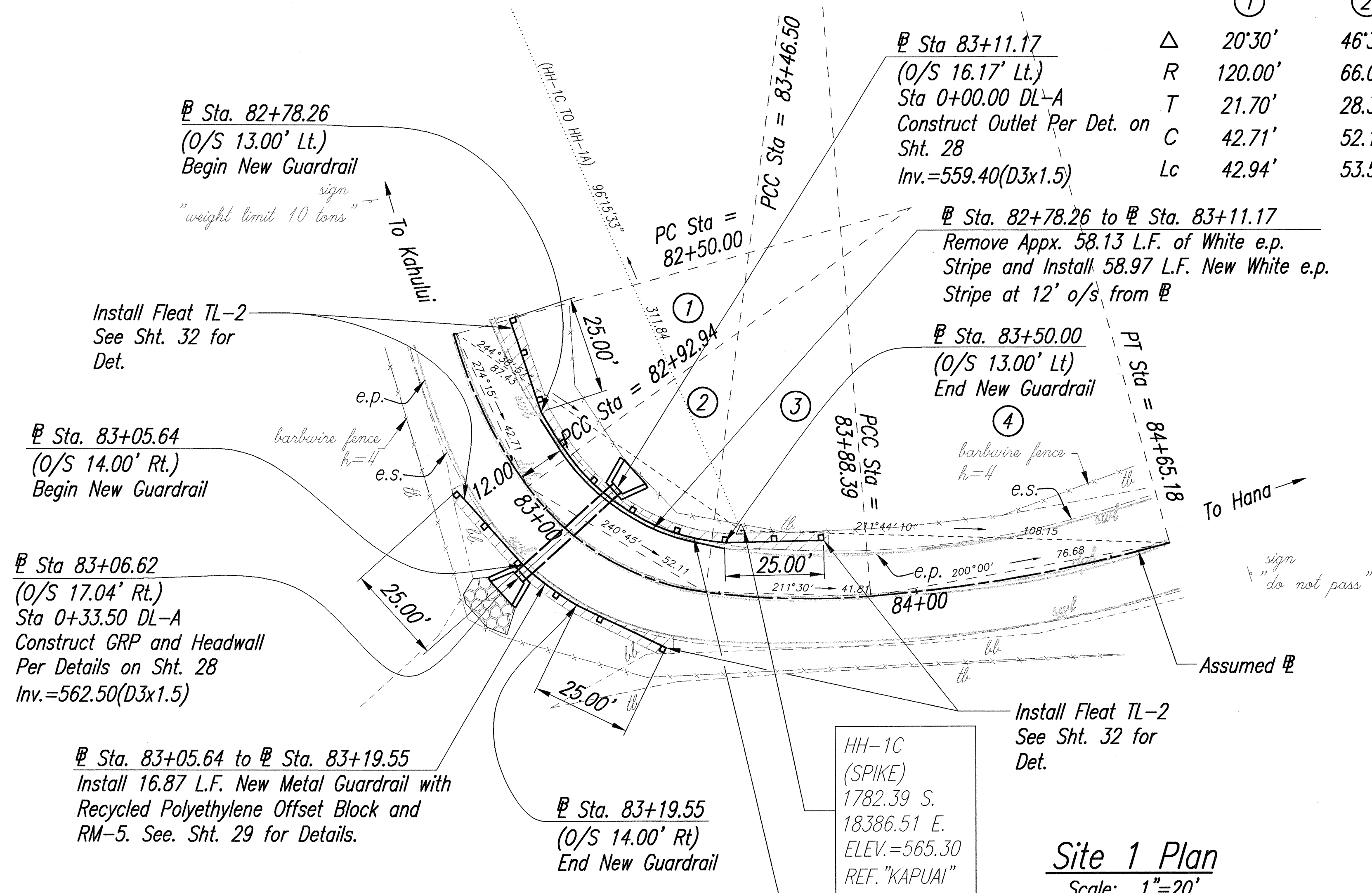


FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	360AB-02-00	2003	6	33

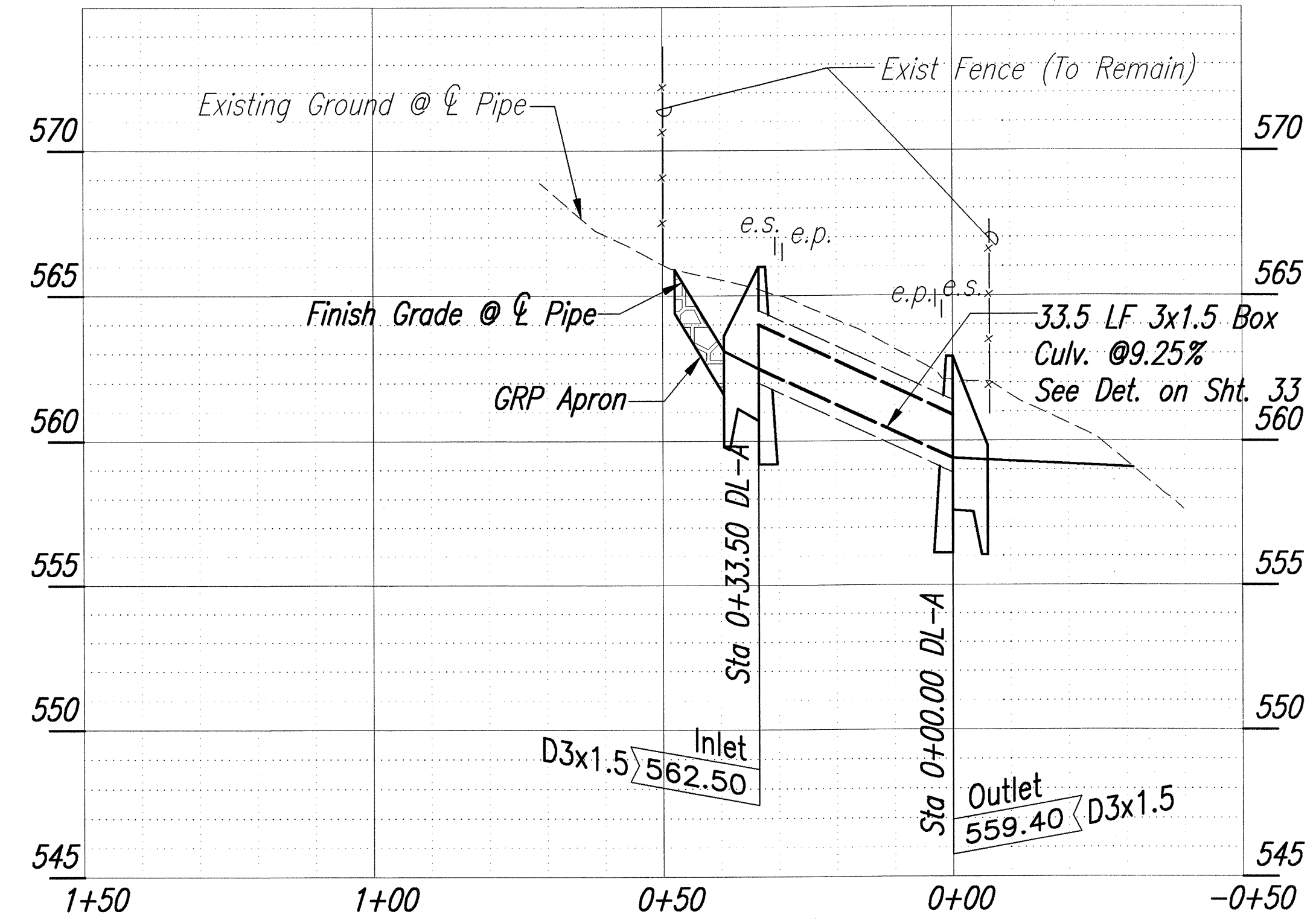
TRUE NORTH
SCALE: 1"=20'

CURVE DATA

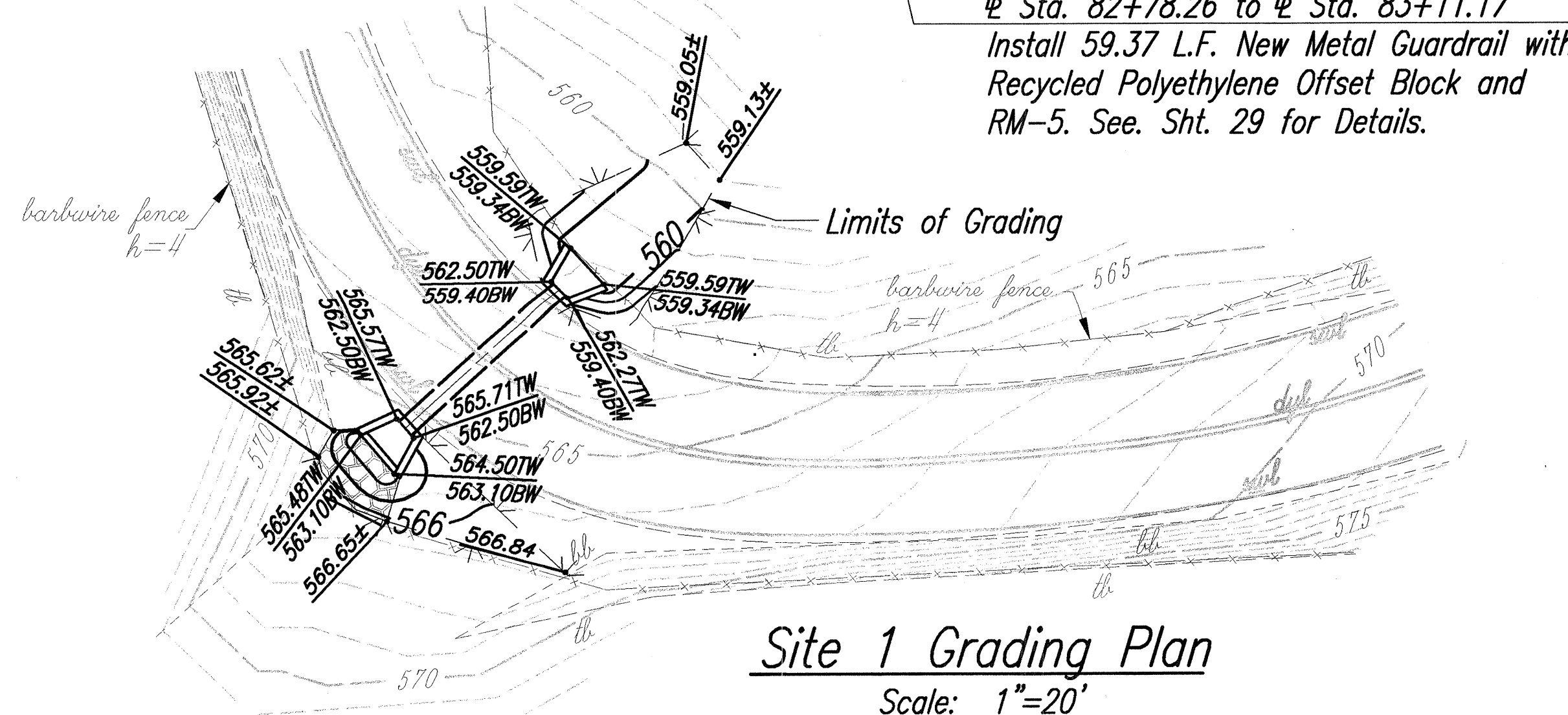
	①	②	③	④
Δ	20°30'	46°30'	12°00'	11°00'
R	120.00'	66.00'	200.00'	400.00'
T	21.70'	28.36'	21.02'	38.52'
C	42.71'	52.11'	41.81'	76.68'
Lc	42.94'	53.56'	41.89'	76.79'



Site 1 Plan
Scale: 1"=20'

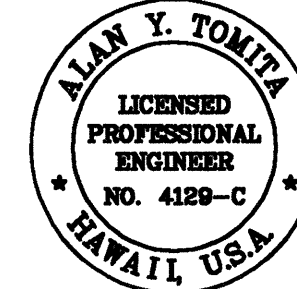


Site 1 Drainline Profile
Scale: Horiz. 1"=20' Vert. 1"=4'



Site 1 Grading Plan
Scale: 1"=20'

DATE	_____
SURVEY PLOTTED BY	_____
DRAWN BY	_____
TRACED BY	_____
DESIGNED BY	_____
QUANTITIES BY	_____
CHECKED BY	_____
NO.	_____



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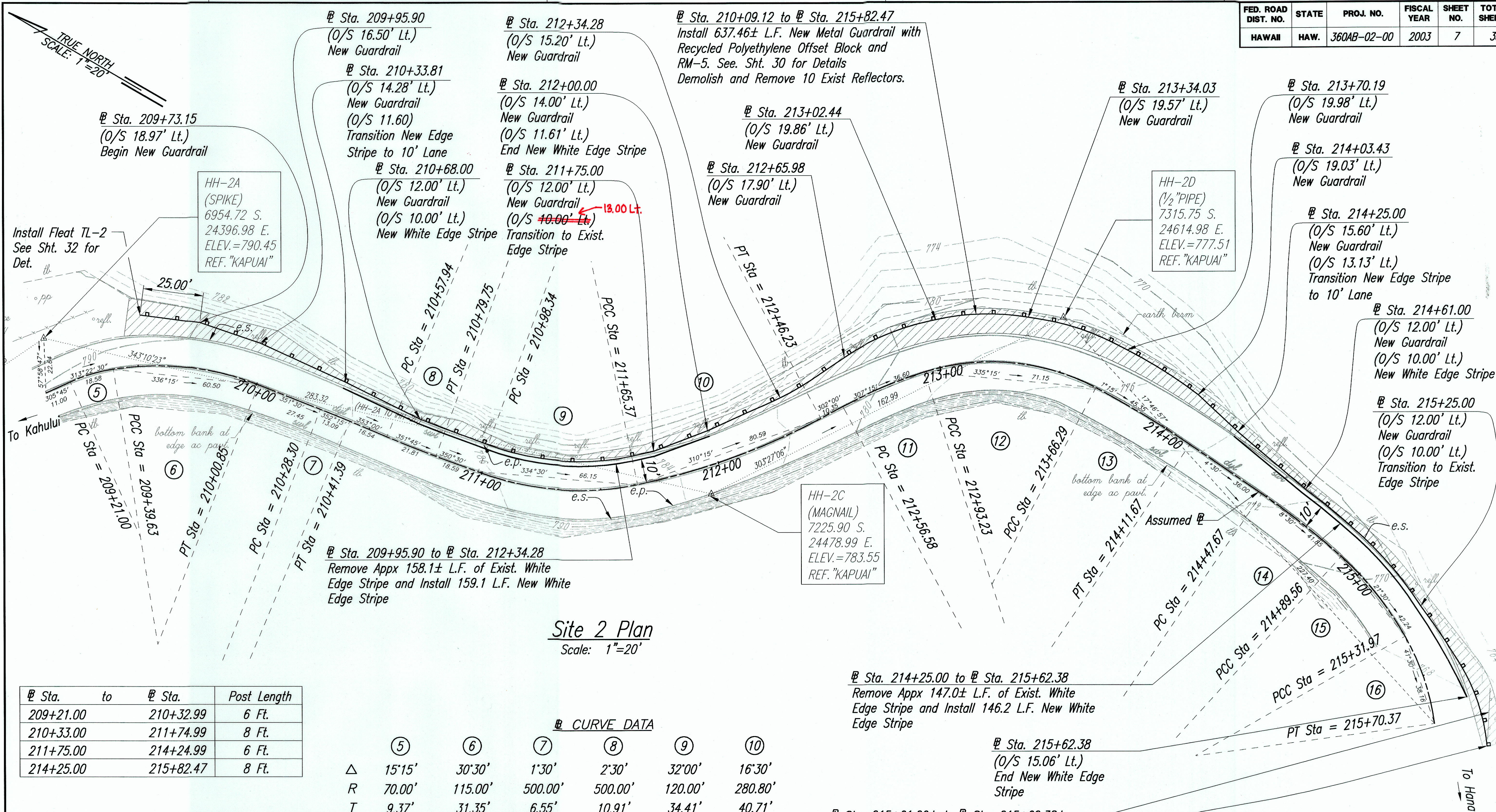
Alan Y. Tomita

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
ROADWAY PLAN
SITE 1 - MP 4.20
HANA HIGHWAY IMPROVEMENTS
Huelo To Hanalei
Project No. 360AB-02-00
Scale: As Shown Date: March, 2003
SHEET No. 1 OF 12 SHEETS

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Alan Y. Tomita

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	360AB-02-00	2003	7	33



Site 2 Plan
Scale: 1"=20'

Sta.	to	Sta.	Post Length
209+21.00		210+32.99	6 Ft.
210+33.00		211+74.99	8 Ft.
211+75.00		214+24.99	6 Ft.
214+25.00		215+82.47	8 Ft.

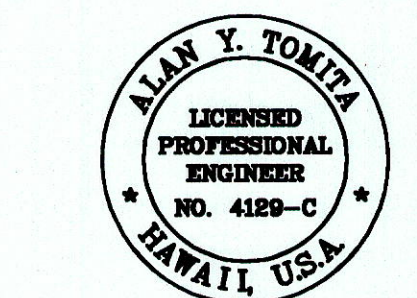
CURVE DATA

	⑤	⑥	⑦	⑧	⑨	⑩
Δ	15°15'	30°30'	1°30'	2°30'	32°00'	16°30'
R	70.00'	115.00'	500.00'	500.00'	120.00'	280.80'
T	9.37'	31.35'	6.55'	10.91'	34.41'	40.71'
C	18.58'	60.50'	13.09'	21.81'	66.15'	80.59'
Lc	18.63'	61.22'	13.09'	21.82'	67.02'	80.86'

	⑪	⑫	⑬	⑭	⑮	⑯
Δ	10°30'	45°30'	6°30'	8°00'	18°00'	22°00'
R	200.00'	92.00'	400.00'	300.00'	135.00'	100.00'
T	18.38'	38.58'	22.71'	20.98'	21.38'	19.44'
C	36.60'	71.15'	45.35'	41.85'	42.24'	38.16'
Lc	36.65'	73.06'	45.38'	41.89'	42.41'	38.40'

Note:
Baseline Stations Have Been
Approximated Based on Available Data &
Tied to Benchmarks Provided by Survey.

SURVEY PLOTTED BY	DATE
DRAWN BY	
TRACED BY	
NOTED BY	
CHECKED BY	
NO.	



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Alan Y. Tomita

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
ROADWAY PLAN
SITE 2 - MP 6.80
HANA HIGHWAY IMPROVEMENTS
Huelo To Hana
Project No. 360AB-02-00
Scale: 1"=20' Date: March, 2003
SHEET No. 2 OF 12 SHEETS

"AS-BUILT"

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	360AB-02-00	2003	8	33

TRUE NORTH
SCALE: 1"=20'

HH-4A
(SPIKE)
13328.66 S.
37293.76 E.
ELEV.=174.82
REF. "KAPUAI"

PC Sta = 535+00.00
PT Sta = 535+44.77

17

To Kohului
36°00' 43.63'
172
31°34'59"
2330.26
33550.04
conc wall w/ posts for future guardrail w=1.2
top of gully
bottom of cliff
Assumed $\bar{P}$
e.p.
e.s.

$\bar{P}$ Sta. 536+67.64 (O/S 13.37' Rt)
Begin Concrete Swale. Transition
to 4' Wide Concrete Swale.
Inv. = 164.47

$\bar{P}$ Sta. 536+79.13 (O/S 11.44' Rt)
4' Wide Concrete Swale.
Inv. = 164.01

$\bar{P}$ Sta. 537+17.20 (O/S 13.16' Rt)
4' Wide Concrete Swale.
Inv. = 162.02

Site 3 Plan
Scale: 1"=20'

New PCC
AG Shoulder

18

PC Sta = 536+57.75
PT Sta = 537+32.20

13°30' 103.94'
e.s.
e.p.

19

PC Sta = 538+14.30
PT Sta = 538+02.09

15°28'30" 156.28.88'
e.s.
e.p.

4' Transition

$\bar{P}$ Sta. 538+11.42 (O/S 11.82' RT)
End Concrete Swale.
Demolish and Remove Exist.
Headwall & Install New Type
61614P GDI
over Exist. 24" Drain.
(See Sht. 29 For Grate Details)
Top = 155.50
Inv. = 155.12 (d24)
Clean Exist. Drain and Outlet.

$\bar{P}$ Sta. 537+67.26 (O/S 11.76' Rt)
4' Wide Concrete Swale.
Inv. = 158.56

$\bar{P}$ Sta. 536+67.66 to $\bar{P}$ Sta. 538+08.57
Install Approx. 163.4 L.F. Concrete Swale
(See Detail on Sheet 28) Running
Parallel to Exist. Edge of Pavement.
Sheet 28 for Details

CURVE DATA

17

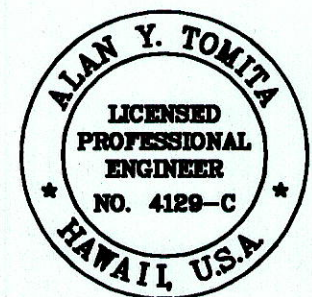
18

19

Δ	45°00'	90°00'	90°00'
R	57.00'	73.50'	100.00'
T	23.61'	73.50'	6.12'
C	43.63'	103.94'	12.21'
Lc	44.77'	115.45'	12.22'

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

Note:
1. Been Approximated Based on Available
Data & Tied to Benchmarks Provided by
Survey.



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Alan Y. Tomita

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
ROADWAY PLAN
SITE 3 - MP 12.80
HANA HIGHWAY IMPROVEMENTS
Huelo To Hana
Project No. 360AB-02-00

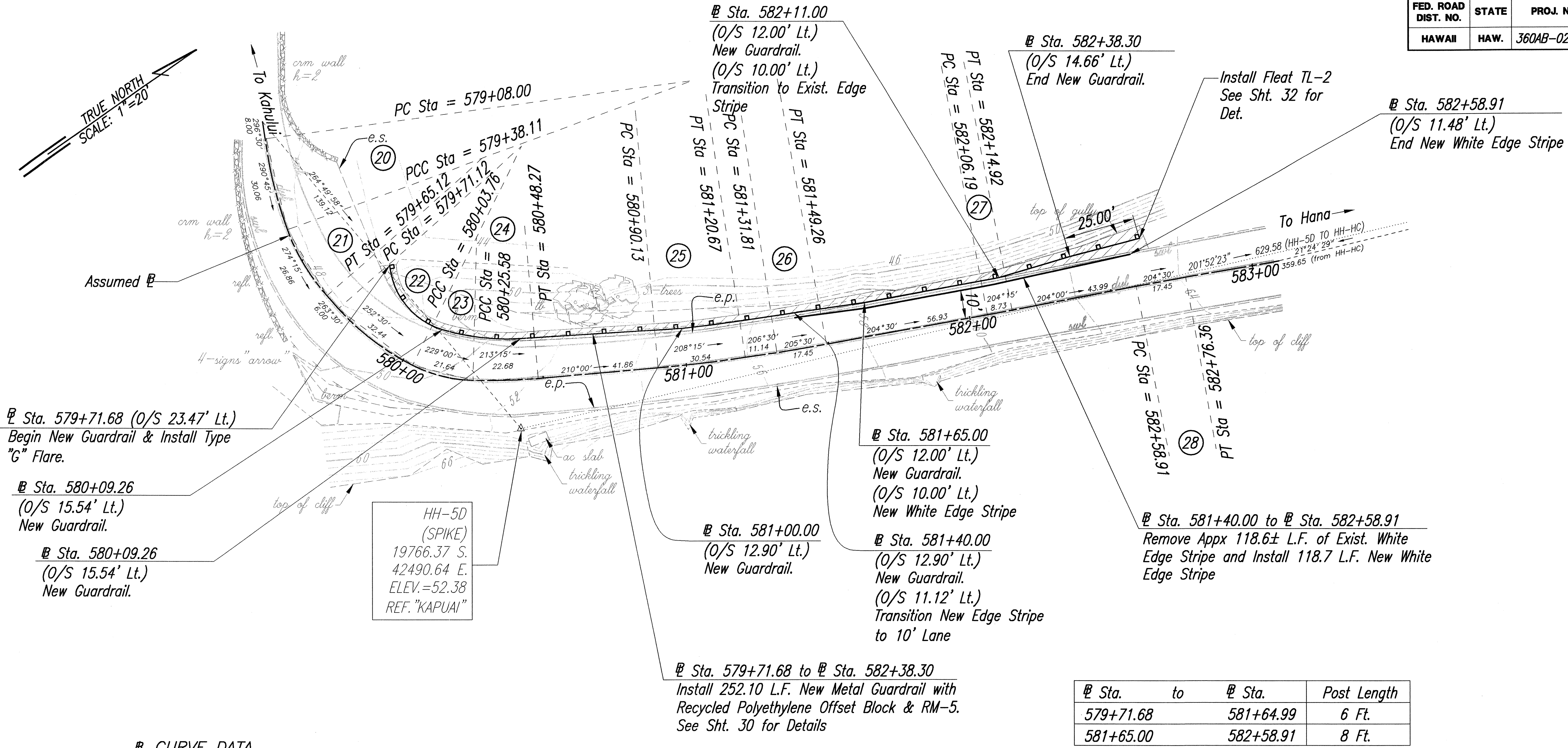
Scale: 1"=20' Date: March, 2003

SHEET No. 3 OF 12 SHEETS

"AS-BUILT"

8

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	360AB-02-00	2003	9	33



CURVE DATA

	20	21	22	23	24
Δ	11°30'	21°30'	22°00'	25°00'	6°30'
R	150.00'	72.00'	85.00'	50.00'	200.00'
T	15.10'	13.67'	16.52'	11.08'	11.36'
C	30.06'	26.86'	32.44'	21.64'	22.68'
Lc	30.11'	27.02'	32.64'	21.82'	22.69'

	25	26	27	28
Δ	3°30'	2°00'	0°30'	1°00'
R	500.00'	500.00'	1000.00'	1000.00'
T	15.28'	8.73'	4.36'	8.73'
C	30.54'	17.45'	8.73'	17.45'
Lc	30.54'	17.45'	8.73'	17.45'

Site 4 Plan
Scale: 1"=20'

Sta.	to	Sta.	Post Length
579+71.68		581+64.99	6 Ft.
581+65.00		582+58.91	8 Ft.

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

Note:
Baseline Stations Have Been
Approximated Based on Available Data &
Tied to Benchmarks Provided by Survey.

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Alan Y. Tomita

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ROADWAY PLAN

SITE 4 - MP 14.0A

HANA HIGHWAY IMPROVEMENTS

Huelo To Hana

Project No. 360AB-02-00

Scale: 1"=20' Date: March, 2003

SHEET No. 4 OF 12 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	360AB-02-00	2003	11	33

TRUE NORTH
SCALE: 1"=20'

Sta. 863+18.59 to Sta. 870+04.98
Install 670 L.F. New Mod. Type 2AG Curb & Gutter (See Note 3)

HH-6C
()
24237.45 S.
47539.12 E.
ELEV.=611.09
REF. "KAPUAI"

Sta. 861+66.74 to Sta. 862+99.73
Install 122 L.F. New Concrete Swale
(See Note 3)

Sta. 861+78.48 (O/S 11.13' Rt)
Begin Concrete Swale
Inv. = 590.06

Sta. 860+66.02 to Sta. 861+66.74
Install 99 L.F. New Mod. Type 2AG Curb & Gutter (See Note 3)

Site 6 Plan - 1
Scale: 1"=20'

Sta. 863+18.60 (O/S 10.94' Rt)
Begin Mod. Type 2AG Curb & Gutter
Inv. = 600.19

Sta. 862+99.73 (O/S 11.76' Rt)
End Concrete Swale. Transition to Mod.
Type 2AG Curb & Gutter
Inv. = 598.71

Sta. 861+66.74 (O/S 9.47' Rt)
End Mod. Type 2AG Curb & Gutter.
Transition to Swale
Inv. = 589.34

Sta. 860+66.02 (O/S 10.48' Rt)
End Concrete Swale.
Begin Mod. Type 2AG Curb & Gutter
Inv. = 581.91

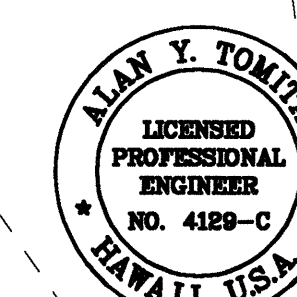
Sta. 860+28.27 to Sta. 860+66.02
Install 41 L.F. New Concrete Swale (See Note 3) & Install Spillway Emptying into Existing Culvert Inlet

Sta. 860+32.45
(O/S 25.65' Rt)
Begin Concrete Swale
Construct Smooth Transition
to Exist Headwall
Inv. = 578.00

CURVE DATA

	33	34	35	36
Δ	12'00"	3'00"	28'00"	1'30"
R	600.00'	600.00'	340.00'	2000.00'
T	63.06'	15.71'	84.77'	26.18'
C	125.43'	31.41'	164.51'	52.36'
Lc	125.66'	31.42'	166.16'	52.36'

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

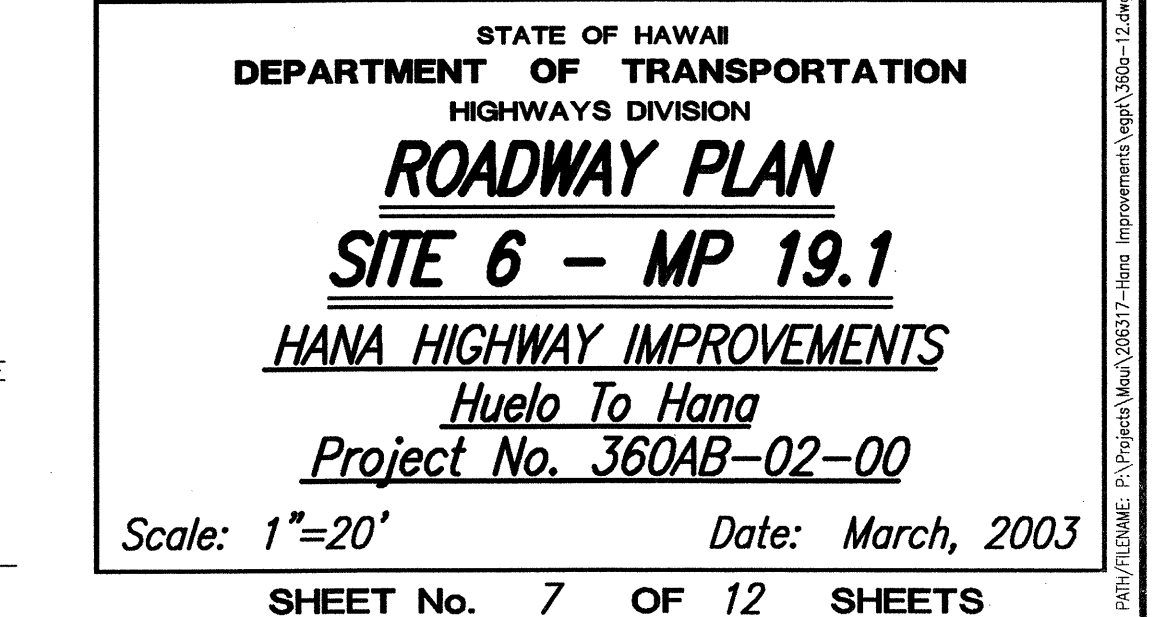


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Alan Y. Tomita

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
ROADWAY PLAN
SITE 6 - MP 19.1
HANA HIGHWAY IMPROVEMENTS
Hualo To Hana
Project No. 360AB-02-00
Scale: 1"=20' Date: March, 2003
SHEET No. 6 OF 12 SHEETS

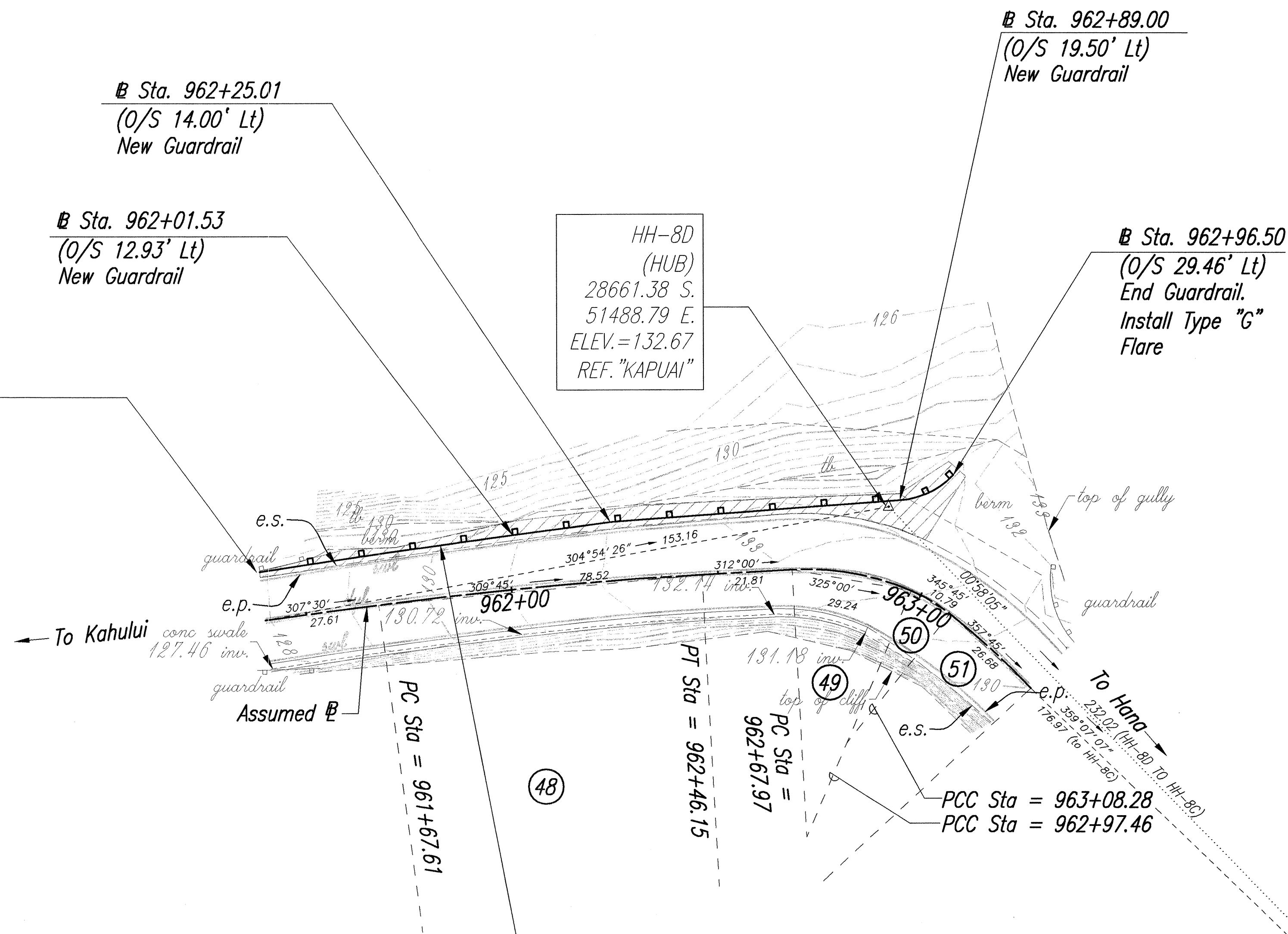
<u>B CURVE DATA</u>			
(38)	(39)	(40)	(40)
9'45'	32'45'	8'30'	6'30'
305.00'	123.00'	500.00'	800.00'
26.01'	36.14'	37.16'	45.43'
51.84'	69.35'	74.11'	90.71'
51.90'	70.31'	74.18'	90.76'
(43)	(44)	(45)	
6'00'	19'30'	10'00'	
550.00'	350.00'	500.00'	
28.82'	60.14'	43.74'	
57.57'	118.54'	87.16'	
57.60'	119.12'	87.27'	



FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	360AB-02-00	2003	14	33

④ CURVE DATA

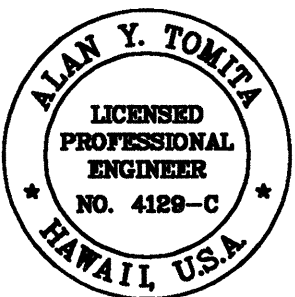
	④8	④9	④50	④51
Δ	4°30'	26°00'	15°30'	8°30'
R	1000.00'	65.00'	40.00'	180.00'
T	39.29'	15.01'	5.44'	13.38'
C	78.52'	29.24'	10.79'	26.68'
Lc	78.54'	29.50'	10.82'	26.70'



Site 8 Plan
Scale: 1"=20'

Sta. 961+40.21 to Sta. 962+96.50
Install 170.4 L.F. New Metal Guardrail with
Recycled Polyethylene Offset Block and
RM-5. See. Sht. 30 for Details.

HH-8C
(MAGNAIL)
28893.37 S.
51484.87 E.
ELEV.=117.72
REF. "KAPUAI"



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Alan Y. Tomita

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ROADWAY PLAN
SITE 8 - MP 21.2
HANA HIGHWAY IMPROVEMENTS
Huelo To Hana
Project No. 360AB-02-00

Scale: 1"=20' Date: March, 2003

SHEET No. 9 OF 12 SHEETS

Note:
Baseline Stations Have Been
Approximated Based on Available Data &
Tied to Benchmarks Provided by Survey.

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

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	360AB-02-00	2003	15	33

TRUE NORTH
SCALE: 1"=20'

Sta 967+70.05 to Sta. 968+26.94
Remove 3 Exist. Concrete Barrier &
Return to Keanae Baseyard

Sta. 967+45.00
(O/S 10.00' Lt)
Begin Guardrail.

Sta. 967+30.43
(O/S 12.70' Lt)
Begin Guardrail.

HH-8B
(HUB)
29000.94 S.
51684.44 E.
ELEV.=114.90
REF."KAPUAI"

Sta. 967+02.00
(O/S 13.50' Lt)
Begin Guardrail.

Install Fleet TL-2
See Sht. 32 for
Det.

Sta. 970+74.03
(O/S 10.00' Lt)
New Guardrail

HH-8A
(HUB)
29248.86 S.
51594.20 E.
ELEV.=100.00
REF."KAPUAI"

PC Sta = 968+77.67

PT Sta = 969+54.46

PC Sta = 969+72.75

PCC Sta = 970+17.31

PCC Sta = 967+76.77
PCC Sta = 967+57.79
PT Sta = 967+28.01
PC Sta = 967+33.01

PCC Sta = 967+09.32
PC Sta = 966+54.27

Sta. 968+80.00
(O/S 10.00' Lt)
New Guardrail

Sta. 970+17.31
(O/S 12.00' Lt)
New Guardrail

Sta. 970+42.28
(O/S 10.55' Lt)
End Guardrail.
Connect to Exist.
Guardrail.

Sta. 967+02.00 to Sta. 970+42.28
Install 355 L.F. New Metal Guardrail with
Recycled Polyethylene Offset Block and
RM-5. See. Sht. 30 for Details.

Sta. 967+33.52 to Sta. 970+42.28
Remove 230.6± L.F. Exist. White Edge
Stripe.

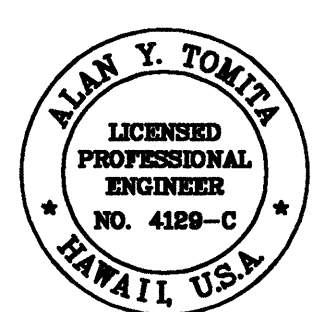
Site 9 Plan
Scale: 1"=20'

CURVE DATA

Sta.	to	Sta.	Post Length
209+21.00		967+29.99	6 Ft.
967+30.00		968+24.99	8 Ft.
968+25.00		969+24.99	7 Ft.
969+25.00		970+42.28	6 Ft.

	52	53	54	55	56
Δ	38°00'	25°30'	35°30'	14°30'	10°30'
R	83.00'	42.00'	40.00'	75.00'	300.00'
T	28.58'	9.50'	12.80'	9.54'	27.57'
C	54.04'	18.54'	24.39'	18.93'	54.90'
Lc	55.05'	18.69'	24.78'	18.98'	54.98'
	57	58	59	60	
Δ	4°45'	5°30'	11°30'	10°45'	
R	440.00'	800.00'	222.00'	300.00'	
T	18.25'	38.43'	22.35'	28.23'	
C	36.47'	76.77'	44.48'	56.20'	
Lc	36.48'	76.79'	44.56'	56.29'	

Note:
Baseline Stations Have Been
Approximated Based on Available Data &
Tied to Benchmarks Provided by Survey.



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Alan Y. Tomita

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
ROADWAY PLAN
SITE 9 - MP 21.3
HANA HIGHWAY IMPROVEMENTS
Huelo To Hana
Project No. 360AB-02-00
Scale: 1"=20' Date: March, 2003
SHEET No. 10 OF 12 SHEETS

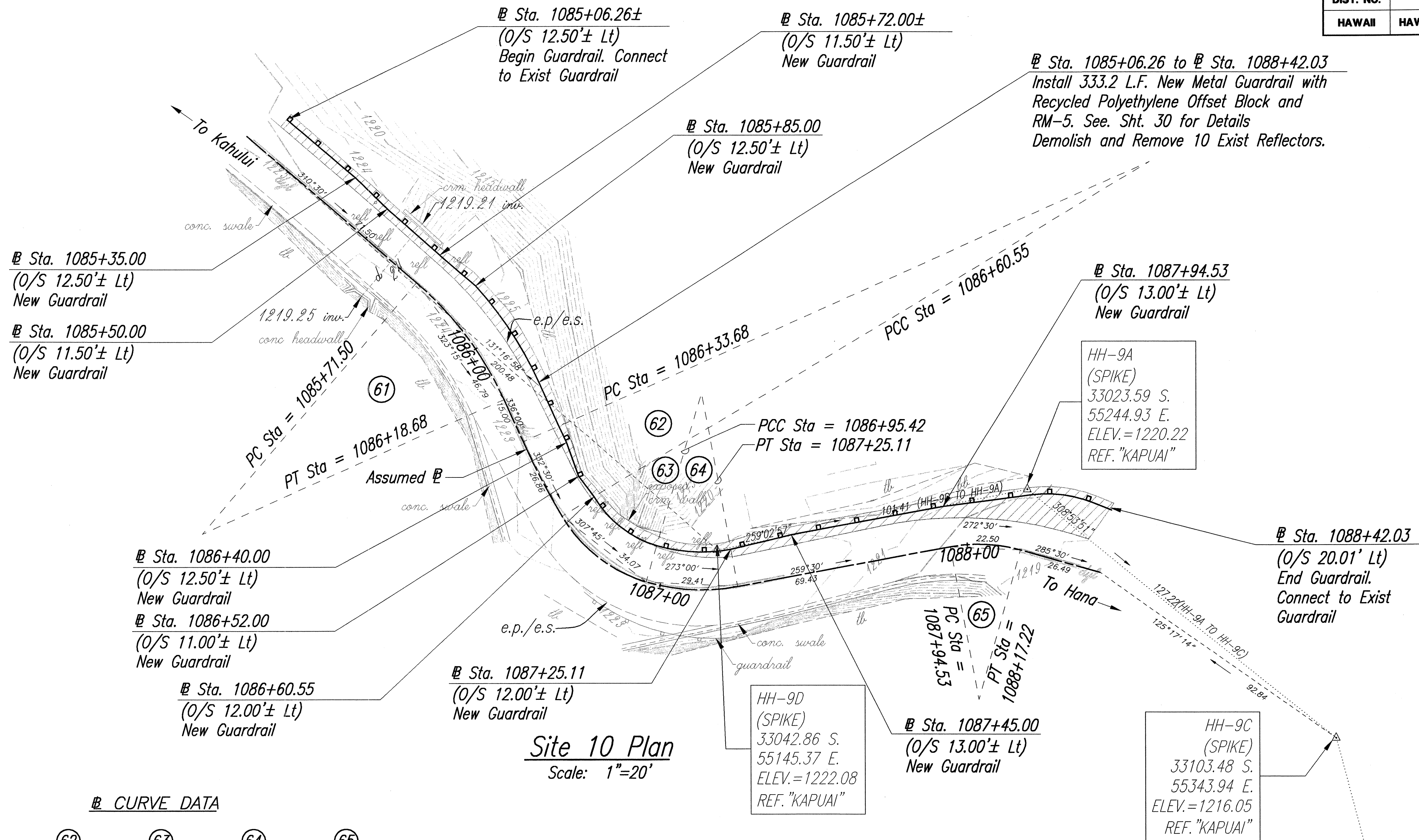
THIS WORK WAS PREPARED BY ME
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Alan Y. Tomita

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

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	360AB-02-00	2003	16	33

TRUE NORTH
SCALE: 1"=20'



Note:
Baseline Stations Have Been
Approximated Based on Available Data &
Tied to Benchmarks Provided by Survey.

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Alan Y. Tomita

STATE OF HAWAII

DEPARTMENT OF TRANSPORTATION

HIGHWAYS DIVISION

ROADWAY PLAN

SITE 10 - MP 23.3

HANA HIGHWAY IMPROVEMENTS

Huelo To Hana

Project No. 360AB-02-00

Scale: 1"=20'

Date: March, 2003

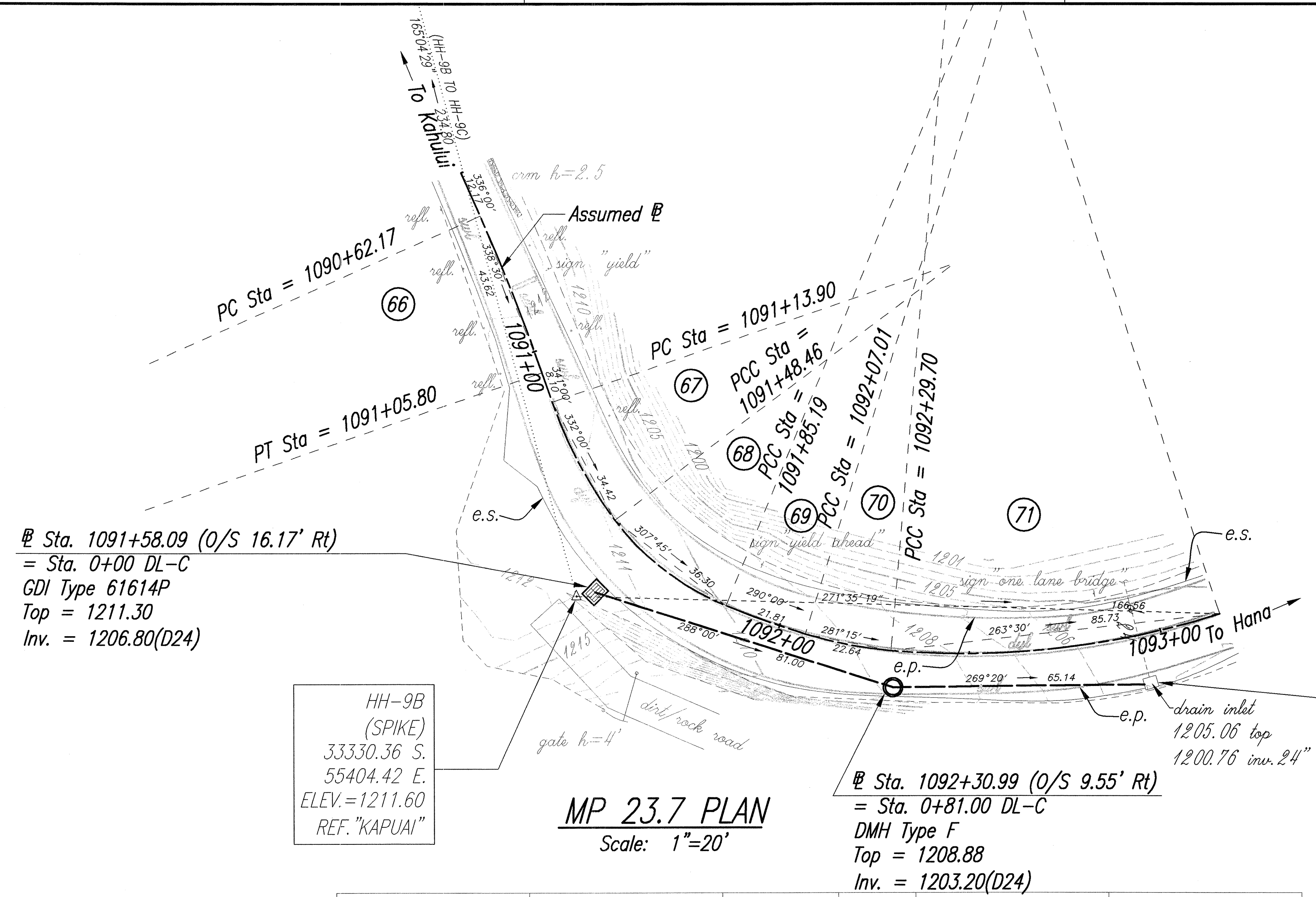
SHEET No. 11 OF 12 SHEETS

16

SURVEY PLOTTED BY	DATE
DRAWN 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	HAW.	360AB-02-00	2003	17	33

TRUE NORTH
SCALE: 1"=20'



CURVE DATA

	66	67	68	69	70	71
Δ	5°00'	18°00'	30°30'	5°00'	12°30'	23°00'
R	500.00'	110.00'	69.00'	250.00'	104.00'	215.00'
T	21.83'	17.42'	18.81'	10.92'	11.39'	43.74'
C	43.62'	34.42'	36.30'	21.81'	22.64'	85.73'
Lc	43.63'	34.56'	36.73'	21.82'	22.69'	86.31'

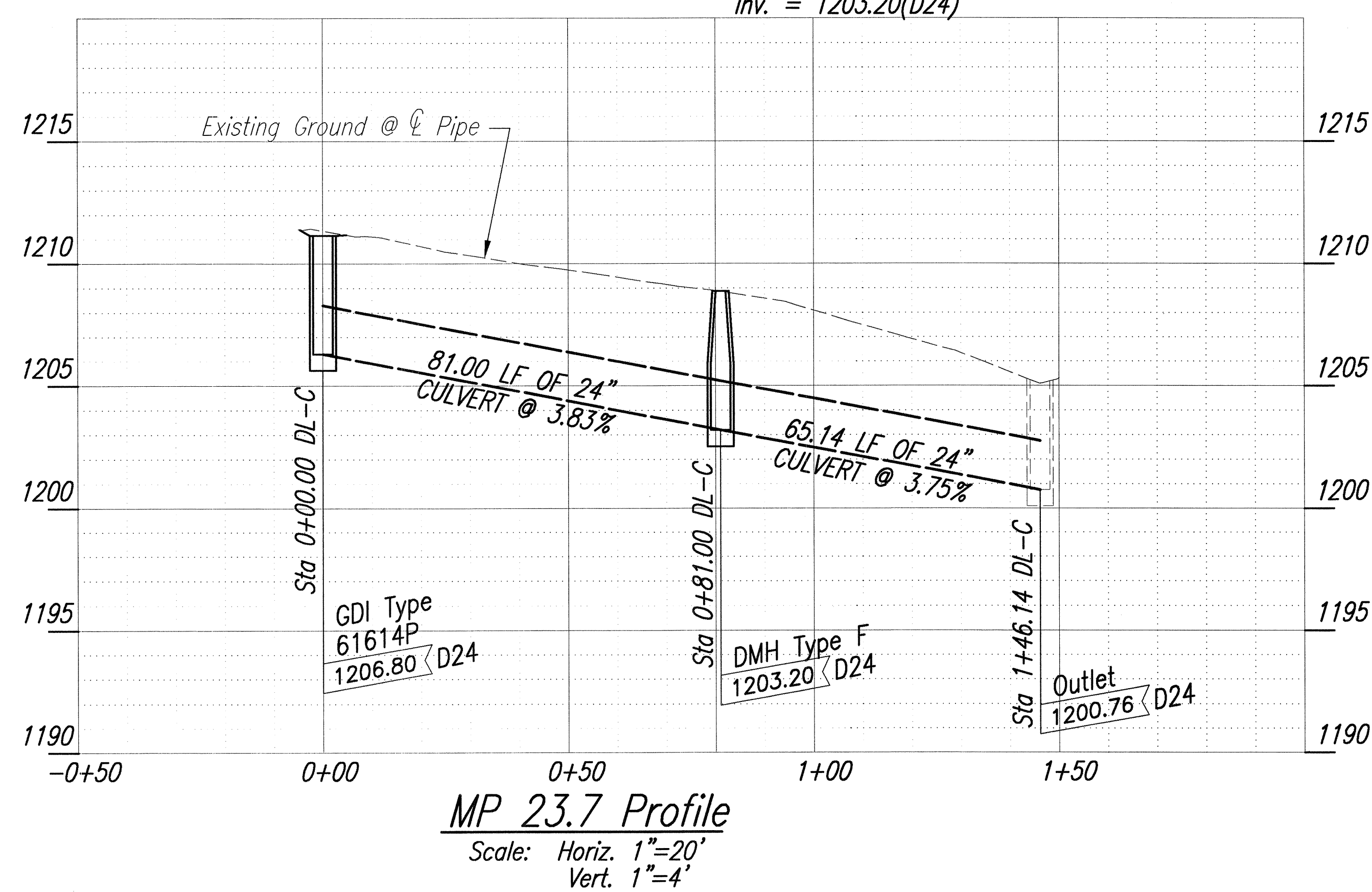
Sta. 1091+58.09 (O/S 16.17' Rt)
= Sta. 0+00 DL-C
GDI Type 61614P
Top = 1211.30
Inv. = 1206.80(D24)

HH-9B
(SPIKE)
33330.36 S.
55404.42 E.
ELEV.=1211.60
REF. "KAPUAI"

MP 23.7 PLAN
Scale: 1"=20'

Sta. 1092+30.99 (O/S 9.55' Rt)
= Sta. 0+81.00 DL-C
DMH Type F
Top = 1208.88
Inv. = 1203.20(D24)

Sta. 1092+93.02 (O/S 12.92' Rt)
= Sta. 1+46.14 DL-C
Connect to Exist GDI
Inv. = 1200.76(D24)



MP 23.7 Profile
Scale: Horiz. 1"=20'
Vert. 1"=4'

ALAN Y. TOMITA
LICENSED PROFESSIONAL ENGINEER
NO. 4189-C
HAWAII, U.S.A.
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.
Alan Y. Tomita

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
ROADWAY PLAN
SITE 11 - MP 23.7
HANA HIGHWAY IMPROVEMENTS
Hualo To Hana
Project No. 360AB-02-00
Scale: As Shown Date: March, 2003
SHEET No. 12 OF 12 SHEETS

Note:
Baseline Stations Have Been
Approximated Based on Available Data &
Tied to Benchmarks Provided by Survey.

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
DESIGNED BY	DRAWN BY	
CHECKED BY	NOTED BY	
No.		