



SWIFT: Balancing Operations and Construction: Strategies for Enhancing Safety In and Around Airports




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OVERVIEW

- Planning an Airfield Construction Project
- Construction Safety and Phasing Plans (CSPP) & Safety Plan Compliance Document (SPCD)/ Contractor Safety Plan
 - Case Studies
- Q&A Session



Advisory Circular

Subject: Operational Safety on Airports During Construction **Date:** 12/13/2017 **AC No:** 150/5370-2G
Initiated By: AAS-100 **Change:**

- Purpose.**

This AC sets forth guidelines for operational safety on airports during construction.
- Cancellation.**

This AC cancels AC 150/5370-2F, *Operational Safety on Airports during Construction*, dated September 29, 2011.
- Application.**

This AC assists airport operators in complying with Title 14 Code of Federal Regulations (CFR) Part 139, *Certification of Airports*. For those certificated airports, this AC provides one way, but not the only way, of meeting those requirements. The use of this AC is mandatory for those airport construction projects receiving funds under the Airport Improvement Program (AIP). See Grant Assurance No. 34, *Policies, Standards, and Specifications*. While we do not require non-certificated airports without grant agreements or airports using Passenger Facility Charge (PFC) Program funds for construction projects to adhere to these guidelines, we recommend that they do so to help these airports maintain operational safety during construction.
- Related Documents.**

ACs and Orders referenced in the text of this AC do not include a revision letter, as they refer to the latest version. [Appendix A](#) contains a list of reading material on airport construction, design, and potential safety hazards during construction, as well as instructions for obtaining these documents.
- Principal Changes.**

The AC incorporates the following principal changes:

 - Notification about impacts to both airport owned and FAA-owned NAVAIDs was added. See paragraph [2.13.5.3](#), NAVAIDs.

[AC 150/5370-2G](#)

Operational Safety on Airports During Construction

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WHO IS RESPONSIBLE FOR SAFETY?

- Airport Operator’s Responsibilities
 - Construction Safety and Phasing Plan (CSPP)
- Construction Contractor Responsibilities
 - Safety Plan Compliance Document (SPCD)/Contractor Safety Plan: Construction Contractor
- Establish a positive safety culture
 - Everyone can and should be responsible for safety
 - Close communication and coordination is key to maintaining safe operations.



WHAT IS THE CONSTRUCTION SAFETY AND PHASING PLAN & SAFETY PLAN COMPLIANCE DOCUMENT?

“Aviation safety is the primary consideration at airports, especially during construction. The airport operator’s CSPP and the contractor’s Safety Plan Compliance Document (SPCD) are the primary tools to ensure safety compliance when coordinating construction activities with airport operations. These documents identify all aspects of the construction project that pose a potential safety hazard to airport operations and outline respective mitigation procedures for each hazard. They must provide information necessary for the Airport Operations department to conduct airfield inspections and expeditiously identify and correct unsafe conditions during construction. All aviation safety provisions included within the project drawings, contract specifications, and other related documents must also be reflected in the CSPP and SPCD.”

[AC 150/5370-2G](#)

PLAN FOR SAFETY

- Develop a Construction Safety and Phasing Plan (CSPP)
 - Identify Affected Areas
 - Describe Current Operations
 - Allow for Temporary Changes to Operators
 - Take Required Measures to Revise Operations
 - Understand & Manage Safety Risk
- Safety, airport operations and construction costs are all interrelated



DEEP DIVE INTO THE CONSTRUCTION SAFETY AND PHASING PLAN

1. Coordination
2. Phasing
3. Identification of Areas and Operations
4. Construction Access
5. Wildlife Management
6. FOD & HAZMAT Management
7. Notification of Construction Activities
8. Inspection Requirements
9. Underground Utilities
10. Special Conditions
11. Runway and taxiway visual aids
12. Prohibitions/Restrictions

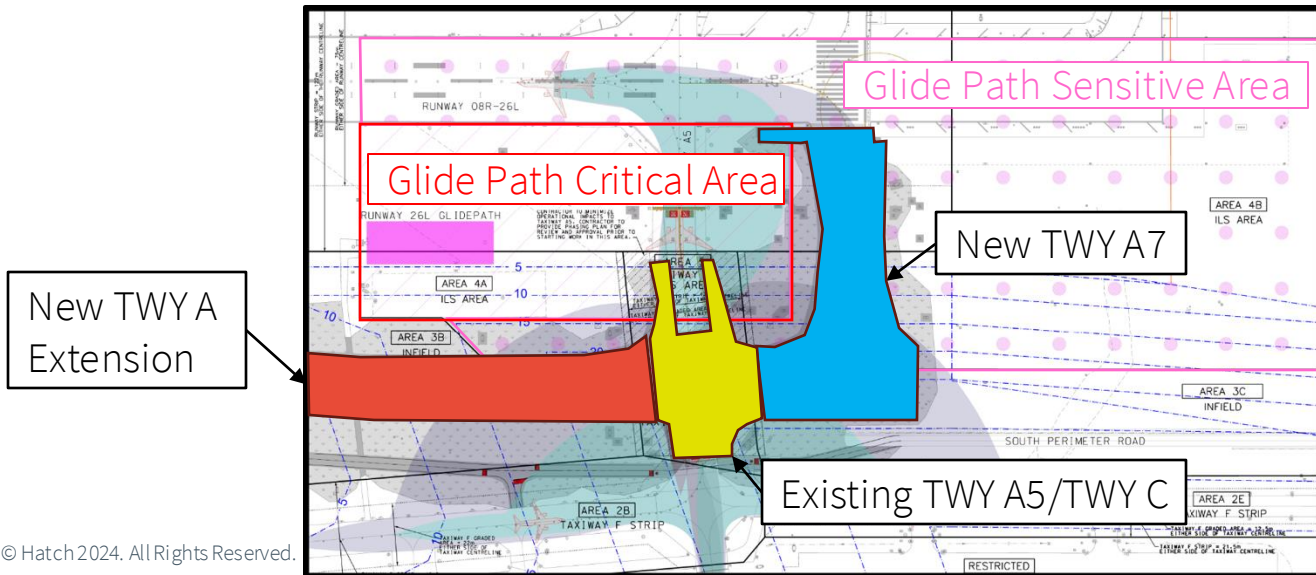
1. COORDINATION

- Progress Meetings
- Scope & Schedule Changes
- Coordination Technical Operators [air navigation/traffic service provider]
 - Early coordination
 - Shutdown scheduling
 - NAVAID Management
 - Formal Agreements
 - Flight Inspections
 - Construction Phasing



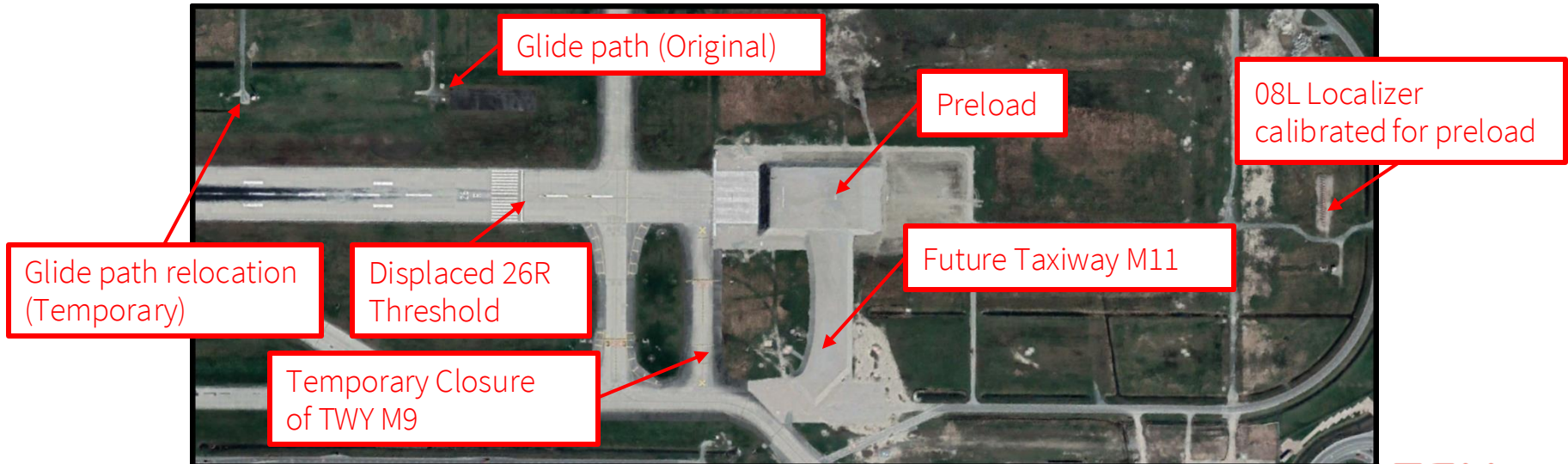
1. COORDINATION – CONTINUED

- Case Study: South Airport Cargo Development (2023-2024), YVR
 - Worked with NAV Canada to identify glide path limits, identify critical area & sensitive area, and coordinate flight check.
 - Assisted with determining project phase limits
 - Allowed all parties (airport authorities, consultants, and contractors) to effectively understand the limits and requirements within each work zone.



1. COORDINATION – CONTINUED

- Case Study: 26R North RESA Project (2018-2022), YVR
- Key Considerations:
 - Declared Distances
 - Lighting Adjustments
 - Temporary Paint Markings
 - OLS Impacts
 - ILS Equipment Impacts
 - NAV Canada coordination for change in flight procedures and publications



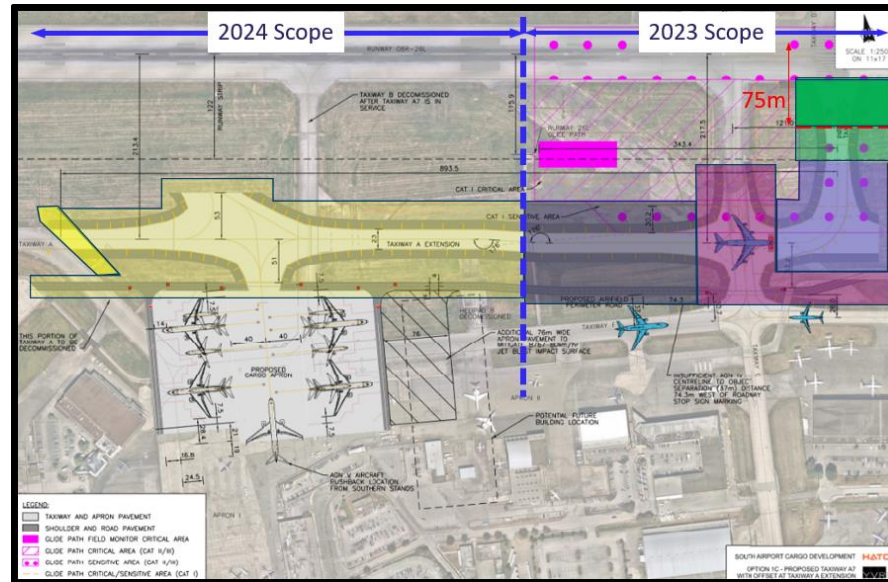
2. PHASING

- Areas closed to aircraft
- Duration of closures & Security Requirements
- Construction staging, disposal and cleanout areas
- Construction Access and Haul Routes
- Impact to NAV Aids
- Lighting, marking and signage changes
- Required hazard markings, lighting and signing
- Lead times for required notifications (tenants)
- Impacts to taxiway/runway clearances (safety areas/strips, declared distances, etc.)
- Risk Assessments (Utilization and flow)
- Mitigations options
- Construction Safety Drawings



2. PHASING – CONTINUED

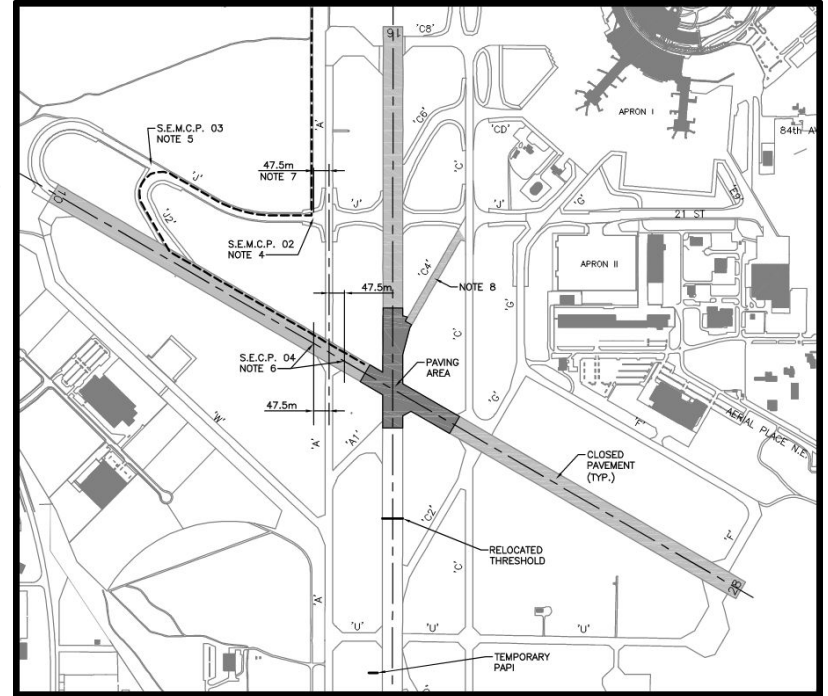
- Case Study: South Airport Cargo Development (2023-2024), YVR
 - Phased Construction: Defined scope limits based on timelines & operational constraints
 - Allowed for early-stage planning and procurement of materials in advance of tender to assist contractor with project schedule.



Note: the configuration shown was the original concept from early 2023. The layout has since been refined.

3. IDENTIFICATION OF AFFECTED AREAS

- Identify Affected Areas and Impacts:
 - Full or partial closures
 - Runways, taxiways, and aprons
 - Aircraft rescue and fire fighting access routes
 - Closing routes used by airport/airline support vehicles
 - Construction areas, storage areas, and access routes near runways, taxiways, aprons, or helipads
 - Lockouts
- Mitigation of effects
 - Establish specific procedures for:
 - Temporary changes to routing
 - Detours for vehicle access
 - Maintenance of essential utilities
 - Temporary changes for air traffic control procedures
 - Providing clear and concise construction safety drawings for each construction phase



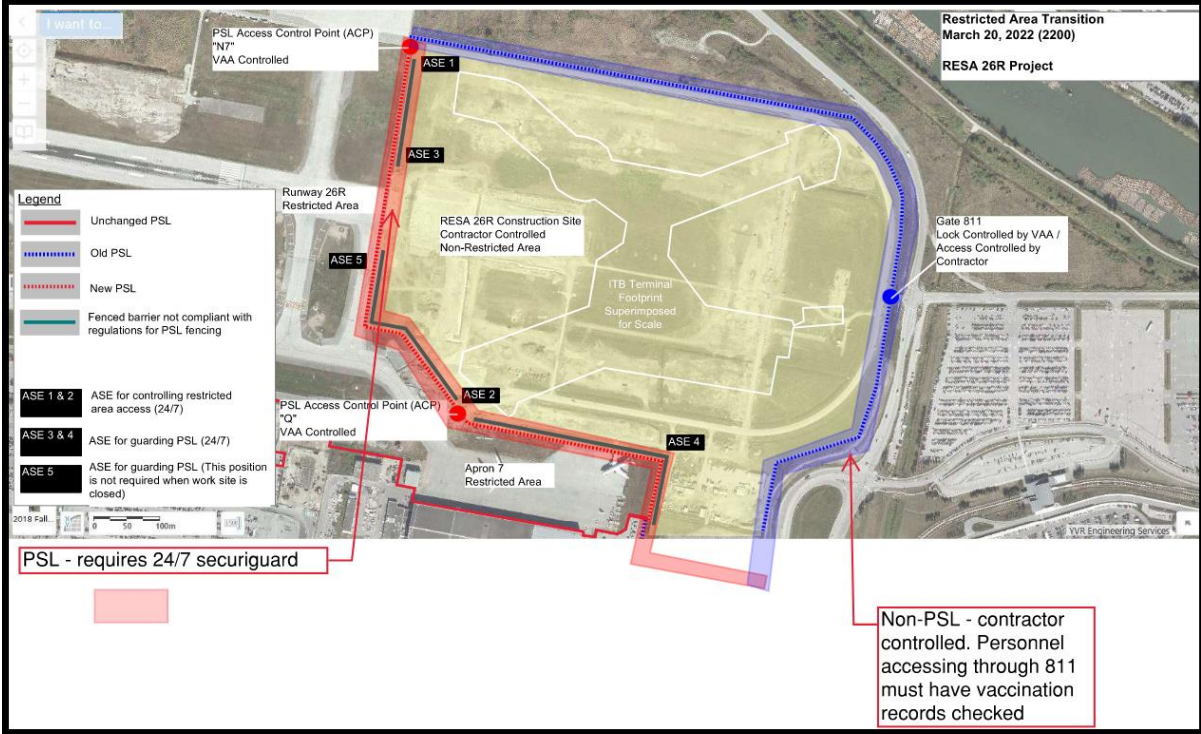
4. CONSTRUCTION ACCESS

- Strategic location of stockpiled materials
- Strategic Contractor Laydown Area
- Distance from Access Gates
- Paint Marking and Lighting
- Maintenance of Secured Access
- Escort Protocols and Communication Systems
- Streamlining Hauling



4. CONSTRUCTION ACCESS-CNT'D

- Case Study: 26R North RESA Project (2019/2020 & 2022), YVR
 - Contractor Controller Safety Area (CCSA)



•Note: the outline of the terminal position is just to show the approx. size of the CCSA area.

5. WILDLIFE MANAGEMENT

- The CSPP and SPCD must align with airport's wildlife hazard management plan
 - Trash
 - Standing Water
 - Tall Grass and Seeds
 - Fencing and Gates



6. FOD & HAZMAT MANAGEMENT

- FOD & HAZMAT management should be outlined in both CSPP and SPCD.
- FOD:
 - General Construction Waste
 - Construction Activities Near Taxiways
 - Waste Receptacles
- HAZMAT
 - Clean-up and Spill Kits
 - Transport and Hauling



7. NOTIFICATION OF CONSTRUCTION ACTIVITIES

- NOTAMS & Publication Adjustments
 - Runway closures, reduced declared distances, alternate taxi routes, gate closures, etc.
- Coordination with firefighters and emergency crews (if applicable)
 - Water Lines and Fire Hydrants
 - Emergency Access Routes
 - Hazardous Materials
- NAV AID Shutdowns
 - Coordination and Notification
- Utility Outages and Cable Cuts
 - Unanticipated Events



8. INSPECTION REQUIREMENTS

- Daily Inspections
 - Alignment with Construction Safety and Phasing plan
 - On-going compliance checks
- Interim Inspections
 - Lights & signage
 - Paint markings are correct & visible
 - Area is free of FOD
- Final Inspections
 - Inspection before resuming air carrier services
 - Coordination with authorities ensures everything is up to standard before opening



9. UNDERGROUND UTILITIES

- Locating and protecting existing underground utilities, cables, wires, pipelines
- Coordinating with public utilities
 - FortisBC, BC Hydro, etc.
- Planning new utilities to address current and future needs



Vancouver Airport Fuel Facilities Corporation

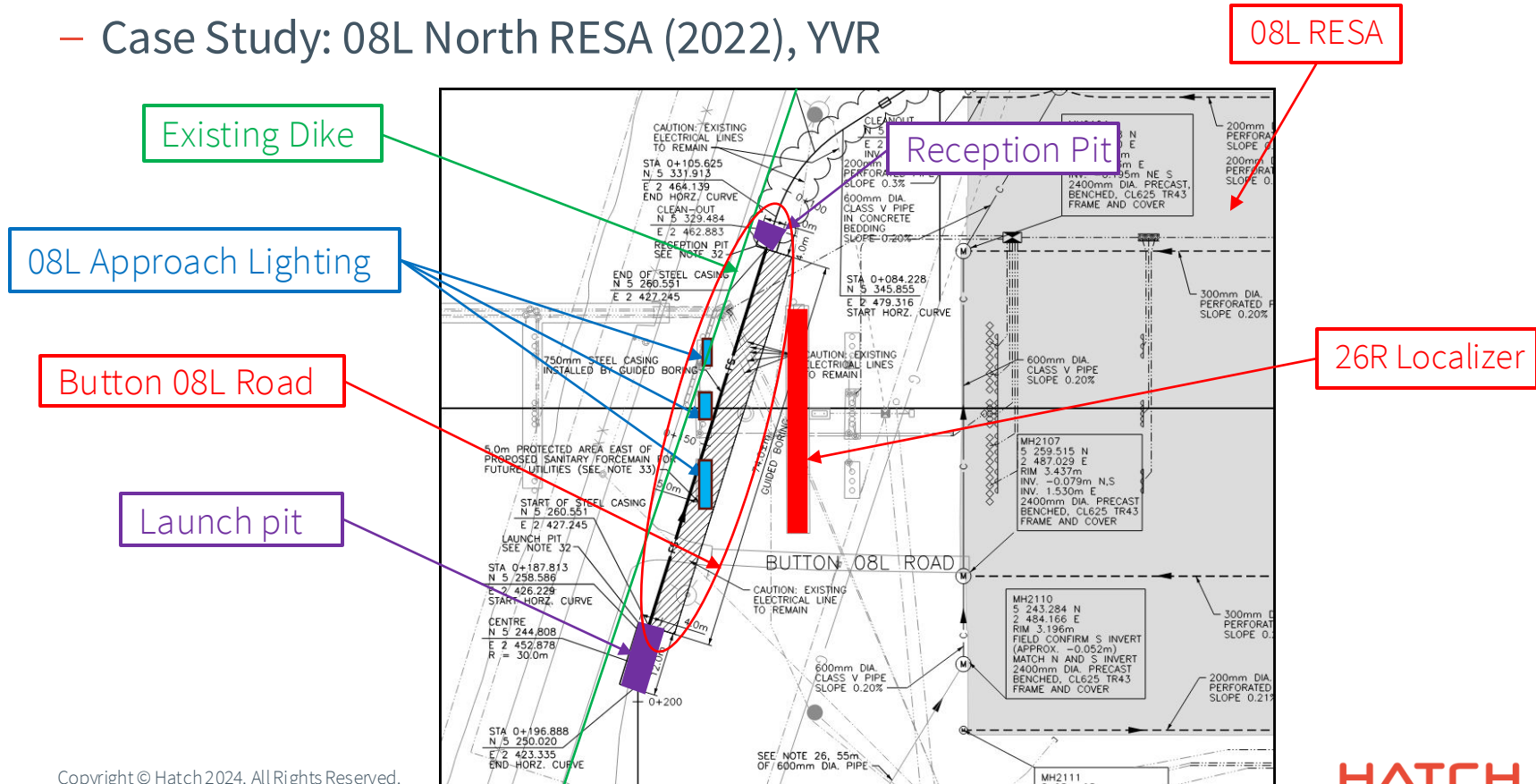


Vancouver Airport Fuel Delivery Project



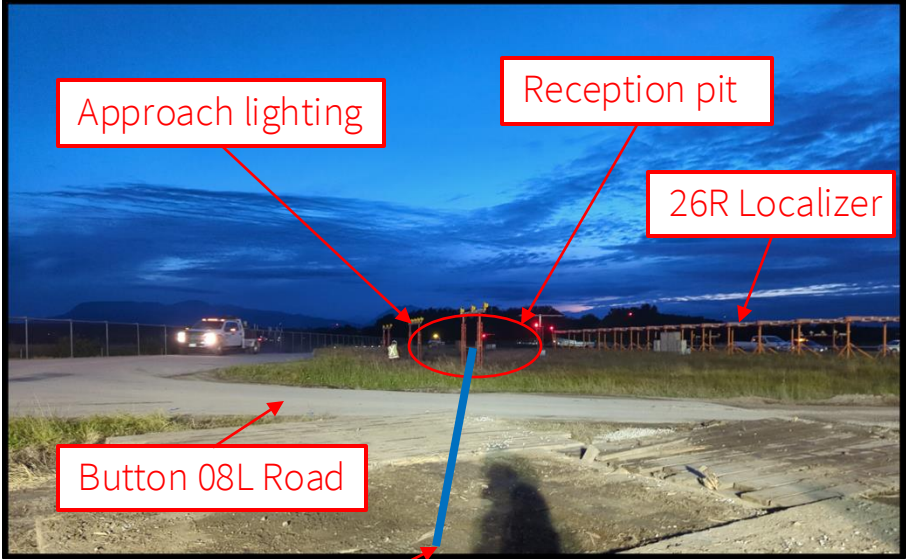
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– Case Study: 08L North RESA (2022), YVR



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Sanitary forcemain alignment

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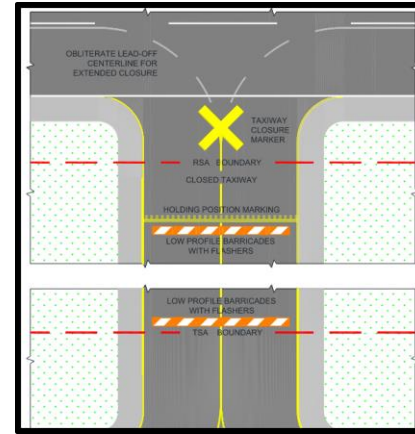
10. SPECIAL CONDITIONS

- Low Visibility Operations
- Snow Removal
- Aircraft incidents
- Security Breach
- Vehicle / Pedestrian Deviations (VPD)
- Other activities requiring construction suspension/resumption
 - COVID-19 Pandemic
 - Union Strike (Security Guard, suppliers, etc.)
 - Material supply shortages
 - Archeological finds



11. RUNWAY AND TAXIWAY VISUAL AIDS

- Markings, Lighting, and Signs
 - Visibility and functional
 - Temporary Markings
- Signs
 - Cover/Relocate signage for closed areas
 - Temporary Signage
- Barricades
 - Low-Profile Options
 - Lighting




12. PROHIBITIONS & RESTRICTIONS

- Limitation on construction:
 - Prohibitions
 - Open flame
 - Smoking/Vaping
 - Specific types of equipment
 - OLS impacts from construction equipment
 - Restrictions
 - Construction suspension
 - Areas that can not be worked on simultaneously
 - Day/night construction restrictions
 - Seasonal construction restrictions
 - Grade changes that could result in unplanned effects on NAV AIDs.



SUMMARY

1. Coordination
2. Phasing
3. Identification of Areas and Operations
4. Construction Access
5. Wildlife Management
6. FOD & HAZMAT Management
7. Notification of Construction Activities
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For more information,
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