Reference No. File reference No.

AUCKLAND INTERNATIONAL AIRPORT LTD

METHOD OF WORK PLAN

Taxiway B5 South, B6 South and A/A5 Intersection Slab Replacement

> Version: V4 (Final) Start Date: July 12th 2021 Expected Completion Date: September 15th 2021 Date of MOWP Issue: June 11th 2021

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2.0 WORKS INFORMATION

2.1 INTRODUCTION

Auckland International Airport Ltd. (AIAL) wishes to implement slab replacement works in the area of Taxiways B5 South, B6 South and A/A5 Intersection. The work also includes fillet widening at Taxiway B5 and the reinstallation of associated airfield ground lighting infrastructure.

2.2 SCOPE OF WORK

The works will be carried out by Brian Perry Civil as main contractor as main contractor in association with several nominated sub-contractors .

The works to be undertaken and covered by this MOWP are the following:

- Isolation and diversion of existing AGL services within the construction area and the closed taxiways surrounding it;
- Provision of temporary paint markings including the blacking out and removal of existing paint markings as required;
- Installation of barriers to isolate the construction site from operational areas;
- Installation of temporary hazard lights to barriers to isolate construction from operational areas;
- Sawcutting and removal of existing (approximately 350 to 400mm thick) concrete slabs;
- Removal of approximately 300 to 350mm depth of basecourse;
- Removal of existing asphalt pavements to allow formwork installation;
- Excavation for the B5 fillet widening structure;
- Installation of subsoil drainage at Taxiway B5;
- Construction of granular subbase;
- Construction of 200mm thick cement stabilised basecourse;
- Trenching for airfield ground lighting (AGL) ducting;
- Installation of AGL ducting and light bases;
- Installation of AGL cabling and electrical works;
- Construction of new 500 to 600mm thick concrete slabs;
- Construction of 50 to 125mm thick asphalt surfacing;
- Testing and commissioning of new AGL within the work area;
- Removal of barrier lighting and AGL diversions;
- Removal of barriers and change back of site to normal operations;
- Removal of temporary paint markings and reinstatement of permanent markings;
- Change back of AGL services to normal operations;

2.2.1 Construction Traffic

Construction traffic will access a staging area at Stand 70 via existing airside roads and enter and exit the work areas from Stand 70 crossing live Taxiways B and D. A secondary site access will be provided from the perimeter road via Taxiways B3 and Alpha. The site access routes cross live taxiways with follow me traffic management provided by AIAL Airfield Safety Officers.

Sweepers will be provided by the Contractor and positioned at the taxiway crossing to remove any potential FOD left by crossing vehicles.

Oversize dump trucks will not be used for the works.

2.3 PROGRAMME

Milestone dates are:

Description	Commencement	Completion	Working Hours
Change-over to temporary taxiway operations	12 July 2021	12 July 2021	07:00 to 18:00 LT
Main Works	13 July 2021	14 September 2021 (TBC)	00:00 to 23:59 LT
Change-back to permanent taxiway operations	15 September 2021 (TBC)	15 September 2021 (TBC)	07:00 to 18:00

NOTAMs will be issued detailing operational restrictions not less than 3 days prior to the works commencing.

3.0 RESTRICTIONS TO AIRCRAFT OPERATIONS

3.1 OPERATIONS

The work area will be closed off to aircraft movements generally by barriers and hazard lighting. Barrier layout is shown on the attached drawing AF104-BECA-DRW-CV-BZ-0305.

Taxiway closures and temporary taxiing routes throughout the duration of the works are the following:

- Taxiway Alpha will be closed between Taxiways A6 and B4
- Taxiway A4 will be closed
- Taxiway A5 will be closed

- Taxiway A7 centreline lighting will be inoperative
- Taxiway B5 will be closed
- Taxiway B6 will be closed
- The Contingent Runway will be unavailable

General

All construction work will generally be undertaken within areas delineated by red and white construction barriers and marked by red hazard lights where these areas interface with the manoeuvring area.

Barriers across Taxiway A will be 47.5m from the Taxiway A6 and B4 C/L. Barriers across Taxiways A4 and A5 will be 75m from the Runway 05R/23L C/L. Barriers across Taxiway B5 and B6 will be 47.5m from the Taxiway B C/L (AF104-BECA-DRW-CV-BZ-0305).

The 51m Code F clearance from the Taxiway B C/L will be marked on the ground and construction equipment and personnel will pull back for all Code F operations on Taxiway B.

The back-of-stand road at the domestic apron will be managed by Airfield Safety Officers during Code F operations.

All construction personnel and equipment will be pulled back clear of zone 3 when weather conditions approach the Cat 1 minima as advised by ATC.

The Contractor will be required to withdraw personnel and equipment to the north side of Taxiway Alpha when the site is unattended. Refer to the attached drawing AF104-BECA-DRW-CV-BZ-0302.

In the event of low visibility operations there will be restrictions to the low visibility taxi routes on Taxiway Alpha between B4 and B7. A follow me vehicle will be available for low visibility operations.

Aeronautical information pertaining to the Auckland Airport aerodrome operating status is to be published via AIP Supplements and NOTAMs by AIAL.

Any variations to that advised below will also be notified via NOTAM.

3.2 EMERGENCY & ADVERSE WEATHER

In case of an emergency, the Contractor will comply with all Airfield Safety Officer instructions for ceasing operations and removing plant and personnel from the immediate location of the works to the staging area at Stand 70 or as directed by the Airfield Safety Officer.

In extreme adverse weather the Airfield Projects and Works Manager has authority to stop the work where worker or operational safety is considered at risk. Work will resume when those conditions abate but at the discretion of the Airfield Projects and Works Manager.

The Apron Operations Team (AOT) will maintain constant communications with the Contractor at all times via the Airfield Safety Officer or the Works Supervisor.

3.3 NAVIGATIONAL AIDS

Instrument Approach Aids

The works will not affect the operation of Runway 05R/23L. Navigational aids available during the normal operation of this runway will be available with workers pulling back in adverse weather conditions

Visual Aids

Normal ground navigation lighting will be in operation for runway and available taxiway routes. Taxiway lighting and pavement markings within and leading to the works site will be decommissioned for the works period. The Taxiway A7 centreline lighting will be inoperative.

Refer to the NOTAMs and AIP Supplement for further details.

3.4 Publications and NOTAMs

An AIP Supplement will be issued to promulgate operational restrictions and available taxi routes. For further details refer to the AIP SUP 40/21.

NOTAMs will be issued providing the timing and other details of the restrictions prior to the commencement of work and as required during construction.

Details of the likely NOTAMs to be published for the works are as follows. Key points about these NOTAMs include the following:

- Generally NOTAM(s) issued by AIAL will notify the physical status of the aerodrome with regard to operations.
- The forms of NOTAMs that follow are a draft of those to be issued by AIAL before and during the works.
- Dates and times for NOTAMs will be confirmed by AIAL at the time of issue, however they will be issued no less than 48 hours before commencement of works (refer section 2.3 for approximate dates).

NOTAM texts are as follows:

REFER AIP SUP 40/21 AUCKLAND AERODROME TWY A, B5, B6 PAVEMENT REHABILITATION.

TWY A CLSD BTN TWY A6 AND TWY B4, TWY B5 CLSD, TWY B6 CLSD, TWY A4 CLSD, TWY A5 CLSD DUE WIP

4.0 RESTRICTIONS OF WORK ORGANISATION

4.1 GENERAL

AIAL will provide Airfield Safety Officers who will have complete authority to direct the Contractor on Aerodrome Operational Requirements.

Any changes or additions to the scope or methodology that could have an impact on operations must be advised to AIAL.

- 4.1.1 The Contractor shall comply with the requirements of the Contract Documents produced for this project and this MOWP. The Contractor's site representative shall contact the Airfield Safety Officers prior to the start of each working period to ascertain the status for the proposed work with respect to the operational requirements of the aerodrome.
- 4.1.2 An AUTHORISATION OF WORK form shall be issued by the Apron Operations Team (AOT) Duty Team Leader for the project. This form shall include any special requirements that will apply for the period of work.

4.2 CONTRACTOR'S METHODOLOGY

The Contractor shall have a written construction methodology including, but not restricted to, the items listed in this section. The Contractor's methodology shall be accepted in writing by AIAL before the commencement of the Works.

4.2.1 FOD and Wildlife Management

The Contractor's written methodology shall include a policy and procedures to ensure that there is no FOD on active taxiways and the runway. The policy shall include measures to mitigate, control and monitor FOD and it shall be accepted in writing by AIAL.

The contractor is to avoid creating areas of standing water during excavations to mitigate against potential mosquito breeding environments and bird baths. The contractor is also to ensure construction and food waste generated airside is binned in secure bins or containers to avoid attracting wildlife to the worksite.

AIAL will undertake additional taxiway inspections during the works to monitor FOD.

4.2.2 Emergency and Adverse Weather

In case of an emergency, the Contractor will comply with all Airfield Safety Officer instructions for ceasing operations and removing plant and personnel from the immediate location of the works to the staging area at Stand 70 or as directed by the Airfield Safety Officer.

In extreme adverse weather the Airfield Projects and Works Manager has authority to stop the work where worker or operational safety is considered at risk. Work will resume when those conditions abate but at the discretion of the Airfield Projects and Works Manager.

The Apron Operations Team (AOT) will maintain constant communications with the Contractor at all times via the Airfield Safety Officer or the Works Supervisor.

4.2.3 Site Lighting during Works outside Daylight Hours

The Contractor's written methodology shall include a policy and procedures to ensure that lighting used during works outside of daylight hours does not adversely impact flight crews. This includes vehicles lights being directed away from approaching aircraft and site lighting directed so as to not be a distraction to aircraft on approach or take off. The policy shall include measures to plan, approve and monitor site lighting.

The Contractor's proposed site lighting plan shall be accepted in writing by AA and the Contractor shall obtain approval from AA prior to any changes to the accepted site lighting arrangement.

4.2.4 Construction Height Limitations

The Contractor's written methodology shall include a policy and procedures to ensure that their staff, plant and equipment operates below the construction height limitations indicated on the drawing AF104-BECA-DRW-CV-BZ-0302 at all times. The policy shall include appropriate measures to mark construction height limitations on site with barrier lines, ground pegs, poles or paint markings as appropriate, including the use of low height equipment or fitting of physical limit devices as applicable. In addition, when equipment with the potential to breach the OLS is in use, the contractor shall have appropriately trained staff and AIAL shall have Airfield Safety Officers continuously monitoring equipment height against the appropriate markings to ensure compliance with OLS restrictions.

The methodology shall include the process for seeking sign-off, communicating (e.g. NOTAM) and managing obstacles that may temporarily penetrate the OLS.

The Contractor's proposed construction height control procedures shall be accepted in writing by AIAL and the Contractor shall obtain approval from AIAL prior to any changes to the accepted procedures.

4.2.5 Site Boundaries

The Contractor's written methodology shall include a policy and procedures to ensure that their staff, plant and equipment operate within the agreed site boundaries shown on drawing AF104-BECA-DRW-CV-BZ-0305.

Procedures shall include the process for the sign-off of works outside of the site boundaries.

4.2.6 Change Management and Sign-off of Additional Works

The Contractor's written methodology shall include a policy and procedures for change management. Procedures shall include the process for the sign-off of newly identified / opportunistic work by AIAL to prevent such works from inadvertently introducing non-compliant objects or resulting in infringement.

4.3 PERSONNEL, EQUIPMENT & MATERIALS

The Contractor's access will be limited to the work area as shown on the attached drawings AF104-BECA-DRW-CV-BZ-0302.

All construction work will generally be undertaken within areas delineated by red and white construction barriers and marked by red hazard lights where these areas interface with the manoeuvring area. Barriers across Taxiway A will be 47.5m from the Taxiway A6 and B4 C/L. Barriers across Taxiways A4 and A5 will be 75m from the Runway 05R/23L C/L. Barriers across Taxiway B5 and B6 will be 47.5m from the Taxiway B C/L (AF104-BECA-DRW-CV-BZ-0305).

The Contractor will be required to withdraw personnel and equipment from the construction area in the event of an emergency.

Only equipment, plant and materials that are required for daily activities will be located within the construction site.

All plant, equipment and materials will be secured at all times during the work so that it is not vulnerable to jet blast or be able to be wind borne. Plant and materials will be stored in such a manner that wing tip clearances of aircraft operating around the site are not compromised. No storage of materials or equipment is allowed outside the works areas and dedicated laydown areas.

Plant, equipment and materials shall not exceed the construction height restrictions shown on the attached drawing AF104-BECA-DRW-CV-BZ-0302.

Marker poles or other agreed markers will be used to mark construction height restrictions in accordance with the Contractor's accepted methodology (refer to Section 4.2.4 for details).

4.4 HEALTH AND SAFETY

4.4.1 General

The PCBU in control of the works under the Health & Safety at Work Act (2015) is the Contractor. The Contractor will prepare a Site Health and Safety Plan prior to the commencement of the work.

Only personnel who have attended the Contractor's site induction meeting will be allowed on site. This will be held prior to commencing the Works. The site induction meeting is to be attended by contractor personnel, AIAL, Beca and Airways personnel. The names of all personnel attending are to be recorded. The Contractor will hold daily toolbox meetings for all staff working on site prior to the commencement of each day's work.

The Principal, the Engineer and the Contractor will review risks and agree on mitigation measures at regular risk management meetings.

In case of adverse weather (e.g. fog) being forecast the Principal may decide to deny the Contractor access to site. A decision is expected prior to the commencement of each shift.

4.4.2 Jet Blast

Jet blast during aircraft entering Taxiway D1 and Stands 24 and 30 may impact the site. The simulated jet blast velocity contours are shown on drawings AF104-BECA-DRW-CV-BZ-0316 and AF104-BECA-SKT-CV-BZ-1010. These velocities will be validated at the commencement of the project via field measurements.

The Contractor shall consider the effect of jet blast to their operations, protect their staff and secure plant, equipment and materials during the works so that it is not vulnerable to jet blast or be able to be wind borne. Refer to the project risk register for mitigation measures.

No storage of materials or equipment is allowed within the 60 km/h jet blast contours. Modelling shows part of the work area within the 56km/hr jet blast contour for the most critical aircraft types. Although this is not considered unsafe, workers should still remain vigilant and aware of jet blast, ensuring that tools and equipment are secured at all times and that PPE including eye protection is worn.

The Airfield Safety Officers will monitor aircraft movements. If aircraft are turning onto Stands 24 or 30, the Airfield Safety Officer may direct construction personnel to pull back further from the aircraft.

Details on recommended maximum jet blast velocities can be found AC139-6 Section 5.2.100

4.5 SITE ACCESS

Entry to the works "airside" shall only be by those accredited with airside security passes issued by the CAA Aviation Security Service (AVSEC). Those people driving vehicles or equipment airside must be holders of an AIAL "Airside Drivers Permit" or under escort by a permit holder authorised to undertake escort duties.

Vehicles that travel to and from the Airside works must have an Airside Vehicle Permit (AVP), or they will require an escort on each trip.

Sweepers will be provided by the Contractor and positioned at the taxiway crossing to remove any potential FOD left by crossing vehicles.

Oversize dump trucks will not be used for the works. Any occasional oversize or overload traffic not suitable for the airside road is to use taxiways to access the work area with follow me traffic management provided by AIAL Airfield Safety Officers. This may require the controlled use of Taxiways.

4.5.1 Main Site Access

Contractor's plant, materials and staff will access airside and the construction site via Checkpoint Charlie and existing airside roads.

The site access route crosses active Taxiways Bravo and Delta. Construction traffic will cross live taxiways with follow me traffic management provided by AIAL Airfield Safety Officers.

4.5.1 Secondary Site Access

Secondary site access for transporting excavated materials to the airside stockpile area will be provided from the perimeter road east of Taxiway C5. The secondary site access route crosses active Taxiways Alpha, Bravo and B3. Construction traffic will cross live taxiways with follow me traffic management provided by AIAL Airfield Safety Officers.

4.6 AERODROME MARKERS, MARKINGS & LIGHTS

The work areas that directly interface with the manoeuvring area shall be barricaded off with red and white plastic water filled barriers set out on site by the Contractor. These shall be marked at night with continuous red coloured lighting.

The Taxiway A7 centreline lighting will be inoperative.

4.7 PROTECTION OF ELECTRICAL & COMMUNICATION SERVICES

As part of the contract works existing electrical and communication cabling may be affected. Standard AIAL procedures will be applied requiring a Ground Penetration Certificate (GPC) before excavation can commence.

Once a GPC has been issued, any essential services will be field-marked prior to work starting and an authorised representative of the affected services management group will attend site to liaise with the Contractor and attend to any requirements necessary to facilitate the works.

In addition to the requirement for the Contractor to become familiar with the location of all services and obtain GPC, as appropriate, pilot holes will be excavated by hydro-excavation to safeguard vital services. Any excavation in the proximity of critical services will be monitored by an appropriate stand over person.

Consultation with AIRWAYS and AIAL staff will be maintained throughout the project.

5.0 ADMINISTRATION

5.1 AIAL REPRESENTATIVES

The PROJECT MANAGER is Mr. Geraint Francis, Infrastructure Project Manager, who can be contacted via the following numbers:

• Mobile: +64 27 273 0160

The AIRFIELD PROJECTS AND WORKS MANAGER, Mr. Ross Cameron, can be contacted via the following numbers:

• Mobile: +64 27 886 4658

He shall be responsible for the operational safety aspects of the project. His representative will be the Airfield Safety Officer who will communicate with the Contract Supervisor on matters necessary for ensuring the safe progress of the work. All communications with the Airways Corporation Control Tower shall be through the Airfield Safety Officer.

5.2 CONTRACTORS REPRESENTATIVES

There will be one Principal Contractor working on this project.

The Principal Contractor's representative is Mr Jamie Porter, who can be contacted via the following number:

• Mobile: +64 274 340 078

The contact for Airways Corporation New Zealand Limited is Ms Andria Huang. She can be contacted via the following number:

• Mobile: +64 27 478 1258

5.3 CONSULTANT REPRESENTATIVES

The technical advisor to AIAL for this project is Beca Ltd.

Their principal representative and PROJECT MANAGER of the consultant is Mr. Tamas Andrell who can be contacted via the following number:

- Work: +64 9 300 9173
- Mobile: +64 21 059 6049

The ENGINEER'S REPRESENTATIVE is Mr. Chris Blind who can be contacted via the following numbers:

• Mobile: +64 21 277 5115

6.0 AUTHORITY

All works will be carried out in accordance with this MOWP.

Approved:

R H Cameron

Ross Cameron – Airfield Projects and Works Manager

7.0 DRAWINGS

Title	Drawing No.
METHOD OF WORKS PLAN LEGEND	AF104-BECA-DRW-CV-AZ-0002
SITE ACCESS PLAN AND CONSTRUCTION PLANT	AF104-BECA-DRW-CV-BZ-0302
HEIGHT RESTRICTIONS	
AIRCRAFT TAXIING ROUTES	AF104-BECA-DRW-CV-BZ-0305
JET BLAST CONTOURS – TAXIWAY B5	AF104-BECA-DRW-CV-BZ-0316
AIRCRAFT JET BLAST THRUST PROFILES – TAXIWAY B6	AF104-BECA-SKT-CV-BZ-1010

8.0 DISTRIBUTION LIST

Distribution of this document shall be to the following:

- GM AIAL Operations
- GM AIAL Infrastructure
- Head of Airport Operations
- Head of Airport Assets and Commercial
- Aeronautical Planning Manager
- Corporate Affairs Manager
- Infrastructure Programme Director
- Project Manager
- Airfield Projects & Works Manager
- CAA
- AVSEC
- Airways Corporation New Zealand
- Airlines (operating at Auckland Airport)
- Contractor (Brian Perry Civil)
- Consultant (Beca)
- Engineer's Representative (Enable Consulting)
- BARNZ
- Airport Emergency Services
- Refuellers

9.0 GLOSSARY OF TERMS

- **AA** \Rightarrow Auckland Airport
 - **AC** \Rightarrow Advisory Circular (Issued by CAANZ)
- AIAL ⇒ Auckland International Airport Limited
- AIP \Rightarrow Aeronautical Information Publication

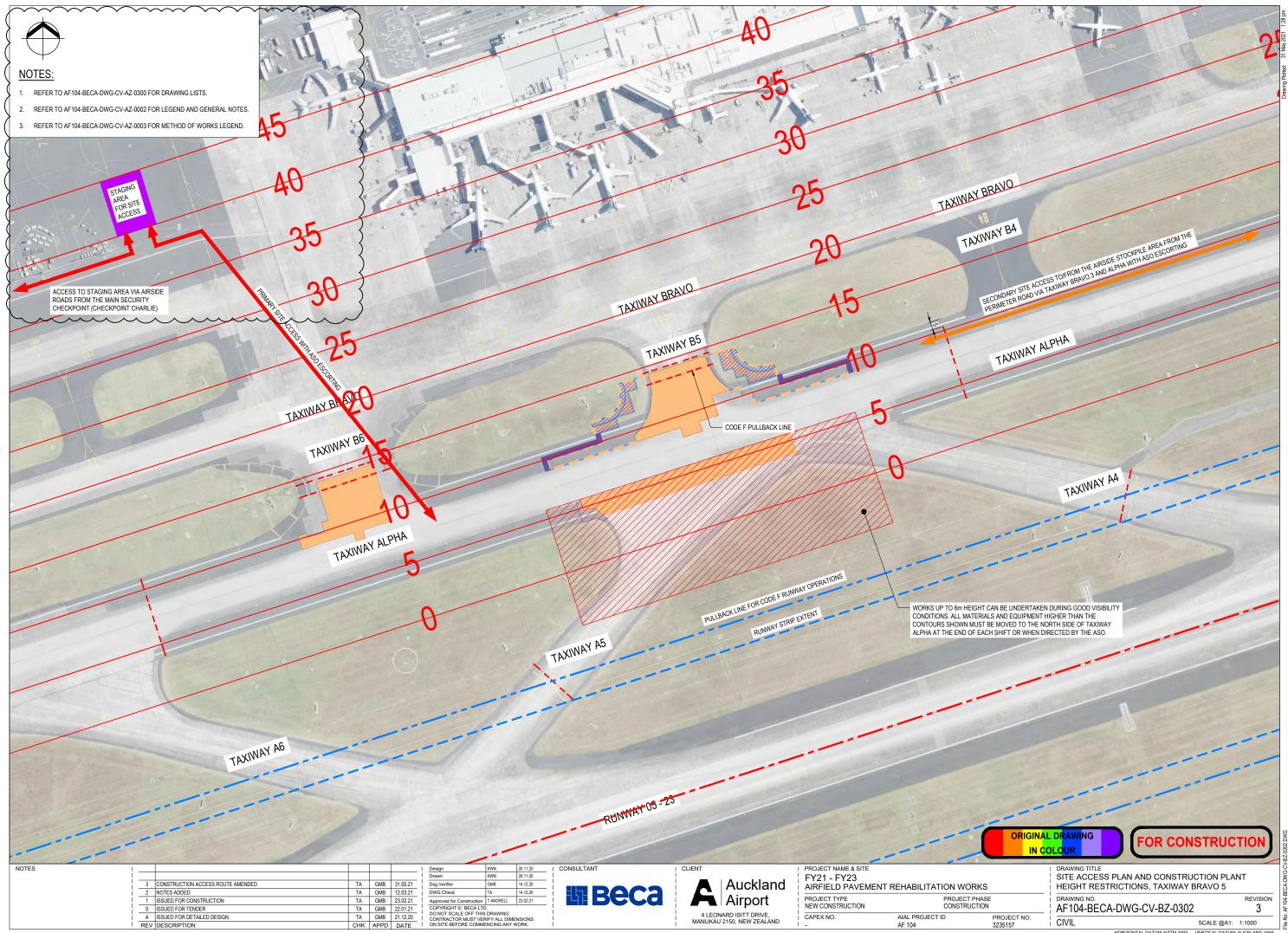
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- AIRAC \Rightarrow Aeronautical Information Publication NZ update cycle
- AGL \Rightarrow Airfield Ground Lighting
- AOT ⇒ Apron Operations Team
- ASDA \Rightarrow Accelerate Stop Distance Available
- ATC ⇒ Air Traffic Control
- AVSEC ⇒ Aviation Security Service
- **CAANZ** \Rightarrow Civil Aviation Authority of New Zealand
- FOD ⇒ Foreign Object Damage
- GPC ⇒ Ground Penetration Certificate
- ICAO \Rightarrow International Civil Aviation Organization
- ITB ⇒ International Terminal Building
- LDA \Rightarrow Landing Distance Available
- MAGS \Rightarrow Movement Area Guidance Sign
- **MOWP** ⇒ Method of Work Plan
- **NOTAM** ⇒ Notice to Airmen/Airwomen
- **OLS** \Rightarrow Obstacle Limitation Surface
- **REIL** \Rightarrow Runway End Indicator Lights
- **RESA** ⇒ Runway End Safety Area
- **RETS** \Rightarrow Rapid Exit Taxiways
- **RWY** \Rightarrow Runway
- **TORA** \Rightarrow Take Off Run Available
- **TODA** \Rightarrow Take Off Distance Available

GENERAL	
	SLAB REPLACEMENT AREA
	EXTENT OF DESIGN
	EXISTING CONTOURS
	NEW CONTOURS
	MAIN ACCESS ROUTE
	SECONDARY ACCESS ROUTE
	CONTRACTORS COMPOUND
	LAYDOWN AREA
	600mm WATERFILLED BARRIERS (LIT AT NIGHT)
5	OLS FAN - TAKE- OFF FAN CONTOURS
5	OLS FAN - APPROACH FAN CONTOURS
5	TRANSITIONAL SURFACE
	TAXIING ROUTE
•	TRANSITIONAL SURFACE





HORIZONTAL DATUM: NZTM 2000 VERTICAL DATUM: AUCKLAND 1

