FED. ROAD	STATE	FED. AID	FISCAL	SHEET	TOTAL
DIST. NO.		PROJ. NO.	YEAR	NO.	SHEETS
KAUA 'I	HAW.	NH-056-1(50)	2019	C.O.ADD.208	244

EXISTING	NEW	
٥()		Existing Street Light Mounted On Joint Pole
	•—	New LED Street Light Luminaire And 15' Arm
		Mounted On Joint Pole (By KIUC)
[]		Pullbox/Handhole, Type As Noted
[<u>o</u>]	0	Manhole, Type As Noted
		Traffic Signal Pullbox, Type $B < 6$
		Pad Mounted Transformer
0	0	Utility Pole/Guy Pole
eoh/X	- OH/X $-$	Overhead Conductors/Cables
		P = KIUC Primary
		S = KIUC Secondary
		T = Telephone V = CATV
		K = KIUC Fiber Optic Cable g
		= quy wire
		S = Traffic Signal
		Underground Ductline, Type as Indicated
		Existing KIUC Primary Ductline
et		Existing Hawaiian Telcom Ductline
-eSIC		Exising Sandwich Isles Communications Ductline
	E	Ductline Stubout, Capped and Marked
	X	Denotes Removal/Demolition
		Electrical Equipment
	CATV	Cable Television
	GP	Guy Pole
	ELEC	Electric
-	HH	Handhole
	HT	Hawaiian Telcom
	GND	Ground Kawai Jaland Utility Cooperative
	KIUC	Kauai Island Utility Cooperative
	R/W	Right Of Way
	SIC	Sandwich Isle Communications, Inc.
	SIC MH	Sandwich Isle Communications Manhole
	SL	Street Light
	TEL	Telephone
	TMH	Telephone Manhole
	TSL	Traffic Signal Light
	TSPB WD	Traffic Signal Pullbox
	WP	Weatherproof
	2	Detail Indicator:
	E-1	Top Half Denotes Detail Number, Left Denotes Sheet On Which Detail Shown
	7	Duct Indicator, See Schedule On Sheet E-36
	$\overline{\uparrow}$	Note Indicator
		IVOLO IIIUICULOI

ELECTRICAL SYMBOL LIST

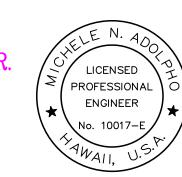
SYMBOL

GENERAL NOTES FOR CONSTRUCTION

- The Contractor at his own expense, shall keep the project area and surrounding area free from rubbish, dust, noise, erosion, etc. The work shall be done in conformance with the air and water pollution control standards and regulations of the State Department of Health.
- 2. Wherever connections to existing utilities are shown on the plans, the Contractor shall expose the existing lines to verify their locations and depths prior to excavation of the main trenches. Should any discrepancies be discovered, the Contractor shall notify the Engineer for direction.
- Wherever new utility lines cross existing underground utilities, the Contractor shall expose the existing lines and verify their locations, depths and clearances between existing utilities and the new lines prior to beginning excavation of the main trenches. Should any discrepancies be discovered, the Contractor shall notify the Engineer for direction.
- Existing underground utilities, pipes, cables or ductlines were determined on the basis of the best available information. Therefore, no assurance can be provided that the actual locations will be precisely as shown on the contract drawings. The Contractor shall verify the locations and depths of the facilities and exercise proper care in excavating the area. Wherever connections of new utilities are shown on the plans, the Contractor shall expose the existing lines at the proposed connections to verify their locations and depths prior to excavation for the new lines. The Contractor shall be responsible for any damages to any existing facilities.
- The Contractor at his own expense, shall remove all utility ductlines designated to be demolished. Do not abandon in place. Restore AC pavement and concrete sidewalk associated with ductline removal work. For pavement and sidewalk restoration requirements, see Civil plans for details.
- Refer to DOT 2008 Standard Plans for Traffic Signal Pullbox details: TE-37, TE-37B, TE-37C, TE-37D, TE-37E, TE-37J.

LEGEND FOR AS-BUILT POSTINGS Squiggly line for as-built deletion Double line for as-built deletion Lt. 0.2 Text for as-built posting

THESE PLANS HAVE BEEN PREPARED UTILIZING EREIN HAS NOT BEEN VERIFIED FOR ACCURACY AND COMPLETENESS. NO REPRESENTATION IS BEING MADE TO ITS VALIDITY.



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

APPROVED:

Date Kauai Island Utility Cooperative Date Hawaiian Telcom Date Spectrum

11/12/19	A Reissuing plan for legibility only. No design changes have been made.
9/20/19	A Reissuing plan for legibility only. No design changes have

REVISION

been made.

GENERAL NOTES Kuhio Highway Short-Term Improvements Kuamoo Road to Temporary Bypass Road Fed. Aid Proj. No. NH-056-1(50) Scale: As Shown

Date: July 2019 SHEET No. E-1 OF 37 SHEETS

STATE OF HAWAI'I
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

<u>ELECTRICAL SYMBOL LIST &</u>

KAUAI ISLAND UTILITY COOPERATIVE (KIUC) UNDERGROUND CONSTRUCTION NOTES AND REQUIREMENTS

- These notes are not intended to be used in place of the Service Installation Manual, please refer to Service Installation Manual for all service issues.
- 2. Contractor shall contact KIUC Construction Coordinator/Inspector prior to start of work on KIUC Facilities and for scheduling site inspections. [West side: 246-2323; East side: 246-4343]
- 3. Contractor shall contact KIUC's Distribution Planning Coordinator @ 246-2373 for design approvals, standard detail drawings, and any items not addressed in these notes or drawings.
- 4. All contractors entering KIUC facilities must be approved by KIUC and must have proper licensing and insurance coverage. Contact KIUC Legal Coordinator @ 246-4369 for details.
- 5. All trenches and pullboxes must be inspected by KIUC prior to backfilling and concrete—encasing operations. For detailed trenching and backfilling requirements refer to KIUC's Service Installation Manual.
- 6. The Contractor shall provide a Poly-Line 200 lb. test line or equivalent as a pulling wire in all 1 inch, 2 inch, 3 inch and 4 inch conduits. In 5 inch and 6 inch conduits, the Contractor shall install Neptco WP1800 muletape as a pulling line.
- 7. All conduits, pullboxes, handholes, and manholes shall be cleaned and free from objectionable materials. Conduit ends shall be adequately covered until the conductor is installed by the electric company (covers shall be Carlon Plug with Pull Tab Series P258 equivalent or better.)
- 8. For all conduit other than services, refer to conduit schedule on drawings.
- 9. For all services where the conductor is 1/0 or less, the distance from KIUC's handhole and customer's meter is less than 125 feet, and not crossing any driveways or roads the conduit shall be 2 inch schedule 40 PVC. For services greater than 125 feet but less than 150 feet, contact KIUC Planner for field verification and underground service requirements. Any deviations will require KIUC written approval.
- 10. Primary and secondary conduits for new line extensions shall be Schedule 40 PVC. Under driveways and roadways, the conduits shall be encased in a minimum of 3 inch concrete jacket extending 12 inches outside the edge of pavement.

- 11. Schedule 80 PVC conduit may be substituted for the concrete encased Schedule 40 PVC for service conduit only crossing under unpaved private driveways and roadways from KIUC pole/handhole to customer's meter. If concrete driveway will be built over service conduit immediately after conduit is installed, then Schedule 40 PVC may be used provided that it meets with Rule No. 21.
- 12. All primary and secondary conduits which are crossing State or County roadways shall be Schedule 40 PVC encased in a minimum 3 inch concrete jacket, which shall extend a minimum of 12 inches outside of the edge of pavement.
- 13. Electrical supply ducts, when installed near communication cables, shall be separated from communication duct systems and buried communication cables or conductors by not less than 3 inches of concrete or 12 inches of earth when paralleling or crossing.
- 14. Chairs shall be installed and spaced at a maximum of 5 feet separation when concrete encasing conduits.
- 15. All conduits shall enter boxes at 90 degree angle, perpendicular and flush to the wall with bell ends to prevent cable damage.
- 6. 90 degree conduit bends shall be factory—made with a minimum radius of 3 feet in trench runs.
- 17. Conduit bends exceeding 90 degrees will not be accepted.
- 18. A 36 inch minimum horizontal clearance shall be maintained when running KIUC conduits parallel to water and sewer lines. If clearance is less than 36 inches, KIUC conduit shall be concrete encased.
- 19. No foreign pullboxes, handholes, manholes, concrete slabs/boxes, structures, etc. are to be installed over KIUC facilities with the exception of Hawaiian Telcom, CATV or waterline conduit crossings. Such crossing must be approved by KIUC's Service Assurance Department and KIUC conduit to be concrete encased. Concrete encasement must be minimum of 3 inch encasement and extend a minimum of 1 foot beyond crossing conduit or pipe.
- 20. Yellow marker tape to be placed 1 foot above electrical conduits in the trench during backfilling. (E-Z CODE WBT 6 inch wide 4 mill polyethylene Protect-A-Line Warning Tape NA-0708 "ELECTRIC LINE" in yellow, equivalent or better).
- 11. Unless otherwise noted, the top of all conduits shall be at depth of 36 inches.

vendor approval. Customer to submit manufacturer's shop drawings if substituting from Walker Industries type.

23. Typically, the top of all electrical utility boxes shall be 1 inch above finish grade, single phase transformer pads shall be 2 inches above fin

All handholes, pullboxes, and manholes shall be Walker Industries type or

approved equal. Contact KIUC prior to ordering underground boxes for

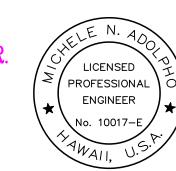
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I ypically, the top of all electrical utility boxes shall be 1 inch above finish grade, single phase transformer pads shall be 2 inches above finish grade, and three phase transformer pads shall be 4 inches above finish grade unless otherwise noted. (special conditions may apply to sidewalks, roadways, etc., see specific location notation).

4. At no time shall cement mortar, wood or any other material be used between pre—cast sections of KIUC pullboxes, handholes, or manholes. The permanent installation of wooden wedges to level or raise the pre—cast sections shall not be permitted.

75. A minimum of 6 inches of #3 crushed rock backfill shall be placed loosely beneath the bottom section of handholes and pullboxes. Crushed rock or other foreign materials are not to be placed inside handholes and pullboxes.

THESE PLANS HAVE BEEN PREPARED UTILIZING INFORMATION PROVIDED BY THE PROJECT CONTRACTOR. THE UPDATED CONSTRUCTION INFORMATION DEPICTED HEREIN HAS NOT BEEN VERIFIED FOR ACCURACY AND COMPLETENESS. NO REPRESENTATION IS BEING MADE TO ITS VALIDITY.



FISCAL YEAR

HAW. |NH-056-1(50)| 2019 | C.O.ADD.209 | 244

SHEET NO.

SHEETS

FED. AID

PROJ. NO.

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<u>LEGEND FOR AS-BUILT POSTINGS</u>

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<u>APPROVED:</u>

Kauai Island Utility Cooperative

DATE

Date

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9/20/19 \(\frac{\hat{\lambda}}{\tau} \) Reissuing plan for legibility only. No design changes have been made.

REVISION

DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

KIUC CONSTRUCTION NOTES

AND REQUIREMENTS

Kuhio Highway Short—Term Improvements
Kuamoo Road to Temporary Bypass Road
Fed. Aid Proj. No. NH—056—1(50)

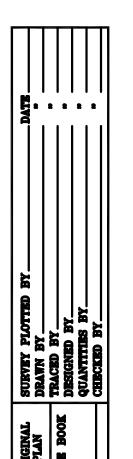
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Date: July 2019

STATE OF HAWAI'I

SHEET No. E-2 OF 37 SHEETS

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HAWAIIAN TELCOM (HT) CONSTRUCTION NOTES GENERAL NOTES:

- Installation of a HT ductline system shall conform with the requirements of the HT "Standard Specification for Placing Underground Systems" dated January 2007, all subsequent amendments and additions, and all other pertinent standards for telephone construction. Contractor shall familiarize his personnel by obtaining applicable specifications.
- For underground cable locating and marking, five (5) working days advanced notice is required. Three (3) 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 HT 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 HT facilities.
- The Contractor shall closely coordinate all work with HT. All trenches must be inspected by HT prior to backfilling and concrete encasing operations. The Contractor shall notify the HT inspector at least 72 hours prior to the excavation, bracing, pouring of concrete or backfilling.
- The location of HT'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 HT's facilities. The Contractor shall verify their locations and shall be liable for any damages to HT's facilities. Any damages shall be reported immediately to HT's repair section at #611 (24 hours) or to the Excavation Permit Section during normal work days hours, Monday through Friday, except holidays.
- When excavation is adjacent to or beneath HT's existing structures or facilities, the Contractor shall:
 - Sheet and/or brace the excavation to prevent slides, cave—ins or settlements to ensure no movement to HT's structures or facilities.
 - Protect existing structures and/or facilities with beams, struts or underpinning while excavating beneath them to ensure no movement to HT's structures or facilities.
 - Contractor shall be liable for any damages to Hawaiian Telcom Facilities.
- The Contractor shall provide a 5/8 inch x 8 foot galvanized ground rod below the telephone cabinet or backboard and a #6 TW insulated green ground wire with a 3 foot coil. Telephone cabinets shall be grounded.
- Concrete strength shall be 3,000 PSI in 28 days.

E.

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 HT Inspector at least 72 hours in advance.

> LEGEND FOR AS-BUILT POSTINGS Double line for as-built deletion

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be done by Contractor, otherwise noted on the plan. The Contractor shall be responsible for all coordination and costs associated with the relocation.

- All construction must be inspected and approved by HT prior to the installation of any of its facilities and the energizing of its systems. Contractor shall commence installation only after the construction has
- The Contractor shall furnish his construction schedule forty—five (45) working days prior to starting any HT work. Contractor shall provide HT with sufficient time to inspect the work.

CONDUIT NOTES:

- Unless otherwise indicated, all conduits, sweeps, couplings, adapters, and bell ends provided for concrete encased usage by HT shall be DB-100 or DB-120, 4 inch PVC meeting NEMA TC-6 & 8. Refer to HT Standard Drawing 34028 for installation. Schedule 40 conduit is acceptable as a substitute for DB-100 or DB-120 except that pole riser bends shall be Schedule 40 sun-resistant conduit.
- incidental to their respective main duct lines. Said conduits shall be DB-100 or DB-120, 4 inch PVC unless otherwise shown (see Item 1 above).
- When utility ducts are concrete encased at intersection of water pipe and utility ducts, a 6 inch 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.
- Bends in the duct alignment, due to changes in grade, shall have a

11/12/19 💰 Reissuing plan for legibility only. No design changes have been made.

record keeping.

9/20/19 \(\frac{1}{\lambda} \) Reissuing plan for legibility only. No design changes have been made.

REVISION

STATE OF HAWAI'I DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION HAWAIIAN TELCOM CONSTRUCTION NOTES

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ENGINEER

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FISCAL YEAR

HAW. NH-056-1(50) 2019 C.O.ADD.210 244

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PROJ. NO.

DIST. NO.

After the ducts are installed, but prior to concrete encasement, a

ducts shall be capped to prevent entry of foreign material during

construction and at the completion of installation. Recommended

mandrel with a square front not less than 12 inches long and having a

diameter of 1/4 inch less than the inside diameter of the duct, 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

mandrels and brushes are made by General Machine Products Co. (GMP),

Trevose, PA (phone: 215-357-5500). Recommended GMP part number

(brush for 4 inch conduit) 2 inch ducts will require cleaning using rags.

All empty ducts and conduits shall have an #1800 polyester mule-tape

length with 2 feet of slack in manholes and handholes, and 1 foot of

slack in pullboxes. The mule-tape shall be rated for 1800 lbs. of pull

mule-tape is available in 3,000 feet, 6,500 feet and 10,000 feet reels.

footage markings. Using the Neptco mule-tape, the Contractor shall

be marked on the record prints and submitted to HT Inspector for

Be installed in the shortest and straightest possible run.

Have no section longer than 100 feet nor contain more than two

90-degree bends. An approved sized junction box or gutter box

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

Metallic entrance conduits shall be grounded.

shall be placed if this is exceeded.

THESE PLANS HAVE BEEN PREPARED UTILIZING

THE UPDATED CONSTRUCTION INFORMATION DEPICTED

COMPLETENESS. NO REPRESENTATION IS BEING MADE

EREIN HAS NOT BEEN VERIFIED FOR ACCURACY AND

All conduits within a building shall:

the conduit.

TO ITS VALIDITY.

measure at least one duct of a common duct run. The distance shall

(Neptco WP1800P, HT code no. 571154) installed through one entire

and have footage markers for measuring duct lengths. The Neptco

The Neptco mule-tape is prelubricated and printed with sequential

8182-4R (test mandrel for 4 inch conduit), and part number 17094

pulled through each duct after which a brush with stiff bristles shall be

Kuhio Highway Short-Term Improvements Kuamoo Road to Temporary Bypass Road Fed. Aid Proj. No. NH-056-1(50) Date: July 2019 Scale: None

SHEET No. E-3 OF 37 SHEETS

Should it become necessary to relocate any HT facilities, the work shall

been approved by HT.

- Conduits from utility boxes to the individual lots shall be considered
- 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.
- The Contractor shall place 8-mil, 4 inch wide warning tape, orange in color with a black imprinted message "WARNING - STOP DIGGING - CALL HT, COMMUNICATIONS CABLE BURIED BELOW, FAILURE TO COMPLY COULD RESULT IN LEGAL ACTION", 12 inchs above the duct or concrete jacket for the entire length of all duct installations. See HT 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'). Equivalent tapes are acceptable.

APPROVED:

Date Hawaiian Telcom

DATE

SPECTRUM CONSTRUCTION NOTES:

- The Contractor shall procure and pay for all licenses and permits and shall give all notices necessary and incident to the due and lawful prosecution of the work.
- The locations of existing utilities are approximate only. The Contractor shall verify their locations and shall be responsible for any damages to these utilities as a result of his operations. Adjustments to the new ductline alignment, if required, shall be made to provide the required clearances.
- The Contractor shall sawcut A.C. pavement, concrete gutter, and concrete sidewalk wherever new manholes, handholes, pullboxes or ductlines are to be placed and shall restore to existing condition or better.
- The Contractor, at his own expense, shall keep the project and surrounding area free from dust nuisance. The cost for supplementary measures, which will be required by the State, shall be borne by the Contractor.
- Prior to the excavation of the ductline, the Contractor shall request that Spectrum to locate existing ductline wherever required.
- 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 Spectrum inspector or his representative.
- The Contractor shall notify the Spectrum Inspector 48 hours prior to the pouring of concrete or backfilling.
- Wherever connections to existing utilities are shown on the plans, the Contractor shall expose the existing lines prior to excavation of the main trenches to verify their locations and depths.
- Contractor shall provide all materials and furnish all labor and equipment necessary to install the ductline in place complete.
- The Contractor shall be responsible for laying out all required lines and grades and shall preserve all bench marks and working points necessary to lay out the work correctly. The new ductline shall be adjusted by the Contractor to suit the existing conditions and the details as described in the plans.
- The Contractor, at his own expense, shall keep the project area free from dust nuisance. The work shall be in conformance with the Air Pollution Control Standards and Regulations of the State of Hawaii, Department of Health.
- 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.
- The Contractor shall obtain excavation permit clearance from Spectrum's Engineering Section.
- For any field assistance or verification of CATV facilities, the Contractor shall call Josh Martin at 855-2621.

- Any work required to relocate CATV facilities shall be done by Spectrum and the Contractor shall be responsible for all coordination requirements and associated costs.
- Any damage to Spectrum's Facilities shall be reported to Spectrum's Repair Dispatch Department.
- 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.
- All existing improvements that are disturbed during the construction phase shall be restored to its original or better condition at no cost to the State in accordance with State's standards.
- 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 Spectrum and paid for by the Contractor.
- Coordinate all penetration of telephone pullboxes with Hawaiian Telcom Inspector.
- 21. Smooth finish inside wall of existing pullboxes and handholes to its original condition or better.
- The Contractor shall install Neptco WP1800 muletape or approved equal in all ductlines, leave muletape in place for future use as a pull or fish line, unless otherwise noted. Reference GTE Material Code No. 571154. All ducts shall be capped to prevent entry of foreign material during construction and at completion of installation.
- 23. The Contractor shall place poly cord through out project, and secure in manholes, handholes, and pullboxes.
- 24. Penetration into pullboxes if necessary to be from factory installed opening or from bricks position. Penetration from pullbox walls is not acceptable.
- A minimum of (2) precast sections must be used on all 2×4 or 2 x 6 pullboxes.
- Two 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.
- At no time shall cement mortar, wood, or any other material be used between precast sections. Leveling or raising of boxes to grade must be done at brickwork section using cement mortar. The permanent installation of wooden wedges to accomplish this purpose will not be accepted.
- Concrete precast base may be used as an alternative to bricks.
- Trenching to be by hand digging near and across existing utility lines.

LEGEND FOR AS-BUILT POSTINGS Squiggly line for as-built deletion

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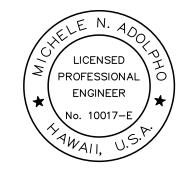
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Date Spectrum

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
KAUA 'I	HAW.	NH-056-1(50)	2019	C.O.ADD.211	244

- Minimum clearance between street light standards and fire hydrants shall be three feet.
- 31. Underground utilities shown hereon is for information only. No guarantee is made on the accuracy or completeness of said installation.
- 32. For underground cable locating and marking, five working days advance notice is required. Three working days advance notice is required for any inspection by a designated representative. Contractor shall take necessary precaution not to damage any existing cables or ducts. Spectrum'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 Spectrum's facilities.
- 33. Concrete strength shall be 3,000 psi in 28 days.
- Bends in the duct alignment, due to changes in grade shall have a minimum radius of 20-feet. All 90-degree C-bends at a pole or at the building floor slab penetration, shall have a bend radius of ten times the diameter of the duct or greater.
- 35. After ductline has been completed, a mandrel with a square front not less than 12-inch long and having a diameter of 1/4-inch less than the inside diameter of 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 inside. Ducts shall be completely dry and clean.
- 36. All construction must be inspected and approved by Spectrum prior to the installation of any of its facilities and the energizing of its system.
- 37. Contractor and/or customer shall provide Spectrum with sufficient installation time in their occupancy time table.
- 38. Install 4-mil. thick orange color warning tape 3-inch wide, entire length of trench when placing CATV conduits. Tape should read "CAUTION BURIED" CABLE LINE BELOW". Manufactured by Harris Industries, Inc., Catalog Number UT-43 or equivalent tape. Tape to be installed 12-inches above ductline.

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DEPARTMENT OF TRANSPORTATION

SPECTRUM CONSTRUCTION NOTES

Kuhio Highway Short-Term Improvements Kuamoo Road to Temporary Bypass Road Fed. Aid Proj. No. NH-056-1(50)

Scale: None Date: July 2019

> SHEET No. E-4 OF 37 SHEETS C.O.ADD.211

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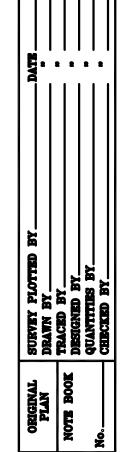
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HIGHWAY LIGHTING NOTES:

- The Contractor shall notify the State Highways, Highway Lighting and Traffic Supervisor 72 hours in advance before commencing installation of highway lighting system.
- 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. Coordinate and schedule work with KIUC.
- Final acceptance and inspection will be undertaken only after all work has been completed. Street light provided and wired by KIUC.
- Contractor shall trim tree branches to clear removal or installation of highway luminaires, at no additional cost the State.
- 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. Coordinate with KIUC.

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.

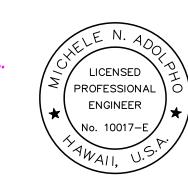
Temporary lighting system shall meet the same design, safety, traffic, etc. requirements as the permanent lighting system.

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

SANDWICH ISLES COMMUNICATIONS, INC (SIC) NOTES:

- The locations of existing utilities are approximate only. The Contractor shall exercise caution and shall maintain proper clearances whenever construction crosses or is in close proximity to Sandwich Isles Communications, Inc. (SIC) facilities.
- Prior to excavating the Contractor shall call into Hawaii's One Call Center and shall comply with Hawaii Revised Statutes Chapter 269E. Contact Hawaii One Call at 1-866-423-7287.
- If required, adjustment shall me made to new construction to provide required clearances from SIC facilities.
- A SIC inspector or designated representative is required to be present during a breakage into or entry into any structure or conduit system that contain SIC facilities. Temporary duct or cable support shall be provided wherever necessary or required by SIC inspector.
- The Contractor shall notify SIC Customer Service at least 72 hours prior to excavation, bracing, or backfilling of SIC facilities. Contact SIC Customer Service at 1-888-995-7274.
- When excavation is adjacent to, above or below SIC facilities, the Contractor shall:
 - Sheet and/or brace the excavation to prevent slides, cave—ins, or settlements to ensure no movement or impact to SIC facilities.
 - Support existing structures and/or facilities with beams, struts, or underpinning while excavating around or beneath them to prevent any movement or impact to SIC facilities.

THESE PLANS HAVE BEEN PREPARED UTILIZING INFORMATION PROVIDED BY THE PROJECT CONTRACTOR THE UPDATED CONSTRUCTION INFORMATION DEPICTED HEREIN HAS NOT BEEN VERIFIED FOR ACCURACY AND COMPLETENESS. NO REPRESENTATION IS BEING MADE TO ITS VALIDITY.



FISCAL YEAR

HAW. NH-056-1(50) 2019 C.O.ADD.212 244

SHEET

NO.

SHEETS

FED. AID

PROJ. NO.

DIST. NO.

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only. No design changes have

STATE OF HAWAI'I DEPARTMENT OF TRANSPORTATION

HIGHWAY LIGHTING AND SIC NOTES

Kuhio Highway Short-Term Improvements Kuamoo Road to Temporary Bypass Road Fed. Aid Proj. No. NH-056-1(50) Scale: None

Date: July 2019 SHEET No. E-5 OF 37 SHEETS

LEGEND FOR AS-BUILT POSTINGS Squiggly line for as-built deletion Double line for as-built deletion

Lt. 0.2 Text for as-built posting

C.O.ADD.212

g.

| 11/12/19 | /3 Reissuing plan for legibility

been made.

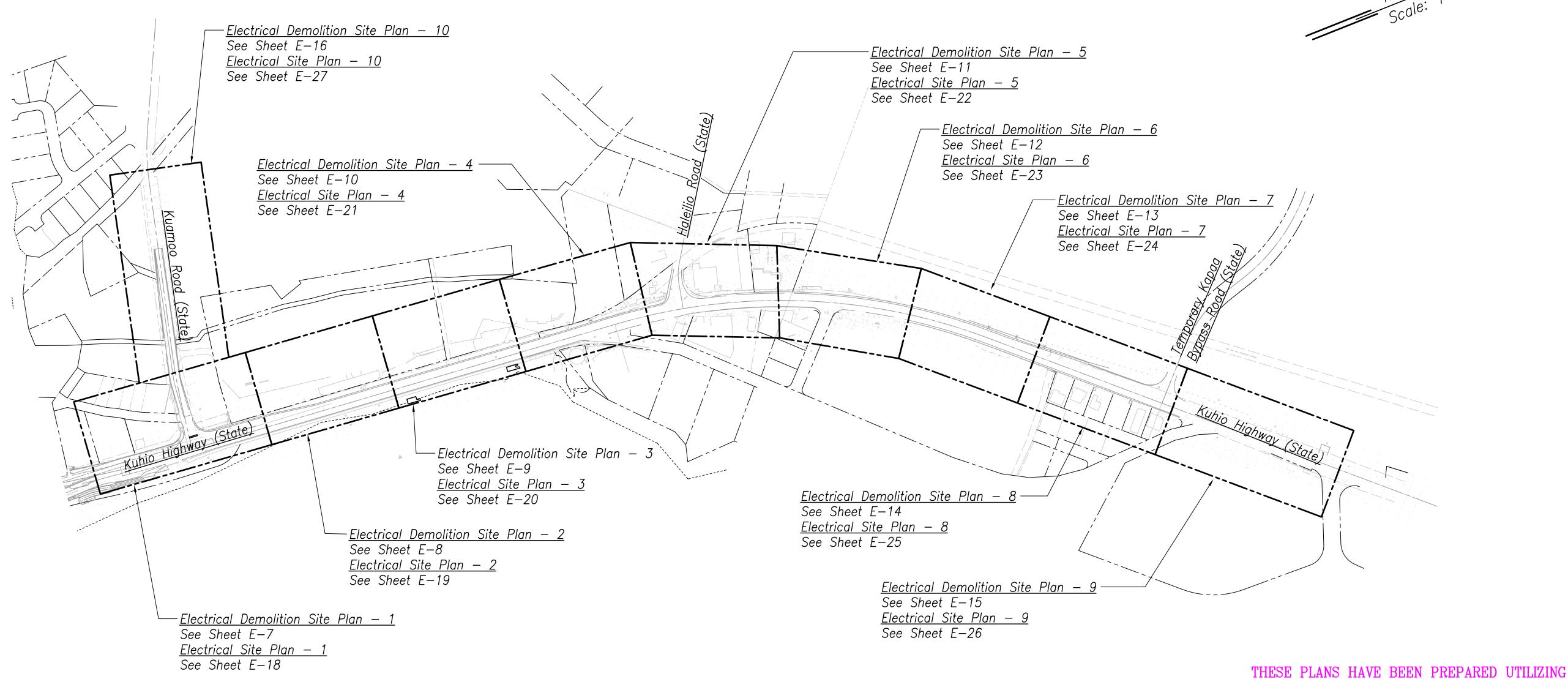
been made.

9/20/19 / Reissuing plan for legibility

only. No design changes have

REVISION

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
KAUA 'I	HAW.	NH-056-1(50)	2019	C.O.ADD.213	244
orth 1"=200°					



LEGEND FOR AS-BUILT POSTINGS

Lt. 0.2 Text for as-built posting

Squiggly line for as-built deletion

Double line for as-built deletion

OVERALL ELECTRICAL SITE PLAN

SCALE: 1" = 200'

11/12/19
| A Reissuing plan for legibility only. No design changes have been made.

9/20/19 | A Reissuing plan for legibility only. No design changes have been made.

DATE

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LICENSED PROFESSIONAL ENGINEER

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STATE OF HAWAI'I
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

INFORMATION PROVIDED BY THE PROJECT CONTRACTOR

COMPLETENESS. NO REPRESENTATION IS BEING MADE

OVERALL ELECTRICAL SITE PLAN

Kuhio Highway Short-Term Improvements
Kuamoo Road to Temporary Bypass Road
Fed. Aid Proj. No. NH-056-1(50)

Scale: 1" = 200' Date: July 2019

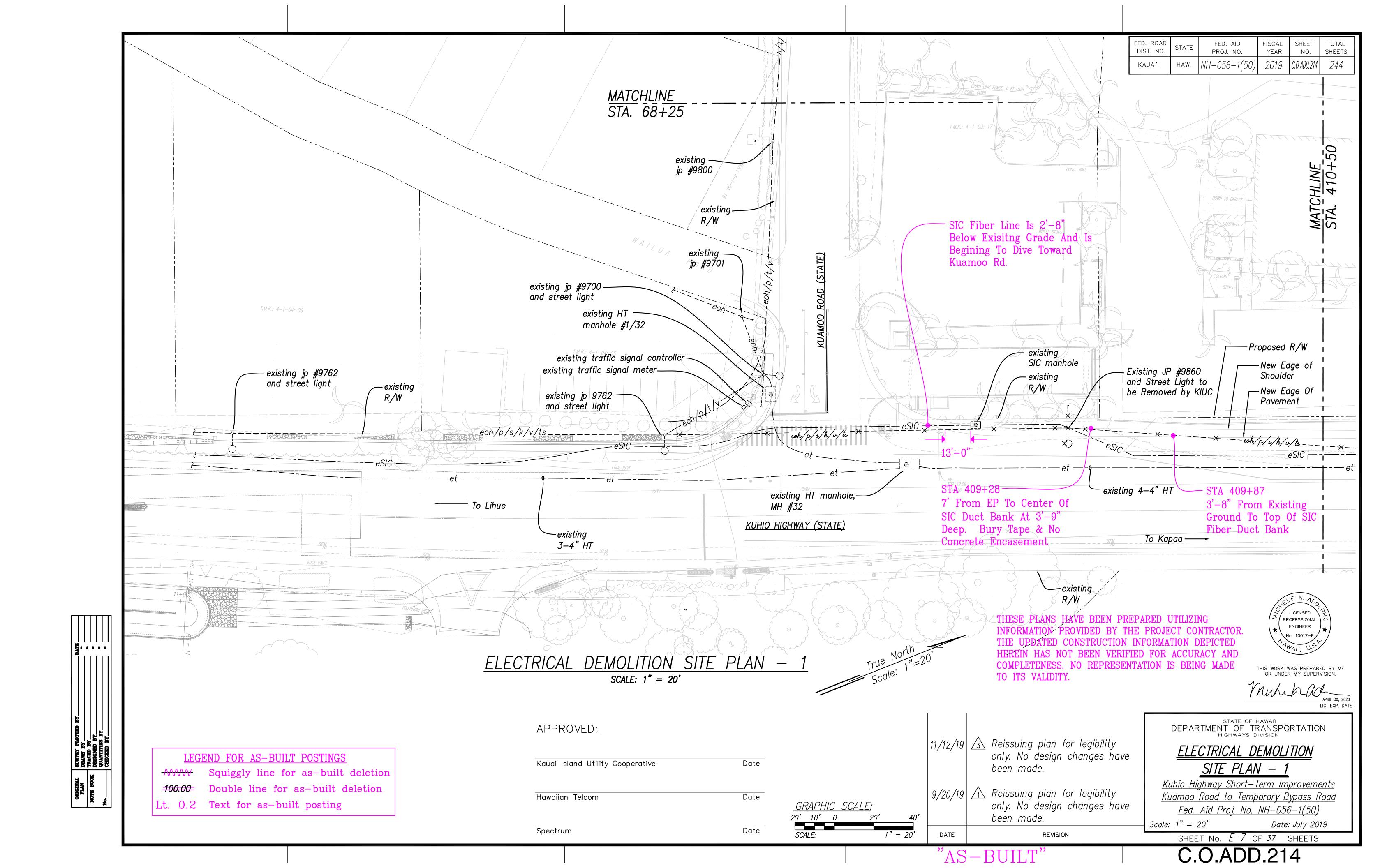
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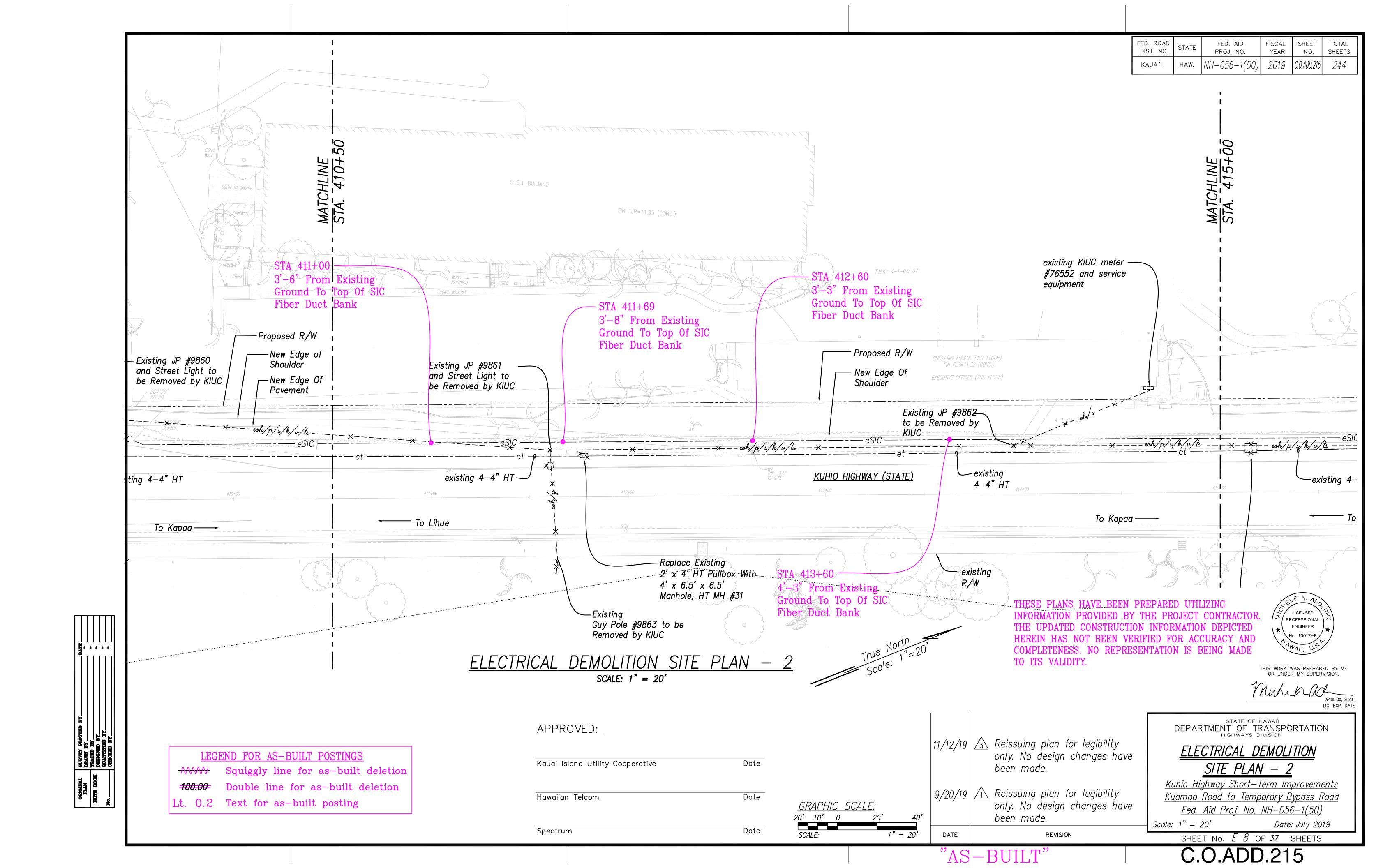
TO ITS VALIDITY.

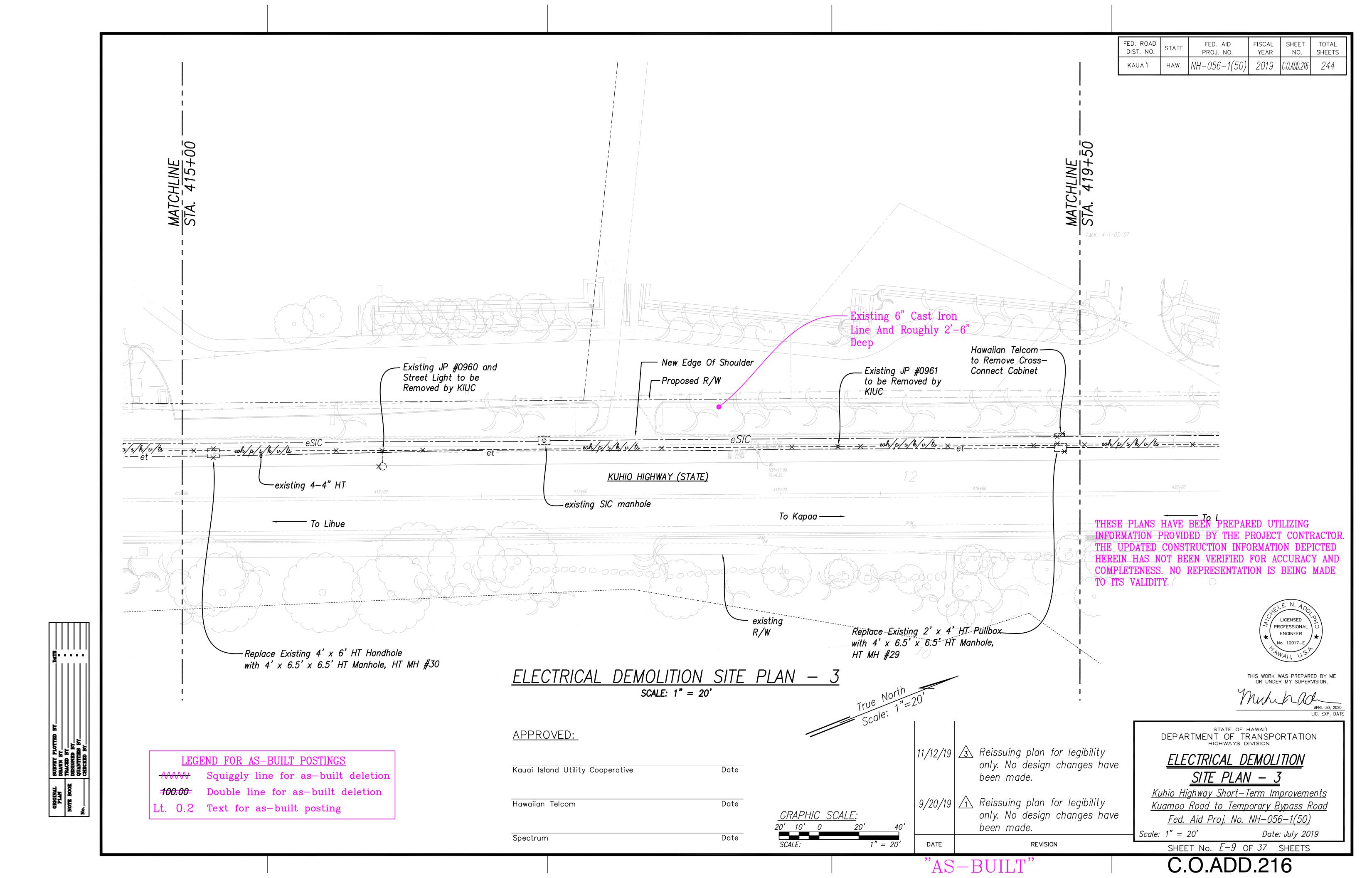
REVISION

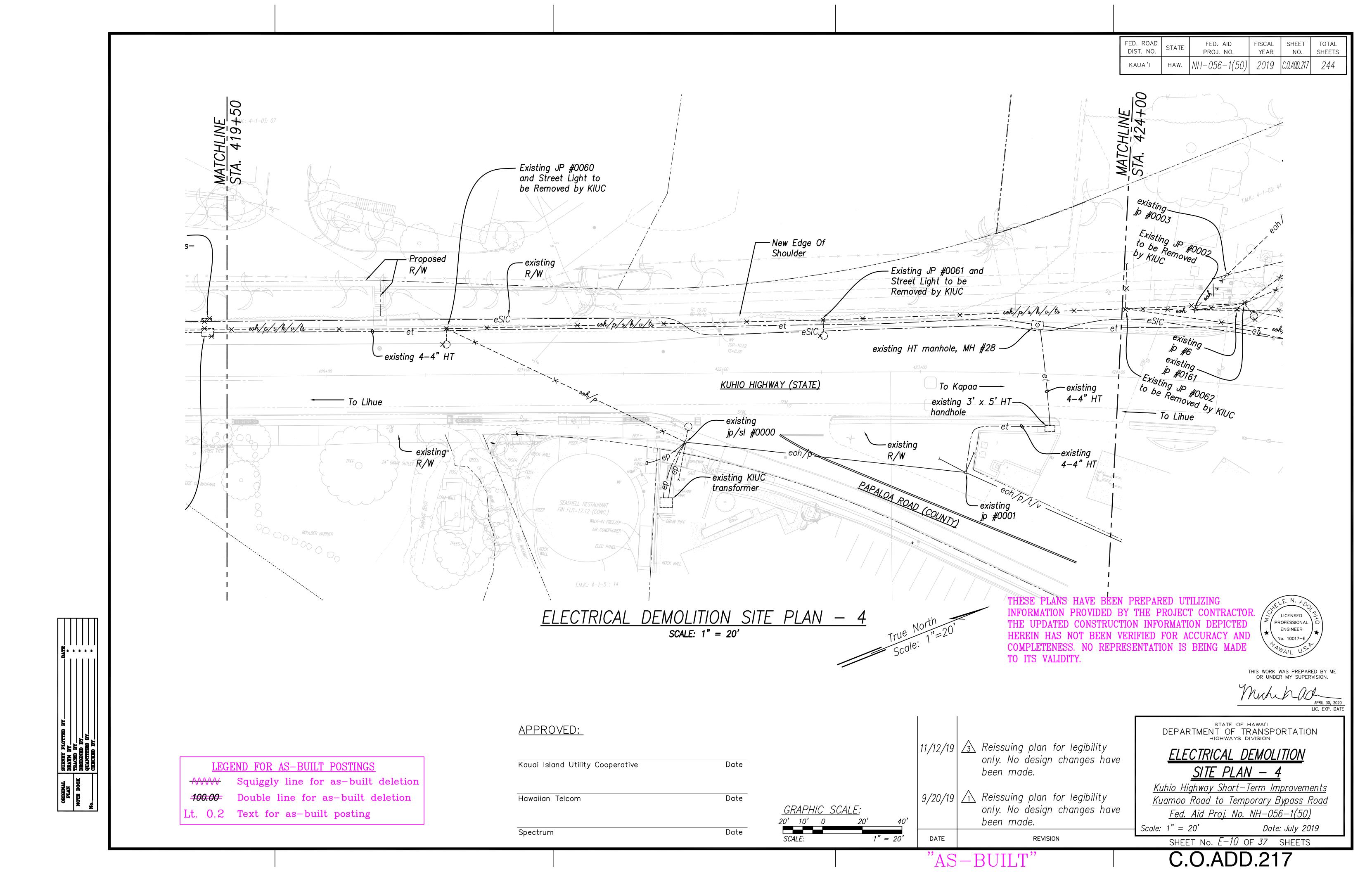
C.O.ADD.213

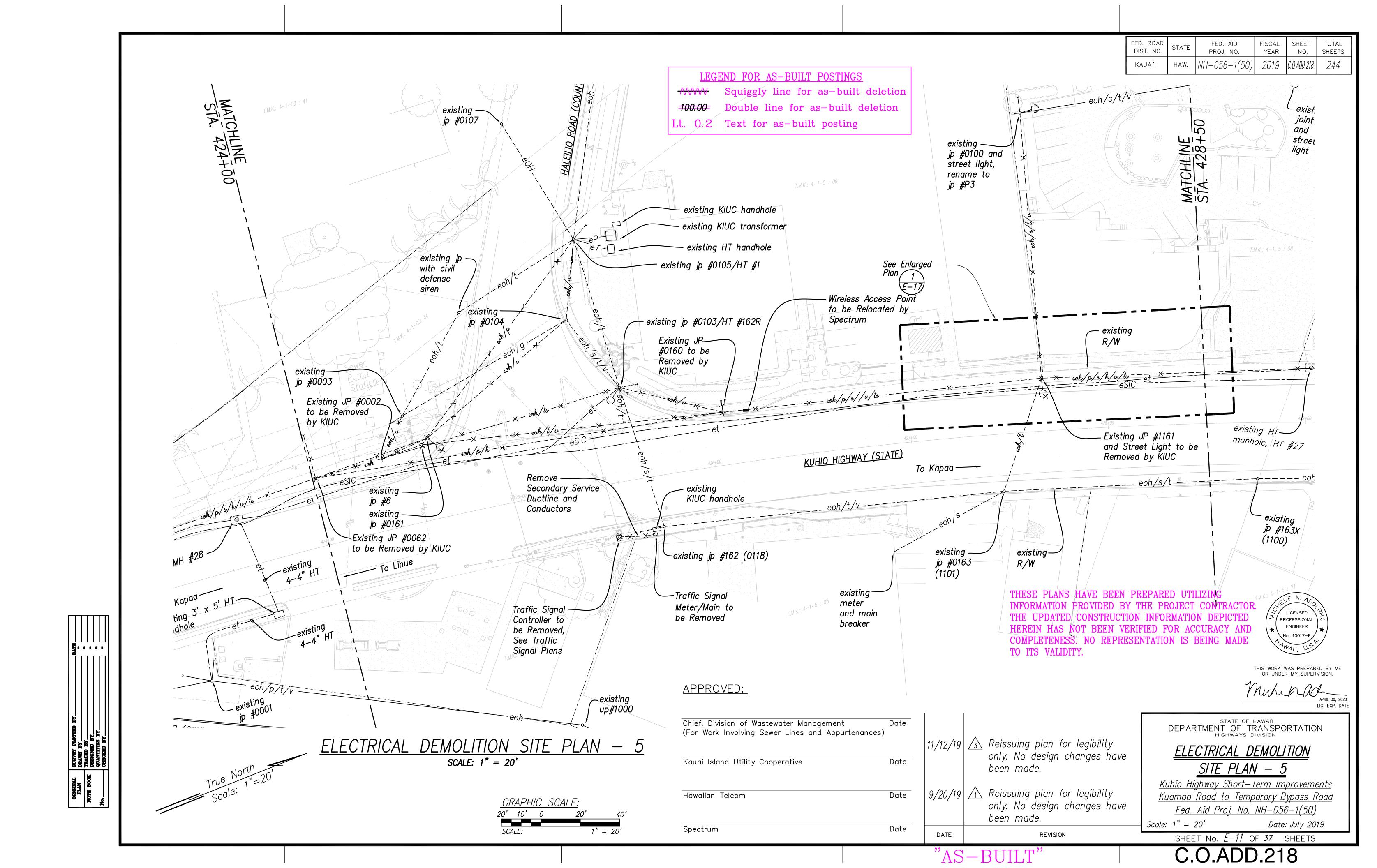
SHEET No. E-6 OF 37 SHEETS

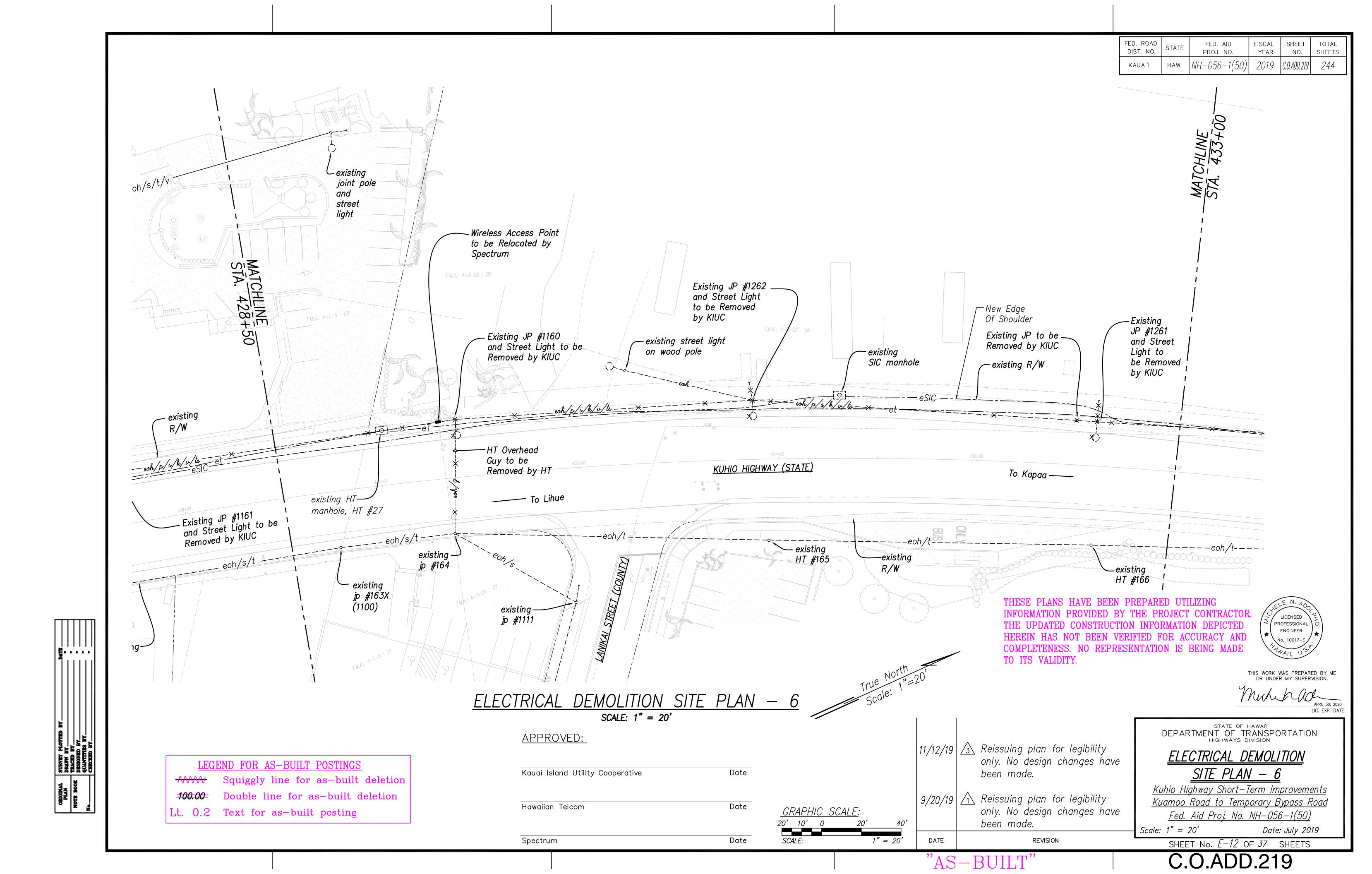


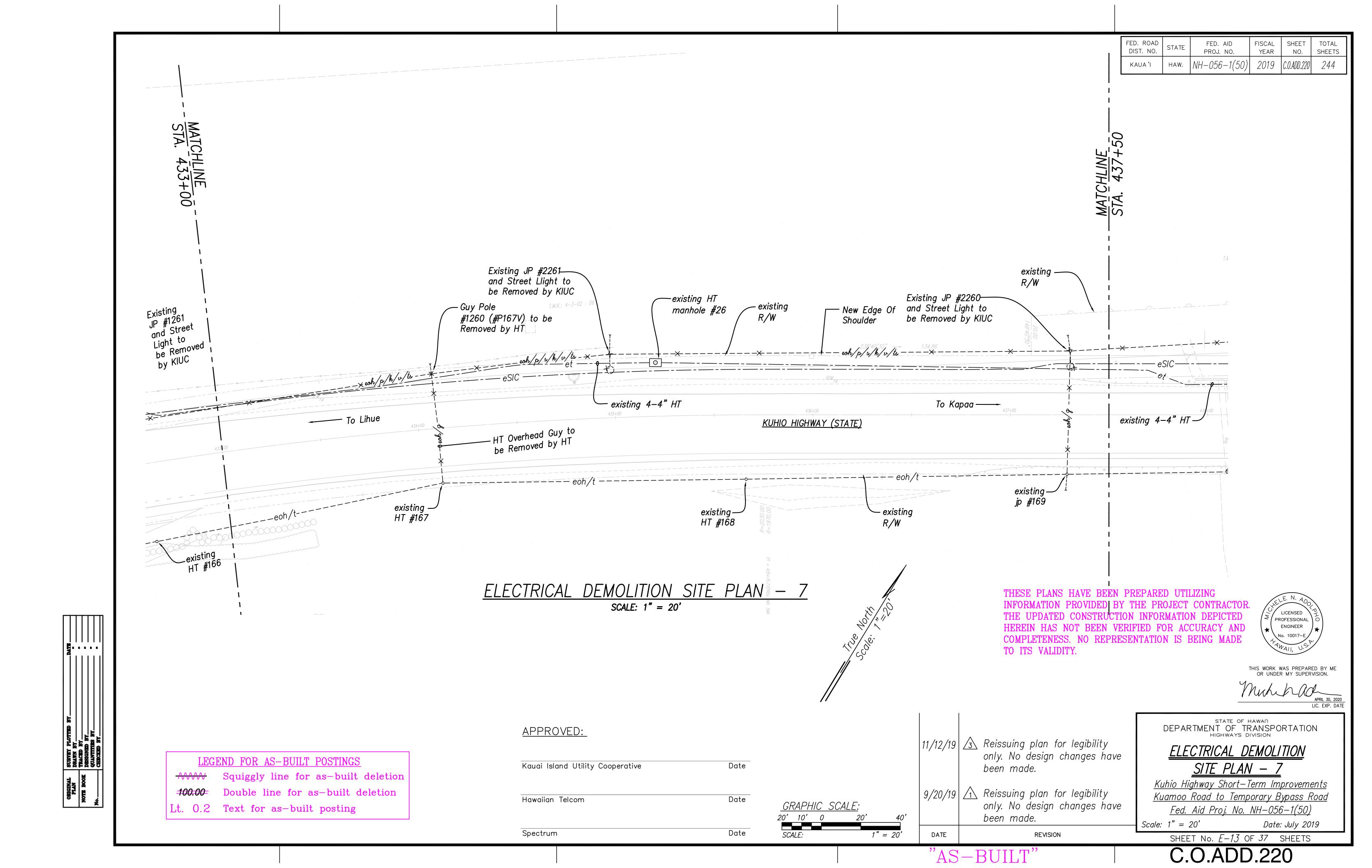


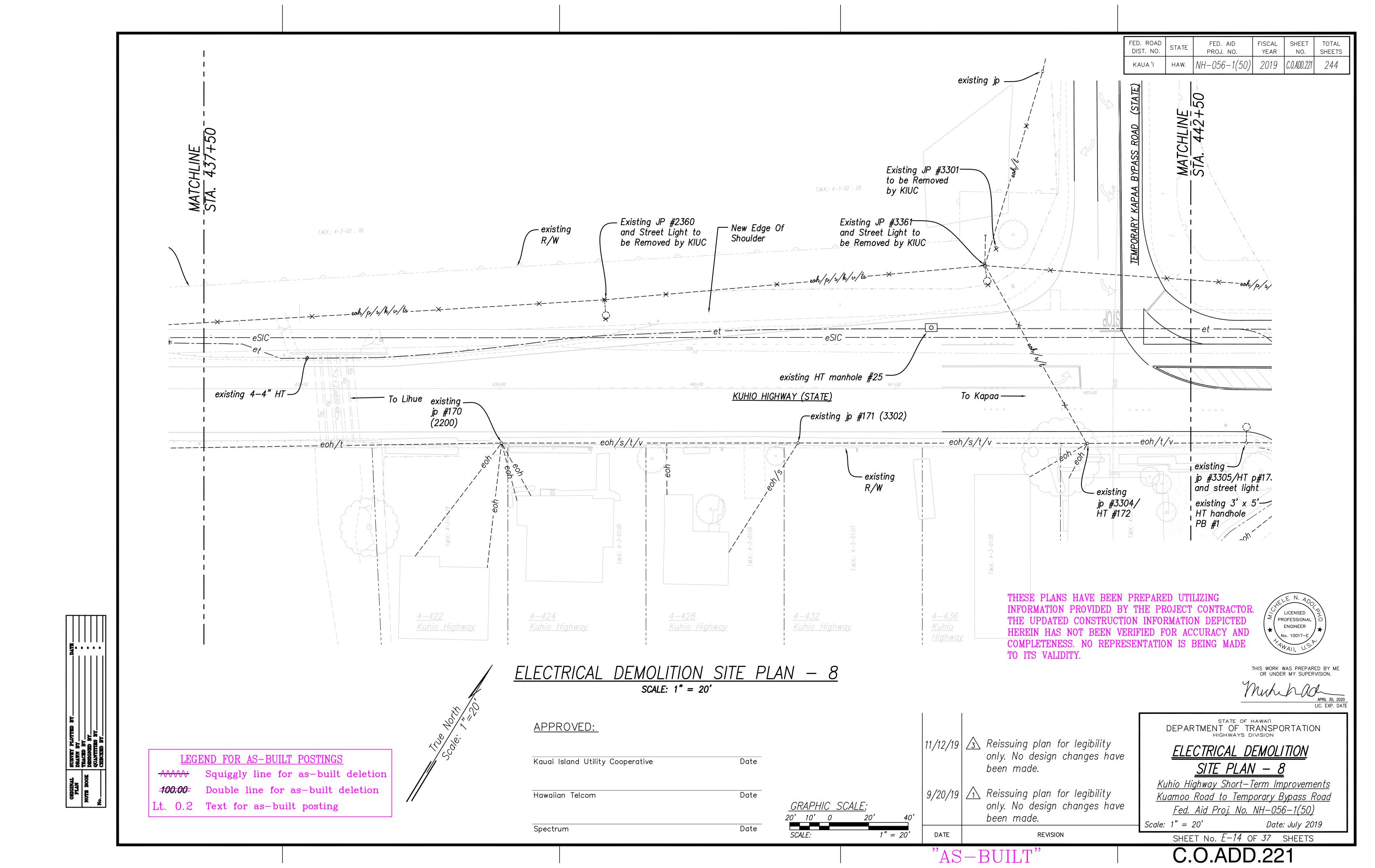


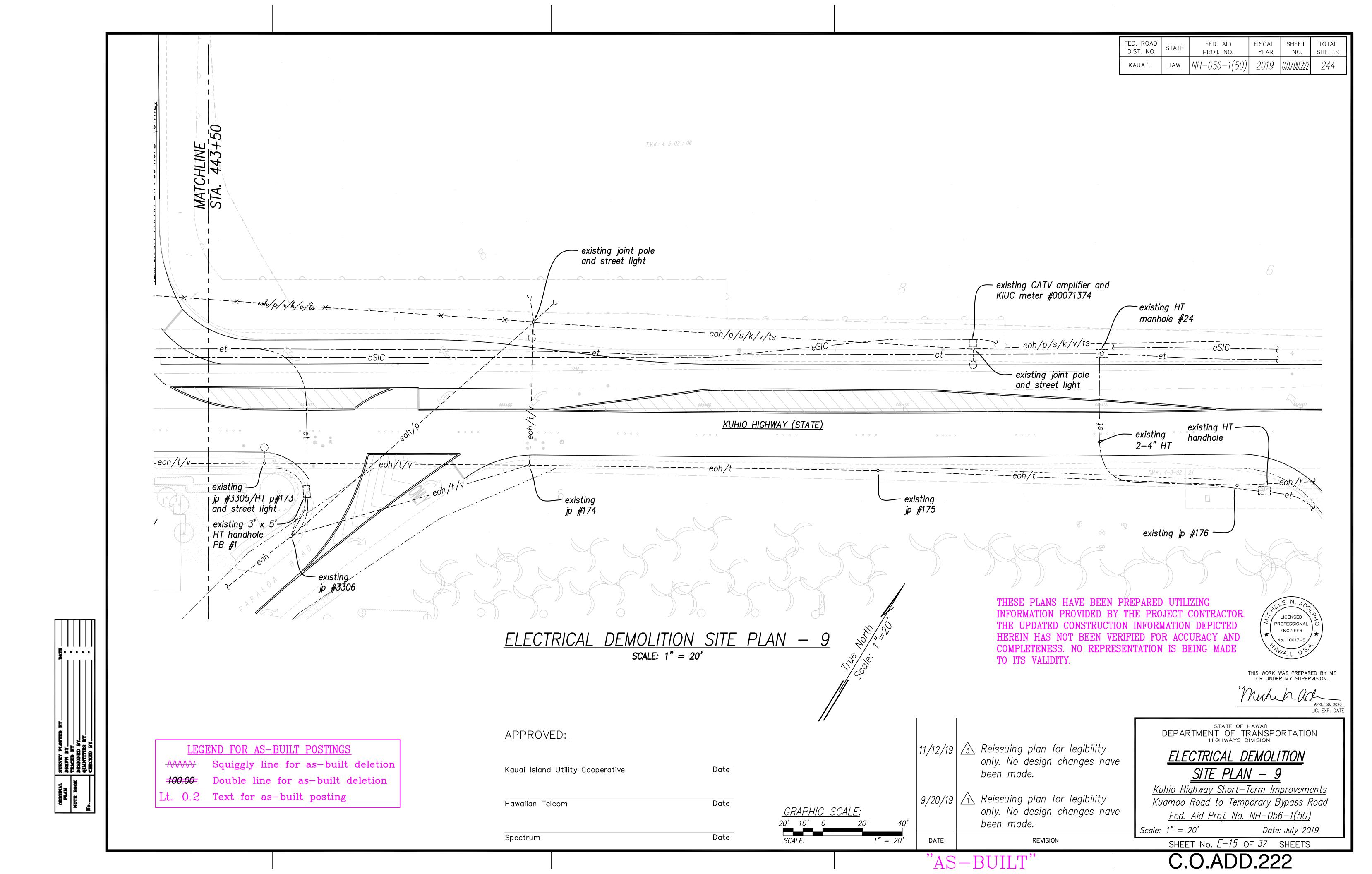


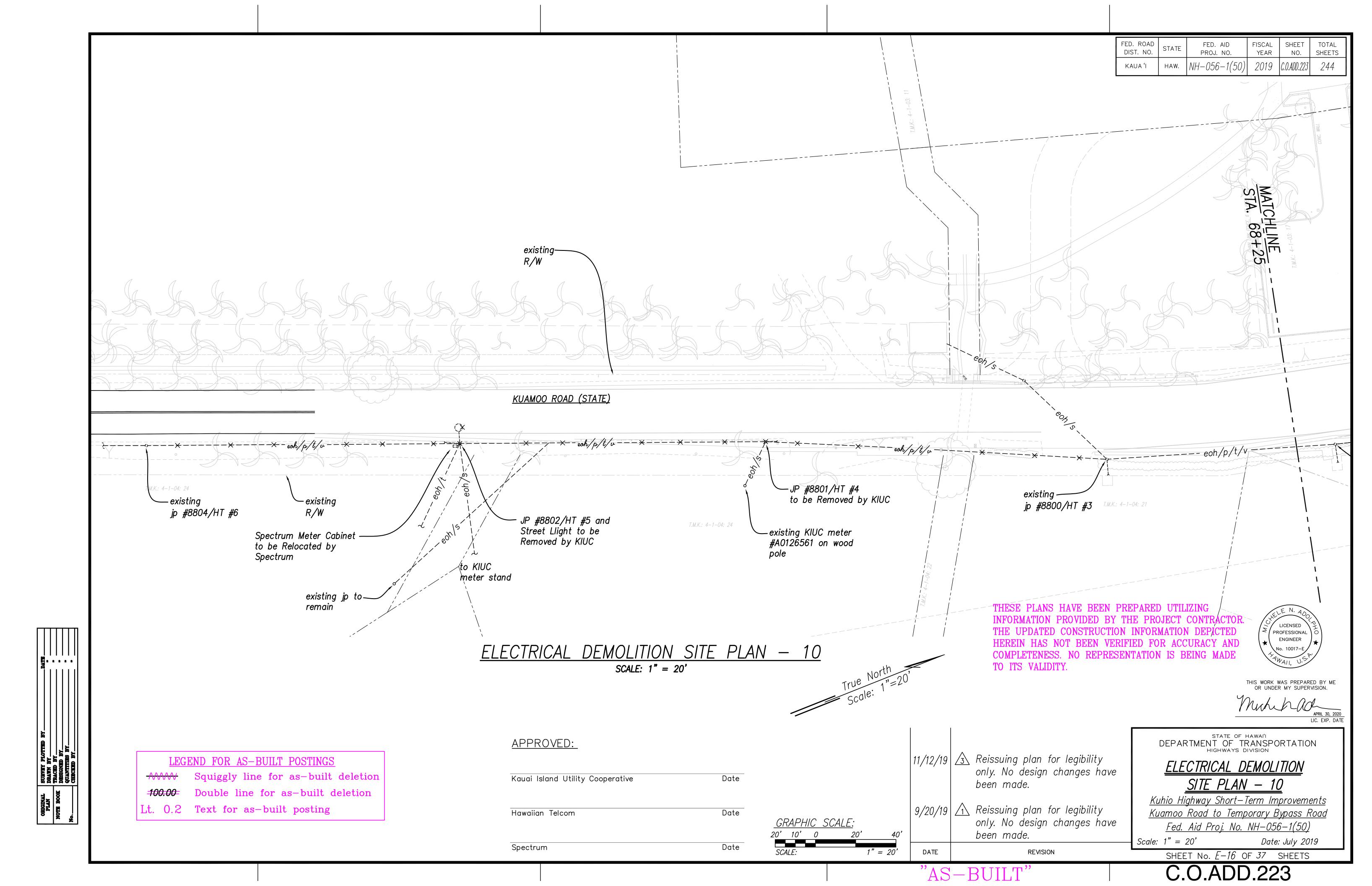




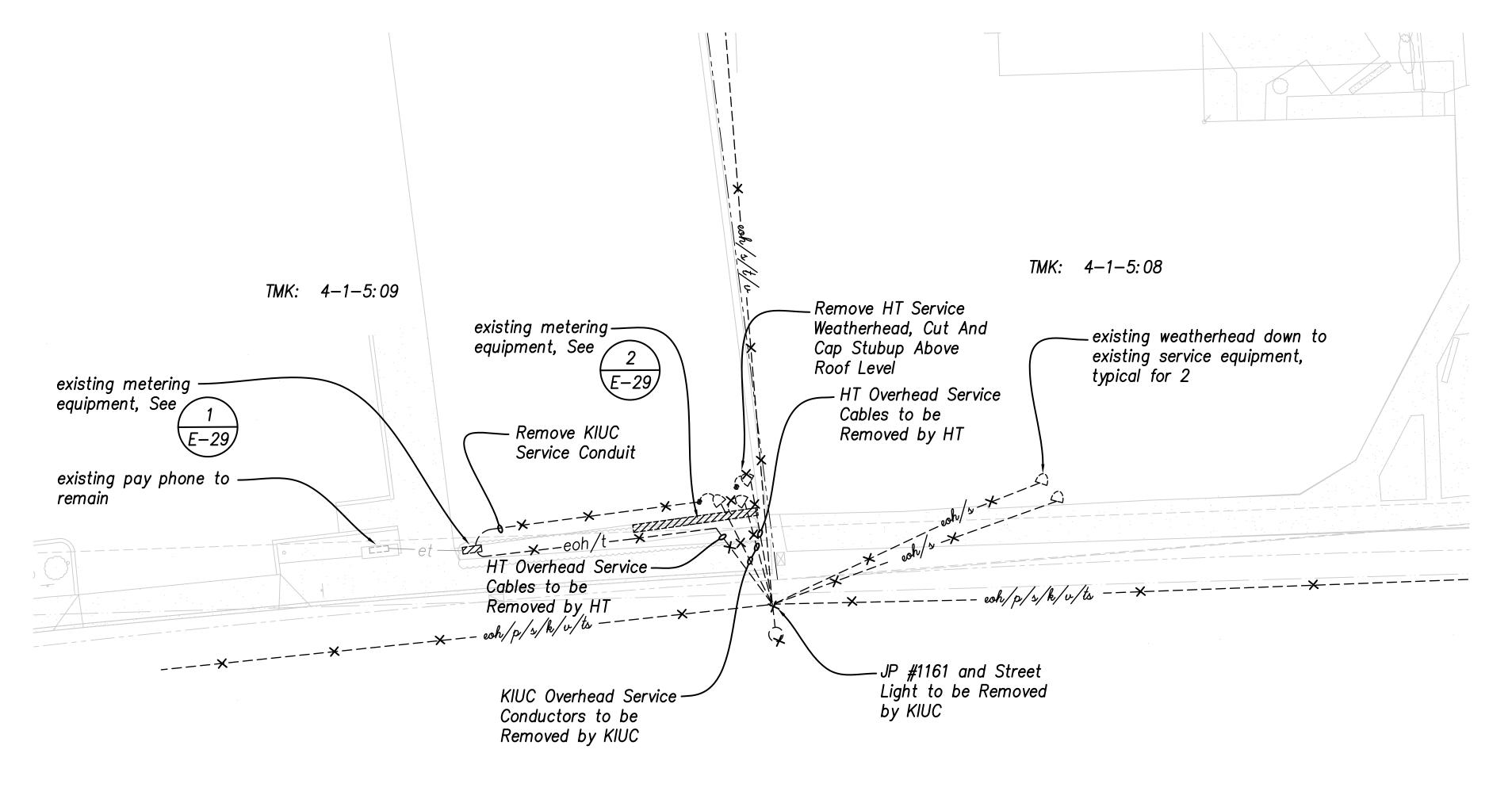








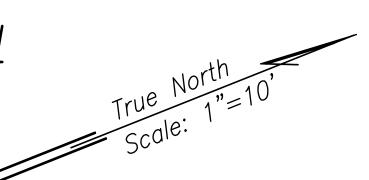
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
KAUA 'I	HAW.	NH-056-1(50)	2019	C.O.ADD.224	244



TO ITS VALIDITY.



Date



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LEGEND FOR AS-BUILT POSTINGS

Squiggly line for as-built deletion Double line for as-built deletion

Lt. 0.2 Text for as-built posting

Kauai Island Utility Cooperative Date Date Hawaiian Telcom

APPROVED:

Spectrum

				11/12/19
	PHIC SC.			9/20/19
1 <u>0'</u>	0	10'	20'	

| 11/12/19 | 🐧 Reissuing plan for legibility; remove HT weatherhead and cables

1 Reissuing plan for legibility only. No design changes have been made.

REVISION

STATE OF HAWAI'I
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION ENLARGED ELECTRICAL

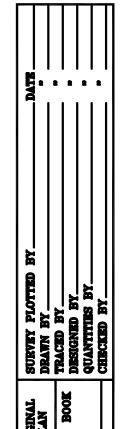
DEMOLITION SITE PLAN Kuhio Highway Short-Term Improvements Kuamoo Road to Temporary Bypass Road

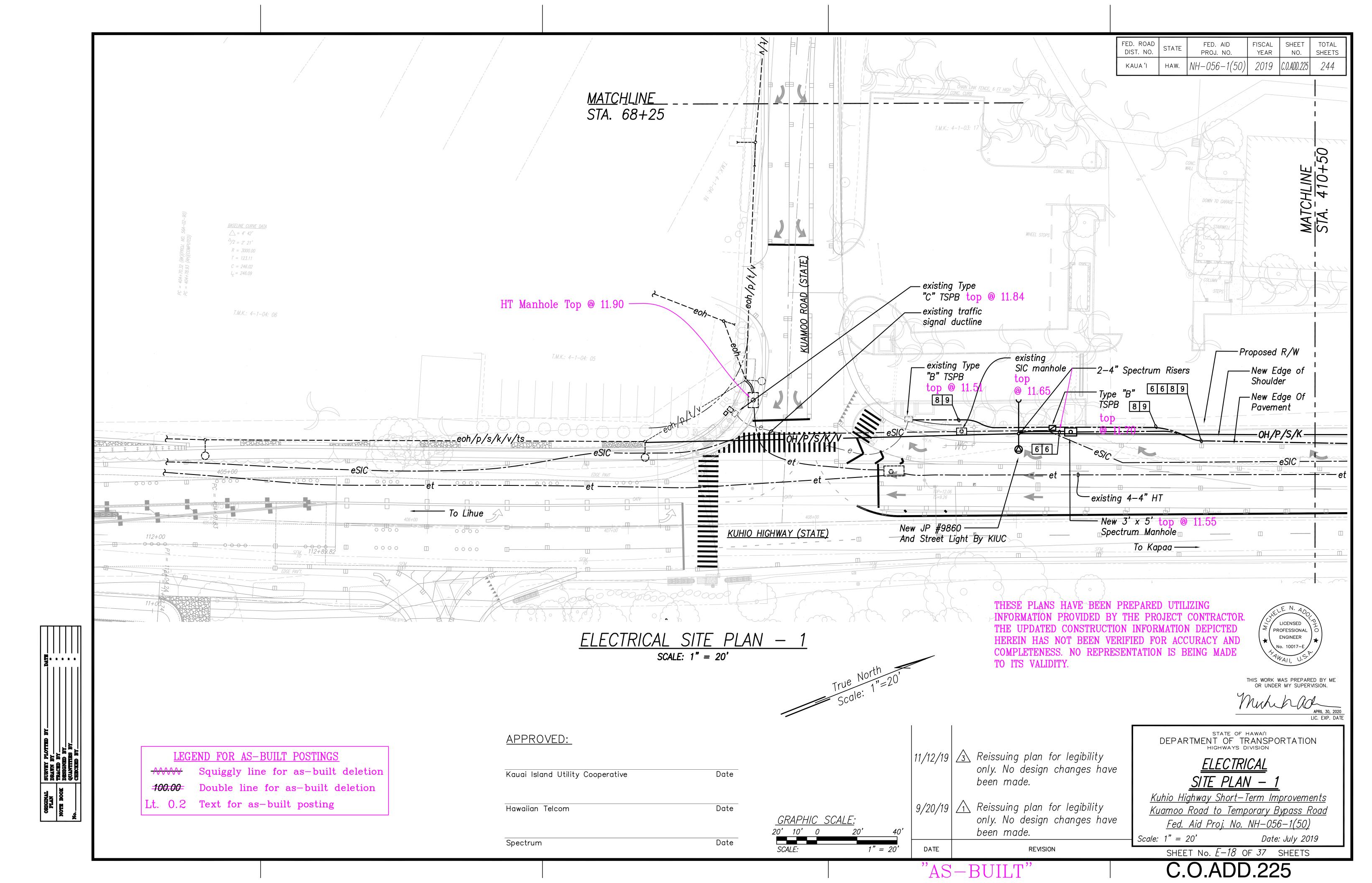
Fed. Aid Proj. No. NH-056-1(50) Scale: 1" = 10' Date: July 2019

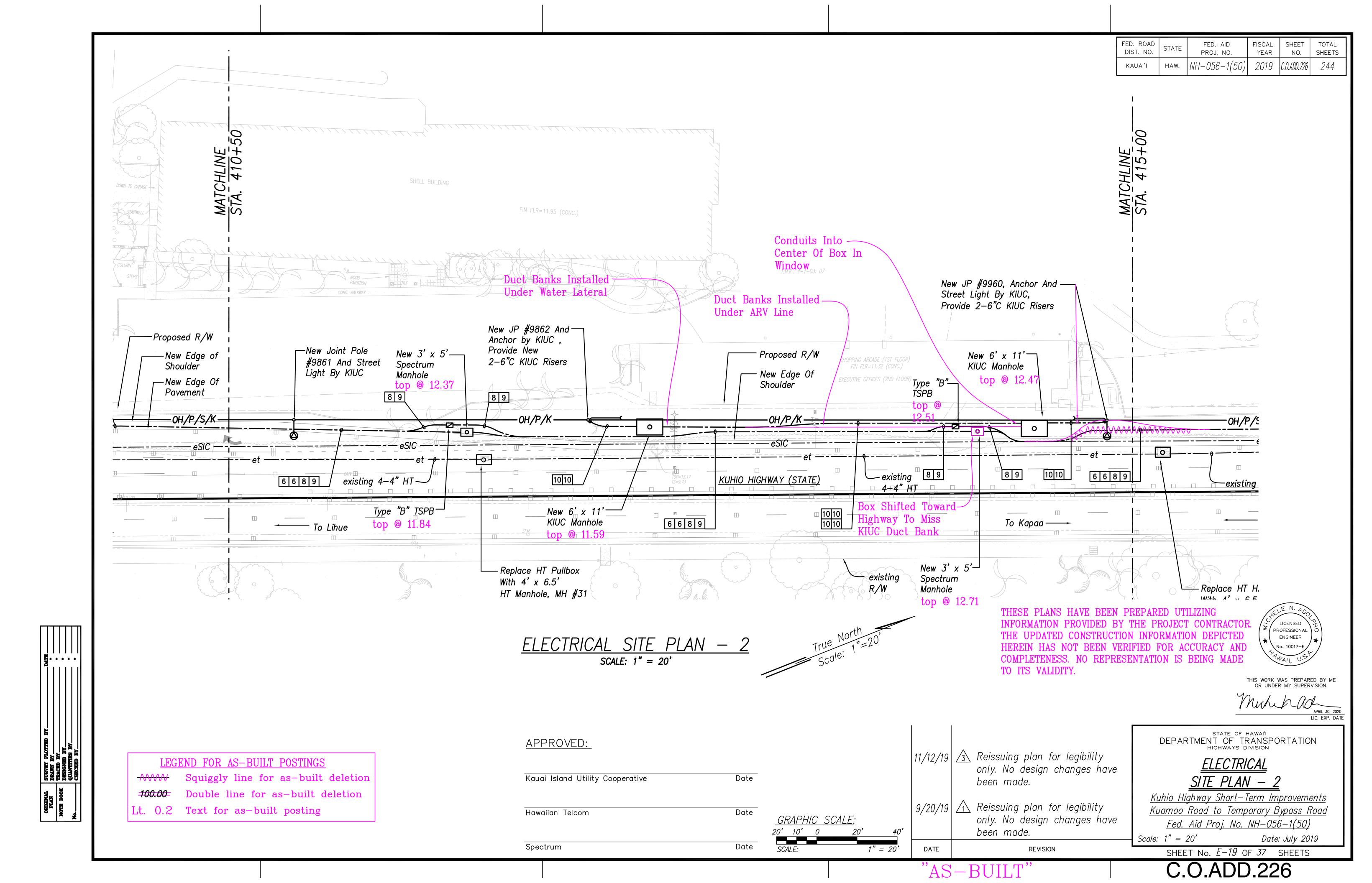
SHEET No. E-17 OF 37 SHEETS

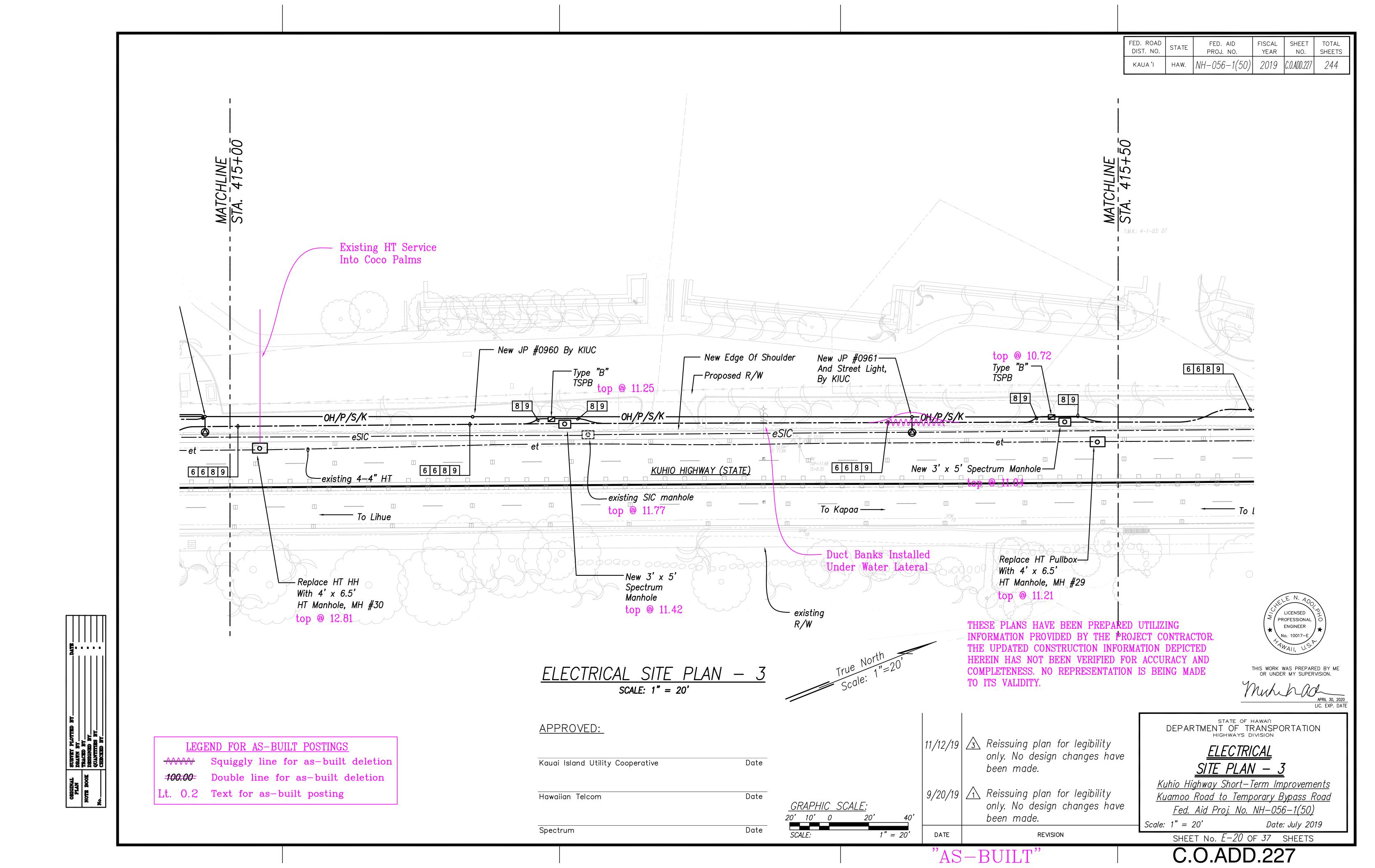


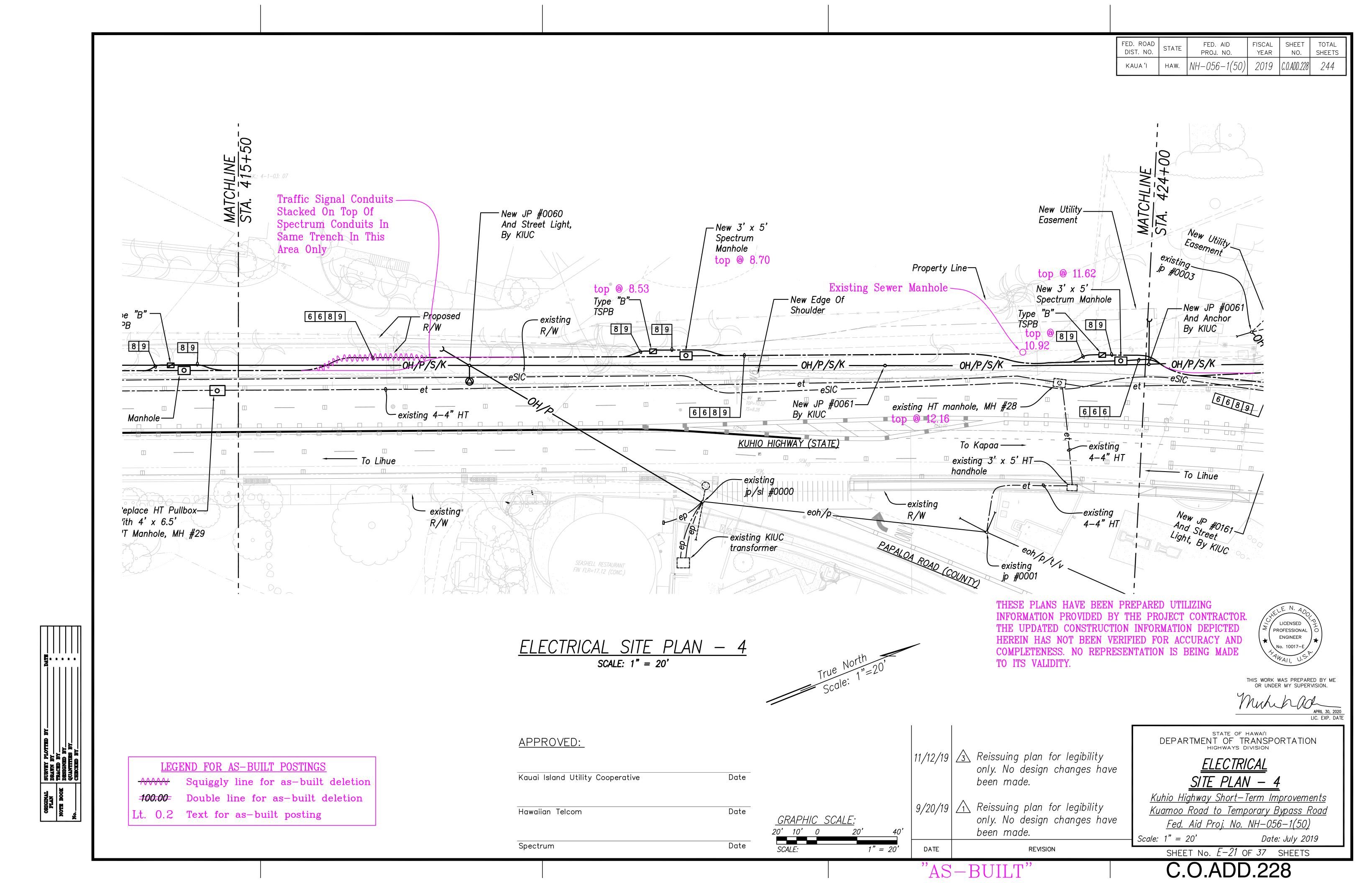
DATE

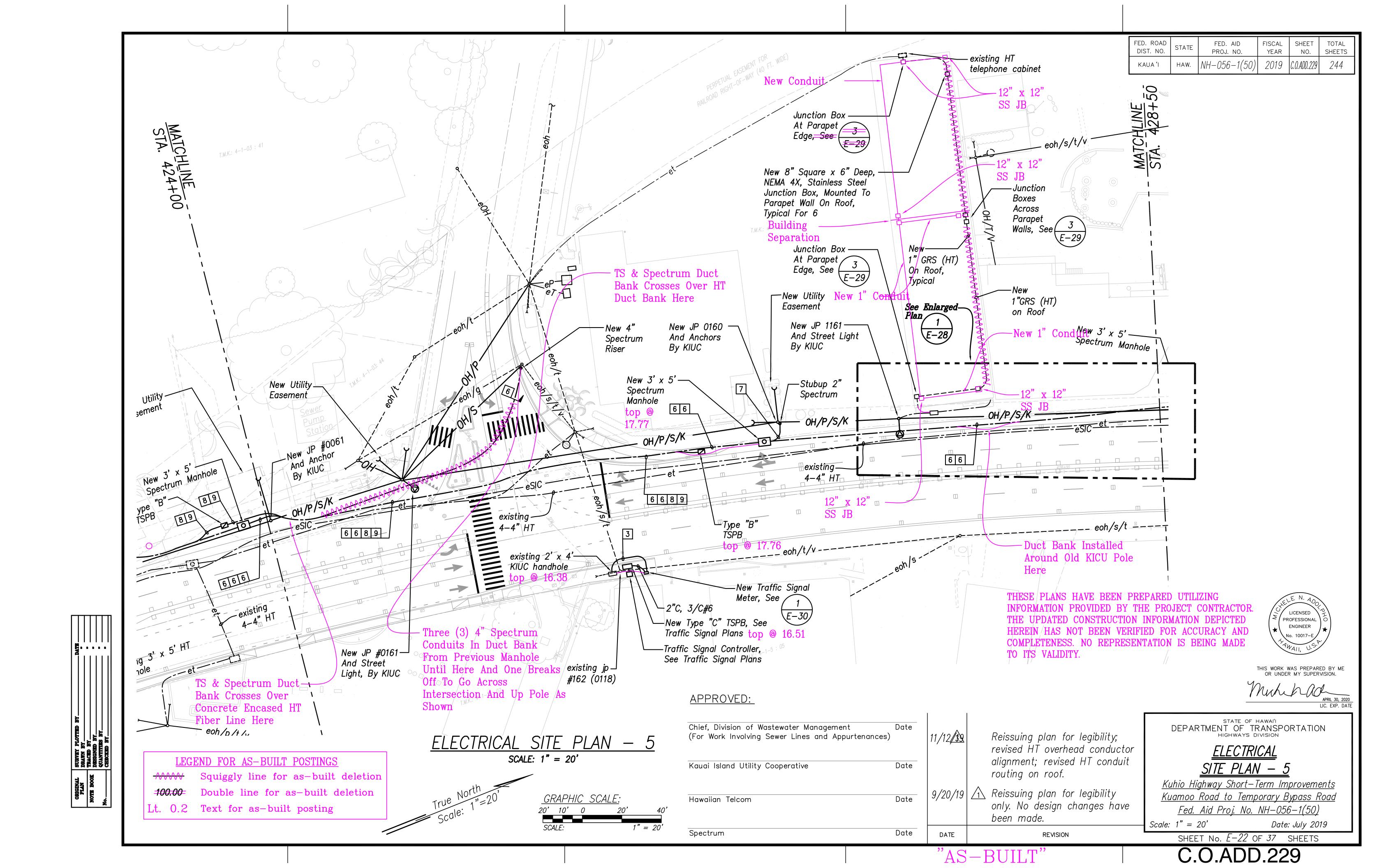


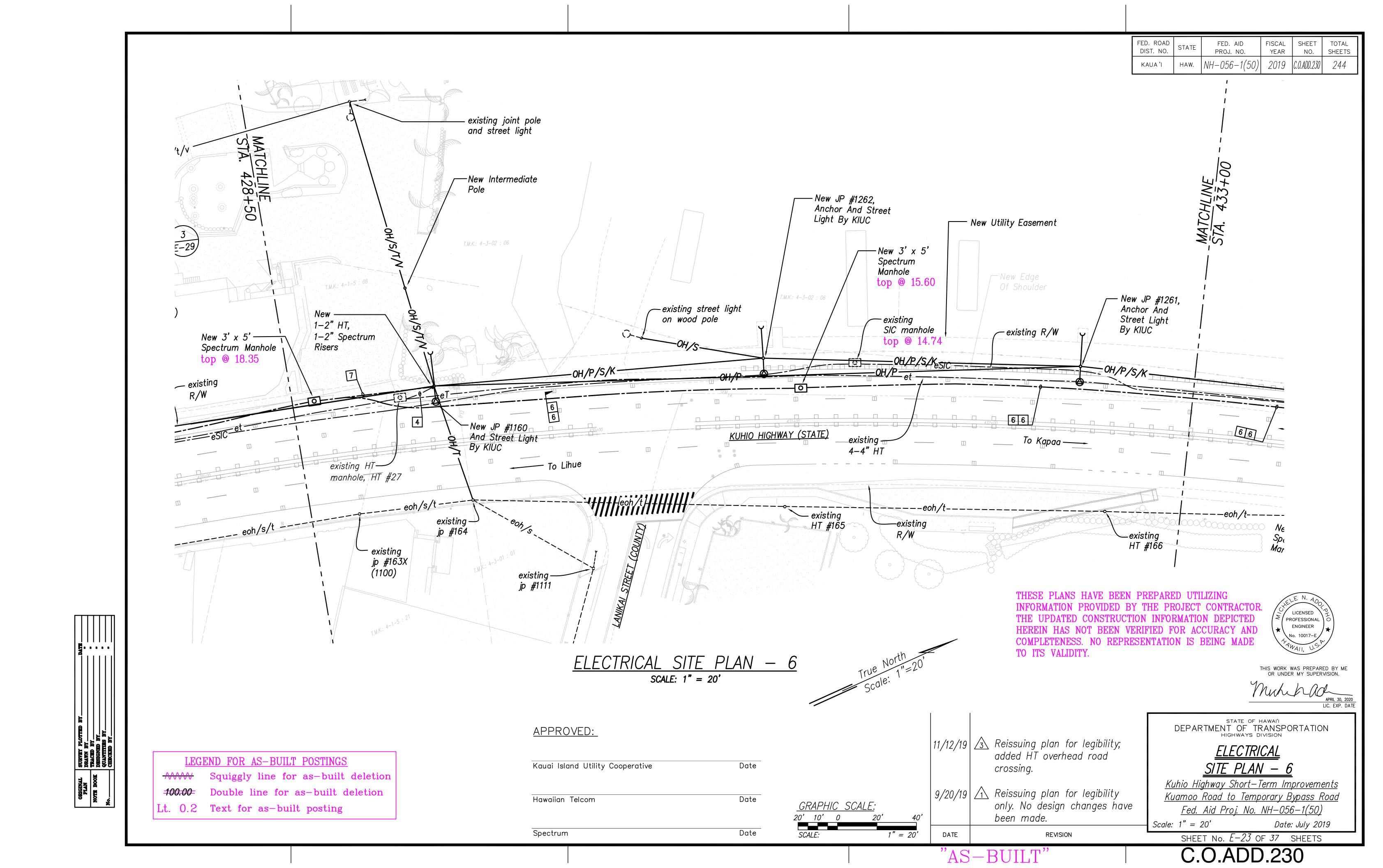


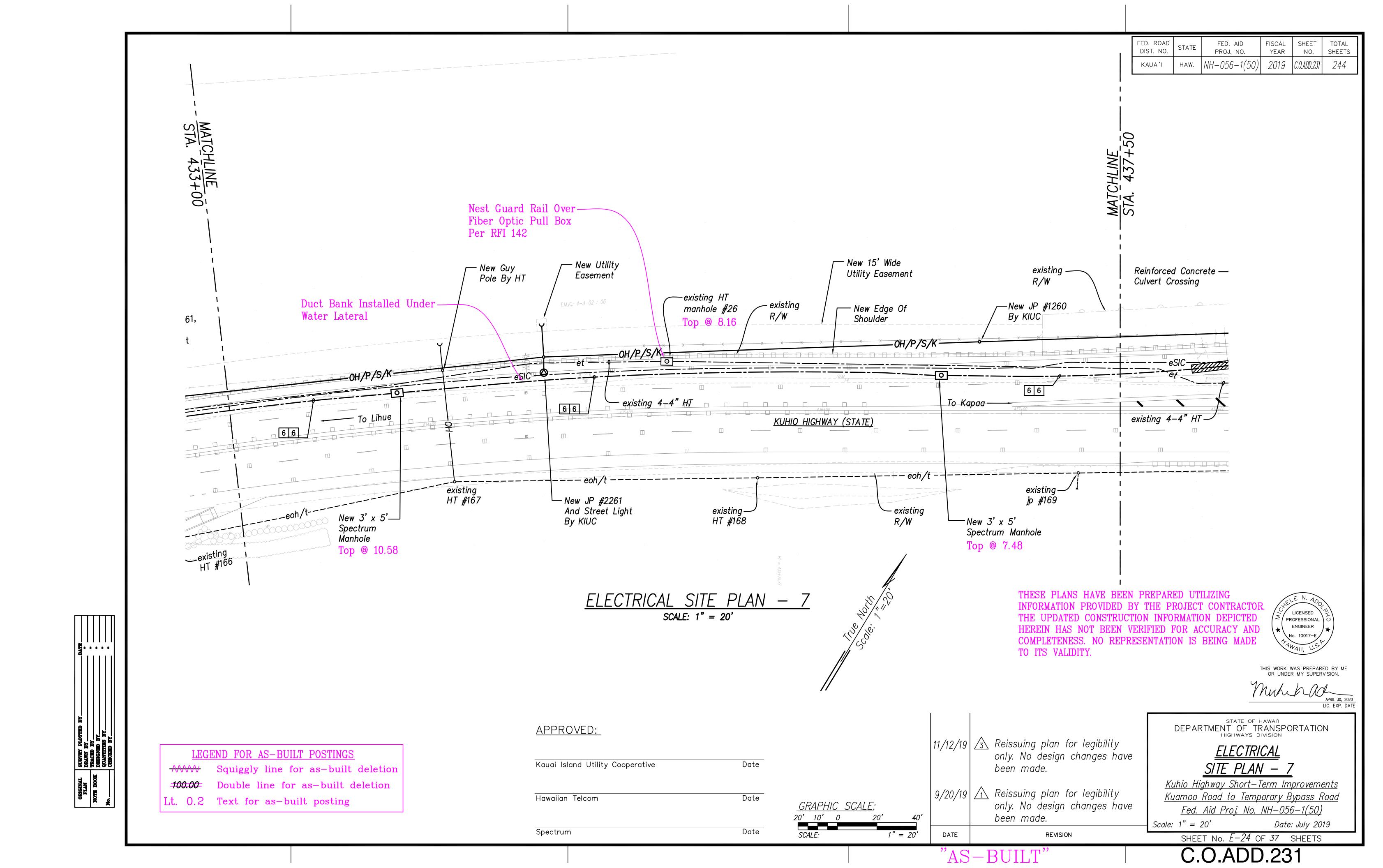


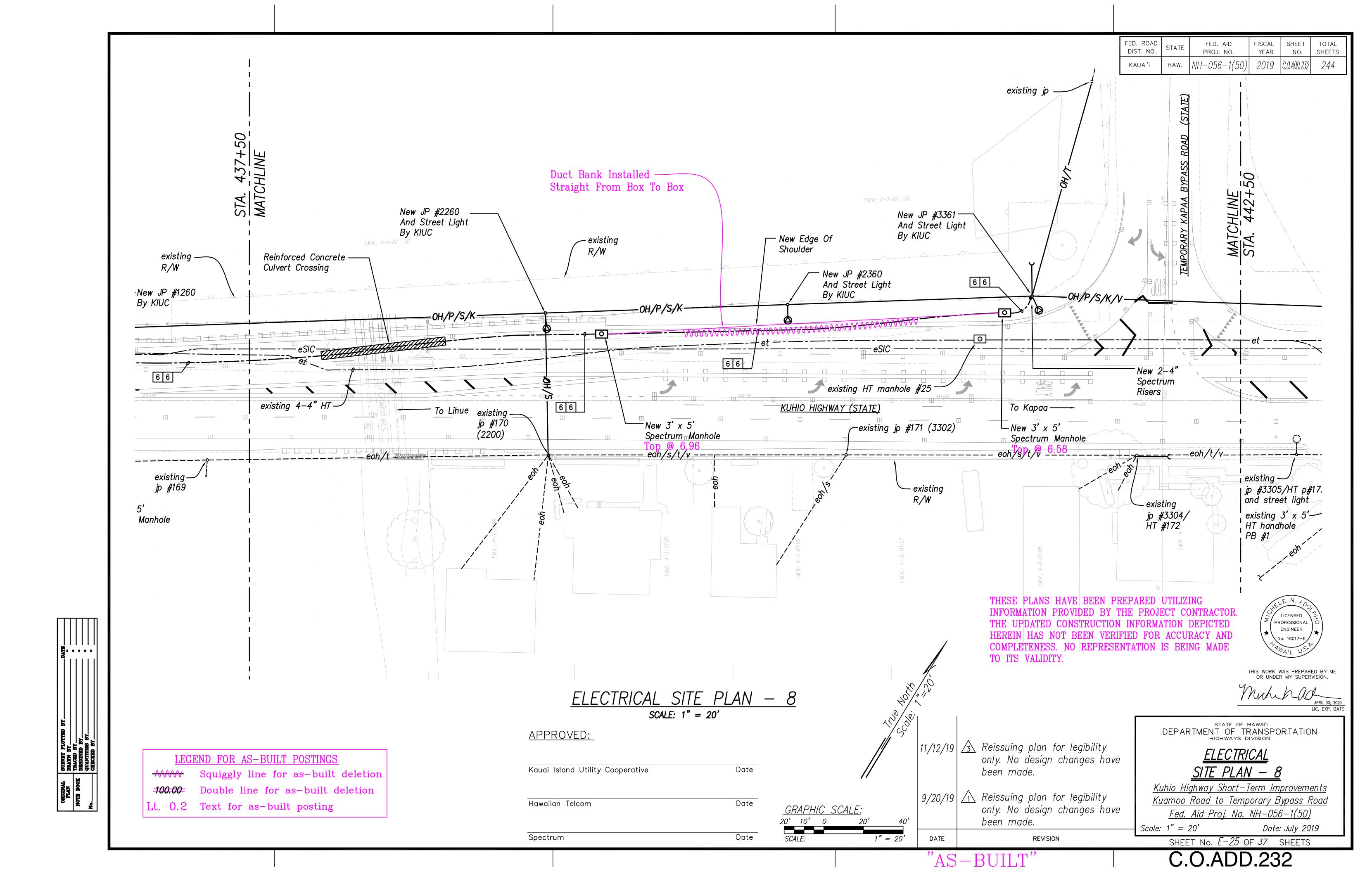


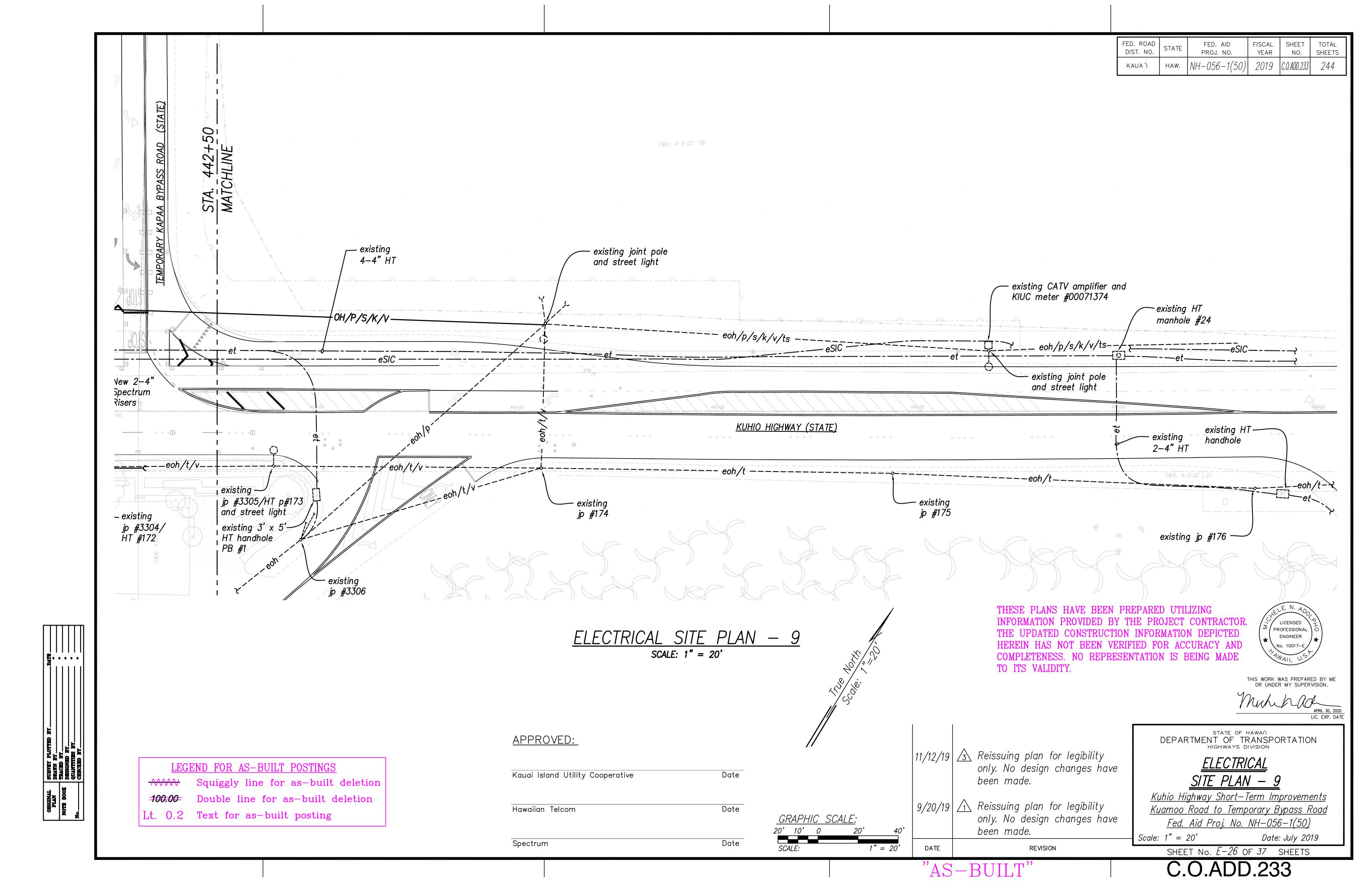


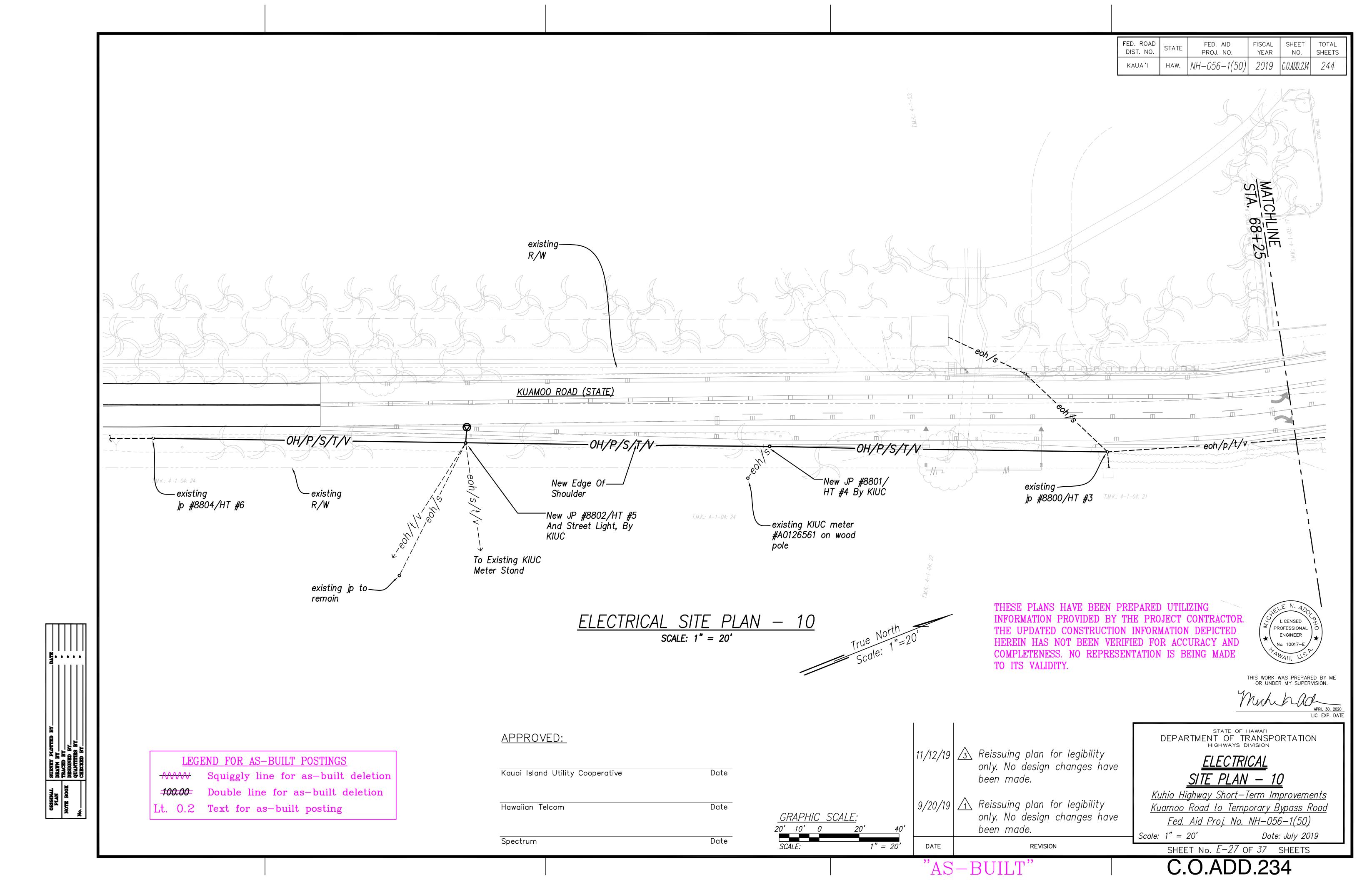




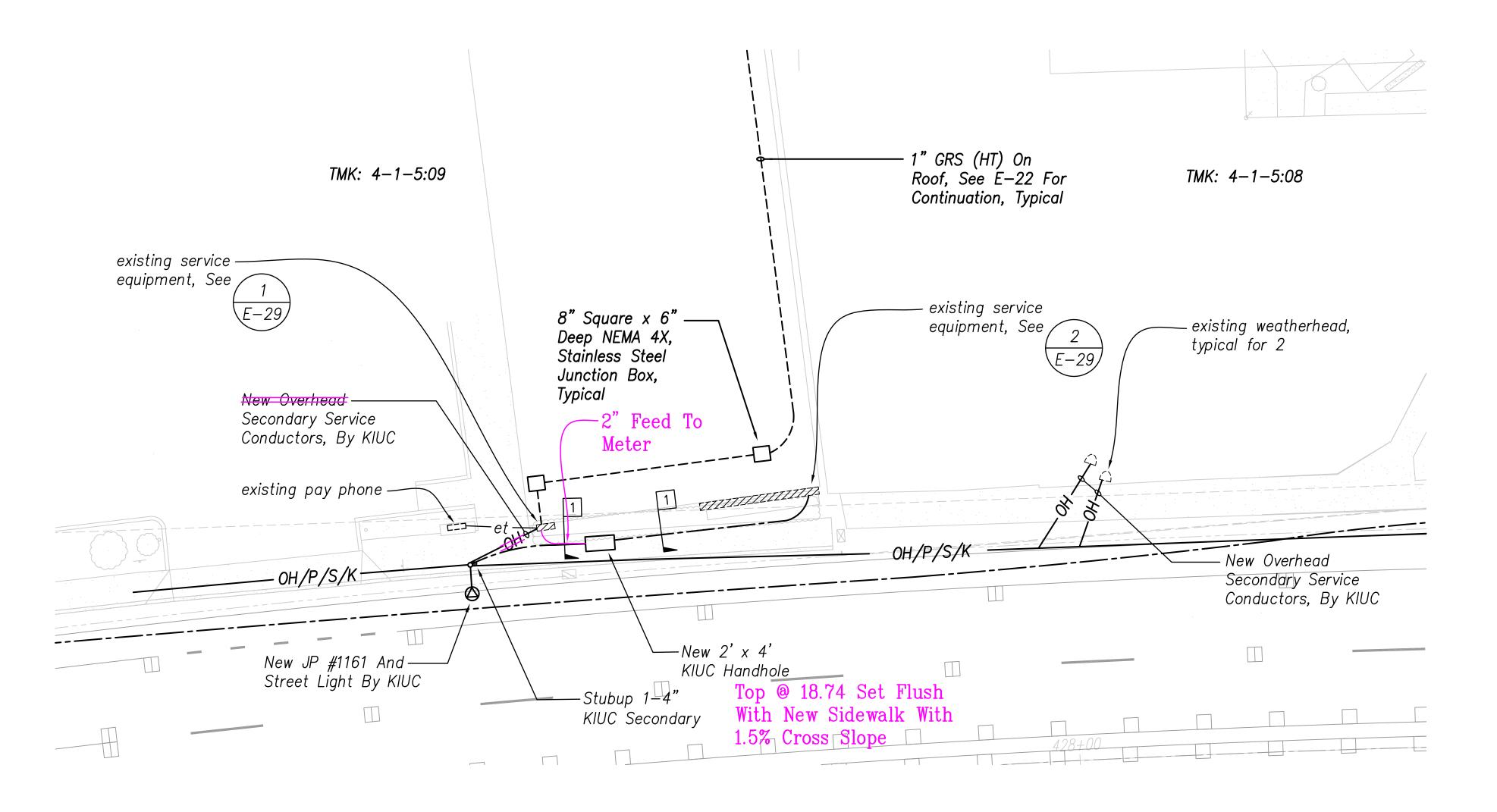








FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
KAUA 'I	HAW.	NH-056-1(50)	2019	C.O.ADD.235	244



ENLARGED ELECTRICAL SITE PLAN

THESE PLANS HAVE BEEN PREPARED UTILIZING TO ITS VALIDITY.



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LEGEND FOR AS-BUILT POSTINGS

1 E • • • •

Squiggly line for as-built deletion Double line for as-built deletion

Lt. 0.2 Text for as-built posting

APPROVED:

SCALE: 1" = 10'

Date Kauai Island Utility Cooperative

DATE

GRAPHIC SCALE:

roof.

| 11/12/19 | 🐧 Reissuing plan for legibility; revised HT conduit routing on

REVISION

9/20/19 Λ Reissuing plan for legibility only. No design changes have been made.

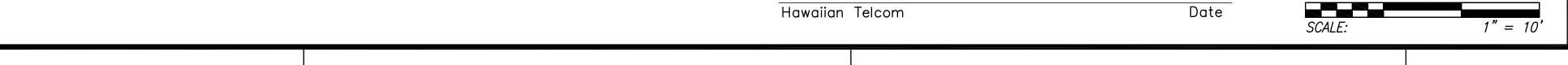
STATE OF HAWAI'I
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ENLARGED ELECTRICAL SITE PLAN

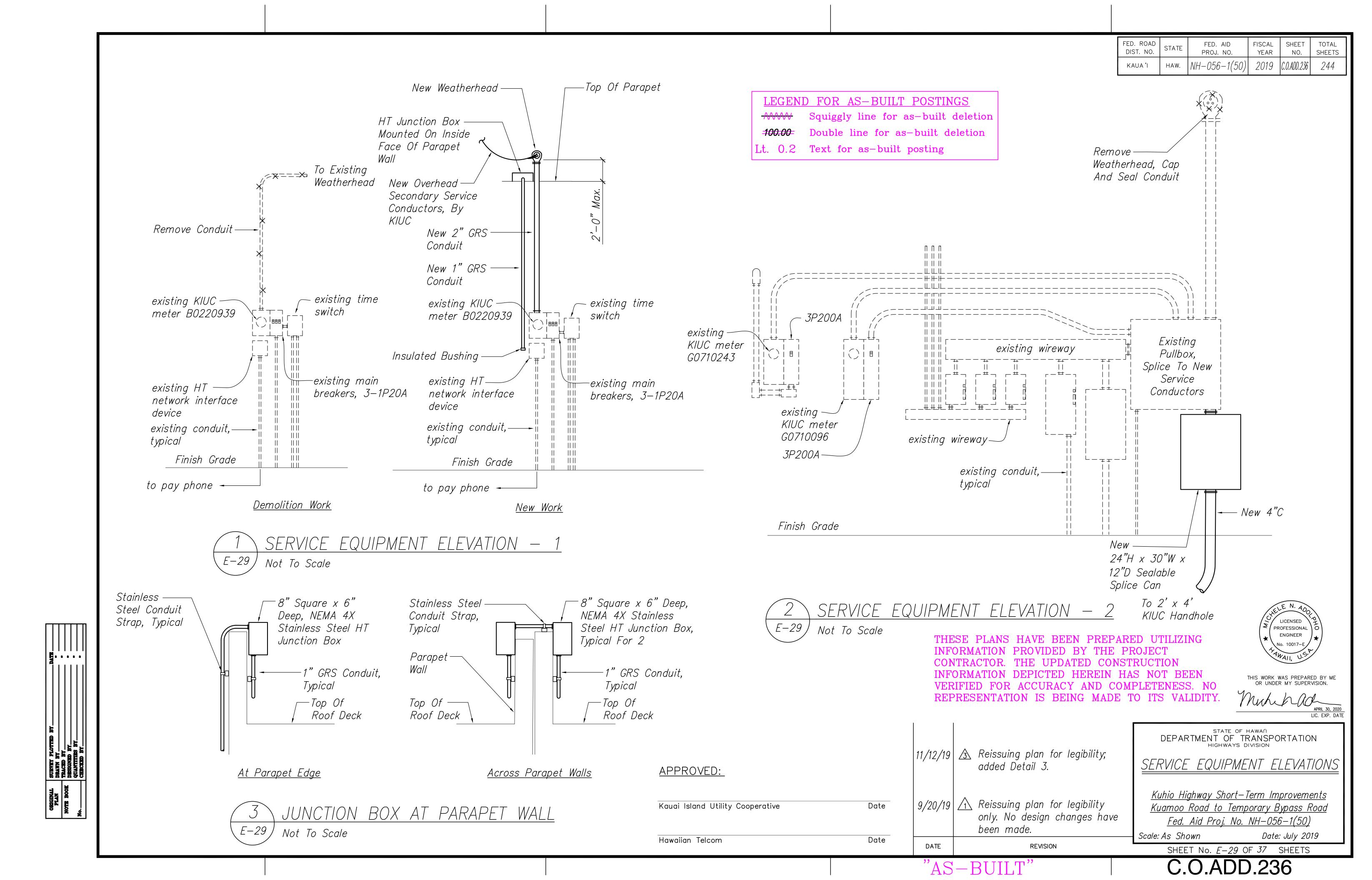
Kuhio Highway Short-Term Improvements Kuamoo Road to Temporary Bypass Road Fed. Aid Proj. No. NH-056-1(50)

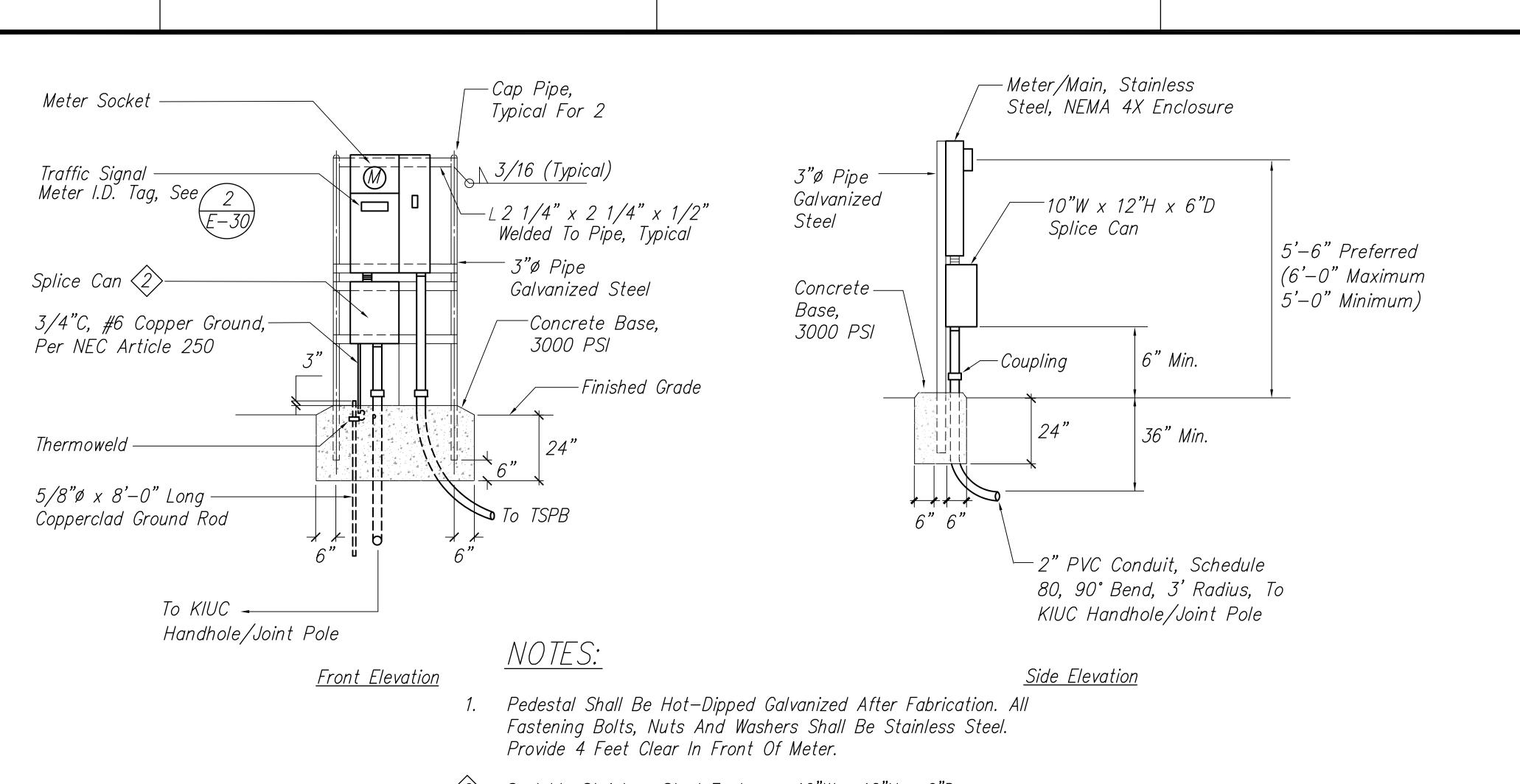
Scale: 1" = 10' Date: July 2019 SHEET No. E-28 OF 37 SHEETS

C.O.ADD.235



(E-28)





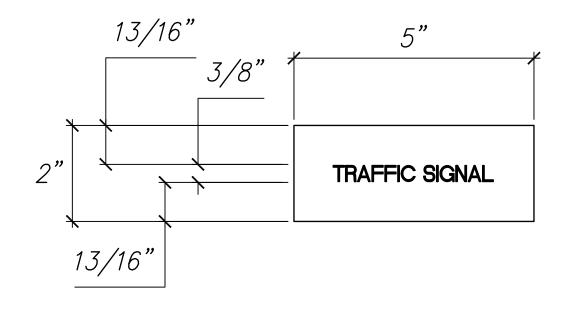
FED. ROAD DIST. NO. FED. AID PROJ. NO. FISCAL YEAR SHEET NO. TOTAL STATE SHEETS 2019 | C.O.ADD.237 | 244

LEGEND FOR AS-BUILT POSTINGS

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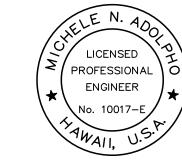
Sealable Stainless Steel Enclosure 10"W x 12"H x 6"D. TRAFFIC SIGNAL METER (E-30) Not To Scale



NOTES:

- 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".
- Attach To Meter Socket Using Scotch 3M Brand Very High Bond (VHB) Double Coated Acrylic Foam Tape Or Equivalent.
- Letters/Numbers Shall Be 3/8" High, 1/16" Stroke, And White In
- Letters/Numbers Area Inscribed By Cutting Through "Black Cap Sheet" To Expose White Letters/Numbers.

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2	TRAFFIC	SIGNAL	METER	1.D.	TAG
E-30 /	Not To Scale				

APPROVED:

Kauai Island Utility Cooperative Date

11/12/19	<u>\$</u>	Reissuing plan for legibility only. No design changes have been made.

| 9/20/19 | 1 Reissuing plan for legibility only. No design changes have been made.

REVISION

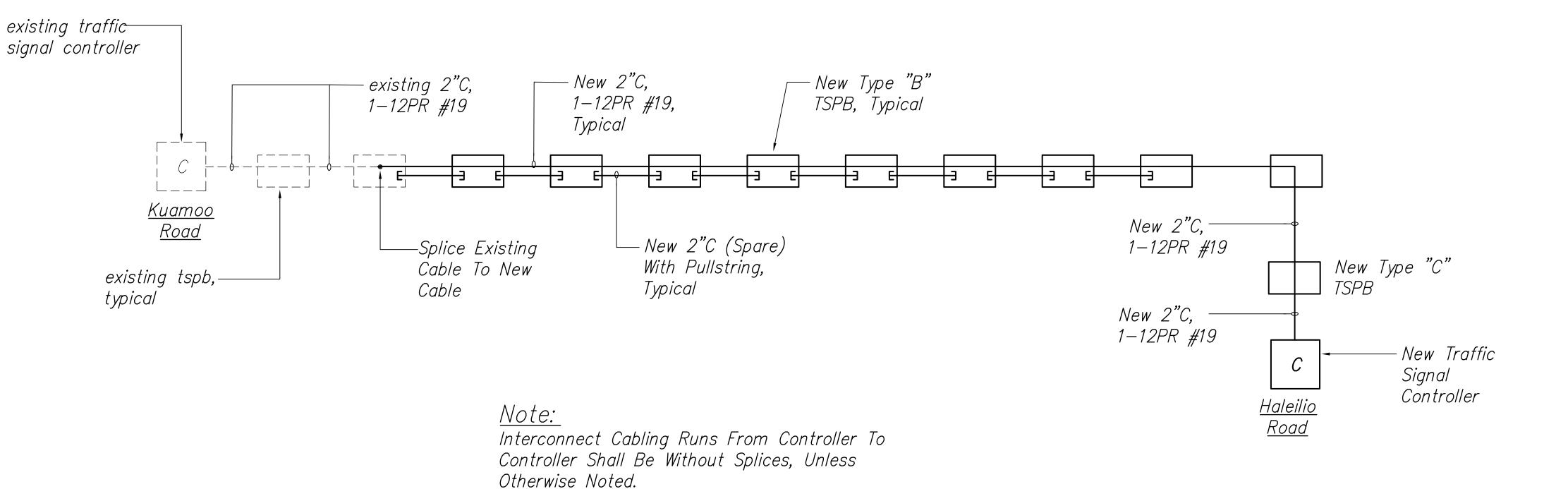
STATE OF HAWAI'I
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION TRAFFIC SIGNAL METER <u>DETAILS</u>

Kuhio Highway Short-Term Improvements Kuamoo Road to Temporary Bypass Road Fed. Aid Proj. No. NH-056-1(50) Scale: As Shown Date: July 2019

DATE

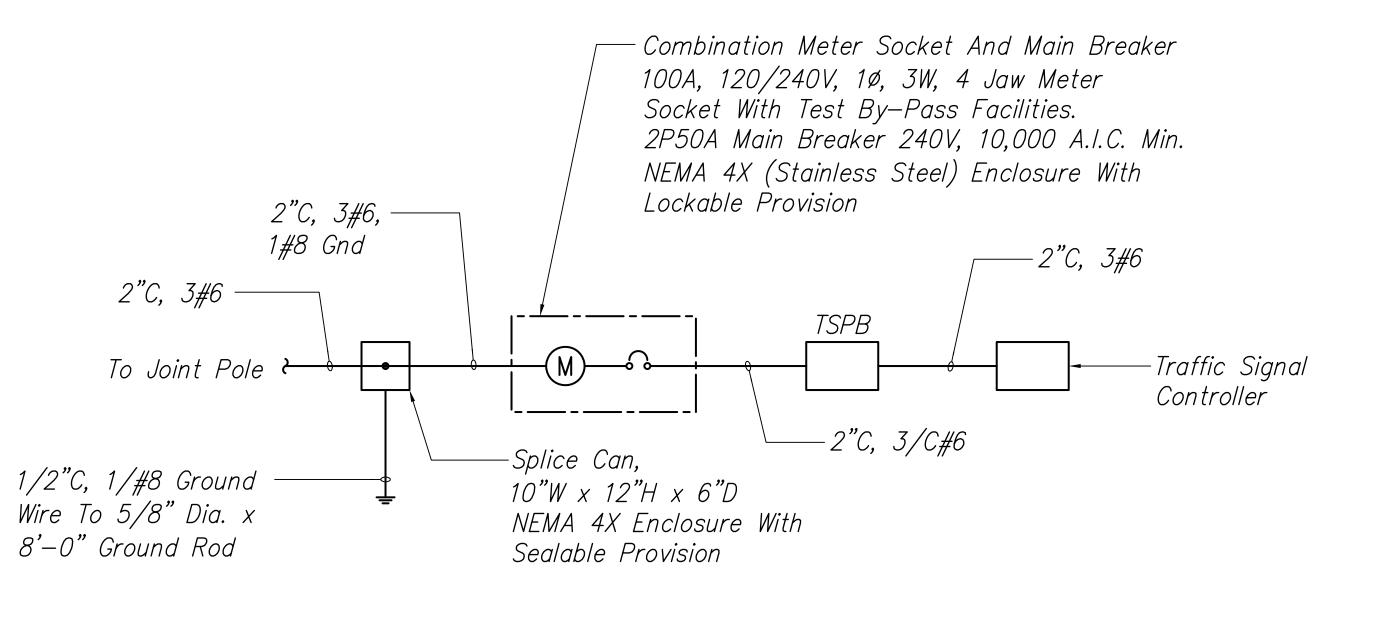
SHEET No. E-30 OF 37 SHEETS C.O.ADD.237

FED. ROAD	STATE	FED. AID	FISCAL	SHEET	TOTAL	-
DIST. NO.	STATE	PROJ. NO.	YEAR	NO.	SHEETS	
KAUA 'I	HAW.	NH-056-1(50)	2019	C.O.ADD.238	244	



1 TRAFFIC SIGNAL INTERCONNECT CABLING DIAGRAM

E-31 No Scale



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ADDIT 70,0000

2 TYPICAL TRAFFIC SIGNAL CONTROLLER ONE—LINE DIAGRAM E-31) No Scale

<u>APPROVED:</u>

Kauai Island Utility Cooperative Date

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REVISION

DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

TRAFFIC SIGNAL DIAGRAMS

Kuhio Highway Short—Term Improvements
Kuamoo Road to Temporary Bypass Road
Fed. Aid Proj. No. NH—056—1(50)

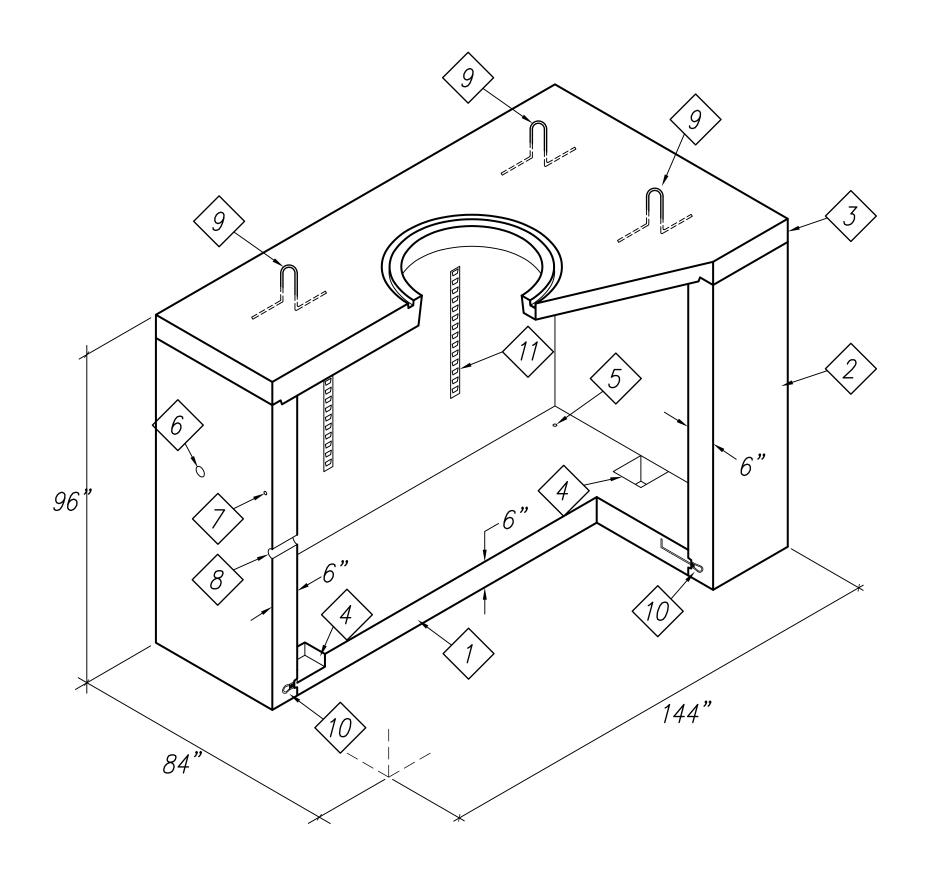
Scale: As Shown
Date: July 2019

SHEET No. E-31 OF 37 SHEETS

"AS-BUILT"

DATE

FED. ROAD	STATE	FED. AID	FISCAL	SHEET	TOTAL
DIST. NO.		PROJ. NO.	YEAR	NO.	SHEETS
KAUA 'I	HAW.	NH-056-1(50)	2019	C.O.ADD.239	244



Material Schedule

- 1) Floor Section 8,400lbs.
- (2) Wall Section 18,375lbs.
- (3) Roof Section 10,120lbs.
- 4 12" x 12" Open Sump (Closed Sump In Areas Of High Water Table Only.)
- 5 1" Dia. Gnd. Rod Hole.
- 6 3" Dia. x 6" Lifting Hole (Contractor To Grout Solid After Placement Of Section.)
- (7) Pulling Iron As Required.
- End Bell Cast In Wall As Required By KIUC
 Butterfly Drawing. Contractor To Request
 Drawing From KIUC Prior To Ordering Manhole.

#5 Lifting Loop.

- Ferrule Loop Insert.
- 10> Cable Rack, Refer To KIUC Requirements

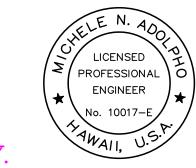
(17

Notes:

- 1. Pullbox Designed In Accordance With HECO Standards Using 4,000 PSI Compressive Strength Concrete And 60,000 PSI Yield Strength Astm A-615 Steel Reinforcement Per Calcs.
- 2. All Concrete And Reinforced Concrete Work Shall Be Done In Accordance With Project Specifications And Special Provisions. Handhole Shall Be Designed In Accordance With AASHTO LRFD Bridge Design Specification, 4th Edition 2007, With 2008 And 2009 Interim Revisions.
- Pullbox To Be Placed On A 6" Base Of #3 Crushed Rock For Ease Of Installation And Even Load Distribution.

- 4. Product To Be Stenciled With Manufacturer Name And Date Of Pour.
- 5. The Following Materials To Be Shipped With Each Handhole:
 - (a) 7/8" Dia. U-bolt W/Nut (Galv) Pulling Iron
 - (b) 1 1/2" Ramnek Joint Compound (36 Feet Required)
 - (c) 32" Dia. "KIUC" Type Frame & Cover
 - (d) 32" Dia. Octagonal Grade Ring (1 Required)

THESE PLANS HAVE BEEN PREPARED UTILIZING INFORMATION PROVIDED BY THE PROJECT CONTRACTOR. THE UPDATED CONSTRUCTION INFORMATION DEPICTED HEREIN HAS NOT BEEN VERIFIED FOR ACCURACY AND COMPLETENESS. NO REPRESENTATION IS BEING MADE TO ITS VALIDITY.



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11/12/19 🛕 Reissuing plan for legibility only. No design changes have

9/20/19 A Reissuing plan for legibility only. No design changes have been made.

REVISION

been made.

Kuhio Highway Short—Term Improvements

Kuamoo Road to Temporary Bypass Road

Ted. Aid Proj. No. NH—056—1(50)

Scale: As Shown

Date: July 2019

ale: As Shown Date: July 2019

SHEET No. E-32 OF 37 SHEETS

LEGEND FOR AS-BUILT POSTINGS

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<u>APPROVED:</u>

Kauai Island Utility Cooperative Date

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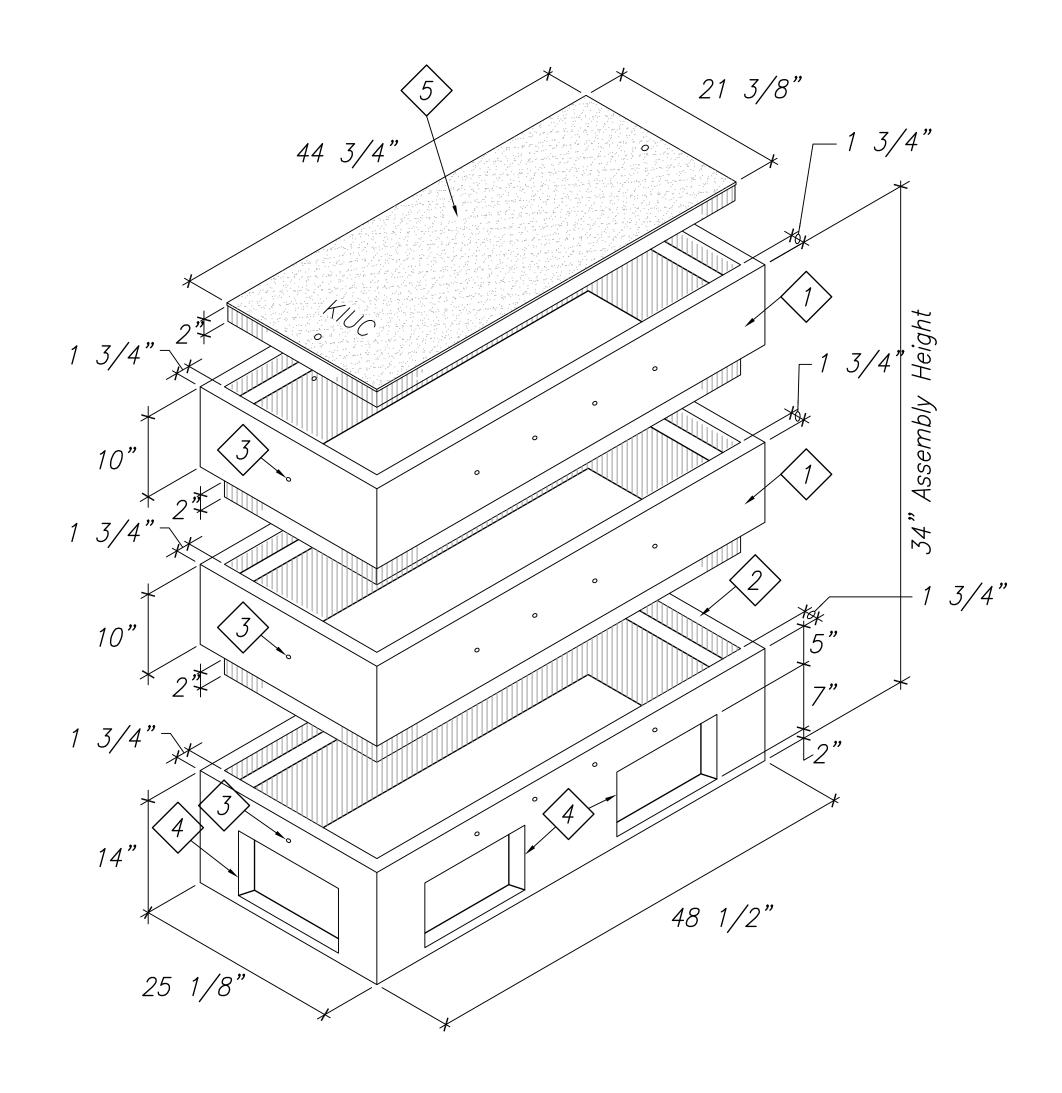
DATE

C.O.ADD.239

STATE OF HAWAI'I
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

6' x 11' KIUC MANHOLE

	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	KAUA 'I	HAW.	NH-056-1(50)	2019	C.O.ADD.240	244



2' x 4' KIUC HANDHOLE (E-33) Not To Scale

Material Schedule

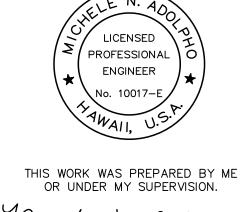
The Following Materials To Be Shipped With Each Handhole:

- Top Section. Wt. 400 lbs.
- Bottom Section With Knockouts. Wt. 430 lbs.
- $\langle 3 \rangle$ 1/2"ø x 4" Lifting Hole (Contr. To Grout Solid After Placement Of Section).
- Conduit Opening Knockout.
- Concrete Cover, Refer To HECO Dwg. No. 11312.

Notes:

- Handhole Designed In Accordance With Hawaiian Electric Company Standards Using 4,000 PSI Compressive Strength Concrete And 60,000 PSI Yield Strength ASTM A-615 Steel Reinforcement Per Calcs.
- All Concrete And Reinforced Concrete Work Shall Be Done In Accordance With Project Specifications And Special Provisions.
- Handhole To Be Placed On A 6" Base Of #3 Crushed Rock For Ease Of Installation And Even Load Distribution.
- Product To Be Stenciled With Manufacturer Name And Date Of Pour.
- Ordering Information: 2' x 4' x 34" KIUC For Assembly As Shown. Approved For KIUC Specs. Total Weight Of Assembly Shown Is 1230 lbs.

INFORMATION PROVIDED BY THE PROJECT CONTRACTOR. THE UPDATED CONSTRUCTION VERIFIED FOR ACCURACY AND COMPLETENESS NO REPRESENTATION IS BEING MADE TO ITS



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LEGEND FOR AS-BUILT POSTINGS

g.

Squiggly line for as-built deletion Double line for as-built deletion Lt. 0.2 Text for as-built posting

APPROVED:

Kauai Island Utility Cooperative Date | 11/12/19 | 🐧 Reissuing plan for legibility only. No design changes have been made.

9/20/19 🛕 Reissuing plan for legibility only. No design changes have been made.

STATE OF HAWAI'I
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION 2' x 4' KIUC HANDHOLE

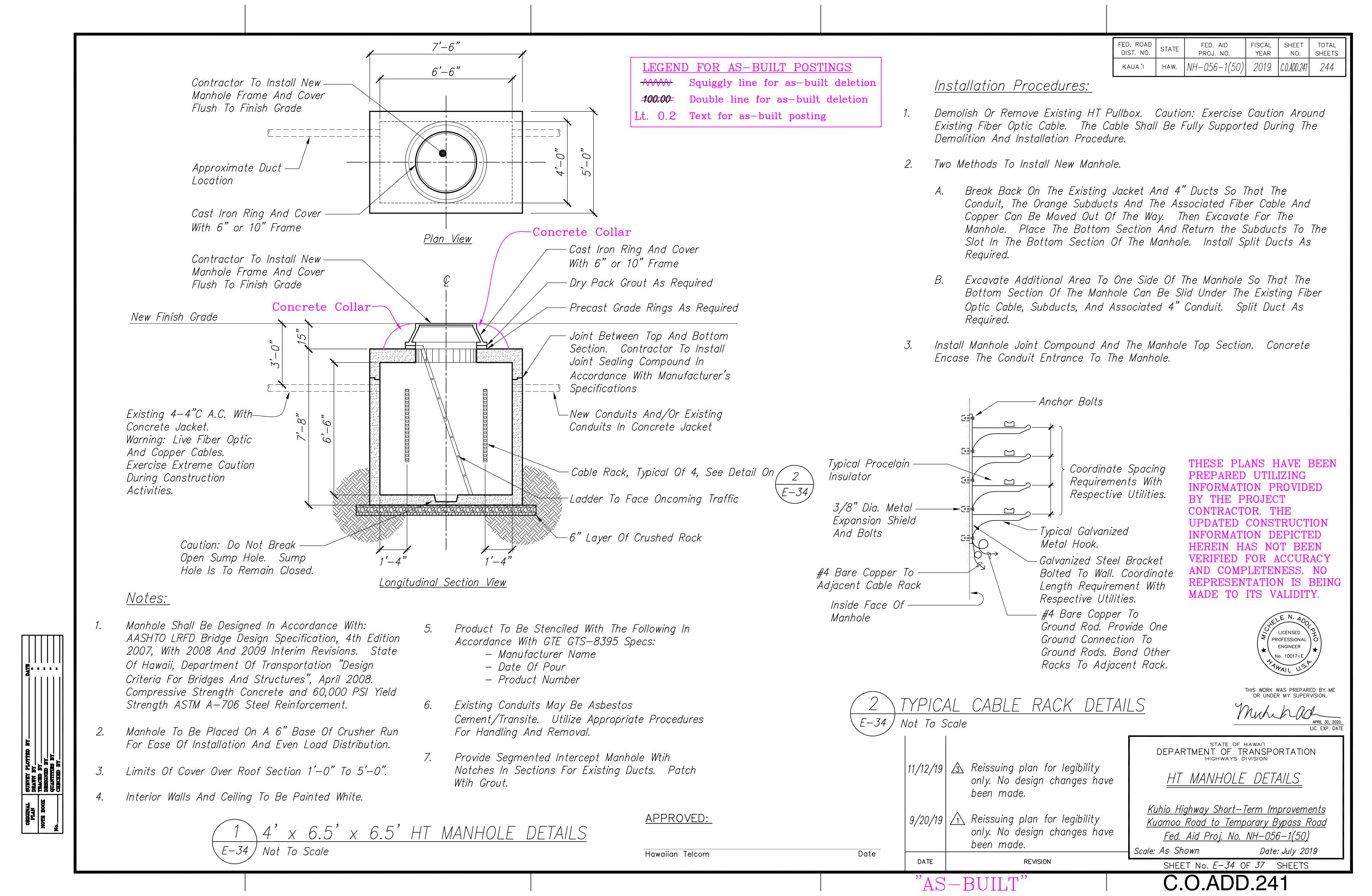
Kuhio Highway Short-Term Improvements

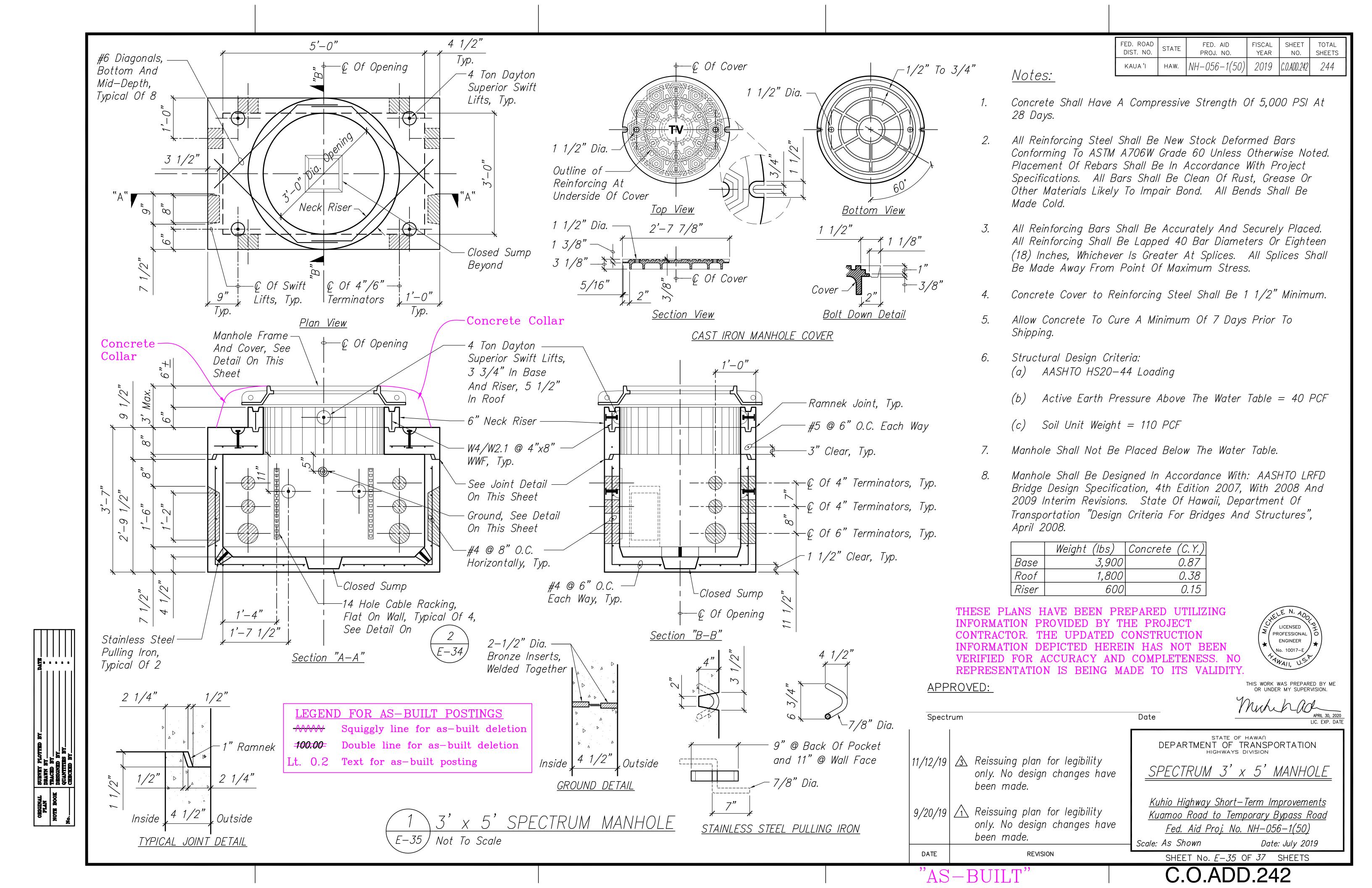
Kuamoo Road to Temporary Bypass Road Fed. Aid Proj. No. NH-056-1(50) Scale: As Shown Date: July 2019

SHEET No. E-33 OF 37 SHEETS

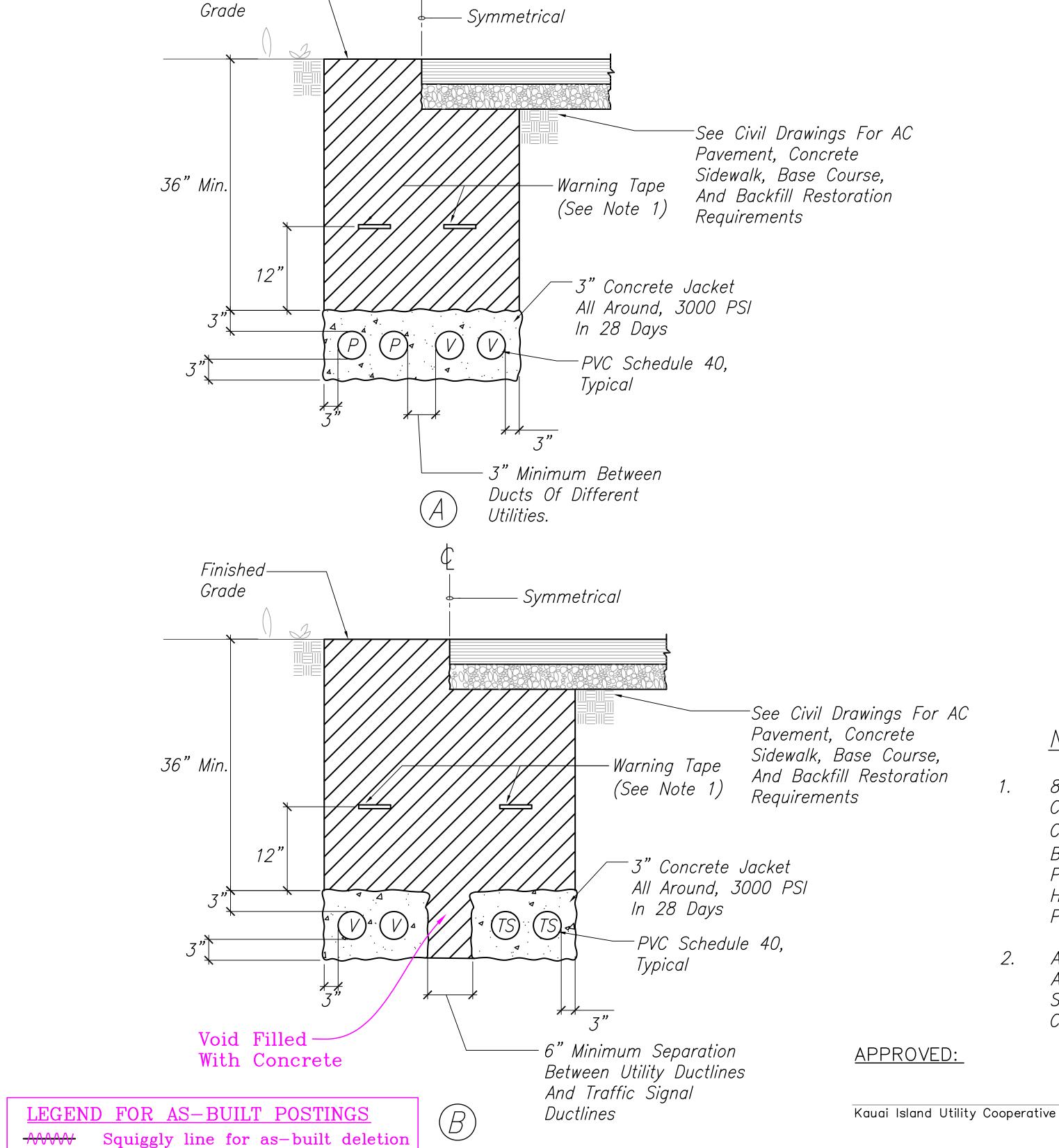
DATE

REVISION





FED. ROAD	STATE	FED. AID	FISCAL	SHEET	TOTAL
DIST. NO.		PROJ. NO.	YEAR	NO.	SHEETS
KAUA 'I	HAW.	NH-056-1(50)	2019	C.O.ADD.243	244



Finished-

Double line for as-built deletion

Lt. 0.2 Text for as-built posting

g.

DUCT SCHEDULE									
Туре	Use	Size (PVC 40)	Cables						
1	KIUC Secondary, PVC Schedule 40	4"	By KIUC, Provide Pullstring						
2	KIUC Secondary, PVC Schedule 40	3"	By KIUC, Provide Pullstring						
3	KIUC Secondary, PVC Schedule 40	2"	3#6						
4	HT, PVC Schedule 40	2"	By Hawaiian Telcom, Provide Muletape						
5	HT, PVC Schedule 40	1"	By Hawaiian Telcom, Provide Muletape						
6	Spectrum, PVC Schedule 40	4"	By Spectrum, Provide Muletape						
7	Spectrum, PVC Schedule 40	2"	By Spectrum, Provide Muletape						
8	Traffic Signal, PVC Schedule 40	2"	12PR #19						
9	Traffic Signal, PVC Schedule 40	2"	Spare, Provide Pullstring						
10	KIUC Primary	6"	By KIUC, Provide Muletape						

Notes:

Hawaiian Telcom

Spectrum

8 Mil Thick 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 Above Power Ductlines. Orange Colored Plastic Warning Tape Per HT Standard 34028 Above HT Ductlines And Warning Tape Per Spectrum Standard Above Spectrum Ductlines.

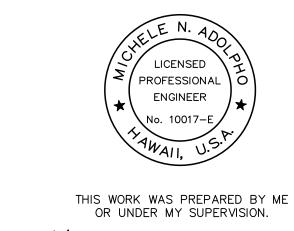
All Conduits In The Concrete Shall Be In Conduit Saddle. All Conduits Shall Be Tied Securely Into The Saddle, And All Saddles Shall Be Anchored Into The Ground So That The Conduits Do Not Float.

Date

Date

Date

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STATE OF HAWAI'I
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

<u>DUCT DETAILS</u>

Kuhio Highway Short-Term Improvements Kuamoo Road to Temporary Bypass Road Fed. Aid Proj. No. NH-056-1(50) Scale: As Shown Date: July 2019

| 11/12/19 | 🐧 Reissuing plan for legibility

9/20/19 🛕 Reissuing plan for legibility

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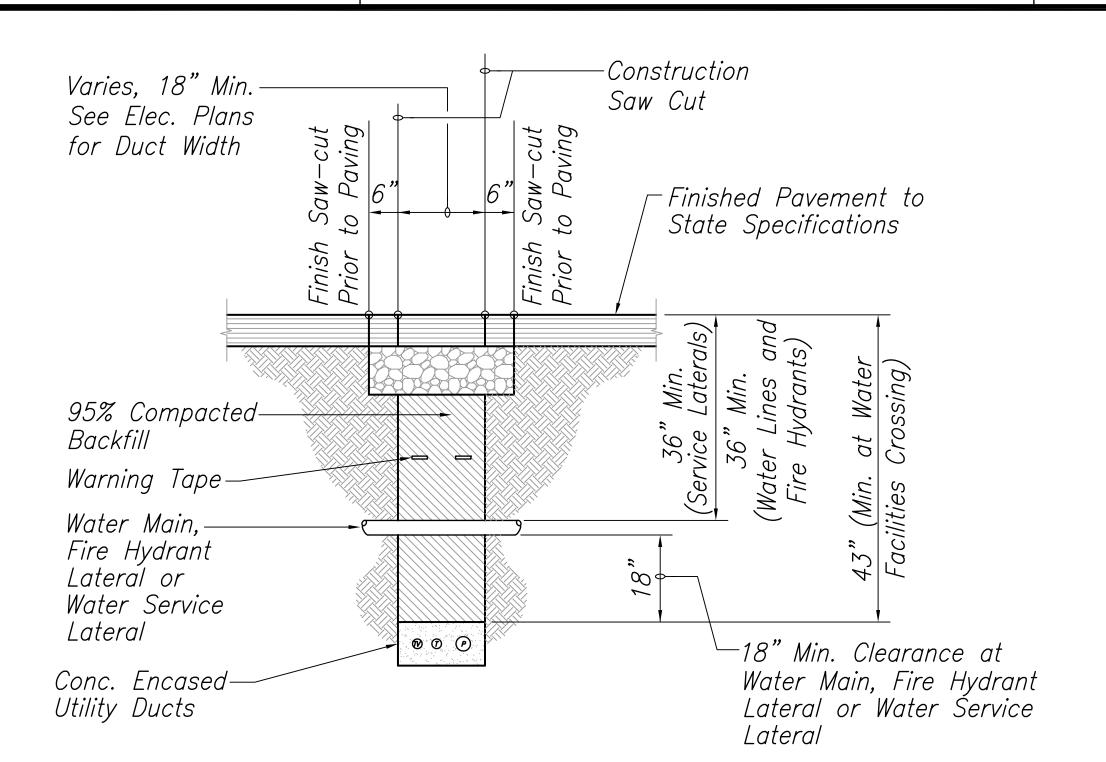
only. No design changes have

only. No design changes have

REVISION

SHEET No. E-36 OF 37 SHEETS C.O.ADD.243

DATE



Water Notes:

- The Contractor shall verify in the field the location of the existing water facilities prior to trenching. Excavation around existing water facilities shall be done by hand.
- Material used for backfilling at the water facilities crossings shall not contain any stones, rocks, or other similar material and shall not contain vegetable matter or debris of any kind. No "Adobe" or similar material shall be used.
- 3. Provide concrete encasement for the conduits at all waterline, service lateral and fire hydrant crossings. The Contractor shall notify the Department of Water at least 24-hours prior to scheduling back filling operations at the water facilities crossings.
- Provide 3-foot minimum distance of insitu soil between reaction blocks and excavation for ductlines.



THESE PLANS HAVE BEEN PREPARED UTILIZING INFORMATION PROVIDED BY THE PROJECT CONTRACTOR. THE UPDATED CONSTRUCTION INFORMATION DEPICTED HEREIN HAS NOT BEEN VERIFIED FOR ACCURACY AND COMPLETENESS. NO REPRESENTATION IS BEING MADE TO ITS VALIDITY.



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION. Muchad

LEGEND FOR AS-BUILT POSTINGS

Lt. 0.2 Text for as-built posting

Squiggly line for as-built deletion Double line for as-built deletion

MANAGER AND CHIEF ENGINEER, DEPARTMENT OF WATER, COUNTY OF KAUA'I

<u>APPROVED</u>

| 11/12/19 | 🐧 Reissuing plan for legibility only. No design changes have been made.

9/20/19 🛕 Reissuing plan for legibility only. No design changes have been made.

REVISION

STATE OF HAWAI'I
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION DETAIL AT WATER CROSSING

FED. AID

PROJ. NO.

STATE

DIST. NO.

FISCAL YEAR

HAW. NH-056-1(50) 2019 C.O.ADD.244 244

SHEET NO.

SHEETS

Kuhio Highway Short-Term Improvements Kuamoo Road to Temporary Bypass Road Fed. Aid Proj. No. NH-056-1(50) Scale: As Shown Date: July 2019

SHEET No. E-37 OF 37 SHEETS

