Northern Apron Aircraft Operations

ESSENDON FIELDS

DOCUMENT DETAILS

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Revision History

Version	Maturity	Date	Description of Change
1.0	Superseded	Oct 2021	Initial issue of Procedure
1.1	Superseded	May 2022	Update the Apron Plan
1.2	Released	September 2022	General updates

Contents

1 Introduction

Essendon Airport Pty Ltd (EAPL) is responsible for the safe operations of aircraft using its facilities and assesses the risk posed by all aircraft operations across the airport. The EAPL Safety Management System (SMS) provides direction on how hazards are identified and managed through the risk assessment process.

The Northern Apron is an operational area that is isolated from the wider airport. It has several commercial tenancies and public areas that surround it, and due to line-of-sight issues, aircraft activity is not controlled by Air Traffic Control (ATC). As a result, the aircraft operations on the Northern Apron have been assessed under the EAPL SMS to ensure the risks associated with the aircraft operations are reduced to As Low As Reasonably Practicable (ALARP).

The *Northern Apron Aircraft Operations Procedure* (this Procedure) has been developed as one of the mitigation strategies for the hazards that were identified in the risk assessment and serve to alert the tenants and operators within this area of the operational requirements for utilising this area.

2 Regulatory Background

Essendon Fields Airport facilities are designed and operated under the Civil Aviation Safety Regulations 1998 (CASR 1998) and Part 139 (Aerodromes) Manual of Standards (Part 139 MOS). Supplementary to the Standards, EAPL has developed a Conditions of Use (CoU) document that provides all airport operators and users the terms and conditions for using the airports infrastructure.

By using any Aeronautical Infrastructure at Essendon Fields Airport, you accept these CoU and use the Aeronautical Infrastructure subject to the CoU.

The CoU provides the airport the ability to direct airport users with instructions relating to the day-to-day operation of the airport. The paragraph below from the CoU provides guidance:

- Section 3 a) iv) other conditions, instructions, orders, and directions necessary for the day-to-day operation of the Airport.

This Procedure is supported by the EAPL CoU and is therefore a requirement for any operators that utilise the Northern Apron.

Web page link to CoU - https://ef.com.au/airport/operations/#airport-user-resources

3 Local Information and Procedures

All operators utilising the Northern Apron must have completed the following requirements prior to accessing and operating in this area:

- Airside Induction
- Northern Apron Aircraft Operations Procedure (this procedure)
- Engine Ground Running Procedure
- Authority to Use Airside & Authority to Drive Airside (as applicable)
- Jet Crossing procedure (as applicable)

If you are a Fixed Base Operator (FBO), then you will take responsibility for ensuring that any aircraft that are utilising your facility are managed in accordance with these requirements.

3.1 Airside Induction

The Airside Induction is a requirement for all persons that operate airside or who require access to the EAPL airside facilities.

This induction can be found on the Essendon Fields website here: https://ef.com.au/airport/operations/#airport-induction

3.2 Northern Apron Aircraft Operations Procedure

The Northern Apron Aircraft Operations Procedure (this procedure) provides to bring all the requirements for operating on the Northern Apron into a document and will be a requirement for anyone utilising the Northern Apron for their operations.

3.3 Aircraft Engine Ground Run Procedure

The Aircraft Engine Ground Run Procedure is applicable to all operations across the airport, including operations on the Northern Apron. The conditions set out in this procedure apply to the ground running of aircraft engines for the purposes of maintenance, testing and minimising noise impacts to sensitive receptors. These conditions do not apply to and are not intended to limit immediate pre-flight engine checks, normal start, taxi and shutdown procedures.

All aircraft operations that require engine runs above idle must be undertaken in accordance with this procedure. This procedure also forms part of the Airside Induction and Conditions of Use.

A copy of the Aircraft Engine Ground Run Procedure can be found on the Essendon Fields website here: https://ef.com.au/airport/operations/#airport-user-resources

3.4 Authority to Use Airside & Authority to Drive Airside (as applicable)

Vehicles may not be driven Airside unless the vehicle has been issued with an Authority for Use Airside (AUA) permit, and the driver has been issued with an Authority to Drive Airside (ADA) licence.

Ground staff are required to hold an Authority to Drive Airside to allow them to operate vehicles or Ground Service Equipment (GSE). This is a requirement for moving aircraft from the hangars to the bays on the Northern Apron and around the airfield.

Vehicles and drivers that do not hold the required permits/licence, but who have a valid reason to be airside, must be under escort by an appropriately licensed airside vehicle and driver.

Further details on these requirements can be found on the Essendon Fields website here: https://ef.com.au/airport/operations/#airside-driving-vehicles

3.5 Jet Crossing Procedure (as applicable)

Any operators that receive or dispatch aircraft between 2200-0600L are required to have undertaken training to operate the Jet Crossing in accordance with the Jet Crossing Operations Procedure. This training can be completed by visiting the Essendon Fields online induction portal.

4 Apron Operational Requirements

4.1 Apron Markings

It is essential that operators know and understand the markings that have been provided on the apron and must be followed. The plan of the apron markings (see **Attachment A**) provides guidance for parking and moving aircraft around the apron.

The white broken lines are the guidance lines for tug operators to follow while moving aircraft around this area. Following these lines ensures that larger aircraft all have the required clearances from other aircraft and structures as they are being moved into position.

The apron markings have been designed for an aircraft up to 29m wingspan and show where aircraft can be positioned to remain clear of the taxiway.

The critical aircraft for the apron design are listed below. Permission must be granted by EAPL, prior to the aircraft's arrival, for any aircraft that exceed these parameters and will be operating on the Northern apron. Tenants of Hangars 9 & 10 are exempt from this requirement as the taxiways associated with these hangars permit a maximum wingspan of 32m.

Bombardier Global Express (ICAO code: GLEX)	**Gulfstream IV (ICAO code: GLF4)**
• Wingspan 28.65m • Length 30.30m • Height 7.7m	• Wingspan 23.72m • Length 26.90m • Height 7.44m

The following Bay Occupancy Chart relates to the use of the parking bays on the apron:

Bay 1	• Maximum span 28.65m (GLEX) max length 30.5m (GLEX) • Taxi in - no restrictions • Taxi out - pushback & tow forward to engine Start Position
Bay 2	• Maximum span 23.72m (GLF4) max length 26.90m (GLF4) • Taxi in - no restrictions • Taxi out – o CL604 or LJ45 idle thrust only o >20,000kg MTOW – pushback & tow forward to engine Start Position

Note: As the apron is designated for the sole use of the tenants, they may choose to park aircraft within the parking clearance lines under their own volition.

5.1 Engine Start Positions

EAPL requires that, where operationally possible, any aircraft that are operating from the Northern Apron must be aligned to the Primary Engine Start Position before starting their engine/s.

Where weather conditions (i.e. a strong northerly wind) prevents this, aircraft can be moved to a secondary engine start position on the taxilane to allow for an easterly facing position - Refer **Attachment B**. The location of the secondary engine start position will prevent movement of other aircraft into and out of the apron. Therefore, the aircraft operator or FBO must liaise with the other northern apron tenants and ATC prior to utilising this location.

EAPL will allow smaller aircraft (less than 20T) to start their engines on Bay 2 provided the aircraft switches from breakaway thrust to idle as soon as possible when turning.

At all times, the responsibility for the safe operation of the aircraft engine start falls to the aircraft operator. EAPL has provided jet blast drawings for critical aircraft starting up in these positions at **Attachment C**.

5.2 Re-Fuelling Operations

Aircraft that are being refuelled must reference Civil Aviation Order 20.9.

During fuelling operations, the aircraft and ground fuelling equipment shall be so located that no fuel tank filling points or vent outlets lie:

a) Within 5m of any sealed building;
b) Within 6m of other stationary aircraft;
c) Within 15m of any exposed public area;
d) Within 15m of any unsealed building in the case of aircraft with maximum take-off weight more than 5700kg; and
e) Within 9m of any unsealed building in the case of aircraft with a maximum take-off weight not exceeding 5700kg.

An aircraft engine shall not be started or operated:

a) Within 5 metres (17 ft) of any sealed building; or
b) Within 8 metres (25 ft) of other aircraft; or
c) Within 15 metres (50 ft) of any exposed public area; or
d) Within 15 metres (50 ft) of any unsealed building in the case of an aircraft with a maximum take-off weight exceeding 5700 kg (12 566 lb); or
e) Within 8 metres (25 ft) of any unsealed building in the case of an aircraft with a maximum take-off weight not exceeding 5 700 kg (12 566 lb);

5.3 Jet Operations

One of the main hazards from large jet operations on the apron is the possibility of jet blast affecting others both on the airport and the adjoining properties. **Attachment C** provides guidance to the extent of the jet blast in the nominated engine start areas based on the critical aircraft. The following restrictions have been developed in accordance with this plan based on Part 139 MOS – 6.64

Turbojet engines shall be operated within the appropriate distance specified below of any other aircraft, fuelling equipment or exposed public areas which lie to the rear of and within a 15-degree arc either side of the exhaust outlet axis of that engine:

ENGINE TYPE	POWER CONDITION	MINIMUM DISTANCE
Turbojet	At or below normal slow taxiing thrust	30m (100 ft)
	At thrust used to initiate movement of a stationary aircraft	46m (150 ft)

6 Apron Operations

Aircraft operators and maintenance organisations need to be aware of the possible impact of their operations on the facilities close to this area. This includes adjoining businesses and the proximity of the public to apron area.

Possible impacts include fumes, noise and any other action that could have a negative impact on others close to the area. Please exercise an elevated level of situational awareness of not only the impact of your operations, but those of others operating in the area.

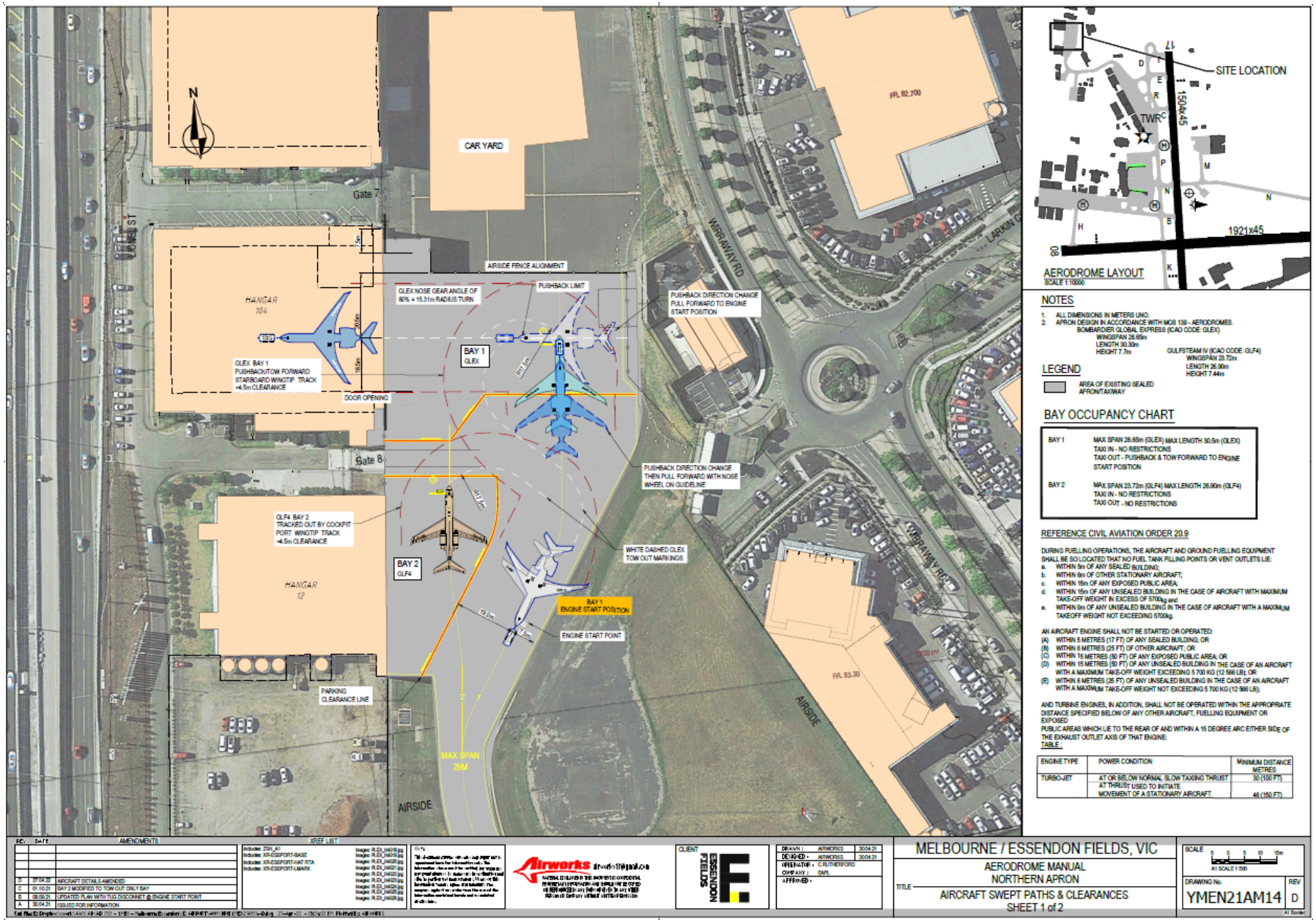
7 Airport Contact Details

Please ensure the contact details for the airside operations staff is included in your operations manual and can be accessed by any staff that may have questions or need to make a report to EAPL.

Airport Operations Officer (Car 1): 0418 335 549 airportops@ef.com.au

Aviation Operations Manager: 0448 431 477 aviation@ef.com.au

Attachment A – Northern Apron Plan & Primary Engine Start Point



NOTES

1. ALL DIMENSIONS IN METERS UNO.
2. APRON DESIGN IN ACCORDANCE WITH MOS 139 - AERODROMES.
   BOMBARDIER GLOBAL EXPRESS (ICAO CODE: GLEX)
   WINGSPAN 28.65m
   LENGTH 30.30m
   HEIGHT 7.7m
   GULFSTEAM IV (ICAO CODE: GLF4)
   WINGSPAN 23.72m
   LENGTH 26.90m
   HEIGHT 7.44m

LEGEND

AREA OF EXISTING SEALED APRON/TAXIWAY

BAY OCCUPANCY CHART

BAY 1	MAX SPAN 28.65m (GLEX) MAX LENGTH 30.5m (GLEX) TAXI IN - NO RESTRICTIONS TAXI OUT - PUSHBACK & TOW FORWARD TO ENGINE START POSITION
BAY 2	MAX SPAN 23.72m (GLF4) MAX LENGTH 26.90m (GLF4) TAXI IN - NO RESTRICTIONS TAXI OUT - NO RESTRICTIONS

REFERENCE CIVIL AVIATION ORDER 20.9

DURING FUELLING OPERATIONS, THE AIRCRAFT AND GROUND FUELLING EQUIPMENT SHALL BE SO LOCATED THAT NO FUEL TANK FILLING POINTS OR VENT OUTLETS LIE:

a. WITHIN 5m OF ANY SEALED BUILDING;
b. WITHIN 6m OF OTHER STATIONARY AIRCRAFT;
c. WITHIN 15m OF ANY EXPOSED PUBLIC AREA;
d. WITHIN 15m OF ANY UNSEALED BUILDING IN THE CASE OF AIRCRAFT WITH MAXIMUM TAKE-OFF WEIGHT IN EXCESS OF 5700kg and
e. WITHIN 6m OF ANY UNSEALED BUILDING IN THE CASE OF AIRCRAFT WITH A MAXIMUM TAKEOFF WEIGHT NOT EXCEEDING 5700kg.

AN AIRCRAFT ENGINE SHALL NOT BE STARTED OR OPERATED:

(A) WITHIN 5 METRES (17 FT) OF ANY SEALED BUILDING; OR
(B) WITHIN 8 METRES (25 FT) OF OTHER AIRCRAFT; OR
(C) WITHIN 15 METRES (50 FT) OF ANY EXPOSED PUBLIC AREA; OR
(D) WITHIN 15 METRES (50 FT) OF ANY UNSEALED BUILDING IN THE CASE OF AN AIRCRAFT WITH A MAXIMUM TAKE-OFF WEIGHT EXCEEDING 5 700 KG (12 566 LB); OR
(E) WITHIN 8 METRES (25 FT) OF ANY UNSEALED BUILDING IN THE CASE OF AN AIRCRAFT WITH A MAXIMUM TAKE-OFF WEIGHT NOT EXCEEDING 5 700 KG (12 566 LB);

AND TURBINE ENGINES, IN ADDITION, SHALL NOT BE OPERATED WITHIN THE APPROPRIATE DISTANCE SPECIFIED BELOW OF ANY OTHER AIRCRAFT, FUELLING EQUIPMENT OR EXPOSED PUBLIC AREAS WHICH LIE TO THE REAR OF AND WITHIN A 15 DEGREE ARC EITHER SIDE OF THE EXHAUST OUTLET AXIS OF THAT ENGINE.

TABLE:

ENGINE TYPE	POWER CONDITION	MINIMUM DISTANCE METRES
TURBO-JET	AT OR BELOW NORMAL SLOW TAXIING THRUST	30 (100 FT)
	AT THRUST USED TO INITIATE MOVEMENT OF A STATIONARY AIRCRAFT	46 (150 FT)

REV	DATE	AMENDMENTS
D	27.04.22	AIRCRAFT DETAILS AMENDED
C	01.10.21	BAY 2 MODIFIED TO TOW OUT ONLY BAY
B	08.09.21	UPDATED PLAN WITH TUG DISCONNECT @ ENGINE START POINT
A	30.04.21	ISSUED FOR INFORMATION

XREF LIST

CLIENT: ESSENDON FIELDS

DRAWN:	AIRWORKS	30.04.21
DESIGNED:	AIRWORKS	30.04.21
ORIGINATOR:	C RUTHERFORD	
COMPANY:	EAPL	
APPROVED:		

MELBOURNE / ESSENDON FIELDS, VIC

AERODROME MANUAL
NORTHERN APRON

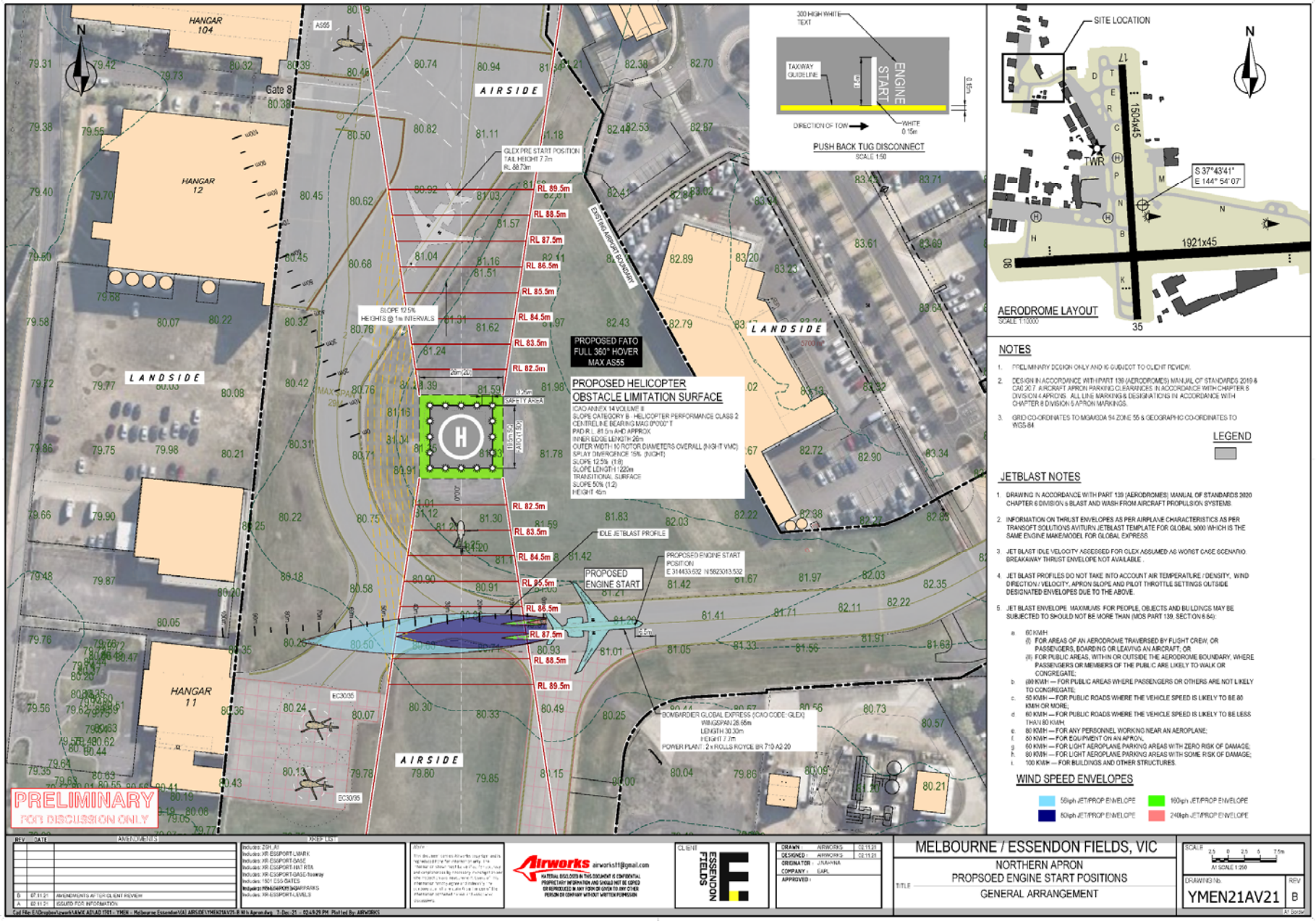
TITLE: AIRCRAFT SWEPT PATHS & CLEARANCES
SHEET 1 of 2

SCALE: 0 5 10 15m
At SCALE 1:500

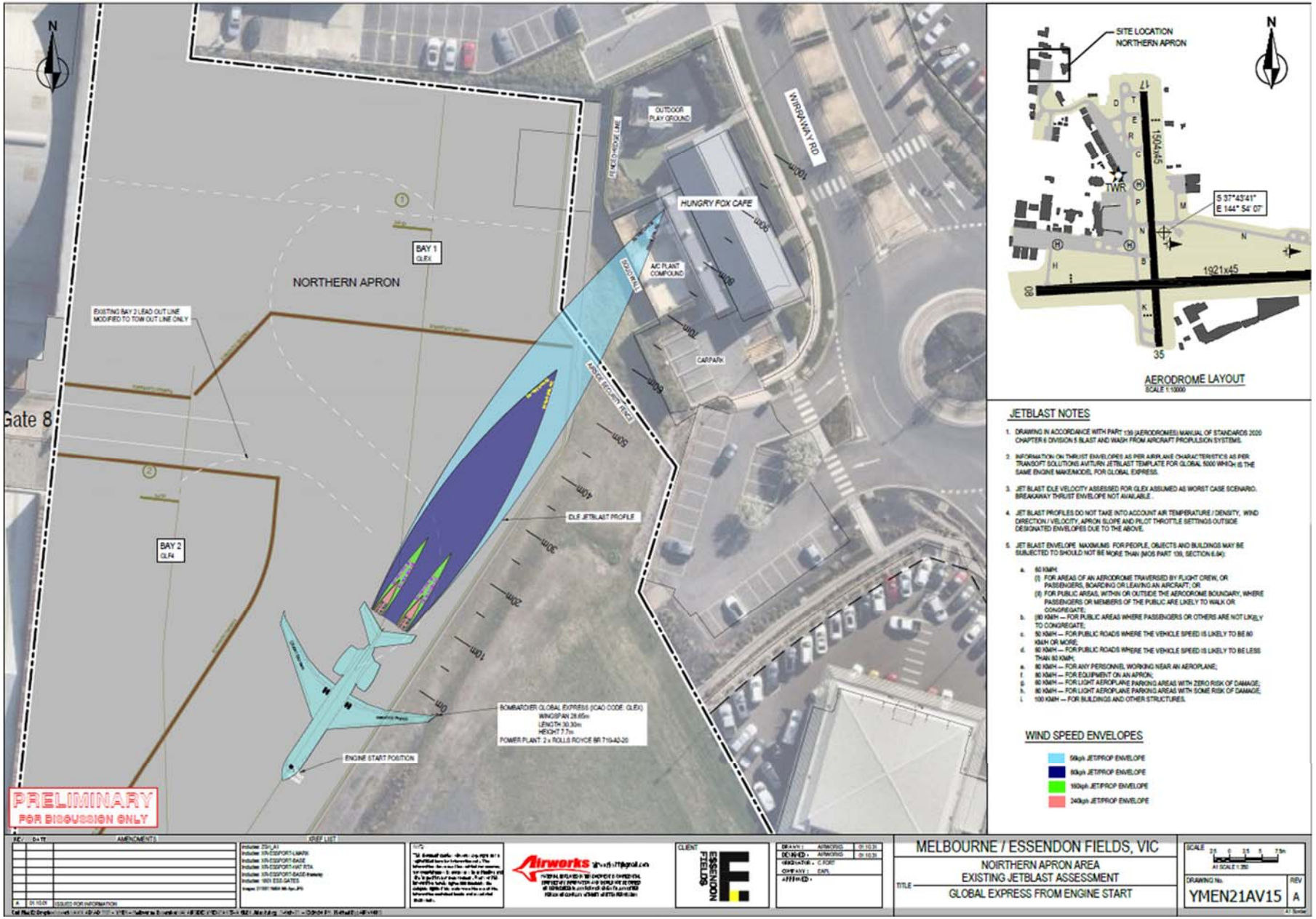
DRAWING No. YMEN21AM14

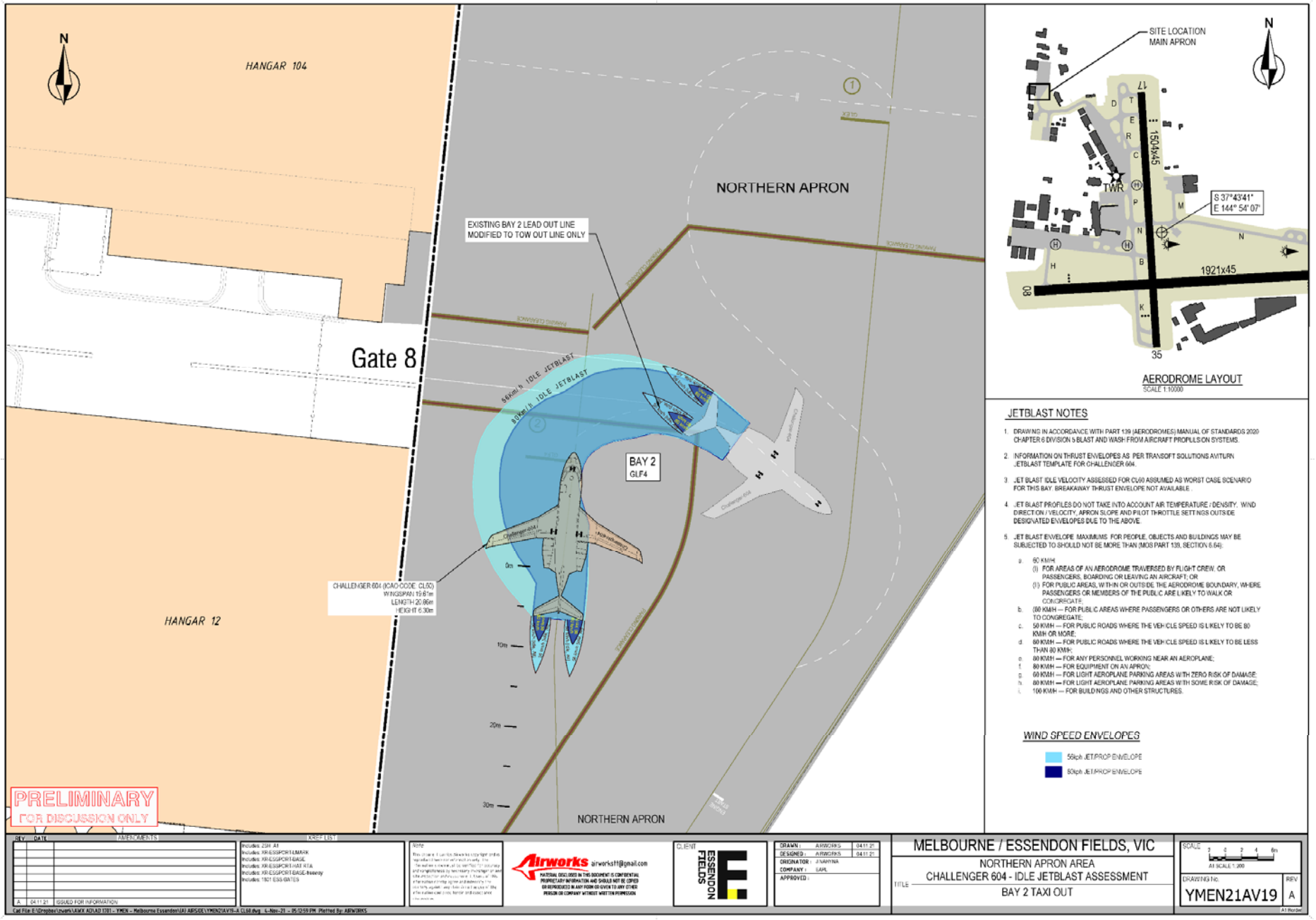
REV D

Attachment B – Secondary Engine Start Point



Attachment C - Jet Blast




HANGAR 104
HANGAR 12
Gate 8
NORTHERN APRON
NORTHERN APRON
EXISTING BAY 2 LEAD OUT LINE
MODIFIED TO TOW OUT LINE ONLY
56KM/H IDLE JETBLAST
80KM/H IDLE JETBLAST
BAY 2
GLF4
CHALLENGER 604 (ICAO CODE: CL60)
WINGSPAN 19.61m
LENGTH 20.86m
HEIGHT 6.30m
0m
10m
20m
30m
PRELIMINARY
FOR DISCUSSION ONLY
SITE LOCATION
MAIN APRON
17
35
08
TWR
1504x45
1921x45
S 37°43'41"
E 144° 54' 07"
AERODROME LAYOUT
SCALE 1:10000
JETBLAST NOTES
1. DRAWING IN ACCORDANCE WITH PART 139 (AERODROMES) MANUAL OF STANDARDS 2020 CHAPTER 6 DIVISION 5 BLAST AND WASH FROM AIRCRAFT PROPULSION SYSTEMS.
2. INFORMATION ON THRUST ENVELOPES AS PER TRANSOFT SOLUTIONS AVITURN JETBLAST TEMPLATE FOR CHALLENGER 604.
3. JET BLAST IDLE VELOCITY ASSESSED FOR CL60 ASSUMED AS WORST CASE SCENARIO FOR THIS BAY. BREAKAWAY THRUST ENVELOPE NOT AVAILABLE.
4. JET BLAST PROFILES DO NOT TAKE INTO ACCOUNT AIR TEMPERATURE / DENSITY, WIND DIRECTION / VELOCITY, APRON SLOPE AND PILOT THROTTLE SETTINGS OUTSIDE DESIGNATED ENVELOPES DUE TO THE ABOVE.
5. JET BLAST ENVELOPE MAXIMUMS FOR PEOPLE, OBJECTS AND BUILDINGS MAY BE SUBJECTED TO SHOULD NOT BE MORE THAN (MOS PART 139, SECTION 6.64):
a. 60 KM/H
(i) FOR AREAS OF AN AERODROME TRAVERSED BY FLIGHT CREW, OR PASSENGERS, BOARDING OR LEAVING AN AIRCRAFT; OR
(ii) FOR PUBLIC AREAS, WITHIN OR OUTSIDE THE AERODROME BOUNDARY, WHERE PASSENGERS OR MEMBERS OF THE PUBLIC ARE LIKELY TO WALK OR CONGREGATE;
b. (80 KM/H — FOR PUBLIC AREAS WHERE PASSENGERS OR OTHERS ARE NOT LIKELY TO CONGREGATE;
c. 50 KM/H — FOR PUBLIC ROADS WHERE THE VEHICLE SPEED IS LIKELY TO BE 80 KM/H OR MORE;
d. 60 KM/H — FOR PUBLIC ROADS WHERE THE VEHICLE SPEED IS LIKELY TO BE LESS THAN 80 KM/H;
e. 60 KM/H — FOR ANY PERSONNEL WORKING NEAR AN AEROPLANE;
f. 80 KM/H — FOR EQUIPMENT ON AN APRON;
g. 60 KM/H — FOR LIGHT AEROPLANE PARKING AREAS WITH ZERO RISK OF DAMAGE;
h. 80 KM/H — FOR LIGHT AEROPLANE PARKING AREAS WITH SOME RISK OF DAMAGE;
i. 100 KM/H — FOR BUILDINGS AND OTHER STRUCTURES.
WIND SPEED ENVELOPES
56kph JET/PROP ENVELOPE
80kph JET/PROP ENVELOPE
REV DATE AMENDMENTS
A 04.11.21 ISSUED FOR INFORMATION
XREF LIST
Includes: 25R A1
Includes: XR-ESSPORT-LIMAR
Includes: XR-ESSPORT-BASE
Includes: XR-ESSPORT-HAT RTA
Includes: XR-ESSPORT-BASE-Runway
Includes: 1901 ESS GATES
Airworks airworksff@gmail.com
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DESIGNED : AIRWORKS 04.11.21
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COMPANY : BAPL
APPROVED :
MELBOURNE / ESSENDON FIELDS, VIC
NORTHERN APRON AREA
CHALLENGER 604 - IDLE JETBLAST ASSESSMENT
BAY 2 TAXI OUT
TITLE
SCALE
0 2 4 6m
AT SCALE 1:200
DRAWING No.
YMEN21AV19
REV
A