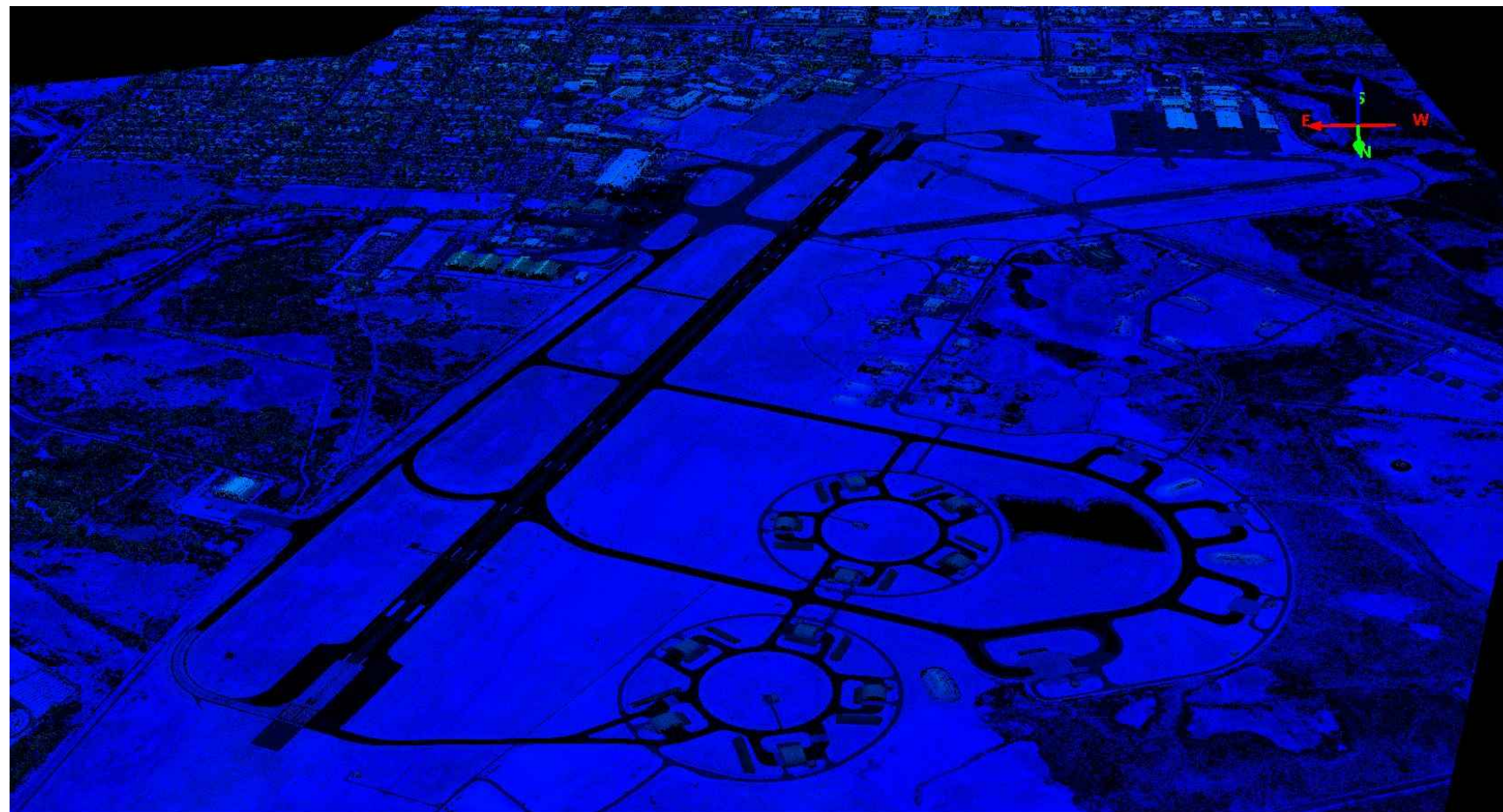


OBSTACLE LIMITATION SURVEYS AND ASSESSMENT

RAAF BASE TOWNSVILLE AERODROME OBSTACLE CHART ICAO TYPE A
(OPERATING LIMITATIONS) ISSUED JUNE 2017



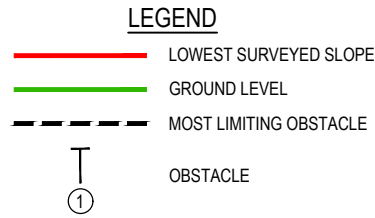
REV	DATE	REVISION DETAILS	APPROVED
A	24.10.16	FINAL FOR REVIEW	
B	24.03.17	SIGNED FOR ISSUE	GG
C	22.06.17	RUNWAY 01/19 STRIP LENGTH CHANGED	GG

SCALE	SIZE
AS SHOWN	A1/A3
DRAWN	AM
SURVEYED	KI / DGG / AAM
CHECKED	DGG

SIGNED FOR ISSUE	DATE
NOT FOR CONSTRUCTION	22.06.17
	
GARRY GRAHAM	

PROJECT	TITLE	DRAWING No.	PROJECT No.	WBS	TYPE	DISC	NUMBER	REV
OBSTACLE LIMITATION SURVEYS AND ASSESSMENT	RAAF BASE TOWNSVILLE AERODROME OBSTACLE CHART ICAO TYPE A (OPERATING LIMITATIONS) ISSUED JUNE 2017 COVER SHEET	248842	D21014	DRG	CV	001	C	

DECLARED DISTANCES FOR RUNWAY 19	
TAKE OFF RUN AVAILABLE (TORA)	2438m (7998')
TAKE OFF DISTANCE AVAILABLE (TODA)	2640m (8661') 4.11%
ACCELERATE STOP DISTANCE AVAILABLE (ASDA)	2438m (7998')
LANDING DISTANCE AVAILABLE (LDA)	2438m (7998')
SUPPLEMENTARY TAKE OFF DISTANCE AVAILABLE (STODA)	1875m (6151') 1.6%, 2472m (8110') 1.9%, 2534m (8313') 2.0%, 2560m (8398') 2.2%, 2581m (8467') 2.5%, 2618m (8589') 3.3%



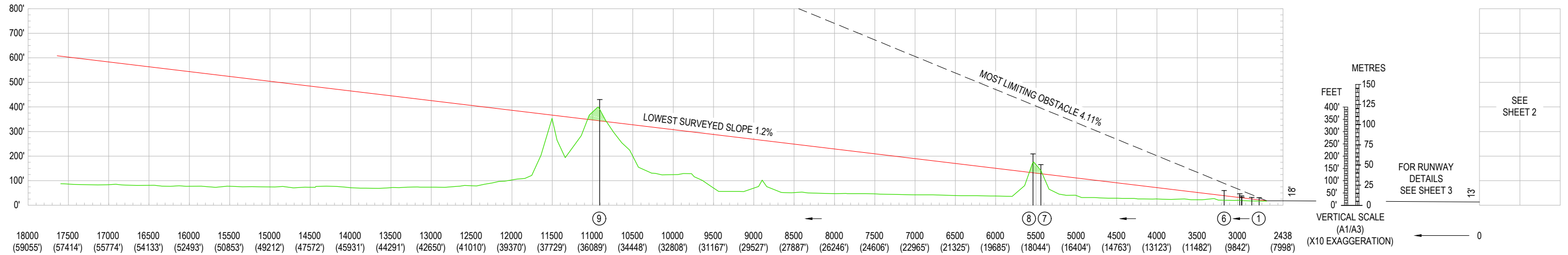
NOTES

- AZIMUTH AND COORDINATES FOR THIS SURVEY ARE BASED ON MGA (GDA94) ZONE 55 THE VERTICAL DATUM BEING AHD.
- HORIZONTAL DIMENSIONS IN METRES (FEET) ELEVATIONS IN FEET
- USERS OF THIS CHART SHOULD NOTIFY ANY ERRORS OR OMISSIONS AS SOON AS THEY BECOME APPARENT TO :-

PROJECT DIRECTOR
NATIONAL AIRFIELD PROJECT
BP26-1C-052
DEPARTMENT OF DEFENCE
CANBERRA ACT 2600
TEL: (02) 6266 8081
- FOR FURTHER INFORMATION REGARDING THIS CHART CONTACT THE ABOVE
- MAGNETIC VARIATION 7°21' E (MARCH 2017)
- AERIAL SURVEY COMPLETED MAY 2016.
GROUND SURVEY CHECKS AND VERIFICATION SEPTEMBER 2016.

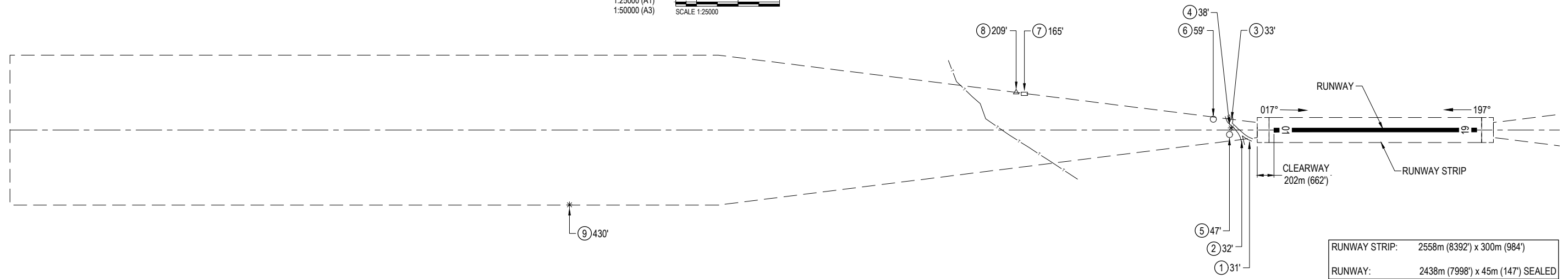
LEGEND

- OBSTRUCTIONS AND OBSTACLES**
- ① OBSTACLE NUMBER
 - 392' TOP ELEVATION IN FEET
 - * TREE(S) OR VEGETATION
 - BUILDING OR LARGE STRUCTURE
 - POLE, TOWER, SPIRE, POST ETC
 - △ ANTENNA
 - MOVING (ROADS, RAILWAY TRACKS ETC)
 - TERRAIN PENETRATING LOWEST SURVEYED SLOPE
 - OVERHEAD TRANSMISSION LINE
 - FENCE LINE



RUNWAY 19

1:25000 (A1)
1:50000 (A3)
SCALE 1:25000



THE TYPE A SURVEY HAS BEEN CONDUCTED IN ACCORDANCE WITH ICAO ANNEX 4 AND DEPARTMENT OF DEFENCE REQUIREMENTS. THE CHART CLEARLY SHOWS THE GRAPHICAL RESULTS OF THE SURVEY AND HAS BEEN CHECKED FOR ACCURACY AND COMPLETENESS OF INFORMATION. THE CHART IS CERTIFIED CORRECT FOR PUBLICATION.

DANIEL GEEVES
REGISTERED SURVEYOR
aurecon
22/6/2017
DATE



REV	DATE	REVISION DETAILS	APPROVED
A	24.10.16	FINAL FOR REVIEW	
B	24.03.17	SIGNED FOR ISSUE	GG
C	22.06.17	RUNWAY 01/19 STRIP LENGTH CHANGED	GG

SCALE	SIZE
AS SHOWN	A1/A3
DRAWN	
AM	
SURVEYED	
KI / DGG / AAM	
CHECKED	
DGG	

SIGNED FOR ISSUE
NOT FOR CONSTRUCTION

APPROVED

DATE
22.06.17
GARRY GRAHAM

PROJECT	TITLE	PROJECT No.	WBS	TYPE	DISC	NUMBER	REV
OBSTACLE LIMITATION SURVEYS AND ASSESSMENT	RAAF BASE TOWNSVILLE AERODROME OBSTACLE CHART ICAO TYPE A (OPERATING LIMITATIONS) ISSUED JUNE 2017 RUNWAY 19 - SHEET 1 OF 6	248842	D21014	DRG	CV	002	C

DECLARED DISTANCES FOR RUNWAY 01	
TAKE OFF RUN AVAILABLE (TORA)	2438m (7998')
TAKE OFF DISTANCE AVAILABLE (TODA)	2640m (8661') 4.17%
ACCELERATE STOP DISTANCE AVAILABLE (ASDA)	2438m (7998')
LANDING DISTANCE AVAILABLE (LDA)	2438m (7998')
SUPPLEMENTARY TAKE OFF DISTANCE AVAILABLE (STODA)	N/A

NOTES

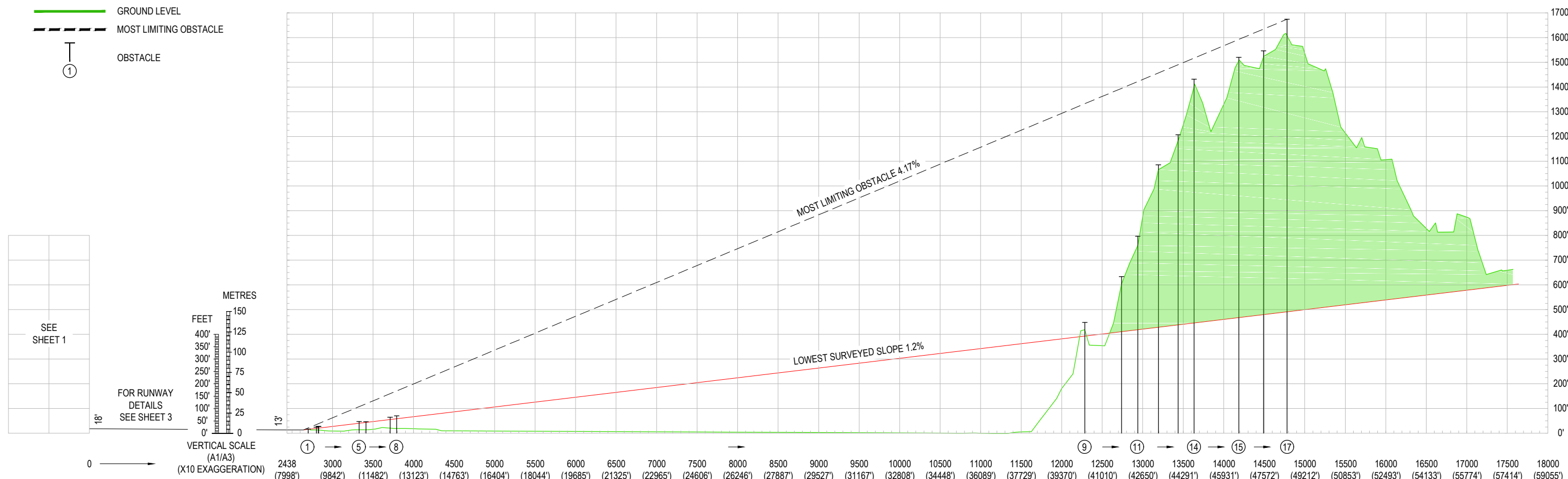
- AZIMUTH AND COORDINATES FOR THIS SURVEY ARE BASED ON MGA (GDA94) ZONE 55 THE VERTICAL DATUM BEING AHD.
- HORIZONTAL DIMENSIONS IN METRES (FEET) ELEVATIONS IN FEET
- USERS OF THIS CHART SHOULD NOTIFY ANY ERRORS OR OMISSIONS AS SOON AS THEY BECOME APPARENT TO:
PROJECT DIRECTOR, NATIONAL AIRFIELD PROJECT, BP26-1C-052,
DEPARTMENT OF DEFENCE, CANBERRA ACT 2600, TEL: (02) 6266 8081
- FOR FURTHER INFORMATION REGARDING THIS CHART CONTACT THE ABOVE
- MAGNETIC VARIATION 7°21' E (MARCH 2017)
- AERIAL SURVEY COMPLETED MAY 2016.
GROUND SURVEY CHECKS AND VERIFICATION SEPTEMBER 2016.

LEGEND

- OBSTRUCTIONS AND OBSTACLES**
- ① OBSTACLE NUMBER
 - 392' TOP ELEVATION IN FEET
 - * TREE(S) OR VEGETATION
 - BUILDING OR LARGE STRUCTURE
 - POLE, TOWER, SPIRE, POST ETC
 - △ ANTENNA
 - MOVING (ROADS, RAILWAY TRACKS ETC)
 - TERRAIN PENETRATING LOWEST SURVEYED SLOPE
 - OVERHEAD TRANSMISSION LINE
 - FENCE LINE

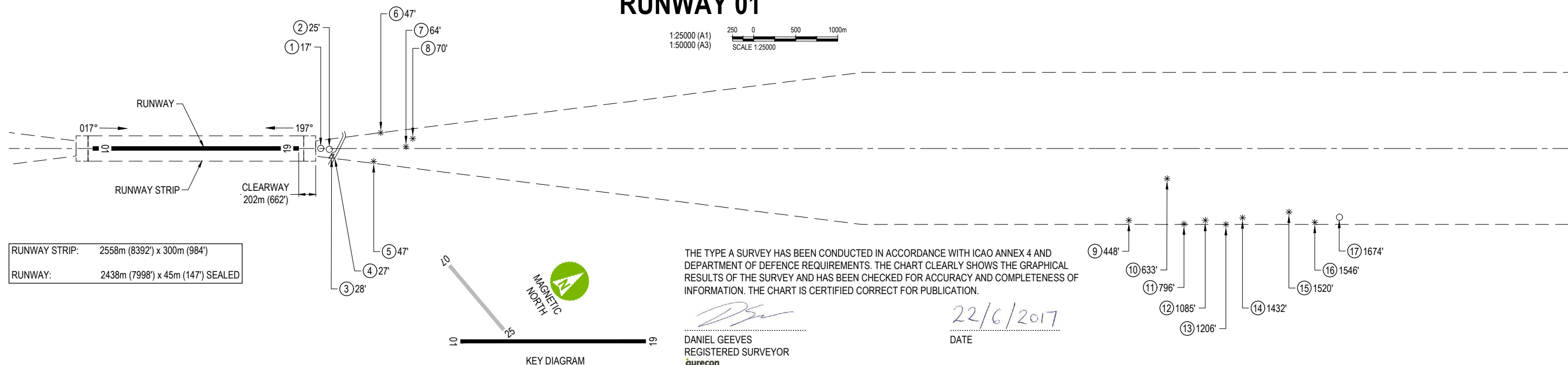
LEGEND

- LOWEST SURVEYED SLOPE
- GROUND LEVEL
- MOST LIMITING OBSTACLE
- ① OBSTACLE



RUNWAY 01

1:25000 (A1)
1:50000 (A3)
SCALE 1:25000



THE TYPE A SURVEY HAS BEEN CONDUCTED IN ACCORDANCE WITH ICAO ANNEX 4 AND DEPARTMENT OF DEFENCE REQUIREMENTS. THE CHART CLEARLY SHOWS THE GRAPHICAL RESULTS OF THE SURVEY AND HAS BEEN CHECKED FOR ACCURACY AND COMPLETENESS OF INFORMATION. THE CHART IS CERTIFIED CORRECT FOR PUBLICATION.

DANIEL GEEVES
REGISTERED SURVEYOR
aurecon

22/6/2017
DATE

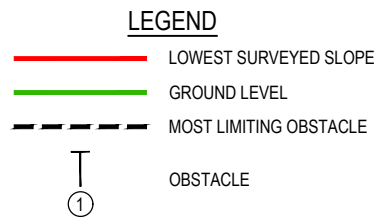
REV	DATE	REVISION DETAILS	APPROVED
A	24.10.16	FINAL FOR REVIEW	
B	24.03.17	SIGNED FOR ISSUE	GG
C	22.06.17	RUNWAY 01/19 STRIP LENGTH CHANGED	GG

SCALE	SIZE
AS SHOWN	A1/A3
DRAWN	
AM	
SURVEYED	
KI / DGG / AAM	
CHECKED	
DGG	

SIGNED FOR ISSUE	APPROVED
NOT FOR CONSTRUCTION	
DATE 22.06.17	
GARRY GRAHAM	

PROJECT	TITLE
OBSTACLE LIMITATION SURVEYS AND ASSESSMENT	RAAF BASE TOWNSVILLE AERODROME OBSTACLE CHART ICAO TYPE A (OPERATING LIMITATIONS) ISSUED JUNE 2017 RUNWAY 01 - SHEET 2 OF 6
DRAWING No.	PROJECT No.
248842	D21014
WBS	TYPE
D21014	DRG
DISC	NUMBER
CV	003
REV	C

DECLARED DISTANCES FOR RUNWAY 25	
TAKE OFF RUN AVAILABLE (TORA)	1100m (3609')
TAKE OFF DISTANCE AVAILABLE (TODA)	1160m (3806') 10.88%
ACCELERATE STOP DISTANCE AVAILABLE (ASDA)	1100m (3609')
LANDING DISTANCE AVAILABLE (LDA)	1100m (3609')
SUPPLEMENTARY TAKE OFF DISTANCE AVAILABLE (STODA)	951m (3120') 1.6%, 989m (3244') 1.9%, 999m (3277') 2.0%, 1017m (3336') 2.2%, 1038m (3405') 2.5%, 1076m (3530') 3.3%, 1117m (3664') 5.0%.



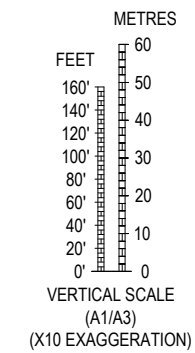
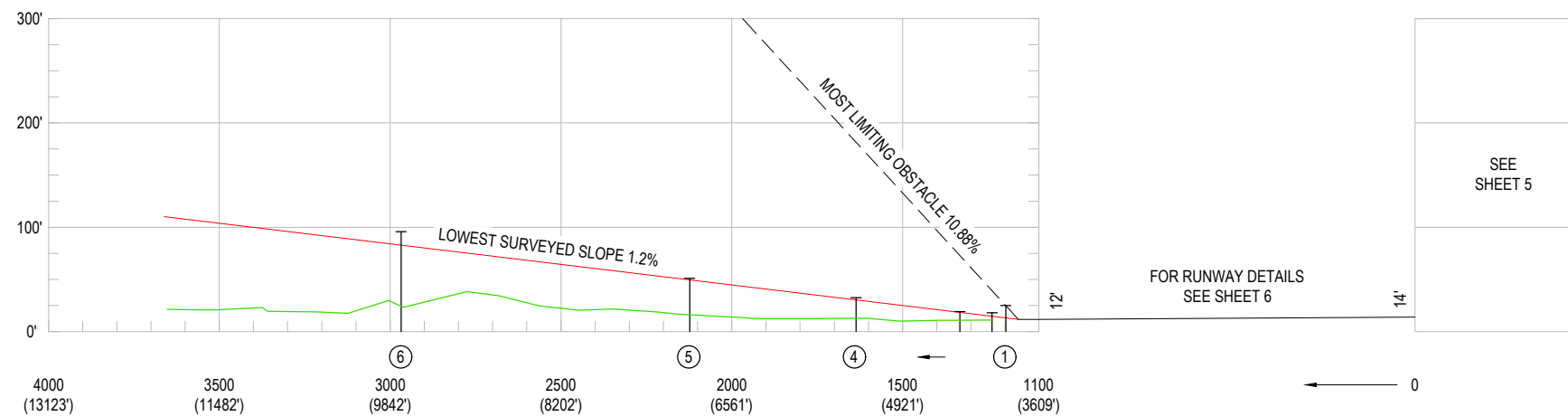
NOTES

- AZIMUTH AND COORDINATES FOR THIS SURVEY ARE BASED ON MGA (GDA94) ZONE 55 THE VERTICAL DATUM BEING AHD.
- HORIZONTAL DIMENSIONS IN METRES (FEET) ELEVATIONS IN FEET
- USERS OF THIS CHART SHOULD NOTIFY ANY ERRORS OR OMISSIONS AS SOON AS THEY BECOME APPARENT TO :-

PROJECT DIRECTOR
NATIONAL AIRFIELD PROJECT
BP26-1C-052
DEPARTMENT OF DEFENCE
CANBERRA ACT 2600
TEL: (02) 6266 8081
- FOR FURTHER INFORMATION REGARDING THIS CHART CONTACT THE ABOVE
- MAGNETIC VARIATION 7°21' E (MARCH 2017)
- AERIAL SURVEY COMPLETED MAY 2016.
GROUND SURVEY CHECKS AND VERIFICATION SEPTEMBER 2016.

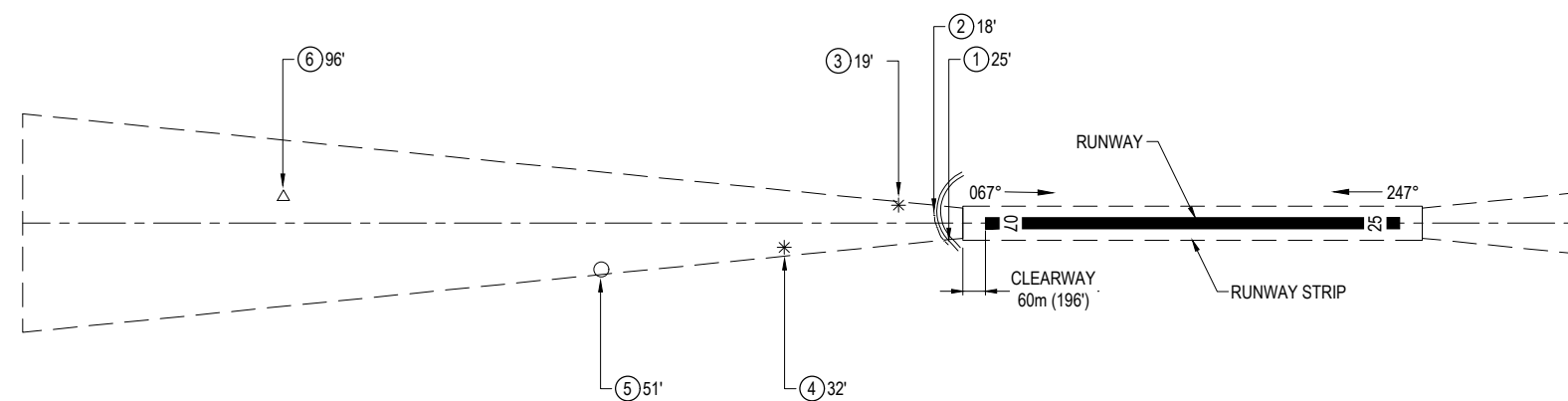
LEGEND

- OBSTRUCTIONS AND OBSTACLES**
- ① OBSTACLE NUMBER
 - 392' TOP ELEVATION IN FEET
 - * TREE(S) OR VEGETATION
 - BUILDING OR LARGE STRUCTURE
 - POLE, TOWER, SPIRE, POST ETC
 - △ ANTENNA
 - MOVING (ROADS, RAILWAY TRACKS ETC)
 - TERRAIN PENETRATING LOWEST SURVEYED SLOPE
 - OVERHEAD TRANSMISSION LINE
 - FENCE LINE



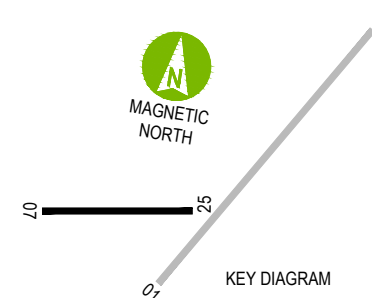
RUNWAY 25 (CODE 2)

1:10000 (A1)
1:20000 (A3)
SCALE 1:10000



RUNWAY 25 SURVEY HAS BEEN ASSESSED BASED ON THE FOLLOWING "CODE 2" TAKE-OFF PARAMETERS:
LENGTH OF INNER EDGE - 80M
RATE OF DIVERGENCE (EACH SIDE) - 10%
FINAL WIDTH - 580M
OVERALL LENGTH - 2500M

RUNWAY STRIP:	1220m (4002') x 90m (295')
RUNWAY:	1100m (3609') x 30m (98') SEALED



THE TYPE A SURVEY HAS BEEN CONDUCTED IN ACCORDANCE WITH ICAO ANNEX 4 AND DEPARTMENT OF DEFENCE REQUIREMENTS. THE CHART CLEARLY SHOWS THE GRAPHICAL RESULTS OF THE SURVEY AND HAS BEEN CHECKED FOR ACCURACY AND COMPLETENESS OF INFORMATION. THE CHART IS CERTIFIED CORRECT FOR PUBLICATION.

[Signature]
DANIEL GEEVES
REGISTERED SURVEYOR
aurecon
22/6/2017
DATE



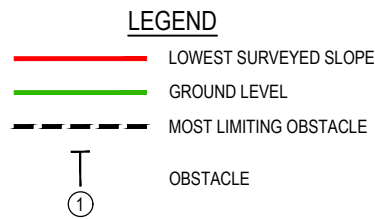
REV	DATE	REVISION DETAILS	APPROVED
A	24.10.16	FINAL FOR REVIEW	
B	24.03.17	SIGNED FOR ISSUE	GG
C	22.06.17	RUNWAY 01/19 STRIP LENGTH CHANGED	GG

SCALE	AS SHOWN
SIZE	A1/A3
DRAWN	AM
SURVEYED	KI / DGG / AAM
CHECKED	DGG

SIGNED FOR ISSUE	NOT FOR CONSTRUCTION
APPROVED	
DATE	22.06.17
GARRY GRAHAM	

PROJECT	OBSTACLE LIMITATION SURVEYS AND ASSESSMENT				
TITLE	RAAF BASE TOWNSVILLE AERODROME OBSTACLE CHART ICAO TYPE A (OPERATING LIMITATIONS) ISSUED JUNE 2017 RUNWAY 25 - SHEET 4 OF 6				
DRAWING No.	248842	PROJECT No.	D21014	WBS	DRG - CV
		TYPE		DISC	NUMBER
					005
					REV
					C

DECLARED DISTANCES FOR RUNWAY 07	
TAKE OFF RUN AVAILABLE (TORA)	1100m (3609')
TAKE OFF DISTANCE AVAILABLE (TODA)	1160m (3806') 3.20%
ACCELERATE STOP DISTANCE AVAILABLE (ASDA)	1100m (3609')
LANDING DISTANCE AVAILABLE (LDA)	1100m (3609')
SUPPLEMENTARY TAKE OFF DISTANCE AVAILABLE (STODA)	863m (2831') 2.2%, 976m (3202') 2.5%



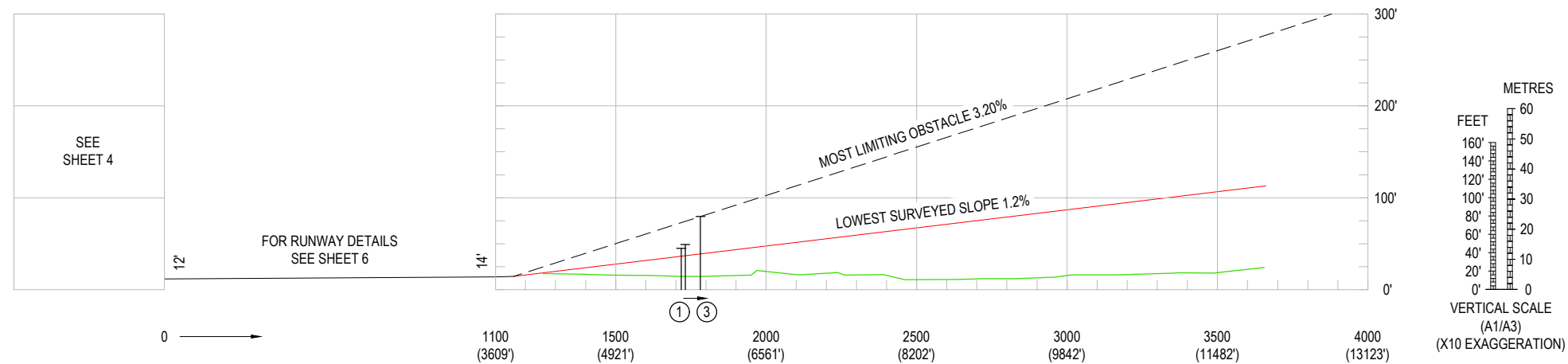
NOTES

- AZIMUTH AND COORDINATES FOR THIS SURVEY ARE BASED ON MGA (GDA94) ZONE 55 THE VERTICAL DATUM BEING AHD.
- HORIZONTAL DIMENSIONS IN METRES (FEET) ELEVATIONS IN FEET
- USERS OF THIS CHART SHOULD NOTIFY ANY ERRORS OR OMISSIONS AS SOON AS THEY BECOME APPARENT TO :-

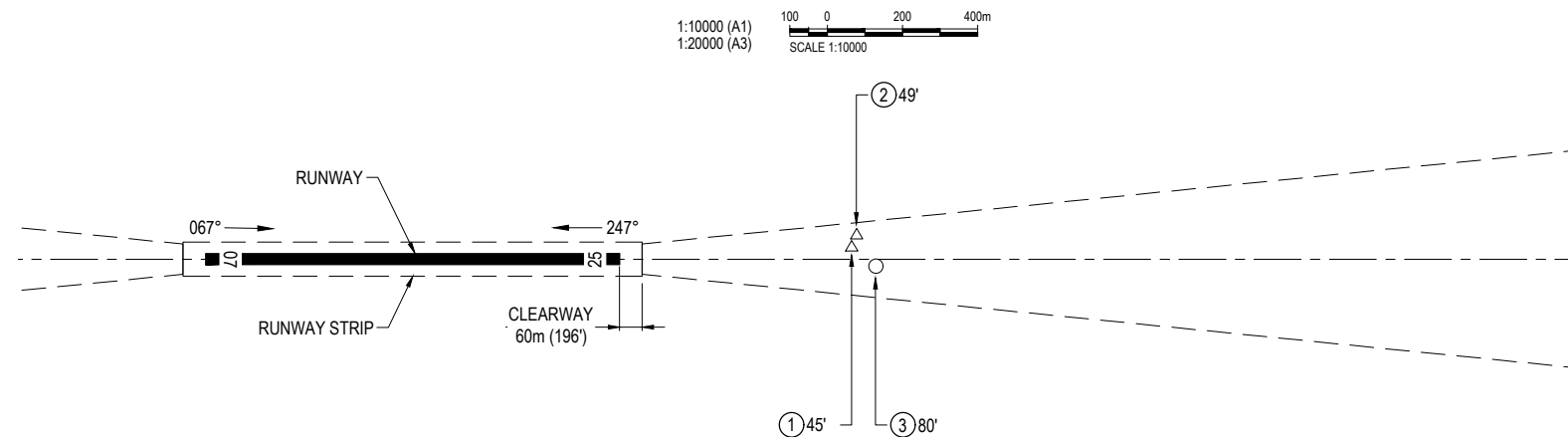
PROJECT DIRECTOR
NATIONAL AIRFIELD PROJECT
BP26-1C-052
DEPARTMENT OF DEFENCE
CANBERRA ACT 2600
TEL: (02) 6266 8081
- FOR FURTHER INFORMATION REGARDING THIS CHART CONTACT THE ABOVE
- MAGNETIC VARIATION 7°21' E (MARCH 2017)
- AERIAL SURVEY COMPLETED MAY 2016.
GROUND SURVEY CHECKS AND VERIFICATION SEPTEMBER 2016.

LEGEND

- OBSTRUCTIONS AND OBSTACLES**
- OBSTACLE NUMBER
 - TOP ELEVATION IN FEET
 - TREE(S) OR VEGETATION
 - BUILDING OR LARGE STRUCTURE
 - POLE, TOWER, SPIRE, POST ETC
 - ANTENNA
 - MOVING (ROADS, RAILWAY TRACKS ETC)
 - TERRAIN PENETRATING LOWEST SURVEYED SLOPE
 - OVERHEAD TRANSMISSION LINE
 - FENCE LINE

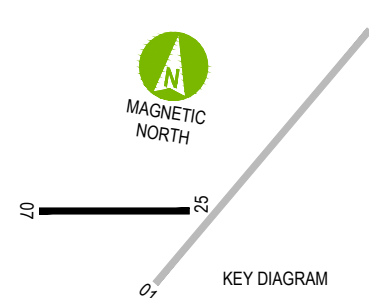


RUNWAY 07 (CODE 2)



RUNWAY 07 SURVEY HAS BEEN ASSESSED BASED ON THE FOLLOWING "CODE 2" TAKE-OFF PARAMETERS:
 LENGTH OF INNER EDGE - 80M
 RATE OF DIVERGENCE (EACH SIDE) - 10%
 FINAL WIDTH - 580M
 OVERALL LENGTH - 2500M

RUNWAY STRIP:	1220m (4002') x 90m (295')
RUNWAY:	1100m (3609') x 30m (98') SEALED



THE TYPE A SURVEY HAS BEEN CONDUCTED IN ACCORDANCE WITH ICAO ANNEX 4 AND DEPARTMENT OF DEFENCE REQUIREMENTS. THE CHART CLEARLY SHOWS THE GRAPHICAL RESULTS OF THE SURVEY AND HAS BEEN CHECKED FOR ACCURACY AND COMPLETENESS OF INFORMATION. THE CHART IS CERTIFIED CORRECT FOR PUBLICATION.

DANIEL GEEVES
 REGISTERED SURVEYOR
 aurecon
 DATE: 22/6/2017



REV	DATE	REVISION DETAILS	APPROVED
A	24.10.16	FINAL FOR REVIEW	
B	24.03.17	SIGNED FOR ISSUE	GG
C	22.06.17	RUNWAY 01/19 STRIP LENGTH CHANGED	GG

SCALE	AS SHOWN	SIZE	A1/A3
DRAWN	AM	APPROVED	
SURVEYED	KI / DGG / AAM	DATE	22.06.17
CHECKED	DGG	SIGNED FOR ISSUE	NOT FOR CONSTRUCTION

GARRY GRAHAM

PROJECT	OBSTACLE LIMITATION SURVEYS AND ASSESSMENT				
TITLE	RAAF BASE TOWNSVILLE AERODROME OBSTACLE CHART ICAO TYPE A (OPERATING LIMITATIONS) ISSUED JUNE 2017 RUNWAY 07 - SHEET 5 OF 6				
DRAWING No.	PROJECT No.	WBS	TYPE	DISC	NUMBER
248842	D21014	DRG	CV	006	C

DEPARTMENT OF DEFENCE

ESTATE AND INFRASTRUCTURE GROUP

AERODROME OBSTACLE CHART - ICAO TYPE A
(OPERATING LIMITATIONS) JUNE 2017, COMPILED BY AURECON

TO BE READ IN CONJUNCTION WITH CURRENT NOTAMs

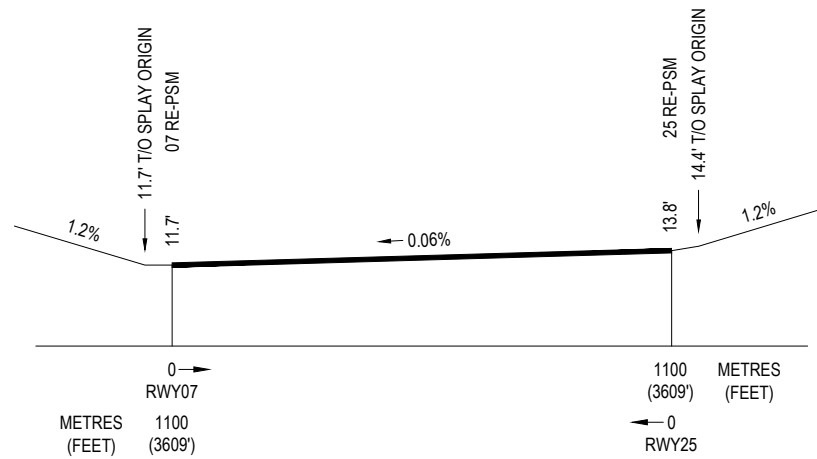
THE ORIGIN OF THE TAKE OFF SURFACE IS LOCATED AT THE END OF THE CLEARWAY.
DISTANCES COMMENCE FROM THE RAAF RE-PSM AT THE START OF THE TAKE-OFF RUNWAY (SOT)

DATUM

AZIMUTH AND COORDINATES FOR THIS SURVEY ARE BASED ON MGA (GDA94) ZONE 55
THE VERTICAL DATUM BEING AHD.

DEFINITIONS

- RE-PSM: RUNWAY END PERMANENT SURVEY MARK
- LENGTH OF INNER EDGE 80m
- RATE OF DIVERGENCE OF SPLAY (EACH SIDE) 10.0%
- FINAL WIDTH 580m
- OVERALL LENGTH 2500m



07/25 RWY LONGITUDINAL SECTION
NOT TO SCALE

07 TAKE OFF (CODE 2)																			
RE - PSM AT START OF TORA											RUNWAY MAGNETIC BEARING		TORA		TODA		ELEVATION AT T.O. ORIGIN		
REF No	GEOGRAPHIC					MGA		ELEVATION		(DEG)	(MIN)	(SEC)	(m)	(FT)	(m)	(FT)	(m)	(FT)	
	(DEG)	(MIN)	(SEC)	(DEG)	(MIN)	(SEC)	EASTING	NORTHING	(m)										(FT)
	-19°	15'	20.92"	146°	45'	19.88"	474308.25	7870849.06	3.6	11.7	66°	37'	47"	1100	3609	1160	3806	4.4	14.4
OBJECTS THAT APPEAR ON THE CHART																			
REF No	GEOGRAPHIC					MGA		ELEVATION TOP		TYPE OF OBSTACLE	DISTANCE FROM SOT		OFFSET		GRADIENT TO TOP				
	(DEG)	(MIN)	(SEC)	(DEG)	(MIN)	(SEC)	EASTING	NORTHING	(m)		(FT)	(m)	(FT)	(m)		(FT)	%		
1	-19°	15'	04.52"	146°	46'	16.15"	475950.15	7871355.41	13.7	44.9	ANTENNA (ON BUILDING)	1718.6	5638.5	31.0L	101.7L	1.67			
2	-19°	15'	03.40"	146°	46'	16.27"	475953.76	7871389.96	15.0	49.2	ANTENNA (ON BUILDING)	1731.7	5681.3	63.2L	207.4L	1.86			
3	-19°	15'	05.52"	146°	46'	18.72"	476025.33	7871324.91	24.3	79.7	POLE (ON BUILDING)	1782.4	5847.8	19.2R	62.9R	3.20			

25 TAKE OFF (CODE 2)																			
RE - PSM AT START OF TORA											RUNWAY MAGNETIC BEARING		TORA		TODA		ELEVATION AT T.O. ORIGIN		
REF No	GEOGRAPHIC					MGA		ELEVATION		(DEG)	(MIN)	(SEC)	(m)	(FT)	(m)	(FT)	(m)	(FT)	
	(DEG)	(MIN)	(SEC)	(DEG)	(MIN)	(SEC)	EASTING	NORTHING	(m)										(FT)
	-19°	15'	11.03"	146°	45'	56.13"	475365.97	7871154.47	4.2	13.8	246°	37'	47"	1100	3609	1160	3806	3.6	11.7
OBJECTS THAT APPEAR ON THE CHART																			
REF No	GEOGRAPHIC					MGA		ELEVATION TOP		TYPE OF OBSTACLE	DISTANCE FROM SOT		OFFSET		GRADIENT TO TOP				
	(DEG)	(MIN)	(SEC)	(DEG)	(MIN)	(SEC)	EASTING	NORTHING	(m)		(FT)	(m)	(FT)	(m)		(FT)	%		
1	-19°	15'	23.15"	146°	45'	17.09"	474226.98	7870780.56	7.6	24.9	MOVING	1198.5	3932.0	43.3L	142.0L	10.88			
2	-19°	15'	21.05"	146°	45'	15.03"	474166.69	7870845.00	5.5	18.1	FENCE	1238.6	4063.5	35.4R	116.1R	2.54			
3	-19°	15'	21.50"	146°	45'	11.81"	474072.74	7870831.00	5.8	19.1	TREE	1332.7	4372.5	48.0R	157.5R	1.32			
4	-19°	15'	27.74"	146°	45'	02.87"	473811.89	7870638.94	9.9	32.4	TREE	1636.7	5369.9	64.2L	210.6L	1.33			
5	-19°	15'	33.96"	146°	44'	47.39"	473360.33	7870447.10	15.5	50.9	POLE (ELECTRICAL)	2124.0	6968.5	123.3L	404.4L	1.24			
6	-19°	15'	35.50"	146°	44'	17.74"	472495.09	7870398.23	29.2	95.7	ANTENNA (ON SILO)	2969.2	9741.3	69.9R	229.3R	1.42			

THE TYPE A SURVEY HAS BEEN CONDUCTED IN ACCORDANCE WITH ICAO ANNEX 4 AND DEPARTMENT OF DEFENCE REQUIREMENTS. THE CHART CLEARLY SHOWS THE GRAPHICAL RESULTS OF THE SURVEY AND HAS BEEN CHECKED FOR ACCURACY AND COMPLETENESS OF INFORMATION. THE CHART IS CERTIFIED CORRECT FOR PUBLICATION.

DANIEL GEEVES
REGISTERED SURVEYOR
aurecon

22/6/2017
DATE



www.aurecongroup.com



REV	DATE	REVISION DETAILS	APPROVED
A	24.10.16	FINAL FOR REVIEW	
B	24.03.17	SIGNED FOR ISSUE	GG
C	22.06.17	RUNWAY 01/19 STRIP LENGTH CHANGED	GG

SCALE	SIZE
AS SHOWN	A1/A3
DRAWN	AM
SURVEYED	KI / DGG / AAM
CHECKED	DGG

SIGNED FOR ISSUE	DATE
NOT FOR CONSTRUCTION	22.06.17
GARRY GRAHAM	

PROJECT	TITLE	DRAWING No.	PROJECT No.	WBS	TYPE	DISC	NUMBER	REV
OBSTACLE LIMITATION SURVEYS AND ASSESSMENT	RAAF BASE TOWNSVILLE AERODROME OBSTACLE CHART ICAO TYPE A (OPERATING LIMITATIONS) ISSUED JUNE 2017 RUNWAY 07 & 25 - SHEET 6 OF 6	248842	D21014	DRG	CV	007	C	