



**RAAF BASE TINDAL
PERIMETER SECURITY FENCE
KATHERINE, NORTHERN TERRITORY**

**STATEMENT OF EVIDENCE
TO THE
PARLIAMENTARY STANDING COMMITTEE
ON PUBLIC WORKS**

**DEPARTMENT OF DEFENCE
CANBERRA ACT**
July 2002

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INTRODUCTION

1. RAAF Base Tindal is part of the chain of airfields stretching across northern Australia from Learmonth in Western Australia, to Townsville in North Queensland. It is the home base for No 75 Squadron, a tactical fighter squadron equipped with F/A-18 Hornets. Tindal is also a forward operating base for other defence elements; a staging area for exercises conducted in the area, and is a possible secondary base for the Airborne Early Warning and Control capability.
2. The Base, in conjunction with the Delamere Air Weapons Range located some 150 kilometers to the south-west, is used extensively to exercise deployed Australian and selected overseas air forces. Army elements use the Base as a transit location. The Base is also used as a designated testing and trial ground for RAAF ground defence tactics, techniques, and procedures.
3. As the Base is the home base for a key element of the Australian Defence Force combat inventory, and plays host to a range of visiting capability elements, the security of the assets is a prime consideration for Defence. An integrated security system is therefore essential. One measure that may be adopted to establish such a system is the fencing of the airfield in a manner that may give warning of intrusion in sufficient time for effective response. Smart fencing of RAAF Base Tindal is the focus of this proposal.

OBJECTIVE

4. The objective of this proposal is to provide an alarmed perimeter security fence at RAAF Base Tindal that would enhance the Base security. The proposed works involve the construction of a fence around the Base, including the necessary civil engineering works, and an associated access road.

BACKGROUND

Location

5. RAAF Base Tindal is Commonwealth owned property under the control of the Department of Defence covering an area of approximately 10,400 hectares in the Northern

Territory. The base is located approximately 330 kilometres by road south of Darwin and approximately 10 kilometres south-east of Katherine. The airfield also services the civilian community of Katherine and the surrounding areas on a leased basis with the Department of Defence. The airfield has an emergency role as an alternate civilian aerodrome for international flight operations. The location of RAAF Base Tindal is shown at Attachment 1.

Development History

6. When developed by the US Corps of Engineers and the Civil Construction Corps during World War II, the airfield was known as Carson's Field. It was later renamed "Tindal" in honour of Wing Commander A.R. Tindal, Commanding Officer of the Darwin-based No 24 Squadron, who was killed in action in the first Japanese air raid on Darwin in 1942. No 5 Airfield Construction Squadron RAAF reconstructed Tindal as a bare base between 1963 and 1970.

7. In 1984 a decision was made to develop Tindal into a manned, operational military airfield, as part of a chain of airfields stretching across northern Australia from Learmonth in the west to Townsville in the east. Its role was to provide for air operations to contribute to the defence of approaches to Australia's north and north-west. The first stage of the redevelopment of the Base to provide for the permanent basing of a tactical fighter squadron (No 75 Squadron) with new F/A-18 aircraft was approved in 1984 at a cost of \$167m. These works were the subject of the Parliamentary Standing Committee on Public Works Twelfth Report of 1984 "Development of RAAF Base, Tindal, Northern Territory". Subsequent development of the Base is covered by the following Public Works Committee Reports:

- Tenth Report of 1988 - "Stage 2 Development of RAAF Base, Tindal, NT" at a cost of \$34.9m (plus \$2.75m for housing) where the main investment effort was in additional aircraft pavements, technical and support facilities, and associated engineering services;
- Ninth Report of 1991 - "Stage 3 Development of RAAF Base Tindal, NT" at a cost of \$53.5m where the main investment effort was in aircraft shelters with associated pavements, facilities and engineering services; and
- Third Report of 1996 - "Development of Operational Facilities at RAAF Base Tindal, NT" at a cost of \$31.4m, where the main investment effort was in

maritime patrol facilities, air movements, base command post and contingency accommodation for transiting personnel.

Resident Units

8. The following units are currently positioned at RAAF Base Tindal:
- No 75 Squadron
 - No 44 Wing (Detachment Tindal)
 - No 322 Combat Support Wing
 - No 322 Combat Support Squadron
 - No 1 Combat Logistic Squadron (Detachment A)
 - No 2 Control and Reporting Unit (Detachment Tindal)
 - No 1 Air Terminal Squadron (Detachment Tindal)
 - Delamere Range Facility (Element not resident at Delamere)
 - Air Traffic Control Flight Tindal

GOVERNING CONSIDERATIONS

Master Planning

9. The RAAF Base Tindal Master Plan was prepared to satisfy the future strategic and operational needs of the area, in a manner that would permit the logical and efficient development of facilities. It takes account of the civilian use of the airfield. A perimeter security fence was not envisaged at the time the Master Plan was prepared but its inclusion is in line with the intended security arrangements for the Base. Subject to Parliament's approval to proceed with the works, the fence alignment would be incorporated within the Master Plan.

Defence Policy

10. The Defence White Paper *Defence 2000 – Our Future Defence Force* endorsed the criticality of air operations in defeating attacks in our maritime and air approaches. The White Paper noted *inter alia*:

“8.37 Air combat is the most important single capability for the defence of Australia, because control of the air over our territory and maritime approaches is critical to all other types of operation in the defence of Australia.

8.38 *Australia's air-combat capability is based on our fleet of 71 F/A-18 aircraft...*"

11. RAAF Base Tindal provides a key role in satisfying this requirement. In turn, protection of the F/A-18 assets is critical to the maintenance of the air combat capability. This involves a security system that can provide a deterrent to, and warning of, intruders so that an effective response can be implemented quickly and effectively.

THE REQUIREMENT

The Need

12. Existing security plans would be enhanced through the protection in depth that would be achieved by providing an outer security perimeter to the Base. The extended perimeter created by the proposed fence would be integrated into the existing Base security arrangements and, through its connection to the Base monitoring post, activate a response to intruders before they could reach critical areas within the Base.

Options Considered

13. The following options were considered:

- Option 1 – Retain the current arrangements.
- Option 2 – Upgrade the existing fences.
- Option 3 – Construct a new Passive Perimeter Security Fence.
- Option 4 – Construct a new Active Perimeter Security Fence.

14. **Option One.** This Option would retain the *status quo* with continued reliance upon existing fences as a deterrent and for physical evidence of intrusion. The existing fencing is inadequate in both respects, poorly sited, and not in compliance with Defence security policy. This Option is considered not to be tenable because the level of protection afforded by the existing fences is unacceptable.

15. **Option Two.** This Option would involve upgrading the existing fences. The focus of existing fencing arrangement is protection of key points at periods of raised security. It relies upon the presence of base combatant personnel in defensive positions. The eastern side of the Base does not have adequate coverage and this option would not address fundamental security

deficiencies. Given the operational importance of RAAF Base Tindal, this Option is not considered to provide a satisfactory solution.

16. **Option Three.** This Option involves the construction of a new “Passive” fence. Passive fences rely upon security patrols to physically detect breaches of the security perimeter. Without extended and close surveillance covert security breaches may go undetected and even overt breaches may not be detected in time for an effective response. This Option is not considered to offer an acceptable solution in the context of RAAF Base Tindal.

17. **Option Four.** This option involves the construction of a new “Active” fence. The active fence provides for both detection and communication of contacts along the fence line. The proposed fence would be based on taut wire technology. This type of fence has lower maintenance costs and better false/nuisance alarm performance than options involving sound or infrared detection systems.

Preferred Option and Fence Length

18. Option Four, a taut wire active fence, is the preferred option. The proposed fence alignment is shown at Attachment 2. It would be approximately 18km in length and would meet RAAF ground defence tactical requirements.

Justification

19. The capability of RAAF Base Tindal to conduct its role in peace or war could be seriously degraded by loss or damage arising from sabotage or theft. In addition, injury to personnel entering RAAF controlled areas may give rise to claims if access is inadequately controlled and signposted. The existing fence arrangements do not allow for an effective integration of ground defence tactics for RAAF Base Tindal. Reliance upon the existing protective security regime of intruder detection by security patrols operating without any form of electronic surveillance is considered unacceptable at a major RAAF Base that accommodates a range of high value military assets.

20. To prevent and counter threats associated with sabotage or theft, and to reduce the likelihood of injury, an integrated physical security protection system is required at RAAF

Base Tindal. A component of an integrated protection system is a fence that deters the casual intruder and offers rapid detection of unauthorised access.

21. The proposed fence would be designed and developed against the requirements of the Protective Security Manual, Defence Security Instructions, and RAAF Ground Defence principles. There is currently no fence at RAAF Base Tindal that meets all these requirements. Existing fence lines are limited and incapable of being effectively enhanced to meet ground defence requirements during contingencies.

Description of Proposal

22. The proposed perimeter fence would comprise the following components:

- A chain mesh security fence extending to an overall height of about three metres incorporating a system of taut wire sensors that initiate an electronic signal when touched and a standard cattle fence erected outside the security fence to prevent activation of false alarms by livestock.
- A dry-season maintenance road with a fire break on the outer side of the fence, and an all-weather access road on the inner side of the fence.
- Civil works that would include a number of culverts including one across the major drainage channel to the south of the main runway.
- A computerized control system located within the Base that would be collocated with other Base alarm and control systems to provide for an integrated response.

23. A provisional arrangement of the proposed fence is shown at Attachment 3. The cost estimate for the fence is based upon mechanically rigid, galvanised, mild steel, pipe posts supporting a protected sensor array to which detecting wires are attached. Vegetation would be cleared around the fence alignment. Culverts would be constructed as required and a typical arrangement is shown at Attachment 4. Where the security fence crosses a culvert, its integrity would be maintained through the installation of appropriate security grills. Culverts and grills would be designed so that the natural watercourse would not be impeded.

24. The taut wire system would be monitored by a computerised control system located at the main access gate to the Base. A secondary control system could be located at an alternative location within the Base.

DESIGN CONSIDERATIONS

Design Standards

25. Policy guidance against which the fence design is to conform is contained in the following publications:

- Security of RAAF Bases (DI(AF) OPS 5-22), which addresses principles for fencing of airfields;
- Defence Security Manual (SECMAN 4), which includes stipulations for signage and surveillance;
- RAAF Ground Defence policy (AAP4130.001), which guides the manner in which RAAF ground defence elements operate in protection of bases; and
- Federal Government Security Equipment Catalogue, which identifies endorsed equipment types and technologies, and associated contractors.

26. Where appropriate, the design of the fence would conform to, or be guided by, the relevant sections of the following:

- Building Code of Australia;
- Current Australian Standards and Codes;
- Defence Manual of Fire Protection Engineering (MFPE);
- Environmental Protection Act and regulations;
- Occupational Health and Safety Commonwealth Employment Act.

Design Philosophy

27. The design of the fence, concrete plinths, tracks, and culverts would recognise the constraints of the physical and climatic environments. Long periods of hot and dry weather culminating in flooding rains impose particular design and material solutions on works in the north. Contractors tendering for this project would be required to demonstrate an understanding of, and experience with, the delivering of quality works in a remote tropical environment.

28. The detection system integral to the fence may be solar powered dependent upon the final design solution. The control system itself would be installed in the existing RAAF Police security office at the main gate to the Base. The works required to accommodate the control

system in the RAAF Police facility are expected to be minimal and are covered in the cost estimate for the project. The provision of a secondary control system within the Base, to provide redundancy and improved flexibility, would be further examined as engineering alternatives are developed by the taut wire fence system provider.

Site Selection

29. The alignment of the fence is influenced by Ground Defence tactical considerations, ground conditions, potential environmental impact, and the potential difficulty of construction and maintenance. Four potential alignments ranging in length from the chosen alignment of 17.7 kilometres to 19.4 kilometres were examined. The proposed 17.7 kilometre route is considered to offer the most economic solution without compromising the tactical integrity of the fence system. It is recognised that ground conditions could require some adjustment of the fence alignment during the design stage.

ECONOMIC, ENVIRONMENTAL AND SOCIAL IMPACTS

Cost of Works

30. The budget for the project is \$9.25 million. This provision includes construction costs, environmental costs, preliminaries, professional fees, and a construction contingency but excludes Goods and Services Tax.

Construction Workforce

31. Over the construction period of some nine to twelve months, an average of some 40 personnel may be directly employed on construction activities. Additional effort would be associated with off-site prefabrication and material activity to support the project. The project would not generate any long term or permanent employment.

32. It is anticipated that local contractors would be employed in the civil works, including fence, track and culvert construction, and the associated environmental management works. An endorsed specialist sub-contractor would arrange the installation and testing of the taut wire system and the installation of the specialised control system and software.

Timings

33. Subject to Parliamentary approval, the works are planned to be committed in the second half of 2002 with construction commencing early-2003. Completion of the project would be expected by December 2003.

Environmental Implications

34. An Environment and Cultural Heritage Review was conducted by an external consultant in December 2000. The review found that no areas of National Environmental Significance, as defined within the *Environment Protection and Biodiversity Conservation Act 1999*, would be impacted by the proposed works. The report identifies a number of key areas that would require active environmental management:

- Protection of land and surface water on the site;
- Preservation of natural floral communities;
- Preservation of fauna communities and enhancement of habitat of significance species;
- Fire management;
- Weed control; and
- Drainage

35. The Department of Defence would address all these factors and is engaged in further studies to minimise any adverse effects that could arise from the fence installation.

Heritage Implications

36. The proposed fence would have no impact on the existing European heritage features such as the abandoned Darwin to Larrimah railway corridor.

37. Cavernous areas around Katherine are culturally sensitive to the local traditional owners and there are a number of archaeological sites in the area of RAAF Base Tindal. Several recorded archaeological sites, mostly open artefacts scatters, are located within 50 metres of the proposed fence line, while several rock shelters with rock art and cultural deposits exist further away but still within proximity of the proposed alignment. These have a high level of cultural and scientific significance.

38. An Archaeological Survey of the proposed fence alignment would be conducted prior to the finalisation of the alignment, and a management plan would be prepared through which these cultural issues could be effectively managed. Representation by the Traditional Owners and the Aboriginal Areas Protection Authority would be sought for the survey and in consultation associated with the development of the management plan.

Establishment Population

39. The overall strength of the Base is approximately 700 serving members, with dependents living on base or in Katherine. This proposal would not change the Base population.

CONSULTATION WITH EXTERNAL AUTHORITIES

40. The following external authorities have been or would be consulted:

- NT Department of Industry and Trade;
- NT Department of Planning, Infrastructure and Environment;
- The Municipality of Katherine;
- Environment Australia;
- Environment Protection Agency;
- Australian Heritage Commission;
- Aboriginal Areas Protection Authority;
- Northern Lands Council; and
- The Daguragu Community Government Council.

DELIVERY MECHANISM

41. The project would be delivered using the Design and Construct method. Part of this contract scope necessarily includes the supply and installation of the specialised active fence system, it being sourced from one of the four companies endorsed for such work. The Design and Construct Contractor would manage and deliver all the works.

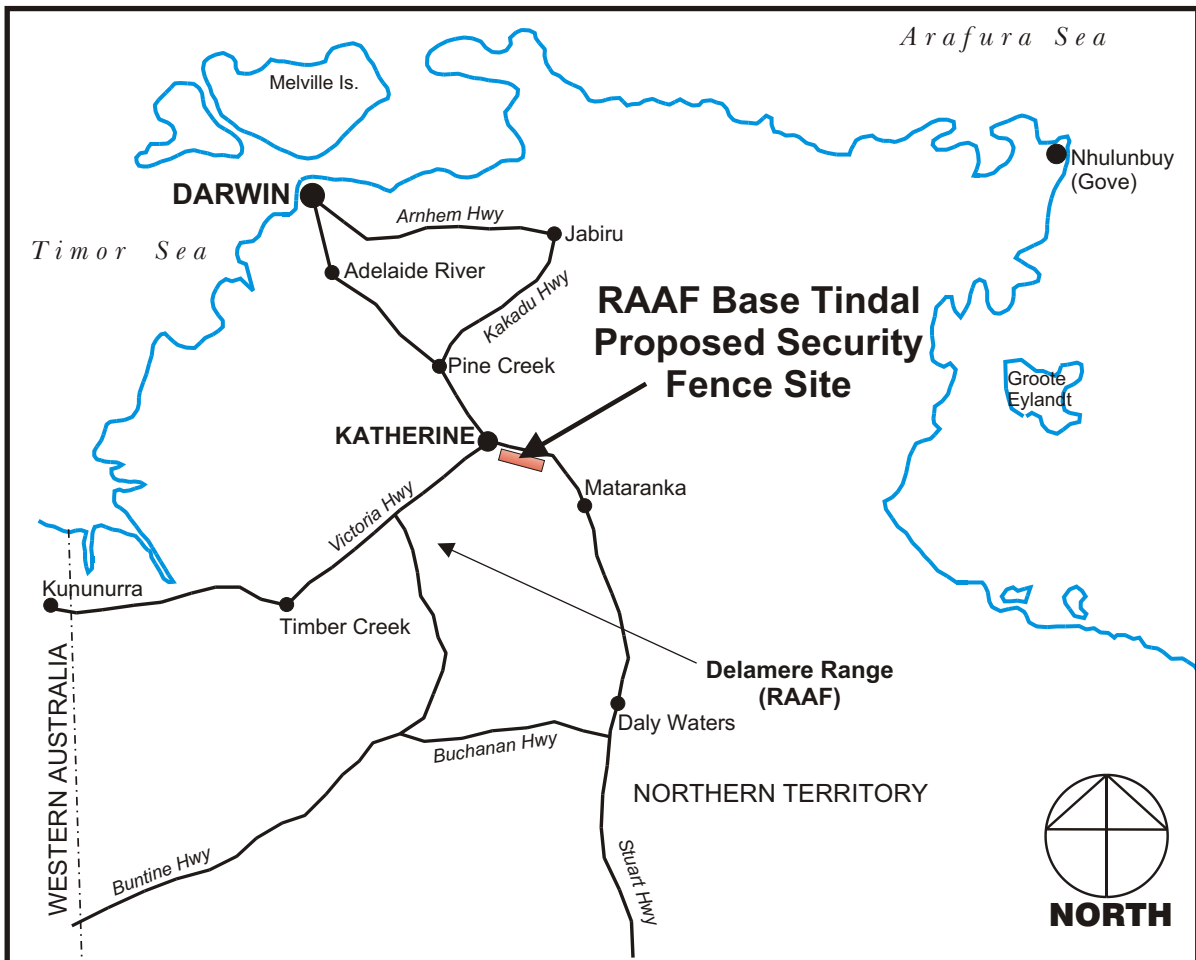
PROPOSED AND OTHER WORKS AT OR NEAR RAAF BASE TINDAL

42. Other works in and near to RAAF Base Tindal comprise the following:

- Recently Completed Works
 - RAAF Base Tindal - Stage 4 (\$31.4m)
 - RAAF Base Tindal - Approach Control Section (\$1.8m)
- Works in Progress
 - Near Delamere Range - Tactical Air Defence Radar site (\$2.1m)
 - RAAF Base Tindal - Junior Ranks Accommodation (\$5.8m)
 - RAAF Base Tindal - Mechanical Target Range (\$3.9m)
- Possible Future Works
 - RAAF Base Tindal - Stage 5: The preliminary scope includes the construction of new kitchens and mess facilities, tanker maintenance facilities and extension to Headquarters buildings.
 - RAAF Base Tindal - Works associated with the Airborne Early Warning and Control Aircraft Project based in RAAF Base Williamtown: Requirement yet to be confirmed and subsequent scope defined.
 - RAAF Base Tindal – Additional Living In Accommodation: Requirement yet to be confirmed and subsequent scope defined.

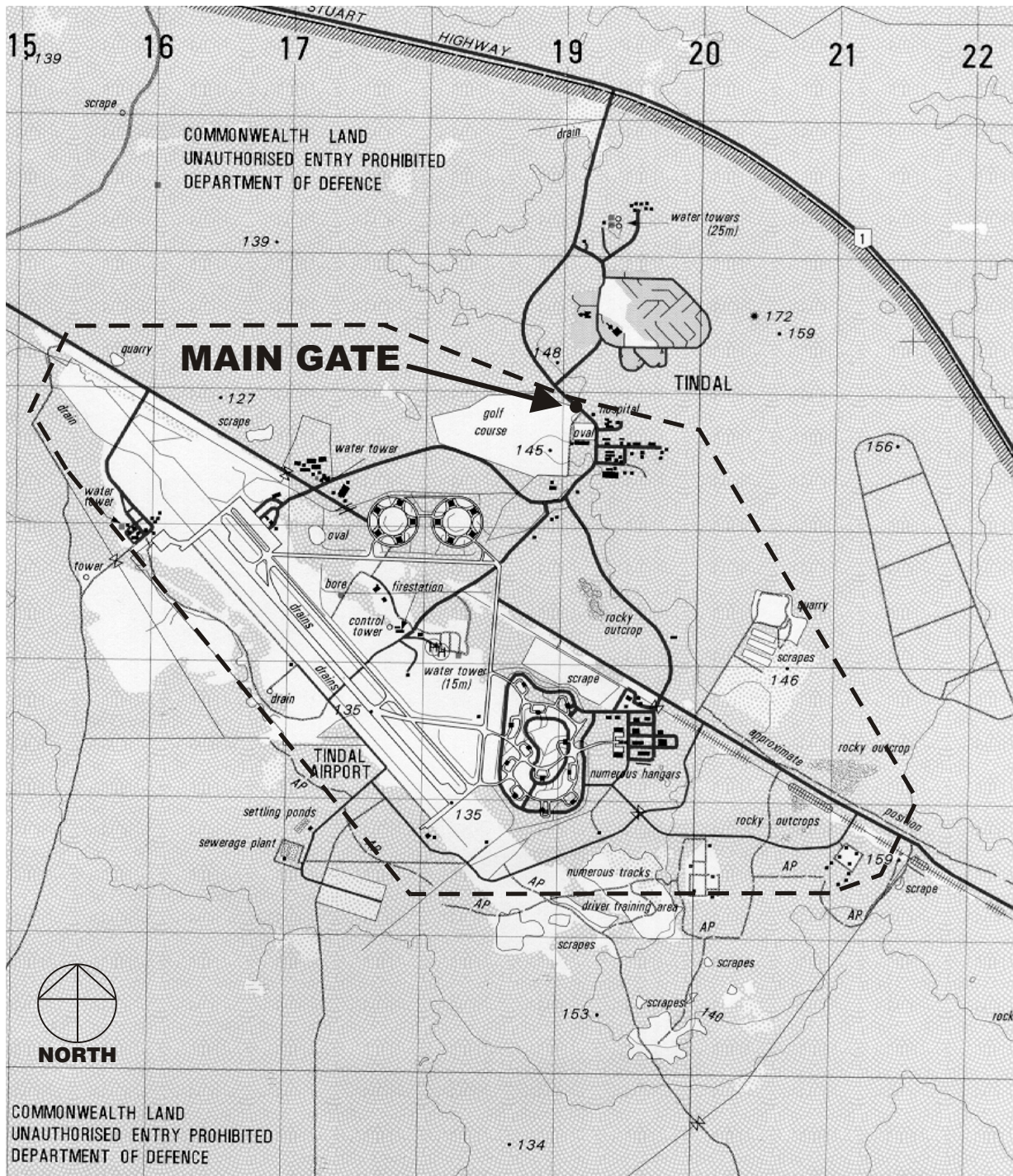
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LOCATION PLAN



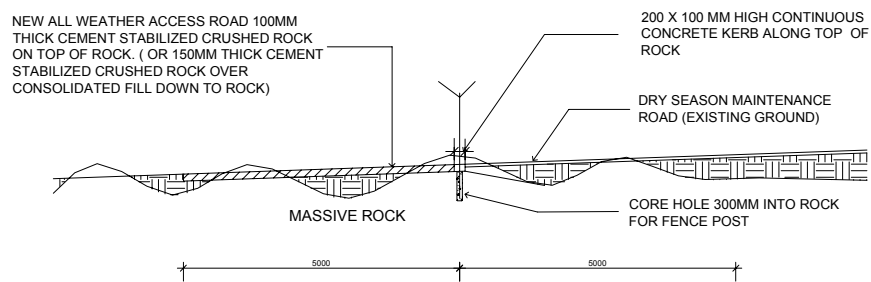
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INDICATIVE SECURITY FENCE ALIGNMENT



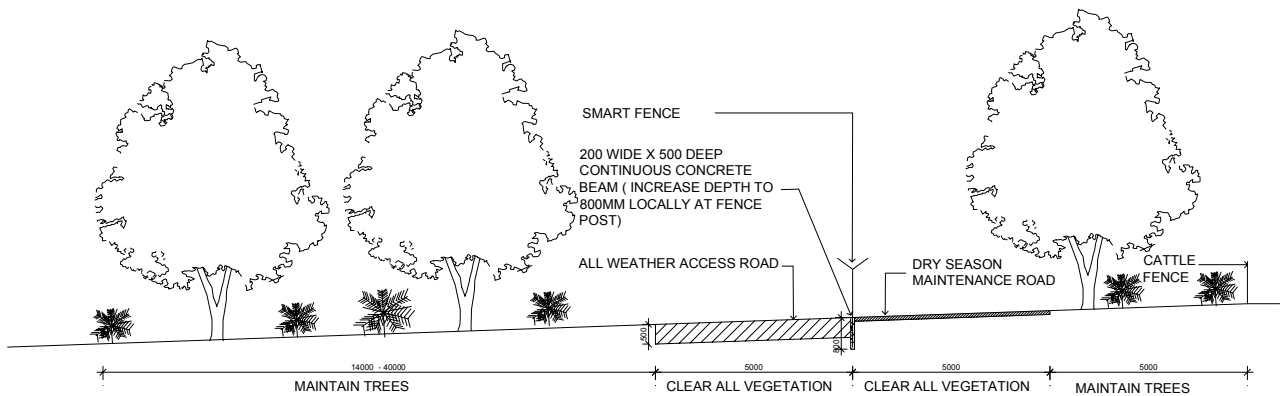
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GENERAL ARRANGEMENT OF PROPOSED SECURITY FENCE



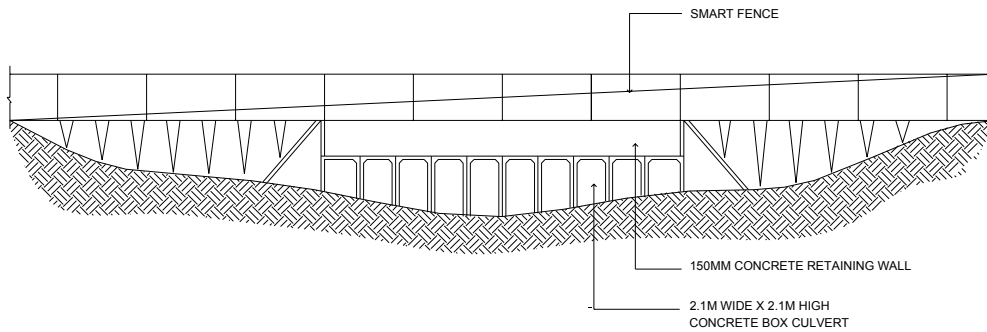
PART ROCK & PART SOIL

(REMOVE ROCK TO 100MM BELOW FINISHED ROAD PROFILE)

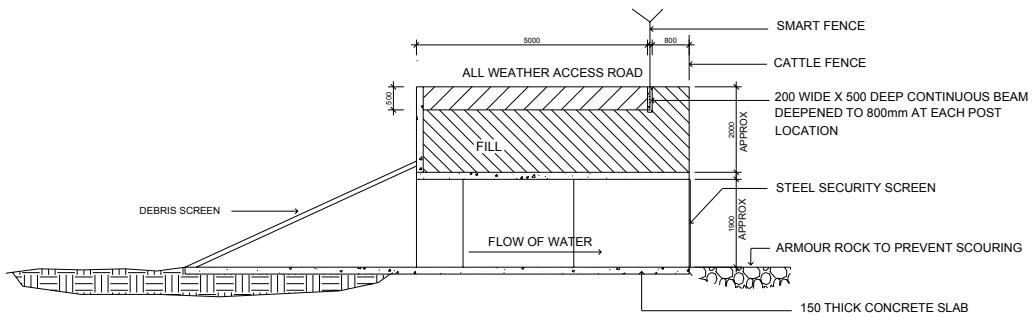


SECTION THROUGH FENCE WITHOUT SURFACE ROCK

GENERAL ARRANGEMENT OF TYPICAL PROPOSED CULVERT



ELEVATION THROUGH MAIN STORMWATER CHANNEL



TYPICAL SECTION THROUGH DRAINAGE CHANNEL