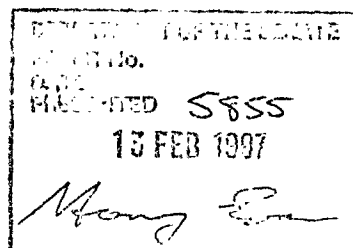


**The Parliament of the Commonwealth of Australia**  
**Parliamentary Standing Committee on Public Works**

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Report relating

to the proposed



**Development of buildings and services  
in support of Department of Defence  
Joint Project 2043, High Frequency  
Modernisation Project**

(Second Report of 1997)



*Parliamentary Standing Committee on Public Works*

## **REPORT**

relating to the proposed

# **DEVELOPMENT OF BUILDINGS AND SERVICES IN SUPPORT OF DEPARTMENT OF DEFENCE JOINT PROJECT 2043, HIGH FREQUENCY MODERNISATION PROJECT**

(Second Report of 1997)

THE PARLIAMENT OF THE COMMONWEALTH OF AUSTRALIA  
1997

The Parliament of the Commonwealth of Australia  
Parliamentary Standing Committee on Public Works

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Report relating

to the proposed

DEPARTMENT OF PUBLIC WORKS
REPORT NO.
CLASS.
REGISTERED 5855
13 FEB 1997
<i>Mary E...</i>

**Development of buildings and services  
in support of Department of Defence  
Joint Project 2043, High Frequency  
Modernisation Project**

(Second Report of 1997)

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ISBN 0 644 49651 7

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**MEMBERS OF THE PARLIAMENTARY STANDING COMMITTEE  
ON PUBLIC WORKS**

(Thirty-Second Committee)

Mr Neil Andrew MP (Chairman)  
Mr Colin Hollis MP (Vice-Chairman)

**Senate**

Senator Paul Calvert  
Senator Alan Ferguson  
Senator Shayne Murphy

**House of Representatives**

Mr Richard Evans MP  
Mr John Forrest MP  
Mr Ted Grace MP  
Mr Michael Hatton MP\*

\* Replaced The Hon Michael Lee MP on 26 June 1996

Committee Secretary: Bjarne Nordin

Inquiry Secretaries: Michael Fetter  
Bronwen Gavin

Secretarial Support: Lynette Sebo

**EXTRACT FROM THE VOTES AND PROCEEDINGS  
OF THE HOUSE OF REPRESENTATIVES**

*No. 37 dated Thursday, 10 October 1996*

**PUBLIC WORKS — PARLIAMENTARY STANDING COMMITTEE —  
REFERENCE OF WORKS — DEVELOPMENT OF BUILDINGS AND  
SERVICES IN SUPPORT OF DEPARTMENT OF DEFENCE JOINT  
PROJECT 2043, HIGH FREQUENCY MODERNISATION PROJECT**

Mr Jull (Minister for Administrative Services), pursuant to notice, moved — That, in accordance with the provisions of the *Public Works Committee Act 1969*, the following proposed works be referred to the Parliamentary Standing Committee on Public Works for consideration and report: Development of buildings and services in support of the Department of Defence Joint Project 2043, High Frequency Modernisation Project.

Question — put and passed.

## **PARLIAMENTARY STANDING COMMITTEE ON PUBLIC WORKS**

### **Development of Buildings and Services in Support of the Department of Defence Joint Project 2043, High Frequency Modernisation Project**

By resolution on 10 October 1996, the House of Representatives referred to the Parliamentary Standing Committee on Public Works for consideration and report to Parliament the proposed development of buildings and services in support of the Department of Defence Joint Project 2043, High Frequency Modernisation Project.

#### **THE REFERENCE**

1. The Department of Defence proposes to redevelop 11 existing Defence communications facilities and to construct new facilities on three greenfield sites. The proposal will provide for the installation of modern, state-of-the-art high frequency radio equipment to satisfy the needs of Army, Navy and Air Force. The development proposal will provide for access roads, security, engineering services and buildings to house the transmitter, receiver and management functions.
2. When referred to the Committee, the estimated cost for building works and services aspects of the program was \$75 million.

#### **THE COMMITTEE'S INVESTIGATION**

3. The Committee received a submission, plans and photographs on the proposal from the Department of Defence. The Committee also received a detailed briefing on 12 September 1996, and took evidence from representatives of Defence at a public hearing in Urana Council Chambers, Urana NSW, on 25 November 1996. A list of witnesses who appeared at the public hearing is at APPENDIX A.
4. Written submissions were received from the:
  - Council of the City of Wagga Wagga;
  - Council of the Shire of Urana;
  - Narrandera Shire Council;
  - Lockhart Shire Council;
  - Environment Protection Agency;

- Australian Heritage Commission;
- Commonwealth Fire Board; and

from private citizens:

- Mr Ron Brons;
- Mr John Bruckner; and
- Mr Michael Coughlan.

5. The Committee inspected the site of the proposed receiver station at Morundah in the Riverina on 25 November 1996. En route to the public hearing, the Committee inspected by air the site proposed for the transmitter station at Lyndoch. On 24 October 1996, as part of the Committee's inspection of the Townsville Field Training Area, the Committee inspected by air the site at Speed Creek, proposed for the receiver station.

6. The Committee's proceedings will be printed as Minutes of Evidence.

## BACKGROUND

### Defence Policy - Communications

7. In 1987, the Minister for Defence tabled in Parliament the policy information paper *The Defence of Australia, 1987* which became the basis for future Defence planning. The policy required emphasis to be placed on Defence development across the north of Australia. The 1994 Defence White Paper, *Defending Australia*, reinforced this policy. The present Government has emphasised the need for Australia's continued Defence self reliance and enhanced operational effectiveness, including the Defence of Australia's northern approaches and land area.

8. The ADF's capability to intercept and defeat invasions into northern Australia and to maintain surveillance of Australia's northern approaches is based on the timely and integrated employment of land, sea and air forces. Quality Australian-owned communications resources, capable of secure data and voice links between force elements, are critical to the effective conduct of operations.

9. Since the Second World War, Defence high frequency communications have traditionally been managed by the single services to meet their own requirements. The Navy currently operates five communications stations around Australia located at Darwin, Cairns, Sydney, Fremantle and Canberra. The RAAF operates four existing communications stations around Australia located at

Darwin, Townsville, Perth and Sydney. Since the early 1990s, the Army has used the RAAF high frequency communications network to support land force operations.

## THE NEED

### Equipment and Encroachment

10. The need for the modernisation of the Defence high frequency communications network is a consequence of two major factors:

- high frequency radio is the primary long-range communications capability of the ADF. Current communications equipment is outdated technology which, Defence advised the Committee, is not capable of providing real-time tactical, strategic and secure data and voice communications. Facilities housing the equipment are also ageing; and
- a significant number of existing Navy and RAAF high frequency facilities are coming under increasing urban encroachment and development pressures. The pressures apply particularly to the capabilities of receiver stations, which are being degraded by electromagnetic interference from surrounding areas.

### The Project

11. Studies conducted by Defence in 1994, confirmed that fixed network high frequency communications requirements could be fulfilled by the provision of four nodes, each comprising a transmitter, receiver and local management facility. The studies also confirmed that land in the Riverina, previously acquired by Defence for a naval communications project, would be suitable as one of the four nodes.

12. Identification of suitable sites for the remaining three nodes followed detailed examination of 70 possible sites throughout Australia. Factors taken into account in the site selection process included:

- re-use of existing buildings;
- suitability and availability of adequate land; and
- environmental impact.

13. The investigation concluded that Defence-owned properties near Townsville, Darwin and North West Cape would meet requirements.



## **New Capital Equipment Project**

14. The studies and investigations resulted in the development of *Joint Project 2043*, which is an approved capital equipment project, estimated to cost \$505 million.

### **The Network**

15. The proposed high frequency communications fixed network will consist of a number of elements located around Australia. The elements include four nodes located in the Riverina, Townsville, Darwin and North West Cape regions, and a primary and secondary national management facility located in Canberra. Each node consists of a transmitter station, receiver station and local management facility. The transmitter station and receiver station will be operated remotely from the local management facility, with access normally only required by maintenance and technical staff.

16. Substantial areas of land designated for use as sites or buffer/safety zones around the sites will continue to be available for traditional purposes, including grazing and cropping under lease-back arrangements.

### **Transmitter Stations**

17. A transmitter station will be located at each of the four nodes. The facility will consist of a transmitter building surrounded by a hardstand area and enclosed within a security fence. The building will accommodate transmitter equipment and storage rooms with workshops and limited office and amenities to support occasional occupation by maintenance and technical staff. Emergency generators will be provided with associated fuel holdings to ensure that the transmitter station can continue to operate should the mains power supply be interrupted. Water tanks and septic sewage systems will also be provided. Antennas will be positioned at various locations around the transmitter building.

### **Receiver Stations**

18. A receiver station will be located at each of the four nodes and is similar in general layout and facility to the transmitter station with a receiver building and associated antenna farm, but will require less power.

### **Local Management Facilities**

19. The local management facility for each node provides a secure environment for the management and control of communications passing through that node. Local management facilities will be located at existing Defence communications facilities. Establishment of the local management facilities will involve the

refurbishment of existing facilities. Typically, a local management facility will contain equipment and storage space, a control room and office facilities for operators and maintenance/technical personnel.

### **Network Management Facility**

20. The national management facility is the control centre of the high frequency communications system fixed network. The primary national management facility will be constructed within the existing secure communications area at *HMAS Harman*, which is located in Canberra and will house dedicated signals processing and routing systems, supporting operational areas, training facilities and amenities areas. Backup equipment will be installed in another existing Defence facility in Canberra to provide the secondary national management facility for the system.

### **Inter-node Links**

21. Compatible communications links exist in most areas although some extension of existing networks may be required. Inter-node links will be provided by common carriers.

### **Inter-site Links**

22. Inter-site links between the transmitter station, receiver station and local management facility at each node will be provided by underground fibre optic cable and/or microwave transmission. Many of these links already exist, but new ones will be required in the Riverina and, to some extent, at the Townsville and North West Cape nodes.

### **Security of System**

23. The Committee questioned the integrity of the network should one or two nodes become inoperable. Defence assured the Committee that a loss of two nodes would not cut off all communications. Although the range of the communications field would be less, the system could effectively operate with less than the four communications nodes.

### **Defence Satellite**

24. The Committee raised the possibility of Defence launching a satellite specifically for its own communications needs. The Committee also questioned whether satellite or other technology would soon supercede the proposed high frequency communications network.

25. Defence responded that it is currently undertaking a study into the feasibility of using satellite communications. The options range from leasing a commercially-owned satellite to launching a Defence-specific military satellite. Defence envisages that if a communications satellite were to be used, it would be in conjunction with, not superceding, the high frequency network. This would bolster Defence's communications network and avoid the risk of losing communications with Defence forces, if a satellite or the high frequency nodes were eliminated.

26. In summary, Defence is embarking on a significant investment to implement a national modernised high frequency communications network. The benefits of the modernised network include an improvement in existing Defence communications, long-term staff efficiencies, re-use or sale of nine redundant communications sites and operational cost savings.

#### **Committee's Conclusions**

27. **The Defence high frequency communications network is being modernised at a cost of \$505 million.**

28. **The modernisation will consist of four communications nodes, each comprising a transmitter station, receiver station and local management facility. There will also be a primary and secondary national management facility.**

29. **The communications nodes will be located in the Riverina, Townsville, North West Cape and Darwin.**

30. **Existing facilities are aged and need refurbishment and, at two nodes, new facilities are required.**

#### **THE PROPOSAL**

##### **Re-use of Buildings**

31. The extent of re-use of existing Defence facilities varies between nodes. In each case the features described in the previous section will be present, although the layout of each facility may vary slightly to allow maximum reuse of existing facilities or to allow the integration of different equipment types.

##### **Riverina**

32. Both the transmitter station and receiver station will be constructed on greenfield sites on Defence owned property. Accommodation for the local management facility will be provided by an extension to the existing

communications centre at RAAF Base Wagga. The transmitter station is located south of the Sturt Highway between Galore and Collingullie, near Lyndoch. The receiver station is located to the south-east of Morundah, approximately 50 kilometres to the west of the transmitter station.

##### **Townsville**

33. The transmitter station is located approximately five kilometres to the west of the airport on an existing high frequency communications transmitter station at Bohle River. The existing transmitter building will be refurbished to accommodate the new high frequency equipment. The existing antenna farm will be replaced in the same location. The receiver station will be constructed on a greenfield site located on Defence property within the Townsville Field Training Area. The location of the receiver station within the Townsville Field Training Area was established in consultation with Army and will not affect or be affected by the Training Area operations. The local management facility will be located within refurbished accommodation in the existing communications centre at RAAF Base Townsville.

##### **Darwin**

34. The transmitter station will be located on an existing Navy communications station at Humpty Doo, west of the Adelaide River. The existing transmitter building will be refurbished to accommodate project requirements. The receiver station will be located at Shoal Bay, an existing receiver station for Navy communications. The local management facility will be located within a refurbished area of the existing communications centre at *HMAS Coonawarra*.

##### **North West Cape**

35. The existing transmitter building, located on Defence property at the Harold E Holt Navy Communications Station, will be refurbished. The receiver station will be located to the south of the Learmonth airfield on existing Defence property. The local management facility equipment and operators' consoles will be accommodated within the existing communications centre at Harold E Holt, while the local management facility office space and maintenance functions will be located in the refurbished transmitter station building.

##### **Building Works**

36. The building works and services required for this project form approximately 15% of the total project cost. The facilities will be designed to meet operational requirements and consequently will vary, depending on each equipment solution tendered.

37. A turnkey approach to the project results in the building works and services being provided as part of the equipment contract, thus ensuring that they are compatible with the equipment requirements and are part of a competitive tendering process to ensure value for money. The contractors responsibilities in this turnkey project approach will include the management and maintenance of the fixed network.

38. The Committee sought an assurance from Defence that this turnkey project would not follow the same path as another Defence turnkey project - Jindalee Over the Horizon Radar Network (JORN) - works elements for which were examined and reported on by the Committee in 1990 (*Committee's Twelfth Report of 1990 - Parliamentary Paper 380/1990*).

39. The JORN project received a highly negative report from the Auditor General.

40. A senior Defence official advised the Committee in the following terms:

I think there is a significant difference between this project and the Jindalee project. Essentially, the technology that we are using to provide this network is technology that exists today. Therefore, we are not in the business of developing a new system at the leading edge of technology, involving lots and lots of signal processing that was involved in JORN. That is probably the essential difference. JORN was a developmental project; whereas in this project we are just taking existing technology and hooking it together in a way that is well known. So I do not see the same sort of risks that are involved in the implementation of this project as against JORN. (Transcript, p. 34)

41. Asked what lessons were learnt from JORN and how they will be reflected in this project, the same official advised:

The contractual arrangements that we propose incorporate the recommendations that were felt to be weak in the JORN contract. For example, we will be applying a cost schedule control system so that we do not get the payments ahead of the actual achievements. We also have a maintenance contract backing onto this contract so that we will have a very good idea of the actual life cycle costs. We will be signing two contracts at the same time, one is an implementation contract and the other is a support contract.

We will know what we are up for in terms of ongoing support costs. We have certainly learned from the JORN contract and will be incorporating those lessons in this contract. I believe we should have a better run than with JORN. (Transcript, p. 35)

#### Committee's Conclusions

42. Facilities to house the high frequency equipment will be located on existing Defence properties and properties acquired for radio communications purposes. All are in areas which Defence believes are free of electromagnetic interference and have sufficient buffer zones to protect them from urban encroachment.

43. The extent of the proposed work will entail the construction of new facilities for the Riverina transmitter and receiver on sites which Defence believes are suitable. Elsewhere, the proposal will make good use of existing facilities, which will need to be modified. The scope of the proposed work can therefore be justified.

#### CONSTRUCTION

##### Design Standards and Codes

44. The design of the proposed building works and services will conform to the relevant sections of the following recognised requirements:

- current Australian Standards and codes, including the Building Code of Australia (BCA);
- local, State and Commonwealth environmental legislation;
- the Defence Fire Protection Engineering Manual (*FACMAN2*);
- the Defence Security Manual (*SECMAN*); and
- occupational health, safety and welfare legislation and the Defence Occupational Health and Safety Manual (*OHSMAN1*).

## Design Principles

45. Design principles to be adopted for new building works and services will include:

- austere and utilitarian facilities of efficient design suitable for local climates, including, where appropriate, cyclone protection;
- maximum use of existing infrastructure to minimise capital facilities costs;
- adoption, where possible, of conventional construction techniques and materials, in particular for the northern sites, commonly used by the construction industry in northern Australia; and
- use of readily available and durable materials that combine long life with minimum maintenance.

## Materials and Size

46. Buildings will be constructed using locally suitable techniques to aid in both construction and maintenance efficiency. Walls and the metal clad roofing will be insulated, with materials chosen for longevity and durability in the harsh climatic conditions.

47. The building works and services will be fully fitted out, with all light fittings, partitions, floor treatments and furniture supplied.

48. The building services are sized to accommodate the equipment demands. Capacity is also provided to meet possible increases in traffic, with future installation of additional equipment possible with a minimum disruption to daily operations.

49. As a general philosophy, the main equipment rooms will be housed with the associated electronics stores and staff amenities, building works and services.

## Fire Protection

50. The following design principles have been adopted:

- as a minimum, compliance with the provisions of the Building Code of Australia (BCA), Defence's *FACMAN2* and all other applicable codes and standards;

- the certification, from a suitably qualified certifier, that the design and construction meet the requirements of the BCA, *FACMAN2*, relevant codes and standards and any additional local, state and commonwealth requirements;
- consultation with local fire brigades;
- any recommended departures from BCA requirements in relation to the project will be technically assessed by Defence specialist fire protection staff and will require written approval at director general level; and
- successful tenderers will be required to produce a Quality Assurance Plan to clearly show how BCA, Australian Standards and any additional Defence requirements in relation to fire protection and safety will be met and the required standards for construction/installation maintained.

## Energy Management

51. The design of all power supply and electrical and mechanical equipment will include an assessment of energy use, applying life cycle costing techniques and power demand analysis. Facilities will incorporate building management systems, metering and other provisions to measure and monitor energy use and to allow regular energy audits. Only essential rooms will be temperature controlled to protect temperature sensitive equipment.

52. To reduce energy consumption, lighting will be controlled by photo electric switches in conjunction with time-switch schedules, where possible. This is to include provision of personnel sensor controlled lighting to amenities and other intermittently occupied areas. External lighting is to be designed to minimise glare and colour distortion.

## Landscaping

53. Landscaping at the three greenfield sites will take particular care to avoid compromising existing environmental sensitivities, by adopting landscaping practices in keeping with local environmental conditions. Landscaping on existing sites will be restricted to the rectification of any areas disturbed during construction.

## Roads and Siteworks

54. All-weather access to sites will be provided by the extension or development of roads. Paved access roads on Defence land will be provided to building compounds. This will include bitumen-sealed unloading, turning and parking areas for fuel tankers, service and operators' vehicles. Gravel access tracks raised above the general terrain will provide access to the bases of all antennas from building compounds.

55. In the Riverina, an existing unsealed road running past the receiver site will be bitumenised in order to provide all-weather access. The Committee noted that some local residents might begin to use the bitumenised road instead of the main highway, as it would provide a significant short-cut for travel.

56. Defence advised that they wish to have a minimum of traffic through the area, as vehicles create radio frequency noise that interferes with the receiver station. Defence planned to solve the problem of local traffic by installing locked gates at both ends of the road. However they may consider providing some keys to local residents who frequently travel in the area, while restricting general public access in order to minimise electromagnetic interference.

## Master Planning Considerations

57. The development proposals for the fixed network at existing Defence communications installations are consistent with the existing master plans for those establishments. The remaining greenfield sites have been established specifically for the purpose of accommodating the high frequency fixed network building works and services, with due allowance for any future expansion that may be necessary. The Townsville receiver station site has been located in accordance with the planned development of the Townsville Field Training Area and will not be affected by Army training activities.

## Redundant Facilities

58. A number of existing Defence communications installations will not be required for Defence communications following the completion of this project. Where appropriate, the Department of Defence will dispose of surplus property, although some properties may be re-used for other Defence activities. The installations that will no longer be required for high frequency communications are:

- Belconnen Naval transmitter station, Canberra ACT;
- Bonshaw Naval receiver station, Canberra ACT;

- Bringelly Air Force receiver station, Sydney NSW;
- Londonderry Air Force transmitter station, Sydney NSW;
- Lee Point Air Force receiver station, Darwin NT;
- 11 Mile Air Force transmitter station, Darwin NT;
- Clevedon Air Force receiver station, Townsville QLD;
- Caversham Air Force transmitter station, Pearce WA; and
- Bullsbrook Air Force receiver station, Pearce WA.

59. The Committee asked what Defence estimated as the sale value of the redundant properties. Defence replied that they were not able to accurately estimate the value of the land. However, they predicted that the sites in populated areas, such as Belconnen, Bringelly, Londonderry, Caversham and Bullsbrook, would be worth a considerable sum. The disposal of any excess properties is not expected until at least 2001, when the new high frequency system is fully operational.

60. In response to Committee concerns about soil contamination at the redundant sites, Defence indicated that there may be contamination at some sites from transformer oil. At one site, Bullsbrook RAAF receiver site in Pearce WA, contamination was discovered and the problem immediately remedied.

61. At the Belconnen ACT site, an underground earth mat is located between the two existing transmitter masts. The Committee asked Defence if this contained any contaminants and whether Defence intended to remove it before selling the property. A representative from Defence replied:

...an earth mat is a thing a radio engineer puts down to ensure that he has consistent ground conductivity. It would be about 20 to 30 radials out from the centre of the antenna for perhaps as much as 200 yards, with single copper cables. I do not really see there would be any problem with leaving them in the ground. It is not going to impede on any construction activity. (Transcript, p. 46)

62. Defence assured the Committee that it would investigate and remedy any contamination of sites before they were sold.

## Committee's Conclusion

63. Design and construction principles for the project are consistent with current practice and recognised Australian building standards.

## Committee's Recommendations

64. Before properties are offered for sale, Defence should ensure that any soil contamination has been remedied in accordance with State or local government requirements.

65. The Committee recommends that the Department of Defence provide annual reports on the status of redundant properties - particularly in relation to the cost of the remediation of any soil contamination, when they are to be sold and the amount of revenue received.

## ENVIRONMENTAL IMPACT

66. The fixed network sites are located on Defence owned land. The two Riverina sites and the Townsville Receiver are not within an existing Defence communications facility.

### Riverina

67. The two Riverina greenfield sites were subject to external review in accordance with the Commonwealth Environment Protection Agency guidelines. Approval was given by the Commonwealth Environment Protection Agency for the development of a more extensive proposal between 1990-92.

68. The Riverina site is the habitat of a rare and endangered species of bird, the Plains Wanderer. The development involves the construction of a small receiver station building and aerial farm with a substantial buffer zone of six kilometres. The buffer zone will largely remain undisturbed, ensuring that the species will not be affected.

69. The Committee was assured that the impact of the development of the Townsville greenfield site was thoroughly assessed.

70. The nature of the developments proposed gives rise to net environmental gains as floral and faunal values can be preserved within the large buffer zone areas which fall under Defence control, and limit the possibilities for other forms of development to take place. For example, the Riverina receiver station buffer zone can be used to preserve the habitat of the rare and endangered Plains Wanderer.

## Environmental Standards

71. The proposed building works and services will be designed to conform to established Commonwealth, State and local government environmental standards.

## Security and Public Safety

72. The Committee raised the possibility of the sites being targets of vandalism or other attacks and of public safety surrounding the sites.

73. Defence outlined how the receiver and transmitter stations are designed to be remotely operated. Each transmitter station will include a surrounding safety zone and be enclosed by anti-intruder fencing with warning signs to deter intruders, reduce the incidence of vandalism and protect the public from any potential electromagnetic hazards.

74. At each receiver station, where there is no risk of electromagnetic hazard, standard stock fences appropriately signposted will be used. In all cases, the compound areas and buildings will have additional man-proof fencing. Closed-circuit television cameras and other intruder detection devices will be installed as appropriate. Staffed security is not intended.

## Defence Targets

75. The Committee raised the issue of the communications sites being a target of attack during hostilities between Australia and another country. The Committee questioned whether the location of the sites would pose a hazard to the local communities.

76. Defence replied that the location of the high frequency sites has been assessed in accordance with the Geneva protocols which cover civilian targets. Several of the high frequency sites would be replacing existing Defence communications facilities and, as such, would not increase the assessed risk already in place. The new sites at the Riverina are well out of town and away from any population. The local management facilities at all four communications sites are to be located on existing Defence property and therefore do not increase any risk of attack. This was also the assessment for the primary and secondary network management facility, to be located in Canberra at *HMAS Harman* and Defence administration.

## Electromagnetic Radiation Hazards

77. In relation to the question of any health risks from electromagnetic radiation associated with the communications sites, Defence advised that the transmitter sites will emit some radiation. Defence has placed these sites on large

amounts of unpopulated land, meeting AS 2772 standards for protection zones for radiation emissions. Defence pointed out that the new transmitters will use far less power than was needed in the past, around 1.5 kilowatts in the new network compared with 10-40 kilowatts in the past.

78. The health and safety of all workers employed on the construction and operation of the proposed facilities will be protected by strict compliance with the Commonwealth Employment Act 1991 (Occupational Health and Safety). Construction and operation of the facilities will be in accordance with an approved Occupational Health and Safety Plan.

## **CONSULTATION**

79. Widespread consultation has taken place with Commonwealth, State and local government organisations and with community groups and individuals.

### **Riverina**

80. The most extensive consultations were undertaken in the Riverina, where the sites were originally purchased for a Navy communications project. A community relations program commenced in late 1990 when a mobile information and display service was provided following the initial announcement of the Navy project. Media and councils were briefed and brochures and leaflets were widely distributed. In 1992, market research in the region indicated that the project had a satisfactory public profile and was widely accepted by the community. The Defence public relations effort in the Riverina was recognised by an industry "Golden Target" award for excellence in the field of public relations.

81. Councils in the affected Riverina areas were consulted and several made submissions to the inquiry. The Council of the City of Wagga Wagga noted Defence's role in the Wagga Wagga community since the Second World War and indicated support for the communications developments. The Narrandera, Urana and Lockhart Shire Councils sounded their appreciation for Defence's efforts to inform the community about the proposed developments.

82. Two former landowners of the Riverina sites, Mr Michael Coughlan and Mr John Bruckner, gave their support for the proposed developments. The Navy purchased their properties several years ago and Mr Coughlan and Mr Bruckner now have long-term leases on the properties. Both noted that the land would now serve multiple purposes - Defence communications and rural farming - and they see this as a good contribution both to Australia's future Defence capabilities and to the Riverina local community.

83. The Committee commends Defence for the exemplary public consultation program undertaken in connection with this project, particularly in the Riverina.

### **Other Sites**

84. Defence assured the Committee that consultations were undertaken for all other sites which are all located on existing Defence owned land. State and local authorities support the need for buffer zones to protect each receiver station from electromagnetic interference and appropriate planning controls have been established in the Riverina and Darwin regions.

## **EMPLOYMENT**

### **Local**

85. The Committee questioned the extent to which local firms and individuals would be employed in the provision of services, construction and maintenance of the project.

86. The Committee was advised that the proposed developments, spread over much of Australia, will provide opportunities for local businesses by way of subcontracting and the provision of building material. While Defence will engage one prime contractor only, they will expect this company to sub-contract to local firms where possible. This could include sub-contracting for the construction of access roads and fencing and subsequent maintenance requirements for the network.

### **Defence**

87. The existing Navy and RAAF high frequency communications networks require more than 400 personnel to operate the system. The proposed rationalisation of the fixed networks under the High Frequency Communications Modernisation Project will reduce the total of ADF personnel required at the fixed nodes and the National Management Facility to approximately 120. The number of operators is dependent on the equipment used and the degree of automation achieved.

88. The successful contractor for the project will also provide support and maintenance for the network once it is operational.

## PROJECT DELIVERY

89. A contract for the High Frequency Communications Modernisation Project is expected to be finalised by May 1997. The building works and services component of the project is expected to be completed by December 2000, with the total project to be completed by December 2002.

## COST

90. The preliminary estimate for the provision of the building works and services component of the project is \$75 million at August 1996 prices. The total project, including building works and services, fixed communications equipment, mobile communications equipment, technical support and maintenance has a preliminary estimated cost of about \$505 million.

91. The Committee sought an assurance from Defence that construction costs will not run over the estimated figure (\$75 million). Defence outlined the tender process for the project and indicated that prices would be refined once the successful contractor has been selected. A representative from the Department of Defence told the Committee:

We have 14 sites spread around the country. Some of those are in remote localities where building costs are essentially high. Most of the buildings are for technical equipment, so they have extra power demands than you might expect for an ordinary domestic building and the cost per square metre tends to be a bit higher. But I can assure the Committee that we will be working very hard to keep costs down and to maintain those costs within the budget that we have been allocated. (Transcript, p. 34)

## RELATED DEFENCE PROJECTS

### Townsville Field Training Area

92. The development of the Townsville Field Training Area is scheduled for commencement in 1996/97 and includes the development of the existing High Range Training Area and the Dotswood Property to the north-west of Townsville. The project is estimated to cost \$18.696 million. The Townsville receiver station site is located within the Townsville Field Training Area and was considered during the Townsville Field Training Area development planning. The development of the Townsville Field Training Area does not impact on the utility of the receiver station.

93. There are no other major Defence works related to this project.

### Committee's Recommendation

94. The Committee recommends the construction of buildings and services in support of the Department of Defence Joint Project 2043, High Frequency Modernisation Project, at an estimated cost of \$75 million.

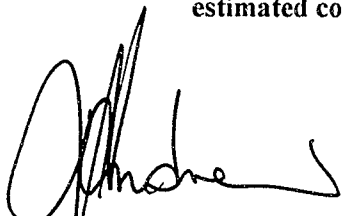
## CONCLUSIONS AND RECOMMENDATIONS

95. The Committee's conclusions and recommendations and the paragraphs in the report in which they occur are set out below:

1. The Defence high frequency communications network is being modernised at a cost of \$505 million. (Paragraph 27)
2. The modernisation will consist of four communications nodes, each comprising a transmitter station, receiver station and local management facility. There will also be a primary and secondary national management facility. (Paragraph 28)
3. The communications nodes will be located in the Riverina, Townsville, North West Cape, and Darwin. (Paragraph 29)
4. Existing facilities are aged and need refurbishment, and at two nodes, new facilities are required. (Paragraph 30)
5. Facilities to house the high frequency equipment will be located on existing Defence properties and properties acquired for radio communications purposes. All are in areas which Defence believes are free of electromagnetic interference and have sufficient buffer zones to protect them from urban encroachment. (Paragraph 42)
6. The extent of the proposed work will entail the construction of new facilities for the Riverina transmitter and receiver on sites which Defence believes are suitable. Elsewhere, the proposal will make good use of existing facilities, which will need to be modified. The scope of the proposed work can therefore be justified. (Paragraph 43)
7. Design and construction principles for the project are consistent with current practice and recognised Australian building standards. (Paragraph 63)



8. Before properties are offered for sale, Defence should ensure that any soil contamination has been remedied in accordance with State or local government requirements. (Paragraph 64)
9. The Committee recommends that the Department of Defence provide annual reports on the status of redundant properties - particularly in relation to the cost of the remediation of any soil contamination, when they are to be sold and the amount of revenue received. (Paragraph 65)
10. The Committee recommends the construction of buildings and services in support of the Department of Defence Joint Project 2043, High Frequency Modernisation Project, at an estimated cost of \$75 million. (Paragraph 94)



Neil Andrew MP  
Chairman

6 February 1997

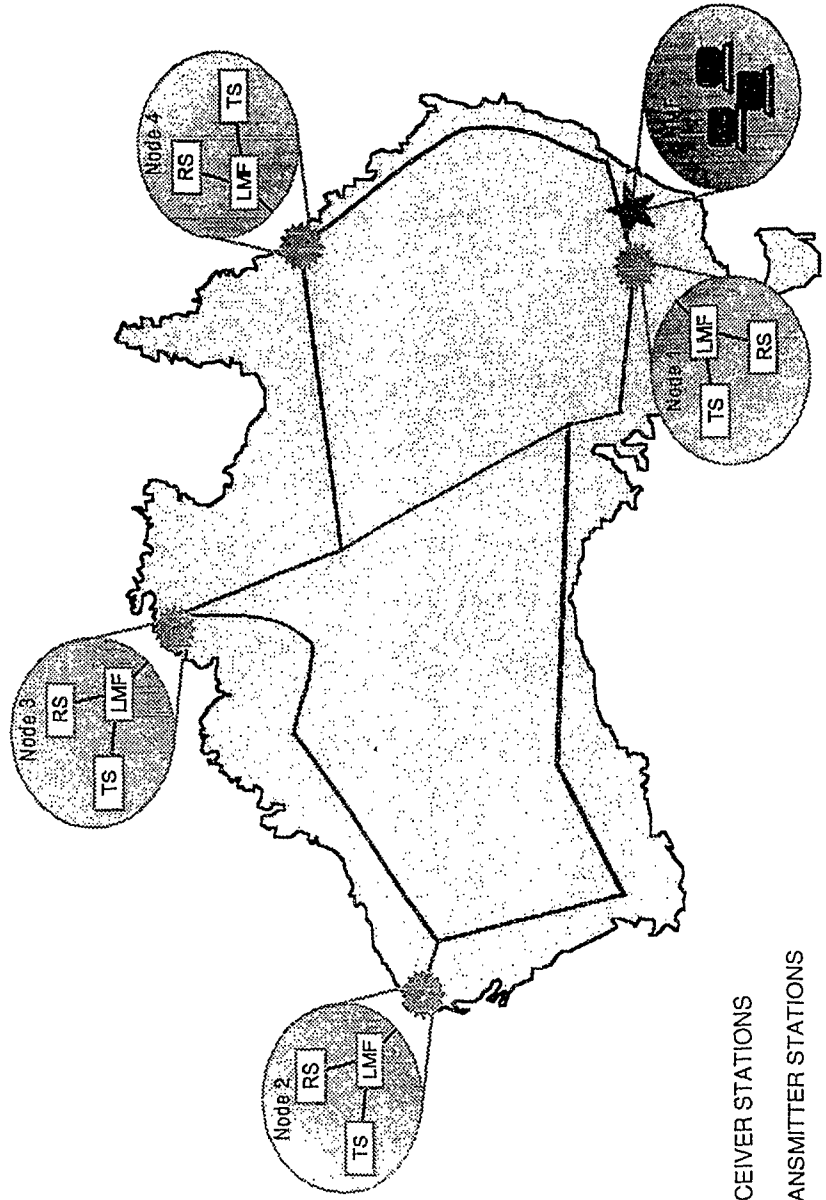
WITNESSES

**DOVERS**, Commodore William, CSM, Director General Force Development (Joint), Headquarters Australian Defence Force, Department of Defence, Russell Offices, Canberra, Australian Capital Territory, 2601

**NOBLE**, Mr James McCallum, Assistant Secretary, Joint Project Management, Materiel Division, Department of Defence, Anzac Park West Offices, Canberra, Australian Capital Territory, 2601

**WILSON**, Mr Alan Ross, Director, High Frequency Modernisation Project, Defence Materiel Division, Anzac Park West Offices, Department of Defence, Canberra, Australian Capital Territory, 2601

B-1

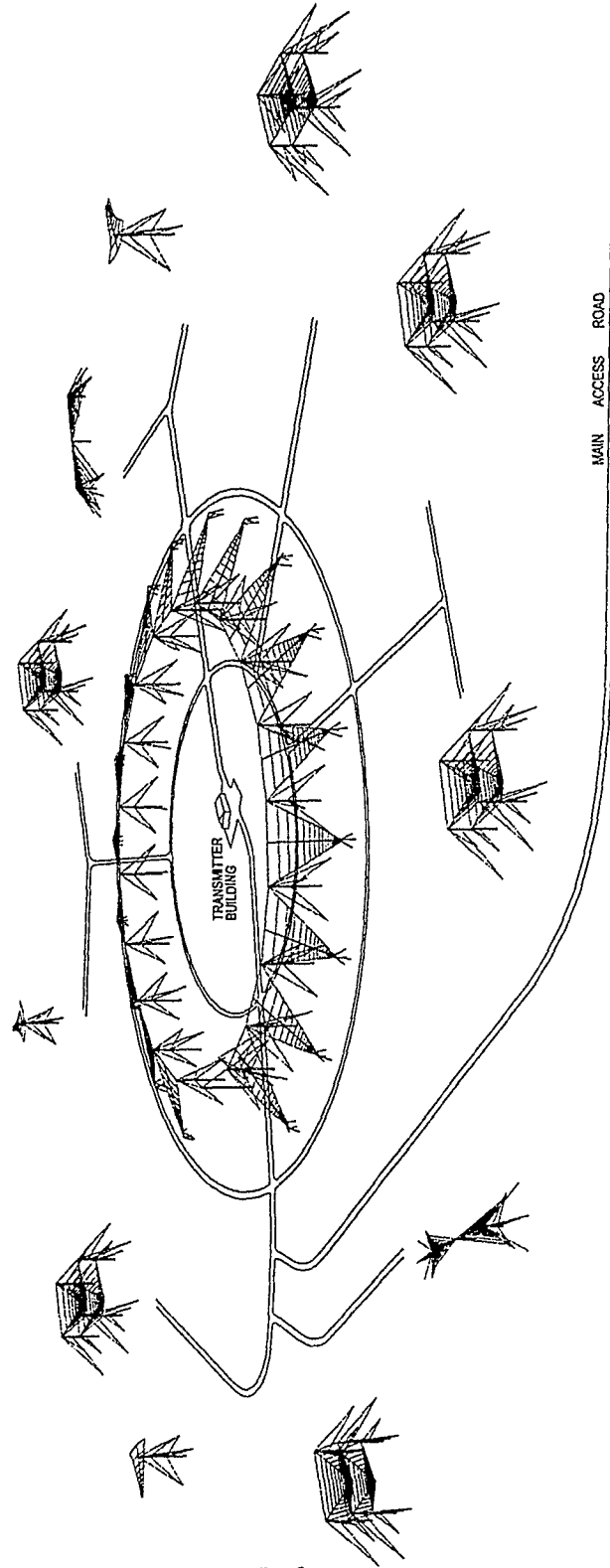


LEGEND

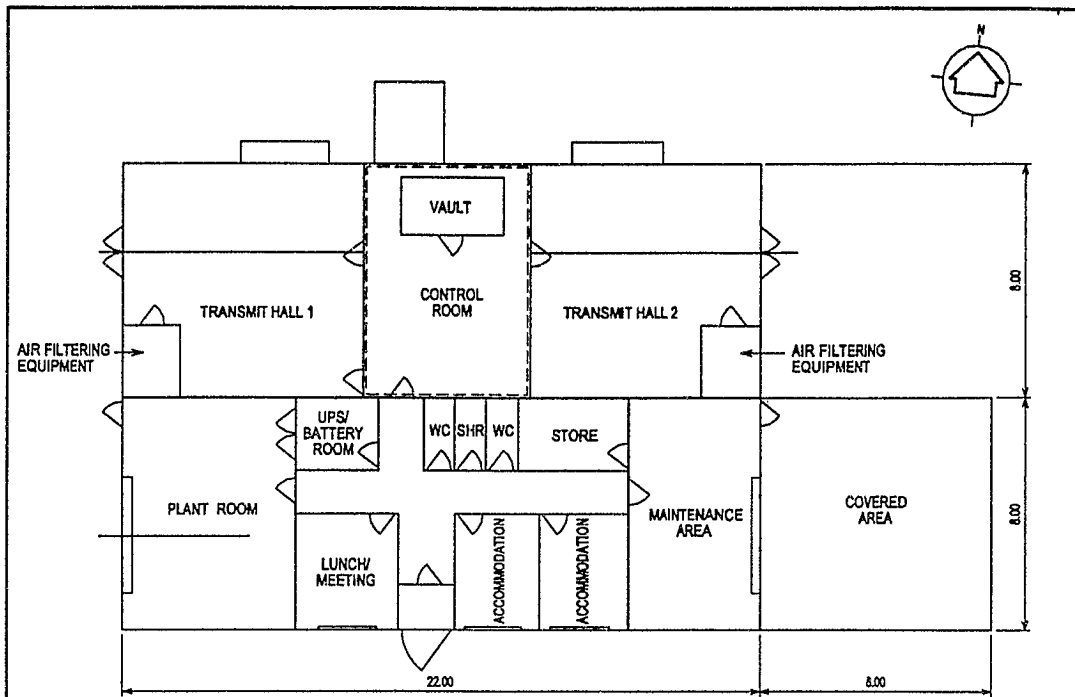
- RS RECEIVER STATIONS
- TS TRANSMITTER STATIONS
- LMF LOCAL MANAGEMENT FACILITY
- NMF NETWORK MANAGEMENT FACILITY INTER-NODE LINKS

HF MODERNISATION  
PWC EVIDENCE  
THE MHFCS FIXED  
NETWORK TOPOLOGY  
Figure 1

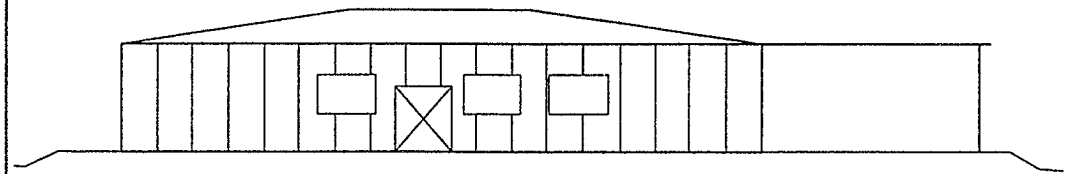
B-2



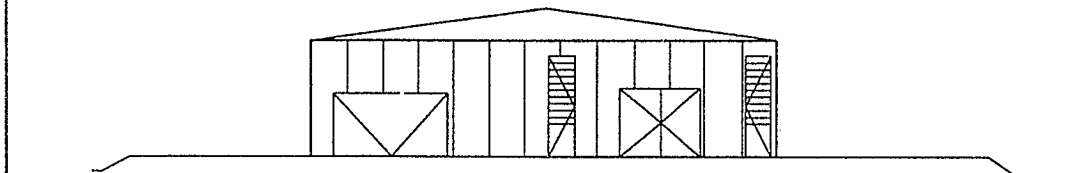
HF MODERNISATION  
PWC EVIDENCE  
POSSIBLE  
TRANSMITTER STATION  
LAYOUT  
Figure 2



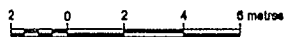
TRANSMIT BUILDING FLOOR PLAN



SOUTHERN ELEVATION



EASTERN ELEVATION

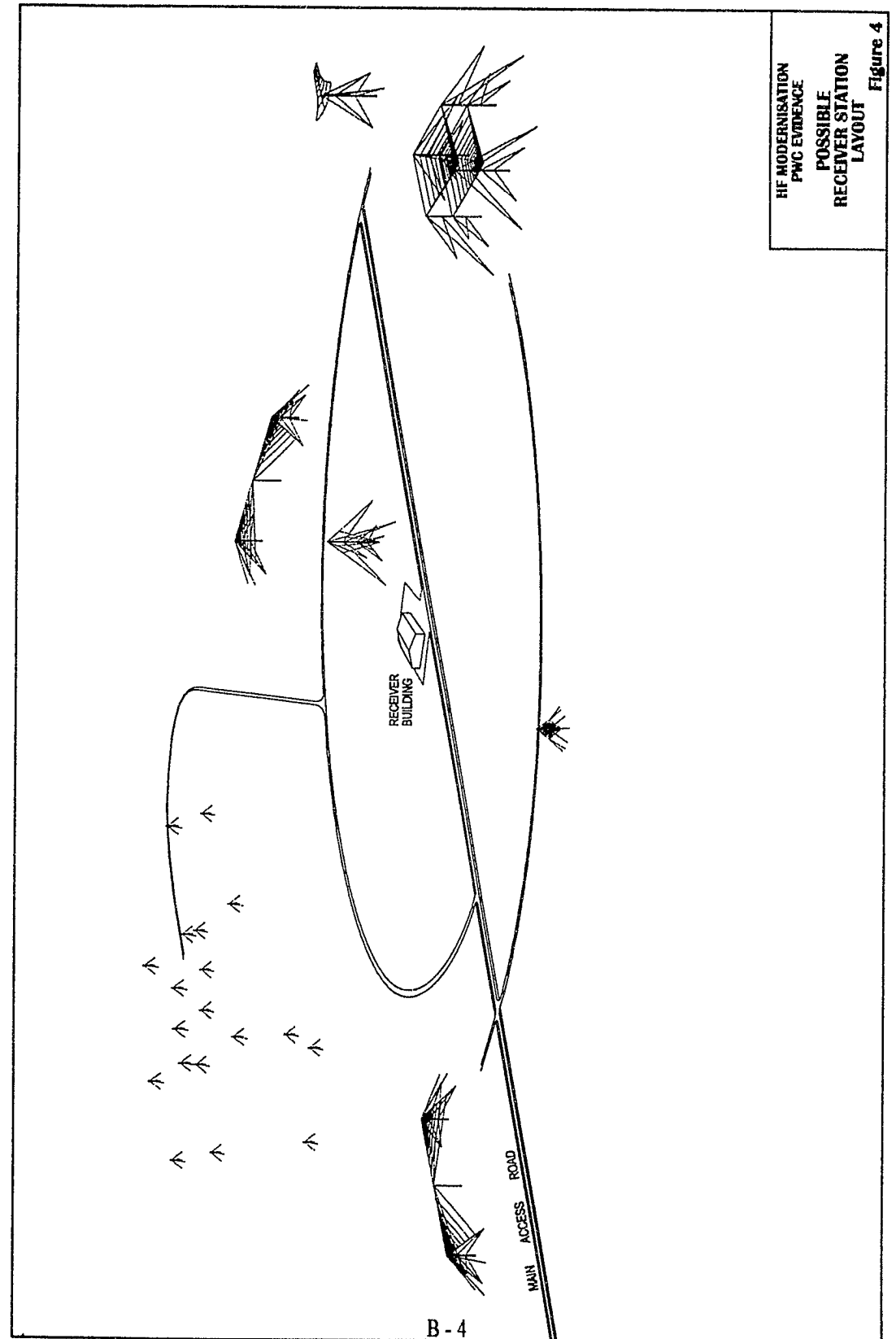


Note: Dimensions are in metres

HF MODERNISATION  
PWC EVIDENCE  
POSSIBLE  
TRANSMITTER BUILDING  
LAYOUT

B - 3

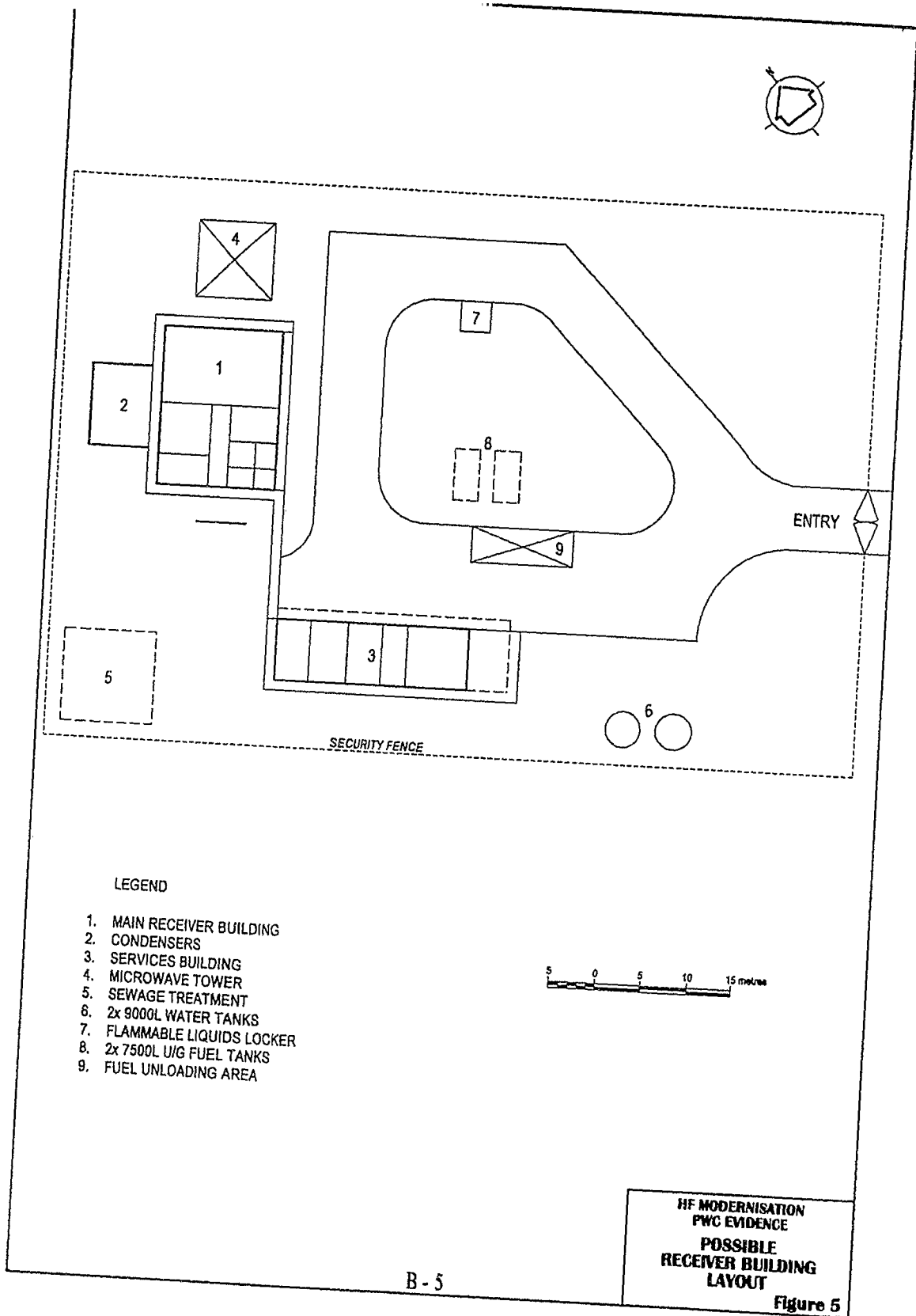
Figure 3



HF MODERNISATION  
PWC EVIDENCE  
POSSIBLE  
RECEIVER STATION  
LAYOUT

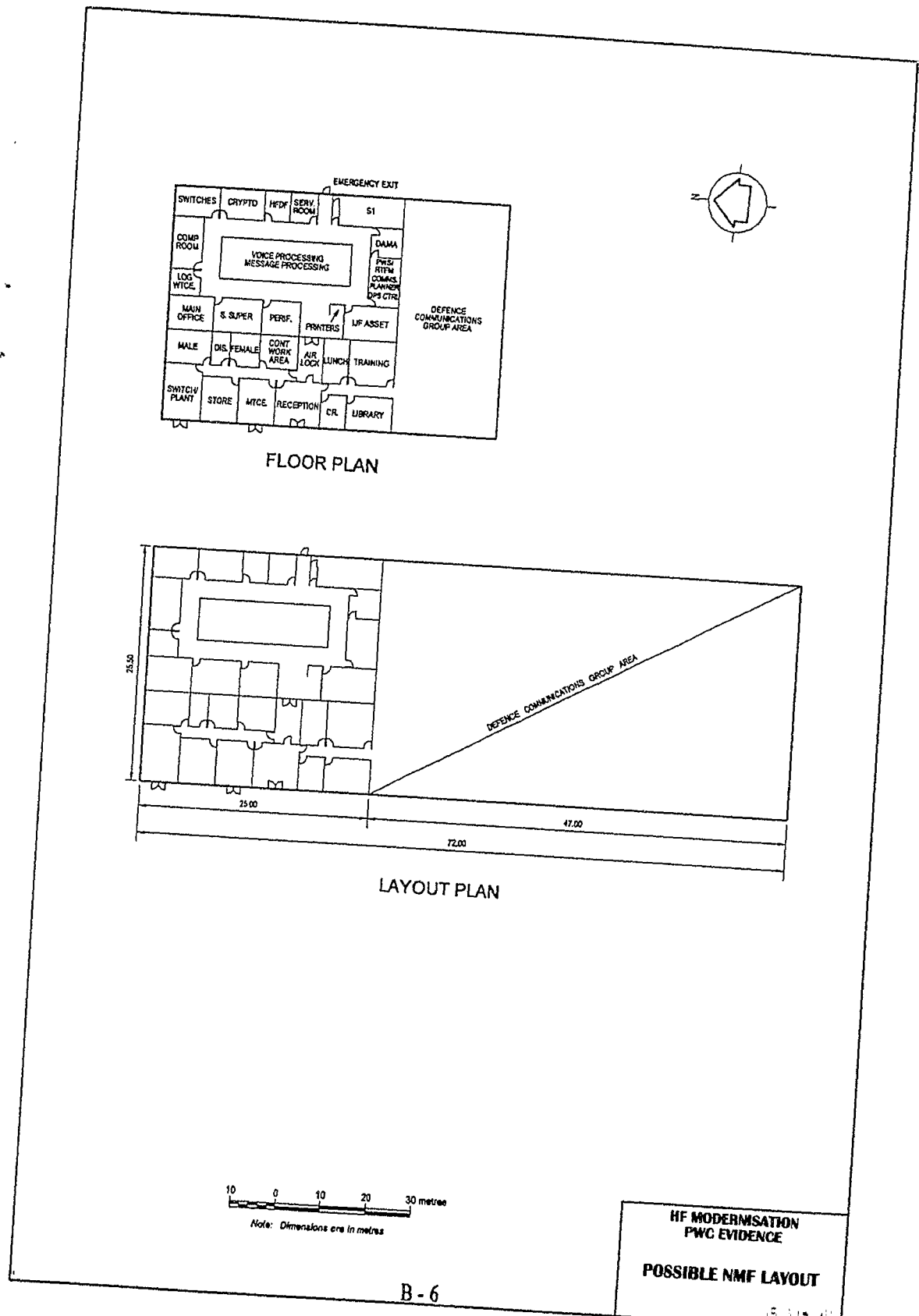
Figure 4

B - 4



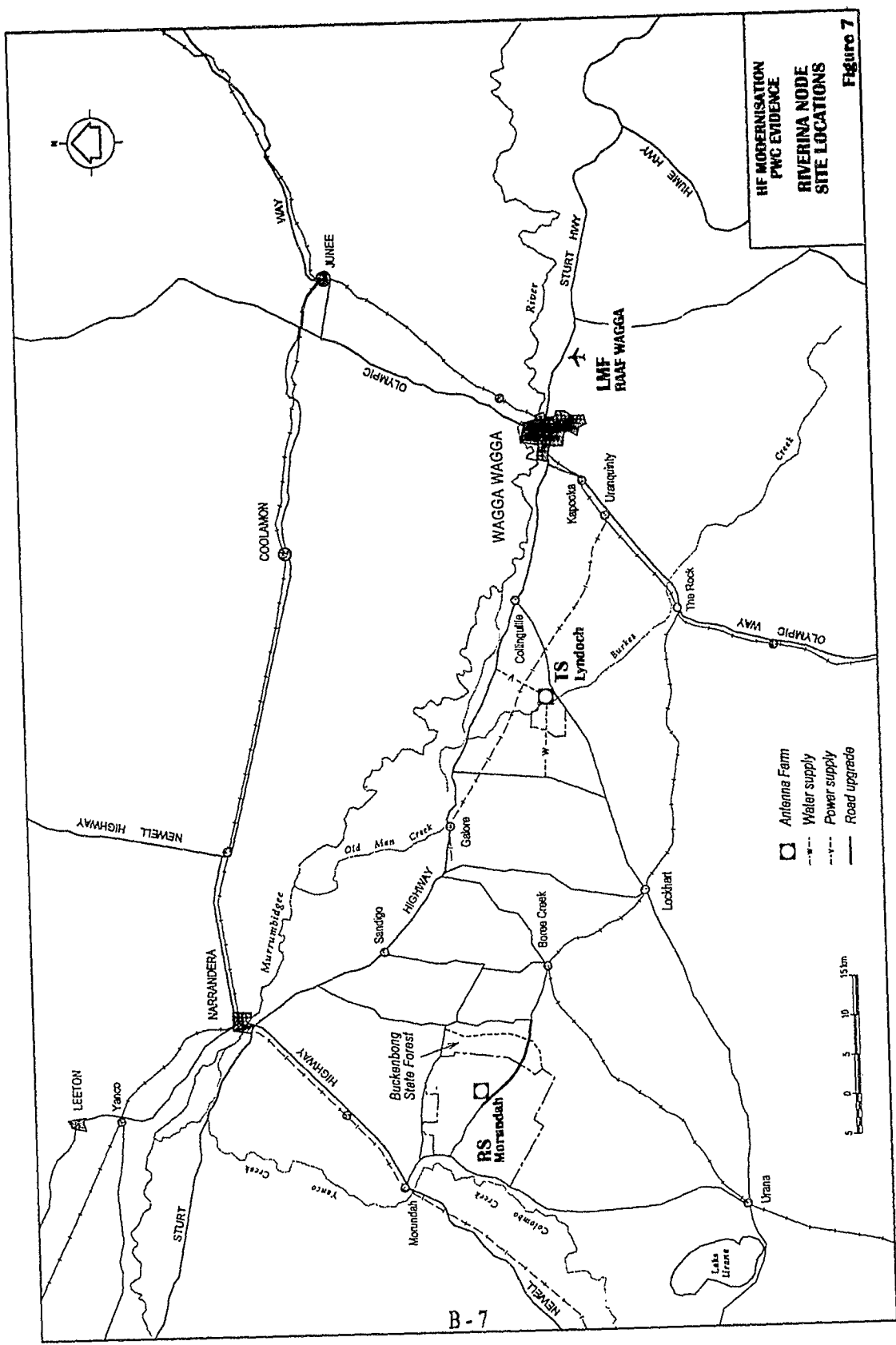
B - 5

HF MODERNISATION  
PWC EVIDENCE  
POSSIBLE  
RECEIVER BUILDING  
LAYOUT  
Figure 5

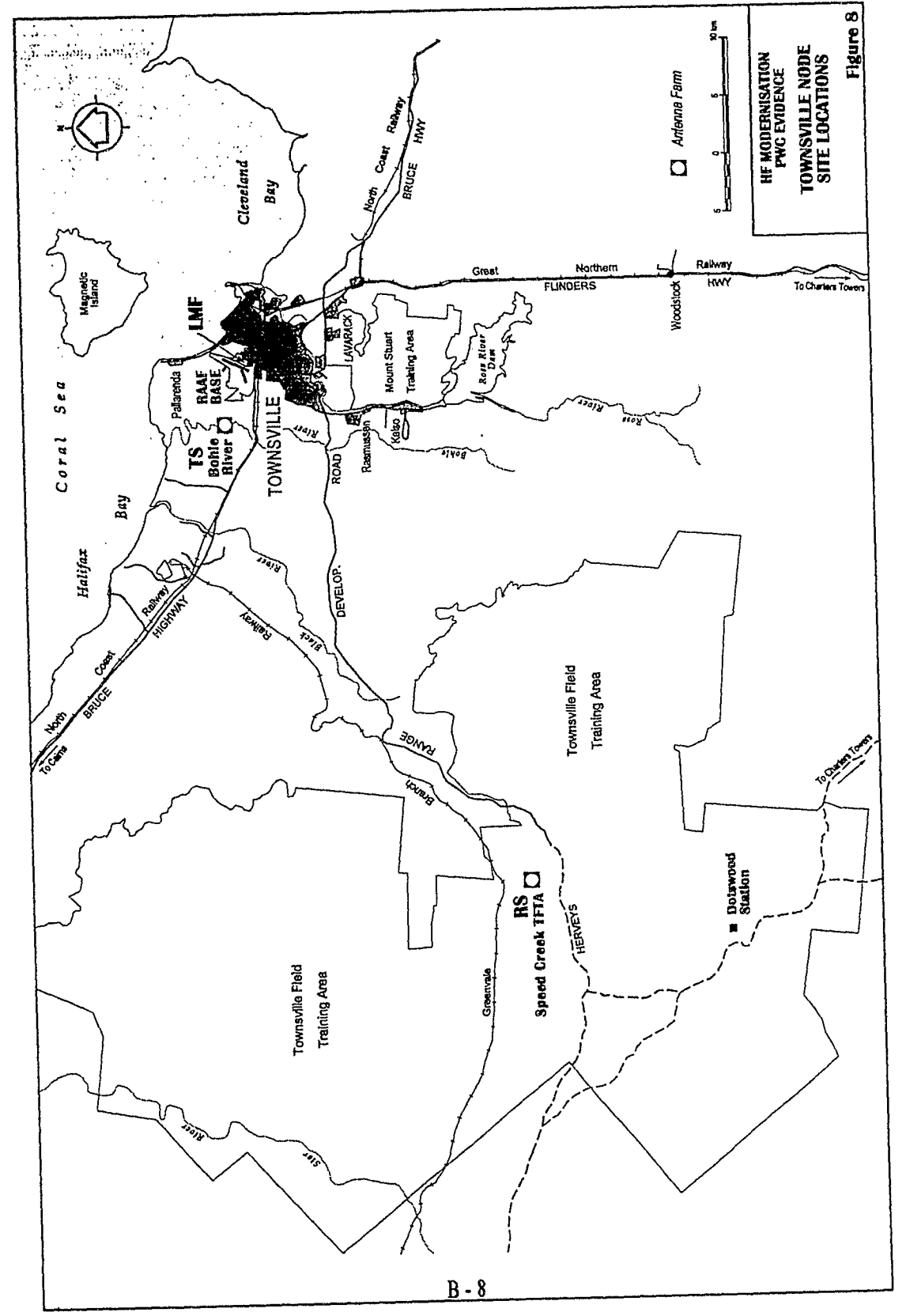


B - 6

HF MODERNISATION  
PWC EVIDENCE  
POSSIBLE NMF LAYOUT



B-7



B-8

