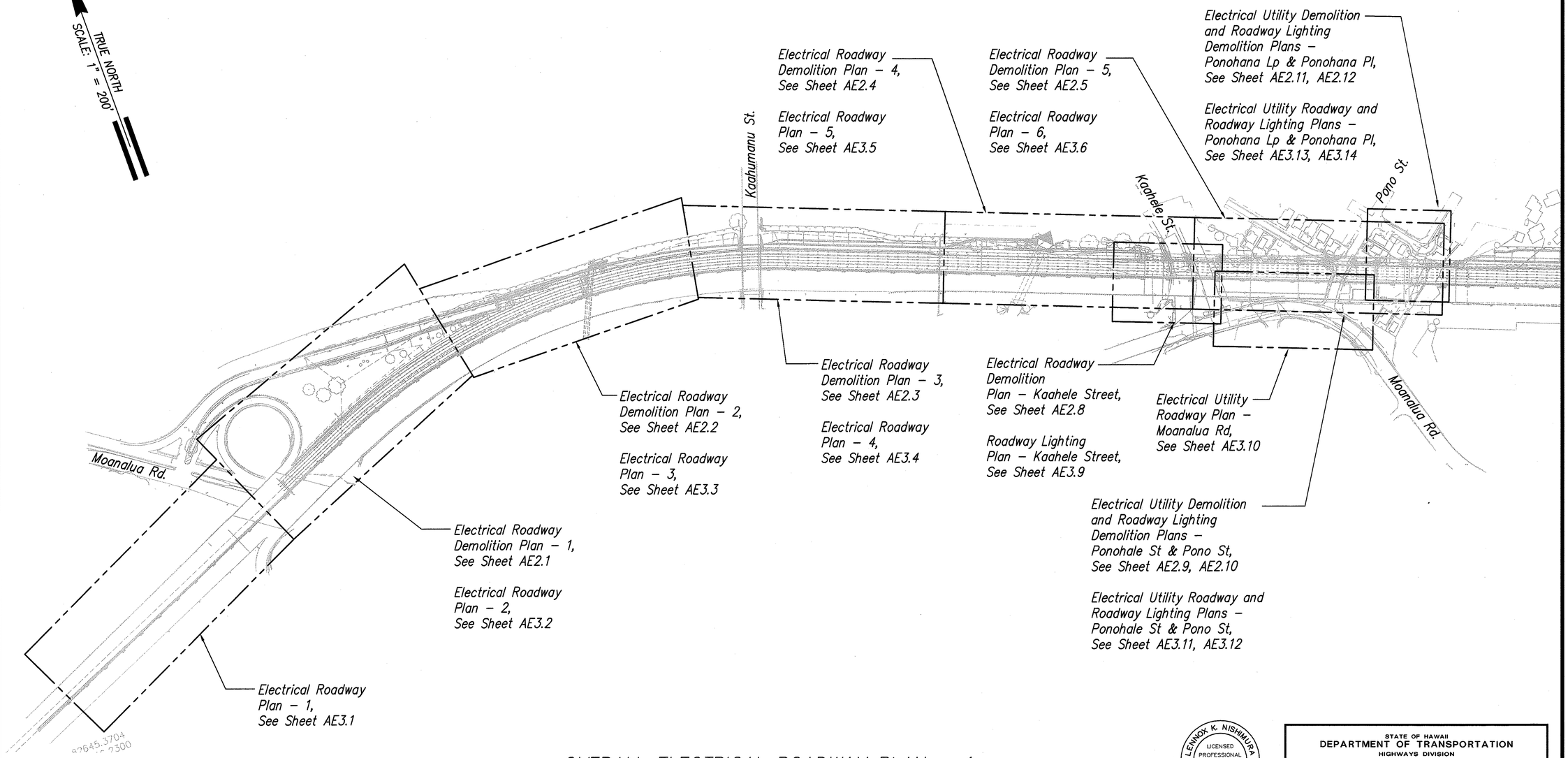
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(75) UNIT VIII	2003	704	816

TRUE NORTH
SCALE: 1" = 200'



OVERALL ELECTRICAL ROADWAY PLAN – 1

Scale: 1" = 200'

GRAPHIC SCALE

1" = 200' 20' 10' 0 200' 400'

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

4/3/03-13:02 Y:\060\s60-80\60-80-AE0.01.dwg

LENNOX K. NISHIMURA
LICENSED PROFESSIONAL ENGINEER
No. 3880-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

Lennox K. Nishimura
PROJECT ENGINEER for ECS, Inc.

APRIL 30, 2004
EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

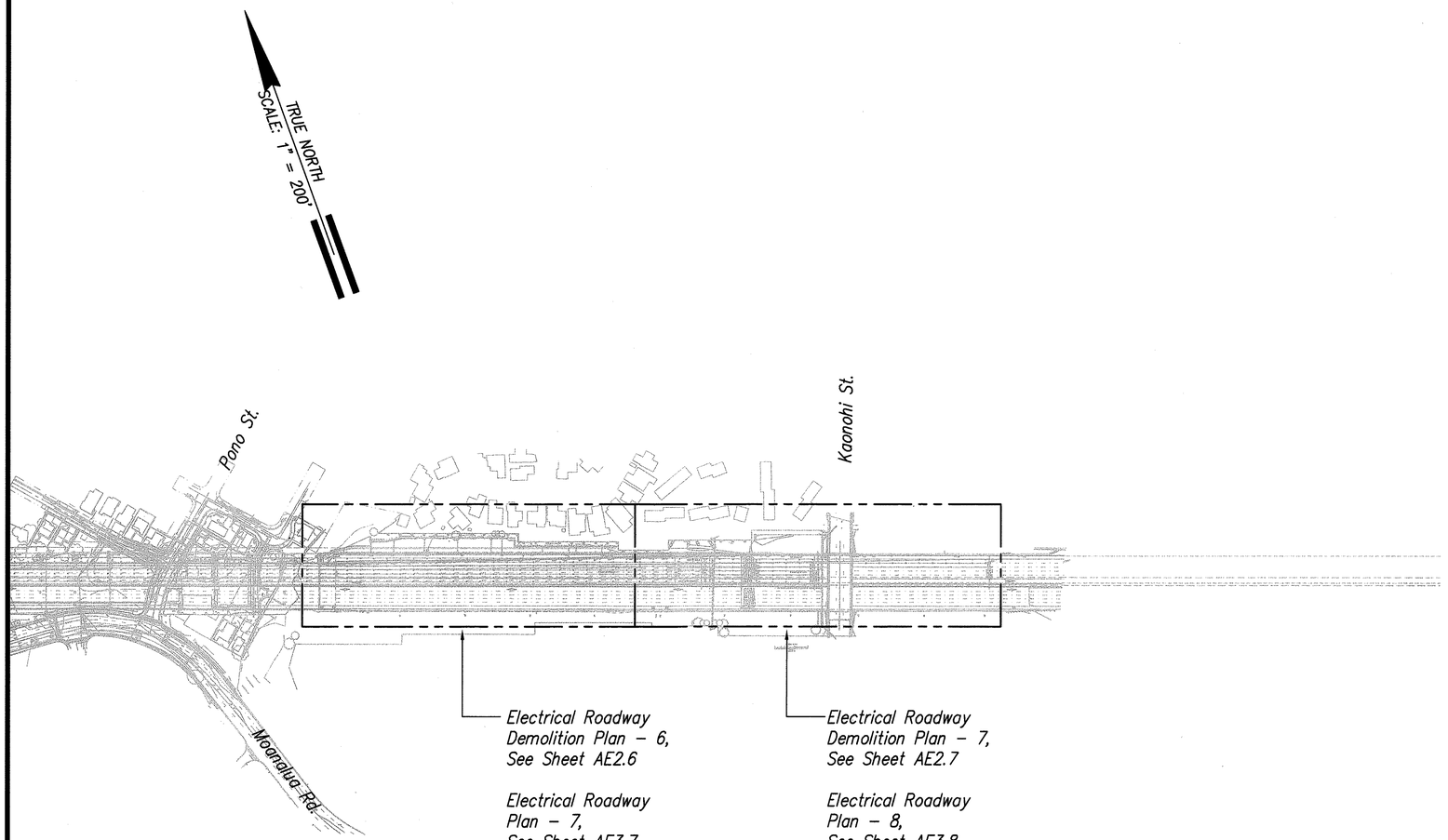
OVERALL ELECTRICAL ROADWAY PLAN – 1

INTERSTATE ROUTE H-3
H-3 FINISH (UNIT VIII)
F.A.I. Proj. No. I-H3-1(75) Unit VIII

Scale: 1" = 200'-0" Date: Mar. 31, 2003

SHEET No. AE0.1 OF 67 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(75) UNIT VIII	2003	705	816



Electrical Roadway Demolition Plan – 6, See Sheet AE2.6

Electrical Roadway Plan – 7, See Sheet AE3.7

Electrical Roadway Demolition Plan – 7, See Sheet AE2.7

Electrical Roadway Plan – 8, See Sheet AE3.8

OVERALL ELECTRICAL ROADWAY PLAN – 2

Scale: 1" = 200'

GRAPHIC SCALE

1" = 200' 20' 10' 0 200' 400'

ORIGINAL PLAN | NOTE BOOK | No.

SURVEY PLOTTED BY | DATE
DRAWN BY
TRACED BY
DESIGNED BY
QUANTITIES BY
CHECKED BY

4/3/03–13:06 Y:\060\e60-80\60-80-AE0.02.dwg

LEANNOX K. NISHIMURA
LICENSED PROFESSIONAL ENGINEER
No. 3880-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

Leannox K. Nishimura
PROJECT ENGINEER for ECS, Inc.

APRIL 30, 2004
EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

OVERALL ELECTRICAL ROADWAY PLAN – 2

INTERSTATE ROUTE H-3
H-3 FINISH (UNIT VIII)
F.A.I. Proj. No. I-H3-1(75) Unit VIII

Scale: 1" = 200'-0" Date: Mar. 31, 2003

SHEET No. AE0.2 OF 67 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(75) UNIT VIII	2003	ADD.706	816

ELECTRICAL SYMBOL LIST

SYMBOL EXISTING	SYMBOL NEW	DESCRIPTION
○---○	○—○	Street Light Standard, Single Luminaire Arm, 400W HPS, Unless Noted
	○—◒	Street Light Standard, Single Luminaire Arm, 250W HPS
	▣—○	Street Light Standard, Single Luminaire Arm, 250W HPS, Mounted On Concrete Structure
	▣—◒	Street Light Standard, Single Luminaire Arm, 400W HPS, Mounted On Concrete Structure
	▣	Underpass Lighting Luminaire
◯	○	Wall Mounted Roadway Lighting Luminaire
◯		Wall Mounted Roadway Lighting Luminaire To Be Removed
○---○		Street Light Standard To Be Removed
	▭	Highway Signage Lighting
		Highway Signage Lighting To Be Removed
	PC	Photocell
J		Junction Box, Wall Mounted
J		Junction Box To Be Removed
▨	▨	Service Equipment
	T	Transformer Pad
▭		Existing Pullbox/Handhole, Type As Noted
	⊠	WIM Pullbox, Type "C"
	◪	Communications Pullbox, Type "B"
	□	Street Light Pullbox, Type "B", Unless Noted
	■	Cast Power Junction Box, Size As Noted On Plans
	◪	Cast Communications Junction Box, Size As Noted On Plans
▣		Existing Pullbox/Handhole To Be Demolished
	⊣⊢	Expansion Coupling
p16 ○	P16 ○	Utility Pole, Pole #16 Indicated
p16 ⊠		Existing Utility Pole To Be Removed, Pole #16 Indicated

SYMBOL EXISTING	SYMBOL NEW	DESCRIPTION
	2 / AE2.1	Detail Indicator: Top Half Denotes Detail Number, Left Denotes Sheet On Which Detail Shown
	1	Duct Indicator, See Schedule, Sheet AE6.17
	◇1	Note Indicator
	GFCI	Ground Fault Circuit Interruptor
	GND	Ground
	HECo	Hawaiian Electric Company
	JP	Joint Utility Pole
	NIC	Denotes Not In Contract
	SLPB	Street Light Pullbox
	TSL	Traffic Signal Light
	TSPB	Traffic Signal Pullbox
	VH	Verizon Hawaii
	WP	Weatherproof
	—·—·—	Underground Ductline And Wiring
	———	Conduit And Wiring Concealed In Concrete Barrier
—eoh/_—	—OH/_—	Overhead Conductors P=Primary S=Secondary T=Telephone V=Cable Television
—*eoh/_*—		Overhead Conductors To Be Removed Or Relocated
— e ———	--------	Exposed Conduit And Wiring
—* e --*--		Exposed Conduit And Wiring To Be Removed
— e ———		Existing Ductline
—* e —*—		Existing Ductline To Be Removed/Abandoned

STATE STREET LIGHT STANDARD IDENTIFICATION LEGEND:

LEGEND		DESCRIPTION
1	121+93	Station Number
2	2	Street Light Pole Number, Circuit Number, (Verify Pole No. With D.O.T.)
3	14'	Pole Clear Setback From Edge Of Pavement, See Note No. 1 Below
4	15'	Luminaire Arm Span In Feet
5	TB	Pole Base Mounting Type, See Note No. 2 Below
6	40'	Luminaire Mounting Height Above Pavement

SYMBOL NOTES:

1. "TOW" indicates mounting is on top of wall; "TOR" indicates mounting is on bridge railing; "SW" indicates mounting is in sidewalk.
2. "TB" indicates transformer base; "BTB" indicates breakaway transformer base.

APPROVED 5

(for City Street Light Work Only):

7/29/03
Chief, Mechanical/Electrical Date
Design And Engineering Division, DDC
City And County Of Honolulu

8/26/03
Chief, Traffic Review Branch, DPP Date
City And County Of Honolulu

LENNOX K. NISHIMURA LICENSED PROFESSIONAL ENGINEER No. 3880-E HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

Lennox K. Nishimura
PROJECT ENGINEER for ECS, Inc.

APRIL 30, 2004
EXPIRATION DATE OF THE LICENSE

DATE	REV.	DESCRIPTION
10/16/03	5	Obtained Agency Signatures

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ELECTRICAL SYMBOL LIST

INTERSTATE ROUTE H-3
H-3 FINISH (UNIT VIII)
F.A.I. Proj. No. I-H3-1(75) Unit VIII

Scale: None Date: Mar. 31, 2003

SHEET No. AE1.1 OF 67 SHEETS

ADD.706

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

6/19/03-15:36 Y:\060\e60-80\60-80-AE1.01.dwg

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(75) UNIT VIII	2003	A00.707	816

HAWAIIAN ELECTRIC COMPANY NOTES

1. Location Of HECo Facilities – The location of HECo's overhead and underground facilities shown on the plans are from existing records with varying degrees of accuracy and are not guaranteed as shown. The contractor shall verify in the field the locations of the facilities and shall exercise proper care in excavating and working in the area. Wherever connections of new utilities to existing utilities and utility crossings are shown, the contractor shall expose the existing lines at the proposed connections and crossings to verify the depths prior to excavation for the new lines. The contractor shall be responsible for any damages to HECo's facilities whether shown or not shown on the plans.

2. Compliance With Hawaii Occupational Safety And Health Laws – The contractor shall comply with the State of Hawaii's occupational safety and health laws and regulations, including without limitation, those related to working on or near exposed or energized electrical lines and equipment.

3. Excavation Permit – The contractor shall obtain an excavation permit from HECo's Technical Division (543–5654) located at 820 Ward Avenue, 4th floor, two weeks prior to starting construction. Please refer to our request number at that time.

4. Caution!!! Electrical Hazard!!! – Existing HECo overhead and underground lines are energized and will remain energized during construction unless prior special arrangements have been made with HECo. Only HECo personnel are to handle these energized lines and erect temporary guards to protect these lines from damage. The contractor shall work cautiously at all times to avoid accidents and damage to existing HECo facilities, which can result in electrocution.

5. Overhead Lines – State law requires that a worker and the longest object he or she may contact cannot come closer than a minimum radial clearance of 10 feet when working close to or under any overhead lines rated 50kv and below. For each additional 1kv above 50kv, an additional 0.4 inch shall be added to the 10–foot clearance requirement. The preceding information on line clearance requirements is provided as a convenience and it is the contractor's responsibility to be informed of and comply with any revisions or amendments to the law.

   Should the contractor anticipate that his work will result in the need to encroach within the minimum required clearance at any time, the contractor shall notify HECo at least four (4) weeks prior to the planned encroachment so that, if feasible, the necessary protections (E.G. Relocate, de–energize, or blanket HECo lines) can be put in place. HECo's cost of safeguarding its lines will be charged to the contractor.

   Contact HECo's customer installations department at 543–7846 for assistance in identifying and safeguarding overhead power lines.

   Refer to Section X of HECo's electric service installation manual for additional guidelines when working around HECo's facilities. A copy may be obtained from HECo's Customer Installations Department.

6. Pole Bracing – A minimum clearance of 10 feet must be maintained when excavating around utility poles and/or their anchor system to prevent weakening or pole support failure. Should work require excavating within 10 feet of a pole and/or its anchor system, the contractor shall protect, support, secure, and take all other precautions to prevent damage to or leaning of these poles. The contractor is responsible for all associated costs to brace, repair, or straighten poles. All means of structural support for the pole proposed by the contractor shall first be reviewed by HECo before implementation. For pole bracing instructions, the contractor shall call the HECo Construction and Maintenance Dept., Customer & System Superintendent, at 543–4223, a minimum of two (2) weeks in advance.

7. Underground Lines – The contractor shall exercise extreme caution whenever construction crosses or is in close proximity of underground lines. HECo's existing electrical cables are energized and will remain energized during construction. Only HECo personnel are to break into existing HECo facilities, handle these cables, and erect temporary guards to protect these cables from damage. The cost of HECo's assistance in providing proper support and protection of its underground lines will be charged to the contractor. Special precautions are required when excavating near HECo's 138kv underground lines (see HECo instructions to consultants/contractors on "Excavation Near HECo's Underground 138kv Lines" for detailed requirements).

   For verification of underground lines, the contractor shall call HECo's underground division at 543–7049 a minimum of 72 hours in advance.

   For assistance in providing proper support and protection of these lines, the contractor shall call HECo's Construction & Maintenance Dept., Customer & System Superintendent, at 543–4223, a minimum of two (2) weeks in advance.

8. Underground Fuel Pipelines – The contractor shall exercise extreme caution whenever construction crosses or is in close proximity of HECo's underground fuel oil pipelines. Special precautions are required when excavating near HECo's underground fuel oil pipelines (see HECo instructions to consultants/contractors on "Excavation Near HECo's Underground Fuel Pipelines" for detailed requirements).

9. Excavations – When trench excavation is adjacent to or beneath HECo's existing structures or facilities, the contractor is responsible for:

   a) Sheeting and bracing the excavation and stabilizing the existing ground to render it safe and secure and to prevent possible slides, cave–ins, and settlements.

   b) Properly supporting existing structures or facilities with beams, struts, or under–pinnings to fully protect it from damage.

   c) Backfilling with proper backfill material including special thermal backfill where existing (refer to engineering department for thermal backfill specifications).

10. Relocation Of HECo Facilities – Any work required to relocate or modify HECo facilities shall be done by HECo, or by the contractor under HECo's supervision. The contractor shall be responsible for all coordination, and shall provide necessary support for HECo's work, which may include, but not be limited to, excavation and backfill, permits and traffic control, barricading, and restoration of pavement, sidewalks, and other facilities.

    All costs associated with any relocation or modification (either temporary or permanent) for the convenience of the contractor, or to enable the contractor to perform his work in a safe and expeditious manner in fulfilling his contract obligations shall be borne by the contractor.

11. Conflicts – Any redesign or relocation of HECo's facilities not shown on the plans may be cause for lengthy delays. The contractor acknowledges that HECo is not responsible for any delay or damage that may arise as a result of any conflicts discovered or identified with respect to the location or construction of HECo's electrical facilities in the field, regardless of whether the contractor has met the requested minimum advance notices. In order to minimize any delay or impact arising from such conflicts, HECo should be notified immediately upon discovery or identification of such conflict.

12. Damage To HECo Facilities – The contractor shall be responsible for the protection of all HECo surface and subsurface utilities and shall be responsible for any damages to HECo's facilities as a result of his operations. The contractor shall immediately report such damages to HECo's trouble dispatcher at 548–7961. Repair work shall be done by HECo or by the contractor under HECo's supervision. Costs for damages to HECo's facilities shall be borne by the contractor.

    In case of damage or suspected damage to HECo's fuel pipeline, the contractor shall immediately notify HECo's Honolulu Power Plant Shift Supervisor at 533–2102 (a 24–hour number) so HECo personnel can secure the damaged section and report any oil spills to the proper authorities. All costs associated with the damage, repair, and oil spill cleanup shall be borne by the contractor.

13. HECo Stand–By Personnel – The contractor shall request HECo to provide an inspector to stand–by during construction near HECo's facilities. The cost of such inspection will be charged to the contractor.

    The contractor shall call the HECo Construction and Maintenance Dept., Customer & System Superintendent at 543–4223 a minimum of 5 working days in advance to arrange for HECo stand–by personnel.

14. Clearances – The following clearances shall be maintained between HECo's ductline and all adjacent structures (charted and uncharted) in the trench:

Structure type	Minimum clearance (inches)
Water lines, parallel	36
Water lines, crossing	12 (a)
Sewer lines, parallel	36 (b)
Sewer lines, crossing	24 (c)
Drain lines, parallel	12
Drain lines, crossing	6 (d)
Electrical and gas lines, parallel	12
Electrical and gas lines, crossing	12
Telephone lines, parallel	6 (d)
Telephone lines, crossing	6 (d)
Chevron oil lines, parallel	36
Chevron oil lines, crossing	48 below oil line (e)

a. The minimum vertical clearances to water lines crossing electrical ductlines can be reduced to 6 inches if the electrical ductline structure is smaller than 16 inches, is concrete encased, and is below the water line.

b. A minimum horizontal clearance of 36 inches is required between new handholes and existing sewer laterals.

c. The minimum vertical clearances to sewer pipes crossing electrical ductlines can be reduced to 12 inches if the sewer pipe is jacketed in concrete.

d. The minimum clearances shall be increased to 12 inches if the electrical ductline is direct buried.

e. The minimum vertical clearances to oil lines crossing electrical ductlines can be reduced to 24 inches below oil lines if the crossings are encased in 6 inches of concrete.

f. The contractor shall notify the Construction Manager & HECo of any heat sources (power cable duct bank, steamline, etc.) encountered that are not properly identified on the drawing.

15. Schedule – Contractor shall furnish his construction schedule 60 working days prior to starting work on HECo facilities. Contractor shall give HECo, in writing, 45 working days notice to proceed with HECo's portion of work.

16. Authority – All construction, restoration work, and inspection shall be subject to whichever governmental agency has authority over the work.

17. Specifications – Construction of HECo's underground facilities shall be constructed in accordance with the latest revisions of HECo specifications CS7001, CS7003, CS7202, CS9301, and CS9401 and applicable HECo standards.

18. Construction – Contractor shall furnish all labor, materials, equipment, and services to properly perform and fully complete all work shown on the contract, drawings, and specifications. All materials shall be new and manufactured in the United States of America. All manhole, handhole, and ductline installations shall be inspected and approved by HECo prior to excavation and prior to placing concrete. Contractor shall notify HECo's inspection division at 543–4356 at least 48 hours prior to placing concrete.

19. Stakeout – The contractor shall stakeout all proposed HECo facilities within the project area so as to not conflict with any utility (existing or proposed) and any proposed construction or improvement work for verification by HECo before proceeding with HECo work.

20. Ductlines – All ductline installations shall be PVC Schedule 40 encased in concrete, unless otherwise noted. All completed ductlines shall be mandrel tested by the contractor in the presence of HECo's inspector using HECo's standard practice. The contractor shall install a 1/8" polyolefin pull line in all completed ductlines after mandrel testing is complete.

21. Joint Pole Removal – The last joint pole occupant off the poles shall remove the poles.

22. As–Built Plans – The contractor shall provide HECo with two sets of as–built reproducible tracings showing the offsets, stationing, and vertical elevation of the duct line(s) constructed.

DRAWING REVIEW

Reviewed for HECO's Facilities Only
Date 7/25/03 By TP
APPROVED (5)
Engineering Department
Hawaiian Electric Company, Inc.

HECO's review of these drawings shall in no way relieve the Customer, its Consultant, its Contractor or anyone acting on the Customer's behalf from the responsibility for engineering, design, materials and any other liability associated with this project.

Hawaiian Electric Company, Inc. Date

DATE	REV.	DESCRIPTION
10/16/03	(5)	Obtained Agency Signatures

LEANNOX K. NISHIMURA
LICENSED PROFESSIONAL ENGINEER
No. 3880–E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

PROJECT ENGINEER for ECS, Inc.

APRIL 30, 2004
EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

HAWAIIAN ELECTRIC COMPANY NOTES

INTERSTATE ROUTE H–3
H–3 FINISH (UNIT VIII)
F.A.I. Proj. No. I–H3–1(75) Unit VIII

Scale: None Date: Mar. 31, 2003

SHEET No. AE1.2 OF 67 SHEETS

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

6/19/03–12:07 Y:\D60\e60–80\60–80–AE1.02.dwg

ADD.707

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(75) UNIT VIII	2003	ADD.708	816

VERIZON HAWAII CONSTRUCTION NOTES

GENERAL NOTES:

1. Installation of a Verizon Hawaii ductline system shall conform with the requirements of the Verizon Hawaii "Standard Specification For Placing Underground Systems" dated March 1999, all subsequent amendments and additions, and all other pertinent standards for telephone construction. Contractor shall familiarize his personnel by obtaining applicable specifications.

2. For underground cable locating and marking, five working days advanced notice is required. Three working days advanced notice is required for any inspection by a designated representative. The contractor shall take necessary precaution not to damage any existing cables or ducts. A Verizon Hawaii inspector or designated representative is required to be at any job site whenever there will be a breakage into or entry into any structure that contain Verizon Hawaii facilities.

3. The contractor shall closely coordinate all work with Verizon Hawaii. All trenches must be inspected by Verizon Hawaii prior to backfilling and concrete encasing operations. The contractor shall notify Verizon Hawaii inspector or designated representative at least 72 hours prior to the excavation, bracing, pouring of concrete or backfilling.

4. The contractor shall obtain an excavation permit and toning request from Verizon Hawaii's Excavation Permit Section, located at 3239 Ualena Street, Third Floor, two weeks prior to the start of construction. Hours of business are 7:00 A.M. To 10:30 A.M. And 11:30 A.M. To 3:00 P.M., Monday through Friday, except holidays.

5. The location of Verizon Hawaii's existing facilities are approximate only. The contractor shall exercise extreme caution and shall maintain proper clearances whenever construction crosses or is in close proximity to Verizon Hawaii's facilities. The contractor shall verify their locations and shall be liable for any damages to Verizon Hawaii's facilities. Any damages shall be reported immediately to Verizon Hawaii's repair section at #611 (24 hours) or to the excavation permit section at 840-1444 during normal work days hours, Monday through Friday, except holidays.

6. When excavation is adjacent to or beneath Verizon Hawaii's existing structures or facilities, the contractor shall:

   a. Sheet and/or brace the excavation to prevent slides, cave-ins or settlements to ensure no movement to Verizon Hawaii's structures or facilities.

   b. Protect existing structures and/or facilities with beams, struts or underpinning while excavating beneath them to ensure no movement to Verizon Hawaii's structures or facilities.

7. The contractor shall provide a 5/8" x 8' galvanized ground rod below the telephone cabinet or backboard and a #6 TW insulated green ground wire with a three foot coil. Telephone cabinets shall be grounded.

8. Concrete strength shall be 3,000 PSI in 28 days.

9. For pole bracing instructions should field conditions and/or construction procedures require that poles be braced to facilitate construction, the contractor is to contact the Verizon Hawaii inspector at 840-2979 at least 72 hours in advance.

10. Should it become necessary to relocate any Verizon Hawaii facilities, the work shall be done by Verizon Hawaii. The contractor shall be responsible for all coordination and costs associated with the relocation.

11. All construction must be inspected and approved by Verizon Hawaii prior to the installation of any of its facilities and the energizing of its systems. Verizon Hawaii will commence installation only after the construction has been approved and no sooner than thirty working days thereafter. A project of large magnitude will require more time.

12. The contractor shall furnish his construction schedule forty-five (45) working days prior to starting any Verizon Hawaii work. Contractor shall provide Verizon Hawaii with sufficient installation time to complete their work.

13. Contractor shall furnish all labor and materials.

CONDUIT NOTES:

1. Unless otherwise indicated, all conduits, sweeps, couplings, adapters, and bell ends provided for usage by Verizon Hawaii shall be GT42 2" or 4" PVC conduit meeting GTE specification GTS-8342. Refer to Verizon standard drawing 34028 for installation. Schedule 40 conduit is acceptable as a substitute for GT42 conduit except that pole riser bends shall be schedule 40 sun-resistant conduit.

2. Conduits from utility boxes to the individual lots shall be considered incidental to their respective main duct lines. Said conduits shall be GT42 4" PVC unless otherwise shown (see item 1 above).

3. When utility ducts are concrete encased at intersection of water pipe and utility ducts, a 6" minimum separation between water pipe and top of the concrete encased utility ducts shall be maintained. Stones, rocks, etc. shall not be used with backfill material. Only nonexpansive select materials shall be used as backfill material.

4. Bends in the duct alignment, due to changes in grade, shall have a minimum radius of 20 feet. All 90-degrees C-bends at a pole or at the building floor penetration shall have a bend radius of ten times the diameter of the duct or greater.

5. The contractor shall place 8-mil, 4" wide warning tape, orange in color with a black imprinted message "Warning - Stop Digging - Call Verizon Hawaii, Communications Cable Buried Below, Failure To Comply Could Result In Legal Action", 12" below the surface over the duct or concrete jacket for the entire length of all duct installations. See Verizon Standard Drawing 34028. Recommended tape is manufactured by Thor Enterprises, Inc., Sun Prairie, WI 53590 (Phone: 1-800-827-8467) Part Numbers DTOGTE-41 (1000'), and DTOGTE-46 (6000'). Equivalenttapes are acceptable.

6. After the ducts are installed, but prior to concrete encasement, a mandrel with a square front not less than 12" long and having a diameter of 1/4" less than the inside diameter of the duct, shall be pulled through each duct after which a brush with stiff bristles shall be pulled through to make certain that no particles of earth, sand, or gravel have been left in the line. Ducts shall be completely dry and clean. All ducts shall be capped to prevent entry of foreign material during construction and at the completion of installation. Recommended mandrels and brushes are made by General Machine Products Co. (GMP), Trevose, PA (phone: 215-357-5500). Recommended GMP part number 8182-4r (test mandrel for 4" conduit), and part number 17094 (brush for 4" conduit) 2" ducts will require cleaning using rags.

7. All ducts and conduits shall have an #1800 polyester mule-tape (Neptco WP1800P, Verizon Hawaii Code No. 571154) installed through one entire length with two feet of slack in manholes and handholes, and one foot of slack in pullboxes. The mule-tape shall be rated for 1800 lbs. of pull and have footage markers for measuring duct lengths. The Neptco mule-tape is available in 3,000', 6,500' and 10,000' reels. The Neptco mule-tape is prelubricated and printed with sequential footage markings. Using the Neptco mule-tape, the contractor shall measure at least one duct of a common duct run. The distance shall be marked on the record prints and submitted to Verizon Hawaii inspector for record keeping.

8. Metallic entrance conduits shall be grounded.

9. All conduits within a building shall:

   A. Be installed in the shortest and straightest possible run.

   B. Have no section longer than 100 feet nor contain more than two 90-degree bends. An approved sized junction box or gutter box shall be placed if this is exceeded.

   C. All bends shall be long sweep-radius bends but the inside radius of the bend must never be less than ten times the diameter of the conduit.

HANDHOLES/MANHOLES NOTES:

1. All ducts associated with manholes or handholes shall be installed to provide adequate drainage toward slope, unless otherwise noted). The "through" ducts entering the manholes or handholes (minimum 0.25% manholes and handholes shall be splayed with a 20' transition and enter the manhole/handhole 6" to 8" from the inside edge of the wall (see manhole wall elevation details and duct transition detail).

2. 5' x 10' manholes (Verizon Standard Drawing 34108), 6' x 12' manholes (Verizon Standard Drawing 180020) may be cast-in-place or precast. If using precast manholes and handholes, the construction joint between precast sections must be thoroughly cleaned of all dirt or other debris, and shall be bonded with a mastic or sealing compound when installed to prevent water entry. The mastic tape or sealing compound must completely fill the construction joint, and cover the entire joint area. The precast sections must be placed as soon as the sealant installation is completed. Two coats of Thero-Seal or approved equal shall be applied twelve inches on both sides of exterior joint areas.

3. Before placing precast sections, the contractor shall provide at least three to six inches of sand or base material on the bottom of the excavation. In fluid soils, or soils vulnerable to becoming fluid, #9 or 10 stone (1/2" to 3/4") may be added for stability. The base material shall be compacted and graded to level.

4. The manhole cover and frame has a clear opening of 30" and is available as a 5-5/8" high frame (Part No. R-1750-C1) or as a 10" high frame (Part No. R-1750-C) from Neenah Foundry Company in Neenah, WI (Phone: 1-800-558-5075). The 10" high frame shall be selected for normal applications. The 5-5/8" high frame shall be used for applications where the depth of pavement down to the concrete manhole slab is shallow and limited. The manhole roof slab opening is 36" in diameter. The cover shall have the Verizon standard logo and be equipped with two 1" diameter lift holes 180 degrees apart. The bolts that come with the cover to lock down the cover are to be turned over to the Verizon Hawaii inspector. Do not lock covers down with these bolts. Refer to Verizon Standard Drawing 34086. A 4" minimum brick collar for new manholes will be provided in conformance with DPW Memorandum 1-92. This collar allows the manhole frame to be lowered without major reconstruction.

PULLBOX NOTES:

1. All types 435TB (2' x 4') and 435TB6 (2' x 6') pullboxes shall be constructed with a 12" base and a minimum of three 8" precast sections. (refer to Verizon standard drawings 34056 and 34078). Modified 3' x 5' pullboxes shall be installed (refer to Verizon Hawaii for 3' x 5' modified pullbox details). Install one 5/8" x 8' ground rod in all other Verizon Hawaii pullboxes and handholes, except in 436T meter type boxes (12" x 20").

2. At no time shall cement mortar, wood or any other material shall be used between precast sections. Leveling or raising of pullboxes shall be done at the brickwork section using cement mortar. The permanent installation of wooden wedges to level or raise the precast sections shall not be permitted.

3. Concrete precasted base shall be used in new construction. Bricks may be used as an alternative only when intercepting existing ducts. The minimum layers of bricks to be used shall always be at least one layer lower than the lowest duct entering the pullbox. At no time, however, shall there be less than two layers of bricks on each installation.

4. Unless indicated otherwise, conduits shall enter boxes at 90-degree angle and be flush to the wall with flared or bell ends to prevent cable damage.

5. The base or bricks shall be placed on a minimum of 3" of #3 crushed rock backfill.

6. The top of all utility boxes shall be 1" above finish grade in non-paved shoulders unless otherwise noted. Finish grade material shall be placed from the top of the utility box and feathered two feet around to finished grade.

APPROVED (5)

7/16/03
Verizon Hawaii — Date

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

6/19/03-15:39 Y:\060\v60-80\60-80-AE1.03.dwg

10/16/03	(5)	Obtained Agency Signatures
DATE	REV.	DESCRIPTION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

VERIZON HAWAII NOTES

INTERSTATE ROUTE H-3
H-3 FINISH (UNIT VIII)
F.A.I. Proj. No. I-H3-1(75) Unit VIII

Scale: None — Date: Mar. 31, 2003

LENNOX K. NISHIMURA
LICENSED PROFESSIONAL ENGINEER
No. 3880-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

PROJECT ENGINEER for ECS, Inc.

APRIL 30, 2004
EXPIRATION DATE OF THE LICENSE

SHEET No. AE1.3 OF 67 SHEETS

ADD.708

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(75) UNIT VIII	2003	ADD.709	816

OCEANIC CABLE (CATV) NOTES:

1. The contractor shall take necessary precaution not to damage existing cables or ducts. Any work involving existing cables or ducts shall be done in the presence of the Oceanic Cable Company inspector or his representative.
2. The contractor shall notify the Oceanic Cable Company inspector 48 hours prior to the pouring of concrete or backfilling.
3. The location of CATV facilities shown on plans are from existing records with varying degrees of accuracy as to its actual fixed location. The contractor shall use extreme caution when working in close proximity of CATV facilities.
4. The contractor shall obtain excavation permit clearance from Oceanic's engineering section located at 200 Akamainui Street, Mililani Tech Park.
5. For any field assistance or verification of CATV facilities, the contractor shall call the Technical Operations Center at 625-8378.
6. Any work required to relocate CATV facilities shall be done by Oceanic Cable and the contractor shall be responsible for all coordination requirements and associated costs.
7. Any damage to Oceanic's facilities shall be reported to OCI's repair dispatch department at 625-8437 or 625-8666.
8. The contractor shall tunnel under existing concrete curb and gutter as necessary to extend conduit into existing CATV pullbox and into the proposed power supply pullbox.
9. At locations where existing CATV pullbox replacement is proposed, the contractor shall take all necessary precaution not to damage the existing cables in the pullbox. All damages to existing cables shall be repaired by Oceanic Cable and paid for by the contractor.
10. For underground cable locating and marking, five working days advance notice is required. Three working days advanced is required for any inspection by a designated representative. Contractor shall take necessary precautions not to damage existing cables or ducts. Oceanic's inspector or designated representative is required to be at any job site whenever there will be a breakage into or entry into any structure that contain oceanic's facilities.
11. All construction must be inspected and approved by Oceanic prior to the installation of any of its facilities and the energizing of its system.

MECHANICAL/ELECTRICAL DESIGN AND ENGINEERING DIVISION NOTES:

1. The contractor shall notify the joint pole committee ten (10) weeks in advance of any relocation of utility pole(s) that may be necessary.
2. The contractor shall notify the Mechanical/Electrical Design and Engineering Division, Department of Design and Construction, ten (10) working days prior to commencing work on the street lighting system or fiber optic communications system. (phone: 527-5002).
3. The street lighting system shall be kept operational during construction. Any relocation required shall be approved by the Mechanical/Electrical Design and Engineering Division. Department of Design and Construction, and paid for by the contractor.
4. 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.
5. 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.

TRAFFIC SIGNAL AND TECHNOLOGY DIVISION NOTES:

1. The contractor shall notify the Traffic Signal and Technology Division, Department of Transportation Services ten (10) working days prior to commencing work on the traffic signal system (phone: 523-4589).
2. The traffic signal system shall be kept operational during construction. Any relocation required shall be approved by the Traffic Signal and Technology Division, Department of Transportation Services, and paid for by the contractor.
3. 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.
4. 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.

APPROVED (5)

Darrick Iwigado 9/2/03
Oceanic Cablevision Date

7/29/03
Chief, Mechanical/Electrical Date
Design and Engineering Division, DDC
City and County of Honolulu
(For City Street Light Work Only)

7/16/03
for Chief, Traffic Signal and Date
Technology Division, DTS
City and County of Honolulu
(For Traffic Signal Work Only)

8/26/03
Chief, Traffic Review Branch, DPP Date
City and County of Honolulu

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

6/19/03-15:40 H:\060\e60-80\60-80-AE1.04.dwg

LENNOX K. NISHIMURA LICENSED PROFESSIONAL ENGINEER No. 3880-E HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

Lennox K. Nishimura
PROJECT ENGINEER for ECS, Inc.

APRIL 30, 2004
EXPIRATION DATE OF THE LICENSE

DATE	REV.	DESCRIPTION
10/16/03	(5)	Obtained Agency Signatures

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

MISCELLANEOUS CONSTRUCTION NOTES

INTERSTATE ROUTE H-3
H-3 FINISH (UNIT VIII)
F.A.I. Proj. No. I-H3-1(75) Unit VIII

Scale: None Date: Mar. 31, 2003

SHEET No. AE1.4 OF 67 SHEETS

ADD.709

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(75) UNIT VIII	2003	710	816

HIGHWAY LIGHTING NOTES:

1. The contractor shall notify the State Highways, Highway Lighting and Traffic Supervisor 72 hours in advance before commencing installation of highway lighting system. Phone: 837-8056.

2. All luminaires shall be high pressure sodium type with wattage and I.E.S. Type light distribution as shown on the approved plans.

3. The contractor shall have one set of approved plans at job site at all times during the construction work and record all changes which occur during construction of the highway lighting system.

4. Contractor to stencil date of installation at the bottom of each photocell.

5. Final acceptance and inspection will be undertaken only after all work has been completed.

6. The contractor shall measure and record ground resistance at each standard with foundations in grade, and submit recorded ground resistance to Traffic Section, and Oahu District Maintenance Section, Department of Transportation, State Highways. The contractor shall certify all electrical tests, including but not limited to: continuity test and the ground rod resistant test prior to submission to the Engineer.

7. Trim tree branches to clear removal or installation of highway light standards, at no additional cost the State.

8. Where existing highway lighting luminaires on metal standards are indicated to be removed, the luminaire and pole shall be removed and disposed of by the contractor. Existing foundations in grade shall be demolished to 24" below grade and the surfaces affected shall be restored to match the surroundings. Unless indicated otherwise, existing foundations on structures shall be abandoned in place, existing anchor bolts and conduit shall be cut flush with the top of what remains of the existing foundation, after demolition and the concrete structure shall be finished to match the existing surrounding surfaces.

9. All temporary and permanent new pole locations shall be staked, and approval of locations shall be obtained from the engineer before installation. Pole locations in the field will be required to clear underground and aerial utility lines. New pole locations shall not conflict with any existing or proposed utility and shall not obstruct any roadway sign. The contractor shall be responsible for costs incurred by conflicting utilities.

10. The contractor shall at his expense, keep the project and surrounding area free from dust nuisance and shall be responsible for cleaning and removal of all silt and debris generated by the excavation work and deposited and accumulated within downstream waterways, ditches, drain pipes and on public roadways. Any citations (fines) received by the State for the contractor's noncompliance of any Department of Health regulations shall be deducted from the progress payment.

11. The contractor shall locate existing buried utility lines in the vicinity of the excavation work prior to commencing excavation. As a minimum, an electronic magnetic device for detection of buried lines shall be utilized prior to excavation. Trenches shall be excavated with care. The contractor shall be responsible for damages to existing utilities resulting from his negligence and shall bear cost of repairs to the utilities. Method of repair shall be determined by the State.

12. The contractor shall reconnect electrical power to all existing sign lighting systems and underpass lighting fixtures. The contractor shall provide additional wiring and conduit as required for an operational system, at no additional cost to the State.

13. After the exact location of the lighting pole base is determined, place 2" x 2" x 18" hubs or other approved marker at these locations to inform the contracting officer of final location. Obtain approval prior to construction of light bases. Actual field conditions may differ from that shown on these drawings. Use extreme caution when excavating for new ductlines.

14. The electrical contractor shall have personnel on the project that comply with the following qualifications:

    a. One (1) registered master electrician in the company.

    b. Certified journeyman electrician at each construction location to perform splicing of cables and all required wiring work.

15. Provide conduit expansion fittings to accommodate expansions and deflections where conduits cross seismic control and expansion joints. Expansion fittings shall be of weathertight construction with insulated bushing on end of moveable conduit. Factory-formed copper braid ring allowing conduit expansion and contraction. Feraloy end fitting, steel conduit body, zinc electroplate and aluminum cellulose lacquer finish, 8" maximum conduit movement. Refer to structural plans for exact locations of expansion joints.

16. All ductlines to be installed in concrete shall be inspected and approved by the State inspector and the State electrical maintenance supervisor before placing concrete. Notify the inspector and supervisor 48 hours before placing concrete.

17. Submit lighting calculations for acceptance by the Engineer. Lighting criteria shall be as follows, unless otherwise noted:

    Design illumination level = 0.8 footcandle average maintained.
    Design uniformity ratio (average:minimum) = 4:1 maximum.
    Design maintenance factor = 0.65

18. Light standard assemblies shall be designed in accordance with AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals, 4th Edition, with subsequent interim revisions. Design parameters shall be in accordance with the following requirements.

    a. Basic Wind Speed: 105 mph.

    b. Recurrence Interval: 100 years.

    c. Height and Exposure Factor: For luminaire support structures on bridges, the height and exposure factor shall be determined based on the maximum height above the surrounding ground.

    d. Fatigue Importance Factors: Luminaire support structures shall be based on the following:

        1) Fatigue Category I - For all structures where failure would result in the structure falling into the travel way.

        2) Fatigue Category II - For all others.

    e. Galloping: Luminaire support structures shall be designed for galloping-induced cyclic loads.

    f. Vortex Shedding: Nontapered lighting structures shall be designed to resist vortex shedding loads including lighting structures that have tapers less than 0.14 in./ft.

    g. Natural Wind Gust: Lighting support structures shall be designed to resist an equivalent static natural wind gust pressure.

    h. Truck-Induced Gust: Lighting support structures shall be designed to resist an equivalent static truck gust pressure range based on a truck speed of 65 mph.

18. Temporary Lighting

The contractor shall schedule the construction work in such a manner that highway lighting is provided during all hours of darkness either with new, temporary or existing luminaires or a combination thereof. Temporary wiring and connections may need to be utilized. Temporary wiring may be installed in exposed conduit, where not subject to vehicular damage, or with overhead wiring. Overhead wiring shall be a minimum of 20 feet above roadways at its lowest measured point, unless approved by the Engineer.

Contractor shall maintain existing circuiting, provide temporary connections to existing highway lights or provide temporary luminaires through construction of the new highway lighting system. Maintain existing illumination levels utilizing a temporary lighting system, eg. utilizing existing or temporary wiring and connections temporary light standards, etc., until new highway lights can be energized and are approved by the Engineer. New highway lights shall be energized by either permanent or temporary wiring and connections prior to demolition of the existing highway lighting system or removal of the temporary lighting system.

Temporary lighting system shall meet the same design, safety, traffic, etc. requirements as the permanent lighting system.

Submit all proposed temporary lighting schemes to the Engineer for review and acceptance. The temporary lighting standard assembly and associated structural support design shall be stamped by a registered Structural Engineer and submitted to the Engineer for acceptance.

The temporary lighting system shall be incidental to the removal of the existing light standards. This includes any design work needed to implement the temporary lighting system.

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

4/3/03-13:07 Y:\060\e60-80\60-80-AE1.05.dwg

LENNOX K. NISHIMURA
LICENSED PROFESSIONAL ENGINEER
No. 3880-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

Lennox K. Nishimura
PROJECT ENGINEER for ECS, Inc.

APRIL 30, 2004
EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

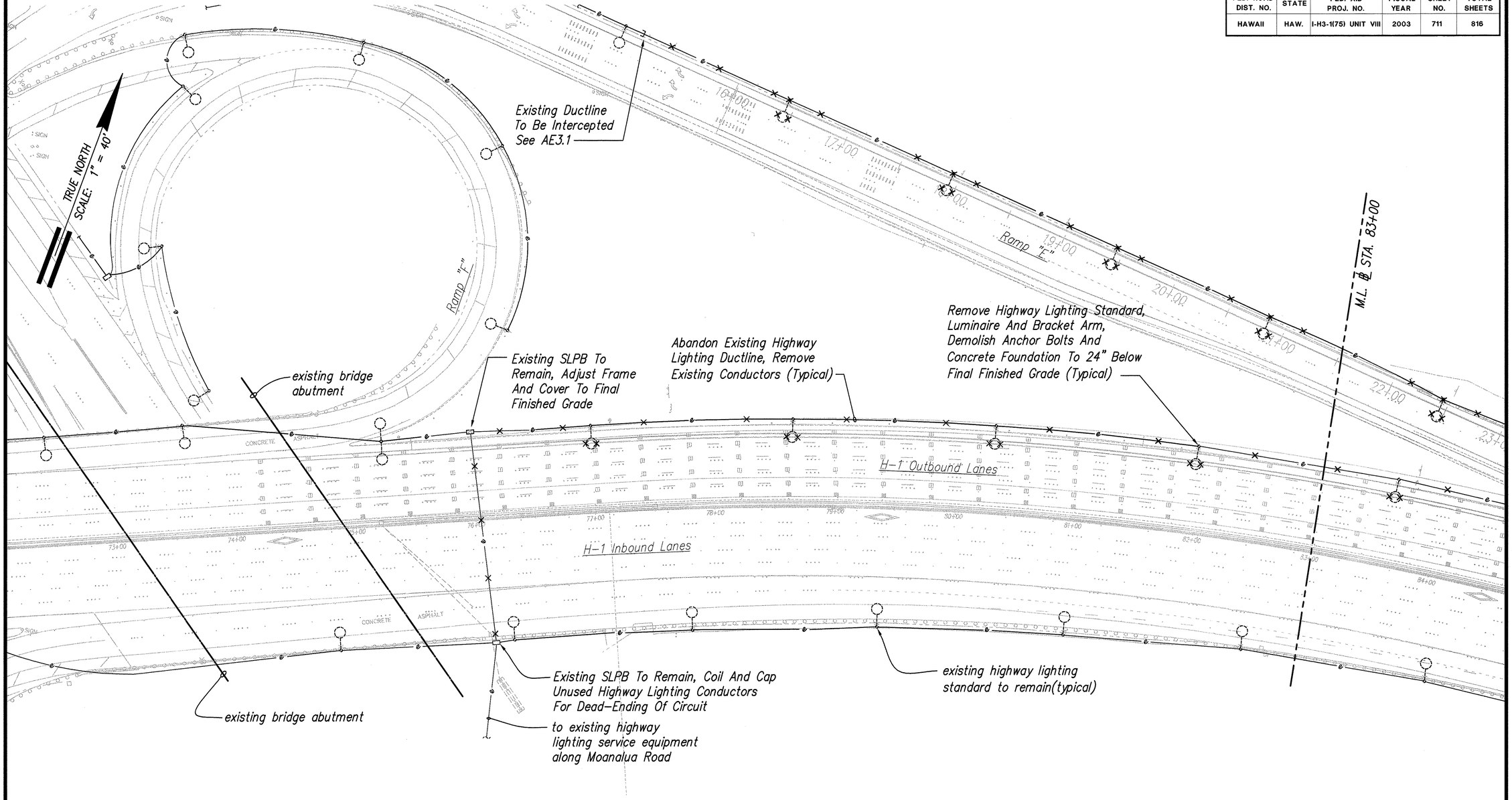
HIGHWAY LIGHTING NOTES

INTERSTATE ROUTE H-3
H-3 FINISH (UNIT VIII)
F.A.I. Proj. No. I-H3-1(75) Unit VIII

Scale: None Date: Mar. 31, 2003

SHEET No. AE1.5 OF 67 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(75) UNIT VIII	2003	711	816



ELECTRICAL ROADWAY DEMOLITION PLAN – 1
(℄ STA. 73+00 TO ℄ STA. 83+00)

Scale: 1" = 40'

GRAPHIC SCALE

1" = 40' 40' 20' 0 40' 80'

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

4/3/03-13:07 X:\060\e60-80\60-80-AE2.01.dwg

LEANNOX K. NISHIMURA
LICENSED PROFESSIONAL ENGINEER
No. 3880-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

PROJECT ENGINEER for ECS, Inc.

APRIL 30, 2004
EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

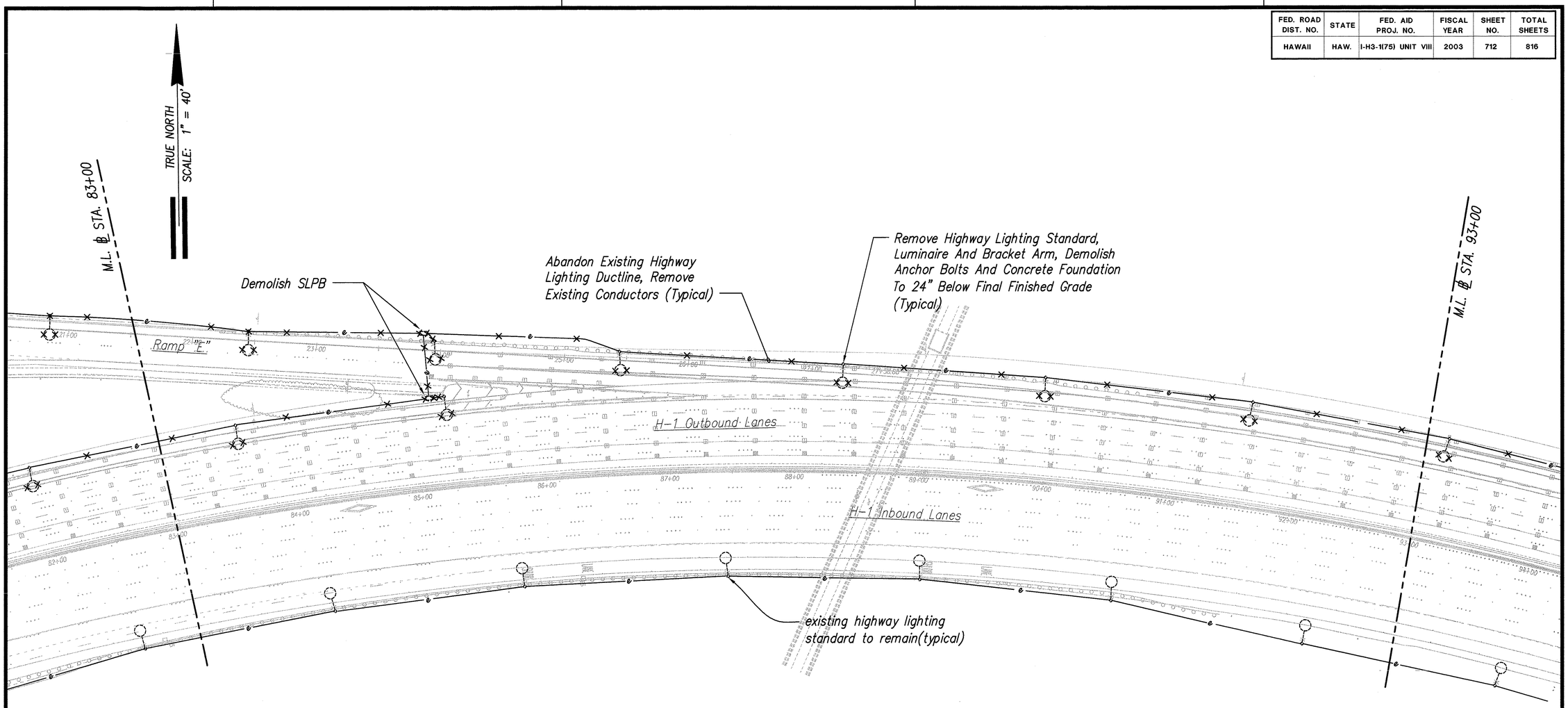
ELECTRICAL ROADWAY
DEMOLITION PLAN – 1

INTERSTATE ROUTE H-3
H-3 FINISH (UNIT VIII)
F.A.I. Proj. No. I-H3-1(75) Unit VIII

Scale: 1" = 40'-0" Date: Mar. 31, 2003

SHEET No. AE2.1 OF 67 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(75) UNIT VIII	2003	712	816



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

4/3/03-13:08 Y:\060\e60-80\60-80-AE2.02.dwg

ELECTRICAL ROADWAY DEMOLITION PLAN – 2
(℄ STA. 83+00 TO ℄ STA. 93+00)

Scale: 1" = 40'

GRAPHIC SCALE
1" = 40' 40' 20' 0 40' 80'

LENNOX K. NISHIMURA
LICENSED PROFESSIONAL ENGINEER
No. 3880-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

Lennox K. Nishimura
PROJECT ENGINEER for ECS, Inc.

APRIL 30, 2004
EXPIRATION DATE OF THE LICENSE

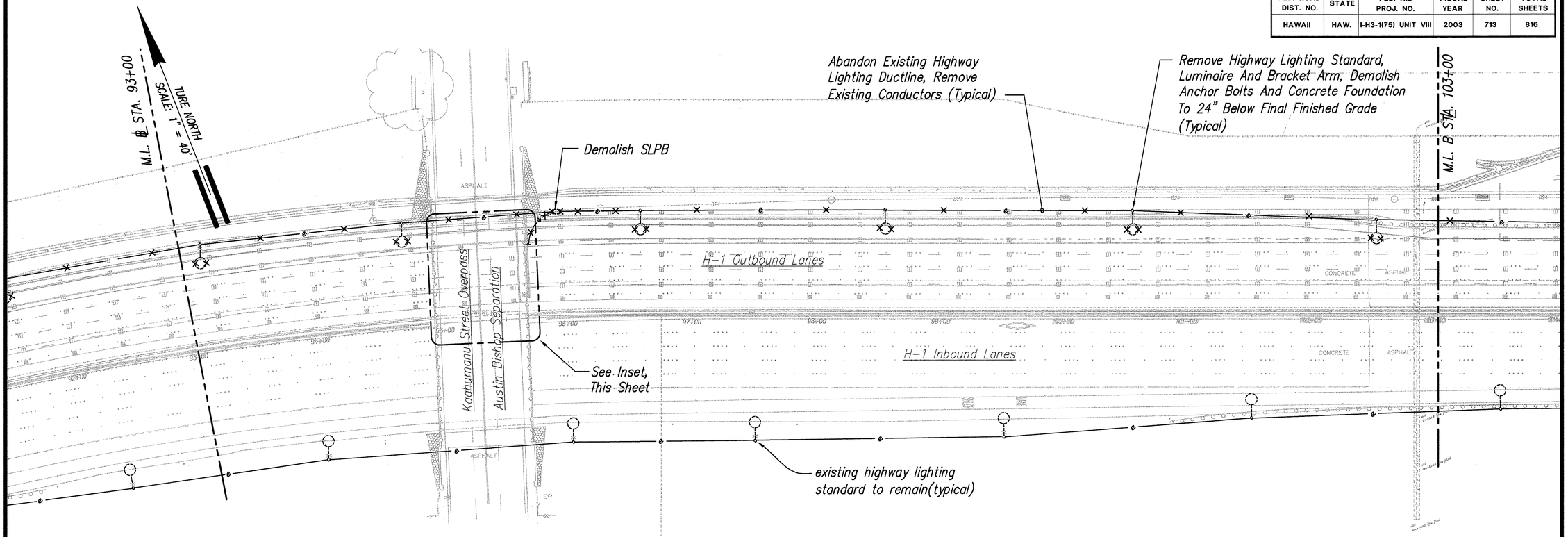
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ELECTRICAL ROADWAY
DEMOLITION PLAN – 2

INTERSTATE ROUTE H-3
H-3 FINISH (UNIT VIII)
F.A.I. Proj. No. I-H3-1(75) Unit VIII
Scale: 1" = 40'-0" Date: Mar. 31, 2003

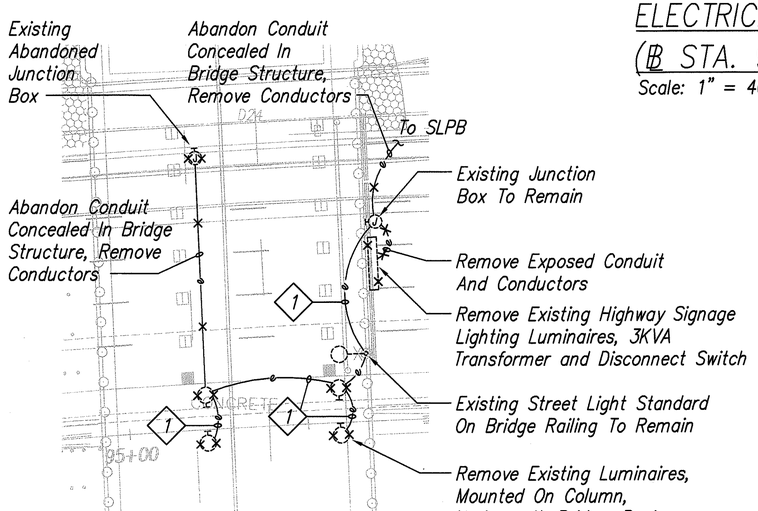
SHEET No. AE2.2 OF 67 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(75) UNIT VIII	2003	713	816



ELECTRICAL ROADWAY DEMOLITION PLAN – 3
(℄ STA. 93+00 TO ℄ STA. 103+00)

Scale: 1" = 40'



INSET

Scale: 1" = 20'

NOTE:

1 Existing Conduit And Conductors To Remain.

GRAPHIC SCALE

1" = 20' 20' 10' 0 20' 40'

1" = 40' 40' 20' 0 40' 80'

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

4/3/03-13:09 Y:\060\e60-80\60-80-AE2.03.dwg

LEINNOX K. NISHIMURA
LICENSED PROFESSIONAL ENGINEER
No. 3880-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

PROJECT ENGINEER for ECS, Inc.

APRIL 30, 2004
EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ELECTRICAL ROADWAY DEMOLITION PLAN – 3

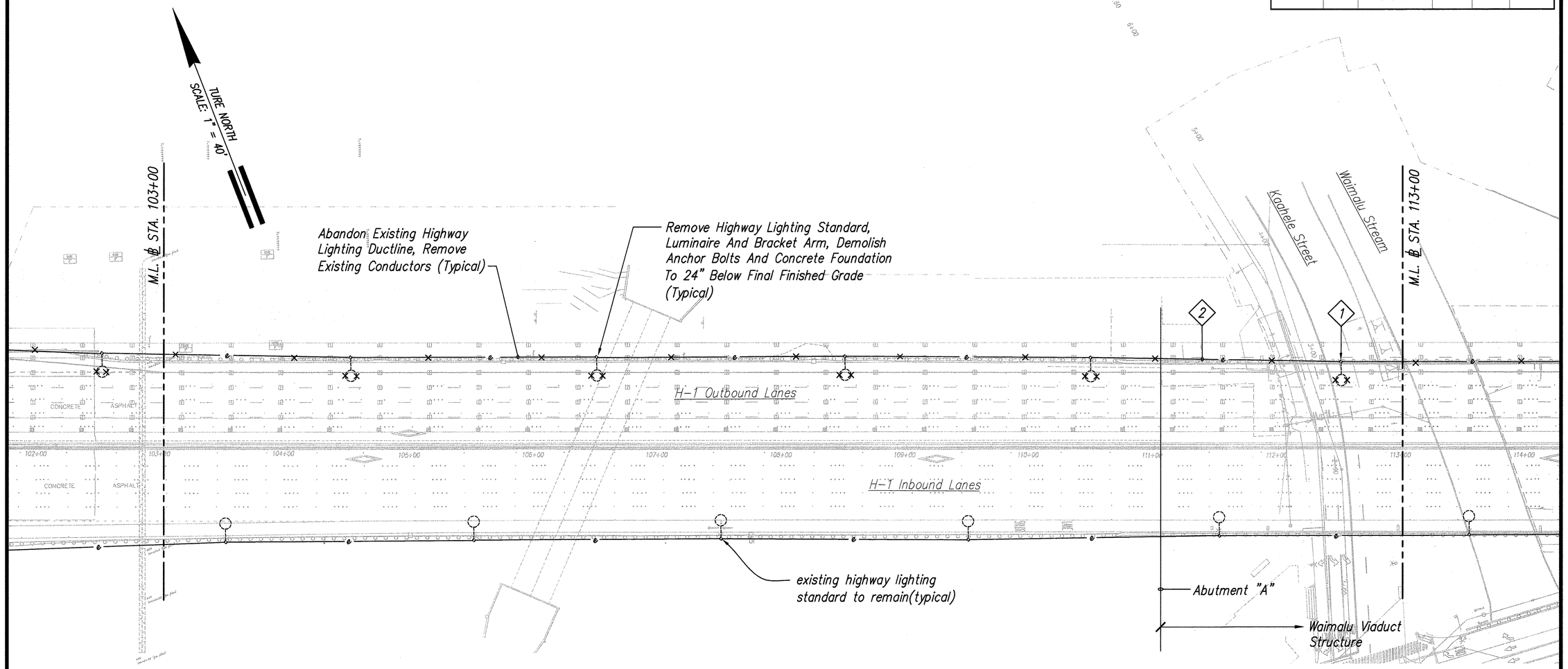
INTERSTATE ROUTE H-3
H-3 FINISH (UNIT VIII)
F.A.I. Proj. No. I-H3-1(75) Unit VIII

Scale: 1" = 40'-0" Date: Mar. 31, 2003

SHEET No. AE2.3 OF 67 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(75) UNIT VIII	2003	714	816

TURE NORTH
SCALE: 1" = 40'



NOTES:

1. Remove Highway Lighting Standard Mounted On Viaduct Railing.
2. Remove Highway Lighting Conduit And Conductors Concealed In Concrete Railing

ELECTRICAL ROADWAY DEMOLITION PLAN – 4
(℄ STA. 103+00 TO ℄ STA. 113+00)

Scale: 1" = 40'

GRAPHIC SCALE
1" = 40' 40' 20' 0 40' 80'

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

4/3/03-13:09 Y:\060\e60-80\60-80-AE2.04.dwg

LEINNOX K. NISHIMURA
LICENSED PROFESSIONAL ENGINEER
No. 3880-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

PROJECT ENGINEER for ECS, Inc.

APRIL 30, 2004
EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

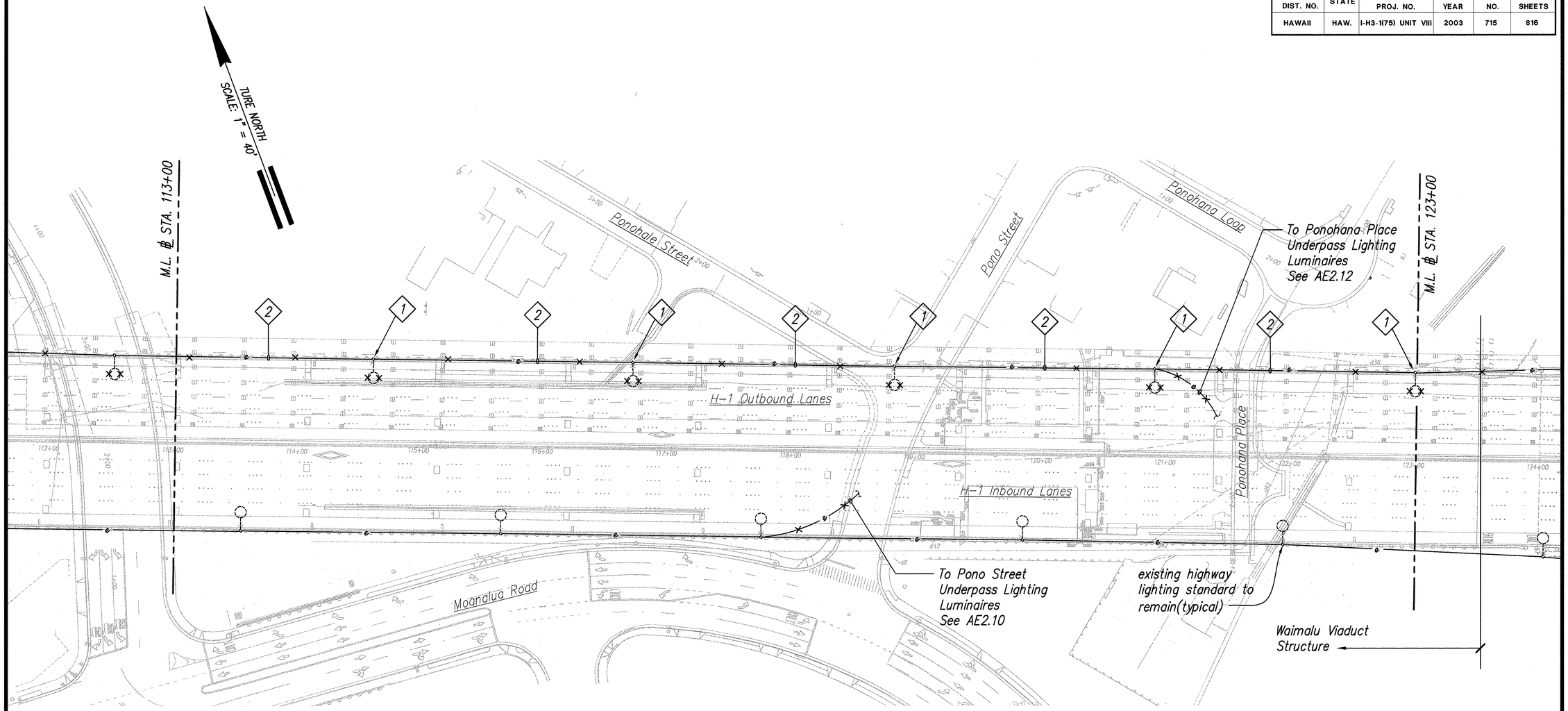
ELECTRICAL ROADWAY
DEMOLITION PLAN – 4

INTERSTATE ROUTE H-3
H-3 FINISH (UNIT VIII)
F.A.I. Proj. No. I-H3-1(75) Unit VIII

Scale: 1" = 40'-0" Date: Mar. 31, 2003

SHEET No. AE2.4 OF 67 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(75) UNIT VIII	2003	715	816



NOTES:

1. Remove Highway Lighting Standard Mounted On Viaduct Railing.
2. Remove Highway Lighting Conduit And Conductors Concealed In Concrete Railing

ELECTRICAL ROADWAY DEMOLITION PLAN – 5
(℄ STA. 113+00 TO ℄ STA. 123+00)

Scale: 1" = 40'

GRAPHIC SCALE

1" = 40' 40' 20' 0 40' 80'

LENNOX K. NISHIMURA
LICENSED PROFESSIONAL ENGINEER
No. 3880-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

PROJECT ENGINEER for ECS, Inc.

APRIL 30, 2004
EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ELECTRICAL ROADWAY DEMOLITION PLAN – 5

INTERSTATE ROUTE H-3
H-3 FINISH (UNIT VIII)
F.A.I. Proj. No. I-H3-1(75) Unit VIII

Scale: 1" = 40'-0" Date: Mar. 31, 2003

SHEET No. AE2.5 OF 67 SHEETS

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

4/3/03-13:10 Y:\060\e60-80\60-80-AE2.05.dwg

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(75) UNIT VIII	2003	716	816

TURE NORTH
SCALE: 1" = 40'

M.L. ℄ STA. 123+00

M.L. ℄ STA. 133+00

Demolish SLPB

Remove Existing Highway Lighting Conduit And Conductors Concealed In Concrete Railing (Typical)

Remove Highway Lighting Standard, Luminaire And Bracket Arm, Demolish Foundation Built Into Concrete Railing (Typical)

H-1 Outbound Lanes

H-1 Inbound Lanes

122+00 123+00 124+00 125+00 126+00 127+00 128+00 129+00 130+00 131+00 132+00 133+00 134+00

Abutment "B"

Waimalu Viaduct Structure

existing highway lighting standard to remain(typical)

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

4/3/03-13:10 I:\060\e60-80\60-80-AE2.06.dwg

ELECTRICAL ROADWAY DEMOLITION PLAN – 6
(℄ STA. 123+00 TO ℄ STA. 133+00)

Scale: 1" = 40'

GRAPHIC SCALE

1" = 40' 40' 20' 0 40' 80'

LENNOX K. NISHIMURA
LICENSED PROFESSIONAL ENGINEER
No. 3880-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

Lennox K. Nishimura
PROJECT ENGINEER for ECS, Inc.

APRIL 30, 2004
EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

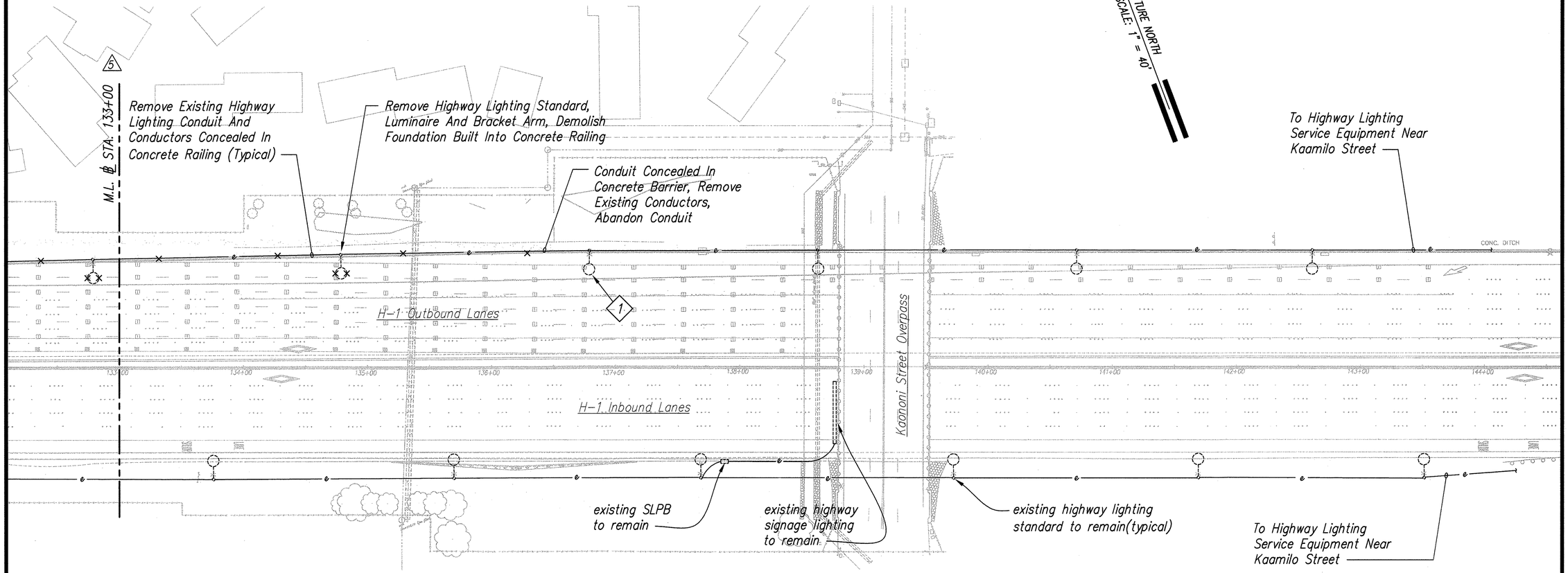
ELECTRICAL ROADWAY
DEMOLITION PLAN – 6

INTERSTATE ROUTE H-3
H-3 FINISH (UNIT VIII)
F.A.I. Proj. No. I-H3-1(75) Unit VIII

Scale: 1" = 40'-0" Date: Mar. 31, 2003

SHEET No. AE2.6 OF 67 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(75) UNIT VIII	2003	ADD. 717	816



NOTE:

1 Cap And Coil Existing Highway Lighting Conductors In Transformer Base For Dead-Ending Of Highway Lighting Conductors.

ELECTRICAL ROADWAY DEMOLITION PLAN – 7

(℄ STA. 133+00 TO ℄ STA. 144+00)

Scale: 1" = 40'

GRAPHIC SCALE

1" = 40' 40' 20' 0 40' 80'

LENNOX K. NISHIMURA
LICENSED PROFESSIONAL ENGINEER
No. 3880-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

PROJECT ENGINEER for ECS, Inc.

APRIL 30, 2004
EXPIRATION DATE OF THE LICENSE

DATE	REV.	DESCRIPTION
10/16/03	5	Revised Matchline

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ELECTRICAL ROADWAY DEMOLITION PLAN – 7

INTERSTATE ROUTE H-3
H-3 FINISH (UNIT VIII)
F.A.I. Proj. No. I-H3-1(75) Unit VIII

Scale: 1" = 40'-0" Date: Mar. 31, 2003

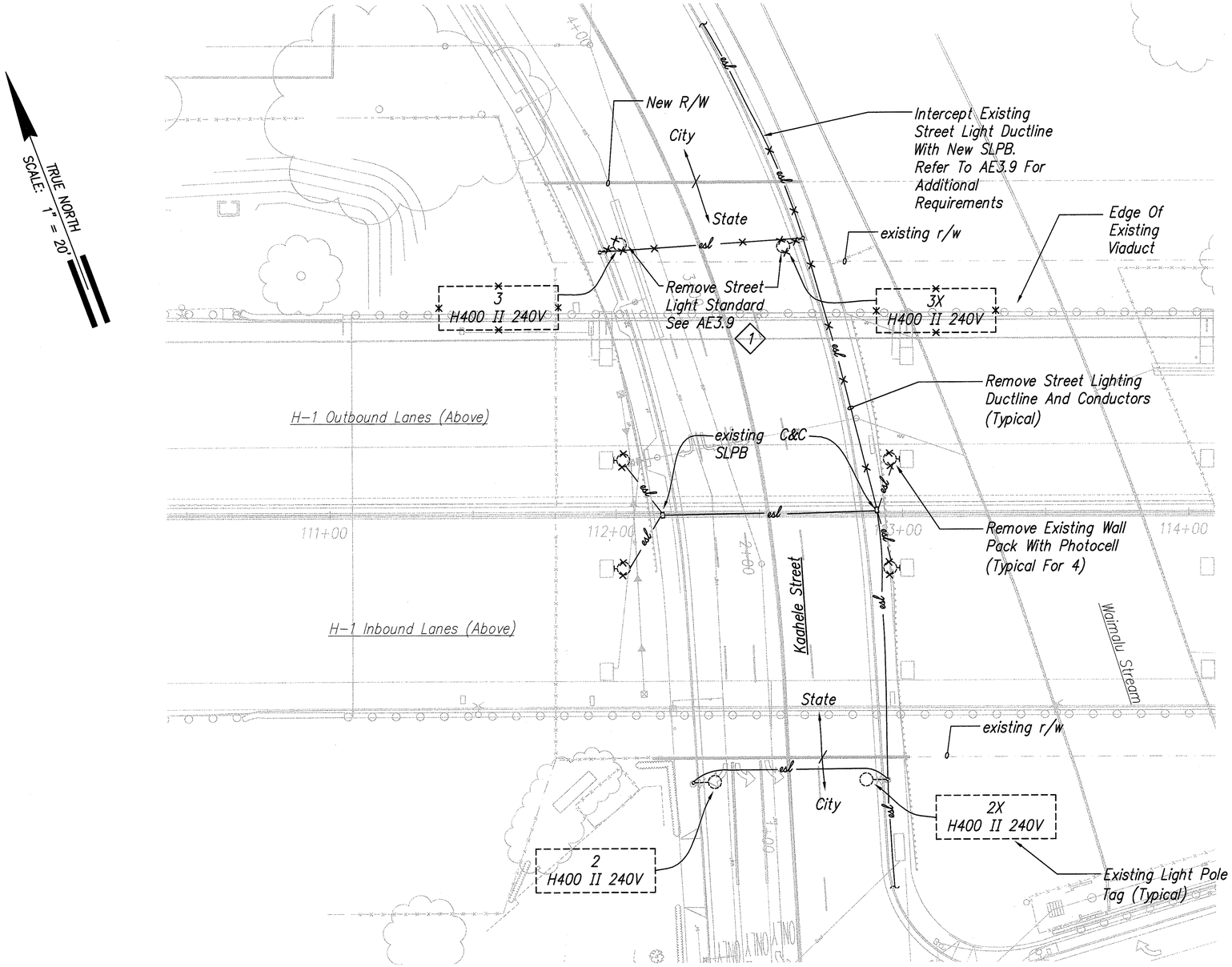
SHEET No. AE2.7 OF 67 SHEETS

ADD.717

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

10/14/03-9:13 Y:\060\e60-80\60-80-AE2.07.dwg

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(75) UNIT VIII	2003	ADD.718	816



ELECTRICAL DEMOLITION PLAN – KAAHELE STREET

Scale: 1" = 20'

GRAPHIC SCALE

1" = 20' 20' 10' 0 20' 40'

NOTE:

1. Existing Street Light Standard, Bracket Arm And Luminaire To Be Removed. Demolish Foundation And Anchor Bolts To 24" Below Final Finished Grade.

APPROVED 5

(for City Street Light Work Only):

7/29/03
Chief, Mechanical/Electrical Date
Design And Engineering Division, DDC
City And County Of Honolulu

8/12/03
Chief, Traffic Review Branch, DPP Date
City And County Of Honolulu

DATE	REV.	DESCRIPTION
10/16/03	5	Obtained Agency Signatures

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ELECTRICAL ROADWAY
DEMOLITION PLAN – KAAHELE STREET

INTERSTATE ROUTE H-3
H-3 FINISH (UNIT VIII)
F.A.I. Proj. No. I-H3-1(75) Unit VIII
Scale: 1" = 20'-0" Date: Mar. 31, 2003

LENNOX K. NISHIMURA
LICENSED PROFESSIONAL ENGINEER
No. 3880-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

PROJECT ENGINEER for ECS, Inc.

APRIL 30, 2004
EXPIRATION DATE OF THE LICENSE

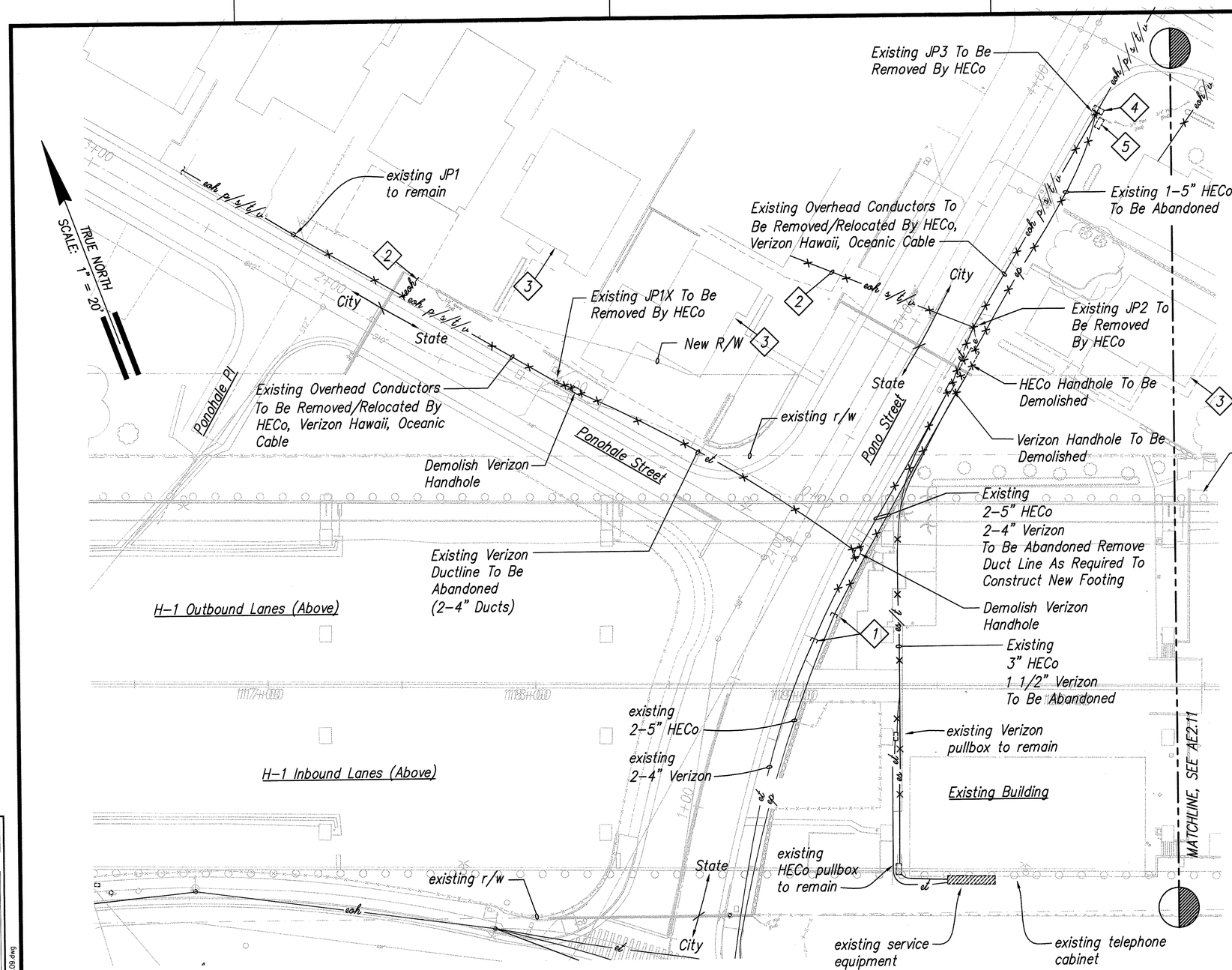
SHEET No. AE2.8 OF 67 SHEETS

ADD.718

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

6/19/03-15:40 Y:\060\e60-80\60-80-AE2.08.dwg

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(75) UNIT VIII	2003	AE2.9	816



NOTE:

1. Existing Ductlines To Be Intercepted With New Handhole, See Sheet AE3.11
2. Existing Service Conductors To Be Relocated/Adjusted By HECo, Verizon Hawaii And Oceanic Cable.
3. Existing Service Conductors To Property To Be Removed And Disconnected By Others.
4. Relocate HECo Meter Socket To New JP3. Refer To Sheet AE3.11 (Meter #451001).
5. Existing CATV Equipment To Be Relocated To New JP3 By Oceanic Cable.

DRAWING REVIEW

Reviewed for HECO's Facilities Only

Date 7/25/03 By

Engineering Department
Hawaiian Electric Company, Inc.

HECO's review of these drawings shall in no way relieve the Customer, its Consultant, its Contractor or anyone acting on the Customer's behalf from the responsibility for engineering, design, materials and any other liability associated with this project.

APPROVED (5)

Hawaiian Electric Company, Inc. Date

7/16/03
Verizon Hawaii Date

9/2/03
Oceanic Cablevision Date

DATE	REV.	DESCRIPTION
10/16/03	(5)	Obtained Agency Signatures

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ELECTRICAL UTILITY DEMOLITION PLAN
PONOHALE ST & PONO ST
Scale: 1" = 20'

GRAPHIC SCALE
1" = 20' 20' 10' 0 20' 40'

LENNOX K. NISHIMURA
LICENSED PROFESSIONAL ENGINEER
No. 3880-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

PROJECT ENGINEER for ECS, Inc.

APRIL 30, 2004
EXPIRATION DATE OF THE LICENSE

ELECTRICAL UTILITY DEMOLITION PLAN
PONOHALE ST & PONO ST

INTERSTATE ROUTE H-3
H-3 FINISH (UNIT VIII)
F.A.I. Proj. No. I-H3-1(75) Unit VIII
Scale: 1" = 20'-0" Date: Mar. 31, 2003

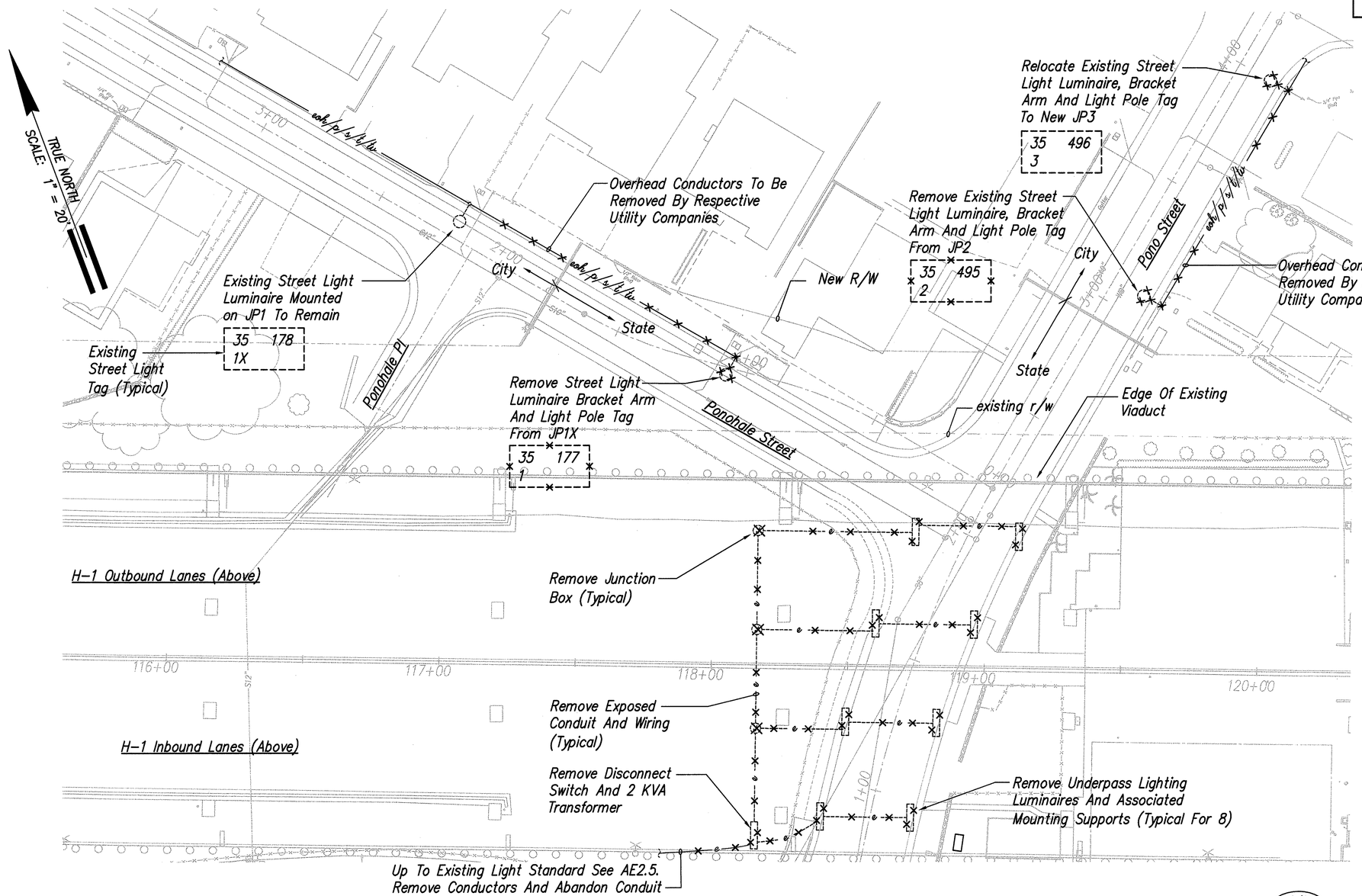
SHEET No. AE2.9 OF 67 SHEETS

ADD.719

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

6/19/03-15:41 Y:\060\e60-80\60-80-AE2.09.dwg

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(75) UNIT VIII	2003	ADD.720	816



ROADWAY LIGHTING DEMOLITION PLAN – PONOHALE ST & PONO ST

Scale: 1" = 20'

GRAPHIC SCALE

1" = 20' 20' 10' 0 20' 40'

APPROVED 5

(for City Street Light Work Only):

7/29/03

Chief, Mechanical/Electrical Design And Engineering Division, DDC City And County Of Honolulu — Date

8/12/03

Chief, Traffic Review Branch, DPP — Date
City And County Of Honolulu

DATE	REV.	DESCRIPTION
10/16/03	5	Obtained Agency Signatures

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ROADWAY LIGHTING DEMOLITION PLAN
PONOHALE ST & PONO ST

INTERSTATE ROUTE H-3
H-3 FINISH (UNIT VIII)
F.A.I. Proj. No. I-H3-1(75) Unit VIII
Scale: 1" = 20'-0" Date: Mar. 31, 2003

SHEET No. AE2.10 OF 67 SHEETS

LENNOX K. NISHIMURA
LICENSED PROFESSIONAL ENGINEER
No. 3880-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

PROJECT ENGINEER for ECS, Inc.

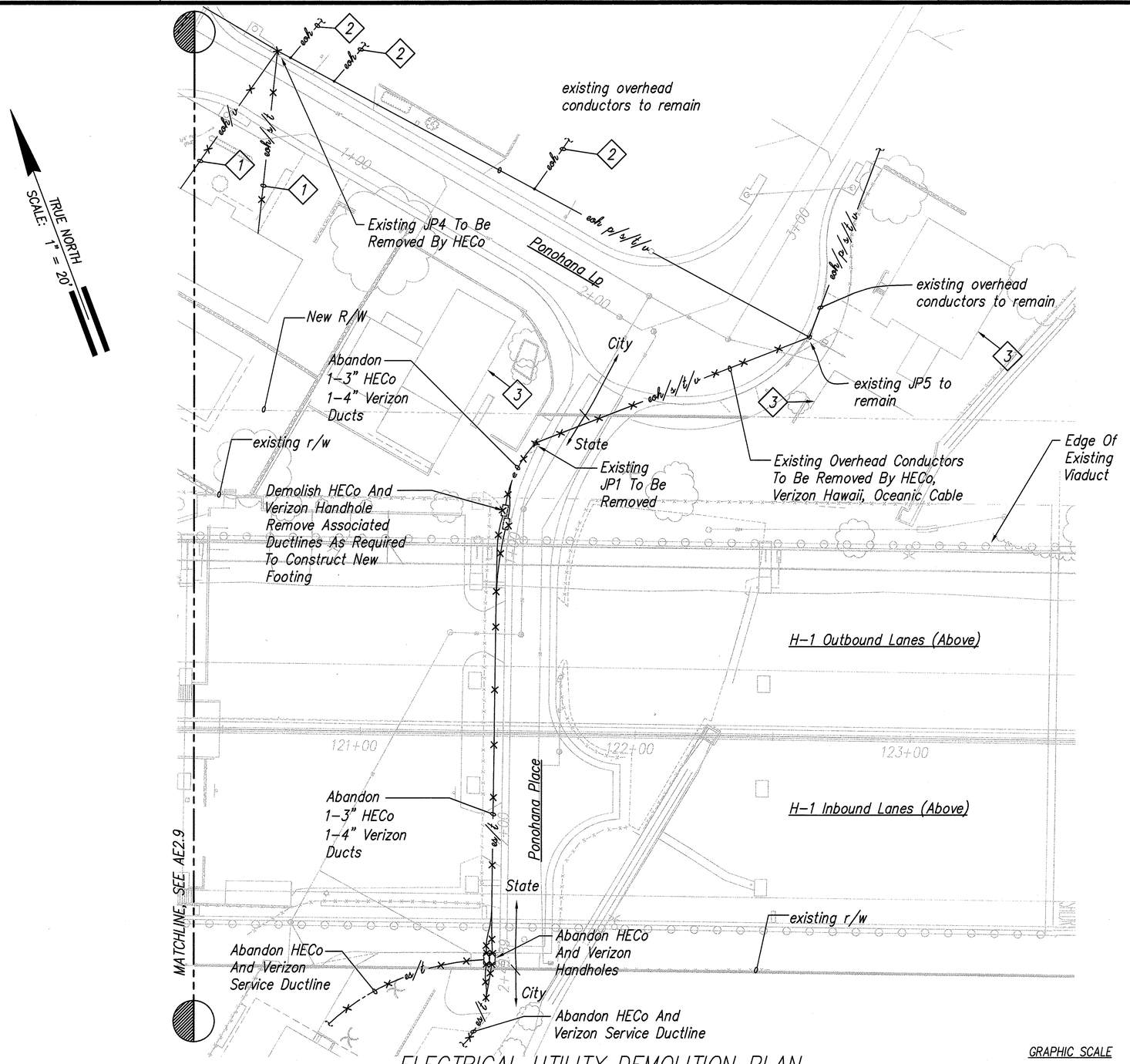
APRIL 30, 2004
EXPIRATION DATE OF THE LICENSE

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

6/20/03-8:30 Y:\D60\e60-80\60-80-AE2.10.dwg

ADD.720

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(75) UNIT VIII	2003	ADD.721	816



ELECTRICAL UTILITY DEMOLITION PLAN
PONOHANA LP & PONOHANA PL
Scale: 1" = 20'

GRAPHIC SCALE
1" = 20' 20' 10' 0 20' 40'

NOTE:

1. Existing Overhead Service Conductors To Be Relocated/Adjusted By HECo, Verizon Hawaii And Oceanic Cable.
2. Existing Overhead Service Conductors To Remain.
3. Existing Service Conductors To Property To Be Removed And Disconnected By Others.

DRAWING REVIEW

Reviewed for HECO's Facilities Only
Date 7/25/03 By
Engineering Department
Hawaiian Electric Company, Inc.

HECO's review of these drawings shall in no way relieve the Customer, its Consultant, its Contractor or anyone acting on the Customer's behalf from the responsibility for engineering, design, materials and any other liability associated with this project.

APPROVED (5)

Hawaiian Electric Company, Inc. Date

7/16/03
Verizon Hawaii Date

9/2/03
Oceanic Cablevision Date

DATE	REV.	DESCRIPTION
10/16/03	(5)	Obtained Agency Signatures

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ELECTRICAL UTILITY DEMOLITION PLAN
PONOHANA LP & PONOHANA PL

INTERSTATE ROUTE H-3
H-3 FINISH (UNIT VIII)
F.A.I. Proj. No. I-H3-1(75) Unit VIII
Scale: 1" = 20'-0" Date: Mar. 31, 2003

SHEET No. AE2.11 OF 67 SHEETS

LENNOX K. NISHIMURA
LICENSED PROFESSIONAL ENGINEER
No. 3880-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

PROJECT ENGINEER for ECS, Inc.

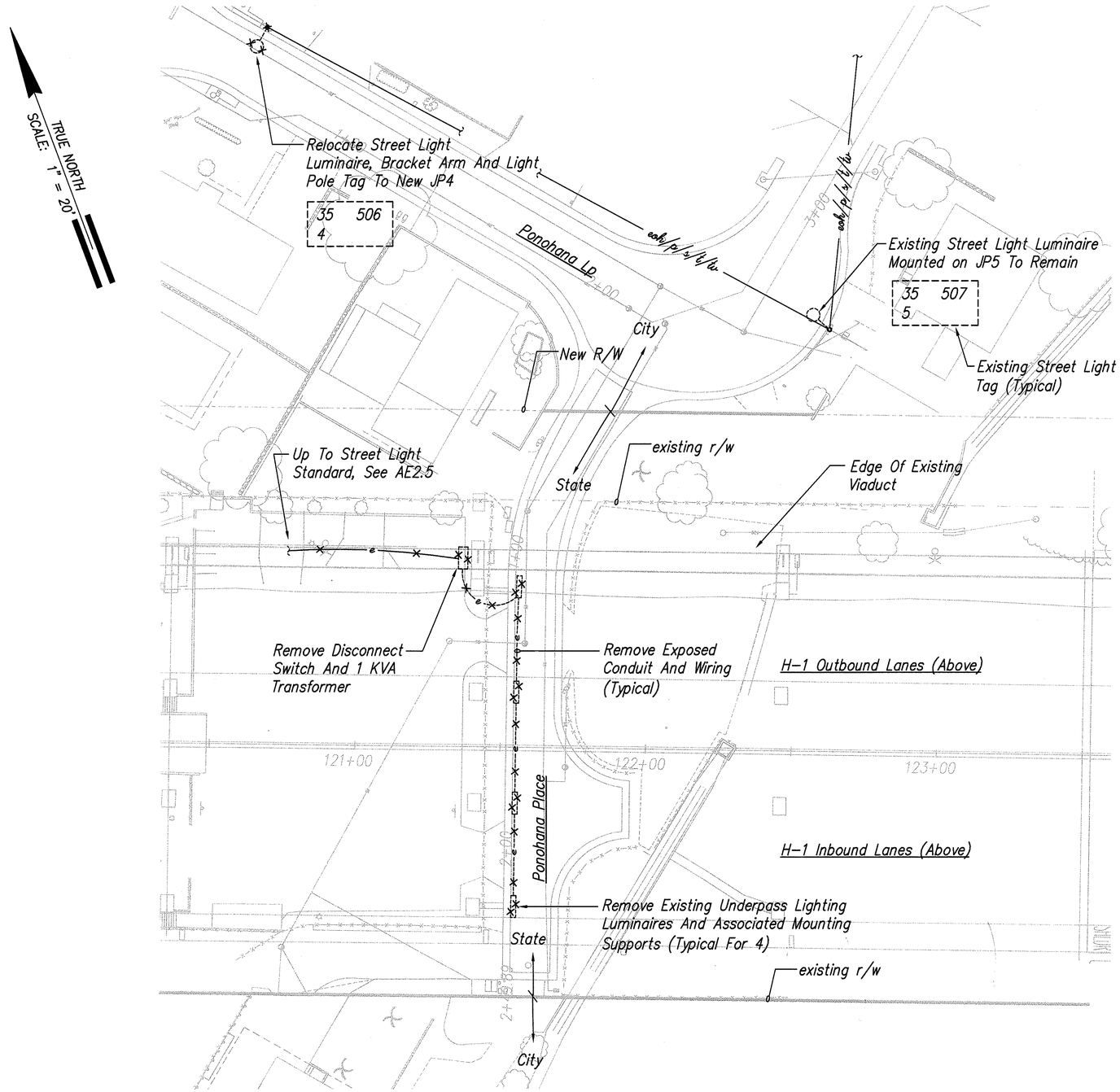
APRIL 30, 2004
EXPIRATION DATE OF THE LICENSE

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

6/19/03-15:43 I:\2003\e60-80\60-80-AE2.11.dwg

ADD.721

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(75) UNIT VIII	2003	ADD.722	816



ROADWAY LIGHTING DEMOLITION PLAN – PONOHANA LP & PONOHANA PL

Scale: 1" = 20'

GRAPHIC SCALE

1" = 20' 20' 10' 0 20' 40'

APPROVED (5)

(for City Street Light Work Only):

7/29/03
Chief, Mechanical/Electrical Date
Design And Engineering Division, DDC
City And County Of Honolulu

8/12/03
Chief, Traffic Review Branch, DPP Date
City And County Of Honolulu

DATE	REV.	DESCRIPTION
10/16/03	(5)	Obtained Agency Signatures

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ROADWAY LIGHTING DEMOLITION PLAN
PONOHANA LP & PONOHANA PL

INTERSTATE ROUTE H-3
H-3 FINISH (UNIT VIII)
F.A.I. Proj. No. I-H3-1(75) Unit VIII

Scale: 1" = 20'-0" Date: Mar. 31, 2003

SHEET No. AE2.12 OF 67 SHEETS

LENNOX K. NISHIMURA
LICENSED PROFESSIONAL ENGINEER
No. 3880-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

PROJECT ENGINEER for ECS, Inc.

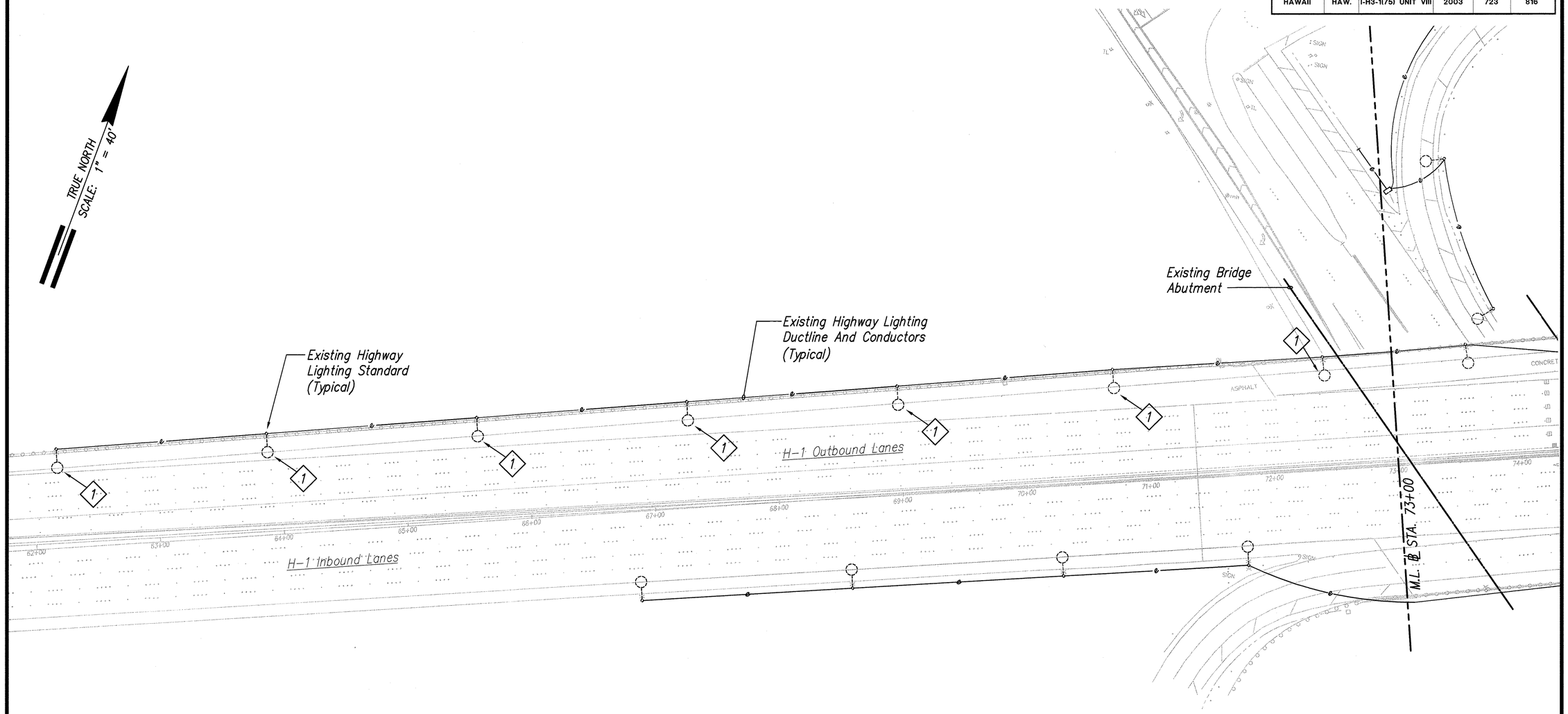
APRIL 30, 2004
EXPIRATION DATE OF THE LICENSE

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

6/19/03-15:44 N:\060\e60-80\60-80-AE2.12.dwg

ADD.722

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(75) UNIT VIII	2003	723	816



NOTE:

(1) Existing Highway Light Standard To Be Connected New Highway Lighting Circuit. Refer To Highway Lighting Wiring Diagram For Additional Requirements.

ELECTRICAL ROADWAY PLAN – 1
(℄ STA. 62+00 TO ℄ STA. 73+00)

Scale: 1" = 40'

GRAPHIC SCALE

1" = 40' 40' 20' 0 40' 80'

LEMNOX K. NISHIMURA
LICENSED PROFESSIONAL ENGINEER
No. 3880-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

Lennox K. Nishimura
PROJECT ENGINEER for ECS, Inc.

APRIL 30, 2004
EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ELECTRICAL ROADWAY PLAN – 1

INTERSTATE ROUTE H-3
H-3 FINISH (UNIT VIII)
F.A.I. Proj. No. I-H3-1(75) Unit VIII

Scale: 1" = 40'-0" Date: Mar. 31, 2003

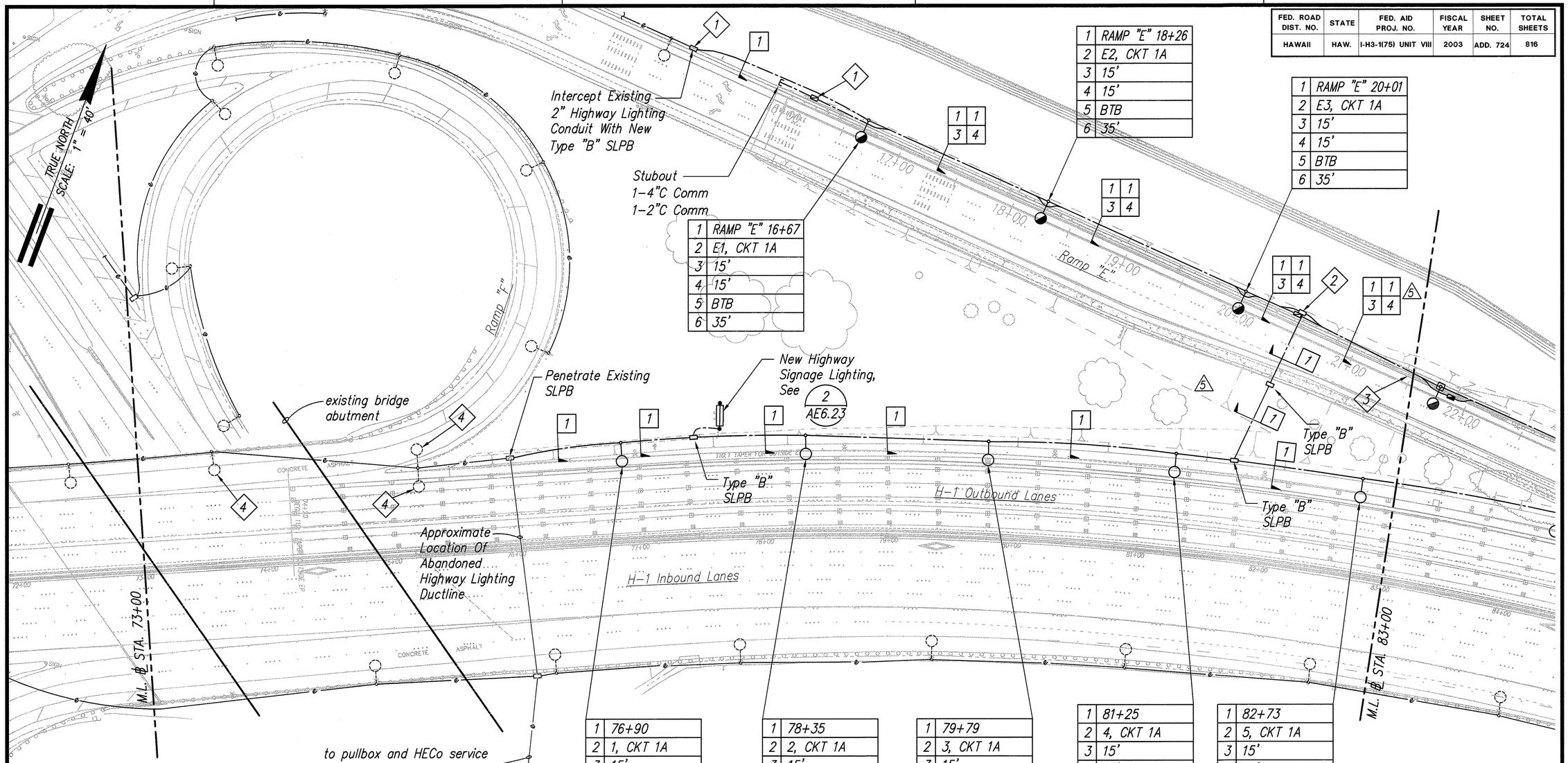
SHEET No. AE3.1 OF 67 SHEETS

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

4/3/03-13:50 Y:\060\e60-80\60-80-AE3.01.dwg

723

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(75) UNIT VIII	2003	ADD. 724	816



1	RAMP "E" 16+67
2	E1, CKT 1A
3	15'
4	15'
5	BTB
6	35'

1	RAMP "E" 18+26
2	E2, CKT 1A
3	15'
4	15'
5	BTB
6	35'

1	RAMP "E" 20+01
2	E3, CKT 1A
3	15'
4	15'
5	BTB
6	35'

1	76+90
2	1, CKT 1A
3	15'
4	15'
5	BTB
6	40'

1	78+35
2	2, CKT 1A
3	15'
4	15'
5	BTB
6	40'

1	79+79
2	3, CKT 1A
3	15'
4	15'
5	BTB
6	40'

1	81+25
2	4, CKT 1A
3	15'
4	15'
5	BTB
6	40'

1	82+73
2	5, CKT 1A
3	15'
4	15'
5	BTB
6	40'

NOTE:

1. See (2 / AE6.8) For Pullbox Layout.
2. See (1 / AE6.8) For Pullbox Layout.
3. Transition Conduit Into Concrete Barrier Wall, See (1 / AE6.9)
4. Existing Highway Light Standard Connected To New Circuit 1A. Refer To Highway Lighting Wiring Diagram For Additional Requirements.

ELECTRICAL ROADWAY PLAN – 2
(℄ STA. 73+00 TO ℄ STA. 83+00)

Scale: 1" = 40'

GRAPHIC SCALE
1" = 40' 40' 20' 0 40' 80'

10/16/03	5	Relocated Irrigation Controller "A"
DATE	REV.	DESCRIPTION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ELECTRICAL ROADWAY PLAN – 2

INTERSTATE ROUTE H-3
H-3 FINISH (UNIT VIII)
F.A.I. Proj. No. I-H3-1(75) Unit VIII
Scale: 1" = 40'-0" Date: Mar. 31, 2003

SHEET No. AE3.2 OF 67 SHEETS

LENNOX K. NISHIMURA
LICENSED PROFESSIONAL ENGINEER
No. 3880-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

PROJECT ENGINEER for ECS, Inc.

APRIL 30, 2004
EXPIRATION DATE OF THE LICENSE

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

10/14/03-9:13 Y:\060\e60-80\60-80-AE3.02.dwg

ADD. 724

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(75) UNIT VIII	2003	ADD. 725	816

TRUE NORTH
SCALE: 1" = 40'

1	RAMP "E" 21+76
2	E4, CKT 1A
3	TOW
4	15'
5	TB
6	35'

1	RAMP "E" 23+33
2	E5, CKT 1A
3	TOW
4	15'
5	TB
6	40'

1	RAMP "E" 24+72
2	E6, CKT 1A
3	TOW
4	15'
5	TB
6	40'

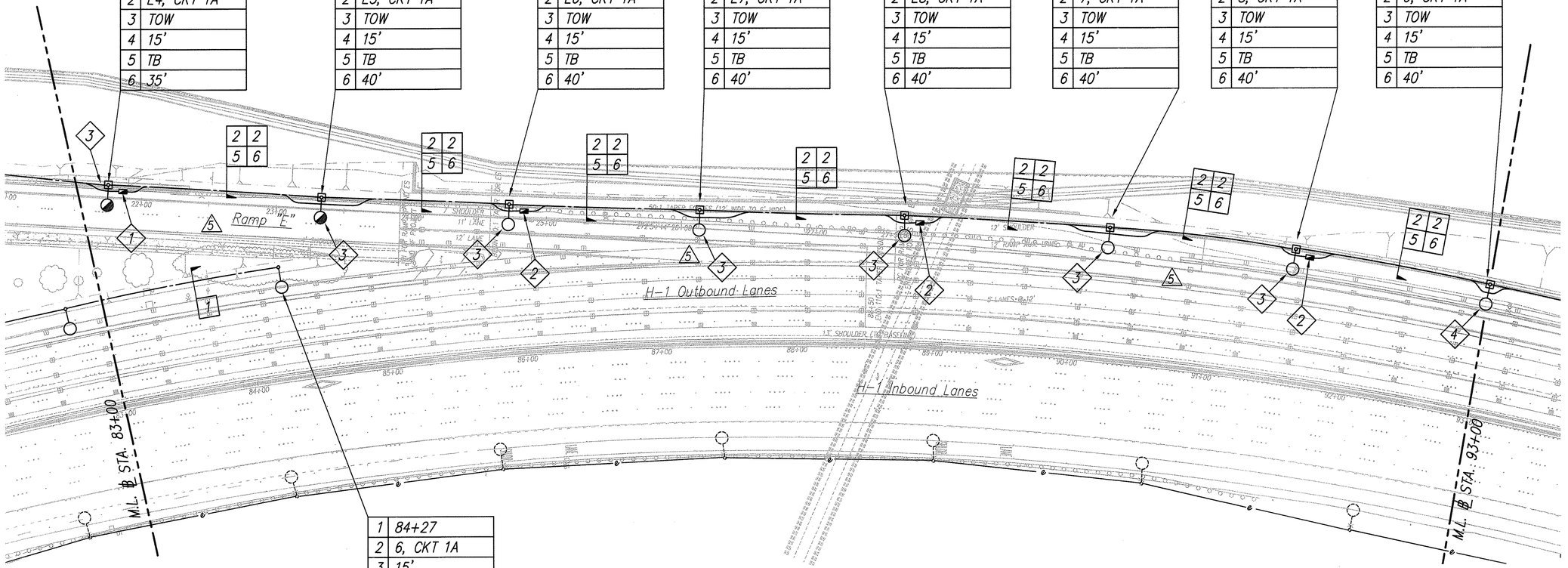
1	RAMP "E" 26+17
2	E7, CKT 1A
3	TOW
4	15'
5	TB
6	40'

1	RAMP "E" 27+66
2	E8, CKT 1A
3	TOW
4	15'
5	TB
6	40'

1	90+22
2	7, CKT 1A
3	TOW
4	15'
5	TB
6	40'

1	91+54
2	8, CKT 1A
3	TOW
4	15'
5	TB
6	40'

1	93+00
2	9, CKT 1A
3	TOW
4	15'
5	TB
6	40'



1	84+27
2	6, CKT 1A
3	15'
4	15'
5	BTB
6	40'

NOTE:

1. 30"L x 10"H x 6"D Cast Communications Junction Box Flush Mounted In Concrete Barrier Wall. See 1/AE6.9
2. 30"L x 10"H x 6"D Cast Communications Junction Box Flush Mounted In Retaining Wall. See 1/AE6.10
3. Light Standard Mounted On Concrete Barrier Wall, CBW-1. See 2/AE6.3 ⚠5
4. Light Standard Mounted On Concrete Barrier Wall, CBW-1. Similar To 1/AE6.2

ELECTRICAL ROADWAY PLAN - 3
(℄ STA. 83+00 TO ℄ STA. 93+00)
Scale: 1" = 40'

GRAPHIC SCALE
1" = 40' 40' 20' 0 40' 80'

10/16/03	⚠6	Relocated Irrigation Controller "A" Eliminated Expansion Couplings In Walls
DATE	REV.	DESCRIPTION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ELECTRICAL ROADWAY PLAN - 3

INTERSTATE ROUTE H-3
H-3 FINISH (UNIT VIII)
F.A.I. Proj. No. I-H3-1(75) Unit VIII
Scale: 1" = 40'-0" Date: Mar. 31, 2003

SHEET No. AE3.3 OF 67 SHEETS

LENNOX K. NISHIMURA
LICENSED PROFESSIONAL ENGINEER
No. 3880-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

PROJECT ENGINEER for ECS, Inc.

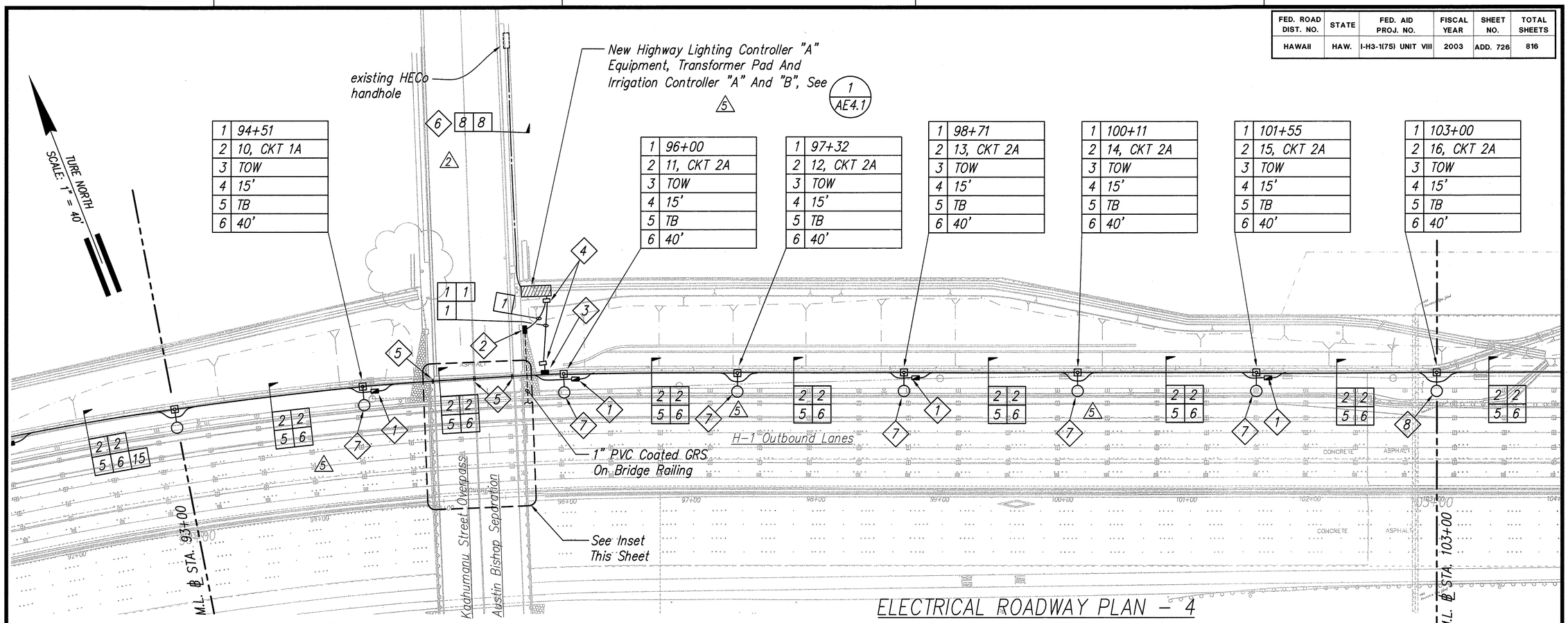
APRIL 30, 2004
EXPIRATION DATE OF THE LICENSE

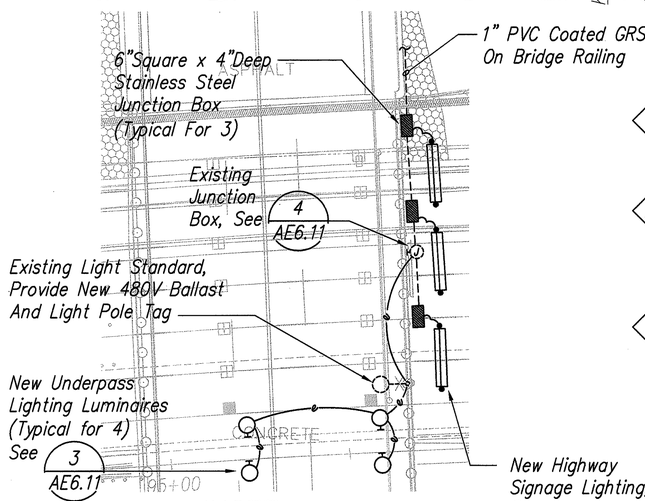
ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DRAWN BY	"
	TRACED BY	"
NOTE BOOK	DESIGNED BY	"
	QUANTITIES BY	"
No.	CHECKED BY	"

10/14/03-9:14 Y:\060\e60-80\60-80-AE3.03.dwg

ADD. 725

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(75) UNIT VIII	2003	ADD. 726	816





INSET
Scale: 1" = 20'

NOTES:

1. 30"L x 10"H x 6"D Cast Communications Junction Box, Flush Mounted In Retaining Wall. See 1/AE6.10
2. 12" Square x 8" Deep Stainless Steel Highway Lighting Junction Box Mounted On Wingwall. See 2/AE6.9
3. 24"L x 18"H x 10"D Cast Highway Lighting Junction Box, Flush Mounted In Retaining Wall. See 3/AE6.10
4. Type "C" SLPB.
5. Expansion Joint, Provide Expansion Couplings.
6. Reconstruct Existing Sidewalk For Installation Of Conduits. Refer To Civil Plans For Reconstruction Details.
7. Light Standard Mounted On Retaining Wall, SNRW-1, SNRW-2. See 1/AE6.2
8. Light Standard Mounted On Concrete Barrier Wall, CBW-2. See 2/AE6.3

ELECTRICAL ROADWAY PLAN - 4
(℄ STA. 93+00 TO ℄ STA. 103+00)
Scale: 1" = 40'

GRAPHIC SCALE
1" = 40' 40' 20' 0 40' 80'

LENNOX K. NISHIMURA
LICENSED PROFESSIONAL ENGINEER
No. 3880-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

PROJECT ENGINEER for ECS, Inc.

APRIL 30, 2004
EXPIRATION DATE OF THE LICENSE

DATE	REV.	DESCRIPTION
10/16/03	5	Relocated Irrigation Controller "A" Eliminated Expansion Couplings In Walls

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ELECTRICAL ROADWAY PLAN - 4

INTERSTATE ROUTE H-3
H-3 FINISH (UNIT VIII)
F.A.I. Proj. No. I-H3-1(75) Unit VIII
Scale: 1" = 40'-0" Date: Mar. 31, 2003

SHEET No. AE3.4 OF 67 SHEETS

ADD. 726

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

10/14/03- 9:15 X:\060\e60-80\60-80-AE3.04.dwg

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(75) UNIT VIII	2003	ADD. 727	816

TURE NORTH
SCALE: 1" = 40'

1	104+52
2	17, CKT 2A
3	TOW
4	15'
5	TB
6	40'

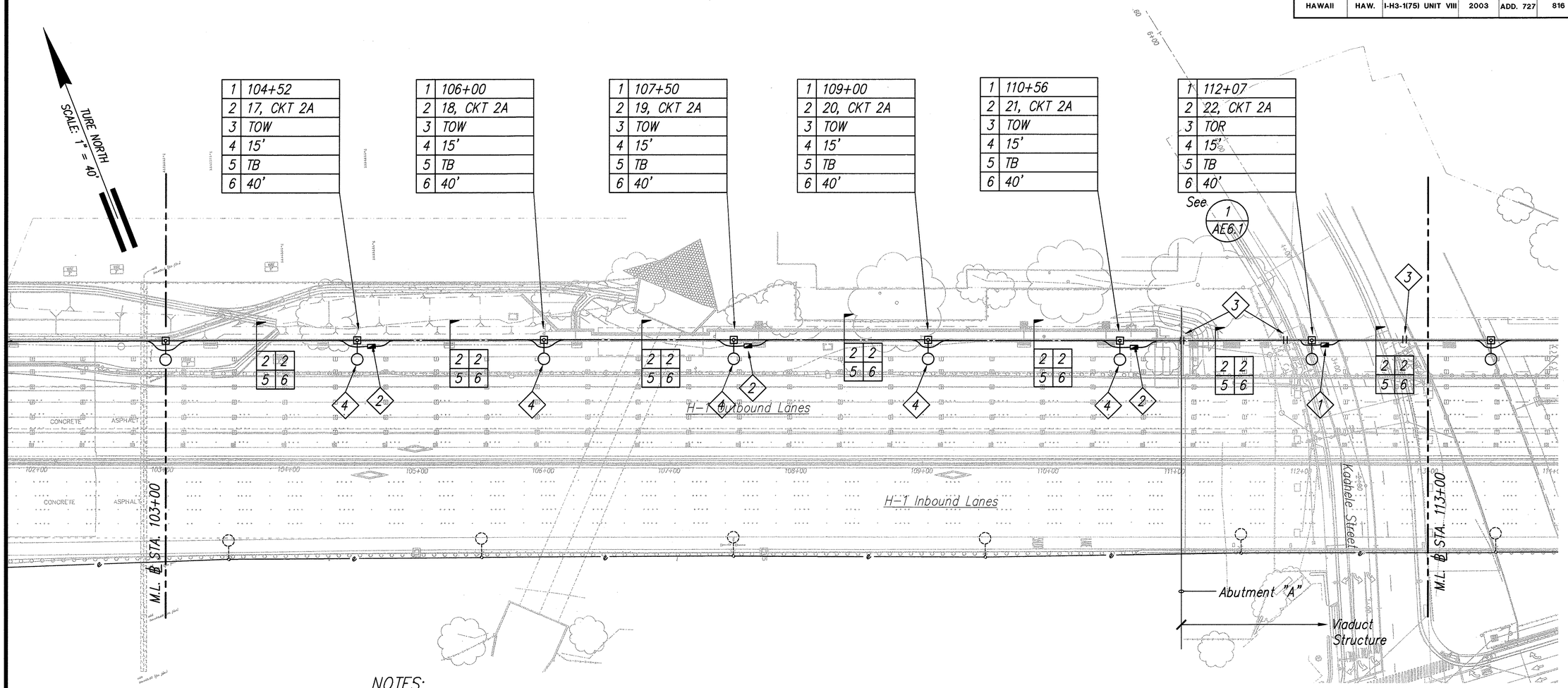
1	106+00
2	18, CKT 2A
3	TOW
4	15'
5	TB
6	40'

1	107+50
2	19, CKT 2A
3	TOW
4	15'
5	TB
6	40'

1	109+00
2	20, CKT 2A
3	TOW
4	15'
5	TB
6	40'

1	110+56
2	21, CKT 2A
3	TOW
4	15'
5	TB
6	40'

1	112+07
2	22, CKT 2A
3	TOR
4	15'
5	TB
6	40'



NOTES:

1. 30"L x 10"H x 6"D Cast Communications Junction Box Flush Mounted In Viaduct Railing. See 1/AE6.6
2. 30"L x 10"H x 6"D Cast Communications Junction Box, Flush Mounted In Concrete Barrier Wall. See 1/AE6.10 △5
3. Expansion Or Deflection Joint, Provide Expansion Couplings.
4. Light Standard Mounted on Concrete Barrier Wall CBW-2, See 2/AE6.3 △5

ELECTRICAL ROADWAY PLAN – 5
(℄ STA. 103+00 TO ℄ STA. 113+00)

Scale: 1" = 40'

GRAPHIC SCALE
1" = 40' 40' 20' 0 40' 80'

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

10/14/03-9:16 Y:\060\e60-80\60-80-AE3.05.dwg

LENNOX K. NISHIMURA
LICENSED PROFESSIONAL ENGINEER
No. 3880-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

PROJECT ENGINEER for ECS, Inc.

APRIL 30, 2004
EXPIRATION DATE OF THE LICENSE

DATE	REV.	DESCRIPTION
10/16/03	△5	Revised Note 2, Added Note 4

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ELECTRICAL ROADWAY PLAN – 5

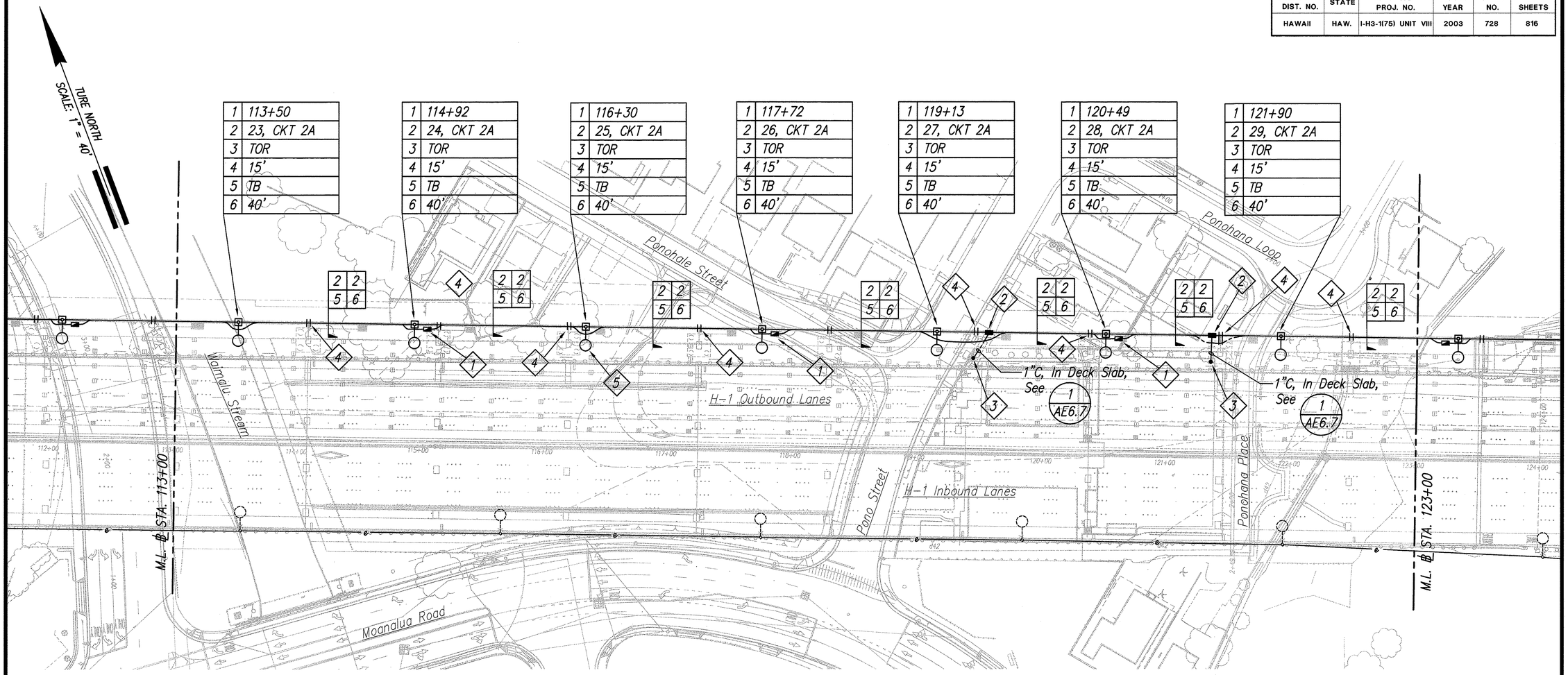
INTERSTATE ROUTE H-3
H-3 FINISH (UNIT VIII)
F.A.I. Proj. No. I-H3-1(75) Unit VIII

Scale: 1" = 40'-0" Date: Mar. 31, 2003

SHEET No. AE3.5 OF 67 SHEETS

ADD.727

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(75) UNIT VIII	2003	728	816



NOTES:

1. 30"L x 10"H x 6"D Cast Communications Junction Box, Flush Mounted In Viaduct Railing. See 1/AE6.6
2. 30"L x 10"H x 6"D Cast Highway Lighting Junction Box Flush Mounted In Viaduct Railing. See 3/AE6.6
3. Down To Lighting Below, Penetrate Viaduct Deck. See 1/AE6.7 And AE3.12, AE3.14
4. Expansion Or Deflection Joint, Provide Expansion Coupling.
5. Light Standard Mounted On Viaduct Railing, Typical This Sheet. See 1/AE6.1

ELECTRICAL ROADWAY PLAN – 6

(℄ STA. 113+00 TO ℄ STA. 123+00)

Scale: 1" = 40'

GRAPHIC SCALE

1" = 40' 40' 20' 0 40' 80'

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

4/3/03-13:52 X:\060\e60-80\60-80-AE3.06.dwg

LEANNOX K. NISHIMURA
LICENSED PROFESSIONAL ENGINEER
No. 3880-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

PROJECT ENGINEER for ECS, Inc.

APRIL 30, 2004
EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

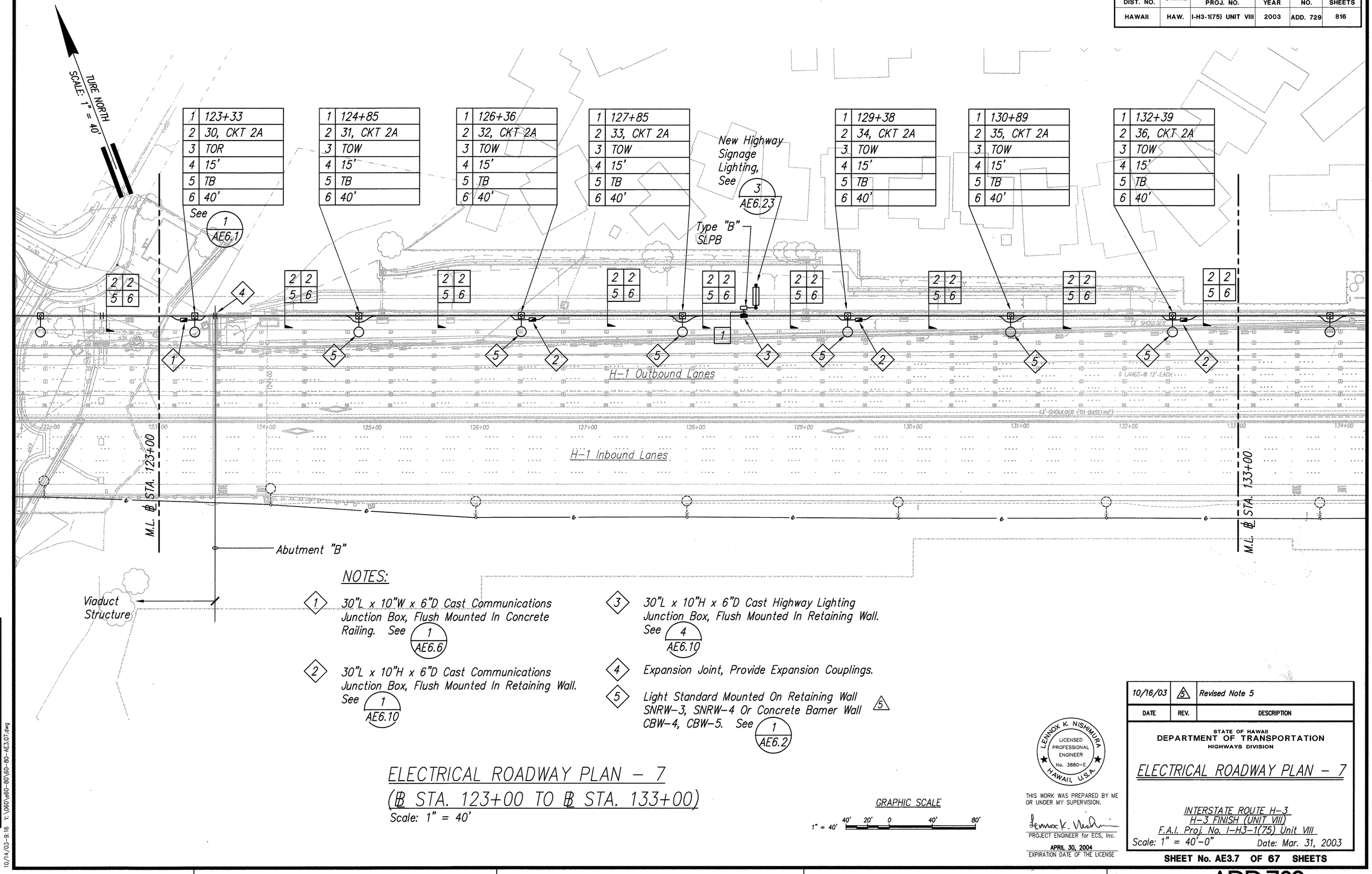
ELECTRICAL ROADWAY PLAN – 6

INTERSTATE ROUTE H-3
H-3 FINISH (UNIT VIII)
F.A.I. Proj. No. I-H3-1(75) Unit VIII

Scale: 1" = 40'-0" Date: Mar. 31, 2003

SHEET No. AE3.6 OF 67 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(75) UNIT VIII	2003	ADD. 729	816



NOTES:

1. 30"L x 10"W x 6"D Cast Communications Junction Box, Flush Mounted In Concrete Railing. See 1 AE6.6
2. 30"L x 10"H x 6"D Cast Communications Junction Box, Flush Mounted In Retaining Wall. See 1 AE6.10
3. 30"L x 10"H x 6"D Cast Highway Lighting Junction Box, Flush Mounted In Retaining Wall. See 4 AE6.10
4. Expansion Joint, Provide Expansion Couplings.
5. Light Standard Mounted On Retaining Wall SNRW-3, SNRW-4 Or Concrete Barrier Wall CBW-4, CBW-5. See 1 AE6.2 △5

ELECTRICAL ROADWAY PLAN - 7
(℄ STA. 123+00 TO ℄ STA. 133+00)

Scale: 1" = 40'

GRAPHIC SCALE
1" = 40' 40' 20' 0 40' 80'

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

10/14/03-9:16 X:\060\g60-80\60-80-AE3.07.dwg

LENNOX K. NISHIMURA
LICENSED PROFESSIONAL ENGINEER
No. 3880-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

PROJECT ENGINEER for ECS, Inc.

APRIL 30, 2004
EXPIRATION DATE OF THE LICENSE

DATE	REV.	DESCRIPTION
10/16/03	△5	Revised Note 5

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ELECTRICAL ROADWAY PLAN - 7

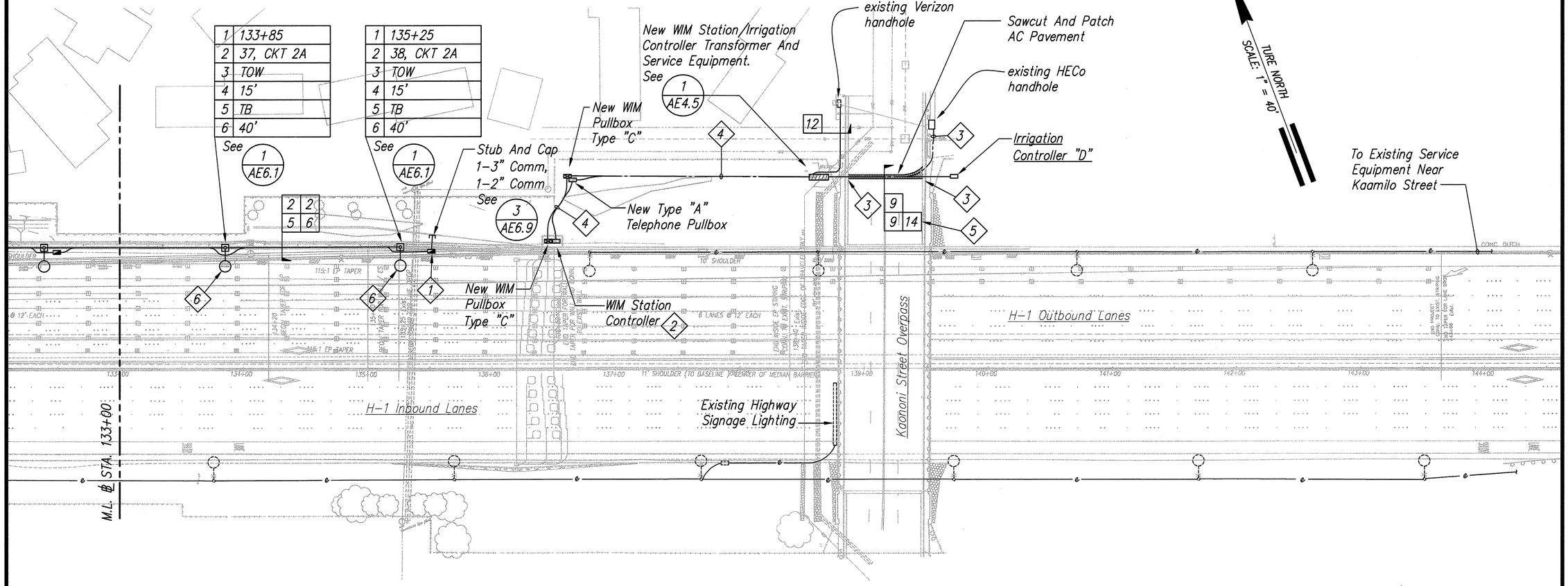
INTERSTATE ROUTE H-3
H-3 FINISH (UNIT VIII)
F.A.I. Proj. No. I-H3-1(75) Unit VIII

Scale: 1" = 40'-0" Date: Mar. 31, 2003

SHEET No. AE3.7 OF 67 SHEETS

ADD.729

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(75) UNIT VIII	2003	ADD. 730	816



NOTES

1. 30"L x 10"H x 6"D Cast Communications Junction Box, Flush Mounted In Retaining Wall. See 1 AE6.10
2. Refer To Civil Plans For Additional Requirements.
3. Reconstruct Existing Sidewalk, Curb And Gutter For Installation Of Conduits.
4. 2"C, PVC Sch. 80, Concrete Encased, WIM Station Power;
   1"C, PVC Sch. 80, Concrete Encased, WIM Station Telephone.
   Refer To Sheet AE4.6 For Conductors.
5. 1"C, 2#10, 1#10 GND For Irrigation Controller.
6. Light Standard Mounted On Concrete Barrier Wall CBW-5, Similar To 1 AE6.2 (5)

ELECTRICAL ROADWAY PLAN - 8
(℄ STA. 133+00 TO ℄ STA. 144+00)

Scale: 1" = 40'

GRAPHIC SCALE
1" = 40' 40' 20' 0 40' 80'

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

10/14/03-9:17 I:\060\e60-80\60-80-AE3.08.dwg

LENNOX K. NISHIMURA
LICENSED PROFESSIONAL ENGINEER
No. 3880-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

PROJECT ENGINEER for ECS, Inc.

APRIL 30, 2004
EXPIRATION DATE OF THE LICENSE

DATE	REV.	DESCRIPTION
10/16/03	5	Added Note 6

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ELECTRICAL ROADWAY PLAN - 8

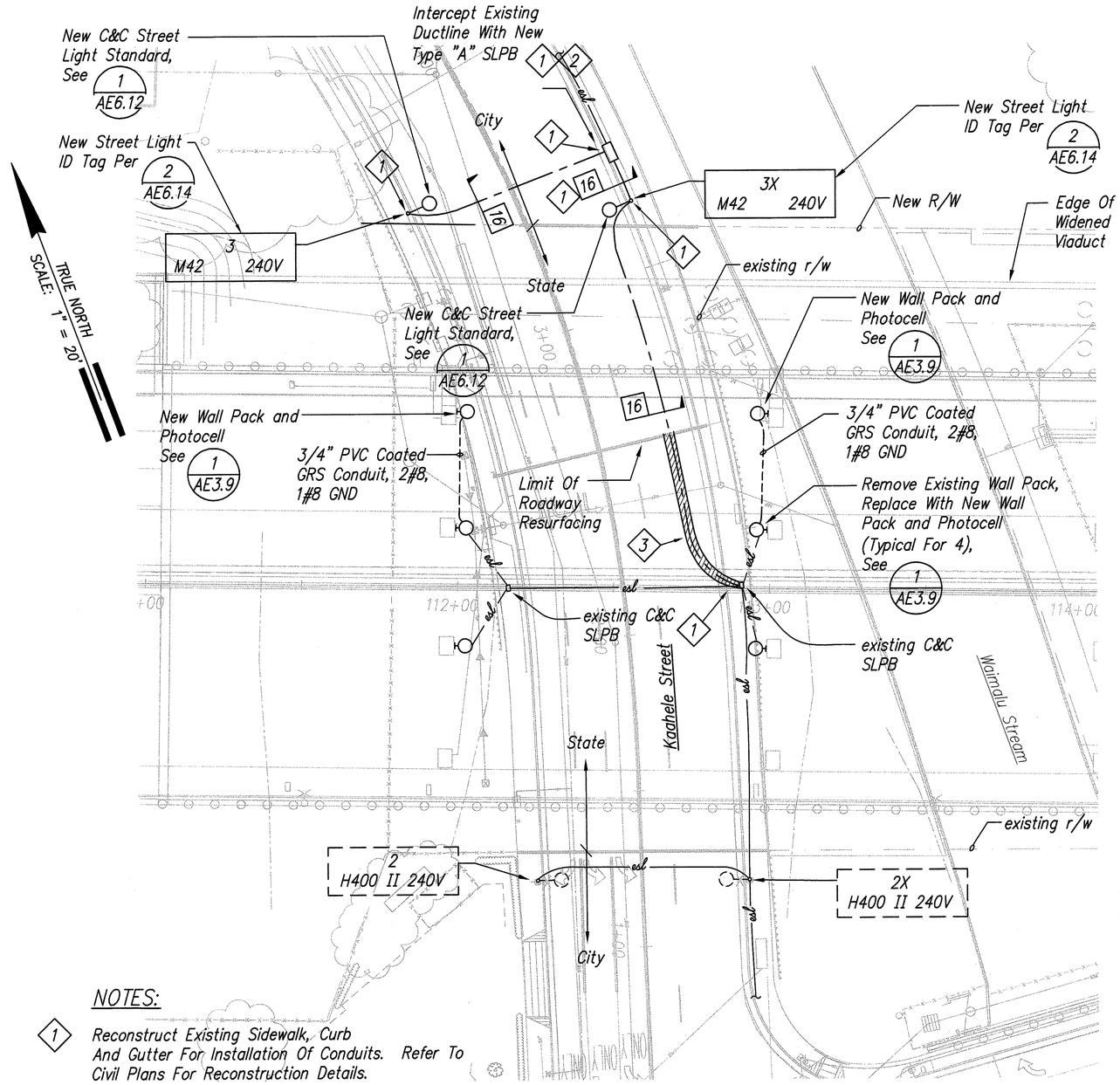
INTERSTATE ROUTE H-3
H-3 FINISH (UNIT VIII)
F.A.I. Proj. No. I-H3-1(75) Unit VIII

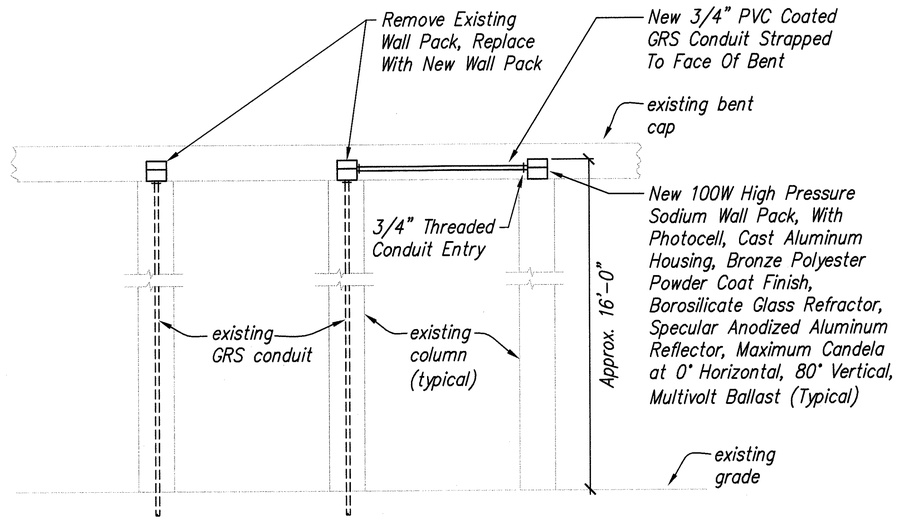
Scale: 1" = 40'-0" Date: Mar. 31, 2003

SHEET No. AE3.8 OF 67 SHEETS

ADD.730

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(75) UNIT VIII	2003	ADD.731	816





1 / AE3.9 WALL MOUNTED UNDERPASS LUMINAIRE
Not To Scale (Ewa Elevation, Diamond Head Elevation Similar)

NOTES:

1. Reconstruct Existing Sidewalk, Curb And Gutter For Installation Of Conduits. Refer To Civil Plans For Reconstruction Details.
2. Label Street Light Pullbox, "C&C".
3. Sawcut And Patch AC Pavement.
4. Provide electrical to drainage clearance at crossings.

ROADWAY LIGHTING PLAN – KAAHELE STREET

Scale: 1" = 20'

APPROVED (5)

(for City Street Light Work Only):

7/29/03
Chief, Mechanical/Electrical Date
Design And Engineering Division, DDC
City And County Of Honolulu

8/12/03
Chief, Traffic Review Branch, DPP Date
City And County Of Honolulu

GRAPHIC SCALE

1" = 20' 20' 10' 0 20' 40'

LENNOX K. NISHIMURA LICENSED PROFESSIONAL ENGINEER No. 3880-E HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

PROJECT ENGINEER for ECS, Inc.

APRIL 30, 2004
EXPIRATION DATE OF THE LICENSE

DATE	REV.	DESCRIPTION
10/16/03	5	Obtained Agency Signatures

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ROADWAY LIGHTING PLAN
KAAHELE STREET

INTERSTATE ROUTE H-3
H-3 FINISH (UNIT VIII)
F.A.I. Proj. No. I-H3-1(75) Unit VIII

Scale: 1" = 20'-0" Date: Mar. 31, 2003

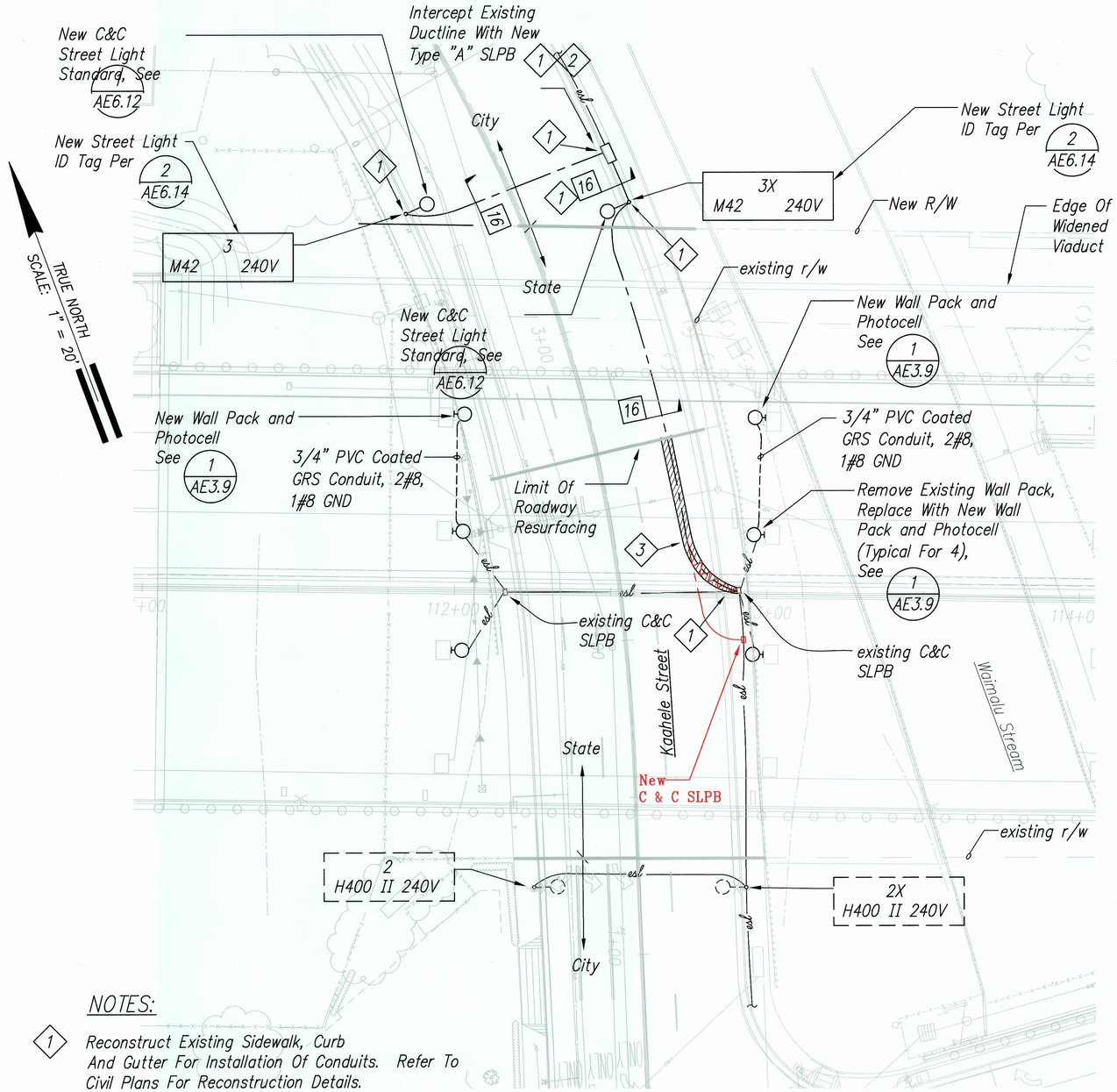
SHEET No. AE3.9 OF 67 SHEETS

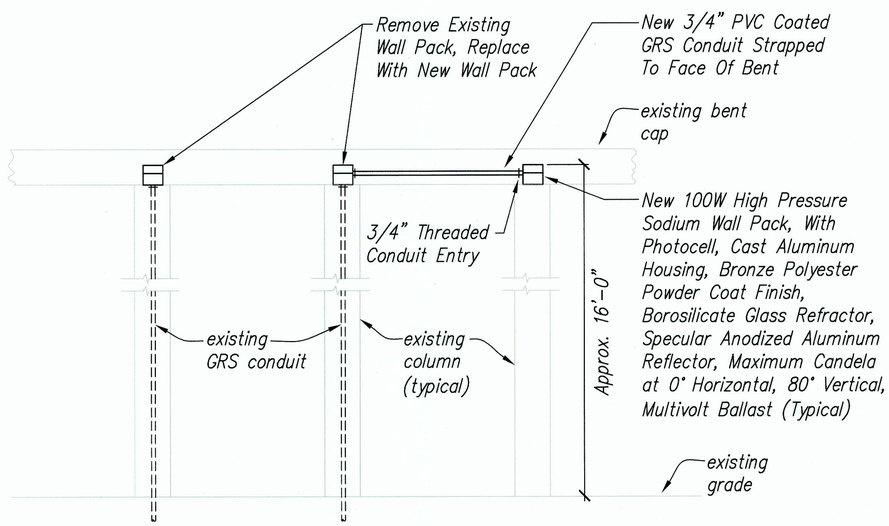
ADD.731

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

6/20/03-8:32 Y:\060\e60-80\60-80-AE3.09.dwg

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(75) UNIT VIII	2003	ADD 731	816





1 / AE3.9 WALL MOUNTED UNDERPASS LUMINAIRE
Not To Scale (Ewa Elevation, Diamond Head Elevation Similar)

NOTES:

1. Reconstruct Existing Sidewalk, Curb And Gutter For Installation Of Conduits. Refer To Civil Plans For Reconstruction Details.
2. Label Street Light Pullbox, "C&C".
3. Sawcut And Patch AC Pavement.
4. Provide electrical to drainage clearance at crossings.

ROADWAY LIGHTING PLAN – KAAHELE STREET

Scale: 1" = 20'

LEGEND FOR AS-BUILT POSTINGS

~~WWWW~~	Squiggly line for as-built deletion
~~100.00~~	Double line for as-built deletion
Roadway	Text for as-built posting

APPROVED 5

(for City Street Light Work Only):

Chief, Mechanical/Electrical Design And Engineering Division, DDC City And County Of Honolulu — Date

Chief, Traffic Review Branch, DPP City And County Of Honolulu — Date

GRAPHIC SCALE

1" = 20' 20' 10' 0 20' 40'

LENNOX K. NISHIMURA LICENSED PROFESSIONAL ENGINEER No. 3880-E HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

PROJECT ENGINEER for ECS, Inc.

APRIL 30, 2004
EXPIRATION DATE OF THE LICENSE

DATE	REV.	DESCRIPTION
7/9/03	5	Obtained Agency Signatures

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ROADWAY LIGHTING PLAN
KAAHELE STREET

INTERSTATE ROUTE H-3
H-3 FINISH (UNIT VIII)
F.A.I. Proj. No. I-H3-1(75) Unit VIII

Scale: 1" = 20'-0" Date: Mar. 31, 2003

SHEET No. AE3.9 OF 67 SHEETS

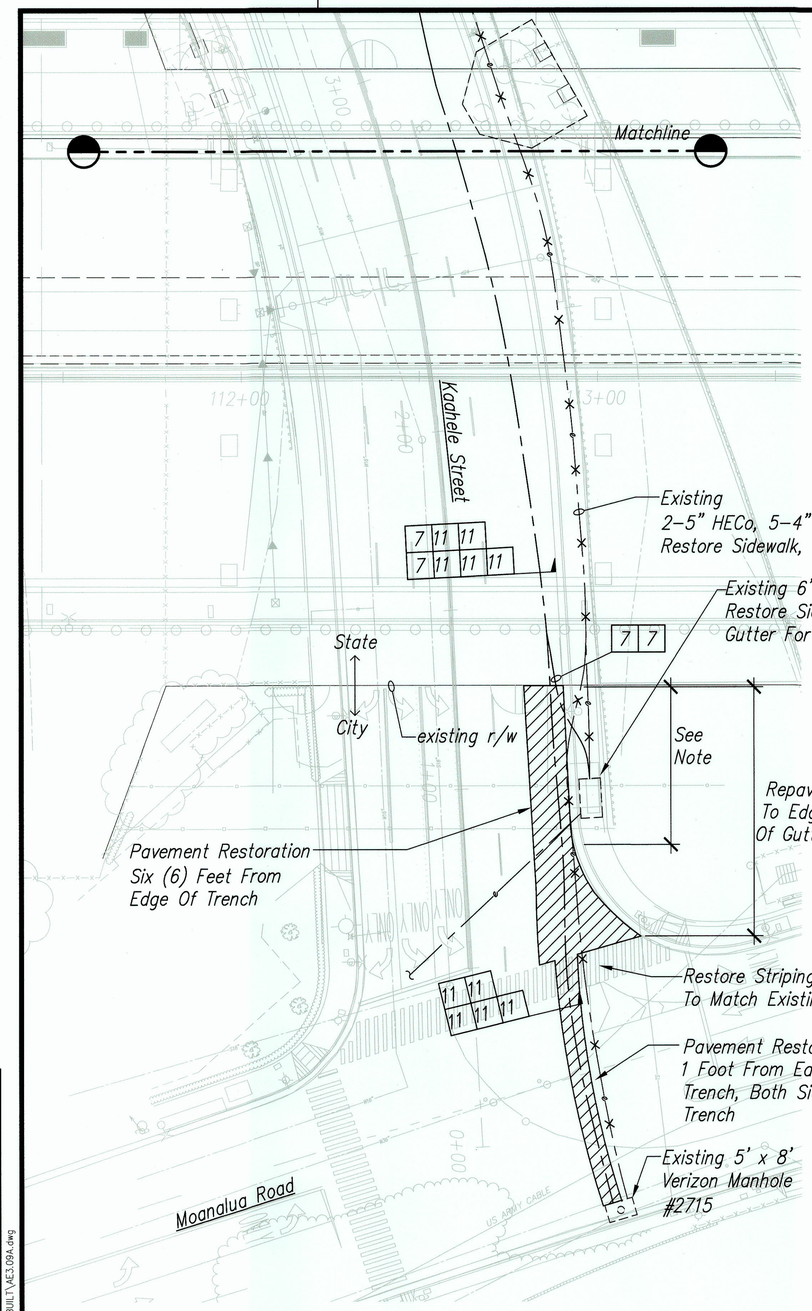
ORIGINAL PLAN | STUFF PLOTTED BY | DRAWN BY | TRACED BY | DESIGNED BY | QUANTITIES BY | CHECKED BY | DATE
NOTE BOOK | No.

7/2/13-9:45 Y:\060\060.080\AS-BUILT\AE3.09.dwg

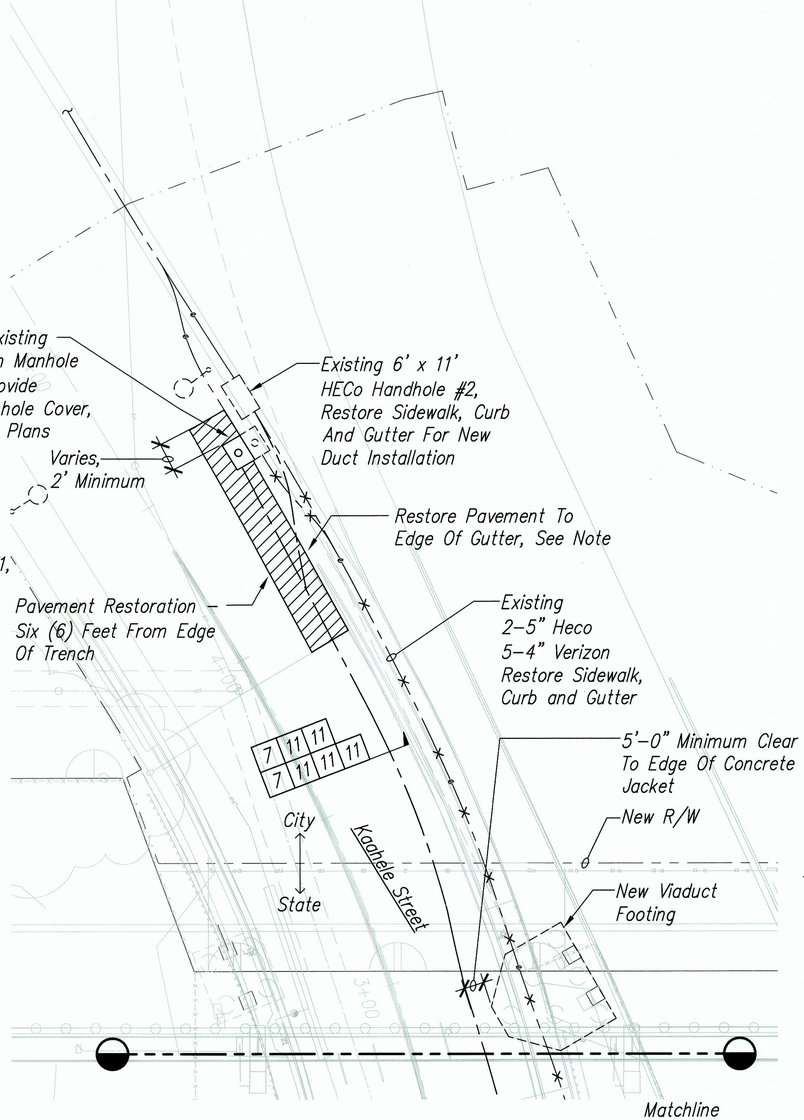
"AS-BUILT" ADD.731

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(75) UNIT VIII	2003	C.O. 7135-1	816

SHEETNO.



ELECTRICAL UTILITY PLAN – KAAHELE STREET
Scale: 1" = 20'



APPROVED

HECo Date

Verizon Hawaii Date

Oceanic Cable Date

Note:
Edge Of Trench Shall Not Exceed Two (2) Feet From Edge Of Gutter.

GRAPHIC SCALE
1" = 20' 20' 10' 0 20' 40'

LENNOX K. NISHIMURA
LICENSED PROFESSIONAL ENGINEER
No. 3880–E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

PROJECT ENGINEER for ECS, Inc.

APRIL 30, 2006
EXPIRATION DATE OF THE LICENSE

DATE	REV.	DESCRIPTION
9/9/04	△	New Sheet

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ELECTRICAL UTILITY PLAN
KAAHELE STREET

INTERSTATE ROUTE H-3
H-3 FINISH (UNIT VIII)
F.A.I. Proj. No. I-H3-1(75) Unit VIII
Scale: 1" = 20'-0" Date: Mar. 31, 2003

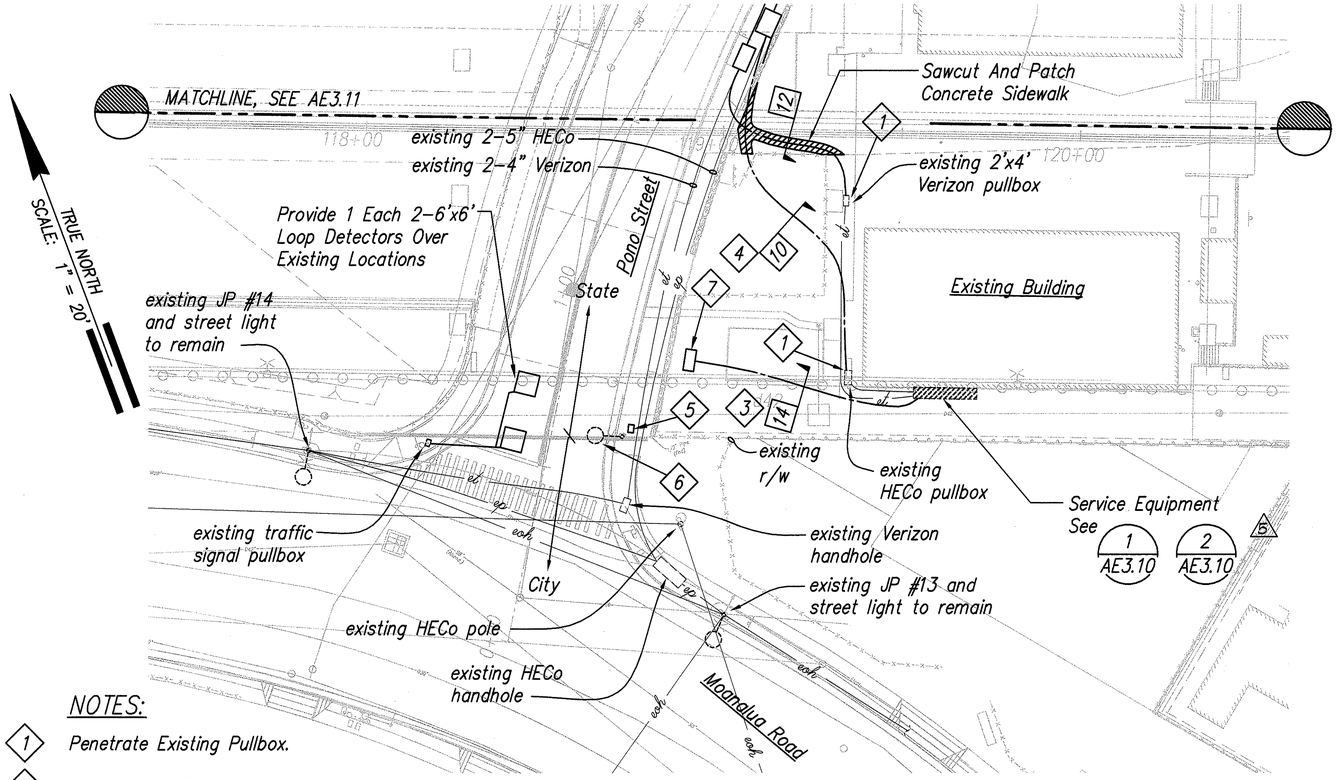
SHEET No. AE3.9A OF 67 SHEETS

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

7/2/13-10:27 Y:\2060\060109\AS-BUILT\AE3.09A.dwg

"AS-BUILT" C.O.7135-1

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(75) UNIT VIII	2003	ADD.732	816



NOTES:

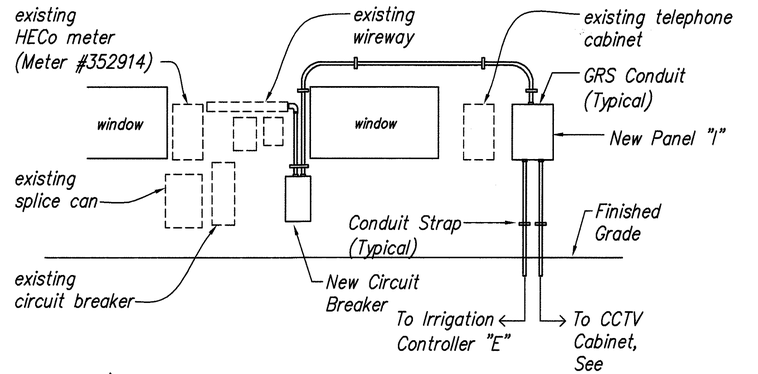
1. Penetrate Existing Pullbox.
2. Abandoned HECO and Verizon Hawaii Ductlines.
3. 3/4"C, 2#12, 1#12 GND.
4. 3" HECO Secondary Conduit.
5. Existing SLPB, Adjust Cover To New Finished Grade.
6. Existing Street Light Standard, Adjust To New Finished Grade.
7. New Irrigation Controller "E".

ELECTRICAL UTILITY ROADWAY PLAN – MOANALUA ROAD

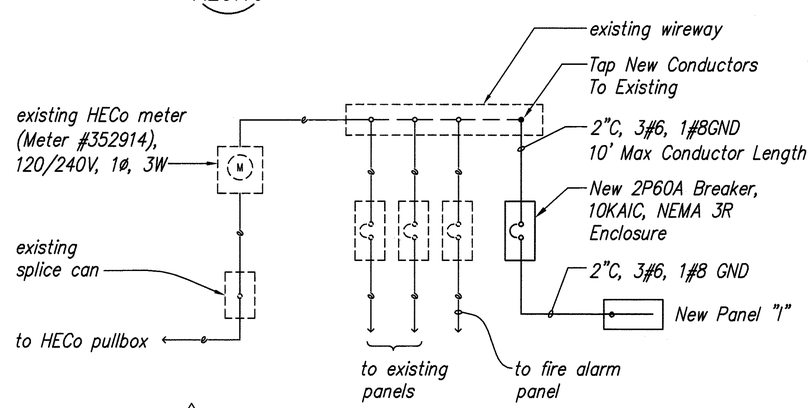
Scale: 1" = 20'

PANEL "I" (5) 120/240 Volts, 1 Phase, 3 Wire, 100A Main Lugs — MIN AIC: 10,000 — Mounting: Surface

Wire Size (AWG)	CKT NO	USE	CKT BKR Pole	CKT BKR AMP	CONN LOAD (KVA) Phase A	CONN LOAD (KVA) Phase B	CKT BKR AMP	CKT BKR Pole	USE	CKT NO	Wire Size (AWG)
12	1	Irrigation Cont."E"	1	20	1.0	1.0	20	1	Spare	2	–
4	3	CCTV Cabinet	1	20		1.0 1.0	20	1	Spare	4	–
–	5	PFB	1	–	–		–	1	PFB	6	–
–	7	PFB	1	–		–	–	1	PFB	8	–
–	9	PFB	1	–	–		–	1	PFB	10	–
–	11	PFB	1	–		–	–	1	PFB	12	–
		Connected Load/Phase			2.0	2.0					
		Total Connected Load			4.0 KVA						
		Demand Factor			.6						
		Total Demand Load			2.4 KVA= 10 AMPS						



(5) 1 / AE3.10 SERVICE EQUIPMENT ELEVATION — Not To Scale



(5) 2 / AE3.10 ONE-LINE DIAGRAM — No Scale

APPROVED (5)

7/29/03
Chief, Mechanical/Electrical Engineering Division, DDC City And County Of Honolulu (for City Street Light Work Only) — Date

7/16/03
for Chief, Traffic Signals And Technology Division, DTS City And County Of Honolulu (for Traffic Signal Work Only) — Date

Chief, Traffic Review Branch, DPP — Date
City And County Of Honolulu

GRAPHIC SCALE
1" = 20' 20' 10' 0 20' 40'

LEANNOX K. NISHIMURA LICENSED PROFESSIONAL ENGINEER No. 3880-E HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

PROJECT ENGINEER for ECS, Inc.

APRIL 30, 2004
EXPIRATION DATE OF THE LICENSE

DRAWING REVIEW
Reviewed for HECO's Facilities Only
Date 7/25/03 By
Engineering Department
Hawaiian Electric Company, Inc.

HECO's review of these drawings shall in no way relieve the Customer, its Consultant, its Contractor or anyone acting on the Customer's behalf from the responsibility for engineering, design, materials and any other liability associated with this project.

DATE	REV.	DESCRIPTION
10/16/03	(5)	Obtained Agency Signatures, Added Panel "I"

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ELECTRICAL UTILITY ROADWAY PLAN
MOANALUA RD

INTERSTATE ROUTE H-3
H-3 FINISH (UNIT VIII)
F.A.I. Proj. No. I-H3-1(75) Unit VIII

Scale: As Noted — Date: Mar. 31, 2003

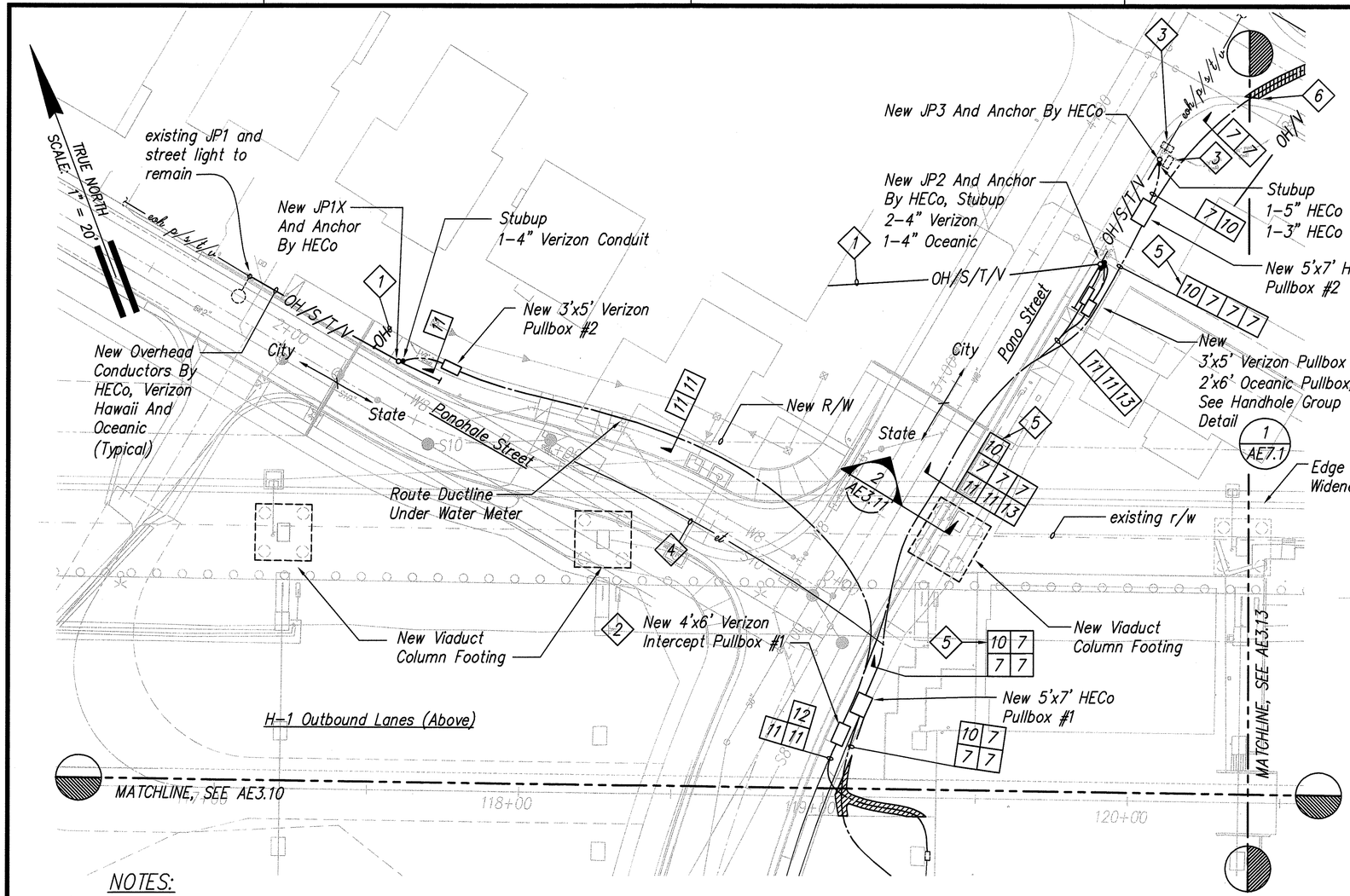
SHEET No. AE3.10 OF 67 SHEETS

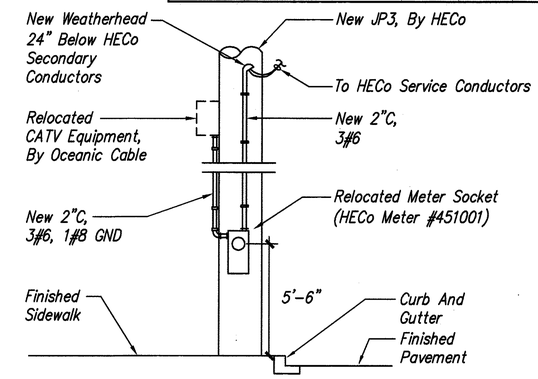
ORIGINAL PLAN | SURVEY PLOTTED BY | DRAWN BY | TRACED BY | DESIGNED BY | QUANTITIES BY | CHECKED BY | DATE | NOTE BOOK | No.

6/19/03-15:45 X:\060\e60-80\60-80-AE3.10.dwg

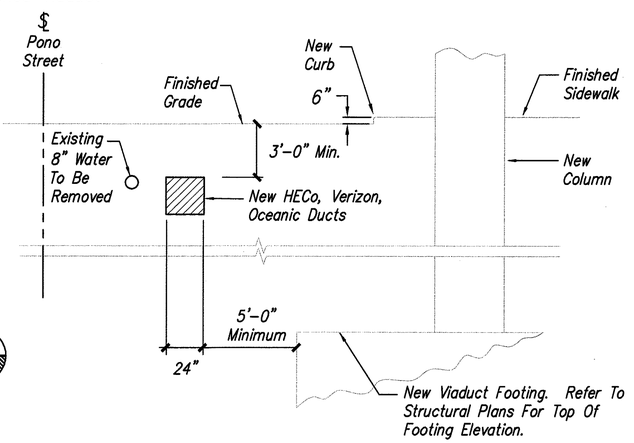
ADD.732

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(75) UNIT VIII	2003	APD.733	816





1 AE3.11 METER ELEVATION – JP3
Not To Scale



2 AE3.11 PARTIAL SECTION – PONO STREET (STA 20+44 TO STA 20+65)
Scale: 1/4" = 1'-0"

NOTES:

1. Relocated Overhead Service Conductors By HECo, Verizon Hawaii & Oceanic. Reconnect To Existing Service Equipment.
2. Place Pullbox Over Existing Ducts. Raise Existing Cables 12" Off The Floor Of Pullbox.
3. Relocated Meter Socket And CATV Equipment, See 1 AE3.11
4. Approximate Location of Abandoned Utility Company Ductline.
5. 3" HECO Secondary Conduit.
6. Cut And Patch Rolled Curb For Installation Of Conduits.

ELECTRICAL UTILITY ROADWAY PLAN
PONOHALE ST & PONO ST
Scale: 1" = 20'

DRAWING REVIEW
Reviewed for HECO's Facilities Only
Date 7/25/03 By
Engineering Department
Hawaiian Electric Company, Inc.
HECO's review of these drawings shall in no way relieve the Customer, its Consultant, its Contractor or anyone acting on the Customer's behalf from the responsibility for engineering, design, materials and any other liability associated with this project.

APPROVED 5

Hawaiian Electric Company, Inc. Date

7/16/03
Verizon Hawaii Date

9/2/03
Oceanic Cablevision Date

GRAPHIC SCALE
1" = 20' 20' 10' 0 20' 40'

LENNOX K. NISHIMURA LICENSED PROFESSIONAL ENGINEER No. 3880-E HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.
PROJECT ENGINEER for ECS, Inc.
APRIL 30, 2004
EXPIRATION DATE OF THE LICENSE

DATE	REV.	DESCRIPTION
10/16/03	5	Obtained Agency Signatures

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ELECTRICAL UTILITY ROADWAY PLAN
PONOHALE ST & PONO ST

INTERSTATE ROUTE H-3
H-3 FINISH (UNIT VIII)
F.A.I. Proj. No. I-H3-1(75) Unit VIII
Scale: 1" = 20'-0" Date: Mar. 31, 2003

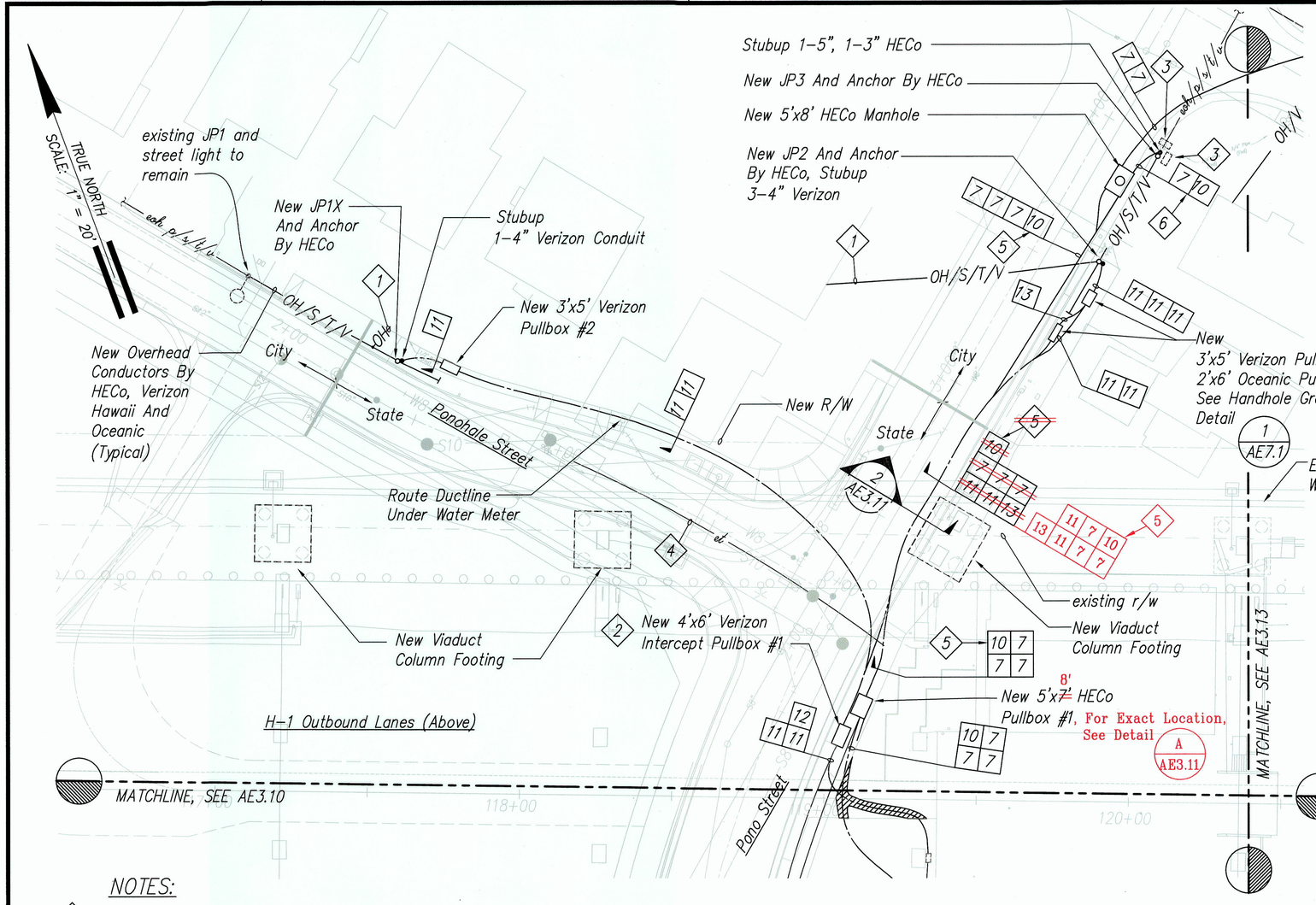
SHEET No. AE3.11 OF 67 SHEETS

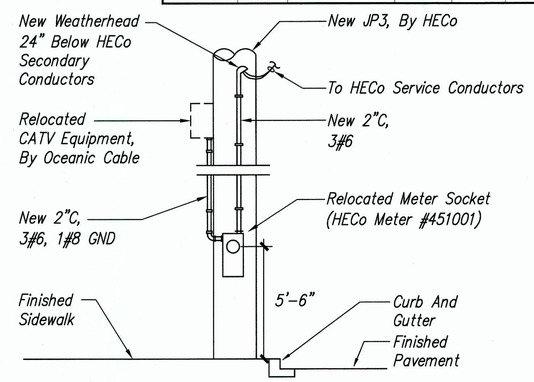
ORIGINAL PLAN | SURVEY PLOTTED BY | DRAWN BY | NOTE BOOK | TRACED BY | DESIGNED BY | QUANTITIES BY | CHECKED BY | DATE | No.

6/19/03-15:46 Y:\060\e60-80\60-80-AE3.11.dwg

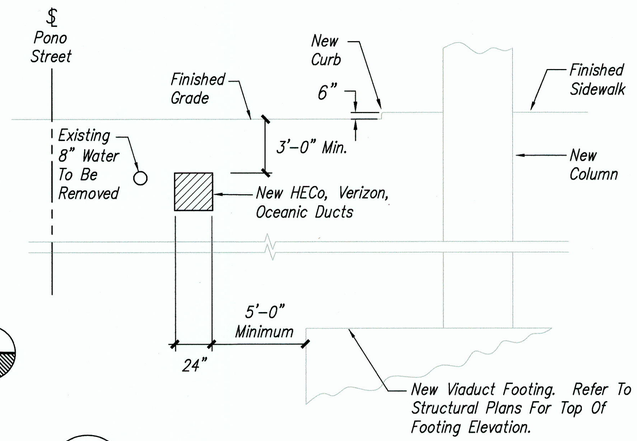
ADD.733

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(75) UNIT VIII	2003	C.O.733	816





1 AE3.11 METER ELEVATION – JP3
Not To Scale

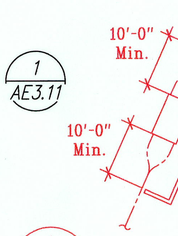


2 AE3.11 PARTIAL SECTION – PONO STREET (STA 20+44 TO STA 20+65)
Scale: 1/4" = 1'-0"

NOTES:

1. Relocated Overhead Service Conductors By HECo, Verizon Hawaii & Oceanic. Reconnect To Existing Service Equipment.
2. Place Pullbox Over Existing Ducts. Raise Existing Cables 12" Off The Floor Of Pullbox.
3. Relocated Meter Socket And CATV Equipment, See 1 AE3.11
4. Approximate Location of Abandoned Utility Company Ductline.
5. 3" HECO Secondary Conduit.
6. Cut And Patch Rolled Curb For Installation Of Conduits.

ELECTRICAL UTILITY ROADWAY PLAN
PONOHALE ST & PONO ST
Scale: 1" = 20'



A AE3.11 HECO PULLBOX #1 – PONO STREET
Not to Scale

LEGEND FOR AS-BUILT POSTINGS

~~WWW~~	Squiggly line for as-built deletion
~~100.00~~	Double line for as-built deletion
Roadway	Text for as-built posting

APPROVED 5

Hawaiian Electric Company, Inc. Date

Verizon Hawaii Date

Oceanic Cablevision Date

GRAPHIC SCALE
1" = 20' 20' 10' 0 20' 40'

LENNOX K. NISHIMURA LICENSED PROFESSIONAL ENGINEER No. 3880-E HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

PROJECT ENGINEER for ECS, Inc.

APRIL 30, 2004
EXPIRATION DATE OF THE LICENSE

DATE	REV.	DESCRIPTION
8/6/04	△	Replaced HECo Pullbox #2 With 5'x8' Manhole
7/9/03	5	Obtained Agency Signatures

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ELECTRICAL UTILITY ROADWAY PLAN
PONOHALE ST & PONO ST

INTERSTATE ROUTE H-3
H-3 FINISH (UNIT VIII)
F.A.I. Proj. No. I-H3-1(75) Unit VIII
Scale: 1" = 20'-0" Date: Mar. 31, 2003

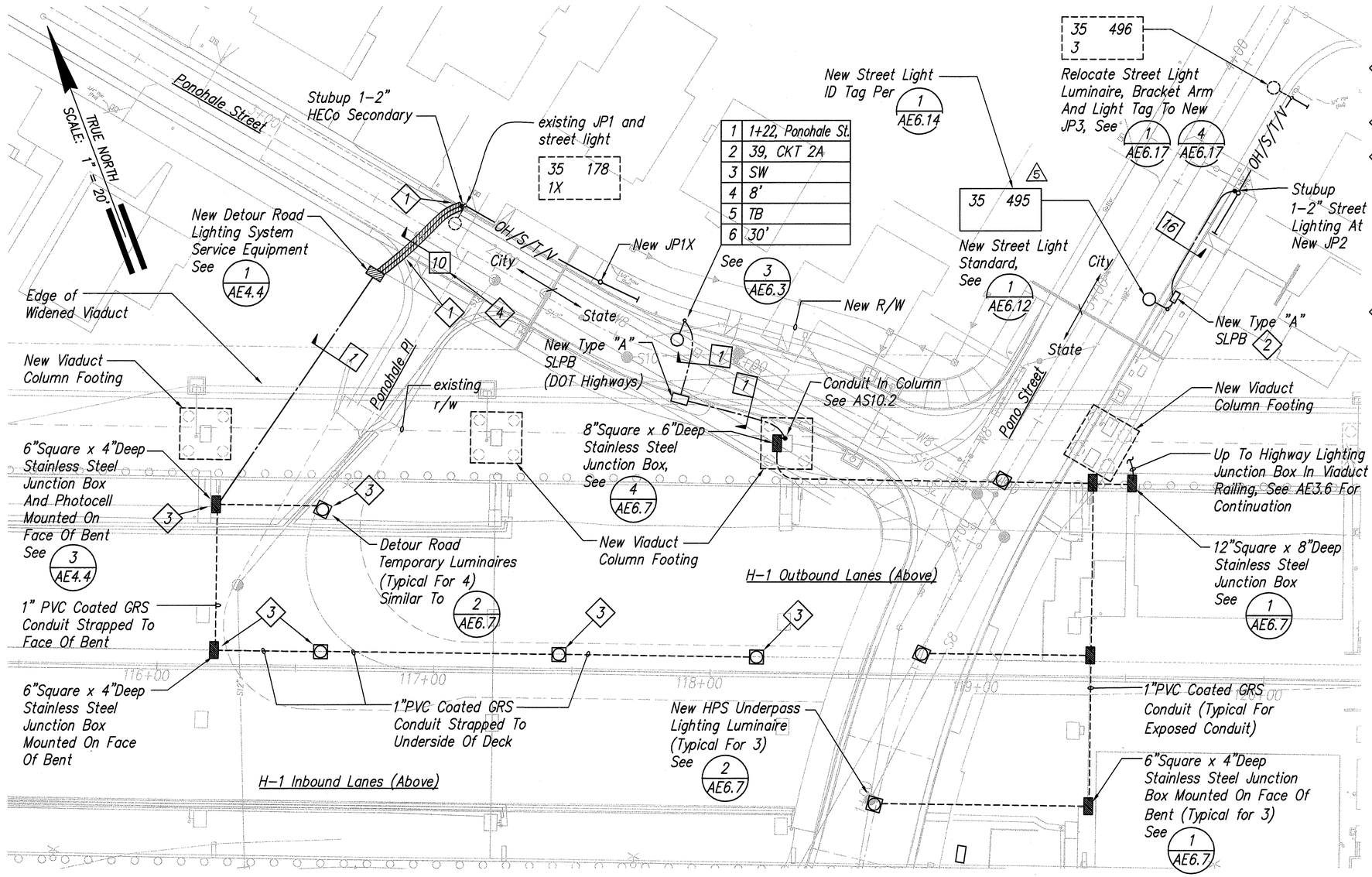
SHEET No. AE3.11 OF 67 SHEETS

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

7/2/13-10:57 Y:\060\060.080\AS-BUILT\AE3.11.dwg

"AS-BUILT" C.O.733

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(75) UNIT VIII	2003	ADD.734	816



ROADWAY LIGHTING PLAN – PONOHALE ST & PONO ST

Scale: 1" = 20'

GRAPHIC SCALE

1" = 20' 20' 10' 0 20' 40'

NOTES:

1. Cut And Patch Existing Rolled Curb For Installation Of Conduits
2. Label Street Light Pullbox, "C&C".
3. Remove Detour Road Luminaires And Mounting Supports, Service Equipment And Associated Conduit And Wiring After Completion Of Construction Activities, At The Direction Of The Engineer. Costs Associated With Removal Shall Be Incidental To The Cost Of The Detour Road Lighting System.
4. Refer To Detour Road Lighting Diagram For Conduit And Conductor Sizes, See 2 AE4.4

APPROVED 5

(for City Street Light Work Only):

Chief, Mechanical/Electrical Design And Engineering Division, DDC City And County Of Honolulu — Date 7/29/03

Chief, Traffic Review Branch, DPP City And County Of Honolulu — Date 8/12/03

DATE	REV.	DESCRIPTION
10/16/03	5	Obtained Agency Signatures, Revised Street Light Tag

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ROADWAY LIGHTING PLAN
PONOHALE ST & PONO ST

INTERSTATE ROUTE H-3
H-3 FINISH (UNIT VIII)
F.A.I. Proj. No. I-H3-1(75) Unit VIII

Scale: 1" = 20'-0" Date: Mar. 31, 2003

LENNOX K. NISHIMURA LICENSED PROFESSIONAL ENGINEER No. 3880-E HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

PROJECT ENGINEER for ECS, Inc.

APRIL 30, 2004
EXPIRATION DATE OF THE LICENSE

SURVEY PLOTTED BY
DRAWN BY
TRACED BY
DESIGNED BY
QUANTITIES BY
CHECKED BY
DATE

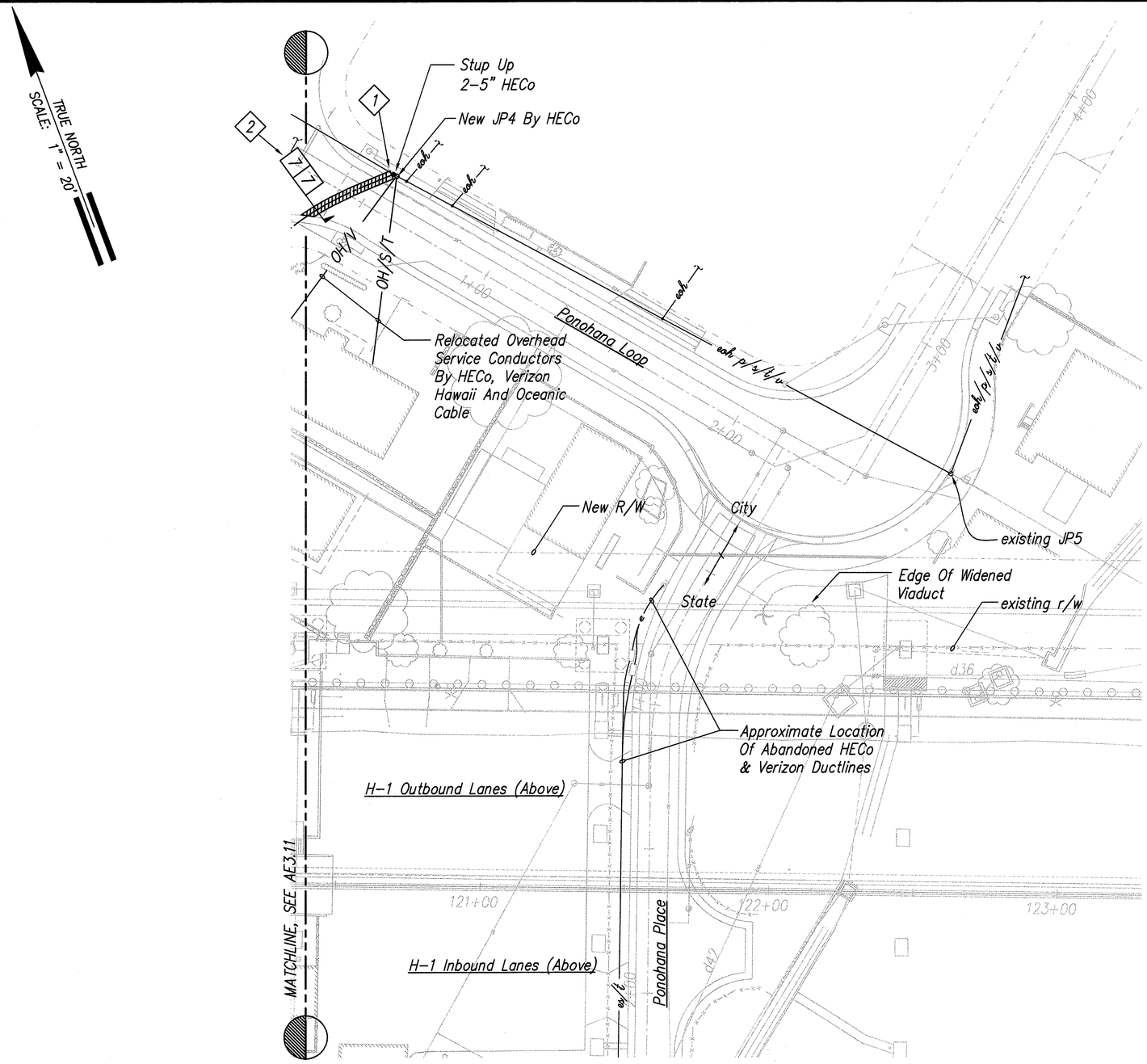
ORIGINAL PLAN
NOTE BOOK No.

6/20/03-8:34 Y:\060\s60-80\60-80-AE3.12.dwg

SHEET No. AE3.12 OF 67 SHEETS

ADD. 734

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(75) UNIT VIII	2003	ADD.735	816



NOTES:

1. Cut And Patch Existing Rolled Curb For Installation Of Conduits
2. Sawcut And Patch AC Pavement, See 3/AE6.18

DRAWING REVIEW

Reviewed for HECO's Facilities Only

Date 7/25/03 By JKL

Engineering Department
Hawaiian Electric Company, Inc.

HECO's review of these drawings shall in no way relieve the Customer, its Consultant, its Contractor or anyone acting on the Customer's behalf from the responsibility for engineering, design, materials and any other liability associated with this project.

APPROVED 5

Hawaiian Electric Company, Inc.	Date
	7/16/03
Verizon Hawaii	Date
	9/2/03
Oceanic Cablevision	Date

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

6/20/03-9:32 Y:\DGN\ge0-80\60-80-AE3.13.dwg

ELECTRICAL UTILITY ROADWAY PLAN
PONOHANA LP & PONOHANA PL
Scale: 1" = 20'

GRAPHIC SCALE
1" = 20' 20' 10' 0 20' 40'

LEONNOX K. NISHIMURA
LICENSED PROFESSIONAL ENGINEER
No. 3880-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

PROJECT ENGINEER for ECS, Inc.

APRIL 30, 2004
EXPIRATION DATE OF THE LICENSE

DATE	REV.	DESCRIPTION
10/16/03	5	Obtained Agency Signatures

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

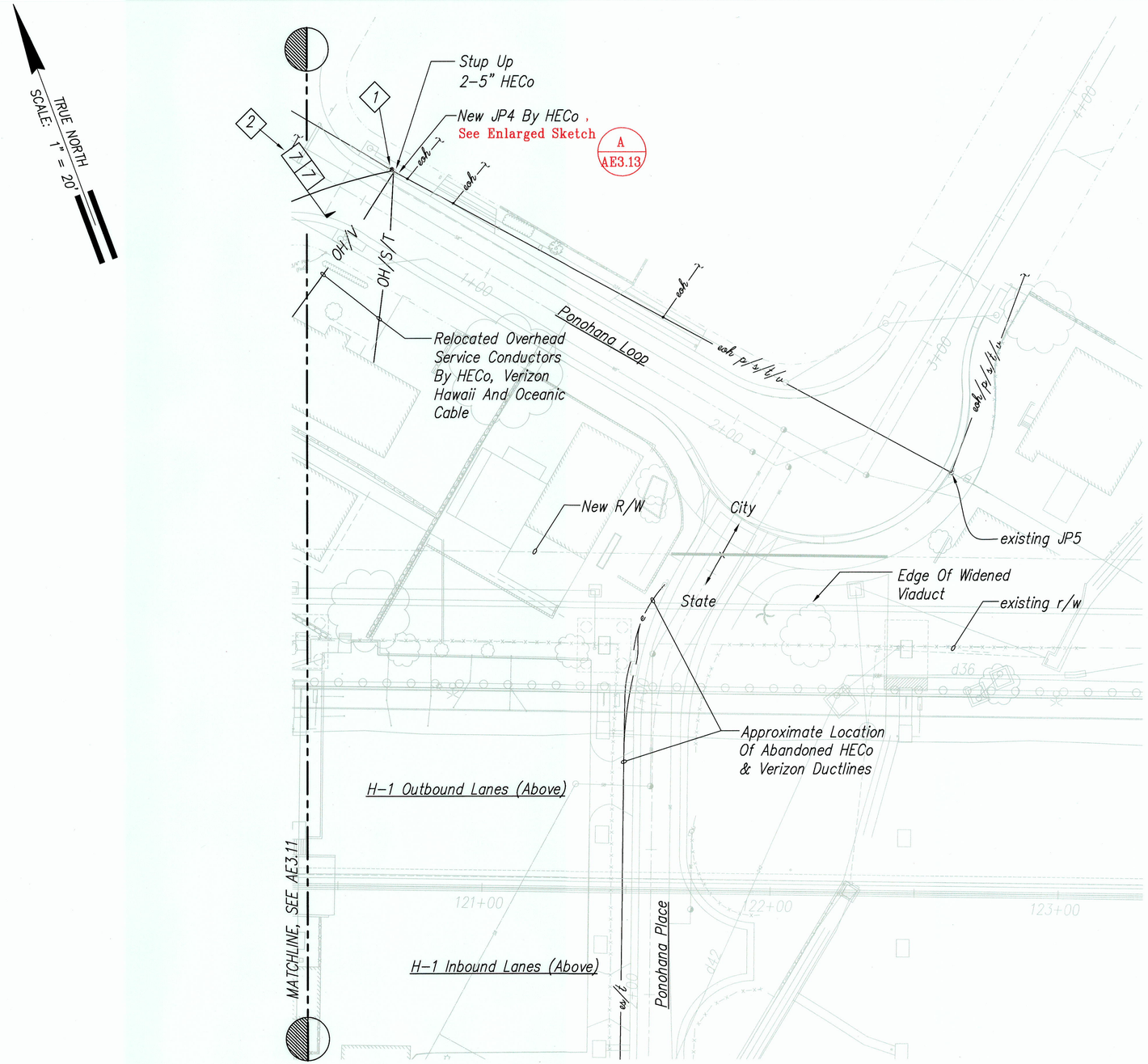
ELECTRICAL UTILITY ROADWAY PLAN
PONOHANA LP & PONOHANA PL

INTERSTATE ROUTE H-3
H-3 FINISH (UNIT VIII)
F.A.I. Proj. No. I-H3-1(75) Unit VIII
Scale: 1" = 20'-0" Date: Mar. 31, 2003

SHEET No. AE3.13 OF 67 SHEETS

ADD.735

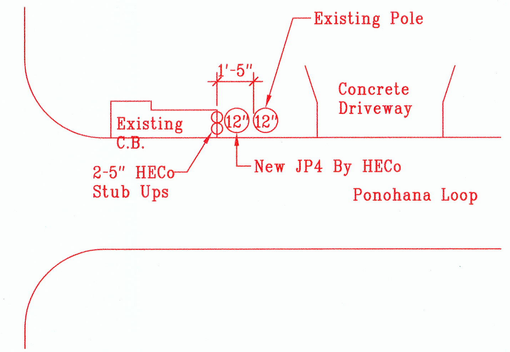
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(175) UNIT VIII	2003	C.O.735	816



ELECTRICAL UTILITY ROADWAY PLAN
PONOHANA LP & PONOHANA PL
Scale: 1" = 20'

NOTES:

1. Cut And Patch Existing Rolled Curb For Installation Of Conduits
2. Sawcut And Patch AC Pavement, See 3 / AE6.18



A / AE3.13 NEW JP4 ON PONOHANA LOOP
Not to Scale

APPROVED 5

Hawaiian Electric Company, Inc. Date

Verizon Hawaii Date

Oceanic Cablevision Date

LEGEND FOR AS-BUILT POSTINGS

~~WWW~~	Squiggly line for as-built deletion
~~100.00~~	Double line for as-built deletion
Roadway	Text for as-built posting

DATE	REV.	DESCRIPTION
8/6/04	△	Revised Location of New JP4
7/9/03	5	Obtained Agency Signatures

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ELECTRICAL UTILITY ROADWAY PLAN
PONOHANA LP & PONOHANA PL

INTERSTATE ROUTE H-3
H-3 FINISH (UNIT VIII)
F.A.I. Proj. No. I-H3-1(75) Unit VIII
Scale: 1" = 20'-0" Date: Mar. 31, 2003

SHEET No. AE3.13 OF 67 SHEETS

GRAPHIC SCALE
1" = 20' 20' 10' 0 20' 40'

LENNOX K. NISHIMURA
LICENSED PROFESSIONAL ENGINEER
No. 3880-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

PROJECT ENGINEER for ECS, Inc.

APRIL 30, 2004
EXPIRATION DATE OF THE LICENSE

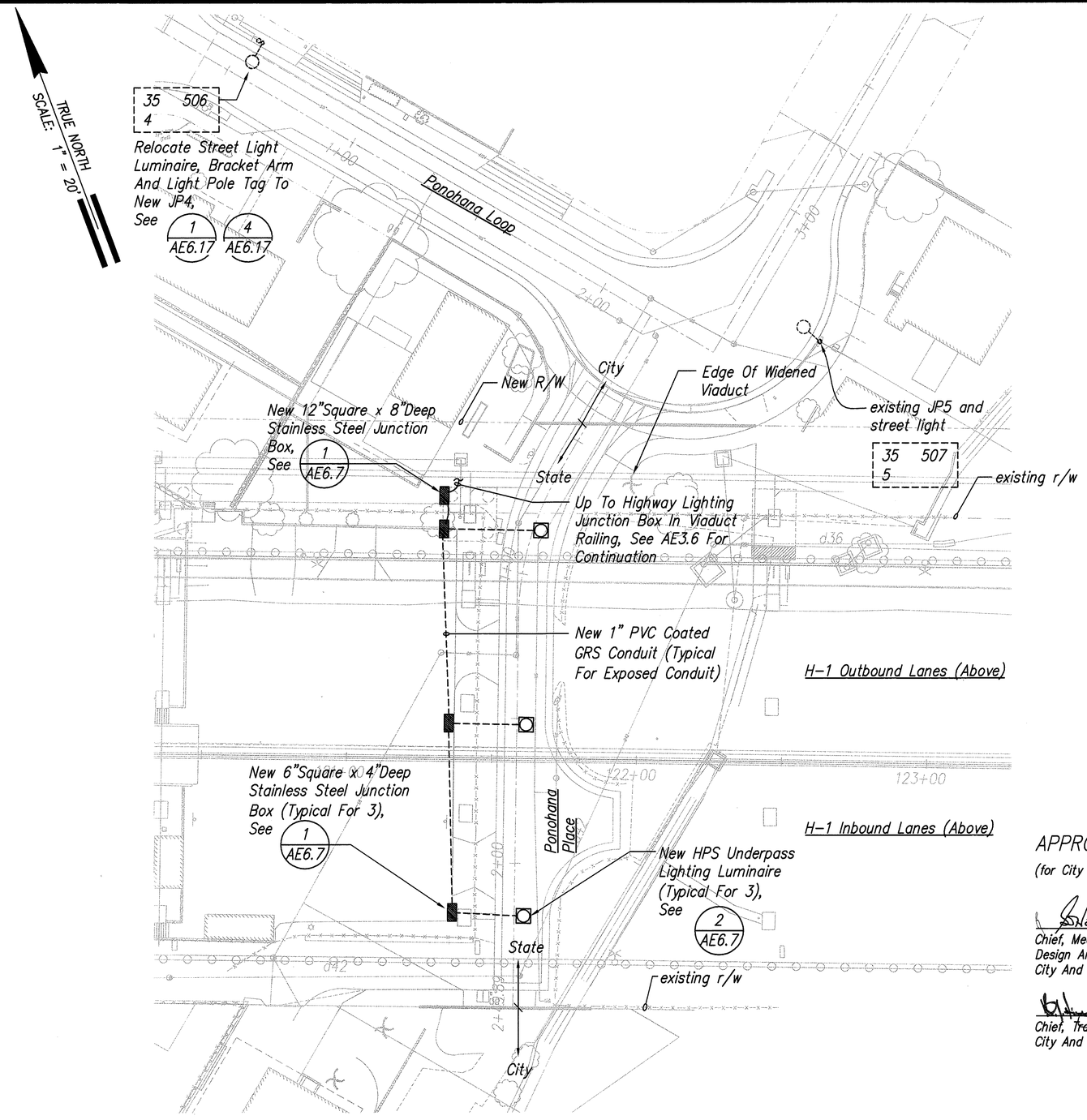
ORIGINAL PLAN
NOTE BOOK
No.

SURVEY PLOTTED BY
DRAWN BY
TRACED BY
DESIGNED BY
QUANTITIES BY
CHECKED BY
DATE

7/2/13-10:40 Y:\060\060.080\AS-BUILT\AE3.13.dwg

"AS-BUILT" C.O.735

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(75) UNIT VIII	2003	ADD.736	816



ROADWAY LIGHTING PLAN – PONOHANA LP & PONOHANA PL

Scale: 1" = 20'

APPROVED 5

(for City Street Light Work Only):

S Hemade 7/29/03

Chief, Mechanical/Electrical Design And Engineering Division, DDC City And County Of Honolulu — Date

Chief, Traffic Review Branch, DPP — Date

City And County Of Honolulu

GRAPHIC SCALE

1" = 20' 20' 10' 0 20' 40'

LENNOX K. NISHIMURA LICENSED PROFESSIONAL ENGINEER No. 3880-E HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

PROJECT ENGINEER for ECS, Inc.

APRIL 30, 2004
EXPIRATION DATE OF THE LICENSE

DATE	REV.	DESCRIPTION
10/16/03	5	Obtained Agency Signatures

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ROADWAY LIGHTING PLAN
PONOHANA LP & PONOHANA PL

INTERSTATE ROUTE H-3
H-3 FINISH (UNIT VIII)
F.A.I. Proj. No. I-H3-1(75) Unit VIII

Scale: 1" = 20'-0" Date: Mar. 31, 2003

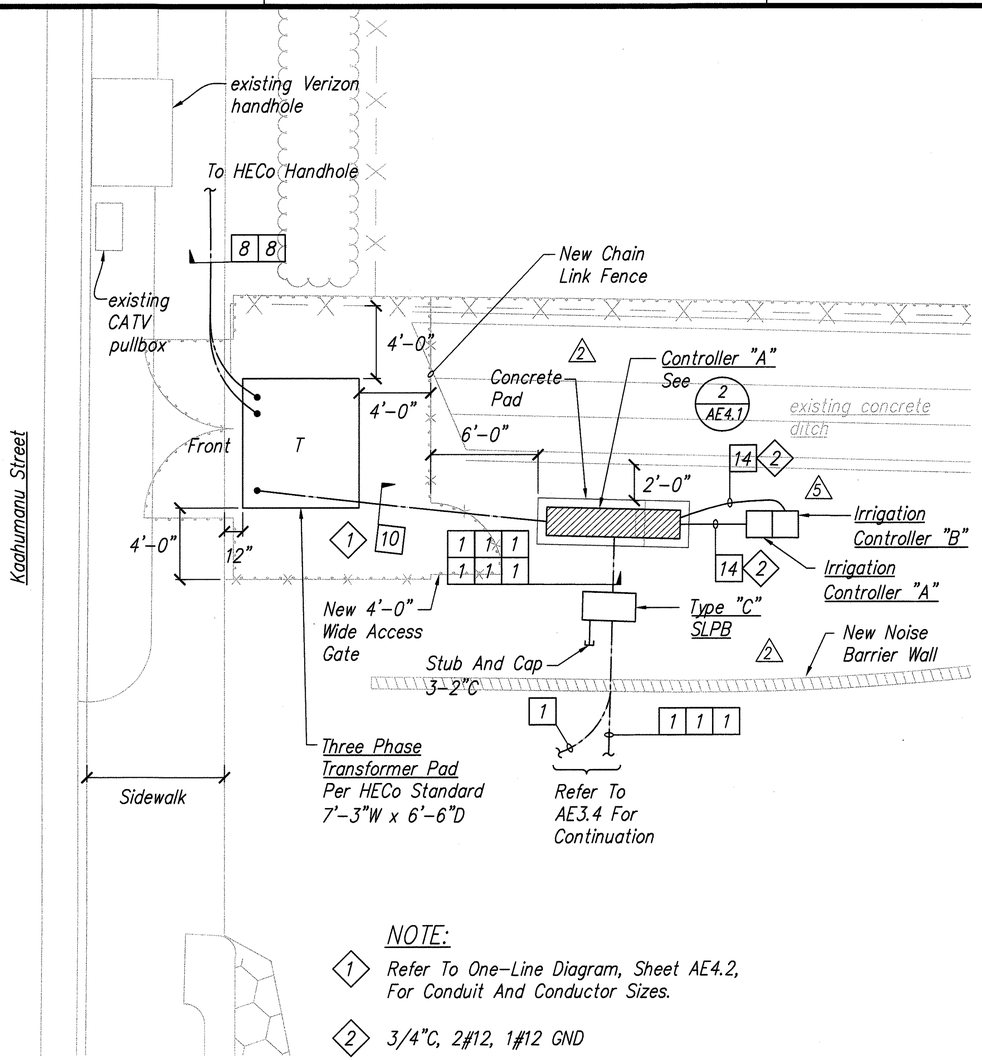
SHEET No. AE3.14 OF 67 SHEETS

ADD.736

ORIGINAL PLAN
NOTE BOOK
SURVEY PLOTTED BY
DRAWN BY
TRACED BY
DESIGNED BY
QUANTITIES BY
CHECKED BY
DATE

6/20/03-8:44 Y:\060\e60-80\60-80-AE3.14.dwg

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(75) UNIT VIII	2003	ADD. 737	816

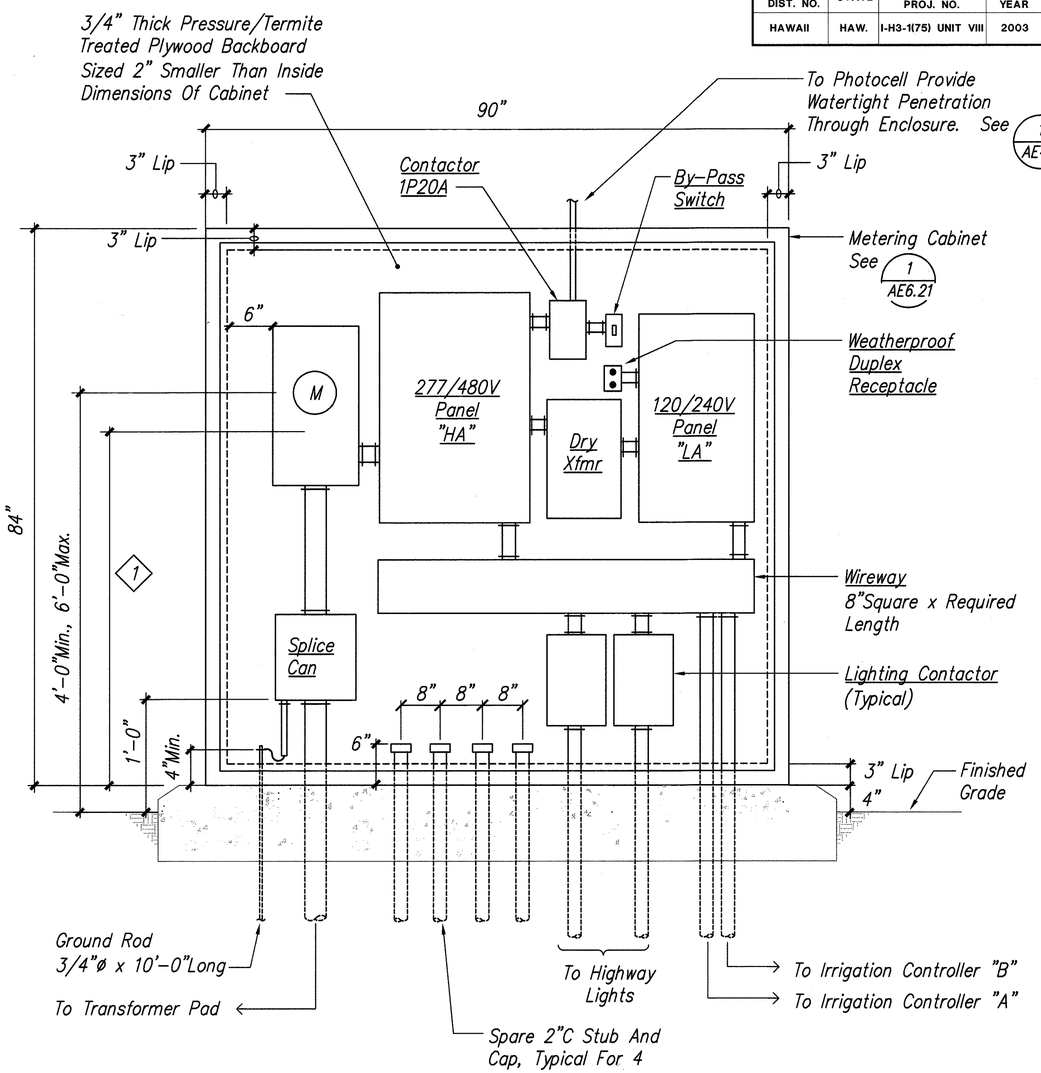


NOTE:

1. Refer To One-Line Diagram, Sheet AE4.2, For Conduit And Conductor Sizes.
2. 3/4"C, 2#12, 1#12 GND

1 / AE4.1 HIGHWAY LIGHTING CONTROLLER "A" DETAIL PLAN

Scale: 1/4" = 1'-0"



NOTE:

1. 3'-0" Minimum To Center Of Commercial By-Pass Facility.

2 / AE4.1 CONTROLLER "A" EQUIPMENT ELEVATION

Not To Scale

GRAPHIC SCALE

1/4" = 1'-0" 0 1' 2' 3'

LENNOX K. NISHIMURA LICENSED PROFESSIONAL ENGINEER No. 3880-E HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

PROJECT ENGINEER for ECS, Inc.

APRIL 30, 2004
EXPIRATION DATE OF THE LICENSE

DATE	REV.	DESCRIPTION
10/16/03	5	Relocated Irrigation Controller "A"

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

HIGHWAY LIGHTING CONTROLLER DETAIL PLAN

INTERSTATE ROUTE H-3
H-3 FINISH (UNIT VIII)
F.A.I. Proj. No. I-H3-1(75) Unit VIII

Scale: As Noted Date: Mar. 31, 2003

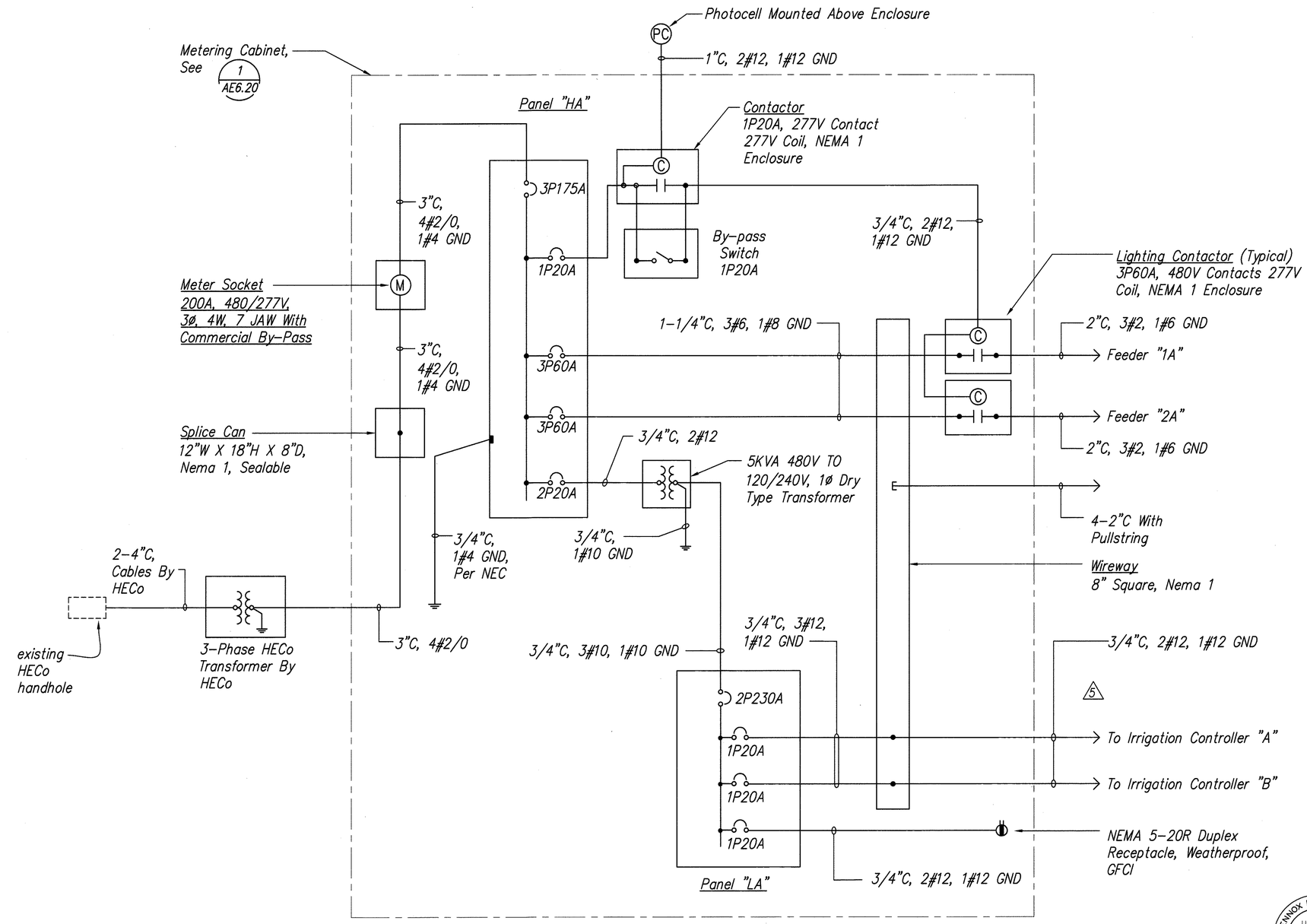
SHEET No. AE4.1 OF 67 SHEETS

ADD. 737

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

10/14/03-9:18 Y:\060\e60-80\60-80-AE4.01.dwg

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(75) UNIT VIII	2003	ADD. 738	816



1 / AE4.2 HIGHWAY LIGHTING CONTROLLER "A" ONE LINE DIAGRAM
Not To Scale

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

10/14/03-9:18 X:\D60\e60-80\60-80-AE4.02.dwg

10/16/03	5	Revised Wiring To Irrigation Controller "A"
DATE	REV.	DESCRIPTION

LENNOX K. NISHIMURA
LICENSED PROFESSIONAL ENGINEER
No. 3880-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

PROJECT ENGINEER for ECS, Inc.

APRIL 30, 2004
EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

HIGHWAY LIGHTING CONTROLLER ONE LINE DIAGRAM

INTERSTATE ROUTE H-3
H-3 FINISH (UNIT VIII)
F.A.I. Proj. No. I-H3-1(75) Unit VIII

Scale: None Date: Mar. 31, 2003

SHEET No. AE4.2 OF 67 SHEETS

ADD. 738

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(75) UNIT VIII	2003	ADD. 739	816

PANEL "HA"

277/480 Volts, 3 Phase, 4 Wire
3P175 Amp Main Breaker

MIN AIC: 22,000
Mounting: Surface

Wire Size (AWG)	CKT NO	USE	CKT BKR Pole	CKT BKR AMP	CONN LOAD (KVA) Phase A	Phase B	Phase C	CKT BKR AMP	CKT BKR Pole	USE	CKT NO	Wire Size (AWG)
2	1		3		3.2 0.5			20	1	Lighting Contactor	2	12
2	3	Feeder "1A"				3.2 2.5		20		Transformer	4	12
2	5			60			3.2 2.5		2		6	12
2	7		3		5.4 –			–	1	PFB	8	–
2	9	Feeder "2A"				5.4 –		–	1	PFB	10	–
2	11			60			5.4 –	–	1	PFB	12	–
–	13	PFB	1	–	– –			–	1	PFB	14	–
–	15	PFB	1	–		– –		–	1	PFB	16	–
–	17	PFB	1	–			– –	–	1	PFB	18	–
–	19	PFB	1	–	– –			–	1	PFB	20	–
–	21	PFB	1	–		– –		–	1	PFB	22	–
–	23	PFB	1	–			– –	–	1	PFB	24	–
–	25	PFB	1	–	– –			–	1	PFB	26	–
–	27	PFB	1	–		– –		–	1	PFB	28	–
–	29	PFB	1	–			– –	–	1	PFB	30	–
		Connected Load/Phase			9.1	11.1	11.1					
		Total Connected Load			31.3 KVA							
		Demand Factor			1.0							
		Total Demand Load			31.3 KVA= 38 AMPS							

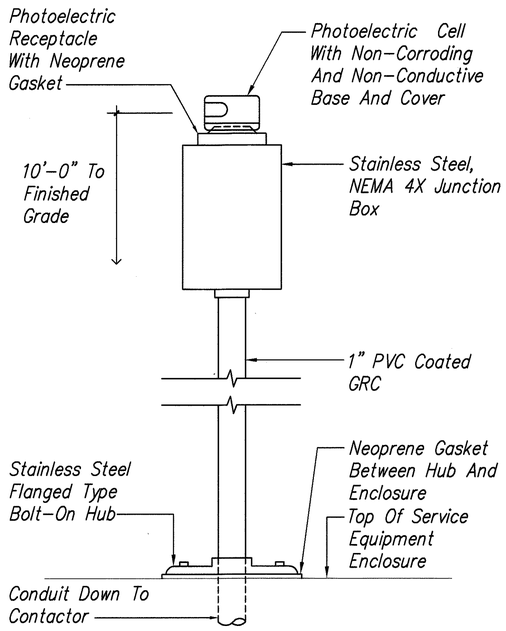
PANEL "LA"

120/240 Volts, 1 Phase, 3 Wire
2P30 Amp Main Breaker

MIN AIC: 10,000
Mounting: Surface

Wire Size (AWG)	CKT NO	USE	CKT BKR Pole	CKT BKR AMP	CONN LOAD (KVA) Phase A	Phase B	CKT BKR AMP	CKT BKR Pole	USE	CKT NO	Wire Size (AWG)
12	1	Receptacle	1	20	1.0 1.0		20	1	Spare	2	–
12	3	Irrigation Cont. "A"	1	20		1.0 1.0	20	1	Spare	4	–
12	5	Irrigation Cont. "B"	1	20	1.0 –		–	1	PFB	6	–
–	7	Spare	1	20		1.0 –	–	1	PFB	8	–
–	9	PFB	1	–	– –		–	1	PFB	10	–
–	11	PFB	1	–		– –	–	1	PFB	12	–
–	13	PFB	1	–	– –		–	1	PFB	14	–
–	15	PFB	1	–		– –	–	1	PFB	16	–
–	17	PFB	1	–	– –		–	1	PFB	18	–
–	19	PFB	1	–		– –	–	1	PFB	20	–
		Connected Load/Phase			3.0	3.0					
		Total Connected Load			6.0 KVA						
		Demand Factor			0.5						
		Total Demand Load			3.0 KVA= 12.5 AMPS						

5



1 / AE4.3 PHOTOCELL MOUNTED ABOVE EQUIPMENT ENCLOSURE
Not To Scale

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

10/14/03-9:19 Y:\060\s60-80\60-80-AE4.03.dwg

LENNOX K. NISHIMURA
LICENSED PROFESSIONAL ENGINEER
No. 3880-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

PROJECT ENGINEER for ECS, Inc.

APRIL 30, 2004
EXPIRATION DATE OF THE LICENSE

DATE	REV.	DESCRIPTION
10/16/03	5	Revised Wiring To Irrigation Controller "A"

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

HIGHWAY LIGHTING CONTROLLER
PANEL SCHEDULES

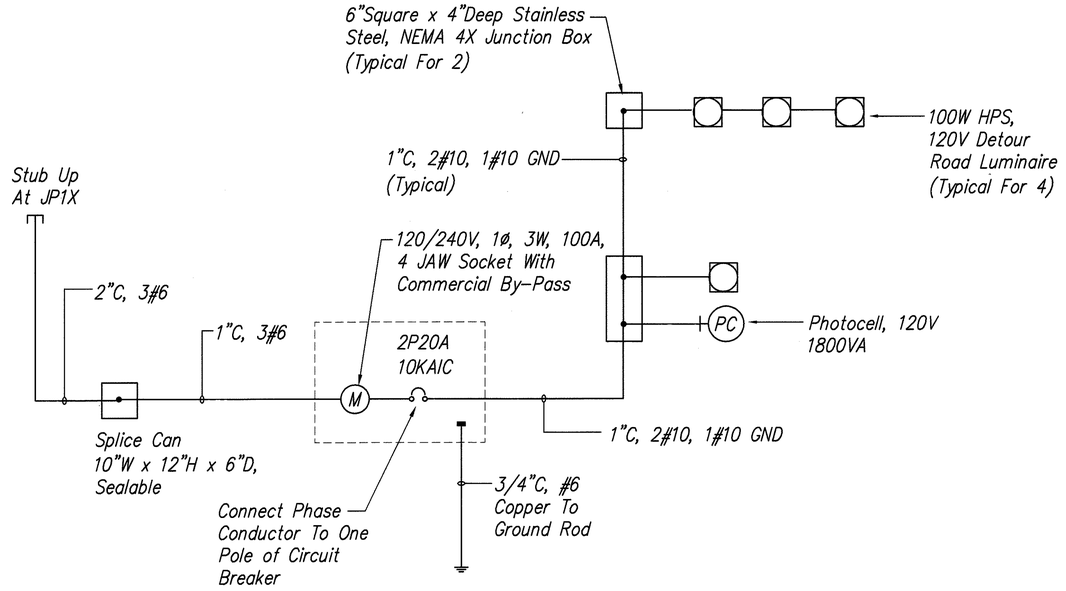
INTERSTATE ROUTE H-3
H-3 FINISH (UNIT VIII)
F.A.I. Proj. No. I-H3-1(75) Unit VIII

Scale: None
Date: Mar. 31, 2003

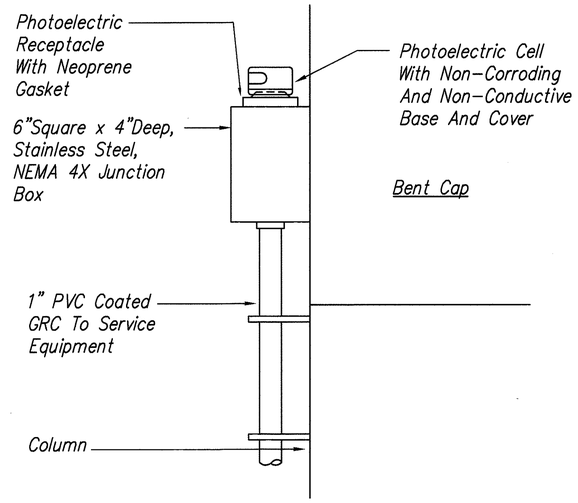
SHEET No. AE4.3 OF 67 SHEETS

ADD. 739

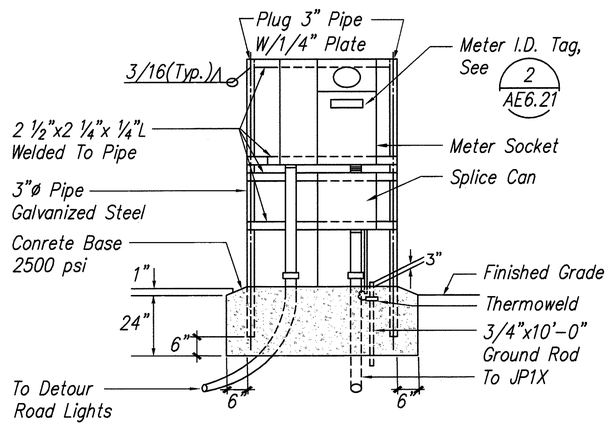
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(75) UNIT VIII	2003	ADD. 740	816



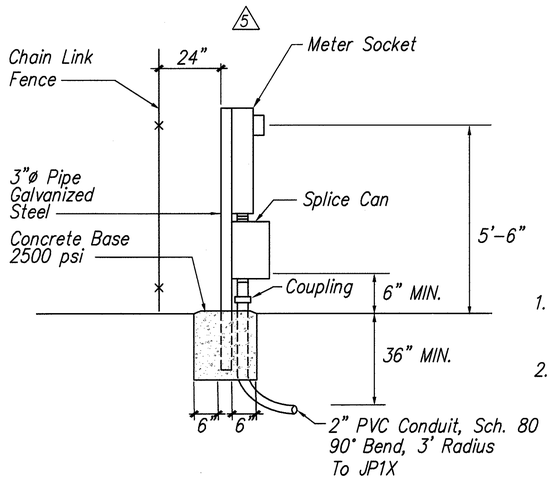
2 / AE4.4 DETOUR ROAD LIGHTING ONE-LINE DIAGRAM
Not To Scale



3 / AE4.4 DETOUR ROAD PHOTOCELL
Not To Scale



FRONT ELEVATION



SIDE ELEVATION

1 / AE4.4 DETOUR ROAD SERVICE EQUIPMENT ELEVATION
Not To Scale

NOTES:

1. Pedestal Shall Be Hot-Dipped Galvanized After Fabrication.
2. All Fastening Bolts, Nuts & Washers Shall Be Stainless Steel.

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

10/14/03-8:19 Y:\060\60-80\60-80-AE4.04.dwg

LENNOX K. NISHIMURA LICENSED PROFESSIONAL ENGINEER No. 3880-E HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

PROJECT ENGINEER for ECS, Inc.

APRIL 30, 2004
EXPIRATION DATE OF THE LICENSE

DATE	REV.	DESCRIPTION
10/16/03	5	Added Chain Link Fence

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DETOUR ROAD LIGHTING SERVICE EQUIPMENT DETAILS

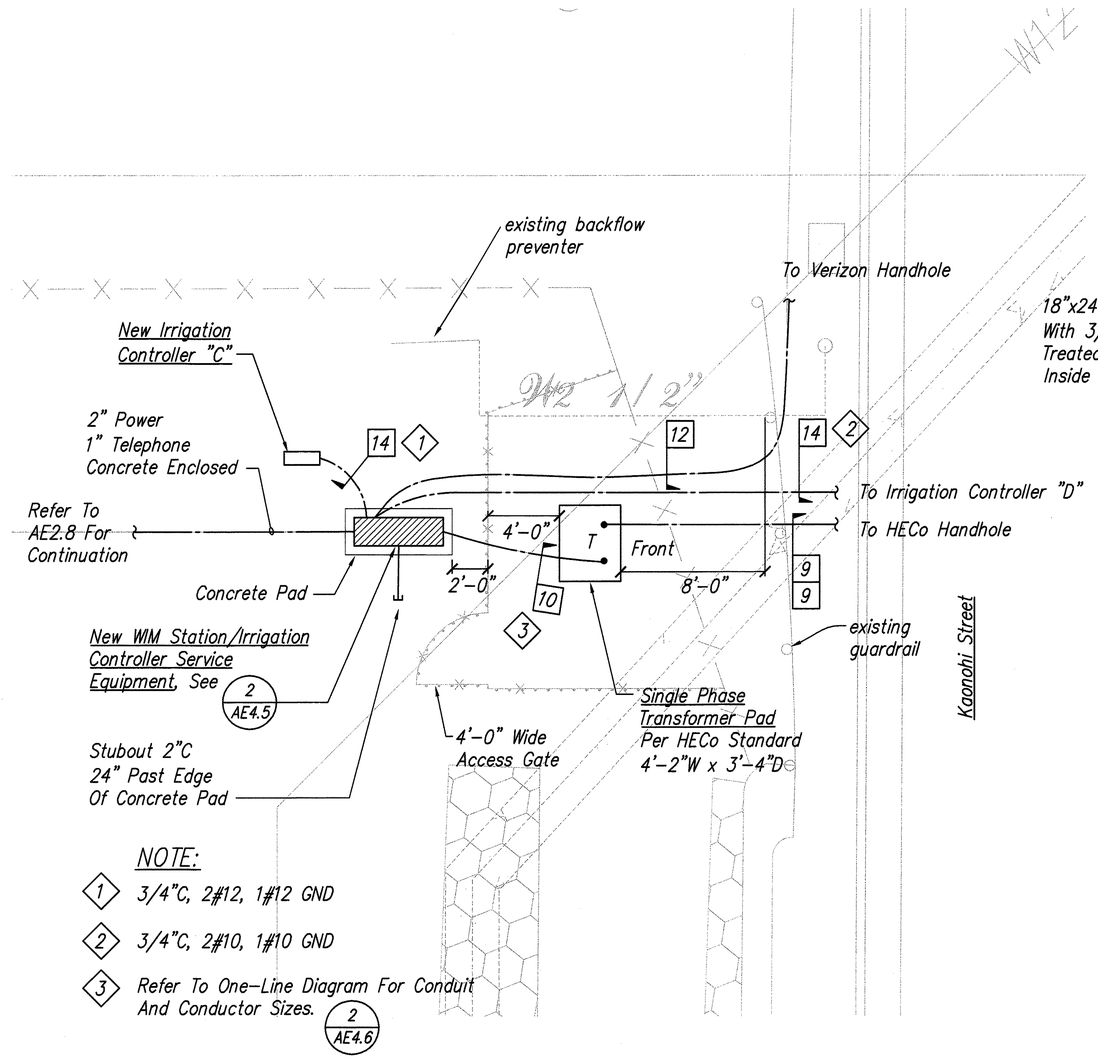
INTERSTATE ROUTE H-3
H-3 FINISH (UNIT VIII)
F.A.I. Proj. No. I-H3-1(75) Unit VIII

Scale: None Date: Mar. 31, 2003

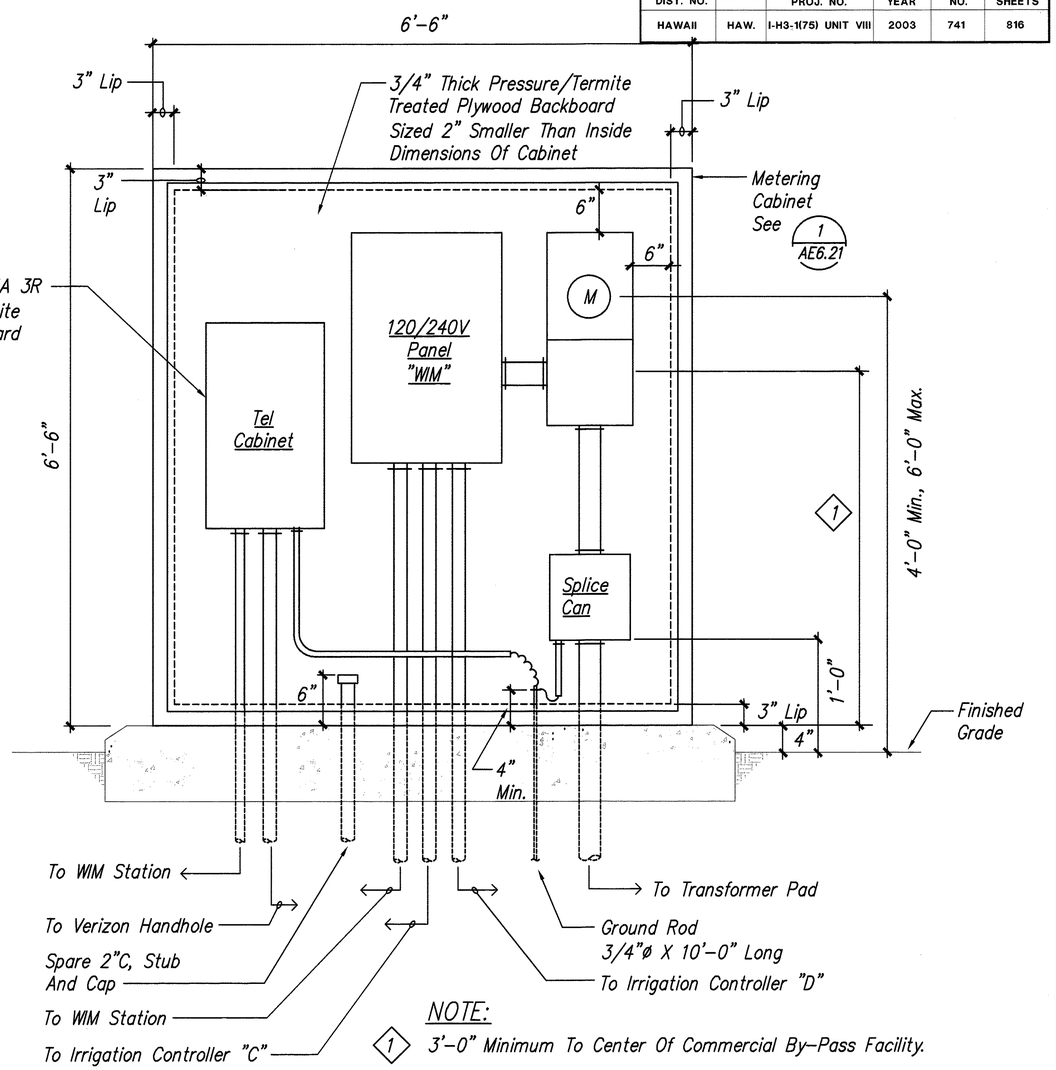
SHEET No. AE4.4 OF 67 SHEETS

ADD.740

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(75) UNIT VIII	2003	741	816



1 AE4.5 WIM STATION SERVICE EQUIPMENT DETAIL PLAN
Scale: 1/4" = 1'-0"



2 AE4.5 WIM STATION/IRRIGATION CONTROLLER SERVICE EQUIPMENT ELEVATION
Not To Scale

GRAPHIC SCALE
1/4" = 1'-0" 0 1' 2' 3'

LENNOX K. NISHIMURA LICENSED PROFESSIONAL ENGINEER No. 3880-E HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

PROJECT ENGINEER for ECS, Inc.

APRIL 30, 2004
EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

WIM STATION SERVICE EQUIPMENT DETAIL PLAN

INTERSTATE ROUTE H-3
H-3 FINISH (UNIT VIII)
F.A.I. Proj. No. I-H3-1(75) Unit VIII

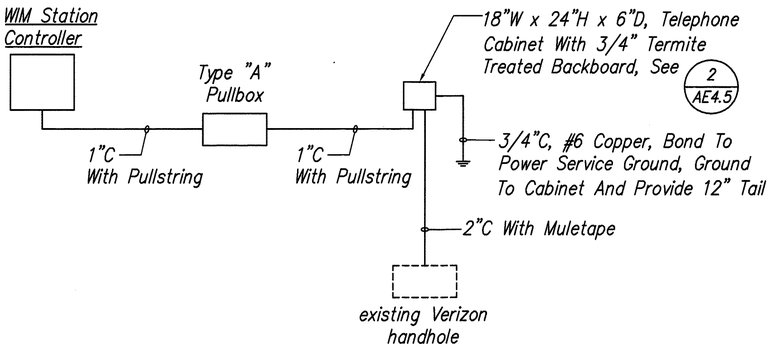
Scale: As Noted Date: Mar. 31, 2003

SHEET No. AE4.5 OF 67 SHEETS

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

4/3/03-14:16 I:\060\e60-80\60-80-AE4.05.dwg

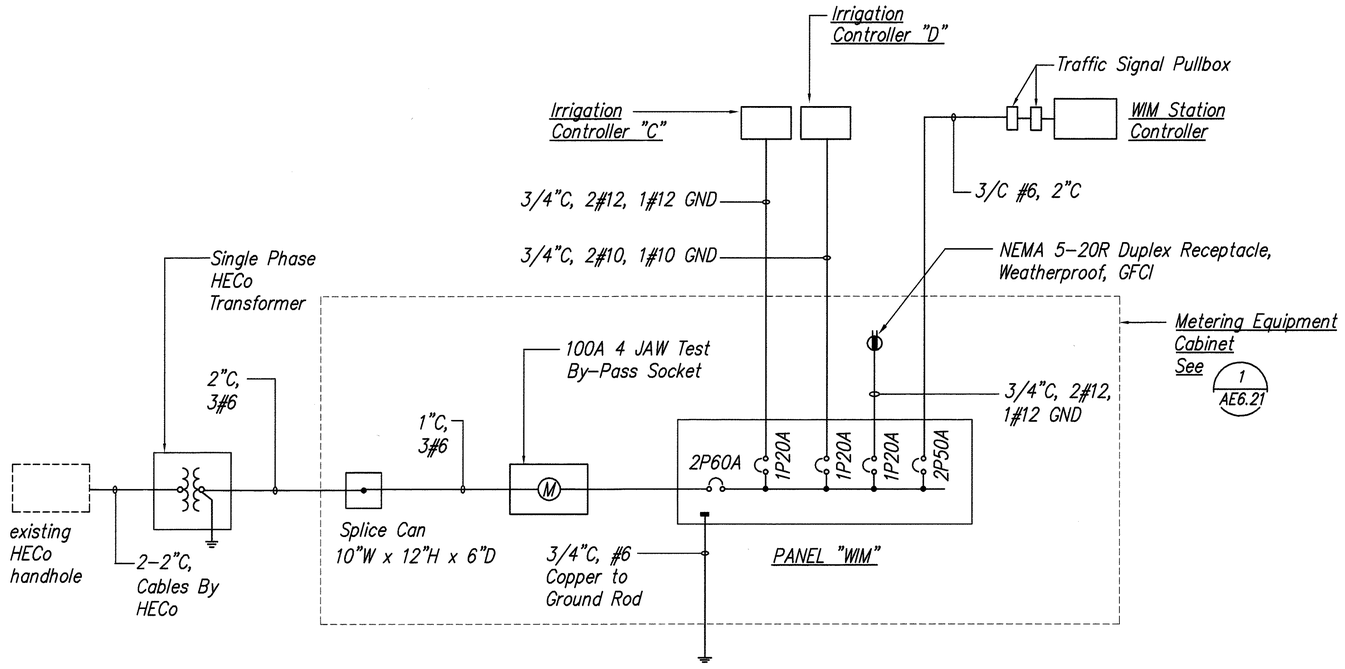
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(75) UNIT VIII	2003	742	816



1/AE4.6 WIM STATION TELEPHONE SERVICE DIAGRAM
Not To Scale

PANEL "WIM" — 120/240 Volts, 1 Phase, 3 Wire; 2P60A Main Breaker; MIN AIC: 10,000; Mounting: Surface

Wire Size (AWG)	CKT NO	USE	CKT BKR Pole	CKT BKR AMP	CONN LOAD (KVA) Phase A	CONN LOAD (KVA) Phase B	CKT BKR AMP	CKT BKR Pole	USE	CKT NO	Wire Size (AWG)
12	1	Irrigation Controller "C"	1	20	1.0	3.5	50		WIM Station	2	6
10	3	Irrigation Controller "D"	1	20		1.0 3.5		2		4	6
12	5	Receptacle	1	20	1.0 –		–	1	PFB	6	–
–	7	Spare	1	20		1.0 –	–	1	PFB	8	–
–	9	PFB	1	20	– –		–	1	PFB	10	–
–	11	PFB	1	20		– –	–	1	PFB	12	–
–	13	PFB	1	20	– –		–	1	PFB	14	–
–	15	PFB	1	20		– –	–	1	PFB	16	–
–	17	PFB	1	20	– –		–	1	PFB	18	–
–	19	PFB	1	20		– –	–	1	PFB	20	–
		Connected Load/Phase			5.5	5.5					
		Total Connected Load			11.0 KVA						
		Demand Factor			0.8						
		Total Demand Load			8.8 KVA= 37 AMPS						



2/AE4.6 WIM STATION/IRRIGATION CONTROLLER ONE-LINE DIAGRAM
Not To Scale

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

4/3/03-14:16 Y:\060\s60-80\60-80-AE4.06.dwg

LENNOX K. NISHIMURA LICENSED PROFESSIONAL ENGINEER No. 3880-E HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

PROJECT ENGINEER for ECS, Inc.

APRIL 30, 2004
EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

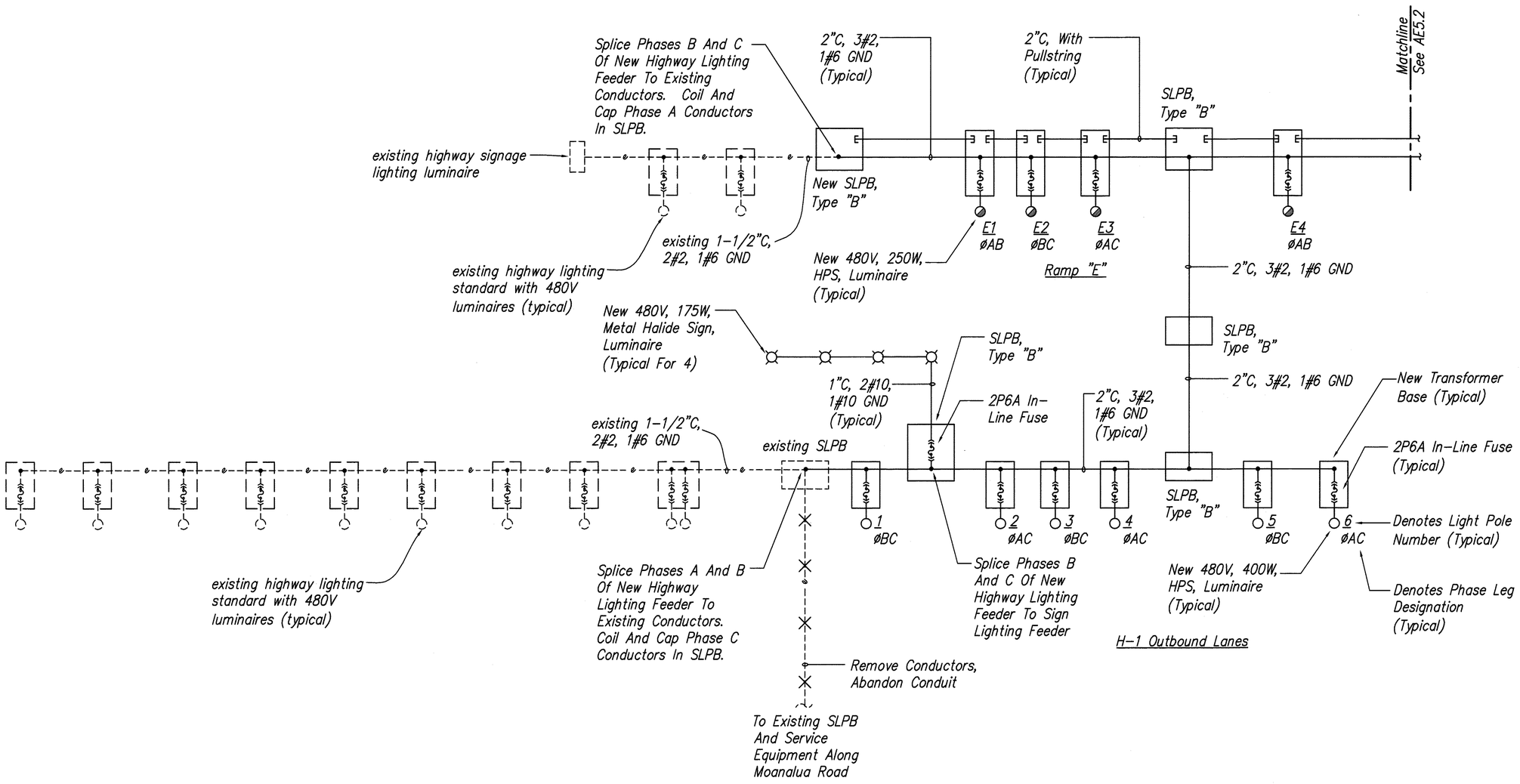
WIM STATION
ONE LINE DIAGRAM

INTERSTATE ROUTE H-3
H-3 FINISH (UNIT VIII)
F.A.I. Proj. No. I-H3-1(75) Unit VIII

Scale: None Date: Mar. 31, 2003

SHEET No. AE4.6 OF 67 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(75) UNIT VIII	2003	743	816



PARTIAL HIGHWAY LIGHTING WIRING DIAGRAM 1

No Scale

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

4/3/03-14:16 I:\060\e60-80\60-80-AE5.01.dwg

LENNOX K. NISHIMURA LICENSED PROFESSIONAL ENGINEER No. 3880-E HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

PROJECT ENGINEER for ECS, Inc.

APRIL 30, 2004
EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

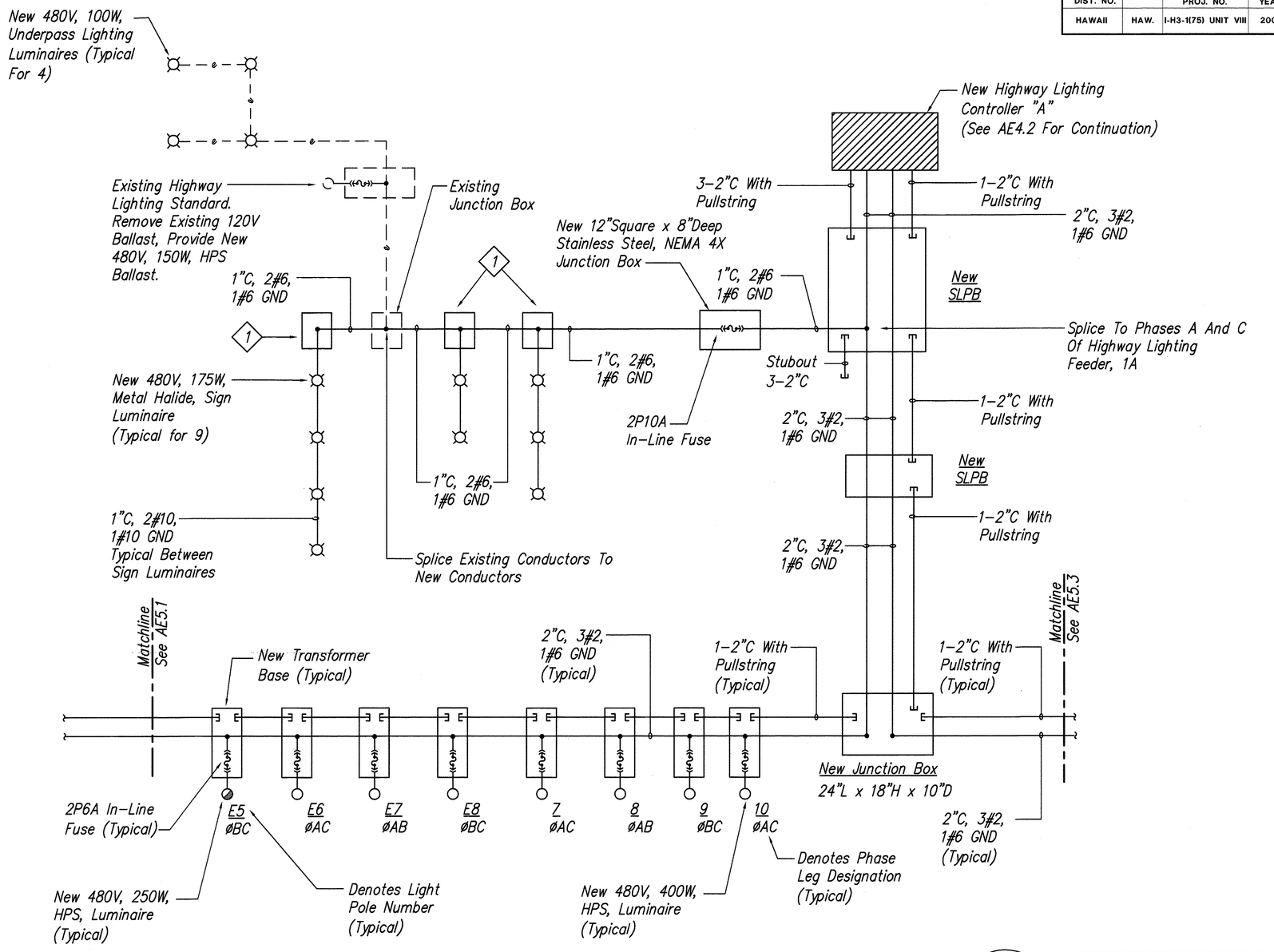
PARTIAL HIGHWAY LIGHTING WIRING DIAGRAM 1

INTERSTATE ROUTE H-3
H-3 FINISH (UNIT VIII)
F.A.I. Proj. No. I-H3-1(75) Unit VIII

Scale: None Date: Mar. 31, 2003

SHEET No. AE5.1 OF 67 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(75) UNIT VIII	2003	744	816



NOTES:

1 New 6"Square x 4"Deep Stainless Steel, NEMA 4X Junction Box

Ramp "E"/H-1 Outbound Lanes

PARTIAL HIGHWAY LIGHTING WIRING DIAGRAM 2

No Scale

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

4/3/03-14:17 Y:\060\e60-80\60-80-AE5.02.dwg

LEMNOX K. NISHIMURA LICENSED PROFESSIONAL ENGINEER No. 3880-E HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

PROJECT ENGINEER for ECS, Inc.

APRIL 30, 2004
EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

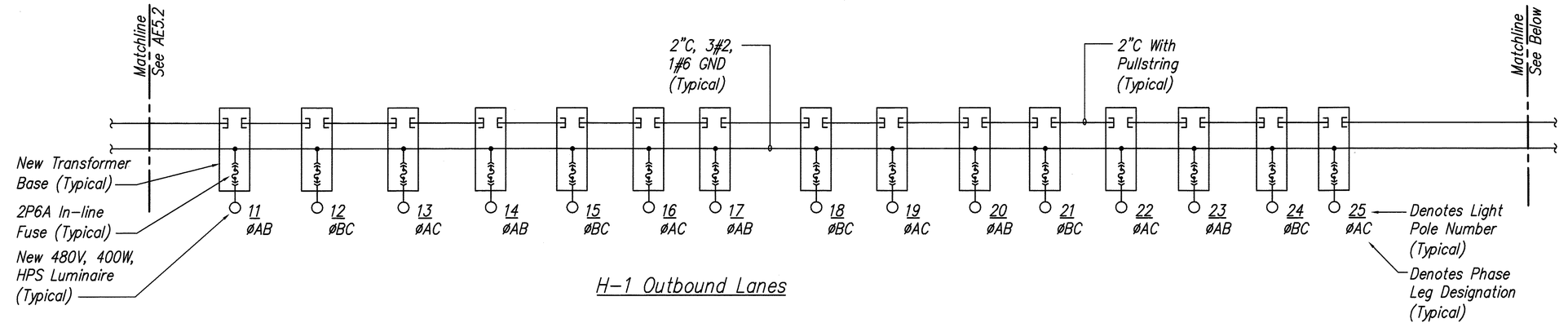
PARTIAL HIGHWAY LIGHTING WIRING DIAGRAM 2

INTERSTATE ROUTE H-3
H-3 FINISH (UNIT VIII)
F.A.I. Proj. No. I-H3-1(75) Unit VIII

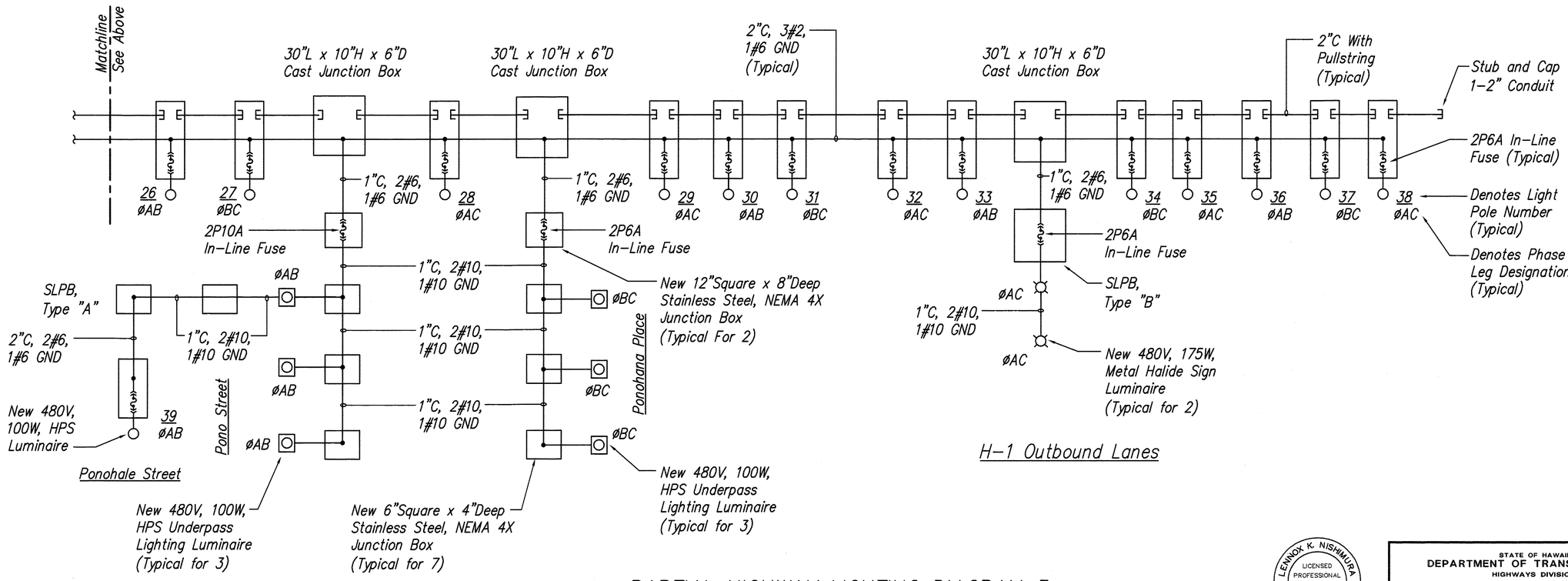
Scale: None Date: Mar. 31, 2003

SHEET No. AE5.2 OF 67 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(75) UNIT VIII	2003	745	816



H-1 Outbound Lanes



H-1 Outbound Lanes

PARTIAL HIGHWAY LIGHTING DIAGRAM 3

Not To Scale

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

Y:\D60\e60-80\60-80-AE5.03.dwg
4/4/03-15:51

LENNOX K. NISHIMURA
LICENSED PROFESSIONAL ENGINEER
No. 3880-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

PROJECT ENGINEER for ECS, Inc.

APRIL 30, 2004
EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

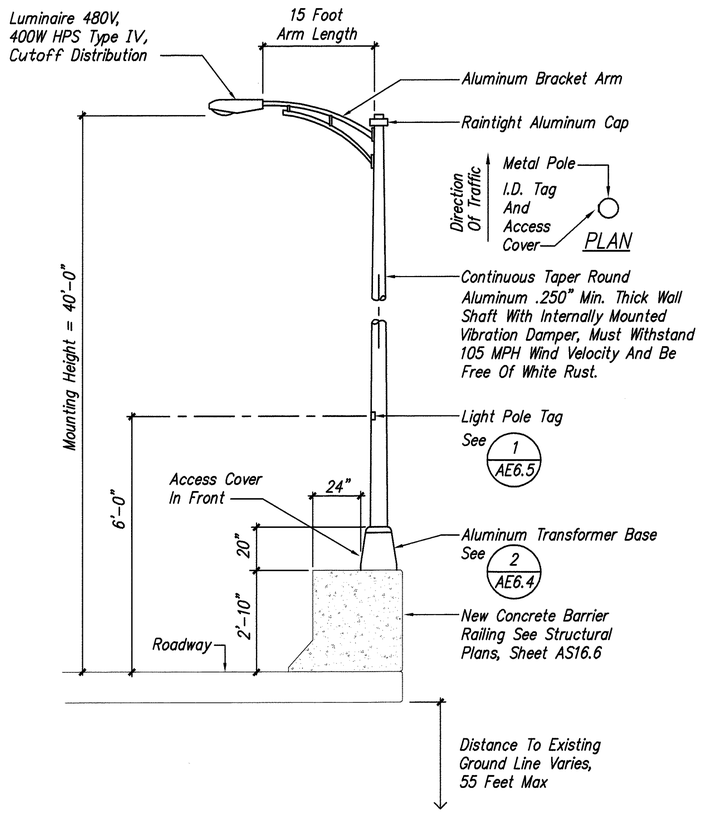
PARTIAL HIGHWAY LIGHTING WIRING DIAGRAM 3

INTERSTATE ROUTE H-3
H-3 FINISH (UNIT VIII)
F.A.I. Proj. No. I-H3-1(75) Unit VIII

Scale: None Date: Mar. 31, 2003

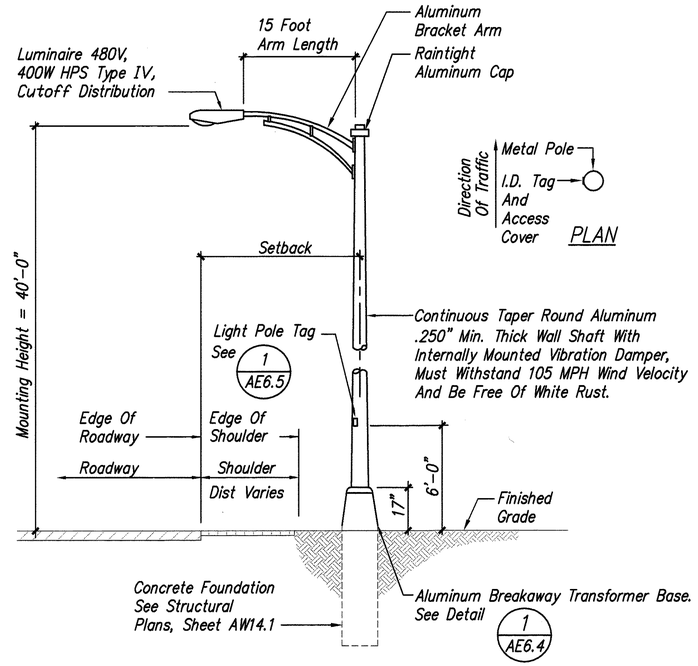
SHEET No. AE5.3 OF 67 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(175) UNIT VIII	2003	746	816



1 AE6.1 TYPICAL LIGHT STANDARD INSTALLATION ON VIADUCT RAILING

Not To Scale



2 AE6.1 TYPICAL LIGHT STANDARD INSTALLATION ON GRADE WITH BREAKAWAY BASE – H-1 FREEWAY

Not To Scale

NOTE:

All light standard assemblies shall be designed in accordance with AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals, 4th Edition with subsequent interim revisions. Refer to Sheet AE1.5 for design parameters and additional requirements.

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

4/3/03-15:39 Y:\060\e60-80\60-80-AE6.01.dwg

LEANNOX K. NISHIMURA LICENSED PROFESSIONAL ENGINEER No. 3880-E HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

PROJECT ENGINEER for ECS, Inc.

APRIL 30, 2004
EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

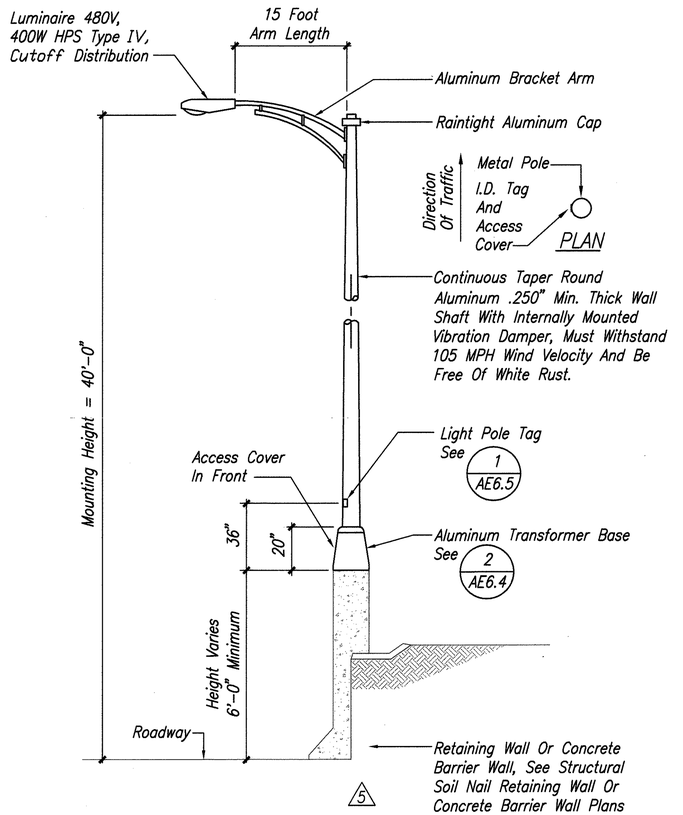
LIGHT STANDARD DETAILS

INTERSTATE ROUTE H-3
H-3 FINISH (UNIT VIII)
F.A.I. Proj. No. I-H3-1(75) Unit VIII

Scale: None Date: Mar. 31, 2003

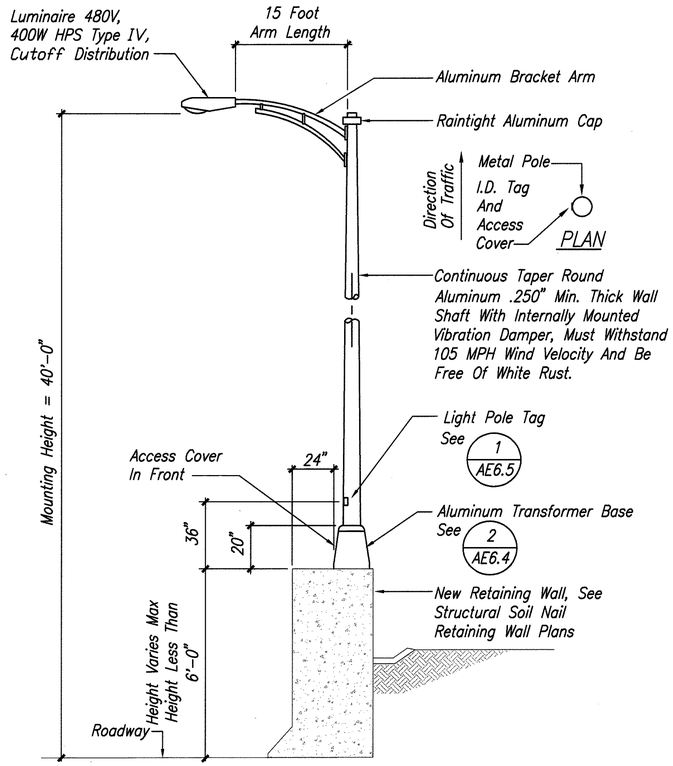
SHEET No. AE6.1 OF 67 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(75) UNIT VIII	2003	ADD. 747	816



1 AE6.2 TYPICAL LIGHT STANDARD INSTALLATION ON RETAINING WALL

Not To Scale (Minimum Wall Height = 6'-0")



2 AE6.2 TYPICAL LIGHT STANDARD INSTALLATION ON RETAINING WALL

Not To Scale (Wall Height Less Than = 6'-0")

NOTE:

All light standard assemblies shall be designed in accordance with AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals, 4th Edition with subsequent interim revisions. Refer to Sheet AE1.5 for design parameters and additional requirements.

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

10/16/03-10:02 Y:\060\e60-80\60-80-AE6.02.dwg

LEINNOX K. NISHIMURA LICENSED PROFESSIONAL ENGINEER No. 3880-E HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

PROJECT ENGINEER for ECS, Inc.

APRIL 30, 2004
EXPIRATION DATE OF THE LICENSE

DATE	REV.	DESCRIPTION
10/16/03	5	Revised Wall Section

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

LIGHT STANDARD DETAILS

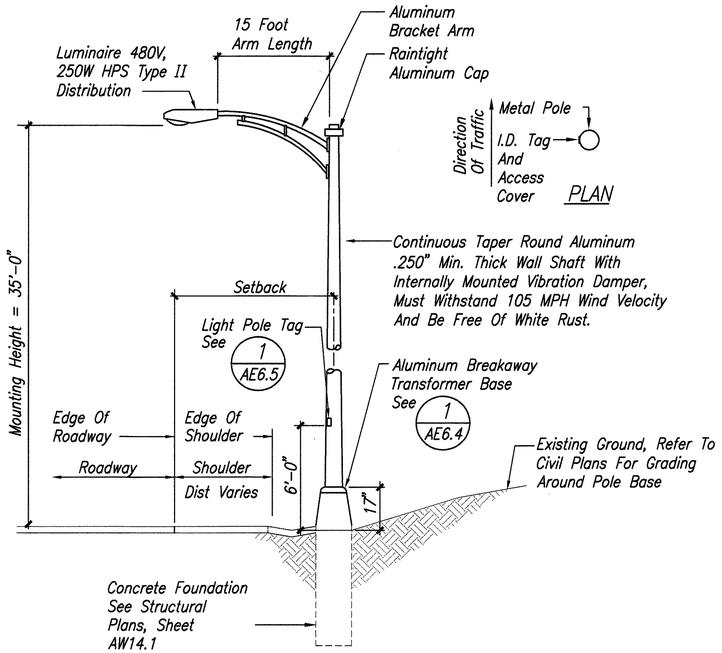
INTERSTATE ROUTE H-3
H-3 FINISH (UNIT VIII)
F.A.I. Proj. No. I-H3-1(75) Unit VIII

Scale: None Date: Mar. 31, 2003

SHEET No. AE6.2 OF 67 SHEETS

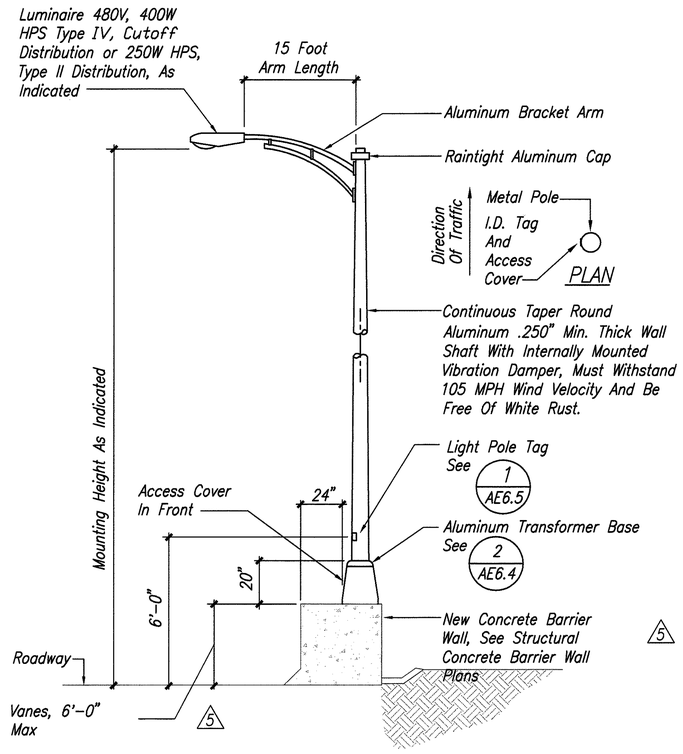
ADD 747

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(75) UNIT VIII	2003	ADD. 748	816



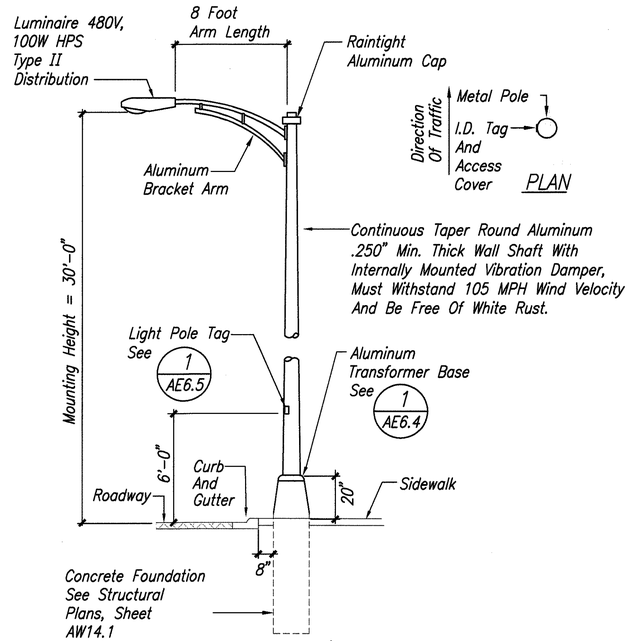
1 AE6.3 TYPICAL LIGHT STANDARD INSTALLATION AT RAMP "E" WITH BREAKAWAY BASE

Not To Scale



2 AE6.3 TYPICAL LIGHT STANDARD INSTALLATION ON CONCRETE BARRIER

Not To Scale



3 AE6.3 LIGHT STANDARD INSTALLATION AT PONOHALE STREET

Not To Scale

NOTE:

All light standard assemblies shall be designed in accordance with AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals, 4th Edition with subsequent interim revisions. Refer to Sheet AE1.5 for design parameters and additional requirements.

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

10/16/03-10:53 X:\060\ae60-80\60-80-AE6.03.dwg

LENNOX K. NISHIMURA LICENSED PROFESSIONAL ENGINEER No. 3880-E HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

Lennox K. Nishimura
PROJECT ENGINEER for ECS, Inc.

APRIL 30, 2004
EXPIRATION DATE OF THE LICENSE

DATE	REV.	DESCRIPTION
10/16/03	5	Revised Typical Barrier Height

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

LIGHT STANDARD DETAILS

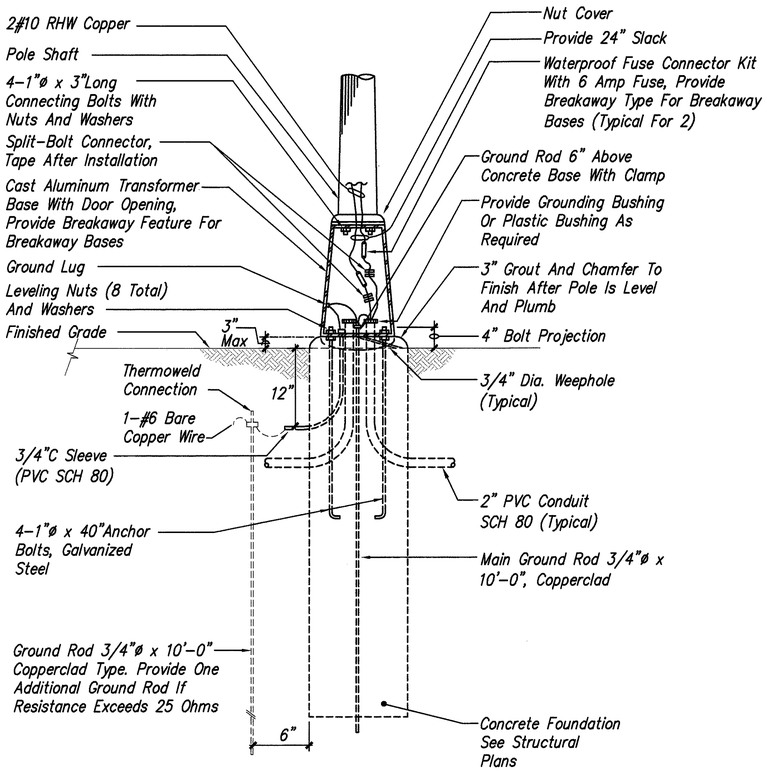
INTERSTATE ROUTE H-3
H-3 FINISH (UNIT VIII)
F.A.I. Proj. No. I-H3-1(75) Unit VIII

Scale: None Date: Mar. 31, 2003

SHEET No. AE6.3 OF 67 SHEETS

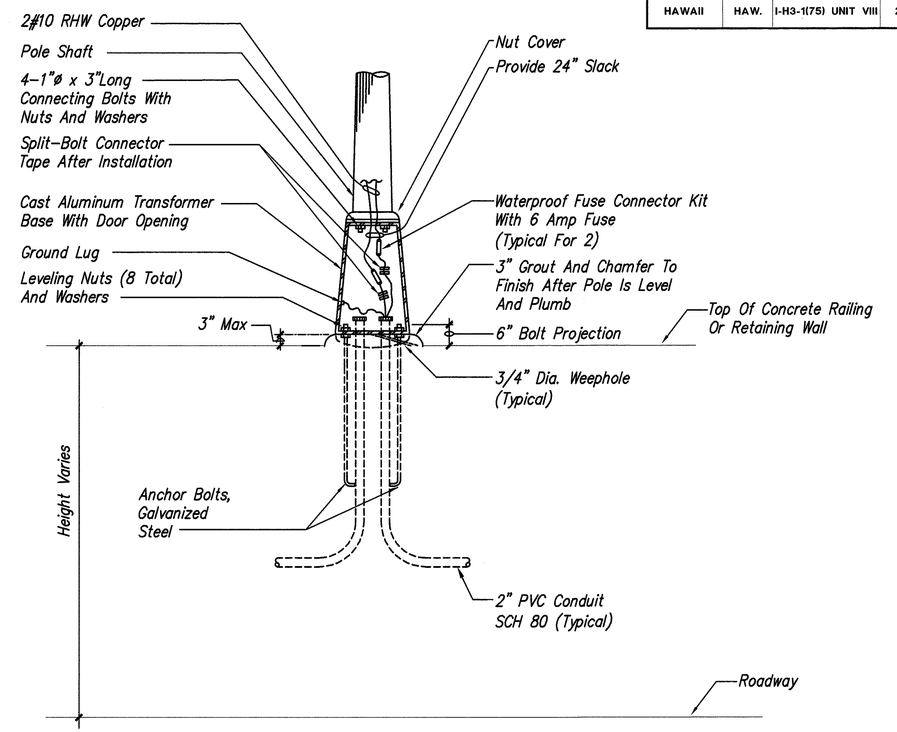
ADD. 748

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(75) UNIT VIII	2003	749	816



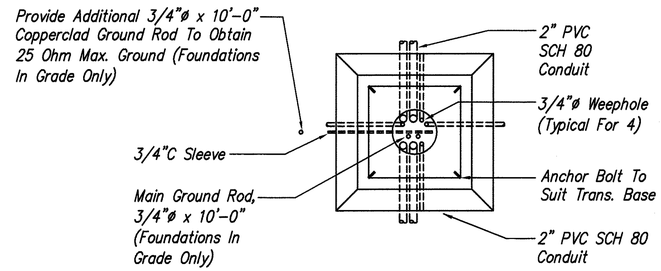
1 AE6.4 TYPICAL IN–GRADE TRANSFORMER BASE DETAIL

Not To Scale



2 AE6.4 TYPICAL BARRIER–MOUNTED TRANSFORMER BASE DETAIL

Not To Scale



3 AE6.4 TRANSFORMER BASE DETAIL – PLAN VIEW

Not To Scale

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

4/3/03-15:40 Y:\060\e60-80\60-80-AE6.04.dwg

LENNOX K. NISHIMURA
LICENSED PROFESSIONAL ENGINEER
No. 3880–E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

PROJECT ENGINEER for ECS, Inc.

APRIL 30, 2004
EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

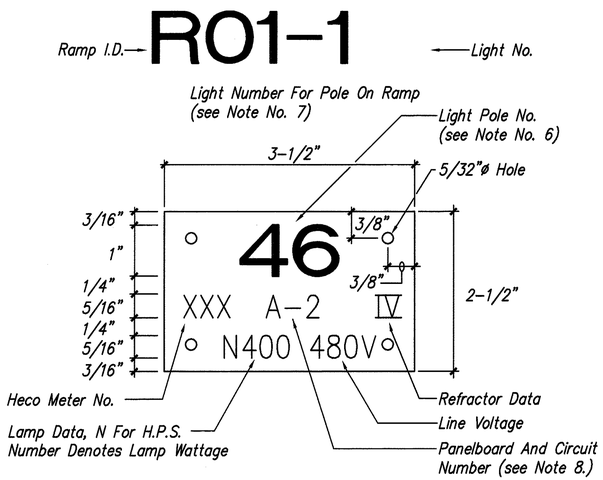
TYPICAL TRANFORMER BASE DETAILS

INTERSTATE ROUTE H–3
H–3 FINISH (UNIT VIII)
F.A.I. Proj. No. I–H3–1(75) Unit VIII

Scale: None Date: Mar. 31, 2003

SHEET No. AE6.4 OF 67 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(75) UNIT VIII	2003	750	816

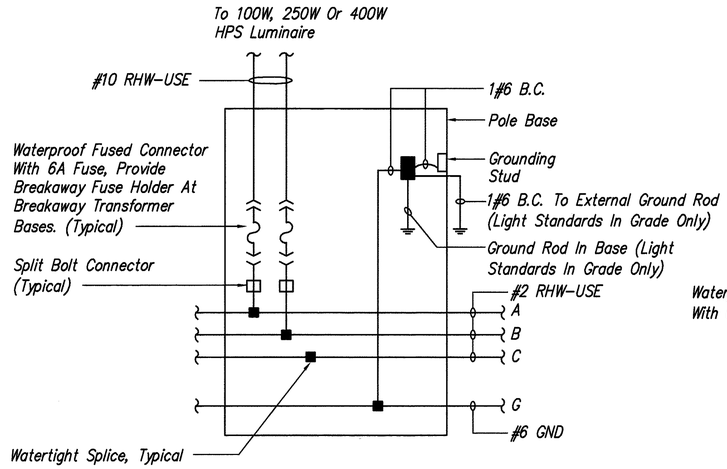


NOTES:

1. Use 3 ply laminated flexible plastic black-white-black thickness black cap sheet-0.010", white base sheet-0.052", black base sheet-0.010".
2. Light pole number size shall be 1" high and engraved 1/8" wide, white in color (number as required).
3. Nomenclature size shall be 5/16" high and engraved 1/32" wide, white in color (HECo vault number panel board and circuit number, line voltage, lamp data and refractor data as required).
4. Attach to aluminum and steel post with no. 8 stainless steel, 1/2" long drive screws in 1/8" drill hole. Attach to wood poles with 4D aluminum nails.
5. Numbers are inscribed by cutting through "black cap sheet" to expose "white letters".
6. Light numbers shall be obtained from the State. Use an alphabet suffix to designate lights mounted on the same pole (e.g. 123a & 123b).
7. For light poles installed on ramp, assign numbers to include ramp I.D. and light number. Legend may be less than one (1) inch in height.
8. Nomenclature required for systems with two or more circuits (letter indicates panelboard, number indicates circuit).

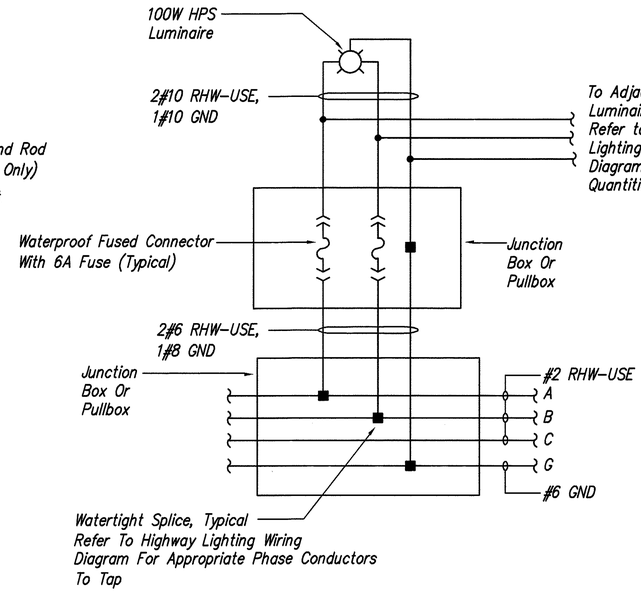
1 / AE6.5 HIGHWAY LIGHT POLE TAG DETAIL METERED SYSTEM

Not To Scale



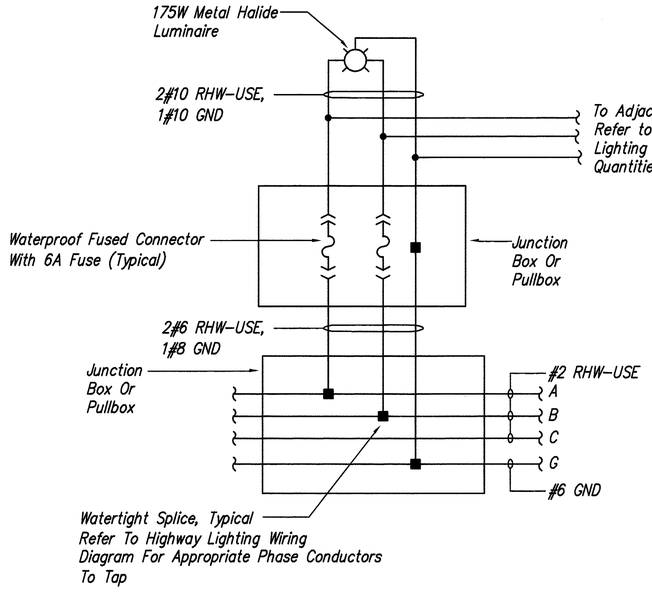
2 / AE6.5 WIRING CONNECTION DIAGRAM - TYPICAL HIGHWAY LIGHTING STANDARD

No Scale



3 / AE6.5 WIRING CONNECTION DIAGRAM - TYPICAL UNDERPASS LUMINAIRE

No Scale



3 / AE6.5 WIRING CONNECTION DIAGRAM - TYPICAL SIGNAGE LUMINAIRE

No Scale

NOTE:

1. Refer to Sheet 2 / AE4.4 for Detour Road Lighting Wiring Diagram

LENNOX K. NISHIMURA
LICENSED PROFESSIONAL ENGINEER
No. 3880-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

Lennox K. Nishimura
PROJECT ENGINEER for ECS, Inc.

APRIL 30, 2004
EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

HIGHWAY LIGHTING DETAILS

INTERSTATE ROUTE H-3
H-3 FINISH (UNIT VIII)
F.A.I. Proj. No. I-H3-1(75) Unit VIII

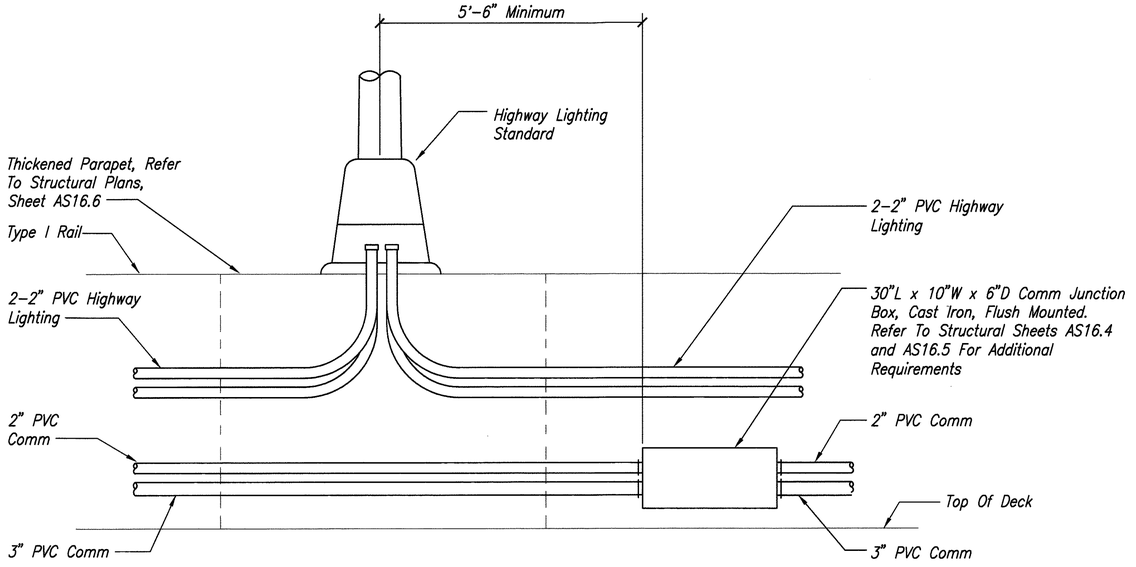
Scale: None Date: Mar. 31, 2003

SHEET No. AE6.5 OF 67 SHEETS

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

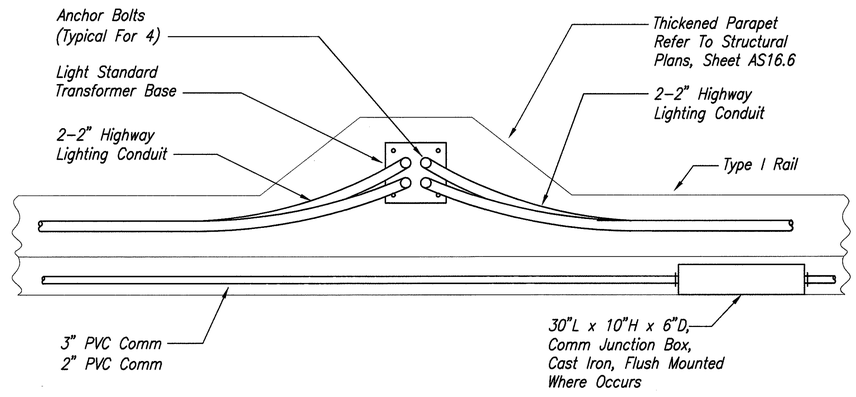
4/3/03-15:40 Y:\AE6\ae6-80\60-80-AE6.05.dwg

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(75) UNIT VIII	2003	ADD. 751	816



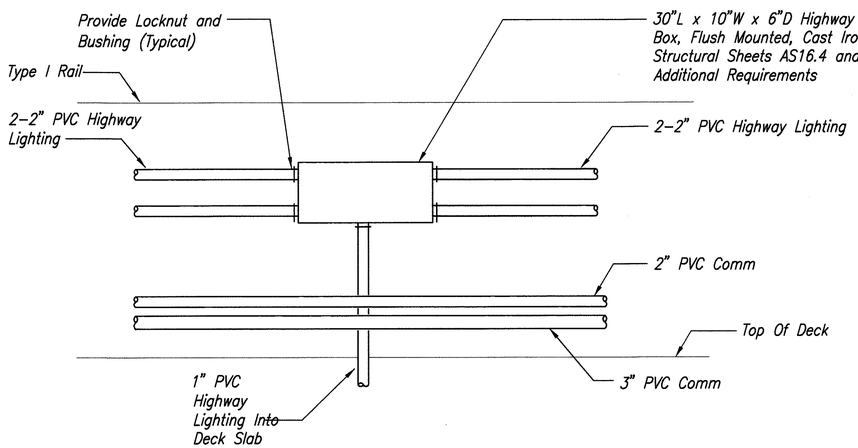
1 / AE6.6 ELEVATION – TYPICAL CONDUIT ROUTING IN BRIDGE RAILING

Not To Scale

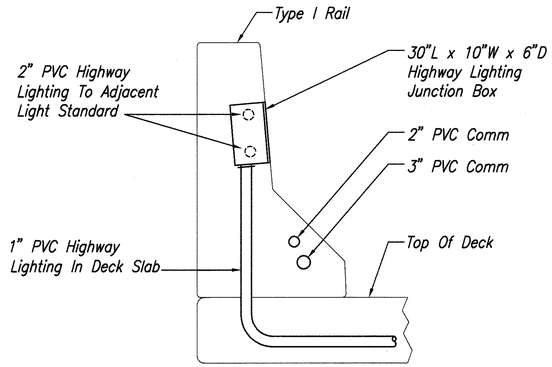


2 / AE6.6 PLAN – CONDUIT ROUTING AT LIGHT STANDARD

Not To Scale



ELEVATION



SECTION

3 / AE6.6 HIGHWAY LIGHTING JUNCTION BOX IN BRIDGE RAILING

Not To Scale

NOTE:

All Junction Boxes Flush Mounted In Concrete Railings And Walls Shall Be Hot-Dip Galvanized Cast Iron, Neoprene Gasketed, With HS20 Traffic Rated, ASTM A36 Checkered Steel Cover 5/8" Minimum Thickness And Stainless Steel Screws. Covers Shall Be Labeled With Cast-On Letters "State Highways – Lighting" Or "State Highways – Comm" As Applicable. △5

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

10/16/03-10:03 Y:\DEO\60-80\60-80-AE6.06.dwg

LENNOX K. NISHIMURA LICENSED PROFESSIONAL ENGINEER No. 3880-E HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

PROJECT ENGINEER for ECS, Inc.

APRIL 30, 2004
EXPIRATION DATE OF THE LICENSE

DATE	REV.	DESCRIPTION
10/16/03	△5	Revised Note

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

CONDUIT ROUTING DETAILS AT VIADUCT

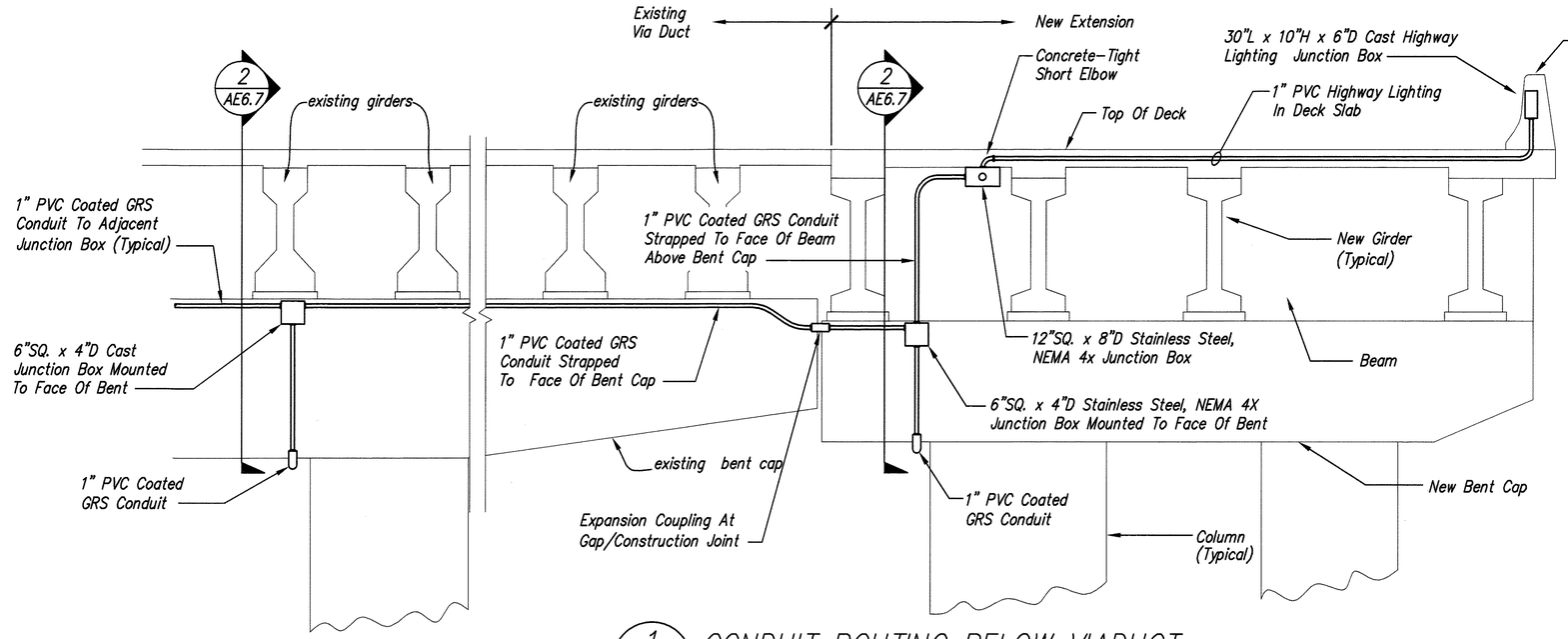
INTERSTATE ROUTE H-3
H-3 FINISH (UNIT VIII)
F.A.I. Proj. No. I-H3-1(75) Unit VIII

Scale: None Date: Mar. 31, 2003

SHEET No. AE6.6 OF 67 SHEETS

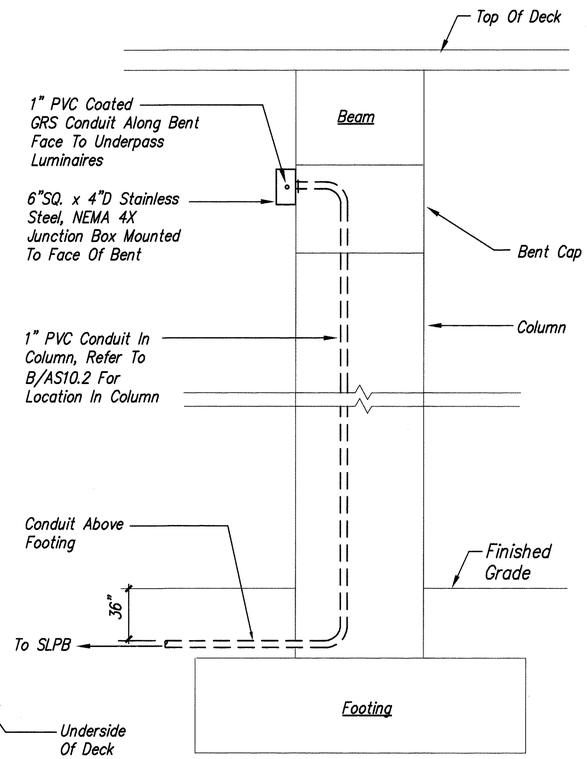
ADD. 751

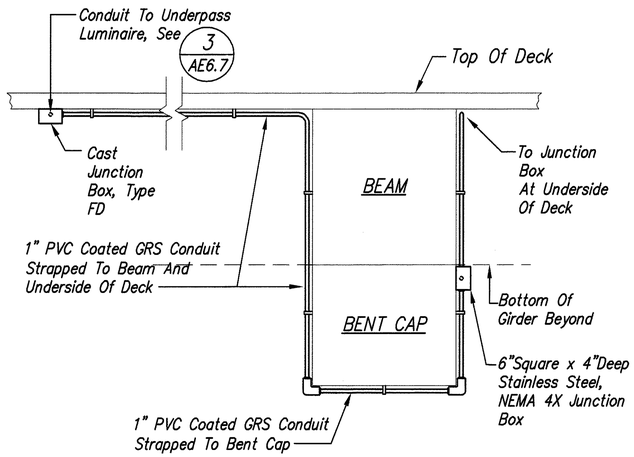
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(75) UNIT VIII	2003	752	816



1 / AE6.7 CONDUIT ROUTING BELOW VIADUCT (BENT 8 SHOWN, BENT 10 SIMILAR)

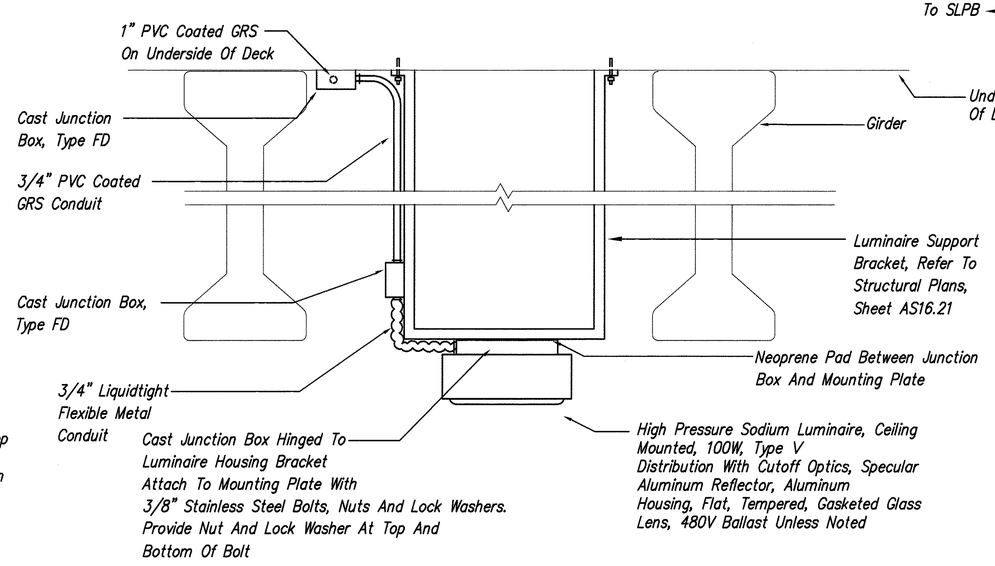
Not To Scale





2 / AE6.7 SECTION AT BENT CAP

Not To Scale



3 / AE6.7 UNDERPASS LIGHTING LUMINAIRE

Not To Scale

4 / AE6.7 JUNCTION BOX AT BENT 7

Not To Scale

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

4/3/03–15:41 Y:\060\e60-80\60-80-AE6.07.dwg

LEMNOX K. NISHIMURA LICENSED PROFESSIONAL ENGINEER No. 3880–E HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

Lennox K. Nishimura
PROJECT ENGINEER for ECS, Inc.

APRIL 30, 2004
EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

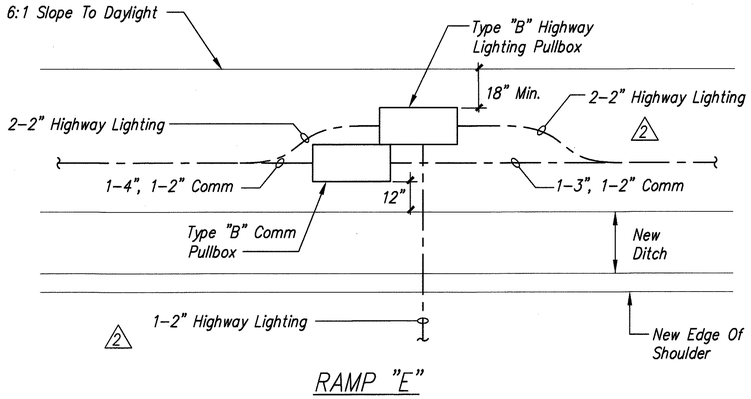
CONDUIT ROUTING DETAILS AT VIADUCT

INTERSTATE ROUTE H-3
H-3 FINISH (UNIT VIII)
F.A.I. Proj. No. I-H3-1(75) Unit VIII

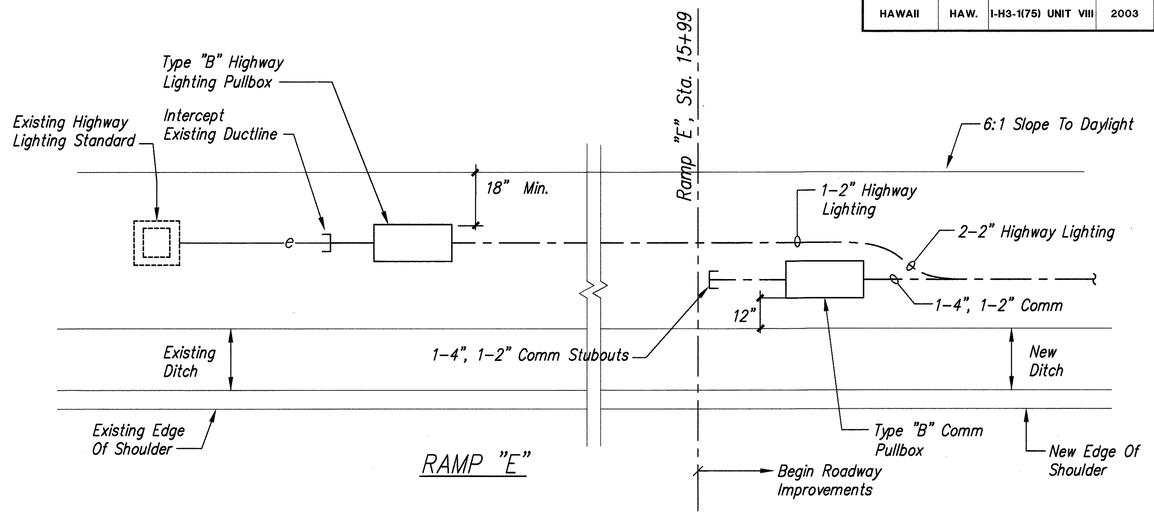
Scale: None Date: Mar. 31, 2003

SHEET No. AE6.7 OF 67 SHEETS

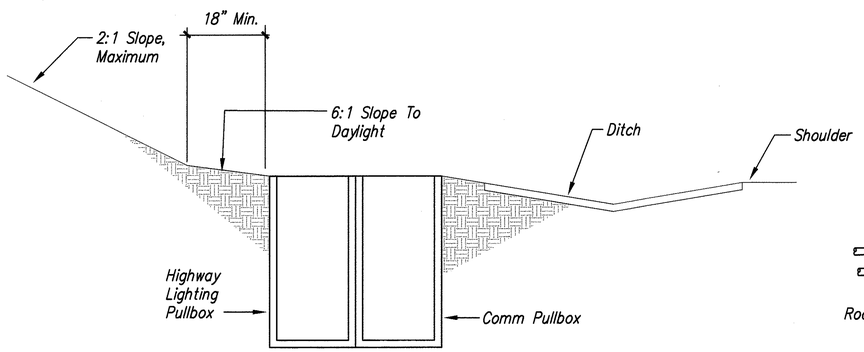
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(75) UNIT VIII	2003	ADD. 753	816



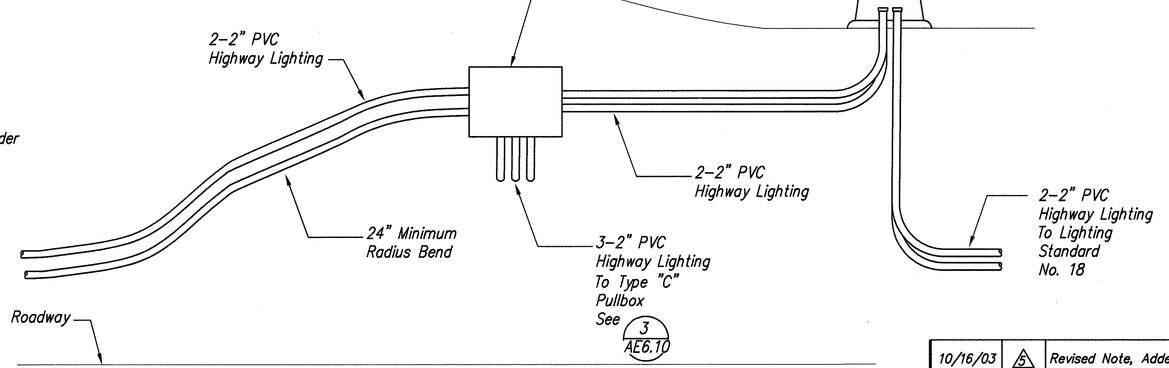
1 AE6.8 PULLBOX LAYOUT AT RAMP "E"
Not To Scale



2 AE6.8 PULLBOX LAYOUT AT RAMP "E"
Not To Scale



3 AE6.8 TYPICAL GRADING SECTION THROUGH PULLBOXES AT RAMP "E"
Not To Scale



2 5 4 AE6.8 CONDUIT ROUTING (APPROX. STA. 95+00 TO STA. 96+00)
Not To Scale

DATE	REV.	DESCRIPTION
10/16/03	5	Revised Note, Added Detail
5/14/03	2	Deleted Detail 4/AE6.8, Eliminated Irrigation Power Conduit

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

CONDUIT ROUTING DETAILS

INTERSTATE ROUTE H-3
H-3 FINISH (UNIT VIII)
F.A.I. Proj. No. I-H3-1(75) Unit VIII

Scale: None Date: Mar. 31, 2003

SHEET No. AE6.8 OF 67 SHEETS

LENNOX K. NISHIMURA
LICENSED PROFESSIONAL ENGINEER
No. 3880-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

PROJECT ENGINEER for ECS, Inc.

APRIL 30, 2004
EXPIRATION DATE OF THE LICENSE

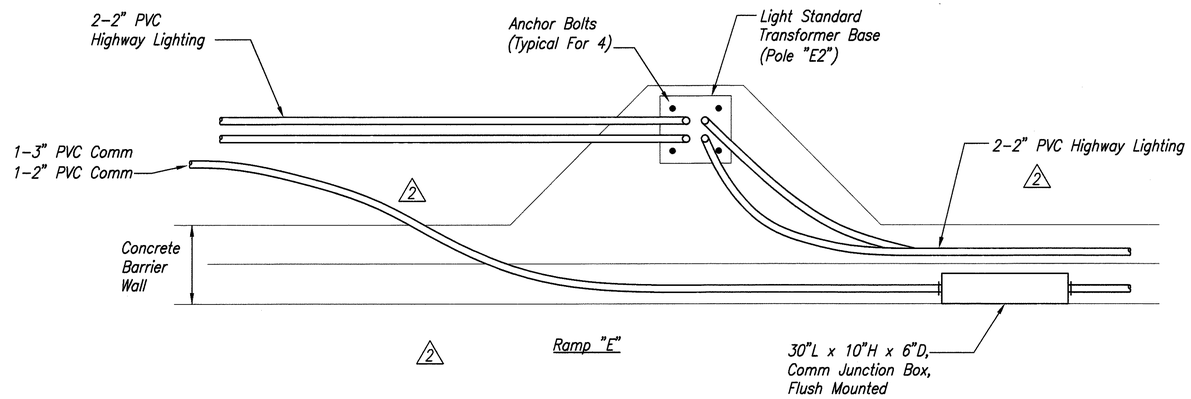
ORIGINAL PLAN | NOTE BOOK No. ____

SURVEY PLOTTED BY
DRAWN BY
TRACED BY
DESIGNED BY
QUANTITIES BY
CHECKED BY
DATE

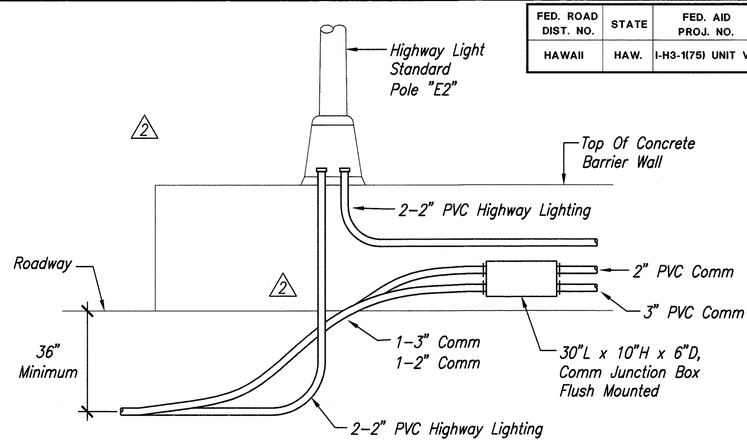
10/14/03-9:21 Y:\060\ae60-80\60-80-AE6.08.dwg

ADD. 753

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(75) UNIT VIII	2003	ADD. 754	816



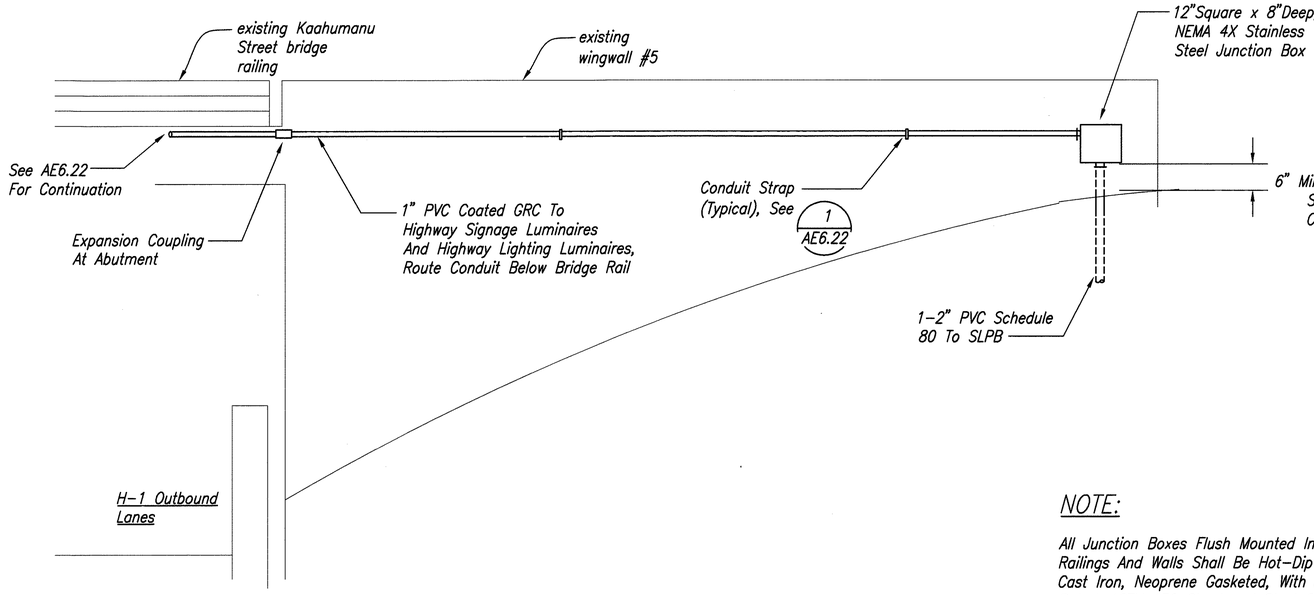
PLAN



ELEVATION

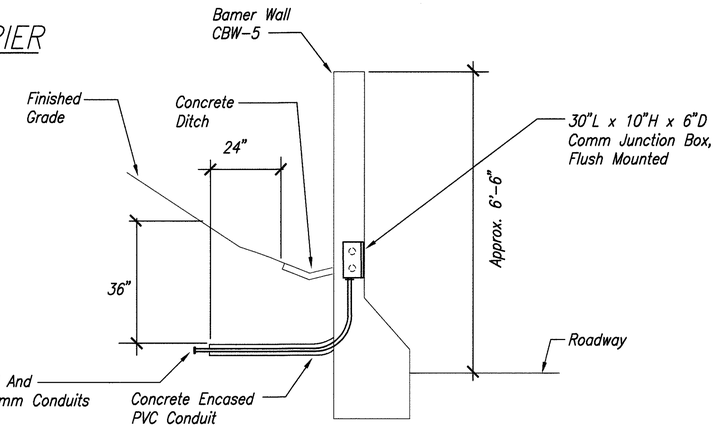
1 / AE6.9 CONDUIT TRANSITION AT CONCRETE BARRIER

Not To Scale



2 / AE6.9 JUNCTION BOX AT WINGWALL #5

Not To Scale



△5 3 / AE6.9 COMM CONDUIT STUBOUTS, APPROX. STA 135+50

Not To Scale

NOTE:

All Junction Boxes Flush Mounted In Concrete Railings And Walls Shall Be Hot-Dip Galvanized Cast Iron, Neoprene Gasketed, With HS20 Traffic Rated, ASTM A36 Checkered Steel Cover 5/8" Minimum Thickness And Stainless Steel Screws. Covers Shall Be Labeled With Cast-on Letters "State Highways - Lighting" Or "State Highways - Comm" As Applicable.

DATE	REV.	DESCRIPTION
10/16/03	△5	Revised Note, Revised Detail 3/AE6.9
5/14/03	△2	Eliminated Irrigation Power Conduit

LENNOX K. NISHIMURA
LICENSED PROFESSIONAL ENGINEER
No. 3880-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

PROJECT ENGINEER for ECS, Inc.

APRIL 30, 2004
EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

CONDUIT ROUTING DETAILS

INTERSTATE ROUTE H-3
H-3 FINISH (UNIT VIII)
F.A.I. Proj. No. I-H3-1(75) Unit VIII

Scale: None Date: Mar. 31, 2003

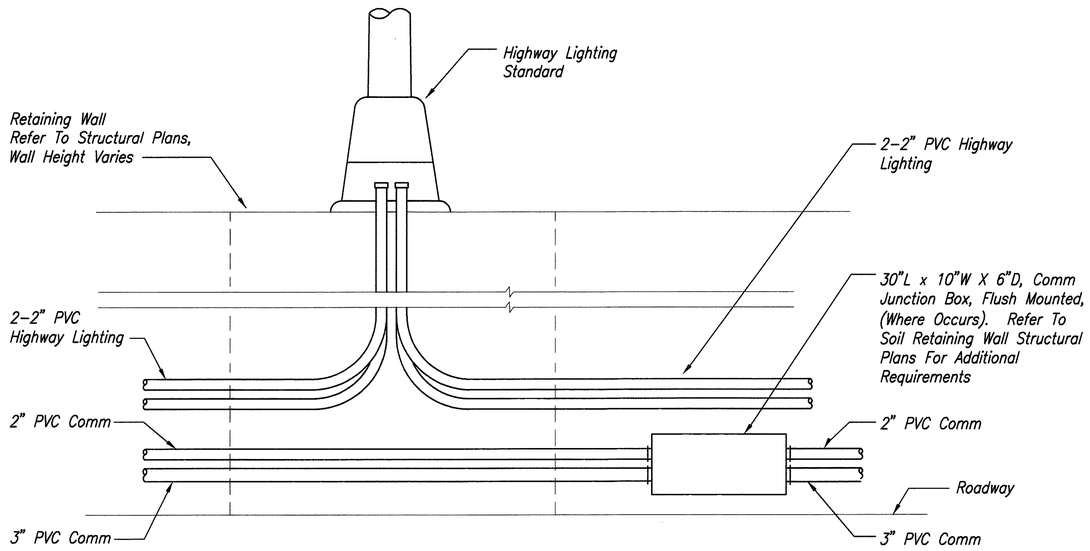
SHEET No. AE6.9 OF 67 SHEETS

ADD. 754

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

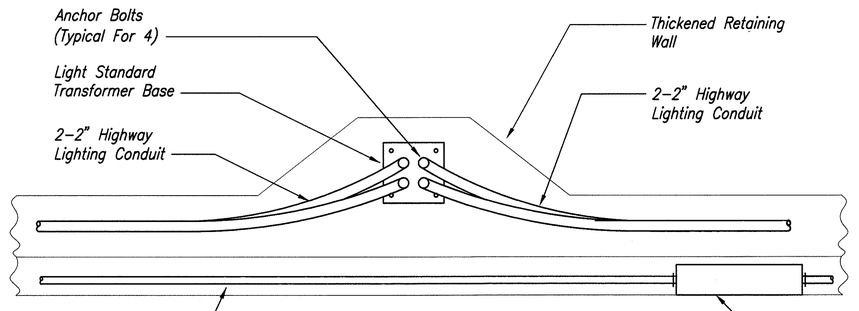
10/16/03-10:03 Y:\060\e60-80\60-80-AE6.09.dwg

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(75) UNIT VIII	2003	ADD. 755	816



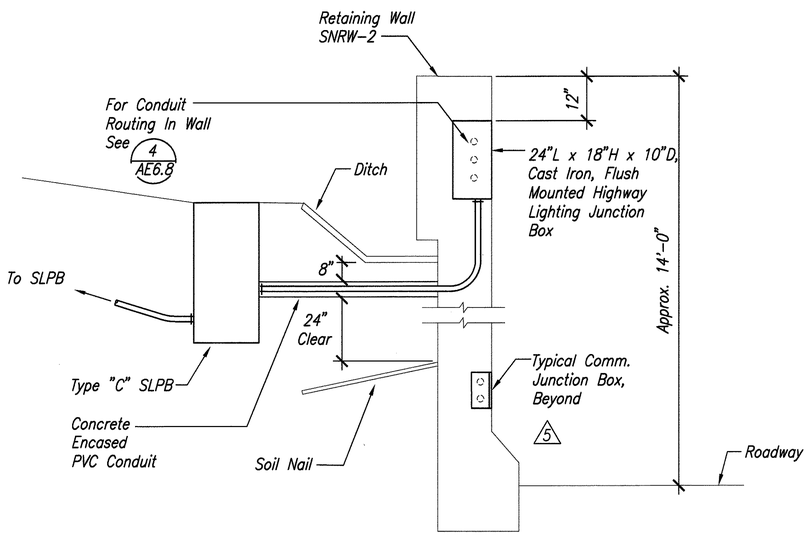
1 AE6.10 ELEVATION – TYPICAL CONDUIT ROUTING IN RETAINING WALL/CONCRETE BARRIER WALL △5

Not To Scale



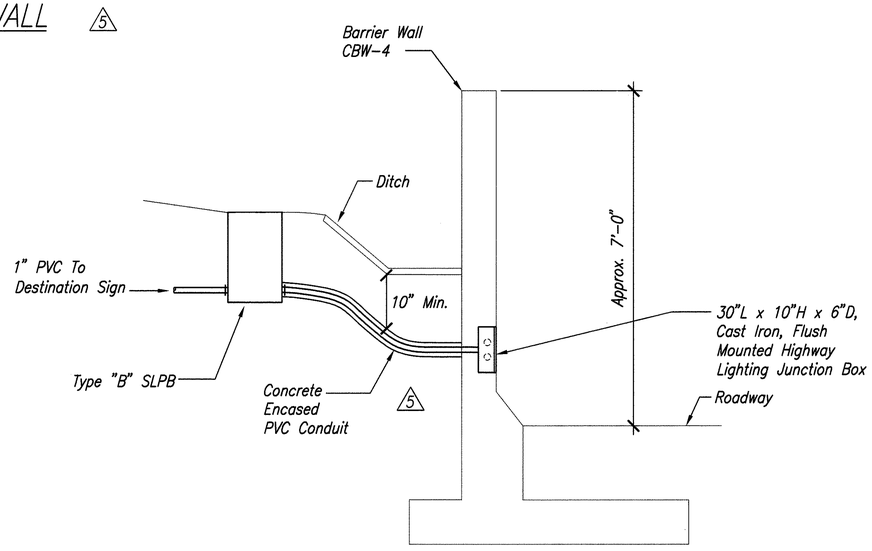
2 AE6.10 PLAN – CONDUIT ROUTING AT LIGHT STANDARD

Not To Scale



3 AE6.10 JUNCTION BOX AT APPROX. STA. 95+85

Not To Scale



4 AE6.10 JUNCTION BOX AT APPROX. STA. 128+40

Not To Scale

NOTE:

All Junction Boxes Flush Mounted In Concrete Railings And Walls Shall Be Hot–Dip Galvanized Cast Iron, Neoprene Gasketed, With HS20 Traffic Rated, ASTM A36 Checkered Steel Cover, 5/8" Minimum Thickness And Stainless Steel Screws. Covers Shall Be Labeled With Cast–On Letters "State Highways – Lighting" Or "State Highways – Comm" As Applicable.

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

10/16/03–10:03 Y:\060\e60-80\60-80-AE6.10.dwg

LENNOX K. NISHIMURA LICENSED PROFESSIONAL ENGINEER No. 3880-E HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

PROJECT ENGINEER for ECS, Inc.

APRIL 30, 2004
EXPIRATION DATE OF THE LICENSE

DATE	REV.	DESCRIPTION
10/16/03	△5	Revised Details 1, 3, 4

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

CONDUIT ROUTING DETAILS

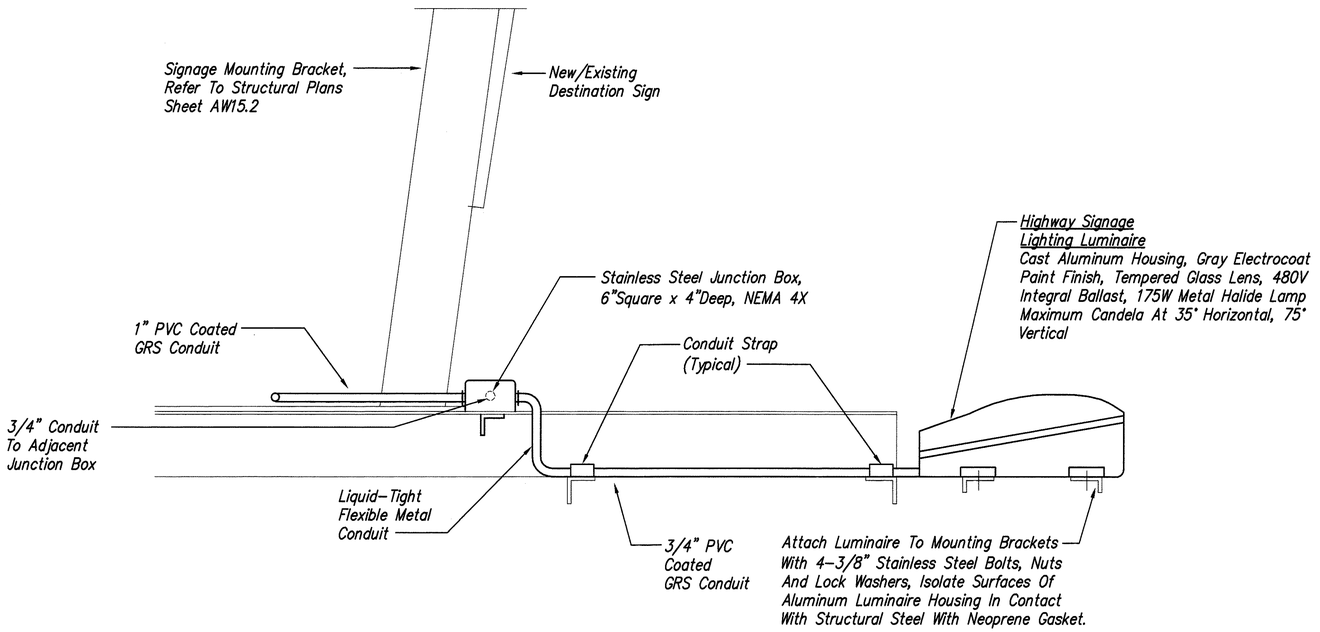
INTERSTATE ROUTE H–3
H–3 FINISH (UNIT VIII)
F.A.I. Proj. No. I–H3–1(75) Unit VIII

Scale: None Date: Mar. 31, 2003

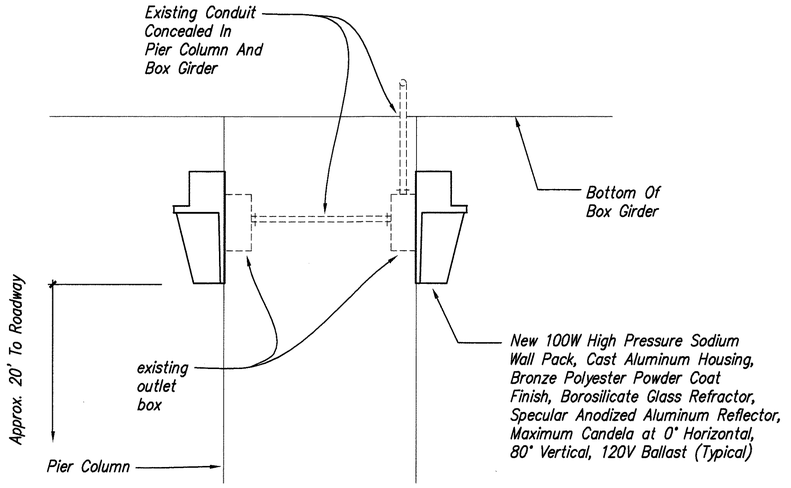
SHEET No. AE6.10 OF 67 SHEETS

ADD. 755

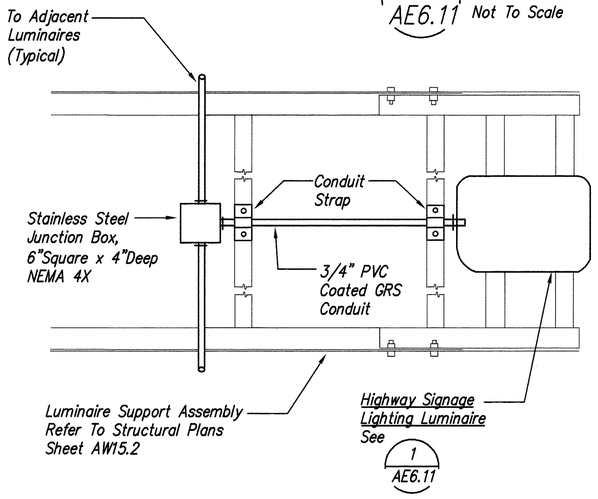
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(75) UNIT VIII	2003	756	816



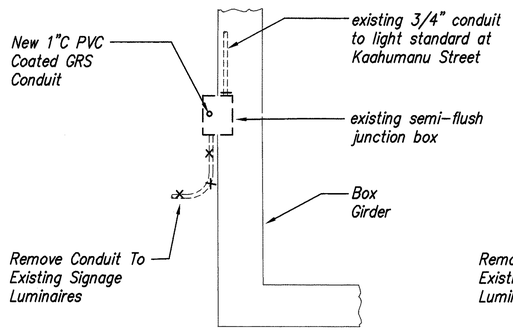
1 AE6.11 SECTION – SIGN LUMINAIRE
Not To Scale



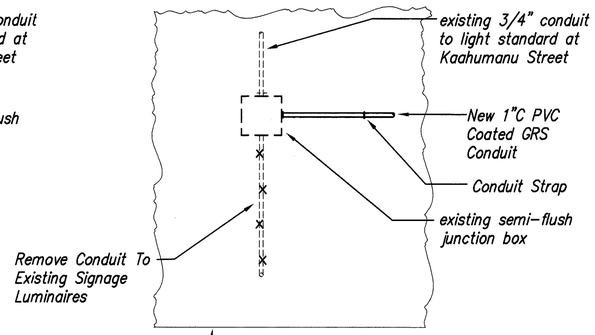
3 AE6.11 UNDERPASS LUMINAIRE – AUSTIN BISHOP SEPARATION
Not To Scale



2 AE6.11 PLAN – SIGN LUMINAIRE
Not To Scale



SECTION



ELEVATION

4 AE6.11 EXISTING JUNCTION BOX – AUSTIN BISHOP SEPARATION
Not To Scale

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

4/4/03-9:58 Y:\060\e60-80\60-80-AE6.11.dwg

LENNOX K. NISHIMURA
LICENSED PROFESSIONAL ENGINEER
No. 3880-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

lennox K. Nishimura
PROJECT ENGINEER for ECS, Inc.

APRIL 30, 2004
EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

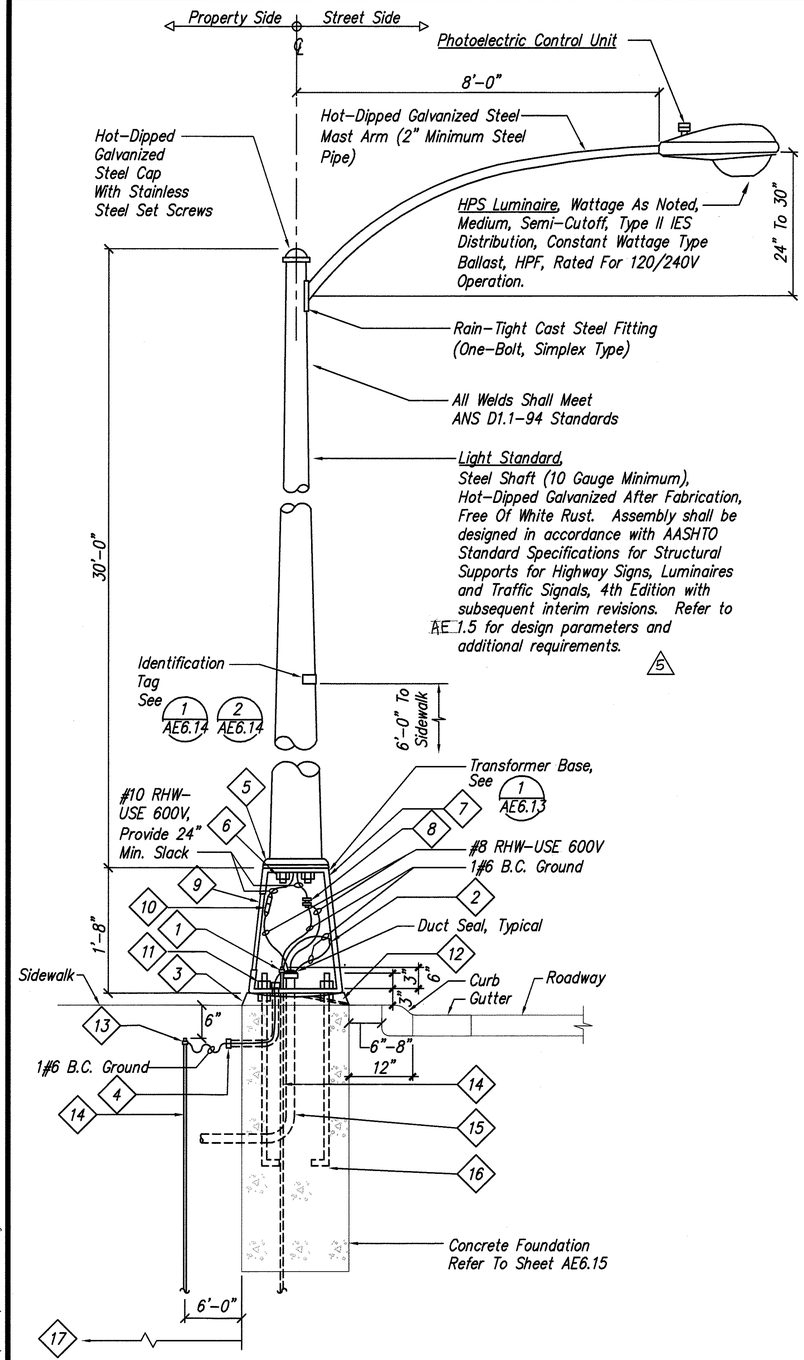
SIGNAGE LIGHTING AND UNDERPASS LUMINAIRE DETAILS

INTERSTATE ROUTE H-3
H-3 FINISH (UNIT VIII)
F.A.I. Proj. No. I-H3-1(75) Unit VIII

Scale: None Date: Mar. 31, 2003

SHEET No. AE6.11 OF 67 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(75) UNIT VIII	2003	ADD.757	816



1 AE6.12 CITY STREET LIGHT STANDARD
Not To Scale

NOTES:

1. Ground Rod Clamp.
2. Ground Lug With 1/2" Nut And 13 NC Bolt With Double Washer (Hot-Dipped Galv.).
3. Grout And Chamfer To Finish After Pole Is Level And Plumb. Dip Grout Finish 1" Per Foot Toward Center Of Base.
4. 1/2" PVC Sleeve, 1#6 B.C.
5. Shaft Base Plate And Base Cover. See 3 AE6.13
6. 4-1"ø x 3-1/2"Long Connecting Hex Bolts, Nuts And Washer (Hot-Dipped Galv.).
7. Hot-Dipped Galvanized Steel Transformer Base (7 Gauge Steel Min.). See 1 AE6.13
8. Split-Bolt Connector, Tape And Waterproof After Installation.
9. Door Opening With Opening Facing Property Side.
10. Waterproof Fused Cable Connector Kit With 6 Amp Fuse.
11. Leveling Nuts With One Piece 3/4" Thick Polygon Washers, (8 Total).
12. 1/2" Diameter Drainage Chase From Center Of Pole Toward Curb.
13. Thermoweld Weld Or Equal.
14. Ground Rod 5/8" Dia. x 10'-0". Provide Additional 5/8" Dia. x 10'-0" Ground Rod Within Adjacent Handhole, As Required, To Obtain 25 OHM Maximum Ground Resistance.
15. Conduit PVC Sched. 80 Elbow. After Elbow, Provide Coupling And Transition To Concrete Encased PVC Schedule 40.
16. 4 - Anchor Bolts, 1"x36"x4", Hot Dipped Galvanized Entire Length.
17. Maintain 36" Minimum Clearance From Back Of Transformer Base To Back Edge Of Sidewalk At All Times.

APPROVED

(for City Street Light Work Only):

Chief, Mechanical/Electrical Design And Engineering Division, DDC City And County Of Honolulu — Date 7/29/03

Chief, Traffic Review Branch, DPP City And County Of Honolulu — Date 8/6/03

STREET LIGHTING NOTES:

1. Street Light Systems For This Installation Shall Be Under Hawaiian Electric Company Contract No. 35.
2. Street Light Numbers For This Project Shall Be:
   Contract No. 35 - 497
   Meter No. M42 - 3, 3X 5
3. All Secondary Circuit Extension On HECo Secondary Cables Shall Be Provided By The Contractor. Connections Shall Be By HECo And Paid By The Contractor.
4. Contractor Shall Be Responsible For Coordinating And Informing HECo Of Street Light Locations On Site Prior To Installation Of Their Secondary Cables.
5. Contractor Shall Notify Mechanical/Electrical Design And Engineering Division, Dept. Of Design And Construction, City And County Of Honolulu, 72 Hours In Advance Of Commencing Installation Of Street Light System. Phone #527-5002
6. All Luminaires Shall Be High Pressure Sodium Type. With Wattage And I.E.S. Distribution As Shown On Plans.
7. See This Sheet For Typical Construction Details, Also Refer To Applicable Standard Details Of The Mechanical/Electrical Design And Engineering Division, Dept. Of Design And Construction, City And County Of Honolulu.
8. Contractor To Have One Set Of Approved Plans At Job Site At All Times During Construction Work.
9. Contractor Shall Stencil Date Of Installation On Bottom Of Photocell.
10. Contractor Shall Obtain Written Acceptance Of Street Light System From Mechanical/Electrical Design And Engineering Division, Dept. Of Design And Construction, City And County Of Honolulu.
11. Luminaire And Pole Count:

	Luminaires	Transf. Base Poles
70 Watt	1	1
150 Watt	2	2

12. Contractor To Arrange With HECo To Energize Street Lights A Minimum Of 6 Hours For Final Inspection And Acceptance. Contractor To Assume Costs.
13. Final Acceptance & Inspection Will Be Undertaken Only After All Work Has Been Completed And The "As Built" Tracing Has Been Given To The Mechanical/Electrical Design And Engineering Division, Dept. Of Design And Construction, City And County Of Honolulu.
14. The Contractor Shall Measure And Record The Ground Resistance At Each Standard With No External Ground Wires Connected To The Ground Rod. Contractor Shall Schedule Ground Resistance Measurement 48 Hours In Advance And Shall Not Proceed With Measurements Until Approval Is Granted. Schedules Are Subject To Change Depending Upon Weather Conditions. Reports Shall Include Name Of Personnel Conducting The Test, Meter Type And Serial Number, Date Of Test And Soil Conditions. Test Results Shall Be Certified By The Contractor And Submitted To The City And Engineer.
15. All Neutral Conductors Must Have White Insulation, Any Other Method Of Identification Is Unacceptable.
16. Contractor Shall Not Backfill Trenches Until Approval Is Granted By The Street Light Inspector.
17. The Contractor Shall Inform The Street Light Inspector Of All Concrete Pours At Least 24 Hours In Advance. Concrete Shall Not Be Poured Until Approval Is Granted By The Street Light Inspector.
18. All Anchor Bolts, Nuts And Washers Shall Be Greased Prior To Installation.
19. CITY AND COUNTY STREET LIGHT SCHEDULE

Area Code/ Meter No.	Light No.	Pole No.	Street	Wattage
EXISTING Street Lights To Be RELOCATED				5
35	496	3	Pono Street	70
35	506	4	Ponohana Loop	70
EXISTING Street Lights To Be REMOVED				
Area Code/ Meter No.	Light No.	Pole No.	Street	
M42	3	–	Kaahele Street	150
M42	3X	–	Kaahele Street	150
35	495	2	Pono Street	70
35	177	1	Ponohale Street	70
NEW Street Lights To Be INSTALLED				
Area Code/ Meter No.	Light No.	Pole No.	Street	
M42	3	–	Kaahele Street	150
M42	3X	–	Kaahele Street	150
35	495	–	Pono Street	70

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

6/20/03-8:44 Y:\060\ae60-80\60-80-AE6.12.dwg

LENNOX K. NISHIMURA LICENSED PROFESSIONAL ENGINEER No. 3880-E HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

PROJECT ENGINEER for ECS, Inc.

APRIL 30, 2004
EXPIRATION DATE OF THE LICENSE

DATE	REV.	DESCRIPTION
10/16/03	5	Obtained Agency Signatures, Revised Note 2, Added Luminaire Wattages

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

CITY STREET LIGHT STANDARD DETAILS

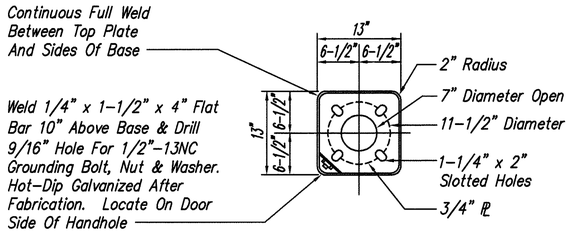
INTERSTATE ROUTE H-3
H-3 FINISH (UNIT VIII)
F.A.I. Proj. No. I-H3-1(75) Unit VIII

Scale: None Date: Mar. 31, 2003

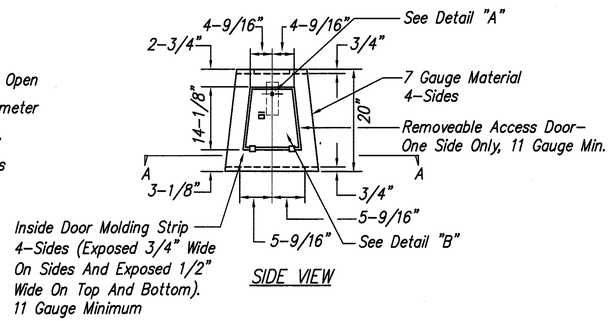
SHEET No. AE6.12 OF 67 SHEETS

ADD. 757

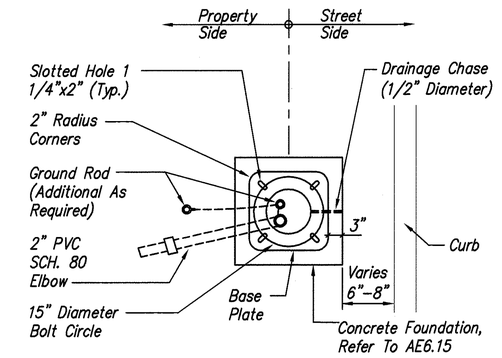
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(75) UNIT VIII	2003	ADD.758	816



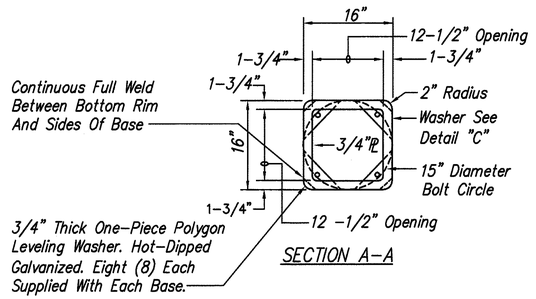
TOP VIEW



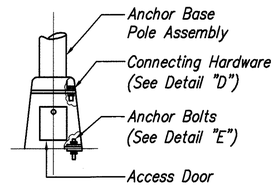
SIDE VIEW



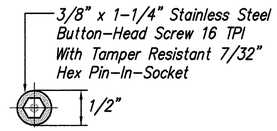
2 PLAN SECTION OF POST STANDARD
AE6.13 Not To Scale



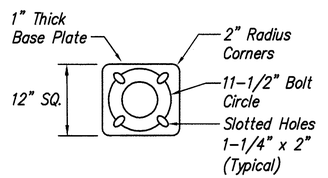
SECTION A-A



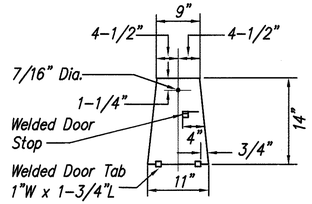
ANCHOR BASE POLE ASSEMBLY



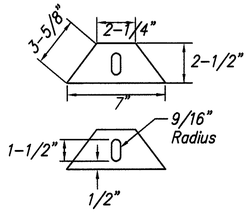
DETAIL "A"



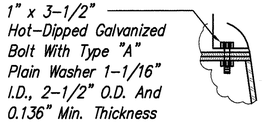
3 BASE PLATE DETAIL
AE6.13 Not To Scale



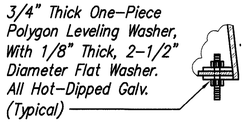
DETAIL "B"
(BACK VIEW OF DOOR)



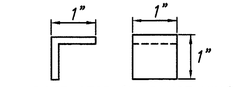
DETAIL "C"



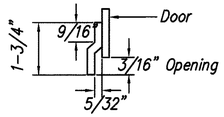
DETAIL "D"



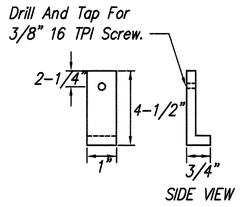
DETAIL "E"



DOOR STOP (11 GAUGE MIN.)



DOOR TAB - (11 GAUGE MIN.)



LOCKING BAR

1 TRANSFORMER BASE DETAIL
AE6.13 Not To Scale

NOTES:

1. All light standard assemblies shall be designed in accordance with AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals, 4th Edition with subsequent interim revisions. Refer to Sheet AE1.5 for design parameters and additional requirements.
2. All Steel Shall Conform To The Requirements Of ASTM A36 Steel.
3. All Welds Shall Be Performed By A Certified Welder. All Vertical Welds On The Sides Of The Base Shall Be Continuous And Machine Welded. Ground Weld For Smooth Finish.
4. Bolts For Bolting Pole Flange Include 4-1" x 3-1/2" Hex Bolts With Nut And Washer. All Hardware Shall Be Hot-Dipped Galvanized.
5. Entire Assembly Shall Be Hot-Dipped Galvanized After Fabrication.
6. Submit Shop Drawing For Review & Approval Prior To Fabrication.

APPROVED (5)

(for City Street Light Work Only):

Chief, Mechanical/Electrical Design And Engineering Division, DDC City And County Of Honolulu — Date 7/29/03

Chief, Traffic Review Branch, DPP City And County Of Honolulu — Date

DATE	REV.	DESCRIPTION
10/16/03	5	Obtained Agency Signatures

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

CITY STREET LIGHT STANDARD DETAILS

INTERSTATE ROUTE H-3
H-3 FINISH (UNIT VIII)
F.A.I. Proj. No. I-H3-1(75) Unit VIII

Scale: None Date: Mar. 31, 2003

SHEET No. AE6.13 OF 67 SHEETS

LENNOX K. NISHIMURA LICENSED PROFESSIONAL ENGINEER No. 3880-E HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

PROJECT ENGINEER for ECS, Inc.

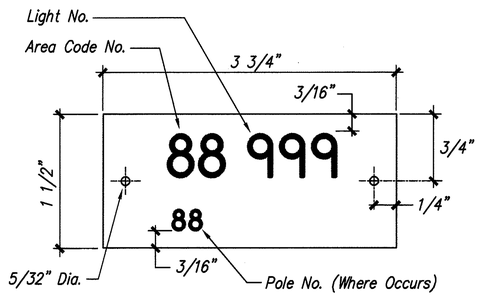
APRIL 30, 2004
EXPIRATION DATE OF THE LICENSE

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

6/20/03-8:45 Y:\060\e60-80\60-80-AE6.13.dwg

ADD.758

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(75) UNIT VIII	2003	ADD.759	816

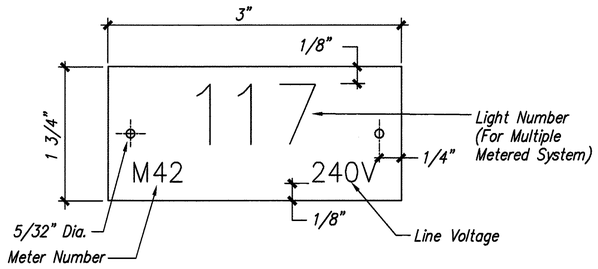


NOTES:

1. Use 2-ply Laminated Flexible Plastic, Black-White, Thickness: Black Cap Sheet - 0.010", White Base Sheet - 0.052".
2. Area Code Number And Light Number Size Shall Be 5/8" High, 1/8" Stroke White In Color (Number As Required).
3. Pole Number Size Shall Be 1/4" High, 1/16" Stroke, White In Color, (Number As Required).
4. Attach To Steel Poles With No. 8 Stainless Steel, 1/2" Long Drive Screws In 1/8" Drill Hole.
5. Numbers Area Inscribed By Cutting Through "Black Cap Sheet" To Expose "White Letters."

1 / AE6.14 STREET LIGHT I.D. TAG - UNMETERED SYSTEM

Not To Scale

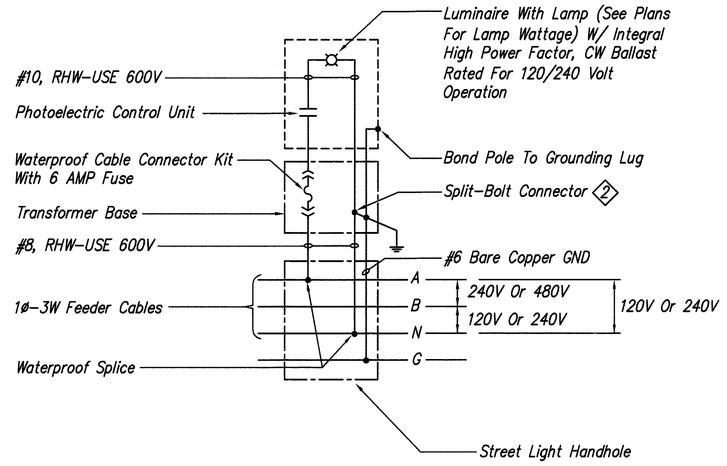


NOTES:

1. Use 2-ply Laminated Flexible Plastic, Black-White, Thickness: Black Cap Sheet - 0.010", White Base Sheet - 0.052".
2. Number Size Shall Be 1" And Engraved 1/8" Wide, White In Color (Number As Required).
3. Nomenclature Size Shall Be 5/16" High And Engraved 1/32" Wide, White In Color (Meter Number, Circuit Number and Voltage As Required).
4. Attach To Steel Poles With No. 8 Stainless Steel, 1/2" Long Drive Screws In 1/8" Drill Hole.
5. Numbers Are Inscribed By Cutting Through "Black Cap Sheet" To Expose "White Letters."

2 / AE6.14 STREET LIGHT I.D. TAG - METERED SYSTEM

Not To Scale



NOTES:

1. All Neutral Conductors Shall Have Solid White Insulation.

2 Ground All Neutral Conductors And Conduits To Ground Rod.

3 / AE6.14 TYPICAL CONNECTION DIAGRAM FOR ONE LIGHT

No Scale

APPROVED 5

(for City Street Light Work Only):

7/29/03
Chief, Mechanical/Electrical Date
Design And Engineering Division, DDC
City And County Of Honolulu

8/26/03
Chief, Traffic Review Branch, DPP Date
City And County Of Honolulu

LENNOX K. NISHIMURA
LICENSED PROFESSIONAL ENGINEER
No. 3880-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

PROJECT ENGINEER for ECS, Inc.

APRIL 30, 2004
EXPIRATION DATE OF THE LICENSE

DATE	REV.	DESCRIPTION
10/16/03	5	Obtained Agency Signatures

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

CITY STREET LIGHT STANDARD DETAILS

INTERSTATE ROUTE H-3
H-3 FINISH (UNIT VIII)
F.A.I. Proj. No. I-H3-1(75) Unit VIII

Scale: None Date: Mar. 31, 2003

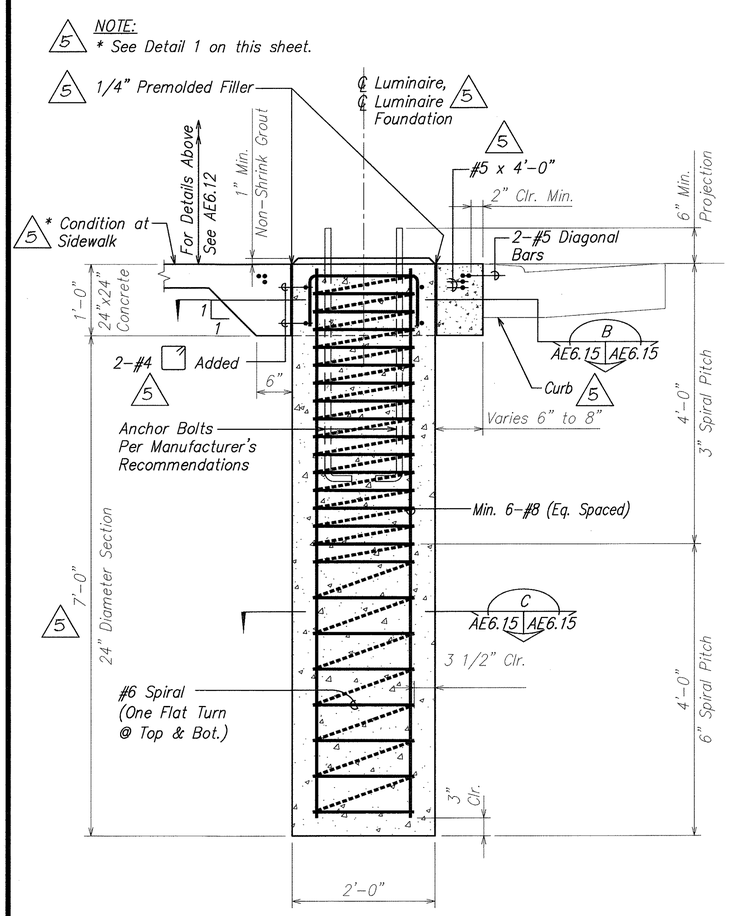
SHEET No. AE6.14 OF 67 SHEETS

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

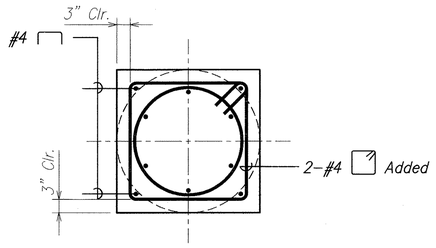
6/20/03-8:45 Y:\060\e60-80\60-80-AE6.14.dwg

ADD.759

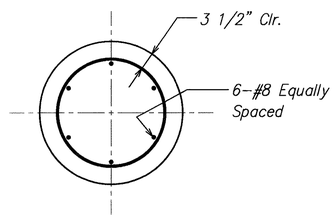
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(75) UNIT VIII	2003	ADD. 760	816



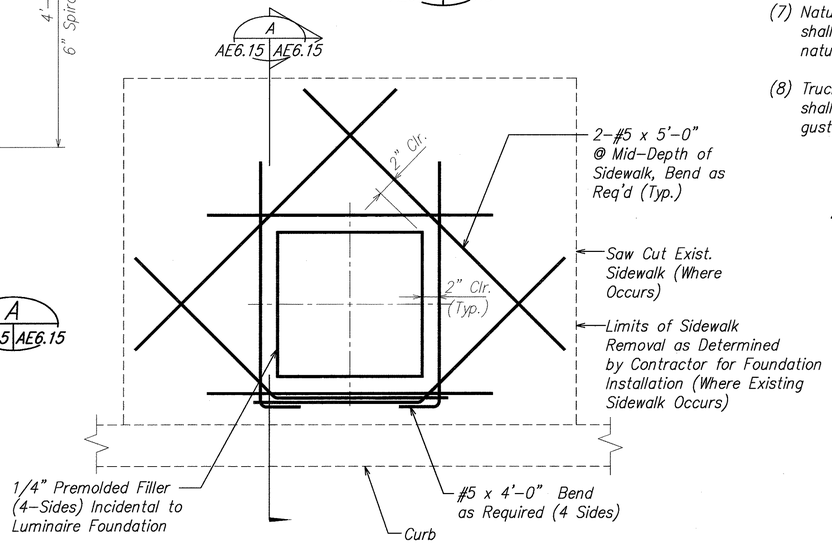
5 LUMINAIRE FOUNDATION (AT KAAHELE ST. AND PONO ST.) A AE6.15 AE6.15
SCALE: 1" = 1'-0"



5 SECTION B AE6.15 AE6.15
SCALE: 1" = 1'-0"



5 SECTION C AE6.15 AE6.15
SCALE: 1" = 1'-0"



5 DETAIL 1 AE6.15 AE6.15
SCALE: 1" = 1'-0"

NOTE:
See civil plans for additional reconstruction details.

NOTES:

1. Reinforcing Shall be Grade 60.
2. Concrete shall be minimum 4500 psi at 28 days.
3. See AE6.12 for grounding and weeps.
4. Loading Criteria:
   Highway Sign supports shall be designed in accordance with AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals, 4th Edition with subsequent interim revisions. Design parameters shall be in accordance with the following requirements.
   (1) Basic Wind Speed: 105 mph.
   (2) Recurrence Interval: 100 years.
   (3) Height and Exposure Factor: For Highway Sign support structures on bridges, the height and exposure factor shall be determined based on the maximum height above the surrounding ground.
   (4) Fatigue Importance Factors: Highway Sign support structures shall be based on the following:
      a. Fatigue Category I – For all structures where failure would result in the structure falling into the travel way.
      b. Fatigue Category II – For all others.
   (5) Galloping: Highway Sign support shall be designed for galloping-induced cyclic loads.
   (6) Vortex Shedding: Nontapered lighting structures shall be designed to resist vortex shedding loads including lighting structures that have tapers less than 0.14 in./ft.
   (7) Natural Wind Gust: Highway Sign support structures shall be designed to resist an equivalent static natural wind gust pressure.
   (8) Truck-Induced Gust: Highway Sign support structures shall be designed to resist on equivalent static truck gust pressure range based on a truck speed of 65 mph.

DAVID K. FUJIWARA LICENSED PROFESSIONAL ENGINEER NO. 8104-S HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

David K. Fujiwara 4-30-04
SIGNATURE EXPIRATION DATE OF THE LICENSE

5 APPROVED
(for Street Light Work Only):

7/29/03
Chief, Mechanical/Electrical Design and Engineering Division, DDC City and County of Honolulu — Date

8/12/03
Chief, Traffic Review Branch, DPP — Date
City and County of Honolulu

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

CITY STREET LIGHT FOUNDATION DETAILS

INTERSTATE ROUTE H-3
H-3 FINISH (UNIT VIII)
F.A.I. Proj. No. I-H3-1(75) Unit VIII

Scale: As Noted Date: Mar. 31, 2003

SHEET No. AE6.15 OF 66 SHEETS

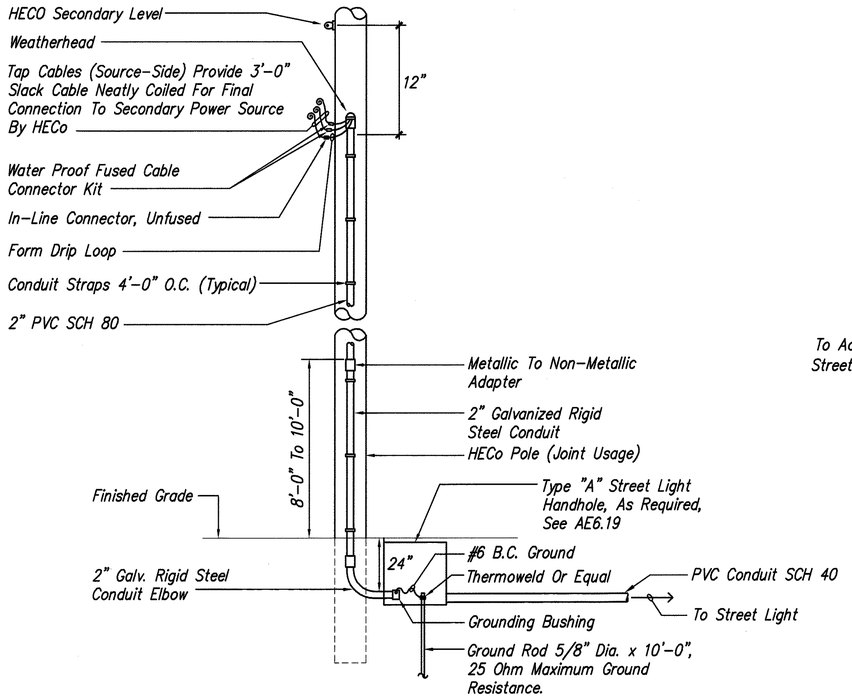
DATE	REVISION
10/16/03	5 Revised Section, Added Cross Sections, Detail 1 & Approval Signatures

ADD. 760

AE-AW615.DWG
1 = 1

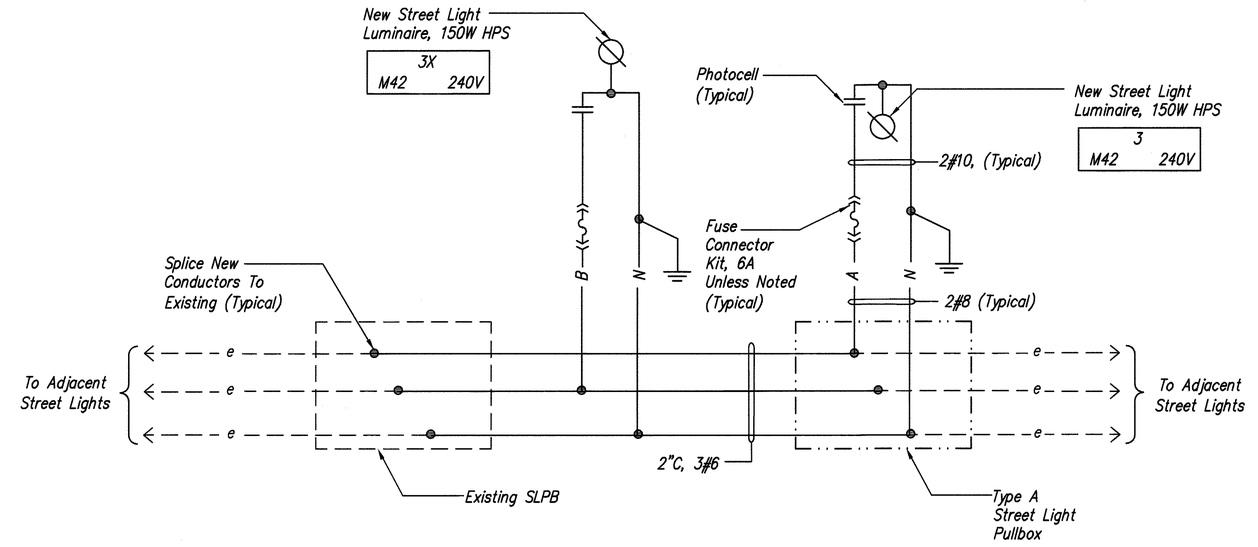
\\Cad\asf\2001\0066-WAIMALU VIADUCT\07-25-03 AE A005\AB-AE0615.dwg, AE6.15, 7/28/2003 1:44:09 PM, KSFinic.pc3

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(75) UNIT VIII	2003	ADD.761	816



1 AE6.16 STREET LIGHTING CONDUIT RISER DETAIL

Not To Scale



3 AE6.16 PARTIAL STREET LIGHTING DIAGRAM - KAAHELE STREET

No Scale

Cable Tag Provide In Each Handhole For Identification Of All Street Light Circuit Cables.

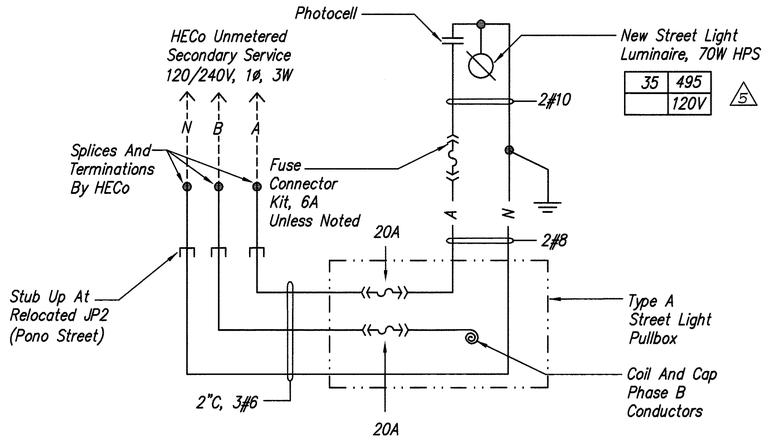
A-1

NOTES:

1. Number Shall Be 3/8" High And Punched On Brass Tag.
2. Attach To Circuit Cables With Nylon Weather Resistant Locking Cable Ties, 3/16" Wide.

2 AE6.16 STREET LIGHT CIRCUIT CABLE I.D. TAG DETAIL

Not To Scale



4 AE6.16 STREET LIGHTING DIAGRAM - PONO STREET

No Scale

APPROVED 5

(for City Street Light Work Only):

7/29/03

Chief, Mechanical/Electrical Date
Design And Engineering Division, DDC
City And County Of Honolulu

8/12/03

Chief, Traffic Review Branch, DPP Date
City And County Of Honolulu

DATE	REV.	DESCRIPTION
10/16/03	5	Obtained Agency Signatures, Revised Street Light Number

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

CITY STREET LIGHTING DETAILS

INTERSTATE ROUTE H-3
H-3 FINISH (UNIT VIII)
F.A.I. Proj. No. I-H3-1(75) Unit VIII

Scale: None Date: Mar. 31, 2003

SHEET No. AE6.16 OF 67 SHEETS

LENNOX K. NISHIMURA
LICENSED PROFESSIONAL ENGINEER
No. 3880-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

PROJECT ENGINEER for ECS, Inc.

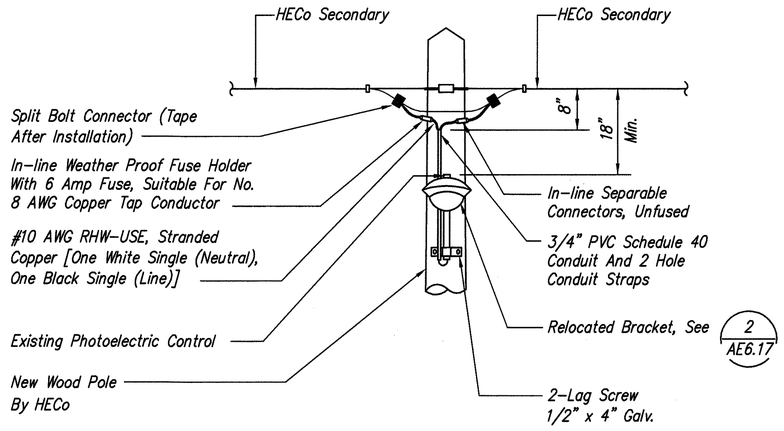
APRIL 30, 2004
EXPIRATION DATE OF THE LICENSE

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

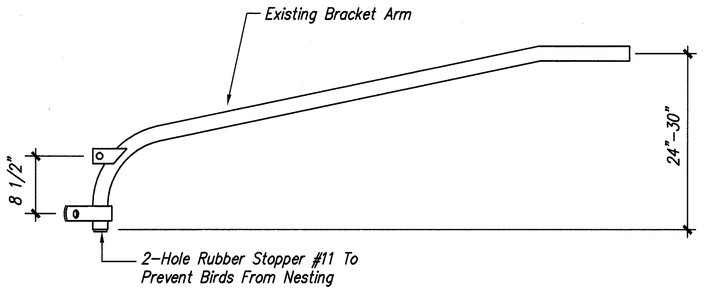
6/20/03-8:45 Y:\060\e60-80\GD-80-AE6.16.dwg

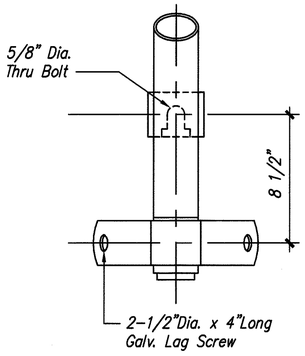
ADD. 761

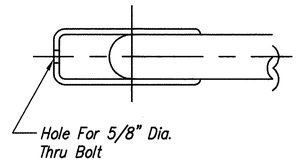
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(75) UNIT VIII	2003	ADD.762	816



TANGENT INSTALLATION



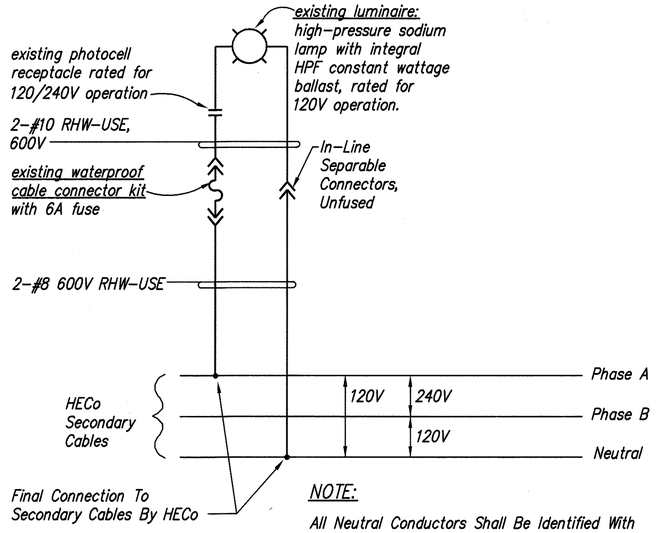




FRONT VIEW TOP VIEW

2 AE6.17 MAST ARM AND BRACKET ATTACHMENT DETAIL

Not To Scale



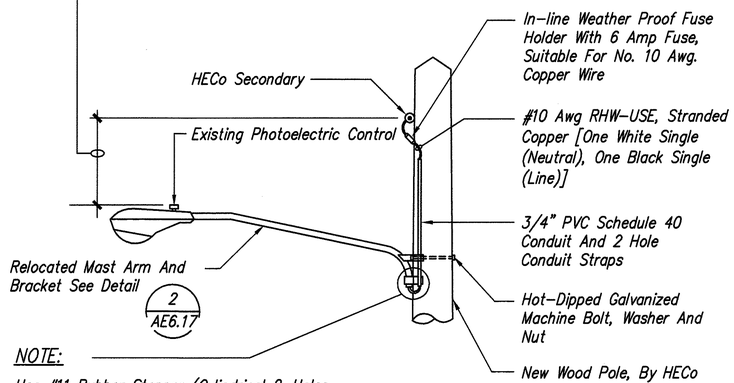
NOTE:

All Neutral Conductors Shall Be Identified With Insulation. Other Means Of Identification Are Not Acceptable

3 AE6.17 STREET LIGHT CONNECTION DIAGRAM

Not To Scale

18" Minimum Clearance. If Not Possible When Service Drop Passes Over Luminaire, HECo Will Select A Splicing Point Which Will Provide For Passage To The Right Or Left Of The Luminaire To Provide 18" Clearance.



NOTE:

Use #11 Rubber Stopper (Cylindrical 2-Holes, Top-56mm, Length-48mm, Each Hole-5mm) To Prevent Nesting Birds. Contractor To Provide & Install.

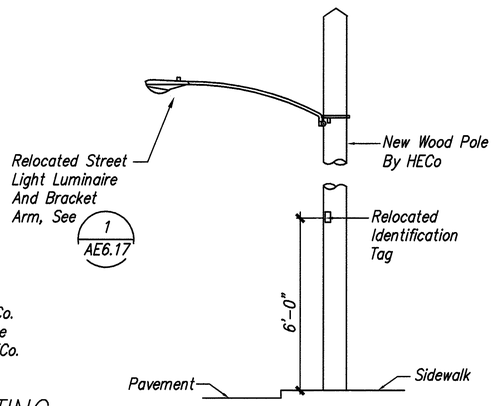
NOTE:

Final Terminations To HECo Secondary To Be Made By HECo. Contractor Shall Be Responsible For Coordinating Work With HECo.

DEAD-END INSTALLATION

1 AE6.17 OVERHEAD MULTIPLE STREET LIGHT MOUNTING

Not To Scale



4 AE6.17 WOOD POLE ELEVATION

Not To Scale

APPROVED 5

(for City Street Light Work Only):

7/29/03

Chief, Mechanical/Electrical Date
Design And Engineering Division, DDC
City And County Of Honolulu

Chief, ~~Traffic~~ Review Branch, DPP Date
City And County Of Honolulu

LEANNOX K. NISHIMURA LICENSED PROFESSIONAL ENGINEER No. 3880-E HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

PROJECT ENGINEER for ECS, Inc.

APRIL 30, 2004
EXPIRATION DATE OF THE LICENSE

DATE	REV.	DESCRIPTION
10/16/03	5	Obtained Agency Signatures

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

OVERHEAD STREET LIGHT DETAILS

INTERSTATE ROUTE H-3
H-3 FINISH (UNIT VIII)
F.A.I. Proj. No. I-H3-1(75) Unit VIII

Scale: None Date: Mar. 31, 2003

SHEET No. AE6.17 OF 67 SHEETS

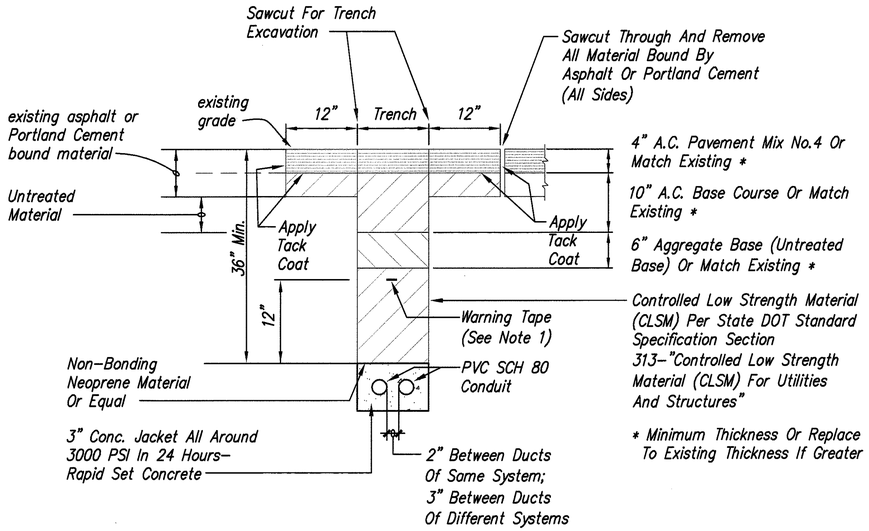
ORIGINAL PLAN | SURVEY PLOTTED BY | DRAWN BY | TRACED BY | DESIGNED BY | QUANTITIES BY | CHECKED BY | DATE

NOTE BOOK | No.

6/20/03-9:29 X:\060\60-80\60-80-AE6.17.dwg

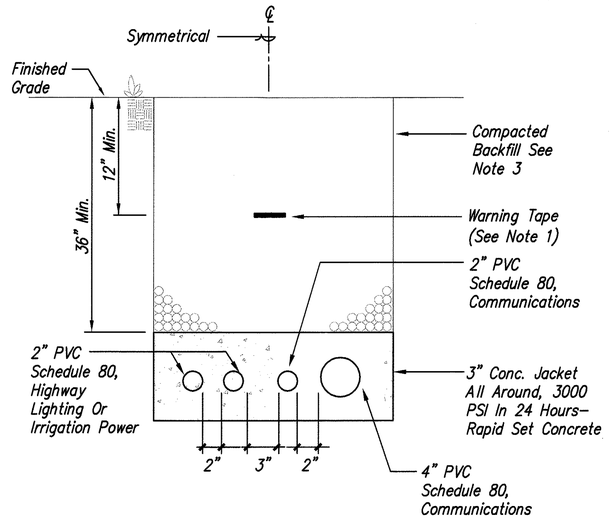
ADD.762

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(75) UNIT VIII	2003	ADD.763	816



1 AE6.18 TYPICAL PAVEMENT RESTORATION IN STATE HIGHWAY R/W (ROADWAY AREAS)

Not To Scale



2 AE6.18 TYPICAL DUCT SECTION - (NON ROADWAY AREAS)

Not To Scale

NOTES:

1. 8 mil thick red colored plastic warning tape. 3" wide with continuous metallic backing and corrosion resistant foil core inscribed with: "CAUTION - ELECTRICAL LINE BURIED BELOW" in black lettering, repeated at 36" intervals.
2. Remove existing conductors from existing conduit. Pull wire brush, swab and mandrel through conduit. Existing conduit shall be free of debris and obstructions prior to pulling new conductors.
3. Type "A" backfill: beach, sand, earth or earth and gravel used. The maximum rock size shall be 1" and the mixture shall contain not more than 50% by volume of rock particles.
4. All conduits in concrete shall be in conduit saddles. All conduits shall be tied securely into the saddles, and all saddles shall be anchored into the ground so that the conduits do not float.
5. Refer to Typical Roadway Sections, Sheet AC1.13 For Existing Thicknesses.

DRAWING REVIEW

Reviewed for HECO's Facilities Only

Date 7/25/03 By

Engineering Department
Hawaiian Electric Company, Inc.

HECO's review of these drawings shall in no way relieve the Customer, its Consultant, its Contractor or anyone acting on the Customer's behalf from the responsibility for engineering, design, materials and any other liability associated with this project.

APPROVED

Hawaiian Electric Company, Inc. Date

APPROVED (for City Street Light Work Only):

7/29/03

Chief, Mechanical/Electrical Date
Design And Engineering Division, DDC
City And County Of Honolulu

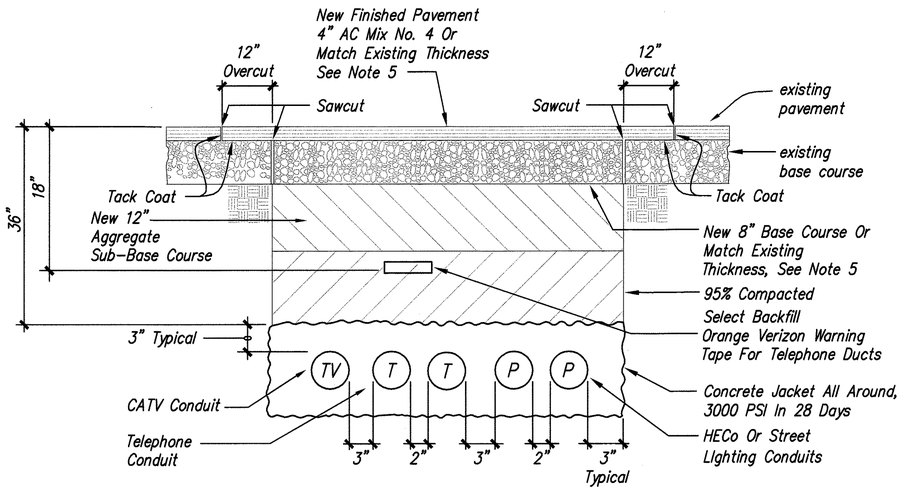
7/16/03

Verizon Hawaii Date

9/2/03

Oceanic Cablevision Date

Chief, Traffic Review Branch, DPP Date
City And County Of Honolulu



3 AE6.18 TYPICAL PAVEMENT RESTORATION - KAAHELE ST., PONO ST., PONOHALE ST., PONOHANA LOOP

Not To Scale

DUCT SCHEDULE

NO.	DESCRIPTION	CONDUCTORS
1	2" PVC Schedule 80, Highway Lighting Concrete Encased	As Noted
2	2" PVC Schedule 80, Highway Lighting, Concealed In Concrete Barrier	As Noted
3	4" PVC Schedule 80, SDOT Communications, Concrete Encased	None, Provide Pullstring
4	2" PVC Schedule 80, SDOT Communications, Concrete Encased	None, Provide Pullstring
5	3" PVC Schedule 80, SDOT Communications, Concealed In Concrete Barrier	None, Provide Pullstring
6	2" PVC Schedule 80, SDOT Communications, Concealed In Concrete Barrier	None, Provide Pullstring
7	5" PVC Schedule 40, HECo Primary Concrete Encased	None, Provide Pullstring
8	4" PVC Schedule 40, HECo Primary Concrete Encased	None, Provide Pullstring
9	2" PVC Schedule 40, HECo Primary Concrete Encased	None, Provide Pullstring
10	PVC Schedule 40, Secondary Power Concrete Encased, Conduit Size As Indicated	As Noted
11	4" PVC Type GTS, Verizon Concrete Encased	None, Provide Muletape
12	2" PVC Type GTS, Verizon Concrete Encased	None, Provide Muletape
13	4" PVC Schedule 40, Oceanic Cable, Concrete Encased	None, Provide Muletape
14	PVC Schedule 80, Irrigation Controller Power, Concrete Encased, Conduit Size as Indicated	As Noted
15	PVC Schedule 80, Irrigation Controller Power, In Concrete Barrier, Conduit Size as Indicated	As Noted
16	2" PVC Schedule 40, City Street Lighting, Concrete Encased	2#6, 1#8 GND

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

6/20/03-9:30 Y:\060\e60-80\60-80-AE6.18.dwg

LENNOX K. NISHIMURA
LICENSED PROFESSIONAL ENGINEER
No. 3880-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

PROJECT ENGINEER for ECS, Inc.

APRIL 30, 2004
EXPIRATION DATE OF THE LICENSE

DATE	REV.	DESCRIPTION
10/16/03	5	Obtained Agency Signatures

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DUCT DETAILS

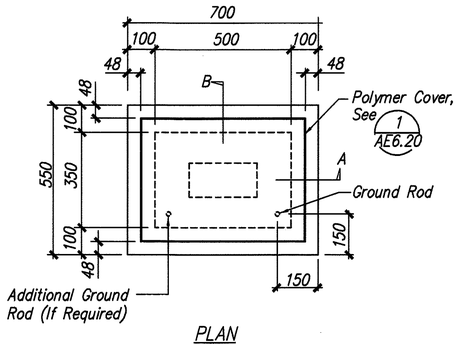
INTERSTATE ROUTE H-3
H-3 FINISH (UNIT VIII)
F.A.I. Proj. No. I-H3-1(75) Unit VIII

Scale: None Date: Mar. 31, 2003

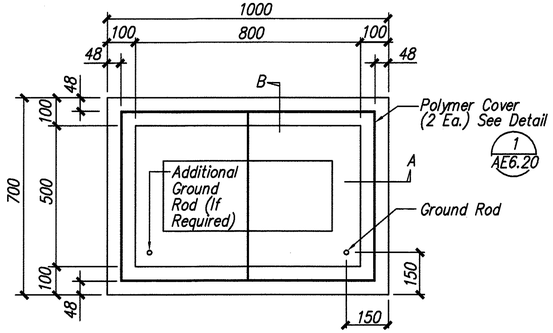
SHEET No. AE6.18 OF 67 SHEETS

ADD.763

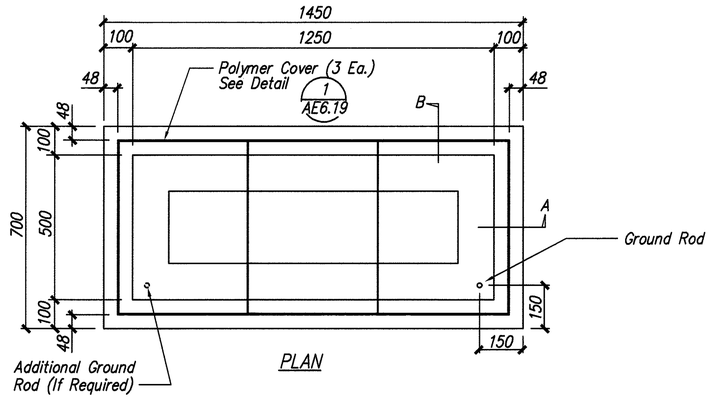
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(75) UNIT VIII	2003	ADD.764	816



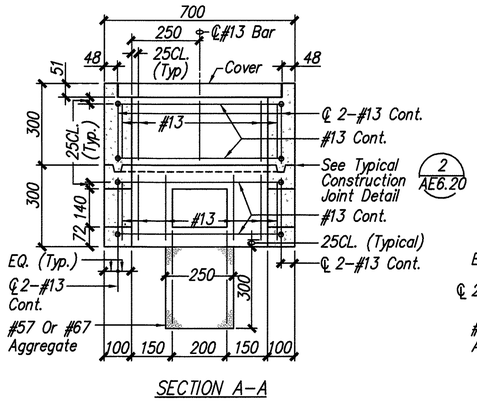
PLAN



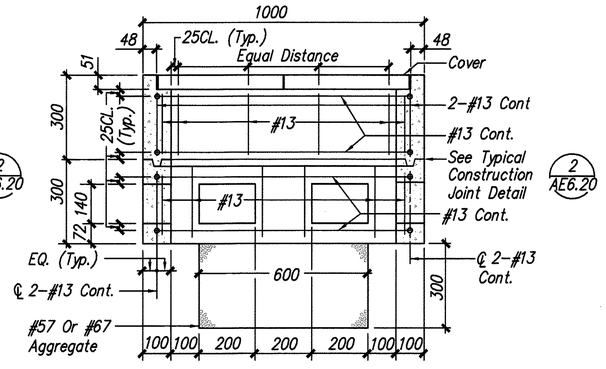
PLAN



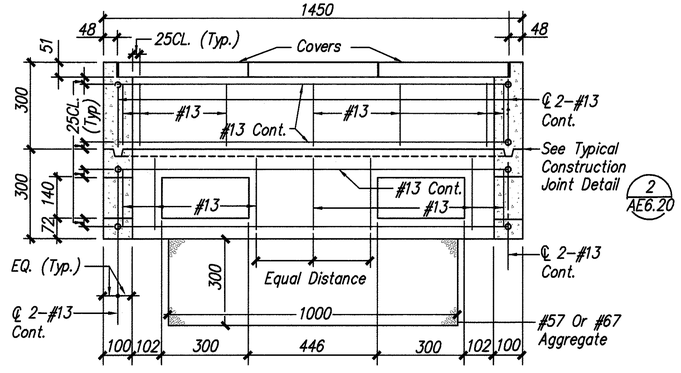
PLAN



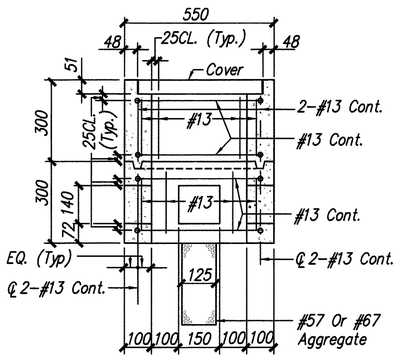
SECTION A-A



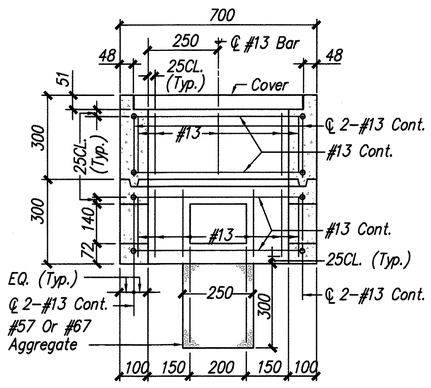
SECTION A-A



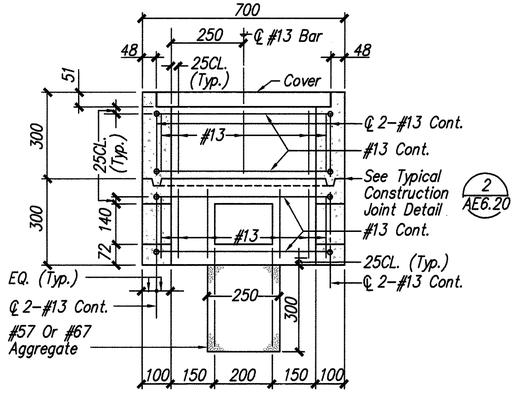
SECTION A-A



SECTION B-B



SECTION B-B



SECTION B-B

TYPE "A" PULLBOX

No Scale

TYPE "B" PULLBOX (OLD TYPE "C")

No Scale

TYPE "C" PULLBOX (OLD TYPE "D")

No Scale

NOTE:

All dimensions are in millimeters unless otherwise shown.
1 millimeter = 0.039 inch

APPROVED 5

(for City Street Light Work Only):

7/29/03

Chief, Mechanical/Electrical Date
Design And Engineering Division, DDC
City And County Of Honolulu

8/12/03

Chief, Traffic Review Branch, DPP Date
City And County Of Honolulu

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

6/20/03-9:30 Y:\060\e60-80\60-80-AE6.19.dwg

LENNOX K. NISHIMURA
LICENSED PROFESSIONAL ENGINEER
No. 3880-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

PROJECT ENGINEER for ECS, Inc.

APRIL 30, 2004
EXPIRATION DATE OF THE LICENSE

DATE	REV.	DESCRIPTION
10/16/03	5	Obtained Agency Signatures

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PULLBOX DETAILS

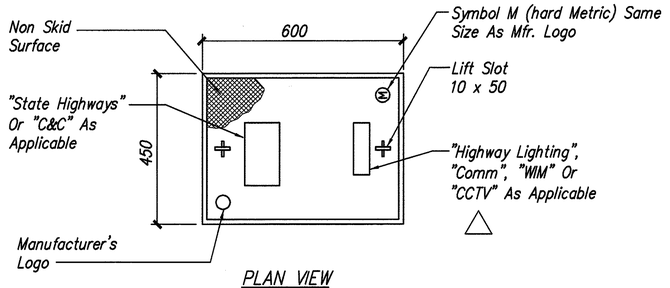
INTERSTATE ROUTE H-3
H-3 FINISH (UNIT VIII)
F.A.I. Proj. No. I-H3-1(75) Unit VIII

Scale: None Date: Mar. 31, 2003

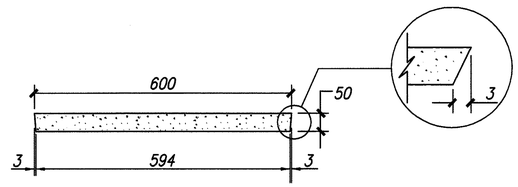
SHEET No. AE6.19 OF 67 SHEETS

ADD.764

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(75) UNIT VIII	2003	ADD.765	816



PLAN VIEW



ELEVATION

1 / AE6.20 — POLYMER CONCRETE COVER

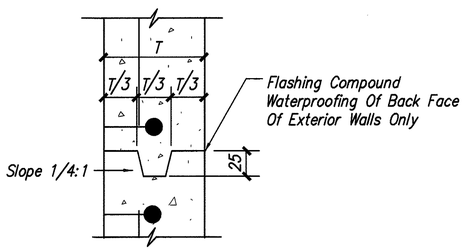
Not To Scale

GENERAL PULLBOX NOTES:

1. Provide a minimum of one 19ø x 3.0m copperclad ground rod in each pullbox. When directed by the traffic signal inspector/engineer, install additional ground rods. Cost of ground rods shall be incidental to the pullboxes.
2. All pre-cast concrete pullboxes shall be manufactured in two pieces.
3. The pullbox with cover shall be capable of supporting an MS 18 loading.
4. The maximum weight of the pullbox cover shall not exceed 27 kilograms.
5. The openings for the conduits on all pullboxes shall be pre-cast concrete knockouts.
6. After installing the conduits in the openings of the pullboxes, the contractor shall fill the excess opening in the pre-cast knockouts with concrete mortar.
7. Prior to installing the pullboxes, the contractor shall level the bottom of the trench and achieve a minimum of 95% relative compaction of the bottom of the trench.
8. All concrete shall be class a (25MPA, min.)
9. Rebars shall be grade 300 and all lapped splices shall be 360mm minimum.
10. The #57 or #67 size aggregate shall conform to latest version of AASHTO M43 (ASTM D 448).
11. Type "C" pullbox shall be installed in a location protected from vehicular traffic (I.E. Raised sidewalks, behind A.C. Curbs, traffic signal standards or pipe guards).
12. Pullboxes placed on slopes shall be installed level, on a plateau, constructed by the contractor. Slopes surrounding the pullbox shall be laid back and the plateau surrounding the pullbox shall be 12" wide, unless otherwise noted.

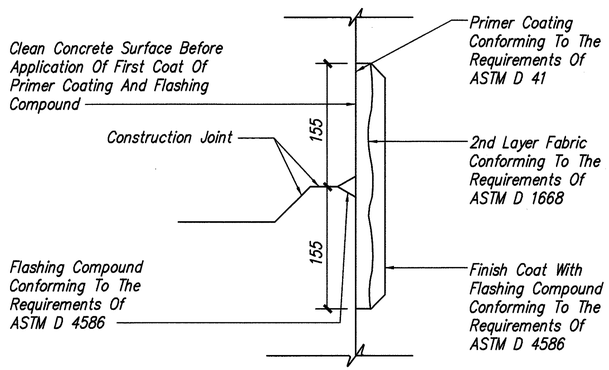
NOTE:

All dimensions are in millimeters unless otherwise shown.
1 millimeter = 0.039 inch



2 / AE6.20 — TYPICAL CONSTRUCTION JOINT DETAIL

Not To Scale



3 / AE6.20 — TYPICAL FLASHING COMPOUND WATERPROOFING DETAIL

Not To Scale

APPROVED (5)

(for City Street Light Work Only):

7/29/03
Chief, Mechanical/Electrical Date
Design And Engineering Division, DDC
City And County Of Honolulu

8/12/03
Chief, Traffic Review Branch, DPP Date
City And County Of Honolulu

LENNOX K. NISHIMURA — LICENSED PROFESSIONAL ENGINEER — No. 3880-E — HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

PROJECT ENGINEER for ECS, Inc.

APRIL 30, 2004
EXPIRATION DATE OF THE LICENSE

DATE	REV.	DESCRIPTION
10/16/03	5	Obtained Agency Signatures

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PULLBOX DETAILS

INTERSTATE ROUTE H-3
H-3 FINISH (UNIT VIII)
F.A.I. Proj. No. I-H3-1(75) Unit VIII

Scale: None Date: Mar. 31, 2003

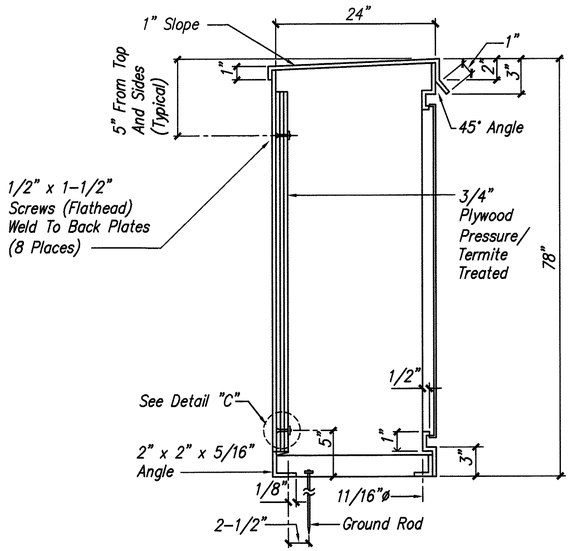
SHEET No. AE6.20 OF 67 SHEETS

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

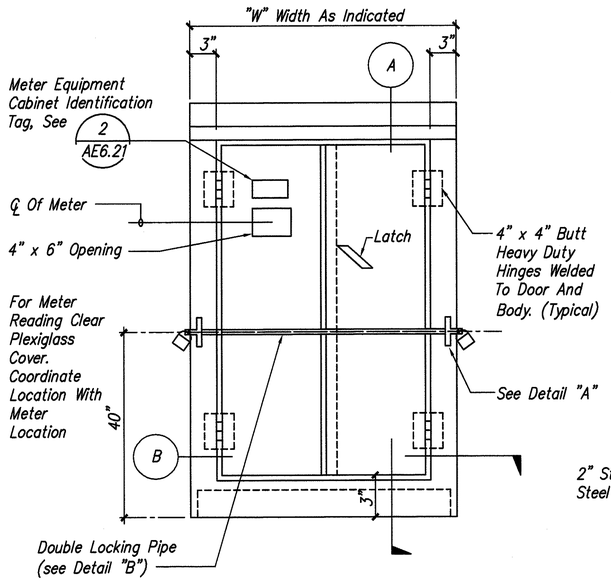
6/20/03-9:31 Y:\060\s60-80\60-80-AE6.20.dwg

ADD.765

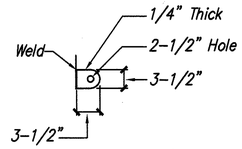
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(75) UNIT VIII	2003	766	816



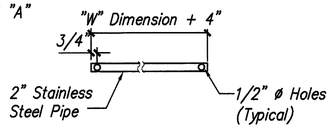
SECTION "A"



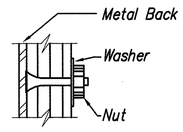
ELEVATION



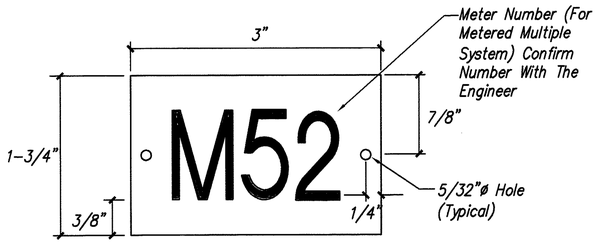
DETAIL "A"
Side View



DETAIL "B"



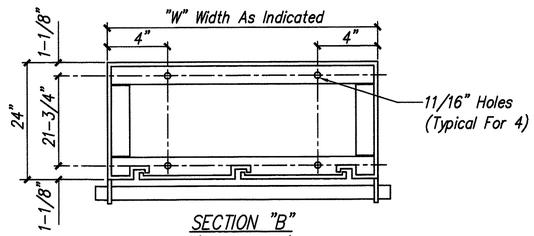
DETAIL "C"



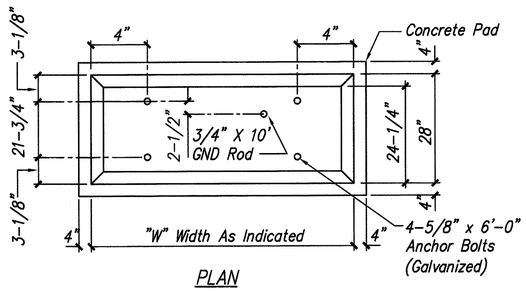
NOTES:

1. Use 2 ply plastic – black, white. Thickness: black cap sheet – 0.010"; white base sheet – 0.052".
2. Number size shall be 1" high and engraved 1/8" wide, white in color (number as required).
3. Attach to meter enclosure with No. 8 stainless steel drive screws.
4. Numbers are inscribed by cutting through "black cap sheet" to expose "white letters".

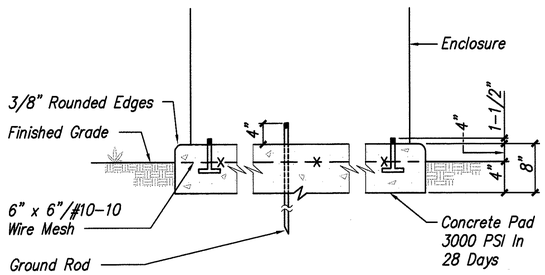
2 AE6.21 METER EQUIPMENT CABINET I.D. TAG
Not To Scale



SECTION "B"
(Angle Frame)



PLAN



FRONT

CONCRETE PAD

1 AE6.21 COMBINATION METER AND EQUIPMENT CABINET
Not To Scale

NOTES:

1. Cabinet to be primed with one coat shop primer. Paint with two coats epoxy enamel finish.
2. Cabinet shall be of stainless steel construction.
3. Enclosure shall be NEMA 3R with neoprene gasketing.
4. Padlocks:
   1 – HECo furnished
   1 – contractor shall obtain combination lock from the Highway Maintenance Section.
5. Shop fabrication drawings shall be submitted for approval.
6. Provide additional ground rod as required if ground resistance exceeds 25 Ohms (max allowed).

LENNOX K. NISHIMURA
LICENSED PROFESSIONAL ENGINEER
No. 3880–E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

PROJECT ENGINEER for ECS, Inc.

APRIL 30, 2004
EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

METERING CABINET DETAILS

INTERSTATE ROUTE H-3
H-3 FINISH (UNIT VIII)
F.A.I. Proj. No. I-H3-1(75) Unit VIII

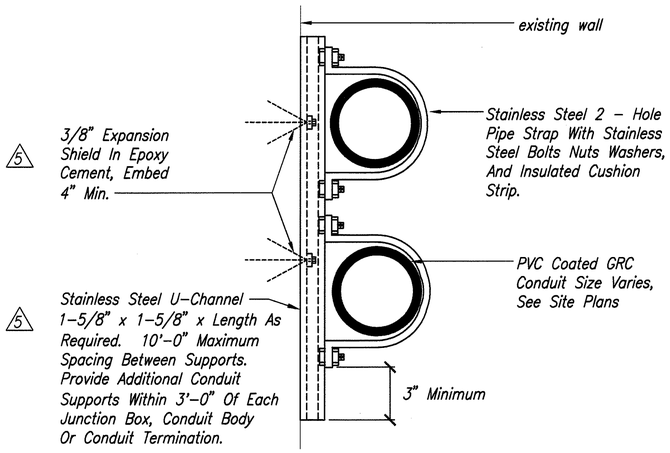
Scale: None Date: Mar. 31, 2003

SHEET No. AE6.21 OF 67 SHEETS

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

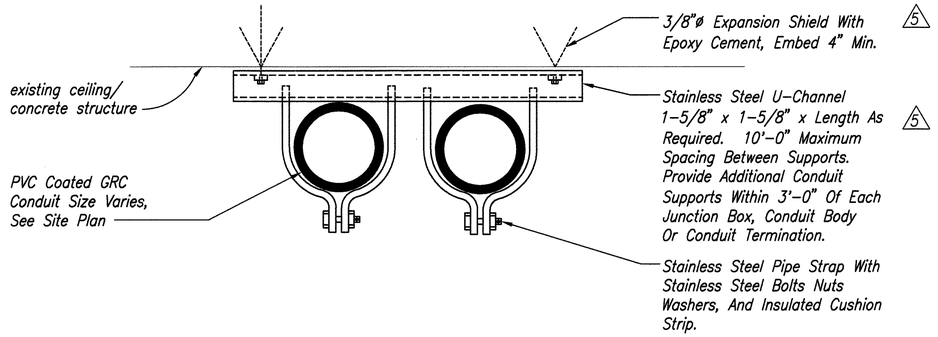
4/3/03–15:43 Y:\060\v60–80\60–80–AE6.21.dwg

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(75) UNIT VIII	2003	ADD. 767	816



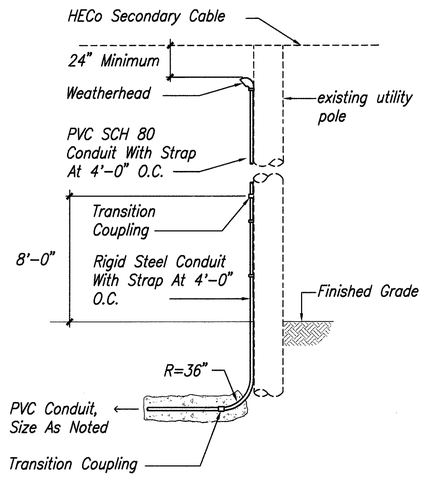
1 AE6.22 TYPICAL WALL MOUNTED CONDUIT SUPPORT DETAIL

Not To Scale



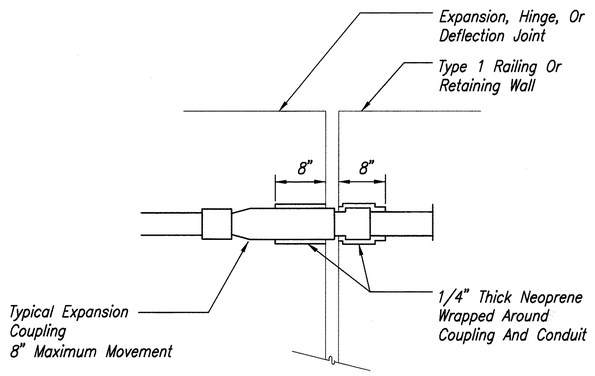
2 AE6.22 TYPICAL SURFACE CONDUIT SUPPORT DETAIL

Not To Scale



3 AE6.22 CONDUIT STUB–UP AT UTILITY POLE

Not To Scale



4 AE6.22 TYPICAL EXPANSION DETAIL

Not To Scale

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

10/16/03-10:03 Y:\DOT\e80-80\80-80-AE6.22.dwg

LENNOX K. NISHIMURA
LICENSED PROFESSIONAL ENGINEER
No. 3880-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

Lennox K. Nishimura
PROJECT ENGINEER for ECS, Inc.

APRIL 30, 2004
EXPIRATION DATE OF THE LICENSE

DATE	REV.	DESCRIPTION
10/16/03	5	Revised Details 1 & 2

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

MISCELLANEOUS ELECTRICAL DETAILS

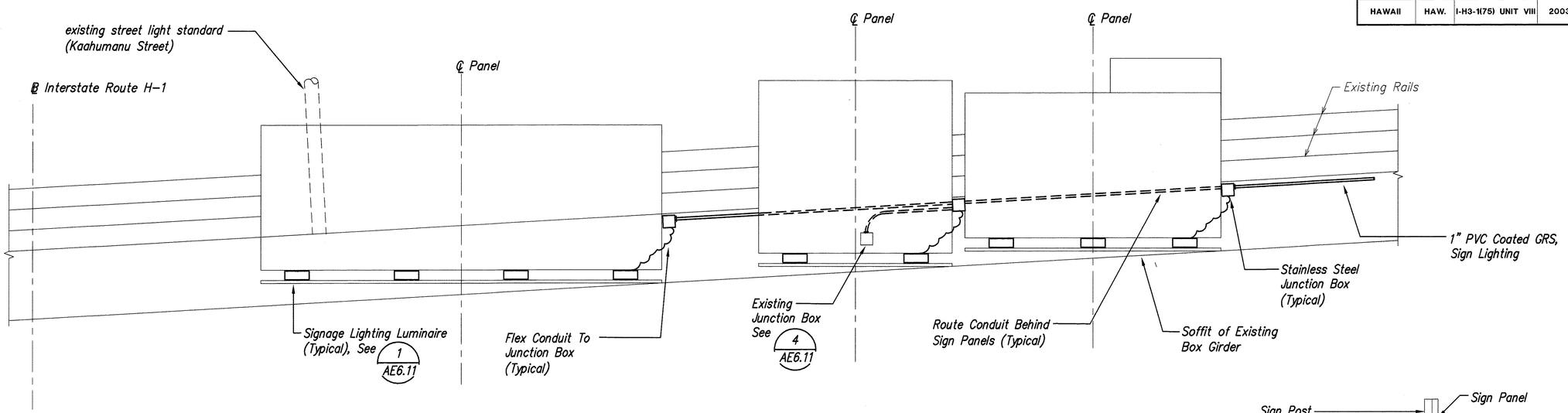
INTERSTATE ROUTE H-3
H-3 FINISH (UNIT VIII)
F.A.I. Proj. No. I-H3-1(75) Unit VIII

Scale: None Date: Mar. 31, 2003

SHEET No. AE6.22 OF 67 SHEETS

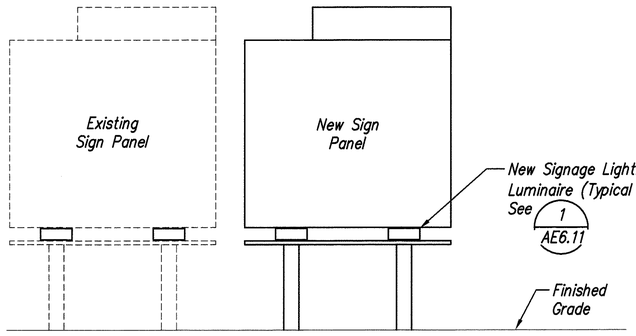
ADD. 767

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(75) UNIT VIII	2003	768	816



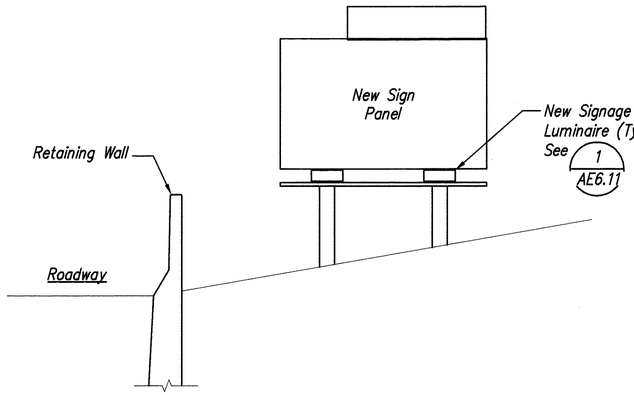
1 AE6.23 SIGN PANEL ELEVATION – KAAHUMANU STREET BRIDGE

Not To Scale



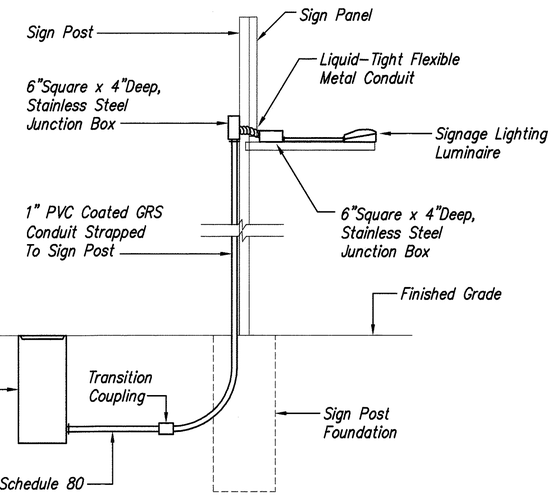
2 AE6.23 SIGN PANEL ELEVATION – STA. 77+65 ±

Not To Scale



3 AE6.23 SIGN PANEL ELEVATION – STA. 128+50 ±

Not To Scale



4 AE6.23 GROUND-MOUNTED DESTINATION SIGN CONDUIT ROUTING

Not To Scale

Note:

Contractor shall adjust signage lighting luminaire locations, to the satisfaction of the Engineer, so that the destination signs will be fully illuminated, ie. the signs shall have no dark spots.

ORIGINAL PLAN | NOTE BOOK No. ____

SURVEY PLOTTED BY ____ DATE
DRAWN BY ____ "
TRACED BY ____ "
DESIGNED BY ____ "
QUANTITIES BY ____ "
CHECKED BY ____ "

4/3/03-15:44 Y:\060\e60-80\60-80-AE6.23.dwg

LENNOX K. NISHIMURA
LICENSED PROFESSIONAL ENGINEER
No. 3880-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

Lennox K. Nishimura
PROJECT ENGINEER for ECS, Inc.

APRIL 30, 2004
EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

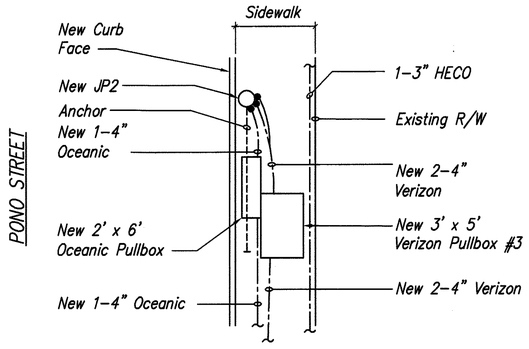
SIGN PANEL ELEVATIONS AND DETAILS

INTERSTATE ROUTE H-3
H-3 FINISH (UNIT VIII)
F.A.I. Proj. No. I-H3-1(75) Unit VIII

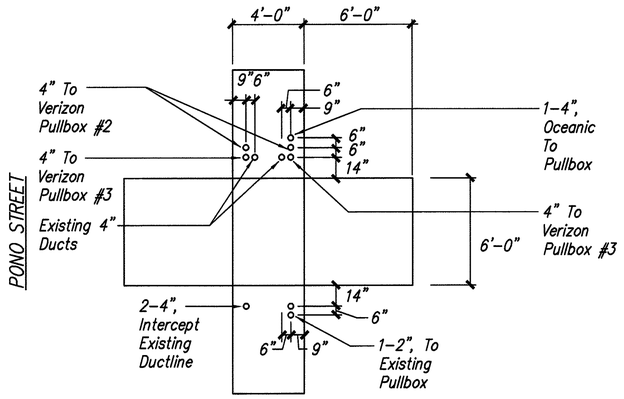
Scale: None Date: Mar. 31, 2003

SHEET No. AE6.23 OF 67 SHEETS

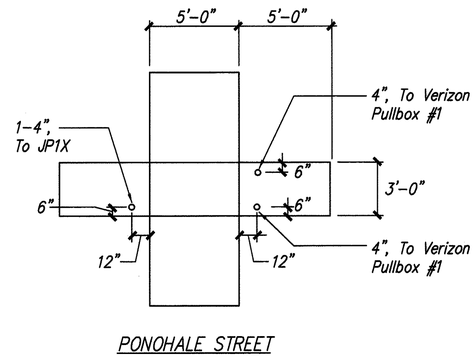
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(75) UNIT VIII	2003	ADD.769	816



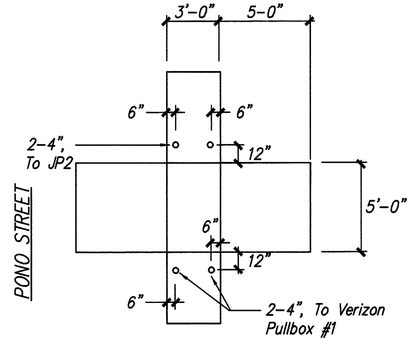
1 / AE7.1 HANDHOLE GROUP DETAIL
Scale: 1/4" = 1'-0"



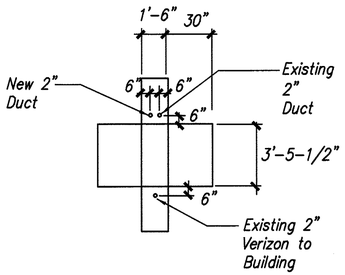
2 / AE7.1 VERIZON PULLBOX #1
Scale: 1/4" = 1'-0"



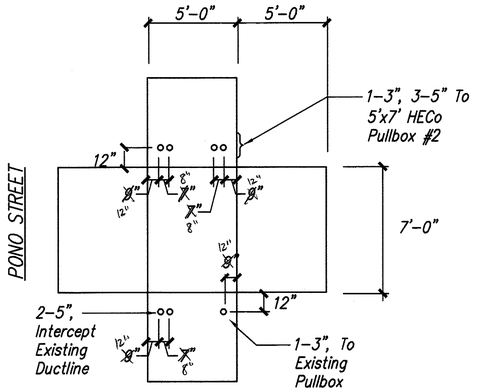
3 / AE7.1 VERIZON PULLBOX #2
Scale: 1/4" = 1'-0"



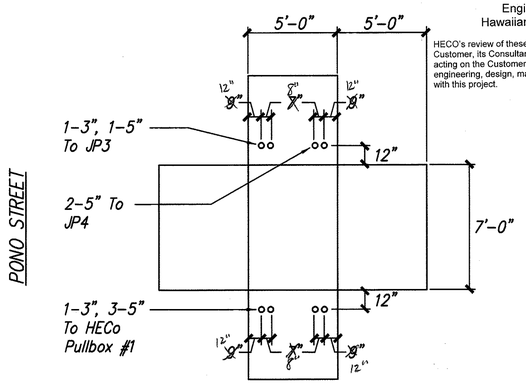
4 / AE7.1 VERIZON PULLBOX #3
Scale: 1/4" = 1'-0"



5 / AE7.1 EXISTING VERIZON PULLBOX #4
Scale: 1/4" = 1'-0"



6 / AE7.1 HECO PULLBOX #1
Scale: 1/4" = 1'-0"



7 / AE7.1 HECO PULLBOX #2
Scale: 1/4" = 1'-0"

NOTE:

Refer to utility company standard details for and AE1.2, AE1.3 and AE1.4 for additional requirements.

DRAWING REVIEW

Reviewed for HECO's Facilities Only
Date 7/25/03 By
Engineering Department
Hawaiian Electric Company, Inc.

HECO's review of these drawings shall in no way relieve the Customer, its Consultant, its Contractor or anyone acting on the Customer's behalf from the responsibility for engineering, design, materials and any other liability associated with this project.

APPROVED (5)

Hawaiian Electric Company, Inc. Date

7/16/03
Verizon Hawaii Date

9/2/03
Oceanic Cablevision Date

DATE	REV.	DESCRIPTION
10/16/03	(5)	Obtained Agency Signatures

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

UTILITY COMPANY PULLBOX LAYOUTS

INTERSTATE ROUTE H-3
H-3 FINISH (UNIT VIII)
F.A.I. Proj. No. I-H3-1(75) Unit VIII

Scale: None Date: Mar. 31, 2003

LEANNOX K. NISHIMURA
LICENSED PROFESSIONAL ENGINEER
No. 3880-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

PROJECT ENGINEER for ECS, Inc.

APRIL 30, 2004
EXPIRATION DATE OF THE LICENSE

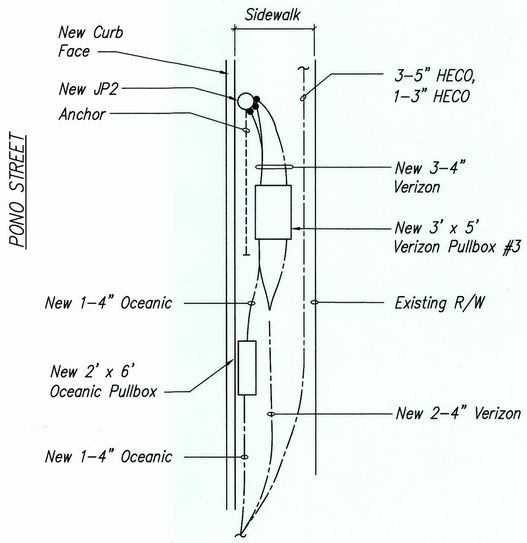
SHEET No. AE7.1 OF 67 SHEETS

ADD.769

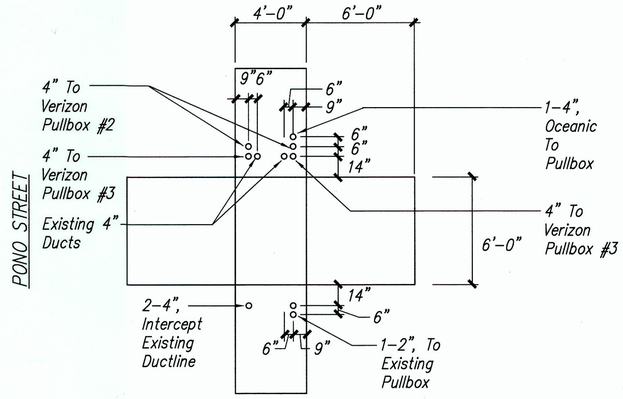
ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DRAWN BY	
NOTE BOOK	TRACED BY	
	DESIGNED BY	
No.	QUANTITIES BY	
	CHECKED BY	

6/20/03-9:31 Y:\060\e60-80\60-80-AE7.01.dwg

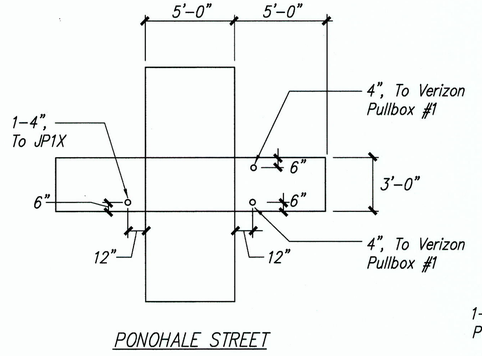
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(75) UNIT VIII	2003	C.O.769	816



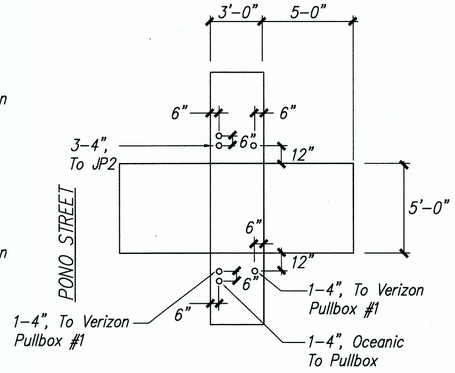
1 / AE7.1 HANDHOLE GROUP DETAIL
Scale: 1/8" = 1'-0"



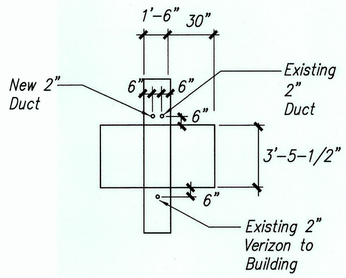
2 / AE7.1 VERIZON PULLBOX #1
Scale: 1/4" = 1'-0"



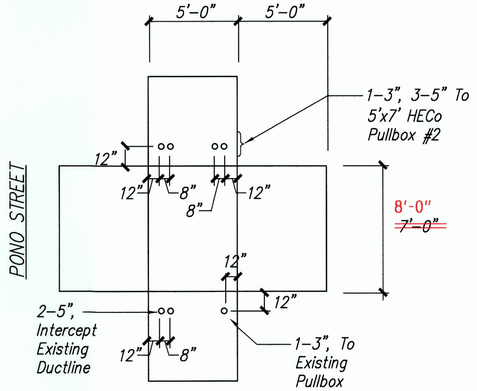
3 / AE7.1 VERIZON PULLBOX #2
Scale: 1/4" = 1'-0"



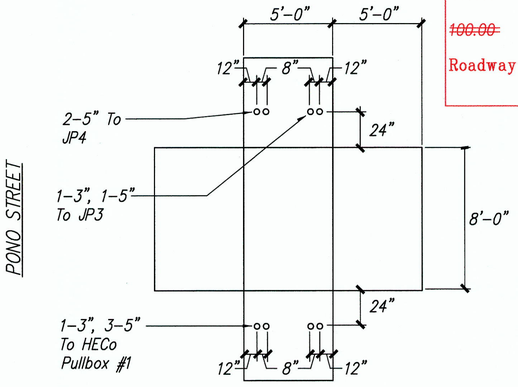
4 / AE7.1 VERIZON PULLBOX #3
Scale: 1/4" = 1'-0"



5 / AE7.1 EXISTING VERIZON PULLBOX #4
Scale: 1/4" = 1'-0"



6 / AE7.1 HECO PULLBOX #1
Scale: 1/4" = 1'-0"



7 / AE7.1 HECO 5'x8' MANHOLE
Scale: 1/4" = 1'-0"

NOTE:

Refer to utility company standard details for and AE1.2, AE1.3 and AE1.4 for additional requirements.

LEGEND FOR AS-BUILT POSTINGS

~~WWW~~	Squiggly line for as-built deletion
~~100.00~~	Double line for as-built deletion
Roadway	Text for as-built posting

APPROVED 5

Hawaiian Electric Company, Inc. Date

Verizon Hawaii Date

Oceanic Cablevision Date

DATE	REV.	DESCRIPTION
8/6/04	△	Replaced HECo Pullbox #2 With 5'x8' Manhole
7/9/03	5	Obtained Agency Signatures

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

UTILITY COMPANY PULLBOX LAYOUTS

INTERSTATE ROUTE H-3
H-3 FINISH (UNIT VIII)
F.A.I. Proj. No. I-H3-1(75) Unit VIII

Scale: None Date: Mar. 31, 2003

SHEET No. AE7.1 OF 67 SHEETS

LENNOX K. NISHIMURA LICENSED PROFESSIONAL ENGINEER No. 3880-E HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

PROJECT ENGINEER for ECS, Inc.

APRIL 30, 2004
EXPIRATION DATE OF THE LICENSE

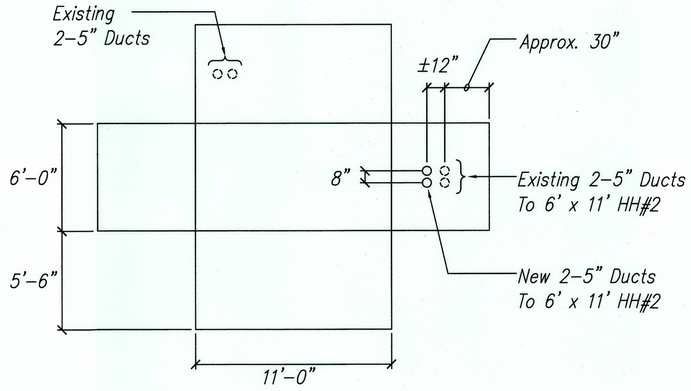
SHEET PLOTTED BY ____ DATE
ORIGINAL PLAN
BOARD BY
TRACED BY
NOTE BOOK DESIGNED BY
QUANTITIES BY
No. ____ CHECKED BY

7/2/13-10:24 Y:\060\060.080\AS-BUILT\AE7.01.dwg

"AS-BUILT" C.O.769

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(75) UNIT VIII	2003	C.O. 769S-1	816

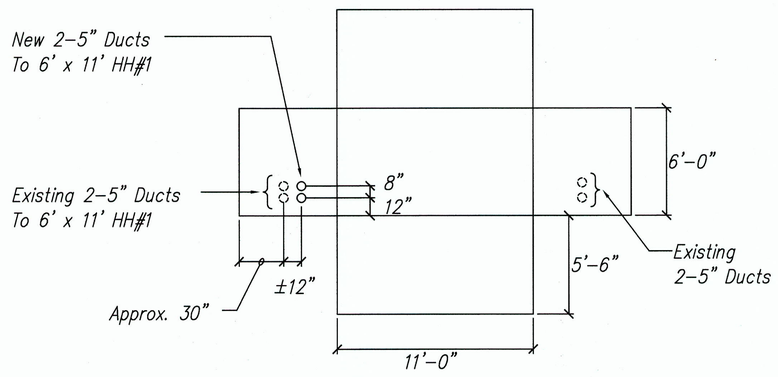
Kaahele Street



EXISTING 6' x 11' HECO HANDHOLE #1

Scale: 1/4" = 1'–0"

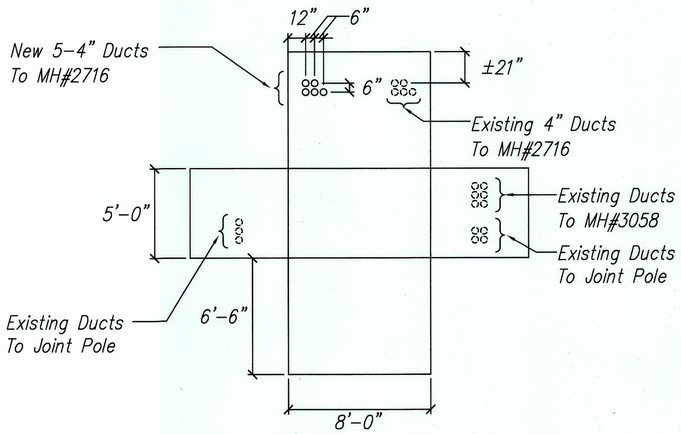
Kaahele Street



EXISTING 6' x 11' HECO HANDHOLE #2

Scale: 1/4" = 1'–0"

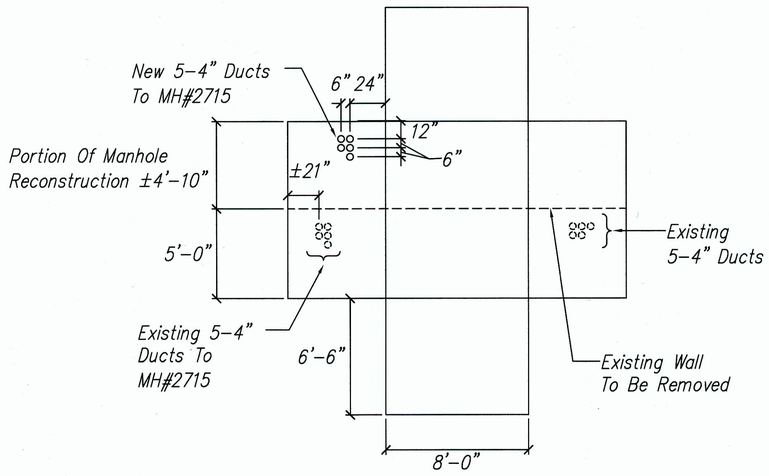
Moanalua Road



EXISTING 5' x 8' VERIZON MANHOLE #2715

Scale: 1/4" = 1'–0"

Kaahele Street



EXISTING 5' x 8' VERIZON MANHOLE #2716

Scale: 1/4" = 1'–0"

APPROVED

HECo Date

Verizon Hawaii Date

Oceanic Cable Date

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

7/2/13-10:26 Y:\060\060109\AS-BUILT\AE7.02.dwg

LENNOX K. NISHIMURA
LICENSED PROFESSIONAL ENGINEER
No. 3880-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

PROJECT ENGINEER for ECS, Inc.

APRIL 30, 2006
EXPIRATION DATE OF THE LICENSE

DATE	REV.	DESCRIPTION
9/10/04	△	New Sheet

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

EXISTING HANDHOLES AND MANHOLES DETAILS

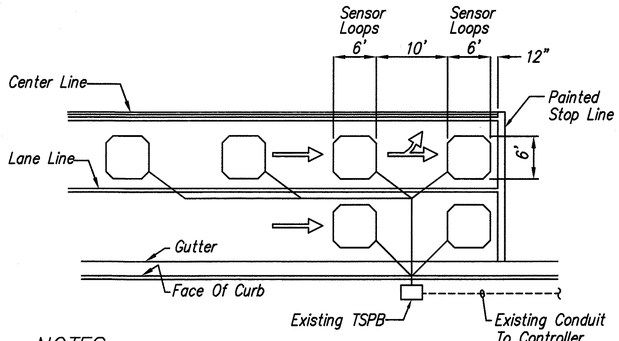
INTERSTATE ROUTE H-3
H-3 FINISH (UNIT VIII)
F.A.I. Proj. No. I-H3-1(75) Unit VIII

Scale: 1" = 20'–0" Date: Mar. 31, 2003

SHEET No. AE7.02 OF 67 SHEETS

"AS-BUILT" C.O.769S-1

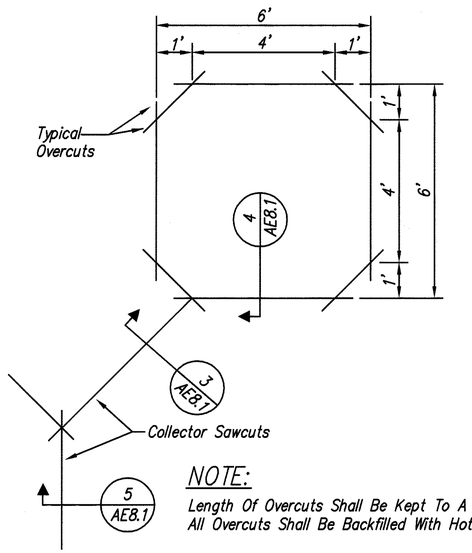
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(75) UNIT VIII	2003	ADD.770	816



NOTES:

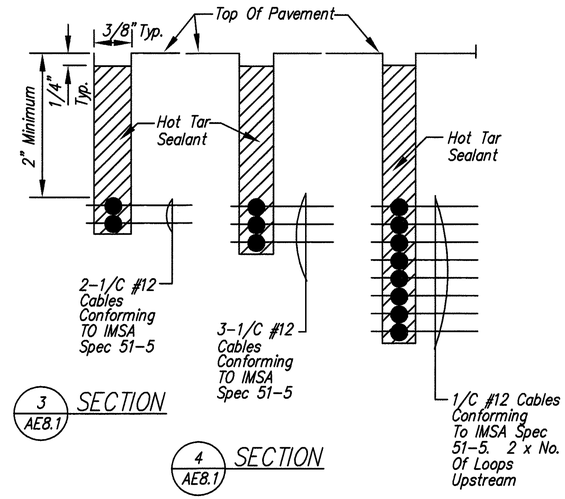
1. Center Sensor Loops In Lanes.
2. Collector Cables Shall Be Twisted 2 Turns Per Foot.
3. Number Of Loops And Locations Vary. See Project Plans.
4. Number And Locations Of Collector Sawcuts May Be Varied In The Field To Suit.
5. Coordinate Final Location Of Sensors With Civil Striping Plan.

1 / AE8.1 TYPICAL SENSOR LOOP LAYOUT
Not To Scale



NOTE:
Length Of Overcuts Shall Be Kept To A Minimum.
All Overcuts Shall Be Backfilled With Hot Tar.

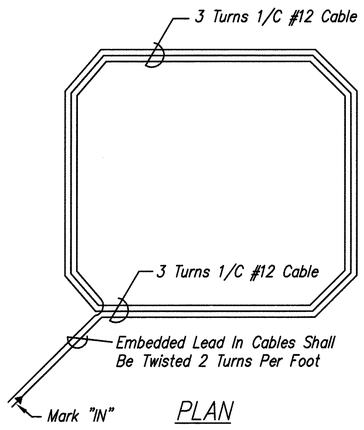
2 / AE8.1 TYPICAL SENSOR LOOP SAWCUT DETAIL
Not To Scale



3 / AE8.1 SECTION

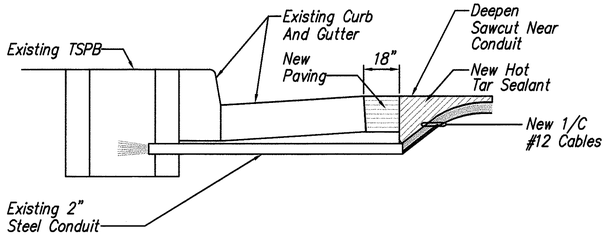
4 / AE8.1 SECTION

5 / AE8.1 SECTION



PLAN

6 / AE8.1 TYPICAL SENSOR LOOP WIRING DIAGRAM
Not To Scale



Notes On Construction At End Of Sawcut

1. Seal Roadway End Of Conduit After Installation Of Conductors
2. Place Hot Tar In Sawcut.
3. Backfill Over Conduit With New Paving.
4. Reconstruct Curb And Gutter As Required.

7 / AE8.1 DETAIL OF SENSOR LOOP INSTALLATION AT EDGE OF ROADWAY
Not To Scale

APPROVED (5)

Ty Fujita 7/16/03
for Chief, Traffic Signals And Technology Division, DTS Date
City And County Of Honolulu

Chief, Traffic Review Branch, DPP Date
City And County Of Honolulu

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

6/20/03-8:43 X:\060\e60-80\60-80-AE8.01.dwg

LEANNOX K. NISHIMURA LICENSED PROFESSIONAL ENGINEER No. 3880-E HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

PROJECT ENGINEER for ECS, Inc.

APRIL 30, 2004
EXPIRATION DATE OF THE LICENSE

DATE	REV.	DESCRIPTION
10/16/03	(5)	Obtained Agency Signatures

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DETECTOR LOOP DETAILS

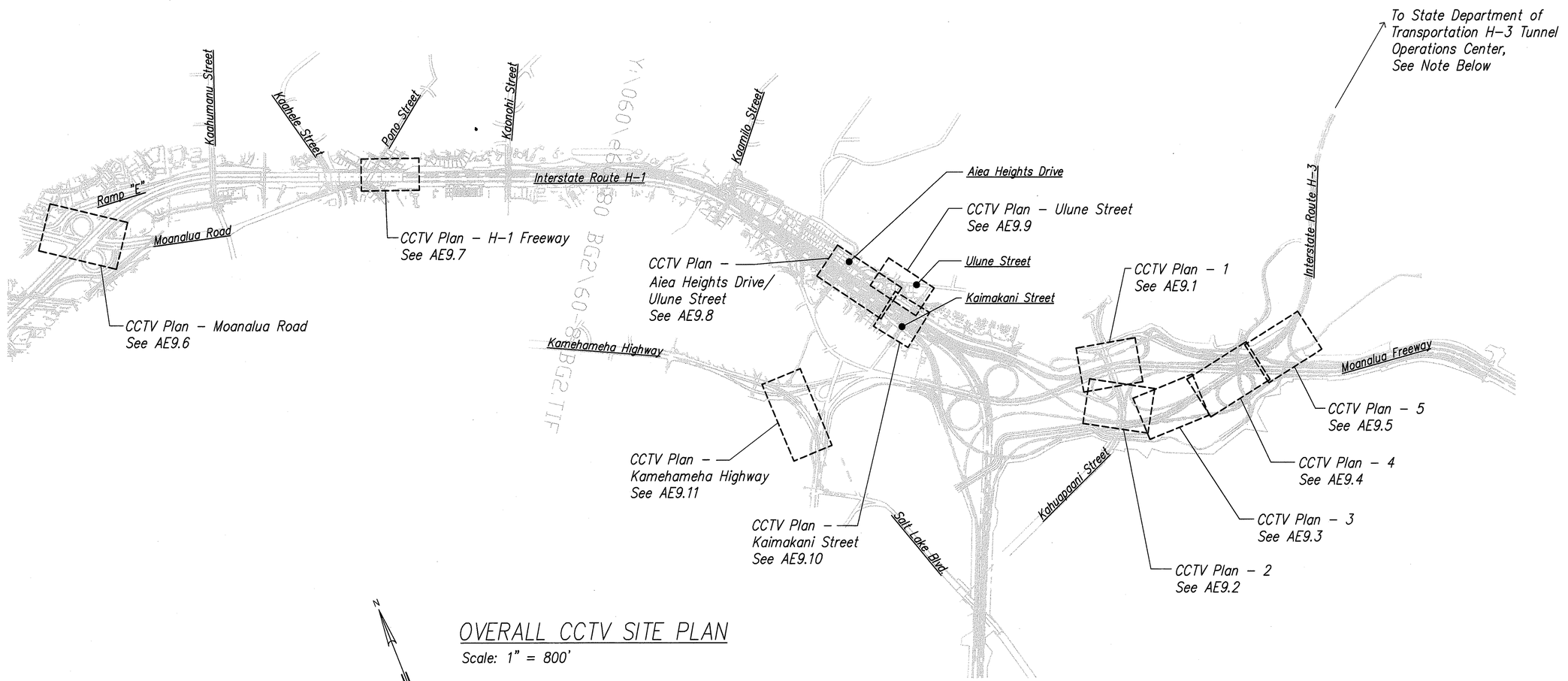
INTERSTATE ROUTE H-3
H-3 FINISH (UNIT VIII)
F.A.I. Proj. No. I-H3-1(75) Unit VIII

Scale: None Date: Mar. 31, 2003

SHEET No. AE8.1 OF 67 SHEETS

ADD.770

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(75) UNIT VIII	2003	ADD.770S-1	816



N

OVERALL CCTV SITE PLAN

Scale: 1" = 800'

NOTE:

Furnish and install 6-port fiber optic adapter panel in existing equipment cabinet at the H-3 Tunnel Operations Center (HDOT-TOC). Provide singlemode pigtails with simplex ST compatible connectors, and fusion splice to 6 existing fiber optic cables at the HDOT-TOC. All work at the HDOT-TOC shall be performed under the direction of the Engineer and HDOT-TOC personnel.

GRAPHIC SCALE

1" = 800' 800' 400' 0 800' 1600'

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

10/14/03-11:33 Y:\060\60-80 BG2\60-80 BG2 500.dwg

LENNOX K. NISHIMURA LICENSED PROFESSIONAL ENGINEER No. 3880-E HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

PROJECT ENGINEER for ECS, Inc.

APRIL 30, 2004
EXPIRATION DATE OF THE LICENSE

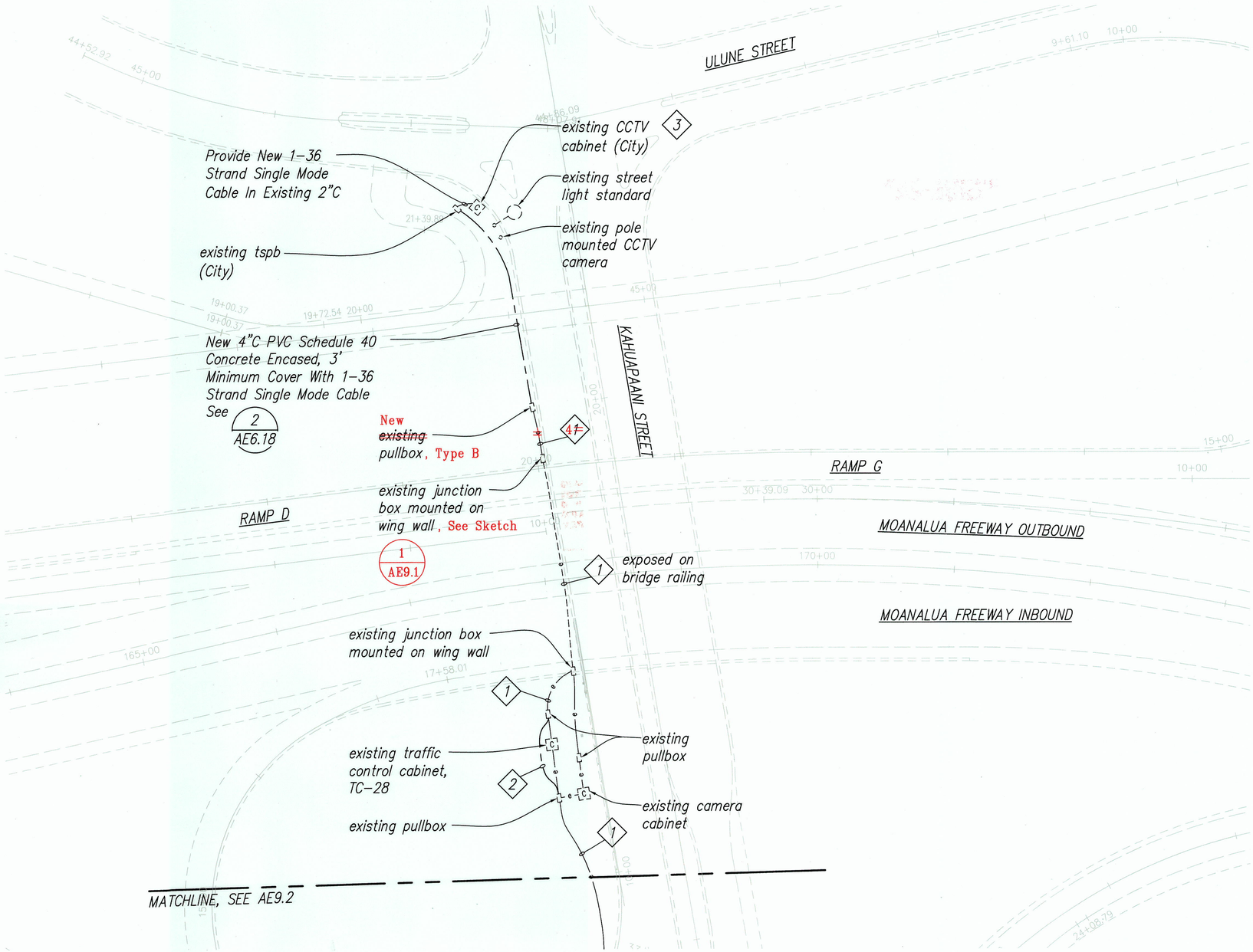
DATE	REV.	DESCRIPTION
10/16/03	5	Added Sheet

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

OVERALL CCTV SITE PLAN

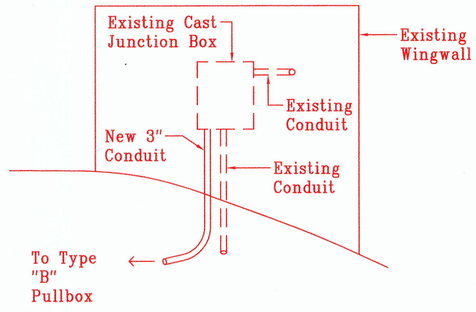
INTERSTATE ROUTE H-3
H-3 FINISH (UNIT VIII)
F.A.I. Proj. No. I-H3-1(75) Unit VIII
Scale: 1" = 800'-0" Date: Mar. 31, 2003

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(75) UNIT VIII	2003	ADD.770S-2	816



NOTES:

1. Existing 3"C With 1 1/2" Innerduct, Provide 1–36 Strand Single Mode Cable In Innerduct.
2. New 3"C, PVC Schedule 40, Concrete Encased, With 1–36 Strand Single Mode Cable. (2 / AE6.18)
3. Fiber Optic Cable Splicing In CCTV Cabinet Shall Be Performed By The City.
4. New 3"C, PVC Schedule 40, Concrete Encased, With 1-36 Strand Single Mode Cable In Innerduct.



1 / AE9.1 EXISTING JUNCTION BOX – KAHUAPAANI STREET
Not to Scale

CCTV SITE PLAN–1
Scale: 1" = 40'

GRAPHIC SCALE
1" = 40' 40' 20' 0 40' 80'

LEGEND FOR AS-BUILT POSTINGS

~~WWWW~~	Squiggly line for as-built deletion
~~100.00~~	Double line for as-built deletion
Roadway	Text for as-built posting

10/16/03	5	Added Sheet
DATE	REV.	DESCRIPTION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

CCTV SITE PLAN – 1

INTERSTATE ROUTE H–3
H–3 FINISH (UNIT VIII)
F.A.I. Proj. No. I–H3–1(75) Unit VIII
Scale: 1" = 40'–0" Date: Mar. 31, 2003

LENNOX K. NISHIMURA LICENSED PROFESSIONAL ENGINEER No. 3880–E HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

PROJECT ENGINEER for ECS, Inc.

APRIL 30, 2004
EXPIRATION DATE OF THE LICENSE

SURVEY PLOTTED BY
DRAWN BY
TRACED BY
DESIGNED BY
QUANTITIES BY
CHECKED BY
DATE

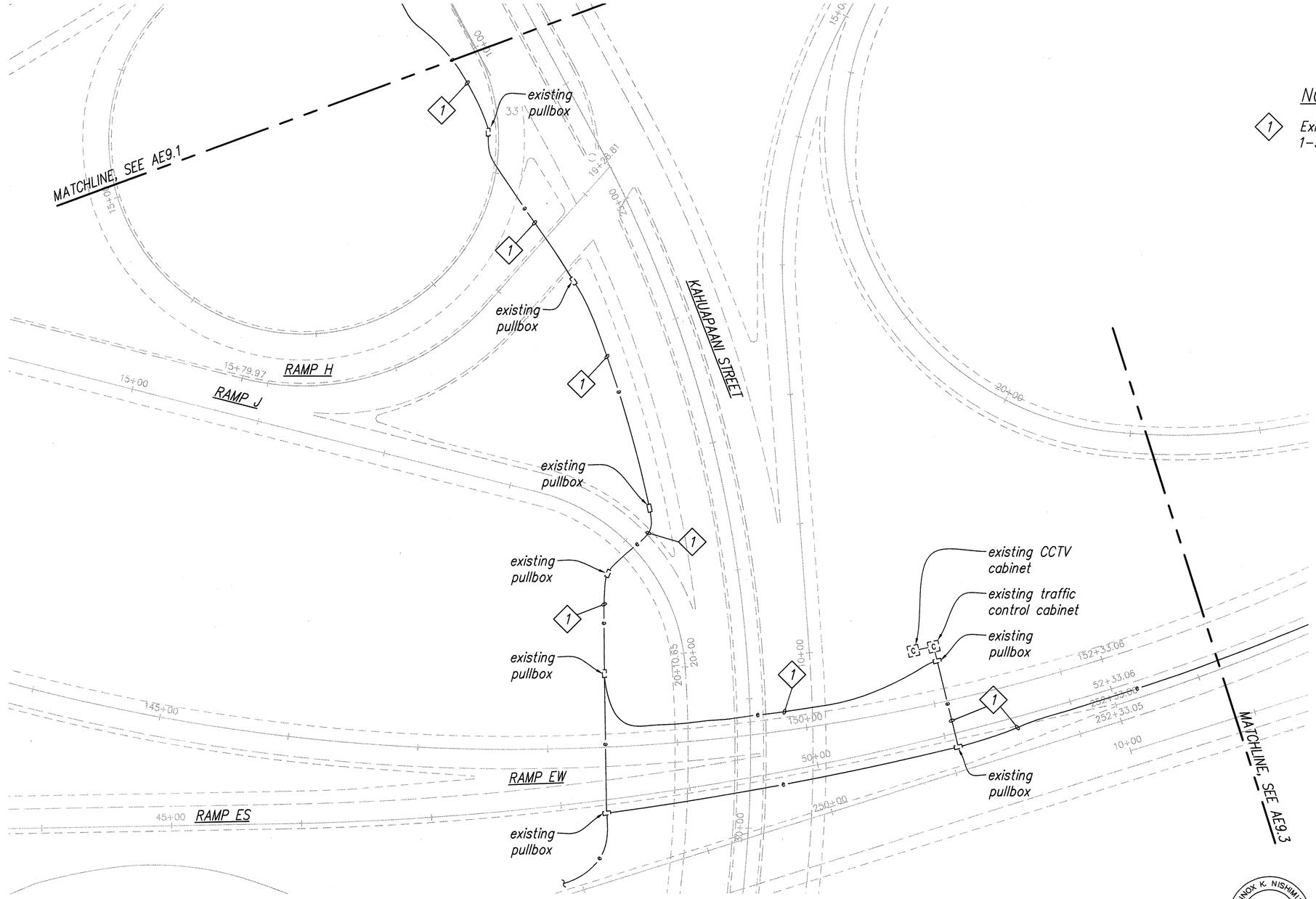
ORIGINAL PLAN
NOTE BOOK
No.

7/2/13–10:59 Y:\060\060.080 BG2\AS–BUILT\AE9.1.dwg

SHEET No. AE9.1 OF 67 SHEETS

"AS–BUILT" ADD.770S-2

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(75) UNIT VIII	2003	ADD.770S-3	816



NOTES:

1. Existing 3"C With 1 1/2" Innerduct, Provide 1-36 Strand Single Mode Cable In Innerduct.

CCTV SITE PLAN-2

Scale: 1" = 40'

GRAPHIC SCALE

1" = 40' 40' 20' 0 40' 80'

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

10/14/03-11:35 Y:\060\e60-80 BG2\60-80 S02.dwg

LENNOX K. NISHIMURA LICENSED PROFESSIONAL ENGINEER No. 3880-E HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

PROJECT ENGINEER for ECS, Inc.

APRIL 30, 2004
EXPIRATION DATE OF THE LICENSE

DATE	REV.	DESCRIPTION
10/16/03	5	Added Sheet

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

CCTV SITE PLAN - 2

INTERSTATE ROUTE H-3
H-3 FINISH (UNIT VIII)
F.A.I. Proj. No. I-H3-1(75) Unit VIII

Scale: 1" = 40'-0" Date: Mar. 31, 2003

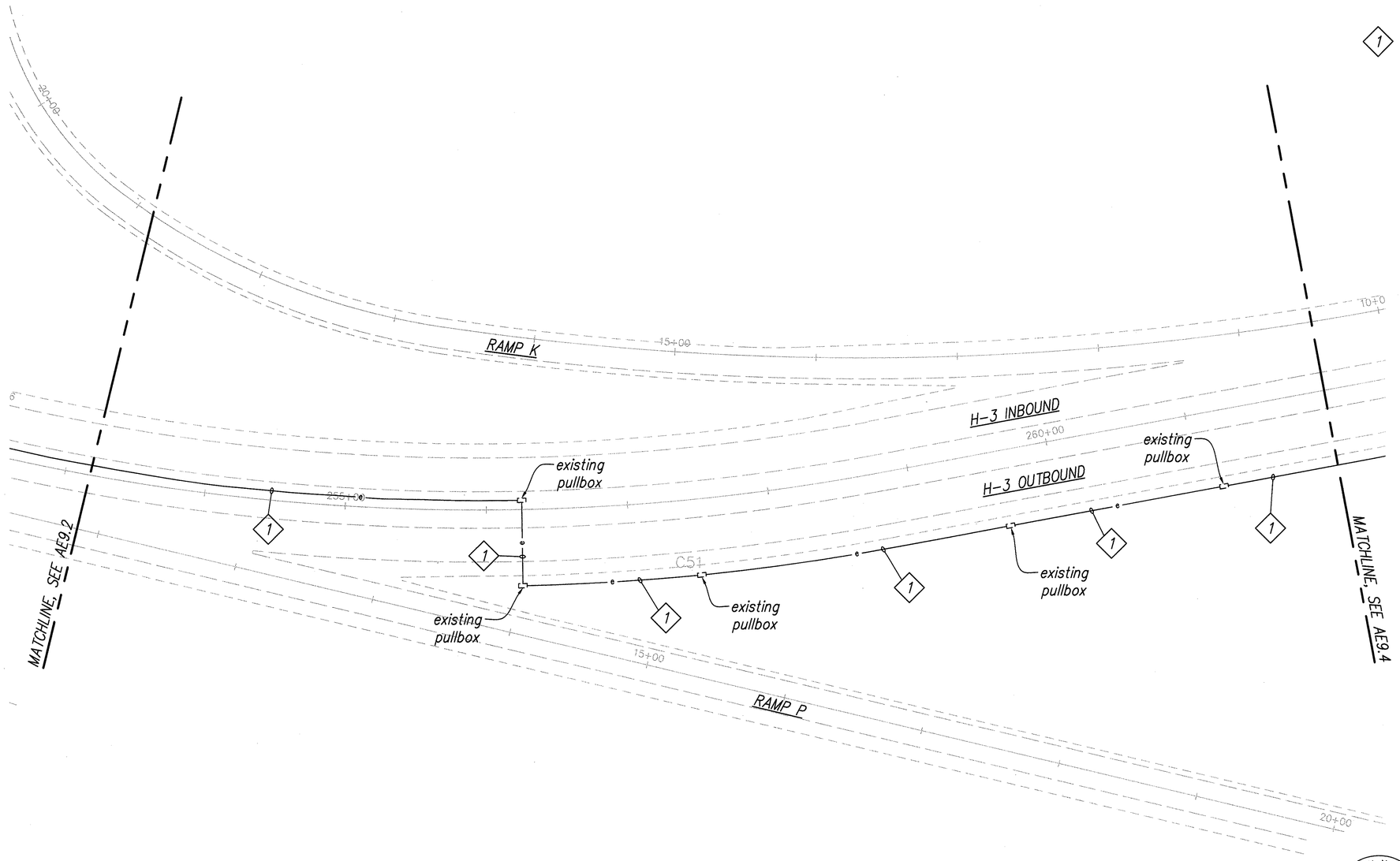
SHEET No. AE9.2 OF 67 SHEETS

ADD.770S-3

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(75) UNIT VIII	2003	ADD.770S-4	816

NOTE:

1 Existing 3"C With 1 1/2" Innerduct, Provide 1–36 Strand Single Mode Cable In Innerduct.



CCTV SITE PLAN–3

Scale: 1" = 40'

GRAPHIC SCALE

1" = 40' 40' 20' 0 40' 80'

LENNOX K. NISHIMURA LICENSED PROFESSIONAL ENGINEER No. 3880–E HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

PROJECT ENGINEER for ECS, Inc.

APRIL 30, 2004
EXPIRATION DATE OF THE LICENSE

DATE	REV.	DESCRIPTION
10/16/03	6	Added Sheet

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

CCTV SITE PLAN – 3

INTERSTATE ROUTE H–3
H–3 FINISH (UNIT VIII)
F.A.I. Proj. No. I–H3–1(75) Unit VIII

Scale: 1" = 40'–0" Date: Mar. 31, 2003

SHEET No. AE9.3 OF 67 SHEETS

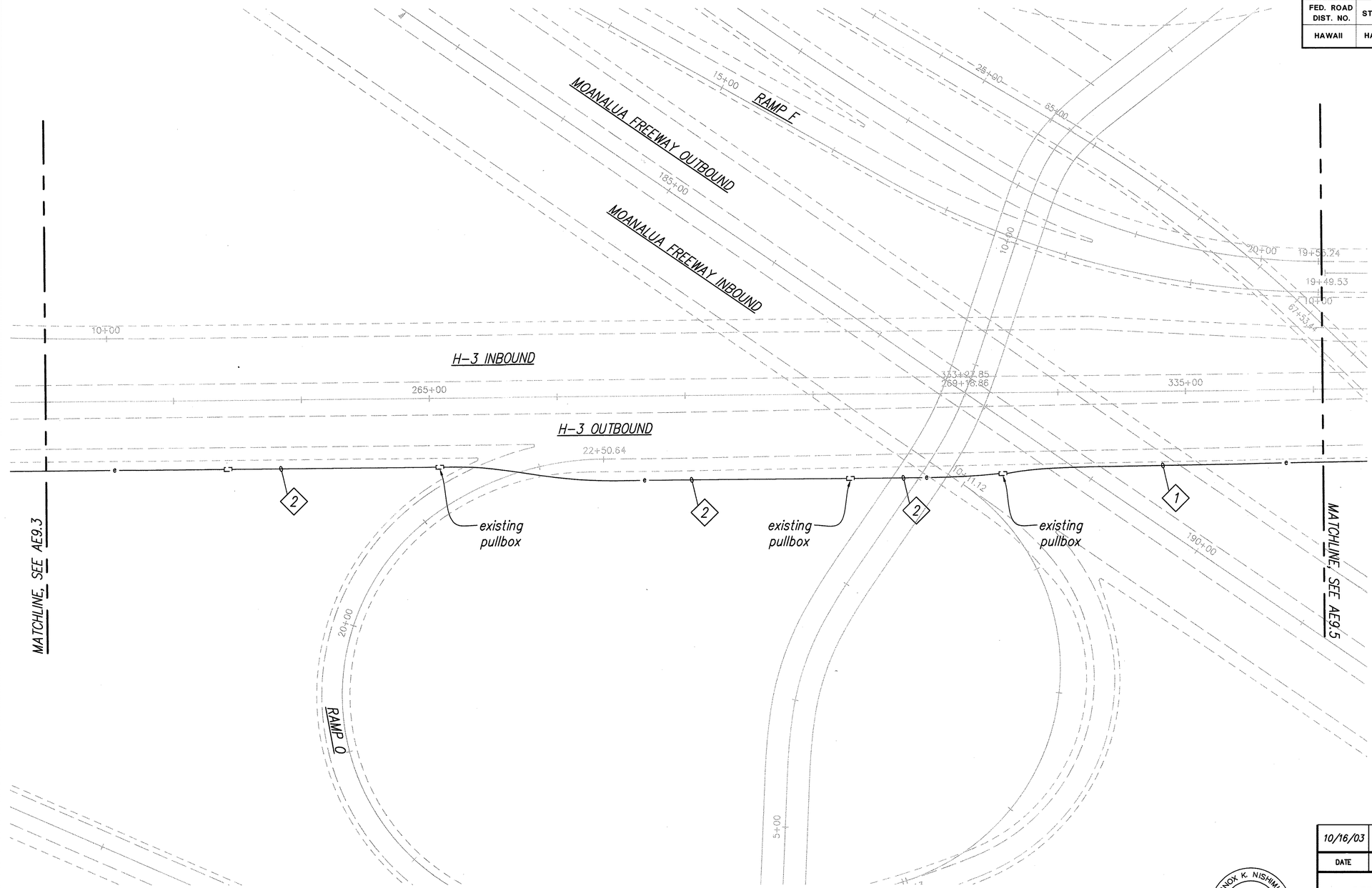
ADD.770S-4

ORIGINAL PLAN
NOTE BOOK
No.

SURVEY PLOTTED BY
DRAWN BY
TRACED BY
DESIGNED BY
QUANTITIES BY
CHECKED BY
DATE

10/14/03–11:36 T:\060\e60–80 BG2\60–80 S03.dwg

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(75) UNIT VIII	2003	ADD.770S-5	816



NOTES:

1. Existing 4"C With 1 1/2" Innerduct, Provide 1-36 Strand Single Mode Cable In Existing Innerduct.
2. Existing 3"C With 1 1/2" Innerduct, Provide 1-36 Strand Single Mode Cable In Existing Innerduct.

N

CCTV SITE PLAN-4
Scale: 1" = 40'

GRAPHIC SCALE
1" = 40' 40' 20' 0 40' 80'

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

10/14/03-11:37 Y:\060\e60-80 B62\60-80 S04.dwg

LENNOX K. NISHIMURA
LICENSED PROFESSIONAL ENGINEER
No. 3880-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

PROJECT ENGINEER for ECS, Inc.

APRIL 30, 2004
EXPIRATION DATE OF THE LICENSE

DATE	REV.	DESCRIPTION
10/16/03	5	Added Sheet

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

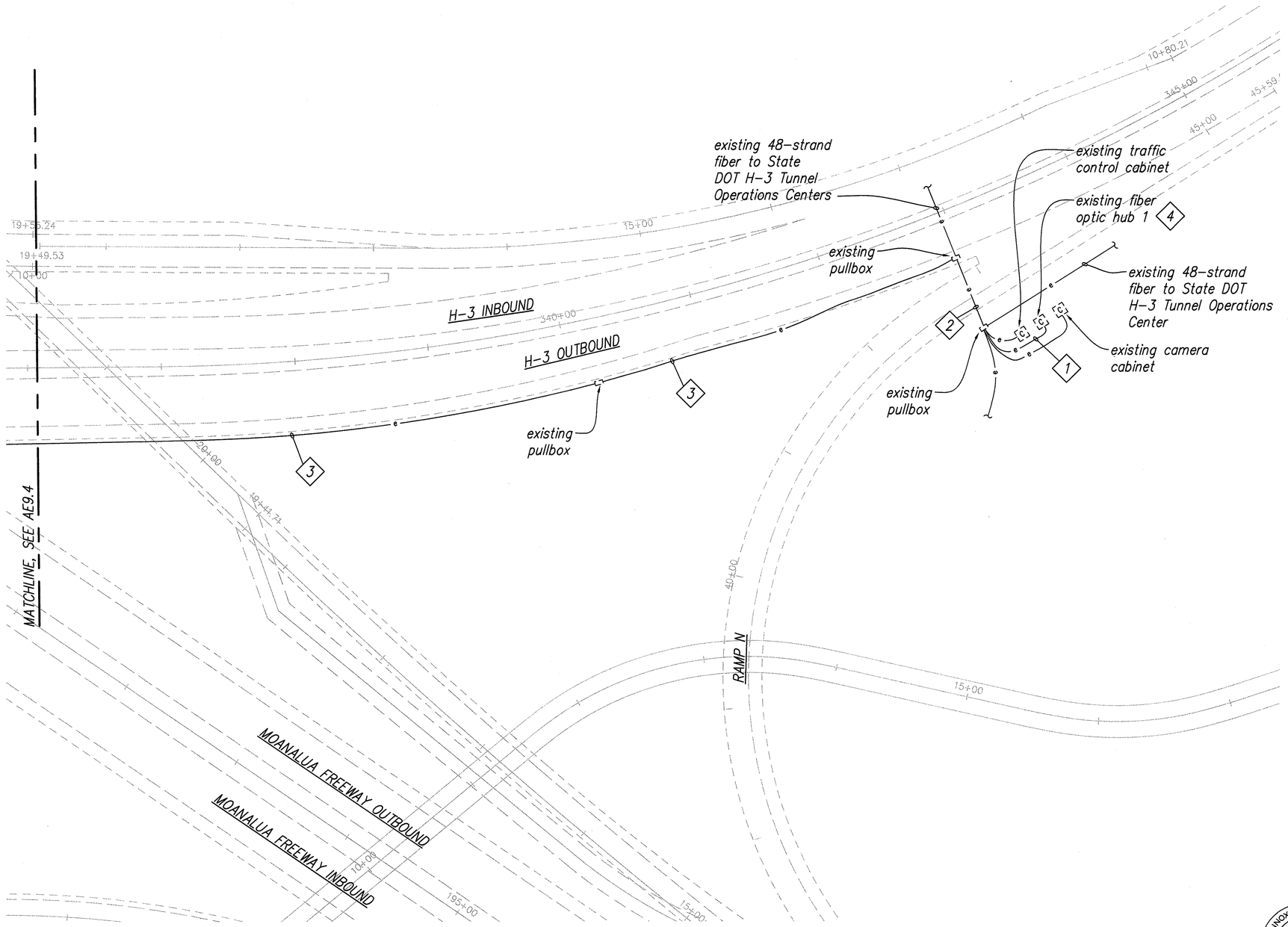
CCTV SITE PLAN - 4

INTERSTATE ROUTE H-3
H-3 FINISH (UNIT VIII)
F.A.I. Proj. No. I-H3-1(75) Unit VIII
Scale: 1" = 40'-0" Date: Mar. 31, 2003

SHEET No. AE9.4 OF 67 SHEETS

ADD.770S-5

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(75) UNIT VIII	2003	ADD.770S-6	816



NOTES:

1. Existing 3"C, Provide 1-36 Strand Single Mode Cable.
2. Existing 3"C With 1 1/2" Innerduct, Provide 1-36 Strand Single Mode Cable In Existing Innerduct.
3. Existing 4"C With 1 1/2" Innerduct, Provide 1-36 Strand Single Mode Cable In Existing Innerduct.
4. Fusion Splice 6 Fibers To Existing Fiber Optic Cable In Cabinet. Utilize Existing Splice Tray In Cabinet. Splicing Shall Be Performed Under The Direction Of The Engineer and Designated State Personnel.

CCTV SITE PLAN-5

Scale: 1" = 40'

GRAPHIC SCALE

1" = 40' 40' 20' 0 40' 80'

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

10/14/03-11:38 X:\060\e60-80 RCS\60-80 S05.dwg

LENNOX K. NISHIMURA LICENSED PROFESSIONAL ENGINEER No. 3880-E HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

PROJECT ENGINEER for ECS, Inc.

APRIL 30, 2004
EXPIRATION DATE OF THE LICENSE

DATE	REV.	DESCRIPTION
10/16/03	5	Added Sheet

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

CCTV SITE PLAN - 5

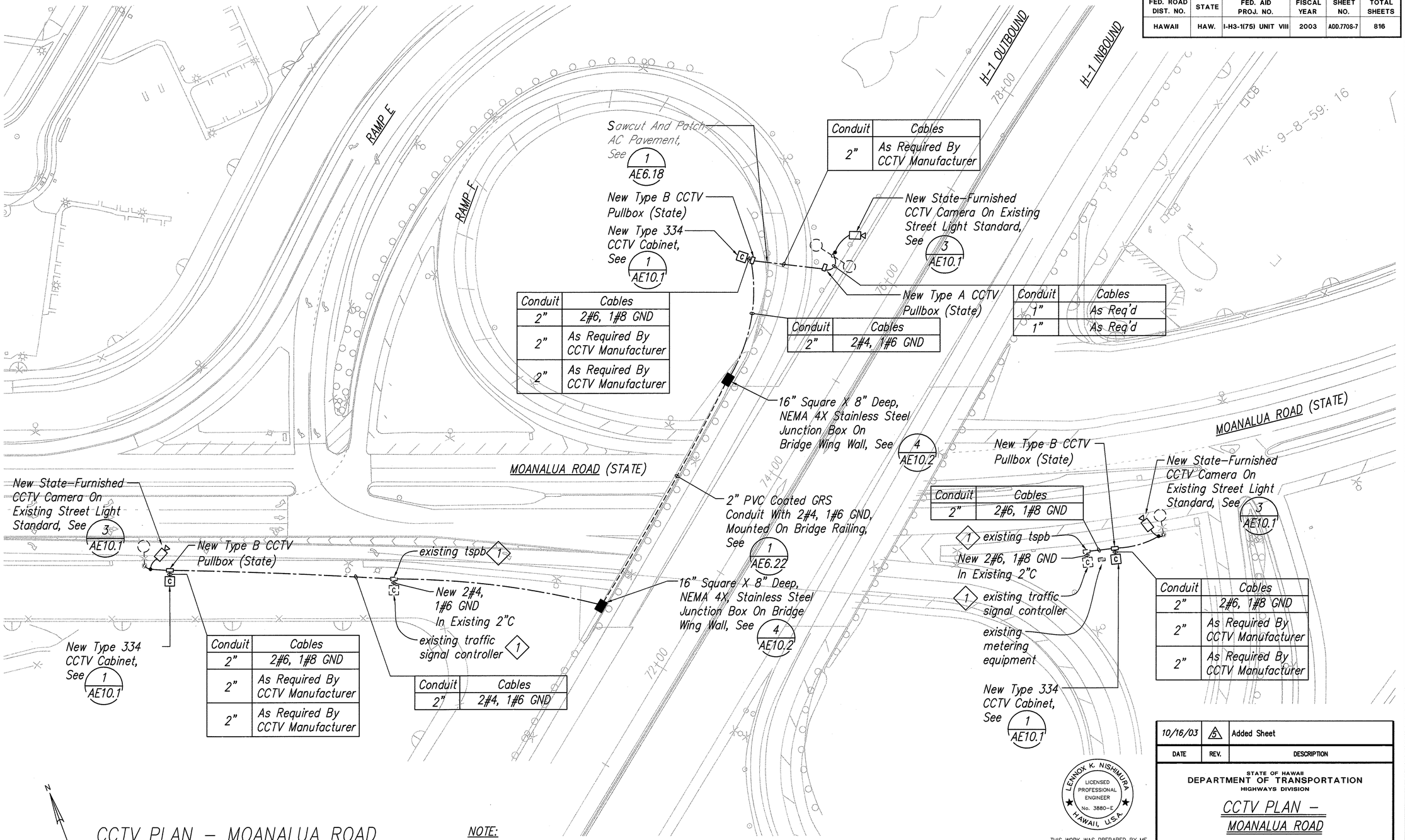
INTERSTATE ROUTE H-3
H-3 FINISH (UNIT VIII)
F.A.I. Proj. No. I-H3-1(75) Unit VIII

Scale: 1" = 40'-0" Date: Mar. 31, 2003

SHEET No. AE9.5 OF 67 SHEETS

ADD.770S-6

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(75) UNIT VIII	2003	ADD.770S-7	816



Conduit	Cables
2"	As Required By CCTV Manufacturer

Conduit	Cables
2"	2#4, 1#6 GND

Conduit	Cables
2"	2#6, 1#8 GND
2"	As Required By CCTV Manufacturer
2"	As Required By CCTV Manufacturer

Conduit	Cables
1"	As Req'd
1"	As Req'd

Conduit	Cables
2"	2#6, 1#8 GND

Conduit	Cables
2"	2#6, 1#8 GND
2"	As Required By CCTV Manufacturer
2"	As Required By CCTV Manufacturer

Conduit	Cables
2"	2#4, 1#6 GND

CCTV PLAN – MOANALUA ROAD

Scale: 1" = 40'

NOTE:

1. Cable Splicing In Traffic Signal Controller Or Pullbox Shall Be Performed By The City.

GRAPHIC SCALE

1" = 40' 40' 20' 0 40' 80'

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

10/14/03-11:42 Y:\060\e60-80 B(2)\60-80 S08.dwg

10/16/03	5	Added Sheet
DATE	REV.	DESCRIPTION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

CCTV PLAN – MOANALUA ROAD

INTERSTATE ROUTE H-3
H-3 FINISH (UNIT VIII)
F.A.I. Proj. No. I-H3-1(75) Unit VIII
Scale: 1" = 40'-0" Date: Mar. 31, 2003

LENNOX K. NISHIMURA
LICENSED PROFESSIONAL ENGINEER
No. 3880-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

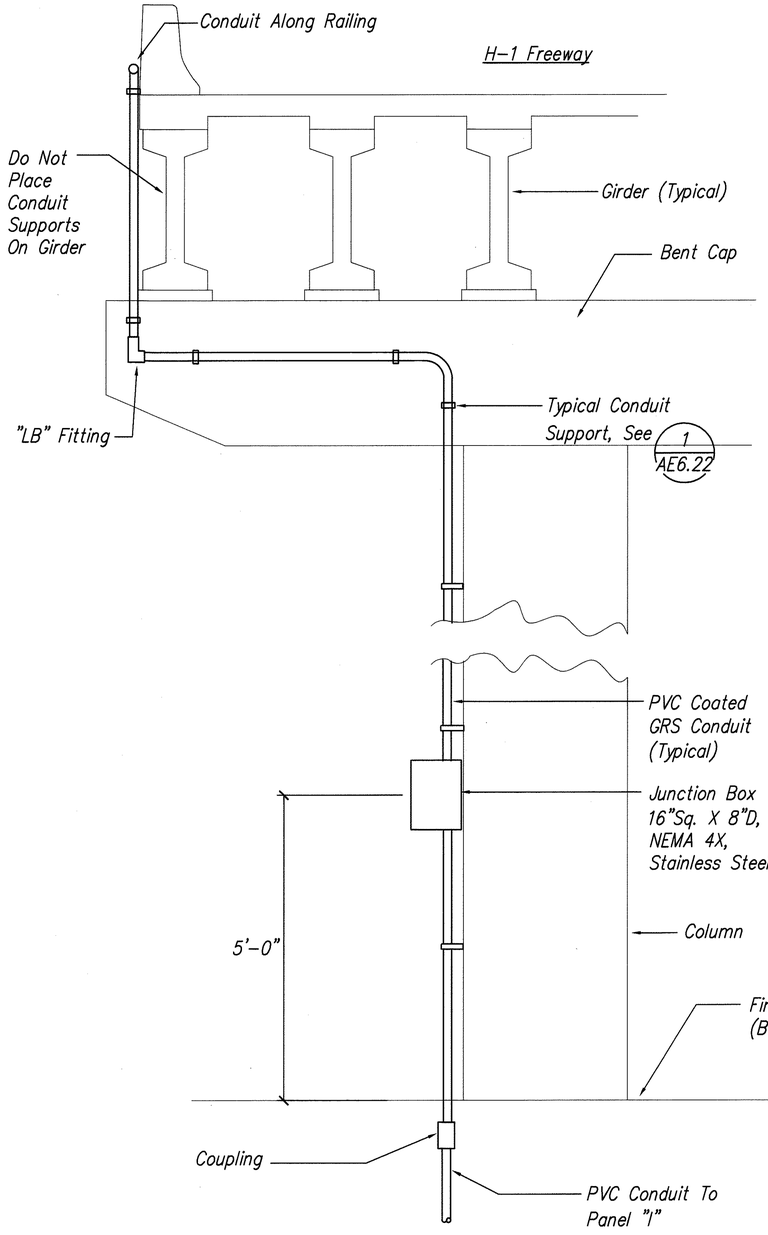
PROJECT ENGINEER for ECS, Inc.

APRIL 30, 2004
EXPIRATION DATE OF THE LICENSE

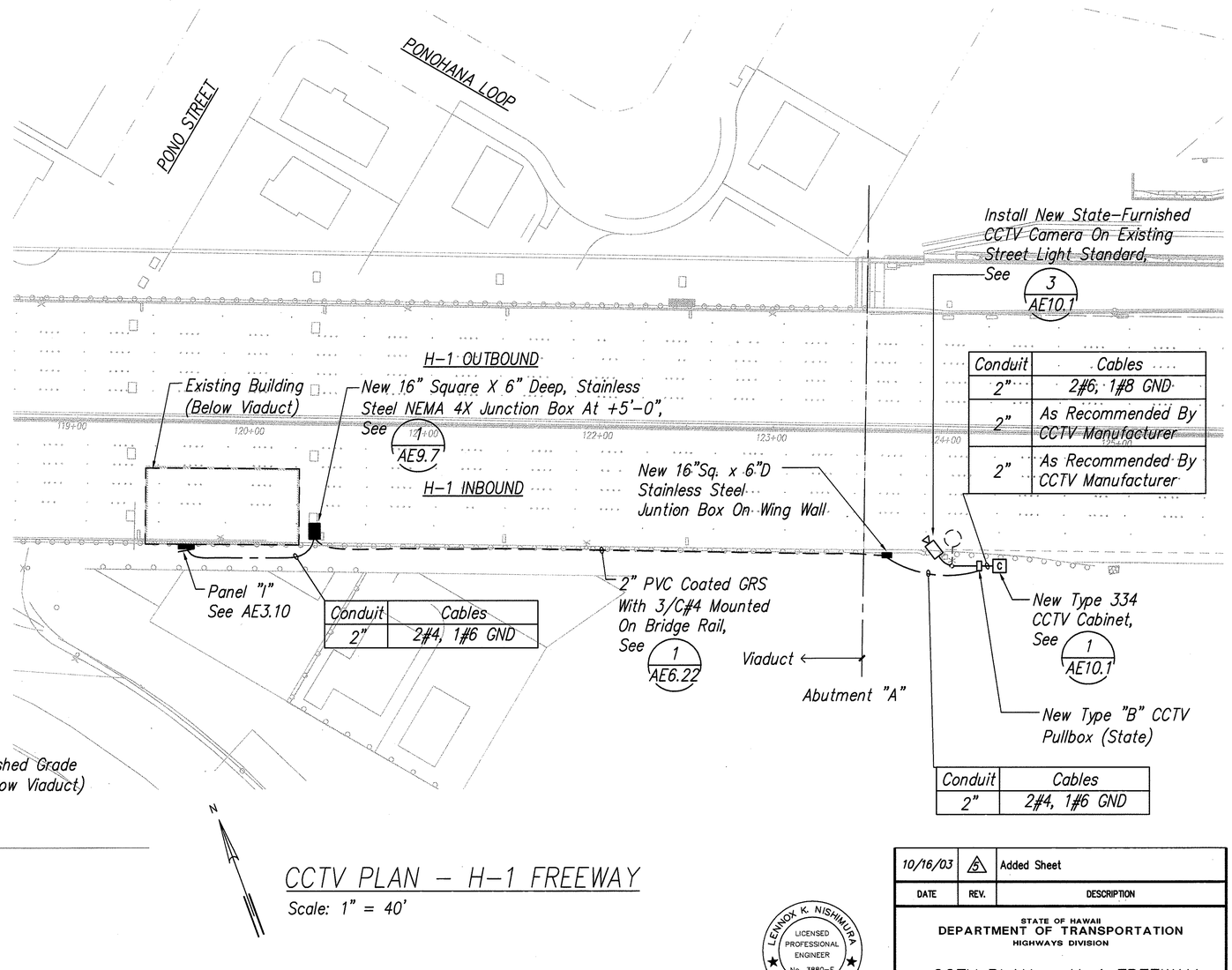
SHEET No. AE9.6 OF 67 SHEETS

ADD.770S-7

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(75) UNIT VIII	2003	ADD.770S-8	816



1 AE9.7 CONDUIT ROUTING AT COLUMN
Not To Scale



CCTV PLAN - H-1 FREEWAY
Scale: 1" = 40'

GRAPHIC SCALE
1" = 40' 40' 20' 0 40' 80'

LENNOX K. NISHIMURA
LICENSED PROFESSIONAL ENGINEER
No. 3880-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

PROJECT ENGINEER for ECS, Inc.

APRIL 30, 2004
EXPIRATION DATE OF THE LICENSE

DATE	REV.	DESCRIPTION
10/16/03	5	Added Sheet

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

CCTV PLAN - H-1 FREEWAY

INTERSTATE ROUTE H-3
H-3 FINISH (UNIT VIII)
F.A.I. Proj. No. I-H3-1(75) Unit VIII

Scale: 1" = 40'-0" Date: Mar. 31, 2003

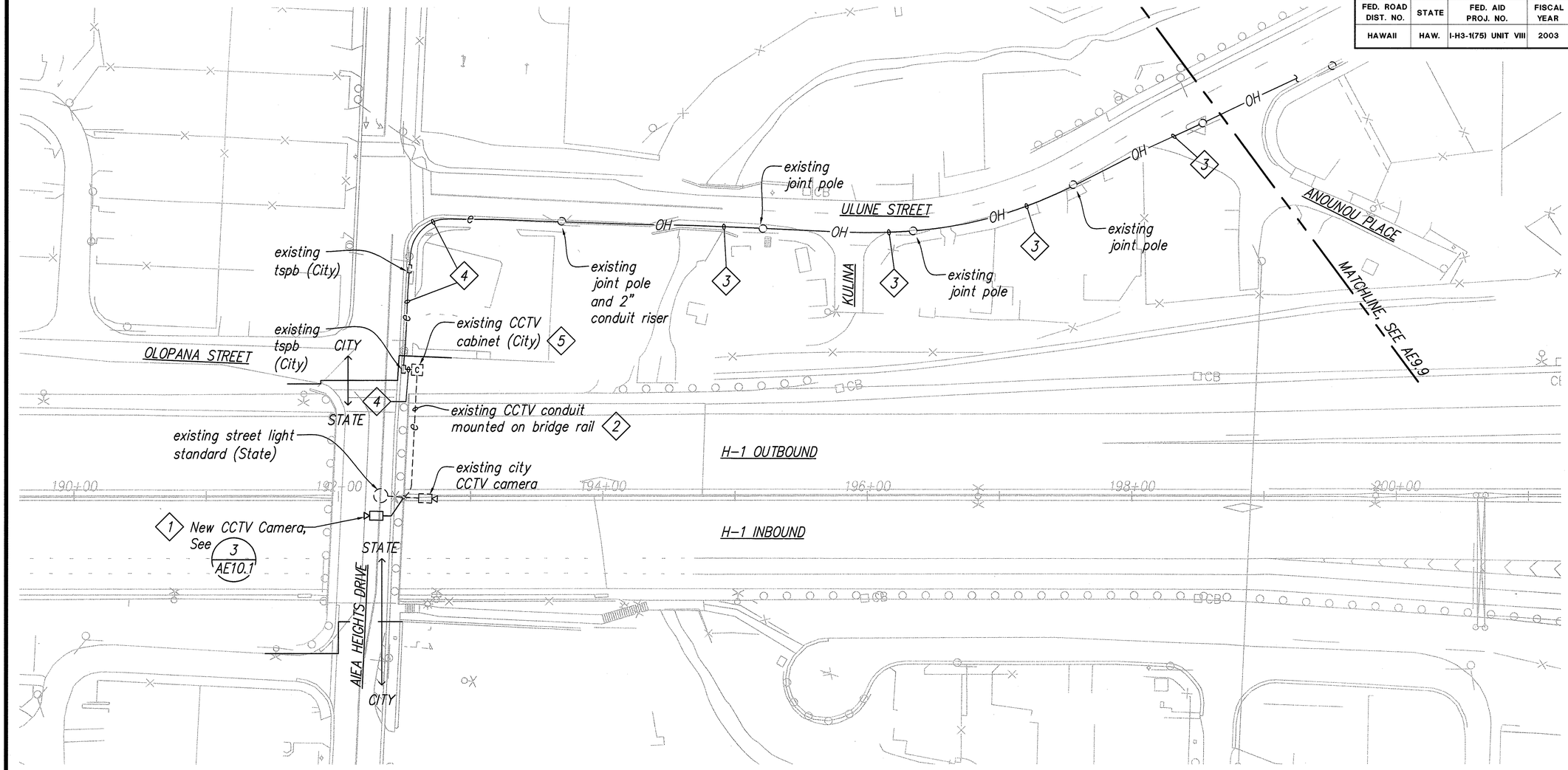
SHEET No. AE9.7 OF 67 SHEETS

ADD.770S-8

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

10/14/03-11:43 Y:\060\e60-80 E62\60-80 S10.dwg

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(75) UNIT VIII	2003	ADD.770S-9	816



NOTES:

1. CCTV Camera Shall Be Compatible With The Existing City And County Of Honolulu CCTV System.
2. Remove Existing Cables and Provide New (1) 3/C#12 "TC" Cable, (2) RG 59, (2) 2-Pair #22TSP.
3. New Overhead 18-Strand Single Mode/18-Strand Multi Mode Fiber Optic Cable On Messenger Cable. See 1 AE10.3
4. New 18-Strand Single Mode/18-Strand Multi Mode Fiber Optic Cable In Existing 2" Duct.
5. Fiber Optic Cable Splicing In CCTV Cabinet Shall Be Performed By The City.

CCTV PLAN – AIEA HEIGHTS DRIVE/ULUNE STREET

Scale: 1" = 40'

GRAPHIC SCALE

1" = 40' 40' 20' 0 40' 80'

LENNOX K. NISHIMURA LICENSED PROFESSIONAL ENGINEER No. 3880-E HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

PROJECT ENGINEER for ECS, Inc.

APRIL 30, 2004
EXPIRATION DATE OF THE LICENSE

DATE	REV.	DESCRIPTION
10/16/03	5	Added Sheet

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

CCTV PLAN –
AIEA HEIGHTS DRIVE/ULUNE STREET

INTERSTATE ROUTE H-3
H-3 FINISH (UNIT VIII)
F.A.I. Proj. No. I-H3-1(75) Unit VIII
Scale: 1" = 40'-0" Date: Mar. 31, 2003

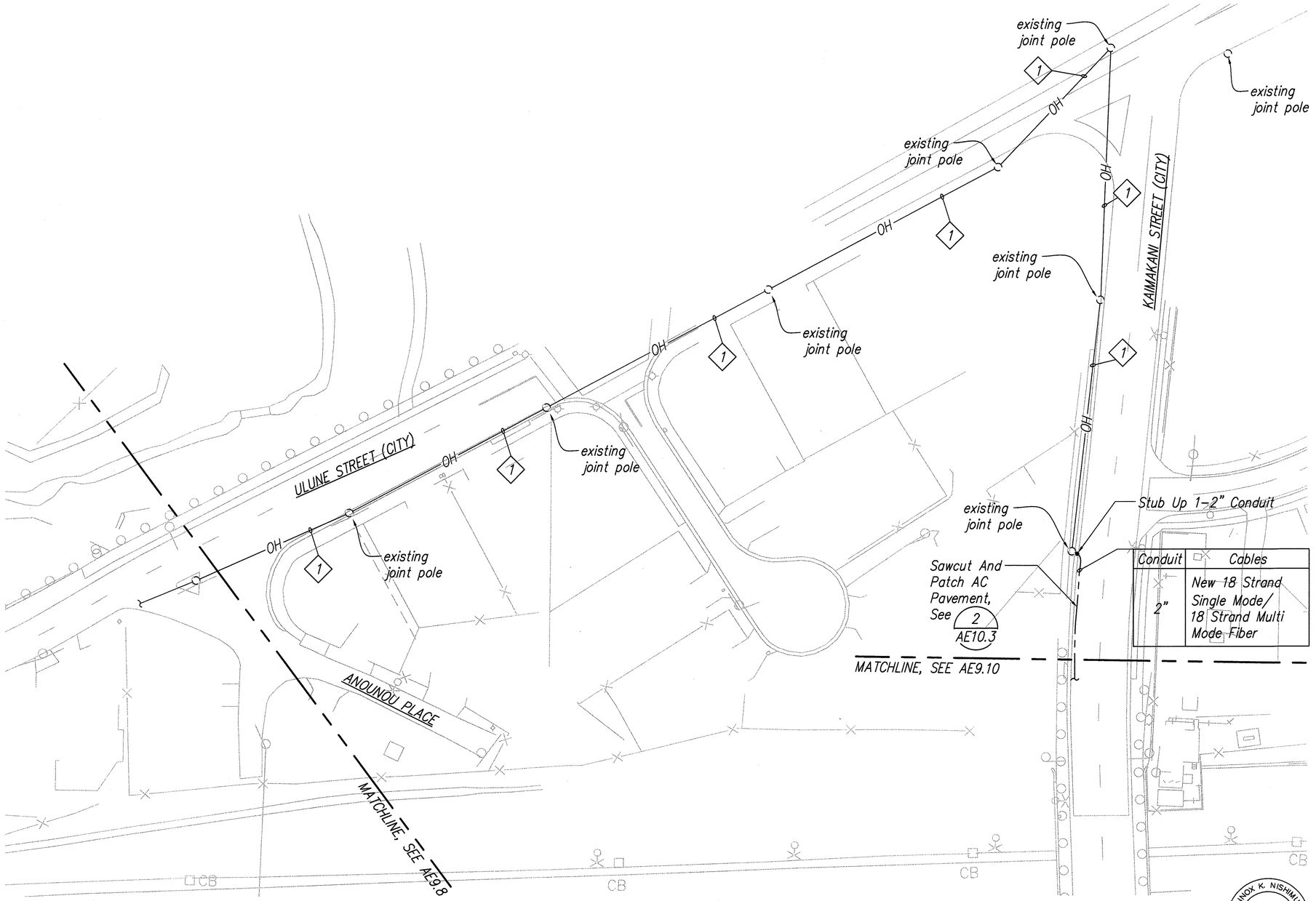
SHEET No. AE9.8 OF 67 SHEETS

ADD.770S-9

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

10/14/03-11:39 Y:\060\e60-80 B62\60-80 306.dwg

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(75) UNIT VIII	2003	ADD.770S-10	816



NOTES:

1. New Overhead 18-Strand Single Mode/18-Strand Multi Mode Fiber Optic Cable On Messenger Cable, See 1 AE10.3

CCTV PLAN – ULUNE STREET/KAIMAKANI STREET

Scale: 1" = 40'

GRAPHIC SCALE

1" = 40' 40' 20' 0 40' 80'

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

10/14/03-11:45 Y:\060\ae60-80 B62\60-80 S12.dwg

LEANNOX K. NISHIMURA LICENSED PROFESSIONAL ENGINEER No. 3880-E HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

PROJECT ENGINEER for ECS, Inc.

APRIL 30, 2004
EXPIRATION DATE OF THE LICENSE

DATE	REV.	DESCRIPTION
10/16/03	5	Added Sheet

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

CCTV PLAN – ULUNE STREET/KAIMAKANI STREET

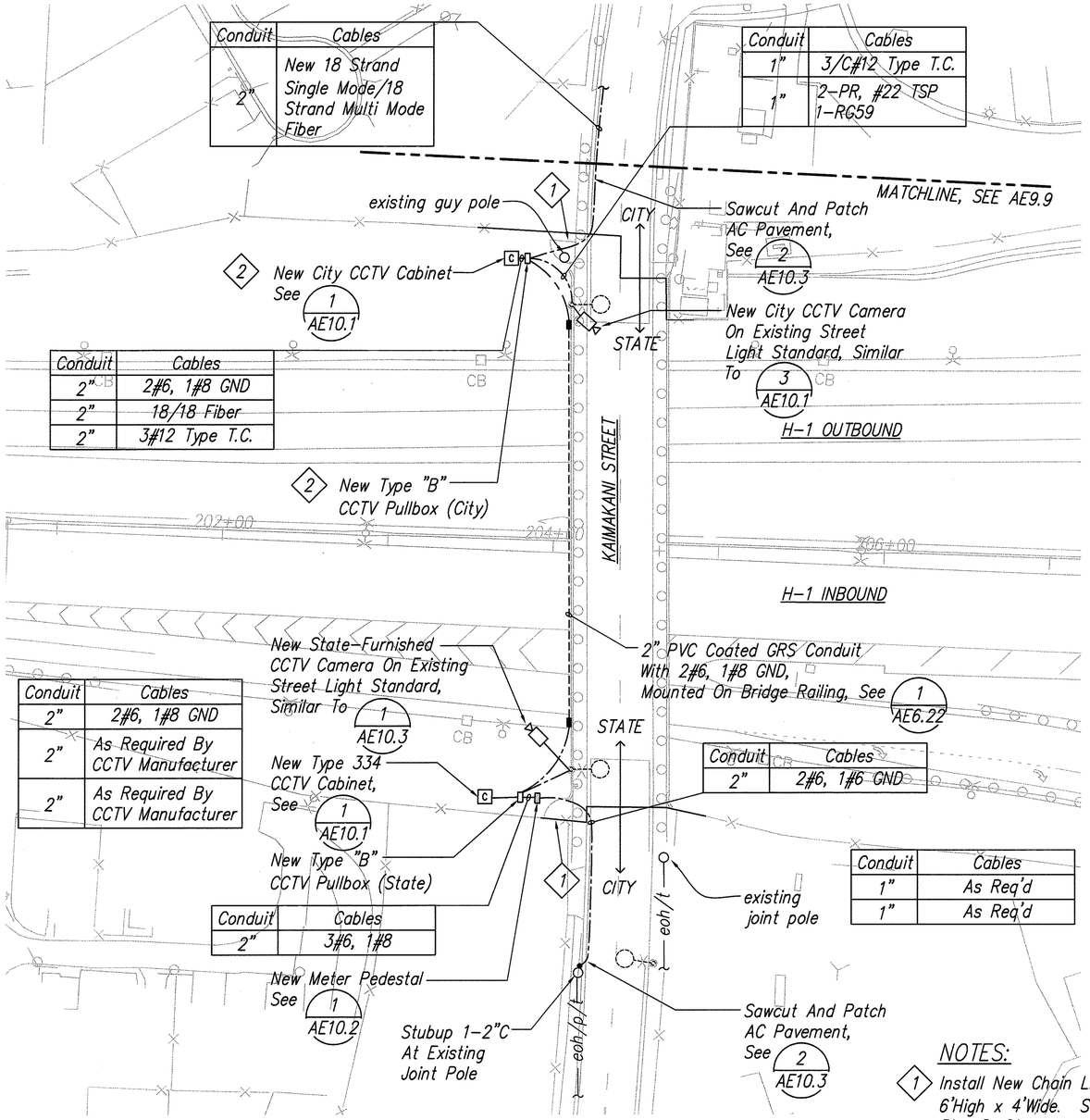
INTERSTATE ROUTE H-3
H-3 FINISH (UNIT VIII)
F.A.I. Proj. No. I-H3-1(75) Unit VIII

Scale: 1" = 40'-0" Date: Mar. 31, 2003

SHEET No. AE9.9 OF 67 SHEETS

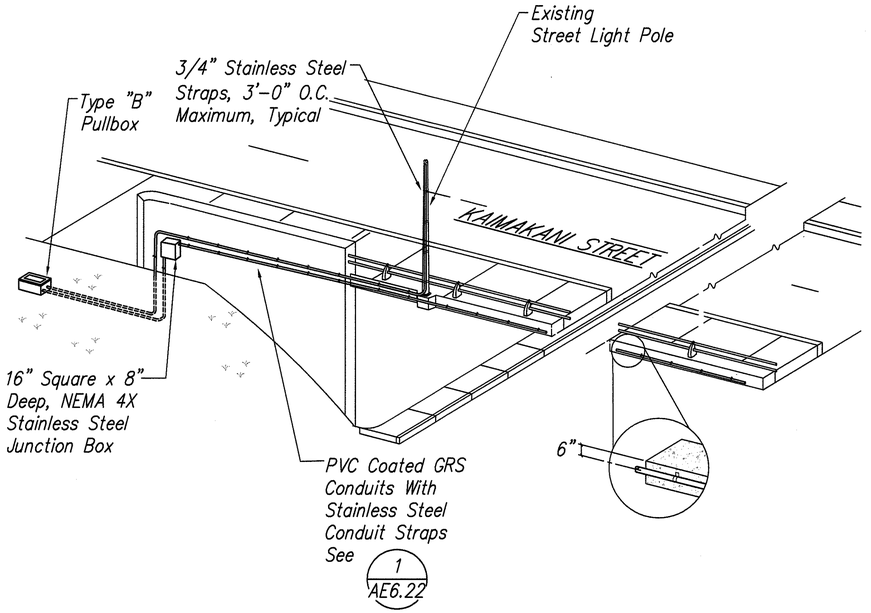
ADD.770S-10

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(75) UNIT VIII	2003	ADD.770S-11	816



CCTV PLAN – KAIMAKANI STREET

Scale: 1" = 40'



1 AE9.10 TYPICAL CONDUIT ROUTING – KAIMAKANI STREET BRIDGE

Not To Scale

NOTES:

1. Install New Chain Link Gate, 6'High x 4'Wide. See Standard Plan D-01.
2. Cable Splicing In City Pullbox And City CCTV Cabinet Shall Be Performed By The City.

GRAPHIC SCALE

1" = 40' 40' 20' 0 40' 80'

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

10/14/03-11:41 Y:\060\e60-80 B02\60-80 S07.dwg

LENNOX K. NISHIMURA LICENSED PROFESSIONAL ENGINEER No. 3880-E HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

Lennox K. Nishimura
PROJECT ENGINEER for ECS, Inc.

APRIL 30, 2004
EXPIRATION DATE OF THE LICENSE

DATE	REV.	DESCRIPTION
10/16/03	5	Added Sheet

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

CCTV PLAN – KAIMAKANI STREET

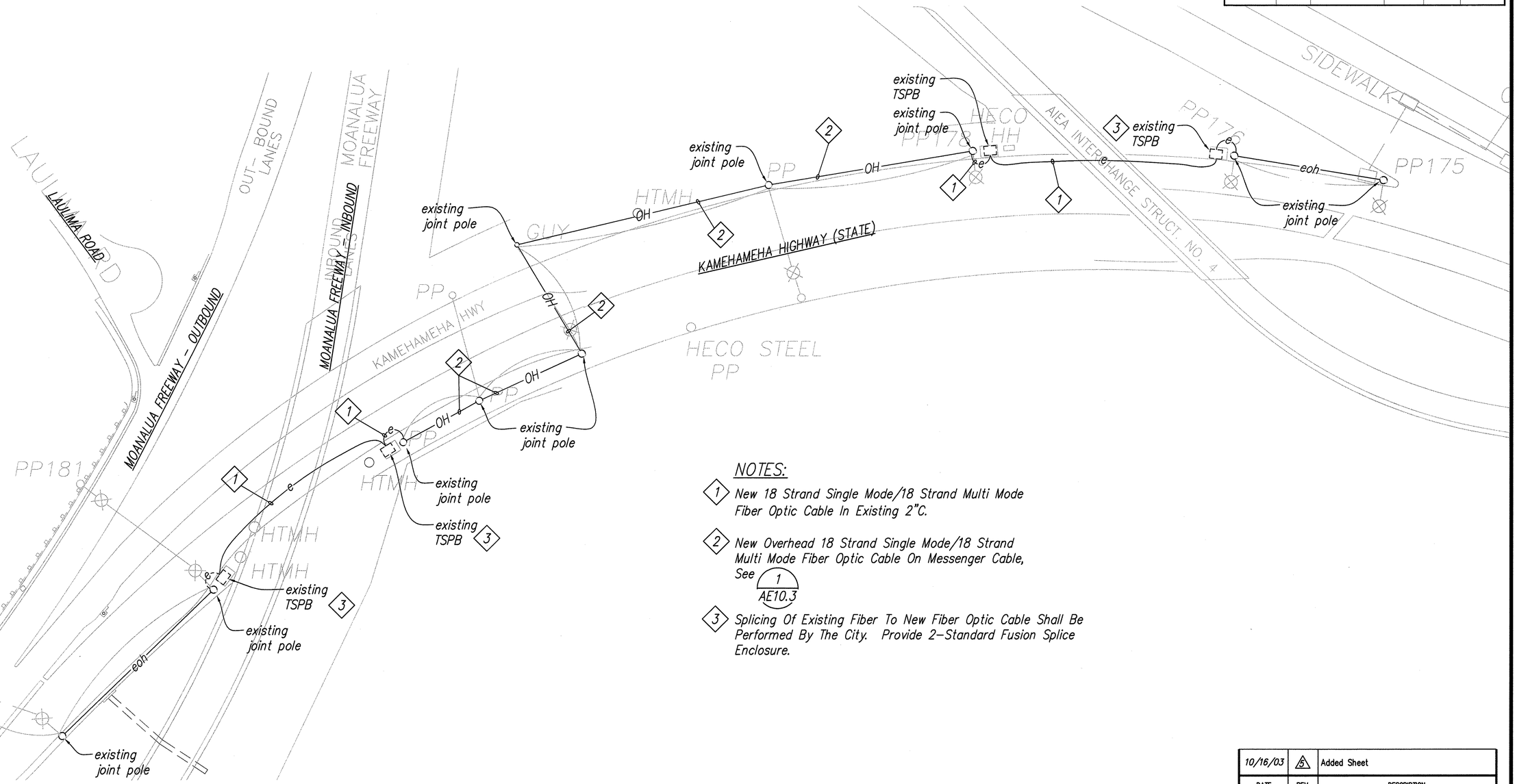
INTERSTATE ROUTE H-3
H-3 FINISH (UNIT VIII)
F.A.I. Proj. No. I-H3-1(75) Unit VIII

Scale: 1" = 40'-0" Date: Mar. 31, 2003

SHEET No. AE9.10 OF 67 SHEETS

ADD.770S-11

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(75) UNIT VIII	2003	ADD.770S-12	816



NOTES:

1. New 18 Strand Single Mode/18 Strand Multi Mode Fiber Optic Cable In Existing 2"C.
2. New Overhead 18 Strand Single Mode/18 Strand Multi Mode Fiber Optic Cable On Messenger Cable, See 1/AE10.3
3. Splicing Of Existing Fiber To New Fiber Optic Cable Shall Be Performed By The City. Provide 2–Standard Fusion Splice Enclosure.

N

CCTV PLAN – KAMEHAMEHA HIGHWAY

Scale: 1" = 40'

GRAPHIC SCALE

1" = 40' 40' 20' 0 40' 80'

ORIGINAL PLAN
NOTE BOOK No.
SURVEY PLOTTED BY DATE
DRAWN BY
TRACED BY
DESIGNED BY
QUANTITIES BY
CHECKED BY
10/14/03–11:44 Y:\060\e60-80 B02\60-80 S11.dwg

LENNOX K. NISHIMURA LICENSED PROFESSIONAL ENGINEER No. 3880-E HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

PROJECT ENGINEER for ECS, Inc.

APRIL 30, 2004
EXPIRATION DATE OF THE LICENSE

DATE	REV.	DESCRIPTION
10/16/03	6	Added Sheet

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

CCTV PLAN – KAMEHAMEHA HIGHWAY

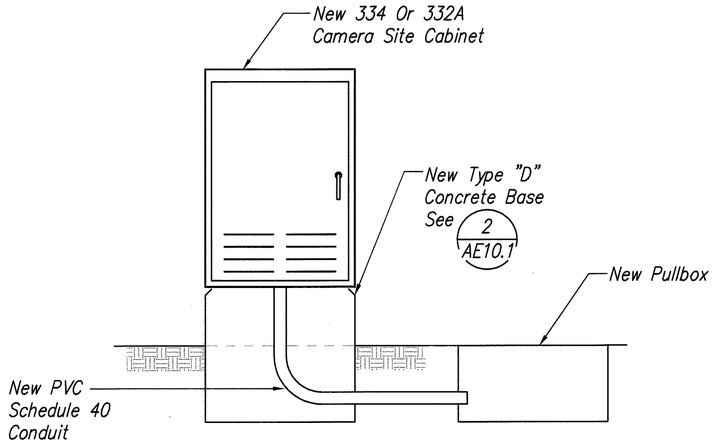
INTERSTATE ROUTE H-3
H-3 FINISH (UNIT VIII)
F.A.I. Proj. No. I-H3-1(75) Unit VIII

Scale: 1" = 40'-0" Date: Mar. 31, 2003

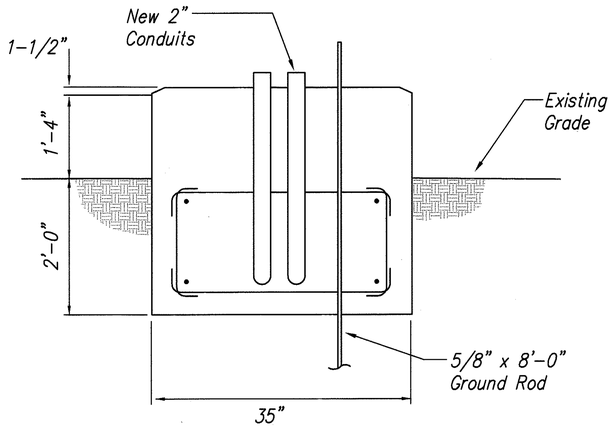
SHEET No. AE9.11 OF 67 SHEETS

ADD.770S-12

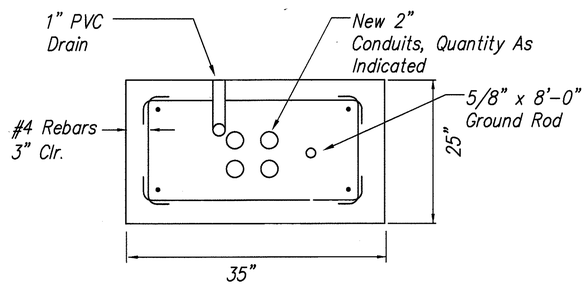
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(75) UNIT VIII	2003	ADD.770S-13	816



1 AE10.1 CCTV CABINET DETAIL
Not To Scale



SECTION

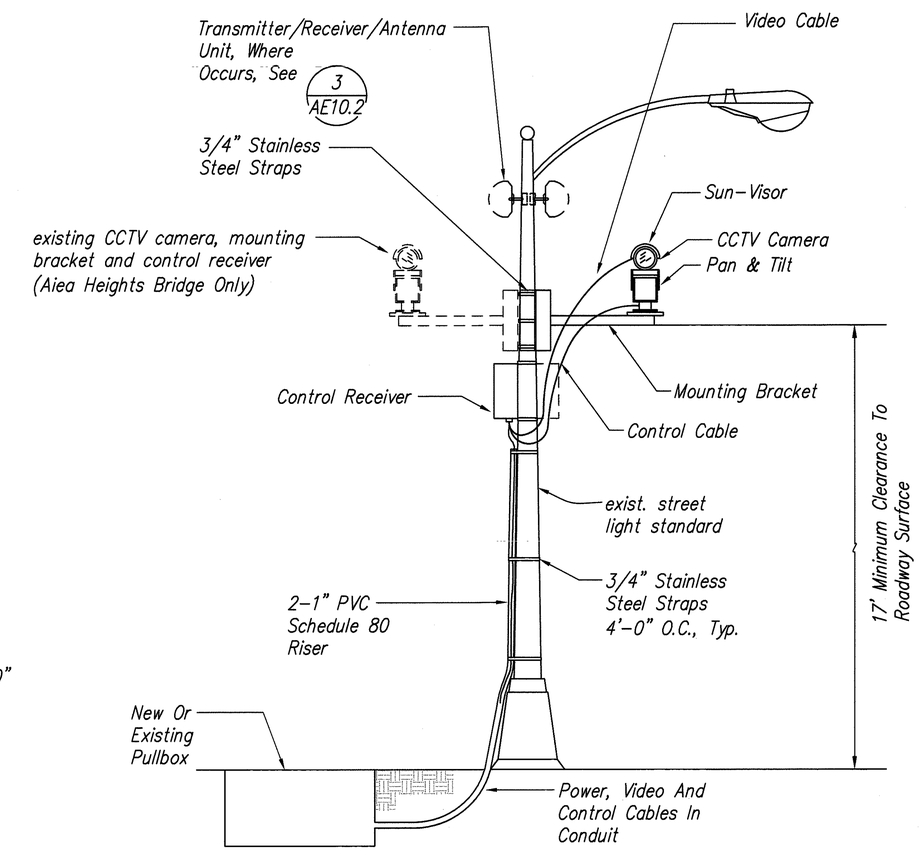


PLAN

2 AE10.1 TYPE "D" CONCRETE BASE
Not To Scale

NOTES:

1. Concrete Shall Be Class "B".
2. Dimensions Shall Be Altered To Suit Camera Cabinet Actually Furnished.
3. Conduit Bend And Drain Are Incidental To Concrete Base.
4. Refer To Cabinet Manufacturer's Specifications For Details Of Anchor Bolts And Base Settings.
5. All Exposed Surfaces Of Concrete Base Shall Be Given A Class 2, Rubbed Finish.



3 AE10.1 CCTV CAMERA INSTALLLATION ON HIGHWAY LIGHTING STANDARD
Not To Scale

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

10/14/03-11:45 Y:\D60\e60-80 B62\60-80 T01.dwg

DATE	REV.	DESCRIPTION
10/16/03	5	Added Sheet

LENNOX K. NISHIMURA
LICENSED PROFESSIONAL ENGINEER
No. 3880-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

PROJECT ENGINEER for ECS, Inc.

APRIL 30, 2004
EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

CCTV DETAILS

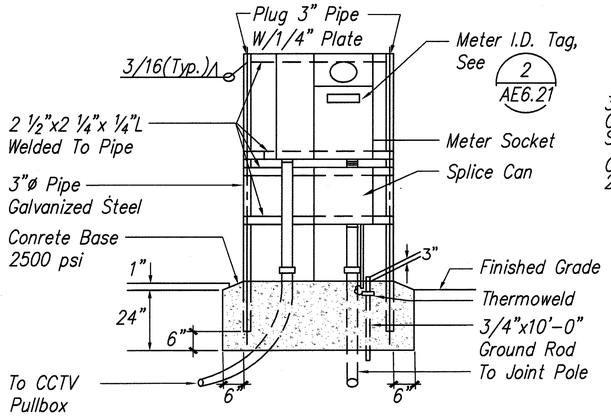
INTERSTATE ROUTE H-3
H-3 FINISH (UNIT VIII)
F.A.I. Proj. No. I-H3-1(75) Unit VIII

Scale: Not To Scale Date: Mar. 31, 2003

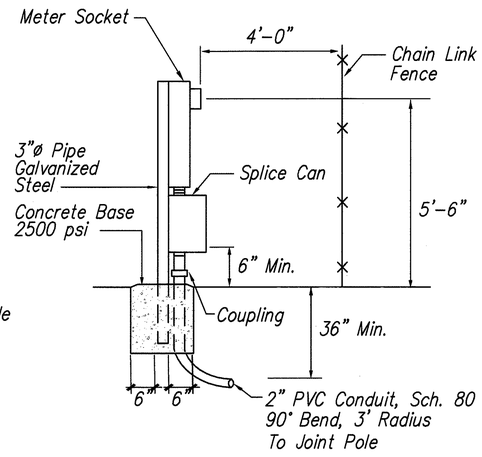
SHEET No. AE10.1 OF 67 SHEETS

ADD.770S-13

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(75) UNIT VIII	2003	ADD.770S-14	816



FRONT ELEVATION

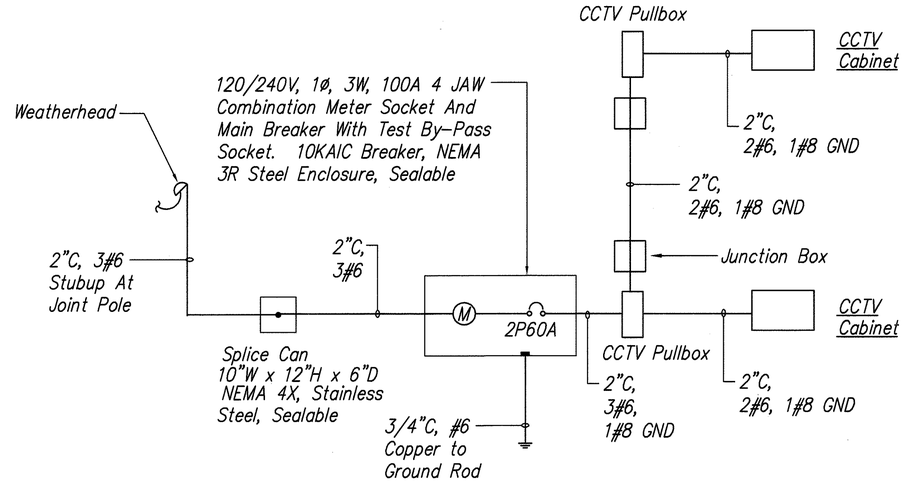


SIDE ELEVATION

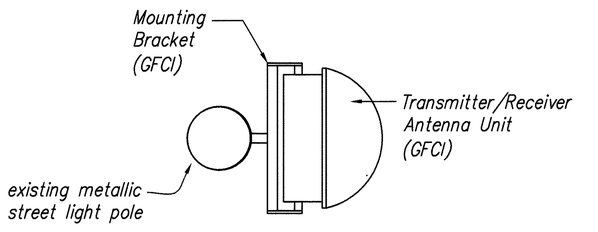
NOTES:

1. Pedestal Shall Be Hot-Dipped Galvanized After Fabrication.
2. All Fastening Bolts, Nuts & Washers Shall Be Stainless Steel.

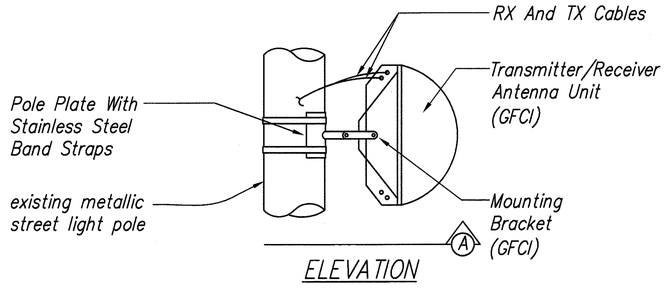
1 / AE10.2 METER PEDESTAL
Not To Scale



2 / AE10.2 ONE LINE DIAGRAM – KAIMAKANI STREET
No Scale

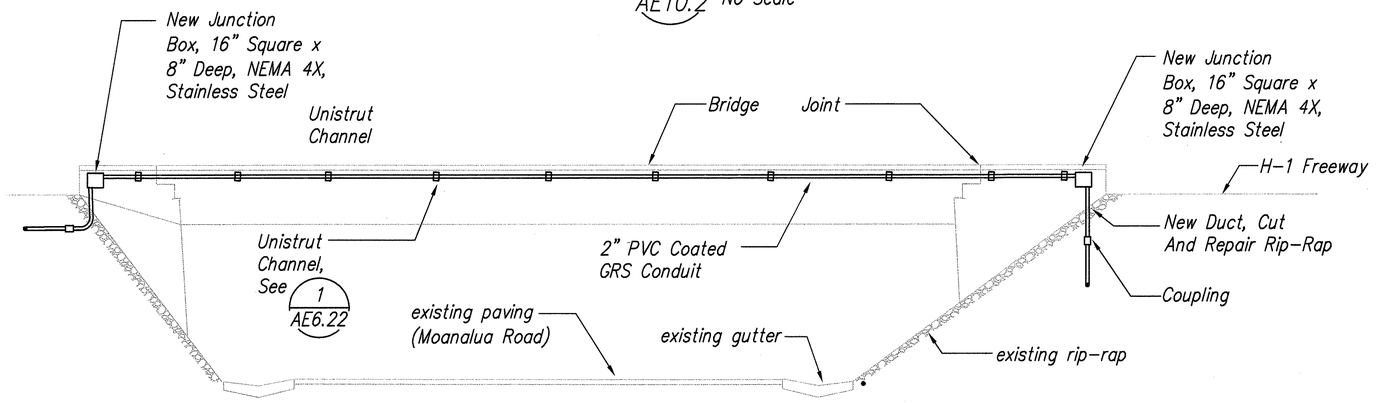


SECTION 'A'



ELEVATION

3 / AE10.2 RF HEAD MOUNTING INSTALLATION
Not To Scale



4 / AE10.2 MOANALUA ROAD BRIDGE CROSSING
Not To Scale

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

10/14/03-11:46 Y:\060\e60-80 B02\60-80 T02.dwg

LENNOX K. NISHIMURA LICENSED PROFESSIONAL ENGINEER No. 3880-E HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

PROJECT ENGINEER for ECS, Inc.

APRIL 30, 2004
EXPIRATION DATE OF THE LICENSE

DATE	REV.	DESCRIPTION
10/16/03	5	Added Sheet

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

CCTV DETAILS

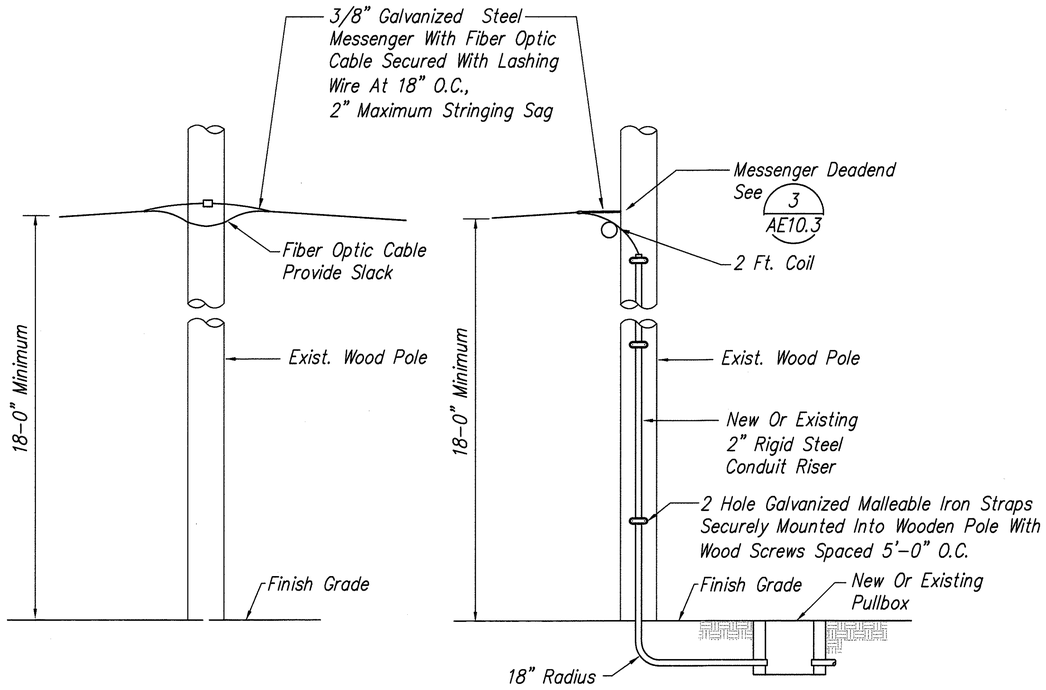
INTERSTATE ROUTE H-3
H-3 FINISH (UNIT VIII)
F.A.I. Proj. No. I-H3-1(75) Unit VIII

Scale: As Noted Date: Mar. 31, 2003

SHEET No. AE10.2 OF 67 SHEETS

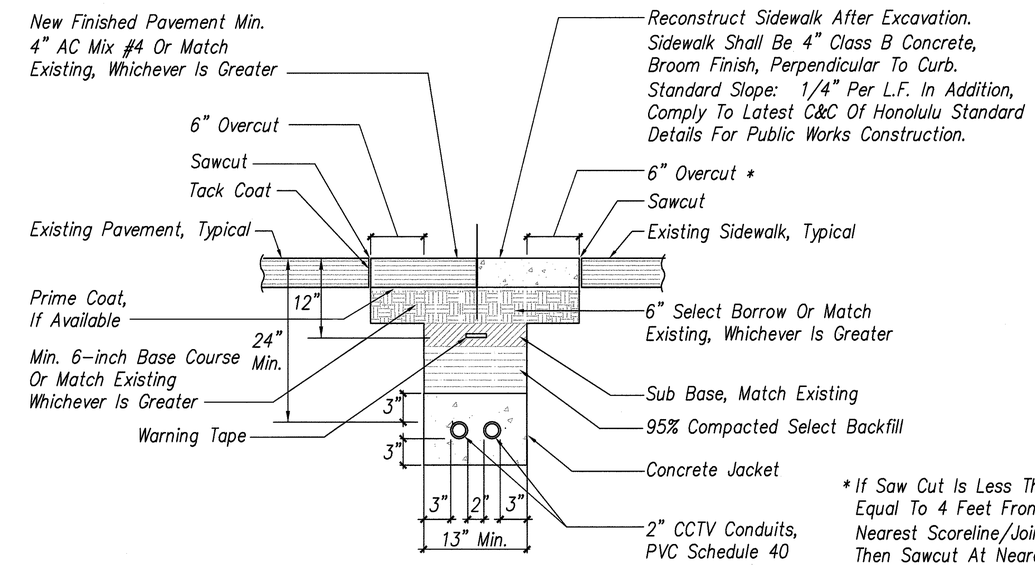
ADD.770S-14

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(75) UNIT VIII	2003	ADD.770S-15	816



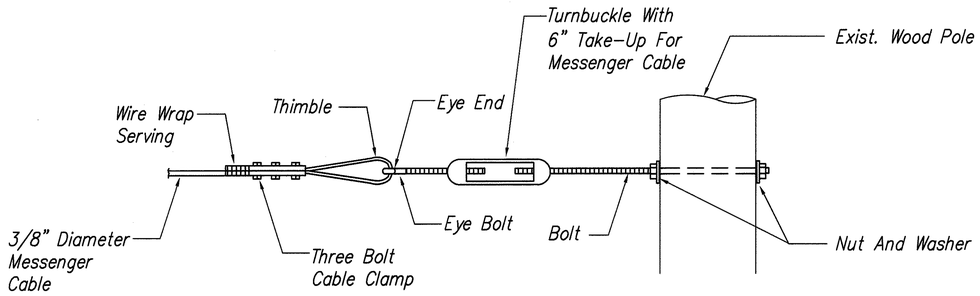
1 AE10.3 OVERHEAD FIBEROPTIC CABLE DETAIL

Not To Scale



2 AE10.3 TYPICAL DUCT SECTION – KAIMAKANI STREET (CITY R/W)

Not To Scale



3 AE10.3 MESSENGER DEADEND

Not To Scale

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

10/14/03-11:46 Y:\060\e60-80 BC2\60-80 T03.dwg

LEINNOX K. NISHIMURA LICENSED PROFESSIONAL ENGINEER No. 3880-E HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

PROJECT ENGINEER for ECS, Inc.

APRIL 30, 2004
EXPIRATION DATE OF THE LICENSE

DATE	REV.	DESCRIPTION
10/16/03	5	Added Sheet

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

CCTV DETAILS

INTERSTATE ROUTE H-3
H-3 FINISH (UNIT VIII)
F.A.I. Proj. No. I-H3-1(75) Unit VIII

Scale: 1" = 40'-0" Date: Mar. 31, 2003

SHEET No. AE10.3 OF 67 SHEETS

ADD.770S-15

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(75) UNIT VIII	2003	C.O.770S-17	816

GENERAL NOTES:

1. ELECTRICAL DRAWINGS ARE DIAGRAMMATIC & MAY NOT INCLUDE ALL DETAILS & COMPONENTS REQUIRED FOR A COMPLETE INSTALLATION. CONTRACTOR SHALL PROVIDE & INCLUDE IN BID ALL COMPONENTS & INSTALL EQUIPMENT IN A NEAT & LOGICAL MANNER FOR A COMPLETE & OPERABLE SYSTEM WITHIN INTENT INDICATED ON CONTRACT DOCUMENTS.

2. EXISTING CONDITION BASED ON LIMITED FIELD OBSERVATION AND AVAILABLE REFERENCE DRAWINGS. CONTRACTOR SHALL STUDY DRAWINGS & SPECIFICATIONS & VERIFY EXISTING CONDITION AND REPORT ANY DISCREPANCY TO ENGINEER PRIOR TO START OF CONSTRUCTION. SHOULD CONTRACTOR NOT REPORT ANY DISCREPANCY PRIOR TO START OF CONSTRUCTION, THEN ALL MATERIAL & LABOR COSTS OF EQUIPMENT THAT REQUIRES REPLACEMENT OR RELOCATION SHALL BE CREDITED TO THE CHANGE ORDER REQUIRED TO CORRECT THE DISCREPANCY, WHETHER ALREADY ORDERED OR INSTALLED.

3. PROVIDE ANY SPACERS, FILLERS, BRACKETS, HANGERS, ETC. NEEDED TO PROPERLY INSTALL NEW ELECTRICAL EQUIPMENT, DEVICES, WIRING, ETC.

4. DO NOT CUT OR CORE THROUGH COLUMN & BEAMS. CONSULT WITH STRUCTURAL ENGINEER PRIOR TO CUTTING OR CORING THROUGH SHEAR WALLS.

5. REPAIR ANY DAMAGE MADE TO WALLS, FLOORS, OTHER STRUCTURES AND UTILITY LINES CAUSED DURING CONSTRUCTION. REPAIRS TO UTILITIES MUST BE DONE WITHIN 24 HOURS AND AT NO ADDITIONAL COST TO THE DEPARTMENT OF TRANSPORTATION SERVICES.

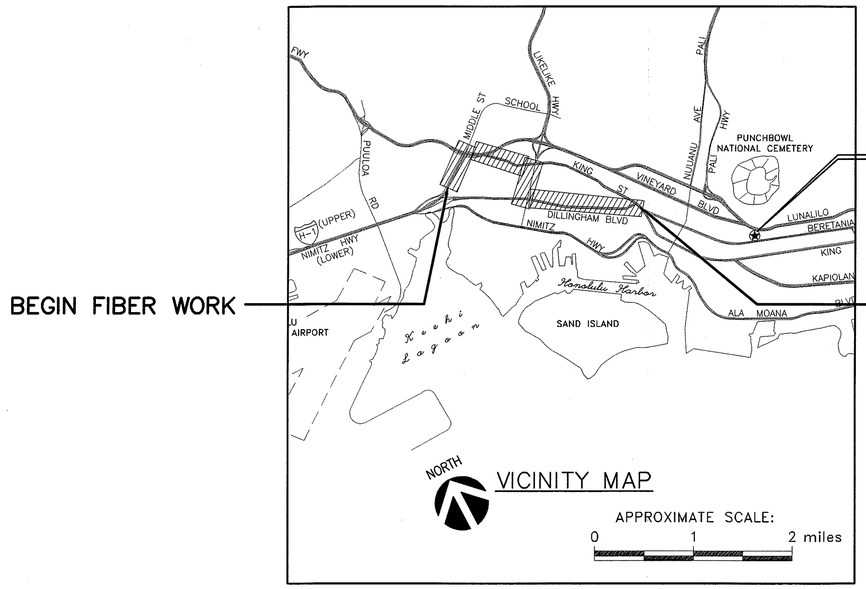
TRAFFIC NOTES

1. A PERMIT SHALL BE OBTAINED FROM THE DEPARTMENT OF TRANSPORTATION SERVICES AND DEPARTMENT OF TRANSPORTATION, HIGHWAYS DIVISION BEFORE WORK ON ANY PORTION OF A PUBLIC STREET OR HIGHWAY MAY BEGIN.

2. NO MATERIAL AND/OR EQUIPMENT SHALL BE STOCKPILED OR OTHERWISE STORED WITHIN STREET RIGHTS-OF-WAY EXCEPT AT LOCATIONS DESIGNATED IN WRITING AND APPROVED BY DEPARTMENT OF TRANSPORTATION SERVICES.

ELECTRICAL SYMBOLS

SYMBOL EXST	SYMBOL NEW	DESCRIPTION
		TS TYPE B PULLBOX
		TS TYPE A PULLBOX
		TS TYPE C PULLBOX
		UTILITY POLE
		STREET LIGHT
	——OH——	OVER HEAD FIBER OPTIC CABLE, SEE PLAN FOR FIBER COUNT
——e——	—— – – ——	UNDERGROUND FIBER OPTIC CABLE, SEE PLAN FOR FIBER COUNT
		CCTV SPLICE CABINET, ADD NEW SPLICE
HUB		CCTV HUB CABINET
		TRAFFIC CAMERA
——viaduct——	——VIADUCT——	INSTALL FIBER OPTIC CABLE IN 2" GRS CONDUIT (BY OTHERS)



BEGIN FIBER WORK

END FIBER WORK

COMPUTERIZED TRAFFIC CONTROL CENTER
740 KINALAU PL.

VICINITY MAP

APPROXIMATE SCALE: 0 1 2 miles

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

GLENN D. OYAMA
LICENSED PROFESSIONAL ENGINEER
NO. 4210-E
HAWAII, U.S.A.
exp. 04/30/06

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

NAKAMURA, OYAMA & ASSOC., INC.
CONSULTING ENGINEERS

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

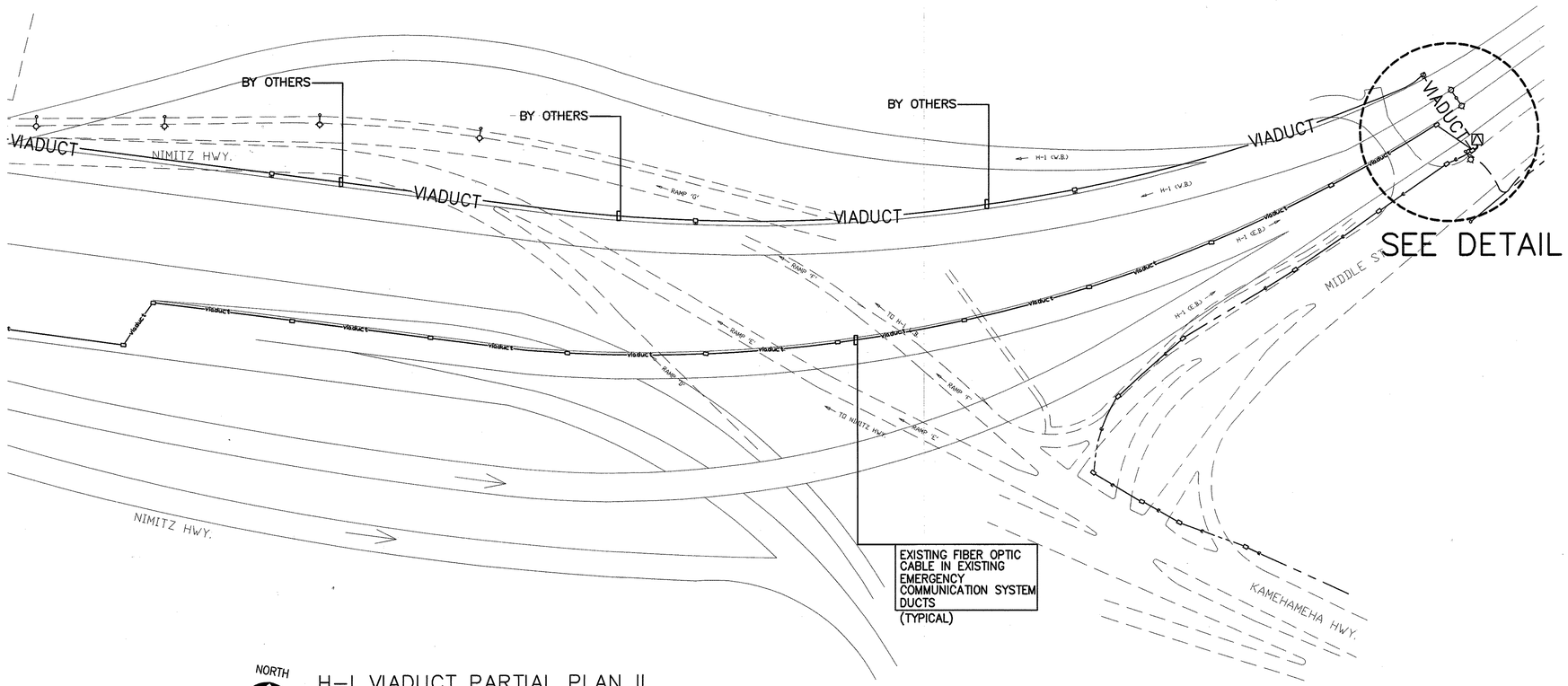
SYMBOL LIST, GENERAL NOTES & VICINITY MAP

INTERSTATE ROUTE H-3
H-3 FINISH (UNIT VIII)
F.A.I. Proj. No. I-H3-1(75) Unit VIII

Scale: AS NOTED Date: Mar. 31, 2003

SHEET No. AE11.1 OF 67 SHEETS

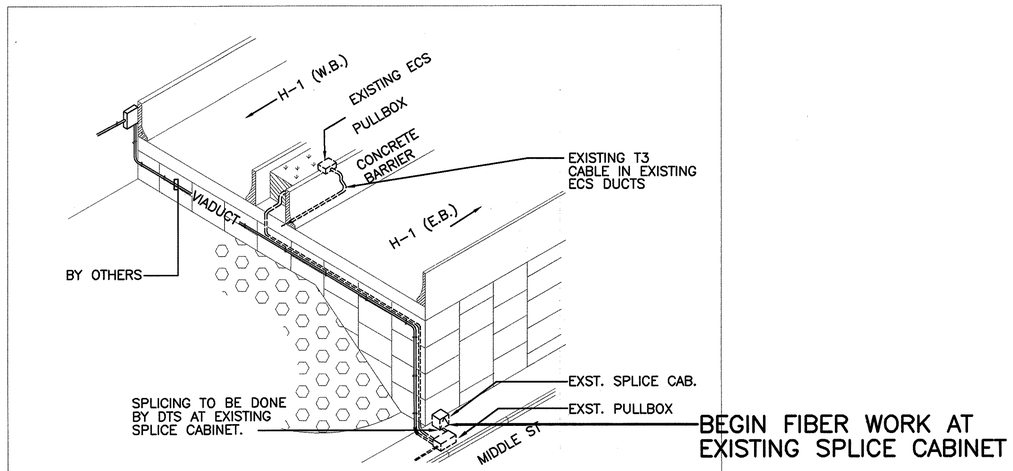
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(75) UNIT VIII	2003	C.O.770S-18	816



NORTH

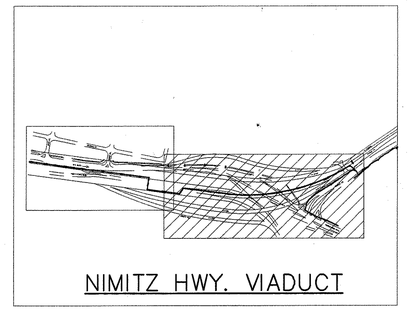
H-1 VIADUCT PARTIAL PLAN II

SCALE: 1"=100'



DETAIL 'C' – H-1 VIADUCT

SCALE: NTS



NIMITZ HWY. VIADUCT

KEY PLAN

GRAPHIC SCALE

100 50 0 100 200

SCALE: 1" = 100'

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

GLENN D. OYAMA LICENSED PROFESSIONAL ENGINEER NO. 4210-E HAWAII, U.S.A.

exp. 04/30/06

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

NAKAMURA, OYAMA & ASSOC., INC. CONSULTING ENGINEERS

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

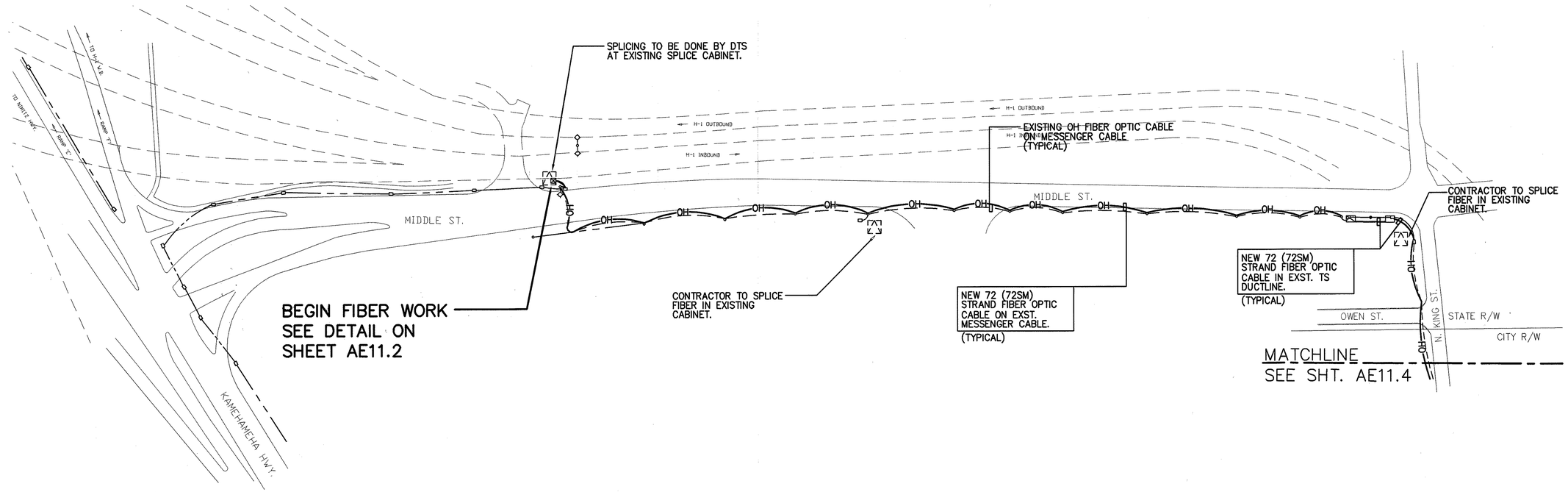
PLAN – H-1 VIADUCT
PARTIAL PLAN II AND DETAILS

INTERSTATE ROUTE H-3
H-3 FINISH (UNIT VIII)
F.A.I. Proj. No. I-H3-1(75) Unit VIII

Scale: **AS NOTED** Date: Mar. 31, 2003

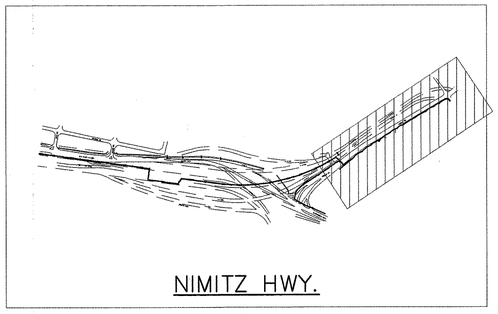
SHEET No. **AE11.2** OF 67 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(75) UNIT VIII	2003	C.O.770S-19	816



NORTH

MIDDLE STREET AND KING
SCALE: 1"=100'



NIMITZ HWY.

KEY PLAN

GRAPHIC SCALE

100 50 0 100 200

SCALE: 1" = 100'

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

GLENN D. OYAMA
LICENSED PROFESSIONAL ENGINEER
NO. 4210-E
HAWAII, U.S.A.
exp. 04/30/06

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

NAKAMURA, OYAMA & ASSOC., INC.
CONSULTING ENGINEERS

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

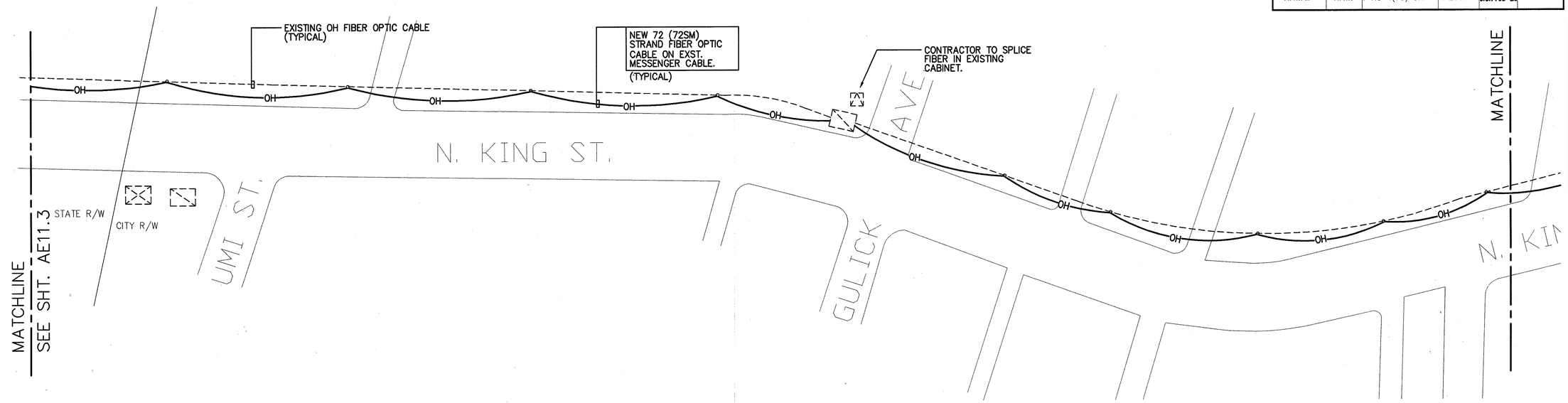
PLAN
MIDDLE ST. AND KING ST.

INTERSTATE ROUTE H-3
H-3 FINISH (UNIT VIII)
F.A.I. Proj. No. I-H3-1(75) Unit VIII

Scale: **AS NOTED** Date: Mar. 31, 2003

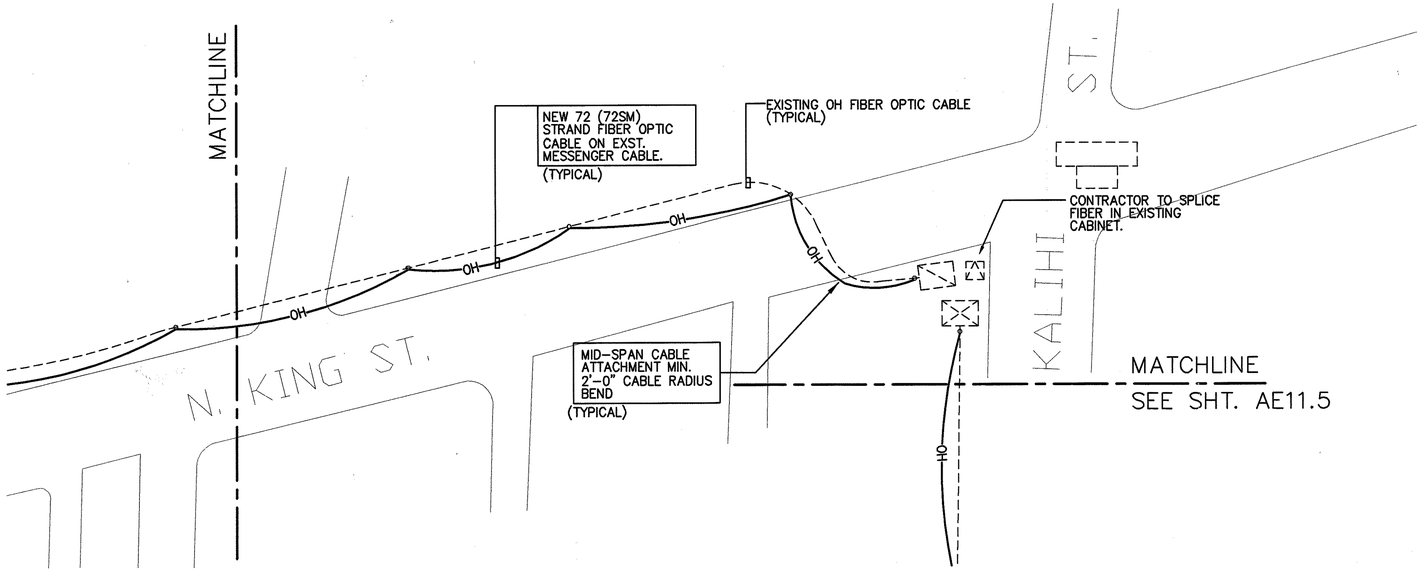
SHEET No. **AE11.3** OF 67 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(75) UNIT VIII	2003	C.O.770S-20	816



NORTH

N. KING AND UMI ST.
SCALE: 1"=100'



NORTH

N. KING AND KALIHI ST.
SCALE: 1"=100'

GRAPHIC SCALE
100 50 0 100 200
SCALE: 1" = 100'

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

GLENN D. OYAMA
LICENSED PROFESSIONAL ENGINEER
NO. 4210-E
HAWAII, U.S.A.
exp. 04/30/06

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

NAKAMURA, OYAMA & ASSOC., INC.
CONSULTING ENGINEERS

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

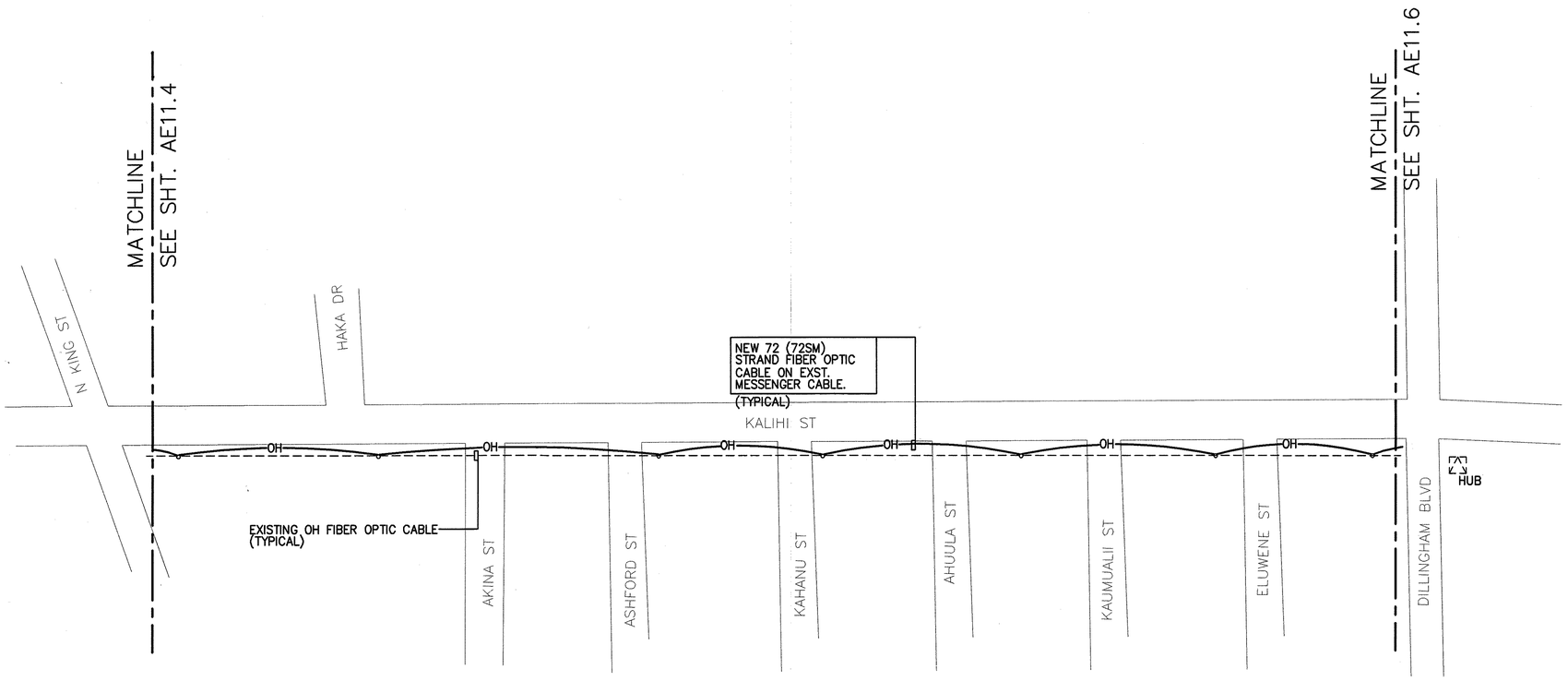
PLAN
NORTH KING STREET

INTERSTATE ROUTE H-3
H-3 FINISH (UNIT VIII)
F.A.I. Proj. No. I-H3-1(75) Unit VIII

Scale: **AS NOTED** Date: Mar. 31, 2003

SHEET No. **AE11.4** OF 67 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(75) UNIT VIII	2003	C.O.770S-21	816



NORTH

KALIHI ST.
SCALE: 1"=100'

GRAPHIC SCALE

100 50 0 100 200

SCALE: 1" = 100'

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

GLENN D. OYAMA
LICENSED PROFESSIONAL ENGINEER
NO. 4210-E
HAWAII, U.S.A.
exp. 04/30/06

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

NAKAMURA, OYAMA & ASSOC., INC.
CONSULTING ENGINEERS

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

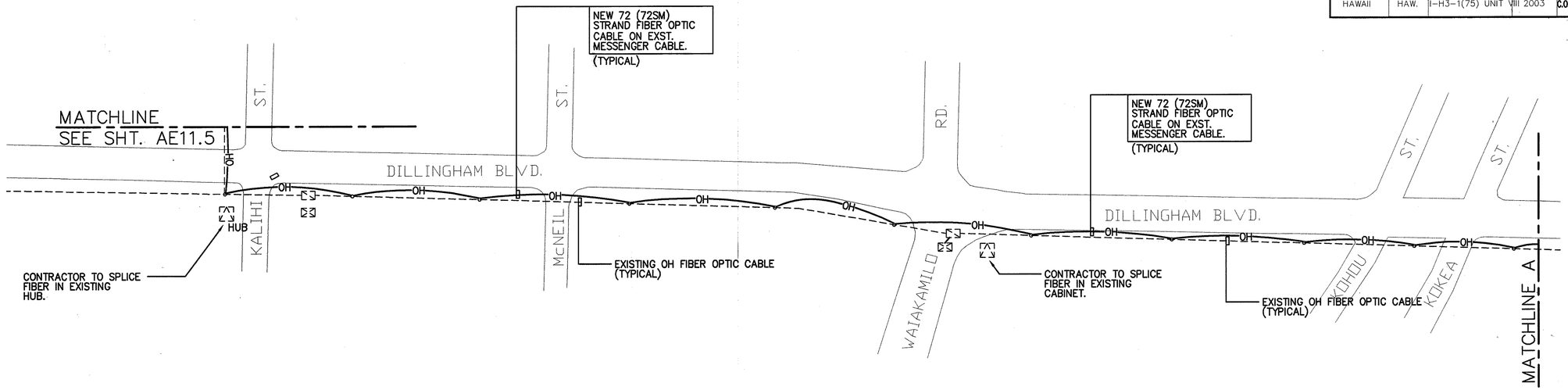
PLAN
KALIHI STREET

INTERSTATE ROUTE H-3
H-3 FINISH (UNIT VIII)
F.A.I. Proj. No. I-H3-1(75) Unit VIII

Scale: **AS NOTED** Date: Mar. 31, 2003

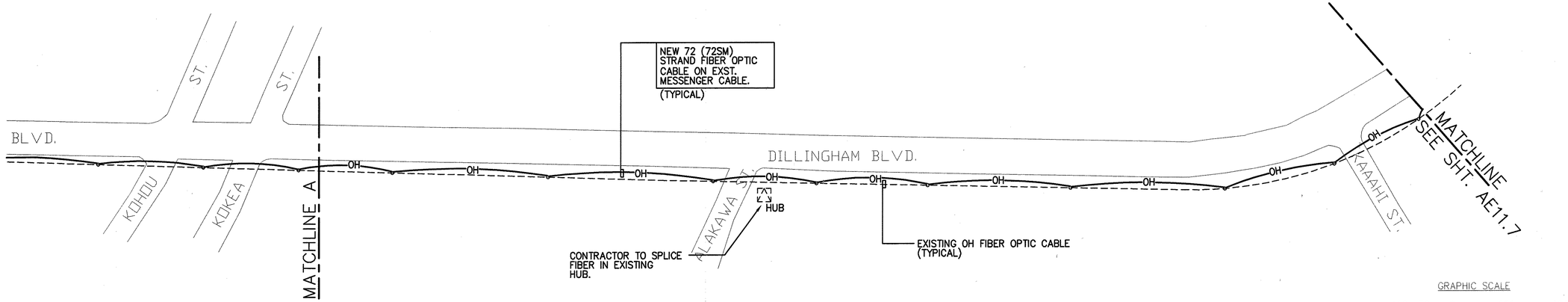
SHEET No. **AE11.5** OF 67 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(75) UNIT VIII	2003	C.0.770S-22	816



NORTH

DILLINGHAM BLVD. AND KALIHI ST.
SCALE: 1"=100'



GRAPHIC SCALE
100 50 0 100 200
SCALE: 1" = 100'

NORTH

DILLINGHAM BLVD. AND KOHOU ST.
SCALE: 1"=100'

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

GLENN D. OYAMA
LICENSED PROFESSIONAL ENGINEER
NO. 4210-E
HAWAII, U.S.A.
exp. 04/30/06

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

NAKAMURA, OYAMA & ASSOC., INC.
CONSULTING ENGINEERS

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

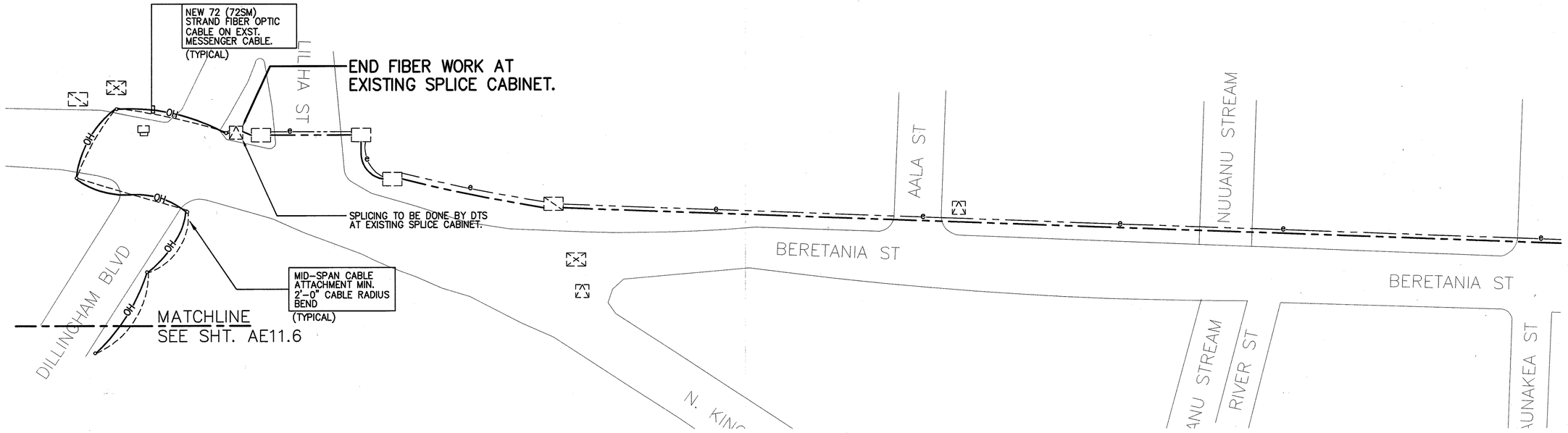
PLAN
DILLINGHAM BOULEVARD

INTERSTATE ROUTE H-3
H-3 FINISH (UNIT VIII)
F.A.I. Proj. No. I-H3-1(75) Unit VIII

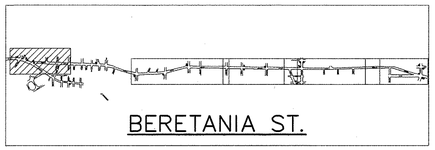
Scale: **AS NOTED** Date: Mar. 31, 2003

SHEET No. **AE11.6** OF 67 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(75) UNIT VIII	2003	C.0.770S-23	816



NORTH

BERETANIA ST. AND LILIHA ST.
SCALE: 1"=60'

BERETANIA ST.

KEY PLAN

GRAPHIC SCALE

60 30 0 60 120

SCALE: 1" = 60'

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

GLENN D. OYAMA
LICENSED PROFESSIONAL ENGINEER
NO. 4210-E
HAWAII, U.S.A.
exp. 04/30/06

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

NAKAMURA, OYAMA & ASSOC., INC.
CONSULTING ENGINEERS

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PLAN – BERETANIA STREET
LILIHA ST. TO PUNCHBOWL ST.

INTERSTATE ROUTE H-3
H-3 FINISH (UNIT VIII)
F.A.I. Proj. No. I-H3-1(75) Unit VIII

Scale: **AS NOTED** Date: Mar. 31, 2003

SHEET No. **AE11.7** OF 67 SHEETS