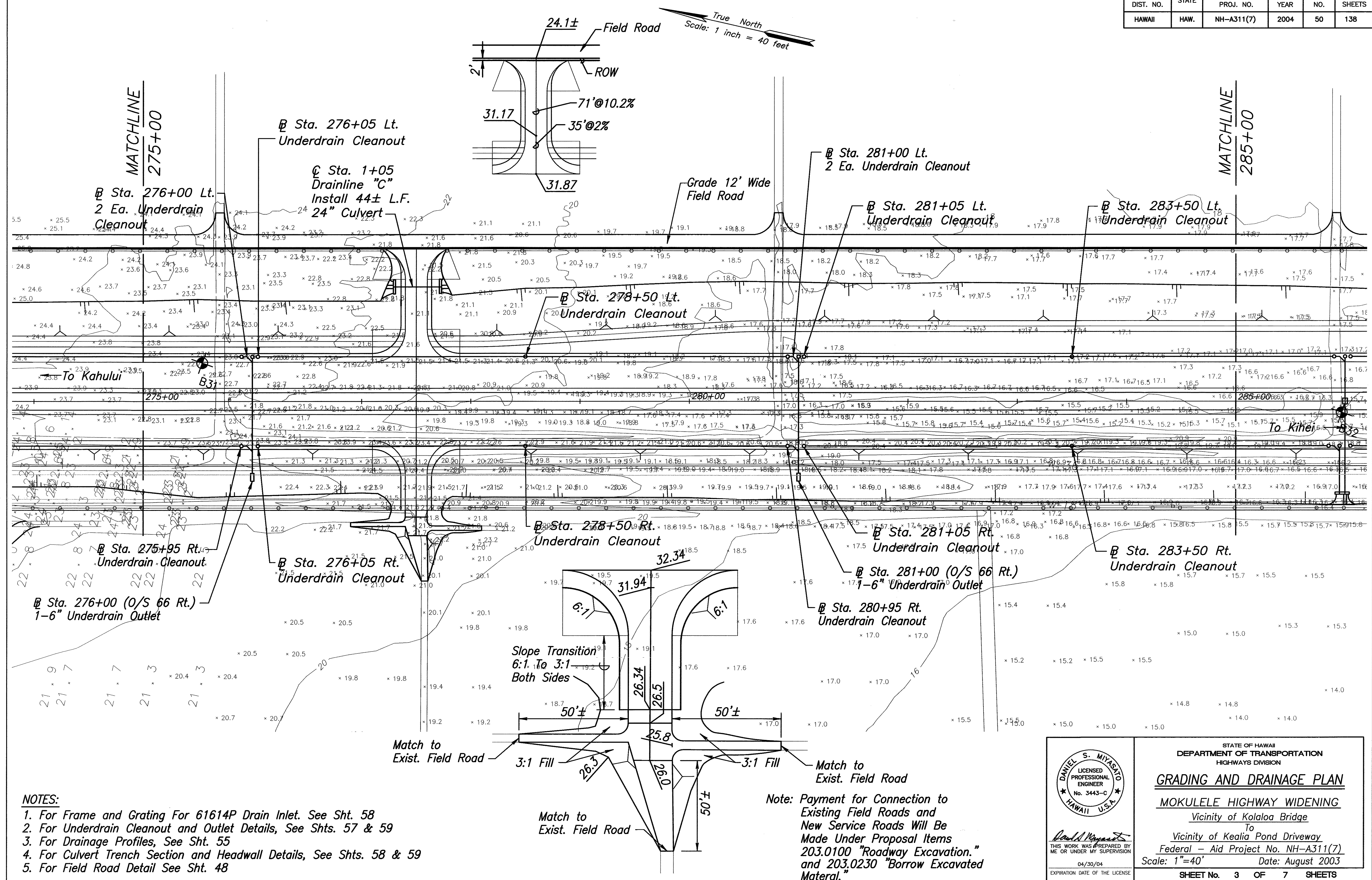
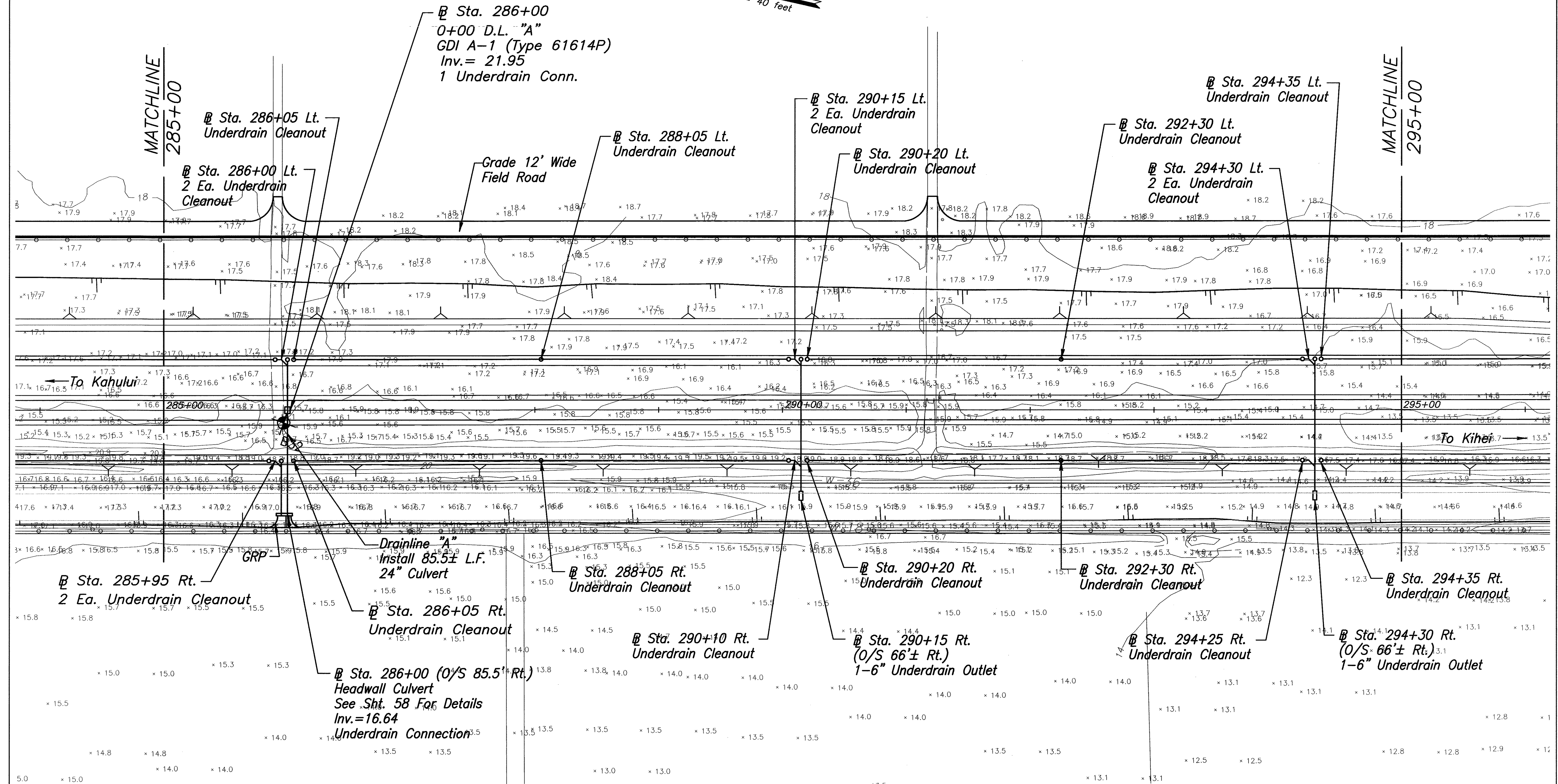


FED. ROAD DIST. NO.	STATE	FEDERAL -- AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-A311(7)	2004	50	138

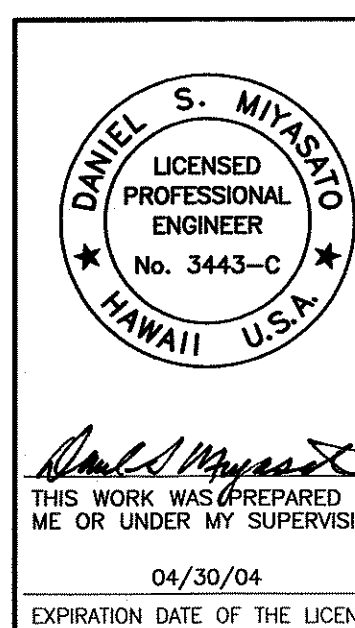


FED. ROAD DIST. NO.	STATE	FEDERAL - AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-A311(7)	2004	51	138



NOTES:

1. For Frame and Grating For 61614P Drain Inlet. See Sht. 58
2. For Underdrain Cleanout and Outlet Details, See Shts. 57 & 59
3. For Drainage Profiles, See Sht. 55
4. For Culvert Trench Section and Headwall Details, See Shts. 58 & 59
5. For Field Road Detail See Sht. 48



STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION
GRADING AND DRAINAGE PLAN
MOKULELE HIGHWAY WIDENING
Vicinity of Kolaloa Bridge To Vicinity of Kealia Pond Driveway Federal - Aid Project No. NH-A311(7) Scale: 1"=40' Date: August 2003
SHEET No. 4 OF 7 SHEETS

FED. ROAD DIST. NO.	STATE	FEDERAL -- AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-A311(7)	2004	52	138

Note: Payment for Connection to Existing Field Roads and New Service Roads Will Be Made Under Proposal Items 203.0100 "Roadway Excavation." and 203.0230 "Borrow Excavated Material."

B Sta. 302+55 Lt. —
Underdrain Cleanout

B Sta. 302+50 Lt.
2 Ea. Underdrain
Cleanout

Sta. 302+50
0+00 D.L. "B"
GDI B-1 (Type 61614P)
Inv. = 17.00
1 Underdrain Conn.

B Sta. 304+50 Lt. —
Underdrain Cleanout

MATCHLINE
295+00

MATCHLINE
305+00

B Sta. 296+35 Lt.
Underdrain Cleanout

B Sta. 296+35 Rt.
Underdrain Cleanout

— See Plan Below

- C Sta. 1+08
Drainline "D"
Install 46± L.F.
24" Drainline

~~B~~ Sta. 298+45 Lt.
2 Ea. Underdrain
Cleanout

Grade 12' Wide
Field Road

Grading and Drainage Plan
MOKULELE HIGHWAY WIDENING
 Vicinity of Kealia Pond Driveway
 Federal - Aid Project No. NH-A311(7)

Stationing: 295+00 to 305+00

Key Features and Details:

- Underdrain Cleanouts:**
 - Sta. 298+40 Rt. Underdrain Cleanout
 - Sta. 298+45 (O/S 66'± Rt.) 1-6" Underdrain Outlet
 - Sta. 298+50 Lt. Underdrain Cleanout
 - Sta. 298+50 Rt. Underdrain Cleanout
 - Sta. 302+45 Rt. Underdrain Cleanout
 - Sta. 302+55 Rt. Underdrain Cleanout
 - Sta. 304+50 Rt. Underdrain Cleanout
- Culverts:**
 - Headwall Culvert B-1 (See Sht. 58 for Details, Inv. = 13.25, 1 Underdrain Conn.)
 - Drainline "B" Install 80'± L.F. 24" Culvert
- Grading and Slopes:**
 - 3:1 Fill Slope Both Sides
 - Offset 5' Graded Field Road at Intersection
 - 40' Slope to Meet Existing
 - 59' @ 10%
 - 45' @ 2%
 - Slope Transition 6:1 To 1:1
 - Shoulder Slope Transition 5% to 1.8% at Pathway
- Other Details:**
 - Provide Smooth Conn to Existing Field Road
 - Provide 20' Rounding @ Grade Break
 - GRP (Grass Rooted Pipe)

NOTES:

- For Frame and Grating For 61614P Drain Inlet. See Sht. 58
- For Underdrain Cleanout and Outlet Details, See Shts. 57 & 59
- For Drainage Profiles, See Sht. 55
- For Culvert Trench Section and Headwall Details, See Shts. 58 & 59

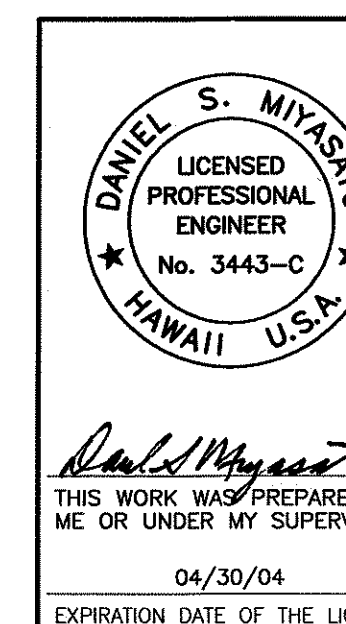
Professional Engineer Seal: DANIEL S. MIYASATO, LICENSED PROFESSIONAL ENGINEER, No. 3443-C, HAWAII, U.S.A.

STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION

Sta. 302+50 (O/S 80' Rt.)
Headwall Culvert B-1
See Sht. 58 for Details
Inv. = 13.25
1 Underdrain Conn.

NOTES:

1. For Frame and Grating For 61614P Drain Inlet. See Sht. 58
2. For Underdrain Cleanout and Outlet Details, See Shts. 57 & 59
3. For Drainage Profiles, See Sht. 55
4. For Culvert Trench Section and Headwall Details, See Shts. 58 & 59
5. For Field Road Detail See Sht. 48



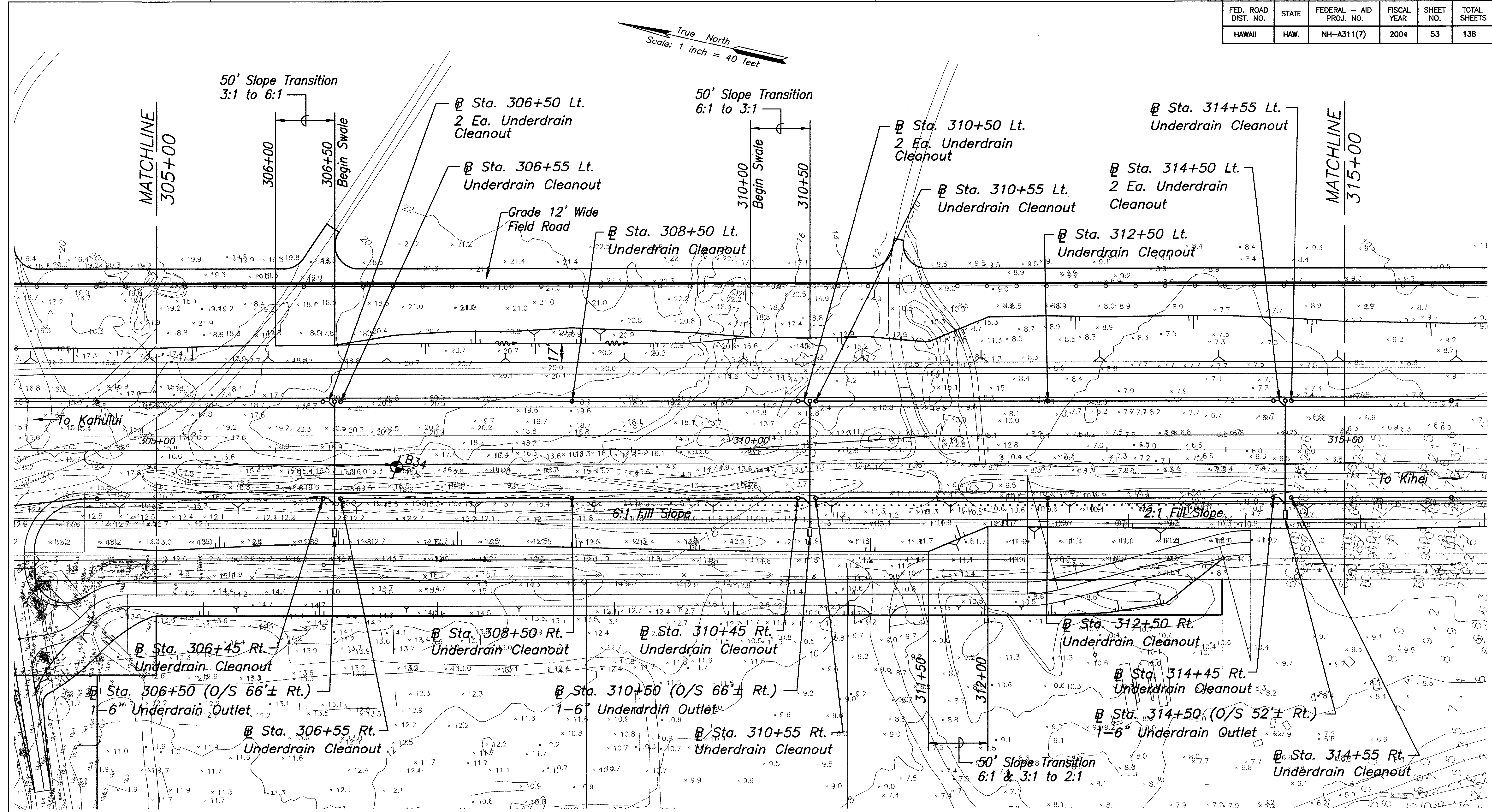
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

GRADING AND DRAINAGE PLAN

MOKULELE HIGHWAY WIDENING
Vicinity of Kolaloa Bridge
To
Vicinity of Kealia Pond Driveway
Federal - Aid Project No. NH-A311(7)
Scale: 1"=40' Date: August 2003

SHEET No. 5 OF 7 SHEETS

FED. ROAD DIST. NO.	STATE	FEDERAL - AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-A311(7)	2004	53	138



NOTES:

1. For Frame and Grating For 61614P Drain Inlet. See Sht. 58
2. For Underdrain Cleanout and Outlet Details, See Shts. 57 & 59
3. For Drainage Profiles, See Sht. 55
4. For Culvert Trench Section and Headwall Details, See Shts. 58 & 59
5. For Field Road Detail See Sht. 48

DANIEL S. MIYASATO
LICENSED PROFESSIONAL ENGINEER
No. 3443-C
HAWAII U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION
04/30/04
EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

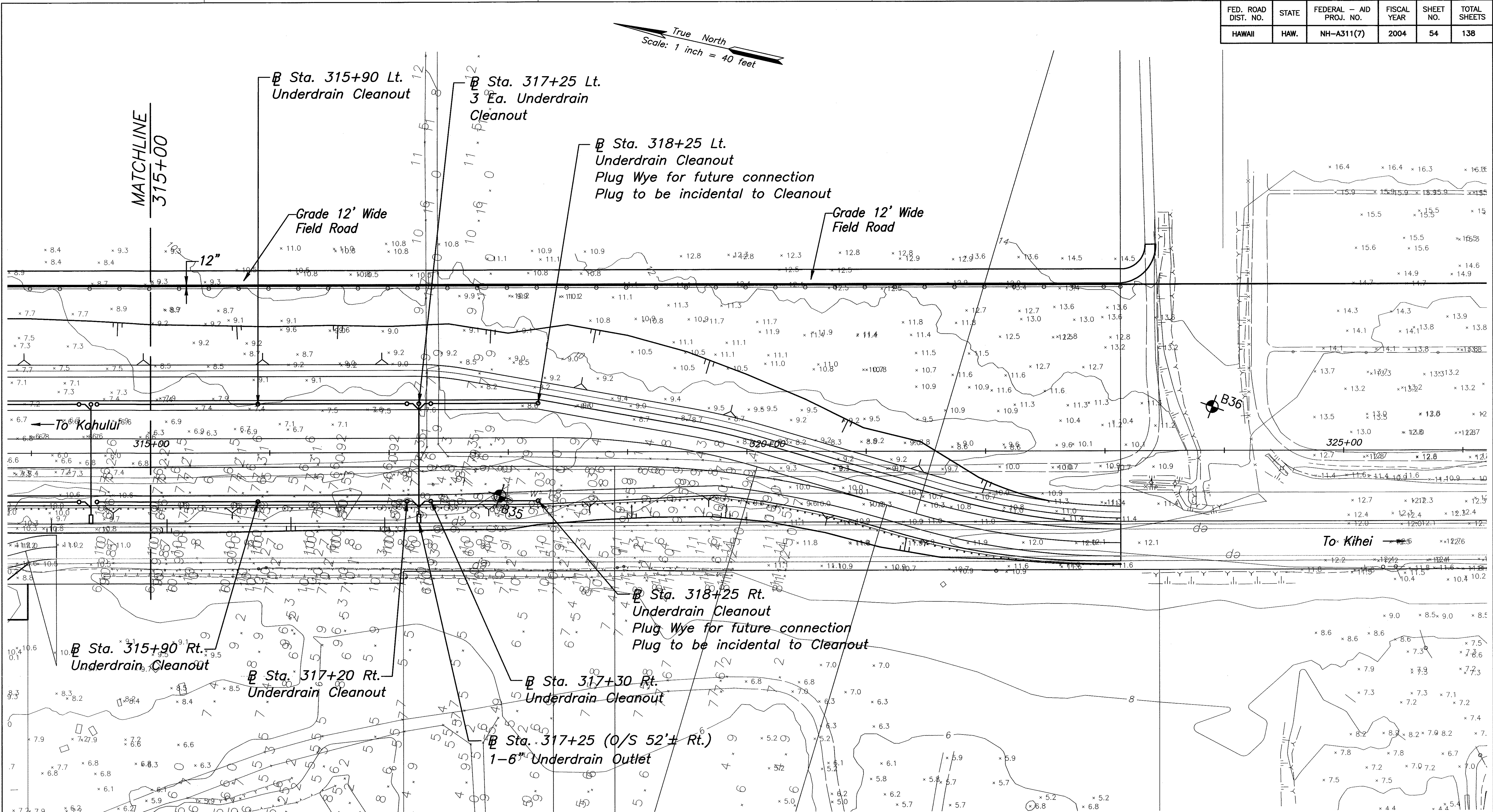
GRADING AND DRAINAGE PLAN

MOKULELE HIGHWAY WIDENING

Vicinity of Kolaloa Bridge
To
Vicinity of Kealia Pond Driveway
Federal - Aid Project No. NH-A311(7)
Scale: 1"=40' Date: August 2003

SHEET No. 6 OF 7 SHEETS

FED. ROAD DIST. NO.	STATE	FEDERAL - AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-A311(7)	2004	54	138



NOTES:

1. For Frame and Grating For 61614P Drain Inlet. See Sht. 58
2. For Underdrain Cleanout and Outlet Details, See Shts. 57 & 59
3. For Drainage Profiles, See Sht. 55
4. For Culvert Trench Section and Headwall Details, See Shts. 58 & 59
5. For Field Road Detail See Sht. 48

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

DANIEL S. MIYASATO

 LICENSED PROFESSIONAL ENGINEER

 No. 3443-C

 HAWAII U.S.A.

STATE OF HAWAII

 DEPARTMENT OF TRANSPORTATION

 HIGHWAYS DIVISION

GRADING AND DRAINAGE PLAN

MOKULELE HIGHWAY WIDENING

 Vicinity of Kolaloa Bridge

 To

 Vicinity of Kealia Pond Driveway

 Federal - Aid Project No. NH-A311(7)

 Scale: 1"=40'

 Date: August 2003

 SHEET No. 7 OF 7 SHEETS