

Our Ref: 17235

24 August 2018

JQZ Pty Ltd
Retail 24 & 25, 1 Nipper Street
HOMEBUSH NSW 2140

Attention: Mr Jeremy Hung

Dear Jeremy,

**RE: DA 6/2018 82-90 CHRISTIE ST, 84A CHRISTIE ST, 71-79 LITHGOW ST, 546-564 PACIFIC HWY
ST LEONARDS – TRAFFIC AND PARKING ASSESSMENT ADDENDUM REPORT**

As requested, please herein The Transport Planning Partnership (TPPP) traffic and parking assessment for the above proposed development.

Background

In January 2018, a development application (DA 6/2018) was lodged with Lane Cove Council relating to a proposed mixed use development at the above site. The proposed development is located on land known as Site A and Site B. Site A is on land which is essentially bounded by Christie Lane to the north, Christie Street to the east, the extension of Marshall Avenue across the railway line to Christie Street to the south and Lithgow Street to the west. Site B is on land fronting Pacific Highway between Christie Street and Lithgow Street.

The application sought approval to demolish all existing buildings on the site and construct in their place three new buildings comprising:

- 654 residential apartments with the following mix:
 - 2 x studio apartments
 - 197 x 1-bedroom apartments
 - 395 x 2-bedroom apartments
 - 56 x 3-bedroom apartments
 - 4 x 4-bedroom apartments
- retail uses

- supermarket retail – 3,976m² gross floor area (or 3,578m² net leasable area)
- specialty retail – 6,388m² gross floor area (or 5,750m² net leasable area)
- commercial uses – 19,297m² gross floor area, and
- communal uses – 1,000m² gross floor area.

The proposed development also includes a total of 1,138 car parking spaces comprising the following allocations:

- residents – 542 car parking spaces
- residential visitors – included into the proposed Site A retail car park provision (see below)
- Site A retail uses – 316 car parking spaces (see below)
- Site B retail uses – 87 car parking spaces, and
- commercial use – 193 car parking spaces.

It is noted that there is an existing VPA that requires a total of 316 car parking spaces to be dedicated to Council to satisfy parking demand generated by the residential visitors and retail customers in Site A.

During the DA assessment stage, consultations with various utility service providers revealed there are underground services that requires the design of the development in particular the proposed driveway and the basement car park to be modified around the underground services. The underground services will result in a loss of approximately 70 car parking spaces.

Amended architectural plans have been prepared to reflect the required changes to basement car park and driveway arrangement. TPPP has undertaken a review of the revised architectural plans and as well as an assessment of the parking requirements for the proposed development. The findings are documented in this letter.

In addition, subsequent to the lodgement of the development application Council has commented on the proposed driveway treatment as proposed in the original DA documentation. This letter also provides responses to those comments.

Proposed Modifications to the Original DA Scheme

The original proposed development yield is presented in Table 1.

Table 1: Original DA Proposed Development Yield

Proposed Land Use		Site A	Site B	Total
Residential use	Studio	2	-	2
	1-bed	197	-	197
	2-bed	395	-	395
	3-bed	56	-	56
	4-bed	4	-	4
	<i>Total</i>	654	-	654
Non-residential use	Retail – supermarket	2,816m ² GFA 2,534m ² NLA	1,160m ² GFA 1,044m ² NLA	3,976m ² GFA 3,578m ² NLA
	Retail – specialty	3,644m ² GFA 3,280m ² NLA	2,744m ² GFA 2,470m ² NLA	6,388m ² GFA 5,750m ² NLA
	Commercial	-	19,297m ² GFA	5,214m ² GFA
	Communal	1,000m ² GFA	-	1,000m ² GFA

Subsequent to the submission of the development application, previously unknown underground services require the design of the access driveway and basement car parking to be modified to accommodate the underground services. The revised scheme is shown in Table 2.

Table 2: Revised Proposed Development Yield

Proposed Land Use		Site A	Site B	Total
Residential use	Studio	2	-	2
	1-bed	197	-	197
	2-bed	395	-	395
	3-bed	56	-	56
	4-bed	4	-	4
	<i>Total</i>	654	-	654
Non-residential use	Retail – supermarket	2,972m ² GFA 2,675m ² NLA	1,211m ² GFA 1,090m ² NLA	4,183m ² GFA 3,765m ² NLA
	Retail – specialty	3,361m ² GFA 3,025m ² NLA	2,913m ² GFA 2,622m ² NLA	6,274m ² GFA 5,647m ² NLA
	Commercial	-	19,322m ² GFA	19,322m ² GFA
	Communal	1,000m ² GFA	-	1,000m ² GFA

The proposed parking provision has been revised to 1,073 car parking spaces comprising:

- residents – 542 car parking spaces (no change)

- residential visitors – included into the proposed Site A retail car park provision (see below) (no change)
- Site A retail uses – 316 car parking spaces (see below) (no change)
- Site B retail uses – 90 car parking spaces, and
- commercial use – 125 car parking spaces.

Traffic Assessment

Given that the revised development includes similar development yields to that submitted in the original development application, the revised proposed development will continue to generate development traffic at a similar level to that estimated in the DA traffic report. The nearby intersections would continue to operate satisfactorily.

Separately, Roads and Maritime Services has requested for the submitted SIDRA modelling to be amended to include additional intersections. These have been completed with the results presented in Table 3, Table 4 and Table 5.

Table 3: Scenario S1 Existing Condition Operation

Scenario	Morning Peak			Evening Peak		
	Degree of Saturation	Ave. Delay (sec/veh)	Level of Service	Degree of Saturation	Ave. Delay (sec/veh)	Level of Service
Christie St-Pacific Hwy	0.77	13	A	0.58	16	B
Pacific Hwy-Oxley St	0.86	11	A	0.89	14	A
Pacific Hwy-Albany St	0.60	16	B	0.89	21	B
Oxley St-Albany St	0.42	6	A	0.52	12	A
Oxley St-Nicholson St	0.10	6	A	0.17	6	A
Oxley St-Lithgow St	0.05	5	A	0.09	5	A
Nicholson St-Christie St	0.08	6	A	0.06	6	A

Table 4: Scenario S2 Future Base Case Operation

Scenario	Morning Peak			Evening Peak		
	Degree of Saturation	Ave. Delay (sec/veh)	Level of Service	Degree of Saturation	Ave. Delay (sec/veh)	Level of Service
Christie St-Pacific Hwy	0.90	18	B	0.75	17	B
Pacific Hwy-Oxley St	0.97	17	B	0.43	10	A
Pacific Hwy-Albany St	0.68	15	B	0.65	18	B
Oxley St-Albany St	0.45	10	A	0.45	10	A
Oxley St-Nicholson St	0.28	6	A	0.17	6.0	A
Oxley St-Lithgow St	0.07	5	A	0.12	5	A
Nicholson St-Christie St	0.13	6	A	0.14	6	A

Table 5: Scenario S3 Future Case with Development Traffic

Scenario	Morning Peak			Evening Peak		
	Degree of Saturation	Ave. Delay (sec/veh)	Level of Service	Degree of Saturation	Ave. Delay (sec/veh)	Level of Service
Christie St-Pacific Hwy	0.90	18	B	0.75	18	B
Pacific Hwy-Oxley St	0.96	18	B	0.63	13	A
Pacific Hwy-Albany St	0.66	15	B	0.68	17	B
Oxley St-Albany St	0.47	10	A	0.47	11	A
Oxley St-Nicholson St	0.33	6	A	0.21	7	A
Oxley St-Lithgow St	0.13	5	A	0.17	5	A
Nicholson St-Christie St	0.13	7	A	0.19	7	A

The modelling results indicate that in the future following the completion of the proposed development, the assessed intersections would continue to operate satisfactorily with similar performance and level of service as that found under existing conditions.

Parking Assessment

A car parking assessment for the revised proposed development against the requirements stipulated in Table 2 of Part R – Traffic, Transport and Planning of the Lane Cove Development Control Plan (2013) (DCP) has been undertaken. This is presented in Table 6. Table 6 also includes the proposed car parking provision for each use.

Table 6: DCP Car Parking Requirements

Land Use		Units/Floor Area	DCP Rate	DCP Requirements	Parking Provision
Residential flat buildings	Studio	2	0.5 per unit	1	
	1-bed	197	0.5 per unit	99	
	2-bed	395	0.9 per unit	356	
	3-bed	56	1.4 per unit	78	
	4-bed	4	2 per unit	8	
	Sub-Total	654	-	542	542
	Visitor	-	1 per 5 units	131*	NA*
Residential sub-total		-	-	673	542
Commercial		19,322	1 per 100m ² GFA	193	
Commercial sub-total		-	-	193	125
Retail (Site A)	Supermarket	2,675	6.1 per 100m ² NLA	163*	316*
	Specialty	3,025	1 per 110m ² NLA	28*	
Retail (Site B)	Supermarket	1,090	6.1 per 100m ² NLA	66	90
	Specialty	2,622	1 per 110m ² NLA	24	
Retail sub-total		9,412	-	281	406
Total				1,147	1,073

*The revised VPA requires a total of 316 car parking spaces to be dedicated to Council to satisfy parking demand generated by the residential visitors and retail customers in Site A.

The above assessment indicates that the required parking for the revised proposed development is 1,147 car parking spaces. This includes 131 residential visitor car parking spaces as well as 193 car parking spaces for the commercial use.

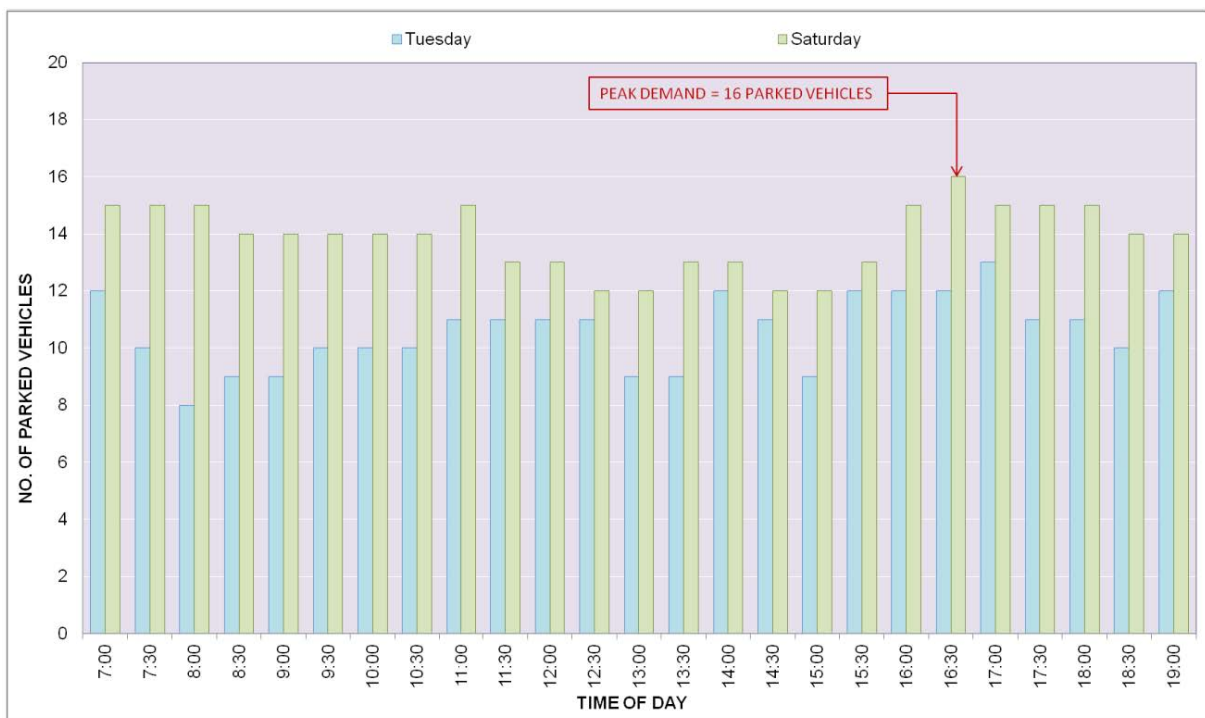
It is noted that the subject site is located within a short stroll of existing public transport nodes, namely St Leonards Railway Station and bus stops along the Pacific Highway. St Leonards Railway Station provides high frequency train services to numerous suburbs around Sydney metropolitan area and inter-city regional areas. Nearby bus stops provide bus services

connecting to other destinations such as Botany, West Pennant Hills, Ryde, McMahons Point, Bondi Junction, Manly as well as Sydney CBD. As such, the site is well placed to be leveraged off existing public transport services as well as its excellent access to services and amenities within the St Leonards Town Centre.

Recognising the location of the subject site being in close proximity to existing public transport nodes and services and amenities around St Leonards, it is recommended that car parking provisions for residential visitors and commercial tenants varied from those stipulated in the DCP.

In relation to reducing parking provision for residential visitor, it is noted a parking utilisation survey of the visitor car park at the East Quarter residential development indicates that visitor parking demand at residential developments peaked at around one car parking space per 10 apartments as demonstrated in Figure 1.

Figure 1: Residential Visitor Car Park Parking Survey Results



Source: GTA Consultants (Ref: East Quarter Stage 3 Proposed Mixed Use Development 93 Forest Road, Hurstville Traffic and Parking Impact dated 8 December 2015). The East Quarter development has a total of 168 residential apartments. The above parking demand translates to a visitor parking demand rate of approximately one space per 10 apartments.

It is noted that the East Quarter site is located within close proximity to railway stations on a major suburban railway line with direct train services to Sydney CBD, as well as a major transport interchange at Hurstville Railway Station with bus services to major centres around Sydney metropolitan area, and also within walking distances to Hurstville CBD. The subject site at St Leonards has very similar transport access characteristics and CBD environment. As such, based on this data there is merit to reduce parking provision for residential visitors at the subject site.

On this basis, the proposed 654 residential apartments would be required to provide approximately 65 residential visitor car parking spaces compares to 131 car parking spaces required by the DCP. Adopting this requirement for visitor parking therefore the total parking required for Site A residential visitors and retail customers will be 286 car parking spaces which will be adequately covered by the proposed 316 public car parking spaces agreed in the VPA.

In relation to the proposed car parking provision for the commercial use, given that the subject site is located within walking distances to existing public transports and nearby CBD amenities and services, there are also merits to reduce parking for the proposed commercial use. In this regard, parking requirements for commercial developments located in similar CBD locations have been reviewed. This is presented in Table 7.

Table 7: Commercial Parking Requirements for Similar CBD Sites

Locations	Parking Requirements
Subject Site (Lane Cove LGA)	1 space per 100m ²
Milsons Point, St Leonards CBD B4 Mixed Use Zone (North Sydney LGA)	1 space per 400m ² (Maximum Parking Rate)
Chatswood CBD B3 Zone (Willoughby LGA)	1 space per 200m ²

With consideration to the parking requirements at other similar CBD locations, it is considered that there are merits to reduce parking for the commercial component to one space per 155m² of gross floor area.

The revised car parking requirements and provisions are shown in Table 8. The proposed modifications to the parking requirements, if approved, will result in a required parking provision of 1,013 car parking spaces as presented in Table 8.

Table 8: Proposed Car Parking Provisions

Land Use		Units/Floor Area	DCP Rate	Modified Requirements	Parking Provision
Residential flat buildings	Studio	2	0.5 per unit	1	
	1-bed	197	0.5 per unit	99	
	2-bed	395	0.9 per unit	356	
	3-bed	56	1.4 per unit	78	
	4-bed	4	2 per unit	8	
	Sub-Total	654	-	542	542
	Visitor	-	1 per 10 units	65*	NA*
Residential sub-total		-	-	607	542
Commercial		19,322	1 per 155m ² GFA	125	
Commercial sub-total		-	-	125	125
Retail (Site A)	Supermarket	2,675	6.1 per 100m ² NLA	163*	316*
	Specialty	3,025	1 per 110m ² NLA	28*	
Retail (Site B)	Supermarket	1,090	6.1 per 100m ² NLA	66	90
	Specialty	2,622	1 per 110m ² NLA	24	
Retail sub-total		9,412	-	281	406
Total				1,013	1,073

*The revised VPA requires a total of 316 car parking spaces to be dedicated to Council to satisfy parking demand generated by the residential visitors and retail customers in Site A.

The proposed car parking provision of 1,073 car parking spaces is therefore satisfactory.

However, it is noted that the construction of the proposed development may not be required to be staged as previously planned. If the proposed development was to be constructed in a single stage without any requirements for piling walls, it may be possible to provide parking for the commercial component at a level similar to that stipulated in the DCP.

It is proposed to design the car parking spaces to comply with design requirements set out in the relevant Australian Standard for car parking facilities namely AS2890.1:2004 and AS2890.6:2009.

Loading Facilities

Consistent with the DA scheme, the revised scheme will continue to have a loading dock comprising:

- one 14.7m long bays (accommodating vehicles up to 14.7m long delivery trucks for the supermarket)
- three 12.5m long bays (accommodating service vehicles up to an Australian Standard 12.5m long heavy rigid vehicle) to be shared different uses of the proposed development;
- two 8.8m long bays (accommodating service vehicles up to an Australian Standard 8.8m long medium rigid vehicle).

The loading dock will include a turn table to assist service vehicles accessing the loading bays, and to facilitate entry and exit in a forward direction.

Swept path diagrams of the loading dock are provided in Attachment One. The diagrams indicate the design vehicles (including Council's large rigid waste collection vehicles) can accessing the loading facility satisfactorily.

Proposed Driveway Treatments

Following the submission of the DA, JQZ/TTPP has been liaising with Lane Cove Council on the proposed driveway arrangements. Council has requested that the proposed driveway be configured with three traffic lanes at the property boundary. A driveway layback is to be provided such that the access into the driveway appears and operates as a private driveway. In addition, Council has requested for roller shutter gates be provided at the end of the proposed contra flow express residential access instead of bollards.

TTPP confirms that the proposed driveway along the property boundary will be configured with three traffic lanes. The driveway traffic lanes will be configured as follow (from west to east):

- single lane, two-way ramp providing access to the loading dock
- single entry lane into the public car park which also permits residential traffic to diverge into the express ramp in the evening period, and
- single exit lane from the public car park which residential traffic will merge into during the morning period.

The single contra flow express lane/ramp for residential tenants only which will operate as an ingress ramp during the morning period say from 5:00am to 12noon each day and as an egress ramp during the evening period say from 12noon to 5:00am. However, it is envisaged that the time could be adjusted by the body corporate (or similar) to suit on-site conditions and different days of the week as required.

Traffic to/from the contra flow express ramp will diverge/merge with the traffic from the public car park as required.

In addition, barriers and roller shutter gates will be installed to manage the contra flow arrangements. The barriers and roller shutter gates will be installed to Council's requirements.

The driveway layback will be designed and constructed in accordance with Council's design standard and requirements to read as a private driveway.

The updated concept plans for the driveway treatment is contained within Attachment Two of this statement.

Conclusion

Our review indicates that overall the traffic and parking impacts arising from proposed development will continue to be satisfactory.

We trust the above is to your satisfaction. Should you have any queries regarding the above or require further information, please do not hesitate to contact the undersigned on 8437 7800.

Yours sincerely,

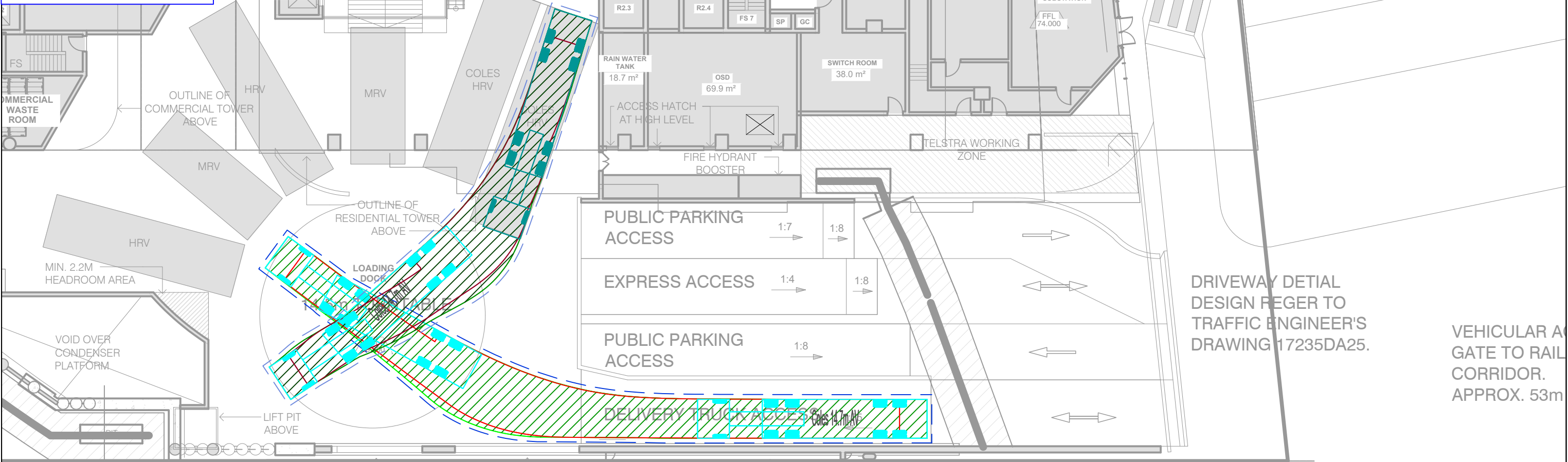


Michael Lee
Director

Attachment One

Loading Dock Swept Path Diagrams

VEHICLE ENTERING

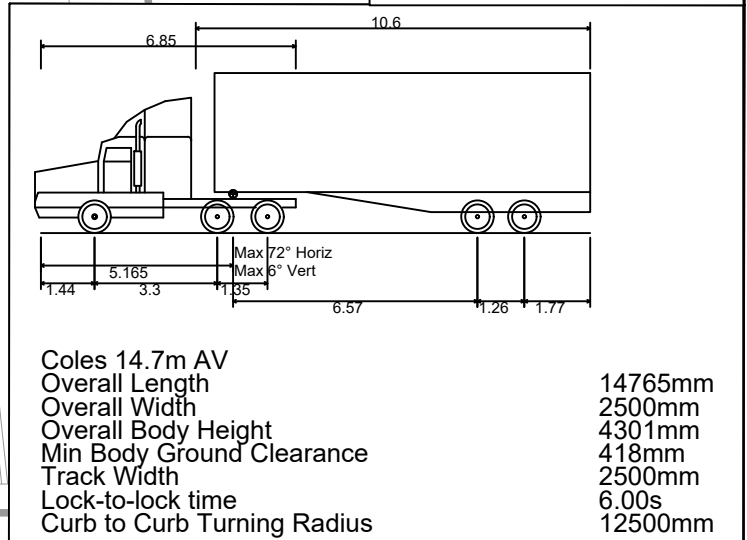


VEHICLE EXITING



KEY:

Wheel path	Forward	Reverse
Body envelope		
300mm clearance		



REV.	DESCRIPTION	DRAWN	CHECK	APP'D	DATE
A	ISSUE FOR DISCUSSION	KM	ML	ML	17/08/18

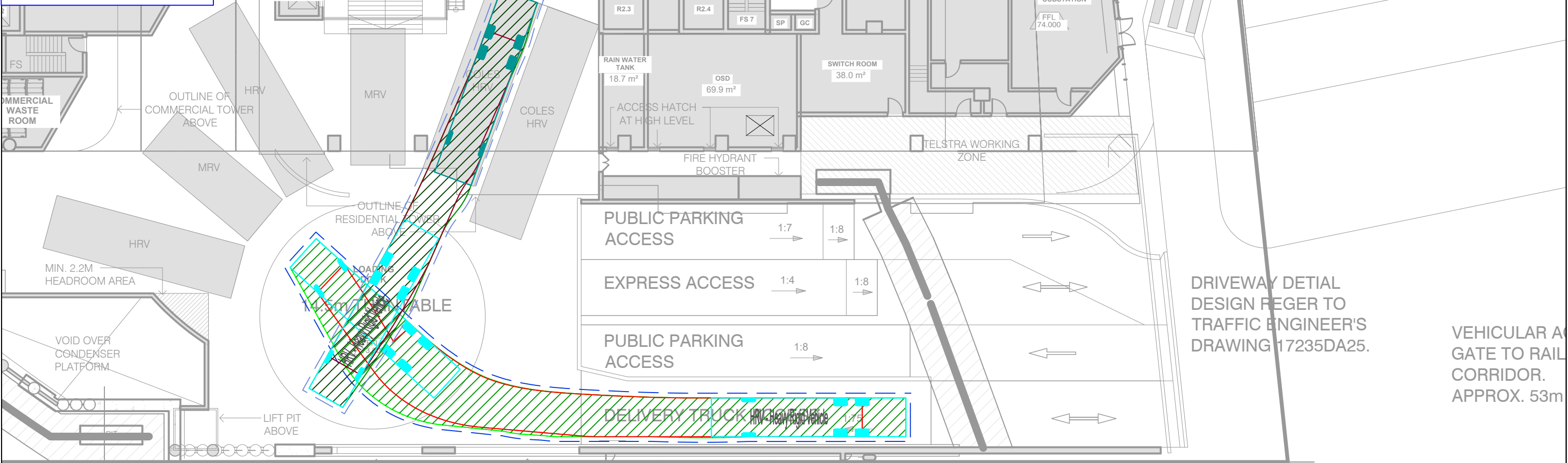
The Transport Planning Partnership
 Suite 402, 22 Alchison Street
 St. Leonards NSW 2045
 Tel: 02 8437 7800
 Email: info@tpp.net.au

PROJECT: **88 CHRISTIE STREET, ST LEONARDS**
 TITLE: **14.765m COLES ARTICULATED VEHICLE SWEEP PATH ANALYSIS LOADING DOCK**

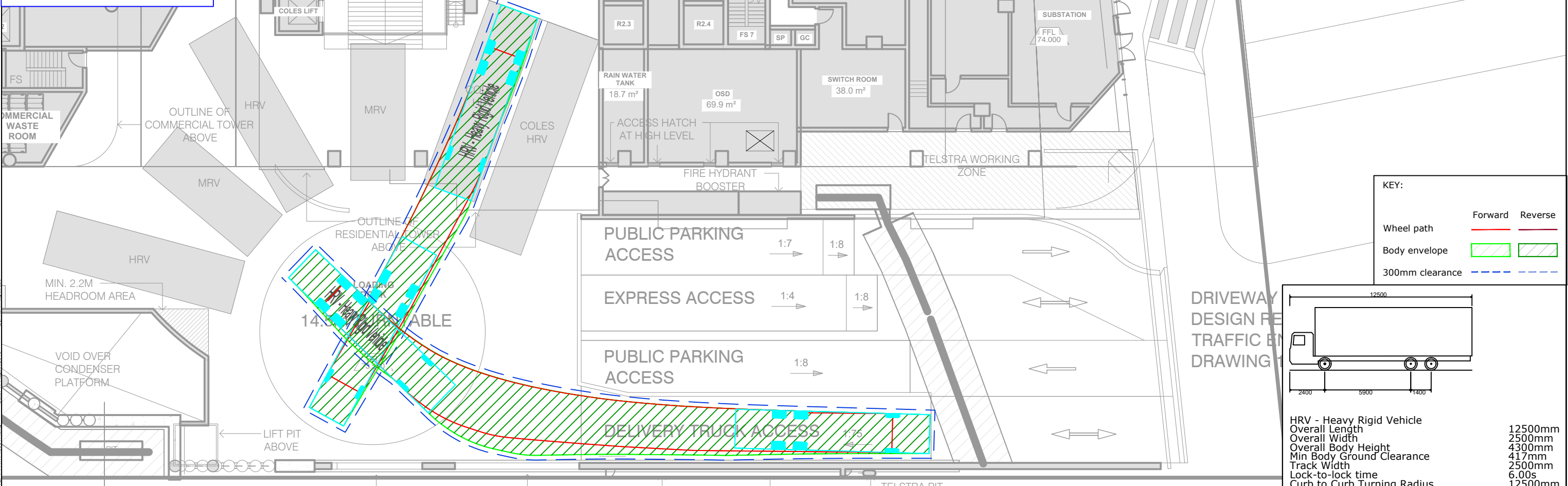
DWG No.	FIGURE 1		
DATE STAMP	17 AUGUST 2018		
PROJECT No.	SCALE	REV.	
17235	1:250 @ A3	A	

Date: 17 August 2018
 By: Kaiti Maguire
 File Name: 17235DA25-LOADING DOCK SWEEP PATH-180817.dwg

VEHICLE ENTERING



VEHICLE EXITING

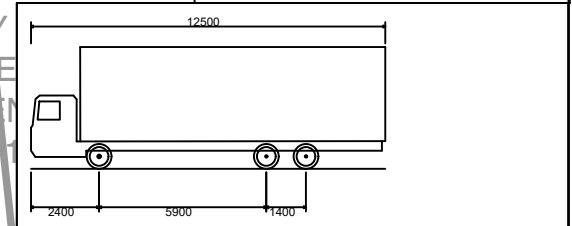


DRIVEWAY DETAIL DESIGN REFER TO TRAFFIC ENGINEER'S DRAWING 17235DA25.

VEHICULAR ACCESS GATE TO RAIL CORRIDOR. APPROX. 53m

KEY:

Wheel path	Forward	Reverse
Body envelope		
300mm clearance		



HRV - Heavy Rigid Vehicle
 Overall Length 12500mm
 Overall Width 2500mm
 Overall Body Height 4300mm
 Min Body Ground Clearance 417mm
 Track Width 2500mm
 Lock-to-lock time 6.00s
 Curb to Curb Turning Radius 12500mm

REV.	DESCRIPTION	DRAWN	CHECK	APP'D	DATE
A	ISSUE FOR DISCUSSION	KM	ML	ML	17/08/18

The Transport Planning Partnership

Suite 402, 22 Alchison Street
 St. Leonards NSW 2045
 Tel: 02 8437 7800
 Email: info@tpp.net.au

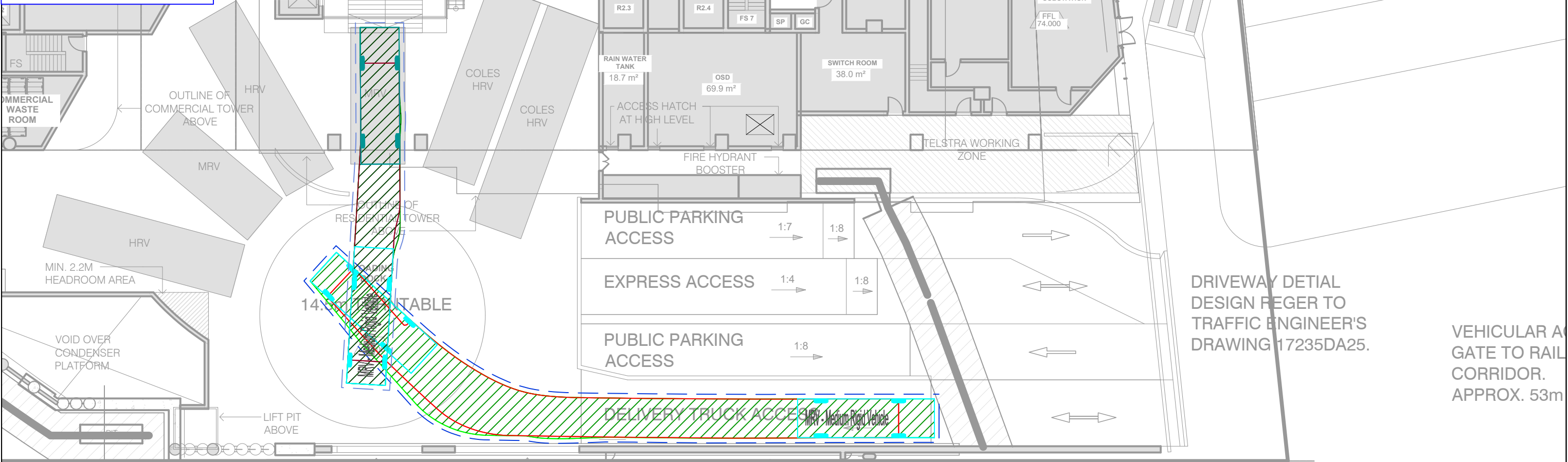
PROJECT: 88 CHRISTIE STREET, ST LEONARDS

TITLE: AS2890.2:2002 12.5m HEAVY RIGID VEHICLE SWEEP PATH ANALYSIS LOADING DOCK

DWG No.	FIGURE 2		
DATE STAMP	17 AUGUST 2018		
PROJECT No.	SCALE	REV.	
17235	1:250 @ A3	A	

Date: 17 August 2018
 By: Kaiti Maguire
 File: 17235DA25-LOADING DOCK SWEEP PATH-080817.dwg

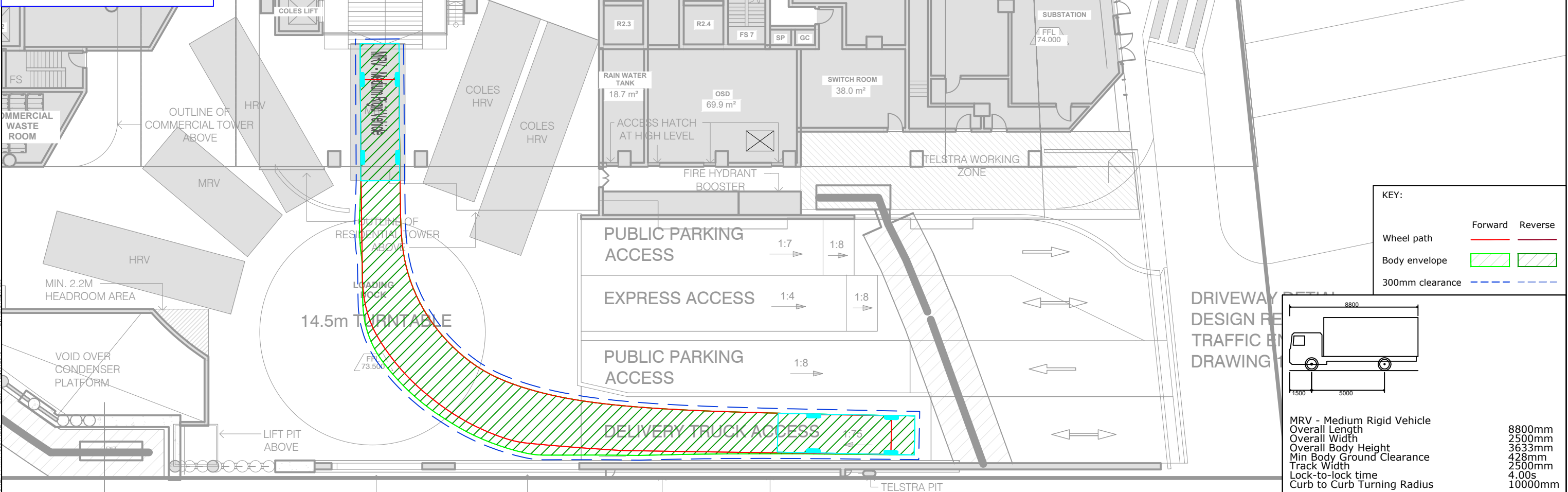
VEHICLE ENTERING



DRIVEWAY DETAIL
DESIGN REFER TO
TRAFFIC ENGINEER'S
DRAWING 17235DA25.

VEHICULAR ACCESS
GATE TO RAIL
CORRIDOR.
APPROX. 53m

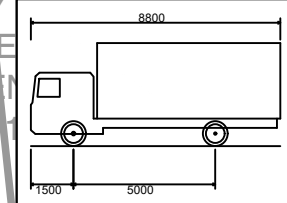
VEHICLE EXITING



DRIVEWAY DETAIL
DESIGN REFER TO
TRAFFIC ENGINEER'S
DRAWING 17235DA25.

KEY:

Wheel path	Forward	Reverse
Body envelope	Green Hatched	Red Hatched
300mm clearance	Blue Dashed Line	



MRV - Medium Rigid Vehicle	
Overall Length	8800mm
Overall Width	2500mm
Overall Body Height	3633mm
Min Body Ground Clearance	428mm
Track Width	2500mm
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	10000mm

REV.	DESCRIPTION	DRAWN	CHECK	APP'D	DATE
A	ISSUE FOR DISCUSSION	KM	ML	ML	17/08/18

The Transport Planning Partnership

Suite 402, 22 Alchison Street
St. Leonards NSW 2045
Tel: 02 8437 7800
Email: info@tpp.net.au

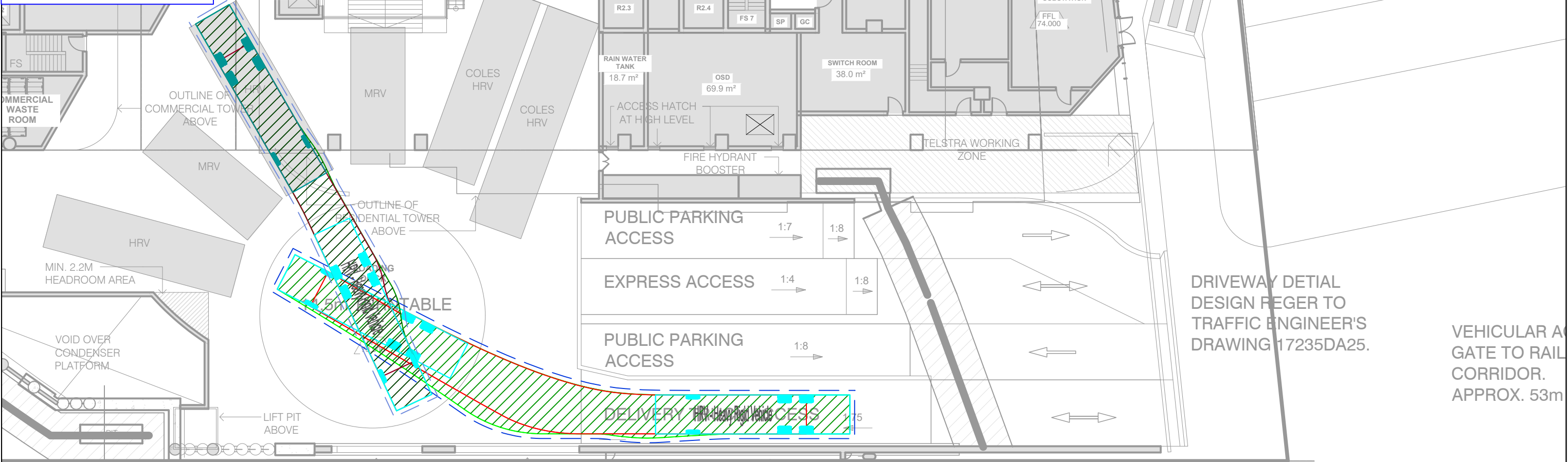
PROJECT: 88 CHRISTIE STREET, ST LEONARDS

TITLE: AS2890.2:2002 8.8m MEDIUM RIGID VEHICLE SWEEP PATH ANALYSIS
LOADING DOCK

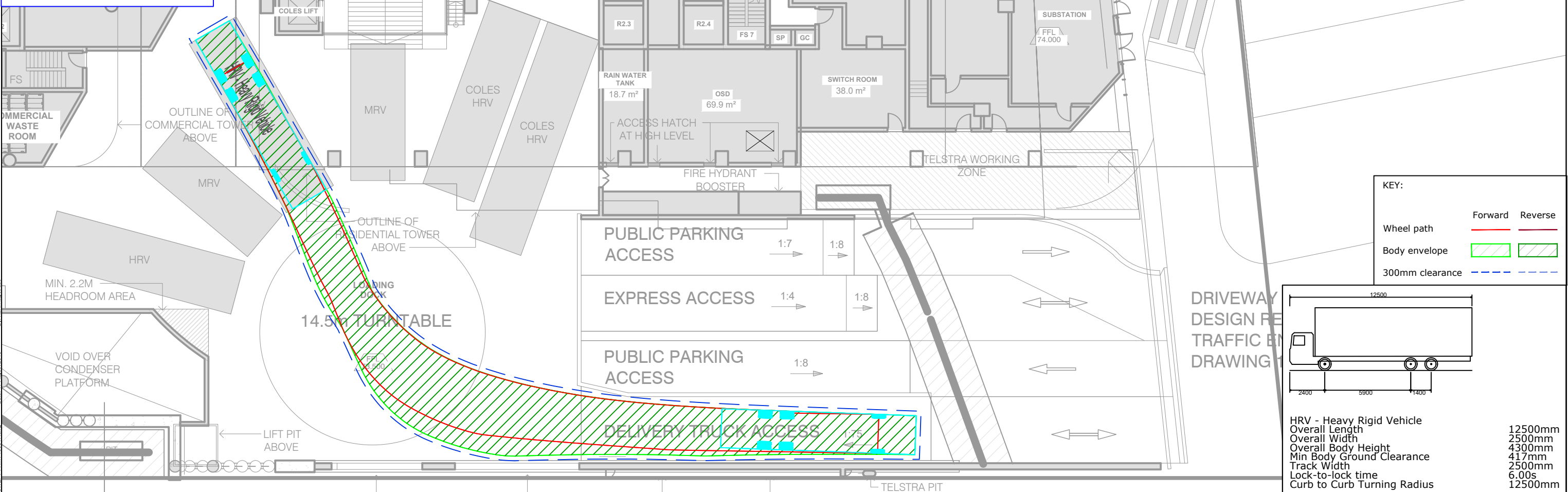
DWG No.	FIGURE 3		
DATE STAMP	17 AUGUST 2018		
PROJECT No.	SCALE	REV.	
17235	1:250 @ A3	A	

Date: 17 August 2018
By: Kaiti Maguire
Filename: 17235DA25-LOADING DOCK SWEEP PATH-88817.dwg

VEHICLE ENTERING



VEHICLE EXITING

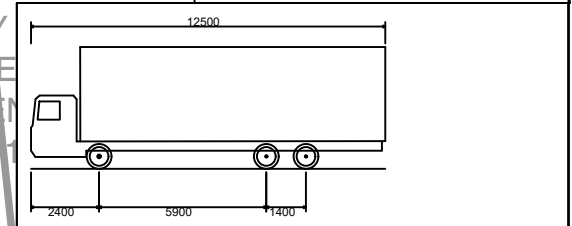


DRIVEWAY DETAIL DESIGN REFER TO TRAFFIC ENGINEER'S DRAWING 17235DA25.

VEHICULAR ACCESS GATE TO RAIL CORRIDOR. APPROX. 53m

KEY:

Wheel path	Forward	Reverse
Body envelope		
300mm clearance		



HRV - Heavy Rigid Vehicle
 Overall Length 12500mm
 Overall Width 2500mm
 Overall Body Height 4300mm
 Min Body Ground Clearance 417mm
 Track Width 2500mm
 Lock-to-lock time 6.00s
 Curb to Curb Turning Radius 12500mm

REV.	DESCRIPTION	DRAWN	CHECK	APP'D	DATE
A	ISSUE FOR DISCUSSION	KM	ML	ML	17/08/18

The Transport Planning Partnership

Suite 402, 22 Alchison Street
 St. Leonards NSW 2045
 Tel: 02 8437 7800
 Email: info@tpp.net.au

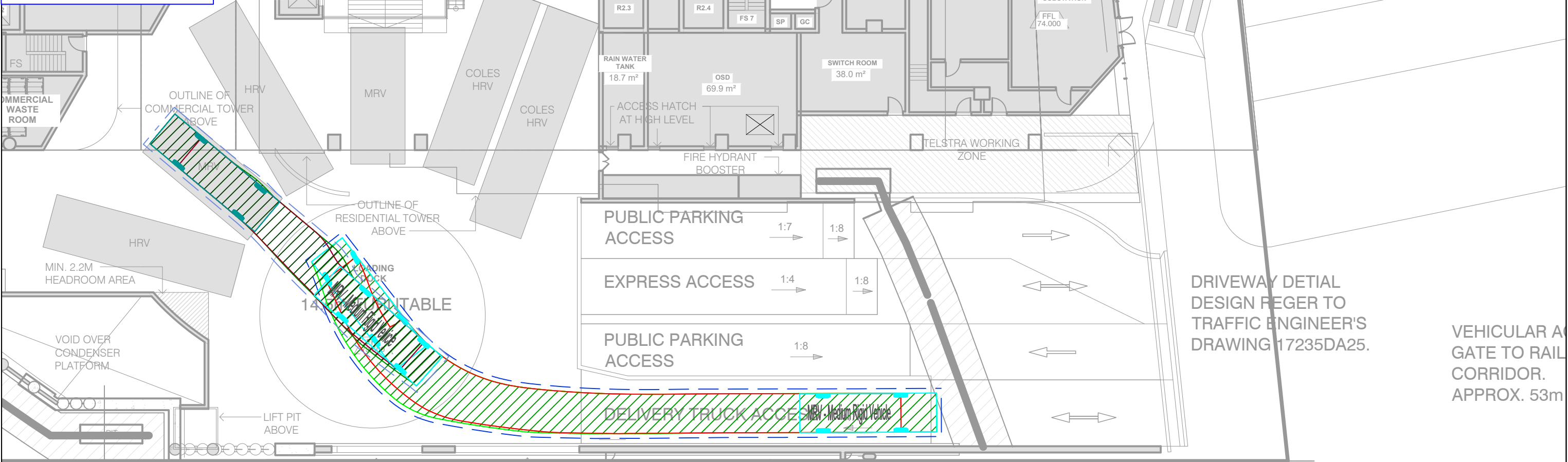
PROJECT: 88 CHRISTIE STREET, ST LEONARDS

TITLE: AS2890.2:2002 12.5m HEAVY RIGID VEHICLE SWEEP PATH ANALYSIS LOADING DOCK

DWG No.	FIGURE 4		
DATE STAMP	17 AUGUST 2018		
PROJECT No.	SCALE	REV.	
17235	1:250 @ A3	A	

Date: 17 August 2018
 By: Kaiti Maguire
 File: 17235DA25-LOADING DOCK SWEEP PATH-0817.dwg

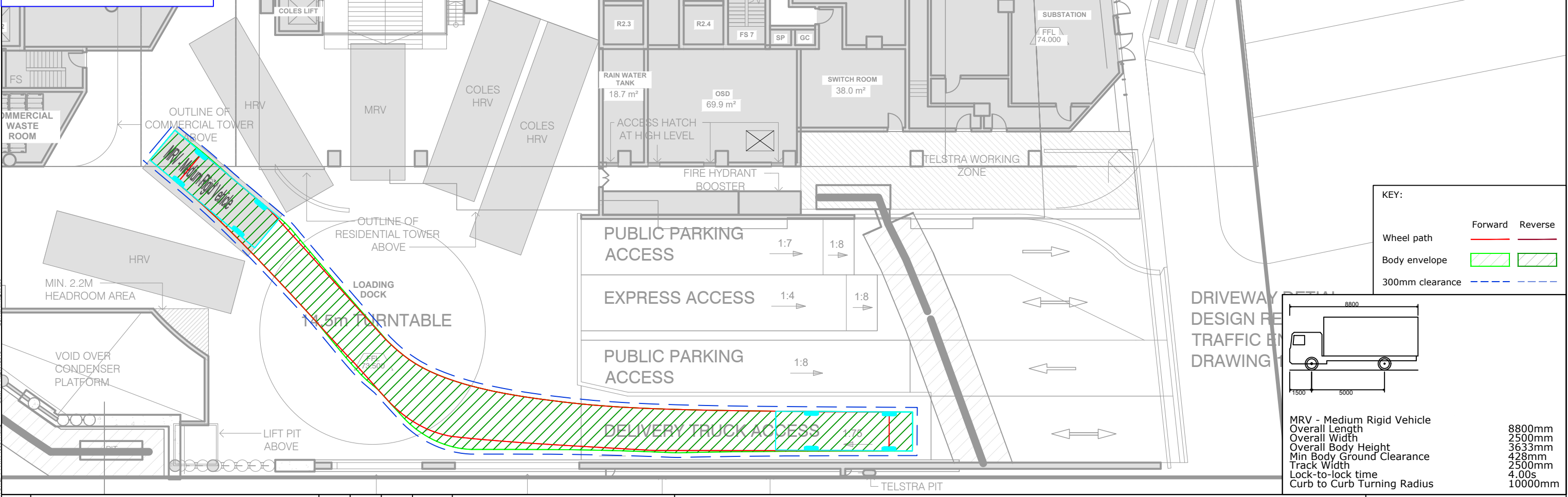
VEHICLE ENTERING



DRIVEWAY DETAIL
DESIGN REFER TO
TRAFFIC ENGINEER'S
DRAWING 17235DA25.

VEHICULAR ACCESS
GATE TO RAIL
CORRIDOR.
APPROX. 53m

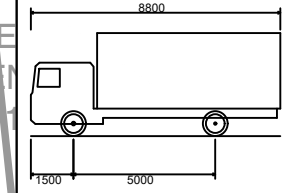
VEHICLE EXITING



DRIVEWAY DETAIL
DESIGN REFER TO
TRAFFIC ENGINEER'S
DRAWING 17235DA25.

KEY:

Wheel path	Forward	Reverse
Body envelope	Green Hatched	Red Hatched
300mm clearance	Blue Dashed Line	



MRV - Medium Rigid Vehicle	Overall Length	8800mm
	Overall Width	2500mm
	Overall Body Height	3633mm
	Min Body Ground Clearance	428mm
	Track Width	2500mm
	Lock-to-lock time	4.00s
	Curb to Curb Turning Radius	10000mm

REV.	DESCRIPTION	DRAWN	CHECK	APP'D	DATE
A	ISSUE FOR DISCUSSION	KM	ML	ML	17/08/18

The Transport Planning Partnership

Suite 402, 22 Alchison Street
St. Leonards NSW 2045
Tel: 02 8437 7800
Email: info@tpp.net.au

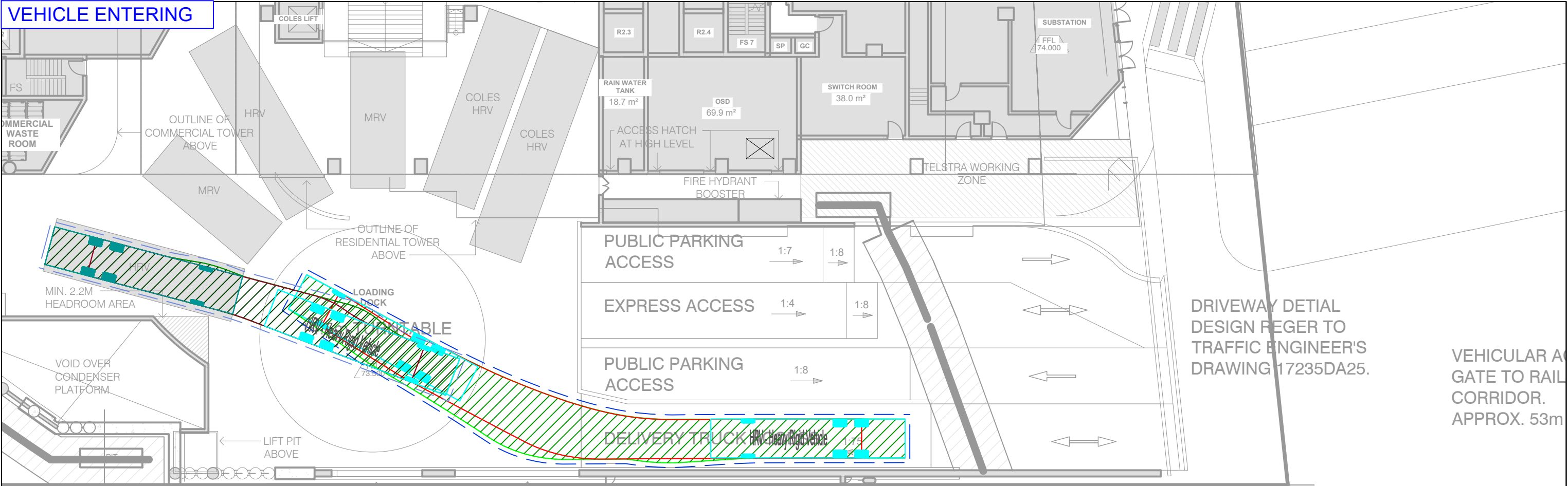
PROJECT: 88 CHRISTIE STREET, ST LEONARDS

TITLE: AS2890.2:2002 8.8m MEDIUM RIGID VEHICLE SWEEP PATH ANALYSIS
LOADING DOCK

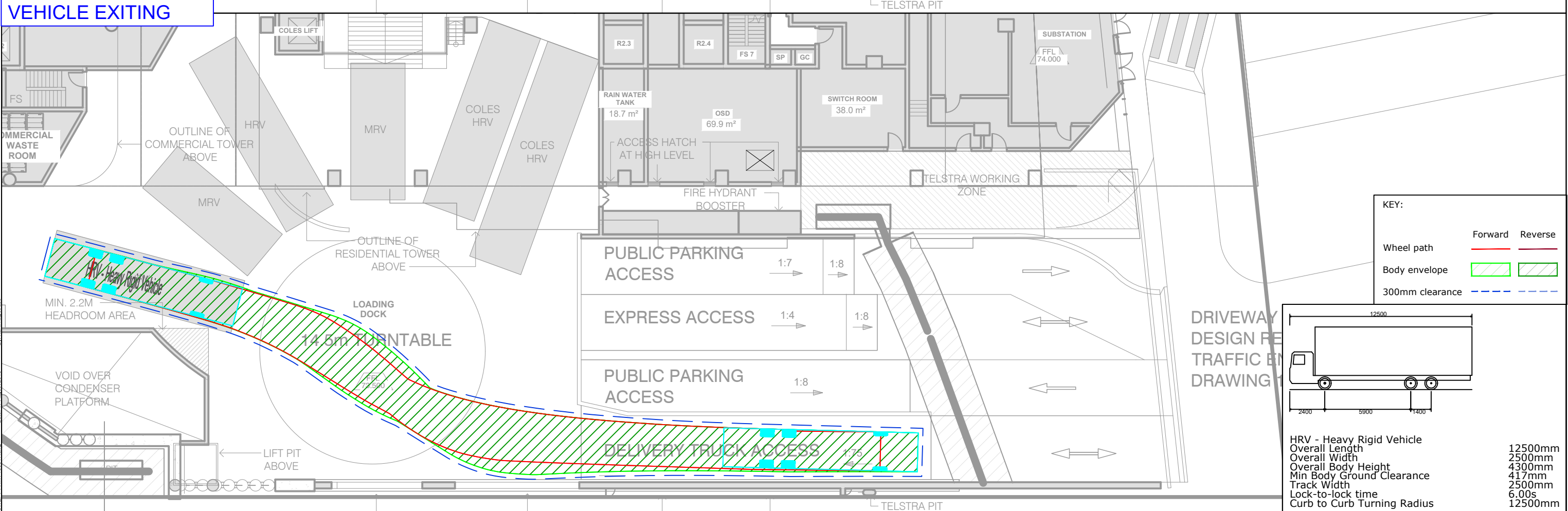
DWG No.	FIGURE 5		
DATE STAMP	17 AUGUST 2018		
PROJECT No.	SCALE	REV.	
17235	1:250 @ A3	A	

Date: 17 August 2018
By: Kaiti Maguire
Filename: 17235DA25-LOADING DOCK SWEEP PATH-88817.dwg

VEHICLE ENTERING



VEHICLE EXITING



REV.	DESCRIPTION	DRAWN	CHECK	APP'D	DATE
A	ISSUE FOR DISCUSSION	KM	ML	ML	17/08/18

The Transport Planning Partnership

Suite 402, 22 Alchison Street
 St. Leonards NSW 2045
 Tel: 02 8437 7800
 Email: info@tpp.net.au

PROJECT: 88 CHRISTIE STREET, ST LEONARDS

TITLE: AS2890.2:2002 12.5m HEAVY RIGID VEHICLE SWEEP PATH ANALYSIS
 LOADING DOCK

DWG No. FIGURE 6

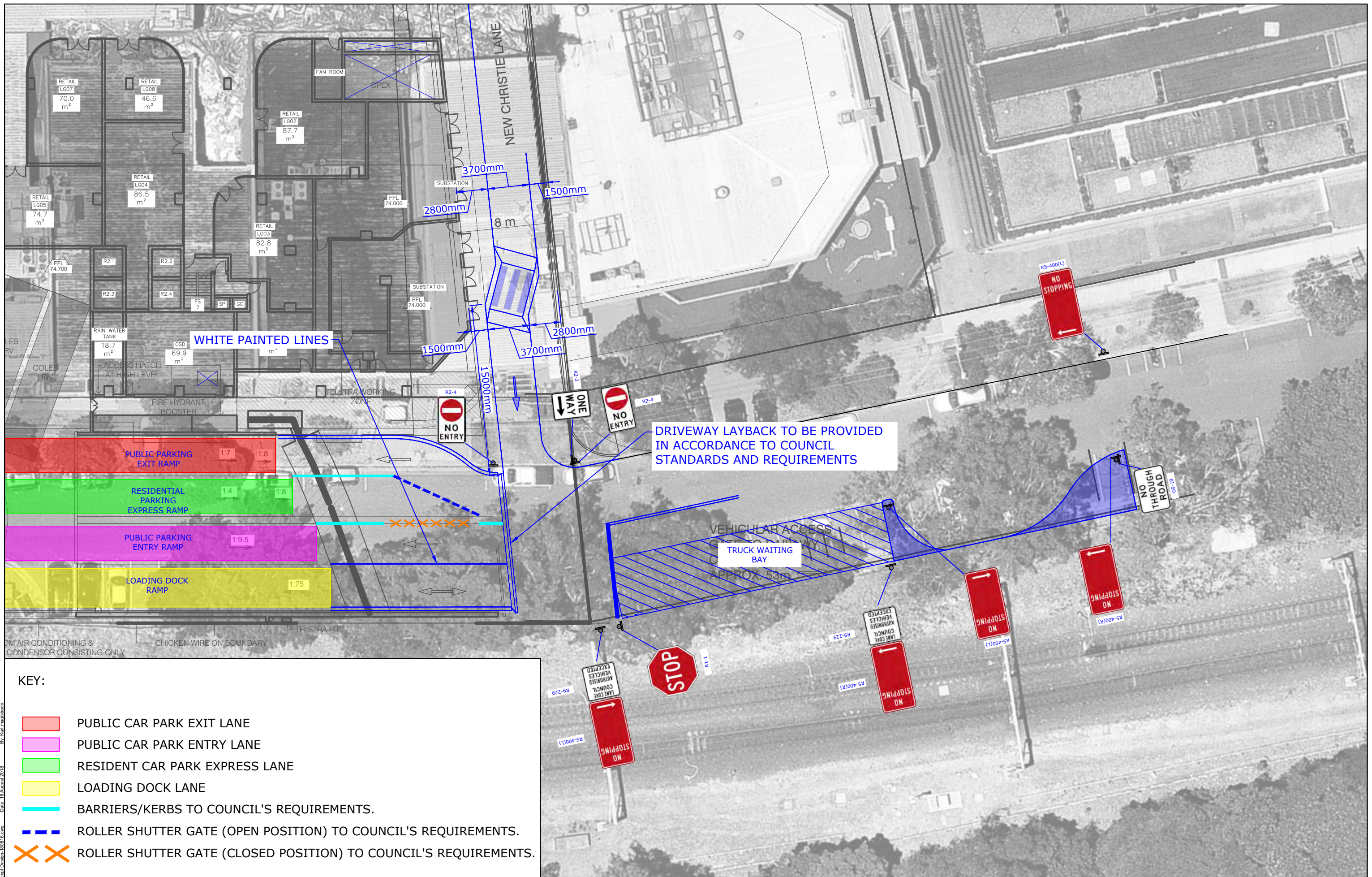
DATE STAMP: 17 AUGUST 2018

PROJECT No. 17235	SCALE 1:250 @ A3	REV. A
-------------------	------------------	--------

Date: 17 August 2018
 By: Kaiti Maguire
 File Name: 17235DA25-LOADING DOCK SWEEP PATH-080817.dwg

Attachment Two

Amended Driveway Treatment Concept Plans



- KEY:**
- PUBLIC CAR PARK EXIT LANE
 - PUBLIC CAR PARK ENTRY LANE
 - RESIDENT CAR PARK EXPRESS LANE
 - LOADING DOCK LANE
 - BARRIERS/KERBS TO COUNCIL'S REQUIREMENTS.
 - ROLLER SHUTTER GATE (OPEN POSITION) TO COUNCIL'S REQUIREMENTS.
 - ROLLER SHUTTER GATE (CLOSED POSITION) TO COUNCIL'S REQUIREMENTS.

REV.	DESCRIPTION	DRAWN	CHECK	APP'D	DATE
A	ISSUE FOR DISCUSSION	KM	ML	ML	16/08/18

**The Transport
Planning Partnership**

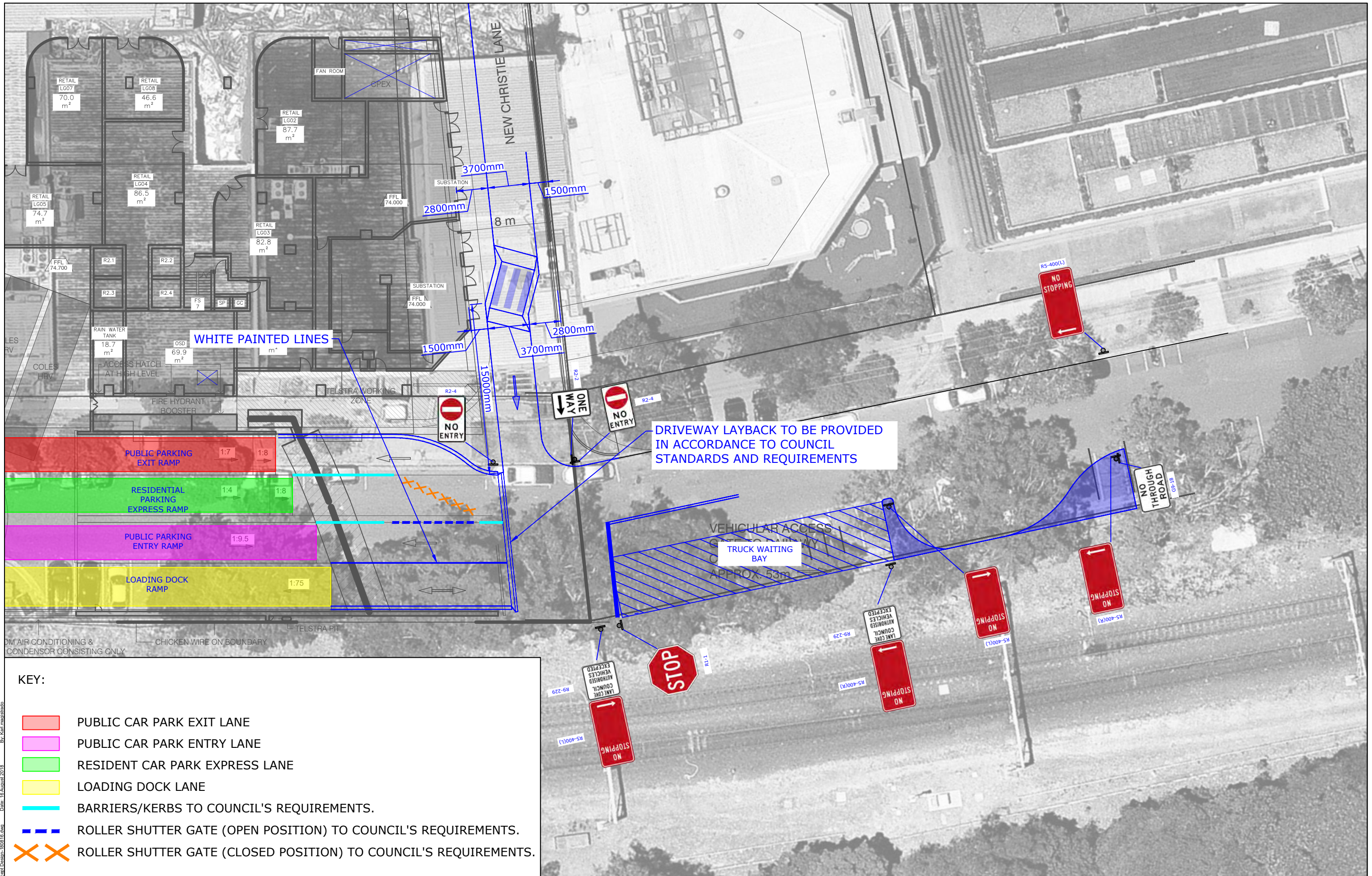
Suite 402, 22 Alchison Street
St. Leonards NSW 2045
Tel: 02 8437 7800
Email: info@tpp.net.au

PROJECT: **88 CHRISTIE STREET, ST LEONARDS**

TITLE: **ACCESS ARRANGEMENT CONCEPT DESIGN
MORNING PERIOD**

DWG No. 17235DA25 - FIGURE 1	
DATE STAMP 16 AUGUST 2018	
PROJECT No. 17235	SCALE 1:300 @A3
REV. A	

File name: 17235DA25-Interaction_Concept_Design-160818.dwg
 Date: 16 August 2018
 By: Kaiti Marshall



- KEY:**
- PUBLIC CAR PARK EXIT LANE
 - PUBLIC CAR PARK ENTRY LANE
 - RESIDENT CAR PARK EXPRESS LANE
 - LOADING DOCK LANE
 - BARRIERS/KERBS TO COUNCIL'S REQUIREMENTS.
 - ROLLER SHUTTER GATE (OPEN POSITION) TO COUNCIL'S REQUIREMENTS.
 - ROLLER SHUTTER GATE (CLOSED POSITION) TO COUNCIL'S REQUIREMENTS.

REV.	DESCRIPTION	DRAWN	CHECK	APP'D	DATE
A	ISSUE FOR DISCUSSION	KM	ML	ML	16/08/18

**The Transport
Planning Partnership**

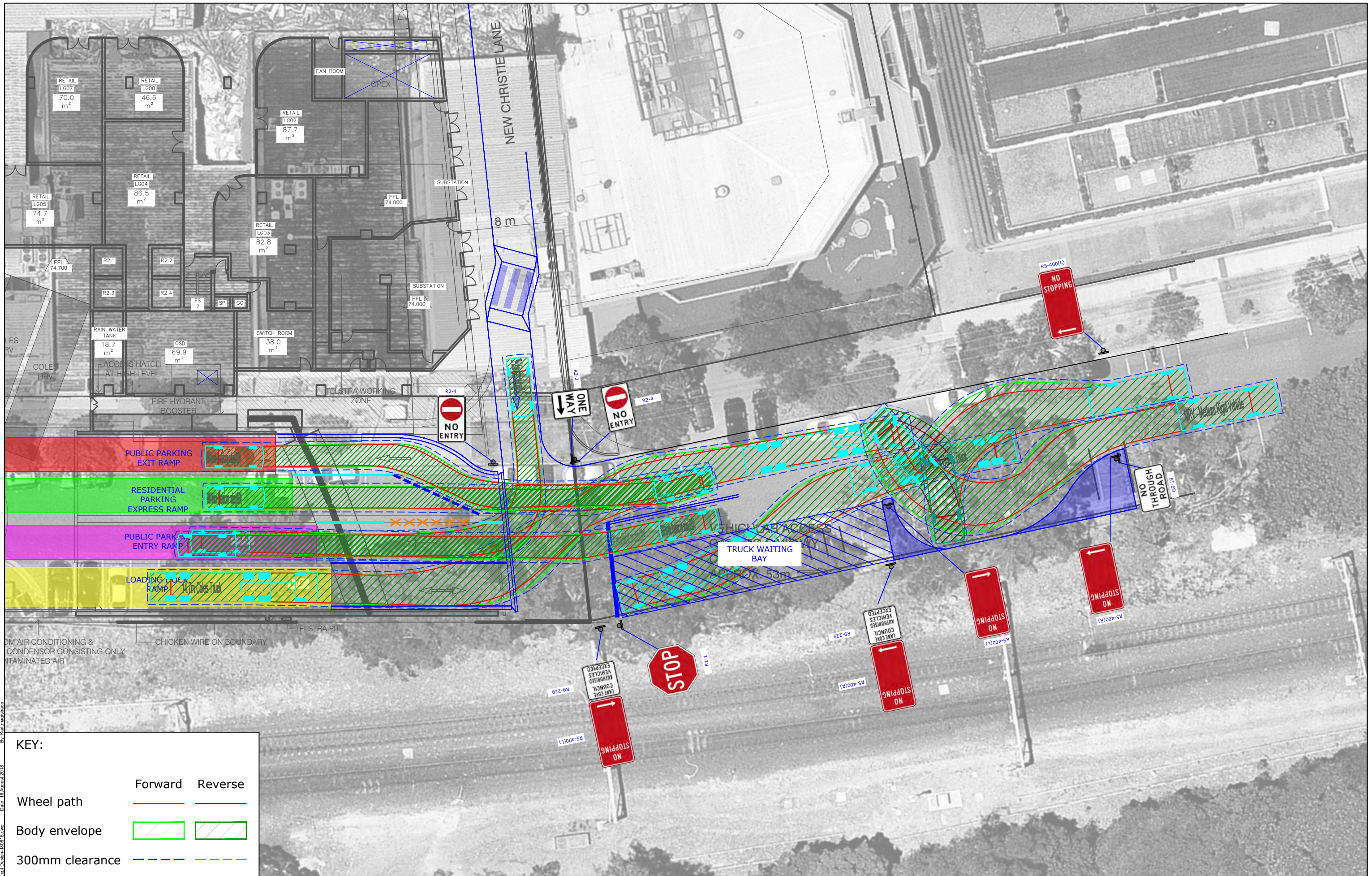
Suite 402, 22 Alchison Street
St. Leonards NSW 2045
Tel: 02 8437 7800
Email: info@tpp.net.au

PROJECT: **88 CHRISTIE STREET, ST LEONARDS**

TITLE: **ACCESS ARRANGEMENT CONCEPT DESIGN
EVENING PERIOD**

DWG No. 17235DA25 - FIGURE 2		
DATE STAMP 16 AUGUST 2018		
PROJECT No. 17235	SCALE 1:300 @A3	REV. A

Date: 16 August 2018
File: 17235DA25-Interaction_Concept_Design-160818.dwg
By: Kail, mshahabadi



KEY:

	Forward	Reverse
Wheel path		
Body envelope		
300mm clearance		

REV.	DESCRIPTION	DRAWN	CHECK	APP'D	DATE
A	ISSUE FOR DISCUSSION	KM	ML	ML	16/08/18

The Transport Planning Partnership

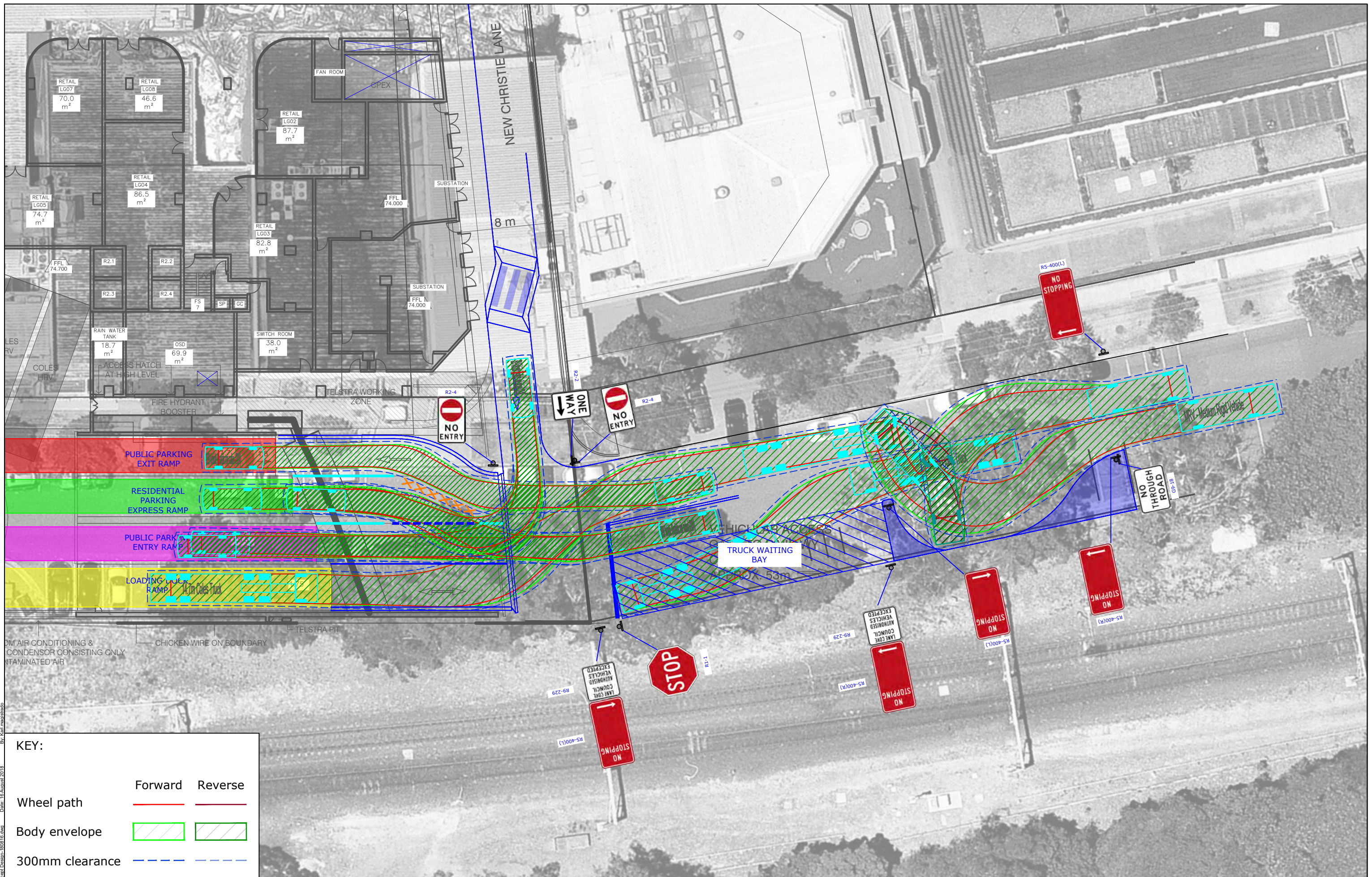
Suite 402, 22 Atchison Street
 St. Leonards NSW 2045
 Tel: 02 8437 7800
 Email: info@tpp.net.au

PROJECT: 88 CHRISTIE STREET, ST LEONARDS

TITLE: SWEPT PATH ASSESSMENT MORNING PERIOD

DWG No. 17235DA25 - FIGURE 3		
DATE STAMP 16 AUGUST 2018		
PROJECT No. 17235	SCALE 1:300 @A3	REV. A

File name: 17235DA25-Intersection_Concept_Design-160818.dwg
 Date: 16 August 2018
 By: Karl Meehan



KEY:

	Forward	Reverse
Wheel path		
Body envelope		
300mm clearance		

REV.	DESCRIPTION	DRAWN	CHECK	APP'D	DATE
A	ISSUE FOR DISCUSSION	KM	ML	ML	16/08/18

The Transport Planning Partnership

Suite 402, 22 Alchison Street
 St. Leonards NSW 2045
 Tel: 02 8437 7800
 Email: info@tpp.net.au

PROJECT: 88 CHRISTIE STREET, ST LEONARDS

TITLE: SWEPT PATH ASSESSMENT
 EVENING PERIOD

DWG No. 17235DA25 - FIGURE 4	
DATE STAMP 16 AUGUST 2018	
PROJECT No. 17235	SCALE 1:300 @A3
REV. A	

File name: 17235DA25-Intersection_Concept_Design-160818.dwg
 Date: 16 August 2018
 By: Karl Meehan