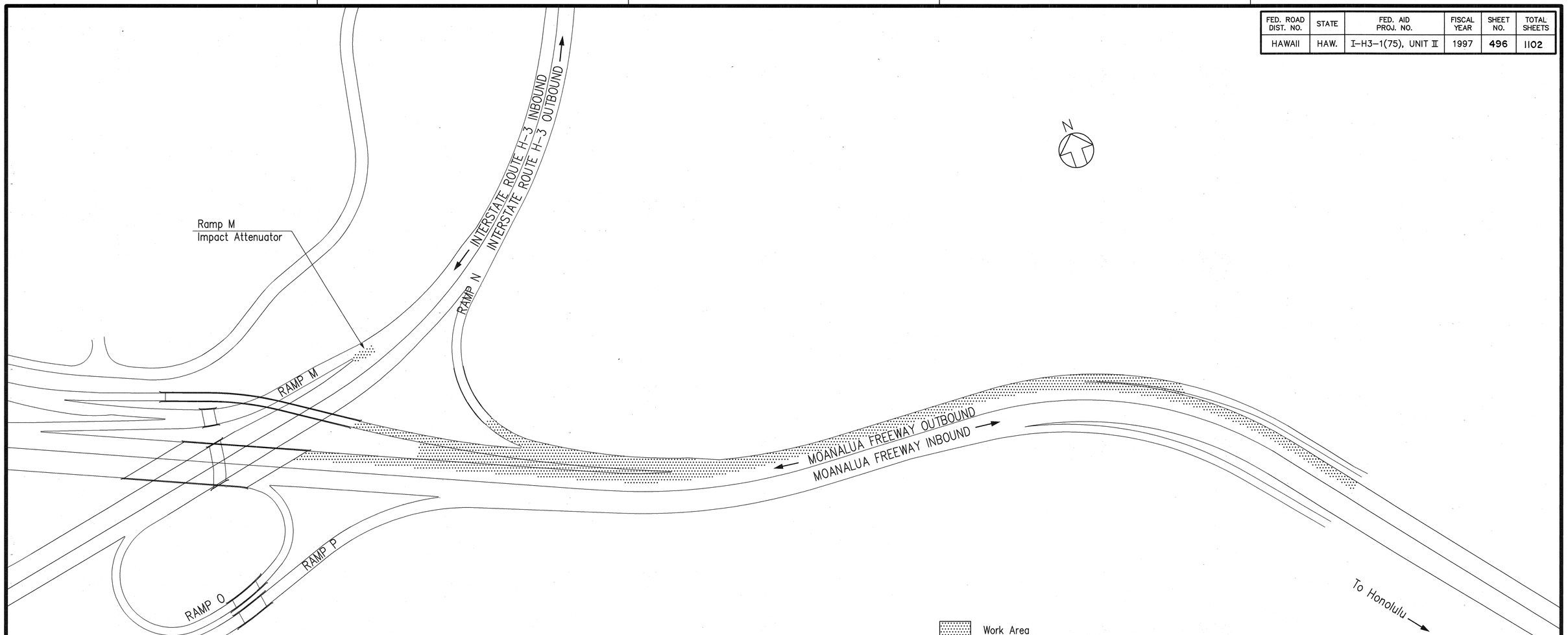
| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|
| HAWAII | HAW. | I-H3-1(75), UNIT II | 1997 | 496 | 1102 |




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

CAD by J. Mimura, 55-52

Last Saved: J:\H3RF\RFU2\MISC\MF-MAP.dwg 02/27/97 at 14:38

RANDALL M. URASAKI
LICENSED PROFESSIONAL ENGINEER
No. 7269-C
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

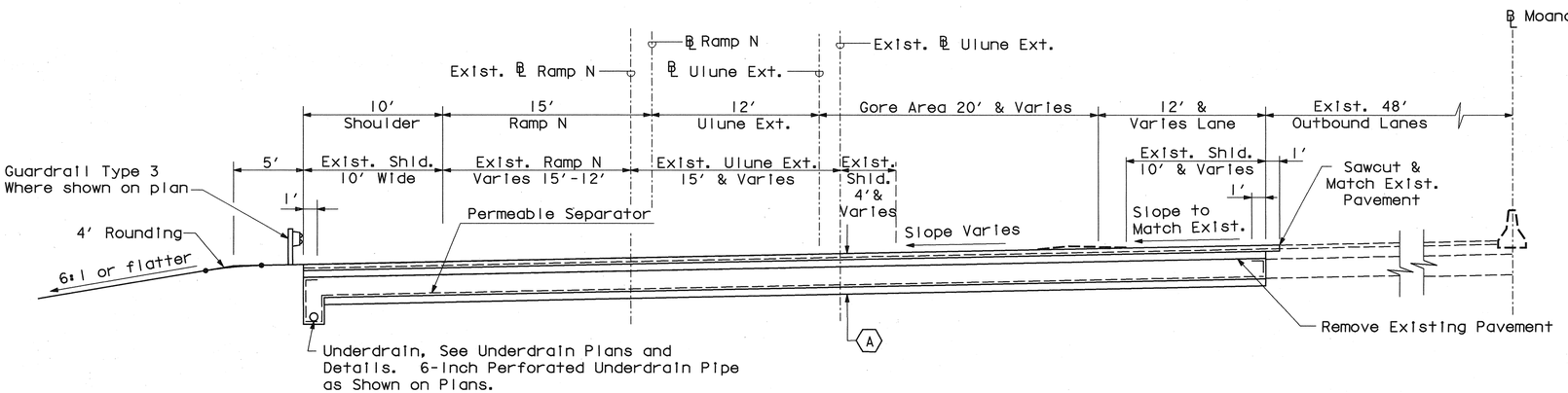
# MOANALUA FREEWAY
# LOCATION MAP

H-3 FINISH (UNIT II)
FAIP NO. I-H3-1(75), UNIT II
LEEWARD SECTION

SCALE: 1" = 150' DATE: JANUARY 1997

SHEET NO. 2G1 OF 1 SHEETS

| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|
| HAWAII | HAW. | I-H3-1(75), UNIT II | 1997 | 497 | 1102 |



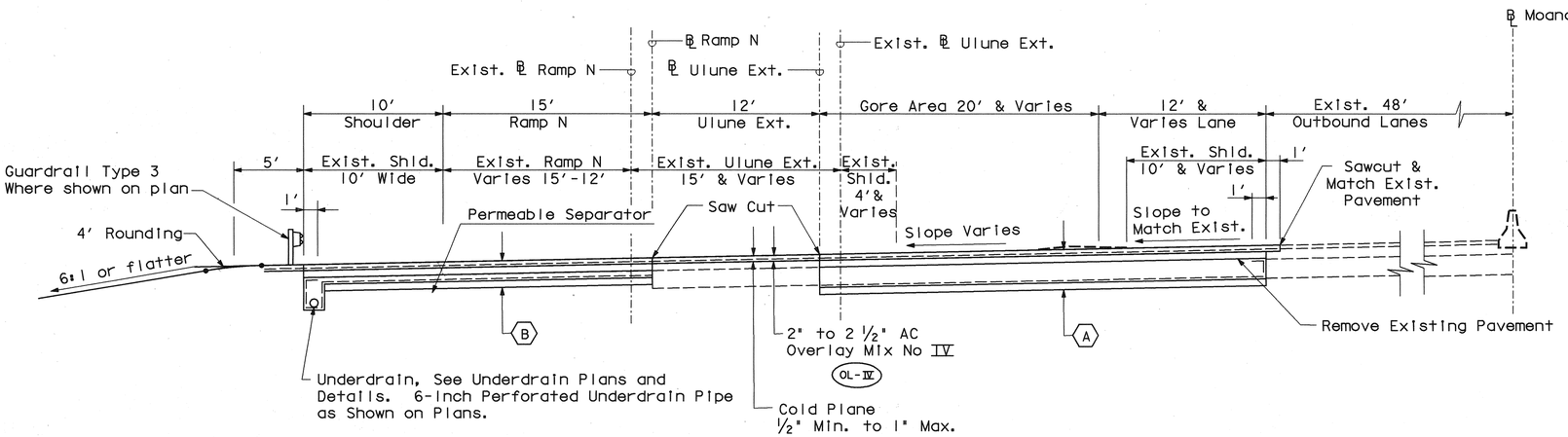

NOTE:

Asphalt concrete base shall be plant mix asphalt concrete base course

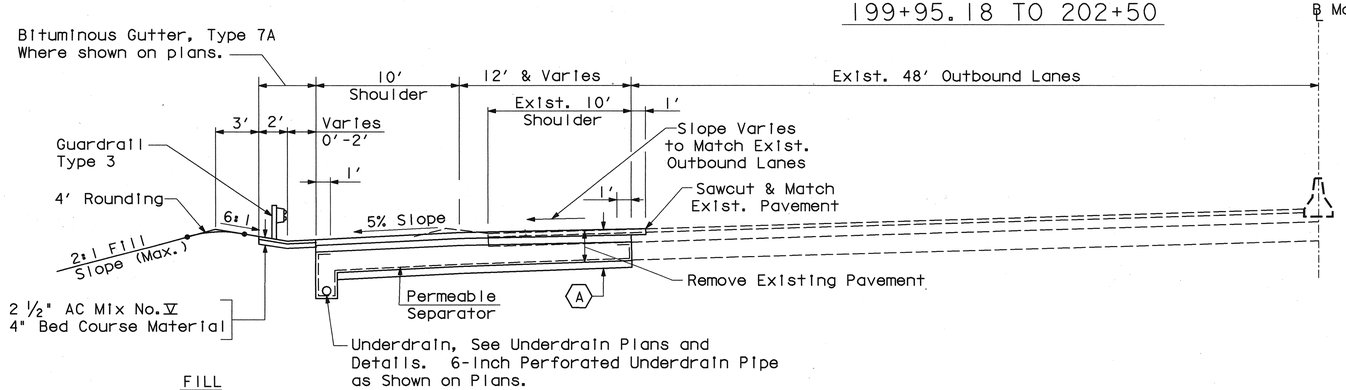
(A) 5" AC Pvmt. Mix No. IV
6" Asphalt Concrete Base
15" Untreated Permeable Base
6" Aggregate Subbase
< Prime Coat

(B) 5" AC Pvmt. Mix No. IV
6" Asphalt Concrete Base
6" Untreated Permeable Base
6" Aggregate Subbase
< Prime Coat

## MOANALUA FREEWAY
## 202+50 TO 206+46.80




## MOANALUA FREEWAY
## 199+95.18 TO 202+50




## MOANALUA FREEWAY
## 191+00 TO 199+95.18

TYPICAL SECTION NOTES:

1. See Shts. 2D8 and 2D9 for Underdrain Details.
2. For Grade Control, see Spot Elevation Plans on Shts. 2A9 to 2A12.
3. See Structural Plans for Retaining Wall No. 1.

| | |
|---|---|
| 4/21/97 | Revised Moanalua Freeway Section 199+95.18 to 206+46.80 |
| Date | Revision |

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

**MOANALUA FREEWAY**
**TYPICAL SECTION**
**MOANALUA FREEWAY**

H-3 FINISH (UNIT II)
FAIP NO. I-H3-1(75), UNIT II
LEEWARD SECTION

SCALE: 1"=5′ DATE: JANUARY 1997

SHEET NO. 2TI OF 3 SHEETS

CLYDE T. SHIMIZU
LICENSED PROFESSIONAL ENGINEER
No. 5514-C
HAWAII, U.S.A.

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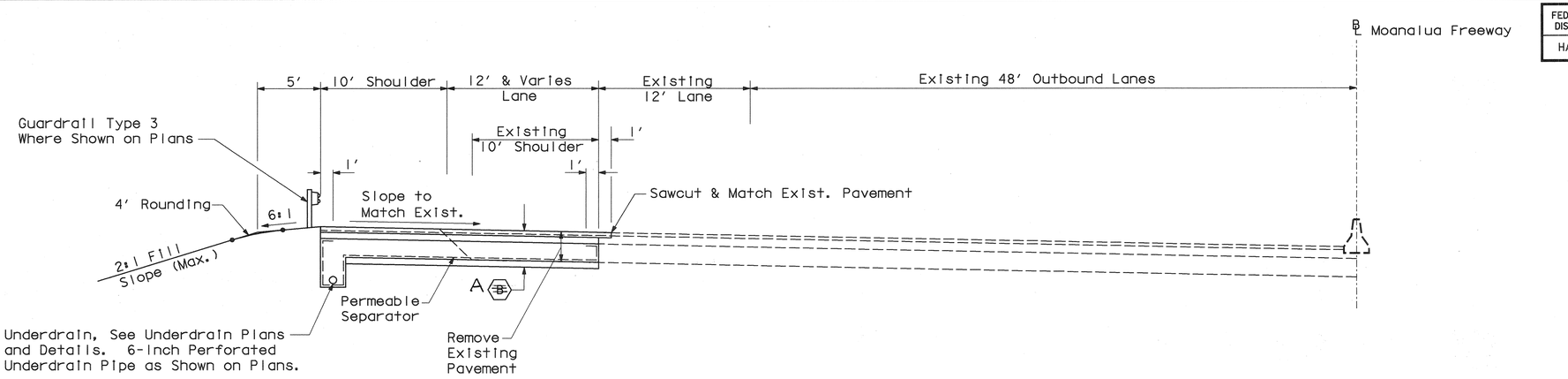
Clyde T. Shimizu

ADD. 497

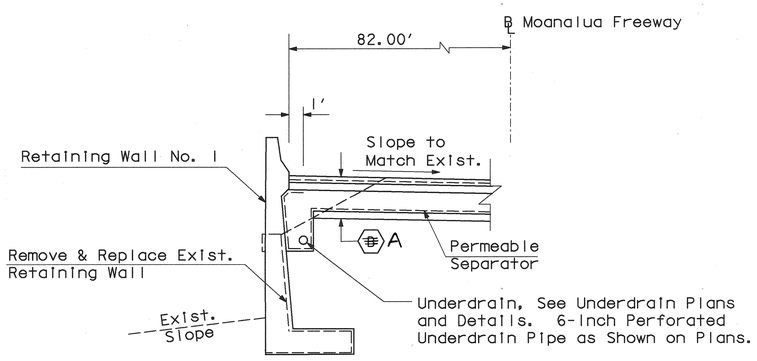
$$$$$$$$$$DGNSPEC$$$$$$$$$$ $$$$$$SYTIME$$$$$$

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

| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|
| HAWAII | HAW. | I-H3-1(75), UNIT II | 1997 | 498 | 1102 |

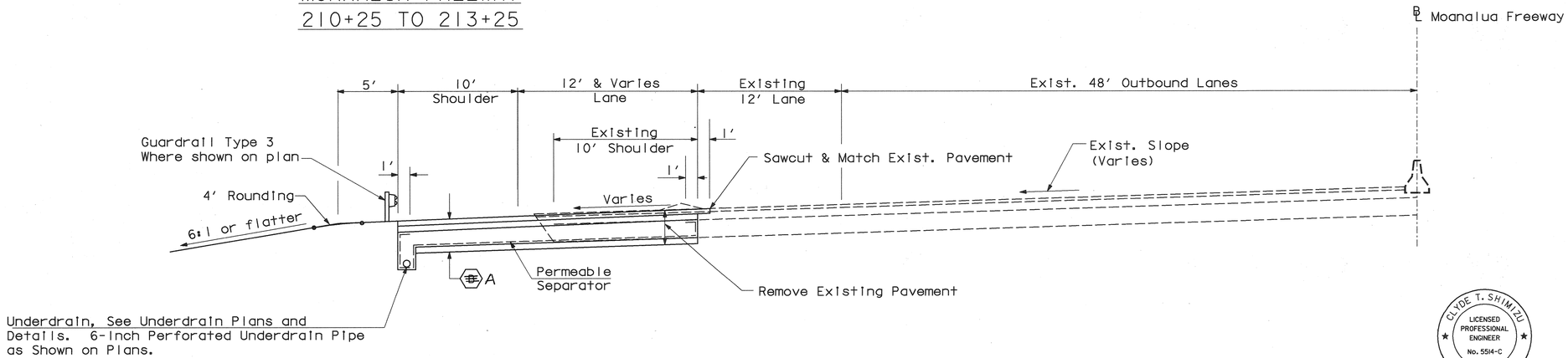



MOANALUA FREEWAY
208+83 TO 214+80.00




MOANALUA FREEWAY
210+25 to 213+25

MOANALUA FREEWAY
210+25 TO 213+25




NOTE:
See Sht. 2T1 for Pavement Structure and Notes.

MOANALUA FREEWAY
206+46.80 TO 208+83

CLYDE T. SHIMIZU
LICENSED PROFESSIONAL ENGINEER
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Clyde T. Shimizu

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

MOANALUA FREEWAY
TYPICAL SECTION
MOANALUA FREEWAY

H-3 FINISH (UNIT II)
FAIP NO. I-H3-1(75), UNIT II
LEEWARD SECTION

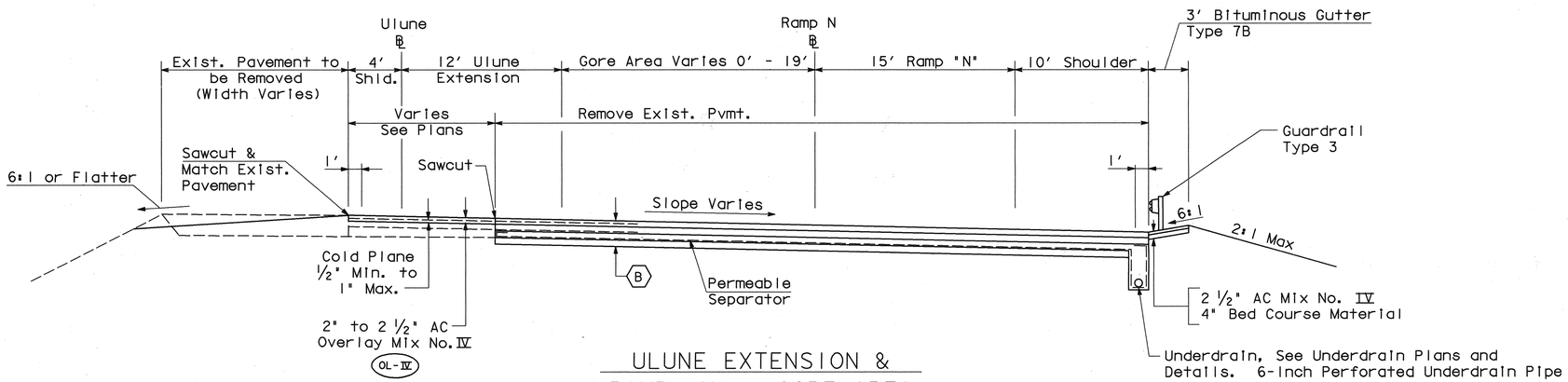
SCALE: 1"=5' DATE: JANUARY 1997

SHEET NO. 2T2 OF 3 SHEETS

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

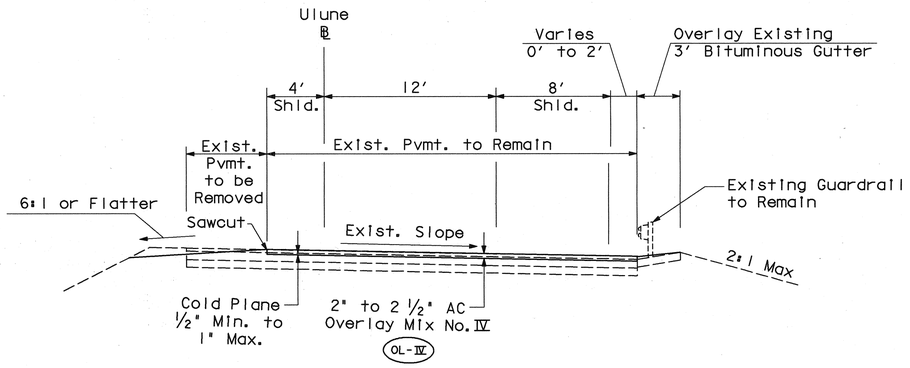
$$$$$$$$$$$$DGNSPEC$$$$$$$$$$$$ $$$$$$SYTIME$$$$$$

| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|
| HAWAII | HAW. | I-H3-1(75), UNIT II | 1997 | 499 | 1102 |



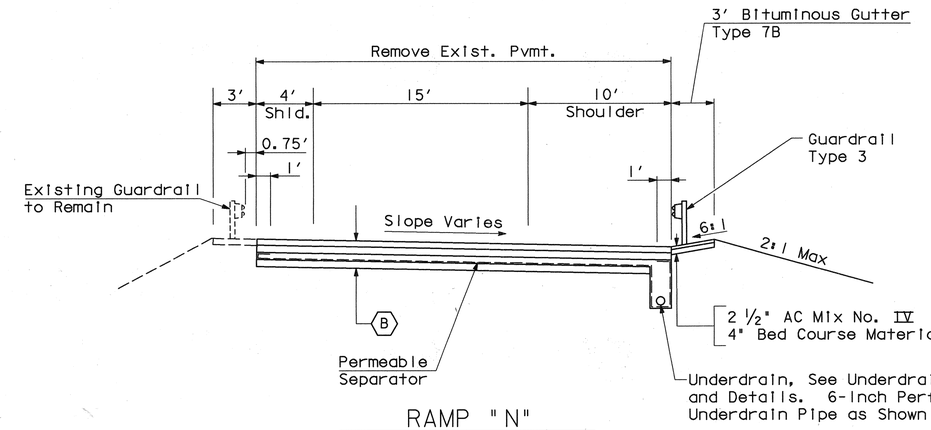

## ULUNE EXTENSION & RAMP "N" @ GORE AREA

Ulune Sta. 11+49.79 to 14+11.39



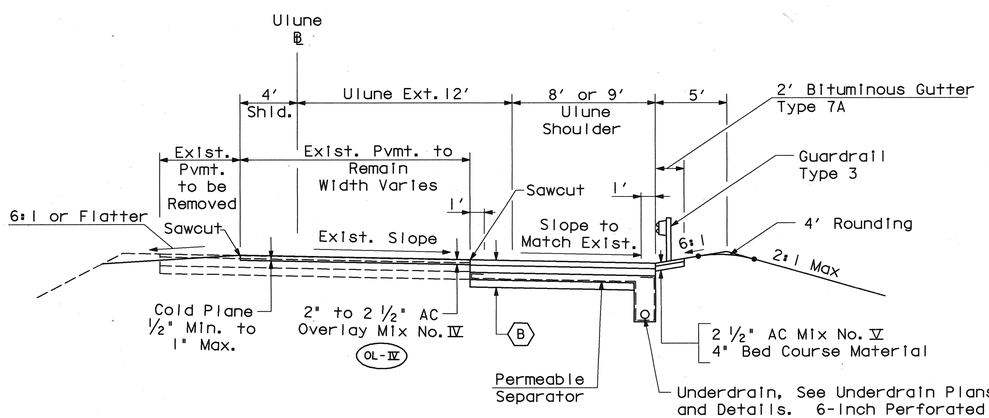

## ULUNE EXTENSION

Ulune Sta. 17+00 to 19+57.49




## RAMP "N"

"N" Sta. 37+08.33 to 38+46




## ULUNE EXTENSION

Ulune Sta. 14+11.39 to 17+00

NOTE:

See Sht. 2T1 for Pavement Structure and Notes.

| 4/21/97 | Revised Ulune Extension & Ramp N @ Gore Area Typical Section |
|---|---|
| Date | Revision |

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

# MOANALUA FREEWAY

## TYPICAL SECTION

## ULUNE EXTENSION & RAMP N

H-3 FINISH (UNIT ID
FAIP NO. I-H3-1(75), UNIT II
LEEWARD SECTION

SCALE: 1"=5' DATE: JANUARY 1997

SHEET NO. 2T3 OF 3 SHEETS

CLYDE T. SHIMIZU
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No. 5514-C
HAWAII, U.S.A.

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Clyde T. Shimizu

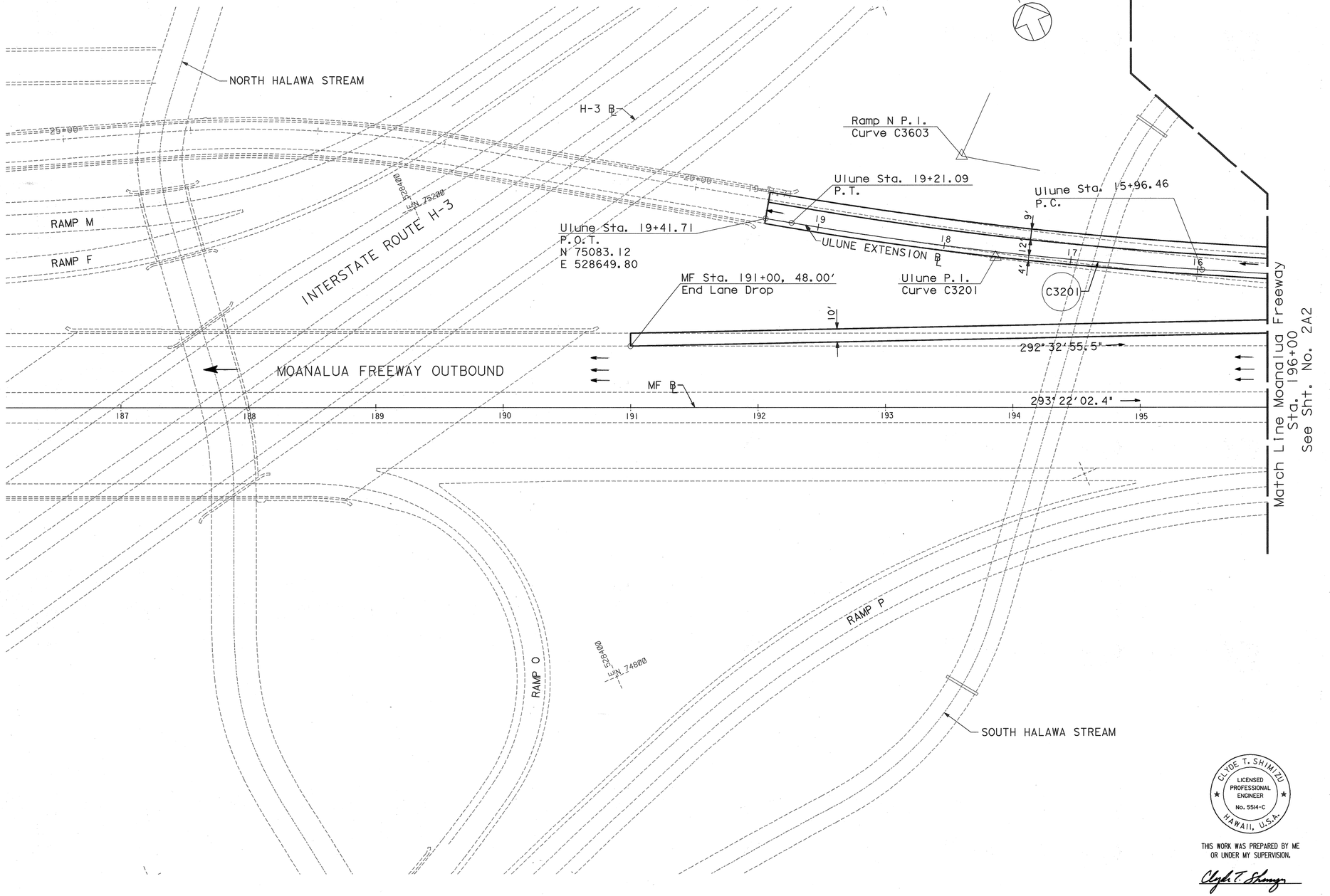
ORIGINAL PLAN
SURVEY PLOTTED BY
DRAWN BY
TRACED BY
DESIGNED BY
QUANTITIES BY
CHECKED BY
DATE
NOTE BOOK
No.

$$$$$$$$$$$$DGNSPEC$$$$$$$$$$$$ $$$$$$SYTIME$$$$$$

ADD. 499

| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|
| HAWAII | HAW. | I-H3-1(75), UNIT II | 1997 | 500 | 1102 |

| CURVE | RADIUS | LENGTH | TANGENT | CHORD | DELTA | COORDINATES OF POINT OF INTERSECTION OF TANGENTS |
|---|---|---|---|---|---|---|
| C3201 | 3000.00' | 324.64' | 162.48 | 324.48' | 06° 12' 00.4" | N 74983.26 E 528803.27 |




$$$$$$$$$$DGNSPEC$$$$$$$$$$ $$$$$$SYTIME$$$$$$

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

CLYDE T. SHIMIZU
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No. 5514-C
HAWAII, U.S.A.

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Clyde T. Shimizu

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

# ALIGNMENT
# MOANALUA FREEWAY
# STA. 187+00 TO STA. 196+00

H-3 FINISH (UNIT ID)
FAIP NO. I-H3-1(75), UNIT II
LEEWARD SECTION

SCALE: 1"=40' DATE: JANUARY 1997

SHEET NO. 2A1 OF 12 SHEETS

| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|
| HAWAII | HAW. | I-H3-1(75), UNIT II | 1997 | 501 | 1102 |

| CURVE | RADIUS | LENGTH | TANGENT | CHORD | DELTA | COORDINATES OF POINT OF INTERSECTION OF TANGENTS |
|---|---|---|---|---|---|---|
| C3101 | 1849.86′ | 391.92′ | 196.70′ | 391.19′ | 12°08′20.5" | N 74619.29 E 529522.23 |
| C3501 | 1837.86′ | 724.01′ | 366.76′ | 719.34′ | 22°34′16.7" | N 74582.12 E 529585.16 |
| C3503 | 1600.00′ | 1144.59′ | 57.32′ | 114.57′ | 04°06′13.1" | N 74793.29 E 529217.39 |
| C3603 | 340.00′ | 615.58′ | 433.12′ | 534.88′ | 103°44′09.1" | N 75067.32 E 528810.64 |
| C34 | 8500.00′ | 103.65′ | 51.83′ | 103.65′ | 00°41′55.3" | N 74637.57 E 529307.83 |
| C35 | 1909.86′ | 658.97′ | 332.79′ | 655.70′ | 19°46′08.4" | N 74489.33 E 529662.75 |

Ramp N Sta. 42+72.46
P.T.
N 75358.79
E 5291.31.01

RAMP N ℄

Relocated South Halawa Stream

C3603

Ramp N Sta. 37+08.83, 4.00′
=Ulune Sta. 14+11.39, 31.00′
Nose

Ramp N Sta. 36+56.88
P.C.C.

Ramp N Sta. 35+42.28
P.C.C.

C3503

C3501

Ulune Sta. 11+49.79
P.T.

Ulune Sta. 11+49.79, 4.00′
=MF Sta. 199+95.18, 76.00′
Nose

C3101

Begin Ulune Sta. 7+57.81 P.C.
=MF Sta. 204+00, 60.00′
N 74569.34
E 259712.48

Begin Ramp N Sta. 28+18.27, P.C.
=MF Sta. 206+46.80, 60.00′
N 74535.57
E 529948.96

R = 1822.86′

Ramp N ℄

Ulune Extension ℄

116°51′01.6"

292°32′55.5"

Ramp N P.I.
Curve C3503

Ulune Extension ℄

Ulune P.I.
Curve C3101

Ramp N P.I.
Curve C3501

MOANALUA FREEWAY OUTBOUND

MF Sta. 206+97.69
P.C.C.

MF Sta. 199+40, 60.00′
Begin Lane Drop

MF P.I.
Curve C34

MF ℄

293°22′02.4"

MF P.I.
Curve C35

MF Sta. 199+35.07
P.C.

C34

MF Sta. 200+38.72
P.C.C.

C35

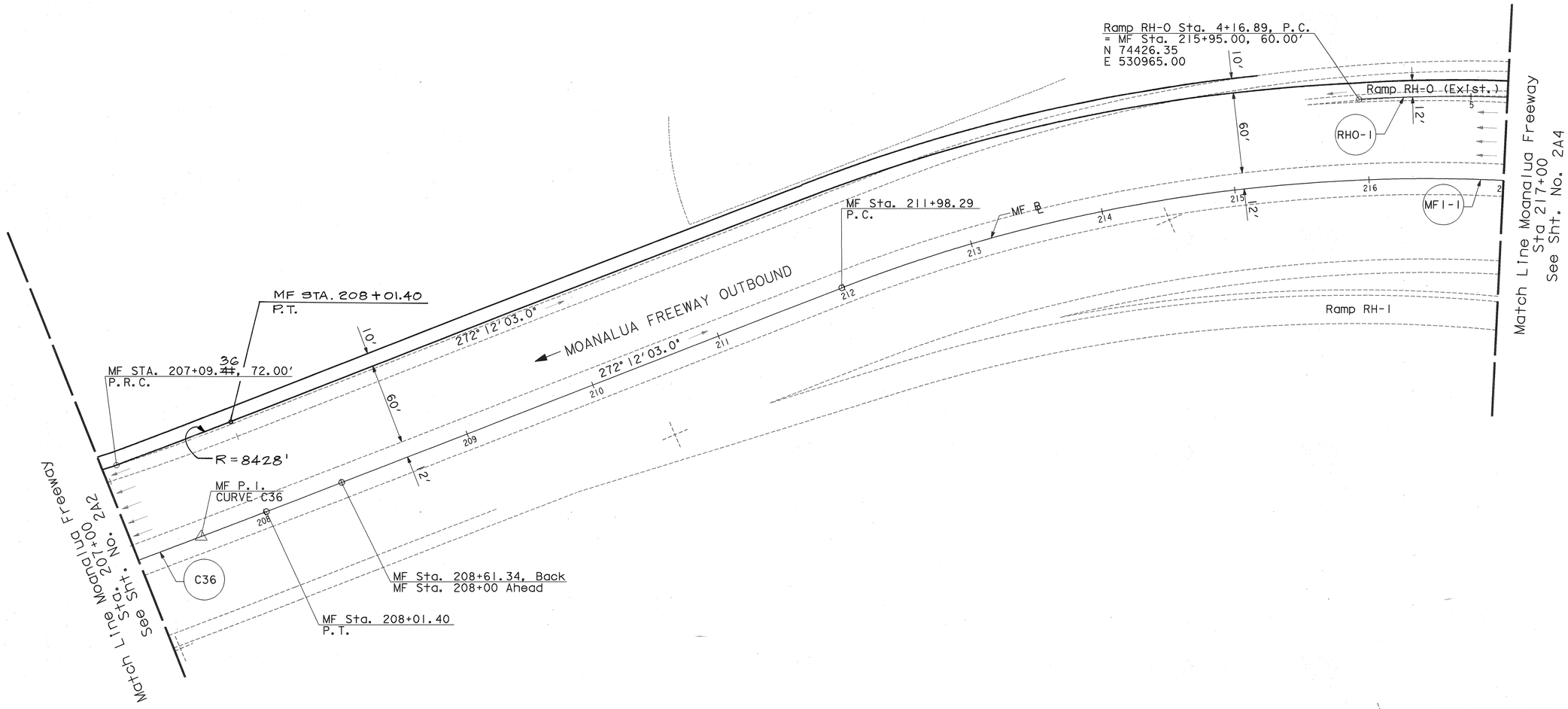
Match Line Moanalua Freeway
Sta. 196+00
See Sht. No. 2A1

Match Line Ulupau Freeway
Sta. 207+00
See Sht. No. 2A3

$$$$$$$$$$$$$$$$$$$$DGNSPEC$$$$$$$$$$$$$$$$$$$

| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|
| HAWAII | HAW. | I-H3-1(75), UNIT II | 1997 | 502 | 1102 |

| CURVE | RADIUS | LENGTH | TANGENT | CHORD | DELTA | COORDINATES OF POINT OF INTERSECTION OF TANGENTS |
|---|---|---|---|---|---|---|
| C-36 | 8500.00' | 103.71' | 51.86' | 103.71' | 00°41'56.8" | N 74469.87 E 530046.91 |
| MF1-1 | 1200.00' | 1021.02' | 543.71' | 990.50' | 48°45'00.0" | N 74429.40 E 531099.93 |
| RHO-1 | 1260.00' | 300.61' | 151.02' | 299.90' | 13°40'10.9" | N 74374.16 E 531106.71 |




\$\$\$\$\$\$\$\$\$\$DGNSPEC\$\$\$\$\$\$\$\$\$\$ \$\$\$\$\$\$SYTIME\$\$\$\$\$\$

ORIGINAL PLAN
NOTE BOOK
No.

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

CLYDE T. SHIMIZU
LICENSED PROFESSIONAL ENGINEER
No. 5514-C
HAWAII, U.S.A.

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Clyde T. Shimizu

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

# ALIGNMENT
## MOANALUA FREEWAY
## STA. 207+00 TO STA. 217+00

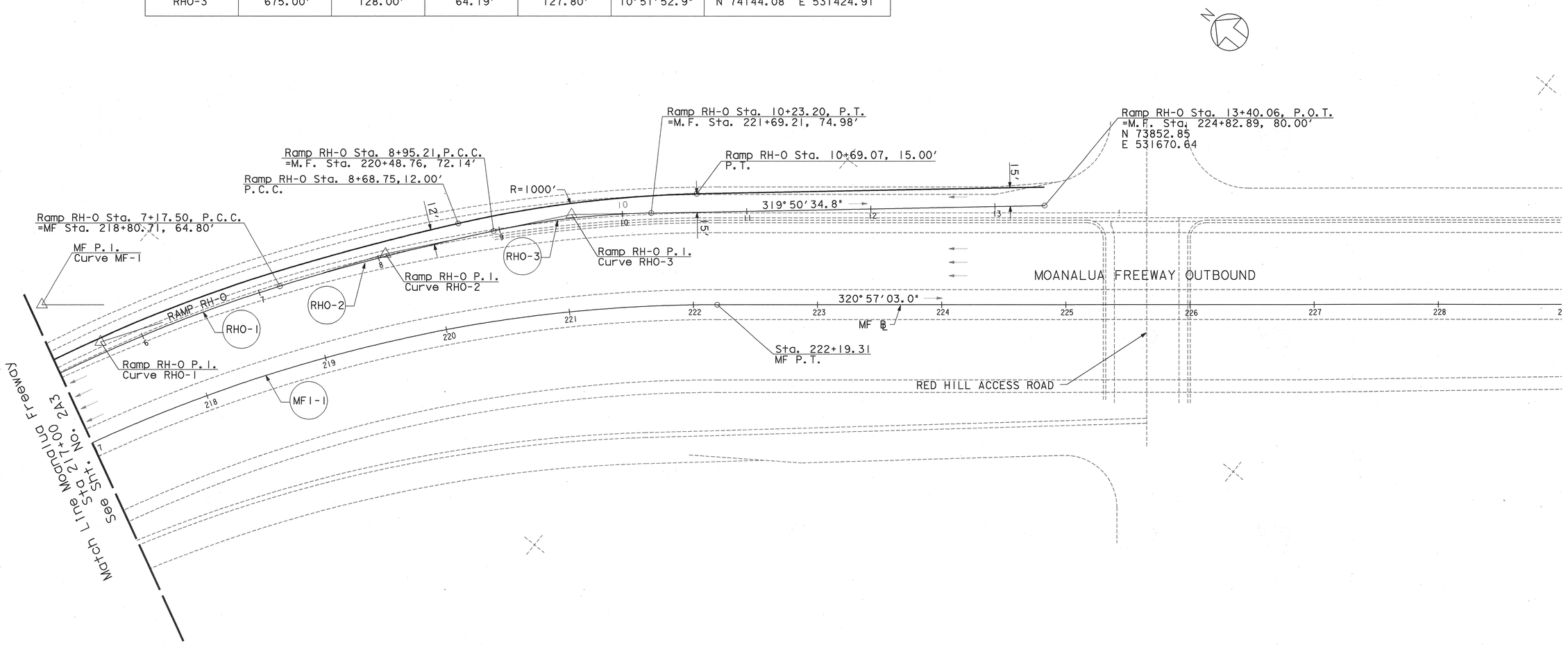
H-3 FINISH (UNIT ID)
FAIP NO. I-H3-1(75), UNIT II
LEEWARD SECTION

SCALE: 1"=40' DATE: JANUARY 1997

SHEET NO. 2A3 OF 12 SHEETS

| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|
| HAWAII | HAW. | I-H3-1(75), UNIT II | 1997 | 503 | 1102 |

| CURVE | RADIUS | LENGTH | TANGENT | CHORD | DELTA | COORDINATES OF POINT OF INTERSECTION OF TANGENTS |
|---|---|---|---|---|---|---|
| MF1-1 | 1200.00' | 1021.02' | 543.71' | 990.50' | 48°45'00.0" | N 74429.00 E 531099.93 |
| RHO-1 | 1260.00' | 300.61' | 151.02' | 299.90' | 13°40'10.9" | N 74374.16 E 531106.71 |
| RHO-2 | 2000.00' | 177.70' | 88.91' | 177.64' | 5°05'26.8" | N 74240.38 E 531305.89 |
| RHO-3 | 675.00' | 128.00' | 64.19' | 127.80' | 10°51'52.9" | N 74144.08 E 531424.91 |




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CLYDE T. SHIMIZU
LICENSED PROFESSIONAL ENGINEER
No. 5514-C
HAWAII, U.S.A.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

# ALIGNMENT
## MOANALUA FREEWAY
## STA. 217+00 TO STA. 228+00

H-3 FINISH (UNIT II)
FAIP NO. I-H3-1(75), UNIT II
LEEWARD SECTION

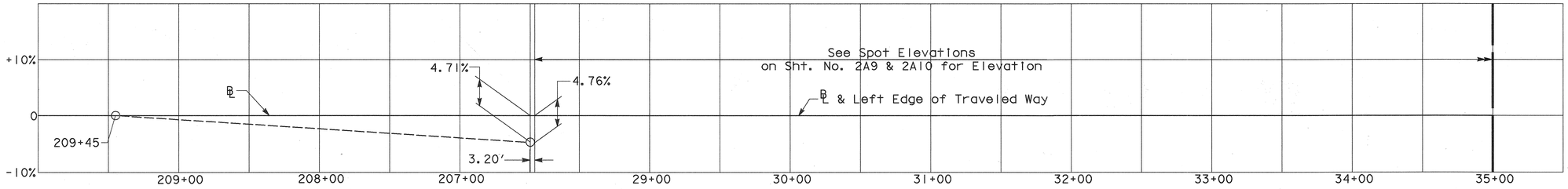
SCALE: 1"=40' DATE: JANUARY 1997

SHEET NO. 2A4 OF 12 SHEETS

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

$$$$$$$$$$DGNSPEC$$$$$$$$$$ $$$$$$$SYTIME$$$$$$$

| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|
| HAWAII | HAW. | I-H3-1(75), UNIT II | 1997 | 504 | 1102 |

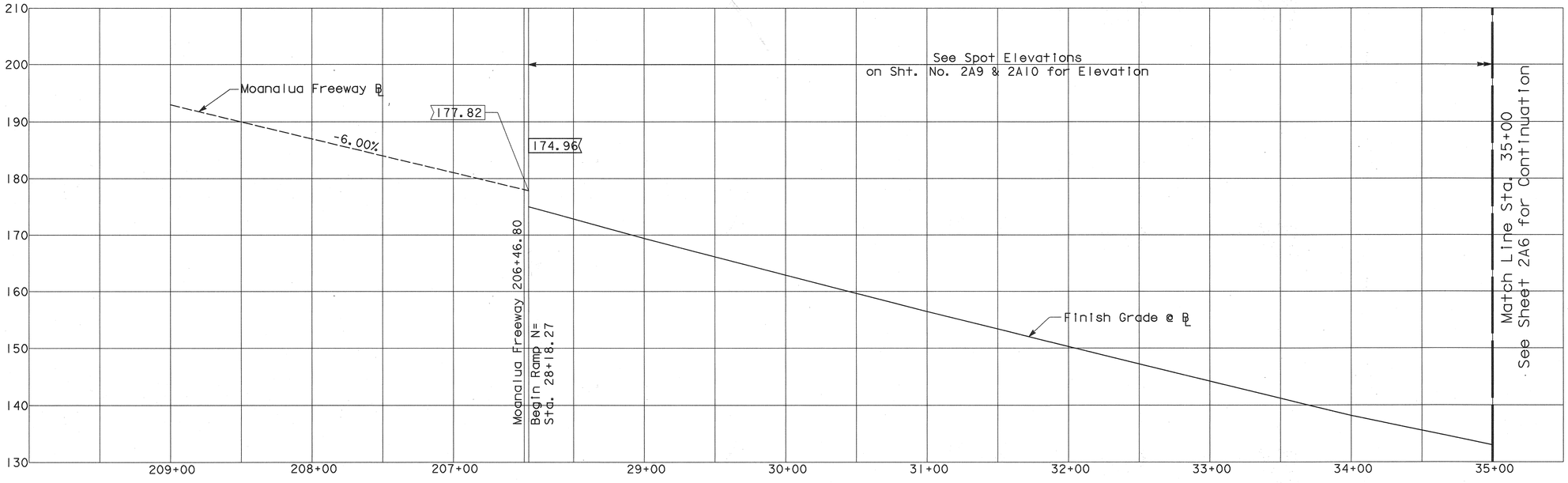



## SUPERELEVATION DIAGRAM (EXIST.)

Scale Horizontal: 1" = 40'
Vertical : 1" = 10%

## SUPERELEVATION DIAGRAM-RAMP N

Scale Horizontal: 1" = 40'
Vertical : 1" = 10%




## MOANALUA FREEWAY (EXIST.)

Scale Horizontal: 1" = 40'
Vertical : 1" = 10'

## PROFILE-RAMP N

Scale Horizontal: 1" = 40'
Vertical : 1" = 10'

FOR REFERENCE ONLY

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

# RAMP N
# PROFILE & SUPERELEVATION DIAGRAM

H-3 FINISH (UNIT II)
FAIP NO. I-H3-1(75), UNIT II
LEEWARD SECTION

SCALE: AS SHOWN DATE: JANUARY 1997

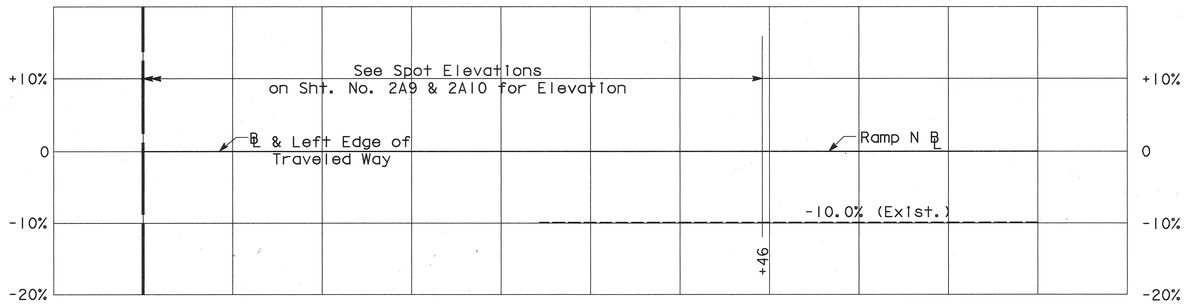
SHEET NO. 2A5 OF 12 SHEETS

504

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

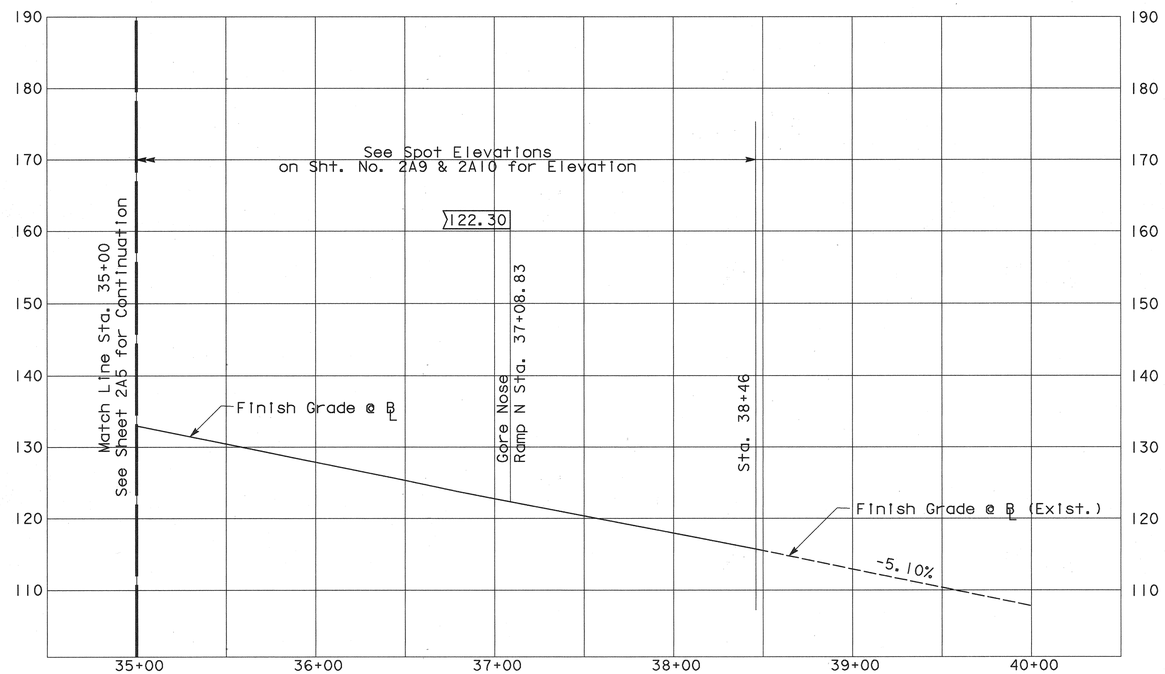
$$$$$$$$$$DGNSPEC$$$$$$$$$$ $$$$$$SYTIME$$$$$$

| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|
| HAWAII | HAW. | I-H3-1(75), UNIT II | 1997 | 505 | 1102 |




SUPERELEVATION DIAGRAM RAMP N (EXIST.)

Scale Horizontal: 1" = 40'
Vertical : 1" = 10%




RAMP N (EXIST.)

Scale Horizontal: 1" = 40'
Vertical : 1" = 10'

FOR REFERENCE ONLY

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

# RAMP N PROFILE & SUPERELVATION DIAGRAM

H-3 FINISH (UNIT II)
FAIP NO. I-H3-1(75), UNIT II
LEEWARD SECTION

SCALE: AS SHOWN DATE: JANUARY 1997

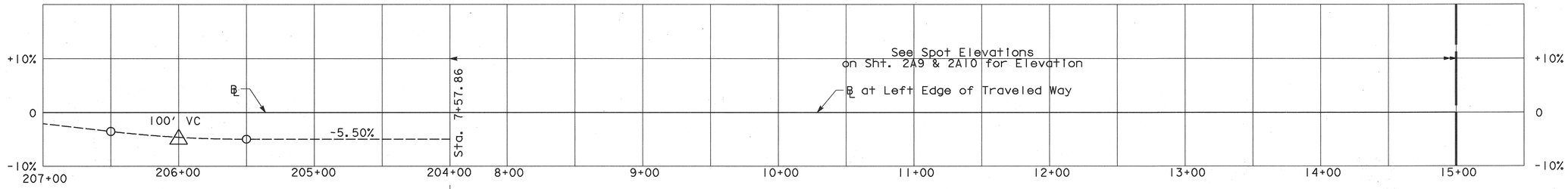
SHEET NO. 2A6 OF 12 SHEETS

505

$$$$$$$$$DGNSPEC$$$$$$$$$ $$$$$$SYTIME$$$$$$

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

| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|
| HAWAII | HAW. | I-H3-1(75), UNIT II | 1997 | 506 | 1102 |

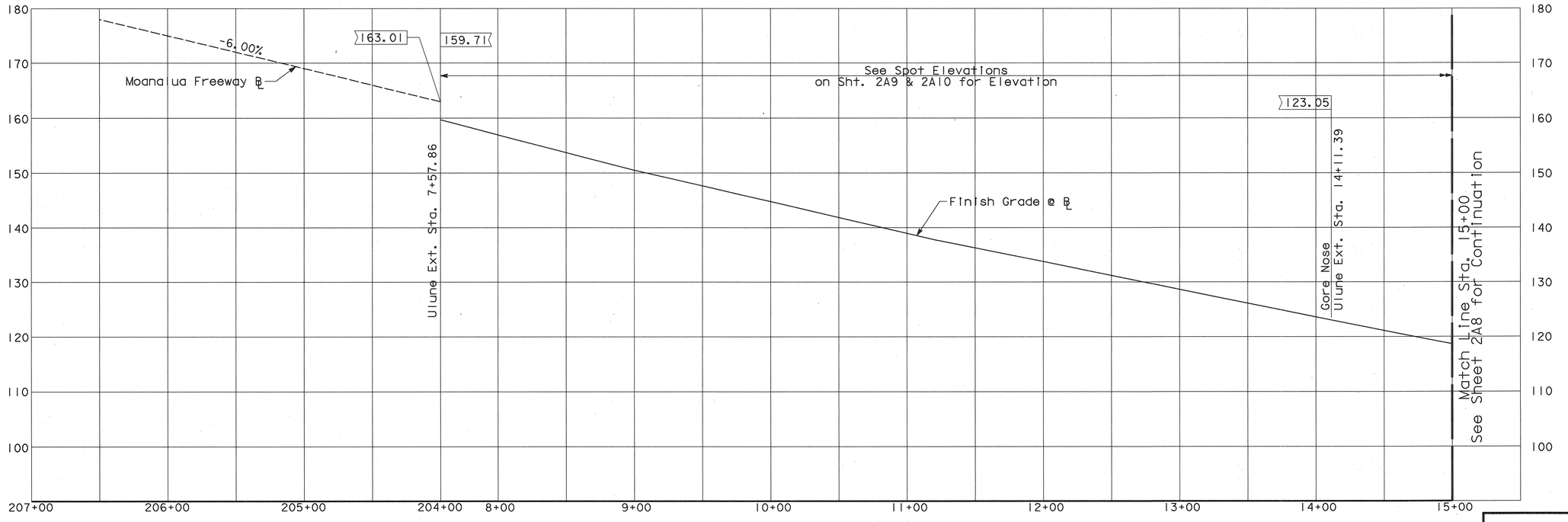



MOANALUA FREEWAY (EXIST.)

Scale Horizontal: 1" = 40'
Vertical : 1" = 10%

SUPERELEVATION DIAGRAM ULUNE EXT.

Scale Horizontal: 1" = 40'
Vertical : 1" = 10%




MOANALUA FREEWAY (EXIST.)

Scale Horizontal: 1" = 40'
Vertical : 1" = 10'

ULUNE EXTENSION RAMP

Scale Horizontal: 1" = 40'
Vertical : 1" = 10'

FOR REFERENCE ONLY

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

# ULUNE EXTENSION PROFILE & SUPERELEVATION DIAGRAM

H-3 FINISH (UNIT II)
FAIP NO. I-H3-1(75), UNIT II
LEEWARD SECTION

SCALE: AS SHOWN DATE: JANUARY 1997

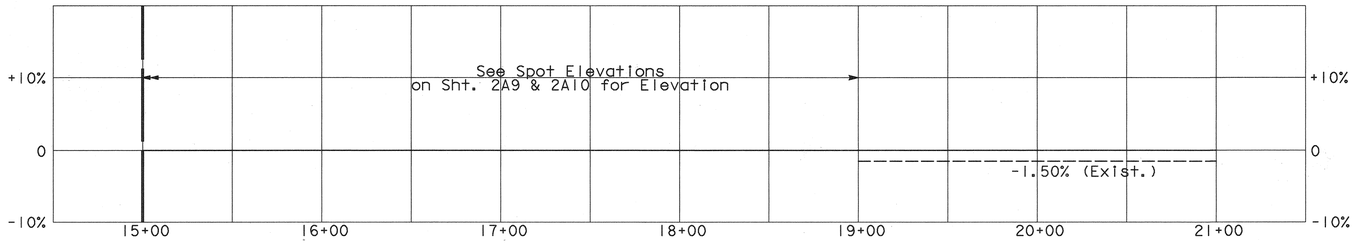
SHEET NO. 2A7 OF 12 SHEETS

506

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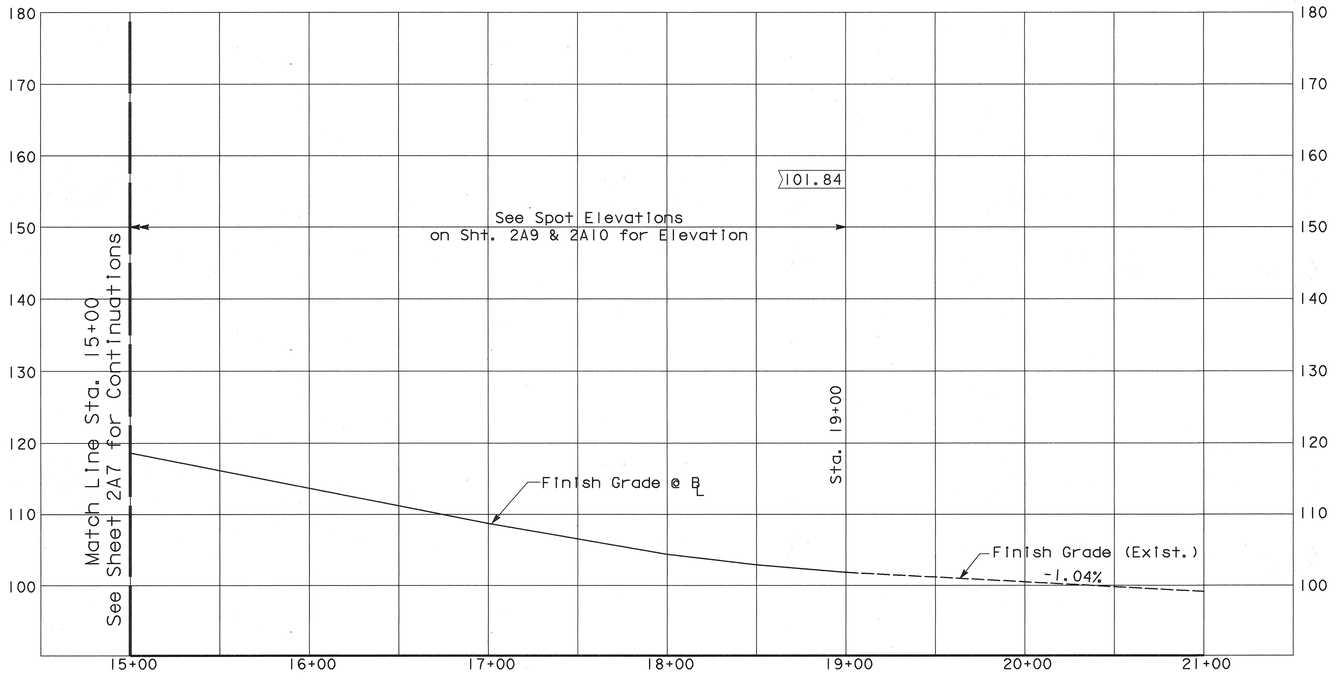
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NOTE BOOK
No.
SURVEY PLOTTED BY
DRAWN BY
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DESIGNED BY
QUANTITIES BY
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DATE

| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
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| HAWAII | HAW. | I-H3-1(75), UNIT II | 1997 | 507 | 1102 |




SUPERELEVATION DIAGRAM-ULUNE EXT.

Scale Horizontal: 1" = 40'
Vertical : 1" = 10%




ULUNE EXTENSION RAMP

Scale Horizontal: 1" = 40'
Vertical : 1" = 10'

ULUNE EXTENSION (EXIST.)

Scale Horizontal: 1" = 40'
Vertical : 1" = 10'

FOR REFERENCE ONLY

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

# ULUNE EXTENSION PROFILE & SUPERELEVATION DIAGRAM

H-3 FINISH (UNIT ID
FAIP NO. I-H3-1(75), UNIT II
LEEWARD SECTION

SCALE: AS SHOWN DATE: JANUARY 1997

SHEET NO. 2A8 OF 12 SHEETS

507

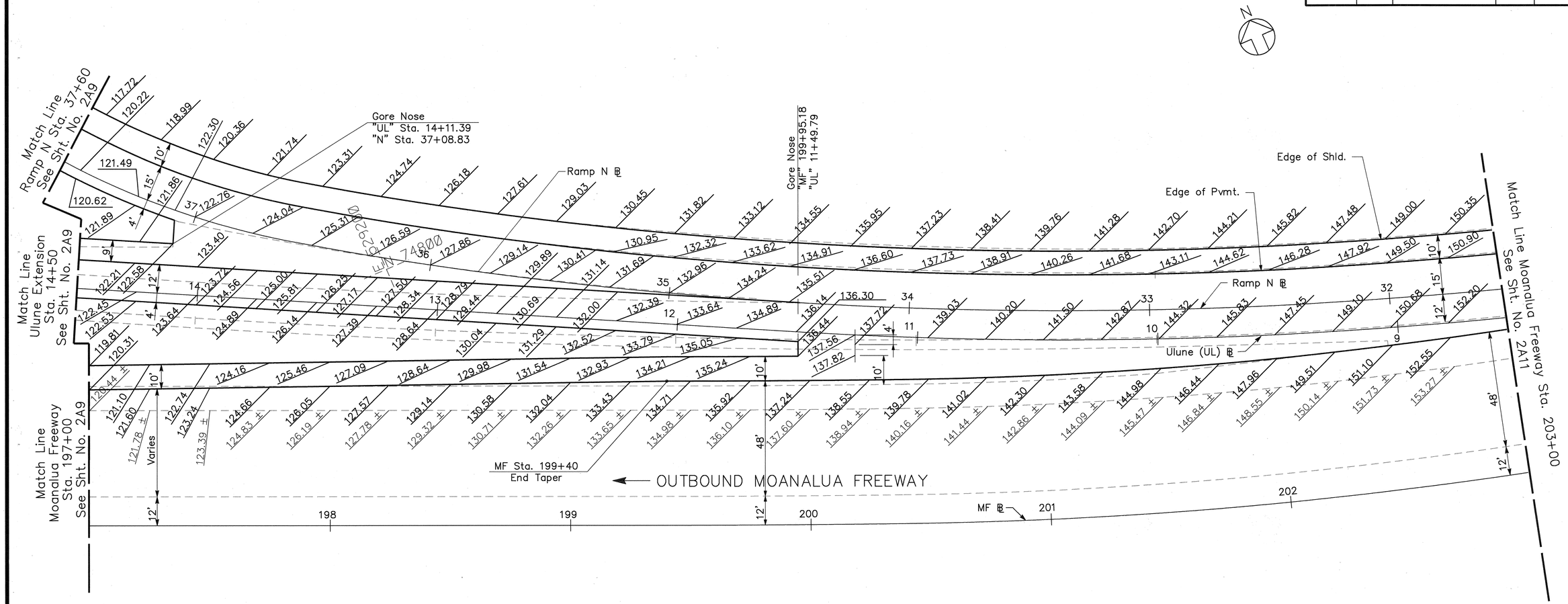
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ORIGINAL PLAN
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| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
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| HAWAII | HAW. | I-H3-1(75), UNIT II | 1997 | 508 | 1102 |

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| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
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LEGEND: 142.79+ Existing Elevation
142.23⁻ Proposed Elevation

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Clyde T. Shimizu

| Date | Revision |
|---|---|
| 11/12/97 | Revised Spot Elevations MF Sta. 200+00 to 203+00 |

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

# MOANALUA FREEWAY
# SPOT ELEVATIONS
# RAMP N & ULUNE EXT.

H-3 FINISH (UNIT ID)
FAIP NO. I-H3-1(75), UNIT II
LEEWARD SECTION

SCALE: 1"=20' DATE: JANUARY 1997

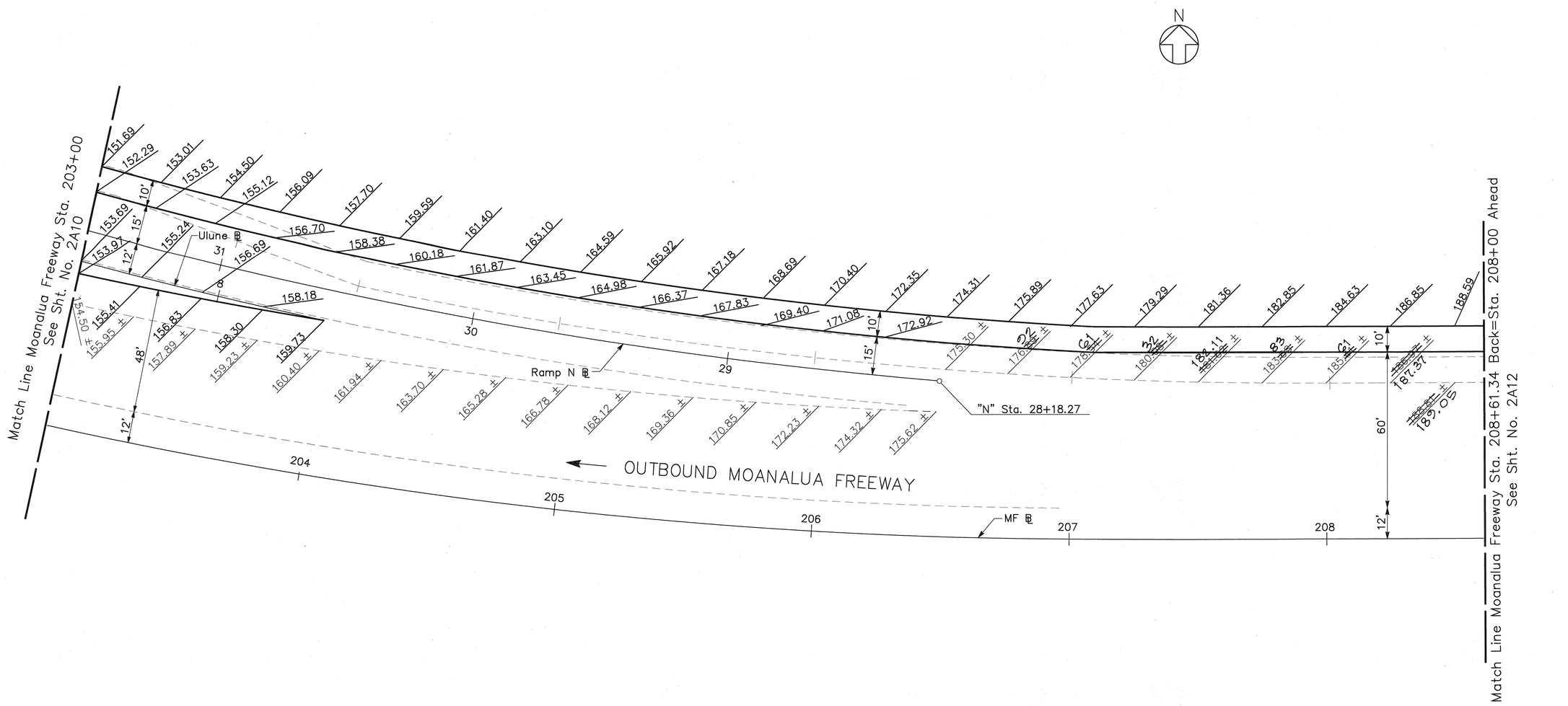
SHEET NO. 2A10 OF 12 SHEETS

C.O. 509

ORIGINAL PLAN
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CHECKED BY
No. ____

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| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
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LEGEND: 178.59± Existing Elevation
177.80 Proposed Elevation

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Clyde T. Shimizu

| 11/12/97 | Revised Spot Elevations |
|---|---|
| Date | Revision |

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

# MOANALUA FREEWAY
# SPOT ELEVATIONS
# RAMP N & ULUNE EXT.

H-3 FINISH (UNIT ID
FAIP NO. I-H3-1(75), UNIT II
LEEWARD SECTION

SCALE: 1"=20' DATE: JANUARY 1997

SHEET NO.2A11 OF 12 SHEETS

C.O. 510

ORIGINAL PLAN
NOTE BOOK
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| HAWAII | HAW. | I-H3-1(75), UNIT II | 1997 | 511 | 1102 |




LEGEND: 237.47± Existing Elevation
238.10 Proposed Elevation

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

# MOANALUA FREEWAY
# SPOT ELEVATIONS
# RAMP N & ULUNE EXT.

H-3 FINISH (UNIT II)
FAIP NO. I-H3-1(75), UNIT II
LEEWARD SECTION

SCALE: 1"=20' DATE: JANUARY 1997

SHEET NO. 2A12 OF 12 SHEETS

511

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ORIGINAL PLAN
SURVEY PLOTTED BY ____ DATE
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TRACED BY ____
DESIGNED BY ____
QUANTITIES BY ____
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NOTE BOOK ____
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| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
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| HAWAII | HAW. | I-H3-1(75), UNIT II | 1997 | 512 | 1102 |

## LEGEND

EXISTING | PROPOSED

- AC Pavement (letter designates pavement structure type) — A
- AC Overlay — OL-IV
- Approximate Grading Limit
- Guardrail Type 3 W-Beam or Thrie Beam
- Drop Intake or Catch Basin
- Portable Concrete Barrier
- Slope
- Retaining Wall

## GENERAL ROADWAY CONSTRUCTION NOTES:

1. Existing fences and metal beam guardrails that are to be removed and are within the right-of-way shall become the property of the contractor.
2. Existing concrete structures, such as manholes, culverts, channels, etc., which are designated to be removed or are in conflict with proposed construction shall be removed to a depth of not less than 3 feet below finish grade in roadway and not less than 1.5 feet below finish grade in other areas. Payment for removal and finish grade in backfilling will be considered incidental to various contract items.
3. Limits of shown rehabilitation work for A.C. pavement and A.C. overlays are approximate. Actual limits will be established by the Engineer.
4. Where necessary, existing A.C. pavement shall be cold-planed to 1-1/2 inches below finish grade to permit installation of A.C. overlay of not less than 1-1/2 inches thickness. Such work is not limited to areas identified on plans, but shall be performed as required.
5. Existing pavement within 6 inches of the finish grade in areas to be grassed shall be removed. All other existing pavement which will not be overlayed with new A.C. pavement shall be rooted, plowed, pulverized or scarified to a minimum depth of 6 inches. Payment for removal of existing pavement will be made under "Roadway Excavation". Payment for scarifying, etc. of existing pavement shall be considered incidental to various contract items.
6. Existing facilities and/or pavement to remain which has been damaged by the Contractor shall be restored to its original condition at the expense of the Contractor.
7. Covers of utility structures which are in service shall be adjusted to finish grade whether or not they are shown on Plans. Abandoned utility boxes within the area of work Shall be demolished and ducts, pipes, etc. shall be plugged.
8. All regraded areas and all grassed areas damaged by construction activities shall be planted in accordance with Specifications Section 618-Grassed Surfaces and shall be at the expense of the Contractor.
9. Saw cut pavement and gutter at limits of reconstruction before removal. Remove 1'-0" exist. pavement prior to paving.
10. For all W-Beam End Section (flared), payment shall be considered Incidental to Guardrail Type 3.

## ABBREVIATIONS

| | | | |
|---|---|---|---|
| A.C., AC | ASPHALT CONCRETE | N.T.S. | NOT TO SCALE |
| ACB | ASPHALT CONCRETE BASE | O.C. | ON CENTER |
| AG | AVIATION GAS | PAVT. | PAVEMENT |
| AGGR., AGG | AGGREGATE | PB | PULL BOX |
| ARV | AIR RELEASE VALVE | P.C. | POINT OF CURVATURE |
| BCT | BREAKAWAY CABLE TERMINAL | P.C.C. | POINT OF COMPOUND CURVATURE |
| ℄ | BASELINE | P.I. | POINT OF INTERSECTION |
| CRM | CEMENT RUBBLE MASONRY | PIVC, P.I.V.C. | POINT OF INTERSECTION OF VERTICAL CURVE |
| CT | CABLE TELEVISION | | |
| E | ELECTRIC | P.O.T. | POINT ON TANGENT |
| FIN. GR. | FINISH GRADE | P.T. | POINT OF TANGENCY |
| G | GAS | S | SEWER |
| GRP | GROUTED RUBBLE PAVEMENT | SD | STORM DRAIN |
| HH | HANDHOLE | SL | STREET LIGHT |
| HT-TP | TRANSPAC LAND CABLE | T | TELEPHONE |
| JF | JET FUEL | W | WATER |
| JTS | JOINT TRUNKING CABLE (ABN) | WM | WATER METER |
| MH | MANHOLE | WV | WATER VALVE |
| NPW | NON-POTABLE WATER | W-BEAM | GUARDRAIL TYPE 3- SINGLE WITH STEEL POST |
| | | TBC | THRIE BEAM CONNECTION |

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

# MOANALUA FREEWAY
## ROADWAY CONSTRUCTION
## NOTES, LEGEND & ABBREVIATIONS

H-3 FINISH (UNIT ID
FAIP NO. I-H3-1(75), UNIT II
LEEWARD SECTION

SCALE: 1"=40' DATE: JANUARY 1997

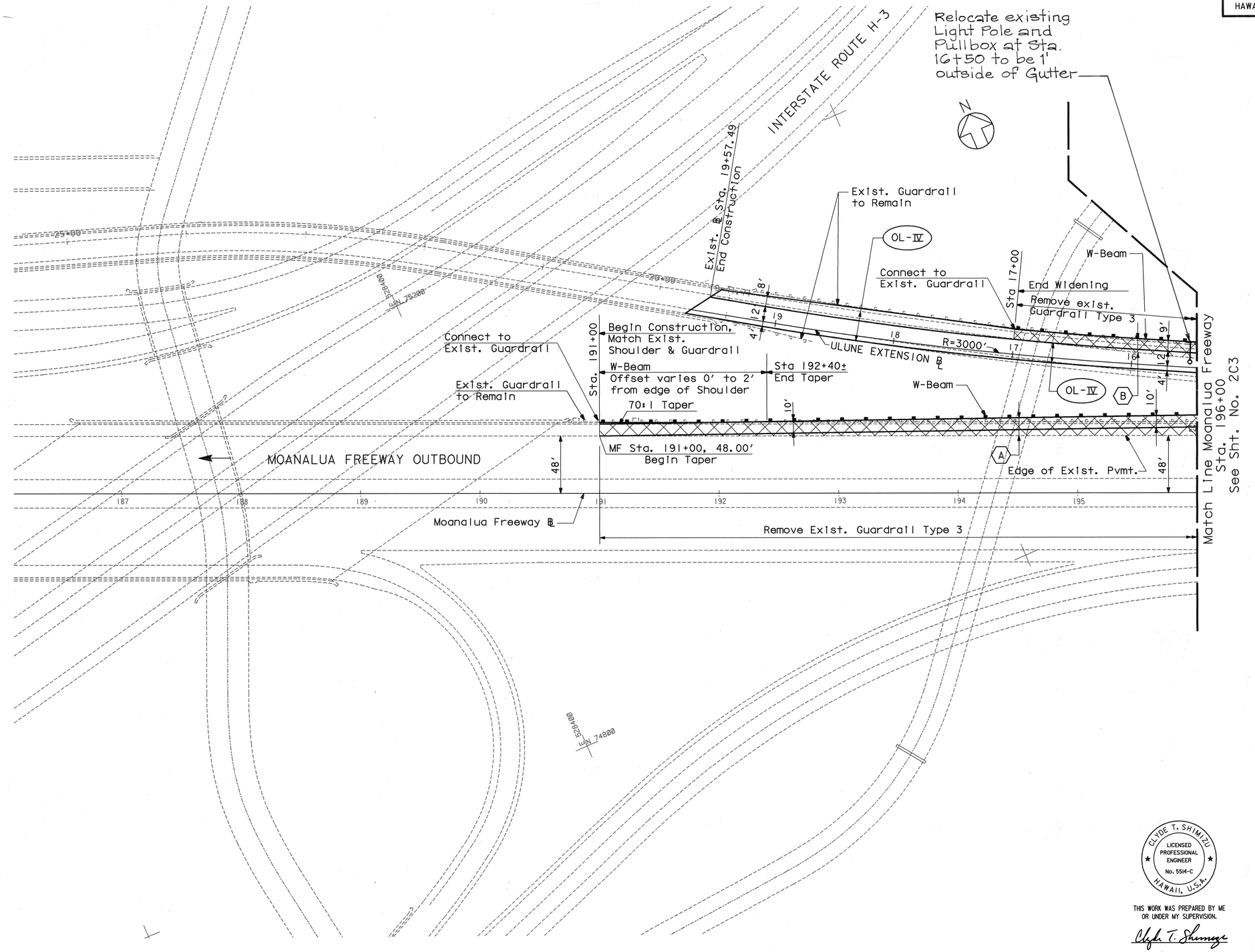
SHEET NO. 2CI OF 9 SHEETS

512

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

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| HAWAII | HAW. | I-H3-1(75), UNIT II | 1997 | 513 | 1102 |




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| Date | Revision |
|---|---|
| 4/21/97 | Revised limits of Roadway Construction along Ulune Extension |

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

# MOANALUA FREEWAY
# ROADWAY CONSTRUCTION
# RAMP N & ULUNE EXTENSION

H-3 FINISH (UNIT II)
FAIP NO. I-H3-1(75), UNIT II
LEEWARD SECTION

SCALE: 1"=40' DATE: JANUARY 1997

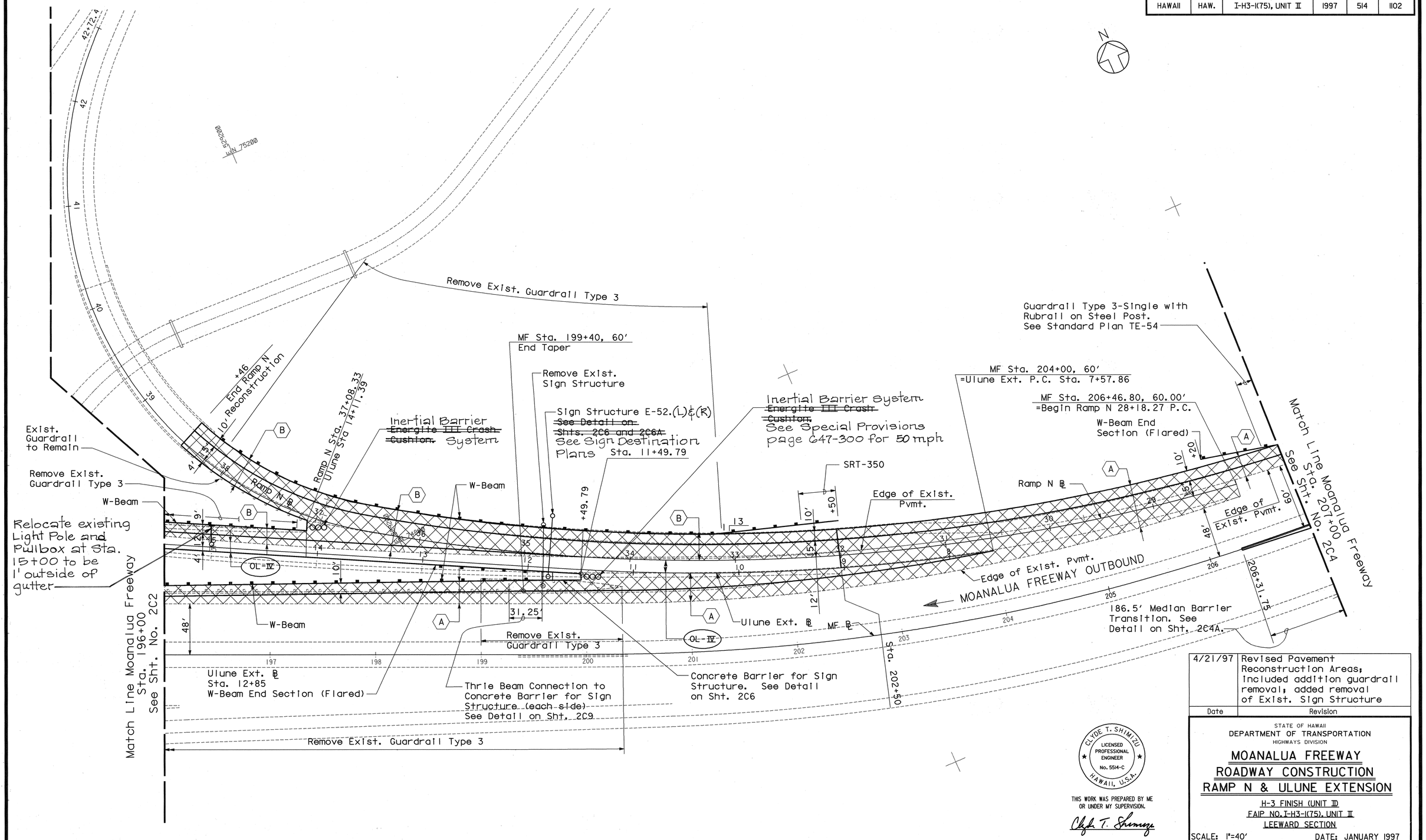
SHEET NO. 2C2 OF 9 SHEETS

ADD. 513

| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
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| Date | Revision |
|---|---|
| 4/21/97 | Revised Pavement Reconstruction Areas; included addition guardrail removal; added removal of Exist. Sign Structure |

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

# MOANALUA FREEWAY
# ROADWAY CONSTRUCTION
# RAMP N & ULUNE EXTENSION

H-3 FINISH (UNIT II)
FAIP NO. I-H3-1(75), UNIT II
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SCALE: 1"=40' DATE: JANUARY 1997

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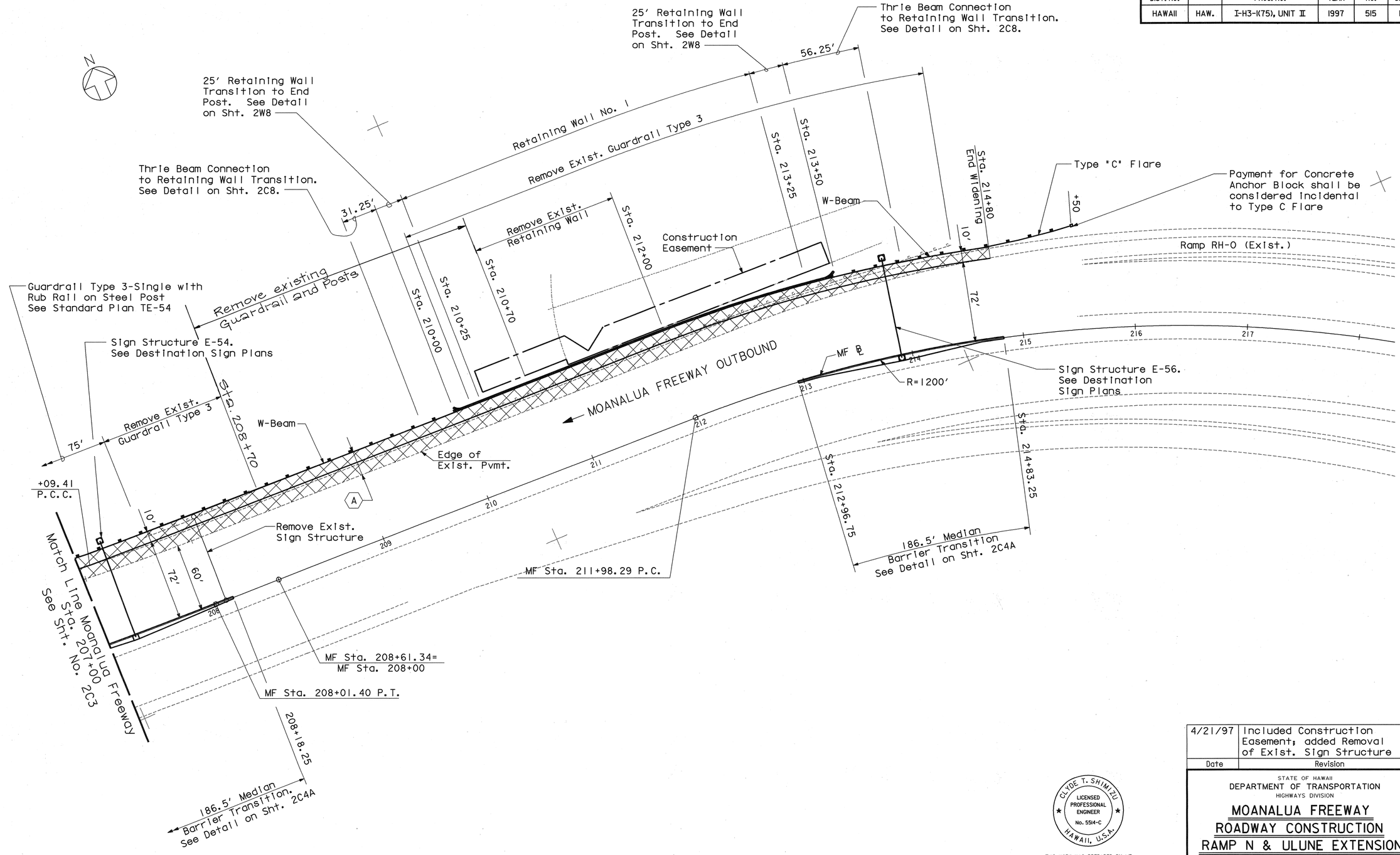
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SHEET NO. 2C3 OF 9 SHEETS

ADD. 514

| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
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| HAWAII | HAW. | I-H3-1(75), UNIT II | 1997 | 515 | 1102 |




| 4/21/97 | Included Construction Easement; added Removal of Exist. Sign Structure |
|---|---|
| Date | Revision |

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

# MOANALUA FREEWAY
# ROADWAY CONSTRUCTION
# RAMP N & ULUNE EXTENSION

H-3 FINISH (UNIT ID
FAIP NO. I-H3-1(75), UNIT II
LEEWARD SECTION

SCALE: 1"=40' DATE: JANUARY 1997

SHEET NO. 2C4 OF 9 SHEETS

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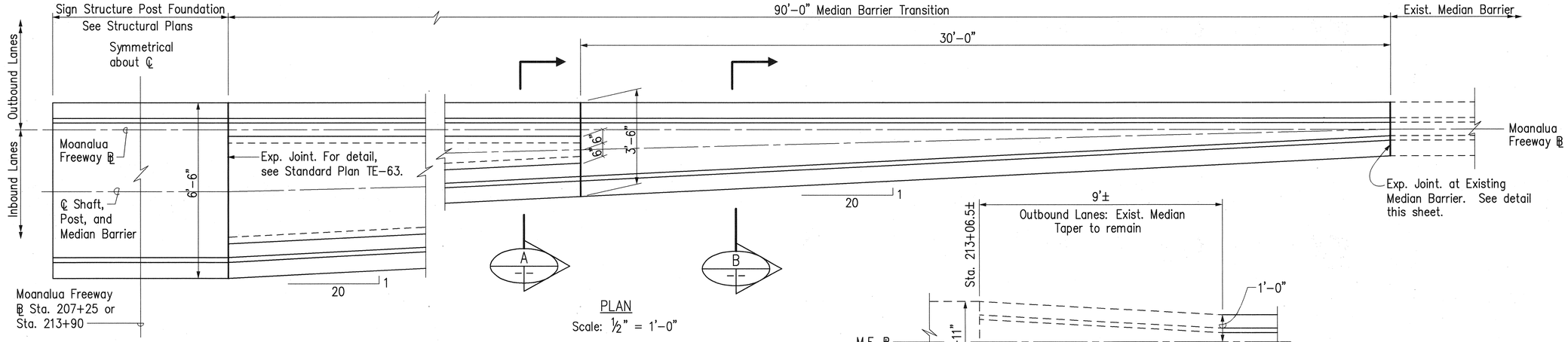
Clyde T. Shimizu

ORIGINAL PLAN
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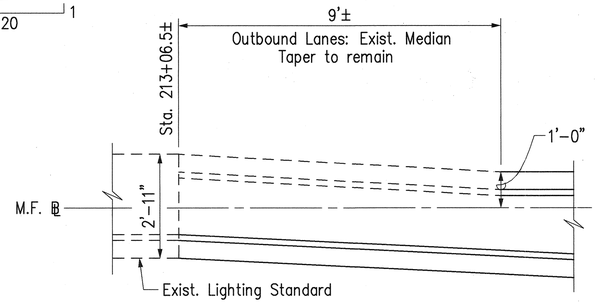
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ADD. 515

| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
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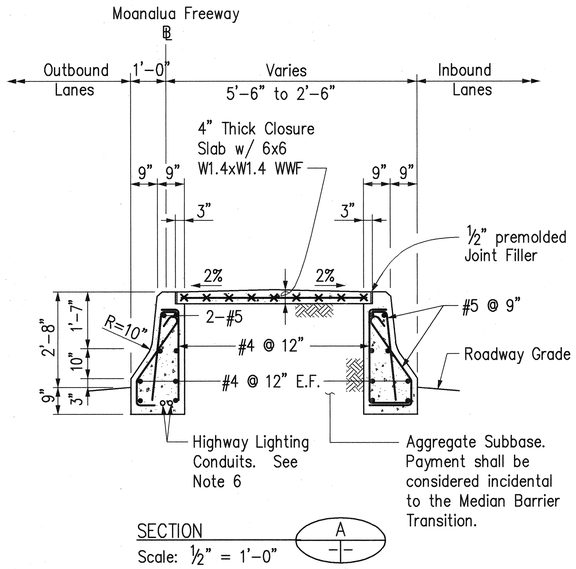



PLAN
Scale: ½" = 1'-0"

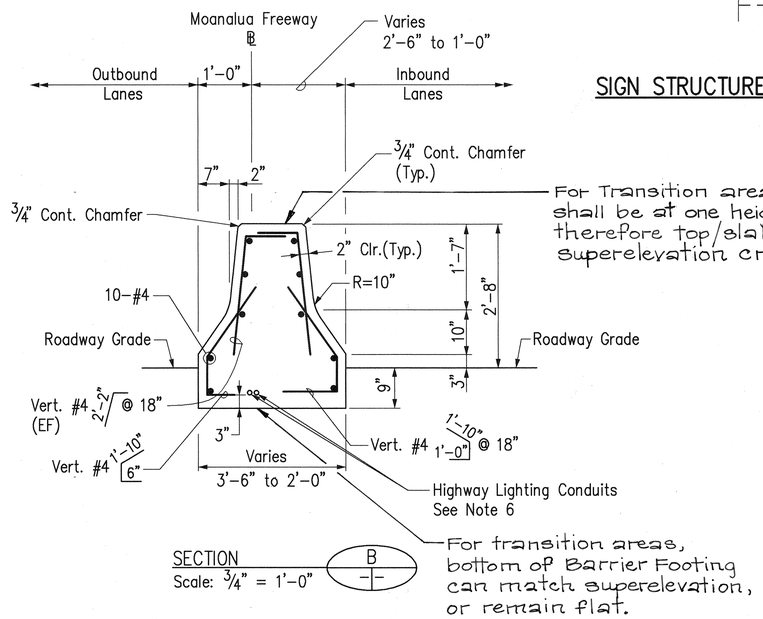



## SIGN STRUCTURE E-56L & CMS 43 MEDIAN BARRIER TRANSITION DETAIL @ EXIST. LIGHTING STANDARD

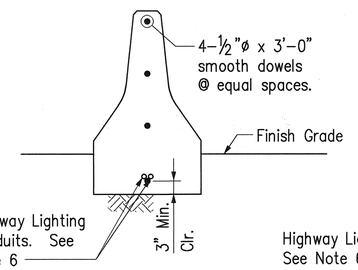
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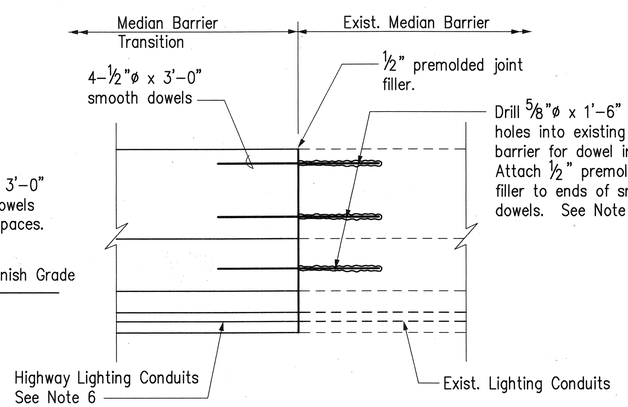

SECTION A
Scale: ½" = 1'-0"




SECTION B
Scale: ¾" = 1'-0"




TYPICAL SECTION




ELEVATION

## EXPANSION JOINT DETAIL @ EXISTING MEDIAN BARRIER

Scale: ¾" = 1'-0"

## MEDIAN BARRIER TRANSITION FOR SIGN STRUCTURES AT MOANALUA FREEWAY ℄ STA. 207+25 AND STA. 213+90

NOTES:

1. For Location Plan, see Moanalua Freeway Roadway Construction on Shts. 2C3 & 2C4.
2. For spacing and details of expansion and control joints, see Standard Plan TE-63.
3. The holes for dowels shall be drilled perpendicular to the existing concrete surfaces. When the drill contacts any existing rebar, the hole shall be filled with epoxy grout and a replacement shall be drilled so that the spacing of dowels will be maintained. Contractor shall avoid cutting existing rebar.
4. Control joints shall be placed between expansion joints at thirty feet (30 ft.) maximum.
5. Contractor shall maintain highway lighting during construction. Payment shall be considered incidental to the Median Barrier Transition.
6. Highway Lighting Conduits and Cables shall be replaced within the Median Barrier Transition. Conduits shall be 2"ø Galv. Steel to match exist. conduits.
7. Payment for Expansion Joints, Highway Lighting Conduits and Lighting Cables shall be considered incidental to the Median Barrier Transition.

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| Date | Revision |
|---|---|
| 5/2/97 | Added sheet |

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

**MOANALUA FREEWAY ROADWAY CONSTRUCTION DETAILS**

H-3 FINISH (UNIT II)
FAIP NO. I-H3-1(75), UNIT II
LEEWARD SECTION

SCALE: AS SHOWN DATE: JANUARY 1997

SHEET NO. 2C4A OF 9 SHEETS

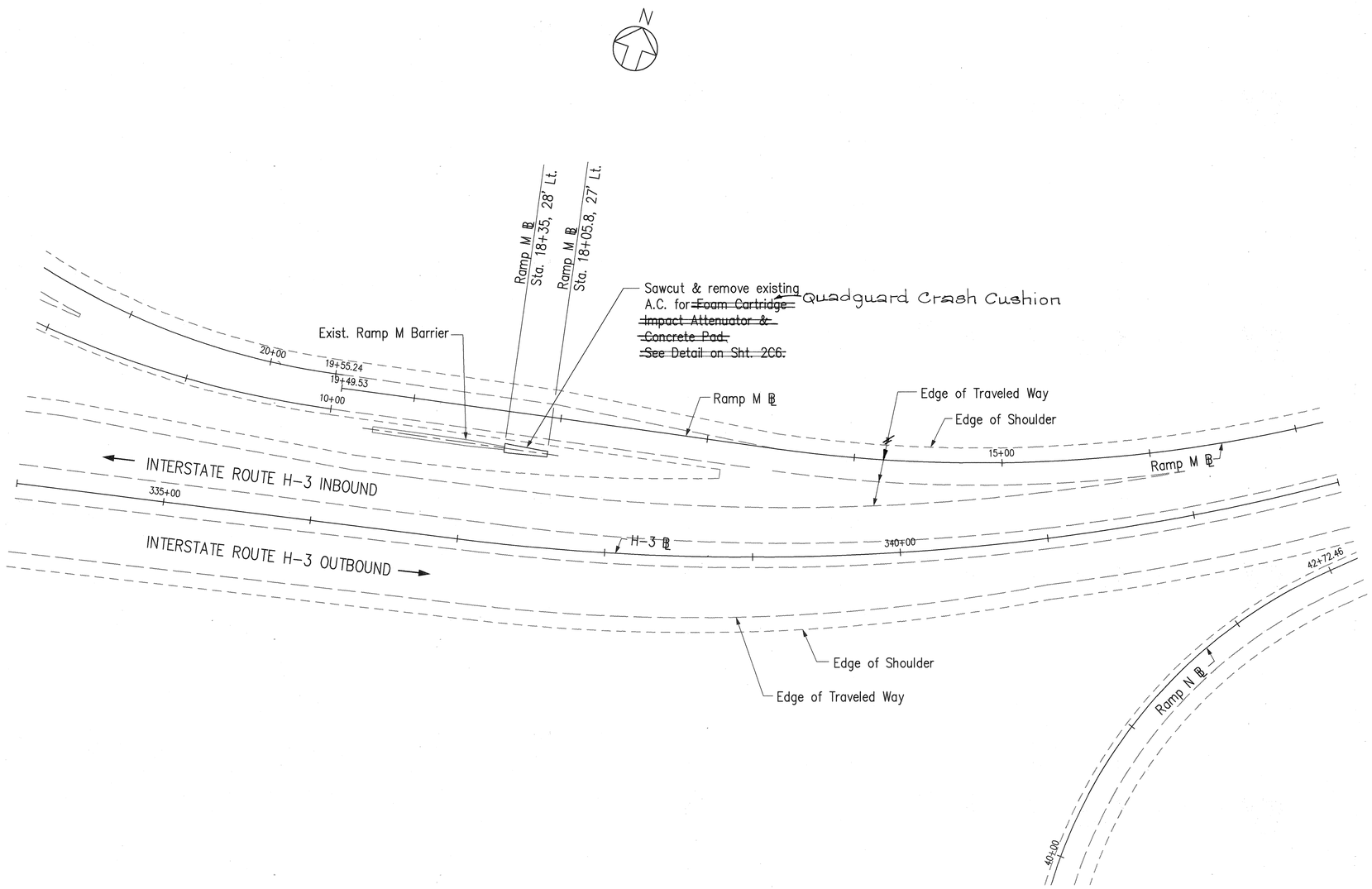
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CAD by L. Fujioni, 55-55

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| HAWAII | HAW. | I-H3-1(75), UNIT II | 1997 | 516 | 1102 |




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CAD by L. Fujioni, 55-52

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DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

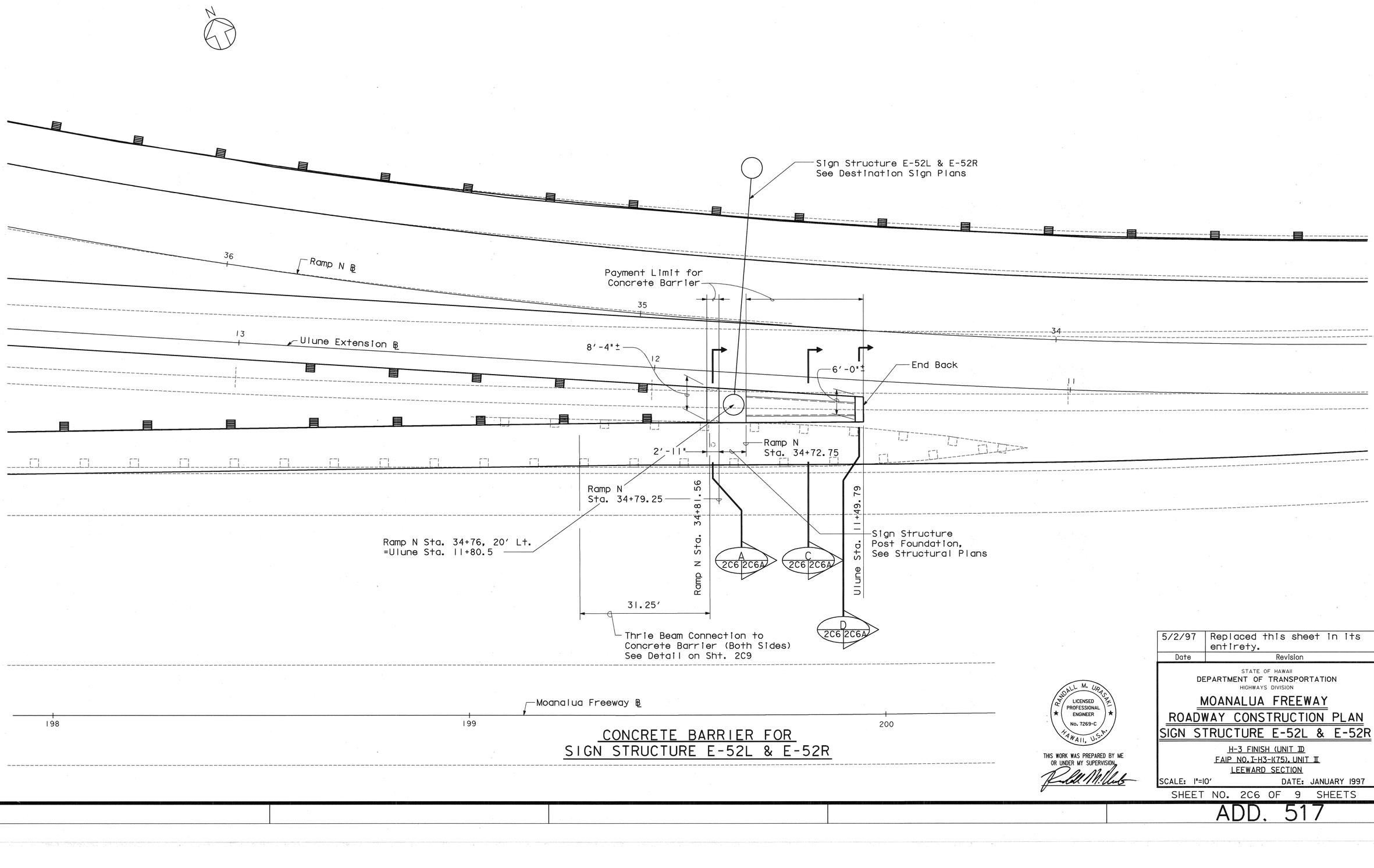
# MOANALUA FREEWAY
# ROADWAY CONSTRUCTION
## RAMP M

H-3 FINISH (UNIT II)
FAIP NO. I-H3-1(75), UNIT II
LEEWARD SECTION

SCALE: 1" = 40' DATE: JANUARY 1997

SHEET NO. 2C5 OF 9 SHEETS

| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|
| HAWAII | HAW. | I-H3-1(75), UNIT II | 1997 | 517 | 1102 |




## CONCRETE BARRIER FOR SIGN STRUCTURE E-52L & E-52R

RANDALL M. URASAKI
LICENSED PROFESSIONAL ENGINEER
No. 7269-C
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

| Date | Revision |
|---|---|
| 5/2/97 | Replaced this sheet in its entirety. |

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

MOANALUA FREEWAY
ROADWAY CONSTRUCTION PLAN
SIGN STRUCTURE E-52L & E-52R

H-3 FINISH (UNIT II)
FAIP NO. I-H3-1(75), UNIT II
LEEWARD SECTION

SCALE: 1"=10′ DATE: JANUARY 1997

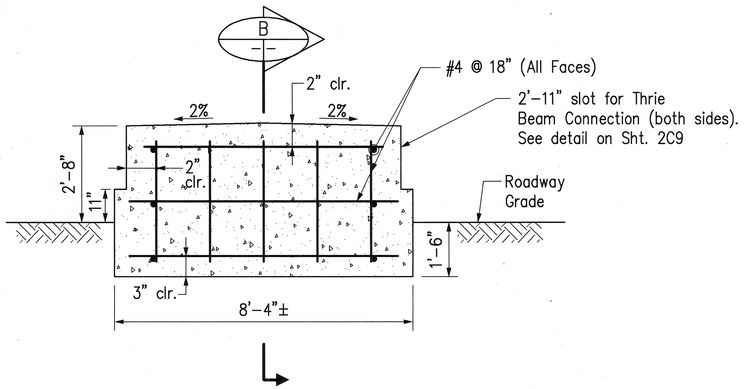
SHEET NO. 2C6 OF 9 SHEETS

ADD. 517

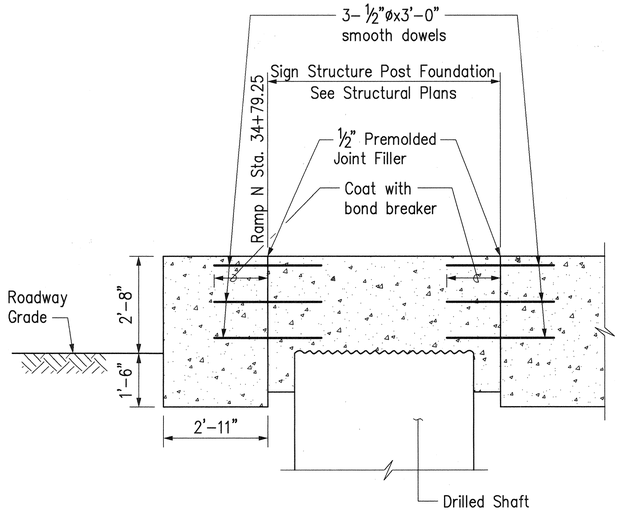
ORIGINAL PLAN
SURVEY PLOTTED BY ____ DATE
DRAWN BY
TRACED BY
NOTE BOOK DESIGNED BY
QUANTITIES BY
No. ____ CHECKED BY

$$$$$$$$$$$$DGNSPEC$$$$$$$$$$$$ $$$$$$$SYTIME$$$$$$$

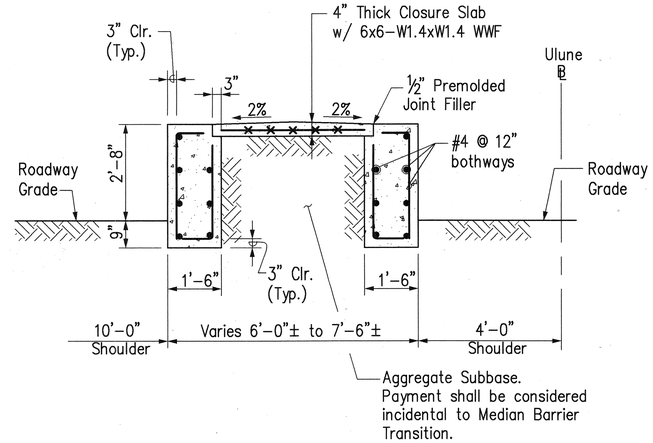
| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|
| HAWAII | HAW. | I-H3-1(75), UNIT II | 1997 | ADD. 517S-1 | 1102 |



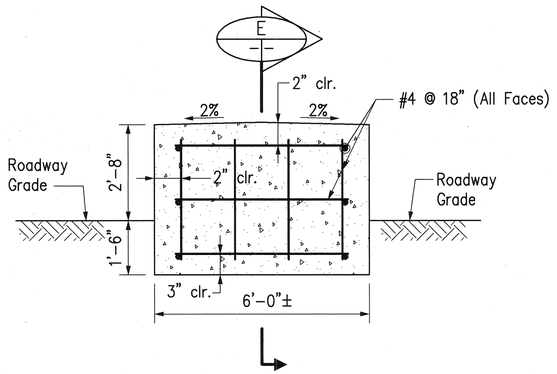

SECTION A (2C6 | 2C6A)
Scale: ½" = 1'-0"




SECTION B (-|-)
Scale: ½" = 1'-0"

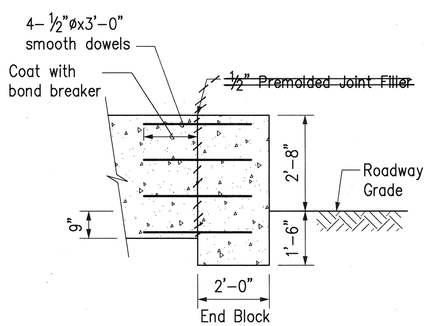



SECTION C (2C6 | 2C6A)
Scale: ½" = 1'-0"




END BLOCK

SECTION D (2C6 | 2C6A)
Scale: ½" = 1'-0"




END BLOCK CONNECTION

SECTION E (-|-)
Scale: ½" = 1'-0"

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

CAD by L. Fujitani, 55-55

Last Saved: J:\H3RF\RFU2\SIGN\SS-DET1.dwg 04/30/97 at 14:50

RANDALL M. URASAKI
LICENSED PROFESSIONAL ENGINEER
No. 7269-C
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

| 5/2/97 | Added Sheet |
|---|---|
| Date | Revision |

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

# MOANALUA FREEWAY
# ROADWAY CONSTRUCTION
# DETAILS

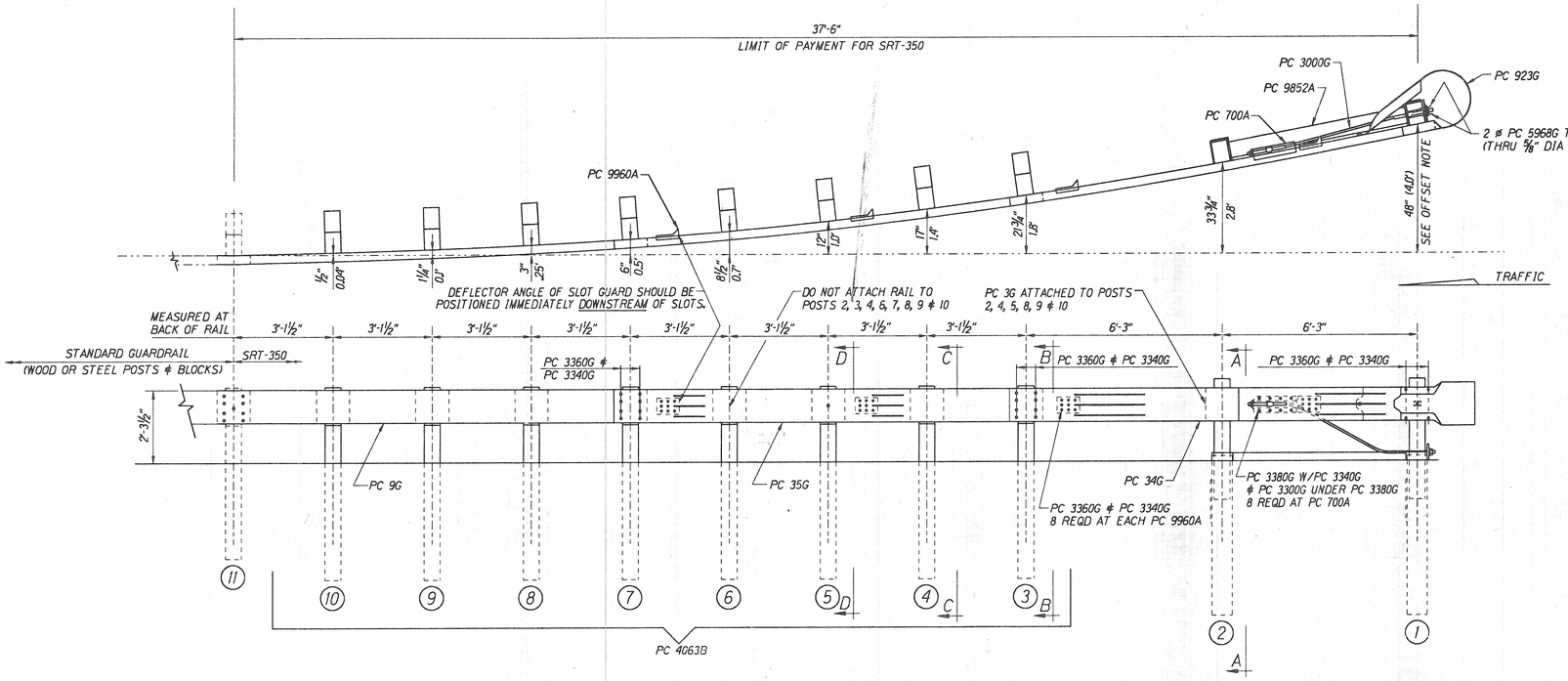
H-3 FINISH (UNIT II)
FAIP NO. I-H3-1(75), UNIT II
LEEWARD SECTION

SCALE: AS SHOWN DATE: MAY 1997

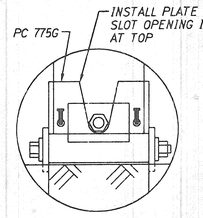
SHEET NO. 2C6A OF 9 SHEETS

ADD. 517S-1

| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|
| HAWAII | HAW. | I-H3-1(75),UNIT II | 1997 | 518 | 1102 |



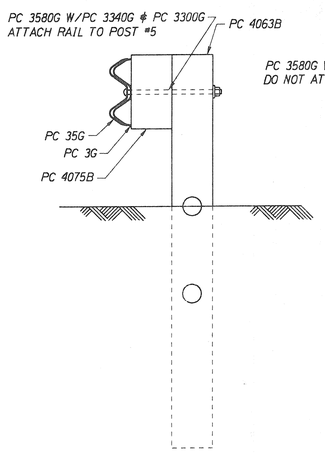

OFFSET NOTE:
THE POST OFFSET DIMENSIONS ARE GIVEN TO THE CENTER OF THE TRAFFIC FACE OF THE BLOCKOUTS, EXCEPT AT THE FIRST TWO POSTS, WHERE THE DIMENSION IS TO THE CENTER OF THE TRAFFIC FACE OF THE POST. OFFSET POINTS ARE TO BE LOCATED BY CHORD MEASUREMENTS AT THE BACK OF THE RAIL EQUAL TO THE NOMINAL POST SPACINGS SHOWN. POSTS ARE TO BE SET APPROXIMATELY RADIAL TO THE RAILING AT EACH POST LOCATION.



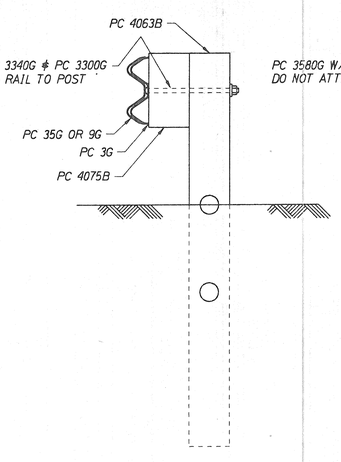

BEARING PLATE ORIENTATION

## BILL OF MATERIAL

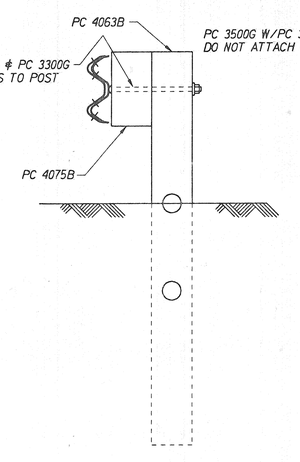
| PC | QTY | DESCRIPTION |
|---|---|---|
| 3G | 7 | 12/12"/BACKUP (GUARDRAIL) |
| 9G | 1 | 12/12'6"/6'3/S (GUARDRAIL) |
| 34G | 1 | 12/12'6/S SRT-1 (GUARDRAIL) |
| 35G | 1 | 12/12'6/6'3/S SRT-2 (GUARDRAIL) |
| 700A | 1 | CABLE ANCHOR BRACKET |
| 705G | 1 | 2"ø x 5½" PIPE |
| 736G | 2 | 5'0 TUBE SLEEVE |
| 766G | 2 | ¼x 18 x 24 SOIL PLATE |
| 775G | 1 | 5/16x 6 x 8 BEARING PLATE |
| 923G | 1 | 12/BARRIER/98" (TERMINAL) |
| 3000G | 1 | ¾x 6'6 CABLE |
| 3300G | 22 | ⅜" WASHER |
| 3320G | 1 | 3/16x 1-¾x 3 WASHER |
| 3340G | 77 | ⅝" HEX NUT |
| 3360G | 53 | ⅝"ø x 1¼" SPLICE BOLT |
| 3380G | 8 | ⅝"ø x 1½" HEX HD BOLT |
| 3478G | 4 | ⅝"ø x 7½" HEX HD BOLT |
| 3497G | 2 | ⅝"ø x 9½" HEX HD BOLT |
| 3500G | 2 | ⅝"ø x 10" POST BOLT |
| 3580G | 8 | ⅝"ø x 18" POST BOLT |
| 3900G | 1 | 1" WASHER |
| 3910G | 2 | 1" HEX NUT |
| 4063B | 8 | 6'0 POST 6 x 8 |
| 4075B | 8 | 14" BLOCK 6 x 8 |
| 4147B | 2 | 3' 9 POST 5½x 7½ |
| 5968G | 2 | 16d NAIL SRT |
| 9852A | 1 | STRUT ASSEMBLY |
| 9960A | 4 | SLOT GUARD |
| 9961G | 1 | ⅜x 3 x 4 PLATE WASHER |
| | | |



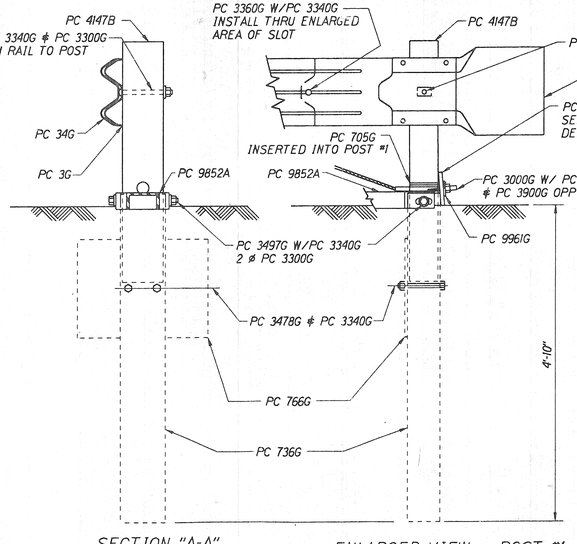

SECTION "D-D"
(@ POST #5)




SECTION "C-C"
(@ POSTS #4, #6, #8, #9 ∉ #10)

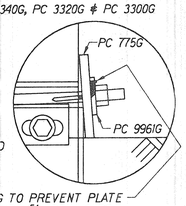



SECTION "B-B"
(@ POSTS #3 ∉ #7)




SECTION "A-A"
(@ POST #2)

ENLARGED VIEW @ POST #1




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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

# SRT-350

# SLOTTED RAIL TERMINAL

H-3 FINISH (UNIT II)
FAIP NO. I-H3-1(75), UNIT II
LEEWARD SECTION

SCALE: NONE DATE: JAN., 1997

SHEET No. 207 OF 9 SHEETS

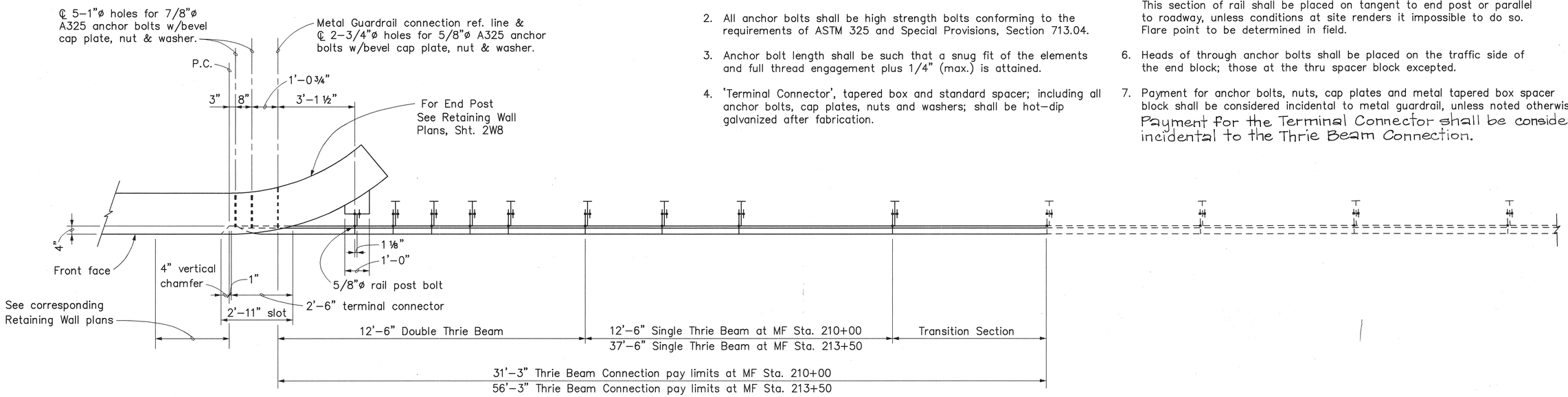
137218

| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|
| HAWAII | HAW. | I-H3-1(75), UNIT II | 1997 | 519 | 1102 |

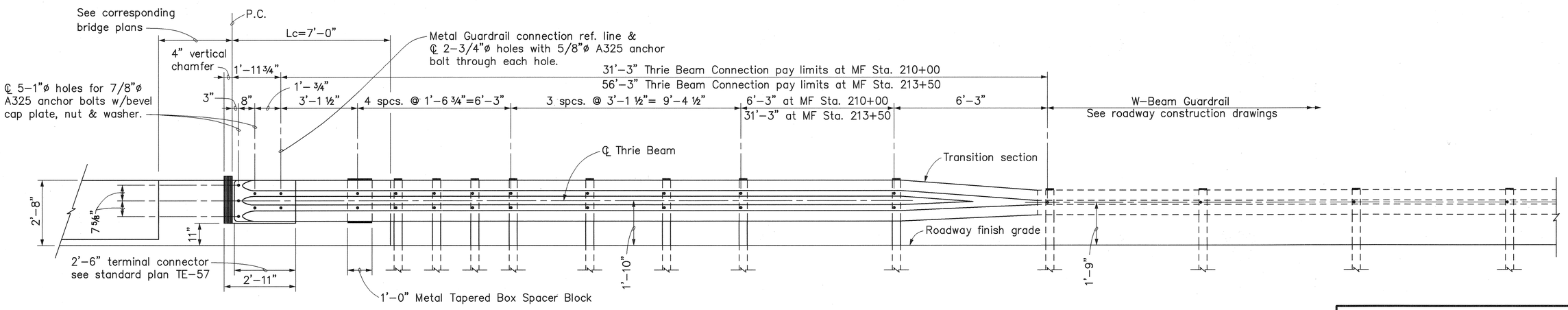
## Notes:

1. 'Terminal Connector' shall be fabricated from 10 gauge steel conforming to the requirements of AASHTO M180.
2. All anchor bolts shall be high strength bolts conforming to the requirements of ASTM 325 and Special Provisions, Section 713.04.
3. Anchor bolt length shall be such that a snug fit of the elements and full thread engagement plus 1/4" (max.) is attained.
4. 'Terminal Connector', tapered box and standard spacer; including all anchor bolts, cap plates, nuts and washers; shall be hot-dip galvanized after fabrication.
5. First 25'-0" of guardrail adjoining 'Terminal Connector' shall be of galvanized steel and supports spaced as shown on the detail drawings. This section of rail shall be placed on tangent to end post or parallel to roadway, unless conditions at site renders it impossible to do so. Flare point to be determined in field.
6. Heads of through anchor bolts shall be placed on the traffic side of the end block; those at the thru spacer block excepted.
7. Payment for anchor bolts, nuts, cap plates and metal tapered box spacer block shall be considered incidental to metal guardrail, unless noted otherwise.

Payment for the Terminal Connector shall be considered incidental to the Thrie Beam Connection.




PLAN
Scale: 1/2" = 1'-0"




ELEVATION
Scale: 1/2" = 1'-0"

# THRIE BEAM CONNECTION TO END POST AND TRANSITION TO W-BEAM GUARDRAIL

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

CAD by J. Minuro, 55-52

Last Saved: J:\H3RF\RFU2\ROAD\TYP-MF1.dwg 02/25/97 at 20:37

RANDALL M. URASAKI
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No. 7269-C
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THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

MOANALUA FREEWAY
ROADWAY CONSTRUCTION
DETAILS

H-3 FINISH (UNIT II)
FAIP NO. I-H3-1(75), UNIT II
LEEWARD SECTION

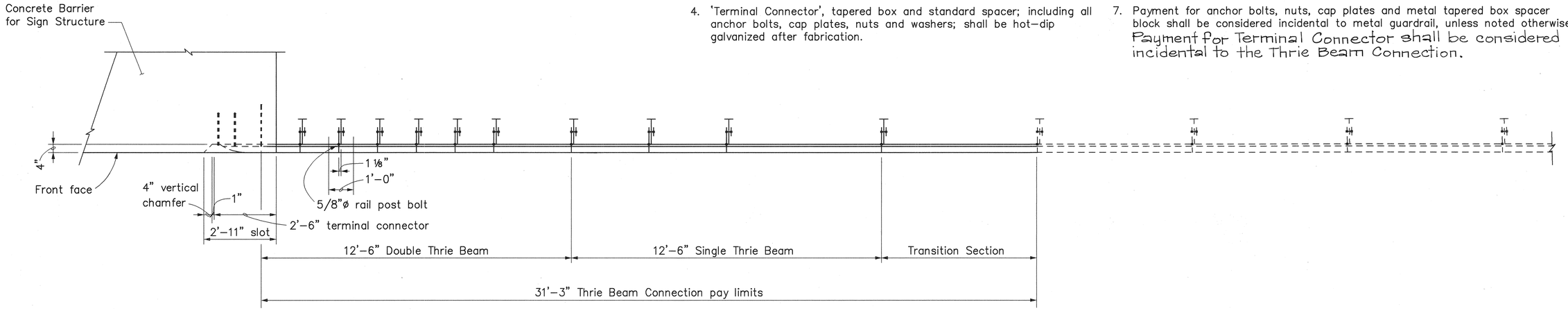
SCALE: AS SHOWN DATE: JANUARY 1997

SHEET NO. 2C8 OF 9 SHEETS

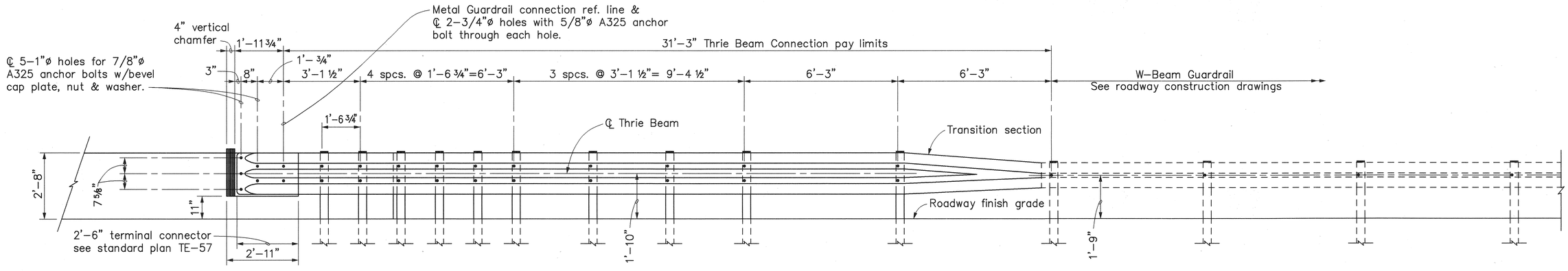
| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|
| HAWAII | HAW. | I-H3-1(75), UNIT II | 1997 | 520 | 1102 |

## Notes:

1. 'Terminal Connector' shall be fabricated from 10 gauge steel conforming to the requirements of AASHTO M180.
2. All anchor bolts shall be high strength bolts conforming to the requirements of ASTM 325 and Special Provisions, Section 713.04.
3. Anchor bolt length shall be such that a snug fit of the elements and full thread engagement plus 1/4" (max.) is attained.
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5. First 25'-0" of guardrail adjoining 'Terminal Connector' shall be of galvanized steel and supports spaced as shown on the detail drawings. This section of rail shall be placed on tangent to end post or parallel to roadway, unless conditions at site renders it impossible to do so. Flare point to be determined in field.
6. Heads of through anchor bolts shall be placed on the traffic side of the end block; those at the thru spacer block excepted.
7. Payment for anchor bolts, nuts, cap plates and metal tapered box spacer block shall be considered incidental to metal guardrail, unless noted otherwise. Payment for Terminal Connector shall be considered incidental to the Thrie Beam Connection.




PLAN
Scale: 1/2" = 1'-0"




ELEVATION
Scale: 1/2" = 1'-0"

# THRIE BEAM CONNECTION TO CONCRETE BARRIER FOR SIGN STRUCTURE AND TRANSITION TO W-BEAM GUARDRAIL

RANDALL M. URASAKI
LICENSED PROFESSIONAL ENGINEER
No. 7269-C
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

**MOANALUA FREEWAY**
**ROADWAY CONSTRUCTION**
**DETAILS**

H-3 FINISH (UNIT II)
FAIP NO. I-H3-1(75), UNIT II
LEEWARD SECTION

SCALE: AS SHOWN DATE: JANUARY 1997

SHEET NO. 2C9 OF 9 SHEETS

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

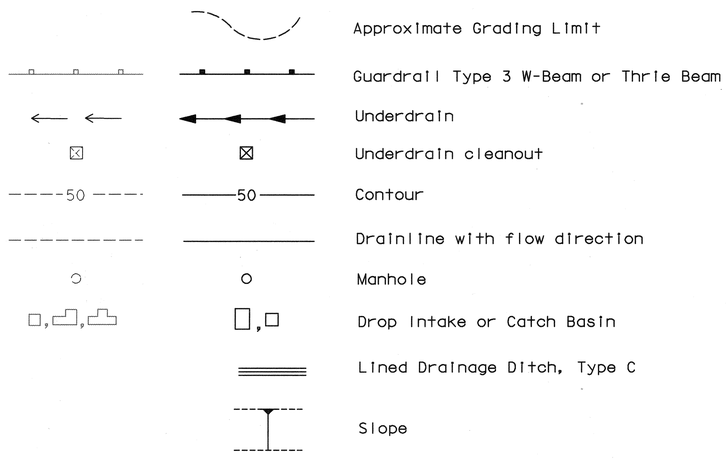
CAD by J. MIMURA, 55-52

Last Saved: J:\H3RF\RFU2\ROAD\TYP-MF2.dwg 02/25/97 at 20:40

| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|
| HAWAII | HAW. | I-H3-1(75), UNIT II | 1997 | 521 | 1102 |

## LEGEND

EXISTING PROPOSED




## GENERAL GRADING NOTES:

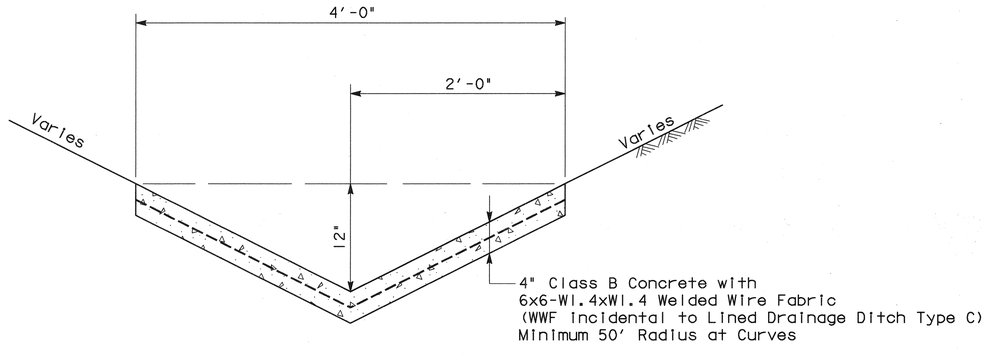
1. Existing concrete structures, such as manholes, culverts, channels, etc., which are designated to be removed or are in conflict with proposed construction shall be removed to a depth of not less than 3 feet below finish grade in roadway and not less than 1.5 feet below finish grade in other areas. Payment for removal and backfilling to finish grade will be considered incidental to various contract items.
2. Existing facilities and/or pavement to remain which has been damaged by the Contractor shall be restored to its original condition at the expense of the Contractor.
3. Covers of utility structures which are in service shall be adjusted to finish grade whether or not they are shown on Plans. Abandoned utility boxes within the area of work shall be demolished, and ducts, pipes, etc. shall be plugged.
4. All regraded areas and all grassed areas damaged by construction activities shall be planted in accordance with Specifications Section 618-Grassed Surfaces and shall be at the expense of the Contractor.

## GENERAL DRAINAGE NOTES:

1. Payment for complete or partial removal of structures and culverts, and sealing of abandoned pipes will be considered incidental to various contract items. Drainage pipes to be abandoned shall be removed as necessary to facilitate construction.
2. Contractor shall sequence construction such that existing facilities remain in service until new facilities are in service or shall provide and maintain, as is necessary, temporary drainage diversion facilities.
3. The Contractor shall verify locations and elevations of all existing utility lines and notify respective owners before commencing excavation work for drainlines.
4. Existing drainage facilities to remain and located within project limits shall be cleaned of silt and debris. Payment shall be considered incidental to various contract items.
5. Except in areas where new pavement structure is being constructed, existing pavement damaged by trenching or other activities shall be restored.
6. Steel plates for covering trenches shall have skid resistant surface.
7. See Typical Sections for Bituminous Gutter Type 7A and 7B.

## ABBREVIATIONS

| | |
|---|---|
| ℄ | BASELINE |
| ETW | EDGE OF TRAVELED WAY |
| FIN. GR. | FINISH GRADE |
| MH | MANHOLE |
| N. T. S. | NOT TO SCALE |
| O. C. | ON CENTER |
| PAVT. | PAVEMENT |
| R. O. W | RIGHT-OF-WAY |
| Trap | TRAPAZOIDAL |
| D24 | 24" DIAMETER CULVERT |
| Rt | RIGHT OF ℄ |
| Lt | LEFT OF ℄ |
| Elev | ELEVATION |
| W/ | WITH |
| Sta | STATION ALONG ℄ OR RAMP |




## LINED DRAINAGE DITCH TYPE C

N.T.S.

CLYDE T. SHIMIZU
LICENSED PROFESSIONAL ENGINEER
No. 5514-C
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

Clyde T. Shimizu

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

# MOANALUA FREEWAY
# DRAINAGE & GRADING
# NOTES, LEGEND & ABBREVIATIONS

H-3 FINISH (UNIT ID
FAIP NO. I-H3-1(75), UNIT II
LEEWARD SECTION

SCALE: 1"=40' DATE: JANUARY 1997

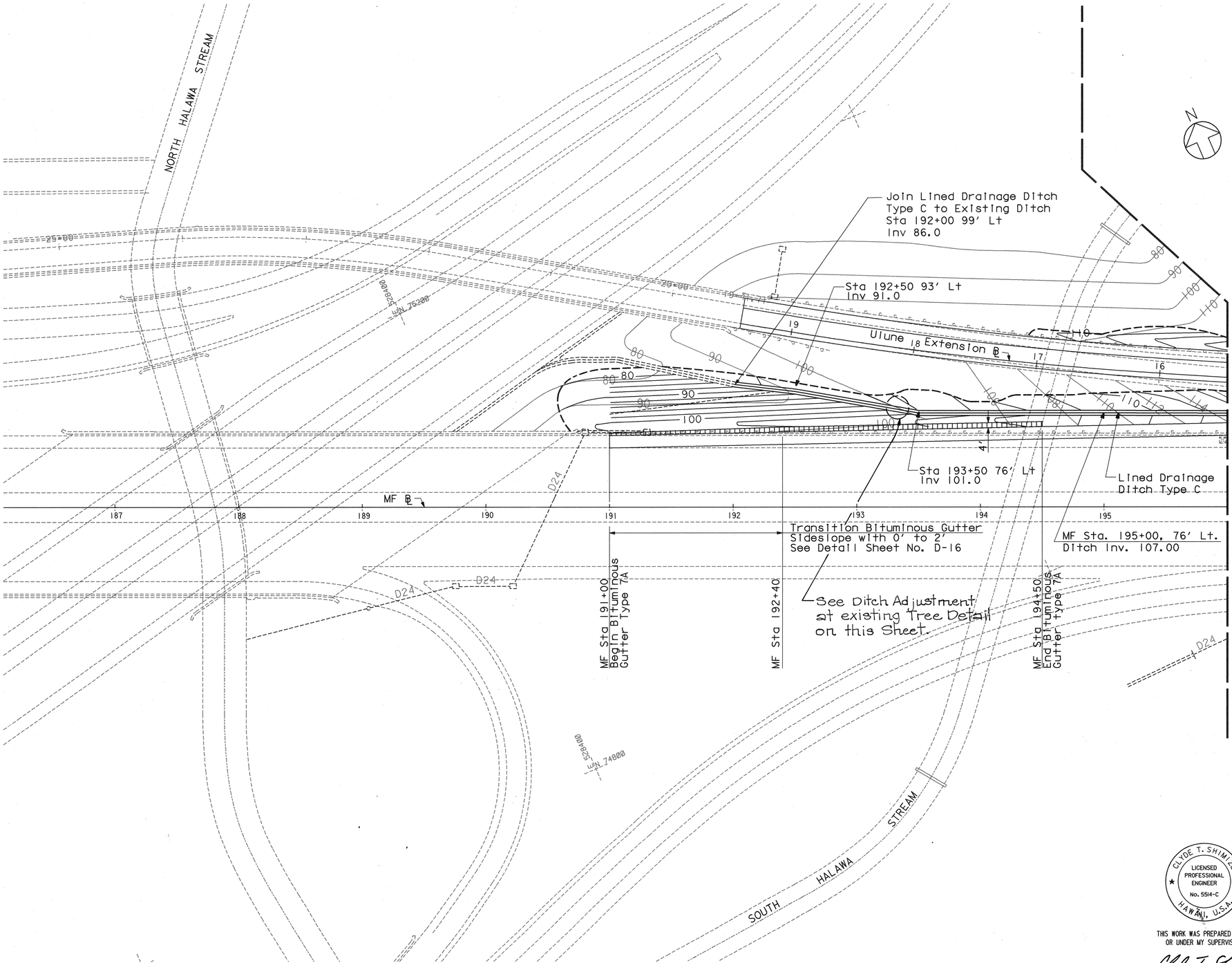
SHEET NO. 2DI OF 10 SHEETS

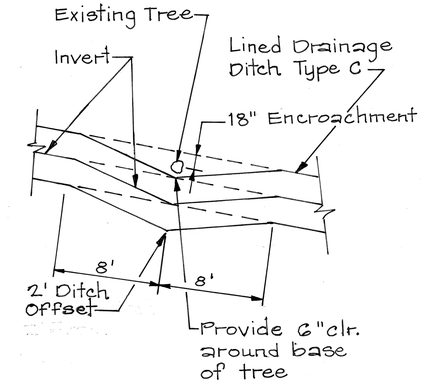
521

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

$$$$$$$$$$DGNSPEC$$$$$$$$$$ $$$$$$SYTIME$$$$$$

| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|
| HAWAII | HAW. | I-H3-1(75), UNIT II | 1997 | 522 | 1102 |




PLAN
DITCH ADJUSTMENT
AT EXISTING TREE, STA. 193+50±
N.T.S.

$$$$$$$$$$DGNSPEC$$$$$$$$$$ $$$$$$SYTIME$$$$$$

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

CLYDE T. SHIMIZU
LICENSED PROFESSIONAL ENGINEER
No. 5514-C
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

Clyde T. Shimizu

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

# MOANALUA FREEWAY
# DRAINAGE & GRADING
# STA. 187+00 TO STA. 196+00

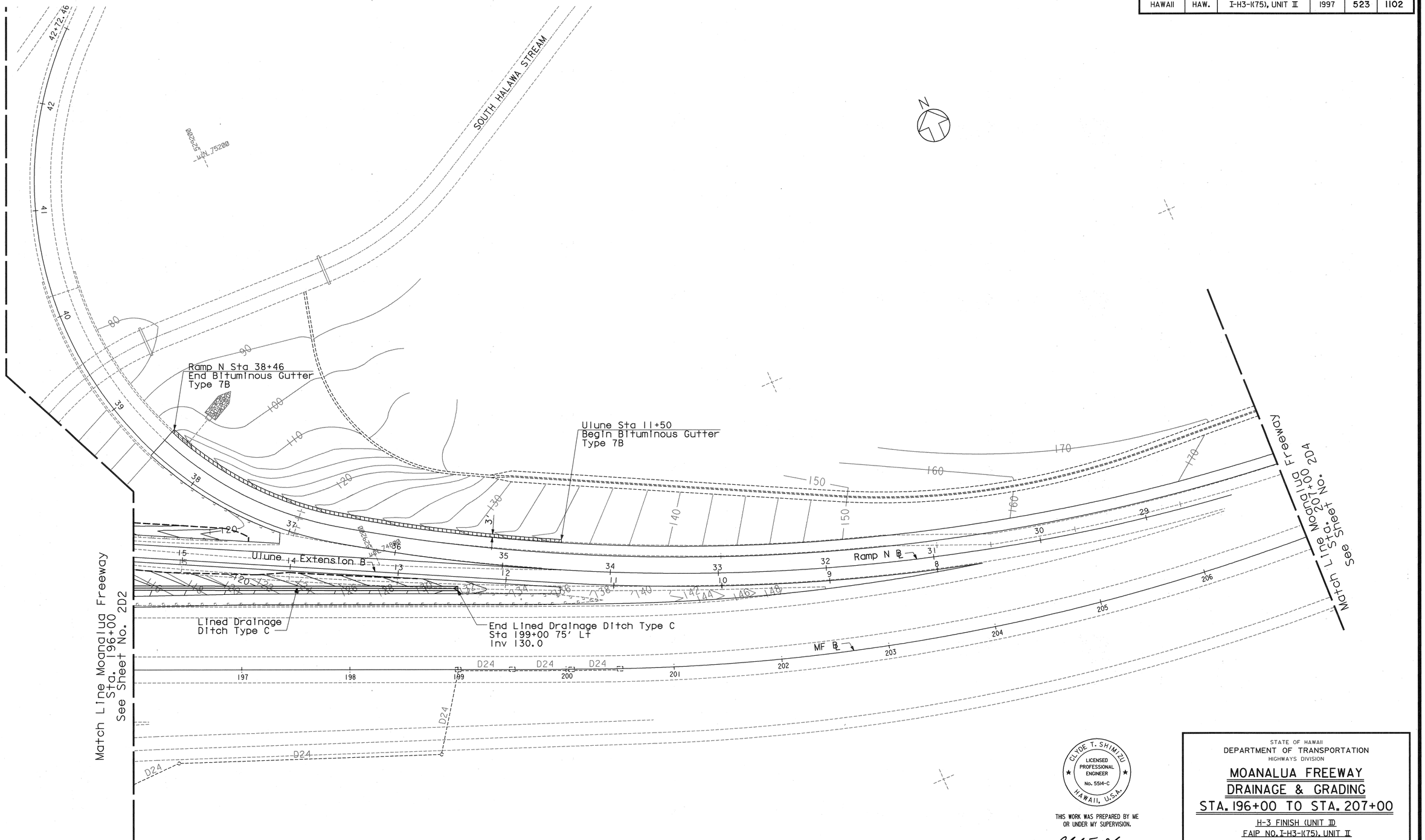
H-3 FINISH (UNIT II)
FAIP NO. I-H3-1(75), UNIT II
LEEWARD SECTION

SCALE: 1"=40' DATE: JANUARY 1997

SHEET NO. 2D2 OF 10 SHEETS

| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|
| HAWAII | HAW. | I-H3-1(75), UNIT II | 1997 | 523 | 1102 |

$$$$$$$$$$DGNSPEC$$$$$$$$$$ $$$$$$SYTIME$$$$$$




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

CLYDE T. SHIMIZU
LICENSED PROFESSIONAL ENGINEER
No. 5514-C
HAWAII, U.S.A.

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Clyde T. Shimizu

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

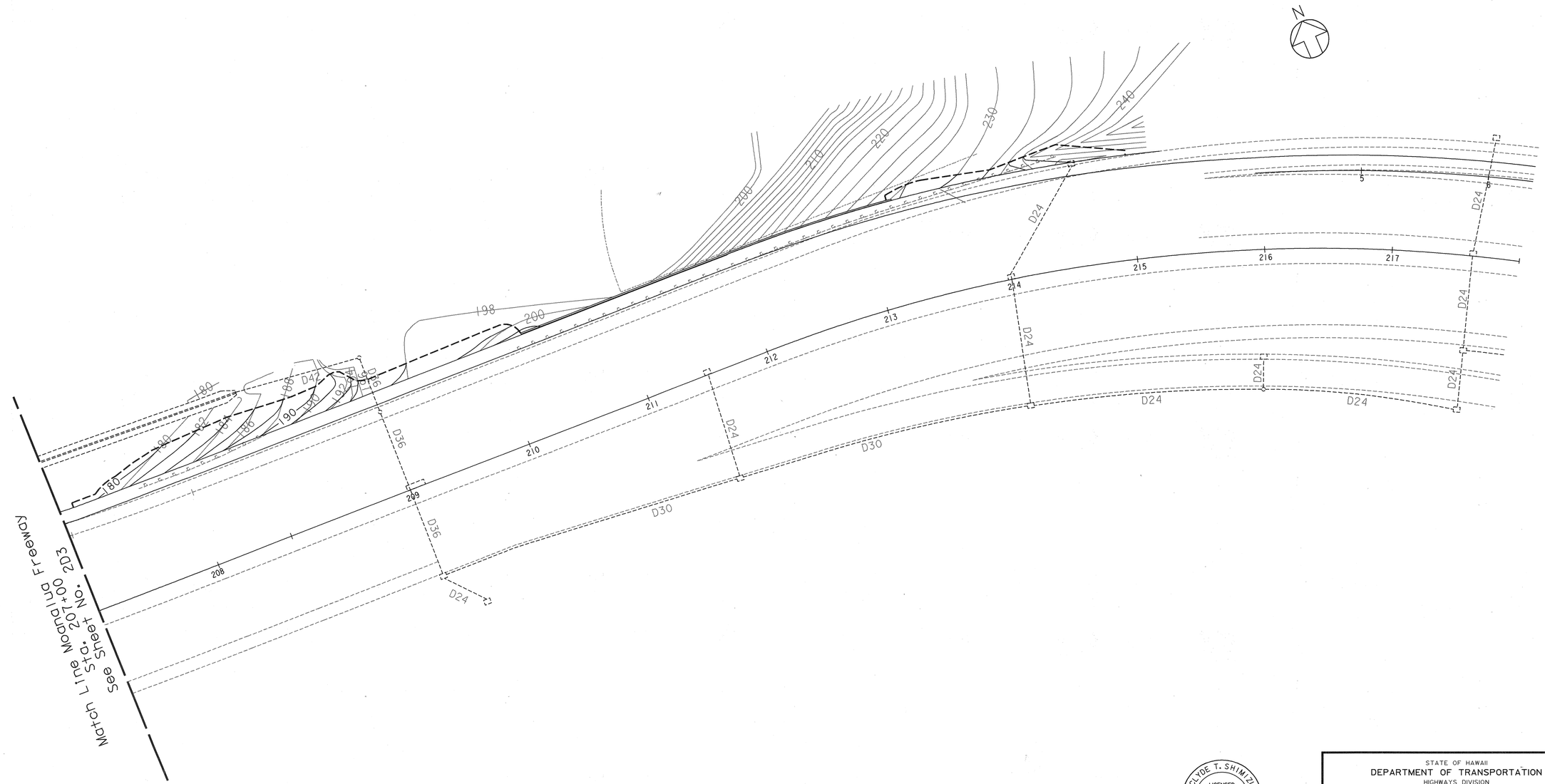
# MOANALUA FREEWAY
## DRAINAGE & GRADING
## STA. 196+00 TO STA. 207+00

H-3 FINISH (UNIT ID)
FAIP NO. I-H3-1(75), UNIT II
LEEWARD SECTION

SCALE: 1"=40' DATE: JANUARY 1997

SHEET NO. 2D3 OF 10 SHEETS

| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|
| HAWAII | HAW. | I-H3-1(75), UNIT II | 1997 | 524 | 1102 |




\$\$\$\$\$\$\$\$\$\$DGNSPEC\$\$\$\$\$\$\$\$\$\$\$ \$\$\$\$\$\$SYTIME\$\$\$\$\$\$

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

CLYDE T. SHIMIZU
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STATE OF HAWAII
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HIGHWAYS DIVISION

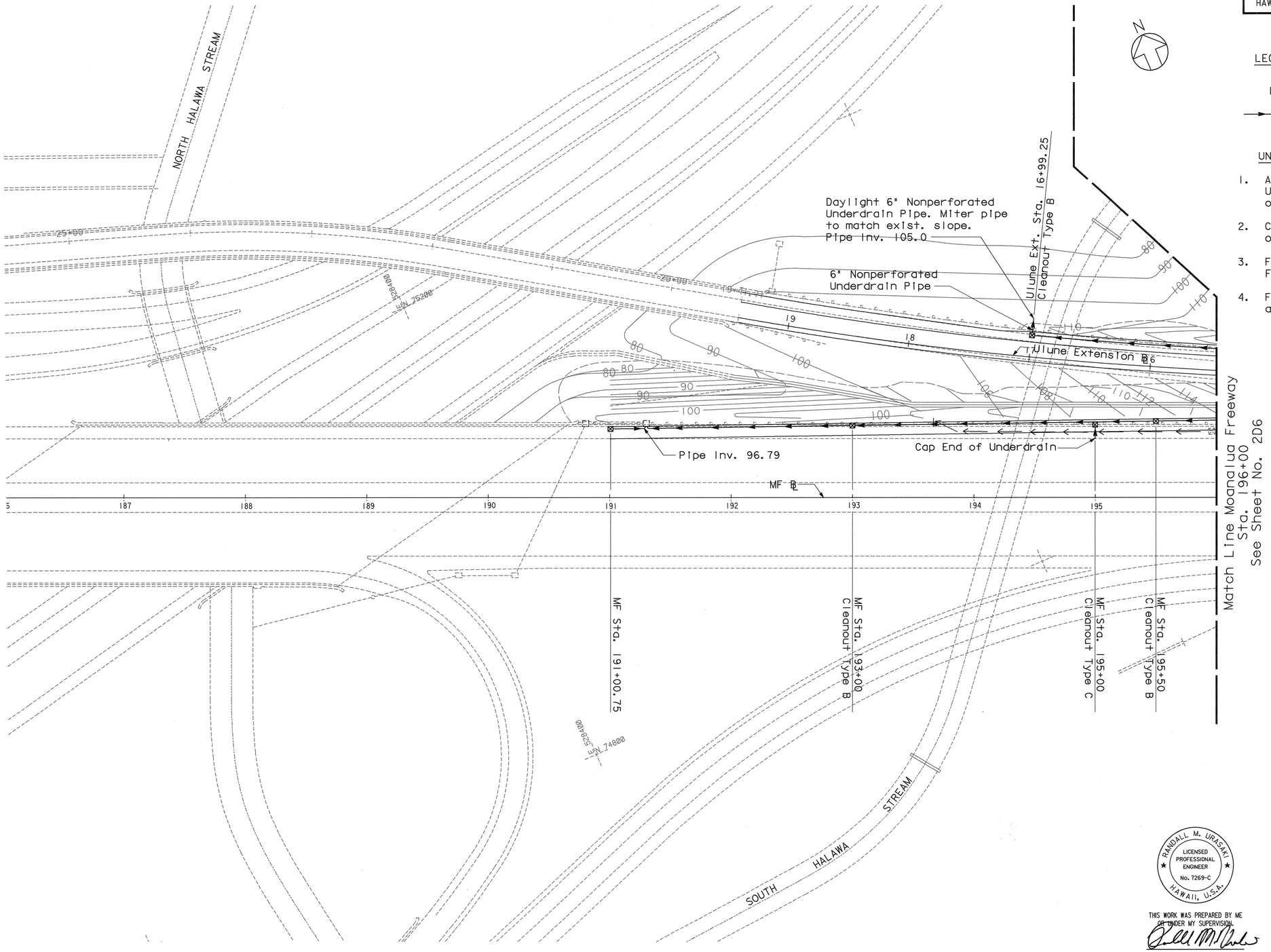
# MOANALUA FREEWAY
# DRAINAGE & GRADING
# STA. 207+00 TO STA. 217+00

H-3 FINISH (UNIT II)
FAIP NO. I-H3-1(75), UNIT II
LEEWARD SECTION

SCALE: 1"=40' DATE: JANUARY 1997

SHEET NO. 2D4 OF 10 SHEETS

| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|
| HAWAII | HAW. | I-H3-1(75), UNIT II | 1997 | 525 | 1102 |




LEGEND

⊠ Cleanout

→ Underdrain Pipe and direction of flow.

UNDERDRAIN NOTES:

1. All underdrains shall be 6" Perforated Underdrain Pipes unless otherwise shown on plan.
2. Cleanouts shall be Type A unless otherwise shown on plan.
3. For underdrain location, see Moanalua Freeway Typical Section.
4. For underdrain details, see Sht. 2D8 and 2D9.

RANDALL M. URASAKI ★ LICENSED PROFESSIONAL ENGINEER No. 7269-C ★ HAWAII, U.S.A.

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

# MOANALUA FREEWAY
# UNDERDRAIN
# STA. 187+00 TO STA. 196+00

H-3 FINISH (UNIT ID)
FAIP NO. I-H3-1(75), UNIT II
LEEWARD SECTION

SCALE: 1"=40' DATE: JANUARY 1997

SHEET NO. 2D5 OF 10 SHEETS

525

$$$$$$$$SYTIME$$$$$$

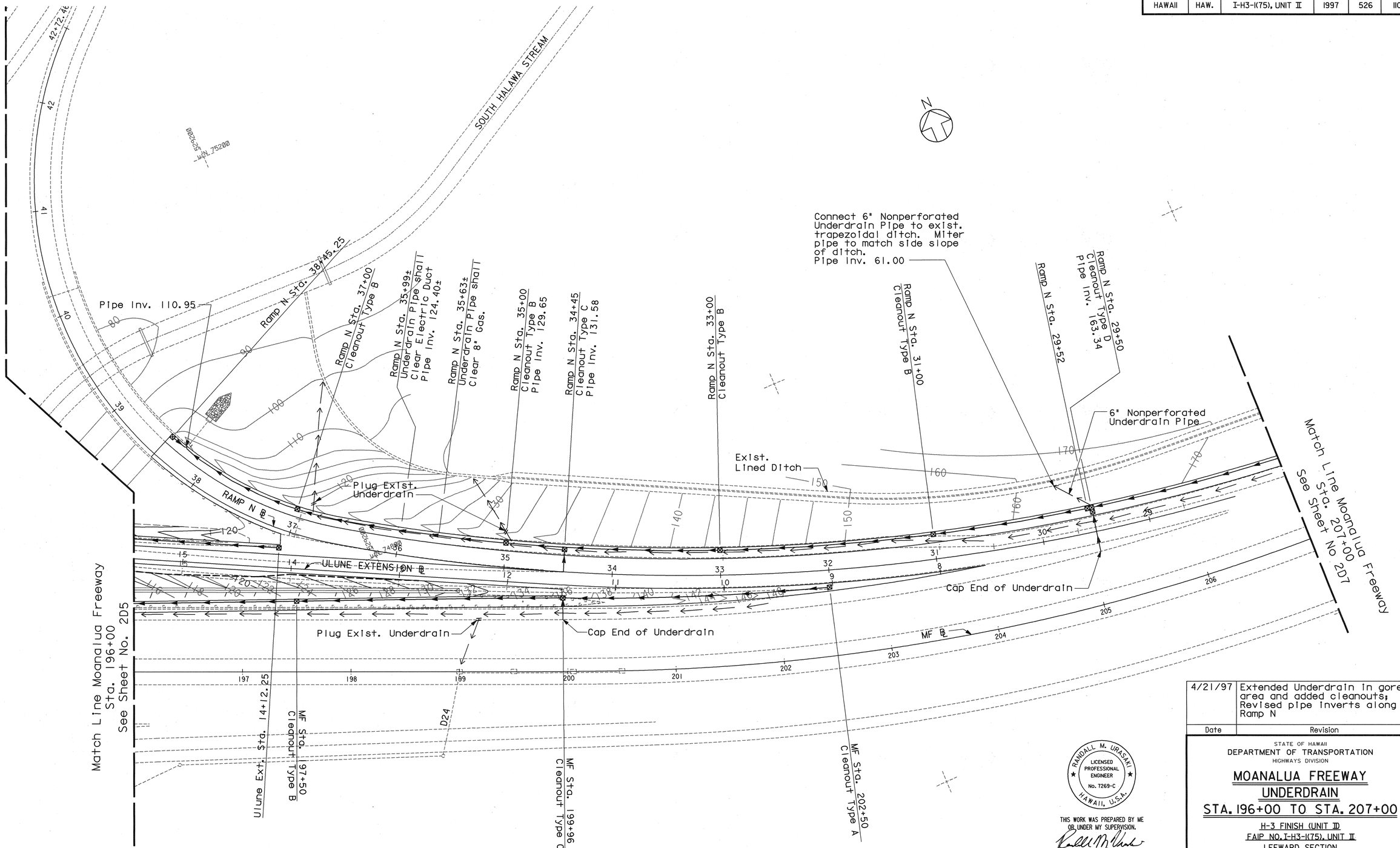
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ORIGINAL PLAN | SURVEY PLOTTED BY ____ DATE ____
DRAWN BY ____
TRACED BY ____
NOTE BOOK | DESIGNED BY ____
QUANTITIES BY ____
No. ____ | CHECKED BY ____

| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|
| HAWAII | HAW. | I-H3-1(75), UNIT II | 1997 | 526 | 1102 |

$$$$$$$$$$DGNSPEC$$$$$$$$$$

$$$$$$$$SYTIME$$$$$$$$




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

| Date | Revision |
|---|---|
| 4/21/97 | Extended Underdrain in gore area and added cleanouts; Revised pipe inverts along Ramp N |

RANDALL M. URASAKI
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DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

# MOANALUA FREEWAY
# UNDERDRAIN
## STA. 196+00 TO STA. 207+00

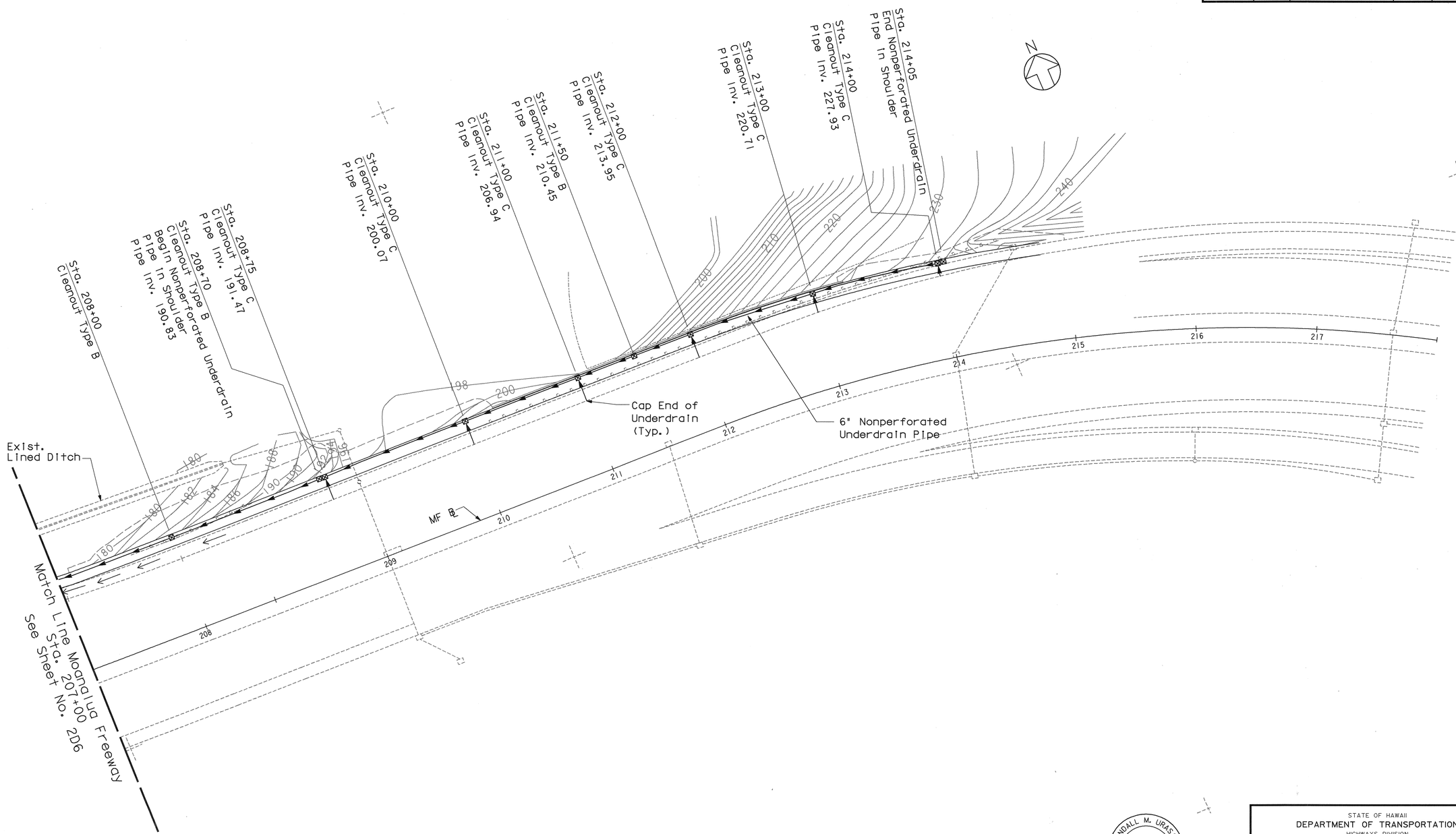
H-3 FINISH (UNIT II)
FAIP NO. I-H3-1(75), UNIT II
LEEWARD SECTION

SCALE: 1"=40' DATE: JANUARY 1997

SHEET NO. 2D6 OF 10 SHEETS

ADD. 526

| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|
| HAWAII | HAW. | I-H3-1(75), UNIT II | 1997 | 527 | 1102 |




\$\$\$\$\$\$\$\$\$\$DGNSPEC\$\$\$\$\$\$\$\$\$\$

\$\$\$\$\$\$\$SYTIME\$\$\$\$\$\$

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

RANDALL M. URASAKI
LICENSED PROFESSIONAL ENGINEER
No. 7269-C
HAWAII, U.S.A.

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

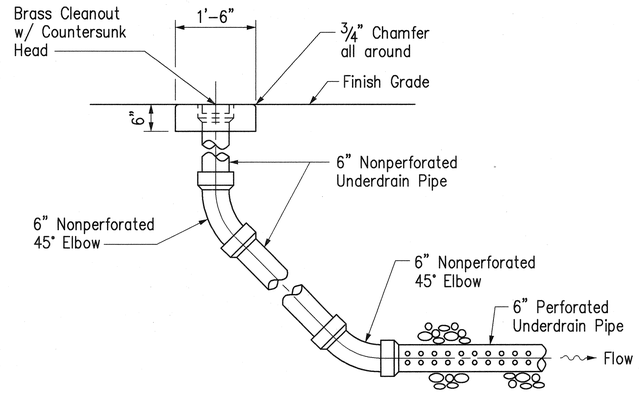
# MOANALUA FREEWAY
## UNDERDRAIN
## STA. 207+00 TO STA. 217+00

H-3 FINISH (UNIT ID)
FAIP NO. I-H3-1(75), UNIT II
LEEWARD SECTION

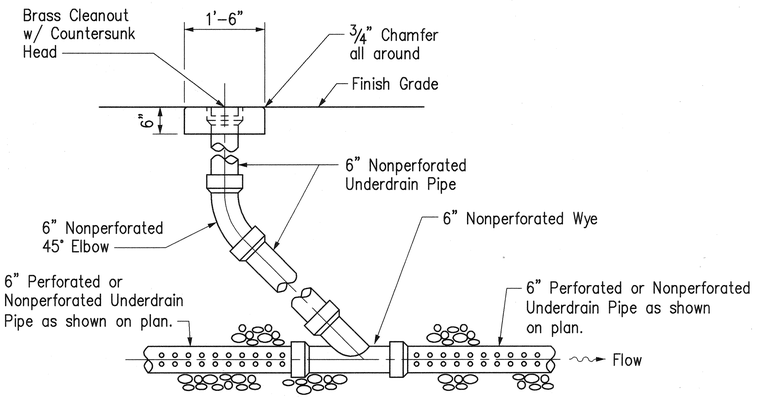
SCALE: 1"=40' DATE: JANUARY 1997

SHEET NO. 2D7 OF 10 SHEETS

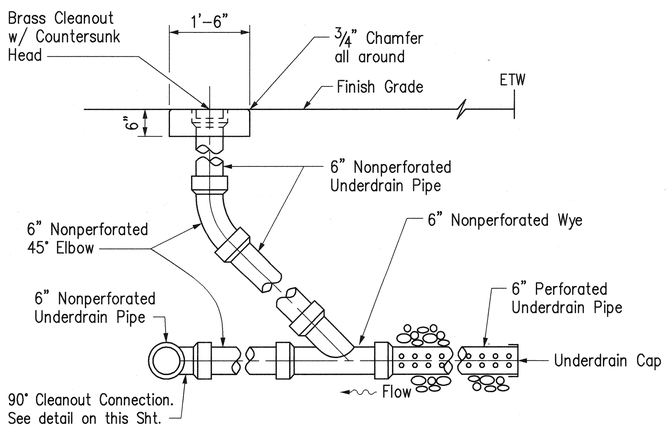
| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|
| HAWAII | HAW. | I-H3-1(75), UNIT II | 1997 | 528 | 1102 |



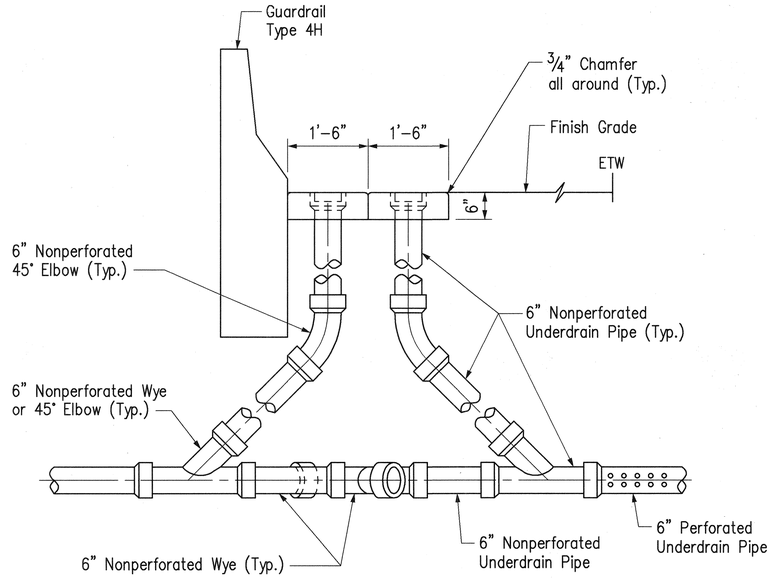

## CLEANOUT TYPE A



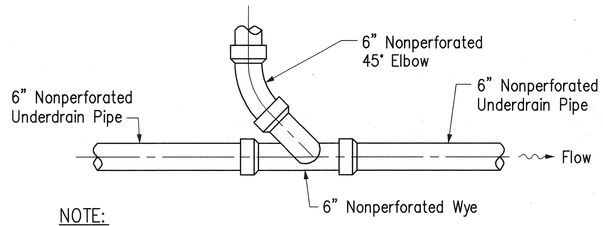

## CLEANOUT TYPE B




## CLEANOUT TYPE C




## CLEANOUT TYPE D




NOTE:

Payment incidental to Cleanout Type C.

PLAN

## 90° CLEANOUT CONNECTION

SURVEY PLOTTED BY ____ DATE
DRAWN BY ____
TRACED BY ____
DESIGNED BY ____
QUANTITIES BY ____
CHECKED BY ____
NOTE BOOK ____
ORIGINAL PLANS
No. ____

CAD by J. MIMURA, 55-52

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

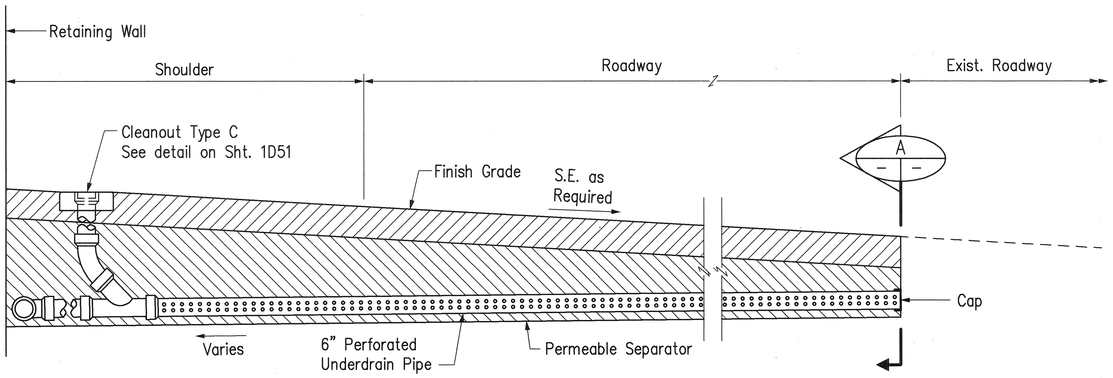
# MOANALUA FREEWAY UNDERDRAIN UNDERDRAIN DETAIL

H-3 FINISH (UNIT II)
FAIP NO. I-H3-1(75), UNIT II
LEEWARD SECTION

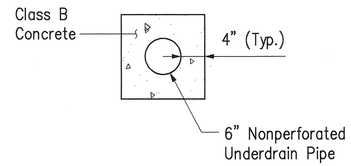
SCALE: NOT TO SCALE DATE: JANUARY 1997

SHEET NO. 2D8 OF 10 SHEETS

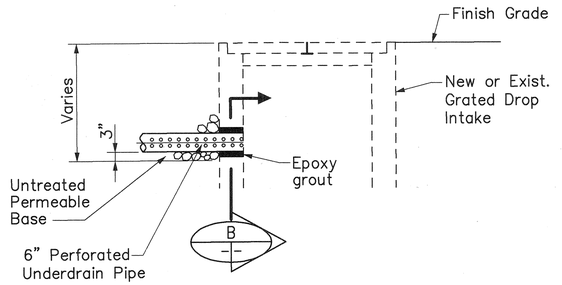
| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|
| HAWAII | HAW. | I-H3-1(75), UNIT II | 1997 | 529 | 1102 |




## TRANSVERSE UNDERDRAIN

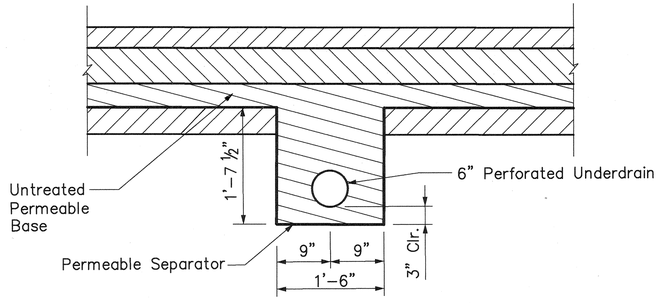



## UNDERDRAIN JACKET



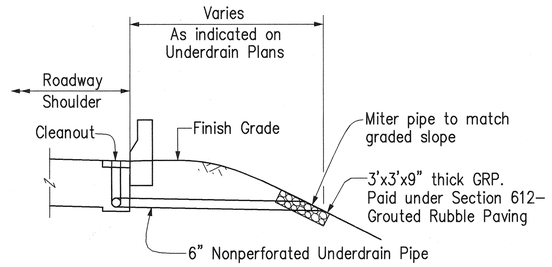

## CONNECTION OF UNDERDRAIN TO GRATED DROP INTAKE

Scale: 1" = 2'

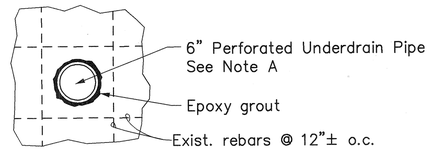



## SECTION A

Scale: 1" = 1'



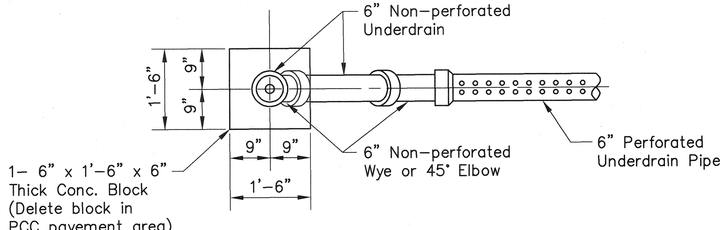

## DAYLIGHTING UNDERDRAIN IN GRADED AREAS



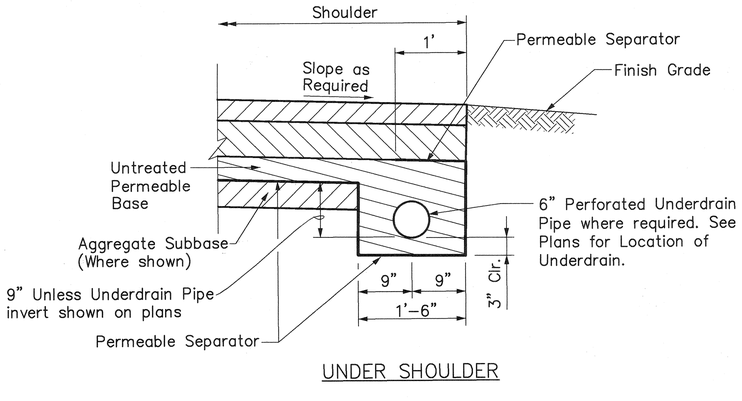

Note A:
The Contractor shall avoid cutting the existing rebars. In case the pipe opening interferes with the existing rebars, the opening shall be enlarged and the location of the pipe shall be adjusted to pass between the existing rebars as shown. The enlarged hole shall be patched with epoxy grout.

## SECTION B

Scale: 1" = 1'




## PLAN




UNDER SHOULDER

## UNDERDRAIN DETAIL

Scale: 1" = 1'

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

CAD by J. Mimura, 55-52

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RANDALL M. URASAKI
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No. 7269-C
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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

# MOANALUA FREEWAY UNDERDRAIN DETAILS

H-3 FINISH (UNIT II)
FAIP NO. I-H3-1(75), UNIT II
LEEWARD SECTION

SCALE: AS SHOWN DATE: JANUARY 1997

SHEET NO. 2D9 OF 10 SHEETS

| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|
| HAWAII | HAW. | I-H3-1(75), UNIT II | 1997 | 530 | 1102 |

| UNDERDRAINS | | | |
|---|---|---|---|
| ITEM NO. | | 605 .0006 | 605 .0106 |
| ℄ STATION NO. | ℄ STATION NO. | 6-INCH PERFORATED UNDERDRAIN PIPE | 6-INCH NONPERFORATED UNDERDRAIN PIPE |
| UNIT | | LIN. FT. | LIN. FT. |
| MOANALUA FREEWAY | | | |
| 191+00.75 Lt. | 202+50 Lt. | 1149 | |
| 195+00 Lt. | | 14 | |
| 199+96 Lt. | | 29 | |
| 205+11 Lt. | 208+61.34 Lt. | 350 | |
| 208+00 Lt. | 208+70 Lt. | 70 | |
| 208+70 Lt. | 214+05 Lt. | | 535 |
| 208+75 Lt. | | 22 | |
| 210+00 Lt. | | 22 | |
| 211+00 Lt. | | 22 | |
| 212+00 Lt. | | 22 | |
| 213+00 Lt. | | 18 | |
| 214+00 Lt. | | 13 | |
| | | | |
| ULUNE EXTENSION | | | |
| 14+12.25 Rt. | 16+99.25 Rt. | 287 | |
| 16+99.25 Rt. | | | 11 |
| | | | |
| RAMP N | | | |
| 29+50 Rt. | 38+45.25 Rt. | 895 | |
| 29+50 Lt. | | 44 | 39 |
| 34+45 Lt. | | 17 | |
| | | | |
| | | | |
| TOTAL | | 2974 | 585 |
| ROUNDED TOTAL | | 2975 | 585 |

| CLEANOUTS | | | | |
|---|---|---|---|---|
| ITEM NO. | 605 .2010 | 605 .2020 | 605 .2030 | 605 .2040 |
| ℄ STATION NO. | CLEANOUT TYPE A | CLEANOUT TYPE B | CLEANOUT TYPE C | CLEANOUT TYPE D |
| UNIT | EACH | EACH | EACH | EACH |
| MOANALUA FREEWAY | | | | |
| 191+00.75 Lt. | 1 | | | |
| 193+00 Lt. | | 1 | | |
| 195+00 Lt. | | | 1 | |
| 195+50 Lt. | | 1 | | |
| 197+50 Lt. | | 1 | | |
| 199+96 Lt. | | | 1 | |
| 202+50 Lt. | 1 | | | |
| 208+00 Lt. | | 1 | | |
| 208+70 Lt. | | 1 | | |
| 208+75 Lt. | | | 1 | |
| 210+00 Lt. | | | 1 | |
| 211+00 Lt. | | | 1 | |
| 211+50 Lt. | | 1 | | |
| 212+00 Lt. | | | 1 | |
| 213+00 Lt. | | | 1 | |
| 214+00 Lt. | | | 1 | |
| 214+05 Lt. | 1 | | | |
| | | | | |
| ULUNE EXTENSION | | | | |
| 14+12.25 Rt. | 1 | | | |
| 16+99.25 Rt. | | 1 | | |
| | | | | |
| RAMP N | | | | |
| 29+50 Rt. | | | | 1 |
| 29+52 Rt. | 1 | | | |
| 31+00 Rt. | | 1 | | |
| 33+00 Rt. | | 1 | | |
| 34+45 Rt. | | | 1 | |
| 35+00 Rt. | | 1 | | |
| 37+00 Rt. | | 1 | | |
| 38+45.25 Rt. | 1 | | | |
| | | | | |
| | | | | |
| TOTAL | 6 | 11 | 9 | 1 |

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

CAD by J. Mimura, 55-52

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RANDALL M. URASAKI
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No. 7269-C
HAWAII, U.S.A.

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| 4/21/97 | Revised Underdrain & Cleanout quantities |
|---|---|
| Date | Revision |

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

# MOANALUA FREEWAY
# UNDERDRAIN
# UNDERDRAIN SUMMARY

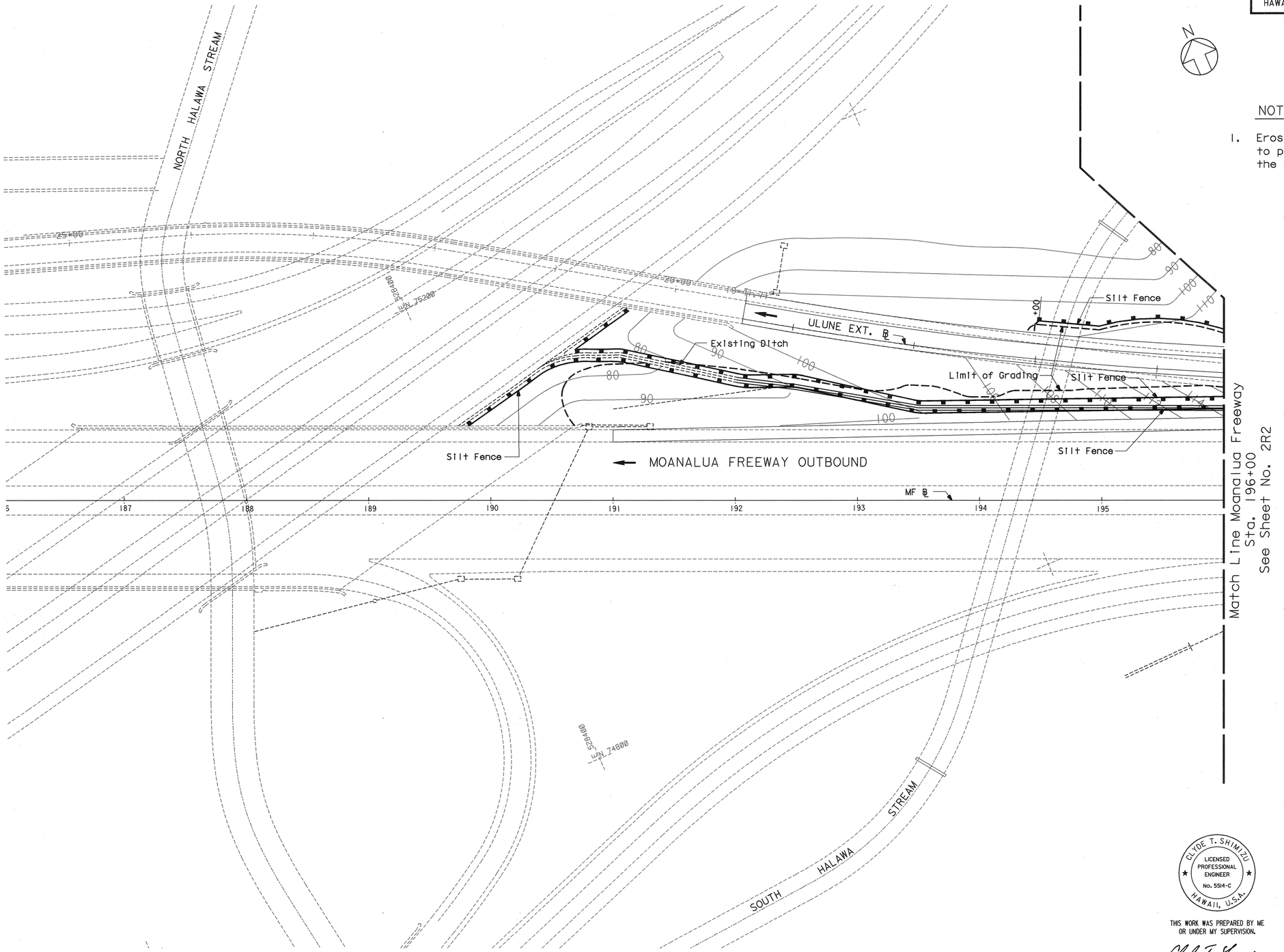
H-3 FINISH (UNIT II)
FAIP NO. I-H3-1(75), UNIT II
LEEWARD SECTION

SCALE: NONE DATE: JANUARY 1997

SHEET NO. 2D10 OF 10 SHEETS

ADD. 530

| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|
| HAWAII | HAW. | I-H3-1(75), UNIT II | 1997 | 531 | 1102 |




NOTE:

1. Erosion control measures must be taken to prevent silt and debris from entering the exist. ditch during construction.

CLYDE T. SHIMIZU
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HIGHWAYS DIVISION

# MOANALUA FREEWAY
# EROSION CONTROL
# STA. 187+00 TO STA. 196+00

H-3 FINISH (UNIT II)
FAIP NO. I-H3-1(75), UNIT II
LEEWARD SECTION

SCALE: 1"=40' DATE: JANUARY 1997

SHEET NO. 2RI OF 3 SHEETS

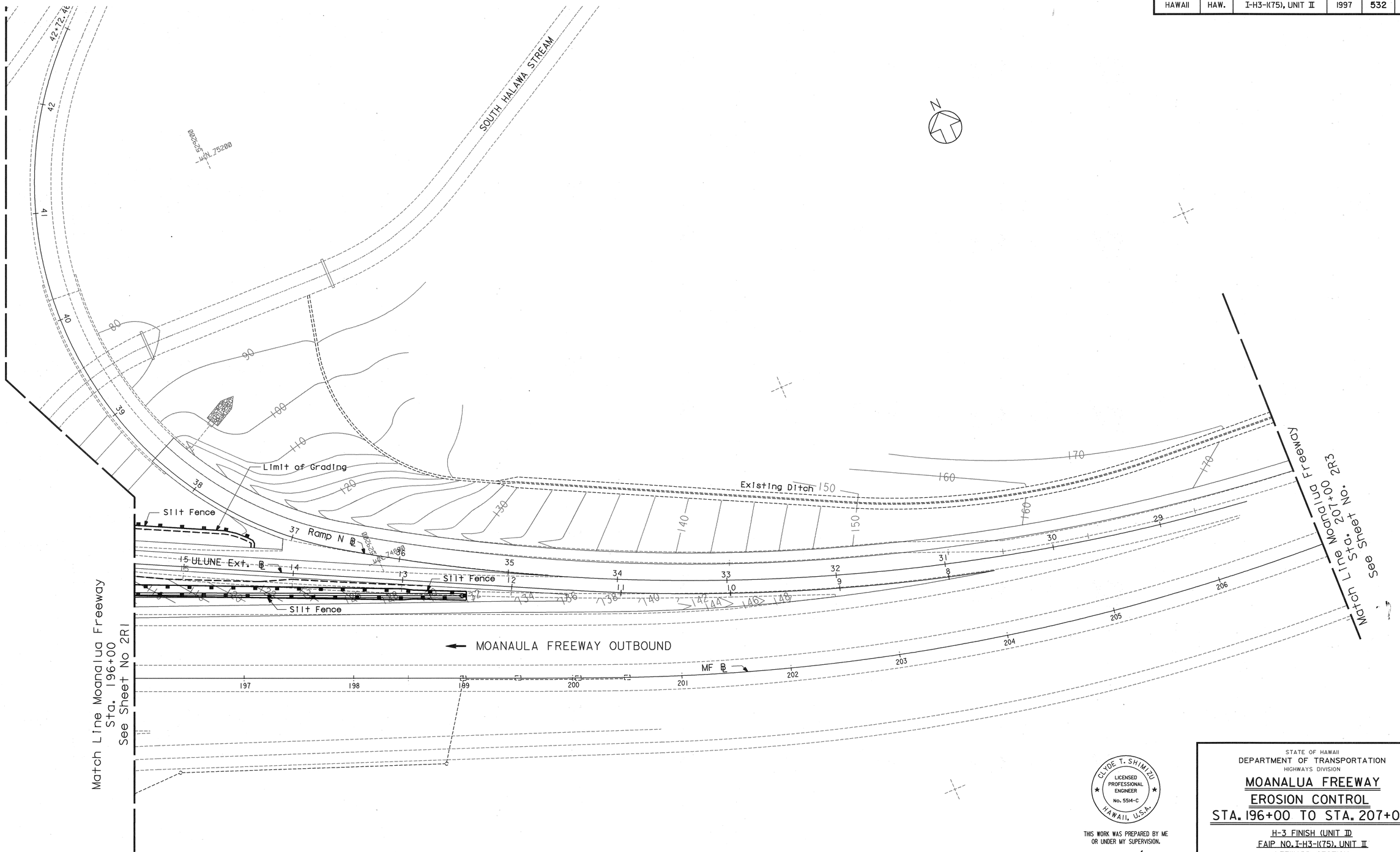
ORIGINAL PLAN
NOTE BOOK
SURVEY PLOTTED BY ____ DATE
DRAWN BY ____
TRACED BY ____
DESIGNED BY ____
QUANTITIES BY ____
CHECKED BY ____
No. ____

$$$$$$$$$$DGNSPEC$$$$$$$$$$ $$$$$$SYTIME$$$$$$

| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|
| HAWAII | HAW. | I-H3-1(75), UNIT II | 1997 | 532 | 1102 |

$$$$$$$$$$DGNSPEC$$$$$$$$$$ $$$$$$$$SYTIME$$$$$$$$

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




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Clyde T. Shimizu

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

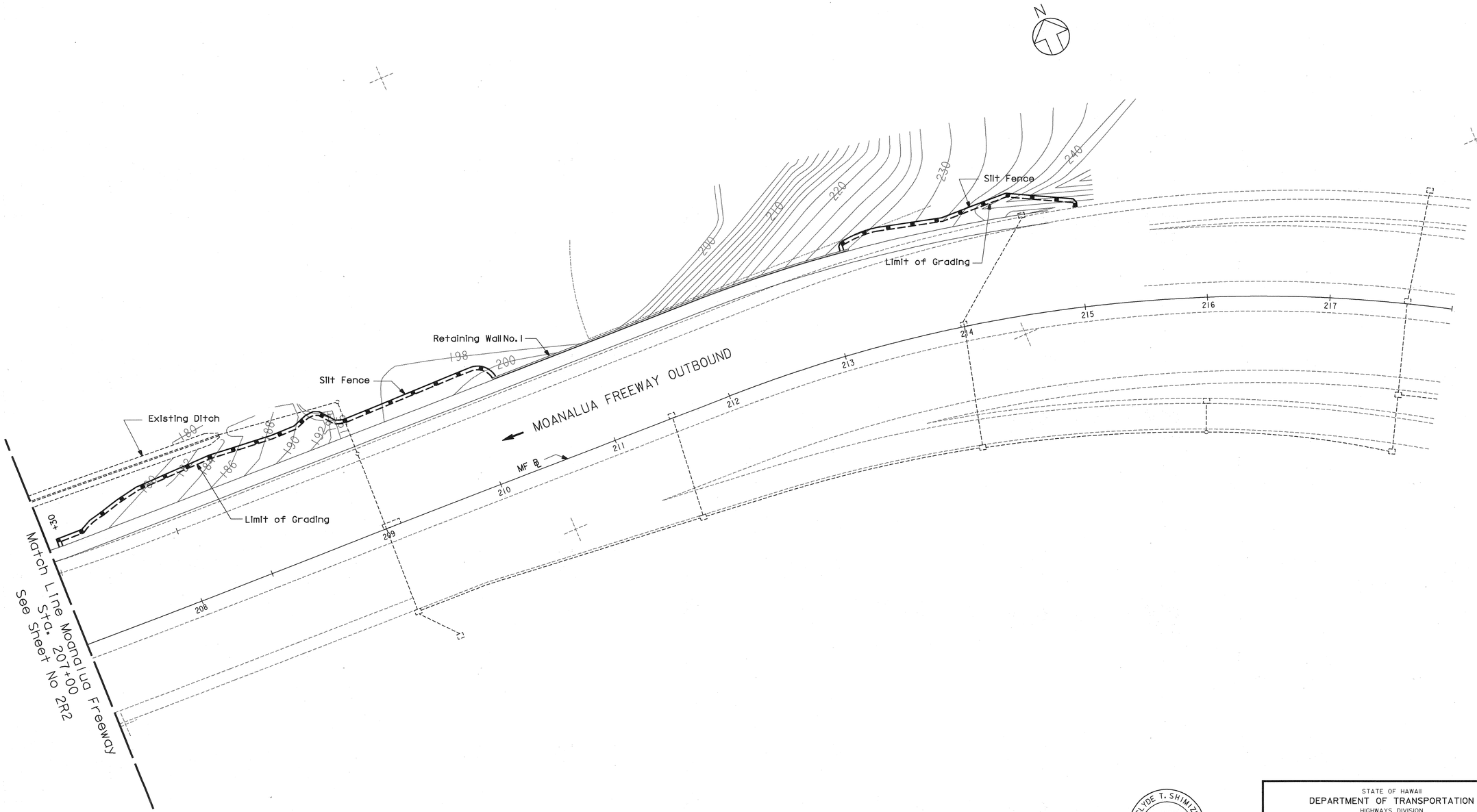
# MOANALUA FREEWAY
# EROSION CONTROL
# STA. 196+00 TO STA. 207+00

H-3 FINISH (UNIT II)
FAIP NO. I-H3-1(75), UNIT II
LEEWARD SECTION

SCALE: 1"=40' DATE: JANUARY 1997

SHEET NO. 2R2 OF 3 SHEETS

| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|
| HAWAII | HAW. | I-H3-1(75), UNIT II | 1997 | 533 | 1102 |




$$$$$$$$$$$DGNSPEC$$$$$$$$$$$ $$$$$$SYTIME$$$$$$

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

CLYDE T. SHIMIZU
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HAWAII, U.S.A.

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

# MOANALUA FREEWAY

## EROSION CONTROL

## STA. 207+00 TO STA. 217+00

H-3 FINISH (UNIT II)
FAIP NO. I-H3-1(75), UNIT II
LEEWARD SECTION

SCALE: 1"=40' DATE: JANUARY 1997

SHEET NO. 2R3 OF 3 SHEETS

| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|
| HAWAII | HAW. | I-H3-1(75), UNIT II | 1997 | 534 | 1102 |

## ABBREVIATIONS

RM Reflector Markers

## LEGEND

- 4" White Edge Stripe with Type C Markers at 40'
- 8" White Stripe with Type C Markers at 20'
- 4" Yellow Stripe with Type H Markers at 40'
- 10' 4 Type A Markers and Type C Markers at 40'
- 4" White Stripe, 2'-0" long at 10' on center with Type C Markers at 40'
- 4" White Stripe, 4 Type A Markers and Type C Markers at 40'
- 8" White Stripe, 3'-0" long at ~~12~~ 15' on center with Type C Markers at 30'
- 4" White Guide Lines, 2'-0" long at 4'
- 12" White Chevrons
- New or Relocated Sign
- Existing Sign
- Reflector Marker, RM-2 mounted on Flexible Delineator Post
- Direction of Traffic

## SIGNING NOTES

1. Sign details shall conform to the latest editions and amendments of the following FHWA publications: "Manual on Uniform Traffic Control Devices for Streets and Highways", "Standard Highway Signs" and "Standard Alphabets for Highway Signs".
2. For Miscellaneous Sign Details, see Standard Plan TE-01 to TE-20.
3. Superfluous Existing Signs are generally not shown on plans. They shall be removed and stockpiled at DOT's Pearl City Baseyard as directed by the Engineer. Removal of signs shall also include the removal of post and foundation to a minimum height of 1-foot below the ground. Post and foundations shall becom the property of the Contractor. Payment shall be considered incidental to various contract items.
4. The Contractor shall backfill all holes, depressions and pits left by the removal of the existing signs with embankment material and grass all areas exposed in accordance with Specifications Section 618-Grassed Surfaces. Payment shall be considered incidental to various contract items.
5. Destination and guide signs mounting and footing, shall conform to standard plans TE-23, TE-24, and TE-26 except as noted on plans.
6. For Expressway and Directional Signs, see Destination Sign Plans.
7. For Changeable Message Signs (CMS) and Variable Message Signs (VMS), see Systems Plans.

## PAVEMENT MARKING NOTES

1. Pavement edge striping shall be reflective thermoplastic compound pavement markings or permanent preformed pavement marking tape Type II. Lane striping shall be reflective thermoplastic compound pavement markings or permanent preformed pavement marking tape Type I. Symbols, legends and intersection markings shall be reflective thermoplastic compound pavement markings or permanent preformed pavement marking tape Type III.
2. Location of pavement markers is shown schematically. For exact location of markers in relation to stripe, see Standard Plans TE-30, TE-31 & TE-32.

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

CAD by J. Mimura, 55-52

Last Saved: J:\H3RF\RFU2\SIGN\SS-NOTE4.dwg 03/03/97 at 12:17

CLYDE T. SHIMIZU
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Clyde T. Shimizu

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

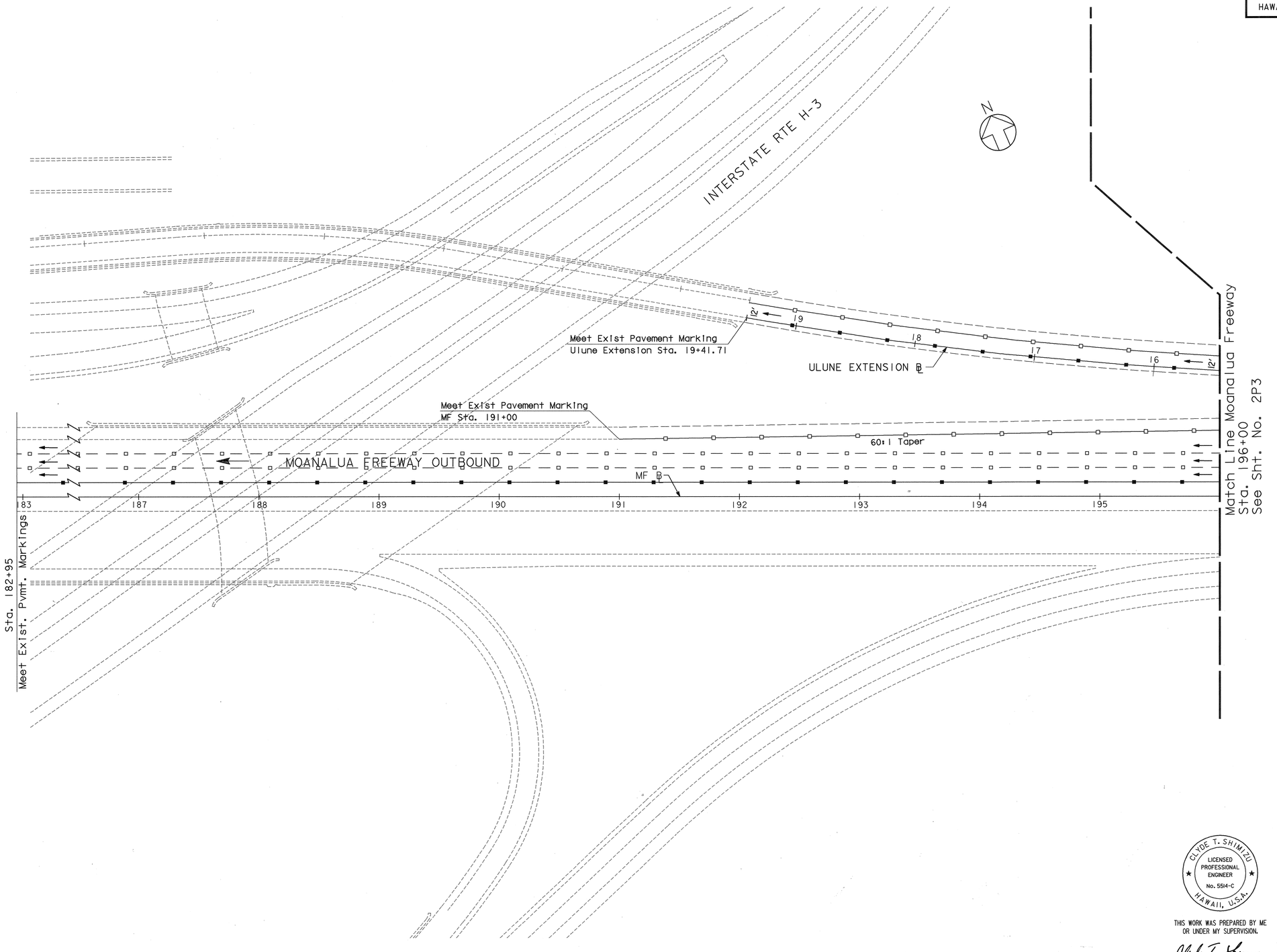
# MOANALUA FREEWAY
# SIGNING & PAVEMENT MARKING NOTES & LEGEND

H-3 FINISH (UNIT II)
FAIP NO. I-H3-1(75), UNIT II
LEEWARD SECTION

SCALE: NONE DATE: JANUARY 1997

SHEET NO. 2P1 OF 4 SHEETS

| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
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| HAWAII | HAW. | I-H3-1(75), UNIT II | 1997 | 535 | 1102 |




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DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

# MOANALUA FREEWAY
# SIGNING & PAVEMENT MARKING
# RAMP N & ULUNE EXTENSION

H-3 FINISH (UNIT ID)
FAIP NO. I-H3-1(75), UNIT II
LEEWARD SECTION

SCALE: 1"=40' DATE: JANUARY 1997

SHEET NO. 2P2 OF 4 SHEETS

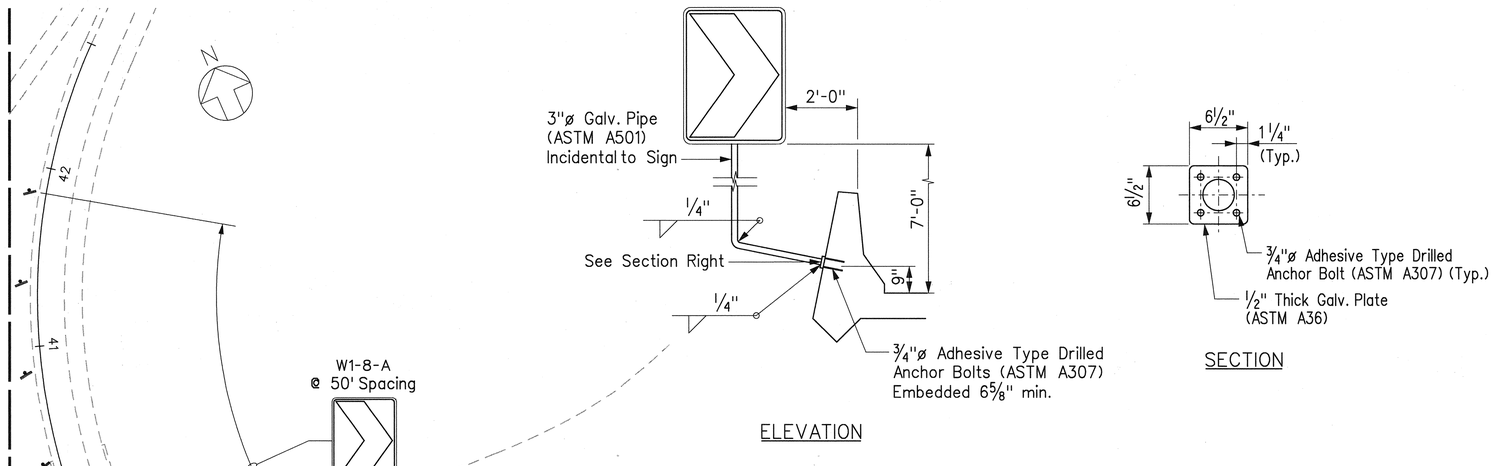
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ORIGINAL PLAN
NOTE BOOK
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SURVEY PLOTTED BY ____ DATE
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| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
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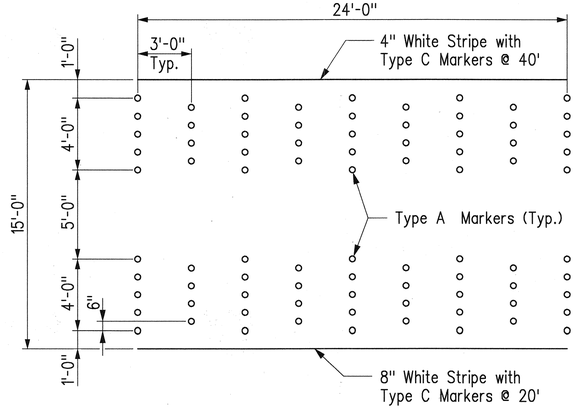


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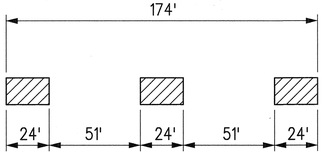



SECTION

## PARAPET MOUNTING DETAIL
Not to Scale




## RUMBLE STRIP DETAIL
Not to Scale




## RUMBLE STRIP LAYOUT
Not to Scale

| Date | Revision |
|---|---|
| 12/5/97 | Added Rumble Strips |
| 11/17/97 | Added Warning Signs & Mounting Detail |

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

# MOANALUA FREEWAY
# SIGNING & PAVEMENT MARKING
# RAMP N & ULUNE EXTENSION

H-3 FINISH (UNIT II)
FAIP NO. I-H3-1(75), UNIT II
LEEWARD SECTION

SCALE: 1"=40' DATE: JANUARY 1997

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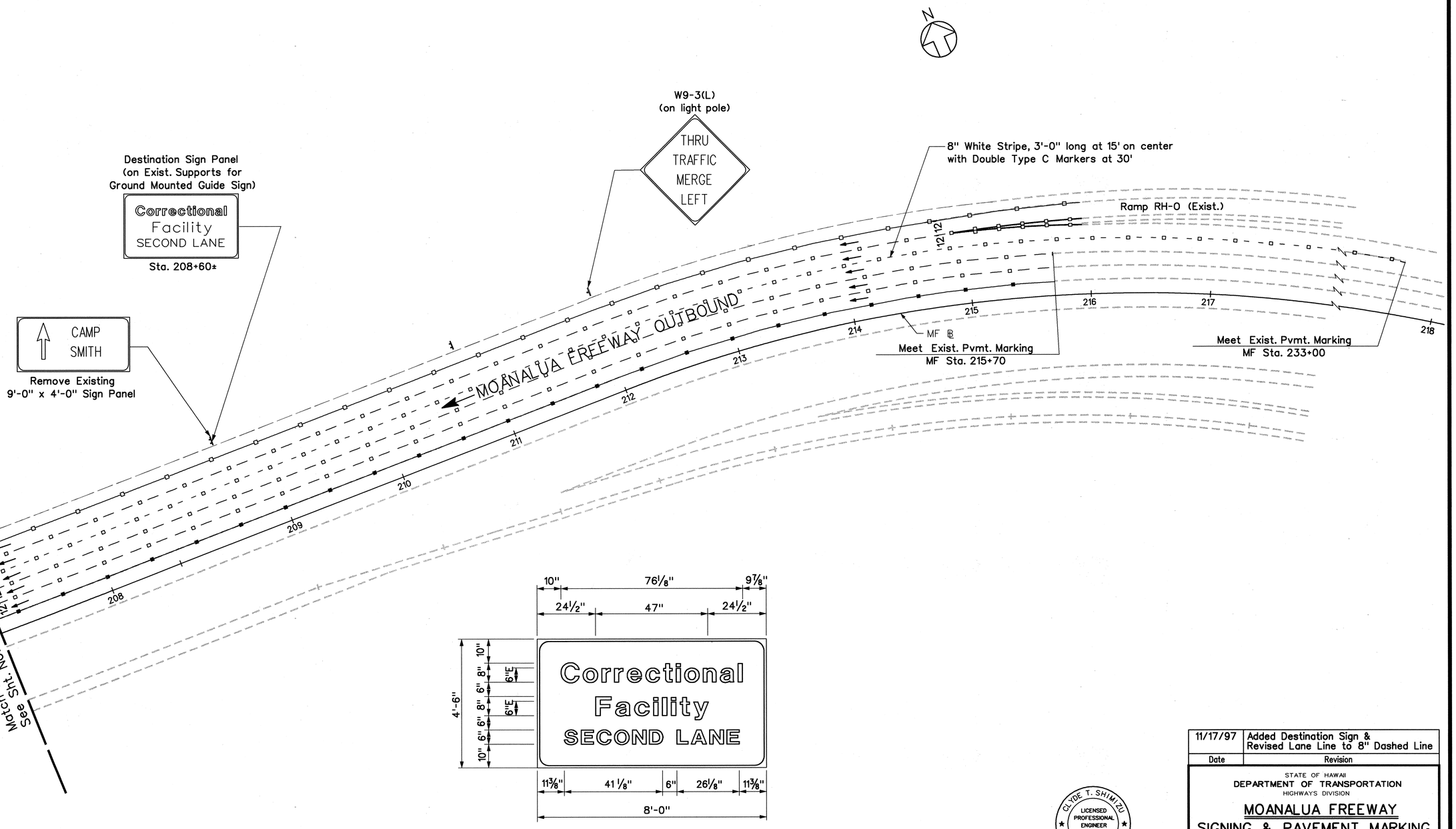
SHEET NO. 2P3 OF 4 SHEETS

C.O. 536

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ORIGINAL PLAN
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DATE

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| Date | Revision |
|---|---|
| 11/17/97 | Added Destination Sign & Revised Lane Line to 8" Dashed Line |

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

# MOANALUA FREEWAY
# SIGNING & PAVEMENT MARKING
# RAMP N & ULUNE EXTENSION

H-3 FINISH (UNIT II)
FAIP NO. I-H3-1(75), UNIT II
LEEWARD SECTION

SCALE: 1"=40' DATE: JANUARY 1997

SHEET NO. 2P4 OF 4 SHEETS

C.O. 537

| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|
| HAWAII | HAW. | I-H3-1(75), UNIT II | 1997 | 538 | 1102 |

## LEGEND

- 4" white edge stripe with type C markers at 40'
- 4" yellow stripe with type H markers at 40'
- 8" white stripe with type C markers at 20'
- 4 type A markers and type C markers at 40'
- 4" white guide lines 2'-0" long at 4'
- 10' 4" white stripe, 2'-0" long, with type C markers at 40'
- TYPE I BARRICADES WITH STEADY BURN AMBER LAMPS.
- CONES OR DELINEATORS
- TRAFFIC DIRECTION
- FLASHING ARROW SIGN
- FLASHING YELLOW BEACON
- FLASHING ARROW BOARD
- WORK AREA
- PORTABLE CONCRETE GUARDRAIL
- NEW OR RELOCATED SIGN
- EXISTING SIGN
- PORTABLE SIGN
- CMS CHANGEABLE MESSAGE SIGN

## GENERAL NOTES FOR TRAFFIC CONTROL PLAN

1. The Contractor shall make minor adjustments at intersections, driveways, bridges, structures, etc., to fit field conditions.
2. Cones or delineators shall be extended to a point where they are visible to approaching traffic.
3. Traffic control devices shall be installed such that the sign or device farthest from the work area shall be placed first. the others shall then be placed progressively toward the work area.
4. Regulatory and warning signs within the construction zone that are in conflict with the Traffic Control Plans shall be removed or covered. All signs shall be restored upon completion of work.
5. Flaggers and/or police officers shall be in sight of each other or in direct communication at all times.
6. When required by the District Engineer, the Contractor shall install a flashing arrow signal as shown on the Traffic Control Plans.
7. Sign spacings (L), taper length (T) and spacings of cones or delineators shall be as shown in Table I of Section 645 in the Specifications, unless otherwise noted on the Traffic Control Plans.
8. All traffic lanes shall be minimum of 11 feet wide.
9. All construction warning signs shall be promptly removed or covered whenever the message is not applicable or not in use.
10. The backs of all signs used for traffic control shall be appropriately covered to preclude the display of inapplicable sign messages (i.e., when signs have messages on both faces).
11. At the end of each day's work or as soon as the work is completed, the permittee shall remove all traffic control devices no longer needed to permit free and safe passage of public traffic. Removal shall be in the reverse order of installation.
12. Replace permanent pavement markings and traffic signs upon completion of each phase of work.
13. All lane closures and other traffic pattern changes (detours) not shown on the plans shall be submitted to the Engineer for approval in accordance with Specifications Section 645 - Traffic Control. For restrictions on lane closures, detours, construction work during peak hours, and other requirements regarding maintaining vehicular and pedestrian traffic, See Section 645 - Traffic control.
14. All existing ramp lanes shall be open to traffic durning non-working hours.
15. Portable concrete guardrail panels not in use during the construction work shall not be stockpiled or otherwise stored within the highway right- of-way except at locations approved by the Engineer.
16. The locations of pavement markings and signs, delineators and portable concrete guardrail panels used in the Construction Phasing shall be as shown on the plans and/or as determined in the field by the Engineer.
17. Damage to signs, temporary pavment markers, delineators and portable concrete guardrail panels caused by the public shall be repaired or replaced by the Contractor as directed by the Engineer and paid for under Section 645. Damage caused by the Contractor's negligence shall be repaired or replaced at the Contractor's expense.

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ORIGINAL PLAN
NOTE BOOK
SURVEY PLOTTED BY ____ DATE ____
DRAWN BY ____
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No. ____

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

# MOANALUA FREEWAY
# TRAFFIC CONTROL PLAN
# NOTES & LEGEND

H-3 FINISH (UNIT ID
FAIP NO. I-H3-1(75), UNIT II
LEEWARD SECTION

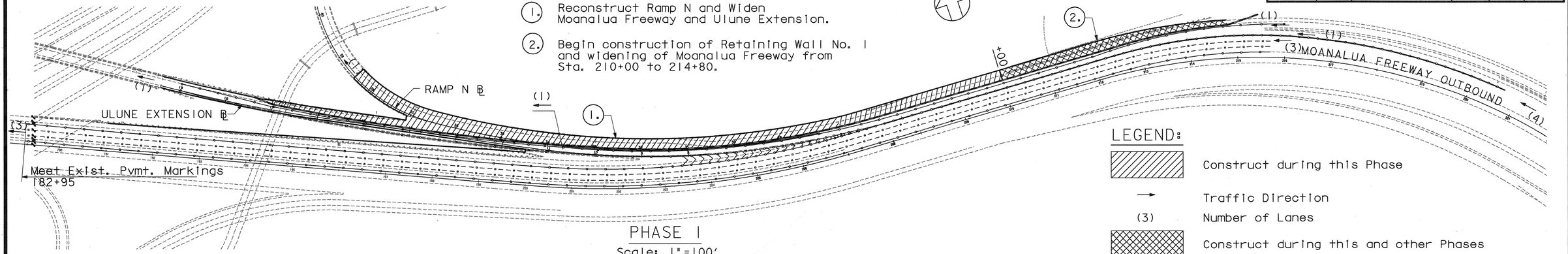
SCALE: 1"=40' DATE: JANUARY 1997

SHEET NO. 2FI OF 13 SHEETS

| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|
| HAWAII | HAW. | I-H3-1(75), UNIT II | 1997 | 539 | 1102 |

## CONSTRUCTION PHASE 1

1. Reconstruct Ramp N and Widen Moanalua Freeway and Ulune Extension.
2. Begin construction of Retaining Wall No. 1 and widening of Moanalua Freeway from Sta. 210+00 to 214+80.




PHASE 1

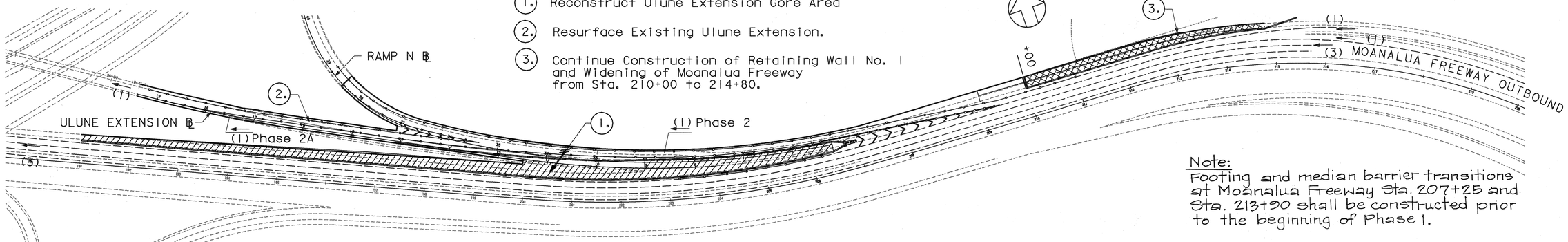
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LEGEND:

- Construct during this Phase
- → Traffic Direction
- (3) Number of Lanes
- Construct during this and other Phases

## CONSTRUCTION PHASE 2

1. Reconstruct Ulune Extension Gore Area
2. Resurface Existing Ulune Extension.
3. Continue Construction of Retaining Wall No. 1 and Widening of Moanalua Freeway from Sta. 210+00 to 214+80.



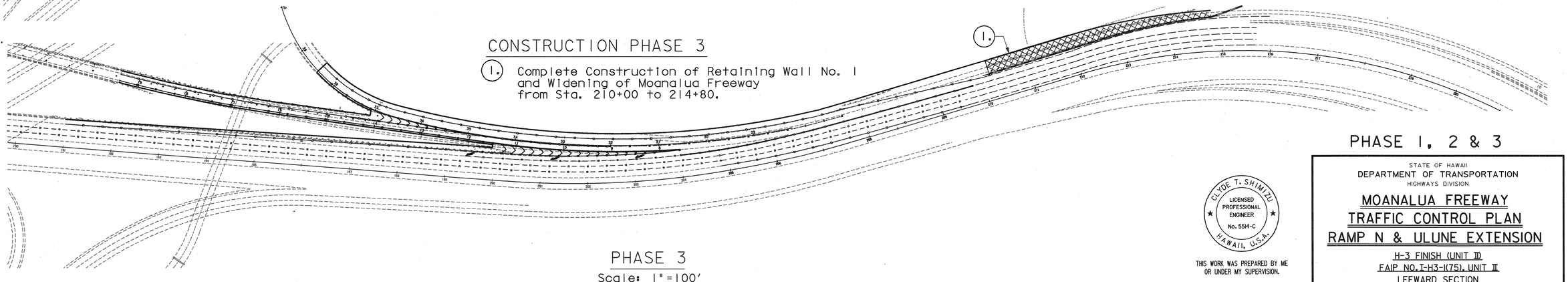

PHASE 2

Scale: 1"=100'

Note:
Footing and median barrier transitions at Moanalua Freeway Sta. 207+25 and Sta. 213+20 shall be constructed prior to the beginning of Phase 1.

## CONSTRUCTION PHASE 3

1. Complete Construction of Retaining Wall No. 1 and Widening of Moanalua Freeway from Sta. 210+00 to 214+80.




PHASE 3

Scale: 1"=100'

PHASE 1, 2 & 3

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

# MOANALUA FREEWAY TRAFFIC CONTROL PLAN RAMP N & ULUNE EXTENSION

H-3 FINISH (UNIT II)
FAIP NO. I-H3-1(75), UNIT II
LEEWARD SECTION

SCALE: 1"=100' DATE: JANUARY 1997

SHEET NO. 2F2 OF 13 SHEETS

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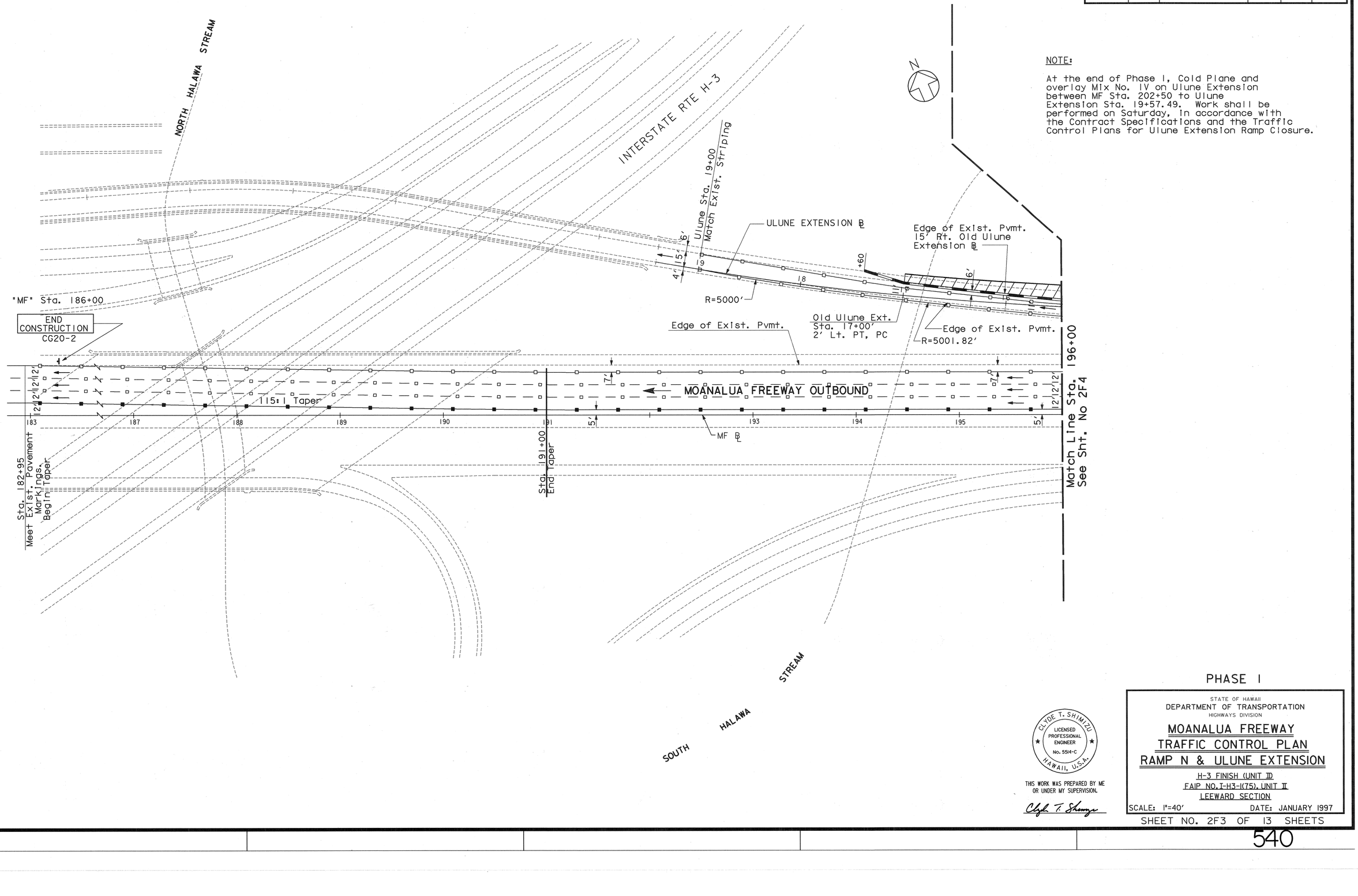
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| HAWAII | HAW. | I-H3-1(75), UNIT II | 1997 | 540 | 1102 |

NOTE:

At the end of Phase I, Cold Plane and overlay Mix No. IV on Ulune Extension between MF Sta. 202+50 to Ulune Extension Sta. 19+57.49. Work shall be performed on Saturday, in accordance with the Contract Specifications and the Traffic Control Plans for Ulune Extension Ramp Closure.




PHASE I

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

# MOANALUA FREEWAY
# TRAFFIC CONTROL PLAN
# RAMP N & ULUNE EXTENSION

H-3 FINISH (UNIT II)
FAIP NO. I-H3-1(75), UNIT II
LEEWARD SECTION

SCALE: 1"=40' DATE: JANUARY 1997

SHEET NO. 2F3 OF 13 SHEETS

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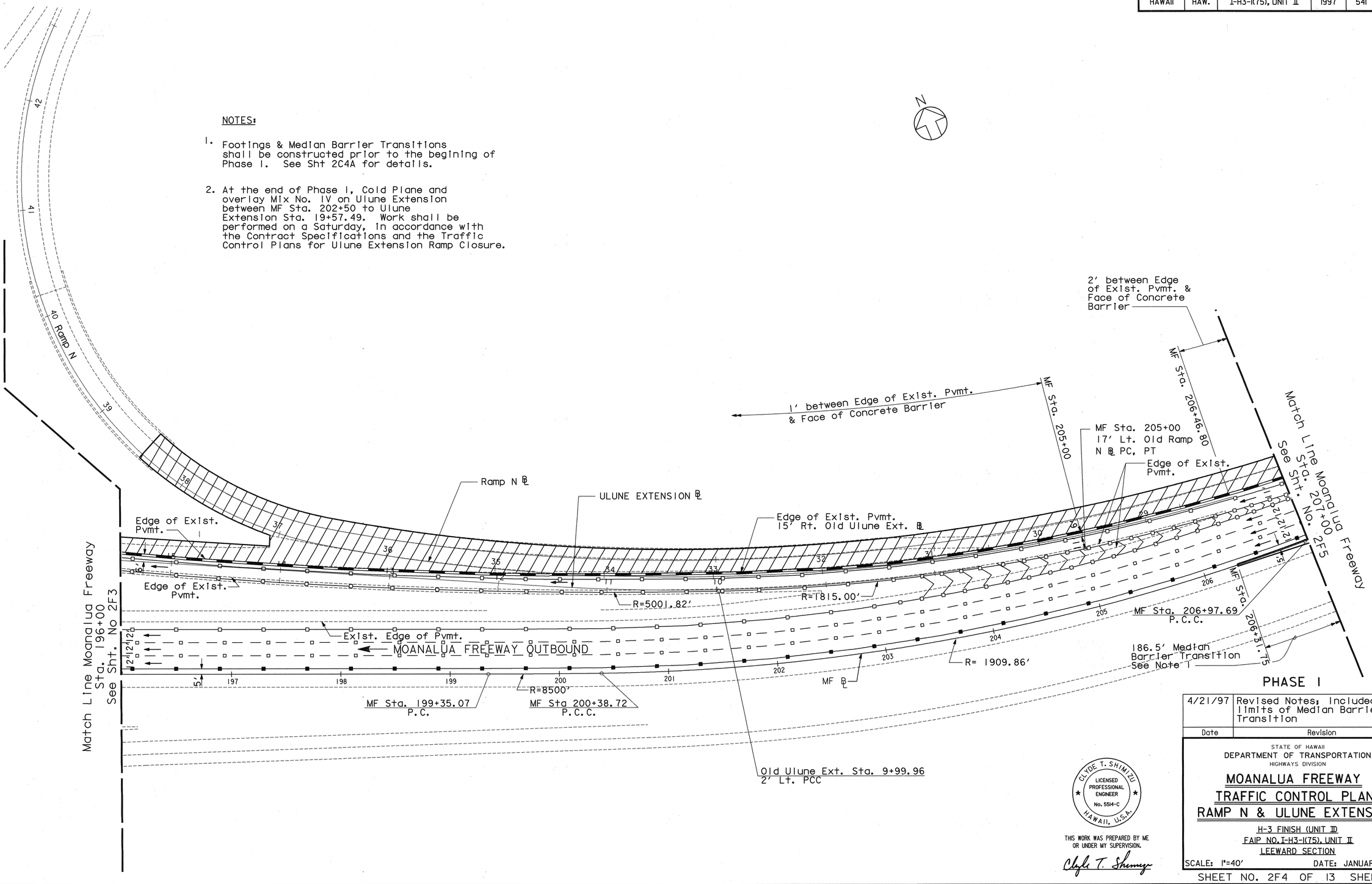
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NOTES:

1. Footings & Median Barrier Transitions shall be constructed prior to the begining of Phase 1. See Sht 2C4A for details.

2. At the end of Phase 1, Cold Plane and overlay Mix No. IV on Ulune Extension between MF Sta. 202+50 to Ulune Extension Sta. 19+57.49. Work shall be performed on a Saturday, in accordance with the Contract Specifications and the Traffic Control Plans for Ulune Extension Ramp Closure.




PHASE 1

| Date | Revision |
|---|---|
| 4/21/97 | Revised Notes; Included limits of Median Barrier Transition |

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

# MOANALUA FREEWAY
# TRAFFIC CONTROL PLAN
# RAMP N & ULUNE EXTENSION

H-3 FINISH (UNIT II)
FAIP NO. I-H3-1(75), UNIT II
LEEWARD SECTION

SCALE: 1"=40' DATE: JANUARY 1997

SHEET NO. 2F4 OF 13 SHEETS

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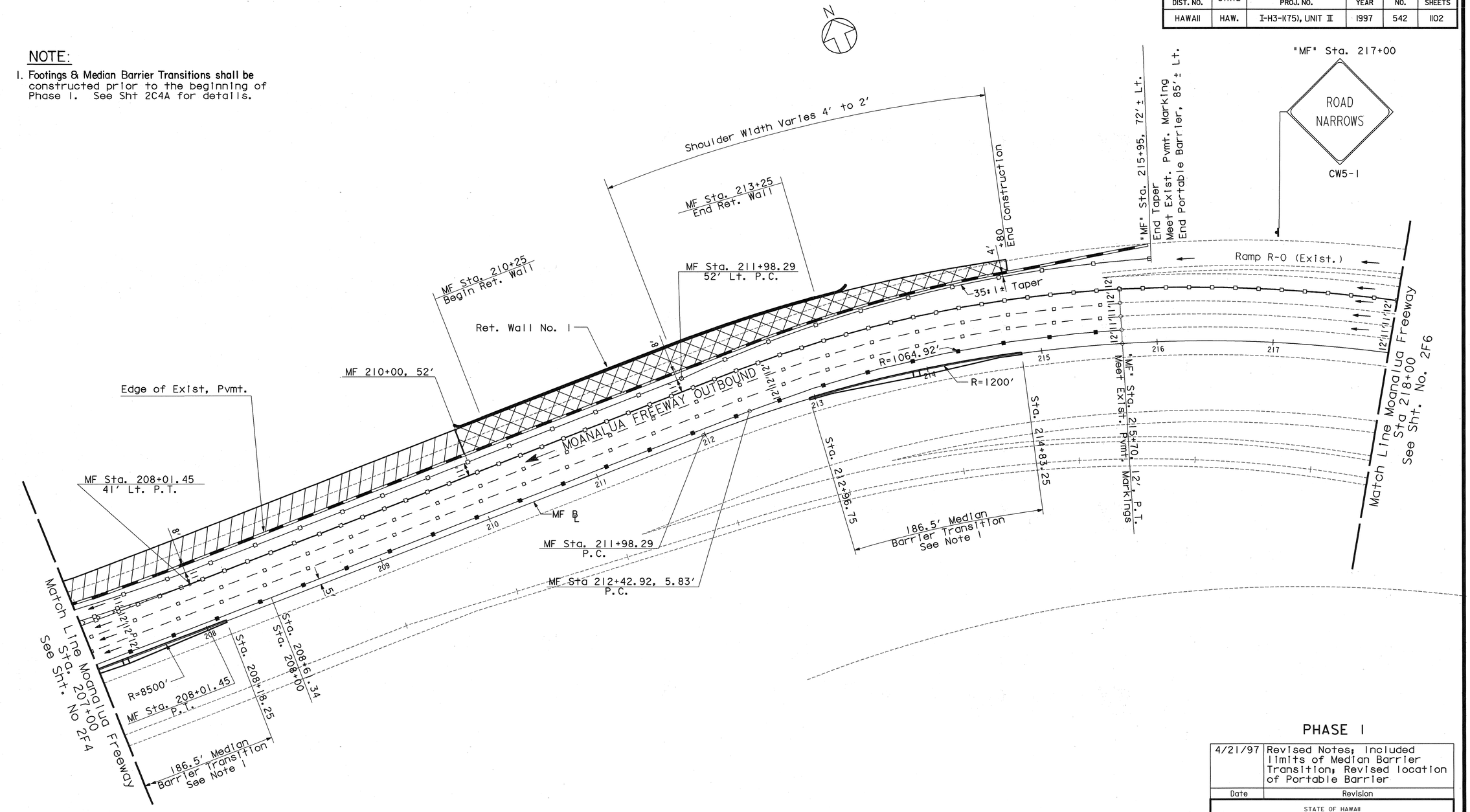
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| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
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| HAWAII | HAW. | I-H3-1(75), UNIT II | 1997 | 542 | 1102 |

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## NOTE:

1. Footings & Median Barrier Transitions shall be constructed prior to the beginning of Phase 1. See Sht 2C4A for details.




PHASE 1

| Date | Revision |
|---|---|
| 4/21/97 | Revised Notes; Included limits of Median Barrier Transition; Revised location of Portable Barrier |

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

# MOANALUA FREEWAY
# TRAFFIC CONTROL PLAN
# RAMP N & ULUNE EXTENSION

H-3 FINISH (UNIT ID)
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SCALE: 1"=40' DATE: JANUARY 1997

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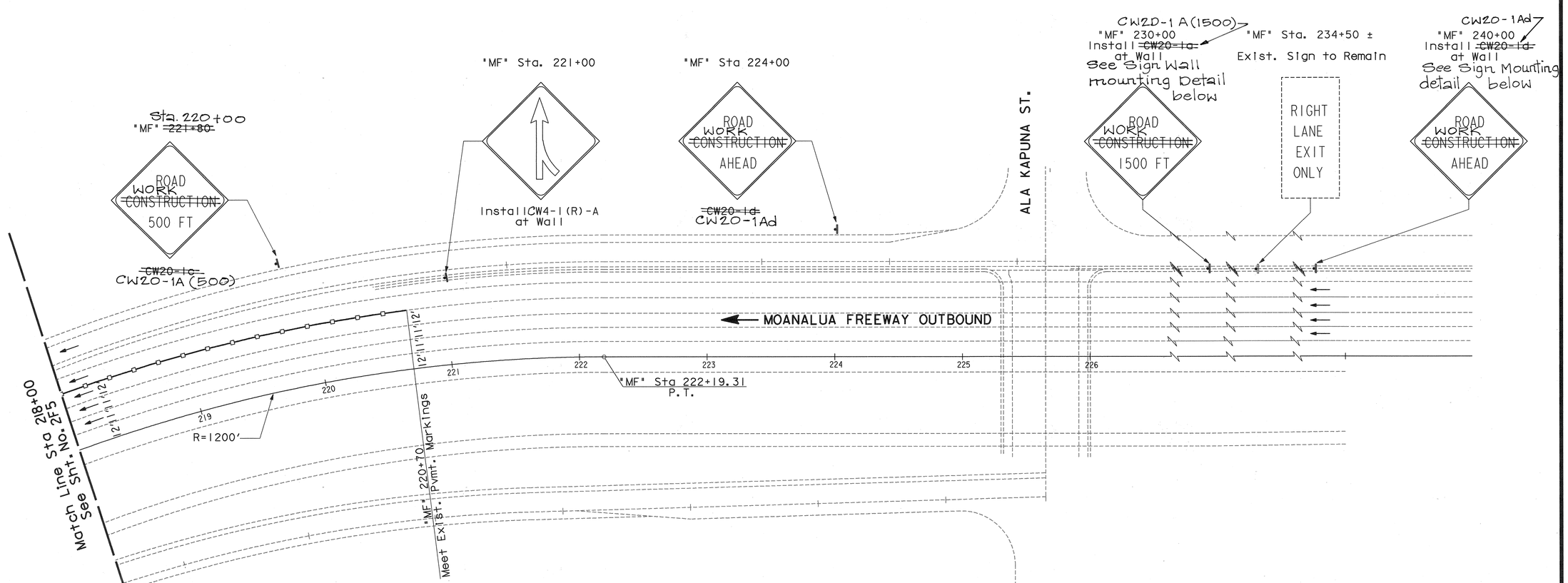
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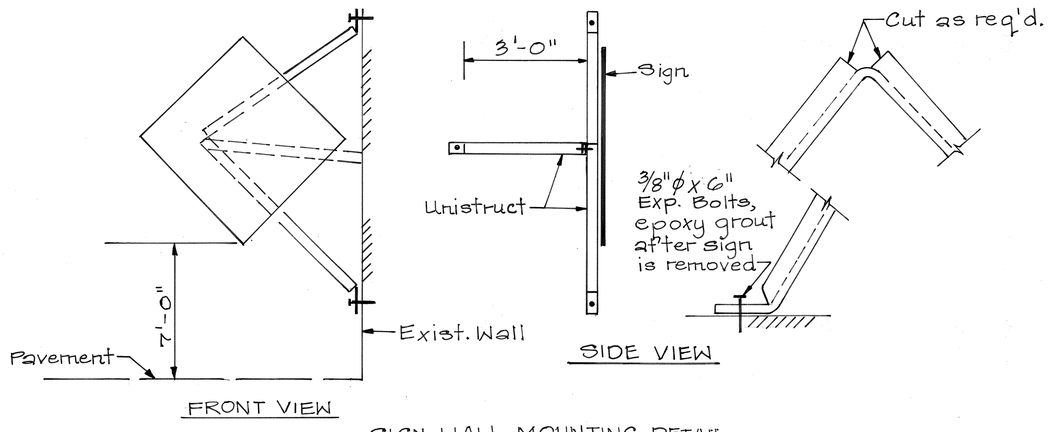
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SIGN WALL MOUNTING DETAIL
N.T.S.

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PHASE I

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HIGHWAYS DIVISION

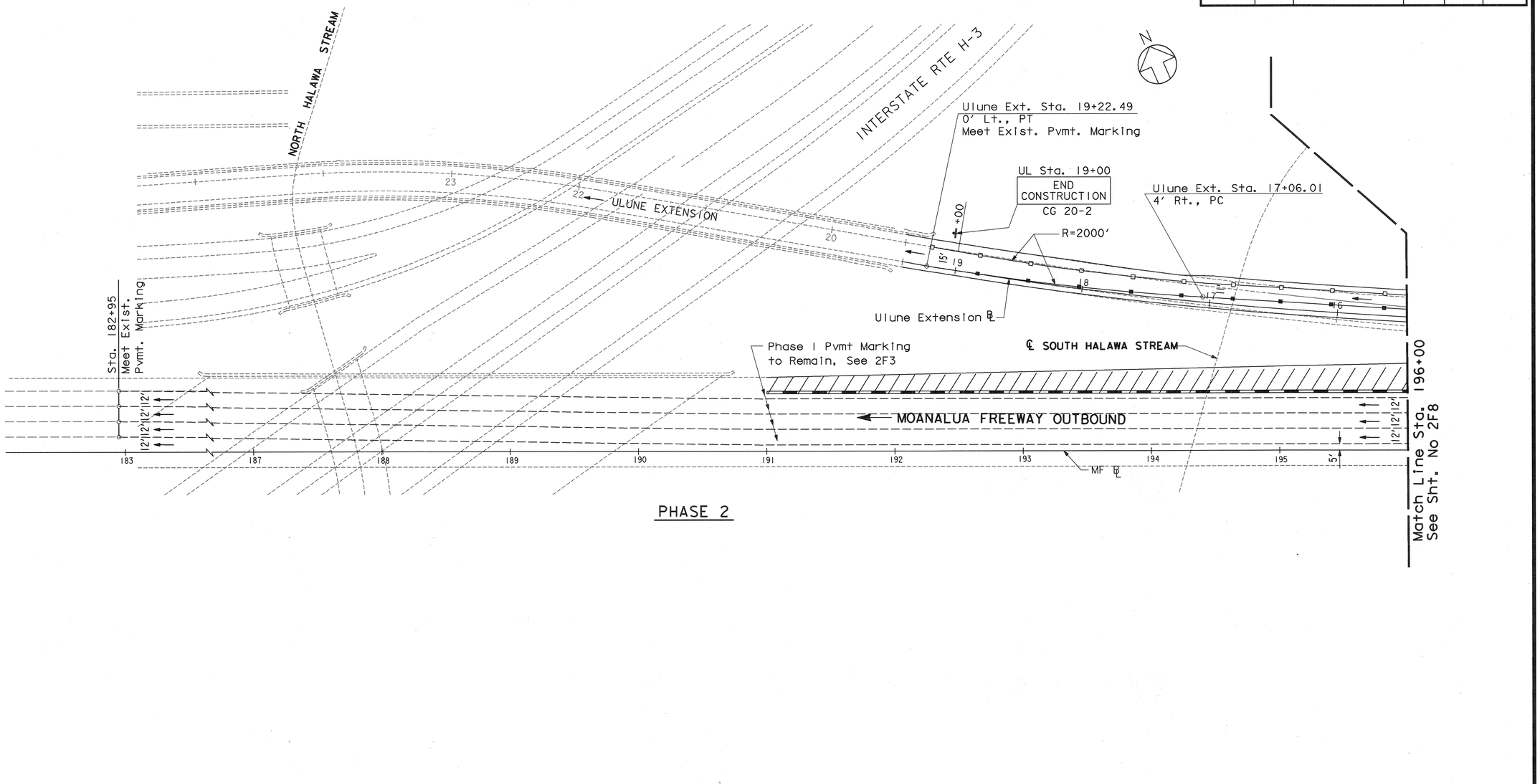
# MOANALUA FREEWAY
# TRAFFIC CONTROL PLAN
# RAMP N & ULUNE EXTENSION

H-3 FINISH (UNIT ID)
FAIP NO. I-H3-1(75), UNIT II
LEEWARD SECTION

SCALE: 1"=40' DATE: JANUARY 1997

SHEET NO. 2F6 OF 13 SHEETS

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PHASE 2

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ORIGINAL PLAN
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DRAWN BY _____
TRACED BY _____
NOTE BOOK DESIGNED BY _____
QUANTITIES BY _____
No. _____ CHECKED BY _____

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LICENSED PROFESSIONAL ENGINEER
No. 5514-C
HAWAII, U.S.A.

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Clyde T. Shimizu

PHASE 2

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

# MOANALUA FREEWAY
# TRAFFIC CONTROL PLAN
# RAMP N & ULUNE EXTENSION

H-3 FINISH (UNIT II)
FAIP NO. I-H3-1(75), UNIT II
LEEWARD SECTION

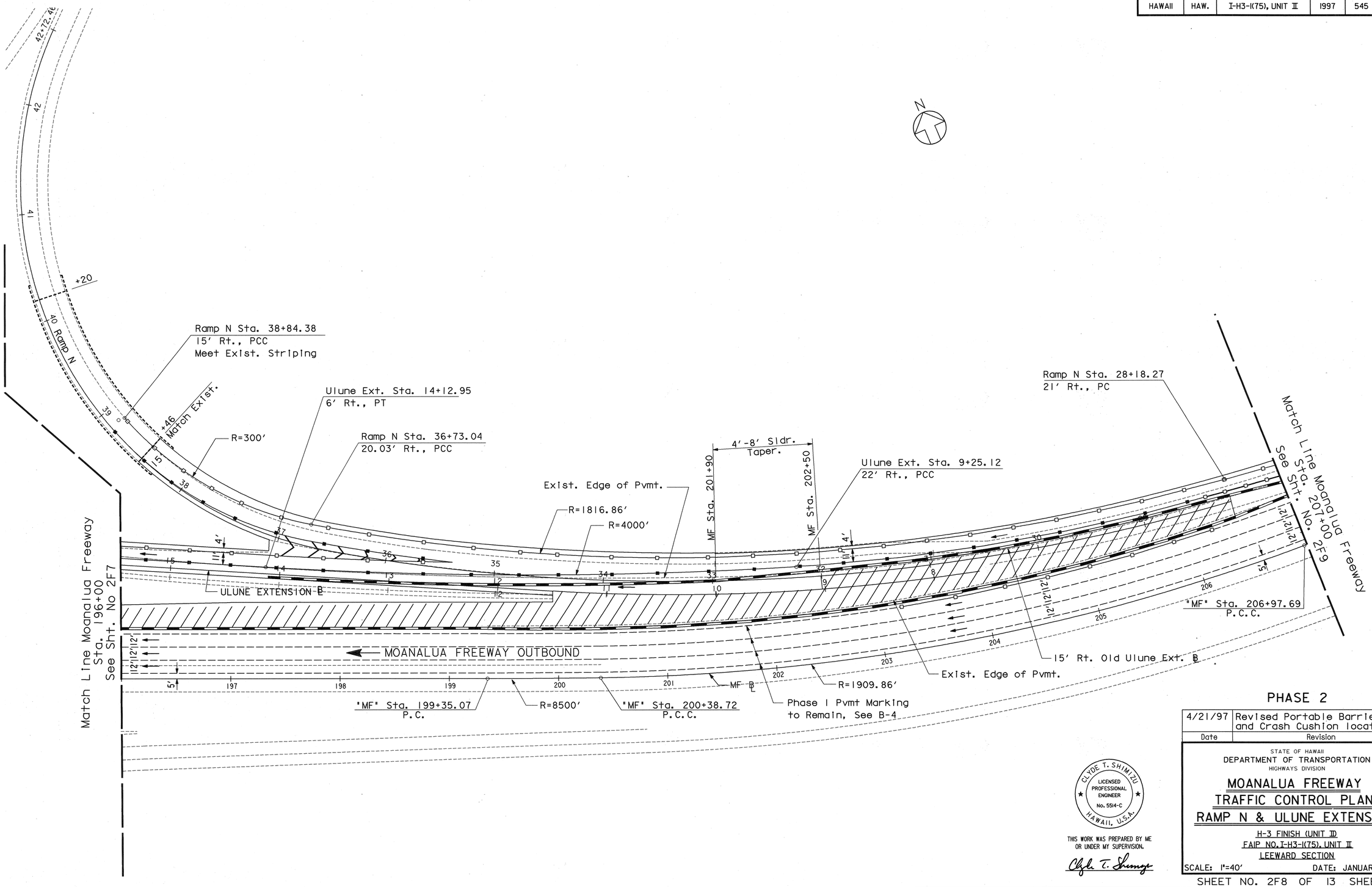
SCALE: 1"=40' DATE: JANUARY 1997

SHEET NO. 2F7 OF 13 SHEETS

544

| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|
| HAWAII | HAW. | I-H3-1(75), UNIT II | 1997 | 545 | 1102 |

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

PHASE 2

| Date | Revision |
|---|---|
| 4/21/97 | Revised Portable Barrier and Crash Cushion locations |

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

# MOANALUA FREEWAY
# TRAFFIC CONTROL PLAN
# RAMP N & ULUNE EXTENSION

H-3 FINISH (UNIT II)
FAIP NO. I-H3-1(75), UNIT II
LEEWARD SECTION

SCALE: 1"=40' DATE: JANUARY 1997

CLYDE T. SHIMIZU
LICENSED PROFESSIONAL ENGINEER
No. 5514-C
HAWAII, U.S.A.

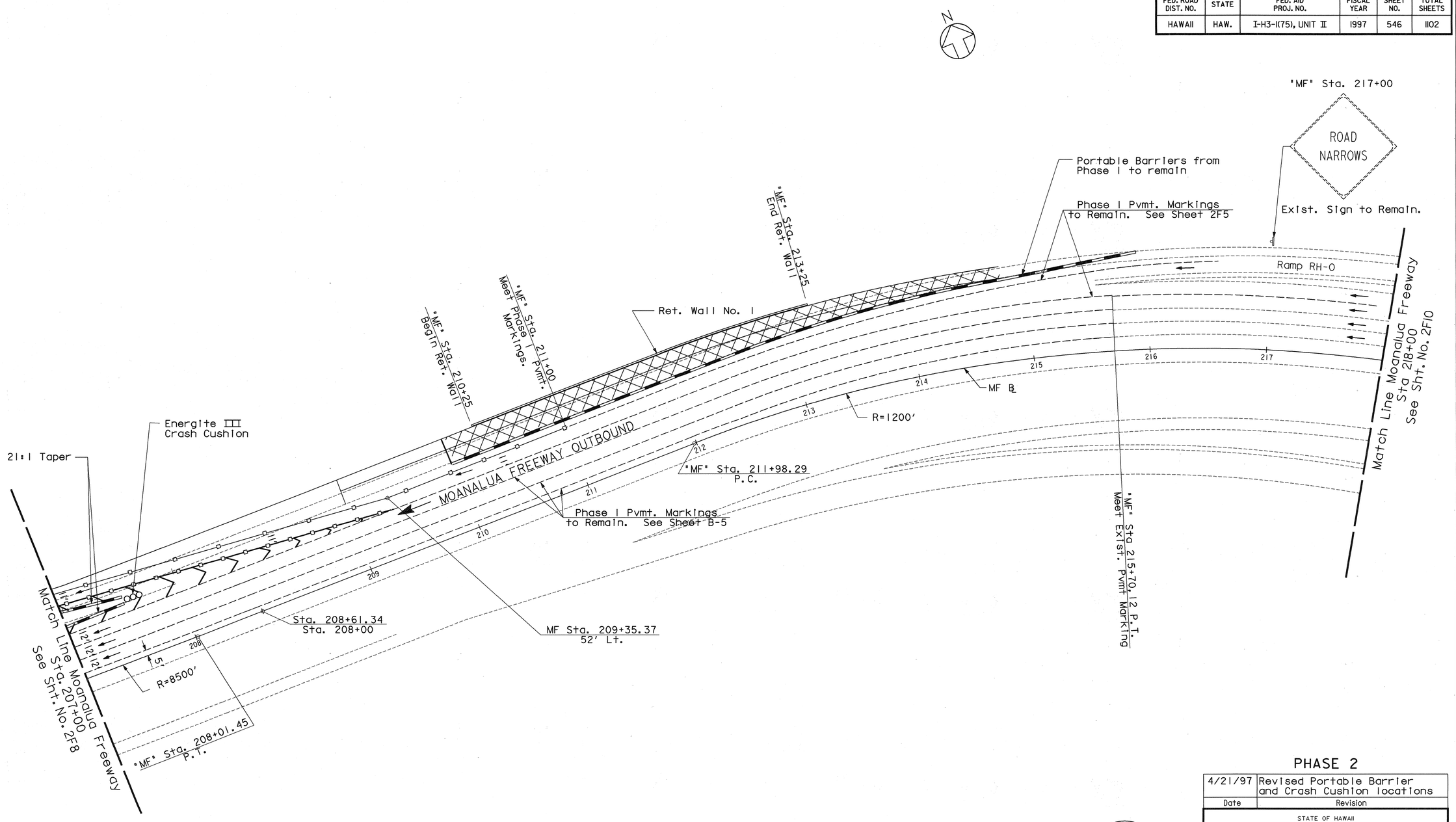
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SHEET NO. 2F8 OF 13 SHEETS

ADD. 545

| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|
| HAWAII | HAW. | I-H3-1(75), UNIT II | 1997 | 546 | 1102 |




PHASE 2

| Date | Revision |
|---|---|
| 4/21/97 | Revised Portable Barrier and Crash Cushion locations |

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

# MOANALUA FREEWAY
# TRAFFIC CONTROL PLAN
# RAMP N & ULUNE EXTENSION

H-3 FINISH (UNIT ID)
FAIP NO. I-H3-1(75), UNIT II
LEEWARD SECTION

SCALE: 1"=40' DATE: JANUARY 1997

SHEET NO. 2F9 OF 13 SHEETS

CLYDE T. SHIMIZU
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No. 5514-C
HAWAII, U.S.A.

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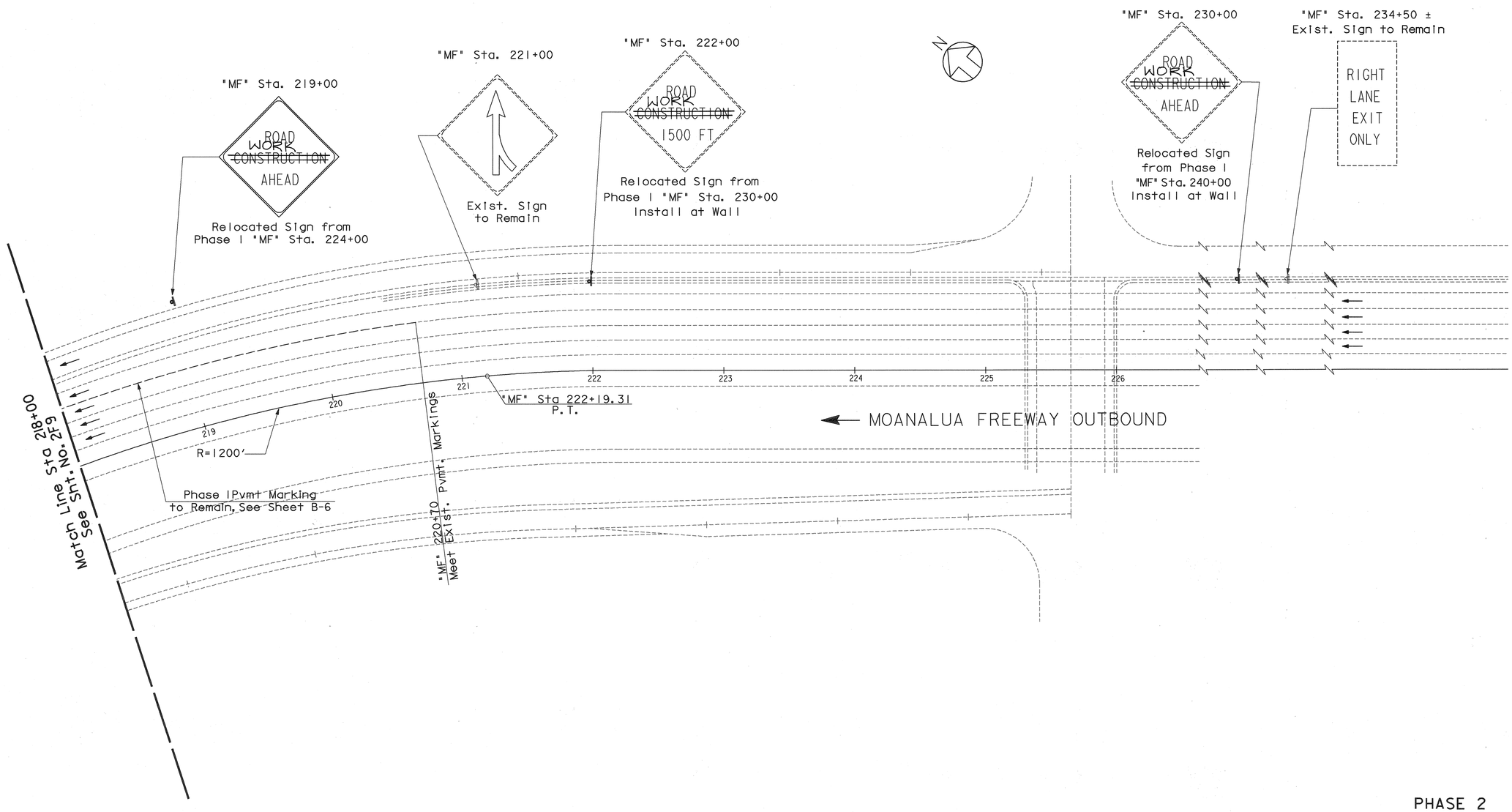
Clyde T. Shimizu

ADD. 546

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

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| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
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| HAWAII | HAW. | I-H3-1(75), UNIT II | 1997 | 547 | 1102 |




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| ORIGINAL PLAN | SURVEY PLOTTED BY | DATE |
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HAWAII, U.S.A.

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

# MOANALUA FREEWAY
# TRAFFIC CONTROL PLAN
# RAMP N & ULUNE EXTENSION

H-3 FINISH (UNIT ID)
FAIP NO. I-H3-1(75), UNIT II
LEEWARD SECTION

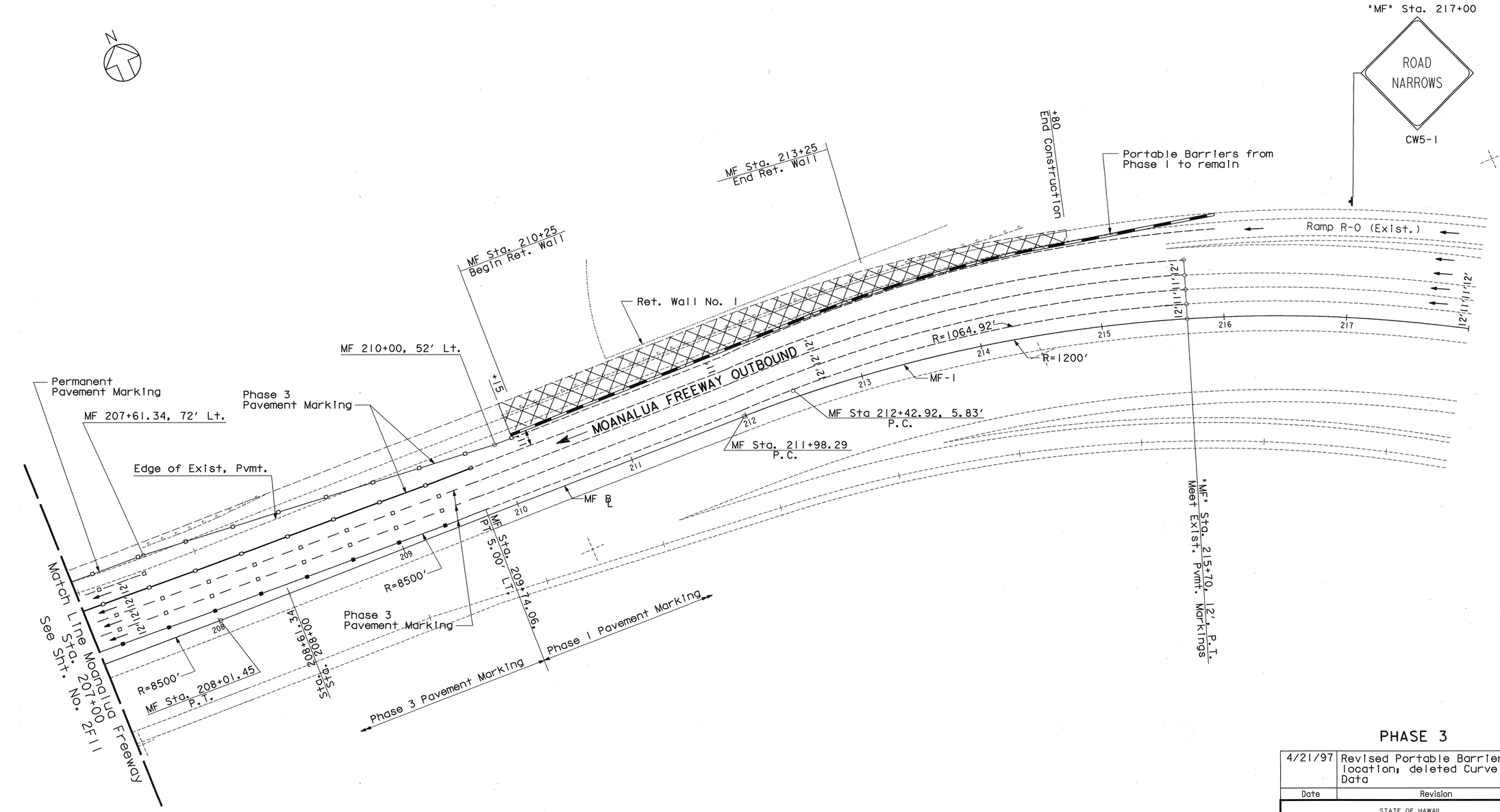
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| HAWAII | HAW. | I-H3-1(75), UNIT II | 1997 | 548 | 1102 |

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| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
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| HAWAII | HAW. | I-H3-1(75), UNIT II | 1997 | 549 | 1102 |




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

PHASE 3

| Date | Revision |
|---|---|
| 4/21/97 | Revised Portable Barrier location, deleted Curve Data |

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

# MOANALUA FREEWAY
# TRAFFIC CONTROL PLAN
# RAMP N & ULUNE EXTENSION

H-3 FINISH (UNIT ID
FAIP NO. I-H3-1(75), UNIT II
LEEWARD SECTION

SCALE: 1"=40' DATE: JANUARY 1997

SHEET NO. 2F12 OF 13 SHEETS

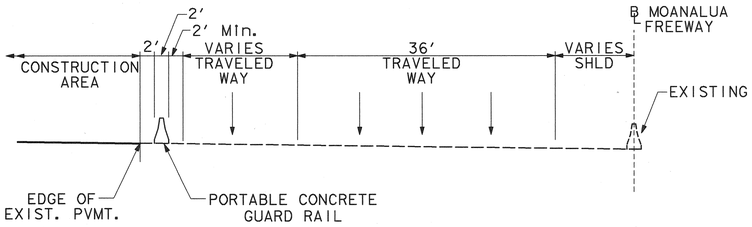
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LICENSED PROFESSIONAL ENGINEER
No. 5514-C
HAWAII, U.S.A.

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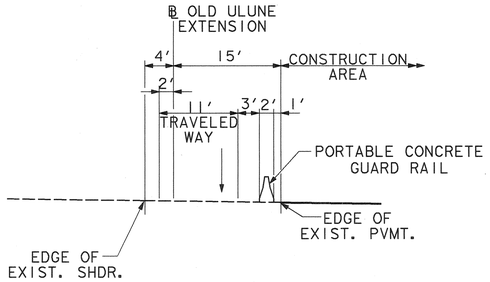
Clyde T. Shimizu

ADD. 549

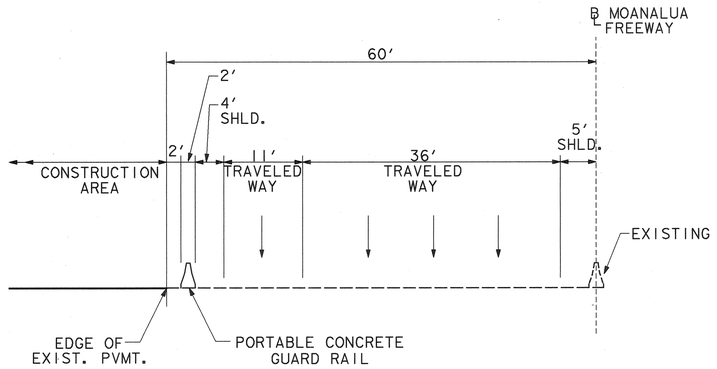
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|---|---|---|---|---|---|
| HAWAII | HAW. | I-H3-1(75), UNIT II | 1997 | 550 | 1102 |



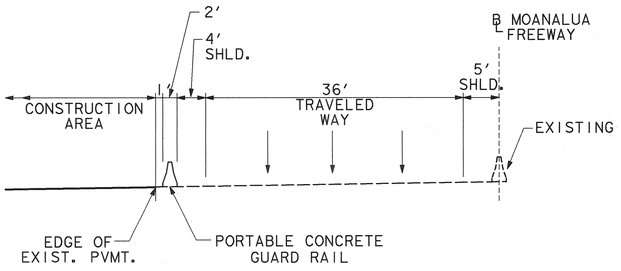

SECTION (PHASE 1)
MF STA. 211+98.29 TO 215+70



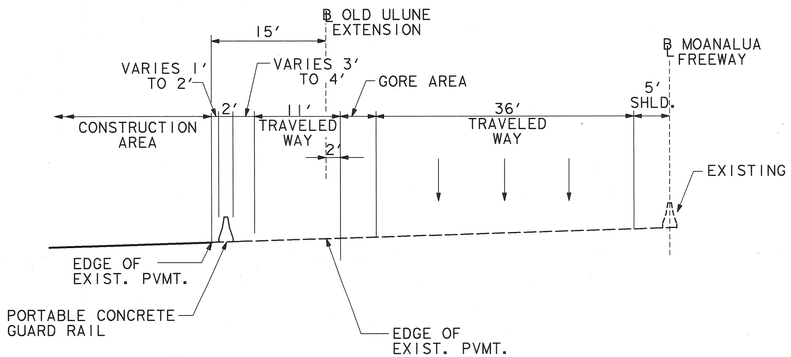

SECTION (PHASE 1)
UL STA. 6+60 TO 17+00




SECTION (PHASE 1)
MF STA. 208+01.45 TO 211+98.29




SECTION (PHASE 2)
MF STA. 191+00 TO 206+50




SECTION (PHASE 1)
MF STA. 205+00 TO 208+01.45

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

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CLYDE T. SHIMIZU
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No. 5514-C
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Clyde T. Shimizu

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DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

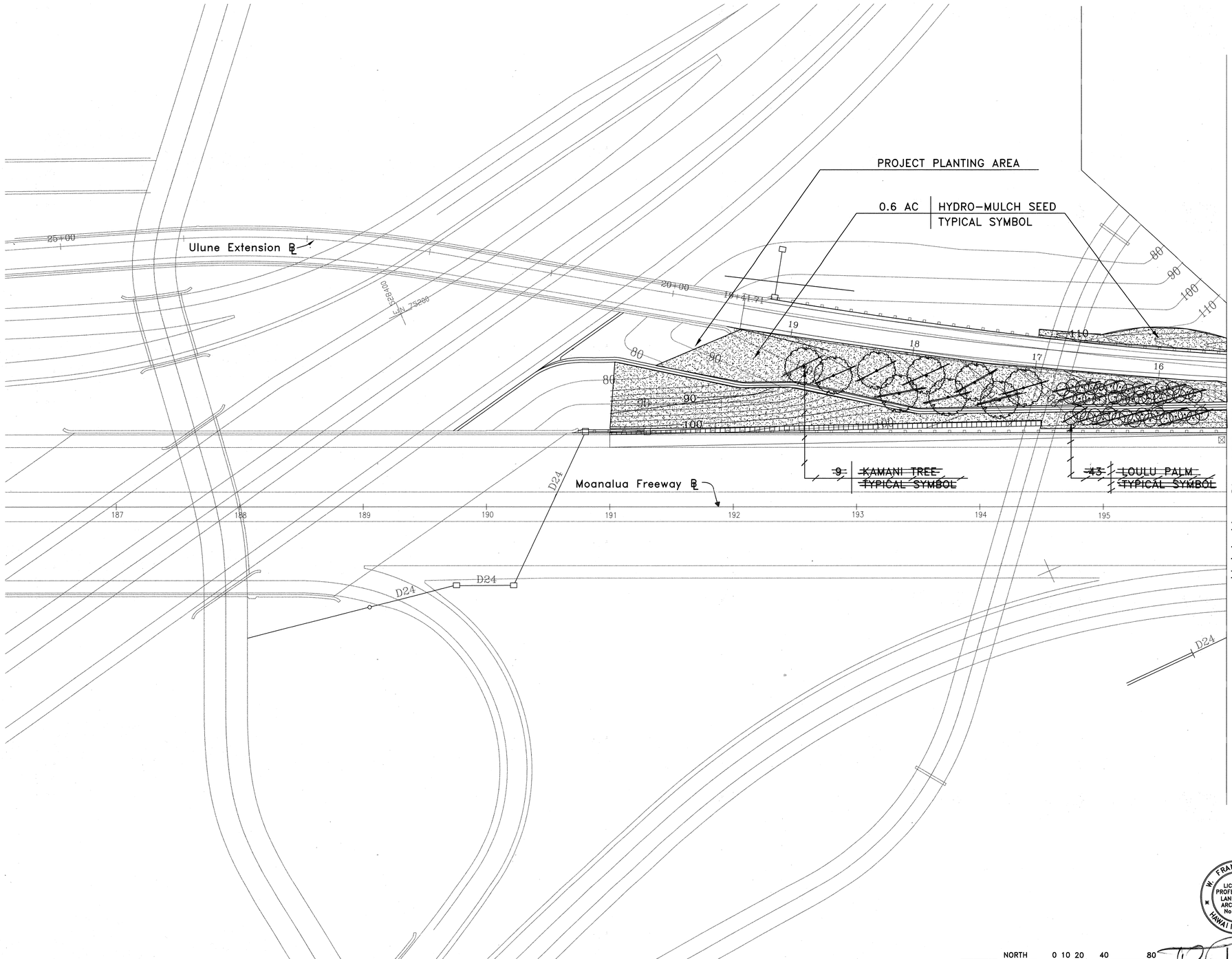
# MOANALUA FREEWAY
# TRAFFIC CONTROL PLAN
# RAMP N & ULUNE EXTENSION

H-3 FINISH (UNIT ID
FAIP NO. I-H3-1(75), UNIT II
LEEWARD SECTION

SCALE: NONE DATE: JANUARY 1997

SHEET NO. 2F13 OF 13 SHEETS

| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|
| HAWAII | HAW. | I-H3-1(75), UNIT II | 1997 | 551 | 1102 |




NOTES:

1. New planting shall be limited to project planting area.
2. Contractor shall install an above grade irrigation system to all planting areas. Irrigation system shall remain on-site in a working condition beyond the nine (9) month establishment period.
3. Tree and Palm planting locations to be adjusted for existing trees that may be retained. The Contractor shall notify the Engineer of new Tree and Palm locations prior to planting.

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

NORTH

0 10 20 40 80 FEET

PBR HAWAII

W. FRANK BRANDT
LICENSED PROFESSIONAL LANDSCAPE ARCHITECT
No. 2808
HAWAII, U.S.A.

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DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

# MOANALUA FREEWAY

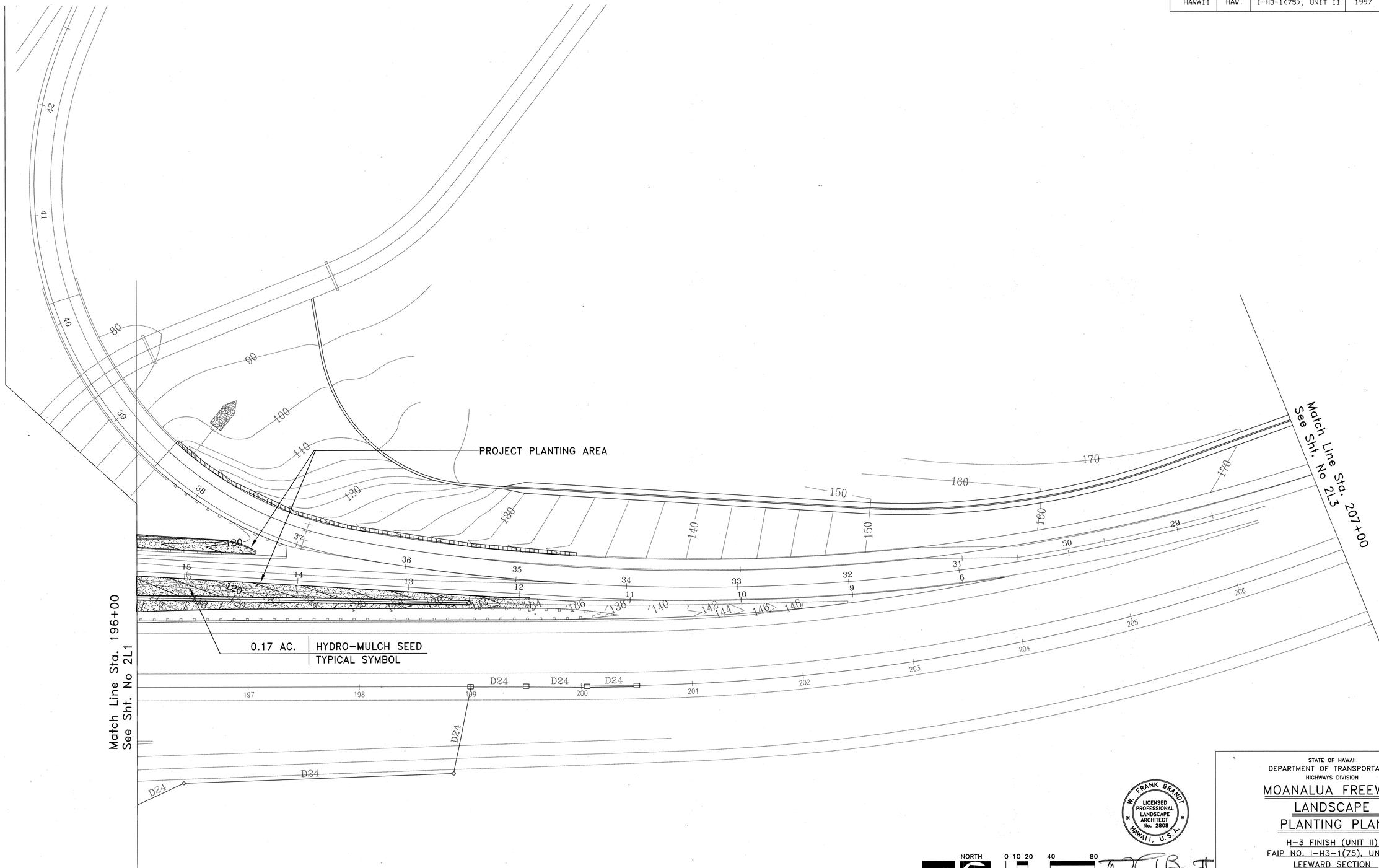
## LANDSCAPE PLANTING PLAN

H-3 FINISH (UNIT II)
FAIP NO. I-H3-1(75), UNIT II
LEEWARD SECTION

SCALE: 1"=40' DATE: JANUARY 1997

SHEET NO. 2L1 OF 3 SHEETS

| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|
| HAWAII | HAW. | I-H3-1(75), UNIT II | 1997 | 552 | 1102 |




ORIGINAL PLAN
NOTE BOOK
No.

SURVEY PLOTTED BY _____ DATE
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NORTH

0 10 20 40 80
FEET

W. FRANK BRANDT
LICENSED PROFESSIONAL LANDSCAPE ARCHITECT No. 2808
HAWAII, U.S.A.

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

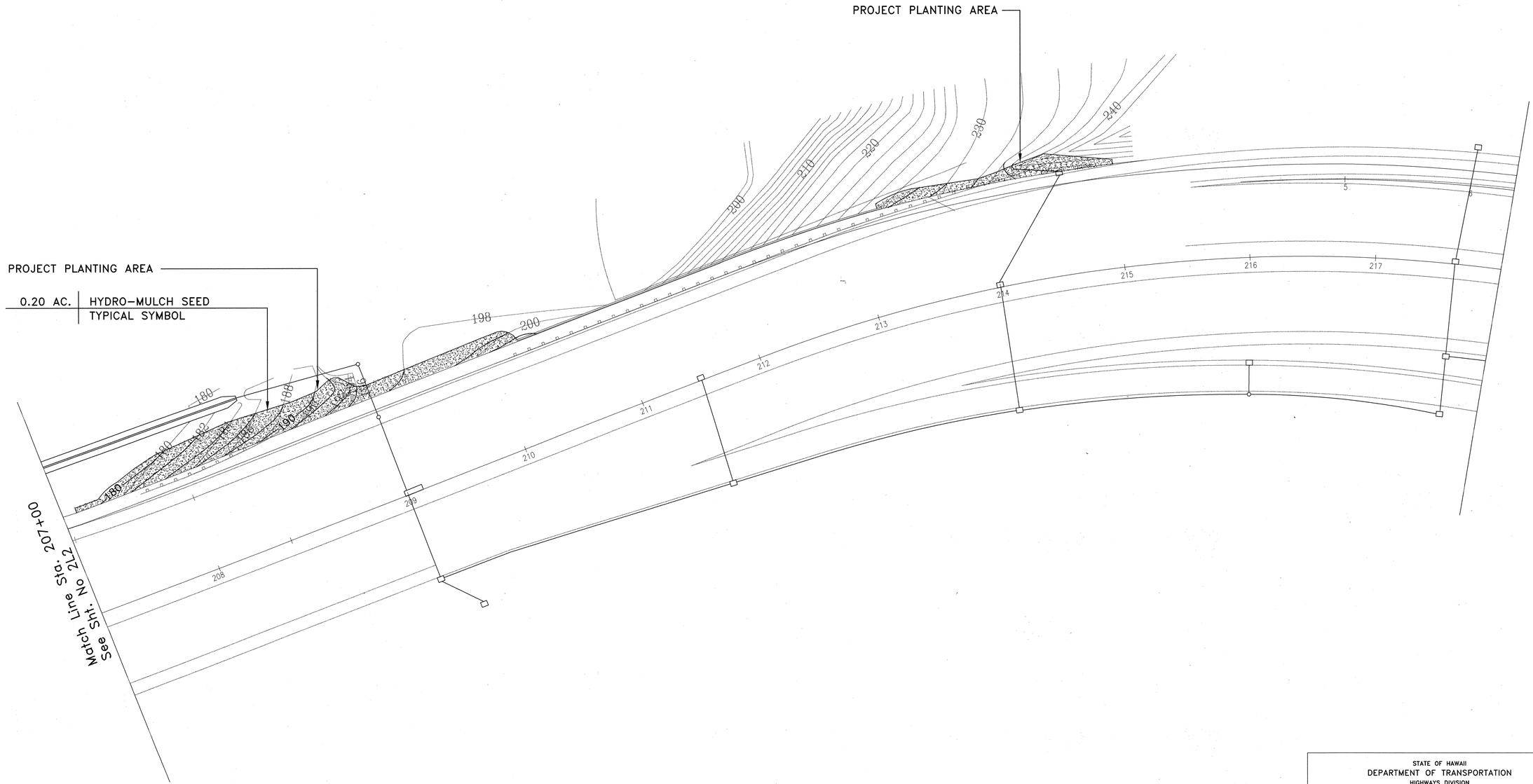
# MOANALUA FREEWAY
# LANDSCAPE
# PLANTING PLAN

H-3 FINISH (UNIT II)
FAIP NO. I-H3-1(75), UNIT II
LEEWARD SECTION

SCALE: 1"=40' DATE: JANUARY 1997

SHEET NO. 2L2 OF 3 SHEETS

| FED. ROAD DIST. NO | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|
| HAWAII | HAW. | I-H3-1(75), UNIT II | 1997 | 553 | 1102 |




ORIGINAL PLAN
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NOTE BOOK QUANTITIES BY _____
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PBR HAWAII

NORTH

0 10 20 40 80
FEET

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LICENSED PROFESSIONAL LANDSCAPE ARCHITECT
No. 2808
HAWAII, U.S.A.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

# MOANALUA FREEWAY
## LANDSCAPE
## PLANTING PLAN

H-3 FINISH (UNIT II)
FAIP NO. I-H3-1(75), UNIT II
LEEWARD SECTION

SCALE: 1"=40' DATE: JANUARY 1997

SHEET NO. 2L3 OF 3 SHEETS

553

| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|
| HAWAII | HAW. | I-H3-1(75), UNIT II | 1997 | 554 | 1102 |

## GENERAL NOTES FOR RETAINING WALL NO. 1

1. General Specifications: Hawaii Department of Transportation, Standard Specifications for Road and Bridge Construction, 1994 together with the Special Provisions prepared for this contract.

2. Design Specifications: AASHTO ~~1992~~ 1996 Standard Specifications for Highways, Bridges (~~Fifteenth~~ Sixteenth Edition) and its subsequent interim specifications with interim supplement modifications by the Highways Divisions, Department of Transportation, State of Hawaii.

3. Reinforcement:
   (A) The minimum covering measured from the surface of the concrete to the face of any reinforcing bar shall be as follows, except as otherwise shown:
      (1) Retaining walls (formed) = 2 inches
      (2) Concrete cast against and permanently exposed to earth = 3 inches
   (B) Reinforcing bars shall be detailed in accordance with A.C.I. Manual of Standard Practice for Detailing Reinforced Concrete Highway Structures unless otherwise noted.
   (C) Minimum spacing between parallel bars shall be 1-1/2 times the diameter of bars. In no case shall the clear distance between bars be less than 1-1/2 times the maximum size of coarse aggregate.
   (D) All dimensions relating to reinforcing are to centers of bars unless noted otherwise.
   (E) Reinforcing bars shall be securely tied at all intersections and lap splices except where the spacing of intersections is less than one foot in each direction, in which case alternate intersections shall be tied.
   (F) For splices not detailed, overlap rebars according to the lengths shown in Table 602-1 of the Standard Specifications. Stagger all splices as approved by the Engineer.

4. Construction Notes:
   (A) See Standard Specifications and Special Provisions.
   (B) All vertical dimensions are measured plumb unless noted otherwise.
   (C) The Contractor shall verify the locations and elevations of all existing utilities and notify the respective owners before commencing the work of excavation or drilled shafts.
   (D) For concrete finish, see Standard Specifications and Special Provisions.
   (E) All exterior corners and re-entrance angles in concrete work shall be chamfered 3/4" x 3/4" unless noted otherwise.
   (F) All spread footing concrete shall be placed to neat lines as shown on the Pay Limits. Any disturbed soil beyond the neat line shown in the Pay Limits shall be filled with lean concrete at no cost to the State.
   (G) During the excavation of wall foundation, the Contractor shall provide adequate shoring system for excavation to satisfy the requirements of OSHA and stability of the excavated ground. The shoring system for excavation required by the Contractor shall be considered incidental to the structure excavation.

5. All items noted incidental will not be paid for separately.

6. Materials:
   (A) All concrete shall be f'c = 4000 psi unless otherwise noted.
   (B) All reinforcing steel shall conform to ASTM A 615, Grade 60.

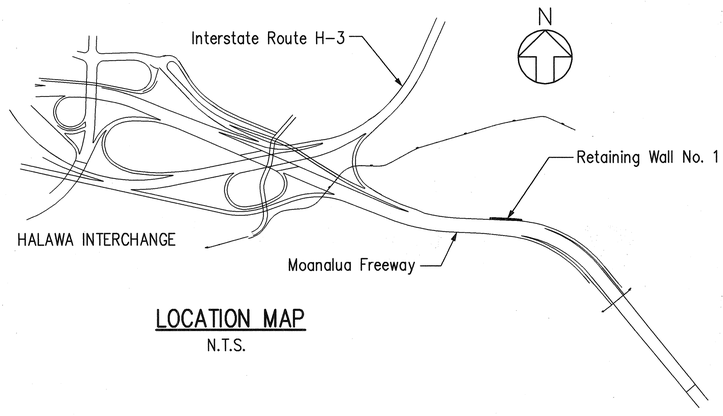
7. Design Criteria:

| | | | |
|---|---|---|---|
| (A) | Minimum Factor of Safety for overturning | --- | 2.0 |
| (B) | Minimum Factor of Safety for sliding | --- | 1.5 |
| (C) | Allowable Bearing Pressure | psf | 4000 |
| (D) | Coefficient of Friction | --- | 0.4 |
| (E) | Equivalent Fluid Pressure | pcf | 45 |

8. For symbols and abbreviations, see Sht. No. 1S1.

## ESTIMATED QUANTITIES FOR RETAINING WALL NO. 1

| ITEM NO. | ITEM | QUANTITY | UNIT |
|---|---|---|---|
| 206.5101 | Structure Excavation for Retaining Wall No. 1 | 2,450 | CU YD |
| 206.7261 | Structure Backfill for Retaining Wall No. 1 | 2,000 | CU YD |
| 206.8002 | Filter Material for Retaining Wall No. 1 | 110 | CU YD |
| 503.6003 | Concrete in Retaining Wall No. 1 (Except for concrete in footing) (200 CY) | LS | LS |
| 503.6018 | Concrete in Footing for Retaining Wall No. 1 (330 CY) | LS | LS |
| 507.7003 | Concrete Railing for Retaining Wall No. 1 (including concrete end post) (335 LF) | LS | LS |
| 602.1302 | Reinforcing Steel for Retaining Wall No. 1 (52,000 LBS) | LS | LS |




LOCATION MAP
N.T.S.

ORIGINAL PLANS
NOTE BOOK
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CAD by J. Mimura, 55-52

Last Saved: J:\H3RF\RFU2\STRUCT\MF-QUANT.dwg 04/18/97 at 09:21

HUI PANG CHEN
LICENSED PROFESSIONAL ENGINEER
No. 3865-S
HAWAII, U.S.A.

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Hui Pang Chen

| Date | Revision |
|---|---|
| 4/21/97 | Revised Quantities and Location Map. Added Note 8. |

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

# MOANALUA FREEWAY
# RETAINING WALLS
# GENERAL NOTES & QUANTITIES

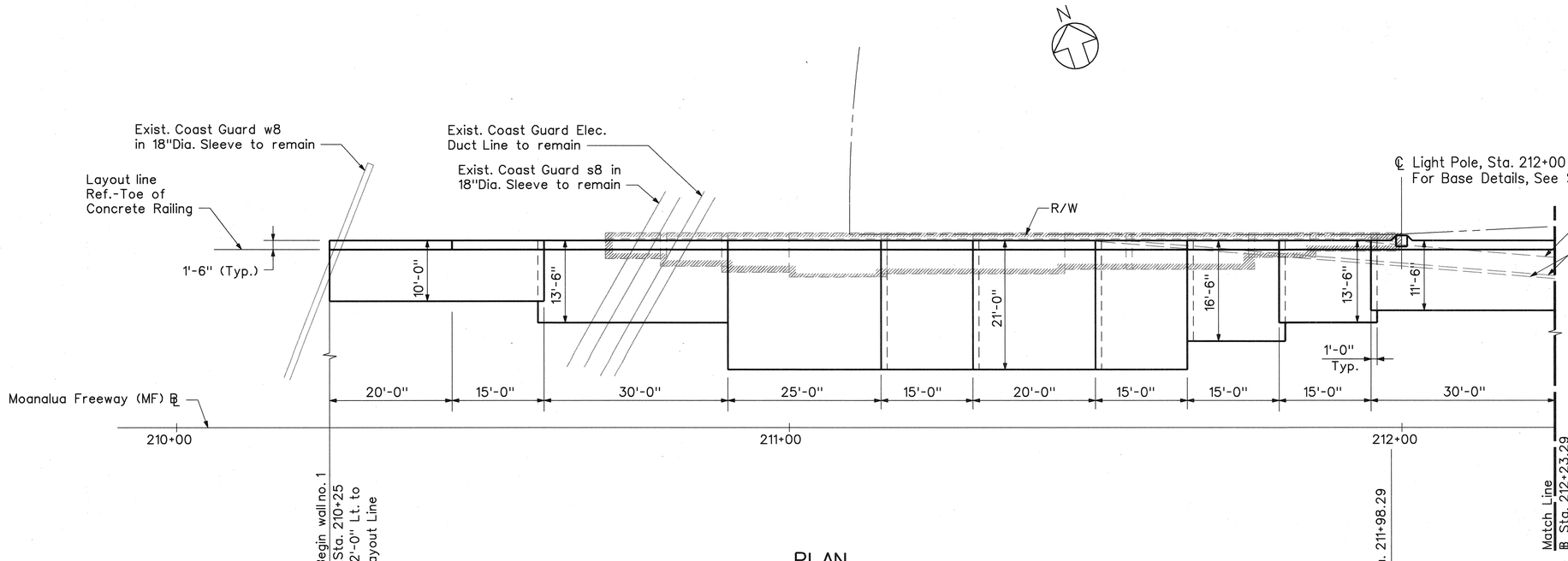
H-3 FINISH (UNIT II)
FAIP NO. I-H3-1(75), UNIT II
LEEWARD SECTION

SCALE: NONE DATE: JANUARY 1997

SHEET NO. 2W1 OF 8 SHEETS

ADD. 554

| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
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| HAWAII | HAW. | I-H3-1(75), UNIT II | 1997 | 555 | 1102 |



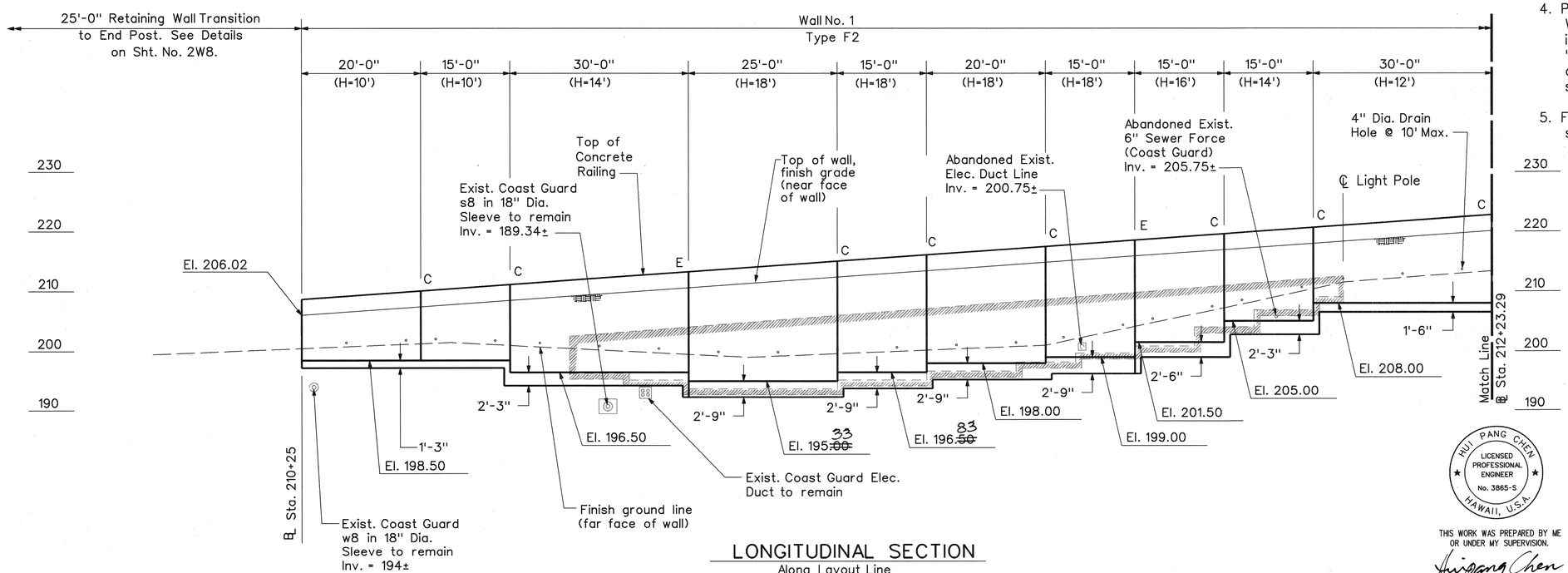

PLAN

## LEGEND:

Existing Retaining Wall to be removed

## NOTES:

1. For Typical Section and Reinforcing Steel, see Sht. No. 2W4.
2. For Expansion and Contraction Joint Details, see Sht. No. 2W5.
3. For Footing Step-up Details, see Sht. No. 2W5.
4. Payment for the removal of existing Retaining Wall, the 25' transition to end post and other incidentals shall be considered incidental to "Concrete in Retaining Wall No. 1 (except concrete in footing)" and will not be paid for separately.
5. For Details of Random Pattern of Reveal in wall, see Sht. No. 2W7.




LONGITUDINAL SECTION
Along Layout Line

| Date | Revision |
|---|---|
| 9/19/97 | Clarified labels on Coast Guard Utilities. |
| 4/21/97 | Revised Plan & Long. Section. Revised Note 4. Added Note 5. |

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

# MOANALUA FREEWAY RETAINING WALL NO. 1 PLAN & ELEVATION - 1

H-3 FINISH (UNIT ID
FAIP NO. I-H3-1(75), UNIT II
LEEWARD SECTION

SCALE: 1"=10' DATE: JANUARY 1997

HUI PANG CHEN
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No. 3865-S
HAWAII, U.S.A.

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Huipang Chen

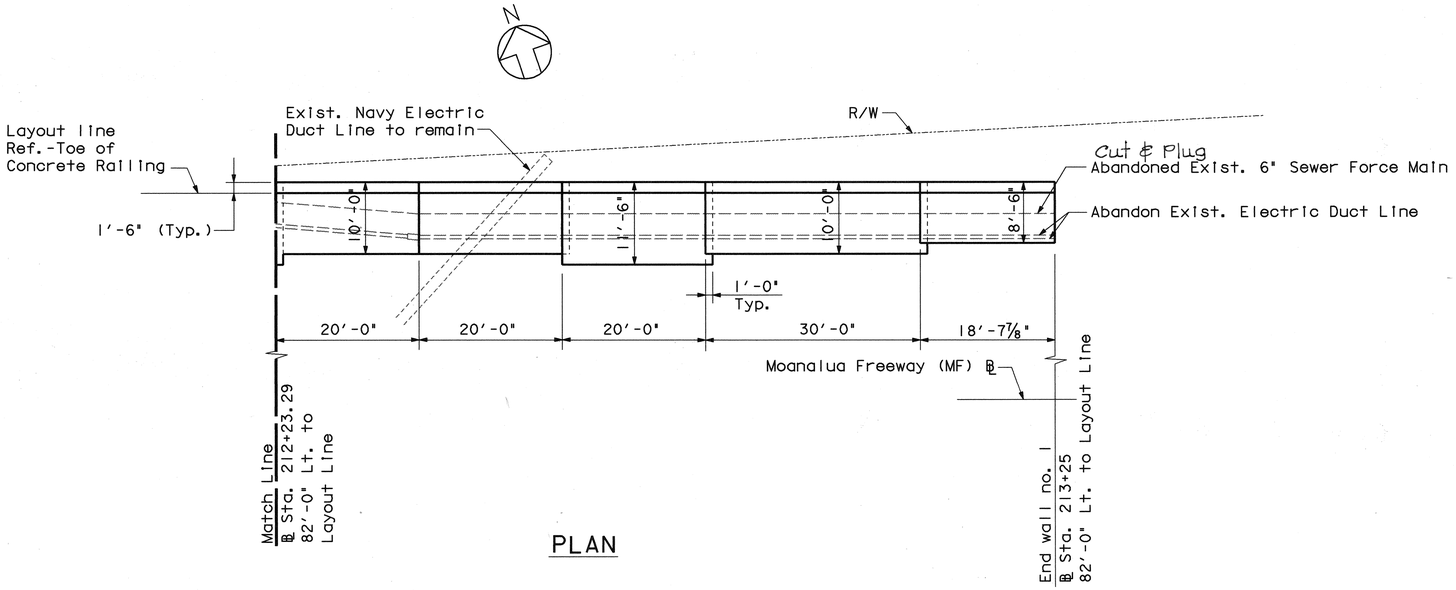
SHEET NO. 2W2 OF 8 SHEETS

C.O. ADD. 555

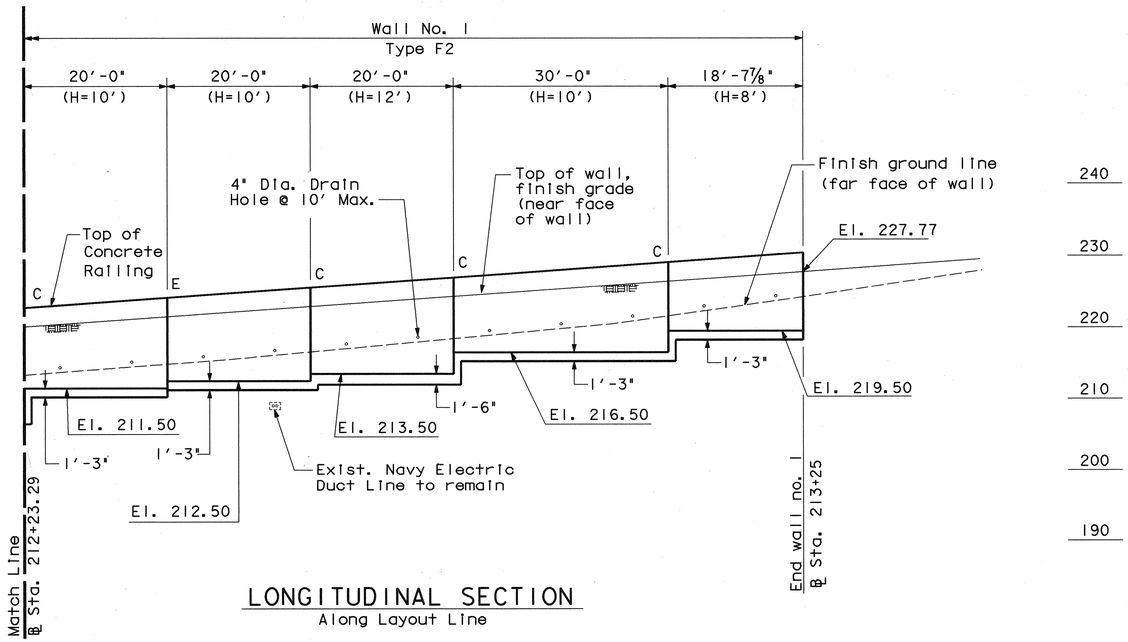
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NOTE BOOK | No.

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| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
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| HAWAII | HAW. | I-H3-1(75), UNIT II | 1997 | 556 | 1102 |




PLAN




LONGITUDINAL SECTION
Along Layout Line

NOTES:

1. For Typical Section and Reinforcing Steel, see Sht. No. 2W4.
2. For Expansion and Contraction Joint Details, see Sht. No. 2W5.
3. For Footing Step-up Details, see Sht. No. 2W5.
4. Payment for the removal of exsiting Retaining Wall, the 25' transition to end post and other incidentals shall be considered incidental to "Concrete in Retaining Wall No. 1 (except concrete in footing)" and will not be paid for separately.
5. For details of Random Pattern of Reveal in wall, see Sht. No. 2W7.

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Hui Pang Chen

| Date | Revision |
|---|---|
| 4/21/97 | Revised Plan & Long. Section Added Note 5 |

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

# MOANALUA FREEWAY
# RETAINING WALL NO. 1
# PLAN & ELEVATION - 2

H-3 FINISH (UNIT II)
FAIP NO. I-H3-1(75), UNIT II
LEEWARD SECTION

SCALE: 1"=10' DATE: JANUARY 1997

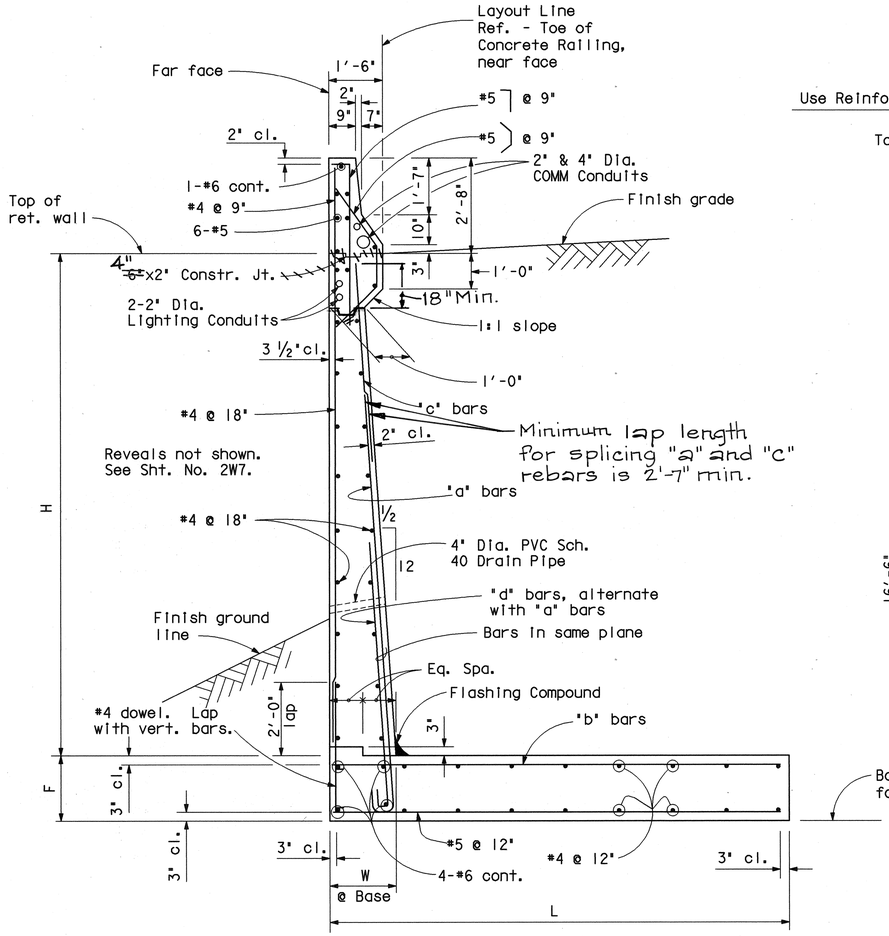
SHEET NO. 2W3 OF 8 SHEETS

ADD. 556

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

$$$$$$$$$$DGNSPEC$$$$$$$$$$ $$$$$$SYTIME$$$$$$

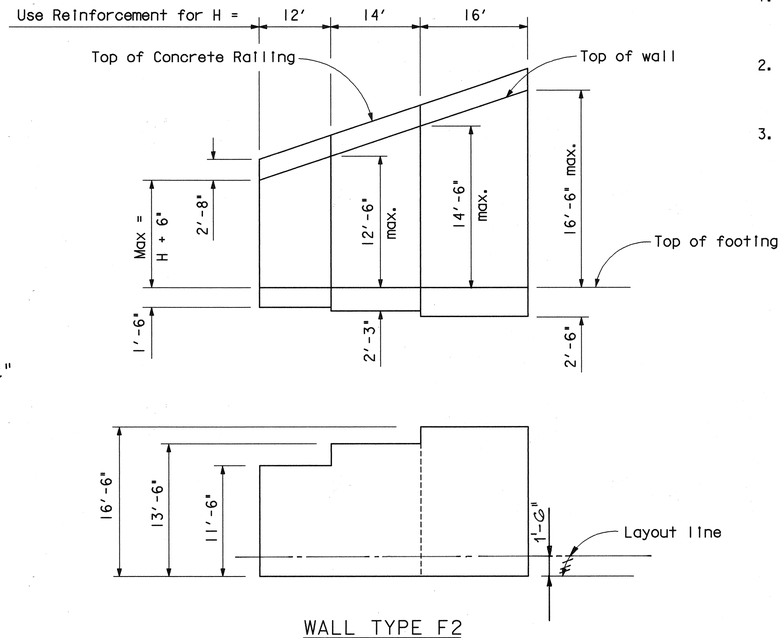
| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|
| HAWAII | HAW. | I-H3-1(75), UNIT II | 1997 | 557 | 1102 |




WALL TYPE F2

TYPICAL SECTION

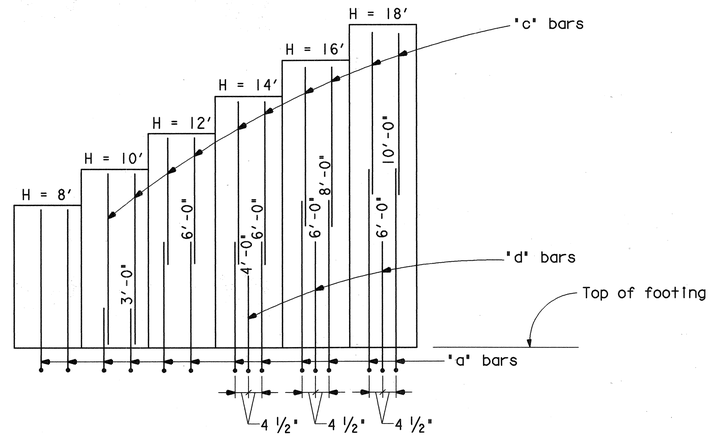
Scale : 1/2" = 1'-0"




WALL TYPE F2

TYPICAL LAYOUT EXAMPLE

Not to scale




WALL TYPE F2

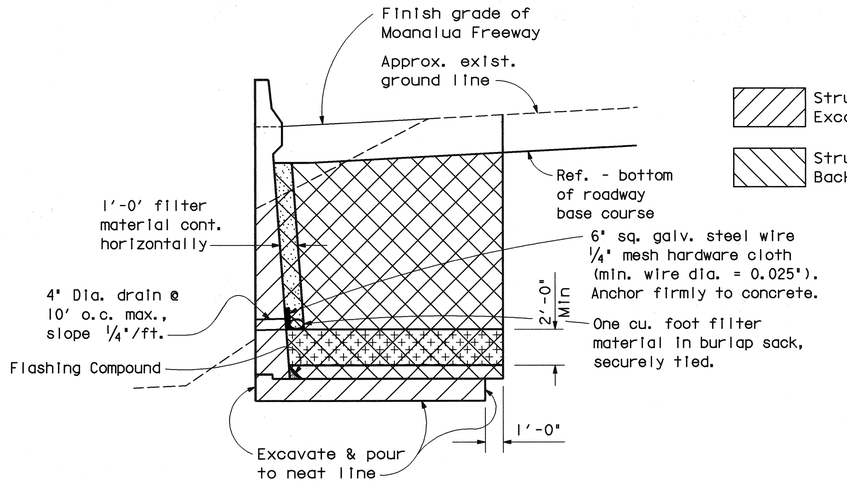
VERTICAL REINFORCING STEEL ARRANGEMENT

Not to scale

NOTES:

1. Spacing of 'a' bars & 'd' bars given in table is at base of stem with repeating placement pattern as indicated.
2. Number above 'a' & 'd' bars indicates distance from top of footing to upper end of bars.
3. Impervious material as selected by the Engineer shall be made as impervious as possible by pneumatic tamping or other approved methods and shall be incidental to Structural Backfill.

| DIMENSIONS AND REINFORCING STEEL - TYPE F2 | | | | | | |
|---|---|---|---|---|---|---|
| Stem Design Height H | 8' | 10' | 12' | 14' | 16' | 18' |
| Stem Thickness (@ Base) W | 1'-3 1/4" | 1'-4 1/4" | 1'-5 1/4" | 1'-6 1/4" | 1'-7 1/4" | 1'-8 1/4" |
| Footing Depth F | 1'-3" | 1'-3" | 1'-6" | 2'-3" | 2'-6" | 2'-9" |
| Footing Width L | 8'-6" | 10'-0" | 11'-6" | 13'-6" | 16'-6" | 21'-0" |
| 'a' bars | #6 @ 9" | #7 @ 9" | #7 @ 9" | #7 @ 9" | #7 @ 9" | #9 @ 9" |
| 'b' bars | #8 @ 12" | #8 @ 6" | #8 @ 6" | #8 @ 6" | #9 @ 6" | #10 @ 6" |
| 'c' bars | --- | #6 @ 9" | #6 @ 9" | #6 @ 9" | #6 @ 9" | #6 @ 9" |
| 'd' bars | --- | --- | --- | #7 @ 18" | #7 @ 9" | #9 @ 18" |
| Toe Pressure (K/sf) | 2.47 | 2.75 | 3.23 | 3.80 | 3.97 | 3.99 |




PAYMENT LIMIT

FOR RETAINING WALL F2

Not To Scale

LEGEND

- Structure Excavation
- Filter Material
- Structure Backfill
- Impervious Material

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| Date | Revision |
|---|---|
| 4/21/97 | Revised Typical Section<br>Added Flashing Compound in Payment Limit<br>Added Notes 3 |

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

# MOANALUA FREEWAY
# RETAINING WALL TYPE F2
# TYPICAL SECTION

H-3 FINISH (UNIT II)
FAIP NO. I-H3-1(75), UNIT II
LEEWARD SECTION

SCALE: As Noted DATE: JANUARY 1997

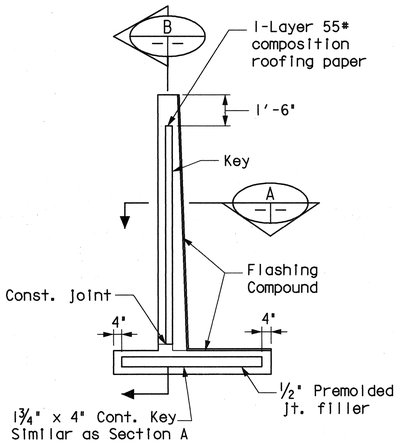
SHEET NO. 2W4 OF 8 SHEETS

ADD. 557

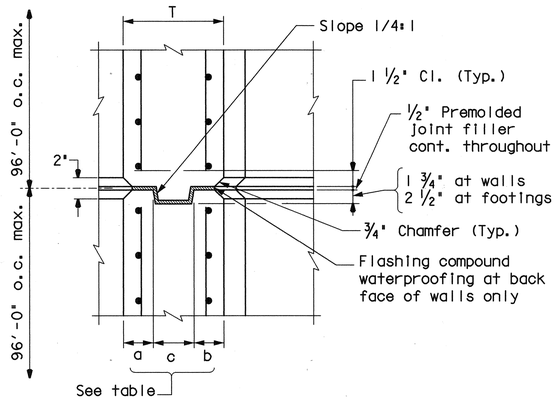
$$$$$$$$$$DGNSPEC$$$$$$$$$$ $$$$$$$SYTIME$$$$$$$

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

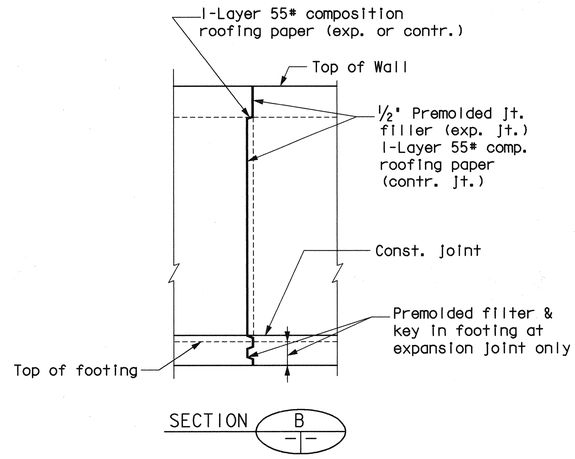
| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|
| HAWAII | HAW. | I-H3-I(75), UNIT II | 1997 | 558 | 1102 |




JOINT ELEVATION




SECTION A

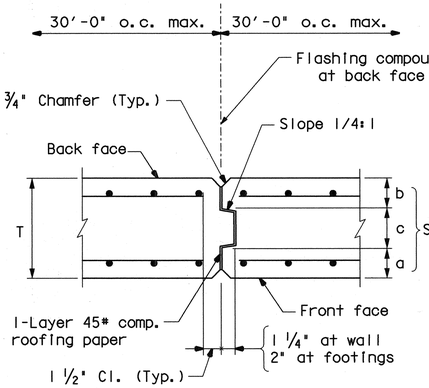



SECTION B

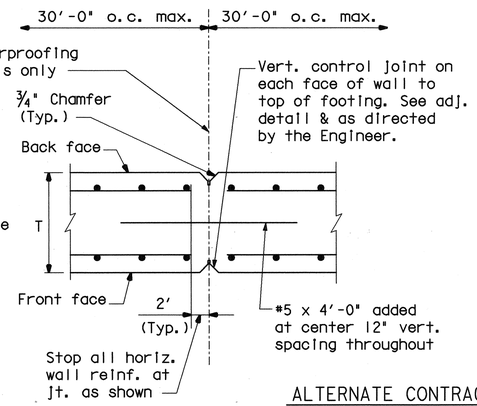
| TABLE OF JOINT DIMENSIONS | | | |
|---|---|---|---|
| | a | b | c |
| @ WALLS | 4" | VARIES | 5" |
| @ FOOTINGS | T/3 | T/3 | T/3 |

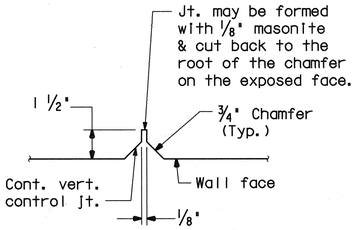
# TYPICAL EXPANSION JOINT DETAILS

N.T.S.

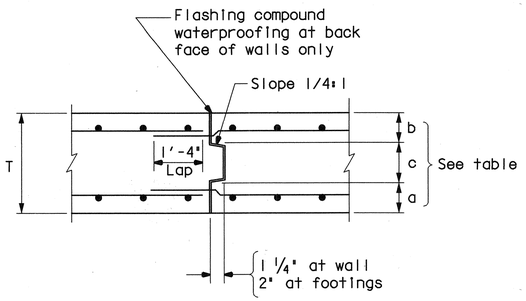



AT CONTRACTION JOINT



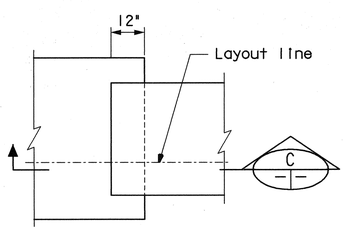

ALTERNATE CONTRACTION JOINT OR CONTROL JOINT



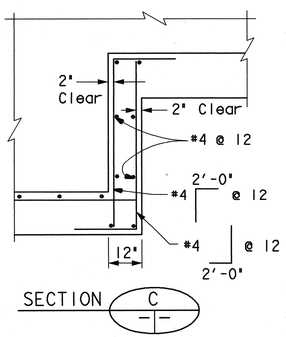

AT CONSTRUCTION JOINT

# TYPICAL JOINT DETAILS

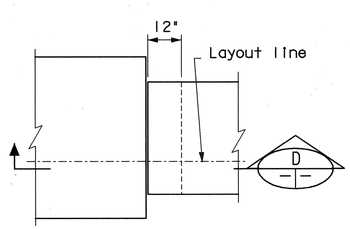
N.T.S.




PLAN

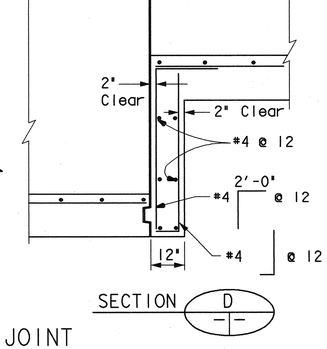



SECTION C

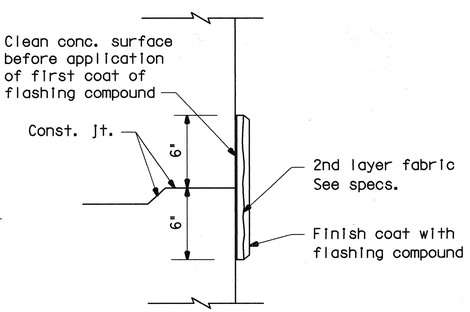



PLAN

AT EXPANSION JOINT




SECTION D




TYPICAL FLASHING COMPOUND WATERPROOFING DETAIL

# TYPICAL FOOTING STEP-UP DETAILS

N.T.S.

| Date | Revision |
|---|---|
| 4/21/97 | Revised Reinf. Steel at Construction Joint |

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

**MOANALUA FREEWAY**
**RETAINING WALL NO. 1**
**MISCELLANEOUS - 1**

H-3 FINISH (UNIT II)
FAIP NO. I-H3-I(75), UNIT II
LEEWARD SECTION

SCALE: As Noted DATE: JANUARY 1997

SHEET NO. 2W5 OF 8 SHEETS

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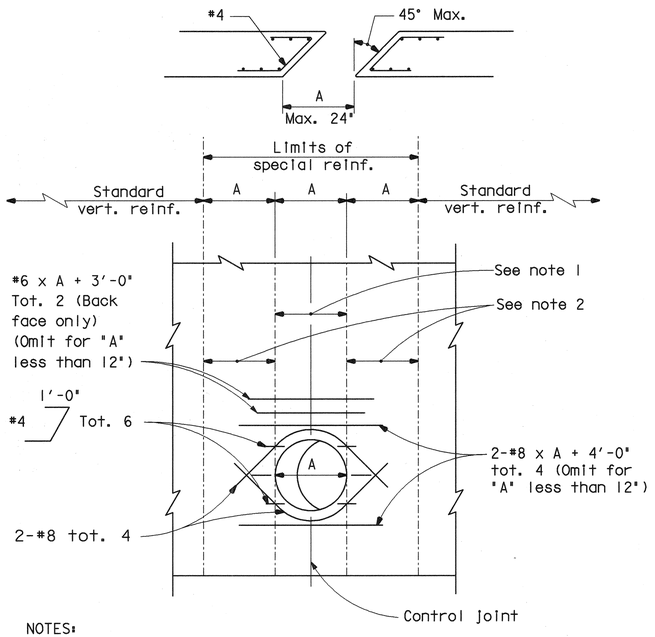
Hui Pang Chen

ADD. 558

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

$$$

| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|
| HAWAII | HAW. | I-H3-1(75), UNIT II | 1997 | 559 | 1102 |

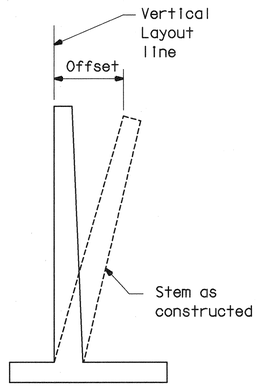



NOTES:

1. Standard vert. reinf. above and below opening. (both faces)
2. Standard vert. reinf. plus additional bars corresponding in size and number to bars cut by the opening. Place half on each side. Extend the additional bars into the footing the same as other wall reinforcement and to a minimum of 60 bar dia. above the top of utility opening if wall height permits. Bundle bars as required.
3. Horiz. reinf. to be standard except as shown.
4. All. reinf. to clear opening by 2" minimun.
5. Expansion joints shall not be located within the limits of special reinforcing.

## RETAINING WALL UTILITY OPENING

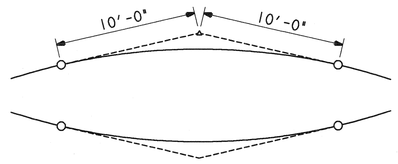
Max. size of opening (A) = 12"




| WALL HEIGHT | OFFSET |
|---|---|
| 4'-0" | 1/4" |
| 6'-0" | 3/8" |
| 8'-0" | 1/2" |
| 10'-0" | 5/8" |
| 12'-0" | 3/4" |
| 14'-0" | 1" |
| 16'-0" | 1 1/4" |
| 18'-0" | 1 1/2" |
| 20'-0" | 1 3/4" |

## APPROXIMATE WALL OFFSET VALUES

VALUES FOR OFFSETTING WALL FORMS TO BE DETERMINED BY THE CONTRACTOR.




## 20' VC AT TOP OF WALL SLOPE CHANGE

Where shown on the plans

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Huipang Chen

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

**MOANALUA FREEWAY**
**RETAINING WALL NO. 1**
**MISCELLANEOUS - 2**

H-3 FINISH (UNIT II)
FAIP NO. I-H3-1(75), UNIT II
LEEWARD SECTION

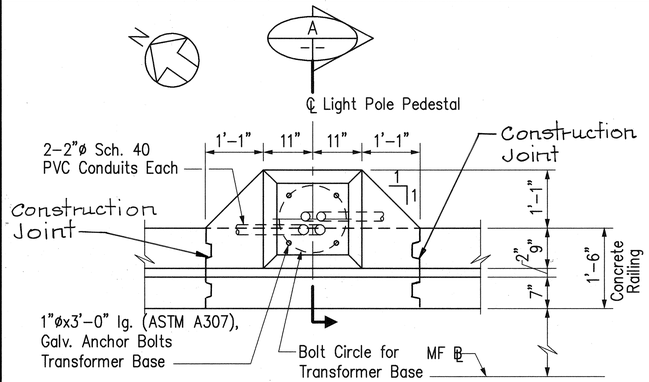
SCALE: AS NOTED DATE: JANUARY 1997

SHEET NO. 2W6 OF 8 SHEETS

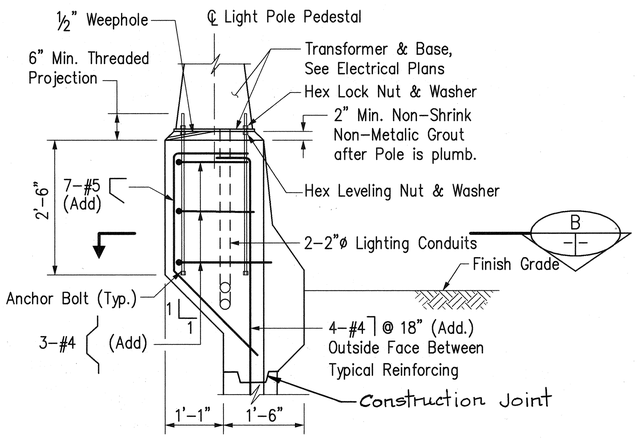
559

$$$$$$$$$$$$$$$$DGNSPEC$$$$$$$$$$$$$$$$

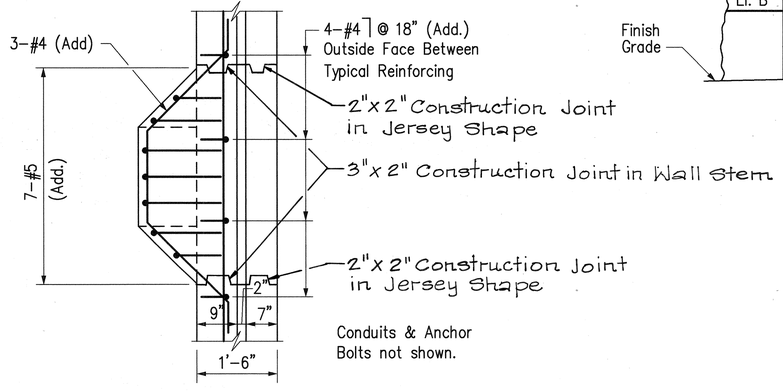
| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|
| HAWAII | HAW. | I-H3-1(75), UNIT II | 1997 | 560 | 1102 |



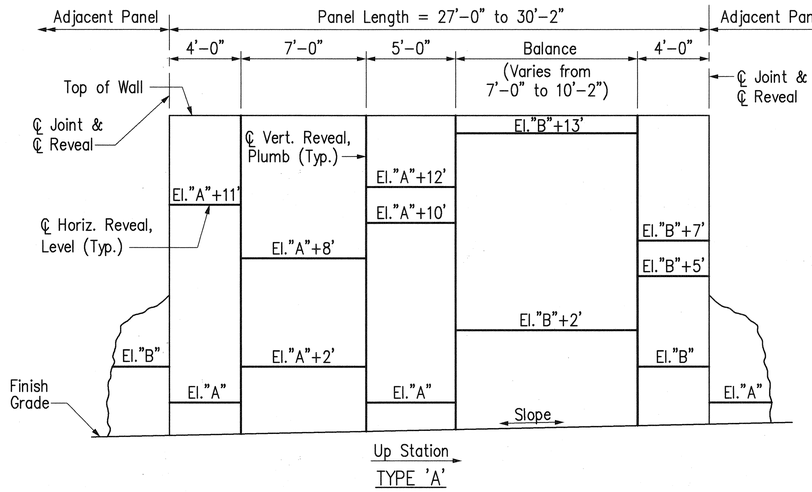

## PLAN
WALL TYPE F2
Scale: 3/4" = 1'-0"



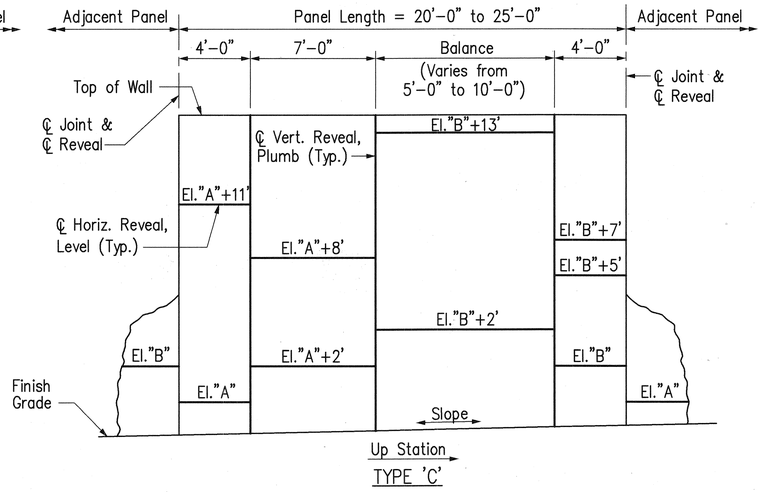

## SECTION A
Scale: 3/4" = 1'-0"



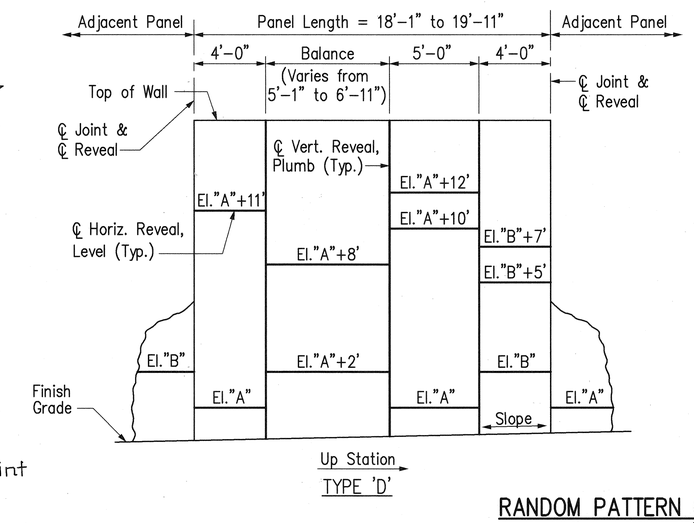

## SECTION B
Scale: 3/4" = 1'-0"



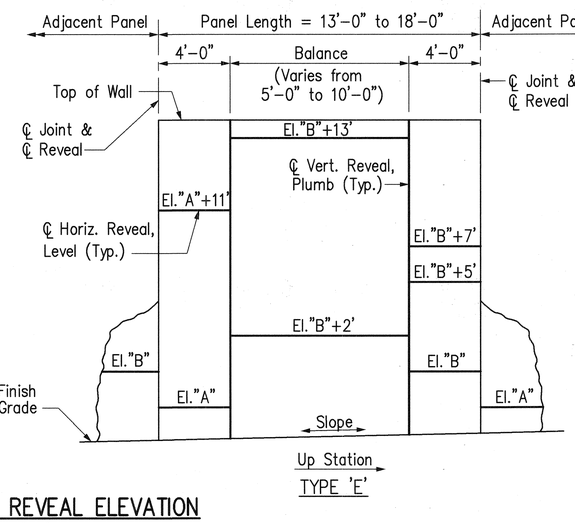

## TYPE 'A'




## TYPE 'C'




## TYPE 'D'

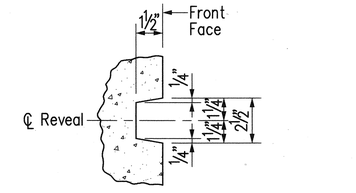



## TYPE 'E'

## RANDOM PATTERN OF REVEAL ELEVATION
Scale: 1/4" = 1'-0"

NOTES:

1. Omit the horizontal reveal if the Level is less than 1'-0" from Top of Wall.
2. Set Elevation "A" = 202.50, Elevation "B" = 204.50.




## HORIZONTAL OR VERTICAL REVEAL DETAIL
Scale: 3" = 1'-0"

| Date | Revision |
|---|---|
| 4/4/97 | Added Details of Random Pattern of Reveals. Corrected Rebars in Section A. Revised Anchor Bolts in Plan. |

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

# MOANALUA FREEWAY RETAINING WALL NO. 1 MISCELLANEOUS – 3

H-3 FINISH (UNIT II)
FAIP NO. I-H3-1(75), UNIT II
LEEWARD SECTION

SCALE: AS SHOWN DATE: JANUARY 1997

SHEET NO. 2W7 OF 8 SHEETS

HUI PANG CHEN
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HAWAII, U.S.A.

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Huipang Chen

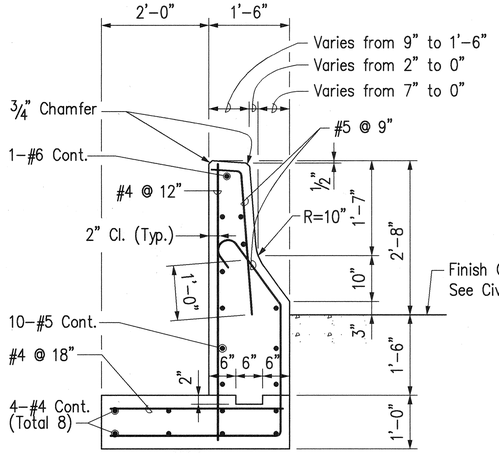
ORIGINAL PLANS
NOTE BOOK
No.
SURVEY PLOTTED BY
DRAWN BY
TRACED BY
DESIGNED BY
QUANTITIES BY
CHECKED BY
DATE

CAD by D. Burgess, 55-52

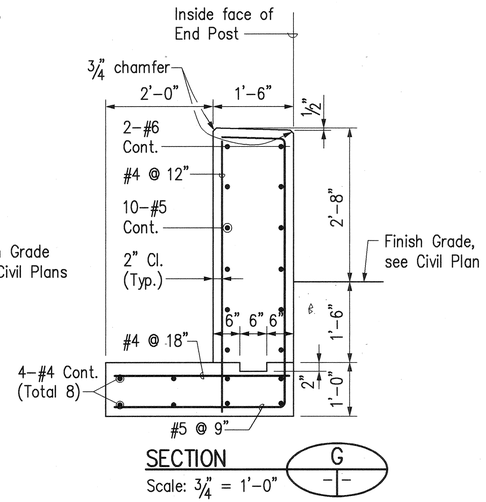
Last Saved: J:\H3RF\RFU2\STRUCT\MF-LIGHT.dwg 04/14/97 at 14:02

ADD. 560

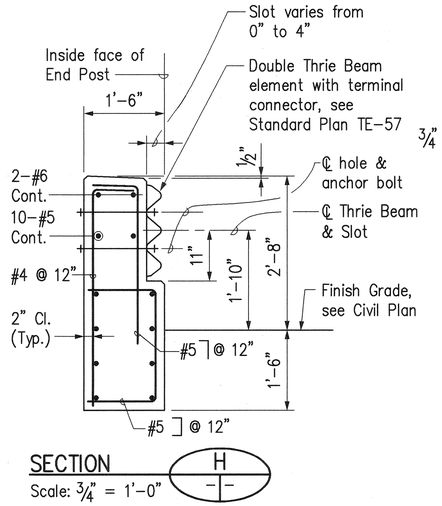
| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|
| HAWAII | HAW. | I-H3-1(75), UNIT II | 1997 | 561 | 1102 |



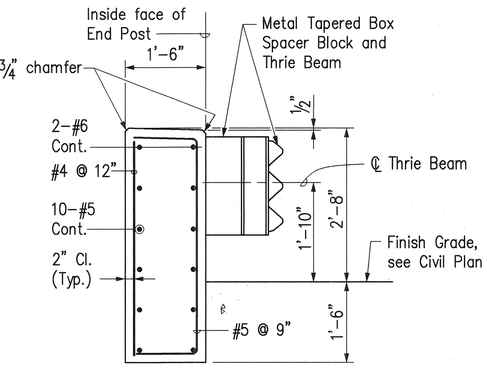

SECTION F
Scale: 3/4" = 1'-0"



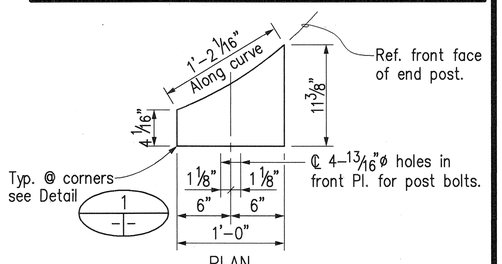

SECTION G
Scale: 3/4" = 1'-0"



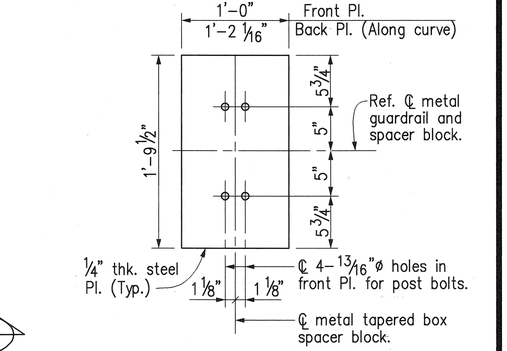

SECTION H
Scale: 3/4" = 1'-0"




SECTION I
Scale: 3/4" = 1'-0"



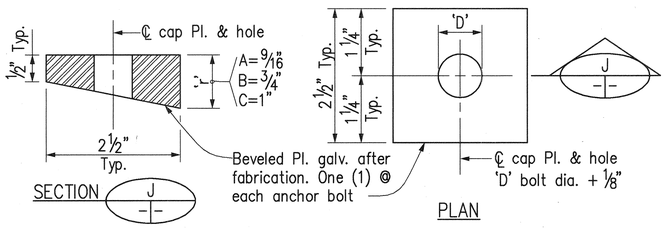

PLAN




FRONT VIEW

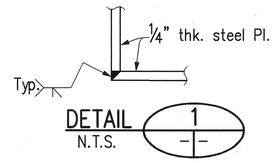
## METAL TAPERED BOX SPACER BLOCK

Scale: 1 1/2" = 1'-0"

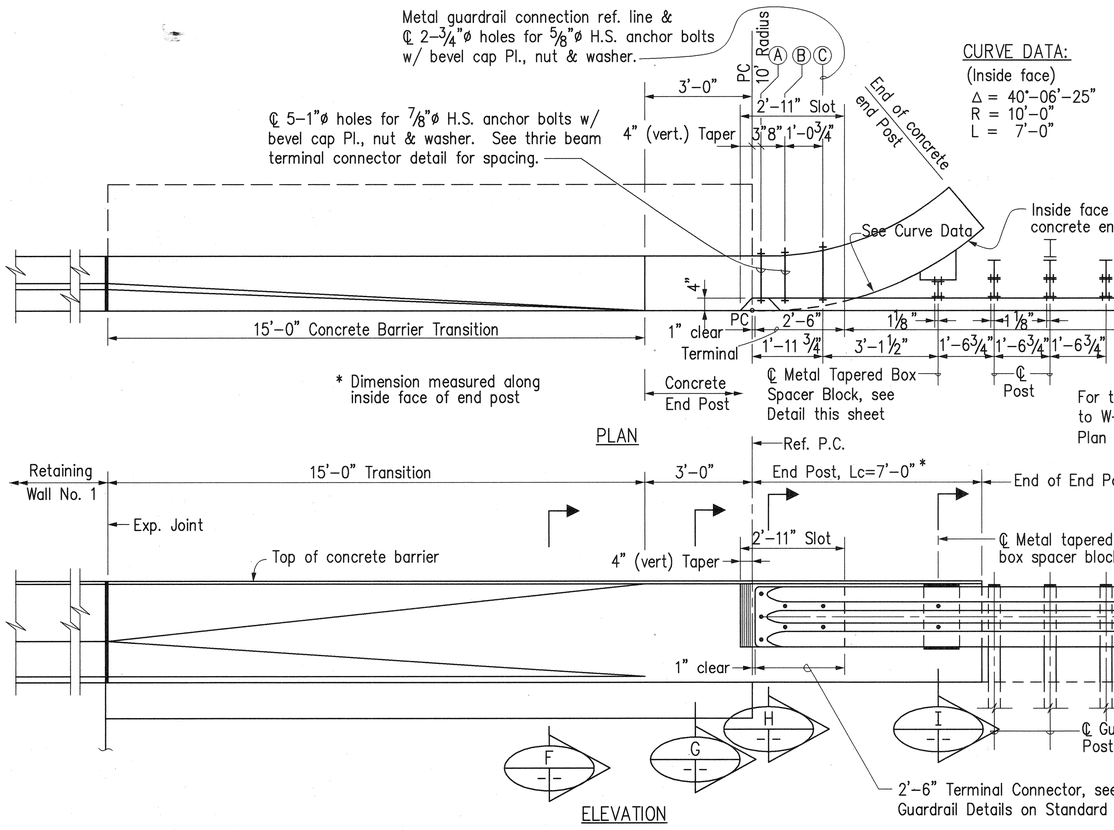



## CAP (BEARING) PLATE DETAIL

Scale: 3/4" = 1"

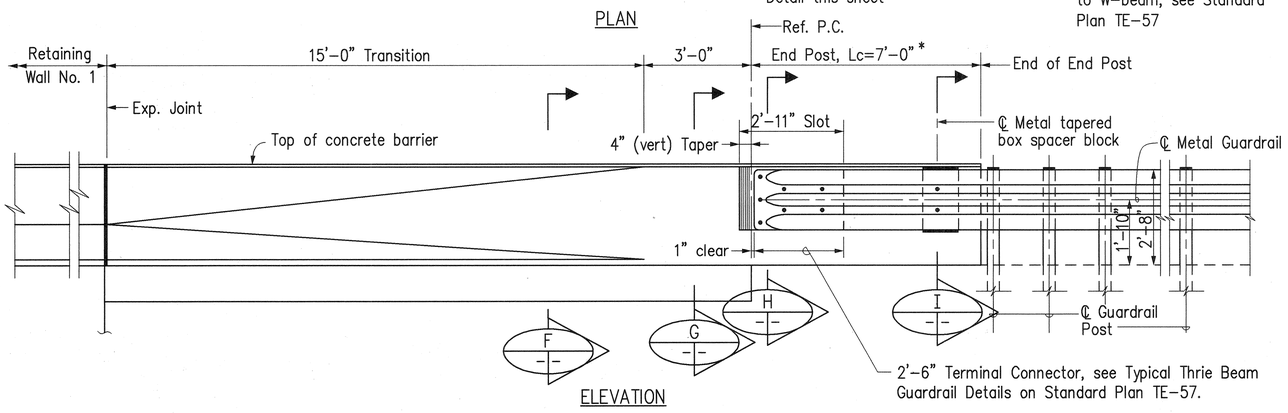



DETAIL 1
N.T.S.




CURVE DATA:
(Inside face)
Δ = 40°-06'-25"
R = 10'-0"
L = 7'-0"

PLAN




ELEVATION

## CONCRETE BARRIER TRANSITION AND END POST

Scale: 1/2" = 1'-0"

NOTES:

1. All reinforcing shall be ASTM A615 Grade 60.
2. Cap Plate and tapered box spacer shall be fabricated from ASTM A36 steel and hot-dip galvanized after fabrication.
3. Cap Plates, tapered box spacer, anchor bolts including nuts and washers and other appurtenances shall be incidental to concrete railing and will not be paid for separately.
4. All anchor bolts shall be high strength conforming to the requirements of ASTM A325 and shall be galvanized.

HUI PANG CHEN
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Hui Pang Chen

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

# MOANALUA FREEWAY
# RETAINING WALL NO. 1
# TRANSITION TO END POST

H-3 FINISH (UNIT II)
FAIP NO. I-H3-1(75), UNIT II
LEEWARD SECTION

SCALE: AS SHOWN DATE: JANUARY 1997

SHEET NO. 2W8 OF 8 SHEETS

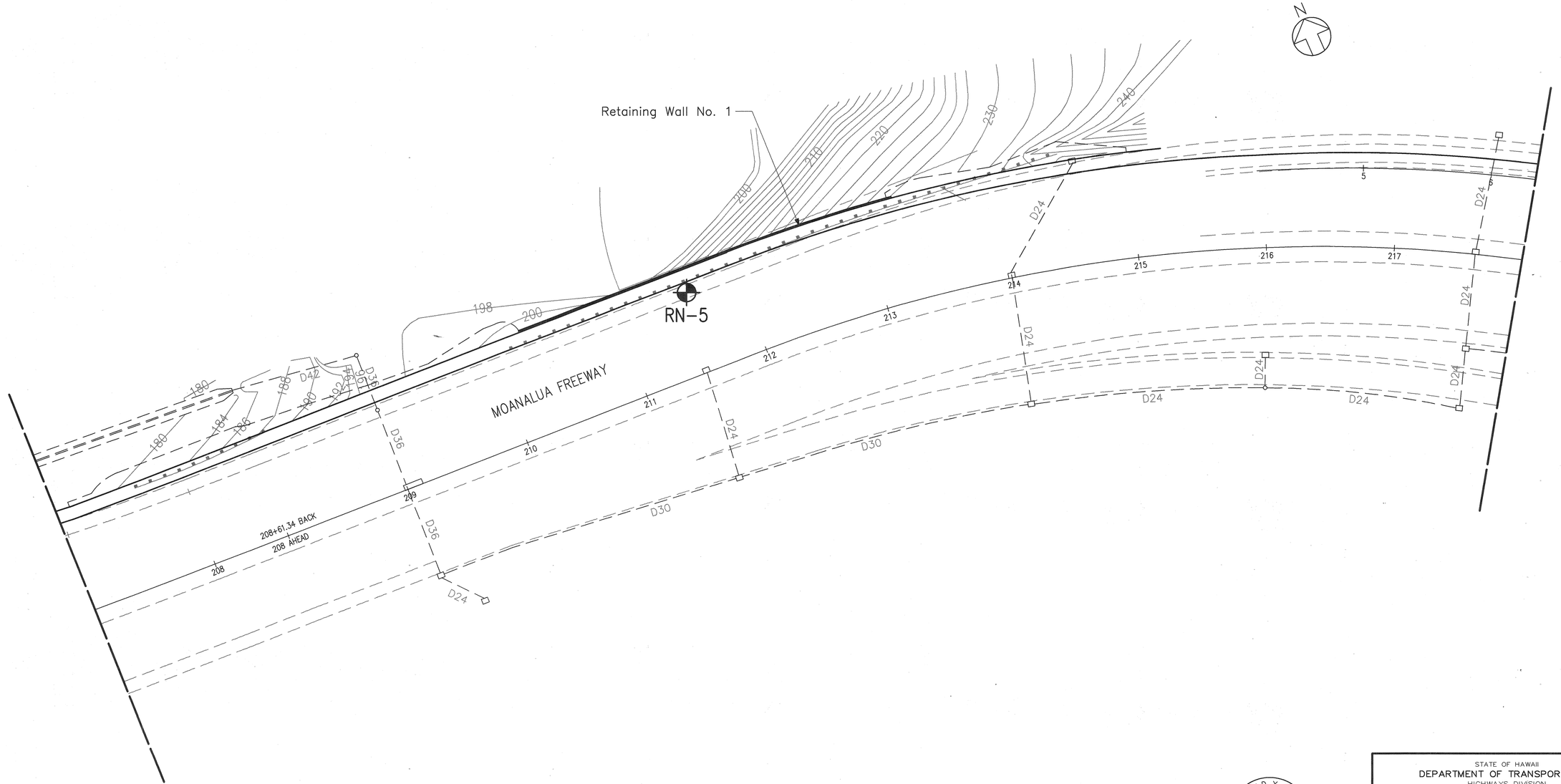
| ORIGINAL PLAN | SURVEY PLOTTED BY | DATE |
|---|---|---|
| | DRAWN BY | |
| | TRACED BY | |
| NOTE BOOK | DESIGNED BY | |
| | QUANTITIES BY | |
| No. | CHECKED BY | |

CAD by D. Burgess, 55-52

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561

| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|
| HAWAII | HAW. | I-H3-1(75), UNIT II | 1997 | 562 | 1102 |




ORIGINAL PLAN

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GERALD Y. SEKI
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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

# MOANALUA FREEWAY
# BORING LOCATION
# PLAN

H-3 FINISH (UNIT II)
FAIP NO. I-H3-1(75), UNIT II
LEEWARD SECTION

SCALE: 1" = 40' DATE: JANUARY 1997

SHEET NO. 2H1 OF 3 SHEETS

562

| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|
| HAWAII | HAW. | I-H3-1(75), UNIT II | 1997 | 563 | 1102 |

## LEGEND

### UNIFIED SOIL CLASSIFICATION SYSTEM (USCS)

| MAJOR DIVISIONS | | | | TYPICAL NAMES |
|---|---|---|---|---|
| COARSE-GRAINED SOILS (MORE THAN 50% OF MATERIAL RETAINED ON NO. 200 SIEVE) | GRAVELS (MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE) | CLEAN GRAVELS (LESS THAN 5% FINES) | GW | WELL GRADED GRAVELS, GRAVEL-SAND MIXTURES, LITTLE OR NO FINES |
| | | | GP | POORLY GRADED GRAVELS, GRAVEL SAND MIXTURES, LITTLE OR NO FINES |
| | | GRAVELS WITH FINES (MORE THAN 12% FINES) | GM | SILTY GRAVELS, POORLY GRADED GRAVEL-SAND-SILT MIXTURES |
| | | | GC | CLAYEY GRAVELS, POORLY GRADED GRAVEL-SAND-CLAY MIXTURES |
| | SANDS (50% OR MORE OF COARSE FRACTION PASSING THROUGH NO. 4 SIEVE) | CLEAN SANDS (LESS THAN 5% FINES) | SW | WELL GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES |
| | | | SP | POORLY GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES |
| | | SANDS WITH FINES (MORE THAN 12% FINES) | SM | SILTY SANDS, POORLY GRADED SAND-SILT MIXTURES |
| | | | SC | CLAYEY SANDS, POORLY GRADED SAND-CLAY MIXTURES |
| FINE-GRAINED SOILS (50% OR MORE OF MATERIAL PASSING THROUGH NO. 200 SIEVE) | SILTS AND CLAYS (LIQUID LIMIT LESS THAN 50) | | ML | INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS, WITH SLIGHT PLASTICITY |
| | | | CL | INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS |
| | | | OL | ORGANIC SILTS AND ORGANIC SILT-CLAYS OF LOW PLASTICITY |
| | SILTS AND CLAYS (LIQUID LIMIT 50 OR MORE) | | MH | INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SANDY OR SILTY SOILS, ELASTIC SILTS |
| | | | CH | INORGANIC CLAYS OF HIGH PLASTICITY, FAT CLAYS |
| | | | OH | ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY |
| HIGHLY ORGANIC SOILS | | | Pt | PEAT AND OTHER HIGHLY ORGANIC SOILS |

NOTE: DUAL SYMBOLS ARE USED TO INDICATE BORDERLINE SOIL CLASSIFICATIONS

LEGEND:

2-INCH O.D. SPLIT-SPOON SAMPLE — WATER LEVEL — 3-INCH O.D. THIN-WALL TUBE SAMPLE — 2.5-INCH O.D. S-H SAMPLE

2.5-INCH OR 1.9-INCH O.D. CORE-BARREL SAMPLE

Parsons Brinckerhoff

**BORING LOG LEGEND**

H-3 Finish Unit II

FAIP No. I-H3-1(75)

DATE: JAN. 1997

PROJECT NO. 3506V080

**PLATE NO. A**

## DEFINITION OF TERMS

### SOIL DESCRIPTION

Density of Consistency

| Granular Soil: Relative Density | Blow Count, N | Cohesive Soil: Consistency | Blow Count, N |
|---|---|---|---|
| Very Loose | 0-4 | Very soft | 0-2 |
| Loose | 4-10 | Soft | 2-4 |
| Medium Density | 10-30 | Medium | 4-8 |
| Dense | 30-50 | Stiff | 8-15 |
| Very Dense | 50 or more | Very Stiff | 15-30 |
| | | Hard | 30 or more |

### ROCK DESCRIPTION

#### WEATHERING

| | |
|---|---|
| Unweathered | No visible sign of rock material weathering, perhaps slight discoloration on major discontinuity surfaces |
| Slightly weathered | Discoloration indicates weathering of rock material and discontinuity surfaces. All the rock material may be discolored by weathering and may be somewhat weaker externally than in its fresh condition. |
| Moderately weathered | Less than half of the rock material is decomposed and/or disintegrated to a soil. Fresh or discolored rock is present either as a continuous framework or as corestones. |
| Highly weathered | More than half of the rock material is decomposed and/or disintegrated to a soil. Fresh or discolored rock is present either as a discontinuous framework or as corestones. |

#### CONTINUITY

| Term | Length of Drill Core Stem Pieces |
|---|---|
| Sound | >8" |
| Slightly Fractured | 4"-8" |
| Moderately Fractured | 1"-4" |
| Closely Fractured | <1" |

#### HARDNESS

| | |
|---|---|
| Weak | Can be peeled by a pocket knife, shallow indentations made or crumbles by firm blow with point of geological hammer |
| Medium Strong | Cannot be scraped or peeled with a pocket knife, specimen can be fractured with single firm blow or geological hammer |
| Strong | Specimen requires more than one blow of geological hammer to fracture it |

GERALD Y. SEKI — LICENSED PROFESSIONAL ENGINEER — No. 5635-C — HAWAII, U.S.A.

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Gerald Y. Seki

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

**MOANALUA FREEWAY**
**BORING LOG LEGEND**

H-3 FINISH (UNIT II)
FAIP NO. I-H3-1(75), UNIT II
LEEWARD SECTION

SCALE: NONE DATE: JANUARY 1997

SHEET NO. 2H2 OF 3 SHEETS

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

CAD by L. Fujioni, 55-52

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| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|
| HAWAII | HAW. | I-H3-1(75), UNIT II | 1997 | 564 | 1102 |

PB 100 YEARS

*Parsons Brinckerhoff*

**H-3 Finish Unit II**
**FAIP No. I-H3-1(75)**
**Oahu, Hawaii**

**BORING NO.**

# RN- 5

| OTHER LAB TESTS | DRY UNIT WEIGHT (pcf) | MOISTURE CONTENT (%) | CORE RECOVERY (%) | R.Q.D (%) | NUMBER OF BLOWS/FT | SAMPLE TYPE AND NUMBER | DEPTH IN FEET | GRAPHIC SYMBOL | U.S.C.S | GEOTECHNICAL DESCRIPTION |
|---|---|---|---|---|---|---|---|---|---|---|
| | | 7 | | | 37 | SP-1 | | | GM | 2" AC |
| | | 20 | | | 75 | SP-2 | | | CH GC | Gray silty GRAVEL with sand, dense, dry (Base Course) |
| PI | 103 | 16 | | | 70/.4" | SH-3 | 5 | | | Brown and gray silty CLAY and GRAVEL with sand and boulders, hard, damp (Fill) |
| | | - | | | 25/0" | SP-4 CB-5 | | | | |
| | | | 40 | 20 | | | 10 | | | |
| | | 37 | | | 13 | SP-6 | | | CH | Reddish brown silty CLAY, stiff, moist (Residual) |
| | | 36 | | | 35 | SP-7 | 15 | | MH | Mottled gray brown clayey SILT, hard, moist (Residual) |
| TX | 71 | 39 | | | 76 | SH-8 | 20 | | | |
| | 81 | 37 | | | | | | | | |
| | 76 | 45 | | | 143/.8" | SH-9 | 25 | | MH SM | Mottled gray clayey SILT and SAND, hard, moist (Saprolite) |
| | | 48 | | | | | | | | |
| | | 42 | | | | | | | | |
| | | 40 | | | 62 | SP-10 | 30 | | | |
| | | | | | | | | | | End boring at 31.5 ft. on 9/14/95 |
| | | | | | | | | | | Groundwater not encountered. |
| | | | | | | | 35 | | | |
| | | | | | | | 40 | | | |

**SAMPLE TYPE**

CB - Core Barrel
DN - Denison Barrel
SB - Split Barrel (2.5")
SP - Standard Penetration
ST - Thin-Wall Tube
SH - S & H Barrel (2.5")

**OTHER LAB TESTS**

CN - Consolidation
DS - Direct Shear
PI - Atterberg Limits
SA - Sieve Analysis
TX - Triaxial Compression
UC - Unconfined Compression

| | | |
|---|---|---|
| BORING LOCATION: Sta.211+60, o/s 64'L | DRILLER: HGG | PROJECT NO. 3506V080 |
| GROUND SURFACE ELEVATION: +218 ft. | LOGGED BY: BC,EH,FB | PLATE NO. A- 5 |
| DATE(S) DRILLED: 9/14/95 to 9/14/95 | TYPE RIG: CME 55 | |

ORIGINAL PLAN
NOTE BOOK
No.

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

GERALD Y. SEKI
LICENSED PROFESSIONAL ENGINEER
No. 5635-C
HAWAII, U.S.A.

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

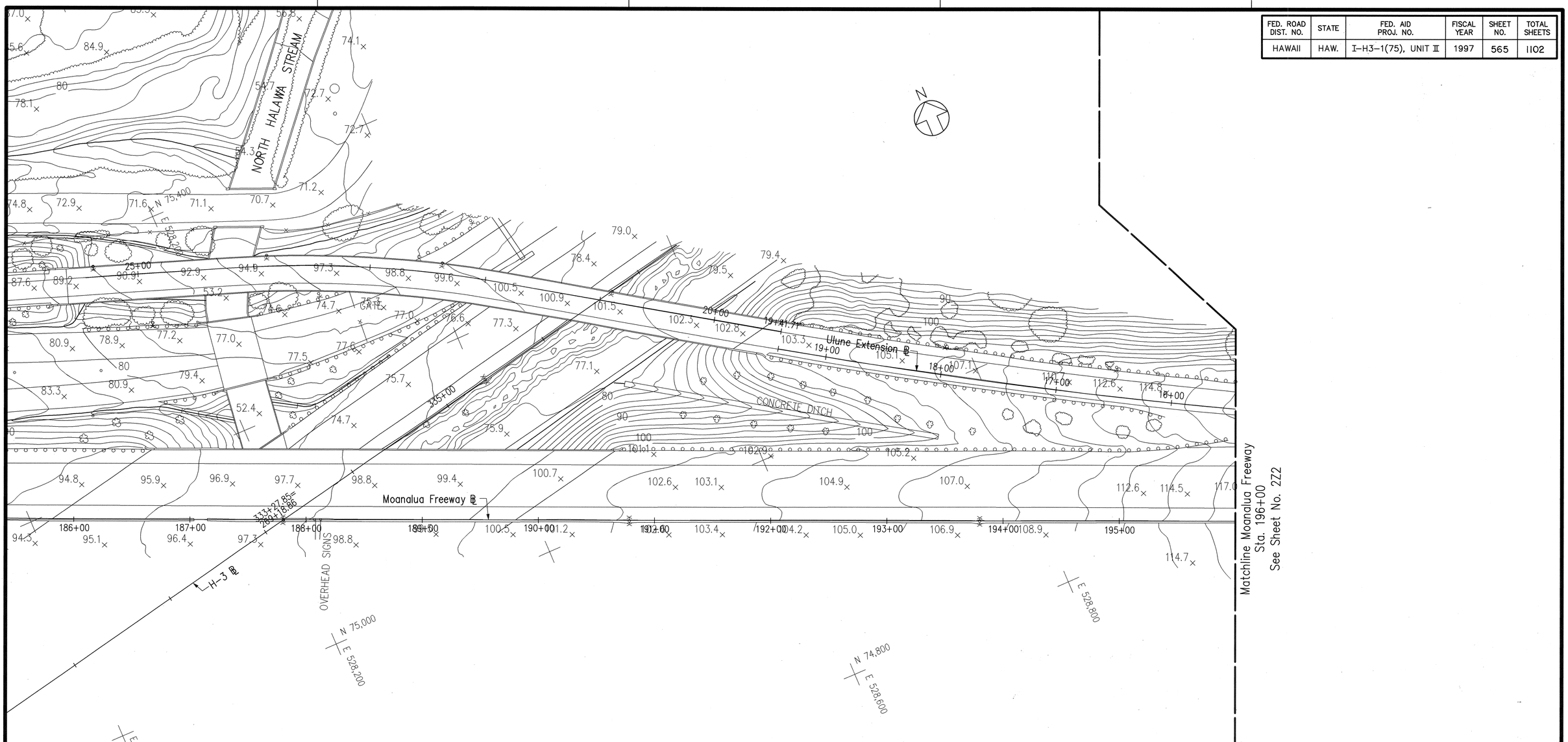
MOANALUA FREEWAY
BORING LOGS

H-3 FINISH (UNIT II)
FAIP NO. I-H3-1(75), UNIT II
LEEWARD SECTION

SCALE: NONE DATE: JANUARY 1997

SHEET NO. 2H3 OF 3 SHEETS

| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|
| HAWAII | HAW. | I-H3-1(75), UNIT II | 1997 | 565 | 1102 |




## NOTES:

1. Contour Interval: 2'
2. Vertical Datum: Mean Sea Level
3. Origin of Coordinates: Hawaiian Plane △ Coordinate System (Zone 3).
4. Compiled from Photogrammetric Methods from photography taken 9-15-1986 and 6-27-1983 at an altitude of 1600' above mean terrain.
5. All contours in areas where the height of vegetation exceeds two feet are to be interpreted as form lines only and as such may be substandard.

## LEGEND

- Building
- Paved Road
- Unpaved Road
- Fence
- Wall
- Power Pole
- Index Contour
- Intermediate Contour
- Depression Contour
- Drain
- X 100.2 Spot Elevation
- Tree, Treeline, Shrub
- Palm Tree

ORIGINAL PLAN
NOTE BOOK No. ____
SURVEY PLOTTED BY ____ DATE ____
DRAWN BY ____
TRACED BY ____
DESIGNED BY ____
QUANTITIES BY ____
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CAD by J. Mimura, 5-5-52

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

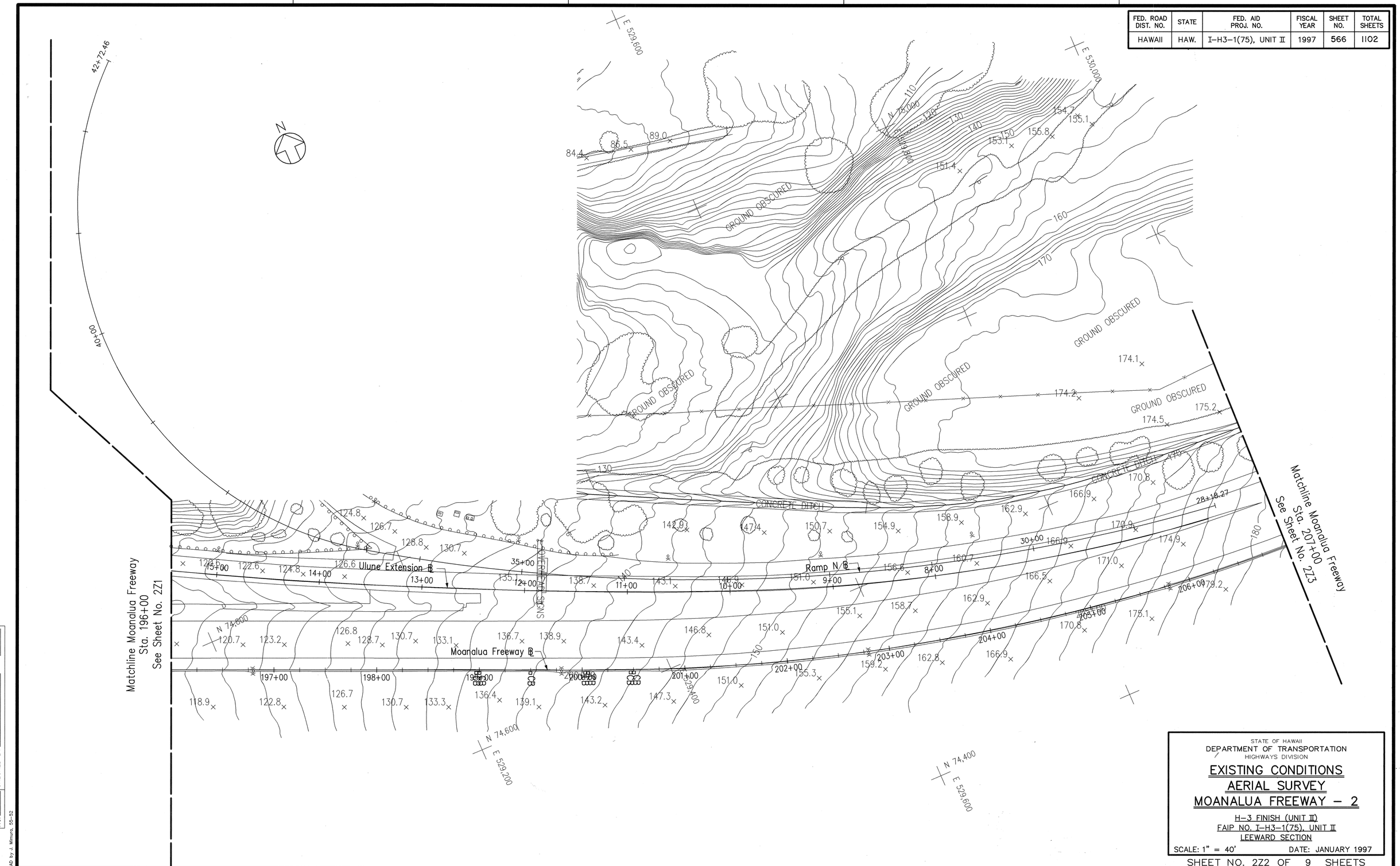
# EXISTING CONDITIONS AERIAL SURVEY MOANALUA FREEWAY - 1

H-3 FINISH (UNIT II)
FAIP NO. I-H3-1(75), UNIT II
LEEWARD SECTION

SCALE: 1" = 40' DATE: JANUARY 1997

SHEET NO. 221 OF 9 SHEETS

| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|
| HAWAII | HAW. | I-H3-1(75), UNIT II | 1997 | 566 | 1102 |




STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

# EXISTING CONDITIONS AERIAL SURVEY MOANALUA FREEWAY – 2

H-3 FINISH (UNIT II)
FAIP NO. I-H3-1(75), UNIT II
LEEWARD SECTION

SCALE: 1" = 40' DATE: JANUARY 1997

SHEET NO. 2Z2 OF 9 SHEETS

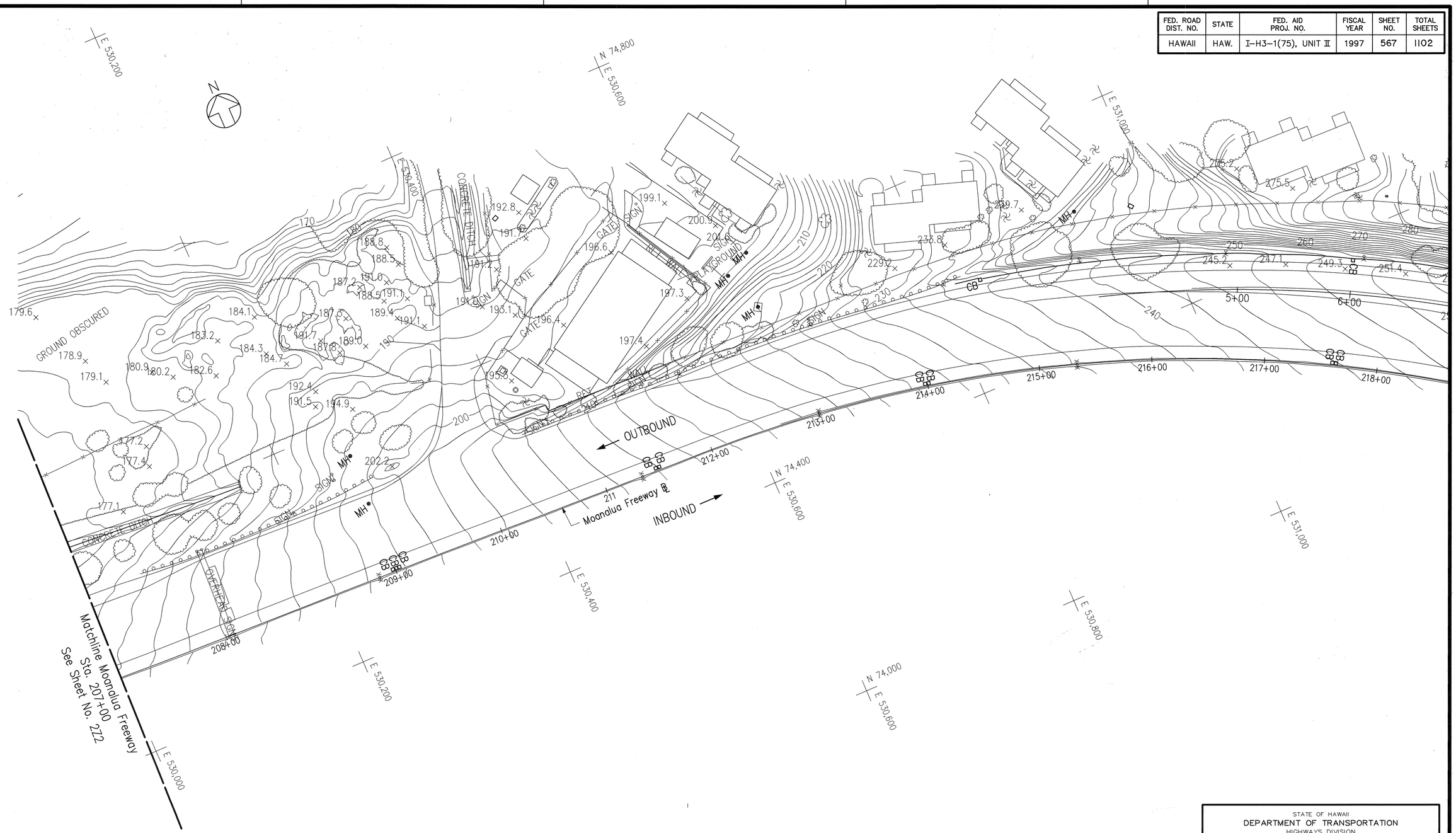
ORIGINAL PLAN
NOTE BOOK ____ No. ____

SURVEY PLOTTED BY ____ DATE ____
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TRACED BY ____
DESIGNED BY ____
QUANTITIES BY ____
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| HAWAII | HAW. | I-H3-1(75), UNIT II | 1997 | 567 | 1102 |




STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

# EXISTING CONDITIONS AERIAL SURVEY MOANALUA FREEWAY – 3

H-3 FINISH (UNIT II)
FAIP NO. I-H3-1(75), UNIT II
LEEWARD SECTION

SCALE: 1" = 40' DATE: JANUARY 1997

SHEET NO. 2Z3 OF 9 SHEETS

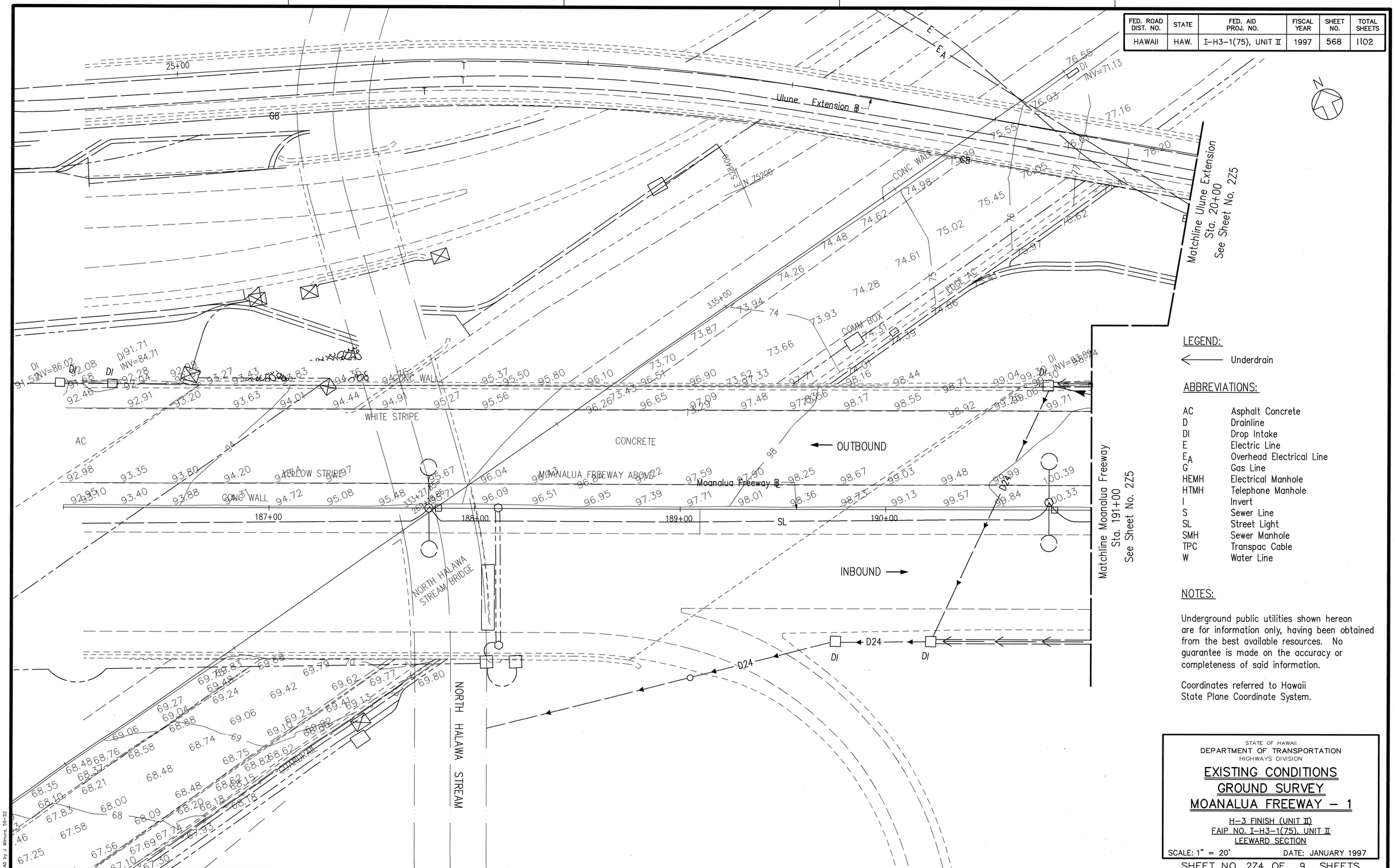
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| | TRACED BY | |
| NOTE BOOK | DESIGNED BY | |
| | QUANTITIES BY | |
| No. | CHECKED BY | |

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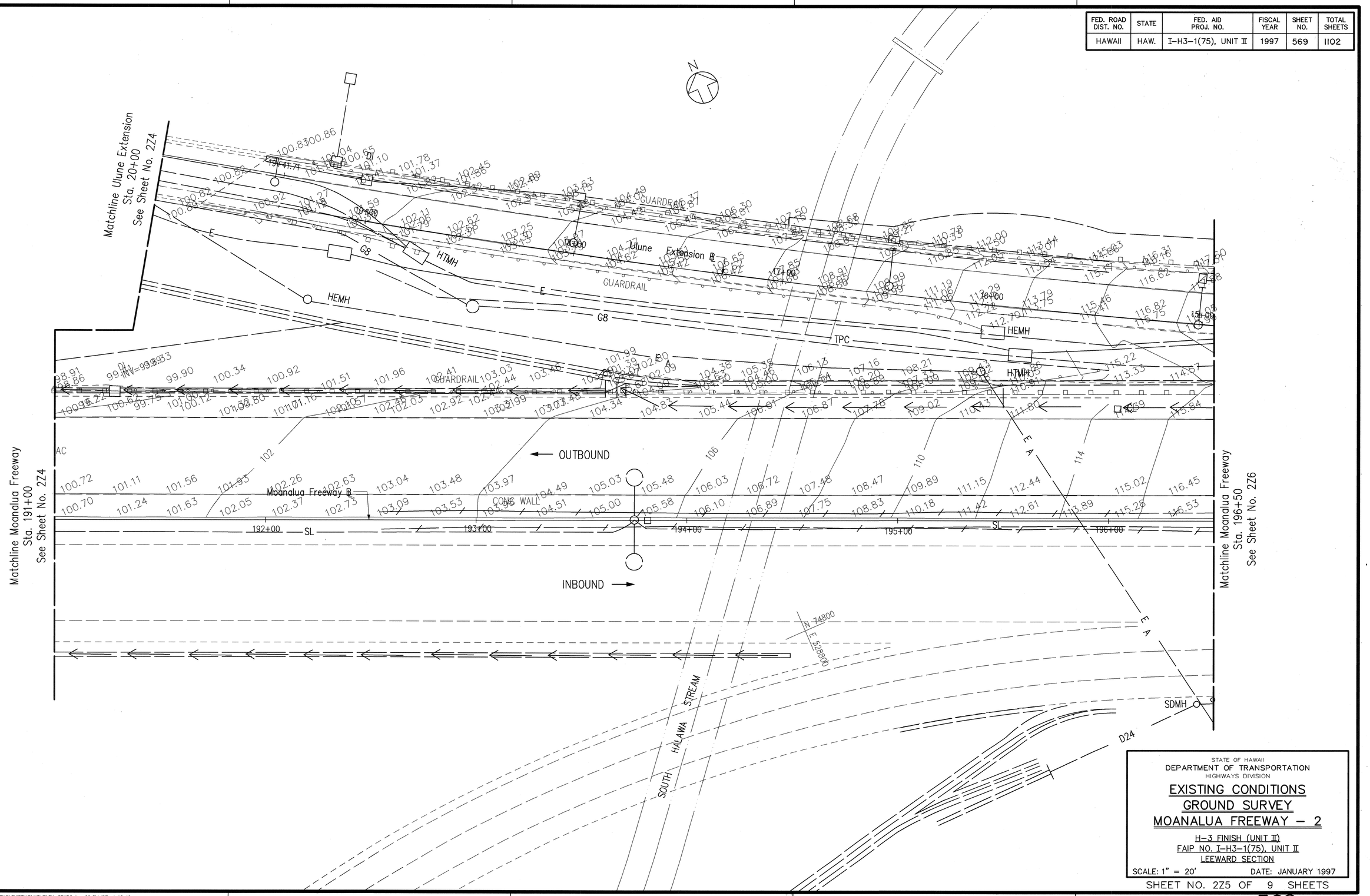
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567

| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|
| HAWAII | HAW. | I-H3-1(75), UNIT II | 1997 | 568 | 1102 |



| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|
| HAWAII | HAW. | I-H3-1(75), UNIT II | 1997 | 569 | 1102 |




ORIGINAL PLAN
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No.
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DESIGNED BY
QUANTITIES BY
CHECKED BY
DATE

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

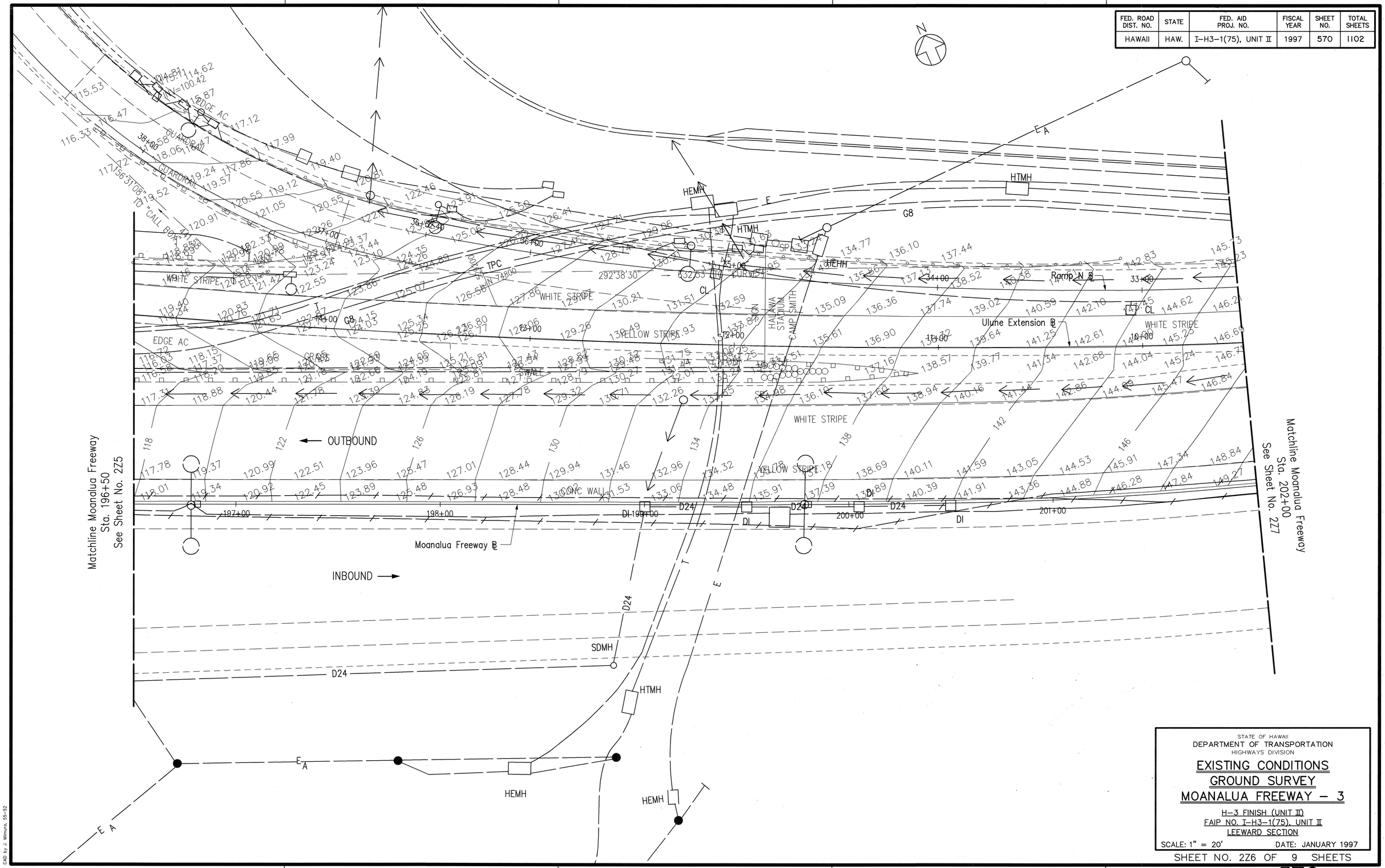
# EXISTING CONDITIONS GROUND SURVEY MOANALUA FREEWAY – 2

H-3 FINISH (UNIT II)
FAIP NO. I-H3-1(75), UNIT II
LEEWARD SECTION

SCALE: 1" = 20' DATE: JANUARY 1997

SHEET NO. 2Z5 OF 9 SHEETS

| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|
| HAWAII | HAW. | I-H3-1(75), UNIT II | 1997 | 570 | 1102 |




ORIGINAL PLAN
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TRACED BY "
NOTE BOOK DESIGNED BY "
QUANTITIES BY "
No. ____ CHECKED BY "

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DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

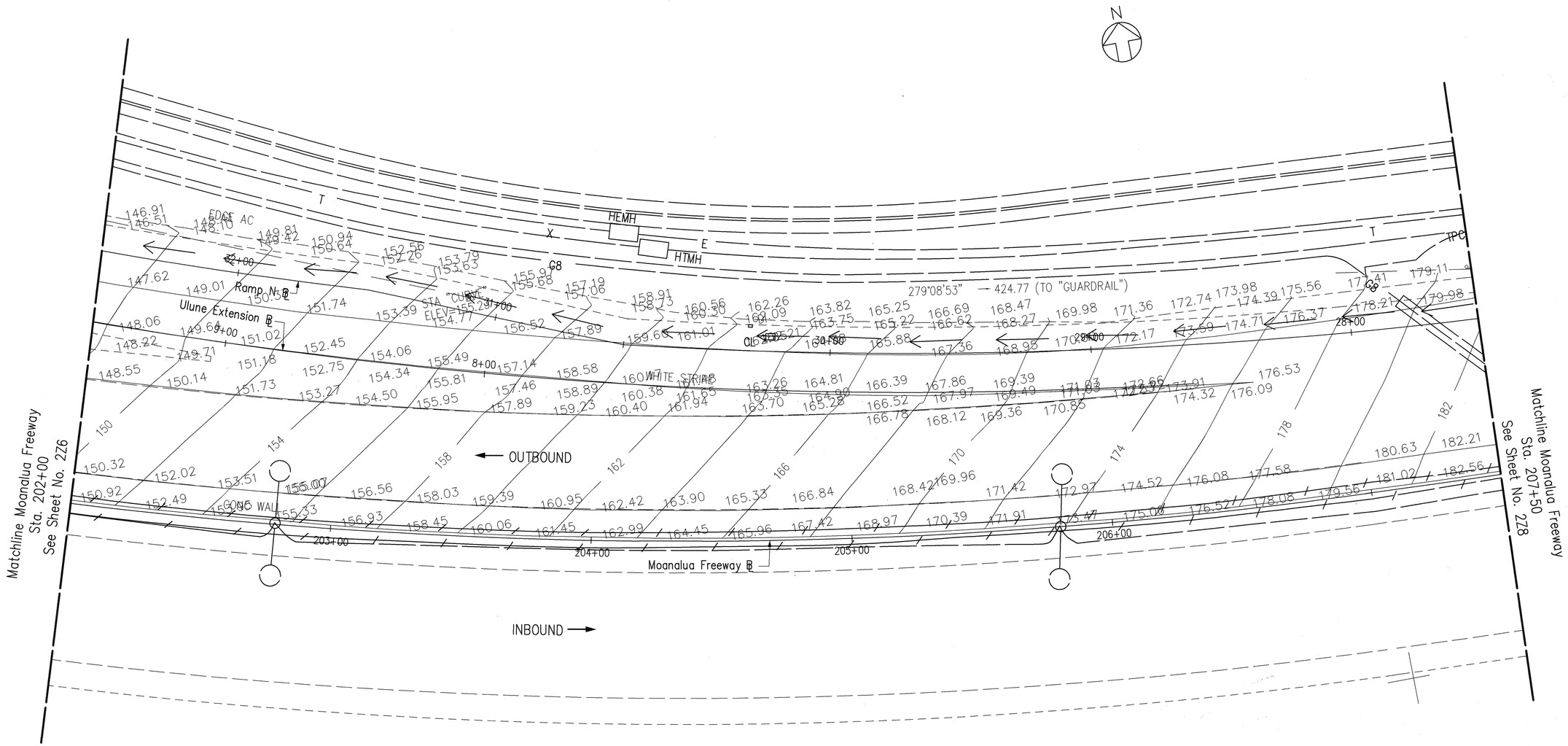
# EXISTING CONDITIONS GROUND SURVEY MOANALUA FREEWAY – 3

H-3 FINISH (UNIT II)
FAIP NO. I-H3-1(75), UNIT II
LEEWARD SECTION

SCALE: 1" = 20' DATE: JANUARY 1997

SHEET NO. 2Z6 OF 9 SHEETS

| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|
| HAWAII | HAW. | I-H3-1(75), UNIT II | 1997 | 571 | 1102 |




74400
529600

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

# EXISTING CONDITIONS
# GROUND SURVEY
# MOANALUA FREEWAY – 4

H-3 FINISH (UNIT II)
FAIP NO. I-H3-1(75), UNIT II
LEEWARD SECTION

SCALE: 1" = 20' DATE: JANUARY 1997

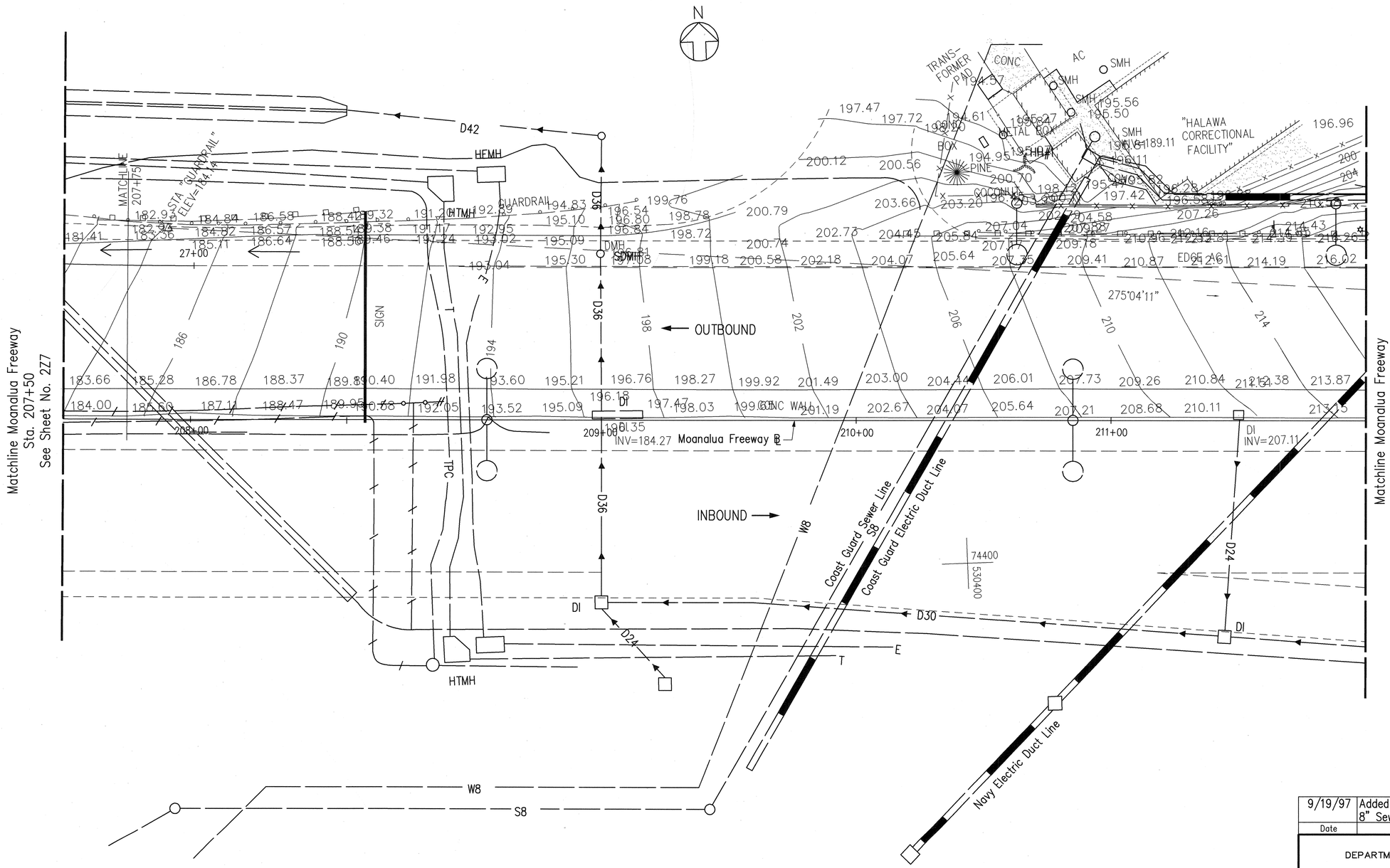
SHEET NO. 227 OF 9 SHEETS

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|---|---|---|---|---|---|
| HAWAII | HAW. | I-H3-1(75), UNIT II | 1997 | 572 | 1102 |




| 9/19/97 | Added Coast Guard label to existing 8" Sewerline |
|---|---|
| Date | Revision |

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

# EXISTING CONDITIONS GROUND SURVEY MOANALUA FREEWAY – 5

H-3 FINISH (UNIT II)
FAIP NO. I-H3-1(75), UNIT II
LEEWARD SECTION

SCALE: 1" = 20' DATE: JANUARY 1997

SHEET NO. 2Z8 OF 9 SHEETS

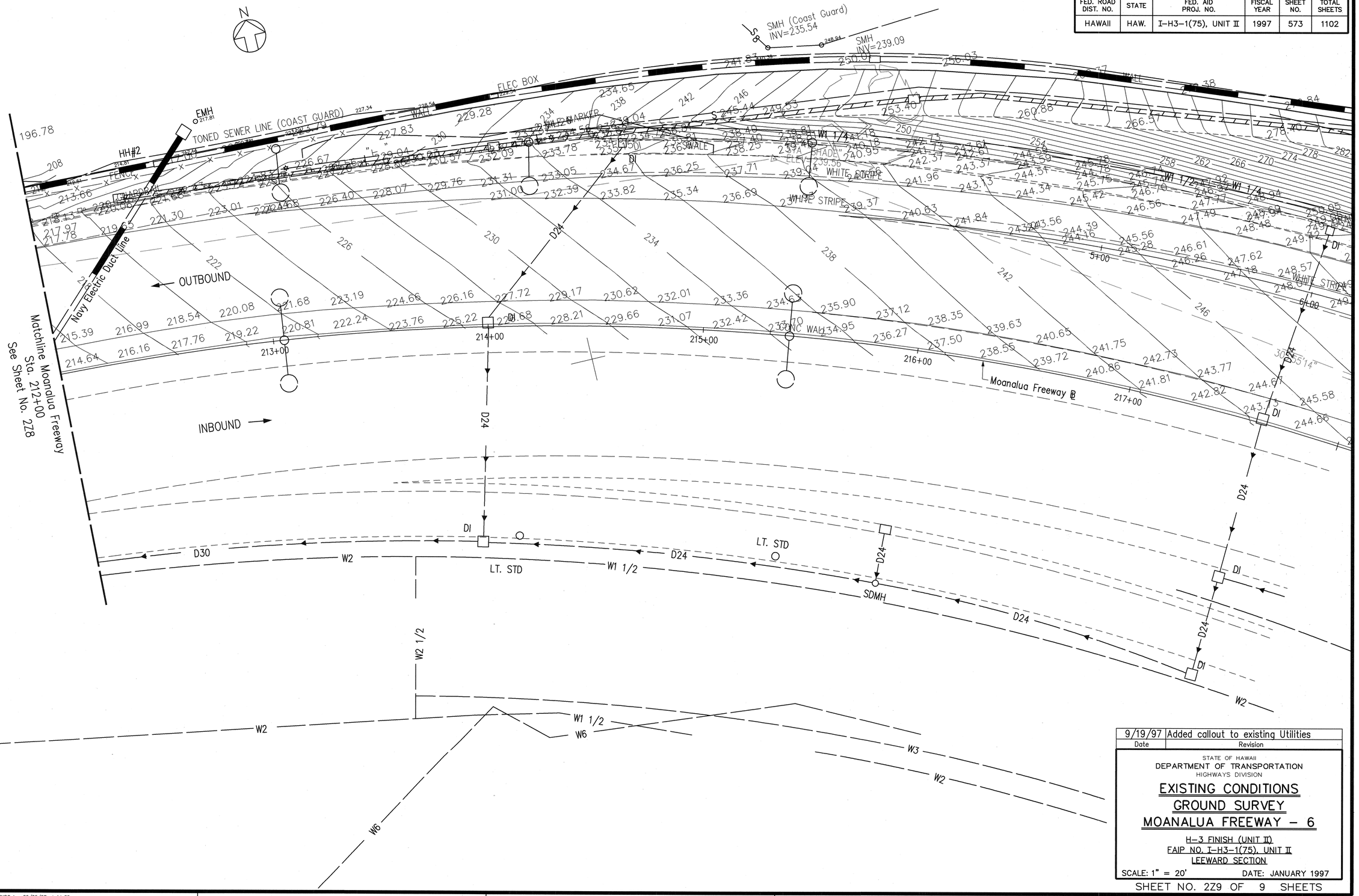
C.O. 572

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

CAD by J. Mimura, 55-52

Last Saved: J:\H3RF\RFU2\CO\CO-EGND1.dwg 09/25/97 at 14:33

| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|
| HAWAII | HAW. | I-H3-1(75), UNIT II | 1997 | 573 | 1102 |




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

CAD by J. Mimura, 55-52

Last Saved: J:\H3RF\RFU2\CO\CO-EGND2.dwg 09/25/97 at 14:35

| 9/19/97 | Added callout to existing Utilities |
|---|---|
| Date | Revision |

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

# EXISTING CONDITIONS
# GROUND SURVEY
# MOANALUA FREEWAY - 6

H-3 FINISH (UNIT II)
FAIP NO. I-H3-1(75), UNIT II
LEEWARD SECTION

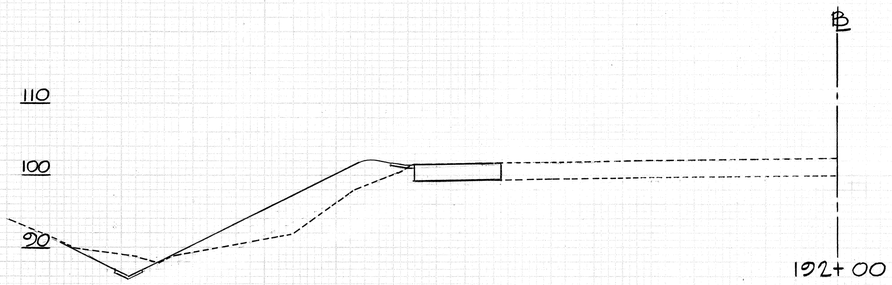
SCALE: 1" = 20' DATE: JANUARY 1997

SHEET NO. 2Z9 OF 9 SHEETS

C.O. 573

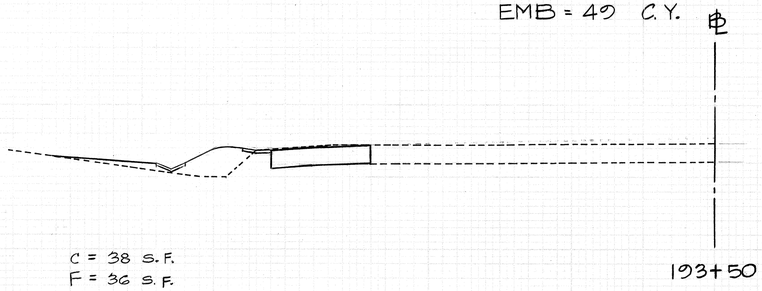
| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|
| HAWAII | HAW. | I-H3-1(75),UNIT II | 1997 | 574 | 1102 |

EXC = 89 C.Y.
EMB = 173 C.Y.



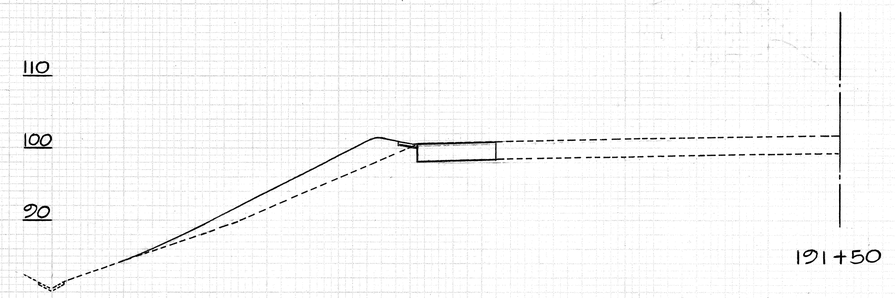

C = 55 S.F.
F = 103 S.F.

EXC = 70 C.Y.
EMB = 40 C.Y.



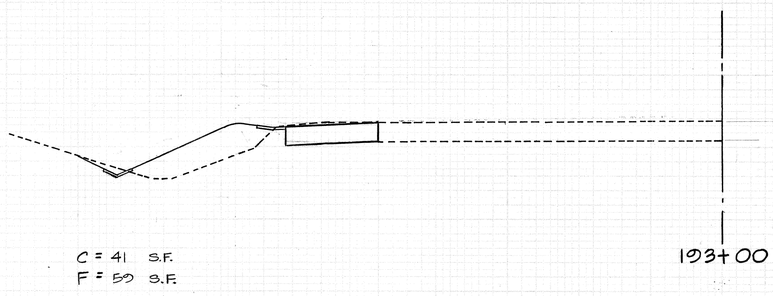

C = 38 S.F.
F = 36 S.F.

EXC = 79 C.Y.
EMB = 148 C.Y.




C = 30 S.F.
F = 56 S.F.

EXC = 73 C.Y.
EMB = 88 C.Y.

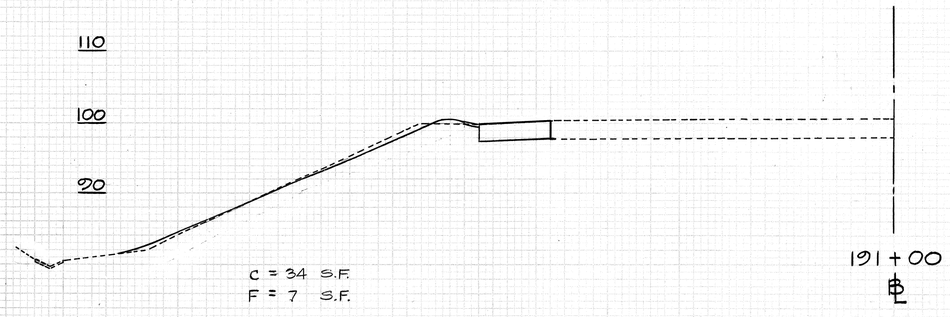



C = 41 S.F.
F = 50 S.F.

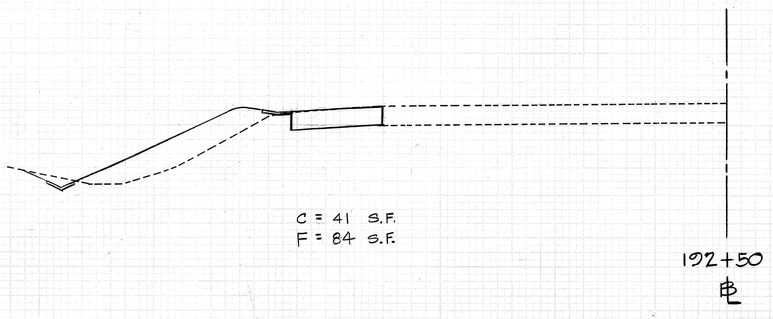
EXC = 59 C.Y.
EMB = 58 C.Y.

EXC = 76 C.Y.
EMB = 132 C.Y.

LEGEND:
--------- Existing




C = 34 S.F.
F = 7 S.F.




C = 41 S.F.
F = 84 S.F.

CLYDE T. SHIMIZU
LICENSED PROFESSIONAL ENGINEER
No. 5514-C
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THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.
Clyde T. Shimizu

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

100 80 60 40 20 0 100 80 60 40 20 0

MOANALUA FREEWAY (MF)

Sheet No. 2X1 of 13 Sheets

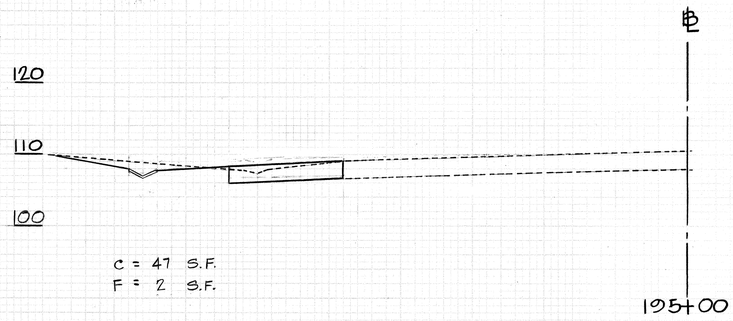
FINAL SURVEY
NOTE BOOK
NO.
SURVEYED
PLOTTED
TEMPLATE
AREAS
AREAS CHECKED
BY
DATE

ORIGINAL SURVEY
NOTE BOOK
NO.
SURVEYED
PLOTTED
TEMPLATE
AREAS
AREAS CHECKED
BY
DATE

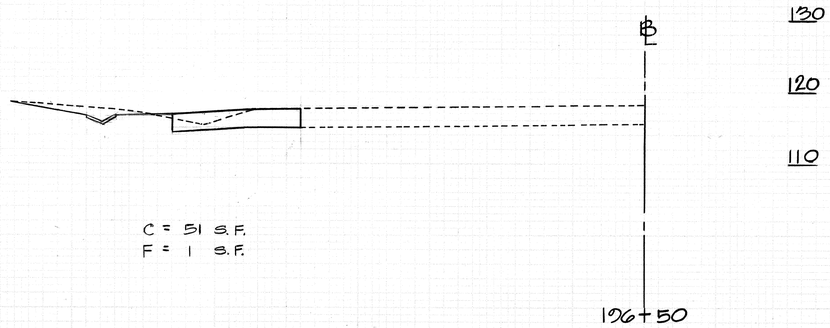
84732

| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|
| HAWAII | HAW. | HH3-1(75)UNIT II | 1997 | 575 | 1102 |

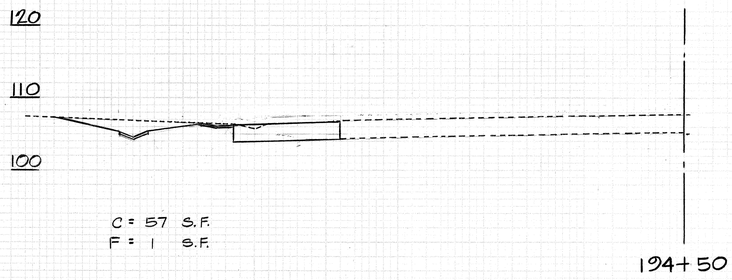
EXC = 85 C.Y.
EMB = 3 C.Y.



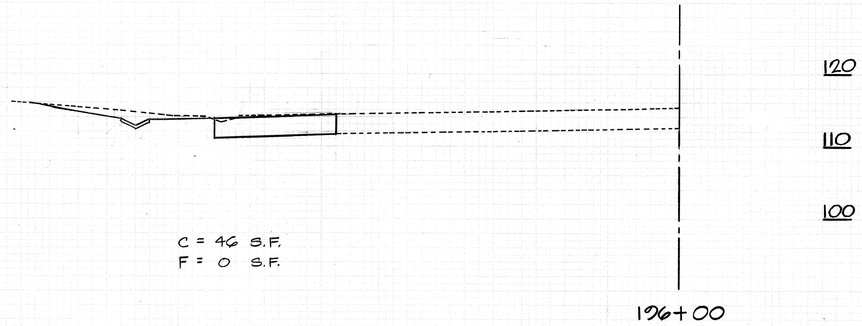

EXC = 98 C.Y.
EMB = 2 C.Y.



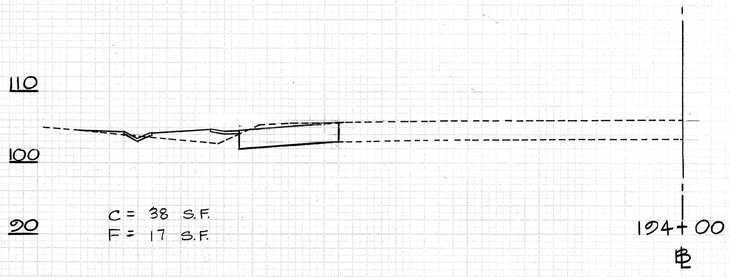

EXC = 96 C.Y.
EMB = 3 C.Y.



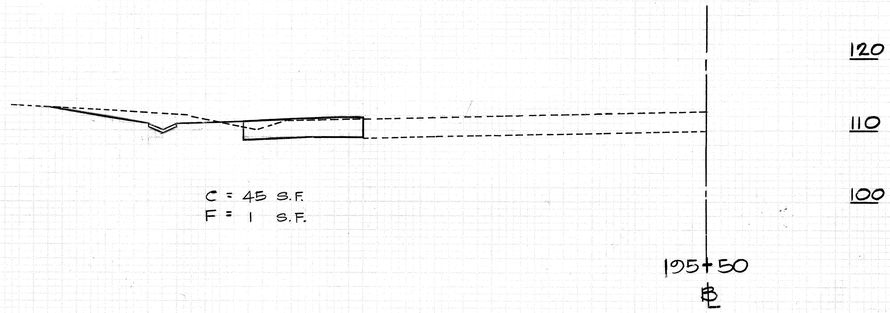

EXC = 90 C.Y.
EMB = 1 C.Y.




EXC = 88 C.Y.
EMB = 17 C.Y.




EXC = 84 C.Y.
EMB = 1 C.Y.




80 60 40 20 0 80 60 40 20 0

MOANALUA FREEWAY (MF)

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

Sheet No. 2X2 of 13 Sheets

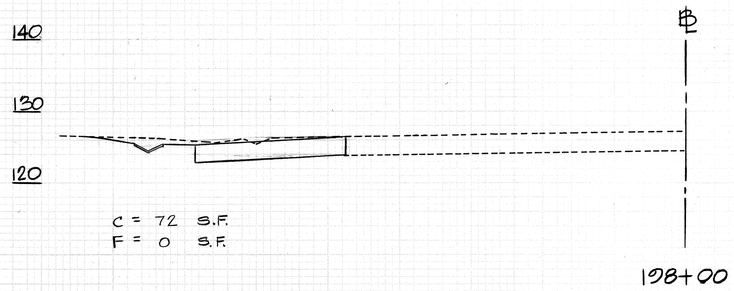
575

FINAL SURVEY — DATE, BY, SURVEYED, PLOTTED, TEMPLATE, NOTE BOOK, AREAS, AREAS CHECKED, NO.

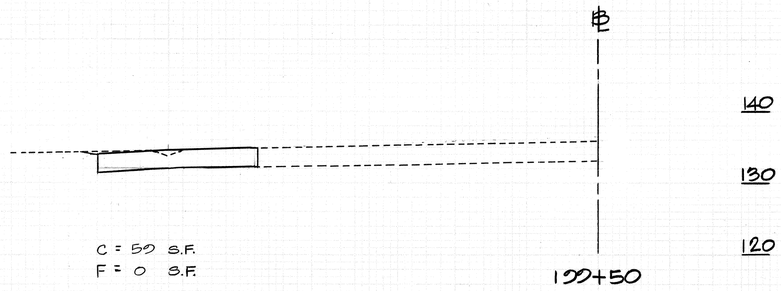
ORIGINAL SURVEY — DATE, BY, SURVEYED, PLOTTED, TEMPLATE, NOTE BOOK, AREAS, AREAS CHECKED, NO.

| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|
| HAWAII | HAW. | I-H3-1(75),UNIT11 | 1997 | 576 | 1102 |

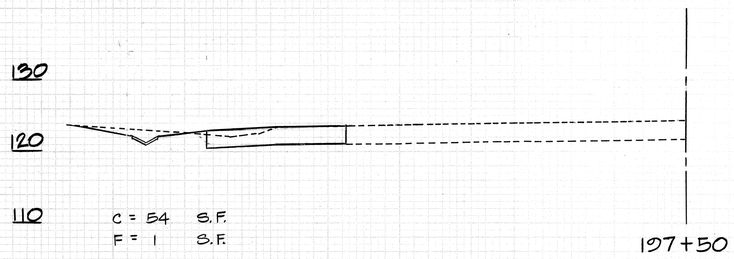
EXC = 128 C.Y.
EMB = 0 C.Y.



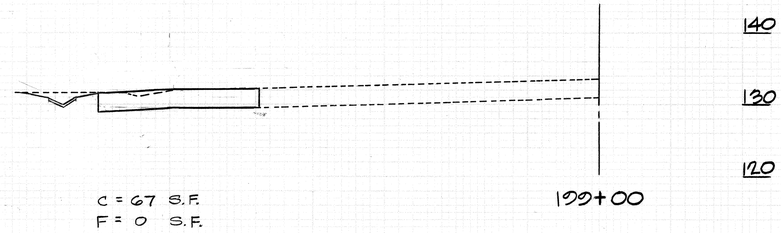

EXC = 207 C.Y.
EMB = 0 C.Y.



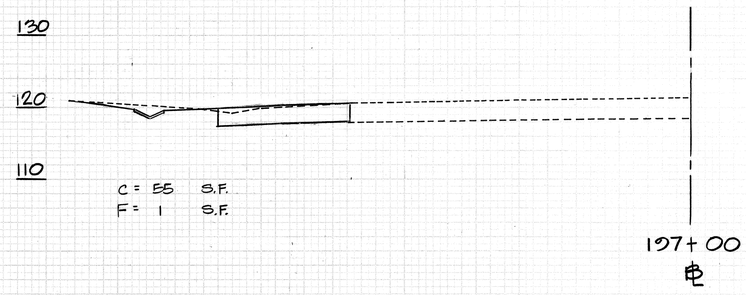

EXC = 117 C.Y.
EMB = 1 C.Y.



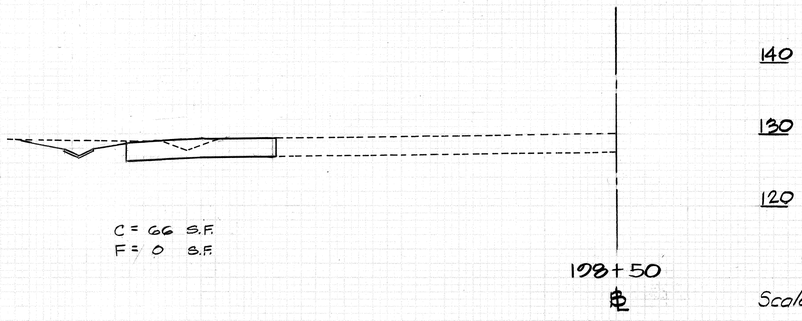

EXC = 117 C.Y.
EMB = 0 C.Y.




EXC = 101 C.Y.
EMB = 2 C.Y.




EXC = 123 C.Y.
EMB = 0 C.Y.




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

80 60 40 20 0 80 60 40 20 0

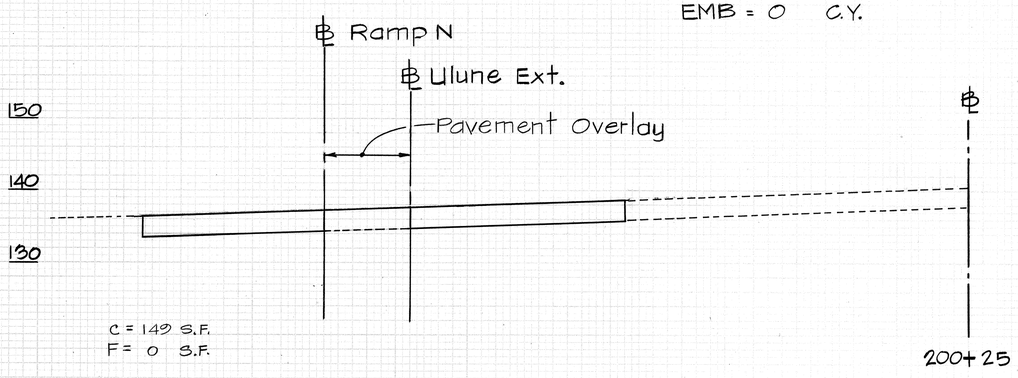
MOANALUA FREEWAY (MF)

Sheet No. 2X3 of 13 Sheets

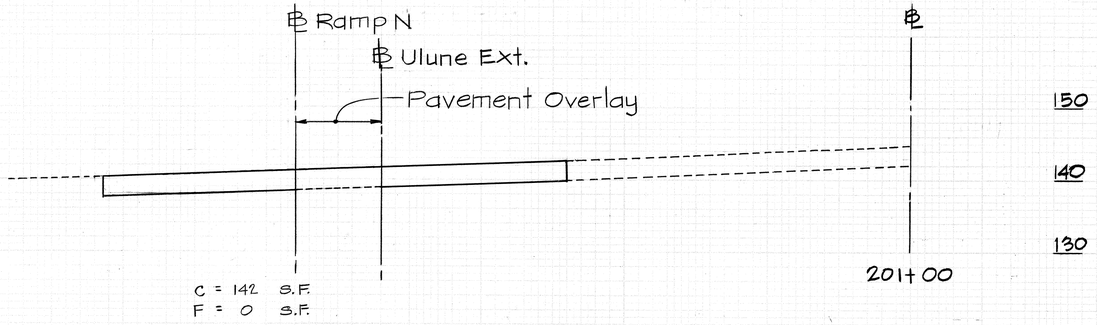
576

| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|
| HAWAII | HAW. | I-H3-1(75)UNIT II | 1997 | 577 | 1102 |

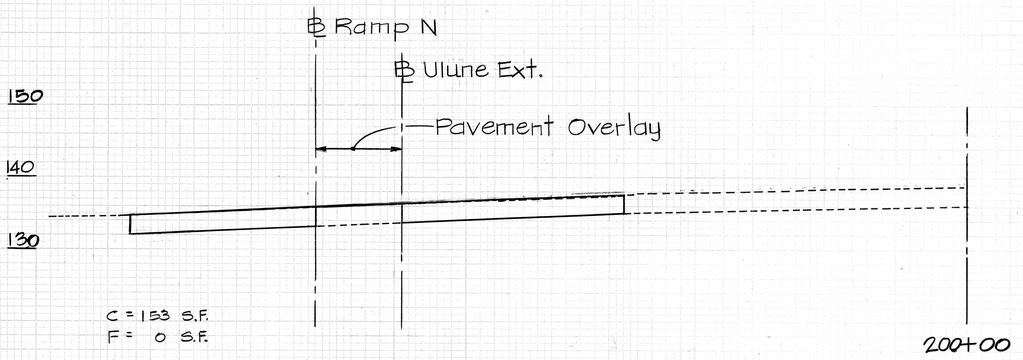
EXC = 141 C.Y.
EMB = 0 C.Y.



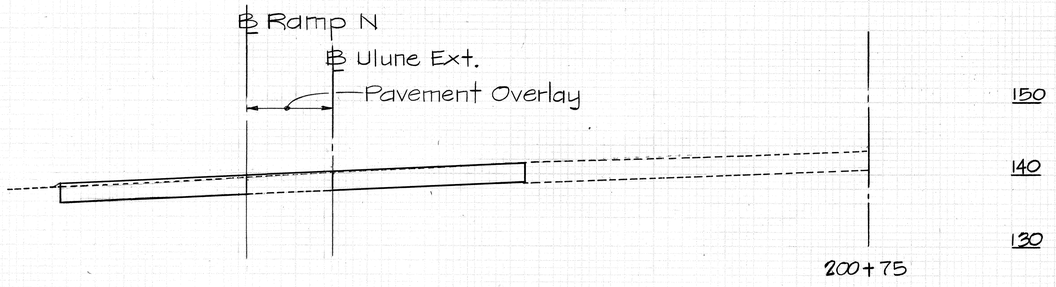

EXC = 119 C.Y.
EMB 1 C.Y.



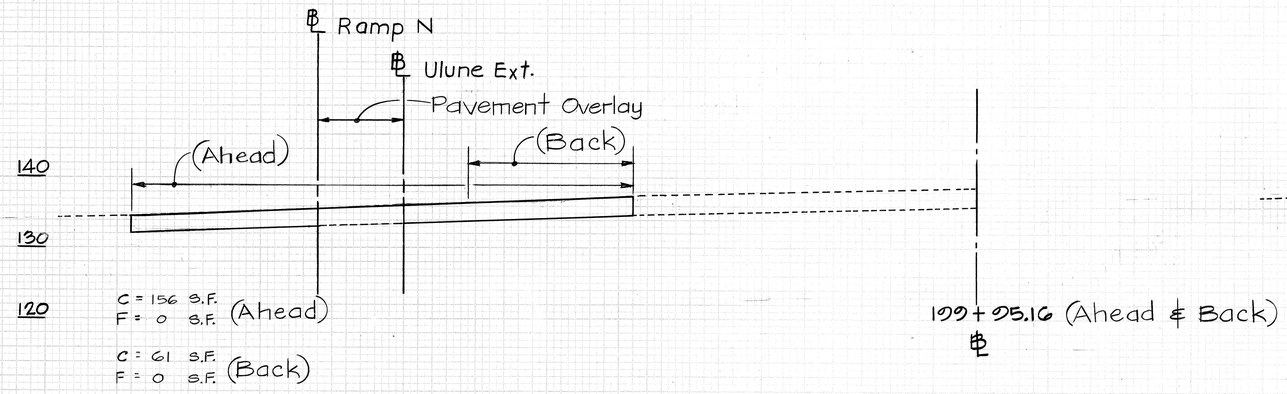

EXC = 140 C.Y.
EMB = 0 C.Y.



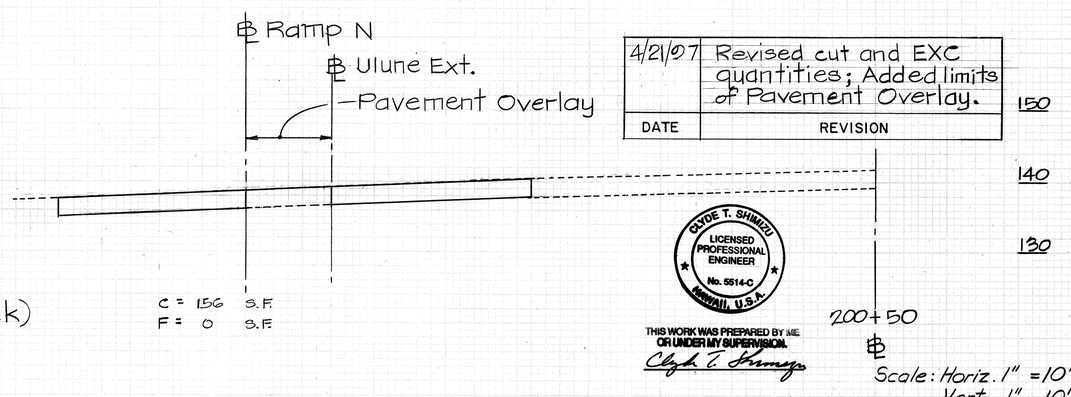

EXC = 144 C.Y.
EMB = 0 C.Y.




EXC = 28 C.Y.
EMB = 0 C.Y.




EXC = 150 C.Y.
EMB = 0 C.Y.




| DATE | REVISION |
|---|---|
| 4/21/97 | Revised cut and EXC quantities; Added limits of Pavement Overlay. |

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MOANALUA FREEWAY (MF)

120 100 80 60 40 20 0 120 100 80 60 40 20 0

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

Sheet No. 2X4 of 13 Sheets

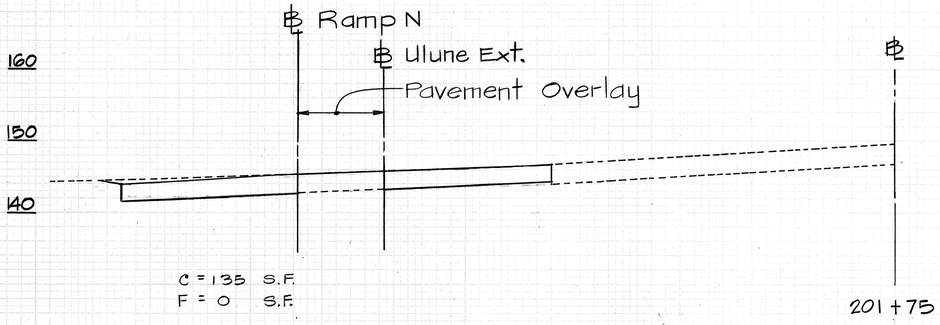
ADD. 577

FINAL SURVEY — DATE, BY, SURVEYED, PLOTTED, TEMPLATE, AREAS, AREAS CHECKED, NOTE BOOK, NO.

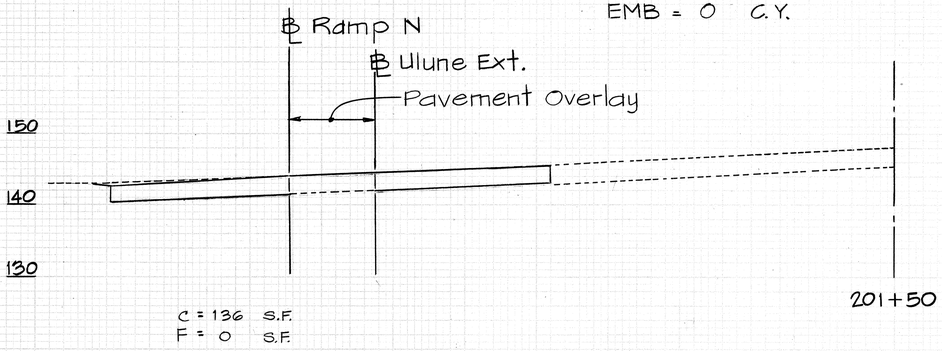
ORIGINAL SURVEY — DATE, BY, SURVEYED, PLOTTED, TEMPLATE, AREAS, AREAS CHECKED, NOTE BOOK, NO.

| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|
| HAWAII | HAW. | I-H3-1(75)UNIT II | 1997 | 578 | 1102 |

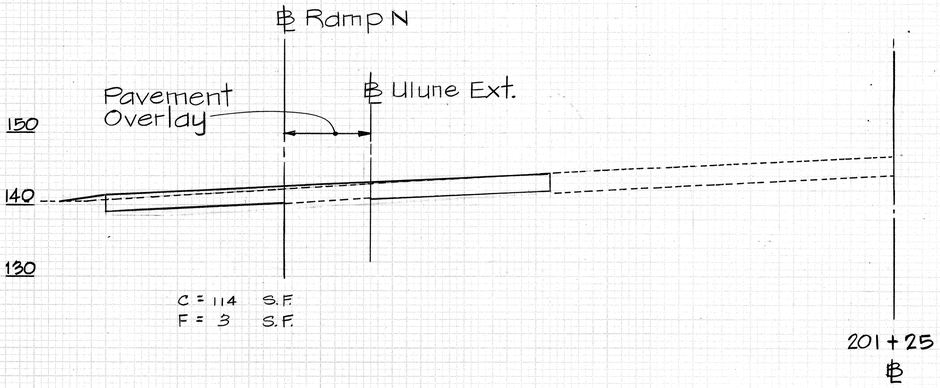
EXC = 123 C.Y.
EMB = 0 C.Y.



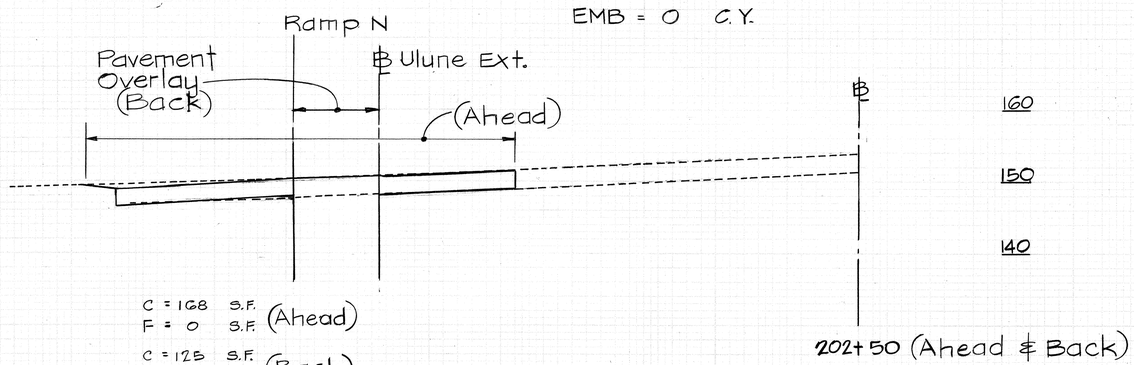

EXC = 125 C.Y.
EMB = 0 C.Y.



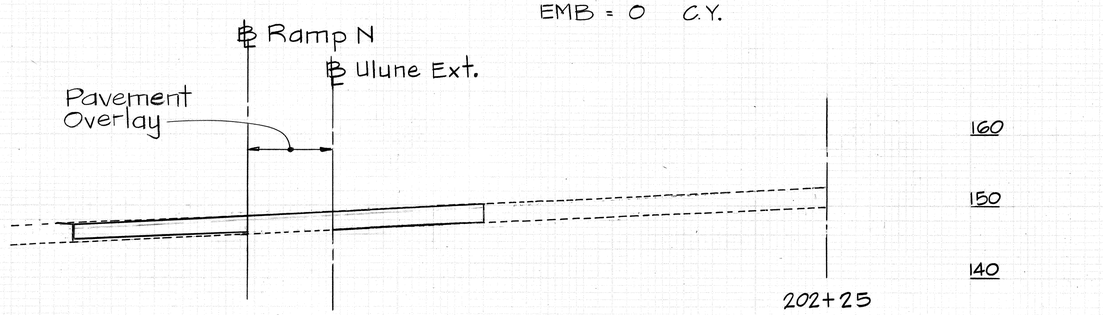

EXC = 116 C.Y.
EMB = 1.5 C.Y.



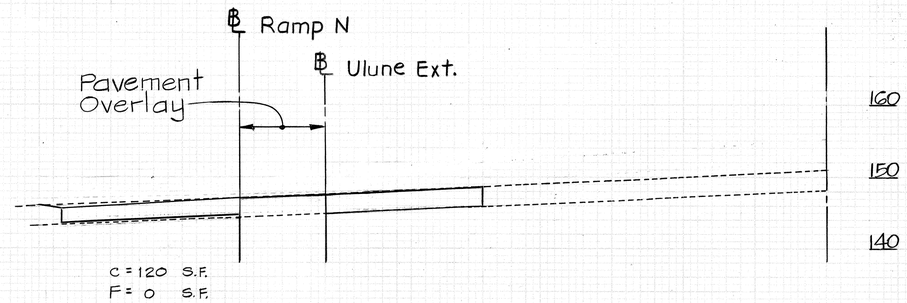

EXC = 149 C.Y.
EMB = 0 C.Y.




EXC = 115 C.Y.
EMB = 0 C.Y.




EXC = 113 C.Y.
EMB = 0 C.Y.




| DATE | REVISION |
|---|---|
| 4/2/97 | Revised cut and EXC quantities; Added limits of Pavement Overlay. |




THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.
Clyde T. Shimizu

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

MOANALUA FREEWAY (MF)

120 100 80 60 40 20 0 120 100 80 60 40 20 0

Sheet No. 2X5 of 13 Sheets

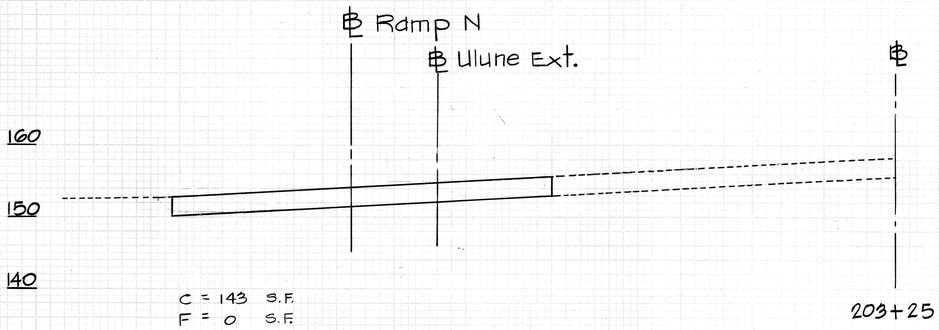
ADD. 578

FINAL SURVEY — SURVEYED, PLOTTED, TEMPLATE, AREAS, CHECKED, NOTE BOOK, NO., BY, DATE

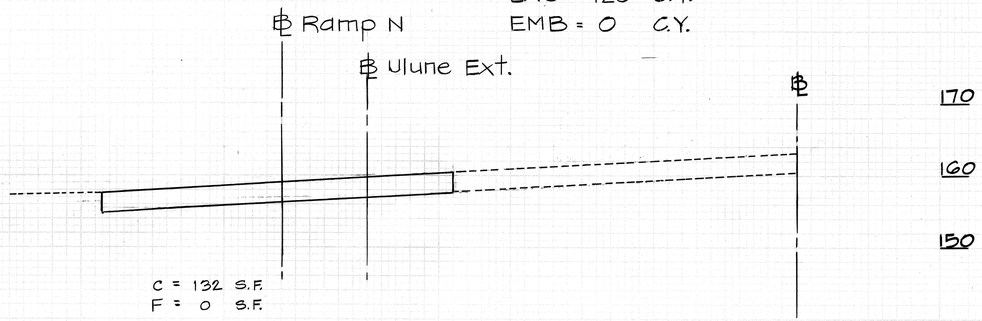
ORIGINAL SURVEY — SURVEYED, PLOTTED, TEMPLATE, AREAS, CHECKED, NOTE BOOK, NO., BY, DATE

| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|
| HAWAII | HAW. | I-H3-1(75),UNIT II | 1997 | 579 | 1102 |

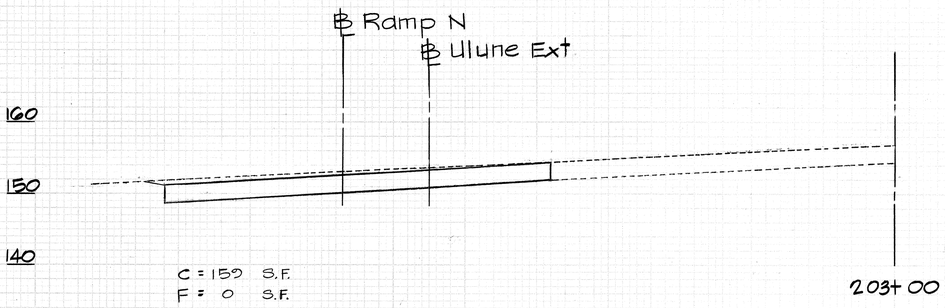
EXC = 131 C.Y.
EMB = 0 C.Y.



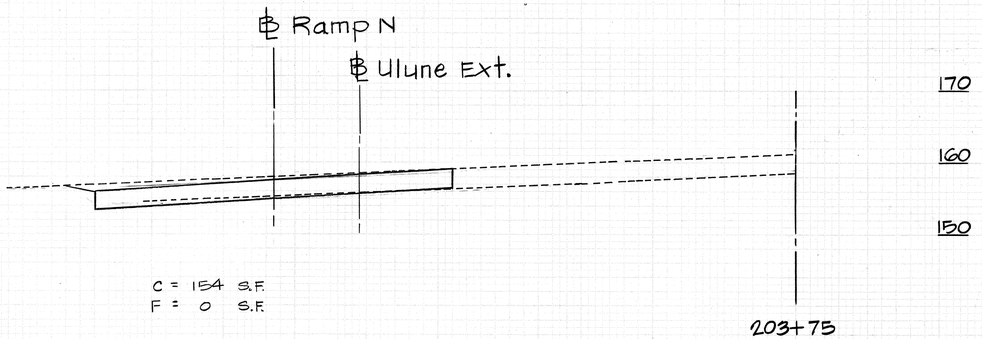

EXC = 120 C.Y.
EMB = 0 C.Y.



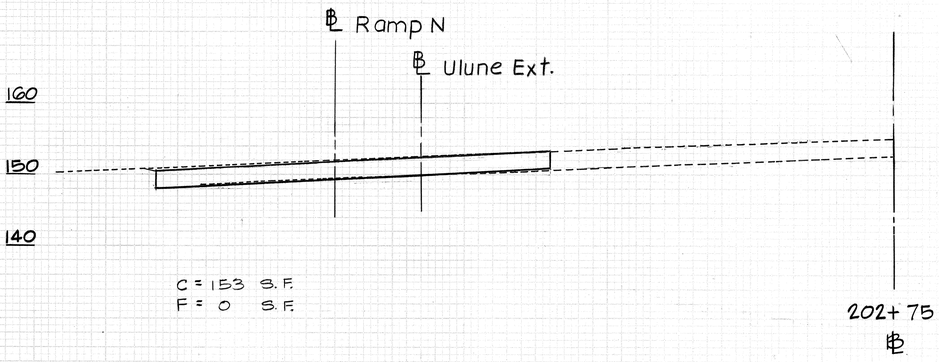

EXC = 140 C.Y.
EMB = 0 C.Y.



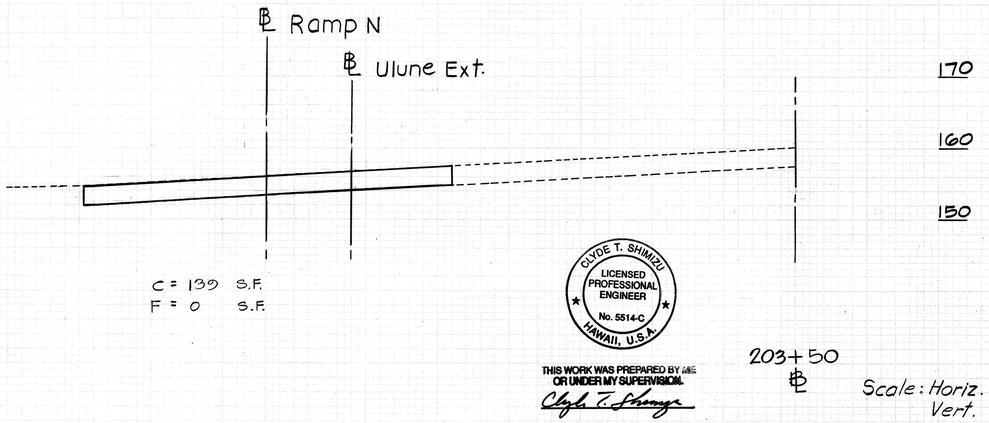

EXC = 132 C.Y.
EMB = 1 C.Y.




EXC = 144 C.Y.
EMB = 0 C.Y.




EXC = 136 C.Y.
EMB = 0 C.Y.




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Clyde T. Shimizu

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

MOANALUA FREEWAY (MF)

Sheet No. 2X6 of 13 Sheets

100 80 60 40 20 0 100 80 60 40 20 0

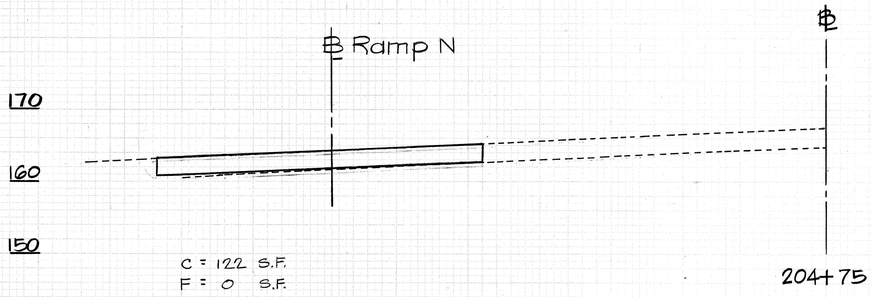
579

FINAL SURVEY — DATE, BY, SURVEYED, PLOTTED, TEMPLATE, AREAS, NOTE BOOK, NO., AREAS CHECKED

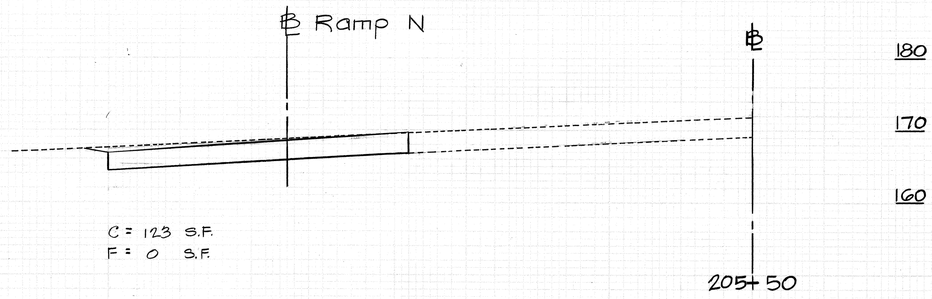
ORIGINAL SURVEY — DATE, BY, SURVEYED, PLOTTED, TEMPLATE, AREAS, NOTE BOOK, NO., AREAS CHECKED

| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|
| HAWAII | HAW. | I-H3-1(75),UNIT II | 1997 | 580 | 1102 |

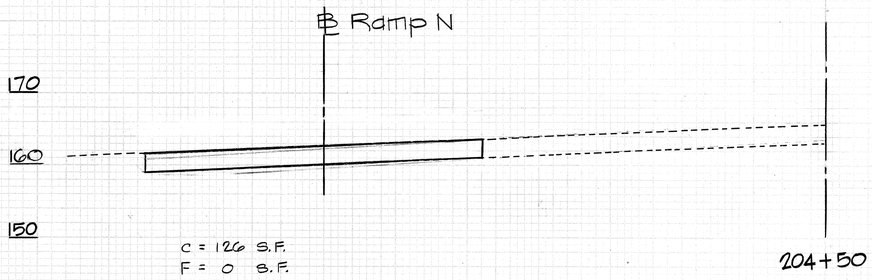
EXC = 110 C.Y.
EMB = 0.5 C.Y.



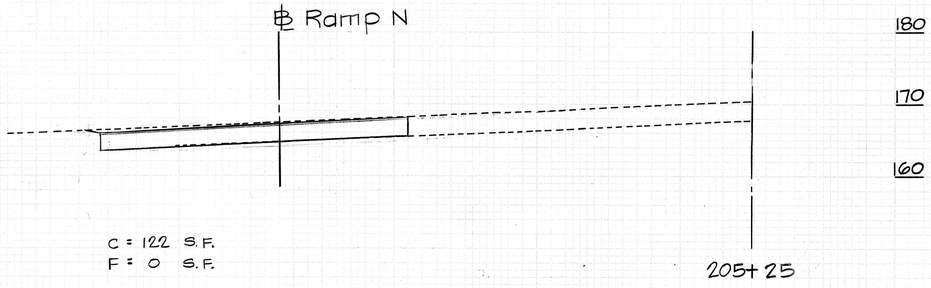

EXC = 107 C.Y.
EMB = 0 C.Y.



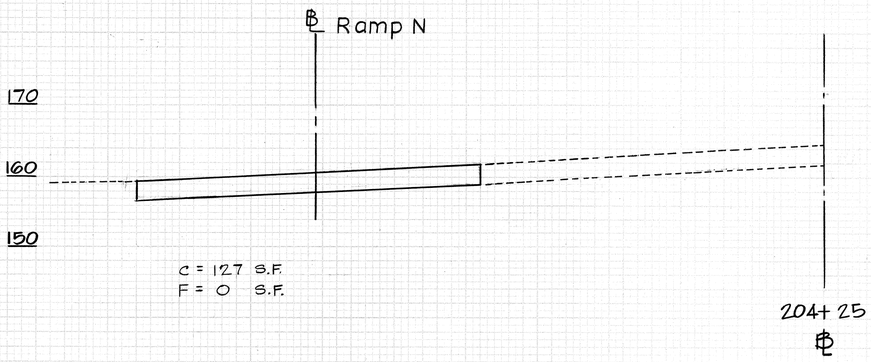

EXC = 115 C.Y.
EMB = 0 C.Y.



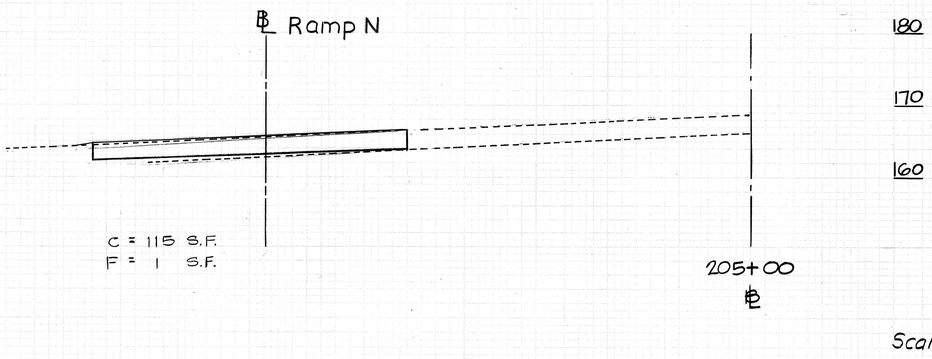

EXC = 113 C.Y.
EMB = 0 C.Y.




EXC = 117 C.Y.
EMB = 0 C.Y.




EXC = 110 C.Y.
EMB = 0.5 C.Y.




CLYDE T. SHIMIZU
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HAWAII, U.S.A.

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Clyde T. Shimizu

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

MOANALUA FREEWAY (MF)

100 80 60 40 20 0 100 80 60 40 20 0

Sheet No. 2X7 of 13 Sheets

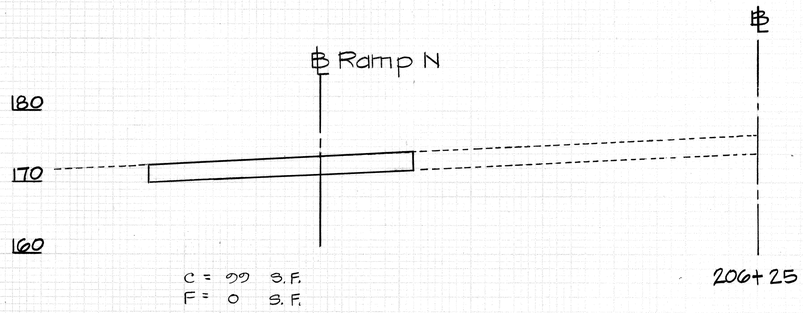
580

FINAL SURVEY — DATE, BY, SURVEYED, PLOTTED, TEMPLATE, AREAS, AREAS CHECKED, NOTE BOOK, NO.

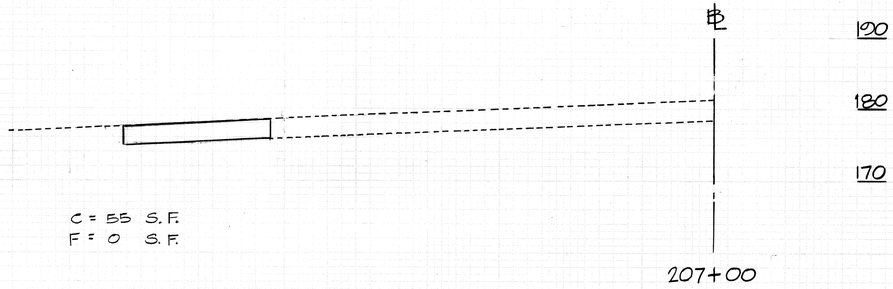
ORIGINAL SURVEY — DATE, BY, SURVEYED, PLOTTED, TEMPLATE, AREAS, AREAS CHECKED, NOTE BOOK, NO.

| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|
| HAWAII | HAW. | I-H3-1(75)UNIT II | 1997 | 581 | 1102 |

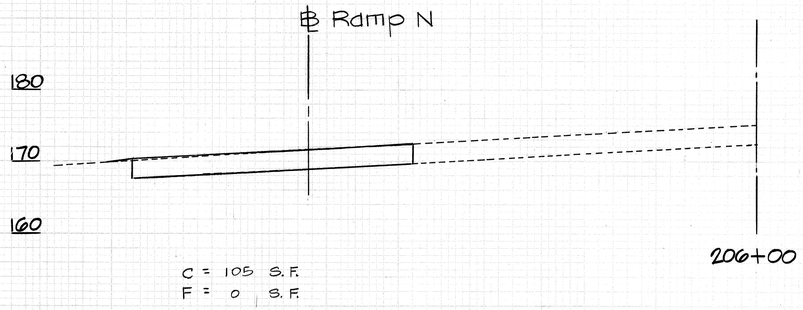
EXC = 80 C.Y.
EMB = 0 C.Y.



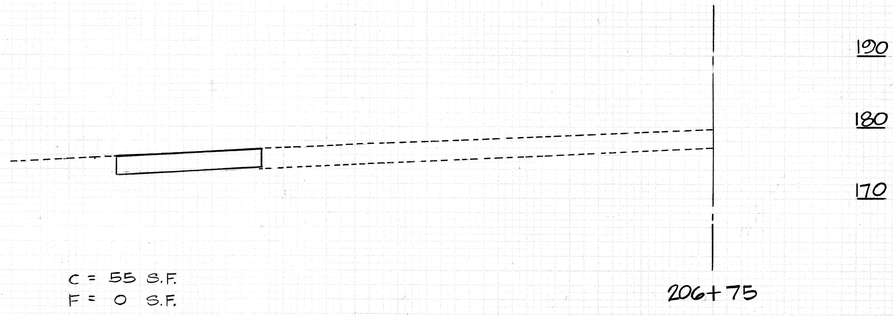

EXC = 97 C.Y.
EMB = 5 C.Y.



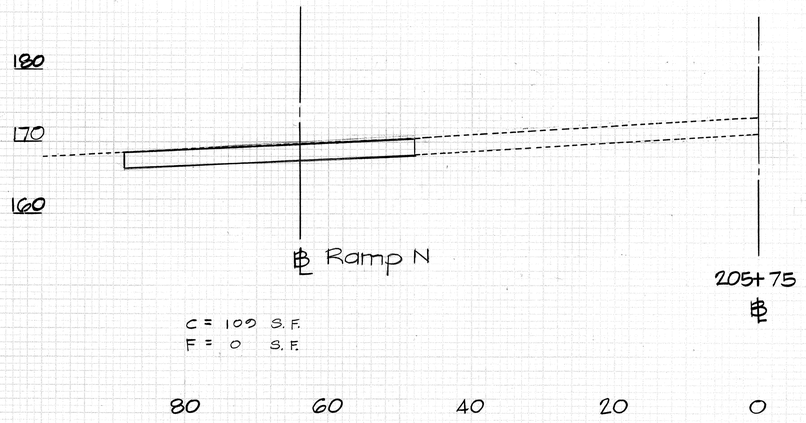

EXC = 95 C.Y.
EMB = 0 C.Y.



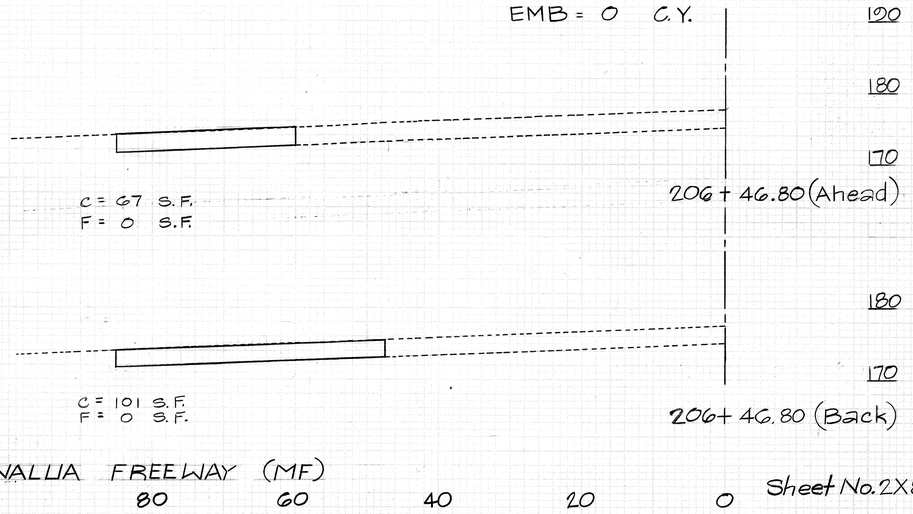

EXC = 51 C.Y.
EMB = 0 C.Y.




EXC = 99 C.Y.
EMB = 0 C.Y.




EXC = 64 C.Y.
EMB = 0 C.Y.




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

MOANALUA FREEWAY (MF)

80 60 40 20 0 80 60 40 20 0

Sheet No. 2X8 of 13 Sheets

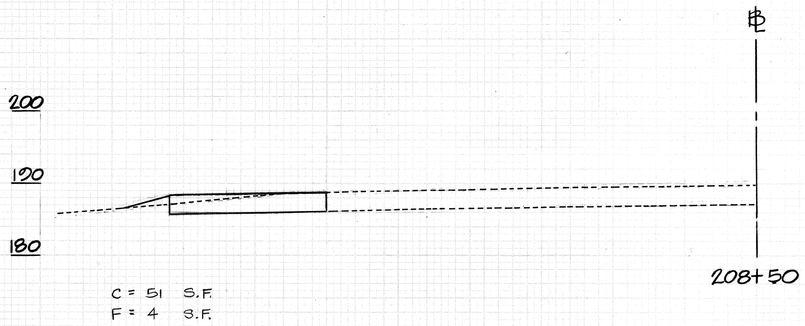
581

FINAL SURVEY — DATE, BY, SURVEYED, PLOTTED, NOTE BOOK, TEMPLATE, AREAS, AREAS CHECKED, NO.

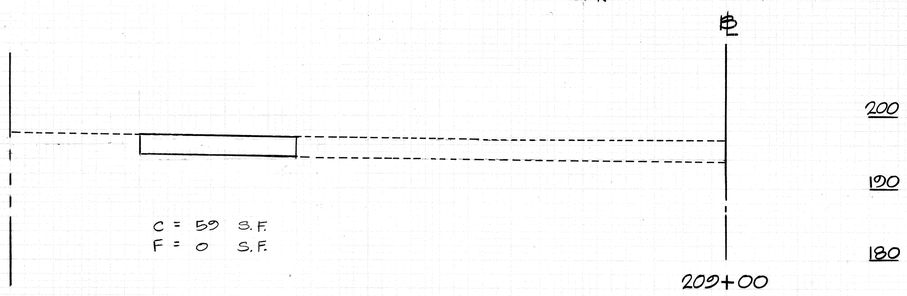
ORIGINAL SURVEY — DATE, BY, SURVEYED, PLOTTED, NOTE BOOK, TEMPLATE, AREAS, AREAS CHECKED, NO.

| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|
| HAWAII | HAW. | I-H3-1(75),UNIT II | 1997 | 582 | 1102 |

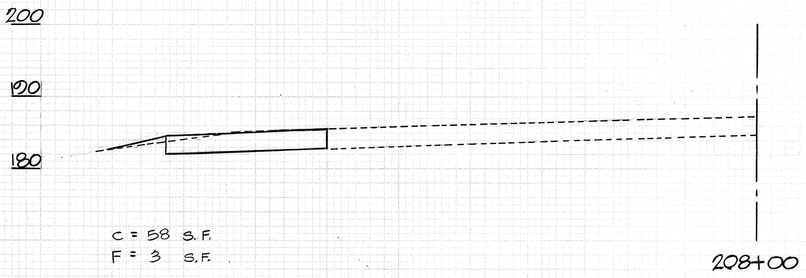
EXC = 21 C.Y.
EMB = 3 C.Y.



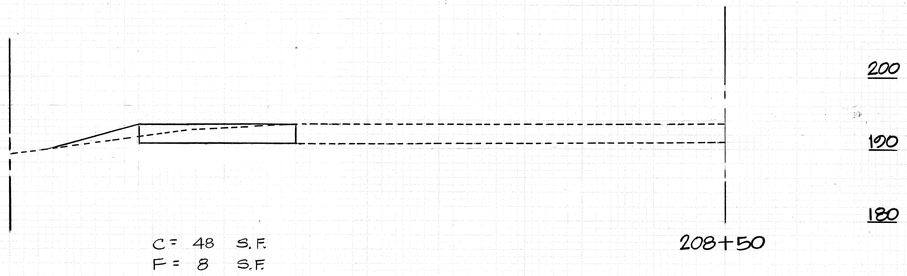

EXC = 112 C.Y.
EMB = 0 C.Y.



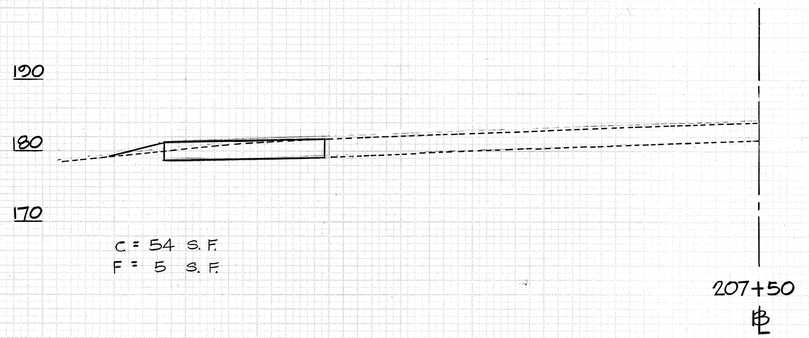

EXC = 101 C.Y.
EMB = 6 C.Y.



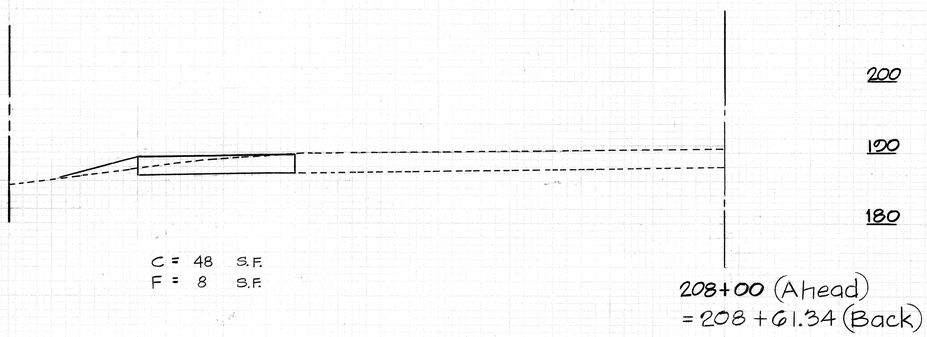

EXC = 99 C.Y.
EMB = 7 C.Y.




EXC = 104 C.Y.
EMB = 7 C.Y.




EXC = 89 C.Y.
EMB = 15 C.Y.




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

MOANALUA FREEWAY (MF)

80 60 40 20 0 80 60 40 20 0

Sheet No 2X9 of 13 Sheets

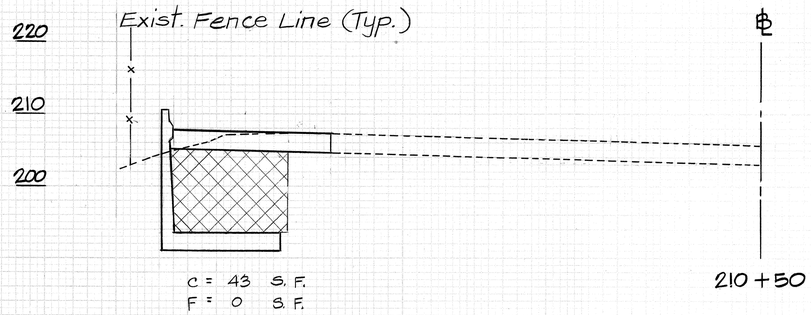
582

FINAL SURVEY — SURVEYED, PLOTTED, TEMPLATE, AREAS CHECKED, NOTE BOOK, REVISIONS, NO., BY, DATE

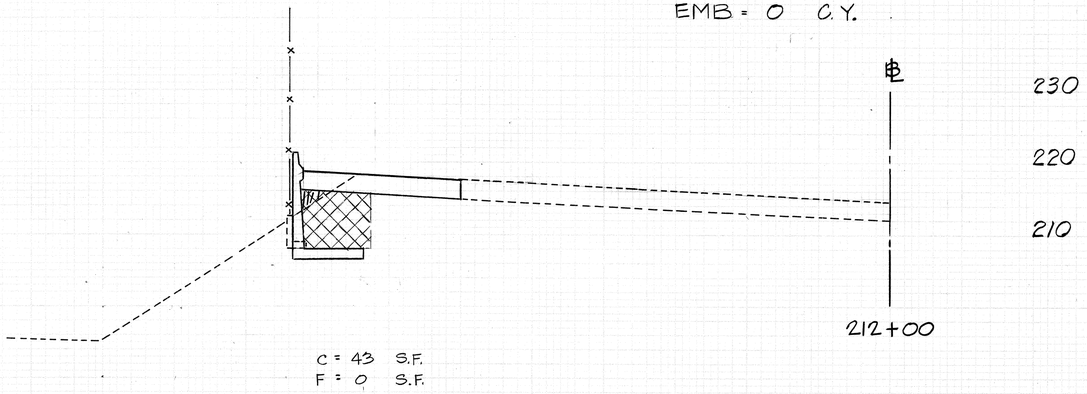
ORIGINAL SURVEY — SURVEYED, PLOTTED, TEMPLATE, AREAS CHECKED, NOTE BOOK, REVISIONS, NO., BY, DATE

| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|
| HAWAII | HAW. | I-H3-1(75),UNIT II | 1997 | 583 | 1102 |

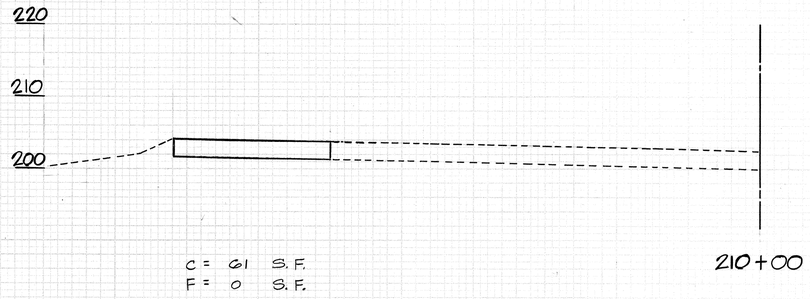
EXC = 76 C.Y.
EMB = 0 C.Y.



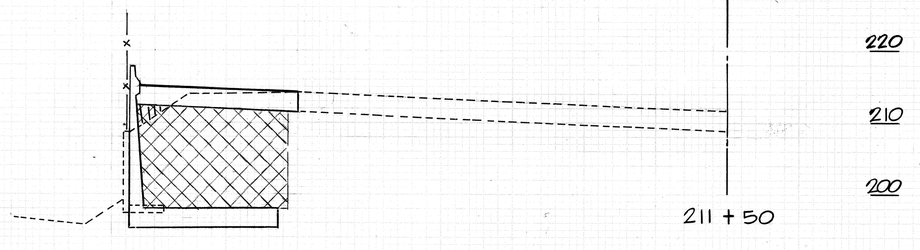

EXC = 79 C.Y.
EMB = 0 C.Y.



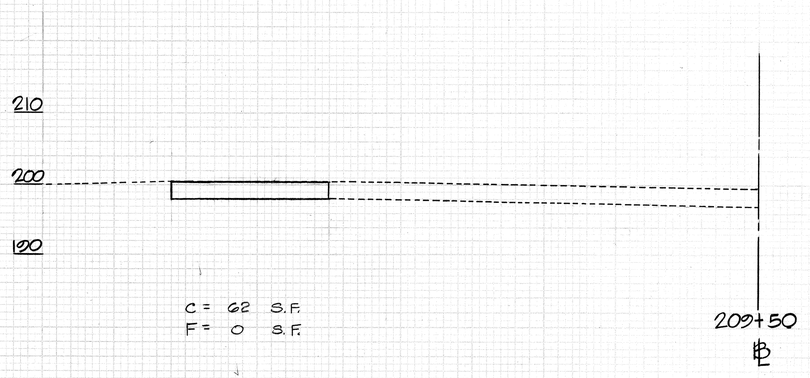

EXC = 96 C.Y.
EMB = 0 C.Y.



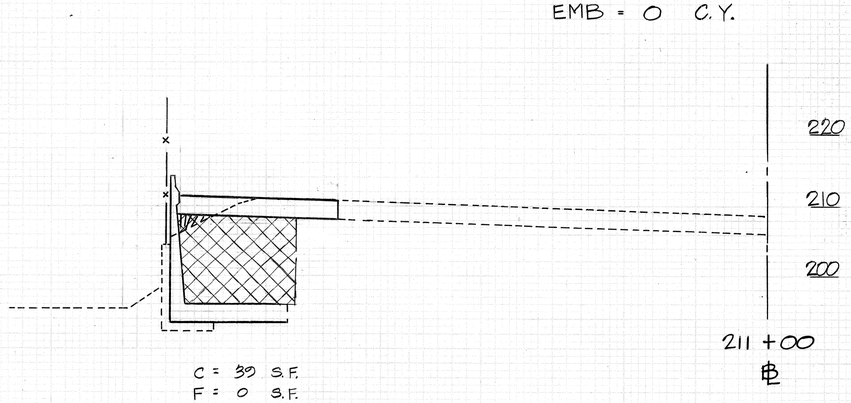

EXC = 75 C.Y.
EMB = 0 C.Y.




EXC = 114 C.Y.
EMB = 0 C.Y.




EXC = 71 C.Y.
EMB = 0 C.Y.




100 80 60 40 20 0 MOANALUA FREEWAY (MF) 80 60 40 20 0

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

Sheet No. 2X10 of 13 Sheets

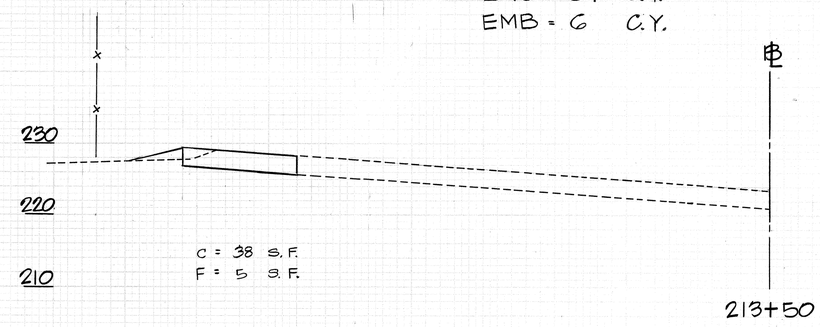
583

FINAL SURVEY — SURVEYED, PLOTTED, TEMPLATE, AREAS, AREAS CHECKED — NOTE BOOK — NO. — BY — DATE

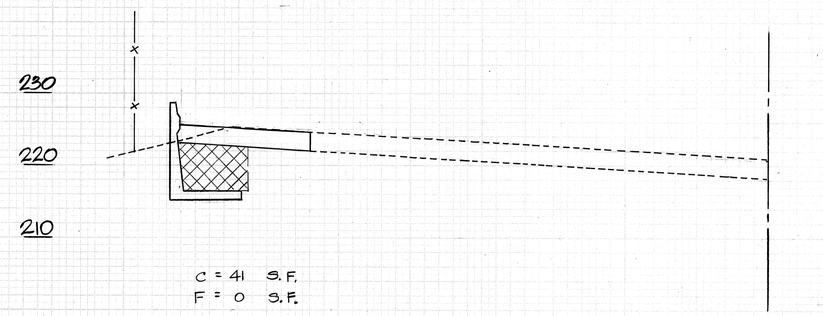
ORIGINAL SURVEY — SURVEYED, PLOTTED, TEMPLATE, AREAS, AREAS CHECKED — NOTE BOOK — NO. — BY — DATE

| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|
| HAWAII | HAW. | I-H3-1(75),UNIT II | 1997 | 584 | 1102 |

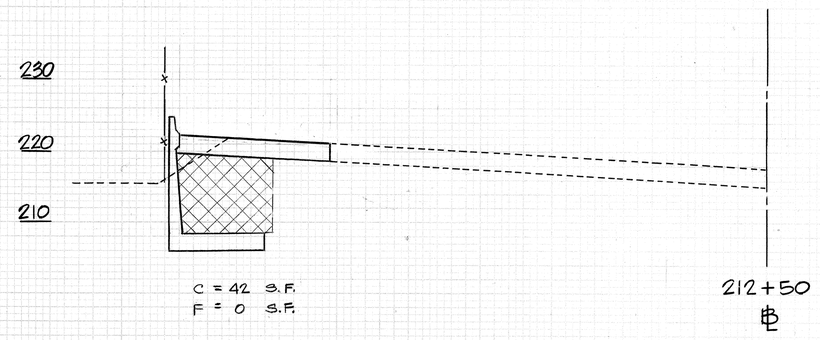
EXC = 67 C.Y.
EMB = 6 C.Y.

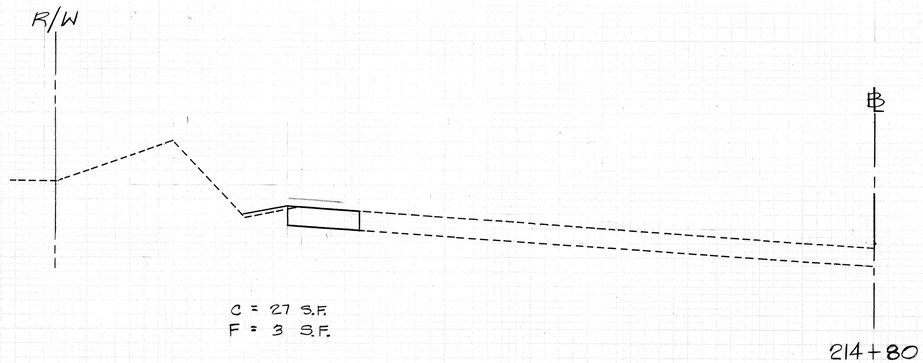



EXC = 73 C.Y.
EMB = 5 C.Y.

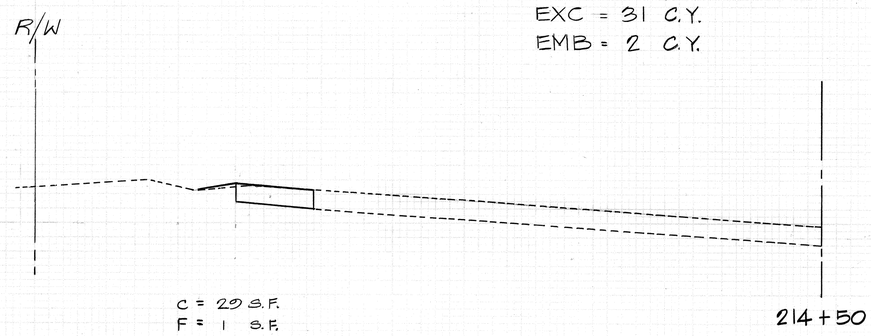



EXC = 77 C.Y.
EMB = 0 C.Y.

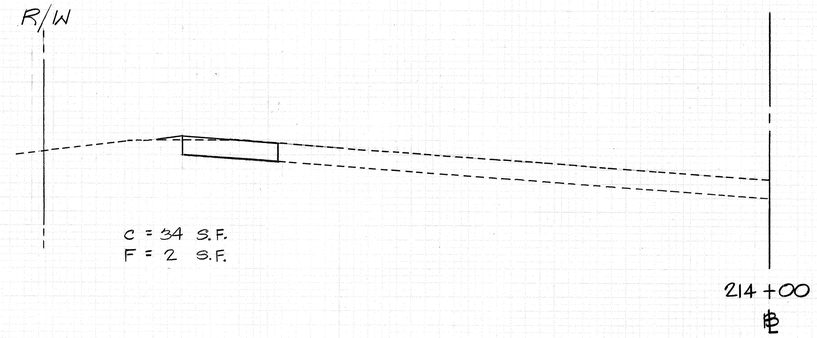



EXC = 31 C.Y.
EMB = 2 C.Y.




EXC = 58 C.Y.
EMB = 3 C.Y.




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

MOANALUA FREEWAY (MF)

80 60 40 20 0 80 60 40 20 0

Sheet No. 2X11 of 13 Sheets

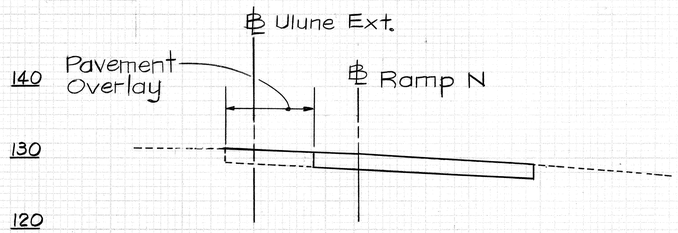
584

FINAL SURVEY — SURVEYED, PLOTTED, TEMPLATE, AREAS, AREAS CHECKED, NOTE BOOK, NO., BY, DATE

ORIGINAL SURVEY — SURVEYED, PLOTTED, TEMPLATE, AREAS, AREAS CHECKED, NOTE BOOK, NO., BY, DATE

| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|
| HAWAII | HAW. | I-H3-1(75),UNIT II | 1997 | 585 | 1102 |

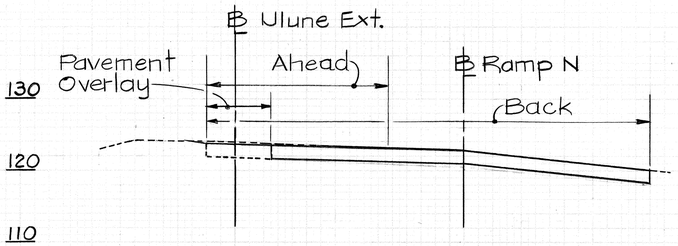
EXC = 118 C.Y.
EMB = 0 C.Y.




UL Sta. 12+50

C = 56 S.F.
F = 0 S.F.

EXC = 42
EMB = 1



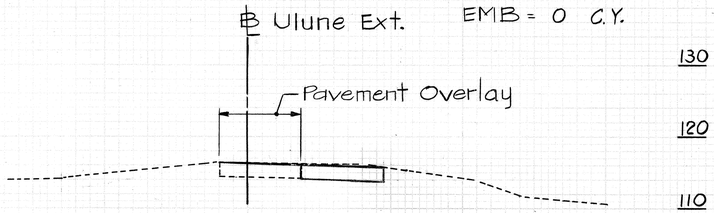

UL. Sta. 14+11.39 (Back)

C = 103 S.F.
F = 0 S.F.

UL. Sta. 14+11.39 (Ahead)

C = 30 S.F.
F = 0 S.F.

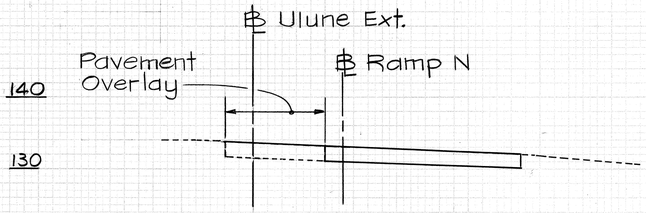
EXC = 40 C.Y.
EMB = 0 C.Y.




UL. Sta. 15+50

C = 21 S.F.
F = 0 S.F.

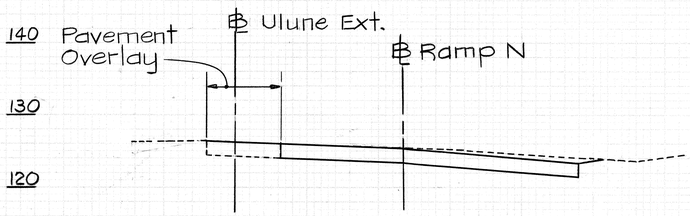
EXC = 97 C.Y.
EMB = 0 C.Y.




UL. Sta. 12+00

C = 49 S.F.
F = 0 S.F.

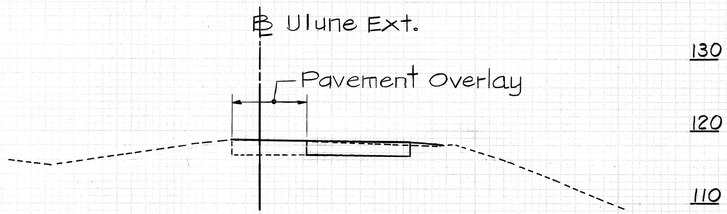
EXC = 214 C.Y.
EMB = 0 C.Y.




UL. Sta. 13+50

C = 85 S.F.
F = 0 S.F.

EXC = 44 C.Y.
EMB = 1 C.Y.



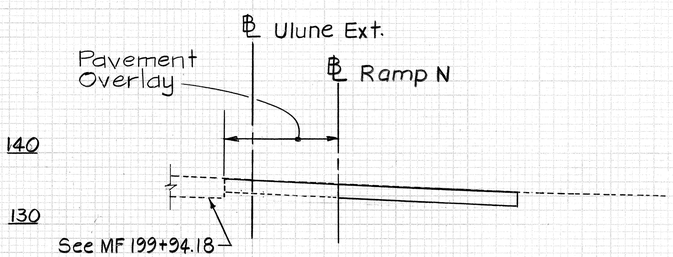

UL. Sta. 15+00

C = 26 S.F.
F = 1 S.F.

EXC = 86 C.Y.
EMB = 0 C.Y.

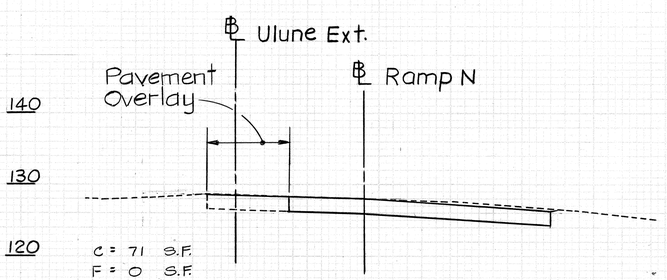
EXC = 144 C.Y.
EMB = 0 C.Y.

EXC = 51 C.Y.
EMB = 2 C.Y.



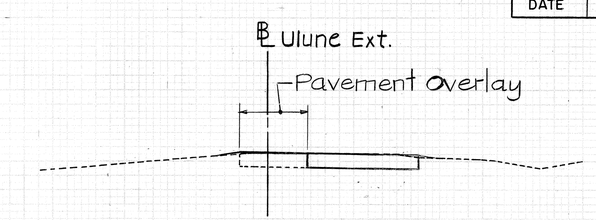

UL. Sta. 11+49.79 (Ahead)

C = 43 S.F.
F = 0 S.F.




UL Sta. 13+00

C = 71 S.F.
F = 0 S.F.




UL. Sta. 14+50

C = 29 S.F.
F = 1 S.F.

| DATE | REVISION |
|---|---|
| 4/21/97 | Revised cut and EXC quantities; Added limits of Pavement Overlay. |

CLYDE T. SHIMIZU
LICENSED PROFESSIONAL ENGINEER
No. 5514-C
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.
Clyde T. Shimizu

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

Sheet No. 2X12 of 13 Sheets

ULUNE EXTENTION

20 0 20 40 60 20 0 20 40 60 20 0 20 40

ADD. 585

Done

| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|
| HAWAII | HAW. | I-H3-1(75),UNIT II | 1997 | 586 | 1102 |

| DATE | REVISION |
|---|---|
| 4/21/97 | Revised Summary Table. |

EXC = 0 C.Y.
EMB = 0 C.Y.

℄ Ulune Ext.

Pavement Overlay

110
100
90

C = 0 S.F.
F = 0 S.F.

UL. Sta. 17+50

EXC = 0 C.Y.
EMB = 0 C.Y.

℄ Ulune Ext.

Pavement Overlay

120
110
100

C = 17 S.F.
F = 0 S.F.

UL. Sta. 17+00 (Back)

EXC = 33 C.Y.
EMB = 0 C.Y.

℄ Ulune Ext.

Pavement Overlay

120
110
100

C = 19 S.F.
F = 0 S.F.

UL. Sta. 16+50

EXC = 38 C.Y.
EMB = 0 C.Y.

℄ Ulune Ext.

Pavement Overlay

120
110
100

C = 22 S.F.
F = 0 S.F.

UL. Sta. 16+00

| MOANALUA FREEWAY EXCAVATION AND EMBANKMENT SUMMARY (CU.YD.) | | |
|---|---|---|
| | EXC. | EMB. |
| MOANALUA FRWY. | 6,440 | 742 |
| ULUNE EXT. | 907 | 16 |
| RAMP N | 301 | 1 |
| TOTAL | 7,648 | 759 |
| ROUNDED TOTAL | 7,650 | 760 |

110
100
90

℄ Ulune Ext.

Pavement Overlay

C = 0 S.F.
F = 2 S.F.

UL. Sta. 19+00

EXC = 0 C.Y.
EMB = 7 C.Y.

℄ Ulune Ext.

Pavement Overlay

110
100
90

C = 0 S.F.
F = 5 S.F.

UL. Sta. 18+50

EXC = 0 C.Y.
EMB = 5 C.Y.

℄ Ulune Ext.

Pavement Overlay

110
100
90

C = 0 S.F.
F = 0 S.F.

UL. Sta. 18+00

℄ Ramp N

120
110
100

C = 58 S.F.
F = 0 S.F.

N Sta. 38+46

EXC = 98 C.Y.
EMB = 0 C.Y.

℄ Ramp N

130
120
110

C = 58 S.F.
F = 0 S.F.

N Sta. 38+00

EXC = 107 C.Y.
EMB = 0 C.Y.

℄ Ramp N

130
120
110

C = 58 S.F.
F = 0 S.F.

N Sta. 37+50

EXC = 96 C.Y.
EMB = 1 C.Y.

℄ Ramp N

Ulune Extension

130
120
110

C = 68 S.F.
F = 1 S.F.

N Sta. 37+08.83

GLYDE T. SHIMADA
LICENSED PROFESSIONAL ENGINEER
No. 5514-0
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

Glyde T. Shimada

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

ULUNE EXTENTION AND RAMP N

Sheet No. 2X13 of 13 Sheets

40 20 0 20 40 60 40 20 0 20 40 60 20 0 20 40

ADD. 586