Ellison Onizuka Kona International Airport at Keahole (KOA)

Runway 17-35 Rehabilitation

Safety Risk Assessment Panel Meeting

Safety Risk Management Document

State of Hawaii
Department of Transportation
Airports Division

SRMD Version 1.0
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Prepared by: Base Management

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Change Control and Version Tracking

SRMD Action/Change	Date	Version
Pre-SRA Panel Meeting with FAA LOB's	April 13, 2023	--
Pre-SRA Panel Meeting with all stakeholders	May 24, 2023	--
DOT SRA Panel Meeting	June 28, 2023	--
DOT SRA Panel Meeting (continued)	July 26, 2023	--
Draft SRMD distributed to Panel Members for comment	September 14, 2023	1.0
Panel Member comments on Draft SRMD due	October 5, 2023	--
Final SRMD routed for signatures	October 11, 2023	1.0
Final SRMD with signatures distributed (estimated)	October 25, 2023	1.0

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Limitations: The observations and conclusions presented in this report are based on discussions from Preliminary and Panel SRA meetings. The decisions are based upon panel member subject matter expertise and information provided at this SRA Panel meeting. The actual work conducted in the future may not be accurately reflected as shown in this SRMD because conditions may have changed. It's assumed the changes are minor, the existing controls, mitigation measures (if applicable) would be effectively implemented accordingly. If not, a reconvened SRA Panel may be triggered. This report is for the sole and exclusive use by our Client and is not meant to be relied upon by or disseminated to others. No warranty is expressed or implied.

Signature Page

Title: Ellison Onizuka Kona International Airport at Keahole, Runway 17-35 Rehabilitation Safety Risk Management Panel Meeting, Safety Risk Management Document

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Submission Date: October 11, 2023

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Risk Acceptance Signature:

	10/20/2023
Chauncey Wong Yuen – Hawaii District Airport Manager	Date
Ford Fuchigami	10/20/2023
Ford Fuchigami – Airports Administrator	Date

Proposal Rejection:

N/A	
Signature, Name and Organization	Date

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Executive Summary

The State of Hawaii, Department of Transportation, Airports division (DOT) proposes to rehabilitate the Runway (RWY) 17-35 asphalt concrete at the Ellison Onizuka Kona International Airport at Keahole (KOA). Once completed, airfield safety will be enhanced for all users.

The DOT implemented the Safety Risk Assessment (SRA) process into the Construction Safety Phasing Plan (CSPP) review due to the proposed changes to the airfield had presumed significant impacts to the airfield operational status and the National Airspace System (NAS). All DOT led SRA Preliminary and Panel meetings were conducted and facilitated in accordance with the FAA Airport (ARP) Safety Management System Order 5200.11A, FAA ARP Safety Management Systems (SMS) Desk Reference, Version 1.0, FAA AC 150/5200-37A Safety Management Systems for Airport Operators, and FAA Order 8040.4B Safety Risk Management Policy

This Safety Risk Management Document (SRMD) documents the Safety Risk Management Panel (SRMP) risk evaluation of the proposed project CSPP and any resulting hazards/effects.

DOT conducted multiple Preliminary SRA meetings with Airport stakeholder groups to ensure that the SRMP is sufficiently knowledgeable of the Federal Aviation Administration (FAA) Airports SMS process and also understand the proposed change to airfield system. These meetings were conducted on the following dates with the indicated stakeholder groups:

1. The first Preliminary SRA meeting was conducted on April 13, 2023. Invitations from DOT to the stakeholders included the Designer, KOA, FAA ATO, ADO, FSDO, RSO, WSC NPI, FPO, ITO SSC, KOA FCT, AvAirPros, Hawaiian Airlines, United Airlines, Alaska Airlines, American Airlines, Delta Airlines, Japan Airlines, Southwest Airlines, UPS and General Aviation stakeholders. Comments to the CSPP were noted and agreed upon for revisions prior to the next PreSRA meeting. Some of the concerns discussed are listed below:
    a. The shortened runway condition and associated marking, lighting, and signage.
    b. Temporary approach procedures and visual aids.
    c. Work hours impacting airline schedules and airline delays impacting the work hours.
    d. Accommodation for medivac flights.
    e. Stakeholder coordination notification and NOTAMs.
    f. Updating connector taxiway nomenclature.

2. The second Preliminary SRA meeting was conducted on May 24, 2023. Invitations from DOT to the stakeholders included the Designer, KOA, FAA ATO, ADO, FSDO, RSO, WSC NPI, FPO, KOA FCT, KOA SSC, AvAirPros, Hawaiian Airlines, United Airlines, Alaska Airlines, American Airlines, Delta Airlines, Japan Airlines, Southwest Airlines, UPS and General Aviation stakeholders. Final comments from PreSRA meeting #1 were incorporated into the CSPP. Some of the concerns discussed are listed below:
    a. Construction phasing transition and timing with the Chart Pacific Supplement and AIRAC publication cycles was reviewed.
    b. Medivac flights were accommodated with a 1-hour Prior Permission Request (PPR) and the runway could be reopened. Except when construction is occurring at the

center portion of the runway, no PPR is available due to insufficient runway length. Further evaluation of alternatives is needed.

c. Runway 17-35 connector taxiways will change their nomenclature during this project.

Following the Preliminary SRA meetings, the SRA Panel meeting was conducted on June 28, 2023, and continued on July 26, 2023, with all stakeholders.

SRMP Findings

The Hazards were identified, analyzed, and assessed in an organized group discussion, based on the thorough review of the Project Proposal Summary (PPS) and the Construction CSPP. There were fifteen (15) presumed hazards generated through the brainstorming session and documented in the Preliminary Hazard List (PHL). The Safety Risk Management Panel (SRMP) evaluated the fifteen (15) presumed hazards from the PHL and categorized nine (9) credible hazards for further evaluation in the Preliminary Hazards Analysis (PHA) worksheet.

During the PHA evaluation, the SRMP refined the hazard list to five (5) hazards, evaluating them for different effects. The remaining presumed hazards were determined as a Cause, Effect, or covered in another hazards analysis and accepted for removal. See Table 1 below for summary.

Table 1: Hazard Risk Assessment Results

(1) Hazard ID	(2) Hazard Description	(7) Effects	(12) Initial Risk	(15) Predicted Residual Risk
XYZ-1	Condition, real or potential; can cause injury, illness, etc. Pre-requisite for accident or incident	Potential outcome or harm of the hazard if it occurs in the defined system state; worst credible	Conditions, characterized by qualities, in which a system can exist; worst credible	Risk status predicted to occur when recommended controls or requirements are verified
KOA-RWY-REHAB-1	Pilot LOSA	-property damage -runway incursion -runway excursion -injury to individual -aircraft accident	4D-Low	N/A
KOA-RWY-Rehab-2	Controller LOSA	-property damage -runway incursion -runway excursion -injury to individual -aircraft accident	3D-Medium	N/A

(1) Hazard ID	(2) Hazard Description	(7) Effects	(12) Initial Risk	(15) Predicted Residual Risk
KOA-RWY-Rehab-3	Vehicle Operator LOSA	-property damage -runway incursion -injury to individual -aircraft accident	4D-Low	N/A
KOA-RWY-Rehab-4A	Pedestrian LOSA	-property damage -runway incursion -injury to individual -aircraft accident -vehicle/pedestrian deviation -surface incident	4D-Low	N/A
KOA-RWY-Rehab-4B	Pedestrian LOSA	-surface incident	4D-Low	N/A
KOA-RWY-Rehab-5 (REMOVED)	Runway Excursion during shortened runway operations	N/A	N/A	N/A
KOA-RWY-Rehab-6 (REMOVED)	Renaming of Taxiways brings confusion	N/A	N/A	N/A
KOA-RWY-Rehab-7 (REMOVED)	Expectation bias	N/A	N/A	N/A
KOA-RWY-Rehab-8 (REMOVED)	Continuation bias	N/A	N/A	N/A
KOA-RWY-Rehab-9 (REMOVED)	Runway Incursion by construction workers near edge of RSA	N/A	N/A	N/A

Severity / Likelihood	Minimal 5	Minor 4	Major 3	Hazardous 2	Catastrophic 1
Frequent A					
Probable B					
Remote C					
Extremely Remote D		KOA-RWY-REHAB-1 KOA-RWY-REHAB-3 KOA-RWY-REHAB-4A KOA-RWY-REHAB-4B	KOA-RWY-REHAB-2		
Extremely Improbable E					

Figure 1: Risk matrix

High Risk – Unacceptable
Medium Risk – Acceptable with Mitigation
Low Risk – Acceptable

The four of the five Hazard Initial Risk ratings were Low Risk. KOA RWY Rehab – 2, Controller LOSA Hazard resulted in an Initial Risk rating of Medium Risk. The SRMP felt there were enough existing controls and emphasis put on stakeholder notifications that no further evaluation for additional mitigation was needed.

The SRMP applied the SRM process determining that the KOA AH2021-16 Runway 17-35 Rehabilitation can be introduced into the NAS with an acceptable level of risk (See Figure 1 above). Appendix F provides the SAS-1 Form 5200-8 Signature Page, signifying SRMP member's

concurrence of this Safety Risk Assessment for the KOA AH2021-16 Runway 17-35 Rehabilitation. Please note, the Hazards in the Matrix are abbreviated and are the same hazards as identified in Table 1, Hazard Risk Assessment Results.

Introduction and Background

Ellison Onizuka Kona International Airport at Keahole (KOA) is owned and operated by the State of Hawaii, Department of Transportation, Airports Division (DOT) and is one of the major airports serving the State. KOA is a 14 CFR Part 139 certified airport with a single Runway 17/35 that is 11,000' long by 150' wide. KOA is a small hub commercial service airport primarily serving international, domestic, interisland, cargo carriers, and military training exercises. KOA also serves the population of the Western region of the Island of Hawaii, which included Kailua-Kona and the hotel properties along the Kohala Coast.

KOA construction began in 1969. The original, asphalt concrete runway was 150 ft wide and 6,500 ft long and opened to traffic in 1970. The runway was rehabilitated and extended in 1992 to its current length of 11,000 ft (10,700 ft Asphalt Concrete (AC) and 300 ft Portland Concrete Cement (PCC). A runway crack sealing project was completed in 2018 in response to Part 139 write-up for excessive Foreign Object Debris (FOD). A Pavement Management System (PMS) pavement assessment and review of the available PMS data was completed in 2018. The most recent PMS report noted overall Pavement Condition Index (PCI) of 80 (RWY 35 end PCI < 70 and RWY 17 end PCI > 70). The visual pavement assessment found rutting and surface deformation, block cracking, oxidation/weathering. Thus, triggering a design project to rehabilitate the runway pavement condition.

The DOT utilized their SRA facilitator services consultant to conduct all DOT led SRA Preliminary and Panel meetings in accordance with the FAA Airport (ARP) Safety Management System Order 5200.11A, FAA ARP Safety Management Systems (SMS) Desk Reference, Version 1.0, FAA AC 150/5200-37A Safety Management Systems for Airport Operators, and FAA Order 8040.4B Safety Risk Management Policy.

A series of preliminary SRA meetings were conducted using a systematic approach to prepare for the final SRA Panel meeting. The meetings were scheduled with stakeholder groups as they reviewed the Construction Safety Phasing Plan (CSPP) presented by the designer. The following outlines the meeting dates and stakeholder groups that were invited. However, it is not an indicator of the actual attendance, please refer to Appendix E Sign-In Sheets.

Preliminary SRA Meeting Date	Stakeholder Group	Purpose
4/13/23	DOT KOA, DOT AIR-EA, AECOM, Orion Engineers, FAA HNL ADO, FAA HCF ATO, FAA RSO, FAA WSC FP, FAA WSC NPI, KOA FCT, FAA ITO SSC, FAA FSDO, AvAirPros, Hawaiian Airlines, United Airlines, Alaska Airlines, American Airlines, Delta Airlines, Japan Airlines, Southwest Airlines, UPS and General Aviation stakeholders.	Technical review of the proposed CSPP and safety impacts resulting from the proposed change. This was the first preliminary meeting with all stakeholders to review draft CSPP plans and obtain work hour windows for the project.

Preliminary SRA Meeting Date	Stakeholder Group	Purpose
5/24/23	DOT KOA, DOT AIR-EA, AECOM, Orion Engineers, FAA HNL ADO, FAA HCF ATO, FAA RSO, FAA WSC FP, FAA WSC NPI, KOA FCT, FAA ITO SSC, FAA FSDO, AvAirPros, Hawaiian Airlines, United Airlines, Alaska Airlines, American Airlines, Delta Airlines, Japan Airlines, Southwest Airlines, UPS and General Aviation stakeholders.	To review the CSPP for the construction with all stakeholders and develop to an acceptable level by all parties.

As the preliminary meetings were conducted, an SRA briefing on the FAA ARP SMS process, roles and responsibilities, and ground rules were presented and posted in the room. The ground rules provided participants the opportunity to ask questions and have their concerns addressed prior to conducting the final SRA Panel Meeting. Throughout these meetings, the participants were reminded of the ground rules. Specifically, "the absence of an answer is understood as agreement." This fostered open discussion with participants' concerns, being either addressed during the meeting or placed on the issues board for future discussion.

The following provides a brief overview of the preliminary SRA meetings discussion and concerns by the stakeholder group in narrative format.

Preliminary SRA No. 1 with the Airport, FAA, and Stakeholders on April 13, 2023

The first Preliminary SRA meeting was conducted on April 13, 2023. Invitations from DOT to the stakeholders included the Designer, KOA, FAA ATO, ADO, FSDO, RSO, WSC NPI, FPO, ITO SSC, KOA FCT, commercial, cargo and general aviation stakeholders to ensure the CSPP was at an acceptable state to have a panel meeting discussion. It was decided this project would be conducted in five (5) main phases, with each phase containing smaller subphases. The following is a recap of the discussion that took place.

a. The project had precoordinated with the FAA and airlines to allow a shortened Rwy 17/35 to accommodate various phases of construction. There would be temporary markings, lighting, signage, flight procedures and PAPIs applied to FAA standards for the temporary relocated threshold. There would also be overflight of the active construction area allowed.
b. The transition to each construction phase will be timed with the Chart Supplement Pacific publication dates for pilot awareness and will allow for ample stakeholder coordination time.
c. The work hours of 2200-0600 were a concern to the airlines because the project is recommending an 8-hour work window for the contractor to perform necessary construction work. The project chose work windows that would be the least impactful to the airline schedules.
d. Based on airline flight schedules and preplanning timeline for this project, there are some late flights departing after the 2200 start time; carriers will have to change schedules or

cancel those flights departing after 2200; other than that, the project doesn't expect significant aircraft traffic impacts.

e. The project can have some flexibility in the start time (15-30 minutes delay) to allow for late airline departures.
f. For the late flight arrivals, Chauncey will do outreach with the airlines to avoid diverting to OGG or HNL.
g. KOA has multiple emergency medivac flights and there were no provisions for alternative for and rotor wing flights were proposed by the project. The project requested coordination start for medivac flights out of Waimea Airport (MUE) as another proposed alternative. Reopening the runway temporarily to allow medivac flights was not agreeable at this time.
h. The scheduled temporary PAPI installation was around the FAA Moratorium times and the project will confirm with FAA to avoid these times.
i. The temporary threshold will have standard markings, edge lighting and signage with an aligned taxiway for commercial aircraft to turn around. This will allow the airlines to use the maximum take-off distance available during the shortened runway condition.
j. Temporary flight procedures, PAPIs and REILs will be installed for the temporary relocated threshold to provide the pilots with landing visual and instrument guidance.
k. NOTAMs, ATIS, meetings, and Chart Pacific publication cycle were the primary methods for stakeholder coordination and notification.
l. The airlines questioned the derivation of the work hours. The project showed the analysis of the airline 2022 annual traffic peaks for KOA to determine the best hours to work with the least amount of airline impacts.
m. Transient flights were also a concern because they can arrive during ATCT closure hours. Coordination with NBAA, AOPA, and A4A was added.
n. The project also proposed to update the taxiway nomenclature in this project and maintain compliance with the FAA requirements. The stakeholders did not support changing any taxiway nomenclature at this time. The designer will reconfirm with the ADO for FAA requirements and compliance with the Engineering and Certification programs. This would also ensure project funding Federal eligibility.
o. There were various construction notes, times, duration, sequencing, and additional flaggers that needed revisions in the CSPP.
p. The project is trying to find a balance for the construction project for runways that need to be fixed before it starts to fail. The work needs to be done for aviation operations to continue. Either the commercial or cargo stakeholders will be impacted because they fly around the clock. Therefore, the project tries to have the least amount of impacts to operations, while fixing the runway.

Preliminary SRA No. 2 with the Airport, FAA, and Stakeholders on May 24, 2023

The second Preliminary SRA meeting was conducted on May 24, 2023. Invitations from DOT to the stakeholders included the Designer, KOA, FAA ATO, ADO, FSDO, RSO, WSC NPI, FPO, KOA FCT, KOA SSC commercial, cargo and general aviation stakeholders to ensure that the CSPP was at an acceptable state to have a panel meeting discussion. The agreed upon revisions from the previous PreSRA meeting were incorporated into the revised CSPP. The following is a recap of the discussion that took place.

a. The phasing transition and timing with the Chart Pacific Supplement publication cycle was reviewed. The airlines wanted to ensure their pilots are trained to use the temporary approach procedures. The phases cannot start earlier and must wait for the airfield diagrams and Chart Pacific Supplement to update on cycle. FAA can't code two thresholds at the same time.
b. FAA requires Ph. 2 and 3 work on the Aeronautical Information Regulation and Control (AIRAC) publication cycle. FAA Flight Procedures Office (FPO) has temporary procedures developed for a double AIRAC publication. Ph. 2 will have one temporary instrument Approach for Rwy 35 RNAV, GPS, LNAV, with the temporary threshold coded in all databases and shown on diagrams for 7,000'. No departure procedures during this phase. Using vectors. Temporary PAPIs will be operational for Rwy 35 approach.
c. Phases when applicable, were adjusted to accommodate medivac flights with reopening the runway and a 1-hour Prior Permission Request (PPR).
d. Project is looking further into phasing the project to accommodate a 4,500' runway for medivac flights only.
e. Taxiway Nomenclature from last Presra1 meeting. Coordination with the FAA AWP, there's no final decision with FAA Engineering and Certification. The engineering team is fine with renaming only end taxiways. However, the Part 139 Certification group strongly recommended renaming all taxiway connectors at once. They will put everyone on notice if an incident occurs, and question why didn't the airport and design team change all the taxiway names all at once. Thus, it becomes a liability issue for DOT if we don't rename them all at once. The designer and the airport are not willing to take on that liability. Therefore, as part of this project all connector taxiways to the runway will be renamed. Starting at Rwy 17 end apply A2 through A6

At the conclusion of the multiple preliminary SRA meetings with all the FAA offices, airlines, military, general aviation, and other stakeholders; the designer was able to refine the Phasing and Barricade Plan, and the CSPP narrative for the SRA Panel review. The SRA Panel meeting was conducted on June 28, 2023, and continued on July 26, 2023.

Section 1 – Current System / Baseline

KOA is located on the West side of the island of Hawaii. It is a 14 CFR Part 139 certificated public use commercial service airport with one runway, a parallel and multiple interconnecting taxiways (See Figure 2). Runway 17-35 at 11,000' x 150', has precision markings and 4-light PAPIs on each runway end. Additionally, Runway 17 approach has an ILS and MALSR. The ATCT is open from 0600-2200, 7 days a week. See Table 2 below for a summary of the runway data at KOA including dimensions, lighting, visual and navigational aids, markings type, and Part 77 approach categories.

Table 2: Runway Data Summary

Item	KOA Runway 17/35	
	17	35
Width	150 ft.	
Length	11,000 ft.	
Marking Type	Precision	Precision
Part 77 Approach	PIR	NPIR
Navigational Aids	ILS/DME	CAT I GPS
Visual Aids	4- Light PAPI	4- Light PAPI
Approach Lights	MALSR	None
Runway Edge Lighting	HIRL	
Runway Design Code (RDC) Airport Approach Category (AAC) / Airport Design Group (ADG)	D-V	
TORA	11,000 ft.	
TODA	11,000 ft.	
ASDA	11,000 ft.	
LDA	11,000 ft.	
RSA Length	1,000 ft.	1,000 ft.
RSA Width	500 ft.	500 ft.

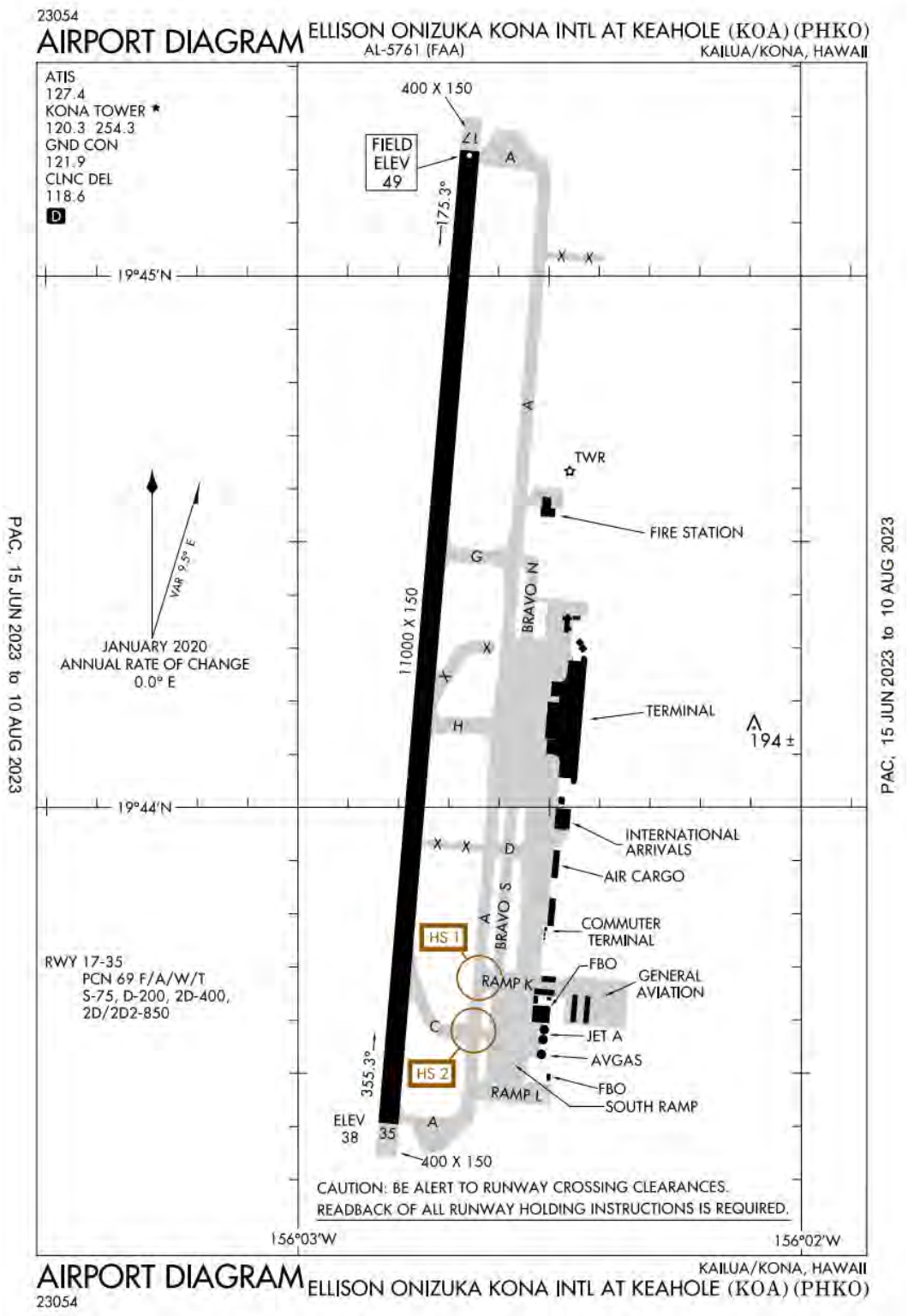

Figure 2: Airport Diagram

Section 2 – Proposed Change

The scope of work consists of rehabilitating the entire length of the runway (up to the hold short lines), shoulders, and blast pad.

This project will be constructed in 5 phases (Phase 1A through Phase 5), with some phases having subphases. An overview of the phasing and barricade plan is presented in Figures 3 through 25. The following stages are as proposed:

Overview

- Construction will start by shortening the northern end of the runway, then the southern end, and finally the middle.
- Begin changes to shorten runway 35(north end) and flight procedures. This will start on 2/20/25 and finish 6/11/25.
- Begin changes to shorten runway 17(south end) and flight procedures. This will start on 6/12/25 and finish 10/1/25.
- Full length operations will resume on 10/1/25 and begin nightly closures discussed for phase 4 (B, C, D).

Phase 1A

Description of Work:

- TEMPORARY PAPI INSTALLATION AND PREPARATORY WORK REPLACE RUNWAY EDGE LIGHTS AND CCR

Hours:

- 2200-0600 DAILY

Duration:

- 30 WORKING DAYS
- ANTICIPATED DATES: 11/12/2024 TO 11/23/2024
  12/2/2024 TO 12/18/2024
  1/2/2025 TO 1/5/2025

Required NOTAMs (WORK HOURS ONLY):

1. RUNWAY 17-35 CLOSED
2. TAXIWAY A CLOSED SOUTH OF TAXILANE L
3. TAXIWAY C CLOSED
4. TAXIWAY H CLOSED
5. TAXIWAY G CLOSED
6. TAXIWAY A CLOSED, NORTH OF TAXIWAY G

NAVAID Status:

- RUNWAY 17 PAPI: OTS
- RUNWAY 17 LOC/DME: OTS
- RUNWAY 17 GS: OTS
- RUNWAY 35 PAPI: OTS

Phasing Notes:

1. TEMP PAPIS TO REMAIN OUT OF SERVICE DURING NON-WORKING HOURS.
2. IN THE EVENT OF EMERGENCY, CONTRACTOR SHALL VACATE THE RSA AND REOPEN THE RUNWAY WITHIN 1-HR NOTICE BY AIRPORT

OPERATIONS FOR ARRIVAL OR DEPARTURE OF EMERGENCY MEDEVAC AIRCRAFT.

Sequence of Work:

1. INSTALL LIGHTED CLOSED RUNWAY SIGN AND LOW-PROFILE BARRICADES.
2. PERFORM WORK.
3. REQUEST INSPECTION FOLLOWING CLEANING, PERFORM ADDITIONAL CLEANING AS NEEDED.
4. REMOVE LIGHTED CLOSED RUNWAY SIGN AND LOW-PROFILE BARRICADES.

Comments:

- Verbiage has been changed from calendar days to working days to account for the Thanksgiving and Christmas runway closure moratoriums that will delay the project.
- FAA AWP RSO: Requested additional flaggers across the haul route on taxiway A at taxiway H, Orion will add flaggers as planned in Phase 1B.
- Kona General Aviation Counsel (KGAC) questioned: If we know what the FAA Airport Diagram will look like?
- Bases: The project design team will be working with Jeppeson, LIDO and NAVBLUE to make sure this information is available to the flying public.
- FAA AWP RSO: Also, all this information will be on NOTAM Manager.
- The contractor will be able to accommodate medevac in this phase: because they will be working primarily outside of the runway. They will be able to reopen the runway to full length with a 1hr ppr and completely clear the runway for medevac use.

Phase 1B

Description of Work:

- FLIGHT INSPECTION

Hours:

- 0600-0900 DAILY

Duration:

- 2 CALENDAR DAYS
- ANTICIPATED DATES: 1/6/2025 TO 2/19/2025

Required NOTAMs (WORK HOURS ONLY):

- None

NAVAID Status:

- RUNWAY 17 PAPI(FAA): OTS
- RUNWAY 17 PAPI(TEMP): IN-SERVICE
- RUNWAY 17 LOC/DME: OTS
- RUNWAY 17 GS: OTS
- RUNWAY 35 PAPI (FAA): OTS
- RUNWAY 35 PAPI (TEMP): IN-SERVICE

Phasing Notes:

1. TEMP PAPIS TO REMAIN OUT OF SERVICE DURING NON-WORKING HOURS.

2. CONTRACTORS SHALL COORDINATED WITH FAA, AND PROVIDE AND INSTALL TEMPORARY THRESHOLD BAR AND AIMING POINTS MADE FROM WHITE PAINTED PLYWOOD DURING FAA FLIGHT CHECK FOR EACH TEPORARY PAPI LOCATION. PLYWOOD SHALL BE ANCHORED WITH SANDBAGS NO GREATER THAN 3" HIGH.

Comments:

- To plan and account for enough time for flight check aircraft, we are using a 45-day duration (approximately 1/5/25-2/19/25) on the schedule because we won't know the exact date that the flight check aircraft will occur. prep work within the 45-day period will allow 2 mornings for flight check to be conducted.
- BASES questioned: if the temporary markings will remain there after flight check?
- Designer: No, the markings will not remain. They will most likely be white painted plywood to designate the threshold when flight check occurs. Once the flight check is completed, the runway goes back to normal operation at full length.

Phase 2A

Description of Work:

- INSTALL TEMPORARY RUNWAY 35 THRESHOLD, MARKING REMOVAL, TEMPORARY MARKING, AND ELECTRICAL WORK REQUIRED FOR SHORTENED RUNWAY CONFIGURATION

Hours:

- 2200-0600

Duration:

- ANTICIPATED DATE: 2/19/2025

Required NOTAMs (WORK HOURS ONLY):

1. RUNWAY 17-35 CLOSED
2. TAXIWAY A CLOSED SOUTH OF TAXILANE L
3. TAXIWAY C CLOSED
4. TAXIWAY H CLOSED
5. TAXIWAY G CLOSED
6. TAXIWAY A CLOSED, NORTH OF TAXIWAY G

NAVAID Status:

- RUNWAY 17 PAPI (FAA): OTS
- RUNWAY 17 PAPI (TEMP): OTS
- RUNWAY 17 LOC/DME: OTS
- RUNWAY 17 GS: OTS
- RUNWAY 35 PAPI (FAA): OTS
- RUNWAY 35 PAPI (TEMP): OTS

Phasing Notes:

1. SEE DWG G-106 FOR DESCRIPTION OF MARKING REMOVAL, TEMPORARY MARKING, AND TEMPORARY ELECTRICAL REQUIREMENTS.
2. ALL TEMP MARKINGS SHALL BE HALF APPLICATION MARKINGS.
3. SEE SPECIAL PROVISIONS FOR LIQUIDATED DAMAGES FOR FAILURE TO REOPEN THE RUNWAY AT 0600 HRS.

Sequence of Work:

1. CONFIRM RWY AND TWY CLOSURES WITH KOA OPERATIONS.
2. INSTALL LIGHTED X'S AT EACH END OF RWY.
3. INSTALL REQUIRED LOW-PROFILE BARRICADES.
4. RELOCATE JET BLAST DEFLECTOR.
5. MARKING REMOVAL
    A. OBLITERATE CONFLICTING SPHPS MARKINGS.
    B. OBLITERATE RWY CENTERLINE MARKINGS IN 1,000' RSA AS SHOWN.
    C. MILL OR GRIND TWY MARKINGS IN WORK AREA AS SHOWN.
6. APPLY TEMPORARY MARKINGS AS SHOWN.
7. ELECTRICAL
    A. ACTIVATE TEMP RWY 35 PAPI.
    B. INSTALL TEMP RWY 35 OUTBOARD THRESHOLD AND REIL LIGHTS.
    C. CHANGE RWY EDGE LIGHTING FROM WHITE TO AMBER/WHITE FOR LAST 2,000' OF RWY.
    D. COVER OR DEACTIVATE RWY EDGE LIGHTS IN PHASE 3 WORK AREA AND 1,000' RSA.
8. SIGNAGE
    A. CHANGE RWY DISTANCE REMAINING SIGNS.
    B. COVER APPROPRIATE TWY DIRECTIONAL SIGNS FOR TWYS SCHEDULED TO BE CLOSED.
9. OPENING OF RUNWAY
    A. CONDUCT FOD CHECK AND OBTAIN FINAL ACCEPTANCE FROM KOA OPERATIONS.
    B. REMOVE LOW PROFILE BARRICADES.
    C. REMOVE LIGHTED X'S AT EACH END OF
    D. OPEN RWY 17-35 AT 7,000' LENGTH.

Comments:

- It was brought up that during this phase of work the contractor will not be able to accommodate medevac for ONE night, 2/19/25. This was discussed and medevac agreed that this one night was not a major concern for their operations, it was the 60+ day duration of nightly closures.
- In preliminary discussions, the following were the agreed upon mitigations to coordinate with the FAA and airlines for runway shortening:
    - Blow-up markings in the CSPP to lessen confusion.
    - Construction to occur during off-peak times to minimize the number of arrivals over the construction zone.
    - A temporary blast fence with obstruciton lights will be installed between the 1,000-ft. RSA and the work area.
    - Marking/striping will be modified for a 7,000-ft. runway.
    - Runway edge lights in the work area will be covered and remaining lights will be modified to meet the color requirements for a 7,000-ft. runway.
    - Incorrect RDR signs will be covered.

        - Temporary REILs and PAPIs can be installed (flight check required before making them operational).
    - FAA AWP RSO: Typically, in the islands, you don't fly over construction. However, it can be done with the mitigations listed above in place.

Phase 2B

Description of Work:
- RUNWAY AND TAXIWAY REHABILITATION

Hours:
- 24/7 SHORTENED RUNWAY
- WORKING HOURS: 1900-0700 DAILY

Duration:
- 111 CALENDAR DAYS
- ANTICIPATED DATES: 2/20/25 TO 6/11/2025

Required NOTAMs:
1. RUNWAY 17-35 TORA, TODA, ASDA, LDA=7000
2. TAXIWAY A CLOSED SOUTH OF TAXILANE L
3. TAXIWAY C CLOSED
4. LAST EXIT TWY H FOR RWY 17 ARRIVAL
5. SOUTH 4000' OF RWY 17-35 CLOSED
6. TAXIWAY A BETWEEN TAXIWAYS L AND K RESTRICTED TO ADG III AND SMALLER (WORKING HOURS ONLY)

NAVAID Status:
- RUNWAY 17 PAPI (FAA): IN-SERVICE
- RUNWAY 17 PAPI (TEMP): OTS
- RUNWAY 17 LOC/DME: OTS
- RUNWAY 17 GS: OTS
- RUNWAY 35 PAPI (FAA): OTS
- RUNWAY 35 PAPI (TEMP): IN-SERVICE

Phasing Notes:
1. BARRICADES SHALL BE LOCATED 86' FROM TAXIWAY CENTERLINE DURING WORKING HOURS. BARRICADES SHALL BE LOCATION 143' FROM TAXIWAY CENTERLINE DURING NON-WORKING HOURS.
2. MATERIAL STOCKPILES AND EQUIPMENT ARE NOT PERMITTED IN THE WORK AREA DURING NON-WORKING HOURS
3. PRIOR TO THE COMPLETION OF PHASE 2B, THE CONTRACTOR SHALL APPLY NEW PAVEMENT MARKINGS WITHIN THE WORK AREA. NEW THRESHOLD, TDZ AND AIMING POINT MARKINGS SHALL BE COVERED WITH GEOTEXTILE FABRIC SECURED WITH SANDBAGS OR BY OTHER MEANS ACCEPTABLE TO THE RPR AND AOC.
4. RENAMING OF TAXIWAYS A (A6) AND C (A5) SHALL BE COMPLETED DURING PHASE 2B.

Comments:
- Runway to open on 2/20/25 in shortened runway configuration of 7,000'. In this phase there is no opportunity for the contractor to have any delays.

- Work needs to take place in a double 56-day FAA AIRAC publication cycle, totaling 112 days.
- Once this phase begins, the FAA will automatically be issuing updated flight procedures and a new airport diagram showing shortened configuration and closed taxiways. All other publication sources (Jeppeson, LIDO, NAVBLUE) will be updated.
- Temporary PAPI will be in operation if there are runway 35 approaches.
- FAA KOA SSC: For the 111-day duration ILS OTS.
- Designer: confirms the temporary runway 35 PAPI will be in service, while the FAA 35 PAPI OTS
  - Designer worked with HNL on how they did the 8L temporary PAPIs NOTAMs to avoid confusion.
  - Designer listed both (FAA and TEMPORARY) PAPIs in NAVAID status for clarity.
- Added the renaming of taxiway A to A6 and C to A5 at the runway 35 end.

Phase 3A

Description of Work:

- INSTALL TEMPORARY RUNWAY 17 THRESHOLD
- MARKING REMOVAL. TEMPORARY MARKING, AND ELECTRICAL WORK REQUIRED FOR SHORTENED RUNWAY CONFIGURATION

Hours:

- 2200-0600

Duration:

- 1 CALENDAR DAY
- ANTICIPATED DATE: 6/11/2025

Required NOTAMs (WORK HOURS ONLY):

1. RUNWAY 17-35 CLOSED
2. TAXIWAY A CLOSED SOUTH OF TAXILANE L
3. TAXIWAY C CLOSED
4. TAXIWAY H CLOSED
5. TAXIWAY G CLOSED
6. TAXIWAY A CLOSED, NORTH OF TAXIWAY G

NAVAID Status:

- RUNWAY 17 PAPI (FAA): OTS
- RUNWAY 17 PAPI (TEMP): OTS
- RUNWAY 17 LOC/DME: OTS
- RUNWAY 17 GS: OTS
- RUNWAY 35 PAPI (FAA): OTS
- RUNWAY 35 PAPI (TEMP): OTS

Phasing Notes:

1. SEE DWG G-110 FOR DESCRIPTION OF MARKING REMOVAL, TEMPORARY MARKING, AND TEMPORARY ELECTRICAL REQUIREMENTS.
2. ALL TEMP MARKINGS SHALL BE HALF APPLICATION MARKINGS.

3. SEE SPECIAL PROVISIONS FOR LIQUIDATED DAMAGES FOR FAILURE TO REOPEN THE RUNWAY AT 0600 HRS.

Sequence of Work:

1. CONFIRM RWY AND TWY CLOSURES WITH KOA OPERATIONS.
2. INSTALL LIGHTED X'S AT EACH END OF RWY.
3. INSTALL REQUIRED LOW-PROFILE BARRICADES.
4. INSTALL JET BLAST DEFLECTOR.
5. MARKING REMOVAL
    A. OBLITERATE CONFLICTING RWY 35 DESIGNATION AND SPHPS MARKINGS.
    B. OBLITERATE RWY CENTERLINE MARKINGS IN 1,000' RSA AS SHOWN.
    C. MILL OR GRIND RWY MARKINGS IN WORK AREA AS SHOWN.
6. APPLY TEMPORARY MARKINGS AS SHOWN.
7. ELECTRICAL
    A. ACTIVATE TEMPORARY RWY 17 PAPI.
    B. INSTALL TEMPORARY OUTBOARD THRESHOLD AND REIL LIGHTS.
    C. CHANGE RWY EDGE LIGHTING FROM WHITE TO AMBER/WHITE FOR THE LAST 2,000' OF RWY.
    D. COVER OR DEACTIVATE RWY EDGE LIGHTS IN WORK AREA AND 1,000' RSA
8. SIGNAGE
    A. CHANGE RWY DISTANCE REMAINING SIGNS.
    B. COVER APPROPRIATE TWY DIRECTIONAL SIGNS FOR TWYS SCHEDULED TO BE CLOSED.
9. OPENING OF RUNWAY
    A. CONDUCT FOD CHECK AND OBTAIN FINAL ACCEPTANCE FROM KOA OPERATIONS.
    B. REMOVE LOW PROFILE BARRICADES.
    C. REMOVE LIGHTED X'S AT EACH END OF RWY.
    D. OPEN RWY 17-35 AT 7,000' LENGTH.

Comments:

- One night for all marking and lighting change over.
- During this phase the contractor will deactivate temporary 35 PAPI and activate temporary 17 PAPI.
- The shortened configuration is a temporary relocated threshold and not a displaced threshold. The area preceding the threshold is not available for takeoff run.
- Will paint a taxiway leadline (centerline) up and around to direct pilots on U-turn movement on runway to use full length for departure. This was modeled by the designer in AVI plan for the largest expected aircraft turning radius.
- Yellow line and arrow heads available for back taxi operation.
- There was concern from the pilot community about confusion when the runway is in the shortened condition.

- The mitigation was the AIRAC publications and addition of the markings for the turnaround.

Phase 3B

Description of Work:

- RUNWAY AND TAXIWAY REHABILITATION

Hours:

- 24/7 SHORTENED RUNWAY
- WORKING HOURS: 1900-0700 DAILY

Duration:

- 111 CALENDAR DAYS
- ANTICIPATED DATES: 6/12/2025 TO 10/1/2025

Required NOTAMs:

1. RUNWAY 17-35 TORA, TODA, ASDA LDA=7000'
2. TAXIWAY A CLOSED, NORTH OF TAXIWAY G
3. SOUTH 3000' OF RUNWAY 17-35 UNGROOVED
4. LAST EXIT TAXIWAY G FOR RUNWAY 35 ARRIVALS
5. NORTH 4000'OF RUNWAY 17-35 CLOSED

NAVAID Status:

- RUNWAY 17 PAPI (FAA): OTS
- RUNWAY 17 PAPI (TEMP): IN-SERVICE
- RUNWAY 17 LOC/DME: OTS
- RUNWAY 17 GS: OTS
- RUNWAY 17 MALSR: OTS
- RUNWAY 35 PAPI (FAA): IN-SERVICE
- RUNWAY 35 PAPI (TEMP): OTS

Phasing Notes:

1. MATERIAL STOCKPILES AND EQUIPMENT ARE NOT PERMITTED IN THE WORK AREA DURING NON-WORKING HOURS.
2. PRIOR TO THE COMPLETION OF PHASE 3B, THE CONTACTOR SHALL APPLY NEW PAVEMENT MARKINGS WITHIN THE WORK AREA. NEW THRESHOLD, TDZ AND AIMING POINT MARKINGS SHALL BE COVERED WITH GEOTEXTILE FABRIC SECURED WITH SANDBAGS OR BY OTHER MEANS ACCEPTABLE TO THE RPR AND AOC.
3. RENAMING OF TAXIWAY A (A2) SHALL BE COMPLETED DURING STAGE 3B.

Comments:

- Designer updated NAVAID status for both PAPIs (applied to all phases necessary).
  - Designer has checked with HNL on how they did the 8L temporary PAPIs NOTAMs with FAA, to coordinate the 17 temporary PAPIs.
  - FAA KOA SSC discussed with SOC to issue the same type of NOTAM.
  - Will post NOTAM and identify which PAPI OTS.
- BASES has concerns about big construction stockpiling (for this and other phases), contractor notified of the lease tern nesting issue and will take preventative measures.

- Designer added phasing note for name change.
- The contractor will swap out signs on the 17 end for taxiway A connector, so when it is reopened in phase 4A, the name will be updated (A to A2).

Phase 4A

Description of Work:

- REMOVE TEMPORARY RUNWAY THRESHOLDS, MARKING REMOVAL, TEMPORARY MARKINGS, AND ELECTRICAL WORK TO RESTORE RUNWAY TO FULL-LENGTH OPERATIONS.

Hours:

- 2200-0600

Duration:

- 1 CALENDAR DAY
- ANTICIPATED DATES: 10/1/2025 TO 10/2/2025

Required NOTAMs:

1. RUNWAY 17-35 CLOSED
2. TAXIWAY A6 CLOSED
3. TAXIWAY A5 CLOSED
4. TAXIWAY H CLOSED
5. TAXIWAY G CLOSED
6. TAXIWAY A CLOSED, NORTH OF TAXIWAY G
7. RUNWAY 17-35 UNGROOVED (WORKING AND NONWORKING HOURS)

NAVAID Status:

- RUNWAY 17 PAPI (FAA): OTS
- RUNWAY 17 PAPI (TEMP): OTS
- RUNWAY 17 LOC/DME: OTS
- RUNWAY 17 GS: OTS
- RUNWAY 17 MALSR: OTS
- RUNWAY 35 PAPI (FAA): OTS
- RUNWAY 35 PAPI (TEMP): OTS

Phasing Notes:

1. SEE DWG G-114 FOR DESCRIPTION OF MARKING REMOVAL, TEMPORARY MARKING, AND TEMPORARY ELECTRICAL REQUIREMENTS.
2. ALL TEMP MARKINGS SHALL BE HALF APPLICATION MARKINGS.
3. SEE SPECIAL PROVISIONS FOR LIQUIDATED DAMAGES FOR FAILURE TO REOPEN THE RUNWAY AT 0600 HRS.

Sequence of Work:

1. CONFIRM RWY AND TWY CLOSURES WITH KOA OPERATIONS.
2. INSTALL LIGHTED X'S AT EACH END OF RWY.
3. INSTALL REQUIRED LOW-PROFILE BARRICADES.
4. REMOVE JET BLAST DEFLECTOR.
5. MARKING REMOVAL
    A. OBLITERATE TEMP RWY 17 DESIGNATION AND THRESHOLD MARKINGS.
    B. OBLITERATE TEMP RWY 17 AIMING POINT MARKING

6. APPLY TEMPORARY MARKINGS AS SHOWN.
7. ELECTRICAL
    A. DEACTIVATE TEMP RWY 17 PAPI.
    B. ACTIVATE RWY 17 PAPI.
    C. CHANGE PHASE 3 RWY EDGE LIGHTING FROM AMBER/WHITE TO WHITE.
    D. UNCOVER OR ACTIVATE RWY EDGE LIGHTS IN PHASE 3 WORK AREA AND 1,000' RSA.
8. SIGNAGE
    A. UNCOVER RWY DISTANCE REMAINING SIGNS.
    B. CHANGE RWY HOLDING POSITION SIGN PANELS.
    C. UNCOVER TWY DIRECTIONAL SIGNS.
9. OPENING OF RUNWAY
    A. CONDUCT FOD CHECK AND OBTAIN FINAL ACCEPTANCE FROM KOA OPERATIONS.
    B. REMOVE LOW PROFILE BARRICADES.
    C. REMOVE LIGHTED X'S AT EACH END OF RWY.
    D. OPEN RWY 17-35.

Comments:

- Runway will reopen back to full length on 10/2/25 to match the publication cycle and new diagrams. All temporary flight procedures will no longer be valid; and original flight procedures are active.

Phase 4B.1

Description of Work:

- COLD MILLING, CRACK REPAIR, AC PAVING, PAVEMENT MARKING

Hours:

- 2200-0600 DAILY

Duration:

- 45 CALENDAR DAYS
- ANTICIPATED DATES: 10/2/2025 TO 11/16/2025

Required NOTAMs:

1. RUNWAY 17-35 CLOSED, EXCEPT MEDEVAC AIRCRAFT WITH 1-HR PPR
2. TAXIWAY A6 CLOSED
3. TAXIWAY A5 CLOSED
4. TAXIWAY H CLOSED
5. RUNWAY 17-35 UNGROOVED (WORKING AND NONWORKING HOURS)
6. TAXIWAY A AT TAXIWAY H RESTRICTED TO ADG III AND SMALLER

NAVAID Status:

- RUNWAY 17 PAPI (FAA): OTS (IN-SERVICE WITH 1-HR PPR)
- RUNWAY 17 PAPI (TEMP): OTS
- RUNWAY 17 LOC/DME: OTS
- RUNWAY 17 GS: OTS
- RUNWAY 17 MALSR: OTS
- RUNWAY 35 PAPI (FAA): OTS
- RUNWAY 35 PAPI (TEMP): N/A

Phasing Notes:

1. CONTRACTOR SHALL CONSTRUCT THE NEW AC PAVEMENT ACROSS THE FULL WIDTH OF THE RUNWAY AND/OR TAXIWAY DURING EACH OVERNIGHT CLOSURE. ALL MILLED SURFACES SHALL BE PAVED AND TRANSITION RAMPS SHALL BE CONSTRUCTED PRIOR TO REOPENING THE RUNWAY EACH MORNING.
2. THE CONTRACTOR SHALL APPLY HALF APPLICATION PAVEMENT MARKINGS PRIOR TO REOPENING THE RUNWAY OR TAXIWAY TO AIRCRAFT OPERATIONS.
3. PRIOR TO OPENING THE RUNWAY, THE CONTRACTOR SHALL COORDINATE FOR AOC TO CONDUCT A RUNWAY INSPECTION.
4. SEE SPECIAL PROVISIONS FOR LIQUIDATED DAMAGES FOR FAILURE TO REOPEN THE RUNWAY AT 0600 HRS.
5. EACH NIGHT, THE CONTRACTOR SHALL PROVIDE EDGE LIGHTS AND TEMPORARY THRESHOLD LIGHTS ON THE DESIGNATED PORTION OF THE RUNWAY (SEE ELECTRICAL PHASING PLANS). WITHIN 1-HR OF NOTIFICATION BY AIRPORT OPERATIONS, THE CONTRACTOR SHALL PERFORM A FOD INSPECTION ON THE DESIGNATED PORTION OF THE RUNWAY AND PREPARE FOR THE ARRIVAL AND/OR DEPARTURE OF EMERGENCY MEDEVAC AIRCRAFT. CONTRACTOR SHALL CONTACT AOC FOR FINAL INSPECTION AND APPROVAL PRIOR TO OPENING THE RUNWAY FOR EMERGENCT MEDEVAC OPERATIONS.
6. CONTRACTOR SHALL PROVIDE A DEDICATED RADIO MONITORING PERSON DURING WORKING HOURS TO MONITOR THE CTAF FREQUENCY.
7. RUNWAY CLOSURE INFORMATION SHALL BE BROADCAST ON ATIS.
8. THE CONTRACTOR SHALL REMOVE THE RWY 17 LIGHTED X IMMEDIATELY PRIOR TO ARRIVAL OR DEPARTURE OF MEDEVAC AIRCRAFT AND SHALL REPLACE THE LIGHTED X IMMEDIATELY AFTER THE AIRCRAFT HAS CLEARED THE RUNWAY.

Comments:

- Work on this phase will take approximately 45 calendar days (dates were updated to 10/2/25-11/16/25) Use master schedule.
- If there is a medevac emergency and they need the runway available, during working hours, the runway will not fully reopen. The contractor will continue work in the south end work area. KOA will reactivate the runway edge lights, put out temporary threshold lights, do a FOD check, contractor to remove lighted X on runway 17. The FAA will activate the FAA 17 PAPI (1hr PPR for medevac).
- This was coordinated with Medevac.
- FAA AWP RSO asked the Designer to explain the flow: in this configuration is medevac able to arrive or depart from runway 17? While there are no runway 35 arrivals, over the construction zone, but are able to depart from runway 35 from taxiway G?
    - BASES: If the wind condition is in a runway 35 operation, reactivate only runway 17 PAPIs.

        - Designer: If wind conditions change, medevac would have to operate in reverse flow; potentially arrive/depart with tail wind; Hawaii Life Flight has been made aware of that and they agree; depending on how strong the wind is, they can accommodate.
        - Hawaii Life Flight is aware of not landing over construction.
        - Takeoffs are available in either wind condition. FAA ATO HCF confirmed HCF has no problem with taking off over construction.
    - Has changed runway 17 PAPI in the NAVAID status to OTS except when in service with 1hr PPR.
    - BASES: can the lighted X, which needs to be on the numbers, be removed and replaced only for that medivac flight?
    - Yes, verbiage can be drafted. However, X to be removed only when medevac operating on the runway. HCF has no objections to continuing construction when aircraft is not operating. Designer changed verbiage in phasing notes.
    - Designer: Inserted draft verbiage for coordination between the medivac, airport and contractor on opening and closing runway for medivac emergency.
    - American Airlines questions: how will other pilots know to avoid landing during medivac? Suggests ATIS notice that temporary runway opening for medivac only emergency operations.
    - Runway closure will be posted to ATIS notice.
    - HDOT-A KOA: NOTAM can add “except emergency aircraft” and “1hr PPR” and there is a place to put frequency to call for PPR and phone number.
    - Designer added additional phasing note to require contractor to have someone monitoring CTAF, when the tower is closed, so they can pick up any VFR pilots that may be coming in.
    - FAA AWP RSO: can you get an ops person out there 24/7 during this phase of project?
    - DOT KOA: we’re in the process of hiring more ops people, 3 more coming on board for a total of 6; hoping we will have someone scheduled 24/7 by the time this project starts. Added to assumptions.
    - Taxiway E was included in this phase’s demolition.

Phase 4B.2

Description of Work:
- ON-WORKING HOURS TAXIWAY H REHABILITATION

Hours:
- 0600-2200 DAILY

Duration:
- 45 CALENDAR DAYS
- ANTICIPATED DATES: 10/2/2025 TO 11/16/2025

Required NOTAMs:
1. TAXIWAY H CLOSED
2. RUNWAY 17-35 UNGROOVED

NAVAID Status:
- RUNWAY 17 PAPI (FAA): IN-SERVICE
- RUNWAY 17 PAPI (TEMP): OTS

- RUNWAY 17 LOC/DME: IN-SERVICE
- RUNWAY 17 GS: IN-SERVICE
- RUNWAY 35 PAPI (FAA): IN-SERVICE
- RUNWAY 35 PAPI (TEMP): N/A

Phasing Notes:

1. PHASE 4B.2 SHALL BE CONCURRENT WITH PHASE 4B.1.

Comments:

- If completed early, the contractor will reopen taxiway H.
- Taxiway H will change to A4 in phase 4C.

Phase 4C

Description of Work:

- COLD MILLING, CRACK REPAIR, AC PAVING, PAVEMENT MARKING.

Hours:

- 2200-0600 DAILY

Duration:

- 4 CALENDAR DAYS
- ANTICIPATED DATES: 11/16/2025 TO 11/20/2025

Required NOTAMs (WORK HOURS):

1. RUNWAY 17-35 CLOSED, EXCEPT MEDEVAC AIRCRAFT WITH 1-HR PPR
2. TAXIWAY A6 CLOSED
3. TAXIWAY A5 CLOSED
4. TAXIWAY A4 CLOSED
5. TAXIWAY H RENAMED TO TAXIWAY A4
6. RUNWAY 17-35 UNGROOVED (WORKING AND NONWORKING HOURS)

NAVAID Status:

- RUNWAY 17 PAPI (FAA): OTS (IN-SERVICE WITH 1-HR PPR)
- RUNWAY 17 PAPI (TEMP): OTS
- RUNWAY 17 LOC/DME: OTS
- RUNWAY 17 GS: OTS
- RUNWAY 17 MALSR: OTS
- RUNWAY 35 PAPI (FAA): OTS
- RUNWAY 35 PAPA (TEMP): N/A

Phasing Notes:

1. CONTRACTOR SHALL CONSTRUCT THE NEW AC PAVEMENT ACROSS THE FULL WIDTH OF THE RUNWAY AND/OR TAXIWAY DURING EACH OVERNIGHT CLOSURE. ALL MILLED SURFACES SHALL BE PAVED AND TRANSITION RAMPS SHALL BE CONSTRUCTED PRIOR TO REOPENING THE RUNWAY EACH MORNING.
2. THE CONTRACTOR SHALL APPLY HALF APPLICATION PAVEMENT MARKINGS PRIOR TO REOPENING THE RUNWAY OR TAXIWAY TO AIRCRAFT OPERATIONS.
3. PRIOR TO OPENING THE RUNWAY, THE CONTRACTOR SHALL COORDINATE FOR AOC TO CONDUCT A RUNWAY INSPECTION.
4. SEE SPECIAL PROVISIONS FOR LIQUIDATED DAMAGES FOR FAILURE TO REOPEN THE RUNWAY AT 0600 HRS.

5. EACH NIGHT, THE CONTRACTOR SHALL PROVIDE EDGE LIGHTS AND TEMPORARY THRESHOLD LIGHTS ON THE DESIGNATED PORTION OF THE RUNWAY (SEE ELECTRICAL PHASING PLANS). WITHIN 1-HR OF NOTIFICATION BY AIRPORT OPERATIONS, THE CONTRACTOR SHALL PERFORM A FOD INSPECTION ON THE DESIGNATED PORTION OF THE RUNWAY AND PREPARE FOR THE ARRIVAL AND/OR DEPARTURE OF EMERGENCY MEDEVAC AIRCRAFT. CONTRACTOR SHALL CONTACT AOC FOR FINAL INSPECTION AND APPROVAL PRIOR TO OPENING THE RUNWAY FOR EMERGENCT MEDEVAC OPERATIONS.
6. CONTRACTOR SHALL PROVIDE A DEDICATED RADIO MONITORING PERSON DURING WORKING HOURS TO MONITOR THE CTAF FREQUENCY.
7. RUNWAY CLOSURE INFORMATION SHALL BE BROADCAST ON ATIS.
8. THE CONTRACTOR SHALL REMOVE THE RWY 17 LIGHTED X IMMEDIATELY PRIOR TO ARRIVAL OR DEPARTURE OF MEDEVAC AIRCRAFT AND SHALL REPLACE THE LIGHTED X IMMEDIATELY AFTER THE AIRCRAFT HAS CLEARED THE RUNWAY.

Comments:

- This phase has a 4-day duration, Hawaii Life Flight understands and is okay with only having 4,700’ of runway.
- Same changes in 4B: NOTAMs, NAVAID status, and extra notes for monitoring, will be carried over to this phase.

Phase 4D.1

Description of Work:

- COLD MILLING, CRACK REPAIR, AC PAVING, PAVEMENT MARKING

Hours:

- 2200-0600 DAILY

Duration:

- 45 WORKING DAYS
- ANTICIPATED DATES: 12/1/2025 TO 12/16/25
  1/1/2026 TO 1/31/2026

Required NOTAMs:

1. RUNWAY 17-35 CLOSED, EXCEPT MEDEVAC AIRCRAFT WITH 1-HR PPR
2. TAXIWAY G CLOSED
3. TAXIWAY A2 CLOSED
4. TAXIWAY A CLOSED, NORTH OF TAXIWAY G
5. TAXIWAY A AT TAXIWAY G RESTRICTED TO ADG III AND SMALLER
6. TAXIWAY H RENAMED TAXIWAY A4
7. RUNWAY 17-35 UNGROOVED (WORKING AND NONWORKING HOURS)

NAVAID Status:

- RUNWAY 17 PAPI (FAA): OTS (IN-SERVICE WITH 1-HR PPR)
- RUNWAY 17 PAPI (TEMP): N/A
- RUNWAY 17 LOC/DME: OTS
- RUNWAY 17 GS: OTS
- RUNWAY 17 MALSR: OTS

- RUNWAY 35 PAPI (FAA): IN-SERVICE
- RUNWAY 35 PAPI (TEMP): N/A

Phasing Notes:

1. CONTRACTOR SHALL CONSTRUCT THE NEW AC PAVEMENT ACROSS THE FULL WIDTH OF THE RUNWAY AND/OR TAXIWAY DURING EACH OVERNIGHT CLOSURE. ALL MILLED SURFACES SHALL BE PAVED AND TRANSITION RAMPS SHALL BE CONSTRUCTED PRIOR TO REOPENING THE RUNWAY EACH MORNING.
2. THE CONTRACTOR SHALL APPLY HALF APPLICATION PAVEMENT MARKINGS PRIOR TO REOPENING THE RUNWAY OR TAXIWAY TO AIRCRAFT OPERATIONS.
3. PRIOR TO OPENING THE RUNWAY, THE CONTRACTOR SHALL COORDINATE FOR AOC TO CONDUCT A RUNWAY INSPECTION.
4. SEE SPECIAL PROVISIONS FOR LIQUIDATED DAMAGES FOR FAILURE TO REOPEN THE RUNWAY AT 0600 HRS.
5. EACH NIGHT, THE CONTRACTOR SHALL PROVIDE EDGE LIGHTS AND TEMPORARY THRESHOLD LIGHTS ON THE DESIGNATED PORTION OF THE RUNWAY (SEE ELECTRICAL PHASING PLANS). WITHIN 1-HR OF NOTIFICATION BY AIRPORT OPERATIONS, THE CONTRACTOR SHALL PERFORM A FOD INSPECTION ON THE DESIGNATED PORTION OF THE RUNWAY AND PREPARE FOR THE ARRIVAL AND/OR DEPARTURE OF EMERGENCY MEDEVAC AIRCRAFT. CONTRACTOR SHALL CONTACT AOC FOR FINAL INSPECTION AND APPROVAL PRIOR TO OPENING THE RUNWAY FOR EMERGENCT MEDEVAC OPERATIONS.
6. CONTRACTOR SHALL PROVIDE A DEDICATED RADIO MONITORING PERSON DURING WORKING HOURS TO MONITOR THE CTAF FREQUENCY.
7. RUNWAY CLOSURE INFORMATION SHALL BE BROADCAST ON ATIS.
8. THE CONTRACTOR SHALL REMOVE THE RWY 17 LIGHTED X IMMEDIATELY PRIOR TO ARRIVAL OR DEPARTURE OF MEDEVAC AIRCRAFT AND SHALL REPLACE THE LIGHTED X IMMEDIATELY AFTER THE AIRCRAFT HAS CLEARED THE RUNWAY.

Comments:

- Flip side to phase 4B, providing 5,000', available for medevac, on the south end of runway to do work on the middle north section. Contractor should expect to deploy temporary threshold lights nightly for runway 17 end.
- Same changes in 4B: NOTAMs, NAVAID status, and extra notes for monitoring, will be carried over to this phase.

Phase 4D.2

Description of Work:

- NON-WORKING HOURS TAXIWAY G REHABILITATION

Hours:

- 0600-2200 DAILY

Duration:

- 45 WORKING DAYS

- ANTICIPATED DATES: 12/1/2025 TO 12/16/2025
  1/1/2026 TO 1/31/2026

Required NOTAMs:

1. TAXIWAY G CLOSED
2. TAXIWAY H RENAMED TAXIWAY A4

NAVAID Status:

- RUNWAY 17 PAPI (FAA): IN-SERVICE
- RUNWAY 17 PAPI (TEMP): N/A
- RUNWAY 17 LOC/DME: IN-SERVICE
- RUNWAY 17 GS: IN-SERVICE
- RUNWAY 35 PAPI (FAA): IN-SERVICE
- RUNWAY 35 PAPI (TEMP): N/A

Phasing Notes:

1. PHASE 4D.2 SHALL BE CONCURRENT WITH PHASE 4D.1.
2. PHASE 4D.2 SHALL NOT BEGIN UNTIL COMPLETION OF PHASE 4B.2.

Comments:

- Taxiway nomenclature will change with the publication cycle, still needs to be defined for taxiway G and H. Add to assumption this publication will get fitted into a phase. Otherwise, the nomenclature will be covered in the posted NOTAMS.

Phase 5

Description of Work:

- RUNWAY GROOVING AND FINAL PAVEMENT MARKINGS

Hours:

- SUNDAY - THURSDAY: 0000-0600 (HST), 1000-1600 (UTC)

Duration:

- 78 CALENDAR DAYS
- ANTICIPATED DATES: 1/31/2026TO 4/12/2026

Required NOTAMs (WORKING HOURS):

1. RUNWAY 17-35 CLOSED
2. TAXIWAY A6 CLOSED
3. TAXIWAY A5 CLOSED
4. TAXIWAY A3 CLOSED
5. TAXIWAY A4 CLOSED
6. TAXIWAY A2 CLOSED
7. TAXIWAY A CLOSED, NORTH OF TAXIWAY A3

Required NOTAMs (NONWORK HOURS):

1. RUNWAY 17-35 UNGROOVED
2. TAXIWAY H RENAMED TAXIWAY A4
3. TAXIWAY G RENAMED TAXIWAY A3

NAVAID Status:

- RUNWAY 17 PAPI (FAA): OTS
- RUNWAY 17 PAPI (TEMP): N/A
- RUNWAY 17 LOC/DME: OTS
- RUNWAY 17 GS: OTS

- RUNWAY 35 PAPI (FAA): OTS
- RUNWAY 35 PAPI (TEMP): N/A

Phasing Notes:

1. PRIOR TO OPENING THE RUNWAY, THE CONTRACTOR SHALL COORDINATE FOR AOC TO CONDUCT A RUNWAY INSPECTION.
2. SEE SPECIAL PROVISIONS FOR LIQUIDATED DAMAGES FOR FAILURE TO REOPEN THE RUNWAY AT 0600 HRS.
3. IN THE EVENT OF MEDICAL EMERGENCY, WITHIN 1-HR OF NOTIFICATION BY AIRPORT OPERATIONS, THE CONTRACTOR SHALL CLEAN THE RUNWAY OF ALL FOD AND DEBRIS, VACATE THE RSA, AND REOPEN THE RUNWAY TO ALLOW FOR ARRIVAL OR DEPARTURE OF EMERGENCY MEDEVAC AIRCRAFT.

Comments:

- During this phase, in order to minimize overall impacts to the airport and give some consideration to cargo carriers; work will start Saturday nights at midnight, so technically Sunday, until Thursday night. No work to be done on Friday and Saturday night.
- FAA AWP RSO: are there flaggers at taxiway A/H, like in phase 1A and 1B?
- Designer: there should be, Designer have added flaggers.
- Designer changed NOTAM from TAXIWAY A CLOSED, NORTH OF TAXIWAY G to TAXIWAY A CLOSED, NORTH OF TAXIWAY A3.

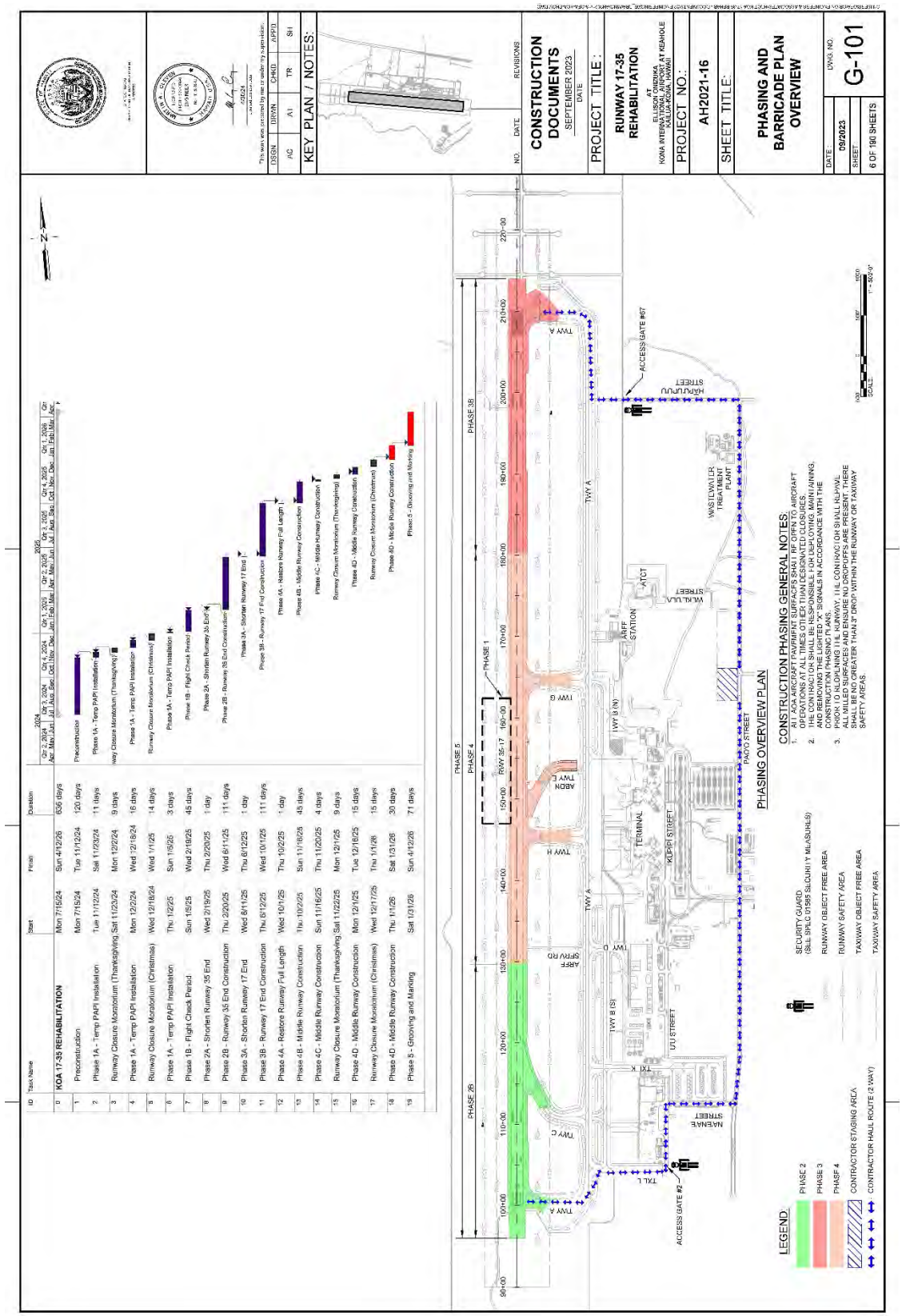

Figure 3: Phasing and Barricade Plan Overview

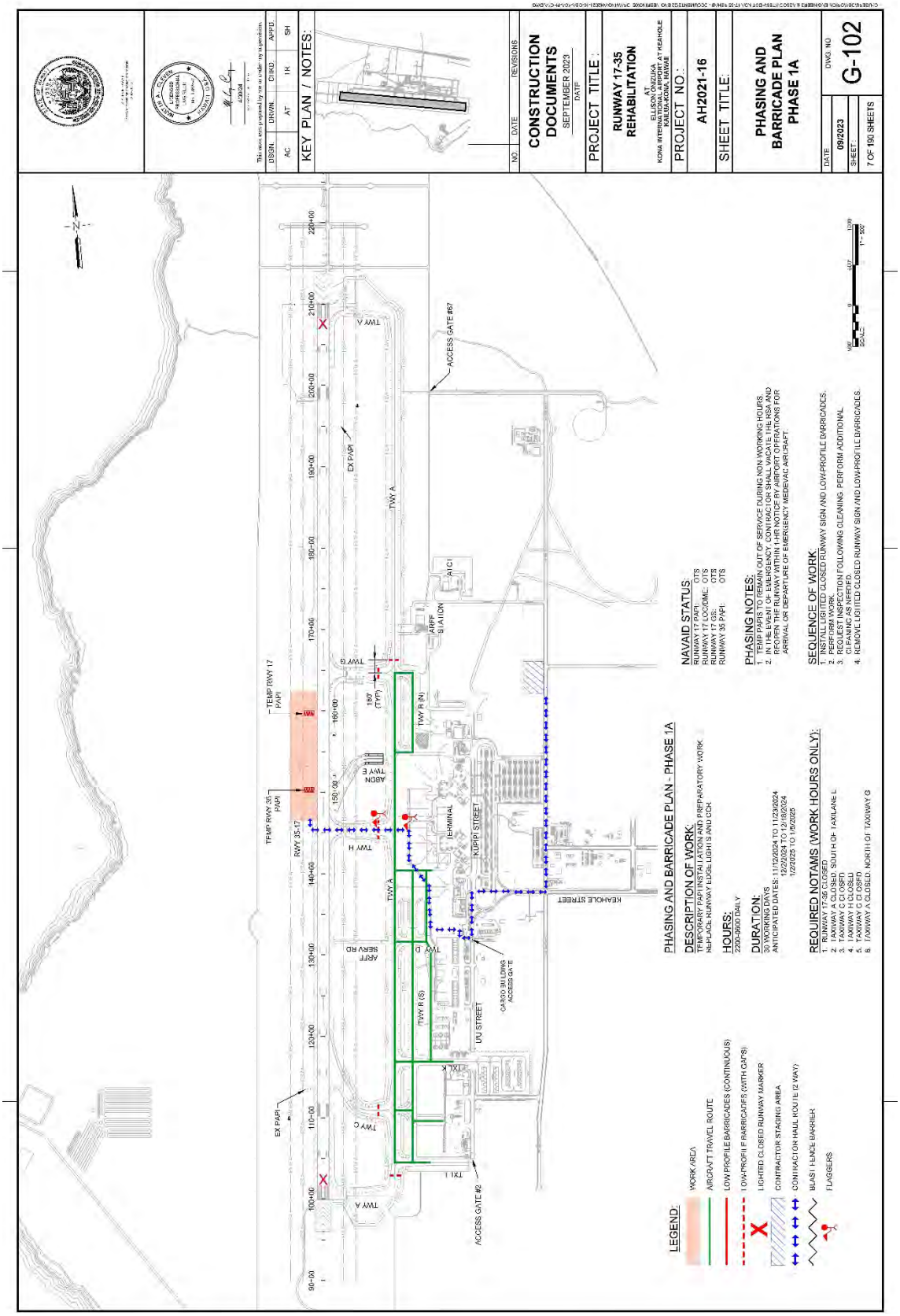

Figure 4: Phasing and Barricade Plan Phase 1A

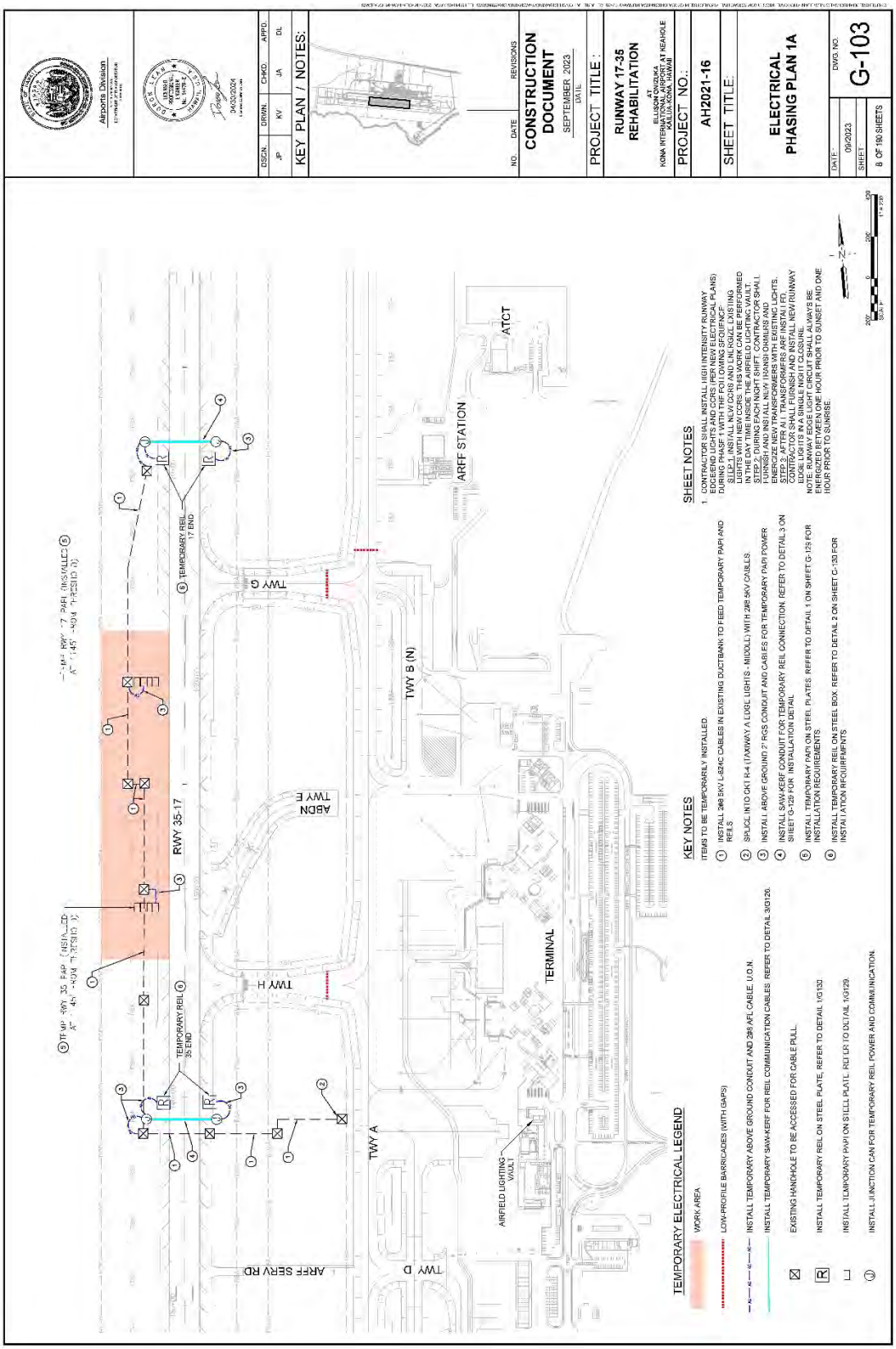

Figure 5: Electrical Phasing Plan 1A

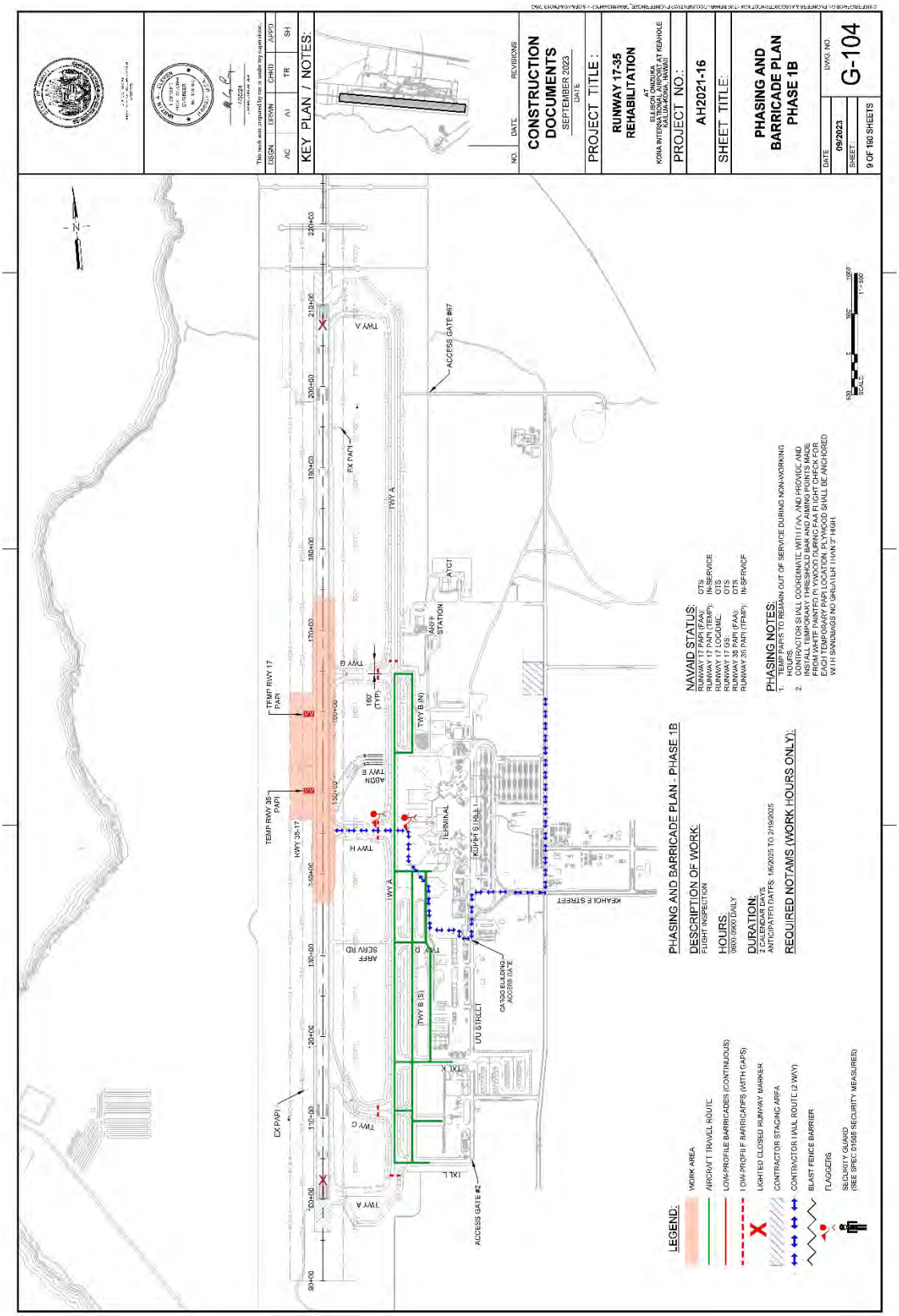

Figure 6: Phasing and Barricade Plan Phase 1B

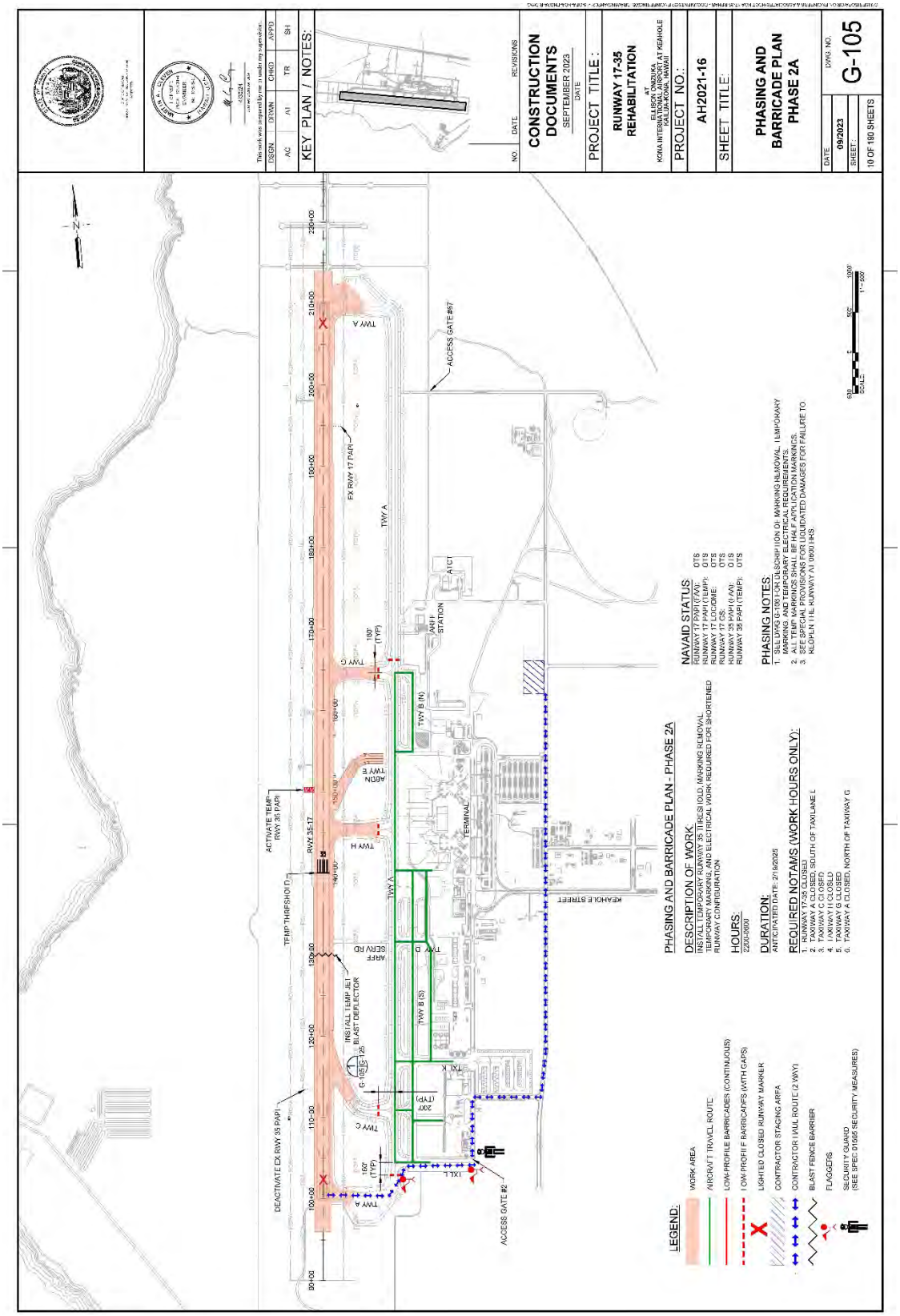

Figure 7: Phasing and Barricade Plan Phase 2A

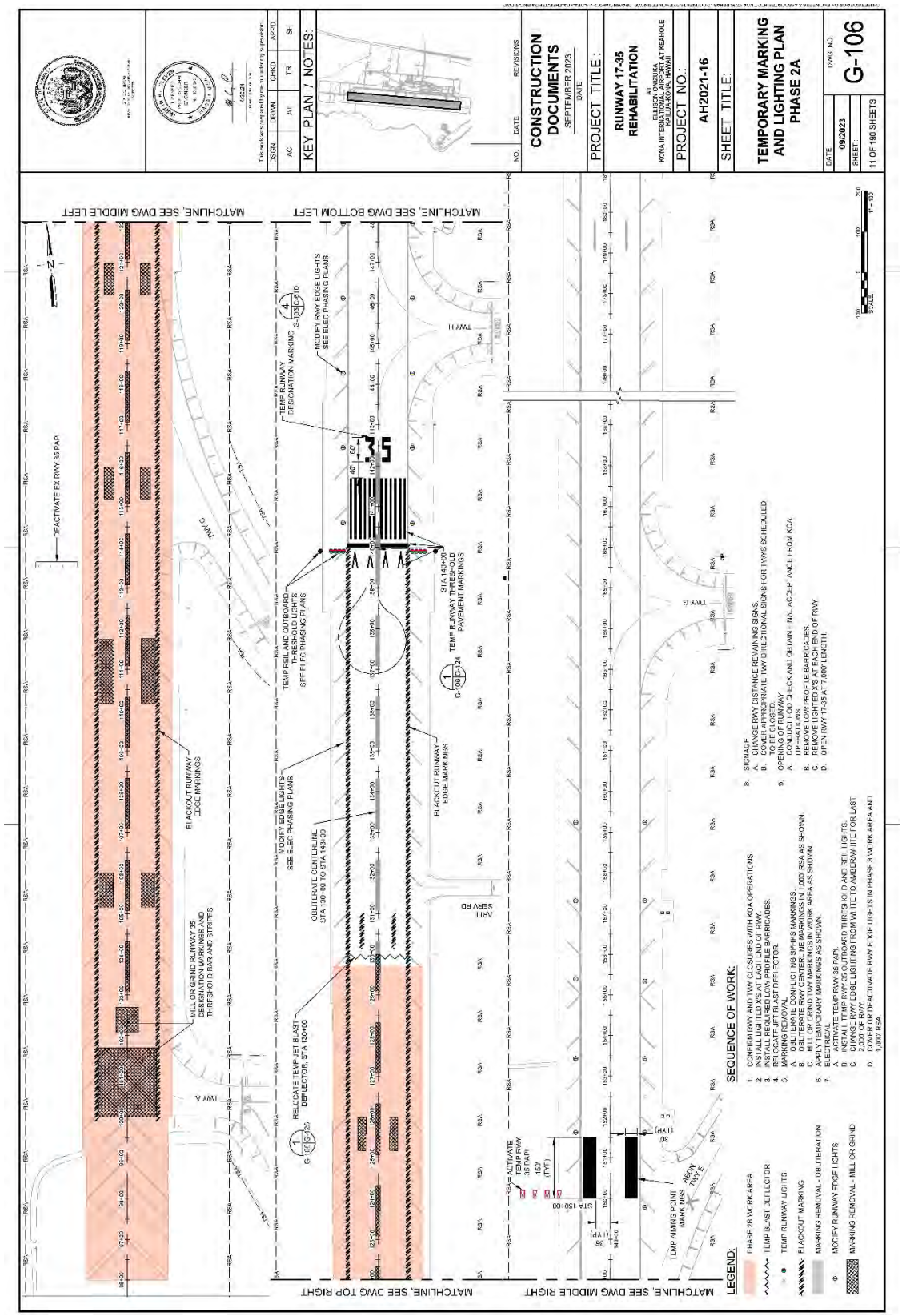

Figure 8: Temporary Marking and Lighting Plan Phase 2A

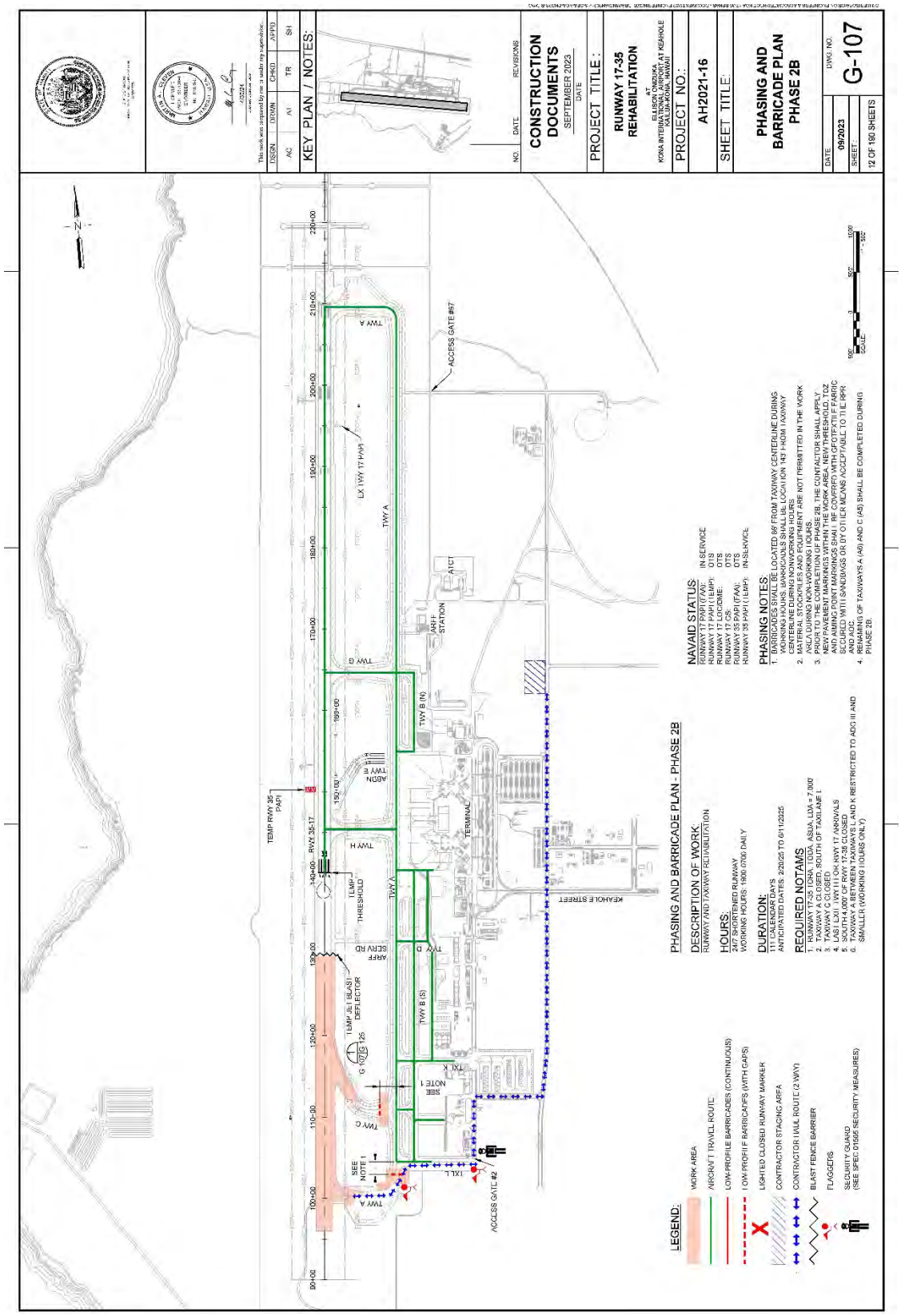

Figure 9: Phasing and Barricade Plan Phase 2B

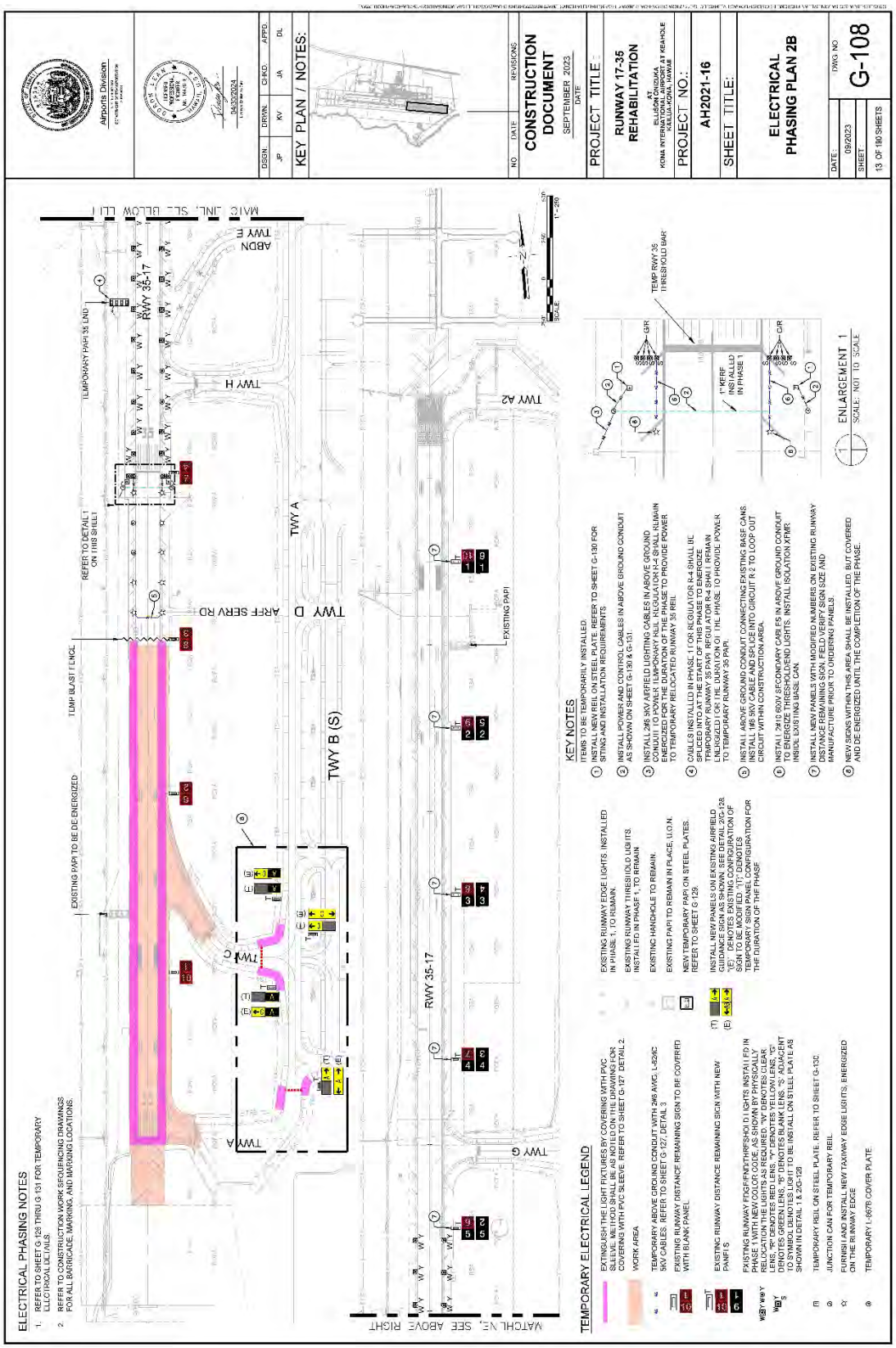

Figure 10: Electrical Phasing Plan 2B

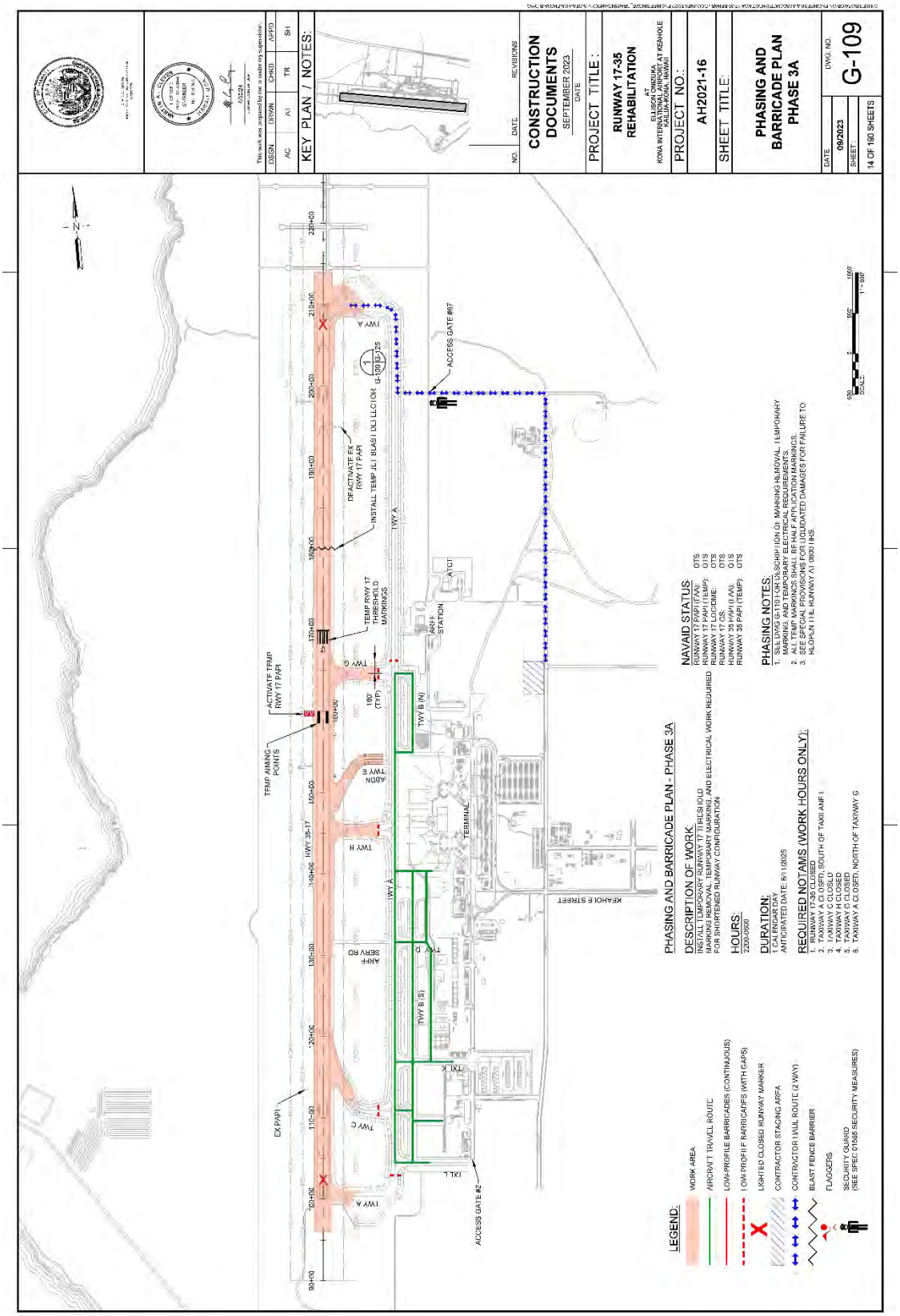

Figure 11: Phasing and Barricade Plan Phase 3A

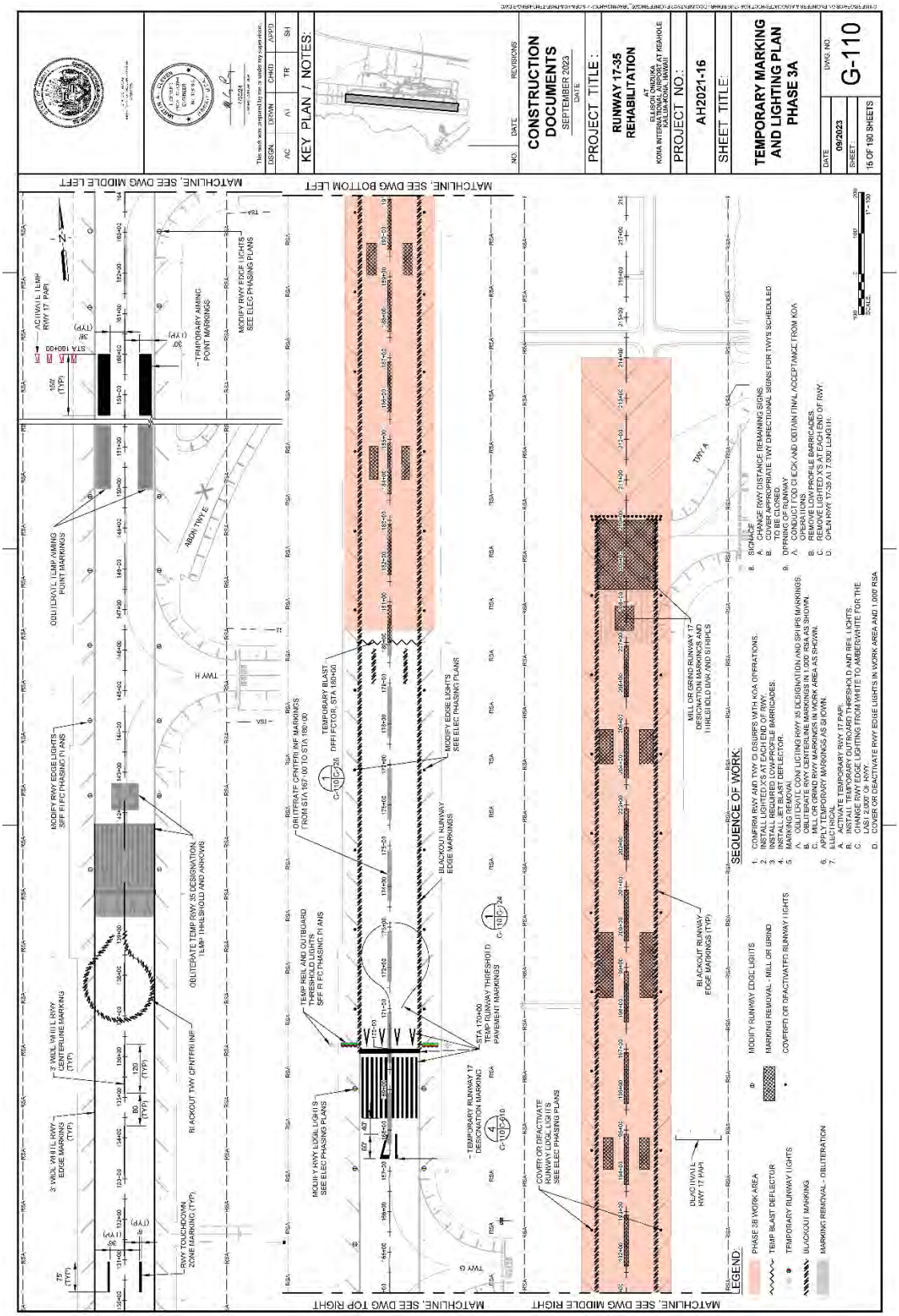

Figure 12: Temporary Marking and Lighting Plan Phase 3A

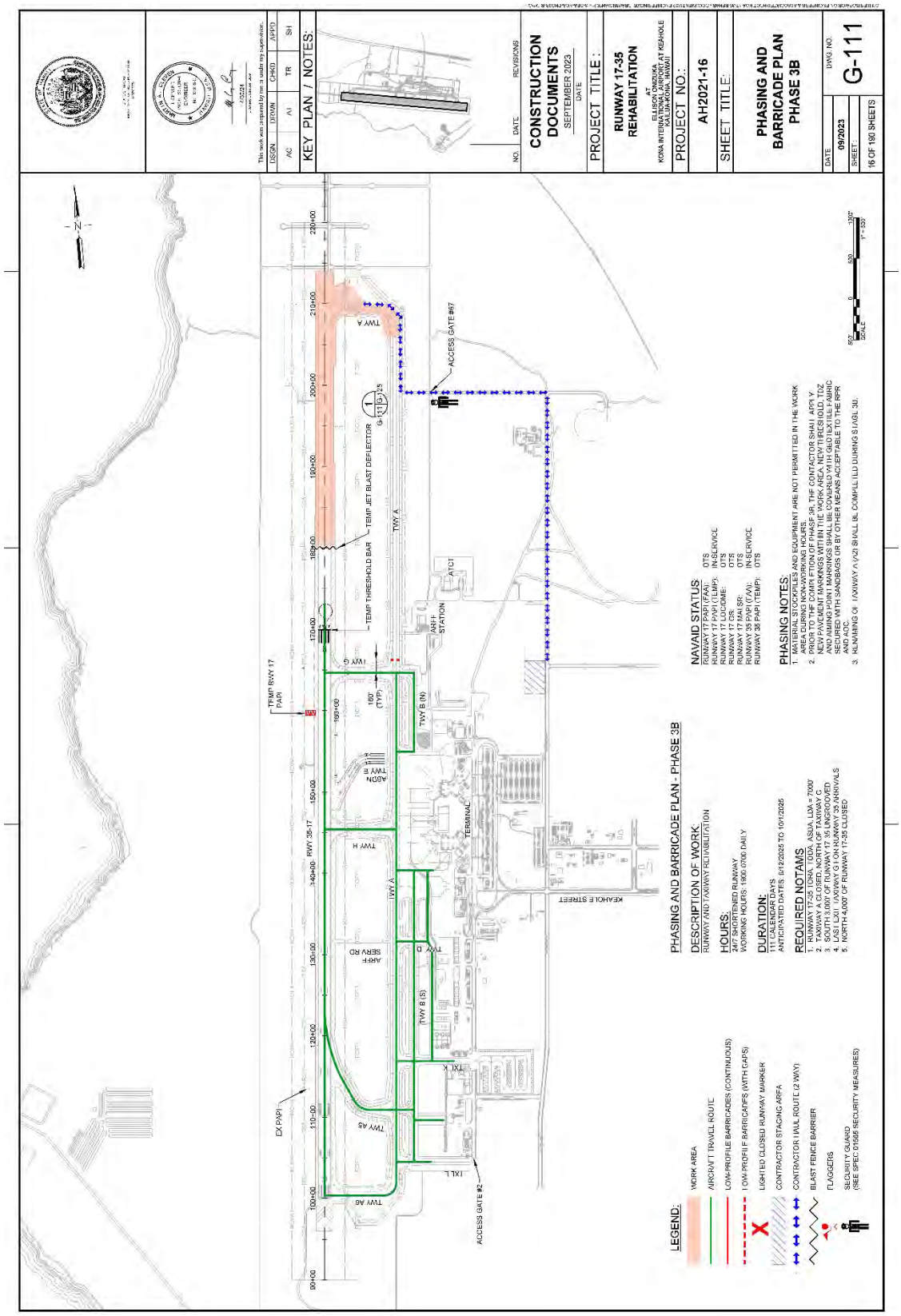

Figure 13: Phasing and Barricade Plan Phase 3B

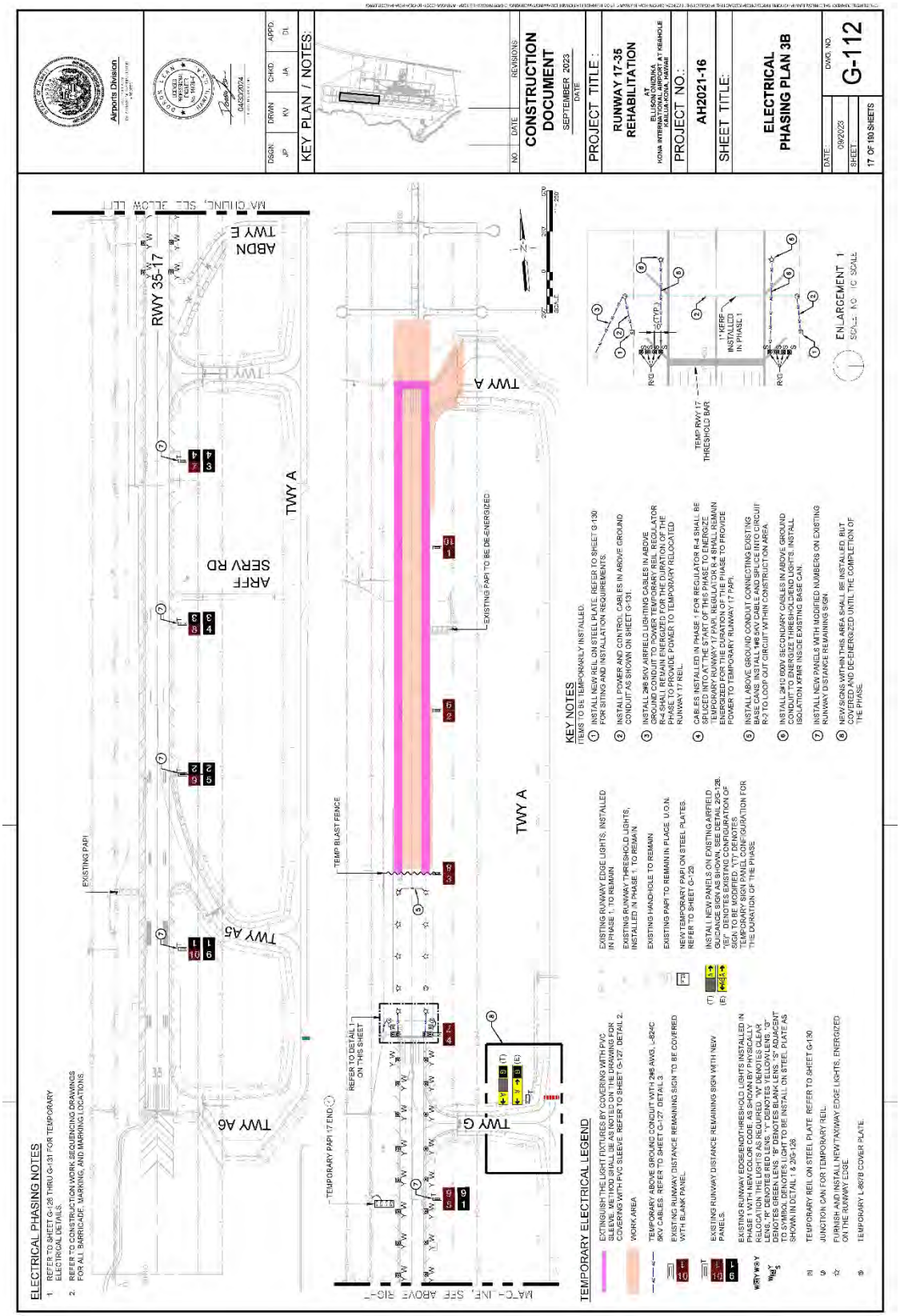

Figure 14: Electrical Phasing Plan 3B

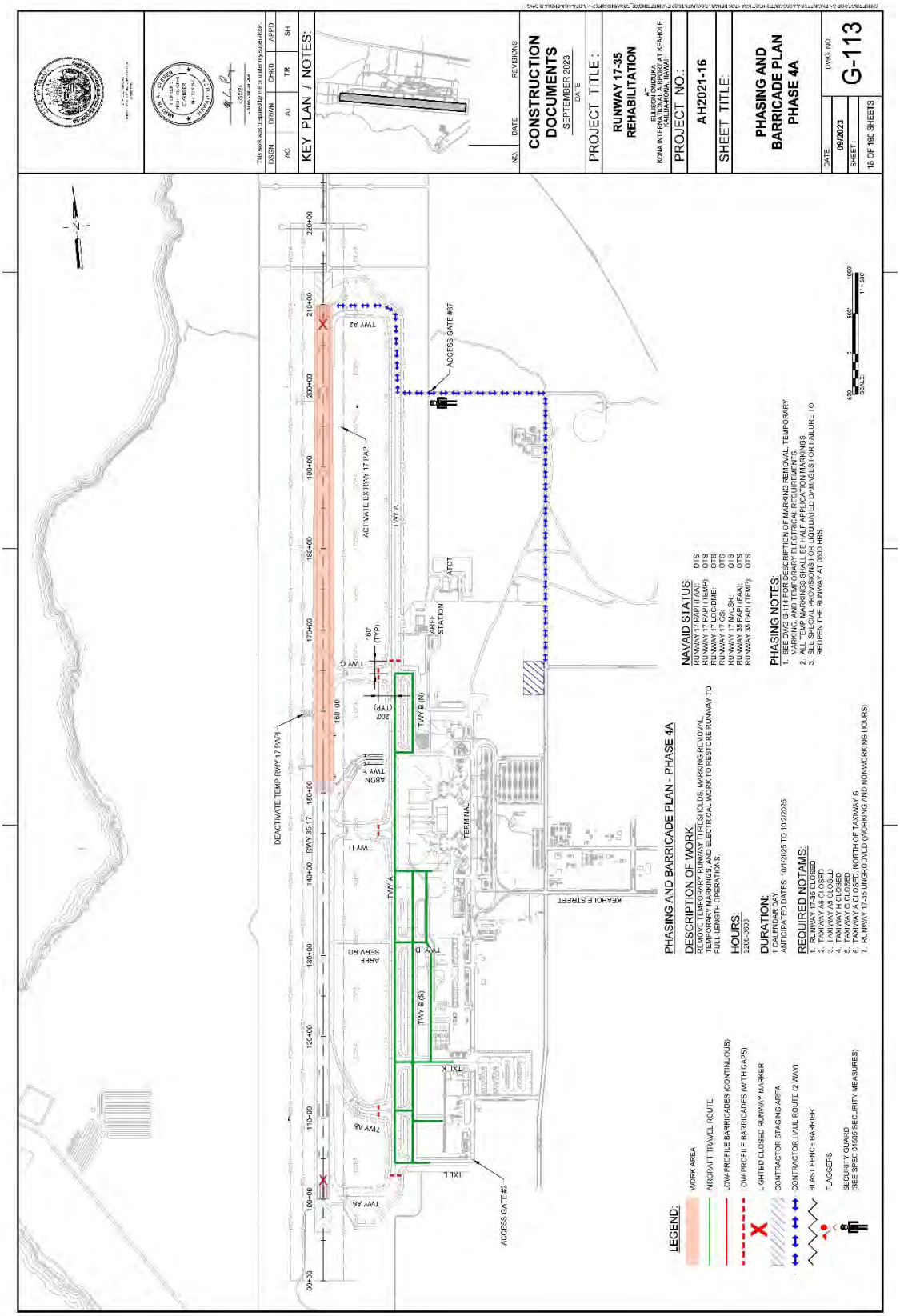

Figure 15: Phasing and Barricade Plan Phase 4A

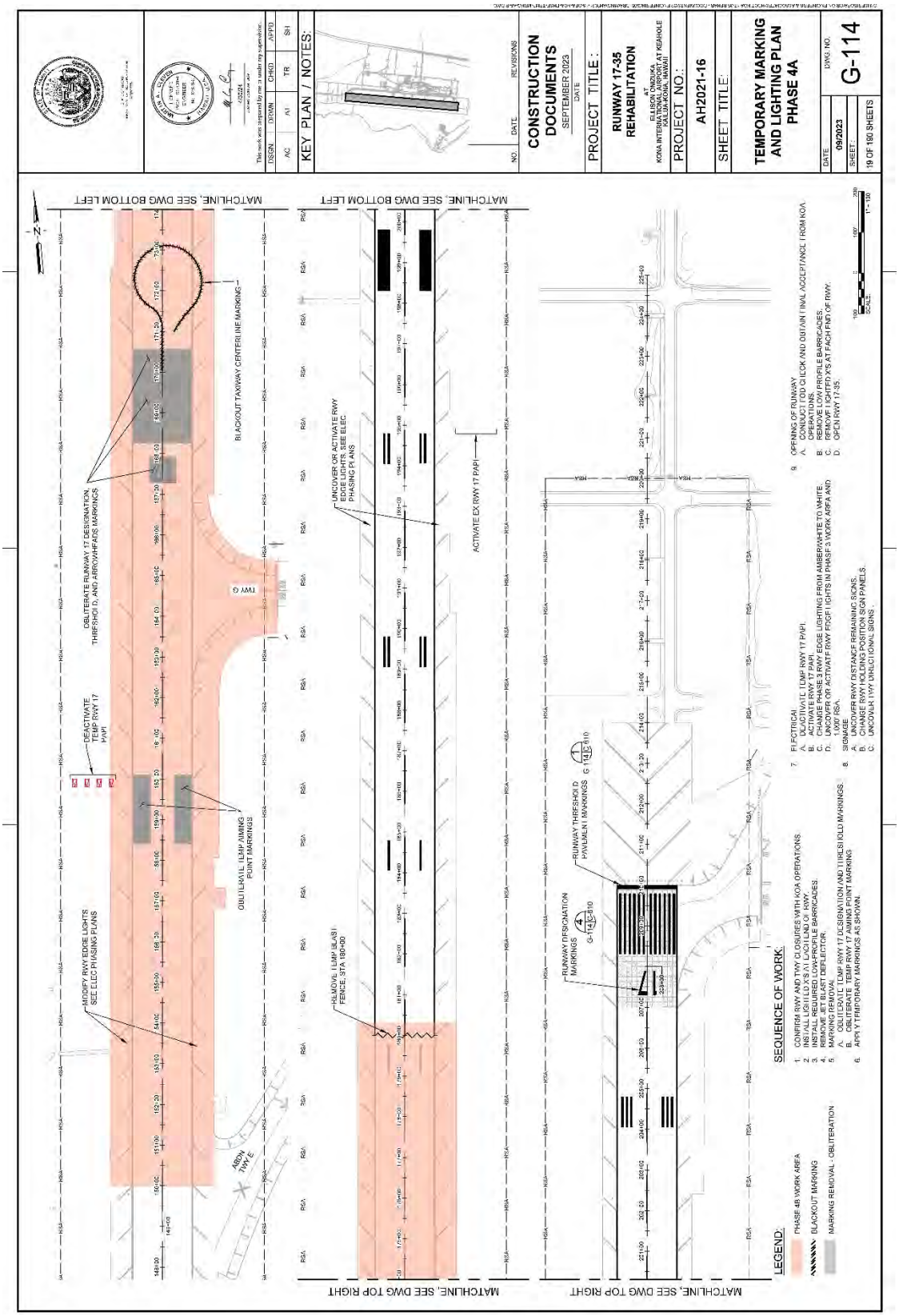

Figure 16:Temporary Marking and Lighting Plan Phase 4A

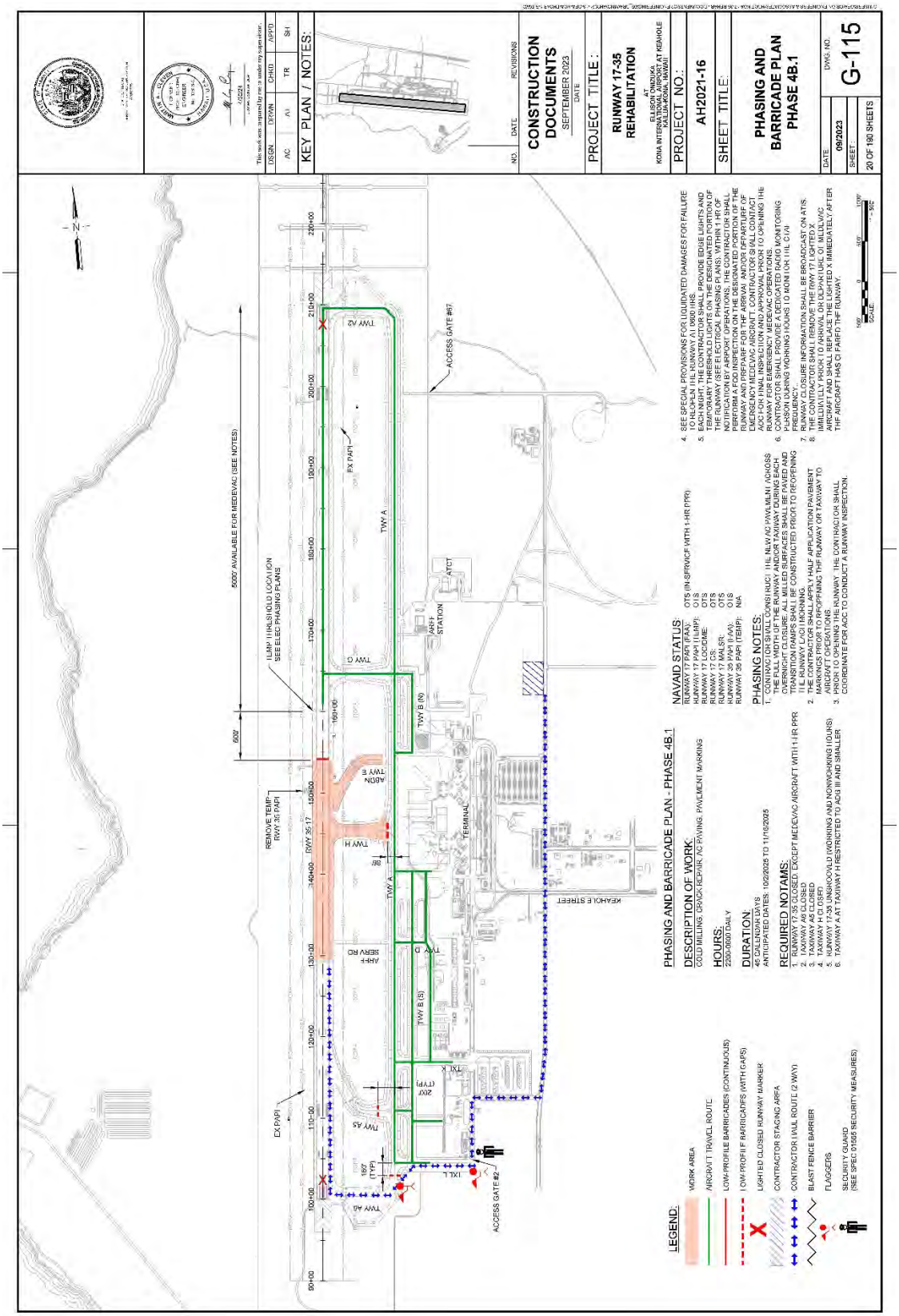

Figure 17: Phasing and Barricade Plan Phase 4B.1

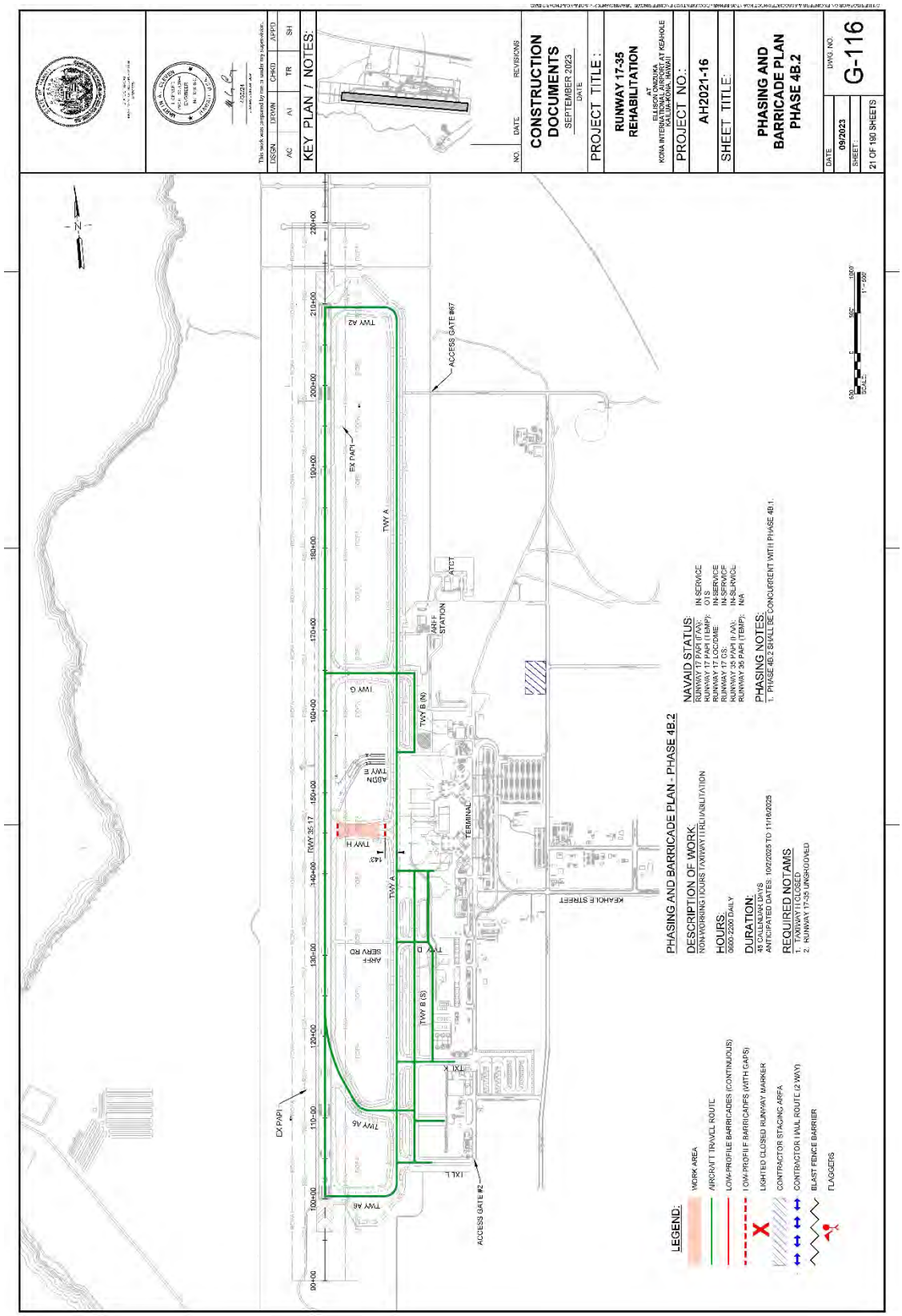

Figure 18: Phasing and Barricade Plan Phase 4B.2

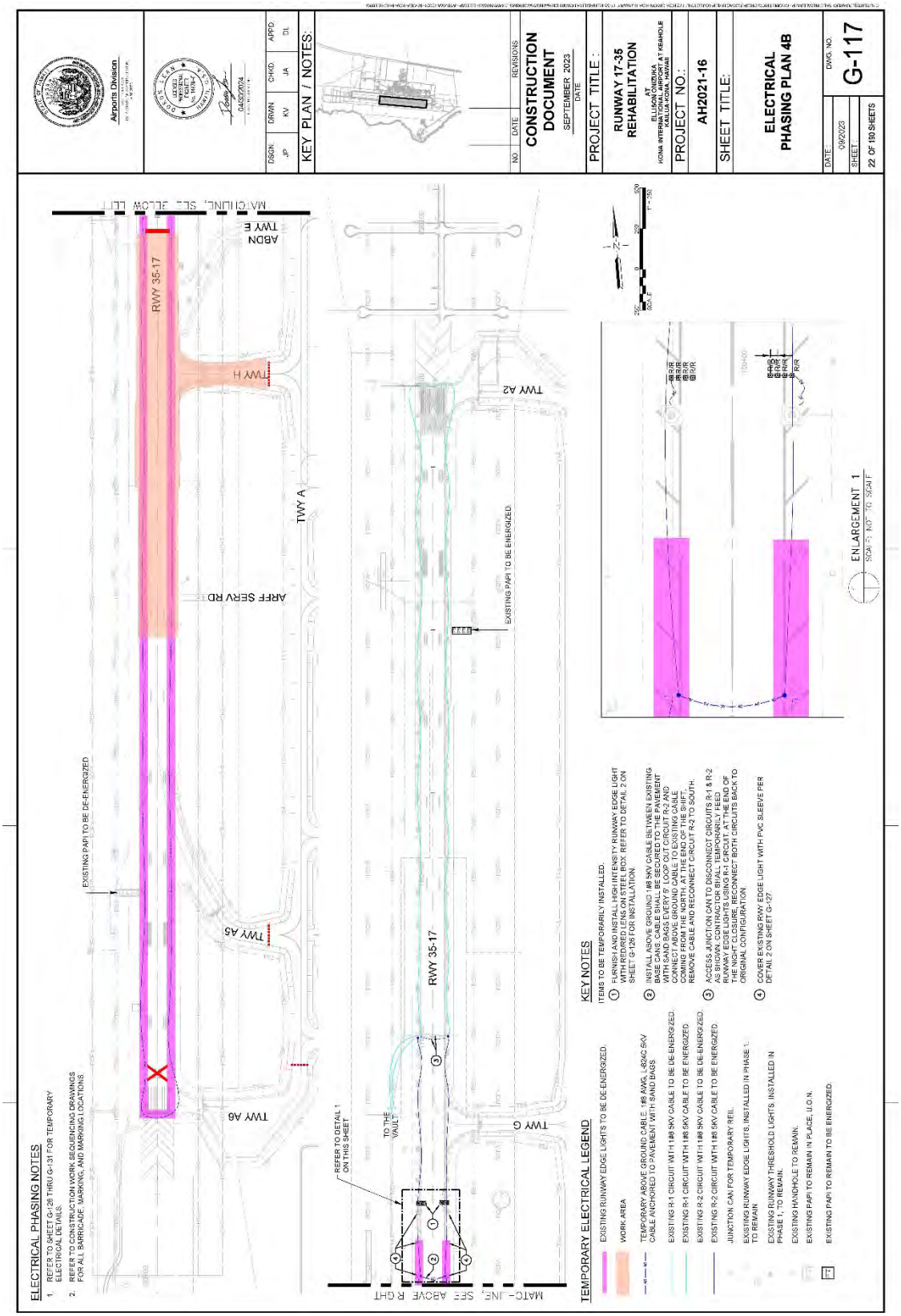

Figure 19: Electrical Phasing Plan 4B

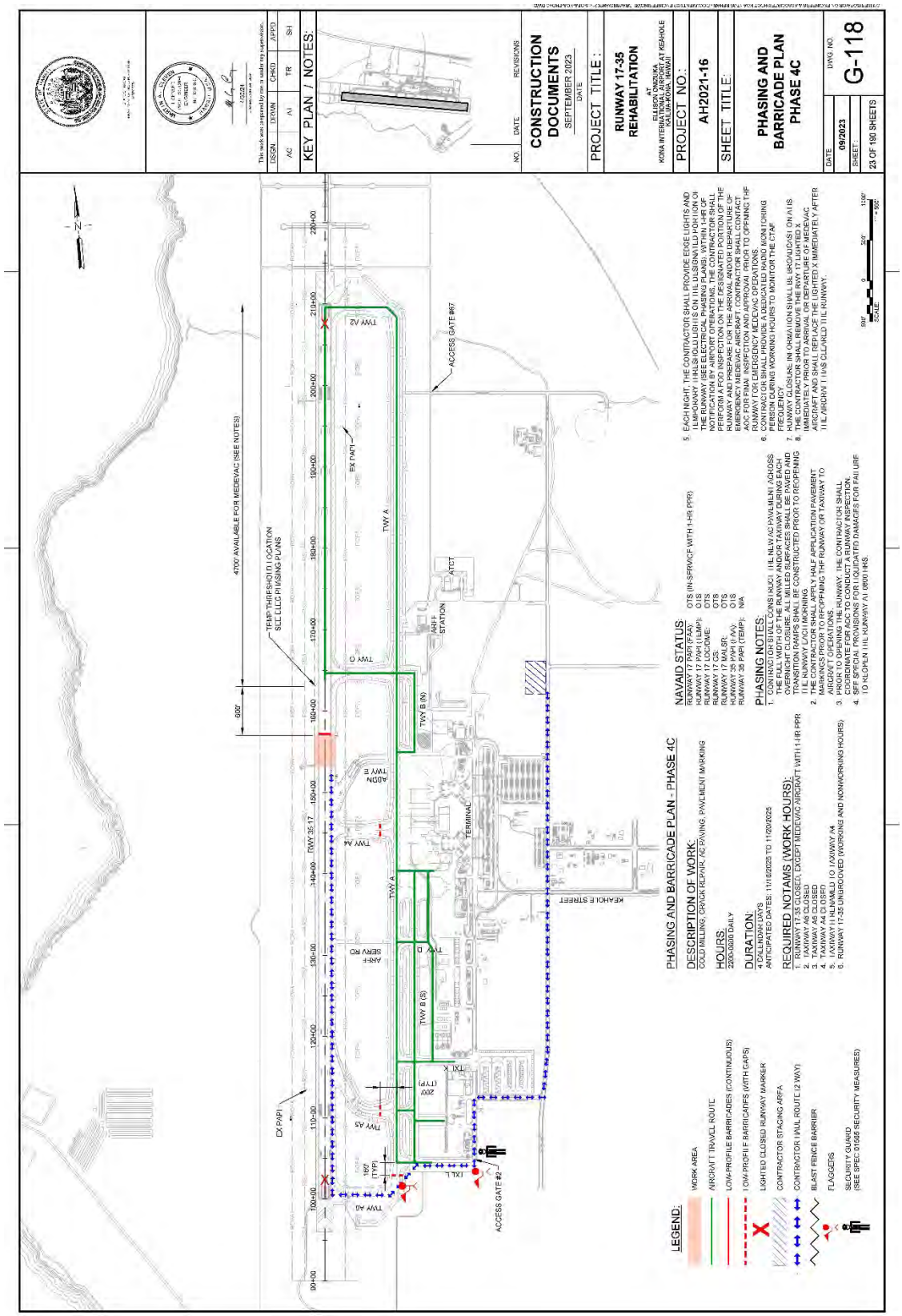

Figure 20: Phasing and Barricade Plan Phase 4C

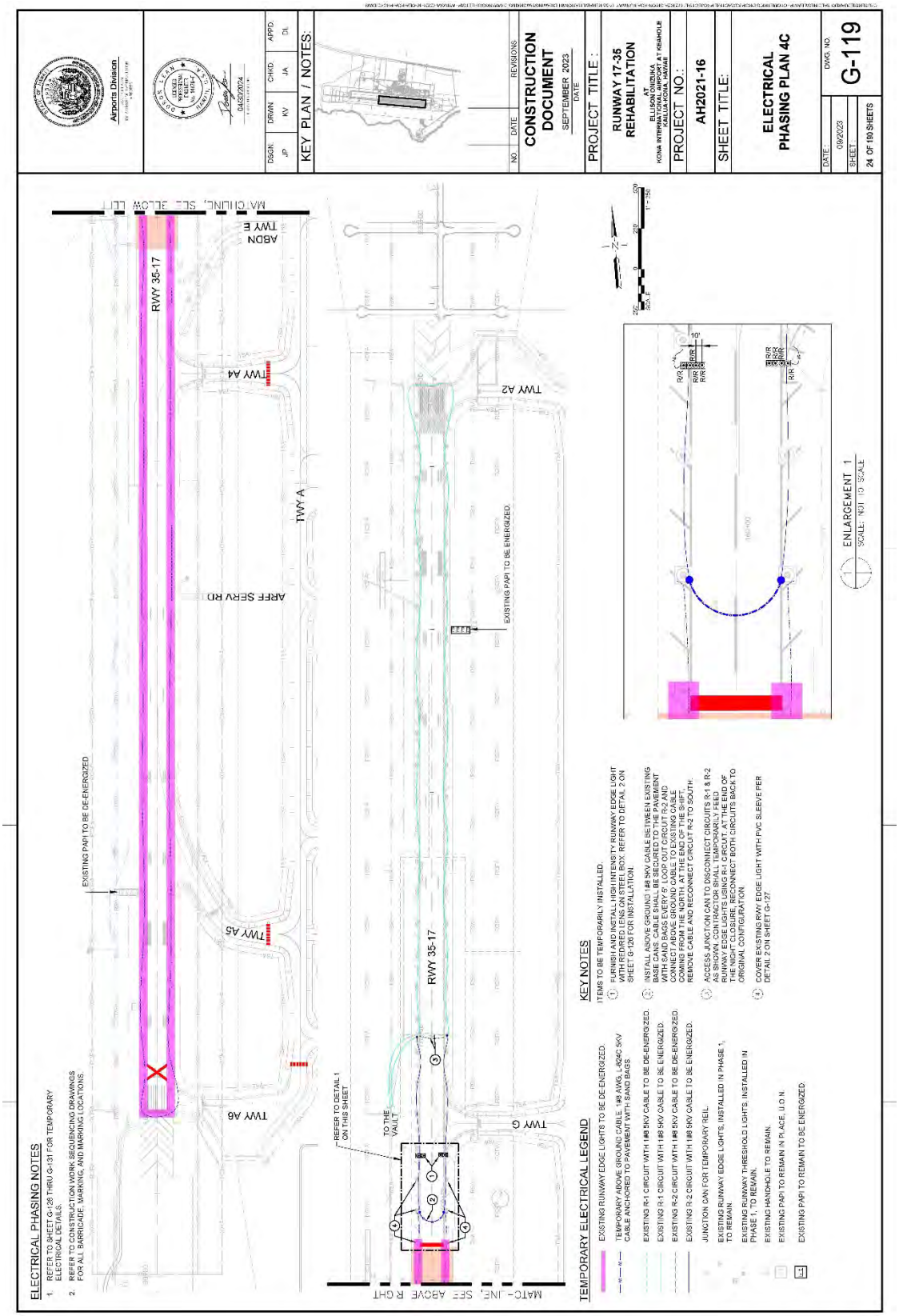

Figure 21: Electrical Phasing Plan 4C

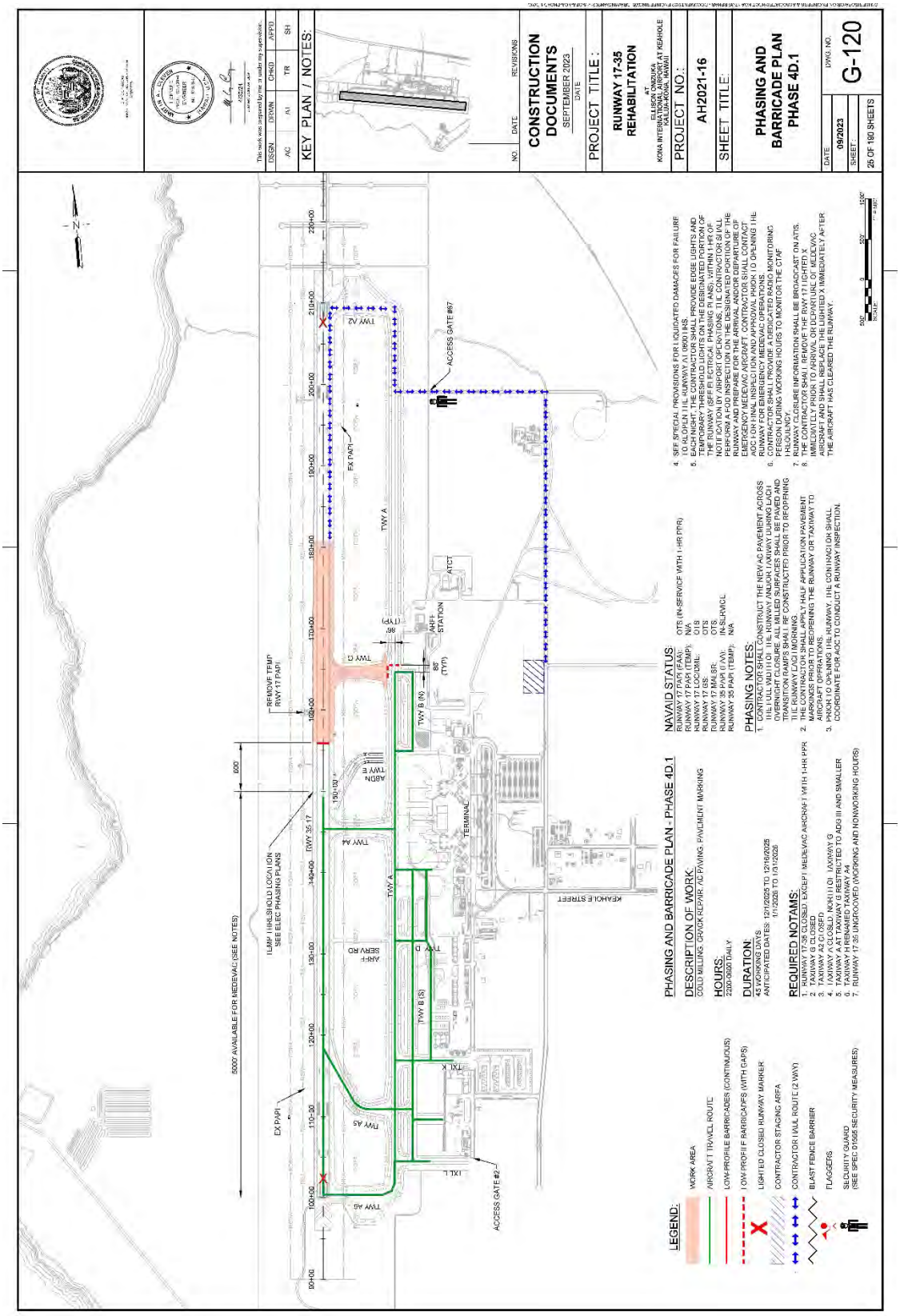

Figure 22: Phasing and Barricade Plan Phase 4D.1

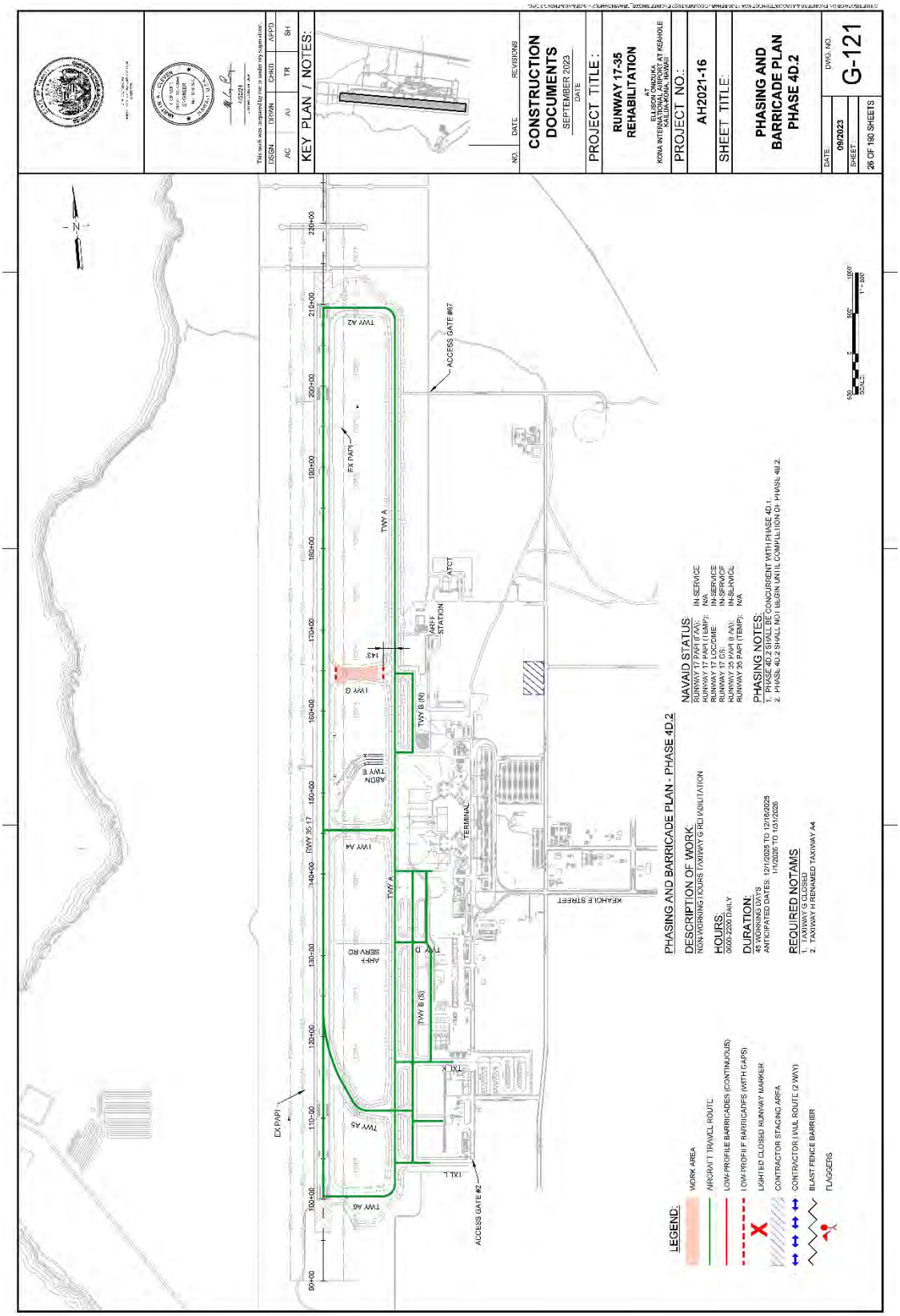

Figure 23: Phasing and Barricade Plan Phase 4D.2

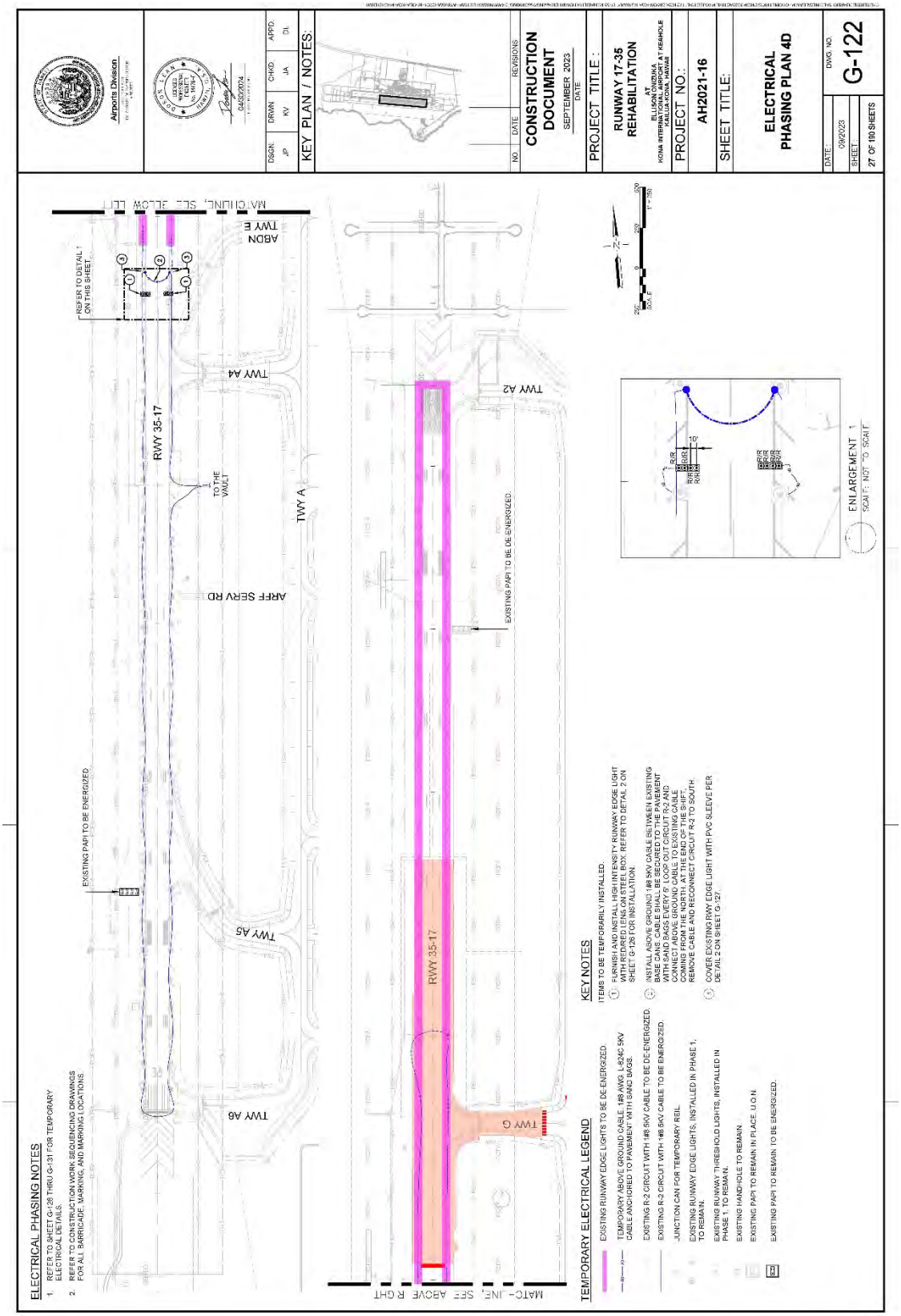

Figure 24: Electrical Phasing Plan 4D

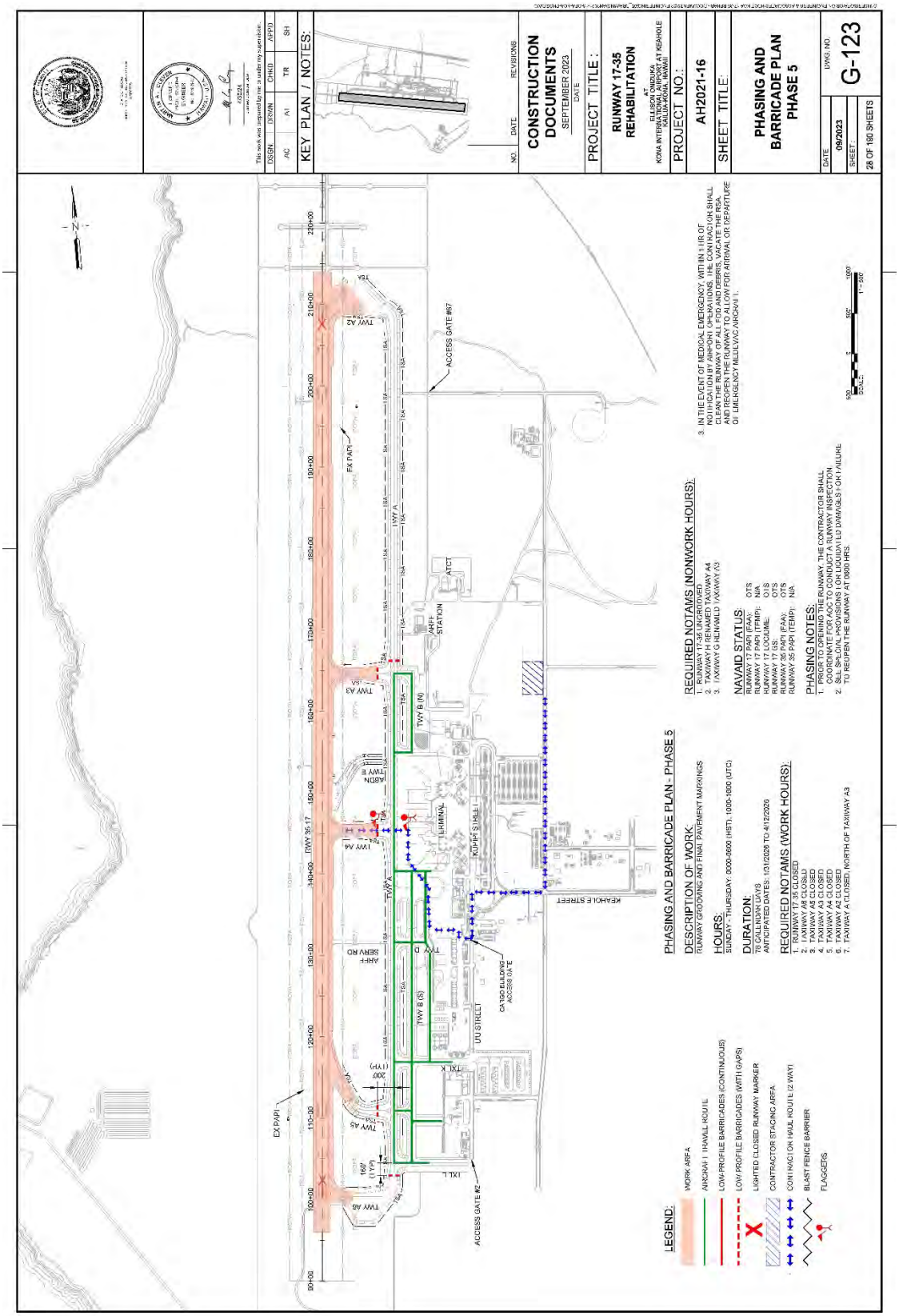

Figure 25: Phasing and Barricade Plan Phase 5

Section 3 – Safety Risk Management Planning and Impacted Organizations

The Safety Risk Management Panel met on June 28, 2023, to assess the proposed change to the NAS and associated hazards. The SRMP evaluated the first hazard in the PHA. The SRMP was not able to complete the remaining hazards, so the SRA Panel Meeting was continued on July 26, 2023. Since there were different panel members and the SRMP felt there were additional causes that should be considered, KOA-RWY-REHAB-1 was reevaluated. The facilitator worked with the HNL ADO Program Manager to identify SRMP members, Subject Matter Experts (SMEs), and obtain concurrence prior to sending out calendar invitations. All FAA Lines of Business and Ellison Onizuka Kona International Airport (KOA) stakeholders were included in the invitation. See Table 3 below for the list of panel meeting participants for these panel meetings. The sign-in sheets can be found in Appendix E.

Table 3: SRM Panel Members, Subject Matter Experts, Meeting Attendees (6/28/23)

Panel Member	Organization, Position/Title	E-mail
David Bell	DOT KOA	david.h.bell@hawaii.gov
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Neil Okuna	FAA HCF ATO	neil.n.okuna@faa.gov
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Michael Trueba	FAA HCF	N/A
Joe Santoro	FAA AWP RSO	joe.santoro@faa.gov

SME	Organization, Position/Title	E-mail
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Matthew Robertson	FAA WSC NPI	matthew.d.robertson@faa.gov
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Linus Lee	Japan Airlines	lee.sday@jal.com
Jeremy Lewis	Southwest Airlines	Jeremy.Lewis2@wnco.com
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Emilia Silva	Base Management, Tech Writer	emilia@basesgrp.com

Table 4: SRM Panel Members, Subject Matter Experts, Meeting Attendees (7/26/23)

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Hans Sholley	Hawaiian Airlines	hans.sholley@hawaiianair.com
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Dexter Espinueva	DOT KOA	dexter.s.espinueva@hawaii.gov
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Henry Sitko	DOT KOA ARFF	henry.g.sitko@hawaii.gov
Charles Akao	DOT KOA ARFF	N/A
Kaimi Moreas	DOT KOA ARFF	N/A
Vance Wright-Pacarro	DOT KOA ARFF	vance.mh.wright-pacarro@hawaii.gov

SME	Organization, Position/Title	E-mail
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Rachel Look	FAA HNL ADO	Rachel.k.look@faa.gov
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Terrel Horton	FAA Instrument Procedures	terrel.j.horton@faa.gov
Matthew Robertson	FAA WSC NPI	matthew.d.robertson@faa.gov
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Facilitation Team	Organization, Position/Title	E-mail
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Dalyn DeMattos	Base Management, Tech Writer	dalyn@basesgrp.com
Emilia Silva	Base Management, Tech Writer	emilia@basesgrp.com
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Section 4 – Assumptions

1. All existing controls are in place.
2. Continuous runway incursion/surface incident monitoring and outreach efforts will continue by the Airport and local FAA offices.
3. Possible increase in corporate, commercial service, cargo, general aviation and military operations during construction period.
4. Qualified radio monitoring personnel will be onsite during construction.
5. Work will not be allowed on the airfield unless an approved CSPP is on file.
6. Ongoing construction meetings will address operations during upcoming phases to ensure attendee awareness of impending construction work and associated operational impacts, including runway and taxiway section closures.
7. Barricade phasing and schedules will be provided to affected parties including the GA, Corporate, airlines, ATCT, contractor, CM, and District via periodic construction meetings, informational meetings, and email.
8. Activation meetings (KOA AOC) with the stakeholders to provide notification of upcoming construction changes to airfield operations. Thursday's at 1030a HST subject to change. Include carriers, GA, medivac and Cargo stakeholders for this project.
9. Construction vehicle routes, flaggers and barricades will be reviewed as indicated in the CSPP prior to the start of each construction phase.
10. Construction areas will be clearly marked with lighted low-profile barricades that will be weighted down.
11. Controllers, maintenance, and vehicle operators will be briefed on runway and taxiway changes, closures, and procedures.
12. FOD checks will be completed by construction and airport personnel when movement areas are used.
13. NOTAMs will be issued for each phase as indicated on the phasing sheets. Ensure the CNDA is selected (if available) so a Construction Diagram is developed by NOTAM Manager.
14. Minimize changes to CSPP/schedule.
15. Coordination with ongoing projects.
16. HCF Traffic Management Unit (TMU) will publish a system impact statement internal to ATO.
17. All applicable 7460-1 airspace determinations (i.e. CSPP and equipment) will be completed prior to commencement of airfield work.
18. Phase 2 and 3, Runway shortened condition will be timed with the AIRAC publication cycles for increased stakeholder awareness. To support the mitigation and implementation of temporary flight procedures with vertical guidance. Updated published documents include FAA Airport Diagram, FAA Chart Supplement, Coded Instrument Flight Procedures (CIFP) database, are planned to occur with the key phase changes.
19. Project Design team working with Jeppesen, Nav Blue and Lido third party publishers to ensure additional information about the phase changes are published directly to the flight crews including declared distances and distance remaining and depiction of the lead lines.

20. Construction to occur during off-peak hours and closures to minimize the number of arrivals over the construction zone.
21. A temporary blast fence with obstruction lights will be installed between the 1,000 ft RSA and the work area.
22. Marking/striping will be modified for a 7,000 ft runway.
23. Runway edge lights in the work area will be covered and remaining lights will be modified to meet the color requirements for a 7,000 ft runway.
24. Incorrect RDR sign panels will be replaced.
25. Temporary REILS and PAPIs will be installed (flight check required).
26. Accommodation may be necessary for medical transport on a case by case basis. Ph. 1 and 5 provisions added for medivac operations with 1 hour PPR.
27. The ATCT will not be changing its hours for this project.
28. The ATCT hours open during Phase 4 and 5 when the runway is open.
29. KOA in process of hiring more ops people and will have someone scheduled 24/7 to address the PPR conditions.
30. KOA and the project will work out the PPR process/NOTAM, rwy opening/closing steps and coordinating with Medivac.
31. Conduct an SRA refresher before the project starts up again in 2025.
32. Orion to work on Twy Nomenclature change publication cycle refinement for G and H.
33. Medivac averages 2 flights per night at KOA. The contractor should expect to deploy temp thld lights every night. Also add a note on Phases 4B and 4C for contractor awareness.

Section 5 – Phase 1: System Description

The current system state is described in Section 1, Current System / Baseline. The CSPP system conditions are described in Section 2, Proposed Change. This project is anticipated to begin construction in November 2024, with an expected completion date of March 20, 2026.

Shown below are the current and near future projects and events anticipated to occur at KOA that were considered for potential cumulative impacts to the airfield operations.

1. AH2023-17 Kona Apron Improvements: Estimated construction start November 2023, 90 days construction, estimated end first Quarter 2024.

Upcoming CIP Projects at KOA

1. AH2050-09 Perimeter Fence Replacement: Project NTP anticipated July 2023, duration 9 months. Expected to be completed before Runway Rehab Project begins.
2. FBO: 16-acre project at south end of the runway. Paving expected to be completed by December 2023. The area will be introduced into the AOA upon completion.
3. Statewide Rubber Removal and Marking Project: Schedule TBD
4. KOA Terminal: Entering Design Phase, estimated 10 months. Schedule TBD.

FAA Project: None

The SRMP determined that these projects are not expected to have any significant impacts with the KOA Runway 17-35 Rehabilitation project.

Section 6 – Phase 2: Identified Hazards

Identification of hazards in this step considers all reasonably possible sources of hazards. According to Order 5200.11A, a hazard is any existing or potential condition that can lead to injury, illness, or death to people; damage or loss of a system, equipment, or property; or damage to the environment. A hazard is a condition that is a prerequisite of an accident or incident.

During this hazard identification stage, the facilitator began by providing the panel members with some ground rules listed in Appendix G and reminded the group that, "the absence of an answer is understood as agreement." The SRM Panel Meeting is the venue to vet out all safety concerns related to this project.

The design consultant completed their presentation of the CSPP exhibits and the facilitator provided the Panel Members a briefing on the brainstorming process. The development of the Preliminary Hazard List (PHL) allowed all panel members to list their presumed safety concerns based upon their background and subject matter expertise.

During the July 26, 2023 continuation of the Panel Meeting from June 28, 2023, the facilitation team reviewed the PHL dated July 26, 2023, with the SRMP and obtained concurrence on the PHL and there were no additional potential hazards listed from the Panel Members.

The SRMP listed fifteen (15) preliminary potential hazards as a result of the brainstorming process (Appendix A). As the SRMP reviewed the preliminary hazard list, they categorized each entry as a Cause, Hazard, or Effect. In review of the Preliminary Hazard Analysis (PHA), the SRMP analyzed the nine (9) resulting hazards with their associated effects. The nine (9) hazards there were analyzed by the SRMP are shown in Table 4 below and in the PHA in Appendix B.

Table 5: List of Hazards and the Associated System State and Effects

(1) Hazard ID	(2) Hazard Description	(4) System State	(7) Effects
XYZ-1	Condition, real or potential; can cause injury, illness, etc. Pre-requisite for accident or incident	Conditions, characterized by quantities or qualities, in which a system can exist	Potential outcome or harm of the hazard if it occurs in the defined system state
KOA-RWY-REHAB-1	Pilot LOSA	All phases of construction	Runway Incursion
KOA-RWY-REHAB-2	Controller LOSA	All phases of construction	Runway Incursion
KOA-RWY-REHAB-3	Vehicle Operator LOSA	All phase of construction	Runway Incursion
KOA-RWY-REHAB-4A	Pedestrian LOSA	All phase of construction	Runway Incursion
KOA-RWY-REHAB-4B	Pedestrian LOSA	All phase of construction	Surface Incident

(1) Hazard ID	(2) Hazard Description	(4) System State	(7) Effects
XYZ-1	Condition, real or potential; can cause injury, illness, etc. Pre-requisite for accident or incident	Conditions, characterized by quantities or qualities, in which a system can exist	Potential outcome or harm of the hazard if it occurs in the defined system state
KOA-RWY-REHAB-5 (REMOVED)	**Runway excursion during shortened runway operations**	All phase of construction	*Determined to be an effect for Pilot LOSA and Controller LOSA*
KOA-RWY-REHAB-6 (REMOVED)	**Renaming of taxiways brings confusion**	All phase of construction	*Determined to be a cause for all analyzed hazards documented as "ineffective communication of changes"*
KOA-RWY-REHAB-7 (REMOVED)	**Expectation bias**	All phase of construction	*Determined to be a cause for all analyzed hazards*
KOA-RWY-REHAB-8 (REMOVED)	**Continuation bias**	All phase of construction	*Determined to be a cause for all analyzed hazards*
KOA-RWY-REHAB-9 (REMOVED)	**Runway incursion by construction workers near edge of RSA**	All phase of construction	*Determined to be an effect for, Vehicle Operator LOSA and Pedestrian LOSA*

During the SRMP PHA Discussion, the following hazards were determined to be an uncontrollable event occurring independently or in combination that results in a hazard or failure. The SRMP agreed to remove these hazards as they were either recategorized as a "Cause" or analyzed as an "Effect". There were no objections, and these were captures under the hazards that were evaluated.

- Hazard ID: KOA-RWY-REHAB-5, Runway excursion during shortened runway operations. It was determined to be included as an effect for Pilot LOSA and Controller LOSA and was evaluated under these respective hazards.
- Hazard ID: KOA-RWY-REHAB-6, Renaming of taxiways brings confusion. It was determined to be a cause for all hazards that were evaluated in the PHA.
- Hazard ID: KOA-RWY-REHAB-7, Expectation bias. This was determined to be a cause for all hazards that were evaluated in the PHA.
- Hazard ID: KOA-RWY-REHAB-8, Continuation bias. This was determined to be a cause for all hazards that were evaluated in the PHA.
- Hazard ID: KOA-RWY-REHAB-9, Runway incursion by construction workers near edge of RSA. It was determined to be included as an effect that was evaluated under Vehicle Operator LOSA and Pedestrian LOSA.

The SRMP evaluated the worst credible Effect for each hazard identified. Hazard ID: KOA-RWY-RWHAB-4, Pedestrian LOSA was determined to have differing circumstances resulting in two worst credible effects that needed further assessment. This hazard was divided and identified as follows:

- Hazard ID: KOA-RWY-REHAB-4A, Pedestrian LOSA with the Effect of a Runway Incursion.
- Hazard ID: KOA-RWY-REHAB-4B, Pedestrian LOSA with the Effect of a Surface Incident.

This panel used the PHA tool/technique provided in the ARP Desk Reference for the Construction Safety and Phasing Plan (CSPP) for the KOA Runway 17-35 Rehabilitation Project. The PHA provided the panel members with an initial overview of the hazards present in the overall flow of the operation in this proposed change.

Description of Hazards

This step focuses on hazard identification, including further analysis of the hazards to assist Panel Members on analyzing the safety risks. The Facilitator cultivated discussions to ensure the panel considered all credible sources of system failure, including equipment, human factors, operational procedures, maintenance procedures, and external services.

The Facilitator initiated the functional brainstorming technique as a tool to systematically identify hazards as the panel developed the Preliminary Hazard List. During the brainstorming session, the group developed a list of potential hazards associated with the project and provided the basis for the Preliminary Hazard Analysis (PHA).

During the hazard identification stage, the panel identified potential safety issues, their possible causes and corresponding effects, as the Technical Writer documented these discussions on the PHA. Following each portion, the Facilitator obtained concurrence from the Panel Members to ensure all documentation was correct.

The sections below provide an overview of each identified hazard, cause, and effect, for all phases of construction.

KOA-RWY-REHAB-1 Pilot LOSA

All phases of construction

The SRMP determined that pilot LOSA is a hazard occurring during all phases of construction which would be caused by expectation bias, not reading NOTAM's, continuation bias, distraction in cockpit, weather, sitting on the ramp too long (now tired), construction diagram not available to foreflight, miscommunication between pilot and tower, ineffective communication of changes, too much info in NOTAMs, lighting changing, and physical footprint changes. This hazard exists in all phases of construction as the SRMP considered all existing controls that relate to the prevention or reduction of this hazard occurrence or to mitigate its effects.

Mitigations that exist to prevent or reduce this hazard occurrence or to mitigate its effects were listed under existing controls in the PHA as follows: AC 5200-18: Airport Safety Self Inspection, AC 5200-28: NOTAMs for Airport Operators, AC 150/5210-5: Painting, Marking, Lighting of vehicles used on airport, AC 150/5300-13: Airport Design, AC 150/5340-1: Standards for airport markings, AC 150/5340-18: Standards for airport sign systems, AC 150/5340-30: Design and installation details for airport visual aids, AC 150/5345-44: Specifications for runway and taxiway signs, AC 150/5345-46: Specifications for runway and taxiway lighting fixtures, AC 150/5345-55: Specification for L-893, lighted visual aid to indicate temporary runway closure, AC 150/5345-56: Specification for L-890, airport lighting control and monitoring system (ALCMS), AC 150/5370-2: Operational safety on airports during construction, FAR Part 139: Regulations/Airports, ACAC Checklist: Airport Construction Advisory Council, JO 7110.65: Air Traffic Control, JO 7210.3: Facility Operations and Administration, JO 6000.15: NAS Maintenance, SOP: Standard Operating Procedures, LOA: Letter of Agreement, MEARTS: Micro En-route Automated Radar Tracking System, ARSR, ASR-9, ASR-11: Surveillance Radar, ATIS: Automated Terminal Information System, ASOS: Automated Surface Observing System, Pilot Training, Controller Training, Pilot Intervention, Controller Intervention, ATC Scanning, Airfield Operations Monitoring, Operational Supervision, Radio Frequency Monitoring, NOTAM: Notice to Airmen, Aeronautical, Jeppesen charts, AFD: Airport/Facility Directory, AIM: Aeronautical Information Manual, CRM: Crew Resource Management, Daily Briefings/Notes, TMI: Traffic Management Initiative, CSPP: Construction Safety and Phasing Plan.

The SRMP identified 5 possible effects and determined the worst credible potential outcome or harm of the hazard if it occurs in the defined system state was a runway incursion. This hazard was analyzed by the SRMP, and the results are documented in Section 7.

KOA-RWY-REHAB-2 **Controller LOSA**

All phases of construction

The SRMP determined that controller LOSA is a hazard which could be caused by expectation bias, not reading NOTAM's, continuation bias, distraction in cockpit, weather, sitting on the ramp too long (now tired), construction diagram not available to forelight, miscommunication pilot and tower, ineffective communication of changes, too much info in NOTAMs, lighting changing, and physical footprint changes, and phase changes between 2&3 and 3&4. This hazard exists in all phases of construction as the SRMP considered all existing controls that relate to the prevention or reduction of this hazard occurrence or to mitigate its effects.

Mitigations that exist to prevent or reduce this hazard occurrence or to mitigate its effects were listed under existing controls in the PHA as follows: AC 150/5200-18: Airport Safety Self Inspection, AC 150/5200-28: NOTAMs for Airport Operators, AC 150/5200-31: Airport emergency plan, AC 150/5200-20: Ground vehicle operations on airports, AC 150/5210-5: Painting, Marking, Lighting of vehicles used on airport, AC 150/5300-13: Airport Design, AC 150/5340-1: Standards for airport markings, AC 150/5340-18: Standards for airport sign systems, AC 150/5340-30: Design and installation details for airport visual aids, AC 150/5345-44: Specifications for runway and taxiway signs, AC 150/5345-46: Specifications for runway and taxiway lighting fixtures, AC 150/5345-55: Specification for L-893, lighted visual aid to indicate temporary runway closure, AC 150/5345-56: Specification for L-890, airport lighting control and

monitoring system (ALCMS), AC 150/5370-2: Operational safety on airports during construction, FAR Part 139: Regulations/Airports, ACAC: Airport Construction Advisory Council, JO 7110.65: Air Traffic Control, JO 7400.2: Handling Airspace Matters Procedures, JO 7210.3 :Facility Operations and Administration, JO 6000.15: NAS Maintenance, SOP: Standard Operating Procedure, LOA: Letter of Agreement, MEARTS: Micro En-route Automated Radar Tracking System, ARSR, ASR-9, ASR-11: Surveillance Radar, ATIS: Automated Terminal Information System, ASOS: Automated Surface Observing System, Pilot Training, Controller Training, Pilot Intervention, Controller Intervention, ATC Scanning, Airfield Operations Monitoring, Operational Supervision, Radio Frequency Monitoring, NOTAM: Notice to Airmen, Aeronautical, Jeppesen chart, AFD: Airport/Facility Directory, AIM: Aeronautical Information Manual, CRM: Crew Resource Management, Daily Briefings/Notes, TMI: Traffic Management Initiative, CSPP: Construction Safety and Phasing Plan.

The SRMP identified 5 possible effects and decided that the worst credible potential outcome or harm of the hazard if it occurs in the defined system state was a runway incursion. This hazard was analyzed by the SRMP, and the results are documented in Section 7.

KOA-RWY-REHAB-3 Vehicle Operator LOSA

All phases of construction

The SRMP determined that vehicle operator LOSA is a hazard which could be caused by expectation bias, not reading NOTAM's, continuation bias, distraction in cockpit, weather, sitting on the ramp too long (now tired), construction diagram not available to forelight, miscommunication pilot and tower, ineffective communication of changes, too much info in NOTAMs, lighting changing, and physical footprint changes, and phase changes between 2&3 and 3&4. This hazard exists in all phases of construction as the SRMP considered all existing controls that relate to the prevention or reduction of this hazard occurrence or to mitigate its effects.

Mitigations that exist to prevent or reduce this hazard occurrence or to mitigate its effects were listed under existing controls in the PHA as follows: AC 150/5200-18: Airport Safety Self Inspection, AC 150/5200-28: NOTAMs for Airport Operators, AC 150/5200-31: Airport emergency plan, AC 150/5200-20: Ground vehicle operations on airports, AC 150/5210-5: Painting, Marking, Lighting of vehicles used on airport, AC 150/5300-13: Airport Design, AC 150/5340-1: Standards for airport markings, AC 150/5340-18: Standards for airport sign systems, AC 150/5340-30: Design and installation details for airport visual aids, AC 150/5345-44: Specifications for runway and taxiway signs, AC 150/5345-46: Specifications for runway and taxiway lighting fixtures, AC 150/5345-55: Specification for L-893, lighted visual aid to indicate temporary runway closure, AC 150/5345-56: Specification for L-890, airport lighting control and monitoring system (ALCMS), AC 150/5370-2: Operational safety on airports during construction, FAR Part 139: Regulations/Airports, ACAC: Airport Construction Advisory Council, JO 7110.65: Air Traffic Control, JO 7210.3 :Facility Operations and Administration, JO: 6000.15: NAS Maintenance, SOP: Standard Operating Procedure, LOA: Letter of Agreement, Controller Training, Airfield Driver Training, Access Control Training, Pilot Intervention, Controller Intervention, ATC Scanning, Airfield Operations Monitoring, Operational Supervision, Radio Frequency Monitoring, NOTAM: Notice to Airmen, CRM: Crew Resource Management, Daily Briefings/Notes, CSPP: Construction Safety and Phasing Plan, Weekly Construction Meetings.

The SRMP identified 5 possible effects and decided that the worst credible potential outcome or harm of the hazard if it occurs in the defined system state was a runway incursion. This hazard was analyzed by the SRMP, and the results are documented in Section 7.

KOA-RWY-REHAB-4A **Pedestrian LOSA**

All phases of construction

The SRMP determined that pedestrian LOSA is a hazard which could be caused by expectation bias, not reading NOTAM's, continuation bias, distraction in cockpit, weather, sitting on the ramp too long (now tired), construction diagram not available to forelight, miscommunication pilot and tower, ineffective communication of changes, too much info in NOTAMs, lighting changing, and physical footprint changes, and phase changes between 2&3 and 3&4. This hazard exists in all phases of construction as the SRMP considered all existing controls that relate to the prevention or reduction of this hazard occurrence or to mitigate its effects.

Mitigations that exist to prevent or reduce this hazard occurrence or to mitigate its effects were listed under existing controls in the PHA as follows: AC 150/5200-18: Airport Safety Self Inspection, AC 150/5200-28: NOTAMs for Airport Operators, AC 150/5200-31: Airport emergency plan, AC 150/5200-20: Ground vehicle operations on airports, AC 150/5210-5: Painting, Marking, Lighting of vehicles used on airport, AC 150/5300-13: Airport Design, AC 150/5340-1: Standards for airport markings, AC 150/5340-18: Standards for airport sign systems, AC 150/5340-30: Design and installation details for airport visual aids, AC 150/5345-44: Specifications for runway and taxiway signs, AC 150/5345-46: Specifications for runway and taxiway lighting fixtures, AC 150/5345-55: Specification for L-893, lighted visual aid to indicate temporary runway closure, AC 150/5345-56: Specification for L-890, airport lighting control and monitoring system (ALCMS), AC 150/5370-2: Operational safety on airports during construction, FAR Part 139: Regulations/Airports, Airfield Driver Training, Access Control Training, Pilot Intervention, Controller Intervention, ATC Scanning, Airfield Operations Monitoring, Operational Supervision, Radio Frequency Monitoring, NOTAM: Notice to Airmen, CRM: Crew Resource Management, Daily Briefings/Notes, CSPP: Construction Safety and Phasing Plan, Weekly Construction Meetings.

The SRMP identified 5 possible effects and was not able to come to consensus on the worst credible potential outcome or harm of the hazard if it occurs in the defined system state, therefore the first evaluated effect was a runway incursion. This hazard was analyzed by the SRMP, and the results are documented in Section 7.

KOA-RWY-REHAB-4B **Pedestrian LOSA**

All phases of construction

The SRMP determined that pedestrian LOSA is a hazard which could be caused by expectation bias, not reading NOTAM's, continuation bias, distraction in cockpit, weather, sitting on the ramp too long (now tired), construction diagram not available to forelight, miscommunication pilot and

tower, ineffective communication of changes, too much info in NOTAMs, lighting changing, and physical footprint changes, and phase changes between 2&3 and 3&4. This hazard exists in all phases of construction as the SRMP considered all existing controls that relate to the prevention or reduction of this hazard occurrence or to mitigate its effects.

Mitigations that exist to prevent or reduce this hazard occurrence or to mitigate its effects were listed under existing controls in the PHA as follows: AC 150/5200-18: Airport Safety Self Inspection, AC 150/5200-28: NOTAMs for Airport Operators, AC 150/5200-31: Airport emergency plan, AC 150/5200-20: Ground vehicle operations on airports, AC 150/5210-5: Painting, Marking, Lighting of vehicles used on airport, AC 150/5300-13: Airport Design, AC 150/5340-1: Standards for airport markings, AC 150/5340-18: Standards for airport sign systems, AC 150/5340-30: Design and installation details for airport visual aids, AC 150/5345-44: Specifications for runway and taxiway signs, AC 150/5345-46: Specifications for runway and taxiway lighting fixtures, AC 150/5345-55: Specification for L-893, lighted visual aid to indicate temporary runway closure, AC 150/5345-56: Specification for L-890, airport lighting control and monitoring system (ALCMS), AC 150/5370-2: Operational safety on airports during construction, FAR Part 139: Regulations/Airports, Airfield Driver Training, Access Control Training, Pilot Intervention, Controller Intervention, ATC Scanning, Airfield Operations Monitoring, Operational Supervision, Radio Frequency Monitoring, NOTAM: Notice to Airmen, CRM: Crew Resource Management, Daily Briefings/Notes, CSPP: Construction Safety and Phasing Plan, Weekly Construction Meetings.

The SRMP identified 5 possible effects and was not able to come to consensus on the worst credible potential outcome or harm of the hazard if it occurs in the defined system state, therefore the second evaluated effect was a surface incident. This hazard was analyzed by the SRMP, and the results are documented in Section 7.

Section 7 – Phases 3 & 4: Hazard Analysis and Risks Assessed

To ensure a thorough examination of hazards, the SRMP's methodology for risk analysis was based on the Five-Step SRM process detailed in FAA Order 5200.11A.

1. Describe the System
2. Identify Hazards
3. Analyze Risk
4. Assess Level of Risk
5. Mitigation Actions

Risk Analysis

The objective of this step is to determine the initial safety risk associated with the effects of each identified hazard. The safety risk associated with a hazard is the combination of predicted severity and the likelihood of the potential effect of a hazard in the worst credible system state. This is also accomplished in consideration of the existing controls which help to mitigate risks to an acceptable level.

The Effect is defined as the potential outcome or harm of the hazard if it occurs in the defined system state. The SRMP categorized a list of Effects due to each Hazard during the PHL process (Appendix A).

The Preliminary Hazard Assessment (PHA) worksheet was developed to record the hazards, causes, system states, existing controls, possible effects, severity and likelihood rationale, initial risk, mitigation, and predicted residual risk. The completed PHA is found in Appendix B.

Risk Assessment

The objective of this step is to determine the safety risk level acceptability. Risk Assessment is the process of combining the impacts of risk elements discovered in risk analysis and comparing them against some acceptability criteria. Risk Assessment can include consolidating risks into risk sets that can be jointly mitigated, combined, and then used in decision making. Order 5200.11A defines risk as the composite of predicted severity and likelihood of the potential effect of a hazard in the worst credible system state.

Each hazard was evaluated by two factors; first the severity was determined using Table 5, followed by a determination of likelihood using Table 6. The SRM Panel identified the severity and likelihood of each hazard, as described above. These documents were also provided as a complete SRMP Panel Packet, see Appendix C. The severity and likelihood ratings from each panel member can be found in Appendix D.

Severity is the potential consequence or impact of a hazard in terms of degree of loss or harm. It is a prediction of how bad the outcome of a hazard can be. There may be many outcomes associated with a given hazard, and the severity should be determined for each outcome.

Likelihood is the estimated probability or frequency, in quantitative or qualitative terms, of the outcome(s) associated with a hazard. It is an expression of how often an outcome of a hazard is predicted to occur in the future.

The SRMP plotted the severity and likelihood for each hazard's worst credible outcome on the FAA predictive risk matrix Figure 1. The SRMP then observed where the hazards lie based on the three categories of risk (low, medium, high). This indicates the "initial" risk level for each hazard.

If the initial risk for any analyzed hazards falls in the high risk (red) region, FAA Order 5200.11A requires mitigation. It also requires further Safety Assessment Acceptance and signature requirements by the Safety Review Board and ARP-1. The Risk Matrix provides a visual depiction of the safety risk and enables prioritization in the control of hazards. The Risk Matrix shown in Figure 1 is referenced from FAA Order 8040.4B Safety Risk Management Policy.

Severity / Likelihood	Minimal 5	Minor 4	Major 3	Hazardous 2	Catastrophic 1
Frequent A					
Probable B					
Remote C					
Extremely Remote D		KOA-RWY-REHAB-1 KOA-RWY-REHAB-3 KOA-RWY-REHAB-4A KOA-RWY-REHAB-4B	KOA-RWY-REHAB-2		
Extremely Improbable E					

Figure 26: Risk matrix

High Risk – Unacceptable
Medium Risk – Acceptable with Mitigation
Low Risk – Acceptable

KOA-RWY-REHAB-1 Pilot LOSA

Effect: Runway incursion

This hazard was identified on June 28, 2023, and the SRMP decided to revisit this hazard and re-evaluate it during the continuation of the Panel Meeting on July 26, 2023. During SRMP discussions, there were some Panel Members needing further understanding of the Airports SRA process which was reiterated by HNL HCF, there will never be "zero" risk, through this process the Panel Members and Subject Matter Experts work to mitigate what can to the extent we have in each of our background, knowledge and expertise and we have put several concerns or risks through the PreSRA meeting process to reduce these risks as much as possible and develop mitigation strategies that have been implemented into the CSPP. The facilitation team added to the discussion by restating the PreSRA and SRA process as the State Airport Engineer, Design Consultant and other SME's have reviewed the CSPP throughout the development and designed out hazards that were identified during the 60% design review meeting. Following this discussion and review, the SRMP began the evaluation of the first hazard.

The SRMP analyzed and assessed this hazard by discussing the identified Causes that contribute to potential outcomes if this hazard occurs in the defined system state. The SRMP continued their assessment based on the worst credible effect, which was identified as a runway incursion. The SRMP determined that in this case it is possible that minimal damage to aircraft and/or minor injury to passengers/workers, minimal unplanned disruption to airport operations, or minor incident involving the use of airport emergency procedures could take place. The SRMP concluded on a risk rating on severity of 4-minor and the likelihood as D-extremely remote, as it is expected to occur once every 10-100 years or 25 million departures, whichever occurs sooner. The SRMP evaluation resulted with an initial risk rating of 4-Mior in severity and D-Extremely Remote for its likelihood. This hazard resultant matrix determination is a 4D-Low (Green).

KOA-RWY-REHAB-2 Controller LOSA

Effect: Runway incursion

The SRMP analyzed and assessed this hazard by discussing the identified Causes that contribute to potential outcomes if this hazard occurs in the defined system state. The SRMP continued their assessment based on the worst credible effect, which was identified as a runway incursion. The SRMP determined that in this case it is possible that major damage to aircraft and/or minor injury to passengers/workers, major unplanned disruption to airport operations, serious incident or deduction on the airport's ability to deal with adverse conditions could take place. The SRMP concluded on a risk rating on severity of 3-Major and the likelihood as D-extremely remote, as it is expected to occur once every 10-100 years or 25 million departures, whichever occurs sooner. The SRMP evaluation resulted with an initial risk rating of 4-Mior in severity and D-Extremely Remote for its likelihood. This hazard resultant matrix determination is a 3D-Medium (Yellow).

The four of the five Hazard Initial Risk ratings were Low Risk. KOA RWY Rehab – 2, Controller LOSA Hazard resulted in an Initial Risk rating of Medium Risk. The SRMP felt there were enough existing controls and emphasis put on stakeholder notifications that no further evaluation for additional mitigation was needed.

KOA-RWY-REHAB-3 Vehicle Operator LOSA

Effect: Runway incursion

The SRMP analyzed and assessed this hazard by discussing the identified Causes that contribute to potential outcomes if this hazard occurs in the defined system state. The SRMP continued their assessment based on the worst credible effect, which was identified as a runway incursion. The SRMP determined that in this case it is possible that minimal damage to aircraft and/or minor injury to passengers/workers, minimal unplanned disruption to airport operations, or minor incident involving the use of airport emergency procedures could take place. The SRMP concluded on a risk rating on severity of 4-minor and the likelihood as D-extremely remote, as it is expected to occur once every 10-100 years or 25 million departures, whichever occurs sooner. The SRMP evaluation resulted with an initial risk rating of 4-Mior in severity and D-Extremely Remote for its likelihood. This hazard resultant matrix determination is a 4D-Low (Green).

KOA-RWY-REHAB-4A Pedestrian LOSA

Effect: Runway incursion

The SRMP analyzed and assessed this hazard by discussing the identified Causes that contribute to potential outcomes if this hazard occurs in the defined system state. The SRMP continued their assessment based on the worst credible effect, which was identified as a runway incursion. The SRMP determined that in this case it is possible that minimal damage to aircraft and/or minor injury to passengers/workers, minimal unplanned disruption to airport operations, or minor incident involving the use of airport emergency procedures could take place. The SRMP concluded on a risk rating on severity of 4-minor and the likelihood as D-extremely remote, as it is expected to occur once every 10-100 years or 25 million departures, whichever occurs sooner. The SRMP evaluation resulted with an initial risk rating of 4-Mior in severity and D-Extremely Remote for its likelihood. This hazard resultant matrix determination is a 4D-Low (Green).

As the SRMP continued discussions related to the worst credible effect, they could not come to consensus and decided to evaluate the “surface incident” effect.

KOA-RWY-REHAB-4B Pedestrian LOSA

Effect: Surface incident

The SRMP analyzed and assessed this hazard by discussing the identified Causes that contribute to potential outcomes if this hazard occurs in the defined system state. The SRMP continued their assessment based on the worst credible effect, which was identified as a surface incident. The SRMP determined that in this case it is possible that minimal damage to aircraft and/or minor injury to passengers/workers, minimal unplanned disruption to airport operations, or minor incident involving the use of airport emergency procedures could take place. The SRMP concluded on a risk rating on severity of 4-minor and the likelihood as D-extremely remote, as it is expected to occur once every 10-100 years or 25 million departures, whichever occurs sooner. The SRMP evaluation resulted with an initial risk rating of 4-Mior in severity and D-Extremely Remote for its likelihood. This hazard resultant matrix determination is a 4D-Low (Green).

KOA-RWY-REHAB-5 Runway excursion during shortened runway operations

The SRMP started analyzing this hazard and as the facilitation team reviewed effects for other hazards already analyzed, the SRMP determined this is an effect for Pilot LOSA and Controller LOSA which has been documented with hazard, KOA-RWY-REHAB-1 and KOA-RWY-REHAB-2 and evaluated. This hazard was not further evaluated because it was documented in the PHA as an effect.

KOA-RWY-REHAB-6 Renaming of Taxiways brings confusion

The SRMP started analyzing this hazard and as the facilitation team reviewed causes for other hazards already analyzed, the SRMP determined this was a cause listed in all the hazards that were evaluated. This hazard was not further evaluated because it was documented in the PHA as a cause.

KOA-RWY-REHAB-7 Expectation bias

The SRMP started analyzing this hazard and as the facilitation team reviewed causes for other hazards already analyzed, the SRMP determined this was a cause listed in all the hazards that were evaluated. This hazard was not further evaluated because it was documented in the PHA as a cause.

KOA-RWY-REHAB-8 Continuation bias

The SRMP started analyzing this hazard and as the facilitation team reviewed causes for other hazards already analyzed, the SRMP determined this was a cause listed in all the hazards that were evaluated. This hazard was not further evaluated because it was documented in the PHA as a cause.

KOA-RWY-REHAB-9 Runway incursion by construction workers near edge of RSA

The SRMP started analyzing this hazard and as the facilitation team reviewed causes for other hazards already analyzed, the SRMP determined this was a cause listed in all the hazards that were evaluated. This hazard was not further evaluated because it was documented in the PHA as a cause.

Table 6: Severity Definitions

Hazard Severity Classification

Effect On:	Minimal 5	Minor 4	Major 3	Hazardous 2	Catastrophic 1
Airports	No damage to aircraft but minimal injury or discomfort of little consequence to passenger(s) or worker(s)	-Minimal damage to aircraft, or -Minor injury to passengers, or -Minimal unplanned airport operations limitations (i.e. taxiway closure), or -Minor incident involving the use of airport emergency procedures	-Major damage to aircraft and/or minor injury to passenger(s)/worker(s), or -Major unplanned disruption to airport operations, or -Serious incident, or -Deduction on the airport's ability to deal with adverse conditions	-Severe damage to aircraft and/or serious injury to passenger(s)/worker(s); or -Complete unplanned airport closure, or -Major unplanned operations limitations (i.e., runway closure), or -Major airport damage to equipment and facilities	-Complete loss of aircraft and/or facilities or fatal injury in passenger(s)/worker(s); or -Complete unplanned airport closure and destruction of critical facilities; or -Airport facilities and equipment destroyed
ATC Services	A minimal reduction in ATC services CAT D runway incursion[1] Proximity Event, Operational Deviation, or measure of compliance greater than or equal to 66 percent[2]	Low Risk Analysis Event severity,[3] two or fewer indicators fail CAT C runway incursion	Medium Risk Analysis Event severity, three indicators fail CAT B runway incursion	High Risk Analysis Event severity, four indicators fail CAT A runway incursion	Ground collision[4] Mid-air collision Controlled flight into terrain or obstacles
Flying Public	Minimal injury or discomfort to persons on board	Physical discomfort to passenger(s) (e.g., extreme braking action, clear air turbulence causing unexpected movement of aircraft resulting in injuries to one or two passengers out of their seats) Minor injury to less than or equal to 10 percent of person on board[6]	Physical distress to passengers (e.g., abrupt evasive action, severe turbulence causing unexpected aircraft movements) Minor injury to greater than 10 percent of persons on board	Serious injury to persons onboard[7]	Fatal injuries to persons onboard[8]
Flight Crew	Pilot is aware of traffic (identified by Traffic Collision Avoidance System traffic alert, issued by ATC, or observed by flight crew) in close enough proximity to require focused attention, but no action is required Pilot deviation[9] where loss of airborne separation falls within the same parameters of a Proximity Event or measure of compliance	Pilot deviation where loss of airborne separation falls within the same parameters of a low Risk Analysis Event severity Reduction of functional capability of aircraft, but overall safety not affected (e.g., normal procedures as per Airplane Flight Manuals) Circumstances requiring a flight crew to abort takeoff (rejected takeoff); however, the	Pilot deviation where loss of airborne separation falls within the same parameters of a medium Risk Analysis Event severity Reduction in safety margin or functional capability of the aircraft, requiring crew to follow abnormal procedures as per Airplane Flight Manuals Circumstances requiring a flight crew to reject landing (i.e., balked	Pilot deviation where loss of airborne separation falls within the same parameters of a high Risk Analysis Event severity Reduction in safety margin and functional capability of the aircraft requiring crew to follow emergency procedures as per Airplane Flight Manuals Near mid-air collision encounters with	Ground collision Mid-air collision Controlled flight into terrain or obstacles Hull loss to manned aircraft Failure conditions that would prevent continued safe flight and landing
	greater than or equal to 66 percent Circumstances requiring a flight crew to initiate a go-around	act of aborting takeoff does not degrade the aircraft performance capability Near mid-air collision encounters with separation greater than 500 feet[10]	landing) at or near the runway threshold Circumstances requiring a flight crew to abort takeoff (i.e., rejected takeoff); the act of aborting takeoff degrades the aircraft performance capability Near mid-air collision encounters with separation less than 500 feet[10]	separation less than 100 feet[10]	

Effect On:	Minimal 5	Minor 4	Major 3	Hazardous 2	Catastrophic 1
Unmanned Aircraft Systems	Discomfort to those on the ground Loss of separation leading to a measure of compliance greater than or equal to 66 percent	Low Risk Analysis Event severity, two or fewer indicators fail Non-serious injury to three or fewer people on the ground	Medium Risk Analysis Event severity, three indicators fail Non-serious injury to more than three people on the ground A reduced ability of the crew to cope with adverse operating conditions to the extent that there would be a significant reduction in safety margins Manned aircraft making an evasive maneuver, but proximity from unmanned aircraft remains greater than 500 feet	High Risk Analysis Event severity, four indicators fail Incapacitation to unmanned aircraft system crew Proximity of less than 500 feet to a manned aircraft Serious injury to persons other than the unmanned aircraft System crew	A collision with a manned aircraft Fatality or fatal injury to persons other than the unmanned aircraft system crew

Table 7: Likelihood Definitions

	Airport Specific	Quantitative (ATC/Flight Procedures/Systems Engineering)	Domain-wide: NAS-wide, Terminal, or En route
A Frequent	Expected to occur more than once per week or every 2500 departures, whichever occurs sooner	(Probability) ≥ 1 per 1000	Equal to or more than once per week
B Probable	Expected to occur about once every month or 250,000 departures, whichever occurs sooner	1 per 1000 > (Probability) ≥ 1 per 100,000	Less than once per week and equal to more than once per three months
C Remote	Expected to occur about once every year or 2.5 million departures, whichever occurs sooner	1 per 100,000 > (Probability) ≥ 1 per 10,000,000	Less than once per three months and equal to more than once per three years
D Extremely Remote	Expected to occur once every 10-100 years or 25 million departures, whichever occurs sooner	1 per 10,000,000 > (Probability) ≥ 1 per 1,000,000,000	Less than once per three years and equal to or more than once per 30 years.
E Extremely Improbable	Expected to occur less than every 100 years	1 per 1,000,000,000 > (Probability) ≥ 1 per 10^{14}	Less than once per 30 years

Note: A cutoff point of 10^{-14} was established to define the boundaries of credible events for the purpose of calculating likelihood.

During the SRMP PHA, there were instances that SRMP members were outside of the majority vote for either severity and likelihood while assessing for initial risks, which were recorded and shown below in Table 7 and Appendix D – Dissenting Opinions. Those SRMP members with the indicated yellow highlights under each Hazard ID, were afforded an opportunity to provide their

dissenting opinions in writing as required by FAA Office of airports Safety Management System (SMS) Implementation Guidance and Desk Reference, Section 5.3.e.2, SRMD documentation; however, there were no dissenting opinions provided by any of the Panel Members in writing.

Table 8: Initial Risk Dissenting Opinion Summary

	KOA-RWY-REHAB-1 Pilot LOSA		KOA-RWY-REHAB-2 Controller LOSA		KOA-RWY-REHAB-3 Vehicle Operator LOSA	
Panel Member	Severity	Likelihood	Severity	Likelihood	Severity	Likelihood
Dave Bell	4	D	3	D	3	D
Kandyce Watanabe	4	D	4	D	4	D
Neil Okuna	4	D	4	D	4	D
Dave Clark	4	D	4	D	4	D
Perfecto Delmendo	4	D	4	D	4	D
Dave Blancett-Maddock	3	D	3	D	3	D
George Hodgson	-	-	3	D	4	D
Scott Allen	4	D	3	D	4	D
Rich Silva	3	D	3	D	3	D
Hans Sholley	-	-	-	-	-	-
Majority Rating	**4**	**D**	**3**	**D**	**4**	**D**
	Low		**Medium**		**Low**	

	KOA-RWY-REHAB-4A Pilot LOSA – Runway Incursion		KOA-RWY-REHAB-4B Controller LOSA – Surface Incident	
Panel Member	Severity	Likelihood	Severity	Likelihood
Dave Bell	4	D	4	D
Kandyce Watanabe	4	D	4	D
Neil Okuna	5	D	5	D
Dave Clark	4	D	5	D
Perfecto Delmendo	4	D	5	D
Dave Blancett-Maddock	3	D	3	C
George Hodgson	3	D	4	D
Scott Allen	4	D	4	D
Rich Silva	-	-	-	-
Hans Sholley	4	D	4	D
Majority Rating	**4**	**D**	**4**	**D**
	Low		**Low**	

Section 8 – Phase 5: Treatment of Risk / Mitigation of Hazards

The SRMP agreed that the following Hazards and associated Effects which were rated with Low Initial Risks 4D, had existing controls in place to effectively manage these risks and no mitigation measures were needed.

- **KOA-RWY-REHAB-1, Pilot LOSA, Runway Incursion**
- **KOA-RWY-REHAB-3, Vehicle Operator LOSA, Runway Incursion**
- **KOA-RWY-REHAB-4A, Pedestrian LOSA, Runway Incursion**
- **KOA-RWY-REHAB-4B, Pedestrian LOSA, Surface Incident**

The SRMP agreed that the following Hazards and associated Effects which was rated with Medium Initial Risk of 3D, had existing controls in place to effectively manage these risks and no further mitigation measures were needed.

- **KOA-RWY-REHAB-2, Controller LOSA, Runway Incursion**

During the SRMP PHA, there were instances that SRMP members were outside of the majority vote for either severity and likelihood while assessing for initial risks, which were recorded and shown below in Table 7 and Appendix D – Dissenting Opinions. Those SRMP members with the indicated yellow highlights under each Hazard ID, were afforded an opportunity to provide their dissenting opinions in writing as required by FAA Office of airports Safety Management System (SMS) Implementation Guidance and Desk Reference, Section 5.3.e.2, SRMD documentation; however, there were no dissenting opinions provided by any of the Panel Members.

Section 9 – Tracking and Monitoring Hazards

Referencing the SRMP SMS Desk Reference, low risk hazards (green) do not need to be actively managed but must be recorded in the SRMD. Medium risk is acceptable within the ARP SMS. A medium risk is the minimum acceptable safety objective. With medium risk, the proposal may be carried out as long as the risk is tracked and managed.

These hazards will be monitored by DOT as this project moves into the construction phases and addressed as needed through the Weekly Construction Project Meetings.

The SRMP incorporated safety performance targets for triggering a reconvened panel, including, but not limited to, the definitions described below. The panel will consider reconvening to look at additional mitigation if there is one incident falling within the category of 4-Minor Severity for the duration of the KOA Runway 17-35 Rehabilitation project. The definitions are described below:

- ATC Services
  - Conditions resulting in a slight reduction in ATC services.
  - A loss of separation resulting in a Category C, RI, or Operation Error (OE)

- Flight Crew
  - Potential for PD due to TCAS Preventative Resolution Advisory (PRA) advising crew not to deviate from present vertical profile.
  - PD where loss of airborne separation falls within the same parameters of a Category C, OE
  - A reduction of functional capability of aircraft but does not impact overall safety (e.g. normal procedures per ARM)

- Flying Public
  - Physical discomfort to passenger(s) (e.g. extreme braking action, clear air turbulence causing unexpected movement of aircraft causing injuries to one or two passengers out of their seats)
  - Minor injury to greater than zero or less than equal to 10% of passengers

- Airport
  - Minimal damage to aircraft
  - Minor injury to passengers
  - Minimal unplanned airport operations limitations (e.g. taxiway closure)
  - Minor incident involving the use of airport emergency procedures.

This would effectively cover all incidents associated with all stakeholder groups.

Preliminary Hazard List

Categorization:

[H] = **Hazard**– any real or potential condition that can result in injury, illness, or death to people; damage to or loss of a system, equipment or property; or damage to the environment.

[C] = **Cause**– events occurring independently or in combination that result in a hazard or failure.

[E] = **Effect**– real or potential outcome or harm that could be created if the hazard occurs in the defined system state.

05/24/23 –

1. GH (in Chat): Construction vehicle height working below aircraft arrivals. [non-issue]
2. DC: Pilot LOSA. [H]
3. DC: Possible No vertically guided Instrument Approach procedures if construction does not align with Publication cycle. [E/non-issue]
4. LM: overnight switch of configuration. [C]
5. JS: Runway Excursion (RE) during shortened runway operations. [H/E]
6. JS: Landing on closed runway (Period when RWY is closed in its entirety). [H/E] (Pilot LOSA)
7. JS: Increase runway occupancy time for departures due to 180 maneuver to Line Up And Wait (LUAW). [E]
8. JS: Increased runway occupancy time for arrival, if miss last connecting taxiway exit. [E]
9. DBM: Taxing (in chat). Concerned about being clear on instructions? Any time there is movement on the ground. Miscommunication between Pilot & Controller. [H] (Pilot/Controller LOSA)
10. DBM: Making an assumption on what may have been meant (communications between Pilot & Controller & the situation/instructions). [H/C/E] (Pilot/Controller LOSA)
11. DBM: Renaming of taxiways brings confusion. [non-issue/H]
12. JS: Expectation Bias. [H/C]
13. DBM: Continuation Bias (muscle memory). [C/H]
14. DBM: Controller LOSA. [H]
15. JS: Runway Incursion (RI) by construction workers near edge of RSA's. [H/E] (pedestrian LOSA)

06/28/23 –

16. WB: Vehicle Operator LOSA [H]
17. DBM: medivac opening issues [E/non-issue]

07/26/23

18. None added

Preliminary Hazard Analysis (PHA) Worksheet

(1) Hazard ID	(2) Hazard Description	(3) Cause(s)	(4) System State(s)	(5) Existing Controls	(6) Justification / Supporting Data	(7) Effects	(8) Severity	(9) Severity Rationale	(10) Likelihood	(11) Likelihood Rationale	(12) Initial Risk	(13) Mitigation	(14) Mitigation Responsibility	(15) Predicted Residual Risk
XYZ-1	Condition, real or potential; can cause injury, illness, etc. Prerequisite for accident or incident	Events that result in a hazard or failure	Conditions, characterized by quantities or qualities, in which a system can exist	Mitigations that exist to prevent or reduce hazard occurrence or mitigate its effect	Explanation and additional detailing of Existing Controls (Need to cite specific paragraph and/or section number of FAA Orders, Program Guidance Letters, Advisory Circulars, Federal Aviation Regulations used)	Potential outcome or harm of the hazard if it occurs in the defined system state; worst credible	Resultant matrix determination	Particular effect of the identified hazard producing the worst credible outcome (likelihood is not considered)	Resultant matrix determination	Expression of how often a particular effect is expected to occur given existing controls and requirements (severity must be considered first)	Risk matrix ranking based on severity and likelihood of a hazard when it is first identified and assessed	Stated proposed mitigation for this hazard	Who has the responsibility to implement the mitigation	Risk status predicted to occur when recommended controls or requirements are verified
KOA-RWY-REHAB-1	Pilot LOSA	-expectation bias -not reading NOTAMs -continuation bias -distraction in cockpit -weather -sitting on the ramp too long (now tired) -Construction diagram not available to forelight -miscommunications pilot and tower -ineffective communication of changes -too much info in NOTAMs -lighting changes -physical footprint changes	All phases of construction	- AC 5200-18: Airport Safety Self Inspection - AC 5200-28: NOTAMs for Airport Operators - AC 150/5210-5: Painting, Marking, Lighting of vehicles used on airport - AC 150/5300-13: Airport Design - AC 150/5340-1: Standards for airport markings - AC 150/5340-18: Standards for airport sign systems - AC 150/5340-30: Design and installation details for airport visual aids - AC 150/5345-44: Specifications for runway and taxiway signs - AC 150/5345-46: Specifications for runway and taxiway lighting fixtures - AC 150/5345-55: Specification for L-893, lighted visual aid to indicate temporary runway closure - AC 150/5345-56: SPecificatin for L-890, airport lighting control and monitoring system (ALCMS) - AC 150/5370-2: Operational safety on airports during construction - FAR Part 139: Regulations/Airports - ACAC Checklist: Airport Construction Advisory Council - JO 7110.65: Air Traffic Control - JO 7210.3: Facility Operations and Administration - JO 6000.15: NAS Maintenance - SOP: Standard Operating Procedures - LOA: Letter of Agreement - MEARTS: Micro En-route Automated Radar Tracking System - ARSR, ASR-9, ASR-11: Surveillance Radar - ATIS: Automated Terminal Information System - ASOS: Automated Surface Observing System - Pilot Training, Controller Training - Pilot Intervention, Controller Intervention - ATC Scanning, Airfield Operations Monitoring, Operational Supervision - Radio Frequency Monitoring - NOTAM: Notice to Airmen - Aeronautical, Jeppesen chart - AFD: Airport/Facility Directory - AIM: Aeronautical Information Manual - CRM: Crew Resource Management - Daily Briefings/Notes - TMI: Traffic Management Initiative - CSPP: Construction Safety and Phasing Plan	-AC 5200-18C: Sections 9, para a-d; 10j, items 1-10; 13e, items 1-6 - AC 150/5200 – 28D: Sections 1.6.1, 8; 10; 13a ; 18 -AC 150/5210 – 20A: Sections 1.1; 1.3; 2.1; 2.2; 3.1.3 ; 3.4; 3.1.4.2; 3.4; 3.5 -AC 150/5210 – 24: Sections 4.1b; 4.3.a.1 ; 4.3a.5; 6.2 -AC 150/5210 – 5D: Section 4c; 5a -AC 150/5300 – 13A: Sections 304; 401 -AC 150/5340 – 1L: Ch. 2; Ch. 3; Ch. 4 -AC 150/5340 – 18F: Ch. 1; Ch. 2 -AC 150/5345 – 46E: Section 1.2.1 -AC 150/5370 – 2G: Sections 1.2, 1.2.1 ; 1.2.2; 1.2.3; 1.2.4 2.13; 2.4.1.9.b; 2.4.1.14; 2.18.3.2; 2.20 -FAR Part 139: Section 139.327;Section 139.329;Section 139.339;Section 139.341	-property damage -runway incursion -runway excursion -injury to individual -aircraft accident	4-Minor	Subject Matter Expertise	D-Extremely Remote	Subject Matter Expertise	4D-Low	N/A	N/A	N/A
KOA-RWY-REHAB-2	Controller LOSA	-expectation bias -not reading NOTAMs -continuation bias -distraction -weather -sitting on the ramp too long (now tired) -Construction diagram not available to forelight -miscommunications pilot and tower -ineffective communication of changes -too much info in NOTAMs -lighting changes -physical footprint changes -phase changes between 2&3 and 3&4	All phases of construction	- AC 150/5200-18: Airport Safety Self Inspection - AC 150/5200-28: NOTAMs for Airport Operators - AC 150/5200-31: Airport emergency plan - AC 150/5200-20: Ground vehicle operations on airports - AC 150/5210-5: Painting, Marking, Lighting of vehicles used on airport - AC 150/5300-13: Airport Design - AC 150/5340-1: Standards for airport markings - AC 150/5340-18: Standards for airport sign systems - AC 150/5340-30: Design and installation details for airport visual aids - AC 150/5345-44: Specifications for runway and taxiway signs - AC 150/5345-46: Specifications for runway and taxiway lighting fixtures - AC 150/5345-55: Specification for L-893, lighted visual aid to indicate temporary runway closure - AC 150/5345-56: Specification for L-890, airport lighting control and monitoring system (ALCMS) - AC 150/5370-2: Operational safety on airports during construction - FAR Part 139: Regulations/Airports - ACAC: Airport Construction Advisory Council - JO 7110.65: Air Traffic Control - JO 7400.2: Handling Airspace Matters Procedures - JO 7210.3 :Facility Operations and Administration - JO: 6000.15: NAS Maintenance - SOP: Standard Operating Procedure - LOA: Letter of Agreement - MEARTS: Micro En-route Automated Radar Tracking System - ARSR, ASR-9, ASR-11: Surveillance Radar - ATIS: Automated Terminal Information System - ASOS: Automated Surface Observing System - Pilot Training, Controller Training - Pilot Intervention, Controller Intervention - ATC Scanning, Airfield Operations Monitoring, Operational Supervision - Radio Frequency Monitoring - NOTAM: Notice to Airmen - Aeronautical, Jeppesen chart - AFD: Airport/Facility Directory - AIM: Aeronautical Information Manual - CRM: Crew Resource Management - Daily Briefings/Notes - TMI: Traffic Management Initiative - CSPP: Construction Safety and Phasing Plan	-AC 5200-18C: Sections 9, para a-d; 10j, items 1-10; 13e, items 1-6 - AC 150/5200 – 28D: Sections 1.6.1, 8; 10; 13a; 18 -AC 150/5210 – 20A: Sections 1.1; 1.3; 2.1; 2.2; 3.1.3 ; 3.4; 3.1.4.2; 3.4; 3.5 -AC 150/5210 – 24: Sections 4.1b; 4.3.a.1; 4.3a.5; 6.2 -AC 150/5210 – 5D: Section 4c; 5a -AC 150/5300 – 13A: Sections 304; 401 -AC 150/5340 – 1L: Ch. 2; Ch. 3; Ch. 4 -AC 150/5340 – 18F: Ch. 1 ; Ch. 2 -AC 150/5345 – 46E: Section 1.2.1 -AC 150/5370 – 2G: Sections 1.2, 1.2.1 ; 1.2.2; 1.2.3; 1.2.4 2.13; 2.4.1.9.b; 2.4.1.14; 2.18.3.2; 2.20 -FAR Part 139: Section 139.327;Section 139.329;Section 139.339;Section 139.341	-property damage -runway incursion -runway excursion -injury to individual -aircraft accident	3-Major	Subject Matter Expertise	D-Extremely Remote	Subject Matter Expertise	3D-Medium	N/A	N/A	N/A

Preliminary Hazard Analysis (PHA) Worksheet

(1) Hazard ID	(2) Hazard Description	(3) Cause(s)	(4) System State(s)	(5) Existing Controls	(6) Justification / Supporting Data	(7) Effects	(8) Severity	(9) Severity Rationale	(10) Likelihood	(11) Likelihood Rationale	(12) Initial Risk	(13) Mitigation	(14) Mitigation Responsibility	(15) Predicted Residual Risk
XYZ-1	Condition, real or potential; can cause injury, illness, etc. Prerequisite for accident or incident	Events that result in a hazard or failure	Conditions, characterized by quantities or qualities, in which a system can exist	Mitigations that exist to prevent or reduce hazard occurrence or mitigate its effect	Explanation and additional detailing of Existing Controls (Need to cite specific paragraph and/or section number of FAA Orders, Program Guidance Letters, Advisory Circulars, Federal Aviation Regulations used)	Potential outcome or harm of the hazard if it occurs in the defined system state; worst credible	Resultant matrix determination	Particular effect of the identified hazard producing the worst credible outcome (likelihood is not considered)	Resultant matrix determination	Expression of how often a particular effect is expected to occur given existing controls and requirements (severity must be considered first)	Risk matrix ranking based on severity and likelihood of a hazard when it is first identified and assessed	Stated proposed mitigation for this hazard	Who has the responsibility to implement the mitigation	Risk status predicted to occur when recommended controls or requirements are verified
KOA-RWY-REHAB-3	Vehicle Operator LOSA	-expectation bias -not reading NOTAMs -continuation bias -distraction in vehicle -weather -sitting on the ramp too long (now tired) -Construction diagram not available to vehicle operator -radio miscommunication -ineffective communication of changes -too much info in NOTAMs -lighting changes -physical footprint changes -phase changes between 2&3 and 3&4	All phases of construction	- AC 150/5200-18: Airport Safety Self Inspection - AC 150/5200-28: NOTAMs for Airport Operators - AC 150/5200-31: Airport emergency plan - AC 150/5200-20: Ground vehicle operations on airports - AC 150/5210-5: Painting, Marking, Lighting of vehicles used on airport - AC 150/5300-13: Airport Design - AC 150/5340-1: Standards for airport markings - AC 150/5340-18: Standards for airport sign systems - AC 150/5340-30: Design and installation details for airport visual aids - AC 150/5345-44: Specifications for runway and taxiway signs - AC 150/5345-46: Specifications for runway and taxiway lighting fixtures - AC 150/5345-55: Specification for L-893, lighted visual aid to indicate temporary runway closure - AC 150/5345-56: Specification for L-890, airport lighting control and monitoring system (ALCMS) - AC 150/5370-2: Operational safety on airports during construction - FAR Part 139: Regulations/Airports - ACAC: Airport Construction Advisory Council - JO 7110.65: Air Traffic Control - JO 7210.3 :Facility Operations and Administration - JO: 6000.15: NAS Maintenance - SOP: Standard Operating Procedure - LOA: Letter of Agreement - Controller Training, Airfield Driver Training, Access Control Training - Pilot Intervention, Controller Intervention - ATC Scanning, Airfield Operations Monitoring, Operational Supervision - Radio Frequency Monitoring - NOTAM: Notice to Airmen - CRM: Crew Resource Management - Daily Briefings/Notes - CSPP: Construction Safety and Phasing Plan - Weekly Construction Meetings	-AC 5200-18C: Sections 9, para a-d; 10j, items 1-10; 13e, items 1-6 - AC 150/5200 – 28D: Sections 1.6.1, 8; 10; 13a; 18 -AC 150/5210 – 20A: Sections 1.1; 1.3; 2.1; 2.2; 3.1.3 ; 3.4; 3.1.4.2; 3.4; 3.5 -AC 150/5210 – 24: Sections 4.1b; 4.3.a.1; 4.3a.5; 6.2 -AC 150/5210 – 5D: Section 4c; 5a -AC 150/5300 – 13A: Sections 304; 401 -AC 150/5340 – 1L: Ch. 2; Ch. 3; Ch. 4 -AC 150/5340 – 18F: Ch. 1 ; Ch. 2 -AC 150/5345 – 46E: Section 1.2.1 -AC 150/5370 – 2G: Sections 1.2, 1.2.1; 1.2.2; 1.2.3; 1.2.4 2.13; 2.4.1.9.b; 2.4.1.14; 2.18.3.2; 2.20 -FAR Part 139: Section 139.327;Section 139.329;Section 139.339;Section 139.341	-property damage -runway incursion -injury to individual -aircraft accident	4-Minor	Subject Matter Expertise	D-Extremely Remote	Subject Matter Expertise	4D-Low	N/A	N/A	N/A
KOA-RWY-REHAB-4A	Pedestrian LOSA	-expectation bias -not reading NOTAMs -continuation bias -distraction -weather -Construction diagram not available -radio miscommunication -ineffective communication of changes -lighting changes -physical footprint changes -phase changes between 2&3 and 3&4	All phases of construction	- AC 150/5200-18: Airport Safety Self Inspection - AC 150/5200-28: NOTAMs for Airport Operators - AC 150/5200-31: Airport emergency plan - AC 150/5200-20: Ground vehicle operations on airports - AC 150/5210-5: Painting, Marking, Lighting of vehicles used on airport - AC 150/5300-13: Airport Design - AC 150/5340-1: Standards for airport markings - AC 150/5340-18: Standards for airport sign systems - AC 150/5340-30: Design and installation details for airport visual aids - AC 150/5345-44: Specifications for runway and taxiway signs - AC 150/5345-46: Specifications for runway and taxiway lighting fixtures - AC 150/5345-55: Specification for L-893, lighted visual aid to indicate temporary runway closure - AC 150/5345-56: Specification for L-890, airport lighting control and monitoring system (ALCMS) - AC 150/5370-2: Operational safety on airports during construction - FAR Part 139: Regulations/Airports - Airfield Driver Training, Access Control Training - Pilot Intervention, Controller Intervention - ATC Scanning, Airfield Operations Monitoring, Operational Supervision - Radio Frequency Monitoring - NOTAM: Notice to Airmen - CRM: Crew Resource Management - Daily Briefings/Notes - CSPP: Construction Safety and Phasing Plan - Weekly Construction Meetings	-AC 5200-18C: Sections 9, para a-d; 10j, items 1-10; 13e, items 1-6 - AC 150/5200 – 28D: Sections 1.6.1, 8; 10; 13a; 18 -AC 150/5210 – 20A: Sections 1.1; 1.3; 2.1; 2.2; 3.1.3 ; 3.4; 3.1.4.2; 3.4; 3.5 -AC 150/5210 – 24: Sections 4.1b; 4.3.a.1; 4.3a.5; 6.2 -AC 150/5210 – 5D: Section 4c; 5a -AC 150/5300 – 13A: Sections 304; 401 -AC 150/5340 – 1L: Ch. 2; Ch. 3; Ch. 4 -AC 150/5340 – 18F: Ch. 1; Ch. 2 -AC 150/5345 – 46E: Section 1.2.1 -AC 150/5370 – 2G: Sections 1.2, 1.2.1; 1.2.2; 1.2.3; 1.2.4 2.13; 2.4.1.9.b; 2.4.1.14; 2.18.3.2; 2.20 -FAR Part 139: Section 139.327;Section 139.329;Section 139.339;Section 139.341	-property damage -runway incursion -injury to individual -aircraft accident -vehicle/pedestrian deviation -surface incident	4-Minor	Subject Matter Expertise	D-Extremely Remote	Subject Matter Expertise	4D-Low	N/A	N/A	N/A
KOA-RWY-REHAB-4B	Pedestrian LOSA	-expectation bias -not reading NOTAMs -continuation bias -distraction -weather -Construction diagram not available -radio miscommunication -ineffective communication of changes -lighting changes -physical footprint changes -phase changes between 2&3 and 3&5	All phases of construction	- AC 150/5200-18: Airport Safety Self Inspection - AC 150/5200-28: NOTAMs for Airport Operators - AC 150/5200-31: Airport emergency plan - AC 150/5200-20: Ground vehicle operations on airports - AC 150/5210-5: Painting, Marking, Lighting of vehicles used on airport - AC 150/5300-13: Airport Design - AC 150/5340-1: Standards for airport markings - AC 150/5340-18: Standards for airport sign systems - AC 150/5340-30: Design and installation details for airport visual aids - AC 150/5345-44: Specifications for runway and taxiway signs - AC 150/5345-46: Specifications for runway and taxiway lighting fixtures - AC 150/5345-55: Specification for L-893, lighted visual aid to indicate temporary runway closure - AC 150/5345-56: Specification for L-890, airport lighting control and monitoring system (ALCMS) - AC 150/5370-2: Operational safety on airports during construction - FAR Part 139: Regulations/Airports - Airfield Driver Training, Access Control Training - Pilot Intervention, Controller Intervention - ATC Scanning, Airfield Operations Monitoring, Operational Supervision - Radio Frequency Monitoring - NOTAM: Notice to Airmen - CRM: Crew Resource Management - Daily Briefings/Notes - CSPP: Construction Safety and Phasing Plan - Weekly Construction Meetings	-AC 5200-18C: Sections 9, para a-d; 10j, items 1-10; 13e, items 1-6 - AC 150/5200 – 28D: Sections 1.6.1, 8; 10; 13a; 18 -AC 150/5210 – 20A: Sections 1.1; 1.3; 2.1; 2.2; 3.1.3 ; 3.4; 3.1.4.2; 3.4; 3.5 -AC 150/5210 – 24: Sections 4.1b; 4.3.a.1; 4.3a.5; 6.2 -AC 150/5210 – 5D: Section 4c; 5a -AC 150/5300 – 13A: Sections 304; 401 -AC 150/5340 – 1L: Ch. 2; Ch. 3; Ch. 4 -AC 150/5340 – 18F: Ch. 1; Ch. 2 -AC 150/5345 – 46E: Section 1.2.1 -AC 150/5370 – 2G: Sections 1.2, 1.2.1 ; 1.2.2; 1.2.3; 1.2.4 2.13; 2.4.1.9.b; 2.4.1.14; 2.18.3.2; 2.20 -FAR Part 139: Section 139.327;Section 139.329;Section 139.339;Section 139.341	surface incident	4-Minor	Subject Matter Expertise	D-Extremely Remote	Subject Matter Expertise	4D-Low	N/A	N/A	N/A

Preliminary Hazard Analysis (PHA) Worksheet

(1) Hazard ID	(2) Hazard Description	(3) Cause(s)	(4) System State(s)	(5) Existing Controls	(6) Justification / Supporting Data	(7) Effects	(8) Severity	(9) Severity Rationale	(10) Likelihood	(11) Likelihood Rationale	(12) Initial Risk	(13) Mitigation	(14) Mitigation Responsibility	(15) Predicted Residual Risk
XYZ-1	Condition, real or potential; can cause injury, illness, etc. Prerequisite for accident or incident	Events that result in a hazard or failure	Conditions, characterized by quantities or qualities, in which a system can exist	Mitigations that exist to prevent or reduce hazard occurrence or mitigate its effect	Explanation and additional detailing of Existing Controls (Need to cite specific paragraph and/or section number of FAA Orders, Program Guidance Letters, Advisory Circulars, Federal Aviation Regulations used)	Potential outcome or harm of the hazard if it occurs in the defined system state; worst credible	Resultant matrix determination	Particular effect of the identified hazard producing the worst credible outcome (likelihood is not considered)	Resultant matrix determination	Expression of how often a particular effect is expected to occur given existing controls and requirements (severity must be considered first)	Risk matrix ranking based on severity and likelihood of a hazard when it is first identified and assessed	Stated proposed mitigation for this hazard	Who has the responsibility to implement the mitigation	Risk status predicted to occur when recommended controls or requirements are verified
KOA-RWY-REHAB-5	Runway Excursion during shortened runway operations	REMOVE HAZARD - CAPTURED AS EFFECTS OF PILOT/CONTROLLER LOSA												
KOA-RWY-REHAB-6	Renaming of Taxiways brings confusion	REMOVE HAZARD - CAPTURED AS CAUSE												
KOA-RWY-REHAB-7	Expectation bias	REMOVE HAZARD - CAPTURED AS CAUSE												
KOA-RWY-REHAB-8	Continuation bias	REMOVE HAZARD - CAPTURED AS CAUSE												
KOA-RWY-REHAB-9	Runway Incusion by construction workers near edge of RSA	REMOVE HAZARD - CAPTURED AS EFFECT												

Appendix C

Safety Risk Assessment (SRA) Panel

Handouts

Appendix C
Existing Controls List

#	CONTROL	TITLE/DESCRIPTION
Advisory Circulars		
1	AC 150/5070 – 7	Airport System Planning Process
2	AC 150/5200 –18	Airport Safety Self Inspection
3	AC 150/5200 – 28	NOTAMs for Airport Operators
4	AC 150/5200 – 31	Airport Emergency Plan
5	AC 150/5210 – 20	Ground Vehicle Operations on Airports
6	AC 150/5210 – 24	Airport Foreign Object Debris Management
7	AC 150/5210 – 5	Painting, Marking, Lighting of Vehicles Used on Airport
8	AC 150/5300 – 13	Airport Design
9	AC 150/5340 – 1	Standards for Airport Markings
10	AC 150/5340 – 18	Standards for Airport Sign Systems
11	AC 150/5340 – 30	Design and Installation Details for Airport Visual Aids
12	AC 150/5345 – 44	Specifications for Runway and Taxiway Signs
13	AC 150/5345 – 46	Specifications for Runway and Taxiway Lighting Fixtures
14	AC 150/5345 – 53	Airport Lighting Equipment Certification Program
15	AC 150/5345 – 55	Specification for L-893, Lighted Visual Aid to indicate Temporary Runway Closure
16	AC 150/5345 – 56	Specification for L-890, Airport Lighting Control and Monitoring System (ALCMS)
17	AC 150/5370 – 2	Operational Safety on Airports During Construction
18	FAR Part 139	Regulations/Airport
Directives - ATC		
19	ACAC Checklist	Airport Construction Advisory Council
20	JO 7110.65	Air Traffic Control
21	JO 7400.2	Handling Airspace Matters Procedures
22	JO 7210.3	Facility Operations and Administration
23	JO 6000.15	NAS Maintenance
24	SOP	Standard Operating Procedure
25	LOA	Letter of Agreement
Systems		
26	ARTS/STARS	Automated Radar System
27	ARSR, ASR-9, ASR-11	Surveillance Radar
28	ASDE, ASDE-X	Airport Surface Detection Equipment
29	ATIS	Automated Terminal Information System
30	TCAS	Traffic Alert & Collision Avoidance System
31	CA/MSAW	Conflict Alert/Minimum Safe Altitude Warning
32	AMASS	Airport Movement Area Safety System
33	ASOS	Automated Surface Observing System

Appendix C
Existing Controls List

#	CONTROL	TITLE/DESCRIPTION
Training		
34	Pilot Training	--
35	Controller Training	--
36	Airfield Driver Training	--
37	Access Control Training	--
Intervention		
38	Pilot Intervention	--
39	Controller Intervention	--
40	ATC Scanning	--
41	Airfield Operations Monitoring	--
42	Operational Supervision	--
43	Radio Frequency Monitoring	--
Publications		
44	NOTAM	Notice to Airmen
45	Charts	Aeronautical, Jeppesen charts
46	AFD	Airport/Facility Directory
47	AIM	Aeronautical Information Manual
Other		
48	CRM	Crew Resource Management
49	Daily Briefings/Notes	--
50	TMI	Traffic Management Initiative
51	CSPP	Construction Safety and Phasing Plan
52		
53		
54		
55		

Appendix C

Preliminary Hazard List with Risk Level

Source: FAA Office of Airports Safety Management Systems (SMS) Desk Reference

Hazard	Initial Risk
Foreign Object Damage / Debris (FOD)	3D
Loss of Situational Awareness by the Pilot: Change in Airport Geometry	2D
Loss of Situational Awareness by the Pilot: Continuation Bias / Complacency	2D
Loss of Situational Awareness by the Pilot: Construction Light Pollution	2E
Loss of Situational Awareness by the Pilot: Visual Cue Saturation	2D
Loss of Situational Awareness by the Pilot: Complex Taxiing Instructions	2D
Loss of Situational Awareness by the Pilot: Insufficient/Ineffective/Inaccurate Notification to Users/Stakeholders	2D
Loss of Situational Awareness by the Pilot: Interference or Loss of NAS Systems	3D
Loss of Situational Awareness by the Controllers: Complexity	3D
Loss of Situational Awareness by the Controllers: Interference or Loss of NAS Systems	4C
Loss of Situational Awareness by the Controllers: Line of Sight	5D
Loss of Situational Awareness by Vehicle Operators/Personnel: Visual Cue Saturation	3D
Increase/Changes in Wildlife Activity	4D
Penetration of Protected Surfaces (Airport Design, TERPS, and others)	5C

Appendix C. Safety Assessment Tables

Hazard Severity Classification

Effect On:	Minimal 5	Minor 4	Major 3	Hazardous 2	Catastrophic 1
Airports	No damage to aircraft but minimal injury or discomfort of little consequence to passenger(s) or worker(s)	-Minimal damage to aircraft, or -Minor injury to passengers, or -Minimal unplanned airport operations limitations (i.e. taxiway closure), or -Minor incident involving the use of airport emergency procedures	-Major damage to aircraft and/or minor injury to passenger(s)/worker(s), or -Major unplanned disruption to airport operations, or -Serious incident, or -Deduction on the airport's ability to deal with adverse conditions	-Severe damage to aircraft and/or serious injury to passenger(s)/worker(s); or -Complete unplanned airport closure, or -Major unplanned operations limitations (i.e., runway closure), or -Major airport damage to equipment and facilities	-Complete loss of aircraft and/or facilities or fatal injury in passenger(s)/worker(s); or -Complete unplanned airport closure and destruction of critical facilities; or -Airport facilities and equipment destroyed
ATC Services	A minimal reduction in ATC services CAT D runway incursion[1] Proximity Event, Operational Deviation, or measure of compliance greater than or equal to 66 percent[2]	Low Risk Analysis Event severity,[3] two or fewer indicators fail CAT C runway incursion	Medium Risk Analysis Event severity, three indicators fail CAT B runway incursion	High Risk Analysis Event severity, four indicators fail CAT A runway incursion	Ground collision[5] Mid-air collision Controlled flight into terrain or obstacles
Flying Public	Minimal injury or discomfort to persons on board	Physical discomfort to passenger(s) (e.g., extreme braking action, clear air turbulence causing unexpected movement of aircraft resulting in injuries to one or two passengers out of their seats) Minor injury to less than or equal to 10 percent of person on board[6]	Physical distress to passengers (e.g., abrupt evasive action, severe turbulence causing unexpected aircraft movements) Minor injury to greater than 10 percent of persons on board	Serious injury to persons onboard[7]	Fatal injuries to persons onboard[8]
Flight Crew	Pilot is aware of traffic (identified by Traffic Collision Avoidance System traffic alert, issued by ATC, or observed by flight crew) in close enough proximity to require focused attention, but no action is required Pilot deviation[9] where loss of airborne separation falls within the same parameters of a Proximity Event or measure of compliance	Pilot deviation where loss of airborne separation falls within the same parameters of a low Risk Analysis Event severity Reduction of functional capability of aircraft, but overall safety not affected (e.g., normal procedures as per Airplane Flight Manuals) Circumstances requiring a flight crew to abort takeoff (rejected takeoff); however, the	Pilot deviation where loss of airborne separation falls within the same parameters of a medium Risk Analysis Event severity Reduction in safety margin or functional capability of the aircraft, requiring crew to follow abnormal procedures as per Airplane Flight Manuals Circumstances requiring a flight crew to reject landing (i.e., balked	Pilot deviation where loss of airborne separation falls within the same parameters of a high Risk Analysis Event severity Reduction in safety margin and functional capability of the aircraft requiring crew to follow emergency procedures as per Airplane Flight Manuals Near mid-air collision encounters with	Ground collision Mid-air collision Controlled flight into terrain or obstacles Hull loss to manned aircraft Failure conditions that would prevent continued safe flight and landing

Effect On:	Minimal 5	Minor 4	Major 3	Hazardous 2	Catastrophic 1
	greater than or equal to 66 percent Circumstances requiring a flight crew to initiate a go-around	act of aborting takeoff does not degrade the aircraft performance capability Near mid-air collision encounters with separation greater than 500 feet[10]	landing) at or near the runway threshold Circumstances requiring a flight crew to abort takeoff (i.e., rejected takeoff); the act of aborting takeoff degrades the aircraft performance capability Near mid-air collision encounters with separation less than 500 feet[10]	separation less than 100 feet[10]	
Unmanned Aircraft Systems	Discomfort to those on the ground Loss of separation leading to a measure of compliance greater than or equal to 66 percent	Low Risk Analysis Event severity, two or fewer indicators fail Non-serious injury to three or fewer people on the ground	Medium Risk Analysis Event severity, three indicators fail Non-serious injury to more than three people on the ground A reduced ability of the crew to cope with adverse operating conditions to the extent that there would be a significant reduction in safety margins Manned aircraft making an evasive maneuver, but proximity from unmanned aircraft remains greater than 500 feet	High Risk Analysis Event severity, four indicators fail Incapacitation to unmanned aircraft system crew Proximity of less than 500 feet to a manned aircraft Serious injury to persons other than the unmanned aircraft System crew	A collision with a manned aircraft Fatality or fatal injury to persons other than the unmanned aircraft system crew

Notes:

1. Refer to the current version of FAA Order 7050.1, *Runway Safety Program*.
2. Proximity Events and Operational Deviations are no longer used to measure losses of separation, but they are applicable when validating old data. The minimal loss of standard separation is now represented as a measure of compliance of greater than or equal to 66 percent.
3. Risk Analysis Event severity indicators are as follows:
   a. **Proximity.** Failure transition point of 50 percent of required separation or less.
   b. **Rate of Closure.** Failure transition point greater than 205 knots or 2,000 feet per minute (consider both aspects and utilize the higher of the two if only one lies above the transition point).
   c. **ATC Mitigation.** ATC able to implement separation actions in a timely manner
   d. **Pilot Mitigation.** Pilot executed ATC mitigation in a timely manner.
4. An effect categorized as catastrophic is one that results in a fatality or fatal injury.
5. **Ground Collision.** An airplane on the ground collides with an object or person.
6. **Minor Injury.** Any injury that is neither fatal nor serious.
7. **Serious Injury.** Any injury that:
   a. Requires hospitalization for more than 48 hours, commencing within seven days from the date the injury was received;
   b. Results in a fracture of any bone (except simple fractures of fingers, toes, or nose);
   c. Causes severe hemorrhages, nerve, muscle, or tendon damage;
   d. Involves any internal organ; or
   e. Involves second- or third-degree burns, or any burns affecting more than five percent of the body's surface.

8. Fatal Injury. Any injury that results in death within 30 days of the accident.
9. Refer to FAA Order JO 8020.16, Air Traffic Organization Aircraft Accident and Incident Notification, Investigation, and Reporting, for more information about pilot deviations.
10. Near mid-air collision definitions are derived from FAA Order 8900.1, *Flight Standards Information Management System*, Volume 7, which defines the following categories: critical, potential, and low potential. Refer to Section 9 for the complete definitions of these categories.

Likelihood Definitions

	Airport Specific	Quantitative (ATC/Flight Procedures/Systems Engineering)	Domain-wide: NAS-wide, Terminal, or En route
A Frequent	Expected to occur more than once per week or every 2500 departures, whichever occurs sooner	(Probability) ≥ 1 per 1000	Equal to or more than once per week
B Probable	Expected to occur about once every month or 250,000 departures, whichever occurs sooner	1 per 1000 > (Probability) ≥ 1 per 100,000	Less than once per week and equal to more than once per three months
C Remote	Expected to occur about once every year or 2.5 million departures, whichever occurs sooner	1 per 100,000 > (Probability) ≥ 1 per 10,000,000	Less than once per three months and equal to more than once per three years
D Extremely Remote	Expected to occur once every 10-100 years or 25 million departures, whichever occurs sooner	1 per 10,000,000 > (Probability) ≥ 1 per 1,000,000,000	Less than once per three years and equal to or more than once per 30 years.
E Extremely Improbable	Expected to occur less than every 100 years	1 per 1,000,000,000 > (Probability) ≥ 1 per 10^{14}	Less than once per 30 years

Note: A cutoff point of 10^{-14} was established to define the boundaries of credible events for the purpose of calculating likelihood.

Severity and Likelihood Ratings

Hazard ID	KOA-RWY-REHAB-1		KOA-RWY-REHAB-2		KOA-RWY-REHAB-3	
Hazard Description - Effect	Pilot LOSA - Runway Incursion		Controller LOSA - Runway Incursion		Vehicle Operator LOSA - Runway Incursion	
Panel Member	Severity	Likelihood	Severity	Likelihood	Severity	Likelihood
Dave Bell	4	D	3	D	3	D
Kandyce Watanabe	4	D	4	D	4	D
Neil Okuna	4	D	4	D	4	D
Dave Clark	4	D	4	D	4	D
Perfecto Delmendo	4	D	4	D	4	D
Dave Blancett-Maddock	3	D	3	D	3	D
George Hodgson	-	-	3	D	4	D
Scott Allen	4	D	3	D	4	D
Rich Silva	3	D	3	D	3	D
Hans Sholley	-	-	-	-	-	-
Majority Rating	**4**	**D**	**3**	**D**	**4**	**D**
	Low		**Medium**		**Low**	

Hazard ID	KOA-RWY-REHAB-4A		KOA-RWY-REHAB-4B	
Hazard Description - Effect	Pedestrian LOSA - Runway Incursion		Pedestrian LOSA - Surface Incident	
Panel Member	Severity	Likelihood	Severity	Likelihood
Dave Bell	4	D	4	D
Kandyce Watanabe	4	D	4	D
Neil Okuna	5	D	5	D
Dave Clark	4	D	5	D
Perfecto Delmendo	4	D	5	D
Dave Blancett-Maddock	3	D	3	C
George Hodgson	3	D	4	D
Scott Allen	4	D	4	D
Rich Silva	-	-	-	
Hans Sholley	4	D	4	D
Majority Rating	**4**	**D**	**4**	**D**
	Low		**Low**	

Appendix E

KOA Runway 17-35 Rehabilitation
SRA Panel Meeting with All Stakeholders
ATTENDANCE

Meeting Date: June 28, 2023
Meeting Time: 9am-4pm HST
Location: Microsoft Teams link / call-in

	Name	Panel Member/ SME	Company/Agency
☒	Wong Yuen, Chauncey	SME	HDOT-A KOA
☒	Valeros, Lorna	SME	HDOT-A KOA
☐	Duvauchelle, Cy	SME	HDOT-A KOA
☒	Bell, David	Panel Member	HDOT-A KOA
☒	Espinueva, Dexter	SME	HDOT-A KOA
☐	Gomes, Timothy	SME	HDOT-A KOA
☐	Nakagawa, Leland	SME	HDOT-A KOA
☒	Matias, Max	SME	HDOT-A KOA
☒	Wise, Darryl	SME	HDOT-A
☒	Gunderson, Bart	SME	HDOT-A KOA
☐	Fukushima, Lyn	SME	HDOT-A KOA
☐	Jacobs, Martinez	SME	HDOT-A
☒	Valenciano, Shelyne	SME	HDOT-A
☐	Chiu, Eddie	SME	HDOT-A AIR-EA
☐	Quarrie, Sean	SME	Parsons
☒	Shoga, Hana	SME	Parsons
☒	Campbell, Alan	SME	AECOM
☐	Dunckel, Sean	SME	AECOM
☐	Brana Munoz, Mary	SME	AECOM
☒	Holman, Shannon	SME	Orion Engineers
☒	Cleven, Aren	SME	Orion Engineers
☐	Raposo, Tony	SME	Orion Engineers
☐	Valentino, Andrew	SME	Orion Engineers
☐	Dabu, Daniel	SME	Orion Engineers
☐	Hannah, Paul	SME	Lean Engineering
☒	Mattix, Lynn	Panel Member	FAA FCT Mgr
☒	Ellorda, Renee	SME	FAA KOA SSC
☐	Barclay, Charles	SME	FAA ITO SSC
☐	Aoki, Brian	SME	FAA KOA SSC
☒	Watanabe, Kandyce	Panel Member	FAA HNL ADO
☒	Brown, William "Will"	Panel Member	FAA HNL ADO
☒	Evans, Kimberly	SME	FAA HNL ADO

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KOA Runway 17-35 Rehabilitation

SRA Panel Meeting with All Stakeholders

	Name	Panel Member/ SME	Company/Agency
☐	Wennes, John	SME	FAA HCF ATO
☐	Kamakahi, Jacob	SME	FAA HCF ATO
☐	Hamamoto, Liane	SME	FAA HCF ATO
☒	Okuna, Neil	Panel Member	FAA HCF ATO
☐	Poole, Dottie	SME	FAA HCF ATO
☒	Trueba, Michael	SME	FAA HCF
☐	Kitashiro, Bryce	SME	FAA HCF NATCA
☐	Heenan, Michael	SME	FAA FSDO
☒	Allen, Scott	Panel Member	FAA FSDO
☐	Chitwood, Tiffany	SME	FAA CMO
☐	Guillory, Richard "Rich"	SME	FAA CMO
☒	Santoro, Joe	SME	FAA AWP RSO
☒	Clark, Dave	Panel Member	FAA WSC Flight Procedures
☒	Horton, Terrel	SME	FAA Instrument Procedures
☐	Tran, Vivian	SME	FAA Engineering Svcs (Comm)
☒	Robertson, Matthew	SME	FAA WSC NPI
☐	Ace-Galvan, Natalie	SME	FAA WSC NPI
☒	Delmendo, Perfecto	Panel Member	AvAirPros
☐	Ilagan, Ed	SME	AvAirPros
☐	Tarpey, Jeff	SME	AvAirPro
☐	Silva, Richard	Panel Member	Hawaiian Airlines
☒	Sholley, Hans	SME/Panel Member	Hawaiian Airlines
☐	Santiago, Reid	SME	Hawaiian Airlines
☐	Heffron Neuhold, Nicholas	SME	Hawaiian Airlines
☐	Everett, Andrew	SME	Hawaiian Airlines
☐	Woods, Benjamin	SME	Hawaiian Airlines
☒	Coon, Kevin	SME	United Airlines
☐	Litke, Paul	SME	United Airlines
☐	Goo, Charlene	SME	United Airlines
☐	Park, Karen	SME	Air Canada
☐	Craig, Lynae	Panel Member	Alaska Airlines
☒	Amen, Paul	Panel Member	American Airlines
☐	Nakao, Jessica	SME	American Airlines
☐	Tafua, Kaliko	SME	American Airlines
☐	Cho, Melissa	SME	Delta Airlines
☐	Sugarliev, Irina	SME	Delta Airlines
☒	Lee, Linus	SME	Japan Airlines
☐	Takahashi, Keita	SME	Japan Airlines

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KOA Runway 17-35 Rehabilitation

SRA Panel Meeting with All Stakeholders

	Name	**Panel Member/ SME**	**Company/Agency**
☐	Wilson, Toni	SME	Southwest Airlines
☐	Hodgson, George	SME	Southwest ATC Support
☐	Dagger, Christopher	Panel Member	Southwest Local Leader
☐	Kitchens, Jason	SME	Southwest Airlines
☐	Sellers, David	SME	Southwest Airlines
☐	Dehart, Scott	SME	Southwest Airlines
☐	Ryan O Connor	SME	Southwest Airlines
☐	David Herrera	SME	Southwest Airlines
☐	Michael Mrachek	SME	Southwest Airlines
☐	Emily Estapa	SME	Southwest Airlines
☐	Matthew Vigen	SME	Southwest Airlines
☐	Lawrence Turner	SME	Southwest Airlines
☐	Peter Crosby	SME	Southwest Airlines
☐	Clint Auten	SME	Southwest Airlines
☐	Brian Gleason	SME	Southwest Airlines
☐	John Walther	SME	Southwest Airlines
☐	Monica Soltero Solano	SME	Southwest Airlines
☐	Tara Kolstad	SME	Southwest Airlines
☐	Christopher Neidhardt	SME	Southwest Airlines
☐	John Zuzu	SME	Southwest Airlines
☐	Emily King	SME	Southwest Airlines
☒	Lewis, Jeremy	SME	Southwest Airlines
☒	Ly, Richie	SME	Air Canada
☐	Miller, Rick	SME	West Jet
☐	Shaw, Craig	SME	West Jet
☐	Zimmerman, Chris	SME	UPS
☐	Hettinger, Trey	SME	UPS
☐	Ochiai, Wes	SME	UPS
☐	Meyer, Dave	SME	UPS
☐	Hamm, Tom	SME	UPS
☐	Balsam, C	SME	UPS
☐	Yoshiki, Jared	SME	AOPA
☐	Melohn, Bill	Panel Member	GACH/AOPA
☒	Blancett-Maddock, David	Panel Member	GA
☐	Gavel, Robert	SME	GA
☐	Hoff, Jeffery	SME	GA
☐	Donovan, James	SME	GA
☐	Osterholt, David	SME	GA

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KOA Runway 17-35 Rehabilitation
SRA Panel Meeting with All Stakeholders

	Name	Panel Member/ SME	Company/Agency
☐	Mann, James	SME	GA
☐	Lauro, Michael	SME	GA
☐	Anderson, Michael	SME	GA
☐	Cislo, Randall	SME	GA
☐	Kale, Timothy	SME	GA
☐	Fouts, Ben	SME	Mauna Loa Helicopters
☒	Tuiolosega, Herman	SME	DOT
☒	Severn, Ray	SME	DOT
☒	Hays, Hannah	SME	DOT
☒	Lum, Traci	SME	DOT
☒	Ward, Dawn	Co-facilitator	Base Management
☒	Wong, Steve	Co-facilitator	Base Management
☒	DeMattos, Dalyn	Tech Writer	Base Management
☒	Silva, Emilia	Tech Writer	Base Management
☐	Sue Yamauchi		Base Management
☐			
☐			

Appendix E

KOA Runway 17-35 Rehabilitation
SRA Panel Meeting with All Stakeholders
ATTENDANCE

Meeting Date: July 26, 2023
Meeting Time: 9am-4pm HST
Location: Microsoft Teams link / call-in

	Name	Panel Member/ SME	Company/Agency
☒	Wong Yuen, Chauncey	SME	HDOT-A KOA
☐	Valeros, Lorna	SME	HDOT-A KOA
☒	Duvauchelle, Cy	SME	HDOT-A KOA
☒	Bell, David	Panel Member	HDOT-A KOA
☒	Espinueva, Dexter	SME	HDOT-A KOA
☐	Gomes, Timothy	SME	HDOT-A KOA
☒	Aragon, Ben	SME	HDOT-A KOA
☒	Matias, Max	SME	HDOT-A KOA
☒	Fukushima, Lyn	SME	HDOT-A KOA
☒	Sitko, Henry	SME	KOA ARFF
☒	Akao, Charles	SME	KOA ARFF
☒	Moraes, Kaimi	SME	KOA ARFF
☒	Wright-Pacarro, Vance	SME	KOA ARFF
☒	Blevins, Kaikea	SME	KOA ARFF
☒	Montgomery, Mark	SME	KOA ARFF
☒	Funakoshi, Erik	SME	KOA ARFF
☐	Jacobs, Martinez	SME	HDOT-A
☐	Chiu, Eddie	SME	HDOT-A AIR-EA
☐	Quarrie, Sean	SME	Parsons
☒	Shoga, Hana	SME	Parsons
☒	Campbell, Alan	SME	AECOM
☒	Dunckel, Sean	SME	AECOM
☒	Brana Munoz, Mary	SME	AECOM
☒	Holman, Shannon	SME	Orion Engineers
☒	Cleven, Aren	SME	Orion Engineers
☐	Raposo, Tony	SME	Orion Engineers
☐	Valentino, Andrew	SME	Orion Engineers
☐	Dabu, Daniel	SME	Orion Engineers
☒	Hannah, Paul	SME	Lean Engineering
☒	Mattix, Lynn	SME	FAA FCT Mgr
☒	Ellorda, Renee	SME	FAA KOA SSC
☐	Aoki, Brian	SME	FAA KOA SSC

Appendix E

KOA Runway 17-35 Rehabilitation

SRA Panel Meeting with All Stakeholders

	Name	Panel Member/ SME	Company/Agency
☐	Barclay, Charles	SME	FAA ITO SSC
☒	Watanabe, Kandyce	Panel Member	FAA HNL ADO
☐	Brown, William "Will"	Panel Member	FAA HNL ADO
☒	Evans, Kimberly	SME	FAA HNL ADO
☒	Look, Rachel	SME	FAA HNL ADO
☒	Wennes, John	SME	FAA HCF ATO
☐	Kamakahi, Jacob	SME	FAA HCF ATO
☐	Hamamoto, Liane	SME	FAA HCF ATO
☒	Okuna, Neil	Panel Member	FAA HCF ATO
☐	Poole, Dottie	SME	FAA HCF ATO
☐	Kitashiro, Bryce	SME	FAA HCF NATCA
☐	Heenan, Michael	SME	FAA FSDO
☒	Allen, Scott	Panel Member	FAA FSDO
☐	Chitwood, Tiffany	SME	FAA CMO
☐	Guillory, Richard "Rich"	SME	FAA CMO
☒	Santoro, Joe	SME	FAA AWP RSO
☒	Clark, Dave	Panel Member	FAA WSC Flight Procedures
☒	Horton, Terrel	SME	FAA Instrument Procedures
☐	Tran, Vivian	SME	FAA Engineering Svcs (Comm)
☒	Robertson, Matthew	SME	FAA WSC NPI
☐	Ace-Galvan, Natalie	SME	FAA WSC NPI
☒	Delmendo, Perfecto	Panel Member	AvAirPros
☐	Ilagan, Ed	SME	AvAirPros
☐	Tarpey, Jeff	SME	AvAirPro
☒	Silva, Richard	Panel Member	Hawaiian Airlines
☒	Sholley, Hans	SME/Panel Member	Hawaiian Airlines
☐	Santiago, Reid	SME	Hawaiian Airlines
☐	Heffron Neuhold, Nicholas	SME	Hawaiian Airlines
☐	Everett, Andrew	SME	Hawaiian Airlines
☐	Woods, Benjamin	SME	Hawaiian Airlines
☒	Coon, Kevin	SME	United Airlines
☐	Litke, Paul	SME	United Airlines
☐	Goo, Charlene	SME	United Airlines
☐	Park, Karen	SME	Air Canada
☐	Craig, Lynae	Panel Member	Alaska Airlines
☐	Amen, Paul	Panel Member	American Airlines
☐	Nakao, Jessica	SME	American Airlines
☐	Tafua, Kaliko	SME	American Airlines

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KOA Runway 17-35 Rehabilitation
SRA Panel Meeting with All Stakeholders

	Name	Panel Member/ SME	Company/Agency
☐	Cho, Melissa	SME	Delta Airlines
☐	Sugarliev, Irina	SME	Delta Airlines
☐	Lee, Linus	SME	Japan Airlines
☐	Takahashi, Keita	SME	Japan Airlines
☒	Richie Ly	SME	Air Canada
☐	Wilson, Toni	SME	Southwest Airlines
☒	Hodgson, George	Panel Member	Southwest ATC Support
☐	Dagger, Christopher	SME	Southwest Local Leader
☐	Kitchens, Jason	SME	Southwest Airlines
☐	Sellers, David	SME	Southwest Airlines
☐	Dehart, Scott	SME	Southwest Airlines
☐	Ryan O Connor	SME	Southwest Airlines
☐	David Herrera	SME	Southwest Airlines
☐	Michael Mrachek	SME	Southwest Airlines
☐	Emily Estapa	SME	Southwest Airlines
☐	Matthew Vigen	SME	Southwest Airlines
☐	Lawrence Turner	SME	Southwest Airlines
☐	Peter Crosby	SME	Southwest Airlines
☐	Clint Auten	SME	Southwest Airlines
☐	Brian Gleason	SME	Southwest Airlines
☐	John Walther	SME	Southwest Airlines
☐	Monica Soltero Solano	SME	Southwest Airlines
☐	Tara Kolstad	SME	Southwest Airlines
☐	Christopher Neidhardt	SME	Southwest Airlines
☐	John Zuzu	SME	Southwest Airlines
☐	Emily King	SME	Southwest Airlines
☒	Lewis, Jeremy	SME	Southwest Airlines
☐	Miller, Rick	SME	West Jet
☐	Shaw, Craig	SME	West Jet
☐	Zimmerman, Chris	SME	UPS
☐	Hettinger, Trey	SME	UPS
☐	Ochiai, Wes	SME	UPS
☐	Meyer, Dave	SME	UPS
☐	Hamm, Tom	SME	UPS
☐	Balsam, C	SME	UPS
☐	Yoshiki, Jared	SME	AOPA
☐	Melohn, Bill	Panel Member	GACH/AOPA

Appendix E

KOA Runway 17-35 Rehabilitation

SRA Panel Meeting with All Stakeholders

	Name	**Panel Member/ SME**	**Company/Agency**
☒	Blancett-Maddock, David	Panel Member	GA
☐	Gavel, Robert	SME	GA
☐	Hoff, Jeffery	SME	GA
☐	Donovan, James	SME	GA
☐	Osterholt, David	SME	GA
☐	Mann, James	SME	GA
☐	Lauro, Michael	SME	GA
☐	Anderson, Michael	SME	GA
☐	Cislo, Randall	SME	GA
☐	Kale, Timothy	SME	GA
☐	Fouts, Ben	SME	Mauna Loa Helicopters
☐	Tuiolosega, Herman	SME	DOT
☒	Severn, Ray	SME	DOT
☐	Hays, Hannah	SME	DOT
☒	Lum, Traci	SME	DOT
☒	Ward, Dawn	Co-facilitator	Base Management
☒	Wong, Steve	Co-facilitator	Base Management
☒	DeMattos, Dalyn	Tech Writer	Base Management
☒	Silva, Emilia	Tech Writer	Base Management
☐	Sue Yamauchi	Tech Writer	Base Management
☒	Ken Rewick	Facilitation Support	Base Management

Safety Assessment Screening for Projects (SAS-1)

SMS ID:

11. SRM Panel Members and Certification

We certify that we have reviewed the project documentation and have fully considered the potential hazards (and any proposed mitigation measures) before reaching this determination. Dissenting opinions concerning the determination are included in the report.

Name	Organization	Title	Date	Signature
David Clark	FAA AJV-W24	Aeronautical Information Specialist	9/15/2023	David Michael Clark Digitally signed by David Michael Clark Date: 2023.09.15 05:07:05 -07'00'

12. Airport Certification and Acceptance

As a duly authorized representative of the sponsor of the airport identified above, I hereby certify that I have reviewed and understand the hazards and mitigation measures identified in the attached documentation. I further certify that I understand it is our legal duty, as sponsor, to ensure that any and all airport-related mitigation measures are fulfilled and documented in a timely manner. Any such commitments on our part represent an obligation under our Federal grant assurances, regardless of whether the FAA participates in the funding of any part of the Proposed Action. Nothing in the FAA's review may be deemed as relieving the sponsor of its legal obligations as owner and operator of the airport.

Name and Title	Date	Signature

13. FAA SRM Approval

Hazards were identified and analyzed using standard procedures and processes in accordance with FAA Order 5200.11. Mitigation measures, including draft NOTAM requirements, if necessary, are attached and are included with the formal FAA project approval action. These measures will help ensure safety levels are maintained at acceptable levels both during and after the proposed construction and non-construction airport changes.

Name and Title	Date	Signature

Safety Assessment Screening for Projects (SAS-1)

SMS ID:

11. SRM Panel Members and Certification

We certify that we have reviewed the project documentation and have fully considered the potential hazards (and any proposed mitigation measures) before reaching this determination. Dissenting opinions concerning the determination are included in the report.

Name	Organization	Title	Date	Signature
Perfecto Delmendo	AvairPros	Senior Director	09/15/23	Perfecto Delmendo Digitally signed by Perfecto Delmendo DN: C=US, E=p.delmendo@avairpros.com, O=AvAirPros, CN=Perfecto Delmendo Reason: I have reviewed this document Date: 2023.09.15 10:36:29-10'00'

12. Airport Certification and Acceptance

As a duly authorized representative of the sponsor of the airport identified above, I hereby certify that I have reviewed and understand the hazards and mitigation measures identified in the attached documentation. I further certify that I understand it is our legal duty, as sponsor, to ensure that any and all airport-related mitigation measures are fulfilled and documented in a timely manner. Any such commitments on our part represent an obligation under our Federal grant assurances, regardless of whether the FAA participates in the funding of any part of the Proposed Action. Nothing in the FAA's review may be deemed as relieving the sponsor of its legal obligations as owner and operator of the airport.

Name and Title	Date	Signature

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Name and Title	Date	Signature

Safety Assessment Screening for Projects (SAS-1)

SMS ID:

11. SRM Panel Members and Certification

We certify that we have reviewed the project documentation and have fully considered the potential hazards (and any proposed mitigation measures) before reaching this determination. Dissenting opinions concerning the determination are included in the report.

Name	Organization	Title	Date	Signature
Neil Okuna	Honolulu Control Facility	Support Specialist	10/2/2023	NEIL N OKUNA Digitally signed by NEIL N OKUNA Date: 2023.10.03 02:01:00 -10'00'

12. Airport Certification and Acceptance

As a duly authorized representative of the sponsor of the airport identified above, I hereby certify that I have reviewed and understand the hazards and mitigation measures identified in the attached documentation. I further certify that I understand it is our legal duty, as sponsor, to ensure that any and all airport-related mitigation measures are fulfilled and documented in a timely manner. Any such commitments on our part represent an obligation under our Federal grant assurances, regardless of whether the FAA participates in the funding of any part of the Proposed Action. Nothing in the FAA's review may be deemed as relieving the sponsor of its legal obligations as owner and operator of the airport.

Name and Title	Date	Signature

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Name and Title	Date	Signature

Safety Assessment Screening for Projects (SAS-1) **Page 3**

SMS ID:

11. SRM Panel Members and Certification

We certify that we have reviewed the project documentation and have fully considered the potential hazards (and any proposed mitigation measures) before reaching this determination. Dissenting opinions concerning the determination are included in the report.

Name	Organization	Title	Date	Signature
George Hodgson	Southwest Airlines	Sr. ATC Systems Prgm Mgr.	10/04/2023	George Hodgson

12. Airport Certification and Acceptance

As a duly authorized representative of the sponsor of the airport identified above, I hereby certify that I have reviewed and understand the hazards and mitigation measures identified in the attached documentation. I further certify that I understand it is our legal duty, as sponsor, to ensure that any and all airport-related mitigation measures are fulfilled and documented in a timely manner. Any such commitments on our part represent an obligation under our Federal grant assurances, regardless of whether the FAA participates in the funding of any part of the Proposed Action. Nothing in the FAA's review may be deemed as relieving the sponsor of its legal obligations as owner and operator of the airport.

Name and Title	Date	Signature

13. FAA SRM Approval

Hazards were identified and analyzed using standard procedures and processes in accordance with FAA Order 5200.11. Mitigation measures, including draft NOTAM requirements, if necessary, are attached and are included with the formal FAA project approval action. These measures will help ensure safety levels are maintained at acceptable levels both during and after the proposed construction and non-construction airport changes.

Name and Title	Date	Signature

Ground Rules

- Open, honest communications
- No sidebar conversations
- All Panel Members input is important
- Be respectful towards each other
- Request no electronic recording of this meeting
- Participants should compile their own notes
    - (notes will not be distributed by the facilitation team)
- Please state your name each time before speaking
- Please mute microphones when not speaking, remember to unmute before speaking (*6 for phone)
- Anyone can call an ELMO (Enough, Let's Move On)

****Absence of an answer is understood as agreement****

Definitions

Accident – an unplanned event or series of events that results in death, injury, occupational illness, damage to or loss of equipment or property, or damage to the environment.

Cause – events occurring independently or in combination that result in a hazard or failure

Credible – capable of being believed. Worthy of belief or confidence. Sound, rational, defendable, and data driven.

Effect – real or credible harmful outcome that could be created if the hazard occurs in the defined system state.

Hazard – any real or potential condition that can result in injury, illness, or death to people; damage to or loss of a system equipment, or property; or damage to the environment.

Likelihood – the estimated probability or frequency, in quantitative or qualitative terms, of an occurrence related to the hazard. *Likelihood is the estimated probability or frequency of a hazard's effect; often an expression of how often an effect is expected to occur.*

Residual Safety Risk – the remaining safety risk that exists after all control techniques have been implemented or exhausted, and all controls have been verified. *Only verified controls can be used for the assessment of residual safety risk.*

Risk Analysis – the process during which a hazard is characterized for its likelihood and the severity of its effect or harm. Risk analysis can be either quantitative or qualitative; however, the inability to quantify or the lack of historical data on a particular hazard does not preclude the need for analysis.

Risk Assessment- assessment of the system or component to compare the achieved risk level with the tolerable risk level.

Risk Matrix – tool that combines severity and likelihood to assess risks as unacceptable, acceptable with mitigation, and acceptable.

Safety Assessment – a systematic, comprehensive evaluation of an implemented system.

Safety Risk - the composite of the likelihood of the potential effect of a hazard and predicted severity of that effect.

Safety Risk Control (Risk Mitigation) – any action taken to eliminate hazards or to mitigate their effects by reducing the severity and/or likelihood of the risk associated with those hazards. Safety risk controls necessary to mitigate an unacceptable risk should be mandatory, measurable, and monitored for effectiveness.

Safety Risk Management (SRM) - a formal process within the SMS composed of describing the system, identifying the hazards, assessing the risk, analyzing the risk, and mitigating the risk.

Severity – the consequence or impact of a hazard in terms of degree or loss or harm. *Severity is the measure of how bad the results of an event are predicted to be; usually determined by the worst credible outcome.*

Roles and Responsibilities

Facilitator – Responsible to follow the SMS process. Engages the panel to develop a thorough SRM Safety Assessment ensuring all relevant perspectives are considered, soliciting expert advice and building group consensus whenever possible. Cultivates discussion among panel members about potential hazards, risks, and mitigations. Manages conflicts that arise during the panel meeting, including biased observers and dissenting opinions. Facilitator does not make the final decision concerning findings of the panel. If the panel does reach a sound consensus, the FAA Project Manager has the final say on the findings of the panel.55555

Technical Writer – Documents discussions, PHL, PHA and consensus.

Panel Member – Invited as an SME to participate in discussions, share technical expertise, identify/analyze risks and reach consensus on level of risk. Panel Members are SME's in their own specialized field. They are expected to have the authority to represent and make decisions for their respective organization. Panel Members are required to sign the resulting SRMD or provide dissenting opinion and rationale.

Subject Matter Expert (SME) – Invited for technical expertise and operational responsibilities. If the panel of SME's already consists of someone with your knowledge and background, you do not need to be a panel member. An example of an SME not on a panel is a planning or design consultant who supports the panel through research and preparation of documents.

List of Reference Documents

ACRP Report 1, Volume 1 – SMS for Airports Overview, 2007

ACRP Report 1, Volume 2 – SMS for Airports Guidebook, 2009

ACRP 58 – Safety Reporting Systems at Airports, 2014

ACRP 131 – Guidebook for SRM, 2015

FAA AC 150/5200-37A – Introduction to Safety Management Systems (SMS) for Airport Operators

FAA Order 5200.11 Change 3 – FAA Airports (ARP) Safety Management System (SMS), August 2014

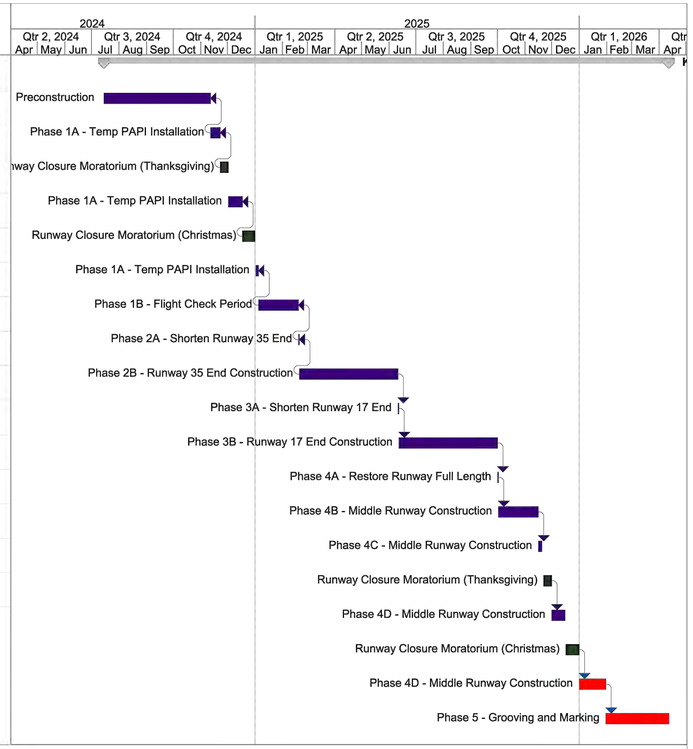
FAA Order 8000.369B, Safety Management System

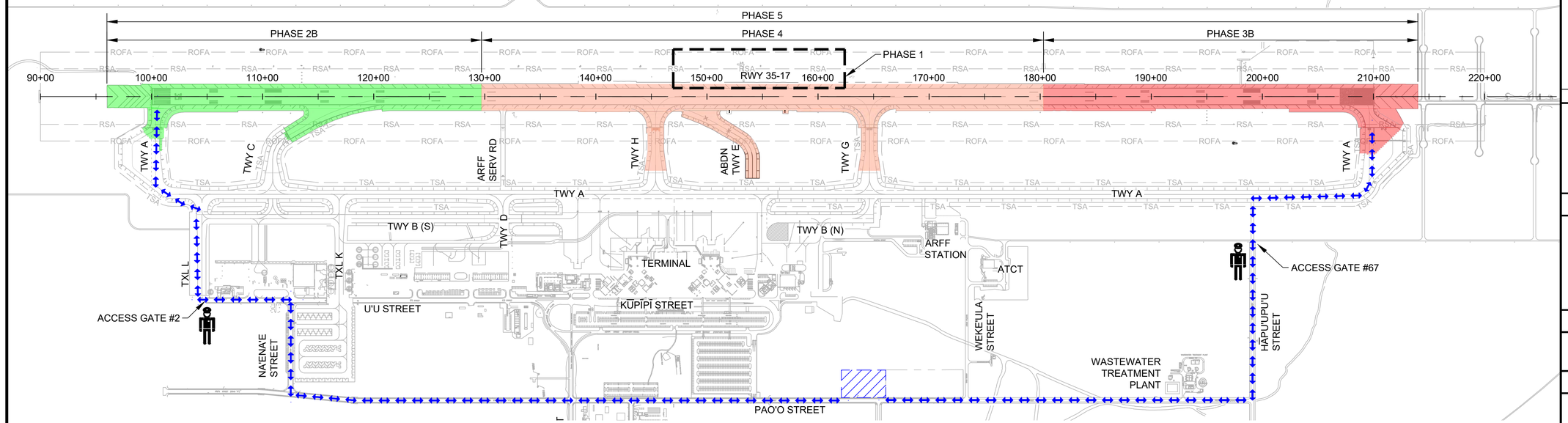
FAA Order 8040.4B, Safety Risk Management Policy

FAA Office of Airports (ARP) SMS Desk Reference, June 2012

Standard Operating Procedure for Safety Risk Management under the FAA Office of Airports Safety Management System

ID	Task Name	Start	Finish	Duration
0	**KOA 17-35 REHABILITATION**	Mon 7/15/24	Sun 4/12/26	636 days
1	Preconstruction	Mon 7/15/24	Tue 11/12/24	120 days
2	Phase 1A - Temp PAPI Installation	Tue 11/12/24	Sat 11/23/24	11 days
3	Runway Closure Moratorium (Thanksgiving)	Sat 11/23/24	Mon 12/2/24	9 days
4	Phase 1A - Temp PAPI Installation	Mon 12/2/24	Wed 12/18/24	16 days
5	Runway Closure Moratorium (Christmas)	Wed 12/18/24	Wed 1/1/25	14 days
6	Phase 1A - Temp PAPI Installation	Thu 1/2/25	Sun 1/5/25	3 days
7	Phase 1B - Flight Check Period	Sun 1/5/25	Wed 2/19/25	45 days
8	Phase 2A - Shorten Runway 35 End	Wed 2/19/25	Thu 2/20/25	1 day
9	Phase 2B - Runway 35 End Construction	Thu 2/20/25	Wed 6/11/25	111 days
10	Phase 3A - Shorten Runway 17 End	Wed 6/11/25	Thu 6/12/25	1 day
11	Phase 3B - Runway 17 End Construction	Thu 6/12/25	Wed 10/1/25	111 days
12	Phase 4A - Restore Runway Full Length	Wed 10/1/25	Thu 10/2/25	1 day
13	Phase 4B - Middle Runway Construction	Thu 10/2/25	Sun 11/16/25	45 days
14	Phase 4C - Middle Runway Construction	Sun 11/16/25	Thu 11/20/25	4 days
15	Runway Closure Moratorium (Thanksgiving)	Sat 11/22/25	Mon 12/1/25	9 days
16	Phase 4D - Middle Runway Construction	Mon 12/1/25	Tue 12/16/25	15 days
17	Runway Closure Moratorium (Christmas)	Wed 12/17/25	Thu 1/1/26	15 days
18	Phase 4D - Middle Runway Construction	Thu 1/1/26	Sat 1/31/26	30 days
19	Phase 5 - Grooving and Marking	Sat 1/31/26	Sun 4/12/26	71 days





PHASING OVERVIEW PLAN

LEGEND:

- PHASE 2
- PHASE 3
- PHASE 4
- CONTRACTOR STAGING AREA
- CONTRACTOR HAUL ROUTE (2 WAY)
- SECURITY GUARD (SEE SPEC 01565 SECURITY MEASURES)
- ROFA — RUNWAY OBJECT FREE AREA
- RSA — RUNWAY SAFETY AREA
- TOFA — TAXIWAY OBJECT FREE AREA
- TSA — TAXIWAY SAFETY AREA

CONSTRUCTION PHASING GENERAL NOTES:

1. ALL AOA AIRCRAFT PAVEMENT SURFACES SHALL BE OPEN TO AIRCRAFT OPERATIONS AT ALL TIMES OTHER THAN DESIGNATED CLOSURES.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DEPLOYING, MAINTAINING, AND REMOVING THE LIGHTED "X" SIGNALS IN ACCORDANCE WITH THE CONSTRUCTION PHASING PLANS.
3. PRIOR TO REOPENING THE RUNWAY, THE CONTRACTOR SHALL REPAVE ALL MILLED SURFACES AND ENSURE NO DROPOFFS ARE PRESENT. THERE SHALL BE NO GREATER THAN 3" DROP WITHIN THE RUNWAY OR TAXIWAY SAFETY AREAS.

SCALE: 500' 0 500' 1000' — 1" = 500'-0"

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
AIRPORTS

MARTIN A. CLEVEN
LICENSED PROFESSIONAL ENGINEER
No. 12828-C
HAWAII U.S.A.

4/30/24
Licensed Expiration Date

This work was prepared by me or under my supervision.

DSGN.	DRWN.	CHKD.	APPD.
AC	AT	TR	SH

KEY PLAN / NOTES:

NO.	DATE	REVISIONS

CONSTRUCTION DOCUMENTS
SEPTEMBER 2023
DATE

PROJECT TITLE :

RUNWAY 17-35 REHABILITATION
AT
ELLISON ONIZUKA KONA INTERNATIONAL AIRPORT AT KEAHOLE
KAILUA-KONA, HAWAII

PROJECT NO.:

AH2021-16

SHEET TITLE:

PHASING AND BARRICADE PLAN OVERVIEW

DATE :	DWG. NO.
09/2023	G-101
SHEET :	
6 OF 190 SHEETS	

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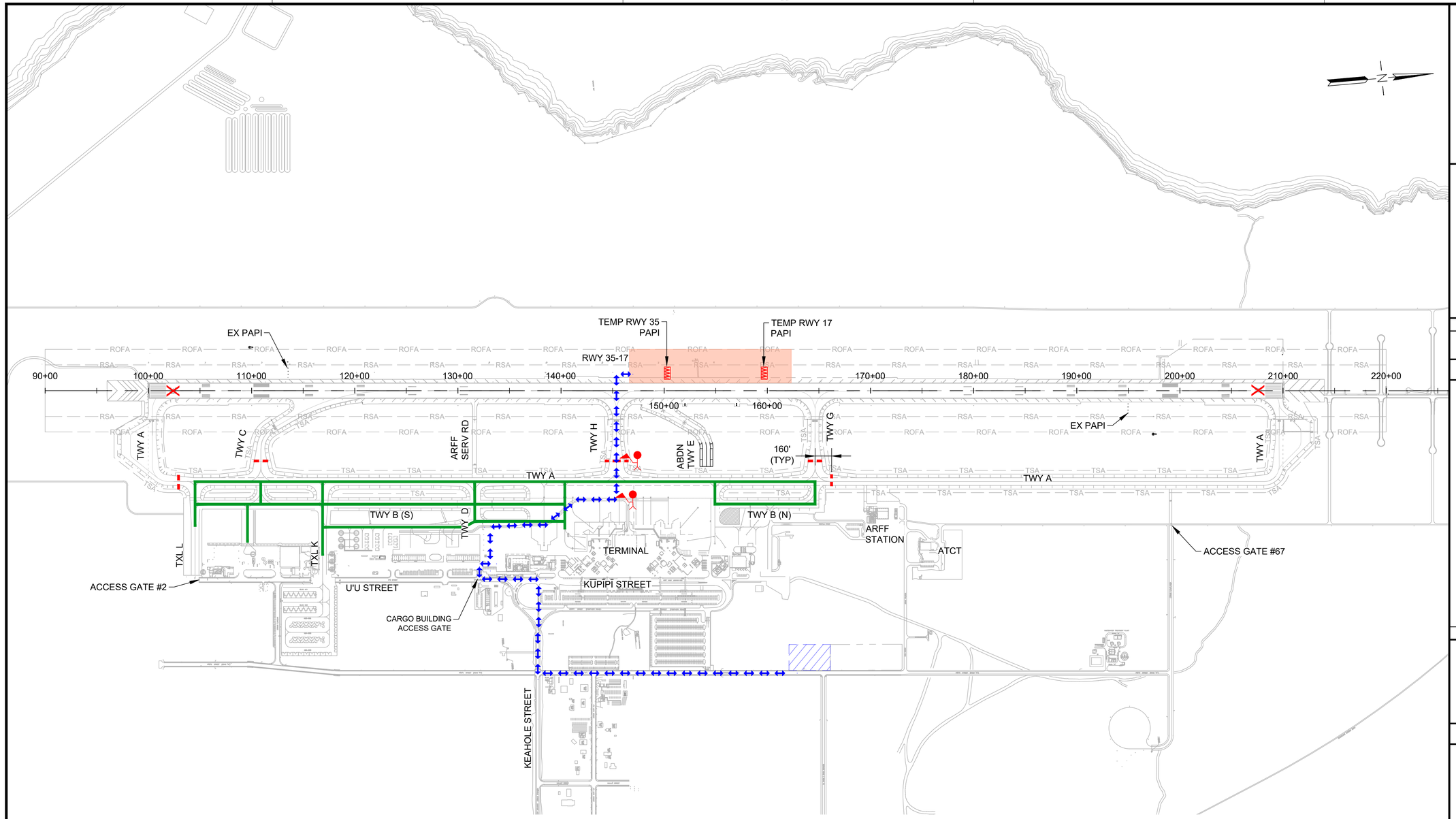


LEGEND:

- WORK AREA
- AIRCRAFT TRAVEL ROUTE
- LOW-PROFILE BARRICADES (CONTINUOUS)
- LOW-PROFILE BARRICADES (WITH GAPS)
- X — LIGHTED CLOSED RUNWAY MARKER
- CONTRACTOR STAGING AREA
- CONTRACTOR HAUL ROUTE (2 WAY)
- BLAST FENCE BARRIER
- FLAGGERS

PHASING AND BARRICADE PLAN - PHASE 1A

DESCRIPTION OF WORK:
TEMPORARY PAPI INSTALLATION AND PREPARATORY WORK
REPLACE RUNWAY EDGE LIGHTS AND CCR

HOURS:
2200-0600 DAILY

DURATION:
30 WORKING DAYS
ANTICIPATED DATES: 11/12/2024 TO 11/23/2024
12/2/2024 TO 12/18/2024
1/2/2025 TO 1/5/2025

REQUIRED NOTAMS (WORK HOURS ONLY):
1. RUNWAY 17-35 CLOSED
2. TAXIWAY A CLOSED, SOUTH OF TAXILANE L
3. TAXIWAY C CLOSED
4. TAXIWAY H CLOSED
5. TAXIWAY G CLOSED
6. TAXIWAY A CLOSED, NORTH OF TAXIWAY G

NAVAID STATUS:
RUNWAY 17 PAPI: OTS
RUNWAY 17 LOC/DME: OTS
RUNWAY 17 GS: OTS
RUNWAY 35 PAPI: OTS

PHASING NOTES:
1. TEMP PAPIS TO REMAIN OUT OF SERVICE DURING NON-WORKING HOURS.
2. IN THE EVENT OF EMERGENCY, CONTRACTOR SHALL VACATE THE RSA AND REOPEN THE RUNWAY WITHIN 1-HR NOTICE BY AIRPORT OPERATIONS FOR ARRIVAL OR DEPARTURE OF EMERGENCY MEDEVAC AIRCRAFT.

SEQUENCE OF WORK:
1. INSTALL LIGHTED CLOSED RUNWAY SIGN AND LOW-PROFILE BARRICADES.
2. PERFORM WORK.
3. REQUEST INSPECTION FOLLOWING CLEANING, PERFORM ADDITIONAL CLEANING AS NEEDED.
4. REMOVE LIGHTED CLOSED RUNWAY SIGN AND LOW-PROFILE BARRICADES.

SCALE: 500' 0 500' 1000' — 1" = 500'

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
AIRPORTS

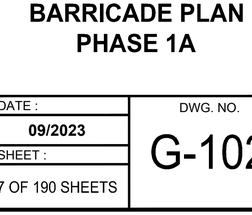
MARTIN A. CLEVEN
LICENSED PROFESSIONAL ENGINEER
No. 12828-C
HAWAII U.S.A.

4/30/24
Licensed Expiration Date

This work was prepared by me or under my supervision.

DSGN.	DRWN.	CHKD.	APPD.
AC	AT	TR	SH

KEY PLAN / NOTES:



NO.	DATE	REVISIONS

CONSTRUCTION DOCUMENTS
SEPTEMBER 2023
DATE

PROJECT TITLE :

RUNWAY 17-35 REHABILITATION
AT
ELLISON ONIZUKA
KONA INTERNATIONAL AIRPORT AT KEAHOLE
KAILUA-KONA, HAWAII

PROJECT NO.:
AH2021-16

SHEET TITLE:
PHASING AND BARRICADE PLAN PHASE 1A

DATE : 09/2023
SHEET : 7 OF 190 SHEETS
DWG. NO. G-102

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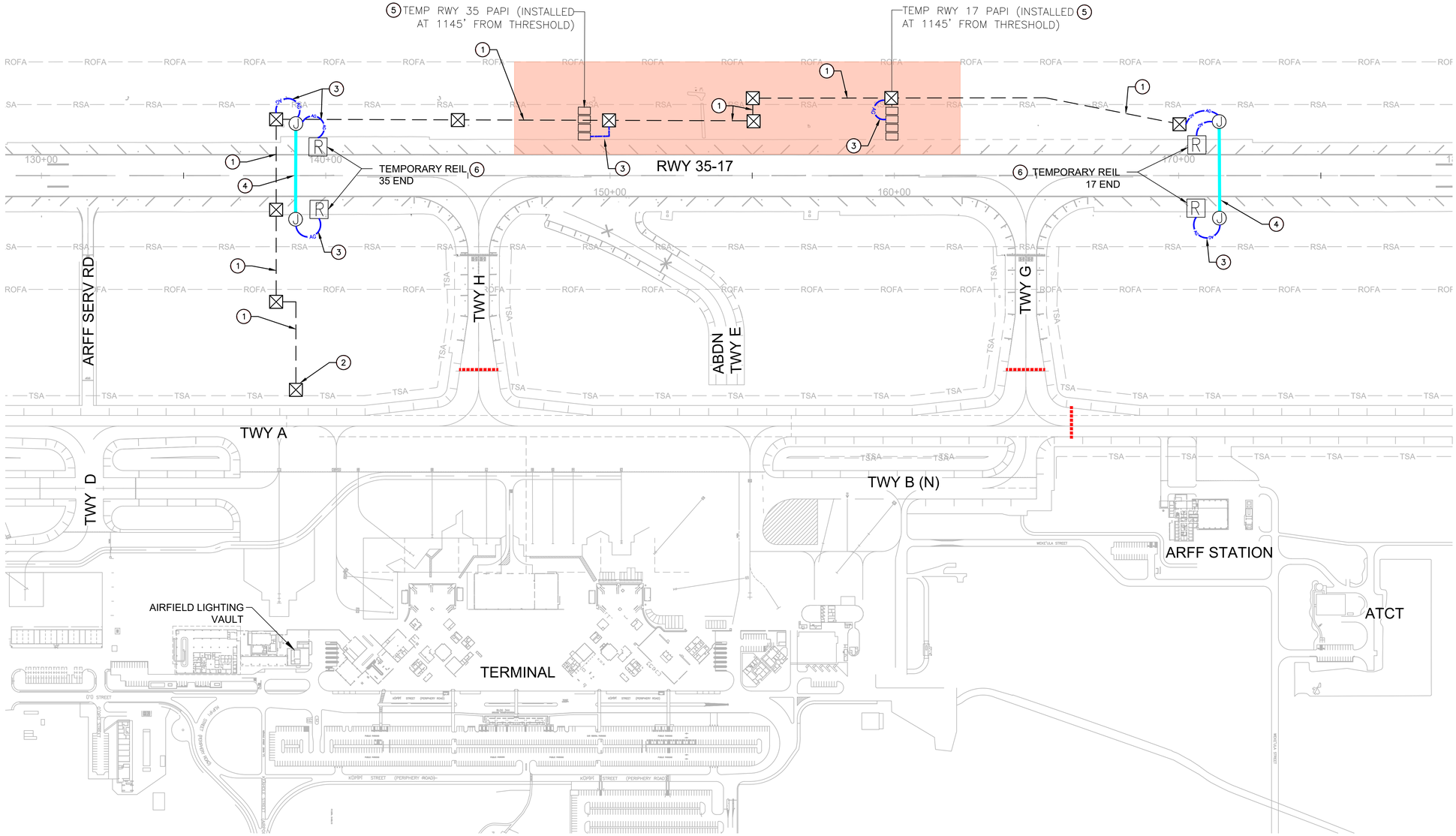

TEMPORARY ELECTRICAL LEGEND

- WORK AREA
- LOW-PROFILE BARRICADES (WITH GAPS)
- INSTALL TEMPORARY ABOVE GROUND CONDUIT AND 2#8 AFL CABLE, U.O.N.
- INSTALL TEMPORARY SAW-KERF FOR REIL COMMUNICATION CABLES, REFER TO DETAIL 3/G126.
- EXISTING HANDHOLE TO BE ACCESSED FOR CABLE PULL.
- INSTALL TEMPORARY REIL ON STEEL PLATE, REFER TO DETAIL 1/G130.
- INSTALL TEMPORARY PAPI ON STEEL PLATE, REFER TO DETAIL 1/G129.
- INSTALL JUNCTION CAN FOR TEMPORARY REIL POWER AND COMMUNICATION.

KEY NOTES

ITEMS TO BE TEMPORARILY INSTALLED.

1. INSTALL 2#8 5KV L-824C CABLES IN EXISTING DUCTBANK TO FEED TEMPORARY PAPI AND REILS.
2. SPLICE INTO CKT R-4 (TAXIWAY A EDGE LIGHTS - MIDDLE) WITH 2#8 5KV CABLES.
3. INSTALL ABOVE GROUND 2" RGS CONDUIT AND CABLES FOR TEMPORARY PAPI POWER.
4. INSTALL SAW-KERF CONDUIT FOR TEMPORARY REIL CONNECTION. REFER TO DETAIL 3 ON SHEET G-129 FOR INSTALLATION DETAIL.
5. INSTALL TEMPORARY PAPI ON STEEL PLATES. REFER TO DETAIL 1 ON SHEET G-129 FOR INSTALLATION REQUIREMENTS.
6. INSTALL TEMPORARY REIL ON STEEL BOX. REFER TO DETAIL 2 ON SHEET G-130 FOR INSTALLATION REQUIREMENTS.

SHEET NOTES

1. CONTRACTOR SHALL INSTALL HIGH INTENSITY RUNWAY EDGE/END LIGHTS AND CCRS (PER NEW ELECTRICAL PLANS) DURING PHASE 1 WITH THE FOLLOWING SEQUENCE:
   STEP 1: INSTALL NEW CCRS AND ENERGIZE EXISTING LIGHTS WITH NEW CCRS. THIS WORK CAN BE PERFORMED IN THE DAY TIME INSIDE THE AIRFIELD LIGHTING VAULT.
   STEP 2: DURING EACH NIGHT SHIFT, CONTRACTOR SHALL FURNISH AND INSTALL NEW TRANSFORMERS AND ENERGIZE NEW TRANSFORMERS WITH EXISTING LIGHTS.
   STEP 3: AFTER ALL TRANSFORMERS ARE INSTALLED, CONTRACTOR SHALL FURNISH AND INSTALL NEW RUNWAY EDGE LIGHTS IN A SINGLE NIGHT CLOSURE.
   NOTE: RUNWAY EDGE LIGHT CIRCUIT SHALL ALWAYS BE ENERGIZED BETWEEN ONE HOUR PRIOR TO SUNSET AND ONE HOUR PRIOR TO SUNRISE.

200' 0 200' 400'
SCALE: 1" = 200'

STATE OF HAWAII 1959
Airports Division
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
AIRPORTS

DORON LEAN
LICENSED PROFESSIONAL ENGINEER
No. 14476-E
HAWAII, U.S.A.
04/30/2024
Licensed Expiration Date

DSGN.	DRWN.	CHKD.	APPD.
JP	KV	JA	DL

KEY PLAN / NOTES:

NO.	DATE	REVISIONS

CONSTRUCTION DOCUMENT
SEPTEMBER 2023
DATE

PROJECT TITLE :

RUNWAY 17-35 REHABILITATION

AT
ELLISON ONIZUKA
KONA INTERNATIONAL AIRPORT AT KEAHOLE
KAILUA-KONA, HAWAII

PROJECT NO.:

AH2021-16

SHEET TITLE:

ELECTRICAL PHASING PLAN 1A

DATE : 09/2023

SHEET : 8 OF 190 SHEETS

DWG. NO. G-103

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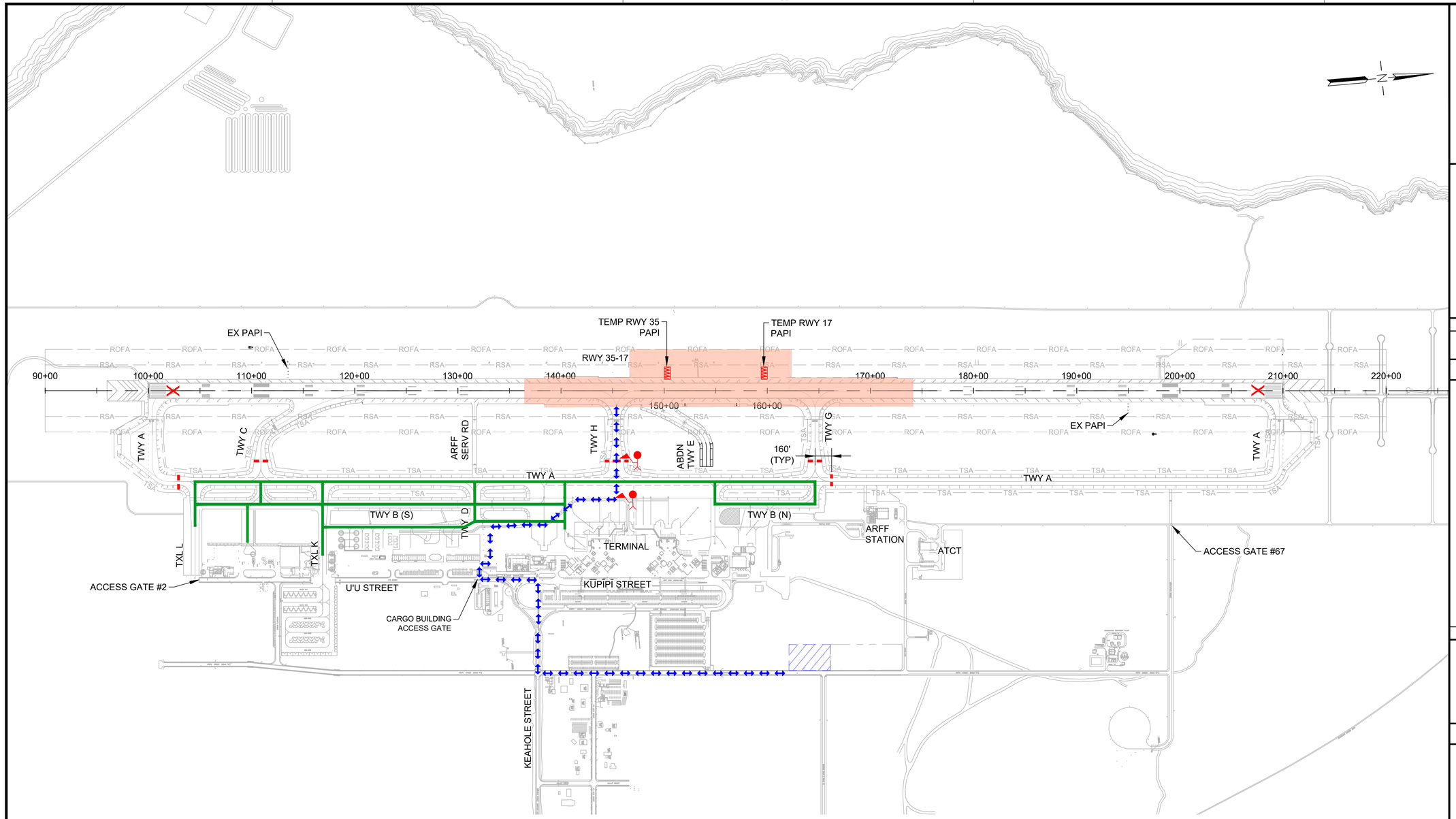


LEGEND:

- WORK AREA
- AIRCRAFT TRAVEL ROUTE
- LOW-PROFILE BARRICADES (CONTINUOUS)
- LOW-PROFILE BARRICADES (WITH GAPS)
- X — LIGHTED CLOSED RUNWAY MARKER
- CONTRACTOR STAGING AREA
- CONTRACTOR HAUL ROUTE (2 WAY)
- BLAST FENCE BARRIER
- FLAGGERS
- SECURITY GUARD (SEE SPEC 01565 SECURITY MEASURES)

PHASING AND BARRICADE PLAN - PHASE 1B

DESCRIPTION OF WORK:
FLIGHT INSPECTION

HOURS:
0600-0900 DAILY

DURATION:
2 CALENDAR DAYS
ANTICIPATED DATES: 1/6/2025 TO 2/19/2025

REQUIRED NOTAMS (WORK HOURS ONLY):

NAVAID STATUS:

RUNWAY 17 PAPI (FAA):	OTS
RUNWAY 17 PAPI (TEMP):	IN-SERVICE
RUNWAY 17 LOC/DME:	OTS
RUNWAY 17 GS:	OTS
RUNWAY 35 PAPI (FAA):	OTS
RUNWAY 35 PAPI (TEMP):	IN-SERVICE

PHASING NOTES:
1. TEMP PAPIS TO REMAIN OUT OF SERVICE DURING NON-WORKING HOURS.
2. CONTRACTOR SHALL COORDINATE WITH FAA, AND PROVIDE AND INSTALL TEMPORARY THRESHOLD BAR AND AIMING POINTS MADE FROM WHITE PAINTED PLYWOOD DURING FAA FLIGHT CHECK FOR EACH TEMPORARY PAPI LOCATION. PLYWOOD SHALL BE ANCHORED WITH SANDBAGS NO GREATER THAN 3" HIGH.

SCALE: 500' 0 500' 1000' — 1" = 500'

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
AIRPORTS

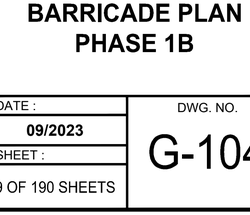
MARTIN A. CLEVEN
LICENSED PROFESSIONAL ENGINEER
No. 12828-C
HAWAII U.S.A.

4/30/24
Licensed Expiration Date

This work was prepared by me or under my supervision.

DSGN.	DRWN.	CHKD.	APPD.
AC	AT	TR	SH

KEY PLAN / NOTES:



NO.	DATE	REVISIONS

CONSTRUCTION DOCUMENTS
SEPTEMBER 2023
DATE

PROJECT TITLE :

RUNWAY 17-35 REHABILITATION
AT
ELLISON ONIZUKA
KONA INTERNATIONAL AIRPORT AT KEAHOLE
KAILUA-KONA, HAWAII

PROJECT NO.:
AH2021-16

SHEET TITLE:
PHASING AND BARRICADE PLAN PHASE 1B

DATE : 09/2023
SHEET : 9 OF 190 SHEETS
DWG. NO. G-104

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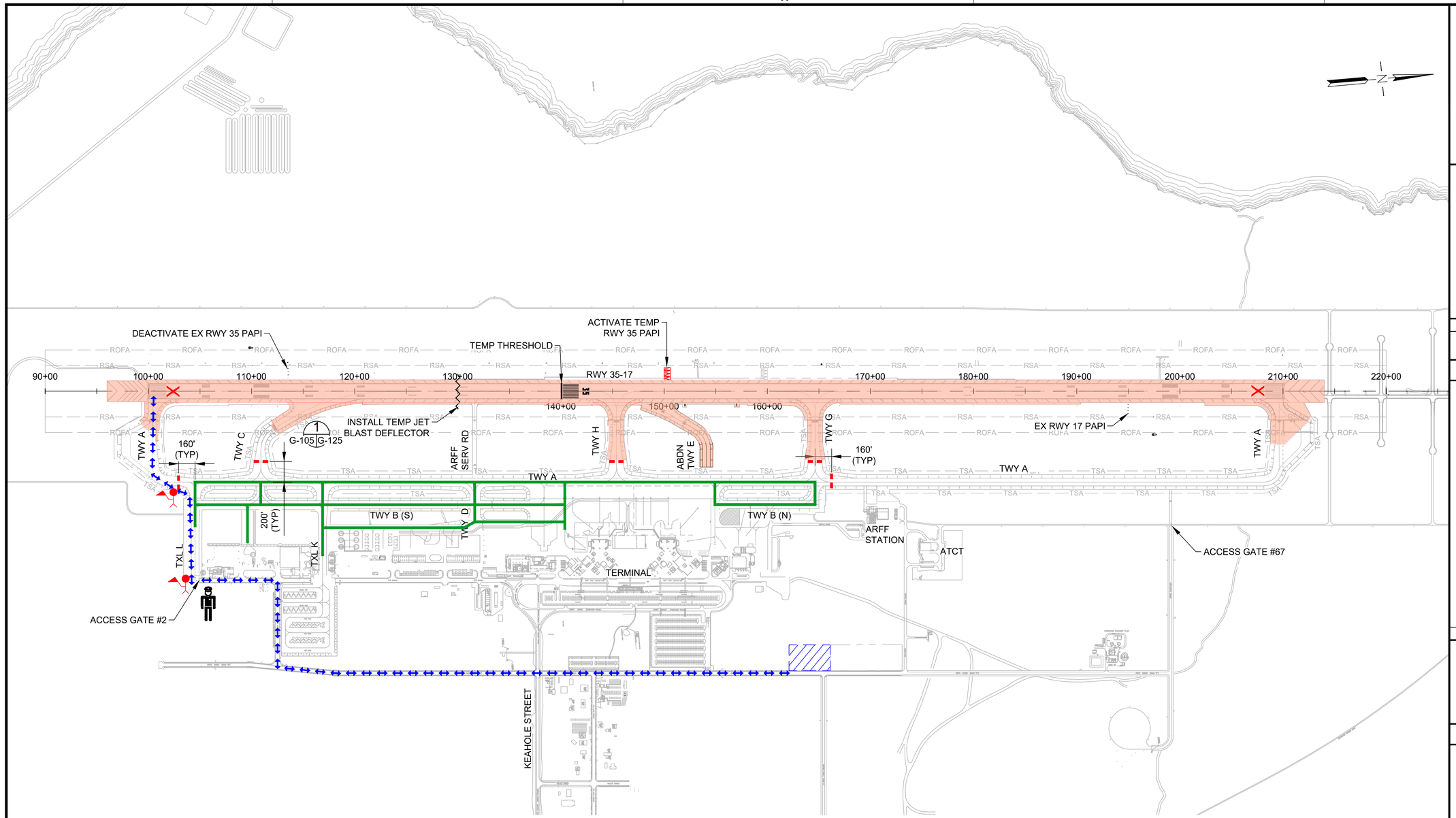


LEGEND:

- WORK AREA
- AIRCRAFT TRAVEL ROUTE
- LOW-PROFILE BARRICADES (CONTINUOUS)
- LOW-PROFILE BARRICADES (WITH GAPS)
- LIGHTED CLOSED RUNWAY MARKER
- CONTRACTOR STAGING AREA
- CONTRACTOR HAUL ROUTE (2 WAY)
- BLAST FENCE BARRIER
- FLAGGERS
- SECURITY GUARD (SEE SPEC 01565 SECURITY MEASURES)

PHASING AND BARRICADE PLAN - PHASE 2A

DESCRIPTION OF WORK:
INSTALL TEMPORARY RUNWAY 35 THRESHOLD, MARKING REMOVAL, TEMPORARY MARKING, AND ELECTRICAL WORK REQUIRED FOR SHORTENED RUNWAY CONFIGURATION

HOURS:
2200-0600

DURATION:
ANTICIPATED DATE: 2/19/2025

REQUIRED NOTAMS (WORK HOURS ONLY):
1. RUNWAY 17-35 CLOSED
2. TAXIWAY A CLOSED, SOUTH OF TAXILANE L
3. TAXIWAY C CLOSED
4. TAXIWAY H CLOSED
5. TAXIWAY G CLOSED
6. TAXIWAY A CLOSED, NORTH OF TAXIWAY G

NAVAID STATUS:

RUNWAY 17 PAPI (FAA):	OTS
RUNWAY 17 PAPI (TEMP):	OTS
RUNWAY 17 LOC/DME:	OTS
RUNWAY 17 GS:	OTS
RUNWAY 35 PAPI (FAA):	OTS
RUNWAY 35 PAPI (TEMP):	OTS

PHASING NOTES:
1. SEE DWG G-106 FOR DESCRIPTION OF MARKING REMOVAL, TEMPORARY MARKING, AND TEMPORARY ELECTRICAL REQUIREMENTS.
2. ALL TEMP MARKINGS SHALL BE HALF APPLICATION MARKINGS.
3. SEE SPECIAL PROVISIONS FOR LIQUIDATED DAMAGES FOR FAILURE TO REOPEN THE RUNWAY AT 0600 HRS.

500' 0 500' 1000'
SCALE: 1" = 500'

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
AIRPORTS

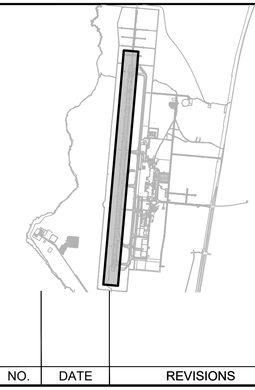
MARTIN A. CLEVEN
LICENSED PROFESSIONAL ENGINEER
No. 12828-C
HAWAII U.S.A.

4/30/24
Licensed Expiration Date

This work was prepared by me or under my supervision.

DSGN.	DRWN.	CHKD.	APPD.
AC	AT	TR	SH

KEY PLAN / NOTES:



NO.	DATE	REVISIONS

CONSTRUCTION DOCUMENTS
SEPTEMBER 2023
DATE

PROJECT TITLE :

RUNWAY 17-35 REHABILITATION

AT
ELLISON ONIZUKA
KONA INTERNATIONAL AIRPORT AT KEAHOLE
KAILUA-KONA, HAWAII

PROJECT NO.:

AH2021-16

SHEET TITLE:

PHASING AND BARRICADE PLAN PHASE 2A

DATE :	DWG. NO.
09/2023	G-105
SHEET :	
10 OF 190 SHEETS	

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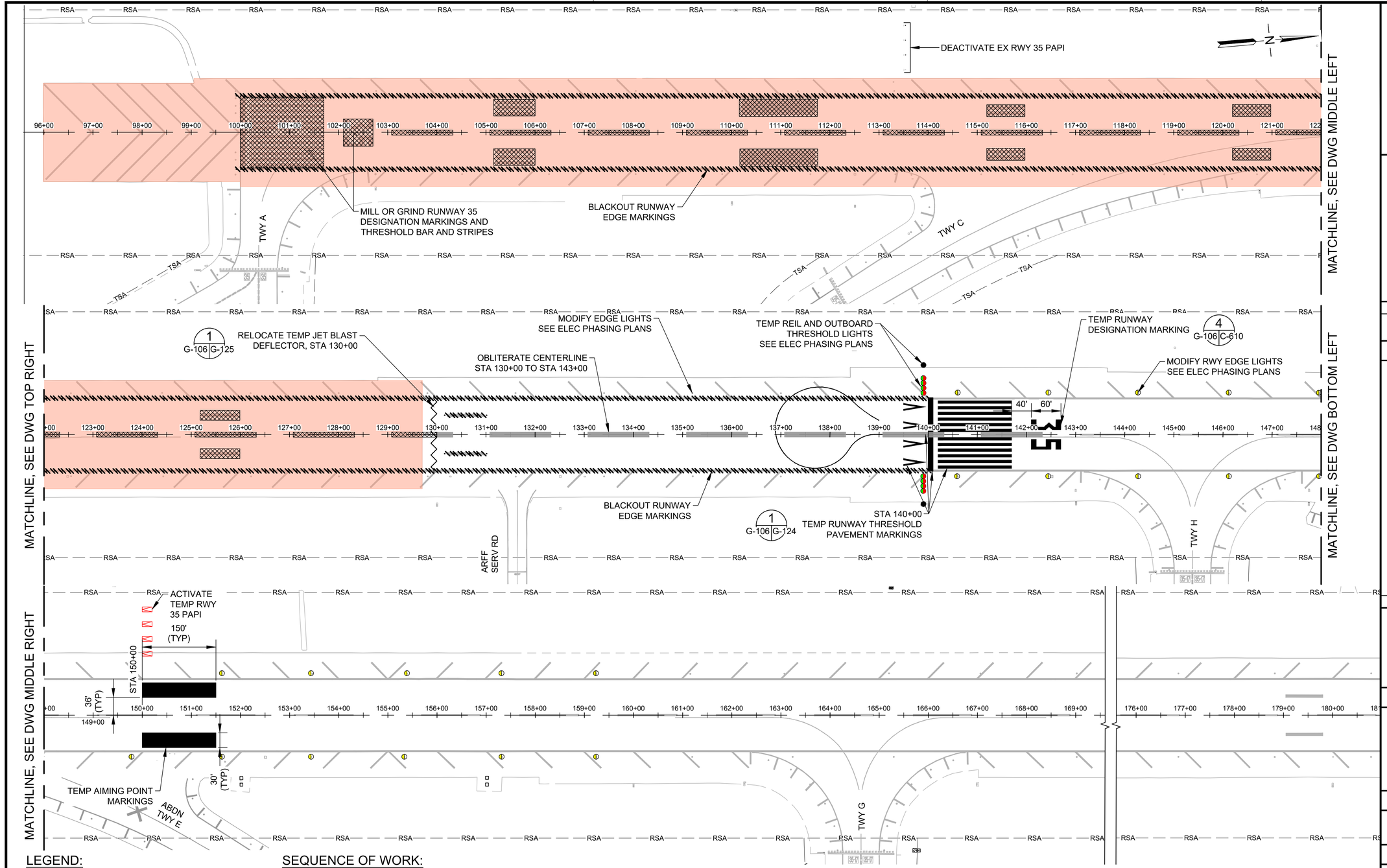


LEGEND:

- PHASE 2B WORK AREA
- TEMP BLAST DEFLECTOR
- TEMP RUNWAY LIGHTS
- BLACKOUT MARKING
- MARKING REMOVAL - OBLITERATION
- MODIFY RUNWAY EDGE LIGHTS
- MARKING REMOVAL - MILL OR GRIND

SEQUENCE OF WORK:

1. CONFIRM RWY AND TWY CLOSURES WITH KOA OPERATIONS.
2. INSTALL LIGHTED X'S AT EACH END OF RWY.
3. INSTALL REQUIRED LOW-PROFILE BARRICADES.
4. RELOCATE JET BLAST DEFLECTOR.
5. MARKING REMOVAL
   - A. OBLITERATE CONFLICTING SPHPS MARKINGS.
   - B. OBLITERATE RWY CENTERLINE MARKINGS IN 1,000' RSA AS SHOWN.
   - C. MILL OR GRIND TWY MARKINGS IN WORK AREA AS SHOWN.
6. APPLY TEMPORARY MARKINGS AS SHOWN.
7. ELECTRICAL
   - A. ACTIVATE TEMP RWY 35 PAPI.
   - B. INSTALL TEMP RWY 35 OUTBOARD THRESHOLD AND REIL LIGHTS.
   - C. CHANGE RWY EDGE LIGHTING FROM WHITE TO AMBER/WHITE FOR LAST 2,000' OF RWY.
   - D. COVER OR DEACTIVATE RWY EDGE LIGHTS IN PHASE 3 WORK AREA AND 1,000' RSA.
8. SIGNAGE
   - A. CHANGE RWY DISTANCE REMAINING SIGNS.
   - B. COVER APPROPRIATE TWY DIRECTIONAL SIGNS FOR TWYS SCHEDULED TO BE CLOSED.
9. OPENING OF RUNWAY
   - A. CONDUCT FOD CHECK AND OBTAIN FINAL ACCEPTANCE FROM KOA OPERATIONS.
   - B. REMOVE LOW PROFILE BARRICADES.
   - C. REMOVE LIGHTED X'S AT EACH END OF RWY.
   - D. OPEN RWY 17-35 AT 7,000' LENGTH.

SCALE: 100' 0 100' 200' — 1" = 100'

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
AIRPORTS

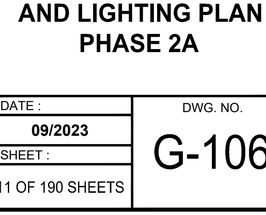
MARTIN A. CLEVEN
LICENSED PROFESSIONAL ENGINEER
No. 12828-C
HAWAII U.S.A.

4/30/24
Licensed Expiration Date

This work was prepared by me or under my supervision.

DSGN.	DRWN.	CHKD.	APPD.
AC	AT	TR	SH

KEY PLAN / NOTES:



NO.	DATE	REVISIONS

CONSTRUCTION DOCUMENTS
SEPTEMBER 2023
DATE

PROJECT TITLE :

RUNWAY 17-35 REHABILITATION
AT
ELLISON ONIZUKA
KONA INTERNATIONAL AIRPORT AT KEAHOLE
KAILUA-KONA, HAWAII

PROJECT NO.:

AH2021-16

SHEET TITLE:

TEMPORARY MARKING AND LIGHTING PLAN PHASE 2A

DATE : 09/2023

SHEET : 11 OF 190 SHEETS

DWG. NO. G-106

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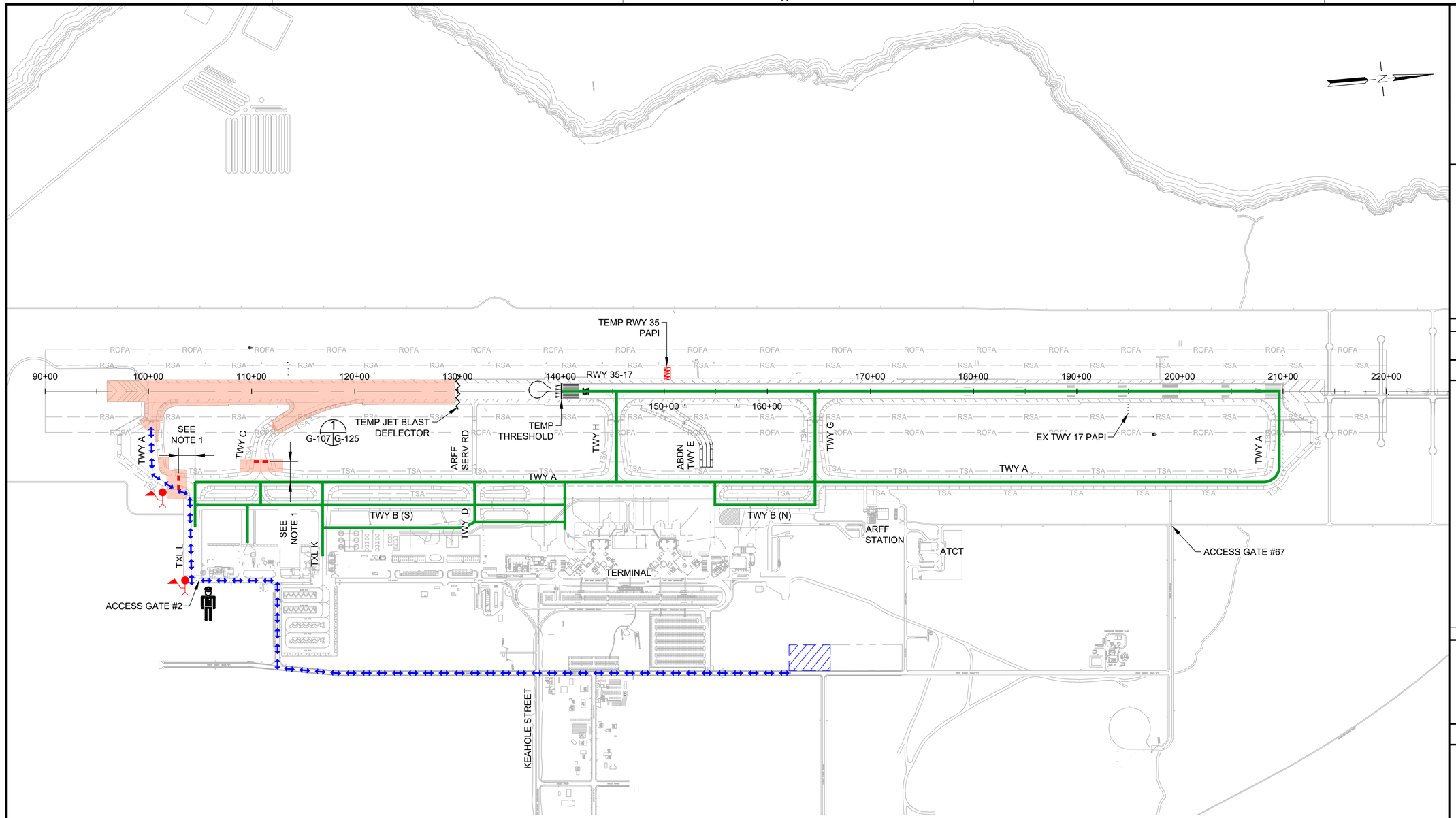

LEGEND:

- WORK AREA
- AIRCRAFT TRAVEL ROUTE
- LOW-PROFILE BARRICADES (CONTINUOUS)
- LOW-PROFILE BARRICADES (WITH GAPS)
- LIGHTED CLOSED RUNWAY MARKER
- CONTRACTOR STAGING AREA
- CONTRACTOR HAUL ROUTE (2 WAY)
- BLAST FENCE BARRIER
- FLAGGERS
- SECURITY GUARD (SEE SPEC 01565 SECURITY MEASURES)

PHASING AND BARRICADE PLAN - PHASE 2B

DESCRIPTION OF WORK:
RUNWAY AND TAXIWAY REHABILITATION

HOURS:
24/7 SHORTENED RUNWAY
WORKING HOURS: 1900-0700 DAILY

DURATION:
111 CALENDAR DAYS
ANTICIPATED DATES: 2/20/25 TO 6/11/2025

REQUIRED NOTAMS
1. RUNWAY 17-35 TORA, TODA, ASDA, LDA = 7,000'
2. TAXIWAY A CLOSED, SOUTH OF TAXILANE L
3. TAXIWAY C CLOSED
4. LAST EXIT TWY H FOR RWY 17 ARRIVALS
5. SOUTH 4,000' OF RWY 17-35 CLOSED
6. TAXIWAY A BETWEEN TAXIWAYS L AND K RESTRICTED TO ADG III AND SMALLER (WORKING HOURS ONLY)

NAVAID STATUS:

RUNWAY 17 PAPI (FAA):	IN-SERVICE
RUNWAY 17 PAPI (TEMP):	OTS
RUNWAY 17 LOC/DME:	OTS
RUNWAY 17 GS:	OTS
RUNWAY 35 PAPI (FAA):	OTS
RUNWAY 35 PAPI (TEMP):	IN-SERVICE

PHASING NOTES:
1. BARRICADES SHALL BE LOCATED 86' FROM TAXIWAY CENTERLINE DURING WORKING HOURS. BARRICADES SHALL BE LOCATION 143' FROM TAXIWAY CENTERLINE DURING NONWORKING HOURS
2. MATERIAL STOCKPILES AND EQUIPMENT ARE NOT PERMITTED IN THE WORK AREA DURING NON-WORKING HOURS.
3. PRIOR TO THE COMPLETION OF PHASE 2B, THE CONTACTOR SHALL APPLY NEW PAVEMENT MARKINGS WITHIN THE WORK AREA. NEW THRESHOLD, TDZ AND AIMING POINT MARKINGS SHALL BE COVERED WITH GEOTEXTILE FABRIC SECURED WITH SANDBAGS OR BY OTHER MEANS ACCEPTABLE TO THE RPR AND AOC.
4. RENAMING OF TAXIWAYS A (A6) AND C (A5) SHALL BE COMPLETED DURING PHASE 2B.

500' 0 500' 1000'
SCALE: 1" = 500'

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
AIRPORTS

MARTIN A. CLEVEN
LICENSED PROFESSIONAL ENGINEER
No. 12828-C
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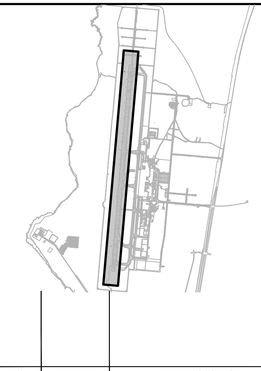
4/30/24
Licensed Expiration Date

This work was prepared by me or under my supervision.

DSGN.	DRWN.	CHKD.	APPD.
AC	AT	TR	SH

KEY PLAN / NOTES:



NO.	DATE	REVISIONS

CONSTRUCTION DOCUMENTS
SEPTEMBER 2023
DATE

PROJECT TITLE :

RUNWAY 17-35 REHABILITATION

AT
ELLISON ONIZUKA
KONA INTERNATIONAL AIRPORT AT KEAHOLE
KAILUA-KONA, HAWAII

PROJECT NO.:

AH2021-16

SHEET TITLE:

PHASING AND BARRICADE PLAN PHASE 2B

DATE :	DWG. NO.
09/2023	G-107
SHEET :	
12 OF 190 SHEETS	

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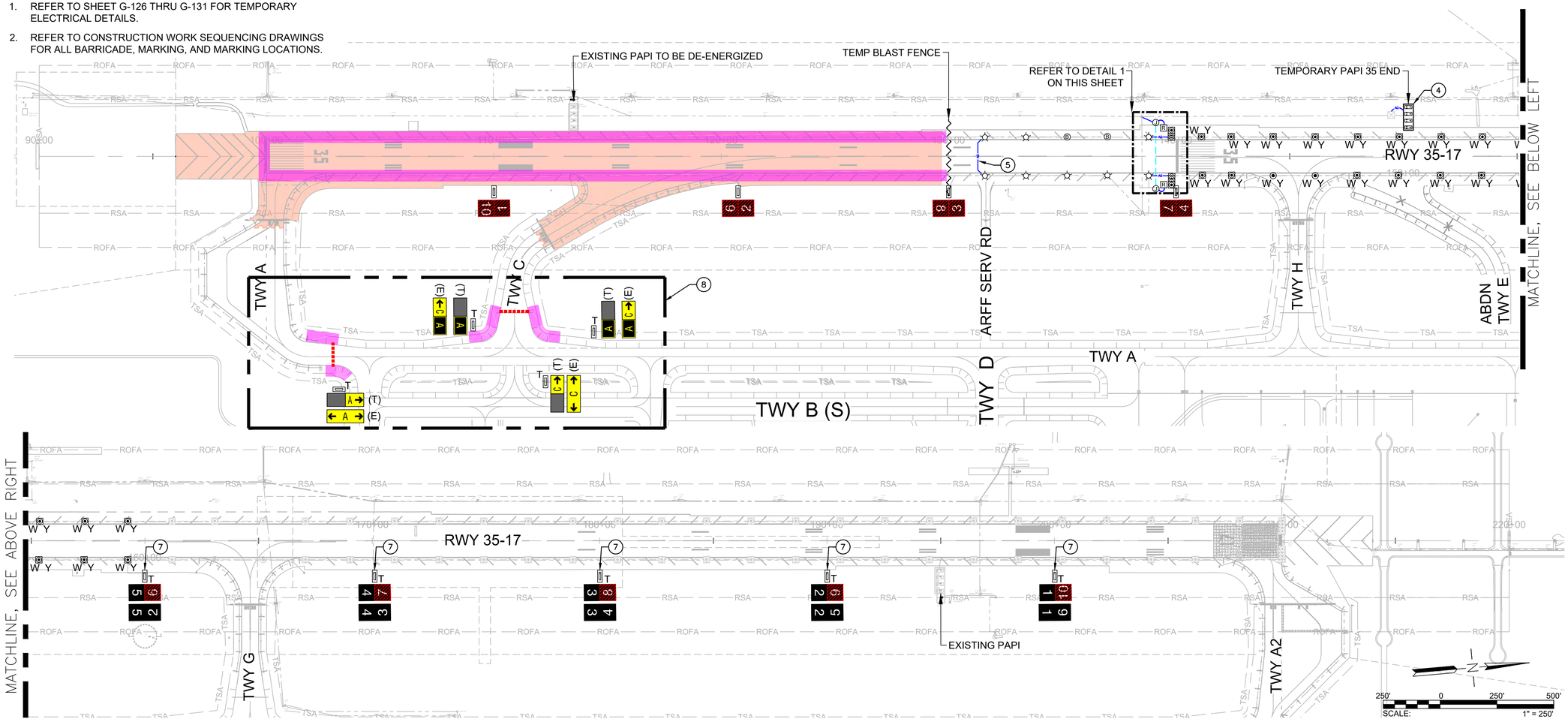
ELECTRICAL PHASING NOTES

1. REFER TO SHEET G-126 THRU G-131 FOR TEMPORARY ELECTRICAL DETAILS.
2. REFER TO CONSTRUCTION WORK SEQUENCING DRAWINGS FOR ALL BARRICADE, MARKING, AND MARKING LOCATIONS.



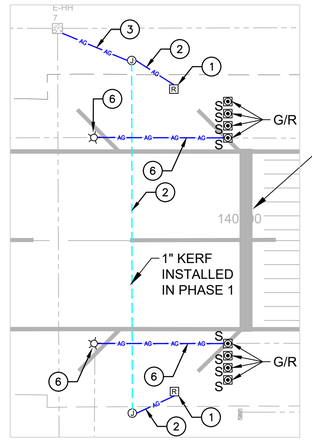
TEMPORARY ELECTRICAL LEGEND

- EXTINGUISH THE LIGHT FIXTURES BY COVERING WITH PVC SLEEVE. METHOD SHALL BE AS NOTED ON THE DRAWING FOR COVERING WITH PVC SLEEVE. REFER TO SHEET G-127, DETAIL 2.
- WORK AREA
- TEMPORARY ABOVE GROUND CONDUIT WITH 2#8 AWG, L-824C 5KV CABLES. REFER TO SHEET G-127, DETAIL 3.
- EXISTING RUNWAY DISTANCE REMAINING SIGN TO BE COVERED WITH BLANK PANEL.
- EXISTING RUNWAY DISTANCE REMAINING SIGN WITH NEW PANELS.
- EXISTING RUNWAY EDGE/END/THRESHOLD LIGHTS INSTALLED IN PHASE 1 WITH NEW COLOR CODE, AS SHOWN BY PHYSICALLY RELOCATION THE LIGHTS AS REQUIRED. "W" DENOTES CLEAR LENS, "R" DENOTES RED LENS, "Y" DENOTES YELLOW LENS, "G" DENOTES GREEN LENS, "B" DENOTES BLANK LENS. "S" ADJACENT TO SYMBOL DENOTES LIGHT TO BE INSTALL ON STEEL PLATE AS SHOWN IN DETAIL 1 & 2/G-126.
- TEMPORARY REIL ON STEEL PLATE. REFER TO SHEET G-130.
- JUNCTION CAN FOR TEMPORARY REIL.
- FURNISH AND INSTALL NEW TAXIWAY EDGE LIGHTS, ENERGIZED ON THE RUNWAY EDGE.
- TEMPORARY L-867B COVER PLATE.
- EXISTING RUNWAY EDGE LIGHTS, INSTALLED IN PHASE 1, TO REMAIN.
- EXISTING RUNWAY THRESHOLD LIGHTS, INSTALLED IN PHASE 1, TO REMAIN.
- EXISTING HANDHOLE TO REMAIN.
- EXISTING PAPI TO REMAIN IN PLACE, U.O.N.
- NEW TEMPORARY PAPI ON STEEL PLATES. REFER TO SHEET G-129.
- (T) (E) INSTALL NEW PANELS ON EXISTING AIRFIELD GUIDANCE SIGN AS SHOWN, SEE DETAIL 2/G-128. "(E)" DENOTES EXISTING CONFIGURATION OF SIGN TO BE MODIFIED. "(T)" DENOTES TEMPORARY SIGN PANEL CONFIGURATION FOR THE DURATION OF THE PHASE

KEY NOTES

ITEMS TO BE TEMPORARILY INSTALLED.

1. INSTALL NEW REIL ON STEEL PLATE. REFER TO SHEET G-130 FOR SITING AND INSTALLATION REQUIREMENTS.
2. INSTALL POWER AND CONTROL CABLES IN ABOVE GROUND CONDUIT AS SHOWN ON SHEET G-130 & G-131.
3. INSTALL 2#8 5KV AIRFIELD LIGHTING CABLES IN ABOVE GROUND CONDUIT TO POWER TEMPORARY REIL. REGULATOR R-4 SHALL REMAIN ENERGIZED FOR THE DURATION OF THE PHASE TO PROVIDE POWER TO TEMPORARY RELOCATED RUNWAY 35 REIL.
4. CABLES INSTALLED IN PHASE 1 FOR REGULATOR R-4 SHALL BE SPLICED INTO AT THE START OF THIS PHASE TO ENERGIZE TEMPORARY RUNWAY 35 PAPI. REGULATOR R-4 SHALL REMAIN ENERGIZED FOR THE DURATION OF THE PHASE TO PROVIDE POWER TO TEMPORARY RUNWAY 35 PAPI.
5. INSTALL ABOVE GROUND CONDUIT CONNECTING EXISTING BASE CANS. INSTALL 1#8 5KV CABLE AND SPLICE INTO CIRCUIT R-2 TO LOOP OUT CIRCUIT WITHIN CONSTRUCTION AREA.
6. INSTALL 2#10 600V SECONDARY CABLES IN ABOVE GROUND CONDUIT TO ENERGIZE THRESHOLD/END LIGHTS. INSTALL ISOLATION XFMR INSIDE EXISTING BASE CAN.
7. INSTALL NEW PANELS WITH MODIFIED NUMBERS ON EXISTING RUNWAY DISTANCE REMAINING SIGN. FIELD VERIFY SIGN SIZE AND MANUFACTURE PRIOR TO ORDERING PANELS.
8. NEW SIGNS WITHIN THIS AREA SHALL BE INSTALLED, BUT COVERED AND DE-ENERGIZED UNTIL THE COMPLETION OF THE PHASE.



1 ENLARGEMENT 1
SCALE: NOT TO SCALE

Airports Division
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
AIRPORTS

DORON LEAN
LICENSED PROFESSIONAL ENGINEER
No. 14476-E
HAWAII, U.S.A.
04/30/2024
Licensed Expiration Date

DSGN.	DRWN.	CHKD.	APPD.
JP	KV	JA	DL

KEY PLAN / NOTES:

NO.	DATE	REVISIONS

CONSTRUCTION DOCUMENT
SEPTEMBER 2023
DATE

PROJECT TITLE :

RUNWAY 17-35 REHABILITATION
AT
ELLISON ONIZUKA
KONA INTERNATIONAL AIRPORT AT KEAHOLE
KAILUA-KONA, HAWAII

PROJECT NO.:

AH2021-16

SHEET TITLE:

ELECTRICAL PHASING PLAN 2B

DATE :	DWG. NO.
09/2023	G-108
SHEET :	
13 OF 190 SHEETS	

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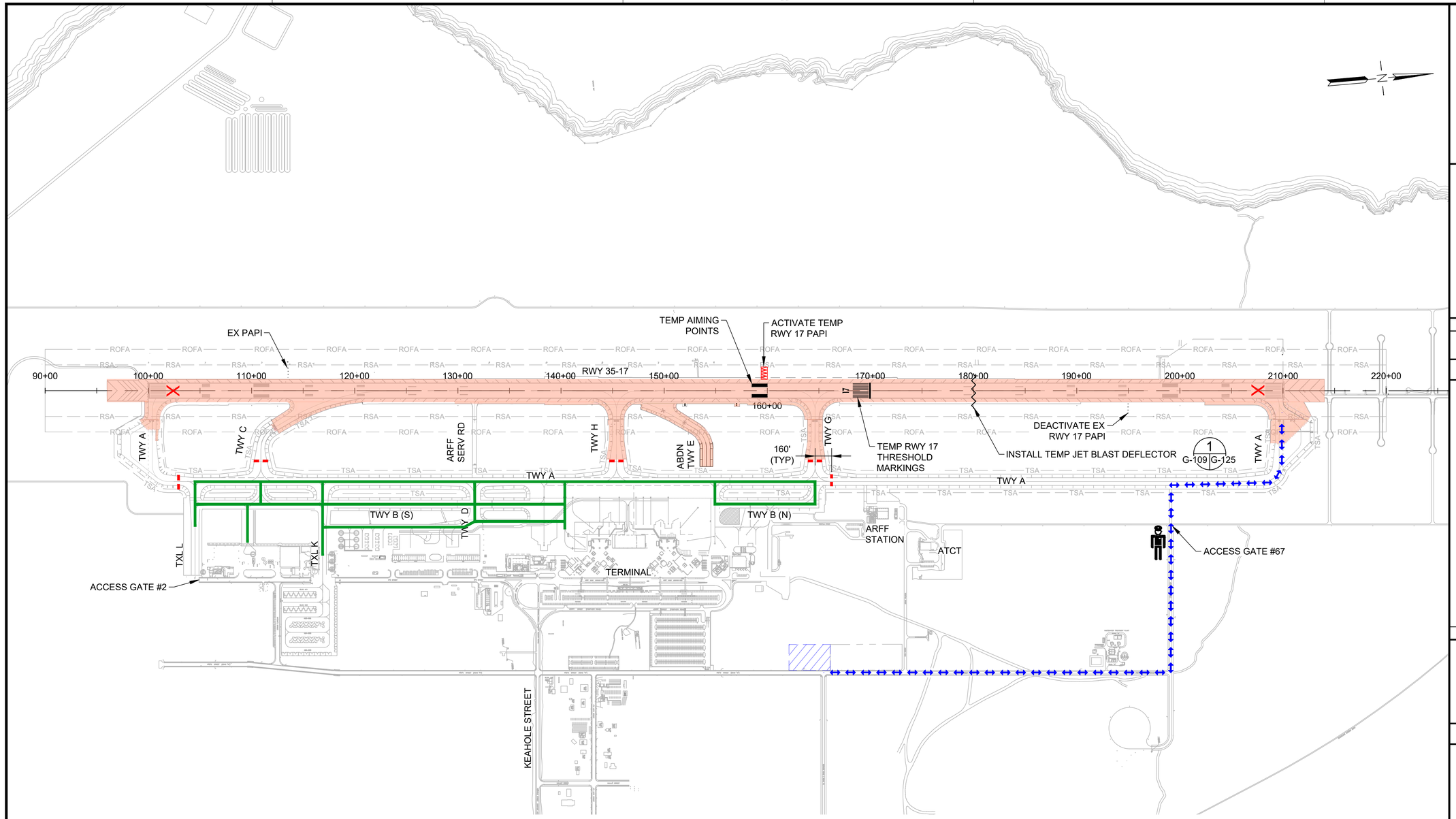


LEGEND:

- WORK AREA
- AIRCRAFT TRAVEL ROUTE
- LOW-PROFILE BARRICADES (CONTINUOUS)
- LOW-PROFILE BARRICADES (WITH GAPS)
- LIGHTED CLOSED RUNWAY MARKER
- CONTRACTOR STAGING AREA
- CONTRACTOR HAUL ROUTE (2 WAY)
- BLAST FENCE BARRIER
- FLAGGERS
- SECURITY GUARD (SEE SPEC 01565 SECURITY MEASURES)

PHASING AND BARRICADE PLAN - PHASE 3A

DESCRIPTION OF WORK:
INSTALL TEMPORARY RUNWAY 17 THRESHOLD MARKING REMOVAL. TEMPORARY MARKING, AND ELECTRICAL WORK REQUIRED FOR SHORTENED RUNWAY CONFIGURATION

HOURS:
2200-0600

DURATION:
1 CALENDAR DAY
ANTICIPATED DATE: 6/11/2025

REQUIRED NOTAMS (WORK HOURS ONLY):
1. RUNWAY 17-35 CLOSED
2. TAXIWAY A CLOSED, SOUTH OF TAXILANE L
3. TAXIWAY C CLOSED
4. TAXIWAY H CLOSED
5. TAXIWAY G CLOSED
6. TAXIWAY A CLOSED, NORTH OF TAXIWAY G

NAVAID STATUS:

RUNWAY 17 PAPI (FAA):	OTS
RUNWAY 17 PAPI (TEMP):	OTS
RUNWAY 17 LOC/DME:	OTS
RUNWAY 17 GS:	OTS
RUNWAY 35 PAPI (FAA):	OTS
RUNWAY 35 PAPI (TEMP):	OTS

PHASING NOTES:
1. SEE DWG G-110 FOR DESCRIPTION OF MARKING REMOVAL, TEMPORARY MARKING, AND TEMPORARY ELECTRICAL REQUIREMENTS.
2. ALL TEMP MARKINGS SHALL BE HALF APPLICATION MARKINGS.
3. SEE SPECIAL PROVISIONS FOR LIQUIDATED DAMAGES FOR FAILURE TO REOPEN THE RUNWAY AT 0600 HRS.

SCALE: 500' 0 500' 1000' — 1" = 500'

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
AIRPORTS

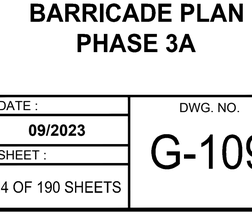
MARTIN A. CLEVEN
LICENSED PROFESSIONAL ENGINEER
No. 12828-C
HAWAII U.S.A.

4/30/24
Licensed Expiration Date

This work was prepared by me or under my supervision.

DSGN.	DRWN.	CHKD.	APPD.
AC	AT	TR	SH

KEY PLAN / NOTES:



NO.	DATE	REVISIONS

CONSTRUCTION DOCUMENTS
SEPTEMBER 2023
DATE

PROJECT TITLE :

RUNWAY 17-35 REHABILITATION
AT
ELLISON ONIZUKA
KONA INTERNATIONAL AIRPORT AT KEAHOLE
KAILUA-KONA, HAWAII

PROJECT NO.:
AH2021-16

SHEET TITLE:
PHASING AND BARRICADE PLAN PHASE 3A

DATE : 09/2023
SHEET : 14 OF 190 SHEETS
DWG. NO. G-109

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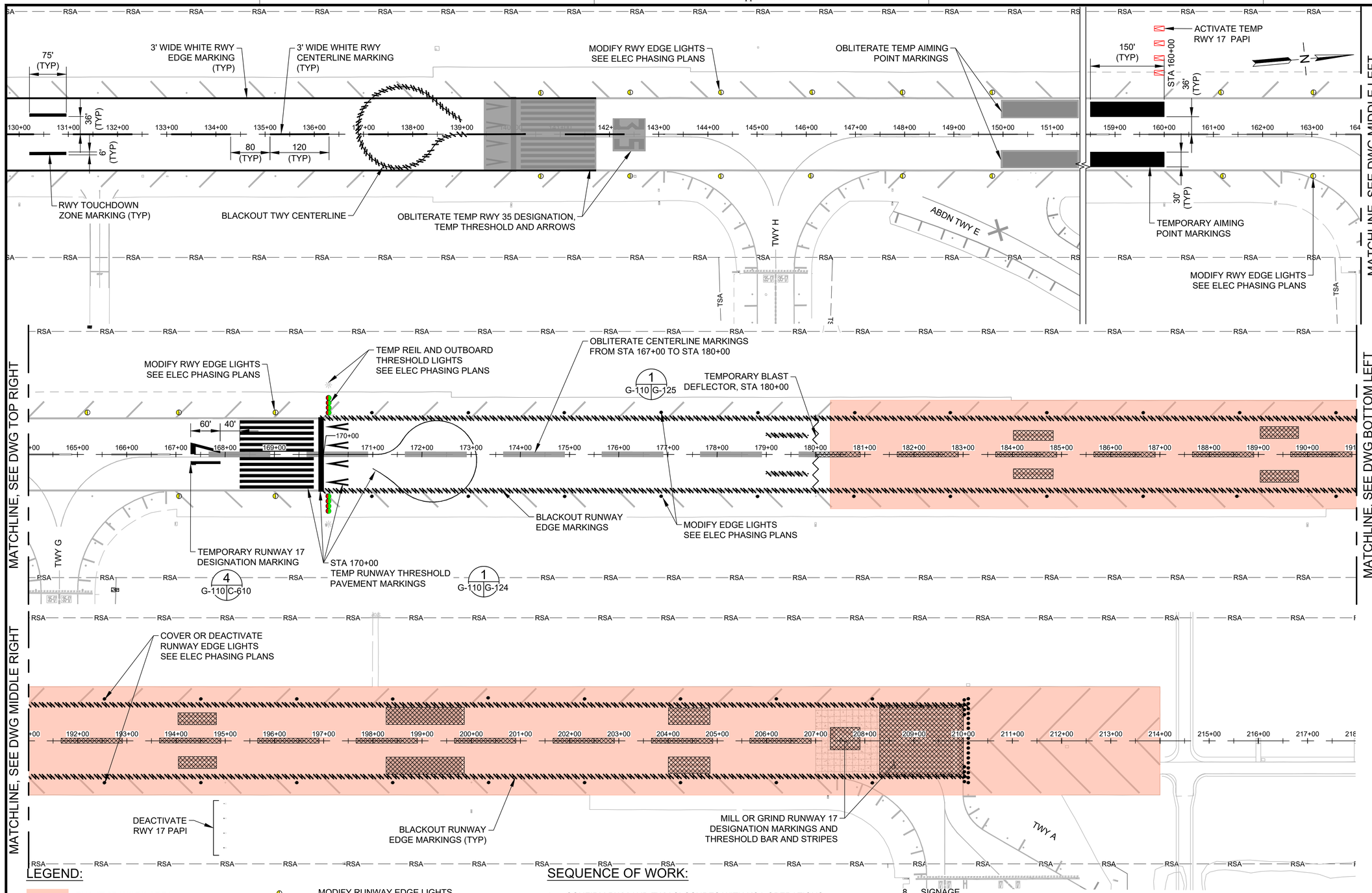


LEGEND:

- PHASE 3B WORK AREA
- TEMP BLAST DEFLECTOR
- TEMPORARY RUNWAY LIGHTS
- BLACKOUT MARKING
- MARKING REMOVAL - OBLITERATION
- MODIFY RUNWAY EDGE LIGHTS
- MARKING REMOVAL - MILL OR GRIND
- COVERED OR DEACTIVATED RUNWAY LIGHTS

SEQUENCE OF WORK:

1. CONFIRM RWY AND TWY CLOSURES WITH KOA OPERATIONS.
2. INSTALL LIGHTED X'S AT EACH END OF RWY.
3. INSTALL REQUIRED LOW-PROFILE BARRICADES.
4. INSTALL JET BLAST DEFLECTOR.
5. MARKING REMOVAL
   A. OBLITERATE CONFLICTING RWY 35 DESIGNATION AND SPHPS MARKINGS.
   B. OBLITERATE RWY CENTERLINE MARKINGS IN 1,000' RSA AS SHOWN.
   C. MILL OR GRIND RWY MARKINGS IN WORK AREA AS SHOWN.
6. APPLY TEMPORARY MARKINGS AS SHOWN.
7. ELECTRICAL
   A. ACTIVATE TEMPORARY RWY 17 PAPI.
   B. INSTALL TEMPORARY OUTBOARD THRESHOLD AND REIL LIGHTS.
   C. CHANGE RWY EDGE LIGHTING FROM WHITE TO AMBER/WHITE FOR THE LAST 2,000' OF RWY.
   D. COVER OR DEACTIVATE RWY EDGE LIGHTS IN WORK AREA AND 1,000' RSA
8. SIGNAGE
   A. CHANGE RWY DISTANCE REMAINING SIGNS.
   B. COVER APPROPRIATE TWY DIRECTIONAL SIGNS FOR TWYS SCHEDULED TO BE CLOSED.
9. OPENING OF RUNWAY
   A. CONDUCT FOD CHECK AND OBTAIN FINAL ACCEPTANCE FROM KOA OPERATIONS.
   B. REMOVE LOW PROFILE BARRICADES.
   C. REMOVE LIGHTED X'S AT EACH END OF RWY.
   D. OPEN RWY 17-35 AT 7,000' LENGTH.

100' 0 100' 200'
SCALE: 1" = 100'

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
AIRPORTS

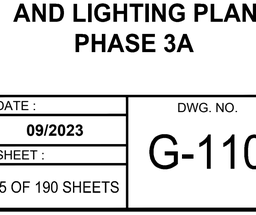
MARTIN A. CLEVEN
LICENSED PROFESSIONAL ENGINEER
No. 12828-C
HAWAII U.S.A.

4/30/24
Licensed Expiration Date

This work was prepared by me or under my supervision.

DSGN.	DRWN.	CHKD.	APPD.
AC	AT	TR	SH

KEY PLAN / NOTES:



NO.	DATE	REVISIONS

CONSTRUCTION DOCUMENTS
SEPTEMBER 2023
DATE

PROJECT TITLE :

RUNWAY 17-35 REHABILITATION
AT
ELLISON ONIZUKA
KONA INTERNATIONAL AIRPORT AT KEAHOLE
KAILUA-KONA, HAWAII

PROJECT NO.:

AH2021-16

SHEET TITLE:

TEMPORARY MARKING AND LIGHTING PLAN PHASE 3A

DATE : 09/2023
SHEET : 15 OF 190 SHEETS
DWG. NO. G-110

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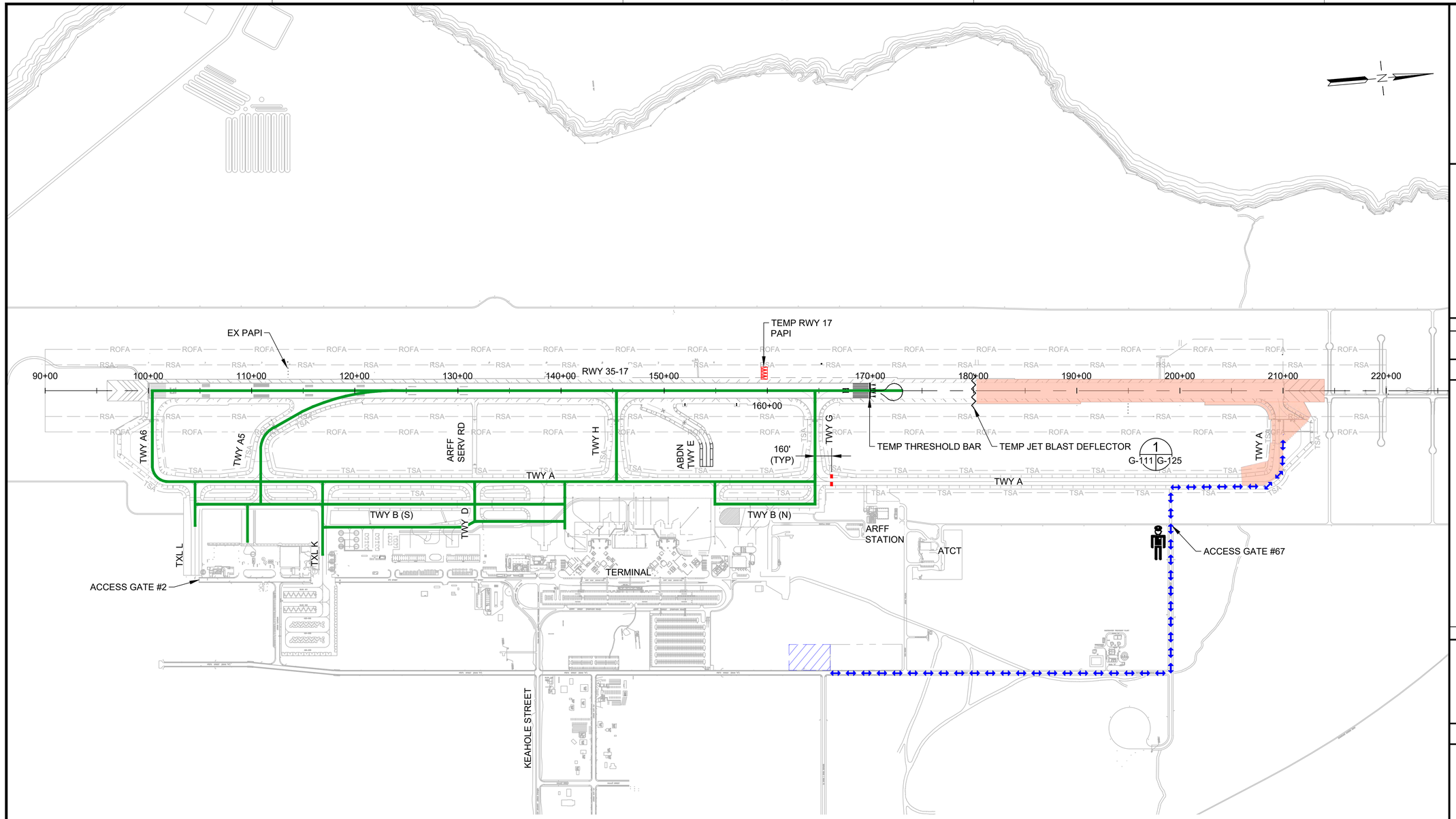


LEGEND:

- WORK AREA
- AIRCRAFT TRAVEL ROUTE
- LOW-PROFILE BARRICADES (CONTINUOUS)
- LOW-PROFILE BARRICADES (WITH GAPS)
- X — LIGHTED CLOSED RUNWAY MARKER
- CONTRACTOR STAGING AREA
- CONTRACTOR HAUL ROUTE (2 WAY)
- BLAST FENCE BARRIER
- FLAGGERS
- SECURITY GUARD (SEE SPEC 01565 SECURITY MEASURES)

PHASING AND BARRICADE PLAN - PHASE 3B

DESCRIPTION OF WORK:
RUNWAY AND TAXIWAY REHABILITATION

HOURS:
24/7 SHORTENED RUNWAY
WORKING HOURS: 1900-0700 DAILY

DURATION:
111 CALENDAR DAYS
ANTICIPATED DATES: 6/12/2025 TO 10/1/2025

REQUIRED NOTAMS
1. RUNWAY 17-35 TORA, TODA, ASDA, LDA = 7000'
2. TAXIWAY A CLOSED, NORTH OF TAXIWAY G
3. SOUTH 3,000' OF RUNWAY 17-35 UNGROOVED
4. LAST EXIT TAXIWAY G FOR RUNWAY 35 ARRIVALS
5. NORTH 4,000' OF RUNWAY 17-35 CLOSED

NAVAID STATUS:

RUNWAY 17 PAPI (FAA):	OTS
RUNWAY 17 PAPI (TEMP):	IN-SERVICE
RUNWAY 17 LOC/DME:	OTS
RUNWAY 17 GS:	OTS
RUNWAY 17 MALSR:	OTS
RUNWAY 35 PAPI (FAA):	IN-SERVICE
RUNWAY 35 PAPI (TEMP):	OTS

PHASING NOTES:
1. MATERIAL STOCKPILES AND EQUIPMENT ARE NOT PERMITTED IN THE WORK AREA DURING NON-WORKING HOURS.
2. PRIOR TO THE COMPLETION OF PHASE 3B, THE CONTACTOR SHALL APPLY NEW PAVEMENT MARKINGS WITHIN THE WORK AREA. NEW THRESHOLD, TDZ AND AIMING POINT MARKINGS SHALL BE COVERED WITH GEOTEXTILE FABRIC SECURED WITH SANDBAGS OR BY OTHER MEANS ACCEPTABLE TO THE RPR AND AOC.
3. RENAMING OF TAXIWAY A (A2) SHALL BE COMPLETED DURING STAGE 3B.

SCALE: 500' 0 500' 1000' — 1" = 500'

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
AIRPORTS

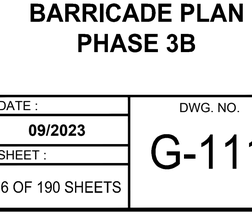
MARTIN A. CLEVEN
LICENSED PROFESSIONAL ENGINEER
No. 12828-C
HAWAII U.S.A.

4/30/24
Licensed Expiration Date

This work was prepared by me or under my supervision.

DSGN.	DRWN.	CHKD.	APPD.
AC	AT	TR	SH

KEY PLAN / NOTES:



NO.	DATE	REVISIONS

CONSTRUCTION DOCUMENTS
SEPTEMBER 2023
DATE

PROJECT TITLE :

RUNWAY 17-35 REHABILITATION
AT
ELLISON ONIZUKA
KONA INTERNATIONAL AIRPORT AT KEAHOLE
KAILUA-KONA, HAWAII

PROJECT NO.:

AH2021-16

SHEET TITLE:

PHASING AND BARRICADE PLAN PHASE 3B

DATE :	DWG. NO.
09/2023	G-111
SHEET :	
16 OF 190 SHEETS	

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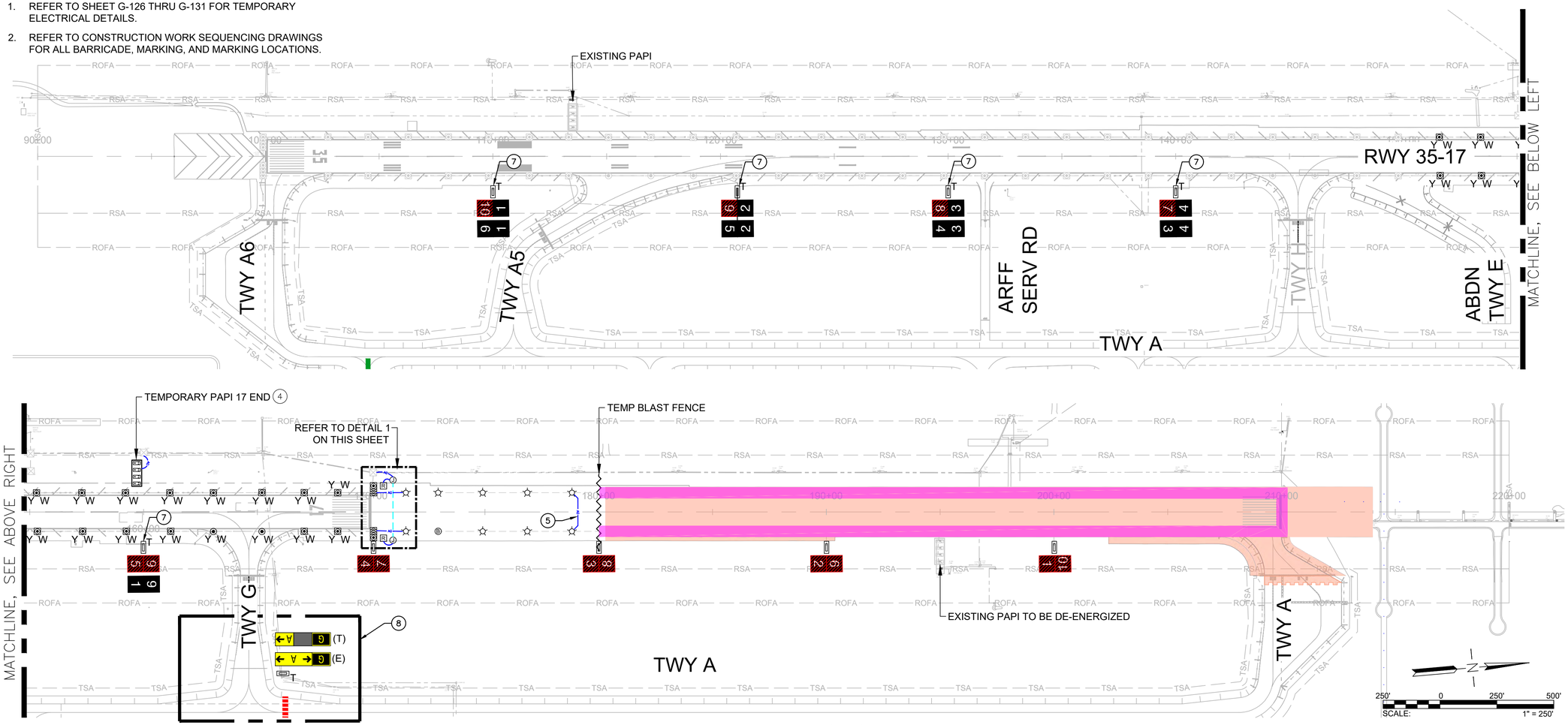
ELECTRICAL PHASING NOTES

1. REFER TO SHEET G-126 THRU G-131 FOR TEMPORARY ELECTRICAL DETAILS.
2. REFER TO CONSTRUCTION WORK SEQUENCING DRAWINGS FOR ALL BARRICADE, MARKING, AND MARKING LOCATIONS.



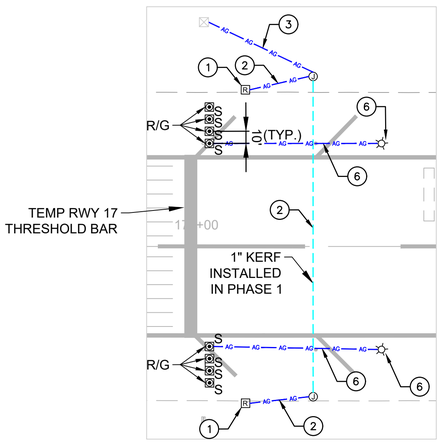
TEMPORARY ELECTRICAL LEGEND

- EXTINGUISH THE LIGHT FIXTURES BY COVERING WITH PVC SLEEVE. METHOD SHALL BE AS NOTED ON THE DRAWING FOR COVERING WITH PVC SLEEVE. REFER TO SHEET G-127, DETAIL 2.
- WORK AREA
- TEMPORARY ABOVE GROUND CONDUIT WITH 2#8 AWG, L-824C 5KV CABLES. REFER TO SHEET G-127, DETAIL 3.
- EXISTING RUNWAY DISTANCE REMAINING SIGN TO BE COVERED WITH BLANK PANEL.
- EXISTING RUNWAY DISTANCE REMAINING SIGN WITH NEW PANELS.
- EXISTING RUNWAY EDGE/END/THRESHOLD LIGHTS INSTALLED IN PHASE 1 WITH NEW COLOR CODE, AS SHOWN BY PHYSICALLY RELOCATION THE LIGHTS AS REQUIRED. "W" DENOTES CLEAR LENS, "R" DENOTES RED LENS, "Y" DENOTES YELLOW LENS, "G" DENOTES GREEN LENS, "B" DENOTES BLANK LENS. "S" ADJACENT TO SYMBOL DENOTES LIGHT TO BE INSTALL ON STEEL PLATE AS SHOWN IN DETAIL 1 & 2/G-126.
- TEMPORARY REIL ON STEEL PLATE. REFER TO SHEET G-130.
- JUNCTION CAN FOR TEMPORARY REIL.
- FURNISH AND INSTALL NEW TAXIWAY EDGE LIGHTS, ENERGIZED ON THE RUNWAY EDGE.
- TEMPORARY L-867B COVER PLATE.
- EXISTING RUNWAY EDGE LIGHTS, INSTALLED IN PHASE 1, TO REMAIN.
- EXISTING RUNWAY THRESHOLD LIGHTS, INSTALLED IN PHASE 1, TO REMAIN.
- EXISTING HANDHOLE TO REMAIN.
- EXISTING PAPI TO REMAIN IN PLACE, U.O.N.
- NEW TEMPORARY PAPI ON STEEL PLATES. REFER TO SHEET G-129.
- (T) (E) INSTALL NEW PANELS ON EXISTING AIRFIELD GUIDANCE SIGN AS SHOWN, SEE DETAIL 2/G-128. "(E)" DENOTES EXISTING CONFIGURATION OF SIGN TO BE MODIFIED. "(T)" DENOTES TEMPORARY SIGN PANEL CONFIGURATION FOR THE DURATION OF THE PHASE

KEY NOTES

ITEMS TO BE TEMPORARILY INSTALLED.

1. INSTALL NEW REIL ON STEEL PLATE. REFER TO SHEET G-130 FOR SITING AND INSTALLATION REQUIREMENTS.
2. INSTALL POWER AND CONTROL CABLES IN ABOVE GROUND CONDUIT AS SHOWN ON SHEET G-131.
3. INSTALL 2#8 5KV AIRFIELD LIGHTING CABLES IN ABOVE GROUND CONDUIT TO POWER TEMPORARY REIL. REGULATOR R-4 SHALL REMAIN ENERGIZED FOR THE DURATION OF THE PHASE TO PROVIDE POWER TO TEMPORARY RELOCATED RUNWAY 17 REIL.
4. CABLES INSTALLED IN PHASE 1 FOR REGULATOR R-4 SHALL BE SPLICED INTO AT THE START OF THIS PHASE TO ENERGIZE TEMPORARY RUNWAY 17 PAPI. REGULATOR R-4 SHALL REMAIN ENERGIZED FOR THE DURATION OF THE PHASE TO PROVIDE POWER TO TEMPORARY RUNWAY 17 PAPI.
5. INSTALL ABOVE GROUND CONDUIT CONNECTING EXISTING BASE CANS. INSTALL 1#8 5KV CABLE AND SPLICE INTO CIRCUIT R-2 TO LOOP OUT CIRCUIT WITHIN CONSTRUCTION AREA.
6. INSTALL 2#10 600V SECONDARY CABLES IN ABOVE GROUND CONDUIT TO ENERGIZE THRESHOLD/END LIGHTS. INSTALL ISOLATION XFMR INSIDE EXISTING BASE CAN.
7. INSTALL NEW PANELS WITH MODIFIED NUMBERS ON EXISTING RUNWAY DISTANCE REMAINING SIGN.
8. NEW SIGNS WITHIN THIS AREA SHALL BE INSTALLED, BUT COVERED AND DE-ENERGIZED UNTIL THE COMPLETION OF THE PHASE.



1 ENLARGEMENT 1
SCALE: NOT TO SCALE

Airports Division
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
AIRPORTS

DORON LEAN
LICENSED PROFESSIONAL ENGINEER
No. 14476-E
HAWAII, U.S.A.
04/30/2024
Licensed Expiration Date

DSGN.	DRWN.	CHKD.	APPD.
JP	KV	JA	DL

KEY PLAN / NOTES:

NO.	DATE	REVISIONS

CONSTRUCTION DOCUMENT
SEPTEMBER 2023
DATE

PROJECT TITLE :

RUNWAY 17-35 REHABILITATION
AT
ELLISON ONIZUKA
KONA INTERNATIONAL AIRPORT AT KEAHOLE
KAILUA-KONA, HAWAII

PROJECT NO.:

AH2021-16

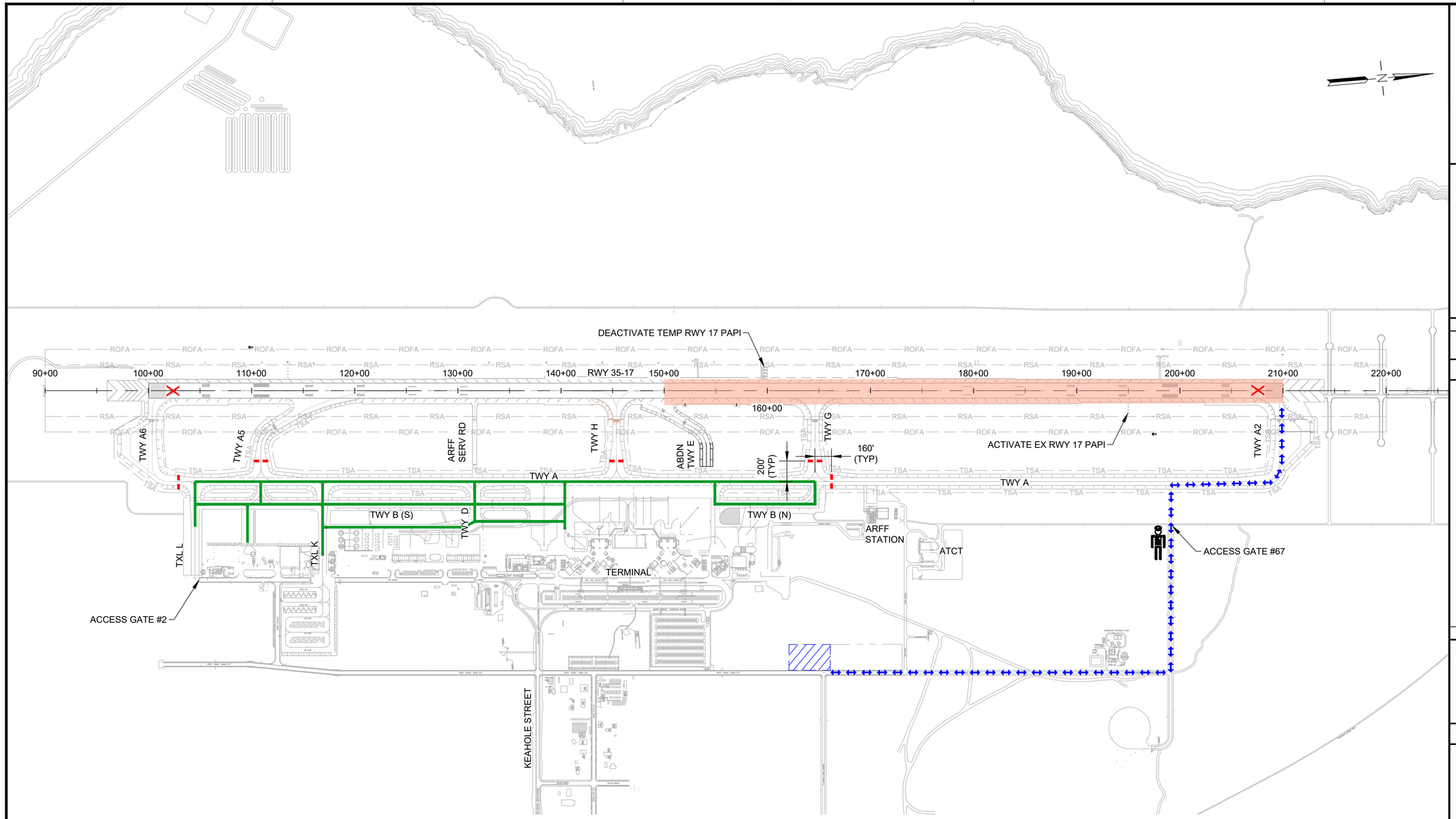
SHEET TITLE:

ELECTRICAL PHASING PLAN 3B

DATE : 09/2023
SHEET : 17 OF 190 SHEETS

DWG. NO. **G-112**

C:\USERS\EDUARDO SALCONES\LEAN PHOTOMETRICS DROPBOX\ACTIVE PROJECTS\L1472102A ORION-KOA RUNWAY 17-35 REHABILITATION\101 DRAWINGS\WORKING DRAWINGS\SHEETS\PHASING\AH2021-16-OEA-KOA-PH03B.DWG



LEGEND:

- WORK AREA
- AIRCRAFT TRAVEL ROUTE
- LOW-PROFILE BARRICADES (CONTINUOUS)
- LOW-PROFILE BARRICADES (WITH GAPS)
- LIGHTED CLOSED RUNWAY MARKER
- CONTRACTOR STAGING AREA
- CONTRACTOR HAUL ROUTE (2 WAY)
- BLAST FENCE BARRIER
- FLAGGERS
- SECURITY GUARD (SEE SPEC 01565 SECURITY MEASURES)

PHASING AND BARRICADE PLAN - PHASE 4A

DESCRIPTION OF WORK:
REMOVE TEMPORARY RUNWAY THRESHOLDS, MARKING REMOVAL, TEMPORARY MARKINGS, AND ELECTRICAL WORK TO RESTORE RUNWAY TO FULL-LENGTH OPERATIONS.

HOURS:
2200-0600

DURATION:
1 CALENDAR DAY
ANTICIPATED DATES: 10/1/2025 TO 10/2/2025

REQUIRED NOTAMS:
1. RUNWAY 17-35 CLOSED
2. TAXIWAY A6 CLOSED
3. TAXIWAY A5 CLOSED
4. TAXIWAY H CLOSED
5. TAXIWAY G CLOSED
6. TAXIWAY A CLOSED, NORTH OF TAXIWAY G
7. RUNWAY 17-35 UNGROOVED (WORKING AND NONWORKING HOURS)

NAVAID STATUS:

RUNWAY 17 PAPI (FAA):	OTS
RUNWAY 17 PAPI (TEMP):	OTS
RUNWAY 17 LOC/DME:	OTS
RUNWAY 17 GS:	OTS
RUNWAY 17 MALSR:	OTS
RUNWAY 35 PAPI (FAA):	OTS
RUNWAY 35 PAPI (TEMP):	OTS

PHASING NOTES:
1. SEE DWG G-114 FOR DESCRIPTION OF MARKING REMOVAL, TEMPORARY MARKING, AND TEMPORARY ELECTRICAL REQUIREMENTS.
2. ALL TEMP MARKINGS SHALL BE HALF APPLICATION MARKINGS.
3. SEE SPECIAL PROVISIONS FOR LIQUIDATED DAMAGES FOR FAILURE TO REOPEN THE RUNWAY AT 0600 HRS.

SCALE: 500' 0 500' 1000' — 1" = 500'

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
AIRPORTS

MARTIN A. CLEVEN
LICENSED PROFESSIONAL ENGINEER
No. 12828-C
HAWAII U.S.A.

4/30/24
Licensed Expiration Date

This work was prepared by me or under my supervision.

DSGN.	DRWN.	CHKD.	APPD.
AC	AT	TR	SH

KEY PLAN / NOTES:

NO.	DATE	REVISIONS

CONSTRUCTION DOCUMENTS
SEPTEMBER 2023
DATE

PROJECT TITLE :

RUNWAY 17-35 REHABILITATION

AT
ELLISON ONIZUKA
KONA INTERNATIONAL AIRPORT AT KEAHOLE
KAILUA-KONA, HAWAII

PROJECT NO.:

AH2021-16

SHEET TITLE:

PHASING AND BARRICADE PLAN PHASE 4A

DATE :	DWG. NO.
09/2023	G-113
SHEET :	
18 OF 190 SHEETS	

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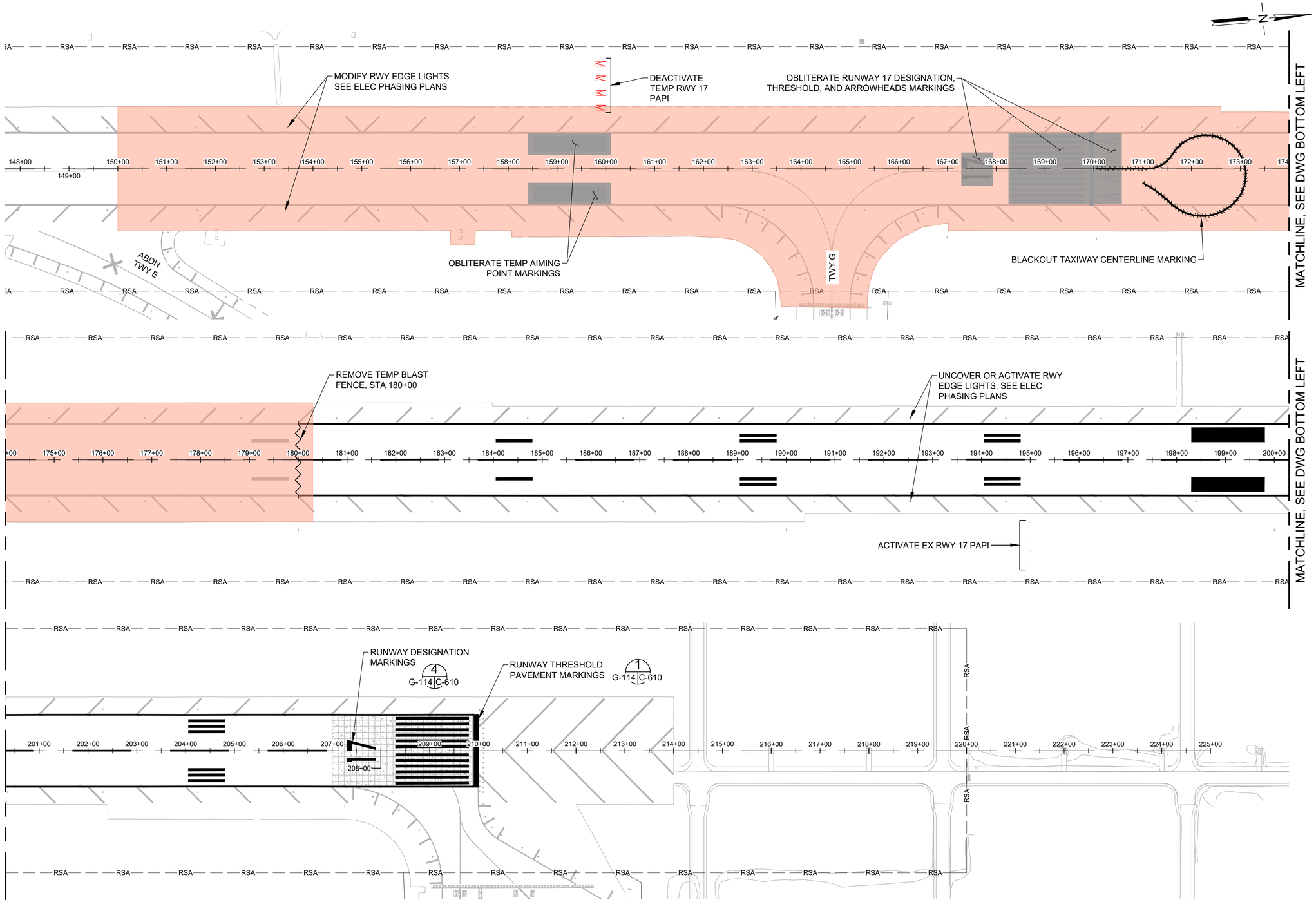


LEGEND:

- PHASE 4B WORK AREA
- BLACKOUT MARKING
- MARKING REMOVAL - OBLITERATION

SEQUENCE OF WORK:

1. CONFIRM RWY AND TWY CLOSURES WITH KOA OPERATIONS.
2. INSTALL LIGHTED X'S AT EACH END OF RWY.
3. INSTALL REQUIRED LOW-PROFILE BARRICADES.
4. REMOVE JET BLAST DEFLECTOR.
5. MARKING REMOVAL
   A. OBLITERATE TEMP RWY 17 DESIGNATION AND THRESHOLD MARKINGS.
   B. OBLITERATE TEMP RWY 17 AIMING POINT MARKING
6. APPLY TEMPORARY MARKINGS AS SHOWN.
7. ELECTRICAL
   A. DEACTIVATE TEMP RWY 17 PAPI.
   B. ACTIVATE RWY 17 PAPI.
   C. CHANGE PHASE 3 RWY EDGE LIGHTING FROM AMBER/WHITE TO WHITE.
   D. UNCOVER OR ACTIVATE RWY EDGE LIGHTS IN PHASE 3 WORK AREA AND 1,000' RSA.
8. SIGNAGE
   A. UNCOVER RWY DISTANCE REMAINING SIGNS.
   B. CHANGE RWY HOLDING POSITION SIGN PANELS.
   C. UNCOVER TWY DIRECTIONAL SIGNS .
9. OPENING OF RUNWAY
   A. CONDUCT FOD CHECK AND OBTAIN FINAL ACCEPTANCE FROM KOA OPERATIONS.
   B. REMOVE LOW PROFILE BARRICADES.
   C. REMOVE LIGHTED X'S AT EACH END OF RWY.
   D. OPEN RWY 17-35.

100' 0 100' 200'
SCALE: 1" = 100'

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
AIRPORTS

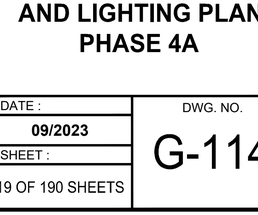
MARTIN A. CLEVEN
LICENSED PROFESSIONAL ENGINEER
No. 12828-C
HAWAII U.S.A.

4/30/24
Licensed Expiration Date

This work was prepared by me or under my supervision.

DSGN.	DRWN.	CHKD.	APPD.
AC	AT	TR	SH

KEY PLAN / NOTES:



NO.	DATE	REVISIONS

CONSTRUCTION DOCUMENTS
SEPTEMBER 2023
DATE

PROJECT TITLE :

RUNWAY 17-35 REHABILITATION
AT
ELLISON ONIZUKA KONA INTERNATIONAL AIRPORT AT KEAHOLE KAILUA-KONA, HAWAII

PROJECT NO.:

AH2021-16

SHEET TITLE:

TEMPORARY MARKING AND LIGHTING PLAN PHASE 4A

DATE :	DWG. NO.
09/2023	G-114
SHEET :	
19 OF 190 SHEETS	

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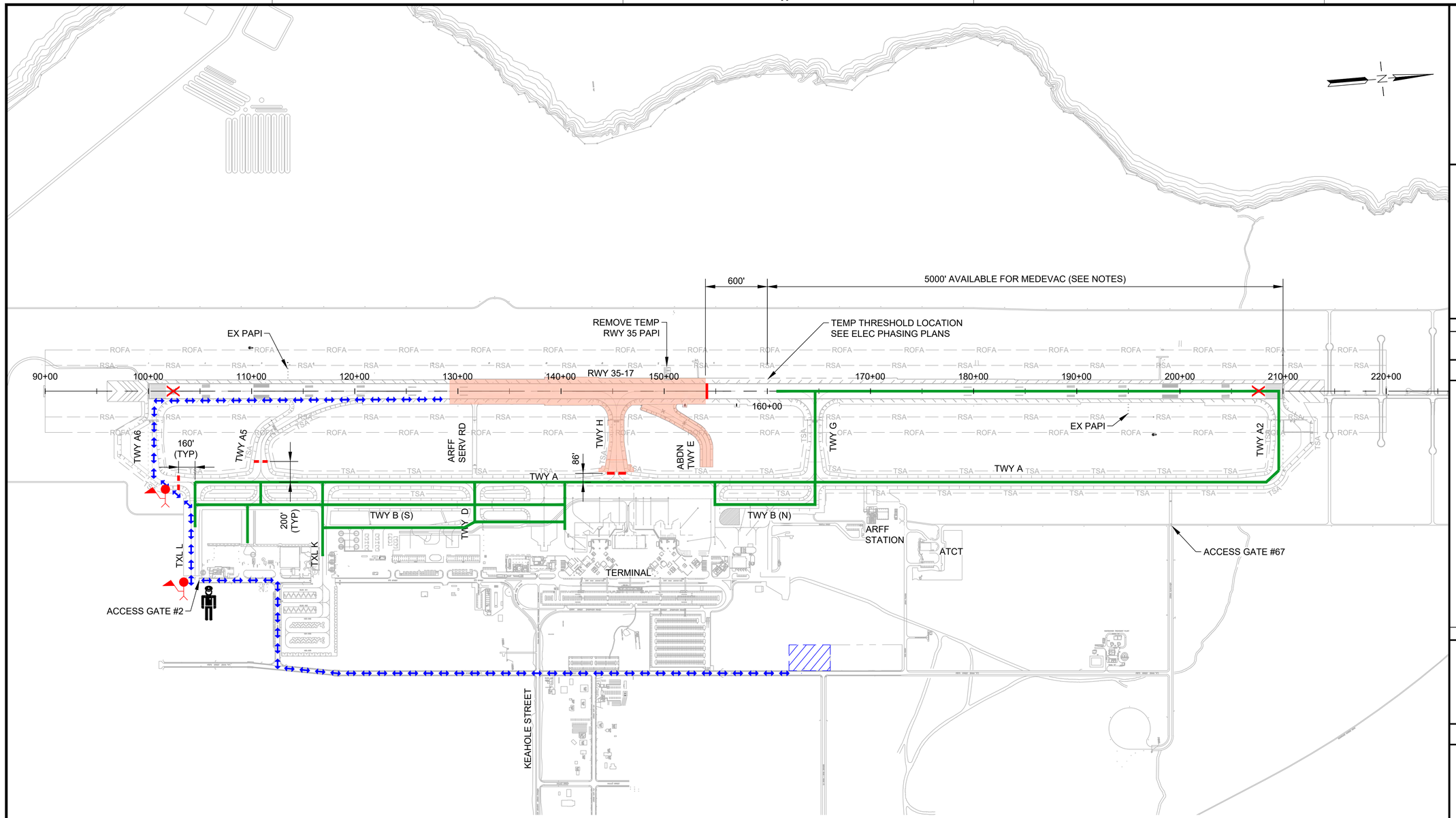


LEGEND:

- WORK AREA
- AIRCRAFT TRAVEL ROUTE
- LOW-PROFILE BARRICADES (CONTINUOUS)
- LOW-PROFILE BARRICADES (WITH GAPS)
- LIGHTED CLOSED RUNWAY MARKER
- CONTRACTOR STAGING AREA
- CONTRACTOR HAUL ROUTE (2 WAY)
- BLAST FENCE BARRIER
- FLAGGERS
- SECURITY GUARD (SEE SPEC 01565 SECURITY MEASURES)

PHASING AND BARRICADE PLAN - PHASE 4B.1

DESCRIPTION OF WORK:
COLD MILLING, CRACK REPAIR, AC PAVING, PAVEMENT MARKING

HOURS:
2200-0600 DAILY

DURATION:
45 CALENDAR DAYS
ANTICIPATED DATES: 10/2/2025 TO 11/16/2025

REQUIRED NOTAMS:
1. RUNWAY 17-35 CLOSED, EXCEPT MEDEVAC AIRCRAFT WITH 1-HR PPR
2. TAXIWAY A6 CLOSED
3. TAXIWAY A5 CLOSED
4. TAXIWAY H CLOSED
5. RUNWAY 17-35 UNGROOVED (WORKING AND NONWORKING HOURS)
6. TAXIWAY A AT TAXIWAY H RESTRICTED TO ADG III AND SMALLER

NAVAID STATUS:

RUNWAY 17 PAPI (FAA):	OTS (IN-SERVICE WITH 1-HR PPR)
RUNWAY 17 PAPI (TEMP):	OTS
RUNWAY 17 LOC/DME:	OTS
RUNWAY 17 GS:	OTS
RUNWAY 17 MALSR:	OTS
RUNWAY 35 PAPI (FAA):	OTS
RUNWAY 35 PAPI (TEMP):	N/A

PHASING NOTES:
1. CONTRACTOR SHALL CONSTRUCT THE NEW AC PAVEMENT ACROSS THE FULL WIDTH OF THE RUNWAY AND/OR TAXIWAY DURING EACH OVERNIGHT CLOSURE. ALL MILLED SURFACES SHALL BE PAVED AND TRANSITION RAMPS SHALL BE CONSTRUCTED PRIOR TO REOPENING THE RUNWAY EACH MORNING.
2. THE CONTRACTOR SHALL APPLY HALF APPLICATION PAVEMENT MARKINGS PRIOR TO REOPENING THE RUNWAY OR TAXIWAY TO AIRCRAFT OPERATIONS.
3. PRIOR TO OPENING THE RUNWAY, THE CONTRACTOR SHALL COORDINATE FOR AOC TO CONDUCT A RUNWAY INSPECTION.
4. SEE SPECIAL PROVISIONS FOR LIQUIDATED DAMAGES FOR FAILURE TO REOPEN THE RUNWAY AT 0600 HRS.
5. EACH NIGHT, THE CONTRACTOR SHALL PROVIDE EDGE LIGHTS AND TEMPORARY THRESHOLD LIGHTS ON THE DESIGNATED PORTION OF THE RUNWAY (SEE ELECTRICAL PHASING PLANS). WITHIN 1-HR OF NOTIFICATION BY AIRPORT OPERATIONS, THE CONTRACTOR SHALL PERFORM A FOD INSPECTION ON THE DESIGNATED PORTION OF THE RUNWAY AND PREPARE FOR THE ARRIVAL AND/OR DEPARTURE OF EMERGENCY MEDEVAC AIRCRAFT. CONTRACTOR SHALL CONTACT AOC FOR FINAL INSPECTION AND APPROVAL PRIOR TO OPENING THE RUNWAY FOR EMERGENCY MEDEVAC OPERATIONS.
6. CONTRACTOR SHALL PROVIDE A DEDICATED RADIO MONITORING PERSON DURING WORKING HOURS TO MONITOR THE CTAF FREQUENCY..
7. RUNWAY CLOSURE INFORMATION SHALL BE BROADCAST ON ATIS.
8. THE CONTRACTOR SHALL REMOVE THE RWY 17 LIGHTED X IMMEDIATELY PRIOR TO ARRIVAL OR DEPARTURE OF MEDEVAC AIRCRAFT AND SHALL REPLACE THE LIGHTED X IMMEDIATELY AFTER THE AIRCRAFT HAS CLEARED THE RUNWAY.

500' 0 500' 1000'
SCALE: 1" = 500'

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
AIRPORTS

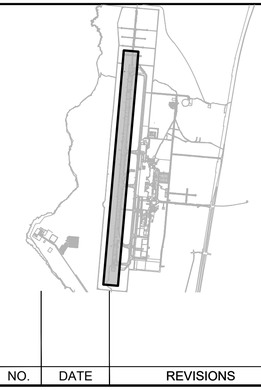
MARTIN A. CLEVEN
LICENSED PROFESSIONAL ENGINEER
No. 12828-C
HAWAII U.S.A.

4/30/24
Licensed Expiration Date

This work was prepared by me or under my supervision.

DSGN.	DRWN.	CHKD.	APPD.
AC	AT	TR	SH

KEY PLAN / NOTES:



NO.	DATE	REVISIONS

CONSTRUCTION DOCUMENTS
SEPTEMBER 2023
DATE

PROJECT TITLE :

RUNWAY 17-35 REHABILITATION

AT
ELLISON ONIZUKA KONA INTERNATIONAL AIRPORT AT KEAHOLE KAILUA-KONA, HAWAII

PROJECT NO.:

AH2021-16

SHEET TITLE:

PHASING AND BARRICADE PLAN PHASE 4B.1

DATE :	DWG. NO.
09/2023	G-115
SHEET :	
20 OF 190 SHEETS	

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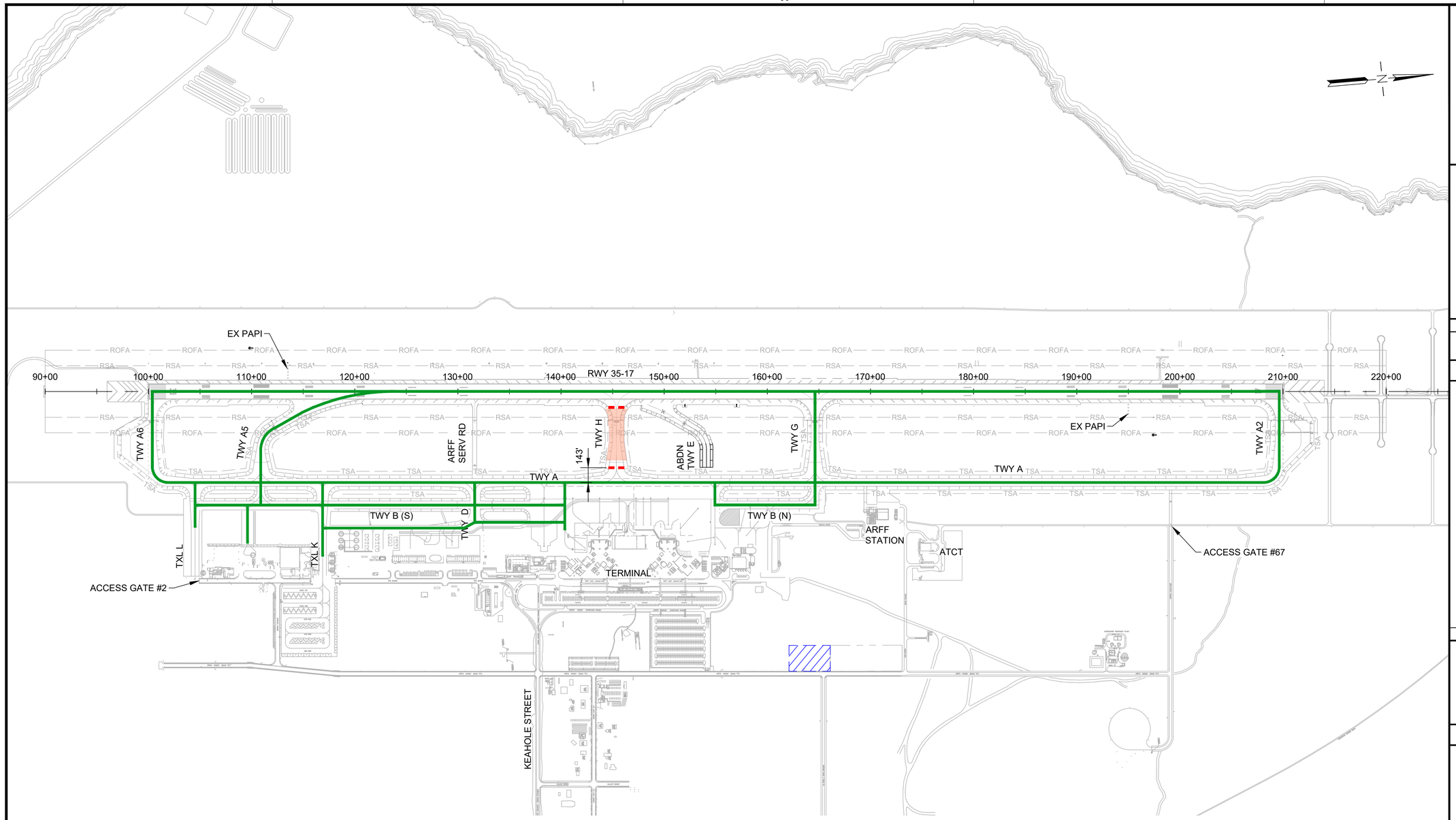

LEGEND:

- WORK AREA
- AIRCRAFT TRAVEL ROUTE
- LOW-PROFILE BARRICADES (CONTINUOUS)
- LOW-PROFILE BARRICADES (WITH GAPS)
- LIGHTED CLOSED RUNWAY MARKER
- CONTRACTOR STAGING AREA
- CONTRACTOR HAUL ROUTE (2 WAY)
- BLAST FENCE BARRIER
- FLAGGERS

PHASING AND BARRICADE PLAN - PHASE 4B.2

DESCRIPTION OF WORK:
NON-WORKING HOURS TAXIWAY H REHABILITATION

HOURS:
0600-2200 DAILY

DURATION:
45 CALENDAR DAYS
ANTICIPATED DATES: 10/2/2025 TO 11/16/2025

REQUIRED NOTAMS
1. TAXIWAY H CLOSED
2. RUNWAY 17-35 UNGROOVED

NAVAID STATUS:

RUNWAY 17 PAPI (FAA):	IN-SERVICE
RUNWAY 17 PAPI (TEMP):	OTS
RUNWAY 17 LOC/DME:	IN-SERVICE
RUNWAY 17 GS:	IN-SERVICE
RUNWAY 35 PAPI (FAA):	IN-SERVICE
RUNWAY 35 PAPI (TEMP):	N/A

PHASING NOTES:
1. PHASE 4B.2 SHALL BE CONCURRENT WITH PHASE 4B.1.

500' 0 500' 1000'
SCALE: 1" = 500'

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
AIRPORTS

MARTIN A. CLEVEN
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4/30/24
Licensed Expiration Date

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DSGN.	DRWN.	CHKD.	APPD.
AC	AT	TR	SH

KEY PLAN / NOTES:

NO.	DATE	REVISIONS

CONSTRUCTION DOCUMENTS
SEPTEMBER 2023
DATE

PROJECT TITLE :

RUNWAY 17-35 REHABILITATION
AT
ELLISON ONIZUKA
KONA INTERNATIONAL AIRPORT AT KEAHOLE
KAILUA-KONA, HAWAII

PROJECT NO.:
AH2021-16

SHEET TITLE:
PHASING AND BARRICADE PLAN PHASE 4B.2

DATE :
09/2023
SHEET :
21 OF 190 SHEETS

DWG. NO.
G-116

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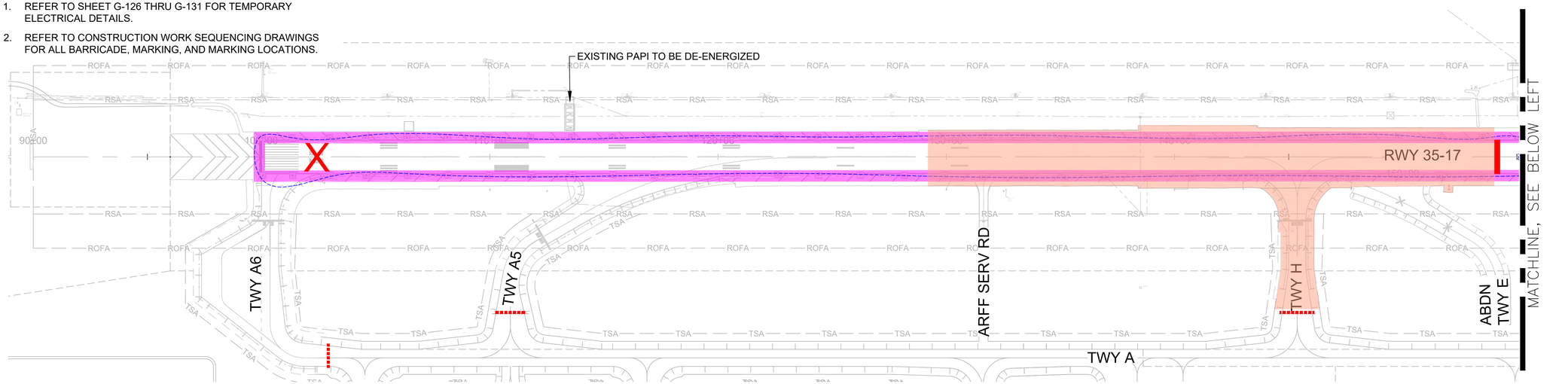
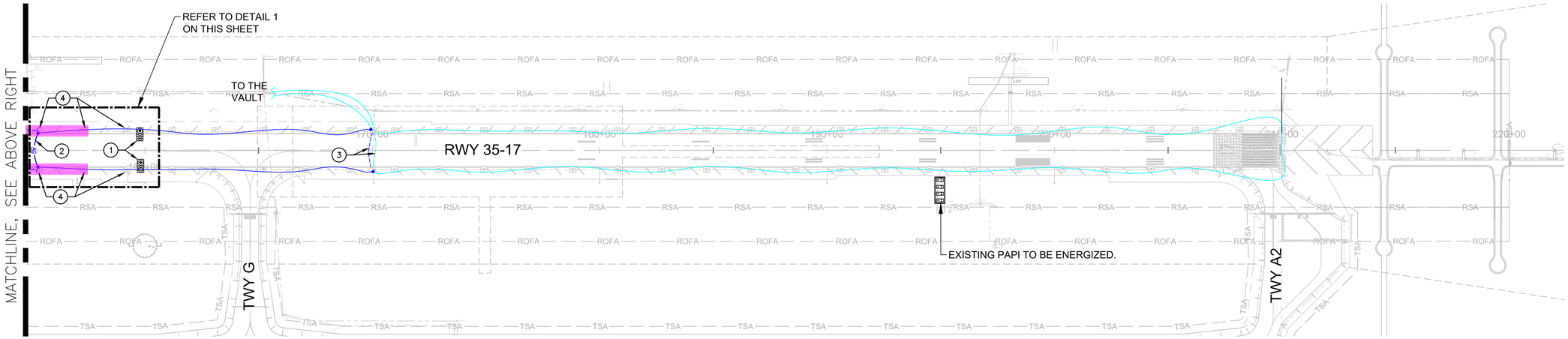
ELECTRICAL PHASING NOTES

1. REFER TO SHEET G-126 THRU G-131 FOR TEMPORARY ELECTRICAL DETAILS.
2. REFER TO CONSTRUCTION WORK SEQUENCING DRAWINGS FOR ALL BARRICADE, MARKING, AND MARKING LOCATIONS.





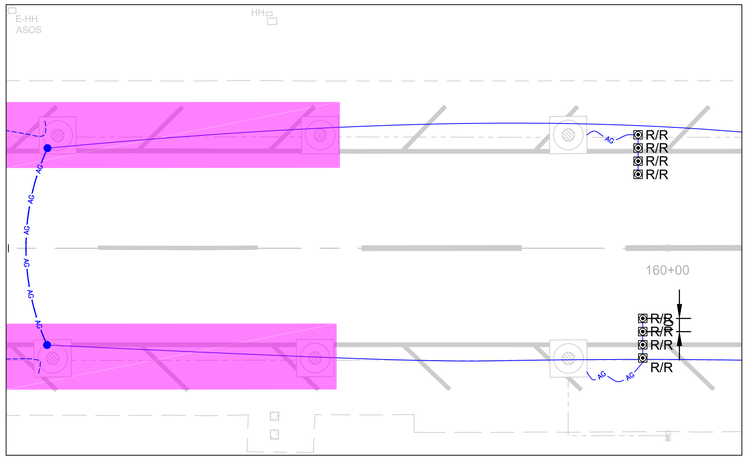
TEMPORARY ELECTRICAL LEGEND

- EXISTING RUNWAY EDGE LIGHTS TO BE DE-ENERGIZED.
- WORK AREA
- TEMPORARY ABOVE GROUND CABLE. 1#8 AWG, L-824C 5KV CABLE ANCHORED TO PAVEMENT WITH SAND BAGS.
- EXISTING R-1 CIRCUIT WITH 1#8 5KV CABLE TO BE DE-ENERGIZED.
- EXISTING R-1 CIRCUIT WITH 1#8 5KV CABLE TO BE ENERGIZED.
- EXISTING R-2 CIRCUIT WITH 1#8 5KV CABLE TO BE DE-ENERGIZED.
- EXISTING R-2 CIRCUIT WITH 1#8 5KV CABLE TO BE ENERGIZED.
- JUNCTION CAN FOR TEMPORARY REIL.
- EXISTING RUNWAY EDGE LIGHTS, INSTALLED IN PHASE 1, TO REMAIN.
- EXISTING RUNWAY THRESHOLD LIGHTS, INSTALLED IN PHASE 1, TO REMAIN.
- EXISTING HANDHOLE TO REMAIN.
- EXISTING PAPI TO REMAIN IN PLACE, U.O.N.
- EXISTING PAPI TO REMAIN TO BE ENERGIZED.

KEY NOTES

ITEMS TO BE TEMPORARILY INSTALLED.

1. FURNISH AND INSTALL HIGH INTENSITY RUNWAY EDGE LIGHT WITH RED/RED LENS ON STEEL BOX. REFER TO DETAIL 2 ON SHEET G-126 FOR INSTALLATION.
2. INSTALL ABOVE GROUND 1#8 5KV CABLE BETWEEN EXISTING BASE CANS. CABLE SHALL BE SECURED TO THE PAVEMENT WITH SAND BAGS EVERY 5'. LOOP OUT CIRCUIT R-2 AND CONNECT ABOVE GROUND CABLE TO EXISTING CABLE COMING FROM THE NORTH. AT THE END OF THE SHIFT, REMOVE CABLE AND RECONNECT CIRCUIT R-2 TO SOUTH.
3. ACCESS JUNCTION CAN TO DISCONNECT CIRCUITS R-1 & R-2 AS SHOWN. CONTRACTOR SHALL TEMPORARILY FEED RUNWAY EDGE LIGHTS USING R-1 CIRCUIT. AT THE END OF THE NIGHT CLOSURE, RECONNECT BOTH CIRCUITS BACK TO ORIGINAL CONFIGURATION.
4. COVER EXISTING RWY EDGE LIGHT WITH PVC SLEEVE PER DETAIL 2 ON SHEET G-127.



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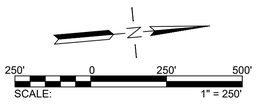
SCALE: NOT TO SCALE



Airports Division
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
AIRPORTS

DORON LEAN
LICENSED PROFESSIONAL ENGINEER
No. 14476-E
HAWAII, U.S.A.
04/30/2024
Licensed Expiration Date

DSGN.	DRWN.	CHKD.	APPD.
JP	KV	JA	DL

KEY PLAN / NOTES:

NO.	DATE	REVISIONS

CONSTRUCTION DOCUMENT
SEPTEMBER 2023
DATE

PROJECT TITLE :

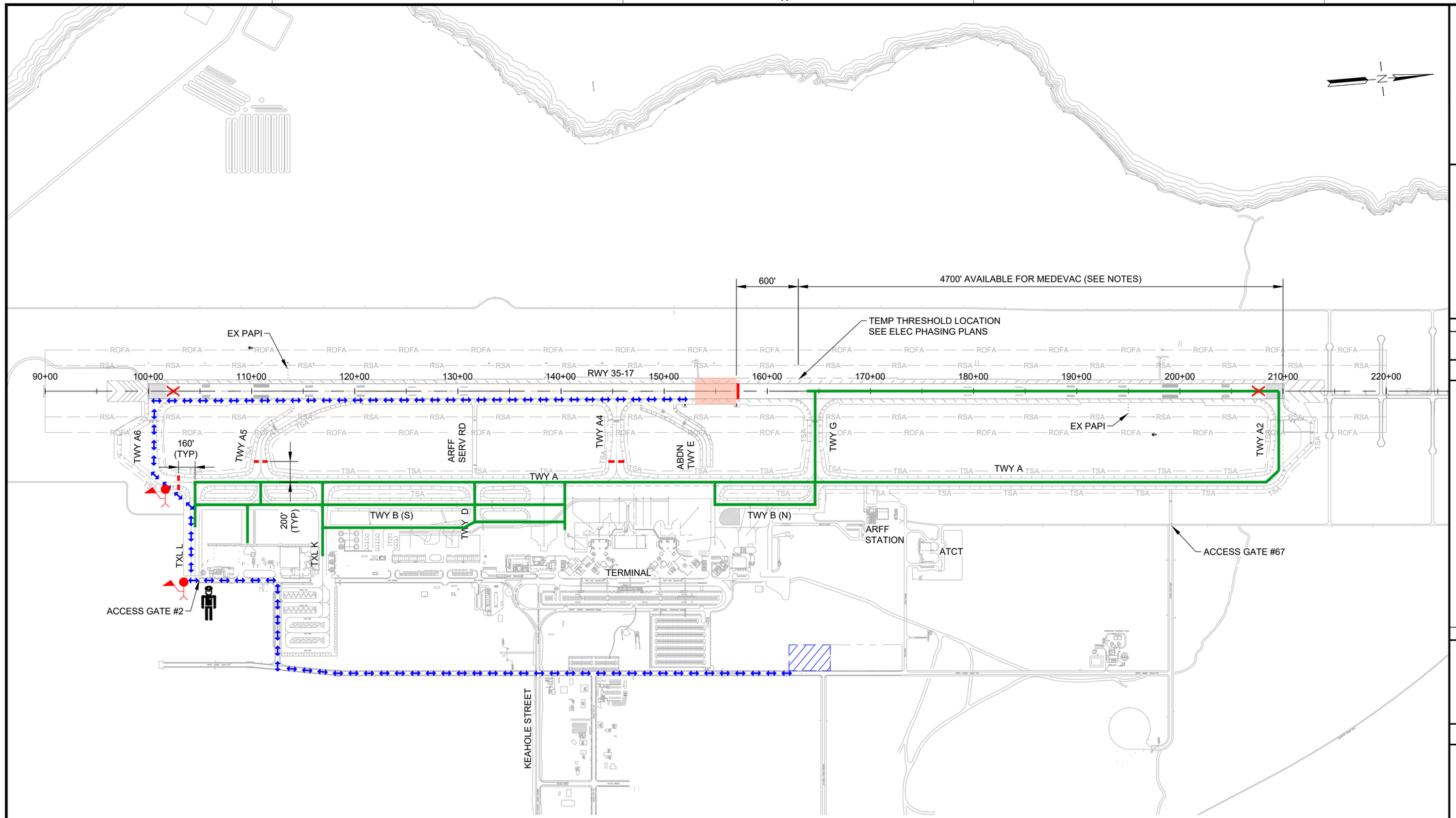
RUNWAY 17-35 REHABILITATION
AT
ELLISON ONIZUKA
KONA INTERNATIONAL AIRPORT AT KEAHOLE
KAILUA-KONA, HAWAII

PROJECT NO.:
AH2021-16

SHEET TITLE:
ELECTRICAL PHASING PLAN 4B

DATE : 09/2023
SHEET : 22 OF 190 SHEETS
DWG. NO. G-117

C:\USERS\EDUARDO SALCINES\LEAN PHOTOMETRICS DROPBOX\ACTIVE PROJECTS\L1472102A ORION-KOA RUNWAY 17-35 REHABILITATION\01 DRAWINGS\WORKING DRAWINGS\SHEETS\PHASING\AH2021-16-OEA-KOA-PH04B.DWG



LEGEND:

- WORK AREA
- AIRCRAFT TRAVEL ROUTE
- LOW-PROFILE BARRICADES (CONTINUOUS)
- LOW-PROFILE BARRICADES (WITH GAPS)
- X — LIGHTED CLOSED RUNWAY MARKER
- CONTRACTOR STAGING AREA
- CONTRACTOR HAUL ROUTE (2 WAY)
- BLAST FENCE BARRIER
- FLAGGERS
- SECURITY GUARD
  (SEE SPEC 01565 SECURITY MEASURES)

PHASING AND BARRICADE PLAN - PHASE 4C

DESCRIPTION OF WORK:
COLD MILLING, CRACK REPAIR, AC PAVING, PAVEMENT MARKING

HOURS:
2200-0600 DAILY

DURATION:
4 CALENDAR DAYS
ANTICIPATED DATES: 11/16/2025 TO 11/20/2025

REQUIRED NOTAMS (WORK HOURS):
1. RUNWAY 17-35 CLOSED, EXCEPT MEDEVAC AIRCRAFT WITH 1-HR PPR
2. TAXIWAY A6 CLOSED
3. TAXIWAY A5 CLOSED
4. TAXIWAY A4 CLOSED
5. TAXIWAY H RENAMED TO TAXIWAY A4
6. RUNWAY 17-35 UNGROOVED (WORKING AND NONWORKING HOURS)

NAVAID STATUS:

RUNWAY 17 PAPI (FAA):	OTS (IN-SERVICE WITH 1-HR PPR)
RUNWAY 17 PAPI (TEMP):	OTS
RUNWAY 17 LOC/DME:	OTS
RUNWAY 17 GS:	OTS
RUNWAY 17 MALSR:	OTS
RUNWAY 35 PAPI (FAA):	OTS
RUNWAY 35 PAPI (TEMP):	N/A

PHASING NOTES:
1. CONTRACTOR SHALL CONSTRUCT THE NEW AC PAVEMENT ACROSS THE FULL WIDTH OF THE RUNWAY AND/OR TAXIWAY DURING EACH OVERNIGHT CLOSURE. ALL MILLED SURFACES SHALL BE PAVED AND TRANSITION RAMPS SHALL BE CONSTRUCTED PRIOR TO REOPENING THE RUNWAY EACH MORNING.
2. THE CONTRACTOR SHALL APPLY HALF APPLICATION PAVEMENT MARKINGS PRIOR TO REOPENING THE RUNWAY OR TAXIWAY TO AIRCRAFT OPERATIONS.
3. PRIOR TO OPENING THE RUNWAY, THE CONTRACTOR SHALL COORDINATE FOR AOC TO CONDUCT A RUNWAY INSPECTION.
4. SEE SPECIAL PROVISIONS FOR LIQUIDATED DAMAGES FOR FAILURE TO REOPEN THE RUNWAY AT 0600 HRS.
5. EACH NIGHT, THE CONTRACTOR SHALL PROVIDE EDGE LIGHTS AND TEMPORARY THRESHOLD LIGHTS ON THE DESIGNATED PORTION OF THE RUNWAY (SEE ELECTRICAL PHASING PLANS). WITHIN 1-HR OF NOTIFICATION BY AIRPORT OPERATIONS, THE CONTRACTOR SHALL PERFORM A FOD INSPECTION ON THE DESIGNATED PORTION OF THE RUNWAY AND PREPARE FOR THE ARRIVAL AND/OR DEPARTURE OF EMERGENCY MEDEVAC AIRCRAFT. CONTRACTOR SHALL CONTACT AOC FOR FINAL INSPECTION AND APPROVAL PRIOR TO OPENING THE RUNWAY FOR EMERGENCY MEDEVAC OPERATIONS.
6. CONTRACTOR SHALL PROVIDE A DEDICATED RADIO MONITORING PERSON DURING WORKING HOURS TO MONITOR THE CTAF FREQUENCY.
7. RUNWAY CLOSURE INFORMATION SHALL BE BROADCAST ON ATIS.
8. THE CONTRACTOR SHALL REMOVE THE RWY 17 LIGHTED X IMMEDIATELY PRIOR TO ARRIVAL OR DEPARTURE OF MEDEVAC AIRCRAFT AND SHALL REPLACE THE LIGHTED X IMMEDIATELY AFTER THE AIRCRAFT HAS CLEARED THE RUNWAY.

500' 0 500' 1000'
SCALE: 1" = 500'

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
AIRPORTS

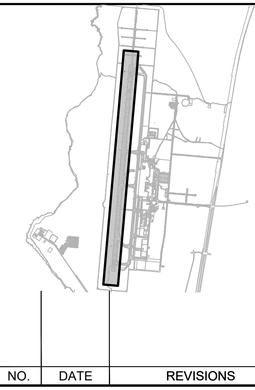
MARTIN A. CLEVEN
LICENSED PROFESSIONAL ENGINEER
No. 12828-C
HAWAII U.S.A.

4/30/24
Licensed Expiration Date

This work was prepared by me or under my supervision.

DSGN.	DRWN.	CHKD.	APPD.
AC	AT	TR	SH

KEY PLAN / NOTES:



NO.	DATE	REVISIONS

CONSTRUCTION DOCUMENTS
SEPTEMBER 2023
DATE

PROJECT TITLE :

RUNWAY 17-35 REHABILITATION
AT
ELLISON ONIZUKA
KONA INTERNATIONAL AIRPORT AT KEAHOLE
KAILUA-KONA, HAWAII

PROJECT NO.:

AH2021-16

SHEET TITLE:

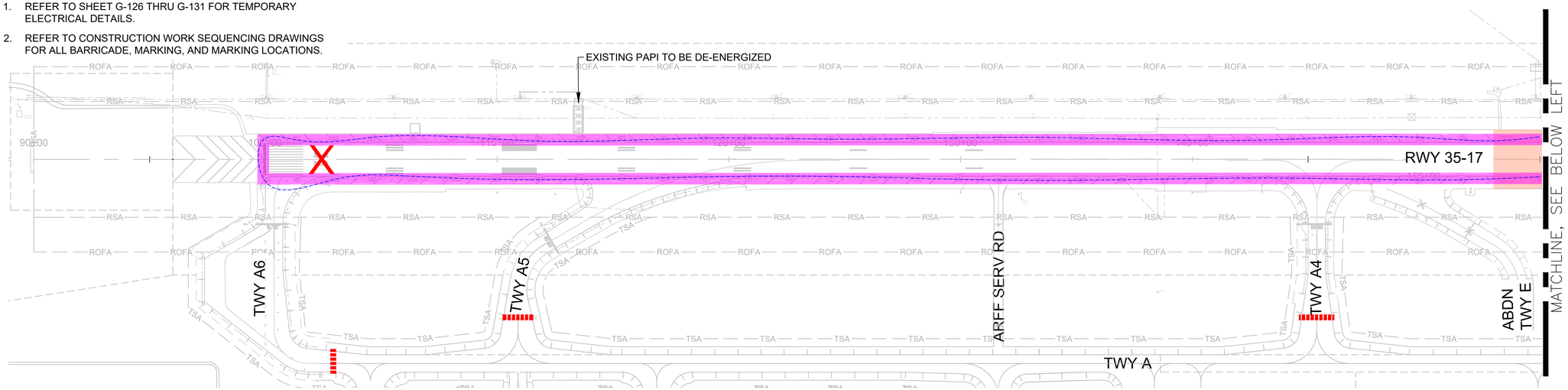
PHASING AND BARRICADE PLAN PHASE 4C

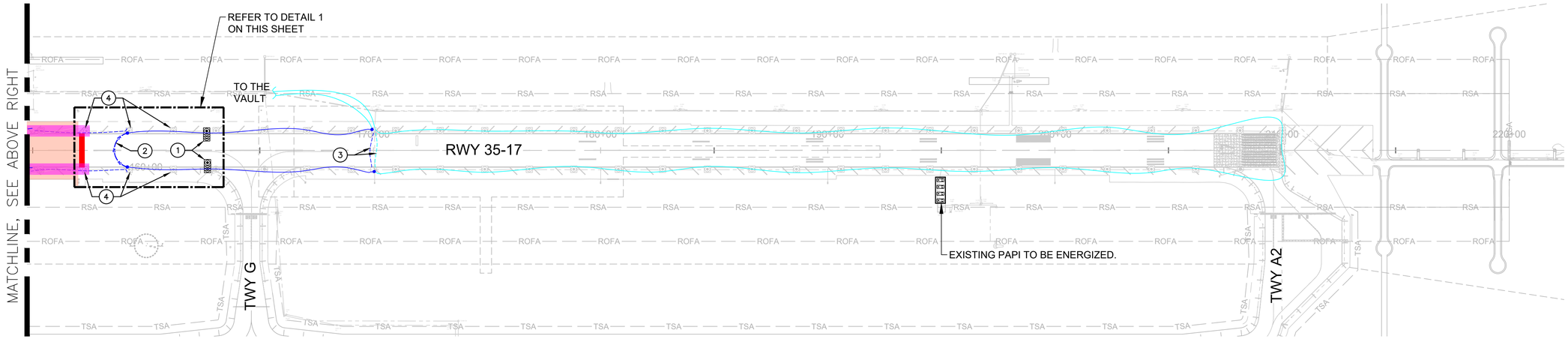
DATE :	DWG. NO.
09/2023	G-118
SHEET :	
23 OF 190 SHEETS	

C:\USERS\CEAGRON ENGINEERS & ASSOCIATES\HDOT KOA 17-35 REHAB - DOCUMENTS\02 ENGINEERING\05_DRAWINGS\AH2021-16-DEA-KOA-PHO4C.DWG

ELECTRICAL PHASING NOTES

1. REFER TO SHEET G-126 THRU G-131 FOR TEMPORARY ELECTRICAL DETAILS.
2. REFER TO CONSTRUCTION WORK SEQUENCING DRAWINGS FOR ALL BARRICADE, MARKING, AND MARKING LOCATIONS.





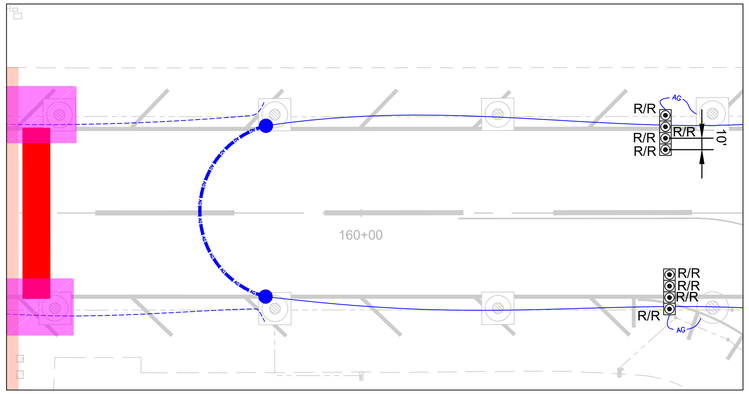
TEMPORARY ELECTRICAL LEGEND

- EXISTING RUNWAY EDGE LIGHTS TO BE DE-ENERGIZED.
- TEMPORARY ABOVE GROUND CABLE. 1#8 AWG, L-824C 5KV CABLE ANCHORED TO PAVEMENT WITH SAND BAGS.
- EXISTING R-1 CIRCUIT WITH 1#8 5KV CABLE TO BE DE-ENERGIZED.
- EXISTING R-1 CIRCUIT WITH 1#8 5KV CABLE TO BE ENERGIZED.
- EXISTING R-2 CIRCUIT WITH 1#8 5KV CABLE TO BE DE-ENERGIZED.
- EXISTING R-2 CIRCUIT WITH 1#8 5KV CABLE TO BE ENERGIZED.
- JUNCTION CAN FOR TEMPORARY REIL.
- EXISTING RUNWAY EDGE LIGHTS, INSTALLED IN PHASE 1, TO REMAIN.
- EXISTING RUNWAY THRESHOLD LIGHTS, INSTALLED IN PHASE 1, TO REMAIN.
- EXISTING HANDHOLE TO REMAIN.
- EXISTING PAPI TO REMAIN IN PLACE, U.O.N.
- EXISTING PAPI TO REMAIN TO BE ENERGIZED.

KEY NOTES

ITEMS TO BE TEMPORARILY INSTALLED.

1. FURNISH AND INSTALL HIGH INTENSITY RUNWAY EDGE LIGHT WITH RED/RED LENS ON STEEL BOX. REFER TO DETAIL 2 ON SHEET G-126 FOR INSTALLATION.
2. INSTALL ABOVE GROUND 1#8 5KV CABLE BETWEEN EXISTING BASE CANS. CABLE SHALL BE SECURED TO THE PAVEMENT WITH SAND BAGS EVERY 5'. LOOP OUT CIRCUIT R-2 AND CONNECT ABOVE GROUND CABLE TO EXISTING CABLE COMING FROM THE NORTH. AT THE END OF THE SHIFT, REMOVE CABLE AND RECONNECT CIRCUIT R-2 TO SOUTH.
3. ACCESS JUNCTION CAN TO DISCONNECT CIRCUITS R-1 & R-2 AS SHOWN. CONTRACTOR SHALL TEMPORARILY FEED RUNWAY EDGE LIGHTS USING R-1 CIRCUIT. AT THE END OF THE NIGHT CLOSURE, RECONNECT BOTH CIRCUITS BACK TO ORIGINAL CONFIGURATION.
4. COVER EXISTING RWY EDGE LIGHT WITH PVC SLEEVE PER DETAIL 2 ON SHEET G-127.



1 ENLARGEMENT 1
SCALE: NOT TO SCALE

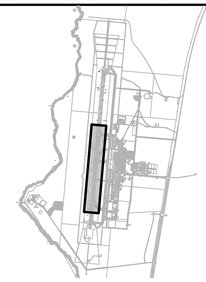
250' 0 250' 500'
SCALE: 1" = 250'

Airports Division
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
AIRPORTS

DORON LEAN
LICENSED PROFESSIONAL ENGINEER
No. 14476-E
HAWAII, U.S.A.
04/30/2024
Licensed Expiration Date

DSGN.	DRWN.	CHKD.	APPD.
JP	KV	JA	DL

KEY PLAN / NOTES:



NO.	DATE	REVISIONS

CONSTRUCTION DOCUMENT
SEPTEMBER 2023
DATE

PROJECT TITLE :

RUNWAY 17-35 REHABILITATION
AT
ELLISON ONIZUKA
KONA INTERNATIONAL AIRPORT AT KEAHOLE
KAILUA-KONA, HAWAII

PROJECT NO.:

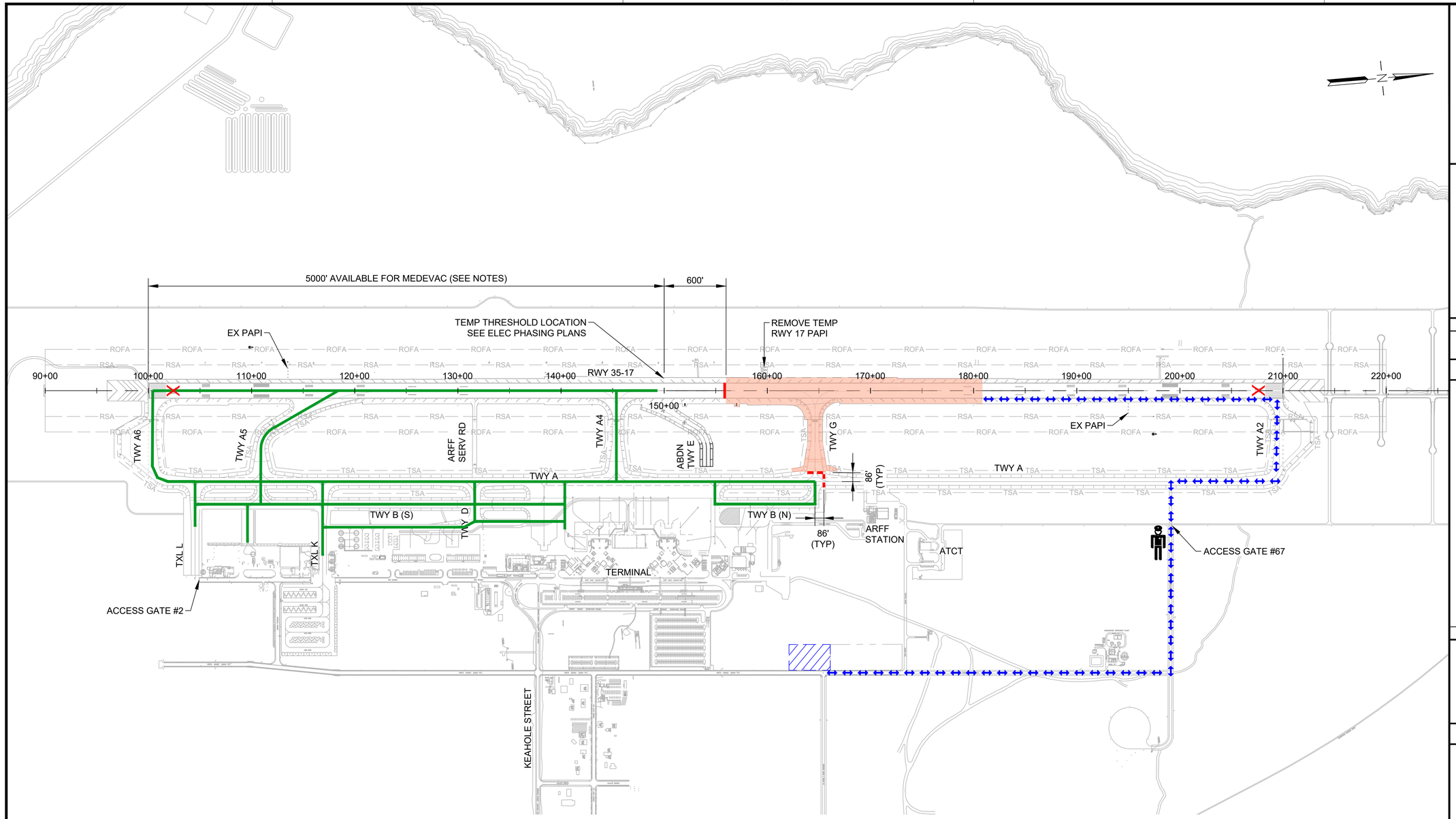
AH2021-16

SHEET TITLE:

ELECTRICAL PHASING PLAN 4C

DATE : 09/2023
SHEET : 24 OF 190 SHEETS
DWG. NO. G-119

C:\USERS\EDUARDO SALCINES\LEAN PHOTOMETRICS DROPBOX\ACTIVE PROJECTS\L1472102A ORION-KOA RUNWAY 17-35 REHABILITATION\01 DRAWINGS\WORKING DRAWINGS\SHEETS\PHASING\AH2021-16-OEA-KOA-PH04C.DWG



LEGEND:

- WORK AREA
- AIRCRAFT TRAVEL ROUTE
- LOW-PROFILE BARRICADES (CONTINUOUS)
- LOW-PROFILE BARRICADES (WITH GAPS)
- LIGHTED CLOSED RUNWAY MARKER
- CONTRACTOR STAGING AREA
- CONTRACTOR HAUL ROUTE (2 WAY)
- BLAST FENCE BARRIER
- FLAGGERS
- SECURITY GUARD (SEE SPEC 01565 SECURITY MEASURES)

PHASING AND BARRICADE PLAN - PHASE 4D.1

DESCRIPTION OF WORK:
COLD MILLING, CRACK REPAIR, AC PAVING, PAVEMENT MARKING

HOURS:
2200-0600 DAILY

DURATION:
45 WORKING DAYS
ANTICIPATED DATES: 12/1/2025 TO 12/16/2025
1/1/2026 TO 1/31/2026

REQUIRED NOTAMS:
1. RUNWAY 17-35 CLOSED, EXCEPT MEDEVAC AIRCRAFT WITH 1-HR PPR
2. TAXIWAY G CLOSED
3. TAXIWAY A2 CLOSED
4. TAXIWAY A CLOSED, NORTH OF TAXIWAY G
5. TAXIWAY A AT TAXIWAY G RESTRICTED TO ADG III AND SMALLER
6. TAXIWAY H RENAMED TAXIWAY A4
7. RUNWAY 17-35 UNGROOVED (WORKING AND NONWORKING HOURS)

NAVAID STATUS:

RUNWAY 17 PAPI (FAA):	OTS (IN-SERVICE WITH 1-HR PPR)
RUNWAY 17 PAPI (TEMP):	N/A
RUNWAY 17 LOC/DME:	OTS
RUNWAY 17 GS:	OTS
RUNWAY 17 MALSR:	OTS
RUNWAY 35 PAPI (FAA):	IN-SERVICE
RUNWAY 35 PAPI (TEMP):	N/A

PHASING NOTES:
1. CONTRACTOR SHALL CONSTRUCT THE NEW AC PAVEMENT ACROSS THE FULL WIDTH OF THE RUNWAY AND/OR TAXIWAY DURING EACH OVERNIGHT CLOSURE. ALL MILLED SURFACES SHALL BE PAVED AND TRANSITION RAMPS SHALL BE CONSTRUCTED PRIOR TO REOPENING THE RUNWAY EACH MORNING.
2. THE CONTRACTOR SHALL APPLY HALF APPLICATION PAVEMENT MARKINGS PRIOR TO REOPENING THE RUNWAY OR TAXIWAY TO AIRCRAFT OPERATIONS.
3. PRIOR TO OPENING THE RUNWAY, THE CONTRACTOR SHALL COORDINATE FOR AOC TO CONDUCT A RUNWAY INSPECTION.
4. SEE SPECIAL PROVISIONS FOR LIQUIDATED DAMAGES FOR FAILURE TO REOPEN THE RUNWAY AT 0600 HRS.
5. EACH NIGHT, THE CONTRACTOR SHALL PROVIDE EDGE LIGHTS AND TEMPORARY THRESHOLD LIGHTS ON THE DESIGNATED PORTION OF THE RUNWAY (SEE ELECTRICAL PHASING PLANS). WITHIN 1-HR OF NOTIFICATION BY AIRPORT OPERATIONS, THE CONTRACTOR SHALL PERFORM A FOD INSPECTION ON THE DESIGNATED PORTION OF THE RUNWAY AND PREPARE FOR THE ARRIVAL AND/OR DEPARTURE OF EMERGENCY MEDEVAC AIRCRAFT. CONTRACTOR SHALL CONTACT AOC FOR FINAL INSPECTION AND APPROVAL PRIOR TO OPENING THE RUNWAY FOR EMERGENCY MEDEVAC OPERATIONS.
6. CONTRACTOR SHALL PROVIDE A DEDICATED RADIO MONITORING PERSON DURING WORKING HOURS TO MONITOR THE CTAF FREQUENCY.
7. RUNWAY CLOSURE INFORMATION SHALL BE BROADCAST ON ATIS.
8. THE CONTRACTOR SHALL REMOVE THE RWY 17 LIGHTED X IMMEDIATELY PRIOR TO ARRIVAL OR DEPARTURE OF MEDEVAC AIRCRAFT AND SHALL REPLACE THE LIGHTED X IMMEDIATELY AFTER THE AIRCRAFT HAS CLEARED THE RUNWAY.

500' 0 500' 1000'
SCALE: 1" = 500'

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
AIRPORTS

MARTIN A. CLEVEN
LICENSED PROFESSIONAL ENGINEER
No. 12828-C
HAWAII U.S.A.

4/30/24
Licensed Expiration Date

This work was prepared by me or under my supervision.

DSGN.	DRWN.	CHKD.	APPD.
AC	AT	TR	SH

KEY PLAN / NOTES:

NO.	DATE	REVISIONS

CONSTRUCTION DOCUMENTS
SEPTEMBER 2023
DATE

PROJECT TITLE :

RUNWAY 17-35 REHABILITATION

AT
ELLISON ONIZUKA
KONA INTERNATIONAL AIRPORT AT KEAHOLE
KAILUA-KONA, HAWAII

PROJECT NO.:

AH2021-16

SHEET TITLE:

PHASING AND BARRICADE PLAN PHASE 4D.1

DATE :	DWG. NO.
09/2023	G-120
SHEET :	
25 OF 190 SHEETS	

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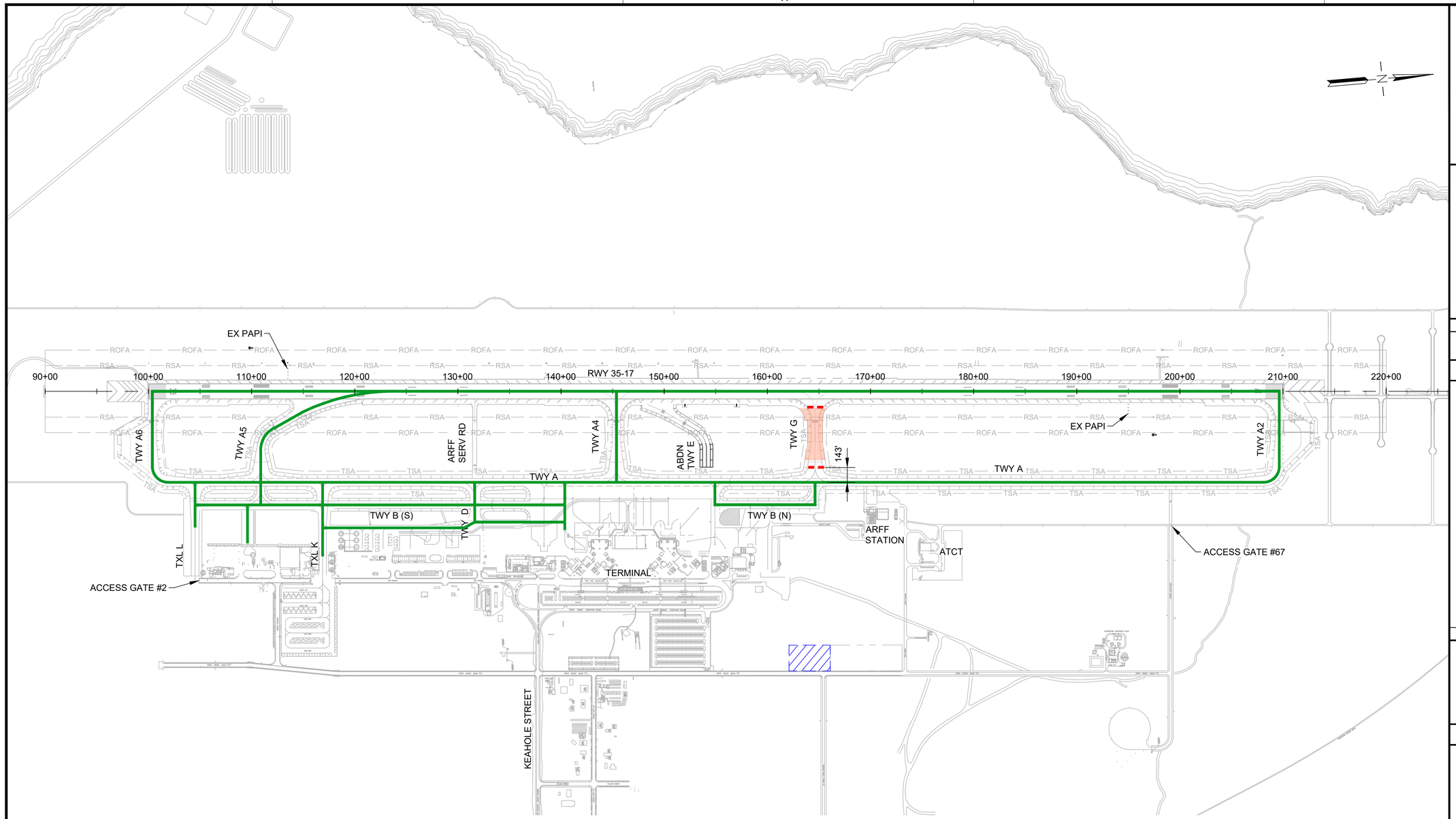


LEGEND:

- WORK AREA
- AIRCRAFT TRAVEL ROUTE
- LOW-PROFILE BARRICADES (CONTINUOUS)
- LOW-PROFILE BARRICADES (WITH GAPS)
- LIGHTED CLOSED RUNWAY MARKER
- CONTRACTOR STAGING AREA
- CONTRACTOR HAUL ROUTE (2 WAY)
- BLAST FENCE BARRIER
- FLAGGERS

PHASING AND BARRICADE PLAN - PHASE 4D.2

DESCRIPTION OF WORK:
NON-WORKING HOURS TAXIWAY G REHABILITATION

HOURS:
0600-2200 DAILY

DURATION:
45 WORKING DAYS
ANTICIPATED DATES: 12/1/2025 TO 12/16/2025
1/1/2026 TO 1/31/2026

REQUIRED NOTAMS
1. TAXIWAY G CLOSED
2. TAXIWAY H RENAMED TAXIWAY A4

NAVAID STATUS:

RUNWAY 17 PAPI (FAA):	IN-SERVICE
RUNWAY 17 PAPI (TEMP):	N/A
RUNWAY 17 LOC/DME:	IN-SERVICE
RUNWAY 17 GS:	IN-SERVICE
RUNWAY 35 PAPI (FAA):	IN-SERVICE
RUNWAY 35 PAPI (TEMP):	N/A

PHASING NOTES:
1. PHASE 4D.2 SHALL BE CONCURRENT WITH PHASE 4D.1.
2. PHASE 4D.2 SHALL NOT BEGIN UNTIL COMPLETION OF PHASE 4B.2.

SCALE: 500' 0 500' 1000' — 1" = 500'

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
AIRPORTS

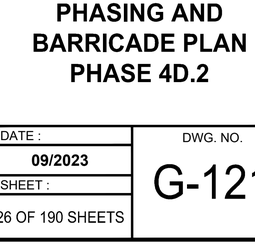
MARTIN A. CLEVEN
LICENSED PROFESSIONAL ENGINEER
No. 12828-C
HAWAII U.S.A.

4/30/24
Licensed Expiration Date

This work was prepared by me or under my supervision.

DSGN.	DRWN.	CHKD.	APPD.
AC	AT	TR	SH

KEY PLAN / NOTES:



NO.	DATE	REVISIONS

CONSTRUCTION DOCUMENTS
SEPTEMBER 2023
DATE

PROJECT TITLE :

RUNWAY 17-35 REHABILITATION
AT
ELLISON ONIZUKA
KONA INTERNATIONAL AIRPORT AT KEAHOLE
KAILUA-KONA, HAWAII

PROJECT NO.:
AH2021-16

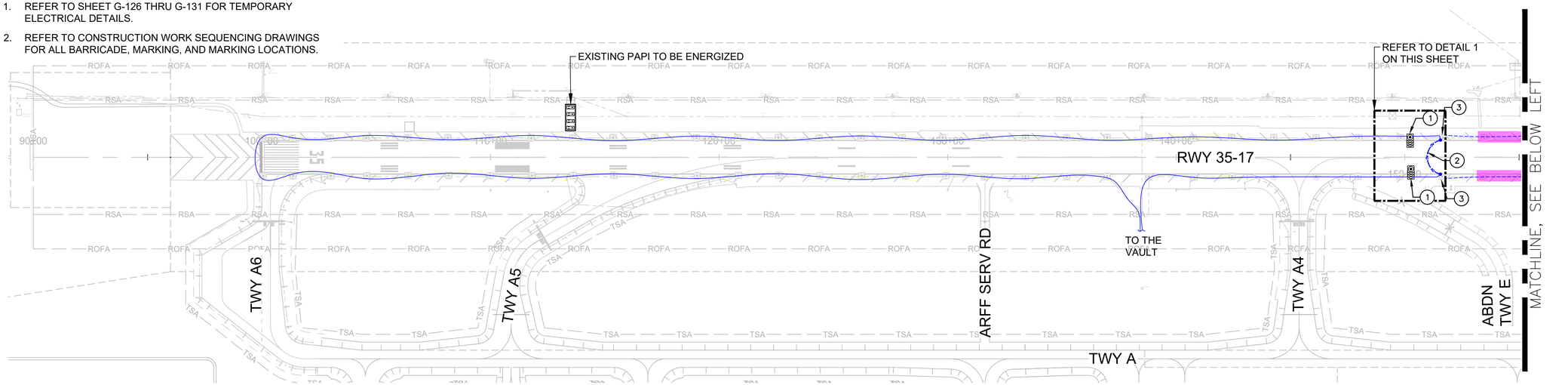
SHEET TITLE:
PHASING AND BARRICADE PLAN PHASE 4D.2

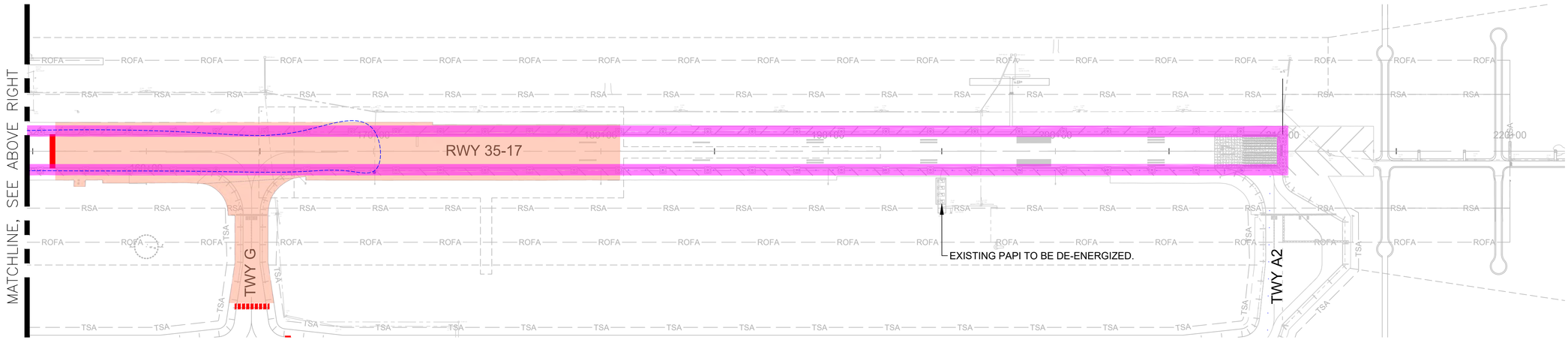
DATE : 09/2023
SHEET : 26 OF 190 SHEETS
DWG. NO. G-121

C:\USERS\OEA\ORION ENGINEERS & ASSOCIATES\HDOT KOA 17-35 REHAB - DOCUMENTS\02 ENGINEERING\05_DRAWINGS\AH2021-16-OEA-KOA-PHOAD 2.DWG

ELECTRICAL PHASING NOTES

1. REFER TO SHEET G-126 THRU G-131 FOR TEMPORARY ELECTRICAL DETAILS.
2. REFER TO CONSTRUCTION WORK SEQUENCING DRAWINGS FOR ALL BARRICADE, MARKING, AND MARKING LOCATIONS.





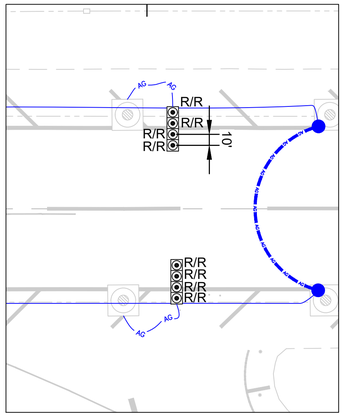
TEMPORARY ELECTRICAL LEGEND

- EXISTING RUNWAY EDGE LIGHTS TO BE DE-ENERGIZED.
- TEMPORARY ABOVE GROUND CABLE. 1#8 AWG, L-824C 5KV CABLE ANCHORED TO PAVEMENT WITH SAND BAGS.
- EXISTING R-2 CIRCUIT WITH 1#8 5KV CABLE TO BE DE-ENERGIZED.
- EXISTING R-2 CIRCUIT WITH 1#8 5KV CABLE TO BE ENERGIZED.
- JUNCTION CAN FOR TEMPORARY REIL.
- EXISTING RUNWAY EDGE LIGHTS, INSTALLED IN PHASE 1, TO REMAIN.
- EXISTING RUNWAY THRESHOLD LIGHTS, INSTALLED IN PHASE 1, TO REMAIN.
- EXISTING HANDHOLE TO REMAIN.
- EXISTING PAPI TO REMAIN IN PLACE, U.O.N.
- EXISTING PAPI TO REMAIN TO BE ENERGIZED.

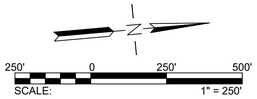
KEY NOTES

ITEMS TO BE TEMPORARILY INSTALLED.

1. FURNISH AND INSTALL HIGH INTENSITY RUNWAY EDGE LIGHT WITH RED/RED LENS ON STEEL BOX. REFER TO DETAIL 2 ON SHEET G-126 FOR INSTALLATION.
2. INSTALL ABOVE GROUND 1#8 5KV CABLE BETWEEN EXISTING BASE CANS. CABLE SHALL BE SECURED TO THE PAVEMENT WITH SAND BAGS EVERY 5'. LOOP OUT CIRCUIT R-2 AND CONNECT ABOVE GROUND CABLE TO EXISTING CABLE COMING FROM THE NORTH. AT THE END OF THE SHIFT, REMOVE CABLE AND RECONNECT CIRCUIT R-2 TO SOUTH.
3. COVER EXISTING RWY EDGE LIGHT WITH PVC SLEEVE PER DETAIL 2 ON SHEET G-127.



1 ENLARGEMENT 1
SCALE: NOT TO SCALE



Airports Division
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
AIRPORTS

DORON LEAN
LICENSED PROFESSIONAL ENGINEER
No. 14476-E
HAWAII, U.S.A.
04/30/2024
Licensed Expiration Date

DSGN.	DRWN.	CHKD.	APPD.
JP	KV	JA	DL

KEY PLAN / NOTES:

NO.	DATE	REVISIONS

CONSTRUCTION DOCUMENT
SEPTEMBER 2023
DATE

PROJECT TITLE :

RUNWAY 17-35 REHABILITATION
AT
ELLISON ONIZUKA
KONA INTERNATIONAL AIRPORT AT KEAHOLE
KAILUA-KONA, HAWAII

PROJECT NO.:

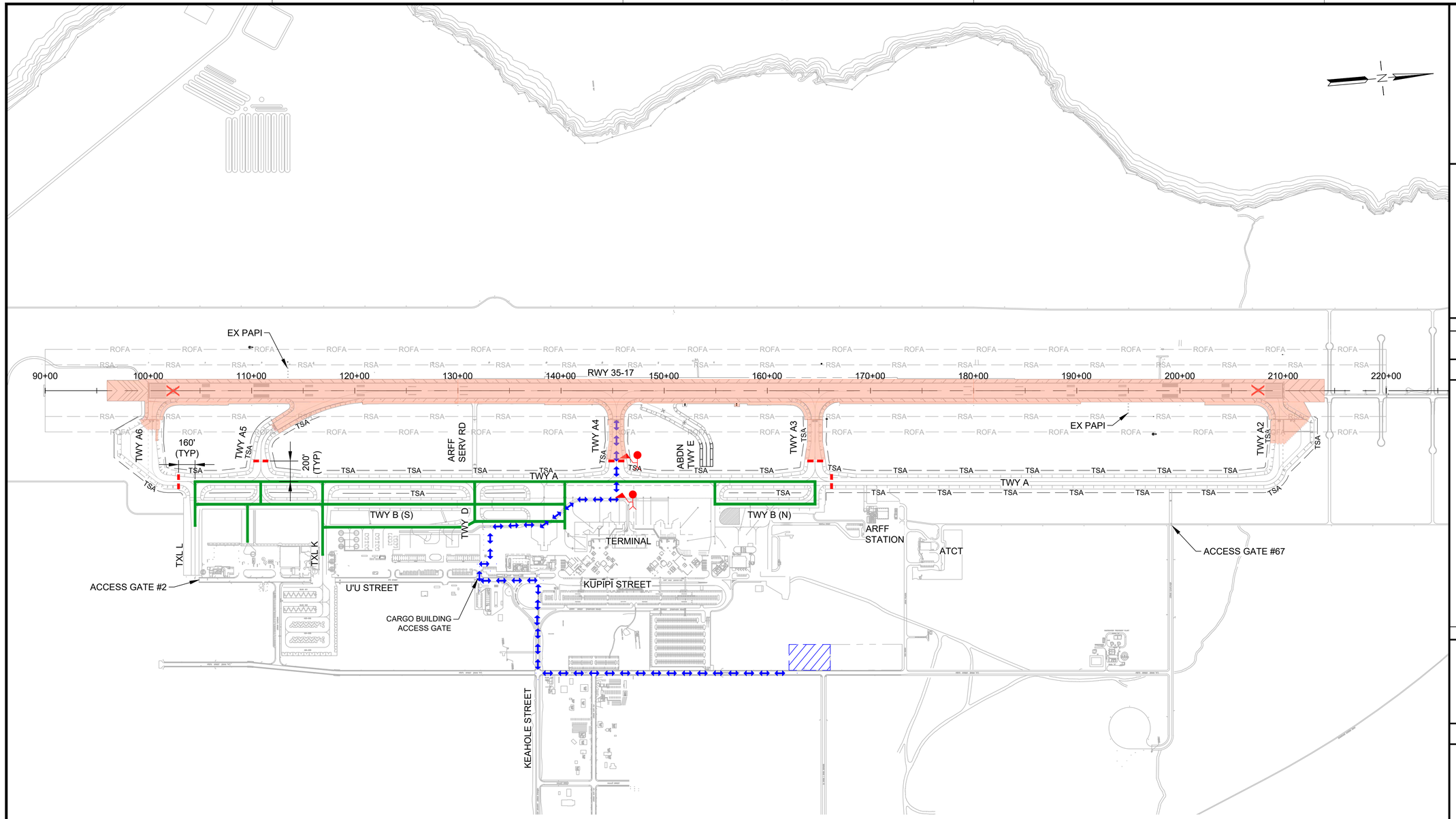
AH2021-16

SHEET TITLE:

ELECTRICAL PHASING PLAN 4D

DATE :	DWG. NO.
09/2023	G-122
SHEET :	
27 OF 190 SHEETS	

C:\USERS\EDUARDO SALCINES\LEAN PHOTOMETRICS DROPBOX\ACTIVE PROJECTS\L147210ZA ORION-KOA RUNWAY 17-35 REHABILITATION\01 DRAWINGS\WORKING DRAWINGS\SHEET S\PHASING\AH2021-16-OEA-KOA-PH04D.DWG



LEGEND:

- WORK AREA
- AIRCRAFT TRAVEL ROUTE
- LOW-PROFILE BARRICADES (CONTINUOUS)
- LOW-PROFILE BARRICADES (WITH GAPS)
- LIGHTED CLOSED RUNWAY MARKER
- CONTRACTOR STAGING AREA
- CONTRACTOR HAUL ROUTE (2 WAY)
- BLAST FENCE BARRIER
- FLAGGERS

PHASING AND BARRICADE PLAN - PHASE 5

DESCRIPTION OF WORK:
RUNWAY GROOVING AND FINAL PAVEMENT MARKINGS

HOURS:
SUNDAY - THURSDAY: 0000-0600 (HST), 1000-1600 (UTC)

DURATION:
78 CALENDAR DAYS
ANTICIPATED DATES: 1/31/2026 TO 4/12/2026

REQUIRED NOTAMS (WORK HOURS):
1. RUNWAY 17-35 CLOSED
2. TAXIWAY A6 CLOSED
3. TAXIWAY A5 CLOSED
4. TAXIWAY A3 CLOSED
5. TAXIWAY A4 CLOSED
6. TAXIWAY A2 CLOSED
7. TAXIWAY A CLOSED, NORTH OF TAXIWAY A3

REQUIRED NOTAMS (NONWORK HOURS):
1. RUNWAY 17-35 UNGROOVED
2. TAXIWAY H RENAMED TAXIWAY A4
3. TAXIWAY G RENAMED TAXIWAY A3

NAVAID STATUS:

RUNWAY 17 PAPI (FAA):	OTS
RUNWAY 17 PAPI (TEMP):	N/A
RUNWAY 17 LOC/DME:	OTS
RUNWAY 17 GS:	OTS
RUNWAY 35 PAPI (FAA):	OTS
RUNWAY 35 PAPI (TEMP):	N/A

PHASING NOTES:
1. PRIOR TO OPENING THE RUNWAY, THE CONTRACTOR SHALL COORDINATE FOR AOC TO CONDUCT A RUNWAY INSPECTION.
2. SEE SPECIAL PROVISIONS FOR LIQUIDATED DAMAGES FOR FAILURE TO REOPEN THE RUNWAY AT 0600 HRS.
3. IN THE EVENT OF MEDICAL EMERGENCY, WITHIN 1-HR OF NOTIFICATION BY AIRPORT OPERATIONS, THE CONTRACTOR SHALL CLEAN THE RUNWAY OF ALL FOD AND DEBRIS, VACATE THE RSA, AND REOPEN THE RUNWAY TO ALLOW FOR ARRIVAL OR DEPARTURE OF EMERGENCY MEDEVAC AIRCRAFT.

SCALE: 500' 0 500' 1000' — 1" = 500'

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
AIRPORTS

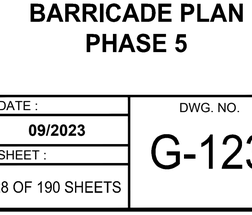
MARTIN A. CLEVEN
LICENSED PROFESSIONAL ENGINEER
No. 12828-C
HAWAII U.S.A.

4/30/24
Licensed Expiration Date

This work was prepared by me or under my supervision.

DSGN.	DRWN.	CHKD.	APPD.
AC	AT	TR	SH

KEY PLAN / NOTES:



NO.	DATE	REVISIONS

CONSTRUCTION DOCUMENTS
SEPTEMBER 2023
DATE

PROJECT TITLE :

RUNWAY 17-35 REHABILITATION
AT
ELLISON ONIZUKA
KONA INTERNATIONAL AIRPORT AT KEAHOLE
KAILUA-KONA, HAWAII

PROJECT NO.:
AH2021-16

SHEET TITLE:
PHASING AND BARRICADE PLAN PHASE 5

DATE : 09/2023
SHEET : 28 OF 190 SHEETS
DWG. NO. G-123

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