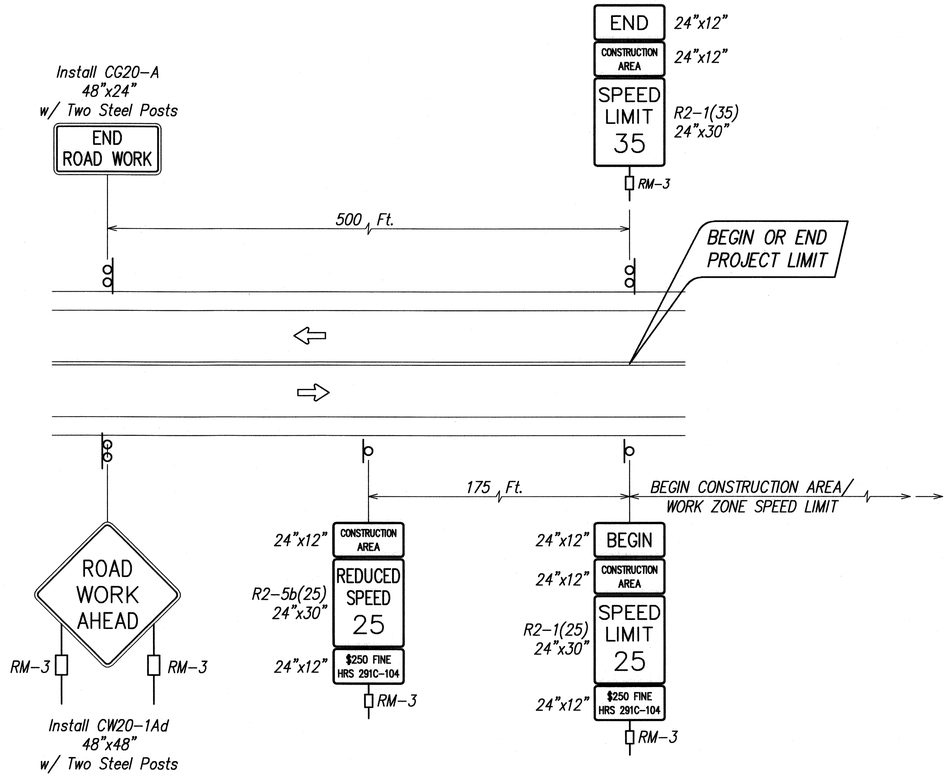
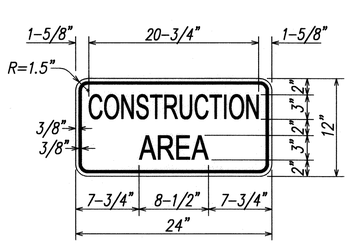
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-072-1(51)	2007	69	106



TYPICAL DETAIL FOR CONSTRUCTION SIGNS ON TWO LANE LOW SPEED HIGHWAY

NOT TO SCALE



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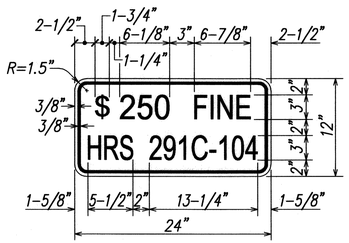

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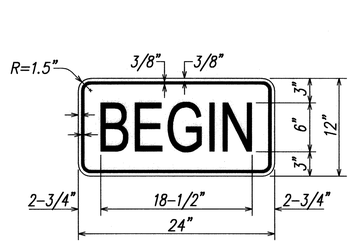

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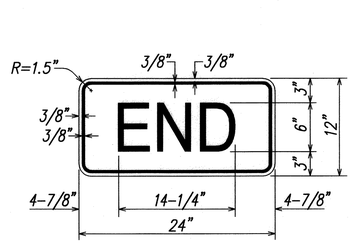

Legend: Black
Background: Orange

Work Zone Notes:

1. This Work Zone Sign Plan is intended for use on long-term stationary work zones/construction phases (3 days or more). All work zones or construction phases less than 3 days duration will use Traffic Control Plans shown in Section 645 of the Special Provisions.
2. All existing regulatory speed limit signs with posts within the work zone/project limits shall be removed and replaced with work zone speed limit sign assemblies (R2-1(25) and R2-5b(25) with "CONSTRUCTION AREA" and "$250 FINE HRS 291C-104" Supplemental Signs).
3. Construction sign assemblies shall be installed on both the approaching and trailing ends of each work zone as shown on this plan.
4. Each construction warning sign shall have a minimum of four (4) Type III reflective markers (RM-3), 2 facing in each direction of traffic. Each work zone speed limit assembly shall have a minimum of two (2) RM-3, 1 facing each direction of traffic. Installation of each RM-3 shall be considered incidental to Item No. 645.7100, Construction Signs with Posts.
5. Upon the completion of all physical work or as directed by the Engineer, all construction signs and work zone speed limit assemblies shall be removed. All speed limit signs and posts that were existing at the start of the project within the work zone/project limits shall be restored back to their original locations and configurations.
6. Placement of construction signs shall not obstruct the path of pedestrians and bicyclists.
7. The removal and restoration of existing regulatory speed limit signs with new posts along with the installation, maintenance and removal of work zone speed limit sign assemblies shall be considered incidental to Item No. 645.7100, Construction Signs with Posts.

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

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DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

WORK ZONE SIGNING PLAN NOTES & DETAILS

Kalanianaole Highway Improvements
Retaining Wall at Makapuu, Oahu
Federal-Aid Project No. NH-072-1(51)

Scale: As Noted Date: APR. 2007

SHEET No. 1 OF 8 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-072-1(51)	2007	70	106

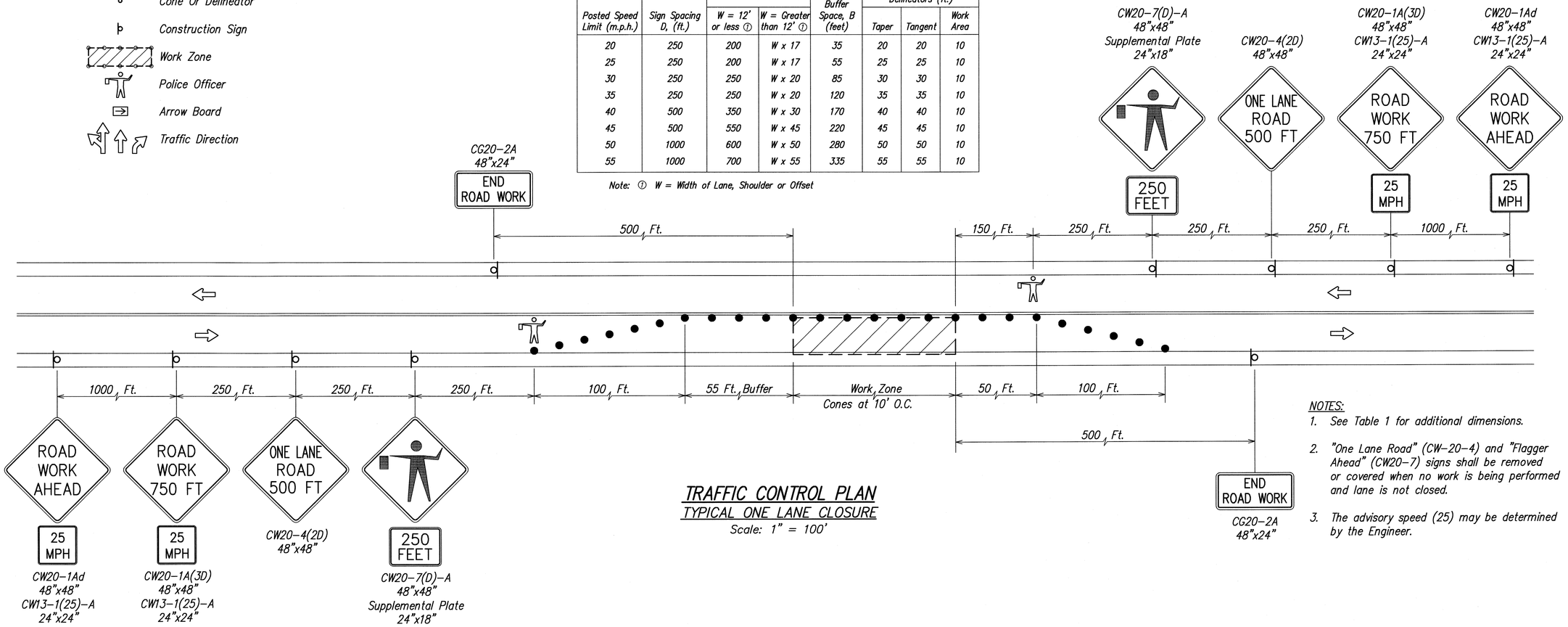
Legend:

- Cone Or Delineator
- Construction Sign
- Work Zone
- Police Officer
- Arrow Board
- Traffic Direction

Table 1 for Traffic Control Plan

Posted Speed Limit (m.p.h.)	Sign Spacing D, (ft.)	Taper Length, T (ft.) W = 12' or less ①	Taper Length, T (ft.) W = Greater than 12' ①	Longitudinal Buffer Space, B (feet)	Spacing of Cones or Delineators (ft.) Taper	Tangent	Work Area
20	250	200	W x 17	35	20	20	10
25	250	200	W x 17	55	25	25	10
30	250	250	W x 20	85	30	30	10
35	250	250	W x 20	120	35	35	10
40	500	350	W x 30	170	40	40	10
45	500	550	W x 45	220	45	45	10
50	1000	600	W x 50	280	50	50	10
55	1000	700	W x 55	335	55	55	10

Note: ① W = Width of Lane, Shoulder or Offset



TRAFFIC CONTROL PLAN
TYPICAL ONE LANE CLOSURE
Scale: 1" = 100'

NOTES:
1. See Table 1 for additional dimensions.
2. "One Lane Road" (CW-20-4) and "Flagger Ahead" (CW20-7) signs shall be removed or covered when no work is being performed and lane is not closed.
3. The advisory speed (25) may be determined by the Engineer.

General Notes for Traffic Control Plan

1. The permittee 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 the work.
5. Flaggers and/or police officers shall be in sight of each other or in direct communications at all times.
6. When required by the issuing officer, the permittee shall install a flashing arrow signal as shown on the Traffic Control Plans.
7. Sign spacings (L), taper lengths (T) and spacings of cones or delineators shall be as shown in Table 1, unless otherwise noted on the Traffic Control Plans.
8. All traffic lanes shall be a minimum of 10 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 need 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 work zone traffic control devices shall comply with the "Statewide Guideline for Work Zone Traffic Control Devices" dated September 13, 2000.

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

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

TRAFFIC CONTROL PLAN
TYPICAL ONE LANE CLOSURE

Kalanianaole Highway Improvements
Retaining Wall at Makapuu, Oahu
Federal-Aid Project No. NH-072-1(51)

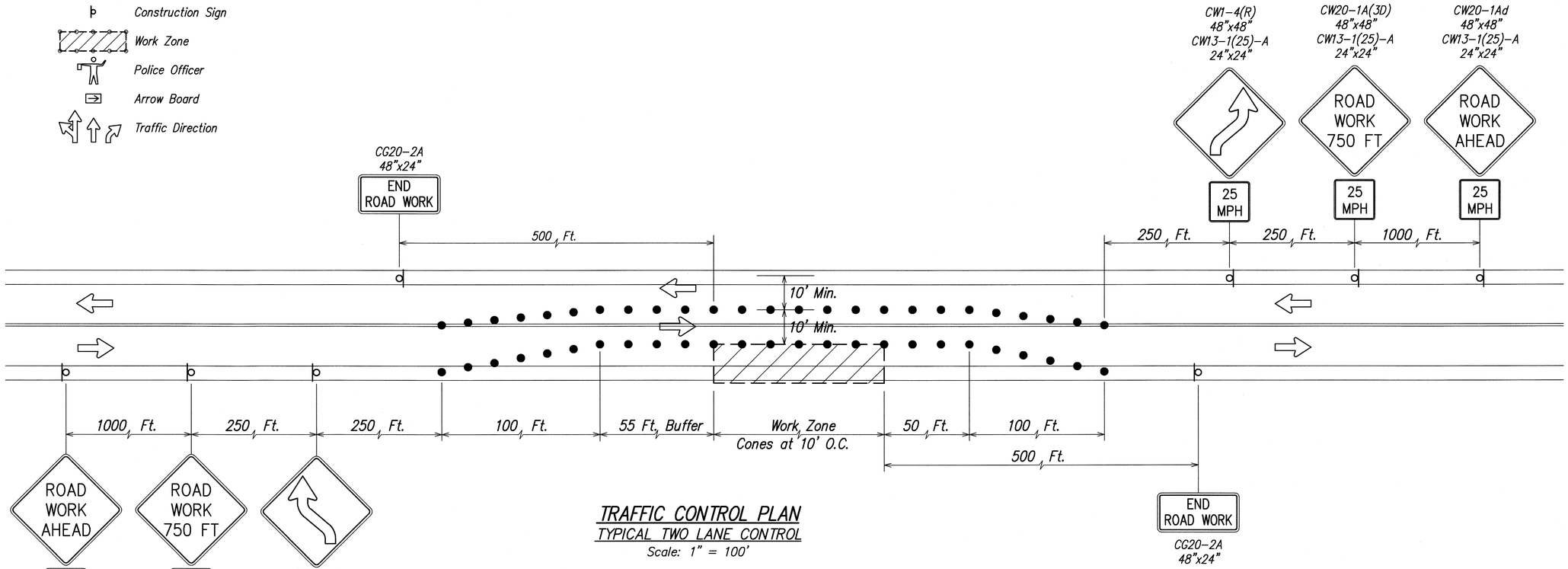
Scale: As Noted Date: APR. 2007

SHEET No. 2 OF 8 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-072-1(51)	2007	71	106

Legend:

- Cone Or Delineator
- Construction Sign
- Work Zone
- Police Officer
- Arrow Board
- Traffic Direction



TRAFFIC CONTROL PLAN
TYPICAL TWO LANE CONTROL
Scale: 1" = 100'

NOTES:

1. See Table 1 for additional dimensions.
2. The advisory speed (25) may be determined by the Engineer.

ORIGINAL PLAN | NOTE BOOK | No. | DATE
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TRACED BY
DESIGNED BY
QUANTITIES BY
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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

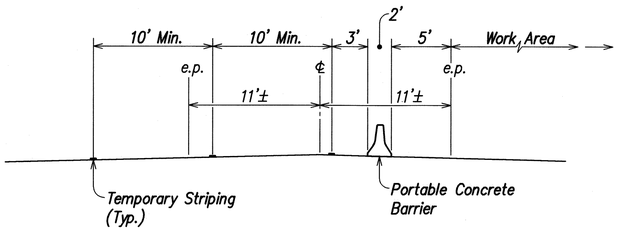
TRAFFIC CONTROL PLAN
TYPICAL TWO LANE CONTROL

Kalanianaole Highway Improvements
Retaining Wall at Makapuu, Oahu
Federal-Aid Project No. NH-072-1(51)

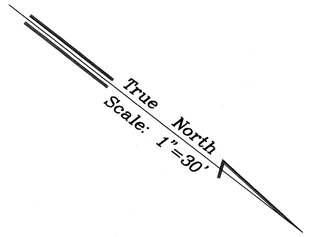
Scale: As Noted Date: APR. 2007

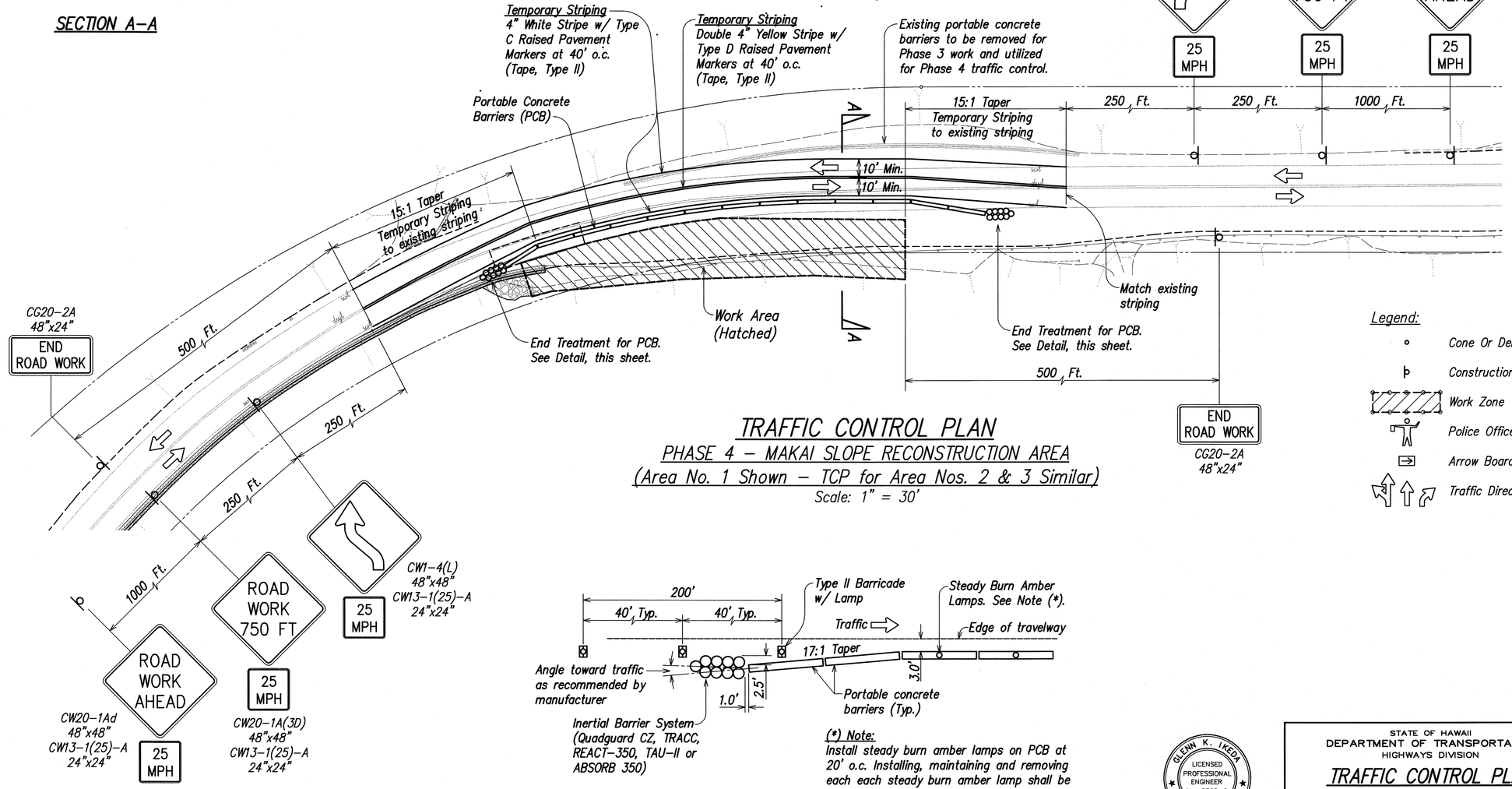
SHEET No. 3 OF 8 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-072-1(51)	2007	72	106



SECTION A-A





Legend:

- Cone Or Delineator
- Construction Sign
- Work Zone
- Police Officer
- Arrow Board
- Traffic Direction

TRAFFIC CONTROL PLAN

PHASE 4 – MAKAI SLOPE RECONSTRUCTION AREA

(Area No. 1 Shown – TCP for Area Nos. 2 & 3 Similar)

Scale: 1" = 30'

(*) Note:
Install steady burn amber lamps on PCB at 20' o.c. Installing, maintaining and removing each each steady burn amber lamp shall be considered incidental to the various items in Section 645.

7 7 14 14 21
7 14 14 21

Number indicates module weight in hundreds of pounds.

INTERTIAL BARRIER SIZES

PCB END TREATMENT
Not To Scale

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

TRAFFIC CONTROL PLAN

TYPICAL PHASE 4 CONTROL

Kalanianaole Highway Improvements
Retaining Wall at Makapuu, Oahu
Federal-Aid Project No. NH-072-1(51)

Scale: As Noted Date: APR. 2007

SHEET No. 4 OF 8 SHEETS

72

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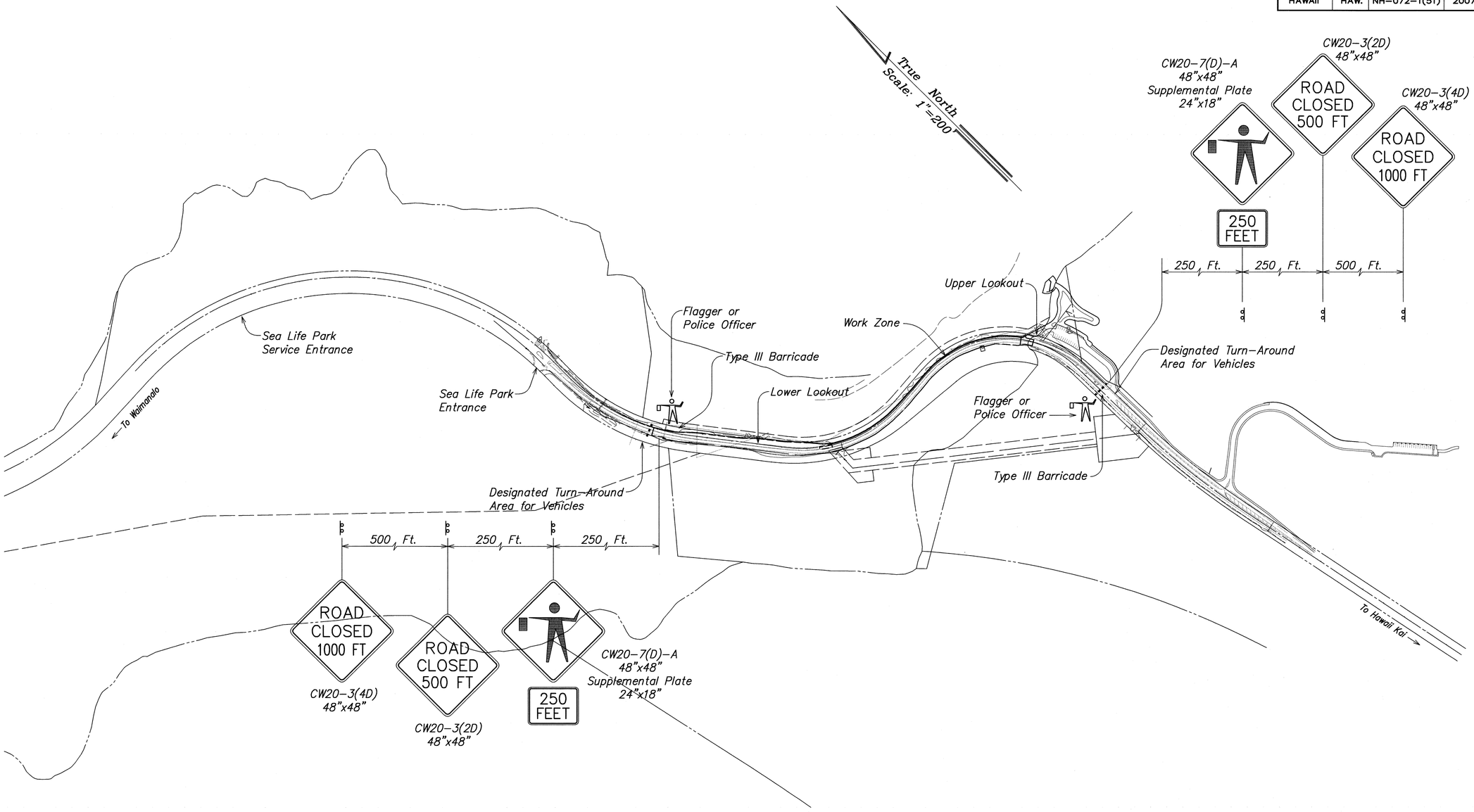
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-072-1(51)	2007	73	106



TRAFFIC CONTROL PLAN
TYPICAL TOTAL HIGHWAY CLOSURE
SCALE: 1" = 200'

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

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STATE OF HAWAII
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HIGHWAYS DIVISION

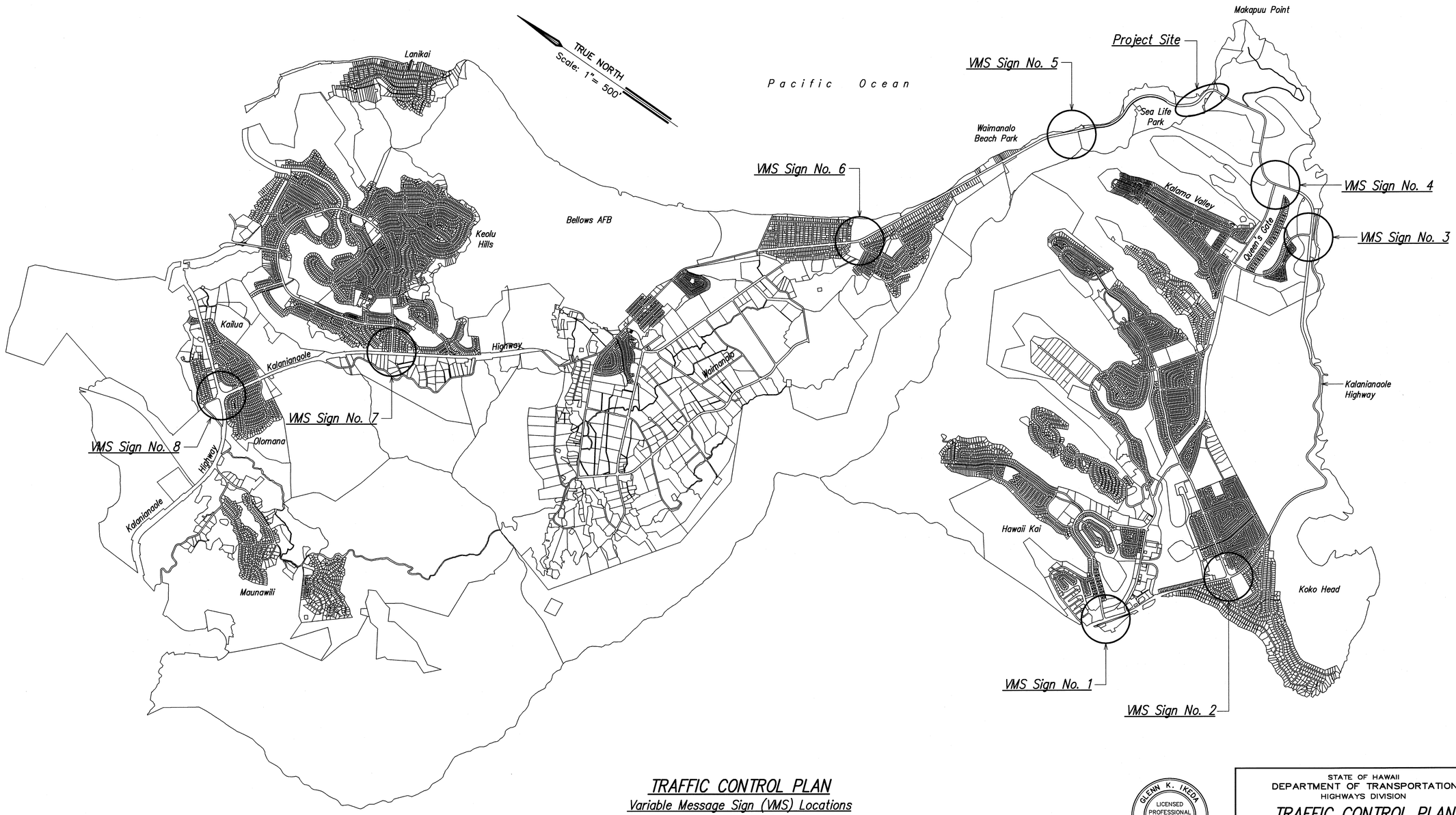
TRAFFIC CONTROL PLAN
TYPICAL TOTAL HIGHWAY CLOSURE

Kalanianaole Highway Improvements
Retaining Wall at Makapuu, Oahu
Federal-Aid Project No. NH-072-1(51)

Scale: As Noted Date: APR. 2007

SHEET No. 5 OF 8 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-072-1(51)	2007	74	106



TRAFFIC CONTROL PLAN

Variable Message Sign (VMS) Locations

Scale: 1" = 500'

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NOTE BOOK	TRACED BY	
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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

TRAFFIC CONTROL PLAN

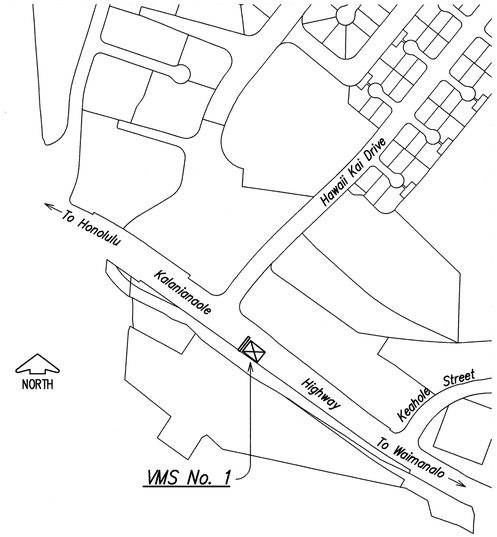
Variable Message Sign (VMS) Locations

Kalanianaole Highway Improvements
Retaining Wall at Makapuu, Oahu
Federal-Aid Project No. NH-072-1(51)

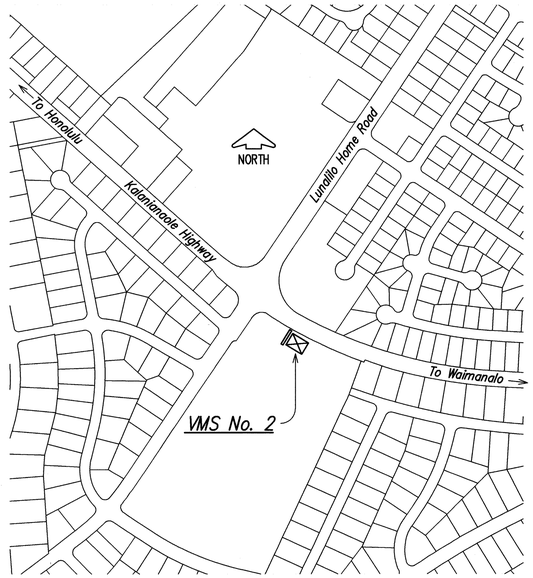
Scale: As Noted Date: APR. 2007

SHEET No. 6 OF 8 SHEETS

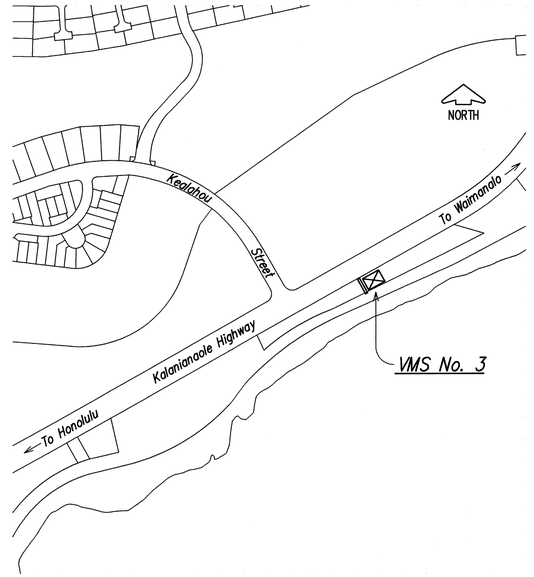
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-072-1(51)	2007	75	106



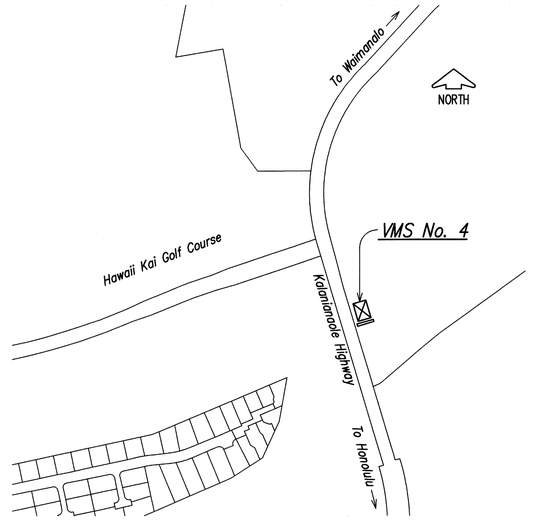
VMS No. 1 Site Plan
Scale: 1"=300'



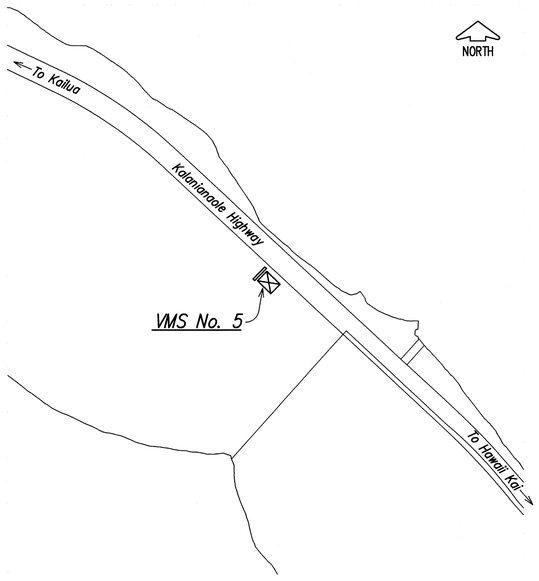
VMS No. 2 Site Plan
Scale: 1"=300'



VMS No. 3 Site Plan
Scale: 1"=300'



VMS No. 4 Site Plan
Scale: 1"=300'



VMS No. 5 Site Plan
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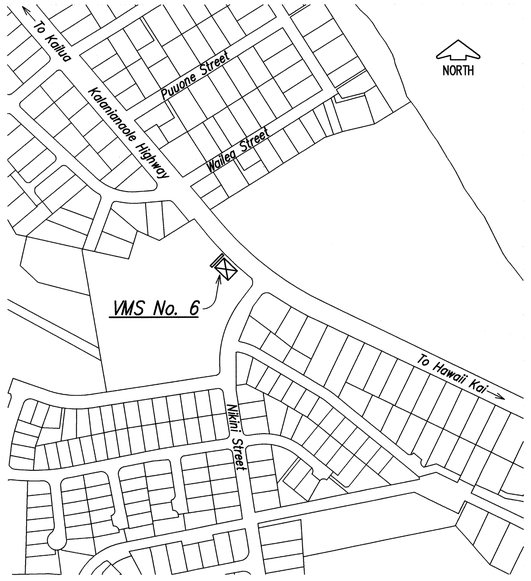
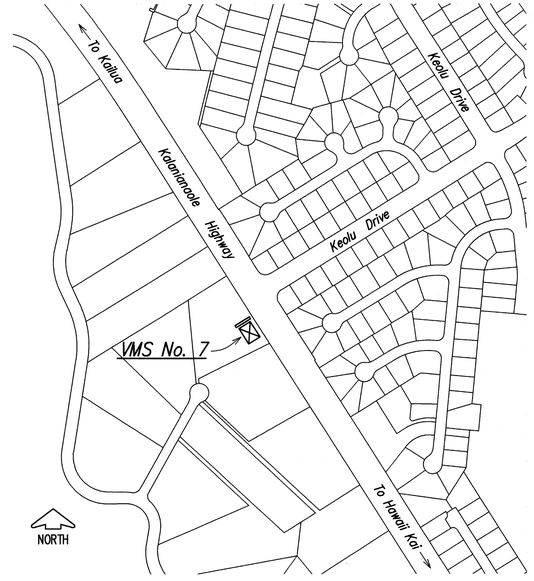
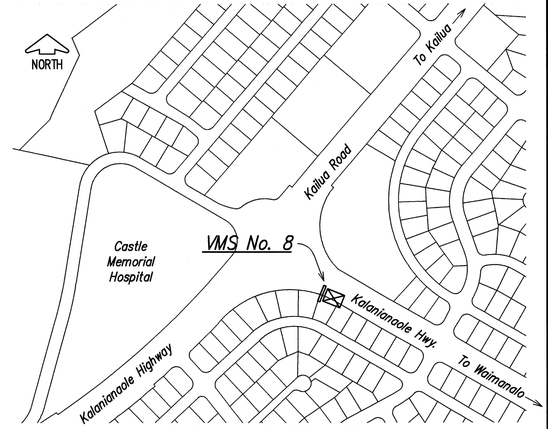


VMS No. 6 Site Plan
Scale: 1"=300'



VMS No. 7 Site Plan
Scale: 1"=300'



VMS No. 8 Site Plan
Scale: 1"=300'

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
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NOTE BOOK	TRACED BY	
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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

TRAFFIC CONTROL PLAN
Variable Message Sign (VMS) Site Plans
Kalanianaole Highway Improvements
Retaining Wall at Makapuu, Oahu
Federal-Aid Project No. NH-072-1(51)

Scale: As Noted Date: APR. 2007

SHEET No. 7 OF 8 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-072-1(51)	2007	76	106

Suggested Variable Messages to be Posted During Construction

		Phase 1			Phase 2			Phase 3			Phase 4, Miscellaneous				
		Highway Open	One Lane Closure	Total Closure (Night Only)	Highway Open	One Lane Closure	Total Closure (Night Only)	Highway Open	One Lane Closure	Total Closure (Night Only)	Highway Open	One Lane Closure	Total Closure (Night Only)		
VMS No. 1	Seq. #1	N.A.	ROAD WORK AT MAKAPUU	ROAD CLOSED	N.A.	ROAD WORK AT MAKAPUU	ROAD CLOSED	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	Seq. #1	VMS No. 1
	Seq. #2	N.A.	not used	AT GOLF COURSE	N.A.	not used	AT GOLF COURSE	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	Seq. #2	
VMS No. 2	Seq. #1	N.A.	ONE LANE OPEN AT MAKAPUU	ROAD CLOSED 1 MI.	N.A.	ONE LANE OPEN AT MAKAPUU	ROAD CLOSED 1 MI.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	Seq. #1	VMS No. 2
	Seq. #2	N.A.	8:30 TO 3:30	8:30 TO 4:30	N.A.	8:30 TO 3:30	8:30 TO 4:30	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	Seq. #2	
VMS No. 3	Seq. #1	N.A.	ONE LANE OPEN AT MAKAPUU	ROAD CLOSED 1/8 MILE	N.A.	ONE LANE OPEN AT MAKAPUU	ROAD CLOSED 1/8 MILE	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	Seq. #1	VMS No. 3
	Seq. #2	N.A.	8:30 TO 3:30	8:30 TO 4:30	N.A.	8:30 TO 3:30	8:30 TO 4:30	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	Seq. #2	
VMS No. 4	Seq. #1	N.A.	ONE LANE OPEN AHEAD	ROAD CLOSED AHEAD	N.A.	ONE LANE OPEN AHEAD	ROAD CLOSED AHEAD	ROAD WORK AT MAKAPUU	N.A.	N.A.	ROAD WORK AT MAKAPUU	N.A.	N.A.	Seq. #1	VMS No. 4
	Seq. #2	N.A.	8:30 TO 3:30	REOPEN AT 4:30	N.A.	8:30 TO 3:30	REOPEN AT 4:30	8:30 TO 3:30	N.A.	N.A.	8:30 TO 3:30	N.A.	N.A.	Seq. #2	
VMS No. 5	Seq. #1	N.A.	ONE LANE OPEN AHEAD	ROAD CLOSED AHEAD	N.A.	ONE LANE OPEN AHEAD	ROAD CLOSED AHEAD	ROAD WORK AT MAKAPUU	N.A.	N.A.	ROAD WORK AT MAKAPUU	N.A.	N.A.	Seq. #1	VMS No. 5
	Seq. #2	N.A.	8:30 TO 3:30	REOPEN AT 4:30	N.A.	8:30 TO 3:30	REOPEN AT 4:30	8:30 TO 3:30	N.A.	N.A.	8:30 TO 3:30	N.A.	N.A.	Seq. #2	
VMS No. 6	Seq. #1	N.A.	ONE LANE OPEN AT MAKAPUU	ROAD CLOSED AHEAD	N.A.	ONE LANE OPEN AT MAKAPUU	ROAD CLOSED AHEAD	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	Seq. #1	VMS No. 6
	Seq. #2	N.A.	8:30 TO 3:30	8:30 TO 4:30	N.A.	8:30 TO 3:30	8:30 TO 4:30	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	Seq. #2	
VMS No. 7	Seq. #1	N.A.	ONE LANE OPEN AT MAKAPUU	ROAD CLOSED	N.A.	ONE LANE OPEN AT MAKAPUU	ROAD CLOSED	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	Seq. #1	VMS No. 7
	Seq. #2	N.A.	EXPECT DELAYS	AT SEA LIFE PARK	N.A.	EXPECT DELAYS	AT SEA LIFE PARK	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	Seq. #2	
VMS No. 8	Seq. #1	N.A.	ROAD WORK AT MAKAPUU	ROAD CLOSED	N.A.	ROAD WORK AT MAKAPUU	ROAD CLOSED	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	Seq. #1	VMS No. 8
	Seq. #2	N.A.	not used	AT SEA LIFE PARK	N.A.	not used	AT SEA LIFE PARK	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	Seq. #2	

VARIABLE MESSAGE SIGN NOTES

1. The Variable Message Signs (VMS's) shall be placed at the locations shown on the VMS Site Plan for the duration of the Project.
2. The VMS's shall display the appropriate message to motorists according to the Table shown on this sheet.
3. The Contractor may alter the messages with the approval of the State Engineer.
4. The suggested messages are based on a maximum of 2 sequences, each with a maximum of three (3) lines and eight (8) characters per line.

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

U82: STATE\DOT\KALANIANAOLE\RETAINING WALL\CADD\ KALRW-76-TCPVMS2.dwg 4/16/07

GLENN K. IKEDA
LICENSED PROFESSIONAL ENGINEER
No. 8328-C
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION
4-19-07
PorEn, Inc.
dba PARK ENGINEERING
LICENSE EXPIRES 4-30-08

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

TRAFFIC CONTROL PLAN
SUGGESTED VARIABLE MESSAGES

Kalaniangole Highway Improvements
Retaining Wall at Makapuu, Oahu
Federal-Aid Project No. NH-072-1(51)

Scale: As Noted Date: APR. 2007

SHEET No. 8 OF 8 SHEETS