FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-064-1(010)	2018	40	120

ELECTRICAL SYMBOL LIST / MOUNTING HEIGHT SCHEDULE

Mounting Height From Floor To		(Special Mounting Heights Indicated On Plan)		
		Symbol		Description
Top	℄	Existing	New	
			(1)	Luminaire, Ceiling Mounted (Numeral In Circle Corresponds To Luminaire Schedule)
			(1)	Luminaire, Ceiling Mounted (Numeral In Circle Corresponds To Luminaire Schedule)
			(1)H	Luminaire, Wall Mounted (Numeral In Circle Corresponds To Luminaire Schedule)
	46"		$a	Light Switch, Flush Wall Mounted, 1P20A, 120/277V, 1HP Max. (Letter Indicates Luminaires Controlled)
	18"		$3	3-Way Switch, Wall Mounted, 20A, 120/277V
	18"			Receptacle, Duplex, Grounding Type, 125V, NEMA Type 5-20R
	18"			Receptacle, Duplex, GFCI Type, 125V, NEMA Type 5-20R
				Roadway Lighting Luminaire and Bracket Arm Mounted To Wood Pole
				Highway Lighting Standard, See 1/E-15
5'-0"				Non-Fused Disconnect Switch, 3P30A Unless Otherwise Noted, Voltage To Match Circuiting
			WP	Weatherproof
			GFCI	Ground Fault Circuit Interrupter
			NL	Night Light Circuit
			HECo	Hawaiian Electric Company
			HT	Hawaiian Telcom
			GND	Ground
	46"			Wall Switch/Occupancy Sensor, Dual Technology Type, Single Relay
			P	Occupancy Sensor Power Pack, 120/277V
				Ceiling Mounted Occupancy Sensor, Dual Technology Type
			J	Junction Box, Horizontally Mounted
	18"		JH	Junction Box, Wall Mounted

Mounting Height From Floor To		(Special Mounting Heights Indicated On Plan)		
		Symbol		Description
Top	℄	Existing	New	
				Equipment Termination With Flexible Conduit Whip
6'-0"				Panelboard
				Electrical Equipment
6'-0"				Signal Cabinet For System Noted
		—e—		Underground Ductline
				Concealed Conduit In Ceiling Or Walls (Hashmarks Indicate Quantity of Current Carrying Wires Within, No Hashmarks Indicate 2 Current Carrying Wires Within
				Exposed Raceway, Provide Strap 8'-0" On Center Maximum
			A-1,3	Homerun Arrow To Panelboard. Letter Indicates Panelboard, Numbers Indicates Circuits.
				Liquid-Tight Flexible Conduit
		—eOH/_—		Overhead Lines (P/S/Y/V/SL) P=Primary S=Secondary T=Telephone V=CATV SL=Street Lighting
			E	Conduit Stub, 1" Minimum Conduit Unless Otherwise Noted
	10'-0"		PEH	Photoelectric Cell
	18"			Tel/Data Outlet Box, Wall Mounted With Blank Device Plate
				Denotes Demolition/removal
			1	Duct Section Indicator
			(1)	Note Indicator
			1/E-2	Detail Indicator: Top Half Denotes Detail Number, Bottom Half Denotes Sheet Number

2/3/21-15:13 Y:\060\060.203\060.203 E-1.001.dwg

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

RMTC JOB NO. : 1-19548-0E

MICHELE N. ADOLPHO
LICENSED PROFESSIONAL ENGINEER
No. 10017-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

4/30/22
SIGNATURE LIC. EXPIRATION
ECS, INC.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ELECTRICAL SYMBOL LIST

Sand Island Access Road
Truck Weigh Station
Federal Aid Project No. NH-064-1(010)

Scale: As Noted Date: January 2021

SHEET No. E-1 OF 120 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-064-1(010)	2018	41	120

GENERAL ELECTRICAL NOTES:

1. All Work Shall Comply With The National Electrical Code (NEC), National Electrical Safety Code And Building Ordinances Of The City And County Of Honolulu. Construction Practices Shall Conform To The Latest Edition Of American Electricians' Handbook By Croft, And Applicable Instructions Of Manufacturers Of Equipment And Material Supplied For This Project.

2. The Drawings Do Not Reflect All The Existing Conditions That May Be Encountered During Construction. Visit The Project Site And Become Familiar With The Existing Conditions, The Extent Of Any Demolition, Relocation, Reconnection, And The New Work Prior To The Start Of On-Site Construction Activities. Report Any Discrepancies And/Or Differences Between The Existing Conditions And The Construction Documents To The State. Resolve All Discrepancies And Questions Prior To The Start Of Work. Bid Submission Shall Be Considered As Evidence That The Contractor Has Visited The Site And Resolved All Discrepancies And Questions And No Extra Payment Will Be Authorized For Work Required By The Contractor's Failure To Do So.

3. Existing Device Locations, Circuit Assignments, Wiring Connections, And Conduit Runs Indicated Were Derived From Available Reference Documents And Limited Field Investigation. Field Verify All Existing Conditions And Make Any Necessary Adjustments To Satisfy The Intent Of The Drawings And Specifications.

4. The Contractor Agrees That He Shall Assume Sole And Complete Responsibility For The Job Site Conditions During The Course Of Construction Of This Project, Including The Safety Of All Persons And Property; That This Requirement Shall Apply Continuosly And Not Be Limited To Normal Working Hours.

5. Work Incidental To The Contract And Necessary To Complete The Project, Although Not Specifically Referred To In The Contract Documents, Shall Be Furnished And Performed By The Contractor At No Additional Cost To The Project.

6. The Location Of All Electrical Apparatus And Devices Are Approximate And Before Installing, Study The Architectural, Structural, And Mechanical Details And Make Installation In The Most Logical Manner. Any Piece Of Equipment/Device May Be Relocated Within 10' Before Installation At The Direction Of The State Without Additional Charge To The Project.

7. Should Project Conditions Require Rearrangement Of The Project's Work, The Contractor Shall Mark Such Changes On The As-Built Drawings. If These Changes Require An Alternate Method To Those Specified In The Contract Documents, The Contractor Shall Submit Drawings To Reflect The Proposed Alternate Methods To The State For Review And Approval. The Contractor Shall Not Proceed Until Approval Is Obtained. Rearrangement Of Work For The Purpose Of Coordination Shall Not Be Considered An Item For Extra Cost.

8. Maintain Continuity Of All Circuits That Pass Through The Project Limits And Serve Other Areas Or Equipment Indicated To Remain. Provide New Junction Boxes, Conduits & Wiring, And The Labor Required To Facilitate Said Continuity. Boxes, Conduits And Wiring Shall Be In Accordance With The NEC.

9. Verify All System Requirements (Electrical, Mechanical, Specialty Systems, Etc.) With The Selected System's Manufacturer Or Authorized Representative Prior To Commencing With Any Work. Coordinate Ratings Of Overcurrent Protection Devices, Disconnect Switches, Conduit And Wiring To Match The Actual Equipment Supplied For The Project. Verify And Check All Dimensions And Details Shown On The Drawings Prior To The Start Of Construction. Correct All Discrepancies So As To Provide A Complete And Operational System. Record Changes On The As-Built Drawings.

10. Conceal All Conduit Wherever Reasonable; Exposed Conduits Are Permitted Only Where Specifically Shown On The Drawings. All Exposed Conduits In Finished Areas Shall Be Installed In The Least Visible Locations. Care Shall Be Taken To Install Conduit In The Most Aesthetically Pleasing Manner.

11. Wiring Devices And Conduits Shall Be Flush Mounted, Wherever Reasonably Possible. Where New Devices Are Indicated To Be Installed In Existing Walls, Fish The Conduit Down Into The Existing Wall Cavity And Keep Disturbances To The Existng Walls To A Minimum. Where Obstructions Are Encountered Or Cutting Of The Wall To Accomplish The Wiring Device And Conduit Installation Is Unavoidable, Consult With The State Prior To Commencing Any Work.

12. An Adhesive Vinyl Nameplate Shall Be Provided For All Switches, Receptacles, And Miscellaneous Devices Requiring Power. The Nameplate Shall Indicate The Panelboard Serving The Device And The Corresponding Circuit Assignment. Lettering Shall Be A Minimum Of 1/4" High. Utilize Brother "P-Touch" Label Maker Or Approved Substitute.

13. A Green, Equipment Ground Conductor Sized In Accordance With The NEC Article 250 Shall Be Installed In All Feeder And Branch Circuits Whether Indicated On Contract Drawings Or Not.

14. Do Not Use A Common Neutral For Multiple Branch Circuits Installed In A Common Conduit. Provide A Dedicated Neutral For Each Individual Circuit. Where Multiple Dedicated Neutrals Are Installed In A Common Conduit, Provide Color Coding Of The Different Neutral Conductors In Accordance With NEC 2014 Article 200.6 (White, Gray, Three Continuous White Or Gray Stripes, Etc.).

15. Provide Nylon Pullstrings In All Empty Conduits Unless Otherwise Indicated.

16. The Telecommunications Raceway System Installation Shall Comply With TIA/EIA-569-A Unless Otherwise Noted.

17. Conduit Bodies (e.g. LB, LR, Etc.) Shall Not Be Permitted In The Telecommunications Raceway Systems Unless Specifically Indicated To Be Utilized And Listed For Telecommunications System Use.

18. Provide Insulated Bushings At All Telecommunications Conduit Terminations At All Boxes, Backboards, And Conduit Stubs.

19. All Surface Mounted Devices Shall Be Installed Utilizing Factory Painted Surface Mounting Accessories And Matching Device Boxes For The Most Aesthetically Pleasing Installation.

20. Provide Knock-Out Plugs For All Unused Conduit Penetrations In Boxes And Enclosures Due To Conduit Removal.

21. Painting Of Electrical Equipment:
    A. Interior Locations - Prime And Paint All Exposed Conduits, Boxes, Fittings, Support Channels, Mounting Hardware And Accessories With Two Finish Coats To Match The Surface On Which They Are Mounted Or To Match The Finish Of The Adjacent Surfaces. Equipment Surfaces/Components With A Factory-Applied Paint Finish Need Not Be Painted.

    B. Exterior Locations - Prime All Exposed Conduits, Boxes, Fittings, Support Channels, Mounting Hardware And Accessories With A 2-Part Epoxy Primer And Finish With 2 Coats Of An Aliphatic Acrylic Urethane Paint. Paint Finish To Match The Surface On Which They Are Mounted Or To Match The Finish Of The Adjacent Surfaces. Stainless Steel Materials Need Not Be Painted.

22. Installation Of New Devices And Conduits Shall Not Interfere With The Opening Of Doors And/Or Windows.

STATE OF HAWAII
ADMINISTRATIVE RULES CHAPTER 3-181.1,
"STATE ENERGY CONSERVATION CODE"
(IECC 2015, AS AMENDED)

To the best of my knowledge, this project's design substantially conforms to the State Energy Conservation Code for:

- ☐ Building Component Systems
- ☒ Electrical Component Systems
- ☐ Mechanical Component Systems

Signature: _____ Date: 05/08/2020

Name: MICHELE N. ADOLPHO

Title: PROJECT ENGINEER

License No: 10017-E

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

MICHELE N. ADOLPHO
LICENSED PROFESSIONAL ENGINEER
No. 10017-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

4/30/22
SIGNATURE LIC. EXPIRATION
ECS, INC.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

GENERAL ELECTRICAL NOTES

Sand Island Access Road
Truck Weigh Station
Federal Aid Project No. NH-064-1(010)

Scale: As Noted Date: January 2021

SHEET No. E-2 OF 120 SHEETS

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RMTC JOB NO. : 1-19548-0E

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-064-1(010)	2018	42	120

HIGHWAY LIGHTING NOTES:

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

2. All luminaires shall be LED 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.

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

6. 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 pole assemblies, 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 or provide temporary connections to existing highway lights through construction of the new highway lighting system. Existing highway lights scheduled for demolition shall remain in operation to maintain existing illumination levels utilizing either existing or temporary pole assemblies, luminaires, wiring and connections 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.

   Submit all proposed temporary lighting plans to the Engineer for review and acceptance. Temporary lighting standard assemblies, if required, and associated structural support design shall be stamped by a registered structural engineer and submitted to the Engineer for acceptance.

7. All temporary 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.

8. 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.

9. 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 approved by the State.

10. 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.

11. Submit lighting calculations using the proposed luminaire for acceptance by the Engineer. Lighting criteria shall be as follows:

    Design Illumination Level = 1.0 footcandle average maintained.

    Design Uniformity Ratio (Average:Minimum) = 3:1 maximum.

    Design Maintenance Factor = 0.85

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

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RMTC JOB NO. : 1-19548-0E

MICHELE N. ADOLPHO
LICENSED PROFESSIONAL ENGINEER
No. 10017-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

4/30/22
SIGNATURE LIC. EXPIRATION

ECS, INC.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

HIGHWAY LIGHTING NOTES

Sand Island Access Road
Truck Weigh Station
Federal Aid Project No. NH-064-1(010)

Scale: As Noted Date: January 2021

SHEET No. E-3 OF 120 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-064-1(010)	2018	43	120

HAWAIIAN ELECTRIC COMPANY NOTES:

1. *Location Of Hawaiian Electric Facilities*

   The location of Hawaiian Electric'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 Hawaiian Electric'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 Clearance*

   The Contractor shall obtain an excavation clearance from Hawaiian Electric's Planning and Design Section of the Customer Installations Division (543-5654) located at 820 Ward Avenue, 4th floor, a minimum of ten (10) working days prior to starting construction.

4. *Caution!!! Electrical Hazard!!!*

   Existing Hawaiian Electric overhead and underground lines are energized and will remain energized during construction unless prior special arrangements have been made with Hawaiian Electric. Only Hawaiian Electric 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 Hawaiian Electric Facilities, which can result in electrocution.

5. *Overhead Lines*

   State Law (OSHA) requires that a worker and the longest object he or she may contact cannot come closer than a specified minimum radial clearance when working close to or under any overhead lines. It is the Contractor's responsibility to be informed of and comply with the law.

   At any time should the Contractor anticipate that his work will result in the need to encroach within the minimum required clearance as stated in the law, the Contractor shall notify Hawaiian Electric at least three (3) months prior to the planned encroachment so that, if feasible, the necessary protections (e.G. Relocate or de-energize Hawaiian Electric lines) can be investigated. Hawaiian Electric may also be able to blanket its distribution (12kV and below) lines to provide a visual aid in preventing accidental contact. Hawaiian Electric's cost of safeguarding or identifying its lines will be charged to the Contractor.

   Contact Hawaiian Electric's Customer Installations Division at 543-7070 for assistance in identifying and safeguarding overhead power lines.

6. *Pole Bracing*

   Contractor shall not excavate within 10 feet of Hawaiian Electric's utility poles or any anchor system supporting the utility pole. If Contractor must excavate an area more than 12 inches deep by 12 inches wide, and closer than 10 feet from a utility pole or its anchor system, Contractor will be responsible for protecting, supporting, securing and taking all precautions to prevent damage to or leaning of existing poles. Before commencing such excavation, Contractor must notify Hawaiian Electric which may lead to implementing pole bracing requirements. Hawaiian Electric requires a minimum of ten (10) working days to conduct the review of Contractor's Submittal.

   Contractor shall submit its bracing calculations and drawings, prepared and stamped by a licensed structural engineer, to Hawaiian Electric's Customer Installations Division (543-7070) for review. Contractor shall be responsible for the design, installation, and removal of the temporary pole bracing system, as well as all costs incurred by Hawaiian Electric to review Contractor's drawings and to repair or straighten poles impacted by Contractor's activities, including response and restoration costs incurred by Hawaiian Electric arising out of or related to outages caused by Contractor's failure to meet the foregoing requirements. Hawaiian Electric's receipt of pole bracing calculation or drawing submittals of any Contractor, including work procedure, shall not relieve Contractor from any liability resulting from Contractor's excavation near or around Hawaiian Electric's utility poles.

7. *Underground Lines*

   The Contractor shall exercise extreme caution whenever construction crosses or is in close proximity of underground lines. Hawaiian Electric's existing electrical cables are energized and will remain energized during construction. Only Hawaiian Electric Personnel are to break into existing Hawaiian Electric Facilities, handle these cables, and erect temporary guards to protect these cables from damage. The cost of Hawaiian Electric's assistance in providing proper support and protection of its underground lines will be charged to the Contractor. For assistance/coordination in providing proper support and protection of these lines, the Contractor shall call Hawaiian Electric's Customer Installations Division at 543-7070 a minimum of ten (10) working days in advance.

   Special precautions are required when excavating near Hawaiian Electric's 138kV or 46kV underground lines (see Hawaiian Electric Instructions to Consultants/Contractors on "Excavation Near Hawaiian Electric's Underground 138kV and/or 46kV lines" for Detailed Requirements).

   For verification of underground lines, the Contractor shall call the Hawaii One Call Center at 866-423-7287 minimum of five (5) working days in advance.

8. *Underground Fuel Pipelines*

   The Contractor shall exercise extreme caution whenever construction crosses or is in close proximity of Hawaiian Electric's underground fuel oil pipelines. Special precautions are required when excavating near Hawaiian Electric's underground fuel oil pipelines (see Hawaiian Electric's Specific Fuel Pipeline "Guidelines" to consultants/Contractors on excavation near Hawaiian Electric's Underground Fuel Pipelines for Detailed Requirements).

9. *Excavations*

   When trench excavation is adjacent to or beneath Hawaiian Electric's existing structures or facilities, the Contractor is responsible for:

   a) *Arranging for Hawaiian Electric Standby Personnel to observe work at Contractor's cost.*

   b) *Sheeting, bracing, or otherwise supporting the excavation and stabilizing the existing ground to render it safe and secure and to prevent possible slides, cave-ins, and settlements.*

   c) *Properly supporting existing structures or facilities with beams, struts, under-pinnings, or other necessary methods to fully protect it from damage.*

   d) *Backfilling with proper backfill material including special thermal backfill where existing (refer to Engineering Division for Thermal Backfill Specifications).*

10. *Relocation of Hawaiian Electric Facilities*

    Any work required to relocate or modify Hawaiian Electric Facilities shall be done by Hawaiian Electric, or by the Contractor under Hawaiian Electric's supervision. The Contractor shall be responsible for all coordination, and shall provide necessary support for Hawaiian Electric's work, which may include, but not be limited to, staking of pole/anchor locations, identifying right of way and property lines, 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 Hawaiian Electric's Facilities not shown on the plans may be cause for lengthy delays. The Contractor acknowledges that Hawaiian Electric 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 Hawaiian Electric'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, Hawaiian Electric should be notified immediately upon discovery or identification of such conflict.

12. *Damage to Hawaiian Electric Facilities*

    The Contractor shall be responsible for the protection of all Hawaiian Electric surface and subsurface utilities and shall be responsible for any damages to Hawaiian Electric's Facilities as a result of his operations. The Contractor shall immediately report such damages or any hazardous conditions related to Hawaiian Electric's lines to Hawaiian Electric's Trouble Dispatcher at 548-7961. Repair work shall be done by Hawaiian Electric or by the Contractor under Hawaiian Electric's supervision. Costs for damages to Hawaiian Electric's Facilities shall be borne by the Contractor in case of damage or suspected damage to Hawaiian Electric's fuel pipeline, the Contractor shall immediately notify Hawaiian Electric's Security Command Center at 543-7685 (a 24-hour number) so Hawaiian Electric 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. *Hawaiian Electric Stand-by Personnel*

    The Contractor may request Hawaiian Electric to provide an Inspector to stand-by during construction near Hawaiian Electric's Facilities. The cost of such inspection will be charged to the Contractor.

    The Contractor shall call Hawaiian Electric's Customer Installations Division at 543-7070 a minimum of three (3) months in advance to arrange for Hawaiian Electric Stand-by Personnel.

14. *Clearances*

    The following clearances shall be maintained between Hawaiian Electric's ductline and all adjacent structures (charted and uncharted) in the trench: (See Table 1 & 2 on sheet E-5) The Contractor shall notify the Construction Manager & Hawaiian Electric of any heat sources (power cable duct bank, steamline, etc.) encountered that are not properly identified on the drawing.

15. *Indemnity*

    The Contractor shall indemnify, defend and hold harmless Hawaiian Electric from and against all losses, damages, claims, and actions, including but not limited to reasonable attorney's fees and costs based upon or arising out of damage to property or injuries to persons, or other tortious acts caused or contributed to by Contractor or anyone acting under its direction or control or on its behalf; provided Contractor's indemnity shall not be applicable to any liability based upon the sole negligence of Hawaiian Electric.

16. *Schedule*

    Contractor shall furnish his construction schedule six (6) months prior to starting work on Hawaiian Electric Facilities. Contractor shall give Hawaiian Electric, in writing, three (3) months notice to proceed with Hawaiian Electric's portion of work.

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

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LICENSED PROFESSIONAL ENGINEER
MICHELE N. ADOLPHO
No. 10017-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

4/30/22
SIGNATURE LIC. EXPIRATION

ECS, INC.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

HAWAIIAN ELECTRIC
COMPANY NOTES – 1
Sand Island Access Road
Truck Weigh Station
Federal Aid Project No. NH-064-1(010)

Scale: As Noted Date: January 2021

SHEET No. E-4 OF 120 SHEETS

RMTC JOB NO. : 1-19548-0E

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-064-1(010)	2018	44	120

Table 1: Guidelines For Minimum Horizontal (Parallel) Clearances Between Hawaiian Electric And Other Underground Utilities

Underground Utility	Hawaiian Electric Direct Buried Cable	Hawaiian Electric Direct Buried In Conduit (No Concrete Encasement)	Hawaiian Electric 3" (Minimum) Concrete Encasement	Applicable Notes:
Hawaiian Electric DB Conduits	12"	3	0"	
Hawaiian Electric 3" Encasement	0"	0"	0"	
Telephone / CATV DB	12"	12"	6"	
Telephone / CATV DB Ducts	12"	12"	6"	
Telephone / CATV 3" Encasement	0"	0"	0"	5
Traffic Signal	12"	12"	12"	
Water DB (BWS Owned)	36"	36"	36"	1, 4
Customer Owned Water Service Laterals	12"	12"	12"	
Water (Concrete Jacketed) (BWS Owned)	36"	36"	36"	1, 4
Gas DB	12"	12"	12"	1
Gas (Concrete Jacketed)	12"	12"	12"	1
Sewer DB	36"	36"	36"	1, 2
Sewer (Concrete Jacketed)	36"	36"	36"	1, 2
Drain	12"	12"	12"	1
Fuel Pipelines				3

Notes:

1. Where space is available, parallel clearance to other utilities, or foreign structures other than communication or traffic signal shall be 36".
2. If 36" clearance cannot be met:
   - If clearance is less than 12", jacket sewer line with reinforced concrete (per Hawaiian Electric's STD. 30-1030) for a distance of 5' plus pipe diameter.
   - If clearance is between 12" and 36", jacket sewer line with plain concrete.
3. All fuel pipeline crossings shall be reviewed and approved by the company that owns and maintains it.
4. 5 feet clear to water mains 16" and larger.
5. For situations with 0" minimum separation, a 6" separation is recommended.
6. Clearances measured from outer edges or diameters of utilities. Whenever concrete jackets are involved, clearances shall be total clear distance between the concrete jacket and utility concerned.

Table 2: Guidelines For Minimum Vertical (Crossing) Clearances Hawaiian Electric And Other Underground Utilities

Underground Utility	Hawaiian Electric Direct Buried Cable	Hawaiian Electric Direct Buried In Conduit (no Concrete Encasement)	Hawaiian Electric 3" (minimum) Concrete Encasement	Applicable Notes:
Hawaiian Electric DB Conduits	6"	3"	0"	
Hawaiian Electric 3" Encasement	0""	0""	0"	
Telephone / CATV DB	12"	12"	6"	
Telephone / CATV DB Ducts	12"	12"	6"	
Telephone / CATV 3" Encasement	0"	0"	0"	3
Traffic Signal	12"	12"	6"	
Water DB (BWS Owned)	12"	12"	12"	5
Customer Owned Water Service Laterals	6"	6"	6"	
Water (Concrete Jacketed) (BWS Owned)	12"	12"	12"	5
Gas DB	12"	12"	12"	
Gas (Concrete Jacketed)	12"	12"	12"	
Sewer DB	24"	24"	24"	1
Sewer (Concrete Jacketed)	24"	24"	24"	1
Drain	12"	12"	6"	
Fuel Pipelines				2

Notes:

1. If 36" clearance cannot be met:
   - If clearance is less than 12", jacket sewer line with reinforced concrete (per Hawaiian Electric's STD. 30-1030) for a distance of 5' plus pipe diameter.
   - If clearance is between 12" and 24", jacket sewer line with plain concrete.
2. All fuel pipeline crossings shall be reviewed and approved by the company that owns and maintains it.
3. For situations with 0" minimum separation, a 6" separation is recommended.
4. Clearances measured from outer edges or diameters of utilities. Whenever concrete jackets are involved, clearances shall be total clear distance between the concrete jacket and utility concerned.
5. 36" clearance is required for trenchless installation work.

17. Authority

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

18. Specifications

Construction of Hawaiian Electric's Underground Facilities shall be constructed in accordance with the latest revisions of Hawaiian Electric Specifications CS7001, CS7003, CS7202, CS9301, and CS9401 and applicable Hawaiian Electric Standards.

19. 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 Hawaiian Electric prior to excavation and prior to placing concrete. Contractor shall notify Hawaiian Electric's Inspection Group at 543-2567 at least five (5) working days prior to installing facilities or placing concrete.

Contractor to coordinate work to break into Hawaiian Electric's existing electrical facilities with Hawaiian Electric's Inspection Group at 543-2567 at least ten (10) working days in advance.

20. Stakeout

The Contractor shall arrange for toneouts of all underground facilities and shall stakeout all proposed Hawaiian Electric 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 Hawaiian Electric before proceeding with Hawaiian Electric work.

21. 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 Hawaiian Electric's Inspector using Hawaiian Electric's Standard Practice. The Contractor shall install 1800# tensile strength muletape pull line in all completed ductlines after mandrel testing is complete.

22. Joint Pole Removal

The last joint pole occupant off the poles shall remove the poles.

23. As-Built Plans

The Contractor shall provide Hawaiian Electric with a set of electronic and hard copy plans of each sheet showing the offsets, stationing, and vertical elevation of the duct line(s) constructed.

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

MICHELE N. ADOLPHO
LICENSED PROFESSIONAL ENGINEER
No. 10017-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

4/30/22
SIGNATURE LIC. EXPIRATION

ECS, INC.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

HAWAIIAN ELECTRIC
COMPANY NOTES - 2
Sand Island Access Road
Truck Weigh Station
Federal Aid Project No. NH-064-1(010)

Scale: As Noted Date: January 2021

SHEET No. E-5 OF 120 SHEETS

RMTC JOB NO. : 1-19548-0E

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-064-1(010)	2018	45	120

HAWAIIAN TELCOM NOTES:

1. 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.

2. The Contractor shall obtain an excavation permit and toning request from Hawaiian Telcom's Excavation Permit Section, located at 1177 Bishop Street, two weeks prior to the start of construction. Hours of business are 8:00am to 11:00am and 12:00pm to 3:00pm Monday through Friday, except holidays.

3. Prior to the excavation of the ductline, the Contractor shall request Hawaiian Telcom to locate existing ductline wherever required. For underground cable locating and marking, five (5) working days advance notice is required. Three (3) working days advance notice is required for any inspection by a designated representative.

4. The locations of existing utilities are approximate only. The Contractor shall exercise extreme caution and shall maintain proper clearances whenever construction crosses or is in close proximity of Hawaiian Telcom facilities. The Contractor shall verify their locations and shall be liable for any damages to Hawaiian Telcom facilities. Any damages shall be reported immediately to Hawaiian Telcom's repair section at #611 (24 hours) or to the excavation permit section at 546-7746 (normal working hours, Monday through Friday, except holidays). As a result of his operations, adjustments to the new ductline alignment, if required, shall be made to provide the required clearances.

5. The Contractor shall take necessary precaution not to damage existing cables or ducts. A Hawaiian Telcom 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 Hawaiian Telcom's facilities. Temporary cable and duct supports shall be provided wherever necessary.

6. The Contractor shall notify Hawaiian Telcom's inspector or designated representative a minimum of 72 hours prior to excavation, bracing, or backfilling of Hawaiian Telcom's structures or facilities.

7. All applicable construction work shall be done in accordance with the "Hawaiian Telcom Standard Specifications for Placing Telephone 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.

8. When excavation is adjacent to or beneath Hawaiian Telcom'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 Hawaiian Telcom'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 Hawaiian Telcom's structures or facilities.

9. The Contractor shall brace all poles or light standards near the new ductline, manhole, or handhole during his operations.

10. The Contractor shall saw-cut A.C. pavement and concrete gutter wherever new manholes, handholes, or ductlines are to be placed and shall restore to existing condition or better.

11. The Contractor shall comply with the policy adopted by the Department of Planning and Permitting, City and County of Honolulu, concerning the replacement of concrete sidewalks after excavation work.

12. The underground pipes, cables, or ductlines known to exist by the engineer from his search of records are indicated on the plans. The Contractor shall verify the locations and depths of the facilities and exercise proper care in excavating in the area. Wherever connections of new utilities to existing 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.

13. 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.

14. 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.

15. The Contractor shall pump all manholes dry during final inspection.

16. The Contractor shall notify Hawaiian Telcom inspector 24 hours priors to the pouring of concrete or backfilling.

1. When connecting to manhole walls, all existing reinforcing bars shall be left intact. Ducts shall be adjusted in the field in order to clear reinforcing.

2. The Contractor shall be responsible for laying out all required lines and grades and shall preserve all bench marks and working points neccessary 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.

3. Minimum concrete strength shall be:

For ductline	2500 PSI at 28 days
For manhole	3000 PSI at 28 days or as specified in design notes

4. Bends in the duct alignment, due to changes in grade shall have a minimum radius of 25 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.

5. After ductline has been completed, 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 inside. Ducts shall be completely dry and clean.

6. All ducts and conduits shall have an 1800# polyester mule-tape (Neptco, WP1800P, Hawaiian Telcom Material Code No. 571154) installed throughout its entire length. All ducts shall be capped to prevent entry of foreign material during construction and at the completion of installation.

HAWAIIAN TELCOM GENERAL CONSTRUCTION NOTES WITHIN A BUILDING:

1. Metallic entrance conduits shall be grounded.

2. 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) Have long sweep radius bendst but the inside radius of the bend MUST never be less than ten times the diameter of the conduit.

3. Ducts and/or conduits installed for usage by Hawaiian Telcom shall be inspected by Hawaiian Telcom.

1. All construction must be inspected and approved by Hawaiian Telcom prior to the installation of any of its facilities and the energizing of its systems.

2. Contractor and/or customer shall provide Hawaiian Telcom with sufficient installation time in their occupancy timetable.

3. Contractor shall provide all materials and furnish all labor and equipment necessary.

4. 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 3' coil. Telephone cabinet shall be grounded and equipped with 3/4" treated backboard. Non-enclosed backboards will only be acceptable in situations complying with the current National Electrical Code.

APPROVED

Hawaiian Telcom Date

ORIGINAL DRAWING BY	SURVEY PLOTTED BY	RSY	DATE
NOTE BOOK	TRACED BY		
No.	DESIGNED BY	WC	
	QUANTITIES BY		
	CHECKED BY		

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4/30/22
SIGNATURE LIC. EXPIRATION
ECS, INC.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

HAWAIIAN TELCOM NOTES

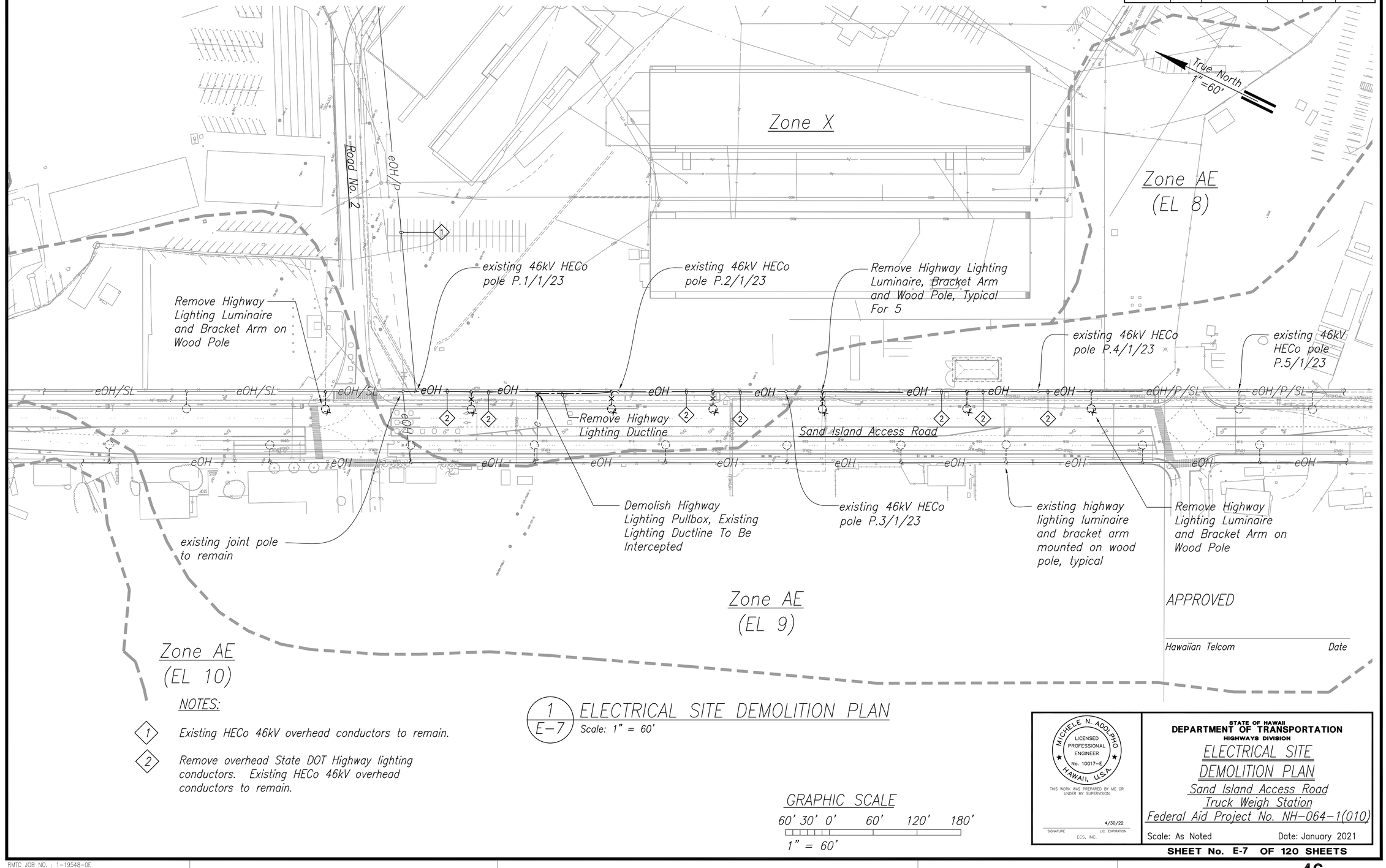
Sand Island Access Road
Truck Weigh Station
Federal Aid Project No. NH-064-1(010)

Scale: As Noted Date: January 2021

SHEET No. E-6 OF 120 SHEETS

RMTC JOB NO. : 1-19548-0E

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-064-1(010)	2018	46	120



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	TRACED BY		
NOTE BOOK	DESIGNED BY	WC	
	QUANTITIES BY		
No.	CHECKED BY		

NOTES:

1. Existing HECo 46kV overhead conductors to remain.
2. Remove overhead State DOT Highway lighting conductors. Existing HECo 46kV overhead conductors to remain.

1/E-7 ELECTRICAL SITE DEMOLITION PLAN

Scale: 1" = 60'

GRAPHIC SCALE

60' 30' 0' 60' 120' 180'

1" = 60'

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ELECTRICAL SITE DEMOLITION PLAN

Sand Island Access Road
Truck Weigh Station
Federal Aid Project No. NH-064-1(010)

Scale: As Noted Date: January 2021

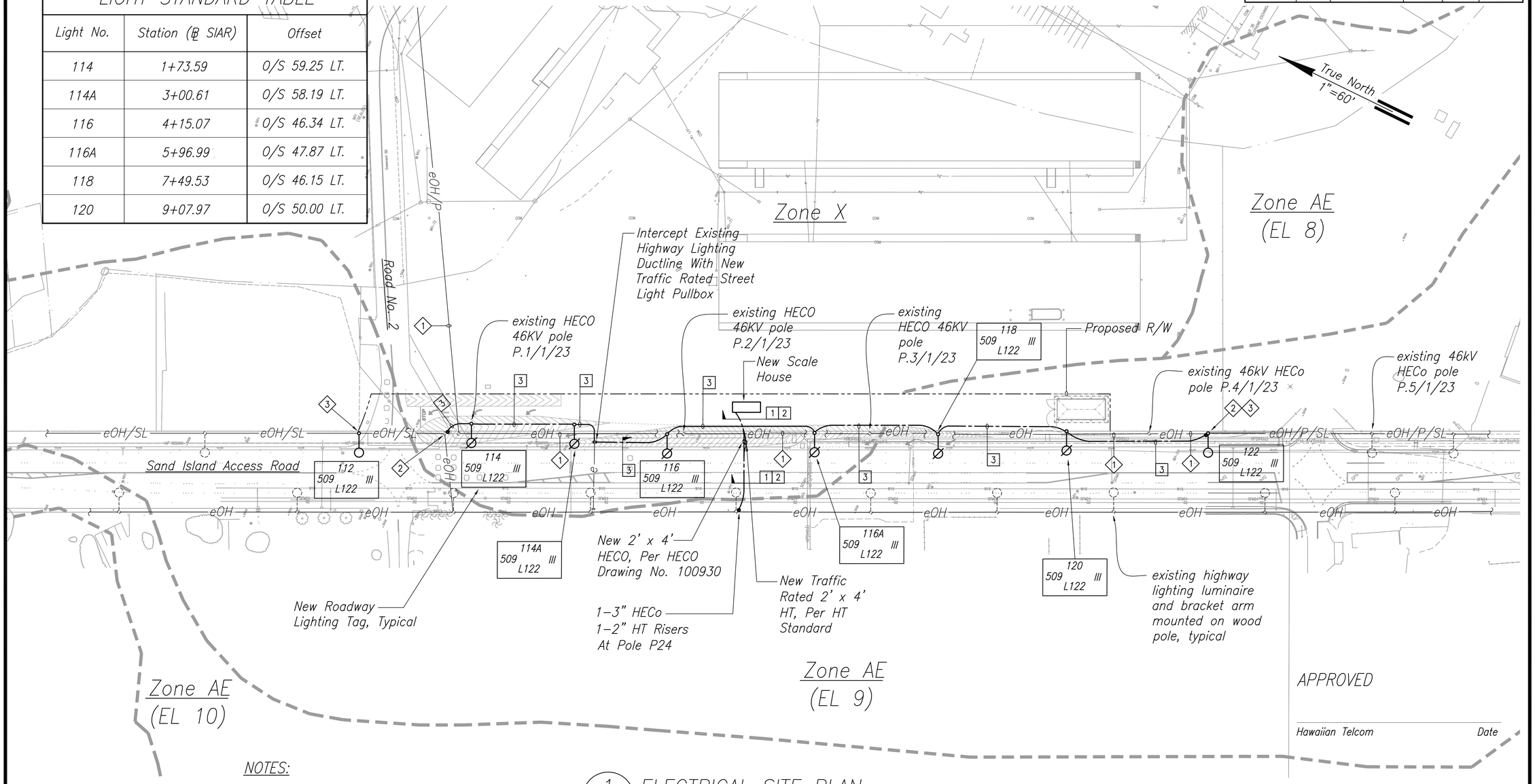
SHEET No. E-7 OF 120 SHEETS

RMTC JOB NO. : 1-19548-0E

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-064-1(010)	2018	47	120

LIGHT STANDARD TABLE

Light No.	Station (℄ SIAR)	Offset
114	1+73.59	0/S 59.25 LT.
114A	3+00.61	0/S 58.19 LT.
116	4+15.07	0/S 46.34 LT.
116A	5+96.99	0/S 47.87 LT.
118	7+49.53	0/S 46.15 LT.
120	9+07.97	0/S 50.00 LT.



APPROVED

Hawaiian Telcom Date

NOTES:

1. Existing HECo 46kV overhead conductors.
2. Stubup 2" highway lighting conduit at wood pole.
3. Provide new highway lighting luminaire and bracket arm on existing wood pole. See 1/E-15

1/E-8 ELECTRICAL SITE PLAN
Scale: 1" = 60'

GRAPHIC SCALE
60' 30' 0' 60' 120' 180'
1" = 60'

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

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RMTC JOB NO. : 1-19548-0E

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

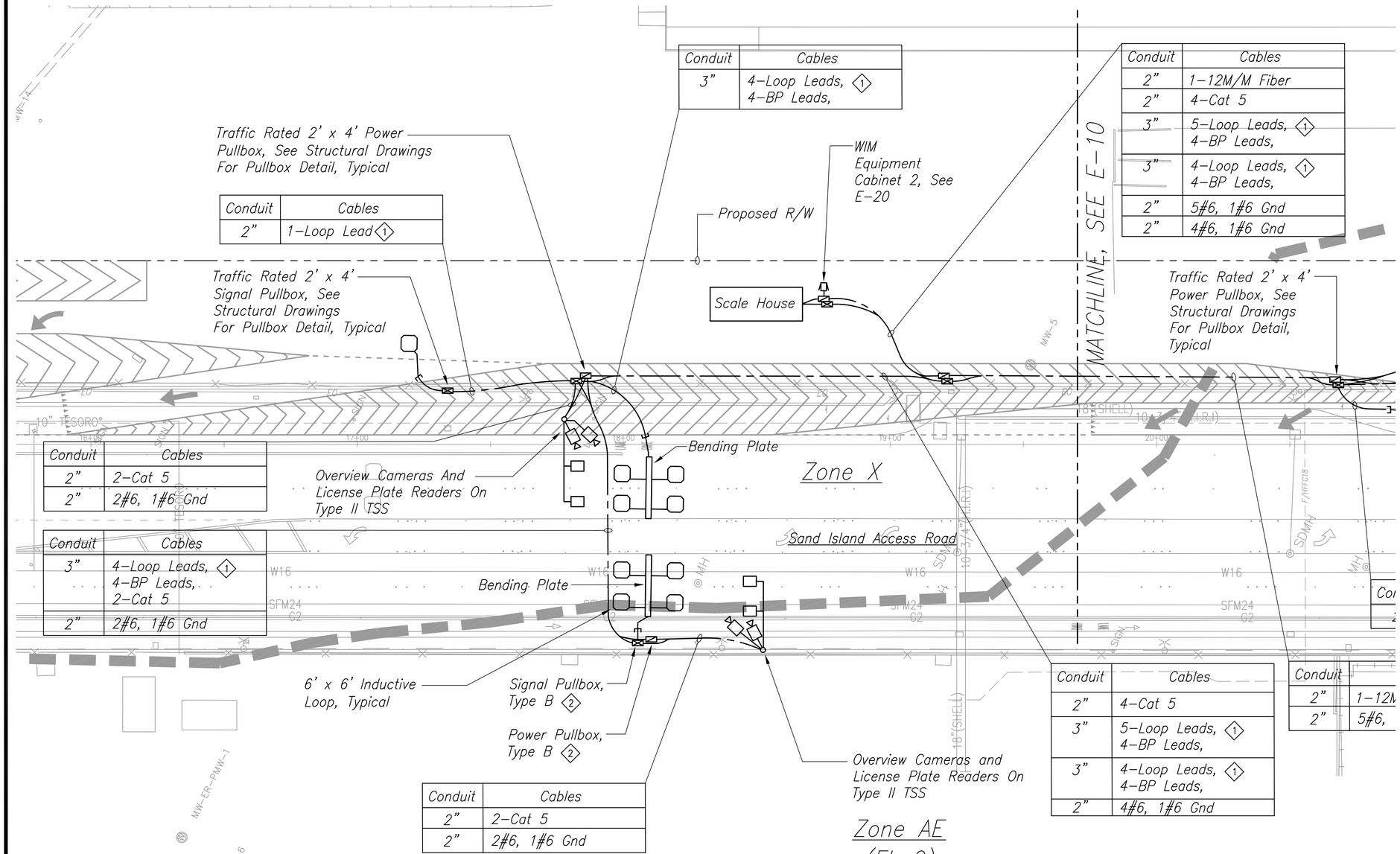
ELECTRICAL SITE PLAN

Sand Island Access Road
Truck Weigh Station
Federal Aid Project No. NH-064-1(010)

Scale: As Noted Date: January 2021

SHEET No. E-8 OF 120 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-064-1(010)	2018	48	120



1 WEIGH STATION ELECTRICAL DETAIL PLAN – 1

E–9 Scale: 1" = 20'

GRAPHIC SCALE

20' 0' 20' 40' 60' 80'

1" = 20'

NOTES:

1. ◇1 Cables provided by WIM system manufacturer.
2. ◇2 Refer to standard plan TE–37 for Type B pullbox details.
3. Coordinate WIM equipment locations, conduit/ductline sizing, cable types and quantities with the WIM system equipment manufacturer.

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

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

WEIGH STATION
ELECTRICAL DETAIL PLAN – 1
Sand Island Access Road
Truck Weigh Station
Federal Aid Project No. NH–064–1(010)

Scale: As Noted Date: January 2021

SHEET No. E-9 OF 120 SHEETS

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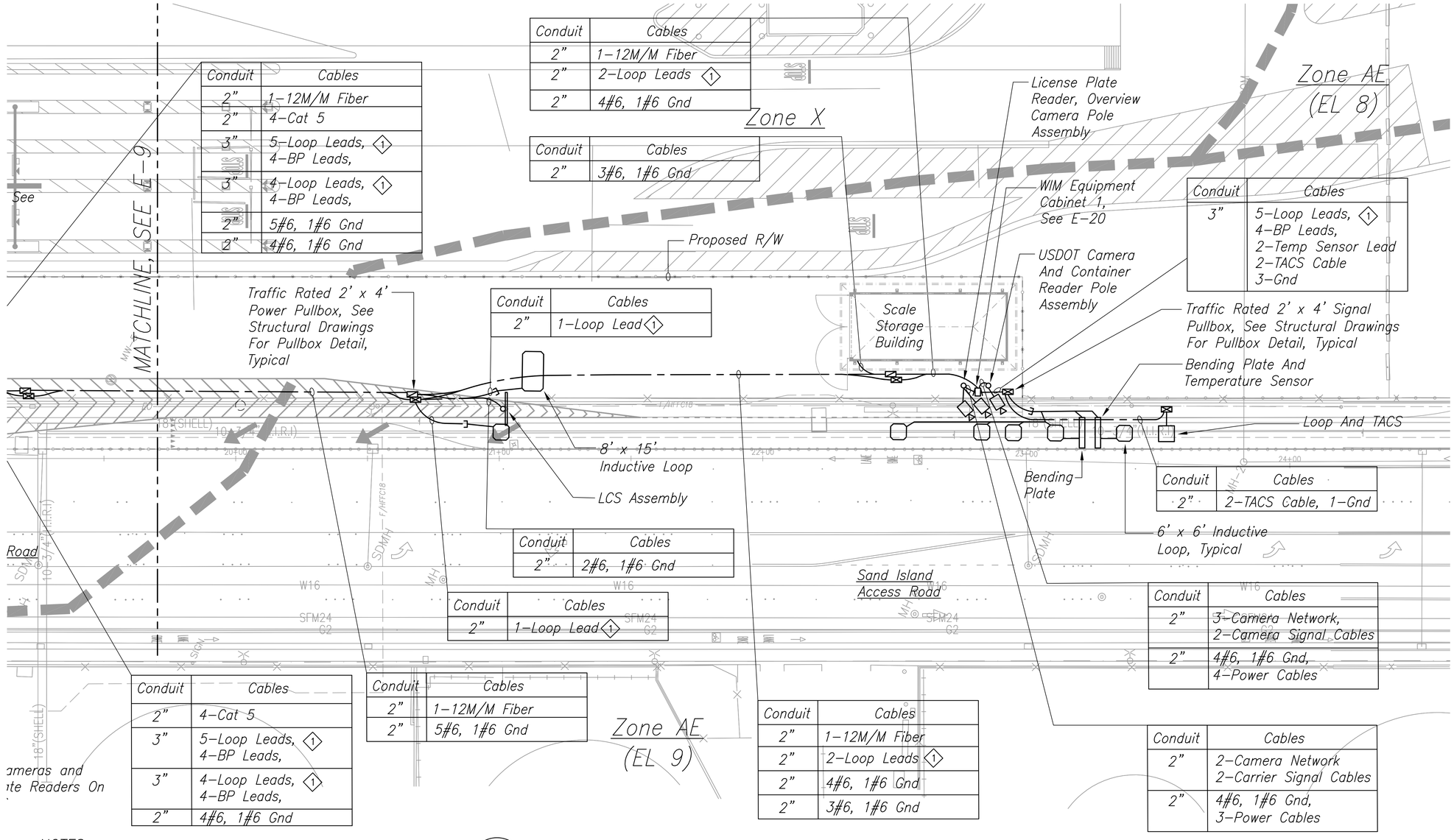
RMTC JOB NO. : 1–19548–0E

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-064-1(010)	2018	49	120



Conduit	Cables
2"	1-12M/M Fiber
2"	4-Cat 5
3"	5-Loop Leads, ◇1 4-BP Leads,
3"	4-Loop Leads, ◇1 4-BP Leads,
2"	5#6, 1#6 Gnd
2"	4#6, 1#6 Gnd

Conduit	Cables
2"	1-12M/M Fiber
2"	2-Loop Leads ◇1
2"	4#6, 1#6 Gnd

Conduit	Cables
2"	3#6, 1#6 Gnd

Conduit	Cables
3"	5-Loop Leads, ◇1 4-BP Leads, 2-Temp Sensor Lead 2-TACS Cable 3-Gnd

Conduit	Cables
2"	1-Loop Lead ◇1

Conduit	Cables
2"	2#6, 1#6 Gnd

Conduit	Cables
2"	2-TACS Cable, 1-Gnd

Conduit	Cables
2"	3-Camera Network, 2-Camera Signal Cables
2"	4#6, 1#6 Gnd, 4-Power Cables

Conduit	Cables
2"	4-Cat 5
3"	5-Loop Leads, ◇1 4-BP Leads,
3"	4-Loop Leads, ◇1 4-BP Leads,
2"	4#6, 1#6 Gnd

Conduit	Cables
2"	1-12M/M Fiber
2"	5#6, 1#6 Gnd

Conduit	Cables
2"	1-12M/M Fiber
2"	2-Loop Leads ◇1
2"	4#6, 1#6 Gnd
2"	3#6, 1#6 Gnd

Conduit	Cables
2"	2-Camera Network 2-Carrier Signal Cables
2"	4#6, 1#6 Gnd, 3-Power Cables

NOTES:

◇1 Cables provided by WIM system manufacturer.

2. Coordinate WIM equipment locations, conduit/ductline sizing, cable types and quantities with the WIM system equipment manufacturer.

True North
1"=20'

1 / E-10 WEIGH STATION ELECTRICAL DETAIL PLAN – 2
Scale: 1" = 20'

GRAPHIC SCALE
20' 0' 20' 40' 60' 80'
1" = 20'

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DATE	

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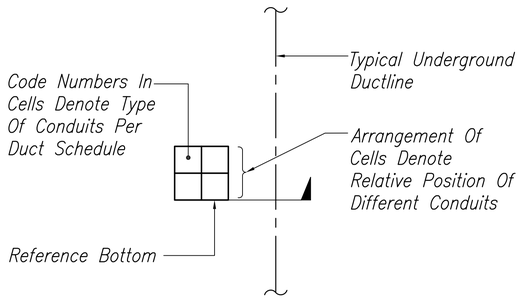
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
WEIGH STATION
ELECTRICAL DETAIL PLAN – 2
Sand Island Access Road
Truck Weigh Station
Federal Aid Project No. NH-064-1(010)
Scale: As Noted Date: January 2021

SHEET No. E-10 OF 120 SHEETS

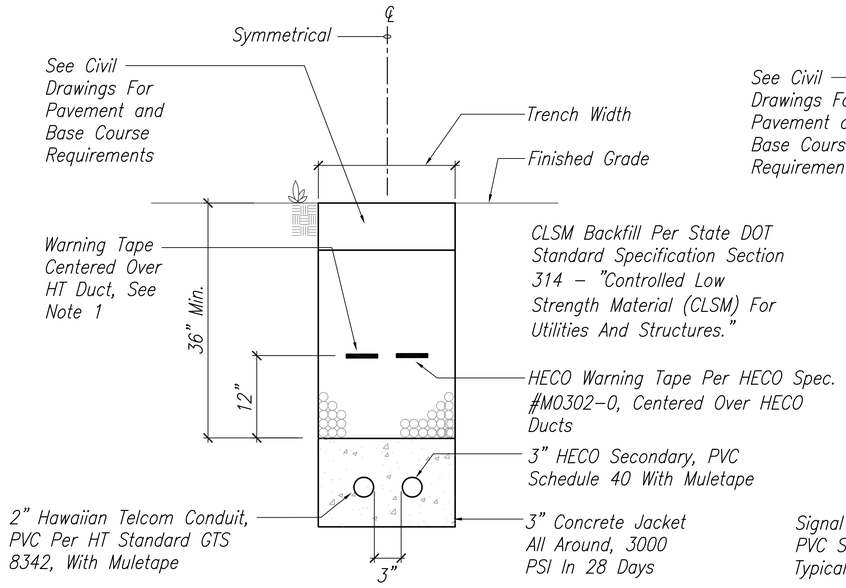
RMTC JOB NO. : 1-19548-0E

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-064-1(010)	2018	50	120



(Note: All Ductlines Are Concrete Encased)

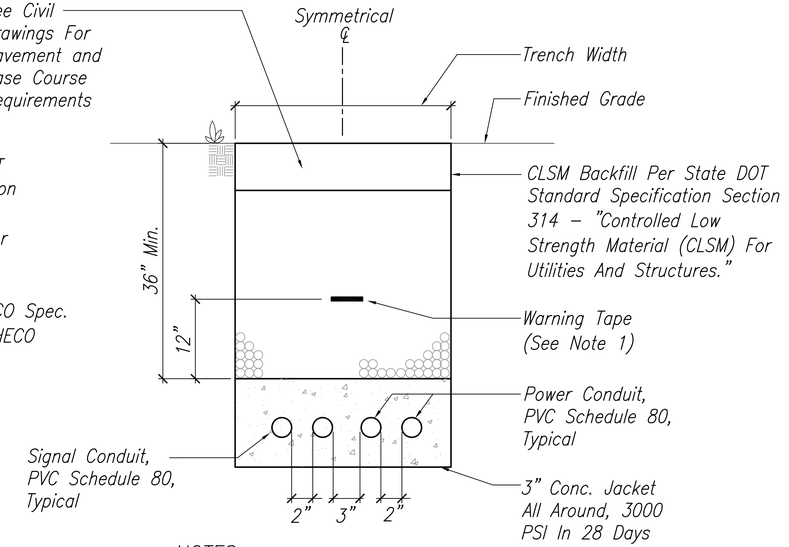
1 / E-11 DUCT SECTION FLAG CODE
No Scale



NOTES:

1. 8 mil thick orange colored plastic warning tape. 4" wide minimum for the entire length of trench. Tape shall read "WARNING – STOP DIGGING – CALL HAWAIIAN TELCOM, CABLE BURIED BELOW, FAILURE TO COMPLY COULD RESULT IN LEGAL ACTION."
2. 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.

2 / E-11 UTILITY COMPANY DUCT SECTION
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. 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.

3 / E-11 TYPICAL DUCT SECTION
Not To Scale

DUCT SCHEDULE

Type	Type	Cables
1	3" HECO Secondary, PVC Schedule 40	By HECO, Provide Pullstring
2	2" Hawaiian Telcom, PVC Per GTS 8342	By HT, Provide Muletape
3	2" Highway Lighting, PVC Schedule 80	See Highway Lighting Diagram

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ORIGINAL PLAN SIZE: 24" x 36"	SURVEY PLOTTED BY	DATE
NOTE BOOK	DRAWN BY RSY	
No.	TRACED BY	
	DESIGNED BY WC	
	QUANTITIES BY	
	CHECKED BY	

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ECS, INC.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DUCT DETAILS

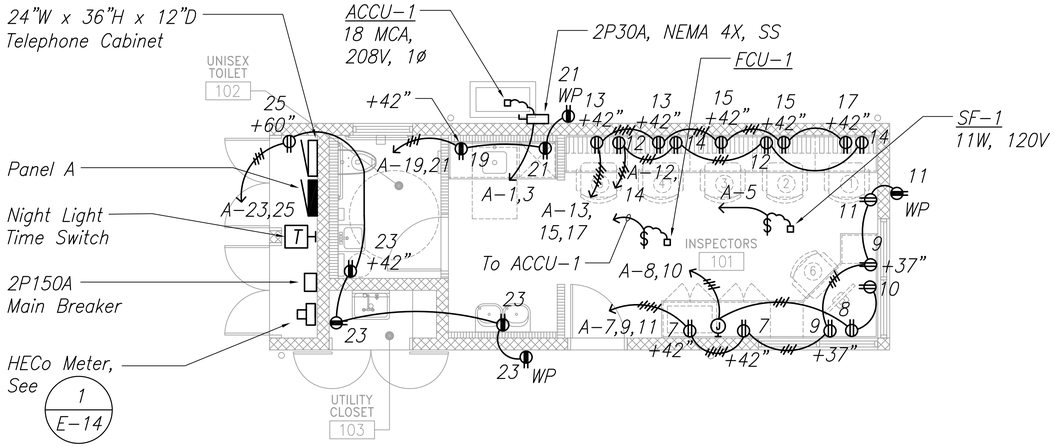
Sand Island Access Road
Truck Weigh Station
Federal Aid Project No. NH-064-1(010)

Scale: As Noted Date: January 2021

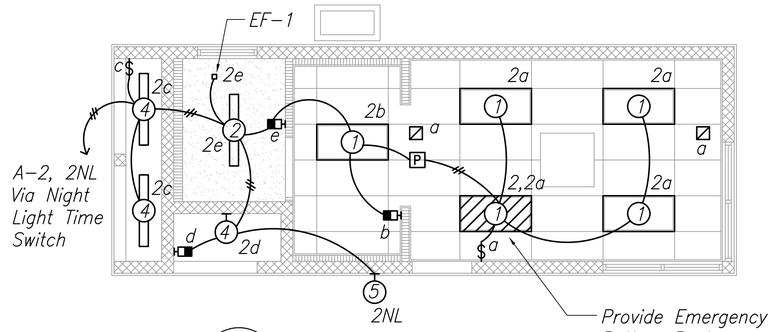
SHEET No. E-11 OF 120 SHEETS

RMTC JOB NO. : 1-19548-0E

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-064-1(010)	2018	51	120



1 / E-12 POWER AND OUTLETS PLAN
Scale: 1/4" = 1'-0"

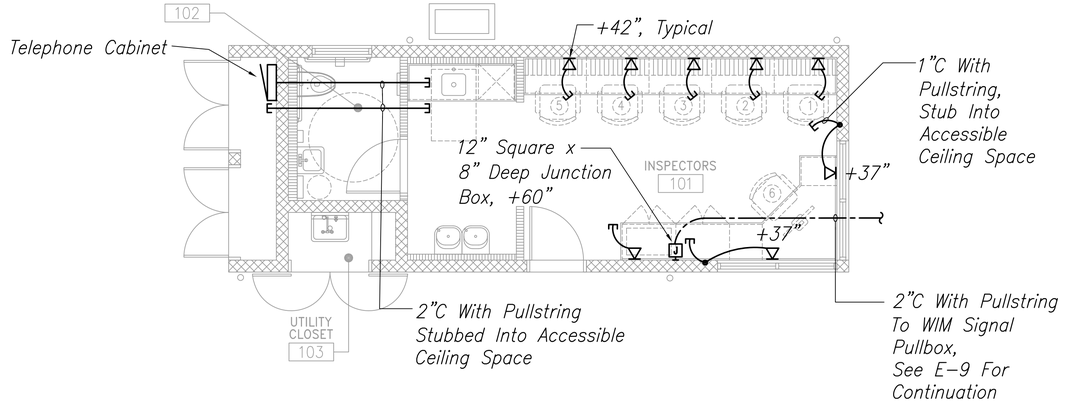


2 / E-12 LIGHTING PLAN
Scale: 1/4" = 1'-0"

PANEL A — 120/240 Volts, 1 Phase, 3 Wire; 225A 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	ACCU-1	2		1.6	0.4	20	1	Lights	2	12
12	3			30	0.6	2.7	60	1	WIM Cab 1	4	4
12	5	SF-1	1	20	0.2	2.5	60	1	WIM Cab 2	6	4
12	7	Recept-Inspectors	1	20	0.6	1.0	20	1	WIM Control Station	8	12
12	9	Recept-Inspectors	1	20	0.6	1.0	20	1	WIM Control Station	10	12
12	11	Recept-Inspectors	1	20	0.6	1.0	20	1	Recept-Inspectors	12	12
12	13	Recept-Inspectors	1	20	0.6	1.0	20	1	Recept-Inspectors	14	12
12	15	Recept-Inspectors	1	20	0.6	1.0	20	1	Spare	16	–
12	17	Recept-Inspectors	1	20	0.6	1.0	20	1	Spare	18	–
12	19	Recept-Kitchen	1	20	1.0	1.0	20	1	Spare	20	–
12	21	Recept-Kitchen	1	20	1.0	1.0	20	1	Spare	22	–
12	23	Recept-Toilet/Utility	1	20	1.0	1.0	20	1	Spare	24	–
12	25	Elec/Comm Closet	1	20	0.5	0.5	20	1	Spare	26	–
–	27	PFB	1	–	–	–	–	1	PFB	28	–
–	29	PFB	1	–	–	–	–	1	PFB	30	–
–	31	PFB	1	–	–	–	–	1	PFB	32	–
* 6	33	Storage Building	2		0.5	–	–	1	PFB	34	–
* 6	35			30		0.5	–	1	PFB	36	–
		CONNECTED LOAD/PHASE			13.8	12.6					
		TOTAL CONNECTED LOAD			26.4 KVA						
		DEMAND FACTOR			0.7						
		TOTAL DEMAND LOAD			18.5 KVA =	77 AMPS					

* Provide 2P30A GFCI Breaker



3 / E-12 SIGNAL PLAN
Scale: 1/4" = 1'-0"

GRAPHIC SCALE
5' 0 5' 10' 15'
1/4" = 1'-0"

MICHELE N. ADOLPHO
LICENSED PROFESSIONAL ENGINEER
No. 10017-E
HAWAII, U.S.A.
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION
4/30/22
SIGNATURE LIC. EXPIRATION
ECS, INC.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

SCALE HOUSE ELECTRICAL PLANS

Sand Island Access Road
Truck Weigh Station
Federal Aid Project No. NH-064-1(010)

Scale: As Noted Date: January 2021

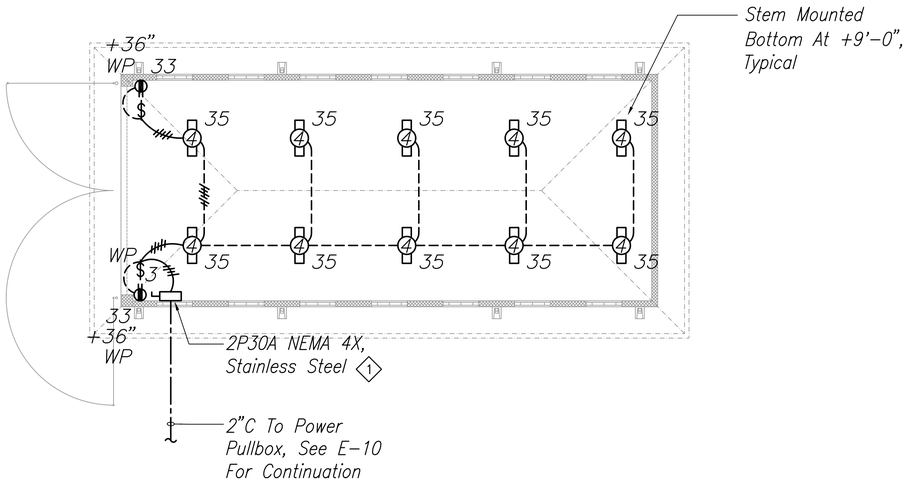
SHEET No. E-12 OF 120 SHEETS

ORIGINAL SURVEY PLOTTED BY: BSY
DRAWN BY:
TRACED BY:
DESIGNED BY: WC
QUANTITIES BY:
CHECKED BY:
DATE:
NOTE BOOK
No.

2/3/21-15:14 Y:\060\060.203\060.203 E-12.PDI.dwg

RMTC JOB NO. : 1-19548-0E

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-064-1(010)	2018	52	120



1 / E-13 WEIGH STORAGE BUILDING ELECTRICAL PLAN

Scale: 1/8" = 1'-0"

GRAPHIC SCALE

5' 0' 5' 10' 15' 20' 25' 30' 35'

1/8" = 1'-0"

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

2/3/21-15:14 Y:\060\060.203\060.203 E-13.PDZ.dwg

RMTC JOB NO. : 1-19548-0E

MICHELE N. ADOLPHO
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No. 10017-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

4/30/22
SIGNATURE LIC. EXPIRATION

ECS, INC.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

WEIGHING STORAGE BUILDING ELECTRICAL PLAN

Sand Island Access Road
Truck Weigh Station
Federal Aid Project No. NH-064-1(010)

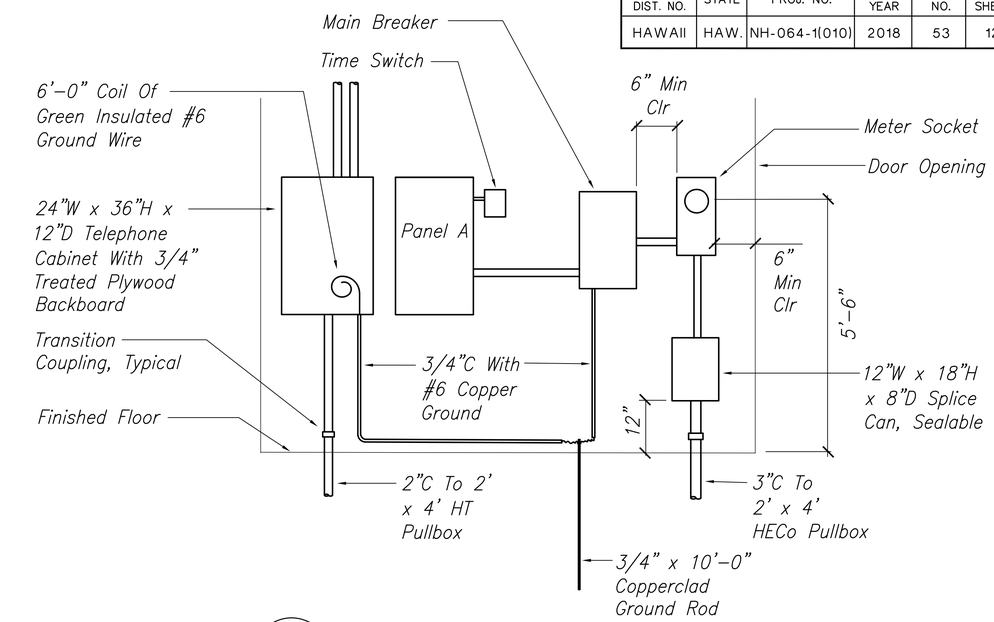
Scale: As Noted Date: January 2021

SHEET No. E-13 OF 120 SHEETS

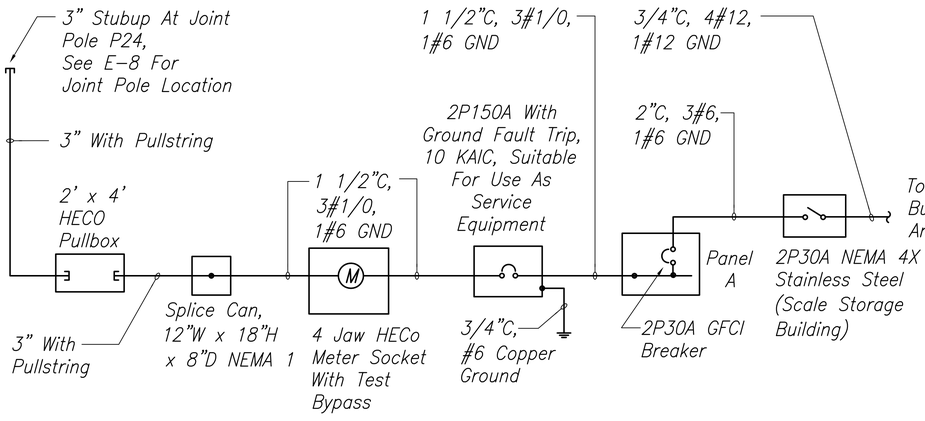
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-064-1(010)	2018	53	120

LUMINAIRE SCHEDULE

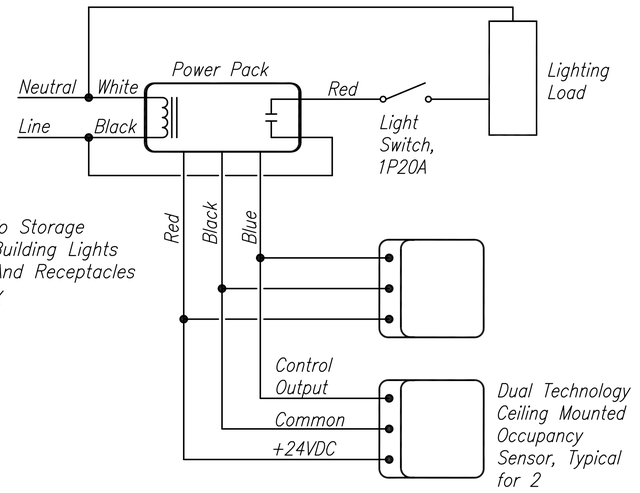
Type	Description	Lamps
1	LED, Recessed 2' x 4', Die Formed Cold-Rolled Steel Housing, Nominal 4,600 Luminaire Lumens, Nominal 102 Lumens Per Watt, 4" Maximum Depth, K12 Prismatic 0.125" Lens, 120V Driver, Emergency Battery Pack (1400 Lumens) Where Indicated Columbia #LJT24-35-MLG-FSA12125-EU-ELL14 Or Approved Equivalent	45W 3500K
2	LED, Ceiling Mounted, Prismatic Acrylic Wraparound, 8 1/4" Wide Heavy Gauge Steel Housing, Nominal 4700 Luminaire Lumens, 100 Lumens Per Watt, 120V Driver Columbia #LAW4-35-ML-EU Or Approved Equivalent	48W 3500K
3	LED, Wall Mounted Drum Light, Bottom At +84", Die-Cast Aluminum Housing, Bronze Finish, Clear Prismatic Polycarbonate Diffuser, 13" Diameter, 4" Max Depth, 1500 Delivered Lumens, 120V Driver Luminaire LED #ARV13-25W-3500K Or Approved Equivalent	15W 3500K
4	LED, Surface Mounted Gasketed Fiberglass Housing, Tamper Resistant Ribbed Frosted Polycarbonate Lens, Nominal 4850 Delivered Lumens, 120V Driver, Emergency Battery Pack Where Indicated Columbia #LXEM4-35ML-RFP-EU-ELL14 Or Approved Equivalent	47W 3500K
5	LED Wall Pack, Bottom At +7'-6", Die-Cast Aluminum Housing, Dark Bronze Powder Paint Finish, Acrylic Diffuser, Type **IV** Distribution, 3900 Delivered Lumens, Fully Shielded, Fully Gasketed, Tamper-Resistant Fasteners, Wet Location, 120V Driver Hubbell #LNC2-18LU-4K-4-DB Or Approved Equivalent	43W 4000K



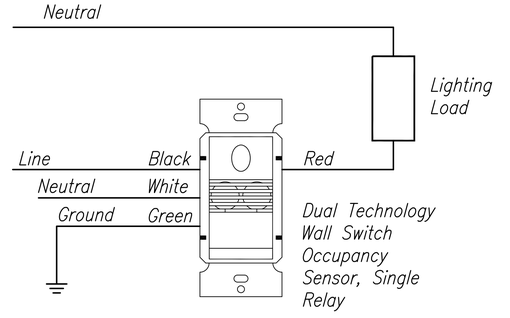
1 / E-14 SERVICE EQUIPMENT ELEVATION
Not To Scale



ONE-LINE DIAGRAM
No Scale



2 / E-14 CEILING OCCUPANCY SENSOR WIRING DIAGRAM
No Scale



3 / E-14 TYPICAL WALL SWITCH OCCUPANCY SENSOR WIRING DIAGRAM
No Scale

ORIGINAL DRAWING SIZE: 22" x 34"
SURVEY PLOTTED BY: DATE
DRAWN BY: BSY
TRACED BY:
DESIGNED BY: WC
QUANTITIES BY:
CHECKED BY:
NOTE BOOK
No.

2/3/21-15:14 Y:\060\060.203\060.203 E-14.003.dwg

RMTC JOB NO. : 1-19548-0E

MICHELE N. ADOLPHO
LICENSED PROFESSIONAL ENGINEER
No. 10017-E
HAWAII, U.S.A.
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION
4/30/22
SIGNATURE LIC. EXPIRATION
ECS, INC.

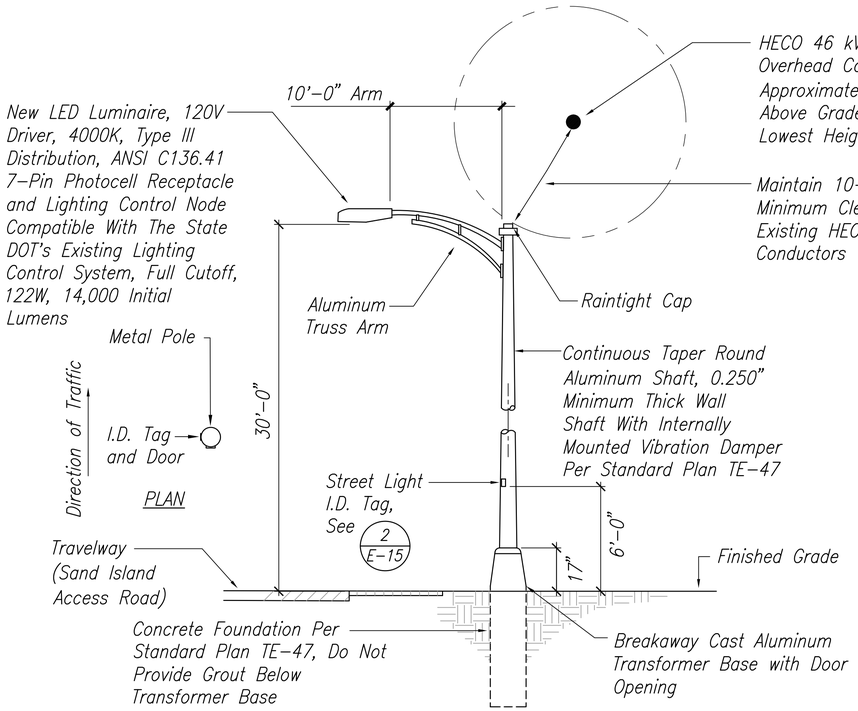
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ONE LINE DIAGRAM,
LUMINAIRE SCHEDULE
Sand Island Access Road
Truck Weigh Station
Federal Aid Project No. NH-064-1(010)

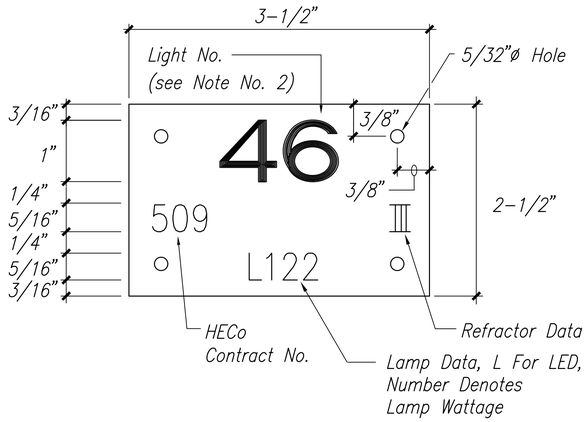
Scale: As Noted Date: January 2021

SHEET No. E-14 OF 120 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-064-1(010)	2018	54	120



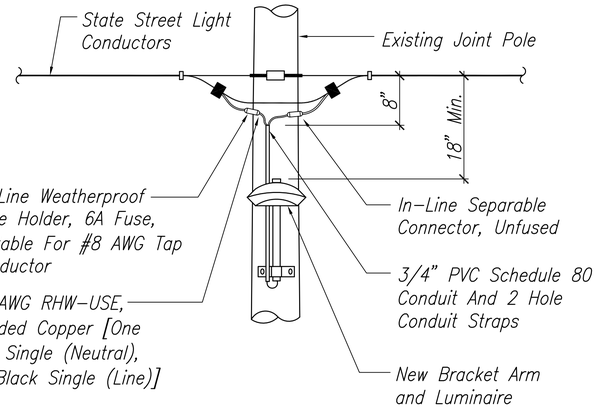
1 E-15 HIGHWAY LIGHT STANDARD
Not To Scale



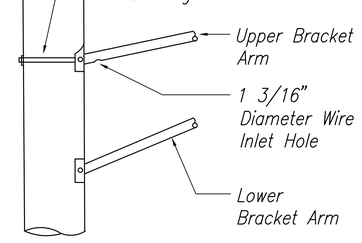
NOTES:

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 Number Size Shall Be 1" High And Engraved 1/8" Wide, White In Color. Obtain Light Numbers From The State.
3. Nomenclature Size Shall Be 5/16" High And Engraved 1/32" Wide, White In Color (HECo Contract Number, Lamp Data And Refractor Data As Required).
4. Attach To Aluminum Poles with No. 8 Stainless Steel 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".

2 E-15 STREET LIGHT TAG
Not To Scale



3 E-15 HIGHWAY LIGHT ON JOINT POLE
Not To Scale



4 E-15 BRACKET ARM DETAIL
Not To Scale

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

2/3/21-15:14 Y:\060\060.203\060.203 E-15.005.dwg

RMTC JOB NO. : 1-19548-0E

MICHELE N. ADOLPHO LICENSED PROFESSIONAL ENGINEER No. 10017-E HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

4/30/22
SIGNATURE LIC. EXPIRATION

ECS, INC.

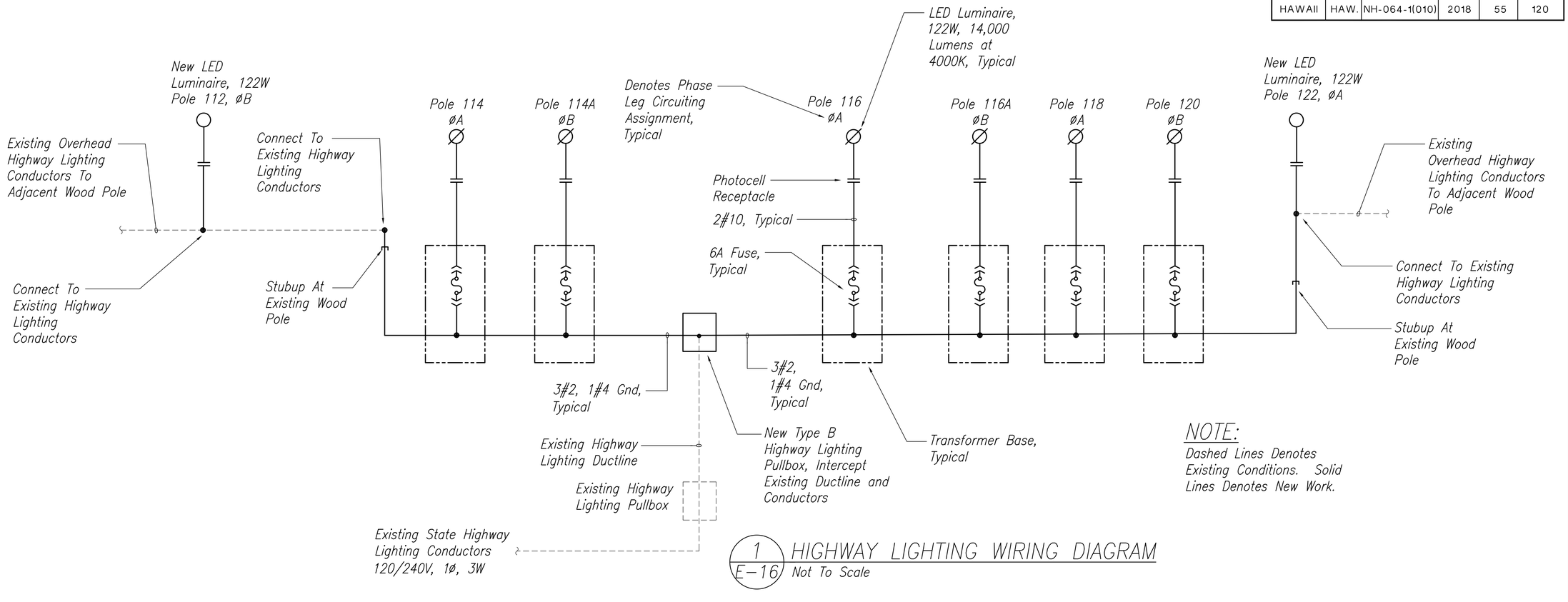
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

HIGHWAY LIGHTING
DETAILS
Sand Island Access Road
Truck Weigh Station
Federal Aid Project No. NH-064-1(010)

Scale: As Noted Date: January 2021

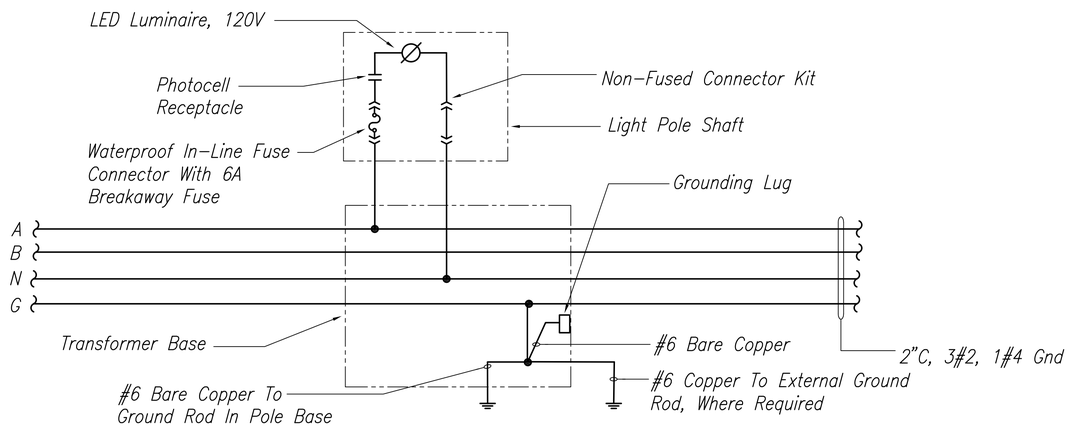
SHEET No. E-15 OF 120 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-064-1(010)	2018	55	120



NOTE:
Dashed Lines Denotes Existing Conditions. Solid Lines Denotes New Work.

1 / E-16 HIGHWAY LIGHTING WIRING DIAGRAM
Not To Scale



2 / E-16 TYPICAL HIGHWAY LIGHT STANDARD WIRING DIAGRAM
Not To Scale

ORIGINAL DRAWING	SURVEY PLOTTED BY	DATE
	DRAWN BY	BSY
NOTE BOOK	TRACED BY	
	DESIGNED BY	WC
No.	QUANTITIES BY	
	CHECKED BY	

2/3/21-15:14 Y:\060\060.203\060.203 E-16.006.dwg

RMTC JOB NO. : 1-19548-0E

MICHELE N. ADOLPHO
LICENSED PROFESSIONAL ENGINEER
No. 10017-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

4/30/22
SIGNATURE LIC. EXPIRATION
ECS, INC.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

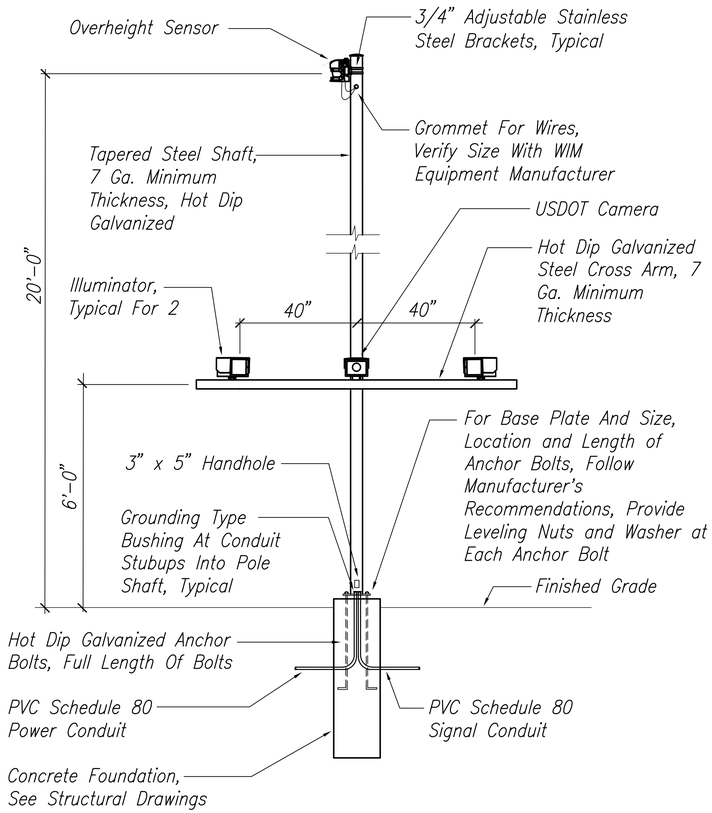
HIGHWAY LIGHTING WIRING DIAGRAM

Sand Island Access Road
Truck Weigh Station
Federal Aid Project No. NH-064-1(010)

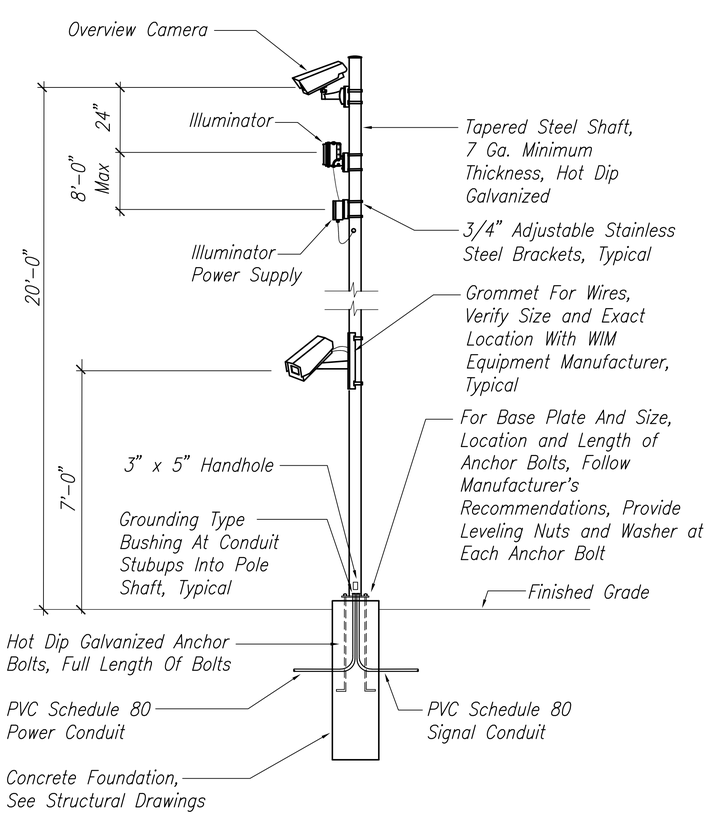
Scale: As Noted Date: January 2021

SHEET No. E-16 OF 120 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-064-1(010)	2018	56	120



1 E-17 OVERHEIGHT SENSOR AND USDOT CAMERA POLE ASSEMBLY
Not To Scale



2 E-17 OVERVIEW CAMERA AND LPR POLE ASSEMBLY
Not To Scale

NOTES:

1. Support structure designs shall conform with the AASHTO LRFD Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals, 1st Edition (2015) including all subsequent interim revisions and editions.

2. Loads:
   a. Basic Wind Speed: 145 mph
   b. Mean Recurrence Interval of 1,700 years
   c. Fatigue importance factor, IF, shall be based on Fatigue Category I for cantilevered structures.
   d. Vortex shedding induced loads shall be considered for cantilevered mast arms and pole shafts that do not have tapers or have tapers of less than 0.14 in./ft.
   e. Structures shall be designed for a truck induced gust based on a truck speed of 20 MPH over the posted speed.
   f. Galloping and natural wind gusts shall be considered for cantilevered structures.

3. All accessories, fittings, connection details and stiffener details (as required) shall be designed for the loads specified above and submitted to the Engineer for approval.

4. All connection bolts shall be AASHTO M164 bolts and anchor bolts shall be AASHTO M134-105 bolts.

5. Aluminum members and surfaces in contact with structural steel shall be isolated with neoprene materials as approved by the Engineer.

6. The recommendations of the traffic pole manufacturer shall be followed. Manufacturer shall select pole, anchor bolts, etc. based on the criteria given in the contract documents. The Contractor shall submit catalog cuts and structural calculations to the Engineer for approval.

ORIGINAL PLAN	SURVEY PLOTTED BY	RSY	DATE
	SURVEY CHKD BY		
	TRACED BY		
NOTE BOOK	DESIGNED BY	WC	
No.	QUANTITIES BY		
	CHECKED BY		

2/3/21-15:14 Y:\060\060.203\060.203 E-17 004.dwg

RMTC JOB NO. : 1-19548-0E

MICHELE N. ADOLPHO
LICENSED PROFESSIONAL ENGINEER
No. 10017-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

4/30/22
SIGNATURE LIC. EXPIRATION
ECS, INC.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

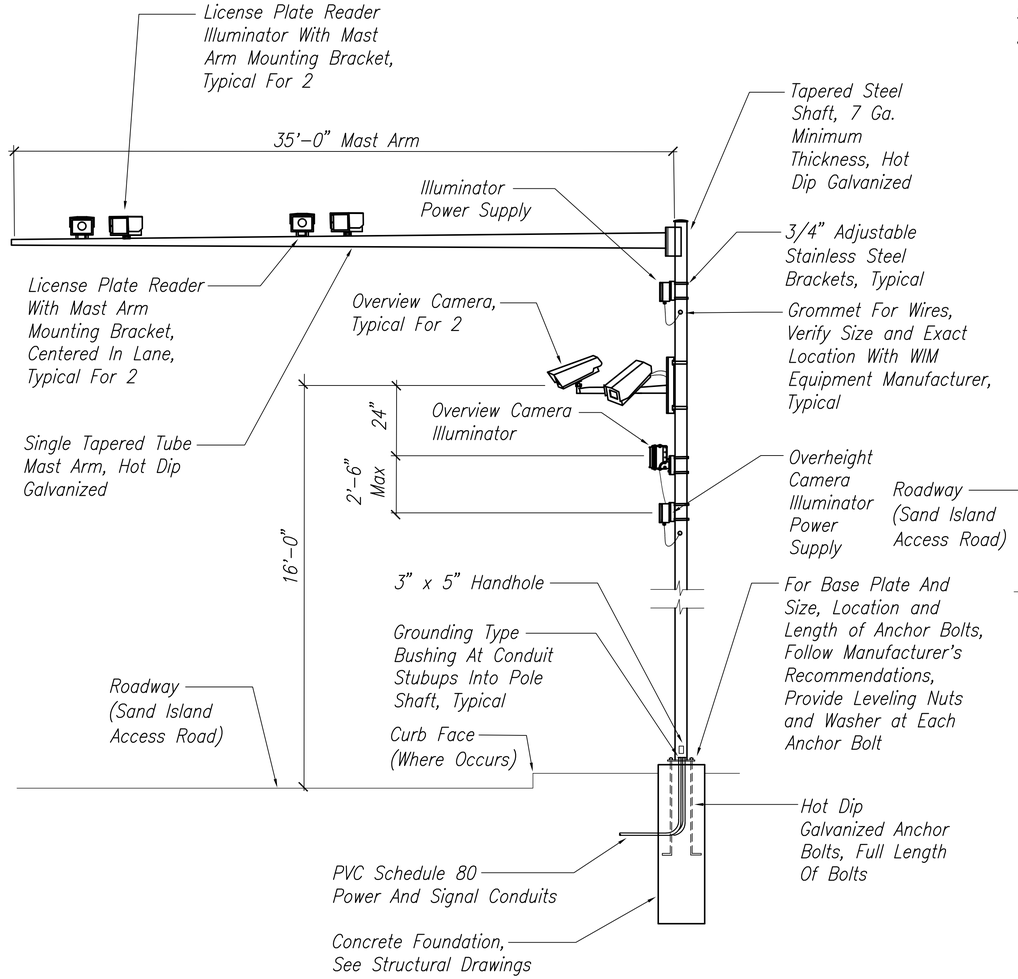
WIM DETAILS

Sand Island Access Road
Truck Weigh Station
Federal Aid Project No. NH-064-1(010)

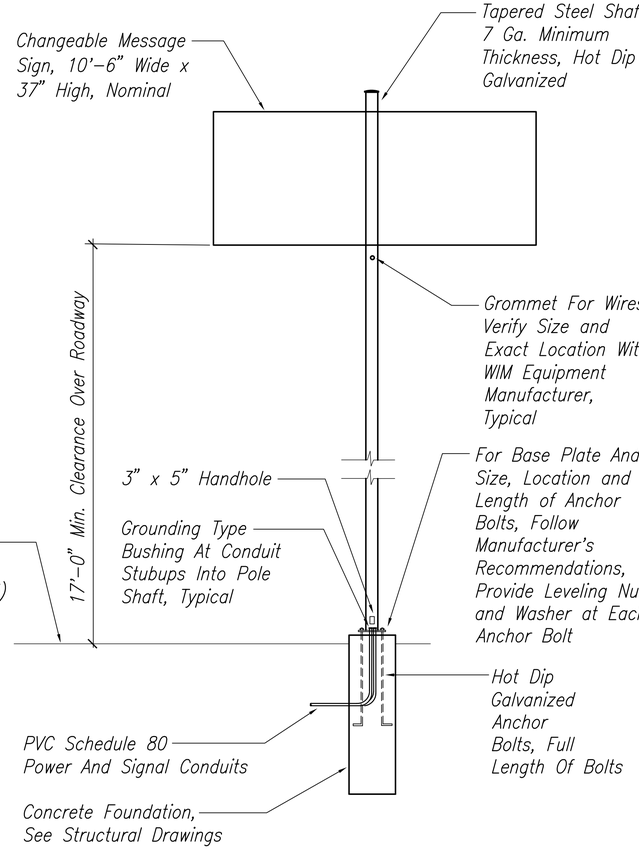
Scale: As Noted Date: January 2021

SHEET No. E-17 OF 120 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-064-1(010)	2018	57	120



1 E-18 OVERVIEW CAMERA AND LPR POLE ASSEMBLY – TYPE II TRAFFIC SIGNAL STANDARD
Not To Scale



2 E-18 LCS POLE ASSEMBLY
Not To Scale

NOTES:

1. Support structure designs shall conform with the AASHTO LRFD Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals, 1st Edition (2015) including all subsequent interim revisions and editions.

2. Loads:
   a. Basic Wind Speed: 145 mph
   b Mean Recurrence Interval of 1,700 years
   c. Fatigue importance factor, IF, shall be based on Fatigue Category I for cantilevered structures.
   d. Vortex shedding induced loads shall be considered for cantilevered mast arms and pole shafts that do not have tapers or have tapers of less than 0.14 in./ft.
   e. Structures shall be designed for a truck induced gust based on a truck speed of 20 MPH over the posted speed.
   f. Galloping and natural wind gusts shall be considered for cantilevered structures.

3. All accessories, fittings, connection details and stiffener details (as required) shall be designed for the loads specified above and submitted to the Engineer for approval.

4. All connection bolts shall be AASHTO M164 bolts and anchor bolts shall be AASHTO M134-105 bolts.

5. Aluminum members and surfaces in contact with structural steel shall be isolated with neoprene materials as approved by the Engineer.

6. The recommendations of the traffic pole manufacturer shall be followed. Manufacturer shall select pole, anchor bolts, etc. based on the criteria given in the contract documents. The Contractor shall submit catalog cuts and structural calculations to the Engineer for approval.

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

2/3/21-15:14 Y:\060\060.203\060.203 E-18 D04.dwg

RMTC JOB NO. : 1-19548-0E

MICHELE N. ADOLPHO
LICENSED PROFESSIONAL ENGINEER
No. 10017-E
HAWAII, U.S.A.
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION
4/30/22
SIGNATURE LIC. EXPIRATION
ECS, INC.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

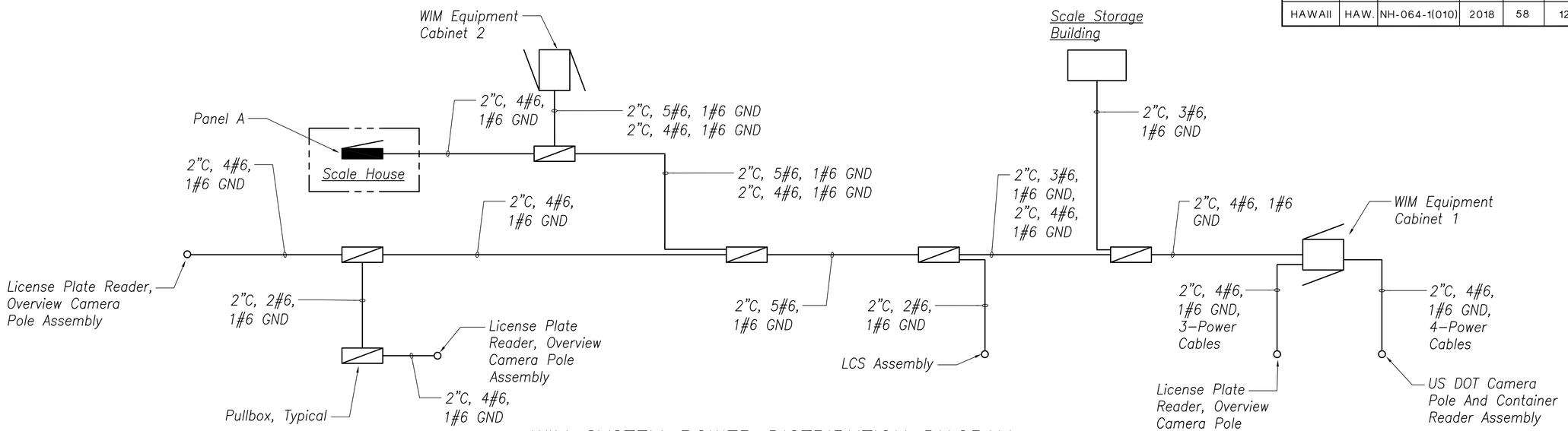
WIM DETAILS

Sand Island Access Road
Truck Weigh Station
Federal Aid Project No. NH-064-1(010)

Scale: As Noted Date: January 2021

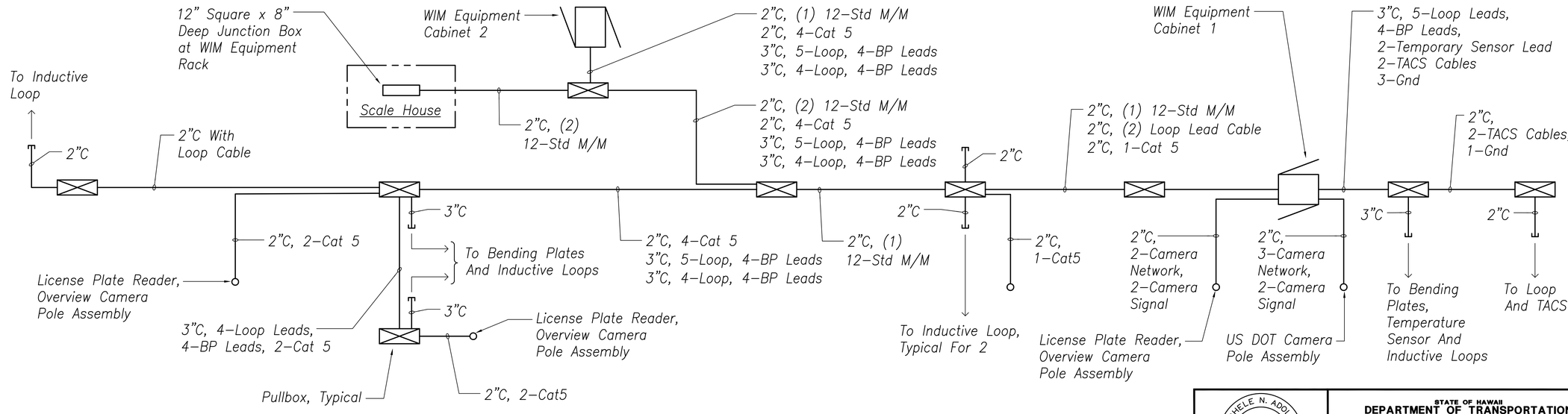
SHEET No. E-18 OF 120 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-064-1(010)	2018	58	120



WIM SYSTEM POWER DISTRIBUTION DIAGRAM

No Scale



WIM SYSTEM COMMUNICATIONS DISTRIBUTION DIAGRAM

No Scale

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

2/3/21-15:15 I:\060\060.203\060.203 E-19 007.dwg

MICHELE N. ADOLPHO
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No. 10017-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

4/30/22
SIGNATURE LIC. EXPIRATION

ECS, INC.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

WIM SYSTEM SITE DISTRIBUTION DIAGRAMS

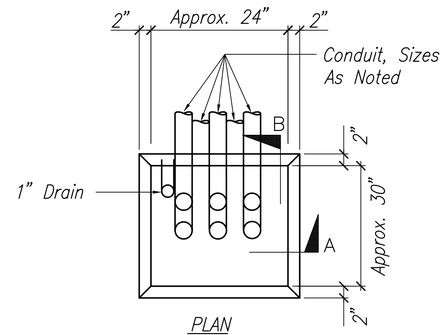
Sand Island Access Road
Truck Weigh Station
Federal Aid Project No. NH-064-1(010)

Scale: As Noted Date: January 2021

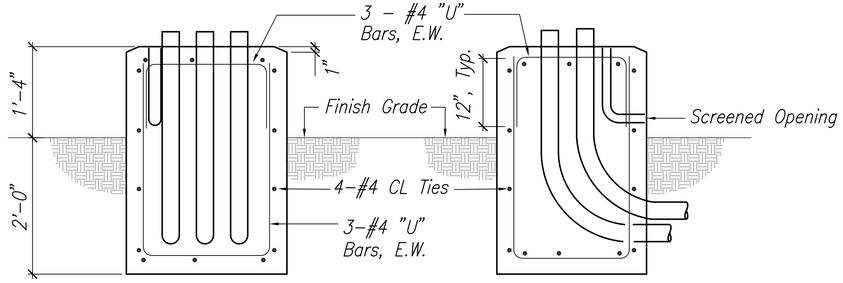
SHEET No. E-19 OF 120 SHEETS

RMTC JOB NO. : 1-19548-0E

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-064-1(010)	2018	59	120

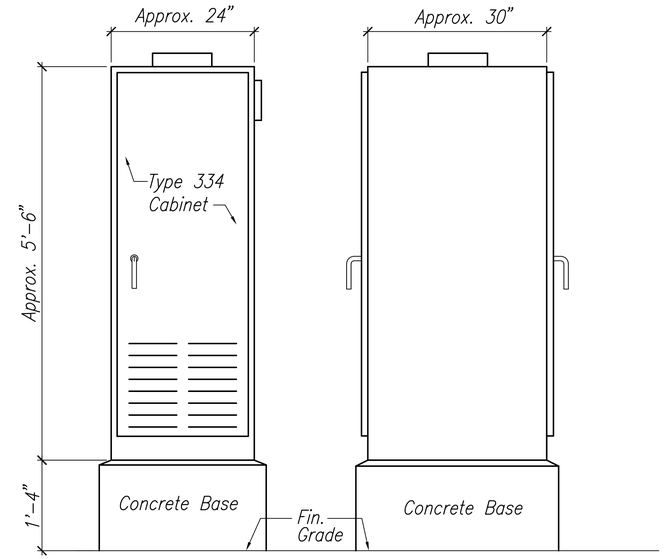


PLAN



SECTION "A" SECTION "B"

CONCRETE BASE



FRONT VIEW SIDE VIEW

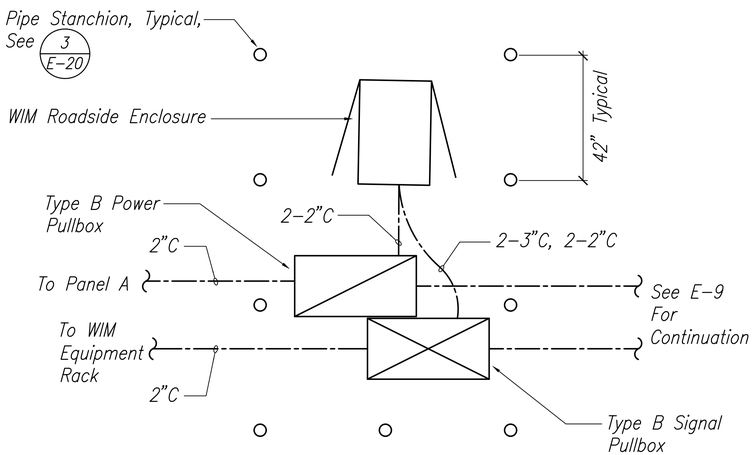
TYPE 334 CABINET

1 / E-20 WIM ROADSIDE ENCLOSURE

Not To Scale

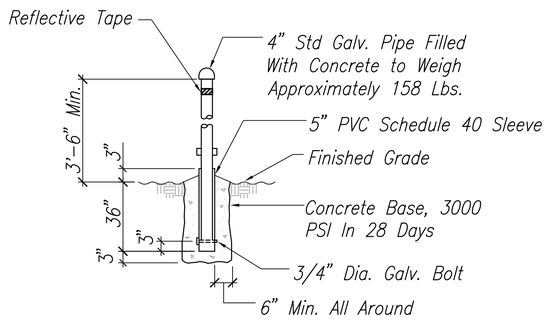
NOTES:

1. Concrete Shall Be Class "B".
2. Dimensions Shall Be Altered To Suit Controller 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.
6. Provide Type II Object Marker Per Standard Plan TE-15.



2 / E-20 WIM EQUIPMENT CABINET 2 LAYOUT

Not To Scale



NOTE:
Stanchion shall be painted yellow per ANSI Spec Z535.1 to comply with OSHA Standards for coloring code.

3 / E-20 PIPE STANCHION

Not To Scale

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

2/3/21-15:15 Y:\060\060.203\060.203 E-20 003.dwg

RMTC JOB NO. : 1-19548-0E

MICHELE N. ADOLPHO LICENSED PROFESSIONAL ENGINEER No. 10017-E HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

4/30/22
SIGNATURE LIC. EXPIRATION

ECS, INC.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

WIM ROADSIDE ENCLOSURE

Sand Island Access Road
Truck Weigh Station
Federal Aid Project No. NH-064-1(010)

Scale: As Noted Date: January 2021

SHEET No. E-20 OF 120 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-064-1(010)	2018	60	120

TRAFFIC SIGNAL NOTES:

1. The locations of the traffic signal standards, traffic signal standards with mast arms, pedestrian pushbuttons, traffic controller, pullboxes, conduits, and loop detectors shall be staked out in the field by the Contractor and approval of the locations shall be obtained from the Engineer prior to construction and installation.

2. All splicing shall be done in the pullboxes.

3. Furnishing and installing the conduit stubouts (pullboxes to edge of pavement) will not be paid for separately but, shall be considered incidental to the various contract items.

4. A solid #8 bare copper wire shall be pulled with the traffic signal control cable for equipment ground. Cost shall be incidental to the installation of the control cable.

5. Should any defect be encountered during the warranty period, the manufacturer will be notified and he shall promptly correct such defect. Service call (by factory qualified representative) during the warranty period for repairs or other maintenance shall be answered within 24 hours and shall be done at no expense to the State. All repairs shall be done as soon as possible.

6. All traffic signal work shall conform to the requirements of the "Manual on Uniform Traffic Control Devices for Streets and Highways", Federal Highway Administration (1988) and Amendments.

7. Locations of traffic markings and markers (lane lines, stop lines, crosswalk, etc.) shown on the plans shall be verified with the Engineer prior to the installation of the traffic signal system.

8. All conduits between pullboxes and traffic signal standards shall not be paid for separately, but shall be considered incidental to various contract items.

9. All signal-drop cables (Type 5 cables) from the various types of traffic signal heads on the traffic signal standards and mast arms to the pullboxes shall not be paid for separately, but considered ncidental to the traffic signal head.

10. After installing all the traffic signal cables, the Contractor shall duct seal all conduits in the pullboxes, traffic signal standards and traffic signal controller cabinet concrete base. The duct seal material shall be approved by the Traffic Signal Inspector/Engineer and shall not be paid for separately, but considered incidental to the direct buried and/or concrete encased conduits.

11. After installing the traffic signal system, the Contractor shall apply grease to all parts of the traffic signal system (i.e., fittings, brackets, nipples, elbows, screws, signal head assemblies, bolts, hinges, etc.) as directed by the Traffic Signal Inspector, to prevent rust and corrosion. The grease material shall be approved by the Signal Inspector.

12. Connecting into existing traffic signal system and marking all necessary adjustments shall not be paid for separately, but considered incidental to the various traffic signal contract items.

13. The Contractor shall notify the Traffic Control Branch, Department of Transportation Services, City & County of Honolulu, (Phone No. 523-4589) three (3) working days prior to commencing any work on the traffic signal system.

14. The Department of Transportation Services, City & County of Honolulu, will assist the Engineer in construction inspection for the traffic signal system.

15. The traffic signal system shall be kept operational during construction. Any relocation required shall be approved by the Traffic Control Branch, Department of Transportation Services, and paid for by the Contractor.

16. 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 State.

17. 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 State.

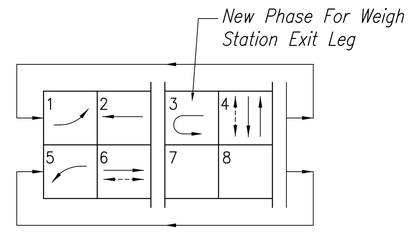
18. Abandon existing traffic signal pullboxes in sidewalks by demolishing top 6" of box, filling with #3 rock, and patching with 4" of concrete to match existing.

19. Refer to standard plans TE-32, TE-34, TE-35, TE-36 and TE-37 for traffic signal standard, pullbox and duct details.

20. Install backplates on new traffic signal heads. Backplates shall be 6" with slots to reduce wind load with 3" retroreflective border.

TRAFFIC SIGNAL SYMBOL LIST

SYMBOL	DESCRIPTION
	Existing Traffic Signal Pullbox (Type As Noted)
	New or Adjusted Traffic Signal Pullbox
	Existing Traffic Signal Type I Standard With Attached Signals
	Existing Type II Traffic Signal Mast and Attached Signals
	Existing Street Light Standard
	Existing 6' x 6' Detector Loop to Remain
	New 6' x 6' Detector Loop
	Existing Detector Loop to be Removed
	Existing Pedestrian Pushbutton
—TS—	New Traffic Signal Ductline, See E-11 For Duct Section Detail
--TS--	Existing Traffic Signal Ducts to Remain
-TS-	Existing Traffic Signal Duct to be Abandoned/Removed
	Existing Pedestrian Signal Head
C	Existing Traffic Signal Controller
TSPB	Denotes Traffic Signal Pullbox
SLPB	Denotes Street Light Pullbox



MODIFIED PHASE DIAGRAM –
SAND ISLAND ACCESS ROAD/ROAD NO. 2

No Scale

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

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MICHELE N. ADOLPHO
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No. 10017-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

4/30/22
SIGNATURE LIC. EXPIRATION

ECS, INC.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

TRAFFIC SIGNAL SYMBOL LIST,
TRAFFIC SIGNAL NOTES

Sand Island Access Road
Truck Weigh Station
Federal Aid Project No. NH-064-1(010)

Scale: As Noted Date: January 2021

SHEET No. TS-1 OF 120 SHEETS

RMTC JOB NO. : 1-19548-0E

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-064-1(010)	2018	61	120

Conduit	Cable
2"	2/C #14

Conduit	Cable
2"	1-4/C #14

to existing 2 each 6' x 6' loop detectors

New 1-6' x 6' Loop Detector Centered In Lane, Typical For 4

New Type I TSS (B)

Road No. 2

existing type B TSPB

Install New 4/C #14 In Existing 2" Conduit

type I TSS to be removed by Kapalama Container Terminal Project

existing type B TSPB (C)

New Traffic Rated TSPB, See Structural Drawings For Pullbox Detail

New Type I TSS (A)

Remove Type I TSS, Demolish Foundation

Zone X

STOP

existing traffic signal controller

existing joint pole

existing traffic signal system HECo meter, meter #346973

See TS-2 For Continuation

Install New 2/C #14 In Existing Spare 2"C

existing type C TSPB

Pedestrian Signal Head And Pedestrian Pushbutton To Be Removed By Kapalama Container Terminal Project; Remove Type I TSS and Traffic Signal Head, Demolish Foundation

New Type I TSS (D)

Zone AE (EL 9)

New Traffic Head On Existing Type I TSS, Remove Existing One-Way Mounting Bracket And Provide New Two-Way, Top Of Pole Mounting Bracket

existing type II TSS

Sand Island Access Road (State)

existing loop detectors to remain, typical

to existing 4 each 6' x 6' loop detectors

existing traffic signal system secondary service conductors

existing type B TSPB

existing type I TSS, typical

existing type B TSS

existing type B TSPB

existing type B TSPB

existing type II TSS

to existing 3 each 6' x 6' loop detectors

True North

1" = 10'

TRAFFIC SIGNAL PLAN - 1

Scale: 1" = 10'

GRAPHIC SCALE

10' 5' 0' 10' 20' 30'

1" = 10'

TRAFFIC SIGNAL HEAD SCHEDULE

Traffic Signal Head Type and Description	12" RYG Traffic Signal Head	12" RY ← Traffic Signal Head
Pole Letter Signal Head Number	A-1	B-1, C-1, D-1

LIST OF MATERIALS

Pole Letter	Standard Type	Mounting Type	Signal Faces
A	I-10	Slipfitter One Way	R-Y-G
B	I-10	Slipfitter One Way	R-Y-←
C	Existing I-10	Slipfitter Two Way	R-Y-← Existing R-Y-G, Existing Opticom
D	I-10	Slipfitter One Way	R-Y-←

MICHELE N. ADOLPHO
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4/30/22
SIGNATURE LIC. EXPIRATION

ECS, INC.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

TRAFFIC SIGNAL PLAN - 1

Sand Island Access Road
Truck Weigh Station
Federal Aid Project No. NH-064-1(010)

Scale: As Noted Date: January 2021

SHEET No. TS-2 OF 120 SHEETS

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

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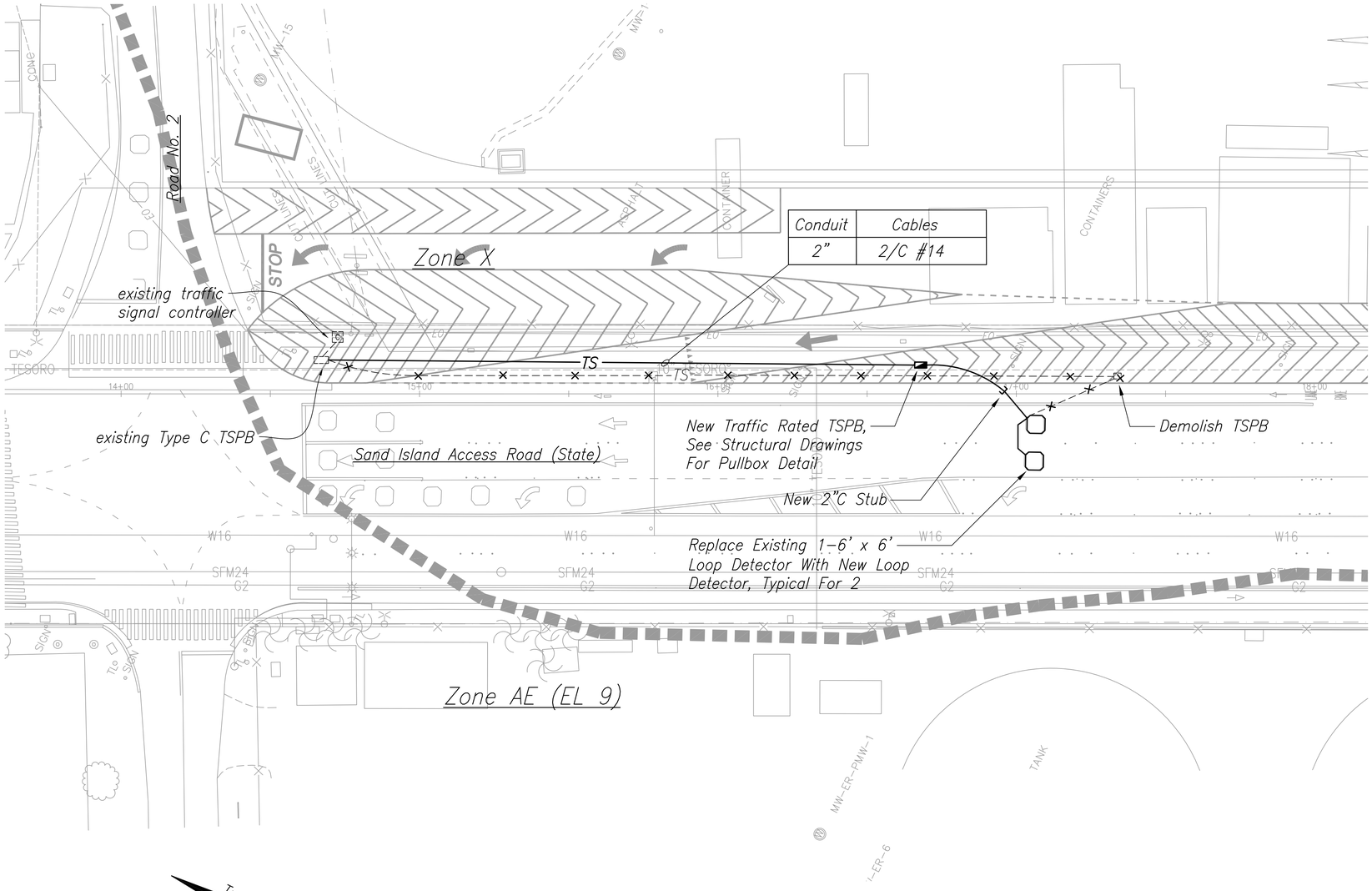
RMTC JOB NO. : 1-19548-0E

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-064-1(010)	2018	62	120



True North
1" =20'

TRAFFIC SIGNAL PLAN – 2

Scale: 1" = 20'

GRAPHIC SCALE

20' 0' 20' 40' 60' 80'

1" = 20'

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

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STATE OF HAWAII
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TRAFFIC SIGNAL PLAN – 2

Sand Island Access Road
Truck Weigh Station
Federal Aid Project No. NH-064-1(010)

Scale: As Noted Date: January 2021

SHEET No. TS-3 OF 120 SHEETS

RMTC JOB NO. : 1-19548-0E