

Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 17/11/2016 3:30:46 PM



Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 17/11/2016 3:25:15 PM

Insp ID: 287

Group 4 - Alice Springs

Ewyenper Atwatye (Hidden Valley)

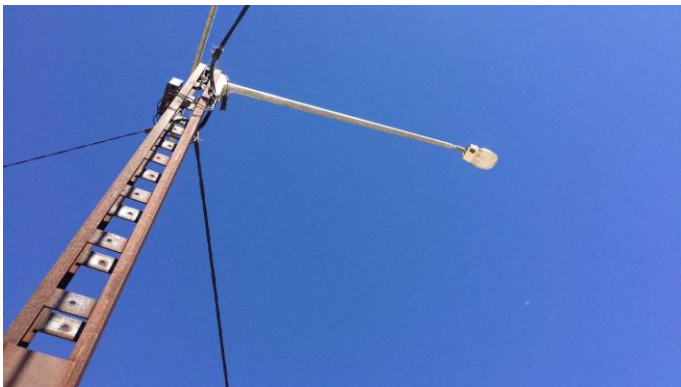
What Category are you capturing: Overhead Poles

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	S70D 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:	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:	1
Overhead Pole Comments:	Surface rusted

Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 17/11/2016 3:25:15 PM



Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 17/11/2016 3:20:40 PM

Insp ID: 288

Group 4 - Alice Springs

Ewyenper Atwatye (Hidden Valley)

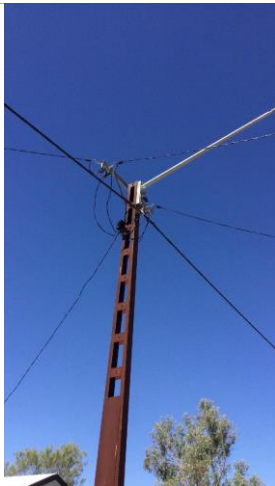
What Category are you capturing: Overhead Poles

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	S70D 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:	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:	4
Overhead Pole Comments:	Surface rusted

Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 17/11/2016 3:20:40 PM



Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 17/11/2016 3:09:47 PM

Insp ID: 289

Group 4 - Alice Springs

Ewyenper Atwatye (Hidden Valley)

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	S70D 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:	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:	2
Overhead Pole Comments:	Surface rusted

Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 17/11/2016 3:09:47 PM



Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 17/11/2016 3:06:25 PM

Insp ID: 290

Group 4 - Alice Springs

Ewyenper Atwatye (Hidden Valley)

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	S150C 11
Street Light Watts	150
Street Light Condition	2
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:	Surface rusted

Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 17/11/2016 3:06:25 PM



Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 17/11/2016 2:59:50 PM

Insp ID: 294

Group 4 - Alice Springs

Ewyenper Atwatye (Hidden Valley)

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	S150C 11
Street Light Watts	150
Street Light Condition	3
Street Light Height	
What is the type of service:	Combined
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:	0
Overhead Pole Comments:	Surface rusted

Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 17/11/2016 2:59:50 PM



Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 17/11/2016 2:37:06 PM

Insp ID: 295

Group 4 - Alice Springs

Ewyenper Atwatye (Hidden Valley)

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	S150C 14
Street Light Watts	150
Street Light Condition	3
Street Light Height	
What is the type of service:	Combined
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:	1
Overhead Pole Comments:	Surface rusted

Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 17/11/2016 2:37:06 PM



Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 17/11/2016 2:32:39 PM

Insp ID: 296

Group 4 - Alice Springs

Ewyenper Atwatye (Hidden Valley)

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	S150C 11
Street Light Watts	150
Street Light Condition	2
Street Light Height	
What is the type of service:	Combined
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:	2
Overhead Pole Comments:	Surface rusted

Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 17/11/2016 2:32:39 PM



Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 17/11/2016 2:27:54 PM

Insp ID: 297

Group 4 - Alice Springs

Ewyenper Atwatye (Hidden Valley)

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:	
Is street light fitted:	Yes
Street Light Power Supply:	
Street Light Type	S150C 11
Street Light Watts	150
Street Light Condition	2
Street Light Height	
What is the type of service:	Combined
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:	0
Overhead Pole Comments:	Surface rusted

Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 17/11/2016 2:27:54 PM



Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 17/11/2016 2:24:10 PM

Insp ID: 298

Group 4 - Alice Springs

Ewyenper Atwatye (Hidden Valley)

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: 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: 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: 0

Overhead Pole Comments: Surface rusted

Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 17/11/2016 2:24:10 PM



Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 17/11/2016 4:34:44 PM

Insp ID: 299

Group 4 - Alice Springs

Ewyenper Atwatye (Hidden Valley)

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	S150C 13
Street Light Watts	150
Street Light Condition	3
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:	4
Overhead Pole Comments:	Surface rusted

Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 17/11/2016 4:34:44 PM



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Electrical Infrastructure

Inspection Date 17/11/2016 4:31:27 PM

Insp ID: 300

Group 4 - Alice Springs

Ewyenper Atwatye (Hidden Valley)

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	S70D 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:	400
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:	2
Overhead Pole Comments:	Surface rusted

Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 17/11/2016 4:31:27 PM



Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 17/11/2016 4:19:28 PM

Insp ID: 301

Group 4 - Alice Springs

Ewyenper Atwatye (Hidden Valley)

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	S150C 11
Street Light Watts	150
Street Light Condition	3
Street Light Height	
What is the type of service:	Combined
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:	1
Overhead Pole Comments:	Surface rusted

Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 17/11/2016 4:19:28 PM



Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 17/11/2016 4:12:45 PM

Insp ID: 304

Group 4 - Alice Springs

Ewyenper Atwatye (Hidden Valley)

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	S150C 15
Street Light Watts	150
Street Light Condition	3
Street Light Height	
What is the type of service:	Combined
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:	2
Overhead Pole Comments:	Surface rusted

Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 17/11/2016 4:12:45 PM



Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 17/11/2016 4:03:03 PM

Insp ID: 306

Group 4 - Alice Springs

Ewyenper Atwatye (Hidden Valley)

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	S150C 15
Street Light Watts	150
Street Light Condition	3
Street Light Height	
What is the type of service:	Combined
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:	0
Overhead Pole Comments:	Surface rusted

Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 17/11/2016 4:03:03 PM



Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 17/11/2016 3:59:29 PM

Insp ID: 307

Group 4 - Alice Springs

Ewyenper Atwatye (Hidden Valley)

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: 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: 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: 0

Overhead Pole Comments: Surface rusted

Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 17/11/2016 3:59:29 PM



Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 17/11/2016 10:41:10 AM

Insp ID: 252

Group 4 - Alice Springs

Ewyenper Atwatye (Hidden Valley)

What Category are you capturing: Overhead Poles

Is street light fitted: Yes

Street Light Power Supply:

Street Light Type S70D 11

Street Light Watts 70

Street Light Condition 2

Street Light Height



Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 17/11/2016 10:41:10 AM



Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 17/11/2016 10:37:16 AM

Insp ID: 253 Group 4 - Alice Springs Ewyenper Atwatye (Hidden Valley)

What Category are you capturing: Overhead Poles

Is street light fitted: Yes
Street Light Power Supply:
Street Light Type S70D 11
Street Light Watts 70
Street Light Condition 3
Street Light Height



Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 17/11/2016 10:37:16 AM



Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 17/11/2016 10:25:28 AM

Insp ID: 255 Group 4 - Alice Springs Ewyenper Atwatye (Hidden Valley)

What Category are you capturing: Overhead Poles

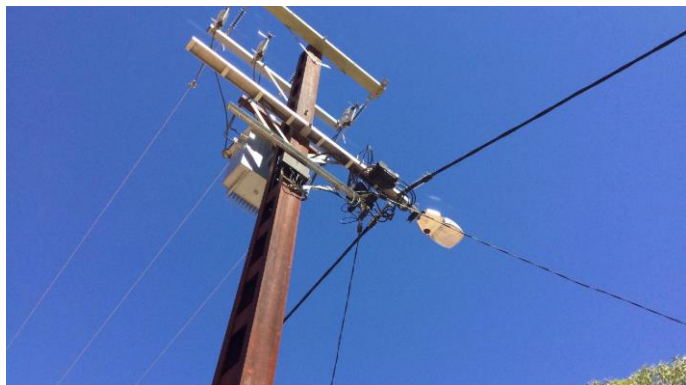
Is street light fitted: Yes
Street Light Power Supply:
Street Light Type S150C 11
Street Light Watts 150
Street Light Condition 3
Street Light Height



Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 17/11/2016 10:25:28 AM



Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 17/11/2016 10:16:36 AM

Insp ID: 256 Group 4 - Alice Springs

Ewyenper Atwatye (Hidden Valley)

What Category are you capturing: Overhead Poles

Is street light fitted: Yes

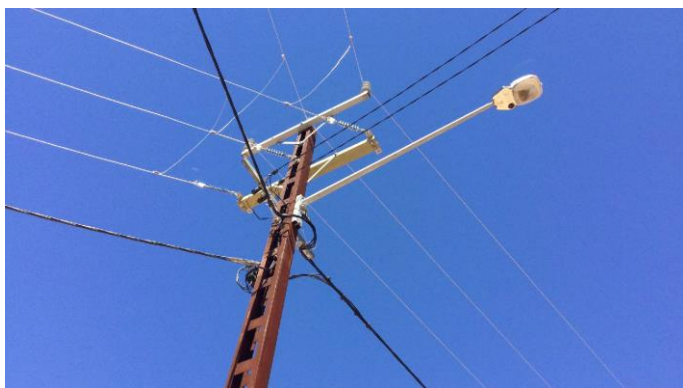
Street Light Power Supply:

Street Light Type S150C 11

Street Light Watts 150

Street Light Condition 2

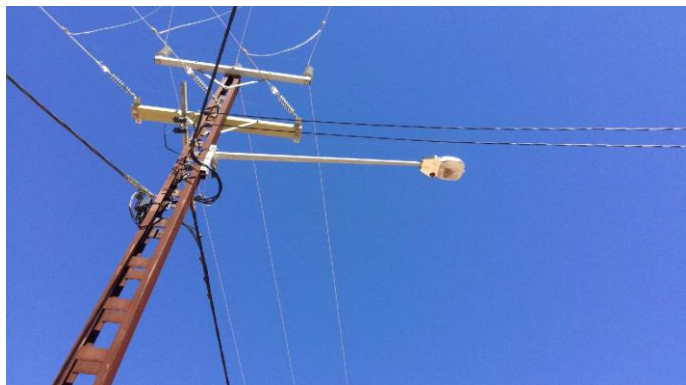
Street Light Height



Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 17/11/2016 10:16:36 AM



Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 17/11/2016 10:12:15 AM

Insp ID: 257 Group 4 - Alice Springs Ewyenper Atwatye (Hidden Valley)

What Category are you capturing: Overhead Poles

Is street light fitted: Yes
Street Light Power Supply:
Street Light Type S150C 14
Street Light Watts 150
Street Light Condition 2
Street Light Height



Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 17/11/2016 10:12:15 AM



Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 17/11/2016 10:06:15 AM

Insp ID: 258

Group 4 - Alice Springs

Ewyenper Atwatye (Hidden Valley)

What Category are you capturing: Overhead Poles

Is street light fitted: Yes

Street Light Power Supply:

Street Light Type S150c 11

Street Light Watts 150

Street Light Condition 3

Street Light Height



Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 17/11/2016 10:06:15 AM



Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 17/11/2016 9:55:20 AM

Insp ID: 260 Group 4 - Alice Springs Ewyenper Atwatye (Hidden Valley)

What Category are you capturing: Overhead Poles

Is street light fitted: Yes
Street Light Power Supply: S150C 11
Street Light Type 150
Street Light Watts 2
Street Light Condition
Street Light Height



Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 17/11/2016 9:55:20 AM



Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 17/11/2016 9:50:16 AM

Insp ID: 261 Group 4 - Alice Springs Ewyenper Atwatye (Hidden Valley)

What Category are you capturing: Overhead Poles

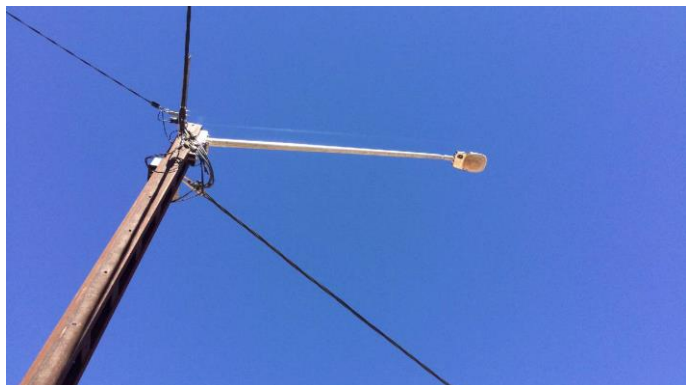
Is street light fitted: Yes
Street Light Power Supply:
Street Light Type S70D 11
Street Light Watts 70
Street Light Condition 1
Street Light Height



Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 17/11/2016 9:50:16 AM



Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 17/11/2016 9:40:59 AM

Insp ID: 262 Group 4 - Alice Springs Ewyenper Atwatye (Hidden Valley)

What Category are you capturing: Overhead Poles

Is street light fitted: Yes
Street Light Power Supply:
Street Light Type S70D 52
Street Light Watts 70
Street Light Condition 3
Street Light Height



Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 17/11/2016 9:40:59 AM



Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 17/11/2016 9:32:18 AM

Insp ID: 265

Group 4 - Alice Springs

Ewyenper Atwatye (Hidden Valley)

What Category are you capturing: Overhead Poles

Is street light fitted: Yes

Street Light Power Supply:

Street Light Type S150C 11

Street Light Watts 150

Street Light Condition 3

Street Light Height



Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 17/11/2016 9:32:18 AM



Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 17/11/2016 10:46:33 AM

Insp ID: 266 Group 4 - Alice Springs Ewyenper Atwatye (Hidden Valley)

What Category are you capturing: Overhead Poles

Is street light fitted: Yes
Street Light Power Supply:
Street Light Type S150C 11
Street Light Watts 150
Street Light Condition 3
Street Light Height



Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 17/11/2016 10:46:33 AM



Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 17/11/2016 12:35:34 PM

Insp ID: 270

Group 4 - Alice Springs

Ewyenper Atwatye (Hidden Valley)

What Category are you capturing: Overhead Poles

Is street light fitted: Yes

Street Light Power Supply:

Street Light Type S70D 11

Street Light Watts 70

Street Light Condition 3

Street Light Height



Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 17/11/2016 12:35:34 PM



Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 17/11/2016 12:20:26 PM

Insp ID: 271 Group 4 - Alice Springs Ewyenper Atwatye (Hidden Valley)

What Category are you capturing: Overhead Poles

Is street light fitted: Yes
Street Light Power Supply:
Street Light Type S70D 11
Street Light Watts 70
Street Light Condition 3
Street Light Height



Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 17/11/2016 12:20:26 PM



Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 17/11/2016 12:16:39 PM

Insp ID: 272

Group 4 - Alice Springs

Ewyenper Atwatye (Hidden Valley)

What Category are you capturing: Overhead Poles

Is street light fitted: Yes

Street Light Power Supply:

Street Light Type S70D 11

Street Light Watts 70

Street Light Condition 3

Street Light Height



Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 17/11/2016 12:16:39 PM



Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 17/11/2016 11:34:03 AM

Insp ID: 276

Group 4 - Alice Springs

Ewyenper Atwatye (Hidden Valley)

What Category are you capturing: Overhead Poles

Is street light fitted: Yes

Street Light Power Supply:

Street Light Type S70D 11

Street Light Watts 70

Street Light Condition 3

Street Light Height



Northern Territory Town Camps

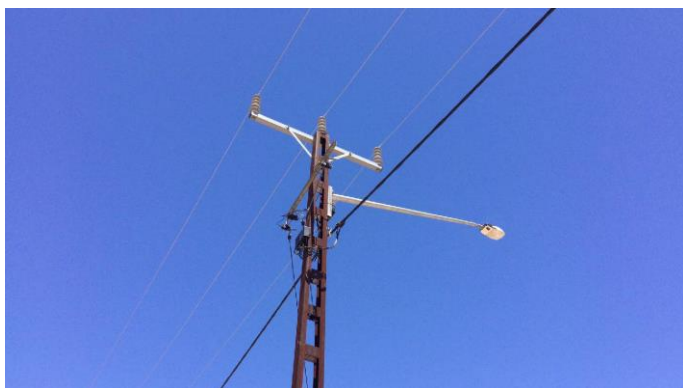
Electrical Infrastructure

Inspection Date 17/11/2016 11:27:22 AM

Insp ID: 277 Group 4 - Alice Springs Ewyenper Atwatye (Hidden Valley)

What Category are you capturing: Overhead Poles

Is street light fitted: Yes
Street Light Power Supply:
Street Light Type S70D 11
Street Light Watts 70
Street Light Condition 3
Street Light Height



Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 17/11/2016 11:27:22 AM



Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 17/11/2016 11:23:15 AM

Insp ID: 278

Group 4 - Alice Springs

Ewyenper Atwatye (Hidden Valley)

What Category are you capturing: Overhead Poles

Is street light fitted: Yes

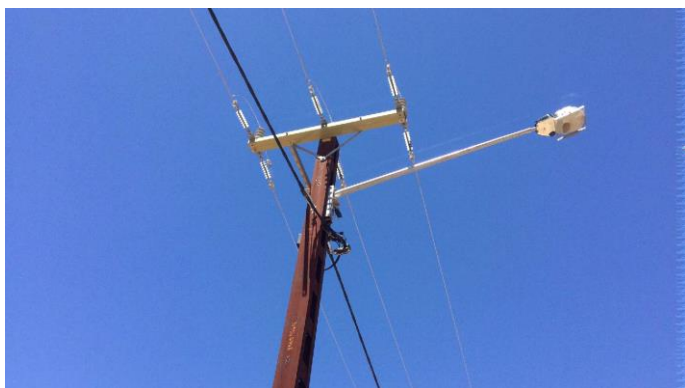
Street Light Power Supply:

Street Light Type S150C 13

Street Light Watts 150

Street Light Condition 3

Street Light Height



Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 17/11/2016 11:23:15 AM



Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 17/11/2016 11:19:17 AM

Insp ID: 279

Group 4 - Alice Springs

Ewyenper Atwatye (Hidden Valley)

What Category are you capturing: Overhead Poles

Is street light fitted: Yes

Street Light Power Supply:

Street Light Type S150C 11

Street Light Watts 150

Street Light Condition 3

Street Light Height



Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 17/11/2016 11:19:17 AM



Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 17/11/2016 11:10:31 AM

Insp ID: 280

Group 4 - Alice Springs

Ewyenper Atwatye (Hidden Valley)

What Category are you capturing: Overhead Poles

Is street light fitted: Yes

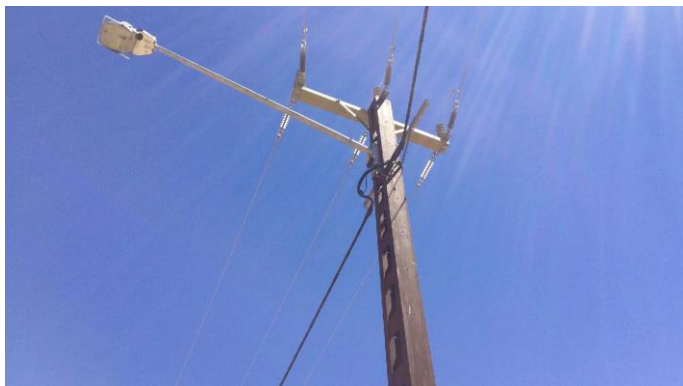
Street Light Power Supply:

Street Light Type S250C 12

Street Light Watts 250

Street Light Condition 3

Street Light Height



Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 17/11/2016 11:10:31 AM



Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 17/11/2016 3:30:46 PM

Insp ID: 286

Group 4 - Alice Springs

Ewyenper Atwatye (Hidden Valley)

What Category are you capturing: Overhead Poles

Is street light fitted: Yes

Street Light Power Supply:

Street Light Type S150 C 11

Street Light Watts 150

Street Light Condition 3

Street Light Height



Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 17/11/2016 3:30:46 PM



Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 17/11/2016 3:25:15 PM

Insp ID: 287

Group 4 - Alice Springs

Ewyenper Atwatye (Hidden Valley)

What Category are you capturing: Overhead Poles

Is street light fitted: Yes

Street Light Power Supply:

Street Light Type S70D 11

Street Light Watts 70

Street Light Condition 3

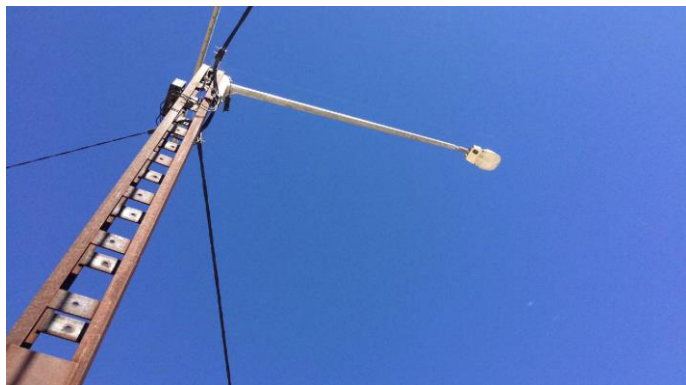
Street Light Height



Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 17/11/2016 3:25:15 PM



Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 17/11/2016 3:20:40 PM

Insp ID: 288

Group 4 - Alice Springs

Ewyenper Atwatye (Hidden Valley)

What Category are you capturing: Overhead Poles

Is street light fitted: Yes

Street Light Power Supply:

Street Light Type S70D 11

Street Light Watts 70

Street Light Condition 3

Street Light Height



Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 17/11/2016 3:20:40 PM



Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 17/11/2016 3:09:47 PM

Insp ID: 289 Group 4 - Alice Springs Ewyenper Atwatye (Hidden Valley)

What Category are you capturing: Overhead Poles

Is street light fitted: Yes
Street Light Power Supply:
Street Light Type S70D 11
Street Light Watts 70
Street Light Condition 3
Street Light Height



Northern Territory Town Camps

Electrical Infrastructure

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Electrical Infrastructure

Inspection Date 17/11/2016 3:06:25 PM

Insp ID: 290

Group 4 - Alice Springs

Ewyenper Atwatye (Hidden Valley)

What Category are you capturing: Overhead Poles

Is street light fitted: Yes

Street Light Power Supply:

Street Light Type S150C 11

Street Light Watts 150

Street Light Condition 2

Street Light Height



Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 17/11/2016 3:06:25 PM



Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 17/11/2016 2:59:50 PM

Insp ID: 294

Group 4 - Alice Springs

Ewyenper Atwatye (Hidden Valley)

What Category are you capturing: Overhead Poles

Is street light fitted: Yes

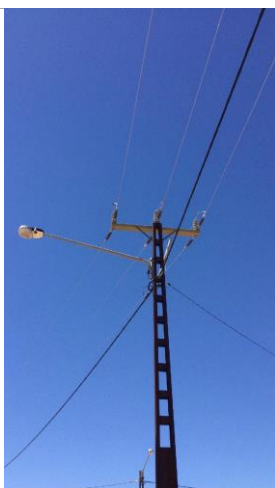
Street Light Power Supply:

Street Light Type S150C 11

Street Light Watts 150

Street Light Condition 3

Street Light Height



Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 17/11/2016 2:59:50 PM



Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 17/11/2016 2:37:06 PM

Insp ID: 295 Group 4 - Alice Springs Ewyenper Atwatye (Hidden Valley)

What Category are you capturing: Overhead Poles

Is street light fitted: Yes
Street Light Power Supply:
Street Light Type S150C 14
Street Light Watts 150
Street Light Condition 3
Street Light Height



Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 17/11/2016 2:37:06 PM



Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 17/11/2016 2:32:39 PM

Insp ID: 296

Group 4 - Alice Springs

Ewyenper Atwatye (Hidden Valley)

What Category are you capturing: Overhead Poles

Is street light fitted: Yes

Street Light Power Supply:

Street Light Type S150C 11

Street Light Watts 150

Street Light Condition 2

Street Light Height



Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 17/11/2016 2:27:54 PM

Insp ID: 297

Group 4 - Alice Springs

Ewyenper Atwatye (Hidden Valley)

What Category are you capturing: Overhead Poles

Is street light fitted: Yes

Street Light Power Supply:

Street Light Type S150C 11

Street Light Watts 150

Street Light Condition 2

Street Light Height



Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 17/11/2016 2:27:54 PM



Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 17/11/2016 4:34:44 PM

Insp ID: 299

Group 4 - Alice Springs

Ewyenper Atwatye (Hidden Valley)

What Category are you capturing: Overhead Poles

Is street light fitted: Yes

Street Light Power Supply:

Street Light Type S150C 13

Street Light Watts 150

Street Light Condition 3

Street Light Height



Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 17/11/2016 4:34:44 PM



Northern Territory Town Camps

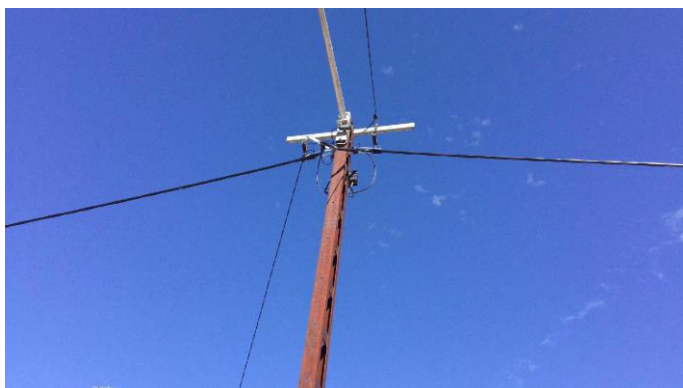
Electrical Infrastructure

Inspection Date 17/11/2016 4:31:27 PM

Insp ID: 300 Group 4 - Alice Springs Ewyenper Atwatye (Hidden Valley)

What Category are you capturing: Overhead Poles

Is street light fitted: Yes
Street Light Power Supply:
Street Light Type S70D 11
Street Light Watts 70
Street Light Condition 3
Street Light Height



Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 17/11/2016 4:31:27 PM



Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 17/11/2016 4:19:28 PM

Insp ID: 301

Group 4 - Alice Springs

Ewyenper Atwatye (Hidden Valley)

What Category are you capturing: Overhead Poles

Is street light fitted: Yes

Street Light Power Supply:

Street Light Type S150C 11

Street Light Watts 150

Street Light Condition 3

Street Light Height



Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 17/11/2016 4:19:28 PM



Northern Territory Town Camps

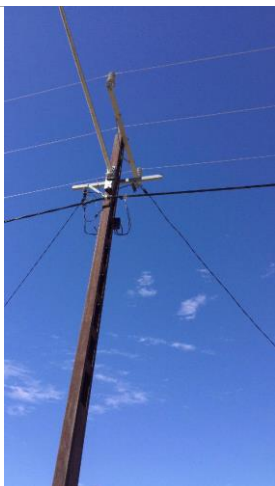
Electrical Infrastructure

Inspection Date 17/11/2016 4:12:45 PM

Insp ID: 304 Group 4 - Alice Springs Ewyenper Atwatye (Hidden Valley)

What Category are you capturing: Overhead Poles

Is street light fitted: Yes
Street Light Power Supply: S150C 15
Street Light Type 150
Street Light Condition 3
Street Light Height



Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 17/11/2016 4:12:45 PM



Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 17/11/2016 4:03:03 PM

Insp ID: 306

Group 4 - Alice Springs

Ewyenper Atwatye (Hidden Valley)

What Category are you capturing: Overhead Poles

Is street light fitted: Yes

Street Light Power Supply:

Street Light Type S150C 15

Street Light Watts 150

Street Light Condition 3

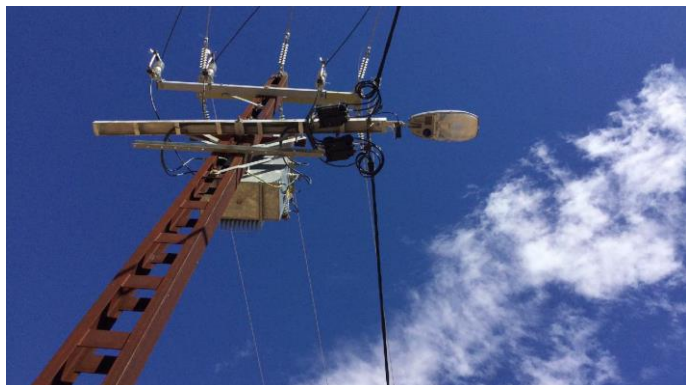
Street Light Height



Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 17/11/2016 4:03:03 PM



Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 17/11/2016 10:30:27 AM

Insp ID: 254

Group 4 - Alice Springs

Ewyenper Atwatye (Hidden Valley)

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:

Unknown

Is there access to transformers name plate to take a photo:

No

What is the condition of transformer:

3

What is cable type to transformer:

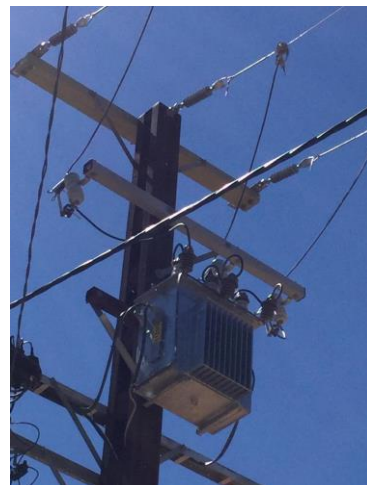
PVC insulated black

What is cable size to transformer:

Is there switch gear or fusing associated with the transformer:

Cut out fuse

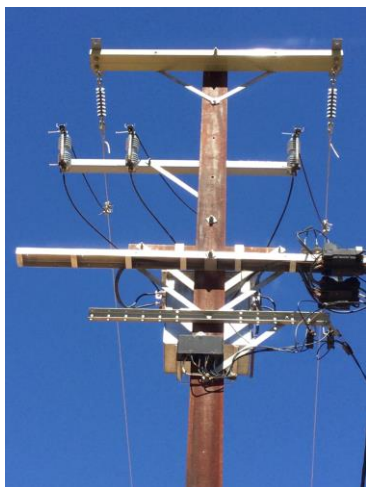
Transformer Comment:



Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 17/11/2016 10:30:27 AM



Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 17/11/2016 10:00:06 AM

Insp ID: 259

Group 4 - Alice Springs

Ewyenper Atwatye (Hidden Valley)

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:

Unknown

Is there access to transformers name plate to take a photo:

No

What is the condition of transformer:

3

What is cable type to transformer:

PVC insulated black

What is cable size to transformer:

Is there switch gear or fusing associated with the transformer:

Cut out fuse

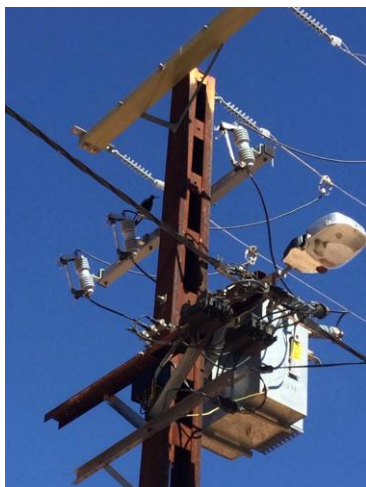
Transformer Comment:



Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 17/11/2016 10:00:06 AM



Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 17/11/2016 11:37:56 AM

Insp ID: 275

Group 4 - Alice Springs

Ewyenper Atwatye (Hidden Valley)

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:

Unknown

Is there access to transformers name plate to take a photo:

No

What is the condition of transformer:

3

What is cable type to transformer:

PVC insulated black

What is cable size to transformer:

Is there switch gear or fusing associated with the transformer:

Cut out fuse

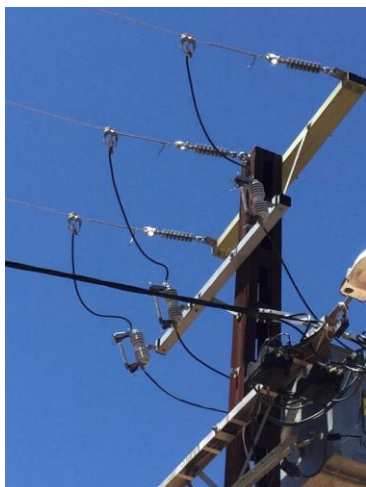
Transformer Comment:



Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 17/11/2016 11:37:56 AM



Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 17/11/2016 4:07:58 PM

Insp ID: 305

Group 4 - Alice Springs

Ewyenper Atwatye (Hidden Valley)

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:

Is there access to transformers name plate to take a photo:

No

What is the condition of transformer:

3

What is cable type to transformer:

PVC insulated black

What is cable size to transformer:

Is there switch gear or fusing associated with the transformer:

Cut out fuse

Transformer Comment:



Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 17/11/2016 4:07:58 PM



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

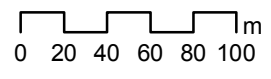


Legend

- Start of road
- Road_Condition**
- 1-Very poor
- 2-Poor
- 3-Good
- 4-Very good
- 5-Excellent
- Town Camp boundary



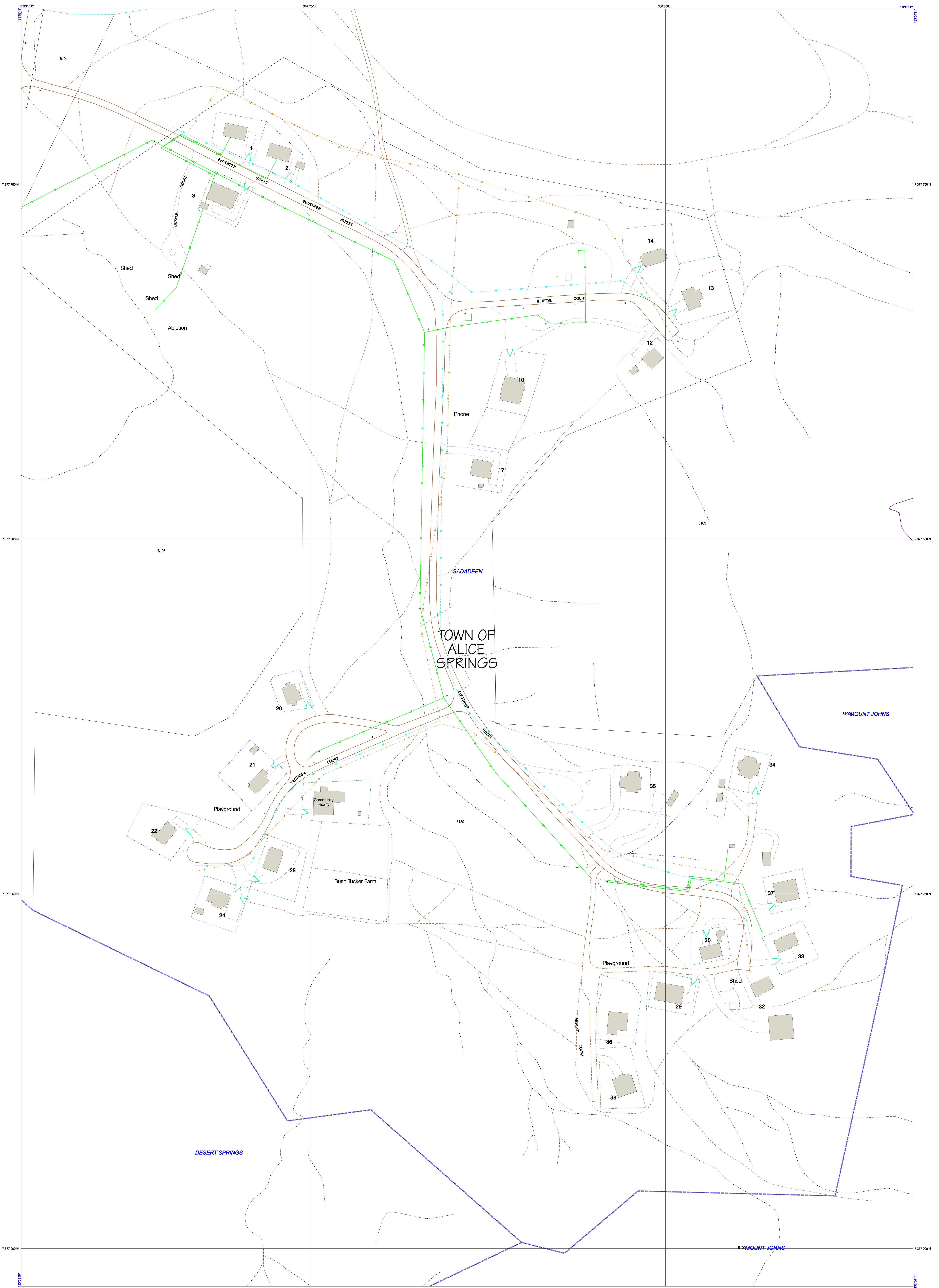
A3 scale: 1:3,500



Date: 11/02/2017 Version: 1
Coordinate system: GDA 1994

NT Town Camp Road Assessments
35 - Ewyenper Atwatye (Alice Springs)

Existing drawings



LEGEND

LAND USE PLANNING:
 APPROX. PORTION OF BUILDING (contoured area) (see also of planning)
 LAND EXCLUDED FROM DEVELOPMENT
 GENERAL EXCLUSION/BUFFER
 CULTURAL EXCLUSION AREAS
 Unauthorised entry, works on or use of land where there is a cultural site or otherwise under the Northern Territory Aboriginal Sacred Sites Act. For conditions relating to works on or use of land with a Cultural Exclusion Area, refer to the Aboriginal Areas Protection Authority (AAPA) web site and/or contact the AAPA or Phone 8999 4332.
 This notice does not negate the need for entry, works, or use with any to be notified under the Aboriginal Land Rights (ALRA) Act. In the case of Aboriginal Land, or another estate.

CADASTRE
 Current 123
 Proposed 123
 Locality LOCALITY

TOPOGRAPHY
 Road Sealed, Bridge
 Road Unsealed, Track
 Footpath, Drain, Culvert
 Wall, Gate, Fence, Cattle Grid
 Railway, Disused Railway
 Aeronautical Terminal, Landing Strip
 Trench, 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
 Contour: Depression

UTILITY SERVICES
 ELECTRICITY
 LOW VOLTAGE
 HIGH VOLTAGE
 WATER RETICULATION
 WATER MAIN
 WATER SERVICE MAIN
 SEWER
 SEWER MAIN
 SEWER SERVICE MAIN

LOCALITY DIAGRAM
 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.

General enquiries, corrections, updates, errors and omissions:
 Indigenous Community Land Use Planning, Department of Lands and Planning
 TEL: (08) 8999 1300, FAX: (08) 8999 7180, Email: planning@nt.gov.au

Topographic Information:
 Land Information Division
 Dept of Lands and Planning
 TEL: (08) 8999 5331
 FAX: (08) 8999 5360
 Email: landinfo@nt.gov.au

Power, Water or Sewer Information:
 Northern Territory Planning Branch
 Power and Water Corporation
 TEL: (08) 8999 5344
 FAX: (08) 8999 5380
 Email: landinfo@nt.gov.au

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

Cadastral Information:
 Office of the Survey General
 Dept of Lands and Planning
 TEL: (08) 8999 5333
 FAX: (08) 8999 5365
 Email: landinfo@nt.gov.au

Planning Information:
 Indigenous Community Land Use Planning
 Dept of Lands and Planning
 TEL: (08) 8999 1300
 FAX: (08) 8999 7180
 Email: planning@nt.gov.au

Housing Infrastructure Information:
 Infrastructure Delivery Branch
 Dept of Housing, Local Government & Regional Services
 TEL: (08) 8999 9213
 FAX: (08) 8999 5110
 Email: info@hgtg.gov.au

AVAILABLE FROM AND PRODUCED BY:
 Northern Territory Government

NOTES: POWER POLES, MASTS AND SUPPORT TOWERS, TOWER/POLETS and other similar support objects are required from Asset Photographs and these locations will need from service providers.
 These features are visible as LOCAL SURVEY CONTROL. The ground location is expected to be within +/- 0.3m of their required location.
 GDA 84/94 (MGA 94) please refer to the GDA 84/94 (MGA 94) for more information and please refer to the GDA 84/94 (MGA 94) for more information and please refer to the GDA 84/94 (MGA 94) for more information.

ORANGE BEFORE YOU DIG
 www.FTDOL.com.au

SOURCE INFORMATION
 CURRENCY OF TOPOGRAPHY: 10 June 2007
 SOURCE MAP SCALE: 2500
 ZONE UTM:
 CONTOUR INTERVAL:
 HORIZONTAL DATUM:
 VERTICAL DATUM:
 PROJECTION:
 DATE GENERATED: 19 June 2012

Scale: 0 10 20 30 40 50 metres

SERVICED LAND AVAILABILITY PROGRAM

SLAP Map

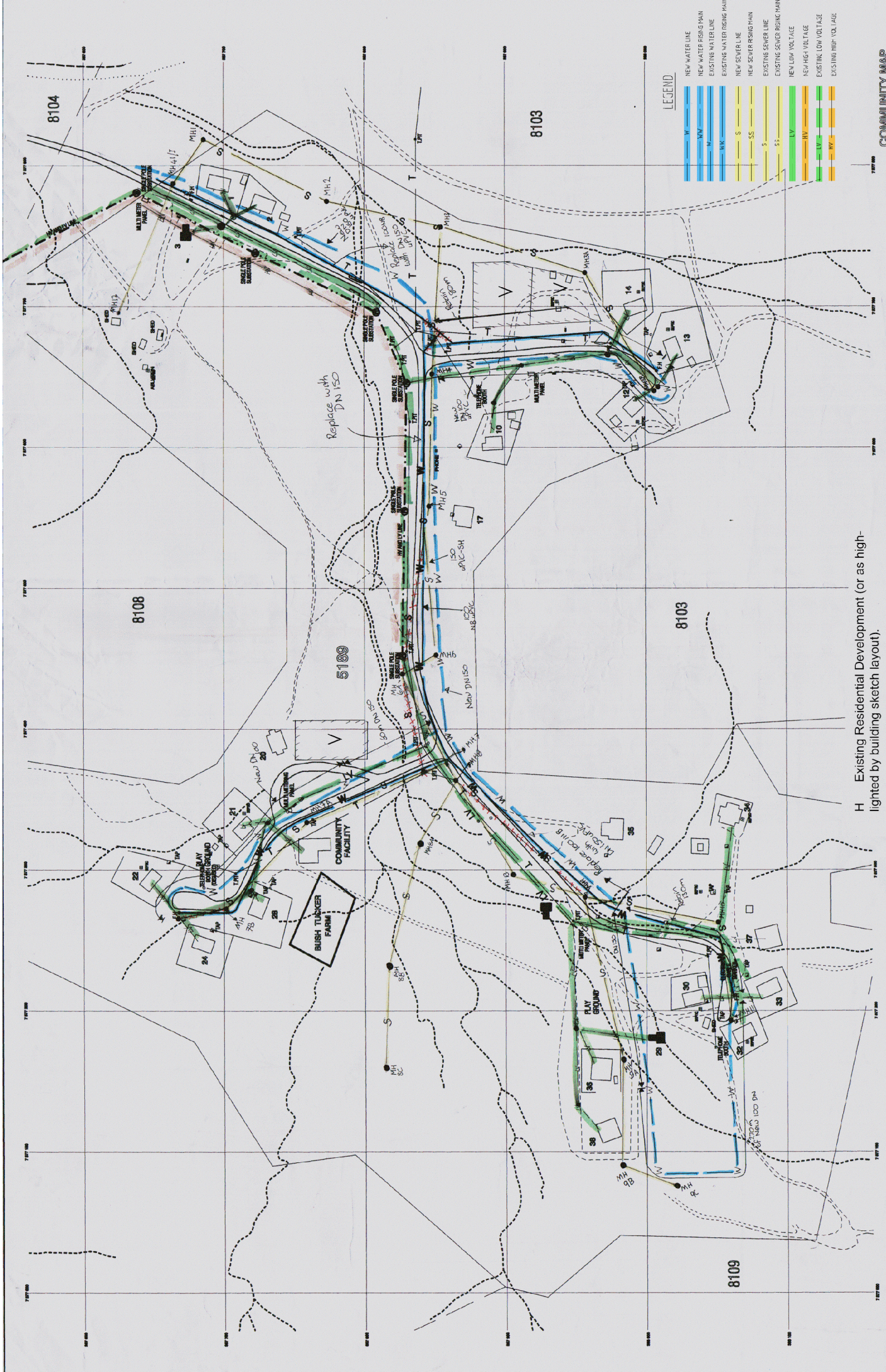
Ewewper-Atwatye (Alice Springs Town Camp)

Hidden Valley

Alice Springs Town Council

Community ID : 35

GDA



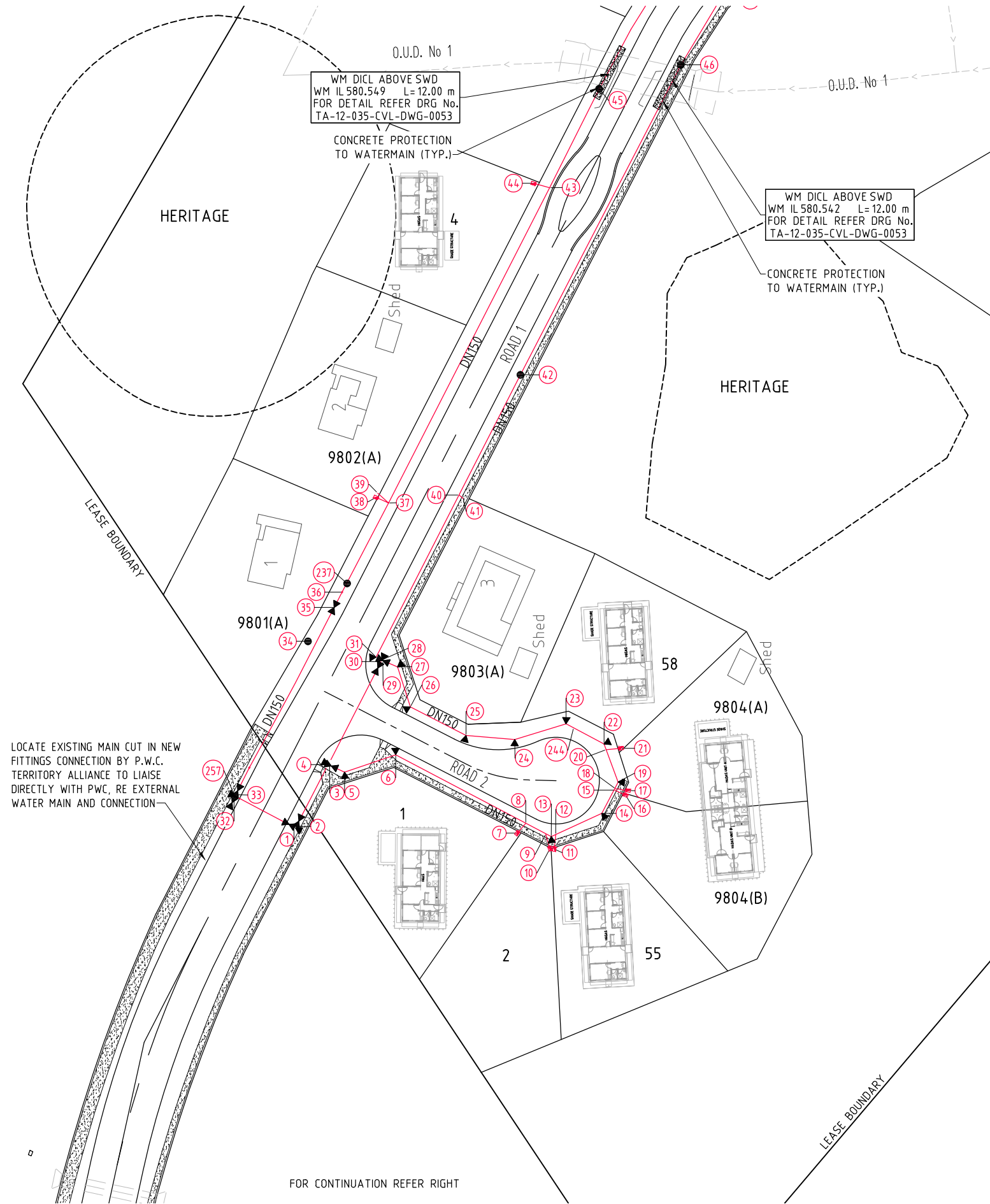
LEGEND

—	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
—	RE-PAH HIGH VOLTAGE
—	EXISTING LOW VOLTAGE
—	EXISTING HIGH VOLTAGE

CONNECTING NEIGHBOURS PROJECT - PROPOSED SERVICES LAYOUT
FIGURE F28 - HIDDEN VALLEY

- 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.

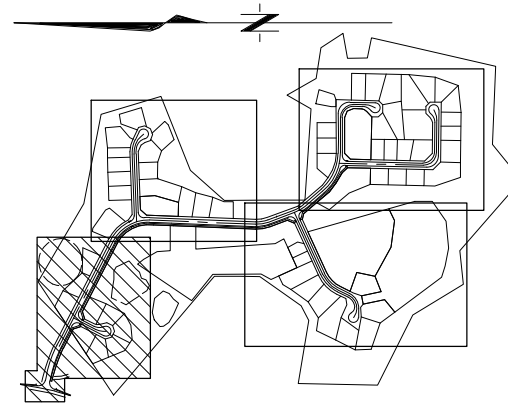
FOR CONTINUATION REFER DRG TA-12-035-CVL-DWG-0047



LOCATE EXISTING MAIN CUT IN NEW FITTINGS CONNECTION BY P.W.C. TERRITORY ALLIANCE TO LIAISE DIRECTLY WITH PWC, RE EXTERNAL WATER MAIN AND CONNECTION

FOR CONTINUATION REFER RIGHT

'AS CONSTRUCTED'



KEY PLAN
N.T.S.

NOTES:

- REFER TO DRG NO. TA-12-035-CVL-DWG-0002 FOR PROJECT NOTES.
- FOR WATER SUPPLY NOTES, REFER TO DRG NO. TA-12-035-CVL-DWG-0046.
- FOR WATER SUPPLY SETTING OUT REFER TO DRG NO. TA-12-035-CVL-DWG-0050.
- FOR WATER SUPPLY SCHEMATICS REFER TO DRG NO. TA-12-035-CVL-DWG-0052 TO 0053
- ALL SERVICES ARE STANDARD OFFSETS UNLESS NOTED OTHERWISE
- FOR SURVEY CONTROL STATION REFER DRG NO. TA-12-035-CVL-DWG-0006
- FOR WATERMAIN CLASHING WITH SWD PIPE REFER DRG NO. TA-12-035-CVL-DWG-0053 FOR DETAILS
- NEW WATERMAIN WORKS TO BE STAGED, TO ENABLE A CONTINUOUS WATER SUPPLY TO THE COMMUNITY.

ABBREVIATIONS

- DN NOMINAL BORE
- SOC SOCKET
- FL FLANGE
- SP SPIGOT

PERMISSION TO USE FOR CONSTRUCTION PURPOSES
 SIGNED..... DATE.....
 ON BEHALF OF LAND DEVELOPMENT, FOR INCORPORATION INTO THE POWER AND WATER AUTHORITY'S 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. This approval is valid up to two years from the above date.

WATER NOTES:

1. WATER PIPES SHALL BE DUCTILE IRON CEMENT-LINED (DICL) WITH A MINIMUM FLANGE RATING OF PN16, OR PVC-O PN16 WITH DICL FITTINGS, UNLESS NOTED OTHERWISE. ALL DUCTILE IRON PIPES AND FITTINGS SHALL BE WRAPPED IN POLYETHYLENE SLEEVING ACCORDING TO DRAWING NO'S W1-2-17A & W1-2-17B.
2. 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.
3. ALL BENDS, TEES AND END CAPS TO BE SUPPORTED BY THRUST BLOCKS. THE COATING ON THE FITTING SHALL BE FULLY PROTECTED BY A FELT OR GEOTEXTILE BARRIER WHEN THE THRUST BLOCK IS POURED AND THRUST BLOCKS MUST NOT OVERLAP THE JOINT.
4. WATERMANS SHALL BE LAID OVER STORMWATER, SEWER, & NON POTABLE WATER PIPES WHERE THE ALIGNMENTS CROSS.
5. PIPE UNDER CARRIAGEWAYS OPEN DRAINS AND DRAINAGE STRUCTURES IS TO BE DICL AND FOR ROADS EXTEND 1.0M (MIN) BEYOND THE BACK OF THE KERB.
6. VALVE AND HYDRANT MARKER POSTS TO BE CLEARLY LABELLED WITH OFFSET DISTANCE FROM MARKER TO FITTING. MARKER POSTS IN ACCORDANCE WITH PWC PRODUCTS MANUAL SV.75X75X2.5 SHS GALVANISED POST, FH 100X50X2.0 RHS GALVANISED POST.
7. STAINLESS STEEL TRACE WIRE 1.6MM DIAMETER TO BE JOINTED WITH PURPOSE MADE LUGS AND TESTED FOR ELECTRICAL CONTINUITY. TEST TO BE WITNESSED BY THE CERTIFIER. THE WIRE IS TO BE BROUGHT TO THE SURFACE (LOOPED) AT ALL VALVES AND FIRE HYDRANTS. THE WIRE IS TO REMAIN CLEAR OF THE VALVE STEM AND KEY DURING OPERATION.
8. WATERMANS INCLUDING ALL LOT SERVICES TO BE HYDROSTATICALLY TESTED TO 1000KPA, DISINFECTED, FLUSHED AND BACTERIOLOGICALLY TESTED TO PWC REQUIREMENTS; SEE CUSTOMER HANDOUT NO.5.
9. FOR VACANT LOTS WHERE THERE IS NO INTENTION TO BUILD IN THE NEAR FUTURE, FINISH THE WATER SERVICE 300MM WITHIN THE LOT BOUNDARY AND CAPPED. MARKER TAPE AND STAINLESS STEEL TRACE WIRE TO BE BROUGHT TO THE SURFACE DIRECTLY ABOVE THE CAPP. PROVIDE ACCURATE AS-CONSTRUCTED LOCATION LEVEL AND DEPTH DIMENSIONS FOR TERMINATED SERVICE.
10. THE FOLLOWING CHANGES APPLY TO PWC STANDARD DRAWING NO W1-1-13. READTAP CONNECTORS FITTED WITH SS BALL VALVES FOR ALL CONNECTIONS OFF NEW MAINS. FOR NEW CONNECTIONS OFF EXISTING MAINS USE A DR BRASS FERULE COCK. FIT A SS BALL VALVE AT THE READTAP CONNECTOR AND FOR CROSS ROAD SERVICES ALSO 300MM INSIDE THE PROPERTY BOUNDARY IMMEDIATELY PRIOR TO THE RISER SECTION.
11. SERVICE UPSTAND PIPES SHALL BE PROTECTED BY BOLLARDS OR FENCING AND THE PIPE PLUGGED WITH A THREADED BRASS CAP UNTIL THE INSTALLATION OF THE METER.
12. RECONNECT ALL EXISTING ON LOT PLUMBING ONLY TO THE NEW WATERMETER. SELF CERTIFYING PLUMBER TO CERTIFY THAT ALL CROSS BOUNDARY CONNECTIONS HAVE BEEN REMOVED AND THAT THE WATERMETER ONLY SUPPLIES WATER TO THE ONE LOT. THIS CERTIFICATION IS REQUIRED FOR EVERY LOT INDIVIDUALLY.
13. AS CONSTRUCTED DRAWINGS FOR WATER ARE TO SHOW POSITION (CO-ORDINATES TO MGA94 & LEVELS TO AHD) FOR ALL VALVES, FIREHYDRANTS, TEES, BENDS, LINE ENDS. SHOW SEPARATION DISTANCES/LEVELS FOR INTERSECTING SERVICES. SHOW ALL OTHER VALUES REQUIRED TO CERTIFY COMPLIANCE OF THE WORKS. PROVIDE MANUFACTURER AND MODEL DETAILS FOR ALL MAIN COMPONENTS..
14. CERTIFICATION DOCUMENTATION MUST INCLUDE AS CONSTRUCTED DRAWINGS, HYDROSTATIC TEST RESULTS, DISINFECTION TEST RESULTS, MICROBIOLOGICAL TEST RESULTS, COMPACTION TEST RESULTS, TRACE WIRE CONTINUITY TEST RESULTS, BEDDING GRADING CURVES, CONCRETE TEST RESULTS, OTHER INSPECTION REPORTS AND PHOTOGRAPHS, SURVEY DATA FOR LOT CONNECTIONS AS WELL AS THE OVERALL CERTIFICATION ITSELF.
15. NOTE DELETED AS PER PWC AGREEMENT
16. NOTE DELETED AS PER PWC AGREEMENT
18. NOTE DELETED AS PER PWC AGREEMENT
19. ALL EXISTING METERS AND RE-USABLE COMPONENTS OF EXISTING METER ASSEMBLIES THAT NEEDS TO BE REMOVED SHALL BE RETURNED TO P.W.C.
20. ALL VALVE PIT COVERS IN CONCRETE FOOTPATH TO MATCH FINISHED SURFACE LEVEL.

LEGEND

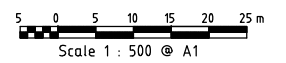
PROPOSED SERVICES

- DN 150 NEW WATER MAIN, STOP VALVE, AND THRUST BLOCK
- PROPOSED FIRE HYDRANT, SCOUR-HYDRANT, OR AIR VALVE. REFER DRG NO. TA-12-035-CVL-DWG-0050 FOR FITTING DESIGNATION.
- WATER SERVICES 20 mm, UNLESS OTHERWISE SPECIFIED
- DUCTILE PIPE ROAD / STORMWATER CROSSING

EXISTING SERVICES

- EXISTING WATER MAINS AND STOP VALVES
- EXISTING WATER MAINS FOR INFORMATION REFER TO NOTE 18 ON DRG NO. TA-12-035-CVL-DWG-0002

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.



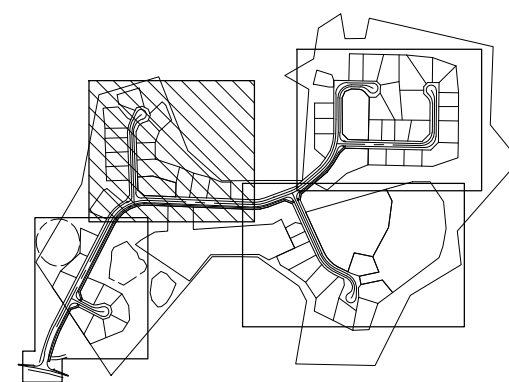
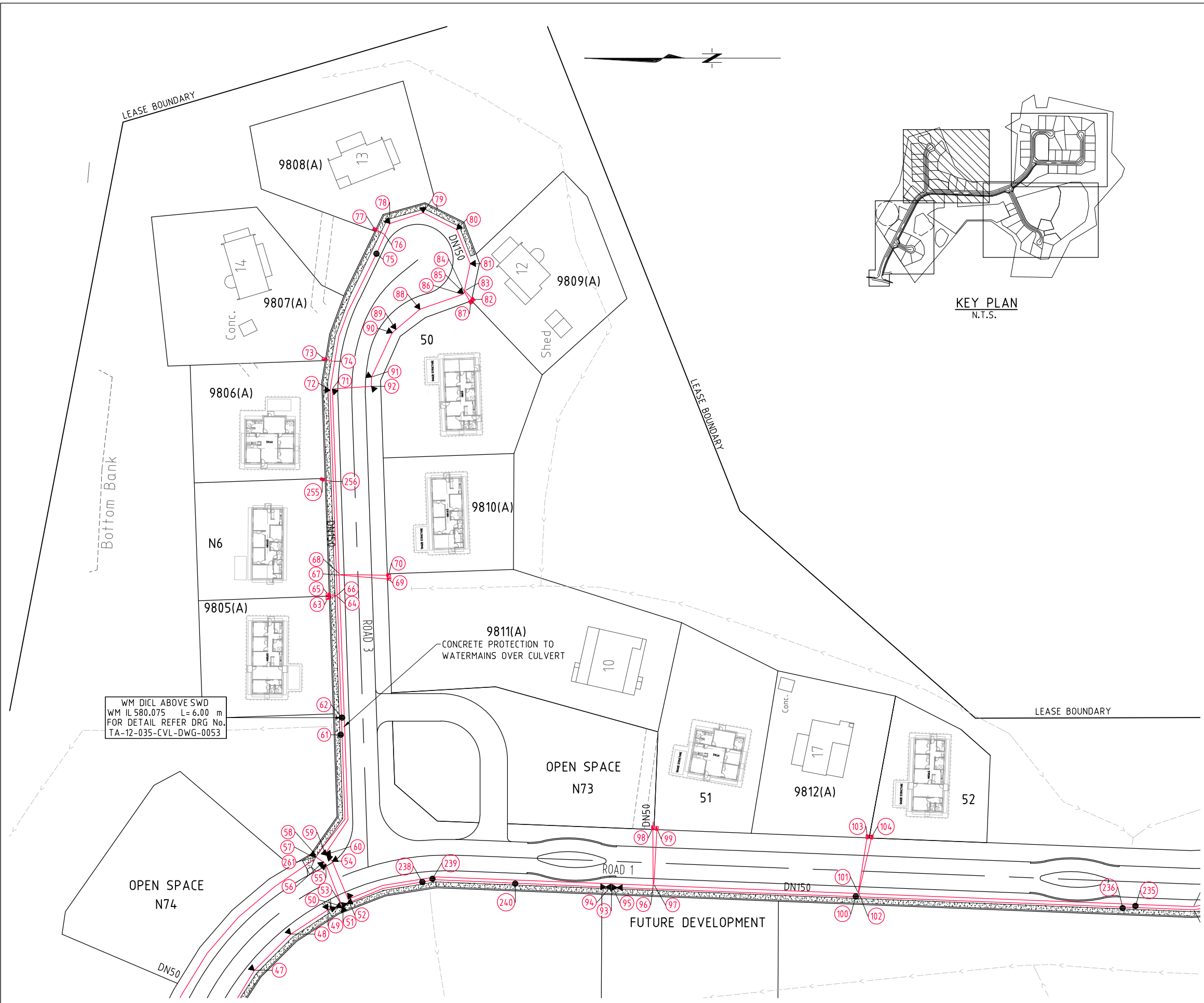
REV	DATE	REVISION DESCRIPTION	ORIG	CKD	ENG	QA	APPD
-	17 MAY 2013	AS CONSTRUCTED INFORMATION	CT	GM	TP	TP	TR

SHEET: A1 SCALE: AS SHOWN



Strategic Indigenous Housing and Infrastructure Program
 ACONEX NO: TA-12-035-CVL-DWG-0046
 DPI NO: R11-3195

ALICE SPRINGS PACKAGE 12 (HIDDEN VALLEY - 035)
 PROPOSED SUBDIVISION OF LOT 5198 - BERGER COURT
 WATER RETICULATION
 SHEET 1 OF 4
 DRAWING NO: TA-12-035-CVL-DWG-0046
 REV: - 5493



LEGEND

- PROPOSED SERVICES**
- DN 150 NEW WATER MAIN, STOP VALVE, AND THRUST BLOCK
 - PROPOSED FIRE HYDRANT, SCOUR-HYDRANT, OR AIR VALVE. REFER DRG No. TA-12-035-CVL-DWG-0050 FOR FITTING DESIGNATION.
 - WATER SERVICES 20 mm, UNLESS OTHERWISE SPECIFIED
 - DUCTILE PIPE ROAD / STORMWATER CROSSING
- EXISTING SERVICES**
- EXISTING WATER MAINS AND STOP VALVES
 - EXISTING WATER MAINS FOR INFORMATION REFER TO NOTE 18 ON DRG No. TA-12-035-CVL-DWG-0002

NOTES:

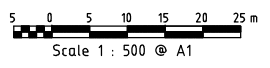
- REFER TO DRG NO. TA-12-035-CVL-DWG-0002 FOR PROJECT NOTES.
- FOR WATER SUPPLY NOTES, REFER TO DRG NO. TA-12-035-CVL-DWG-0046.
- FOR WATER SUPPLY SETTING OUT REFER TO DRG NO. TA-12-035-CVL-DWG-0050.
- FOR WATER SUPPLY SCHEMATICS REFER TO DRG NO. TA-12-035-CVL-DWG-0052 TO 0053
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'AS CONSTRUCTED'

FOR CONTINUATION REFER DRG TA-12-035-CVL-DWG-0046

FOR CONTINUATION REFER DRG TA-12-035-CVL-DWG-0048

REV	DATE	REVISION DESCRIPTION	ORIG	CKD	ENG	QA	APPD
-	17 MAY 2013	AS CONSTRUCTED INFORMATION	CT	GM	TP	TP	TR

SHEET: A1 SCALE: AS SHOWN

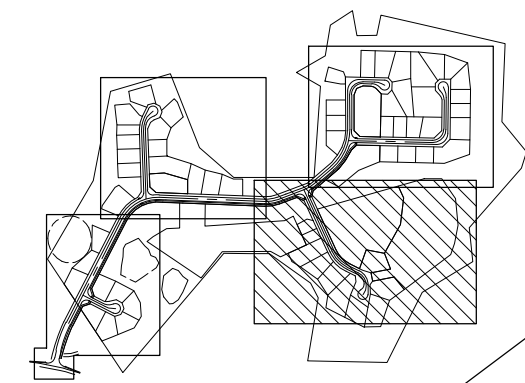


Strategic Indigenous Housing and Infrastructure Program
ACONEX NO: TA-12-035-CVL-DWG-0047
DPI NO: R11-3196

ALICE SPRINGS PACKAGE 12 (HIDDEN VALLEY - 035)
PROPOSED SUBDIVISION OF LOT 5198 - BERGER COURT
WATER RETICULATION
SHEET 2 OF 4
DRAWING NO: TA-12-035-CVL-DWG-0047
REV: - 5494

NOTES:

- REFER TO DRG NO. TA-12-035-CVL-DWG-0002 FOR PROJECT NOTES.
- FOR WATER SUPPLY NOTES, REFER TO DRG NO. TA-12-035-CVL-DWG-0046.
- FOR WATER SUPPLY SETTING OUT REFER TO DRG NO. TA-12-035-CVL-DWG-0050.
- FOR WATER SUPPLY SCHEMATICS REFER TO DRG NO. TA-12-035-CVL-DWG-0052 TO 0053
- ALL SERVICES ARE STANDARD OFFSETS UNLESS NOTED OTHERWISE
- FOR SURVEY CONTROL STATION REFER DRG NO. TA-12-035-CVL-DWG-0006
- FOR WATERMAIN CLASHING WITH SWD PIPE REFER DRG NO. TA-12-035-CVL-DWG-0053 FOR DETAILS
- NEW WATERMAIN WORKS TO BE STAGED, TO ENABLE A CONTINUOUS WATER SUPPLY TO THE COMMUNITY



KEY PLAN
N.T.S.

WM DICL ABOVE SWD
WM IL 583.164 L=9.00 m
FOR DETAIL REFER DRG No.
TA-12-035-CVL-DWG-0053

WM DICL ABOVE SWD
WM IL 583.083 L=9.00 m
FOR DETAIL REFER DRG No.
TA-12-035-CVL-DWG-0053

WM DICL UNDER SWD
WM IL 579.004 L=6.00 m
FOR DETAIL REFER DRG No.
TA-12-035-CVL-DWG-0053

ABBREVIATIONS

- DN NOMINAL BORE
- SOC SOCKET
- FL FLANGE
- SP SPIGOT

LEGEND

- PROPOSED SERVICES**
- NEW WATER MAIN, STOP VALVE, AND THRUST BLOCK
 - PROPOSED FIRE HYDRANT, SCOUR-HYDRANT, OR AIR VALVE. REFER DRG No. TA-12-035-CVL-DWG-0050 FOR FITTING DESIGNATION.
 - WATER SERVICES 20 mm, UNLESS OTHERWISE SPECIFIED
 - DUCTILE PIPE ROAD / STORMWATER CROSSING
- EXISTING SERVICES**
- EXISTING WATER MAINS AND STOP VALVES
 - EXISTING WATER MAINS FOR INFORMATION REFER TO NOTE 18 ON DRG No. TA-12-035-CVL-DWG-0002

'AS CONSTRUCTED'

REV	DATE	REVISION DESCRIPTION	ORIG	CKD	ENG	QA	APPD
-	17 MAY 2013	AS CONSTRUCTED INFORMATION	CT	GM	TP	TP	TR

SHEET: A1 SCALE: AS SHOWN

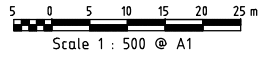


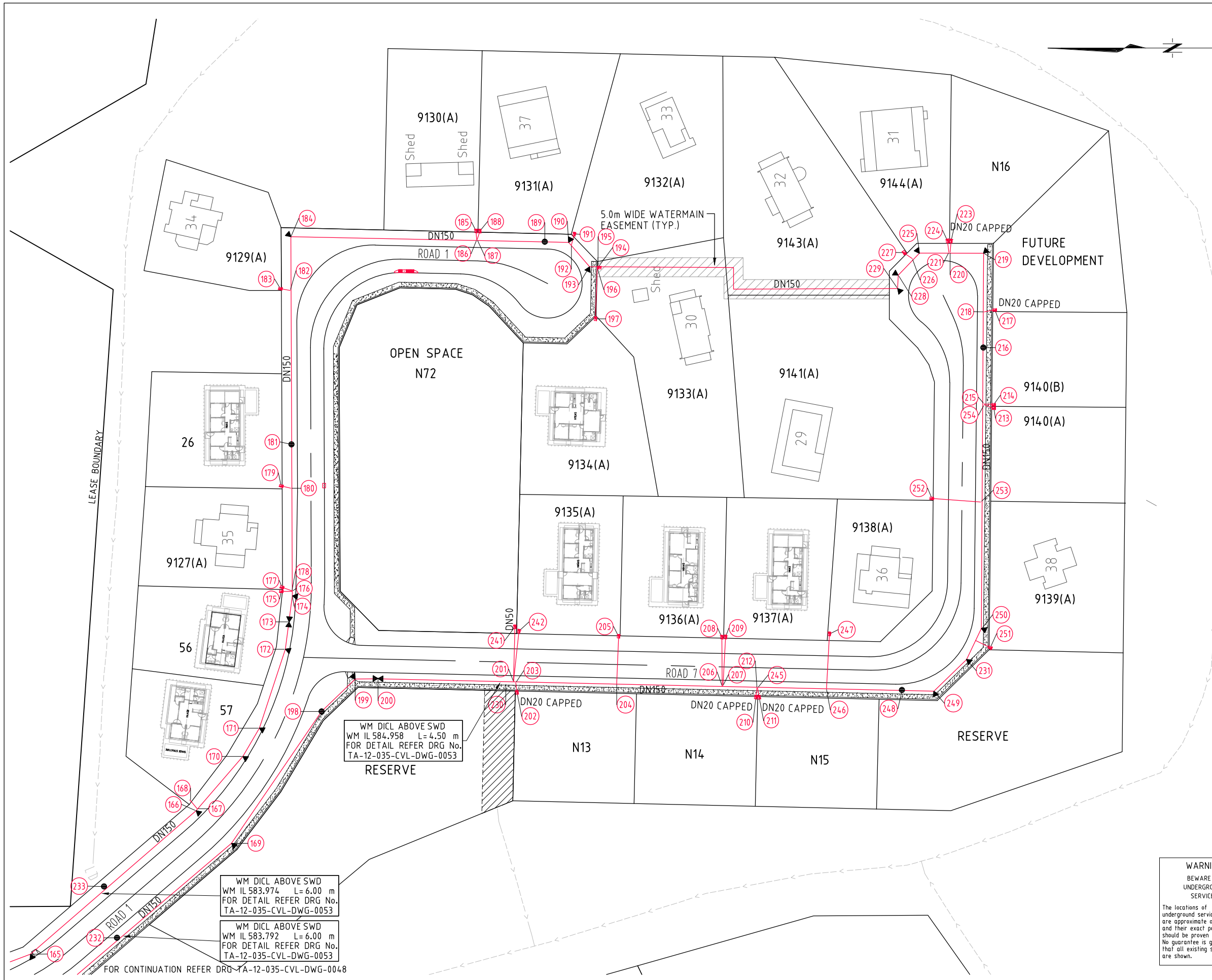
Strategic Indigenous Housing and Infrastructure Program
ACONEX NO: TA-12-035-CVL-DWG-0048
DPI NO: R11-3197

ALICE SPRINGS PACKAGE 12 (HIDDEN VALLEY - 035)
PROPOSED SUBDIVISION OF LOT 5198 - BERGER COURT
WATER RETICULATION
SHEET 3 OF 4
DRAWING NO: TA-12-035-CVL-DWG-0048
REV: - 5495

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.

PERMISSION TO USE FOR CONSTRUCTION PURPOSES
SIGNED..... DATE.....
ON BEHALF OF LAND DEVELOPMENT, FOR INCORPORATION INTO THE POWER AND WATER AUTHORITY'S 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. This approval is valid up to two years from the above date.





LEGEND

PROPOSED SERVICES

- DN 150 NEW WATER MAIN, STOP VALVE, AND THRUST BLOCK
- PROPOSED FIRE HYDRANT, SCOUR-HYDRANT, OR AIR VALVE. REFER DRG No. TA-12-035-CVL-DWG-0050 FOR FITTING DESIGNATION.
- WATER SERVICES 20 mm, UNLESS OTHERWISE SPECIFIED
- DUCTILE PIPE ROAD / STORMWATER CROSSING

EXISTING SERVICES

- EXISTING WATER MAINS AND STOP VALVES
- EXISTING WATER MAINS FOR INFORMATION REFER TO NOTE 18 ON DRG No. TA-12-035-CVL-DWG-0002

NOTES:

REFER TO DRG No. TA-12-035-CVL-DWG-0002 FOR PROJECT NOTES.

FOR WATER SUPPLY NOTES, REFER TO DRG No. TA-12-035-CVL-DWG-0046.

FOR WATER SUPPLY SETTING OUT REFER TO DRG No. TA-12-035-CVL-DWG-0050.

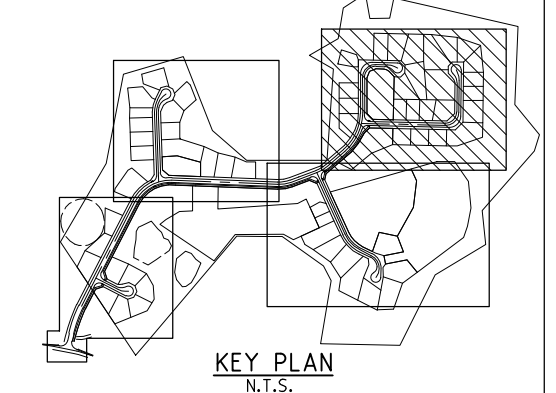
FOR WATER SUPPLY SCHEMATICS REFER TO DRG No. TA-12-035-CVL-DWG-0052 TO 0053

ALL SERVICES ARE STANDARD OFFSETS UNLESS NOTED OTHERWISE

FOR SURVEY CONTROL STATION REFER DRG No. TA-12-035-CVL-DWG-0006

FOR WATERMAIN CLASHING WITH SWD PIPE REFER DRG No. TA-12-035-CVL-DWG-0053 FOR DETAILS

NEW WATERMAIN WORKS TO BE STAGED, TO ENABLE A CONTINUOUS WATER SUPPLY TO THE COMMUNITY



ABBREVIATIONS

DN NOMINAL BORE
SOC SOCKET
FL FLANGE
SP SPIGOT

PERMISSION TO USE FOR CONSTRUCTION PURPOSES

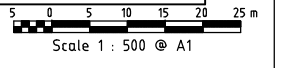
SIGNED..... DATE.....

ON BEHALF OF LAND DEVELOPMENT, FOR INCORPORATION INTO THE POWER AND WATER AUTHORITY'S 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. This approval is valid up to two years from the above date.

WARNING
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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.



'AS CONSTRUCTED'

REV	DATE	REVISION DESCRIPTION	ORIG	CKD	ENG	QA	APPD
-	17 MAY 2013	AS CONSTRUCTED INFORMATION	CT	GM	TP	TP	TR

WM DICL ABOVE SWD
WM IL 584.958 L=4.50 m
FOR DETAIL REFER DRG No. TA-12-035-CVL-DWG-0053

WM DICL ABOVE SWD
WM IL 583.974 L=6.00 m
FOR DETAIL REFER DRG No. TA-12-035-CVL-DWG-0053

WM DICL ABOVE SWD
WM IL 583.792 L=6.00 m
FOR DETAIL REFER DRG No. TA-12-035-CVL-DWG-0053

FOR CONTINUATION REFER DRG TA-12-035-CVL-DWG-0048



Strategic Indigenous Housing and Infrastructure Program

ACONEX NO: TA-12-035-CVL-DWG-0049

DPI NO: R11-3198

ALICE SPRINGS PACKAGE 12 (HIDDEN VALLEY - 035)
PROPOSED SUBDIVISION OF LOT 5198 - BERGER COURT
WATER RETICULATION
SHEET 4 OF 4

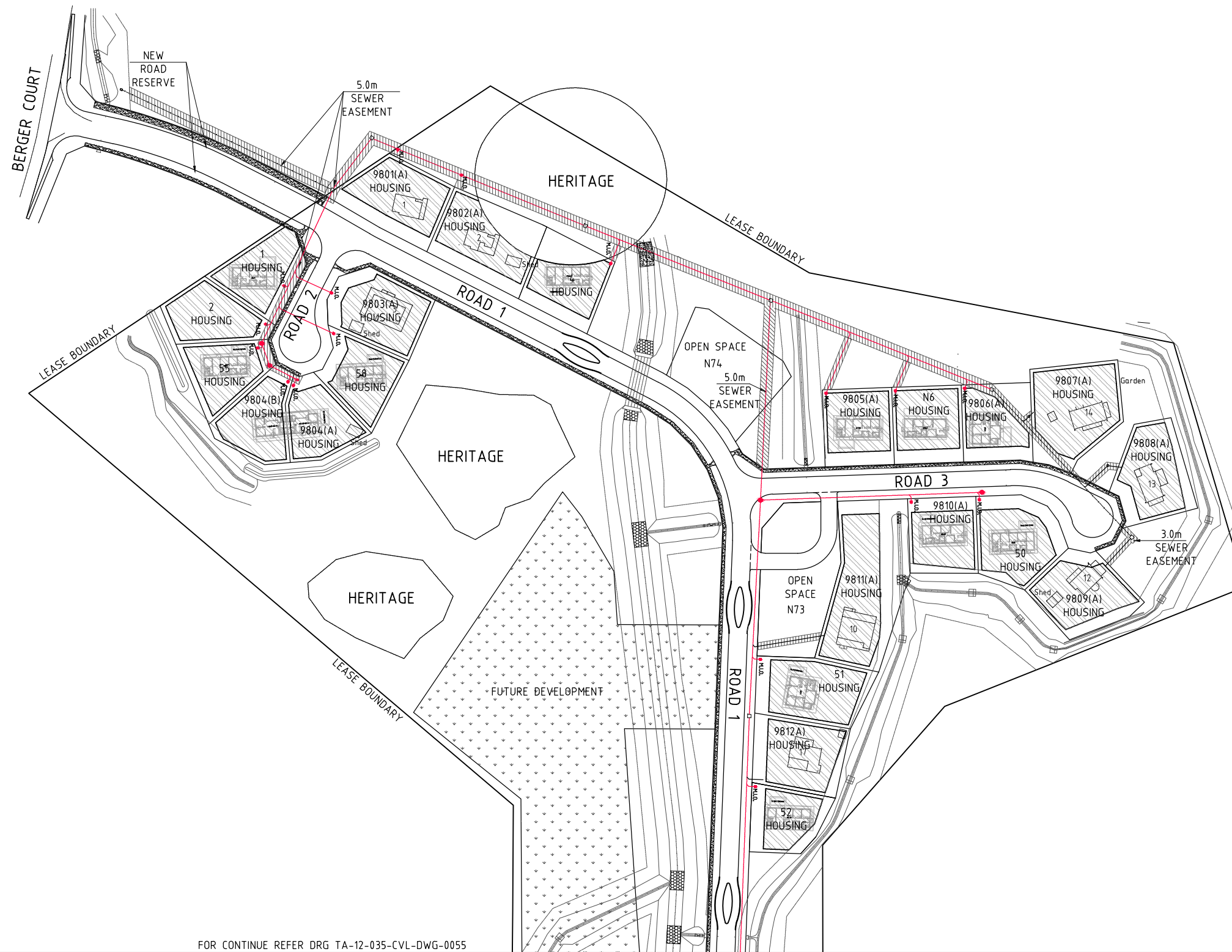
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REV: - 5496



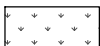



WATERMAIN FITTINGS SETTING-OUT TABLE				
POINT NO.	EASTING	NORTHING	FITTING LEGEND	FITTING
1	387640.430	7377782.230	V2/1	PN 16 RESILIENT SEAT GATE VALVE
2	387640.590	7377781.790	V2/2	PN 16 RESILIENT SEAT GATE VALVE
3	387653.360	7377774.950	V2/3	PN 16 RESILIENT SEAT GATE VALVE
4	387653.480	7377775.240	T2/1	DN 150x150 TEE
5	387651.940	73777184.0	B7/1	DN 150 45 ° BEND
6	387655.630	7377761.250	B7/2	DN 150 45 ° BEND
7	387639.540	7377735.910	M2/1	WATER METER
8	387641.610	7377734.130	LSC2/1	LATERAL SERVICE CONNECTION
9	387639.390	7377729.970	LSC2/2	LATERAL SERVICE CONNECTION
10	387636.360	7377729.080	M2/2	WATER METER
11	387636.300	7377728.160	M2/3	WATER METER
12	387639.310	7377727.910	LSC2/3	LATERAL SERVICE CONNECTION
13	387638.910	7377728.820	B7/3	DN 150 45 ° BEND
14	387643.800	7377718.360	B7/4	DN 150 45 ° BEND
15	387648.660	7377715.720	LSC2/4	LATERAL SERVICE CONNECTION
16	387647.620	7377713.460	M2/4	WATER METER
17	387648.560	7377712.940	M2/5	WATER METER
18	387648.930	7377715.590	LSC2/5	LATERAL SERVICE CONNECTION
19	387650.320	7377715.030	B7/5	DN 150 45 ° BEND
20	387657.020	7377717.570	LSC2/6	LATERAL SERVICE CONNECTION
21	387657.330	7377714.460	M2/6	WATER METER
22	387658.180	7377718.010	B7/6	DN 150 45 ° BEND
23	387662.300	7377725.930	B7/7	DN 150 45 ° BEND
24	387658.960	7377736.540	B6/1	DN 150 22.5 ° BEND
25	387659.730	7377746.670	B6/2	DN 150 22.5 ° BEND
26	387665.570	7377758.270	B7/8	DN 150 45 ° BEND
27	387673.870	7377760.990	B7/9	DN 150 45 ° BEND
28	387675.280	7377764.280	T2/2	DN 150x150 TEE
29	387675.050	7377764.050	V2/4	PN 16 RESILIENT SEAT GATE VALVE
30	387674.920	7377764.420	V2/5	PN 16 RESILIENT SEAT GATE VALVE
31	387675.870	7377765.490	B8/1	DN 150 90 ° BEND
32	387646.440	7377794.730	V2/6	PN 16 RESILIENT SEAT GATE VALVE
33	387674.040	7377794.400	V2/7	PN 16 RESILIENT SEAT GATE VALVE
34	387679.020	7377779.650	H2/1	BS750 HYDRANT WITH DN 80 HYDRANT TEE
35	387686.090	7377774.285	V2/8	PN 16 RESILIENT SEAT GATE VALVE
36	387689.280	7377772.650	-	-
37	387707.880	7377763.120	LSC2/7	LATERAL SERVICE CONNECTION
38	387709.010	7377765.760	M2/7	WATER METER
39	387709.900	7377765.390	M2/8	WATER METER
40	387709.620	7377748.490	LSC2/8	LATERAL SERVICE CONNECTION
41	387708.910	7377747.660	M2/9	WATER METER
42	387734.680	7377735.940	H2/2	BS750 HYDRANT WITH DN 80 HYDRANT TEE
43	387773.550	7377730.210	LSC2/9	LATERAL SERVICE CONNECTION
44	387774.460	7377733.550	M2/10	WATER METER
45	387794.180	7377720.060	H2/3	BS750 HYDRANT WITH DN 80 HYDRANT TEE
46	387799.290	7377703.140	H2/4	BS750 HYDRANT WITH DN 80 HYDRANT TEE
47	387812.670	7377695.260	B5/1	DN 150 11.25 ° BEND
48	387821.970	7377686.040	B5/2	DN 150 11.25 ° BEND
49	387828.240	7377676.590	B5/3	DN 150 11.25 ° BEND
50	387829.290	7377673.420	V2/9	PN 16 RESILIENT SEAT GATE VALVE
51	387829.550	7377672.790	V2/10	PN 16 RESILIENT SEAT GATE VALVE
52	387831.010	7377671.460	B8/2	DN 150 90 ° BEND
53	387829.710	7377673.220	T2/3	DN 150x150 TEE
54	387840.670	7377675.600	B6/3	DN 150 22.5 ° BEND
55	387839.800	7377677.200	B6/4	DN 150 22.5 ° BEND
56	387840.410	7377677.850	B5/4	DN 150 11.25 ° BEND
57	387841.410	7377680.070	V2/11	PN 16 RESILIENT SEAT GATE VALVE
58	387841.950	7377679.610	V2/12	PN 16 RESILIENT SEAT GATE VALVE
59	387842.510	7377677.410	B8/3	DN 150 90 ° BEND
	387842.510	7377677.410	B5/5	DN 150 11.25 ° BEND
60	387842.300	7377677.270	V2/13	PN 16 RESILIENT SEAT GATE VALVE
61	387872.860	7377673.700	H2/5	BS750 HYDRANT WITH DN 80 HYDRANT TEE
62	387877.220	7377673.380	H2/6	BS750 HYDRANT WITH DN 80 HYDRANT TEE
63	387907.650	7377677.240	M2/11	WATER METER
64	387908.210	7377674.990	LSC2/10	LATERAL SERVICE CONNECTION
65	387908.580	7377677.240	M2/12	WATER METER
66	387908.320	7377675.010	LSC2/11	LATERAL SERVICE CONNECTION
67	387913.520	7377674.060	LSC2/12	LATERAL SERVICE CONNECTION
68	387913.710	7377674.160	LSC2/13	LATERAL SERVICE CONNECTION
69	387912.610	7377661.720	M2/13	WATER METER
71	387960.920	7377676.520	B8/4	DN 150 90 ° BEND
72	387960.580	7377677.100	B5/6	DN 150 11.25 ° BEND
73	387968.600	7377678.690	M2/15	WATER METER

WATERMAIN FITTINGS SETTING-OUT TABLE				
POINT NO.	EASTING	NORTHING	FITTING LEGEND	FITTING
74	387968.000	7377676.430	LSC2/14	LATERAL SERVICE CONNECTION
75	387995.450	7377665.550	H2/7	BS750 HYDRANT WITH DN 80 HYDRANT TEE
76	388000.460	7377663.570	LSC2/15	LATERAL SERVICE CONNECTION
77	388001.730	7377666.030	M2/16	WATER METER
78	388003.220	7377662.170	B7/10	DN 150 45 ° BEND
79	388006.020	7377653.700	B7/11	DN 150 45 ° BEND
80	388001.810	7377645.160	B7/12	DN 150 45 ° BEND
81	387993.130	7377641.620	B6/5	DN 150 22.5 ° BEND
	387993.130	7377641.620	B5/7	DN 150 11.25 ° BEND
82	387983.990	7377640.840	M2/17	WATER METER
83	387986.200	7377642.980	LSC2/16	LATERAL SERVICE CONNECTION
84	387985.990	7377643.080	LSC2/17	LATERAL SERVICE CONNECTION
85	387985.660	7377643.190	B6/6	DN 150 22.5 ° BEND
86	387985.290	7377643.490	B6/7	DN 150 22.5 ° BEND
	387985.290	7377643.490	B5/8	DN 150 11.25 ° BEND
87	387983.280	7377641.500	M2/18	WATER METER
88	387981.420	7377654.360	B6/8	DN 150 22.5 ° BEND
89	387976.230	7377660.410	-	-
90	387975.350	7377661.370	B6/9	DN 150 22.5 ° BEND
91	387964.050	7377666.550	B6/10	DN 150 22.5 ° BEND
92	387961.680	7377666.550	B8/5	DN 150 90 ° BEND
93	387834.140	7377604.430	V2/14	PN 16 RESILIENT SEAT GATE VALVE
95	387834.460	7377604.060	V2/16	PN 16 RESILIENT SEAT GATE VALVE
96	387835.320	7377593.780	LSC2/18	LATERAL SERVICE CONNECTION
97	387835.310	7377593.610	LSC2/19	LATERAL SERVICE CONNECTION
98	387849.790	7377593.980	M2/19	WATER METER
100	387832.690	7377542.130	H2/8	BS750 HYDRANT WITH DN 80 HYDRANT TEE
101	387833.600	7377541.560	LSC2/20	LATERAL SERVICE CONNECTION
102	387833.660	7377541.440	LSC2/21	LATERAL SERVICE CONNECTION
104	387847.850	7377538.250	M2/22	WATER METER
106	387830.770	7377456.090	B5/10	DN 150 11.25 ° BEND
107	387834.600	7377430.940	B5/11	DN 150 11.25 ° BEND
108	387835.240	7377431.210	B5/12	DN 150 11.25 ° BEND
109	387858.990	7377401.800	B8/6	DN 150 90 ° BEND
110	387848.160	7377397.980	B8/7	DN 150 90 ° BEND
111	387846.390	7377399.980	B7/13	DN 150 45 ° BEND
112	387840.880	7377386.150	B7/14	DN 150 45 ° BEND
113	387820.490	7377376.670	V2/17	PN 16 RESILIENT SEAT GATE VALVE
114	387819.820	7377376.370	V2/18	PN 16 RESILIENT SEAT GATE VALVE
115	387820.490	7377376.370	V2/19	PN 16 RESILIENT SEAT GATE VALVE
116	387788.490	7377364.230	M2/23	WATER METER
117	387789.890	7377362.660	LSC2/22	LATERAL SERVICE CONNECTION
118	387787.740	7377363.860	M2/24	WATER METER
119	387788.570	7377362.180	LSC2/23	LATERAL SERVICE CONNECTION
120	387766.770	7377351.600	LSC2/24	LATERAL SERVICE CONNECTION
121	387766.110	7377353.850	M2/25	WATER METER
122	387765.250	7377353.370	M2/26	WATER METER
123	387766.570	7377351.640	LSC2/25	LATERAL SERVICE CONNECTION
124	387756.850	7377349.510	M2/27	WATER METER
125	387758.560	7377347.760	LSC2/26	LATERAL SERVICE CONNECTION
126	387741.350	7377338.850	H2/9	BS750 HYDRANT WITH DN 80 HYDRANT TEE
127	387739.500	7377337.990	B6/11	DN 150 22.5 ° BEND
128	387738.990	7377338.580	B6/12	DN 150 22.5 ° BEND
129	387734.430	7377334.180	-	-
130	387733.570	7377333.470	LSC2/27	LATERAL SERVICE CONNECTION
131	387732.440	7377334.970	M2/28	WATER METER
132	387723.020	7377322.210	B5/13	DN 150 11.25 ° BEND
133	387723.680	7377321.820	B5/14	DN 150 11.25 ° BEND
134	387708.830	7377309.130	M2/29	WATER METER
135	387715.190	7377307.560	LSC2/28	LATERAL SERVICE CONNECTION
136	387714.570	7377306.180	H2/10	BS750 HYDRANT WITH DN 80 HYDRANT TEE
137	387713.710	7377302.980	H2/11	BS750 HYDRANT WITH DN 80 HYDRANT TEE
138	387709.890	7377295.850	B8/8	DN 150 90 ° BEND
139	387707.760	7377293.590	B7/15	DN 150 45 ° BEND
140	387699.350	7377290.440	B7/16	DN 150 45 ° BEND
141	387683.070	7377297.470	B7/17	DN 150 45 ° BEND
142	387666.480	7377290.200	B7/18	DN 150 45 ° BEND
143	387663.090	7377290.640	M2/30	WATER METER
144	387665.980	7377289.270	LSC2/29	LATERAL SERVICE CONNECTION
145	387661.450	7377288.660	H2/12	BS750 HYDRANT WITH DN 80 HYDRANT TEE
146	387660.530	7377276.420	B8/9	DN 150 90 ° BEND
147	387672.340	7377271.310	B6/13	DN 150 22.5 ° BEND
148	387677.600	7377271.070	LSC2/30	LATERAL SERVICE CONNECTION

WATERMAIN FITTINGS SETTING-OUT TABLE				
POINT NO.	EASTING	NORTHING	FITTING LEGEND	FITTING
149	387674.400	7377262.500	M2/31	WATER METER
150	387691.040	7377269.535	M2/32	WATER METER
151	387691.160	7377271.190	LSC2/31	LATERAL SERVICE CONNECTION
152	387698.400	7377271.390	V2/20	PN 16 RESILIENT SEAT GATE VALVE
153	387698.760	7377271.070	V2/21	PN 16 RESILIENT SEAT GATE VALVE
154	387699.130	7377271.380	V2/22	PN 16 RESILIENT SEAT GATE VALVE
155	387703.380	7377271.430	-	-
156	387708.900	7377271.680	B7/19	DN 150 45 ° BEND
	387708.900	7377271.680	B5/15	DN 150 11.25 ° BEND
157	387718.370	7377291.430	B8/10	DN 150 90 ° BEND
158	387719.890	7377291.000	-	-
160	387824.370	7377366.750	V2/23	PN 16 RESILIENT SEAT GATE VALVE
161	387824.970	7377367.000	V2/24	PN 16 RESILIENT SEAT GATE VALVE
162	387842.640	7377374.870	V2/25	PN 16 RESILIENT SEAT GATE VALVE
163	387848.800	7377378.180	B7/20	DN 150 45 ° BEND
164	387855.210	7377375.850	B6/14	DN 150 22.5 ° BEND
165	387867.250	7377380.210	B6/15	DN 150 22.5 ° BEND
166	387904.990	7377337.300	B5/16	DN 150 11.25 ° BEND
167	387905.510	7377336.990	LSC2/32	LATERAL SERVICE CONNECTION
168	387907.570	7377338.730	M2/34	WATER METER
169	387896.550	7377327.980	B5/17	DN 150 11.25 ° BEND
170	387919.220	7377325.220	B5/18	DN 150 11.25 ° BEND
171	387926.650	7377320.960	B5/19	DN 150 11.25 ° BEND
172	387947.270	7377314.330	B5/20	DN 150 11.25 ° BEND
173	387954.400	7377313.410	V2/26	PN 16 RESILIENT SEAT GATE VALVE
175	387962.340	7377315.500	M2/35	WATER METER
176	387962.370	7377312.710	LSC2/33	LATERAL SERVICE CONNECTION
177	387963.410	7377315.340	M2/36	WATER METER
178	387962.530	7377312.700	LSC2/34	LATERAL SERVICE CONNECTION
179	387989.830	7377315.730	M2/37	WATER METER
180	387989.250	7377313.200	LSC2/35	LATERAL SERVICE CONNECTION
181	388000.680	7377313.140	H2/13	BS750 HYDRANT WITH DN 80 HYDRANT TEE
182	388004.810	7377313.780	LSC2/36	LATERAL SERVICE CONNECTION
183	388041.270	7377316.360	M2/38	WATER METER
184	388054.830	7377313.710	B8/11	DN 150 90 ° BEND
185	388056.720			



LEGEND

-  LOT COVERAGE AREAS
-  COMMUNITY PURPOSE
-  FUTURE DEVELOPMENT
-  OPEN CHANNEL EASEMENT
-  PROPOSED SEWERS AND SEWER MANHOLES
-  EXISTING SEWERAGE / MANHOLE



PERMISSION TO USE FOR CONSTRUCTION PURPOSES

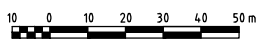
SIGNED..... DATE.....

ON BEHALF OF LAND DEVELOPMENT, FOR
INCORPORATION INTO THE POWER AND
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FOR CONTINUE REFER DRG TA-12-035-CVL-DWG-0055

FOR CONTINUE REFER DRG TA-12-035-CVL-DWG-0055



Scale 1: 1000

'AS CONSTRUCTED'

REV	DATE	REVISION DESCRIPTION	ORIG	CKD	ENG	QA	APPD
-	17 MAY 2013	AS CONSTRUCTED INFORMATION	CT	GM	TP	TP	TR

SHEET: A1 SCALE: AS SHOWN



Strategic Indigenous Housing
and
Infrastructure Program

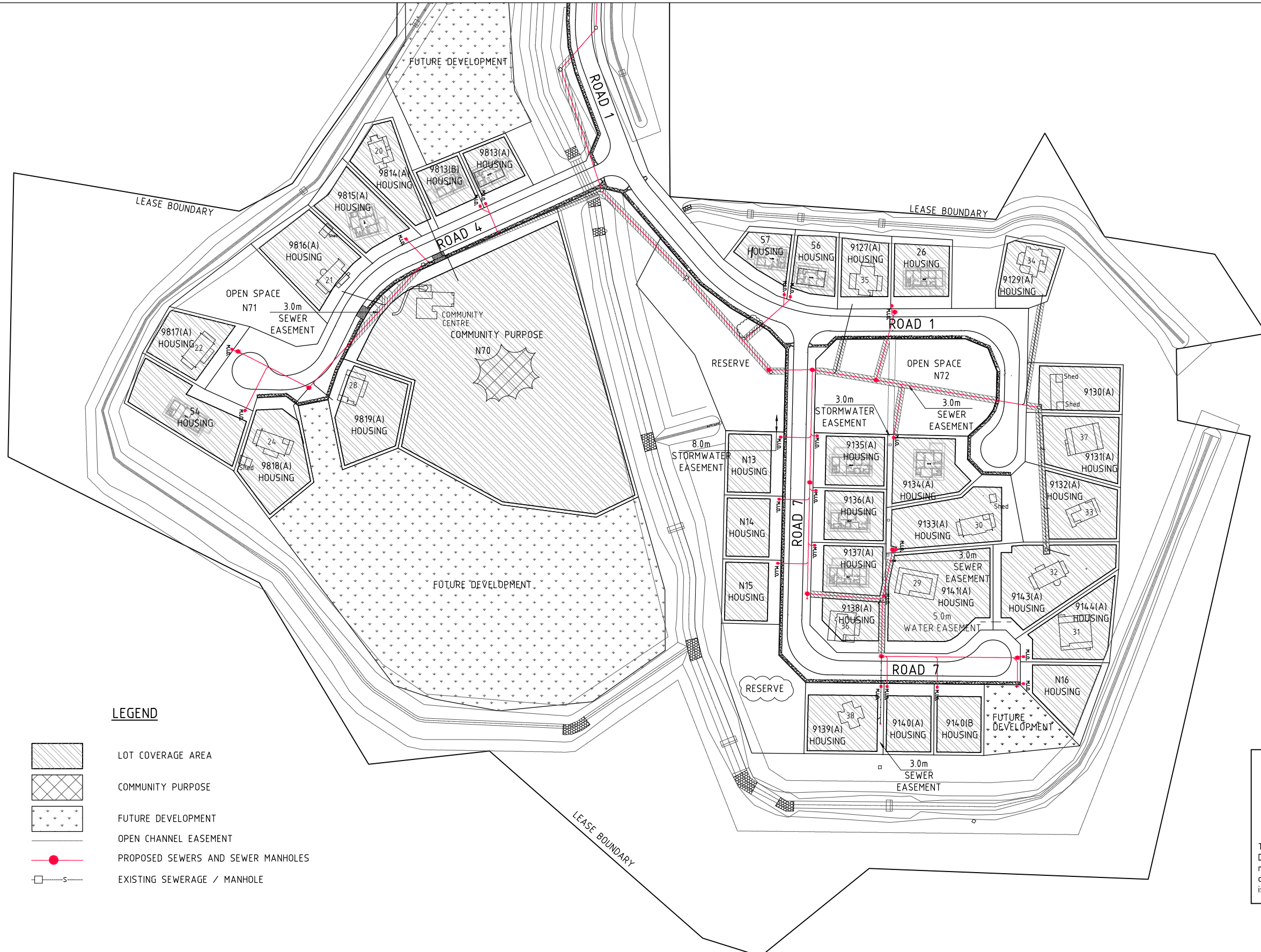
ACONEX NO:
TA-12-035-CVL-DWG-0054

DPI NO:
R11-3202







ALICE SPRINGS PACKAGE 12 (HIDDEN VALLEY - 035)
PROPOSED SUBDIVISION OF LOT 5198 - BERGER COURT
SEWERAGE SERVICE LOT COVERAGE PLAN
SHEET 1 OF 2

DRAWING NO:
TA-12-035-CVL-DWG-0054

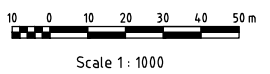
REV:
- 5498



LEGEND

-  LOT COVERAGE AREA
-  COMMUNITY PURPOSE
-  FUTURE DEVELOPMENT
-  OPEN CHANNEL EASEMENT
-  PROPOSED SEWERS AND SEWER MANHOLES
-  EXISTING SEWERAGE / MANHOLE

PERMISSION TO USE FOR CONSTRUCTION PURPOSES
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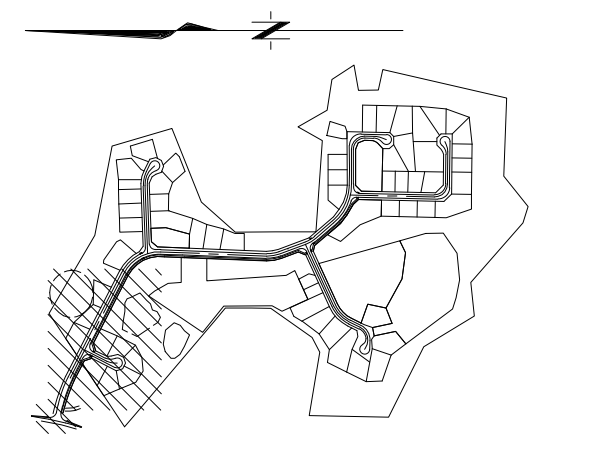
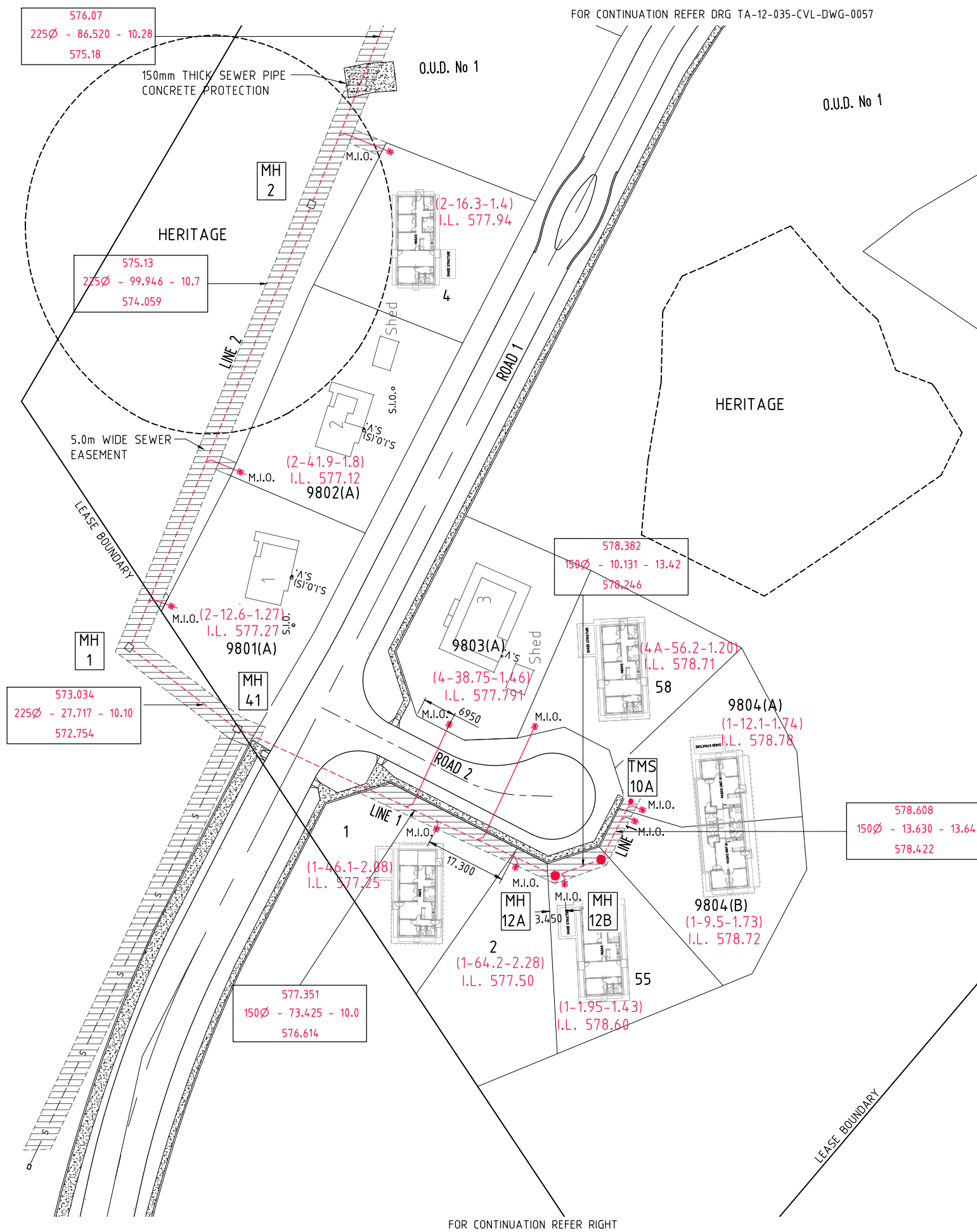
REV	DATE	REVISION DESCRIPTION	ORIG	CKD	ENG	QA	APPD
-	17 MAY 2013	AS CONSTRUCTED INFORMATION	CT	GM	TP	TP	TR

SHEET: A1 SCALE: AS SHOWN



Strategic Indigenous Housing and Infrastructure Program
 ACONEX NO: TA-12-035-CVL-DWG-0055
 DPI NO: R11-3203

ALICE SPRINGS PACKAGE 12 (HIDDEN VALLEY - 035)
 PROPOSED SUBDIVISION OF LOT 5198 - BERGER COURT
 SEWERAGE SERVICE LOT COVERAGE PLAN
 SHEET 2 OF 2
 DRAWING NO: TA-12-035-CVL-DWG-0055
 REV: - 5499



KEY PLAN
N.T.S.

LEGEND

NEW WORKS

- SEWERAGE / CONNECTION
- PROPOSED SEWERS AND SEWER MANHOLES
- SEWER MANHOLE IDENTIFICATION NUMBER
- EXIST. EXISTING HOUSE CONNECTIONS
- I.L. 577.000 INVERT LEVEL AT I.O.
- M.I.O. INSPECTION OPENING TO BE CONSTRUCTED
- HOUSE CONNECTION SERVICE TO BE CONSTRUCTED FROM EXISTING SEWER
- UPSTREAM INVERT
- PIPE SIZE - DISTANCE - GRADE (mm/m)
- DOWNSTREAM INVERT
- SERVICE CONNECTION DETAILS
- DEPTH TO LOT SERVICE CONNECTION AT I.O.
- DISTANCE FROM D/S M.H.
- HOUSE CONNECTION TYPE

EXISTING FEATURES

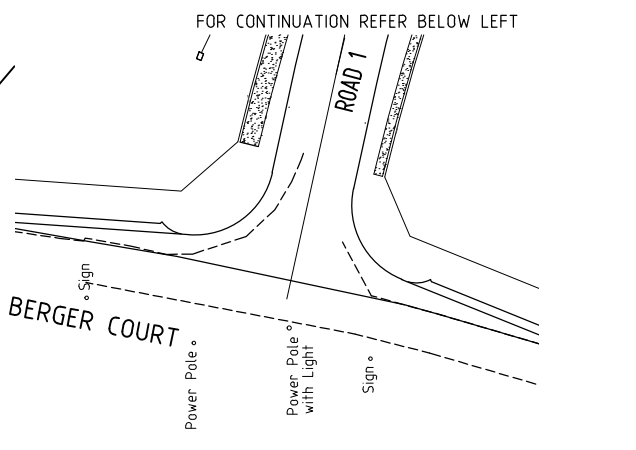
- SEWERAGE / MANHOLE
- EXISTING SEWER MAINS FOR INFORMATION REFER TO NOTE 19 ON DRG No. TA-12-035-CVL-DWG-0002

ABBREVIATIONS

- M.I.O. MODIFIED INSPECTION OPENING
- MS MAINTENANCE SHAFT
- TMS TERMINAL MAINTENANCE SHAFT

- SEWER NOTES:**
- ALL GRAVITY SEWER PIPES SHALL BE PVC CLASS SN8 WITH STYRENE-BUTADIENE RUBBER RING JOINTS (SBR) UNLESS OTHERWISE NOTED.
 - SEWER CENTRELINE SHALL BE OFFSET FROM PROPERTY BOUNDARIES 1.6M IN ROAD RESERVES AND 1.5M IN PRIVATE PROPERTY EXCEPT WHERE OTHERWISE NOTED.
 - MAINTENANCE HOLE/SHAFT COVERS AND SLABS SHALL FINISH AT: FINISHED SURFACE LEVEL (FSL) IN ROAD RESERVES AND FOOTPATHS AND MATCH CROSS FALL TO A MAXIMUM OF 2 DEGREES 42MM ACROSS THE DIAMETER OF A 1200MM MH COVER. 150MM ABOVE SURFACE LEVEL IN PRIVATE PROPERTY AND OPEN SPACE. (BACKFILL TO BE GRADED AT 1:10 FROM THE MH TO THE SURROUNDING FSL, REFER TO SEWER LONGITUDINAL SECTIONS FOR F.S.L. OF TOP OF MANHOLES.
 - ENSURE THERE ARE NO LOW POINTS CREATED AROUND MANHOLES BY GRADING OF SURROUNDING FINISHED SURFACE LEVEL.
 - ADJUST ALL EXISTING MANHOLE LID LEVELS TO COMPLY WITH REQUIREMENTS ABOVE.
 - FOR EXISTING MANHOLES REPLACE ALL CRACKED, DAMAGED, AND CIRCULAR LIDS AND TAPERS WITH NEW RECTANGULAR LIDS.
 - MINIMUM CONCRETE STRENGTH FOR ALL SEWER MAINTENANCE HOLES AND STRUCTURES SHALL BE N50.
 - ALL LOT SERVICE CONNECTIONS NEW AND EXISTING MUST BE DN 150. A NEW INSPECTION OPENING IN ACCORDANCE WITH THE STANDARD DETAIL IS TO BE PROVIDED FOR EVERY LOT WHETHER THE SERVICE IS NEW OR EXISTING. ENSURE LEVEL AND LOCATION AT THE IO ARE PICKED UP BY THE REGISTERED SURVEYOR FOR EVERY LOT SERVICE.
 - EXISTING LOT SANITARY DRAINS ARE ONLY TO BE CONNECTED UPSTREAM OF THE NEW IO.
 - INSCRIBE THE COVER OF THE MAINTENANCE HOLE/SHAFT COVER WITH THE IDENTIFYING NUMBER AS SHOWN ON THE DRAWINGS.
 - USE HEAVY DUTY INSPECTION OPENING OPTION FOR DRAWING NO'S W2-1-05, W2-1-06 & W2-2-07
 - NOTE DELETED AS PER PWC AGREEMENT.
 - SELF CERTIFYING PLUMBER TO CERTIFY THAT ALL LOT SANITARY DRAINAGE RUNS THROUGH THE NEW SEWER CONNECTION IO, THAT THERE ARE NO CROSS BOUNDARY CONNECTIONS. THE CERTIFIER TOGETHER WITH THE SURVEYOR AND PLUMBER ARE TO CERTIFY THAT THE SEWER SERVICE DOES NOT RUN THROUGH ADJACENT LOTS EXCEPT WHERE THE APPROVED DESIGN SPECIFICALLY SHOWS THIS.
 - AS CONSTRUCTED DRAWINGS FOR SEWER ARE TO SHOW POSITION (CO-ORDINATES TO MGA 94 LEVELS TO AHD) FOR ALL ACCESS CHAMBERS, ACCESS SHAFTS, INSPECTION OPENINGS, SERVICE JUNCTIONS, SEPARATION DISTANCES AND LEVELS FOR INTERSECTING SERVICES. SHOW ALL OTHER SURFACE VALUES REQUIRED TO CERTIFY COMPLIANCE OF THE WORKS. SHOW FINISHED SURFACE LEVELS AT LOT CORNERS TO VERIFY SEWER LOT COVERAGE. PROVIDE MANUFACTURER AND MODEL DETAILS FOR ALL MAIN COMPONENTS OF THE SEWER SYSTEM.
 - CERTIFICATION DOCUMENTATION MUST INCLUDE AS CONSTRUCTED DRAWINGS, HYDROSTATIC TEST RESULTS, PROVER TEST RESULTS, CCTV REPORTS, COMPACTION TEST RESULTS, BEDDING GRADING CURVES, CONCRETE REPORTS & TEST RESULTS, OTHER INSPECTION REPORTS AND PHOTOGRAPHS, SURVEY DATA FOR LOT CONNECTIONS AS WELL AS THE OVERALL CERTIFICATION ITSELF. CHECKS CONFIRMING COMPLIANCE OF SEWER GRADIENTS WITH DESIGN, CONFIRMING LOT SERVICE LEVELS WITH DESIGN AND THAT THE LOT CONNECTION LEVEL WITH LOT FINISHED SURFACE LEVELS PROVIDE COVER, LOT COVERAGE, AND FIXTURE CONTROL.
 - CONNECTIONS TO EXISTING SEWER MAINS WILL ONLY BE CARRIED OUT WHEN ALL WORKS UPSTREAM OF THE CONNECTION ARE COMPLETE IN ACCORDANCE WITH THE APPROVED DESIGN DRAWINGS, AND HAVE SATISFACTORY PASSED ALL REQUIRED TESTING AND FINAL HANDOVER INSPECTION.

- NOTES:**
- REFER TO DRG NO. TA-12-035-CVL-DWG-0002 FOR PROJECT NOTES.
 - REFER TO DRG NO. TA-12-035-CVL-DWG-0062 FOR LOT CONNECTION INSPECTION OPENING DETAIL
 - FOR SURVEY CONTROL STATION REFER DRG NO. TA-12-035-CVL-DWG-0006
 - SEWER EASEMENT 3.0m WIDE UNLESS OTHERWISE NOTED
 - ALL EXISTING HOUSE CONNECTIONS TO BE RELOCATED, IF REQUIRED BY REMOTE HOUSING



PERMISSION TO USE FOR CONSTRUCTION PURPOSES

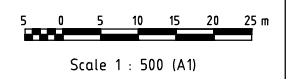
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WARNING
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REV	DATE	REVISION DESCRIPTION	ORIG	CKD	ENG	QA	APPD
-	28 AUG 2014	AS CONSTRUCTED INFORMATION UPDATED	CT	GM	TP	TP	TR
-	20 JUN 2012	AS CONSTRUCTED	CT	GM	TP	TP	TR

SHEET: A1 SCALE: AS SHOWN



Strategic Indigenous Housing and Infrastructure Program

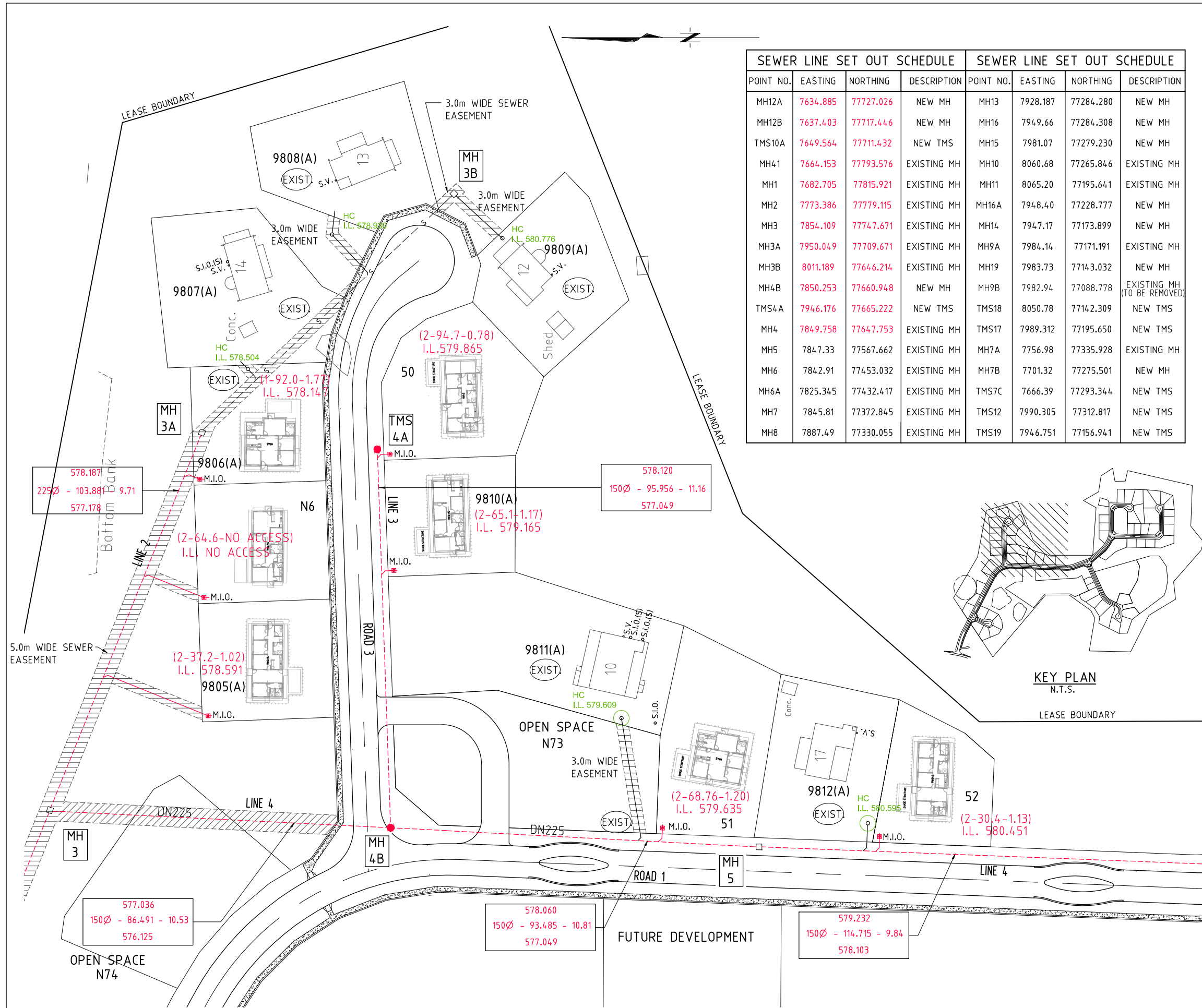
ACONEX NO: TA-12-035-CVL-DWG-0056

DPI NO: R11-3204

ALICE SPRINGS PACKAGE 12 (HIDDEN VALLEY - 035) PROPOSED SUBDIVISION OF LOT 5198 - BERGER COURT SEWER COMPILATION PLAN SHEET 1 OF 4

DRAWING NO: TA-12-035-CVL-DWG-0056

REV: - 5500



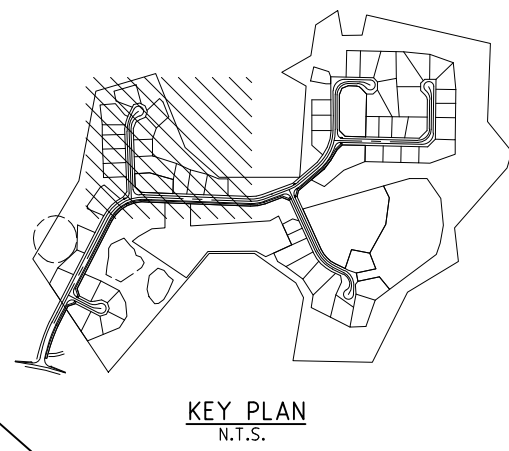
SEWER LINE SET OUT SCHEDULE				SEWER LINE SET OUT SCHEDULE			
POINT NO.	EASTING	NORTHING	DESCRIPTION	POINT NO.	EASTING	NORTHING	DESCRIPTION
MH12A	7634.885	77727.026	NEW MH	MH13	7928.187	77284.280	NEW MH
MH12B	7637.403	77717.446	NEW MH	MH16	7949.66	77284.308	NEW MH
TMS10A	7649.564	77711.432	NEW TMS	MH15	7981.07	77279.230	NEW MH
MH41	7664.153	77793.576	EXISTING MH	MH10	8060.68	77265.846	EXISTING MH
MH1	7682.705	77815.921	EXISTING MH	MH11	8065.20	77195.641	EXISTING MH
MH2	7773.386	77779.115	EXISTING MH	MH16A	7948.40	77228.777	NEW MH
MH3	7854.109	77747.671	EXISTING MH	MH14	7947.17	77173.899	NEW MH
MH3A	7950.049	77709.671	EXISTING MH	MH9A	7984.14	77171.191	EXISTING MH
MH3B	8011.189	77646.214	EXISTING MH	MH19	7983.73	77143.032	NEW MH
MH4B	7850.253	77660.948	NEW MH	MH9B	7982.94	77088.778	EXISTING MH (TO BE REMOVED)
TMS4A	7946.176	77665.222	NEW TMS	TMS18	8050.78	77142.309	NEW TMS
MH4	7849.758	77647.753	EXISTING MH	TMS17	7989.312	77195.650	NEW TMS
MH5	7847.33	77567.662	EXISTING MH	MH7A	7756.98	77335.928	EXISTING MH
MH6	7842.91	77453.032	EXISTING MH	MH7B	7701.32	77275.501	NEW MH
MH6A	7825.345	77432.417	EXISTING MH	TMS7C	7666.39	77293.344	NEW TMS
MH7	7845.81	77372.845	EXISTING MH	TMS12	7990.305	77312.817	NEW TMS
MH8	7887.49	77330.055	EXISTING MH	TMS19	7946.751	77156.941	NEW TMS

NOTES:
 REFER TO DRG NO. TA-12-035-CVL-DWG-0002 FOR PROJECT NOTES.
 FOR SEWER NOTES REFER TO DRG NO. TA-12-035-CVL-DWG-0056.
 REFER TO DRG NO. TA-12-035-CVL-DWG-0062 FOR LOT CONNECTION INSPECTION OPENING DETAIL
 FOR SURVEY CONTROL STATION REFER DRG NO. TA-12-035-CVL-DWG-0006
 SEWER EASEMENT 3.0m WIDE UNLESS OTHERWISE NOTED
 ALL EXISTING HOUSE CONNECTIONS TO BE RELOCATED, IF REQUIRED BY REMOTE HOUSING

LEGEND

NEW WORKS

- SEWERAGE / CONNECTION
- PROPOSED SEWERS AND SEWER MANHOLES
- SEWER MANHOLE IDENTIFICATION NUMBER
- EXISTING HOUSE CONNECTIONS
- INVERT LEVEL AT I.O.
- INSPECTION OPENING TO BE CONSTRUCTED
- HOUSE CONNECTION SERVICE TO BE CONSTRUCTED FROM EXISTING SEWER
- UPSTREAM INVERT
- PIPE SIZE - DISTANCE - GRADE (mm/m)
- DOWNSTREAM INVERT
- SERVICE CONNECTION DETAILS
- DEPTH TO LOT SERVICE CONNECTION AT I.O.
- DISTANCE FROM D/S M.H.
- HOUSE CONNECTION TYPE



EXISTING FEATURES

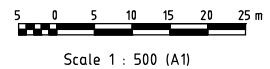
- SEWERAGE / MANHOLE
- EXISTING SEWER MAINS FOR INFORMATION REFER TO NOTE 19 ON DRG No. TA-12-035-CVL-DWG-0002

ABBREVIATIONS

M.I.O. MODIFIED INSPECTION OPENING
 TMS TERMINAL MAINTENANCE SHAFT

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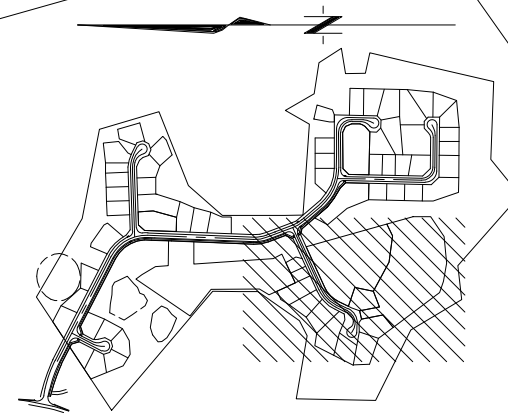


'AS CONSTRUCTED'

REV	DATE	REVISION DESCRIPTION	ORIG	CKD	ENG	QA	APPD
-	28 AUG 2014	AS CONSTRUCTED INFORMATION UPDATED	CT	GM	TP	TP	TR
-	6 MAY 2014	UPDATED AS CONSTRUCTED INFORMATION	GM	CT	TP		
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FOR CONTINUATION REFER DRG TA-12-035-CVL-DWG-0056

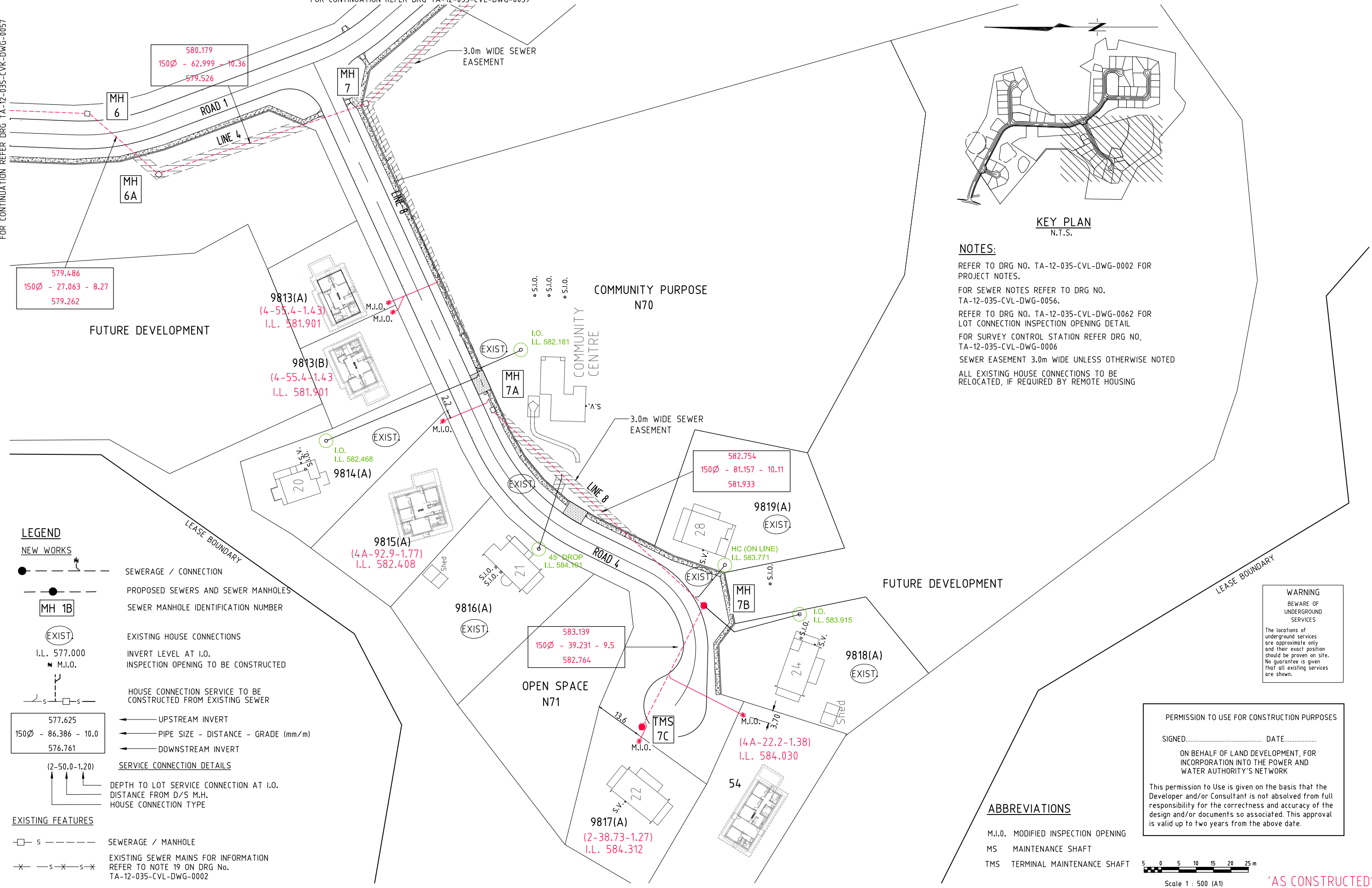
FOR CONTINUATION REFER DRG TA-12-035-CVL-DWG-0058



KEY PLAN
N.T.S.

NOTES:

REFER TO DRG NO. TA-12-035-CVL-DWG-0002 FOR PROJECT NOTES.
FOR SEWER NOTES REFER TO DRG NO. TA-12-035-CVL-DWG-0056.
REFER TO DRG NO. TA-12-035-CVL-DWG-0062 FOR LOT CONNECTION INSPECTION OPENING DETAIL
FOR SURVEY CONTROL STATION REFER DRG NO. TA-12-035-CVL-DWG-0006
SEWER EASEMENT 3.0m WIDE UNLESS OTHERWISE NOTED
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LEGEND

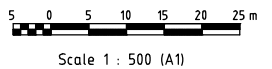
- NEW WORKS**
- SEWERAGE / CONNECTION
 - PROPOSED SEWERS AND SEWER MANHOLES
 - SEWER MANHOLE IDENTIFICATION NUMBER
 - EXIST. EXISTING HOUSE CONNECTIONS
 - I.L. 577.000 INVERT LEVEL AT I.O.
 - M.I.O. INSPECTION OPENING TO BE CONSTRUCTED
 - HOUSE CONNECTION SERVICE TO BE CONSTRUCTED FROM EXISTING SEWER
 - UPSTREAM INVERT
 - PIPE SIZE - DISTANCE - GRADE (mm/m)
 - DOWNSTREAM INVERT
 - SERVICE CONNECTION DETAILS
 - DEPTH TO LOT SERVICE CONNECTION AT I.O.
 - DISTANCE FROM D/S M.H.
 - HOUSE CONNECTION TYPE
- EXISTING FEATURES**
- SEWERAGE / MANHOLE
 - EXISTING SEWER MAINS FOR INFORMATION REFER TO NOTE 19 ON DRG No. TA-12-035-CVL-DWG-0002

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ABBREVIATIONS

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- MS MAINTENANCE SHAFT
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Scale 1 : 500 (A1)

'AS CONSTRUCTED'

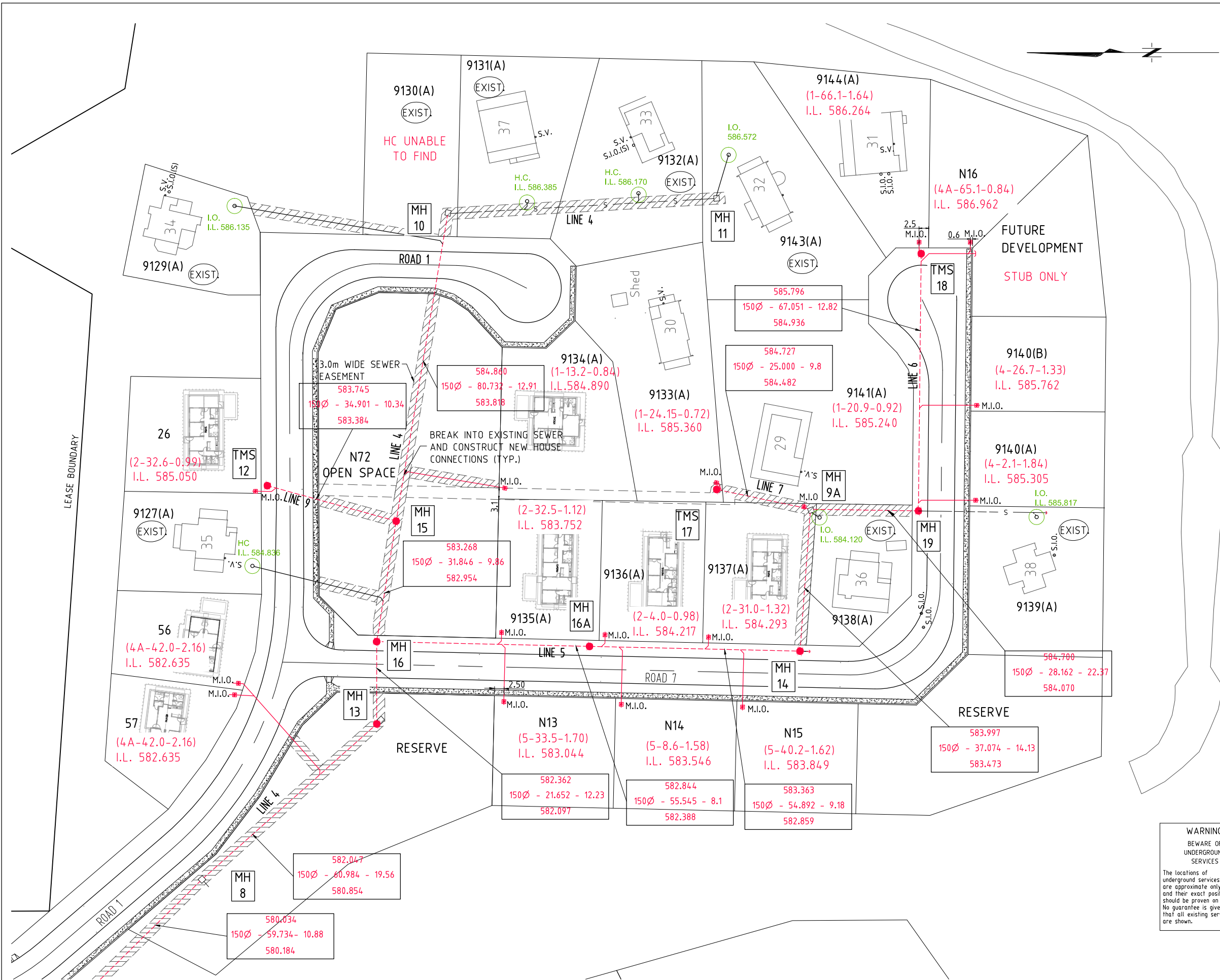
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-	28 AUG 2014	AS CONSTRUCTED INFORMATION UPDATED	CT	GM	TP	TP	TR
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-	11 JUL 2012	AS CONSTRUCTED	CT	GM	TP	TP	TR

SHEET: A1 SCALE: AS SHOWN

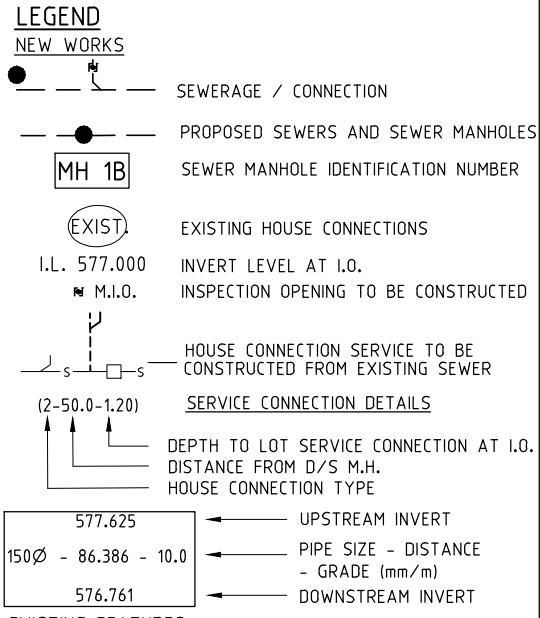


Strategic Indigenous Housing and Infrastructure Program
ACONEX NO: TA-12-035-CVL-DWG-0058
DPI NO: R11-3206

ALICE SPRINGS PACKAGE 12 (HIDDEN VALLEY - 035)
PROPOSED SUBDIVISION OF LOT 5198 - BERGER COURT
SEWER COMPILATION PLAN
SHEET 3 OF 4
DRAWING NO: TA-12-035-CVL-DWG-0058
REV: - 5502



NOTES:
 REFER TO DRG NO. TA-12-035-CVL-DWG-0002 FOR PROJECT NOTES.
 FOR SEWER NOTES REFER TO DRG NO. TA-12-035-CVL-DWG-0056.
 REFER TO DRG NO. TA-12-035-CVL-DWG-0062 FOR LOT CONNECTION INSPECTION OPENING DETAIL
 FOR SURVEY CONTROL STATION REFER DRG NO. TA-12-035-CVL-DWG-0006
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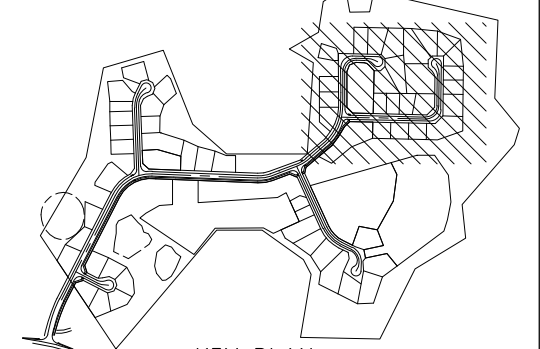


EXISTING FEATURES

- SEWERAGE / MANHOLE
- EXISTING SEWER MAINS FOR INFORMATION REFER TO NOTE 19 ON DRG No. TA-12-035-CVL-DWG-0002

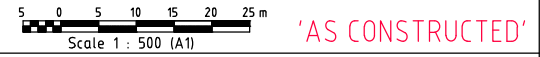
ABBREVIATIONS

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FOR CONTINUATION REFER DRG TA-12-035-CIV-58

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-	28 AUG 2014	AS CONSTRUCTED INFORMATION UPDATED	CT	GM	TP	TP	TR
-	6 MAY 2014	UPDATED AS CONSTRUCTED INFORMATION	GM	CT	TP		
-	11 JUL 2012	AS CONSTRUCTED	CT	GM	TP	TP	TR

SHEET: A1 SCALE: AS SHOWN



Strategic Indigenous Housing and Infrastructure Program
 ACONEX NO: TA-12-035-CVL-DWG-0059
 DPI NO: R11-3207

ALICE SPRINGS PACKAGE 12 (HIDDEN VALLEY - 035)
 PROPOSED SUBDIVISION OF LOT 5198 - BERGER COURT
 SEWER COMPILATION PLAN
 SHEET 4 OF 4
 DRAWING NO: TA-12-035-CVL-DWG-0059
 REV: - 5503

SEWER MAINTENANCE HOLE No.	MH41
CHAMBER SHAPE COVER & DUTY	EXISTING
CHAMBER DROP TYPE	NEW 4

NOTE:
 ALL MANHOLE CHAMBERS TO BE PRECAST AND 1200 DIA. AS PER STD. DRG. W2-2-02/3

WATERMAIN COVER 750mm MIN IN ROAD RESERVE AND 600mm MIN IN NON-TRAFFICABLE AREA

FOR WATERMAIN CLASHING WITH SWD PIPES REFER TA-12-035-CVL-DWG-0053 FOR DETAILS

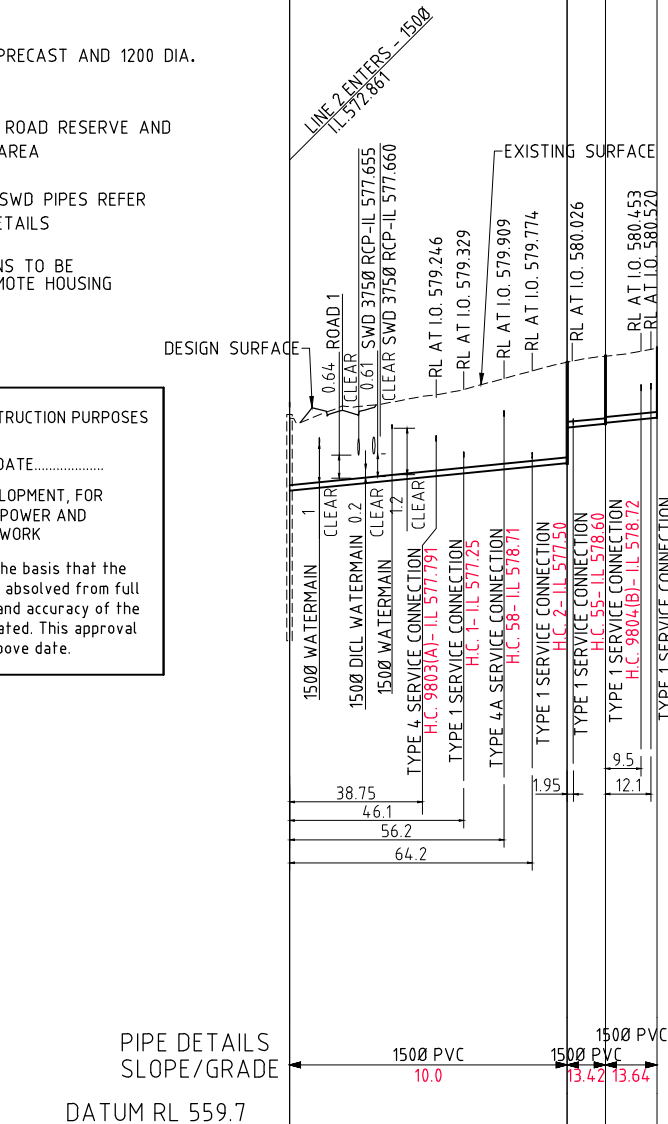
ALL EXISTING HOUSE CONNECTIONS TO BE RELOCATED, IF REQUIRED BY REMOTE HOUSING

PERMISSION TO USE FOR CONSTRUCTION PURPOSES

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

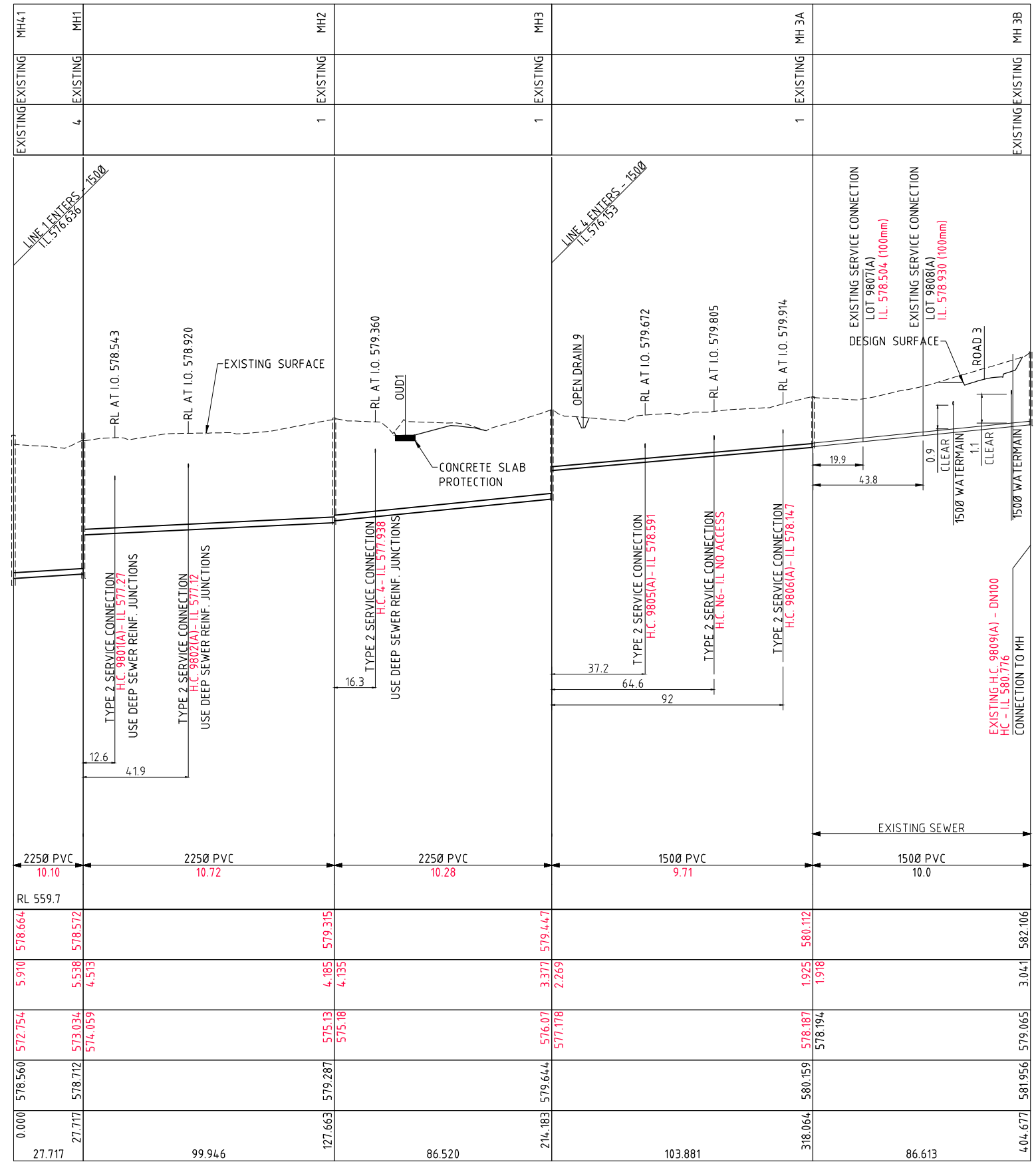
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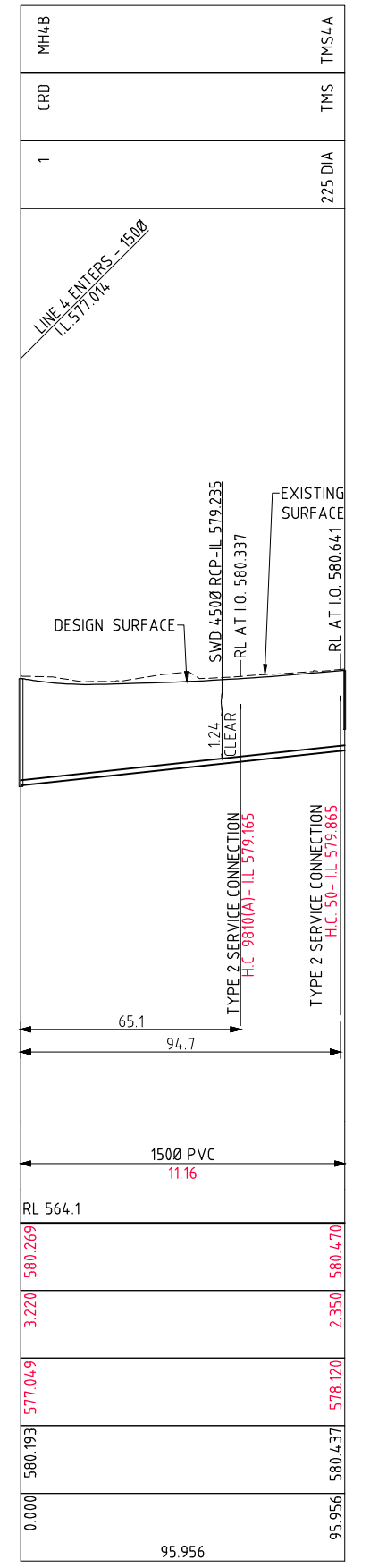


PIPE DETAILS SLOPE/GRADE	DATUM RL 559.7	
1500 PVC	10.0	
1500 PVC	13.42	
1500 PVC	13.64	
RIM TOP LEVEL	578.664	
DEPTH TO INVERT	2.050	
INVERT LEVEL	576.614	
FINISHED SURFACE	578.560	
CHAINAGE	0.000	

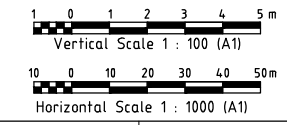
LONGITUDINAL SECTION
SEWER LINE 1



SEWER LINE 2



LONGITUDINAL SECTION
SEWER LINE 3



'AS CONSTRUCTED'

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-	17 MAY 2013	AS CONSTRUCTED INFORMATION	CT	GM	TP	TP	TR

SHEET: A1 SCALE: AS SHOWN



Strategic Indigenous Housing and Infrastructure Program

ACONEX NO: TA-12-035-CVL-DWG-0060

DPI NO: R11-3208

ALICE SPRINGS PACKAGE 12 (HIDDEN VALLEY - 035)
 PROPOSED SUBDIVISION OF LOT 5198 - BERGER COURT
 SEWERAGE LONGITUDINAL SECTIONS
 SHEET 1 OF 4

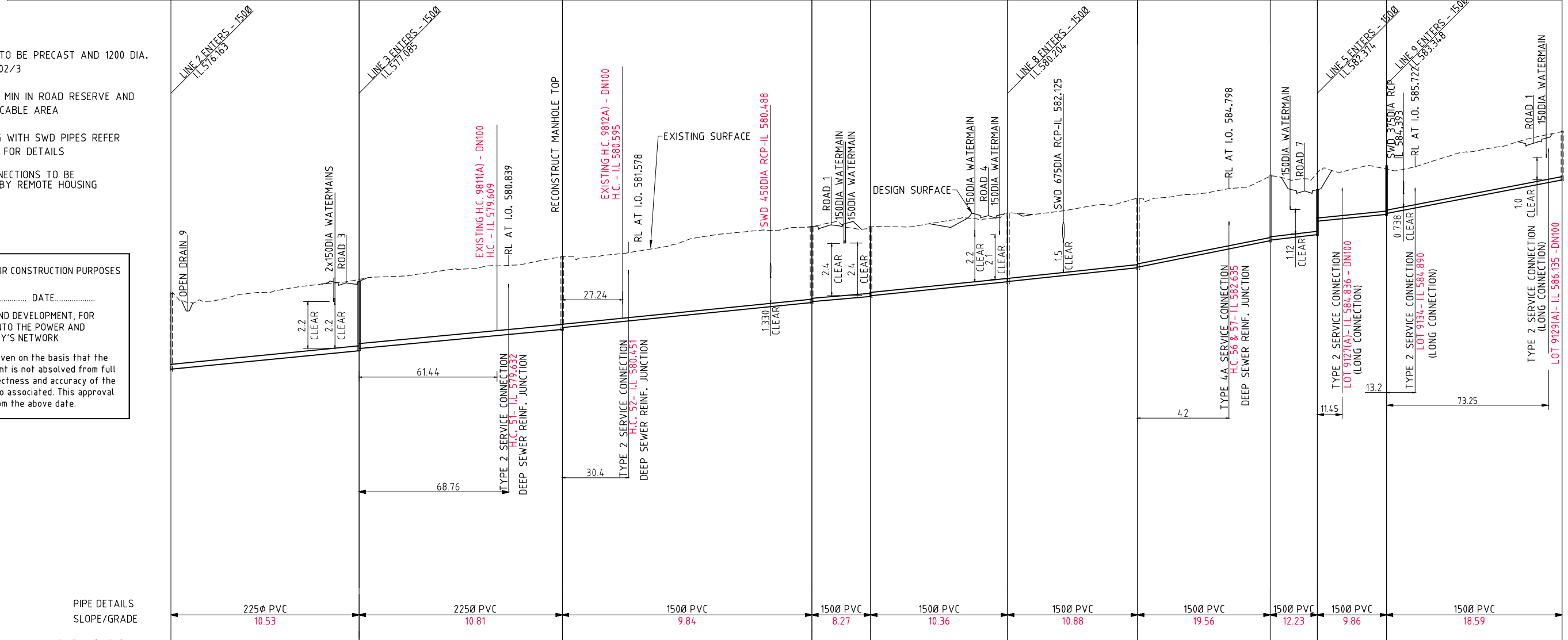
DRAWING NO: TA-12-035-CVL-DWG-0060

REV: 5504

SEWER MAINTENANCE HOLE No.	MH3	MH4B	MH5	MH6	MH6A	MH7	MH8	MH13	MH16	MH15	MH10
COVER SHAPE & COVER DUTY	EXISTING	CRD	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	CRB	CRD	CRB	EXISTING
CHAMBER DROP TYPE	1	1	1	1	1	1	1	1	4	1	1

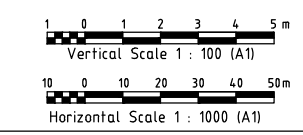
NOTE:
 ALL MANHOLE CHAMBERS TO BE PRECAST AND 1200 DIA. AS PER STD. DRG. W2-2-02/3
 WATERMAIN COVER 750MM MIN IN ROAD RESERVE AND 600MM MIN IN NON-TRAFFICABLE AREA
 FOR WATERMAIN CLASHING WITH SWD PIPES REFER TA-12-035-CVL-DWG-0053 FOR DETAILS
 ALL EXISTING HOUSE CONNECTIONS TO BE RELOCATED, IF REQUIRED BY REMOTE HOUSING

PERMISSION TO USE FOR CONSTRUCTION PURPOSES
 SIGNED..... DATE.....
 ON BEHALF OF LAND DEVELOPMENT, FOR INCORPORATION INTO THE POWER AND WATER AUTHORITY'S 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. This approval is valid up to two years from the above date.



PIPE DETAILS SLOPE/GRADE	DATUM RL 563.1										
2250 PVC 10.53	2250 PVC 10.81	1500 PVC 9.84	1500 PVC 8.27	1500 PVC 10.36	1500 PVC 10.88	1500 PVC 19.56	1500 PVC 12.23	1500 PVC 9.86	1500 PVC	1500 PVC	1500 PVC
RIM TOP LEVEL	579.447	580.385	581.308	582.722	583.353	584.033	584.757	584.480	585.613	585.613	587.233
DEPTH TO INVERT	3.322	3.349	3.248	3.490	3.174	3.199	2.710	2.118	2.345	2.254	2.373
INVERT LEVEL	576.125	577.036	578.060	579.232	580.179	580.834	582.047	582.362	583.268	583.359	584.860
FINISHED SURFACE	579.644	580.193	581.069	582.719	583.203	584.008	585.025	584.413	585.469	585.469	587.083
CHAINAGE	0.000	86.491	179.975	294.69	321.753	384.753	444.487	505.471	527.123	558.968	639.701
		86.491	93.485	114.715	27.063	62.999	59.734	60.984	21.652	31.846	80.732

LONGITUDINAL SECTION
SEWER LINE 4



'AS CONSTRUCTED'

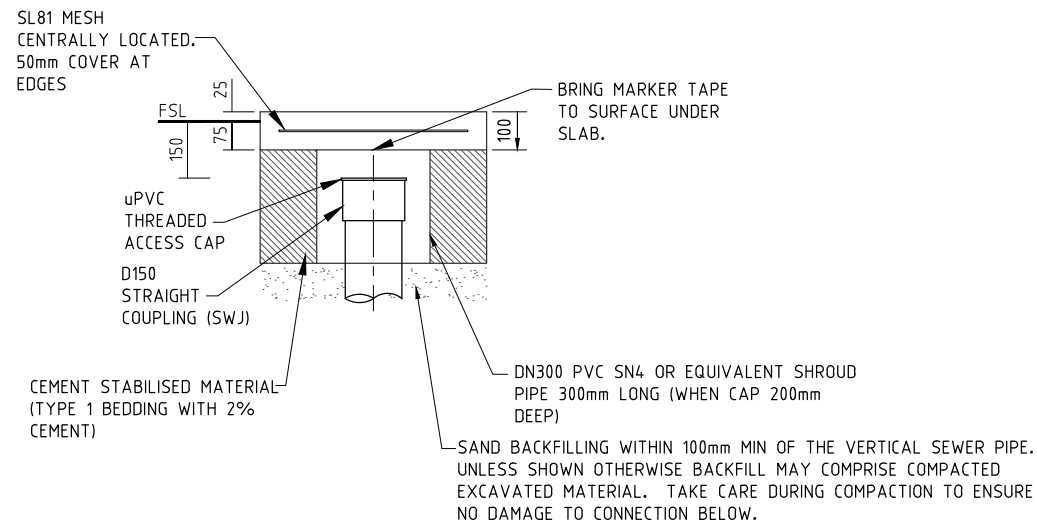
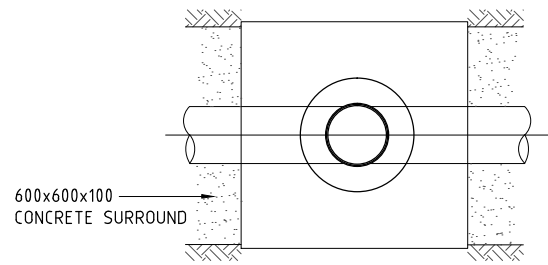
REV	DATE	REVISION DESCRIPTION	ORIG	CKD	ENG	QA	APPD
-	28 AUG 2014	AS CONSTRUCTED INFORMATION UPDATED	CT	GM	TP		
-	17 MAY 2013	AS CONSTRUCTED INFORMATION	CT	GM	TP	TP	TR

SHEET: A1 SCALE: AS SHOWN



Strategic Indigenous Housing and Infrastructure Program
 ACONEX NO: TA-12-035-CVL-DWG-0061
 DPI NO: R11-3209

ALICE SPRINGS PACKAGE 12 (HIDDEN VALLEY - 035)
 PROPOSED SUBDIVISION OF LOT 5198 - BERGER COURT
 SEWERAGE LONGITUDINAL SECTIONS
 SHEET 2 OF 4
 DRAWING NO: TA-12-035-CVL-DWG-0061
 REV: - 5505



ON LOT INSPECTION OPENING DETAIL FOR NEW HOUSE CONNECTIONS

PERMISSION TO USE FOR CONSTRUCTION PURPOSES

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

ON BEHALF OF LAND DEVELOPMENT, FOR INCORPORATION INTO THE POWER AND WATER AUTHORITY'S NETWORK

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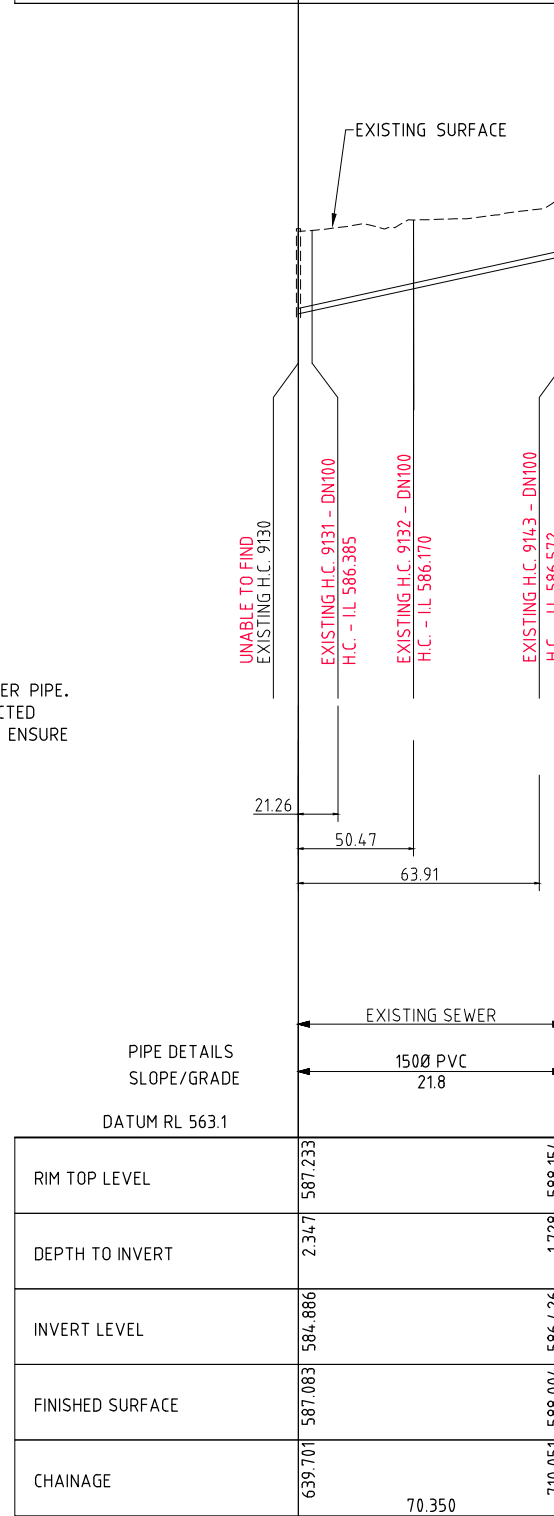
NOTE:
ALL MANHOLE CHAMBERS TO BE PRECAST AND 1200 DIA. AS PER STD. DRG. W2-2-02/3

WATERMAIN COVER 750MM MIN IN ROAD RESERVE AND 600MM MIN IN NON-TRAFFICABLE AREA

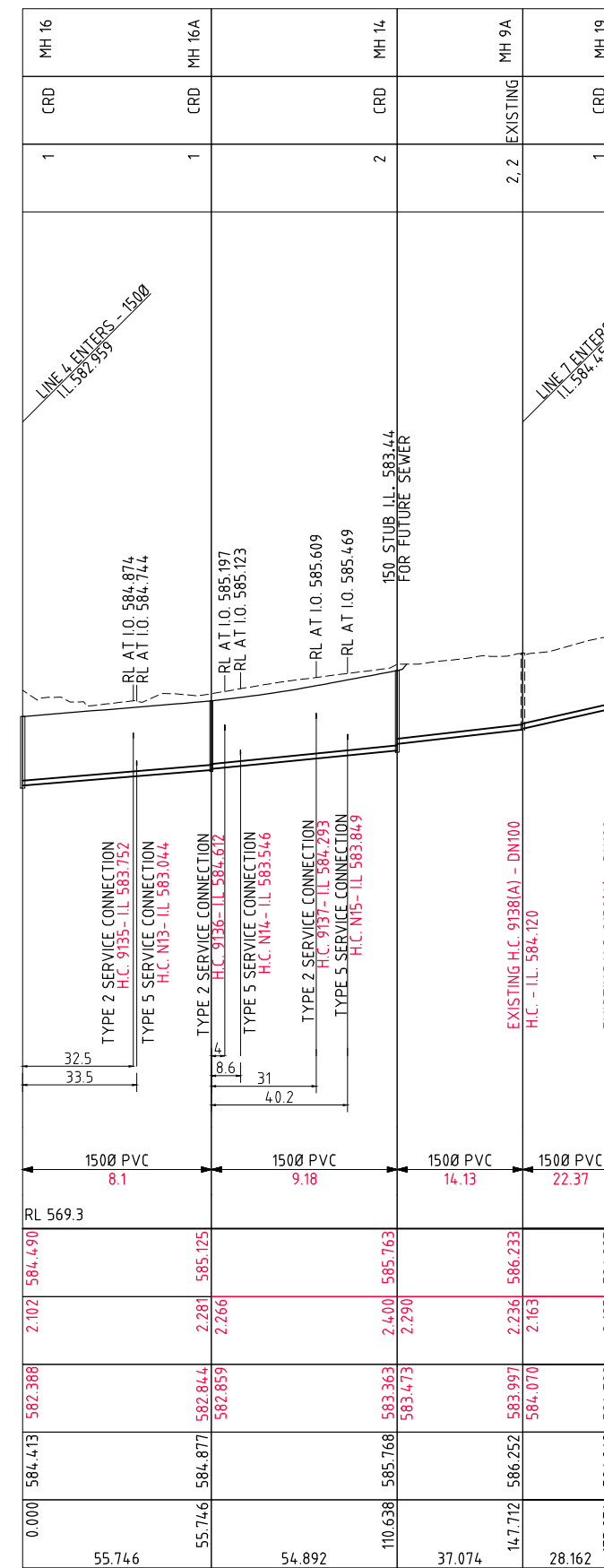
FOR WATERMAIN CLASHING WITH SWD PIPES REFER TA-12-035-CVL-DWG-0053 FOR DETAILS

ALL EXISTING HOUSE CONNECTIONS TO BE RELOCATED, IF REQUIRED BY REMOTE HOUSING

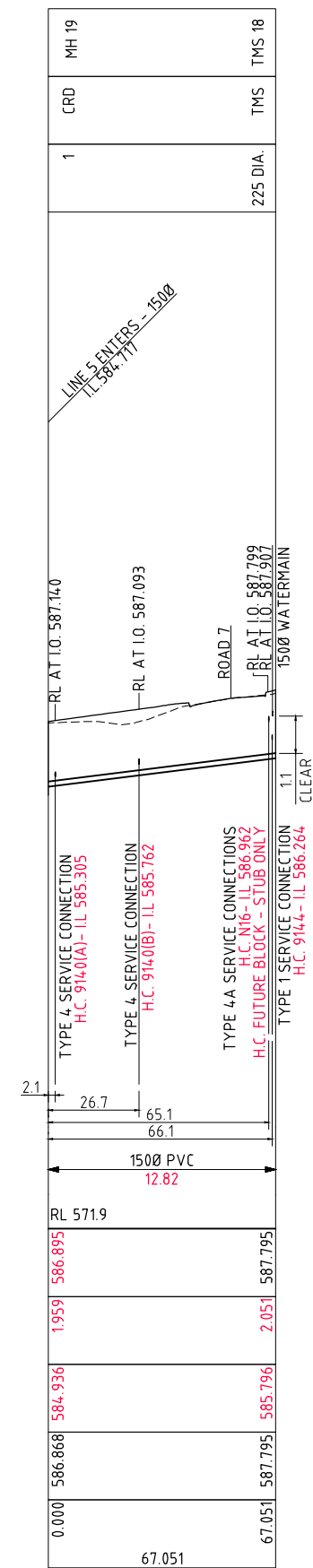
SEWER MAINTENANCE HOLE No.	MH10	MH11
COVER SHAPE & COVER DUTY	EXISTING	EXISTING
CHAMBER DROP TYPE	1	-



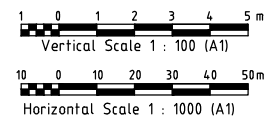
LONGITUDINAL SECTION SEWER LINE 4



LONGITUDINAL SECTION SEWER LINE 5



LONGITUDINAL SECTION SEWER LINE 6



'AS CONSTRUCTED'

REV	DATE	REVISION DESCRIPTION	ORIG	CKD	ENG	QA	APPD
-	28 AUG 2014	AS CONSTRUCTED INFORMATION UPDATED	CT	GM	TP		
-	6-8-2014	ADDITIONAL AS CONSTRUCTED INFORMATION	GM	CT	TP		
-	17 MAY 2013	AS CONSTRUCTED INFORMATION	CT	GM	TP	TP	TR

SHEET: A1 SCALE: AS SHOWN



Strategic Indigenous Housing and Infrastructure Program

ACONEX NO: TA-12-035-CVL-DWG-0062

DPI NO: R11-3210

ALICE SPRINGS PACKAGE 12 (HIDDEN VALLEY - 035) PROPOSED SUBDIVISION OF LOT 5198 - BERGER COURT SEWERAGE LONGITUDINAL SECTIONS SHEET 3 OF 4

DRAWING NO: TA-12-035-CVL-DWG-0062

REV: 5506

PERMISSION TO USE FOR CONSTRUCTION PURPOSES

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

ON BEHALF OF LAND DEVELOPMENT, FOR INCORPORATION INTO THE POWER AND WATER AUTHORITY'S NETWORK

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NOTE:

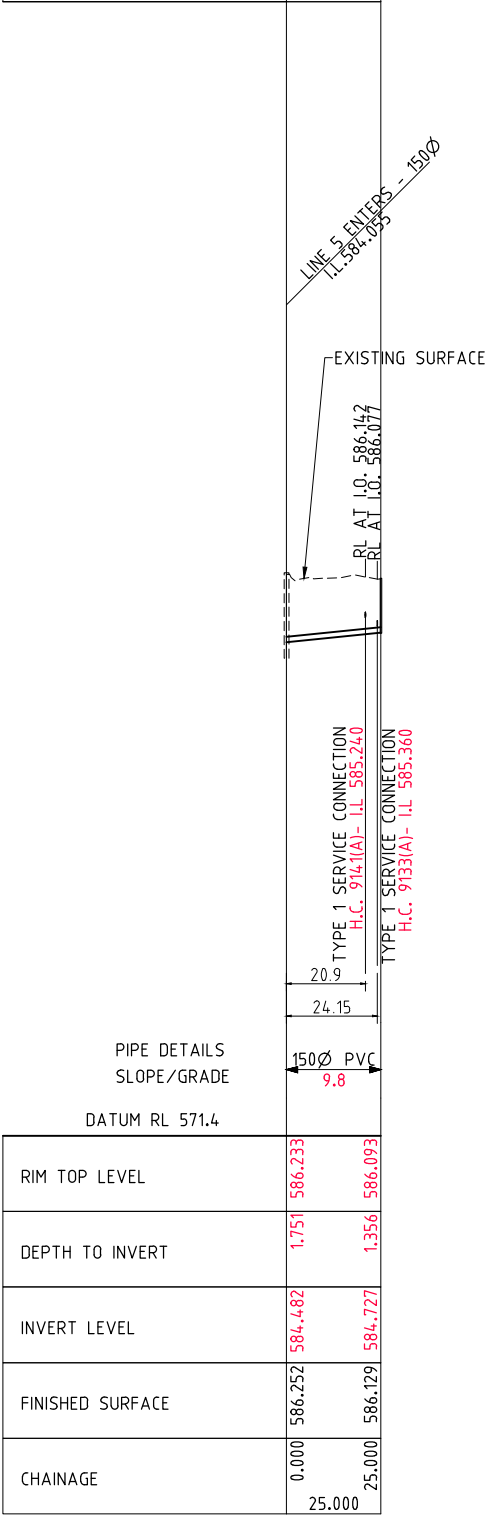
ALL MANHOLE CHAMBERS TO BE PRECAST AND 1200 DIA. AS PER STD. DRG. W2-2-02/3

WATERMAIN COVER 750MM MIN IN ROAD RESERVE AND 600MM MIN IN NON-TRAFFICABLE AREA

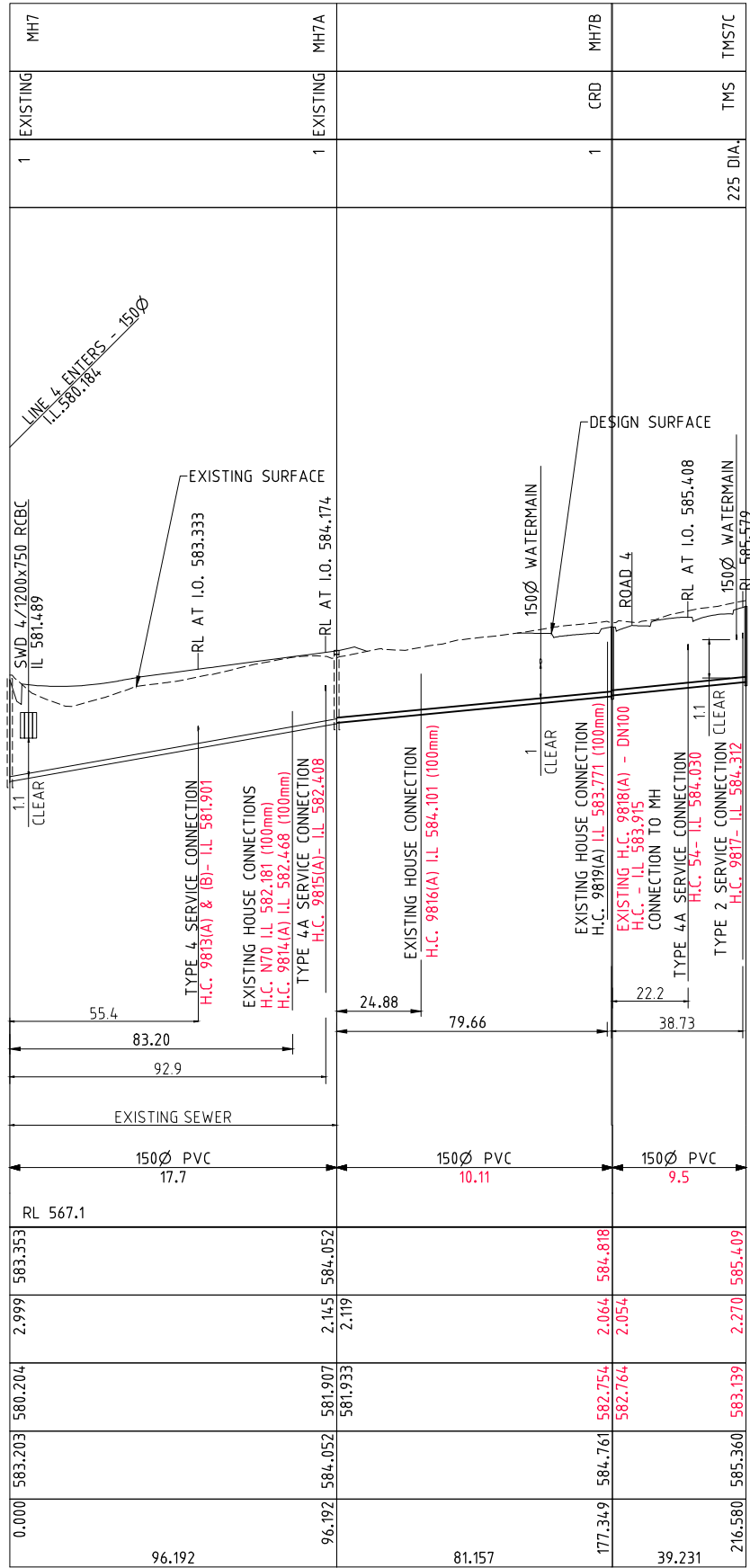
FOR WATERMAIN CLASHING WITH SWD PIPES REFER TA-12-035-CVL-DWG-0053 FOR DETAILS

ALL EXISTING HOUSE CONNECTIONS TO BE RELOCATED, IF REQUIRED BY REMOTE HOUSING

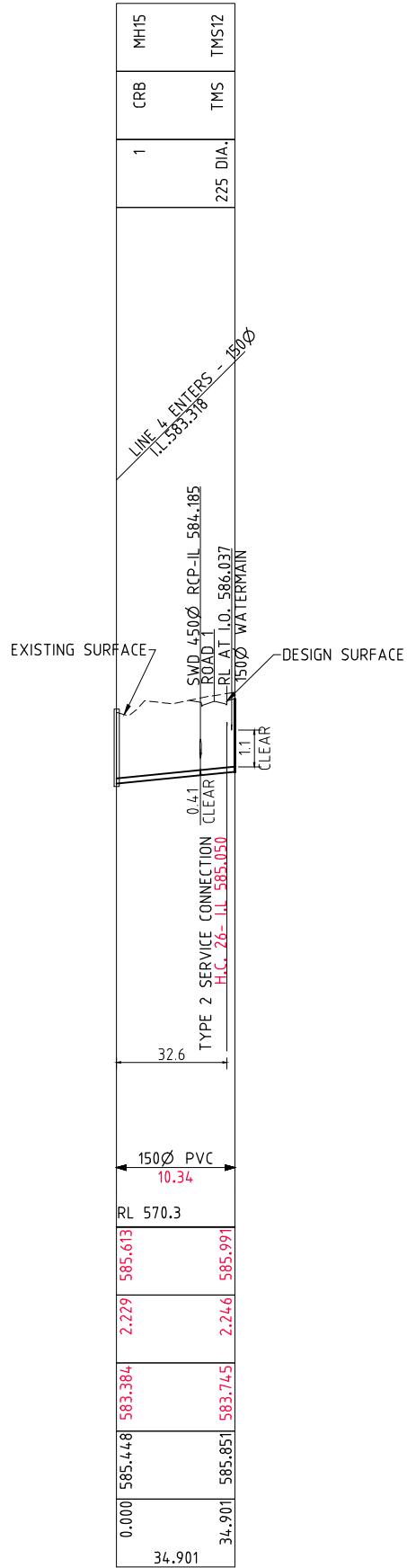
SEWER MAINTENANCE HOLE No.	MH9A	TMS17
COVER SHAPE & COVER DUTY	EXISTING	TMS
CHAMBER DROP TYPE	2	225 DIA.



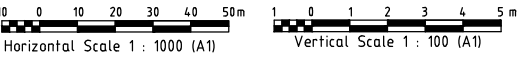
LONGITUDINAL SECTION
SEWER LINE 7



LONGITUDINAL SECTION
SEWER LINE 8



LONGITUDINAL SECTION
SEWER LINE 9



'AS CONSTRUCTED'

REV	DATE	REVISION DESCRIPTION	ORIG	CKD	ENG	QA	APPD
-	28 AUG 2014	AS CONSTRUCTED INFORMATION UPDATED	CT	GM	TP	TP	TR
-	17 MAY 2013	AS CONSTRUCTED INFORMATION	CT	GM	TP	TP	TR

SHEET: A1 SCALE: AS SHOWN



Strategic Indigenous Housing and Infrastructure Program

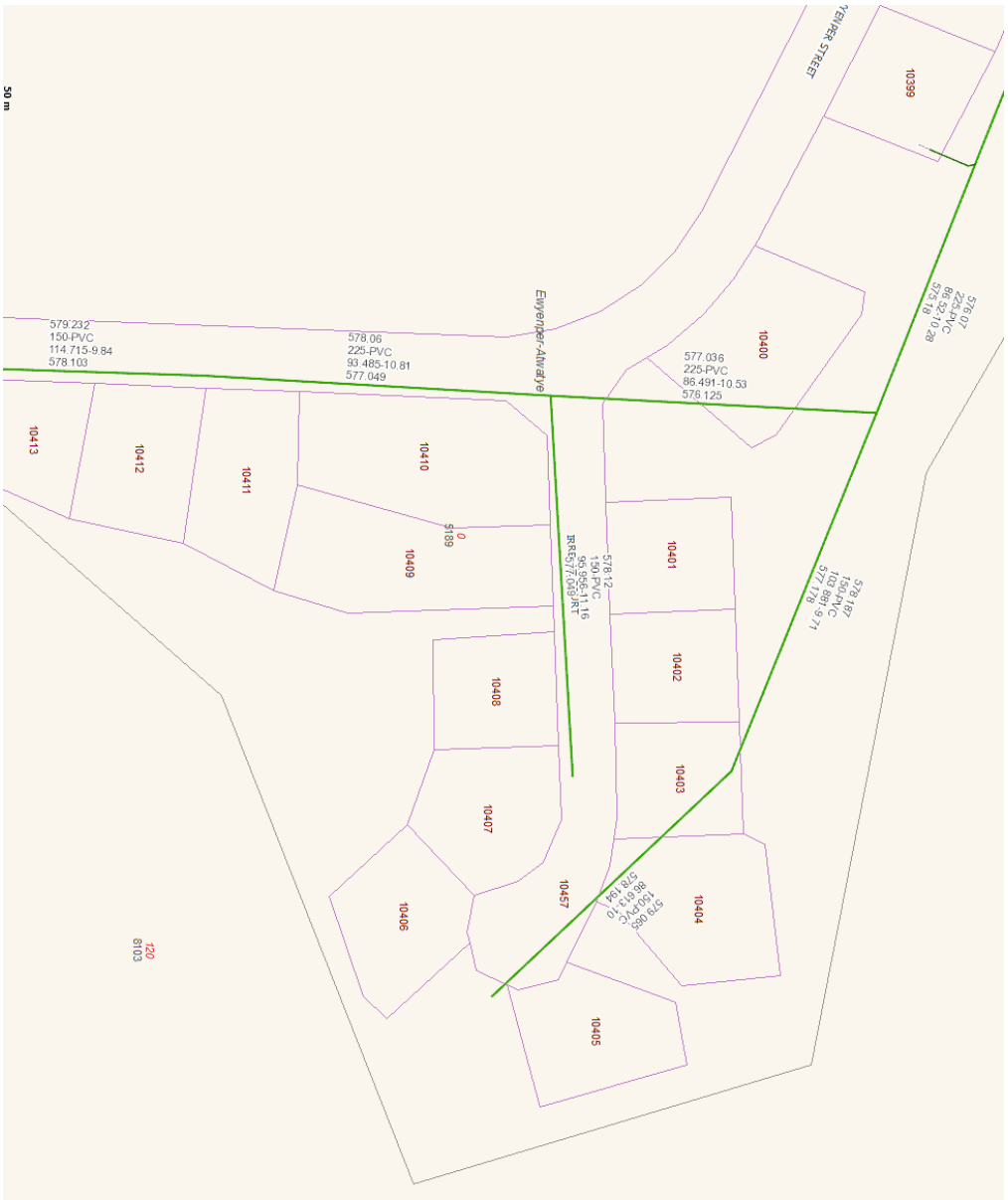
ACONEX NO: TA-12-035-CVL-DWG-0063

DPI NO: R11-3211

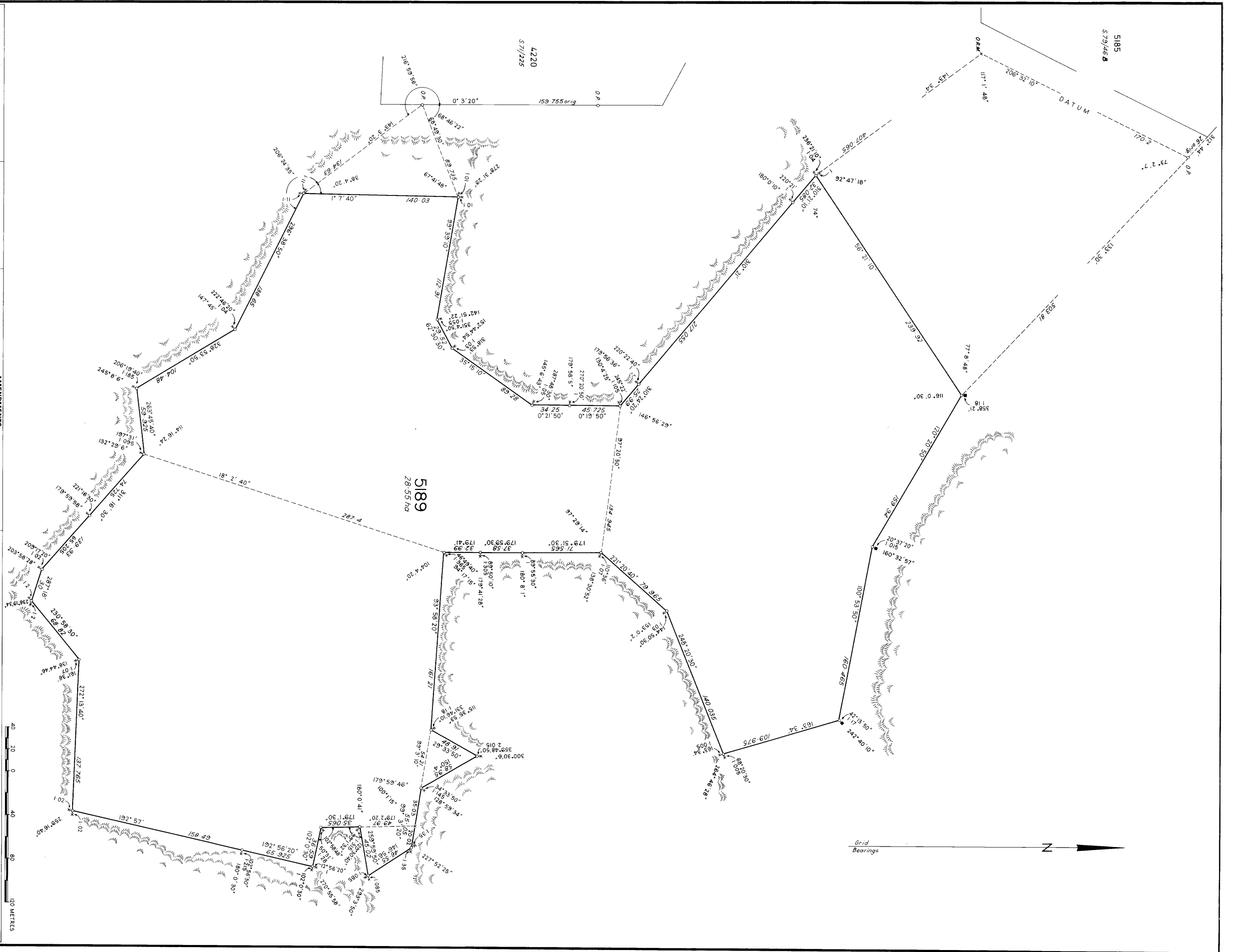
ALICE SPRINGS PACKAGE 12 (HIDDEN VALLEY - 035) PROPOSED SUBDIVISION OF LOT 5198 - BERGER COURT SEWERAGE LONGITUDINAL SECTIONS SHEET 4 OF 4

DRAWING NO: TA-12-035-CVL-DWG-0063

REV: - 5507



COPY TO LTC 15-4-80



SURVEYORS CERTIFICATE
 I, David Charles Chudleigh,
 being duly sworn, hereby certify that the survey represented on this plan was carried out by me or under my supervision in accordance with the provisions of the Survey Act 1958 and that this survey has been conducted in accordance with the Regulations, Precedents and the Regulations, Precedents and the Regulations, Precedents.
 Date: 21/1/79
 Licensed Surveyor: [Signature]

FILE NO.	NO. REFERENCE	AMENDMENTS	APPROVED DATE
S79/070			

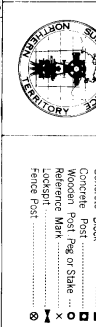
LEGEND
 Concrete Block:
 Centre Post:
 Reference Mark:
 Lockpost:
 Fence Post:

LOT 5189
TOWN OF ALICE SPRINGS

SCALE 1 : 1500
S.79 / 70

SURVEY APPROVED
 Date: 2/1/79
 Surveyor-General: [Signature]

FILE NO. S79/070
FIELD BOOK NO. 1930, 1931, 1932
INDEX PLAN, DEED, SURVEY BOOK NO. 8 Dyer 31-8-79
EXAMINED BY: [Signature] 29/9/79
DATE: 2/1/79
CALCULATION BOOK NO.



LEGEND
 A. Assumed from S79/46 B
 Azimuth
 Latitude Datum

SCALE 1 : 1500
S.79 / 70

13.12.79

Date Registered: 09/06/2010

Volume 747 Folio 782

Duplicate Certificate as to Title issued? No

SEARCH CERTIFICATE

SPECIAL PURPOSES LEASE 00473

Lot 5189 Town of Alice Springs from plan(s) S 79/070

Area under title is 28 hectares 5500 square metres

Owner:

Ewyenper-Atwatye Association Incorporated
of PO Box 8070, Alice Springs NT 0871

Registered Date	Dealing Number	Description
		Previous title is Volume 622 Folio 177
09/06/2010	728347	Underlease to Northern Territory of Australia - expiring 02/12/2012 (728317)
09/06/2010	728317	Sublease to Executive Director of Township Leasing - expiring 02/12/2049
End of Dealings		

Commencement Date: 14 February 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 other services on the leased land or on other lands.

Provisions:

To hold unto the Lessee in perpetuity yielding and paying therefore an annual rental of ten cents if and when demanded by the Minister subject to re-appraisal 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 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

Duplicate Certificate as to Title issued? No

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.

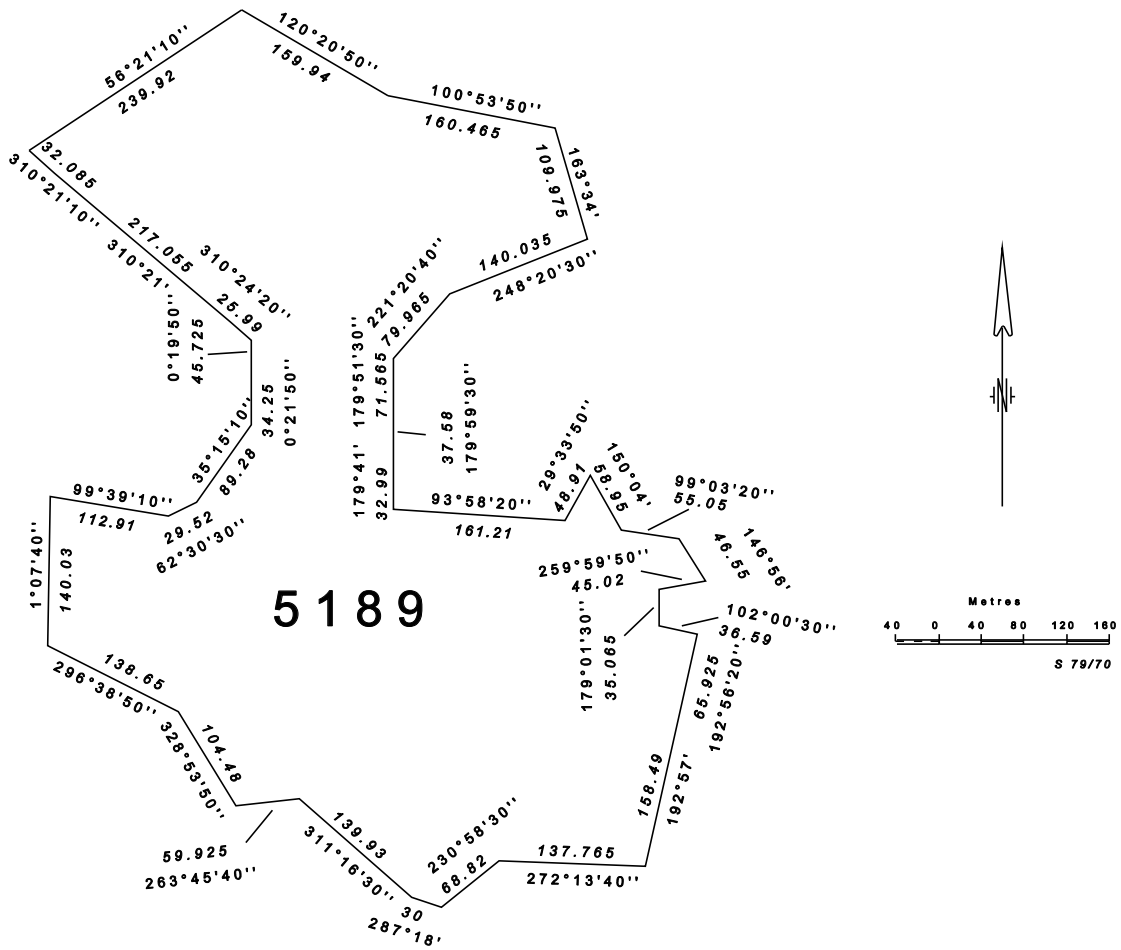
Covenants:

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 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 December, 1980 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 one hundred and fifty thousand dollars and in accordance with 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 said improvements at a cost not less than the said sum and in accordance with any Act, Ordinance or Regulation by the first day of December, 1981 or within such further time as may be approved in writing by the Minister. The Lessee will complete by the first day of December, 1984 further improvements to the total value of not less than the sum of four hundred 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 four hundred 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 and Housing 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 December, 1981 or within such further time as may be approved in writing by the Minister and all such works will thereafter be maintained to the satisfaction 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 no building, structure or vehicle shall be situated within eight metres of any road frontage. The setback area so formed will be landscaped with trees and shrubs to the satisfaction of the Minister by the first day of December, 1981 or within such further time as may be allowed by the Minister and all such landscaping will thereafter be maintained to the satisfaction of the Minister.
10. That all water and sewerage works will be carried out in accordance with the standards required by the Local Authority and the Department of Health. The disposal of garbage, sewage, waste, water and sullage within the boundaries of the site must accord with the requirements of the Department of Health.
11. That adequate fire fighting equipment will be provided on the site and will be easily accessible from any development. Such equipment will be approved by the Chief Fire Officer and thereafter maintained to the satisfaction of the Minister.
12. That no building or structure will be constructed to a height of more than one storey above ground level.
12. That for every ten individual camping sites or part thereof there shall 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 males 1 shower with hot and cold water, for use by females 1 handbasin with hot and cold water for each water closet provided 1 wash trough with hot and cold water.

Duplicate Certificate as to Title issued? No

13. That all electrical reticulation will conform at all times with the appropriate by-laws, standards and specifications of the Northern Territory Electricity Commission.





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 05189 Town of Alice Springs plan(s) S 79/070

(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 747 782 (order 1)

Tenure Type

SPECIAL PURPOSES LEASE 473

Tenure Status

Current

Area Under Title

28 hectares 5500 square metres

Owners

Ewyenper-Atwatye 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 622 177 (order 1)

CUCL 179 057 (order 2)

CUCL 179 057 (order 1)

Visit the website http://www.nt.gov.au/justice/bdm/land_title_office/

Custodian - Surveyor General (+61 8 8995 5362)**Address**

SADADEEN

Survey Plan

S 79/070

Survey Status

Approved

Parcel Status

CURRENT

Parcel Area

28 hectares, 5500 square metres

Map Reference

Code 010 Scale 2500 Sheet 30.32

Code 010 Scale 2500 Sheet 31.32

Code 010 Scale 50000 Sheet 00.01

Parent Parcels

(none found)

Parcel Comments

ILPEA ILPEA ABORIGINAL LAND APPLICATION S79/70/17. PT OF FORMER NT POR 409 S79/70/16. SEE S2008/002 LOTS 9801(A) TO 9845(A) FOR LOT ALLOCATIONS UNDER THE CONNECTING NEIGHBOURS INITIATIVE - REPLACED BY S2012/017. KNOWN AS "HIDDEN VALLEY" TOWN CAMP. INTERNAL ROADS NAMED NTG G42 19/10/2011. LOTS 10397(A) TO 10457(A) - S2012/017.

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 05189 Town of Alice Springs

Unimproved Capital Value

\$1,350,000 on 01/07/2015

\$1,470,000 on 01/07/2012

\$1,400,000 on 01/07/2009

\$1,000,000 on 01/07/2006

\$814,000 on 01/07/2003

\$570,000 on 01/07/2000

\$550,000 on 01/07/1997

\$450,000 on 01/07/1994

\$375,000 on 01/07/1991

\$350,000 on 01/01/1989

\$145,000 on 01/01/1986

\$100,000 on 01/01/1983

\$52,500 on 01/07/1980

Valuation Improvements

28/05/1990 Hall

28/05/1990 Ablution block x 3

28/05/1990 House x 18

20/02/1987 Residential other

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: 63 of 63
Description: shade structure for park
Number of Residential Units:
Australian Bureau of Statistics Type: (none found)
Building Class: Non-habitable building
Area: 64 square metres
Certification: Non-habitable building - Occupancy Permit - *issued on 28/04/2016*

Application Number: 62 of 63
Description: House 32 - reglaze existng window. refurbish existng kitch with new stove and ss joinery units. new ceramic tiles throughout house. repaint inside and out. supply and install new evap cooling system.
Number of Residential Units: 1
Australian Bureau of Statistics Type: Separate House
Building Class: Single Dwelling
Area: (none found)
Certification: Single Dwelling - Full Code - *issued on 14/12/2011*

Application Number: 61 of 63
Description: House 22 - reglaze existng windows, refurbish existing kitchen with new stove ans ss joinery units. new ceramic thiles throughtout house. repaint inside and out. supplu and install new evap colling system
Number of Residential Units: 1
Australian Bureau of Statistics Type: Separate House
Building Class: Single Dwelling
Area: (none found)
Certification: Single Dwelling - Full Code - *issued on 14/12/2011*

Application Number: 60 of 63
Description: reglaze existing windows, refurbish existng kitchen with new stove ans ss joinery units, new ceramic tiles throughout house. repaint insiude and out. supply and install new evap colling system.
Number of Residential Units: 1
Australian Bureau of Statistics Type: Separate House
Building Class: Single Dwelling
Area: (none found)
Certification: Single Dwelling - Full Code - *issued on 14/12/2011*

Application Number: 59 of 63
Description: HV 58 - New concrete and steel residential 2 bedroom dwelling and verandah(Type H4ASA)
Number of Residential Units: 1
Australian Bureau of Statistics Type: Separate House

Building Class: Single Dwelling
Non-habitable building
Area: 115 square metres
Certification: Single Dwelling - Full Code - *issued on 02/12/2011*
Non-habitable building - Full Code - *issued on 02/12/2011*

Application Number: 58 of 63
Description: Refurbishment - House 14
Number of Residential Units: 1
Australian Bureau of Statistics Type: Separate House
Building Class: Single Dwelling
Area: (none found)
Certification: Single Dwelling - Full Code - *issued on 12/02/2013*

Application Number: 57 of 63
Description: New Concrete & Steel Residential Dwelling [HV 57] Type H4ASB
Number of Residential Units: 1
Australian Bureau of Statistics Type: Separate House
Building Class: Single Dwelling
Area: 110 square metres
Certification: Single Dwelling - Full Code - *issued on 06/09/2011*

Application Number: 56 of 63
Description: New Concrete & Steel Residential Dwelling [HV52-House 18]Type H6SAS
Number of Residential Units: 1
Australian Bureau of Statistics Type: Separate House
Building Class: Single Dwelling
Area: 140 square metres
Certification: Single Dwelling - Full Code - *issued on 06/09/2011*

Application Number: 55 of 63
Description: New Concrete & Steel Residential Dwelling [HV26-House 40] (Type H6AS)
Number of Residential Units: 1
Australian Bureau of Statistics Type: Separate House
Building Class: Single Dwelling
Area: 136 square metres
Certification: Single Dwelling - Full Code - *issued on 07/09/2011*

Application Number: 54 of 63
Description: New Concrete & Steel Residential Dwelling [HV9805/House 26] (Type H6SAS)
Number of Residential Units: 1
Australian Bureau of Statistics Type: Separate House
Building Class: Single Dwelling
Area: 140 square metres
Certification: Single Dwelling - Full Code - *issued on 07/09/2011*

Application Number: 53 of 63
Description: New Concrete & Steel Residential Dwelling [HV9137/House 43] (Type H6AS)
Number of Residential Units: 1
Australian Bureau of Statistics Type: Separate House
Building Class: Single Dwelling
Area: 136 square metres
Certification: Single Dwelling - Full Code - *issued on 06/09/2011*

Application Number: 52 of 63
Description: New Concrete & Steel Residential Dwelling [HV9135/House 41](Type H6SAS)
Number of Residential Units: 1
Australian Bureau of Statistics Type: Separate House
Building Class: Single Dwelling
Area: 140 square metres
Certification: Single Dwelling - Full Code - *issued on 08/09/2011*

Application Number: 51 of 63
Description: New Concrete & Steel Residential Dwelling [HV50 - House 9] Type H6AS
Number of Residential Units: 1
Australian Bureau of Statistics Type: Separate House
Building Class: Single Dwelling
Area: 136 square metres
Certification: Single Dwelling - Full Code - *issued on 07/09/2011*

Application Number: 50 of 63
Description: New Concrete & Steel Residential 3 bedroom Dwelling [HV1-House 7](Type H6AS)
Number of Residential Units: 1
Australian Bureau of Statistics Type: Separate House
Building Class: Single Dwelling
Area: 136 square metres
Certification: Single Dwelling - Full Code - *issued on 07/09/2011*

Application Number: 49 of 63
Description: New Concrete & Steel Residential Dwelling [HV55 - House 6](Type H6SAS)
Number of Residential Units: 1
Australian Bureau of Statistics Type: Separate House
Building Class: Single Dwelling
Area: 140 square metres
Certification: Single Dwelling - Full Code - *issued on 28/09/2011*

Application Number: 48 of 63

Description: New Concrete & Steel Residential Dwelling [HV54/House 25](Type H6SAS)
Number of Residential Units: 1
Australian Bureau of Statistics Type: Separate House
Building Class: Single Dwelling
Area: 140 square metres
Certification: Single Dwelling - Full Code - *issued on 06/09/2011*

Application Number: 47 of 63
Description: New Concrete & Steel Residential Dwelling [HV9815/House 23](Type H7AS)
Number of Residential Units: 1
Australian Bureau of Statistics Type: Separate House
Building Class: Single Dwelling
Area: 140 square metres
Certification: Single Dwelling - Full Code - *issued on 06/09/2011*

Application Number: 46 of 63
Description: New Concrete & Steel Residential Dwelling [HV51/House 27] (Type H7AS)
Number of Residential Units: 1
Australian Bureau of Statistics Type: Separate House
Building Class: Single Dwelling
Area: 140 square metres
Certification: Single Dwelling - Full Code - *issued on 07/09/2011*

Application Number: 45 of 63
Description: New Concrete & Steel Residential Dwelling [HV 9813B](Type H4ASB)
Number of Residential Units: 1
Australian Bureau of Statistics Type: Separate House
Building Class: Single Dwelling
Area: 110 square metres
Certification: Single Dwelling - Full Code - *issued on 08/09/2011*

Application Number: 44 of 63
Description: New Concrete & Steel Residential Dwelling [HV 9813A] (Type H4ASA)
Number of Residential Units: 1
Australian Bureau of Statistics Type: Separate House
Building Class: Single Dwelling
Area: 110 square metres
Certification: Single Dwelling - Full Code - *issued on 08/09/2011*

Application Number: 43 of 63
Description: New Concrete & Steel Residential Dwelling (Type H6VAS)(HV 9810 - House 10)
Number of Residential Units: 1
Australian Bureau of Statistics Type: Separate House
Building Class: Single Dwelling

Area: 136 square metres
Certification: Single Dwelling - Full Code - *issued on 08/09/2011*

Application Number: 42 of 63
Description: New Concrete & Steel Residential Dwelling duplex [HV 9804 /5A & 5B](Type H4ASA)
Number of Residential Units: 1
Australian Bureau of Statistics Type: Separate House
Building Class: Single Dwelling
Area: 110 square metres
Certification: Single Dwelling - Full Code - *issued on 07/09/2011*

Application Number: 41 of 63
Description: New Concrete & Steel Residential Dwelling [HV56](Type H4ASA)
Number of Residential Units: 1
Australian Bureau of Statistics Type: Separate House
Building Class: Single Dwelling
Area: 110 square metres
Certification: Single Dwelling - Full Code - *issued on 14/10/2011*

Application Number: 40 of 63
Description: New Concrete & Steel Residential Dwelling [HV 9806/House 15] Type H7AS
Number of Residential Units: 1
Australian Bureau of Statistics Type: Separate House
Building Class: Single Dwelling
Area: 140 square metres
Certification: Single Dwelling - Full Code - *issued on 05/09/2011*

Application Number: 39 of 63
Description: New Concrete & Steel Residential Dwelling [HV 9136/House 42]
Number of Residential Units: 1
Australian Bureau of Statistics Type: Separate House
Building Class: Single Dwelling
Area: 136 square metres
Certification: Single Dwelling - Full Code - *issued on 06/09/2011*

Application Number: 38 of 63
Description: New Concrete & Steel Residential Dwelling [HV 9134/House 31] Type H7EAS
Number of Residential Units: 1
Australian Bureau of Statistics Type: Separate House
Building Class: Single Dwelling
Area: 140 square metres
Certification: Single Dwelling - Full Code - *issued on 08/09/2011*

Application Number: 35 of 63
Description: Refurbishment
Number of Residential Units: 1
Australian Bureau of Statistics Type: Separate House
Building Class: Single Dwelling
Area: (none found)
Certification: Single Dwelling - Full Code - *issued on 17/10/2011*

Application Number: 33 of 63
Description: Refurbishment [House 17]
Number of Residential Units: 1
Australian Bureau of Statistics Type: Separate House
Building Class: Single Dwelling
Area: (none found)
Certification: Single Dwelling - Full Code - *issued on 01/02/2011*

Application Number: 31 of 63
Description: dwelling
Number of Residential Units: 1
Australian Bureau of Statistics Type: Separate House
Building Class: Single Dwelling
Non-habitable building
Area: 103 square metres
Certification: Single Dwelling - Full Code - *issued on 23/11/2010*
Non-habitable building - Full Code - *issued on 23/11/2010*

Application Number: 30 of 63
Description: dwelling
Number of Residential Units: 1
Australian Bureau of Statistics Type: Separate House
Building Class: Single Dwelling
Non-habitable building
Area: 103 square metres
Certification: Single Dwelling - Full Code - *issued on 23/11/2010*
Non-habitable building - Full Code - *issued on 23/11/2010*

Application Number: 27 of 63
Description: Stage 1- Shade Structure & Window Awings only
Number of Residential Units:
Australian Bureau of Statistics Type: (none found)
Building Class: Non-habitable building
Area: (none found)
Certification: Non-habitable building - Full Code - *issued on 17/12/2008*

Application Number: 26 of 63
Description: Dwelling Alterations
Number of Residential 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: 25 of 63
Description: Upgrades and new multi-purpose room
Number of Residential Units:
Australian Bureau of Statistics Type: (none found)
Building Class: Assembly building
Area: 165 square metres
Certification: Assembly building - Full Code - *issued on 04/12/2009*

Application Number: 23 of 63
Description: Single residential dwelling
Number of Residential Units: 1
Australian Bureau of Statistics Type: Separate House
Building Class: Single Dwelling
Area: 192 square metres
Certification: Single Dwelling - Full Code - *issued on 20/08/2007*

Application Number: 22 of 63
Description: DEMOLISH & NEW DWELLING
Number of Residential Units: 1
Australian Bureau of Statistics Type: Separate House
Building Class: Single Dwelling
Area: 220 square metres
Certification: Single Dwelling - Full Code - *issued on 17/10/2003*

Application Number: 21 of 63
Description: CONSTRUCTION OF A DWELLING
Number of Residential Units: 1
Australian Bureau of Statistics Type: Separate House
Building Class: Single Dwelling
Area: 0 square metres
Certification: Single Dwelling - Full Code - *issued on 06/03/2001*

Application Number: 18 of 63
Description: DWELLING
Number of Residential Units: 1
Australian Bureau of Statistics Type: (none found)
Building Class: Single Dwelling
Area: 208 square metres
Certification: Single Dwelling - Full Code - *issued on 21/04/1995*

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

File Number

PA2010/0414

Type

Compliance Check

Date Received

28/04/2010

Application Purpose

Demountable building

Application Status

Approved

Other Affected Parcels

(none found)

Instrument Signed

Instrument Number

Instrument Issued

Not Complete

Instrument Status

File Number

PA2010/0158

Type

Compliance Check

Date Received

17/02/2010

Application Purpose

Dwellings to Hidden Valley Town Camp

Application Status

Approved

Other Affected Parcels

(none found)

Instrument Signed**Instrument Number****Instrument Issued**

Not Complete

Instrument Status**Custodian - Power and Water Corporation (1800 245 092)****Meters on Parcel**

Power Water - Electricity 22

Power Water - Water 22

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>

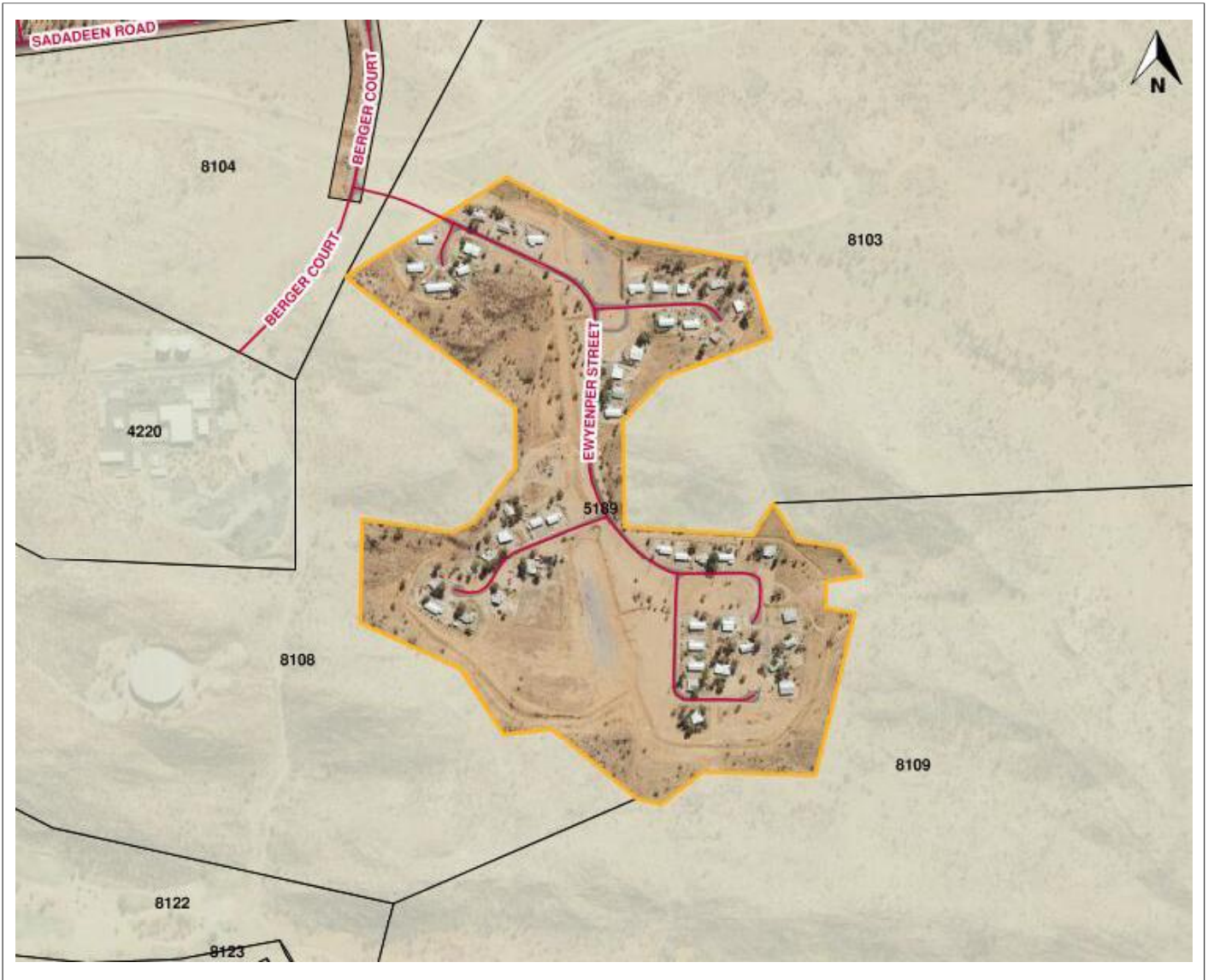
Custodian - Heritage Branch (+61 8 8999 5039)**Heritage Listing:**

(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].		
	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.		
	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.		
	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			
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.		
	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			
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	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.		
	19	Alice Springs	Aper Alwerrkng (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			
	47	Alice Springs	Ilparpa	13	13		11	8623	11203	100	58.5	91			
	48	Alice Springs	Ilperle Tyathe (Walpiri)	10	9		22	8625	11205	63	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	8626	11204	100	45	70			
	64	Alice Springs	Bassos	2	2		11	8611	11702	200	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			
	90	Alice Springs	Inarlenge (Little Sisters)	16	22		11	8618	11200	63	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	8619	11335	100	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	8620	11201	100	54	84			
	129	Alice Springs	Nyewente (Trucking Yards)	26	26		11	8405	2939	200	117	182			
	675	Alice Springs	Hoppys	15	19		11	8629	11312	300	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	315	18	28	Transformer is not in boundary of Town Camp [The nearest transformer data to Town Camp is highlighted in yellow].			
5	222	Borrooloola	Mara	28	29	2	11	6187	12610	100	130.5	203	Two transformers for this Town Camp.		
	229	Borrooloola	Garawa 1	16	14		11	6545	10203	100	72	112	Two transformers for this Town Camp.		
	278	Borrooloola	Yanyula	29	29		11	6546	10166	100	130.5	203	Data extracted from PWC asset information. It's outside of Twon Camp, shown only Transformer to this Town Camp.		
	992	Borrooloola	Garawa 2	11	11		11	6332	4890	100	49.5	77	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.		

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

Bassos

Bassos

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 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,
- 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 Itwiyethwenge (Bassos) 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 Bassos Camp is property of Mount Nancy Housing Association Incorporated, however is the responsibility of Tangentyere Council Incorporated to maintain.

5.1.1 Connection methods and billing

There are no sewer mains in Bassos, only septic tanks. It is assumed that Mount Nancy Housing Association Incorporated would pay for the septic tanks to be emptied. It is not known what contribution the residents would make towards this.

5.2 Existing infrastructure condition assessment

Available drawings (refer Appendices) show that there are at least two septic tanks at Bassos Camp. The septic tanks were not inspected during the site investigation.

No other sewerage infrastructure exists at Bassos Camp.

5.3 Current performance and risks

The current sewer system for the ablution block and dwelling at Bassos Camp is two separate septic tanks. This is not recommended in accordance with PWC standards.

The nearest town sewer is approximately 550 m away (Mount Nancy town camp pump station). It is recommended to construct a new gravity main, housing connections, sewer manholes, and connection to the existing pump station on Basso Road. The elevation difference between Bassos Camp and Mount Nancy pump station is not known, so a pump station may also be required to pump station may also be required. The cost estimates have not allowed for a pump station.

It is recommended that Bassos Camp is connected to the town sewer via a new gravity main (or rising main if required). This will also allow for future growth in the community. The capacity of the Mount Nancy pump station would need to be assessed to confirm it still complies with PWC standards with the additional loads.

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 for Bassos Camp:

- Construct approximately 550 m of gravity main, new housing connections, manholes, and connection to the existing pump station on Basso Road.

6 Water supply

6.1 Ownership and boundaries

A water services upgrade design was conducted under the SIHIP program for the area surrounding Bassos (refer Appendices). It is understood that the construction of these upgrades has not been undertaken.

The water main supplying Bassos is understood to be a DN100 AC pipe. However, the DN100 AC pipe ends outside the community boundaries with the internal reticulation network unknown. The DN25 water meter connects to the DN100 AC water main near to the community boundary, therefore, it is expected that the internal reticulation is DN25.

The water supply assets within Bassos are believed to be owned by Mount Nancy Housing Association Incorporated, but are the responsibility of Tangentyere Council Incorporated to maintain. The water is supplied from PWC owned water main outside of the community. Figure 2 shows the water supply to Bassos.

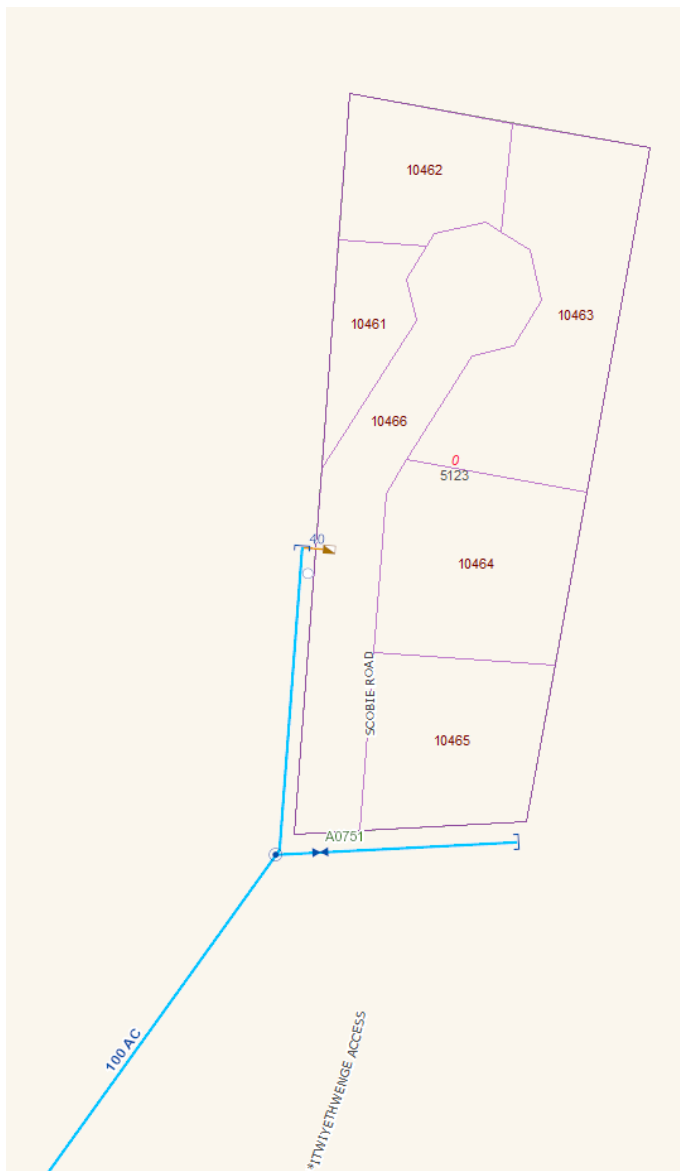


Figure 1 Bassos water supply

6.1.1 Connection methods and billing

Through consultation with PWC, it has been determined that the water supply to Bassos is currently charged using a fixed daily rate for a single house water meter. The water bills for Bassos are issued to the Department of Housing and Community Development. It is not known what contributions are made by the residents.

PWC have advised they maintain the water supply assets up to the bulk water meter. This bulk water meter is the sole water meter found at Bassos.

It is proposed that PWC continue to measure the water supply to the entire community, as opposed to individual houses. Under this scheme, the water bill for the entire community is the responsibility of the governing body, being Mount Nancy Housing Association Incorporated for Bassos. It will be up to governing body to assign bills to residents accordingly.

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 2 Water asset condition assessment

Asset	1 Very Poor	2 Poor	3 Good	4 Very Good	5 Excellent	Total
Fire hydrant*		1				1
Taps				2		2
Water meter			1			1



Figure 2 Fire hydrant, condition: *poor*



Figure 3 Tap, condition: *good*



Figure 4 Residential lot water meter condition: *good*

A single above ground fire hydrant was assessed as being in poor condition. Note, the fire hydrant was located immediately outside the community boundary. Given the surroundings (or lack there off) it is assumed that the purpose of the fire hydrant for coverage to Bassos and/or flushing the water main. PWC standards states that above ground fire hydrants should be removed and replaced with screw down (below ground) fire hydrants.

6.3 Current performance and risks

The current peak hour water demand 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 3 shows the peak hour water demand calculated.

Table 3 Current water demand

Total dwellings	EP	Demand (l/s)	Peak hour demand (l/s)
2	18	0.27	0.81

The capacity of the internal water reticulation at Bassos cannot be accurately analysed without further information on the underground services within the community. However, with consideration to the very low flow rate calculated for peak hour it is expected that the internal network has sufficient capacity. However further information on the internal network is required to confirm.

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. No additional hydrants are required at this stage.

The DN100 AC pipe is non-compliant with current PWC standards as it exceeds the maximum length a DN100 single feed pipe, which is 40 m.

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

There are no internal water supply assets requiring immediate maintenance.

Although the internal water mains are expected to provide sufficient capacity the external water main which supplies Bassos community is not compliant with PWC standards. It is recommended that the DN100 AC dead end pipe is replaced with a DN150 looped main. The cost estimates for the upgrades are including:

- Replace DN100 AC with DN150 PVC, approximately 450 m
- Replace above ground fire hydrant with below ground fire hydrant

7 Roadworks

7.1 Ownership and boundaries

The roads and road furniture that was inspected is property of Mount Nancy Housing Association Corporation, but is the responsibility of Tangentyere Council Incorporated to maintain.

7.2 Existing infrastructure condition assessment

The road network within Bassos community consists of one unsealed road with a circular area at the end to turn the vehicles around. As the community is quite small there is minimal road furniture, however two signs were assessed during the inspection, these can be observed below in Table 4.

Table 4 Roadworks condition assessment

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

Shown below in Figure 6 and Figure 7 are pictures depicting the of the signs.



Figure 5 Road sign, condition: *very good*

Figure 6 Entrance sign, condition: *very good*

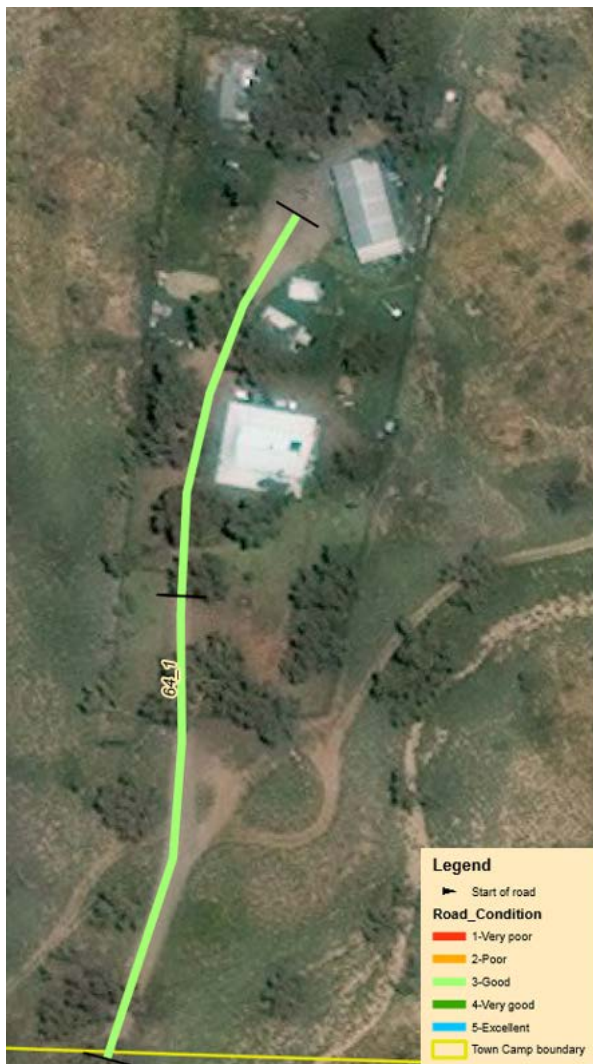


Figure 7 Community road network

Table 5 below details the condition of the road within Bassos community. The main road can be identified and combined with Figure 9 and Figure 10 an overview of the quality of road can be gathered.

Table 5 Road network condition assessment

Road name	Chainage start (km)	Chainage end (km)	Condition (1 to 5)	Defects and associated condition
Scobie Road	0.0	0.1	3	-20 m of the road has surface failure, this can be seen in Figure 10 (1)



Figure 8 Road into community, condition: *good*

Figure 9 Road exiting community, condition: *good*

7.3 Current performance and risks

The singular road is sufficient for the current number of houses. The current entrance road floods as it crosses a creek therefore during a significant storm event access to the community is restricted. This is also a safety risk. It is recommended that the road is flood modelled with the end goal of formalising the road with a culvert bridge crossing over the creek next to the community. Therefore limiting the time which the community is inaccessible.

Cost estimates to upgrade the road and incorporate a culvert/bridge arrangement have been included. Note the estimate is for construction only, the works would need to be detailed designed.

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;

- Regrade Scobie Road to repair the surface failure occurring
- Formalise the entire Scobie Road to ensure the community is accessible all year round

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 Bassos community is 3.5 m, this means that all 500 m of the road network will need to be upgraded to a 7.2 m wide road. An allowance has also been made for the culvert / bridge arrangement.

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 Bassos Camp is property of Mount Nancy Housing Association Incorporated, however is the responsibility of Tangentyere Council Incorporated to maintain.

8.2 Existing infrastructure condition assessment

There were no stormwater drainage assets at Bassos Camp.

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 500 m of stormwater drainage, including the road into Bassos Camp from Basso Road.

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.

9 Community structures

9.1 Ownership and boundaries

The community structures that was inspected is property of Mount Nancy Housing Association Corporation, but is the responsibility of Tangentyere Council Incorporated to maintain.

9.2 Existing infrastructure condition assessment

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

Table 6 Community structures condition assessment

Asset	1 Very Poor	2 Poor	3 Good	4 Very Good	5 Excellent	Total
Basketball court				1		1
BBQ area			1			1
Shaded sitting area (table and chairs)				1		1



Figure 10 Basketball court, condition: *very good*



Figure 11 Sitting area, condition: *very good*



Figure 12 BBQ area, condition: *good*

9.3 Current performance and risks

The current community structures are all in good or very good condition and adequate for the population of the Bassos community, all that is required is some maintenance and cleaning.

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:

- Paint basketball 'key' lines
- Install basketball net
- Cleaning of basketball court, BBQ area and shaded sitting area to remove rubbish and any broken glass.

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 Bassos community electrical reticulation systems is supplied by an overhead reticulation to a transformer that supplies to overhead for street lighting and underground for the housing.

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.

Bassos 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 7 shows the condition rating given to the street lights. The street lights 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 7 Street light condition assessment

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

Table 8 shows the condition rating given to the transformer. One transformer in camp boundary. The transformer was visually assessed to be in good condition.

Table 8 Transformer condition assessment

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

Table 9 shows the condition rating given to the Overhead poles. The overhead poles are of Weld Construction (Universal Pole construction). The overhead pole has a 100% operational rating from the visual inspection.

Table 9 Overhead pole condition assessment

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

The meters in Bassos community were not inspected by Bennett Design or Aurecon.

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 Bassos community transformer is 18% of rated capacity based on 4.5kVA/dwelling. The calculated maximum demand is within the total capacity of the substation on site.

Table 10 Bassos current demand load vs transformer ratings

Com Id	Community name	Dwellings	Transformer (kVA)	kVA Total @ 4.5kVA	kVA Total @ 7kVA
64	Bassos	2	50	9	14

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:

- Install new street lighting - approximately 10 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 found at Bassos.

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 Bassos is displayed in the Figure 14 below. NBN is available to residents via a fixed telecommunication line on application to an appropriate NBN access provider.

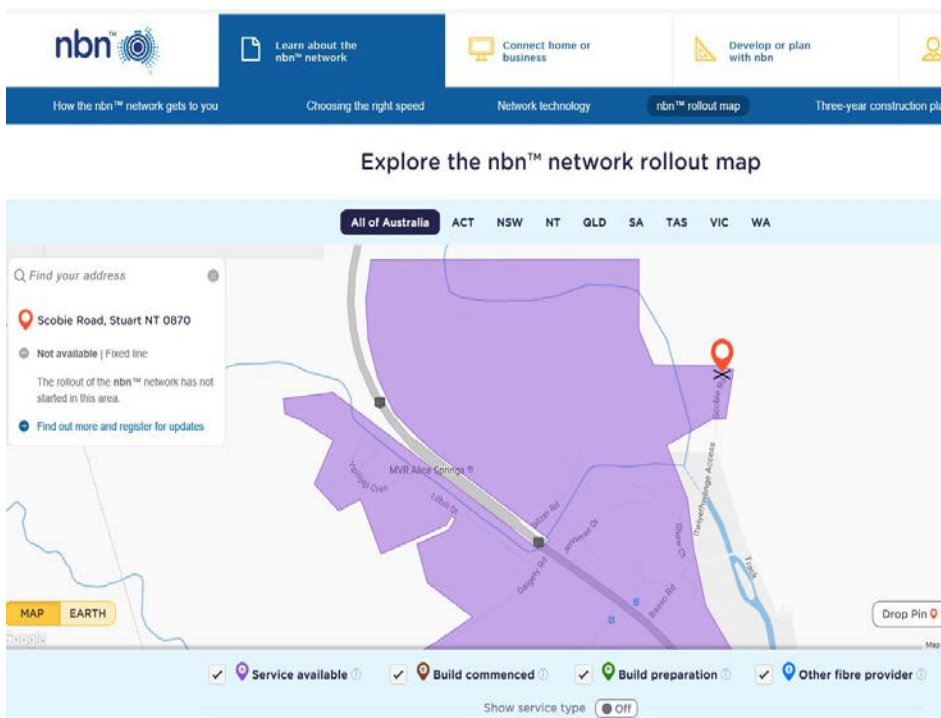


Figure 13 NBN network availability map

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

12 Cost estimates

Table 15 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 11 Cost estimates

Infrastructure	Maintenance of existing infrastructure	Upgrades to meet current design
Sewerage	\$ 0	\$ 438,000
Water supply	\$ 0	\$ 265,000
Roadworks	\$ 32,000	\$ 779,000
Stormwater drainage	\$ 0	\$ 601,000
Community structures	\$ 3,000	\$ 0
Electrical	\$ 0	\$ 143,000
Communications	\$ 0	\$ 0
Miscellaneous provisions	\$ 14,000	\$ 277,000
Total (including GST)	\$ 49,000	\$ 2,503,000
Grand total	\$ 2,552,000	

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 Bassos community:

Sewerage

- Construct approximately 550 m of gravity main, new housing connections, manholes, and connection to the existing pump station on Basso Road.

Water supply

- Replace existing pipe with DN150 PVC, approximately 450 m
- Replace above ground fire hydrant with below ground fire hydrant

Roadworks

- Regrade Scobie Road to repair the surface failure occurring
- New culvert / bridge arrangement over the creek
- 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.

Community structures

- Paint basketball 'key' lines
- Install basketball net
- Cleaning of basketball court, BBQ area and shaded sitting area to remove rubbish

Electrical services

- Install new street lighting - approximately 10 poles


Communications

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

Civil inspection reports

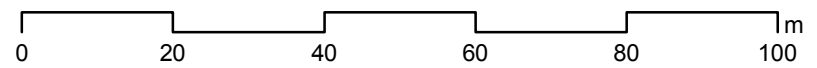
Map by: DMCP P:\GIS\Projects\253963_NT_Town_Camps\253963_003_Civil_DDP.mxd 23/02/2017 12:02 Imagery: Digital Globe WV2 2013-2016



Legend
Town Camp boundary


A3 scale: 1:1,000

Note:
Label numbers refer to survey IDs



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

NT Town Camp Infrastructure Assessments: Sewerage
64 - Itwiyethwenge (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

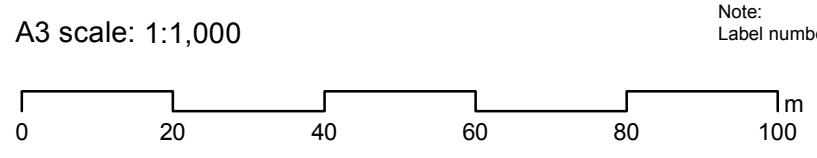
Town Camp boundary

Water

Fire Hydrants (1)

Water Meter (1)

Taps (2)



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

NT Town Camp Infrastructure Assessments: Water
64 - Itwiyethwenge (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

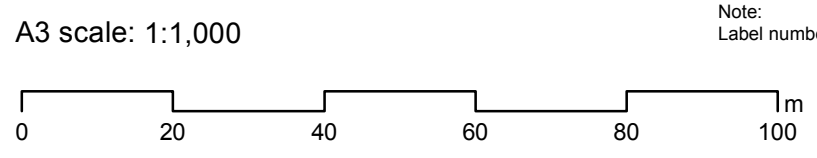
Town Camp boundary
□

Community structures

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

Road furniture

- ▲ Signs (2)



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

NT Town Camp Infrastructure Assessments
Road furniture, stormwater drainage & community structures
64 - Itwiythwenge (Alice Springs)

Northern Territory Town Camps

Civil Infrastructure

Inspection Date 21/11/2016 10:26:08 AM

Insp ID: 891

Group 4 - Alice Springs

Bassos

What Water Asset Are you Capturing: Fire Hydrants

Single or Double: Single

Sluice Valve: No

Above or Below ground: Above ground

FH Leakage: No

Bollards around hydrant:

FH Condition: 2 - Poor

FH Comment: Outside community fence, expected to service community as well



Northern Territory Town Camps

Civil Infrastructure

Inspection Date 21/11/2016 10:26:08 AM

Northern Territory Town Camps

Civil Infrastructure

Inspection Date 21/11/2016 10:16:25 AM

Insp ID: 908 Group 4 - Alice Springs Bassos

Road Name:

What are you inspecting: Pavements

Ch From (km): 0

Ch To (km): 0.1

Road Type: Unsealed

Section Width (m): 3.5

Road Condition: 3 - Good

General Comment: Mostly good condition for a unsealed road. Entrance has defect surface failure

Road Defects Section

Defect Type	Defect QTY	Defect Condition	Defect Comments
Surfacing Failure	20	1 - Very Poor	20 m

Kerbs Section

Kerb Type	Kerb Cond	Kerb Comments
No kerb		

Shoulders Section

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

Linemarking Section

Obstruction Section

Northern Territory Town Camps

Civil Infrastructure

Inspection Date 21/11/2016 10:16:25 AM



Northern Territory Town Camps

Civil Infrastructure

Inspection Date 21/11/2016 10:16:25 AM



Northern Territory Camps

Civil Infrastructure

Inspection Date 21/11/2016 10:12:39 AM

Insp ID: 901

Group 4 - Alice Springs

Bassos

Inspection Type:	Shade Structure
Shade Structure Type:	Table and Chairs
Shade Floor Type:	Concrete
Roof Type:	Tin Roof
Width (mm):	2.1
Length (mm):	2.6
Appearance:	3
Appearance Comment:	Rubbish around table
Condition:	4 - Very Good
Comment:	



Northern Territory Camps

Civil Infrastructure

Inspection Date 21/11/2016 10:12:39 AM



Northern Territory Camps

Civil Infrastructure

Inspection Date 21/11/2016 10:03:30 AM

Insp ID: 902

Group 4 - Alice Springs

Bassos

Inspection Type:	Shade Structure
Shade Structure Type:	Basket Ball Court
Shade Floor Type:	Concrete
Roof Type:	Not Covered
Width (mm):	6
Length (mm):	12
Appearance:	3
Appearance Comment:	
Condition:	3 - Good
Comment:	



Northern Territory Camps

Civil Infrastructure

Inspection Date 21/11/2016 10:03:30 AM



Northern Territory Camps

Civil Infrastructure

Inspection Date 21/11/2016 10:14:38 AM

Insp ID: 907

Group 4 - Alice Springs

Bassos

Inspection Type:	Shade Structure
Shade Structure Type:	BBQ Area
Shade Floor Type:	Concrete
Roof Type:	Not Covered
Width (mm):	1
Length (mm):	4
Appearance:	3
Appearance Comment:	Rubbish on BBQ
Condition:	4 - Very Good
Comment:	



Northern Territory Town Camps

Civil Infrastructure

Inspection Date 21/11/2016 10:31:09 AM

Insp ID: 888

Group 4 - Alice Springs

Bassos

Road Name:

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 10:30:25 AM

Insp ID: 889

Group 4 - Alice Springs

Bassos

Road Name:

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 21/11/2016 10:27:39 AM

Insp ID: 890

Group 4 - Alice Springs

Bassos

What Water Asset Are you Capturing: Taps

Diameter(mm): 20

Tap Leakage: No

Tap Condition: 4 - Very Good

Tap Comment:



Northern Territory Town Camps

Civil Infrastructure

Inspection Date 21/11/2016 10:24:40 AM

Insp ID: 892

Group 4 - Alice Springs

Bassos

What Water Asset Are you Capturing: Taps

Diameter(mm): 20

Tap Leakage: No

Tap Condition: 4 - Very Good

Tap Comment:



Northern Territory Town Camps

Civil Infrastructure

Inspection Date 21/11/2016 10:22:14 AM

Insp ID: 894

Group 4 - Alice Springs

Bassos

What Water Asset Are you Capturing: Water Meter

Water Meter Type: Bulk

Bulk Water Meter Size (mm): 25

Bulk Water Meter Condition: 3 - Good

Bulk Water Meter Comment: Small water meter appears to be servicing entire camp

Lot Number:

Lot Water Meter Size:

Lot Water Meter Condition:

Lot Water Meter Comment:



Northern Territory Town Camps

Civil Infrastructure

Inspection Date 21/11/2016 10:22:14 AM



Electrical inspection report

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



Legend

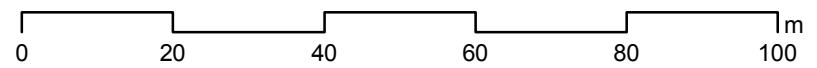
Electrical infrastructure

- 11KV Line Pole
- 11KV Pole Mounted Substation
- 11kV Switch Fuse
- LV Metering
- LV switch
- Transformer
- Town Camp roads
- NT cadastre
- Town Camp boundary

Electrical survey points

- 1234 Other Values
- 1234 Distribution Panel
- 1234 Overhead Poles
- 1234 Street Light
- 1234 Transformers

A3 scale: 1:1,000



Date: 23/02/2017 Version: 3
Coordinate system: MGA94 Zone 52

Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 21/11/2016 11:13:18 AM

Insp ID: 397

Group 4 - Alice Springs

Bassos

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: 11000

What is the arrangement of connected cables: Parallel

Are there isolators on the pole: Yes

What is the Condition:

How many Lots are connected to this pole: 2

Overhead Pole Comments:

Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 21/11/2016 11:13:18 AM



Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 21/11/2016 10:49:51 AM

Insp ID: 393 Group 4 - Alice Springs Bassos

What Category are you capturing: Street Light

What is power supply method:

Overhead

What is the lamp type:

S70 D15

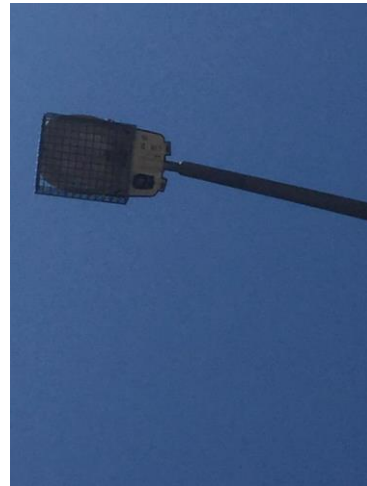
What Wattage is the lamp:

70

What is the condition of street lights:

4

What is Street Lighting pole installation height (approximate):



Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 21/11/2016 10:46:04 AM

Insp ID: 394 Group 4 - Alice Springs Bassos

What Category are you capturing: Street Light

What is power supply method:

Overhead

What is the lamp type:

S70 D 15

What Wattage is the lamp:

75

What is the condition of street lights:

4

What is Street Lighting pole installation height (approximate):

6



Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 21/11/2016 10:54:59 AM

Insp ID: 395

Group 4 - Alice Springs

Bassos

What Category are you capturing: Street Light

What is power supply method:

Overhead

What is the lamp type:

S70 D 15

What Wattage is the lamp:

70

What is the condition of street lights:

4

What is Street Lighting pole installation height (approximate):

6



Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 21/11/2016 11:06:55 AM

Insp ID: 396

Group 4 - Alice Springs

Bassos

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:

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 core insulated

What is cable size to transformer:

Is there switch gear or fusing associated with the transformer:

Drop out fuses and surge arrestors

Transformer Comment:

Good earthing



Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 21/11/2016 11:06:55 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

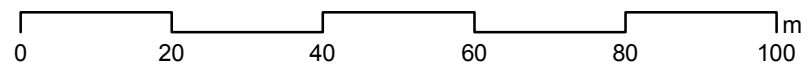


Legend

- ▶ Start of road
- Road_Condition**
- 1-Very poor
- 2-Poor
- 3-Good
- 4-Very good
- 5-Excellent
- Town Camp boundary



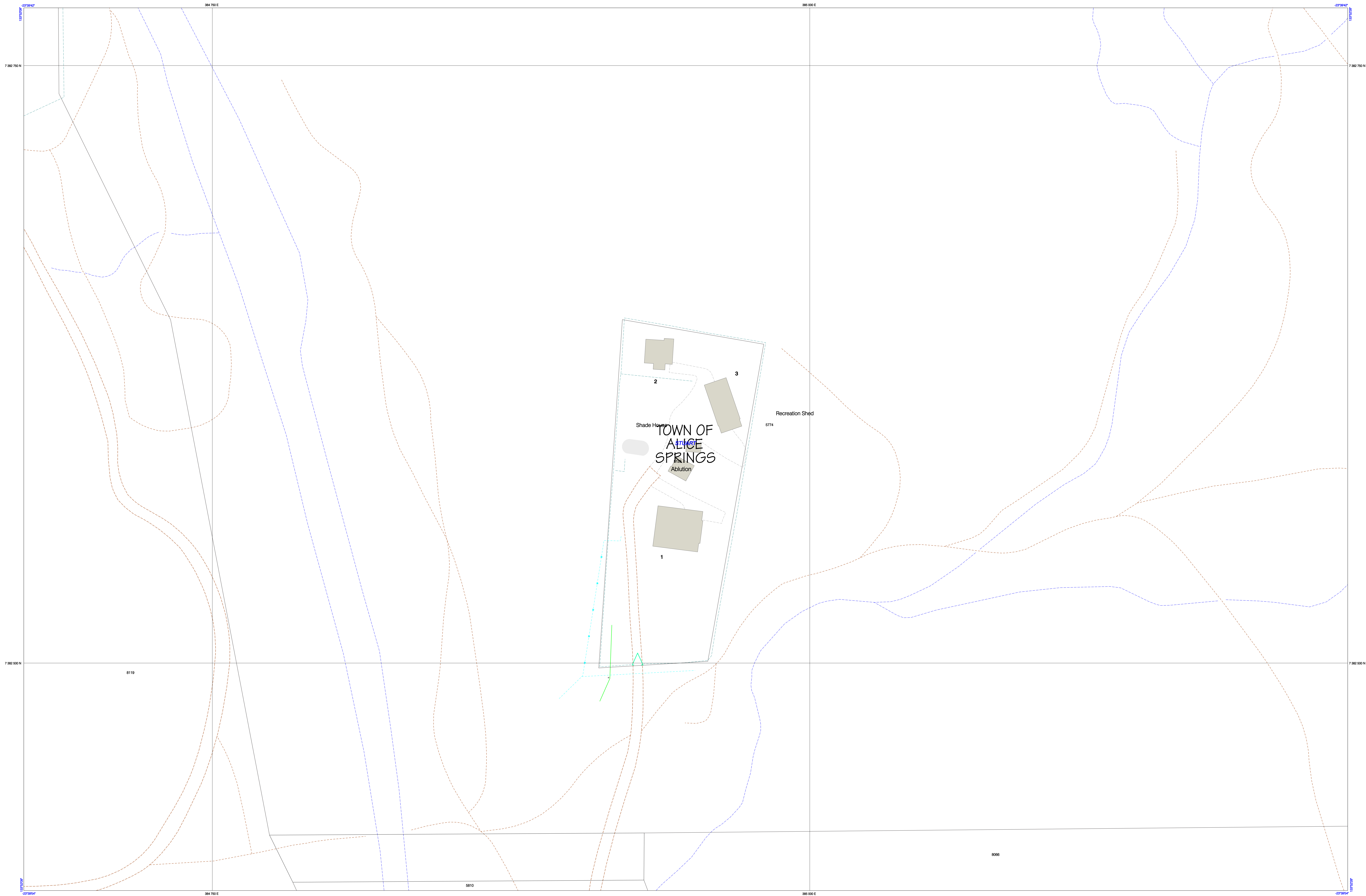
A3 scale: 1:1,000



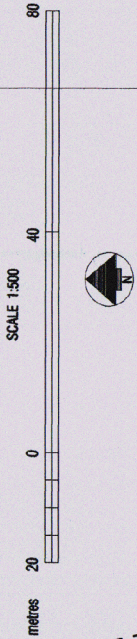
Date: 11/02/2017 Version: 1
Coordinate system: GDA 1994

NT Town Camp Road Assessments 64 - Itwiyethwenge (Alice Springs)

Existing drawings



<p>LAND USE PLANNING</p> <p>APPROX. PORTION OF BUILDING constructed since date of photography</p> <p>LAND EXCLUDED FROM DEVELOPMENT</p> <p>GENERAL EXCLUSION BUFFERS</p> <p>CULTURAL EXCLUSION AREAS</p> <p>Unsubstantiated earth works or use of land where there is a suspected risk of an offence under the Northern Territory Aboriginal Sacred Sites Act. For conditions relating to water or use of land within a Cultural Exclusion Area, contact the Aboriginal Areas Protection Authority (AAPA) and/or the Northern Territory Department of Lands and Planning.</p> <p>This advice does not require the need for consent for entry, works, or use which may be regulated under the Aboriginal Land Rights (NT) Act or the use of Aboriginal land, or another statute.</p> <p>BEFORE YOU DIG www.nt.gov.au</p>	<p>CADASTRE</p> <p>Current 123</p> <p>Proposed 122</p> <p>Locality LOCALITY</p> <p>UTILITY SERVICES</p> <p>ELECTRICITY</p> <p>LOW VOLTAGE</p> <p>HIGH VOLTAGE</p> <p>WATER RETICULATION</p> <p>WATER MAIN</p> <p>WATER RISING MAIN</p> <p>SEWER</p> <p>SEWER MAIN</p> <p>SEWER RISING MAIN</p> <p>Building, Building-Shape unconfirmed</p> <p>Shade Structure, Incomplete Building</p> <p>Sewage Ponds, Tattlers Pond</p> <p>Oval, Awns, Swimming Pool</p>	<p>TOPOGRAPHY</p> <p>Road, Dam, Bridge</p> <p>Road Unsealed, Track</p> <p>Footpath, Drain, Culvert</p> <p>Wall, Gate, Fence, Cattle Grid</p> <p>Railway, Disused Railway</p> <p>Aerodrome Tarmac, Landing Strip</p> <p>Tackway, Apron</p> <p>Pipeline: Oil, Water, Undetermined, Gas, Sewage</p> <p>High Water Mark, Low Water Mark</p> <p>Mine, Quarry, Surface Excavation</p> <p>Contour: Index, Intermediate</p> <p>Contour: Depression</p> <p>Top of Bank, Bottom of Bank, Cliff</p> <p>Watercourse: Perennial, Intermittent, Channel or Canal</p> <p>Waterbodies: Perennial, Intermittent</p> <p>Waterbodies: Reservoir, Water Hole</p> <p>Swamp, Swampy Perennial, Swamp Intermittent</p> <p>Fuel, Fuel Pit, Clay/Gravel, DTI</p> <p>Pole, Power, General, Light</p> <p>Tank, Water, Elevated, Non-Water, Oil</p> <p>Marble, Pylon, Communication Tower, Bone</p>	<p>AVAILABLE FROM AND PRODUCED BY:</p> <p>Northern Territory Government</p> <p>NOTES:</p> <p>POWER POLES, MANHOLES, OPTIC FIBRE, CONDUITS and other similar proposed objects are indicated on this map. The information is for planning purposes only and does not constitute a contract for any work.</p> <p>LOCAL SURVEY CONTROL: The ground level is reported to within +/-0.2m of the mean 1985 sea level.</p> <p>Topographic Information: Land Information Officer Dept of Lands and Planning TEL: (08) 8999 1300, FAX: (08) 8999 0906 Email: landinfo@nt.gov.au</p> <p>Cadastral Information: Office of the Survey General Dept of Lands and Planning TEL: (08) 8999 1300, FAX: (08) 8999 0906 Email: landinfo@nt.gov.au</p> <p>Planning Information: Indigenous Community Land Use Planning Indigenous Community Development and Planning TEL: (08) 8999 1300, FAX: (08) 8999 7169 Email: planning@nt.gov.au</p> <p>Water or Sewer Information: Northern Territory Planning Branch Power and Water Corporation TEL: (08) 8999 1300, FAX: (08) 8999 0906 Email: landinfo@nt.gov.au</p> <p>Planning Information: Indigenous Community Land Use Planning Indigenous Community Development and Planning TEL: (08) 8999 1300, FAX: (08) 8999 7169 Email: planning@nt.gov.au</p>	<p>General enquiries, corrections, updates, errors and omissions:</p> <p>Indigenous Community Land Use Planning, NT Dept of Lands and Planning TEL: (08) 8999 1300, FAX: (08) 8999 7169, Email: planning@nt.gov.au</p> <p>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.</p> <p>Source Information: Topographic Information: Land Information Officer, Dept of Lands and Planning, TEL: (08) 8999 1300, FAX: (08) 8999 0906, Email: landinfo@nt.gov.au Cadastral Information: Office of the Survey General, Dept of Lands and Planning, TEL: (08) 8999 1300, FAX: (08) 8999 0906, Email: landinfo@nt.gov.au Planning Information: Indigenous Community Land Use Planning, Indigenous Community Development and Planning, TEL: (08) 8999 1300, FAX: (08) 8999 7169, Email: planning@nt.gov.au Water or Sewer Information: Northern Territory Planning Branch, Power and Water Corporation, TEL: (08) 8999 1300, FAX: (08) 8999 0906, Email: landinfo@nt.gov.au</p>	<p>SOURCE INFORMATION</p> <p>CONTOUR INTERVAL: 2000</p> <p>HORIZONTAL DATUM: Transverse Mercator</p> <p>VERTICAL DATUM: Transverse Mercator</p> <p>PROJECTION: Transverse Mercator</p> <p>CURRENCY OF TOPOGRAPHY: 10 June 2007</p> <p>SOURCE MAP SCALE: 2000</p> <p>ZONE UTM: 55</p> <p>DATE GENERATED: 19 June 2012</p> <p>LOCALITY DIAGRAM</p> <p>Locality Diagram showing the location of the town camp within the Alice Springs region.</p> <p>Scale: 0 10 20 30 40 50</p> <p>GDA</p>	<p>SERVICED LAND AVAILABILITY PROGRAM</p> <p>SLAP Map</p> <p>Itwiyethwenge (Alice Springs Town Camp)</p> <p>Alice Springs Town Camp Alice Springs Town Council Community ID: 64</p>
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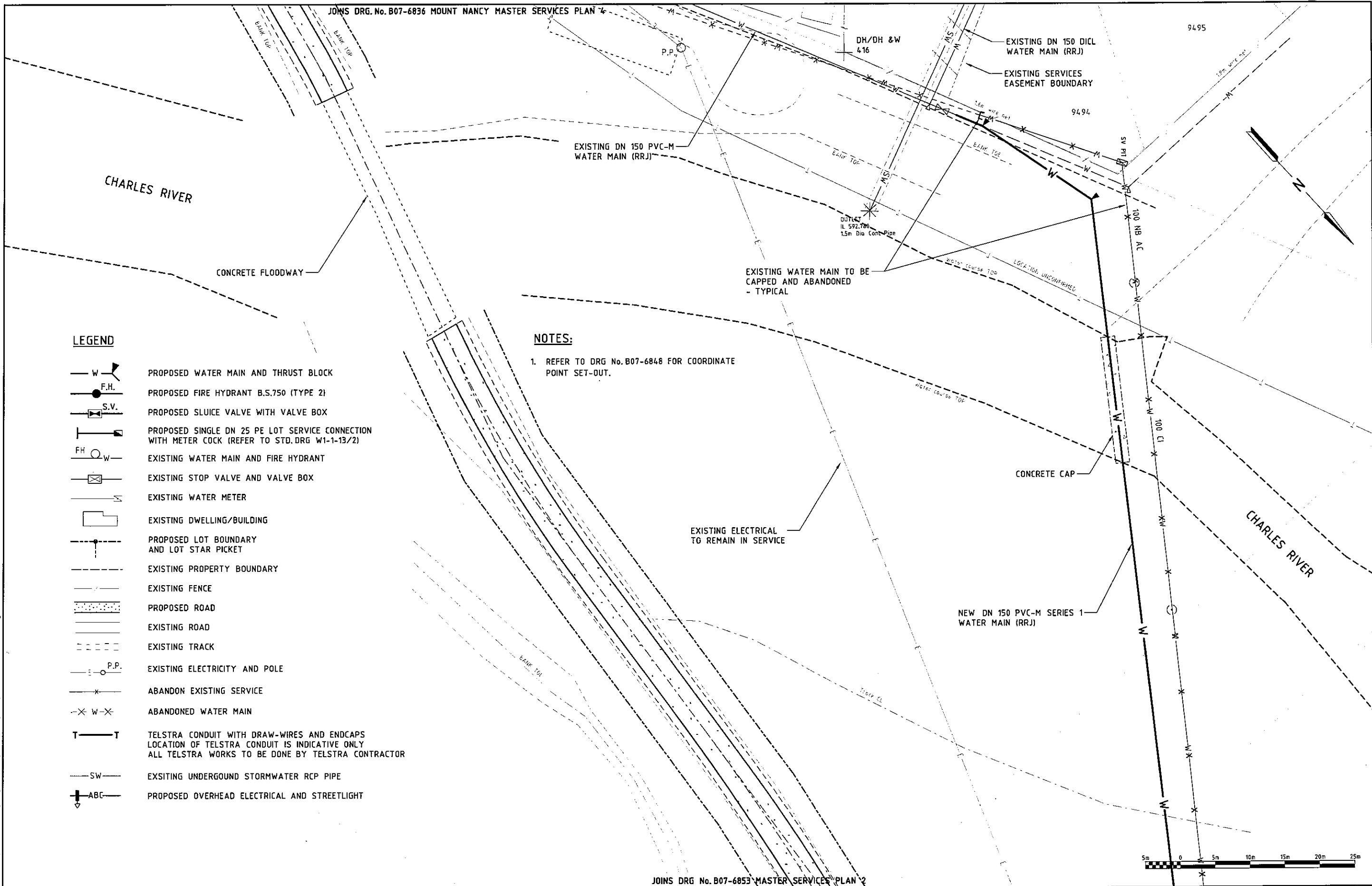
LEGEND

- NEW WATERLINE
- 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.

COMMUNITY MAP
 ITWIYETHWENGE
 (ALICE SPRINGS TOWN CAMP,
 BASSO'S CAMP, BAZZO'S CAMP)
 064



LEGEND

- PROPOSED WATER MAIN AND THRUST BLOCK
- PROPOSED FIRE HYDRANT B.S.750 (TYPE 2)
- PROPOSED SLUICE VALVE WITH VALVE BOX
- PROPOSED SINGLE DN 25 PE LOT SERVICE CONNECTION WITH METER COCK (REFER TO STD. DRG. W1-1-13/2)
- EXISTING WATER MAIN AND FIRE HYDRANT
- EXISTING STOP VALVE AND VALVE BOX
- EXISTING WATER METER
- EXISTING DWELLING/BUILDING
- PROPOSED LOT BOUNDARY AND LOT STAR PICKET
- EXISTING PROPERTY BOUNDARY
- EXISTING FENCE
- PROPOSED ROAD
- EXISTING ROAD
- EXISTING TRACK
- EXISTING ELECTRICITY AND POLE
- ABANDON EXISTING SERVICE
- ABANDONED WATER MAIN
- TELSTRA CONDUIT WITH DRAW-WIRES AND ENDCAPS
LOCATION OF TELSTRA CONDUIT IS INDICATIVE ONLY
ALL TELSTRA WORKS TO BE DONE BY TELSTRA CONTRACTOR
- EXISTING UNDERGROUND STORMWATER RCP PIPE
- PROPOSED OVERHEAD ELECTRICAL AND STREETLIGHT

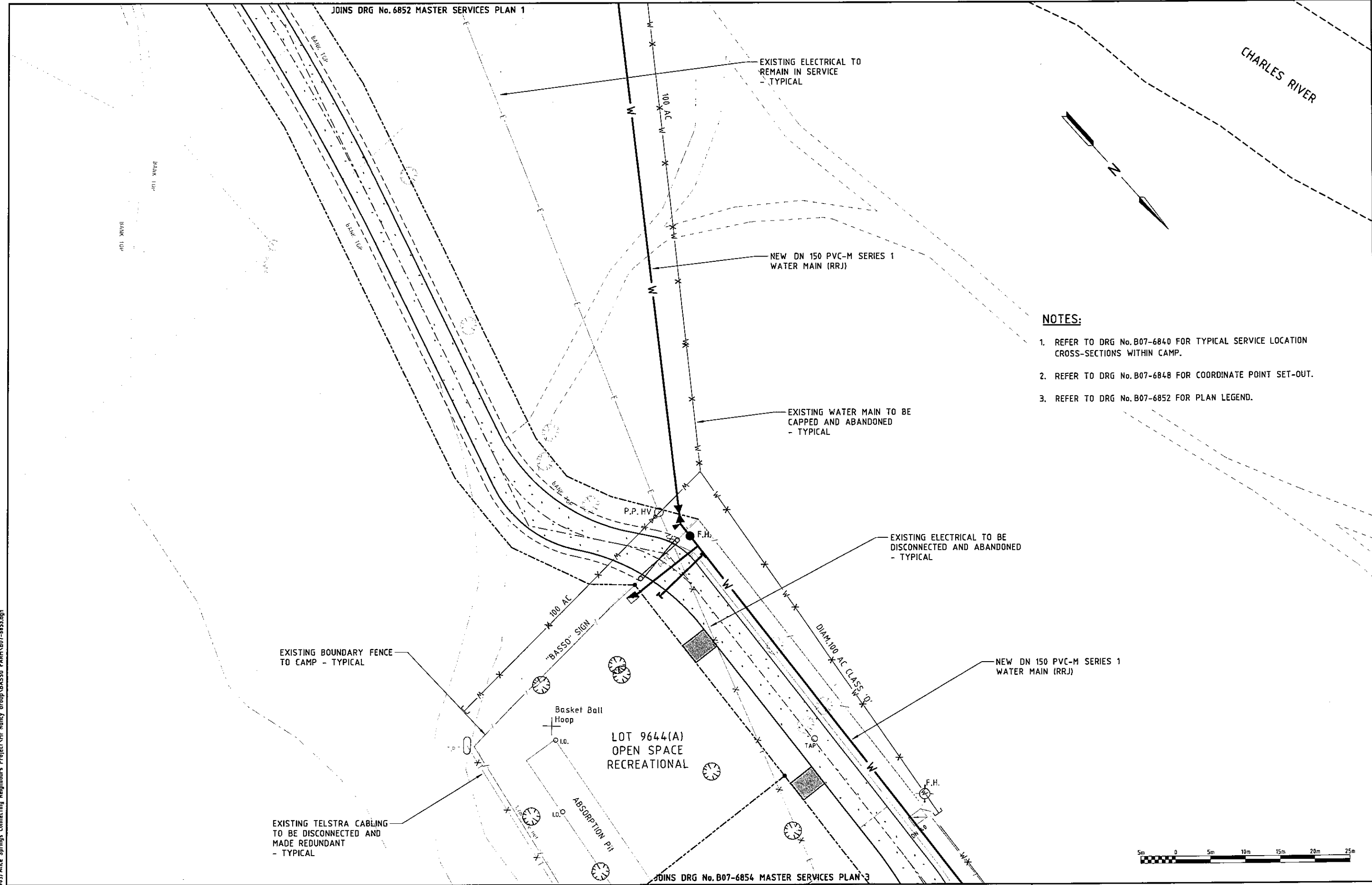
NOTES:

1. REFER TO DRG. No. B07-6848 FOR COORDINATE POINT SET-OUT.

31/09/2008 2:46:53 PM W:\2121033 Alice Springs Connecting Neighbours Project\MT Nancy Group\BASSO FARM\B07-6852.dgn

0 ISSUED FOR CONSTRUCTION C ISSUED FOR APPROVAL B ISSUED FOR 90% DESIGN REVIEW A ISSUED FOR 30% DESIGN REVIEW		28.03.08	B.M.	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 clearance and conditions. PWC reserves a right for review and new approval when AAPA clearance and conditions are added to the final design drawing. SIGNED: <i>DM</i> DATE: <i>1.8.08</i> On behalf of Land Development for incorporation into PowerWater's Network.	B07-6835 B07-6834 B07-6836 15	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 N.C./S.B. DATE JAN. 2007	CHECKED	 Northern Territory Government Department of Planning and Infrastructure	ALICE SPRINGS CONNECTING NEIGHBOURS PROGRAM - ALICE SPRINGS PROJECT UPGRADE WORKS ON ITWIYETHWENGE (I.D. 064 BASSO'S FARM) LOTS 9644 TO 9649 MASTER SERVICES PLAN - SHEET 1	FILE No. FOS 22270	ASSET No.	SHEET No. 15 OF 17	DRAWING No. B07-6852	AMEND. 0	SHEET SIZE A1
		DESIGNED N.C./B.M. DATE JULY 2007	CHECKED	DESIGN PROJECT LEADER PROJECT OFFICER				DATE DATE	DATE DATE								

CHARLES RIVER



NOTES:

1. REFER TO DRG No.B07-6840 FOR TYPICAL SERVICE LOCATION CROSS-SECTIONS WITHIN CAMP.
2. REFER TO DRG No.B07-6848 FOR COORDINATE POINT SET-OUT.
3. REFER TO DRG No.B07-6852 FOR PLAN LEGEND.

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No.	DESCRIPTION	DATE	NAME	DEPT/COMPANY
0	ISSUED FOR CONSTRUCTION	28.03.08	B.M.	DPI - CD - ESB
C	ISSUED FOR APPROVAL	16.11.07	B.M.	DPI - CD - ESB
B	ISSUED FOR 90% DESIGN REVIEW	23.07.07	B.M.	DPI - CD - ESB
A	ISSUED FOR 30% DESIGN REVIEW	31.10.06	B.M.	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: *[Signature]* DATE: *1/10/08*
 On behalf of Land Development for incorporation into PowerWater's Network.

B07-6836

15

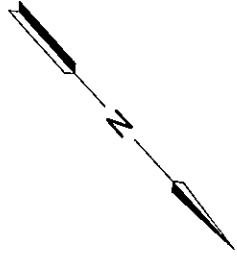
16

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.

DATE	DATE	DATE	DATE
N.C./S.B.	CHECKED		
JAN. 2007	DATE		
N.C./B.M.	CHECKED		
JULY 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 ITWIYETHWENGE (I.D.064 BASSO'S FARM) LOTS 9644 TO 9649 MASTER SERVICES PLAN - SHEET 2					
FILE No.	ASSET No.	SHEET No.	DRAWING No.	AMEND.	SHEET SIZE
FOS 22270		16 OF 17	B07-6853	0	A1



NOTES:

1. REFER TO DRG No. B07-6840 FOR TYPICAL SERVICE LOCATION CROSS-SECTIONS WITHIN CAMP.
2. REFER TO DRG No. B07-6848 FOR COORDINATE POINT SET-OUT.
3. REFER TO DRG No. B07-6852 FOR PLAN LEGEND.

EXISTING TELSTRA CABLING TO BE DISCONNECTED AND MADE REDUNDANT - TYPICAL

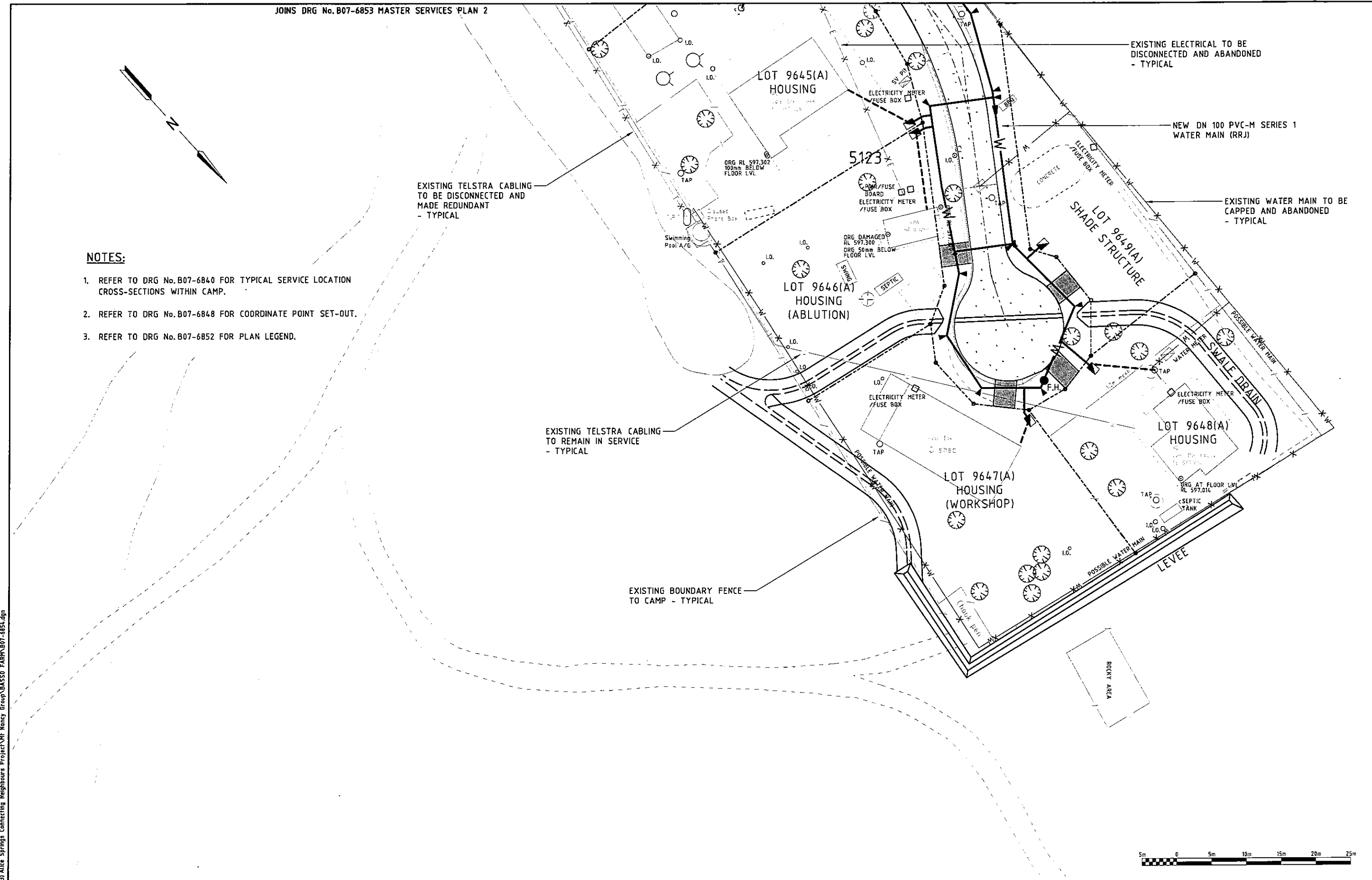
EXISTING TELSTRA CABLING TO REMAIN IN SERVICE - TYPICAL

EXISTING BOUNDARY FENCE TO CAMP - TYPICAL

EXISTING ELECTRICAL TO BE DISCONNECTED AND ABANDONED - TYPICAL

NEW DN 100 PVC-M SERIES 1 WATER MAIN (RRJ)

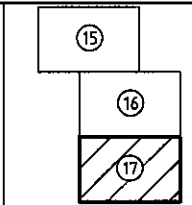
EXISTING WATER MAIN TO BE CAPPED AND ABANDONED - TYPICAL



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No.	DESCRIPTION	DATE	NAME	DEPT/COMPANY
0	ISSUED FOR CONSTRUCTION	28.03.08	B.M.	DPI - CD - ESB
C	ISSUED FOR APPROVAL	16.11.07	B.M.	DPI - CD - ESB
B	ISSUED FOR 90% DESIGN REVIEW	23.07.07	B.M.	DPI - CD - ESB
A	ISSUED FOR 30% DESIGN REVIEW	31.10.06	B.M.	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 details which should reflect A.A.P.A. clearance and conditions. PWC reserves a right for review and any approval when A.A.P.A. clearances and conditions are added to the final design drawings.
 SIGNED: *[Signature]* DATE: *14/08*
 On behalf of Lead 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 N.C./S.B.	CHECKED
DATE JAN. 2007	DATE
DESIGNED N.C./B.M.	CHECKED
DATE JULY 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 ITWIYETHWENGE (I.D. 064 BASSO'S FARM) LOTS 9644 TO 9649				
MASTER SERVICES PLAN - SHEET 3				
FILE No. FOS 22270	ASSET No.	SHEET No. 17 OF 17	DRAWING No. B07-6854	AMEND. 0
				SHEET SIZE A1

Transformer data

Group	Com Id	Location	Community Name	Dwellings No. (Funded Dwellings)	Dwellings No. (Bennett Design)	New Houses ** (Future Demand)	Primary Voltage 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].
	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.
	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.
	621	Katherine	Miali Brumby (Kalano)	47	31		22	6074	4695	25			
	640	Pine Creek	Pine Creek Compound	4	4		22	6133	12247	315	211.5	329	
	971	Mataranka	Mulggan	12	9	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].
3	215	Tennant Creek	Blueberry Hill (Munji-Marla)	2	2		22	6819	5296	16	54	84	
	223	Tennant Creek	Dump Camp (Marla-Marla)	7	7		22	6818	5297	16	31.5	49	Transformer is not in boundary of Town Camp [The nearest transformer data to Town Camp is highlighted in yellow].
	224	Elliott	Elliott South Camp	12	12		22	6384	11028	25	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	7079	1868	200	162	252	
	238	Tennant Creek	Kargaru (East Side Camp)	12	12	1	22	7504	4718	200	54	84	
	246	Tennant Creek	Ngalpa Ngalpa	18	21		22	7572		200	94.5	147	Two transformers for this Town Camp.
	271	Tennant Creek	Village Camp	12	12	1	22	7179		200	54	84	
	681	Tennant Creek	Tingkarli	12	12		22	7033	10904	315	54	84	
	684	Tennant Creek	Wuppa	15	15	1	22	7183	11107	200	67.5	105	Two transformers for this Town Camp.
4	3	Alice Springs	Akngwertnarre (Morris Soak)	11	15		22	7180		200	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		22	7141	11092	100	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	7182	11095	200	67.5	105	Data extracted from PWC asset information. There was not access to this Town Camp due to ceremony on inspection day.
	19	Alice Springs	Aper Alwerrkng (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	
	47	Alice Springs	Ilparpa	13	13		11	8623	11203	100	58.5	91	
	48	Alice Springs	Ilperle Tyathe (Walpiri)	10	9		22	8625	11205	63	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	8626	11204	100	45	70	
	64	Alice Springs	Bassos	2	2		11	8611	11702	200	9	14	
	69	Alice Springs	Karnte	19	19		22	8001	11209	315	85.5	133	
	87	Alice Springs	Yarrenty Altere (Larapinta Valley)	34	34		11	8002	10946	50	153	238	
	90	Alice Springs	Inarlange (Little Sisters)	16	22		11	8282	2345	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	8617	11334	100	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	8618	11200	63	54	84	
	129	Alice Springs	Nyewente (Trucking Yards)	26	26		11	8619	11335	100	117	182	
675	Alice Springs	Hoppys	15	19		11	8620	11201	100	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	8137	2925	100	67.5	105		
1029	Alice Springs	Kunoth	4	4		11	8093	11703	315	18	28	Transformer is not in boundary of Town Camp [The nearest transformer data to Town Camp is highlighted in yellow].	
5	222	Borrooloola	Mara	28	29	2	11	8145	3323	100	130.5	203	Two transformers for this Town Camp.
	229	Borrooloola	Garawa 1	16	14		11	8314	369	50	72	112	Two transformers for this Town Camp.
	278	Borrooloola	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.
	992	Borrooloola	Garawa 2	11	11		11	6332	4890	100	49.5	77	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.

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

Karnte

Karnte

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. 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 Karnte community on 15 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 at Karnte is owned by the Karnte Aboriginal Corporation, however is the responsibility of Tangentyere Council Incorporated to maintain.

There is a pump station within Karnte community which is maintained by Power and Water Corporation, however there is no maintenance agreement in place. The sewage pump station was inspected with a representative from PWC.

The following image shows the extent of PWC ownership of sewerage infrastructure in Karnte.

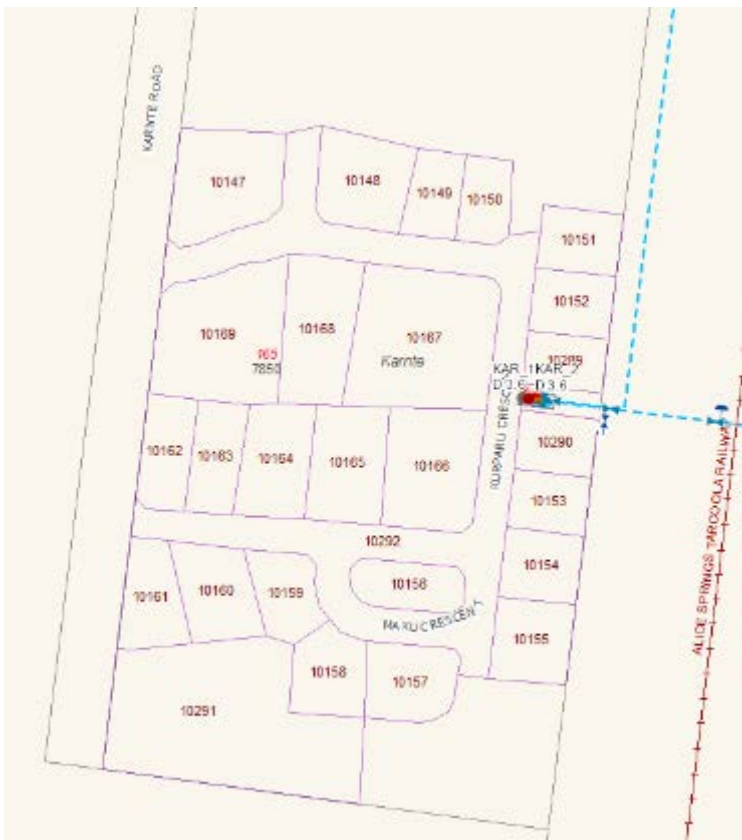


Figure 1 PWC owned sewerage infrastructure

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 Karnte is 20. 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. A comprehensive review of all available documentation, including reviewing as-constructed drawings and having discussions with Power and Water Corporation was conducted. The following table compares the assets that have been

constructed, according to the as-constructed drawings, and the assets assessed during the inspections conducted by Aurecon.

Table 2 Sewerage assets inspected

Asset type	Number of assets as per documentation	Number of assets assessed during inspection
Manholes	6	4

As per Table 2, a number of manholes were not assessed during the inspections, this is likely due to access limitations such as manholes being located within private property or outside of the town camp. As other manholes along the same sewer line were investigated, it is assumed that all assets have been constructed as per the as-constructed drawings. The condition ratings of the manholes inspected are as follows:

Table 3 Sewer condition assessment

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



Figure 2 Sewer manhole, condition: *very good*



Figure 3 Sewage pumping station, condition: *very good*

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 Karnte community disposes to a pump station, the capacity of the pump station has also been assessed.

The current number of houses in Karnte is 19, this multiplied by 9 EP per house gives a total current EP of 171.

There was no information on the diameter of the existing sewer network so it was assumed to be DN100 and non-compliant, as PWC require a DN150 diameter pipe.

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

Table 4 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	171	100	1.0	5.60	2.01	36%

Table 4 above shows that the capacity of the existing sewer network is adequate for the current peak population.

The SIHIP program provided detailed design drawings for sewerage infrastructure upgrades. It appears as though these upgrades have not yet been constructed at Karnte. It is recommended that the network is upgraded to a DN150 PVC with new housing connections and manholes.

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.

Using the current EP of 171, the pump station meets the minimum velocity for self-cleansing, and does not exceed the maximum velocity. The available drawings did not show any overflow storage, so it is recommended that overflow storage is constructed. Further analysis is required to determine the size and location of overflow storage.

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:

- Upgrade sewer network to DN150 PVC with new housing connections, new manholes and connection to the existing pump station. Approximately 650 m required.
- Construct overflow storage

6 Water supply

6.1 Ownership and boundaries

The reticulation servicing the community is a DN150 PVC water main with two supply points. As-constructed engineering drawings were available to validate the layout supplied by PWC.

The water supply assets within Karnte are believed to be owned by Karnte Aboriginal Corporation, but are the responsibility of Tangentyere Council Incorporated to maintain. The water supply infrastructure was upgraded to PWC standards as part of the SIHIP program.

PWC have advised they currently maintain the water assets up to the residential lot water meters, although there is no formal agreement covering this maintenance. The water is supplied from PWC owned water mains outside of the community.

Figure 5 shows the extent of water services.

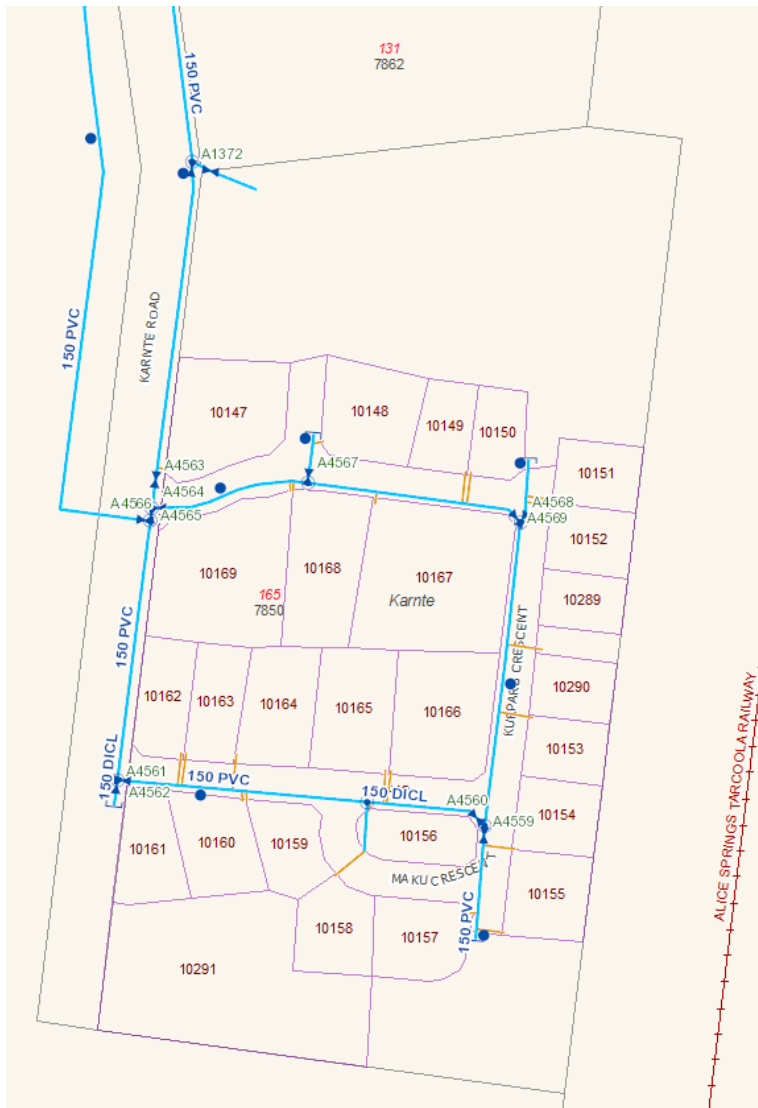


Figure 4 Karnte water supply

6.1.1 Connection methods and billing

Through consultation with PWC it has been determined that the water usage is currently charged as a fixed daily rate for 20 house water meters within Karnte. The bill is issued to the Department of Housing and Community Development. It is not known what contribution the residents make towards water bills.

It is proposed that PWC measure the water supply to the entire community, as opposed to individual lots within the community. This requires the installation of a bulk water meter on the water main located at the community boundary. Under this scheme, the water bill for the entire community is the responsibility of the governing body, being Tangentyere Council Incorporated for Karnte. 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 14 lot water meters were assessed during the inspection. Karnte is believed to contain 19 dwellings. Therefore, up to an additional five residential 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 assessed above ground; no below ground services were inspected. A comprehensive review of all available documentation, including reviewing as-constructed drawings and having discussions with Power and Water Corporation was conducted. The following table compares the assets that have been constructed, according to the as-constructed drawings, and the assets assessed during the inspections conducted by Aurecon.

Table 5 Water supply assets inspected

Asset type	Number of assets as per documentation	Number of assets assessed during inspection
Fire hydrants	9	6
Water meter (residential lots)	19	14
Tanks	-	1

As per Table 5, a number of water meters were not assessed during the inspections, this is likely due to overgrown flora or restricted property access as previously discussed. The tank assessed was not shown on the available documentation. As the tank was located within the pumping station it is assumed to not be part of the water reticulation system.

The condition of each asset is as follows:

Table 6 Water asset condition assessment

Asset	1 Very Poor	2 Poor	3 Good	4 Very Good	5 Excellent	Total
Fire hydrant		1		5		6
Water meter (residential lots)			4	10		14
Tanks			1			1



Figure 5 Fire hydrant, condition: *poor*



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

A single fire hydrant was assessed as being in poor condition. This fire hydrant requires some minor maintenance works, including clearing the concrete area of overgrown grass and other debris, as well as repainting the faded hydrant cover.

6.3 Current performance and risks

The current peak hour water 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 7 shows the calculated peak hour water demand.

Table 7 Current water demand

Total dwellings	EP	Demand (l/s)	Peak hour demand (l/s)
19	171	2.57	7.70

The system is expected to have sufficient capacity for peak hour and fire flows.

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 Karnte it is not expected that any additional fire hydrants are required to increase coverage.

The existing network appears to comply with PWC standards.

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 one fire hydrants
- Repaint one fire hydrants

The community is viewed overall as a large single lot and as previously detailed proposed have the water usage measured accordingly. In order to measure the water usages as a single lot, a bulk water meter should be installed. As the network has two supply points, one points should be disconnected and reconnected to the internal network creating a looped main. This allows the remaining point to be metered. The cost estimates for upgrades at Karnte include;

- Install five residential lot water meters
- Install new bulk water meter at community boundary
- Disconnect secondary supply point and extend mains to create looping

7 Roadworks

7.1 Ownership and boundaries

It is the current understanding that the road infrastructure at Karnte is owned by the Karnte Aboriginal Corporation, however is the responsibility of Tangentyere Council Incorporated to maintain.

7.2 Existing infrastructure condition assessment

The road network within Karnte community consists of sealed 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 8 below summarise the condition of the road furniture as assessed during the site inspection.

Table 8 Roadworks condition assessment

Asset	1 Very Poor	2 Poor	3 Good	4 Very Good	5 Excellent	Total
Signs		3		7	1	11
Car parks			1			1



Figure 7 Carpark, condition: *good*



Figure 8 Sign, condition: *poor*

The numerous signs are all in very good or excellent condition with the exception of three that are in poor condition and require replacement.

The one car park within the community is in good condition and does not require upgrades.

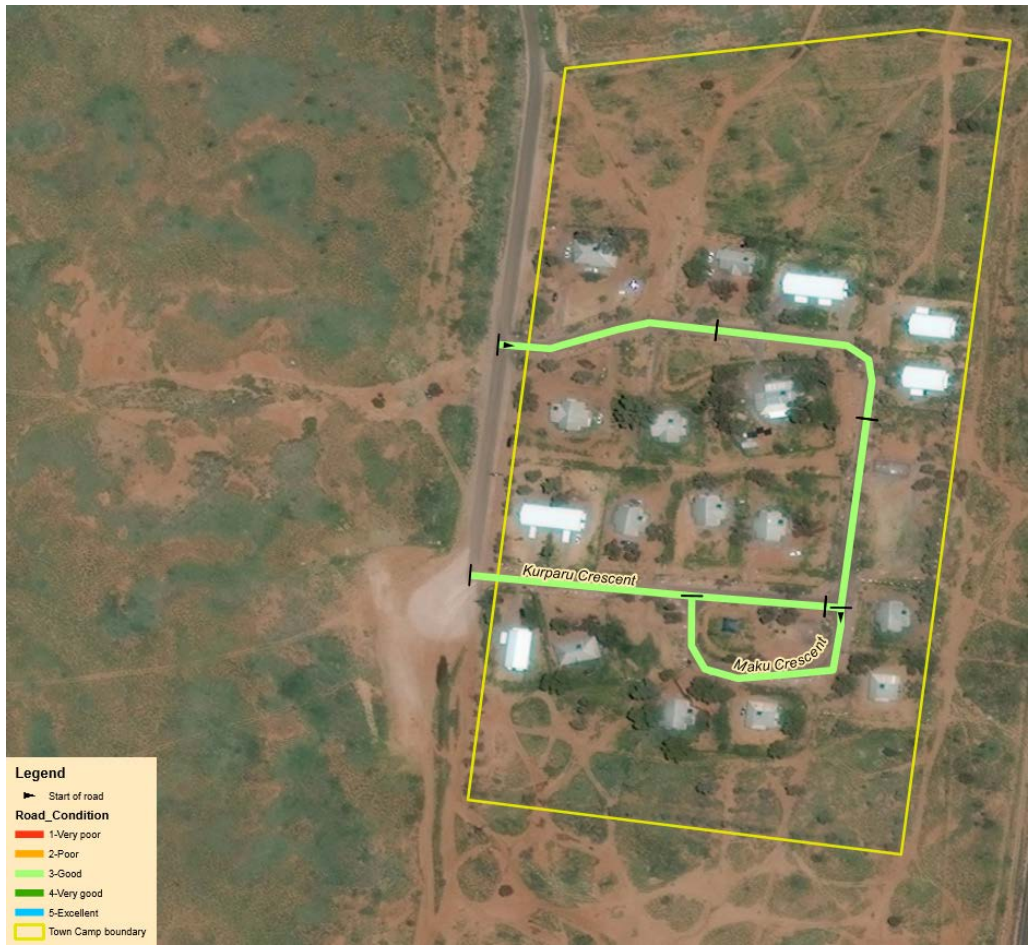


Figure 9 Community road network

Table 9 below details the condition of the roads within Karnte community for specific segments. Figure 10 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 9 Road network condition assessment

Road name	Chainage start (km)	Chainage end (km)	Condition (1 to 5)	Defects and associated condition
Karnte Rd	0.2	0.3	3	-10% of the road has edge breaks (no rating) -5% of the road has longitudinal cracking (3) -5% of the road has transverse cracking (3)
Kurparu Cres	0.3	0.46	3	-10% of the road has surface cracking (3) -70% of the road has edge breaks (3)
	0	0.1	3	-90% of the road has edge breaks (3) -5% of the road has transverse cracking (3) -5% of the road has longitudinal cracking (3)
	0.1	0.2	3	-10% of the road has longitudinal cracking (4)

Road name	Chainage start (km)	Chainage end (km)	Condition (1 to 5)	Defects and associated condition
				-1 pothole (4) -20% of the road has edge breaks (4)
Maku Cres	0	0.13	3	-40% of the road has edge breaks as can be seen in Figure 12 (3) -5% of the road has surface cracking (3)



Figure 10 Pavement, condition: *good*



Figure 11 Edge breaks, condition: *good*

7.3 Current performance and risks

All roads in Karnte were rated as having good condition, although there were edge breaks and some pavement cracking. 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 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;

- General clean of 590 m of road and road reserve to remove any rubbish or glass.

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 Karnte community is 6 m, this means that all 690 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 at Karnte is owned by the Karnte Aboriginal Corporation, however is the responsibility of Tangentyere Council Incorporated 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 10 below summarises the condition of the stormwater assets as assessed during the inspection.

Table 10 Stormwater condition assessment

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



Figure 12 Culvert (upstream), condition: *good*



Figure 13 Culvert (downstream), condition: *good*

The culverts were in good condition and do not require any immediate maintenance upgrades.

The Connecting Neighbours Program designed stormwater drainage for the community, however it appears as though the infrastructure has not been constructed.

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 600 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.

9 Community structures

9.1 Ownership and boundaries

The community structures infrastructure at Karnte is owned by the Karnte Aboriginal Corporation, however is the responsibility of Tangentyere Council Incorporated 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 11 Community structures condition assessment

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



Figure 14 Basketball Court, condition: *very good*



Figure 15 Playground, condition: *good*

9.3 Current performance and risks

The current structures are either in good condition or very good condition, therefore minimal works are required except for a general tidy of the community areas.

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:

- Paint 'key' lines on basketball court
- General clean of basketball court area and playground to ensure all rubbish and glass is removed for future demand

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 its 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 Karnte community electrical reticulation systems is supplied via an overhead HV distribution line from Anthepe community to a pole mounted transformer 8282. From this transformer an overhead reticulation scheme runs to individual houses. Prepaid meters are utilised in Karnte community.

PWC advise that the Point Of Supply is the LV fuses of the substation and that they own and are responsible for the substation and upstream infrastructure.

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.

Karnte 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 12 shows the condition rating given to the Distribution Panels. The distribution panels had 100% operational rating.

Table 12 Distribution panel condition assessment

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

Table 13 shows the condition rating given to the street lights. The street lights 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 condition assessment

Asset	1 Very Poor	2 Poor	3 Good	4 Very Good	5 Excellent	Total
Street light			9			9

Table 14 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 an 89% operational rating and 11% in non-operational rating.

Table 14 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		1	8			9

Table 15 shows the condition rating given to the transformer. The transformer was of pole mount substation design. The transformer was visually assessed to be in good condition.

Table 15 Transformer condition assessment

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

Table 16 shows the condition rating given to the overhead poles. The overhead poles are of Welded Construction (Universal Pole construction) and steel LV distribution/consumer service poles. The overhead poles have 100% operational rating from the visual inspection.

Table 16 Overhead pole condition assessment

Asset	1 Very Poor	2 Poor	3 Good	4 Very Good	5 Excellent	Total
Overhead pole			12			12

Table 17 shows the condition rating given to the metering panels. All assessed meters in this community are prepaid digital meters.

Table 17 Meter panel condition assessment

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

Table 18 shows the condition rating given to the switchboards associated to dwellings.

Table 18 Switchboard condition assessment (housing footprint)

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

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 Karnte community transformer is 85.5% of rated capacity based on 4.5kVA/dwelling. This is based on the assumption that all dwellings are supplied from one transformer.

Table 19 Karnte current demand load vs transformer ratings

Com Id	Community name	Dwellings	Transformer (kVA)	kVA Total @ 4.5kVA	kVA Total @ 7kVA
69	Karnte	19	100	85.5	133

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 70W street light.
- Replace one switchboard inside the metering panel
- Install new street lighting - approximately 35 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. There were no telecommunication pits found at Karnte.

Appendices contains the individual reports.

Table 20 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 Karnte is displayed in the Figure 17 below. NBN is available to residents via satellite on application to an appropriate NBN access provider.

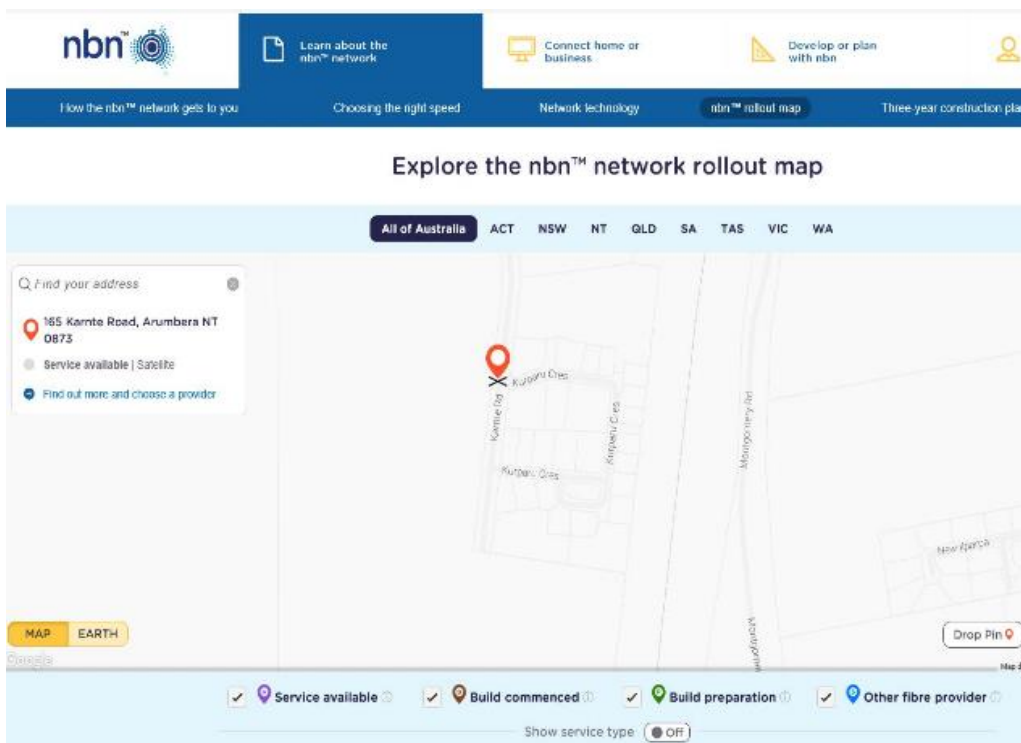


Figure 16 NBN network availability map

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

11.5 Recommended works

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

12 Cost estimates

Table 22 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 21 Cost estimates

Infrastructure	Maintenance of existing infrastructure	Upgrades to meet current design
Sewerage	\$ 0	\$ 535,000
Water supply	\$ 1,000	\$ 93,000
Roadworks	\$ 8,000	\$ 837,000
Stormwater drainage	\$ 0	\$ 715,000
Community structures	\$ 3,000	\$ 0
Electrical	\$ 3,000	\$ 501,000
Communications	\$ 0	\$ 0
Miscellaneous provisions	\$ 11,000	\$ 331,000
Total (including GST)	\$ 26,000	\$ 3,012,000
Grand total	\$ 3,038,000	

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 Karnte community:

Sewerage

- Upgrade sewer network to DN150 PVC with new housing connections, new manholes and connection to the existing pump station. Approximately 650 m required.
- Construct overflow storage

Water supply

- Clear dirt from one fire hydrants
- Repaint one fire hydrants
- Install five residential lot water meters
- Install new bulk water meter at community boundary
- Disconnect secondary supply point and extend mains to create looping

Roadworks

- General clean of 590 m of road and road reserve to remove any rubbish or glass.
- 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.

Community structures

- Paint 'key' lines on basketball court
- General clean of basketball court area and playground to ensure all rubbish and glass is removed

Electrical services

- Replace one 70W street light.
- Replace one switchboard inside the metering panel
- Install new street lighting - approximately 35 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



Legend

Town Camp boundary

Town Camp boundary

Sewerage

Manholes (4)

Pump Station (1)

A3 scale: 1:2,000

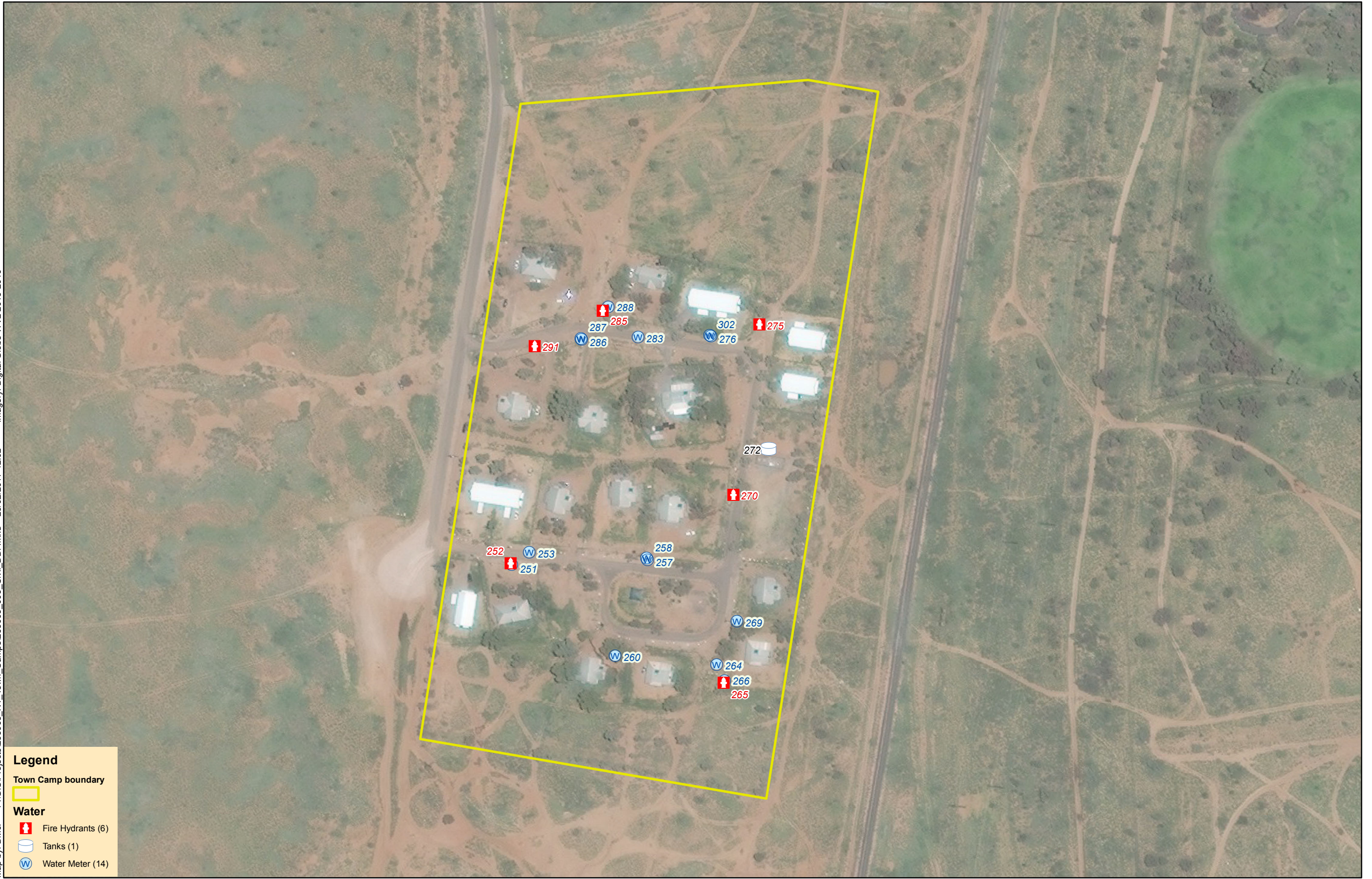


Note:
Label numbers refer to survey IDs



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

NT Town Camp Infrastructure Assessments: Sewerage
69 - Karnte (Alice Springs)



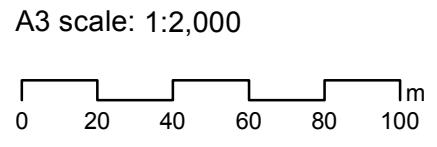
Legend

Town Camp boundary

- Yellow outline

Water

- Fire Hydrants (6)
- Tanks (1)
- Water Meter (14)



Note:
Label numbers refer to survey IDs



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

NT Town Camp Infrastructure Assessments: Water
69 - Karnte (Alice Springs)



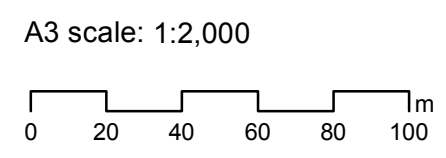
Legend

Town Camp boundary
[Yellow outline]

Community structures
● Basketball court (1)
● Playground (1)

Road furniture
[P] Car Parks (1)
▲ Signs (10)

Stormwater
● Culverts (1)



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
69 - Karnte (Alice Springs)

Northern Territory Town Camps

Civil Infrastructure

Inspection Date 15/11/2016 11:55:07 AM

Insp ID: 281

Group 4 - Alice Springs

Karnte

Road Name:

What are you inspecting: Car Parks

Carpark Width (m): 6

Carpark Length (m): 20

Carpark Type: Unsealed

Carpark Condition: 3 - Good

Line marking: No

Kerbs: No

General Comment:



Northern Territory Town Camps

Civil Infrastructure

Inspection Date 15/11/2016 11:20:17 AM

Insp ID: 296

Group 4 - Alice Springs

Karnte

Stormwater Infrastructure:	Culverts
Culvert Type:	RCBC
Diameter (mm):	
Width (mm):	600
Culvert Depth (mm):	300
Culvert Length (m):	10
Culvert Condition:	3 - Good
Culvert Blockage (%):	5
Culvert Comments:	
Culvert Head Wall:	Yes
Safety Grate:	No
Headwall Blockage:	5
Headwall Condition:	3 - Good
Headwall Comment:	
End Wall:	Yes
End Wall condition:	3 - Good
EW Comment:	



Northern Territory Town Camps

Civil Infrastructure

Inspection Date 15/11/2016 12:53:33 PM

Insp ID: 252

Group 4 - Alice Springs

Karnte

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 15/11/2016 12:29:51 PM

Insp ID: 265

Group 4 - Alice Springs

Karnte

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: 4 - Very Good

FH Comment:



Northern Territory Town Camps

Civil Infrastructure

Inspection Date 15/11/2016 12:15:42 PM

Insp ID: 270

Group 4 - Alice Springs

Karnte

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: 4 - Very Good

FH Comment:



Northern Territory Town Camps

Civil Infrastructure

Inspection Date 15/11/2016 12:04:05 PM

Insp ID: 275

Group 4 - Alice Springs

Karnte

What Water Asset Are you Capturing: Fire Hydrants

Single or Double: Single

Sluice Valve: Yes

Above or Below ground: Below ground

FH Leakage: No Access

Bollards around hydrant: No

FH Condition: 4 - Very Good

FH Comment:



Northern Territory Town Camps

Civil Infrastructure

Inspection Date 15/11/2016 11:37:14 AM

Insp ID: 285

Group 4 - Alice Springs

Karnte

What Water Asset Are you Capturing: Fire Hydrants

Single or Double: Single

Sluice Valve: Yes

Above or Below ground: Below ground

FH Leakage: No Access

Bollards around hydrant: No

FH Condition: 4 - Very Good

FH Comment:



Northern Territory Town Camps

Civil Infrastructure

Inspection Date 15/11/2016 11:34:00 AM

Insp ID: 291

Group 4 - Alice Springs

Karnte

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: 4 - Very Good

FH Comment:



Northern Territory Town Camps

Civil Infrastructure

Inspection Date 15/11/2016 12:50:13 PM

Insp ID: 254

Group 4 - Alice Springs

Karnte

What Sewerage Asset are you capturing: Manholes

MH Cover Shape: Rectangular

Manhole Cover Diam (mm):

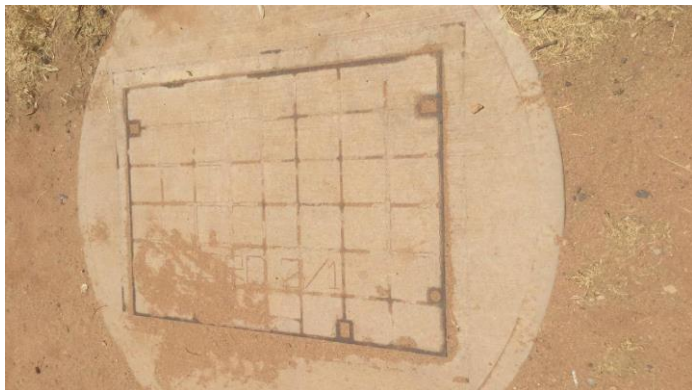
Manhole Length (mm): 1000

Manhole Width (mm): 700

Manhole Condition: 4 - Very Good

Notes on Lid: Class D

Comments:



Northern Territory Town Camps

Civil Infrastructure

Inspection Date 15/11/2016 12:01:08 PM

Insp ID: 277

Group 4 - Alice Springs

Karnte

What Sewerage Asset are you capturing: Manholes

MH Cover Shape: Round

Manhole Cover Diam (mm): 370

Manhole Length (mm):

Manhole Width (mm):

Manhole Condition: 4 - Very Good

Notes on Lid:

Comments:



Northern Territory Town Camps

Civil Infrastructure

Inspection Date 15/11/2016 11:58:05 AM

Insp ID: 280

Group 4 - Alice Springs

Karnte

What Sewerage Asset are you capturing: Manholes

MH Cover Shape: Rectangular

Manhole Cover Diam (mm): 370

Manhole Length (mm):

Manhole Width (mm):

Manhole Condition: 4 - Very Good

Notes on Lid:

Comments:



Northern Territory Town Camps

Civil Infrastructure

Inspection Date 15/11/2016 1:12:22 PM

Insp ID: 298

Group 4 - Alice Springs

Karnte

What Sewerage Asset are you capturing: Manholes

MH Cover Shape: Round

Manhole Cover Diam (mm): 400

Manhole Length (mm):

Manhole Width (mm):

Manhole Condition: 5 - Excellent

Notes on Lid: Class D

Comments:



Northern Territory Town Camps

Civil Infrastructure

Inspection Date 15/11/2016 12:40:41 PM

Insp ID: 259 Group 4 - Alice Springs Karnte

Road Name: Kurparu Crescent

What are you inspecting: Pavements

Ch From (km): 0.3

Ch To (km): 0.46

Road Type: Sealed - spray seal

Section Width (m): 5

Road Condition: 3 - Good

General Comment: 1 speed hump

Road Defects Section

Defect Type	Defect QTY	Defect Condition	Defect Comments
Surfacing Cracks	10	3 - Good	10%
Edge Breaks	70	3 - Good	70% of road

Kerbs Section

Kerb Type	Kerb Cond	Kerb Comments
Kerb only	3 - Good	Only on corners

Shoulders Section

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

Linemarking Section

Obstruction Section

Northern Territory Town Camps

Civil Infrastructure

Inspection Date 15/11/2016 12:40:41 PM



Northern Territory Town Camps

Civil Infrastructure

Inspection Date 15/11/2016 12:40:41 PM

Northern Territory Town Camps

Civil Infrastructure

Inspection Date 15/11/2016 12:22:14 PM

Insp ID: 267 Group 4 - Alice Springs Karnte

Road Name: Maku Crescent

What are you inspecting: Pavements

Ch From (km): 0

Ch To (km): 0.13

Road Type: Sealed - spray seal

Section Width (m): 6

Road Condition: 3 - Good

General Comment:

Road Defects Section

Defect Type	Defect QTY	Defect Condition	Defect Comments
Edge Breaks	40	3 - Good	40% of road
Surfacing Cracks	5	3 - Good	5%

Kerbs Section

Kerb Type	Kerb Cond	Kerb Comments
Kerb only	3 - Good	Kerb only on inside corners

Shoulders Section

Shoulder Type	Width	Dropoff(mm)	Erosion	Condition	Shoulder Comments
Unsealed		40		3	

Linemarking Section

Obstruction Section

Northern Territory Town Camps

Civil Infrastructure

Inspection Date 15/11/2016 12:22:14 PM



Northern Territory Town Camps

Civil Infrastructure

Inspection Date 15/11/2016 12:22:14 PM



Northern Territory Town Camps

Civil Infrastructure

Inspection Date 15/11/2016 12:07:59 PM

Insp ID: 273

Group 4 - Alice Springs

Karnte

Road Name: Karnte Road

What are you inspecting: Pavements

Ch From (km): 0.2

Ch To (km): 0.3

Road Type: Sealed - spray seal

Section Width (m): 5

Road Condition: 3 - Good

General Comment:

Road Defects Section

Defect Type	Defect QTY	Defect Condition	Defect Comments
Edge Breaks	10		10% of road
Longitudinal Cracks	5	3 - Good	5%
Transverse Cracks	5	3 - Good	5%

Kerbs Section

Kerb Type	Kerb Cond	Kerb Comments
No kerb		

Shoulders Section

Shoulder Type	Width	Dropoff(mm)	Erosion	Condition	Shoulder Comments
Unsealed				4	

Linemarking Section

Obstruction Section

Northern Territory Town Camps

Civil Infrastructure

Inspection Date 15/11/2016 12:07:59 PM



Northern Territory Town Camps

Civil Infrastructure

Inspection Date 15/11/2016 12:07:59 PM

Northern Territory Town Camps

Civil Infrastructure

Inspection Date 15/11/2016 11:45:52 AM

Insp ID: 282 Group 4 - Alice Springs Karnte

Road Name: Kurparu Crescent

What are you inspecting: Pavements

Ch From (km): 0.1

Ch To (km): 0.2

Road Type: Sealed - spray seal

Section Width (m): 5

Road Condition: 3 - Good

General Comment:

Road Defects Section

Defect Type	Defect QTY	Defect Condition	Defect Comments
Longitudinal Cracks	10	4 - Very Good	
Potholes	1	4 - Very Good	
Edge Breaks	20	4 - Very Good	20% length of road

Kerbs Section

Kerb Type	Kerb Cond	Kerb Comments
No kerb		

Shoulders Section

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

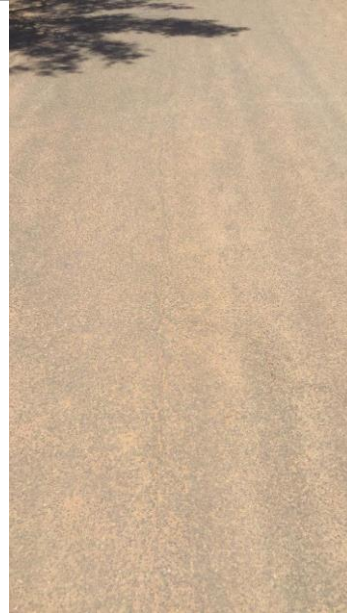
Linemarking Section

Obstruction Section

Northern Territory Town Camps

Civil Infrastructure

Inspection Date 15/11/2016 11:45:52 AM



Northern Territory Town Camps

Civil Infrastructure

Inspection Date 15/11/2016 11:45:52 AM



Northern Territory Town Camps

Civil Infrastructure

Inspection Date 15/11/2016 11:29:20 AM

Insp ID: 290 Group 4 - Alice Springs Karnte

Road Name: Kurparu Crescent

What are you inspecting: Pavements

Ch From (km): 0

Ch To (km): 0.1

Road Type: Sealed - spray seal

Section Width (m): 5

Road Condition: 3 - Good

General Comment:

Road Defects Section

Defect Type	Defect QTY	Defect Condition	Defect Comments
Edge Breaks	90	3 - Good	Along 90 percent of road
Transverse Cracks	5	3 - Good	5%
Longitudinal Cracks	5	3 - Good	5 %

Kerbs Section

Kerb Type	Kerb Cond	Kerb Comments
No kerb		

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 15/11/2016 11:29:20 AM



Northern Territory Town Camps

Civil Infrastructure

Inspection Date 15/11/2016 11:29:20 AM



Northern Territory Town Camps

Civil Infrastructure

Inspection Date 14/11/2016 3:47:22 PM

Insp ID: 249

Group 4 - Alice Springs

Karnte

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: 1 - Very Poor

Overhead Light: No

Overhead Light Condition:

Light Comments: High level light broken

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:

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 3:47:22 PM

Condition:

Cabinet Locked: Yes

Cabinet Lock Condition: 4 - Very Good

Hand rails around entrance: No

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

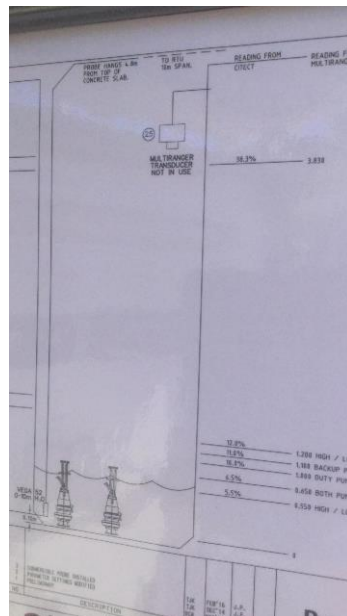
Inspection Date 14/11/2016 3:47:22 PM



Northern Territory Town Camps

Civil Infrastructure

Inspection Date 14/11/2016 3:47:22 PM



Northern Territory Town Camps

Civil Infrastructure

Inspection Date 14/11/2016 3:47:22 PM



Northern Territory Camps

Civil Infrastructure

Inspection Date 15/11/2016 12:34:07 PM

Insp ID: 261

Group 4 - Alice Springs

Karnte

Inspection Type:	Shade Structure
Shade Structure Type:	Play ground
Shade Floor Type:	Rubber Mats
Roof Type:	Shadecloth
Width (mm):	6
Length (mm):	6
Appearance:	3
Appearance Comment:	Paint
Condition:	3 - Good
Comment:	



Northern Territory Camps

Civil Infrastructure

Inspection Date 15/11/2016 12:34:07 PM



Northern Territory Camps

Civil Infrastructure

Inspection Date 15/11/2016 12:32:20 PM

Insp ID: 262

Group 4 - Alice Springs

Karnte

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 Town Camps

Civil Infrastructure

Inspection Date 15/11/2016 12:49:10 PM

Insp ID: 255

Group 4 - Alice Springs

Karnte

Road Name: Kurparu Crescent

What are you inspecting: Signs

Type of Sign: Pedestrian Sign

Sign Condition: 4 - Very Good

Sign Comment:

General Comment:



Northern Territory Town Camps

Civil Infrastructure

Inspection Date 15/11/2016 12:19:46 PM

Insp ID: 268

Group 4 - Alice Springs

Karnte

Road Name: Maku Crescent

What are you inspecting: Signs

Type of Sign: Street name

Sign Condition: 5 - Excellent

Sign Comment:

General Comment:



Northern Territory Town Camps

Civil Infrastructure

Inspection Date 15/11/2016 12:05:53 PM

Insp ID: 274

Group 4 - Alice Springs

Karnte

Road Name:

What are you inspecting: Signs

Type of Sign: 20kph

Sign Condition: 2 - Poor

Sign Comment: Graffiti

General Comment:



Northern Territory Town Camps

Civil Infrastructure

Inspection Date 15/11/2016 11:44:06 AM

Insp ID: 284

Group 4 - Alice Springs

Karnte

Road Name: Kurparu Crescent

What are you inspecting: Signs

Type of Sign: Pedestrian Sign

Sign Condition: 4 - Very Good

Sign Comment:

General Comment:



Northern Territory Town Camps

Civil Infrastructure

Inspection Date 15/11/2016 11:35:29 AM

Insp ID: 289

Group 4 - Alice Springs

Karnte

Road Name: Kurparu Crescent

What are you inspecting: Signs

Type of Sign: 20 kph

Sign Condition: 4 - Very Good

Sign Comment:

General Comment:



Northern Territory Town Camps

Civil Infrastructure

Inspection Date 15/11/2016 11:27:59 AM

Insp ID: 292

Group 4 - Alice Springs

Karnte

Road Name:

What are you inspecting: Signs

Type of Sign: Welcome signs

Sign Condition: 4 - Very Good

Sign Comment:

General Comment:



Northern Territory Town Camps

Civil Infrastructure

Inspection Date 15/11/2016 11:27:14 AM

Insp ID: 293

Group 4 - Alice Springs

Karnte

Road Name: Kurparu Crescent

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 15/11/2016 11:23:45 AM

Insp ID: 294 Group 4 - Alice Springs Karnte

Road Name: Kurparu Crescent
What are you inspecting: Signs
Type of Sign: Community sign
Sign Condition: 2 - Poor
Sign Comment: Left hand side broken of posts
General Comment:



Northern Territory Town Camps

Civil Infrastructure

Inspection Date 15/11/2016 1:11:30 PM

Insp ID: 299

Group 4 - Alice Springs

Karnte

Road Name: Kurparu Crescent

What are you inspecting: Signs

Type of Sign: 20kph

Sign Condition: 4 - Very Good

Sign Comment:

General Comment:



Northern Territory Town Camps

Civil Infrastructure

Inspection Date 15/11/2016 1:10:43 PM

Insp ID: 300

Group 4 - Alice Springs

Karnte

Road Name: Kurparu Crescent

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 15/11/2016 12:12:50 PM

Insp ID: 272

Group 4 - Alice Springs

Karnte

What Water Asset Are you Capturing: Tanks

Water Tank Material: Plastic

Water Tank Diameter:

Water Tank Height:

Water Tank Volume: 10000

Leaking: No

Water Tank Condition: 3 - Good

Northern Territory Town Camps

Civil Infrastructure

Inspection Date 15/11/2016 12:54:33 PM

Insp ID: 251

Group 4 - Alice Springs

Karnte

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: 1

Lot Water Meter Size: 20

Lot Water Meter Condition: 4 - Very Good

Lot Water Meter Comment:



Northern Territory Town Camps

Civil Infrastructure

Inspection Date 15/11/2016 12:52:16 PM

Insp ID: 253

Group 4 - Alice Springs

Karnte

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: 8

Lot Water Meter Size: 20

Lot Water Meter Condition: 4 - Very Good

Lot Water Meter Comment:



Northern Territory Town Camps

Civil Infrastructure

Inspection Date 15/11/2016 12:47:03 PM

Insp ID: 257

Group 4 - Alice Springs

Karnte

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: 7

Lot Water Meter Size: 20

Lot Water Meter Condition: 3 - Good

Lot Water Meter Comment: Good condition, surrounded by rubbish

Northern Territory Town Camps

Civil Infrastructure

Inspection Date 15/11/2016 12:46:03 PM

Insp ID: 258

Group 4 - Alice Springs

Karnte

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: 8

Lot Water Meter Size: 20

Lot Water Meter Condition: 4 - Very Good

Lot Water Meter Comment:



Northern Territory Town Camps

Civil Infrastructure

Inspection Date 15/11/2016 12:38:53 PM

Insp ID: 260

Group 4 - Alice Springs

Karnte

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: 2

Lot Water Meter Size: 20

Lot Water Meter Condition: 4 - Very Good

Lot Water Meter Comment:



Northern Territory Town Camps

Civil Infrastructure

Inspection Date 15/11/2016 12:30:55 PM

Insp ID: 264

Group 4 - Alice Springs

Karnte

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: 3

Lot Water Meter Size: 20

Lot Water Meter Condition: 4 - Very Good

Lot Water Meter Comment:



Northern Territory Town Camps

Civil Infrastructure

Inspection Date 15/11/2016 12:28:04 PM

Insp ID: 266

Group 4 - Alice Springs

Karnte

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: 4

Lot Water Meter Size: 20

Lot Water Meter Condition: 4 - Very Good

Lot Water Meter Comment:



Northern Territory Town Camps

Civil Infrastructure

Inspection Date 15/11/2016 12:18:35 PM

Insp ID: 269

Group 4 - Alice Springs

Karnte

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: 5

Lot Water Meter Size: 20

Lot Water Meter Condition: 4 - Very Good

Lot Water Meter Comment: Building 5



Northern Territory Town Camps

Civil Infrastructure

Inspection Date 15/11/2016 12:02:14 PM

Insp ID: 276

Group 4 - Alice Springs

Karnte

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: 20

Lot Water Meter Condition: 3 - Good

Lot Water Meter Comment:



Northern Territory Town Camps

Civil Infrastructure

Inspection Date 15/11/2016 11:50:26 AM

Insp ID: 283

Group 4 - Alice Springs

Karnte

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: 20

Lot Water Meter Condition: 4 - Very Good

Lot Water Meter Comment: Community centre



Northern Territory Town Camps

Civil Infrastructure

Inspection Date 15/11/2016 11:41:42 AM

Insp ID: 286

Group 4 - Alice Springs

Karnte

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: 9

Lot Water Meter Size: 20

Lot Water Meter Condition: 4 - Very Good

Lot Water Meter Comment: Building 9



Northern Territory Town Camps

Civil Infrastructure

Inspection Date 15/11/2016 11:40:36 AM

Insp ID: 287

Group 4 - Alice Springs

Karnte

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: 10

Lot Water Meter Size: 20

Lot Water Meter Condition: 4 - Very Good

Lot Water Meter Comment: Building 10



Northern Territory Town Camps

Civil Infrastructure

Inspection Date 15/11/2016 11:38:51 AM

Insp ID: 288

Group 4 - Alice Springs

Karnte

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: 12

Lot Water Meter Size: 20

Lot Water Meter Condition: 4 - Very Good

Lot Water Meter Comment: Building 12



Northern Territory Town Camps

Civil Infrastructure

Inspection Date 15/11/2016 11:59:07 AM

Insp ID: 302

Group 4 - Alice Springs

Karnte

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:

Lot Water Meter Condition: 3 - Good

Lot Water Meter Comment: Overgrown around metre, lot number Unknown



Electrical inspection report

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

Legend

Electrical infrastructure

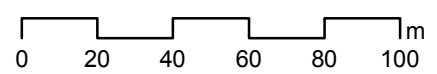
- 11KV HV/LV Pole
- 11KV Line Pole
- 11KV Pole Mounted Substation
- 11kV Air break switch
- 11kV Current transformer
- 11kV Switch Fuse
- LV Metering
- LV Line Pole
- LV Service Pole
- LV switch
- Street Lighting on HV Pole
- Transformer
- Transmission Line Pole
- Town Camp roads
- NT cadastre
- Town Camp boundary

Electrical survey points

- 1234 Other Values
- 1234 Distribution Panel
- 1234 Overhead Poles
- 1234 Street Light
- 1234 Transformers



A3 scale: 1:2,000



Date: 23/02/2017 Version: 3
Coordinate system: MGA94 Zone 52

NT Town Camp Infrastructure Assessments: Electrical
69 - Karnte (Alice Springs)

Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 14/11/2016 4:23:44 PM

Insp ID: 139 Group 4 - Alice Springs Karnte

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: 4

Condition Comments:

What is the condition of cables/glands into switchboard:

Cable/Gland Condition Comments: Unknown

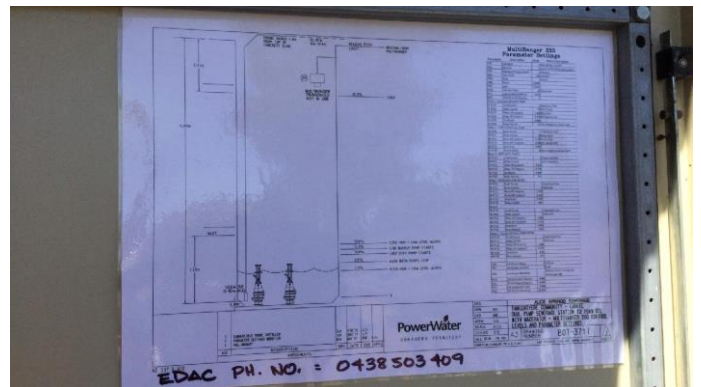
Distribution Panels name plate access: Yes



Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 14/11/2016 4:23:44 PM



Northern Territory Town Camps

Communications Infrastructure

Inspection Date 15/11/2016 12:05:40 PM

Insp ID: 145 Group 4 - Alice Springs Karnte

What Comms Category are you capturing: General
Telstra Comms Drawing Available: No
Facility upgrade not in drawings: Yes
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

Communications Infrastructure

Inspection Date 15/11/2016 1:21:33 PM

Insp ID: 161

Group 4 - Alice Springs

Karnte

What Comms Category are you capturing:

General

Telstra Comms Drawing Available:

No

Facility upgrade not in drawings:

No

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 19/01/2017 11:34:35 AM

Insp ID: 3611

Group 4 - Alice Springs

Karnte

What Category are you capturing: Electrical Meters

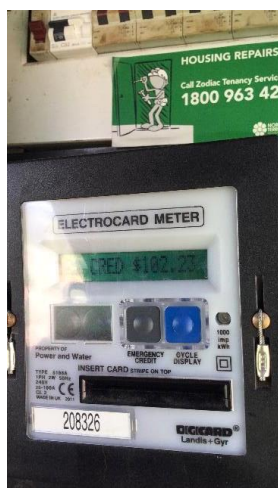
Meter Type: Prepaid

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 19/01/2017 11:19:14 AM

Insp ID: 3612 Group 4 - Alice Springs Karnte

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 20/01/2017 11:00:48 AM

Insp ID: 3666

Group 4 - Alice Springs

Karnte

What Category are you capturing: Electrical Meters

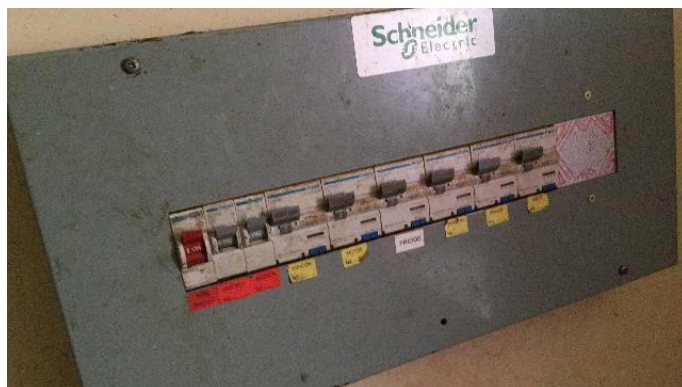
Meter Type: Prepaid

Meter Switchboard Cond: 3

Meter Condition: 3

Meter Comment: Indoor SB, Cond 3

Comments:



Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 14/11/2016 4:27:22 PM

Insp ID: 138

Group 4 - Alice Springs

Karnte

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

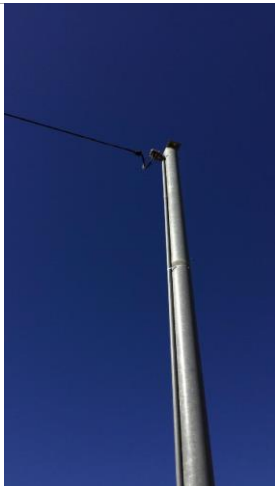
How many Lots are connected to this pole: 0

Overhead Pole Comments:

Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 14/11/2016 4:27:22 PM



Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 15/11/2016 11:50:49 AM

Insp ID: 143

Group 4 - Alice Springs

Karrnte

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: 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: 0

Overhead Pole Comments: Surface rusted

Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 15/11/2016 11:50:49 AM



Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 15/11/2016 11:59:39 AM

Insp ID: 144

Group 4 - Alice Springs

Karnte

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: Yes

Street Light Power Supply:

Street Light Type S70D 14

Street Light Watts 70

Street Light Condition 3

Street Light Height

What is the type of service: Three

What is the HV voltage level: 400

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: 4

Overhead Pole Comments: Surface rusted. Street light S70D 14. Good conditi

Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 15/11/2016 11:59:39 AM



Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 15/11/2016 12:14:49 PM

Insp ID: 147

Group 4 - Alice Springs

Karnte

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 14

Street Light Watts 70

Street Light Condition 3

Street Light Height

What is the type of service: Three

What is the HV voltage level: 400

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: 0

Overhead Pole Comments: Feeds street lighting pole. Also separate street ligh

Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 15/11/2016 12:14:49 PM



Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 15/11/2016 12:29:38 PM

Insp ID: 148

Group 4 - Alice Springs

Karrnte

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: Yes

Street Light Power Supply:

Street Light Type Unknown

Street Light Watts

Street Light Condition 2

Street Light Height

What is the type of service: Three

What is the HV voltage level: 400

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: 4

Overhead Pole Comments: Surface rusted. Street light fitted. Hanging basket.

Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 15/11/2016 12:29:38 PM



Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 15/11/2016 12:36:23 PM

Insp ID: 149

Group 4 - Alice Springs

Karrnte

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: 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: Yes

What is the Condition: 3

How many Lots are connected to this pole: 1

Overhead Pole Comments: Feeds pump station & 2 street lighting poles.

Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 15/11/2016 12:36:23 PM



Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 15/11/2016 12:52:11 PM

Insp ID: 153

Group 4 - Alice Springs

Karnte

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:	Yes
Street Light Power Supply:	
Street Light Type	S70D 14
Street Light Watts	70
Street Light Condition	3
Street Light Height	
What is the type of service:	Three
What is the HV voltage level:	400
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:	2
Overhead Pole Comments:	

Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 15/11/2016 12:52:11 PM



Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 15/11/2016 1:51:36 PM

Insp ID: 157

Group 4 - Alice Springs

Karnte

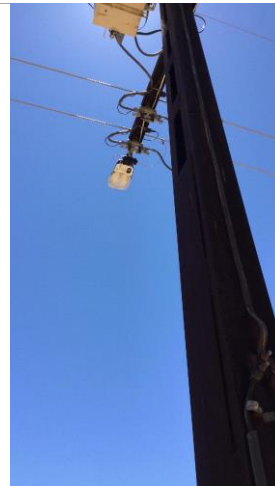
What Category are you capturing: Overhead Poles

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:	Overhead
Street Light Type	S70D 15
Street Light Watts	70
Street Light Condition	3
Street Light Height	
What is the type of service:	Combined
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:	0
Overhead Pole Comments:	Surface rusted

Northern Territory Town Camps

Electrical Infrastructure

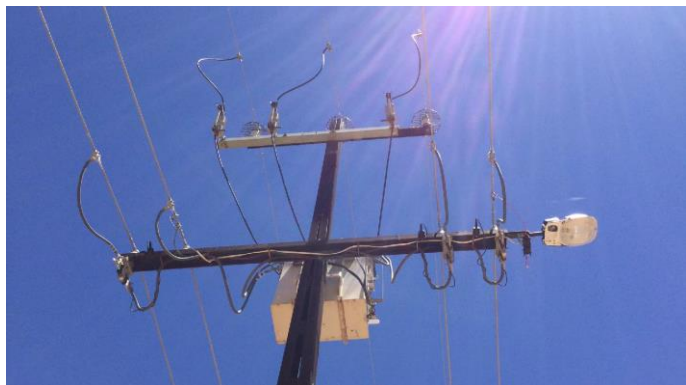
Inspection Date 15/11/2016 1:51:36 PM



Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 15/11/2016 1:51:36 PM



Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 15/11/2016 1:43:17 PM

Insp ID: 158

Group 4 - Alice Springs

Karnte

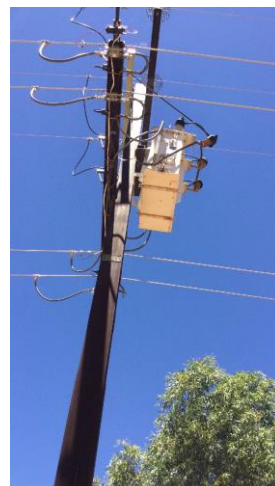
What Category are you capturing: Overhead Poles

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	S70D 15
Street Light Watts	70
Street Light Condition	3
Street Light Height	
What is the type of service:	Combined
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:	0
Overhead Pole Comments:	Surface rusted.

Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 15/11/2016 1:43:17 PM



Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 15/11/2016 1:38:31 PM

Insp ID: 159

Group 4 - Alice Springs

Karrnte

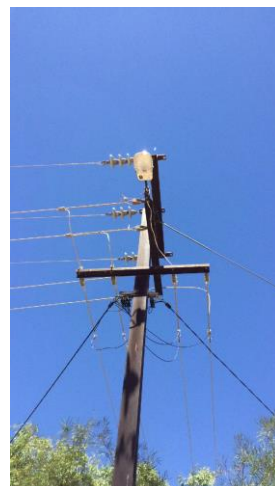
What Category are you capturing: Overhead Poles

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:	Yes
Street Light Power Supply:	
Street Light Type	S70D 15
Street Light Watts	70
Street Light Condition	3
Street Light Height	
What is the type of service:	Combined
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:	3
Overhead Pole Comments:	Surface rusted.

Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 15/11/2016 1:38:31 PM



Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 15/11/2016 1:38:31 PM



Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 15/11/2016 1:26:35 PM

Insp ID: 160

Group 4 - Alice Springs

Karnte

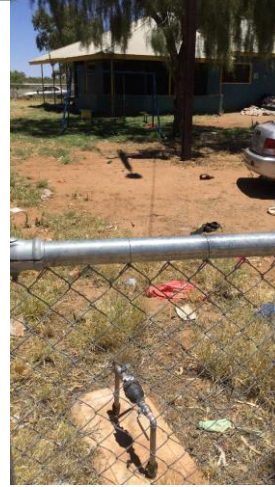
What Category are you capturing: Overhead Poles

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:	Yes
Street Light Power Supply:	
Street Light Type	S70D 14
Street Light Watts	70
Street Light Condition	3
Street Light Height	
What is the type of service:	Three
What is the HV voltage level:	400
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:	2
Overhead Pole Comments:	Surface rusted.

Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 15/11/2016 1:26:35 PM



Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 15/11/2016 1:13:26 PM

Insp ID: 164

Group 4 - Alice Springs

Karnte

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:	Yes
Street Light Power Supply:	
Street Light Type	S70D 14
Street Light Watts	70
Street Light Condition	3
Street Light Height	
What is the type of service:	Three
What is the HV voltage level:	400
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:	4
Overhead Pole Comments:	Surface rusted.

Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 15/11/2016 1:13:26 PM



Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 15/11/2016 1:13:26 PM



Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 15/11/2016 11:59:39 AM

Insp ID: 144 Group 4 - Alice Springs Karnte

What Category are you capturing: Overhead Poles

Is street light fitted: Yes
Street Light Power Supply:
Street Light Type S70D 14
Street Light Watts 70
Street Light Condition 3
Street Light Height



Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 15/11/2016 11:59:39 AM



Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 15/11/2016 12:14:49 PM

Insp ID: 147

Group 4 - Alice Springs

Karnte

What Category are you capturing: Overhead Poles

Is street light fitted: Yes

Street Light Power Supply:

Street Light Type S70 14

Street Light Watts 70

Street Light Condition 3

Street Light Height



Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 15/11/2016 12:14:49 PM



Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 15/11/2016 12:29:38 PM

Insp ID: 148 Group 4 - Alice Springs Karnte

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 2

Street Light Height



Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 15/11/2016 12:29:38 PM



Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 15/11/2016 12:52:11 PM

Insp ID: 153

Group 4 - Alice Springs

Karnte

What Category are you capturing: Overhead Poles

Is street light fitted: Yes

Street Light Power Supply:

Street Light Type S70D 14

Street Light Watts 70

Street Light Condition 3

Street Light Height



Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 15/11/2016 12:52:11 PM



Northern Territory Town Camps

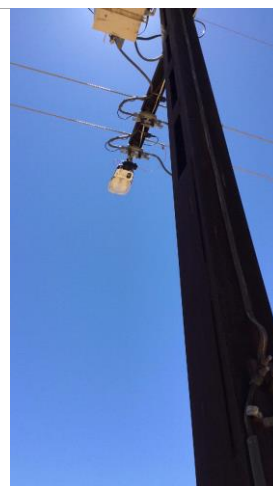
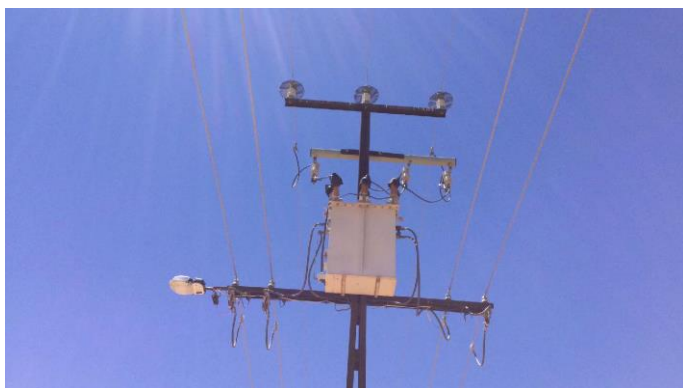
Electrical Infrastructure

Inspection Date 15/11/2016 1:51:36 PM

Insp ID: 157 Group 4 - Alice Springs Karnte

What Category are you capturing: Overhead Poles

Is street light fitted: Yes
Street Light Power Supply: Overhead
Street Light Type: S70D 15
Street Light Watts: 70
Street Light Condition: 3
Street Light Height:



Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 15/11/2016 1:51:36 PM



Northern Territory Town Camps

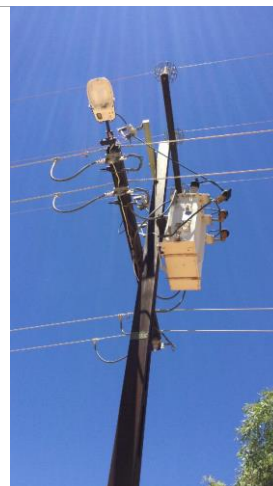
Electrical Infrastructure

Inspection Date 15/11/2016 1:43:17 PM

Insp ID: 158 Group 4 - Alice Springs Karnte

What Category are you capturing: Overhead Poles

Is street light fitted: Yes
Street Light Power Supply:
Street Light Type S70D 15
Street Light Watts 70
Street Light Condition 3
Street Light Height



Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 15/11/2016 1:43:17 PM



Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 15/11/2016 1:38:31 PM

Insp ID: 159 Group 4 - Alice Springs Karnte

What Category are you capturing: Overhead Poles

Is street light fitted: Yes
Street Light Power Supply:
Street Light Type S70D 15
Street Light Watts 70
Street Light Condition 3
Street Light Height



Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 15/11/2016 1:38:31 PM



Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 15/11/2016 1:26:35 PM

Insp ID: 160

Group 4 - Alice Springs

Karnte

What Category are you capturing: Overhead Poles

Is street light fitted: Yes

Street Light Power Supply:

Street Light Type S70D 14

Street Light Watts 70

Street Light Condition 3

Street Light Height



Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 15/11/2016 1:13:26 PM

Insp ID: 164 Group 4 - Alice Springs Karnte

What Category are you capturing: Overhead Poles

Is street light fitted: Yes
Street Light Power Supply:
Street Light Type S70D 14
Street Light Watts 70
Street Light Condition 3
Street Light Height



Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 15/11/2016 1:13:26 PM



Northern Territory Town Camps

Electrical Infrastructure

Inspection Date 15/11/2016 12:08:54 PM

Insp ID: 146

Group 4 - Alice Springs

Karnte

What Category are you capturing: Street Light

What is power supply method:

Overhead

What is the lamp type:

S70D 15

What Wattage is the lamp:

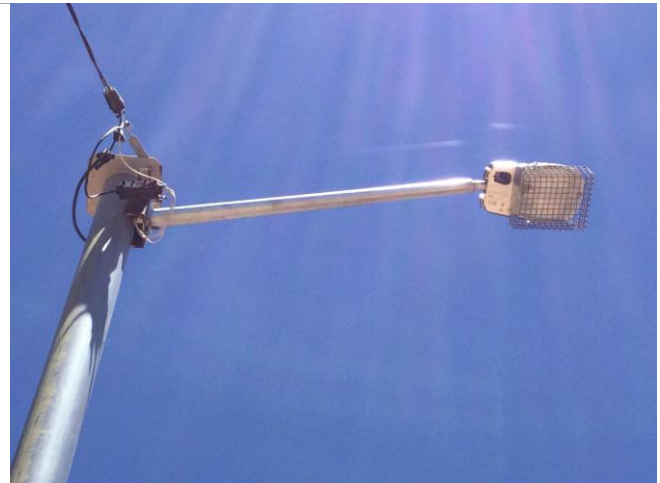
70

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 15/11/2016 12:38:46 PM

Insp ID: 150

Group 4 - Alice Springs

Karnte

What Category are you capturing: Street Light

What is power supply method:

Overhead

What is the lamp type:

S70D 15

What Wattage is the lamp:

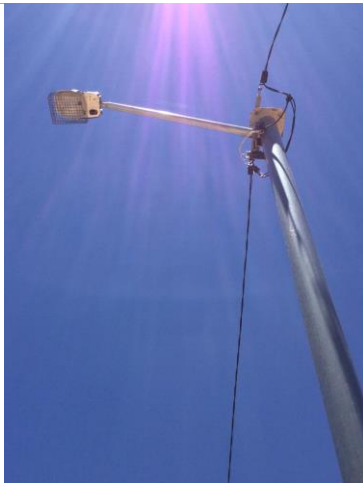
70

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 15/11/2016 12:43:30 PM

Insp ID: 151 Group 4 - Alice Springs Karnte

What Category are you capturing: Street Light

What is power supply method:

Overhead

What is the lamp type:

S70D 11

What Wattage is the lamp:

70

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 15/11/2016 12:47:07 PM

Insp ID: 152 Group 4 - Alice Springs Karnte

What Category are you capturing: Street Light

What is power supply method:

Overhead

What is the lamp type:

S70D 15

What Wattage is the lamp:

70

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 15/11/2016 12:55:23 PM

Insp ID: 154 Group 4 - Alice Springs Karnte

What Category are you capturing: Street Light

What is power supply method:

Overhead

What is the lamp type:

S70D 15

What Wattage is the lamp:

70

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 15/11/2016 12:58:16 PM

Insp ID: 155

Group 4 - Alice Springs

Karnte

What Category are you capturing: Street Light

What is power supply method:

Overhead

What is the lamp type:

S70D 15

What Wattage is the lamp:

70

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 15/11/2016 1:19:37 PM

Insp ID: 162 Group 4 - Alice Springs Karnte

What Category are you capturing: Street Light

What is power supply method:

Overhead

What is the lamp type:

S70D 15

What Wattage is the lamp:

70

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 15/11/2016 1:16:41 PM

Insp ID: 163

Group 4 - Alice Springs

Karnte

What Category are you capturing: Street Light

What is power supply method:

Overhead

What is the lamp type:

S70D 15

What Wattage is the lamp:

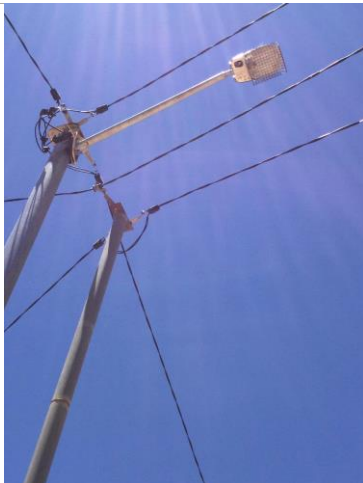
70

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 15/11/2016 1:03:25 PM

Insp ID: 165 Group 4 - Alice Springs Karnte

What Category are you capturing: Street Light

What is power supply method:

Overhead

What is the lamp type:

S70D 15

What Wattage is the lamp:

70

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 15/11/2016 1:56:07 PM

Insp ID: 156

Group 4 - Alice Springs

Karnte

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:

Unknown

Is there access to transformers name plate to take a photo:

No

What is the condition of transformer:

3

What is cable type to transformer:

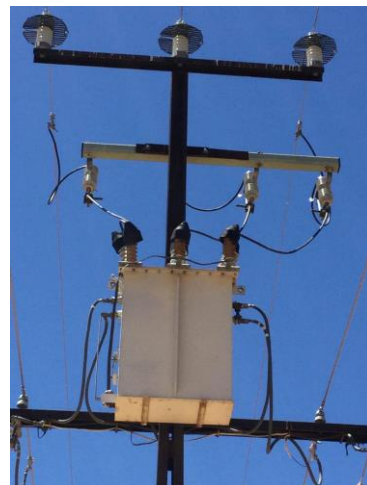
PVC insulated

What is cable size to transformer:

Is there switch gear or fusing associated with the transformer:

11ABS

Transformer Comment:



Northern Territory Town Camps

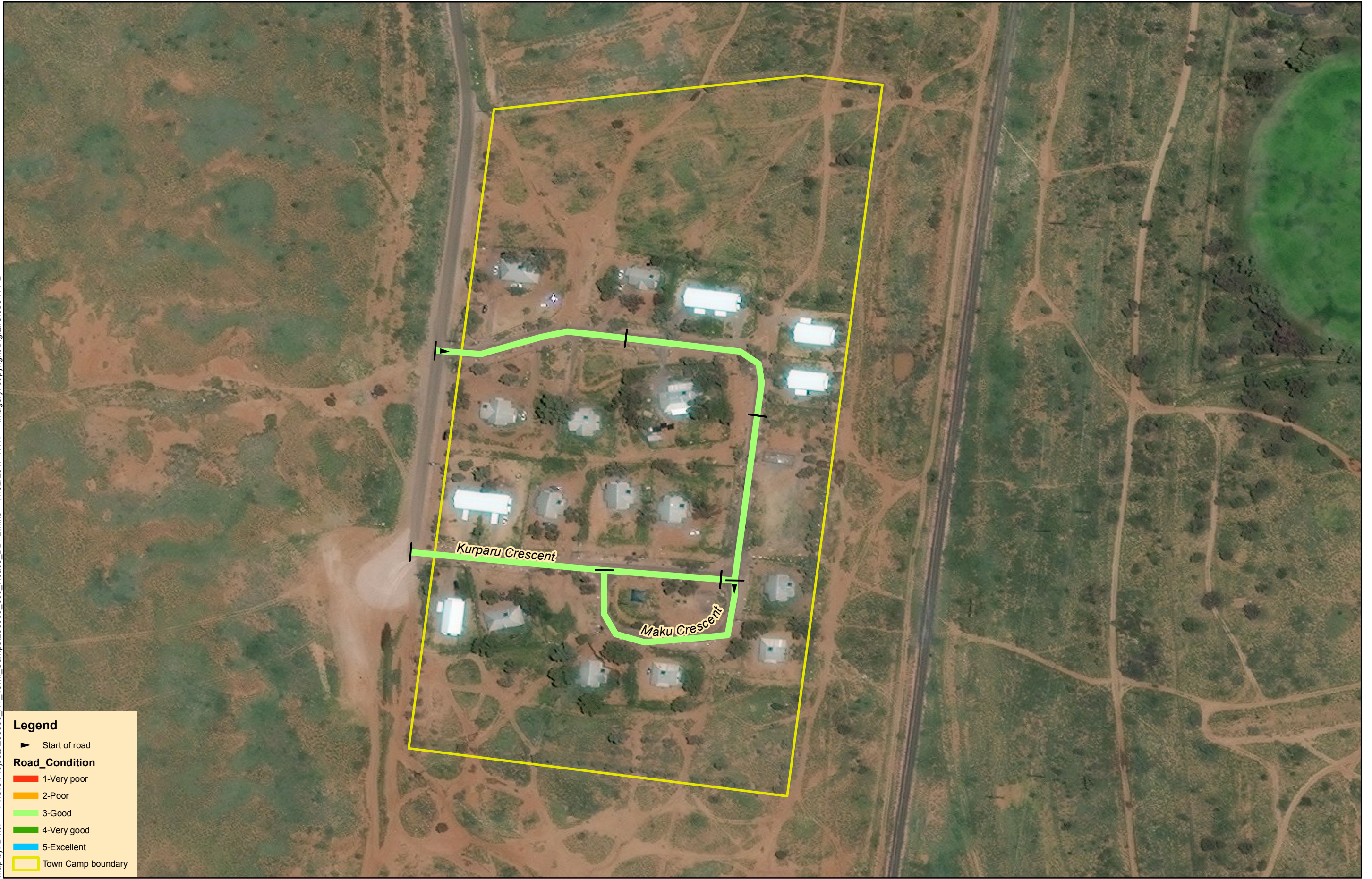
Electrical Infrastructure

Inspection Date 15/11/2016 1:56:07 PM



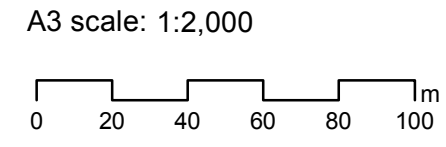
Road map

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



Legend

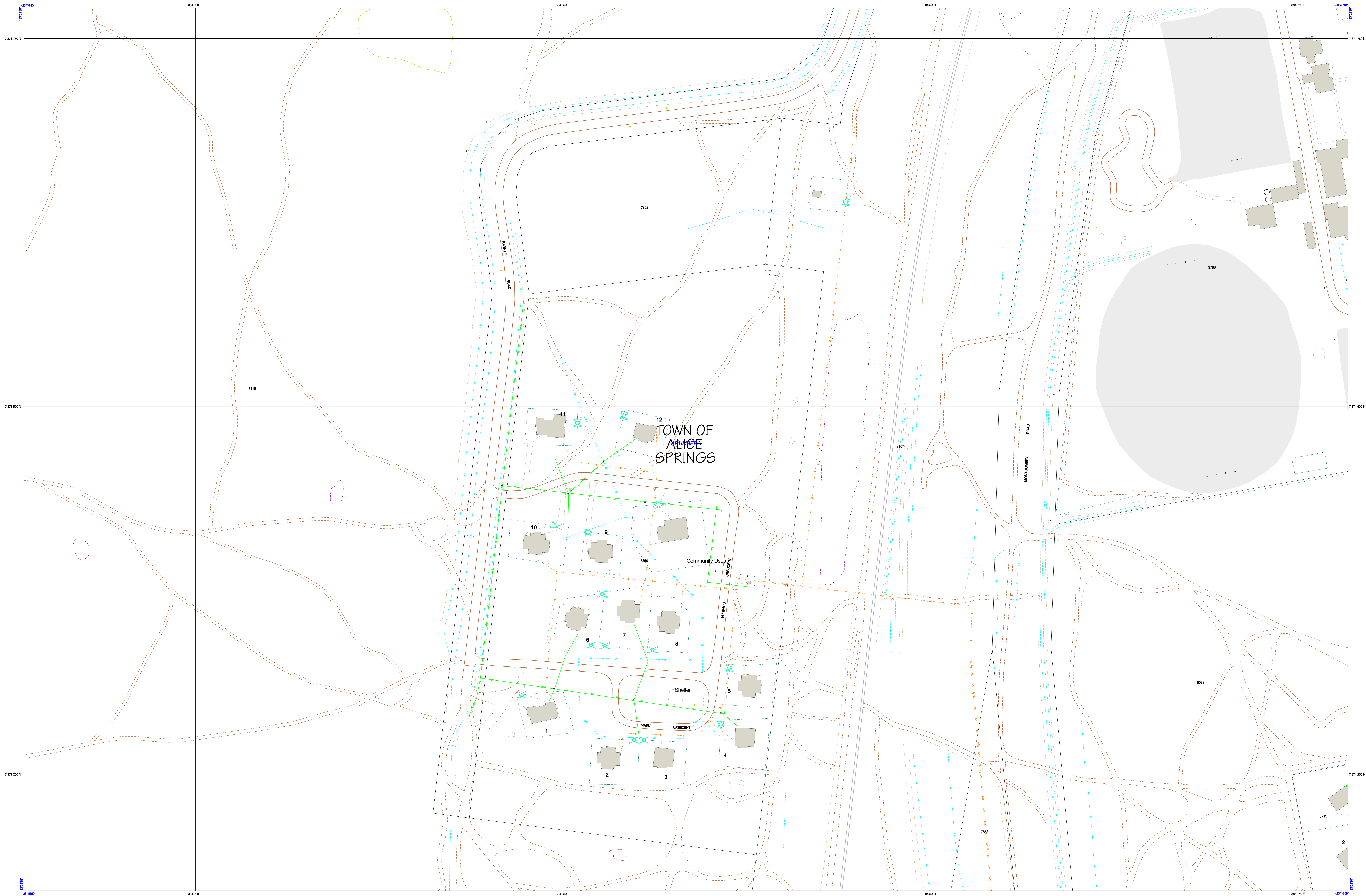
- Start of road
- Road_Condition**
- 1-Very poor
- 2-Poor
- 3-Good
- 4-Very good
- 5-Excellent
- Town Camp boundary



Date: 11/02/2017 Version: 1
Coordinate system: GDA 1994

NT Town Camp Road Assessments
69 - Karnte (Alice Springs)

Existing drawings



LAND USE PLANNING

APPROX. PORTION OF BUILDING constructed above date of photography

LAND EXCLUDED FROM DEVELOPMENT

GENERAL EXCLUSIONS/BUFFERS

CULTURAL EXCLUSION AREAS

Unsubstantiated early works or use of land where there is a special duty to observe and the Northern Territory Aboriginal Sacred Sites Act. For conditions relating to works or use of land within a Cultural Exclusion Area contact the Aboriginal Area Protection Authority (AAPA) and email: aaapa@nt.gov.au or phone 0899 4222.

This advice does not replace the need for consent for works, works or use which may be required under the Aboriginal Land (Reserves) Act in the case of Aboriginal lands, or whether advice.

CADASTRE

Current 123

Proposed 122

Locality LOCALITY

UTILITY SERVICES

ELECTRICITY

LOW VOLTAGE

HIGH VOLTAGE

WATER RETICULATION

WATER MAIN

WATER REISING MAIN

SEWER

SEWER MAIN

SEWER RESERVOIR

Building, Building-Stage unconfirmed

Shade Structure, Uncomplete Building

Seepage Ponds, Siltage Pond

Oval, Arena, Swimming Pool

TOPOGRAPHY

Road Sealing, Bridge

Road Unsealed, Track

Footpath, Drain, Culvert

Wall, Gate, Fence, Cattle Grid

Railway, Disused Railway

Aerodrome Tarmac, Landing Strip

Tackway, Apron

Pipeline: Oil, Water, Undetermined

Gas, Sewage

High Water Mark, Low Water Mark

Mine, Quarry Surface Excavation

Contour, Index, Intermediate

Contour, Depression

Top of Bank, Bottom of Bank, Cliff

Watercourse, Perennial, Intermittent, Channel or Canal

WaterBodies: Perennial, Intermittent

WaterBodies: Reservoir, Water Hole

Swamp, Swampy Perennial, Swamp Intermittent

Flat, Mud Flat, Clay/Silt/clay, Silt

Pole, Power, General, Light

Tank, Water, Elevated, Non-Water, Silo

Marluka, Pylon, Communication Tower, Bore

AVAILABLE FROM AND PRODUCED BY:

Northern Territory Government

NTSIS:

POWER LINES, MARLAKES, OPTIC FIBRE, TELECOMMUNICATIONS and other white and black objects are captured from Aerial Photography and used as available conditions and used as a reference.

LOCAL SURVEY CONTROL: This ground control is provided to the extent of the map.

For more information on data acquisition and metadata requirements for development contact: Planning@nt.gov.au

Aboriginal Area Protection Authority
Tel: (08) 8999 4222, Fax: (08) 8999 4222, and web: <http://www.aapa.nt.gov.au>

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 7169, 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 Area 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 original indices of departments regarding the accuracy and currency of the data.

Topographic Information:
Land Information System
Dept of Lands and Planning
TEL: (08) 8999 1300, FAX: (08) 8999 4222
Email: landinfo@nt.gov.au

Cadastral Information:
Office of the Survey General
Dept of Lands and Planning
TEL: (08) 8999 1300, FAX: (08) 8999 4222
Email: landinfo@nt.gov.au

Power, Water or Sewer Information:
Power and Water Corporation
TEL: (08) 8999 1300, FAX: (08) 8999 4222
Email: landinfo@nt.gov.au

Planning Information:
Indigenous Community Land Use Planning
Dept of Lands and Planning
TEL: (08) 8999 1300, FAX: (08) 8999 7169
Email: planning@nt.gov.au

Historical Information:
Indigenous Cemetery Branch
Dept of Lands and Planning
TEL: (08) 8999 1300, FAX: (08) 8999 4222
Email: landinfo@nt.gov.au

SOURCE INFORMATION

CONTOUR INTERVAL: 1m

HORIZONTAL DATUM: Transverse Mercator

VERTICAL DATUM: Transverse Mercator

CURRENCY OF TOPOGRAPHY: 16 June 2008

SOURCE MAP SCALE: 2500

ZONE UTM: 53

DATE GENERATED: 20 June 2012

GDA

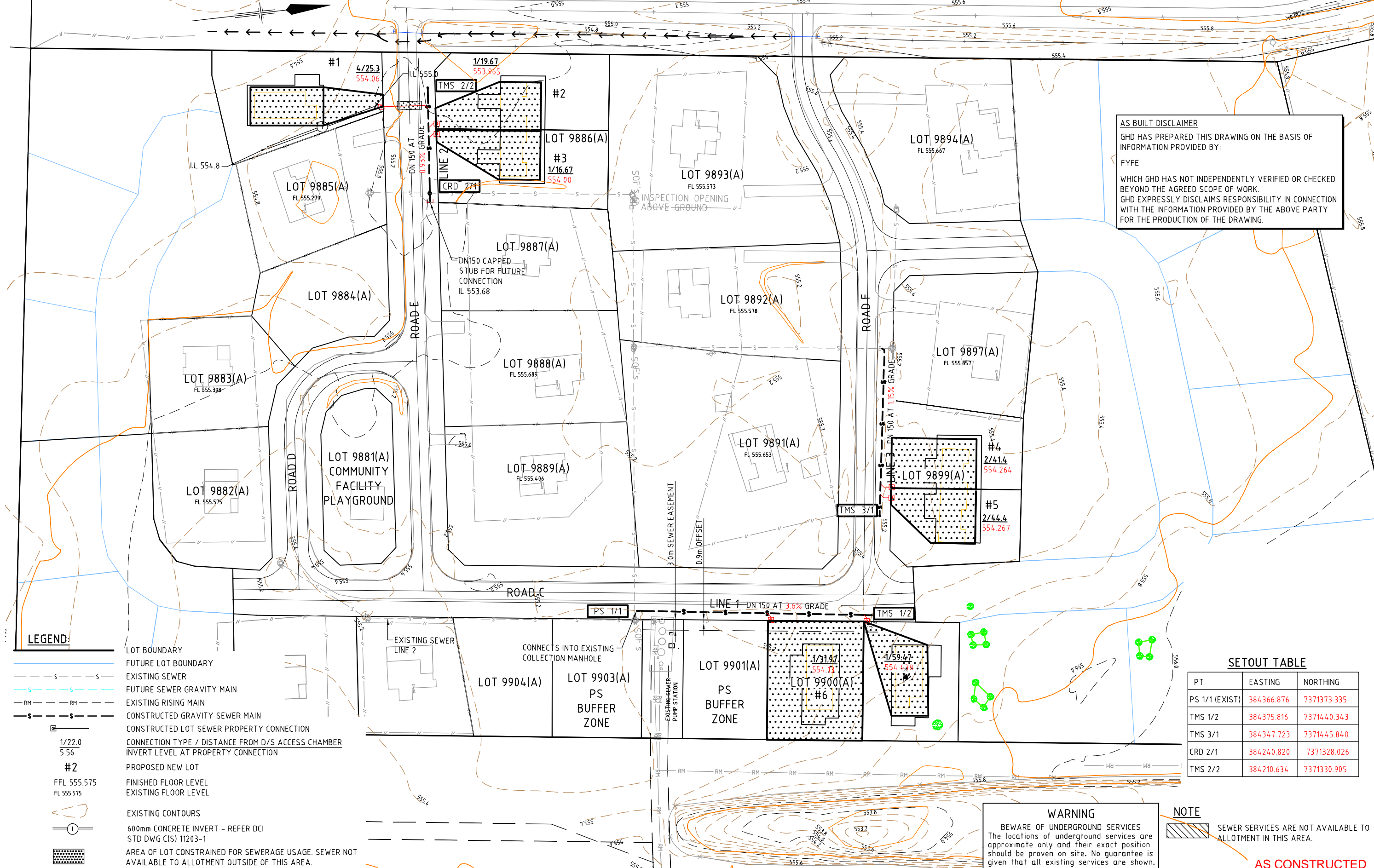
Locality Diagram

SERVICED LAND AVAILABILITY PROGRAM

SLAP Map

Karnte (Alice Springs Town Camp)

Alice Springs Town Camp
Alice Springs Town Council
Community ID: 69



AS BUILT DISCLAIMER
 GHD HAS PREPARED THIS DRAWING ON THE BASIS OF INFORMATION PROVIDED BY:
 FYFE
 WHICH GHD HAS NOT INDEPENDENTLY VERIFIED OR CHECKED BEYOND THE AGREED SCOPE OF WORK.
 GHD EXPRESSLY DISCLAIMS RESPONSIBILITY IN CONNECTION WITH THE INFORMATION PROVIDED BY THE ABOVE PARTY FOR THE PRODUCTION OF THE DRAWING.

LEGEND:

- LOT BOUNDARY
- FUTURE LOT BOUNDARY
- EXISTING SEWER
- FUTURE SEWER GRAVITY MAIN
- EXISTING RISING MAIN
- CONSTRUCTED GRAVITY SEWER MAIN
- CONSTRUCTED LOT SEWER PROPERTY CONNECTION
- CONNECTION TYPE / DISTANCE FROM D/S ACCESS CHAMBER
- INVERT LEVEL AT PROPERTY CONNECTION
- #2 PROPOSED NEW LOT
- FFL 555.575 FINISHED FLOOR LEVEL
- FL 555.575 EXISTING FLOOR LEVEL
- EXISTING CONTOURS
- 600mm CONCRETE INVERT - REFER DCI STD DWG C(S) 11203-1
- AREA OF LOT CONSTRAINED FOR SEWERAGE USAGE. SEWER NOT AVAILABLE TO ALLOTMENT OUTSIDE OF THIS AREA.

SETOUT TABLE

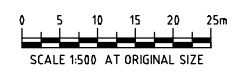
PT	EASTING	NORTHING
PS 1/1 (EXIST)	384366.876	7371373.335
TMS 1/2	384375.816	7371440.343
TMS 3/1	384347.723	7371445.840
CRD 2/1	384240.820	7371328.026
TMS 2/2	384210.634	7371330.905

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.

NOTE
 SEWER SERVICES ARE NOT AVAILABLE TO ALLOTMENT IN THIS AREA.

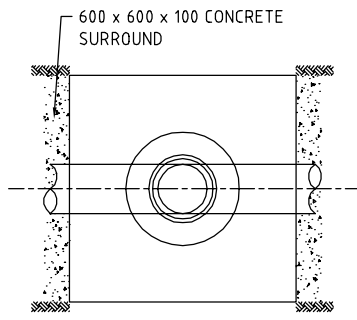
AS CONSTRUCTED

REV	DATE	REVISION DESCRIPTION	ORIG	CKD	ENG	QA	APPD
3	22-04-13	PAD RLS REMOVED					CQ
2	21-03-13	CORRECTIONS MADE					RF
1	18-02-13	AS CONSTRUCTED					RF
0	25-01-13	AS CONSTRUCTED					JSW

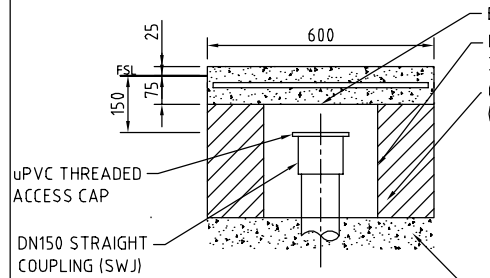


Strategic Indigenous Housing and Infrastructure Program
 ACONEX NO: TA-12-069-CVL-DWG-0017
 DPI NO: R08-1249

ALICE SPRINGS PACKAGE 12
 KARTE CAMP- 069 LOT- 7850
 SEWER COMPILATION PLAN
 DRAWING NO: R08-1249



PLAN



SECTION

ON LOT CONNECTION
INSPECTION OPENING DETAIL
NTS

ACCESS CHAMBER TYPE AND COVER	PS	TMS
JOINS WITH LINE No.	-	-
ACCESS CHAMBER DROP TYPES	1	1
ACCESS CHAMBER No / TMS No.	1/1	1/2

AS BUILT DISCLAIMER
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FYFE
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GHD EXPRESSLY DISCLAIMS RESPONSIBILITY IN CONNECTION WITH THE INFORMATION PROVIDED BY THE ABOVE PARTY FOR THE PRODUCTION OF THE DRAWING.

DATUM R.L.	539.000	
DIAMETER (mm)	150	
GRADE (mm/m)	36.4	
DEPTH TO INVERT OF SEWER	5.112 2.337	0.900
INVERT LEVEL	550.308 551.978	554.438
TOP OF MANHOLE LEVEL	555.420	555.15
CHAINAGE	0.000	67.594

LINE 1

EXISTING LINE	TMS	CRD	TMS
-	-	2	-
-	1	1	1
-	3/1	2/1	2/2
HC LOT #4 TYPE 2 41.4		HC LOT #3 TYPE 1 16.67	
HC LOT #5 TYPE 2 44.4		HC LOT #2 TYPE 1 19.67	
HC LOT #980(A) TYPE 1 59.47		HC LOT #1 TYPE 4 25.30	
DATUM R.L.	539.000		539.000
DIAMETER (mm)	150		150
GRADE (mm/m)	11.5		9.3
DEPTH TO INVERT OF SEWER	1.015 0.697	1.264 1.184	0.876
INVERT LEVEL	553.890 554.416	553.680 553.706	553.987
TOP OF MANHOLE LEVEL	555.221	554.944 554.935	554.935
CHAINAGE	0.000 45.402	0.000 30.317	30.317

LINE 3

EXISTING LINE	TMS	CRD	TMS
-	-	2	-
-	1	1	1
-	3/1	2/1	2/2
HC LOT #4 TYPE 2 41.4		HC LOT #3 TYPE 1 16.67	
HC LOT #5 TYPE 2 44.4		HC LOT #2 TYPE 1 19.67	
HC LOT #980(A) TYPE 1 59.47		HC LOT #1 TYPE 4 25.30	
DATUM R.L.	539.000		539.000
DIAMETER (mm)	150		150
GRADE (mm/m)	11.5		9.3
DEPTH TO INVERT OF SEWER	1.015 0.697	1.264 1.184	0.876
INVERT LEVEL	553.890 554.416	553.680 553.706	553.987
TOP OF MANHOLE LEVEL	555.221	554.944 554.935	554.935
CHAINAGE	0.000 45.402	0.000 30.317	30.317

LINE 2

SEWER LONG SECTION NOTES

- 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.
- I.O. => INSPECTION OPENING WITH HEAVY DUTY CAST IRON COVER. REFER STD. DRG. No. W2-1-05/5.
- CRD => CAST IN-SITU BASE, CIRCULAR ACCESS CHAMBER RECTANGULAR HEAVY DUTY LID
- CRB => CAST IN-SITU BASE, CIRCULAR ACCESS CHAMBER RECTANGULAR LIGHT DUTY LID
- CRDS => CAST IN-SITU BASE & ACCESS CHAMBER CIRCULAR HEAVY DUTY BOLT DOWN LID
- TMS => TERMINAL MAINTENANCE SHAFT REFER STD. DRG. No's. W2-2-07/3 & W2-2-08
- ALL LEVELS ARE TO A.H.D.

SEWER LONG SECTION LEGEND

HC Lot # 4 HOUSE CONNECTION LOT NUMBER
TYPE 1 39.50 DROP TYPE & DISTANCE TO DOWN STREAM PIT
IL 584.840 INVERT LEVEL (IF OTHER THAN TYPE 1 OR 4)

GENERAL NOTES:

- CONSTRUCTION OF THE WATER AND SEWERAGE WORKS SHALL BE CARRIED OUT IN ACCORDANCE WITH THE LATEST AMENDMENT OF THE APPROVED PROJECT DRAWINGS AND SPECIFICATIONS, THE POWER AND WATER CONNECTION CODE AND ASSOCIATED DOCUMENTS.
- ALL WATER AND SEWER SHALL BE CONSTRUCTED EXACTLY AS SHOWN ON THE LATEST AMENDMENT OF THE APPROVED DESIGN DRAWINGS. THE DRAWINGS MUST BE SIGNED "APPROVED FOR CONSTRUCTION" BY A POWER AND WATER OFFICER.
- ANY CHANGE TO THE DESIGN MUST BE APPROVED BY A POWER AND WATER OFFICER PRIOR TO CONSTRUCTION OF THAT CHANGE.
- ALL MATERIALS USED IN CONSTRUCTION OF THE WATER AND SEWER WORKS ARE TO BE APPROVED PRODUCTS AS SPECIFIED AND LISTED IN POWER AND WATER'S "WATER & SEWER MAINS PRODUCT MANUAL"
- AAPA SACRED SITES CERTIFICATES ARE TO BE IN PLACE PRIOR TO COMMENCING CONSTRUCTION AND THOSE CERTIFICATES MUST ALLOW FOR THE FUTURE ONGOING OPERATION MAINTENANCE AND REPLACEMENT OF WATER AND SEWER INFRASTRUCTURE BY POWER AND WATER.
- SEVEN (7) DAYS WRITTEN NOTICE MUST BE GIVEN TO SERVICES DEVELOPMENT, POWER AND WATER (FACSIMILE: 8951 7347 - SOUTHERN REGION) WITH A 'NOTICE OF INTENTION TO START WORK' PRIOR TO COMMENCEMENT OF WORK. (FORM AVAILABLE ON THE CONNECTION CODE WEBSITE).
- THE CONTRACTOR SHOULD CONFIRM WITH SERVICES DEVELOPMENT IF A MEETING IS REQUIRED WITH POWER AND WATER, THE HYDRAULIC CERTIFIER AND THE DEVELOPER PRIOR TO COMMENCEMENT OF SITE WORKS.
- PRIOR TO COMMENCEMENT OF WORKS, THE CONTRACTOR SHALL CHECK THE LOCATION OF ALL UNDERGROUND SERVICES, AND CONFIRMED FINISHED SURFACE LEVELS AND CHECK THE MATERIAL, DIAMETER, ALIGNMENT, LEVEL AND LOCATION OF EXISTING WATER AND SEWER PIPEWORK AT THE CONNECTION POINT. THIS INFORMATION IS TO BE PROVIDED TO THE CERTIFIER AND POWER AND WATER. IT IS NOT GUARANTEED THAT ALL SERVICES HAVE BEEN SHOWN ON THE DRAWINGS.
- OBTAIN PERMIT(S) FROM RELEVANT ROAD AUTHORITY OR COUNCIL PRIOR TO ANY EXCAVATION WITHIN THE ROAD RESERVE. REINSTATE ALL SURFACES UPON COMPLETION AS SPECIFIED OR OTHERWISE AS GOOD AS EXISTING TO THE SATISFACTION OF THE RELEVANT AUTHORITY.
- CONNECTIONS TO EXISTING WATER AND SEWER MAINS WILL ONLY BE CARRIED OUT WHEN ALL WORKS UPSTREAM OF THE CONNECTION ARE COMPLETE IN ACCORDANCE WITH THE APPROVED DESIGN DRAWINGS, AND HAVE SATISFACTORILY PASSED ALL REQUIRED TESTING AND FINAL HANDOVER INSPECTION.
- POWER AND WATER PERSONNEL SHALL INSTALL ALL WATER AND SEWER CONNECTIONS TO EXISTING MAINS. THE CONSTRUCTOR IS RESPONSIBLE FOR ALL CONNECTION FEES, MATERIALS AND LABOUR FOR EXCAVATION, SHORING, LIFTING, PUMPING, TRAFFIC CONTROL, BACKFILLING, AND REINSTATEMENT.
- AT NO STAGE SHALL ANY CONTRACTOR BE ALLOWED TO CARRY OUT WORK ON PWC INFRASTRUCTURE.
- ALL LEVELS GIVEN ARE TO A.H.D.
- ALL DIMENSIONS ARE IN MILLIMETRES AND ALL CHAINAGES AND LEVELS LEVEL IN METRES UNLESS SHOWN OTHERWISE.
- MINIMUM COVER TO PIPE IS 750mm IN TRAFFICABLE AREAS, 600mm IN OTHER AREAS. 1500mm COVER REQUIRED FOR THRUST BORING UNDER ROAD.
- ENSURE ALL AS CONSTRUCTED INFORMATION HAS BEEN PICKED UP BY THE REGISTERED SURVEYOR PRIOR TO BACKFILLING.
- CERTIFIER TO CONTACT SERVICES DEVELOPMENT, POWER AND WATER, TO ARRANGE FOR HANDOVER INSPECTIONS. SEVEN WORKING DAYS NOTICE MUST BE PROVIDED PRIOR TO HANDOVER INSPECTIONS. AS CONSTRUCTED DRAWINGS AND ALL OTHER CERTIFICATION AND TESTING DOCUMENTATION, INCLUDING A PHOTOGRAPHIC RECORD THROUGHOUT CONSTRUCTION, MUST BE PROVIDED TO SERVICES DEVELOPMENT, POWER AND WATER PRIOR TO THE REQUEST FOR A HANDOVER INSPECTION.
- AS CONSTRUCTED DRAWINGS TO BE CERTIFIED BY THE CERTIFYING ENGINEER. 'AS CONSTRUCTED' SURVEY BY A REGISTERED SURVEYOR. PROVIDE AS HARD COPY 1x43 PAPER 1x41 MYLAR FILM AS WELL AS DIGITAL, BOTH PDF AND MICROSTATION DGN. CO-ORDINATES TO MGA94 & LEVELS TO AHD. SEE WATER AND SEWER NOTES FOR SPECIFIC REQUIREMENTS. SHOW SEPARATION DISTANCES AND LEVELS FOR INTERSECTING SERVICES. PROVIDE MANUFACTURER AND MODEL DETAILS FOR ALL MAIN COMPONENTS OF WATER AND SEWER SYSTEMS.
- EXISTING SERVICE CONNECTIONS TO REMAIN IN SERVICE AT ALL TIMES PRIOR TO THE COMPLETION OF CONSTRUCTION.
- MINIMUM CLEARANCES BETWEEN UNDERGROUND SERVICES IS AS PER WSA 02-2003 TABLE 4.2 FOR SEWER, AND WSA 03-2003 TABLE 4.1 FOR WATER.
- WHEN EMBEDMENT TYPE CHANGES, A VERTICAL GEOTEXTILE BARRIER SHALL BE INSERTED BETWEEN THE EMBEDMENT TYPES.

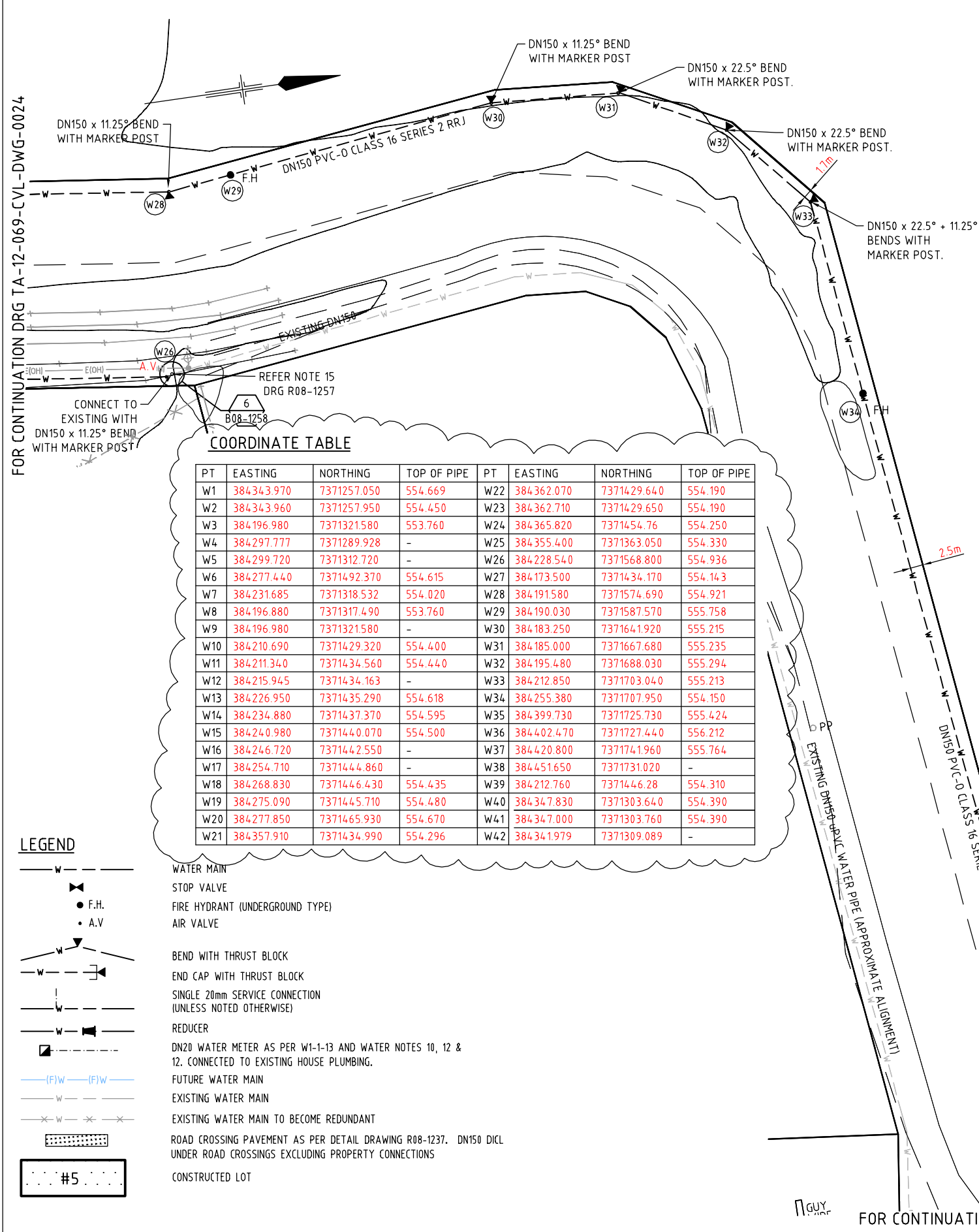
SEWER NOTES:

- ALL GRAVITY SEWER PIPES SHALL BE UPVC DWV CLASS SN8 WITH STYRENE-BUTADIENE RUBBER RING JOINTS (SBR), UNLESS NOTED OTHERWISE.
- SEWER CENTRELINES 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 DRAWINGS.
- ALL GRAVITY SEWERS ARE TO BE A MINIMUM OF DN150, UNLESS NOTED OTHERWISE.
- MAINTENANCE HOLE/SHAFT COVERS AND SLABS SHALL FINISH AT FINISHED SURFACE LEVEL (FSL) IN ROAD RESERVES AND FOOTPATHS AND MATCH CROSS FALL TO MAXIMUM OF 2 DEGREES 42mm ACROSS THE DIAMETER OF A 1200mm MAINTENANCE HOLE COVER. 150mm ABOVE SURFACE LEVEL IN PRIVATE PROPERTY AND OPEN SPACE (BACKFILL TO BE GRADED AT 1:10 FROM THE MAINTENANCE HOLE TO THE SURROUNDING FINISHED SURFACE LEVEL).
- ENSURE THERE ARE NO LOW POINTS CREATED AROUND MANHOLES BY GRADING OF SURROUNDING FINISHED SURFACE LEVEL.
- ADJUST ALL EXISTING MANHOLE LID LEVELS TO COMPLY WITH REQUIREMENTS ABOVE.
- FOR EXISTING MANHOLES REPLACE ALL CRACKED, DAMAGED, AND CIRCULAR LIDS AND TAPERS WITH NEW RECTANGULAR LIDS.
- MINIMUM CONCRETE STRENGTH FOR ALL SEWERAGE STRUCTURES INCLUDING MAINTENANCE HOLES SHALL BE N50. USE GP CEMENT WITH SILICA FUME CONTENT SPECIFIED.
- ALL LOT SERVICE CONNECTIONS NEW AND EXISTING MUST BE DN 150. A NEW INSPECTION OPENING IN ACCORDANCE WITH THE STANDARD DETAIL IS TO BE PROVIDED FOR EVERY LOT WHETHER THE SERVICE IS NEW OR EXISTING. ENSURE LEVEL AND LOCATION AT THE IO ARE PICKED UP BY THE REGISTERED SURVEYOR FOR EVERY LOT SERVICE.
- EXISTING LOT SANITARY DRAINS ARE ONLY TO BE CONNECTED UPSTREAM OF THE NEW IO.
- THE CONSTRUCTOR SHALL EITHER INSCRIBE OR ATTACH A PLATE TO THE MAINTENANCE HOLE OR MAINTENANCE SHAFT COVER WITH THE IDENTIFYING NUMBER AS SHOWN ON THE DRAWINGS.
- USE HEAVY DUTY INSPECTION OPENING OPTION FOR STANDARD DRAWING NO'S W2-1-05, W2-1-06 & W2-2-07.
- FOR MANHOLE COATING USE ELASTON W80 SPRAY POLYURETHANE ELASTOMER OR PWC APPROVED EQUIVALENT. APPLY IN 2 COATS EACH OF 2mm THICKNESS IN CONTRASTING COLOURS. SPRAY IN A CONTINUOUS APPLICATION WITH NO DRY JOINTS.
- SELF CERTIFYING PLUMBER TO CERTIFY THAT ALL LOT SANITARY DRAINAGE RUNS THROUGH THE NEW SEWER CONNECTION IO, THAT THERE ARE NO CROSS BOUNDARY CONNECTIONS. THE CERTIFIER TOGETHER WITH THE SURVEYOR AND PLUMBER ARE TO CERTIFY THAT THE SEWER SERVICE DOES NOT RUN THROUGH ADJACENT LOTS EXCEPT WHERE THE APPROVED DESIGN SPECIFICALLY SHOWS THIS.
- AS CONSTRUCTED DRAWINGS FOR SEWER ARE TO SHOW POSITION (CO-ORDINATES TO MGA 94, LEVELS TO AHD) FOR ALL ACCESS CHAMBERS, ACCESS SHAFTS, INSPECTION OPENINGS, SERVICE JUNCTIONS, SEPARATION DISTANCES AND LEVELS FOR INTERSECTING SERVICES. SHOW ALL OTHER VALUES REQUIRED TO CERTIFY COMPLIANCE OF THE WORKS. SHOW FINISHED SURFACE LEVELS AT LOT CORNER TO VERIFY SEWER LOT COVERAGE. PROVIDE MANUFACTURER AND MODEL DETAILS FOR ALL MAIN COMPONENTS OF THE SEWER SYSTEM.
- CERTIFICATION DOCUMENTATION MUST INCLUDE AS CONSTRUCTED DRAWINGS, HYDROSTATIC TEST RESULTS, PROVER TEST RESULTS, CCTV REPORTS, COMPACTION TEST RESULTS, BEDDING GRADING CURVES, CONCRETE REPORTS & TEST RESULTS, OTHER INSPECTION REPORTS AND PHOTOGRAPHS, SURVEY DATA FOR LOT CONNECTIONS AS WELL AS THE OVERALL CERTIFICATION ITSELF. CHECKS CONFIRMING COMPLIANCE OF SEWER GRADIENTS WITH DESIGN, CONFIRMING LOT SERVICE LEVELS WITH DESIGN AND THAT THE LOT CONNECTION LEVEL WITH LOT FINISHED SURFACE LEVELS PROVIDE COVER, LOT COVERAGE, AND FIXTURE CONTROL.
- CONNECTIONS TO EXISTING SEWER MAINS WILL ONLY BE CARRIED OUT WHEN ALL WORKS AND TESTING ARE COMPLETE IN ACCORDANCE WITH THE APPROVED DESIGN DRAWING AND HAVE PASSED THE FINAL HANDOVER INSPECTION.
- FLEXIBLE JOINTS WITH CONCRETE SURROUND SHALL BE CONSTRUCTED ON BOTH UPSTREAM AND DOWN STREAM SIDES OF MAINTENANCE HOLES.
- DEPTH TO INVERT AT MAINTENANCE HOLES IS CALCULATED FROM THE TOP OF MAINTENANCE HOLES.
- ALIGN MAINTENANCE HOLE COVER SUCH THAT ALONG SIDE OF THE LID IS PARALLEL WITH THE SEWER MAIN.
- MARKING TAPE COLOURED ORANGE AND MARKED 'SEWER MAIN' SHALL BE LAID CONTINUOUSLY AND LOCATED 300mm ABOVE THE WATER PIPEWORK.

AS CONSTRUCTED

		Strategic Indigenous Housing and Infrastructure Program ACONEX NO: TA-12-069-CVL-DWG-0018 DPI NO: R08-1250		ALICE SPRINGS PACKAGE 12 KARTE CAMP- 069 LOT- 7850 SEWER LONGITUDINAL SECTION AND NOTES DRAWING NO: R08-1250 REV: 1 5759	
Copyright © Territory Alliance 1 18-02-13 AS CONSTRUCTED RF 0 25-01-13 AS CONSTRUCTED JSW	VERTICAL 1:100 AT ORIGINAL SIZE HORIZONTAL 1:1000 AT ORIGINAL SIZE 	Northern Territory Government Department of Planning and Infrastructure 	SHEET: A3 SCALE: AS SHOWN @ A3 Plot Date: 30 April 2013 - 9:12 AM Plotted by: Ron Fernandez Cad File No: G:\43\21659\CADD\Drawings\Karte\R08-1250.dwg		

FOR CONTINUATION DRG TA-12-069-CVL-DWG-0024



COORDINATE TABLE

PT	EASTING	NORTHING	TOP OF PIPE	PT	EASTING	NORTHING	TOP OF PIPE
W1	384343.970	7371257.050	554.669	W22	384362.070	7371429.640	554.190
W2	384343.960	7371257.950	554.450	W23	384362.710	7371429.650	554.190
W3	384196.980	7371321.580	553.760	W24	384365.820	7371454.76	554.250
W4	384297.777	7371289.928	-	W25	384355.400	7371363.050	554.330
W5	384299.720	7371312.720	-	W26	384228.540	7371568.800	554.936
W6	384277.440	7371492.370	554.615	W27	384173.500	7371434.170	554.143
W7	384231.685	7371318.532	554.020	W28	384191.580	7371574.690	554.921
W8	384196.880	7371317.490	553.760	W29	384190.030	7371587.570	555.758
W9	384196.980	7371321.580	-	W30	384183.250	7371644.920	555.215
W10	384210.690	7371429.320	554.400	W31	384185.000	7371667.680	555.235
W11	384211.340	7371434.560	554.440	W32	384195.480	7371688.030	555.294
W12	384215.945	7371434.163	-	W33	384212.850	7371703.040	555.213
W13	384226.950	7371435.290	554.618	W34	384255.380	7371707.950	554.150
W14	384234.880	7371437.370	554.595	W35	384399.730	7371725.730	555.424
W15	384240.980	7371440.070	554.500	W36	384402.470	7371727.440	556.212
W16	384246.720	7371442.550	-	W37	384420.800	7371741.960	555.764
W17	384254.710	7371444.860	-	W38	384451.650	7371731.020	-
W18	384268.830	7371446.430	554.435	W39	384212.760	7371446.28	554.310
W19	384275.090	7371445.710	554.480	W40	384347.830	7371303.640	554.390
W20	384277.850	7371465.930	554.670	W41	384347.000	7371303.760	554.390
W21	384357.910	7371434.990	554.296	W42	384341.979	7371309.089	-

- LEGEND**
- W --- WATER MAIN
 - STOP VALVE
 - F.H. FIRE HYDRANT (UNDERGROUND TYPE)
 - A.V. AIR VALVE
 - BEND WITH THRUST BLOCK
 - END CAP WITH THRUST BLOCK
 - SINGLE 20mm SERVICE CONNECTION (UNLESS NOTED OTHERWISE)
 - REDUCER
 - DN20 WATER METER AS PER W1-1-13 AND WATER NOTES 10, 12 & 12. CONNECTED TO EXISTING HOUSE PLUMBING.
 - (F)W --- (F)W FUTURE WATER MAIN
 - EXISTING WATER MAIN
 - EXISTING WATER MAIN TO BECOME REDUNDANT
 - ROAD CROSSING PAVEMENT AS PER DETAIL DRAWING R08-1237. DN150 DICL UNDER ROAD CROSSINGS EXCLUDING PROPERTY CONNECTIONS
 - #5 --- CONSTRUCTED LOT

GENERAL NOTES

REFER TO DRG NO TA-12-069-CVL-DWG-0018 (R08-1250) FOR GENERAL LAND DEVELOPMENT NOTES FOR SEWER AND WATER.

WATER NOTES:

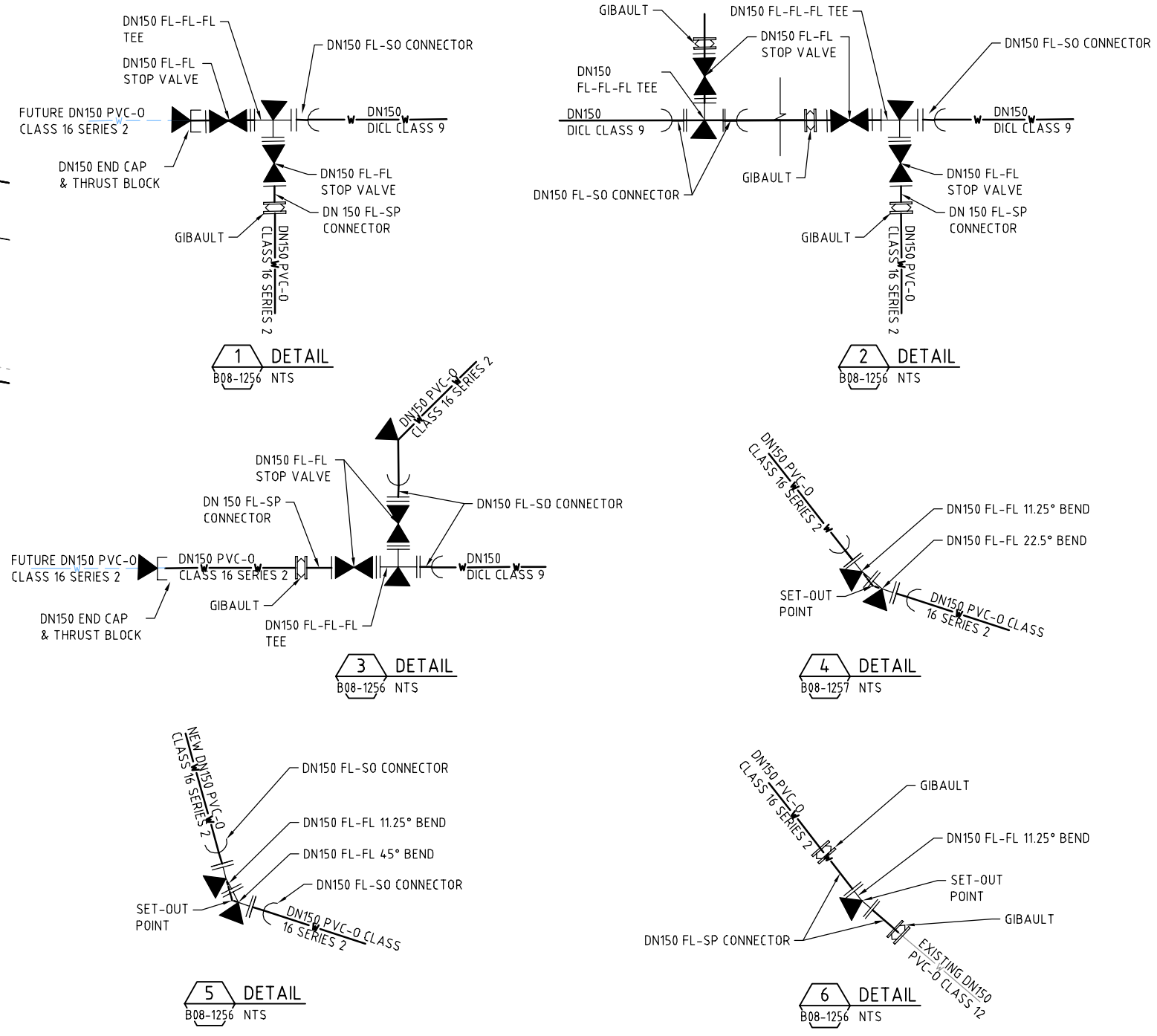
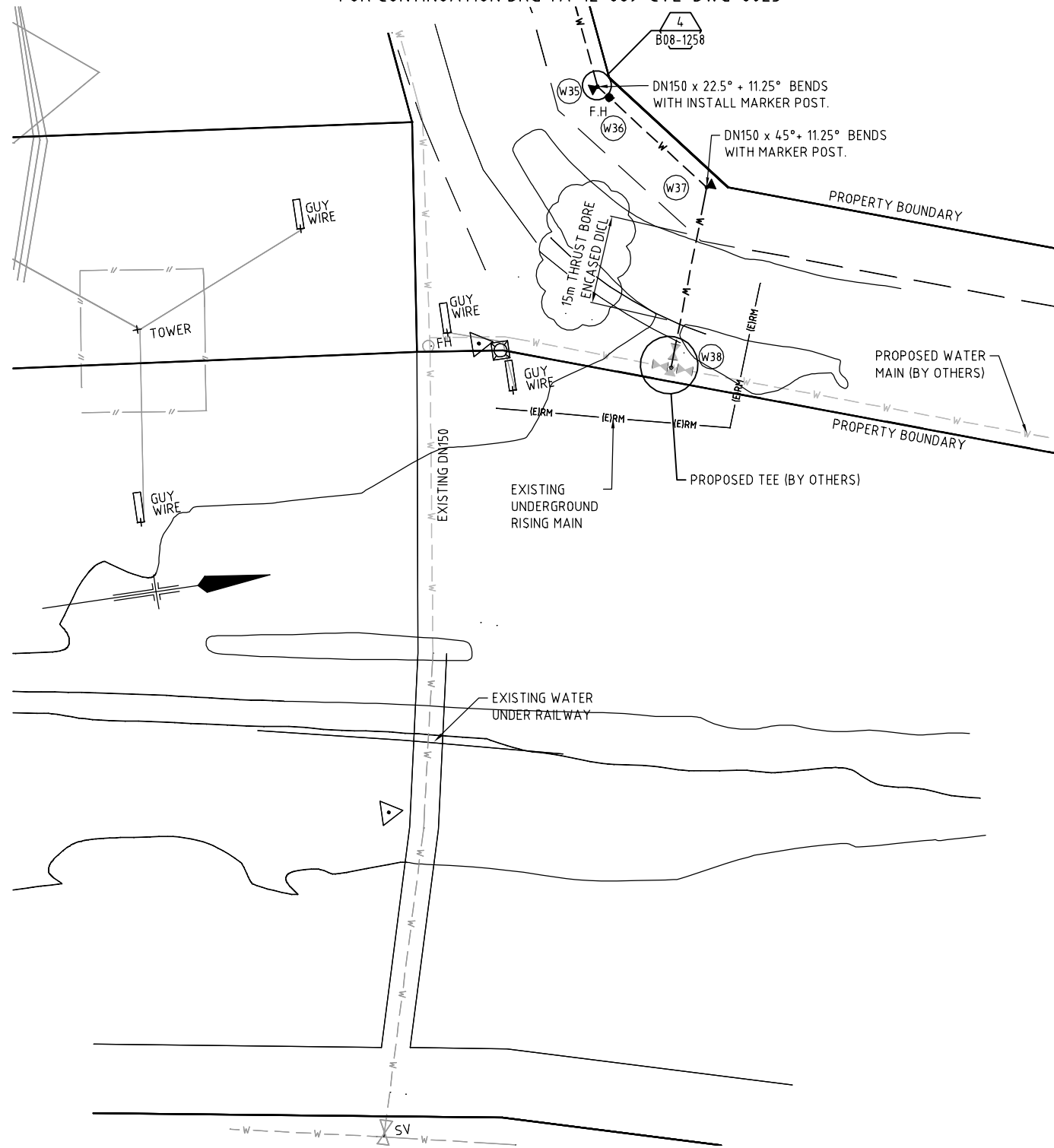
1. WATER PIPES SHALL BE DUCTILE IRON CEMENT LINED (DICL) (CLASS K9), OR PVC-0 (CLASS 16 SERIES 2), WITH DICL FITTINGS, UNLESS OTHERWISE NOTED. ALL DUCTILE IRON PIPES AND FITTINGS SHALL BE WRAPPED IN POLYETHYLENE SLEEVING ACCORDING TO STANDARD DRAWING NOS W1-2-17A & W1-2-17B.
2. WATER MAINS SHALL BE OFFSET FROM PROPERTY BOUNDARIES A DISTANCE OF 2.4m IN ROAD RESERVES AND 1.5m IN PRIVATE PROPERTY, EXCEPT WHERE SHOWN OTHERWISE ON THE DRAWINGS.
3. ALL BENDS, TEES AND END CAPS TO BE SUPPORTED BY THRUST BLOCKS. THE COATING ON THE FITTING SHALL BE FULLY PROTECTED BY A FELT OR GEOTEXTILE BARRIER WHEN THE THRUST BLOCK IS POURED AND THRUST BLOCKS MUST NOT OVERLAP THE JOINT.
4. WATERMANS SHALL BE LAID OVER STORM WATER PIPES WHERE THE ALIGNMENTS CROSS.
5. ALL WATERMAIN PIPES UNDER CARRIAGEWAYS ARE TO BE DICL AND EXTEND 1.0M (MIN) BEYOND THE BACK OF THE KERB.
6. VALVE AND HYDRANT MARKER POSTS TO BE CLEARLY LABELLED WITH OFFSET DISTANCE FROM MARKER TO FITTING. MARKER POSTS IN ACCORDANCE WITH POWER AND WATER PRODUCTS MANUAL SV.75X75X2.5 SHS GALVANISED POST, FH 100X50X2.0 RHS GALVANISED POST.
7. STAINLESS STEEL TRACE WIRE 1.6MM DIAMETER TO BE JOINTED WITH PURPOSE MADE LUGS AND TESTED FOR ELECTRICAL CONTINUITY. TEST TO BE WITNESSED BY THE CERTIFIER. THE WIRE IS TO BE BROUGHT TO THE SURFACE (LOOPED) AT ALL VALVES AND FIRE HYDRANTS. THE WIRE IS TO REMAIN CLEAR OF THE VALVE STEM AND KEY DURING OPERATION.
8. WATERMANS INCLUDING ALL LOT SERVICES TO BE HYDROSTATICALLY TESTED TO 1000KPA, DISINFECTED, FLUSHED AND BACTERIOLOGICALLY TESTED TO POWER AND WATER REQUIREMENTS; SEE CUSTOMER HANDOUT NO.5.
9. FOR VACANT LOTS WHERE THERE IS NO INTENTION TO BUILD IN THE NEAR FUTURE, FINISH THE WATER SERVICE AT A STAINLESS STEEL BALL VALVE WHICH IS TO BE TURNED OFF, PLUGGED WITH A THREADED PLUG AND WRAPPED IN PLASTIC. THE VALVE IS TO BE LOCATED 300M WITHIN THE LOT BOUNDARY. MARKER TAPE AND STAINLESS STEEL TRACE WIRE TO BE BROUGHT TO THE SURFACE DIRECTLY ABOVE THE VALVE. PROVIDE ACCURATE AS CONSTRUCTED LOCATION DIMENSIONS FOR TERMINATED SERVICES AND SERVICE ISOLATION VALVES.
10. THE FOLLOWING CHANGES APPLY TO POWER AND WATER STANDARD DRAWING NO W1-1-13. READITAP CONNECTORS FITTED WITH SS BALL VALVES FOR ALL CONNECTIONS OFF NEW MAINS. FOR NEW CONNECTIONS OFF EXISTING MAINS USE A DR BRASS FERRULE COCK. FIT A SS BALL VALVE 300MM INSIDE THE PROPERTY BOUNDARY IMMEDIATELY PRIOR TO THE RISER SECTION.
11. SERVICE UPSTAND PIPES SHALL BE PROTECTED BY TEMPORARY POSTS OR FENCING AND THE PIPE PLUGGED WITH A THREADED BRASS CAP UNTIL THE INSTALLATION OF THE METER.
12. TO RECONNECT ALL EXISTING ON LOT PLUMBING ONLY TO THE NEW WATER METER. SELF-CERTIFYING PLUMBER TO CERTIFY THAT ALL CROSS BOUNDARY CONNECTIONS HAVE BEEN REMOVED AND THAT THE WATER METER SUPPLIES WATER TO ONLY THAT LOT. THIS CERTIFICATION IS REQUIRED FOR EVERY LOT INDIVIDUALLY. RETURN TO PWC.
13. AS CONSTRUCTED DRAWINGS FOR WATER ARE TO SHOW POSITION (CO-ORDINATES TO MGA94 AND LEVELS TO AHD) FOR ALL VALVES, FIRE HYDRANTS, TEES, BENDS, LINE ENDS. SHOW SEPARATION DISTANCES/LEVELS FOR INTERSECTING SERVICES. SHOW ALL OTHER VALUES REQUIRED TO CERTIFY COMPLIANCE OF THE WORKS. PROVIDE MANUFACTURER AND MODEL DETAILS FOR ALL MAIN COMPONENTS.
14. CERTIFICATION DOCUMENTATION MUST INCLUDE AS CONSTRUCTED DRAWINGS, HYDROSTATIC TEST RESULTS, DISINFECTION TEST RESULTS, MICROBIOLOGICAL TEST RESULTS, COMPACTION TEST RESULTS, TRACE WIRE CONTINUITY TEST RESULTS, BEDDING GRADING CURVES, CONCRETE TEST RESULTS, OTHER INSPECTION REPORTS AND PHOTOGRAPHS, SURVEY DATA FOR LOT CONNECTIONS AS WELL AS THE OVERALL CERTIFICATION ITSELF.
15. POWER AND WATER PERSONNEL SHALL INSTALL ALL WATER AND SEWER CONNECTIONS TO EXISTING MAINS ONLY AFTER ACCEPTANCE OF THE WORK HAS BEEN ACHIEVED. THE CONSTRUCTOR IS RESPONSIBLE FOR ALL CONNECTION FEES, MATERIALS AND LABOUR FOR EXCAVATION, BACKFILLING UNDER ROADS / OPEN DRAINS AND REINSTATEMENT.
16. MARKED TAPE AND 1.6mm SS TRACE WIRE TO BE INSTALLED ABOVE ALL MAINS TO STANDARD DRAWINGS.
17. ALL PIPE BEDDING TO BE TYPE 1 UNLESS NOTED OTHERWISE.
18. FOR DN 100 - 225 THRUST BLOCK DETAILS REFER PWC STD W1-2-05.
19. WHERE ELECTRIC CABLES CROSS WATER MAINS, CONCRETE PROTECTION REQUIRED OVER ELECT. CABLES 1m EACH SIDE OF WATER MAIN CROSSING ROVI.
20. AFTER CONNECTION OF NEW WORKS REMOVE THE EXISTING WATER METER ASSEMBLY IN ITS ENTIRETY INCLUDING REMOVING THE TEE FROM THE MAIN AND REPLACING WITH PIPE AND RETURN WATER METER TO PWC.
21. ALL SLUICE VALVES SHALL BE RESILIENT SEATED FLANGED CLASS 16 TO PWC STANDARDS WITH RAISED FLANGES, UNLESS NOTED OTHERWISE.
22. ALL FLANGES SHALL BE CLASS 16 RAISED COMPLYING WITH AS 4087 FIGURE B5 FOR DICL AND FIGURE B7 FOR MSCL, UNLESS NOTED OTHERWISE.
23. JOINT DEFLECTION AND BENDING ARE NOT ALLOWED FOR PVC PIPES. USE SO-SO DICL CONNECTORS TO ACHIEVE A MAXIMUM 2 DEGREE JOINT DEFLECTION OR BENDS FOR LARGER DEFLECTION.
24. WATER MAIN MARKER POSTS ARE TO BE INSTALLED ON ALL BENDS ALONG KARNT ROAD, S PER PWC STANDARD DRAWING W1-02-03H

AS BUILT DISCLAIMER
 GHD HAS PREPARED THIS DRAWING ON THE BASIS OF INFORMATION PROVIDED BY:
 FYFE
 WHICH GHD HAS NOT INDEPENDENTLY VERIFIED OR CHECKED BEYOND THE AGREED SCOPE OF WORK.
 GHD EXPRESSLY DISCLAIMS RESPONSIBILITY IN CONNECTION WITH THE INFORMATION PROVIDED BY THE ABOVE PARTY FOR THE PRODUCTION OF THE DRAWING.

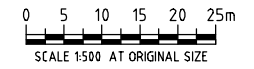
FOR CONTINUATION REFER DRG R08-1258

AS CONSTRUCTED

G:\4\3\21659\CADD\Drawings\Karnte\R08-1257.dwg		0 5 10 15 20 25m SCALE 1500 AT ORIGINAL SIZE		 Northern Territory Government Department of Planning and Infrastructure territory housing		 Territory Alliance building together		Strategic Indigenous Housing and Infrastructure Program ALICE SPRINGS PACKAGE 12 KARNT CAMP - 069 LOT - 7850 WATER LAYOUT PLAN SHEET 2 OF 3	
REV	DATE	REVISION DESCRIPTION	ORIG	CKD	ENG	QA	APPD	SHEET: A3	SCALE: AS SHOWN @ A3
3	03-04-13	ADDED TOP OF PIPE DEPTHS							
2	21-03-13	CORRECTIONS MADE							
1	18-02-13	AS CONSTRUCTED							
0	13-02-13	AS CONSTRUCTED							
ACONEX NO: TA-12-069-CVL-DWG-0025 DPI NO: R08-1257								DRAWING NO: R08-1257	
Copyright © Territory Alliance									REV: 3 5761



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AS CONSTRUCTED

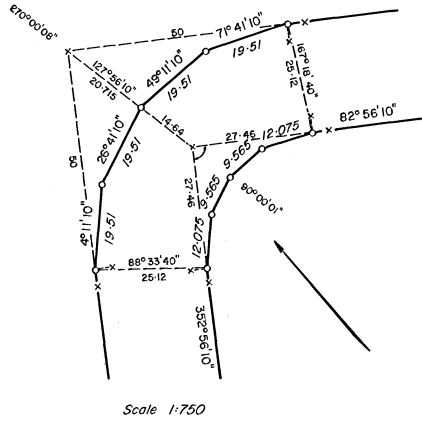
REV	DATE	REVISION DESCRIPTION	ORIG	CKD	ENG	QA	APPD	SHEET: A3	SCALE: AS SHOWN @ A3
3	22.04.13	CORRECTION ON ROAD CROSSING NOTE							
2	21.03.13	CORRECTIONS MADE							
1	18.02.13	AS CONSTRUCTED							
0	13.02.13	AS CONSTRUCTED							



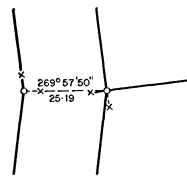
Strategic Indigenous Housing and Infrastructure Program
 ACONEX NO: TA-12-069-CVL-DWG-0026
 DPI NO: R08-1258

ALICE SPRINGS PACKAGE 12
 KARTE CAMP- 069 LOT- 7850
 WATER LAYOUT PLAN SHEET 3 OF 3
 DRAWING NO: R08-1258
 REV: 3
 5762

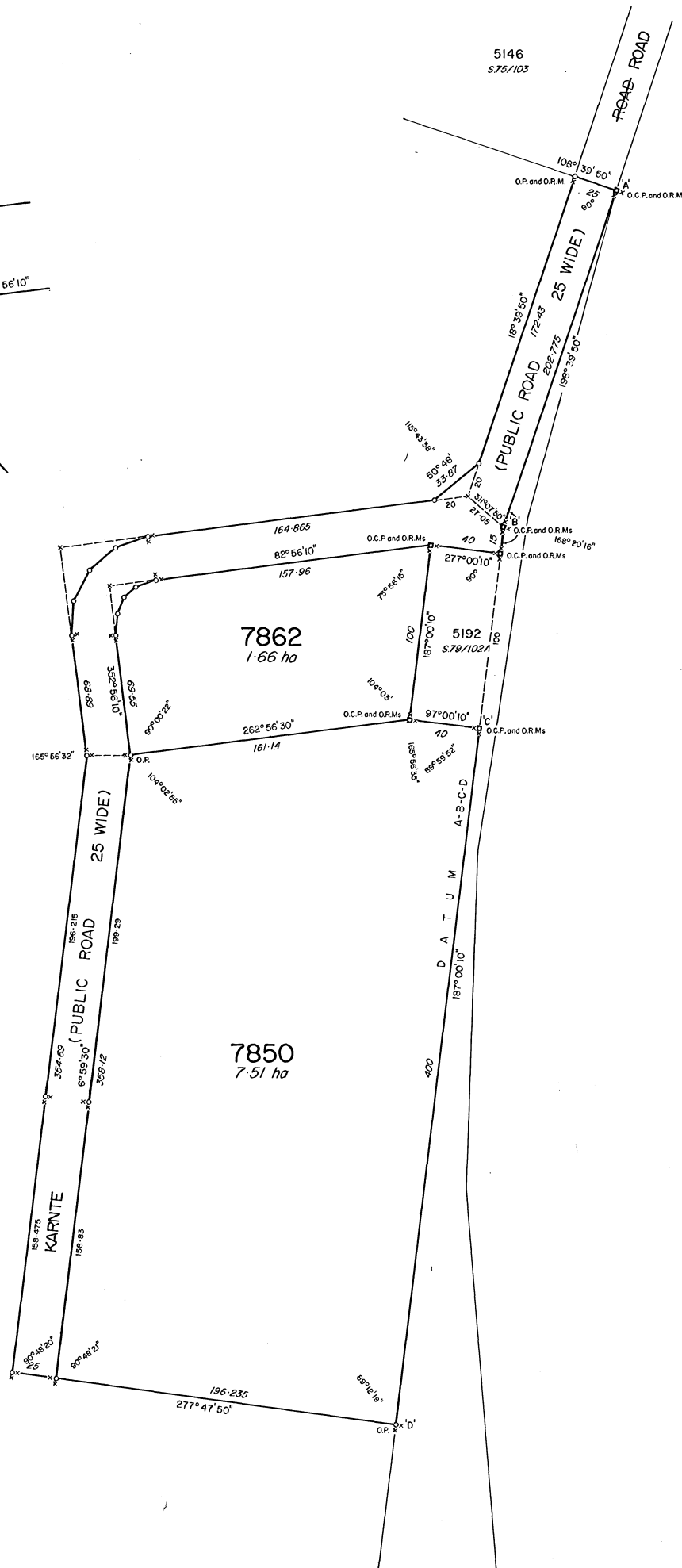
SUPERSEDES S.82/46



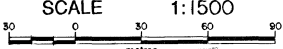


Scale 1:750



Scale 1:1000



Department of Lands  Northern Territory	I, TERRENCE LEONARD GADSBY , hereby certify that the survey represented on this plan was carried out by me or under my immediate supervision and was completed on 2.10.87 and that this survey has been executed in accordance with the Licensed Surveyors Act and the Directions thereunder. <i>T.L. Gadsby</i> Licensed Surveyor Date: 2.10.87	Notes: Reference Marks are of one metre unless otherwise shown.	Field Book S.87/59 Drawn D.M. WHITE 2-10-87 Examined <i>[Signature]</i> 27-10-87	 Grid Bearings AZIMUTH Assumed from S.79/102A Observed at	LEGEND Concrete Post ■ Concrete Block □ Peg or Wooden Post ○ Reference Mark x Lockspit + Fence Post ⊗	LOTS 7850 AND 7862 TOWN OF ALICE SPRINGS SCALE 1:1500  S.87/59
	SURVEY APPROVED <i>S.W. Cathals</i> Delegate of the Surveyor - General Date: 28.10.87		Map Reference ALICE SPRINGS 1:2,000 SHEET 89-88 ALICE SPRINGS 1:5,000 SHEET 15-14			

WARNING - Damaged or crossed plan will be rejected

Duplicate Certificate as to Title issued? No

SEARCH CERTIFICATE

CROWN LEASE IN PERPETUITY 01111

Lot 7850 Town of Alice Springs from plan(s) S 87/059

Area under title is 7 hectares 5100 square metres

Owner:

Karnte Aboriginal Corporation
of PO Box 8070, Alice Springs NT 0871

Registered Date	Dealing Number	Description
		Previous title is Volume 622 Folio 184
09/06/2010	728360	Underlease to Northern Territory of Australia - expiring 02/12/2012 (728337)
09/06/2010	728337	Sublease to Executive Director of Township Leasing - expiring 02/12/2049
End of Dealings		

Commencing: 22 January 1993

Expiring: In Perpetuity

Reservations:

All reservations and rights to which this grant is made subject by the Crown Lands Act.

Provisions:

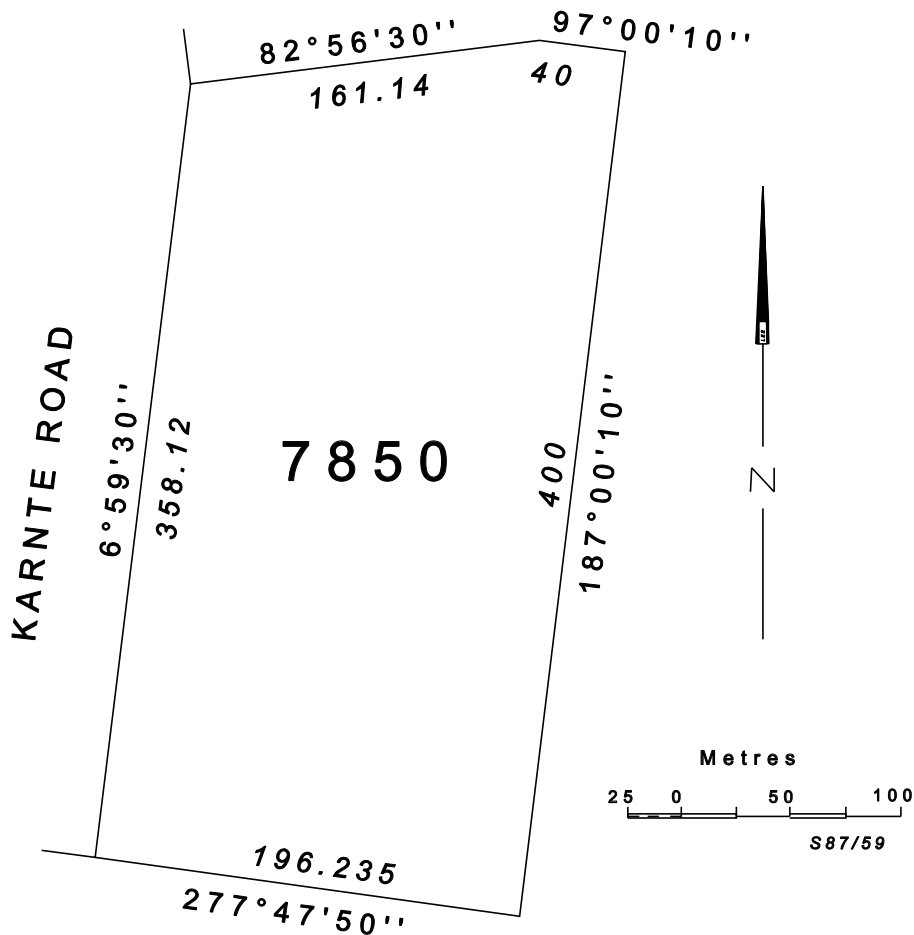
1. The purpose of the lease ("the lease purpose") is Aboriginal Residential Housing Area.
2. The annual rent for the lease will be 10 cents if and when demanded.
3. If the rent referred to in provision 2 is unpaid for six months or more, the lease will be liable to be forfeited.
4. This lease is granted under and subject to the Crown Lands 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 will, subject to the Crown Lands Act and Regulations, be liable to be determined and forfeited for non-compliance with any such covenant or condition.
5. The Lessee, having paid all rent due to be paid by Lessee may at any time surrender the lease in the manner prescribed under the Crown Lands Act.
6. For the purposes of sections 58 and 59 of the Crown Lands Act the Lessee agrees that the Minister may at his absolute discretion determine the Lessee's rights in improvements and whether compensation is payable for improvements following surrender, expiry, termination or forfeiture of this lease.

Lease Conditions:

1. Subject to the Crown Lands Act the Lessee will not use the land for a purpose other than the lease purpose.
2. The Lessee will pay rates and taxes which may at any time become due in respect to the leased land.
3. The Lessee will pay the rent annually in advance.
4. The Lessee will maintain and repair and keep in repair all such boundary fencing to the satisfaction of the Minister.

Duplicate Certificate as to Title issued? No

5. The Lessee will at all times maintain and repair to a value of not less than one million three hundred thousand dollars and keep in repair all buildings and improvements on the leased land all to the satisfaction of the Minister.
6. The Lessee will maintain all landscaping in accordance with the approved plan, and to the satisfaction of the Minister.
7. The Lessee will maintain all car parking areas, internal driveways and footpaths to the satisfaction of the Regional Director (South), Department of Lands, Housing and Local Government.
8. All developments will be in accordance with any Planning Instrument and or any Instrument of Determination issued under the Planning Act affecting the land the subject of the lease.
9. The Lessee will in respect of land included in the lease, ensure that at all times and to the satisfaction of the Minister, the land is kept clean, tidy and free from weeds, debris, dry herbage, rubbish, carcasses of animals and other unsightly or offensive matter and harbour for insects, pests and the breeding of mosquitoes.
10. The Lessee covenants with the Minister that if the lessee fails to observe and carry out or to cause to be observed or carried out the requirements of Condition 9 above, the Territory will have a right to enter onto the leased premises and do all things necessary to that end and the expense and cost thereof (as determined by the Minister) shall be borne and payable by the Lessee on demand.
11. The Lessee acknowledges that services, including road access, electricity supply and water supply are not available to the lease boundary and acknowledges that the Northern Territory Government is not obliged to provide such services.



Date Registered: 09/06/2010
Duplicate Certificate as to Title issued? No

Volume 747 Folio 788



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 07850 Town of Alice Springs plan(s) S 87/059

(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 747 788 (order 1)

Tenure Type

CROWN LEASE IN PERPETUITY 1111

Tenure Status

Current

Area Under Title

7 hectares 5100 square metres

Owners

Karnte 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 622 184 (order 1)

CUCL 204 096 (order 1)

CUCL 200 058 (order 1)

Visit the website http://www.nt.gov.au/justice/bdm/land_title_office/

Custodian - Surveyor General (+61 8 8995 5362)**Address**

165 KARNTTE RD, ARUMBERA

Survey Plan

S 87/059

Survey Status

Approved

Parcel Status

CURRENT

Parcel Area

7 hectares, 5100 square metres

Map Reference

Code 010 Scale 5000 Sheet 15.14

Code 010 Scale 2500 Sheet 29.28

Parent Parcels

Lot 05825 Town of Alice Springs plan(s) S 82/046

Parcel Comments

ISSUE OF A CROWN LEASE (TERM) TO KARNTTE ABORIGINAL CORPORATION - S87/059. NOTICE OF DETERMINATION NTG G49 09/12/1987. ACCEPTANCE OF OFFER OF CL(T) TO KARNTTE ABORIGINAL CORPORATION FOR RESIDENTIAL HOUSING AREA. ADJOINING ROAD WIDENING - S90/29. ADMINISTRATIVE LOTS 10147 TO 10169 ALLOCATED UNDER CONNETERRITORY ALLIANCE PROJECT - 98/9249. KNOWN AS "KARNTTE" TOWN CAMP. INTERNAL ROADS NAMED NTG G42 19/10/2011. ADMINISTRATIVE LOTS 10147 TO 10169 AND 10289 TO 10292 - S2012/007.

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 07850 Town of Alice Springs

Unimproved Capital Value

\$530,000 on 01/07/2015

\$578,000 on 01/07/2012

\$550,000 on 01/07/2009

\$385,000 on 01/07/2006

\$285,000 on 01/07/2003

\$230,000 on 01/07/2000

\$202,000 on 01/07/1997

\$156,000 on 01/07/1994

\$132,000 on 01/07/1991

\$120,000 on 01/01/1989

\$80,000 on 01/01/1986

Valuation Improvements

28/05/1990 House x 12

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: alterations to existing, addition of verandah
Number of Residential Units:
Australian Bureau of Statistics Type: (none found)
Building Class: Assembly building
Area: 245 square metres
Certification: Assembly building - Full Code - *issued on 16/06/2015*

Application Number: 20 of 21
Description: KC30 - New concrete and steel residential 3 bedroom dwelling (Type H6SAS) and enclosed verandah
Number of Residential 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 14/12/2011*
Non-habitable building - Full Code - *issued on 14/12/2011*

Application Number: 19 of 21
Description: Refurbishment - House 9
Number of Residential Units: 1
Australian Bureau of Statistics Type: Separate House
Building Class: Single Dwelling
Area: (none found)
Certification: Single Dwelling - Full Code - *issued on 22/09/2011*

Application Number: 18 of 21
Description: Refurbishment - House 8
Number of Residential Units: 1
Australian Bureau of Statistics Type: Separate House
Building Class: Single Dwelling
Area: (none found)
Certification: Single Dwelling - Full Code - *issued on 06/12/2011*

Application Number: 17 of 21
Description: Refurbishment - House 7
Number of Residential Units: 1
Australian Bureau of Statistics Type: Separate House
Building Class: Single Dwelling
Area: (none found)
Certification: Single Dwelling - Full Code - *issued on 22/09/2011*

Application Number: 16 of 21
Description: Refurbishment - House 6
Number of Residential Units: 1
Australian Bureau of Statistics Type: Separate House
Building Class: Single Dwelling
Area: (none found)
Certification: Single Dwelling - Full Code - *issued on 22/09/2011*

Application Number: 15 of 21
Description: Refurbishment - House 5
Number of Residential Units: 1
Australian Bureau of Statistics Type: Separate House
Building Class: Single Dwelling
Area: (none found)
Certification: Single Dwelling - Full Code - *issued on 12/02/2013*

Application Number: 14 of 21
Description: Refurbishment - House 4
Number of Residential Units: 1
Australian Bureau of Statistics Type: Separate House
Building Class: Single Dwelling
Area: (none found)
Certification: Single Dwelling - Full Code - *issued on 16/09/2011*

Application Number: 13 of 21
Description: HOUSE KC9900 - New concrete and steel residential 3 bedroom dwelling (Type H6SAS)
Number of Residential Units: 1
Australian Bureau of Statistics Type: Separate House
Building Class: Single Dwelling
Area: 139 square metres
Certification: Single Dwelling - Full Code - *issued on 05/12/2011*

Application Number: 12 of 21
Description: HOUSE KC21A & KC21B - New concrete and steel residential duplex building (Type H4DAS)
Number of Residential Units: 2
Australian Bureau of Statistics Type: Semi-detached town house of one storey
Building Class: Single Dwelling
Area: 228 square metres
Certification: Single Dwelling - Full Code - *issued on 05/12/2011*

Application Number: 11 of 21
Description: HOUSE KC17A & KC17B - New concrete and steel residential duplex building (Type H4DAS)
Number of Residential Units: 2

Australian Bureau of Statistics Type:	Semi-detached town house of one storey
Building Class:	Single Dwelling
Area:	228 square metres
Certification:	Single Dwelling - Full Code - <i>issued on 06/12/2011</i>
<hr/>	
Application Number:	10 of 21
Description:	HOUSE KC9 - New concrete and steel residential 3 bedroom dwelling (Type H6AS)
Number of Residential Units:	1
Australian Bureau of Statistics Type:	Separate House
Building Class:	Single Dwelling
Area:	136 square metres
Certification:	Single Dwelling - Full Code - <i>issued on 02/12/2011</i>
<hr/>	
Application Number:	9 of 21
Description:	Dwelling Alterations [House 1,10]
Number of Residential Units:	2
Australian Bureau of Statistics Type:	Separate House
Building Class:	Single Dwelling
Area:	(none found)
Certification:	Single Dwelling - Full Code - <i>issued on 23/09/2011</i>
<hr/>	
Application Number:	8 of 21
Description:	Dwelling alterations to house 02, 03 & 12 including new kitchens, wet areas, floor linings, windows and doors, air conditioning and heating
Number of Residential Units:	1
Australian Bureau of Statistics Type:	Separate House
Building Class:	Single Dwelling
Area:	(none found)
Certification:	Single Dwelling - Full Code - <i>issued on 16/11/2010</i>
<hr/>	
Application Number:	7 of 21
Description:	R&M-House 14-Community Centre
Number of Residential Units:	
Australian Bureau of Statistics Type:	(none found)
Building Class:	Assembly building
Area:	200 square metres
Certification:	Assembly building - Full Code - <i>issued on 09/02/2009</i>
<hr/>	
Application Number:	6 of 21
Description:	Dwelling Alterations
Number of Residential Units:	1
Australian Bureau of Statistics Type:	Separate House
Building Class:	Single Dwelling
Area:	(none found)
Certification:	Single Dwelling - Full Code - <i>issued on 02/07/2009</i>

Application Number: 4 of 21
Description: DWELLING ADDITIONS / ALTERATIONS
Number of Residential Units: 1
Australian Bureau of Statistics Type: Separate House
Building Class: Single Dwelling
Area: 0 square metres
Certification: Single Dwelling - Full Code - *issued on 14/06/2000*

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 12
Power Water - Water 14

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>

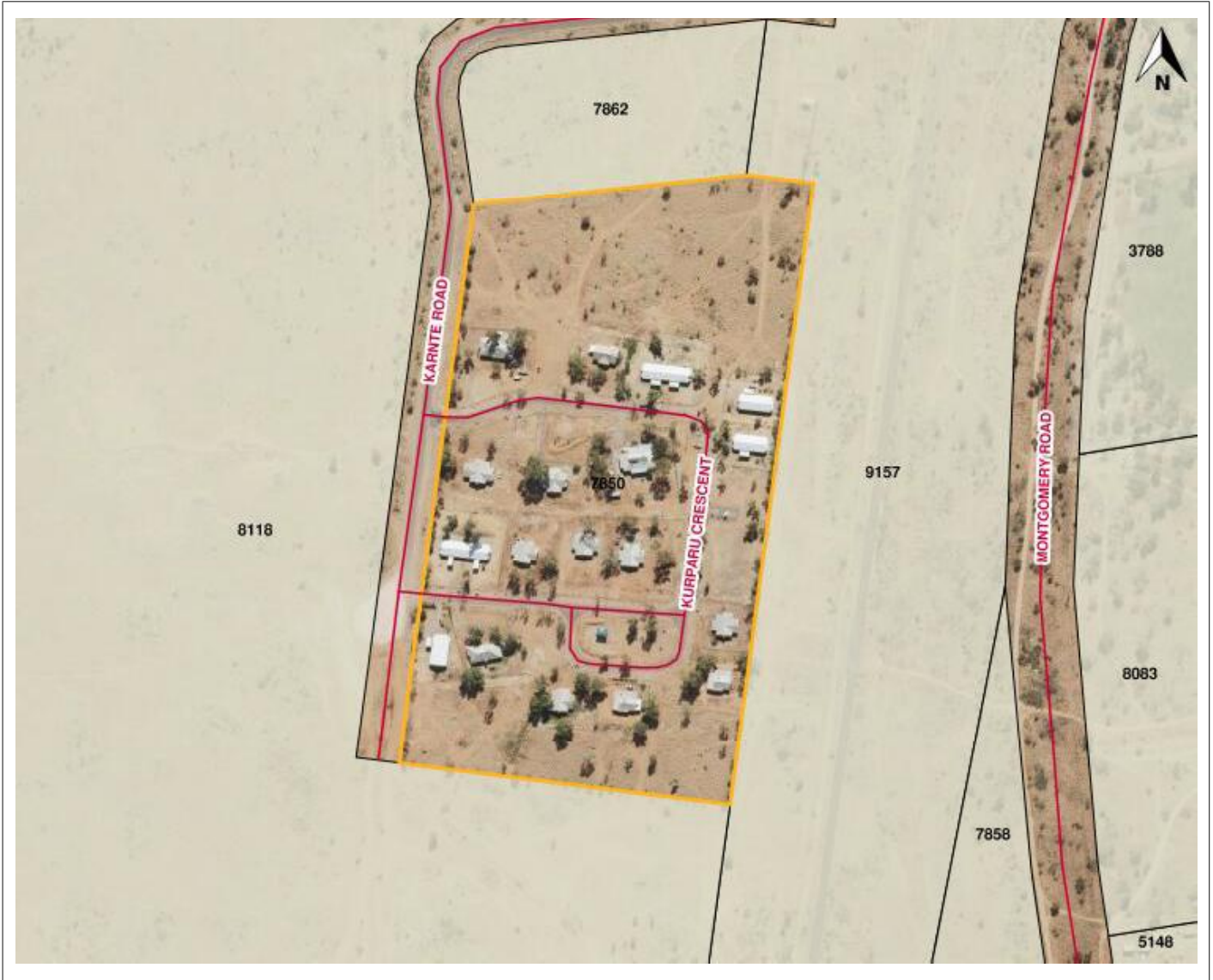
Custodian - Heritage Branch (+61 8 8999 5039)

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 Voltage 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 Alwerrkng (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	Ipiye Ipiye (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	Borrooloola	Mara	28	29	2	11	6187	12610	100	130.5	203	Two transformers for this Town Camp.
							11	6545	10203				
	229	Borrooloola	Garawa 1	16	14		11	6546	10166	100	72	112	Two transformers for this Town Camp.
							11	6332	4890	100			
	278	Borrooloola	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	Borrooloola	Garawa 2	11	11		11	6189	2669	25	49.5	77		

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

Yarrenty Altere (Larapinta Valley)

Yarrenty Altere (Larapinta Valley)

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,
- 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 Larapinta Valley community on 16 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 at Larapinta Valley is owned by the Yarrenyty-Arltere Association Incorporated, however is the responsibility of Tangentyere Council Incorporated to maintain. Power and Water Corporation noted that they are currently responsible for maintaining the sewer network to the house connections, however this is not reflected on any drawings or by any maintenance agreements.

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 Larapinta Valley is 35. 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. A comprehensive review of all available documentation, including reviewing as-constructed drawings and having discussions with Power and Water Corporation was conducted. The following table compares the assets that have been constructed, according to the as-constructed drawings, and the assets assessed during the inspections conducted by Aurecon.

Table 2 Sewerage assets inspected

Asset type	Number of assets as per documentation	Number of assets assessed during inspection
Manholes	50	14

As per Table 2, a number of manholes were not assessed during the inspections, this is likely due to access limitations such as manholes being located within private property, outside of the town camp, or being covered by grass or debris. As other manholes along the same sewer line were investigated, it is assumed that all assets have been constructed as per the as-constructed drawings. The condition ratings of the manholes inspected are as follows:

Table 3 Sewer condition assessment

Asset	1 Very Poor	2 Poor	3 Good	4 Very Good	5 Excellent	Total
Manhole				9	5	14



Figure 1 Sewer manhole, condition: *excellent*



Figure 2 Sewer manhole, condition: *very good*

The sewer manholes were generally in very good and excellent condition. The SIHIP program produced detailed drawings for the sewerage infrastructure in Larapinta Valley, and it appears that these upgrades have been completed. A number of the manholes were labelled as being constructed in 2012.

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 Larapinta Valley is 34, this multiplied by 9 EP per house gives a total current EP of 306. The capacity of the existing sewer was then calculated. The percentage shows how much of the pipe capacity is currently being used.

Table 4 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	306	150	1.0	16.50	3.12	19%

Table 4 above shows that the capacity of the existing sewer network is adequate for the current peak population.

The new pipework does not follow the road reserve, however a 3 m wide sewer easement is shown on the as constructed drawings where the pipe is not within the road reserve. The Land Title, refer Appendices, does not show any easements over the sewerage infrastructure.

The new sewer network complies with PWC standards and no upgrades are required. It is recommended that if the infrastructure is to be gifted to PWC, then easements should be created.

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

No upgrades required.

6 Water supply

6.1 Ownership and boundaries

The water supply infrastructure was upgraded to as part of the SIHIP program. The water mains servicing Larapinta Valley are a combination of DN225, DN150 and DN100 PVC pipes with network looping incorporated throughout the community, refer Appendices.

The water reticulation appears to have a single supply point at the community boundary where a bulk water meter is located. The as-constructed drawings indicate a section of the water main inside a 5 m wide dedicated water easement. However, the Land Titles show that there are no formal easements within the community.

The water supply assets within Larapinta Valley are believed to be owned by Yarrenyty-Arltere Association Incorporated, but are the responsibility of Tangentyere Council Incorporated to maintain. The water is supplied from PWC owned water main outside of the community.

PWC have advised they currently maintain the water assets up the residential lot water meters, although there is no formal agreement covering this maintenance.

6.1.1 Connection methods and billing

Despite the presence of a bulk water meter, PWC have advised that the water usage is currently charged as a fixed daily rate for 35 house water meters within Hidden Valley. The bill is issued to the Department of Housing and Community Development. It is not known what contribution the residents make towards water bills.

It is proposed that PWC measure the water supply to the entire community at the 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 Yarrenyty-Arltere Association Incorporated. 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 28 lot water meters were assessed during the inspection and Larapinta is believed to contain 34 dwellings. Therefore, up to an additional six residential lot 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 assessed above ground; no below ground services were inspected. A comprehensive review of all available documentation, including reviewing as-constructed drawings and having discussions with Power and Water Corporation was conducted. The following table compares the assets that have

been constructed, according to the as-constructed drawings, and the assets assessed during the inspections conducted by Aurecon.

Table 5 Water supply assets inspected

Asset type	Number of assets as per documentation	Number of assets assessed during inspection
Fire hydrants	23	23
Water meter (residential lots)	35	30
Taps	-	2
Water meter (bulk)	-	2

In contrast to Table 5, there were four fire hydrants which were not assessed, whilst four additional fire hydrants were assessed which are not shown on the available documentation. Of the four hydrants not shown on the as-constructed drawings, two were located on the boundary of the camp and thus may not be serviced by this water reticulation network. The remaining two hydrants not shown, appear to be part of an abandoned network.

A number of water meters were not assessed during the inspections, this is likely due to overgrown flora or restricted property access as previously discussed.

The condition of each asset is as follows:

Table 6 Water asset condition assessment

Asset	1 Very Poor	2 Poor	3 Good	4 Very Good	5 Excellent	Total
Fire hydrants		1	8	11	3	23
Taps	2					2
Water meter (bulk)				2		2
Water meter (residential lots)		3	11	12	2	28



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



Figure 4 Tap, condition: *very poor*



Figure 5 Fire hydrant, condition: *good*



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

Two taps were found to be in very poor condition and need to be replaced. Additionally three water meters required minor maintenance works. One of the water meter requires a handle replacement. General clearing is required for the other two.

The fire hydrants were generally in very good condition. Some fire hydrants were found to be partially covered by loose sand. It is recommended that the fire hydrants are cleared of the sand to maintain clear visibility. A total of eight required clearing. In addition, three fire hydrants should be repainted as the existing paint is peeling.

6.3 Current performance and risks

The current peak hour water 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 7 shows the calculated peak hour demand.

Table 7 Current water demand

Total dwellings	EP	Demand (l/s)	Peak hour demand (l/s)
34	306	4.59	13.77

The water reticulation is expected to have sufficient capacity for PWC flow requirements including peak hour and fire flow.

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 Larapinta Valley no additional hydrants are expected to be required.

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 two taps

- Clear rubbish and overgrown grass from two residential water meters
- Replace one water meter handle
- Clear loose soil from covering eight fire hydrants
- Repaint three fire hydrants

Whilst it is proposed that the water usage is measured at the bulk water meter it is recommended that residential lot water meters on the service to each dwelling is maintained. The cost estimates for the upgrades include:

- Install six additional residential lot water meters

7 Roadworks

7.1 Ownership and boundaries

It is the current understanding that the roads within Larapinta are owned by Yarrenyty-Arltere Association Incorporated, but are the responsibility of Tangentyere Council Incorporated to maintain.

The road infrastructure has been upgraded to comply with Alice Springs Town Council requirements, however the upgrades have not been approved for hand over to the ASTC.

7.2 Existing infrastructure condition assessment

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

Road furniture including signs, foot paths and car parks were also inspected where applicable. Table 8 below summarise the condition of the road furniture as assessed during the site inspection.

Table 8 Roadworks condition assessment

Asset	1 Very Poor	2 Poor	3 Good	4 Very Good	5 Excellent	Total
Sign	1		1	9	3	14
Carpark		1				1



Figure 7 Sign, condition: *very poor*



Figure 8 Sign, condition: *excellent*



Figure 9 Carpark, condition: *poor*

The vast majority of signs within Larapinta Valley are in good or very good condition and therefore do not require any works. One sign was rated as very poor will need to be replaced.

The carpark was rated as poor condition due to being unsealed, this is pictured above in Figure 9.



Figure 10 Community road network

Table 9 below details the condition of the roads within the Larapinta Valley for specific segments. Figure 10 shows a map of the community’s road network with the condition ratings, road name, and chainage direction.

Table 9 Road network condition assessment

Road name	Chainage start (km)	Chainage end (km)	Condition (1 to 5)	Defects and associated condition
87_3	0	0.25	5	No defects noted throughout road network of Larapinta Valley
	0.25	0.5	5	
	0.5	0.76	5	
Ebatarinja Court	0	0.15	5	
	0.15	0.29	5	
Forrester Court	0.25	0.34	5	
	0	0.2	5	
Lynch Court	0	0.2	4	
	0.2	0.35	5	
	0	0.2	4	
	0.35	0.55	5	
	0.55	0.66	5	
Obitja Court	0	0.16	4	



Figure 11 Pavement, condition: *excellent*



Figure 12 Pavement, condition: *very good*

7.3 Current performance and risks

The road network in Larapinta Valley was rated as very good or excellent condition since it has only recently been upgraded. The layout of the road network is sufficient for the current number of houses.

It is recommended that the roads are cleaned with a street sweeper to remove any dirt that could potentially block the stormwater drainage pipes. One sign should be replaced, and the carpark should be sealed.

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 following works are recommended to upgrade the current infrastructure;

- Clean road network with a street sweeper
- Replace one sign
- Seal the carpark

8 Stormwater drainage

8.1 Ownership and boundaries

The stormwater drainage infrastructure at Larapinta Valley is owned by the Yarrenyty-Arltere Association Incorporated, however is the responsibility of Tangentyere Council Incorporated 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 10 below summarises the condition of the stormwater assets as assessed during the inspection.

Table 10 Stormwater condition assessment

Asset	1 Very Poor	2 Poor	3 Good	4 Very Good	5 Excellent	Total
Culvert			2	1		3
Letterbox pit			1		1	2
Side entry pit			2	17	39	58
Stormwater manhole					2	2
Swale			2	2		4



Figure 13 Swale, condition: *very good*



Figure 14 Side entry pit, condition: *excellent*



Figure 15 Letterbox pit, condition: *good*



Figure 16 Culver and headwall, condition: *very good*

The Connecting Neighbours Program designed stormwater drainage for the community which appears to have been constructed as all stormwater drainage infrastructure was relatively new and in very good condition.

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. However based on the condition of the stormwater infrastructure assessed it would appear to be operating adequately.

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:

- Clear blockages from three culverts (up to 50% blocked)
- Clear blockages from six side entry pits (up to 30% blocked)
- Clear blockages from one letterbox pit (40% blocked)

9 Community structures

9.1 Ownership and boundaries

The community structures within Larapinta are believed to be owned by Yarrenyty-Artere Association Incorporated, but are the responsibility of Tangentyere Council Incorporated 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 11 Community structures condition assessment

Asset	1 Very Poor	2 Poor	3 Good	4 Very Good	5 Excellent	Total
Bubblers	1			1		2
Playground			1	1		2
Table and chairs				2		2
Basketball court				1		1



Figure 17 Basketball court, condition: *very good*



Figure 18 Bubbler, condition: *very poor*



Figure 19 Table and chairs, condition: *very good*



Figure 20 Playground, condition: *good*

9.3 Current performance and risks

The current community structures are overall in good or very good condition aside from some maintenance issues that need to be fixed along with a general clean to remove graffiti, rubbish and glass.

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:

- Conduct maintenance on one of the water bubblers to identify and fix the issue that's stopping it from working
- Install shade structure over one of the playgrounds, seen in Figure 20
- Paint 'key' lines on basketball court
- Install net on basketball ring
- General clean of all community areas to remove graffiti, rubbish and any glass.

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 its 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 Yarrenty Altere (Larapinta Valley) community electrical reticulation systems is supplied by an overhead HV line from PWCs network. The demarcation point between the PWC network and the community infrastructure is a set of HV links on a pole outside the community. An overhead LV reticulation scheme runs to individual houses. Prepaid meters are utilised in Larapinta Valley dwellings.

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.

Yarrenty Altere (Larapinta Valley) 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 12 shows the condition rating given to the street lights. The street lights were of a low voltage overhead feeder design, sodium lamp type S150C. 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			2			2

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 & S150C. The street lights have a 75% operational rating and 25% in un-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	2	9	33			44

Table 14 shows the condition rating given to the transformer. The transformers were of pole mount substation design. The transformers were visually accessed 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			4			4

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			48			48

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			12			12
Switchboard		5	5			10

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			10			10

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 Larapinta Valley transformer is at 42% of rated capacity based on 4.5kVA/dwelling.

Table 18 Larapinta Valley current demand load vs transformer ratings

Com Id	Community name	Dwellings	Transformer (kVA)	kVA Total @ 4.5kVA	kVA Total @ 7kVA
			100		
87	Yarrenty Altere (Larapinta Valley)	34	63	153	238
			100		
			100		

A tabulated summary of all the community transformers in in Appendicies.

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 four street lights 70W and seven street lights 150W.
- Replace five switchboards inside the metering panel

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 19 Telecommunication pit condition assessment

Asset	1 Very Poor	2 Poor	3 Good	4 Very Good	5 Excellent	Total
Telecommunication pit			15			15

Table 20 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 Yarrenty Altere (Larapinta Valley) is displayed in the Figure 21 below. NBN is available to residents via a fixed telecommunication line on application to an appropriate NBN access provider.

Explore the nbn™ network rollout map

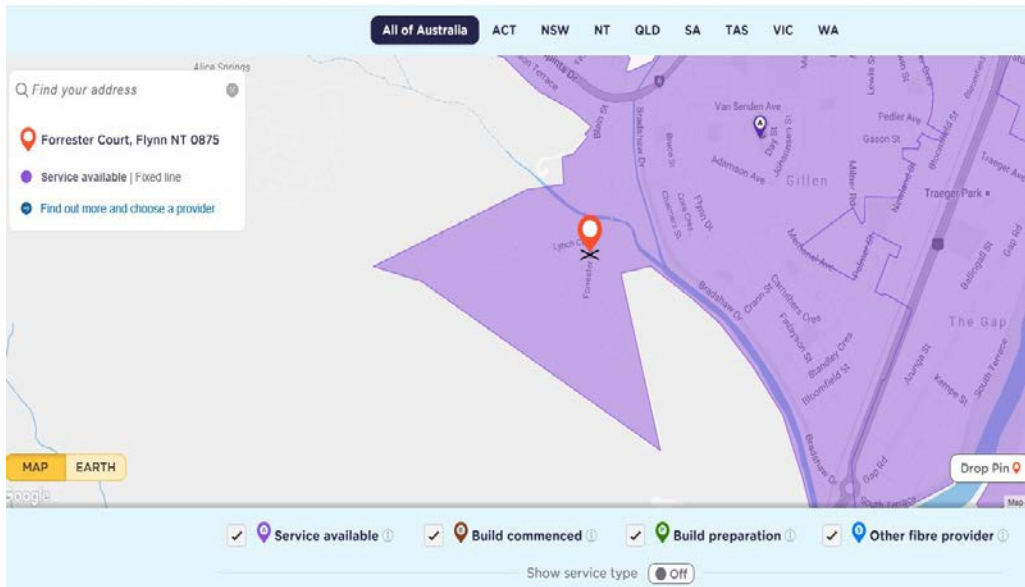


Figure 21 NBN network availability map

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

No works are required at Yarrenty Altere (Larapinta Valley) because NBN is available to residents via fixed telecommunications line on application to an appropriate NBN access provider.

12 Cost estimates

Table 21 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 21 Cost estimates

Infrastructure	Maintenance of existing infrastructure	Upgrades to meet current design
Sewerage	\$ 0	\$ 0
Water supply	\$ 4,000	\$ 26,000
Roadworks	\$ 17,000	\$ 0
Stormwater drainage	\$ 18,000	\$ 0
Community structures	\$ 17,000	\$ 0
Electrical	\$ 24,000	\$ 0
Communications	\$ 0	\$ 0
Miscellaneous provisions	\$ 19,000	\$ 13,000
Total (including GST)	\$ 99,000	\$ 39,000
Grand total	\$ 138,000	

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 Yarrenty Altere (Larapinta Valley) community:

Sewerage

- No upgrades required.

Water supply

- Replace two taps
- Clear rubbish and overgrown grass from two residential water meters
- Replace one water meter handle
- Clear loose soil from covering eight fire hydrants
- Repaint three fire hydrants
- Install six additional residential lot water meters

Roadworks

- Clean road network with a street sweeper
- Replace one sign
- Seal the carpark

Stormwater drainage

- Clear blockages from three culverts (up to 50% blocked)
- Clear blockages from six side entry pits (up to 30% blocked)
- Clear blockages from one letterbox pit (40% blocked)

Community structures

- Conduct maintenance on one of the water bubblers to identify and fix the issue that's stopping it from working
- Install shade structure over one of the playgrounds
- Paint 'key' lines on basketball court
- Install net on basketball ring
- General clean of all community areas to remove graffiti, rubbish and any glass.

Electrical services

- Replace four street lights 70W and seven street lights 150W.
- Replace five switchboards inside the metering panel

Communications

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

Civil inspection reports