Appendix 10 — Aerodrome Flight Paths Protection Area for Richard Pearce (Timaru) Airport

Buildings, structures or trees within close proximity to runways

1. No building~~s~~, structure~~s~~ or tree (other than stock-fences less than 1.2m ~~metre~~ high above existing ground level) shall be erect within 500m ~~metres~~ of the ends of the future extended main runway and existing cross wind runways. ~~AND~~

Buildings, structures or trees penetrating flight paths

2. No building, structure or tree shall penetrate any of the flight paths, side clearances or horizontal and conical surfaces. For details of flight paths, side clearances and horizontal and conical surfaces described below and illustrated in Figures 7(a) and 7(b) and their associated tables.

Flight Paths

The flight paths consist of take-off and approach corridors in and out of the North South sealed runway 02-20 and East West grassed runway 11-29 together with a horizontal surface and a conical surface lying over the aerodrome.

(1) Runway 02-20

Takeoff

1. The takeoff surface~~s~~ at each end of the runway commences at the locations and levels shown in ~~t~~Table 1 and continue out on the runway extended centreline for 15,000m ~~metres~~.
2. The base width at the origin is 150m ~~metres~~ (75m ~~metres~~ either side of the runway centreline) and the surface rises upwards at a gradient of 1 in 50 and each side expands at a rate of 1 in 8 to a maximum width of 1200m ~~metres~~ and then continues parallel out to a distance of 15,000m ~~metres~~ from the origin.

Approach

1. The approach surface~~s~~ at each end of the runway commence at the locations and levels shown in ~~t~~Table 1 and continue out on the runway extended centreline for a distance of 15,000m ~~metres~~ from the origin. The base width at the origin is 220m ~~metres~~ (110m ~~metres~~ ~~w~~either side of the runway centreline) and the surface rises upwards at a gradient of 1 in 50 and each side expands at a rate of 1 in 6.6 out to a distance of 15,000m ~~metres~~ from the origin.

(2) Runway 11-29

Takeoff and Approach Path

1. The takeoff and approach surface~~s~~ at each end of the runway commence at the locations and levels shown in ~~t~~Table 1 and continue out on the runway extended centreline for 2,500m ~~metres~~ from the origin.
2. The base width at the origin is 150m ~~metres~~ (75m ~~metres~~ either side of runway centreline) and the surface rises upwards at a gradient of 1 in 30 and each side expands at a rate of 1 in 6.6 out to a distance of 2,500m ~~metres~~ from the origin.

(3) Glider Grass 10

Takeoff ~~p~~Path

1. The takeoff surface at the east end of the runway commences at the location and level shown in ~~t~~Table 1 and continues out on the runway extended centreline for 1,200m ~~metres~~ from the origin. The west end of the runway is located as shown in ~~t~~Table 1.
2. The base width at the origin is 60m ~~metres~~ (30m ~~metres~~ either side of runway centreline) and the surface rises upwards at a gradient of 1 in 20 and each side expands at a rate of 1 in 20 out to a distance of 1,200m ~~metres~~ from the origin.

(4) Side Clearances

1. The side clearance surface for runway 02-20 rises at a gradient of 1 in 7 and the side clearance surface for runway 11-29 at a gradient of 1 in 5, both up to the horizontal surface. The side clearance surfaces originate at the edge of the respective runway strips.

(5) Horizontal Surface

1. This surface is located in a horizontal plane which extends over the aerodrome and surrounding land at a height of 45m ~~metres~~ above the runways (elevation 72m ~~metres~~ above MSL).
2. The outer limits of the horizontal surface is measured from the periphery of the strip of runway 02-20 and a locus of 3,500m ~~metres~~ from the periphery of runway 11-29.

(6) Conical Surface

1. The conical surface slopes upwards and outwards from the periphery of the horizontal surface at a gradient of 1 in 20 up to a height of 150m ~~metres~~ above the runways (elevation 177m ~~metres~~ above MSL).

(7) Future Runway Extension

1. Any future development of the aerodrome will consist of lengthening of runway 02-20 to the north and south by up to 657m ~~metres~~ in total plus 60m ~~metres~~ grassed strip and 90m ~~metres~~ grassed runway end safety area beyond the end of the sealed runway at each end.
2. In order to protect the aerodrome for future runway extensions no permanent structures shall be built under the flight path within the area shown on Figure 7(b).

NOTE: For the purposes of this rule the possible runway extension to the north is 262m ~~metres~~ and to the south is 395m ~~metres~~.

~~(c)~~ 3. See Figure 7(c) for details of proposed runway extension.

(8) Table 1: Location of takeoff and approach surface bases[1]

~~Surface~~		~~mN (metres North)~~	~~mE (metres East)~~	~~Height (Above Mean Sea Level)~~
-	~~Runway 02-20~~	-	-	-

[1] Millward Finlay Lobb [60.58]

~~North Surfaces origin~~		~~711855.50~~	~~313966.34~~	~~25.9m~~
	~~South Surfaces origin~~	~~710588.56~~	~~312842.67~~	~~26.7m~~
~~Runway 11-29~~	~~East Surfaces origin~~	~~710523.40~~	~~314079.43~~	~~22.0m~~
	~~West Surfaces origin~~	~~711156.57~~	~~313380.70~~	~~26.2m~~
~~Glider grass~~	~~10 East Surfaces origin~~	~~710475.01~~	~~314159.05~~	~~21.4m~~
	~~West Surfaces origin~~	~~710992.14~~	~~313313.80~~	~~26.3m~~

Surface	Easting (metres east)	Northing (metres north)	Height (Metres Above Mean Sea Level)
Runway 02-20-North Surface origin	1458979.89	5093981.55	25.9
Runway 02-20-South Surface origin	1457886.71	5092688.55	26.7
Runway 11-29-East Surface origin	1459124.46	5092652.71	22
Runway 11-29-West Surface origin	1458411.05	5093269.06	26.2
Glider grass-10 East Surface origin	1459205.19	5092606.23	21.4
Glider grass-West Surface origin	1458348.07	5093103.11	26.3

(9) Table 2: Coordinates of points A - T on Figure 7(b) [2]

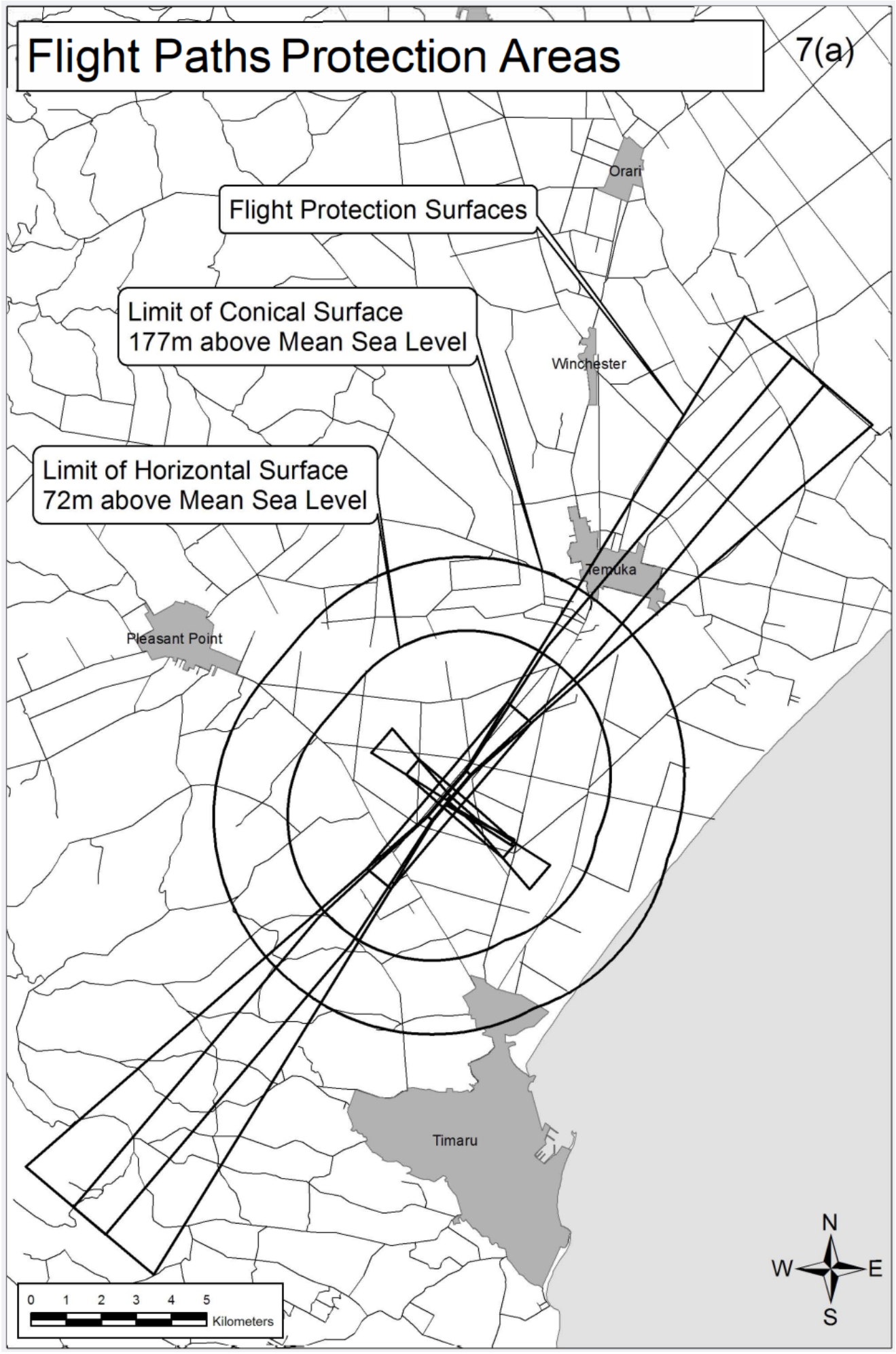
~~A~~	~~2368849.29~~	~~5655663.91~~
~~B~~	~~2369017.23~~	~~5655521.8~~
~~C~~	~~2369114.42~~	~~5656094.54~~
~~D~~	~~2369398.03~~	~~5655854.57~~
~~E~~	~~2369028.27~~	~~5654207.10~~
~~F~~	~~2369126.37~~	~~5654320.56~~

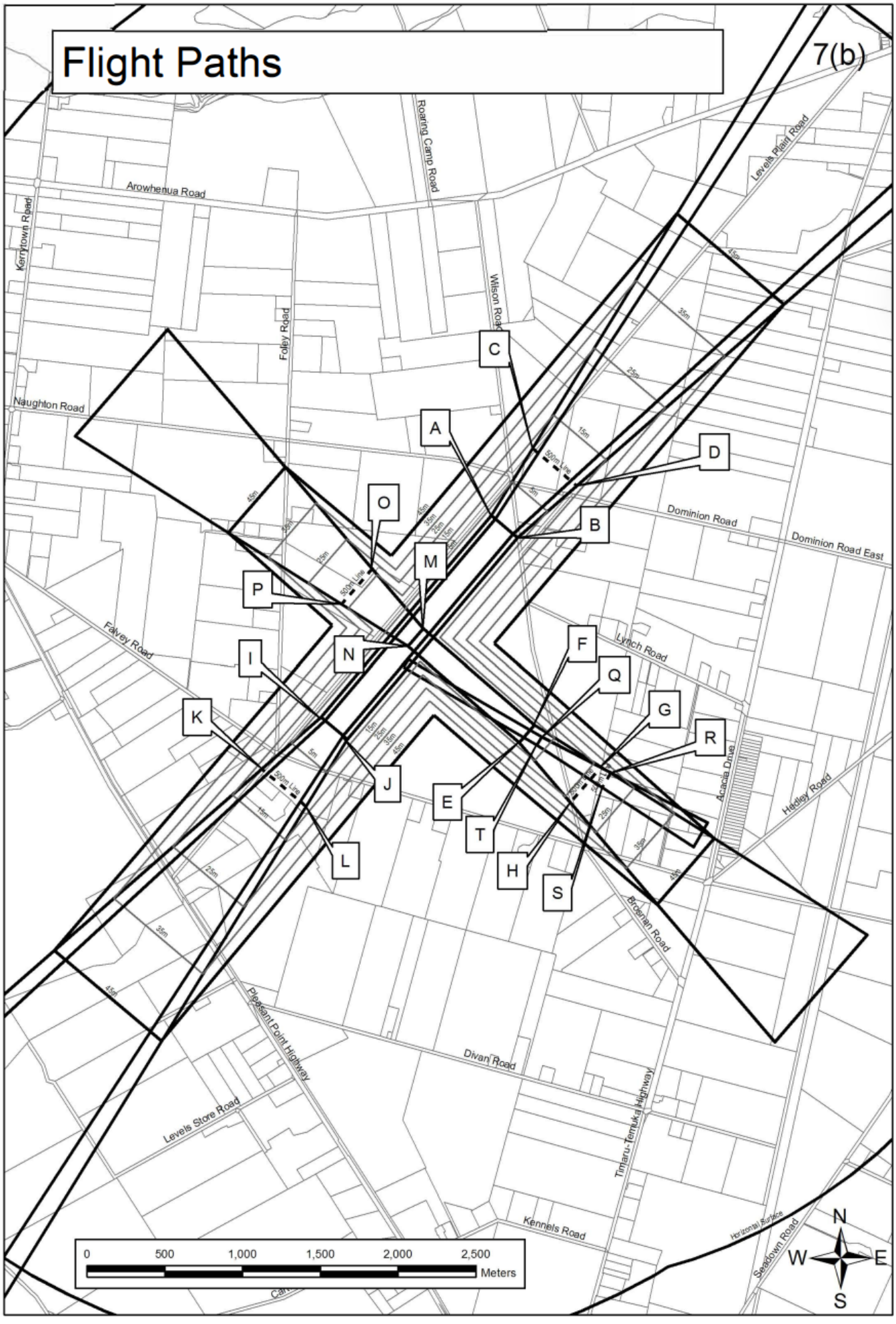
[2] Millward Finlay Lobb [60.59]

~~G~~	~~2369551.60~~	~~5654047.89~~
~~H~~	~~2369356.93~~	~~5653822.76~~
~~I~~	~~2367755.49~~	~~5654371.24~~
~~J~~	~~2367923.43~~	~~5654229.14~~
~~K~~	~~2367374.69~~	~~5654038.48~~
~~L~~	~~2367658.30~~	~~5653798.51~~
~~M~~	~~2368413.14~~	~~5654937.26~~
~~N~~	~~2368315.04~~	~~5654823.8~~
~~O~~	~~2368084.48~~	~~5655321.60~~
~~P~~	~~2367887.26~~	~~5655093.52~~
~~Q~~	~~2369173.10~~	~~5654243.26~~
~~R~~	~~2369616.67~~	~~5654011.45~~
~~S~~	~~2369562.73~~	~~5653918.51~~
~~T~~	~~2369142.98~~	~~5654191.36~~

Point	Easting (metres east)	Northing (metres north)
A	1458895.89	5094052.56
B	1459063.87	5093910.53
C	1459160.82	5094483.25
D	1459444.50	5094243.42
E	1459075.44	5092595.96
F	1459173.48	5092709.45
G	1459598.78	5092436.98
H	1459404.22	5092211.80
I	1457802.72	5092759.57
J	1457970.70	5092617.55
K	1457422.09	5092426.68
L	1457705.77	5092186.85
M	1458460.08	5093325.80

N	1458362.03	5093212.31
O	1458131.29	5093709.97
P	1457934.18	5093481.84
Q	1459220.24	5092632.18
R	1459663.86	5092400.57
S	1459609.96	5092307.62
T	1459190.14	5092580.27


Flight Paths Protection Areas
7(a)
Flight Protection Surfaces
Limit of Conical Surface
177m above Mean Sea Level
Limit of Horizontal Surface
72m above Mean Sea Level
Orari
Winchester
Temuka
Pleasant Point
Timaru
0 1 2 3 4 5
Kilometers
N
W
E
S


Flight Paths
7(b)
Roaring Camp Road
Levels Plain Road
Arowhenua Road
Kerrytown Road
Foley Road
Wilson Road
Naughton Road
Dominion Road
Dominion Road East
Falvey Road
Lynch Road
Acacia Drive
Heddley Road
Brosnan Road
Pleasant Point Highway
Divan Road
Levels Store Road
Timaru-Temuka Highway
Kennels Road
Seadown Road
Horizontal Surface
A
B
C
D
E
F
G
H
I
J
K
L
M
N
O
P
Q
R
S
T
0
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Meters
N
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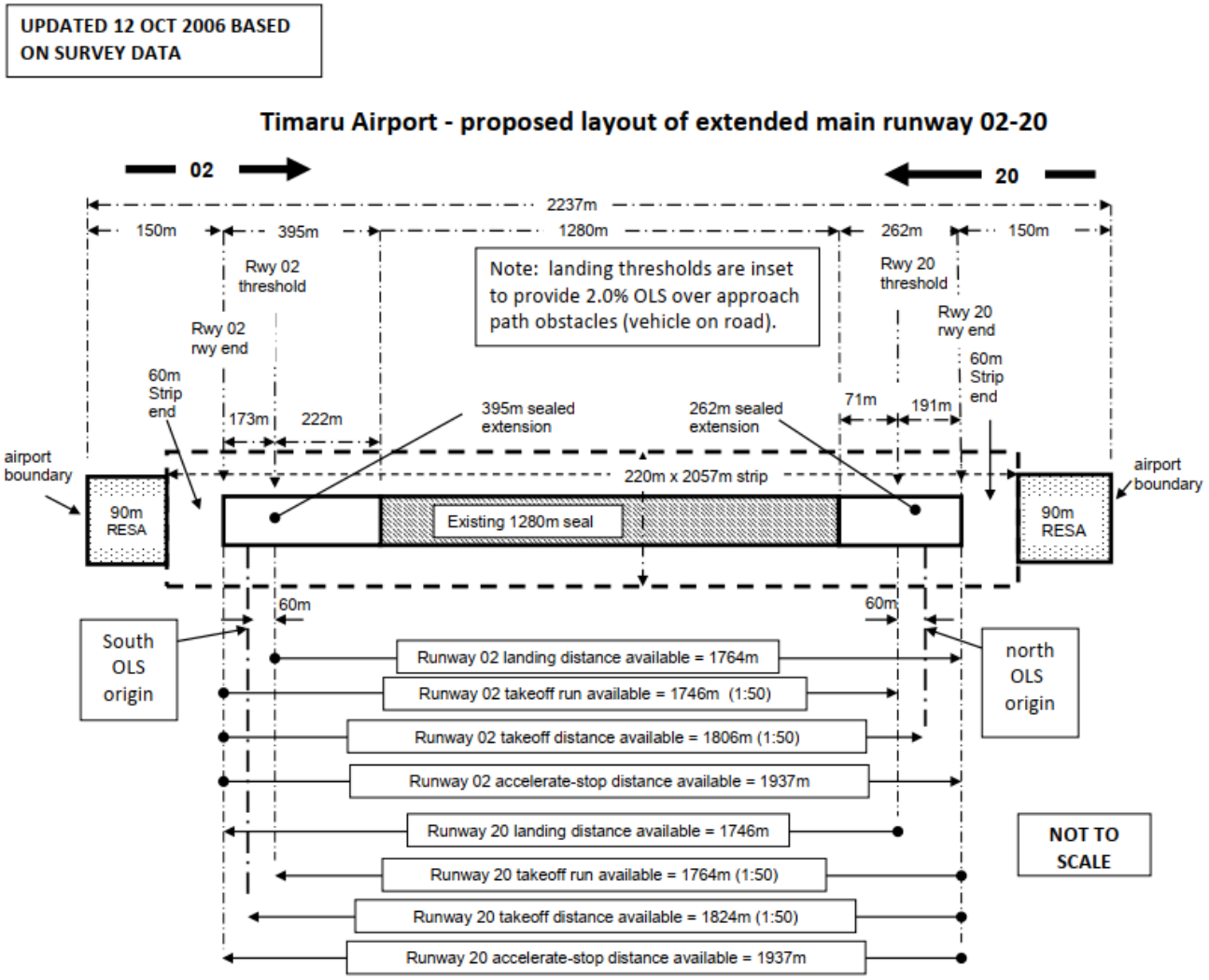
E
S


UPDATED 12 OCT 2006 BASED ON SURVEY DATA
Timaru Airport - proposed layout of extended main runway 02-20
02
20
2237m
150m
395m
1280m
262m
150m
Rwy 02 threshold
Rwy 02 rwy end
Note: landing thresholds are inset to provide 2.0% OLS over approach path obstacles (vehicle on road).
Rwy 20 threshold
Rwy 20 rwy end
60m Strip end
60m Strip end
173m
222m
395m sealed extension
262m sealed extension
71m
191m
airport boundary
220m x 2057m strip
airport boundary
90m RESA
Existing 1280m seal
90m RESA
60m
60m
South OLS origin
north OLS origin
Runway 02 landing distance available = 1764m
Runway 02 takeoff run available = 1746m (1:50)
Runway 02 takeoff distance available = 1806m (1:50)
Runway 02 accelerate-stop distance available = 1937m
Runway 20 landing distance available = 1746m
Runway 20 takeoff run available = 1764m (1:50)
Runway 20 takeoff distance available = 1824m (1:50)
Runway 20 accelerate-stop distance available = 1937m
NOT TO SCALE