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TRAFFIC ASSESMENT REPORT FOR SPORTS AVIATION AUSTRALIA AT THE INTERSECTION OF THE ACCESS OF THE PROPOSED DEVELOPMENT AND THE PRINCES HIGHWAY.

Introduction

The development proposal is to construct accommodation and training facilities for prospective pilots. The proposal is to be constructed in 9 stages with the first stage lasting for 1 year then at six monthly intervals.
This report concerns the estimation of increased traffic flows due to the development over the nine stages and to propose a concept plan for the intersection upgrade at the intersection of the proposed development's access and the Princes Highway.

Existing property access

At present the property is served by a sealed access terminating in a gravel road at a gate which is set back from the highway. The access is angled at approx 45 degrees to the highway. See appendix.
The access type is a hybrid between a Basic Right Turn (BAR) and an Auxiliary lane right turn (AU) in that unlike a BAR, the widened shoulder is sealed, but the widened length, although adequate for a 90 access angle, is inadequate for a 45 degree angle.
The left hand turn out of the access is sufficient for a HRV, having a 15m radius. The right hand turn to the property enables a HRV to turn in as shown in the intersection design drawings.

Traffic estimation

<u>Highway traffic</u>

Through traffic data has been obtained from the RMS for the week ending 23rd October 2015 at hourly intervals over 24 hour periods. See Appendix
An estimation of the present traffic count has been calculated by obtaining traffic counts at the nearest permanent traffic counter north of Bega for the years 2015, 2016 and 2017 from the RMS traffic volume viewer. These AADT counts show that northbound traffic has increased by 1.15% from 2015 to 2016 and 6.95% from 2016 to 2017 and southbound traffic has increased by 1.49% and 8.36% for the same intervals. It is assumed that traffic will continue to increase at the same rate for the duration of the construction of the nine development stages.
It can be seen that peak flows southwards are at 10-12 am and 4-5 pm. The peak flows northwards are 8-9 am and 1-4 pm. The development traffic is mainly between 8-9 am in and 4-5pm out. There is little

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development traffic after 9 am and before 4 pm. Accordingly, the traffic estimation is based on 8-9 am flows and 4-5 pm.

The estimate of highway traffic up to and including the 9 stages is shown below. These figures are calculated from the worst day peak flow.

Morning peak 8 am 9 am Qt1 vph = southbound Qt2 vph = northbound

Stage	1	2	3	4	5	6	7	8	9
Qt1	165	172	180	189	199	209	219	230	242
Qt2	373	386	406	426	447	470	493	518	544

Evening peak 4 pm 5 pm Qt1 vph = southbound Qt2 vph = northbound

Stage	1	2	3	4	5	6	7	8	9
Qt1	302	315	331	347	365	383	402	422	443
Qt2	187	193	203	213	224	235	247	259	272

Development traffic.

There are two types of development flow, an irregular and a regular flow.

The irregular flow is due to students arriving in Australia, leaving Australia and going on recreational bus trips. Students arrive and leave at Canberra airport by 14 seat buses every 3 months. This is on the weekend as lectures and classes are between Monday and Friday. Stage 1 will involve 6 buses every 3 months and this will increase stage by stage to 30 buses every 3 months by stage 9.

Any mid week recreational leave by the students will be by bus and will be after 7 pm at night. There are 7 social days on Sundays during a 3 month stay and this will be roughly between 8 am and 5 pm.

The regular flow is due to employees of the development, with the worst case entry and exit at 8-9 am and 4 -5 pm. There will be less traffic flows earlier than 8-9 and later than 4-5.

The estimated 8-9 am and 4-5 pm flows to and from the development are shown below.

Time	Stage	1	2	3	4	5	6	7	8	9
8-9 am	Management	4	4	4	4	4	4	4	4	4
	Admin	3	3	5	5	5	5	5	5	5
	English intruct.	4	6	8	10	12	14	16	18	20
	Total	11	13	17	19	21	23	25	27	29
	Qr	5	6	8	9	10	11	12	13	14
	Ql	6	7	9	10	11	12	13	14	15
4-5 pm	Flight theory insti	1	2	3	4	5	6	7	8	9
	English instruct	4	6	8	10	12	14	16	18	20
	1/2 ground staff	4	4	6	6	6	6	6	6	6
	Total	9	12	17	20	23	26	29	32	35
	Qr	5	5	9	10	12	13	15	16	18
	Ql	5	6	9	11	12	14	15	17	18

A summary diagram of the total estimated peak highway and employee flows is shown below.

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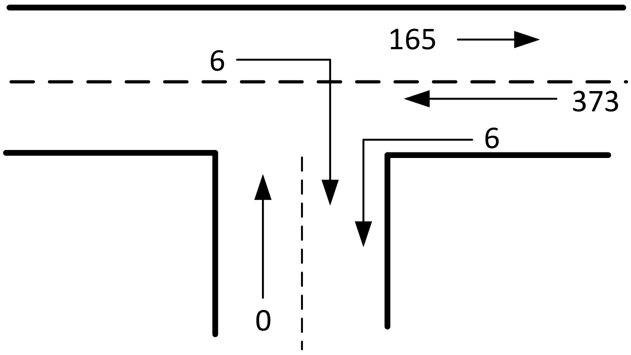
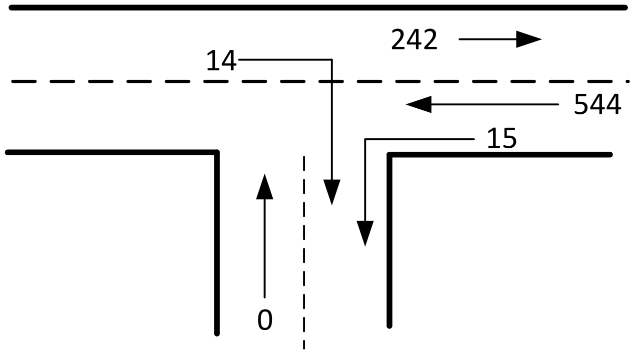
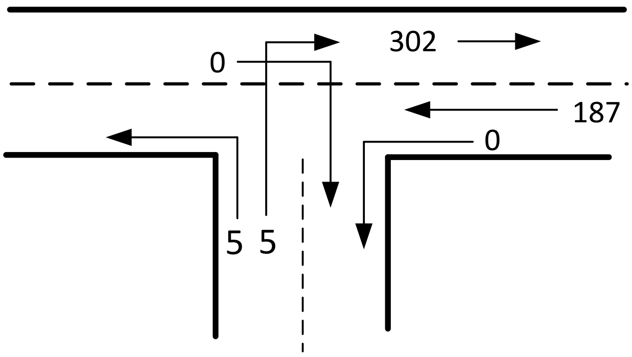
Morning peak stage 1



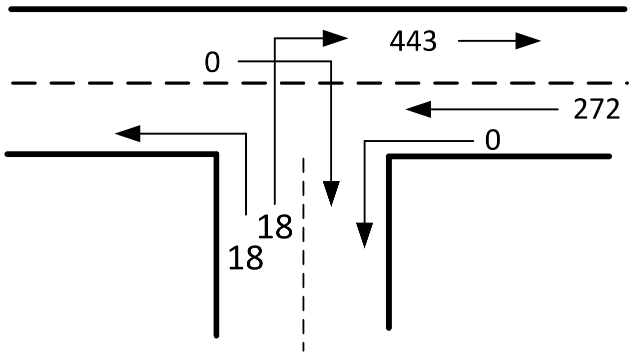
Morning peak stage 9



Evening peak stage 1



Evening peak stage 9



<u>Go kart track traffic flow</u>

According to the owner Lance Ogier of the go-kart track, the facility is closed during the week. One or two people train during the week end. There is a race meeting on Sundays which involves 20-30 people. It not expected that the proposed development will add significantly to the weekend load due to the go-kart track.

Intersection design parameters

<u>Safe intersection sight distance</u>

Safe intersection sight distances have been plotted on the survey plan. North and south long sections have been derived from the survey plan. See Appendix.

The safe intersection sight distance looking north towards the proposed property access is 235 m and is achievable by removing the trees where shown on the drawing.

The safe intersection sight distance looking south towards the intersection is achievable without any intervention.

See photos in Appendix.

<u>Practical Absorption Capacity</u>

It is desirable that turning traffic minimises the interference with through traffic. This is especially desirable for access to a high speed through road. Calculations of practical absorption and waiting times for a BAR BAL intersection for stage 1 and a CHR AUL intersection for the following stages are shown

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below. These calculations are based on the example calculation A4.1.5 in RTA of NSW Intersections at grade in lieu of a sidra analysis. The equations used that in Fig A.4.1 and Fig A4.2(a,b,c,d,e,f,g,h).

The morning RH turn into the development is opposed by northern traffic and also depends on the south traffic so north and south bound are added as major stream flow + left hand turn into development traffic.
This does not apply in the case of a CHR intersection because the RH turn traffic is now out of the southern flow, thus southern flow is subtracted from the major stream flow.
The evening RH turn out of the development is opposed by southern and northern flow.
The evening LH turn is opposed by northern flow.
A ta of 4 and a tf of 2 is used for the RH turn in as per Table A4.1
A ta of 14 and tf of 3 is used for RH turn out and LH turn out as per Table A4.1

The intersection absorption capacity and waiting times for minor flow are shown below.

STAGE 1	major stream volume	minor stream volume	Absorption cap.	Waiting times
RH in	543	5	912	1.5 sec
RH out	489	5	174	28 sec
LH out	187	5	501	6.6 sec
STAGE 9				
RH in	559	15	900	1.6 sec
RH out	715	18	79	75 sec
LH out	272	18	370	11.5 sec

Intersection design choice

Using the warrant in Guide to Road Design part 4 General, it can be seen that stage 1 traffic can be catered for with a BAR BAL. This will required minimum upgrade for the existing intersection.
After stage 1, a CHR(S) and AUL(S) can be used but this quickly turns into a CHR AUL requirement.
The RMS is unlikely to approve a CHR(S) AUL(S) initially to converted to a CHR AUL at a later date. This was confirmed with the Land Use Manager Southern Region in a phone conversation.
Both intersection choices will cater for a 15m radius turn HRV or 19 articulated vehicle.

Stage 1

It is recommended that is necessary for stage 1. This is because

1. The turning traffic/ through traffic ratio implies a BAR treatment and there already is a hybrid BAR/AU treatment present.
2. The existing access has been designed for 15m radius turns to enable HRV access and egress.
3. The access has more than 10m sealed surface which minimises mud from the gravel road being dropped on the highway.
4. There is sufficient SISD and MGSD and ASD with the present access if the three marked trees are removed. See appendix EXISTING ACCESS PLAN and BAR BAL intersection.
5. There will be no requirement to encroach on any adjoining land holders.

Stage 2 to stage 9

These stages will require a CHR AUL type intersection. This will involve a deceleration lane and storage length for right turning vehicles on the southbound lane.

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It will also require a deceleration lane on the northbound lane.
There will be considerable widening of the road to cater for a 3.5 m through lane as well as 3.5 m storage lanes. However there will be no requirement to encroach on existing landholders.
The concept plans for the CHR AUL intersection is shown in the appendix.

Jeff Lean BE (Hons) MIEAust 21st Dec 2017

Appendix

Photos of worst case SISD views

Traffic count from RMS

Existing access plan with SISD sections from both directions scale 1:1000 A2

BAR BAL concept plan A1 sheet scale 1:500

CHR AUL concept plan A1 sheet scale 1:500

CHR AUL concept earthworks plan A1 sheet scale 1:500

DBYD information

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Looking north from south of access, 1.15m post just behind trees to be removed


Looking north from access showing clear view in excess of 350 m

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Hour	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Averages 1 - 5	Averages 1 - 7
0000-0100	2.0	1.0	3.0	1.0	2.0	1.0	9.0	1.8	2.7
0100-0200	2.0	1.0	2.0	1.0	2.0	2.0	4.0	1.6	2.0
0200-0300	4.0	5.0	3.0	1.0	3.0	2.0	7.0	3.2	3.6
0300-0400	10.0	10.0	7.0	5.0	10.0	5.0	5.0	8.4	7.4
0400-0500	9.0	9.0	8.0	7.0	11.0	2.0	4.0	8.8	7.1
0500-0600	56.0	69.0	52.0	46.0	48.0	18.0	12.0	54.2	43.0
0600-0700	116.0	126.0	130.0	112.0	115.0	46.0	18.0	119.8	94.7
0700-0800	199.0	230.0	193.0	201.0	192.0	69.0	40.0	203.0	160.6
0800-0900	**283.0<**	**318.0<**	**344.0<**	**327.0<**	**275.0<**	114.0	56.0	**309.4<**	**245.3<**
0900-1000	179.0	228.0	201.0	200.0	193.0	144.0	**117.0<**	200.2	180.3
1000-1100	168.0	162.0	205.0	220.0	209.0	**151.0<**	105.0	192.8	174.3
1100-1200	160.0	150.0	165.0	172.0	146.0	138.0	113.0	158.6	149.1
1200-1300	142.0	152.0	156.0	163.0	155.0	**120.0<**	116.0	153.6	143.4
1300-1400	144.0	**183.0<**	**172.0<**	**173.0<**	158.0	118.0	131.0	**166.0<**	**154.1<**
1400-1500	157.0	157.0	153.0	142.0	**177.0<**	90.0	**143.0<**	157.2	145.6
1500-1600	**176.0<**	182.0	151.0	157.0	162.0	91.0	103.0	165.6	146.0
1600-1700	151.0	172.0	162.0	123.0	156.0	77.0	90.0	152.8	133.0
1700-1800	111.0	129.0	113.0	99.0	119.0	48.0	71.0	114.2	98.6
1800-1900	58.0	52.0	47.0	47.0	62.0	44.0	40.0	53.2	50.0
1900-2000	27.0	42.0	40.0	28.0	43.0	30.0	29.0	36.0	34.1
2000-2100	35.0	22.0	31.0	27.0	33.0	26.0	25.0	29.6	28.4
2100-2200	43.0	36.0	32.0	38.0	42.0	37.0	29.0	38.2	36.7
2200-2300	18.0	14.0	14.0	23.0	18.0	20.0	10.0	17.4	16.7
2300-2400	5.0	5.0	7.0	3.0	11.0	15.0	4.0	6.2	7.1
Totals									
0700-1900	1928.0	2115.0	2062.0	2024.0	2004.0	1204.0	1125.0	2026.6	1780.3
0600-2200	2149.0	2341.0	2295.0	2229.0	2237.0	1343.0	1226.0	2250.2	1974.3
0600-0000	2172.0	2360.0	2316.0	2255.0	2266.0	1378.0	1240.0	2273.8	1998.1
0000-0000	2255.0	2455.0	2391.0	2316.0	2342.0	1408.0	1281.0	2351.8	2064.0
AM Peak	0800	0800	0800	0800	0800	1000	0900		
	283.0	318.0	344.0	327.0	275.0	151.0	117.0		
PM Peak	1500	1300	1300	1300	1400	1200	1400		
	176.0	183.0	172.0	173.0	177.0	120.0	143.0		

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Hour	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Averages 1 - 5	Averages 1 - 7
0000-0100	6.0	6.0	4.0	5.0	8.0	13.0	9.0	5.8	7.3
0100-0200	6.0	3.0	5.0	3.0	8.0	1.0	2.0	5.0	4.0
0200-0300	3.0	0.0	2.0	3.0	3.0	8.0	2.0	2.2	3.0
0300-0400	0.0	2.0	2.0	5.0	1.0	4.0	4.0	2.0	2.6
0400-0500	4.0	3.0	6.0	2.0	8.0	3.0	4.0	4.6	4.3
0500-0600	16.0	19.0	18.0	22.0	22.0	6.0	6.0	19.4	15.6
0600-0700	53.0	87.0	70.0	64.0	64.0	28.0	31.0	67.6	56.7
0700-0800	91.0	84.0	97.0	74.0	91.0	41.0	28.0	87.4	72.3
0800-0900	102.0	146.0	150.0	145.0	140.0	61.0	35.0	136.6	111.3
0900-1000	144.0	158.0	142.0	139.0	142.0	102.0	79.0	145.0	129.4
1000-1100	122.0	137.0	155.0	**199.0<**	177.0	148.0	104.0	158.0	148.9
1100-1200	**159.0<**	**207.0<**	**192.0<**	176.0	**195.0<**	**159.0<**	**133.0<**	**185.8<**	**174.4<**
1200-1300	174.0	163.0	156.0	149.0	164.0	**158.0<**	130.0	161.2	156.3
1300-1400	164.0	167.0	175.0	194.0	213.0	145.0	**130.0<**	182.6	169.7
1400-1500	192.0	201.0	227.0	216.0	217.0	134.0	106.0	210.6	184.7
1500-1600	237.0	233.0	**276.0<**	226.0	248.0	96.0	92.0	244.0	201.1
1600-1700	**253.0<**	**258.0<**	245.0	**257.0<**	**275.0<**	92.0	99.0	**257.6<**	**211.3<**
1700-1800	233.0	228.0	230.0	223.0	198.0	98.0	71.0	222.4	183.0
1800-1900	134.0	129.0	135.0	107.0	117.0	86.0	66.0	124.4	110.6
1900-2000	57.0	65.0	49.0	66.0	59.0	40.0	41.0	59.2	53.9
2000-2100	36.0	49.0	42.0	46.0	32.0	38.0	24.0	41.0	38.1
2100-2200	26.0	35.0	25.0	38.0	29.0	19.0	18.0	30.6	27.1
2200-2300	24.0	40.0	37.0	32.0	41.0	18.0	7.0	34.8	28.4
2300-2400	13.0	10.0	8.0	8.0	12.0	5.0	6.0	10.2	8.9

Totals

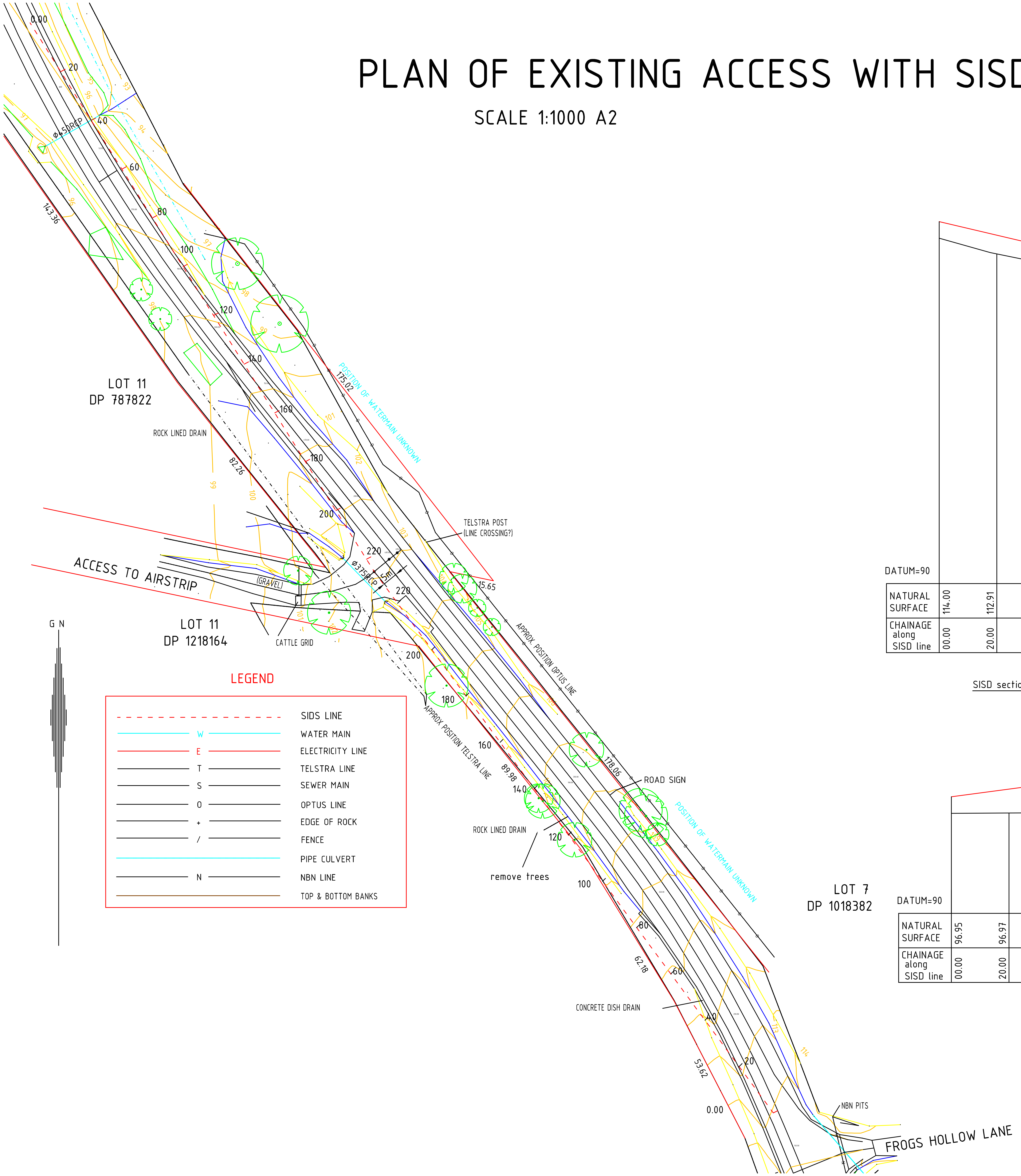
	Mon	Tue	Wed	Thu	Fri	Sat	Sun	1 - 5	1 - 7
0700-1900	2005.0	2111.0	2180.0	2105.0	2177.0	1320.0	1073.0	2115.6	1853.0
0600-2200	2177.0	2347.0	2366.0	2319.0	2361.0	1445.0	1187.0	2314.0	2028.9
0600-0000	2214.0	2397.0	2411.0	2359.0	2414.0	1468.0	1200.0	2359.0	2066.1
0000-0000	2249.0	2430.0	2448.0	2399.0	2464.0	1503.0	1227.0	2398.0	2102.9

	Mon	Tue	Wed	Thu	Fri	Sat	Sun
AM Peak	1100	1100	1100	1000	1100	1100	1100
	159.0	207.0	192.0	199.0	195.0	159.0	133.0
PM Peak	1600	1600	1500	1600	1600	1200	1300
	253.0	258.0	276.0	257.0	275.0	158.0	130.0

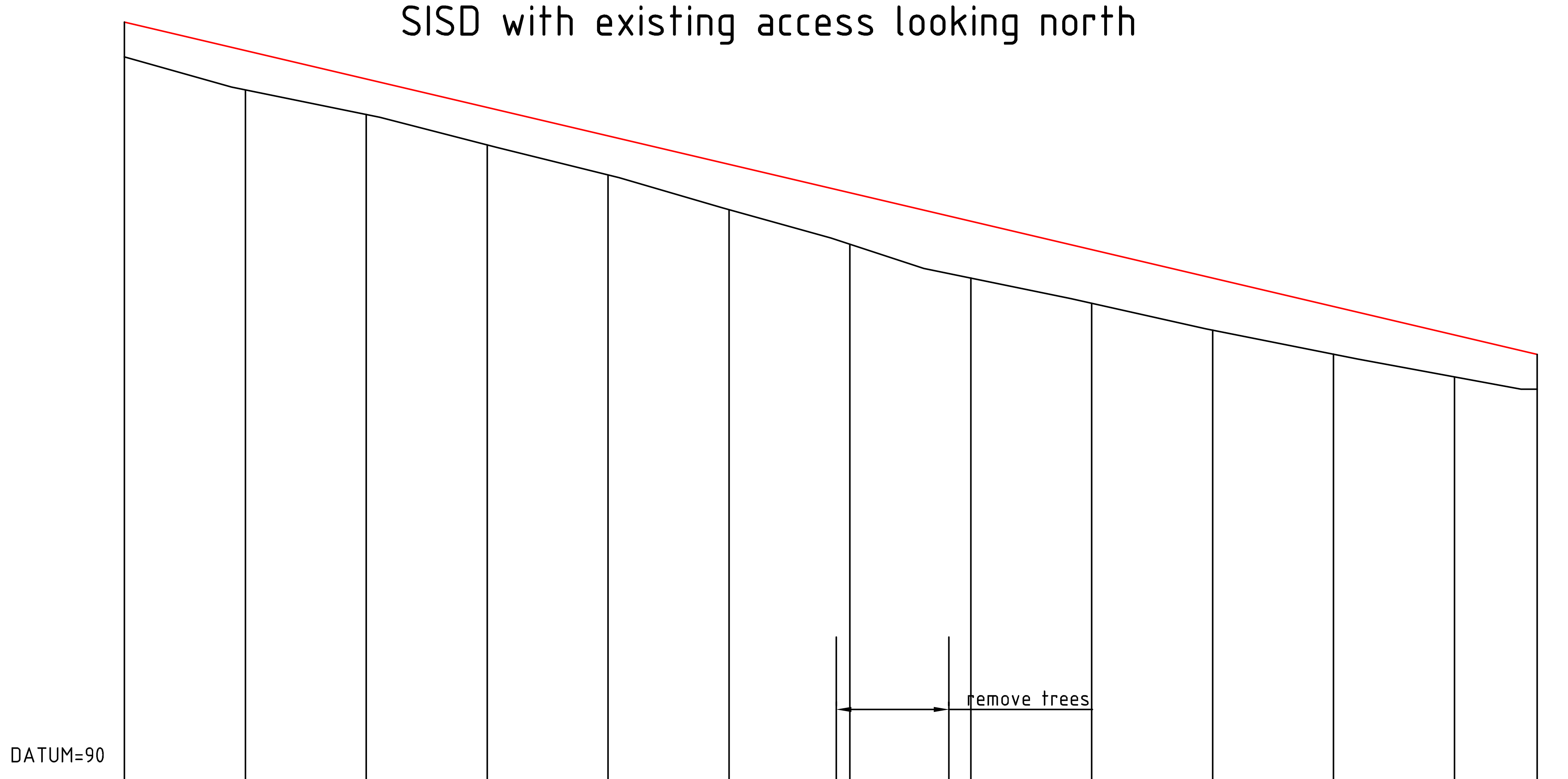
* - No data.

PLAN OF EXISTING ACCESS WITH SISD SECTIONS

SCALE 1:1000 A2



SISD with existing access looking north

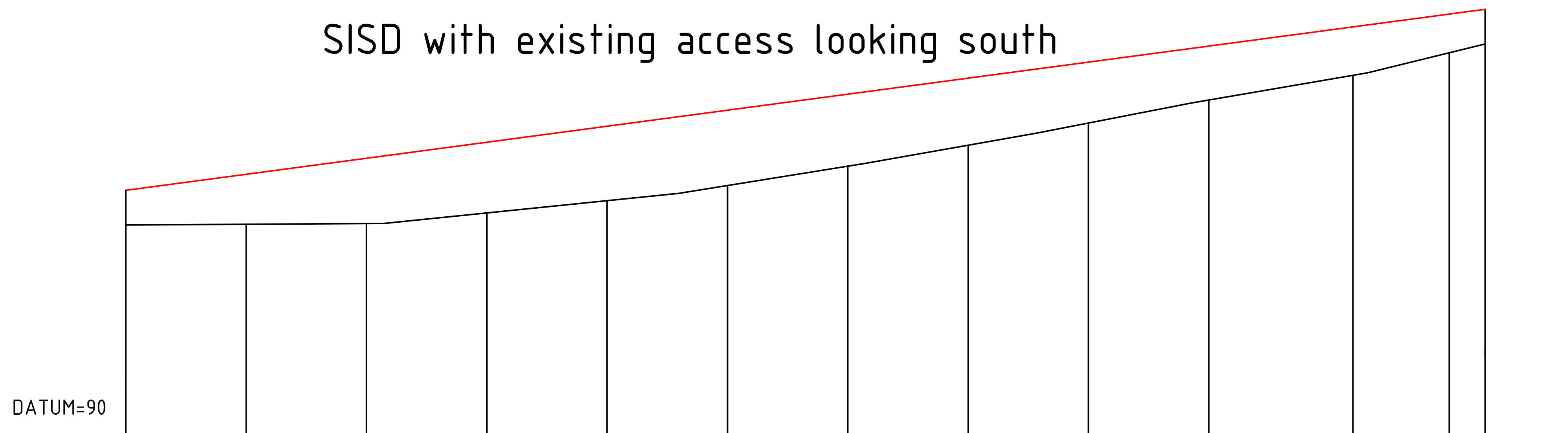


NATURAL SURFACE	114.00	112.91	112.09	111.08	110.09	108.9	107.8	106.68	105.9	104.96	103.76	103.07	102.94
CHAINAGE along SISD line	00.00	20.00	40.00	60.00	80.00	100.00	120.00	140.00	160.00	180.00	200.00	220.00	233.7

SISD section along sight distance with 1.15 sight height at both ends LOOKING NORTH

Horizontal scale 1:1000, vertical scale 1:200

SISD with existing access looking south



NATURAL SURFACE	96.95	96.97	97	97.35	97.76	98.26	98.90	99.60	100.34	101.11	101.92	102.67	102.94
CHAINAGE along SISD line	00.00	20.00	40.00	60.00	80.00	100.00	120.00	140.00	160.00	180.00	200.00	220.00	225.96

SISD section along sight distance with 1.15 sight height at both ends LOOKING SOUTH

Horizontal scale 1:1000, vertical scale 1:200

INTERSECTION CONCEPT PLAN BAR BAL

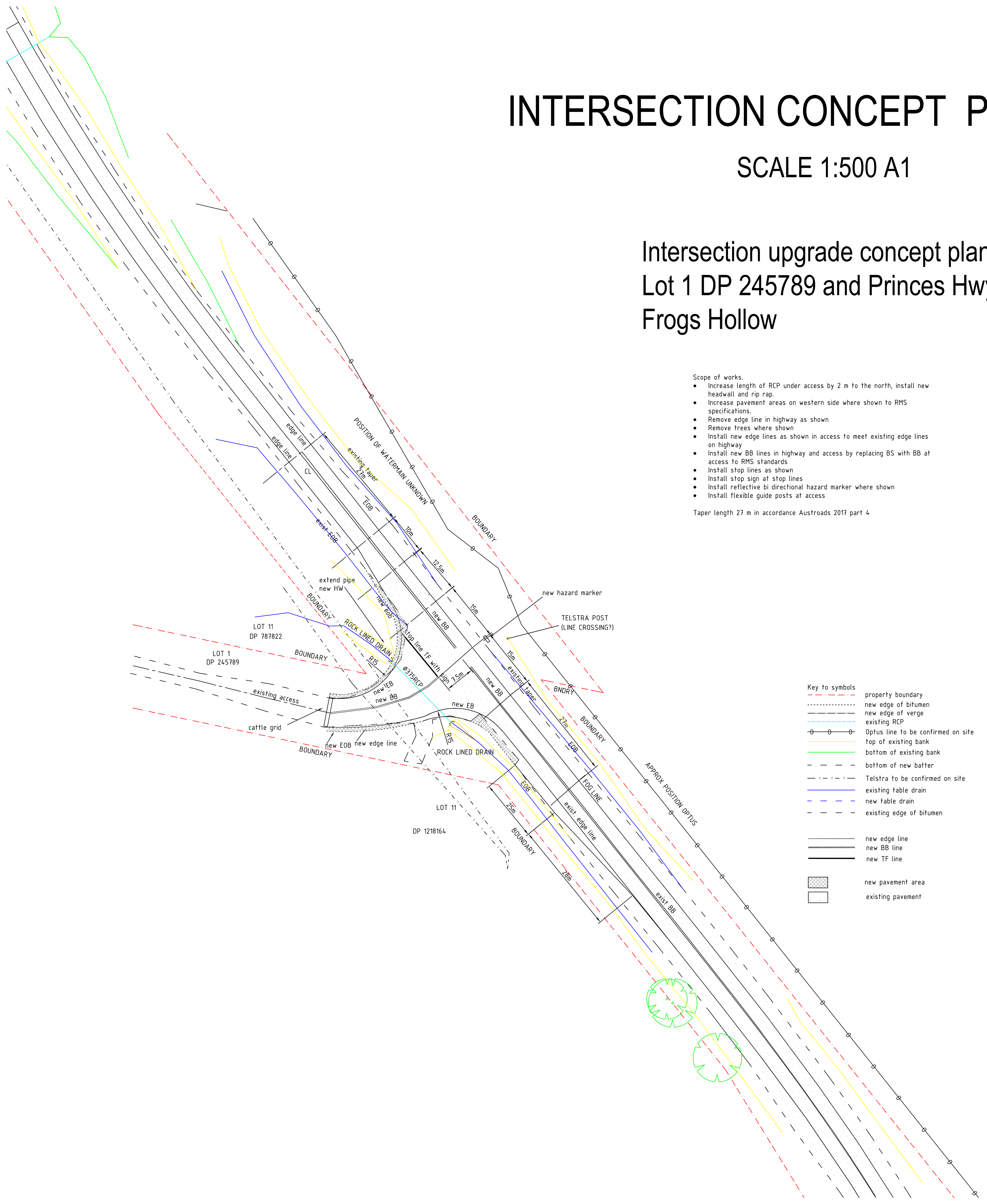
SCALE 1:500 A1

Intersection upgrade concept plan for Lot 1 DP 245789 and Princes Hwy, Frogs Hollow

Scope of works.

- Increase length of RCP under access by 2 m to the north, install new headwall and rip rap.
- Increase pavement areas on western side where shown to RMS specifications.
- Remove edge line in highway as shown
- Remove trees where shown
- Install new edge lines as shown in access to meet existing edge lines on highway
- Install new BB lines in highway and access by replacing BS with BB at access to RMS standards
- Install stop lines as shown
- Install stop sign at stop lines
- Install reflective bi directional hazard marker where shown
- Install flexible guide posts at access

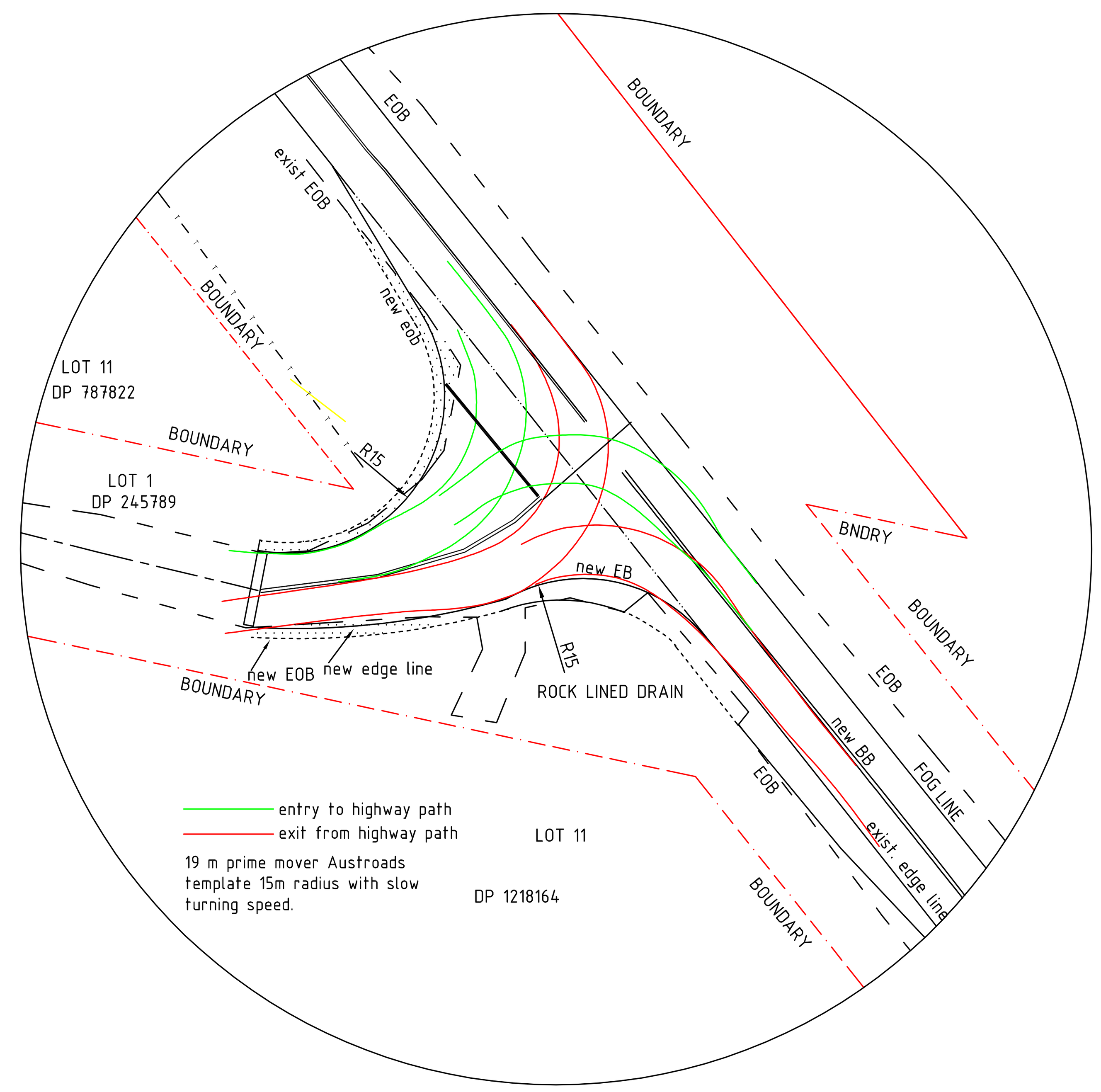
Taper length 27 m in accordance Austroads 2017 part 4



Key to symbols

- property boundary
- new edge of bitumen
- new edge of verge
- existing RCP
- Optus line to be confirmed on site
- top of existing bank
- bottom of existing bank
- bottom of new batter
- Telstra to be confirmed on site
- existing table drain
- new table drain
- existing edge of bitumen
- new edge line
- new BB line
- new TF line
- new pavement area
- existing pavement

TURNING TEMPLATES SCALE 1:500



INTERSECTION CONCEPT CHR and AUL PLAN

SCALE 1:500 A1

Intersection upgrade concept plan for Lot 1 DP 245789 and Princes Hwy, Frogs Hollow

CHR DESIGN for 100kph - +1.5% grade

Through lane width= 3.5 m
Turn lane width = 3.5 m
Total length of auxiliary lane incl taper and storage= 167m
Diverge incl taper = 155m
Taper length = 32 m
Storage length = 12.5 m
Lateral movement length = 100 m

AUL DESIGN for 100 kph - -4% grade

Through lane width = 3.5 m
Turn lane width = 3.5 m
Total diverge lane length inc taper = 186 m
Taper length = 32 m

Pavement design to RMS specifications. Markings to RMS Delineation Guidlelines. All services to be located by builder, DBYD info included.

CHR and AUL Design to Austroads 2017 part 4A and General

Key to symbols

- property boundary
- new edge of bitumen
- new edge of verge
- existing RCP
- Optus line to be confirmed on site
- top of existing bank
- bottom of existing bank
- bottom of new batter
- Telstra to be confirmed on site
- existing table drain
- new table drain
- existing edge of bitumen
- new edge line
- new BB line
- new TF line
- new pavement area
- existing pavement

SCOPE OF EARTHWORKS CONCEPT CHR AUL PLAN

SCALE 1:500 A1

Intersection upgrade concept plan for Lot 1 DP 245789 and Princes Hwy, Frogs Hollow

<u>Concept Scope of earthworks</u>

A extend RCP approx 9 m and add new Headwall and rip rap
B construct new batter slope 1V3H approx 10 m wide 120 m long
C ensure water pipe is correct strength for increased load. Replace if necessary.
D remove or trim existing trees
E install conc table drain to RMS specs
F install new table drain to meet conc drain
G construct new batter slope aprox 0.6m high and 100m long
H new table drain to meet existing table drain
I extend RCP approx 5 m and add new Headwall and rip rap
Increase pavement areas where shown to RMS specs.

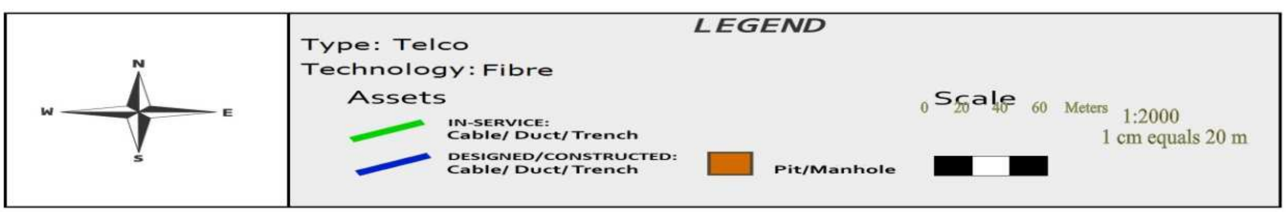
Key to symbols

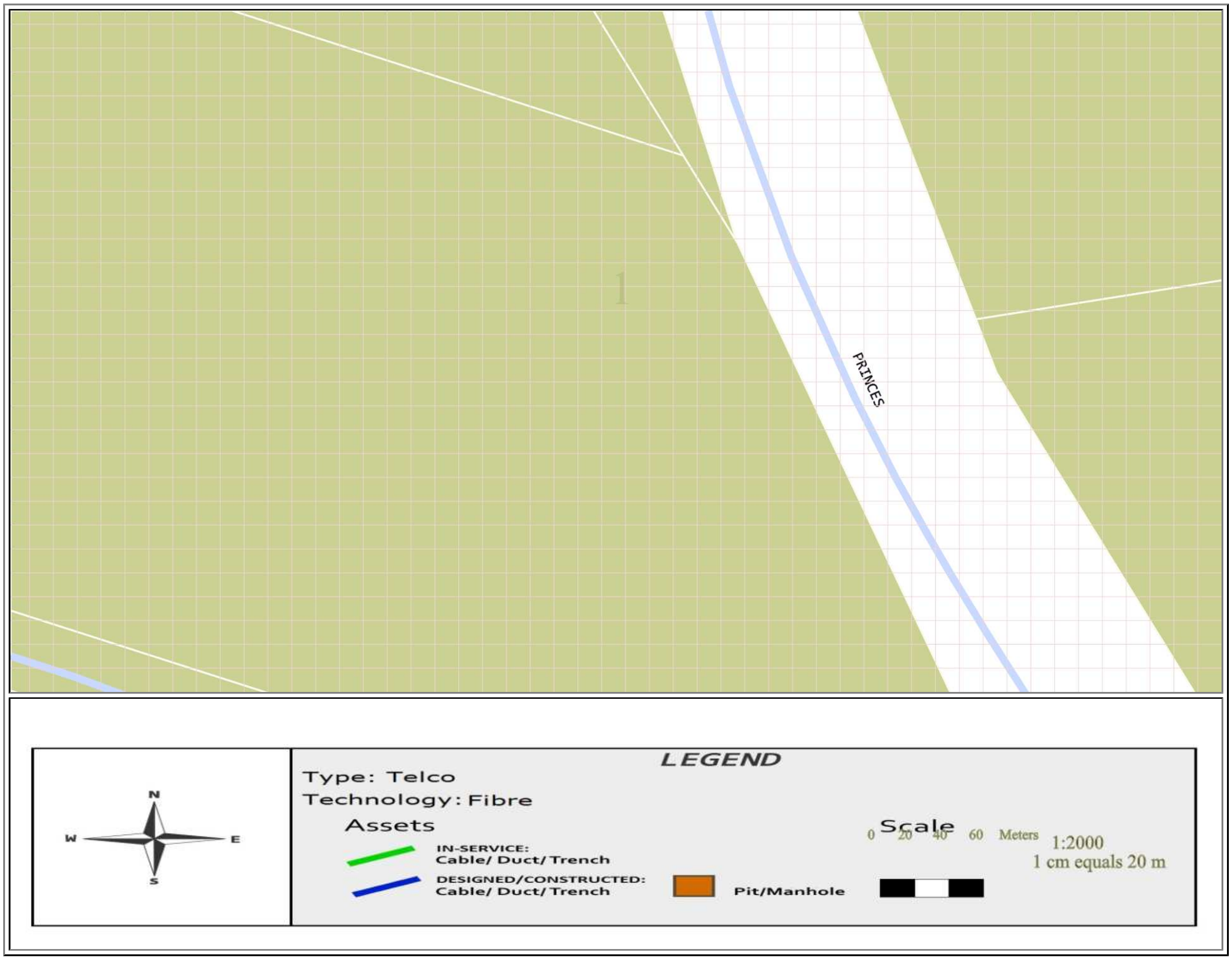
- property boundary
- new edge of bitumen
- new edge of verge
- existing RCP
- Optus line to be confirmed on site
- top of existing bank
- bottom of existing bank
- bottom of new batter
- Telstra to be confirmed on site
- existing table drain
- new table drain
- existing edge of bitumen
- new edge line
- new BB line
- new TF line
- new pavement area

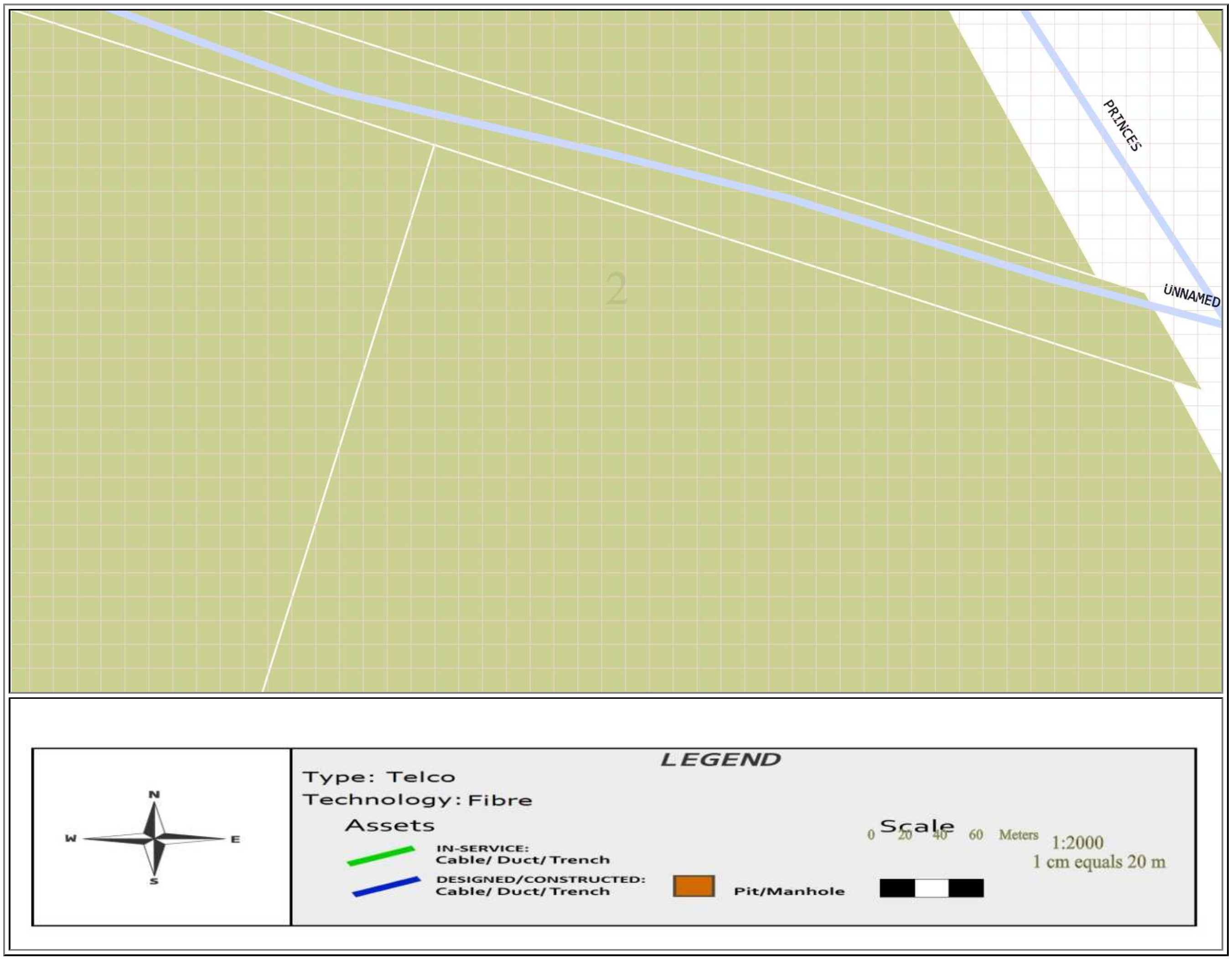
Indicative Plans

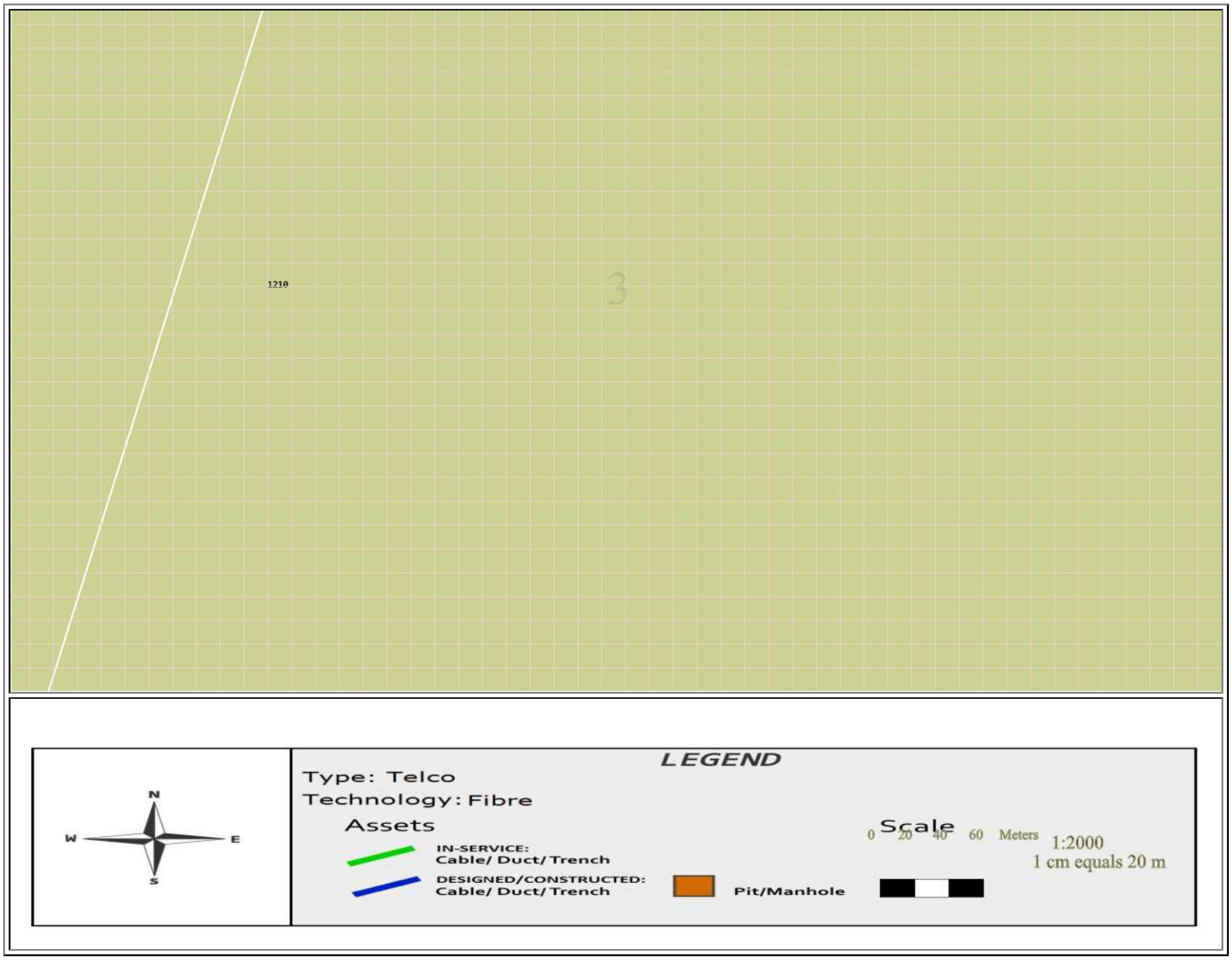
Issue Date:	18/12/2017	DIAL BEFORE YOU DIG www.1100.com.au
Location:	Frogs Hollow Lane,Frogs Hollow,NSW-2550	

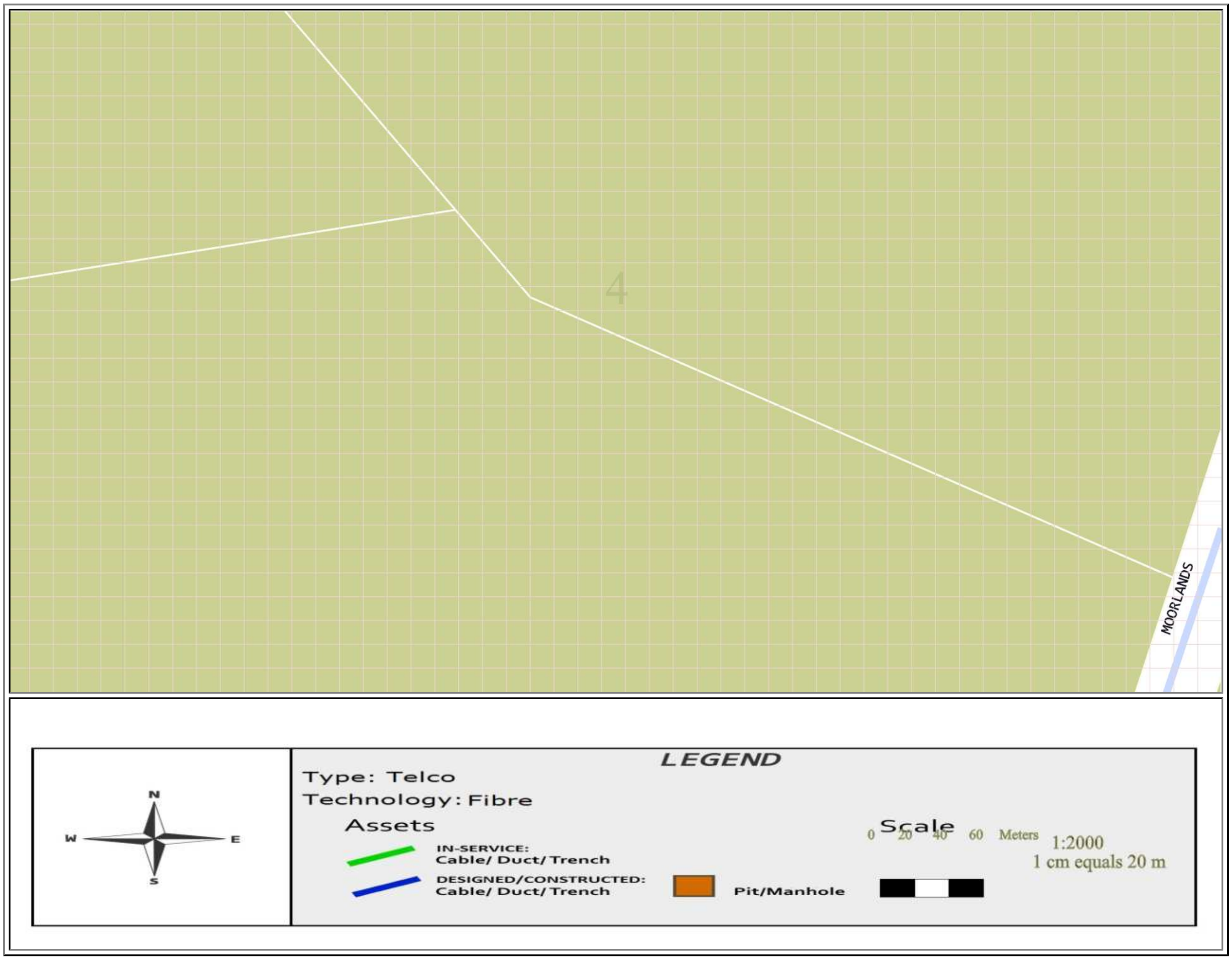
1	4
2	5
3	6

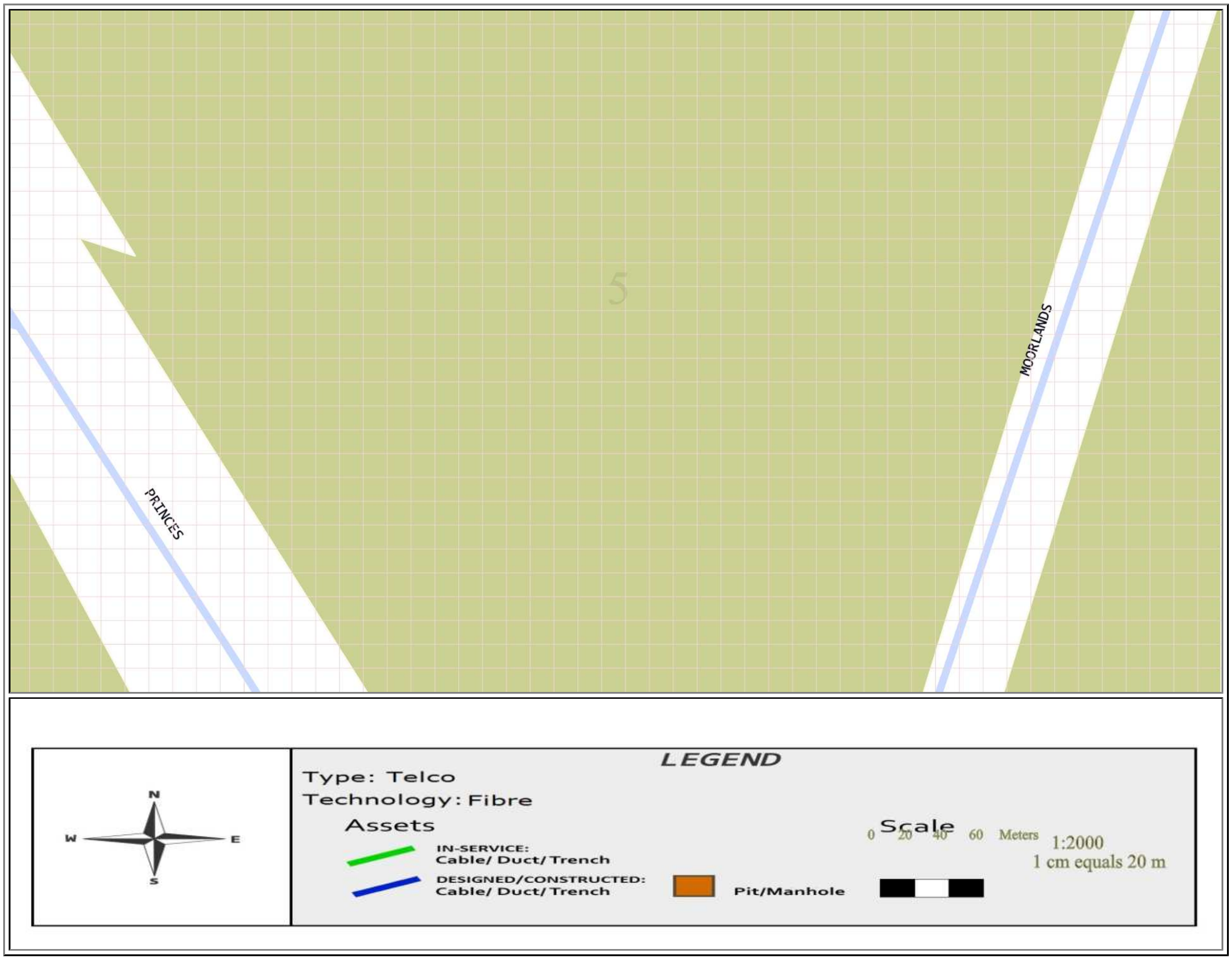


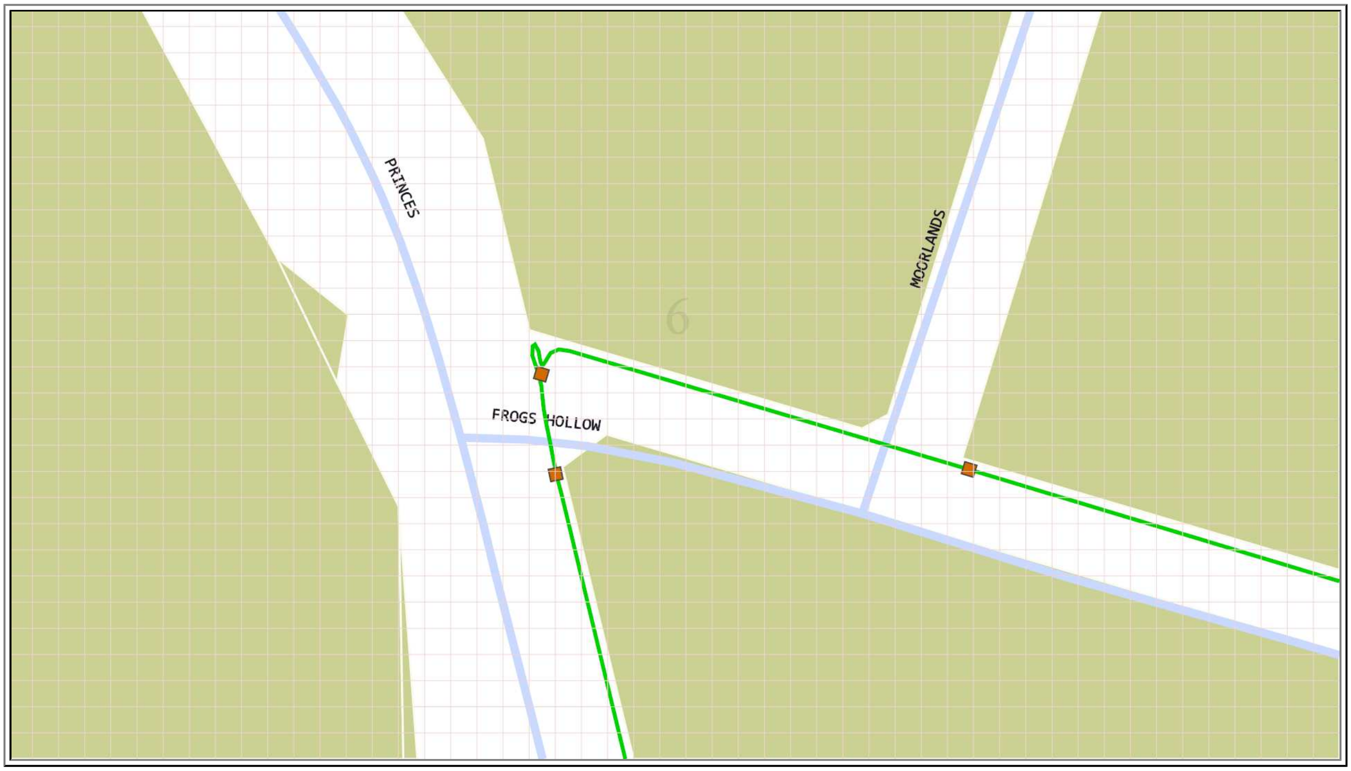

1
PRINCES
LEGEND
Type: Telco
Technology: Fibre
Assets
IN-SERVICE:
Cable/ Duct/ Trench
DESIGNED/CONSTRUCTED:
Cable/ Duct/ Trench
Pit/Manhole
Scale
0 20 40 60 Meters
1:2000
1 cm equals 20 m
N
S
W
E


PRINCES
UNNAMED
2
N
W
E
S
LEGEND
Type: Telco
Technology: Fibre
Assets
IN-SERVICE:
Cable/ Duct/ Trench
DESIGNED/CONSTRUCTED:
Cable/ Duct/ Trench
Pit/Manhole
Scale
0 20 40 60 Meters
1:2000
1 cm equals 20 m


1210
3
LEGEND
Type: Telco
Technology: Fibre
Assets
IN-SERVICE:
Cable/ Duct/ Trench
DESIGNED/CONSTRUCTED:
Cable/ Duct/ Trench
Pit/Manhole
Scale
0 20 40 60 Meters
1:2000
1 cm equals 20 m
N
S
W
E

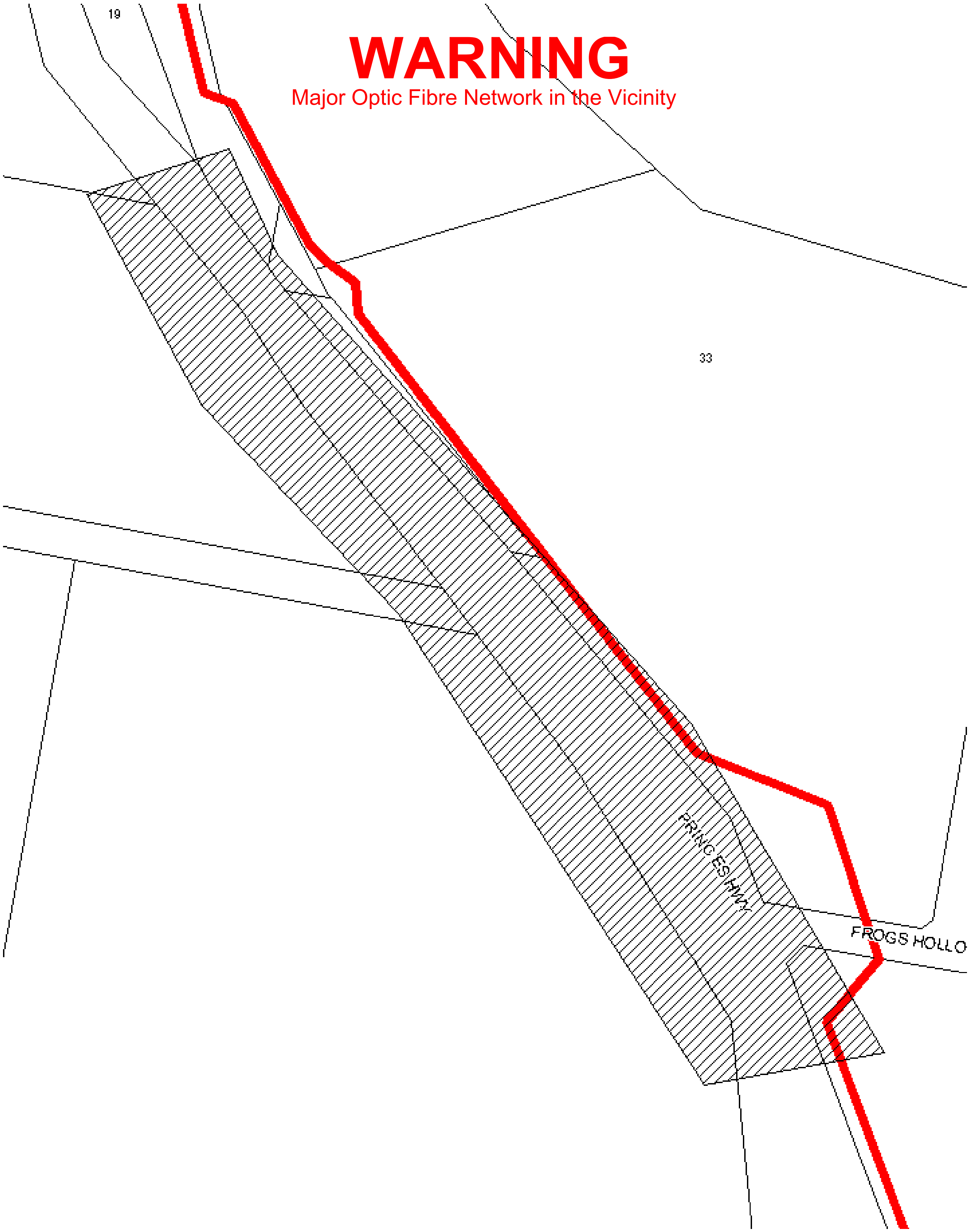

4
MOORLANDS
LEGEND
Type: Telco
Technology: Fibre
Assets
IN-SERVICE:
Cable/ Duct/ Trench
DESIGNED/CONSTRUCTED:
Cable/ Duct/ Trench
Pit/Manhole
Scale
0 20 40 60 Meters
1:2000
1 cm equals 20 m
N
W
E
S


5
MOORLANDS
PRINCES
LEGEND
Type: Telco
Technology: Fibre
Assets
IN-SERVICE:
Cable/ Duct/ Trench
DESIGNED/CONSTRUCTED:
Cable/ Duct/ Trench
Pit/Manhole
Scale
0 20 40 60 Meters
1:2000
1 cm equals 20 m
N
S
W
E



Emergency Contacts

You must immediately report any damage to **nbn™** network that you are/become aware of. Notification may be by telephone - 1800 626 329.



Sequence Number: 67169607

Date Generated: 18/12/2017

OPTUS yes

For all Optus DBYD plan enquiries –
Email: Fibre.Locations@optus.net.au
For urgent onsite assistance contact 1800 505 777
Optus Limited ACN 052 833 208

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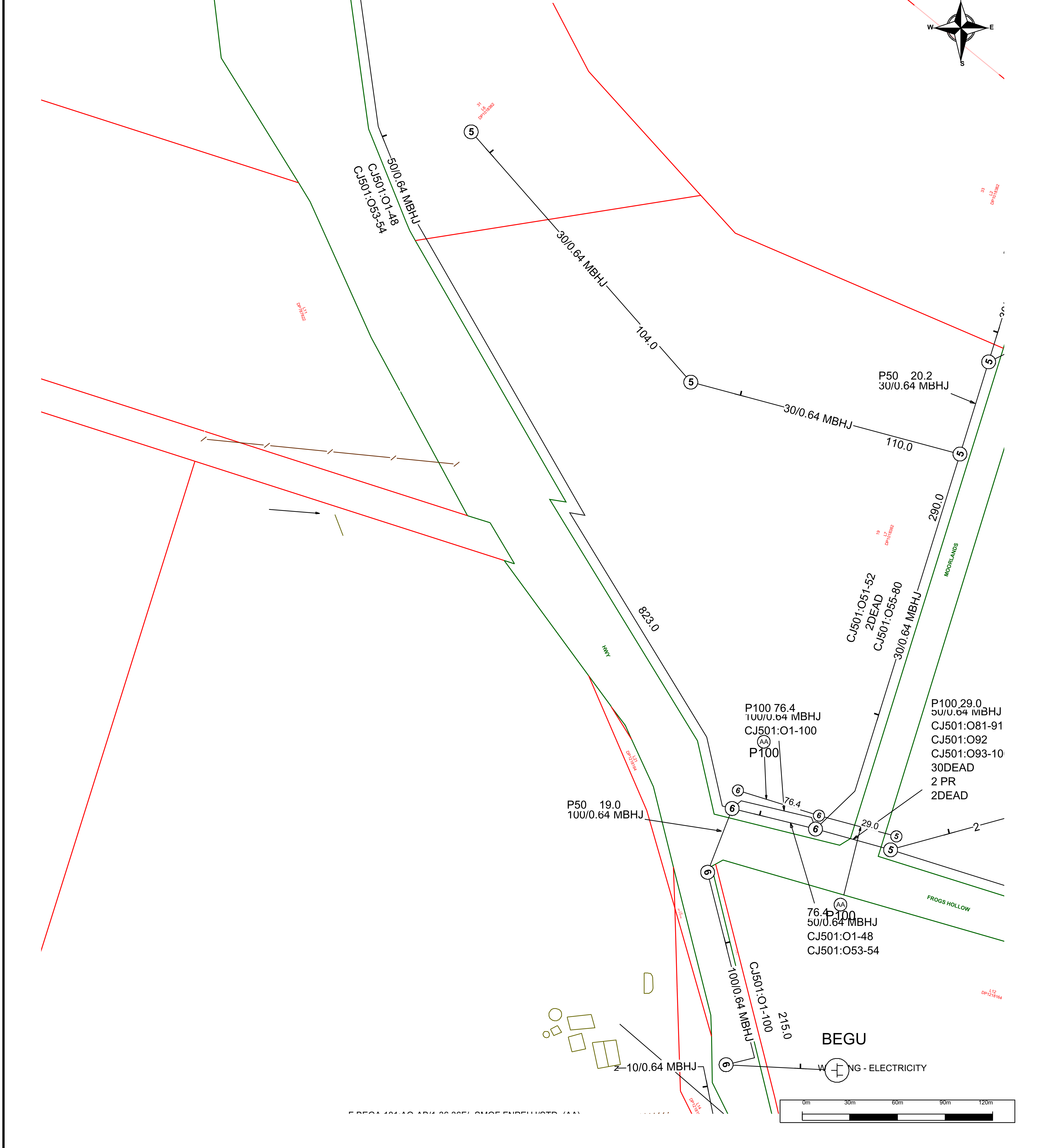
Cable Plan



Telstra	For all Telstra DBYD plan enquiries - email - Telstra.Plans@team.telstra.com For urgent onsite contact only - ph 1800 653 935 (bus hrs)	Sequence Number: 67169606
TELSTRA CORPORATION LIMITED A.C.N. 051 775 556		CAUTION: Fibre optic and/ or major network present in plot area. Please read the Duty of Care and contact Telstra Plan Services should you require any assistance.
Generated On 18/12/2017 13:56:48		

The above plan must be viewed in conjunction with the Mains Cable Plan on the following page

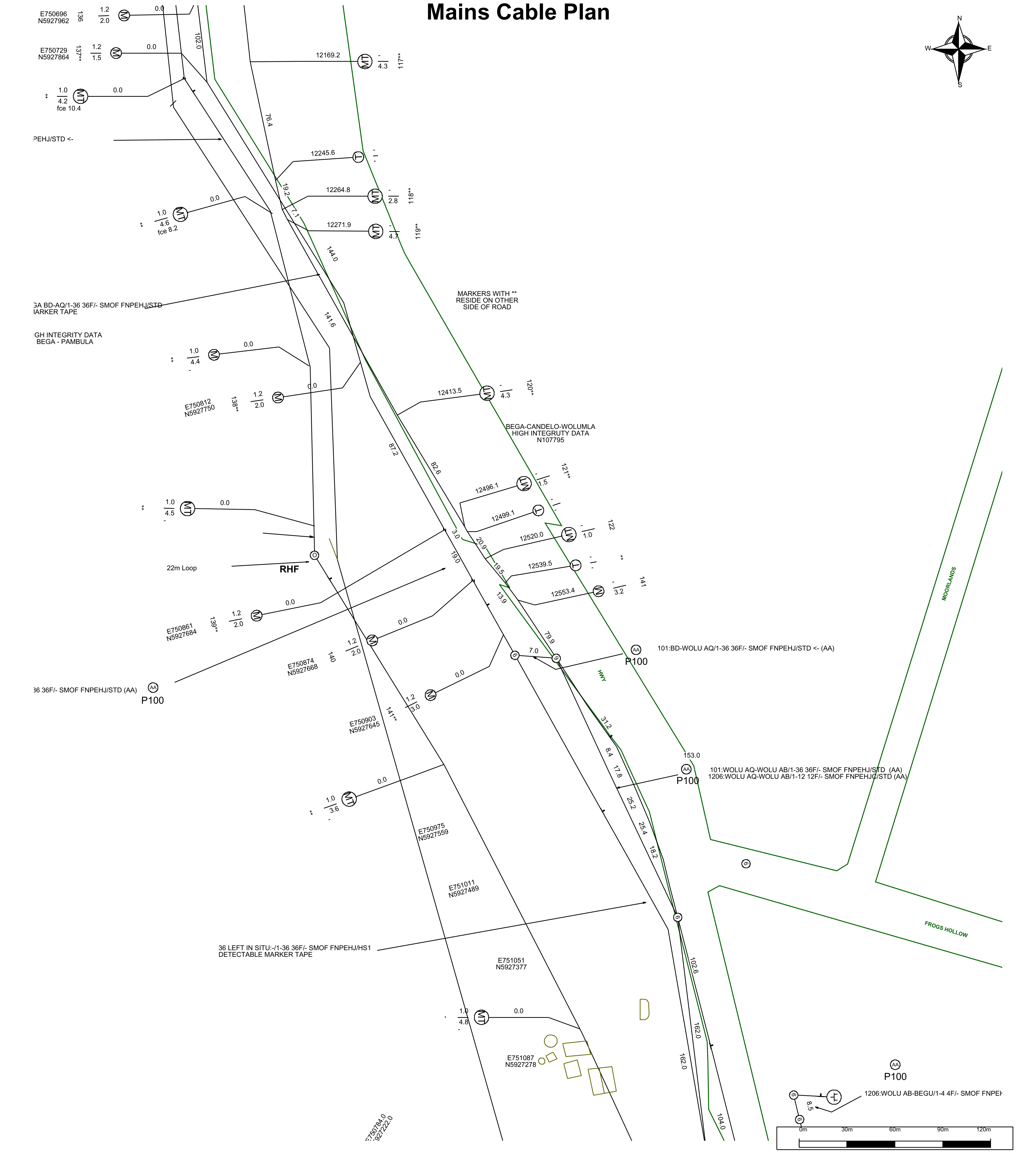
WARNING - Due to the nature of Telstra underground plant and the age of some cables and records, it is impossible to ascertain the precise location of all Telstra plant from Telstra's plans. The accuracy and/or completeness of the information supplied can not be guaranteed as property boundaries, depths and other natural landscape features may change over time, and accordingly the plans are indicative only. Telstra does not warrant or hold out that its plans are accurate and accepts no responsibility for any inaccuracy shown on the plans.

It is your responsibility to locate Telstra's underground plant by careful hand pot-holing prior to any excavation in the vicinity and to exercise due care during that excavation.

Please read and understand the information supplied in the duty of care statement attached with the Telstra plans. TELSTRA WILL SEEK COMPENSATION FOR LOSS CAUSED BY DAMAGE TO ITS PLANT.

Telstra plans and information supplied are valid for 60 days from the date of issue. If this timeframe has elapsed, please reapply for plans.

Mains Cable Plan



For all Telstra DBYD plan enquiries -
email - Telstra.Plans@team.telstra.com
For urgent onsite contact only - ph 1800 653 935 (bus hrs)

TELSTRA CORPORATION LIMITED A.C.N. 051 775 556

Generated On 18/12/2017 13:56:49

Sequence Number: 67169606

CAUTION: Fibre optic and/ or major network present in plot area. Please read the Duty of Care and contact Telstra Plan Services should you require any assistance.

WARNING - Due to the nature of Telstra underground plant and the age of some cables and records, it is impossible to ascertain the precise location of all Telstra plant from Telstra's plans. The accuracy and/or completeness of the information supplied can not be guaranteed as property boundaries, depths and other natural landscape features may change over time, and accordingly the plans are indicative only. Telstra does not warrant or hold out that its plans are accurate and accepts no responsibility for any inaccuracy shown on the plans.

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Telstra plans and information supplied are valid for 60 days from the date of issue. If this timeframe has elapsed, please reapply for plans.

LEGEND

IT'S HOW WE CONNECT

For more info contact a Telstra Accredited Locater or Telstra Plan Services 1800 653 935

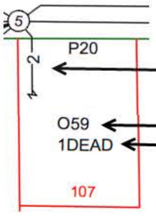
Exchange
(major cable present)

Footway access chamber
(can vary from 1-lid to 12-lid)

Pillar/cabinet — or
(above the ground / free standing)

Above ground complex equipment housing (eg RIM)
Please Note: This equipment is powered by 240V electricity.

OC **other carrier**



2 pair lead-in to property from pit in street
1 pair working (pair ID 059)
1 pair dead (i.e. spare, not connected)

Cable jointing pit
(number indicating pit type)

Elevated cable joint
(above ground joint on buried cable)

Telstra Plant in shared utility trench

Aerial Cable
(above ground)

Aerial Cable
(attached to joint use pole e.g. power)

Direct buried cable

M **Marker post installed**

TR **Buried transponder**

MT **Marker, transponder**

SMOF **Optical fibre cable direct buried**

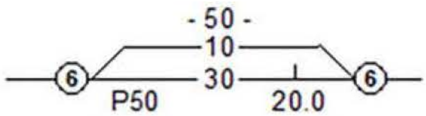
Single to multiple round conduit
Configurations 1, 2, 4, 9 respectively
P100 (Attached text denotes conduit type and size)

Multiple square conduit
Configurations 2, 4, 6 respectively
E85 (Attached text denotes conduit type and size)

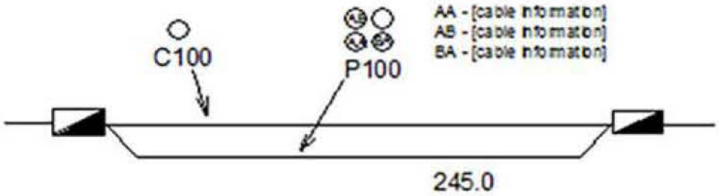
Some examples of conduit type and size:
A - Asbestos cement, P - PVC / plastic, C - Concrete, GI - Galvanised iron, E - Earthenware.
Conduit sizes *nominally* range from 20mm to 100mm.

P50	50mm PVC conduit
P100	100mm PVC conduit
A100	100mm asbestos cement conduit
E 85	85mm square earthenware conduit

Some examples of how to read Telstra plans:

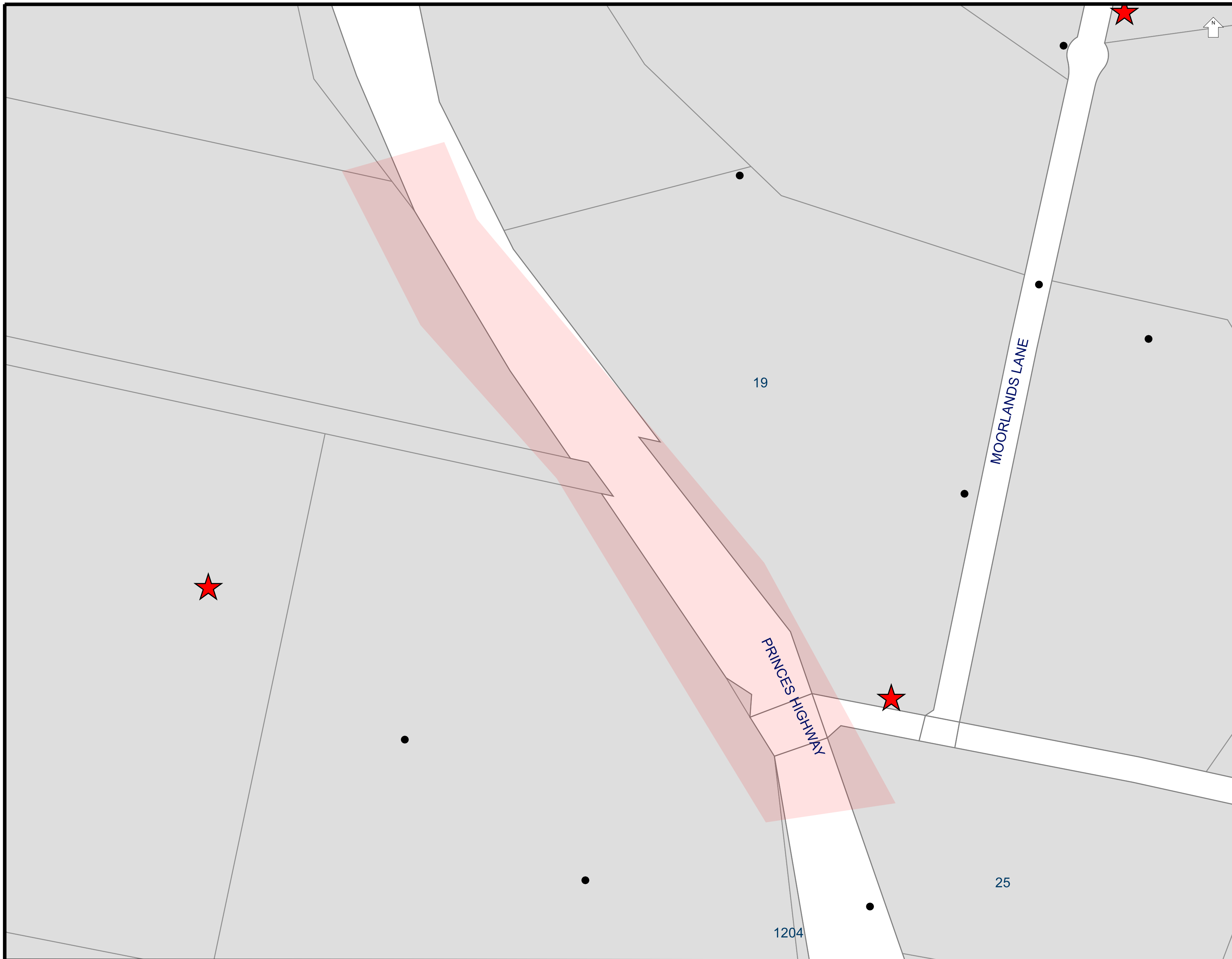


One 50mm PVC conduit (P50) containing a 50-pair and a 10-pair cable between two 6-pits, 20.0m apart, with a direct buried 30-pair cable along the same route.



Two separate conduit runs between two footway access chambers (manholes) 245m apart. A nest of four 100mm PVC conduits (P100) containing assorted cables in three ducts (one being empty) and one empty 100mm concrete duct (C100) along the same route.

WARNING: Telstra plans and location information conform to Quality Level 'D' of the Australian Standard AS 5488 - Classification of Subsurface Utility Information. As such, Telstra supplied location information is indicative only. Spatial accuracy is not applicable to Quality Level D. Refer to AS 5488 for further details. Telstra does not warrant or hold out that its plans are accurate and accepts no responsibility for any inaccuracy shown on the plans. FURTHER ON SITE INVESTIGATION IS REQUIRED TO VALIDATE THE EXACT LOCATION OF TELSTRA PLANT PRIOR TO COMMENCING CONSTRUCTION WORK. A plant location service is an essential part of the process to validate the exact location of Telstra assets and to ensure the asset is protected during construction works. The exact position of Telstra assets can only be validated by physically exposing it. Telstra will seek compensation for damages caused to its property and losses caused to Telstra and its customers.



Overhead wires not shown
LOOK UP & LIVE!

LEGEND

- LV Underground Cable
- HV Underground Cable
- Underground Pipe
- Underground Earth or Wires
- Ground Substation
- Pole
- Cubicle
- Pit
- Area of Interest

Critical Assets

Contact Essential Energy on 13 23 91

- Zone Substation
- Underground Cable
- Underground Fibre

Proposed Works

- Area of proposed works

Proposed assets are shown as orange symbols

THE INFORMATION ON THIS MAP MAY NOT BE ACCURATE.
If details are incorrect, please notify Essential Energy on 13 23 91 (or fax 1800 354 636)

ISSUE DATE: 18/12/2017

You must resubmit your request if you have not started work within 4 weeks of the 'Issue Date' above

A4 | SCALE: 1:3644

essential energy

Job Number: 13438165 Sequence number: 67169605 Job location: Frogs Hollow Lane, Frogs Hollow Map Centre: 149° 48' 43.4", -36° 45' 43.0"