

# Airways New Zealand Gisborne Airspace Amend Design Notes DRAFT v2 6 November 2018

This paper explains and defines the Airways version 2 requested changes to Gisborne airspace.

This version 2 differs from the earlier version 1 with a reduction in the requested 6500 ft CTA near Wairoa and a very minor (imperceptible) change to the southern boundary of the 3500 ft CTA



*Diagram 1 DRAFT amended GS CTR and CTA version 2*  
 Note minimal change to the GS CTR boundaries except that the upper limit is lowered to 2500 ft.  
 White lines are the existing airspace boundaries to be deleted

## Purpose of changing the airspace

The airspace design policy is that the instrument flight procedures (IFP) at controlled aerodromes are contained within controlled airspace. This is in-line with CAR Part 71 Designation and Classification of Airspace.

A primary driver for changing the Gisborne control zone (GS CTR) and Gisborne control area (GS CTA) as detailed in this paper is to provide the correct airspace containment of the planned new performance based navigation (PBN) IFR procedures being developed by Airways for Gisborne. These PBN procedures are still in the design process and some further developments may occur which could result in some changes to the draft airspace layout as detailed in this paper.

Most of the current VOR-based IFPs at GS are **not** correctly contained by the existing GS CTR and CTA. Therefore, to comply with the airspace design policy, the airspace and/or the IFPs concerned will need to be amended to achieve correct airspace containment of the IFPs to be retained.

Airways has a desire to minimise controlled airspace, particularly control zones, as much as practical. This desire is in-line with CAR Part 71. However, the need to correctly contain the IFPs to be retained along with the new PBN IFPs has prevented any reduction in the GS control zone as described in this paper.

## Instrument flight procedures to be retained

The draft GS airspace is designed to contain the following IFPs. Containment is based on the airspace design policy of 300 ft per NM gradient for climbs and descents or a steeper gradient where specified for the procedure.

- TWO DELTA Arrival (GS2D)
- ONE CHARLIE Arrival (GS1C)
- VOR/DME RWY 14 approach Cat A, B and C except that the missed approach will be changed so it tracks towards COOKS until passing a level yet to be determined (likely 1500ft – 1800 ft) and then turns left and tracks to a new hold at 'MARKY' 10 NM east of NZGS – MNM holding 4000 ft.
- VOR/DME RWY 32 approach Cat A, B and C except that the missed approach needs to be changed for containment. Plan is for the MA to track north-west until passing a level yet to be determined (likely 1500ft – 1800 ft) and then turn left and track overhead GS to a new hold at 'MARKY' 10 NM east of NZGS – MNM holding 4000 ft.
- NICK THREE Departure (NIC3) off RWY 14 except that the departure needs to be changed for containment. The minimum climb gradient needed for this departure to be contained needs to be significantly steeper than existing – yet to be determined but likely around 500 ft/NM (8.2%) Plan is for the departure to be annotated with the minimum climb gradient required for airspace containment. Pilots may request to fly this departure at a lower gradient accepting the lack of airspace containment.
- New VOR-based departure off RWY 14 similar to NIC3 that tracks RWY centreline until passing a level yet to be determined (likely 1500 ft – 1800 ft) and then turn right to intercept HAWKE, AP, RO, TG or KEEPA. Airspace containment achieved at 300 ft/NM (4.9%) climb gradient. This departure would be the default ATC-issued departure.
- GANET ONE Departure (GAN1) except that the departure to COKAG (to the Chatham Is) is not contained by the new airspace because this departure and route is normally used by aircraft that intend to operate outside/below the 13500 ft and/or FL245 CTA to the Chatham Islands.
- TUNA TWO Departure (TUN2) except that the departure needs to be changed for containment – increased climb gradient and/or raised minimum turn level after take off.

- CRAY THREE Departure (CRA3) off RWY 32 except that the departure needs to be changed for containment. The minimum climb gradient needed for this departure to be contained needs to be significantly steeper than existing – yet to be determined but likely around 500 ft/NM (8.2%) Plan is for the departure to be annotated with the minimum climb gradient required for airspace containment. Pilots may request to fly this departure at a lower gradient accepting the lack of airspace containment.
- New VOR-based departure off RWY 32 similar to CRA3 that tracks RWY centreline until passing a level yet to be determined (likely 1500 ft – 1800 ft) and then turn left to intercept KEEP, TG, RO, HAWKE and COOKS. Airspace containment achieved at 300 ft/NM (4.9%) climb gradient. This departure would be the default ATC-issued departure. Also a new departure to COKAG but not necessarily to be contained for the same reasons as explained for the GAN1 departure.
- GS VOR 305 holding pattern (overhead) at or above 4000 ft
- GS VOR 133 holding pattern (overhead) at or above 4000 ft
- COOKS holding pattern at or above 4000 ft (enroute criteria)
- Approach Cat A and B circling areas
- Approach Cat C circling area west of RWY 14/32 extended centreline

The VOR RWY 32 approach (non-DME) is to be retained. Containment of this approach is likely but not assured (particularly during the missed approach) and the approach chart will be annotated as such.

### **New PBN instrument flight procedures to be contained**

- The draft GS airspace is designed to contain the draft new PBN SIDs, STARs and approaches version 10 except that the SIDs and missed approach tracks will need to climb RWY centreline to a level yet to be determined (likely 1500 ft – 1800 ft) before turning.
- ‘MARAI’ hold at or above 5000 ft
- ‘MARKY’ hold between 4000 ft and 10,000 ft
- ‘ENDEV’ hold at or above 4000 ft

### **Existing instrument flight procedures to be disestablished**

- All existing RNAV (GNSS) arrivals for RWY 14 and RWY 32
- RNAV (GNSS) RWY 14 approach
- RNAV (GNSS) RWY 32 approach
- NUHAKA THREE Departure
- PAUA THREE Departure
- CITY THREE Departure
- All existing RNAV (GNSS) departures off RWY 14 and RWY 32
- HAWKE holding pattern

The DRAFT GS CTR and CTA has not been designed to contain the Evaluated Climb Sector R050 through south to R355 within 25 NM. A modified version of this departure may be able to be retained if desired.



Most of the departures from GS are to the west. To properly contain those departures when turning at MNM 500 ft the CTR would need to expand westward to the point at which the departure profile, including its lateral buffer, passed 3000 ft – around 6 to 8 NM depending on the departure. This being wider than the existing 5 NM CTR to the west. The same situation applies to the TUNA TWO departure that turns to the east initially.

Widening the CTR by a few miles to contain the IFPs would be contrary to the Airways desire to reduce the size of CTRs. We also expect opposition from industry to a significant increase in the CTR.

Alternatively, containment of the departures and reducing the width of the CTR could be achieved by amending the departures so that they flew RWY centreline until passing 2000 ft – 2500 ft before turning west or east. A MNM turn at that level could result in the CTR being narrowed from existing 5 NM to about 3 NM abeam NZGS. However, that tracking would cause IFR departures to track significantly further before turning towards destination and impact significantly on the ATC efficiency of multiple IFR departures.

This draft CTR seeks a compromise between containment and efficiency. This is achieved by leaving the CTR width as it currently is (neither widen nor narrow) and amending the departures to climb RWY centreline to an appropriate level before turning so that the departure will be contained by the CTR and new 2500 ft CTA above. The minimum turn level for each departure track is yet to be determined by Aeropath but it is believed that the level will be 1500 ft – 1800 ft based on 300 ft/NM climb profile. Some lowering of that level could be achieved by specifying a steeper climb gradient in the departure.

Whilst this compromise does not achieve the Airways desire for reduced CTR size, it is believed that the further reduction in efficiency by making the CTR more narrow is not worth the advantage of making it narrower. Airways is open to feedback about this though.

The CTR needs to be extended half a mile to the south to correctly contain the VOR/DME arc approach to RWY 32 as shown in Diagram 3 below. New boundary at 12.5 NM GS DME.

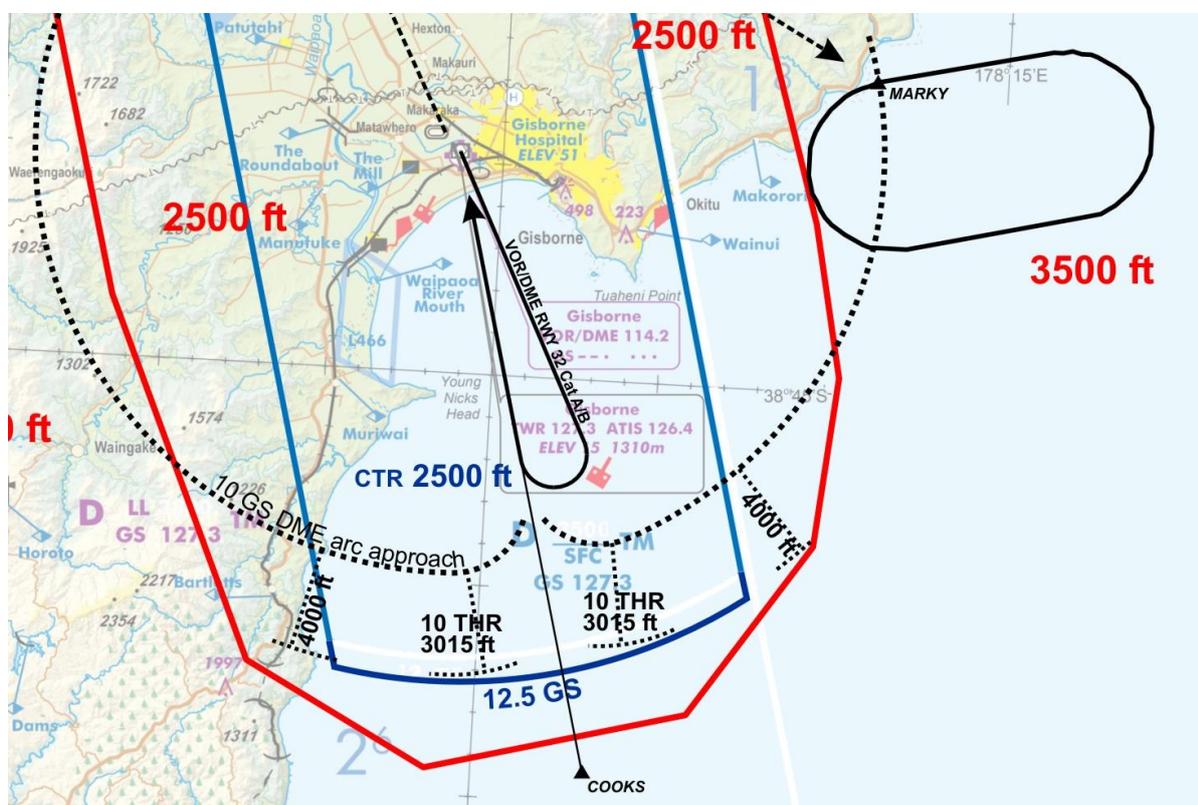


Diagram 3 DRAFT amended GS CTR extended to 12.5 to correctly contain the arc approach to RWY 32. The arc approach, including its lateral protection buffer, needs to be within the CTR boundary when 3000 ft and below. The new CTA LL 2500 ft needs to protect the arc approach and its buffer when the approach is 4000 ft and below. Those profile levels being based on 300 ft/NM descent gradient to the RWY 32 threshold.

As shown in Diagram 4 below, the VOR/DME arc approach to RWY 14 3000 ft and below just fits within the northern part of the CTR with the new CTA 2500 ft encompassing the arc for the portions below 4000 ft.

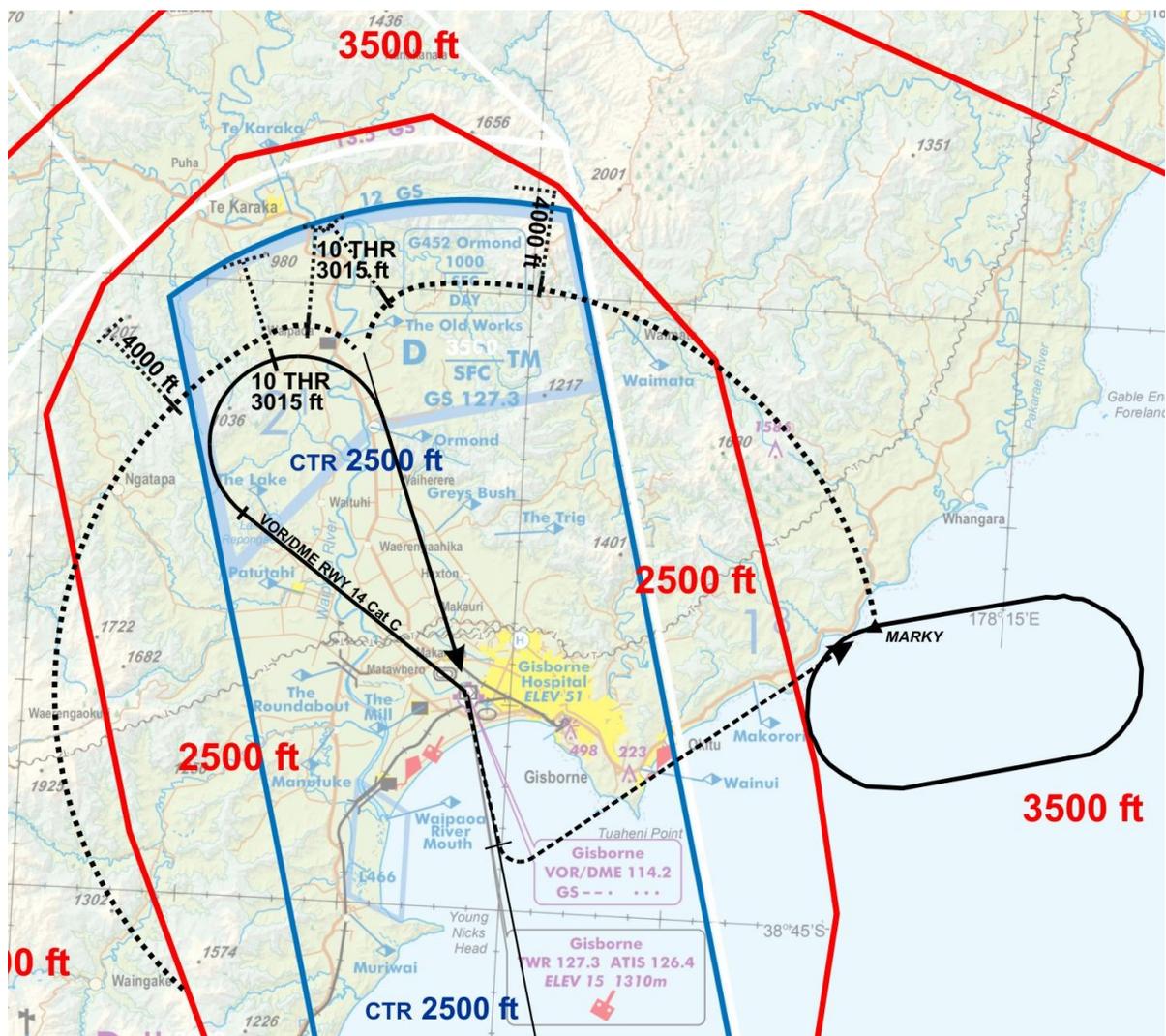


Diagram 4 Northern part of the GS CTR contains the arc approach to RWY 14 3000 ft and below.

Containment of approaches is based on continuous descent of 300 ft/NM, including throughout base turn, to the approach runway threshold.

Containment of missed approaches is based on continuous climb at 300 ft/NM from missed approach point and MDA.

GAA G452 Ormond

The Airways proposal includes retention of existing GAA G452 Ormond – our understanding being that it does still get used.

Applicable AIPNZ approach and departure charts for NZGS need to include depiction of this GAA.

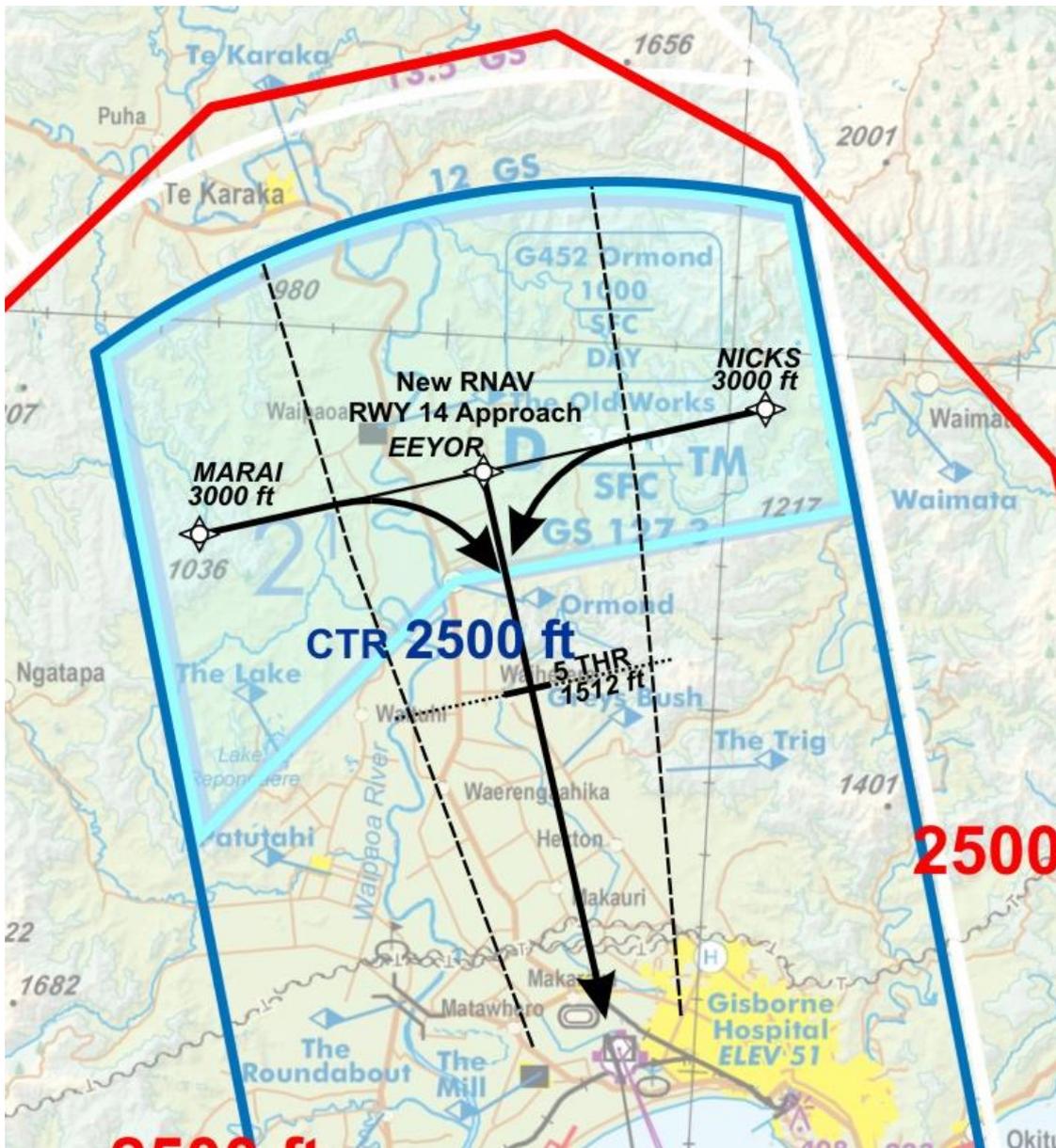


Diagram 5 Northern part of the GS CTR with existing GAA G452 (SFC to 1000 ft) and the planned new PBN RNAV approach to RWY 14.





Diagram 7 Southern part of the DRAFT GS CTA  
 This version 2 involves a slight expansion of the 6500 ft CTA east of Wairoa.

Diagram 8 below depicts the draft CTA v2 to the north of Gisborne. The planned new PBN departures off RWYs 14 and 32 to the north are depicted along with checkmarks showing the airspace policy profile (300 ft/NM) levels at various points. The profile of the departures, including their lateral buffer, must always be at least 500 ft above the lower limit of the CTA (e.g. cross into a CTA LL 6500 ft at 7000 ft or above). A portion of the 2 NM lateral buffer is depicted northeast of new waypoint 'BYBYE' – that buffer determining the location of the CTA boundary in that area.

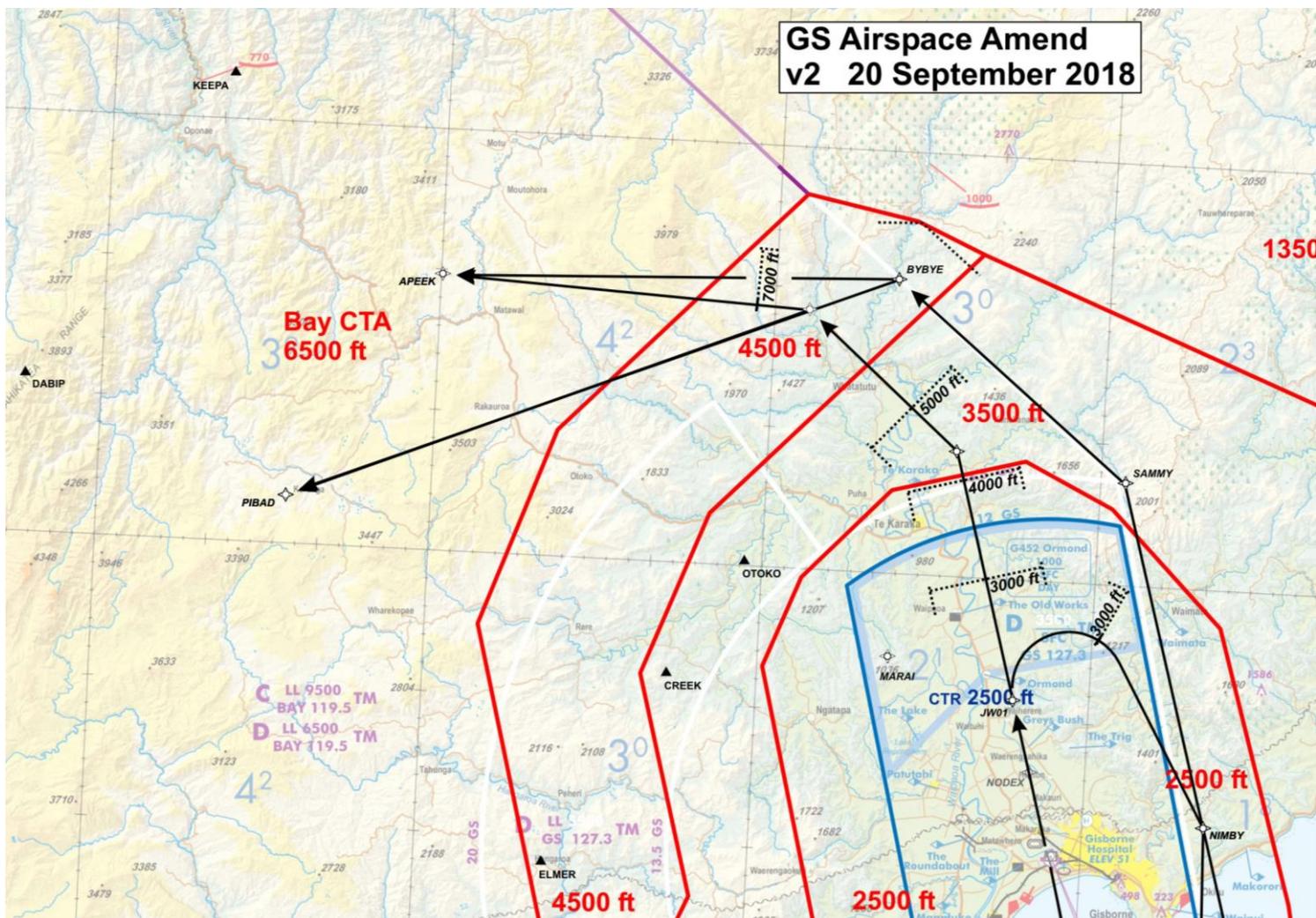


Diagram 8 DRAFT amended GS CTA to the north of Gisborne with new PBN departures depicted along with profile level checkmarks. Profile being 300 ft/NM gradient from runway upwind threshold.

The planned new PBN arrivals to RWY 14 from the north-west also determine the location of the CTA boundaries as shown on Diagram 9 below. Again, a 300 ft/NM profile is used – this time based on the aircraft being at 3000 ft at the start of the T-Bar for the approach.

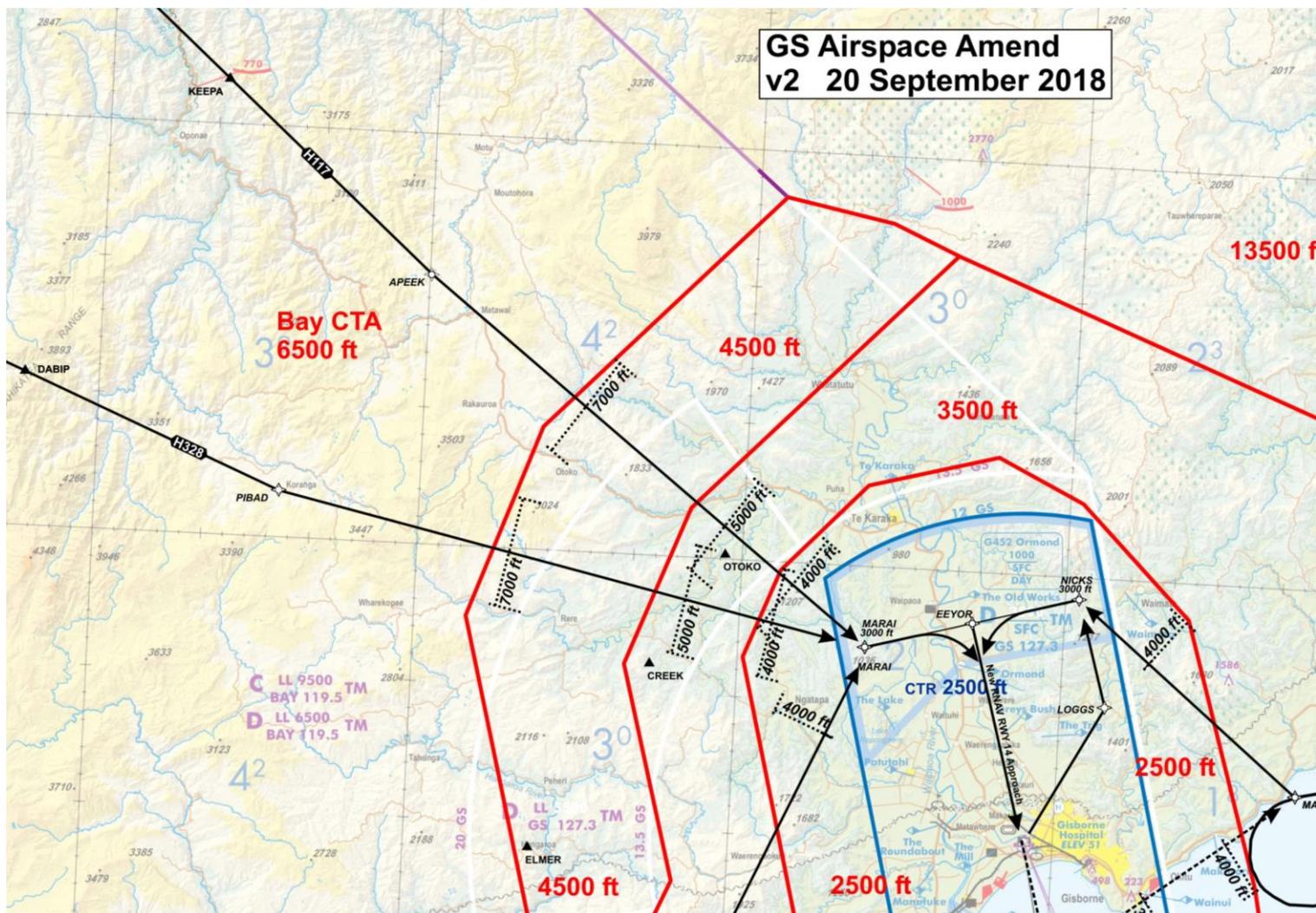
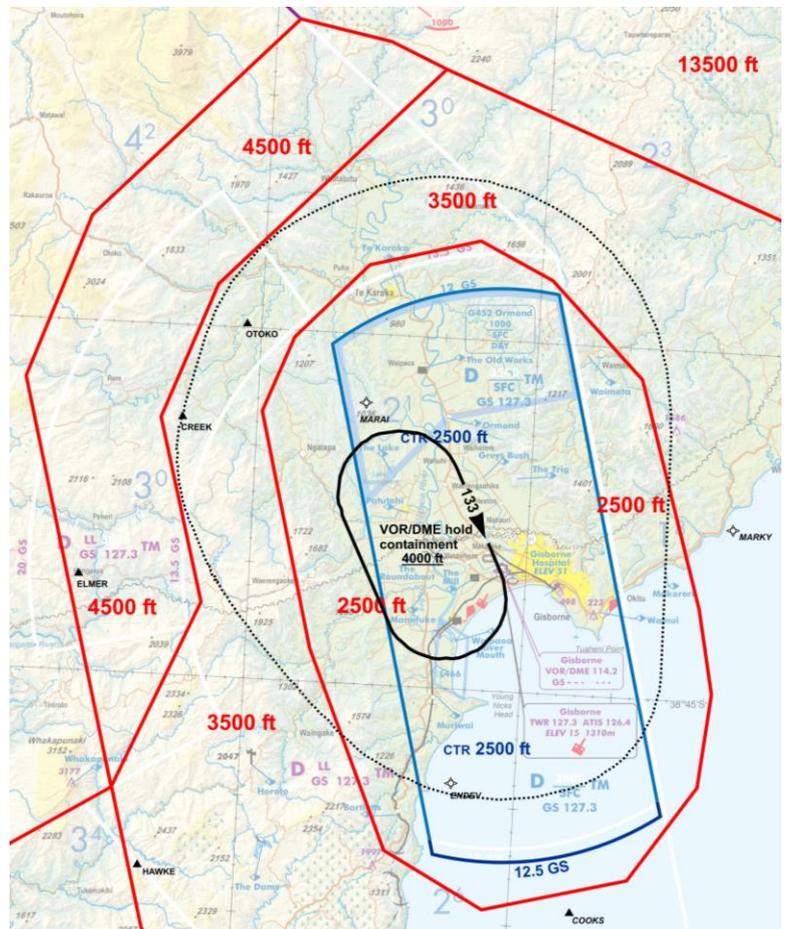


Diagram 9 DRAFT amended GS CTA to the north of Gisborne with new PBN arrivals depicted along with profile level checkmarks.

The containment area for the overhead VOR 133 holding pattern determines the extent of the 3500 ft CTA to the north-west of Gisborne. This holding pattern is contained at 4000 ft and above.

Diagram 10 DRAFT amended GS CTA to the north of Gisborne with the protection area (the black dotted line) for the VOR 133 holding pattern depicted.

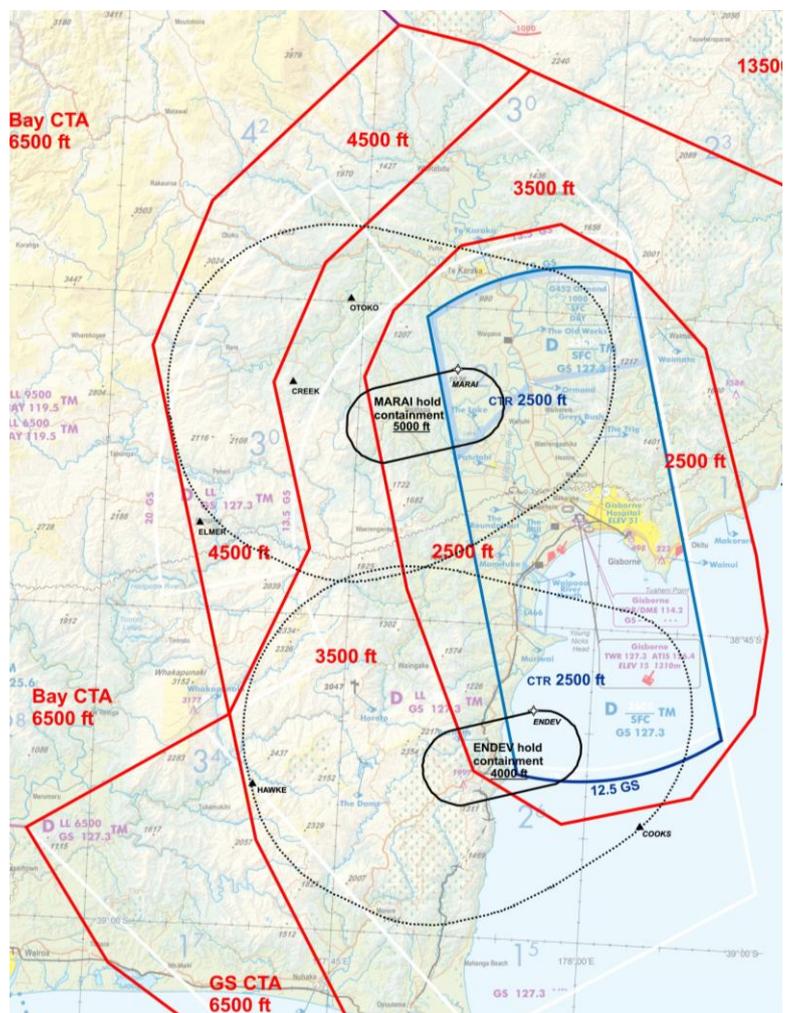


The containment area for the new PBN holding patterns at 'ENDEV' and 'MARAI' determines the extent of the 3500 ft and 4500 ft CTAs to the west of Gisborne.

MARAI holding pattern is contained at 5000 ft and above.

ENDEV holding pattern is contained at 4000 ft and above.

Diagram 11 DRAFT amended GS CTA to the west of Gisborne with the protection areas (the black dotted lines) for the new PBN holding patterns at 'MARAI' and 'ENDEV' depicted.



The existing NICK THREE and CRAY THREE departures need to be amended or replaced for correct airspace containment. Extending the runway centreline tracking until a higher minimum turn level (likely 1500 ft – 1800 ft) would provide for containment of the departures including their lateral buffer areas.

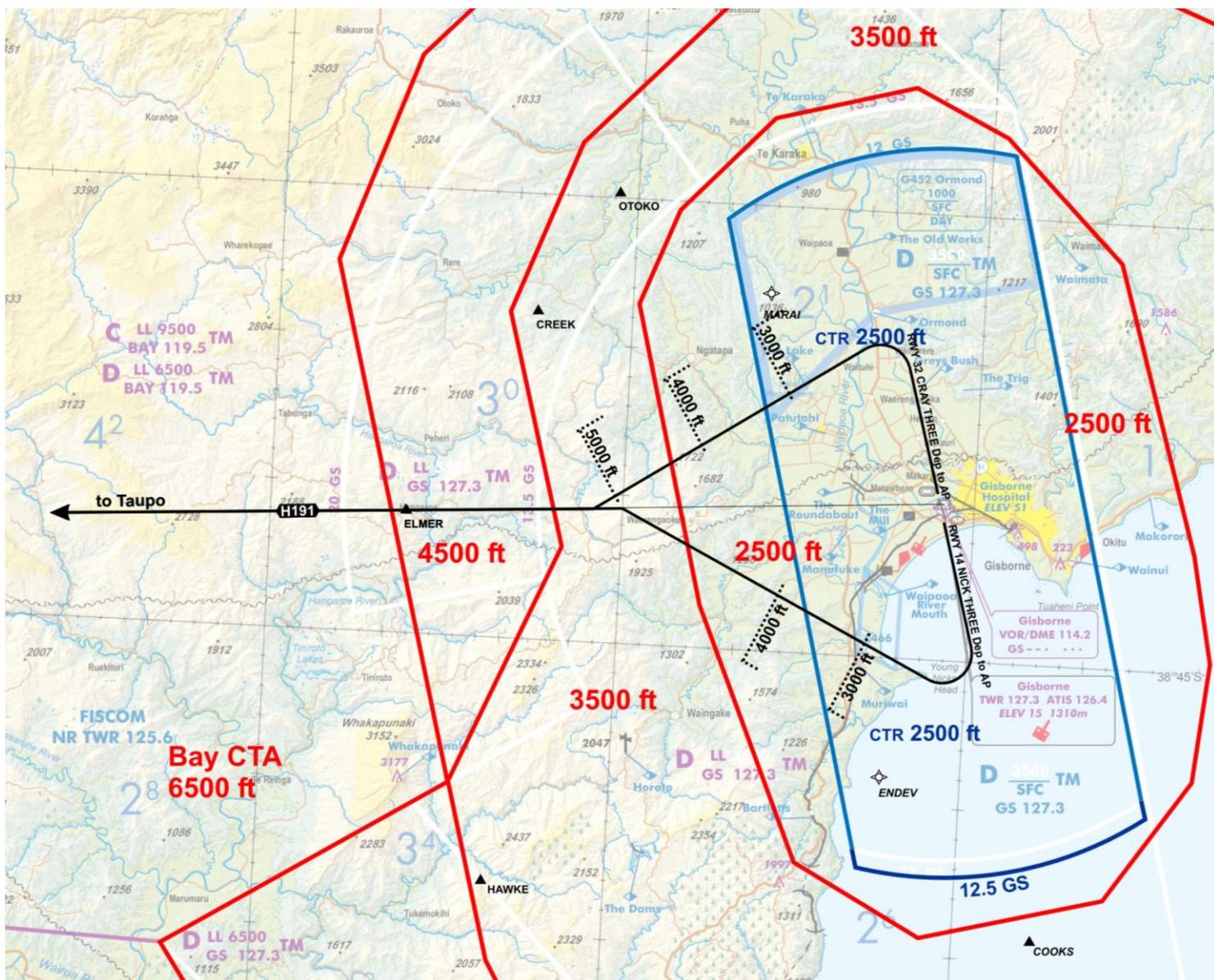


Diagram 12 DRAFT amended GS CTR and CTA with existing NICK THREE and CRAY THREE departures amended for correct containment.

Diagram 13 below depicts the protection area for the COOKS hold. The 3500 ft CTA is expanded south to contain that protection area.

The COOKS hold would be contained at 4000 ft and above.

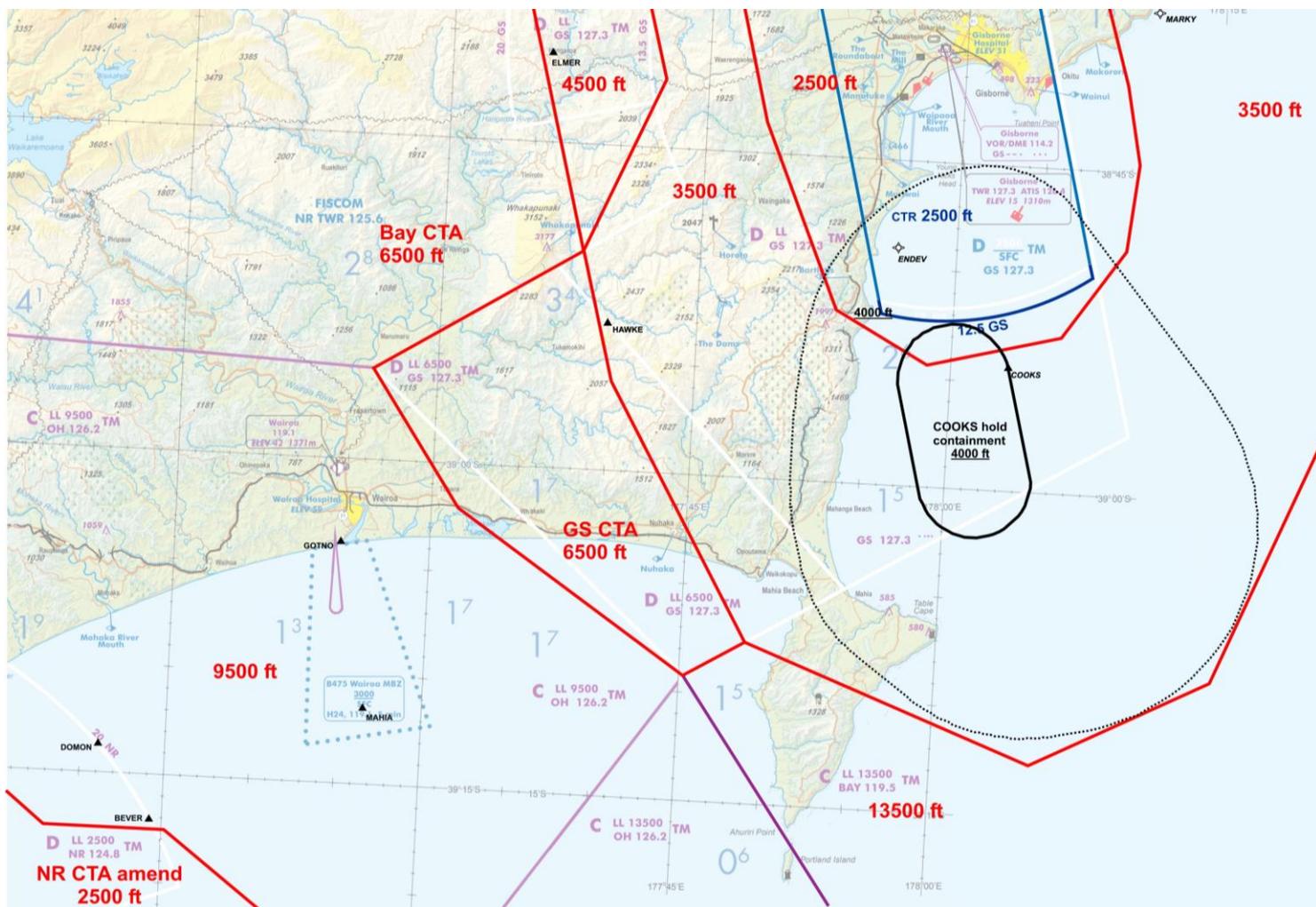


Diagram 13 DRAFT amended GS CTA to the south of Gisborne with the protection area (the black dotted line) for the holding pattern at COOKS depicted. This diagram includes a small portion of the Airways draft change to the NR CTA LL 2500 ft.

The new PBN departure from RWY 14 to the south-west determines the 2500 ft CTA and 3500 ft CTA boundaries as shown in Diagram 14 below. This departure is also the reason for the small expansion of the 6500 ft CTA east of Wairoa.

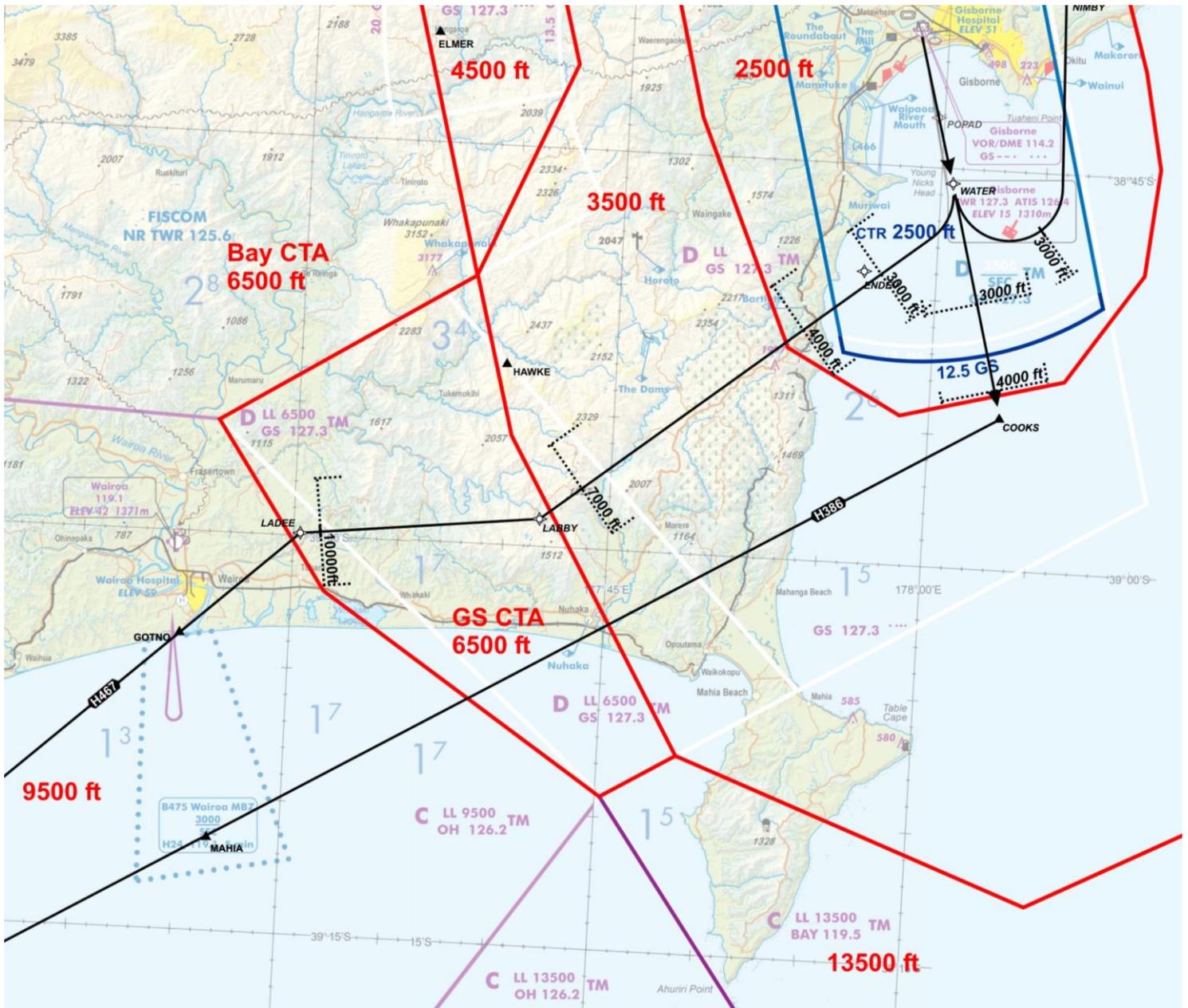


Diagram 14 DRAFT amended GS CTA to the south of Gisborne showing the new PBN departures off RWY 14 to the south-west.

The planned new PBN arrival to RWY 32 is significant in determining the location of the 2500 ft CTA and the 3500 ft CTA boundaries as shown in Diagram 15 below.

Containment of the protection area for the new missed approach holding pattern at MARKY to the east of NZGS is the reason for the significant expansion of 3500 ft CTA to the east.

Holding at MARKY needs to be at 4000 ft or above for airspace containment.

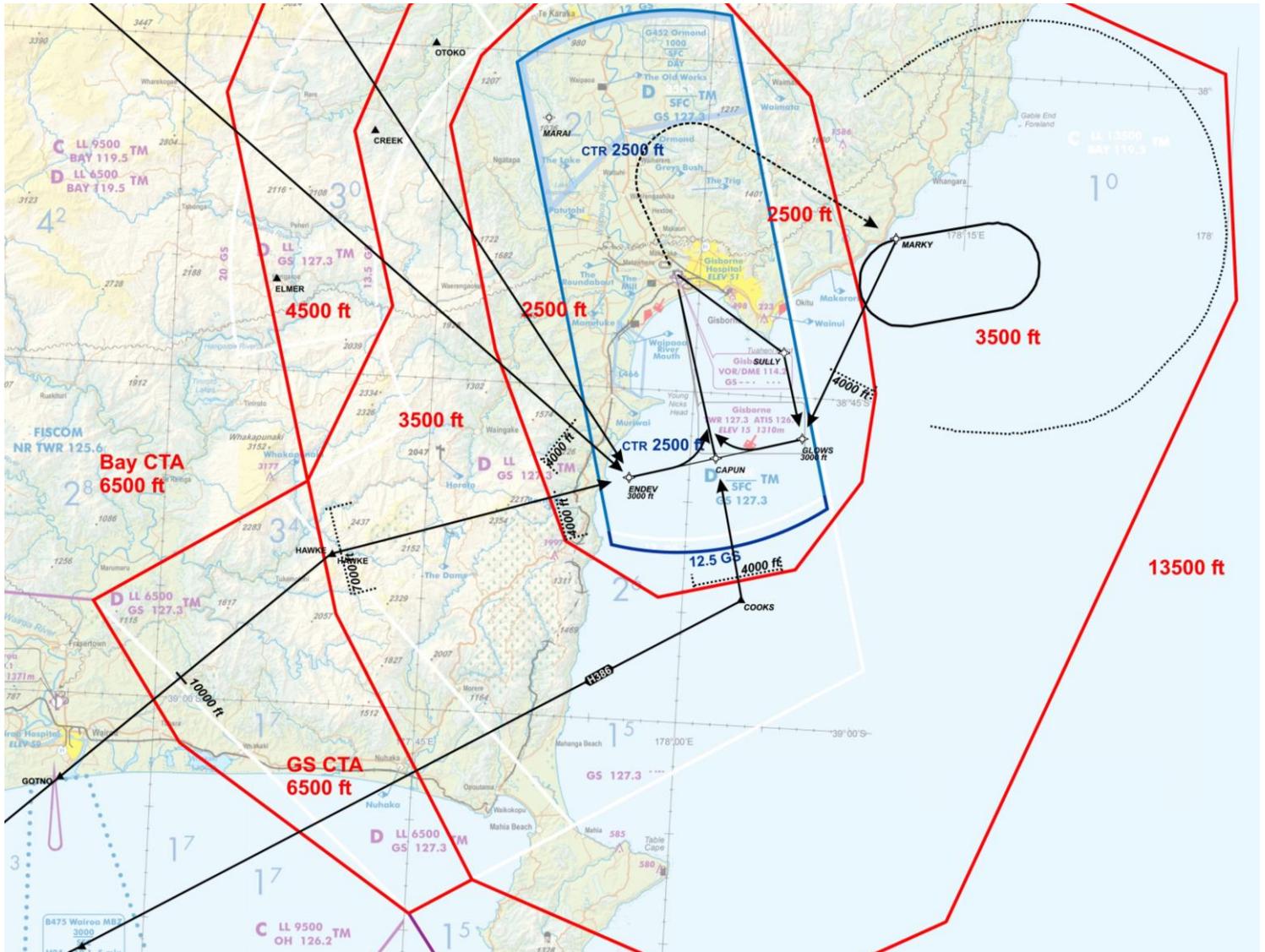


Diagram 15 DRAFT amended GS CTA to the south-west of Gisborne with the planned new PBN arrivals and RNAV approach to RWY 32. Also depicted is the new missed approach holding pattern at MARKY along with its protection area (the black dotted line) that needs containment by the 3500 ft CTA.

Diagram 16 below depicts the existing GANET ONE departure which is to be retained. This departure to COOKS determines the location of the 2500 ft CTA boundary to the south of Gisborne.

Departures to COKAG

Containment of the GANET ONE departure to COKAG reduces to less than required soon after take off. However, if the aircraft climbs steeper than 300 ft/NM then correct containment may be present until nearing the boundary of the 3500 ft CTA around 26 NM from GS.

Full containment of this departure to GOKAG at 300 ft/NM has not been provided in this draft because most aircraft using it intend to operate outside/below the 13,500 ft and/or FL245 CTA to the Chatham Islands. If desired by CAA and/or operators, containment of the departure could be expanded by steepening the required climb gradient to 4000 ft and lowering some of the existing 13,500 ft and/or FL245 CTA.

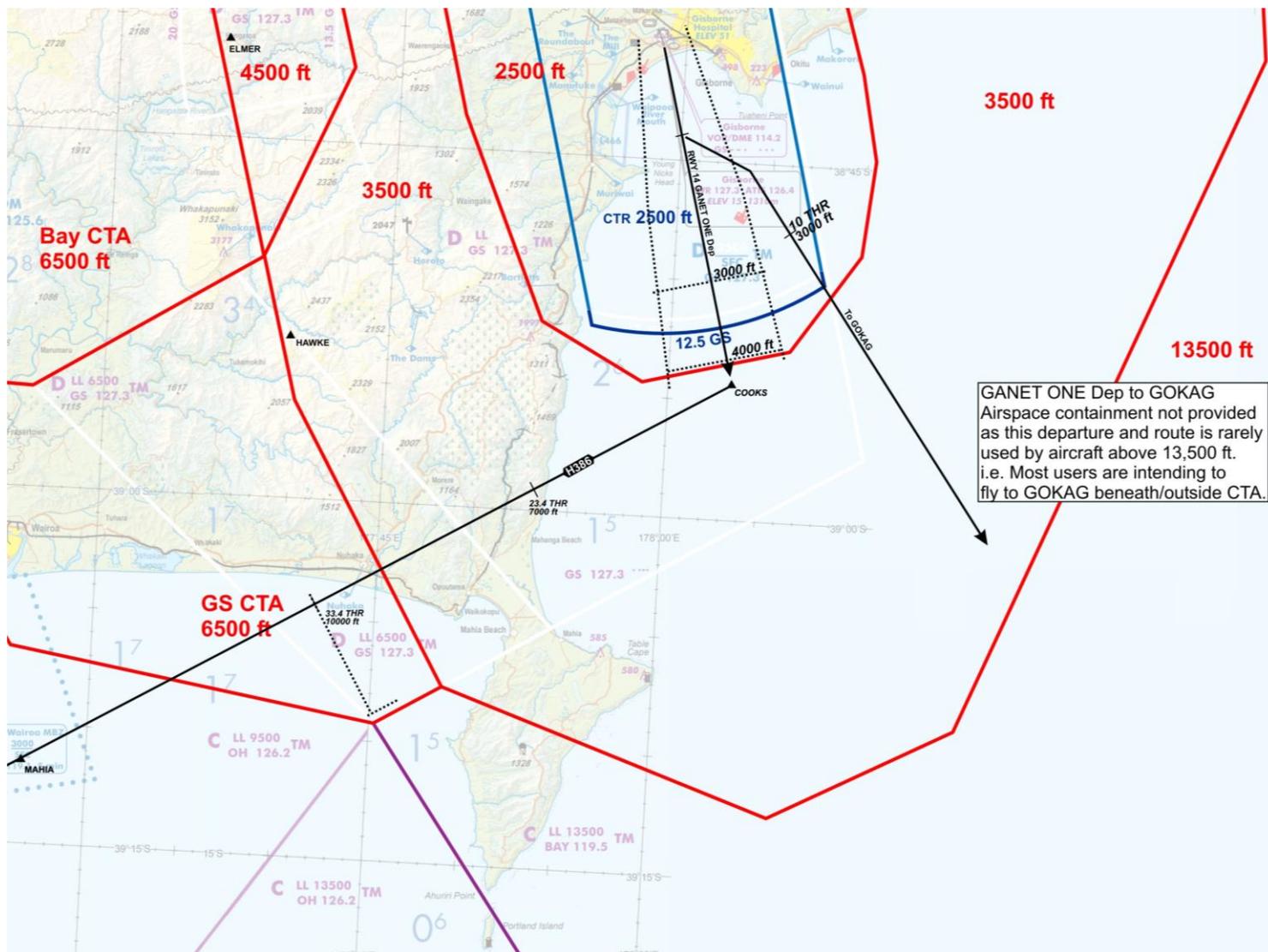


Diagram 16 DRAFT amended GS CTA to the south of Gisborne with the GANET ONE departure to COOKS and then route H386 to Napier and the GANET ONE departure to GOKAG and onwards to the Chatham Islands. The dashed lines depict the VOR splay protection area for the departure's track to COOKS.

### The CTA above 9500 ft

The Bay CTA LL 9500 ft that extends over the top of the GS CTA needs to be expanded to match the expanded GS CTA.

Consequently, the adjoining Bay CTA LL 13500 ft and the Ohakea CTA LL 9500 ft also need to have their boundaries modified to match the expanded Bay CTA.

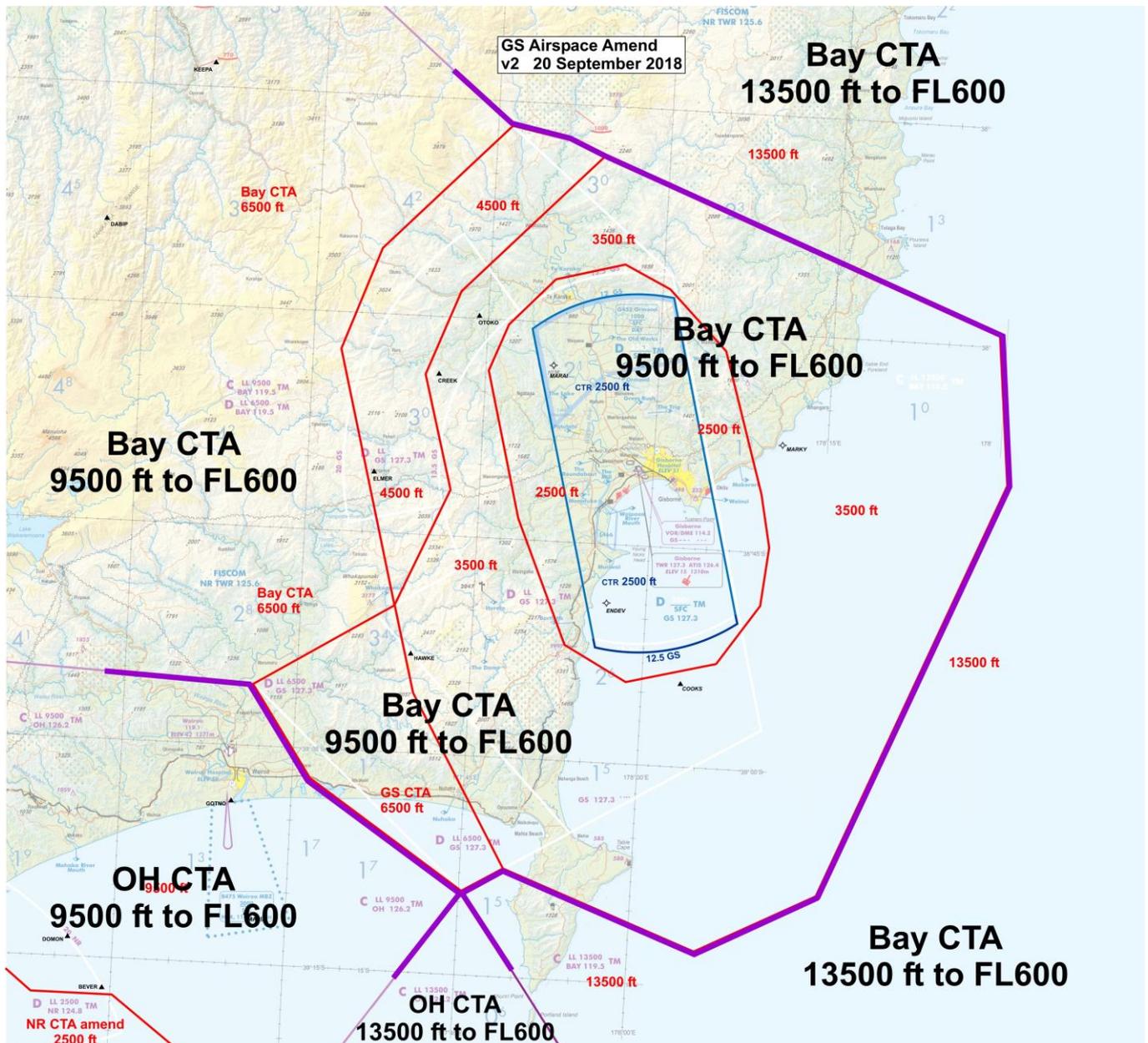


Diagram 17 DRAFT amended airspace above 9500 ft.

## Airspace definitions for DRAFT version 2

- GS CTR and GS CTA
- Bay CTA
- Ohakea CTA

### GS CTR

Amend NZA450 to move the southern boundary from existing 12 NM arc to a 12.5 NM arc.  
Upper limit lowered to 2500 ft

#### DRAFT GS CTR co-ordinates.

All that airspace bounded by a straight line from;

S38° 27' 46.9" E178° 01' 10.6" existing NZA450 seq 1 point to;

S38° 49' 38.04" E178° 08' 13.73" new point, extension of eastern CTR boundary line then;

the arc of a circle of 12.5 NM radius centred on S38° 39' 37.97" E177° 58' 38.70" GS VOR/DME from;

S38° 49' 38.04" E178° 08' 13.73" clockwise to;

S38° 51' 54.88" E177° 55' 45.44" then a straight line from;

S38° 51' 54.88" E177° 55' 45.44" to;

S38° 30' 23.3" E177° 48' 52.7" existing NZA450 seq 4 point then;

the arc of a circle of 12.5 NM radius centred on S38° 39' 37.97" E177° 58' 38.70" GS VOR/DME from;

S38° 30' 23.3" E177° 48' 52.7" clockwise to;

S38° 27' 46.9" E178° 01' 10.6" existing NZA450 seq 1 point

Vertical limits: SFC to 2500 ft

Classification: Class D

ATC Authority: Gisborne Tower 127.3

### GS CTA

Delete existing GS CTAs NZA430 (LL 3500 ft), NZA431 (LL 5500 ft) and NZA432 (LL 6500 ft) and replace with new GS CTAs LL 2500 ft, LL 3500 ft, LL 4500 ft and LL 6500 ft

**DRAFT GS CTA LL 2500 ft co-ordinates.**

All that airspace bounded by a straight line from;

S38° 31' 09.86" E178° 05' 45.29" to;  
S38° 40' 56.39" E178° 09' 30.76" to;  
S38° 44' 27.12" E178° 10' 34.21" to;  
S38° 48' 38.65" E178° 09' 54.22" to;  
S38° 52' 44.37" E178° 06' 24.76" to;  
S38° 54' 18.72" E177° 58' 35.69" to;  
S38° 51' 59.45" E177° 53' 04.16" to;  
S38° 43' 25.32" E177° 48' 32.04" to;  
S38° 33' 27.84" E177° 45' 17.43" to;  
S38° 30' 03.98" E177° 46' 51.59" to;  
S38° 26' 57.87" E177° 50' 40.75" to;  
S38° 25' 45.90" E177° 56' 32.81" to;  
S38° 27' 06.08" E178° 00' 33.16" to;  
S38° 31' 09.86" E178° 05' 45.29"

Vertical limits: 2500 to 3500 ft  
Classification: Class D  
ATC Authority: Gisborne Tower 127.3

**DRAFT GS CTA LL 3500 ft co-ordinates.**

All that airspace bounded by a straight line from;

S38° 29' 10.23" E178° 29' 18.12" to;  
S38° 39' 29.30" E178° 30' 41.21" to;  
S39° 08' 14.84" E178° 16' 14.54" to;  
S39° 12' 25.05" E178° 05' 52.95" to;  
S39° 07' 32.34" E177° 48' 52.73" to;  
S38° 55' 51.21" E177° 40' 10.41" to;  
S38° 49' 48.19" E177° 38' 10.05" to;  
S38° 41' 45.12" E177° 42' 28.80" to;  
S38° 33' 56.41" E177° 39' 55.61" to;  
S38° 28' 02.14" E177° 42' 31.79" to;  
S38° 18' 17.65" E177° 54' 13.61" to;  
S38° 29' 10.23" E178° 29' 18.12"

Vertical limits: 3500 to 9500 ft  
Classification: Class D  
ATC Authority: Gisborne Tower 127.3

**DRAFT GS CTA LL 4500 ft co-ordinates.**

All that airspace bounded by a straight line from;

S38° 18' 17.65" E177° 54' 13.61" to;  
S38° 28' 02.14" E177° 42' 31.79" to;  
S38° 33' 56.41" E177° 39' 55.61" to;  
S38° 41' 45.12" E177° 42' 28.80" to;  
S38° 49' 48.19" E177° 38' 10.05" to;  
S38° 32' 24.88" E177° 32' 24.04" to;  
S38° 25' 22.66" E177° 35' 33.02" to;  
S38° 16' 31.22" E177° 46' 24.10" to;  
S38° 17' 22.35" E177° 51' 10.45" to;  
S38° 18' 17.65" E177° 54' 13.61"

Vertical limits: 4500 to 9500 ft  
Classification: Class D  
ATC Authority: Gisborne Tower 127.3

**DRAFT GS CTA LL 6500 ft co-ordinates.**

All that airspace bounded by a straight line from;

S38° 49' 48.19" E177° 38' 10.05" to;  
S38° 55' 51.21" E177° 40' 10.41" to;  
S39° 07' 32.34" E177° 48' 52.73" to;  
S39° 09' 08.0" E177° 45' 18.8" existing NZA432 seq 2 point to;  
S39° 02' 17.59" E177° 31' 39.86" to;  
S38° 55' 42.7" E177° 26' 14.8" existing NZA439 seq 8 point to;  
S38° 49' 48.19" E177° 38' 10.05"

Vertical limits: 6500 to 9500 ft  
Classification: Class Ds  
ATC Authority: Gisborne Tower 127.3

**DRAFT Bay CTA LL 6500 ft co-ordinates.**

Amendment of existing NZA439

All that airspace bounded by a straight line from;

S38° 16' 31.22" E177° 46' 24.10" to;

S38° 25' 22.66" E177° 35' 33.02" to;

S38° 32' 24.88" E177° 32' 24.04" to;

S38° 49' 48.19" E177° 38' 10.05" to existing NZA439 co-ords listed below (sequence numbers no longer match);

<del>NZA439</del>	<del>1</del>		<del>382613.0S</del>	<del>1780045.0E</del>	<del>CCA</del>	<del>383937.84S</del>	<del>1775839.22E</del>	<del>13.5</del>	<del>NM</del>
<del>NZA439</del>	<del>2</del>		<del>382913.6S</del>	<del>1774739.8E</del>	<del>GRC</del>				
<del>NZA439</del>	<del>3</del>		<del>382408.9S</del>	<del>1774229.5E</del>	<del>CCA</del>	<del>383937.84S</del>	<del>1775839.22E</del>	<del>20</del>	<del>NM</del>
<del>NZA439</del>	<del>4</del>		<del>384418.6S</del>	<del>1773348.7E</del>	<del>GRC</del>				
<del>NZA439</del>	<del>5</del>		<del>384247.9S</del>	<del>1774153.5E</del>	<del>CCA</del>	<del>383937.84S</del>	<del>1775839.22E</del>	<del>13.5</del>	<del>NM</del>
<del>NZA439</del>	<del>6</del>		<del>384653.1S</del>	<del>1774406.1E</del>	<del>GRC</del>				
<del>NZA439</del>	<del>7</del>		<del>385033.8S</del>	<del>1773641.0E</del>	<del>GRC</del>				
NZA439	8		385542.7S	1772614.8E	GRC				
NZA439	9		385422.7S	1764743.0E	CCA	392713.69S	1765208.13E	33	NM
NZA439	10		390555.3S	1761939.8E	GRC				
NZA439	11	Motuoapa	385556.4S	1755232.5E	GRC				
NZA439	12		385718.3S	1753437.3E	GRC				
NZA439	13		383246.0S	1753905.0E	GRC				
NZA439	14		383506.0S	1751918.0E	GRC				
NZA439	15		383151.0S	1745947.0E	GRC				
NZA439	16		381123.7S	1750202.8E	CCA	375057.7S	1752019.0E	25	NM
NZA439	17		381558.2S	1752125.0E	GRC				
NZA439	18	Maihihi	381254.9S	1752302.7E	GRC				
NZA439	19	Korakonui	380857.0S	1752509.5E	GRC				
NZA439	20	Wharepapa South	380838.0S	1753301.0E	GRC				
NZA439	21		381508.0S	1754905.0E	CCA	380628.9741S	1761850.1520E	25	NM
NZA439	22		383058.0S	1762524.6E	GRC				
NZA439	23		382110.5S	1762246.3E	CCA	380628.9741S	1761850.1520E	15	NM
NZA439	24		380341.7S	1763730.2E	GRC				
NZA439	25		375829.5S	1763540.3E	GRC				
NZA439	26		375243.6S	1764014.1E	GRC				
NZA439	27		373630.5S	1764542.0E	GRC				
NZA439	28		374638.4S	1770216.9E	GRC				

then back to;

S38° 16' 31.22" E177° 46' 24.10"

Vertical limits: 6500 to 9500 ft

Classification: Class D

ATC Authority: Bay Approach 119.5

**DRAFT Bay CTA LL 9500 ft co-ordinates.**

Amendment of existing NZA434

All that airspace bounded by a straight line from;

S38° 29' 10.23" E178° 29' 18.12" to;

S38° 39' 29.30" E178° 30' 41.21" to;

S39° 08' 14.84" E178° 16' 14.54" to;

S39° 12' 25.05" E178° 05' 52.95" to;

S39° 07' 32.34" E177° 48' 52.73" to;

S39° 09' 08.0" E177° 45' 18.8" existing NZA434 seq 4 point to;

S39° 02' 17.59" E177° 31' 39.86" to existing NZA434 co-ords listed below (sequence numbers no longer match);

<del>NZA434</del>	<del>1</del>		<del>382613.0S</del>	<del>1780045.0E</del>	<del>GRC</del>				
<del>NZA434</del>	<del>2</del>		<del>385704.2S</del>	<del>1781039.4E</del>	<del>GRC</del>				
<del>NZA434</del>	<del>3</del>		<del>390446.7S</del>	<del>1775427.8E</del>	<del>GRC</del>				
<del>NZA434</del>	<del>4</del>		<del>390908.0S</del>	<del>1774518.8E</del>	<del>GRC</del>				
NZA434	5		385542.7S	1772614.8E	GRC				
NZA434	6		385422.7S	1764743.0E	CCA	392713.69S	1765208.13E	33	NM
NZA434	7		390555.3S	1761939.8E	GRC				
NZA434	8	Motuoapa	385556.4S	1755232.5E	GRC				
NZA434	9		385718.3S	1753437.3E	GRC				
NZA434	10		375609.0S	1754539.0E	GRC				
NZA434	11	Morrinsville	373928.8S	1753140.3E	GRC				
NZA434	12	Te Hoe, 1709 ft	372914.2S	1752153.4E	GRC				
NZA434	13		371524.0S	1754143.0E	CCA	370016.3S	1744849.4E	45	NM
NZA434	14		365835.7S	1754459.3E	GRC				
NZA434	15		371044.0S	1765325.1E	CWA	370016.3S	1744849.4E	100	NM
NZA434	16		373630.5S	1764542.0E	GRC				
NZA434	17		374638.4S	1770216.9E	GRC				

to;

S38° 16' 31.22" E177° 46' 24.10" to;

S38° 17' 22.35" E177° 51' 10.45" to;

S38° 18' 17.65" E177° 54' 13.61" back to;

S38° 29' 10.23" E178° 29' 18.12"

Vertical limits: 9500 ft to FL600

Classification: Class C

ATC Authority: Bay Approach 119.5

**DRAFT Bay CTA LL 13500 ft co-ordinates.**  
 Amendment of existing NZA435

NZA435	1		382700.0S	1794400.0W	GRC				
NZA435	2		400016.9S	1783207.3E	GRC				
NZA435	3		390908.0S	1774518.8E	GRC				

to;

S39° 07' 32.34" E177° 48' 52.73" to;

S39° 12' 25.05" E178° 05' 52.95" to;

S39° 08' 14.84" E178° 16' 14.54" to;

S38° 39' 29.30" E178° 30' 41.21" to;

S38° 29' 10.23" E178° 29' 18.12" to;

S38° 18' 17.65" E177° 54' 13.61" to;

S38° 17' 22.35" E177° 51' 10.45" to;

S38° 16' 31.22" E177° 46' 24.10" to;

<del>NZA435</del>	<del>4</del>		<del>390446.7S</del>	<del>1775427.8E</del>	<del>GRC</del>				
<del>NZA435</del>	<del>5</del>		<del>385704.2S</del>	<del>1781039.4E</del>	<del>GRC</del>				
<del>NZA435</del>	<del>6</del>		<del>382613.0S</del>	<del>1780045.0E</del>	<del>GRC</del>				
NZA435	7		374638.4S	1770216.9E	GRC				
NZA435	8		373630.5S	1764542.0E	CCA	370016.3S	1744849.4E	100	NM
NZA435	9		371044.0S	1765325.1E	GRC				
NZA435	10		373229.5S	1785608.9E	GRC				

Vertical limits: 13500 ft to FL600  
 Classification: Class C  
 ATC Authority: Bay Approach 119.5

**DRAFT Ohakea CTA LL 9500 ft co-ordinates.**  
 Amendment of existing NZA347

NZA347	1		390908.8S	1774518.8E	GRC				
NZA347	2		411650.0S	1754818.5E	GRC				
NZA347	3	Martinborough	411307.5S	1752735.1E	GRC				
NZA347	4	NE corner Lake Wairarapa	411118.4S	1751851.0E	GRC				
NZA347	5	Mount Hector	405706.8S	1751656.6E	GRC				
NZA347	6		404238.5S	1751622.2E	GRC				
NZA347	7	KAPTI	403753.8S	1745948.0E	GRC				
NZA347	8		403753.8S	1745524.5E	GRC				
NZA347	9		394128.3S	1745505.0E	GRC				
NZA347	10		391349.1S	1745455.6E	GRC				
NZA347	11	Taumarunui NDB	385517.5S	1751849.4E	GRC				
NZA347	12		385555.1S	1752219.3E	GRC				
NZA347	13		385718.3S	1753437.3E	GRC				
NZA347	14	Motuoapa	385556.4S	1755232.5E	GRC				
NZA347	15		390555.3S	1761939.8E	CWA	392714.112S	1765208.045E	33	NM
NZA347	16		385422.7S	1764743.0E	GRC				
NZA347	17		385542.7S	1772614.8E	GRC				

to;

S39° 02' 17.59" E177° 31' 39.86" back to;

S39° 09' 08.8" E177° 45' 18.8"

NZA347_S	1				CIR	391722.4S	1753345.6E	3	NM
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Vertical limits: 9500 ft to FL600  
 Classification: Class C  
 ATC Authority: OH Control 126.2