








































































**GENERAL NOTES**

| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|--------------------|-------------|-----------|--------------|
| HAWAII              | HAW.  | NH-019-1(36)       | 2009        | ADD.3     | 27           |

- The scope of work for this project consists of removing existing guardrails and end treatments; installing new metal guardrails; installing pavement and reflector markers; providing traffic control; providing water pollution and erosion control; and providing slope stabilization.
- The Contractor is reminded of the requirements of Subsection 108.01 - Subletting of Contract, which requires him to perform work to not less than 30 percent of the total contract cost less deductible items. Non-compliance with this Subsection may be grounds for rejection of bid.
- The Contractor's attention is directed to the following Sections: Subsection 104.11 - Utilities and Services; Subsection 107.06 - Contractor Duty Regarding Public Convenience; and Section 645 - Work Zone Traffic Control.
- At the end of each day's work, the Contractor shall remove all equipment and other obstructions to permit free and safe passage of public traffic.
- The existence and location of underground utilities, manholes, monuments and structures as shown on the plans are from the latest available data, but the accuracy is not guaranteed. The encountering of other obstacles during the course of work is possible. The Contractor shall tone for the exact locations and depths of all underground facilities, either shown on or omitted from the plans, in areas where work, such as the placement of sign posts, traffic signal conduits, etc. may affect these properties. Toning shall be considered incidental to the various contract items and will not be paid for separately. The Contractor shall be held liable for any damages incurred to the existing facilities and/or improvements as a result of his operations.
- The Contractor shall notify, the Oahu Transit Services, Lowell Tom (848-4578) or Ed Sniffen (848-4571), two (2) weeks prior to construction, informing them of location, scope of work, and closure of Name of Highway and/or traffic lanes and dates of closure. (For Oahu projects only. For other islands, check with your local bus company.)
- The Contractor shall notify the Engineer in writing, two (2) weeks prior to starting construction operations.
- The Contractor shall obtain a Community Noise permit from the State Department of Health, Noise and Radiation Branch, 591 Ala Moana Blvd., Room 136, Honolulu, HI 96813-2498; Telephone No. 586-4700. This shall be considered incidental to the various contract items and will not be paid for separately.
- The Contractor shall indemnify and be solely responsible for the protection of adjacent properties, utilities and existing structures from damages due to construction. Repairing any damage shall be at the Contractor's own expense, to the satisfaction of the Engineer.
- Existing drainage system will be functional at all times during construction. The Contractor shall furnish materials, equipment, labor, tools and incidentals necessary to maintain flow. This work shall be considered incidental to any culvert work or the various contract items and will not be paid for separately.
- Earth swale shall be graded to drain. This work shall be considered incidental to various contract items.

- Smooth riding connections shall be constructed at all limits of project, including the beginning and end of project, connecting approaches, side streets, walkways and driveways as shown on the plans and/or as directed by the Engineer. This work shall be considered incidental to asphalt concrete and will not be paid for separately.
- The Contractor shall clean and remove any accumulation of aggregates along the roadside within 10 feet of the edge of pavement. This work shall be considered incidental to bulk of work or the various contract items and will not be paid for separately.
- Removal and disposal of existing curb and gutter, curb, sidewalk and asphalt concrete pavement, curb, sidewalk and any debris shall be considered incidental to their respective bid items.
- All saw cutting work shall be considered incidental to Roadway Excavation or Asphalt Concrete or Various Contract Items or their respective bid items.
- The Contractor shall provide and maintain for access to and from all existing driveways, sidewalks and ADA access routes, and side streets and cross streets at all times. This work shall be considered incidental to curb ramps, or sidewalk, or the various contract items and will not be paid for separately.
- The Contractor shall provide and maintain a temporary pedestrian-safe and easily accessible route or detour with barricades in or near the work zone. This temporary route or detour shall be paved at least an inch of Asphalt Concrete Pavement, Mix No V or steel and/or wood planks and shall be American With Disabilities Act (ADA) compliant [This is only applicable if existing surface is dirt and/or if existing surface is non-ADA compliant.]. This work shall be incidental to curb ramps, or sidewalk, or the various contract items and will not be paid for separately.
- The Contractor shall remove and dispose of all existing raised pavement markers, thermoplastic line markings, traffic tapes, and epoxy adhesives prior to the overlaying of Asphalt Concrete Pavement, Mix No. IV and will not be paid for separately.
- No material and/or equipment shall be stockpiled or otherwise stored within the highway right-of-way except at locations designed in writing and approved by the Engineer. If use of location is approved by the engineer, the Contractor shall obtain a permit to use the property within the highway right-of-way from the Hawaii District Office at telephone no. 831-6712.

**LEGEND**

|  |  |
|--|--|
|  Reconstruction Areas                         |  Existing Sewer Line                  |
|  Leveling Areas                               |  New 12" Sewer Line                   |
|  Cold Planing Areas                           |  Existing Sewer Manhole               |
|  Transition Limits $\Delta$                   |  Adjusted Sewer MH Frame/Cover        |
|  Existing Electrical Line                     |  New Sewer Manhole                    |
|  New Electrical Line                          |  Existing 6" Gas Line                 |
|  Existing Joint Pole                          |  New 6" Gas Line                      |
|  Existing Power Pole                          |  Existing Gas Valve Box               |
|  Existing Electric Manhole                    |  Adjusted Gas Valve Box               |
|  Adjusted Elec. MH Frame/Cover                |  New Gas Valve Box                    |
|  New Electric Manhole                         |  Existing Gas Manhole                 |
|  Existing Telephone Line                      |  Adjusted Gas MH Frame/Cover          |
|  New Telephone Line                           |  New Gas Manhole                      |
|  Existing Telephone Pole                      |  Existing Monument                    |
|  Existing Telephone Manhole                   |  Adjusted Monument                    |
|  Adjusted Tele. MH Frame/Cover                |  New Monument                         |
|  New Telephone Manhole                        |  Existing 24" Drain Line              |
|  Existing Signal Corps Line                   |  New 24" RCP Drain Line               |
|  New Signal Corps Line                       |  Existing Storm Drain Manhole         |
|  Existing TV Cable                          |  Adjusted Storm Drain MH Frame/Cover  |
|  New TV Cable                               |  New Storm Drain Manhole             |
|  Existing Sandwich Isles Communication Line |  Existing Grated Drop Inlet         |
|  Existing 12" Water Line                    |  Existing Catch Basin               |
|  New 12" Water Line                         |  Existing Traffic Sign              |
|  Existing Water Manhole                     |  Existing Highway Lighting Standard |
|  Adjusted Water MH Frame/Cover              |  Existing Highway Lighting Pullbox  |
|  New Water Manhole                          |  Existing Traffic Signal Pole       |
|  Existing Water Air Valve                   |  New Traffic Signal Pole            |
|  Adjusted Water Air Valve                   |  Existing Traffic Signal Pullbox    |
|  New Water Air Valve                        |  Adjusted Traffic Signal Pullbox    |
|  Existing Water Valve Box                   |  New Traffic Signal Pullbox         |
|  Adjusted Water Valve Box                   |  Existing Metal Guardrail           |
|  New Water Valve Box                        |  New Metal Guardrail                |
|  Existing Water Meter                       |  |
|  Adjusted Water Meter                       |  |
|  New Water Meter                            |  |
|  Existing Fire Hydrant                      |  |
|  New Fire Hydrant                           |  |

6/18/09  $\Delta$  Corrected Legend

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**GENERAL NOTES AND LEGEND**

HAWAII BELT ROAD

Guardrail & Shoulder Improvements

Paaahu Road to Pakalana Street

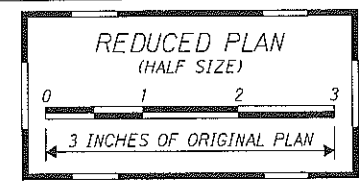
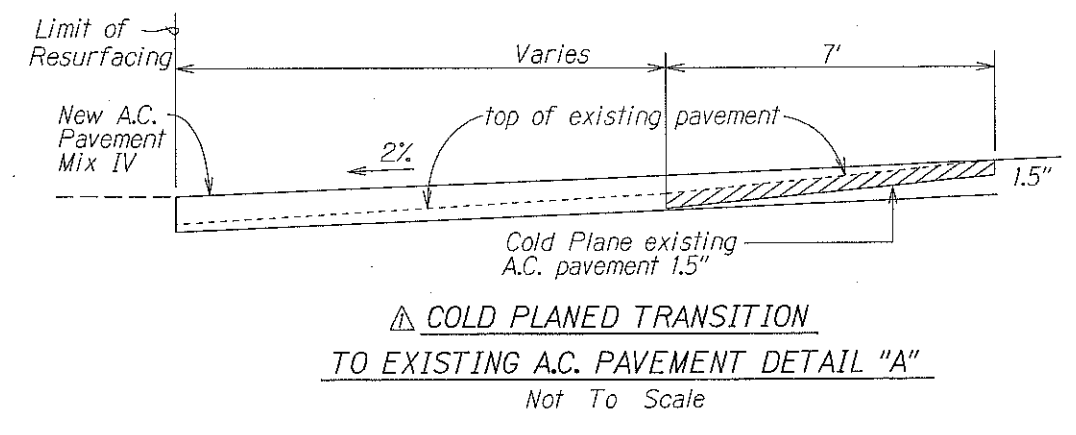
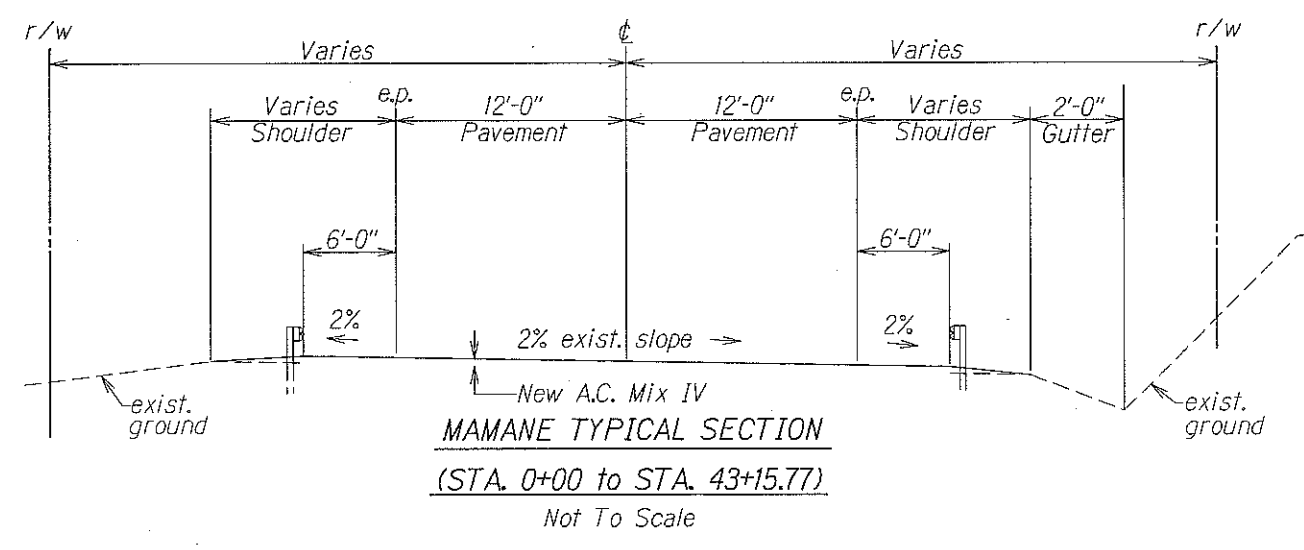
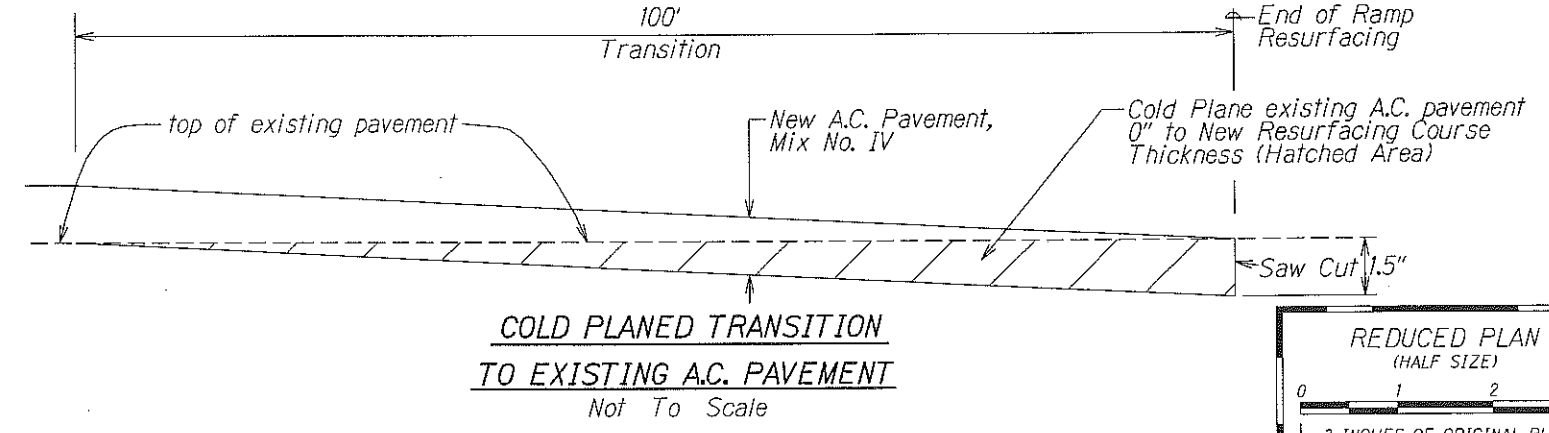
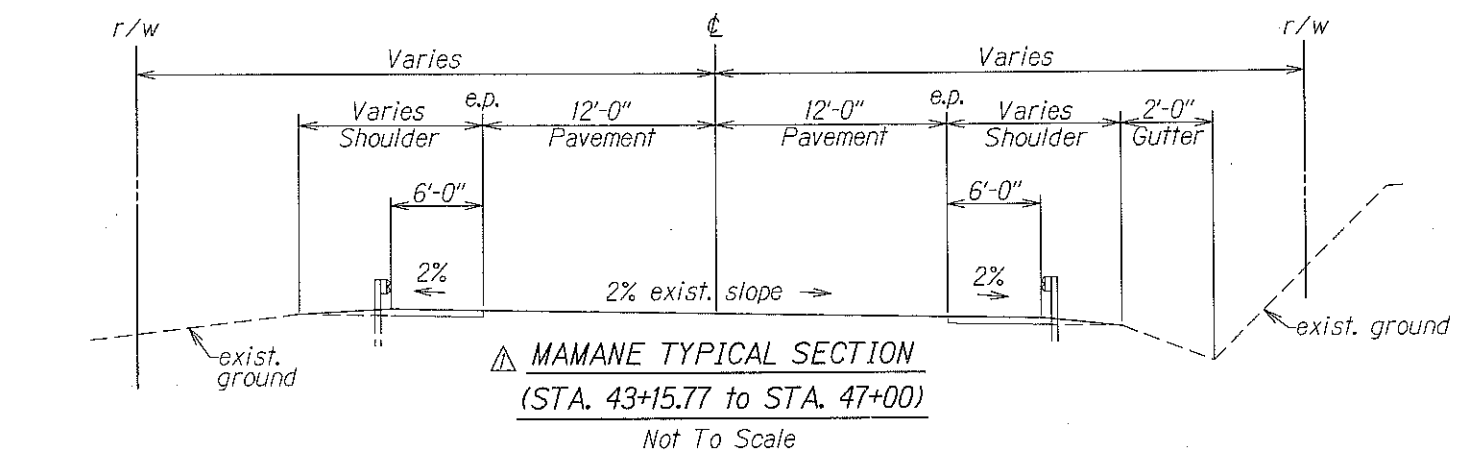
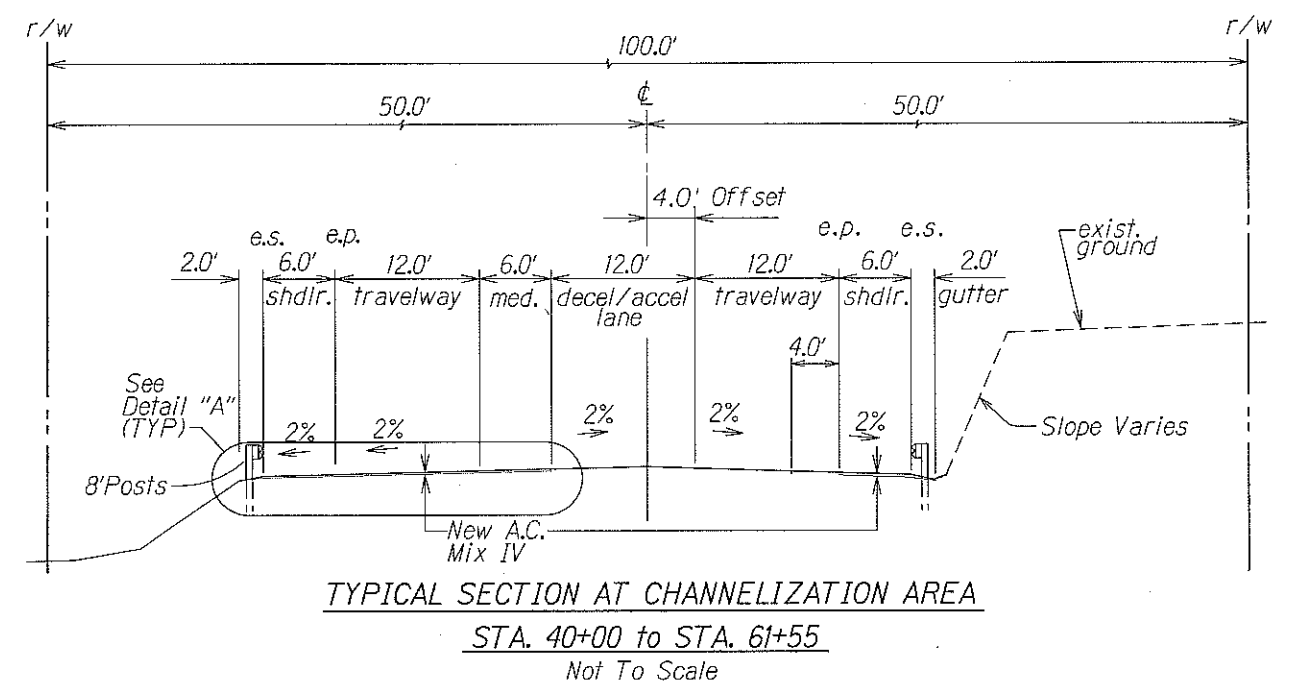
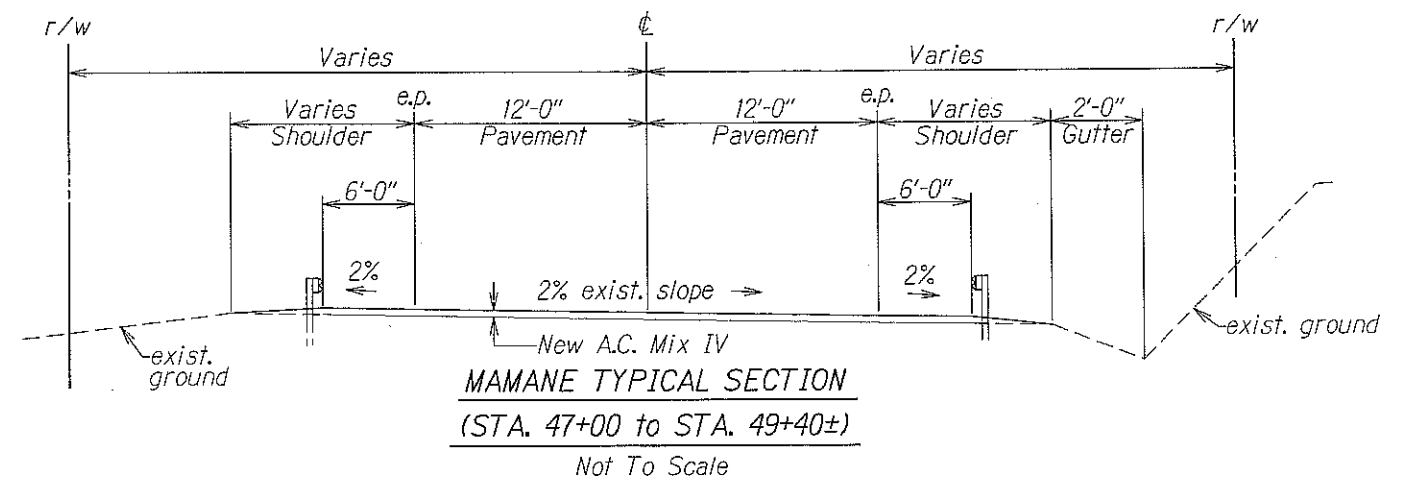
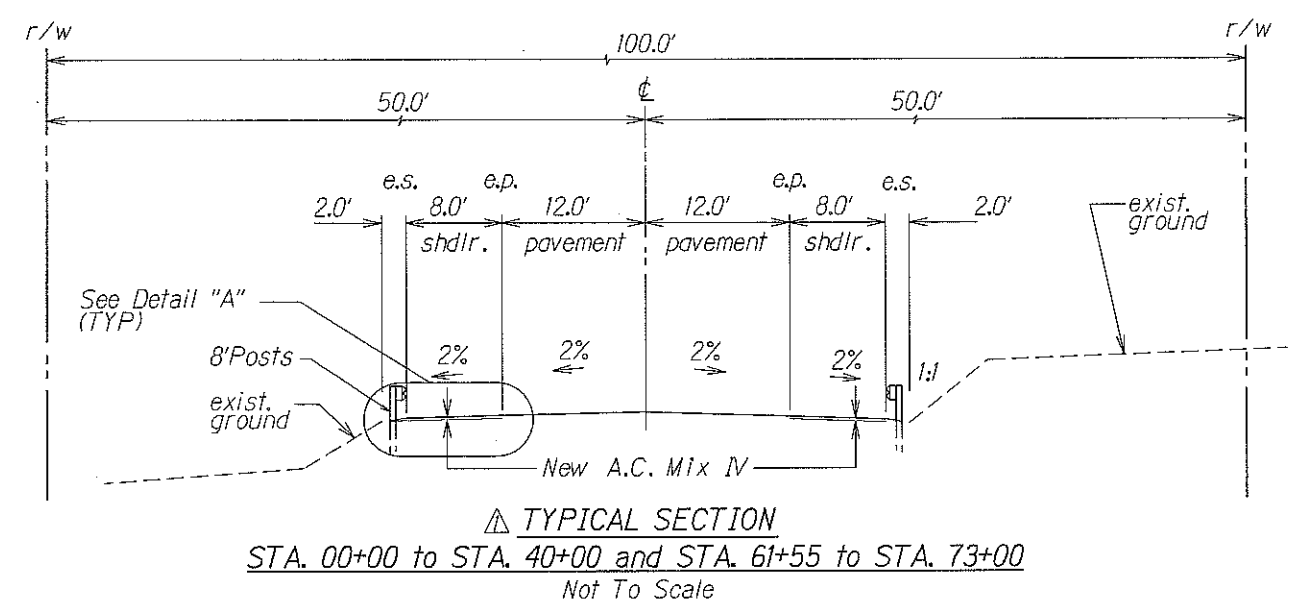
Federal-Aid Project No. NH-019-1(36)

Scale: No Scale Date: Feb, 2009

SHEET No. 1 OF 2 SHEETS

ORIGINAL PLAN  
DATE  
SURVEY PLOTTED BY  
DRAWN BY  
TRACED BY  
DESIGNED BY  
CHECKED BY

| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|--------------------|-------------|-----------|--------------|
| HAWAII              | HAW.  | NH-019-K(36)       | 2009        | ADD.14    | 27           |



|         |   |
|---------|---|
| 6/18/09 | △ Revised Typical Section, and Detail A |
| 6/17/09 | △ Added Mamane Typical Section          |
| DATE    | REVISION                                |

STATE OF HAWAII  
 DEPARTMENT OF TRANSPORTATION  
 HIGHWAYS DIVISION  
**TYPICAL SECTION**  
 HAWAII BELT ROAD GUARDRAIL  
 AND SHOULDER IMPROVEMENTS  
 Paauhau Road to Pakalana Street  
 Federal-Aid Project No. NH-019-K(36)  
 Scale: Not to Scale Date: Feb, 2009

ORIGINAL PLAN  
 SURVEY PLOTTED BY  
 DRAWN BY  
 NOTE BOOK DESIGNED BY  
 QUANTITIES BY  
 N. [Signature]

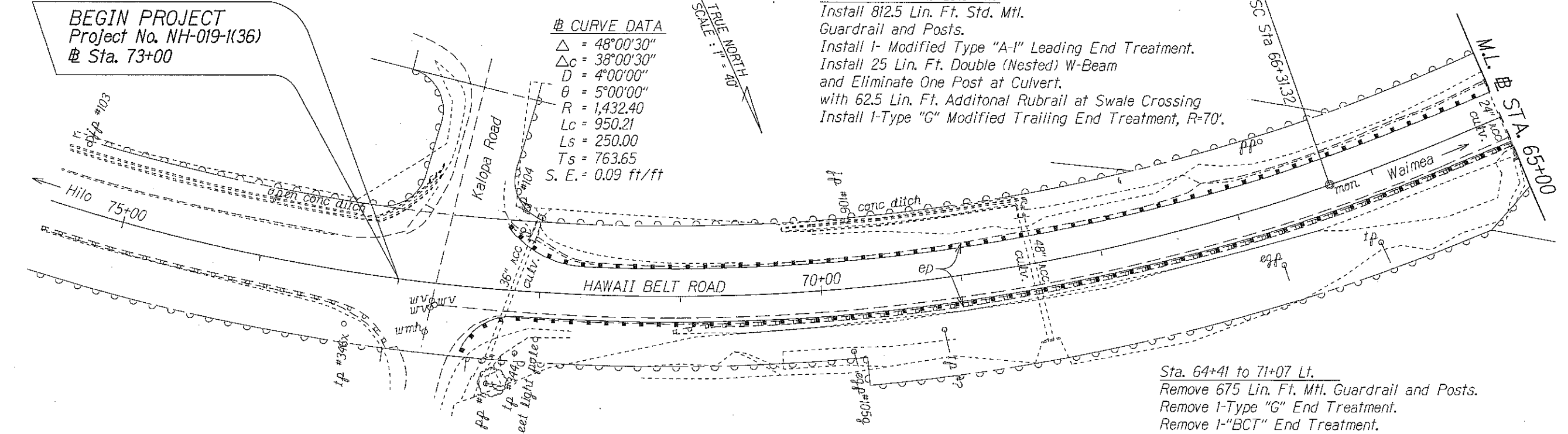
| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|--------------------|-------------|-----------|--------------|
| HAWAII              | HAW.  | NH-019-1(36)       | 2009        | ADD.16    | 27           |

**BEGIN PROJECT**  
Project No. NH-019-1(36)  
# Sta. 73+00

**① CURVE DATA**  
 $\Delta = 48^{\circ}00'30''$   
 $\Delta c = 38^{\circ}00'30''$   
 $D = 4^{\circ}00'00''$   
 $\theta = 5^{\circ}00'00''$   
 $R = 1,432.40$   
 $Lc = 950.21$   
 $Ls = 250.00$   
 $Ts = 763.65$   
 $S. E. = 0.09 \text{ ft/ft}$

TRUE NORTH  
SCALE: 1" = 40'

Sta. 63+48 to 72+25.5 Rt.  
Install 812.5 Lin. Ft. Std. Mtl. Guardrail and Posts.  
Install I- Modified Type "A-I" Leading End Treatment.  
Install 25 Lin. Ft. Double (Nested) W-Beam and Eliminate One Post at Culvert.  
Install 62.5 Lin. Ft. Additional Rubrail at Swale Crossing  
Install I-Type "G" Modified Trailing End Treatment, R=70'.



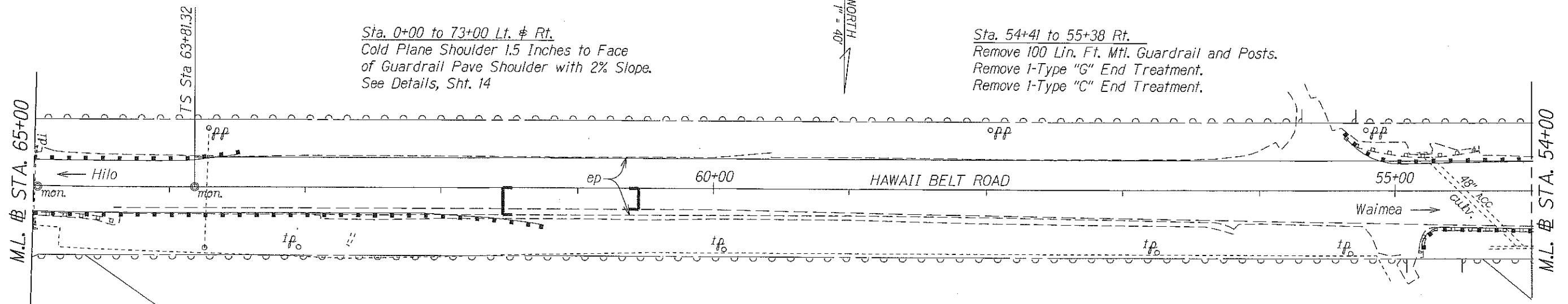
Sta. 64+41 to 71+07 Lt.  
Remove 675 Lin. Ft. Mtl. Guardrail and Posts.  
Remove I-Type "G" End Treatment.  
Remove I-"BCT" End Treatment.

Sta. 61+25 to 72+52 Lt.  
Install 1087.5 Lin. Ft. Std. Mtl. Guardrail and Posts.  
Install I-Type "G" Modified Leading End Treatment, R=40'.  
Install I-Modified Type "A-I" Trailing End Treatment.

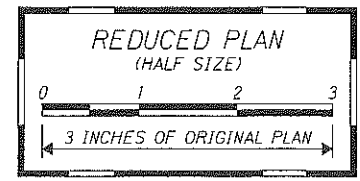
TRUE NORTH  
SCALE: 1" = 40'

Sta. 0+00 to 73+00 Lt. & Rt.  
Cold Plane Shoulder 1.5 Inches to Face of Guardrail Pave Shoulder with 2% Slope.  
See Details, Sht. 14

Sta. 54+41 to 55+38 Rt.  
Remove 100 Lin. Ft. Mtl. Guardrail and Posts.  
Remove I-Type "G" End Treatment.  
Remove I-Type "C" End Treatment.



▲ Sta. 60+55 to 61+55 Lt.  
Cold Plane Transition 1.5 Inches to 0 Inch.  
See Details, Sht. 14



STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**ROADWAY PLANS**

**HAWAII BELT ROAD GUARDRAIL AND SHOULDER IMPROVEMENTS**  
Paauhau Road to Pakalana Street  
Federal-Aid Project No. NH-019-1(36)

Scale: 1" = 40' Date: Feb, 2009

SHEET No. 1 OF 4 SHEETS

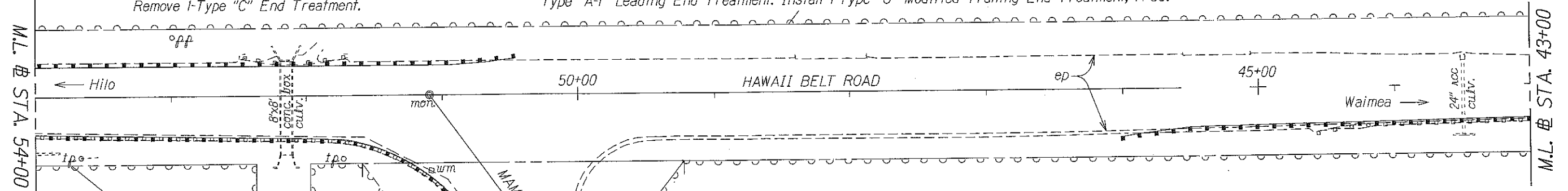
| DATE    | REVISION                     |
|---------|------------------------------|
| 6/16/09 | ▲ Revised Baseline Stations. |

ORIGINAL PLAN  
DATE: \_\_\_\_\_  
SURVEY PLOTTED BY: \_\_\_\_\_  
DRAWN BY: \_\_\_\_\_  
NOTE BOOK DESIGNED BY: \_\_\_\_\_  
DESIGNED BY: \_\_\_\_\_  
CHECKED BY: \_\_\_\_\_

| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|--------------------|-------------|-----------|--------------|
| HAWAII              | HAW.  | NH-019-1(36)       | 2009        | ADD.17    | 27           |

Sta. 51+71 to 52+46.5 Rt.  
 Remove 75 Lin. Ft. Mtl. Guardrail and Posts.  
 Remove I-Type "F" End Treatment.  
 Remove I-Type "C" End Treatment.

Sta. 50+46 to 55+38 Rt.  
 Install 437.5 Lin. Ft. Std. Mtl. Guardrail and Posts. Install 62.5 Lin. Ft. Double (Nested) W-Beam Guardrail at Two Culvert Locations (Eliminate One Post Each). Install I- Modified Type "A-1" Leading End Treatment. Install I-Type "G" Modified Trailing End Treatment, R=50'.



Sta. 44+21 Mamane St. to 54+82.5 Hawaii Belt Road Lt.  
 Remove 925 Lin. Ft. Mtl. Guardrail and Posts.  
 Remove I-Type "G" End Treatment.  
 Remove I-"SRT 350" End Treatment.

Sta. 43+36 Route 240 to 54+82.5 Route 19 Lt.  
 Install 987.5 Lin. Ft. Std. Mtl. Guardrail and Posts with 94 - 8-Ft. Posts Along Top Of Bank.  
 Install I-Type "G" Modified Leading End Treatment, R=30'.  
 Install I-Type "G" Modified Trailing End Treatment, R=15'.

Sta. 43+15.77 to Hawaii Belt Road Lt. & Rt.  
 Cold Plane a Shoulder 1.5 Inches to Face of Guardrail.  
 Pave Shoulders with 2% Slope.  
 See Details, Sht. 14.

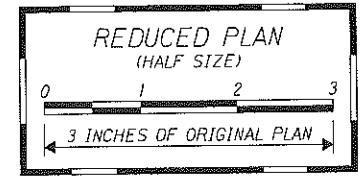
Sta. 39+00 to 59+45 Lt.  
 Cold Plane 1.5 Inches, from Centerline/Median 7 Ft.  
 Towards Should with 2% Slope.  
 See Details, Sht. 14.

Sta. 47+00 to 48+00 Lt. & Rt.  
 Cold Plane Transition 1.5 Inches to 0 Inch.  
 See Details, Sht. 14.

▲ Sta. 47+00 to 50+40±  
 Pave Transition to meet new A.C. elevation at Hawaii Belt Road.

Sta. 46+11 to 48+42.5 Rt.  
 Install 187.5 Lin. Ft. Std. Mtl. Guardrail and Posts with 6 - 8-Ft. Posts Along Top Of Bank.  
 Install I-Type "G" Modified Leading End Treatment, R=20'.  
 Install I-"FLEAT 350" Trailing End Treatment or Approved Equal.

Sta. 46+14 to 47+93.5 Mamane St. Rt.  
 Remove 187.5 Lin. Ft. Mtl. Guardrail and Posts.  
 Remove I-Type "G" End Treatment.  
 Remove I-Type "F" End Treatment.



|  |                            |
|--|----------------------------|
| 6/18/09  | ▲ Revised Baseline Station |
| DATE   | REVISION                   |
| STATE OF HAWAII<br>DEPARTMENT OF TRANSPORTATION<br>HIGHWAYS DIVISION |                            |
| <b>ROADWAY PLANS</b>   |                            |
| HAWAII BELT ROAD GUARDRAIL<br>AND SHOULDER IMPROVEMENTS              |                            |
| Paauhau Road to Pakalana Street                                      |                            |
| Federal-Aid Project No. NH-019-1(36)                                 |                            |
| Scale: 1" = 40'  | Date: Feb, 2009            |
| SHEET No. 2 OF 4 SHEETS  |                            |

|             |      |
|-------------|------|
| DESIGNED BY | DATE |
| CHECKED BY  |      |
| APPROVED BY |      |
| DATE        |      |

ADD.17

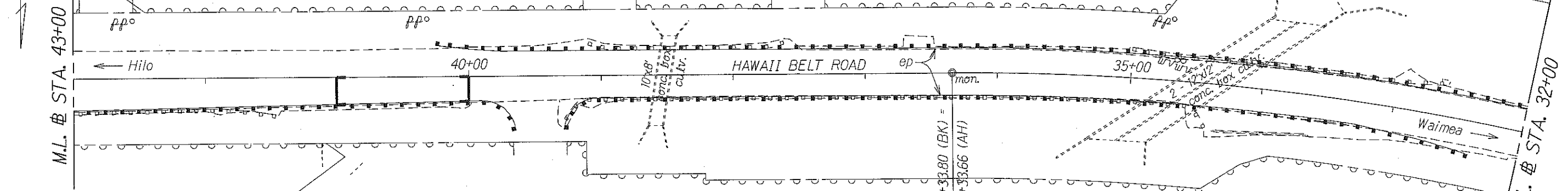
| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|--------------------|-------------|-----------|--------------|
| HAWAII              | HAW.  | NH-019-1(36)       | 2009        | ADD.18    | 27           |

TRUE NORTH  
SCALE: 1" = 40'

Sta. 31+67.5 to 40+25 Rt.  
Install 762.5 Lin. Ft. Std. Mtl. Guardrail and Posts.  
Install 1- Modified Type "A-1" Leading End Treatment.  
Install 1-Modified Type "A-1" Trailing End Treatment.

Sta. 37+61 to 39+10 Rt.  
Remove 150 Lin. Ft. Mtl. Guardrail and Posts.  
Remove 2-"SRT 350" End Treatment.

Sta. 32+65.5 to 35+00 Rt.  
Remove 237.5 Lin. Ft. Mtl. Guardrail and Posts  
Remove 1-"BCT" End Treatment  
Remove 1-Type "C" End Treatment



Sta. 41+46 to 44+57.5 Lt.  
Remove 312.5 Lin. Ft. Mtl. Guardrail and Posts.  
Remove 1-Type "F" End Treatment.  
Remove 1-Type "C" End Treatment.

Sta. 34+41 to 39+28 Lt.  
Remove 500 Lin. Ft. Mtl. Guardrail and Posts.  
Remove 2-Type "G" End Treatment.

Sta. 32+37.5 to 39+28.5 Lt.  
Install 637.5 Lin. Ft. Std. Mtl. Guardrail and Posts.  
Install 1-Type "G" Modified Leading End Treatment, R=25'.  
Install 1- Modified Type "A-1" Trailing End Treatment with 87.5 Lin. Ft. Additional Rubrail at Swale Crossing.

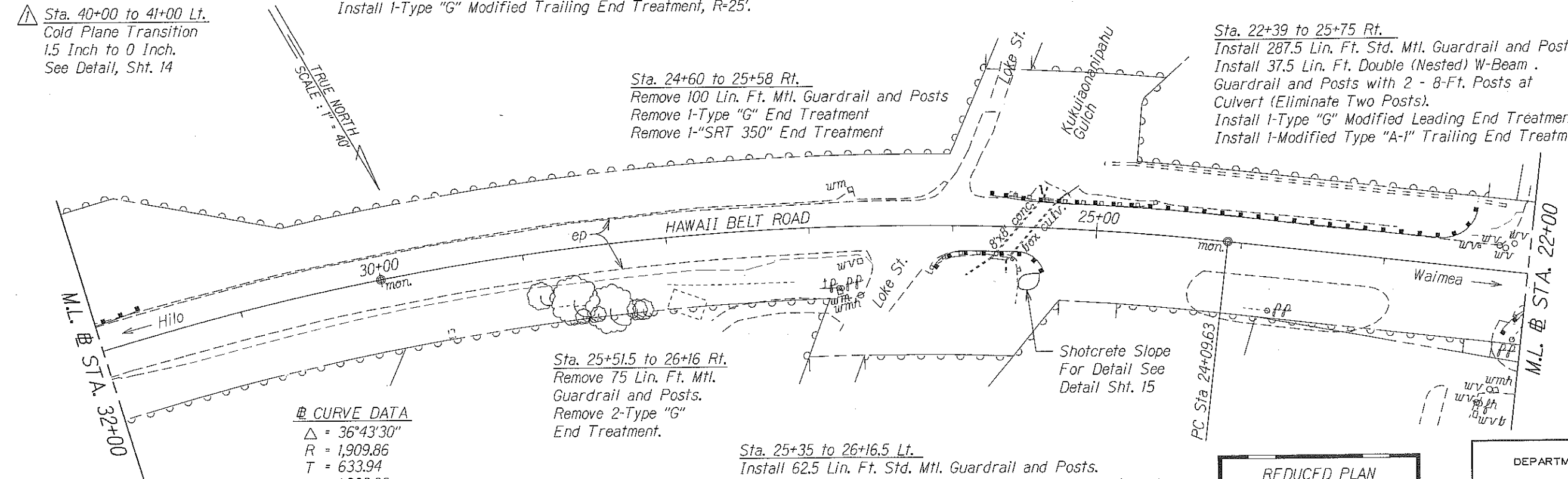
Sta. 32+37.5 to 39+28.5 Lt.  
Install 637.5 Lin. Ft. Std. Mtl. Guardrail and Posts.  
Install 1-Type "G" Modified Leading End Treatment, R=25'.  
Install 1- Modified Type "A-1" Trailing End Treatment with 87.5 Lin. Ft. Additional Rubrail at Swale Crossing.

▲ Sta. 40+00 to 41+00 Lt.  
Cold Plane Transition  
1.5 Inch to 0 Inch.  
See Detail, Sht. 14

Sta. 39+64.5 to 46+02 Lt.  
Install 587.5 Lin. Ft. Std. Mtl. Guardrail and Posts.  
Install 1- Modified Type "A-1" Leading End Treatment.  
Install 1-Type "G" Modified Trailing End Treatment, R=25'.

Sta. 24+60 to 25+58 Rt.  
Remove 100 Lin. Ft. Mtl. Guardrail and Posts  
Remove 1-Type "G" End Treatment  
Remove 1-"SRT 350" End Treatment

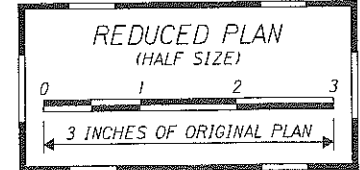
Sta. 22+39 to 25+75 Rt.  
Install 287.5 Lin. Ft. Std. Mtl. Guardrail and Posts.  
Install 37.5 Lin. Ft. Double (Nested) W-Beam Guardrail and Posts with 2 - 8-Ft. Posts at Culvert (Eliminate Two Posts).  
Install 1-Type "G" Modified Leading End Treatment, R=25'.  
Install 1-Modified Type "A-1" Trailing End Treatment.



Sta. 25+51.5 to 26+16 Rt.  
Remove 75 Lin. Ft. Mtl. Guardrail and Posts.  
Remove 2-Type "G" End Treatment.

Sta. 25+35 to 26+16.5 Lt.  
Install 62.5 Lin. Ft. Std. Mtl. Guardrail and Posts.  
Install 37.5 Lin. Ft. Double (Nested) W-Beam Guardrail and Posts with 4 - 8-Ft. Posts At Culvert (Eliminate Two Post).  
Install 1-Type "G" Modified Leading End Treatment, R=20'.  
Install 1-Type "G" Modified Trailing End Treatment, R=25'.

⊙ CURVE DATA  
Δ = 36°43'30"  
R = 1,909.86  
T = 633.94  
C = 1,203.32  
Lc = 1,224.17  
S. E. = 0.07 ft/ft



ORIGINAL SURVEY PLOTTED BY: \_\_\_\_\_ DATE: \_\_\_\_\_  
DRAWN BY: \_\_\_\_\_  
NOTE BOOK REVISIONS BY: \_\_\_\_\_  
002 mar kphr QUANTITIES BY: \_\_\_\_\_  
N. abt/afp03 CHECKED BY: \_\_\_\_\_

|         |                              |
|---------|------------------------------|
| 6/16/09 | ▲ Revised Baseline Stations. |
| DATE    | REVISION                     |

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**ROADWAY PLANS**

**HAWAII BELT ROAD GUARDRAIL AND SHOULDER IMPROVEMENTS**  
Paauhau Road to Pakalana Street  
Federal-Aid Project No. NH-019-1(36)

Scale: 1" = 40' Date: Feb, 2009

SHEET No. 3 OF 4 SHEETS