

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	CMAQ-0300(94)	2004	60	79

ELECTRICAL SYMBOLS

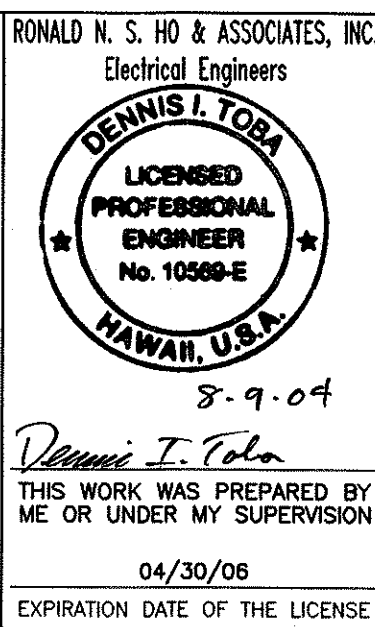
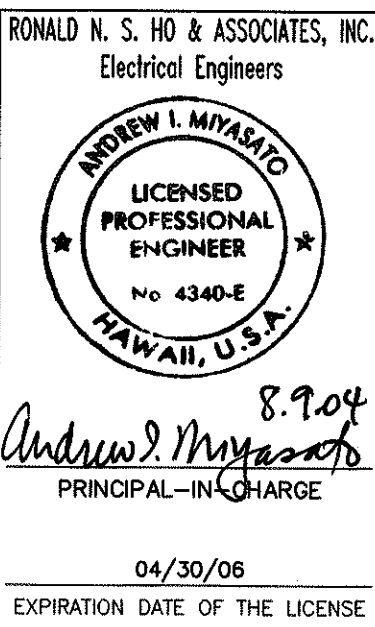
SYMBOL	DESCRIPTION
	EXST. HPS STREET LIGHT
	EXST. TRAFFIC SIGNAL HEAD TO REMAIN
	EXST. RYG TRAFFIC SIGNAL HEAD TO REMAIN
	EXST. OPTICON DETECTOR TO REMAIN
	EXST. PEDESTRIAN TRAFFIC SIGNAL HEAD TO REMAIN
	NEW PEDESTRIAN PUSHBUTTON SHALL MEET CURRENT AMERICAN WITH DISABILITIES ACT (ADA) ACCESSIBILITY GUIDELINES AND WILL BE SUBJECT TO ENGINEER'S APPROVAL SEE SHEET E-19
	EXST. CCTV SYSTEM CAMERA TO REMAIN
	REMOVE EXST PEDESTRIAN PUSHBUTTON
	EXST. PEDESTRIAN PUSHBUTTON
	NEW TYPE "A" METRIC TRAFFIC SIGNAL PULLBOX (APPROX. 22" X 28"), SEE DETAIL A/E-16
	NEW TYPE "B" METRIC TRAFFIC SIGNAL PULLBOX (APPROX. 22" X 40"), SEE DETAIL B/E-16
	NEW TYPE "A" METRIC STREET LIGHTING PULLBOX (APPROX. 22" X 28"), SEE DETAIL A/E-16
	EXST. PULLBOX OR HANDHOLE, SEE PLAN FOR SIZE
	EXST. TRAFFIC SIGNAL CONTROLLER
	EXST. TRAFFIC SIGNAL DUCTLINE & WIRING TO REMAIN
	EXST. TRAFFIC SIGNAL CONDUIT & WIRING, WIRING TO BE REMOVED AND CONDUIT ABANDONED IN PLACE.
	NEW TRAFFIC SIGNAL CONDUIT & WIRING
	NEW TRAFFIC SIGNAL CONDUIT & WIRING. SAWCUT AND PATCH EXST. AC PAVEMENT, SIDEWALK, CURB & GUTTER
	EXST. UNDERGROUND ELEC./SIGNAL CONDUITS & CABLES TO REMAIN
	ELECTRIC/SIGNAL DUCTLINE WITH DESIGNATORS; INDICATES TYPE "A" DUCT SECTION WITH "1-2 ELEC" DUCTS. SEE SHEET E-15 FOR DUCT ENCASEMENT AND TRENCH RESTORATION DETAILS
	ADJUST EXISTING PULLBOX TO BE FLUSH WITH NEW FINISH GRADE
	EXST. TYPE 1 TRAFFIC SIGNAL STANDARD TO REMAIN

GENERAL CONSTRUCTION NOTES

- A. Trenching to be by hand when digging near and across existing utility lines.
- B. Unless otherwise requested by the Board of Water Supply, minimum clearance between water lines and conduits shall be:  
Horizontal = 3 feet  
Vertical = 6 inches
- C. 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 Board of Water Supply.
- D. Underground utilities shown hereon are for information only. No guarantee is made on the accuracy or completeness of said information.
- E. Where necessary, reconstruction of sidewalk, gutter and driveway areas shall conform to the standard details of the governmental agency having jurisdiction over the work.
- F. 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.
- G. 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	DESIGNED BY	
	QUANTITIES BY	
	CHECKED BY	
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DTS, C&C HONOLULU DRAWING REVIEWED	7
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION <u>ELECTRICAL SYMBOLS AND</u> <u>GENERAL CONSTRUCTION NOTES</u> <u>PEDESTRIAN FACILITIES &amp; ADA</u> <u>COMPLIANCE AT VARIOUS</u> <u>LOCATIONS ON OAHU, UNIT 3</u> <u>Federal - Aid Project No. CMAQ-0300(94)</u> <u>Scale: AS NOTED</u> <u>Date: AUGUST 2004</u>	
SHEET No. E-1 OF 20 SHEETS	

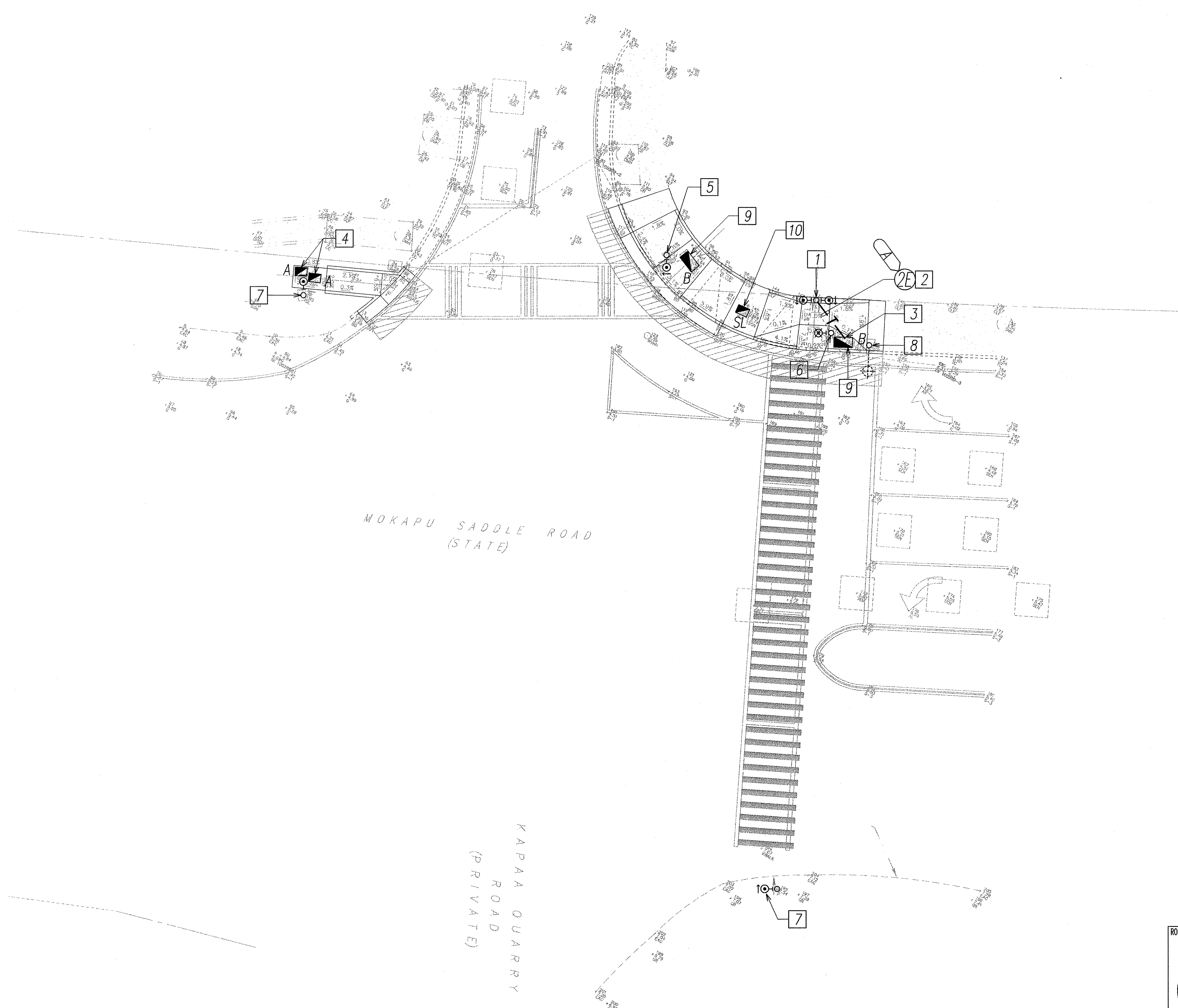




FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	CMAQ-0300(94)	2004	62	79

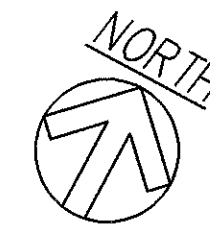
NOTES:

- 1 PROVIDE NEW PEDESTRIAN PUSHBUTTON POST AND PEDESTRIAN PUSHBUTTON(S), AS INDICATED.
- 2 PROVIDE NEW 1-2" CONDUIT WITH REQUIRED CABLE COMPLEMENT FOR PEDESTRIAN PUSHBUTTONS BETWEEN PEDESTRIAN PEDESTAL STANDARD AND PULLBOX/HANDHOLE. INSTALL CONDUIT AS SHOWN ON THE DUCT SECTION SHEET AND AS REQUIRED BY DTS.
- 3 PENETRATE EXISTING PULLBOX/HANDHOLE FOR NEW CONDUIT ENTRY. REPAIR TO MATCH EXISTING CONDITION.
- 4 DEMOLISH AND DISPOSE OF EXISTING TRAFFIC SIGNAL PULLBOX AND PROVIDE TYPE "A" TRAFFIC SIGNAL PULLBOX FLUSH WITH SLOPED GRADE.
- 5 EXISTING TRAFFIC SIGNAL STANDARD TO REMAIN, CONTRACTOR SHALL PROVIDE NECESSARY ACCESSORIES, AS DIRECTED BY THE CITY INSPECTOR AND PER THE DRAWINGS, TO ADJUST STANDARD TO NEW FINISH GRADE. DEMOLISH EXISTING PEDESTRIAN PUSHBUTTON(S) AND SEAL ALL UNUSED HOLES IN POLE. PROVIDE NEW ADA COMPLIANT PEDESTRIAN PUSHBUTTON(S) AND INSTALL AS SHOWN ON THE PLANS AND AS REQUIRED BY DTS.
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- 8 EXISTING STREET LIGHT STANDARD TO REMAIN. CONTRACTOR TO PROVIDE NECESSARY ACCESSORIES AS DIRECTED BY THE INSPECTOR AND PER THE DRAWINGS TO ADJUST STANDARD TO NEW FINISH GRADE.
- 9 DEMOLISH AND DISPOSE OF EXISTING TRAFFIC SIGNAL PULLBOX AND PROVIDE TYPE "B" TRAFFIC SIGNAL PULLBOX FLUSH WITH SLOPED GRADE.
- 10 DEMOLISH AND DISPOSE OF EXISTING STREET LIGHTING PULLBOX AND PROVIDE TYPE "A" STREET LIGHTING PULLBOX FLUSH WITH SLOPED GRADE.

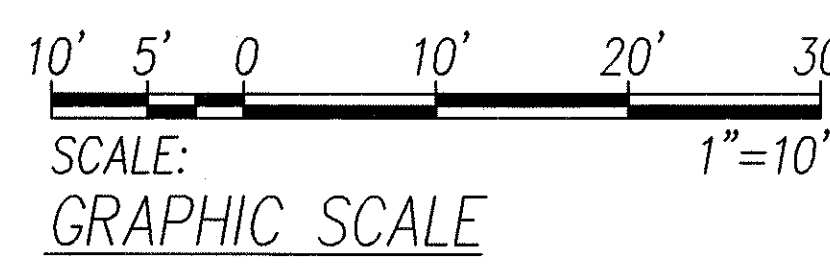


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**MOKAPU RD./KAPAA QUARRY RD. - TRAFFIC SIGNAL PLAN**  
SCALE: 1"=10'



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

**ANDREW I. MIYASATO**  
LICENSED PROFESSIONAL ENGINEER  
No. 4340-E  
HAWAII, U.S.A.

8-9-04  
Principal-in-Charge

04/30/06  
EXPIRATION DATE OF THE LICENSE

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

**DENNIS I. TOBI**  
LICENSED PROFESSIONAL ENGINEER  
No. 10569-E  
HAWAII, U.S.A.

8-9-04  
Principal-in-Charge

04/30/06  
EXPIRATION DATE OF THE LICENSE

DTS, C&C HONOLULU DRAWING REVIEWED 7

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**MOKAPU RD./KAPAA QUARRY RD.**  
**TRAFFIC SIGNAL PLAN (100289)**  
PEDESTRIAN FACILITIES & ADA  
COMPLIANCE AT VARIOUS  
LOCATIONS ON OAHU, UNIT 3

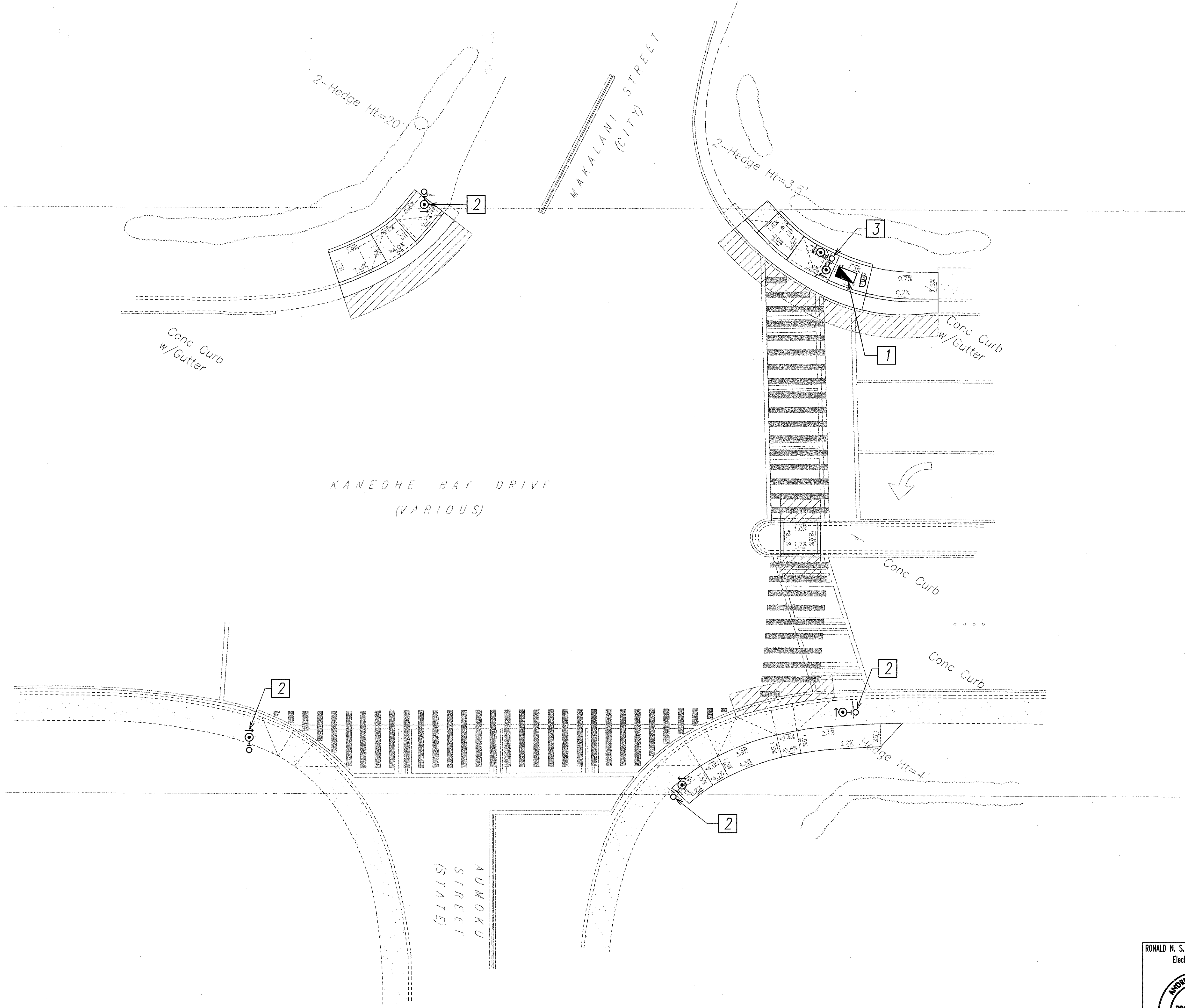
Federal - Aid Project No. CMAQ-0300(94)  
Scale: AS NOTED Date: AUGUST 2004

SHEET No. E-3 OF 20 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	CMAQ-0300(94)	2004	63	79

NOTES:

- 1 DEMOLISH AND DISPOSE OF EXISTING TRAFFIC SIGNAL PULLBOX AND PROVIDE TYPE "B" TRAFFIC SIGNAL PULLBOX FLUSH WITH SLOPED GRADE.
- 2 EXISTING TRAFFIC SIGNAL STANDARD TO REMAIN, CONTRACTOR SHALL DEMOLISH EXISTING PEDESTRIAN PUSHBUTTON(S) AND SEAL ALL UNUSED HOLES IN POLE. PROVIDE NEW ADA COMPLIANT PEDESTRIAN PUSHBUTTON(S) AND INSTALL AS SHOWN ON THE PLANS AND AS REQUIRED BY DTS.
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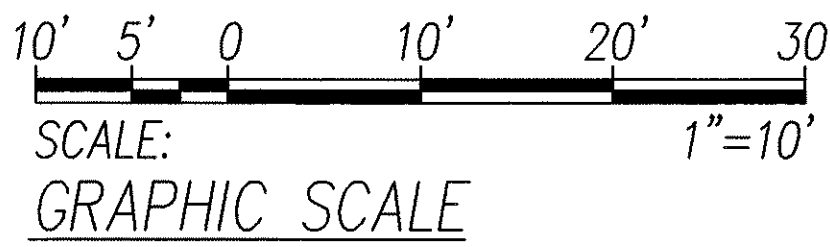


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**KANEOHE BAY DR./AUMOKU ST./MAKALANI ST. - TRAFFIC SIGNAL PLAN**  
SCALE: 1"=10'



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

**ANDREW I. MIYASATO**  
LICENSED PROFESSIONAL ENGINEER  
No. 4340-E  
HAWAII, U.S.A.

8.9.04  
Principal-in-Charge

04/30/06  
EXPIRATION DATE OF THE LICENSE

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

**DENNIS I. TOBA**  
LICENSED PROFESSIONAL ENGINEER  
No. 10569-E  
HAWAII, U.S.A.

8.9.04  
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

04/30/06  
EXPIRATION DATE OF THE LICENSE

DTS, C&C HONOLULU DRAWING REVIEWED

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**KANEOHE BAY DR./AUMOKU ST./MAKALANI ST.**  
**TRAFFIC SIGNAL PLAN (41188/41288)**

PEDESTRIAN FACILITIES & ADA  
COMPLIANCE AT VARIOUS  
LOCATIONS ON OAHU, UNIT 3

Federal - Aid Project No. CMAQ-0300(94)  
Scale: AS NOTED Date: AUGUST 2004

SHEET No. E-4 OF 20 SHEETS

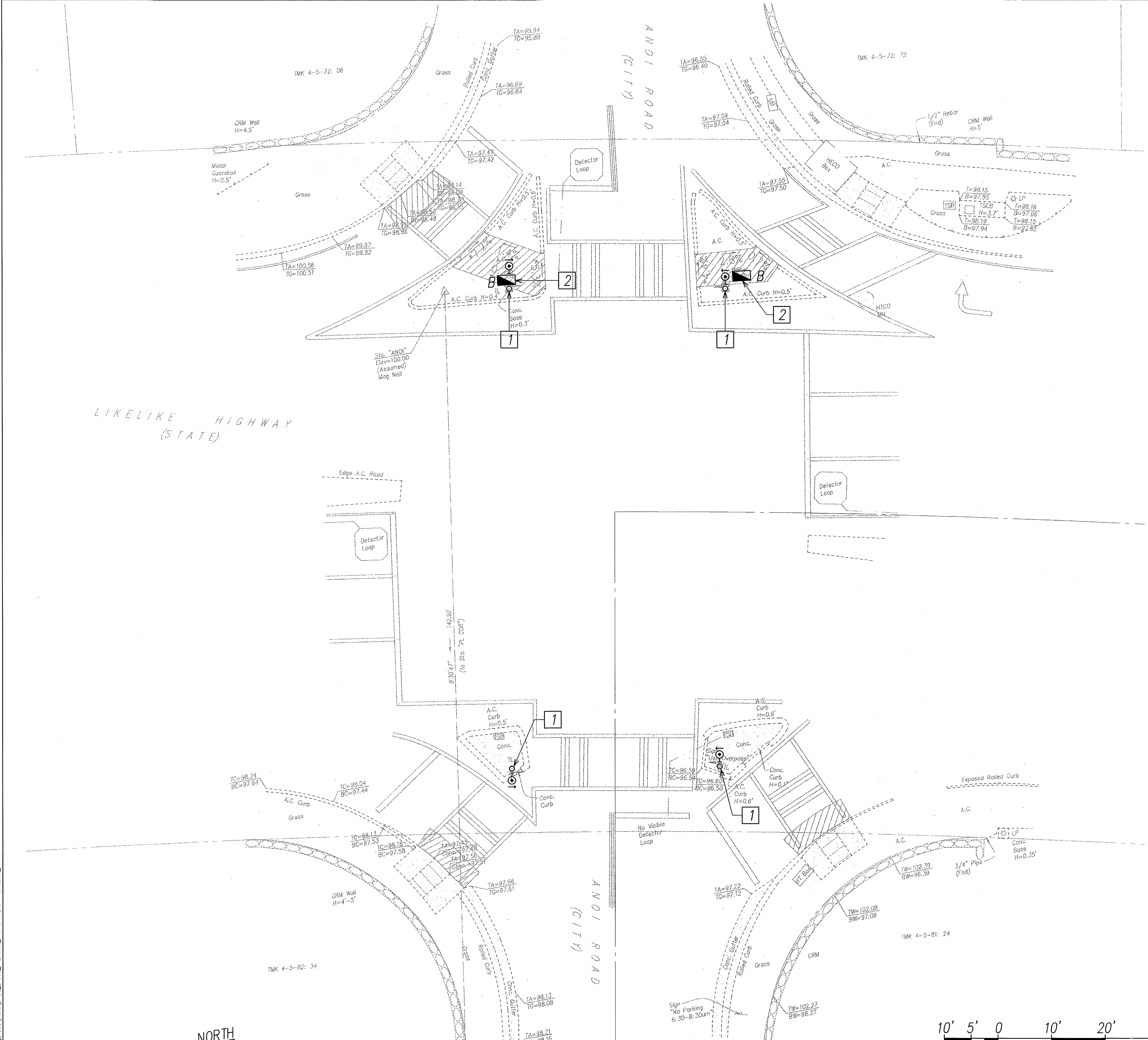




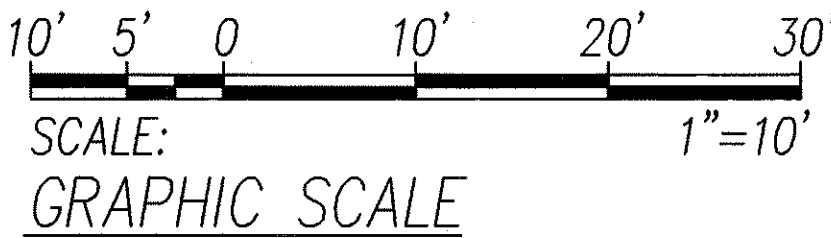
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	CMAQ-0300(94)	2004	65	79

NOTES:

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- 2 DEMOLISH AND DISPOSE OF EXISTING TRAFFIC SIGNAL PULLBOX AND PROVIDE TYPE "B" TRAFFIC SIGNAL PULLBOX FLUSH WITH SLOPED GRADE.



**LIKELIKE HWY./ANOI RD. - TRAFFIC SIGNAL PLAN**  
SCALE: 1"=10'



RONALD N. S. HO & ASSOCIATES, INC.  
Electrical Engineers  
**ANDREW I. MIYASATO**  
LICENSED PROFESSIONAL ENGINEER  
No. 4340-E  
HAWAII, U.S.A.  
8.9.04  
Principal-in-Charge

RONALD N. S. HO & ASSOCIATES, INC.  
Electrical Engineers  
**DENNIS I. TODA**  
LICENSED PROFESSIONAL ENGINEER  
No. 10569-E  
HAWAII, U.S.A.  
8.9.04  
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION  
Date: AUGUST 2004

EXPIRATION DATE OF THE LICENSE: 04/30/06

DTS, C&C HONOLULU DRAWING REVIEWED 7

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION  
**LIKELIKE HWY./ANOI RD.**  
**TRAFFIC SIGNAL PLAN (40788)**  
PEDESTRIAN FACILITIES & ADA  
COMPLIANCE AT VARIOUS  
LOCATIONS ON OAHU, UNIT 3  
Federal - Aid Project No. CMAQ-0300(94)  
Scale: AS NOTED Date: AUGUST 2004  
SHEET No. E-6 OF 20 SHEETS

ORIGINAL PLAN	DATE
NO. _____	_____
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CHECKED BY _____	_____
DATE _____	_____

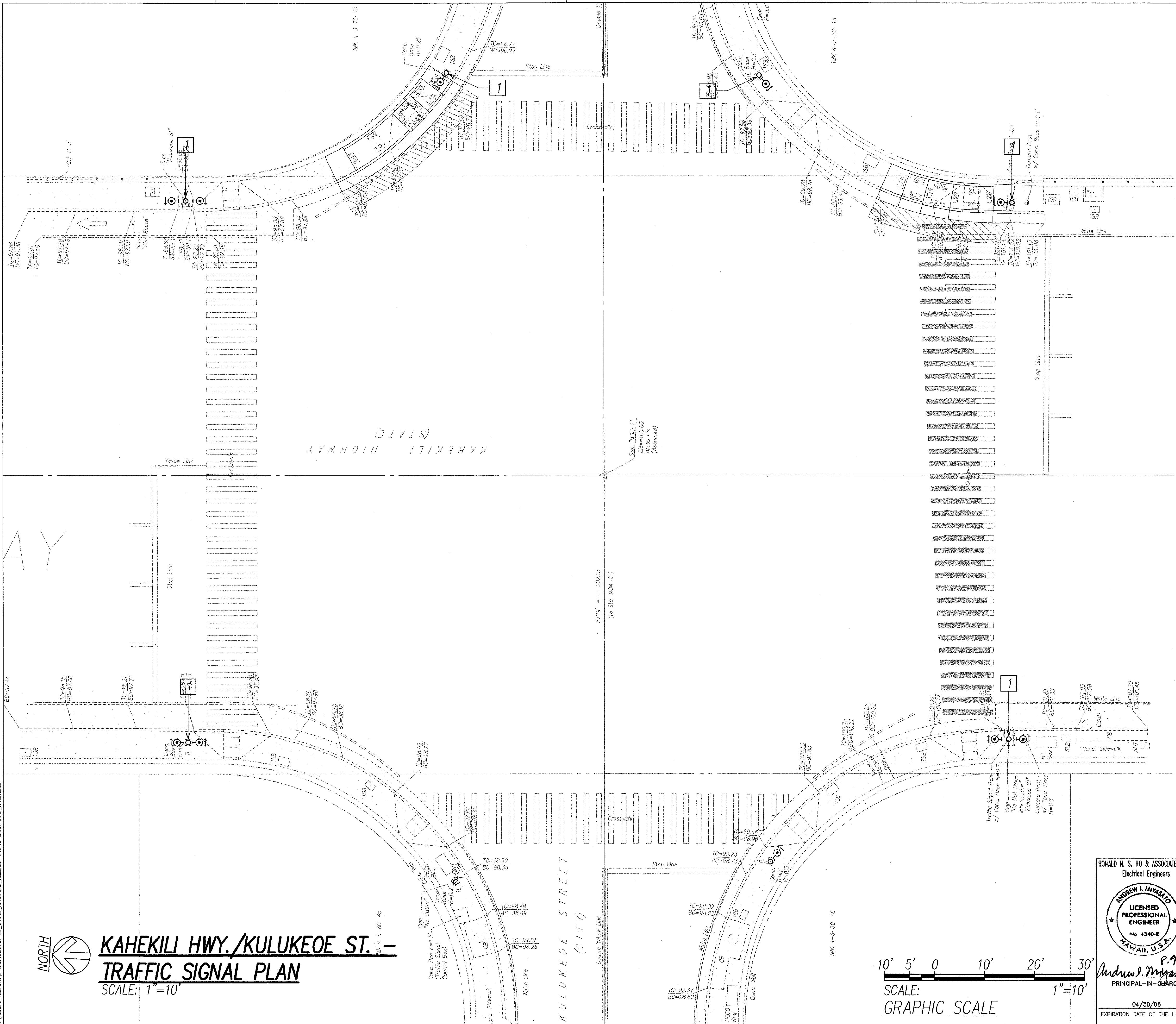
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FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	CMAQ-0300(94)	2004	66	79

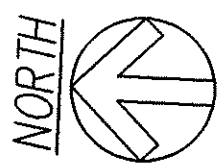
# NOTES:

- EXISTING TRAFFIC SIGNAL STANDARD TO REMAIN, CONTRACTOR SHALL DEMOLISH EXISTING PEDESTRIAN PUSHBUTTON(S) AND SEAL ALL UNUSED HOLES IN POLE. PROVIDE NEW ADA COMPLIANT PEDESTRIAN PUSHBUTTON(S) AND INSTALL AS SHOWN ON THE PLANS AND AS REQUIRED BY DTS.



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NOTE BOOK	
QUANTITIES BY	
CHECKED BY	
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**KAHEKILI HWY./KULUKEOE ST. -**  
**TRAFFIC SIGNAL PLAN**  
SCALE: 1"=10'

10' 5' 0 10' 20' 30'  
SCALE:  
GRAPHIC SCALE  
1"=10'

RONALD N. S. HO & ASSOCIATES, INC.  
Electrical Engineers  
ANDREW I. MIYASATO  
LICENSED PROFESSIONAL ENGINEER  
No. 4340-E  
HAWAII, U.S.A.  
8-9-04  
Principal-in-Charge  
04/30/06  
EXPIRATION DATE OF THE LICENSE

RONALD N. S. HO & ASSOCIATES, INC.  
Electrical Engineers  
ANDREW I. MIYASATO  
LICENSED PROFESSIONAL ENGINEER  
No. 10568-E  
HAWAII, U.S.A.  
8-9-04  
Principal-in-Charge  
04/30/06  
EXPIRATION DATE OF THE LICENSE

DTS, C&C HONOLULU DRAWING REVIEWED 7  
STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION  
**KAHEKILI HWY./KULUKEOE ST.**  
**TRAFFIC SIGNAL PLAN (81388)**  
PEDESTRIAN FACILITIES & ADA  
COMPLIANCE AT VARIOUS  
LOCATIONS ON OAHU, UNIT 3  
Federal - Aid Project No. CMAQ-0300(94)  
Scale: AS NOTED Date: AUGUST 2004  
SHEET No. E-7 OF 20 SHEETS



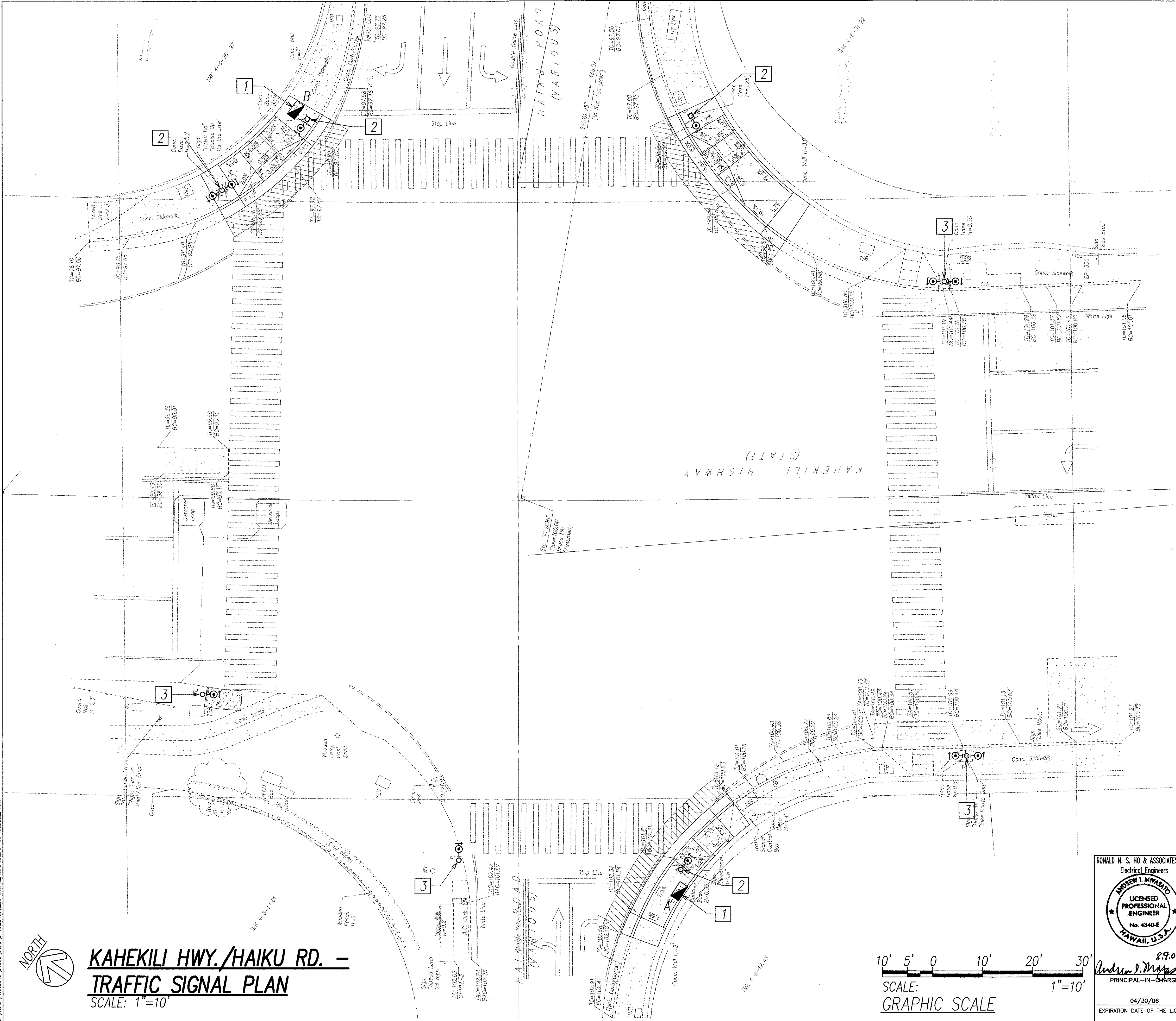




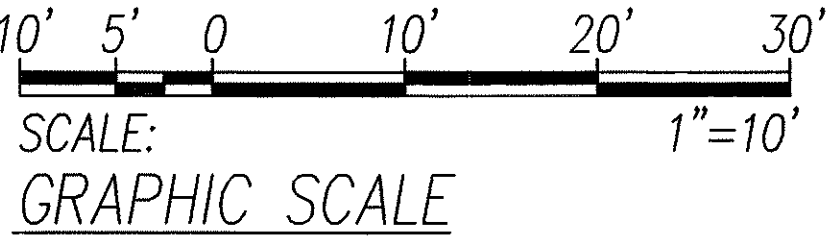
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	CMAQ-0300(94)	2004	69	79

NOTES:

- 1 DEMOLISH AND DISPOSE OF EXISTING TRAFFIC SIGNAL PULLBOX AND PROVIDE TYPE "B" TRAFFIC SIGNAL PULLBOX FLUSH WITH SLOPED GRADE.
- 2 EXISTING TRAFFIC SIGNAL STANDARD TO REMAIN, CONTRACTOR SHALL PROVIDE NECESSARY ACCESSORIES, AS DIRECTED BY THE CITY INSPECTOR AND PER THE DRAWINGS, TO ADJUST STANDARD TO NEW FINISH GRADE. DEMOLISH EXISTING PEDESTRIAN PUSHBUTTON(S) AND SEAL ALL UNUSED HOLES IN POLE. PROVIDE NEW ADA COMPLIANT PEDESTRIAN PUSHBUTTON(S) AND INSTALL AS SHOWN ON THE PLANS AND AS REQUIRED BY DTS.
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**KAHEKILI HWY./HAIKU RD. -**  
**TRAFFIC SIGNAL PLAN**  
SCALE: 1"=10'



RONALD N. S. HO & ASSOCIATES, INC.  
Electrical Engineers  
MICHELE I. MIYANO  
LICENSED PROFESSIONAL ENGINEER  
No. 4340-E  
HAWAII, U.S.A.  
8.9.04  
Principal-in-Charge  
04/30/06  
EXPIRATION DATE OF THE LICENSE

RONALD N. S. HO & ASSOCIATES, INC.  
Electrical Engineers  
DENNIS I. TORA  
LICENSED PROFESSIONAL ENGINEER  
No. 10500-E  
HAWAII, U.S.A.  
8.9.04  
8.9.04  
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION  
04/30/06  
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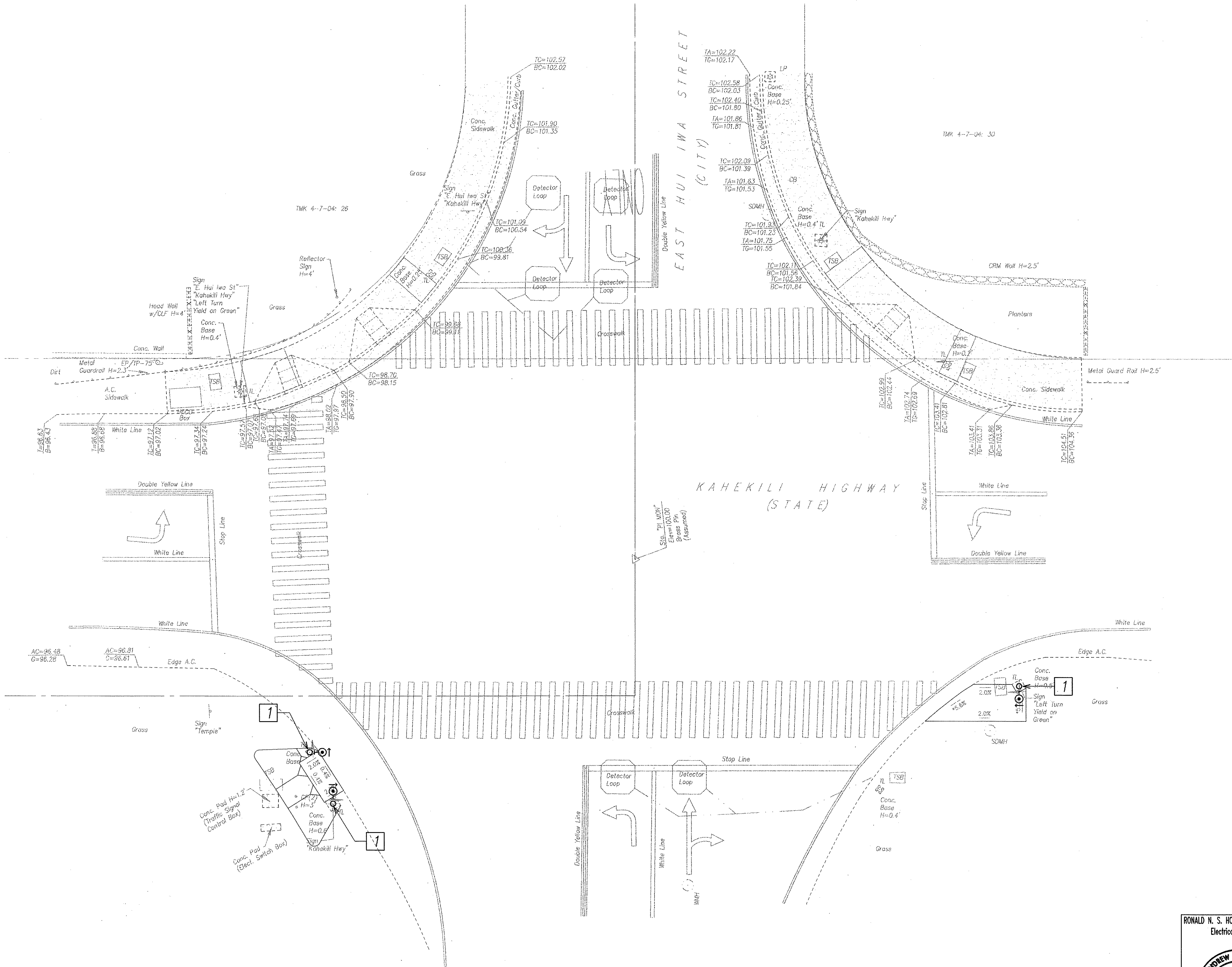
DTS, C&C HONOLULU DRAWING REVIEWED  
STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION  
**KAHEKILI HWY./HAIKU RD.**  
**TRAFFIC SIGNAL PLAN (81688)**  
PEDESTRIAN FACILITIES & ADA  
COMPLIANCE AT VARIOUS  
LOCATIONS ON OAHU, UNIT 3  
Federal - Aid Project No. CMAQ-0300(94)  
Scale: AS NOTED Date: AUGUST 2004  
SHEET No. E-10 OF 20 SHEETS



FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	CMAQ-0300(94)	2004	70	79

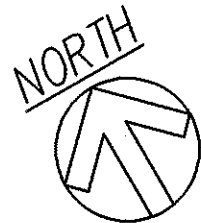
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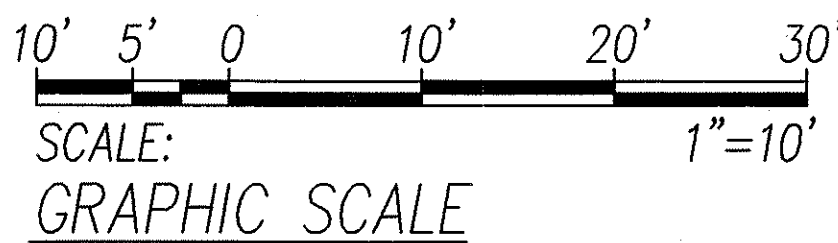


ORIGINAL PLAN	DATE
NO. 1	8-9-04
NO. 2	
NO. 3	
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NO. 5	
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NO. 9	
NO. 10	

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KAHEKILI HWY./EAST HUI IWA RD. - TRAFFIC SIGNAL PLAN  
SCALE: 1"=10'



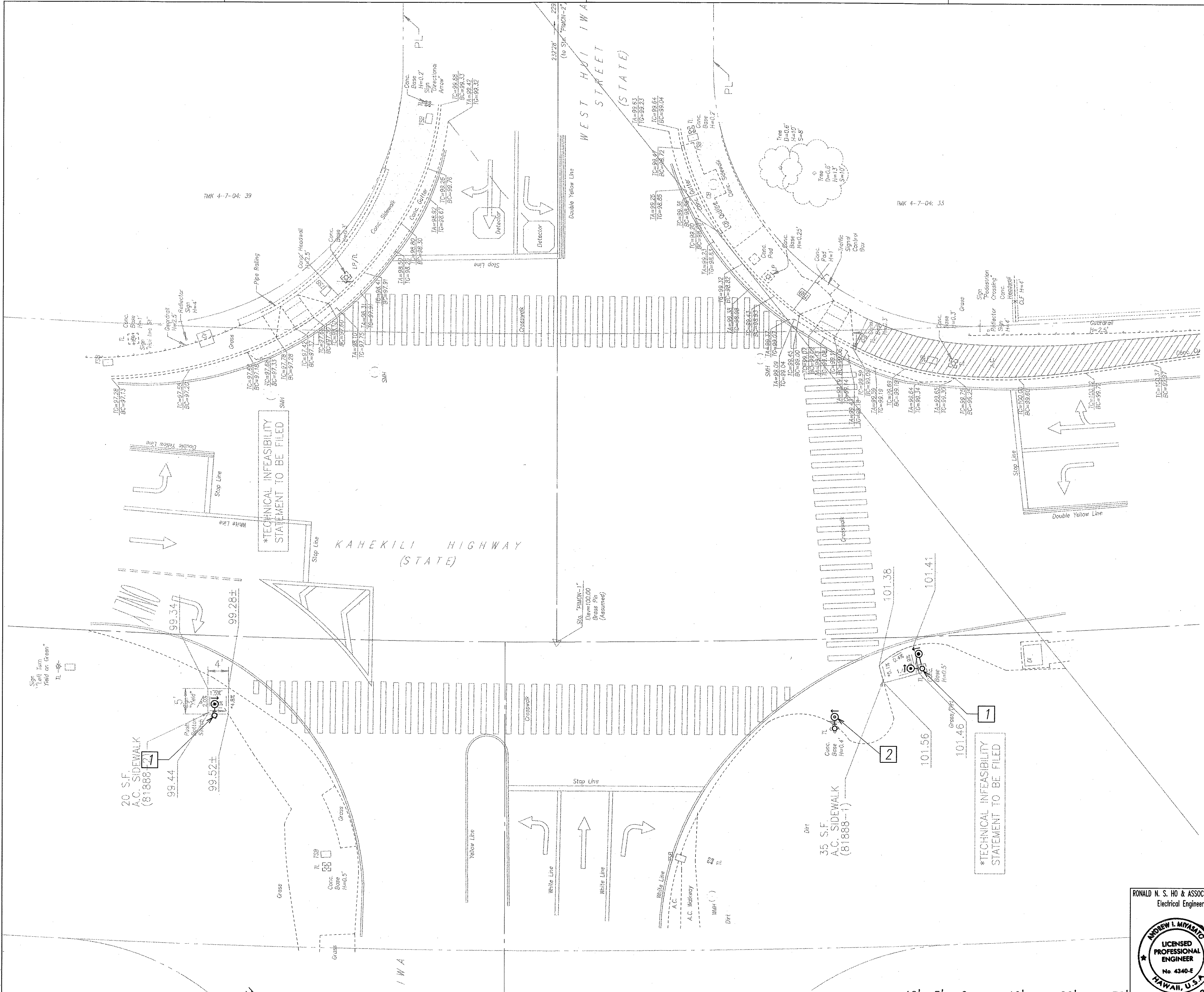
RONALD N. S. HO & ASSOCIATES, INC. Electrical Engineers  Andrew I. Miyasaka PRINCIPAL-IN-CHARGE 04/30/06 EXPIRATION DATE OF THE LICENSE	RONALD N. S. HO & ASSOCIATES, INC. Electrical Engineers  Dennis I. Toba THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION 04/30/06 EXPIRATION DATE OF THE LICENSE
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DTS, C&C HONOLULU DRAWING REVIEWED	3
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION <u>KAHEKILI HWY./EAST HUI IWA RD.</u> <u>TRAFFIC SIGNAL PLAN (81788)</u> <u>PEDESTRIAN FACILITIES &amp; ADA</u> <u>COMPLIANCE AT VARIOUS</u> <u>LOCATIONS ON OAHU, UNIT 3</u> <i>Federal - Aid Project No. CMAQ-0300(94)</i> Scale: AS NOTED      Date: AUGUST 2004	
SHEET No. E-11 OF 20 SHEETS	

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	CMAQ-0300(94)	2004	71	79

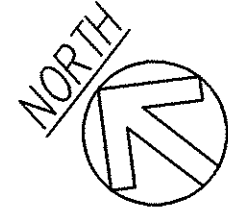
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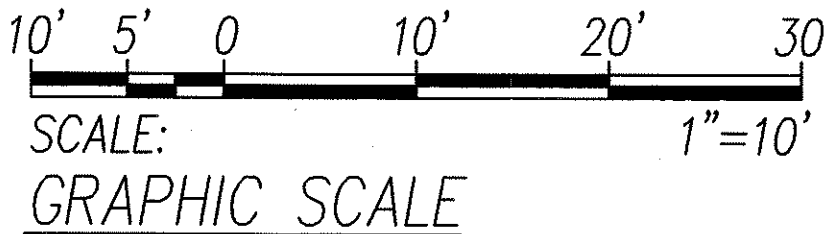


DATE	DATE
PLANNED BY	DESIGNED BY
TRACED BY	CHECKED BY
NOTE BOOK	QUANTITIES BY
No.	

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**KAHEKILI HWY./WEST HUI IWA ST. - TRAFFIC SIGNAL PLAN**  
SCALE: 1"=10'



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

8-9-04  
Principal-in-Charge

04/30/06  
EXPIRATION DATE OF THE LICENSE

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

8-9-04  
Supervisor

04/30/06  
EXPIRATION DATE OF THE LICENSE

DTS, C&C HONOLULU DRAWING REVIEWED

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**KAHEKILI HWY./WEST HUI IWA ST.**  
**TRAFFIC SIGNAL PLAN (81888)**  
PEDESTRIAN FACILITIES & ADA  
COMPLIANCE AT VARIOUS  
LOCATIONS ON OAHU, UNIT 3

Federal - Aid Project No. CMAQ-0300(94)  
Scale: AS NOTED Date: AUGUST 2004

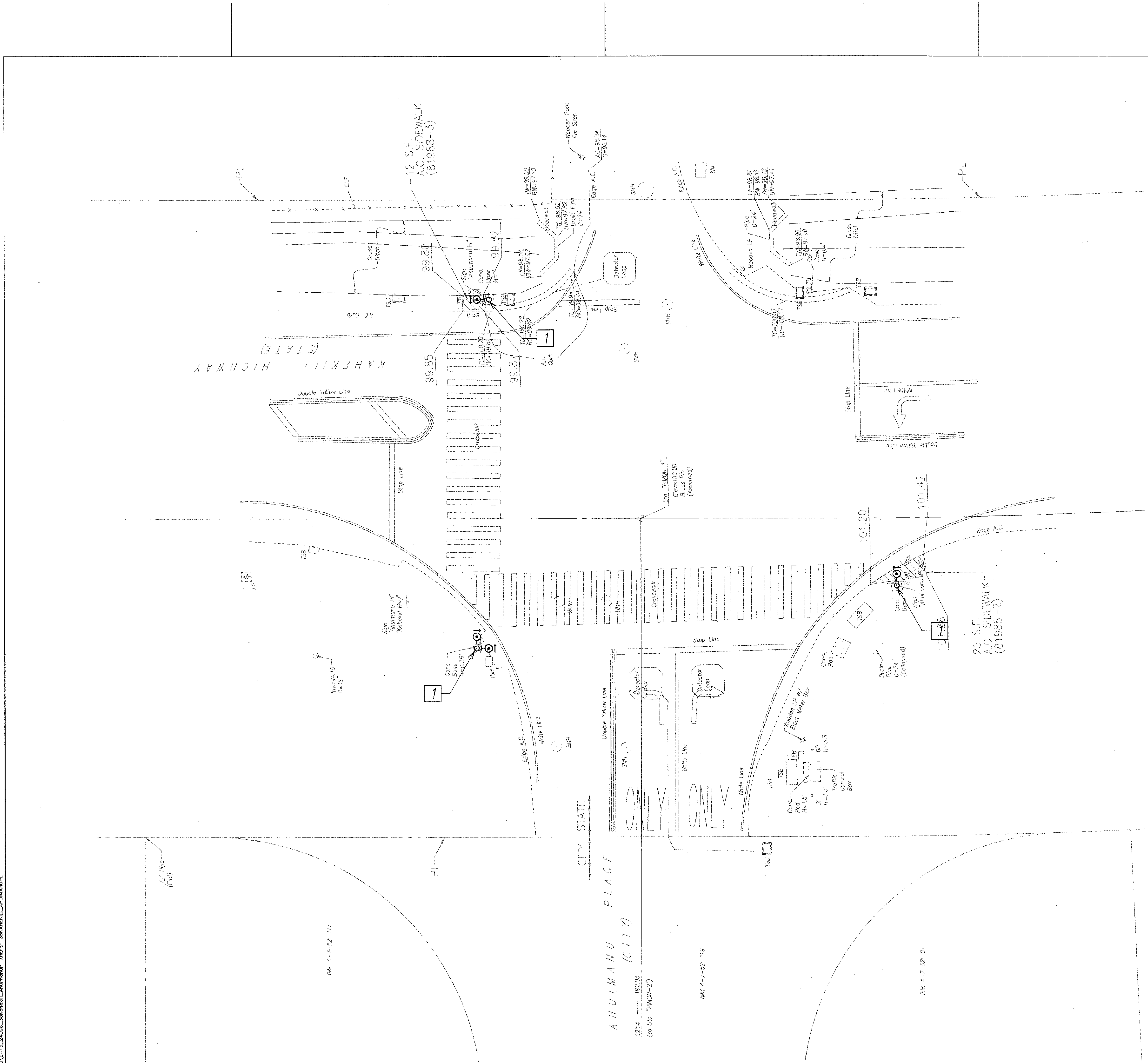
SHEET No. E-12 OF 20 SHEETS



FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	CMAQ-0300(94)	2004	72	79

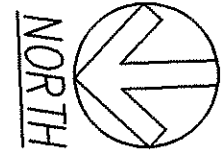
NOTES:

- 1 EXISTING TRAFFIC SIGNAL STANDARD TO REMAIN, CONTRACTOR SHALL PROVIDE NECESSARY ACCESSORIES, AS DIRECTED BY THE CITY INSPECTOR AND PER THE DRAWINGS, TO ADJUST STANDARD TO NEW FINISH GRADE. DEMOLISH EXISTING PEDESTRIAN PUSHBUTTON(S) AND SEAL ALL UNUSED HOLES IN POLE. PROVIDE NEW ADA COMPLIANT PEDESTRIAN PUSHBUTTON(S) AND INSTALL AS SHOWN ON THE PLANS AND AS REQUIRED BY DTS.

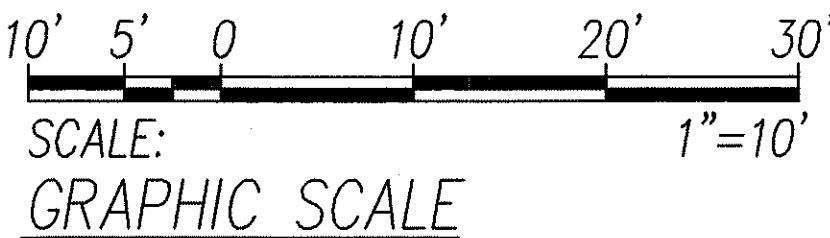


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**KAHEKILI HWY./AHUIMANU PL. - TRAFFIC SIGNAL PLAN**  
SCALE: 1"=10'



RONALD N. S. HO & ASSOCIATES, INC.  
Electrical Engineers  
ANDREW I. MIYASATO  
LICENSED PROFESSIONAL ENGINEER  
No. 4340-E  
HAWAII, U.S.A.  
8-9-04  
Principal-in-Charge  
04/30/06  
EXPIRATION DATE OF THE LICENSE

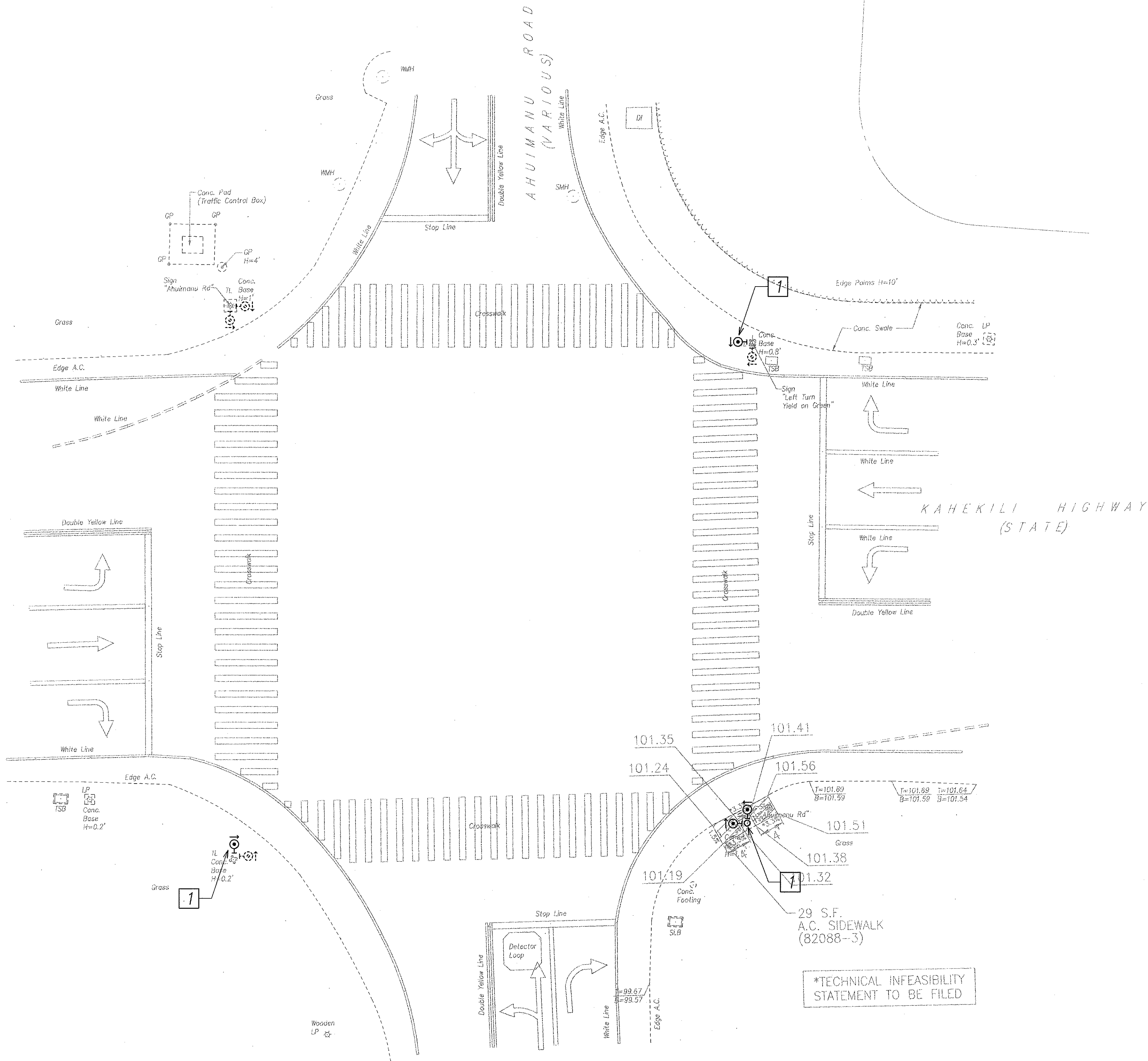
RONALD N. S. HO & ASSOCIATES, INC.  
Electrical Engineers  
DENNIS I. TOBA  
LICENSED PROFESSIONAL ENGINEER  
No. 10569-E  
HAWAII, U.S.A.  
8-9-04  
Principal-in-Charge  
04/30/06  
EXPIRATION DATE OF THE LICENSE

DTS, C&C HONOLULU DRAWING REVIEWED	17
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION <u>KAHEKILI HWY./AHUIMANU PL.</u> <u>TRAFFIC SIGNAL PLAN (81988)</u> <u>PEDESTRIAN FACILITIES &amp; ADA</u> <u>COMPLIANCE AT VARIOUS</u> <u>LOCATIONS ON OAHU, UNIT 3</u> <i>Federal - Aid Project No. CMAQ-0300(94)</i> <i>Scale: AS NOTED</i> <i>Date: AUGUST 2004</i> SHEET No. E-13 OF 20 SHEETS	

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	CMAQ-0300(94)	2004	73	79

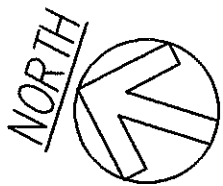
NOTES:

- EXISTING TRAFFIC SIGNAL STANDARD TO REMAIN, CONTRACTOR SHALL PROVIDE NECESSARY ACCESSORIES, AS DIRECTED BY THE CITY INSPECTOR AND PER THE DRAWINGS, TO ADJUST STANDARD TO NEW FINISH GRADE. DEMOLISH EXISTING PEDESTRIAN PUSHBUTTON(S) AND SEAL ALL UNUSED HOLES IN POLE. PROVIDE NEW ADA COMPLIANT PEDESTRIAN PUSHBUTTON(S) AND INSTALL AS SHOWN ON THE PLANS AND AS REQUIRED BY DTS.

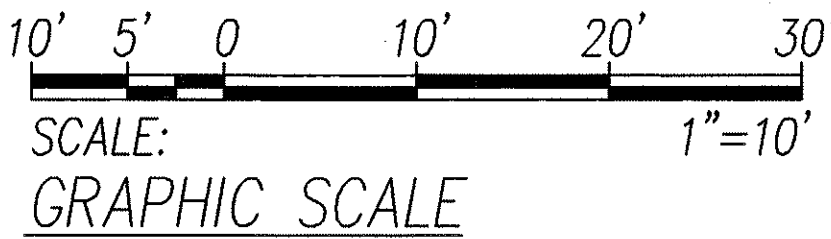


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QUANTITIES BY	
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**KAHEKILI HWY./AHUIMANU RD. - TRAFFIC SIGNAL PLAN**  
SCALE: 1"=10'



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

**ANDREW I. MINASO**  
LICENSED PROFESSIONAL ENGINEER  
No. 4340-E  
HAWAII, U.S.A.

8-9-04  
Principal-in-Charge

04/30/06  
EXPIRATION DATE OF THE LICENSE

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

**DENNIS I. TOBA**  
LICENSED PROFESSIONAL ENGINEER  
No. 10569-E  
HAWAII, U.S.A.

8-9-04  
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

04/30/06  
EXPIRATION DATE OF THE LICENSE

DTS, C&C HONOLULU DRAWING REVIEWED **7**

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**KAHEKILI HWY./AHUIMANU RD.**  
**TRAFFIC SIGNAL PLAN (82088)**  
PEDESTRIAN FACILITIES & ADA  
COMPLIANCE AT VARIOUS  
LOCATIONS ON OAHU, UNIT 3

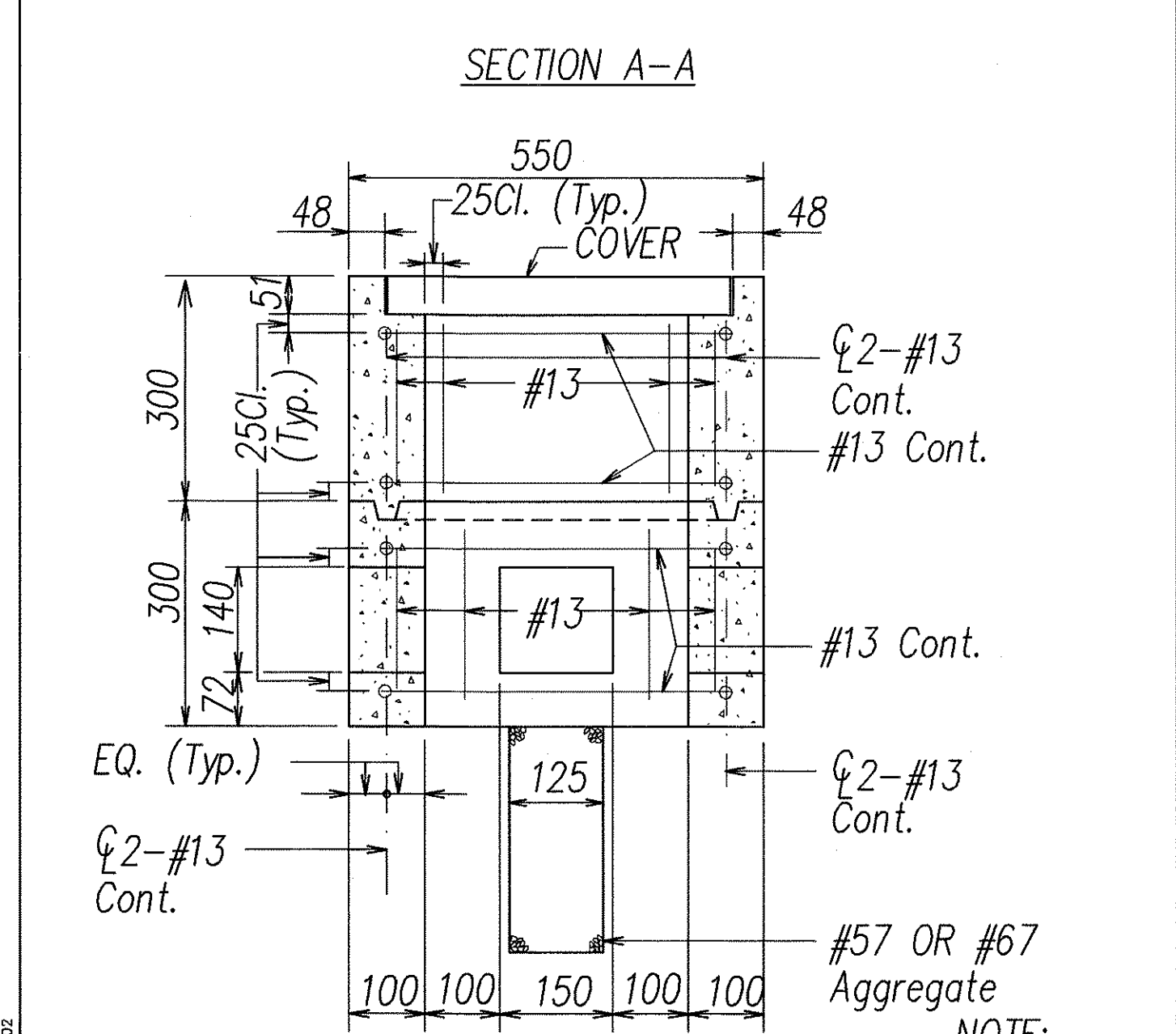
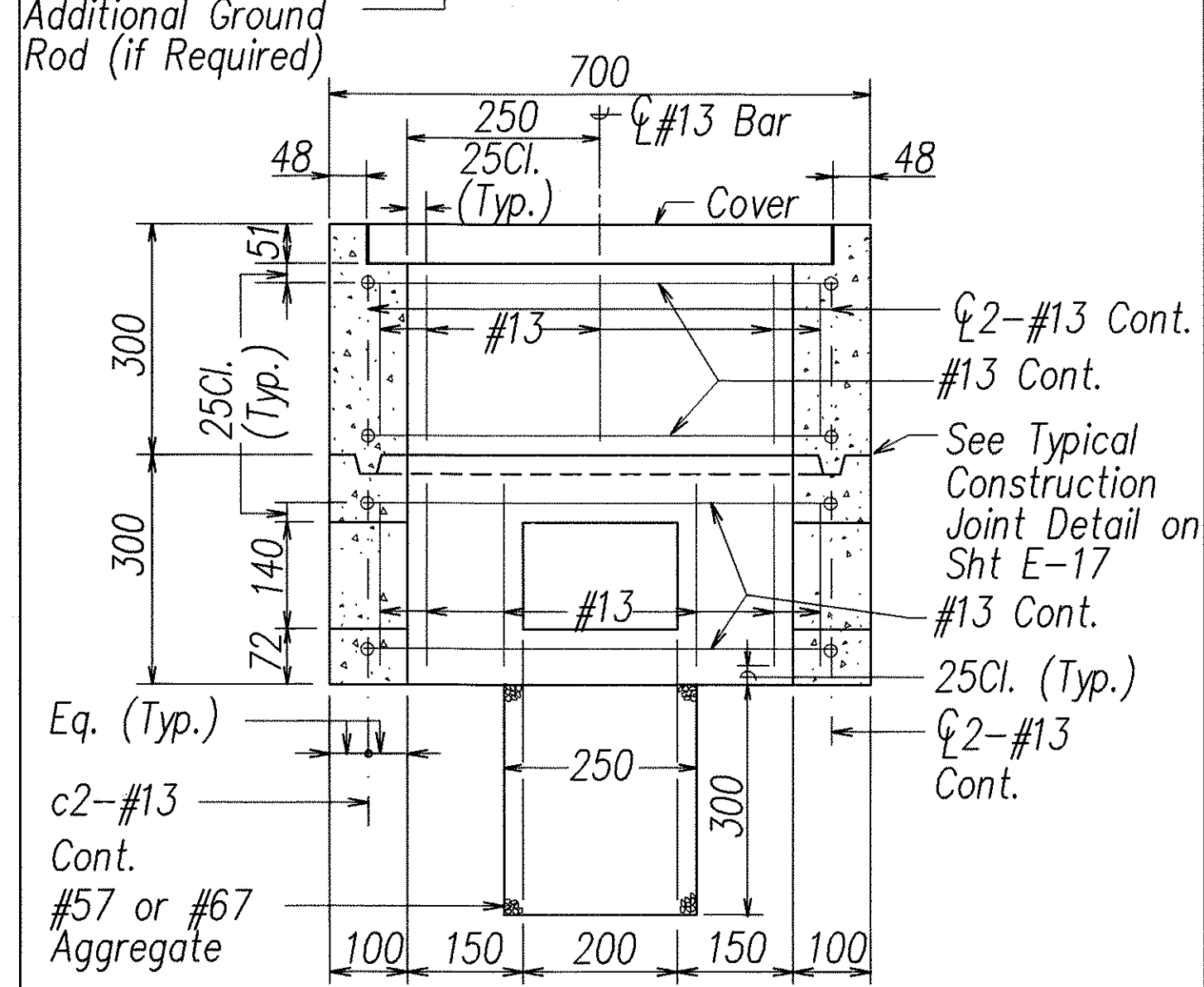
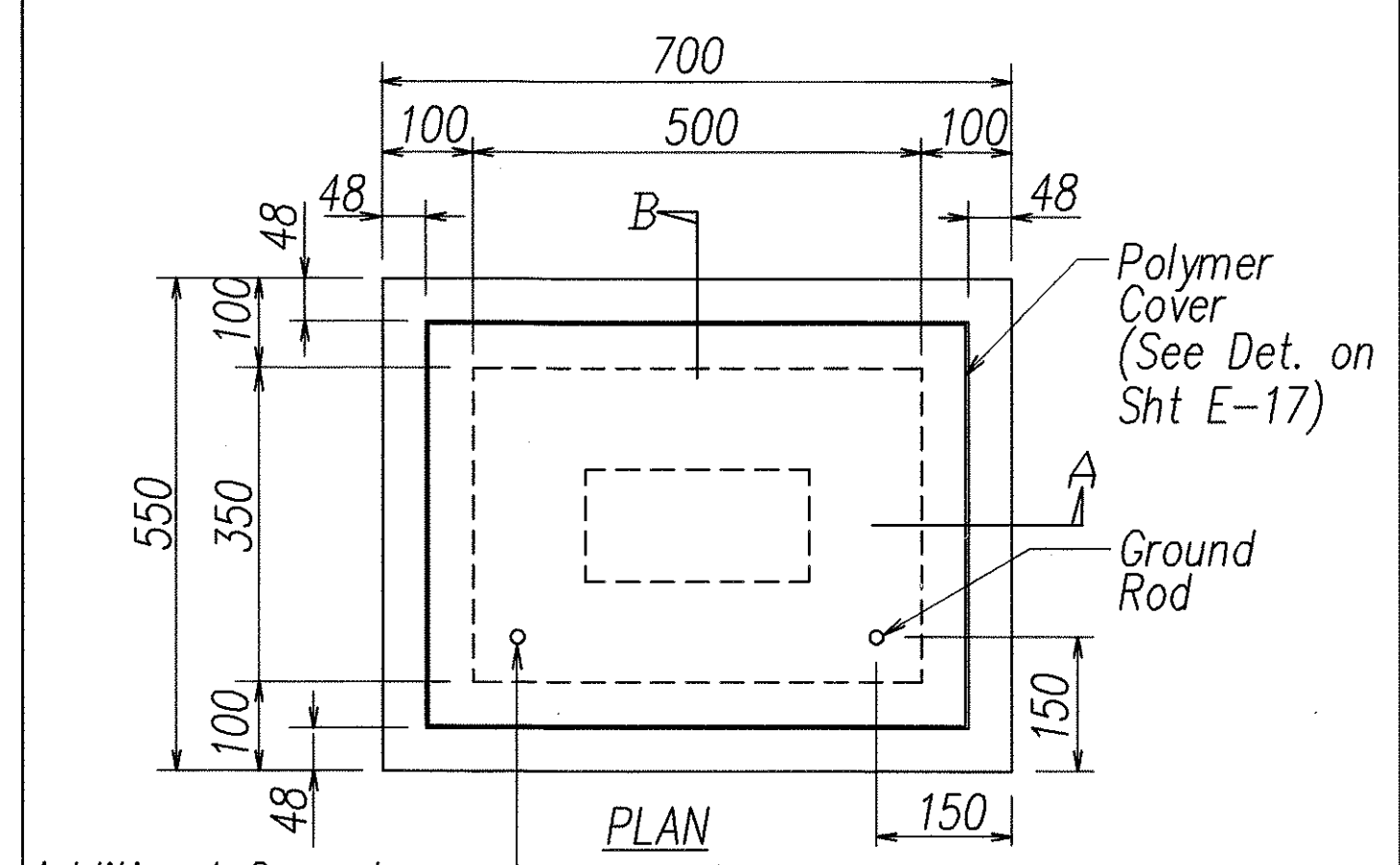
Federal - Aid Project No. CMAQ-0300(94)  
Scale: AS NOTED Date: AUGUST 2004

SHEET No. E-14 OF 20 SHEETS

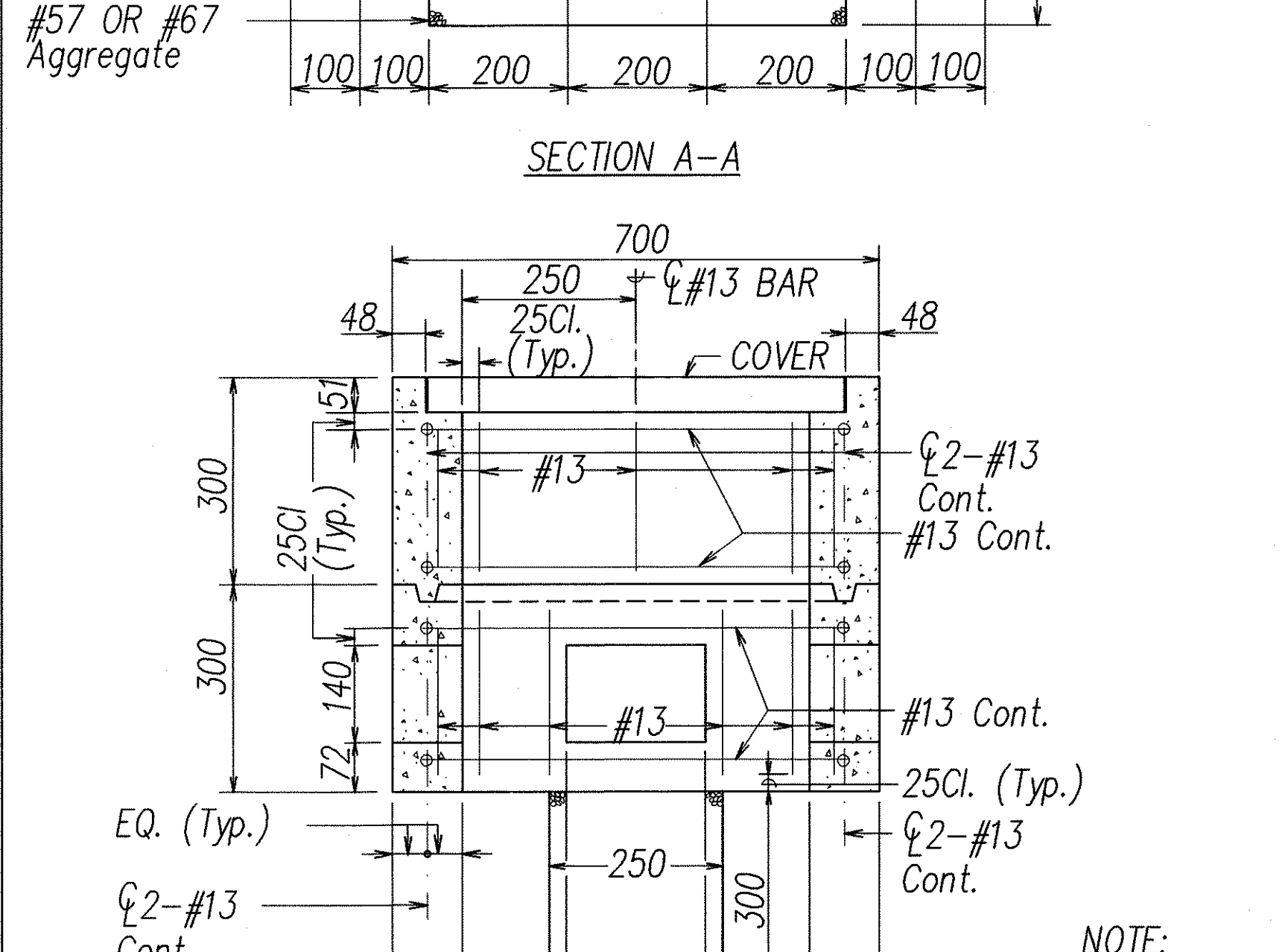
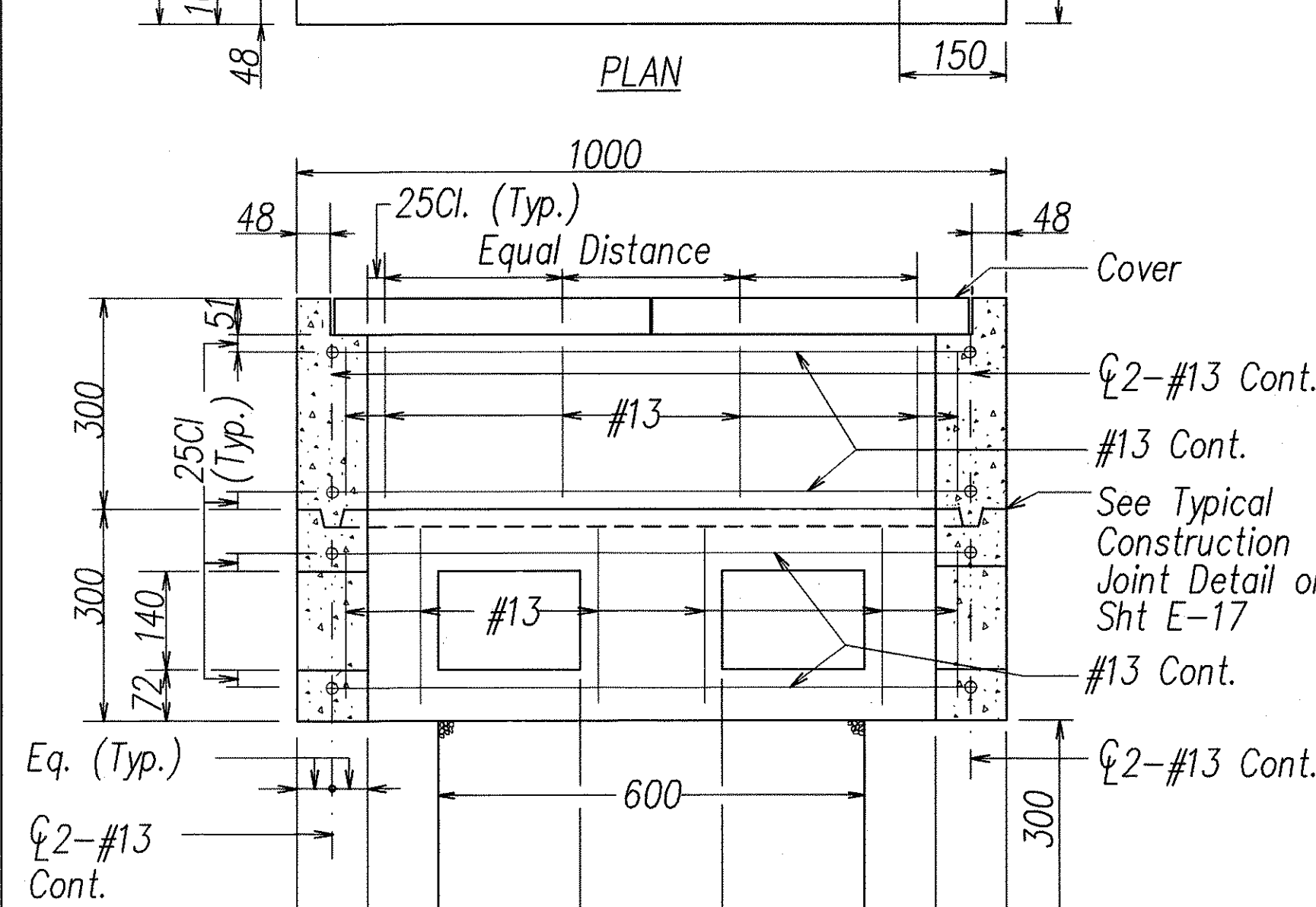
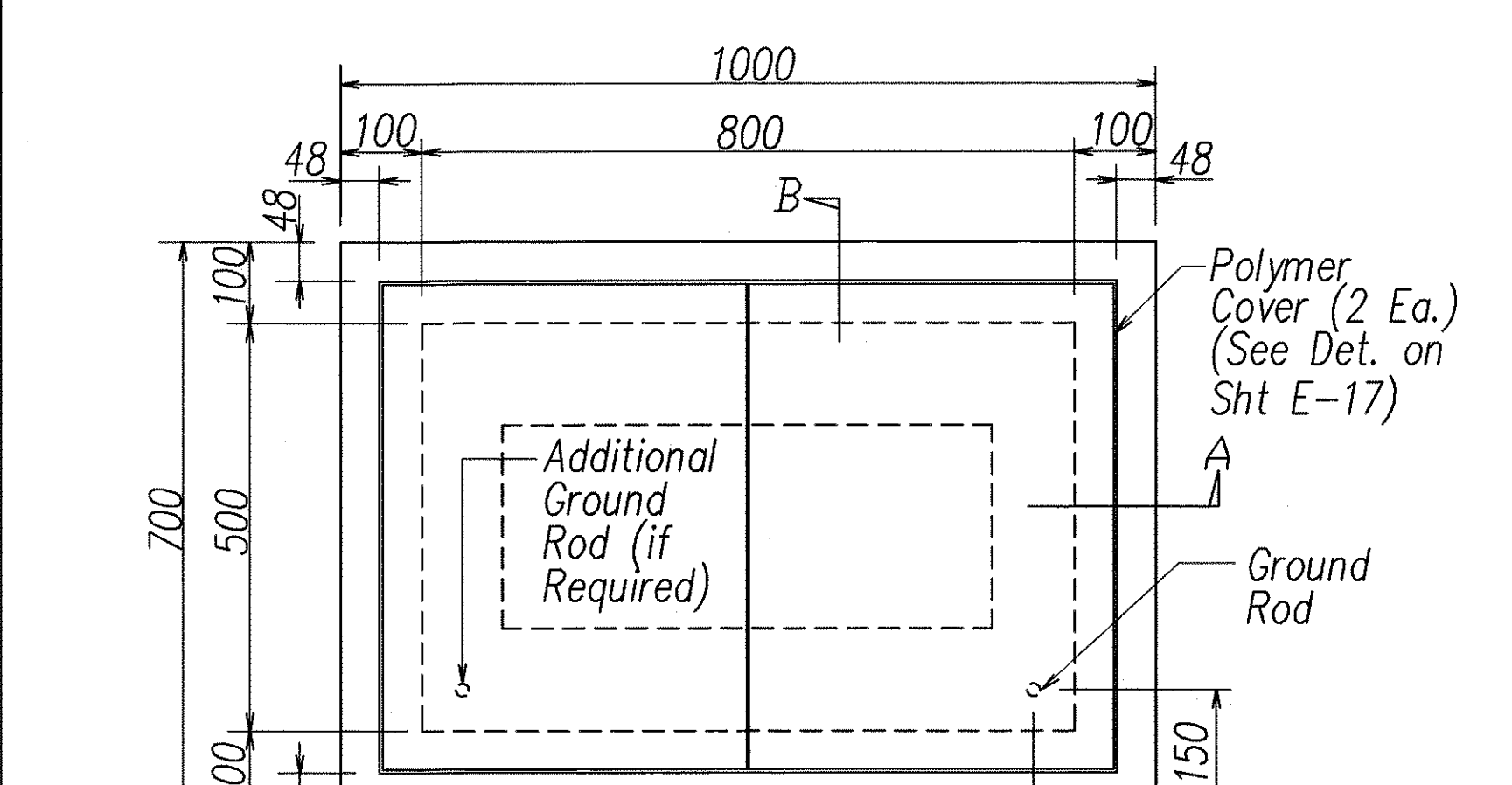




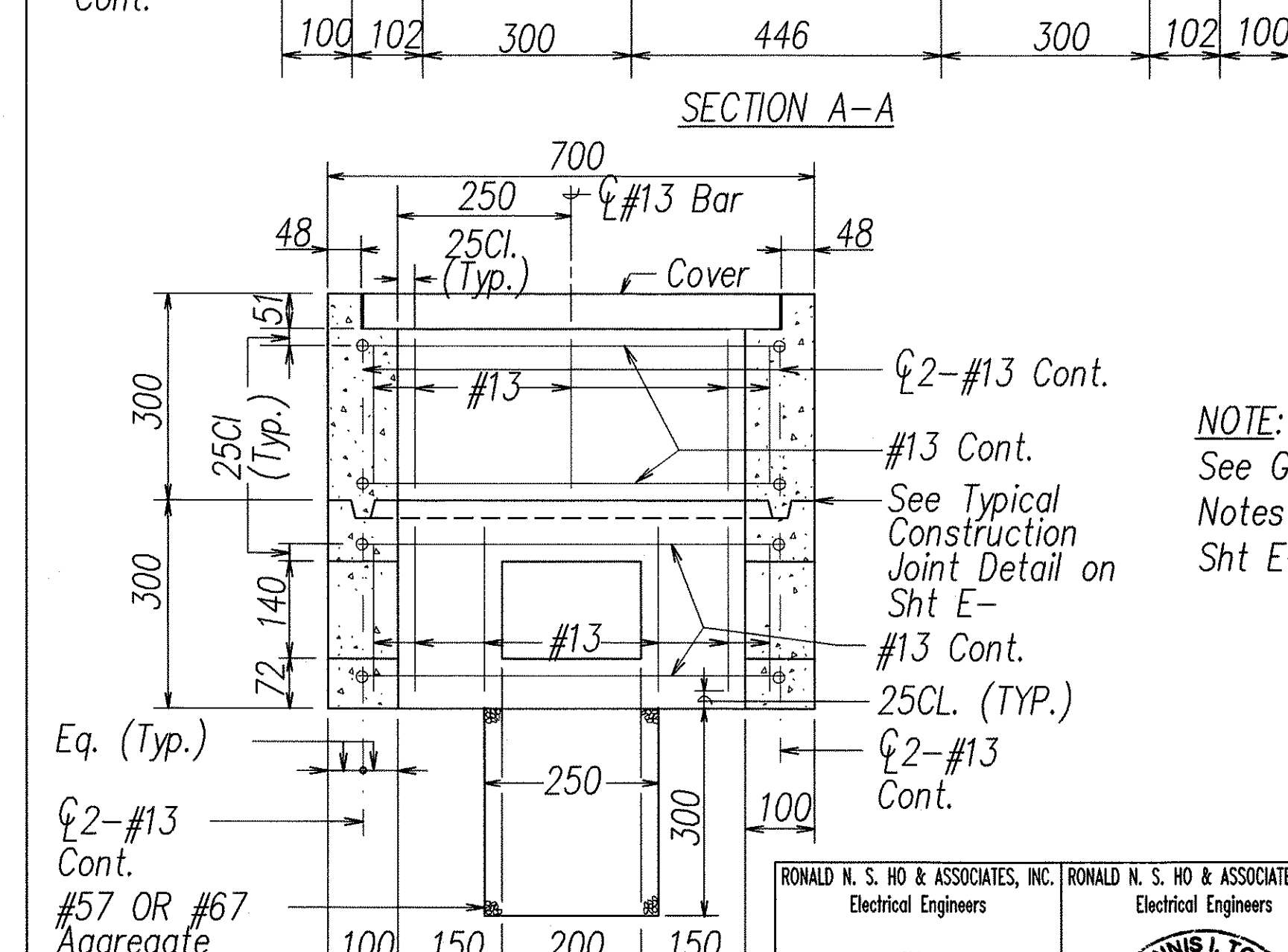
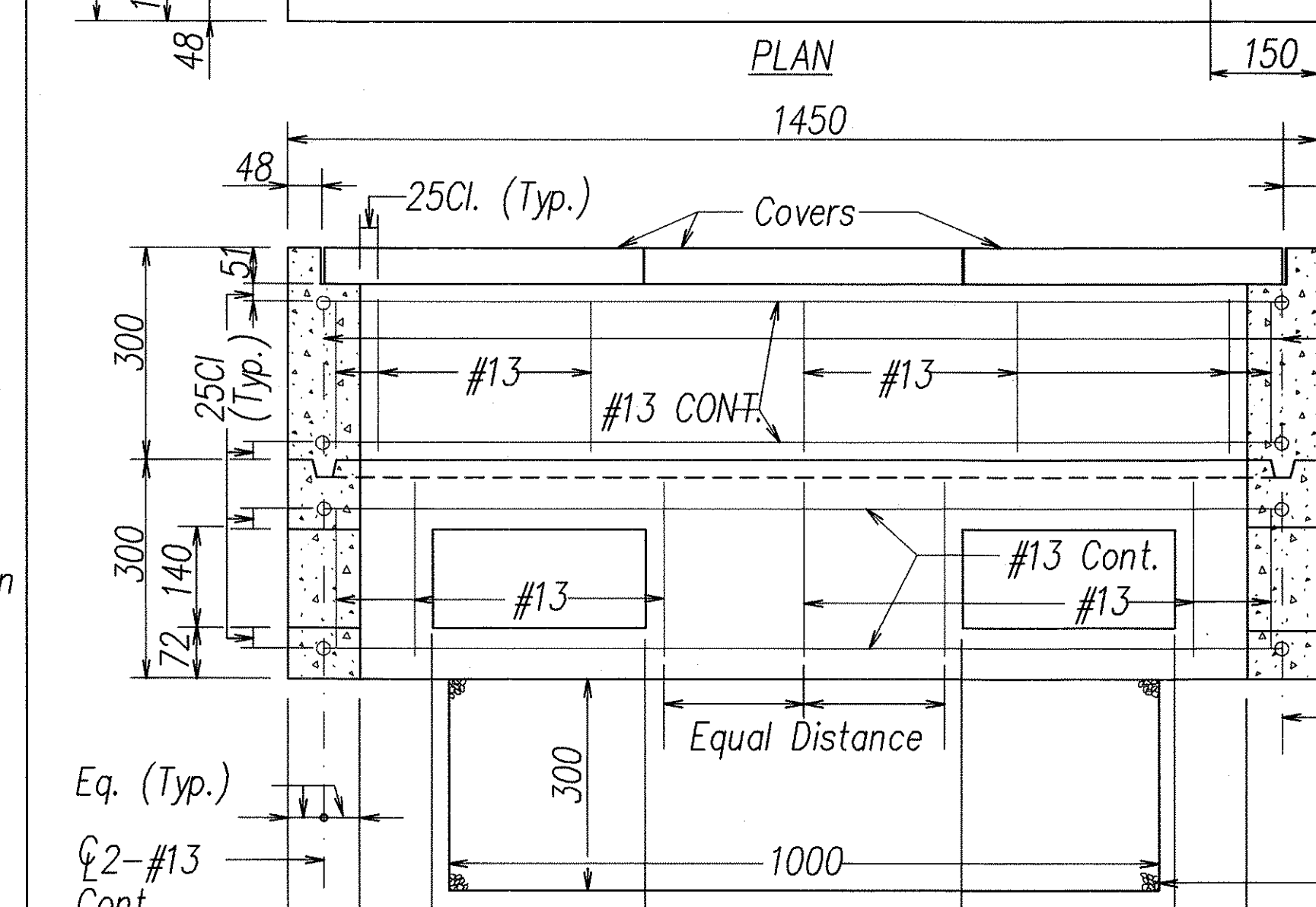
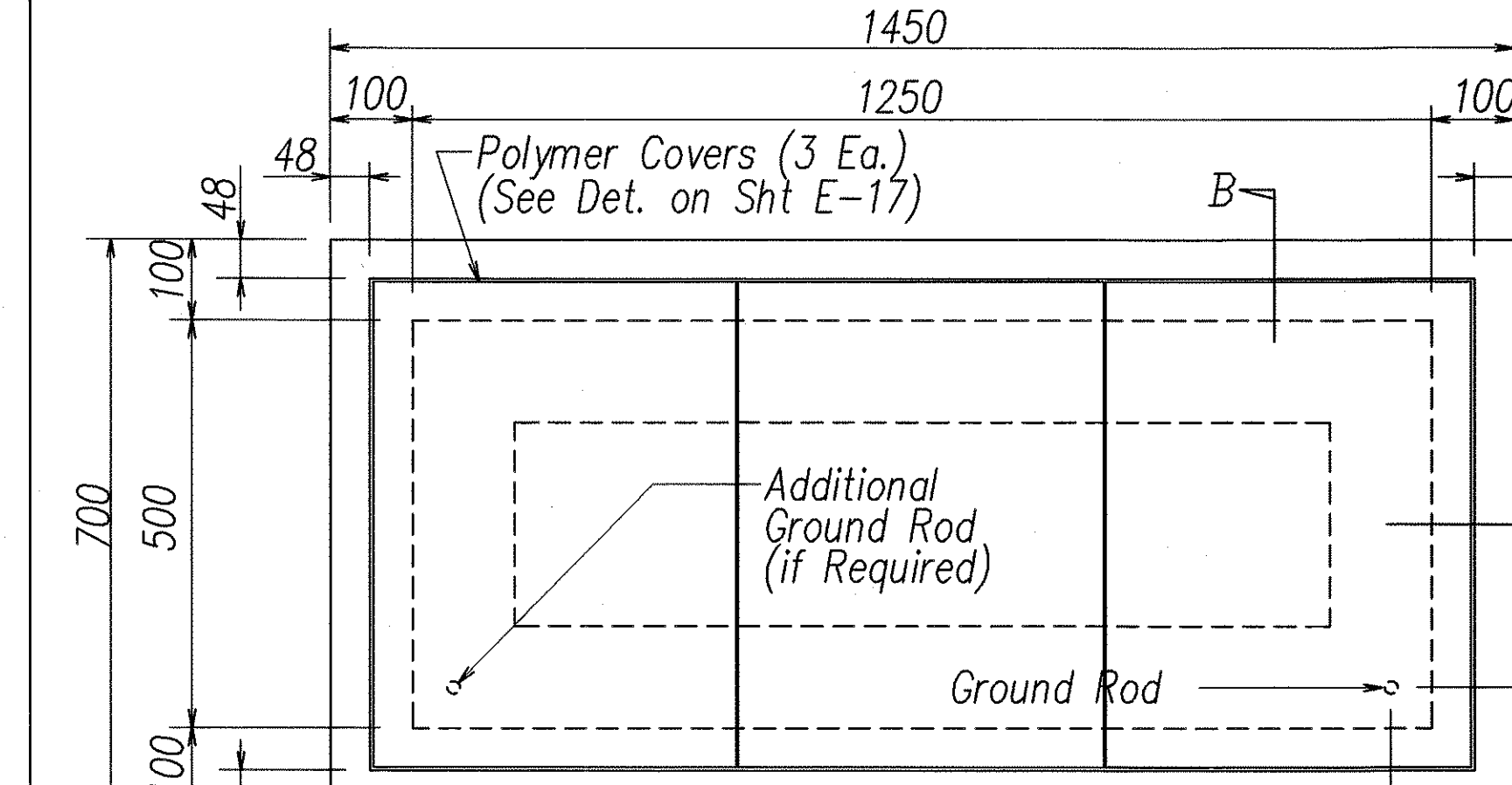
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	CMAQ-0300(94)	2004	75	79



**A**  
E-16  
**TYPE "A" PULLBOX**  
**OLD TYPE "B"**  
NOT TO SCALE



**B**  
E-16  
**TYPE "B" PULLBOX (OLD TYPE "C")**  
NOT TO SCALE



**C**  
E-16  
**TYPE "C" PULLBOX**  
**(OLD TYPE "D")**  
NOT TO SCALE

All Dimensions on this Sheet are in Millimeters

NOTE:  
See General  
Notes on  
Sht E-17

SURVEY PLOTTED BY	DATE
DRAWN BY	
DESIGNED BY	
QUANTITIES BY	
CHECKED BY	
ORIGINAL PLAN	
NOTE BOOK	
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DTS, C&C HONOLULU DRAWING REVIEWED <b>7</b>	
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION <b>TRAFFIC SIGNAL</b> <b>PULLBOX DETAILS 1</b> PEDESTRIAN FACILITIES & ADA COMPLIANCE AT VARIOUS LOCATIONS ON OAHU, UNIT 3 Federal - Aid Project No. CMAQ-0300(94) Scale: AS NOTED Date: AUGUST 2004 SHEET No. E-16 OF 20 SHEETS	
RONALD N. S. HO & ASSOCIATES, INC. Electrical Engineers LICENSED PROFESSIONAL ENGINEER No. 4340-E HAWAII, U.S.A. Andrew L. Miyazaki PRINCIPAL-IN-CHARGE 04/30/06 EXPIRATION DATE OF THE LICENSE	RONALD N. S. HO & ASSOCIATES, INC. Electrical Engineers LICENSED PROFESSIONAL ENGINEER No. 10589-E HAWAII, U.S.A. Dennis I. Tola THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION 04/30/06 EXPIRATION DATE OF THE LICENSE





FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	CMAQ-0300(94)	2004	77	79

GENERAL CONSTRUCTION NOTES:

- Plans do not indicate complete existing electrical conditions. Contractor shall visit jobsite to become familiar with all existing conditions and extent of demolition and new work prior to the start of work.
- Prior to the start of work, Contractor shall visit jobsite and report any discrepancies and/or difference in drawings, in respect to existing condition, to Engineer and/or Owner.
- Contractor shall resolve all discrepancies and questions prior to start of work. No extra payment shall be allowed on account of work made necessary by Contractor's failure to visit the site and/or failure to resolve discrepancies and questions.
- Return all salvable apparatus, as determined by the City or his representatives, to a site designated by the City or his representatives, at no additional cost to the City. Dispose of all unwanted materials.
- The Contractor is to comply with the directions of the State of Hawaii Occupational Safety and Health Law (DOSH).
- Contractor shall coordinate all work with Hawaiian Electric Co. (HECO) and Verizon Hawaii, Inc.. (HTCO).
- Contractor shall notify HTCO's inspectors 72 hours prior to start of his excavation work.
- Prior to start of construction the Contractor shall verify with the respective utility companies and government agencies, the locations of all electric, telephone, traffic signal, street light, fire alarm, gas, water, sewer, drain, and other lines crossing the excavation path or in excavation areas.
- The locations of all new traffic signal standards and controllers on the drawings are approximate. Exact location will be determined in the field by the Engineer. conflicts between standards and crosswalk locations shall be avoided wherever possible. The locations of traffic signal standards, controllers, pullboxes, and conduits shall be staked out by the Contractor and approved by the Engineer prior to any excavation.
- All structures, pavements, utilities, landscaping, and other topographical features shown on the intersection drawings are existing and are to remain unless noted or indicated otherwise.
- 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.
- The Contractor may close only one lane of traffic at a time for any reason. During the peak traffic periods from 6:00 to 9:00 a.m. and from 3:00 to 6:00 p.m., Monday thru Friday, all lanes shall be kept open and maintained at all times.

- Type "A" Backfill - Earth and gravel, rock size to be 1" and the mixture to contain not more than 50% by volume of rock particles. 95% compaction.
- Type "B" Backfill - Earth and gravel, mixture must pass a 1/2" mesh screen and contain not more than 20% by volume of rock particles. 95% compaction.
- If normal material at bottom of trench is not Type "B", an additional 3" shall be excavated and Type "B" Backfill provided.
- Contractor shall completely restore all sidewalks, roadways, curbs and gutter disturbed by the construction. All restoration work shall conform to City Dept. of Design and Construction standards.
- The Contractor shall coordinate with the City, all splices and connections in pullboxes, handholes and cabinet locations pertaining to traffic signal; signal heads, ped signals, ped pushbuttons, vehicular detectors, preemption detectors and intertie circuits shall be performed by the City.
- The Contractor shall deliver all excess lava rock curb to the Honolulu Corporation Yard at 99-1077 Iwaena Street. If additional lava rock curb is required, call Mr. Melvin Miyata at 523-4287 for pickup.

TRAFFIC SIGNALS & TECHNOLOGY NOTES:


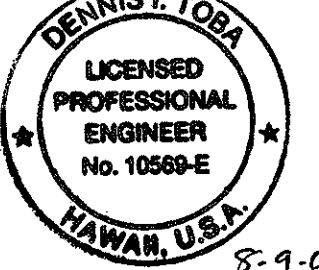
- The Contractor shall notify the Traffic Signal & Technology, Department of Transportation Services, three (3) working days prior to commencing work on the traffic signal system (phone: 523-4589).
- The traffic signal system shall be kept operational during construction. Any relocation required shall be approved by the Traffic Signals & Technology, Department of Transportation Services, and paid for by the Contractor.
- The Contractor shall be responsible for any damages to the existing traffic signal facilities, including the traffic signal interconnect system. Any and all damages to these facilities shall be repaired by the Contractor at his cost in accordance with the requirements of the City and County of Honolulu.
- The Contractor shall be responsible for any damages to the existing traffic signal fiber optic cable system. Any and all damages to these facilities shall be repaired by the Contractor at his cost in accordance with the requirements of the City and County of Honolulu.
- The Contractor shall provide microwave detector system for all existing signalized intersections where existing loop detector system will be out of service for more than one (1) week. All work shall be coordinated with the Traffic Signals & Technology, Department of Transportation Services, and paid for by the Contractor.

MECHANICAL/ELECTRICAL DIVISION NOTES:

- The Contractor shall notify the Joint Pole Committee two (2) weeks in advance of any relocation of utility pole(s) that may be necessary.
- The Contractor shall notify the Mechanical/Electrical Division, Department of Design and Construction, three (3) working days prior to commencing work on the street lighting system (phone: 527-5002).
- The street lighting system shall be kept operational during construction. Any relocation required shall be approved by the Mechanical/Electrical Division, Department of Design and Construction, and paid for by the Contractor.
- The locations of the existing underground street light facilities shown on the plans are from existing plans and are approximate only. The Contractor shall exercise caution when construction crosses or is in close proximity to the existing street light facilities. The Contractor shall be responsible for any damages to the existing street lighting facilities, any and all damages to these facilities shall be repaired by the Contractor at his cost in accordance with the requirements of the City and County of Honolulu.
- The Contractor shall be responsible for any damages to the City's existing communications fiber optic cable system. Any and all damages to these facilities shall be repaired by the Contractor at his cost in accordance with the requirements of the City and County of Honolulu.
- Salvage and deliver existing street light standard to the Department of facility maintenance base yard at manana. Contact Clarice Kam at 564-6109 a minimum of two days prior to delivery.

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

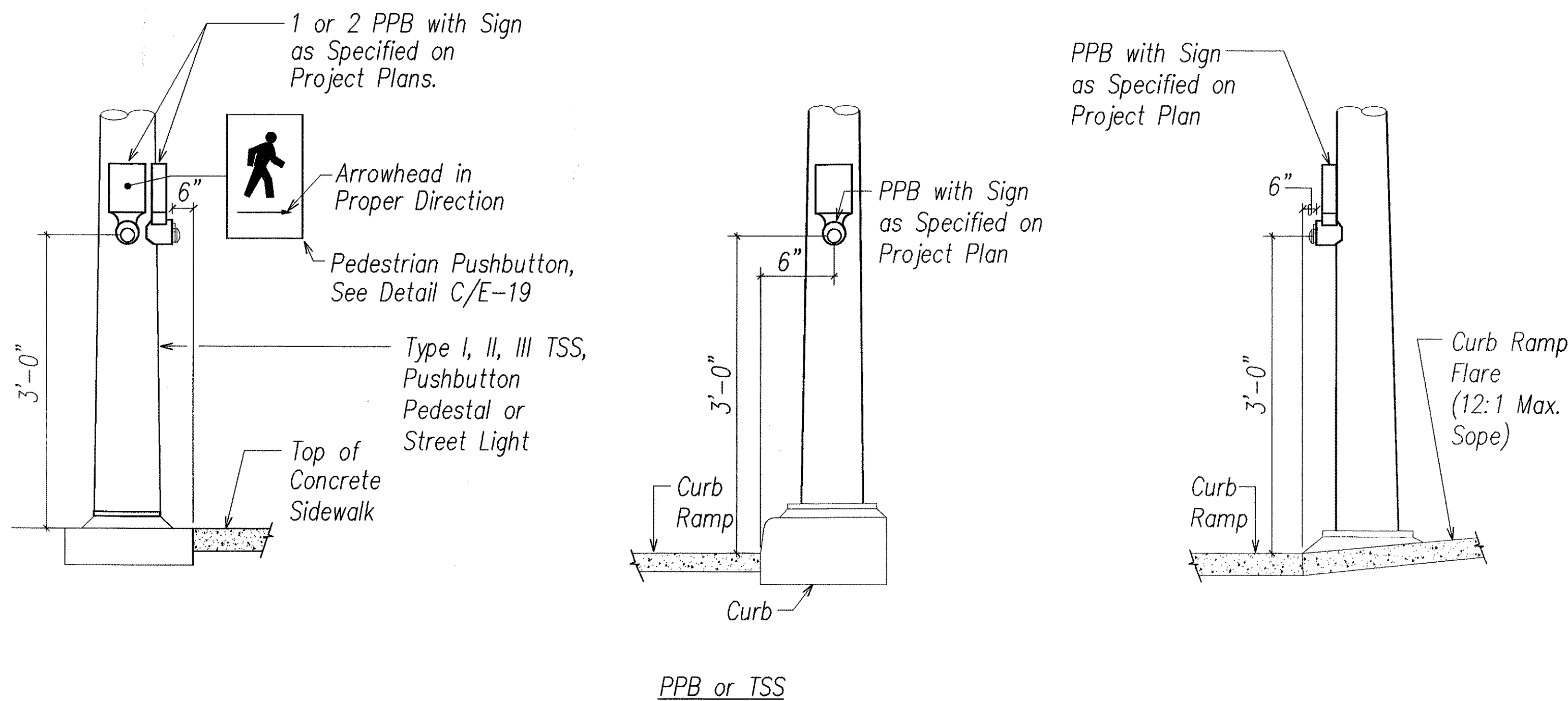
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RONALD N. S. HO & ASSOCIATES, INC. Electrical Engineers	RONALD N. S. HO & ASSOCIATES, INC. Electrical Engineers
	
Principal-in-Charge	THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION
04/30/06	04/30/06
EXPIRATION DATE OF THE LICENSE	EXPIRATION DATE OF THE LICENSE

DTS, C&C HONOLULU DRAWING REVIEWED	
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION <b>CONSTRUCTION NOTES</b>	
PEDESTRIAN FACILITIES & ADA COMPLIANCE AT VARIOUS LOCATIONS ON OAHU, UNIT 3	
Federal - Aid Project No. CMAQ-0300(94) Scale: AS NOTED Date: AUGUST 2004	
SHEET No. E-18 OF 20 SHEETS	



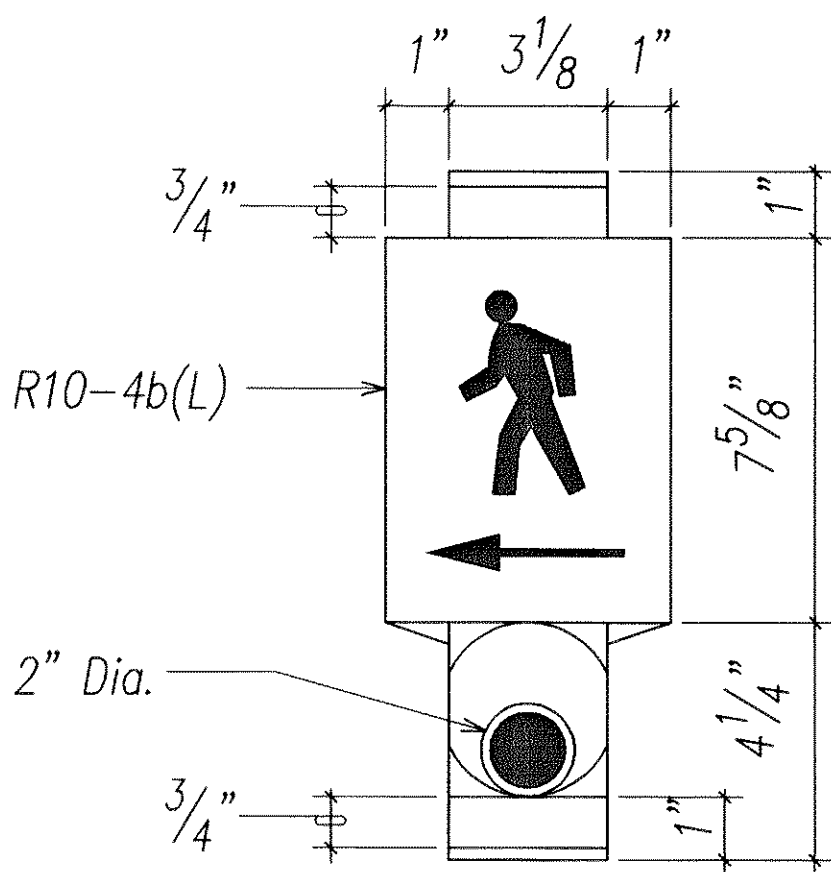
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	CMAQ-0300(94)	2004	78	79



**A**  
**E-19** **PEDESTRIAN PUSHBUTTON MOUNTING DETAILS**  
NOT TO SCALE

**DETAIL NOTES:**

1. The pedestrian pushbutton unit shall consist of a one piece assembly with a raised walking man, arrow indication and push button.
2. 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.
3. The raised man and arrows shall be directional and match the directional indication as shown on the plans.
4. The pushbutton shall be tamper proof, weatherproof and constructed so that electrical shocks are impossible.
5. The color scheme shall be:  
White - Man, arrow and pushbutton  
Black - Background

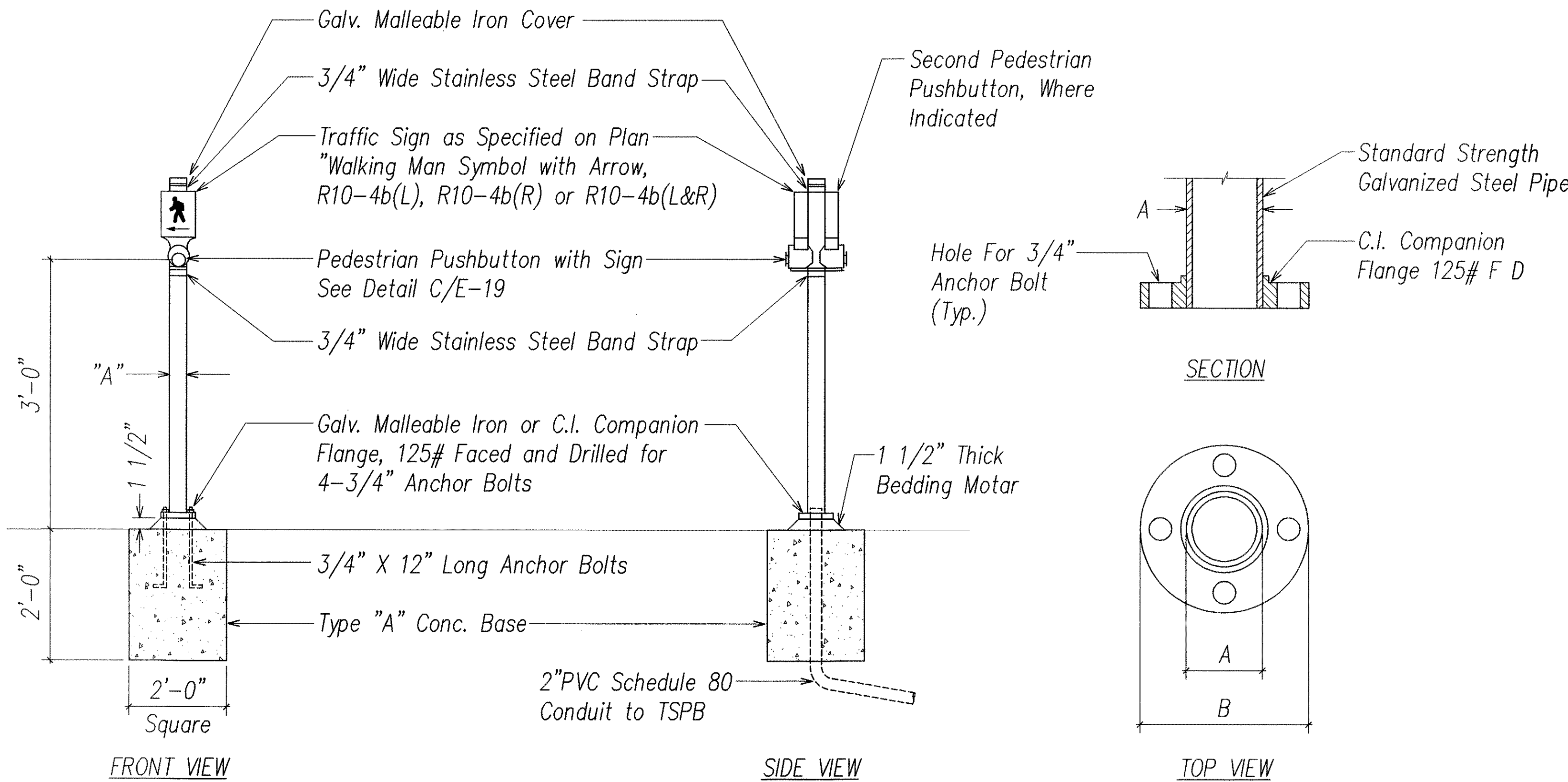


**C**  
**E-19** **PEDESTRIAN PUSHBUTTON DETAIL**  
NOT TO SCALE

**NOTE:**

1. Conduits shall Protrude 2" Max above Finished Surface of Foundation.
2. Conduits Shall slope away from Post Foundation.

DATA TABLE FOR PPB POST		
AMOUNT OF PPB	DIMENSIONS	
	A	B
1	3 1/2"	8"
2-3	4 1/2"	9"



**B**  
**E-19** **PEDESTRIAN PUSHBUTTON POST AND FOOTING DETAIL**  
NOT TO SCALE

SURVEY PLOTTED BY	DATE
DESIGNED BY	
TRACED BY	
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NOTE BOOK	
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RONALD N. S. HO & ASSOCIATES, INC. Electrical Engineers <b>ANDREW L. MINAVAL</b> LICENSED PROFESSIONAL ENGINEER No. 4340-E HAWAII, U.S.A. 8-9-04 PRINCIPAL-IN-CHARGE 04/30/06 EXPIRATION DATE OF THE LICENSE	RONALD N. S. HO & ASSOCIATES, INC. Electrical Engineers <b>DENNIS L. TORA</b> LICENSED PROFESSIONAL ENGINEER No. 10568-E HAWAII, U.S.A. 8-9-04 THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION 04/30/06 EXPIRATION DATE OF THE LICENSE
---	--

DTS, C&C HONOLULU DRAWING REVIEWED	7
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION <b>PEDESTRIAN PUSHBUTTON DETAILS</b>  PEDESTRIAN FACILITIES & ADA COMPLIANCE AT VARIOUS LOCATIONS ON OAHU, UNIT 3 Federal - Aid Project No. CMAQ-0300(94) Scale: AS NOTED Date: AUGUST 2004 SHEET No. E-19 OF 20 SHEETS	



