



Keogh Bridge Replacement
Plan of Construction Operations

Issued for Permit
July 16, 2021
WSP Project No. 19M-01601-02

Rev A	16 April 2021	DRAFT-Issued for TC Review
Rev B	16 July 2021	Issued for Permit



Transport
Canada

Transports
Canada

PLAN OF CONSTRUCTION OPERATIONS

Project Number: 19M-01601-02

Project Name: Keogh Bridge Replacement

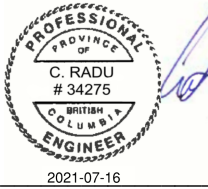
Project Location: Port Hardy Airport, BC

Prepared by:

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Manager, Transportation Engineering

WSP Canada Inc.



Signature

July 16, 2021

Date

Reviewed and Approved by:

Airport Manager

Port Hardy Airport

Signature

Date

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FIGURES

Figure 1 - Communication Plan

APPENDIX A - DRAWINGS

C100 – Plan of Construction Operations Stage 1

C101 – Plan of Construction Operations Stage 2

C102 – Plan of Construction Operations Transitional Surface

C103 – Plan of Construction Operations Details

APPENDIX B – ADDITIONAL SAFETY INFORMATION

Contractor Information – will be available for review onsite

1.0 INTRODUCTION

1.1 Background

The Keogh River Bridge is a 21m-span (70 ft) Acrow-panel bridge located approximately 500m southeast of the Port Hardy Airport's end of Runway 29's threshold bar. The bridge is owned by Transport Canada and provides the only means for vehicle access to the east side of the Keogh River which serves as an emergency response area and provides access to fish counting facilities. The current substructure is near the end of its service life and the existing bridge will be replaced as part of this project.

As part of the project scope, WSP prepared draft plan of construction operations (PCO) sketches to determine operational constraints that may be required in the technical specifications and general conditions of the contract, including limitation of crane heights and other equipment. These sketches were presented to Port Hardy Airport/ Transport Canada in discussion as to how best accommodate erection of the bridge superstructure and pile foundations with airport operations of Runway 11-29, running east-west.

WSP presented three options in a meeting with Public Services and Procurement Canada (PSPC) and Transport Canada (TC) representatives during a meeting on March 01, 2021:

1. **Option 1:** Displace the threshold at Runway 29 for a two to three-week duration in which pile foundations and steel girders would be erected and installed on-site;
2. **Option 2:** Temporarily close the runway for two to three days during which Runway 11-29 would not be operational and all airfield and approach lights for Runway 11-29 would be unserviceable.
3. **Option 3:** Alternate Runway 11-29 operational hours to limit airside operations during a time window. If required, TC will provide advance notice for contractors to boom down equipment in the event of incoming medivac flights.

From the meeting, it was confirmed the preferred option by TC was to displace the threshold on Runway 29 (**Option 1**). This was chosen to maintain airside operations at the airport given Runway 11-29 is the primary runway and used most often, especially during summer months. It also has a Flight Service Station (FSS) tower and is open 24 hours, and thus issuing a one-time only Notice to Airmen (NOTAM) to advise of situation and duration of the runway is the preferable solution.

Note that Runway 29 has a clearway of 250m (820ft). Transport Canada TP312E 5th Edition for Obstruction Limitation Surface (OLS) Figure 4.9 indicates a 1.25% clearway plane slope before becoming the required 2.5% take-off approach surface. However, this has been superseded by the Port Hardy's Airport Operations Manual (AOM) that measure the 2.5% take-off approach surface starting 60 m distance from the Runway 29 threshold.

Construction is currently scheduled to commence in Summer of 2021.

1.2 Purpose of the Plan of Construction

The purpose of this Plan of Construction Operations (PCO) is to:

- Provide notification of deviations from the certification standards and typical airport operations;
- Formulate in advance the coordination required to implement this construction project with minimal interruption to, and conflict with, airport operations and to ensure that airport security and flight safety are not compromised by the construction operations;
- Inform all airport users, tenants and operators, Transport Canada and NAV Canada of the project activities, such that they are aware of the effect on their operations; and
- Inform all parties of work procedures to be followed in a safe and secure manner.

2.0 CONSTRUCTION OPERATIONS AND SCHEDULE

This section details the proposed construction works, staging and scheduling, and impacts to operations. The proposed construction work will be within an active airport and accordingly the work has been phased to minimize disruption to airfield operations.

The Construction Staging is as follows and is shown in the attached drawings in Appendix A:

C100 – Plan of Construction Operations Stage 1

C101 – Plan of Construction Operations Stage 2

C102 – Plan of Construction Operations Transitional Surface

C103 – Plan of Construction Operations Details

2.1 STAGE 1 RUNWAY 11-29

2.1.1 Construction Timing

Estimated August 16 – September 3 (3 weeks), Daytime Work from 0700 to 1800 hours. To be confirmed with the Contractor's schedule. Note the construction fish instream window will be between August 1 – October 31.

2.1.2 Construction Activity

The proposed work on this stage will primarily be civil and structural work, which includes clearing and grubbing, pile driving, and steel girder erection for the bridge superstructure. Existing threshold marking and bar and the first aiming point markings will be covered with dark grey plastic sheets secured to the ground with sandbags painted with the similar colour. New temporary threshold and runway close markings

will be placed and secured to ground with sandbags to indicate the new temporary displacement as noted in Drawing C103.

The electrical work components will be limited to placing black sheets over the top of existing precision approach path indicators (PAPI) and covering existing edge lights outside the temporary active runway with cones.

2.1.3 Construction Site Access

Construction access to Keogh River Bridge will be from an existing unpaved perimeter road east of Runway 11-29. A laydown area located off the road (see Drawing C102), as approved by TC, will house construction vehicles and equipment for the duration of the project construction period; construction vehicles and equipment can only reach a maximum height of 20 m measured from the runway centerline elevation with the transitional slope of 14.3% measured from the edge of the 75.0m runway strip in this area. Any equipment will have to stay below the transitional slope as outlined in Aerodrome Standards and Recommended Practices for non-instrument runways. Dust control mitigation measures will be required throughout the construction phase.

It was noted by TC (Port Hardy Airport) Supervisor, an airside escort will not be required to provide the necessary control of truck and equipment traffic given the location of the project site. However, TC Supervisor will meet with the contractor at the pre-construction meeting to discuss and briefing all personnel about access to/from the project site, security regulations, and applicable Airport rules. TC will monitor airport traffic over the local ground frequency and will control construction vehicles and personnel movements as needed. Communication between the TC's Supervisor and vehicles accessing the site will be undertaken using handheld radios to be supplied by Contractor.

2.1.4 Airport Operation

(All items listed below to be reviewed, approved, and implemented by the Airport Operations)

1. To accommodate the 23m-tall cranes at the project site, Runway 29 threshold will need to be relocated by 253.3m (831 ft), measured from the existing threshold. All aircraft operations will be limited to the area west of the relocated threshold during this stage.
2. On airfield lighting component, the following modifications will be done during this stage:
 - i. Install temporary runway bar threshold and temporary "X" runway closure marking behind the displaced threshold bar;
 - ii. Temporarily cover the existing edge lights, threshold lights and runway end lights with cones or high-grade black plastic beyond the temporary threshold bars. Disconnect or cover the PAPI (2) and ODALs for Runway 29. These lighting instruments will be unserviceable during this stage; and

3. Runway 11-29 declared distances will be reduced. See Drawing C100 for all declared distances at this stage. There will be no direct impact to other runways or taxiways operations.

The following is a sample NOTAM for Runway 29 work.

NOTAM CYZT
FIRST 831 FT RWY 29 CLSD MARKED.

Declared distances:

Runway 11: TORA 4,168 FT, TODA 4,168 FT, ASDA 4,168 FT, LDA 4,168 FT

Runway 29: TORA 4,168 FT, TODA 4,988 FT, ASDA 4,168 FT, LDA 4,168 FT

The RW29's Edge Lights, End Lights, Threshold Lights, ODALs, and PAPI behind the Temporary Threshold will be U/S during this time.

FROM 2108160000Z TIL 2109032400Z

2.2 STAGE 2 RUNWAY 11-29

2.2.1 Construction Timing

Estimated September 6 – October 1 (4 weeks), Working hours: 0700 to 1800 hours.

2.2.2 Activity

The proposed civil and structural work at this stage will be mostly related to remaining activities that do not require encroachment to the OLS. A notification to the contractor of limited height to be provided and enforced.

2.2.3 Construction Site Access

Construction access and staging area will remain the same (see Drawing C102) and will not impede to airport operations.

2.2.4 Airport Operations

1. Runway 11-29 will resume normal airside and aircraft operations. The temporary Runway 29 threshold bar and "X" runway closure markings from Stage 1 will be removed and the full runway length will be reinstated.
2. On airfield lighting component, the following modifications will be done during this stage:
 - i. Remove covered edge, threshold, and runway end lights;

- ii. Reinstate existing PAPI, ODAL, and Localizer for Runway 29; and
 - iii. Reinstate Runway 29 to pre-construction conditions.
3. Existing Runway 11-29 declared distances will be reinstated. See Drawing C101 for existing declared distances as provided by TC. There will be no direct impact to other runways or taxiways operations as a result of construction at this stage.

The NOTAM issued for Runway 29 during Stage 1 work will be rescinded.

3.0 AIRPORT OPERATIONS AND RESTRICTIONS

3.1 Restrictions on Airside

All vehicles and personnel requiring access to the Work Area must follow the rules and regulations set out in this plan at all times. Any failure to comply with the rules and regulations will result in immediate removal of personnel from the site and the termination of site access privileges of that individual.

No vehicles and/or equipment will have access to aircraft movement. Construction vehicles and equipment shall be stored within the designated laydown area, delineated with orange snow fencing; they shall travel along the perimeter road east of Runway 11-29. All vehicles shall operate only within those defined routes or areas. See Drawing C102 for designated laydown area and perimeter road.

There is no anticipated conflict in traffic movement between aircrafts and construction vehicles, however, a clear communication plan should be established and periodically audited by the Airport Operations Manager and Contractor's Representative.

3.2 Airside Procedures

The Contractor's Site Supervisor/Foreman is responsible for ensuring that construction personnel at the Airport operate construction equipment and service vehicles in a safe manner and in accordance with Airport procedures.

Prior to the start of construction, Airport Operations and the Contractor shall be responsible for briefing all personnel about access to/from the Work Area, security regulations, and applicable Airport rules.

Vehicles or personnel shall not proceed outside the designated Work Area without approval from the Airport.

3.3 Escorting and Security Requirements

Access gates to the airside shall be secured by the Contractor. At the pre-construction meeting, the Contractor will be provided a clicker to get access to the speed gate and a key to Gate 9 which they will need to lock up daily to get access to/from the project site.

3.4 Radios

The Contractor shall supply non-aviation radios to the Contractor Foreman/Safety Representative and the Airport. These radios shall be monitored at all times and will be used for direct communication between the Airport and the Contractor in order for the Airport to provide notification/direction regarding aircraft traffic.

3.5 Construction Equipment Storage and Stockpiling Area

Storage of equipment or materials shall meet all Transport Canada regulations and shall be stored within the laydown area noted in Drawing C102. Materials and equipment must not be stored in a location that would violate any Obstacle Limitation Surface. Overnight storage of vehicles and equipment such as cranes or excavators will be required to be parked in a way to minimize height.

3.6 Underground Utilities

Before work commences, the Contractor shall confirm the location and extent of any existing service lines within the Work Area (if any). Drawings and information provided in the Contract are for planning purposes only. It is the responsibility of the Contractor to ensure that services are properly located.

For any shut down of an airport lighting system or visual aid, the Contractor must submit a schedule and obtain prior permission from the Airport. The Contractor will be responsible for notifying and scheduling site inspections as required for provision of certification for service connections.

Where unknown services are encountered, the Contractor will immediately notify the Airport. The Contractor will mark all deviations from the original approved proposal and the location of unknown services discovered during construction activities clearly in red on-site plans to be incorporated into the airport data base plans.

During excavation, the Contractor will carefully locate underground services (if any) with excavating equipment, hand shovels, rakes, etc. as required to ensure that no damage is done to existing lines. The Contractor will provide the maximum space required to make connections in accordance with applicable codes and manufacturer's recommendations.

The Contractor will be responsible for restoring, replacing or repairing any services damaged as a result of construction activities at no extra cost to the Airport.

3.7 Open Trenches/Stockpiles

Absolutely no open excavations, stock piling of materials or equipment shall be permitted overnight on or adjacent to the perimeter road. All stockpiled material shall meet the requirements of the Obstacle Limitation Surface and be stored in the designated laydown area that is identified with orange snow fencing.

3.8 Erection of Cranes, Towers, or Other Structures

Prior permission must be obtained before operating any crane or constructing any work tower, platform or other structure.

The height of Contractor's equipment is restricted for any activity within the Airport. Prior to crane operation or erection of a structure the Contractor will submit a detailed plan outlining the estimated height of the structure (shall not exceed 23 m), location of the work and the anticipated duration of the operation. The Airport will notify any affected parties and make arrangements for temporary closure of obstructed surfaces and issue appropriate NOTAM.

Cranes must be equipped with red flashing lights at the top of booms.

3.9 F.O.D Control

The Contractor must maintain a clean jobsite at all times. Particular attention must be paid in order to keep all areas free of all objects such as paper, paper cups, plastic lunch bags, screws and nails, and construction packing material and waste. Constant monitoring will be required by the Contractor to ensure no loose gravel and material on, or adjacent to the perimeter road.

Secure or containerize all materials that are prone to blowing away, i.e.; dry soil, to include the tarping of all vehicles used for hauling. Dust control on Airport property is paramount. It is the Contractor's responsibility for controlling dust. Dust control shall be achieved through the application of water to ensure all turned surfaces are kept to a minimum. No calcium products are permitted.

During activities involving the hauling of materials onto and/or off site via the perimeter road, the Contractor shall keep the road clear. The Contractor will be required to maintain a mechanical sweeper that is in good working condition on site to pick up such materials along with brooms and shovels.

Any noted items will be brought to the attention of the Contractor for immediate remedial action. In the event that the contractor does not take immediate action, the area will be cleared by Airport staff and all associated costs will be back charged to the contractor. Failure to comply may also result in the suspension of work until the site is made safe/secure.

3.10 Safety

An overview of the responsibilities will be reviewed at the pre-construction meeting and also at regular weekly construction update meetings..

In the event of an Airport Emergency, all construction activities may be suspended, and all non-authorized personnel will be required to leave the Work Area. All access points to the Airport must be kept clear of equipment, vehicles, and material at all times.

The Contractor shall ensure all personnel are aware of the relevant requirements of the Airport's Safety Management System.

MEDICAL EMERGENCIES AND FIRES

Medical or Fire Services are available by calling 911. Off-site Emergency Response unit(s) will respond.

The Airport staff shall be notified immediately in the event of any incidents.

3.11 Workplace Injuries

Any work-related injury must be reported to the proper authority having jurisdiction to investigate in accordance with current Labour Laws, and Regulations. The Airport must be made aware of any incidents.

3.12 Jet Blast and Prop Wash

The contractor and all assigned personnel working within the Airside area or directly adjacent to this area must be aware and use caution when Aircraft are maneuvering on active airside areas. Winds in excess of 120 miles per hour can be experienced causing stones, construction material and dust to become dangerous projectiles which could injure workers.

The Contractor should ensure all personnel are informed of the hazards of jet blast and prop wash.

3.13 NOTAMS

The Airport Staff is responsible for originating, revising and canceling any NOTAMS required for closures. A minimum of 72 hours' notice will be required to file a NOTAM, and all applicable NOTAMS must be in place prior to the start of any construction activities. For significant runway impacts including temporary closure, 10 days' notice shall be provided.

Any deviation in operation, level of service or construction activity affecting the regulatory requirements shall be published by NOTAM and be provided by voice notification to NAV Canada.

4.0 COMMUNICATION PLAN

4.1 Port Hardy Airport Project Contacts

Communication during the construction period will occur between the contractors, clients/users, Port Hardy Airport/TC, and NAV CANADA. A list of project contacts is identified in the table on the following page:

TITLE (<i>COMPANY</i>)	CONTACT	PHONE
Transport Canada – Airport Manager	Jason Tran	250.902.8275
Transport Canada – Supervisor, Surface and Mobile	Radford Smith	250.902.8519
PSPC Project Manager	Trever Greer	778.808.7606
PSPC - Structural	Pei-Chin Tsai	
WSP Project Manager	Matthew Bowser	250.734.4692
WSP Civil Lead	Cozmin Radu	604.207.6862
WSP Contract Administrator	TBC	
Contractor Project Manager	TBC	
Contractor Site Supervisor	TBC	
NavCanada at CYZT Tower	Andrew Luttrell	250.902.2653
NavCanada	NOTAM	866.577.0247

The proposed Communication Plan is shown in Figure 1.

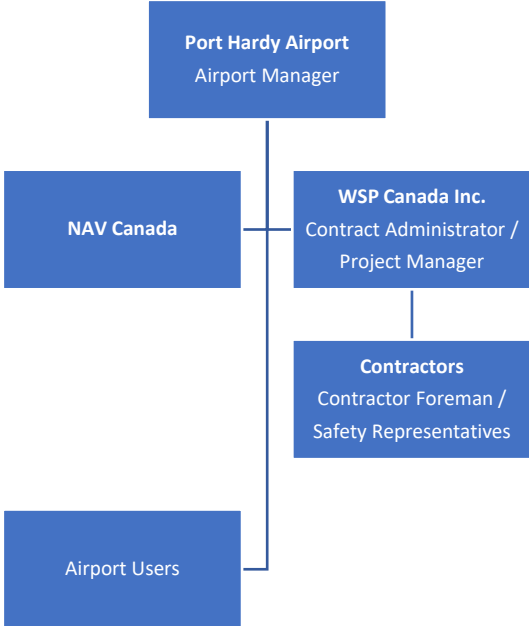
4.2 Planning and Pre-Construction Phase

Prior to start of construction, a pre-construction meeting will be coordinated and attended by representatives from the Airport and Contractor/Consultant. The scope of work, airside operations, procedures, Contractor responsibilities, safety and security and other relevant issues will be discussed.

4.3 Construction Phase

Regular construction meetings will take place during the construction period to exchange information regarding progress of the project, safety and security, operational issues, contractual items, and deficiencies of the project. The meetings will be attended by the Port Hardy Airport, and Contractor/Consultant, and other representatives involved in the project. Should the frequency of the meetings require change, the Project Manager will revise accordingly.

Figure 1



4.4 Post-Construction Phase

Once construction is completed, deficiencies will need to be addressed and commissioning of the completed project will occur. A post-construction meeting is to take place to discuss the above items.

Following substantial completion of the project, an on-site meeting will be held to determine and resolve any site deficiencies by a visual walk-through which will be attended by the Contractor, Consultant, and the Airport.

APPROVAL OF PLAN CONSTRUCTION OPERATIONS

PROJECT:

Keogh Bridge Replacement

AIRPORT NAME:

Port Hardy Airport (CYZT)

AIRPORT OPERATOR AND CERTIFICATE HOLDER:

AIRPORT MANAGER:

CERTIFICATE NUMBER:

DATE OF ISSUE:

I undertake to meet the obligations set out in this plan of construction; and I hereby certify that the information in this plan is complete and accurate and no relevant information has been omitted.

Date (YYYY-MM-DD)

Signature of Airport Operator/Certificate Holder

This Plan of Construction Operations Manual/Amendment is approved.

Date (YYYY-MM-DD)

For Minister of Transport

APPENDIX A

Plan of Construction
Operations Drawings

STAGE 1

CONSTRUCTION:

- PLACE TEMPORARY THRESHOLD BAR. PLACE BLACK SHEETS OVER TOP OF INSTRUMENT LIGHTING.
- START BRIDGE CONSTRUCTION ON **EAST / WEST SIDE, START CLEAR AND GRUB AND STRIP, WORK UNDER ADVISED NOT TO EXCEED HEIGHT NOTED IN THE PROFILE.
- ERECTION OF PILE DRIVING CRANE UPON ACCEPTANCE OF OLS REQUIREMENT BY AIRSIDE OPERATIONS (SEE NOTE 1)

SCHEDULE:

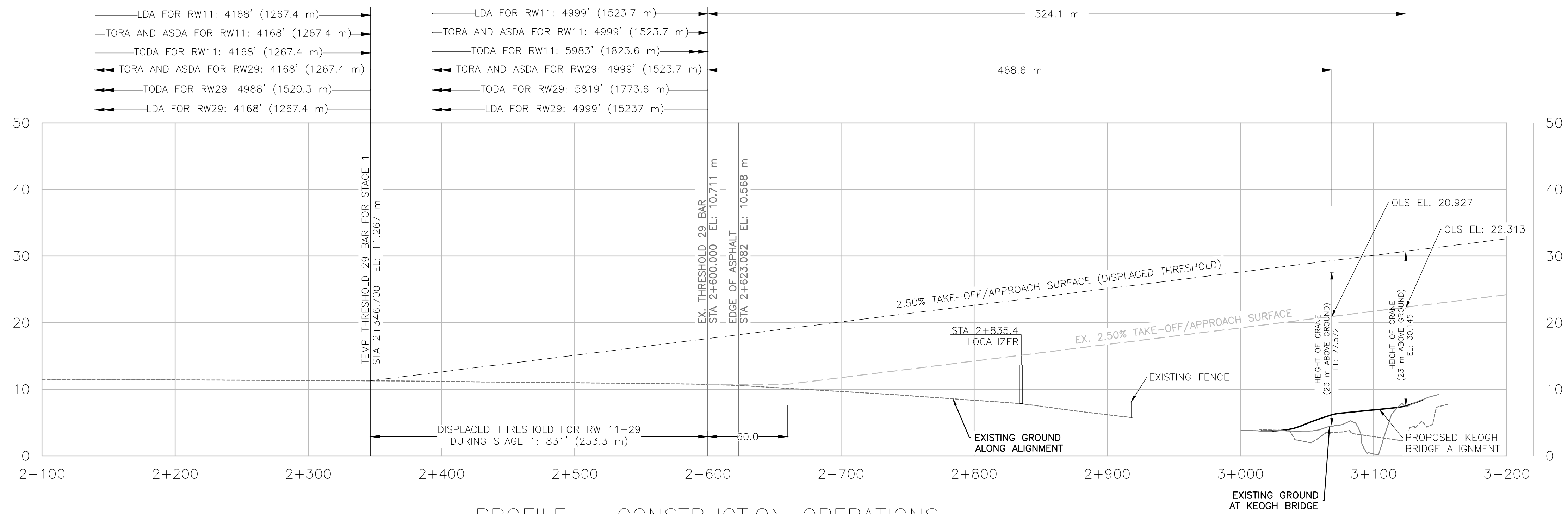
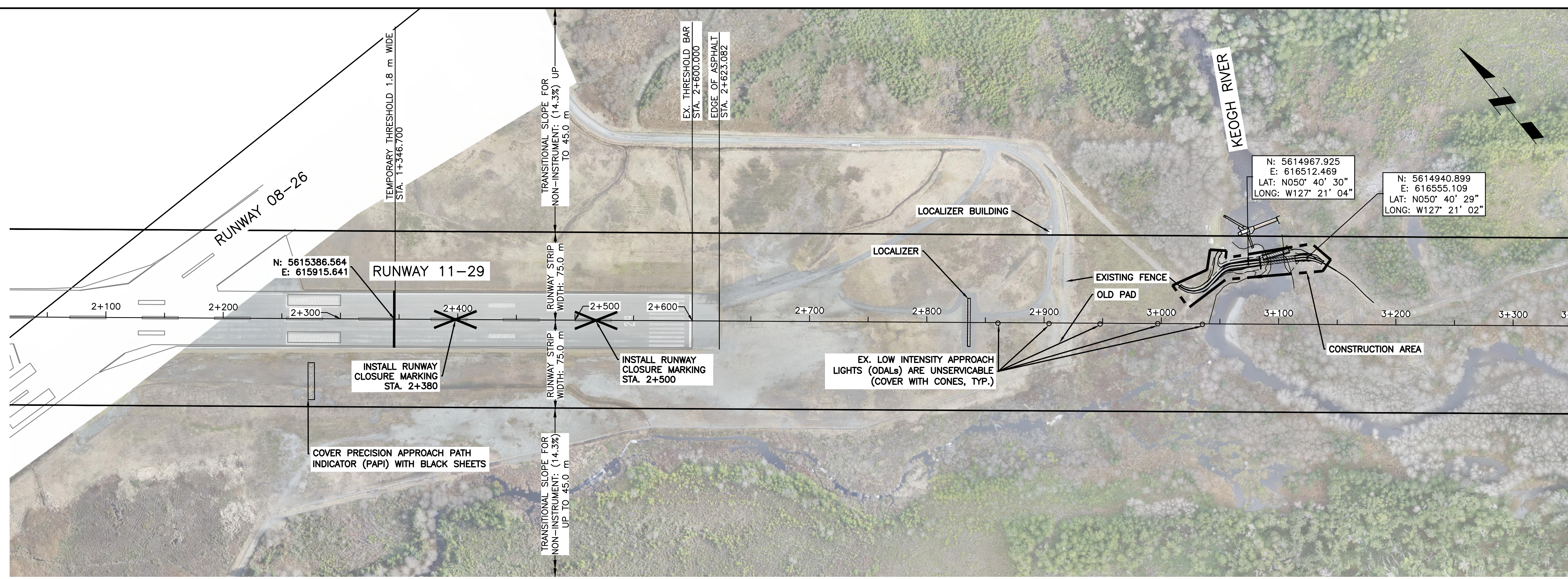
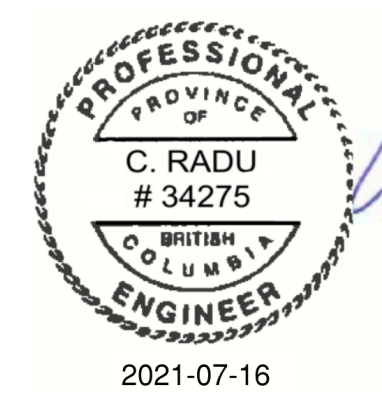
APPROXIMATELY 10 TO 15 WORKING DAYS

UNSERVICABLE / CLOSURE:

- THE FIRST 831' (253.3 m) OF RW 29 (BEHIND TEMPORARY THRESHOLD) WILL BE CLOSED TO AIRCRAFT TRAFFIC. RUNWAY REDUCED TO THE NOTED TABLE ON THIS DRAWING.
- TEMPORARY "X" RUNWAY CLOSURE MARKING TO BE PLACED BEHIND THE DISPLACED THRESHOLD BAR.
- EXISTING EDGE LIGHTS, THRESHOLD MARKING TO BE PLACED BEHIND THE DISPLACED THRESHOLD BAR. PAPI (2) AND ODALS FOR RUNWAY 29 TO BE DISCONNECTED OR COVERED. THESE LIGHT INSTRUMENTS WILL BE UNSERVICABLE DURING THIS STAGE.

NOTE: THE HORIZONTAL DATUM USED FOR THIS DRAWING IS IN REFERENCE TO UTM (NAD 83) ZONE 9.

Revision	Description	Date
C	ISSUED FOR PERMIT	21/07/16
B	ISSUED FOR TC REVIEW	21/04/22
A	ISSUED FOR DISCUSSION	21/02/26



PROFILE – CONSTRUCTION OPERATIONS
SCALE 1:2000H
1:400V

DECLARED DISTANCES	RUNWAY	
	11	29
TORA	4168' (1270.4 m)	4168' (1270.4 m)
TODA	4168' (1270.4 m)	4988' (1520.3 m)
ASDA	4168' (1270.4 m)	4168' (1270.4 m)
LDA	4168' (1270.4 m)	4168' (1270.4 m)
THRESHOLD DISPLACEMENT	0	831' (253.3 m)

LEGEND

	PROJECT AREA
	RUNWAY STRIP WIDTH (FROM RUNWAY CENTRELINE)
	TRANSITIONAL SLOPE LIMIT
	APPROACH SURFACE SLOPE
	CONSTRUCTION ACCESS ROUTE
	CLEARWAY PLANE
	CONSTRUCTION LAYDOWN AREA

GENERAL NOTES

- ALL UNITS ARE IN METRES UNLESS NOTED OTHERWISE.
- CONTRACTOR SHALL MAINTAIN ROADS IN USABLE CONDITION DURING AND AFTER CONSTRUCTION COMPLETION.
- CONTINUOUSLY CLEAN, SWEEP, DUST, AND REMOVE MUD OFF EXISTING ROAD TO THE SATISFACTION OF THE DEPARTMENT REPRESENTATIVE.
- ALL AIRPORT GATES MUST REMAIN UNBLOCKED AT ALL TIMES FOR EMERGENCY ACCESS.
- SEE DWG. C103 FOR LOCATION AND EXTENT OF CONTRACTOR STAGING AND STOCKPILE AREA.
- ESCORTS REQUIRED FOR ALL CONSTRUCTION WITHIN AIRSIDE.
- ANY CONTRACTOR FLAGGING OPERATION ACROSS ACTIVE AREAS TO BE CONTROLLED BY AIRSIDE RADIO ESCORT.
- CONSTRUCTION IS LIMITED TO THE AREAS SHOWN.
- CONTRACTOR SHALL ENSURE ALL LOOSE MATERIAL IS SECURED.
- CONTRACTOR SHALL ENSURE AIRFIELD LIGHTING AND VISUAL AIDS REMAIN ENERGIZED AT ALL TIMES EXCEPT AS NOTED IN THESE PCO.
- CONTRACTOR IS RESPONSIBLE TO PROVIDE APPURTENANCE FOR TEMPORARY WORKS, WHICH INCLUDE BARRIERS, LIGHTING, ETC.
- CONTRACTOR SHALL CLEAR 3.0m FROM SECURITY FENCE.
- ALL VEHICLES AND EQUIPMENT ENTERING AIRSIDE SHALL BE EQUIPPED WITH OPERABLE FLASHING YELLOW LIGHTS, AND THEY SHALL DISPLAY COMPANY LOGOS ON BOTH SIDES OF THE VEHICLES.
- ALL PROVISIONS OF TRANSPORT CANADA MANUAL TP312E MUST BE OBSERVED AND RESPECTED DURING THE CONSTRUCTION PERIOD.



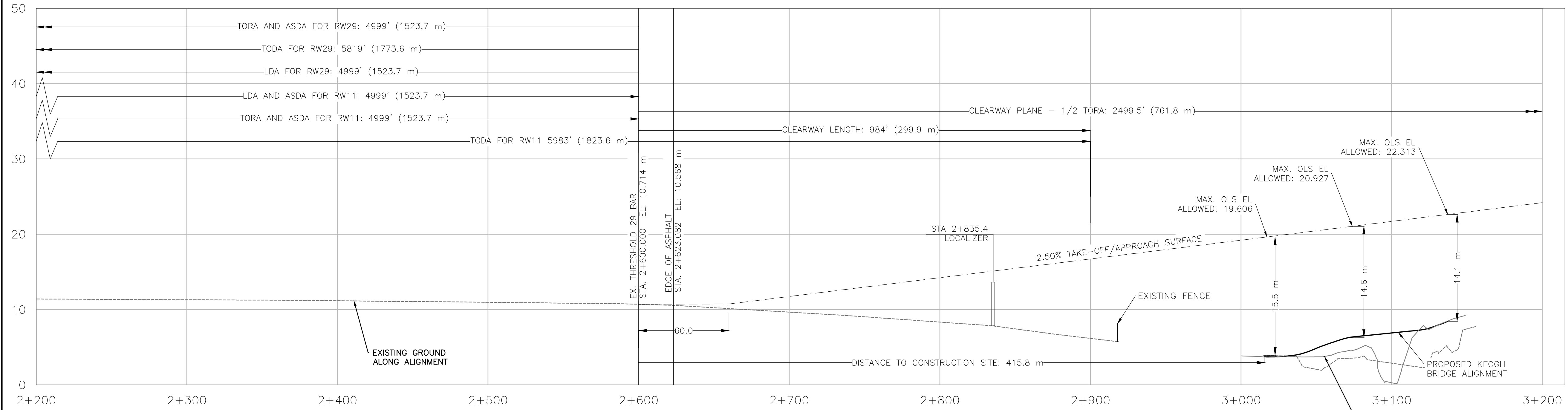
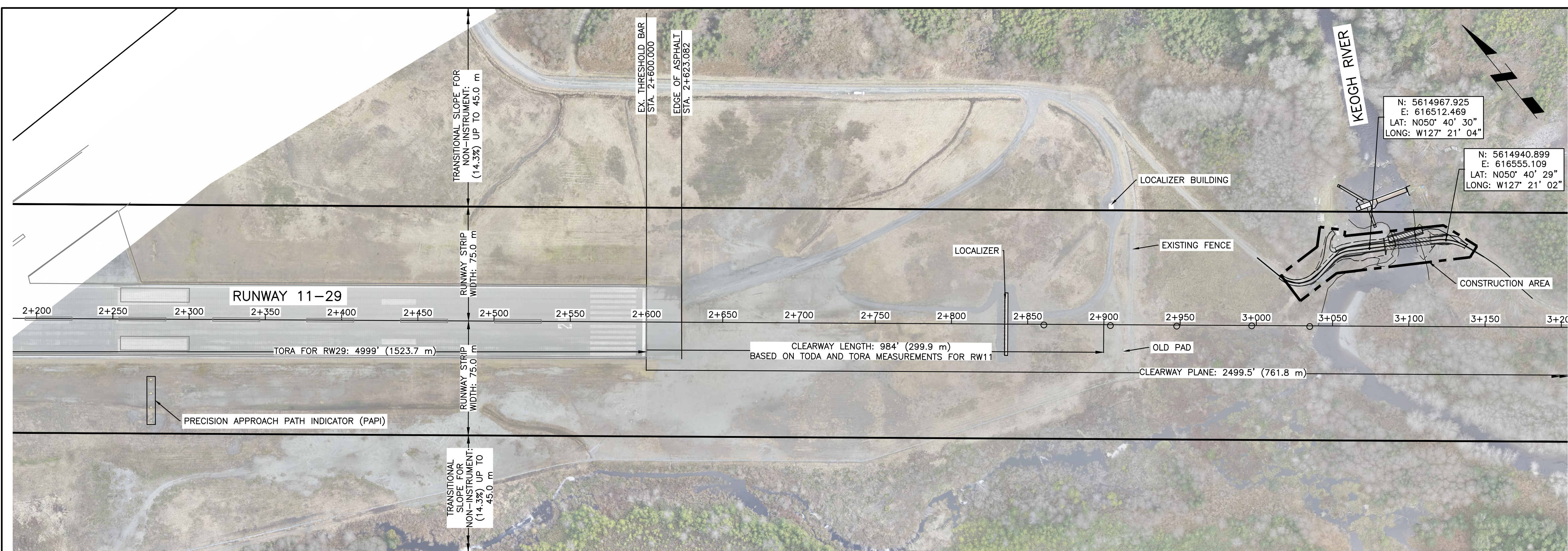
RWY DATE RWY 11 (113 DEG)/ 29 (293 DEG) 4999' X 150' ASPHALT AGN III B
RUNWAY 29 NON-INSTRUMENT

DATE: 2021-07-16 12:57pm (CAK1064882) PWSSC Project Manager Administrateur de Projets TPSGC T.GREER, P.ENG. Drawing title Titre du dessin

STAGE 2

- CONSTRUCTION:**
- REMOVE TEMPORARY THRESHOLD BAR AND RUNWAY CLOSURE MARKINGS. REMOVE BLACK SHEETS OVER TOP OF INSTRUMENT LIGHTING.
 - CONTINUE BRIDGE AND ROAD CONSTRUCTION. WORK EQUIPMENT SHALL NOT EXCEED HEIGHT NOTED IN THE PROFILE.

- SCHEDULE:**
- APPROXIMATELY 15 TO 20 WORKING DAYS
 UNSERVICEABLE / CLOSURE:
- NONE.



PROFILE - CONSTRUCTION OPERATIONS
 SCALE 1:1500H
 1:300V

EXISTING DECLARED DISTANCES	RUNWAY	
	11	29
TORA	4999'	4999'
TODA	5983'	5819'
ASDA	4999'	4999'
LDA	4999'	4999'
THRESHOLD DISPLACEMENT		

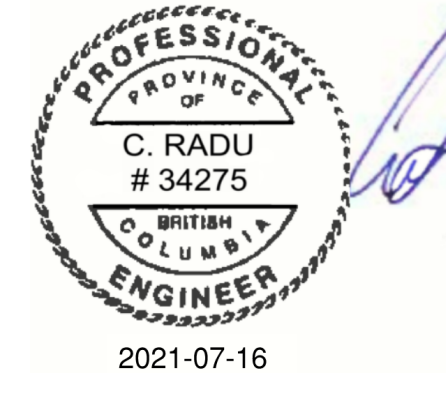
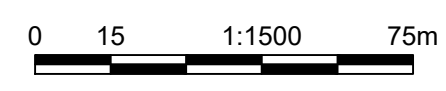
RWY DATE RWY 11 (113 DEG) / 29 (293 DEG) 4999' X 150' ASPHALT AGN III B
 RUNWAY 29 NON-INSTRUMENT

- LEGEND**
- PROJECT AREA
 - RUNWAY STRIP WIDTH (FROM RUNWAY CENTRELINE)
 - TRANSITIONAL SLOPE LIMIT
 - APPROACH SURFACE SLOPE
 - CONSTRUCTION ACCESS ROUTE
 - CLEARWAY PLANE
 - ▨ CONSTRUCTION LAYDOWN AREA

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 - ALL VEHICLES AND EQUIPMENT ENTERING AIRSIDE SHALL BE EQUIPPED WITH OPERABLE FLASHING YELLOW LIGHTS, AND THEY SHALL DISPLAY COMPANY LOGOS ON BOTH SIDES OF THE VEHICLES.
 - ALL PROVISIONS OF TRANSPORT CANADA MANUAL TP312E MUST BE OBSERVED AND RESPECTED DURING THE CONSTRUCTION PERIOD.



NOTE: THE HORIZONTAL DATUM USED FOR THIS DRAWING IS IN REFERENCE TO UTM (NAD 83) ZONE 9.

Revision	Description	Date
B	ISSUED FOR PERMIT	21/07/16
A	ISSUED FOR TC REVIEW	21/04/22



Project title **BRITISH COLUMBIA PORT HARDY**

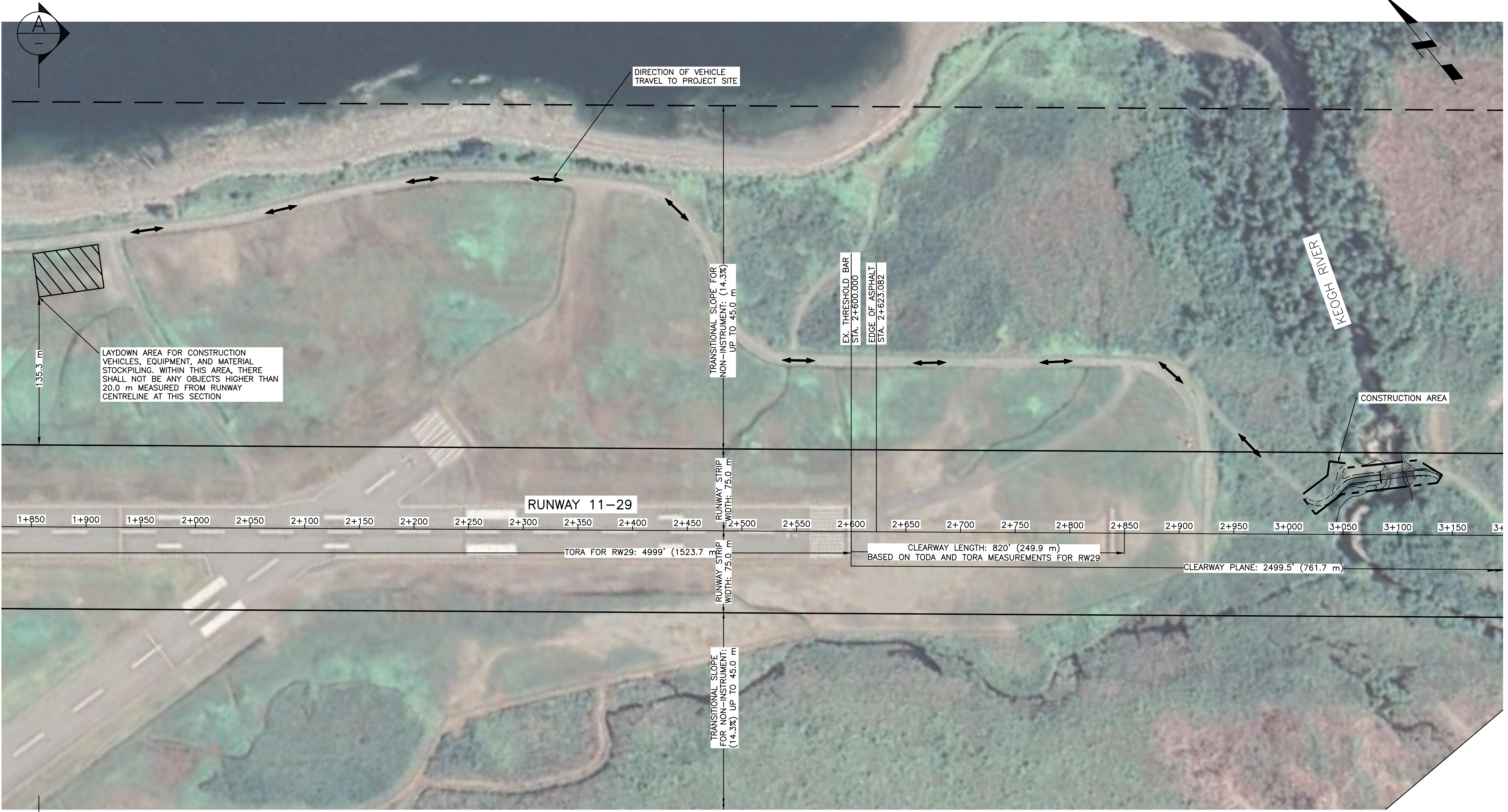
KEOGH RIVER BRIDGE REPLACEMENT

Designed by V.TJIA, P.ENG	Conçu par
Drawn by K.YANG, EIT	Dessiné par
Approved by C.RADU, P.ENG.	Approuvé par
PWSSC Project Manager T.GREER, P.ENG.	Administrateur de Projets TPSGC
Drawing title	Titre du dessin

PCO OBJECT LIMITATION OVERVIEW APPROACH SURFACE STAGE 2

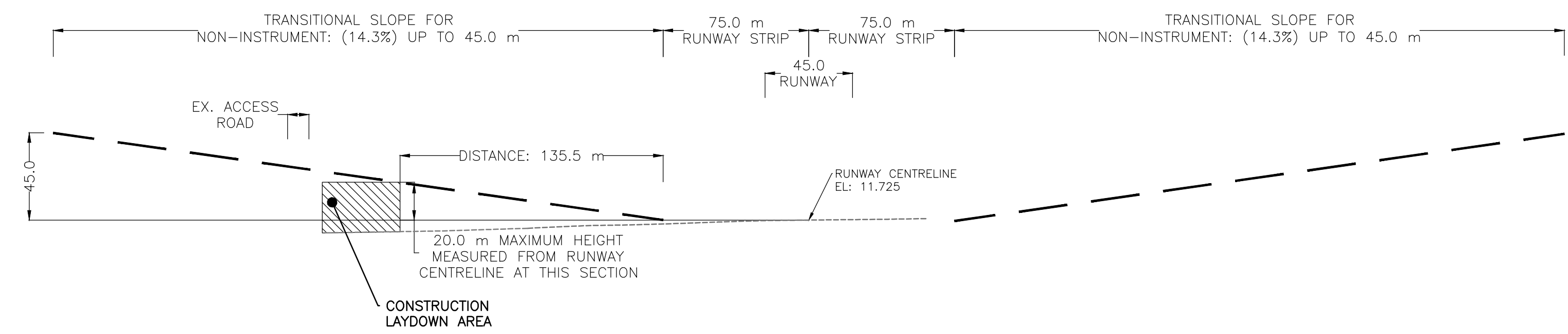
Project no./No. du projet R.109401.001	Drawing no./No. du dessin C101	Revision no. B
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DATE: 2021-07-16 - 12:56pm (CAK1064882) 19000193 (19M-01601-02 - PSFC Keogh Bridge Replacement Drawings)060 - Highways\Production\C101 - PCO Stage 2.dwg LAYOUT C101 PWGSC - A1 - 841x594



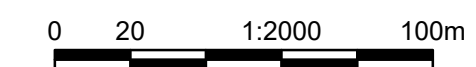
PLAN - LAYDOWN AREA
SCALE 1:2000

- LEGEND**
- PROJECT AREA
 - RUNWAY STRIP WIDTH (FROM RUNWAY CENTRELINE)
 - TRANSITIONAL SLOPE LIMIT
 - APPROACH SURFACE SLOPE
 - CONSTRUCTION ACCESS ROUTE
 - CLEARWAY PLANE
 - CONSTRUCTION LAYDOWN AREA



SECTION A
SCALE 1:2000

RWY DATE RWY 11 (113 DEG)/ 29 (293 DEG) 4999' X 150' ASPHALT AGN III B
RUNWAY 29 NON-INSTRUMENT



NOTE: AERIAL IMAGERY OBTAINED FROM GOOGLE EARTH PRO ON 21/02/17.

THE HORIZONTAL DATUM USED FOR THIS DRAWING IS IN REFERENCE TO UTM (NAD 83) ZONE 9.

Revision	Description	Date
C	ISSUED FOR PERMIT	21/07/16
B	ISSUED FOR TC REVIEW	21/04/22
A	ISSUED FOR DISCUSSION	21/02/26



Project title: **BRITISH COLUMBIA PORT HARDY**

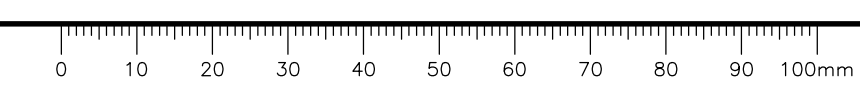
KEOGH RIVER BRIDGE REPLACEMENT

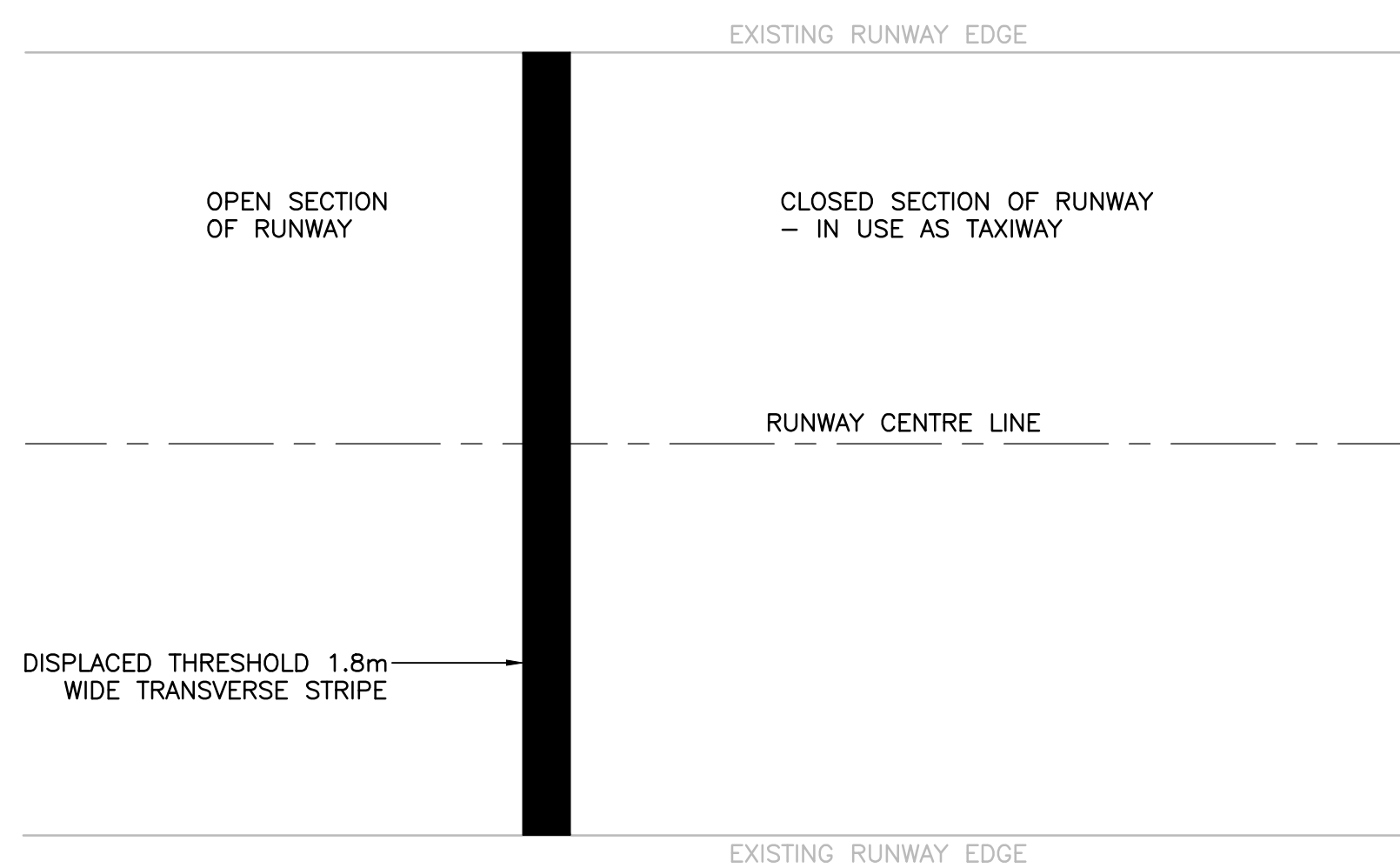
Designed by: **V.TJIA, P.ENG.**
 Drawn by: **K.YANG, EIT**
 Approved by: **C.RADU, P.ENG.**
 PWSSC Project Manager: **T.GREER, P.ENG.**

PCO OBJECT LIMITATION OVERVIEW TRANSITIONAL SURFACE

Project no./No. du projet	Drawing no./No. du dessin	Revision no.
R.109401.001	C102 OF S12	C

DATE: 2021-07-16 - 12:59pm (C:\K1064882) \19M-01601-02 - PS3C Keogh Bridge Replacement\Drawings\060 - Highways\Production\C102 - PCO Transitional Surface.dwg LAYOUT C102

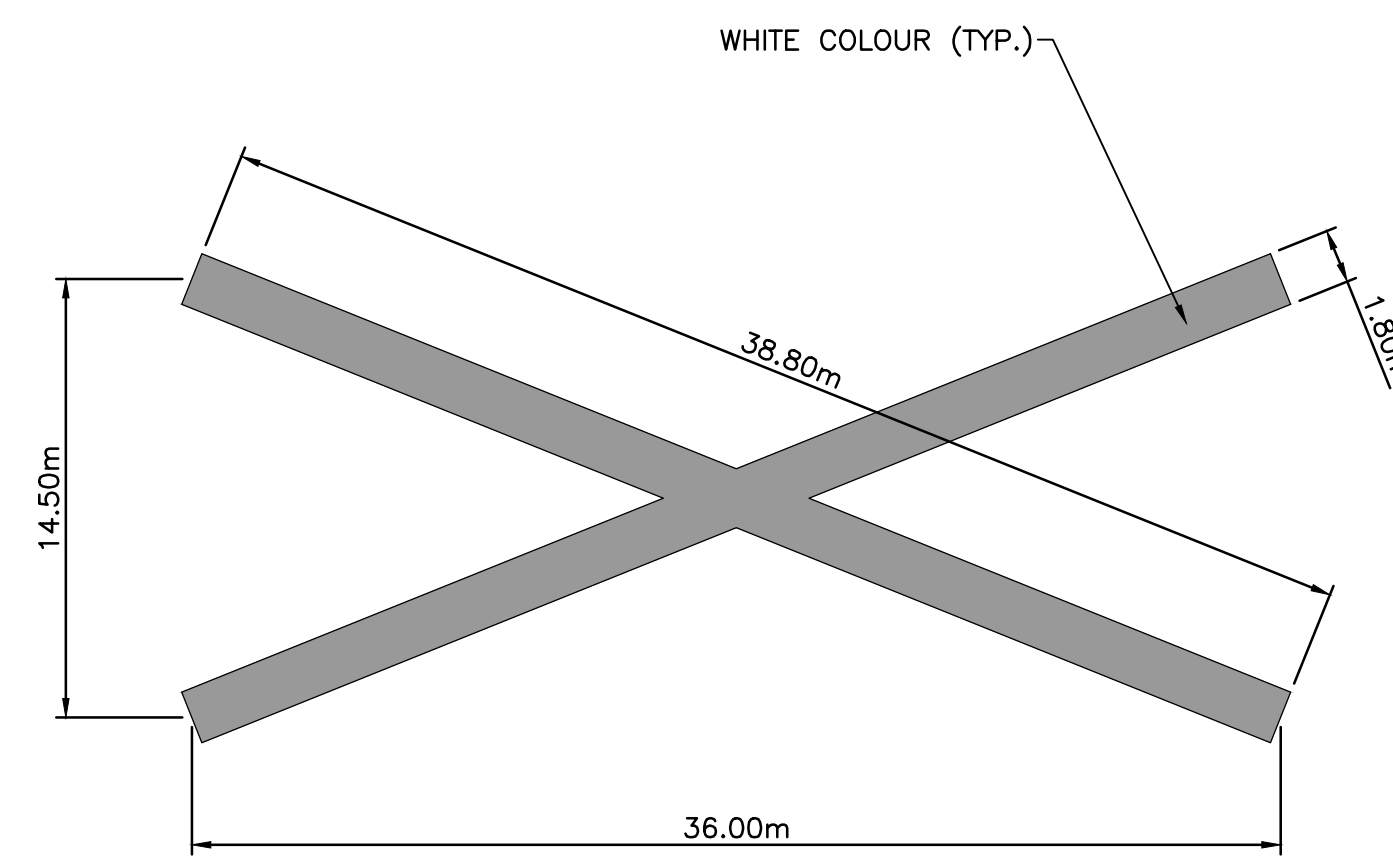




NOTES:

1. THESE MARKINGS ARE NOT TO BE PAINTED ON PAVEMENT SURFACES. THEY ARE TO BE CONSTRUCTED TO ALLOW FOR MOVING AND RELOCATING OF MARKINGS.
2. POLYETHYLENE ROLLS C/W WHITE SAND BAGS ARE ACCEPTABLE MATERIALS.

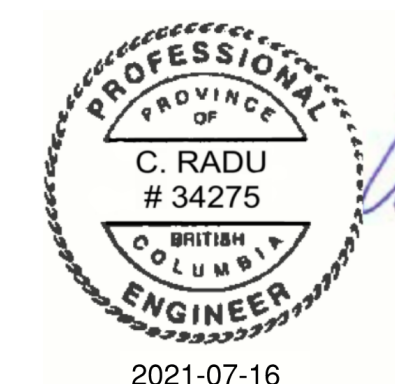
1 - DETAIL - TEMPORARY THRESHOLD BAR
- N.T.S.



NOTES:

1. THESE MARKINGS ARE NOT TO BE PAINTED ON PAVEMENT SURFACES. THEY ARE TO BE CONSTRUCTED TO ALLOW FOR MOVING AND RELOCATING OF MARKINGS.
2. POLYETHYLENE ROLLS C/W WHITE SAND BAGS ARE ACCEPTABLE MATERIALS.
3. MAXIMUM SPACING BETWEEN MARKINGS 300.00m

2 - DETAIL - RUNWAY CLOSURE MARKING
- N.T.S.



Revision	Description	Date
B	ISSUED FOR PERMIT	21/07/16
A	ISSUED FOR TC REVIEW	21/04/22



Project title: **BRITISH COLUMBIA PORT HARDY**

KEOGH RIVER BRIDGE REPLACEMENT

Designed by: **V.TJIA, P.ENG.** / Conçu par

Drawn by: **K.YANG, EIT** / Dessiné par

Approved by: **C.RADU, P.ENG.** / Approuvé par

PWSSC Project Manager: **T.GREER, P.ENG.** / Administrateur de Projets TPSGC

Drawing title: **PCO OBJECT LIMITATION OVERVIEW DETAILS** / Titre du dessin

Project no./No. du projet	Drawing no./No. du dessin	Revision no.
R.109401.001	C103 OF S12	B

DATE: 2021-07-16 - 12:59pm (CAK1064882) 19000193 \19M-01601-02 - PSFC Keogh Bridge Replacement\Drawings\060 - Highways\Production\C103 - PCO Details.dwg LAYOUT_C103

APPENDIX B

Contractor Information – Will be Available for Review Onsite
