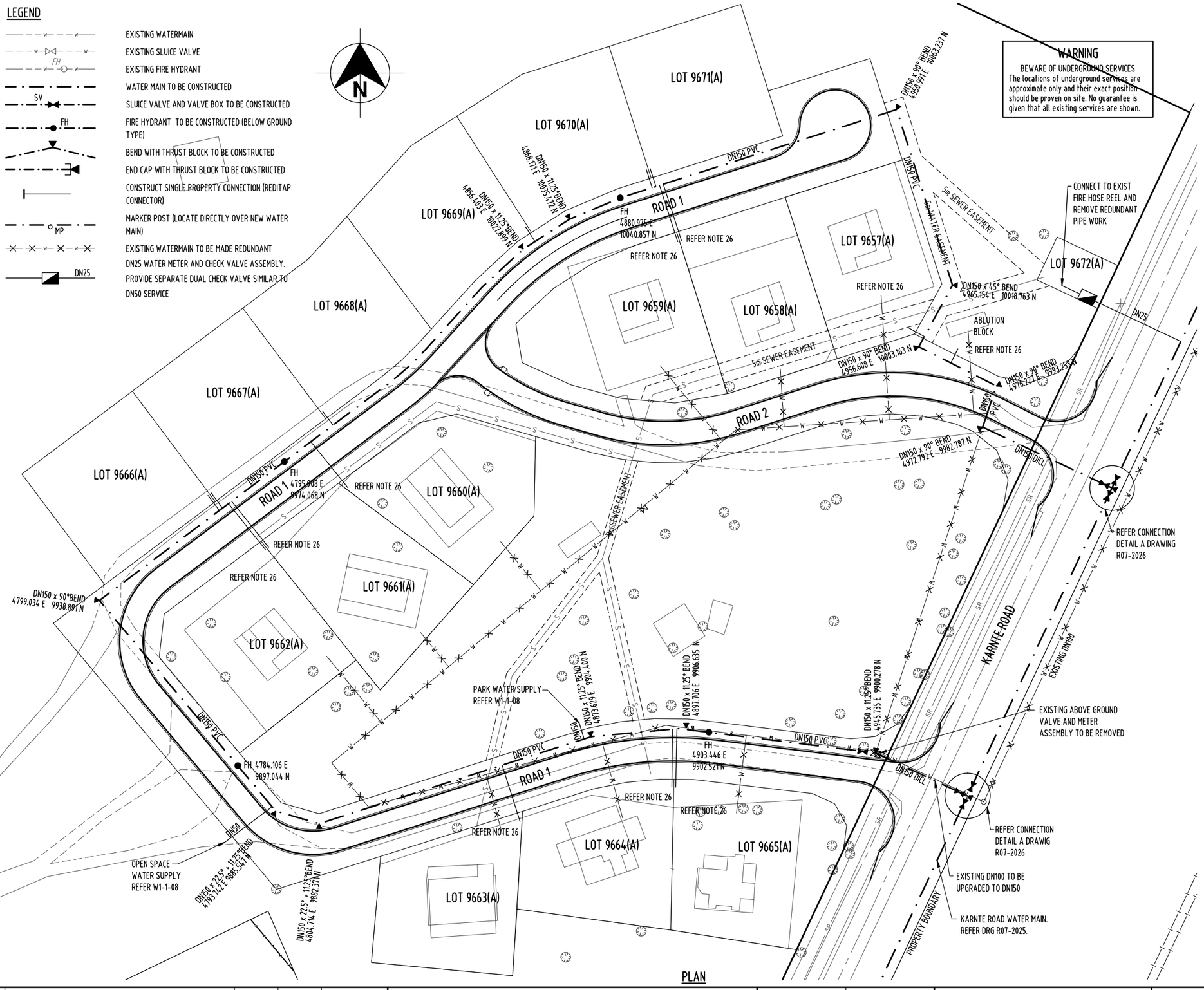
LEGEND

- EXISTING WATERMAIN
- EXISTING SLUICE VALVE
- EXISTING FIRE HYDRANT
- WATER MAIN TO BE CONSTRUCTED
- SLUICE VALVE AND VALVE BOX TO BE CONSTRUCTED
- FIRE HYDRANT TO BE CONSTRUCTED (BELOW GROUND TYPE)
- BEND WITH THRUST BLOCK TO BE CONSTRUCTED
- END CAP WITH THRUST BLOCK TO BE CONSTRUCTED
- CONSTRUCT SINGLE PROPERTY CONNECTION (REDITAP CONNECTOR)
- MARKER POST (LOCATE DIRECTLY OVER NEW WATER MAIN)
- EXISTING WATERMAIN TO BE MADE REDUNDANT
- DN25 WATER METER AND CHECK VALVE ASSEMBLY. PROVIDE SEPARATE DUAL CHECK VALVE SIMILAR TO DN50 SERVICE



PLAN

WARNING

BEWARE OF UNDERGROUND SERVICES

The locations of underground services are approximate only and their exact position should be proven on site. No guarantee is given that all existing services are shown.

PWC DRG No. R07 - 2024

PERMISSION TO USE FOR CONSTRUCTION PURPOSES

SIGNED ..... DATE .....

ON BEHALF OF LAND DEVELOPMENT FOR INCORPORATION INTO POWER AND WATER CORPORATION

This Permission to Use is given on the basis that the Developer and/or Consultant is not absolved from full responsibility for the correctness and accuracy of the design and/or documents so associated.

NOTES

1. DESIGN AND CONSTRUCTION OF THE WATER AND SEWERAGE WORKS SHALL BE CARRIED OUT IN ACCORDANCE WITH THE PWC CONNECTION CODE AND ASSOCIATED DOCUMENTS.
2. ALL LEVELS GIVEN TO A.H.D.
3. ALL DIMENSIONS ARE IN METRES UNLESS SHOWN OTHERWISE.
4. MINIMUM COVER TO PIPE IS 750mm IN TRAFFICABLE AREAS, 600mm IN OTHER AREAS.
5. PRIOR TO COMMENCEMENT OF WORKS THE CONTRACTOR SHALL CHECK THE LOCATION OF ALL EXISTING UNDERGROUND SERVICES, AND CONFIRM FINISHED SURFACE LEVELS AND THE INVERT LEVELS OF EXISTING STUBS TO BE INCORPORATED IN THE WORKS.
6. IT IS NOT GUARANTEED THAT ALL SERVICES HAVE BEEN SHOWN ON THE DRAWING.
7. OBTAIN PERMIT(S) FROM THE RELEVANT ROAD AUTHORITY PRIOR TO ROAD EXCAVATION.
8. ALL WATER AND SEWERAGE (HYDRAULIC) WORKS SHALL BE CARRIED OUT AS SHOWN ON THE LATEST AMENDMENT OF THE DESIGN DRAWINGS.
9. CONSTRUCTION SITE DRAWINGS MUST BE SIGNED AS 'APPROVED FOR CONSTRUCTION' BY LAND DEVELOPMENT OFFICER.
10. SEVEN (7) DAYS NOTICE HAS TO BE GIVEN TO LAND DEVELOPMENT, PWC (FACSIMILE: 8924 7212 - NORTHERN REGION & 89517347 - SOUTHERN REGION), WITH A "NOTICE OF INTENTION TO START WORK" PRIOR TO COMMENCEMENT OF WORK.
11. ANY CHANGES TO THIS DRAWING, REQUIRED OR DESIRED DURING THE CONSTRUCTION PHASE MUST BE AUTHORISED BY A LAND DEVELOPMENT OFFICER.
12. 'AS CONSTRUCTED' DRAWINGS MUST BE PROVIDED TO LAND DEVELOPMENT, PWC, PRIOR TO HANDOVER INSPECTION.
13. DESIGNER TO CONTACT LAND DEVELOPMENT, PWC, TO ARRANGE FOR HANDOVER INSPECTIONS. SEVEN (7) DAYS NOTICE MUST BE PROVIDED PRIOR TO HANDOVER INSPECTION.
14. CONNECTIONS TO EXISTING WATER AND SEWER MAINS WILL ONLY BE CARRIED OUT WHEN ALL WORKS UPSTREAM OF THE CONNECTION ARE COMPLETE (ie. TESTED, DISINFECTED WHERE APPLICABLE, BACKFILLED AND CERTIFICATES SUBMITTED) IN ACCORDANCE WITH THE APPROVED DESIGN DRAWINGS, AND HAVE SATISFACTORILY PASSED FINAL HANDOVER INSPECTION.
15. PWC PERSONNEL SHALL INSTALL ALL WATER AND SEWER CONNECTIONS TO EXISTING MAINS ONLY AFTER ACCEPTANCE OF THE WORK HAS BEEN ACHIEVED. THE CONSTRACTOR IS RESPONSIBLE FOR ALL CONNECTION FEES, MATERIALS AND LABOUR FOR EXCAVATION, BACKFILLING AND REINSTATEMENT.
16. WATER MAINS SHALL BE PVC-M SERIES 1 (CLASS PN12) FOR 100DN & 150DN SIZE, WITH DICL FITTINGS, UNLESS NOTED OTHERWISE. DICL WATER MAINS TO BE CLASS PN20.
17. WATERMAINS SHALL BE OFFSET FROM PROPERTY BOUNDARIES A DISTANCE OF 2.40m IN ROAD RESERVE AND 1.5m IN PRIVATE PROPERTY, EXCEPT WHERE SHOWN OTHERWISE ON THE DRAWINGS.
18. PIPE BEDDING SHALL BE TYPE 1 U.N.O. THE SUPERINTENDENT SHALL DETERMINE WATER PIPE BEDDING TYPE AFTER INSPECTION OF THE EXCAVATED TRENCH.
19. ALL BENDS TO BE SUPPORTED BY THRUST BLOCKS.
20. CHANGES IN DIRECTION OF DICL WATERMAINS SHALL BE ACHIEVED BY JOINT DEFLECTION UNLESS SHOWN OTHERWISE. JOINT DEFLECTIONS ARE NOT TO EXCEED THE MAXIMUM ALLOWABLE DEFLECTION RECOMMENDED BY THE MANUFACTURER.
21. CHANGES IN DIRECTION OF PVC WATERMAINS SHALL BE ACHIEVED BY DICL BENDS OR PIPE DEFLECTION. MAX. DEFLECTION = 300 x PIPE NOMINAL DIAMETER.
22. FIRE HYDRANTS ARE TO BE LOCATED DIRECTLY OPPOSITE LOT CORNERS UNLESS SHOWN OTHERWISE.
23. MAKE ALL NECESSARY REPAIRS TO EXISTING SERVICES IF DAMAGED TO AN "AS GOOD AS NEW" CONDITION.
24. ALL SERVICES DN20 UNLESS SHOWN OTHERWISE.
25. ALL BACKFILL UNDER ROADS TO BE CLASS 3 GRAVEL COMPACTED IN 150mm MAX. LAYERS TO 95% M.M.D.D. TO SUBGRADE LEVEL.
26. LOCATE AND CONNECT INTERNAL PLUMBING TO NEW WATER SERVICE POINTS.
27. INSTALL 1.6mm STAINLESS STEEL TRACE WIRE ABOVE ALL NEW WATER MAINS. THE WIRE IS TO BE JOINTED WITH PURPOSE MADE LUGS FOR FULL ELECTRICAL CONTINUITY AND IS TO BE TESTED FOR ELECTRICAL CONTINUITY AT COMPLETION OF THE WORKS. THE TRACE WIRE IS TO BE LOOPED TO THE SURFACE AT ALL HYDRANTS AND SLUICE VALVES AND IT'S LOCATION IS TO BE SUCH THAT IT DOES NOT INTERFERE WITH OPERATION OF THE VALVES OR HYDRANTS.
28. MARKER POSTS FOR SLUICE VALVES AND HYDRANTS TO BE IN ACCORDANCE WITH PWC PRODUCTS MANUAL EXCEPT THAT HYDRANT MARKER POSTS ARE TO BE 100 x 50 x RHS HOT DIP GALVANISED.

PRELIMINARY

NOT TO BE USED FOR CONSTRUCTION
SUBJECT TO FINAL
VERIFICATION AND APPROVAL

No.	DESCRIPTION	DATE	NAME	DEPT/COMPANY
04	DETAIL DESIGN ISSUE	19.05.08	SLK	DPI
03	ISSUE FOR COMMENT	05.02.08	SLK	DPI
02	DETAIL DESIGN ISSUE	29.10.07	SLK	DPI
01	DETAIL DESIGN ISSUE	19.10.07	NLC	DPI

AMENDMENTS

Connell Wagner

Connell Wagner Pty Ltd ABN 54 005 139 873
62 Cavenagh Street (PO Box 919) Darwin
Northern Territory 0800 Australia

Telephone: +61 8 8919 9777
Facsimile: +61 8 8919 9750
Email: cwdrw@conwag.com
CAD File No: FILE-No.
Plot Date: PLOT-DATE

DRAWN	CHECKED
TWH	
DATE DEC 07	DATE
DESIGNED	CHECKED
PDG	
DATE DEC 07	DATE
DESIGN PROJECT LEADER	PROJECT OFFICER
DATE	DATE

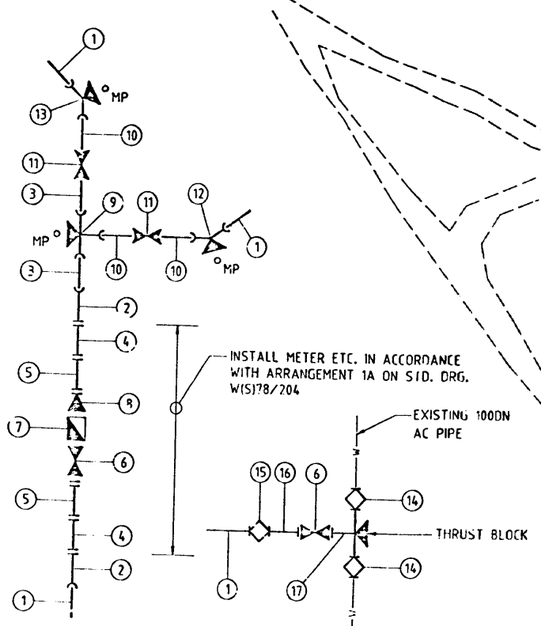
Northern Territory Government
Department of Planning and Infrastructure

Alice Springs
Connecting Neighbours Program - Upgrade Works on Anthepe

WATER COMPILATION PLAN

FILE No.	ASSET No.	SHEET No.	DRAWING No.	AMEND.	SHEET SIZE
-	-	13 OF 25	R07-2024	04	A1

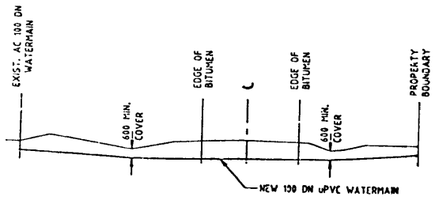
2133



DETAIL 2

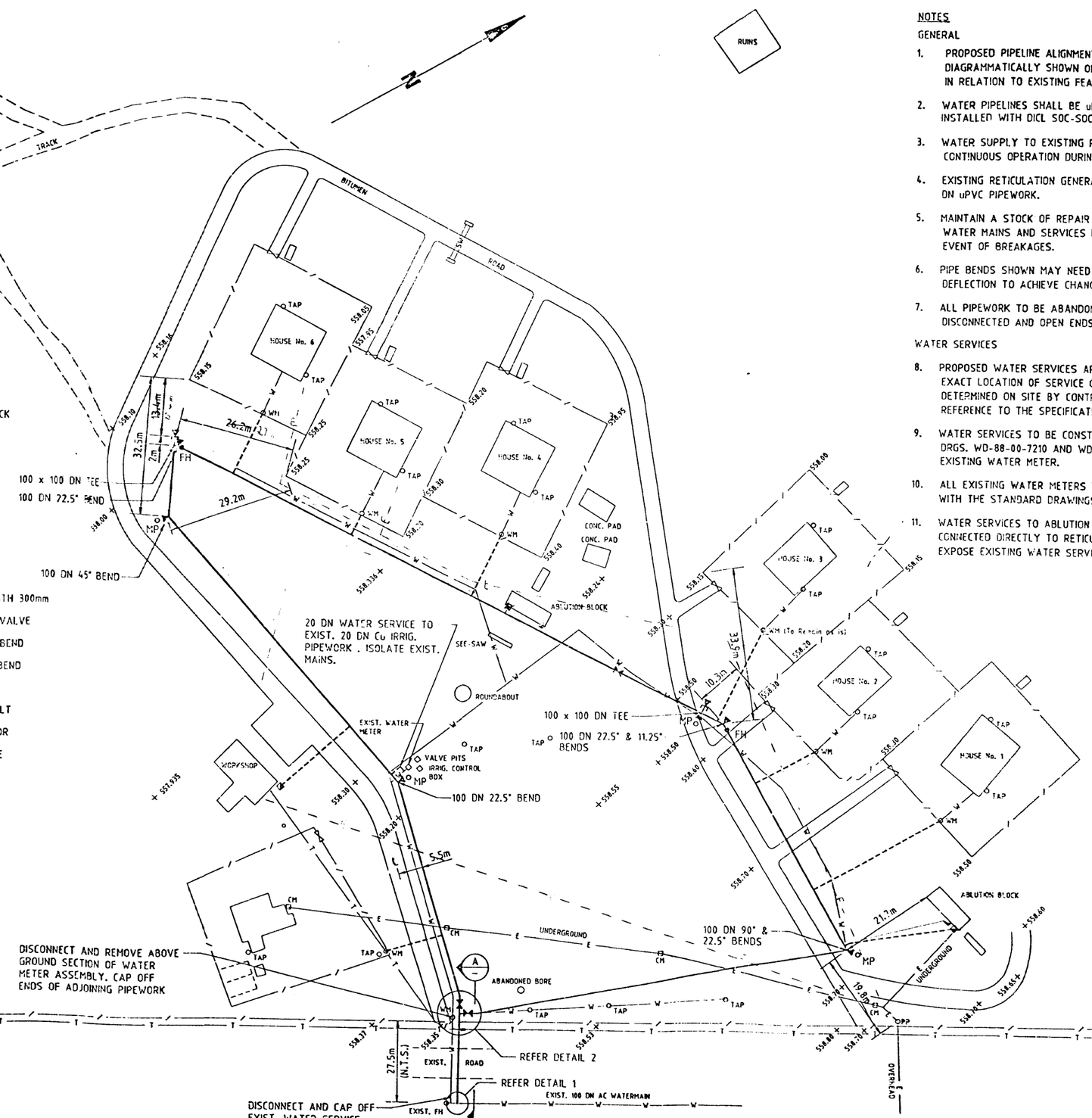
DETAIL 1

(1)	100 DN uPVC PIPE	(10)	100 DN uPVC PIPE LENGTH 300mm
(2)	100 DN 90° FL-SOC BEND WITH THRUST BLOCK	(11)	100 DN SOC-SOC STOP VALVE
(3)	100 DN uPVC PIPE LENGTH TO SUIT	(12)	100 DN 11.25° SOC-SOC BEND
(4)	100 DN FL-FL PIPE LENGTH TO SUIT	(13)	100 DN 22.5° SOC-SOC BEND
(5)	100 DN FL-FL 90° BEND	(14)	100 DN GIBAULT
(6)	100 DN FL-FL STOP VALVE	(15)	100 DN ADAPTOR GIBAULT
(7)	100 DN FL-FL COMBINATION WATER METER	(16)	100 DN FL-SP CONNECTOR
(8)	100 DN FL-FL REFLUX VALVE	(17)	100 x 100 FL-SP-SP TEE
(9)	100 x 100 ALL SOC TEE		



SECTION A - ROAD CROSSING

1 : 200



NOTES

GENERAL

1. PROPOSED PIPELINE ALIGNMENT AND WATER SERVICE LOCATIONS ARE DIAGRAMMATICALLY SHOWN ONLY AND SHOULD BE SET-OUT ON SITE IN RELATION TO EXISTING FEATURES AS SHOWN.
2. WATER PIPELINES SHALL BE uPVC CLASS 12 RRJ PIPE. (U.N.O.) AND INSTALLED WITH DICL SOC-SOC FITTINGS AND VALVES (U.N.O.)
3. WATER SUPPLY TO EXISTING RETICULATION TO BE MAINTAINED IN CONTINUOUS OPERATION DURING CONSTRUCTION OF NEW WORK.
4. EXISTING RETICULATION GENERALLY CONSISTS OF 25 AND 50 ON uPVC PIPEWORK.
5. MAINTAIN A STOCK OF REPAIR FITTINGS FOR EXISTING AND NEW WATER MAINS AND SERVICES IN ORDER TO EFFECT REPAIRS IN THE EVENT OF BREAKAGES.
6. PIPE BENDS SHOWN MAY NEED TO BE SUPPLEMENTED BY PIPE JOINT DEFLECTION TO ACHIEVE CHANGE IN DIRECTIONS REQUIRED.
7. ALL PIPEWORK TO BE ABANDONED SHALL BE CAPPED OFF AT ALL DISCONNECTED AND OPEN ENDS.

WATER SERVICES

8. PROPOSED WATER SERVICES ARE SCHEMATICALLY SHOWN ONLY. EXACT LOCATION OF SERVICE OFFTAKE, METER PIT ETC. TO BE DETERMINED ON SITE BY CONTRACTOR AND SUPERINTENDENT IN REFERENCE TO THE SPECIFICATION.
9. WATER SERVICES TO BE CONSTRUCTED IN ACCORDANCE WITH STD. DRGS. WD-88-00-7210 AND WD-88-00-7220. CONNECT NEW WORK TO EXISTING WATER METER.
10. ALL EXISTING WATER METERS TO BE RE-INSTALLED IN ACCORDANCE WITH THE STANDARD DRAWINGS, UNLESS NOTED OTHERWISE.
11. WATER SERVICES TO ABLUTION BLOCKS AND WORKSHOP TO BE CONNECTED DIRECTLY TO RETICULATION. ALLOW TO LOCATE AND EXPOSE EXISTING WATER SERVICE CONNECTION.

LEGEND

- EXISTING FENCE
- EXIST. ELECTRICITY LINE (U/G OR OVERHEAD AS SHOWN)
- EXIST. TELECOM LINE
- EXIST. WATER MAIN AND WATER METER
- PROPOSED NEW 100DN CLASS 12 RRJ uPVC WATER MAIN
- PROPOSED NEW 20DN M.D.P.E. WATER SERVICE
- PROPOSED NEW FIRE HYDRANT AND STOP VALVE
- PROPOSED NEW THRUST BLOCK AND MARKER POST
- PROPOSED NEW END CAP
- PROPOSED NEW WATER METER
- EXIST. NATURAL SURFACE SPOT LEVEL

WARNING

BEWARE OF UNDERGROUND SERVICES
The locations of underground services are approximate only and their exact position should be proven on site. No guarantee is given that all existing services are shown. Seek advice from Tangentyre Council for the locations of underground electrical reticulation.

0 10 20 30 40

No.	DESCRIPTION	DATE	INIT.
1	As constructed	May 93	R.

AMENDMENTS

No.	TITLE

ASSOCIATED DOCUMENTS

NORTHERN TERRITORY OF AUSTRALIA

DEPARTMENT OF TRANSPORT AND WORKS

Copyright Reserved

DRAWN	R.VERHOEF / T.CORFIAS	CHECKED	G.H.
DATE	March '93	DATE	March '93
DESIGN	C.GILLANDERS	CHECKED	G.H.
DATE	March '93	DATE	March '93
PROJECT OFFICER		SUPERVISING ENG./ARCH.	
DATE		DATE	

POWER AND WATER AUTHORITY

GUTTERIDGE HASKINS & DAVEY PTY LTD

ALICE SPRINGS

PRINCIPAL DATE 18 Mar '93

ALICE SPRINGS

ANTHEPE

WATERMAIN REPLACEMENT

LAYOUT PLAN, NOTES AND DETAILS

FILE No.	WGA 3039
SCALE	1 : 500 Horiz. Vert.
SHEET	2 OF 2
AMEND.	1
DRAWING No.	400-93-07-3042

2134

S75/103

7

3797
B 544

2503
A 63

ROAD 20·115 WIDE

332·77 calc

198° 39' 50"

O.P.gsms R. OF 1005 O.R.M.

47·275

1005

25

98

O. P. 1257

WIDE) ROAD

RAILWAY

198° 39' 50"

365

(25

KARNTE

ROAD

DATUM

198° 39' 50"

365

O.R.M.

1005

25

98

107° 0' 30"

S/E

108° 39' 50"

113° 40' 27"

398·556 231·76

42° 20'

187·286

69° 20'

200

288° 39' 50"

475

275

5146

14·41 ha

NOTE: REFERENCE MARKS ARE AT ONE METRE UNLESS OTHERWISE SHOWN

N

Grid Bearings

METRES

160 120 80 40 0 20 40

SCALE 1:1500

S.75/103

LOT 5146

TOWN OF ALICE SPRINGS

LEGEND

Concrete Block.....
Survey Post.....
Pipe or Nail.....
Reference Mark.....
Lockspit.....
Fence Post.....

AZIMUTH

A. Assumed from....O.P. 1257.....
observed at.....
to the.....Meridian of Longitude.
B. Derived from.....R.M.....
C. From Latitude Datum.....derived
from.....

DETAILS

No	REFERENCE	APPROVED	DATE
	AMENDMENTS		

SURVEYOR'S CERTIFICATE

I, Richard H. Barry
hereby certify that the survey represented on this plan was carried out by me or under my immediate supervision and was completed on 15.7.76
and that this survey was executed in accordance with the Licensed Surveyors Ordinance 1933-1937 and the Regulations thereunder.
Date 3/8/76
Licensed Surveyor

File No. S.75/103
Field Book No.
Index Plan ALICE SPRINGS 4849 Sht 24-25
Drawn B. Dyer 29-7-76
Examined 6.8.76
Calculation Book No.

SURVEY APPROVED
Passed
Date 14.10.1976
Surveyor-General

ASSISTANT CHIEF DRAFTSMAN

MICROFILMED 4/7/91

Date Registered: 09/06/2010 **Volume** 747 **Folio** 783
Duplicate Certificate as to Title issued? No

SEARCH CERTIFICATE

SPECIAL PURPOSES LEASE 00412

Lot 5146 Town of Alice Springs from plan(s) S 75/103
Area under title is 14 hectares 4100 square metres

Owner:
Anthepe Housing Association Incorporated
of PO Box 8070, Alice Springs NT 0871

Registered Date	Dealing Number	Description
		Previous title is **Volume** 622 **Folio** 178
09/06/2010	728349	Underlease to Northern Territory of Australia - expiring 02/12/2012 (728326)
09/06/2010	728326	Sublease to Executive Director of Township Leasing - expiring 02/12/2049
End of Dealings		

Commencement Date: 8 November 1976

Expiry Date: In Perpetuity

Reservations:

(a) A right of entry in favour of the Administrator or an officer authorised in writing by the Administrator, at all reasonable times and in any reasonable manner, to enter upon the leased land or any part of it and to inspect the leased land or any part of it and any improvements on it.

(b) All minerals and mineral substances in or on the leased land including gold, silver, copper, tin, other metals, ores, and substances containing metals, gems, precious stones, coal, shale, mineral oils and valuable earths or substances, together with the right to authorise any persons to enter upon the land to mine, work for, win, recover and remove them or any of them and to do all things necessary or convenient for those purposes.

(c) A power of resumption.

(d) A right of entry and inspection for the purposes of providing and maintaining water, sewer, electricity and other services on the leased land or on other lands.

Provisions:

To hold unto the lessee in perpetuity yielding and paying therefor an annual rental of five hundred and twenty five dollars subject to re-appraisement in accordance with section 11A of the Special Purposes Leases Act.

And it is hereby declared that -

The lessee, having paid all rent due under this lease, may at any time surrender this lease in accordance with the provisions of the Special Purposes Leases Act and the Regulations thereunder.

If the rent (other than the rent for the first year) is not paid on or before the expiry of three months from the date on which it becomes payable by the lessee, an additional amount (which shall be deemed to be recoverable as rent) at the rate of five per centum per annum from the expiry of that period shall become payable by the lessee in respect of the rent overdue, if demanded by the Administrator.

This lease is granted under and subject to the Special Purposes Leases Act and the Regulations for the time being in force thereunder and is conditional upon compliance by the lessee with the covenants and conditions to be complied with

by the lessee and may, subject to the Special Purposes Leases Act and the Regulations, be forfeited for non-compliance with any such covenant or condition.

Covenants:

The lessee covenants with the Minister as follows -

1. That the lessee will pay the rent annually in advance.

2. That the lessee will use the land only for the purposes for which it is leased; viz., Aboriginal Communal Purposes.

3. That the lessee will pay all rates and taxes which may at any time become due in respect of the leased land.

4. That the lessee will observe and comply with the Regulations under the Special Purposes Leases Act for the time being in force.

5. That the lessee will by the first day of January, 1978 or within such further time as may be approved in writing by the Administrator commence to erect improvements suitable for the purpose of the lease on the said land (with the necessary and usual outbuildings and fences) at a cost of not less than fifty thousand dollars and in accordance with plans and specifications prepared by the lessee and previously submitted to and approved in writing by the Administrator and complete the erection of the said improvements at a cost of not less than the said sum and in accordance with any Act, Ordinance or Regulation by the first day of January, 1979 or within such further time as may be approved by the Administrator.

6. That the lessee will by the first day of January, 1981 or within such further time as may be approved in writing by the Administrator raise the value of improvements on the leased land to the value of one hundred and fifty thousand dollars and in accordance with the plans and specifications prepared by the lessee and previosly submitted to and approved in writing by the Administrator and thereafter maintain and repair and keep in repair all improvements on the leased land to the satisfaction of the Administrator.

7. That the leased land shall be dust suppressed and drained for stormwater to the satisfaction of the Administrator by the first day of January, 1979 or within such further time as may be allowed by the Administrator, and all such works shall thereafter be maintained to the satisfaction of the Administrator.

8. That all internal roads and pathways shall be of good all-weather construction and shall be maintained to the satisfaction of the Administrator.

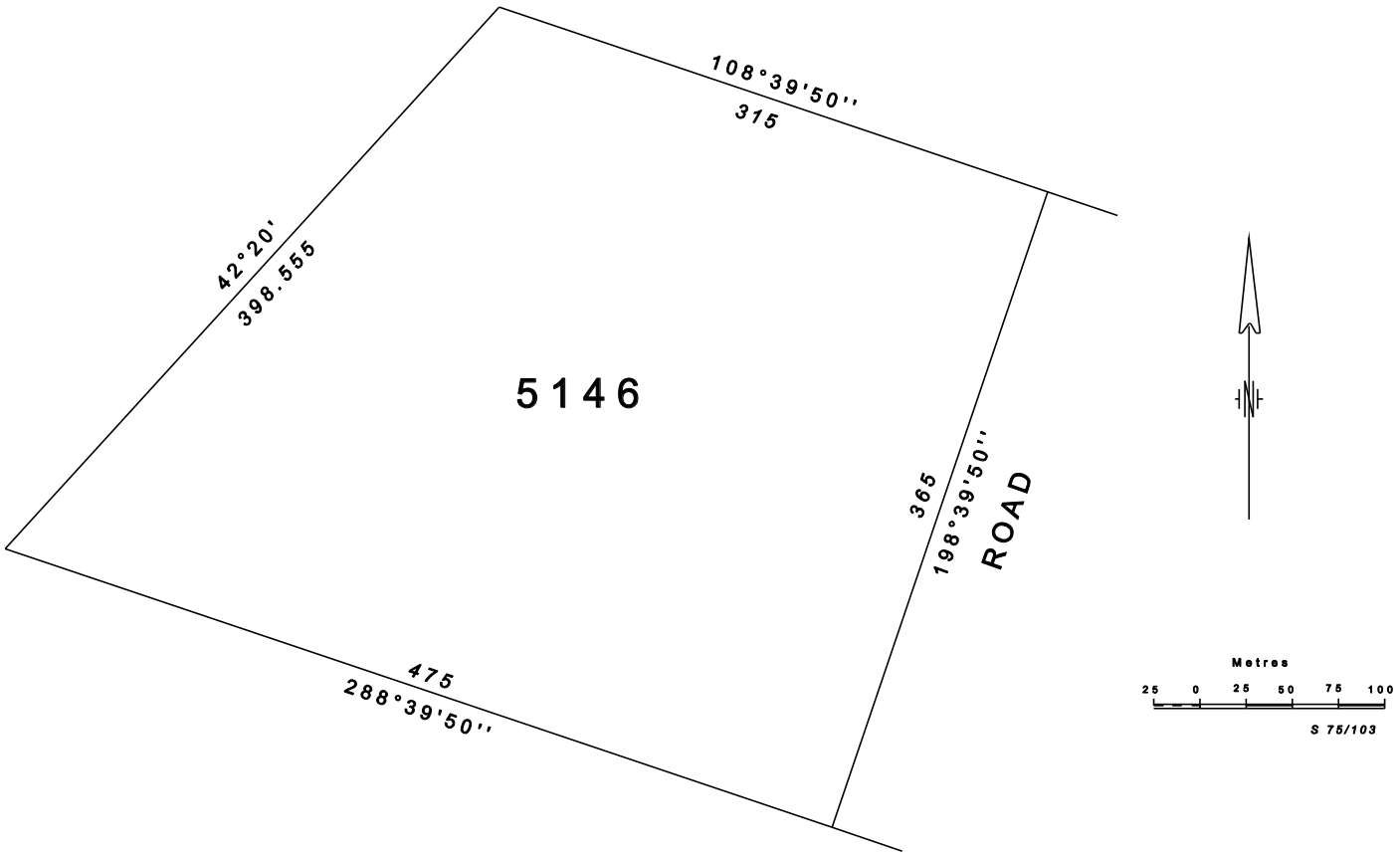
9. That no building, vehicle or structure shall be situated within five metres of the boundary of the land to the Railway Reserve, and not within six metres of any other boundary. The area so formed along the northern and western boundaries shall be landscaped with trees, and shrubs to the satifaction of the Administrator by the first day of January 1979 and all such landscaping shall thereafter be maintained to the satisfaction of the Administartor.

10. That the disposal and treatment of sewerage from the land shall be in accordance with approvals and directions given by the Director of Health.

11. That for every ten camping sites or part thereof there shall be provided the following facilities:- 1 water closet for use by males 1 urinal 1 water closet for use by females 1 shower with hot and cold water, for use by males 1 shower with hot and cold water, for use by females 1 handbasin with hot and cold water for each water closet provided.

13. That the lessee shall submit plans for the development of the site to the Urban Development and Town Planning Branch for approval prior to the commencement of development.

Date Registered: 09/06/2010 **Volume** 747 **Folio** 783
Duplicate Certificate as to Title issued? No



NORTHERN TERRITORY OF AUSTRALIA

Record of Administrative Interests and Information

Record of Administrative Interests and Information
The information contained in this record of Administrative Interests only relates to the below parcel reference.

Parcel Reference: Lot 05146 Town of Alice Springs plan(s) S 75/103

(See section 38 of the Land Title Act)

Note: The Record of Administrative Interests and Information is not part of the Land Register and is not guaranteed by the Northern Territory of Australia, and the NT Government accepts no Liability for any omission, misstatement or inaccuracy contained in this statement.

Registrar General

Government Land Register
(none found)

Custodian - Registrar General (+61 8 8999 6252)

Current Title
CUFT 747 783 (order 1)

Tenure Type
SPECIAL PURPOSES LEASE 412

Tenure Status
Current

Area Under Title
14 hectares 4100 square metres

Owners
Anthepe Housing Association Incorporated
PO Box 8070, Alice Springs NT 0871

Easements
(none found)

Scheme Name
(none found)

Scheme Body Corporate Name
(none found)

Reserved Name(s)
(none found)

Unit Entitlements
(none found)

Transfers
(none found)

Tenure Comments
(none found)

Historic Titles
CUFT 622 178 (order 1)
CUCL 146 016 (order 2)
CUCL 146 016 (order 1)
Visit the website http://www.nt.gov.au/justice/bdm/land_title_office/

Custodian - Surveyor General (+61 8 8995 5362)

Address
80 KARNTE RD, ARUMBERA

Survey Plan
S 75/103

Survey Status
Approved

Parcel Status
CURRENT

Parcel Area
14 hectares, 4100 square metres

Map Reference
Code 010 Scale 2500 Sheet 29.29
Code 010 Scale 2500 Sheet 29.28
Code 010 Scale 5000 Sheet 15.14

Parent Parcels
(none found)

Parcel Comments
ABORIGINAL COMMUNAL PURPOSES. POSSIBLY AFFECTED BY PROP ROUTE OF MEREENIE-PALM VALLEY-ALICE SPRINGS GAS PIPELINE - REF CP4501. RUBUNTJA CRESCENT NAMED, NTG G21 23/05/2012. LOTS 10228(A) TO 10245(A)- 98/9249/141-8. ADMINISTRATIVE LOTS 10228 TO 10245 AND 10295 TO 10298 SURVEYED - S2012/010 .

Survey Comments
(none found)

Proposed Easements
(none found)

Municipality
ALICE SPRINGS MUNICIPALITY

Region
ALICE SPRINGS

Custodian - Valuer General (+61 8 8995 5375)

Owner's Last Known Address

CEO Housing & Department of Lands and Planning, ATTENTION: CHIEF FINANCE OFFICER, GPO BOX 4621, DARWIN NT 0801

Parcels in Valuation

Lot 05146 Town of Alice Springs

Unimproved Capital Value

$910,000 on 01/07/2015
$998,000 on 01/07/2012
$950,000 on 01/07/2009
$675,000 on 01/07/2006
$500,000 on 01/07/2003
$400,000 on 01/07/2000
$351,000 on 01/07/1997
$250,000 on 01/07/1994
$215,000 on 01/07/1991
$180,000 on 01/01/1989
$100,000 on 01/01/1986

Valuation Improvements

28/05/1990 House
28/05/1990 Hall x 2
28/05/1990 Ablution block

Custodian - Property Purchasing (+61 8 8999 6631)

Acquisitions

(none found)

Custodian - Building Advisory Service (+61 8 8999 8965)

Building Control Areas

BBASP001 - Building Control Area	ALICE SPRINGS BUILDING AREA

Building Permits

Application Number:	21 of 21
Description:	AC 9668A & 9668B - New concrete and steel residential 2 x 2 bedroom duplex building (Type H4DAS)
Number of Residental Units:	2
Australian Bureau of Statistics Type:	Semi-detached town house of one storey
Building Class:	Single Dwelling Non-habitable building
Area:	228 square metres
Certification:	Single Dwelling - Full Code - *issued on* 06/02/2012 Non-habitable building - Full Code - *issued on* 06/02/2012

Application Number:	20 of 21
Description:	House AC 9670 - New concrete and steel residential 3 bedroom dwelling (Type H6SAS)
Number of Residental Units:	1
Australian Bureau of Statistics Type:	Separate House
Building Class:	Single Dwelling Non-habitable building
Area:	139 square metres
Certification:	Single Dwelling - Full Code - *issued on* 05/12/2011 Non-habitable building - Full Code - *issued on* 05/12/2011

Application Number:	19 of 21
Description:	House AC 9669 - New concrete and steel residential 3 bedroom dwelling, free standing shade structure (Type H6AS)
Number of Residental Units:	1
Australian Bureau of Statistics Type:	Separate House
Building Class:	Single Dwelling Non-habitable building
Area:	136 square metres
Certification:	Single Dwelling - Full Code - *issued on* 05/12/2011 Non-habitable building - Full Code - *issued on* 05/12/2011

Application Number:	18 of 21
Description:	House AC 9671 - New concrete and steel residential 3 bedroom dwelling, free standing shade structure(Type H6AS)
Number of Residental Units:	1
Australian Bureau of Statistics Type:	Separate House
Building Class:	Non-habitable building Single Dwelling
Area:	139 square metres
Certification:	Non-habitable building - Full Code - *issued on* 05/12/2011 Single Dwelling - Full Code - *issued on* 05/12/2011

Application Number:	17 of 21
Description:	House AC 30 & 31 - New concrete and steel residential duplex building, free standing shade structure(Type H4DAS)
Number of Residental Units:	2
Australian Bureau of Statistics Type:	Semi-detached town house of one storey
Building Class:	Single Dwelling Non-habitable building
Area:	228 square metres
Certification:	Single Dwelling - Full Code - *issued on* 05/12/2011 Non-habitable building - Full Code - *issued on* 05/12/2011

Application Number:	15 of 21
Description:	Dwelling Alterations [House 2]
Number of Residental Units:	1
Australian Bureau of Statistics Type:	Separate House
Building Class:	Single Dwelling
Area:	(none found)
Certification:	Single Dwelling - Full Code - *issued on* 27/09/2011

Application Number:	14 of 21
Description:	Dwelling alterations to house 01 including new kitchens, wet areas, floor linings, windows and doors, air conditioning and heating
Number of Residental Units:	1
Australian Bureau of Statistics Type:	Separate House
Building Class:	Single Dwelling
Area:	(none found)
Certification:	Single Dwelling - Full Code - *issued on* 05/08/2010

Application Number:	13 of 21
Description:	Wall Cladding and Awnings.
Number of Residental Units:	1
Australian Bureau of Statistics Type:	Separate House
Building Class:	Single Dwelling
Area:	(none found)
Certification:	Single Dwelling - Full Code - *issued on* 11/11/2009

Application Number:	12 of 21
Description:	DWELLING ALTERATIOPNS - House 6
Number of Residental Units:	1
Australian Bureau of Statistics Type:	Separate House
Building Class:	Single Dwelling
Area:	(none found)
Certification:	Single Dwelling - Full Code - *issued on* 02/07/2009

Application Number:	11 of 21
Description:	new residence
Number of Residental Units:	1
Australian Bureau of Statistics Type:	Separate House

Building Class:	Single Dwelling
Area:	242 square metres
Certification:	Single Dwelling - Full Code - *issued on* 23/10/2006

Application Number:	9 of 21
Description:	DWELLING
Number of Residental Units:	1
Australian Bureau of Statistics Type:	Separate House
Building Class:	Single Dwelling
Area:	0 square metres
Certification:	Single Dwelling - Full Code - *issued on* 23/05/2002

Visit the website http://www.nt.gov.au/building/

Custodian - Town Planning and Development Assessment Services (+61 8 8999 6046)

Planning Scheme Zone
CL (Community Living)

Interim Development Control Orders
(none found)

Planning Notes
(none found)

Planning Applications
(none found)

Custodian - Power and Water Corporation (1800 245 092)

Meters on Parcel

Power Water - Electricity	7
Power Water - Water	10

For Account balances, contact the Power and Water Corporation.

Custodian - Pool Fencing Unit (+61 8 8924 3641)

Swimming Pool/Spa Status
(none found)

For more information, contact the Pool Fencing Unit (+61 8 8924 3641).

Custodian - Mines and Energy (+61 8 8999 5322)

For information on possible Exploration Licences, contact Mines & Energy or visit the website http://www.nt.gov.au/d/Minerals_Energy/

For information on possible Petroleum Titles, contact Mines & Energy for further details.

Custodian - NT Environment Protection Authority (+61 8 8924 4218)

Results of site contamination assessment
(none found)

For further information contact Environment Protection Authority or visit the website
https://ntepa.nt.gov.au/waste-pollution/contaminated-land

Custodian - Heritage Branch (+61 8 8999 5039)

Heritage Listing:
(none found)

For further information on heritage places contact Heritage Branch or visit the website
https://nt.gov.au/property/land/heritage-register-search-for-places-or-objects

Other Interests

For Account balances, contact Alice Springs Town Council



Transformer data

Group	Com Id	Location	Community Name	Dwellings No. (Funded Dwellings)	Dwellings No. (Bennett Design)	New Houses ** (Future Demand)	Primary Volatge Level (KV)	PWC Substation ID	PWC Test Number	Transformer size (KVA)	KVA Total dwellings @ 4.5KVA	KVA Total dwellings @ 7KVA	Comments
1	290	Darwin	Bagot	55	55		11	1924	1735	300	247.5	385	
	344	Darwin	Knuckey Lagoons	18	19	2	11	1771	2163	100	85.5	133	
	347	Darwin	Kulaluk	19	19		11	1092	10607	50	85.5	133	
	403	Darwin	Palmerston Town Camp	20	16		22	10196	10245	100	90	140	Two transformers for this Town Camp. Transformers are not in boundary of Town Camp [The nearest transformers data to Town Camp are highlighted in yellow].
							22	265	11645	25			
	412	Darwin	Railway Dam (One Mile Dam)	5	6	2	11	1041	4378	200	27	42	Transformer is not in boundary of Town Camp [The nearest transformer data to Town Camp is highlighted in yellow].
	427	Adelaide River	Amangal	9	9		22	216	12187	100	40.5	63	Two transformers for this Town Camp.
							22	184	5646	63			
	687	Jabiru	Manabadurma	10	12		11	5050	11107	200	54	84	
	825	Darwin	Minmarama Park	24	24		11	2147	11372	100	108	168	
2	606	Katherine	Warlpiri Transient Camp	9	9		22	6416	4886	100	40.5	63	Two transformers for this Town Camp.
							22	6074	4695	25			
	621	Katherine	Miali Brumby (Kalano)	47	31		22	6133	12247	315	211.5	329	
	640	Pine Creek	Pine Creek Compound	4	4		22	6666	3147	25	18	28	Transformer is not in boundary of Town Camp [The nearest transformer data to Town Camp is highlighted in yellow].
	971	Mataranka	Mulggan	12	9	4	22	6819	5296	16	54	84	
							22	6818	5297	16			
							22	6384	11028	25			
3	215	Tennant Creek	Blueberry Hill (Munji-Marla)	2	2		22	7079	1868	200	9	14	Transformer is not in boundary of Town Camp [The nearest transformer data to Town Camp is highlighted in yellow].
	223	Tennant Creek	Dump Camp (Marla-Marla)	7	7		22	7181	11088	200	31.5	49	
	224	Elliott	Elliott South Camp	12	12		11	7504	4718	200	54	84	Transformer is not in boundary of Town Camp [The nearest transformer data to Town Camp is highlighted in yellow].
	225	Elliott	Elliott North Camp	36	25		11	7505	4715	100	162	252	
	238	Tennant Creek	Kargaru (East Side Camp)	12	12	1	22	7572		200	54	84	
	246	Tennant Creek	Ngalpa Ngalpa	18	21		22	7179		200	94.5	147	Two transformers for this Town Camp.
							22	7033	10904	315			
	271	Tennant Creek	Village Camp	12	12	1	22	7183	11107	200	54	84	
	681	Tennant Creek	Tingkarli	12	12		22	7180		200	54	84	
	684	Tennant Creek	Wuppa	15	15	1	22	7141	11092	100	67.5	105	Two transformers for this Town Camp.
							22	7182	11095	200			
4	3	Alice Springs	Akngwertnarre (Morris Soak)	11	15		11	8596	11336	300	67.5	105	Transformer is not in boundary of Town Camp [The nearest transformer data to Town Camp is highlighted in yellow].
	16	Alice Springs	Anthelk Ewlpaye (Charles Creek)	17	10		11	8569		315	76.5	119	Transformer is not in boundary of Town Camp [The nearest transformer data to Town Camp is highlighted in yellow].
	17	Alice Springs	Anthepe	15	15		22	8598	5874	200	67.5	105	Data extracted from PWC asset information. There was not access to this Town Camp due to ceremony on inspection day.
							22	8597	11244	315			
	19	Alice Springs	Aper Alwerrknge (Palmers)	7	6		11	8405	2939	200	31.5	49	Transformer is not in boundary of Town Camp [The nearest transformer data to Town Camp is highlighted in yellow].
	35	Alice Springs	Ewyenper Atwatye (Hidden Valley)	47	47		11	8622	11202	100	211.5	329	
							11	8623	11203	100			
							22	8625	11205	63			
							11	8626	11204	100			
	47	Alice Springs	Ilparpa	13	13		22	8611	11702	200	58.5	91	
	48	Alice Springs	Ilperle Tyathe (Walpiri)	10	9		11	8001	11209	315	45	70	Transformer is not in boundary of Town Camp [The nearest transformer data to Town Camp is highlighted in yellow].
	50	Alice Springs	Ilyperenye (Old Timers)	10	10		22	8145	3323	100	45	70	
	64	Alice Springs	Bassos	2	2		11	8002	10946	50	9	14	
	69	Alice Springs	Karnte	19	19		22	8282	2345	100	85.5	133	
	87	Alice Springs	Yarrenty Altere (Larapinta Valley)	34	34		11	8617	11334	100	153	238	
							11	8618	11200	63			
							11	8619	11335	100			
							11	8620	11201	100			
	90	Alice Springs	Inarlenge (Little Sisters)	16	22		22	8137	2925	100	99	154	Transformer is not in boundary of Town Camp [The nearest transformer data to Town Camp is highlighted in yellow].
	108	Alice Springs	Mpwetyerre (Abbotts)	6	6		11	8093	11703	315	27	42	Transformer is not in boundary of Town Camp [The nearest transformer data to Town Camp is highlighted in yellow].
	113	Alice Springs	Mount Nancy (Nyewente)	11	12		11	8405	2939	200	54	84	
	129	Alice Springs	Nyewente (Trucking Yards)	26	26		11	8629	11312	300	117	182	
	675	Alice Springs	Hoppys	15	19						85.5	133	There is not any Transformer in boundary of Town Camp. Also it's not shown in PWC asset information.
	676	Alice Springs	Ilpiye Ilpiye (Golders Camp)	15	14		11	8314	369	50	67.5	105	
	1029	Alice Springs	Kunoth	4	4		11	8569		315	18	28	Transformer is not in boundary of Town Camp [The nearest transformer data to Town Camp is highlighted in yellow].
5	222	Borroloola	Mara	28	29	2	11	6187	12610	100	130.5	203	Two transformers for this Town Camp.
							11	6545	10203				
	229	Borroloola	Garawa 1	16	14		11	6546	10166	100	72	112	Two transformers for this Town Camp.
							11	6332	4890	100			
	278	Borroloola	Yanyula	29	29		11	6162	10496	200	130.5	203	Data extracted from PWC asset information. It's outside of Twon Camp, shown only Transformer to this Town Camp.
							11		10167				This transformer is not shown in PWC asset information. It's installed in Boat Ramp Road near to Town Camp and connected to Electrical reticulation of Town Camp.
	992	Borroloola	Garawa 2	11	11		11	6189	2669	25	49.5	77	

** For New house's demand calculation see section 13.4 "Future Demand".

Ilparpa

Ilparpa

1 Design

The infrastructure reviews have been undertaken against current relevant standards for typical sub-divisions. The following standards have been used in undertaking the reviews.

Sewerage and water supply

- Water Services Association of Australia – Sewerage Code – WSA 02 Part 1: Planning and Design
- Power and Water Corporation supplement to WSA 02
- Water Services Association of Australia – Sewerage Pumping Station Code – WSA 04 -2005 Part 1: Planning and Design
- Power and Water Corporation supplement to WSA 04
- Water Services Association of Australia – Water Supply Code – WSA 03 2002 Part 1: Planning and Design
- Power and Water Corporation supplement to WSA 03
- Power and Water Corporation Indigenous Community Engineering Guidelines (2008)
- Department of Housing and Community Development Indigenous Community Engineering Guidelines (ICEG 2014, updated September 2016)
- Power and Water Corporation Essential Services Infrastructure Assessment and Upgrade Guidelines (for Town Camps in Urban Communities, 2009)
- Power and Water Corporation Standard Drawings
- Australian Standards

Electrical services

Electrical infrastructure has been assessed against AS/NZS3000 Wiring Rules and against PWC Service, Installation and Metering Rules and Urban Residential Development (URD) Design Standards where possible.

With one exception, town camps are each a single lot and compliance with AS/NZS3000 is sufficient to address potential safety concerns.

As such application of PWC URD Design Standards will mainly apply to the incoming supply and bulk or initial multi-metering panels if provided.

URD Design Standards for internal reticulation and street lighting appear to have been applied in many cases for convenience rather than compliance.

For the purposes of this report, the demand per dwelling allowances of URD Design Standards have been used to estimate incoming supply and overall distribution capacity requirements.

The following standards apply:

- Australian Standards
- Power Networks Design and Construction Guidelines, Power and Water Corporation
    - NP001.1_Design and Construction of Network Assets – General Requirements
    - NP001.3_General Specification for Overhead Electrical Reticulation
    - NP001.6_General Specification for URD Subdivisions
    - NP003_Installation Rules_V3
    - NP007_Service Rules

- NP027_Capture of Newly Installed Street Lighting Information
- NP041_Guidelines for Electrical Design Consultants

Further referral to the guidelines in this report will be designated by the guidelines number, NP001.1.

Communications

- National Broadband Network Website viewed 21 January 2017 (http://www.nbnco.com.au/) – NBN rollout maps

Council guidelines

In addition to the above standards, the following Council guidelines will be used where applicable.

- Alice Springs Town Council – Subdivision and Development Guidelines, November 2012

General

It should be noted that if the town camps are proposed to be subdivided and services assets gifted to Power and Water Corporation (PWC) for operation and maintenance, all of these services will need to fully meet PWC standards. With the exception of a few town camps that have recently been upgraded, this will require the full replacement and/or realignment of most services.

2 Condition assessment

2.1 Rating assessment matrix

A condition rating matrix was developed and used to assess all municipal infrastructure. The same rating was used for all services to maintain consistency in assessments. Table 1 below shows the condition rating and operability.

Table 1 Condition rating

Condition rating		Operability
1	Very Poor	Not operational
2	Poor	Not fully operational or requires immediate maintenance to keep operational
3	Good	Fully operational, may require routine maintenance
4	Very Good	Fully operational, may require maintenance in the next six months
5	Excellent	New, fully operational

2.2 Civil assessment limitations

The civil infrastructure condition investigations were subject to a number of limitations. These include:

- Only accessible services have been investigated. This includes inspecting the top of sewer manholes, side entry pits, etc., however, does not include opening pits to inspect infrastructure below ground.
- No physical testing of the sewer, water or stormwater network was undertaken.
- No survey or service locating was undertaken.

As there was no survey, potholing or CCTV undertaken on the underground infrastructure there is insufficient information to make determinations on the asset condition. The condition assessments discussed in this report are only for the accessible services and do not necessarily represent the condition of the underground infrastructure. For the majority of the town camps, other than a few that have recently been upgraded it was found that the underground services are generally undersized and it is likely, due to their age, that the these services are in poor condition. Either factor would trigger the need for a complete replacement to meet current relevant standards.

2.3 Electrical assessment limitations

The electrical infrastructure condition investigations were subject to a number of limitations. These include:

- Inspections were carried out without the assistance of an electrical tradesman.
- Only accessible services were investigated. Assessments were of a visual nature and no pit covers were removed.
- Overhead equipment was assessed from ground level.
- Switchboards were not opened and no assessment of the internal connections or bus ratings was made.

- Electrical infrastructure was assessed down to the meter for multi-meter panels and down to the termination, overhead pole or distribution pillar, of the supply cable to a meter located at a dwelling.

3 Current infrastructure issues

Power and Water Corporation (PWC) have advised of the following concerns and issues in regard to the sewerage, water and electrical infrastructure at all town camps.

3.1 Ownership and maintenance

PWC stated there has always been confusion regarding the ownership and responsibilities of the internal sewer, water and electrical infrastructure. PWC have advised that they have no legal tenure on the majority of assets in any town camps and that the owner is essentially that of the land owner or leaseholder. This is further discussed for each type of infrastructure for each town camp.

The ownership and who is responsible for the maintenance of the sewage pump stations and street lighting is a major concern. In most town camps it was found that PWC have been maintaining the assets on an in-kind basis, although there are no maintenance or access agreements in place and the infrastructure is generally not compliant to PWC standards.

3.2 Access to infrastructure

PWC advised that due to the uncertainty surrounding ownership and responsibility of the sewerage, water and electrical infrastructure, each town camp is seen as a single lot with multiple houses on it. There are no formal road reserves or easements where the municipal infrastructure should be located. PWC therefore have no legal right to enter the town camps to work on the infrastructure, nor can PWC stop others from working on the infrastructure. There is a risk that the maintenance undertaken by others may be to a lower standard than PWC.

It should be noted that there are currently no legal services easements within the town camps, except for a few cases where a town service passes through the town camp. Therefore it is recommended that easements are created over any infrastructure owned by PWC and any future assets to be gifted to PWC, to allow the service providers access to the infrastructure.

3.3 Existing infrastructure

PWC have stated that although the existing sewerage and water infrastructure appears to comply with relevant standards in some locations, the capacity cannot be assumed to meet PWC requirements due to the potential for underground substandard condition and/or grading of pipework. It is likely that these assets will need to be fully replaced to PWC standards to ensure sufficient capacity.

The planning process currently allows construction within the town camps on Commonwealth land without requiring service authority (PWC) approvals. This means that there has been no opportunity for PWC to recover contributions towards required upgrades to headworks servicing the developments and these upgrades have been paid for by PWC in the past. This inconsistency needs to be addressed for future developments within the town camps to ensure PWC are able to continue to provide adequate services.

3.4 Safety concerns

PWC have expressed concerns with safety of PWC staff and contractors working within the camps. PWC have employed procedures such as multiple people / vehicles to attend the site, with police or housing safety officers as required. This

generally leads to a delayed response time and increased cost to respond to and remediate emergency situations.

PWC have also raised the concern that if others work on water infrastructure within the town camps and do not apply the correct sanitation procedures they not only risk contaminating the entire water supply network within the town camp, at some town camps with direct connections to the town supply, they risk contaminating the entire town's water supply.

4 Available information

As the site investigations were limited to accessible / visible services, information on below ground services (such as electrical cables, sewer pipes, water supply pipes, etc.) were determined from available information. This information included:

- Serviced Land Availability Program (SLAP) maps,
- Department of Family & Community Services - Connecting Neighbours Program – Essential Services Scoping Study Report Volume 1 April 2005,
- Connecting Neighbours Project – Infrastructure Assessment and Recommendation Report - Arup Pty Ltd, April 2005,
- Alice Springs Town Camp Sewage Pumping Station Assessments, Byrne Design, 2014,
- Drawings supplied by NT Department of Infrastructure - Technical Records,
- Drawings supplied by Power and Water Corporation,
- Bennett Design inspection reports and population data.

Aurecon undertook a site investigation of the Ilparpa community on 22 November 2016 to inspect roads, stormwater drainage, electrical services, sewerage and water supply, and community structures. The following sections detail the outcomes of this investigation and the assessments of the infrastructure.

The civil and electrical inspection reports can be found in the Appendices.

5 Sewerage

5.1 Ownership and boundaries

The sewer infrastructure that was inspected is property of Ilparpa Aboriginal Corporation, but is the responsibility of Ingkerreke Outstations Resource Services to maintain.

Power and Water Corporation noted that they have been maintaining the sewage pump station, although there is no maintenance agreement in place. The sewage pump station was inspected with a representative from PWC.

5.1.1 Connection methods and billing

PWC advised that they currently charge a single sewerage bill based on the number of houses, which for Ilparpa is nine. The sewerage bill is charged to the Department of Housing and Community Development.

It is not known what contribution the residents make towards the sewerage bills.

5.2 Existing infrastructure condition assessment

The sewer infrastructure inspection was limited to inspecting the condition of manhole covers and pump stations, as all other sewerage infrastructure is below ground. The assets that were inspected had the following conditions:

Table 2 Sewer condition assessment

Asset	1 Very Poor	2 Poor	3 Good	4 Very Good	5 Excellent	Total
Manhole			1	1		2
Pump station				1		1



Figure 1 Sewer manhole, condition: *good*



Figure 2 Sewage pump station, condition: *very good*

Two manholes were assessed in good and very condition, although one was located within a property boundary. The sewage pump station appears to be quite new and is in very good condition.

The SIHIP program provided detailed drawings for upgrades within Ilparpa (refer Appendices). At the time of the inspection it appears as though these upgrades have not yet been constructed.

5.3 Current performance and risks

5.3.1 Current sewer network performance

The current capacity of the sewer network was calculated based on the following design assumptions:

- The adopted minimum grade for the pipework is 1.0%, as advised by Power and Water Corporation.
- The Equivalent Population (EP) has been calculated assuming one household equates to 9 EP, based on discussions with Power and Water Corporation.

- The capacity has been assessed by calculating the current flow rate, and the maximum flow rate when the sewer pipe flows full. The result is then a percentage of how much of the pipe is currently being used.
- Manning's roughness coefficient of the pipework is 0.012, as recommended by PWC for PVC pipes.
- Where the sewer pipe grade, size or material is not known, it is assumed to be non-compliant to PWC standards.
- As Ilparpa disposes to a pump station, the capacity of the pump station has also been assessed.

The current number of houses in Ilparpa is 13, this multiplied by 9 EP per house gives a total current EP of 126. As the pipe size was not known, it was assumed to be DN100 which is non-compliant to PWC standards.

The capacity of the existing sewer was then calculated. The percentage shows how much of the pipe capacity is currently being used.

Table 3 Existing sewer capacity

Catchment	Current total EP	Diameter of connection (mm)	Adopted PWC minimum slope (%)	Q_{full} (L/s)	Current Q (L/s)	Current capacity (%)
Catchment 1	117	100	1.0	5.60	1.51	27%

Table 3 above shows that the capacity of the existing sewer network is adequate for the current peak population.

5.3.2 Current sewage pump station performance

The capacity of the pump station was checked against the following criteria, based on PWC guidelines:

- Less than 12 pump starts per hour (for pumps less than 15kW),
- Minimum velocity 0.9 m/s,
- Maximum velocity 2.5 m/s,
- Overflow storage equal to three hours of peak dry weather flow.

It should be noted that an investigation was undertaken by Byrne Design in 2014 to confirm the capacity and compliance of the sewage pump stations. The Byrne Design report details the works required to the pump station wet well, collection chamber, and generally around the compound (e.g. lighting, hand rails, etc) to bring it up to relevant standards. PWC confirmed that none of the recommended upgrades from the Byrne Design report have been constructed.

Detailed drawings of the pump station were not available, however, based on the report by Byrne Design, it appears as though there is no overflow storage. It is recommended that overflow storage with capacity equal to three hours of peak dry weather flow is constructed.

5.4 Future demands

As no new developments are currently planned for the community, there are no additional upgrades required to cater for future demand.

5.5 Recommended works

The following works are recommended:

- Upgrade network to DN150 PVC reticulation main – approximately 350 m, including house connections and new manholes
- Install overflow storage

6 Water supply

6.1 Ownership and boundaries

Existing engineering drawings shows the reticulation network servicing the community is DN100 AC water main with a single supply point with a dead end (refer Appendices).

The water supply assets within Ilparpa are believed to be owned by Ilparpa Aboriginal Corporation, but are the responsibility of Ingkerreke Outstations Resource Services to maintain. The water is supplied from PWC owned water mains outside of the community. Figure 3 shows the extent of PWC water supply to Ilparpa from.

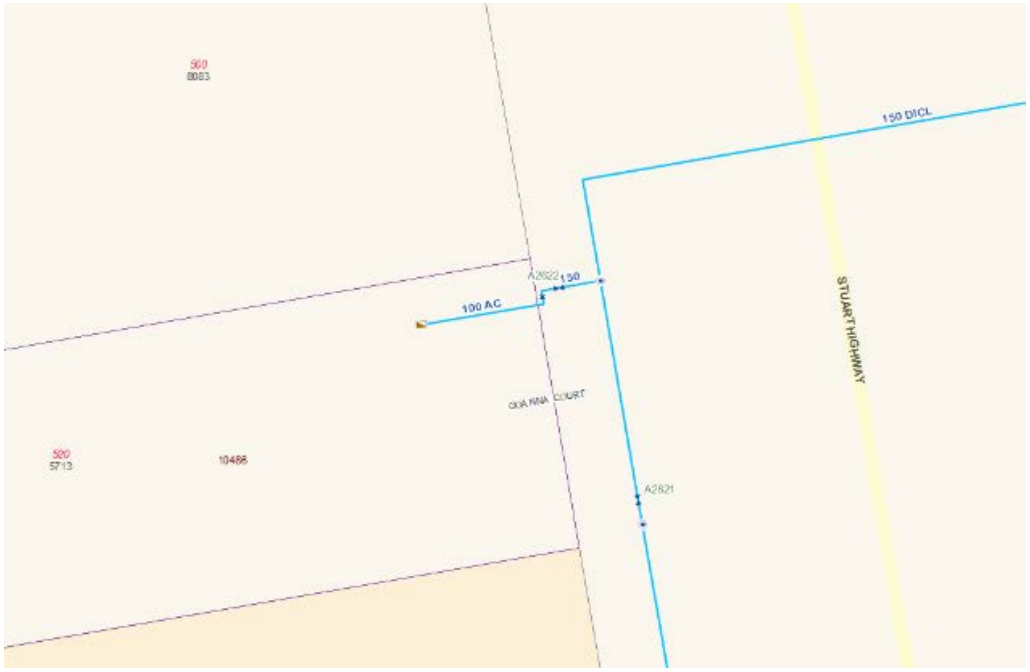


Figure 3 PWC water supply to Ilparpa

6.1.1 Connection methods and billing

Through consultation with PWC, it has been determined that the water supply to Ilparpa is charged using a fixed daily rate for a total of eight house water meters and a single bulk water meter. PWC have advised that the house water meters are sub meters, meaning that the daily rate charged against the house meters is subtracted from the bulk meter to ensure water usage is not charged twice.

PWC have advised that they currently maintain assets up to the bulk water meter.

It is proposed that PWC measure the water supply to the entire community, as opposed to individual lots within the community. Under this scheme, the water bill for the entire community is the responsibility of the governing body, being Ilparpa Aboriginal Corporation. It will be up to governing body to assign bills to residents accordingly.

It is recommended that the individual lot meters are maintained in addition to the proposed use of the bulk water meter. This will assist the governing body with distributing bills to residents, the identification of any leaks in the network, and meeting PWC standards should the town camp be subdivided in the future.

A total of three lot water meters were assessed during the inspection. Bennett Design reported Ilparpa contains 13 dwellings. Therefore, up to an additional 10 water meters are required to be installed to cover the properties without an existing water meter. Note, some water meters may have been present however not visible due to overgrown flora or restricted property access. Consequently water meters may have not been discovered during the inspection.

6.2 Existing infrastructure condition assessment

The site investigation for the water infrastructure included assessing the condition of any air valves, fire hydrants, tanks, taps, and water meters. The assessment was limited to services that could be accessed above ground; no excavation of below ground services was undertaken.

The condition of each asset is as follows:

Table 4 Water asset condition assessment

Asset	1 Very Poor	2 Poor	3 Good	4 Very Good	5 Excellent	Total
Air valves				1		1
Fire hydrants			1			1
Taps	1					1
Water meter (bulk)			1			1
Water meter (residential lots)		1	2			3



Figure 4 Water meter (bulk), condition: *good*



Figure 5 Water tank, condition: *very good*



Figure 6 Fire hydrant, condition: *good*



Figure 7 Residential water meter, condition: *good*

A single tap was found in very poor conditions with the entire tap head missing which should be replaced. The residential water meter assessed as being in poor condition was surrounded by rubbish that should be cleared.

6.3 Current performance and risks

The current capacity of the water supply was calculated based on the following design assumptions:

- The nominal peak day flow is 1300 L/capita/day, based on PWC's supplement to WSA 03 2002. This value is for the southern region of NT. It was assumed that the nominal peak day flow of 1300 L/capita/day also applies to water usage within the community, although it is possible that this value could be higher in real life due to a lack of controls to reduce water usage.
- The Equivalent Population (EP) has been calculated assuming one household equates to 9 EP, based on discussions with Power and Water Corporation.
- The maximum flow velocity used for calculating the incoming flow capacity is 1.4 m/s. PWC supplement to WSA 03-2002 states that flow velocities should generally not exceed 1.4 m/s during peak hour demand.
- The peak hour factors are listed in PWC's Supplement to WSA 03-2002, and they depend on the population range of the community. The peak hour factor of 3.0 has been adopted, for populations less than 500
- The water meter has PWC's minimum pressure guaranteed value of 15 m.

Table 5 shows the properties used to analyse Ilparpa water demand. The pipe size and type has been obtained from drawings supplied by tech records and is shown in Appendices.

Table 5 Current water demand

Total dwellings	EP	Demand (l/s)	Peak hour demand (l/s)	Fire flow demand (l/s)	Pipe size & type	Total length (m)
13	117	1.76	5.27	25	DN100 AC	630

Table 6 Current water demand analysis

Demand	Velocity (m/s)	Headloss (m)	Pressure (m)
Peak hour demand	0.67	3.11	11.89
Fire flow demand	3.18	70.23	-55.23

The existing water network has insufficient capacity to for fire flow demands. The size and layout of the pipe is non-complaint with PWC standards. It is recommended that the existing water main is replaced with a DN150 PVC ring main.

In addition to having insufficient capacity for fire flow demands, a single fire hydrant does not provide sufficient coverage for the entire community. Additional fire hydrants are required for firefighting compliance. For cost estimates an estimation of three additional fire hydrants have been incorporated.

6.4 Future demands

As no new developments are currently planned for the community, there are no additional upgrades required to cater for future demand.

6.5 Recommended works

The infrastructure that was assessed as very poor or poor is recommended to be upgraded to prevent failure in the future. The following maintenance works are required:

- Replace broken tap
- Clear rubbish from residential water meter

It is proposed that a new DN150 PVC looped water main, installed to PWC standards replaces the existing water reticulation. The cost estimates for upgrades at Ilparpa include;

- Replace water main with DN150 PVC looped main, approximately 1,000 m
- Install DN150 bulk water meters
- Install up to 10 new residential water meters
- Install three new fire hydrants

7 Roadworks

7.1 Ownership and boundaries

It is the current understanding that the road network infrastructure that was inspected is property of Ilparpa Aboriginal Corporation, but is the responsibility of Ingkerreke Outstations Resource Services to maintain.

7.2 Existing infrastructure condition assessment

The road network within Ilparpa community consists of a mix of sealed and unsealed roads.

Table 7 below summarise the condition of the road furniture as assessed during the site inspection.

Table 7 Roadworks condition assessment

Asset	1 Very Poor	2 Poor	3 Good	4 Very Good	5 Excellent	Total
Signs				3		3



Figure 8 Sign, condition: *very good*

The three signs in Ilparpa are all in very good condition and require no maintenance.

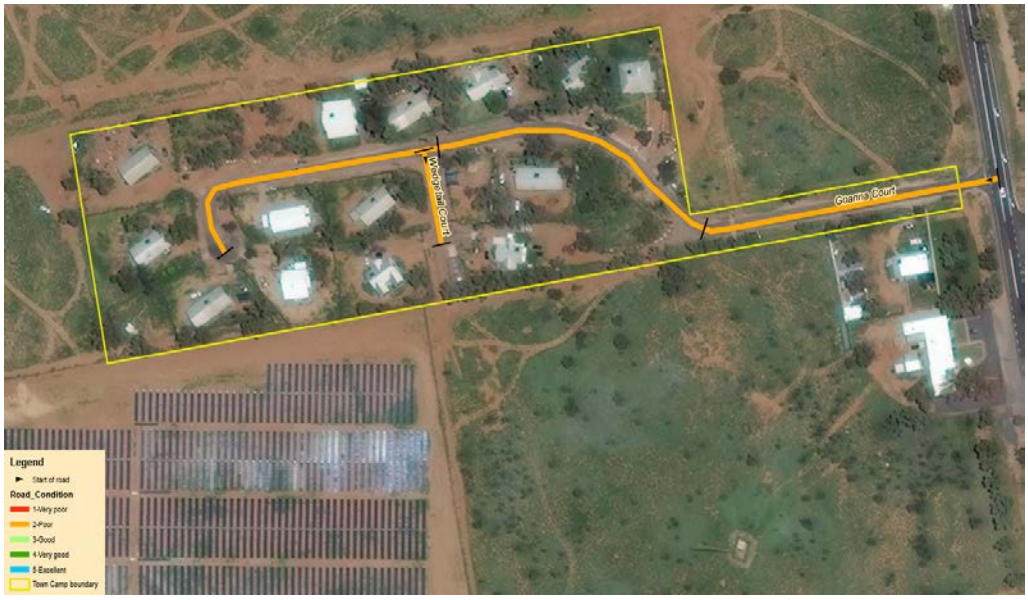


Figure 9 Community road network

Table 8 below details the condition of the roads within Ilparpa community for specific segments. Figure 9 shows a map of the community's road network with the condition ratings, road name, and chainage direction. Note, the percentage refers to the percentage of that particular road segment which experiences the defect.

Table 8 Road network condition assessment

Road name	Chainage start (km)	Chainage end (km)	Condition (1 to 5)	Defects and associated condition
Goanna Court	0	0.15	2	-6 potholes (2) -90% of the road has edge breaks (2) -5% of the road has surface cracking (3)
	0.15	0.3	2	-60% of the road has edge breaks (2) -10 potholes throughout section (3) -5% of the road has surface cracking (not rated)
	0.3	0.45	2	-6 potholes (2) -10% of the road has longitudinal cracking -60% of the road has edge breaks (2) -5m^2 of the road has stone loss(3)
Wedgetail Court	0	0.05	2	-20% of the road is covered with loose stones (2)



Figure 10 Pavement, condition: *poor*

7.3 Current performance and risks

The road network in Ilparpa was rated as having poor condition, due to edge breaks, potholes and surface cracking. The road network requires maintenance and/or upgrades. As the roads have cracking, there may be more significant issues to do with the subgrade or drainage that will require remediation before the road can be resealed.

The layout of the road network is sufficient for the current number of houses.

It is recommended that a road safety audit is undertaken to determine where signage, line marking, etc. are required.

7.4 Future demands

As no new developments are currently planned for the community, there are no additional upgrades required to cater for future demand.

7.5 Recommended works

The infrastructure that was assessed as very poor or poor is recommended to be upgraded to prevent failure in the future. The following works are recommended to upgrade the current infrastructure;

- Fill and reseal 22 potholes
- Repair 135 m2 of surface cracking
- Repair 315 m of edge breaks
- General clean of 500 m of road reserve

In order to allow for a longer term sustainable road network a significant upgrade would be required. It is recommended that a long term design which incorporates a full two lane road network, with all appropriate road furniture, line-marking, kerbs and gutters is constructed. A cost estimate to reinstate the base and subbase material, reseal with a two coat spray seal surface, construct subsoil drainage, line marking and signage has been included. Note that these works will need to be fully designed, the cost estimate is for budgetary purposes only and only indicates the construction phase. A footpath next to the road is also recommended to provide a safe trail for pedestrians.

As the maximum road width within the Ilparpa community is 6 m, this means that all 500 m of the road network will need to be upgraded to a 7.2 m wide road. The stormwater drainage infrastructure upgrades that are closely associated with the road upgrade i.e. kerb and gutters, side entry pits and underground drainage pipes are included in the stormwater section of this report.

8 Stormwater drainage

8.1 Ownership and boundaries

The stormwater drainage infrastructure that was inspected is property of Ilparpa Aboriginal Corporation, but is the responsibility of Ingkerreke Outstations Resource Services to maintain.

8.2 Existing infrastructure condition assessment

The site investigation for the stormwater infrastructure included assessing the condition of swales, culverts, headwalls, and side entry pits (SEP). Only the above ground infrastructure was assessed. As the inspection was undertaken outside of a storm event and no CCTV of the pipes was undertaken, flooding due to blockages or damage to the underground infrastructure could not be assessed. Table 9 below summarises the condition of the stormwater assets as assessed during the inspection.

Table 9 Stormwater condition assessment

Asset	1 Very Poor	2 Poor	3 Good	4 Very Good	5 Excellent	Total
Swale		1				1



Figure 11 Swale, condition: *poor*

The swale inspected at Ilparpa was in poor condition since it was poorly formalised and had no lining. The swale had debris within it that looks as though it would be causing ponding.

8.3 Current performance and risks

The detailed performance of the stormwater network cannot be fully analysed without significant hydraulic and hydrodynamic modelling, which is outside the scope of this project.

The Alice Springs Town Council's general design philosophy for stormwater drainage is that the system is based on a network of sealed roads, kerb and gutters, side entry pits and underground drainage pipes, including grassed open channels and diversion drains. It is recommended that kerbs and gutters, side entry pits and underground pipes are installed to help reduce flooding in the community. The cost estimates allow for 500 m of stormwater drainage.

8.4 Future demands

As no new developments are currently planned for the community, there are no additional upgrades required to cater for future demand.

8.5 Recommended works

The following works are recommended to upgrade or improve the current infrastructure:

- Reshape the existing swale so stormwater can effectively drain way
- Construct kerbs and gutters, side entry pits, and underground drainage.

9 Community structures

9.1 Ownership and boundaries

The community structures that were inspected are the property of Ilparpa Aboriginal Corporation, but this infrastructure is the responsibility of Ingkerreke Outstations Resource Services to maintain.

9.2 Existing infrastructure condition assessment

The site investigation for the community structures included assessing the condition and features of playgrounds, basketball courts and shade structures. The following table shows the condition rating given to the community structures.

Table 10 Community structures condition assessment

Asset	1 Very Poor	2 Poor	3 Good	4 Very Good	5 Excellent	Total
Basketball court			1	1		2
BBQ area			1			1
Playground				1		1



Figure 12 Basketball court, condition: *good*



Figure 13 Basketball court, condition: *very good*



Figure 14 BBQ area, condition: *good*



Figure 15 Playground, condition: *very good*

9.3 Current performance and risks

The current community structures are generally in good or very good condition. Some general cleaning and maintenance is required.

9.4 Future demands

As no new developments are currently planned for the community, there are no additional upgrades required to cater for future demand.

9.5 Recommended works

The following works are recommended to upgrade the community structures:

- General clean-up of BBQ area, basketball courts and playground
- Repair BBQ

10 Electrical services

10.1 Ownership and boundaries

The following points, from Network Policy NP003 Installation Rules Section 3, define the typical shared ownership of electrical infrastructure by Power and Water Corporation (PWC) and customers.

- The point of supply is defined as the point where PWC makes the electrical supply available. For domestic supply, this is normally one of the following:
- A point of attachment of an overhead service on to a building or pole on which a metering panel is fitted.
- A point of attachment of an overhead service on to a pole forming part of unmetered aerial consumer's mains.
- A nominated point on a distribution substation located on the customer's lot.
- A point of connection of an underground service in a metering panel, including underground services originating at an overhead line.
- A point of connection of an underground service in a pillar or junction box forming part of unmetered consumer's mains, located on the customer's lot.
- A point on a Power and Water pillar located on the customer's lot.

Typically, distribution infrastructure upstream of the Point Of Supply is owned and maintained by PWC and infrastructure below the point of supply is owned and maintained by the customer.

In many cases PWC have defined a Point Of Supply to ensure that they retain responsibility for aerial high voltage infrastructure, and aerial low voltage infrastructure where installed with aerial high voltage infrastructure, to minimise the possibility of the community or it's contractors coming into contact, either deliberately or inadvertently, with aerial high voltage infrastructure.

In other cases isolation facilities are present or desired by PWC to define the Point of Supply at or near the boundary of the town camp.

PWC advise that most of Tennant Creek/Alice Springs Town Camps have undergone upgrades under the SIHIP program with the intent to normalise the services to look like an urban subdivision but have never been formally handed over to PWC for operations and maintenance.

The Ilparpa community electrical reticulation systems is supplied by an overhead reticulation scheme to individual houses and underground to a few street lights. Prepaid meters are utilised in Ilparpa community.

PWC advise that the Point Of Supply is the LV terminals of the substations and that they own and are responsible for the first pole mount substation and upstream infrastructure.

PWC recommend that a GBS (Gas Break Switch) be provided upstream of the first transformer to establish a demarcation point.

PWC advise that street lighting is supplied from unmetered LV infrastructure and is the responsibility of the lot holder and not PWC.

All meters, whether pre- or post-paid are the property of PWC.

Ilparpa community are responsible for maintain all unmetered and metered LV infrastructure including the main switchboard, metering panel (excluding meter), LV distribution feeders, distribution pillars, consumers mains and consumer switchboards and street lights.

10.2 Existing infrastructure condition assessment

Table 11 shows the condition rating given to the Distribution Panels. The distribution panels have 100% operational rating from the visual inspection.

Table 11 Distribution panel condition assessment

Asset	1 Very Poor	2 Poor	3 Good	4 Very Good	5 Excellent	Total
Distribution panels			1			1

Table 12 shows the condition rating given to the street lights. The street lights were of a low voltage underground feeder design, unknown lamp type, with lamp covers protected by cages. The street lights have a 100% operational rating.

Table 12 Street light condition assessment

Asset	1 Very Poor	2 Poor	3 Good	4 Very Good	5 Excellent	Total
Street light			5		1	6

Table 13 shows the condition rating given to the street lights. The street lights on OH poles were of a low voltage overhead feeder design, sodium lamp type S70D, with lamp covers protected by cages. The street lights have a 100% operational rating.

Table 13 Street light on O/H Pole condition assessment

Asset	1 Very Poor	2 Poor	3 Good	4 Very Good	5 Excellent	Total
Street light on O/H pole			14			14

Table 14 shows the condition rating given to the transformer. One transformer in camp boundary. The transformer was visually assessed to be in good condition.

Table 14 Transformer condition assessment

Asset	1 Very Poor	2 Poor	3 Good	4 Very Good	5 Excellent	Total
Transformer			1			1

Table 15 shows the condition rating given to the Overhead poles. The overhead poles are of Weld Construction (Universal Pole construction) and steel LV construction. The overhead poles have 100% operational rating from the visual inspection.

Table 15 Overhead pole condition assessment

Asset	1 Very Poor	2 Poor	3 Good	4 Very Good	5 Excellent	Total
Overhead pole			14	4		18

Table 16 shows the condition rating given to the Metering panels. All assessed meters in this community are prepaid digital meters.

Table 16 Meter Panel condition assessment

Asset	1 Very Poor	2 Poor	3 Good	4 Very Good	5 Excellent	Total
Pre-paid meter			11			11
Switchboard		3	3			6

Table 17 shows the condition rating given to the switchboards associated to dwellings.

Table 17 Switchboard condition assessment (Housing footprint)

Asset	1 Very Poor	2 Poor	3 Good	4 Very Good	5 Excellent	Total
Switchboard			5			5

The details of the individual inspections and photographs of each infrastructure item are included in Appendices.

10.3 Current performance and risks

The electrical infrastructure evaluation was conducted against the following criteria

- Number of dwellings on tenure, the higher value of the funded dwelling and as quoted in the population report was utilised.
- Urban area, NP001.1, 4. Definitions.
- General Specification for URD Subdivisions, NP001.6, 4.3 Substation Size.
- Normal ADMD (After Diversity Maximum Demand) of 4.5 kVA and high cost subdivisions at 7 kVA.
- Transformer ratings were assumed to be correct in Dekho (PWC asset information system) and compared against photographs of test or transformer numbers collected.
- Substation loads were compared against transformer sizes only. No load flow analysis was conducted.
- No load calculations were performed or assessment conducted on overhead or underground cable, visual inspection from the ground only.
- Street lighting loads were ignored as they are not significant.

The calculated maximum demand of the Ilparpa community transformer is 29% of rated capacity based on 4.5kVA/dwelling. The calculated maximum demand is within the total capacity of the substation on site.

Table 18 Ilparpa current demand load vs transformer ratings

Com Id	Community name	Dwellings	Transformer (kVA)	kVA Total @ 4.5kVA	kVA Total @ 7kVA
47	Ilparpa	13	200	58.5	91

A tabulated summary of all community transformers is included in Appendices.

There is a risk of equipment not being maintained associated with the non-standard division of responsibilities between the customer and PWC.

The following points from the PWC Metering Rules should be noted:

- The routine maintenance of metering installations and the replacement of any faulty meters is the responsibility of PWC.
- The property owners are responsible for the maintenance and upkeep of meter rooms, boxes and panels (including lids, doors and locking mechanisms).
- The installation of pre-paid metering is a cost to the customer, refer NP010 Meter Manual-Maintenance of Metering Installations, Power and Water Corporation.

10.4 Future demands

As no new developments are currently planned for the community, there are no additional upgrades required to cater for future demand.

10.5 Recommended works

The following maintenance works and upgrades are recommended:

- Replace three switchboards inside the metering panel
- Install new street lighting - approximately 25 poles

11 Communications

11.1 Ownership and boundaries

Details of Telstra pit and conduit infrastructure within the town camp boundaries were sought but were not forthcoming.

11.2 Existing infrastructure condition assessment

The telecommunications infrastructure assessed included pits and telephone booths. However there were no telecommunication pits found.

Appendices contains the individual reports.

Table 19 Telephone booth condition assessment

Asset	1 Very Poor	2 Poor	3 Good	4 Very Good	5 Excellent	Total
Phone booth						1 (status unknown)

11.3 Current performance and risks

No details of the performance of communications infrastructure were obtained.

11.4 Future demands

The current availability of broadband services at Ilparpa is displayed in the Figure 16 below. NBN is available to residents via satellite on application to an appropriate NBN access provider.

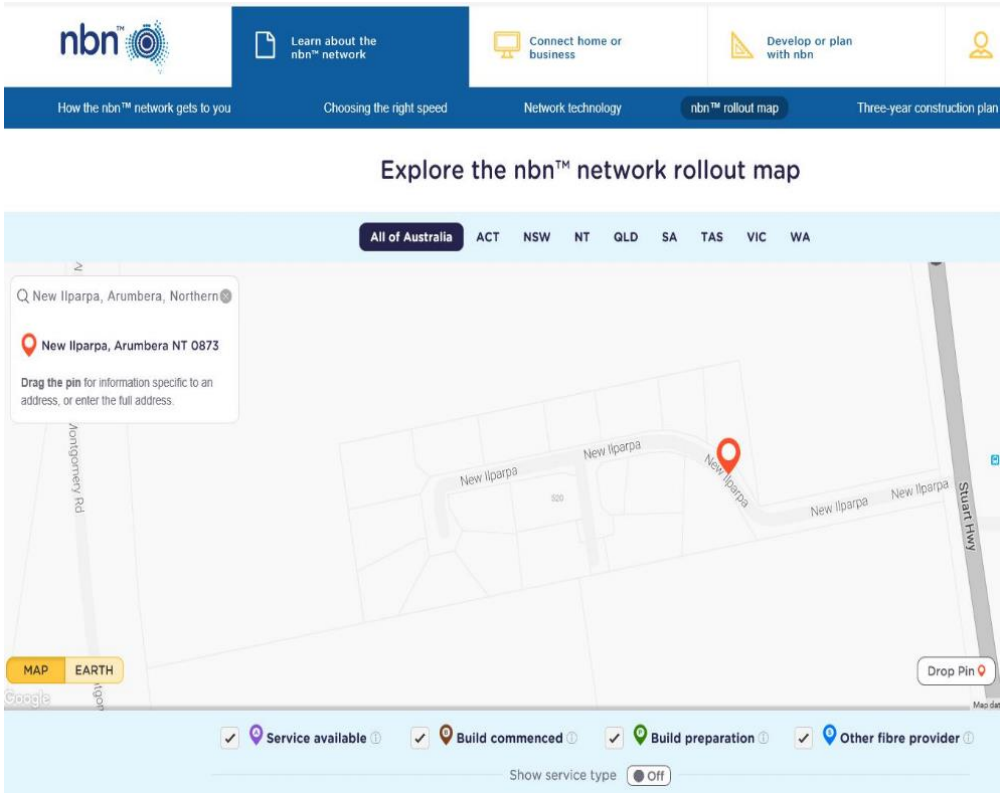


Figure 16 NBN network availability map

NBN is available to residents via satellite on application.

11.5 Recommended works

Representatives from NBN's Land Access and Stake Holder management teams are currently engaged with Yilli Housing and NT Housing to look at how camps will be serviced. It is expected that any existing premises in these camps will have some type of NBN service via the NBN brownfields rollout in the future.

No works are required at Ilparpa because NBN is available to residents via satellite on application to an appropriate NBN access provider.

12 Cost estimates

Table 20 below shows a summary of the cost estimates to undertake the maintenance required to fix the existing infrastructure and to upgrade the existing network to meet current design standards. There are no upgrades required for the future design. The estimates take into account a 30% contingency, are inclusive of GST, and a location factor has been applied to town camps outside of Darwin.

Table 20 Cost estimates

Infrastructure	Maintenance of existing infrastructure	Upgrades to meet current design
Sewerage	$ 0	$ 204,000
Water supply	$ 1,000	$ 729,000
Roadworks	$ 48,000	$ 607,000
Stormwater drainage	$ 11,000	$ 601,000
Community structures	$ 8,000	$ 0
Electrical	$ 8,000	$ 358,000
Communications	$ 0	$ 0
Miscellaneous provisions	$ 19,000	$ 309,000
Total (including GST)	**$ 95,000**	**$ 2,808,000**
Grand total	**$ 2,903,000**	

The cost estimates are a preliminary estimate only. Since Aurecon has no control over the cost of labour, materials, equipment or services furnished by others, or over contractors' methods of determining prices, or over competitive bidding or market conditions, Aurecon cannot guarantee actual costs will not vary from these estimates.

13 Summary

The following works are recommended for Ilparpa community:

Sewerage

- Upgrade network to DN150 PVC reticulation main – approximately 350 m
- Install overflow storage at pump station

Water supply

- Replaced water main with DN150 PVC ring main approximately 1000 m
- Install two DN150 bulk water meter at community boundaries (one for each connection)
- Replace broken tap
- Clear rubbish from residential water meter
- Install up to 10 new residential water meters

Roadworks

- Fill and reseal 22 potholes
- Repair 135 m2 of surface cracking
- Repair 315 m of edge breaks
- General clean of 500 m of road reserve
- It is recommended that the road is upgraded to a two lane network with all appropriate road furniture, line marking, kerbs, footpaths, etc.

Stormwater drainage

- Reshape the existing swale so stormwater can effectively drain way
- Construct kerbs and gutters, side entry pits, and underground drainage.

Community structures

- General clean-up of BBQ area, basketball courts and playground
- Repair BBQ

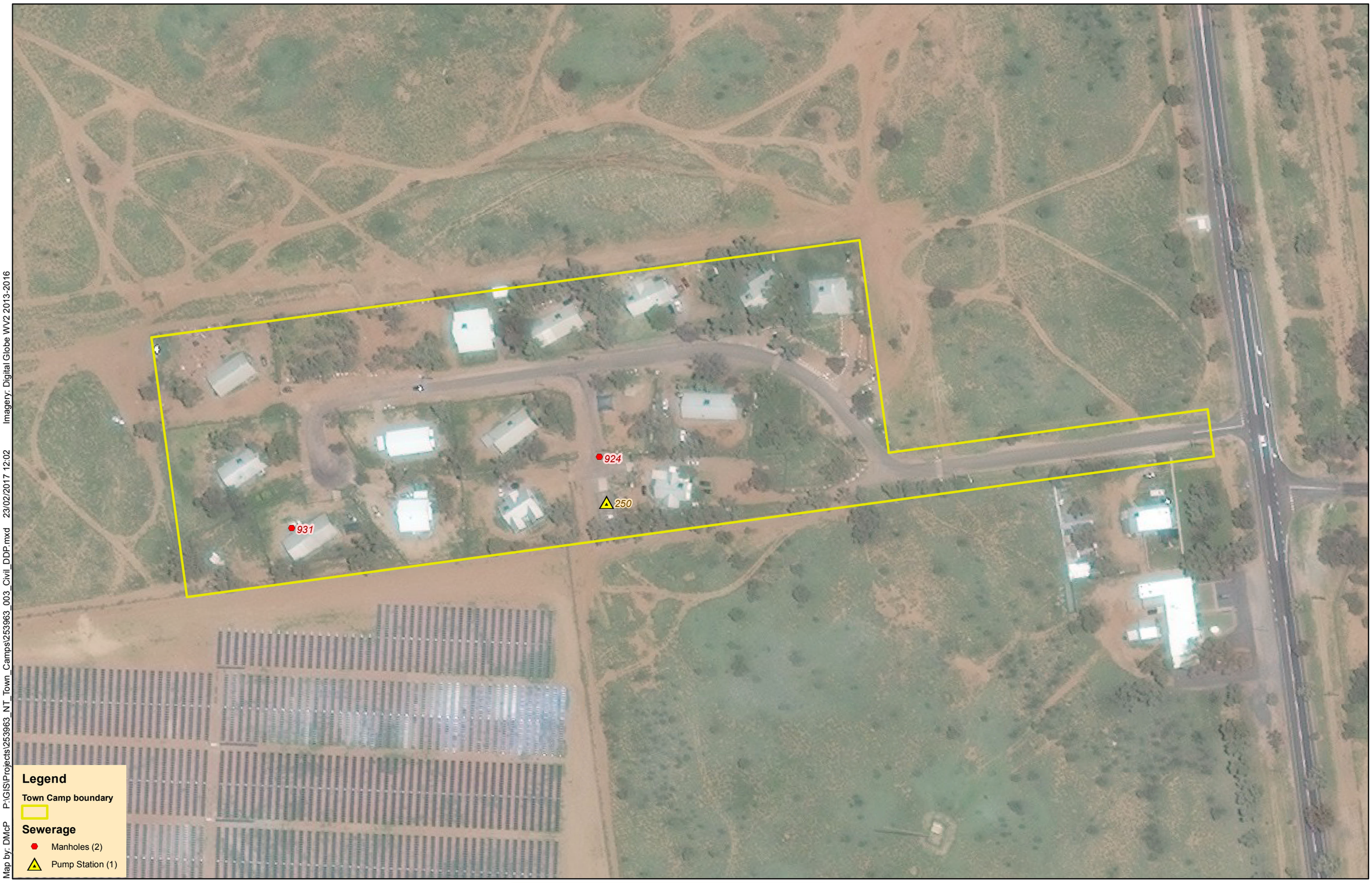
Electrical services

- Replace three switchboards inside the metering panel
- Install new street lighting - approximately 25 poles

Communications

- No works are required because NBN is available to residents via satellite on application to an appropriate NBN access provider.

Civil inspection reports



Map by: DMcP P:\GIS\Projects\253963_NT_Town_Camps\253963_003_Civil_DDP.mxd 23/02/2017 12:02 Imagery: Digital Globe WV2 2013-2016

A3 scale: 1:1,500

0 20 40 60 80 100 m

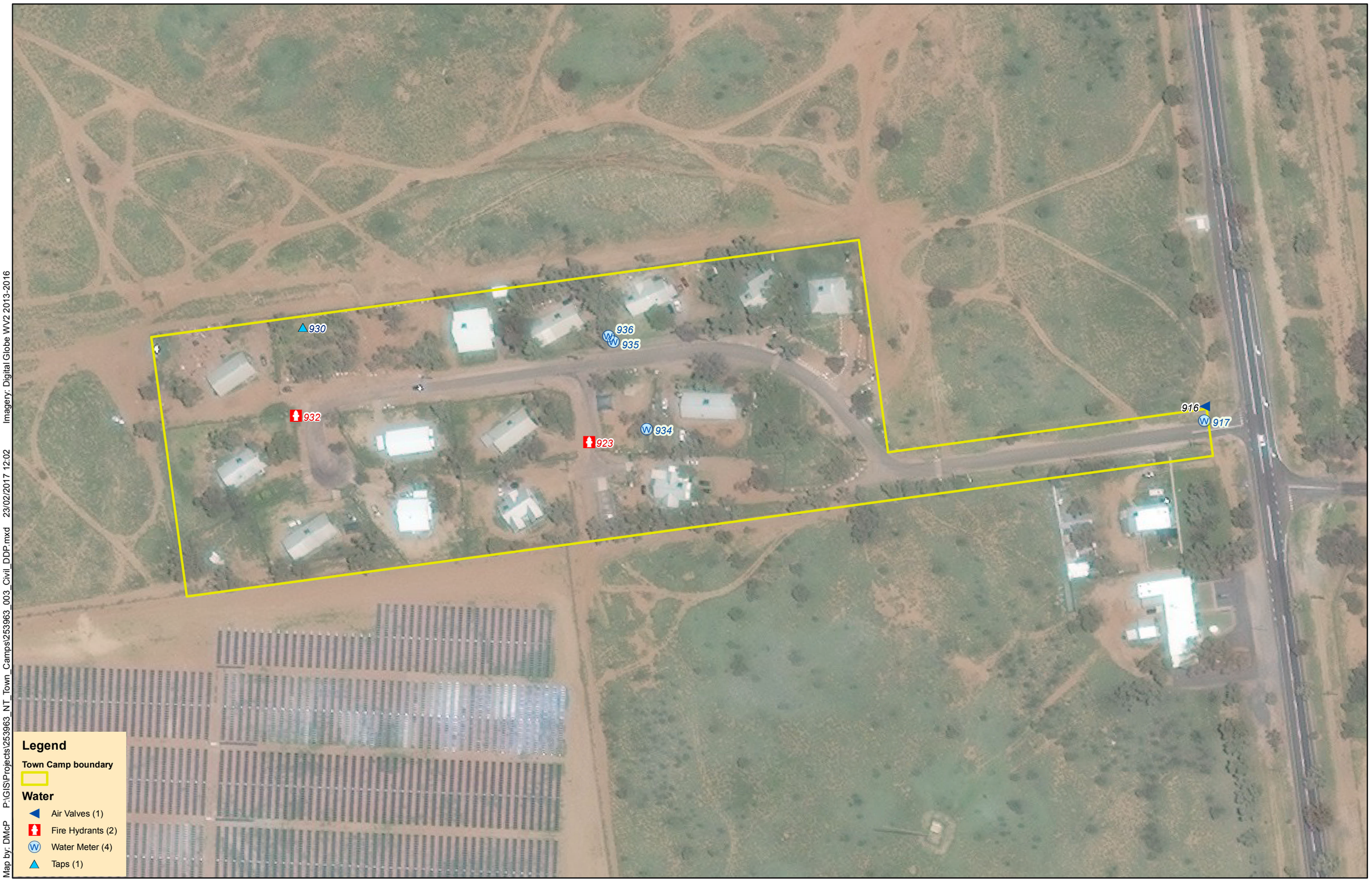
Note:
Label numbers refer to survey IDs

Date: 23/02/2017 Version: 2

Coordinate system: MGA94 Zone 52

NT Town Camp Infrastructure Assessments: Sewerage

47 - New Ilparpa (Alice Springs)



Map by: DMcP P:\GIS\Projects\253963_NT_Town_Camps\253963_003_Civil_DDP.mxd 23/02/2017 12:02 Imagery: Digital Globe WV2 2013-2016

A3 scale: 1:1,500

0 20 40 60 80 100 m

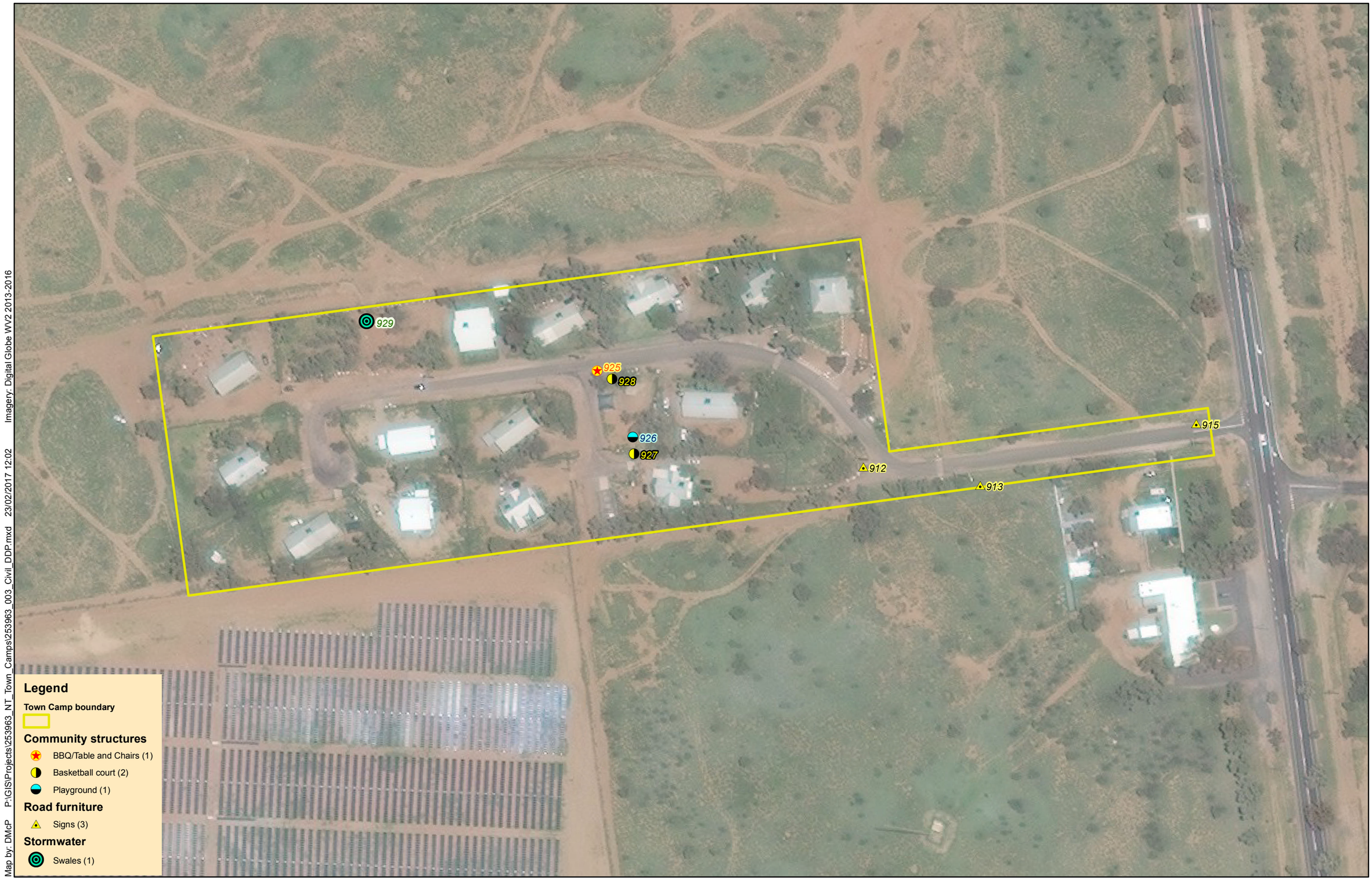
Note:
Label numbers refer to survey IDs

Date: 23/02/2017 Version: 2

Coordinate system: MGA94 Zone 52

NT Town Camp Infrastructure Assessments: Water

47 - New Ilparpa (Alice Springs)



Legend

Town Camp boundary

Community structures

- BBQ/Table and Chairs (1)
- Basketball court (2)
- Playground (1)

Road furniture

- Signs (3)

Stormwater

- Swales (1)

Map by: DMcP P:\GIS\Projects\253963_NT_Town_Camps\253963_003_Civil_DDP.mxd 23/02/2017 12:02 Imagery: Digital Globe WV2 2013-2016

A3 scale: 1:1,500

0 20 40 60 80 100 m

Note:
Label numbers refer to survey IDs

Date: 23/02/2017 Version: 2

Coordinate system: MGA94 Zone 52

NT Town Camp Infrastructure Assessments
Road furniture, stormwater drainage & community structures
47 - New Ilparpa (Alice Springs)

Northern Territory Town Camps

Civil Infrastructure

Inspection Date 22/11/2016 8:52:06 AM

Insp ID: 916 Group 4 - Alice Springs Ilparpa

What Water Asset Are you Capturing: Air Valves

Air Valve Diameter (mm): 80

Air Valve Make:

Air Valve Leak: No

Air Valve Condition: 4 - Very Good

Air Valve Comments:









Northern Territory Town Camps

Civil Infrastructure

Inspection Date 22/11/2016 9:50:30 AM

Insp ID: 923 Group 4 - Alice Springs Ilparpa

What Water Asset Are you Capturing: Fire Hydrants

Single or Double:	Single
Sluice Valve:	No
Above or Below ground:	Below ground
FH Leakage:	No Access
Bollards around hydrant:	No
FH Condition:	3 - Good
FH Comment:	





Northern Territory Town Camps

Civil Infrastructure

Inspection Date 22/11/2016 10:29:30 AM

Insp ID: 932 Group 4 - Alice Springs Ilparpa

What Water Asset Are you Capturing: Fire Hydrants

Single or Double:	Single
Sluice Valve:	No
Above or Below ground:	Below ground
FH Leakage:	No Access
Bollards around hydrant:	Yes
FH Condition:	3 - Good
FH Comment:	Location bollard







Northern Territory Town Camps

Civil Infrastructure

Inspection Date 22/11/2016 10:29:30 AM

Northern Territory Town Camps

Civil Infrastructure

Inspection Date 22/11/2016 9:48:59 AM

Insp ID: 924 Group 4 - Alice Springs Ilparpa

What Sewerage Asset are you capturing:	Manholes
MH Cover Shape:	Rectangular
Manhole Cover Diam (mm):	
Manhole Length (mm):	1000
Manhole Width (mm):	700
Manhole Condition:	4 - Very Good
Notes on Lid:	
Comments:	





Northern Territory Town Camps

Civil Infrastructure

Inspection Date 22/11/2016 10:31:25 AM

Insp ID: 931 Group 4 - Alice Springs Ilparpa

What Sewerage Asset are you capturing:	Manholes
MH Cover Shape:	Round
Manhole Cover Diam (mm):	250
Manhole Length (mm):	
Manhole Width (mm):	
Manhole Condition:	3 - Good
Notes on Lid:	
Comments:	Manhole within property, cannot access closely





Northern Territory Town Camps

Civil Infrastructure

Inspection Date 22/11/2016 9:02:41 AM

Insp ID: 911 Group 4 - Alice Springs Ilparpa

Road Name:	Goanna Court
What are you inspecting:	Pavements
Ch From (km):	0.15
Ch To (km):	0.3
Road Type:	Sealed - spray seal
Section Width (m):	4
Road Condition:	2 - Poor
General Comment:	1 speed hump no signs

Road Defects Section

Defect Type	Defect QTY	Defect Condition	Defect Comments
Edge Breaks	60	2 - Poor	60 percent
Potholes	10	3 - Good	
Surfacing Cracks	5		5 percent

Kerbs Section

Kerb Type	Kerb Cond	Kerb Comments
No kerb		

Shoulders Section

Shoulder Type	Width	Dropoff(mm)	Erosion	Condition	Shoulder Comments
Unsealed	50				

Linemarking Section

Obstruction Section

Road Obstruction	Other Road Obstruction
Trees	

Northern Territory Town Camps

Civil Infrastructure

Inspection Date 22/11/2016 9:02:41 AM









Northern Territory Town Camps

Civil Infrastructure

Inspection Date 22/11/2016 9:02:41 AM









Northern Territory Town Camps

Civil Infrastructure

Inspection Date 22/11/2016 9:02:41 AM







Northern Territory Town Camps

Civil Infrastructure

Inspection Date 22/11/2016 8:42:34 AM

Insp ID: 914 Group 4 - Alice Springs Ilparpa

Road Name:	Goanna Court
What are you inspecting:	Pavements
Ch From (km):	0
Ch To (km):	0.15
Road Type:	Sealed - spray seal
Section Width (m):	6
Road Condition:	2 - Poor
General Comment:	1 speed hump no signs

Road Defects Section

Defect Type	Defect QTY	Defect Condition	Defect Comments
Potholes	6	2 - Poor	
Edge Breaks	90	2 - Poor	90 percent of section
Surfacing Cracks	5	3 - Good	5 percent

Kerbs Section

Kerb Type	Kerb Cond	Kerb Comments
No kerb		

Shoulders Section

Shoulder Type	Width	Dropoff(mm)	Erosion	Condition	Shoulder Comments
Unsealed		50		3	

Linemarking Section

Line Type	Other Line Type	Line Cond	Line Comments
Give way line		3 - Good	

Obstruction Section

Northern Territory Town Camps

Civil Infrastructure

Inspection Date 22/11/2016 8:42:34 AM





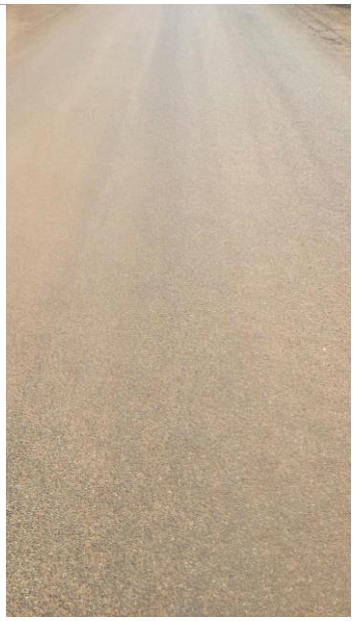




Northern Territory Town Camps

Civil Infrastructure

Inspection Date 22/11/2016 8:42:34 AM







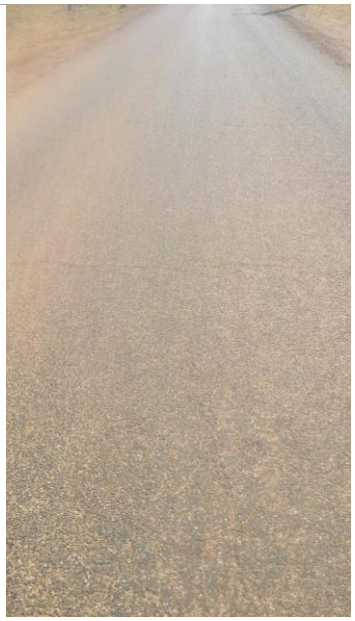


Northern Territory Town Camps

Civil Infrastructure

Inspection Date 22/11/2016 8:42:34 AM









Northern Territory Town Camps

Civil Infrastructure

Inspection Date 22/11/2016 10:06:11 AM

Insp ID: 933 Group 4 - Alice Springs Ilparpa

Road Name:	Goanna Court
What are you inspecting:	Pavements
Ch From (km):	0.3
Ch To (km):	0.45
Road Type:	Sealed - spray seal
Section Width (m):	4
Road Condition:	2 - Poor
General Comment:	

Road Defects Section

Defect Type	Defect QTY	Defect Condition	Defect Comments
Potholes	6	2 - Poor	
Longitudinal Cracks	10	2 - Poor	10 percent
Edge Breaks	60	2 - Poor	60 percent of road
Stone Loss	5	3 - Good	5 meters square area

Kerbs Section

Kerb Type	Kerb Cond	Kerb Comments
Flush Kerb	3 - Good	Only for half the section

Shoulders Section

Shoulder Type	Width	Dropoff(mm)	Erosion	Condition	Shoulder Comments
Unsealed		50		3	

Linemarking Section

Obstruction Section

Northern Territory Town Camps

Civil Infrastructure

Inspection Date 22/11/2016 10:06:11 AM







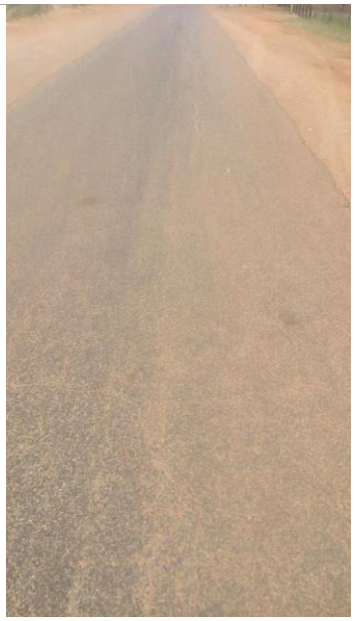


Northern Territory Town Camps

Civil Infrastructure

Inspection Date 22/11/2016 10:06:11 AM









Northern Territory Town Camps

Civil Infrastructure

Inspection Date 22/11/2016 10:06:11 AM





Northern Territory Town Camps

Civil Infrastructure

Inspection Date 22/11/2016 9:57:19 AM

Insp ID: 937 Group 4 - Alice Springs Ilparpa

Road Name:	Wedgetail Court
What are you inspecting:	Pavements
Ch From (km):	0
Ch To (km):	0.05
Road Type:	Sealed - spray seal
Section Width (m):	5.4
Road Condition:	2 - Poor
General Comment:	

Road Defects Section

Defect Type	Defect QTY	Defect Condition	Defect Comments
Stone Loss	20	2 - Poor	20 percent of road covered with loose stones

Kerbs Section

Kerb Type	Kerb Cond	Kerb Comments
Flush Kerb	2 - Poor	Kerbs mistly covered by dirt

Shoulders Section

Shoulder Type	Width	Dropoff(mm)	Erosion	Condition	Shoulder Comments
Unsealed		100		2	Isolated section of large drop off

Linemarking Section

Obstruction Section

Northern Territory Town Camps

Civil Infrastructure

Inspection Date 22/11/2016 9:57:19 AM









Northern Territory Town Camps

Civil Infrastructure

Inspection Date 22/11/2016 9:57:19 AM









Northern Territory Town Camps

Civil Infrastructure

Inspection Date 22/11/2016 9:57:19 AM



Northern Territory Town Camps

Civil Infrastructure

Inspection Date 14/11/2016 3:57:22 PM

Insp ID: 250 Group 4 - Alice Springs Ilparpa

What Sewerage Asset are you capturing:	Pump Station
No of Pumps in Pump Station:	2
Cabinet Condition:	4 - Very Good
Cabinet Comment:	
Alarm Light:	Yes
Alarm Light Condition:	4 - Very Good
Overhead Light:	No
Overhead Light Condition:	
Light Comments:	
Davit Crane Present:	Yes
Davit Crane Capacity (kg):	550
Davit Crane Condition:	4 - Very Good
Davit Crane Comments:	
Fence TYPE:	Standard Security Fence (3 Strands barbed)
PS Fence Height (m):	1.8
PS Gates Locked:	Yes
PS Fence Condition:	4 - Very Good
Fence Comment:	
Flow meter type:	
Flow meter condition:	4 - Very Good
Flow meter comments:	
Macerator Pump Make/Model:	
Manufacturers Date:	
Macerator Pump:	Yes
Macerator Pump Condition:	
Macerator Pump Comments:	
Outgoing Pipe Diameter (mm):	100
Valves:	
Outgoing Pipe Comments:	
Water Supply to pump station:	Yes
Fire hose reel:	Yes
Access cover locked:	Yes
Safety grid beneath access cover:	No

Northern Territory Town Camps

Civil Infrastructure

Inspection Date 14/11/2016 3:57:22 PM

Condition:	
Cabinet Locked:	Yes
Cabinet Lock Condition:	4 - Very Good
Hand rails around entrance:	
Fixed or removable:	
Rail Condition:	
Safety Comments:	

Pump Station Pumps section

Pump Capacity	Pump Make	Manufacture Date	Pump Chain	Condition	Comments
			Yes		

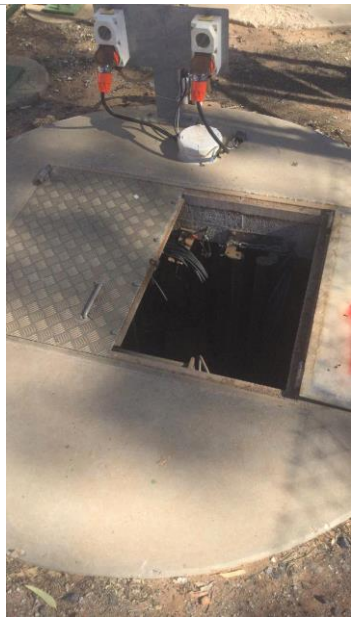




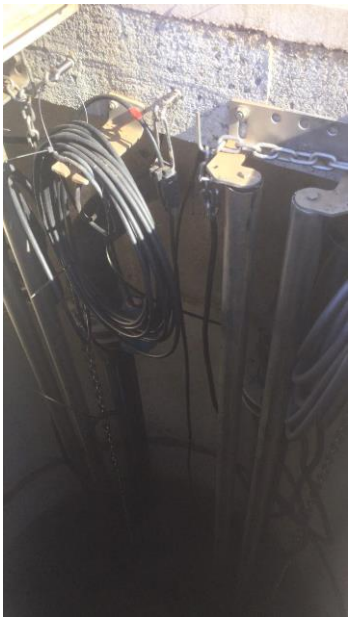
Northern Territory Town Camps

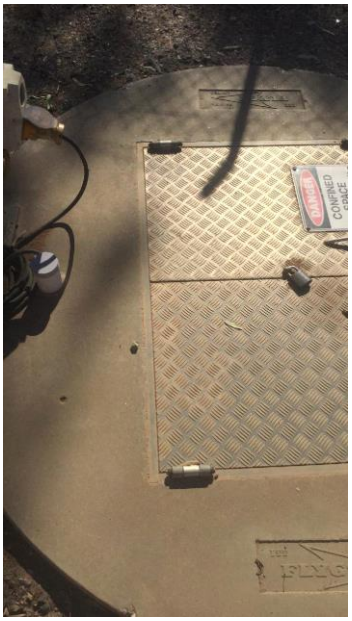
Civil Infrastructure

Inspection Date 14/11/2016 3:57:22 PM









Northern Territory Town Camps

Civil Infrastructure

Inspection Date 14/11/2016 3:57:22 PM





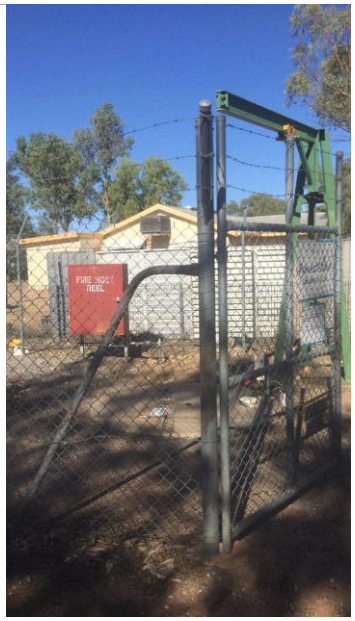




Northern Territory Town Camps

Civil Infrastructure

Inspection Date 14/11/2016 3:57:22 PM





Northern Territory Camps

Civil Infrastructure

Inspection Date 22/11/2016 9:44:38 AM

Insp ID: 925 Group 4 - Alice Springs Ilparpa

Inspection Type:	Shade Structure
Shade Structure Type:	BBQ Area
Shade Floor Type:	
Roof Type:	
Width (mm):	5
Length (mm):	8
Appearance:	3
Appearance Comment:	
Condition:	3 - Good
Comment:	Table next to BBQ





Northern Territory Camps

Civil Infrastructure

Inspection Date 22/11/2016 9:44:38 AM



Northern Territory Camps

Civil Infrastructure

Inspection Date 22/11/2016 9:42:28 AM

Insp ID: 926 Group 4 - Alice Springs Ilparpa

Inspection Type:	Shade Structure
Shade Structure Type:	Play ground
Shade Floor Type:	Sand
Roof Type:	Shadecloth
Width (mm):	6
Length (mm):	10
Appearance:	3
Appearance Comment:	Some rubbish on ground
Condition:	4 - Very Good
Comment:	





Northern Territory Camps

Civil Infrastructure

Inspection Date 22/11/2016 9:42:28 AM







Northern Territory Camps

Civil Infrastructure

Inspection Date 22/11/2016 9:41:06 AM

Insp ID: 927 Group 4 - Alice Springs Ilparpa

Inspection Type:	Shade Structure
Shade Structure Type:	Basket Ball Court
Shade Floor Type:	Concrete
Roof Type:	Not Covered
Width (mm):	5
Length (mm):	5
Appearance:	4
Appearance Comment:	
Condition:	4 - Very Good
Comment:	





Northern Territory Camps

Civil Infrastructure

Inspection Date 22/11/2016 9:41:06 AM



Northern Territory Camps

Civil Infrastructure

Inspection Date 22/11/2016 9:38:50 AM

Insp ID: 928 Group 4 - Alice Springs Ilparpa

Inspection Type:	Shade Structure
Shade Structure Type:	Basket Ball Court
Shade Floor Type:	Concrete
Roof Type:	Not Covered
Width (mm):	5
Length (mm):	5
Appearance:	3
Appearance Comment:	Concrete covered by sand
Condition:	3 - Good
Comment:	





Northern Territory Camps

Civil Infrastructure

Inspection Date 22/11/2016 9:38:50 AM



Northern Territory Town Camps

Civil Infrastructure

Inspection Date 22/11/2016 8:57:33 AM

Insp ID: 912 Group 4 - Alice Springs Ilparpa

Road Name:	Goanna Court
What are you inspecting:	Signs
Type of Sign:	Community sign
Sign Condition:	4 - Very Good
Sign Comment:	
General Comment:	



Northern Territory Town Camps

Civil Infrastructure

Inspection Date 22/11/2016 8:55:31 AM

Insp ID: 913 Group 4 - Alice Springs Ilparpa

Road Name:	Goanna Court
What are you inspecting:	Signs
Type of Sign:	Community signs
Sign Condition:	4 - Very Good
Sign Comment:	
General Comment:	







Northern Territory Town Camps

Civil Infrastructure

Inspection Date 22/11/2016 8:53:39 AM

Insp ID: 915 Group 4 - Alice Springs Ilparpa

Road Name:	Goanna Court
What are you inspecting:	Signs
Type of Sign:	Give Way
Sign Condition:	4 - Very Good
Sign Comment:	
General Comment:	





Northern Territory Town Camps

Civil Infrastructure

Inspection Date 22/11/2016 10:34:53 AM

Insp ID: 929 Group 4 - Alice Springs Ilparpa

Stormwater Infrastructure:	Swales
Type of lining:	No Lining
Are dimensions uniform along drain:	Yes
Base Width (m):	2
Overall Width (m):	4
Swale Depth (m):	0.3
Length of Batter 1 (m):	1
Length of Batter 2 (m):	1
Swale Condition:	2 - Poor
Swale Ponding:	Yes
Drain flooded at time of inspection:	No
Swale Comments:	Swale expected to pond due do small elevation rise at fence





Northern Territory Town Camps

Civil Infrastructure

Inspection Date 22/11/2016 10:34:53 AM







Northern Territory Town Camps

Civil Infrastructure

Inspection Date 22/11/2016 10:34:09 AM

Insp ID: 930 Group 4 - Alice Springs Ilparpa

What Water Asset Are you Capturing: Taps

Diameter(mm):	20
Tap Leakage:	No
Tap Condition:	1 - Very Poor
Tap Comment:	Broken



Northern Territory Town Camps

Civil Infrastructure

Inspection Date 22/11/2016 8:49:41 AM

Insp ID: 917	Group 4 - Alice Springs	Ilparpa

What Water Asset Are you Capturing: Water Meter

Water Meter Type:	Bulk
Bulk Water Meter Size (mm):	100
Bulk Water Meter Condition:	3 - Good
Bulk Water Meter Comment:	RPZD installed
Lot Number:	
Lot Water Meter Size:	
Lot Water Meter Condition:	
Lot Water Meter Comment:	





Northern Territory Town Camps

Civil Infrastructure

Inspection Date 22/11/2016 8:49:41 AM









Northern Territory Town Camps

Civil Infrastructure

Inspection Date 22/11/2016 8:49:41 AM





Northern Territory Town Camps

Civil Infrastructure

Inspection Date 22/11/2016 10:18:24 AM

Insp ID: 934 Group 4 - Alice Springs Ilparpa

What Water Asset Are you Capturing: Water Meter

Water Meter Type:	Lot
Bulk Water Meter Size (mm):	
Bulk Water Meter Condition:	
Bulk Water Meter Comment:	
Lot Number:	21
Lot Water Meter Size:	20
Lot Water Meter Condition:	3 - Good
Lot Water Meter Comment:	Most of community does not have lot meters





Northern Territory Town Camps

Civil Infrastructure

Inspection Date 22/11/2016 10:21:12 AM

Insp ID: 935 Group 4 - Alice Springs Ilparpa

What Water Asset Are you Capturing: Water Meter

Water Meter Type:	Lot
Bulk Water Meter Size (mm):	
Bulk Water Meter Condition:	
Bulk Water Meter Comment:	
Lot Number:	26
Lot Water Meter Size:	20
Lot Water Meter Condition:	2 - Poor
Lot Water Meter Comment:	



Northern Territory Town Camps

Civil Infrastructure

Inspection Date 22/11/2016 10:22:03 AM

Insp ID: 936 Group 4 - Alice Springs Ilparpa

What Water Asset Are you Capturing: Water Meter

Water Meter Type:	Lot
Bulk Water Meter Size (mm):	
Bulk Water Meter Condition:	
Bulk Water Meter Comment:	
Lot Number:	28
Lot Water Meter Size:	20
Lot Water Meter Condition:	3 - Good
Lot Water Meter Comment:	





Electrical inspection report



Map by: DMcP P:\GIS\Projects\253963_NT_Town_Camps\253963_004_Elec_DDP_report.mxd 23/02/2017 12:22

A3 scale: 1:1,500

0 20 40 60 80 100 m

Date: 23/02/2017 Version: 3

Coordinate system: MGA94 Zone 52

NT Town Camp Infrastructure Assessments: Electrical

47 - New Ilparpa (Alice Springs)

2234

Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 14/11/2016 4:41:42 PM

Insp ID: 137 Group 4 - Alice Springs Ilparpa

What Category are you capturing:	Distribution Panel
What is Main Distribution Panel installation method:	Outdoor
Is the distribution panel labelled:	Yes
What is Distribution Panel main CB Rating:	100A
What is the main incoming cable type/Size to Distribution Panel:	Unknown
What is the condition of switchboard:	3
Condition Comments:	
What is the condition of cables/glands into switchboard:	
Cable/Gland Condition Comments:	Unknown
Distribution Panels name plate access:	Yes







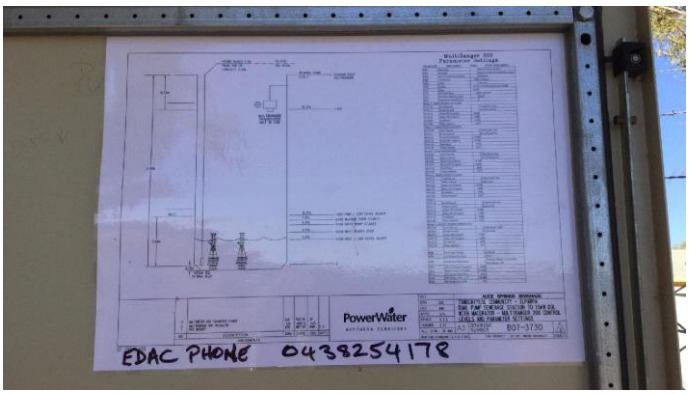


Northern Territory Town Camps

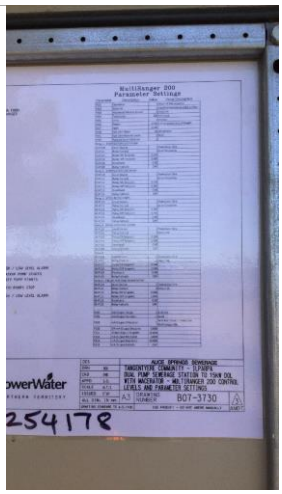
Electrical Infrastructure

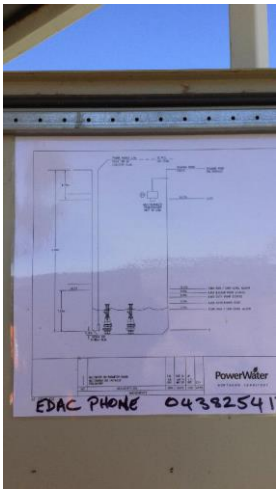
Inspection Date 14/11/2016 4:41:42 PM













Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 14/11/2016 4:41:42 PM



Northern Territory Town Camps

Communications Infrastructure

Inspection Date 22/11/2016 10:50:39 AM

Insp ID: 437	Group 4 - Alice Springs	Ilparpa

What Comms Category are you capturing:	General
Telstra Comms Drawing Available:	NA
Facility upgrade not in drawings:	NA
Which telecoms carriers are present in the town camp:	Telstra
How many Communications Pit(s) are allocated in this town camp:	



Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 21/11/2016 12:56:47 PM

Insp ID: 3414 Group 4 - Alice Springs Ilparpa

What Category are you capturing: Electrical Meters

Meter Type:	Prepaid
Meter Switchboard Cond:	2
Meter Condition:	3
Meter Comment:	Blank plates are missing on CB slot.
Comments:	



Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 21/11/2016 1:49:50 PM

Insp ID: 3415 Group 4 - Alice Springs Ilparpa

What Category are you capturing: Electrical Meters

Meter Type: Electrical

Meter Switchboard Cond:

Meter Condition:

Meter Comment:

Comments:

Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 21/11/2016 1:41:08 PM

Insp ID: 3416 Group 4 - Alice Springs Ilparpa

What Category are you capturing: Electrical Meters

Meter Type: Prepaid

Meter Switchboard Cond: 3

Meter Condition: 3

Meter Comment:

Comments:





Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 21/11/2016 1:38:27 PM

Insp ID: 3417 Group 4 - Alice Springs Ilparpa

What Category are you capturing: Electrical Meters

Meter Type: Prepaid

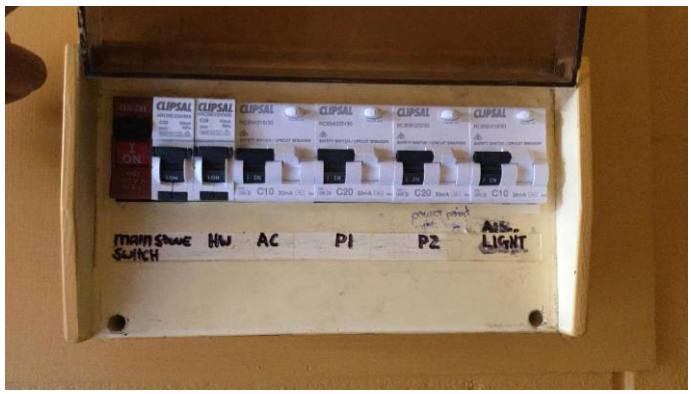
Meter Switchboard Cond:

Meter Condition: 3

Meter Comment: Condition of CB not assessed. Indoor SB, Cond 3

Comments:





Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 21/11/2016 1:18:55 PM

Insp ID: 3418 Group 4 - Alice Springs Ilparpa

What Category are you capturing: Electrical Meters

Meter Type: Prepaid

Meter Switchboard Cond:

Meter Condition: 3

Meter Comment: Condition of CB not assessed. Indoor SB, Cond 3

Comments:





Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 21/11/2016 1:57:04 PM

Insp ID: 3419 Group 4 - Alice Springs Ilparpa

What Category are you capturing: Electrical Meters

Meter Type: Prepaid

Meter Switchboard Cond:

Meter Condition: 3

Meter Comment: Condition of CB not assessed. Indoor SB, Cond 3

Comments:





Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 21/11/2016 12:59:32 PM

Insp ID: 3420 Group 4 - Alice Springs Ilparpa

What Category are you capturing: Electrical Meters

Meter Type:	Prepaid
Meter Switchboard Cond:	2
Meter Condition:	3
Meter Comment:	Blank plates are missing on CB slot.
Comments:	



Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 21/11/2016 2:14:09 PM

Insp ID: 3421 Group 4 - Alice Springs Ilparpa

What Category are you capturing: Electrical Meters

Meter Type: Prepaid

Meter Switchboard Cond:

Meter Condition: 3

Meter Comment: Condition of CB not assessed.

Comments:



Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 19/01/2017 12:18:49 PM

Insp ID: 3610 Group 4 - Alice Springs Ilparpa

What Category are you capturing: Electrical Meters

Meter Type: Prepaid

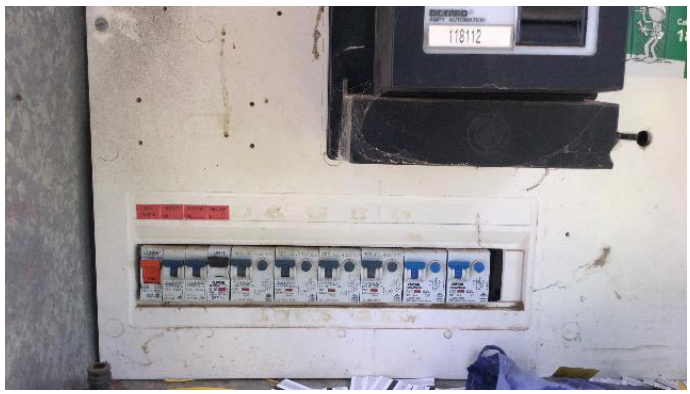
Meter Switchboard Cond: 2

Meter Condition: 3

Meter Comment: Blank plates are missing on CB slot.

Comments:





Northern Territory Town Camps

Electrical Infrastructure

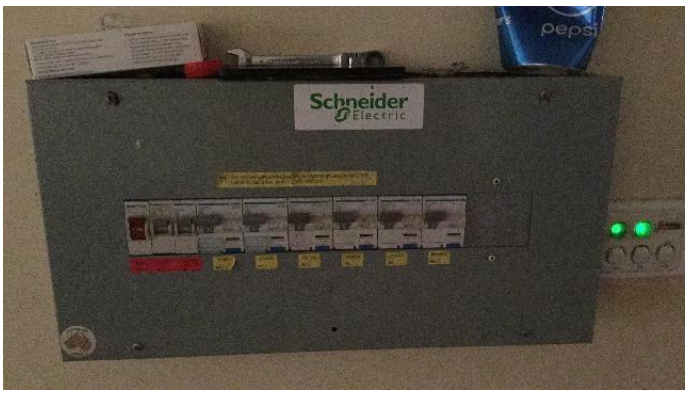
Inspection Date 19/01/2017 12:07:38 PM

Insp ID: 3657 Group 4 - Alice Springs Ilparpa

What Category are you capturing: Electrical Meters

Meter Type:	Prepaid
Meter Switchboard Cond:	3
Meter Condition:	3
Meter Comment:	Indoor SB, Cond 3
Comments:	





Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 24/01/2017 12:49:15 PM

Insp ID: 3675 Group 4 - Alice Springs Ilparpa

What Category are you capturing: Electrical Meters

Meter Type: Prepaid

Meter Switchboard Cond:

Meter Condition: 3

Meter Comment: Condition of CB not assessed. Indoor SB, Cond 3

Comments:





Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 24/01/2017 8:34:28 AM

Insp ID: 3684 Group 4 - Alice Springs Ilparpa

What Category are you capturing: Electrical Meters

Meter Type: Prepaid

Meter Switchboard Cond: 3

Meter Condition: 3

Meter Comment:

Comments:





Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 14/11/2016 4:45:15 PM

Insp ID: 136 Group 4 - Alice Springs Ilparpa

What Category are you capturing:	Overhead Poles
What is Pole Material type:	Steel
What is the condition of pole:	3
How is the pole planted:	Concrete
What is the Condition of plant:	3
Is street light fitted:	No
Street Light Power Supply:	
Street Light Type	
Street Light Watts	
Street Light Condition	
Street Light Height	
What is the type of service:	Three
What is the HV voltage level:	400
What is the arrangement of connected cables:	Twisted
Are there isolators on the pole:	No
What is the Condition:	3
How many Lots are connected to this pole:	0
Overhead Pole Comments:	

Northern Territory Town Camps

Electrical Infrastructure

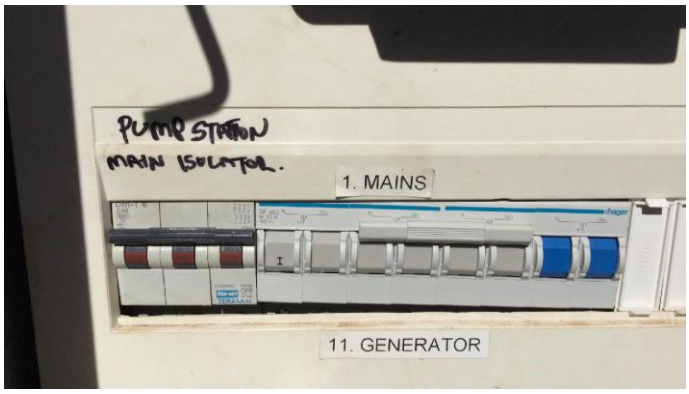
Inspection Date 14/11/2016 4:45:15 PM









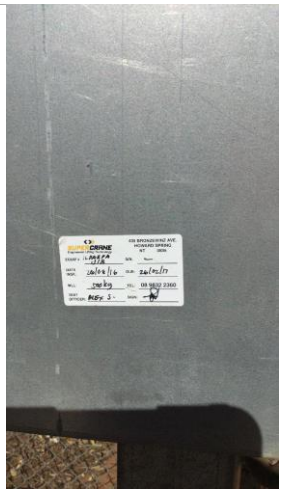




Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 14/11/2016 4:45:15 PM



Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 22/11/2016 11:18:16 AM

Insp ID: 428 Group 4 - Alice Springs Ilparpa

What Category are you capturing:	Overhead Poles
What is Pole Material type:	Welded
What is the condition of pole:	3
How is the pole planted:	Concrete
What is the Condition of plant:	3
Is street light fitted:	Yes
Street Light Power Supply:	
Street Light Type	Unknown
Street Light Watts	
Street Light Condition	3
Street Light Height	
What is the type of service:	
What is the HV voltage level:	22000
What is the arrangement of connected cables:	Parallel
Are there isolators on the pole:	Yes
What is the Condition:	3
How many Lots are connected to this pole:	
Overhead Pole Comments:	

Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 22/11/2016 11:18:16 AM

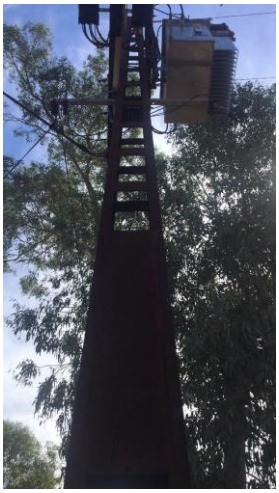












Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 22/11/2016 11:17:42 AM

Insp ID: 429 Group 4 - Alice Springs Ilparpa

What Category are you capturing:	Overhead Poles
What is Pole Material type:	Welded
What is the condition of pole:	3
How is the pole planted:	Concrete
What is the Condition of plant:	3
Is street light fitted:	Yes
Street Light Power Supply:	
Street Light Type	S 70 D 11
Street Light Watts	70
Street Light Condition	3
Street Light Height	
What is the type of service:	Three
What is the HV voltage level:	22000
What is the arrangement of connected cables:	Parallel
Are there isolators on the pole:	Yes
What is the Condition:	3
How many Lots are connected to this pole:	
Overhead Pole Comments:	

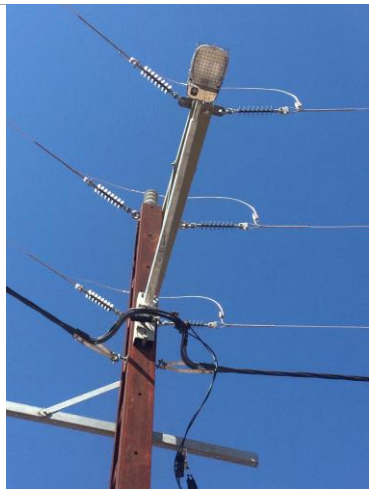
Northern Territory Town Camps

Electrical Infrastructure

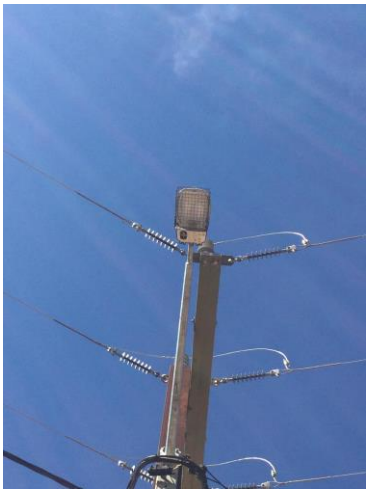
Inspection Date 22/11/2016 11:17:42 AM













Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 22/11/2016 11:17:02 AM

Insp ID: 430 Group 4 - Alice Springs Ilparpa

What Category are you capturing:	Overhead Poles
What is Pole Material type:	Welded
What is the condition of pole:	3
How is the pole planted:	Concrete
What is the Condition of plant:	3
Is street light fitted:	Yes
Street Light Power Supply:	
Street Light Type	S70 D 15
Street Light Watts	70
Street Light Condition	3
Street Light Height	
What is the type of service:	Three
What is the HV voltage level:	22000
What is the arrangement of connected cables:	Parallel
Are there isolators on the pole:	Yes
What is the Condition:	3
How many Lots are connected to this pole:	
Overhead Pole Comments:	

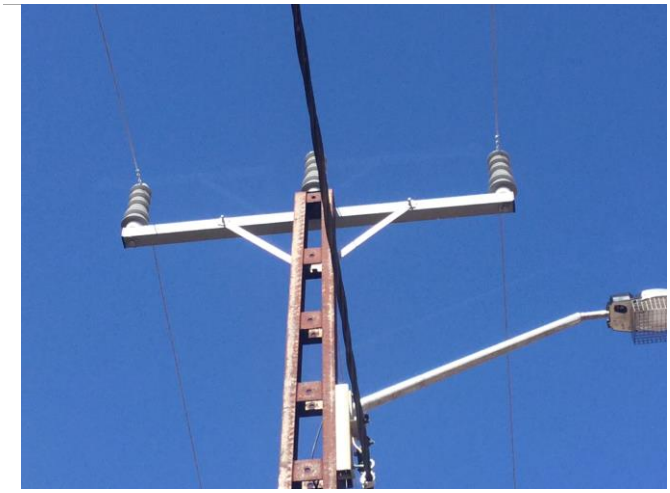
Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 22/11/2016 11:17:02 AM











Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 22/11/2016 11:15:39 AM

Insp ID: 431 Group 4 - Alice Springs Ilparpa

What Category are you capturing:	Overhead Poles
What is Pole Material type:	Welded
What is the condition of pole:	3
How is the pole planted:	Concrete
What is the Condition of plant:	3
Is street light fitted:	Yes
Street Light Power Supply:	
Street Light Type	S70 D11
Street Light Watts	70
Street Light Condition	3
Street Light Height	
What is the type of service:	Three
What is the HV voltage level:	
What is the arrangement of connected cables:	Twisted
Are there isolators on the pole:	No
What is the Condition:	
How many Lots are connected to this pole:	
Overhead Pole Comments:	

Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 22/11/2016 11:15:39 AM











Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 22/11/2016 11:11:19 AM

Insp ID: 432 Group 4 - Alice Springs Ilparpa

What Category are you capturing:	Overhead Poles
What is Pole Material type:	Steel
What is the condition of pole:	4
How is the pole planted:	Concrete
What is the Condition of plant:	3
Is street light fitted:	No
Street Light Power Supply:	
Street Light Type	
Street Light Watts	
Street Light Condition	
Street Light Height	
What is the type of service:	Single
What is the HV voltage level:	
What is the arrangement of connected cables:	Twisted
Are there isolators on the pole:	No
What is the Condition:	
How many Lots are connected to this pole:	
Overhead Pole Comments:	

Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 22/11/2016 11:11:19 AM







Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 22/11/2016 11:08:53 AM

Insp ID: 433 Group 4 - Alice Springs Ilparpa

What Category are you capturing:	Overhead Poles
What is Pole Material type:	Welded
What is the condition of pole:	3
How is the pole planted:	Concrete
What is the Condition of plant:	3
Is street light fitted:	Yes
Street Light Power Supply:	
Street Light Type	S70 D11
Street Light Watts	70
Street Light Condition	3
Street Light Height	
What is the type of service:	Three
What is the HV voltage level:	
What is the arrangement of connected cables:	Twisted
Are there isolators on the pole:	No
What is the Condition:	
How many Lots are connected to this pole:	
Overhead Pole Comments:	

Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 22/11/2016 11:08:53 AM











Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 22/11/2016 11:05:31 AM

Insp ID: 434 Group 4 - Alice Springs Ilparpa

What Category are you capturing:	Overhead Poles
What is Pole Material type:	Steel
What is the condition of pole:	4
How is the pole planted:	Concrete
What is the Condition of plant:	3
Is street light fitted:	No
Street Light Power Supply:	
Street Light Type	
Street Light Watts	
Street Light Condition	
Street Light Height	
What is the type of service:	Single
What is the HV voltage level:	
What is the arrangement of connected cables:	Twisted
Are there isolators on the pole:	No
What is the Condition:	
How many Lots are connected to this pole:	
Overhead Pole Comments:	

Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 22/11/2016 11:05:31 AM







Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 22/11/2016 11:01:12 AM

Insp ID: 436 Group 4 - Alice Springs Ilparpa

What Category are you capturing:	Overhead Poles
What is Pole Material type:	Welded
What is the condition of pole:	3
How is the pole planted:	Concrete
What is the Condition of plant:	3
Is street light fitted:	Yes
Street Light Power Supply:	
Street Light Type	S70 D12
Street Light Watts	70
Street Light Condition	3
Street Light Height	
What is the type of service:	Three
What is the HV voltage level:	
What is the arrangement of connected cables:	Twisted
Are there isolators on the pole:	No
What is the Condition:	
How many Lots are connected to this pole:	
Overhead Pole Comments:	

Northern Territory Town Camps

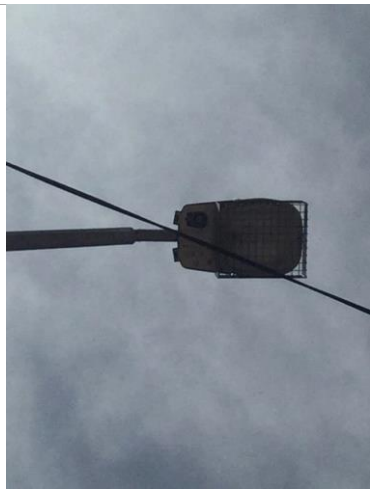
Electrical Infrastructure

Inspection Date 22/11/2016 11:01:12 AM













Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 22/11/2016 10:48:42 AM

Insp ID: 438 Group 4 - Alice Springs Ilparpa

What Category are you capturing:	Overhead Poles
What is Pole Material type:	Steel
What is the condition of pole:	3
How is the pole planted:	Concrete
What is the Condition of plant:	3
Is street light fitted:	Yes
Street Light Power Supply:	
Street Light Type	S70 D 11
Street Light Watts	70
Street Light Condition	3
Street Light Height	
What is the type of service:	Single
What is the HV voltage level:	
What is the arrangement of connected cables:	Twisted
Are there isolators on the pole:	No
What is the Condition:	
How many Lots are connected to this pole:	
Overhead Pole Comments:	

Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 22/11/2016 10:48:42 AM









Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 22/11/2016 10:45:38 AM

Insp ID: 439 Group 4 - Alice Springs Ilparpa

What Category are you capturing:	Overhead Poles
What is Pole Material type:	Steel
What is the condition of pole:	3
How is the pole planted:	Direct
What is the Condition of plant:	3
Is street light fitted:	Yes
Street Light Power Supply:	
Street Light Type	S70 D 11
Street Light Watts	70
Street Light Condition	3
Street Light Height	
What is the type of service:	Single
What is the HV voltage level:	
What is the arrangement of connected cables:	Twisted
Are there isolators on the pole:	No
What is the Condition:	
How many Lots are connected to this pole:	
Overhead Pole Comments:	

Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 22/11/2016 10:45:38 AM









Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 22/11/2016 10:41:11 AM

Insp ID: 440 Group 4 - Alice Springs Ilparpa

What Category are you capturing:	Overhead Poles
What is Pole Material type:	Welded
What is the condition of pole:	3
How is the pole planted:	Concrete
What is the Condition of plant:	3
Is street light fitted:	Yes
Street Light Power Supply:	
Street Light Type	S70 D 11
Street Light Watts	70
Street Light Condition	3
Street Light Height	
What is the type of service:	
What is the HV voltage level:	
What is the arrangement of connected cables:	Twisted
Are there isolators on the pole:	No
What is the Condition:	
How many Lots are connected to this pole:	
Overhead Pole Comments:	

Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 22/11/2016 10:41:11 AM













Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 22/11/2016 10:36:31 AM

Insp ID: 441 Group 4 - Alice Springs Ilparpa

What Category are you capturing:	Overhead Poles
What is Pole Material type:	Steel
What is the condition of pole:	4
How is the pole planted:	Concrete
What is the Condition of plant:	3
Is street light fitted:	Yes
Street Light Power Supply:	
Street Light Type	S70 D 11
Street Light Watts	70
Street Light Condition	3
Street Light Height	
What is the type of service:	Single
What is the HV voltage level:	
What is the arrangement of connected cables:	Twisted
Are there isolators on the pole:	No
What is the Condition:	
How many Lots are connected to this pole:	
Overhead Pole Comments:	

Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 22/11/2016 10:36:31 AM









Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 22/11/2016 10:33:45 AM

Insp ID: 442 Group 4 - Alice Springs Ilparpa

What Category are you capturing:	Overhead Poles
What is Pole Material type:	Welded
What is the condition of pole:	3
How is the pole planted:	Concrete
What is the Condition of plant:	3
Is street light fitted:	Yes
Street Light Power Supply:	
Street Light Type	S70 D 11
Street Light Watts	70
Street Light Condition	3
Street Light Height	
What is the type of service:	Three
What is the HV voltage level:	
What is the arrangement of connected cables:	Twisted
Are there isolators on the pole:	No
What is the Condition:	
How many Lots are connected to this pole:	
Overhead Pole Comments:	

Northern Territory Town Camps

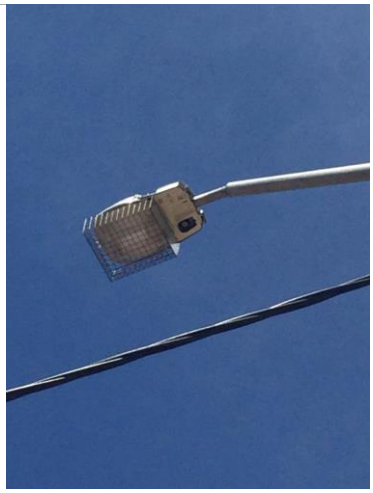
Electrical Infrastructure

Inspection Date 22/11/2016 10:33:45 AM











Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 22/11/2016 10:29:50 AM

Insp ID: 443 Group 4 - Alice Springs Ilparpa

What Category are you capturing:	Overhead Poles
What is Pole Material type:	Steel
What is the condition of pole:	4
How is the pole planted:	Concrete
What is the Condition of plant:	3
Is street light fitted:	No
Street Light Power Supply:	
Street Light Type	
Street Light Watts	
Street Light Condition	
Street Light Height	
What is the type of service:	Single
What is the HV voltage level:	
What is the arrangement of connected cables:	Twisted
Are there isolators on the pole:	No
What is the Condition:	
How many Lots are connected to this pole:	
Overhead Pole Comments:	

Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 22/11/2016 10:29:50 AM







Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 22/11/2016 10:27:39 AM

Insp ID: 444 Group 4 - Alice Springs Ilparpa

What Category are you capturing:	Overhead Poles
What is Pole Material type:	Welded
What is the condition of pole:	3
How is the pole planted:	Concrete
What is the Condition of plant:	3
Is street light fitted:	Yes
Street Light Power Supply:	
Street Light Type	S70 D 11
Street Light Watts	70
Street Light Condition	3
Street Light Height	
What is the type of service:	Three
What is the HV voltage level:	22000
What is the arrangement of connected cables:	Twisted
Are there isolators on the pole:	No
What is the Condition:	
How many Lots are connected to this pole:	
Overhead Pole Comments:	415V

Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 22/11/2016 10:27:39 AM









Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 22/11/2016 9:33:49 AM

Insp ID: 554 Group 4 - Alice Springs Ilparpa

What Category are you capturing:	Overhead Poles
What is Pole Material type:	Welded
What is the condition of pole:	3
How is the pole planted:	Concrete
What is the Condition of plant:	3
Is street light fitted:	Yes
Street Light Power Supply:	
Street Light Type	S70 D11
Street Light Watts	70
Street Light Condition	3
Street Light Height	
What is the type of service:	Three
What is the HV voltage level:	11000
What is the arrangement of connected cables:	Parallel
Are there isolators on the pole:	No
What is the Condition:	3
How many Lots are connected to this pole:	
Overhead Pole Comments:	Overhead to underground transition ,minor rust

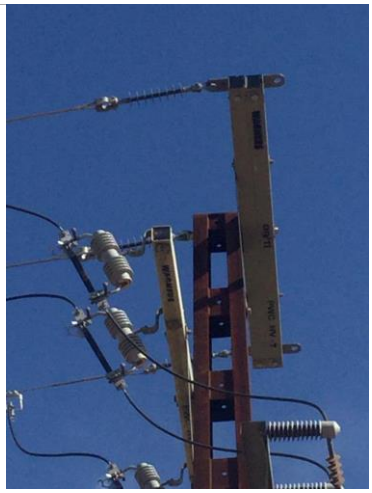
Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 22/11/2016 9:33:49 AM











Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 22/11/2016 9:31:53 AM

Insp ID: 555 Group 4 - Alice Springs Ilparpa

What Category are you capturing:	Overhead Poles
What is Pole Material type:	Welded
What is the condition of pole:	3
How is the pole planted:	Concrete
What is the Condition of plant:	3
Is street light fitted:	Yes
Street Light Power Supply:	
Street Light Type	S70 D11
Street Light Watts	70
Street Light Condition	3
Street Light Height	
What is the type of service:	Three
What is the HV voltage level:	11000
What is the arrangement of connected cables:	Parallel
Are there isolators on the pole:	Yes
What is the Condition:	3
How many Lots are connected to this pole:	
Overhead Pole Comments:	

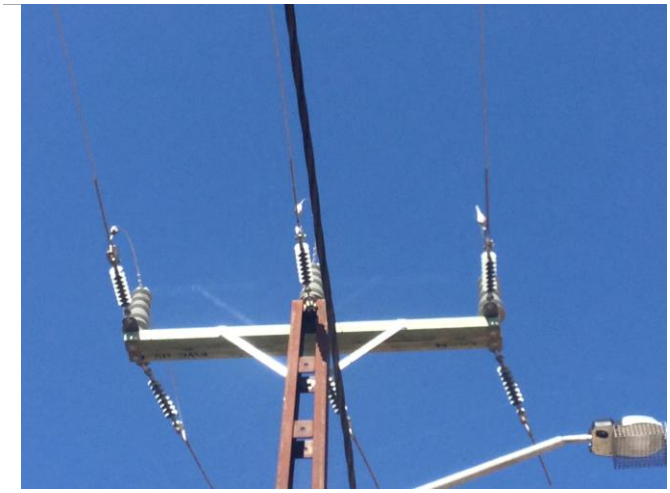
Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 22/11/2016 9:31:53 AM













Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 22/11/2016 11:18:16 AM

Insp ID: 428 Group 4 - Alice Springs Ilparpa

What Category are you capturing:	Overhead Poles
Is street light fitted:	Yes
Street Light Power Supply:	
Street Light Type	Unknown
Street Light Watts	
Street Light Condition	3
Street Light Height	







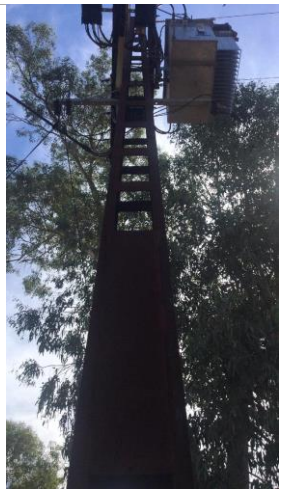


Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 22/11/2016 11:18:16 AM





Northern Territory Town Camps

Electrical Infrastructure

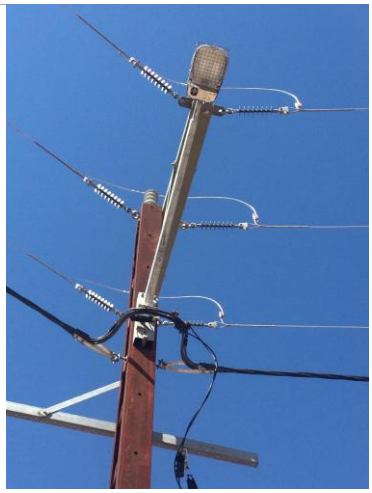
Inspection Date 22/11/2016 11:17:42 AM

Insp ID: 429 Group 4 - Alice Springs Ilparpa

What Category are you capturing:	Overhead Poles
Is street light fitted:	Yes
Street Light Power Supply:	
Street Light Type	S 70 D 11
Street Light Watts	70
Street Light Condition	3
Street Light Height	





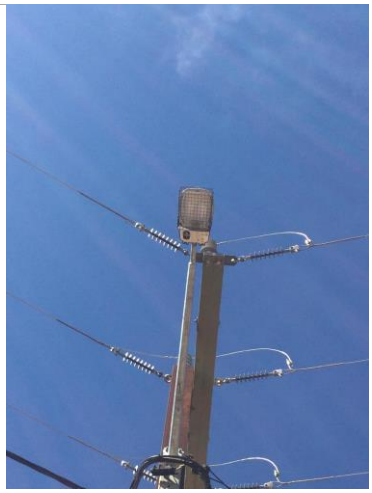




Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 22/11/2016 11:17:42 AM





Northern Territory Town Camps

Electrical Infrastructure

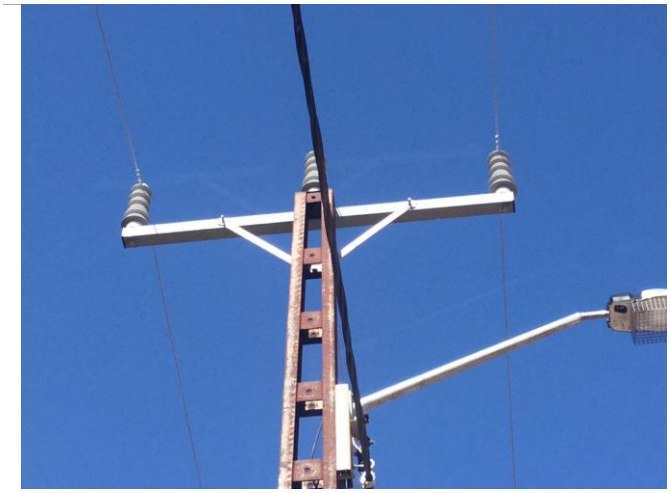
Inspection Date 22/11/2016 11:17:02 AM

Insp ID: 430 Group 4 - Alice Springs Ilparpa

What Category are you capturing:	Overhead Poles
Is street light fitted:	Yes
Street Light Power Supply:	
Street Light Type	S70 D 15
Street Light Watts	70
Street Light Condition	3
Street Light Height	









Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 22/11/2016 11:17:02 AM



Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 22/11/2016 11:15:39 AM

Insp ID: 431	Group 4 - Alice Springs	Ilparpa

What Category are you capturing:	Overhead Poles
Is street light fitted:	Yes
Street Light Power Supply:	
Street Light Type	S70 D11
Street Light Watts	70
Street Light Condition	3
Street Light Height	









Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 22/11/2016 11:15:39 AM



Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 22/11/2016 11:08:53 AM

Insp ID: 433	Group 4 - Alice Springs	Ilparpa

What Category are you capturing:	Overhead Poles
Is street light fitted:	Yes
Street Light Power Supply:	
Street Light Type	S70 D11
Street Light Watts	70
Street Light Condition	3
Street Light Height	









Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 22/11/2016 11:08:53 AM



Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 22/11/2016 11:01:12 AM

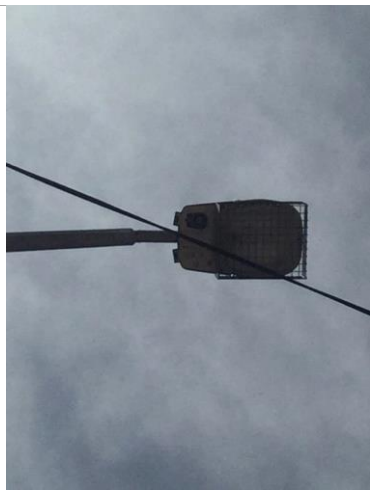
Insp ID: 436 Group 4 - Alice Springs Ilparpa

What Category are you capturing:	Overhead Poles
Is street light fitted:	Yes
Street Light Power Supply:	
Street Light Type	S70 D12
Street Light Watts	70
Street Light Condition	3
Street Light Height	









Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 22/11/2016 11:01:12 AM





Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 22/11/2016 10:48:42 AM

Insp ID: 438 Group 4 - Alice Springs Ilparpa

What Category are you capturing:	Overhead Poles
Is street light fitted:	Yes
Street Light Power Supply:	
Street Light Type	S70 D 11
Street Light Watts	70
Street Light Condition	3
Street Light Height	









Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 22/11/2016 10:45:38 AM

Insp ID: 439 Group 4 - Alice Springs Ilparpa

What Category are you capturing:	Overhead Poles
Is street light fitted:	Yes
Street Light Power Supply:	
Street Light Type	S70 D 11
Street Light Watts	70
Street Light Condition	3
Street Light Height	









Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 22/11/2016 10:41:11 AM

Insp ID: 440 Group 4 - Alice Springs Ilparpa

What Category are you capturing:	Overhead Poles
Is street light fitted:	Yes
Street Light Power Supply:	
Street Light Type	S70 D 11
Street Light Watts	70
Street Light Condition	3
Street Light Height	









Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 22/11/2016 10:41:11 AM





Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 22/11/2016 10:36:31 AM

Insp ID: 441 Group 4 - Alice Springs Ilparpa

What Category are you capturing:	Overhead Poles
Is street light fitted:	Yes
Street Light Power Supply:	
Street Light Type	S70 D 11
Street Light Watts	70
Street Light Condition	3
Street Light Height	









Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 22/11/2016 10:33:45 AM

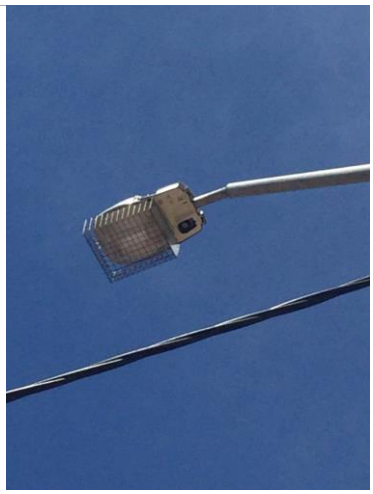
Insp ID: 442 Group 4 - Alice Springs Ilparpa

What Category are you capturing:	Overhead Poles
Is street light fitted:	Yes
Street Light Power Supply:	
Street Light Type	S70 D 11
Street Light Watts	70
Street Light Condition	3
Street Light Height	









Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 22/11/2016 10:33:45 AM



Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 22/11/2016 10:27:39 AM

Insp ID: 444 Group 4 - Alice Springs Ilparpa

What Category are you capturing:	Overhead Poles
Is street light fitted:	Yes
Street Light Power Supply:	
Street Light Type	S70 D 11
Street Light Watts	70
Street Light Condition	3
Street Light Height	









Northern Territory Town Camps

Electrical Infrastructure

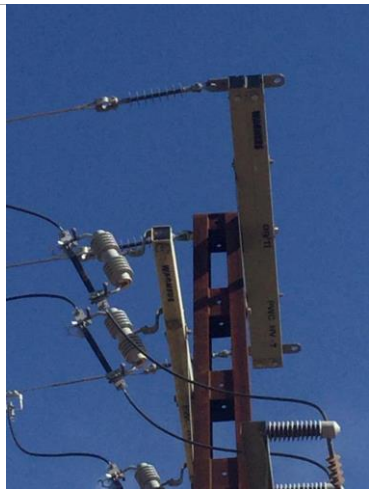
Inspection Date 22/11/2016 9:33:49 AM

Insp ID: 554 Group 4 - Alice Springs Ilparpa

What Category are you capturing:	Overhead Poles
Is street light fitted:	Yes
Street Light Power Supply:	
Street Light Type	S70 D11
Street Light Watts	70
Street Light Condition	3
Street Light Height	









Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 22/11/2016 9:33:49 AM



Northern Territory Town Camps

Electrical Infrastructure

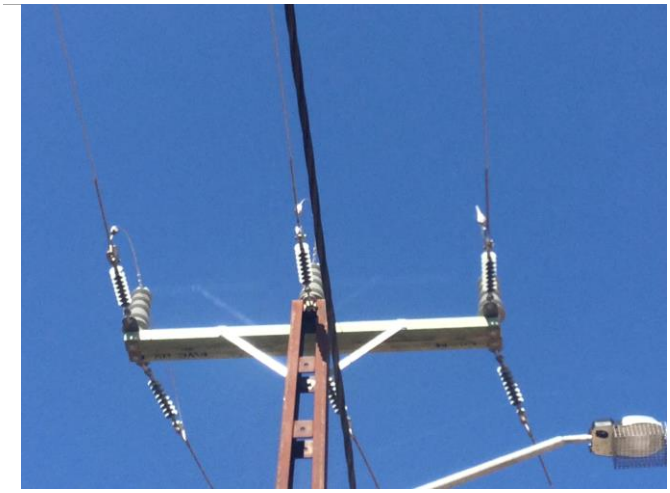
Inspection Date 22/11/2016 9:31:53 AM

Insp ID: 555 Group 4 - Alice Springs Ilparpa

What Category are you capturing:	Overhead Poles
Is street light fitted:	Yes
Street Light Power Supply:	
Street Light Type	S70 D11
Street Light Watts	70
Street Light Condition	3
Street Light Height	









Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 22/11/2016 9:31:53 AM





Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 22/11/2016 11:03:34 AM

Insp ID: 435 Group 4 - Alice Springs Ilparpa

What Category are you capturing:	Street Light
What is power supply method:	Overhead
What is the lamp type:	S70 D12
What Wattage is the lamp:	70
What is the condition of street lights:	5
What is Street Lighting pole installation height (approximate):	8







Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 22/11/2016 10:12:08 AM

Insp ID: 551 Group 4 - Alice Springs Ilparpa

What Category are you capturing:	Street Light
What is power supply method:	Underground
What is the lamp type:	
What Wattage is the lamp:	
What is the condition of street lights:	3
What is Street Lighting pole installation height (approximate):	6









Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 22/11/2016 10:10:00 AM

Insp ID: 552 Group 4 - Alice Springs Ilparpa

What Category are you capturing:	Street Light
What is power supply method:	Underground
What is the lamp type:	
What Wattage is the lamp:	
What is the condition of street lights:	3
What is Street Lighting pole installation height (approximate):	6









Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 22/11/2016 9:35:58 AM

Insp ID: 553 Group 4 - Alice Springs Ilparpa

What Category are you capturing:	Street Light
What is power supply method:	Underground
What is the lamp type:	
What Wattage is the lamp:	
What is the condition of street lights:	3
What is Street Lighting pole installation height (approximate):	6









Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 22/11/2016 9:25:21 AM

Insp ID: 556 Group 4 - Alice Springs Ilparpa

What Category are you capturing:	Street Light
What is power supply method:	Underground
What is the lamp type:	
What Wattage is the lamp:	
What is the condition of street lights:	3
What is Street Lighting pole installation height (approximate):	6









Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 22/11/2016 9:19:44 AM

Insp ID: 557 Group 4 - Alice Springs Ilparpa

What Category are you capturing:	Street Light
What is power supply method:	Underground
What is the lamp type:	
What Wattage is the lamp:	
What is the condition of street lights:	3
What is Street Lighting pole installation height (approximate):	6









Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 22/11/2016 10:18:40 AM

Insp ID: 550 Group 4 - Alice Springs Ilparpa

What Category are you capturing:	Transformers
What is Transformer installation method:	Pole
If method know:	11SS1P
What is the condition of the mounting:	3
What is Transformer Rating:	200
Is there access to transformers name plate to take a photo:	No Access
What is the condition of transformer:	3
What is cable type to transformer:	Black single insulated single core
What is cable size to transformer:	
Is there switch gear or fusing associated with the transformer:	Drop out fuses and surge suppressors
Transformer Comment:	









Northern Territory Town Camps

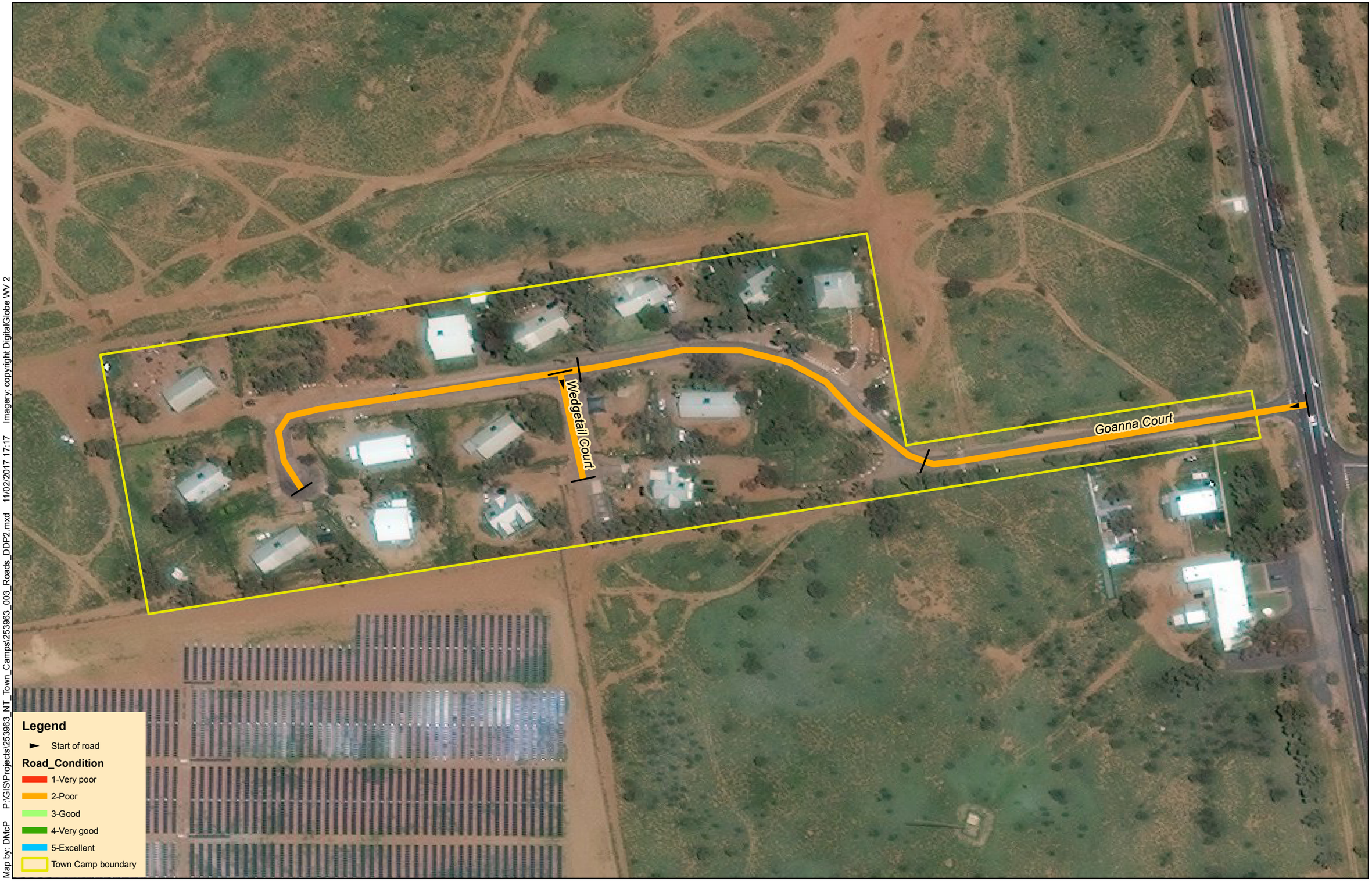
Electrical Infrastructure

Inspection Date 22/11/2016 10:18:40 AM



Road map

Map by: DMcP P:\GIS\Projects\253963_NT_Town_Camps\253963_003_Roads_DDP2.mxd 11/02/2017 17:17 Imagery: copyright DigitalGlobe WV 2



A3 scale: 1:1,500

0 20 40 60 80 100 m

Date: 11/02/2017 Version: 1

Coordinate system: GDA 1994

NT Town Camp Road Assessments

47 - New Ilparpa (Alice Springs)

2321

Existing drawings

-23°40'51"
384 750 E
385 000 E
-23°40'51"
7 371 250 N
7 371 250 N
-23°40'02"
384 750 E
385 000 E
-23°40'02"

8083
CONNELLAN
STUART HIGHWAY
Ablutions
4
7
11
1
TOWN OF ALICE SPRINGS
Phone
5713
9
Playground
5
2
6
8
3
Demountable
5148
3697

LEGEND

LAND USE PLANNING:
APPROX. POSITION OF BUILDING constructed since date of photography

LAND EXCLUDED FROM DEVELOPMENT
GENERAL EXCLUSION/BUFFERS
CULTURAL EXCLUSION AREAS:
Unauthorised entry, works on or use of land where there is a sign stating that the area or use of land is Northern Territory Aboriginal Sacred Site or conditions apply to entry, works on or use of land within a Cultural Exclusion Area contact the Aboriginal Areas Protection Authority (AAPA) email enquiries.aapa@nt.gov.au or phone 8999 4332.
This advice does not negate the need for consent for entry, works, or use which may be required under the Aboriginal Land Rights(NT) Act (in the case of Aboriginal land), or another statute.

© NORTHERN TERRITORY OF AUSTRALIA

CADASTRE
Current 123
Proposed 123
Locality LOCALITY

UTILITY SERVICES
ELECTRICITY
LOW VOLTAGE LV
HIGH VOLTAGE HV
WATER RETICULATION
WATER MAIN
WATER RISING MAIN
SEWER
SEWER MAIN S
SEWER RISING MAIN S S

DIAL BEFORE YOU DIG www.1100.com.au

TOPOGRAPHY
Road Sealed, Bridge
Road Unsealed, Track
Footpath, Drain, Culvert
Wall, Gate, Fence, Cattle Grid
Railway, Disused Railway
Aerodrome Tarmac, Landing Strip
Taxiway, Apron
Pipeline: Oil, Water, Undetermined Gas, Sewage
Building, Building-Shape unconfirmed
Shade Structure, Incomplete Building
Sewage Ponds, Tailings Pond
Oval, Arena, Swimming Pool
High Water Mark, Low Water Mark
Mine; Quarry, Surface Excavation
Contour; Index, Intermediate 75
Contour; Depression
Top of Bank, Bottom of Bank, Cliff
Watercourse; Perennial, Intermittent, Channel or Canal
WaterBodies; Perennial, Intermittent
WaterBodies; Reservoir, Water Hole
Swamp; Swamp Perennial, Swamp Intermittent
Flat; Mud Flat, Clay/Saltpan, STI
Pole; Power, General, Light
Tank; Water, Elevated, Non-Water, Silo
Manhole, Pylon, Communication Tower, Bore.

AVAILABLE FROM AND PRODUCED BY:

Northern Territory Government

NOTES:
POWER POLES, MANHOLES, TANKS, SILOS, TOWERS and other similar shaped objects are captured from Aerial Photography and have their locations confirmed from aerial survey techniques.
Other features and cadastre are LOCAL SURVEY CONTROL. Their ground location is expected to be within +/-0.3m of their mapped location.

DIAL BEFORE YOU DIG phone 1100 (freecall) or visit www.1100.com.au
For water, sewer, and power information and connection requirements for Power and Water Corporation, Indigenous Community Development on 1800 245 092, and visit http://www.powerwater.com.au/business

General enquiries, corrections, updates, errors and omissions:
Indigenous Community Land Use Planning, NT Dept of Lands and Planning
TEL: (08) 8999 1300, FAX: (08) 8999 7189, Email: planning@nt.gov.au

This product is a compilation of data holdings from (but not restricted to) NT Dept of Lands and Planning, NT Dept of Housing, Local Government and Regional Services, Power and Water Corporation and Aboriginal Areas Protection Authority.
Whilst every effort has been made to ensure the accuracy of this map, errors and omissions may occur.
No Warranty is given concerning the accuracy of the information herein. Users should refer to the originating bodies or departments regarding the accuracy and currency of the data.

Topographic Information:
Land Information Division
Dept of Lands and Planning
TEL: (08) 8999 5311, FAX: (08) 8995 5366
Email: landinfo.dlp@nt.gov.au

Cadastral Information:
Office of the Surveyor-General
Dept of Lands and Planning
TEL: (08) 8995 5303, FAX: (08) 8995 5395
Email: landinfo.dlp@nt.gov.au

Power, Water or Sewer Information:
Remote Operations Planning Branch
Power and Water Corporation
TEL: (08) 8924 5364, FAX: (08) 8924 5360

Aboriginal Areas Protection Authority:
The Registrar
Aboriginal Areas Protection Authority
TEL: (08) 8999 4332
Email: enquiries.aaoa@nt.gov.au

Planning Information:
Indigenous Community Land Use Planning
Dept of Lands and Planning
TEL: (08) 8999 1300, FAX: (08) 8999 7189
Email: planning@nt.gov.au

Housing Infrastructure Information:
Infrastructure Delivery Branch
Dept of Housing, Local Government, and Regional Services
TEL: (08) 8995 5013, FAX: (08) 8995 5110
Email: tex.dhlgrs@nt.gov.au

SOURCE INFORMATION

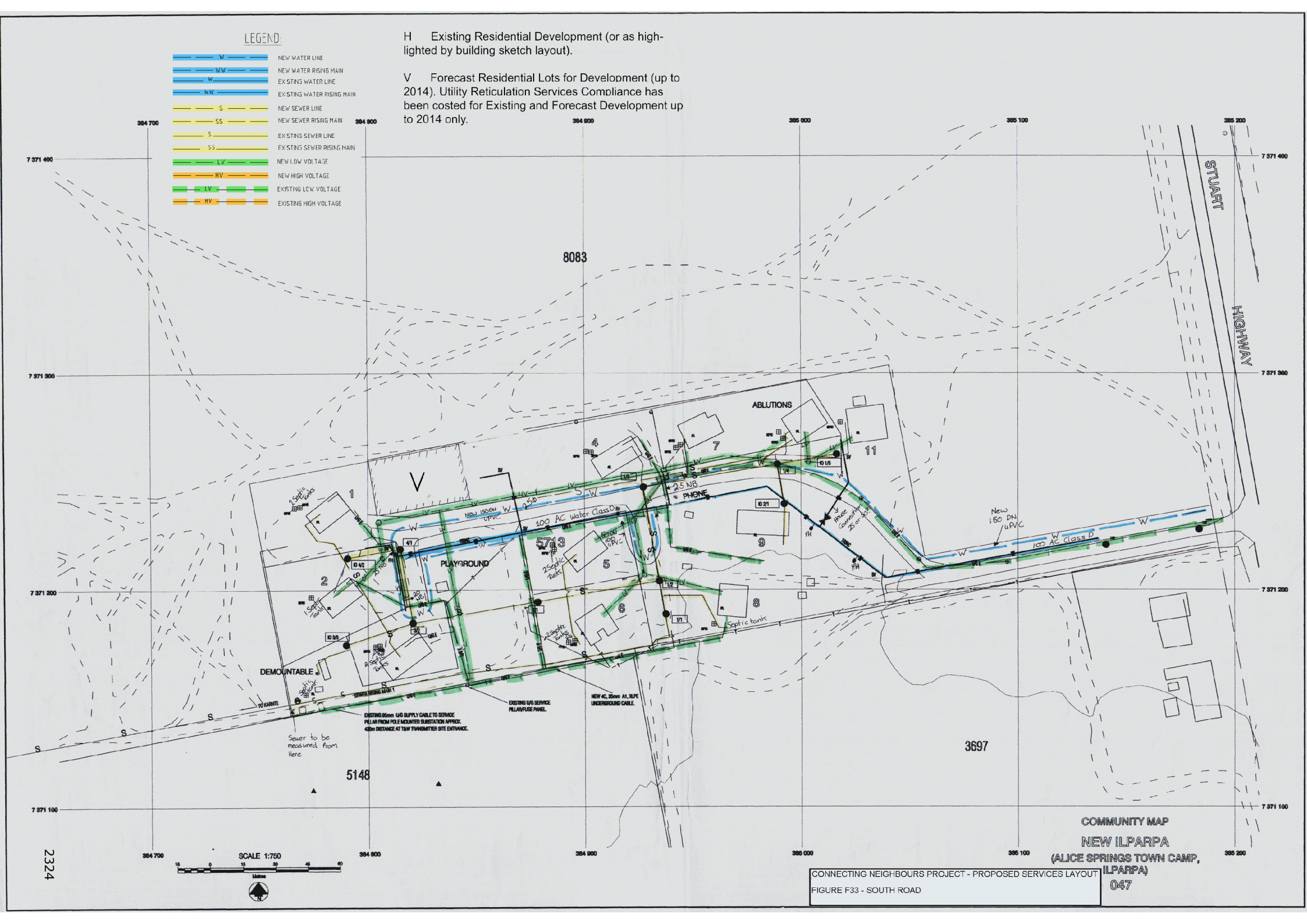
CONTOUR INTERVAL :		CURRENCY OF TOPOGRAPHY :	16 June 2008
HORIZONTAL DATUM :		SOURCE MAP SCALE :	2500
VERTICAL DATUM :		ZONE UTM :	53
PROJECTION :	Transverse Mercator	DATE GENERATED :	21 June 2012

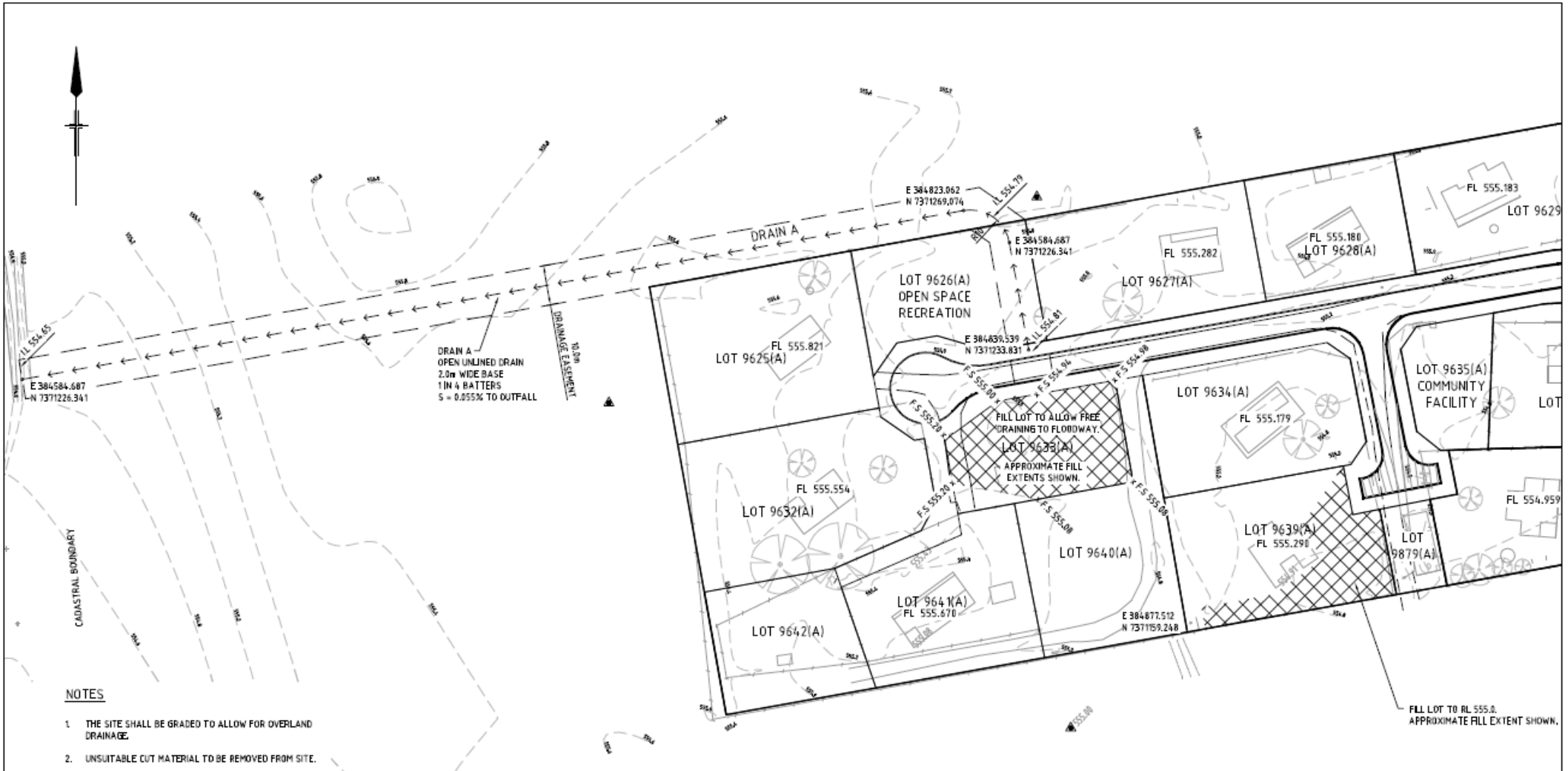
N
GDA
0 10 20 30 40 50

Locality Diagram



SERVICED LAND AVAILABILITY PROGRAM
SLAP Map
New Ilparpa (Alice Springs Town Camp)
Alice Springs Town Camp
Alice Springs Town Council
Community ID: 47


LEGEND:
NEW WATER LINE
NEW WATER RISING MAIN
EXISTING WATER LINE
EXISTING WATER RISING MAIN
NEW SEWER LINE
NEW SEWER RISING MAIN
EXISTING SEWER LINE
EXISTING SEWER RISING MAIN
NEW LOW VOLTAGE
NEW HIGH VOLTAGE
EXISTING LOW VOLTAGE
EXISTING HIGH VOLTAGE
H Existing Residential Development (or as high-lighted by building sketch layout).
V Forecast Residential Lots for Development (up to 2014). Utility Reticulation Services Compliance has been costed for Existing and Forecast Development up to 2014 only.
384 700
384 800
384 900
385 000
385 100
385 200
7 371 400
7 371 300
7 371 200
7 371 100
STUART HIGHWAY
8083
3697
5148
ABLUTIONS
PLAYGROUND
DEMOUNTABLE
PHONE
Septic tank
New 150 DN uPVC
100 AC Class D
Sewer to be measured from here
EXISTING 95mm U/G SUPPLY CABLE TO SERVICE PILLAR FROM POLE MOUNTED SUBSTATION APPROX. 430m DISTANCE AT T&W TRANSMITTER SITE ENTRANCE.
EXISTING U/G SERVICE PILLAR/FUSE PANEL.
NEW 4C, 35mm A1, XLPE UNDERGROUND CABLE.
SCALE 1:750
Metres
2324
COMMUNITY MAP
NEW ILPARPA
(ALICE SPRINGS TOWN CAMP, ILPARPA)
047
CONNECTING NEIGHBOURS PROJECT - PROPOSED SERVICES LAYOUT
FIGURE F33 - SOUTH ROAD

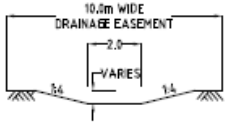


NOTES

1. THE SITE SHALL BE GRADED TO ALLOW FOR OVERLAND DRAINAGE.
2. UNSUITABLE CUT MATERIAL TO BE REMOVED FROM SITE.

LEGEND

- AREA TO BE FILLED TO MATCH ADJACENT SURFACE AND COMPACTED TO 90 % MMDD.
- OPEN DRAIN WITH DIRECTION OF FLOW
- EXISTING FENCE
- EXISTING CONTOUR
- FL — EXISTING HOUSE FINISHED FLOOR LEVEL
- x F.S 563.50 — FINISHED FILL LEVEL
- EXISTING TREE



DRAIN A SECTION
SCALE 1 : 100

No.	DESCRIPTION	DATE	INIT.
D	RE-ISSUED FOR APPROVAL	20/06/08	B.S
C	RE-ISSUED FOR APPROVAL	19/03/08	B.S
B	ISSUED FOR APPROVAL	14/02/08	B.S
A	ISSUED FOR 90% REVIEW	13/07/07	B.S

AMENDMENTS

0 1 2 3 4 5m
SCALE 1:100 AT ORIGINAL SIZE

0 5 10 15 20 25m
SCALE 1:500 AT ORIGINAL SIZE

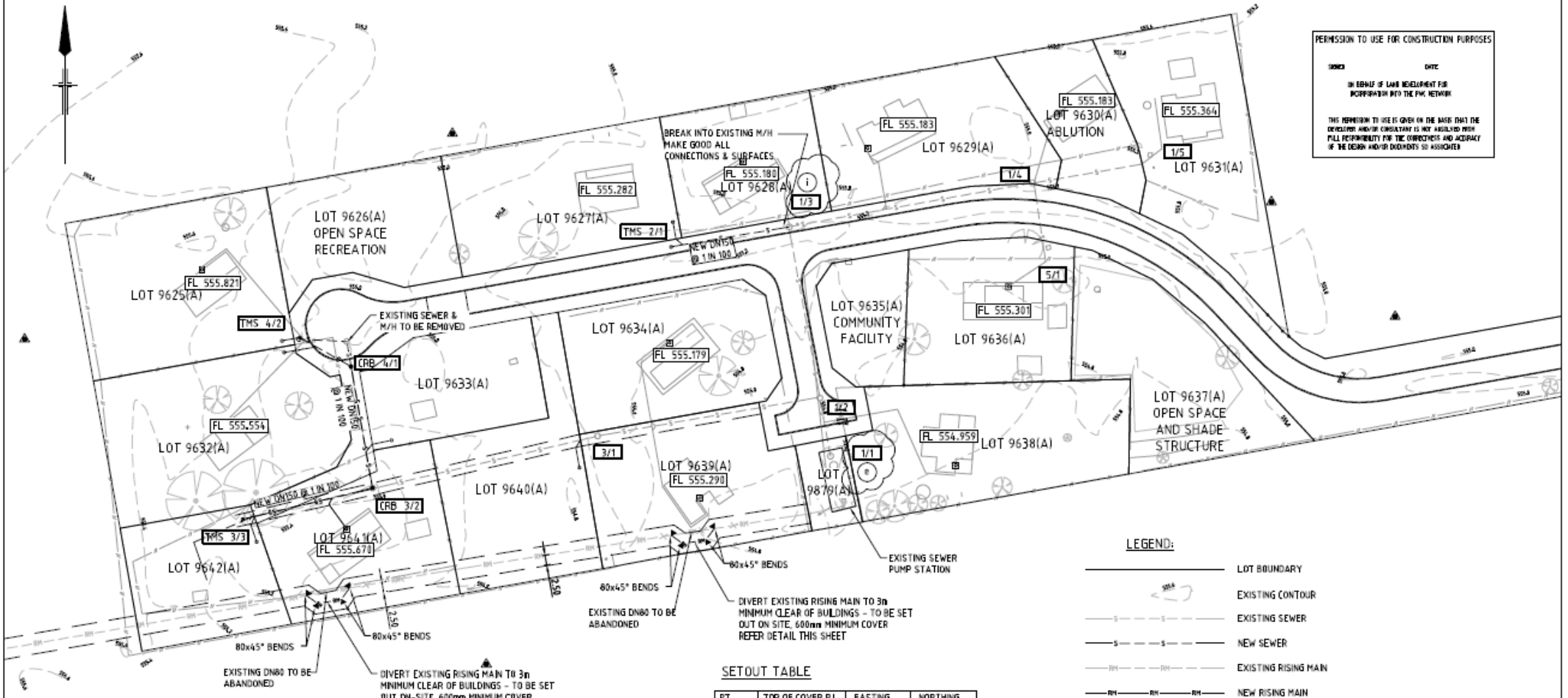
GHD

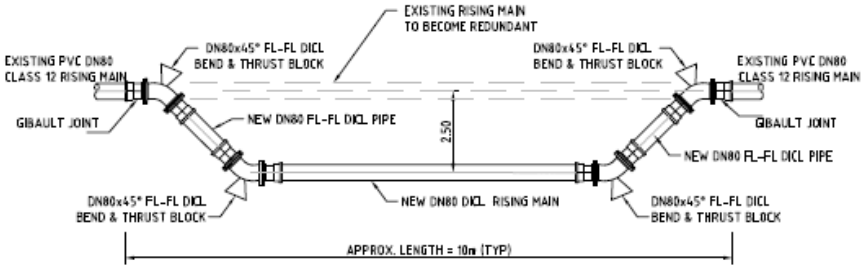
DRAWN B.S DATE 1/06/2007 CHECKED DATE
DESIGNED G.C DATE 1/06/2007 CHECKED DATE
DESIGN PROJECT LEADER DATE PROJECT OFFICER DATE

Northern Territory Government
Department of Planning and Infrastructure

ALICE SPRINGS
CONNECTING NEIGHBOURS PROGRAM
UPGRADE WORKS FOR ILPARPA
DRAINAGE COMPILATION PLAN

FILE No.	ASSET No.	SHEET No.	DRAWING No.	AMEND.	SHEET SIZE
43-21132	-	8 OF 20	B08-1826	D	A1





RISING MAIN DIVERSION DETAIL

NTS

SETOUT TABLE

PT	TOP OF COVER R.L	EASTING	NORTHING
TMS 2/1	555.070	384897.027	7371243.816
CRB 3/2	555.435	384821.411	7371182.770
TMS 3/3	555.336	384788.511	7371174.842
CRD 4/1	555.242	384815.937	7371213.518
TMS 4/2	555.165	384803.001	7371220.837

CONSTRUCTION NOTES

1. R.L. SHOWN FOR TOP OF MAINTENANCE HOLE IS INDICATIVE ONLY. FINAL LEVEL TO BE DETERMINED ON-SITE TO SUIT THE SURROUNDING FINISHED SURFACE LEVELS.
2. TMS = TERMINAL MAINTENANCE SHAFT WITH HEAVY DUTY COVER REFER STD. DRG. No. W2-1-06
3. CRD = NEW CAST IN-SITU BASE, 1200 DIA CIRCULAR MAINTENANCE HOLE RECTANGULAR HEAVY DUTY LID
4. ALL NEW & EXISTING INSPECTION OPENING COVERS TO BE HEAVY DUTY.

LEGEND:

- LOT BOUNDARY
- EXISTING CONTOUR
- EXISTING SEWER
- NEW SEWER
- EXISTING RISING MAIN
- NEW RISING MAIN
- EXISTING HOUSE CONNECTION (HC)
- NEW HOUSE CONNECTION (HC) - REFER LONG SECTION TO BE CONNECTED TO HOUSE SEWER SYSTEM ON DRG. B08-1829
- 3/1 EXISTING MAINTENANCE HOLE / INSPECTION OPENING
- CRD 4/1 NEW CIRCULAR MAINTENANCE HOLE - RECTANGULAR LID
- TMS 4/2 TERMINAL MAINTENANCE SHAFT - HEAVY DUTY LID
- I INDUCT VENT - REFER TO B08-3493
- E EDUCT VENT - REFER TO B08-3493

No.	DESCRIPTION	DATE	INIT.
E	RE-ISSUED FOR APPROVAL	20/06/08	B.S
D	INDUCT & EDUCT VENTS ADDED & RE-ISSUED FOR APPROVAL	9/05/08	B.S
C	RE-ISSUED FOR APPROVAL	19/03/08	B.S
B	ISSUED FOR APPROVAL	14/02/08	B.S
A	ISSUED FOR 90% REVIEW	13/07/07	B.S

AMENDMENTS

SCALE 1:500 AT ORIGINAL SIZE

GHD

DRAWN B.S DATE 1/06/2007 CHECKED DATE

DESIGNED G.C DATE 1/06/2007 CHECKED DATE

DESIGN PROJECT LEADER DATE PROJECT OFFICER DATE

Northern Territory Government
Department of Planning and Infrastructure

ALICE SPRINGS
CONNECTING NEIGHBOURS PROGRAM
UPGRADE WORKS FOR ILPARPA

SEWER COMPILATION PLAN

FILE No.	ASSET No.	SHEET No.	DRAWING No.	AMEND.	SHEET SIZE
43-21132	-	9 OF 20	B08-1827	E	A1

2326



PERMISSION TO USE FOR CONSTRUCTION PURPOSES

SIGNED DATE

ON BEHALF OF LAND DEVELOPMENT FOR INCORPORATION INTO THE PWC NETWORK

THIS PERMISSION TO USE IS GIVEN ON THE BASIS THAT THE DEVELOPER AND/OR CONSULTANT IS NOT ABSOLVED FROM FULL RESPONSIBILITY FOR THE CORRECTNESS AND ACCURACY OF THE DESIGN AND/OR DOCUMENTS SO ASSOCIATED

SEWER LONG SECTION NOTES

1. R.L. SHOWN FOR TOP OF ACCESS CHAMBER IS INDICATIVE ONLY. FINAL LEVEL TO BE DETERMINED ON SITE TO SUIT THE SURROUNDING FINISHED SURFACE LEVELS.
2. I.O. => INSPECTION OPENING WITH HEAVY DUTY CAST IRON COVER. REFER STD. DRG. No. W2-1-05/5
3. CRD => CAST IN-SITU BASE, CIRCULAR ACCESS CHAMBER RECTANGULAR HEAVY DUTY LID
4. CRB => CAST IN-SITU BASE, CIRCULAR ACCESS CHAMBER RECTANGULAR LIGHT DUTY LID
5. TMS => TERMINAL MAINTENANCE SHAFT REFER STD. DRG. No's. W2-2-07/3 & W2-2-08
6. ALL LEVELS ARE TO A.H.D.

SEWER LONG SECTION LEGEND

TYPE 1 39.076 — DROP TYPE & DISTANCE TO DOWN STREAM PIT
HC Lot 23 — HOUSE CONNECTION LOT NUMBER
IL 584.843 — INVERT LEVEL (IF OTHER THAN TYPE 1 OR 4)

G:\43\21132\CADD\Drawings\ILPARPA\43-21132-C010-C011_B08-1828-1829.dwg

No.	DESCRIPTION	DATE	INIT.
D	RE-ISSUED FOR APPROVAL	20/06/08	B.S
C	RE-ISSUED FOR APPROVAL	19/05/08	B.S
B	ISSUED FOR APPROVAL	16/02/06	B.S
A	ISSUED FOR NON REVIEW	15/01/07	B.S

AMENDMENTS

0 5 10 15 20 25m
SCALE 1:500 AT ORIGINAL SIZE

GHD
Suite 5, GHD Building, 62 Todd Street Alice Springs NT 0871
PO Box 1744 Alice Springs NT 0871
T 61 8 8951 3200 F 61 8 8951 3201
E ispmail@ghd.com.au W www.ghd.com.au

DRAWN	B.S	CHECKED	
DATE	1/06/2007	DATE	
DESIGNED	G.C	CHECKED	
DATE	1/06/2007	DATE	
DESIGN PROJECT LEADER		PROJECT OFFICER	
DATE		DATE	

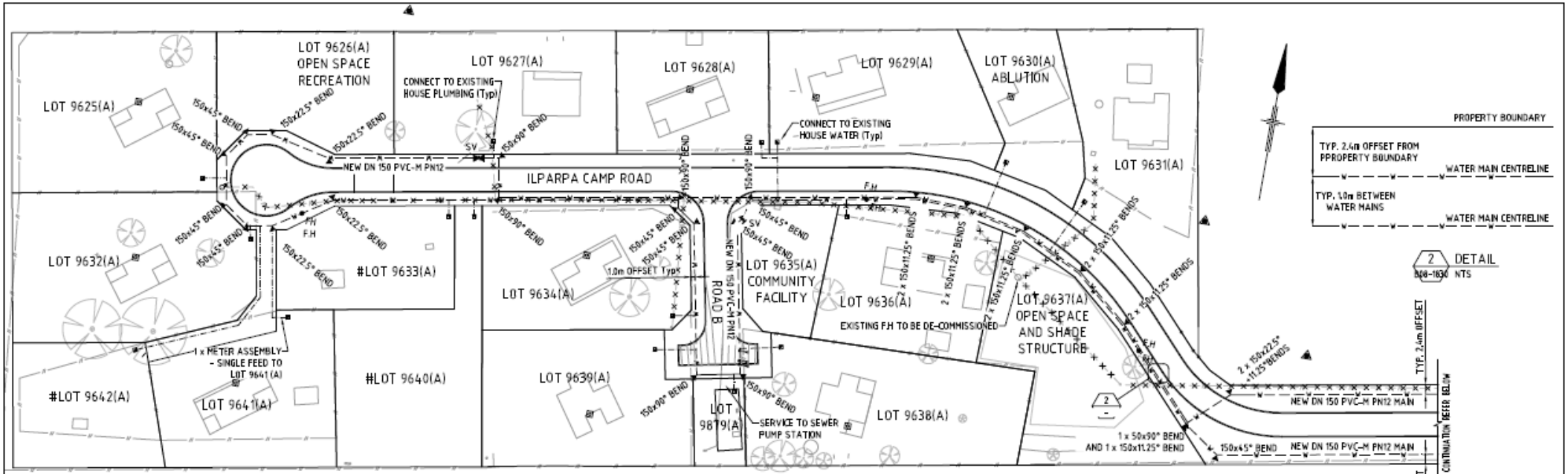
Northern Territory Government
Department of Planning and Infrastructure

ALICE SPRINGS
CONNECTING NEIGHBOURS PROGRAM
UPGRADE WORKS FOR ILPARPA

SEWER LONGITUDINAL SECTIONS

2327

FILE No.	ASSET No.	SHEET No.	DRAWING No.	AMEND.	SHEET SIZE
43-21132	-	11 OF 20	B08-1829	D	A1

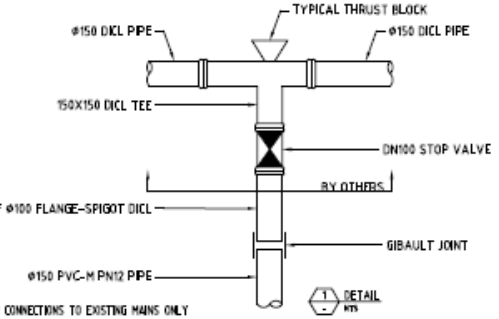


LEGEND

- PROPOSED DN 150 PVC-M PN12 WATER MAIN TO BE CONSTRUCTED.
- EXISTING WATER MAIN
- PROPOSED STOP VALVE.
- EXISTING WATER MAIN TO BE REMOVED
- F.H. PROPOSED FIRE HYDRANT TO BE CONSTRUCTED (UNDERGROUND TYPE).
- PROPOSED BEND WITH THRUST BLOCK TO BE CONSTRUCTED.
- PROPOSED END CAP WITH THRUST BLOCK TO BE CONSTRUCTED.
- CONSTRUCT SERVICE PIPE WITH DOUBLE 20mm SERVICE CONNECTIONS.
- CONSTRUCT SINGLE 20mm SERVICE CONNECTION (UNLESS NOTED OTHERWISE)
- PROPOSED DN20 WATER METER TO BE CONNECTED TO EXISTING HOUSE WATER CONNECTION

NOTES

1. DESIGN & CONSTRUCTION OF WATER WORKS SHALL BE CARRIED OUT IN ACCORDANCE WITH THE POWER AND WATER CONNECTION CODE AND ASSOCIATED DOCUMENTS
2. ALL LEVELS GIVEN ARE TO AHD
3. ALL DIMENSIONS ARE IN METRES UNLESS SHOWN OTHERWISE
4. MINIMUM COVER TO PIPE IS 750mm IN TRAFFICABLE AREAS, 600mm IN OTHER AREAS
5. PRIOR TO COMMENCEMENT OF WORKS THE CONSTRUCTOR SHALL CHECK THE LOCATION OF ALL UNDERGROUND SERVICES, AND CONFIRM FINISHED SURFACE LEVELS AND INVERTS OF EXISTING STUBS TO BE INCORPORATED INTO THE WORKS.
6. IT'S NOT GUARANTEED THAT ALL SERVICES HAVE BEEN SHOWN ON THE DRAWINGS.
7. WATER MAIN SHALL BE LAID OVER STORMWATER PIPES UNLESS OTHERWISE NOTED.
8. CONTRACTOR TO PAY FOR AND OBTAIN PERMIT(S) FROM THE RELEVANT ROAD AUTHORITY PRIOR TO ROAD EXCAVATION.
9. SEVEN (7) DAYS NOTICE HAS TO BE GIVEN TO LAND DEVELOPMENT, POWER AND WATER (FACSIMILE) 8924 7212 NORTH REGION & 8951 7347 – SOUTH REGION), WITH A "NOTICE OF INTENTION TO START WORK" PRIOR TO COMMENCEMENT OF WORKS.
   CONTRACTOR TO ARRANGE A PRE COMMENCEMENT MEETING WITH PWC AND CERTIFYING ENGINEER AND DEVELOPER.
10. 'AS CONSTRUCTED' DRAWINGS MUST BE PROVIDED TO LAND DEVELOPMENT, POWER AND WATER PRIOR TO HAND OVER INSPECTION AND CERTIFIED BY STRUCTURAL ENGINEER.
11. 'AS CONSTRUCTED' SURVEY TO BE PRODUCED BY REGISTERED SURVEYOR, 'AS CONSTRUCTED' DRAWINGS REQUIRED TO MGA 94 AND TO AHD COORDINATES. POSITION OF ALL BENDS, TEES, VALVES, FIRE HYDRANTS AND LINE ENDS REQUIRED.
12. CONNECTIONS TO EXISTING WATER MAINS WILL ONLY BE CARRIED OUT WHEN ALL WORKS UPSTREAM OF THE CONNECTION ARE COMPLETE (IE TESTED), DISINFECTED WHERE APPLICABLE, BACKFILLED AND CERTIFICATES SUBMITTED) IN ACCORDANCE WITH THE APPROVED DESIGN DRAWINGS, AND HAVE SATISFACTORILY PASSED FINAL HANDOVER INSPECTION.
13. POWER AND WATER PERSONAL SHALL INSTALL ALL WATER AND SEWER CONNECTIONS TO EXISTING MAINS ONLY AFTER ACCEPTANCE OF THE WORK HAS BEEN ACHIEVED. THE CONTRACTOR IS RESPONSIBLE FOR ALL CONNECTION FEES, MATERIALS AND LABOUR FOR EXCAVATION, BACKFILLING UNDER ROADS / OPEN DRAINS AND REINSTATEMENT.
14. WATER PIPES SHALL BE DUCTILE IRON CEMENT LINED (DICL) (CLASS K9), OR PVC-M S1 (PN 12), WITH DICL FITTINGS, UNLESS OTHERWISE NOTED.
15. WATER MAINS SHALL BE OFFSET FROM PROPERTY BOUNDARIES A DISTANCE OF 2.4m IN ROAD RESERVES AND 1.5m IN PRIVATE PROPERTY, EXCEPT WHERE SHOWN OTHERWISE ON THE DRAWINGS.
16. MARKED POSTS FOR STOP VALVES AND FIRE HYDRANTS TO INCORPORATE THE OFFSET DISTANCE FROM THE MARKER TO THE FITTING. REFER TO PWC PRODUCTS MANUAL FOR DETAILS OF 75 x 75 SHS MARKER POST. FIRE HYDRANTS USE 100 x 50 x 2 RHS.
17. MARKED TAPE AND 1.6mm SS TRACE WIRE TO BE INSTALLED ABOVE ALL MAINS TO STANDARD DRAWINGS .
18. 1.6mm SS TRACE WIRE IS NOT INTEGRAL WITH THE MARKER TAPE. TRACE WIRE IS TO BE JOINTED WITH PURPOSE MADE LUGS FOR FULL ELECTRICAL CONTINUITY AND TESTED AT COMPLETION OF WORKS. TRACE WIRE IS TO BE LOOPED TO THE SURFACE AT ALL HYDRANTS AND STOP VALVES, ITS LOCATION TO BE SUCH THAT IT DOES NOT INTERFERE WITH THE OPERATION OF THE VALVES OR HYDRANTS.
19. ALL PIPE BEDDING TO BE TYPE 1 UNLESS NOTED OTHERWISE.
20. FOR DN 100 – 225 THRUST BLOCK DETAILS REFER PWC STD W1-2-05.
    FOR DN 300 REFER WATER SERVICES AUSTRALIA ETD DWG WAT-1205.
21. EXISTING SERVICE CONNECTIONS TO BE DECOMMISSIONED & NEW METERS INSTALLED TO PWC STANDARDS. READITAP CONNECTORS ARE TO BE USED FOR ALL LOT SERVICE CONNECTIONS.
22. WHERE ELECTRIC CABLES CROSS WATER MAINS, CONCRETE PROTECTION REQUIRED OVER ELECT. CABLES 1.0m EACH SIDE OF WATER MAIN CROSSING ROW).



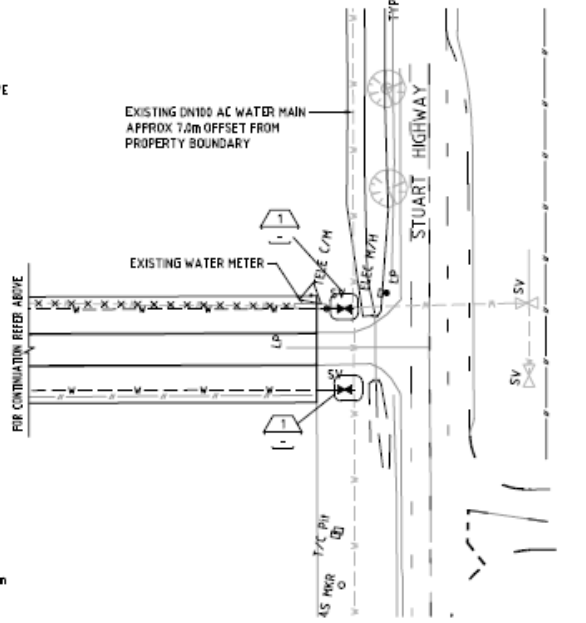
PERMISSION TO USE FOR CONSTRUCTION PURPOSES

SIGNED DATE

ON BEHALF OF LAND DEVELOPMENT FOR INCORPORATION INTO THE PWC NETWORK

THIS PERMISSION TO USE IS GIVEN ON THE BASIS THAT THE DEVELOPER AND/OR CONSULTANT IS NOT ABSOLVED FROM FULL RESPONSIBILITY FOR THE CORRECTNESS AND ACCURACY OF THE DESIGN AND/OR DOCUMENTS SO ASSOCIATED

0 5 10 15 20 25m
SCALE 1:500 AT ORIGINAL SIZE



No.	DESCRIPTION	DATE	INT.
D	RE-ISSUED FOR APPROVAL	26/06/08	B.S
C	RE-ISSUED FOR APPROVAL	19/05/08	B.S
B	ISSUED FOR APPROVAL	16/02/08	B.S
A	ISSUED FOR 90% REVIEW	19/07/07	B.S

AMENDMENTS

PowerWater
NORTHERN TERRITORY

GHD
Suite 5, GHD Building, 42 Todd Street Alice Springs NT 0870
PO Box 3776 Alice Springs NT 0871
T 61 8 8954 1220 F 61 8 8954 1221
E aspmail@ghd.com.au W www.ghd.com.au

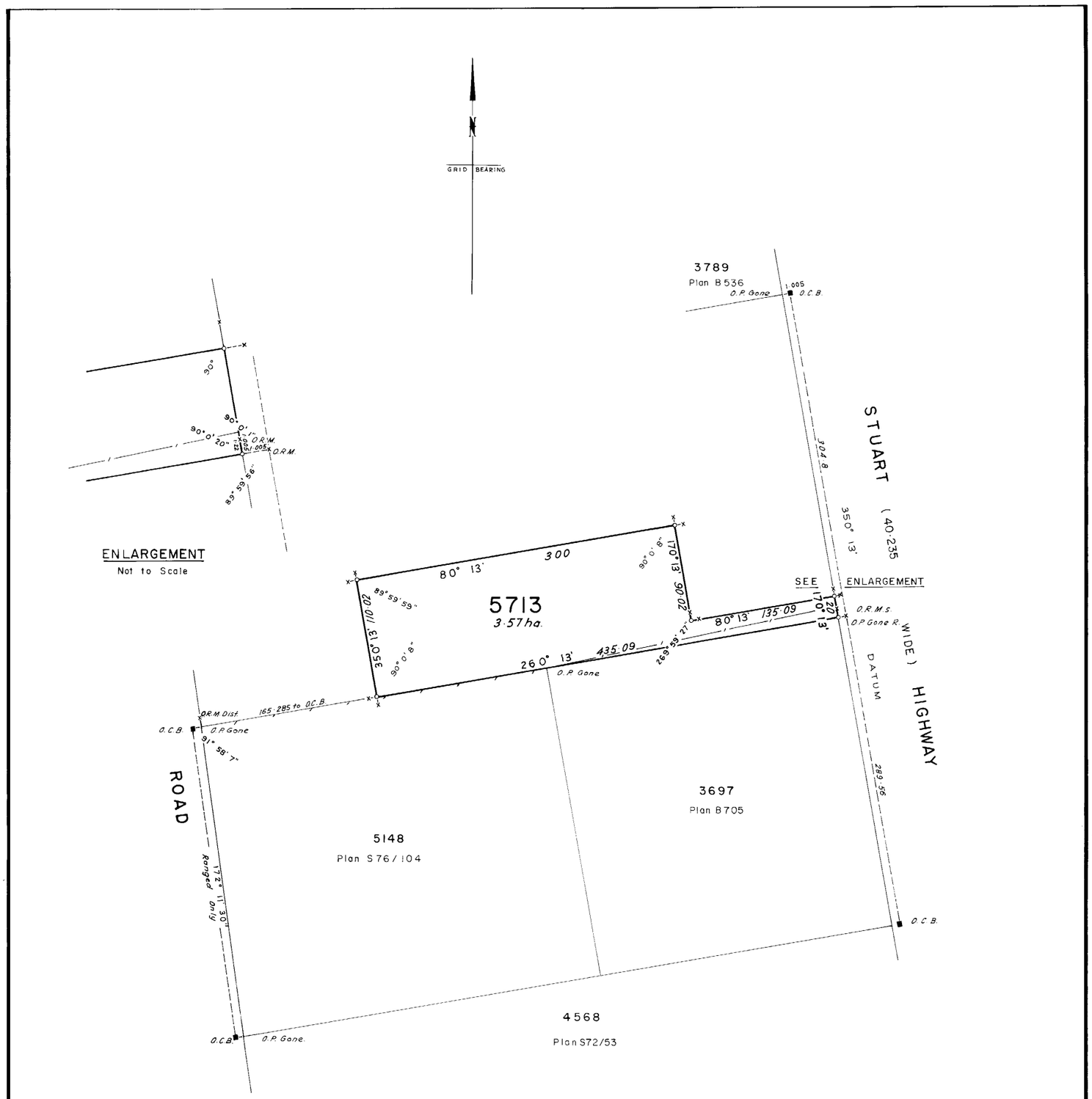
DRAWN B.S	DATE 1/06/2007	CHECKED DATE
DESIGNED G.C	DATE 1/06/2007	CHECKED DATE
DESIGN PROJECT LEADER DATE		PROJECT OFFICER DATE

Northern Territory Government
Department of Planning and Infrastructure

ALICE SPRINGS
CONNECTING NEIGHBOURS PROGRAM
UPGRADE WORKS FOR ILPARPA

WATER LAYOUT PLAN

FILE No.	ASSET No.	SHEET No.	DRAWING No.	AMEND.	SHEET SIZE
43-21132	-	14 OF 20	B08-1830	D	A1



Note : Reference Marks are at one metre unless otherwise shown.

50 0 100 200 Metres

No	REFERENCE	DETAILS	APPROVED	DATE
		AMENDMENTS		

SURVEYOR'S CERTIFICATE

I Galety William Cathels
hereby certify that the survey represented on this plan was carried out by me or under my immediate supervision and was completed on 19. 5. 1980 and that this survey has been executed in accordance with the Licensed Surveyors Ordinance 1933–1937 and the Regulations thereunder.

Date 26. 5. 1980 G.W. Cathels
Licensed Surveyor

SURVEY APPROVED

Date 18.6.1980
Surveyor-General

File No. }
Field Book No. } S80/79
Index Plan ALICE SPRINGS 5000 Sheet 15-14
Drawn A.Stobbart 23/5/80
Examined Graham Doyle 26/6/80
Calculation Book No.

Passed
Assistant Chief Draftsman
Date 18.6.80

SURVEY OFFICE NORTHERN TERRITORY

LOT 5713

TOWN OF ALICE SPRINGS

LEGEND

Concrete Block ■
Concrete Post ■
Wooden Post, Peg or Stake ○
Reference Mark ×
Lockspit ⋈
Fence Post ⊗

AZIMUTH

A. Assumed from S76/104

B. Observed at
Latitude Datum

SCALE

1 : 2500

S80/79

COPY TO L.T.O. 27-8-80

30/6/80

Survey Plan S80/079

Viewed at 08:02:36 on 23/02/2017 by L2B.

Date Registered: 09/06/2010 **Volume** 747 **Folio** 781
Duplicate Certificate as to Title issued? No

SEARCH CERTIFICATE

SPECIAL PURPOSES LEASE 00493

Lot 5713 Town of Alice Springs from plan(s) S 80/079
Area under title is 3 hectares 5700 square metres

Owner:
Ilparpa Aboriginal Corporation
of PO Box 8070, Alice Springs NT 0871

Registered Date	Dealing Number	Description
		Previous title is **Volume** 622 **Folio** 259
09/06/2010	728346	Underlease to Northern Territory of Australia - expiring 02/12/2012 (728314)
09/06/2010	728314	Sublease to Executive Director of Township Leasing - expiring 02/12/2049
End of Dealings		

Commencement Date: 23 July 1980

Expiry date: In Perpetuity

Reservations:

(a) A right of entry in favour of the Minister, or an officer authorised in writing by the Minister, at all reasonable times and in any reasonable manner, to enter upon the leased land or any part of it and to inspect the leased land or any part of it and any improvements on it.

(b) All minerals and mineral substances in or on the leased land including gold, silver, copper, tin, other metals, ores and substances containing metals, gems, precious stones, coal, shale, mineral oils and valuable earths or substances, together with the right to authorise any persons to enter upon the land to mine, work for, win, recover and remove them or any of them and to do all things necessary or convenient for those purposes.

(c) A power of resumption.

(d) A right of entry and inspection for the purposes of providing and maintaining water, sewer, electricity and services on the leased land or on other lands.

Provisions:

To hold unto the Lessee in perpetuity yielding and paying therefor an annual rental of ten cents if and when demanded by the Minister subject to re-appraisment in accordance with Section 11A of the Special Purposes Leases Act.

And it is hereby declared that-

The Lessee, having paid all rent due under this lease, may at any time surrender this lease in accordance with the provisions of the Special Purposes Leases Act and the Regulations thereunder.

If the rent (other than the rent for the the first year) is not paid on or before the expiry of three months from the date on which it becomes payable by the Lessee, an additional amount (which will be deemed to be recoverable as rent) at the rate of five per centum per annum from the expiry of that period will become payable by the Lessee in respect of the rent overdue, if demanded by the Minister.

This lease is granted under and subject to the Special Purposes Leases Act and the Regulations for the time being in force thereunder and is conditional upon compliance by the Lessee with the covenants and conditions to be complied

with by the Lessee and may, subject to the Special Purpose Leases Act and the Regulations, be forfeited for non-compliance with any such covenant or condition.

Covenants:

The Lessee covenants with the Minister as follows -

1. That the Lessee will pay the rent annually in advance.

2. That the Lessee will use the land only for the purposes for which it is leased; viz., Aboriginal Communal Living

3. That the Lessee will pay all rates and taxes which may at any time become due in respect of the leased land.

4. That the Lessee will observe and comply with the Regulations under The Special Purposes Leases Act for the time being in force.

5. That the Lessee will by the first day of October, 1981 or within such further time as may be allowed in writing by the Minister commence to erect improvements on the leased land at a cost of not less than the sum of one hundred and fifty thousand dollars and in accordance with the plans and specifications prepared by the Lessee and previously submitted to and approved in writing by the Minister and the Lessee will complete the erection of the said improvements at a cost not less than the said sum and in accordance with the said plans and specifications and in accordance with any Act, Ordinance or Regulation by the first day of October, 1982 or within such further time as may be allowed in writing by the Minister. The Lessee will complete by the first day of October, 1984 further improvements to the total value of not less than the sum of two hundred and fifty thousand dollars and in accordance with the plans and specifications prepared by the Lessee and previously submitted to and approved in writing by the Minister and in accordance with any Act, Ordinance or Regulation and the Lessee will at all times thereafter maintain and repair and keep in repair all buildings and improvements on the said land at a cost of not less than two hundred and fifty thousand dollars all to the satisfaction of the Minister.

6. That the Lessee will submit detailed sketch plans for the development of the site to the Planning Branch of the Department of Lands for approval prior to the commencement of development. Such plans will contain all details of intended improvements and proposed landscaping.

7. That the leased land will be dust suppressed and drained for stormwater to the satisfaction of the Minister by the First day of October, 1982 or within such further time as may be approved by the Minister and all such works will thereafter be maintained to the satisfation of the Minister.

8. That all internal roads and pathways will be well drained and of good all weather construction and will be maintained to the satisfaction of the Minister.

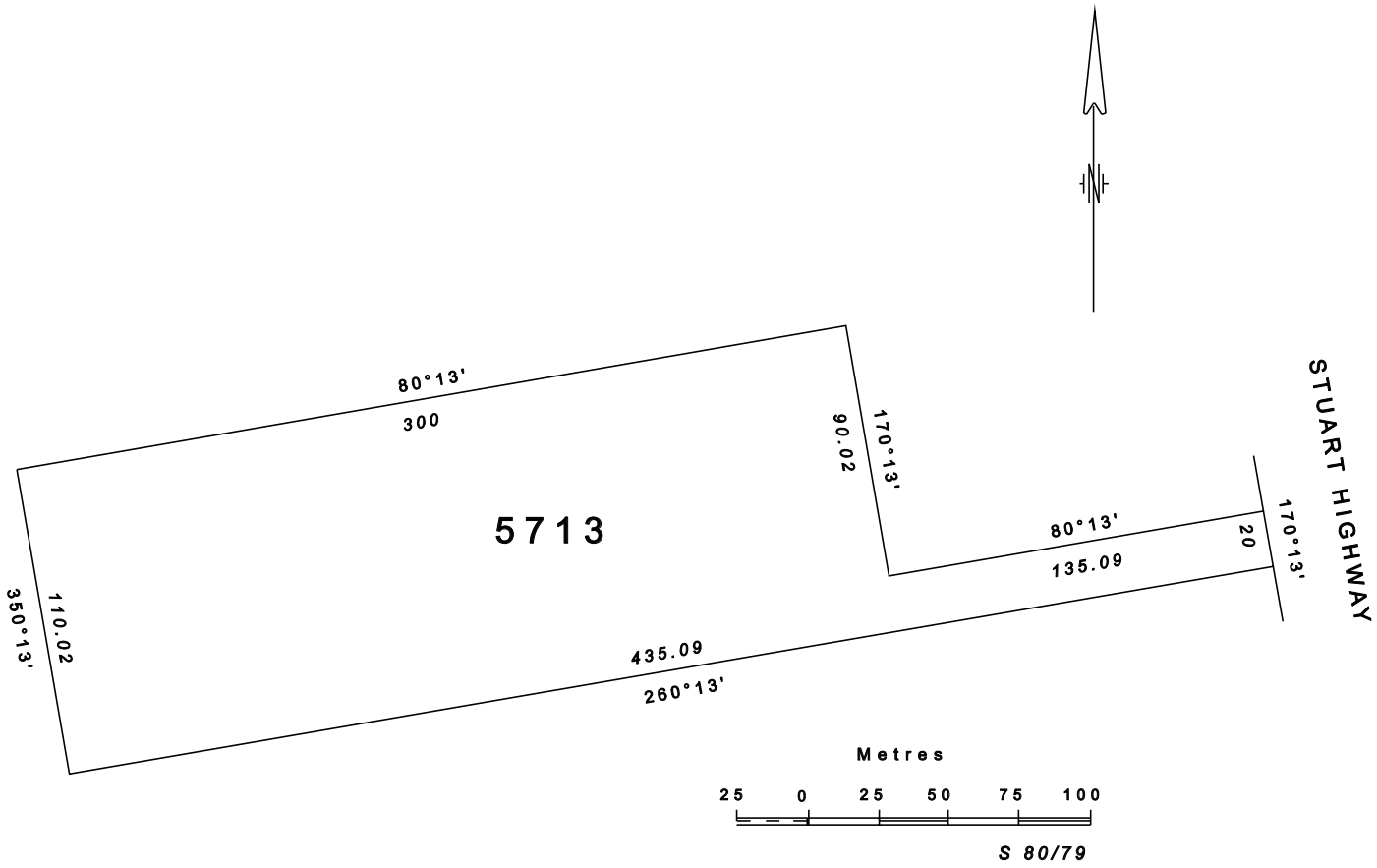
9. That adequate fire fighting equipment will be provided on the site and will be easily accessible from any development. Such development will be approved by the Chief Fire Officer and thereafter maintained to the satisfaction of the Minister.

10. That no building or structure will be constructed to a height of more than one storey above ground level.

11. That for every ten individual camping sites or part thereof there will be provided the following minimal facilities- 1 water point 1 water closet for use by males 1 urinal 1 water closet for use by females 1 shower with hot and cold water, for use by females 1 shower with hot and cold water, for use by males 1 handbasin with hot and cold water for each water closet provided 1 wash trough with hot and cold water.

Date Registered: 09/06/2010 **Volume** 747 **Folio** 781

Duplicate Certificate as to Title issued? No



NORTHERN TERRITORY OF AUSTRALIA

Record of Administrative Interests and Information

Record of Administrative Interests and Information
The information contained in this record of Administrative Interests only relates to the below parcel reference.

Parcel Reference: Lot 05713 Town of Alice Springs plan(s) S 80/079

(See section 38 of the Land Title Act)

Note: The Record of Administrative Interests and Information is not part of the Land Register and is not guaranteed by the Northern Territory of Australia, and the NT Government accepts no Liability for any omission, misstatement or inaccuracy contained in this statement.

Registrar General

Government Land Register
(none found)

Custodian - Registrar General (+61 8 8999 6252)

Current Title
CUFT 747 781 (order 1)

Tenure Type
SPECIAL PURPOSES LEASE 493

Tenure Status
Current

Area Under Title
3 hectares 5700 square metres

Owners
Ilparpa Aboriginal Corporation
PO Box 8070, Alice Springs NT 0871

Easements
(none found)

Scheme Name
(none found)

Scheme Body Corporate Name
(none found)

Reserved Name(s)
(none found)

Unit Entitlements
(none found)

Transfers
(none found)

Tenure Comments
(none found)

Historic Titles
CUFT 622 259 (order 1)
CUCL 185 097 (order 2)
CUCL 185 097 (order 1)
Visit the website http://www.nt.gov.au/justice/bdm/land_title_office/

Custodian - Surveyor General (+61 8 8995 5362)

Address
520 STUART HWY, ARUMBERA

Survey Plan
S 80/079

Survey Status
Approved

Parcel Status
CURRENT

Parcel Area
3 hectares, 5700 square metres

Map Reference
Code 010 Scale 5000 Sheet 15.14
Code 010 Scale 2500 Sheet 29.28

Parent Parcels
(none found)

Parcel Comments
SPL FOR ILPARPA ABORIGINAL CORPORATION S80/79/14. LOTS 10467(A) TO 10486(A) SURVEYED - S2012/019 .

Survey Comments
(none found)

Proposed Easements
(none found)

Municipality
ALICE SPRINGS MUNICIPALITY

Region
ALICE SPRINGS

Custodian - Valuer General (+61 8 8995 5375)

Owner's Last Known Address
CEO Housing & Department of Lands and Planning, ATTENTION: CHIEF FINANCE OFFICER, GPO BOX 4621, DARWIN NT 0801

Parcels in Valuation
Lot 05713 Town of Alice Springs

Unimproved Capital Value
$315,000 on 01/07/2015
$347,000 on 01/07/2012
$330,000 on 01/07/2009
$315,000 on 01/07/2006
$233,000 on 01/07/2003
$143,000 on 01/07/2000
$125,000 on 01/07/1997
$100,000 on 01/07/1994
$75,000 on 01/07/1991
$70,000 on 01/01/1989
$60,000 on 01/01/1986

Valuation Improvements
28/05/1990 House
28/05/1990 Hall x 10
28/05/1990 Ablution block

Custodian - Property Purchasing (+61 8 8999 6631)

Acquisitions
(none found)

Custodian - Building Advisory Service (+61 8 8999 8965)

Building Control Areas

BBASP001 - Building Control Area	ALICE SPRINGS BUILDING AREA

Building Permits

Application Number:	27 of 27
Description:	HOUSE IC9640 - New concrete and steel residential 3 bedroom dwelling (Type H7EAS)
Number of Residental Units:	1
Australian Bureau of Statistics Type:	Separate House
Building Class:	Single Dwelling
Area:	138 square metres
Certification:	Single Dwelling - Full Code - *issued on* 06/10/2011

Application Number:	26 of 27
Description:	HOUSE IC9633 - New concrete and steel residential 3 bedroom dwelling (Type H6VAS)
Number of Residental Units:	1
Australian Bureau of Statistics Type:	(none found)
Building Class:	Single Dwelling
Area:	(none found)
Certification:	Single Dwelling - Full Code - *issued on* 06/10/2011

Application Number:	25 of 27
Description:	Refurbishment [House 11]
Number of Residental Units:	1
Australian Bureau of Statistics Type:	Separate House
Building Class:	Single Dwelling
Area:	(none found)
Certification:	Single Dwelling - Full Code - *issued on* 16/12/2010

Application Number:	24 of 27
Description:	Refurbishment [House 2]
Number of Residental Units:	1
Australian Bureau of Statistics Type:	Separate House
Building Class:	Single Dwelling
Area:	(none found)
Certification:	Single Dwelling - Full Code - *issued on* 16/12/2010

Application Number:	23 of 27
Description:	Refurbishment [House 4]
Number of Residental Units:	1
Australian Bureau of Statistics Type:	Separate House
Building Class:	Single Dwelling
Area:	(none found)
Certification:	Single Dwelling - Full Code - *issued on* 16/12/2010

Application Number:	22 of 27
Description:	Refurshment [House 6]
Number of Residental Units:	1
Australian Bureau of Statistics Type:	Separate House
Building Class:	Single Dwelling
Area:	(none found)
Certification:	Single Dwelling - Full Code - *issued on* 16/12/2010

Application Number:	21 of 27
Description:	Refurbishment [House 7]
Number of Residental Units:	1
Australian Bureau of Statistics Type:	Separate House
Building Class:	Single Dwelling
Area:	(none found)
Certification:	Single Dwelling - Full Code - *issued on* 12/08/2011

Application Number:	20 of 27
Description:	Detached Dwelling [House 9]
Number of Residental Units:	1
Australian Bureau of Statistics Type:	Separate House
Building Class:	Single Dwelling
Area:	(none found)
Certification:	Single Dwelling - Full Code - *issued on* 11/11/2010

Application Number:	19 of 27
Description:	Detached Dwelling [House 8]
Number of Residental Units:	1
Australian Bureau of Statistics Type:	Separate House
Building Class:	Single Dwelling
Area:	(none found)
Certification:	Single Dwelling - Full Code - *issued on* 23/07/2010

Application Number:	18 of 27
Description:	Dwelling altertions including new kitchens, wet areas, floor linings, windows and doors, air conditioning and heating
Number of Residental Units:	1
Australian Bureau of Statistics Type:	Separate House
Building Class:	Single Dwelling
Area:	(none found)
Certification:	Single Dwelling - Full Code - *issued on* 11/12/2009

Application Number:	17 of 27
Description:	Dwelling Alterations
Number of Residental Units:	1
Australian Bureau of Statistics Type:	Separate House
Building Class:	Single Dwelling
Area:	(none found)
Certification:	Single Dwelling - Full Code - *issued on* 02/07/2009

Application Number:	16 of 27
Description:	Upgrades to dwelling including wall cladding, sunshade awnings, verandas
Number of Residental Units:	1
Australian Bureau of Statistics Type:	Separate House
Building Class:	Single Dwelling Non-habitable building
Area:	(none found)
Certification:	Single Dwelling - Full Code - *issued on* 21/12/2009 Non-habitable building - Full Code - *issued on* 21/12/2009

Application Number:	15 of 27
Description:	DEMOLISH & NEW DWELLING
Number of Residental Units:	1
Australian Bureau of Statistics Type:	Separate House
Building Class:	Single Dwelling
Area:	220 square metres
Certification:	Single Dwelling - Full Code - *issued on* 14/11/2003

Application Number:	13 of 27
Description:	ALTERATIONS TO DWELLING
Number of Residental Units:	1
Australian Bureau of Statistics Type:	(none found)
Building Class:	Single Dwelling
Area:	0 square metres
Certification:	Single Dwelling - Full Code - *issued on* 18/11/1994

Visit the website http://www.nt.gov.au/building/

Custodian - Town Planning and Development Assessment Services (+61 8 8999 6046)

Planning Scheme Zone
CL (Community Living)

Interim Development Control Orders
(none found)

Planning Notes
(none found)

Planning Applications
(none found)

Custodian - Power and Water Corporation (1800 245 092)

Meters on Parcel

Power Water - Electricity	11
Power Water - Water	11

For Account balances, contact the Power and Water Corporation.

Custodian - Pool Fencing Unit (+61 8 8924 3641)

Swimming Pool/Spa Status
(none found)

For more information, contact the Pool Fencing Unit (+61 8 8924 3641).

Custodian - Mines and Energy (+61 8 8999 5322)

For information on possible Exploration Licences, contact Mines & Energy or visit the website http://www.nt.gov.au/d/Minerals_Energy/

For information on possible Petroleum Titles, contact Mines & Energy for further details.

Custodian - NT Environment Protection Authority (+61 8 8924 4218)

Results of site contamination assessment
(none found)

For further information contact Environment Protection Authority or visit the website https://ntepa.nt.gov.au/waste-pollution/contaminated-land

Custodian - Heritage Branch (+61 8 8999 5039)

Heritage Listing:
(none found)

For further information on heritage places contact Heritage Branch or visit the website https://nt.gov.au/property/land/heritage-register-search-for-places-or-objects

Other Interests

For Account balances, contact Alice Springs Town Council


3788
N
9398
8083
GOANNA COURT
5713
STUART HIGHWAY
9399
3697
5148

Transformer data

Group	Com Id	Location	Community Name	Dwellings No. (Funded Dwellings)	Dwellings No. (Bennett Design)	New Houses ** (Future Demand)	Primary Volatge Level (KV)	PWC Substation ID	PWC Test Number	Transformer size (KVA)	KVA Total dwellings @ 4.5KVA	KVA Total dwellings @ 7KVA	Comments
1	290	Darwin	Bagot	55	55		11	1924	1735	300	247.5	385	
	344	Darwin	Knuckey Lagoons	18	19	2	11	1771	2163	100	85.5	133	
	347	Darwin	Kulaluk	19	19		11	1092	10607	50	85.5	133	
	403	Darwin	Palmerston Town Camp	20	16		22	10196	10245	100	90	140	Two transformers for this Town Camp. Transformers are not in boundary of Town Camp [The nearest transformers data to Town Camp are highlighted in yellow].
							22	265	11645	25			
	412	Darwin	Railway Dam (One Mile Dam)	5	6	2	11	1041	4378	200	27	42	Transformer is not in boundary of Town Camp [The nearest transformer data to Town Camp is highlighted in yellow].
	427	Adelaide River	Amangal	9	9		22	216	12187	100	40.5	63	Two transformers for this Town Camp.
							22	184	5646	63			
	687	Jabiru	Manabadurma	10	12		11	5050	11107	200	54	84	
	825	Darwin	Minmarama Park	24	24		11	2147	11372	100	108	168	
2	606	Katherine	Warlpiri Transient Camp	9	9		22	6416	4886	100	40.5	63	Two transformers for this Town Camp.
							22	6074	4695	25			
	621	Katherine	Miali Brumby (Kalano)	47	31		22	6133	12247	315	211.5	329	
	640	Pine Creek	Pine Creek Compound	4	4		22	6666	3147	25	18	28	Transformer is not in boundary of Town Camp [The nearest transformer data to Town Camp is highlighted in yellow].
	971	Mataranka	Mulggan	12	9	4	22	6819	5296	16	54	84	
							22	6818	5297	16			
							22	6384	11028	25			
3	215	Tennant Creek	Blueberry Hill (Munji-Marla)	2	2		22	7079	1868	200	9	14	Transformer is not in boundary of Town Camp [The nearest transformer data to Town Camp is highlighted in yellow].
	223	Tennant Creek	Dump Camp (Marla-Marla)	7	7		22	7181	11088	200	31.5	49	
	224	Elliott	Elliott South Camp	12	12		11	7504	4718	200	54	84	Transformer is not in boundary of Town Camp [The nearest transformer data to Town Camp is highlighted in yellow].
	225	Elliott	Elliott North Camp	36	25		11	7505	4715	100	162	252	
	238	Tennant Creek	Kargaru (East Side Camp)	12	12	1	22	7572		200	54	84	
	246	Tennant Creek	Ngalpa Ngalpa	18	21		22	7179		200	94.5	147	Two transformers for this Town Camp.
							22	7033	10904	315			
	271	Tennant Creek	Village Camp	12	12	1	22	7183	11107	200	54	84	
	681	Tennant Creek	Tingkarli	12	12		22	7180		200	54	84	
	684	Tennant Creek	Wuppa	15	15	1	22	7141	11092	100	67.5	105	Two transformers for this Town Camp.
							22	7182	11095	200			
4	3	Alice Springs	Akngwertnarre (Morris Soak)	11	15		11	8596	11336	300	67.5	105	Transformer is not in boundary of Town Camp [The nearest transformer data to Town Camp is highlighted in yellow].
	16	Alice Springs	Anthelk Ewlpaye (Charles Creek)	17	10		11	8569		315	76.5	119	Transformer is not in boundary of Town Camp [The nearest transformer data to Town Camp is highlighted in yellow].
	17	Alice Springs	Anthepe	15	15		22	8598	5874	200	67.5	105	Data extracted from PWC asset information. There was not access to this Town Camp due to ceremony on inspection day.
							22	8597	11244	315			
	19	Alice Springs	Aper Alwerrknge (Palmers)	7	6		11	8405	2939	200	31.5	49	Transformer is not in boundary of Town Camp [The nearest transformer data to Town Camp is highlighted in yellow].
	35	Alice Springs	Ewyenper Atwatye (Hidden Valley)	47	47		11	8622	11202	100	211.5	329	
							11	8623	11203	100			
							22	8625	11205	63			
							11	8626	11204	100			
	47	Alice Springs	Ilparpa	13	13		22	8611	11702	200	58.5	91	
	48	Alice Springs	Ilperle Tyathe (Walpiri)	10	9		11	8001	11209	315	45	70	Transformer is not in boundary of Town Camp [The nearest transformer data to Town Camp is highlighted in yellow].
	50	Alice Springs	Ilyperenye (Old Timers)	10	10		22	8145	3323	100	45	70	
	64	Alice Springs	Bassos	2	2		11	8002	10946	50	9	14	
	69	Alice Springs	Karnte	19	19		22	8282	2345	100	85.5	133	
	87	Alice Springs	Yarrenty Altere (Larapinta Valley)	34	34		11	8617	11334	100	153	238	
							11	8618	11200	63			
							11	8619	11335	100			
							11	8620	11201	100			
	90	Alice Springs	Inarlenge (Little Sisters)	16	22		22	8137	2925	100	99	154	Transformer is not in boundary of Town Camp [The nearest transformer data to Town Camp is highlighted in yellow].
	108	Alice Springs	Mpwetyerre (Abbotts)	6	6		11	8093	11703	315	27	42	Transformer is not in boundary of Town Camp [The nearest transformer data to Town Camp is highlighted in yellow].
	113	Alice Springs	Mount Nancy (Nyewente)	11	12		11	8405	2939	200	54	84	
	129	Alice Springs	Nyewente (Trucking Yards)	26	26		11	8629	11312	300	117	182	
	675	Alice Springs	Hoppys	15	19						85.5	133	There is not any Transformer in boundary of Town Camp. Also it's not shown in PWC asset information.
	676	Alice Springs	Ilpiye Ilpiye (Golders Camp)	15	14		11	8314	369	50	67.5	105	
	1029	Alice Springs	Kunoth	4	4		11	8569		315	18	28	Transformer is not in boundary of Town Camp [The nearest transformer data to Town Camp is highlighted in yellow].
5	222	Borroloola	Mara	28	29	2	11	6187	12610	100	130.5	203	Two transformers for this Town Camp.
							11	6545	10203				
	229	Borroloola	Garawa 1	16	14		11	6546	10166	100	72	112	Two transformers for this Town Camp.
							11	6332	4890	100			
	278	Borroloola	Yanyula	29	29		11	6162	10496	200	130.5	203	Data extracted from PWC asset information. It's outside of Twon Camp, shown only Transformer to this Town Camp.
							11		10167				This transformer is not shown in PWC asset information. It's installed in Boat Ramp Road near to Town Camp and connected to Electrical reticulation of Town Camp.
	992	Borroloola	Garawa 2	11	11		11	6189	2669	25	49.5	77	

** For New house's demand calculation see section 13.4 "Future Demand".

Ilperle Tyathe (Walpiri)

Ilperle Tyathe (Walpiri)

1 Design

The infrastructure reviews have been undertaken against current relevant standards for typical sub-divisions. The following standards have been used in undertaking the reviews.

Sewerage and water supply

- Water Services Association of Australia – Sewerage Code – WSA 02 Part 1: Planning and Design
- Power and Water Corporation supplement to WSA 02
- Water Services Association of Australia – Sewerage Pumping Station Code – WSA 04 -2005 Part 1: Planning and Design
- Power and Water Corporation supplement to WSA 04
- Water Services Association of Australia – Water Supply Code – WSA 03 2002 Part 1: Planning and Design
- Power and Water Corporation supplement to WSA 03
- Power and Water Corporation Indigenous Community Engineering Guidelines (2008)
- Department of Housing and Community Development Indigenous Community Engineering Guidelines (ICEG 2014, updated September 2016)
- Power and Water Corporation Essential Services Infrastructure Assessment and Upgrade Guidelines (for Town Camps in Urban Communities, 2009)
- Power and Water Corporation Standard Drawings
- Australian Standards

Electrical services

Electrical infrastructure has been assessed against AS/NZS3000 Wiring Rules and against PWC Service, Installation and Metering Rules and URD Design Standards where possible.

With one exception, all town camps are each a single lot and compliance with AS/NZS3000 is sufficient to address potential safety concerns.

As such application of PWC URD Design Standards will mainly apply to the incoming supply and bulk or initial multi-metering panels if provided.

URD Design Standards for internal reticulation and street lighting have probably been applied in most cases for convenience rather than compliance.

For the purposes of this report, the demand per dwelling allowances of URD Design Standards have been used to estimate incoming supply and overall distribution capacity requirements.

The following apply:

- Australian Standards
- Power Networks Design and Construction Guidelines, Power and Water Corporation
    - NP001.1_Design and Construction of Network Assets – General Requirements
    - NP001.3_General Specification for Overhead Electrical Reticulation
    - NP001.6_General Specification for URD Subdivisions
    - NP003_Installation Rules_V3
    - NP007_Service Rules

- NP027_Capture of Newly Installed Street Lighting Information
- NP041_Guidelines for Electrical Design Consultants

Further referral to the guidelines in this report will be designated by the guidelines number, NP001.1.

Communications

- National Broadband Network Website viewed 21 January 2017 (http://www.nbnco.com.au/) – NBN rollout maps

Council guidelines

In addition to the above standards, the following Council guidelines will be used where applicable.

- Alice Springs Town Council – Subdivision and Development Guidelines, November 2012

General

It should be noted that if the town camps are proposed to be subdivided and services assets gifted to Power and Water Corporation (PWC) for operation and maintenance, all of these services will need to fully meet PWC standards. With the exception of a few town camps that have recently been upgraded, this will require the full replacement and/or realignment of most services.

2 Condition assessment

2.1 Rating assessment matrix

A condition rating matrix was developed and used to assess all municipal infrastructure. The same rating was used for all services to maintain consistency in assessments. Table 1 below shows the condition rating and operability.

Table 1 Condition rating

Condition rating		Operability
1	Very Poor	Not operational
2	Poor	Not fully operational or requires immediate maintenance to keep operational
3	Good	Fully operational, may require routine maintenance
4	Very Good	Fully operational, may require maintenance in the next six months
5	Excellent	New, fully operational

2.2 Civil assessment limitations

The civil infrastructure condition investigations were subject to a number of limitations. These include:

- Only accessible services have been investigated. This includes inspecting the top of sewer manholes, side entry pits, etc., however, does not include opening pits to inspect infrastructure below ground.
- No physical testing of the sewer, water or stormwater network was undertaken.
- No survey or service locating was undertaken.

As there was no survey, potholing or CCTV undertaken on the underground infrastructure there is insufficient information to make determinations on the asset condition. The condition assessments discussed in this report are only for the accessible services and do not necessarily represent the condition of the underground infrastructure. For the majority of the town camps, other than a few that have recently been upgraded it was found that the underground services are generally undersized and it is likely, due to their age, that the these services are in poor condition. Either factor would trigger the need for a complete replacement to meet current relevant standards.

2.3 Electrical assessment limitations

The electrical infrastructure condition investigations were subject to a number of limitations. These include:

- Inspections were carried out without the assistance of an electrical tradesman.
- Only accessible services were investigated. Assessments were of a visual nature and no pit covers were removed.
- Overhead equipment was assessed from ground level.
- Switchboards were not opened and no assessment of the internal connections or bus ratings was made.

- Electrical infrastructure was assessed down to the meter for multi-meter panels and down to the termination, overhead pole or distribution pillar, of the supply cable to a meter located at a dwelling.

3 Current infrastructure issues

Power and Water Corporation (PWC) have advised of the following concerns and issues in regard to the sewerage, water and electrical infrastructure at all town camps.

3.1 Ownership and maintenance

PWC stated there has always been confusion regarding the ownership and responsibilities of the internal sewer, water and electrical infrastructure. PWC have advised that they have no legal tenure on the majority of assets in any town camps and that the owner is essentially that of the land owner or leaseholder. This is further discussed for each type of infrastructure for each town camp.

The ownership and who is responsible for the maintenance of the sewage pump stations and street lighting is a major concern. In most town camps it was found that PWC have been maintaining the assets on an in-kind basis, although there are no maintenance or access agreements in place and the infrastructure is generally not compliant to PWC standards.

3.2 Access to infrastructure

PWC advised that due to the uncertainty surrounding ownership and responsibility of the sewerage, water and electrical infrastructure, each town camp is seen as a single lot with multiple houses on it. There are no formal road reserves or easements where the municipal infrastructure should be located. PWC therefore have no legal right to enter the town camps to work on the infrastructure, nor can PWC stop others from working on the infrastructure. There is a risk that the maintenance undertaken by others may be to a lower standard than PWC.

It should be noted that there are currently no legal services easements within the town camps, except for a few cases where a town service passes through the town camp. Therefore it is recommended that easements are created over any infrastructure owned by PWC and any future assets to be gifted to PWC, to allow the service providers access to the infrastructure.

3.3 Existing infrastructure

PWC have stated that although the existing sewerage and water infrastructure appears to comply with relevant standards in some locations, the capacity cannot be assumed to meet PWC requirements due to the potential for underground substandard condition and/or grading of pipework. It is likely that these assets will need to be fully replaced to PWC standards to ensure sufficient capacity.

The planning process currently allows construction within the town camps on Commonwealth land without requiring service authority (PWC) approvals. This means that there has been no opportunity for PWC to recover contributions towards required upgrades to headworks servicing the developments and these upgrades have been paid for by PWC in the past. This inconsistency needs to be addressed for future developments within the town camps to ensure PWC are able to continue to provide adequate services.

3.4 Safety concerns

PWC have expressed concerns with safety of PWC staff and contractors working within the camps. PWC have employed procedures such as multiple people / vehicles to attend the site, with police or housing safety officers as required. This

generally leads to a delayed response time and increased cost to respond to and remediate emergency situations.

PWC have also raised the concern that if others work on water infrastructure within the town camps and do not apply the correct sanitation procedures they not only risk contaminating the entire water supply network within the town camp, at some town camps with direct connections to the town supply, they risk contaminating the entire town's water supply.

4 Available information

As the site investigations were limited to accessible / visible services, information on below ground services (such as electrical cables, sewer pipes, water supply pipes, etc.) were determined from available information. This information included:

- Serviced Land Availability Program (SLAP) maps,
- Department of Family & Community Services - Connecting Neighbours Program – Essential Services Scoping Study Report Volume 1 April 2005,
- Connecting Neighbours Project – Infrastructure Assessment and Recommendation Report - Arup Pty Ltd, April 2005,
- Alice Springs Town Camp Sewage Pumping Station Assessments, Byrne Design, 2014,
- Drawings supplied by NT Department of Infrastructure - Technical Records,
- Drawings supplied by Power and Water Corporation,
- Bennett Design inspection reports and population data.

Aurecon undertook a site investigation of the Ilperle Tyathe (Warlpiri) community on 23 November 2016 to inspect roads, stormwater drainage, electrical services, sewerage and water supply, and community structures. The following sections detail the outcomes of this investigation and the assessments of the infrastructure.

The civil and electrical inspection reports can be found in the Appendices.

5 Sewerage

5.1 Ownership and boundaries

Power and Water Corporation own a DN150 gravity main which is located through the middle of the community. The housing connections and any other gravity main within the community are owned by owned by Ilperle Tyathe Association Incorporated, but is the responsibility of Ingkerreke Outstations Resource Services. The following image shows the extent of PWC's ownership.



Figure 1: Extent of PWC sewerage infrastructure

5.1.1 Connection methods and billing

PWC advised that they currently charge a single sewerage bill based on the number of houses, which for Ilperle Tyathe is six houses plus two others (one with three fixtures, one with two fixtures). The sewerage bill is charged to the Department of Housing and Community Development.

It is not known what contribution the residents make towards the sewerage bills.

5.2 Existing infrastructure condition assessment

There were no sewerage assets inspected at Ilperle Tyathe community. This is because the sewer manholes are located within private property or outside of the camp boundary. It is expected that there is no easement over the sewerage infrastructure.

Issue for Construction drawings from the SIHIP program (refer Appendices) were available which show a new sewer gravity main, manholes and housing connections. It does not appear that the sewer upgrades have been constructed.

5.3 Current performance and risks

5.3.1 Current sewer network performance

The current capacity of the sewer network was calculated based on the following design assumptions:

- The adopted minimum grade for the pipework is 1.0%, as advised by Power and Water Corporation.
- The Equivalent Population (EP) has been calculated assuming one household equates to 9 EP, based on discussions with Power and Water Corporation.
- The capacity has been assessed by calculating the current flow rate, and the maximum flow rate when the sewer pipe flows full. The result is then a percentage of how much of the pipe is currently being used.
- Manning's roughness coefficient of the pipework is 0.012, as recommended by PWC for PVC pipes.
- Where the sewer pipe grade, size or material is not known, it is assumed to be non-compliant to PWC standards.

The current number of houses in Ilperle Tyathe is 9, this multiplied by 9 EP per house gives a total current EP of 81.

The diameter of connection is assumed to be DN150, based on the PWC main that goes through the community.

The capacity of the existing sewer was then calculated. The percentage shows how much of the pipe capacity is currently being used.

Table 2 Existing sewer capacity

Catchment	Current total EP	Diameter of connection (mm)	Adopted PWC minimum slope (%)	Q_{full} (L/s)	Current Q (L/s)	Current capacity (%)
Catchment 1	81	150	1.0	16.50	1.16	7%

Table 2 above shows that the capacity of the existing sewer network is adequate for the current peak population.

As the current flows are relatively low, it is likely that self-cleansing velocities are not achieved.

If substantial developments are expected for this community, the PWC sewer main should be realigned so it goes through a road reserve, rather than through the community. As there were no drawings that show the existing reticulation network, other than the PWC main, it is recommended that a new reticulation main is constructed that connects to the PWC town sewer.

5.4 Future demands

As no new developments are currently planned for the community, there are no additional upgrades required to cater for future demand.

5.5 Recommended works

The following works are recommended:

- Construct new DN150 reticulation main, including housing connections and manholes. Approximately 450 m.

6 Water supply

6.1 Ownership and boundaries

The water main servicing the community is DN100 AC pipe with a single supply point. It appears that a length of approximately 100 m of DN25 extends from the end of the DN100 pipe to the dwellings. No engineering drawings were available to validate the existing water reticulation network. Without information proving otherwise, it is assumed that one of the DN25 pipes services up to four dwellings.

The water supply assets within Ilperle Tyathe are believed to be owned by Ilperle Tyathe Association Incorporated, but are the responsibility of Ingkerreke Outstations Resource Services to maintain. The water is supplied from PWC owned water mains outside of the community. Figure 2 shows the extent of water services.



Figure 2 Ilperle Tyathe water supply

6.1.1 Connection methods and billing

Through consultation with PWC, it has been determined that the water supply to Ilperle Tyathe is currently charged using a fixed daily rate for a total of eight lot water meters and a single bulk water meter. The eight lot water meters include connections to six houses, one irrigation point and one park. PWC have advised that the lot water meters are sub meters, meaning that the daily rate charged against the house meters is subtracted from the bulk meter to ensure water usage is not charged twice. The water bills for Ilperle Tyathe are issued to the Department of Housing and Community Development. It is not known what contributions are made by the residents.

It is proposed that PWC measure the water supply to the entire community, as opposed to individual lots within the community. Under this scheme, the water bill for the entire community is the responsibility of the governing body, being

Ingkerreke Outstations Resource Services for Ilperle Tyathe. It will be up to governing body to assign bills to residents accordingly.

It is recommended that the individual lot meters are maintained in addition to the proposed use of a bulk water meter. This will assist the governing body with distributing bills to residents, the identification of any leaks in the network, and meeting PWC standards should the town camp be subdivided in the future.

Two lot water meters were assessed during the inspection. Ilperle Tyathe is believed to contain 9 dwellings. Therefore, up to an additional 7 water meters are required to be installed to cover the properties without an existing water meter. Note, some water meters may have been present however not visible due to overgrown flora or restricted property access. Consequently water meters may have not been discovered during the inspection.

6.2 Existing infrastructure condition assessment

The site investigation for the water infrastructure included assessing the condition of any air valves, fire hydrants, tanks, taps, and water meters. The assessment was limited to services that could be accessed above ground; no excavation of below ground services was undertaken.

The condition of each asset is as follows:

Table 3 Water asset condition assessment

Asset	1 Very Poor	2 Poor	3 Good	4 Very Good	5 Excellent	Total
Air valves				1		1
Taps	1	1				2
Water meter (bulk)				1		1
Water meter (residential lots)			2			2



Figure 3 Water meter (bulk), condition: *very good*



Figure 4 Air valve, condition: *very good*



Figure 5 Tap, condition: *very poor*



Figure 6 Residential lot water meter, condition: *good*

One of the taps in the community was found to have no handle and requires replacement. A second tap within the community needs maintenance to fix a slow leak.

6.3 Current performance and risks

The peak hour demand of the water supply was calculated based on the following design assumptions:

- The nominal peak day flow is 1300 L/capita/day, based on PWC's supplement to WSA 03 2002. This value is for the southern region of NT. It was assumed that the nominal peak day flow of 1300 L/capita/day also applies to water usage within the community, although it is possible that this value could be higher in real life due to a lack of controls to reduce water usage.
- The Equivalent Population (EP) has been calculated assuming one household equates to 9 EP, based on discussions with Power and Water Corporation.
- The peak hour factors are listed in PWC's Supplement to WSA 03-2002, and they depend on the population range of the community. The peak hour factor of 3.0 has been adopted, for populations less than 500.

Table 4 shows the calculated peak hour water demand.

Table 4 Current water demand

Total dwellings	EP	Demand (l/s)	Peak hour demand (l/s)
9	81	1.22	3.65

Although there is a small peak hour demand, due to the long lengths of DN25 pipes, the current network has insufficient capacity to supply adequate pressure throughout the community.

Ultimately, the existing water reticulation has insufficient capacity, as well as being non-compliant with PWC standards. Furthermore there are no firefighting services in the community and the network does not have the capacity to supply fire flow demands. It is recommended that fire hydrants are installed.

6.4 Future demands

As no new developments are currently planned for the community, there are no additional upgrades required to cater for future demand.

6.5 Recommended works

The infrastructure that was assessed as very poor or poor is recommended to be upgraded to prevent failure in the future. The following maintenance works are recommended;

- Replace tap with missing handle
- Repair leaking tap

It is recommended that a new water main is installed at Ilperle Tyathe, replacing the existing network. The upgraded water main is proposed to be a DN150 PVC looped main installed to PWC standards. The cost estimates for upgrades at Ilperle Tyathe include;

- DN150 PVC looped main, approximately 800 m
- Install up to seven additional residential lot meters
- Install new DN150 bulk water meter
- Install approximately five screw down fire hydrants

7 Roadworks

7.1 Ownership and boundaries

It is the current understanding that the road assets within Ilperle Tyathe are owned by Ilperle Tyathe Association Incorporated, but are the responsibility of Ingkerreke Outstations Resource Services to maintain

7.2 Existing infrastructure condition assessment

The road network within Ilperle Tyathe community consists of a sealed road.

Road furniture such as signs were inspected. Table 5 below summarise the condition of the road furniture as assessed during the site inspection. A typical very good condition sign can be seen in Figure 7.

Table 5 Roadworks condition assessment

Asset	1 Very Poor	2 Poor	3 Good	4 Very Good	5 Excellent	Total
Sign				5		5



Figure 7 Sign, condition: *very good*

Signs were the only road furniture within the community and all five signs were rated very good and therefore do not require any maintenance.

Figure 8 shows a map of the community's road network with the condition ratings, road name, and chainage direction.



Figure 8 Community road network

Table 6 below details the condition of the roads within Ilperle Tyathe community for specific segments.

Table 6 Road network condition assessment

Road name	Chainage start (km)	Chainage end (km)	Condition (1 to 5)	Defects and associated condition
Yipilljaji Crescent	0.0	0.15	2	-5% of the road has surface cracking (3) -<5% of the road has surface failure (3) -30% of the road has edge breaks (2)
	0.15	0.28	2	-5% of the road has undulations (3) -2 significant potholes (1)
Lilbili Street	0.3	0.5	3	-5% of the road has surface cracking (3) -100% of the entire road has edge breaks (2)
	0.5	0.65	3	-5% of the road has surface cracking (3)
	0.65	0.68	2	None
Wanapari Walk	0.0	0.08	3	-5% of the road has transverse cracking (2)

Some typical pavement conditions are shown in Figure 9 and Figure 10.



Figure 9 Pavement, condition: *poor*



Figure 10 Pavement, condition: *good*

7.3 Current performance and risks

The main road into Ilperle Tyathe was rated as having good condition, although there were significant edge breaks and surface cracking. Other sections road network within Ilperle Tyathe are rated as poor condition and require significant maintenance and/or upgrades. As some of the roads have undulations and pavement failure, there may be more significant issues to do with the subgrade or drainage that will require remediation before the road can be resealed.

The layout of the road network is sufficient for the current number of houses.

It was noted during the site inspections that a number of unsealed 'short-cuts' had been created and were regularly used. It is not recommended that these paths are formalised.

It is recommended that a road safety audit is undertaken to determine where signage, line marking, etc. are required.

7.4 Future demands

As no new developments are currently planned for the community, there are no additional upgrades required to cater for future demand.

7.5 Recommended works

The infrastructure that was assessed as very poor or poor is recommended to be upgraded to prevent failure in the future. The following works are recommended to upgrade the current infrastructure;

- Repair 245 m of edge breaks
- Repair 140 m2 of surface cracking
- Fill and reseal two potholes

In order to allow for a longer term sustainable road network a significant upgrade would be required. It is recommended that a long term design which incorporates a full two lane road network, with all appropriate road furniture, line-marking, kerbs and gutters is constructed. A cost estimate to reinstate the base and subbase material, reseal with a two coat spray seal surface, construct subsoil drainage, line marking and signage has been included. Note that these works will need to be fully designed, the cost estimate is for budgetary purposes only and only indicates the construction phase. A footpath next to the road is also recommended to provide a safe trail for pedestrians.

As the maximum road width within the Ilperle Tyathe community is 6.2 m, this means that all 740 m of the road network will need to be upgraded to a 7.2 m wide road. The stormwater drainage infrastructure upgrades that are closely associated with the road upgrade i.e. kerb and gutters, side entry pits and underground drainage pipes are included in the stormwater section of this report.

8 Stormwater drainage

8.1 Ownership and boundaries

The stormwater drainage infrastructure is owned by owned by Ilperle Tyathe Association Incorporated, but is the responsibility of Ingkerreke Outstations Resource Services.

8.2 Existing infrastructure condition assessment

The site investigation for the stormwater infrastructure included assessing the condition of swales, culverts, headwalls, and side entry pits (SEP). Only the above ground infrastructure was assessed. As the inspection was undertaken outside of a storm event and no CCTV of the pipes was undertaken, flooding due to blockages or damage to the underground infrastructure could not be assessed. Table 7 below summarises the condition of the stormwater assets as assessed during the inspection.

Table 7 Stormwater condition assessment

Asset	1 Very Poor	2 Poor	3 Good	4 Very Good	5 Excellent	Total
Culvert		2				2



Figure 11 Culvert, condition: *poor*



Figure 12 Culvert, condition: poor

The culverts were in poor condition due to being blocked up to 90% percent. It is recommended that the culverts are cleaned out and the swales reformed on both the upstream and downstream sides of the culvert.

The SIHIP program designed stormwater drainage for the community, however it appears as though the infrastructure has not been built.

8.3 Current performance and risks

The detailed performance of the stormwater network cannot be fully analysed without significant hydraulic and hydrodynamic modelling, which is outside the scope of this project.

The Alice Springs Town Council's general design philosophy for stormwater drainage is that the system is based on a network of sealed roads, kerb and gutters, side entry pits and underground drainage pipes, including grassed open channels and diversion drains. It is recommended that kerbs and gutters, side entry pits and underground pipes are installed to help reduce flooding in the community. The cost estimates allow for 550 m of stormwater drainage.

8.4 Future demands

As no new developments are currently planned for the community, there are no additional upgrades required to cater for future demand.

8.5 Recommended works

The following works are recommended to upgrade or improve the current infrastructure:

- Construct kerb and gutters, side entry pits, and underground drainage.
- Clear blockages from culverts (2) and reshape swales upstream and downstream of culverts

9 Community structures

9.1 Ownership and boundaries

The community structures within Ilperle Tyathe are believed to be owned by Ilperle Tyathe Association Incorporated, but are the responsibility of Ingkerreke Outstations Resource Services to maintain.

9.2 Existing infrastructure condition assessment

The site investigation for the community structures included assessing the condition and features of playgrounds, BBQ areas and shade structures. The following table shows the condition rating given to the community structures.

Table 8 Community structures condition assessment

Asset	1 Very Poor	2 Poor	3 Good	4 Very Good	5 Excellent	Total
BBQ area				1		1
Playground	1			1		2

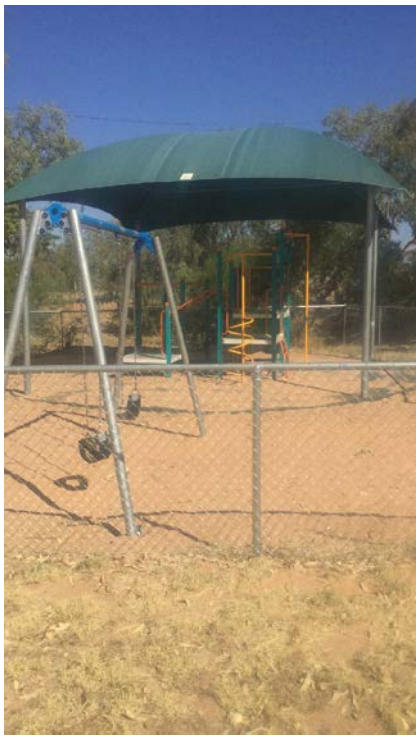


Figure 13 Playground, condition: *very good*



Figure 14 BBQ area, condition: *very good*



Figure 15 Playground, condition: *very poor*

9.3 Current performance and risks

One of the playgrounds and the BBQ are in very good condition, however the second playground is in poor condition due to broken equipment and having no shade structure.

9.4 Future demands

As no new developments are currently planned for the community, there are no additional upgrades required to cater for future demand.

9.5 Recommended works

The following works are recommended to upgrade the community structures:

- General clean of both playgrounds and BBQ area ensuring removal of all glass
- Installation of shade structure over one playground
- Replace playground equipment at one playground

10 Electrical services

10.1 Ownership and boundaries

The following points, from Network Policy NP003 Installation Rules Section 3, define the typical shared ownership of electrical infrastructure by Power and Water Corporation (PWC) and customers.

- The point of supply is defined as the point where PWC makes the electrical supply available. For domestic supply, this is normally one of the following:
- A point of attachment of an overhead service on to a building or pole on which a metering panel is fitted.
- A point of attachment of an overhead service on to a pole forming part of unmetered aerial consumer's mains.
- A nominated point on a distribution substation located on the customer's lot.
- A point of connection of an underground service in a metering panel, including underground services originating at an overhead line.
- A point of connection of an underground service in a pillar or junction box forming part of unmetered consumer's mains, located on the customer's lot.
- A point on a Power and Water pillar located on the customer's lot.

Typically, distribution infrastructure upstream of the Point Of Supply is owned and maintained by PWC and infrastructure below the point of supply is owned and maintained by the customer.

In many cases PWC have defined a Point Of Supply to ensure that they retain responsibility for aerial high voltage infrastructure, and aerial low voltage infrastructure where installed with aerial high voltage infrastructure, to minimise the possibility of the community or it's contractors coming into contact, either deliberately or inadvertently, with aerial high voltage infrastructure.

In other cases isolation facilities are present or desired by PWC to define the Point of Supply at or near the boundary of the town camp.

PWC advise that most of Tennant Creek/Alice Springs Town Camps have undergone upgrades under the SIHIP program with the intent to normalise the services to look like an urban subdivision but have never been formally handed over to PWC for operations and maintenance.

The Ilperle Tyathe community electrical reticulation system is supplied by an overhead reticulation scheme and combined with underground reticulation for street lighting and metering panel.

PWC advise that the Point Of Supply is the LV terminals of the substations and that they own and are responsible for the first pole mount substation and upstream infrastructure.

PWC recommend that a GBS (Gas Break Switch) be provided upstream of the first transformer to establish a demarcation point.

PWC advise that street lighting is supplied from unmetered LV infrastructure and is the responsibility of the lot holder and not PWC.

All meters, whether pre- or post-paid are the property of PWC.

Ilperle Tyathe community are responsible for maintain all unmetered and metered LV infrastructure including the main switchboard, metering panel (excluding meter), LV distribution feeders, distribution pillars, consumers mains and consumer switchboards and street lights.

10.2 Existing infrastructure condition assessment

The Table 9 shows the condition rating given to the Distribution Panels. The distribution panels have 50% operational rating and 50% un-operational rating, missing meter.

Table 9 Distribution panel condition assessment

Asset	1 Very Poor	2 Poor	3 Good	4 Very Good	5 Excellent	Total
Distribution panels		1	1			2

Table 10 shows the condition rating given to the street lights. The street lights were of a low voltage overhead and underground feeder design, sodium lamp type S70D, with lamp covers protected by cages. The street lights have a 100% operational rating.

Table 10 Street light condition assessment

Asset	1 Very Poor	2 Poor	3 Good	4 Very Good	5 Excellent	Total
Street light			5	11		16

Table 11 shows the condition rating given to the Overhead poles. The overhead poles are of Weld Construction (Universal Pole construction) and steel LV construction. The overhead poles have 100% operational rating from the visual inspection.

Table 11 Overhead pole condition assessment

Asset	1 Very Poor	2 Poor	3 Good	4 Very Good	5 Excellent	Total
Overhead pole			4	3		7

Table 12 shows the condition rating given to the Metering panels. All assessed meters in this community are prepaid digital meters.

Table 12 Meter panel condition assessment

Asset	1 Very Poor	2 Poor	3 Good	4 Very Good	5 Excellent	Total
Pre-paid meter			3			3
Switchboard			3			3

Table 13 shows the condition rating given to the switchboards associated to dwellings.

Table 13 Switchboard condition assessment (housing footprint)

Asset	1 Very Poor	2 Poor	3 Good	4 Very Good	5 Excellent	Total
Switchboard			2			2

The details of the individual inspections and photographs of each piece of infrastructure are in Appendices.

10.3 Current performance and risks

The electrical infrastructure evaluation was conducted against the following criteria

- Number of dwellings on tenure, the higher value of the funded dwelling and as quoted in the population report was utilised.
- Urban area, NP001.1, 4. Definitions.
- General Specification for URD Subdivisions, NP001.6, 4.3 Substation Size.
- Normal ADMD (After Diversity Maximum Demand) of 4.5 kVA and high cost subdivisions at 7 kVA.
- Transformer ratings were assumed to be correct in Dekho (PWC asset information system) and compared against photographs of test or transformer numbers collected.
- Substation loads were compared against transformer sizes only. No load flow analysis was conducted.
- No load calculations were performed or assessment conducted on overhead or underground cable, visual inspection from the ground only.
- Street lighting loads were ignored as they are not significant.

The calculated maximum demand of the Ilperle Tyathe community transformer is 14% of rated capacity based on 4.5kVA/dwelling. The calculated maximum demand is within the total capacity of the substation on site.

Table 14 Ilperle Tyathe current demand load vs transformer ratings

Com Id	Community name	Dwellings	Transformer (kVA)	kVA Total @ 4.5kVA	kVA Total @ 7kVA	Comments
48	Ilperle Tyathe (Walpiri)	10	315	45	70	Transformer is not in boundary of Town Camp [The nearest transformer data to Town Camp is used].

A tabulated summary of all community transformers is included in Appendices.

There is a risk of equipment not being maintained associated with the non-standard division of responsibilities between the customer and PWC.

The following points from the PWC Metering Rules should be noted:

- The routine maintenance of metering installations and the replacement of any faulty meters is the responsibility of PWC.
- The property owners are responsible for the maintenance and upkeep of meter rooms, boxes and panels (including lids, doors and locking mechanisms).
- The installation of pre-paid metering is a cost to the customer, refer NP010 Meter Manual-Maintenance of Metering Installations, Power and Water Corporation.

10.4 Future demands

As no new developments are currently planned for the community, there are no additional upgrades required to cater for future demand.

10.5 Recommended works

The following maintenance works and upgrades are recommended:

- Replace one switchboard
- Install new street lighting - approximately 37 poles

11 Communications

11.1 Ownership and boundaries

Details of Telstra pit and conduit infrastructure within the town camp boundaries were sought but were not forthcoming.

11.2 Existing infrastructure condition assessment

The telecommunications infrastructure assessed included pits and telephone booths. Appendices contains the individual reports.

Table 15 Telecommunication pit condition assessment

Asset	1 Very Poor	2 Poor	3 Good	4 Very Good	5 Excellent	Total
Telecommunication pit			1			1

Table 16 Telephone booth condition assessment

Asset	1 Very Poor	2 Poor	3 Good	4 Very Good	5 Excellent	Total
Phone booth						2 (status unknown)

11.3 Current performance and risks

No details of the performance of communications infrastructure were obtained.

11.4 Future demands

The current availability of broadband services at Ilperle Tyathe is displayed in the Figure below. NBN is available to residents via a fixed telecommunication line on application to an appropriate NBN access provider.

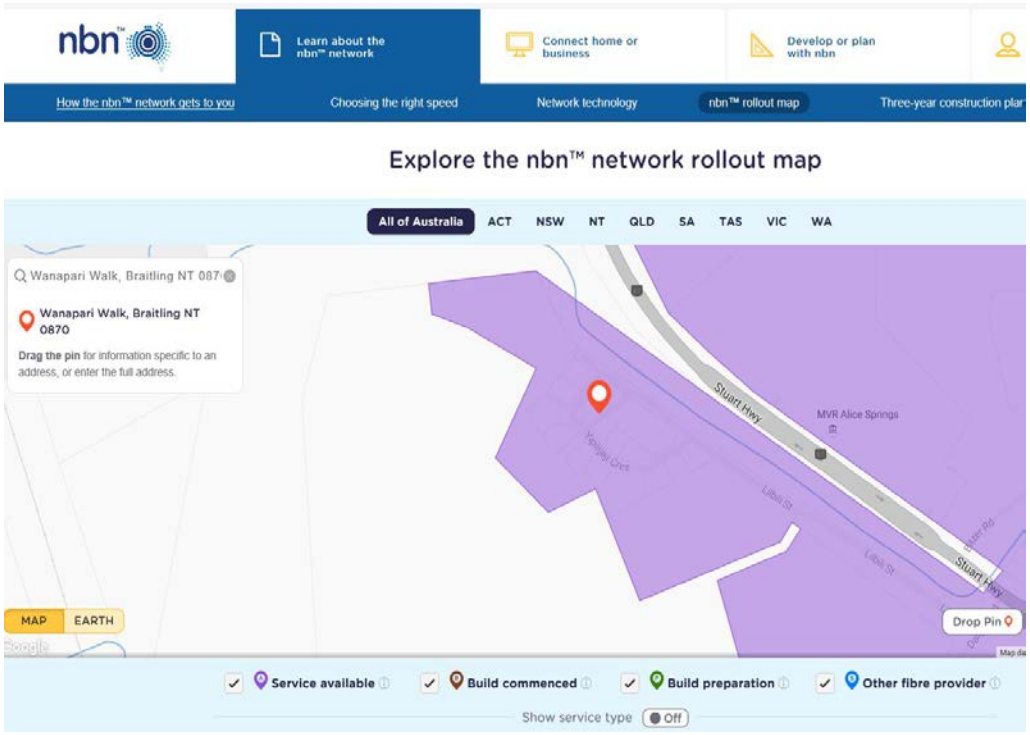


Figure 16 NBN network availability map

The NBN rollout map confirms that NBN is planned to be made available to residents via fixed telecommunications line on application to an appropriate NBN access provider.

11.5 Recommended works

Representatives from NBN's Land Access and Stake Holder management teams are currently engaged with Yilli Housing and NT Housing to look at how camps will be serviced. It is expected that any existing premises in these camps will have some type of NBN service via the NBN brownfields rollout in the future.

No works are required at Ilperle Tyathe because NBN is available to residents via fixed telecommunications line on application to an appropriate NBN access provider.

12 Cost estimates

Table 17 below shows a summary of the cost estimates to undertake the maintenance required to fix the existing infrastructure and to upgrade the existing network to meet current design standards. There are no upgrades required for the future design. The estimates take into account a 30% contingency, are inclusive of GST, and a location factor has been applied to town camps outside of Darwin.

Table 17 Cost estimates

Infrastructure	Maintenance of existing infrastructure	Upgrades to meet current design
Sewerage	$ 0	$ 369,000
Water supply	$ 1,000	$ 599,000
Roadworks	$ 21,000	$ 898,000
Stormwater drainage	$ 20,000	$ 658,000
Community structures	$ 31,000	$ 0
Electrical	$ 2,000	$ 529,000
Communications	$ 0	$ 0
Miscellaneous provisions	$ 19,000	$ 376,000
Total (including GST)	**$ 94,000**	**$ 3,429,000**
Grand total	**$ 3,523,000**	

The cost estimates are a preliminary estimate only. Since Aurecon has no control over the cost of labour, materials, equipment or services furnished by others, or over contractors' methods of determining prices, or over competitive bidding or market conditions, Aurecon cannot guarantee actual costs will not vary from these estimates.

13 Summary

The following works are recommended for Ilperle Tyathe community:

Sewerage

- Construct new DN150 reticulation main, including housing connections and manholes. Approximately 450 m.

Water supply

- Replace tap with missing handle
- Repair leaking tap
- DN150 PVC looped main, approximately 800 m
- Install up to seven additional residential lot meters
- Install new DN150 bulk water meter
- Install five new fire hydrants

Roadworks

- Repair 245 m of edge breaks
- Repair 140 m2 of surface cracking
- Fill and reseal two potholes
- It is recommended that the road is upgraded to a two lane network with all appropriate road furniture, line marking, kerbs, footpaths, etc.

Stormwater drainage

- Construct kerb and gutters, side entry pits, and underground drainage.
- Clear blockages from culverts (2) and reshape swales upstream and downstream of culverts

Community structures

- General clean of both playgrounds and BBQ area ensuring removal of all glass
- Installation of shade structure over one of the playgrounds
- Replace playground equipment for one of the playgrounds

Electrical services

- Replace one switchboard
- Install new street lighting - approximately 37 poles

Communications

- NBN is available to residents via fixed telecommunications line on application to an appropriate NBN access provider.

Civil inspection reports



Map by: DMcP P:\GIS\Projects\253963_NT_Town_Camps\253963_003_Civil_DDP.mxd 23/02/2017 12:02 Imagery: Digital Globe WV2 2013-2016

A3 scale: 1:2,000

0 20 40 60 80 100 m

Note:
Label numbers refer to survey IDs

Date: 23/02/2017 Version: 2
Coordinate system: MGA94 Zone 52

NT Town Camp Infrastructure Assessments: Sewerage

48 - Ilperle-Tyathe (Alice Springs)

2374



Map by: DMcP P:\GIS\Projects\253963_NT_Town_Camps\253963_003_Civil_DDP.mxd 23/02/2017 12:02 Imagery: Digital Globe WV2 2013-2016

A3 scale: 1:2,000

0 20 40 60 80 100 m

Note:
Label numbers refer to survey IDs

Date: 23/02/2017 Version: 2

Coordinate system: MGA94 Zone 52

NT Town Camp Infrastructure Assessments: Water

48 - Ilperle-Tyathe (Alice Springs)

2375



Map by: DMcP P:\GIS\Projects\253963_NT_Town_Camps\253963_003_Civil_DDP.mxd 23/02/2017 12:02 Imagery: Digital Globe WV2 2013-2016

Legend

Town Camp boundary

Community structures
- BBQ/Table and Chairs (1)
- Playground (2)

Road furniture
- Signs (5)

Stormwater
- Culverts (2)

A3 scale: 1:2,000

0 20 40 60 80 100 m

Note:
Label numbers refer to survey IDs

Date: 23/02/2017 Version: 2

Coordinate system: MGA94 Zone 52

NT Town Camp Infrastructure Assessments
Road furniture, stormwater drainage & community structures
48 - Ilperle-Tyathe (Alice Springs)

2376

Northern Territory Town Camps

Civil Infrastructure

Inspection Date 23/11/2016 4:26:59 PM

Insp ID: 1009 Group 4 - Alice Springs Ilperle Tyathe (Walpiri)

What Water Asset Are you Capturing: Air Valves

Air Valve Diameter (mm): 80

Air Valve Make:

Air Valve Leak: No

Air Valve Condition: 4 - Very Good

Air Valve Comments:







Northern Territory Town Camps

Civil Infrastructure

Inspection Date 23/11/2016 3:29:00 PM

Insp ID: 998	Group 4 - Alice Springs	Ilperle Tyathe (Walpiri)

Stormwater Infrastructure:	Culverts
Culvert Type:	RCBC
Diameter (mm):	
Width (mm):	350
Culvert Depth (mm):	250
Culvert Length (m):	9
Culvert Condition:	2 - Poor
Culvert Blockage (%):	50
Culvert Comments:	
Culvert Head Wall:	Yes
Safety Grate:	No
Headwall Blockage:	20
Headwall Condition:	2 - Poor
Headwall Comment:	
End Wall:	Yes
End Wall condition:	2 - Poor
EW Comment:	





Northern Territory Town Camps

Civil Infrastructure

Inspection Date 23/11/2016 3:29:00 PM





Northern Territory Town Camps

Civil Infrastructure

Inspection Date 23/11/2016 3:54:36 PM

Insp ID: 1015 Group 4 - Alice Springs Ilperle Tyathe (Walpiri)

Stormwater Infrastructure:	Culverts
Culvert Type:	RCBC
Diameter (mm):	
Width (mm):	450
Culvert Depth (mm):	250
Culvert Length (m):	10
Culvert Condition:	2 - Poor
Culvert Blockage (%):	90
Culvert Comments:	
Culvert Head Wall:	Yes
Safety Grate:	No
Headwall Blockage:	30
Headwall Condition:	2 - Poor
Headwall Comment:	
End Wall:	Yes
End Wall condition:	1 - Very Poor
EW Comment:	





Northern Territory Town Camps

Civil Infrastructure

Inspection Date 23/11/2016 3:54:36 PM



Northern Territory Town Camps

Civil Infrastructure

Inspection Date 23/11/2016 3:35:57 PM

Insp ID: 996 Group 4 - Alice Springs Ilperle Tyathe (Walpiri)

Road Name:	Lilbili Street
What are you inspecting:	Pavements
Ch From (km):	0.5
Ch To (km):	0.65
Road Type:	Sealed - spray seal
Section Width (m):	4
Road Condition:	3 - Good
General Comment:	

Road Defects Section

Defect Type	Defect QTY	Defect Condition	Defect Comments
Surfacing Cracks	5	3 - Good	5 percent

Kerbs Section

Kerb Type	Kerb Cond	Kerb Comments
Flush Kerb	3 - Good	

Shoulders Section

Shoulder Type	Width	Dropoff(mm)	Erosion	Condition	Shoulder Comments
Unsealed		30		3	

Linemarking Section

Obstruction Section

Road Obstruction	Other Road Obstruction
Trees	

Northern Territory Town Camps

Civil Infrastructure

Inspection Date 23/11/2016 3:35:57 PM









Northern Territory Town Camps

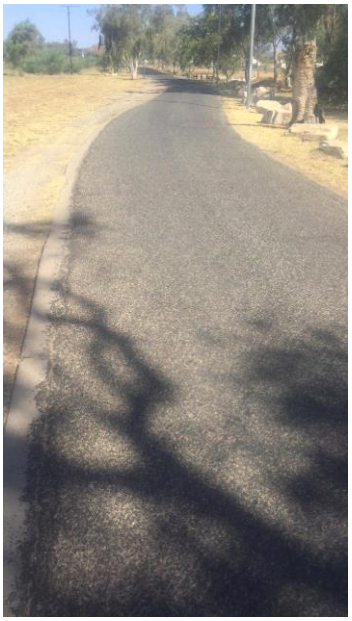
Civil Infrastructure

Inspection Date 23/11/2016 3:35:57 PM









Northern Territory Town Camps

Civil Infrastructure

Inspection Date 23/11/2016 3:35:57 PM



Northern Territory Town Camps

Civil Infrastructure

Inspection Date 23/11/2016 3:32:19 PM

Insp ID: 997	Group 4 - Alice Springs	Ilperle Tyathe (Walpiri)

Road Name:	Lilbili Street
What are you inspecting:	Pavements
Ch From (km):	0.65
Ch To (km):	0.68
Road Type:	Unsealed
Section Width (m):	
Road Condition:	2 - Poor
General Comment:	This section of road is an open area used as to park cars

Road Defects Section

Kerbs Section

Shoulders Section

Linemarking Section

Obstruction Section





Northern Territory Town Camps

Civil Infrastructure

Inspection Date 23/11/2016 3:32:19 PM

Northern Territory Town Camps

Civil Infrastructure

Inspection Date 23/11/2016 3:25:03 PM

Insp ID: 1000 Group 4 - Alice Springs Ilperle Tyathe (Walpiri)

Road Name:	Wanapari Walk
What are you inspecting:	Pavements
Ch From (km):	0
Ch To (km):	0.08
Road Type:	Sealed - spray seal
Section Width (m):	3.6
Road Condition:	3 - Good
General Comment:	

Road Defects Section

Defect Type	Defect QTY	Defect Condition	Defect Comments
Transverse Cracks	5	2 - Poor	5 percent

Kerbs Section

Kerb Type	Kerb Cond	Kerb Comments
Flush Kerb	3 - Good	

Shoulders Section

Shoulder Type	Width	Dropoff(mm)	Erosion	Condition	Shoulder Comments
Unsealed					

Linemarking Section

Obstruction Section

Northern Territory Town Camps

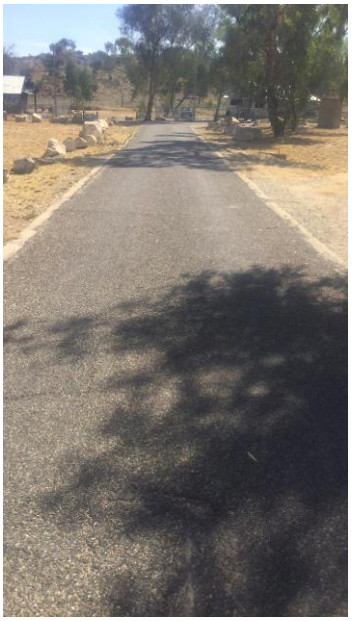
Civil Infrastructure

Inspection Date 23/11/2016 3:25:03 PM









Northern Territory Town Camps

Civil Infrastructure

Inspection Date 23/11/2016 3:25:03 PM



Northern Territory Town Camps

Civil Infrastructure

Inspection Date 23/11/2016 3:12:24 PM

Insp ID: 1004 Group 4 - Alice Springs Ilperle Tyathe (Walpiri)

Road Name:	Yipilljaji Crescent
What are you inspecting:	Pavements
Ch From (km):	0.15
Ch To (km):	0.28
Road Type:	Sealed - spray seal
Section Width (m):	6.2
Road Condition:	2 - Poor
General Comment:	

Road Defects Section

Defect Type	Defect QTY	Defect Condition	Defect Comments
Undulation/Settlement	5	3 - Good	5 percent of section
Potholes	2	1 - Very Poor	

Kerbs Section

Kerb Type	Kerb Cond	Kerb Comments
Kerb only	3 - Good	

Shoulders Section

Shoulder Type	Width	Dropoff(mm)	Erosion	Condition	Shoulder Comments
Unsealed		30		3	

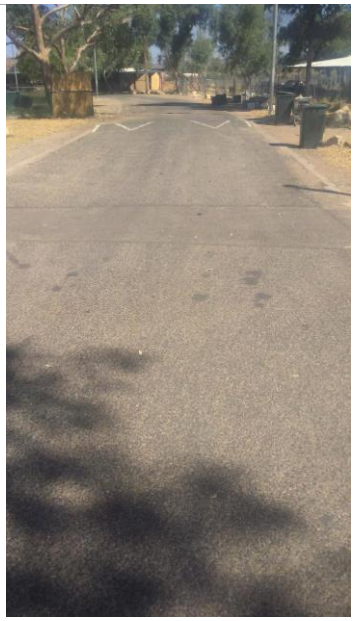
Linemarking Section

Obstruction Section

Northern Territory Town Camps

Civil Infrastructure

Inspection Date 23/11/2016 3:12:24 PM









Northern Territory Town Camps

Civil Infrastructure

Inspection Date 23/11/2016 3:12:24 PM









Northern Territory Town Camps

Civil Infrastructure

Inspection Date 23/11/2016 3:12:24 PM





Northern Territory Town Camps

Civil Infrastructure

Inspection Date 23/11/2016 4:15:38 PM

Insp ID: 1011 Group 4 - Alice Springs Ilperle Tyathe (Walpiri)

Road Name:	Lilbili Street
What are you inspecting:	Pavements
Ch From (km):	0.3
Ch To (km):	0.5
Road Type:	Sealed - spray seal
Section Width (m):	5
Road Condition:	3 - Good
General Comment:	2 speed humps with no signs, overhanging trees at about 5 m high

Road Defects Section

Defect Type	Defect QTY	Defect Condition	Defect Comments
Surfacing Cracks	5	3 - Good	5 percent
Edge Breaks	100	2 - Poor	Along entire road

Kerbs Section

Kerb Type	Kerb Cond	Kerb Comments
No kerb		

Shoulders Section

Shoulder Type	Width	Dropoff(mm)	Erosion	Condition	Shoulder Comments
Unsealed		90			Isolated section of large drop offs

Linemarking Section

Line Type	Other Line Type	Line Cond	Line Comments
			Only on speed humps

Obstruction Section

Road Obstruction	Other Road Obstruction
Trees	

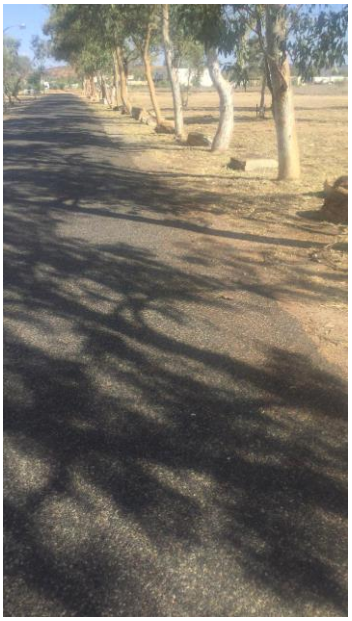
Northern Territory Town Camps

Civil Infrastructure

Inspection Date 23/11/2016 4:15:38 PM









Northern Territory Town Camps

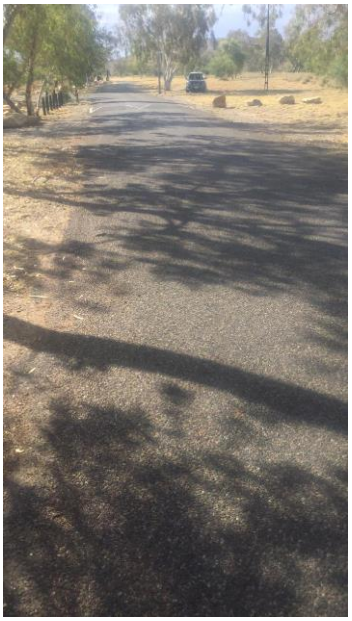
Civil Infrastructure

Inspection Date 23/11/2016 4:15:38 PM









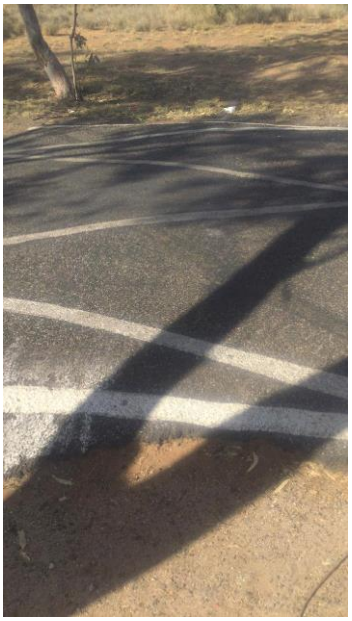
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Civil Infrastructure

Inspection Date 23/11/2016 4:15:38 PM









Northern Territory Town Camps

Civil Infrastructure

Inspection Date 23/11/2016 4:15:38 PM



Northern Territory Town Camps

Civil Infrastructure

Inspection Date 23/11/2016 4:07:14 PM

Insp ID: 1013 Group 4 - Alice Springs Ilperle Tyathe (Walpiri)

Road Name:	Yipilljaji Crescent
What are you inspecting:	Pavements
Ch From (km):	0
Ch To (km):	0.15
Road Type:	Sealed - spray seal
Section Width (m):	5.5
Road Condition:	2 - Poor
General Comment:	

Road Defects Section

Defect Type	Defect QTY	Defect Condition	Defect Comments
Surfacing Cracks	5	3 - Good	5 percent
Surfacing Failure	5	3 - Good	Less than 5 percent
Edge Breaks	30	2 - Poor	30 percent of section

Kerbs Section

Kerb Type	Kerb Cond	Kerb Comments
Flush Kerb	1 - Very Poor	Some Sections without kerb

Shoulders Section

Shoulder Type	Width	Dropoff(mm)	Erosion	Condition	Shoulder Comments
Unsealed		30			

Linemarking Section

Obstruction Section

Road Obstruction	Other Road Obstruction
Trees	

Northern Territory Town Camps

Civil Infrastructure

Inspection Date 23/11/2016 4:07:14 PM









Northern Territory Town Camps

Civil Infrastructure

Inspection Date 23/11/2016 4:07:14 PM





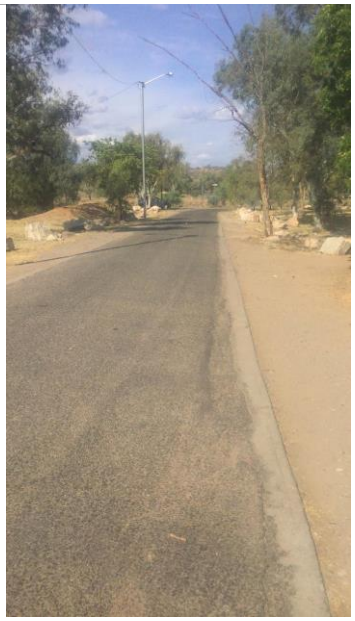




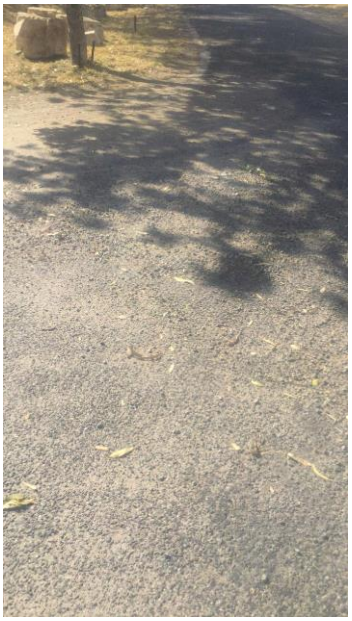
Northern Territory Town Camps

Civil Infrastructure

Inspection Date 23/11/2016 4:07:14 PM









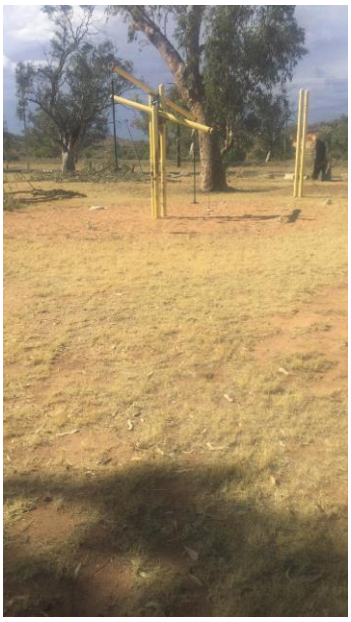
Northern Territory Camps

Civil Infrastructure

Inspection Date 23/11/2016 3:54:46 PM

Insp ID: 1016 Group 4 - Alice Springs Ilperle Tyathe (Walpiri)

Inspection Type:	Shade Structure
Shade Structure Type:	Play ground
Shade Floor Type:	Sand
Roof Type:	Not Covered
Width (mm):	10
Length (mm):	10
Appearance:	2
Appearance Comment:	
Condition:	1 - Very Poor
Comment:	





Northern Territory Camps

Civil Infrastructure

Inspection Date 23/11/2016 3:54:46 PM







Northern Territory Camps

Civil Infrastructure

Inspection Date 23/11/2016 3:52:43 PM

Insp ID: 1017 Group 4 - Alice Springs Ilperle Tyathe (Walpiri)

Inspection Type:	Shade Structure
Shade Structure Type:	BBQ Area
Shade Floor Type:	Natural ground
Roof Type:	Not Covered
Width (mm):	5
Length (mm):	5
Appearance:	2
Appearance Comment:	Broken glass
Condition:	4 - Very Good
Comment:	





Northern Territory Camps

Civil Infrastructure

Inspection Date 23/11/2016 3:52:43 PM



Northern Territory Camps

Civil Infrastructure

Inspection Date 23/11/2016 3:50:14 PM

Insp ID: 1018 Group 4 - Alice Springs Ilperle Tyathe (Walpiri)

Inspection Type:	Shade Structure
Shade Structure Type:	Play ground
Shade Floor Type:	Sand
Roof Type:	Shadecloth
Width (mm):	10
Length (mm):	18
Appearance:	3
Appearance Comment:	
Condition:	4 - Very Good
Comment:	





Northern Territory Camps

Civil Infrastructure

Inspection Date 23/11/2016 3:50:14 PM



Northern Territory Town Camps

Civil Infrastructure

Inspection Date 23/11/2016 3:23:18 PM

Insp ID: 1001 Group 4 - Alice Springs Ilperle Tyathe (Walpiri)

Road Name:	Lilbili Street
What are you inspecting:	Signs
Type of Sign:	Street name
Sign Condition:	4 - Very Good
Sign Comment:	
General Comment:	



Northern Territory Town Camps

Civil Infrastructure

Inspection Date 23/11/2016 3:22:17 PM

Insp ID: 1002 Group 4 - Alice Springs Ilperle Tyathe (Walpiri)

Road Name:	Lilbili Street
What are you inspecting:	Signs
Type of Sign:	Street name
Sign Condition:	4 - Very Good
Sign Comment:	
General Comment:	







Northern Territory Town Camps

Civil Infrastructure

Inspection Date 23/11/2016 4:30:35 PM

Insp ID: 1007	Group 4 - Alice Springs	Ilperle Tyathe (Walpiri)

Road Name:	Lilbili Street
What are you inspecting:	Signs
Type of Sign:	Street name
Sign Condition:	4 - Very Good
Sign Comment:	
General Comment:	





Northern Territory Town Camps

Civil Infrastructure

Inspection Date 23/11/2016 4:28:34 PM

Insp ID: 1008 Group 4 - Alice Springs Ilperle Tyathe (Walpiri)

Road Name:	Lilbili Street
What are you inspecting:	Signs
Type of Sign:	Community signs
Sign Condition:	4 - Very Good
Sign Comment:	
General Comment:	





Northern Territory Town Camps

Civil Infrastructure

Inspection Date 23/11/2016 3:49:15 PM

Insp ID: 1019	Group 4 - Alice Springs	Ilperle Tyathe (Walpiri)

Road Name:	Lilbili Street
What are you inspecting:	Signs
Type of Sign:	Street name
Sign Condition:	4 - Very Good
Sign Comment:	
General Comment:	





Northern Territory Town Camps

Civil Infrastructure

Inspection Date 23/11/2016 3:19:33 PM

Insp ID: 1003	Group 4 - Alice Springs	Ilperle Tyathe (Walpiri)

What Water Asset Are you Capturing: Taps

Diameter(mm):	15
Tap Leakage:	No
Tap Condition:	1 - Very Poor
Tap Comment:	No handle





Northern Territory Town Camps

Civil Infrastructure

Inspection Date 23/11/2016 3:59:33 PM

Insp ID: 1014	Group 4 - Alice Springs	Ilperle Tyathe (Walpiri)

What Water Asset Are you Capturing: Taps

Diameter(mm):	15
Tap Leakage:	Yes
Tap Condition:	2 - Poor
Tap Comment:	





Northern Territory Town Camps

Civil Infrastructure

Inspection Date 23/11/2016 3:28:01 PM

Insp ID: 999	Group 4 - Alice Springs	Ilperle Tyathe (Walpiri)

What Water Asset Are you Capturing: Water Meter

Water Meter Type:	Lot
Bulk Water Meter Size (mm):	
Bulk Water Meter Condition:	
Bulk Water Meter Comment:	
Lot Number:	
Lot Water Meter Size:	25
Lot Water Meter Condition:	3 - Good
Lot Water Meter Comment:	





Northern Territory Town Camps

Civil Infrastructure

Inspection Date 23/11/2016 3:10:16 PM

Insp ID: 1005	Group 4 - Alice Springs	Ilperle Tyathe (Walpiri)

What Water Asset Are you Capturing: Water Meter

Water Meter Type:	Lot
Bulk Water Meter Size (mm):	
Bulk Water Meter Condition:	
Bulk Water Meter Comment:	
Lot Number:	17
Lot Water Meter Size:	20
Lot Water Meter Condition:	3 - Good
Lot Water Meter Comment:	





Northern Territory Town Camps

Civil Infrastructure

Inspection Date 23/11/2016 4:23:51 PM

Insp ID: 1010	Group 4 - Alice Springs	Ilperle Tyathe (Walpiri)

What Water Asset Are you Capturing: Water Meter

Water Meter Type:	Bulk
Bulk Water Meter Size (mm):	100
Bulk Water Meter Condition:	4 - Very Good
Bulk Water Meter Comment:	Back flow protection
Lot Number:	
Lot Water Meter Size:	
Lot Water Meter Condition:	
Lot Water Meter Comment:	





Northern Territory Town Camps

Civil Infrastructure

Inspection Date 23/11/2016 4:23:51 PM









Northern Territory Town Camps

Civil Infrastructure

Inspection Date 23/11/2016 4:23:51 PM









Electrical inspection report



Map by: DMcP P:\GIS\Projects\253963_NT_Town_Camps\253963_004_Elec_DDP_report.mxd 23/02/2017 12:22

A3 scale: 1:2,000

0 20 40 60 80 100 m

Date: 23/02/2017 Version: 3

Coordinate system: MGA94 Zone 52

NT Town Camp Infrastructure Assessments: Electrical

48 - Ilperle-Tyathe (Alice Springs)

Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 23/11/2016 4:51:31 PM

Insp ID: 474 Group 4 - Alice Springs Ilperle Tyathe (Walpiri)

What Category are you capturing:	Distribution Panel
What is Main Distribution Panel installation method:	Outdoor
Is the distribution panel labelled:	No
What is Distribution Panel main CB Rating:	
What is the main incoming cable type/Size to Distribution Panel:	
What is the condition of switchboard:	2
Condition Comments:	
What is the condition of cables/glands into switchboard:	
Cable/Gland Condition Comments:	
Distribution Panels name plate access:	NA









Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 23/11/2016 4:51:31 PM



Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 23/11/2016 4:40:20 PM

Insp ID: 477 Group 4 - Alice Springs Ilperle Tyathe (Walpiri)

What Category are you capturing:	Distribution Panel
What is Main Distribution Panel installation method:	Outdoor
Is the distribution panel labelled:	No
What is Distribution Panel main CB Rating:	
What is the main incoming cable type/Size to Distribution Panel:	
What is the condition of switchboard:	3
Condition Comments:	
What is the condition of cables/glands into switchboard:	3
Cable/Gland Condition Comments:	
Distribution Panels name plate access:	No









Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 23/11/2016 4:40:20 PM



Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 23/11/2016 4:09:51 PM

Insp ID: 487 Group 4 - Alice Springs Ilperle Tyathe (Walpiri)

What Comms Category are you capturing:	Distribution
What is distribution method to households:	Underground
Is it Shared with PWC:	
Is there Anti-climb barrier provided for this pole:	
What is Pole construction type:	
Is street light fitted:	
Is there concrete collar around the base of pole:	
What is the condition of tap off to house:	
What is the condition of pole:	
How many Lots are connected to this pole:	
Is there access to Pits to take a photo:	No
What is Pit Condition:	3
Underground Comments:	



Northern Territory Town Camps

Communications Infrastructure

Inspection Date 23/11/2016 5:06:09 PM

Insp ID: 469	Group 4 - Alice Springs	Ilperle Tyathe (Walpiri)

What Comms Category are you capturing:	General
Telstra Comms Drawing Available:	No
Facility upgrade not in drawings:	NA
Which telecoms carriers are present in the town camp:	
How many Communications Pit(s) are allocated in this town camp:	



Northern Territory Town Camps

Communications Infrastructure

Inspection Date 23/11/2016 3:42:29 PM

Insp ID: 497	Group 4 - Alice Springs	Ilperle Tyathe (Walpiri)

What Comms Category are you capturing:	General
Telstra Comms Drawing Available:	No
Facility upgrade not in drawings:	NA
Which telecoms carriers are present in the town camp:	Telstra
How many Communications Pit(s) are allocated in this town camp:	



Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 16/01/2017 3:31:16 PM

Insp ID: 3586 Group 4 - Alice Springs Ilperle Tyathe (Walpiri)

What Category are you capturing: Electrical Meters

Meter Type: Prepaid

Meter Switchboard Cond: 3

Meter Condition: 3

Meter Comment: Indoor SB, Cond 3

Comments:





Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 16/01/2017 3:21:56 PM

Insp ID: 3640 Group 4 - Alice Springs Ilperle Tyathe (Walpiri)

What Category are you capturing: Electrical Meters

Meter Type: Prepaid

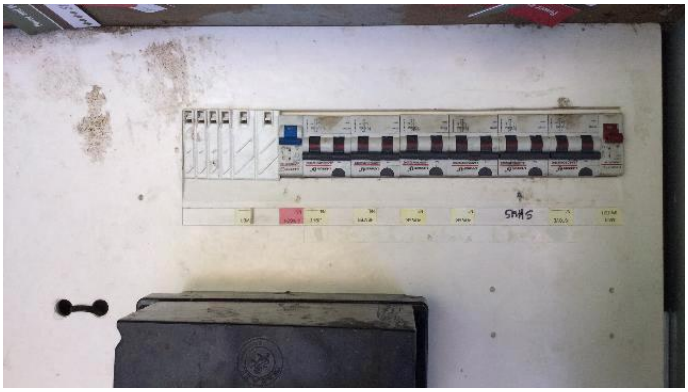
Meter Switchboard Cond: 3

Meter Condition: 3

Meter Comment:

Comments:





Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 24/01/2017 1:08:03 PM

Insp ID: 3683 Group 4 - Alice Springs Ilperle Tyathe (Walpiri)

What Category are you capturing: Electrical Meters

Meter Type:	Prepaid
Meter Switchboard Cond:	3
Meter Condition:	3
Meter Comment:	Indoor SB, Cond 3
Comments:	





Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 23/11/2016 4:54:07 PM

Insp ID: 473 Group 4 - Alice Springs Ilperle Tyathe (Walpiri)

What Category are you capturing:	Overhead Poles
What is Pole Material type:	Welded
What is the condition of pole:	3
How is the pole planted:	Direct
What is the Condition of plant:	3
Is street light fitted:	No
Street Light Power Supply:	
Street Light Type	
Street Light Watts	
Street Light Condition	
Street Light Height	
What is the type of service:	Combined
What is the HV voltage level:	
What is the arrangement of connected cables:	Parallel
Are there isolators on the pole:	Yes
What is the Condition:	3
How many Lots are connected to this pole:	
Overhead Pole Comments:	

Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 23/11/2016 4:54:07 PM









Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 23/11/2016 4:21:02 PM

Insp ID: 483 Group 4 - Alice Springs Ilperle Tyathe (Walpiri)

What Category are you capturing:	Overhead Poles
What is Pole Material type:	Welded
What is the condition of pole:	3
How is the pole planted:	Direct
What is the Condition of plant:	3
Is street light fitted:	No
Street Light Power Supply:	
Street Light Type	
Street Light Watts	
Street Light Condition	
Street Light Height	
What is the type of service:	Combined
What is the HV voltage level:	
What is the arrangement of connected cables:	Parallel
Are there isolators on the pole:	Yes
What is the Condition:	3
How many Lots are connected to this pole:	
Overhead Pole Comments:	

Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 23/11/2016 4:21:02 PM









Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 23/11/2016 4:02:31 PM

Insp ID: 490	Group 4 - Alice Springs	Ilperle Tyathe (Walpiri)

What Category are you capturing:	Overhead Poles
What is Pole Material type:	Welded
What is the condition of pole:	3
How is the pole planted:	Direct
What is the Condition of plant:	3
Is street light fitted:	No
Street Light Power Supply:	
Street Light Type	
Street Light Watts	
Street Light Condition	
Street Light Height	
What is the type of service:	Combined
What is the HV voltage level:	
What is the arrangement of connected cables:	Parallel
Are there isolators on the pole:	Yes
What is the Condition:	3
How many Lots are connected to this pole:	
Overhead Pole Comments:	Drop out fuses for overhead to underground conn

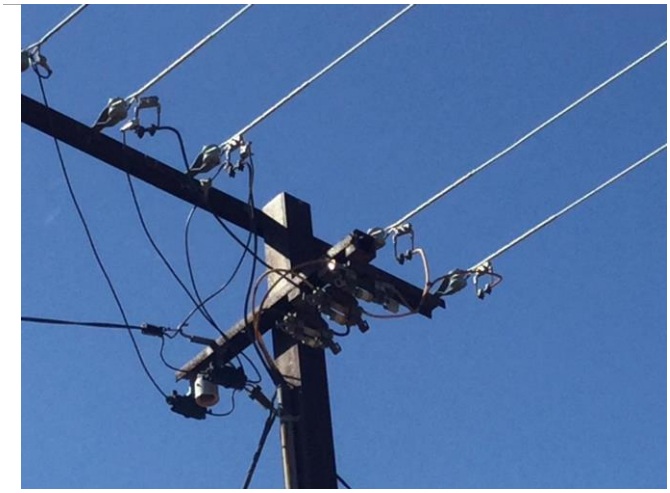
Northern Territory Town Camps

Electrical Infrastructure

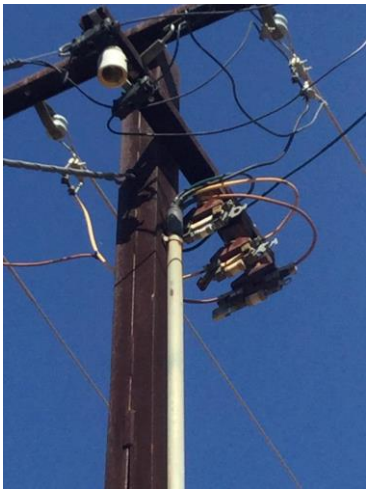
Inspection Date 23/11/2016 4:02:31 PM











Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 23/11/2016 3:49:48 PM

Insp ID: 494 Group 4 - Alice Springs Ilperle Tyathe (Walpiri)

What Category are you capturing:	Overhead Poles
What is Pole Material type:	Steel
What is the condition of pole:	4
How is the pole planted:	Concrete
What is the Condition of plant:	3
Is street light fitted:	No
Street Light Power Supply:	
Street Light Type	
Street Light Watts	
Street Light Condition	
Street Light Height	
What is the type of service:	Single
What is the HV voltage level:	
What is the arrangement of connected cables:	Twisted
Are there isolators on the pole:	No
What is the Condition:	
How many Lots are connected to this pole:	
Overhead Pole Comments:	

Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 23/11/2016 3:49:48 PM







Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 23/11/2016 3:47:46 PM

Insp ID: 495 Group 4 - Alice Springs Ilperle Tyathe (Walpiri)

What Category are you capturing:	Overhead Poles
What is Pole Material type:	Steel
What is the condition of pole:	4
How is the pole planted:	Concrete
What is the Condition of plant:	
Is street light fitted:	No
Street Light Power Supply:	
Street Light Type	
Street Light Watts	
Street Light Condition	
Street Light Height	
What is the type of service:	Single
What is the HV voltage level:	
What is the arrangement of connected cables:	Twisted
Are there isolators on the pole:	No
What is the Condition:	
How many Lots are connected to this pole:	
Overhead Pole Comments:	

Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 23/11/2016 3:47:46 PM







Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 23/11/2016 3:41:27 PM

Insp ID: 498 Group 4 - Alice Springs Ilperle Tyathe (Walpiri)

What Category are you capturing:	Overhead Poles
What is Pole Material type:	Steel
What is the condition of pole:	4
How is the pole planted:	Concrete
What is the Condition of plant:	3
Is street light fitted:	No
Street Light Power Supply:	
Street Light Type	
Street Light Watts	
Street Light Condition	
Street Light Height	
What is the type of service:	Single
What is the HV voltage level:	
What is the arrangement of connected cables:	Twisted
Are there isolators on the pole:	No
What is the Condition:	
How many Lots are connected to this pole:	
Overhead Pole Comments:	

Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 23/11/2016 3:41:27 PM







Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 23/11/2016 5:00:43 PM

Insp ID: 631 Group 4 - Alice Springs Ilperle Tyathe (Walpiri)

What Category are you capturing:	Overhead Poles
What is Pole Material type:	Welded
What is the condition of pole:	3
How is the pole planted:	Direct
What is the Condition of plant:	3
Is street light fitted:	No
Street Light Power Supply:	
Street Light Type	
Street Light Watts	
Street Light Condition	
Street Light Height	
What is the type of service:	Three
What is the HV voltage level:	
What is the arrangement of connected cables:	Parallel
Are there isolators on the pole:	Yes
What is the Condition:	3
How many Lots are connected to this pole:	
Overhead Pole Comments:	

Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 23/11/2016 5:00:43 PM









Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 23/11/2016 4:57:35 PM

Insp ID: 471 Group 4 - Alice Springs Ilperle Tyathe (Walpiri)

What Category are you capturing:	Street Light
What is power supply method:	Underground
What is the lamp type:	S50
What Wattage is the lamp:	50
What is the condition of street lights:	3
What is Street Lighting pole installation height (approximate):	6







Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 23/11/2016 4:49:33 PM

Insp ID: 475 Group 4 - Alice Springs Ilperle Tyathe (Walpiri)

What Category are you capturing:	Street Light
What is power supply method:	Underground
What is the lamp type:	S50
What Wattage is the lamp:	50
What is the condition of street lights:	3
What is Street Lighting pole installation height (approximate):	6







Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 23/11/2016 4:46:41 PM

Insp ID: 476 Group 4 - Alice Springs Ilperle Tyathe (Walpiri)

What Category are you capturing:	Street Light
What is power supply method:	Underground
What is the lamp type:	S50
What Wattage is the lamp:	50
What is the condition of street lights:	3
What is Street Lighting pole installation height (approximate):	6









Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 23/11/2016 4:34:24 PM

Insp ID: 478 Group 4 - Alice Springs Ilperle Tyathe (Walpiri)

What Category are you capturing:	Street Light
What is power supply method:	Overhead
What is the lamp type:	S70 D14
What Wattage is the lamp:	70
What is the condition of street lights:	4
What is Street Lighting pole installation height (approximate):	8







Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 23/11/2016 4:31:45 PM

Insp ID: 479 Group 4 - Alice Springs Ilperle Tyathe (Walpiri)

What Category are you capturing:	Street Light
What is power supply method:	Overhead
What is the lamp type:	S70 D 13
What Wattage is the lamp:	70
What is the condition of street lights:	4
What is Street Lighting pole installation height (approximate):	8







Northern Territory Town Camps

Electrical Infrastructure

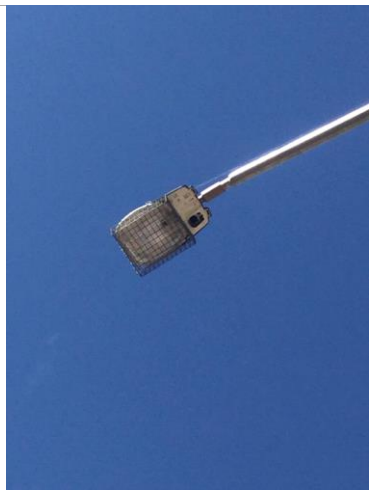
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Insp ID: 480 Group 4 - Alice Springs Ilperle Tyathe (Walpiri)

What Category are you capturing:	Street Light
What is power supply method:	Overhead
What is the lamp type:	S70 D13
What Wattage is the lamp:	70
What is the condition of street lights:	4
What is Street Lighting pole installation height (approximate):	8







Northern Territory Town Camps

Electrical Infrastructure

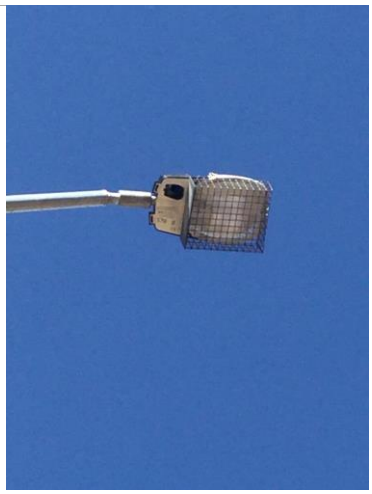
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Insp ID: 481 Group 4 - Alice Springs Ilperle Tyathe (Walpiri)

What Category are you capturing:	Street Light
What is power supply method:	Overhead
What is the lamp type:	S70 D13
What Wattage is the lamp:	70
What is the condition of street lights:	4
What is Street Lighting pole installation height (approximate):	8







Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 23/11/2016 4:23:19 PM

Insp ID: 482 Group 4 - Alice Springs Ilperle Tyathe (Walpiri)

What Category are you capturing:	Street Light
What is power supply method:	Underground
What is the lamp type:	S50
What Wattage is the lamp:	50
What is the condition of street lights:	3
What is Street Lighting pole installation height (approximate):	6





Northern Territory Town Camps

Electrical Infrastructure

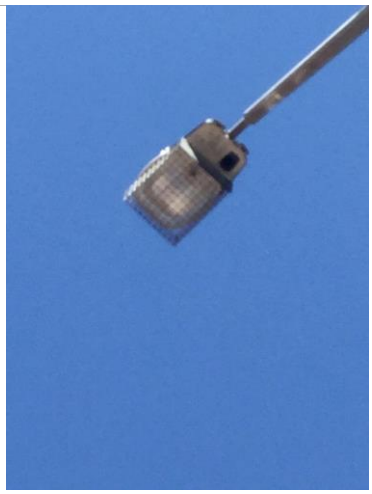
Inspection Date 23/11/2016 4:18:08 PM

Insp ID: 484 Group 4 - Alice Springs Ilperle Tyathe (Walpiri)

What Category are you capturing:	Street Light
What is power supply method:	Overhead
What is the lamp type:	S70 D 11
What Wattage is the lamp:	70
What is the condition of street lights:	4
What is Street Lighting pole installation height (approximate):	8







Northern Territory Town Camps

Electrical Infrastructure

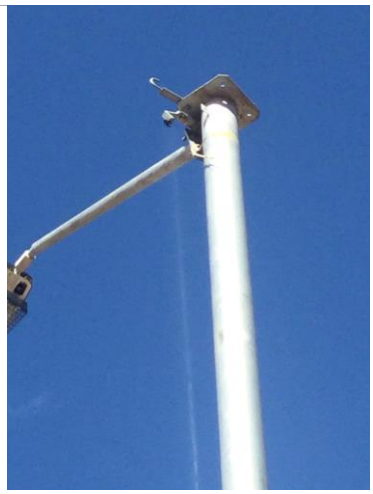
Inspection Date 23/11/2016 4:15:27 PM

Insp ID: 486 Group 4 - Alice Springs Ilperle Tyathe (Walpiri)

What Category are you capturing:	Street Light
What is power supply method:	Overhead
What is the lamp type:	S70 D11
What Wattage is the lamp:	70
What is the condition of street lights:	3
What is Street Lighting pole installation height (approximate):	8







Northern Territory Town Camps

Electrical Infrastructure

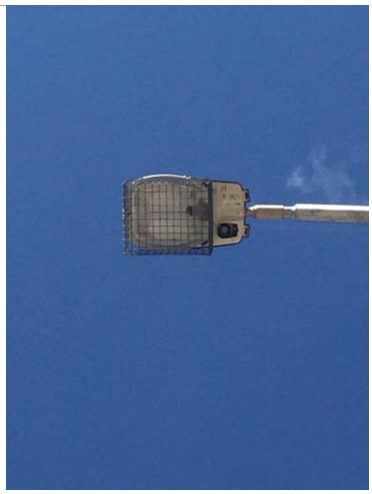
Inspection Date 23/11/2016 4:08:23 PM

Insp ID: 488 Group 4 - Alice Springs Ilperle Tyathe (Walpiri)

What Category are you capturing:	Street Light
What is power supply method:	Overhead
What is the lamp type:	S70 D14
What Wattage is the lamp:	70
What is the condition of street lights:	4
What is Street Lighting pole installation height (approximate):	8







Northern Territory Town Camps

Electrical Infrastructure

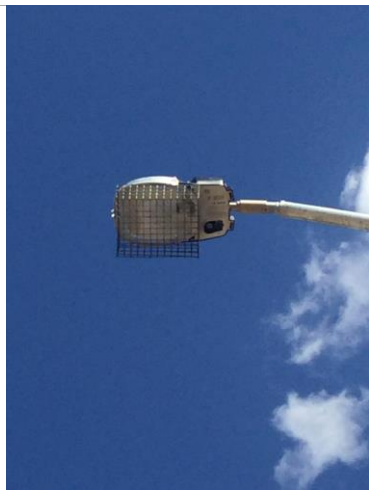
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Insp ID: 489 Group 4 - Alice Springs Ilperle Tyathe (Walpiri)

What Category are you capturing:	Street Light
What is power supply method:	Overhead
What is the lamp type:	S70 D 10
What Wattage is the lamp:	70
What is the condition of street lights:	4
What is Street Lighting pole installation height (approximate):	8







Northern Territory Town Camps

Electrical Infrastructure

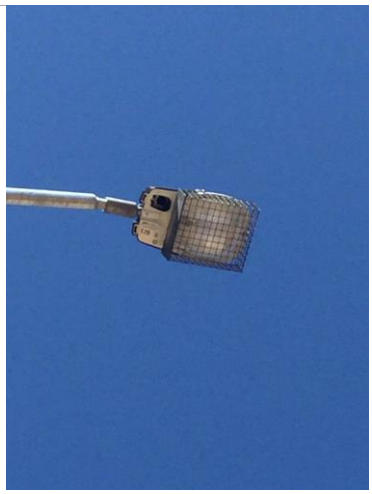
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Insp ID: 492 Group 4 - Alice Springs Ilperle Tyathe (Walpiri)

What Category are you capturing:	Street Light
What is power supply method:	Overhead
What is the lamp type:	S70 D14
What Wattage is the lamp:	70
What is the condition of street lights:	4
What is Street Lighting pole installation height (approximate):	8







Northern Territory Town Camps

Electrical Infrastructure

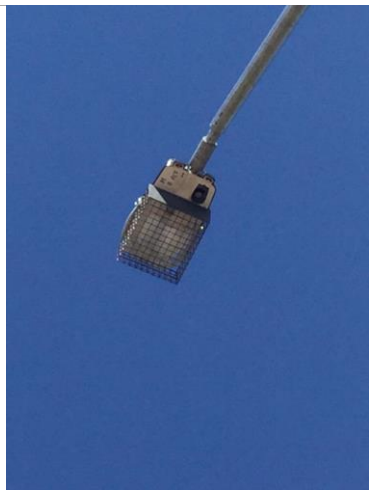
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Insp ID: 493 Group 4 - Alice Springs Ilperle Tyathe (Walpiri)

What Category are you capturing:	Street Light
What is power supply method:	Overhead
What is the lamp type:	S70 D14
What Wattage is the lamp:	70
What is the condition of street lights:	4
What is Street Lighting pole installation height (approximate):	8







Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 23/11/2016 3:44:56 PM

Insp ID: 496 Group 4 - Alice Springs Ilperle Tyathe (Walpiri)

What Category are you capturing:	Street Light
What is power supply method:	Overhead
What is the lamp type:	S70 D14
What Wattage is the lamp:	70
What is the condition of street lights:	4
What is Street Lighting pole installation height (approximate):	8







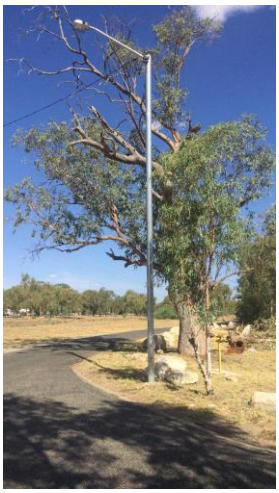
Northern Territory Town Camps

Electrical Infrastructure

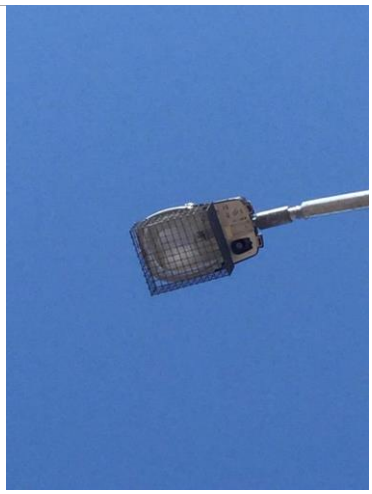
Inspection Date 23/11/2016 3:57:10 PM

Insp ID: 632 Group 4 - Alice Springs Ilperle Tyathe (Walpiri)

What Category are you capturing:	Street Light
What is power supply method:	Overhead
What is the lamp type:	S70 D14
What Wattage is the lamp:	70
What is the condition of street lights:	4
What is Street Lighting pole installation height (approximate):	8







Road map



Map by: DMcP P:\GIS\Projects\253963_NT_Town_Camps\253963_003_Roads_DDP2.mxd 11/02/2017 17:17 Imagery: copyright DigitalGlobe WV 2

A3 scale: 1:2,000

0 20 40 60 80 100 m

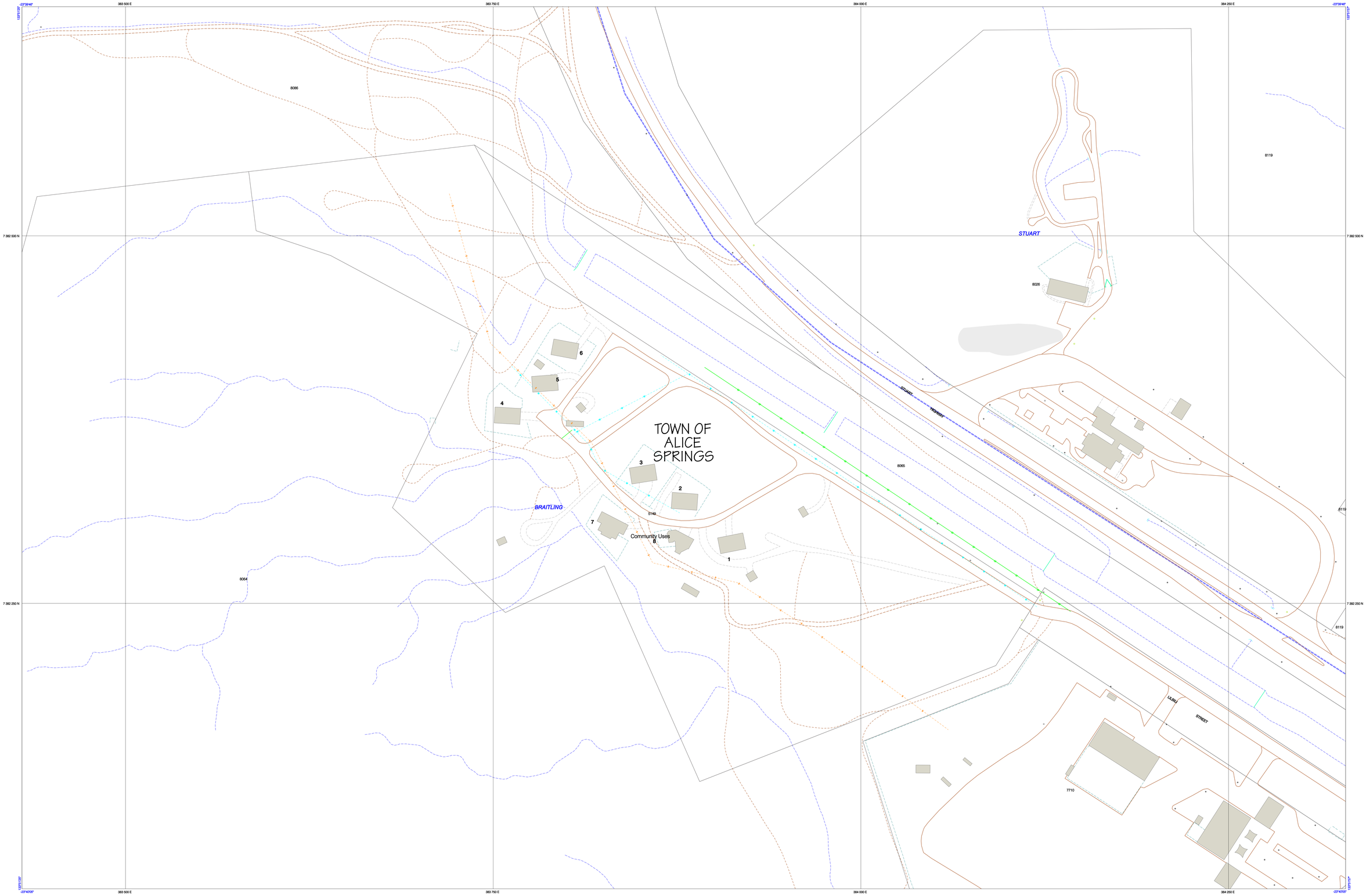
Date: 11/02/2017 Version: 1

Coordinate system: GDA 1994

NT Town Camp Road Assessments

48 - Ilperle-Tyathe (Alice Springs)

Existing drawings



LAND USE PLANNING:
- APPROX. POSITION OF BUILDING constructed since date of photography

LAND EXCLUDED FROM DEVELOPMENT
- GENERAL EXCLUSION/BUFFERS
- CULTURAL EXCLUSION AREAS:

Unauthorised entry, works on or use of land where there is a sacred site is an offence under the Northern Territory Aboriginal Sacred Sites Act. For conditions relating to works on or use of land within a Cultural Exclusion Area, contact the Aboriginal Areas Protection Authority (AAPA) email enquiries.aapa@nt.gov.au or phone 8999 4332.

This advice does not negate the need for consent for entry, works, or use which may be required under the Aboriginal Land Rights(NT) Act (in the case of Aboriginal land), or another statute.

© NORTHERN TERRITORY OF AUSTRALIA

CADASTRE
- Current — 123
- Proposed — 123
- Locality — LOCALITY

UTILITY SERVICES
- ELECTRICITY
- LOW VOLTAGE — LV
- HIGH VOLTAGE — HV
- WATER RETICULATION
- WATER MAIN — W
- WATER RISING MAIN
- SEWER
- SEWER MAIN — S
- SEWER RISING MAIN — S S

DIAL BEFORE YOU DIG www.1100.com.au

LEGEND

TOPOGRAPHY
- Road Sealed, Bridge
- Road Unsealed, Track
- Footpath, Drain, Culvert
- Wall, Gate, Fence, Cattle Grid
- Railway, Disused Railway
- Aerodrome Tarmac, Landing Strip
- Taxiway, Apron
- Pipeline: Oil, Water, Undetermined Gas, Sewage
- Building, Building-Shape unconfirmed
- Shade Structure, Incomplete Building
- Sewage Ponds, Tailings Pond
- Oval, Arena, Swimming Pool
- High Water Mark, Low Water Mark
- Mine; Quarry, Surface Excavation
- Contour; Index, Intermediate — 75
- Contour; Depression
- Top of Bank, Bottom of Bank, Cliff
- Watercourse; Perennial, Intermittent, Channel or Canal
- WaterBodies; Perennial, Intermittent
- WaterBodies; Reservoir, Water Hole
- Swamp; Swamp Perennial, Swamp Intermittent
- Flat; Mud Flat, Clay/Saltpan, STI
- Pole; Power, General, Light
- Tank; Water, Elevated, Non-Water, Silo
- Manhole, Pylon, Communication Tower, Bore.

AVAILABLE FROM AND PRODUCED BY:

Northern Territory Government

NOTES:
POWER POLES, MANHOLES, SEPTIC TANKS, TOWERS/POSTS and other minor topographic objects are excluded from Aerial Photography and have their locations confirmed from aerial survey techniques.
These features are suitable as LOCAL SURVEY CONTROL. Their ground location is expected to be within +/-0.3m of their mapped location.

DIAL BEFORE YOU DIG phone 1100 (freecall) or visit www.1100.com.au
For water, sewer, and power information and connection requirements for developments contact Power and Water Corporation, Customer Service and Development on 1800 245 092, and visit http://www.powerwater.com.au/business

General enquiries, corrections, updates, errors and omissions:
Indigenous Community Land Use Planning, NT Dept of Lands and Planning
TEL: (08) 8999 1300, FAX: (08) 8999 7189, Email: planning@nt.gov.au

This product is a compilation of data holdings from (but not restricted to) NT Dept of Lands and Planning, NT Dept of Housing, Local Government and Regional Services, Power and Water Corporation and Aboriginal Areas Protection Authority.
Whilst every effort has been made to ensure the accuracy of this map, errors and omissions may occur.
No Warranty is given concerning the accuracy of the information herein. Users should refer to the originating bodies or departments regarding the accuracy and currency of the data.

Topographic Information:
Land Information Division
Dept of Lands and Planning
TEL: (08) 8995 5337, FAX: (08) 8995 5368
Email: landinfo.dlp@nt.gov.au

Aboriginal Areas Protection Authority:
The Registrar
Aboriginal Areas Protection Authority
TEL: (08) 8999 4332
Email: enquiries.aapa@nt.gov.au

Cadastral Information:
Office of the Surveyor-General
Dept of Lands and Planning
TEL: (08) 8995 5353, FAX: (08) 8995 5395
Email: landinfo.dlp@nt.gov.au

Planning Information:
Indigenous Community Land Use Planning
Dept of Lands and Planning
TEL: (08) 8999 1300, FAX: (08) 8999 7189
Email: planning@nt.gov.au

Power, Water or Sewer Information:
Remote Operations Planning Branch
Power and Water Corporation
TEL: (08) 8924 6094, FAX: (08) 8924 5360

Housing Infrastructure Information:
Infrastructure Delivery Branch
Dept of Housing, Local Government, and Regional Services
TEL: (08) 8995 5013, FAX: (08) 8995 5110
Email: lee.dhglrs@nt.gov.au

SOURCE INFORMATION

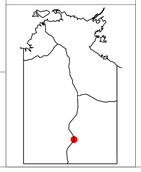
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HORIZONTAL DATUM :		SOURCE MAP SCALE :	2500
VERTICAL DATUM :		ZONE UTM :	53
PROJECTION :	Transverse Mercator	DATE GENERATED :	19 June 2012

N

0 20 40 60 80 100

GDA

Locality Diagram



SERVICED LAND AVAILABILITY PROGRAM

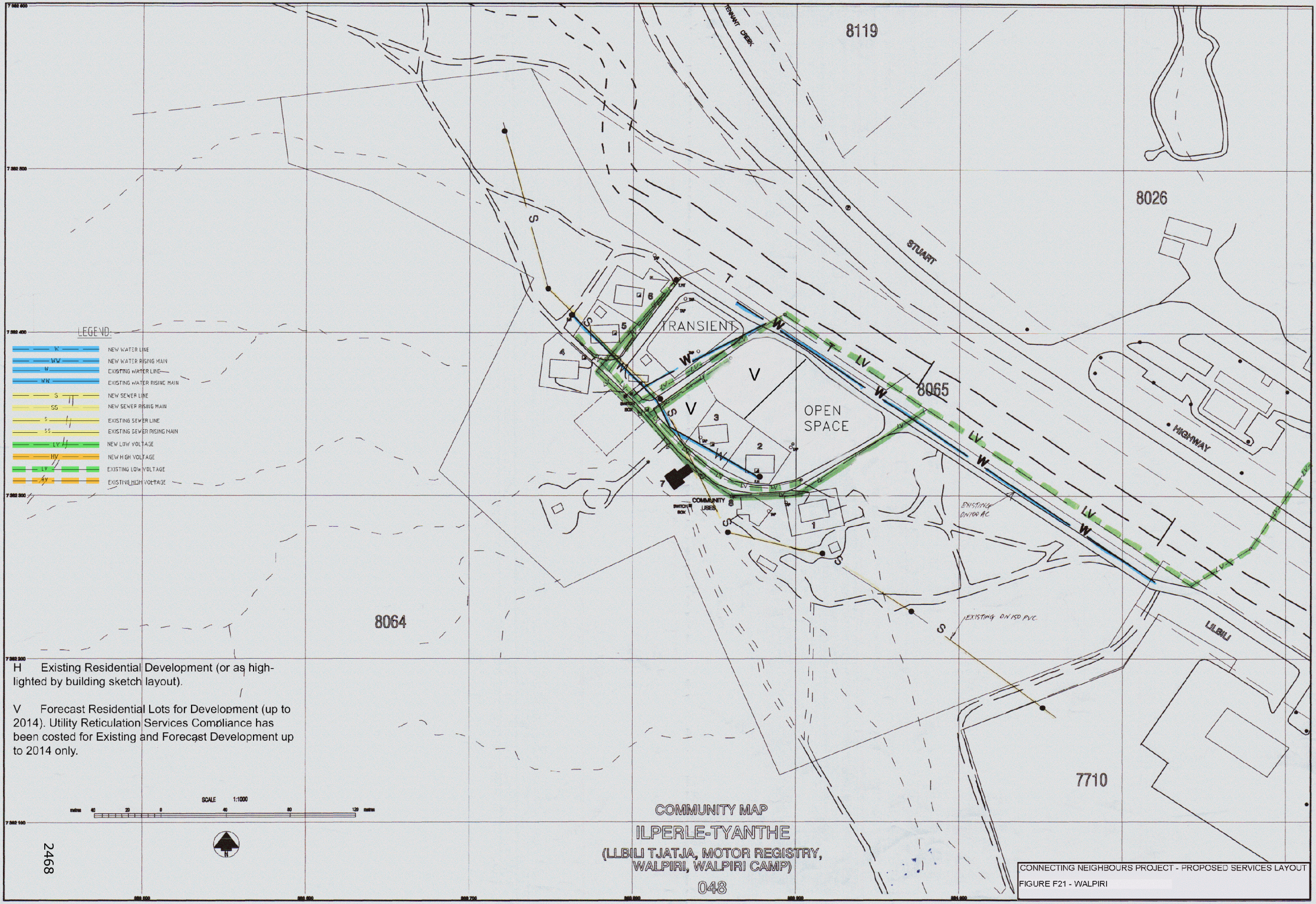
SLAP Map

Ilperle-Tyathe (Alice Springs Town Camp)

Llbili Tjatja

Alice Springs Town Council

Community ID: 48



H Existing Residential Development (or as high-lighted by building sketch layout).

V Forecast Residential Lots for Development (up to 2014). Utility Reticulation Services Compliance has been costed for Existing and Forecast Development up to 2014 only.

COMMUNITY MAP

ILPERLE-TYANTHE

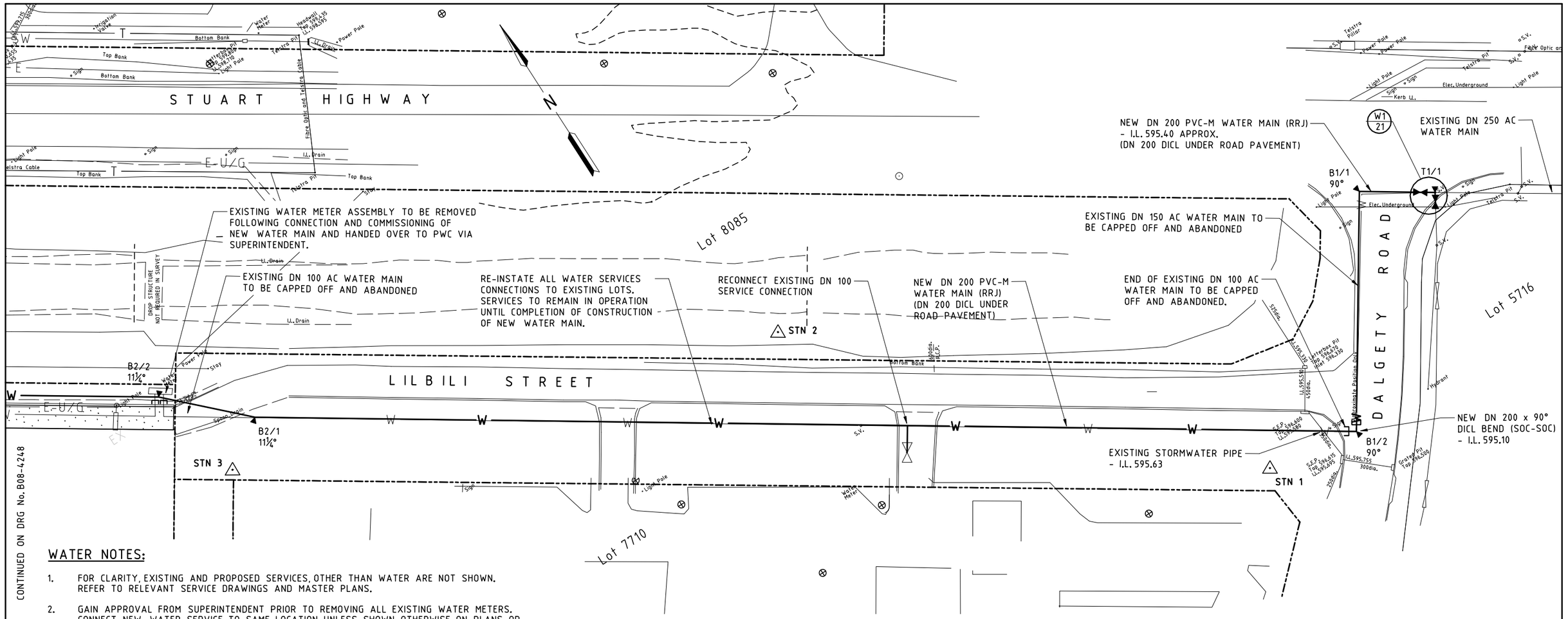
(LLBILI TJATJA, MOTOR REGISTRY, WALPIRI, WALPIRI CAMP)

048

2468

CONNECTING NEIGHBOURS PROJECT - PROPOSED SERVICES LAYOUT

FIGURE F21 - WALPIRI


STUART HIGHWAY
LILBILI STREET
DALGETY ROAD
Lot 8085
Lot 7710
Lot 5716
EXISTING WATER METER ASSEMBLY TO BE REMOVED FOLLOWING CONNECTION AND COMMISSIONING OF NEW WATER MAIN AND HANDED OVER TO PWC VIA SUPERINTENDENT.
EXISTING DN 100 AC WATER MAIN TO BE CAPPED OFF AND ABANDONED
DROP STRUCTURE NOT REQUIRED IN SURVEY
RE-INSTATE ALL WATER SERVICES CONNECTIONS TO EXISTING LOTS. SERVICES TO REMAIN IN OPERATION UNTIL COMPLETION OF CONSTRUCTION OF NEW WATER MAIN.
RECONNECT EXISTING DN 100 SERVICE CONNECTION
NEW DN 200 PVC-M WATER MAIN (RRJ) (DN 200 DICL UNDER ROAD PAVEMENT)
NEW DN 200 PVC-M WATER MAIN (RRJ) - I.L. 595.40 APPROX. (DN 200 DICL UNDER ROAD PAVEMENT)
EXISTING DN 250 AC WATER MAIN
EXISTING DN 150 AC WATER MAIN TO BE CAPPED OFF AND ABANDONED
END OF EXISTING DN 100 AC WATER MAIN TO BE CAPPED OFF AND ABANDONED.
NEW DN 200 x 90° DICL BEND (SOC-SOC) - I.L. 595.10
EXISTING STORMWATER PIPE - I.L. 595.63
B1/1 90°
B1/2 90°
B2/1 11¼°
B2/2 11¼°
W1 21
T1/1
STN 1
STN 2
STN 3
Bottom Bank
Top Bank
I.L. Drain
Elec. Underground
Kerb I.L.
Light Pole
Power Pole
Sign
Telstra Pit
Fibre Optic and Telstra Cable
Irrigation Valve
Water Meter
Headwall Top 596.135 I.L. 595.995
Gratey Pit Top 596.088
Gratey Pit Top 596.010
Gratey Pit Top 596.088
Telstra Pillar
Fibre Optic ar
Hydrant
Spear Main
Lot Boundary
S.E.P. Top 596.400 I.L. 595.980
S.E.P. Top 596.635 I.L. 595.695
I.L. 595.755
300dia.
I.L. 595.730
I.L. 595.570
450dia.
Gratey Pit Top 596.588
Gratey Pit Top 596.630
Gratey Pit Top 596.610
Gratey Pit Top 596.588
Gratey Pit Top 596.588
Gratey Pit Top 596.588

WATER MAIN SET-OUT COORDINATES

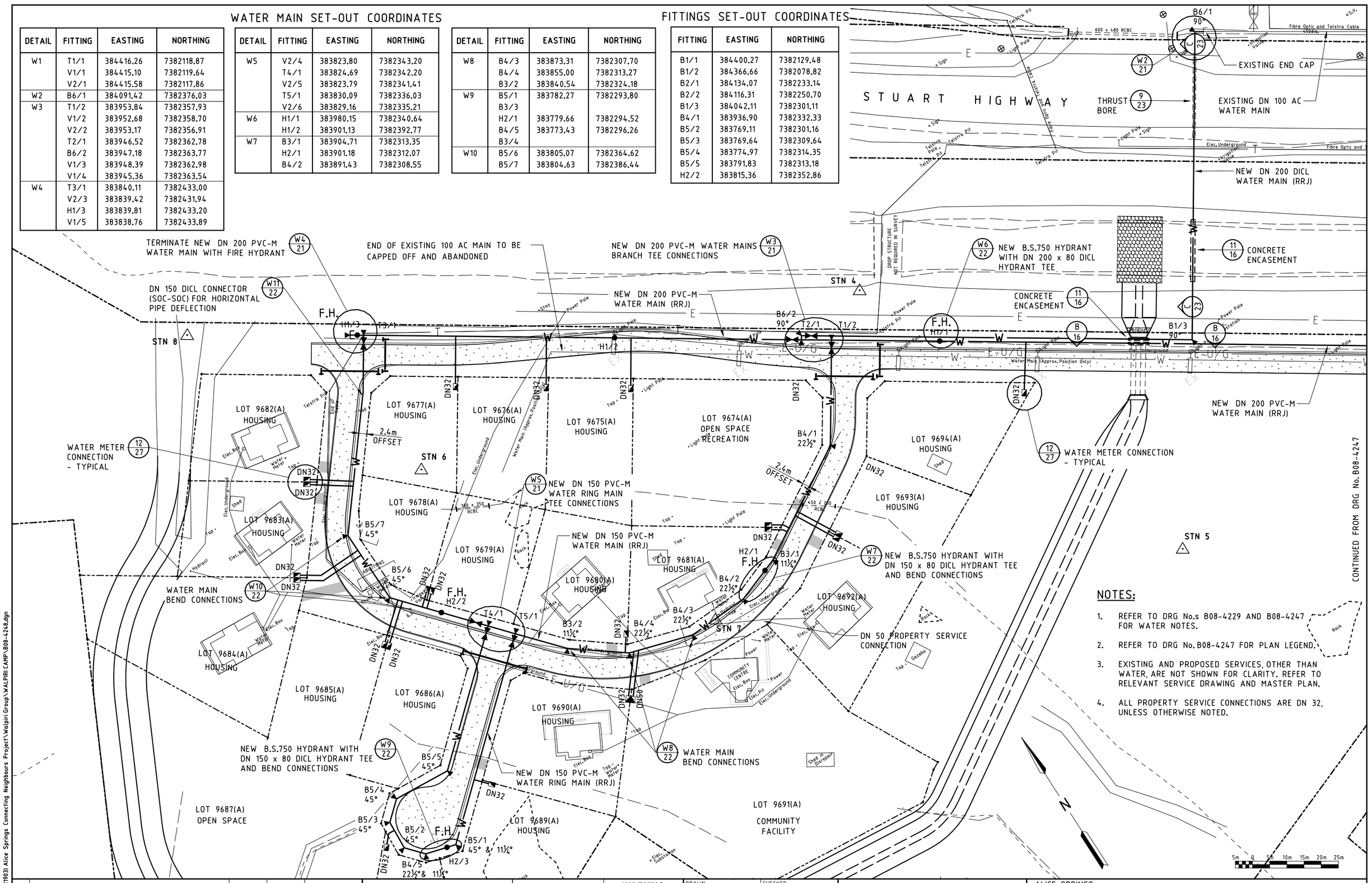
DETAIL	FITTING	EASTING	NORTHING
W1	T1/1	384416.26	7382118.87
	V1/1	384415.10	7382119.64
	V2/1	384415.58	7382117.86
W2	B6/1	384091.42	7382376.03
W3	T1/2	383953.84	7382357.93
	V1/2	383952.68	7382358.70
	V2/2	383953.17	7382356.91
	T2/1	383946.52	7382362.78
	B6/2	383947.18	7382363.77
	V1/3	383948.39	7382362.98
	V1/4	383945.36	7382363.54
W4	T3/1	383840.11	7382433.00
	V2/3	383839.42	7382431.94
	H1/3	383839.81	7382433.20
	V1/5	383838.76	7382433.89

DETAIL	FITTING	EASTING	NORTHING
W5	V2/4	383823.80	7382343.20
	T4/1	383824.69	7382342.20
	V2/5	383823.79	7382341.41
	T5/1	383830.09	7382336.03
	V2/6	383829.16	7382335.21
W6	H1/1	383980.15	7382340.64
	H1/2	383901.13	7382392.77
W7	B3/1	383904.71	7382313.35
	H2/1	383901.18	7382312.07
	B4/2	383891.43	7382308.55

DETAIL	FITTING	EASTING	NORTHING
W8	B4/3	383873.31	7382307.70
	B4/4	383855.00	7382313.27
	B3/2	383840.54	7382324.18
W9	B5/1	383782.27	7382293.80
	B3/3		
	H2/1	383779.66	7382294.52
	B4/5	383773.43	7382296.26
	B3/4		
W10	B5/6	383805.07	7382364.62
	B5/7	383804.63	7382386.44

FITTINGS SET-OUT COORDINATES

FITTING	EASTING	NORTHING
B1/1	384400.27	7382129.48
B1/2	384366.66	7382078.82
B2/1	384134.07	7382233.14
B2/2	384116.31	7382250.70
B1/3	384042.11	7382301.11
B4/1	383936.90	7382332.33
B5/2	383769.11	7382301.16
B5/3	383769.64	7382309.64
B5/4	383774.97	7382314.35
B5/5	383791.83	7382313.18
H2/2	383815.36	7382352.86



NOTES:

1. REFER TO DRG No.s B08-4229 AND B08-4247 FOR WATER NOTES.
2. REFER TO DRG No. B08-4247 FOR PLAN LEGEND.
3. EXISTING AND PROPOSED SERVICES, OTHER THAN WATER, ARE NOT SHOWN FOR CLARITY. REFER TO RELEVANT SERVICE DRAWING AND MASTER PLAN.
4. ALL PROPERTY SERVICE CONNECTIONS ARE DN 32, UNLESS OTHERWISE NOTED.

No.	DESCRIPTION	DATE	NAME	DEPT/COMPANY
	AMENDMENTS			
0	ISSUED FOR CONSTRUCTION	18.07.08	K.P.	DPI - CD - ESB
C	ISSUED FOR APPROVAL	14.12.07	K.P.	DPI - CD - ESB
B	ISSUED FOR 90% DESIGN REVIEW	29.07.07	B.M.	DPI - CD - ESB
A	ISSUED FOR 30% DESIGN REVIEW	05.04.07	K.P.	DPI - CD - ESB

POWER AND WATER

PWC APPROVAL FOR THE CONSTRUCTION OF ALL WATER COMPONENTS SHOWN ON THIS DRAWING IS CONDITIONAL UPON ELECTRICITY SUPPLY VIA OVERHEAD POWER LINES.

This approval does not relieve the developer and consultant from full responsibility for the correctness of the design which should reflect AAPA clearances and conditions. PWC reserves a right for review and new approval when AAPA clearances and conditions are added to the final design drawings.

SIGNED ..... DATE .../.../...

On behalf of Land Development for incorporation into PowerWater's Network.

WARNING

BEWARE OF UNDERGROUND SERVICES

The locations of underground services are approximate only and their exact position should be proven on site. No guarantee is given that all existing services are shown.

DRAWN S.B.		CHECKED	
DATE	MAR. 2007	DATE	
DESIGNED KUMAR P.		CHECKED	
DATE	MAR. 2007	DATE	
DESIGN PROJECT LEADER		PROJECT OFFICER	
DATE		DATE	

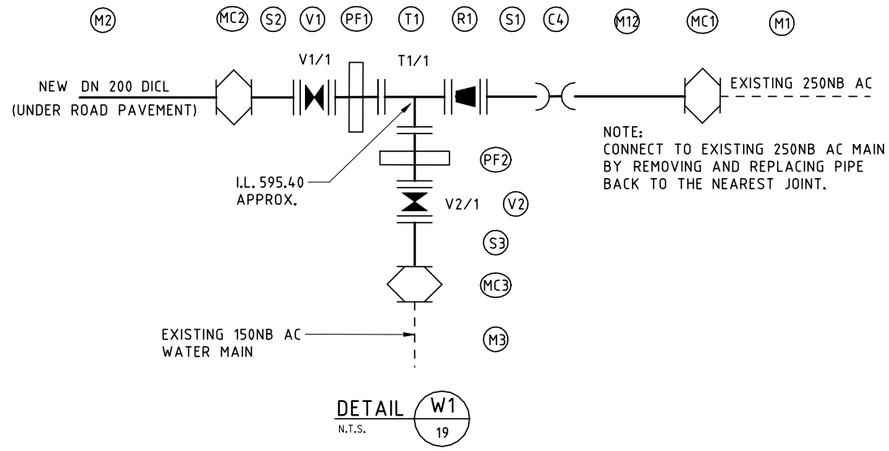
Northern Territory Government
Department of Planning and Infrastructure

ALICE SPRINGS
CONNECTING NEIGHBOURS PROGRAM - ALICE SPRINGS PROJECT
UPGRADE WORKS ON ILPERLE-TYANTHE (WALPIRI CAMP I.D. 048)
LOTS 9674 TO 9694 AND NYEWENTE (TRUCKING YARDS I.D. 129)
LOTS 9696 TO 9731

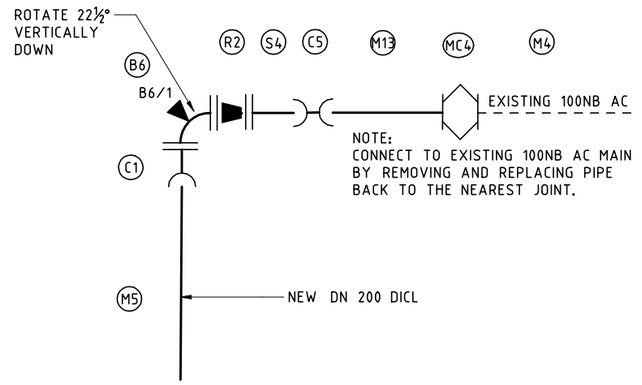
WATER LAYOUT - SHEET 2 (WALPIRI CAMP)

FILE No.	ASSET No.	SHEET No.	DRAWING No.	AMEND.	SHEET SIZE
FOS 22270	-	20 OF 76	B08-4248	0	A1

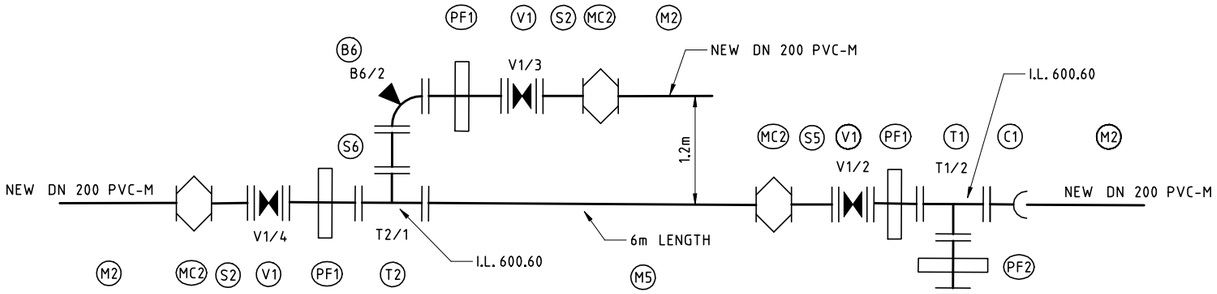
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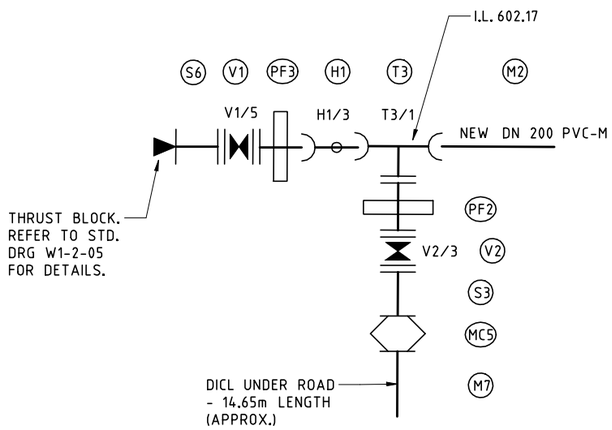
DETAIL W1 (N.T.S.) 19



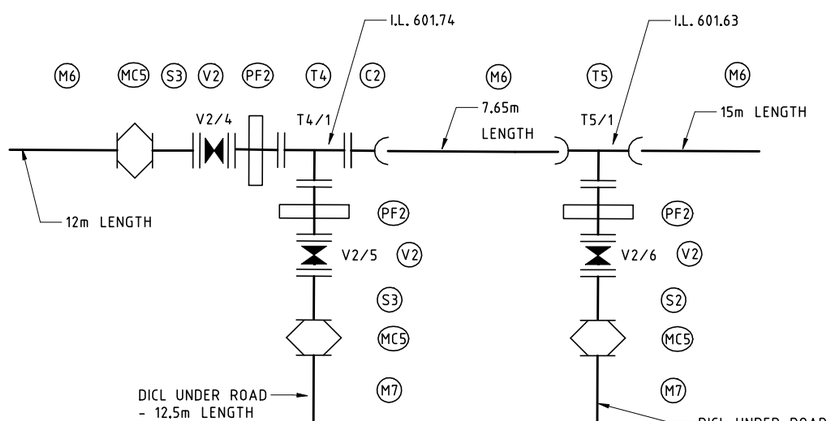
DETAIL W2 (N.T.S.) 20



DETAIL W3 (N.T.S.) 20



DETAIL W4 (N.T.S.) 20



DETAIL W5 (N.T.S.) 20

POINT LEGEND:

- (M1) EXISTING 250NB AC WATER MAIN
- (M2) NEW DN 200 PVC-M SERIES 2 CLASS PN12 WATER MAIN (RRJ)
- (M3) EXISTING 150NB AC WATER MAIN
- (M4) EXISTING 100NB AC WATER MAIN
- (M5) NEW DN 200 DICL CLASS PN35 WATER MAIN (RRJ)
- (M6) NEW DN 150 PVC-M SERIES 1 CLASS PN12 WATER MAIN (RRJ)
- (M7) NEW DN 150 DICL CLASS PN35 WATER MAIN (RRJ)
- (M8) NEW O.D. 219 MSCL WATER MAIN (COLLAR JOINTED)
- (M12) NEW DN 250 PVC-M SERIES 2 CLASS PN12 WATER MAIN (RRJ)
- (M13) NEW DN 100 PVC-M SERIES 1 CLASS PN12 WATER MAIN (RRJ)
- (T1) NEW DN 200x200x150 DICL TEE (FL-FL-FL) WITH THRUST BLOCK
- (T2) NEW DN 200 DICL TEE (FL-FL-FL) WITH THRUST BLOCK
- (T3) NEW DN 200x200x150 DICL TEE (SOC-SOC-FL) WITH THRUST BLOCK
- (T4) NEW DN 150 DICL TEE (FL-FL-FL) WITH THRUST BLOCK
- (T5) NEW DN 150 DICL TEE (SOC-SOC-FL) WITH THRUST BLOCK
- (PF1) NEW DN 200 DICL BRIDGING PIECE (FL-FL) WITH ANCHOR BLOCK AND INTEGRALLY CAST PUDDLE FLANGE - 1m LENGTH. REFER TO DETAIL W12 ON DRG No. B08-4252.
- (PF2) NEW DN 150 DICL BRIDGING PIECE (FL-FL) WITH ANCHOR BLOCK AND INTEGRALLY CAST PUDDLE FLANGE - 0.85m LENGTH. REFER TO DETAIL W12 ON DRG No. B08-4252.
- (PF3) NEW DN 200 DICL BRIDGING PIECE (FL-SP) WITH ANCHOR BLOCK AND INTEGRALLY CAST PUDDLE FLANGE - 1m LENGTH. REFER TO DETAIL W12 ON DRG No. B08-4252.
- (V1) NEW DN 200 PN16 RESILIENT SEATED GATE VALVE (FL-FL) IN VALVE BOX REFER TO PWC ST. DRG's W1-2-03D/1 AND W1-2-03J/2.
- (V2) NEW DN 150 PN16 RESILIENT SEATED GATE VALVE (FL-FL) IN VALVE BOX REFER TO PWC ST. DRG's W1-2-03D/1 AND W1-2-03J/2.
- (R1) NEW DN 250x200 DICL CONCENTRIC TAPER (FL-FL)
- (R2) NEW DN 200x100 DICL CONCENTRIC TAPER (FL-FL)
- (C1) NEW DN 200 DICL CONNECTOR (FL-SOC)
- (C2) NEW DN 150 DICL CONNECTOR (FL-SOC)
- (C3) NEW DN 150 DICL CONNECTOR (SOC-SOC)
- (C4) NEW DN 250 DICL CONNECTOR (SOC-SOC)
- (C5) NEW DN 100 DICL CONNECTOR (SOC-SOC)
- (S1) NEW DN 250 DICL SHORT PIPE (FL-SP) - 0.5m MIN. LENGTH
- (S2) NEW DN 200 DICL SHORT PIPE (FL-SP) - 0.5m MIN. LENGTH
- (S3) NEW DN 150 DICL SHORT PIPE (FL-SP) - 0.5m MIN. LENGTH
- (S4) NEW DN 100 DICL SHORT PIPE (FL-SP) - 0.5m MIN. LENGTH
- (S5) NEW DN 200 DICL SHORT PIPE (FL-SP) - 1m LENGTH
- (S6) NEW DN 200 DICL SHORT PIPE (FL-FL) - 0.65m LENGTH
- (S7) NEW DN 150 DICL SHORT PIPE (SP-SP) - 0.5m MIN. LENGTH
- (MC1) NEW DN 250 'TYCO' VARIGIB MULTI-PURPOSE UNRESTRAINED MECHANICAL COUPLING
- (MC2) NEW DN 200 GIBAULT UNRESTRAINED COUPLING (GJ)
- (MC3) NEW DN 150 'TYCO' VARIGIB MULTI-PURPOSE MECHANICAL COUPLING
- (MC4) NEW DN 100 'TYCO' VARIGIB MULTI-PURPOSE MECHANICAL COUPLING
- (MC5) NEW DN 150 GIBAULT UNRESTRAINED COUPLING
- (B3) NEW DN 150 DICL 11¼° HORIZONTAL BEND AND THRUST BLOCK (SOC-SOC)
- (B4) NEW DN 150 DICL 22½° HORIZONTAL BEND AND THRUST BLOCK (SOC-SOC)
- (B5) NEW DN 150 DICL 45° HORIZONTAL BEND AND THRUST BLOCK (SOC-SOC)
- (B6) NEW DN 200 DICL 90° HORIZONTAL BEND AND THRUST BLOCK (FL-FL)
- (B7) NEW DN 200 DICL 11 1 /4 ° VERTICAL BEND AND ANCHOR BLOCK (SOC-SOC)
- (B8) NEW DN 200 DICL 22½° VERTICAL BEND AND ANCHOR BLOCK (SOC-SOC)
- (H1) NEW B.S.750 HYDRANT WITH DN 200x80 HYDRANT TEE (SOC-SP-FL) - DN 80 DICL RISER LENGTH CUT TO SUIT (FL-FL). REFER TO STD. DRG's W1-2-03A/3 AND W1-2-03F/3 FOR DETAILS.
- (H2) NEW B.S.750 HYDRANT WITH DN 150x80 HYDRANT TEE (SOC-SP-FL) - DN 80 DICL RISER LENGTH CUT TO SUIT (FL-FL). REFER TO STD. DRG's W1-2-03A/3 AND W1-2-03F/3 FOR DETAILS.

No.	DESCRIPTION	DATE	NAME	DEPT/COMPANY
0	ISSUED FOR CONSTRUCTION	18.07.08	K.P.	DPI - CD - ESB
C	ISSUED FOR APPROVAL	30.11.07	K.P.	DPI - CD - ESB
B	ISSUED FOR 90% DESIGN REVIEW	29.07.07	B.M.	DPI - CD - ESB
A	ISSUED FOR 30% DESIGN REVIEW	05.04.07	K.P.	DPI - CD - ESB

AMENDMENTS

POWER AND WATER

PWC APPROVAL FOR THE CONSTRUCTION OF ALL WATER COMPONENTS SHOWN ON THIS DRAWING IS CONDITIONAL UPON ELECTRICITY SUPPLY VIA OVERHEAD POWER LINES.

This approval does not relieve the developer and consultant from full responsibility for the correctness of the design which should reflect AAPA clearances and conditions. PWC reserves a right for review and new approval when AAPA clearances and conditions are added to the final design drawings.

SIGNED ..... DATE ...../...../.....

On behalf of Land Development for incorporation into PowerWater's Network.

DRAWN R.V./S.B./G.T.	CHECKED
DATE OCT. 2007	DATE
DESIGNED KUMAR P.	CHECKED
DATE OCT. 2007	DATE
DESIGN PROJECT LEADER	PROJECT OFFICER
DATE	DATE

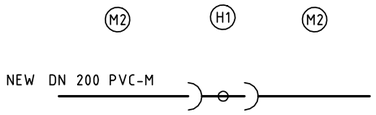
Northern Territory Government
Department of Planning and Infrastructure

ALICE SPRINGS
CONNECTING NEIGHBOURS PROGRAM - ALICE SPRINGS PROJECT
UPGRADE WORKS ON ILPERLE-TYANHTE (WALPIRI CAMP I.D. 048)
LOTS 9674 TO 9694 AND NYEWENTE (TRUCKING YARDS I.D. 129)
LOTS 9696 TO 9731

WATER DETAILS - SHEET 1 (WALPIRI CAMP)

FILE No.	ASSET No.	SHEET No.	DRAWING No.	AMEND.	SHEET SIZE
FOS 22270		21 OF 76	B08-4249	0	A1

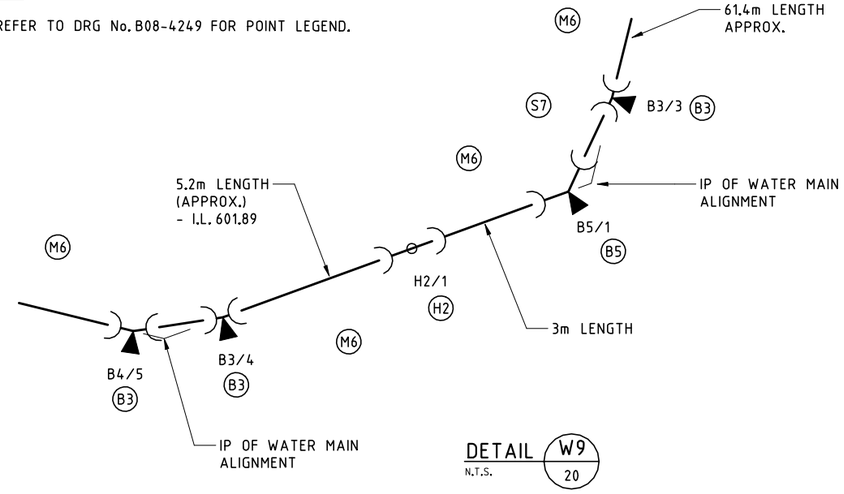
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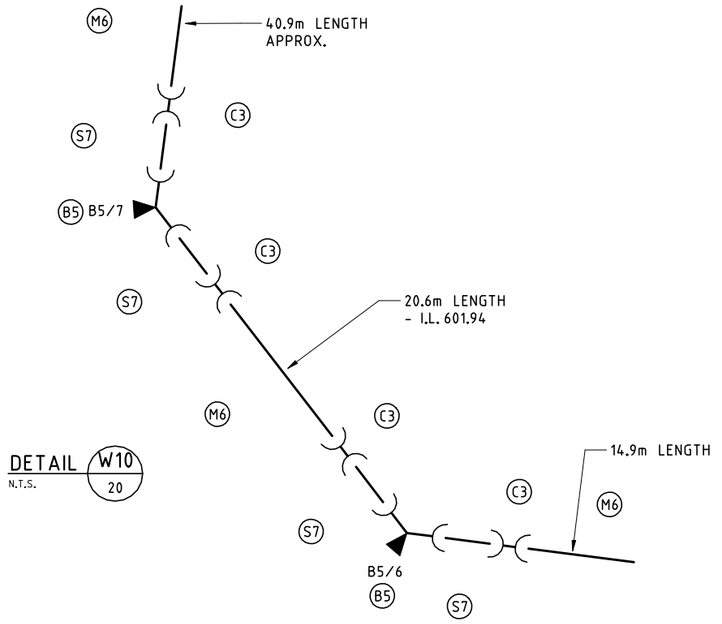
DETAIL W6 (20) N.T.S.

NOTES:

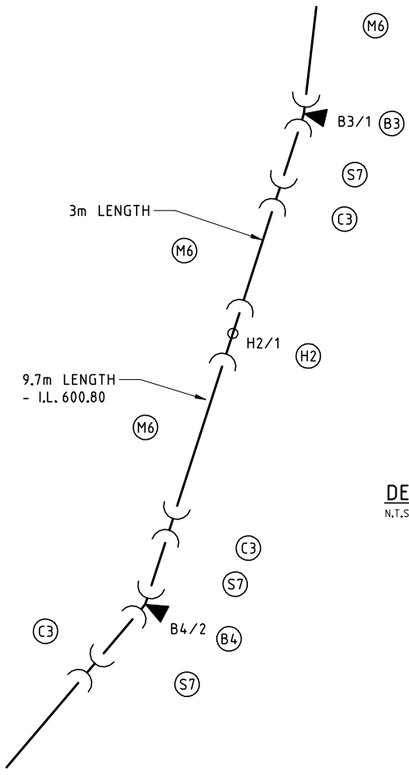
1. REFER TO DRG No. B08-4249 FOR POINT LEGEND.



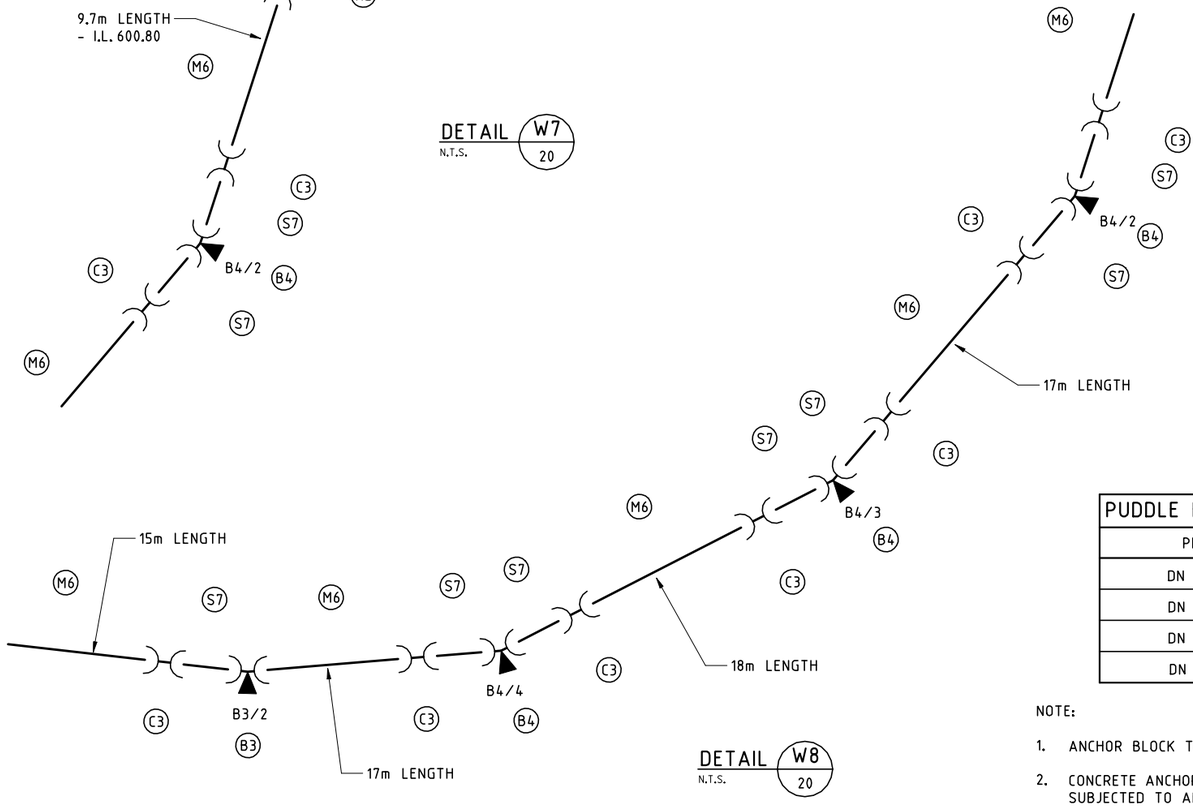
DETAIL W9 (20) N.T.S.



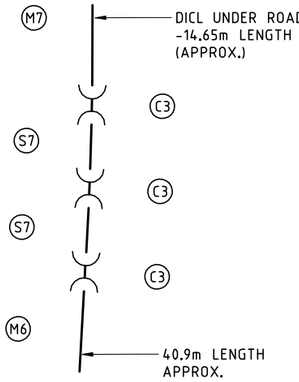
DETAIL W10 (20) N.T.S.



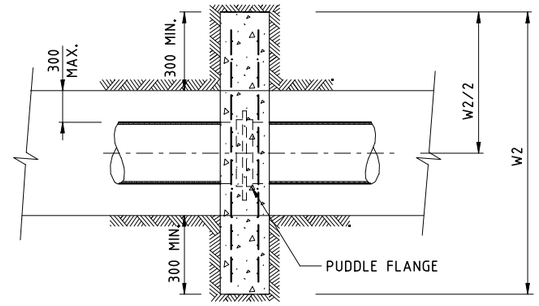
DETAIL W7 (20) N.T.S.



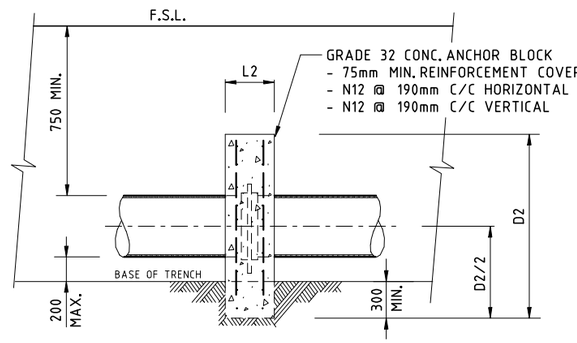
DETAIL W8 (20) N.T.S.



DETAIL W11 (20) N.T.S.



PLAN



ELEVATION

INTEGRALLY CAST PUDDLE FLANGE WITH ANCHOR BLOCK

DETAIL W12 (21,63) N.T.S.

PUDDLE FLANGED PIPE WITH ANCHOR BLOCK				
PIPE	W2	D2	L2	VOL. (m^3)
DN 450	1.50	1.40	0.40	0.84
DN 250	1.40	1.20	0.40	0.67
DN 200	1.40	1.20	0.40	0.67
DN 150	1.40	1.20	0.35	0.59

NOTE:

1. ANCHOR BLOCK TO BE POURED AGAINST UNDISTURBED GROUND.
2. CONCRETE ANCHOR BLOCKS TO BE CURED FOR A MINIMUM OF 7 DAYS BEFORE BEING SUBJECTED TO ANY THRUST LOAD UNLESS OTHERWISE DIRECTED BY SUPERINTENDENT.
3. REFER TO RELEVANT CLAUSES OF THE SPECIFICATION FOR EMBEDMENT AND BACKFILL DETAILS.

No.	DESCRIPTION	DATE	NAME	DEPT/COMPANY
0	ISSUED FOR CONSTRUCTION	18.07.08	K.P.	DPI - CD - ESB
C	ISSUED FOR APPROVAL	30.11.07	K.P.	DPI - CD - ESB
B	ISSUED FOR 90% DESIGN REVIEW	29.07.07	B.M.	DPI - CD - ESB
A	ISSUED FOR 30% DESIGN REVIEW	05.04.07	K.P.	DPI - CD - ESB

AMENDMENTS

POWER AND WATER

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SIGNED ..... DATE .../.../...

On behalf of Land Development for incorporation into PowerWater's Network.

DRAWN R.V./S.B./G.T. DATE OCT. 2007	CHECKED DATE
DESIGNED KUMAR P. DATE OCT. 2007	CHECKED DATE
DESIGN PROJECT LEADER DATE	PROJECT OFFICER DATE

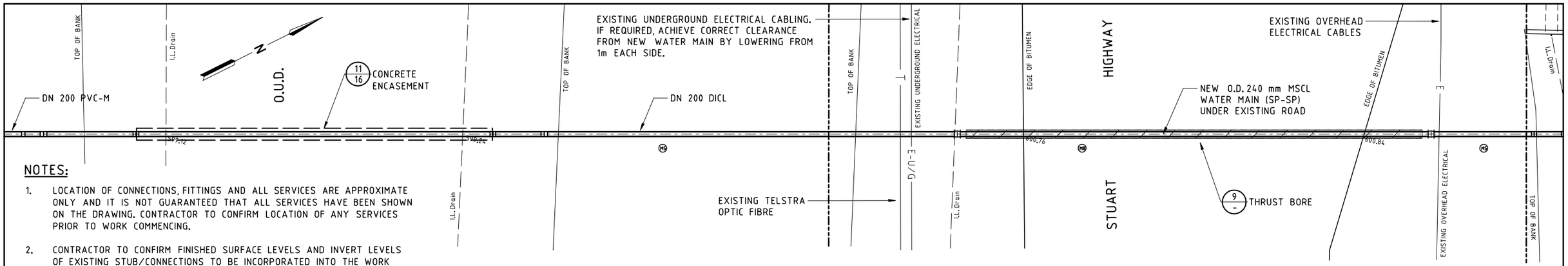
Northern Territory Government
Department of Planning and Infrastructure

ALICE SPRINGS
CONNECTING NEIGHBOURS PROGRAM - ALICE SPRINGS PROJECT
UPGRADE WORKS ON ILPERLE-TYANHTE (WALPIRI CAMP I.D. 048)
LOTS 9674 TO 9694 AND NYEWENTE (TRUCKING YARDS I.D. 129)
LOTS 9696 TO 9731

WATER DETAILS - SHEET 2 (WALPIRI CAMP)

FILE No.	ASSET No.	SHEET No.	DRAWING No.	AMEND.	SHEET SIZE
FOS 22270		22 OF 76	B08-4250	0	A1

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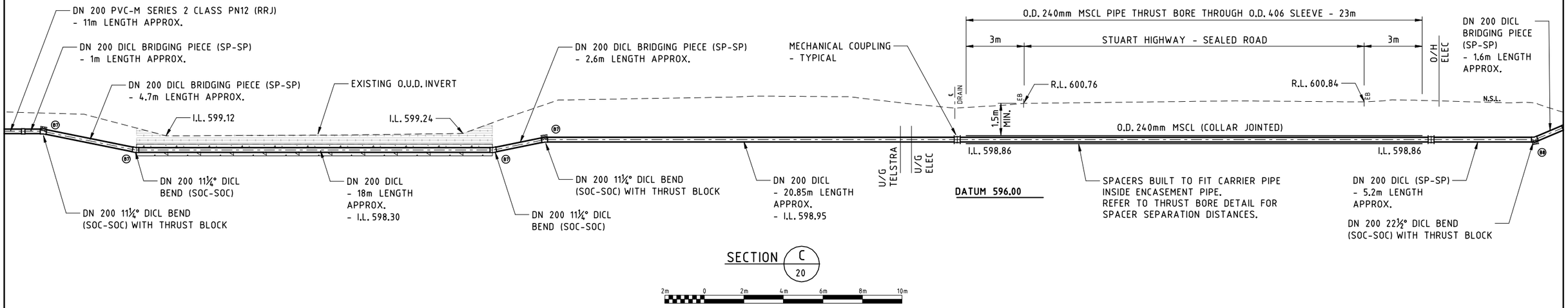


PLAN

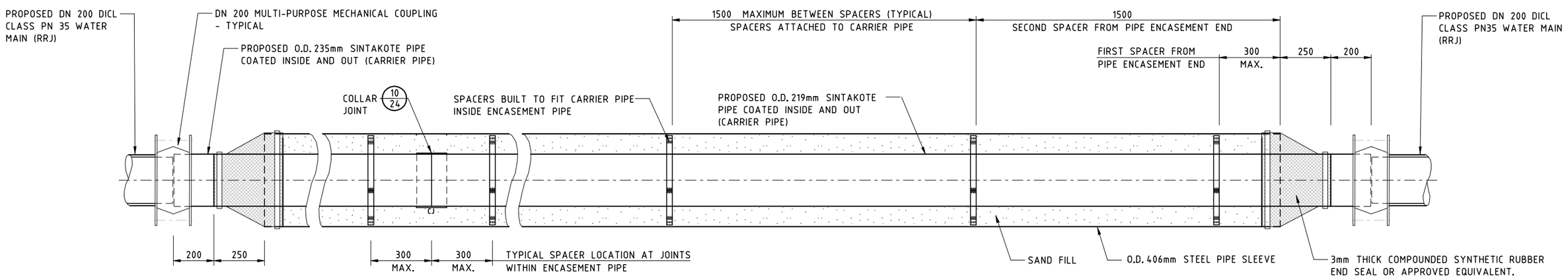
STUART HIGHWAY/O.U.D. CROSSING

NOTES:

1. LOCATION OF CONNECTIONS, FITTINGS AND ALL SERVICES ARE APPROXIMATE ONLY AND IT IS NOT GUARANTEED THAT ALL SERVICES HAVE BEEN SHOWN ON THE DRAWING. CONTRACTOR TO CONFIRM LOCATION OF ANY SERVICES PRIOR TO WORK COMMENCING.
2. CONTRACTOR TO CONFIRM FINISHED SURFACE LEVELS AND INVERT LEVELS OF EXISTING STUB/CONNECTIONS TO BE INCORPORATED INTO THE WORK PRIOR TO WORK COMMENCING.
3. CONTRACTOR IS TO CONFIRM SERVICE CLEARANCES WITH THE SUPERINTENDENT ON SITE.



SECTION C/20



STUART HIGHWAY THRUST BORE DETAIL

DETAIL 9/-, 20 N.T.S.

No.	DESCRIPTION	DATE	NAME	DEPT/COMPANY
0	ISSUED FOR CONSTRUCTION	18.07.08	K.P.	DPI - CD - ESB
A	ISSUED FOR 90% DESIGN REVIEW	21.04.08	K.P.	DPI - CD - ESB

AMENDMENTS

POWER AND WATER

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SIGNED ..... DATE .../.../...

On behalf of Land Development for incorporation into PowerWater's Network.

WARNING

BEWARE OF UNDERGROUND SERVICES

The locations of underground services are approximate only and their exact position should be proven on site. No guarantee is given that all existing services are shown.

DRAWN S.B.		CHECKED	
DATE	MAY 2008	DATE	
DESIGNED KUMAR P.		CHECKED	
DATE	MAY 2008	DATE	
DESIGN PROJECT LEADER		PROJECT OFFICER	
DATE		DATE	

Northern Territory Government

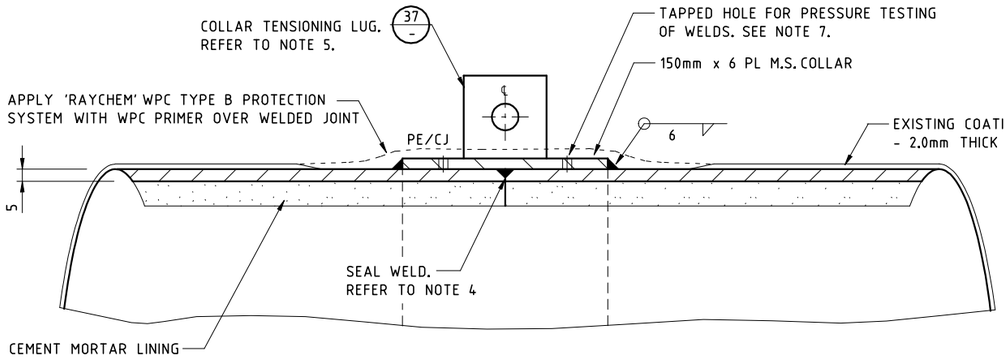
Department of Planning and Infrastructure

ALICE SPRINGS
CONNECTING NEIGHBOURS PROGRAM - ALICE SPRINGS PROJECT
UPGRADE WORKS ON ILPERLE-TYANTHE (WALPIRI CAMP I.D. 048)
LOTS 9674 TO 9694 AND NYEWENTE (TRUCKING YARDS I.D. 129)
LOTS 9696 TO 9731

WATER DETAIL - STUART HIGHWAY (WALPIRI CAMP)

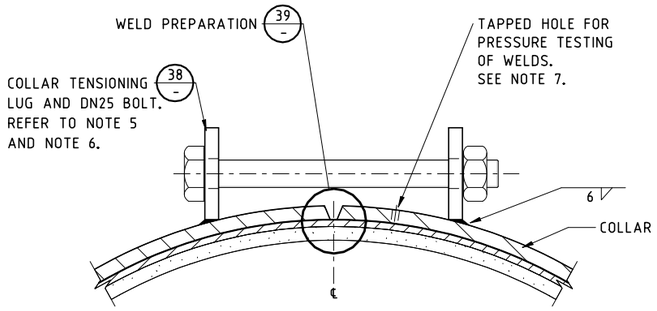
FILE No.	ASSET No.	SHEET No.	DRAWING No.	AMEND	SHEET SIZE
FOS 22270		23 OF 76	B08-4251	0	A1

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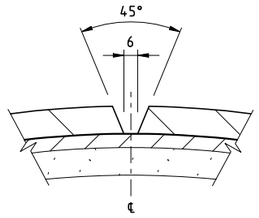


WELD DETAIL - COLLAR JOINT (CJ)

DETAIL 37 / 64 — N.T.S.

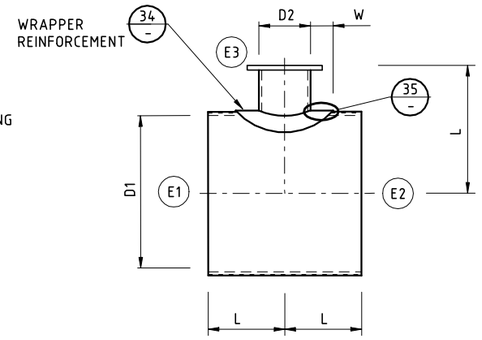


VIEW OF COLLAR IN WELDING POSITION



WELD PREPARATION

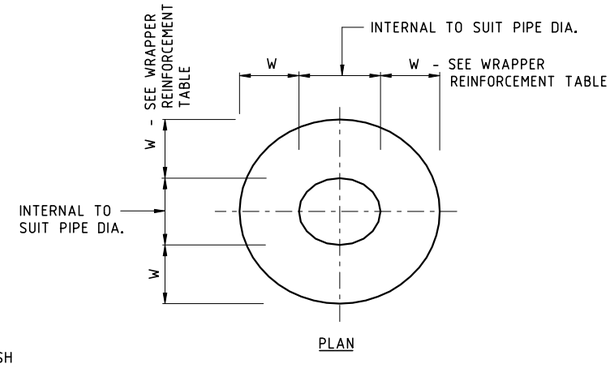
DETAIL 39 — N.T.S.



MSCL TAKE-OFF TEE

DETAIL 33 / 62,64 — N.T.S.

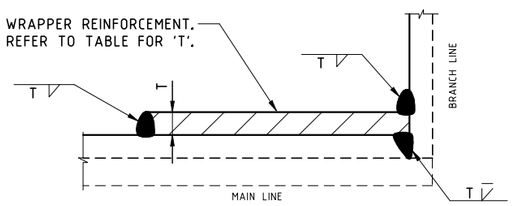
MSCL TAKE-OFF TEE WRAPPER REINFORCEMENT TABLE								
D1	D2	E1	E2	E3	L	W	T	TOTAL NUMBER
450	450	PE	PE	PE	450	100	6	2
450	150	PE	PE	FL	450	100	6	2



PLAN

TAKE-OFF TEE - WRAPPER REINFORCEMENT

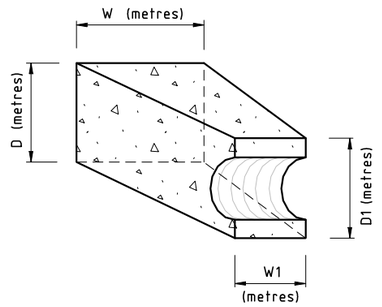
DETAIL 34 — N.T.S.

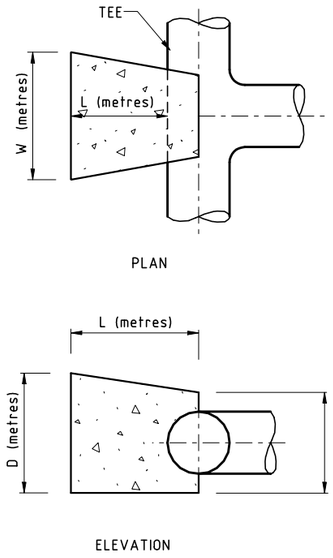


WRAPPER PLATE WELDING DETAIL

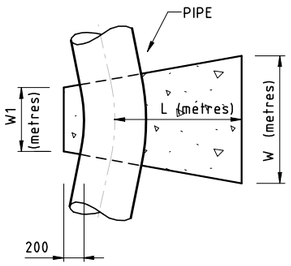
DETAIL 35 — N.T.S.

TEES WITH THRUST BLOCKS						
TEE	W	W1	D	D1	L	VOL. (m^3)
450 x 450	2.60	0.55	1.20	0.91	0.75	2.65
450 x 150	0.50	0.40	0.73	0.75	0.75	0.51

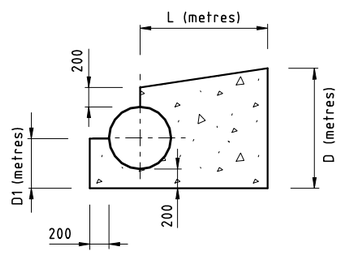




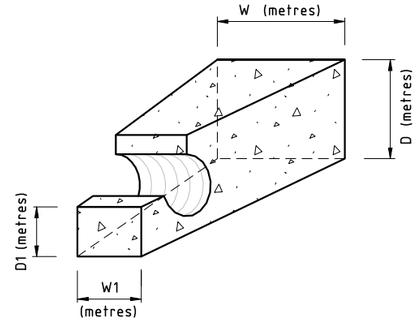
TEES



PLAN



ELEVATION



BENDS

BENDS WITH THRUST BLOCKS							
DN	DEFLECTION ANGLE	W1	W	D1	D	L	VOL. (m^3)
450	90°	0.55	3.50	0.75	1.20	0.75	3.45

THRUST BLOCK DETAILS

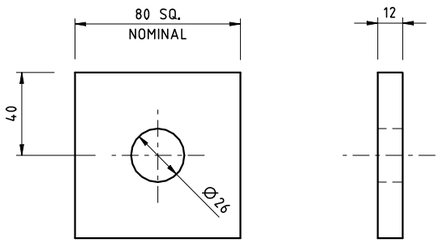
DETAIL 36 / 63,64 — N.T.S.

THRUST BLOCK NOTES:

1. THRUST BLOCK TO BE POURED AGAINST UNDISTURBED GROUND.
2. CONCRETE THRUST BLOCKS TO BE CURED FOR A MINIMUM OF 7 DAYS BEFORE BEING SUBJECTED TO ANY THRUST LOAD, UNLESS OTHERWISE DIRECTED BY SUPERINTENDENT.

WELDED COLLAR DETAILS		
PIPELINE - DN	T	C
450	6	8

T = PIPE WALL THICKNESS
C = COLLAR THICKNESS



COLLAR TENSIONING LUG

DETAIL 38 — N.T.S.

WELD NOTES:

1. STEEL USED FOR COLLARS TO BE IN ACCORDANCE WITH A.S.3678.
2. ALL WELDED JOINTS TO BE MECHANICAL WIRE BRUSH CLEANED AND COATED WITH INORGANIC ZINC SILICATE PRIMER - MINIMUM 75 MICRONS
3. ALL WELDS TO BE OF SPECIAL CLASS TO A.S.1554.1, UNLESS NOTED OTHERWISE.
4. SEAL WELD SHALL CONSIST OF A SINGLE CONTINUOUS WELD BEAD AROUND THE PIPE. THE WELD BEAD SHALL BE GROUND FLUSH WITH THE PIPE OUTSIDE DIAMETER PRIOR TO FITTING COLLAR.
5. REMOVE BOLTS AND WELDING LUGS AFTER COLLAR HAS BEEN WELDED. GRIND FINISHED SURFACES FLUSH.
6. WRAP AROUND CHAIN TENSIONERS MAY BE USED AS AN ALTERNATIVE TO COLLAR TENSIONING LUGS.
7. PROVIDE A TAPPED HOLE TO ALLOW THE GAP UNDER THE COLLAR TO BE PRESSURISED TO CONFIRM COMPLETE WELDING INTEGRITY. HOLE TO BE PLUGGED ON COMPLETION OF TEST.
8. ALL MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE RELEVANT S.A.A. CODES, EXCEPT WHERE VARIED BY THE PROJECT SPECIFICATION.

No.	DESCRIPTION	DATE	NAME	DEPT/COMPANY
0	ISSUED FOR CONSTRUCTION	18.07.08	K.P.	DPI - CD - ESB
A	ISSUED FOR 90% DESIGN REVIEW	21.04.08	K.P.	DPI - CD - ESB

AMENDMENTS

POWER AND WATER

PWC APPROVAL FOR THE CONSTRUCTION OF ALL WATER AND SEWER COMPONENTS SHOWN ON THIS DRAWING IS CONDITIONAL UPON ELECTRICITY SUPPLY VIA OVERHEAD POWER LINES.

This approval does not relieve the developer and consultant from full responsibility for the correctness of the design which should reflect AAPA clearances and conditions. PWC reserves a right for review and new approval when AAPA clearances and conditions are added to the final design drawings.

SIGNED ..... DATE ...../...../.....

On behalf of Land Development
for incorporation into PowerWater's Network.

DRAWN S.B.	DATE MAY 2008	CHECKED DATE
DESIGNED KUMAR P.	DATE MAY 2008	CHECKED DATE
DESIGN PROJECT LEADER	DATE	PROJECT OFFICER DATE

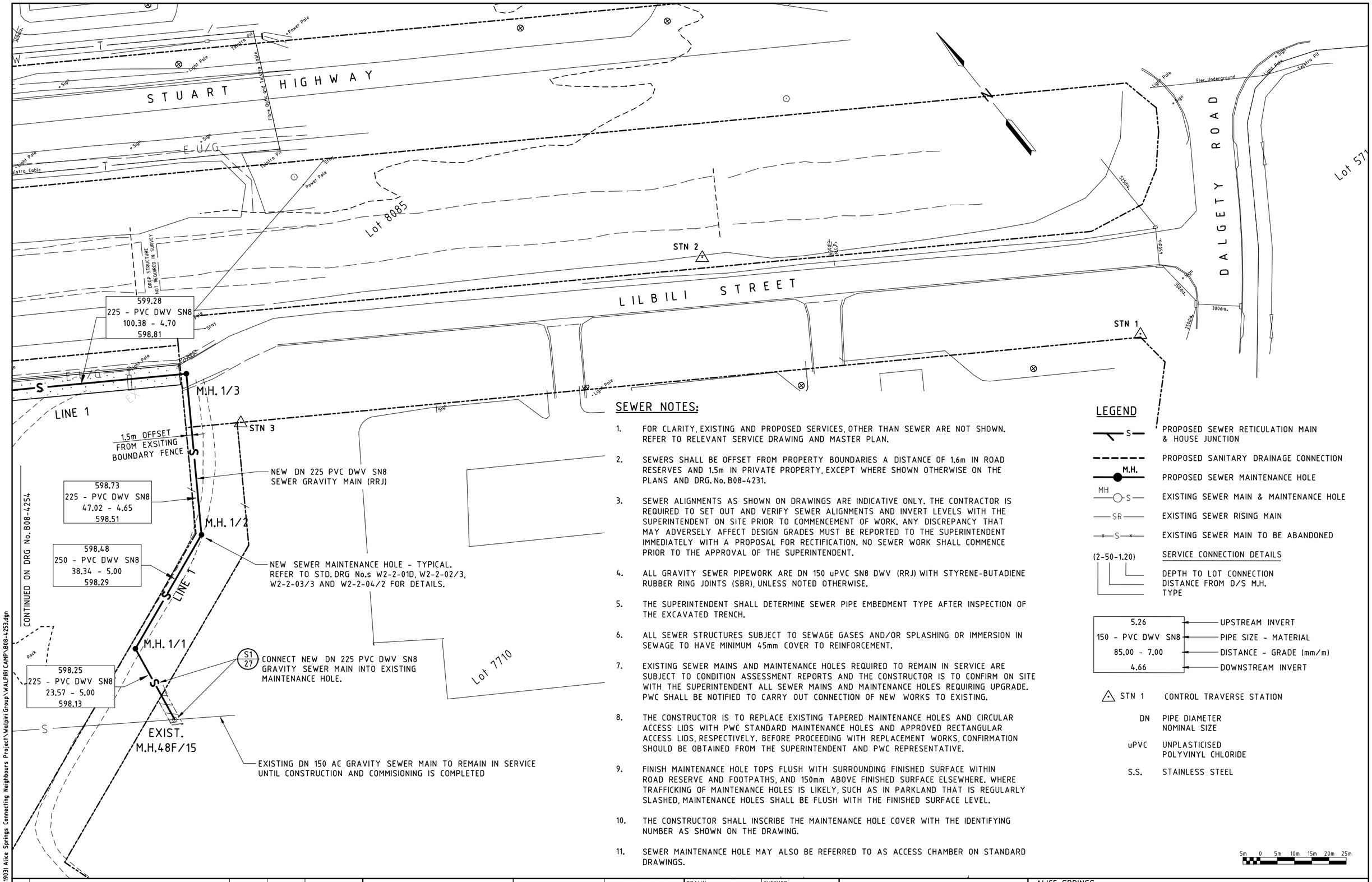
Northern Territory Government
Department of Planning and Infrastructure

ALICE SPRINGS
CONNECTING NEIGHBOURS PROGRAM - ALICE SPRINGS PROJECT
UPGRADE WORKS ON ILPERLE-TYANTHE (WALPIRI CAMP I.D. 048)
LOTS 9674 TO 9694 AND NYEWENTE (TRUCKING YARDS I.D. 129)
LOTS 9696 TO 9731

WATER DETAILS (WALPIRI CAMP AND TRUCKING YARDS)

FILE No.	ASSET No.	SHEET No.	DRAWING No.	AMEND.	SHEET SIZE
FOS 22270		24 OF 76	B08-4252	0	A1

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SEWER NOTES:

1. FOR CLARITY, EXISTING AND PROPOSED SERVICES, OTHER THAN SEWER ARE NOT SHOWN. REFER TO RELEVANT SERVICE DRAWING AND MASTER PLAN.
2. SEWERS SHALL BE OFFSET FROM PROPERTY BOUNDARIES A DISTANCE OF 1.6m IN ROAD RESERVES AND 1.5m IN PRIVATE PROPERTY, EXCEPT WHERE SHOWN OTHERWISE ON THE PLANS AND DRG. No. B08-4231.
3. SEWER ALIGNMENTS AS SHOWN ON DRAWINGS ARE INDICATIVE ONLY. THE CONTRACTOR IS REQUIRED TO SET OUT AND VERIFY SEWER ALIGNMENTS AND INVERT LEVELS WITH THE SUPERINTENDENT ON SITE PRIOR TO COMMENCEMENT OF WORK. ANY DISCREPANCY THAT MAY ADVERSELY AFFECT DESIGN GRADES MUST BE REPORTED TO THE SUPERINTENDENT IMMEDIATELY WITH A PROPOSAL FOR RECTIFICATION. NO SEWER WORK SHALL COMMENCE PRIOR TO THE APPROVAL OF THE SUPERINTENDENT.
4. ALL GRAVITY SEWER PIPEWORK ARE DN 150 uPVC SN8 DWV (RRJ) WITH STYRENE-BUTADIENE RUBBER RING JOINTS (SBR), UNLESS NOTED OTHERWISE.
5. THE SUPERINTENDENT SHALL DETERMINE SEWER PIPE EMBEDMENT TYPE AFTER INSPECTION OF THE EXCAVATED TRENCH.
6. ALL SEWER STRUCTURES SUBJECT TO SEWAGE GASES AND/OR SPLASHING OR IMMERSION IN SEWAGE TO HAVE MINIMUM 45mm COVER TO REINFORCEMENT.
7. EXISTING SEWER MAINS AND MAINTENANCE HOLES REQUIRED TO REMAIN IN SERVICE ARE SUBJECT TO CONDITION ASSESSMENT REPORTS AND THE CONSTRUCTOR IS TO CONFIRM ON SITE WITH THE SUPERINTENDENT ALL SEWER MAINS AND MAINTENANCE HOLES REQUIRING UPGRADE. PWC SHALL BE NOTIFIED TO CARRY OUT CONNECTION OF NEW WORKS TO EXISTING.
8. THE CONSTRUCTOR IS TO REPLACE EXISTING TAPERED MAINTENANCE HOLES AND CIRCULAR ACCESS LIDS WITH PWC STANDARD MAINTENANCE HOLES AND APPROVED RECTANGULAR ACCESS LIDS, RESPECTIVELY. BEFORE PROCEEDING WITH REPLACEMENT WORKS, CONFIRMATION SHOULD BE OBTAINED FROM THE SUPERINTENDENT AND PWC REPRESENTATIVE.
9. FINISH MAINTENANCE HOLE TOPS FLUSH WITH SURROUNDING FINISHED SURFACE WITHIN ROAD RESERVE AND FOOTPATHS, AND 150mm ABOVE FINISHED SURFACE ELSEWHERE. WHERE TRAFFICKING OF MAINTENANCE HOLES IS LIKELY, SUCH AS IN PARKLAND THAT IS REGULARLY SLASHED, MAINTENANCE HOLES SHALL BE FLUSH WITH THE FINISHED SURFACE LEVEL.
10. THE CONSTRUCTOR SHALL INSCRIBE THE MAINTENANCE HOLE COVER WITH THE IDENTIFYING NUMBER AS SHOWN ON THE DRAWING.
11. SEWER MAINTENANCE HOLE MAY ALSO BE REFERRED TO AS ACCESS CHAMBER ON STANDARD DRAWINGS.

LEGEND

- S — PROPOSED SEWER RETICULATION MAIN & HOUSE JUNCTION
- PROPOSED SANITARY DRAINAGE CONNECTION
- M.H. — PROPOSED SEWER MAINTENANCE HOLE
- MH — S — EXISTING SEWER MAIN & MAINTENANCE HOLE
- SR — EXISTING SEWER RISING MAIN
- S — EXISTING SEWER MAIN TO BE ABANDONED

(2-50-1.20) SERVICE CONNECTION DETAILS
- DEPTH TO LOT CONNECTION
- DISTANCE FROM D/S M.H.
- TYPE

5.26 — UPSTREAM INVERT
150 - PVC DWV SN8 — PIPE SIZE - MATERIAL
85.00 - 7.00 — DISTANCE - GRADE (mm/m)
4.66 — DOWNSTREAM INVERT

STN 1 — CONTROL TRAVERSE STATION

DN — PIPE DIAMETER NOMINAL SIZE
uPVC — UNPLASTICISED POLYVINYL CHLORIDE
S.S. — STAINLESS STEEL

5m 0 5m 10m 15m 20m 25m

No.	DESCRIPTION	DATE	NAME	DEPT/COMPANY
0	ISSUED FOR CONSTRUCTION	18.07.08	K.P.	DPI - CD - ESB
C	ISSUED FOR APPROVAL	14.12.07	K.P.	DPI - CD - ESB
B	ISSUED FOR 90% DESIGN REVIEW	29.07.07	B.M.	DPI - CD - ESB
A	ISSUED FOR 30% DESIGN REVIEW	05.04.07	K.P.	DPI - CD - ESB

AMENDMENTS

POWER AND WATER

PWC APPROVAL FOR THE CONSTRUCTION OF ALL SEWER COMPONENTS SHOWN ON THIS DRAWING IS CONDITIONAL UPON ELECTRICITY SUPPLY VIA OVERHEAD POWER LINES.

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SIGNED ..... DATE ..../..../....

On behalf of Land Development for incorporation into PowerWater's Network.

WARNING

BEWARE OF UNDERGROUND SERVICES

The locations of underground services are approximate only and their exact position should be proven on site. No guarantee is given that all existing services are shown.

DRAWN	S.B.	CHECKED	
DATE	MAR. 2007	DATE	
DESIGNED	KUMAR P.	CHECKED	
DATE	MAR. 2007	DATE	
DESIGN PROJECT LEADER		PROJECT OFFICER	
DATE		DATE	

Northern Territory Government
Department of Planning and Infrastructure

ALICE SPRINGS
CONNECTING NEIGHBOURS PROGRAM - ALICE SPRINGS PROJECT
UPGRADE WORKS ON ILPERLE-TYANTHE (WALPIRI CAMP I.D. 048)
LOTS 9674 TO 9694 AND NYEWENTE (TRUCKING YARDS I.D. 129)
LOTS 9696 TO 9731

SEWER LAYOUT - SHEET 1 (WALPIRI CAMP)

FILE No.	ASSET No.	SHEET No.	DRAWING No.	AMEND.	SHEET SIZE
FOS 22270	-	25 OF 76	B08-4253	0	A1

05/08/2008 2:11:38 PM W:\(21903) Alice Springs Connecting Neighbours Project\Walpiri Group\WALPIRI CAMP\B08-4253.dgn

PROVIDE DN 150 PVC DWV SN8 STUB CONNECTION TO NEW M.H. 1/7 FOR FUTURE CONNECTION.
- LENGTH OF STUB 1.8m
- I.L. 601.37

LOT SEWER SERVICE CONNECTION - TYPICAL (12/27)

NEW SEWER MAINTENANCE HOLE - TYPICAL. REFER TO STD. DRG No.s W2-2-01D, W2-2-02/3, W2-2-03/3 AND W2-2-04/2 FOR DETAILS.

NEW DN 150 PVC DWV SN8 SEWER GRAVITY MAIN (RRJ)

NEW DN 225 PVC DWV SN8 SEWER GRAVITY MAIN (RRJ)

CONTINUED FROM DRG No. B08-4253

EXSITING DN 150 uPVC GRAVITY SEWER MAIN TO REMAIN IN SERVICE

PROVIDE DN 150 PVC DWV SN8 STUB CONNECTION TO NEW M.H. 1/4 FOR FUTURE CONNECTION.
- LENGTH OF STUB 4.41m
- I.L. 599.53

NEW DN 150 PVC DWV SN8 SEWER GRAVITY MAIN

PROVIDE DN 150 PVC DWV SN8 STUB CONNECTION TO NEW M.H. 3/1 FOR FUTURE CONNECTION.
- LENGTH OF STUB 12.54m
- I.L. 601.97

601.34
150 - PVC DWV SN8
89.00 - 6.00
600.83

599.28
225 - PVC DWV SN8
100.38 - 4.70
598.81

599.90
150 - PVC DWV SN8
91.05 - 6.00
599.36

600.21
150 - PVC DWV SN8
26.10 - 8.00
600.00

600.78
150 - PVC DWV SN8
74.65 - 6.00
600.36

600.62
150 - PVC DWV SN8
50.72 - 7.00
600.26

600.93
150 - PVC DWV SN8
37.05 - 7.00
600.67

602.00
150 - PVC DWV SN8
57.00 - 8.75
601.50

601.45
150 - PVC DWV SN8
47.95 - 9.80
600.98

601.89
150 - PVC DWV SN8
56.61 - 6.30
601.53

M.H. 1/4, M.H. 1/5, M.H. 1/6, M.H. 1/7, M.H. 2/1, M.H. 2/2, M.H. 2/3, M.H. 2/4, M.H. 2/5, M.H. 3/1

LINE 1, LINE 2, LINE 3

STN 5, STN 6, STN 7, STN 8

9.60m OFFSET

6.53m OFFSET

LOT 9674(A) OPEN SPACE RECREATION

LOT 9675(A) HOUSING

LOT 9676(A) HOUSING

LOT 9677(A) HOUSING

LOT 9678(A) HOUSING

LOT 9679(A) HOUSING

LOT 9680(A) HOUSING

LOT 9681(A) HOUSING

LOT 9682(A) HOUSING

LOT 9683(A) HOUSING

LOT 9684(A) HOUSING

LOT 9685(A) HOUSING

LOT 9686(A) HOUSING

LOT 9687(A) OPEN SPACE

LOT 9688(A) HOUSING

LOT 9689(A) HOUSING

LOT 9690(A) HOUSING

LOT 9691(A) COMMUNITY FACILITY

LOT 9692(A) HOUSING

LOT 9693(A) HOUSING

LOT 9694(A) HOUSING

(1-44.75-1.81) (2-87.50-1.08) (4-55.50-1.35) (4-55.50-1.37) (1-32.00-1.22) (1-10.60-1.27) (1-18.35-1.57) (1-68.00-1.49) (1-17.90-1.18) (1-44.94-1.16) (1-1.20-1.15) (1-30.40-1.17) (1-25.50-1.00) (1-24.65-1.26) (1-21.50-1.24) (1-10.50-1.12) (1-8.50-1.00) (1-5.00-1.07) (1-37.40-0.80) (1-1.70-0.97)

SEWER MAINTENANCE HOLE (MH) SET-OUT TABLE

MAINTENANCE HOLE	EASTING	NORTHING	F.S.L.	I.L. IN	I.L. OUT
LINE 1					
1/7	383822.04	7382438.62	603.42	601.37	601.34
1/6	383897.96	7382392.18	602.52	600.83	600.78
1/5	383958.53	7382348.53	601.47	600.36	599.90
1/4	384034.52	7382298.38	600.41	599.36	599.28
1/3	384118.30	7382243.08	599.89	598.81	598.73
1/2	384092.40	7382203.84	599.90	598.51	598.48
1/1	384056.62	7382190.08	600.38	598.29	598.25
48F/15 (EXIST.)	384052.62	7382166.85	600.24	598.13	598.10
LINE 2					
2/5	383787.39	7382380.02	603.40	-	602.00
2/4	383821.39	7382334.30	602.65	601.50	601.45
2/3	383859.40	7382305.07	602.12	600.98	600.93
2/2	383896.44	7382304.07	601.78	600.67	600.62
2/1	383939.86	7382330.29	601.60	600.26	600.21
1/5	383958.53	7382348.53	601.47	600.00	599.90
LINE 3					
3/1	383779.00	7382296.79	602.81	601.97	601.89
2/4	383821.39	7382334.30	602.65	601.53	601.45

NOTES:

1. FOR SEWER NOTES AND PLAN LEGEND REFER TO DRG No. B08-4253.

5m 0 5m 10m 15m 20m 25m

No.	DESCRIPTION	DATE	NAME	DEPT/COMPANY
0	ISSUED FOR CONSTRUCTION	18.07.08	K.P.	DPI - CD - ESB
C	ISSUED FOR APPROVAL	14.12.07	K.P.	DPI - CD - ESB
B	ISSUED FOR 90% DESIGN REVIEW	29.07.07	B.M.	DPI - CD - ESB
A	ISSUED FOR 30% DESIGN REVIEW	05.04.07	K.P.	DPI - CD - ESB

AMENDMENTS

POWER AND WATER

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SIGNED ..... DATE .../.../...

On behalf of Land Development for incorporation into PowerWater's Network.

WARNING

BEWARE OF UNDERGROUND SERVICES

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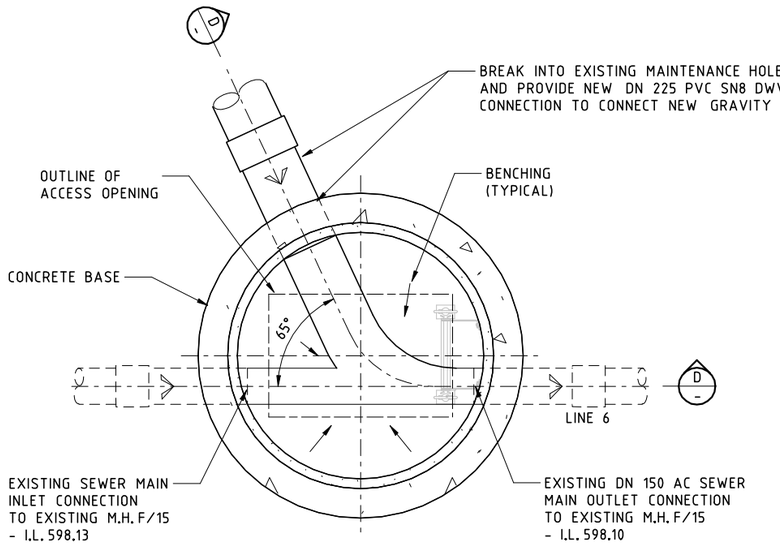
DRAWN	S.B.	CHECKED	
DATE	MAR. 2007	DATE	
DESIGNED	KUMAR P.	CHECKED	
DATE	MAR. 2007	DATE	
DESIGN PROJECT LEADER		PROJECT OFFICER	
DATE		DATE	

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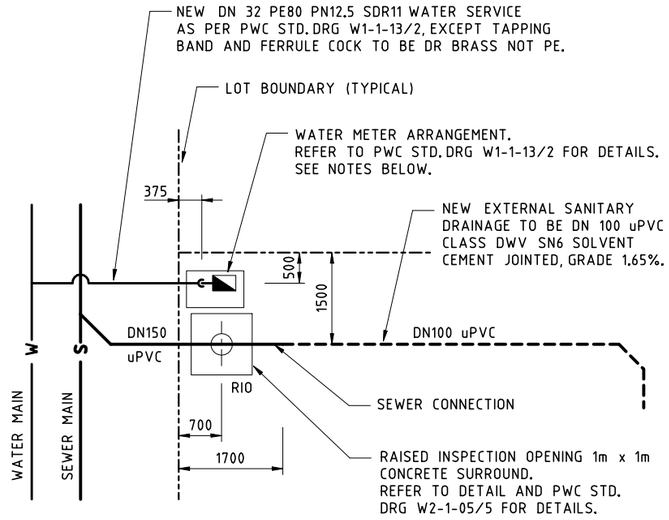
ALICE SPRINGS
CONNECTING NEIGHBOURS PROGRAM - ALICE SPRINGS PROJECT
UPGRADE WORKS ON ILPERLE-TYANTHE (WALPIRI CAMP I.D. 048)
LOTS 9674 TO 9694 AND NYEWENTE (TRUCKING YARDS I.D. 129)
LOTS 9696 TO 9731
SEWER LAYOUT - SHEET 2
(WALPIRI CAMP)

FILE No.	ASSET No.	SHEET No.	DRAWING No.	AMEND.	SHEET SIZE
FOS 22270	-	26 OF 76	B08-4254	0	A1

05/08/2008 2:12:09 PM W:\(21903) Alice Springs Connecting Neighbours Project\Walpiri Group\WALPIRI CAMP\B08-4254.dgn

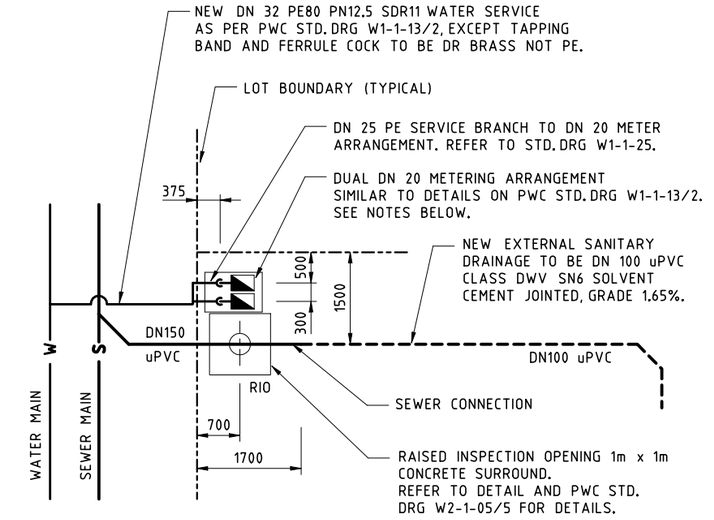


PLAN



SINGLE LOT WATER/SEWER SERVICE CONNECTIONS

DETAIL 12 (N.T.S.) — 20,26,61 62,65,66

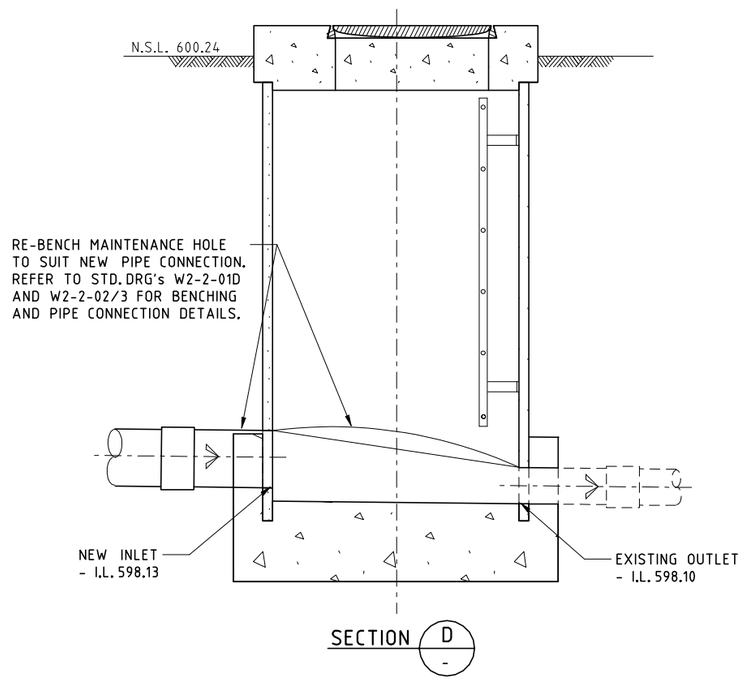


DUPLEX LOT WATER/SEWER SERVICE CONNECTIONS

DETAIL 13 (N.T.S.) — 61, 65

NOTE:

1. EXISTING HOUSING LOTS SHALL HAVE WATER METERS INSTALLED AT CONSTRUCTION OF NEW WORKS.
2. NEW HOUSING LOTS SHALL BE PROVIDED WITH A BRIDGING PIECE FOR METER CONNECTION AT CONSTRUCTION OF NEW WORKS. METERS TO BE INSTALLED ON FUTURE DEVELOPMENT OF LOTS.



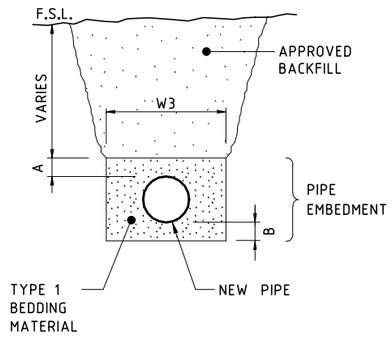
EXISTING M.H. F/15 PIPE ARRANGEMENT

DETAIL S1 (N.T.S.) — 25,28

WATER/SEWER TRENCH WIDTH DIMENSIONS						
PIPE DIAMETER	TRENCH WIDTH 'W3'		EMBEDMENT DIMENSIONS			
			TYPE 1		TYPE 2	
NOMINAL SIZE	MIN.	MAX.	A	B	A	B
450 (W)	900	1200	100	100	150	150
225 (S)	600	900	100	100	150	150
200 (W)	600	900	100	100	150	150
150 (W/S)	450	750	100	100	150	150

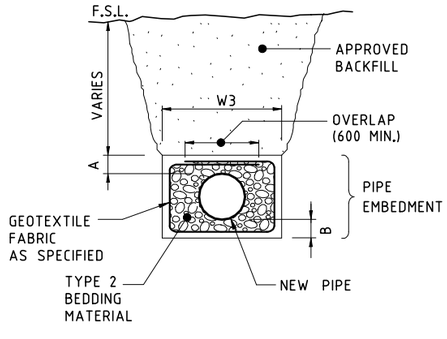
NOTES:

1. REFER TO RELEVANT CLAUSES OF THE SPECIFICATION FOR EMBEDMENT AND BACKFILL DETAILS.
2. 'W3' (TRENCH WIDTH) IS MEASURED AT LEVEL OF TOP OF PIPE.



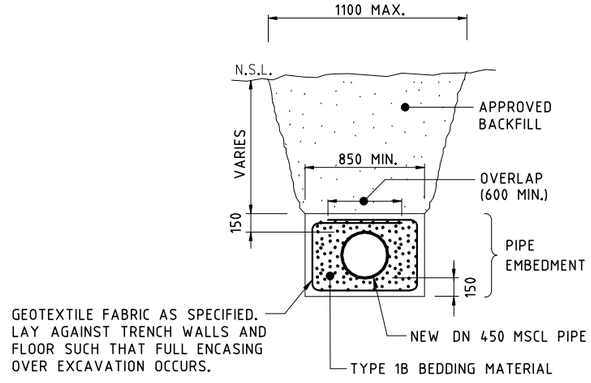
TYPE 1 EMBEDMENT DETAIL

DETAIL 14 (N.T.S.) — 68, 69 70



TYPE 2 EMBEDMENT DETAIL

DETAIL 15 (N.T.S.) — 30,68.69 70



TYPE 4 EMBEDMENT DETAIL

DETAIL - (N.T.S.) — 61, 63

No.	DESCRIPTION	DATE	NAME	DEPT/COMPANY
0	ISSUED FOR CONSTRUCTION	18.07.08	K.P.	DPI - CD - ESB
C	ISSUED FOR APPROVAL	14.12.07	K.P.	DPI - CD - ESB
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AMENDMENTS

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SIGNED ..... DATE .../.../...

On behalf of Land Development for incorporation into PowerWater's Network.

	DRAWN	CHECKED
	S.B.	
	DATE MAR. 2007	DATE
	DESIGNED	CHECKED
	KUMAR P.	
	DATE MAR. 2007	DATE
	DESIGN PROJECT LEADER	PROJECT OFFICER
	DATE	DATE

Northern Territory Government
Department of Planning and Infrastructure

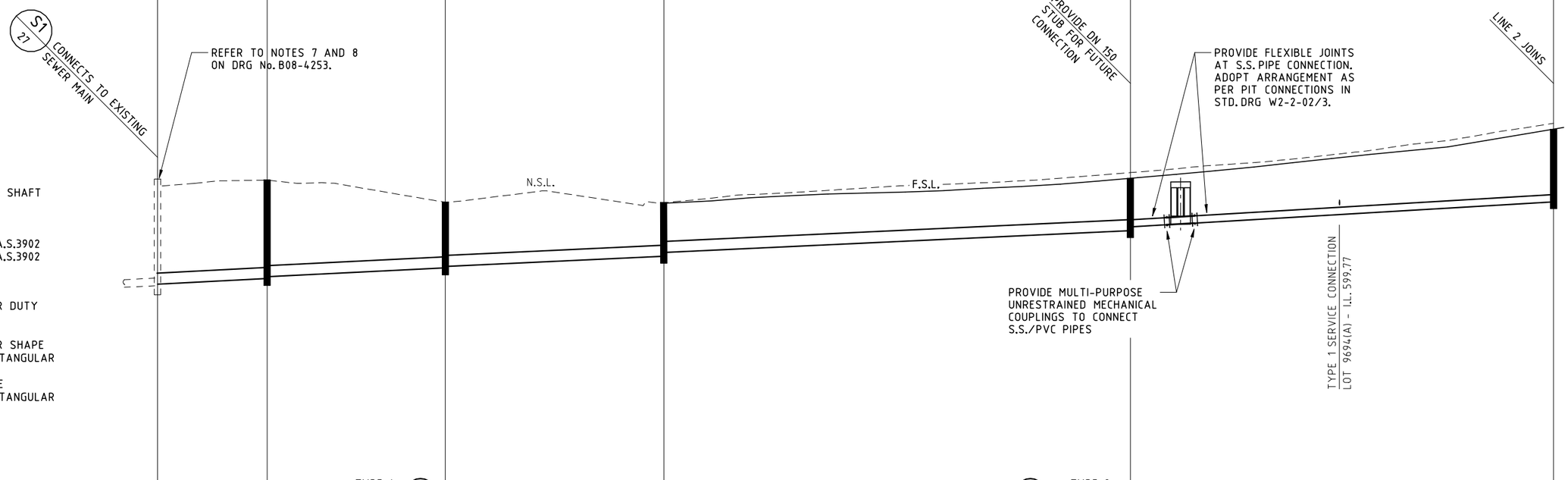
ALICE SPRINGS
CONNECTING NEIGHBOURS PROGRAM - ALICE SPRINGS PROJECT
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LOTS 9674 TO 9694 AND NYEWENTE (TRUCKING YARDS I.D. 129)
LOTS 9696 TO 9731

SEWER AND COMMON SERVICES DETAILS (WALPIRI CAMP AND TRUCKING YARDS)

FILE No.	ASSET No.	SHEET No.	DRAWING No.	AMEND	SHEET SIZE
FOS 22108		27 OF 76	B08-4255	0	A1

05/08/2008 2:12:38 PM W:\(21903) Alice Springs Connecting Neighbours Project\Walpiri Group\WALPIRI CAMP\B08-4255.dgn

SEWER MAINTENANCE HOLE No.	EXISTING 48F/15	1/1	1/2	1/3	1/4	1/5
CHAMBER SHAPE, COVER AND DUTY	CRD	CRD	CRD	CRD	CRD	CRD
CHAMBER DROP TYPE	1	1	1	1	1	1



LEGEND:

T.M.S. - TERMINAL MAINTENANCE SHAFT
(REFER TO STD. DRG W2-1-06)
PROVIDE A LOCKABLE LID.

B - CAST IRON CLASS 'B' TO A.S.3902
D - CAST IRON CLASS 'D' TO A.S.3902

CRC
- MAINTENANCE HOLE COVER DUTY (REFER TO W2-2-01D)
- MAINTENANCE HOLE COVER SHAPE C = CIRCULAR R = RECTANGULAR
- MAINTENANCE HOLE SHAPE C = CIRCULAR R = RECTANGULAR

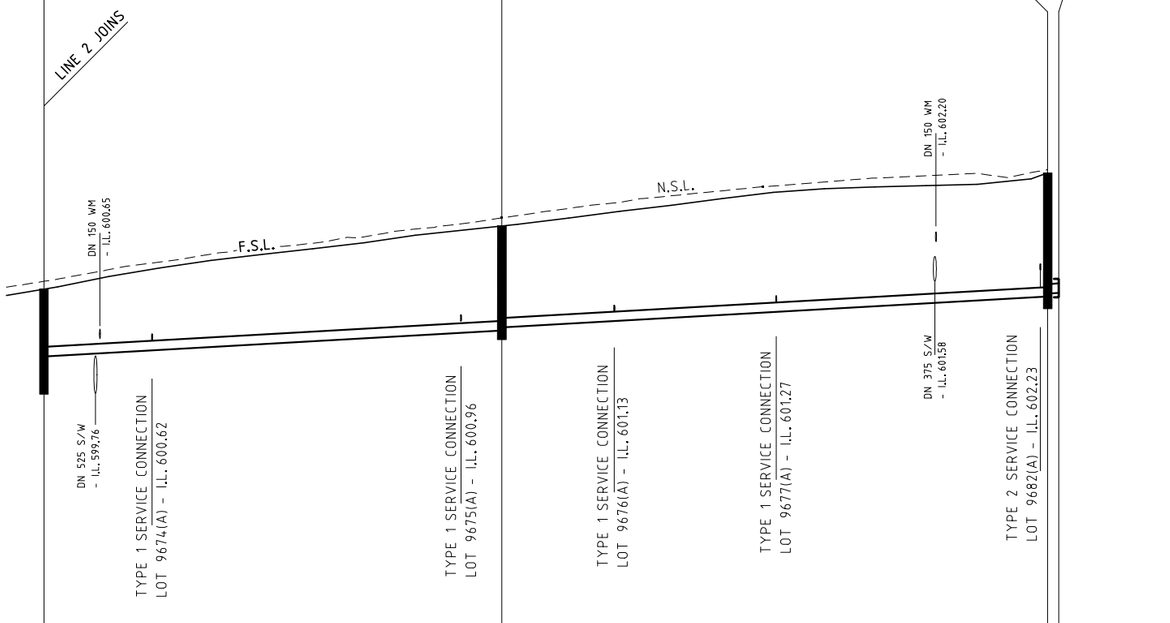
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LEGEND:

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(REFER TO STD. DRG W2-1-06)
PROVIDE A LOCKABLE LID.

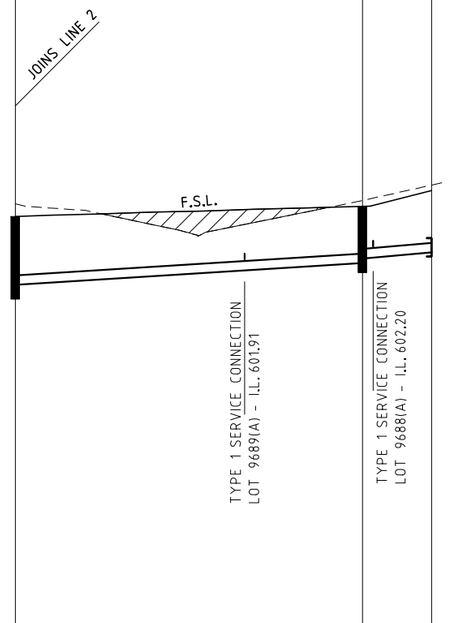
B - CAST IRON CLASS 'B' TO A.S.3902
D - CAST IRON CLASS 'D' TO A.S.3902

CRC
- MAINTENANCE HOLE COVER DUTY (REFER TO W2-2-01D)
- MAINTENANCE HOLE COVER SHAPE C = CIRCULAR R = RECTANGULAR
- MAINTENANCE HOLE SHAPE C = CIRCULAR R = RECTANGULAR



SEWER ACCESS CHAMBER No.	1/5	1/6	1/7	ENDCAP
CHAMBER SHAPE, COVER AND DUTY	CRD	CRD	CRD	
CHAMBER DROP TYPE	2	1	1	
EMBEDMENT TYPE	15/27	TYPE 2		
PIPE DIA (mm), TYPE AND JOINTING	DN 150 - PVC DWV SN8 - RRJ			
PIPE LENGTH (m) AND GRADE (mm/m)	74.65 - 6.00	89.00 - 6.00		1.80 - 8.00
LOCATION	LILBILI STREET SERVICE ROAD UNDER NEW	- ROAD 'A' ROAD RESERVE SEALED ROAD		
DATUM R.L. 592.00				
DEPTH TO INVERT	1.56 / 1.10	- / -	1.75 / 1.70	- / - / 1.97 / 1.94 / 2.08
INVERT LEVEL	599.90 / 600.36	600.50 / 600.64	600.78 / 600.83	600.97 / 601.12 / 601.34 / 601.37 / 601.38
FINISHED SURFACE LEVEL	601.46	- / -	602.53 / -	- / 603.31 / 603.46
DESIGN CHAINAGE	300.36	325.00 / 350.00	375.01 / 400.00	425.00 / 464.01 / 465.81

LINE 1



2/4	3/1	ENDCAP	
CRD	CRD		
1	1		
15/27	TYPE 2		
DN 150 - PVC DWV SN8 - RRJ			
56.61 - 6.30			12.54 - 8.00
ROAD 'B' ROAD RESERVE	ROAD 'C' ROAD RESERVE UNDER NEW SEALED ROAD		
1.20 / 1.12	- / 0.93 / 0.85 / 1.00		
601.45 / 601.53	601.69 / 601.89 / 601.97 / 602.07		
602.65	- / 602.82 / 603.07		
0.00	25.00 / 56.61 / 69.15		

LINE 3

HORIZONTAL 10m 10m 20m 30m 40m 50m
VERTICAL 1m 0 1m 2m 3m 4m 5m

No.	DESCRIPTION	DATE	NAME	DEPT/COMPANY
0	ISSUED FOR CONSTRUCTION	18.07.08	K.P.	DPI - CD - ESB
C	ISSUED FOR APPROVAL	14.12.07	K.P.	DPI - CD - ESB
B	ISSUED FOR 90% DESIGN REVIEW	29.07.07	B.M.	DPI - CD - ESB
A	ISSUED FOR 30% DESIGN REVIEW	05.04.07	K.P.	DPI - CD - ESB

AMENDMENTS

POWER AND WATER

PWC APPROVAL FOR THE CONSTRUCTION OF ALL SEWER COMPONENTS SHOWN ON THIS DRAWING IS CONDITIONAL UPON ELECTRICITY SUPPLY VIA OVERHEAD POWER LINES.

This approval does not relieve the developer and consultant from full responsibility for the correctness of the design which should reflect AAPA clearances and conditions. PWC reserves a right for review and new approval when AAPA clearances and conditions are added to the final design drawings.

SIGNED ..... DATE ..../..../....

On behalf of Land Development for incorporation into PowerWater's Network.

WARNING
BEWARE OF UNDERGROUND SERVICES
The locations of underground services are approximate only and their exact position should be proven on site. No guarantee is given that all existing services are shown.

DRAWN R.V./S.B.	DATE MAR. 2007	CHECKED	DATE
DESIGNED KUMAR P.	DATE MAR. 2007	CHECKED	DATE
DESIGN PROJECT LEADER	DATE	PROJECT OFFICER	DATE

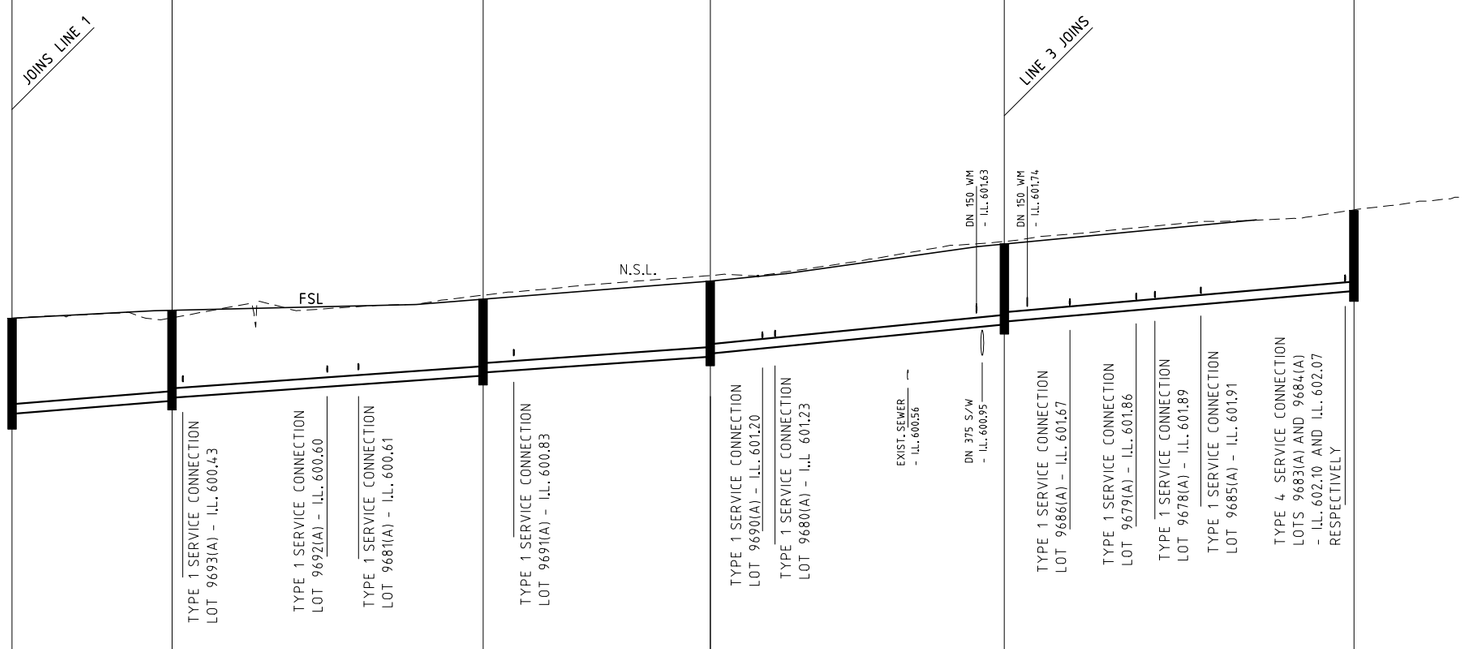
Northern Territory Government
Department of Planning and Infrastructure

ALICE SPRINGS
CONNECTING NEIGHBOURS PROGRAM - ALICE SPRINGS PROJECT
UPGRADE WORKS ON ILPERLE-TYANTHE (WALPIRI CAMP I.D. 048)
LOTS 9674 TO 9694 AND NYEWENTE (TRUCKING YARDS I.D. 129)
LOTS 9696 TO 9731
SEWER LONGITUDINAL SECTION (WALPIRI CAMP)
- LINE 1 CH. 300.36 TO CH. 465.81 AND LINE 3

FILE No.	ASSET No.	SHEET No.	DRAWING No.	AMEND.	SHEET SIZE
FOS 22270		29 OF 76	B08-4257	0	A1

05/08/2008 2:13:40 PM W:\21903) Alice Springs Connecting Neighbours Project\Walpiri Group\WALPIRI CAMP\B08-4257.dgn

SEWER ACCESS CHAMBER No.	1/5	2/1	2/2	2/3	2/4	2/5
CHAMBER SHAPE, COVER AND DUTY	CRH	CRH	CRH	CRH	CRH	CRD
CHAMBER DROP TYPE	1	1	1	1	1	1



EMBEDMENT TYPE	TYPE 2 (15/27)					
PIPE DIA (mm), TYPE AND JOINTING	DN 150 - PVC DWV SN8 - RRJ					
PIPE LENGTH (m) AND GRADE (mm/m)	26.10 - 8.00	50.72 - 7.00	37.05 - 7.00	47.95 - 9.80	57.00 - 8.75	
LOCATION	ROAD 'B' ROAD RESERVE - UNDER			NEW SEALED ROAD	ROAD 'B' ROAD RESERVE	
DATUM R.L. 592.00						
DEPTH TO INVERT	1.56	1.36 / 1.27	1.22 / 1.09	1.04 / 1.25	1.20 / 1.32	1.27 / 1.43
INVERT LEVEL	599.90	600.00 / 600.21	600.26 / 600.62	600.67 / 600.93	600.98 / 601.45	601.50 / 602.00
FINISHED SURFACE LEVEL	601.46	601.55	601.78	602.25	602.77	603.33
DESIGN CHAINAGE	0.00	26.10	76.82	113.87	161.82	218.80

LEGEND:

T.M.S. - TERMINAL MAINTENANCE SHAFT
(REFER TO STD. DRG W2-1-06)
PROVIDE A LOCKABLE LID.

B - CAST IRON CLASS 'B' TO A.S.3902
D - CAST IRON CLASS 'D' TO A.S.3902

CRC
- MAINTENANCE HOLE COVER DUTY (REFER TO W2-2-01D)
- MAINTENANCE HOLE COVER SHAPE C = CIRCULAR R = RECTANGULAR
- MAINTENANCE HOLE SHAPE C = CIRCULAR R = RECTANGULAR

LINE 2

HORIZONTAL 10m 0 10m 20m 30m 40m 50m
VERTICAL 1m 0 1m 2m 3m 4m 5m

No.	DESCRIPTION	DATE	NAME	DEPT/COMPANY
0	ISSUED FOR CONSTRUCTION	18.07.08	K.P.	DPI - CD - ESB
C	ISSUED FOR APPROVAL	14.12.07	K.P.	DPI - CD - ESB
B	ISSUED FOR 90% DESIGN REVIEW	29.07.07	B.M.	DPI - CD - ESB
A	ISSUED FOR 30% DESIGN REVIEW	05.04.07	K.P.	DPI - CD - ESB

AMENDMENTS

POWER AND WATER

PWC APPROVAL FOR THE CONSTRUCTION OF ALL SEWER COMPONENTS SHOWN ON THIS DRAWING IS CONDITIONAL UPON ELECTRICITY SUPPLY VIA OVERHEAD POWER LINES.

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SIGNED ..... DATE .../.../...

On behalf of Land Development for incorporation into PowerWater's Network.

WARNING
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DRAWN R.V./S.B.	DATE MAR. 2007	CHECKED	DATE
DESIGNED KUMAR P.	DATE MAR. 2007	CHECKED	DATE
DESIGN PROJECT LEADER	DATE	PROJECT OFFICER	DATE

Northern Territory Government
Department of Planning and Infrastructure

ALICE SPRINGS
CONNECTING NEIGHBOURS PROGRAM - ALICE SPRINGS PROJECT
UPGRADE WORKS ON ILPERLE-TYANTHE (WALPIRI CAMP I.D. 048)
LOTS 9674 TO 9694 AND NYEWENTE (TRUCKING YARDS I.D. 129)
LOTS 9696 TO 9731
SEWER LONGITUDINAL SECTION (WALPIRI CAMP) - LINE 2

FILE No.	ASSET No.	SHEET No.	DRAWING No.	AMEND	SHEET SIZE
FOS 22270		30 OF 76	B08-4258	0	A1

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Transformer data

Group	Com Id	Location	Community Name	Dwellings No. (Funded Dwellings)	Dwellings No. (Bennett Design)	New Houses ** (Future Demand)	Primary Volatge Level (KV)	PWC Substation ID	PWC Test Number	Transformer size (KVA)	KVA Total dwellings @ 4.5KVA	KVA Total dwellings @ 7KVA	Comments
1	290	Darwin	Bagot	55	55		11	1924	1735	300	247.5	385	
	344	Darwin	Knuckey Lagoons	18	19	2	11	1771	2163	100	85.5	133	
	347	Darwin	Kulaluk	19	19		11	1092	10607	50	85.5	133	
	403	Darwin	Palmerston Town Camp	20	16		22	10196	10245	100	90	140	Two transformers for this Town Camp. Transformers are not in boundary of Town Camp [The nearest transformers data to Town Camp are highlighted in yellow].
							22	265	11645	25			
	412	Darwin	Railway Dam (One Mile Dam)	5	6	2	11	1041	4378	200	27	42	Transformer is not in boundary of Town Camp [The nearest transformer data to Town Camp is highlighted in yellow].
	427	Adelaide River	Amangal	9	9		22	216	12187	100	40.5	63	Two transformers for this Town Camp.
							22	184	5646	63			
	687	Jabiru	Manabadurma	10	12		11	5050	11107	200	54	84	
	825	Darwin	Minmarama Park	24	24		11	2147	11372	100	108	168	
2	606	Katherine	Warlpiri Transient Camp	9	9		22	6416	4886	100	40.5	63	Two transformers for this Town Camp.
							22	6074	4695	25			
	621	Katherine	Miali Brumby (Kalano)	47	31		22	6133	12247	315	211.5	329	
	640	Pine Creek	Pine Creek Compound	4	4		22	6666	3147	25	18	28	Transformer is not in boundary of Town Camp [The nearest transformer data to Town Camp is highlighted in yellow].
	971	Mataranka	Mulggan	12	9	4	22	6819	5296	16	54	84	
							22	6818	5297	16			
							22	6384	11028	25			
3	215	Tennant Creek	Blueberry Hill (Munji-Marla)	2	2		22	7079	1868	200	9	14	Transformer is not in boundary of Town Camp [The nearest transformer data to Town Camp is highlighted in yellow].
	223	Tennant Creek	Dump Camp (Marla-Marla)	7	7		22	7181	11088	200	31.5	49	
	224	Elliott	Elliott South Camp	12	12		11	7504	4718	200	54	84	Transformer is not in boundary of Town Camp [The nearest transformer data to Town Camp is highlighted in yellow].
	225	Elliott	Elliott North Camp	36	25		11	7505	4715	100	162	252	
	238	Tennant Creek	Kargaru (East Side Camp)	12	12	1	22	7572		200	54	84	
	246	Tennant Creek	Ngalpa Ngalpa	18	21		22	7179		200	94.5	147	Two transformers for this Town Camp.
							22	7033	10904	315			
	271	Tennant Creek	Village Camp	12	12	1	22	7183	11107	200	54	84	
	681	Tennant Creek	Tingkarli	12	12		22	7180		200	54	84	
	684	Tennant Creek	Wuppa	15	15	1	22	7141	11092	100	67.5	105	Two transformers for this Town Camp.
							22	7182	11095	200			
4	3	Alice Springs	Akngwertnarre (Morris Soak)	11	15		11	8596	11336	300	67.5	105	Transformer is not in boundary of Town Camp [The nearest transformer data to Town Camp is highlighted in yellow].
	16	Alice Springs	Anthelk Ewlpaye (Charles Creek)	17	10		11	8569		315	76.5	119	Transformer is not in boundary of Town Camp [The nearest transformer data to Town Camp is highlighted in yellow].
	17	Alice Springs	Anthepe	15	15		22	8598	5874	200	67.5	105	Data extracted from PWC asset information. There was not access to this Town Camp due to ceremony on inspection day.
							22	8597	11244	315			
	19	Alice Springs	Aper Alwerrknge (Palmers)	7	6		11	8405	2939	200	31.5	49	Transformer is not in boundary of Town Camp [The nearest transformer data to Town Camp is highlighted in yellow].
	35	Alice Springs	Ewyenper Atwatye (Hidden Valley)	47	47		11	8622	11202	100	211.5	329	
							11	8623	11203	100			
							22	8625	11205	63			
							11	8626	11204	100			
	47	Alice Springs	Ilparpa	13	13		22	8611	11702	200	58.5	91	
	48	Alice Springs	Ilperle Tyathe (Walpiri)	10	9		11	8001	11209	315	45	70	Transformer is not in boundary of Town Camp [The nearest transformer data to Town Camp is highlighted in yellow].
	50	Alice Springs	Ilyperenye (Old Timers)	10	10		22	8145	3323	100	45	70	
	64	Alice Springs	Bassos	2	2		11	8002	10946	50	9	14	
	69	Alice Springs	Karnte	19	19		22	8282	2345	100	85.5	133	
	87	Alice Springs	Yarrenty Altere (Larapinta Valley)	34	34		11	8617	11334	100	153	238	
							11	8618	11200	63			
							11	8619	11335	100			
							11	8620	11201	100			
	90	Alice Springs	Inarlenge (Little Sisters)	16	22		22	8137	2925	100	99	154	Transformer is not in boundary of Town Camp [The nearest transformer data to Town Camp is highlighted in yellow].
	108	Alice Springs	Mpwetyerre (Abbotts)	6	6		11	8093	11703	315	27	42	Transformer is not in boundary of Town Camp [The nearest transformer data to Town Camp is highlighted in yellow].
	113	Alice Springs	Mount Nancy (Nyewente)	11	12		11	8405	2939	200	54	84	
	129	Alice Springs	Nyewente (Trucking Yards)	26	26		11	8629	11312	300	117	182	
	675	Alice Springs	Hoppys	15	19						85.5	133	There is not any Transformer in boundary of Town Camp. Also it's not shown in PWC asset information.
	676	Alice Springs	Ilpiye Ilpiye (Golders Camp)	15	14		11	8314	369	50	67.5	105	
	1029	Alice Springs	Kunoth	4	4		11	8569		315	18	28	Transformer is not in boundary of Town Camp [The nearest transformer data to Town Camp is highlighted in yellow].
5	222	Borroloola	Mara	28	29	2	11	6187	12610	100	130.5	203	Two transformers for this Town Camp.
							11	6545	10203				
	229	Borroloola	Garawa 1	16	14		11	6546	10166	100	72	112	Two transformers for this Town Camp.
							11	6332	4890	100			
	278	Borroloola	Yanyula	29	29		11	6162	10496	200	130.5	203	Data extracted from PWC asset information. It's outside of Twon Camp, shown only Transformer to this Town Camp.
							11		10167				This transformer is not shown in PWC asset information. It's installed in Boat Ramp Road near to Town Camp and connected to Electrical reticulation of Town Camp.
	992	Borroloola	Garawa 2	11	11		11	6189	2669	25	49.5	77	

** For New house's demand calculation see section 13.4 "Future Demand".

Ilyperenye (Old Timers)

Ilyperenye (Old Timers)

1 Design

The infrastructure reviews have been undertaken against current relevant standards for typical sub-divisions. The following standards have been used in undertaking the reviews.

Sewerage and water supply

- Water Services Association of Australia – Sewerage Code – WSA 02 Part 1: Planning and Design
- Power and Water Corporation supplement to WSA 02
- Water Services Association of Australia – Sewerage Pumping Station Code – WSA 04 -2005 Part 1: Planning and Design
- Power and Water Corporation supplement to WSA 04
- Water Services Association of Australia – Water Supply Code – WSA 03 2002 Part 1: Planning and Design
- Power and Water Corporation supplement to WSA 03
- Power and Water Corporation Indigenous Community Engineering Guidelines (2008)
- Department of Housing and Community Development Indigenous Community Engineering Guidelines (ICEG 2014, updated September 2016)
- Power and Water Corporation Essential Services Infrastructure Assessment and Upgrade Guidelines (for Town Camps in Urban Communities, 2009)
- Power and Water Corporation Standard Drawings
- Australian Standards

Electrical services

Electrical infrastructure has been assessed against AS/NZS3000 Wiring Rules and against PWC Service, Installation and Metering Rules and URD Design Standards where possible.

With one exception, all town camps are each a single lot and compliance with AS/NZS3000 is sufficient to address potential safety concerns.

As such application of PWC URD Design Standards will mainly apply to the incoming supply and bulk or initial multi-metering panels if provided.

URD Design Standards for internal reticulation and street lighting have probably been applied in most cases for convenience rather than compliance.

For the purposes of this report, the demand per dwelling allowances of URD Design Standards have been used to estimate incoming supply and overall distribution capacity requirements.

The following apply:

- Australian Standards
- Power Networks Design and Construction Guidelines, Power and Water Corporation
    - NP001.1_Design and Construction of Network Assets – General Requirements
    - NP001.3_General Specification for Overhead Electrical Reticulation
    - NP001.6_General Specification for URD Subdivisions
    - NP003_Installation Rules_V3
    - NP007_Service Rules

    - NP027_Capture of Newly Installed Street Lighting Information
- NP041_Guidelines for Electrical Design Consultants

Further referral to the guidelines in this report will be designated by the guidelines number, NP001.1.

Communications

- National Broadband Network Website viewed 21 January 2017 (http://www.nbnco.com.au/) – NBN rollout maps

Council guidelines

In addition to the above standards, the following Council guidelines will be used where applicable.

- Alice Springs Town Council – Subdivision and Development Guidelines, November 2012

General

It should be noted that if the town camps are proposed to be subdivided and services assets gifted to Power and Water Corporation (PWC) for operation and maintenance, all of these services will need to fully meet PWC standards. With the exception of a few town camps that have recently been upgraded, this will require the full replacement and/or realignment of most services.

2 Condition assessment

2.1 Rating assessment matrix

A condition rating matrix was developed and used to assess all municipal infrastructure. The same rating was used for all services to maintain consistency in assessments. Table 1 below shows the condition rating and operability.

Table 1 Condition rating

Condition rating		Operability
1	Very Poor	Not operational
2	Poor	Not fully operational or requires immediate maintenance to keep operational
3	Good	Fully operational, may require routine maintenance
4	Very Good	Fully operational, may require maintenance in the next six months
5	Excellent	New, fully operational

2.2 Civil assessment limitations

The civil infrastructure condition investigations were subject to a number of limitations. These include:

- Only accessible services have been investigated. This includes inspecting the top of sewer manholes, side entry pits, etc., however, does not include opening pits to inspect infrastructure below ground.
- No physical testing of the sewer, water or stormwater network was undertaken.
- No survey or service locating was undertaken.

As there was no survey, potholing or CCTV undertaken on the underground infrastructure there is insufficient information to make determinations on the asset condition. The condition assessments discussed in this report are only for the accessible services and do not necessarily represent the condition of the underground infrastructure. For the majority of the town camps, other than a few that have recently been upgraded it was found that the underground services are generally undersized and it is likely, due to their age, that the these services are in poor condition. Either factor would trigger the need for a complete replacement to meet current relevant standards.

2.3 Electrical assessment limitations

The electrical infrastructure condition investigations were subject to a number of limitations. These include:

- Inspections were carried out without the assistance of an electrical tradesman.
- Only accessible services were investigated. Assessments were of a visual nature and no pit covers were removed.
- Overhead equipment was assessed from ground level.
- Switchboards were not opened and no assessment of the internal connections or bus ratings was made.

- Electrical infrastructure was assessed down to the meter for multi-meter panels and down to the termination, overhead pole or distribution pillar, of the supply cable to a meter located at a dwelling.

3 Current infrastructure issues

Power and Water Corporation (PWC) have advised of the following concerns and issues in regard to the sewerage, water and electrical infrastructure at all town camps.

3.1 Ownership and maintenance

PWC stated there has always been confusion regarding the ownership and responsibilities of the internal sewer, water and electrical infrastructure. PWC have advised that they have no legal tenure on the majority of assets in any town camps and that the owner is essentially that of the land owner or leaseholder. This is further discussed for each type of infrastructure for each town camp.

The ownership and who is responsible for the maintenance of the sewage pump stations and street lighting is a major concern. In most town camps it was found that PWC have been maintaining the assets on an in-kind basis, although there are no maintenance or access agreements in place and the infrastructure is generally not compliant to PWC standards.

3.2 Access to infrastructure

PWC advised that due to the uncertainty surrounding ownership and responsibility of the sewerage, water and electrical infrastructure, each town camp is seen as a single lot with multiple houses on it. There are no formal road reserves or easements where the municipal infrastructure should be located. PWC therefore have no legal right to enter the town camps to work on the infrastructure, nor can PWC stop others from working on the infrastructure. There is a risk that the maintenance undertaken by others may be to a lower standard than PWC.

It should be noted that there are currently no legal services easements within the town camps, except for a few cases where a town service passes through the town camp. Therefore it is recommended that easements are created over any infrastructure owned by PWC and any future assets to be gifted to PWC, to allow the service providers access to the infrastructure.

3.3 Existing infrastructure

PWC have stated that although the existing sewerage and water infrastructure appears to comply with relevant standards in some locations, the capacity cannot be assumed to meet PWC requirements due to the potential for underground substandard condition and/or grading of pipework. It is likely that these assets will need to be fully replaced to PWC standards to ensure sufficient capacity.

The planning process currently allows construction within the town camps on Commonwealth land without requiring service authority (PWC) approvals. This means that there has been no opportunity for PWC to recover contributions towards required upgrades to headworks servicing the developments and these upgrades have been paid for by PWC in the past. This inconsistency needs to be addressed for future developments within the town camps to ensure PWC are able to continue to provide adequate services.

3.4 Safety concerns

PWC have expressed concerns with safety of PWC staff and contractors working within the camps. PWC have employed procedures such as multiple people / vehicles to attend the site, with police or housing safety officers as required. This generally leads to a delayed response time and increased cost to respond to and remediate emergency situations.

PWC have also raised the concern that if others work on water infrastructure within the town camps and do not apply the correct sanitation procedures they not only risk contaminating the entire water supply network within the town camp, at some town camps with direct connections to the town supply, they risk contaminating the entire town's water supply.

4 Available information

As the site investigations were limited to accessible / visible services, information on below ground services (such as electrical cables, sewer pipes, water supply pipes, etc.) were determined from available information. This information included:

- Serviced Land Availability Program (SLAP) maps,
- Department of Family & Community Services - Connecting Neighbours Program – Essential Services Scoping Study Report Volume 1 April 2005,
- Connecting Neighbours Project – Infrastructure Assessment and Recommendation Report - Arup Pty Ltd, April 2005,
- Alice Springs Town Camp Sewage Pumping Station Assessments, Byrne Design, 2014,
- Drawings supplied by NT Department of Infrastructure - Technical Records,
- Drawings supplied by Power and Water Corporation,
- Bennett Design inspection reports and population data.

Aurecon undertook a site investigation of the Ilyiperenye (Old Timers) community on 21 November 2016 to inspect roads, stormwater drainage, electrical services, sewerage and water supply, and community structures. The following sections detail the outcomes of this investigation and the assessments of the infrastructure.

The civil and electrical inspection reports can be found in the Appendices.

5 Sewerage

5.1 Ownership and boundaries

The sewerage infrastructure within Old Timers is property of the Ilyperenye Association Incorporated, but is the responsibility of Ingkerreke Outstations Resource Services.

PWC advised that they do not own or maintain any infrastructure within Old Timers. The extent of PWC's ownership is to the sewage pump station inlet.

5.1.1 Connection methods and billing

PWC advised that they currently charge a single sewerage bill based on the number of houses, which for Old Timers is five. The sewerage bill is charged to the Department of Housing and Community Development.

It is not known what contribution the residents make towards the sewerage bills.

5.2 Existing infrastructure condition assessment

The sewer infrastructure inspection was limited to inspecting the condition of manhole covers, as all other sewerage infrastructure is below ground. The assets that were inspected had the following conditions:

Table 2 Sewer condition assessment

Asset	1 Very Poor	2 Poor	3 Good	4 Very Good	5 Excellent	Total
Manhole			4	1		5



Figure 1 Sewer manhole, condition: *good*



Figure 2 Sewer manhole, condition: *good*

The Byrne Design report shows that there is also a pump station (septic tank with pump station – STEP system) and rising main in Old Timers, however this could not be inspected during the site investigation. The pump station has not been assessed in this report.

5.3 Current performance and risks

5.3.1 Current sewer network performance

The current capacity of the sewer network was calculated based on the following design assumptions:

- The adopted minimum grade for the pipework is 1.0%, as advised by Power and Water Corporation.
- The Equivalent Population (EP) has been calculated assuming one household equates to 9 EP, based on discussions with Power and Water Corporation.
- The capacity has been assessed by calculating the current flow rate, and the maximum flow rate when the sewer pipe flows full. The result is then a percentage of how much of the pipe is currently being used.
- Manning's roughness coefficient of the pipework is 0.012, as recommended by PWC for PVC pipes.
- Where the sewer pipe grade, size or material is not known, it is assumed to be non-compliant to PWC standards.

The current number of houses in Old Timers is 10, this multiplied by 9 EP per house gives a total current EP of 90.

The pipe diameter was not known so was assumed to be 100 mm at 1.0% grade.

The capacity of the existing sewer was then calculated. The percentage shows how much of the pipe capacity is currently being used.

Table 3 Existing sewer capacity

Catchment	Current total EP	Diameter of connection (mm)	Adopted PWC minimum slope (%)	Q_{full} (L/s)	Current Q (L/s)	Current capacity (%)
Catchment 1	90	100	1.0	5.60	1.25	22%

Table 3 above shows that the capacity of the existing sewer network is adequate for the current peak population.

As the current flow is relatively small, it is likely that self-cleansing velocities are not achieved.

There were no drawings available that show the alignment of the reticulation main so it is assumed to be non-compliant. It is recommended that a new DN150 PVC with new housing connections and manholes are constructed.

5.3.2 Current sewage pump station performance

The capacity of the pump station could not be verified as there was no information available.

PWC have previously advised that they have no intention in taking over the pump station for operation or maintenance.

It should be noted that an investigation was undertaken by Byrne Design in 2014 to confirm the capacity and compliance of the sewage pump stations. The Byrne Design report details the works required to the pump station wet well, collection chamber, and generally around the compound (e.g. lighting, hand rails, etc) to bring it up to relevant standards. PWC confirmed that none of the recommended upgrades from the Byrne Design report have been constructed.

5.4 Future demands

As no new developments are currently planned for the community, there are no additional upgrades required to cater for future demand.

5.5 Recommended works

The following works are recommended:

- Construct new DN150 PVC reticulation main, including housing connections and manholes, within the road reserve, or within new sewer easements.
- Install new pump station to PWC standards and remove existing STEP system. This will require further engineering design.

6 Water supply

6.1 Ownership and boundaries

No engineer drawings depicting he size and layout of the internal water reticulation system were attainable for Old Timers community.

The water supply assets at Old Timers are believed to be owned by Ilyperenye Association Incorporated, but are the responsibility of Ingkerreke Outstations Resource Services to maintain. The water is supplied from PWC owned water mains outside of the community.

6.1.1 Connection methods and billing

Through consultation with PWC, it has been determined that the water supply to Old Timers is currently charged using a fixed daily rate for a total of five house water meters and a single bulk water meter. PWC have advised that the lot water meters are sub meters, meaning that the daily rate charged against the house meters is subtracted from the bulk meter to ensure water usage is not charged twice. The water bills for Old Timers are issued to the Department of Housing and Community Development. It is not known what contribution is made by the residents.

It is proposed that PWC measure the water supply to the entire community using a bulk water meter, as opposed to individual lots within the community. Under this scheme, the water bill for the entire community is the responsibility of the governing body, being Ilyperenye Association Incorporated. It will be up to governing body to assign bills to residents accordingly.

It is recommended that the individual lot meters are installed and maintained in addition to the proposed use of the bulk water meter. This will assist the governing body with distributing bills to residents, the identification of any leaks in the network, and meeting PWC standards should the town camp be subdivided in the future.

A total of three lot water meters were assessed during the inspection. Bennett Design reported ten dwellings in the community. Therefore, up to an additional seven water meters are required to be installed to cover the properties without an existing water meter. Note, some water meters may have been present however not visible due to overgrown flora, restricted property access or being buried in boxes. Consequently water meters may have not been discovered during the inspection.

6.2 Existing infrastructure condition assessment

The site investigation for the water infrastructure included assessing the condition of any air valves, fire hydrants, tanks, taps, and water meters. The assessment was limited to services that could be accessed above ground; no excavation of below ground services was undertaken.

The condition of each asset is as follows:

Table 4 Water asset condition assessment

Asset	1 Very Poor	2 Poor	3 Good	4 Very Good	5 Excellent	Total
Air valves			1			1
Fire hydrants		2				2
Water meter (bulk)				1		1
Water meter (residential lots)			3			3



Figure 3 Water meter (bulk), condition: *very good*



Figure 4 Air valve, condition: *good*



Figure 5 Fire hydrant, condition: *poor*



Figure 6 Residential lot water meter, condition: *good*

Two fire hydrants were assessed as being in poor condition. These fire hydrants require some minor maintenance works, including clearing the concrete area of overgrown grass and other debris, as well as repainting.

6.3 Current performance and risks

The current peak hour demand was calculated based on the following design assumptions:

- The nominal peak day flow is 1300 L/capita/day, based on PWC's supplement to WSA 03 2002. This value is for the southern region of NT. It was assumed that the nominal peak day flow of 1300 L/capita/day also applies to water usage within the community, although it is possible that this value could be higher in real life due to a lack of controls to reduce water usage.
- The Equivalent Population (EP) has been calculated assuming one household equates to 9 EP, based on discussions with Power and Water Corporation.
- The peak hour factors are listed in PWC's Supplement to WSA 03-2002, and they depend on the population range of the community. The peak hour factor of 3.0 has been adopted, for populations less than 500.

Table 5 shows the calculated peak hour water demand.

Table 5 Current water demand

Total dwellings	EP	Demand (l/s)	Peak hour demand (l/s)
10	90	1.35	4.05

Although layout and pipe sizes of the water reticulation network could not be confirmed, it is expected that the water main is a DN100 pipe due to the size of the

bulk water meter. The bulk water meter suggest the existing water main is undersized and non-compliant with PWC standards.

The assessment of water supply for firefighting has been based on the size of the water mains and the condition of the accessible fire hydrants. Additional hydrants have been recommended where it appears the existing number of hydrants are insufficient. In the case of Ilperenye an additional fire hydrant is expected to be required to provide sufficient coverage.

6.4 Future demands

As no new developments are currently planned for the community, there are no additional upgrades required to cater for future demand.

6.5 Recommended works

The infrastructure that was assessed as very poor or poor is recommended to be upgraded to prevent failure in the future. The following maintenance works are recommended;

- Clear dirt from covering two fire hydrants
- Repaint two fire hydrants

It is recommended that a detailed water reticulation plan is established. For cost estimate purposes it is assumed that the network has insufficient capacity and needs upgrading. The cost estimates for an upgrade include:

- DN150 PVC looped main, approximately 500 m
- DN150 bulk water meter
- One additional fire hydrant
- Seven new residential lot water meters

7 Roadworks

7.1 Ownership and boundaries

It is the current understanding that the road infrastructure within Old Timers is property of the Ilyperenye Association Incorporated, but is the responsibility of Ingkerreke Outstations Resource Services.

7.2 Existing infrastructure condition assessment

The road network within Ilyperenye community consists of a mix of sealed and unsealed roads. There are also numerous informal tracks which appear to be used frequently but are not covered in this inspection and report.

Road furniture including signs, foot paths and car parks were also inspected. Table 6 below summarise the condition of the road furniture as assessed during the site inspection.

Table 6 Roadworks condition assessment

Asset	1 Very Poor	2 Poor	3 Good	4 Very Good	5 Excellent	Total
Sign				1		1



Figure 7 Sign, condition: *very good*

The only road furniture in Ilperenye was a single sign in very good condition, as shown in Figure 8.



Figure 8 Community road network

Table 7 below details the condition of the roads within Ilyperenye community for specific segments. Figure 9 shows a map of the community's road network with the condition ratings, road name, and chainage direction. Note, the percentage refers to the percentage of that particular road segment which experiences the defect.

Table 7 Road network condition assessment

Road name	Chainage start (km)	Chainage end (km)	Condition (1 to 5)	Defects and associated condition
Marshall Crescent	0	0.1	1	-20% of the road has edge breaks (2) -2 potholes (1) -30% of the road has surface failure (1)
Morgan Street	0	0.1	3	-5% of the road has edge breaks (3)
	0.1	0.19	2	-5% of the road has surface failure (1) -50% of the road has edge breaks (2) -5 potholes (2)



Figure 9 Surface failure, condition: *very poor*

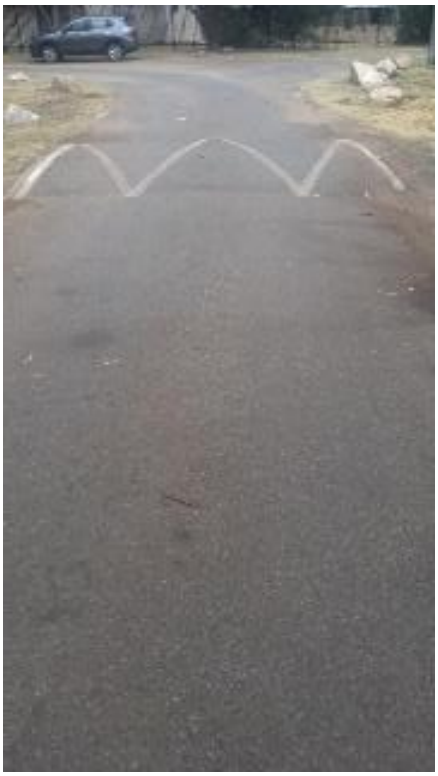


Figure 10 Pavement, condition: *very poor*

7.3 Current performance and risks

The road into Ilperenye varied in rating from good to very poor, there were significant edge breaks, potholes and even some surface failure. The road network requires significant maintenance and/or upgrades. As the roads have undulation and pavement failure, there may be more significant issues to do with the subgrade or drainage that will require remediation before the road can be resealed.

The layout of the road network is sufficient for the current number of houses, although the condition of the road is poor.

It was noted during the site inspections that a number of unsealed 'short-cuts' had been created and were regularly used. It is not recommended that these paths are formalised.

It is recommended that a road safety audit is undertaken to determine where signage, line marking, etc. are required.

7.4 Future demands

As no new developments are currently planned for the community, there are no additional upgrades required to cater for future demand.

7.5 Recommended works

The infrastructure that was assessed as very poor or poor is recommended to be upgraded to prevent failure in the future. The following works are recommended to upgrade the current infrastructure;

- Repaint lines over speed humps
- Install of five regular road signs throughout such as speed restriction, give way and speed hump signs
- Repair 70 m of edge breaks
- Fill and reseal seven potholes
- Total reseal of 140 m^2 of pavement

In order to allow for a longer term sustainable road network a significant upgrade would be required. It is recommended that a long term design which incorporates a full two lane road network, with all appropriate road furniture, line-marking, kerbs and gutters is constructed. A cost estimate to reinstate the base and subbase material, reseal with a two coat spray seal surface, construct subsoil drainage, line marking and signage has been included. Note that these works will need to be fully designed, the cost estimate is for budgetary purposes only and only indicates the construction phase. A footpath next to the road is also recommended to provide a safe trail for pedestrians.

As the maximum road width within the Ilyperenye community is 4.2 m, this means that all 290 m of the road network will need to be upgraded to a 7.2 m wide road. The stormwater drainage infrastructure upgrades that are closely associated with the road upgrade i.e. kerb and gutters, side entry pits and underground drainage pipes are included in the stormwater section of this report.

8 Stormwater drainage

8.1 Ownership and boundaries

The stormwater drainage infrastructure within Old Timers is property of the Ilyperenye Association Incorporated, but is the responsibility of Ingkerreke Outstations Resource Services.

8.2 Existing infrastructure condition assessment

The site investigation for the stormwater infrastructure included assessing the condition of swales, culverts, headwalls, and side entry pits (SEP). Only the above ground infrastructure was assessed. As the inspection was undertaken outside of a storm event and no CCTV of the pipes was undertaken, flooding due to blockages or damage to the underground infrastructure could not be assessed. Table 8 below summarises the condition of the stormwater assets as assessed during the inspection.

Table 8 Stormwater condition assessment

Asset	1 Very Poor	2 Poor	3 Good	4 Very Good	5 Excellent	Total
Swale			2			2
Culvert		2				2



Figure 11 Swale, condition: *good*



Figure 12 Culvert, condition: *poor*

The swales were both in good condition, however neither were formal grassed swales. The culverts were both rated in poor condition due to being blocked up to 100%.

It is recommended that the culverts are cleared out and the swales upstream and downstream of the culverts are reshaped to avoid future blockages.

The Connecting Neighbours Program designed stormwater drainage for the community, however it appears as though the infrastructure has not been built.

8.3 Current performance and risks

The detailed performance of the stormwater network cannot be fully analysed without significant hydraulic and hydrodynamic modelling, which is outside the scope of this project.

The Alice Springs Town Council's general design philosophy for stormwater drainage is that the system is based on a network of sealed roads, kerb and gutters, side entry pits and underground drainage pipes, including grassed open channels and diversion drains. It is recommended that kerbs and gutters, side entry pits and underground pipes are installed to help reduce flooding in the community. The cost estimates allow for 300 m of stormwater drainage.

8.4 Future demands

As no new developments are currently planned for the community, there are no additional upgrades required to cater for future demand.

8.5 Recommended works

The following works are recommended to upgrade or improve the current infrastructure:

- Construct kerb and gutters, side entry pits, and underground drainage.
- Clear out blocked culverts (2) and reshape swale upstream and downstream of culvert

9 Community structures

9.1 Ownership and boundaries

The community structures within Old Timers are the property of Ilyperenye Association Incorporated, but are the responsibility of Ingkerreke Outstations Resource Services.

9.2 Existing infrastructure condition assessment

The site investigation for the community structures included assessing the condition and features of playgrounds, basketball courts and shade structures. The following table shows the condition rating given to the community structures.

Table 9 Community structures condition assessment

Asset	1 Very Poor	2 Poor	3 Good	4 Very Good	5 Excellent	Total
BBQ area				1		1
Playground			1			1



Figure 13 BBQ Area, condition: *very good*



Figure 14 Playground, condition: *good*

9.3 Current performance and risks

The current condition of the community structures is either good or very good, therefore the only action required is a general maintenance to tidy up the area. The current infrastructure appears adequate for the amount of houses in the community.

9.4 Future demands

As no new developments are currently planned for the community, there are no additional upgrades required to cater for future demand.

9.5 Recommended works

The following works are recommended to upgrade the community structures:

- Repaint playground equipment
- Clean BBQ area and playground area, ensuring all rubbish, graffiti and glass is removed

10 Electrical services

10.1 Ownership and boundaries

The following points, from Network Policy NP003 Installation Rules Section 3, define the typical shared ownership of electrical infrastructure by Power and Water Corporation (PWC) and customers.

- The point of supply is defined as the point where PWC makes the electrical supply available. For domestic supply, this is normally one of the following:
- A point of attachment of an overhead service on to a building or pole on which a metering panel is fitted.
- A point of attachment of an overhead service on to a pole forming part of unmetered aerial consumer's mains.
- A nominated point on a distribution substation located on the customer's lot.
- A point of connection of an underground service in a metering panel, including underground services originating at an overhead line.
- A point of connection of an underground service in a pillar or junction box forming part of unmetered consumer's mains, located on the customer's lot.
- A point on a Power and Water pillar located on the customer's lot.

Typically, distribution infrastructure upstream of the Point Of Supply is owned and maintained by PWC and infrastructure below the point of supply is owned and maintained by the customer.

In many cases PWC have defined a Point Of Supply to ensure that they retain responsibility for aerial high voltage infrastructure, and aerial low voltage infrastructure where installed with aerial high voltage infrastructure, to minimise the possibility of the community or it's contractors coming into contact, either deliberately or inadvertently, with aerial high voltage infrastructure.

In other cases isolation facilities are present or desired by PWC to define the Point of Supply at or near the boundary of the town camp.

PWC advise that most of Tennant Creek/Alice Springs Town Camps have undergone upgrades under the SIHIP program with the intent to normalise the services to look like an urban subdivision but have never been formally handed over to PWC for operations and maintenance.

The Ilyperenye community electrical reticulation systems is supplied by an overhead reticulation scheme to individual houses and underground reticulation to a few street lights. Prepaid meters are utilised in Ilyperenye community.

PWC advise that the Point Of Supply is the LV terminals of the substations and that they own and are responsible for the first pole mount substation and upstream infrastructure.

PWC recommend that a GBS (Gas Break Switch) be provided upstream of the first transformer to establish a demarcation point.

PWC advise that street lighting is supplied from unmetered LV infrastructure and is the responsibility of the lot holder and not PWC.

All meters, whether pre- or post-paid are the property of PWC.

Ilyperenye community are responsible for maintain all unmetered and metered LV infrastructure including the main switchboard, metering panel (excluding meter), LV distribution feeders, distribution pillars, consumers' mains and consumer switchboards and street lights.

10.2 Existing infrastructure condition assessment

Table 10 shows the condition rating given to the street lights. The street lights were of a low voltage overhead feeder design, sodium lamp type S70D or underground feed, with lamp covers protected by cages. The street lights have a 100% operational rating.

Table 10 Street light condition assessment

Asset	1 Very Poor	2 Poor	3 Good	4 Very Good	5 Excellent	Total
Street light			3	1	11	15

Table 11 shows the condition rating given to the street lights. The street lights on OH poles were of a low voltage overhead feeder design, sodium lamp type S70D, with lamp covers protected by cages. The street lights have a 100% operational rating.

Table 11 Street light on O/H pole condition assessment

Asset	1 Very Poor	2 Poor	3 Good	4 Very Good	5 Excellent	Total
Street light on O/H pole			3			3

Table 12 shows the condition rating given to the transformer. One transformer in camp boundary. The transformer has oil leakage around low voltage bushing, requires an inspection.

Table 12 Transformer condition assessment

Asset	1 Very Poor	2 Poor	3 Good	4 Very Good	5 Excellent	Total
Transformer		1				1

Table 13 shows the condition rating given to the Overhead poles. The overhead poles are of Weld Construction (Universal Pole construction) and steel LV construction. The O/H poles were visually accessed to be in good condition

Table 13 Overhead pole condition assessment

Asset	1 Very Poor	2 Poor	3 Good	4 Very Good	5 Excellent	Total
Overhead pole			4		1	5

Table 14 shows the condition ratings given to electrical pit. LV supply connection pit were constructed of concrete.

Table 14 Pit condition assessment

Asset	1 Very Poor	2 Poor	3 Good	4 Very Good	5 Excellent	Total
Pit						1 (status unknown)

Table 15 shows the condition rating given to the Metering panels. All assessed meters in this community are prepaid digital meters.

Table 15 Meter Panel condition assessment

Asset	1 Very Poor	2 Poor	3 Good	4 Very Good	5 Excellent	Total
Pre-paid Meter			8			8
Switchboard		4	1			5

Table 16 shows the condition rating given to the switchboards associated to dwellings.

Table 16 Switchboard condition assessment (Housing footprint)

Asset	1 Very Poor	2 Poor	3 Good	4 Very Good	5 Excellent	Total
Switchboard			4			4

The details of the individual inspections and photographs of each piece of infrastructure are in Appendices.

10.3 Current performance and risks

The electrical infrastructure evaluation was conducted against the following criteria

- Number of dwellings on tenure, the higher value of the funded dwelling and as quoted in the population report was utilised.
- Urban area, NP001.1, 4. Definitions.
- General Specification for URD Subdivisions, NP001.6, 4.3 Substation Size.
- Normal ADMD (After Diversity Maximum Demand) of 4.5 kVA and high cost subdivisions at 7 kVA.
- Transformer ratings were assumed to be correct in Dekho (PWC asset information system) and compared against photographs of test or transformer numbers collected.
- Substation loads were compared against transformer sizes only. No load flow analysis was conducted.
- No load calculations were performed or assessment conducted on overhead or underground cable, visual inspection from the ground only.
- Street lighting loads were ignored as they are not significant.

The calculated maximum demand of the Ilyperenye community transformer is 45% of rated capacity based on 4.5kVA/dwelling. The calculated maximum demand is within the total capacity of the substation on site.

Table 17 Ilyperenye current demand load vs transformer ratings

Com Id	Community name	Dwellings	Transformer (kVA)	kVA Total @ 4.5kVA	kVA Total @ 7kVA
50	Ilyperenye	10	100	45	70

A tabulated summary of all community transformers is included in Appendices.

There is a risk of equipment not being maintained associated with the non-standard division of responsibilities between the customer and PWC.

The following points from the PWC Metering Rules should be noted:

- The routine maintenance of metering installations and the replacement of any faulty meters is the responsibility of PWC.
- The property owners are responsible for the maintenance and upkeep of meter rooms, boxes and panels (including lids, doors and locking mechanisms).
- The installation of pre-paid metering is a cost to the customer, refer NP010 Meter Manual-Maintenance of Metering Installations, Power and Water Corporation.

10.4 Future demands

As no new developments are currently planned for the community, there are no additional upgrades required to cater for future demand.

10.5 Recommended works

The Ilyperenye (Old Timers) community transformer is owned by PWC. The transformer has oil leakage around low voltage bushing, an inspection recommended.

The following maintenance works and upgrades are recommended:

- Replace four switchboards inside the metering panel
- Install new street lighting - approximately 15 poles

11 Communications

11.1 Ownership and boundaries

Details of Telstra pit and conduit infrastructure within the town camp boundaries were sought but were not forthcoming.

11.2 Existing infrastructure condition assessment

There were no telecommunication assets inspected at Ilperenye.

11.3 Current performance and risks

No details of the performance of communications infrastructure were obtained.

11.4 Future demands

The current availability of broadband services at Ilyperenye is displayed in the Figure 16 below. NBN is available to residents via a fixed telecommunication line on application to an appropriate NBN access provider.

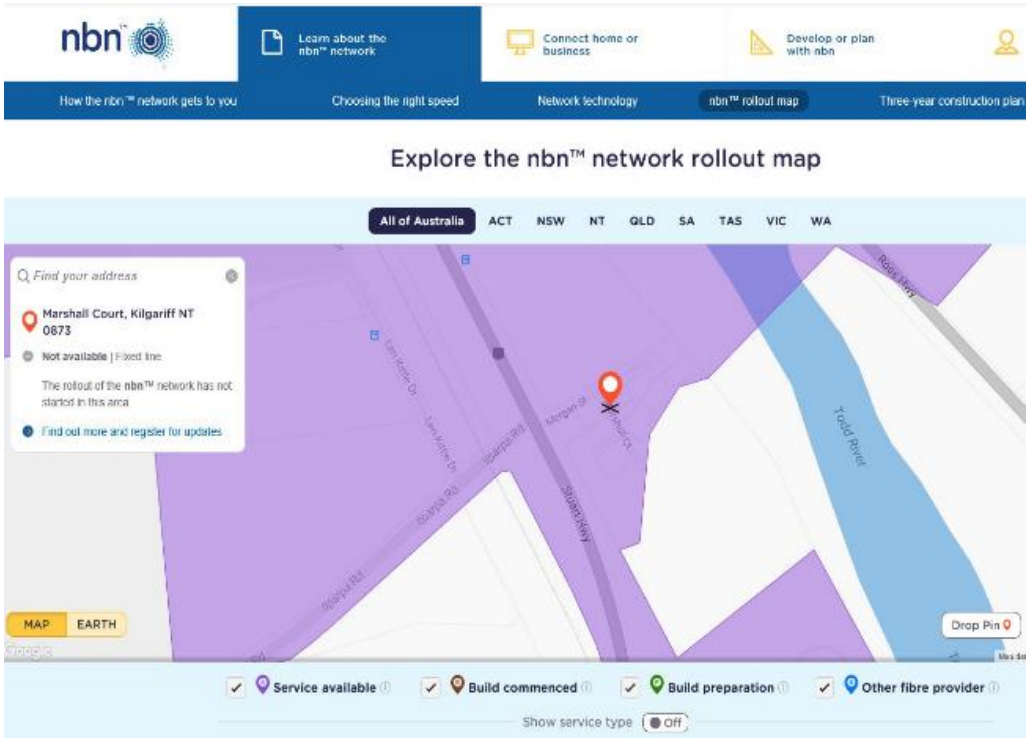


Figure 15 NBN network availability map

The NBN rollout map confirms that NBN is planned to be made available to residents via fixed telecommunications line on application to an appropriate NBN access provider.

11.5 Recommended works

Representatives from NBN's Land Access and Stake Holder management teams are currently engaged with Yilli Housing and NT Housing to look at how camps will be serviced. It is expected that any existing premises in these camps will have some type of NBN service via the NBN brownfields rollout in the future.

No works are required at Ilyperenye because NBN is available to residents via fixed telecommunications line on application to an appropriate NBN access provider.

12 Cost estimates

Table 20 below shows a summary of the cost estimates to undertake the maintenance required to fix the existing infrastructure and to upgrade the existing network to meet current design standards. There are no upgrades required for the future design. The estimates take into account a 30% contingency, are inclusive of GST, and a location factor has been applied to town camps outside of Darwin.

Table 18 Cost estimates

Infrastructure	Maintenance of existing infrastructure	Upgrades to meet current design
Sewerage	$ 0	$ 603,000
Water supply	$ 1,000	$ 323,000
Roadworks	$ 34,000	$ 352,000
Stormwater drainage	$ 20,000	$ 372,000
Community structures	$ 7,000	$ 0
Electrical	$ 10,000	$ 215,000
Communications	$ 0	$ 0
Miscellaneous provisions	$ 18,000	$ 233,000
Total (including GST)	**$ 90,000**	**$ 2,098,000**
Grand total	**$ 2,188,000**	

The cost estimates are a preliminary estimate only. Since Aurecon has no control over the cost of labour, materials, equipment or services furnished by others, or over contractors' methods of determining prices, or over competitive bidding or market conditions, Aurecon cannot guarantee actual costs will not vary from these estimates.

13 Summary

The following works are recommended for Ilyperenye (Old Timers) community:

Sewerage

- Construct new DN150 PVC reticulation main, including housing connections and manholes, within the road reserve, or within new sewer easements.
- Install new pump station to PWC standards and remove existing STEP system. This will require further engineering design.

Water supply

- Clear dirt from covering two fire hydrants
- Repaint two fire hydrants
- DN150 PVC looped main, approximately 500 m
- DN150 bulk water meter
- One additional fire hydrant
- Install up to seven new residential lot water meters

Roadworks

- Repaint lines over speed humps
- Install of five road signs throughout such as speed restriction, give way and speed hump signs
- Repair 70 m of edge breaks
- Fill and reseal seven potholes
- Total reseal of 140 m2 of pavement
- It is recommended that the road is upgraded to a two lane network with all appropriate road furniture, line marking, kerbs, footpaths, etc.

Stormwater drainage

- Construct kerb and gutters, side entry pits, and underground drainage.
- Clear out blocked culverts (2) and reshape swale upstream and downstream of culvert

Community structures

- Repaint playground equipment
- Clean BBQ area and playground area, ensuring all rubbish, graffiti and glass is removed

Electrical services

- The transformer has oil leakage around low voltage bushing, requires an inspection.
- Replace four switchboards inside the metering panel
- Install new street lighting - approximately 15 poles

Communications

- NBN is planned to be available to residents via fixed line on application to an appropriate NBN access provider.

Civil inspection reports



Map by: DMcP P:\GIS\Projects\253963_NT_Town_Camps\253963_003_Civil_DDP.mxd 23/02/2017 12:02 Imagery: Digital Globe WV2 2013-2016

A3 scale: 1:1,500

0 20 40 60 80 100 m

Note:
Label numbers refer to survey IDs

Date: 23/02/2017 Version: 2

Coordinate system: MGA94 Zone 52

NT Town Camp Infrastructure Assessments: Sewerage

50 - Ilyiperenye (Alice Springs)

2515



Map by: DMcP P:\GIS\Projects\253963_NT_Town_Camps\253963_003_Civil_DDP.mxd 23/02/2017 12:02 Imagery: Digital Globe WV2 2013-2016

A3 scale: 1:1,500

0 20 40 60 80 100 m

Note:
Label numbers refer to survey IDs

Date: 23/02/2017 Version: 2
Coordinate system: MGA94 Zone 52

NT Town Camp Infrastructure Assessments: Water

50 - Ilyiperenye (Alice Springs)



Map by: DMcP P:\GIS\Projects\253963_NT_Town_Camps\253963_003_Civil_DDP.mxd 23/02/2017 12:02 Imagery: Digital Globe WV2 2013-2016

Legend

Town Camp boundary

Community structures
- BBQ/Table and Chairs (1)
- Playground (1)

Road furniture
- Signs (1)

Stormwater
- Culverts (2)
- Swales (2)

A3 scale: 1:1,500

0 20 40 60 80 100 m

Note:
Label numbers refer to survey IDs

Date: 23/02/2017 Version: 2

Coordinate system: MGA94 Zone 52

NT Town Camp Infrastructure Assessments
Road furniture, stormwater drainage & community structures
50 - Ilyiperenye (Alice Springs)

2517

Northern Territory Town Camps

Civil Infrastructure

Inspection Date 21/11/2016 3:37:00 PM

Insp ID: 861	Group 4 - Alice Springs	Ilyperenye (Old Timers)

What Water Asset Are you Capturing: Air Valves

Air Valve Diameter (mm):	80
Air Valve Make:	
Air Valve Leak:	No
Air Valve Condition:	3 - Good
Air Valve Comments:	No current leak, appear to have previously leaked





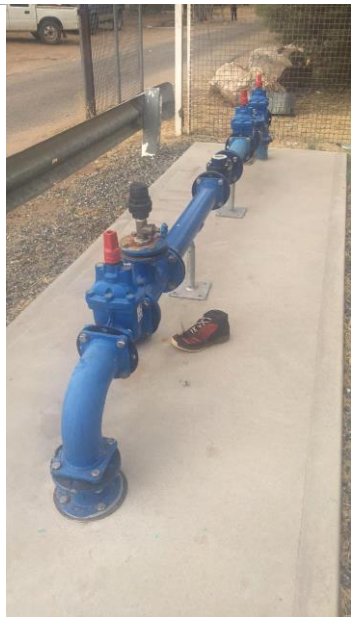




Northern Territory Town Camps

Civil Infrastructure

Inspection Date 21/11/2016 3:37:00 PM





Northern Territory Town Camps

Civil Infrastructure

Inspection Date 21/11/2016 2:56:29 PM

Insp ID: 871	Group 4 - Alice Springs	Ilyperenye (Old Timers)

Stormwater Infrastructure:	Culverts
Culvert Type:	RCBC
Diameter (mm):	
Width (mm):	450
Culvert Depth (mm):	250
Culvert Length (m):	9
Culvert Condition:	2 - Poor
Culvert Blockage (%):	70
Culvert Comments:	
Culvert Head Wall:	Yes
Safety Grate:	No
Headwall Blockage:	70
Headwall Condition:	2 - Poor
Headwall Comment:	
End Wall:	Yes
End Wall condition:	2 - Poor
EW Comment:	





Northern Territory Town Camps

Civil Infrastructure

Inspection Date 21/11/2016 2:56:29 PM



Northern Territory Town Camps

Civil Infrastructure

Inspection Date 21/11/2016 2:47:35 PM

Insp ID: 874	Group 4 - Alice Springs	Ilyperenye (Old Timers)

Stormwater Infrastructure:	Culverts
Culvert Type:	RCBC
Diameter (mm):	
Width (mm):	450
Culvert Depth (mm):	250
Culvert Length (m):	10
Culvert Condition:	2 - Poor
Culvert Blockage (%):	100
Culvert Comments:	
Culvert Head Wall:	Yes
Safety Grate:	No
Headwall Blockage:	90
Headwall Condition:	2 - Poor
Headwall Comment:	
End Wall:	Yes
End Wall condition:	2 - Poor
EW Comment:	





Northern Territory Town Camps

Civil Infrastructure

Inspection Date 21/11/2016 3:26:33 PM

Insp ID: 866	Group 4 - Alice Springs	Ilyperenye (Old Timers)

What Water Asset Are you Capturing: Fire Hydrants

Single or Double:	Single
Sluice Valve:	No
Above or Below ground:	Below ground
FH Leakage:	No Access
Bollards around hydrant:	No
FH Condition:	2 - Poor
FH Comment:	No easily visible





Northern Territory Town Camps

Civil Infrastructure

Inspection Date 21/11/2016 2:42:31 PM

Insp ID: 877	Group 4 - Alice Springs	Ilyperenye (Old Timers)

What Water Asset Are you Capturing: Fire Hydrants

Single or Double:	Single
Sluice Valve:	No
Above or Below ground:	Below ground
FH Leakage:	No Access
Bollards around hydrant:	No
FH Condition:	2 - Poor
FH Comment:	





Northern Territory Town Camps

Civil Infrastructure

Inspection Date 21/11/2016 3:25:44 PM

Insp ID: 867 Group 4 - Alice Springs Ilyperenye (Old Timers)

What Sewerage Asset are you capturing:	Manholes
MH Cover Shape:	Round
Manhole Cover Diam (mm):	600
Manhole Length (mm):	
Manhole Width (mm):	
Manhole Condition:	3 - Good
Notes on Lid:	
Comments:	





Northern Territory Town Camps

Civil Infrastructure

Inspection Date 21/11/2016 3:24:52 PM

Insp ID: 868 Group 4 - Alice Springs Ilyperenye (Old Timers)

What Sewerage Asset are you capturing:	Manholes
MH Cover Shape:	Round
Manhole Cover Diam (mm):	600
Manhole Length (mm):	
Manhole Width (mm):	
Manhole Condition:	3 - Good
Notes on Lid:	
Comments:	





Northern Territory Town Camps

Civil Infrastructure

Inspection Date 21/11/2016 3:01:28 PM

Insp ID: 870	Group 4 - Alice Springs	Ilyperenye (Old Timers)

What Sewerage Asset are you capturing:	Manholes
MH Cover Shape:	Round
Manhole Cover Diam (mm):	600
Manhole Length (mm):	
Manhole Width (mm):	
Manhole Condition:	3 - Good
Notes on Lid:	
Comments:	





Northern Territory Town Camps

Civil Infrastructure

Inspection Date 21/11/2016 2:50:25 PM

Insp ID: 873	Group 4 - Alice Springs	Ilyperenye (Old Timers)

What Sewerage Asset are you capturing:	Manholes
MH Cover Shape:	Round
Manhole Cover Diam (mm):	250
Manhole Length (mm):	
Manhole Width (mm):	
Manhole Condition:	4 - Very Good
Notes on Lid:	
Comments:	





Northern Territory Town Camps

Civil Infrastructure

Inspection Date 21/11/2016 2:50:25 PM



Northern Territory Town Camps

Civil Infrastructure

Inspection Date 21/11/2016 2:26:41 PM

Insp ID: 883	Group 4 - Alice Springs	Ilyperenye (Old Timers)

What Sewerage Asset are you capturing:	Manholes
MH Cover Shape:	Round
Manhole Cover Diam (mm):	600
Manhole Length (mm):	
Manhole Width (mm):	
Manhole Condition:	3 - Good
Notes on Lid:	
Comments:	





Northern Territory Town Camps

Civil Infrastructure

Inspection Date 21/11/2016 3:29:54 PM

Insp ID: 863 Group 4 - Alice Springs Ilyperenye (Old Timers)

Road Name:	Morgan Street
What are you inspecting:	Pavements
Ch From (km):	0
Ch To (km):	0.1
Road Type:	Sealed - spray seal
Section Width (m):	3.9
Road Condition:	3 - Good
General Comment:	1 speed hump in section of road

Road Defects Section

Defect Type	Defect QTY	Defect Condition	Defect Comments
Edge Breaks	5	3 - Good	5 percent

Kerbs Section

Kerb Type	Kerb Cond	Kerb Comments
Flush Kerb	3 - Good	Kerb mostly covered by sand

Shoulders Section

Shoulder Type	Width	Dropoff(mm)	Erosion	Condition	Shoulder Comments
Unsealed		100		2	

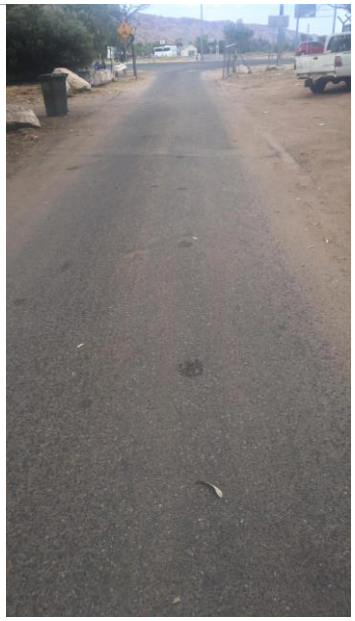
Linemarking Section

Obstruction Section

Northern Territory Town Camps

Civil Infrastructure

Inspection Date 21/11/2016 3:29:54 PM





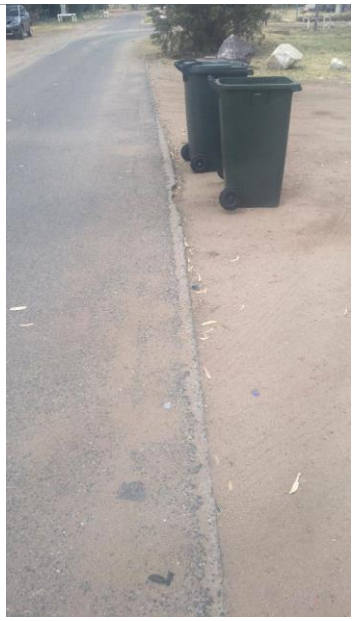




Northern Territory Town Camps

Civil Infrastructure

Inspection Date 21/11/2016 3:29:54 PM









Northern Territory Town Camps

Civil Infrastructure

Inspection Date 21/11/2016 3:02:51 PM

Insp ID: 869 Group 4 - Alice Springs Ilyperenye (Old Timers)

Road Name:	Marshall Crescent
What are you inspecting:	Pavements
Ch From (km):	0
Ch To (km):	0.1
Road Type:	Sealed - spray seal
Section Width (m):	4
Road Condition:	1 - Very Poor
General Comment:	1 speed hump at start of road

Road Defects Section

Defect Type	Defect QTY	Defect Condition	Defect Comments
Edge Breaks	20	2 - Poor	20 percent of road
Potholes	2	1 - Very Poor	
Surfacing Failure	30	1 - Very Poor	30 percent of road

Kerbs Section

Kerb Type	Kerb Cond	Kerb Comments
Flush Kerb	2 - Poor	

Shoulders Section

Shoulder Type	Width	Dropoff(mm)	Erosion	Condition	Shoulder Comments
Unsealed		80		2	

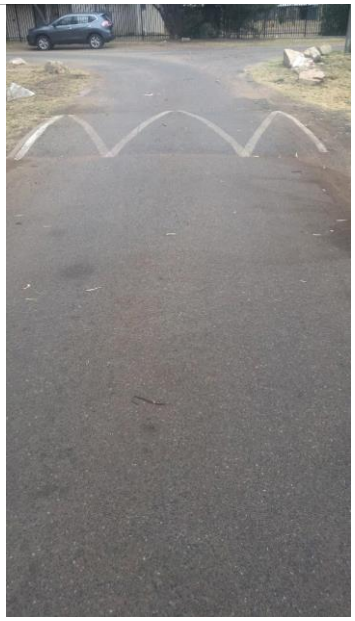
Linemarking Section

Obstruction Section

Northern Territory Town Camps

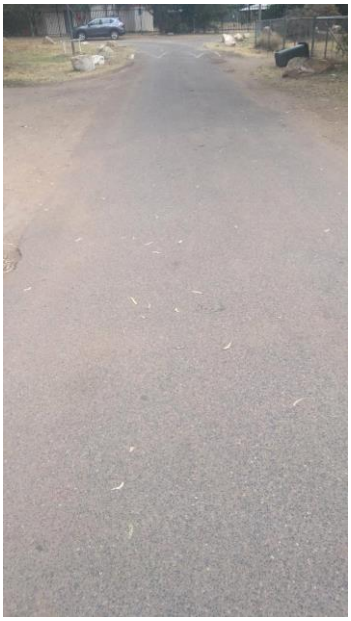
Civil Infrastructure

Inspection Date 21/11/2016 3:02:51 PM









Northern Territory Town Camps

Civil Infrastructure

Inspection Date 21/11/2016 3:02:51 PM









Northern Territory Town Camps

Civil Infrastructure

Inspection Date 21/11/2016 3:02:51 PM





Northern Territory Town Camps

Civil Infrastructure

Inspection Date 21/11/2016 2:29:31 PM

Insp ID: 881 Group 4 - Alice Springs Ilyperenye (Old Timers)

Road Name:	Morgan Street
What are you inspecting:	Pavements
Ch From (km):	0.1
Ch To (km):	0.19
Road Type:	Sealed - spray seal
Section Width (m):	4.2
Road Condition:	2 - Poor
General Comment:	

Road Defects Section

Defect Type	Defect QTY	Defect Condition	Defect Comments
Surfacing Failure	5	1 - Very Poor	5 percent
Edge Breaks	50	2 - Poor	50 percent
Potholes	5	2 - Poor	5 potholes

Kerbs Section

Kerb Type	Kerb Cond	Kerb Comments
Flush Kerb	2 - Poor	

Shoulders Section

Shoulder Type	Width	Dropoff(mm)	Erosion	Condition	Shoulder Comments
Unsealed		50			

Linemarking Section

Obstruction Section

Northern Territory Town Camps

Civil Infrastructure

Inspection Date 21/11/2016 2:29:31 PM









Northern Territory Town Camps

Civil Infrastructure

Inspection Date 21/11/2016 2:29:31 PM









Northern Territory Town Camps

Civil Infrastructure

Inspection Date 21/11/2016 2:29:31 PM



Northern Territory Camps

Civil Infrastructure

Inspection Date 21/11/2016 2:45:13 PM

Insp ID: 875	Group 4 - Alice Springs	Ilyperenye (Old Timers)

Inspection Type:	Shade Structure
Shade Structure Type:	Play ground
Shade Floor Type:	Rubber Mats
Roof Type:	Shadecloth
Width (mm):	7
Length (mm):	7
Appearance:	3
Appearance Comment:	
Condition:	3 - Good
Comment:	





Northern Territory Camps

Civil Infrastructure

Inspection Date 21/11/2016 2:45:13 PM





Northern Territory Camps

Civil Infrastructure

Inspection Date 21/11/2016 2:36:38 PM

Insp ID: 879	Group 4 - Alice Springs	Ilyperenye (Old Timers)

Inspection Type:	Shade Structure
Shade Structure Type:	BBQ Area
Shade Floor Type:	Concrete
Roof Type:	Not Covered
Width (mm):	4
Length (mm):	1
Appearance:	3
Appearance Comment:	
Condition:	4 - Very Good
Comment:	

Northern Territory Town Camps

Civil Infrastructure

Inspection Date 21/11/2016 3:39:31 PM

Insp ID: 860	Group 4 - Alice Springs	Ilyperenye (Old Timers)

Road Name:	Morgan Street
What are you inspecting:	Signs
Type of Sign:	Community signs
Sign Condition:	4 - Very Good
Sign Comment:	
General Comment:	







Northern Territory Town Camps

Civil Infrastructure

Inspection Date 21/11/2016 2:52:51 PM

Insp ID: 872	Group 4 - Alice Springs	Ilyperenye (Old Timers)

Stormwater Infrastructure:	Swales
Type of lining:	Natural Grasses
Are dimensions uniform along drain:	Yes
Base Width (m):	2
Overall Width (m):	8
Swale Depth (m):	0.6
Length of Batter 1 (m):	3
Length of Batter 2 (m):	3
Swale Condition:	3 - Good
Swale Ponding:	No
Drain flooded at time of inspection:	No
Swale Comments:	





Northern Territory Town Camps

Civil Infrastructure

Inspection Date 21/11/2016 2:52:51 PM



Northern Territory Town Camps

Civil Infrastructure

Inspection Date 21/11/2016 2:24:11 PM

Insp ID: 884	Group 4 - Alice Springs	Ilyperenye (Old Timers)

Stormwater Infrastructure:	Swales
Type of lining:	Natural Grasses
Are dimensions uniform along drain:	Yes
Base Width (m):	1
Overall Width (m):	3
Swale Depth (m):	0.4
Length of Batter 1 (m):	1
Length of Batter 2 (m):	1
Swale Condition:	3 - Good
Swale Ponding:	No
Drain flooded at time of inspection:	No
Swale Comments:	





Northern Territory Town Camps

Civil Infrastructure

Inspection Date 21/11/2016 2:24:11 PM



Northern Territory Town Camps

Civil Infrastructure

Inspection Date 21/11/2016 2:38:20 PM

Insp ID: 878	Group 4 - Alice Springs	Ilyperenye (Old Timers)

What Water Asset Are you Capturing: Taps

Diameter(mm):

Tap Leakage: Yes

Tap Condition: 1 - Very Poor

Tap Comment:





