

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	36-AB-02-04M	2005	42	48

GENERAL CONSTRUCTION NOTES

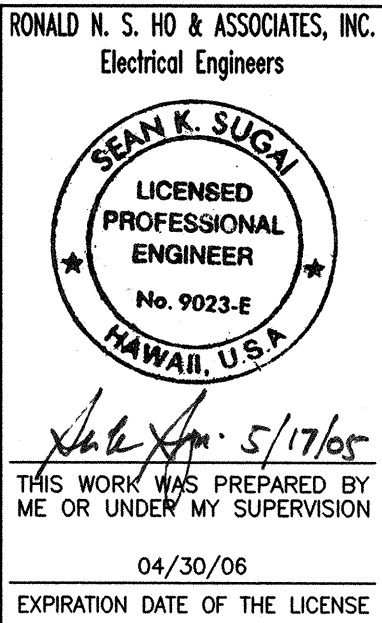
- A. All work shall be done in accordance with the "Hawaii Standard Specifications For Road, Bridge, and Public Works Construction", 1994, State of Hawaii Department of Transportation, Highways Division, except as modified herein or in the Special Provisions.
- B. The Contractor shall verify with the respective utility companies and Government agencies the locations of all electric, telephone, roadway light, water, sewer, drain and other lines crossing the excavation path or in excavation areas.
- C. The Contractor shall notify all affected utility companies and Government agencies of their intent to begin construction on any intersection or street at least two (2) weeks prior to the start of such construction.
- D. The Contractor shall notify the Department of Transportation three (3) working days prior to commencing work on the traffic signal system. (Phone: 873-3535).
- E. The traffic signal system shall be kept operational during construction. Any relocation required shall be approved by the Department of Transportation and paid for by the Contractor.
- F. The Contractor shall provide microwave detector system for all existing signalized intersections where existing loop detector system will be out of service for more the one (1) week.
- G. Trenching to be by hand digging near and across existing utility lines.
- H. Unless otherwise requested by the Board of Water Supply, minimum clearance between water lines and conduits shall be:
Horizontal = 3 feet
Vertical = 6 inches
- I. Adjust new conduit alignment, if required to provide clearances. If conduit cannot be realigned, adjustments to existing water system shall be performed in accordance with standards of the Department of Water Supply.
- J. Underground utilities shown hereon are for information only. No guarantee is made on the accuracy or completeness of said information.
- K. Where necessary, reconstruction of sidewalk, gutter and driveway areas shall conform to the standard details of the governmental agency having jurisdiction over the work.
- L. The Contractor shall be responsible for removal of all silt and debris resulting from his work and deposited in drainage facilities, roadways and other areas. The cost for any necessary remedial action by the Chief Engineer shall be payable by the Contractor.
- M. The Contractor, at his own expense, shall keep the project area free from dust nuisance. The work shall be in conformance with the air pollution control standards and regulations of the State Department of Health.

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

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ELECTRICAL SYMBOLS

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	TRAFFIC SIGNAL HEAD RYG↑, PROVIDE NECESSARY MOUNTING BRACKETS AND ACCESSORIES		TRAFFIC SIGNAL PULLBOX
	TRAFFIC SIGNAL HEAD RYG, PROVIDE NECESSARY MOUNTING BRACKETS AND ACCESSORIES		TRAFFIC SIGNAL CONDUIT & WIRING
	PEDESTRIAN TRAFFIC SIGNAL HEAD, PROVIDE NECESSARY MOUNTING BRACKETS AND ACCESSORIES		EXISTING TRAFFIC SIGNAL CONDUIT WITH NEW WIRING
	PEDESTRIAN PUSHBUTTON SHALL MEET CURRENT AMERICAN WITH DISABILITIES ACT (ADA) ACCESSIBILITY GUIDELINES AND WILL BE SUBJECT TO ENGINEER'S APPROVAL, SEE DETAIL A/E-6.		
	TYPE I TRAFFIC SIGNAL STANDARD		
	TYPE II TRAFFIC SIGNAL STANDARD (WITH 30' MAST ARM INDICATED).		



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

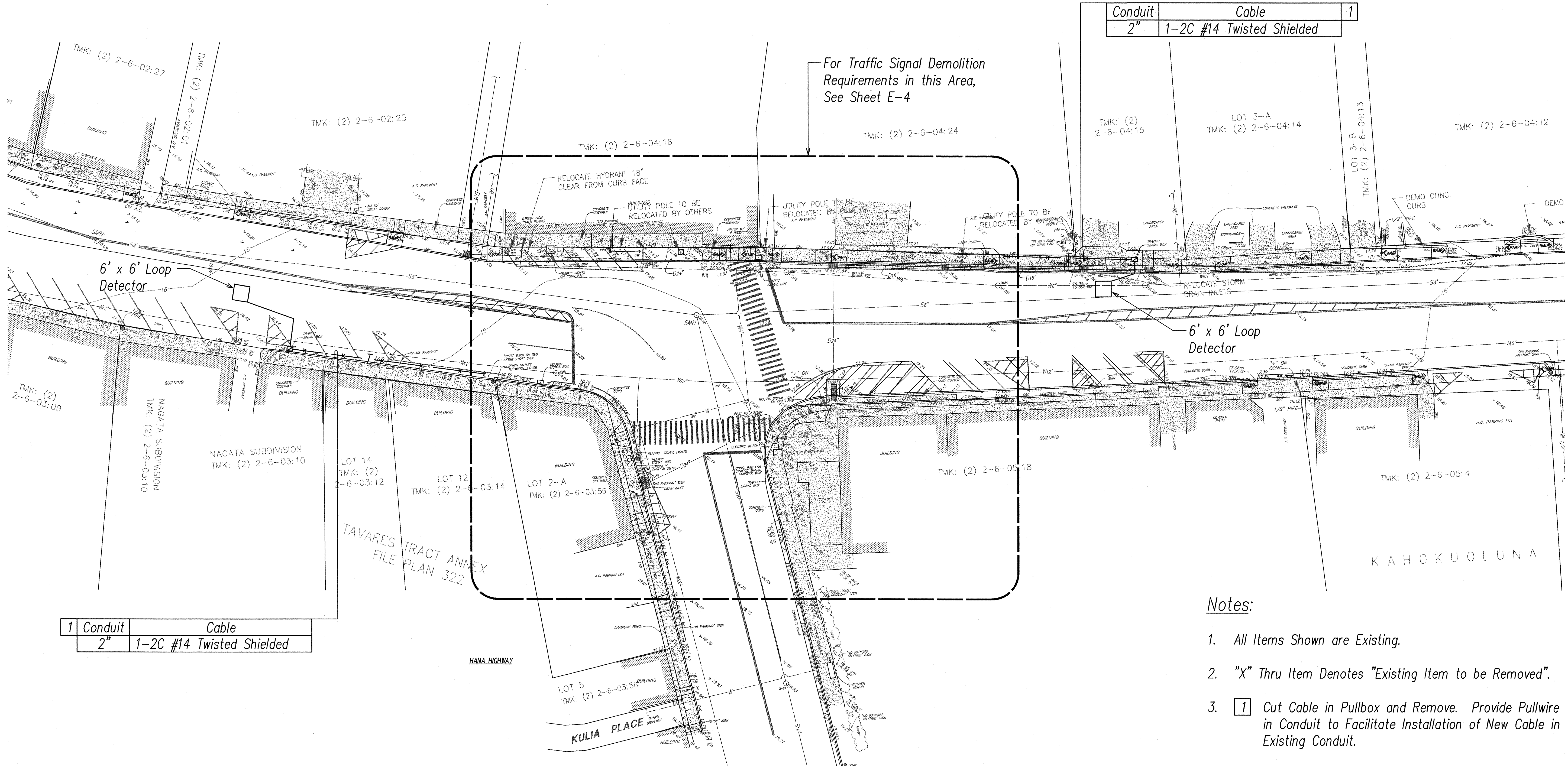
ELECTRICAL SYMBOLS,
GENERAL NOTES

ROUTE 36, HANA HIGHWAY RESURFACING
HALEAKALA HWY TO HOOKIPA PARK
PAIA TOWN SECTION

Project No. 36-AB-02-04M
Scale: As Noted Date: May 6, 2005

SHEET No. E-1 OF 7 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	36-AB-02-04M	2005	43	48



Conduit	Cable	
2"	1-2C #14 Twisted Shielded	1

1	Conduit	Cable
	2"	1-2C #14 Twisted Shielded

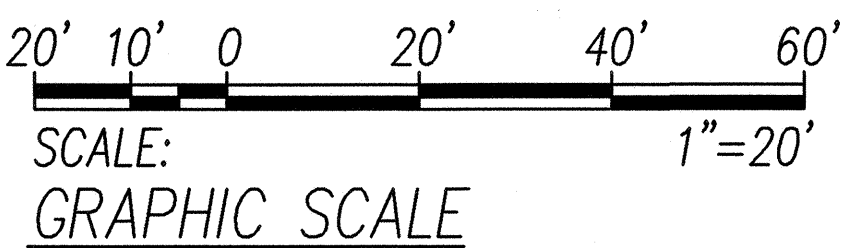
- Notes:
- All Items Shown are Existing.
 - "X" Thru Item Denotes "Existing Item to be Removed".
 - | |
|---|
| 1 |
|---|

 Cut Cable in Pullbox and Remove. Provide Pullwire in Conduit to Facilitate Installation of New Cable in Existing Conduit.

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NOTE BOOK	
No.	



TRAFFIC SIGNAL DEMOLITION SITE PLAN
SCALE: 1"=20'



RONALD N. S. HO & ASSOCIATES, INC.
Electrical Engineers

SEAN K. SUGA
LICENSED PROFESSIONAL ENGINEER
No. 9023-E
HAWAII, U.S.A.

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04/30/06
EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

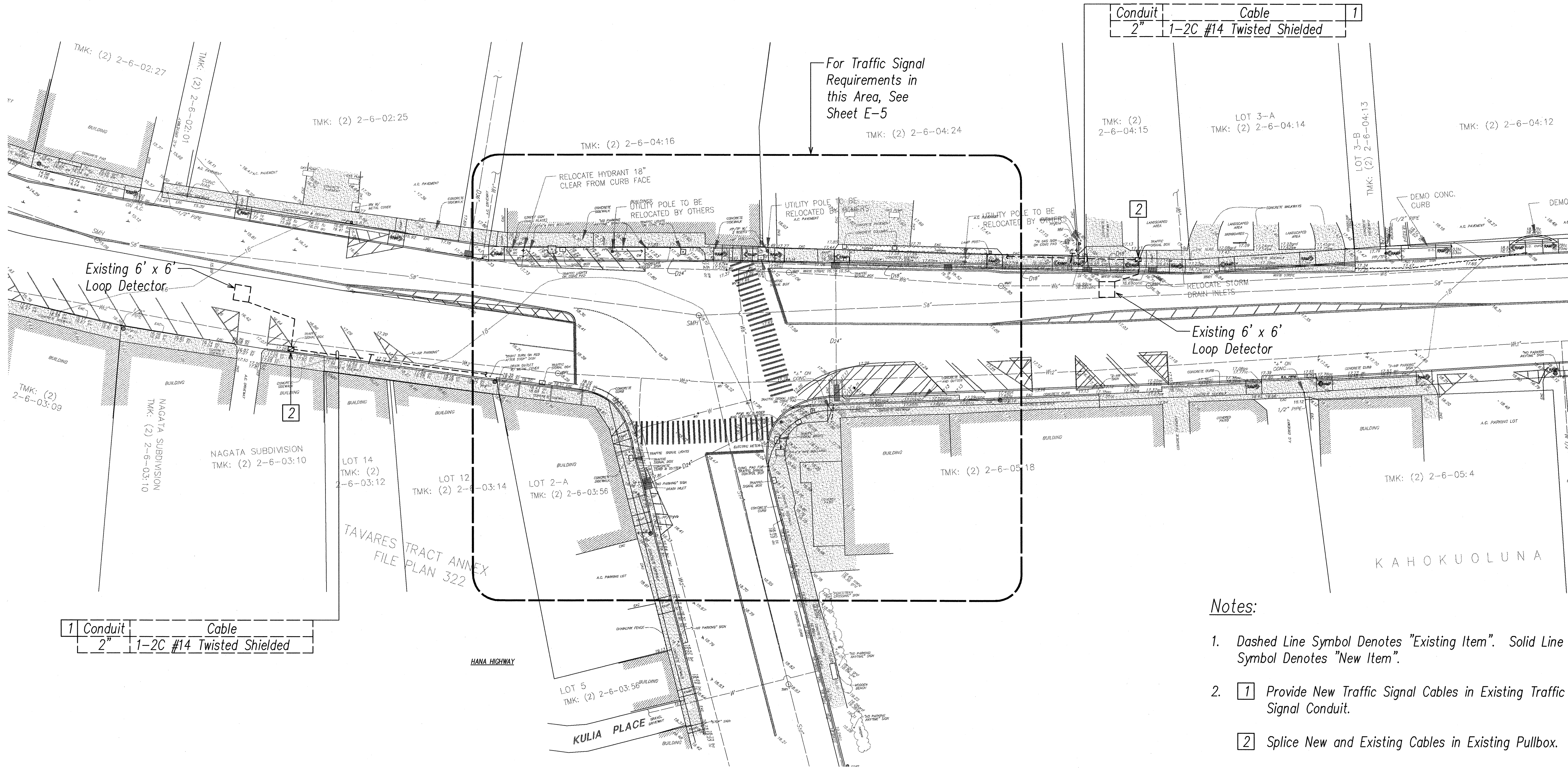
**TRAFFIC SIGNAL
DEMOLITION SITE PLAN**

ROUTE 36, HANA HIGHWAY RESURFACING
HALEAKALA HWY TO HOOKIPA PARK
PAIA TOWN SECTION

Project No. 36-AB-02-04M
Scale: As Noted Date: May 6, 2005

SHEET No. E-2 OF 7 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	36-AB-02-04M	2005	44	48

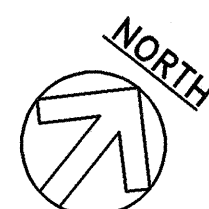


Notes:

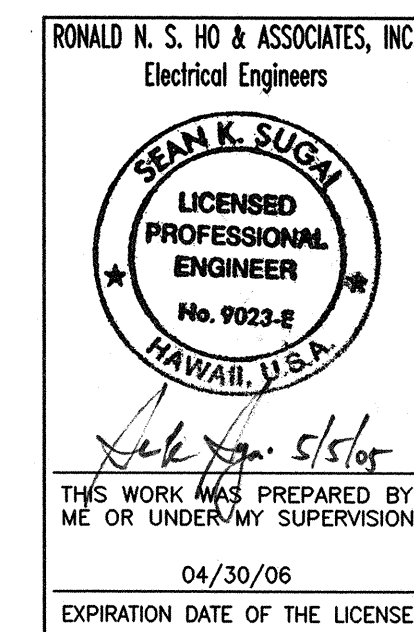
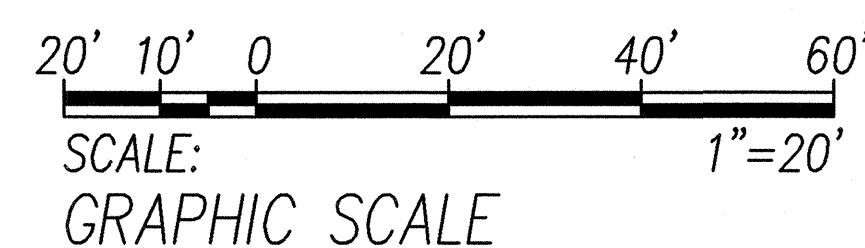
1. Dashed Line Symbol Denotes "Existing Item". Solid Line Symbol Denotes "New Item".
2. 1 Provide New Traffic Signal Cables in Existing Traffic Signal Conduit.
2. 2 Splice New and Existing Cables in Existing Pullbox.

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DATE
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2. VARIOUS PROJECTS (4/24/03, 4/24/03, 4/24/03, 4/24/03)



TRAFFIC SIGNAL SITE PLAN
SCALE: 1"=20'

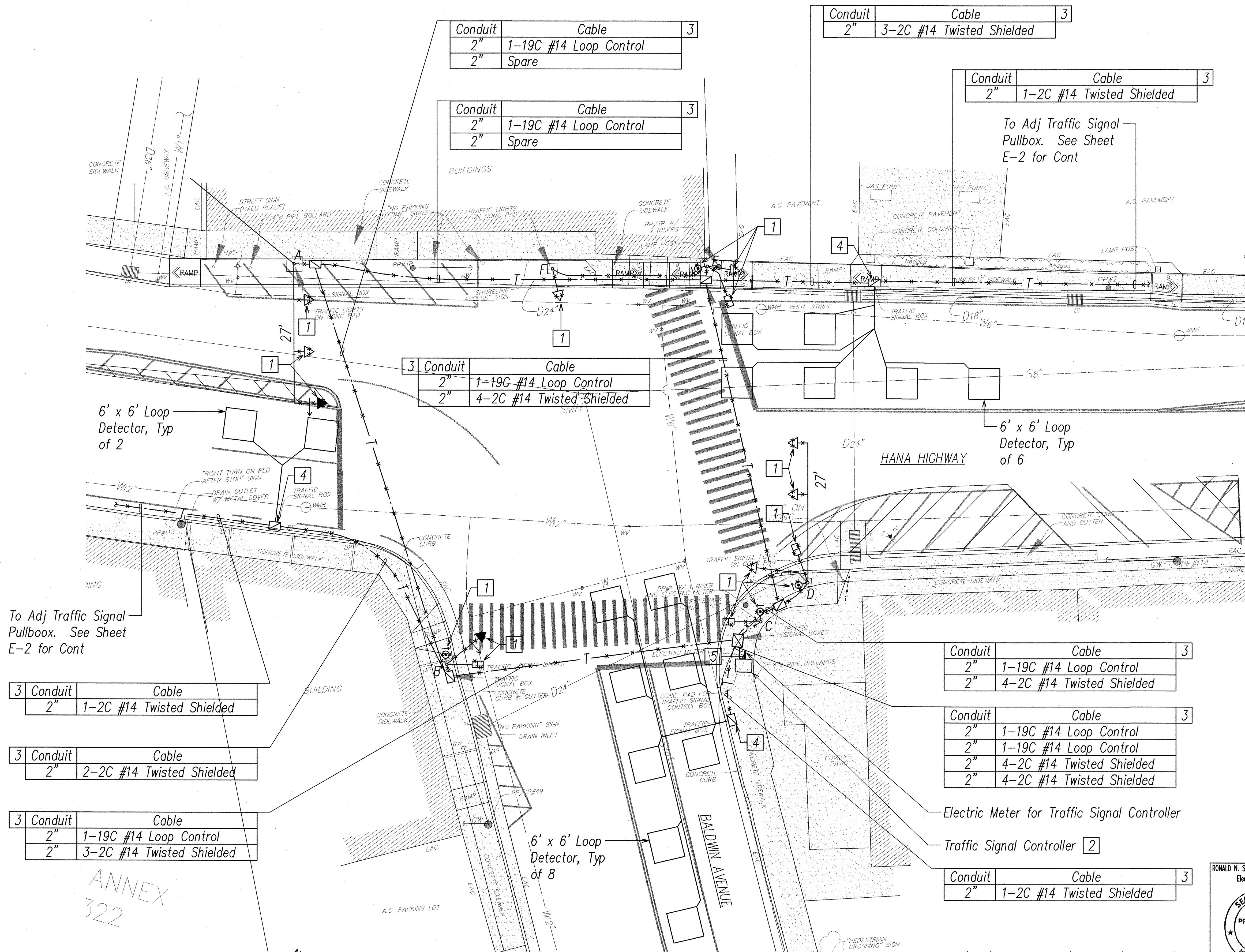


STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
**TRAFFIC SIGNAL
SITE PLAN**
ROUTE 36, HANA HIGHWAY RESURFACING
HALEAKALA HWY TO HOOKIPA PARK
PAIA TOWN SECTION
Project No. 36-AB-02-04M
Scale: As Noted Date: May 6, 2005
SHEET No. E-3 OF 7 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	36-AB-02-04M	2005	45	48

Notes:

- All Items Shown are Existing.
- "X" Thru Item Denotes "Existing Item to be Removed".
- Salvage All Existing Traffic Signal System Equipment and Return to the Department of Transportation.
- Remove Traffic Signal Head/Pedestrian Pushbutton and Associated Cables. Provide Pullwire to Facilitate Installation of New Cables in Existing Pole.
 - Remove Traffic Signal Controller. Concrete Pad to be Reused for New Traffic Signal Controller.
 - Remove Traffic Signal Cables and Provide Pullwire to Facilitate Installation of New Cables in Existing Conduit.
 - Cut Loop Detector Cable in Pullbox and Remove. Provide Pullwire to Facilitate Installation of New Cable in Existing Conduit.
 - 2"C, 1-3C#6. Remove Cables and Provide Pullwire to Facilitate Installation of New Cable in Existing Conduit.



Conduit	Cable	
3	2"	1-2C #14 Twisted Shielded

Conduit	Cable	
3	2"	2-2C #14 Twisted Shielded

Conduit	Cable	
3	2"	1-19C #14 Loop Control
2"	3-2C #14 Twisted Shielded	

Conduit	Cable	
2"	1-19C #14 Loop Control	3
2"	Spare	

Conduit	Cable	
2"	1-19C #14 Loop Control	3
2"	Spare	

Conduit	Cable	
2"	1-19C #14 Loop Control	3
2"	4-2C #14 Twisted Shielded	

Conduit	Cable	
2"	3-2C #14 Twisted Shielded	3

Conduit	Cable	
2"	1-2C #14 Twisted Shielded	3

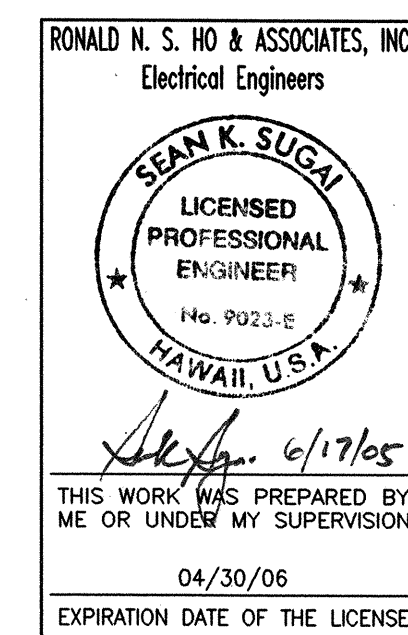
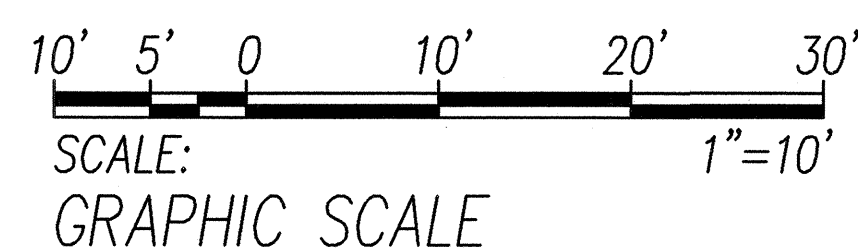
Conduit	Cable	
2"	1-19C #14 Loop Control	3
2"	4-2C #14 Twisted Shielded	

Conduit	Cable	
2"	1-19C #14 Loop Control	3
2"	1-19C #14 Loop Control	
2"	4-2C #14 Twisted Shielded	
2"	4-2C #14 Twisted Shielded	

Conduit	Cable	
2"	1-2C #14 Twisted Shielded	3

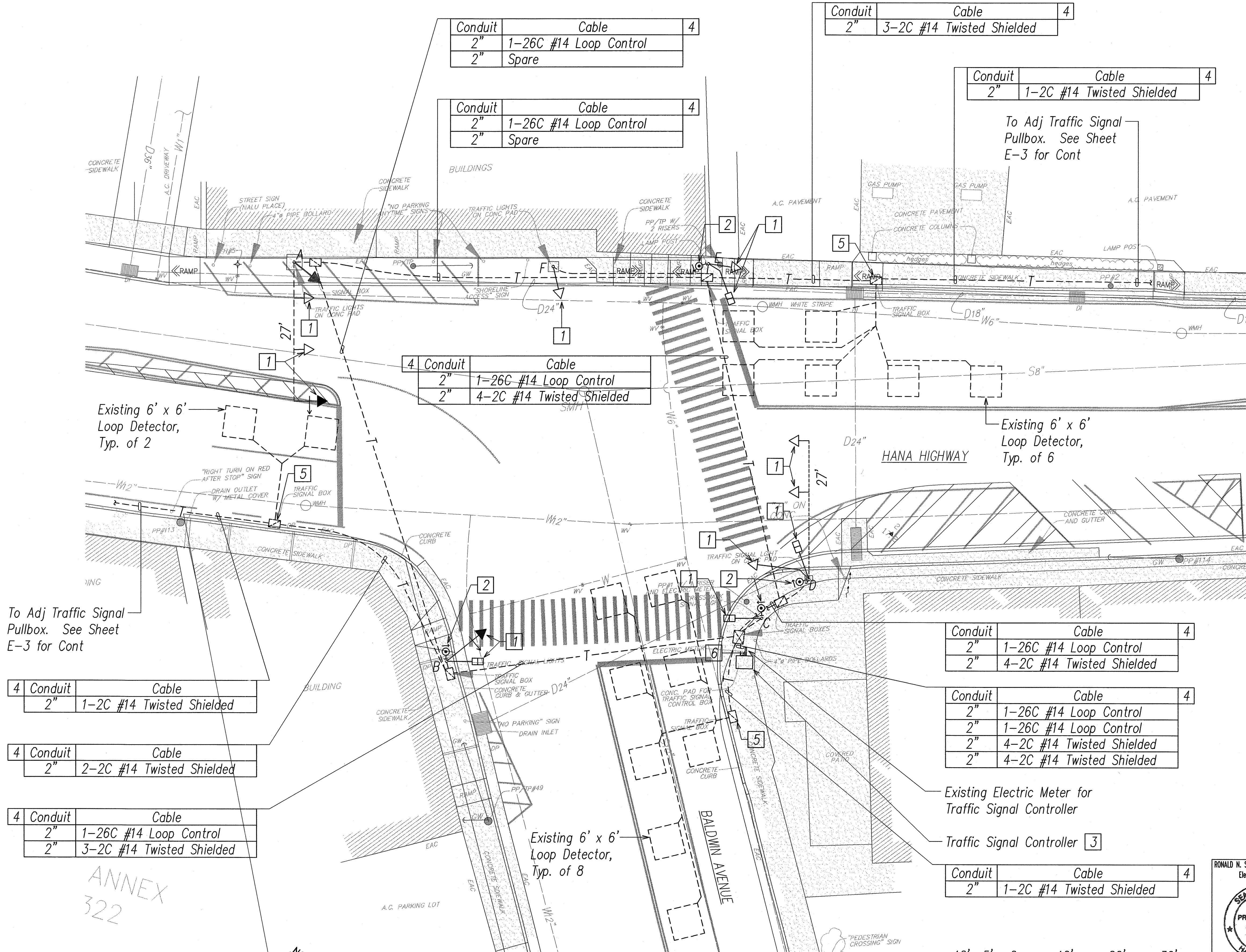
TRAFFIC SIGNAL DEMOLITION PLAN

SCALE: 1"=10'



6-16-05	Added Demolition Note
DATE	DESCRIPTION
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION TRAFFIC SIGNAL DEMOLITION PLAN ROUTE 36, HANA HIGHWAY RESURFACING HALEAKALA HWY TO HOOKIPA PARK PAIA TOWN SECTION Project No. 36-AB-02-04M Scale: As Noted Date: May 6, 2005 SHEET No. E-4 OF 7 SHEETS	

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	36-AB-02-04M	2005	46	48



- Notes:
1. Dashed Line Symbol Denotes "Existing Item". Solid Line Symbol Denotes "New Item".
 - 1 Provide New LED Type Traffic Signal Head on Existing Traffic Signal Pole. Provide All Necessary Mounting Accessories and Cables.
 - 2 Provide New ADA Compliant Pedestrian Pushbutton on Existing Traffic Signal Pole. Provide All Necessary Mounting Accessories and Cables.
 - 3 Provide New Traffic Signal Controller On Existing Concrete Pad. Provide All Necessary Mounting Hardware.
 - 4 Install New Traffic Signal Cable(s) In Existing Conduit.
 - 5 Splice New and Existing Loop Detector Cable(s) in Existing Pullbox.
 - 6 Existing 2"C, Install New 3C#6 for Traffic Signal Controller Electrical Feeder.

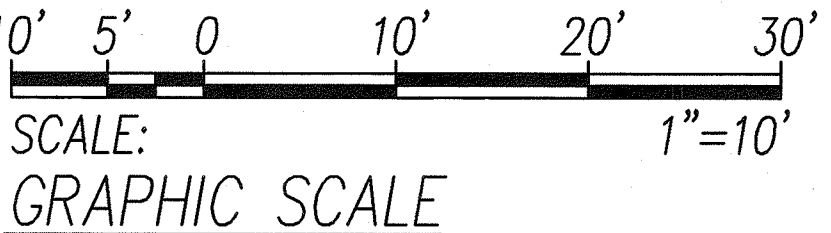
Conduit	Cable	
4 2"	1-2C #14 Twisted Shielded	
4 2"	2-2C #14 Twisted Shielded	
4 2"	1-26C #14 Loop Control	
4 2"	3-2C #14 Twisted Shielded	

Conduit	Cable	
2"	1-26C #14 Loop Control	4
2"	4-2C #14 Twisted Shielded	

Conduit	Cable	
2"	1-26C #14 Loop Control	4
2"	1-26C #14 Loop Control	
2"	4-2C #14 Twisted Shielded	
2"	4-2C #14 Twisted Shielded	

Conduit	Cable	
2"	1-2C #14 Twisted Shielded	4

TRAFFIC SIGNAL PLAN SCALE: 1"=10'



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HIGHWAYS DIVISION

TRAFFIC SIGNAL PLAN

ROUTE 36, HANA HIGHWAY RESURFACING
HALEAKALA HWY TO HOOKIPA PARK
PAIA TOWN SECTION

Project No. 36-AB-02-04M
Scale: As Noted Date: May 6, 2005

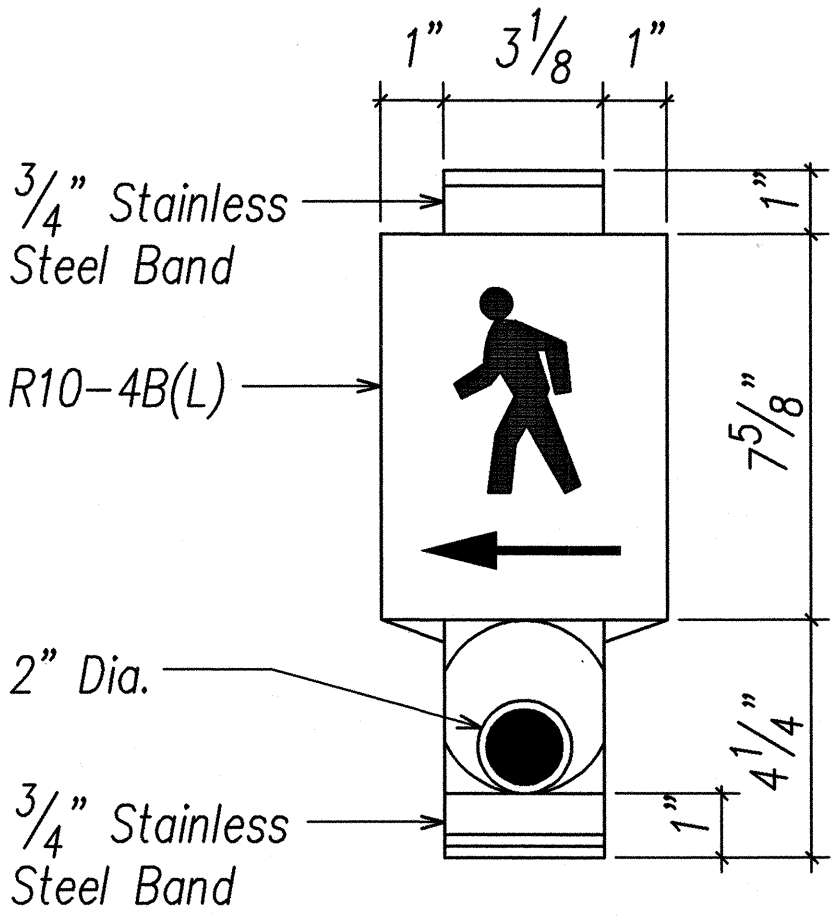
SHEET No. E-5 OF 7 SHEETS

"AS-BUILT"

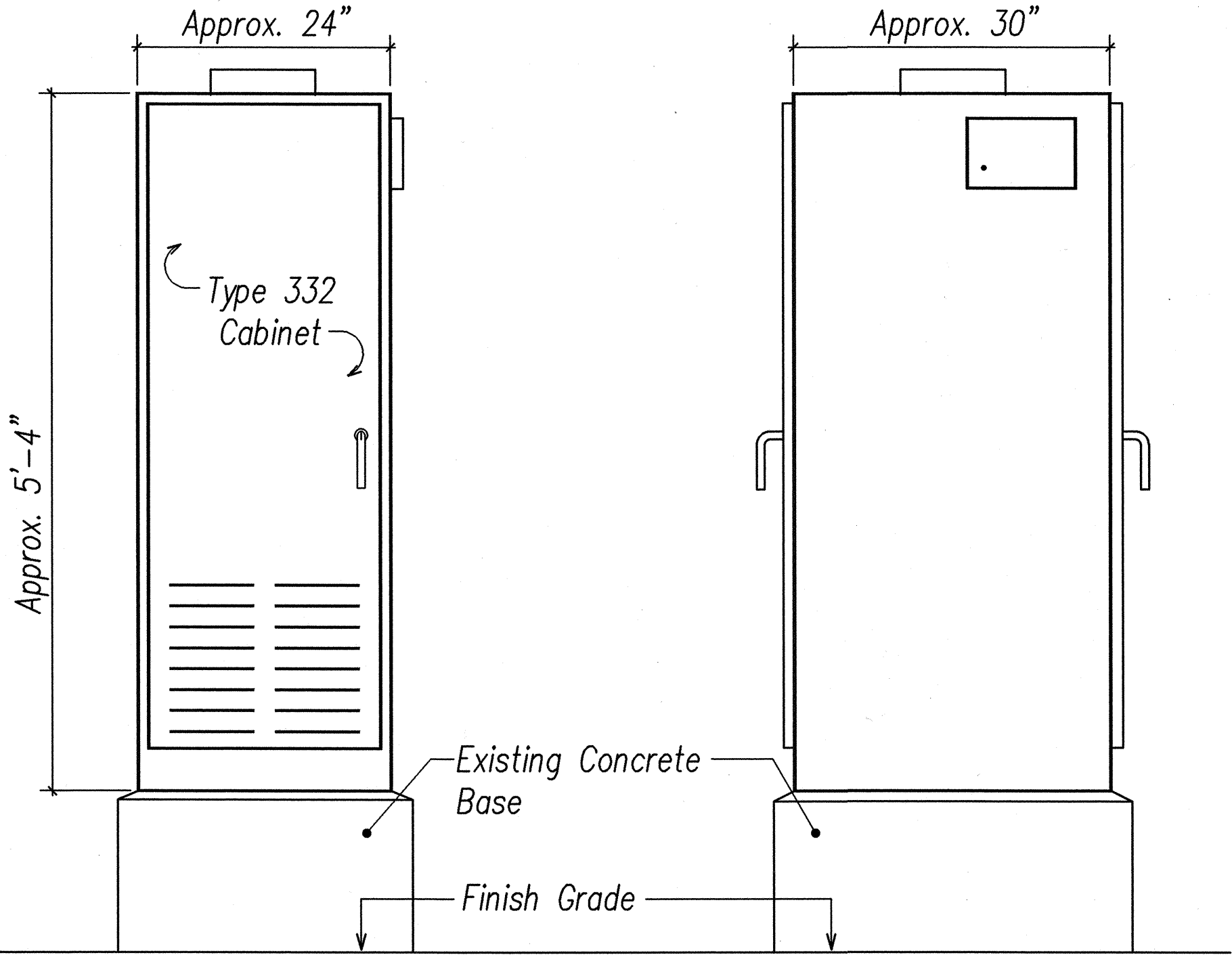
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	36-AB-02-04M	2005	47	48

DETAIL NOTES:

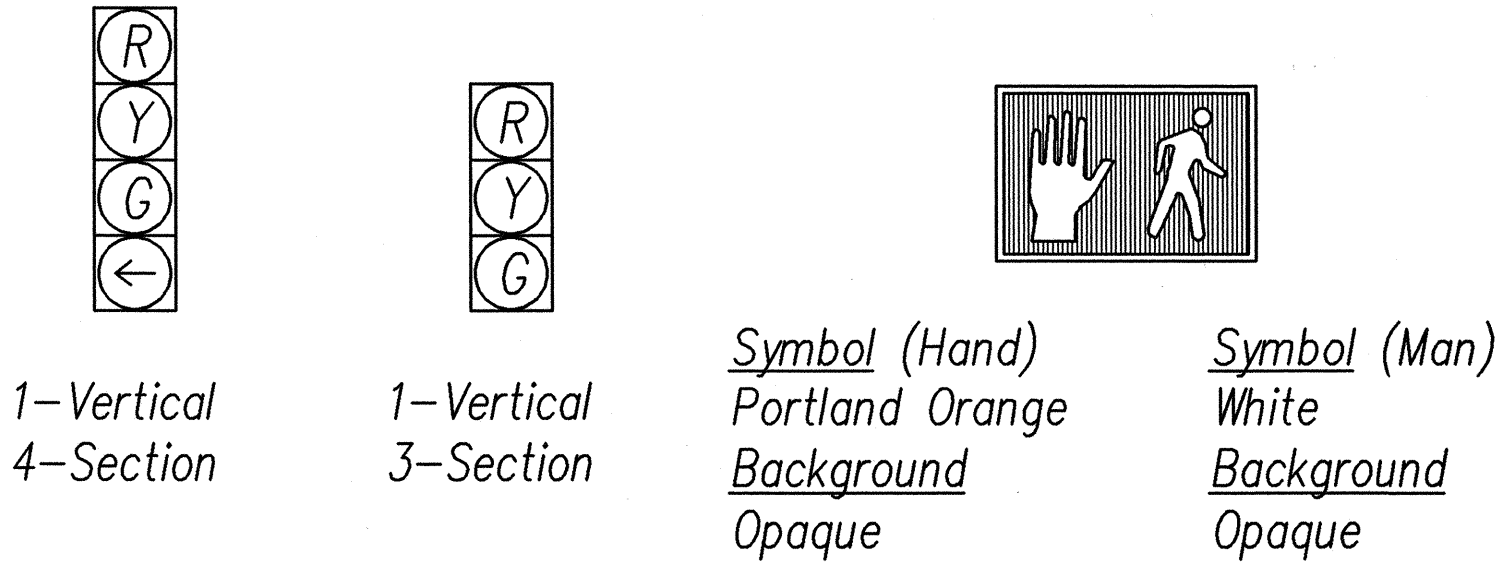
- The pedestrian pushbutton unit shall consist of a one piece assembly with a raise walking man, arrow indication and push button.
- The pushbutton activator shall be of the mushroom plunger type, ADA acceptable, 2 inches in diameter that requires less than 5 lbs. of pressure to activate.
- The raised man and arrows shall be directional and match the directional indication as shown on the plans.
- The pushbutton shall be tamper proof, weatherproof and constructed so that electrical shocks are impossible.
- The color scheme shall be:
White – Man, arrow and pushbutton
Black – Background



A
E-6 **PEDESTRIAN PUSHBUTTON DETAILS**
NOT TO SCALE



C
E-6 **TYPE 332A TRAFFIC SIGNAL CONTROLLER CABINET DETAIL**
NOT TO SCALE



B
E-6 **TYPICAL SIGNAL ARRANGEMENTS**
NOT TO SCALE

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STATE OF HAWAII

DEPARTMENT OF TRANSPORTATION

HIGHWAYS DIVISION

MISCELLANEOUS DETAILS

ROUTE 36, HANA HIGHWAY RESURFACING

HALEAKALA HWY TO HOOKIPA PARK

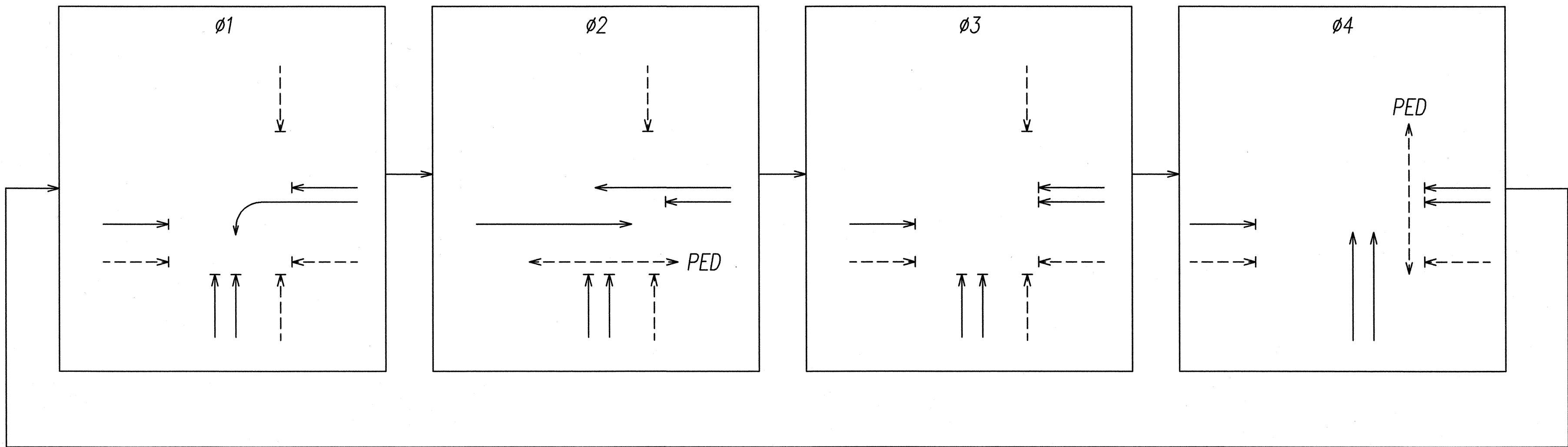
PAIA TOWN SECTION

Project No. 36-AB-02-04M

Scale: As Noted

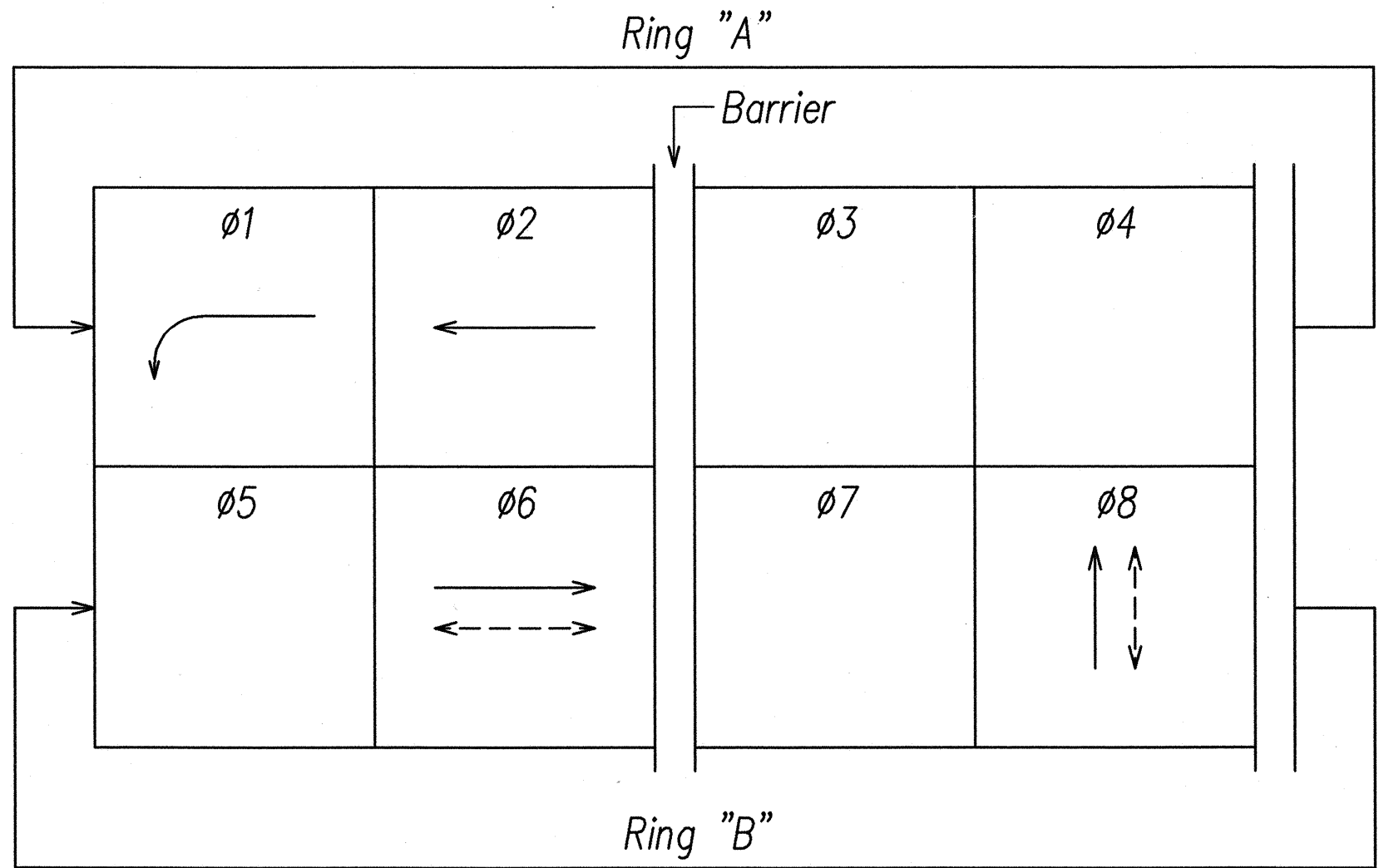
Date: May 6, 2005

SHEET No. E-6 OF 7 SHEETS



PHASE DIAGRAM

Traffic Signal Head Schedule			
Symbol	→	→	→
Signal Head Type	<div><div>R</div><div>Y</div><div>G</div></div> <div>RYG</div>	<div><div>R</div><div>Y</div><div>G</div><div></div></div> <div>RYGG</div>	<div><div></div><div></div><div></div><div></div></div> <div>PED</div>
Signal Standard	A (2) D (3) E F	A B	B C D E



PHASE ASSIGNMENT DIAGRAM

ORIGINAL PLAN
DATE
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NOTED BY
No.

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

TRAFFIC SIGNAL PHASE DIAGRAMS,
TRAFFIC SIGNAL HEAD SCHEDULE
ROUTE 36, HANA HIGHWAY RESURFACING
HALEAKALA HWY TO HOOKIPA PARK
PAIA TOWN SECTION

Project No. 36-AB-02-04M
Scale: As Noted
Date: May 6, 2005

SHEET No. E-7 OF 7 SHEETS