RSP | Manston Airport

Appendix A – Manston Airport Airspace Design and Procedures

Options Development Part 3

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Glossary

Acronym	Meaning
aal	above aerodrome level
agl	above ground level
ACP	Airspace Change Proposal
AMS	Airspace Modernisation Strategy
amsl	above mean sea level
ANSP	Air Navigation Service Provider
ATC	Air Traffic Control
ATZ	Aerodrome Traffic Zone
CAA	Civil Aviation Authority
CAP	Civil Aviation Publication
DCO	Development Consent Order
DER	Departure End of the Runway
FAF/FAP	Final Approach Fix / Point
FASI-S	Future Airspace Strategy Implementation - South
FMS	Flight Management System
ft	feet
GA	General Aviation
GNSS	Global Navigation Satellite System
IAF	Initial Approach Fix
IAP	Instrument Approach Procedure
ICAO	International Civil Aviation Organisation
IF	Intermediate Fix

Glossary

Acronym	Meaning
IFP	Instrument Flight Procedure
ILS	Instrument Landing System
KIAS	Knots Indicated Air Speed
km	kilometres
LAMP	London Airspace Modernisation Programme
LTMA	London Terminal Manoeuvring Area
MAP	Missed Approach Procedure
NATMAC	National Air Traffic Management Advisory Committee
NATS	formerly National Air Traffic Services
NDB	Non-Directional Beacon
nm	nautical mile
PBN	Performance Based Navigation
RNAV	Area Navigation
RSP	RiverOak Strategic Partners Ltd
SID	Standard Instrument Departure
STAR	Standard Arrival Route

1. Options Development

1.1 Introduction

The purpose of this document is to seek the input of key stakeholders in the development of the design options that address the requirements of the Manston Airport Airspace Change Proposal (ACP). This ACP concerns the introduction of appropriate Performance Based Navigation (PBN) flight procedures and airspace to enable safe operations at the redeveloped airport.

1.2 Background

Manston Airport is a disused airport on the Isle of Thanet in Kent. It has one of the longest and widest runways in the UK, comparable to other international airports, making it a valuable infrastructure asset. RiverOak Strategic Partners (RSP) is proposing to secure the future of this valuable national asset by redeveloping and reopening it as a successful hub for international air freight which also offers passenger travel, executive travel and aircraft engineering services.

RSP has applied to the Planning Inspectorate for a Development Consent Order (DCO) to build Manston Airport and a decision is expected in July 2020.In addition, RSP must also secure approval from the Civil Aviation Authority (CAA), through the Civil Aviation Publication (CAP) 1616 process, for its use of airspace and procedures.

This document relates only to the CAP 1616 process and the proposal to introduce the airspace and Instrument Flight Procedures (IFPs) required to enable safe and efficient operations to and from the airport.

1.3 CAP 1616 Airspace Design Guidance

CAP 1616 is a seven-stage process published by the CAA that provides guidance on the process to follow when seeking to change the way airspace is used. The whole Manston Airport CAP 1616 process is envisaged to take 2½ years. The seven stages of the process are as follows:

- Stage 1 – Define
- Stage 2 – Develop and Assess (current stage)
- Stage 3 – Consultation
- Stage 4 – Update and Submit
- Stage 5 – Decide
- Stage 6 - Implement
- Stage 7 – Post-Implementation Review

Manston Airport is currently at Stage 2 which requires the development of options that seek to meet the original Statement of Need. The options are required to align, where practicable, with the Design Principles generated in Stage 1. These options are then assessed to understand the positive/negative impacts before progressing to the CAA evaluation at the Stage 2 Gateway[1]. There is a formal public consultation in Stage 3, but this document is a further opportunity for you as a key stakeholder involved in the development of the Design Principles to contribute early and help influence the procedure design options taken forward to Stage 3. Outside the formal consultation windows, when we are asking for you to contribute, we will still listen to what you have to say about the proposal or generally about our operations.

[1] There are 'Gateways' at four points in the process. At each Gateway, the change sponsor must satisfy the CAA that it has followed the process correctly before it can move to the next stage in the process

1.4 Progress So Far

In November 2018, RSP submitted a Statement of Need to the CAA. This is the formal explanation as to why RSP wishes to make changes within the airspace surrounding the Airport. The CAA indicated that an airspace change was the appropriate mechanism to achieve the objectives in the Statement of Need. A copy of the Statement of Need and other associated documentation can be viewed at https://airspacechange.caa.co.uk/PublicProposalArea?pID=112.

At the end of February 2020, the first stage in the change process was successfully completed when the RSP submission for Manston Airport passed through the CAA's Stage 1 DEFINE Gateway.

The work undertaken during Stage 1 helped to establish a prioritised shortlist of Design Principles to act as a framework against which Design Options will be drawn up. The prioritised list of Design Principles is shown in Table 1 below.

Priority	Design Principle
1	Procedures must be designed to meet acceptable levels of flight safety
2	Design options must accord with the CAA's published Airspace Modernisation Strategy (CAP 1711) and any current or future plans associated with it
3	Procedures should be designed to minimise the impact of noise below 7,000 feet
4	Where practicable, designs should seek to minimise the impact of noise on particularly sensitive areas
5	Designs should minimise the impact on other airspace users in the local area
6	Procedures should be designed that minimise aircraft emissions to reduce air pollution
7	Designs should make provision for multiple routes that can be used to spread the noise burden more equitably
8	Procedures should be designed to minimise the number of track miles flown

Table 1 - Prioritised Design Principles

1.5 Step 2A – Options Development

Stage 2, Step 2A in the process is about the development of a potential long list of procedure design options that seek to meet the original Statement of Need and are aligned with the Design Principles shown above. RSP has developed a comprehensive list of design options for Manston Airport which, with your input, will be refined to produce one or more options that address the Statement of Need and align with the defined Design Principles. RSP would like to ensure that stakeholder concerns have been properly understood and accounted for in designing these options. It is important to us that you are satisfied that the design options are aligned with the Design Principles and that we have properly understood and accounted for your concerns in designing options.

In addition, RSP will be hosting workshops (physically or virtually) to further engage with stakeholders to make sure that your views have been captured and demonstrate how this feedback has influenced the design options.

Once stakeholder feedback has been received, RSP will produce a Design Principle Evaluation that sets out how its design options have responded to the Design Principles.

1.6 Step 2B – Options Appraisal

The second part of Stage 2 (Step 2B) involves an assessment of the options to develop the short list that will be taken forward to Stage 3 (Consultation). Your input will assist us in developing the shortlist. Any options that are unviable and cannot be taken forward, or any restrictions on the design options developed, will be clearly explained to the stakeholders, with the appropriate evidence to support the reasons for not taking an option forward. At the end of this Step 2B, RSP will submit details of the options developed to the CAA to pass through the Stage 2 DEVELOP AND ASSESS Gateway, currently programmed for 27th November 2020.

1.7 Next Steps

This engagement is focussed on those representative bodies and individuals that were involved in developing the Design Principles in Stage 1, who can offer early views on behalf of their local communities, including elected community representatives, commercial aviation operators, including airlines, airports and Air Navigation Service Providers (ANSPs), representatives of local General Aviation (GA) organisations or clubs and members of the National Air Traffic Management Advisory Committee (NATMAC).

Once the Stage 2 DEVELOP AND ASSESS Gateway has been passed, we will launch formal public consultation as part of Stage 3 (expected in 2021), in which we will be consulting widely with residents, businesses, communities, the public and other stakeholders. Details of the formal consultation will be communicated in due course, at which point RSP will welcome all relevant views about its ACP.

2. Design Options

2.1 Proposed Procedures

RSP is seeking to introduce Instrument Flight Procedures (IFPs) at Manston Airport for aircraft departing from, and arriving at, the airport. IFP is a term used to describe the published routes aircraft fly over the ground, both in plan and elevation view. These new procedures allow aircraft to make the best use of the airspace, utilising Global Navigation Satellite System (GNSS) technology to make more efficient use of the airspace around the airport by defining more accurate routing and to allow the airport to explore different options for the way aircraft will approach and depart the airport, whilst ensuring acceptable levels of safety.

RSP is proposing to introduce Standard Instrument Departures (SIDs), Transition procedures and Instrument Approach Procedures (IAP) as part of this Airspace Change Proposal (ACP). This ACP is part of the Future Airspace Strategy Implementation – South (FASI-S), which is the umbrella name or the concept to modernise air traffic services in the south east of England. This is a collaborative exercise between 15 airports and NATS, who are the en-route air navigation service provider (ANSP). RSP is responsible for the design of the routes in the lower airspace, from ground level to 7,000 ft. Above this height, NATS will be responsible for the design of the airways network as part of the London Airspace Management Programme (LAMP) Phase 2 ACP. It is imperative that the route designs are not only aligned to the LAMP Phase 2 ACP, but with all the other airport's ACPs that form the FASI-S programme.

The new procedures will be designed so that they comply with the internationally agreed criteria set down in the International Civil Aviation Organisation (ICAO) document PANS-OPS 8168 Volume 2 – *Construction of Visual and Instrument Flight Procedures* (PANS-OPS), which means that there will be a number of constraints on the design procedure, which will be explained below, where appropriate.

Having developed a comprehensive list of design options, RSP has already sought stakeholder input to identify the design envelopes, or swathes, in which the routes could be contained. We have taken feedback into account and developed a series of route options that we would now like to share with our stakeholders to seek further input. It must be stressed that the options described below and shown in the attached Appendices are not the final designs but have been developed based on the information provided by all our stakeholders. Your continued input will help us to further develop these designs to form the short list that can be taken forward to the next stage of the process.

2.2 Explanation of Waypoints

All the procedures are constructed with a series of waypoints designed to be flown by the automatic systems that most modern aircraft use for navigation. A waypoint is defined positionally by its Latitude and Longitude, and generally will not necessarily represent a physical feature on the ground but will be positioned so that the routes designed are technically flyable by the various aircraft types. Some waypoints describe the point at which the route integrates with the national airways structure. The aircraft navigation systems will automatically direct the aircraft according to the routing designed into the procedure.

The majority of the waypoints will be designated as a 'Fly-By' waypoint, where the aircraft will initially be heading in the direction of the waypoint but the aircraft Flight Management System (FMS) will anticipate a point in space to turn before it reaches the waypoint so that the aircraft ends up heading directly towards the next waypoint in sequence, as shown in Figure 1 below. Depending on the angle of turn, the aircraft may not overfly the actual waypoint at all. In addition, the actual flight path that an aircraft follows during these turns will vary slightly depending on the flight performance of each aircraft, creating a small amount of lateral dispersion of aircraft tracks during the turn. Once the aircraft have intercepted the straight portion of the following leg, the aircraft FMS will follow this route very accurately, resulting in a concentration of aircraft tracks.

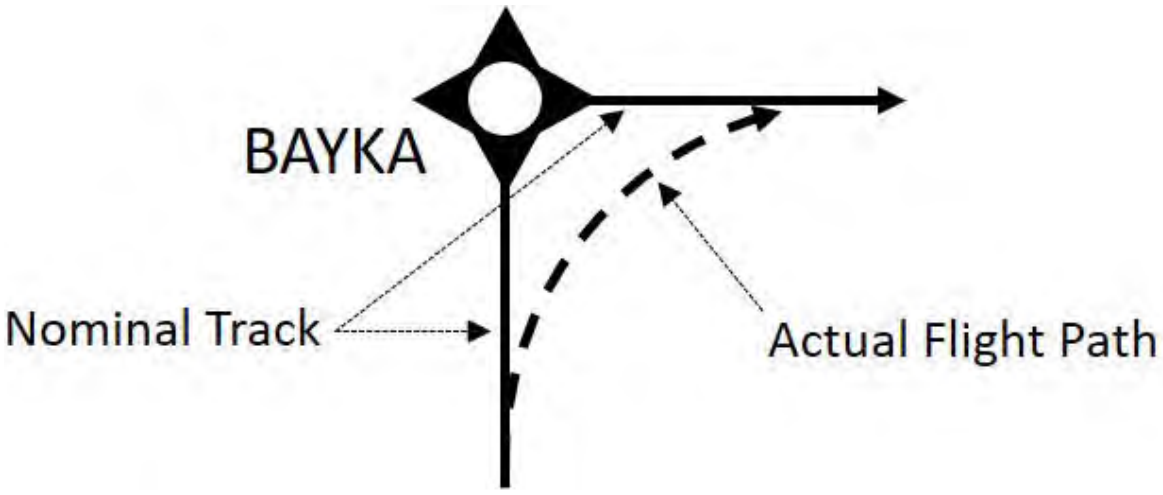

Figure 1 - Fly-By Waypoint

2.3 Standard Instrument Departure

A Standard Instrument Departure (SID) describes the route that an aircraft must fly on departure from an airport to connect safely with the en-route airspace structure. Aircraft will follow a defined route profile, including any altitude constraints, to a designated waypoint that forms part of the national airspace structure. As this ACP forms part of the FASI-S programme of airspace changes, the precise designated waypoints at the end of each SID are yet to be determined and will be developed by NATS as part of the LAMP Phase 2 ACP.

Regardless of aircraft performance, the start of the SID assumes that aircraft reach a height of 16 ft at the Departure End of the Runway (DER). From this point, we have assumed a climb gradient of 6% (3.4°) and all heights referenced on the images relate to this, which is considered to be the worst-case scenario. In reality, the majority of aircraft will be higher than 16 ft by the end of the runway and, will be able to climb at a greater gradient than the procedure is designed at. This will mean that although the aircraft will follow the ground track of the procedure design, they should, in most cases, be higher than the shown altitudes (or reach 7,000 ft earlier than the shown track).

Aircraft will have to achieve a minimum height of 500 ft above aerodrome level (aal) before commencing any turn.

2.3.1 Runway 28 Departures to the South

Figures 7 and 8 in Appendix A1 show 3 possible options for a SID departing Runway 28 to the south. The designs as shown in these diagrams terminate at a point that is part of the current en-route network. Although NATS will be re-designing the upper network, it is anticipated that aircraft will still be able to join the en-route network at, or very close to, this position. Due to the distances available after take-off on these routes, in order to achieve 7,000 ft at the end of the SID, aircraft will be required to achieve a climb gradient greater than the minimum 6%. The eastern (right hand) route option has the shortest distance and requires a climb gradient of 7.5% to achieve the desired height by the end of the SID. The central option requires a climb gradient of 7% to achieve the desired height by the end of the SID. The western (left hand) option has the longest distance but still requires a climb gradient of 6.5% to achieve the desired height. All these required climb gradients should also be achievable by the majority of aircraft that will be using the procedure.

2.3.2 Runway 28 Departures to the North

Figures 9 – 12 in Appendix A1 show the possible options for aircraft departing Runway 28 over the sea. Figures 11 and 12 show 3 possible options, in increasing detail, for the overland portion of the northern procedure. Regardless of which overland option is decided on, the procedure will then track in an easterly direction over the sea, before splitting into a further 3 options:

• An early turn to the north and continuing to climb to 7,000 ft.

• An early turn to the south east and continuing to climb to 7,000 ft.

• Continuing an easterly heading until achieving 7,000 ft, before then turning as required to join the en-route network.

In the case of the early turn options described above, both the northerly and south eastern options would be required to facilitate aircraft routing in different directions.

2.3.3 Runway 10 Departures

Figure 13 in Appendix A2 shows the possible options for aircraft departing Runway 10. Figures 14 and 15 shows the routing of the procedure, in increasing detail, as it would affect Ramsgate. As previously stated, aircraft would have to achieve a minimum height of 500 ft before any turns were permitted, hence the procedure has been designed to continue straight ahead without turning until over the sea, to minimise the impact of noise as much as possible.

Once over the sea, 3 options are shown:

• A turn to the north and continuing to climb to 7,000 ft.

• A turn to the south before turning west and continuing to climb to 7,000 ft.

• A turn to the south before turning east and continuing to climb to 7,000 ft.

It is anticipated that all 3 options, or variations thereof, may be required in order to facilitate aircraft routing in different directions within the en-route network.

2.4 The New Transitions

The Transitions describes the route that the aircraft will take when arriving at an airport from the en-route network or termination of a Standard Arrival Route (STAR) procedure to the Initial Approach Fix (see paragraph 2.5) for an Instrument Approach Procedure.

2.4.1 Runway 28 Transitions

Figure 26 in Appendix A5 shows the possible options for aircraft transitioning from the en-route airways network to join the approach procedure for Runway 28. The options shown to the north east, east and south east allow for traffic entering UK airspace from Europe descending to join the approach procedure. The options from the north and south cater for aircraft that are able to follow a pre-existing arrival procedure (for another airport), and descending off the designated arrival procedure, to join the approach procedure for Manston Airport.

Aircraft would descend to be at approximately 4,000 ft at the end of the Transition procedure to join the approach procedure.

2.4.2 Runway 10 Transitions to Approach Procedures with a 2,500 ft Final Approach

Figure 27 in Appendix A6 shows the possible options for aircraft transitioning from the en-route airways network to join those approach procedures (described in paragraph 2.6.2 below) that have a 2,500 ft Final Approach Fix/Point. Figure 28 shows the overland portion of the Transition options.

For the northern Transition option, aircraft would follow a pre-existing arrival procedure for another airport before being descended from approximately 9,000 ft to join the procedure at approximately 4,000 ft. Should this option be chosen as part of the pre-existing procedure, the actual routing that aircraft follow could vary to that indicated, although the routing will always remain over the sea above 7,000 ft.

The southern options also follow a pre-existing arrival procedure for another airport, with aircraft being routed off this track and descended to join the approach procedure. Aircraft would descend from above 8,000 ft in the en-route structure to join the approach procedure at approximately 4,000 ft.

2.4.3 Runway 10 Transitions to Approach Procedures with a 3,000 ft Final Approach

Figure 29 in Appendix A6 shows the possible options for aircraft transitioning from the en-route airways network to join those approach procedures (described in paragraph 2.6.2 below) that have a 3,000 ft Final Approach Fix/Point. Figure 30 shows the overland portion of the Transition options. The options are like those described above for an approach with a 2,500 ft final approach albeit with different procedure join positions.

For the northern Transition option, aircraft would follow a pre-existing arrival procedure for another airport before being descended from approximately 9,000 ft to join the procedure at approximately 4,000 ft. Should this option be chosen as part of the pre-existing procedure, the actual routing that the aircraft follow could vary to that indicated, although the routing will always remain over the sea above 7,000 ft.

The southern options also follow a pre-existing arrival procedure for another airport, with aircraft being routed off this track and descended to join the approach procedure. Aircraft would descend from above 8,000 ft in the en-route structure to join the approach procedure at approximately 4,000 ft.

2.5 Instrument Approach Procedure

The Instrument Approach Procedure (IAP) is the final stage of flight as an aircraft arrives at the airport to land, detailing the route and descent profile that an aircraft must follow to safely avoid ground obstacles in the final, critical stages of flight. It also includes a Missed Approach Procedure (MAP), and an associated Hold position, that defines what the aircraft should do in the unusual and rare event of not being able to land off the approach. RSP is planning on introducing IAPs for Manston Airport that will use satellite navigation technology to guide the aircraft as well as procedures that utilise a ground-based Instrument Landing System (ILS) and Non-directional Beacon (NDB). An ILS is a precision runway approach aid based on two radio beams which together provide pilots with both vertical and horizontal guidance during an approach; an NDB is a non-precision approach, as there is no vertical guidance, used by small General Aviation (GA) aircraft.

An IAP is designed to align an aircraft in a direction that will enable it to make a safe approach to land at the designated runway at the airport. From approximately 8-10 miles from landing, only minor adjustments to the aircraft's direction can be made. Figure 2 below shows the general arrangement for an approach procedure according to the design restrictions imposed by PANS-OPS.

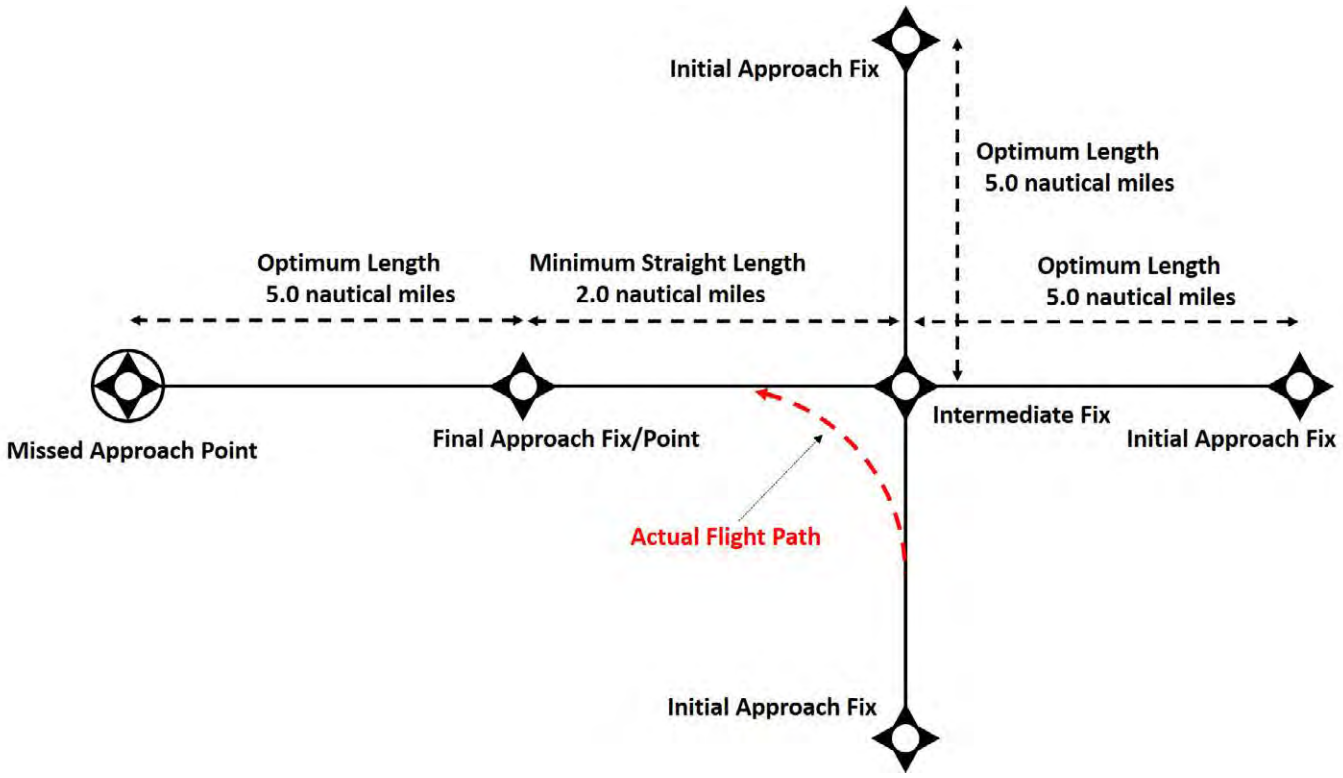

Figure 2 – Instrument Approach Procedure General Arrangement

The Initial Approach Fix (IAF)[2] for these procedural approaches are points generally 4-5 miles and up to 90° away from the extended centreline (the route the aircraft will fly to land), so that the aircraft can safely manoeuvre onto the required direction to make an approach. Although the approach angle to the Intermediate Fix (IF) can be less than shown in the image, it cannot be more than 90°. Aircraft must be aligned with the runway heading a minimum of 2 nautical miles prior to the Final Approach Fix/Point[3] (FAF/FAP). Therefore, if the procedure contains a turning portion between the IAF and the IF (the Actual Flight Path as indicated above in red), the distance between the IF and the FAF/FAP must allow for this to ensure that the aircraft is stabilised prior to descent.

[2] Initial Approach Fix (IAF) is the point where the Approach procedure begins – if the approach is T-bar shaped then it will have two IAFs, one on either end of the crossbar of the 'T'. An aircraft will fly to one of the IAFs depending on the direction they are coming from and then make a turn to fly down the long segment of the 'T' which is lined up to the runway.

[3] A Final Approach Fix (FAF) is the designation used in an RNAV approach procedure; Final Approach Point (FAP) is the designation used in an ILS procedure. Both mark the position at which the aircraft will commence the descent to land.

The FAF/FAP represents the point at which aircraft will commence the descent on their approach. The maximum permitted descent angle for both RNAV and ILS approaches for the aircraft that will be operating at Manston Airport is 3°. This means that aircraft will descend approximately 320 ft per nautical mile along the approach path. Offset RNAV or ILS approaches are not permitted for the type of operations that can be expected at Manston Airport.

The MAP is the flightpath an aircraft will follow if, for some reason, it is not able to complete its approach to the runway; it is sometimes referred to as a 'go-around'. It should be noted that the number of aircraft that would perform a MAP is generally very low and is usually the result of poor weather at the airport or the runway becoming unexpectedly unavailable. The execution of the MAP is considered an emergency procedure when the flight crew will be experiencing high cockpit workload. The MAP involves the aircraft climbing to a nominated altitude and proceeding to a nominated position (the Hold) to await Air Traffic instructions to carry out a further approach procedure. The planned rate of climb for a MAP is less than that permitted for the design of the SIDs. Aircraft will climb at a gradient of 2.5% (1.4°), which equates to approximately 150 ft per nautical mile. Depending on the current traffic situation and nature of the reason why the aircraft had to undertake the MAP, Air Traffic may direct the aircraft back to the IAF for the approach procedure, rather than directing the aircraft to the Hold.

It is common for procedure designers to position the Missed Approach Hold at one of the Initial Approach Fixes for the procedure and aligned with the Initial Approach segment (the leg between the IAF and the IF). However, this is not a PANS-OPS requirement, and the Hold could feasibly be positioned in any suitable location and orientated in any direction. In addition, a common Hold could be used for procedures to either runway approach.

2.5.1 Runway 28 Approach Procedures

Figure 16 in Appendix A3 shows possible options for approach procedures to Runway 28. Due to the nature of the approach, the RNAV and ILS procedures would follow the same profile. The height of the aircraft at the FAF/FAP could be increased above the 2,000 ft altitude shown on the image. This would move the FAF/FAP position 1.6 nautical miles (nm) further east away from the runway, resulting in a corresponding movement of the IF, IAF and Hold positions indicated on the image. However, it would not affect the height of the aircraft during the final overland portion of the approach (over south Ramsgate), as shown in Figure 3 below. Figure 17 shows the overland portion of the procedure. The final approach segment over Ramsgate cannot be adjusted due to the range from the runway.

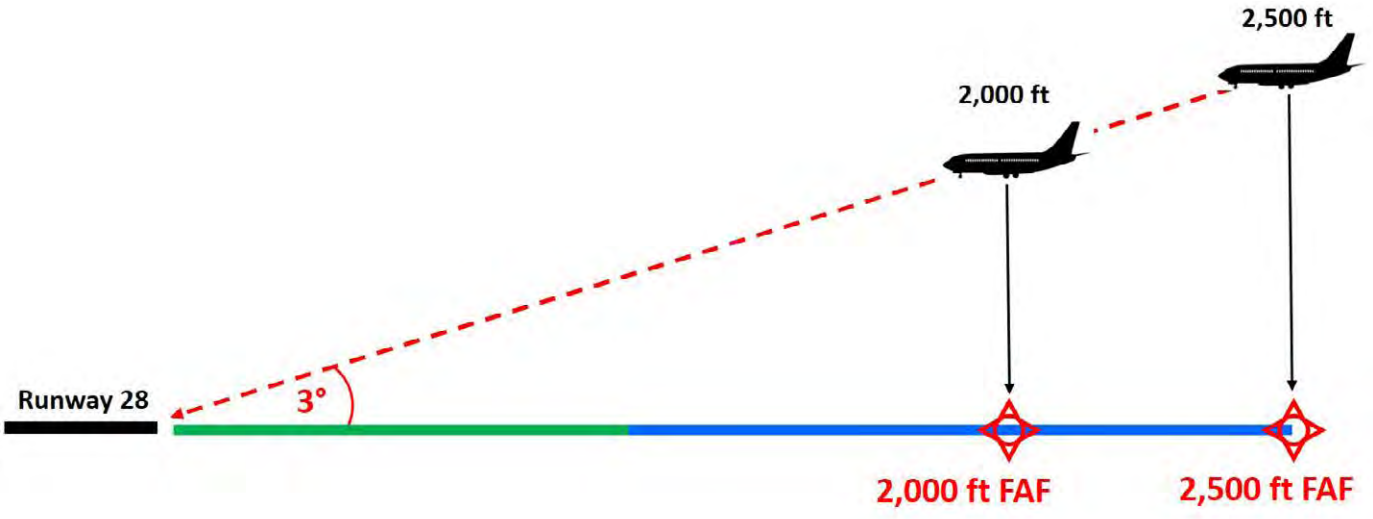

Figure 3 – Runway 28 3° Instrument Approach Procedure Height Profile

The MAP for the Runway 28 approach could involve aircraft either turning right or left and climbing to approximately 3,000 ft to the position of the Hold, or as directed by Air Traffic Control (ATC) to execute a further approach. Figure 17 in Appendix A3 shows some options for the overland track of the aircraft following the MAP to one of the possible Hold positions, in this instance located at an IAF for the approach procedure.

2.5.2 Runway 10 Approach Procedures with a 2,500 ft Final Approach

Figure 18 and Figure 22 in Appendix A4 shows possible options for ILS and RNAV approach procedures to Runway 28 where the FAP/FAF is at 2,500 ft. Due to the nature of the approach, the RNAV and ILS procedures would follow the same profile. As previously stated, the approach procedures have a 3° descent angle which means that the aircraft will descend approximately 320 ft per nm (1.8 kilometres (km)) along the approach path. These options show several possible positions for the IAFs as well as multiple options for the position of the MAP Hold. Figure 19 and Figure 23 show the overland portion of the approach on a larger scale map.

Aircraft executing a MAP would climb straight ahead and achieve a minimum height of 500 ft before any turns were permitted. The procedure has been designed to continue straight ahead, to minimise the impact of noise as much as possible, before turning either left or right over the sea and climbing to approximately 3,000 ft to the position of the Hold, or as directed by ATC to execute a further approach.

2.5.3 Runway 10 Approach Procedures with a 3,000 ft Final Approach

Figure 20 and Figure 24 in Appendix A4 shows possible options for ILS and RNAV approach procedures to Runway 28 where the FAP/FAF is at 3,000 ft. Due to the nature of the approach, the RNAV and ILS procedures would follow the same profile. As previously stated, the approach procedures have a 3° descent angle which means that the aircraft will descend approximately 320 ft per nm (1.8 km) along the approach path. Since the approach angle is the same as the options described in the previous paragraph, and for the reasons shown in Figure 3 above, aircraft descending from a 3,000 ft FAF/FAP would pass through same position of the FAF/FAP as described in the previous options and subsequently follow the same descent profile. These options also show several possible positions for the IAFs as well as multiple options for the position of the MAP Hold. Figure 21 and Figure 25 show the overland portion of the approach on a larger scale map.

Aircraft executing a MAP would climb straight ahead and achieve a minimum height of 500 ft before any turns were permitted. The procedure has been designed to continue straight ahead, to minimise the impact of noise as much as possible, before turning either left or right over the sea before turning either left or right and climbing to approximately 3,000 ft to the position of the Hold, or as directed by ATC to execute a further approach.

2.5.4 NDB Hold for General Aviation Aircraft

To facilitate access to the airport for General Aviation (GA) users, a Non-Directional Beacon (NDB) Hold will be established in the airfield overhead for the use of GA aircraft for both training and whilst awaiting approval to land at the airport. The NDB Hold will only be used by Cat A or Cat B aircraft at a maximum speed of 140 Knots corrected Indicated Air Speed (KIAS). The Hold will be based on the position of the NDB and will consist of a 1-minute racetrack, orientated in alignment with the runway. Figure 4 below shows the 4 possible options for the position of the Hold. The minimum height for aircraft in the Hold would be 2,000 ft. The actual position that the NDB will be located at is still to be determined as part of the airport redevelopment so the tracks of the Hold may vary slightly to those shown below.

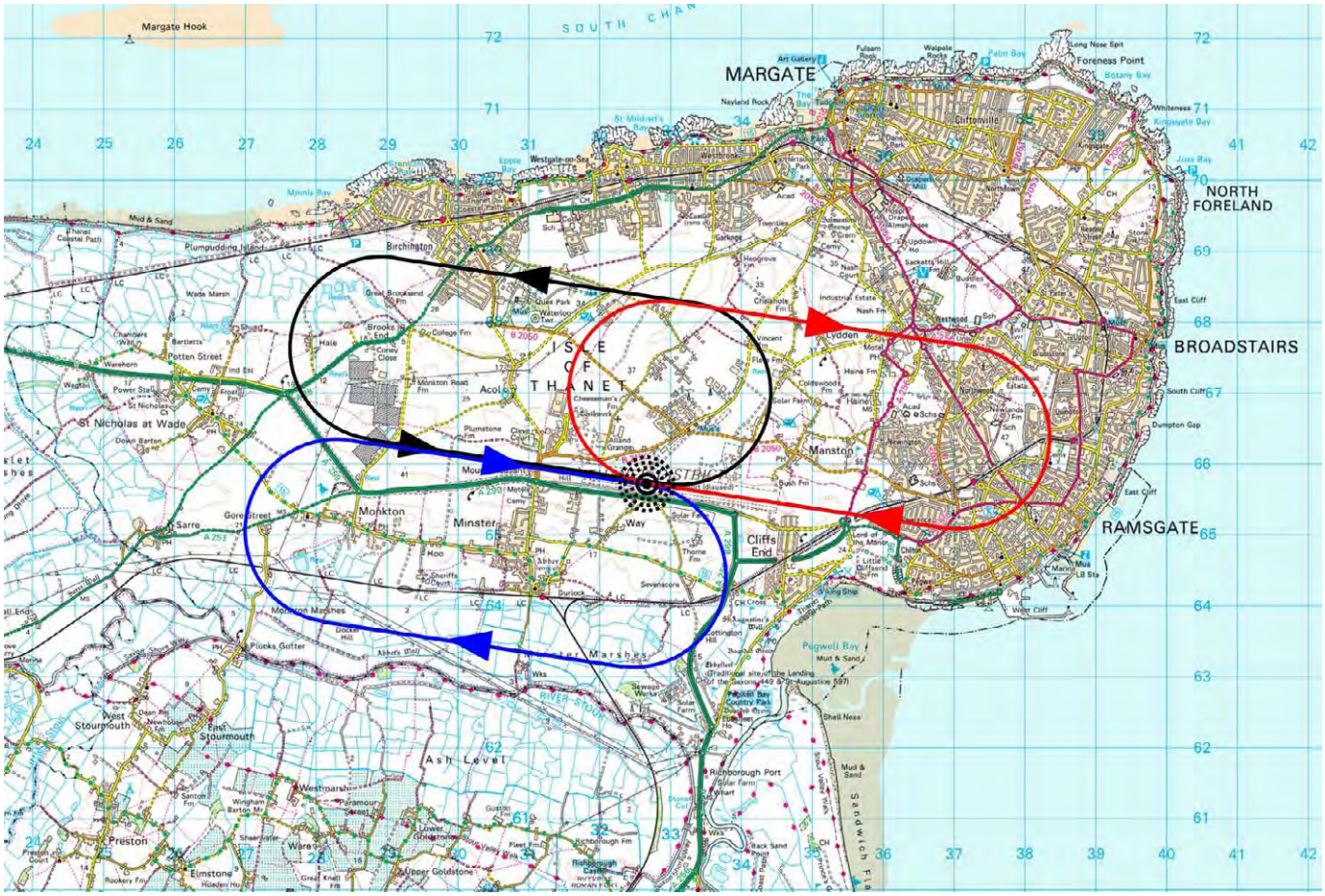

Figure 4 – NDB Hold for General Aviation Aircraft

2.6 Regulated Airspace

As well as IFPs, RSP is planning on introducing an airspace solution that will seek to provide an appropriate degree of protection to enable the safe management of Air Transport Movements in the critical stages of flight; take-off and landing. In order to minimise the impact on other airspace users in the local area, RSP is proposing to introduce an Aerodrome Traffic Zone (ATZ) as the airspace solution.

An ATZ is a fixed area of protected airspace extending around an aerodrome. An ATZ takes on the classification of the airspace within which it is established, which, in the case of Manston Airport, would be Class G uncontrolled airspace. Given the length of the runway at Manston Airport, the ATZ would be a circle extending from the surface to 2,000 ft above ground level (agl) with a radius of 2.5 nm from the midpoint of the runway.

An aircraft must not fly, take off or land within the ATZ unless the commander of the aircraft has obtained the permission of ATC to enable the flight to be conducted safely within the ATZ. Figure 5 and Figure 6 below show the lateral extent of the ATZ.

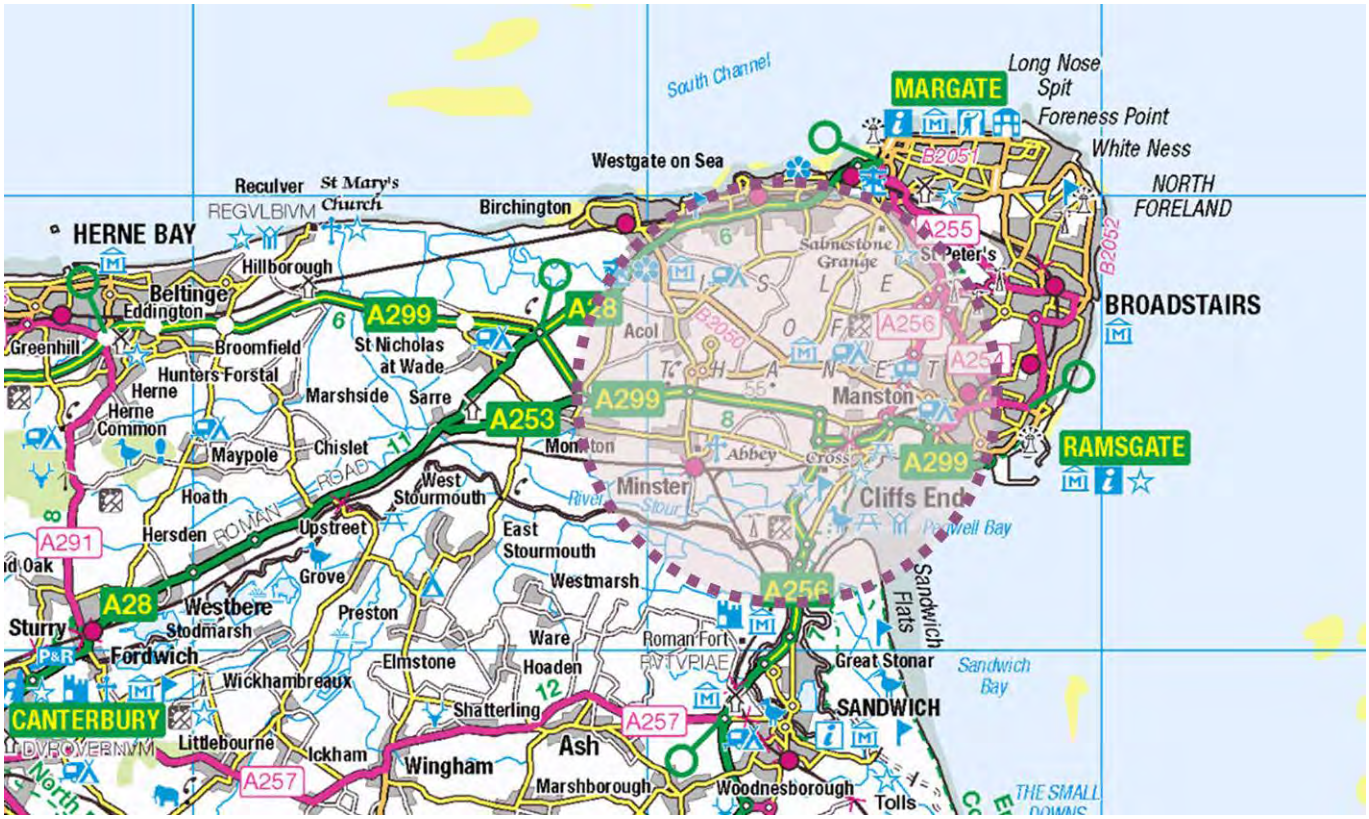

Figure 5 – Manston ATZ (1:250,000 Ordnance Survey Mapping)

Figure 6 – Manston ATZ (NATS 1:500,000 VFR Chart Southern England)

3. The Design Options – Your Input

3.1 Design Options – Your Input

RSP is seeking views from stakeholders on the list of procedure design options described in Section 2 and shown in Appendices A1 to A6.

A series of workshops will be held to give an opportunity to discuss these options with the RSP team. Joining instructions will be provided to invited stakeholders separately by email. Stakeholders unable to attend the workshops are still welcome to provide comments by following the instructions in the section below.

Stakeholders need not feel constrained by the options provided when considering their response. Views could include, but need not be limited to:

- **Preferences where there is more than one option given.**
- **Suggested amendments to the designs shown.**
- **Alternative ideas to those shown.**
- **Any options that stakeholders do not think should be taken forward, with reasons stated.**

3.2 How to Respond

Please send your comments and views via email to the following address:
manstonairspace@communityrelations.co.uk

Please use **'Manston ACP Stage 2'** as your subject line and include your name, contact details and, where relevant, the organisation you represent.

The deadline for responses is **Friday 14th August 2020.**

As described in paragraph 1.7, it is anticipated that the full public consultation will be conducted in 2021 and all participants will have a further opportunity to comment. RSP will ensure any views expressed at this stage will also be recorded and processed through to the full consultation.

A1 Runway 28 Standard Departure Routes

A1.1 Departures to the South

Figure 7 – Runway 28 Departures to the South
(1:250,000 Ordnance Survey Mapping)

Figure 8 – Runway 28 Departures to the South (1:50,000 Ordnance Survey Mapping) with representative minimum along track altitudes

A1.2 Departures to the North

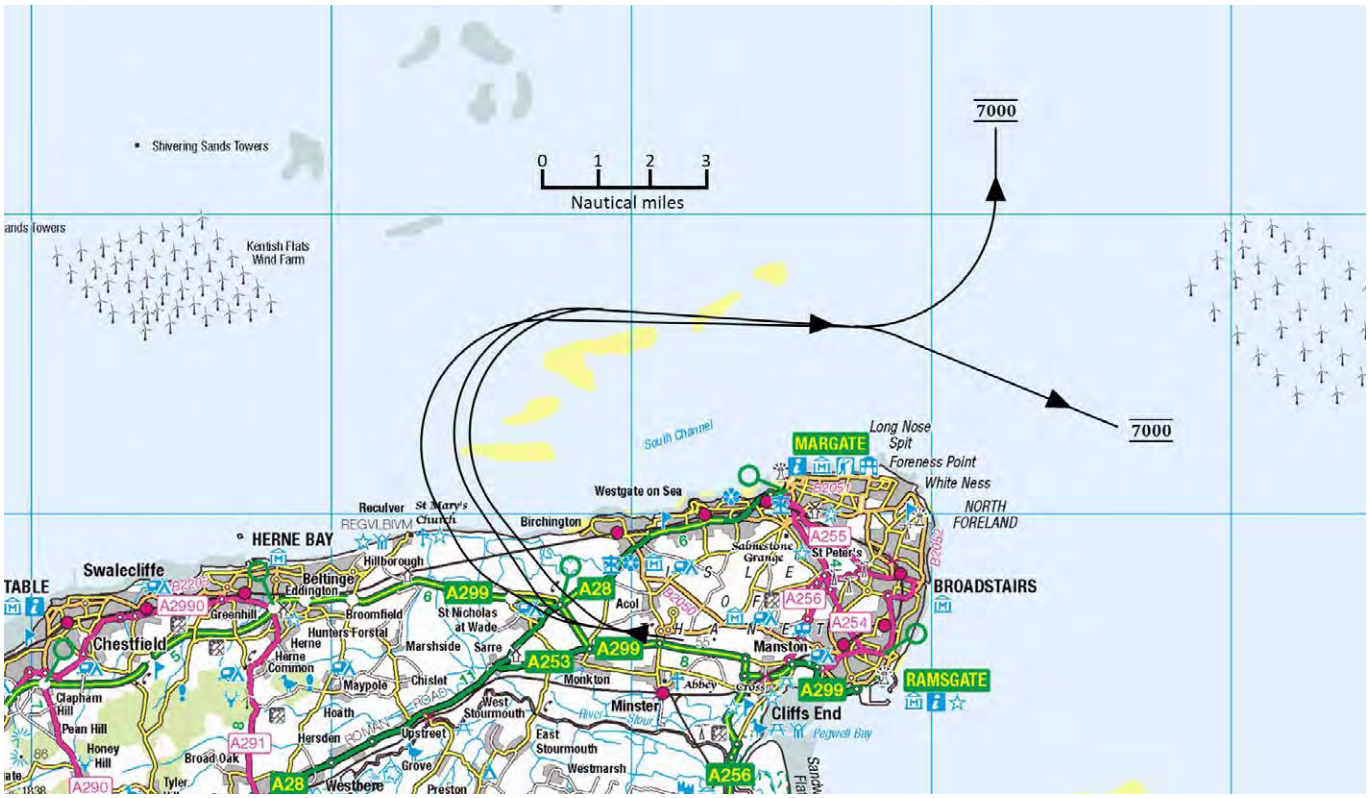

Figure 9 – Runway 28 Departures to the North (1:250,000 Ordnance Survey Mapping)

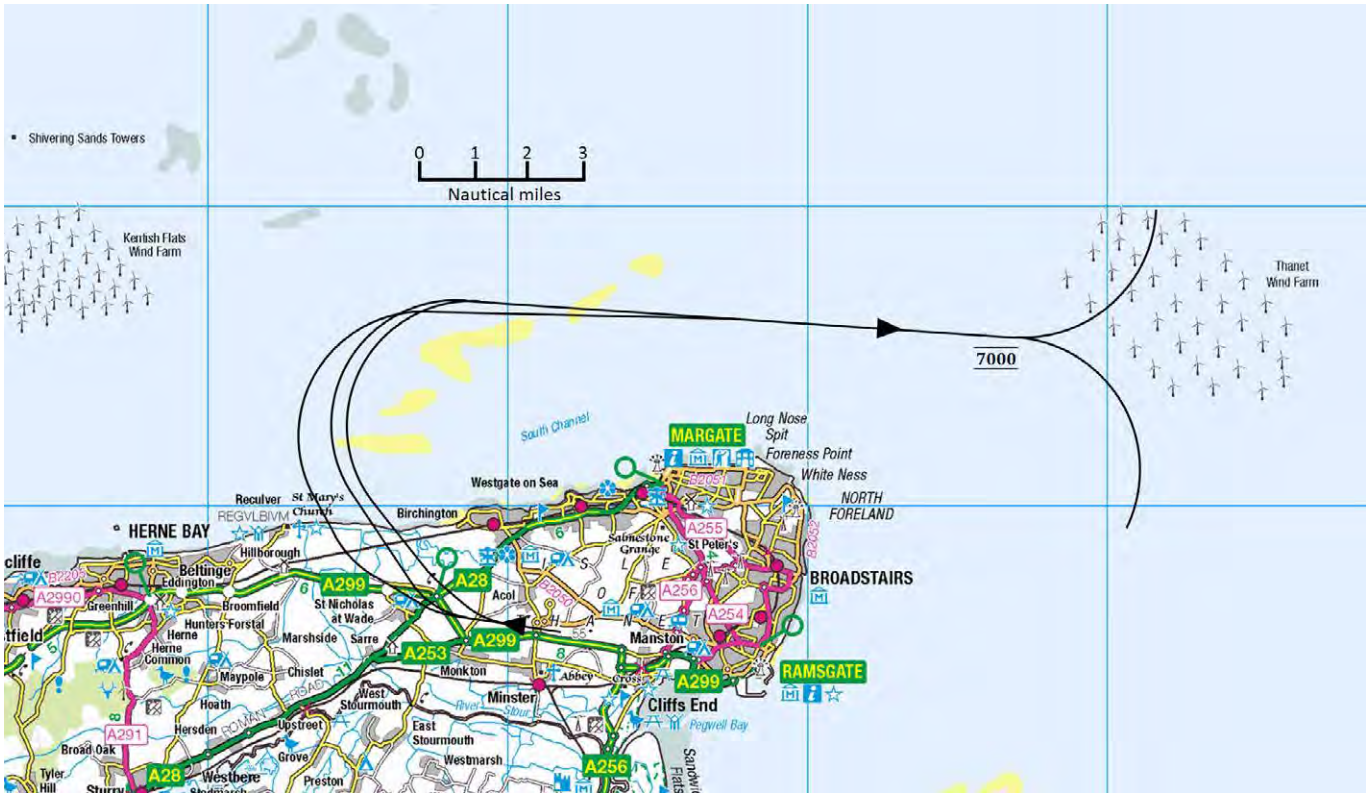

Figure 10 – Runway 28 Departures to the North (1:250,000 Ordnance Survey Mapping)

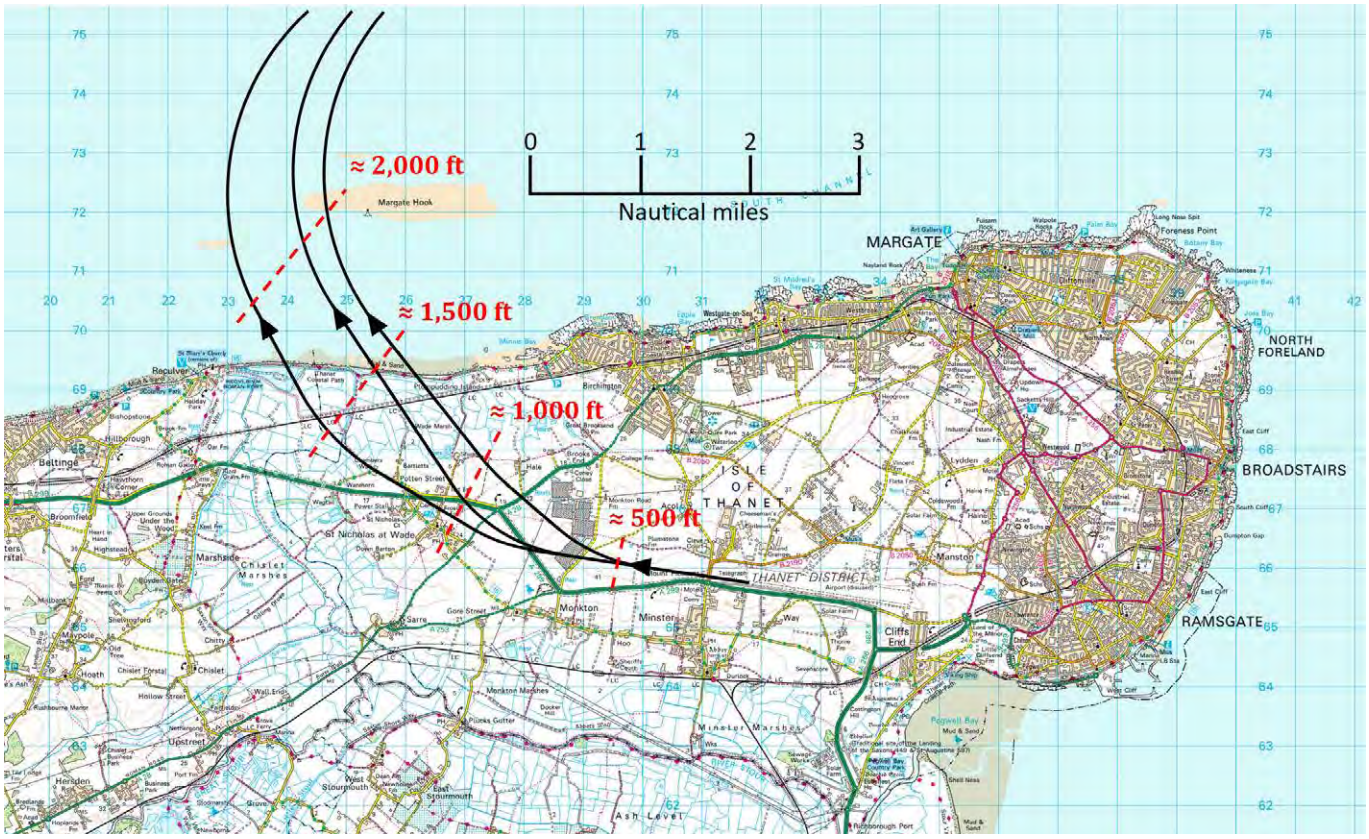

Figure 11 – Runway 28 Departures to the North (1:50,000 Ordnance Survey Mapping) with representative minimum along track altitudes

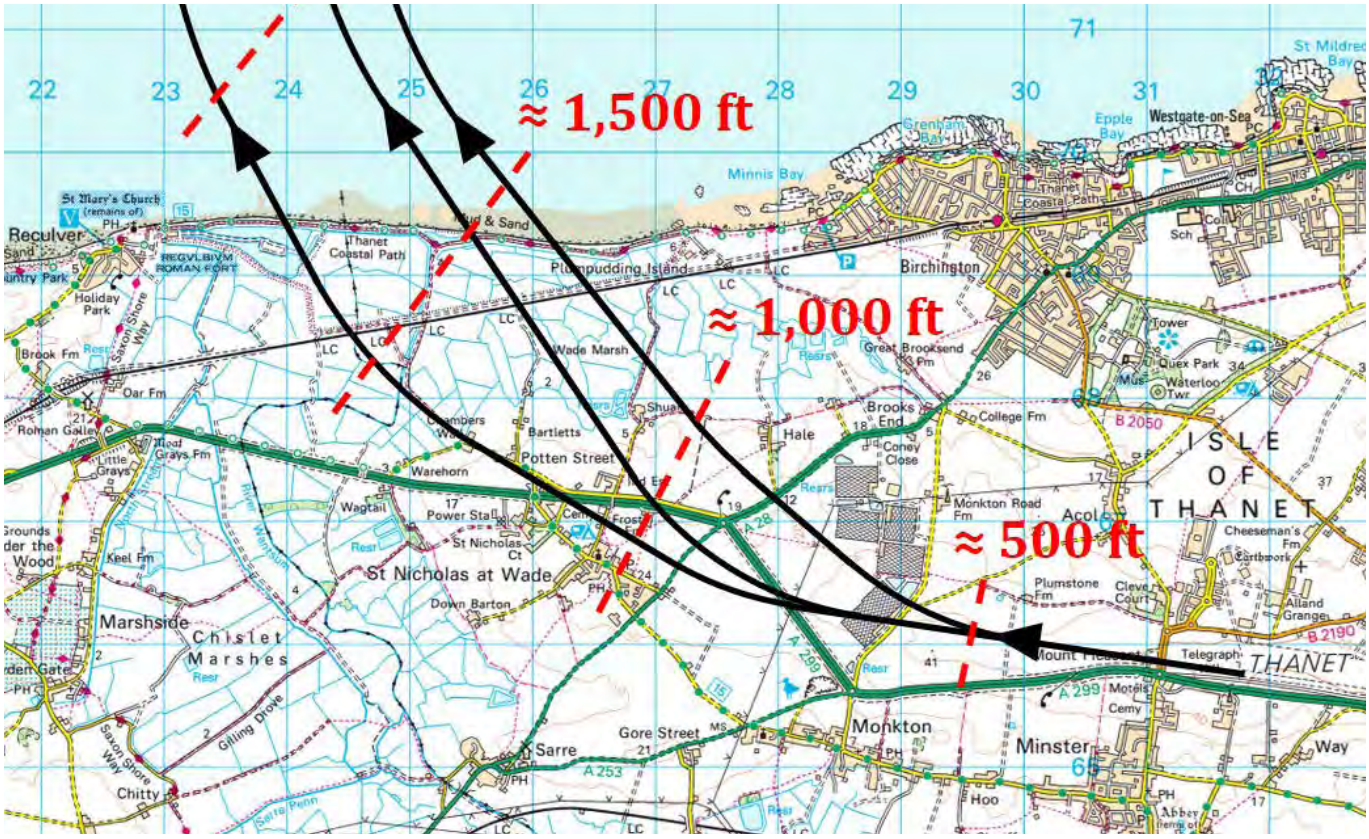

Figure 12 – Runway 28 Departures to the North (1:50,000 Ordnance Survey Mapping) with representative minimum along track altitudes

A2 Runway 10 Standard Departure Routes

A2.1 Runway 10 Departures

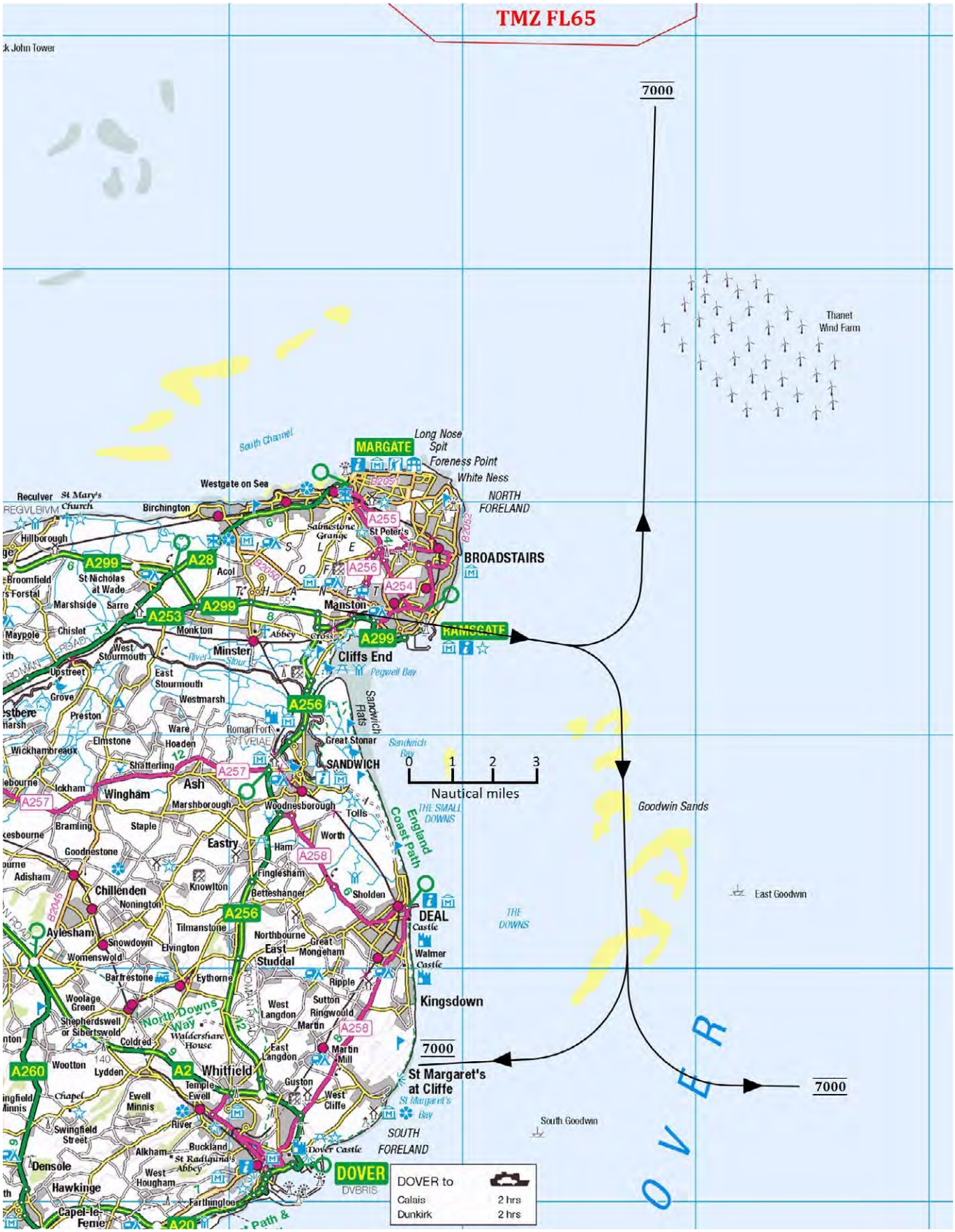

Figure 13 – Runway 10 Departures (1:250,000 Ordnance Survey Mapping)

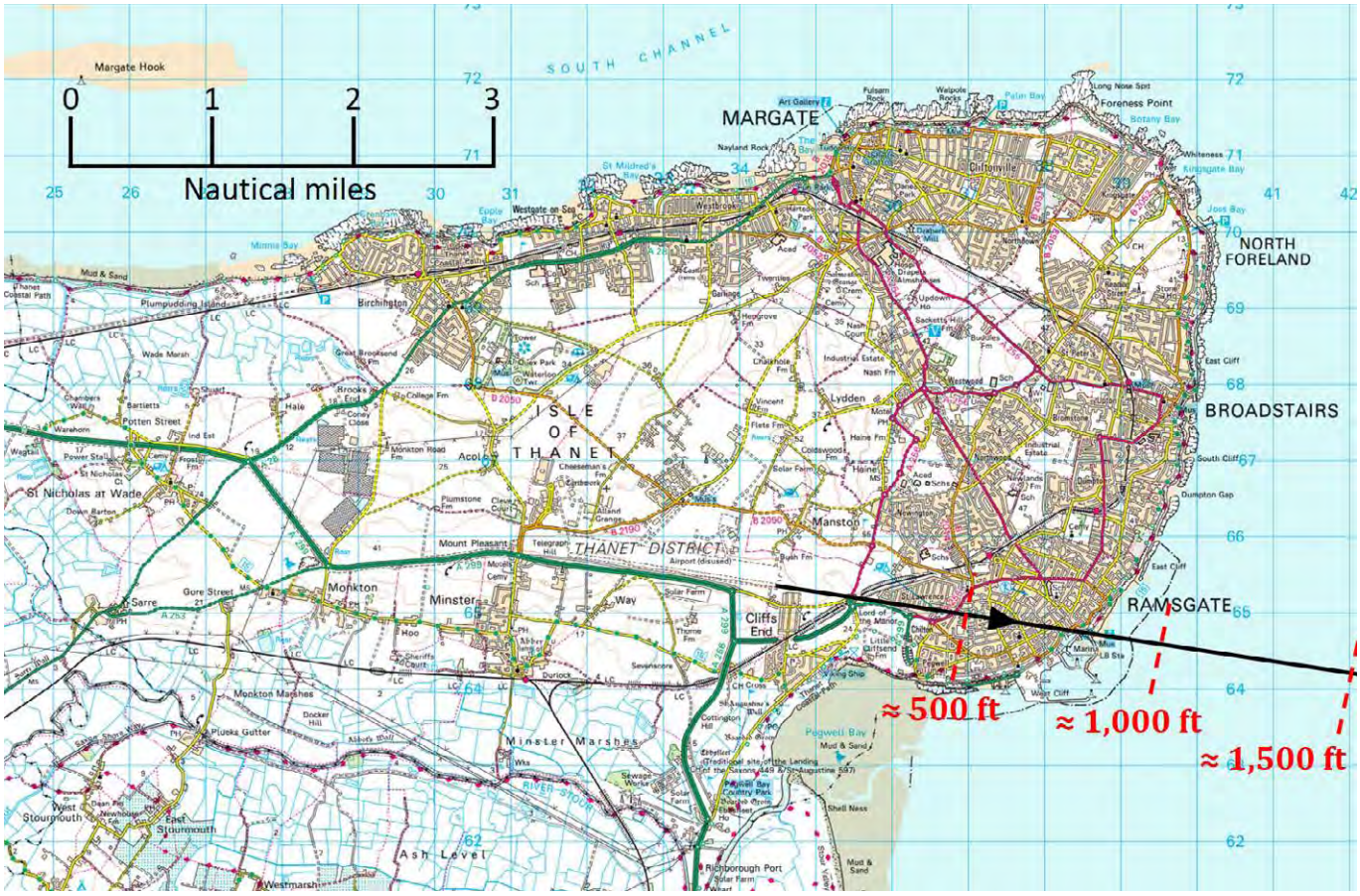

Figure 14 – Runway 10 Departures (1:50,000 Ordnance Survey Mapping) with representative minimum along track altitudes

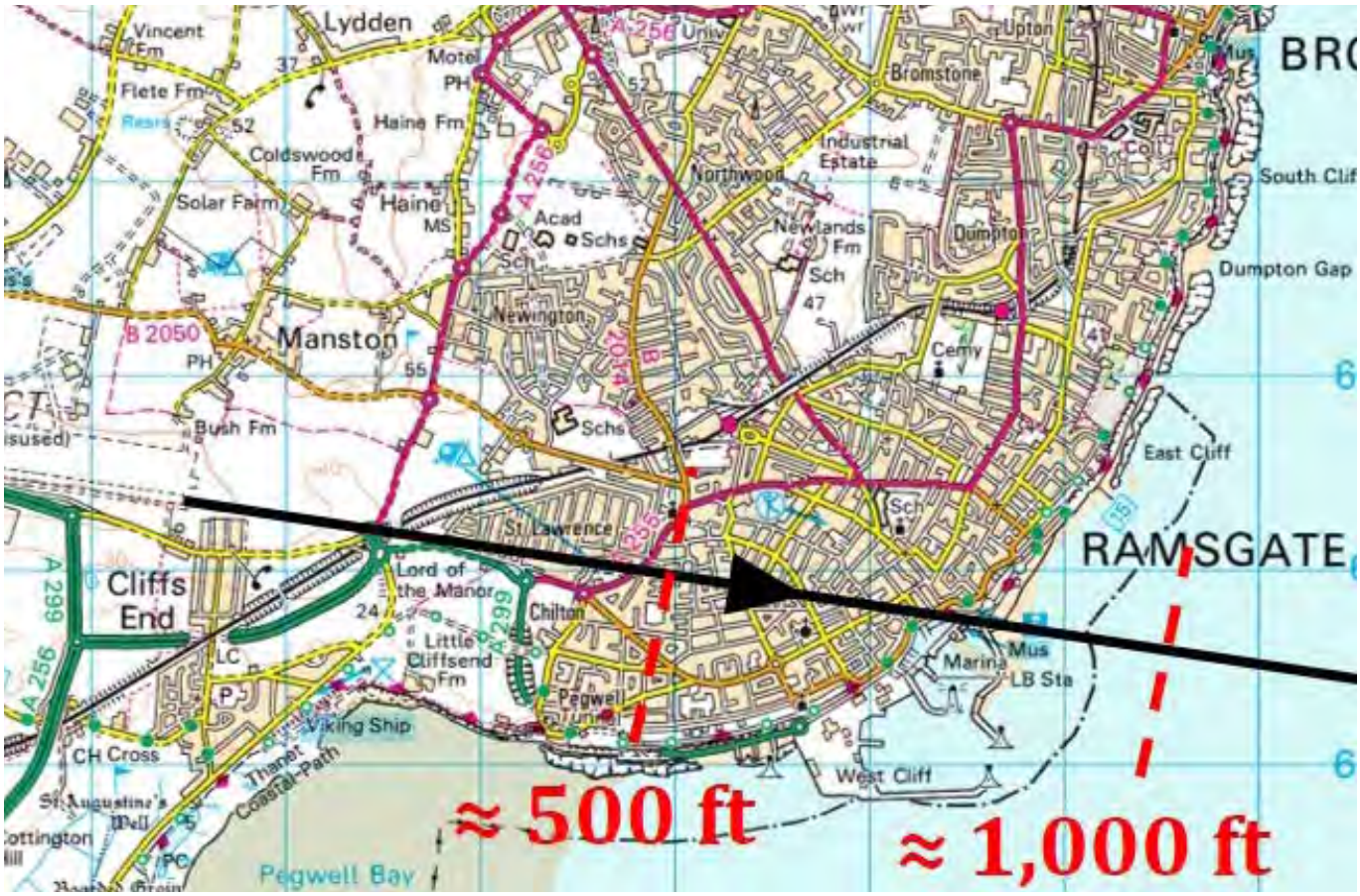

Figure 15 – Runway 10 Departures (1:50,000 Ordnance Survey Mapping) with representative minimum along track altitudes

A3 Runway 28 Approach Procedures

A3.1 Runway 28 Area Navigation (RNAV) and Instrument Landing System (ILS) Approach (2,000 ft Final Approach)

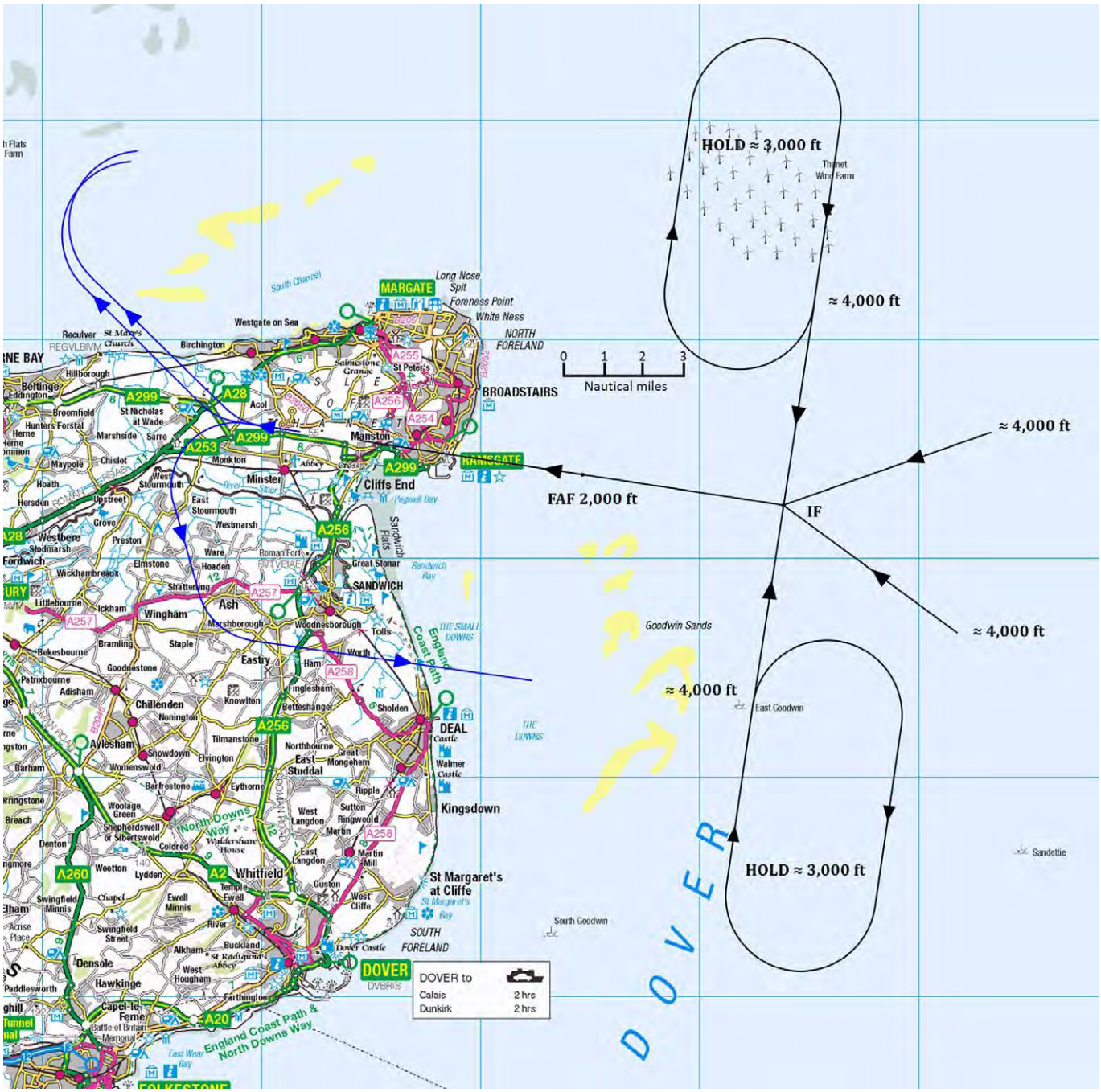

Figure 16 – Runway 28 Approach Procedures (1:250,000 Ordnance Survey Mapping)

Figure 17 – Runway 28 Approach Procedures (1:50,000 Ordnance Survey Mapping) showing the MAP (go-around) tracks overland from a left or right turn at the end of the runway

A4 Runway 10 Approach Procedures

A4.1 Runway 10 Instrument Landing System (ILS) Approach (2,500 ft Final Approach)

Figure 18 – Runway 10 ILS Approach Procedure 2,500 ft Final Approach (1:250,000 Ordnance Survey Mapping)

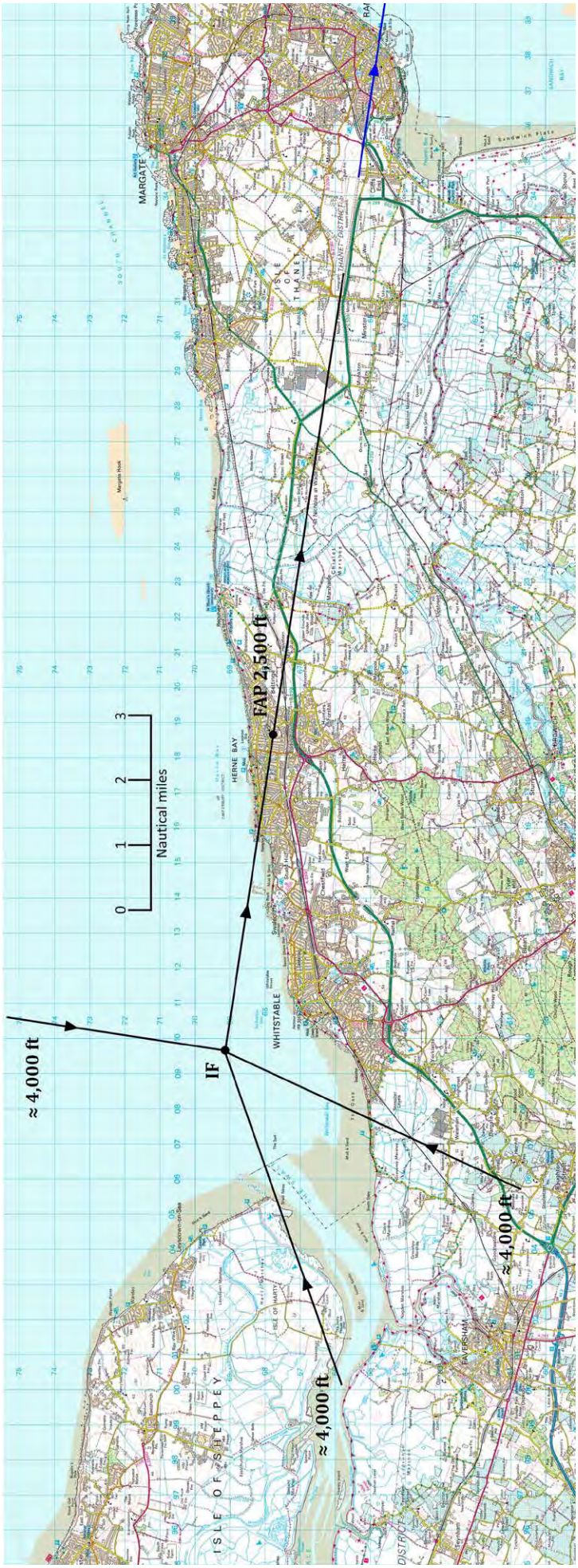

Figure 19 – Runway 10 ILS Approach Procedure 2,500 ft Final Approach (1:50,000 Ordnance Survey Mapping)

A4.2 Runway 10 Instrument Landing System (ILS) Approach (3,000 ft Final Approach)

Figure 20 – Runway 10 ILS Approach Procedure 3,000 ft Final Approach (1:250,000 Ordnance Survey Mapping)

Figure 21 – Runway 10 ILS Approach Procedure 3,000 ft Final Approach
(1:50,000 Ordnance Survey Mapping)

A4.3 Runway 10 Area Navigation (RNAV) Approach (2,500 ft Final Approach)

Figure 22 – Runway 10 RNAV Approach Procedure 2,500 ft Final Approach (1:250,000 Ordnance Survey Mapping)

Figure 23 – Runway 10 RNAV Approach Procedure 2,500 ft Final Approach (1:50,000 Ordnance Survey Mapping)

A4.4 Runway 10 Area Navigation (RNAV) Approach (3,000 ft Final Approach)

Figure 24 – Runway 10 RNAV Approach Procedure 3,000 ft Final Approach (1:250,000 Ordnance Survey Mapping)

Figure 25 – Runway 10 RNAV Approach Procedure 3,000 ft Final Approach (1:50,000 Ordnance Survey Mapping)

A5 Runway 28 Arrival Transitions

A5.1 Runway 28 Arrival Transitions to Approach Procedures

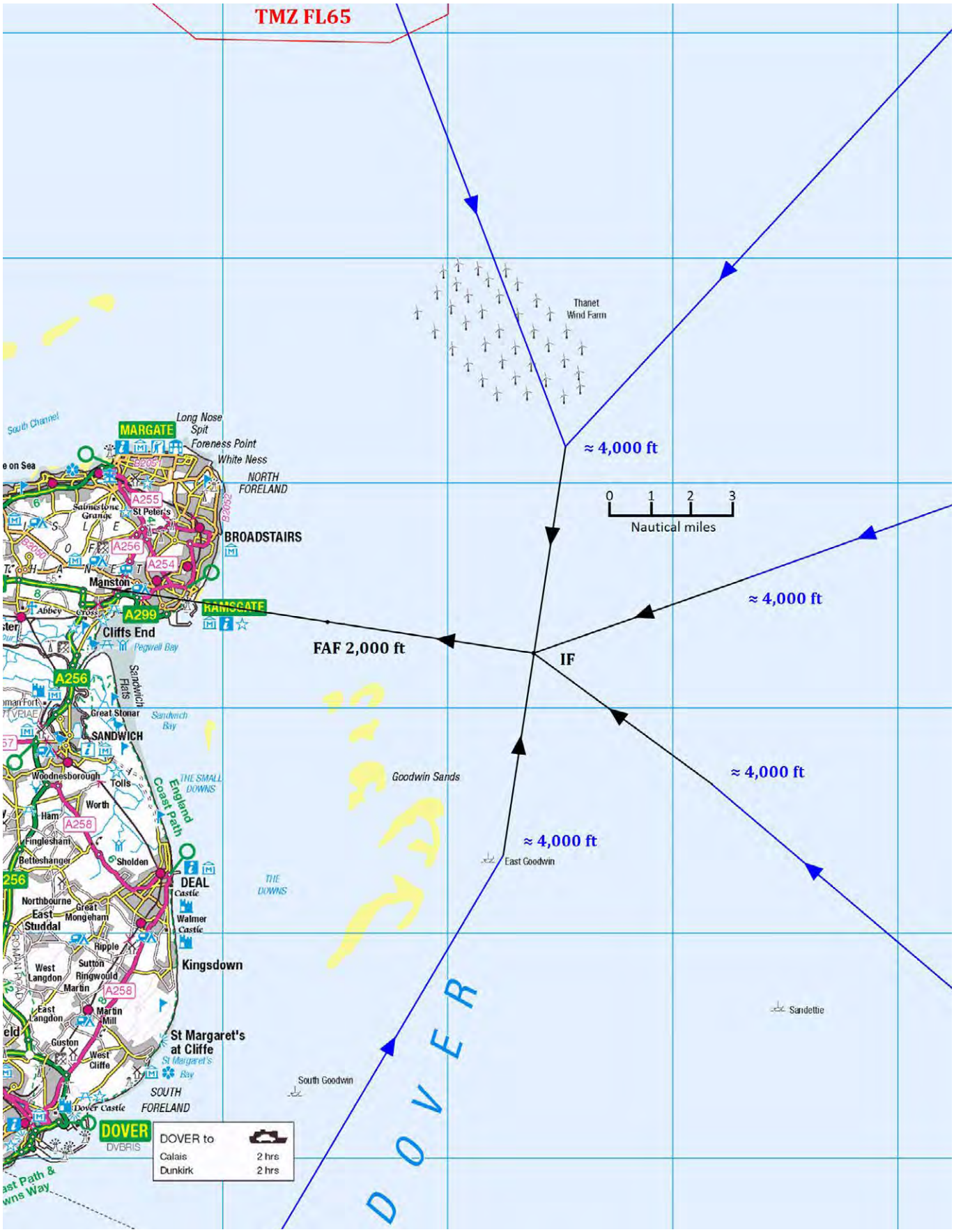

Figure 26 – Runway 28 Arrival Transitions
(1:250,000 Ordnance Survey Mapping)

A6 Runway 10 Arrival Transitions

A6.1 Runway 10 Transitions to Approach Procedures with 2,500 ft Final Approach

Figure 27 – Runway 10 Arrival Transitions 2,500 ft Final Approach (1:250,000 Ordnance Survey Mapping)

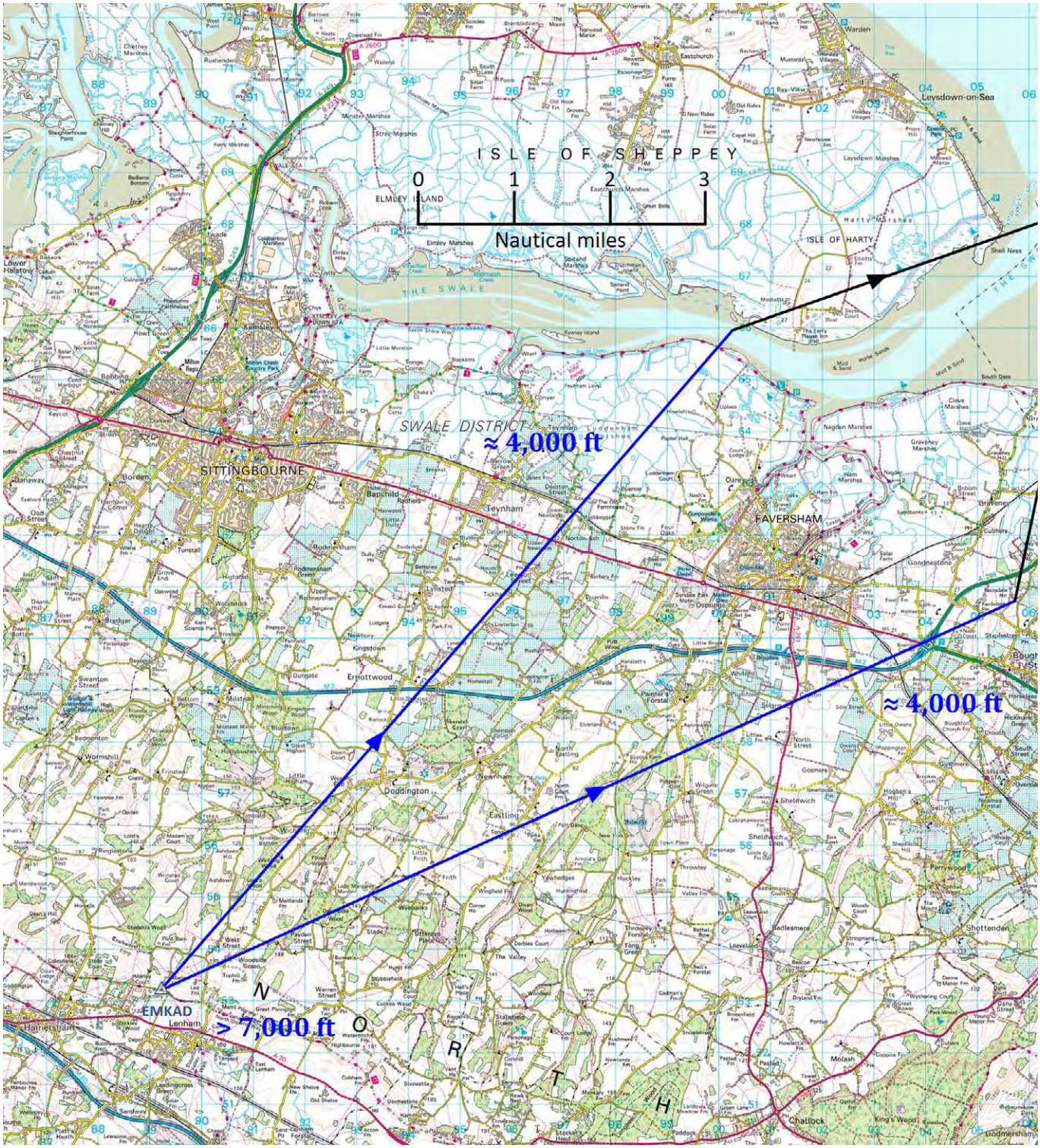

Figure 28 – Runway 10 Arrival Transitions 2,500 ft Final Approach (1:50,000 Ordnance Survey Mapping)

A6.2 Runway 10 Transitions to Approach Procedures with 3,000 ft Final Approach

Figure 29 – Runway 10 Arrival Transitions 3,000 ft Final Approach (1:250,000 Ordnance Survey Mapping)

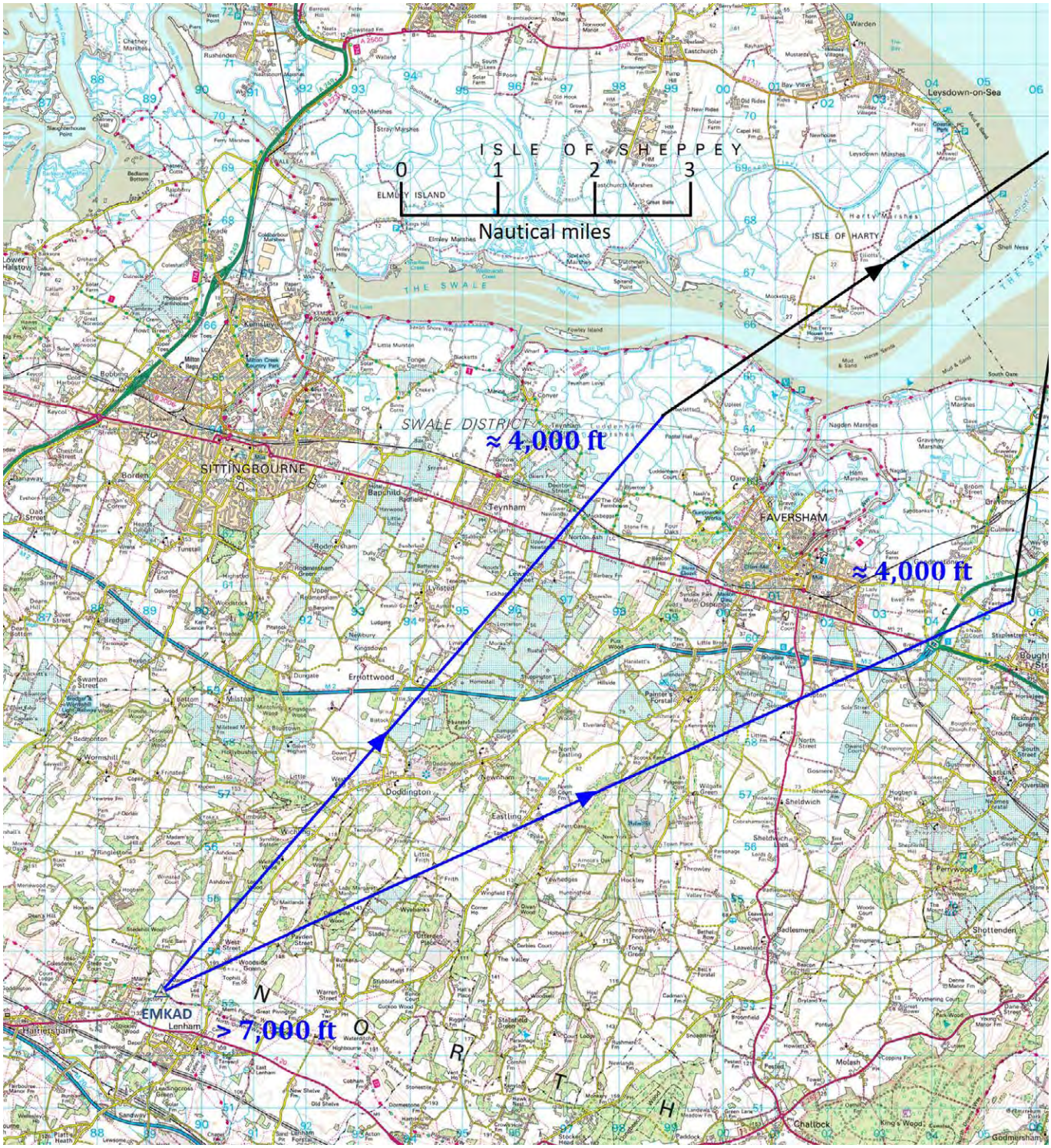

Figure 30 – Runway 10 Arrival Transitions 3,000 ft Final Approach (1:50,000 Ordnance Survey Mapping)

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