TOWN OF COTTESLOE

ATTACHMENTS

NORTH COTTESLOE PRIMARY SCHOOL TRAFFIC SAFETY COMMITTEE MEETING – 10 AUGUST 2020

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TOWN OF COTTESLOE

NORTH COTTESLOE PRIMARY SCHOOL TRAFFIC SAFETY COMMITTEE MEETING

ATTACHMENT

ITEM 8.1.1A:
NORTH COTTESLOE PRIMARY SCHOOL KISS AND DROP - CONCEPT DEISGN - ROAD SAFETY AUDIT OFFICER COMMENTS

ADBird Engineering

Feasibility Stage

Road Safety Audit

North Cottesloe Primary School – Railway St KissnRide

Town of Cottesloe

May 2020

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1 Introduction

1.1 Scope of Audit

The Town of Cottesloe has commissioned this feasibility stage road safety audit of a proposed upgrade of the KissnRide facility on Railway Street at the North Cottesloe Primary School, including the examination of the existing KissnRide facility on Eric Street. The purpose of the audit is to identify any safety issues or deficiencies with the design and provide recommendations to address these deficiencies and safety issues.

Site plans annotated to indicate the locations of the audit findings have been provided at Appendix A.

1.2 Background Information

1.2.1 Documentation provided for audit

A summary of documents provided for audit is presented at Appendix B.

At the audit commencement meeting, the audit team noted that the two Cardno "North Cottesloe Primary School Concept" drawings (un-numbered but dated 24 June 2019, Revision A) showed a different configuration of pedestrian facilities at the proposed KissnRide;

- The Cardno drawings show wombat crossings across both through lanes of Railway Street as well as the KissnRide area.
- Sketches SK300 and SK301 show a wombat crossing at the KissnRide facility leading directly towards a guard-attended crossing for the through-lanes of Railway Street.

Note: A wombat crossing is a zebra crossing positioned on an elevated platform.

1.2.2 Description of the site

North Cottesloe Primary School is situated at the north east quadrant of the intersection of Eric Street and Railway Street, Cottesloe. It is adjacent to the Perth-Fremantle Railway line and with limited rail crossings in the area, Eric Street serves as the primary access for the school catchment to the west of the railway line.

Eric Street provides Distributor A access between Curtin Avenue and Stirling Highway, while Railway Street provides Local Distributor access along the eastern boundary of the Perth -Fremantle Rail line, between the nearest crossings of the rail line (grade separated crossing at Claremont Crescent approximately 1 km to the north of Eric Street, at-grade rail crossing at Jarrad Street approximately 1 km to the south of Eric Street).

In the vicinity of North Cottesloe Primary School, Eric Street is configured predominantly as a 2-lane road with painted centre median. Between the KissnRide entry and Stirling Highway, Eric Street has line marked sealed shoulders which are painted green and marked as cycle lanes at the median island immediately east of the KissnRide exit. However, segregated on-road cycling facilities do not extend through the Eric Street / Railway Street roundabout, where instead there are footpaths.

In the vicinity of North Cottesloe Primary School, Railway Street is configured as a 2-lane undivided road. There are footpaths along both verges of Railway Street.

1.2.3 Traffic

Information on existing road use was obtained from the Main Roads WA Trafficmap website. The following table summarises this information.

Location	Weekday traffic	Survey date	Linear growth rate (%)
Eric Street, immediately west of Stirling Highway	9,353 vpd 8,537 vpd	2019/20 2015/16	2.4%
Railway Street (at the intersection with Mann Street - 24 hour video survey)	3,482 vpd including 150 bicycles	1 June 2017	Single survey

The following traffic information was provided by the Town of Cottesloe.

Location	Weekday traffic	Survey date	Linear growth rate (%)
Railway Street – between Greenham Street and Grant Street	3,351 vpd	30 Oct 2019 – 13 Nov 2019	Single survey

It is noted that at the time of the audit site inspection, it is not known whether the pedestrian and vehicular traffic at school closing time was representative of normal activities. This is because of Covid-19 influences whereby caregivers had the option of schooling from home. Advice from the North Cottesloe Primary School prior to the audit was that they anticipated approximately 80% of normal attendance at the time the audit site inspection was undertaken.

1.2.4 Historic Crash data

Reported crashes for 2015 to 2019 inclusive were sourced for;

- the section of Railway Street from Greenham Street to the roundabout at Eric Street.
- The section of Eric Street from the roundabout at Railway Street up to the slow point near Gordon Street.

There were no reported crashes over the sections where the upgraded KissnRide facility is proposed.

On Eric Street, the following property damage crashes have been reported;

- Three RUM 11 right-angle crashes at the Railway Street / Eric Street roundabout, one involving a bicycle.
- Two RUM 17 Thru-left crashes at the Eric Street roundabout.
- One RUM 45 (Reversing rear-end) crash on the eastern Approach of Eric Street to the roundabout.
- One unallocated RUM 31 (Rear-end) crash at the roundabout, and another immediately west of the slow point island.

These crashes occurred predominantly outside school drop off and pick up hours (mostly late afternoon) and in dry weather conditions.

A collision diagram showing these crashes is presented at Appendix D.

1.3 Audit Process

1.3.1 Team organisation

The feasibility stage road safety audit team comprised:

Name	Organisation	Audit role
Adrian Bird	ADBird Engineering Pty Ltd	Team Leader
Andrew McDougall	GAF Traffic	Audit team member (accredited Senior Road Safety Auditor)

Table 2: Audit team

1.3.2 Audit methodology

Prior to the audit on Sunday 26 April 2020, the team leader captured daytime video of the site for reference purposes by the audit team.

Also prior to the audit commencement meeting, the team leader phone the North Cottesloe Primary School Principal, Doug Cook, to discuss operational observations of traffic and vulnerable road user interactions at the existing KissnRide facility on Railway Street.

The audit commencement meeting was held via Skype due to Coronavirus social distancing requirements, between 1.15 and 2.15pm on Thursday 30 April 2020. Participating in the audit commencement meeting was the audit team with David Lappan from the Town of Cottesloe.

A job safety analysis was prepared covering the site inspection activities, in recognition of the potential traffic hazards to audit team members in conducting the site inspections.

The daytime site inspection was conducted between 2.45pm and 3.45 pm on Thursday 30 April 2020, attended by both audit team members. During the afternoon site inspection, the audit team liaised briefly with the Traffic Warden manning the guard-attended crossing on Railway St to discuss any operational concerns. The night time site inspection was conducted on Thursday 30 April between 6.30pm and 7.00pm.

A draft audit report was prepared and audit team member comments were incorporated into the final report.

The audit team also completed the Road Safety Around Schools Audit Checklist.

1.3.3 Audit compliance

The audit has been conducted in accordance with Austroads Guide to Road Safety Part 6: Road Safety Audit (2009) and IPWEA (WA) audit requirements. It covers physical features of the site which may affect the road user safety and has sought to identify potential safety hazards based on the background information and site inspections. However, the auditors point out that no guarantee is made that every deficiency has been identified.

1.3.4 Safe System Findings

The aim of Safe System Findings is to focus the Road Safety Audit process on considering safe speeds and by providing forgiving roads and roadsides. This is to be delivered through the Road Safety Audit process by accepting that people will always make mistakes and by considering the known limits to crash forces the human body can tolerate. This is to be achieved by focusing the Road Safety Audit on particular crash types that are known to result in higher severity outcomes at relatively lower speed environments to reduce the risk of fatal and serious injury crashes.

Ratings of audit Findings or Recommendations are provided in the form (**KSI Severity Rating : Likelihood Rating**). A KSI Rating of "IMPORTANT" is used to provide emphasis to any road safety audit finding that has the potential to result in fatal or serious injury or findings that are likely to result in the following crash types above the related speed environment: head-on (>70 km/h), right angle (>50 km/h), run off road impact object (>40 km/h), and crashes involving vulnerable road users (>30 km/h), as these crash types are known to result in higher severity outcomes at relatively lower speed environments.

The Likelihood Rating (of crash occurrence) takes account of factors including exposure (traffic volumes and movements), speed environment, crash history and the road environment, and is subjective in that it requires the application of road safety engineering and crash investigation experience. The Likelihood Rating of crash occurrence is rated "VERY HIGH", "HIGH", "MODERATE" or "LOW".

1.3.5 Responding to the road safety audit

A Corrective Action Report to be completed by Main Roads WA is attached at Appendix E.

It is the responsibility of the Town of Cottesloe to seek additional advice, if necessary, before accepting any of the recommendations or proceeding with any solutions to address the recommendations made in this report.

1.3.6 Disclaimer

This report addresses physical features of the site (as described in section 1.1 Scope of Audit) which may affect the road user safety and has sought to identify potential safety hazards based on the available background information (refer to Appendix B) and site inspections.

The report is based on the conditions viewed at the times of inspection and is relevant at the time of production of the report. The times of site inspection may not be representative of all states of road use and therefore may not allow identification of all road safety hazards (eg wet weather performance).

The road safety audit team does not warrant, guarantee or represent that this report is free from errors or omissions or that the information is exhaustive. Information contained within this report may become inaccurate without notice, may be wholly or partly incomplete or incorrect, or may be superseded. Before relying on the information in this report, users should carefully evaluate the accuracy, completeness and relevance of the information and seek appropriate expert advice in the interpretation of this report. Furthermore, users should not solely rely on the contents of this report or draw inferences to other sites.

Subject to any responsibilities implied in law which cannot be excluded, the road safety audit team is not liable to any party for any losses, expenses, damages, liabilities or claims whatsoever, whether direct, indirect or consequential, arising out of or referable to the use of this report, howsoever caused whether in contract, tort, statute or otherwise.

2 Audit Findings and Recommendations

The audit findings and recommendations are presented in the Corrective Action Report in Appendix E.

3 Conclusions

This road safety audit has been carried out for the purpose of identifying any features that could be changed to improve the safety of the concept design of the proposed upgrade to the Railway Street KissnRide facility at the North Cottesloe Primary School.

All the identified problems have been noted in this report and the accompanying recommendations are forwarded to the Town of Cottesloe for consideration.

Adrian Bird (Audit Team Leader)

Revision	Date	Approved	Purpose
A	3 May 2020	Adrian Bird	DRAFT for audit team review and comment
0	11 May 2020		Issued for Town of Cottesloe use

APPENDIX A

Site plans indicating the audit finding locations

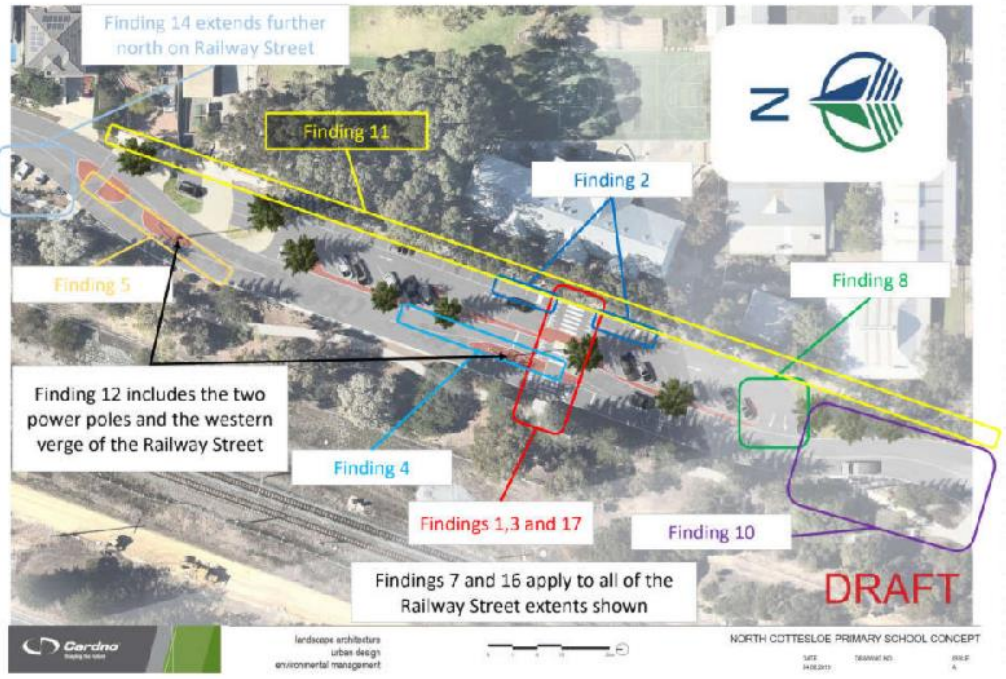


Figure A1: Site plan showing the audit finding locations along Railway Street

Figure A2: Site plan showing the audit finding locations along Eric Street (Map source: Nearmap)

APPENDIX B

Documents provided for audit

The following table provides a summary of the documents provided for the audit.

Title	Detail	Date
Road Safety Audit Brief	email	22 April 2020
Reported crashes	Railway Street – Greenham Street to Eric Street Eric Street – Railway Street to the slow point immediately west of Gordon Street	2015 to 2019 inclusive
Town of Cottesloe resolution	Item 2i	25 February 2020
Traffic Engineering, Safety Review and Travel Management Plan V5	Move Consultants	September 2019
Previous Road Safety Audits	None identified	-

Table B1 Documents provided for audit

APPENDIX C

Site Photos

Photo	Photo content	Related finding
1	Vehicles were observed driving contra-flow to get past illegally standing vehicles on Eric Street shortly before and after school closing time.	6
2	The driver of the vehicle at the left of this photo is trying to turning left from Railway Street onto Eric Street. Vehicles were observed mounting the roundabout splitter island to get past the illegally standing vehicles shown in the eastbound lane of Eric Street.	6
3	Sight distance to the west along Eric Street from the KissnRide exit is restricted by the Banksia trees.	9
4	Footpath running along the east verge of Railway St. Note the path width and also the foliage encroaching over the footpath.	11
5	Multiple tow ball strikes evident and wide lane width at the Eric Street KissnRide exit.	13
6	Soft, uneven surface of the informal parking area on the west verge of Railway Street, north of the proposed KissnRide facility.	14
7	View from the roundabout northwards showing the poor delineation at the NW quadrant of the Eric St / Railway St roundabout due to the faulty street light (indicated in the red circle).	15

Table C1 Photo index

Photo 1: Vehicles were observed driving contra-flow to get past illegally standing vehicles on Eric Street shortly before and after school closing time.

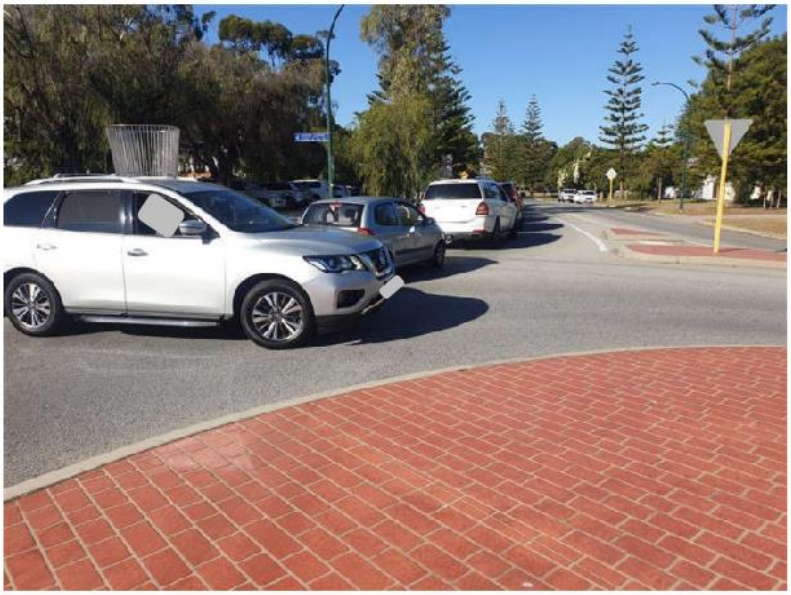


Photo 2: The driver of the vehicle at the left of this photo is trying to turning left from Railway Street onto Eric Street. Vehicles were observed mounting the roundabout splitter island to get past the illegally standing vehicles shown in the eastbound lane of Eric Street.

Photo 3: Sight distance to the west along Eric Street from the KissnRide exit is restricted by the Banksia trees.

Photo 4: Footpath running along the east verge of Railway St. Note the path width and also the foliage encroaching over the footpath.

Photo 5: Multiple tow ball strikes evident and wide lane width at the Eric Street KissnRide exit.

Photo 6: Soft, uneven surface of the informal parking area on the west verge of Railway Street, north of the proposed KissnRide facility.

Photo 7: View from the roundabout northwards showing the poor delineation at the NW quadrant of the Eric St / Railway St roundabout due to the faulty street light (indicated in the red circle).

APPENDIX D

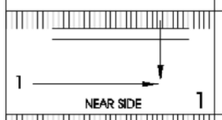
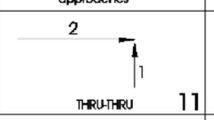
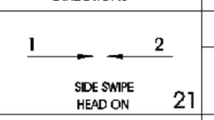
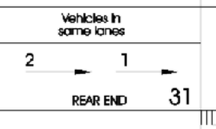
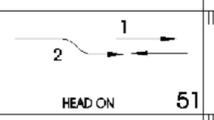
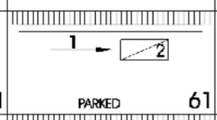
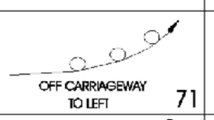
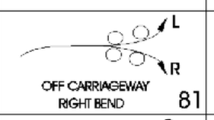
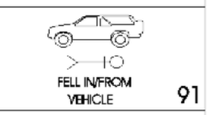
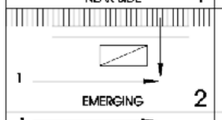
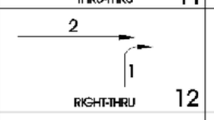
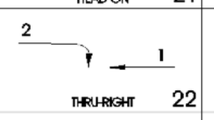
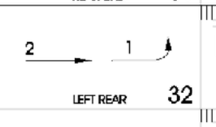
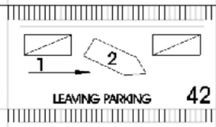
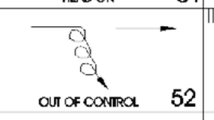
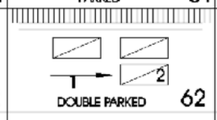
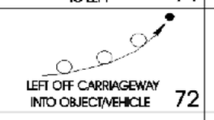
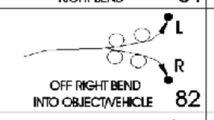
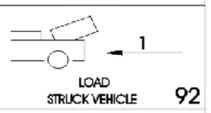
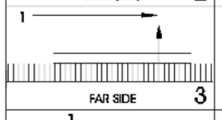
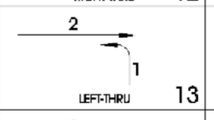
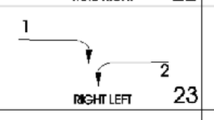
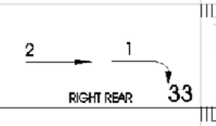
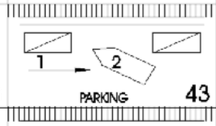
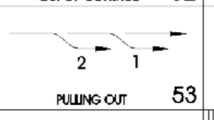
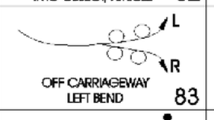
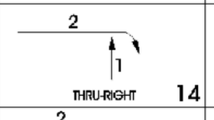
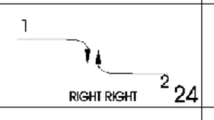
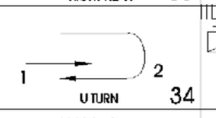
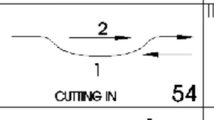
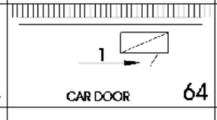
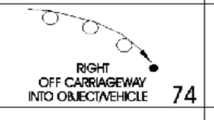
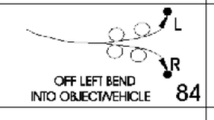
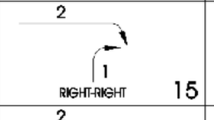
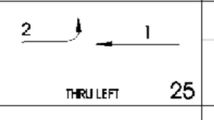
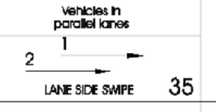
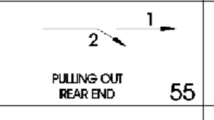
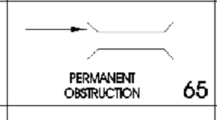
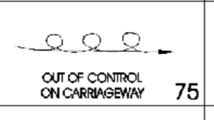
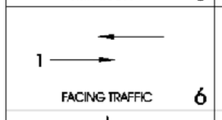
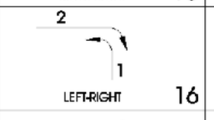
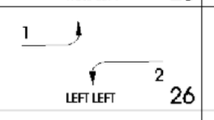
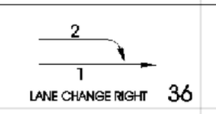
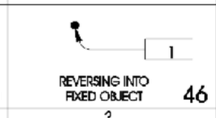
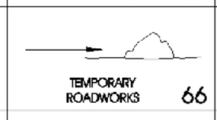
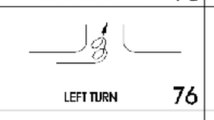
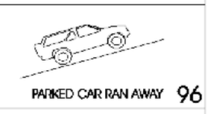
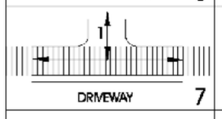
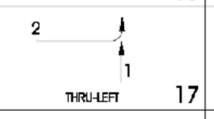
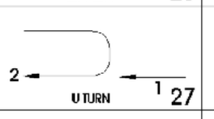
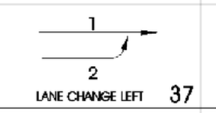
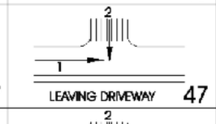
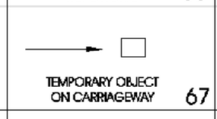
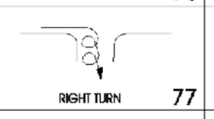
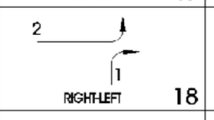
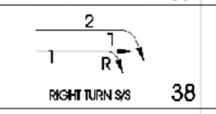
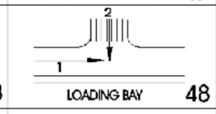
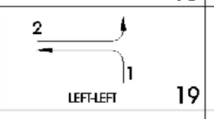
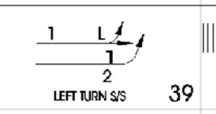
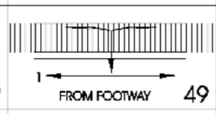
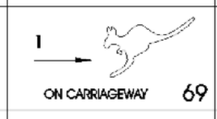
2015 to 2019 crash information

APPENDIX D1

Road User Movement (RUM) codes

Crash Factor Matrix

ROAD USE MOVEMENT (RUM) CODES

	0	1	2	3	4	5	6	7	8	9
	PEDESTRIAN on foot, in toy/pram	INTERSECTION vehicles from adjacent approaches	VEHICLES FROM OPPOSING DIRECTIONS	VEHICLES FROM ONE DIRECTION	MANOEUVRING	OVERTAKING	ON PATH	OFF STRAIGHT, ON STRAIGHT	OFF PATH, ON CURVE	PASSENGERS AND MISCELLANEOUS
1	 NEAR SIDE 1	 THRU-THRU 11	 SIDE SWIPE HEAD ON 21	 REAR END 31		 HEAD ON 51	 PARKED 61	 OFF CARRIAGEWAY TO LEFT 71	 OFF CARRIAGEWAY RIGHT BEND 81	 FELL IN/FROM VEHICLE 91
2	 EMERGING 2	 RIGHT-THRU 12	 THRU-RIGHT 22	 LEFT REAR 32	 LEAVING PARKING 42	 OUT OF CONTROL 52	 DOUBLE PARKED 62	 LEFT OFF CARRIAGEWAY INTO OBJECT/VEHICLE 72	 OFF RIGHT BEND INTO OBJECT/VEHICLE 82	 LOAD STRUCK VEHICLE 92
3	 FAR SIDE 3	 LEFT-THRU 13	 RIGHT LEFT 23	 RIGHT REAR 33	 PARKING 43	 PULLING OUT 53	 ACCIDENT OR BROKEN DOWN 63	 OFF CARRIAGEWAY TO RIGHT 73	 OFF CARRIAGEWAY LEFT BEND 83	 STRUCK TRAIN 93
4	 PLAYING, WORKING LYING, STANDING ON CARRIAGEWAY 4	 THRU-RIGHT 14	 RIGHT RIGHT 24	 U TURN 34	 PARKING VEHICLES ONLY 44	 CUTTING IN 54	 CAR DOOR 64	 RIGHT OFF CARRIAGEWAY INTO OBJECT/VEHICLE 74	 OFF LEFT BEND INTO OBJECT/VEHICLE 84	 STRUCK RAILWAY XING FURNITURE 94
5	 WALKING WITH TRAFFIC 5	 RIGHT-RIGHT 15	 THRU LEFT 25	 LANE SIDE SWIPE 35	 REVERSING 45	 PULLING OUT REAR END 55	 PERMANENT OBSTRUCTION 65	 OUT OF CONTROL ON CARRIAGEWAY 75	 OUT OF CONTROL ON CARRIAGEWAY 85	 ANIMAL OFF CARRIAGEWAY 95
6	 FACING TRAFFIC 6	 LEFT-RIGHT 16	 LEFT LEFT 26	 LANE CHANGE RIGHT 36	 REVERSING INTO FIXED OBJECT 46	 O.T.-RT 56	 TEMPORARY ROADWORKS 66	 LEFT TURN 76		 PARKED CAR RAN AWAY 96
7	 DRIVEWAY 7	 THRU-LEFT 17	 U TURN 27	 LANE CHANGE LEFT 37	 LEAVING DRIVEWAY 47		 TEMPORARY OBJECT ON CARRIAGEWAY 67	 RIGHT TURN 77		 VEHICLE MOVEMENTS NOT KNOWN 97
8	 ON FOOTWAY 8	 RIGHT-LEFT 18		 RIGHT TURN S/S 38	 LOADING BAY 48					
9	STRUCK WHILE BOARDING OR ALIGHTING 9	 LEFT-LEFT 19		 LEFT TURN S/S 39	 FROM FOOTWAY 49		 ON CARRIAGEWAY 69			
	OTHER 98	OTHER 10	OTHER 20	OTHER 30	OTHER 40	OTHER 50	OTHER 60 (MISSILE/ FLYING OBJECT)	OTHER 70	OTHER 80	OTHER 90

APPENDIX D2

Collision diagram

RAILWAY ST, ERIC ST TO GREENHAM ST AND ERIC ST, RAILWAY ST TO SLOW POINT NEAR GORDON ST, COTTELSOE
COLLISION DIAGRAM
205 TO 2019 REPORTED CRASHES

Crash locations shown indicatively

APPENDIX E

Corrective Action Report

Road Safety Audit: Feasibility audit for concept design of North Cottesloe Primary School KissnRide facility on Railway Street

Audit Stage:	**Feasibility Stage**
Documents Reviewed:	**Refer to Appendix B of the Road Safety Audit report**
Audit Team:	**Adrian Bird (Team Leader), Andrew McDougall**
Audit Date:	**30 April 2020**

Item	Description	Audit Finding and Recommendation	Response (Project Manager to agree / disagree, provide reason for disagreeing, and detail proposed actions and comments)
1	**Form of pedestrian facility at the proposed KissnRide on Railway Street**	The Cardno concept plans provided for audit show collinear wombat crossings on both lanes of Railway Street as well as the KissnRide facility. Sketches SK300 and SK301 show a wombat crossing at the KissnRide facility collinear with a guard attended crossing across both lanes of Railway Street. Operational details indicating how each form of pedestrian facility would operate were not provided to the audit team. The adoption of a wombat crossing instead of a guard-attended crossing across the through-lanes of Railway Street is likely to result in; • Periods of traffic congestion at peak pedestrian times where the crossing is continuous in use by pedestrians, possibly leading to driver frustration and inappropriate, unsafe driver behaviour. • Greater reliance on young children (where unsupervised) cognitively assessing whether an approaching vehicle will yield and if it is safe to cross the road. Errors of judgement can result in high severity crashes in a 40km/hr speed environment. • Possibly lower levels of driver compliance in yielding to pedestrians due to the absence of a traffic warden at the crossing. In addition, the layout of the proposed KissnRide facility on Railway Street includes; • Children having to cross the KissnRide car park in order to get to the pedestrian crossing across Railway Street, and	

CAR 1

ADBird Engineering

Item	Description	Audit Finding and Recommendation	Response (Project Manager to agree / disagree, provide reason for disagreeing, and detail proposed actions and comments)
		• Children crossing the KissnRide lane in close proximity to angle parking bays in which vehicles in the closest bays will be reversing towards the crossing. Visibility of small children in this instance is likely to be restricted. Each of these safety issues can result in high severity crash outcomes. (**IMPORTANT: LOW**) **Justification** Although in most instances, children using the crossings will be supervised, this cannot be guaranteed. Unsupervised children may not be able to cognitively process either; • A change in priority between a wombat crossing and a crossing where a guard has not implemented pedestrian priority, or • The need for caution at a wombat crossing at which the pedestrian has priority but the vehicle driver has failed to yield. It is not clear from the information provided for audit; • Whether a wombat crossing across Railway Street will meet Main Roads WA warrants. • Whether the proposed configuration of the guard attended crossing option across Railway Street can be managed by a single guard (given the median width). • How three separate lanes of traffic will be effectively managed. NOTE: Advice from the WAPOL children's crossing and road safety committee is that a traffic warden would only provide supervision to the warranted area (the crossing of through-lanes on Railway Street) and would be restricted from providing any supervision on the adjacent wombat crossing within the KissnRide car park area. There are legal implications for anyone supervising pedestrians on the KissnRide wombat crossing. The audit team consider the safety of pedestrian facilities at which intermittent pedestrian priority over vehicles is established by a competent person or by a signal device is a better overall safety option compared with the wombat crossings option, in particular considering; a) The likelihood of compliance by drivers with pedestrian priority facilities.	

CAR 2

ADBird Engineering

Item	Description	Audit Finding and Recommendation	Response (Project Manager to agree / disagree, provide reason for disagreeing, and detail proposed actions and comments)
		b) The risks of creating congestion on (Local Distributor) Railway Street prompting driver frustration and associated inappropriate driver behaviour. **Recommendations** 1. Review the form of the proposed pedestrian priority facility across Railway Street. 2. Review the location of the wombat crossing at the proposed KissnRide facility as well as the interface arrangements of this facility with the proposed pedestrian priority facility across Railway Street. 3. Develop a management plan for the proposed form of pedestrian facility at the proposed KissnRide and the adjacent crossing of the realigned section of Railway Street. This should address issues including; • Formalising the responsibilities for supervision of children leaving school grounds in relation to the pedestrian facilities across the KissnRide trafficable lane and also across Railway Street. • Whether the KissnRide pedestrian facility will be supervised and if so, how. • Whether one or two guards will be required to manage pedestrian movements the through-lanes of Railway Street (guard-attended option). 4. If it is proposed to use different pedestrian treatments for the KissnRide and the lanes of Railway Street, then ensure that the possibility of pedestrians continuing unhindered across both types of facility is mitigated. This could be achieved by either; • Ensuring that the different facility types are not collinear, or • Installing a gating structure to ensure that the two facility types are physically segregated (eg using offset grab rails). • Ensuring supervision of children at the interface between the two types of pedestrian facility. 5. Liaise with the WAPOL children's crossing and road safety committee and Main Roads WA to confirm whether; • a wombat crossing on either the KissnRide or across Railway Street through lanes meets warrants.	* Wombat crossing within the carpark and a self regulating crossing on Railway Street managed by a warden. * Having a wombat crossing on Railway Street may cause confusion between regulated crossing and warden controlled crossing. * Include 8km/hr posted sign in carpark.

CAR 3

ADBird Engineering

Item	Description	Audit Finding and Recommendation	Response (Project Manager to agree / disagree, provide reason for disagreeing, and detail proposed actions and comments)
		• A guard attended pedestrian facility across the Railway Street through lanes can be managed by a single guard and if the location requires 2 traffic wardens. • Alternative treatments such as a Pelican crossing covering the two through-lanes of Railway Street as well as the KissnRide facility would be an acceptable alternative pedestrian priority facility. Note: This option is likely to generate relatively greater delays for pedestrians and for vehicles compared with the guard-attended option. 6. Modify the design as appropriate based on the advice received from recommendation 5 above.	

ADBird Engineering

Item	Description	Audit Finding and Recommendation	Response (Project Manager to agree / disagree, provide reason for disagreeing, and detail proposed actions and comments)
2	**KissnRide parking bays near the proposed pedestrian priority crossing on Railway Street**	The Cardno concept plan shows KissnRide parking bays immediately abutting the wombat crossing. A vehicle occupying the bay immediately upstream of the wombat crossing will obstruct sight lines between pedestrians and approaching vehicles, possibly resulting in a high severity crash. (**IMPORTANT: LOW**) **Justification** Drivers approaching a wombat crossing must have unobstructed views of pedestrians on the wombat crossing as well as unobstructed views of pedestrians approaching the wombat crossing. Main Roads WA's standard drawing for zebra crossings (Drawing 200331-164-3) indicates minimum distances for the restriction of Stopping as being 20m upstream and 10m downstream of the closest edge of a zebra crossing. The audit team were not provided information on the proposed speed limit to be applied within the proposed KissnRide facility. However, it is expected that a speed limit no greater than 10km/hr would be applied. Australian Standard AS1158.4 at Figure 3.1 describes the 'surround zone' comprising the area 3m back from each approach to the zebra crossing as the area in which driver visibility of persons approaching the crossing needs to be provided. **Recommendation** Modify the design to ensure that Crossing Sight Distance is achieved at the wombat crossing, and that Stopping Sight Distance is achieved for the surround zones 3m adjacent to the wombat crossing, and that Main Roads WA's no stopping distances are provided. This may be achieved by; • Providing a nib for the east verge of the wombat crossing (this reduces the crossing distance of the wombat crossing, provides additional pedestrian storage and reduces the likelihood of congestion on the footpath running along the eastern verge of Railway Street) • Modifying the KissnRide parking bay arrangement to provide the necessary sight lines and no stopping distances.	* Agree with nib that is within carpark adjacent to school fenceline. * 2 bays before and after wombat crossing within carpark to be removed. Agree with recommendation.

CAR 5

ADBird Engineering

Item	Description	Audit Finding and Recommendation	Response (Project Manager to agree / disagree, provide reason for disagreeing, and detail proposed actions and comments)
3	**Signs and line marking at the proposed pedestrian priority facility on Railway Street**	The Cardno concept plans provided for audit show indicatively some of the signs and line marking required for the proposed pedestrian priority facilities on Railway Street including the proposed KissnRide. Main Roads WA have developed guideline drawings for both zebra crossings and Traffic Warden controlled children's crossings that mitigate the potential for drivers to fail to react appropriately when the pedestrian facilities are in use and also to provide consistency in pedestrian priority facilities at schools throughout Western Australia. This is necessary to avoid potential high severity crashes between vehicles and pedestrians (**IMPORTANT: LOW**) **Justification** Main Roads WA provide a guideline and drawings on their website for; • Traffic Warden Controlled Children's Crossings. • Zebra Crossings. **Recommendation** Ensure that the appropriate Main Roads WA guidelines and drawings are complied with in developing the design for the KissnRide facility on Railway Street.	* Wombat crossing going over Railway Street to be removed as per recommendation in item 1. There needs to be a compliance check to ensure compliance with these standards. * Agree with recommendation.

CAR 6

ADBird Engineering

Item	Description	Audit Finding and Recommendation	Response (Project Manager to agree / disagree, provide reason for disagreeing, and detail proposed actions and comments)
4	**Restricted sight lines at the proposed pedestrian priority facilities**	The Cardno concept plans show an existing power pole surrounded by what appears to be w-beam safety barrier, immediately adjacent to the proposed wombat crossing on the realigned section of Railway Street. Persons located in the median of Railway Street could be concealed from an approaching southbound driver on Railway Street by either the power pole or the safety barrier. Failure of the driver to detect a person in this situation could result in a high severity crash (**IMPORTANT: HIGH**) **Justification** It is essential for the safe operation of a pedestrian priority facility that approaching drivers can see persons approaching the crossing as well as those already on it. **Recommendation** Modify the design so that persons within 3m of the wombat crossing can be seen by drivers approaching from the north on Railway Street.	

CAR 7

ADBird Engineering

Item	Description	Audit Finding and Recommendation	Response (Project Manager to agree / disagree, provide reason for disagreeing, and detail proposed actions and comments)
5	**Restricted sight lines at the proposed pedestrian facility to the north of the KissnRide facility on Railway Street**	The Cardno concept plans show an existing power pole surrounded by what appears to be w-beam safety barrier, located in the median at the north end of the proposed realignment section of Railway Street. Persons located in the median of Railway Street could be concealed from an approaching northbound driver on Railway Street by either the power pole or the safety barrier. Failure of the driver to detect a person in this situation could result in a high severity crash. (**IMPORTANT: HIGH**) **Justification** It is essential for the safe operation of a pedestrian priority facility that approaching drivers can see persons approaching the crossing as well as those already on it. **Recommendation** Modify the design so that persons within 3m of the pedestrian facility can be seen by drivers approaching from the south on Railway Street.	* Guardrail to be replaced by traffic rated bollard and barrier kerb to provide the equivalent protection for power pole whilst providing the required sight lines for pedestrians. * Agree with recommendation.

CAR 8

ADBird Engineering

Item	Description	Audit Finding and Recommendation	Response (Project Manager to agree / disagree, provide reason for disagreeing, and detail proposed actions and comments)
6	**Road user non-compliance with existing parking controls on Eric Street**	During the afternoon site inspection, the audit team identified several vehicles illegally standing on the eastbound lane of Eric Street, between the Eric Street / Railway Street roundabout and the entry to the existing KissnRide facility on Eric Street. This included vehicles standing within the roundabout and appeared to contribute to queues of vehicles extending to the western side of the Curtin Avenue intersection. This issue effectively gridlocked traffic on Eric Street as well as Railway Street in the vicinity of both existing KissnRide facilities, resulting in some drivers proceeding contraflow as well as mounting roundabout splitter island and central annulus areas to try to pass the standing vehicles. This increases the risk of driver frustration resulting in a range of crash types including rear end, side swipe, head-on and high severity crashes between pedestrians and vehicles at the roundabout. (**IMPORTANT: MODERATE**) **Justification** Refer to Photos 1 & 2 at Appendix D of the audit report. The effect of vehicles illegally standing on Eric Street was to exacerbate significant congestion approximately 15 minutes prior to, and for 15 minutes following, the close time siren for the North Cottesloe Primary School. The restriction of traffic flows eastbound on Eric Street also severely restricted the opportunity for other drivers to complete an anticlockwise circulatory movement around the school when access into either KissnRide facility is not possible. This is considered the desirable driver behaviour to improve the performance of the KissnRide facilities, now and following the implementation of any upgrades. Anti-clockwise circulatory traffic movements around the school are already possible by utilising Eric Street, Mann Street, Grant Street and Railway Street. The audit team observed that the yellow line marking indicating the extent where parking controls apply (the Eric Street eastbound lane between the roundabout and the KissnRide entry) had faded and was not conspicuous. The No Standing Sign located on the 40km/hr speed zone sign was also not highly conspicuous.	

CAR 9

ADBird Engineering

Item	Description	Audit Finding and Recommendation	Response (Project Manager to agree / disagree, provide reason for disagreeing, and detail proposed actions and comments)
		The audit team were briefed that the ongoing use of the Eric Street KissnRide had not been determined at the time of audit. **Recommendations** 1. The proposed provision of a new KissnRide facility on Railway Street is supported in principle by the audit team as a means of improving the safety of all road users, by utilising Railway Street which carries significantly less through traffic than Eric Street. 2. For as long as the Eric Street KissnRide facility remains in service; • the existing parking restrictions on Eric Street need to be enforced to deter drivers from standing illegally. • Drivers seeking to utilise a KissnRide facility need to be educated in the need to circulate anti-clockwise around the school if access into a KissnRide facility is unavailable, instead of blocking traffic by queuing at a KissnRide entry point. • Improve the conspicuity of parking controls in place along Eric Street by repainting the yellow edge line and placing addition No Standing signs at the start and finish of the restricted section. 3. If the Eric Street KissnRide facility is to be closed following the implementation of the new KissnRide facility on Railway Street, then means of stopping it's use as a pick up point need to be determined. (The documentation provided for audit does not clarify what is intended for the existing Eric Street KissnRide facility). For example, the Eric Street KissnRide might be re-purposed as a segregated staff car park (possibly using a permit system) with a small separate allocation of parking bays for school visitors. This would require removal of the existing KissnRide pavement markings and reconfiguration of sealed and unsealed (limestone surfaced) parking areas.	* Agree with recommendation 2. * Point 2 in relation to the anti-clockwise circulation will need to be clarified to specify going around the block. * Existing kiss and ride will be staff parking and for kindy mainly drop offs and refresh yellow line on Eric Street and location of "No Stopping" sign and surveillance for compliance.

CAR 10

ADBird Engineering

Item	Description	Audit Finding and Recommendation	Response (Project Manager to agree / disagree, provide reason for disagreeing, and detail proposed actions and comments)
7	**Parking controls for the proposed KissnRide facility on Railway Street**	The concept designs provided to the audit team do not indicate parking controls that will be required to appropriately manage traffic at and near the facility. Failure to provide adequate parking controls will result in traffic congestion which in turn may escalate driver frustration leading to inappropriate, unsafe driver behaviour. Such behaviour could result in a vehicle versus pedestrian crash with high severity outcomes. (**IMPORTANT:LOW**) **Justification** The audit team observed highly undesirable manoeuvres by drivers trying to get past illegally standing vehicles at the Eric Street KissnRide facility. Associate congestion also gave rise to driver frustration which included several prolonged soundings of vehicle horns. Main Roads WA's Traffic Warden Controlled Children Crossing guideline provides details on preferred minimum No Stopping distances as well as signs and line marking requirements at guard-attended crossings. **Recommendation** As an integral part of the KissnRide design, include parking controls to limit the possibility of excessive traffic congestion or unsafe manoeuvres around parked or standing vehicles on through-lanes.	*Increase enforcement in the interim and install centre median on Eric Street as the worst case to prevent queuing should the problem persist.

CAR 11

ADBird Engineering

Item	Description	Audit Finding and Recommendation	Response (Project Manager to agree / disagree, provide reason for disagreeing, and detail proposed actions and comments)
8	**All movement exit from the proposed KissnRide**	The concept designs for the proposed KissnRide facility show both right and left turn movements being accommodated at the KissnRide exit. This arrangement creates the potential for vehicles positioned side by side at the exit to mask one another from approaching traffic in either direction on Railway Street. This could result in right-angle or side swipe crashes at the exit. (**MODERATE**) In addition, a vehicle trying to turn right from the KissnRide at the exit could block other vehicles from exiting to the left, significantly reducing the effectiveness of the KissnRide as a short term pick up facility, leading to driver frustration. This in turn can result in errant driver behaviour which could result in a vehicle / pedestrian crash of high severity (**IMPORTANT: LOW**). **Justification** The potential exists for the establishment of an anti-clockwise circulatory mindset and operational guideline that requires drivers to continue to circulate around the school if they cannot enter the KissnRide facility / facilities. The streets that can accommodate this circulatory traffic are Railway Street, Eric Street, Mann Street and Grant Street. **Recommendations** 1. As part of the management plan for the KissnRide facility / facilities, include an anti-clockwise circulatory guideline for drivers to adopt when they cannot access a KissnRide facility. 2. Modify the design to exclude the possibility of a right turn movement out of the proposed KissnRide facility on Railway Street.	* Agree with recommendations. * Point 1. would need to be reinforced by the school.

CAR 12

ADBird Engineering

Item	Description	Audit Finding and Recommendation	Response (Project Manager to agree / disagree, provide reason for disagreeing, and detail proposed actions and comments)
9	**Sight lines at the Eric Street KissnRide exit**	Safe Intersection Sight Distance is not achieved at the Eric Street KissnRide exit. Sight lines to the west are restricted by the Banksia trees located a short distance to the west of the exit. This can result in drivers; • Encroaching into the cycle lane on Eric Street to improve their sight lines to approaching eastbound traffic on Eric Street and • Possibly accelerating rapidly from the exit to avoid approaching eastbound traffic, potentially conflicting with pedestrians at the facility immediate east of the exit, or even coming into direct contact with the median island (including the grab rail). The lack of sight distance at the exit can result in a variety of crash types including right angle, side swipe, rear-end, loss of control hit object and pedestrian versus vehicle crashes with potentially high severity outcomes. (**IMPORTANT: LOW**) **Justification** Refer to Photo 3 at Appendix D of the audit report. Austroads Guide to Road Design Part 4 A (Unsignalised and signalised intersections) Table 3.2 indicates that for a design speed of 60km/hr (maximum posted speed limit of 50km/hr), 123m is the required Safe Intersection Sight distance assuming a reaction time of 2.0 seconds. Currently available sight distance is approximately 65m. **Recommendations** If the exit is to remain, prune the Banksia trees from the north verge of Eric Street in order to provide and maintain Safe Intersection Sight Distance at the exit.	

CAR 13

ADBird Engineering

Item	Description	Audit Finding and Recommendation	Response (Project Manager to agree / disagree, provide reason for disagreeing, and detail proposed actions and comments)
10	**Pedestrian desire lines to and from North Cottesloe Primary School**	The proposed KissnRide facility on Railway Street provides two pedestrian facilities – one near the school entry and one near the pre-primary access. The concept design features a narrow section near the Eric Street roundabout where pedestrians may find it more direct to try to cross Railway Street than to utilise the nearest pedestrian facility. This could result in conflict between pedestrians and vehicles, particularly vehicles entering Railway Street from the west on Eric Street, possibly resulting in high severity injuries. (**IMPORTANT: LOW**) **Justification** Foliage in the north west quadrant of the Eric Street / Railway Street roundabout currently restricts stopping sight distance for vehicles entering Railway Street northwards from the west on Eric Street and also for crossing sight distance for pedestrians trying to cross at this location. This situation will be exacerbated by the proposed realignment of Railway Street immediately to the north of the roundabout, where the realignment consists of a left curve, right curve combination. It is possible that queues of vehicles could extend from the KissnRide close to the Eric Street roundabout. The audit team evaluated the potential exit speed for the movement from the west on Eric Street to the north on Railway Street. It was determined that it is possible to drive this manoeuvre at in excess of 40km/hr, which confirms verbal advice that the audit team received from the Railway Street traffic warden, who estimated some vehicles making the turn at speeds approaching 60km/hr. **Recommendation** 1. Ensure that the design accommodates stopping sight distance for the design speed for vehicles entering Railway Street. This may require the pruning or clearing of some foliage, or modification of the design if this is not possible. 2. Deter pedestrians from attempting to cross Railway Street near the roundabout where the realigned section of Railway Street connects with existing Railway Street, using pedestrian fencing or low height hedging along one or both verges.	* Recommendation one is the preferred option as the second approach of installing fence is costly and may not be equitable to those that wish to head toward Eric Street. i.e - a non-school destination.

CAR 14

ADBird Engineering

Item	Description	Audit Finding and Recommendation	Response (Project Manager to agree / disagree, provide reason for disagreeing, and detail proposed actions and comments)
11	**Footpath along the eastern verge of Railway Street**	The concrete footpath along the eastern verge of Railway Street (between the Eric Street roundabout and Greenham Street) is approximately 1.2m wide. Between the path and the school boundary fence is sand (approximately 0.5m) and the section between the path and the trafficable lane is grassed (width varies). Numerous shrubs and tree branches overhang the footpath in this section. The audit team noted a significant number of pedestrians and cyclists utilising this footpath immediately after school closing time. Path users were observed encroaching onto the areas adjacent to the footpath on several occasions to make room for other path users. Encroaching onto uneven or soft ground, particularly for young cyclists or pram users, can result in falls or collisions. (**IMPORTANT: LOW**) **Justification** Refer to Photo 4 at Appendix D of the audit report. **Recommendations** 1. Pave either side of the footpath (between the Railway Street kerbline and the school property boundary) to reduce the risk falls or collisions involving path users. 2. Under prune the foliage along the footpath to establish and maintain a minimum clearance of 2.5m for allow path users to proceed without having to avoid foliage.	* Agree with recommendation

ADBird Engineering

Item	Description	Audit Finding and Recommendation	Response (Project Manager to agree / disagree, provide reason for disagreeing, and detail proposed actions and comments)
12	**Roadside hazards**	The concept design appears to introduce some additional roadside hazards including; • Existing power poles which will be located in the median and within the clear zone of the realigned section of Railway Street. The concept plans show what appears to be w-beam safety barriers installed in a diamond shape around these poles. • A possible embankment as natural surface levels are lower to the west where the realigned section of Railway Street and adjacent new footpath are proposed. These hazards can increase the risk of injury in the event of a loss of control crash where a vehicle departs the trafficable lane, or a path user deviates from the path alignment. (**LOW**) **Justification** There have been no reported crashes on the section of Railway Street, between Greenham Street and Eric Street, involving a vehicle running off the road and hitting an object. However, it is noted that the existing alignment is straight and the proposed design comprises two reverse curves. It is noted that the configuration of safety barriers presented in the Cardno concept plans are unlikely to be a crashworthy treatment, due to the sub-standard length and configuration of barrier sections. It is further noted that installing a safety barrier closer to a trafficable lane than the hazard being shielded increases the likelihood of hits. **Recommendations** 1. Undertake a risk assessment to determine whether the introduced roadside hazards require removal, relocation, shielding using safety barriers or no mitigation. 2. If it is determined that safety barriers are required, consider the use of energy absorbing bollards rated to 50km/hr as an alternative to w-beam safety barriers.	* The roadside barriers are a requirement of Western Power. * The guardrail will be replaced by the protection in recommendation two and barrier kerb.

CAR 16

ADBird Engineering

Item	Description	Audit Finding and Recommendation	Response (Project Manager to agree / disagree, provide reason for disagreeing, and detail proposed actions and comments)
13	**Geometry of the Eric Street KissnRide exit**	The vertical geometry of this exit is poor, with evidence of multiple vehicles having their tow ball grind against the trafficable surface. This may reduce traction or destabilise a vehicle accelerating onto Eric Street from the exit, resulting in a variety of crash types. (**LOW**) **Justification** Refer to Photo 5 at Appendix D of the audit report. **Recommendation** If the exit is to remain, safety can be improved by re-grading the exit vertical geometry and narrowing the exit lane width while maintaining a minimum angle of intersection with Eric Street of 70 degrees. Note: This may require some retaining structures or the loss of one parking bay.	

CAR 17

ADBird Engineering

Item	Description	Audit Finding and Recommendation	Response (Project Manager to agree / disagree, provide reason for disagreeing, and detail proposed actions and comments)
14	**Verge parking to the north of the proposed KissnRide facility on Railway Street**	The west verge of Railway Street immediately to the north of the angle parking area is utilised as an informal 90-degree parking area. It appears that this is being utilised by some caregivers of the Pre-primary school. The surface of the area where this informal parking is occurring is undulating soft sand and grass. The variability of surface texture and profile could result in a driver skidding or moving abruptly, possibly causing a crash with other vehicles or pedestrians, resulting in a high severity injury. (**IMPORTANT: LOW**) **Justification** Refer to Photo 6 at Appendix D of the audit report. There is mountable kerbing at this location and it is expected that informal parking will continue following the implementation of a KissnRide facility on Railway Street, unless measures are taken to prohibit this parking. It was noted that the action of vehicles driving on the soft sand is pushing sand onto the adjacent footpath, also creating the risk of instability for cyclist using the path, and an ongoing maintenance issue for the Town of Cottesloe. **Recommendation** 1. Determine whether parking will continue to be permitted on the west verge of Railway Street, to the north of the proposed KissnRide facility. 2. If parking will be permitted at this location, provide formal parking bays with a competent surface in order to avoid collisions arising from an uneven surface or from variable surface traction.	* Agree with recommendation.

CAR 18

ADBird Engineering

Item	Description	Audit Finding and Recommendation	Response (Project Manager to agree / disagree, provide reason for disagreeing, and detail proposed actions and comments)
15	**Street light not working**	The street light located at the north west quadrant of the Eric Street / Railway Street roundabout was not working at the time of the audit night inspection. The departure leg from the roundabout heading northwards on Railway Street approaching the proposed KissnRide upgrade was poorly delineated as a result, increasing the possibility of loss of control crashes and pedestrian versus vehicle crashes. (**IMPORTANT: LOW**) **Justification** Refer to Photo 7 at Appendix D of the audit report. **Recommendation** Repair the faulty luminaire.	* Agree with recommendation.

CAR 19

ADBird Engineering

Item	Description	Audit Finding and Recommendation	Response (Project Manager to agree / disagree, provide reason for disagreeing, and detail proposed actions and comments)
16	**Road lighting for the proposed KissnRide on Railway Street**	Lighting is currently installed along the eastern verge of Railway Street, between Greenham Street and Eric Street. The proposed KissnRide facility realigns Railway Street and the adjacent footpath a significant distance to the west of the existing lighting. The proposed footpath runs close to existing trees in the west verge of Railway Street. Failure to provide adequate lighting for the realigned section of Railway Street and the adjacent footpath could result in pedestrian /vehicle conflict and also reduce the security of pedestrians using the proposed path in hours of darkness. (**IMPORTANT: LOW**) **Justification** Although there have been no reported crashes involving pedestrians along the west verge of Railway Street, the existing lighting provides good delineation for pedestrians between Greenham Street and Eric Street. The proposed layout of Railway Street and the adjacent footpath will not be as well lit by the existing lighting due to the increased distance from the road lighting and the increased proximity of trees. **Recommendation** Review pedestrian lighting requirements for the proposed KissnRide facility on Railway Street and incorporate additional lighting into the design as appropriate.	* Agree with recommendation. Lighting review and design to be undertaken.

CAR 20

ADBird Engineering

Item	Description	Audit Finding and Recommendation	Response (Project Manager to agree / disagree, provide reason for disagreeing, and detail proposed actions and comments)
17	**Supplementary lighting for Zebra Crossings**	The proposed KissnRide concept plans show at least one wombat crossing. Failure of a driver to detect a pedestrian on, or approaching, a zebra crossing (a key element of a wombat crossing) can result in a high severity crash. (**IMPORTANT: LOW**) **Justification** Australian Standard AS1158.4 requires the provision of supplementary lighting to provide vertical illumination of object on or approaching a zebra crossing. Figure 1.3 from that standard provides an indication of the lighting requirement. **Recommendation** Provide supplementary lighting in accordance with AS1158.4 as an integral part of any zebra / wombat crossing.	* Agree with recommendation and lighting design will be done as per action for item 16.

CAR 21

ADBird Engineering

Corrective Action Report – [North Cottesloe Primary School KissnRide upgrade on Railway Street]

Feasibility Stage Road Safety Audit

NOTE:

- This Corrective Action Report is to be read in conjunction with the full Road Safety Inspection Report.
- The asset owners (Main Roads WA and/or the relevant local government authorities) **must** be informed of these findings, recommendations and proposed actions.
- Items not under the responsibility of this project representative must be forwarded to the persons / agencies who are responsible.

These findings and recommendations have been considered, and the actions listed will be taken accordingly.

Responsible Project Representative	**Company / Agency / Division**	**Position**	**Date**

Asset Owner Representative	**Company / Agency / Division**	**Position**	**Date**

CAR 22

ADBird Engineering

TOWN OF COTTESLOE

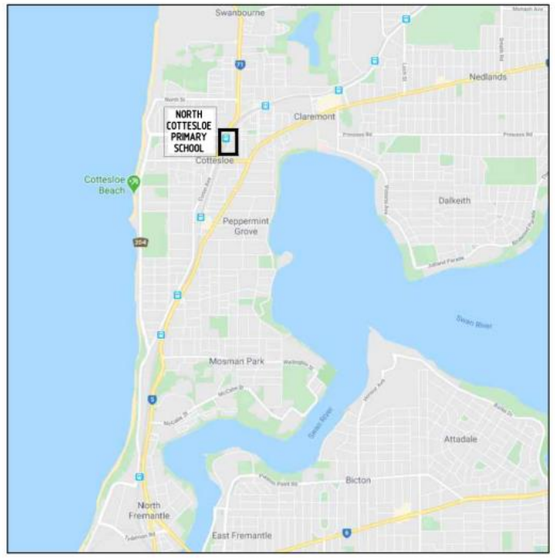
NORTH COTTESLOE PRIMARY SCHOOL TRAFFIC SAFETY COMMITTEE MEETING

ATTACHMENT

ITEM 8.1.1B:
NORTH COTTESLOE PRIMARY SCHOOL KISS AND DROP - DETAILED DESIGN

RAILWAY ST REALIGNMENT

NORTH COTTESLOE PRIMARY SCHOOL CARPARK



TOWN OF COTTELSOE

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JOB No. 20-04-053


LEGEND
EXISTING KERB
EXISTING KERB TO BE REMOVED
PROPOSED KERB AND PATH
EXISTING HP GAS LINE
EXISTING MP GAS LINE
EXISTING SEWER PIPE
EXISTING TELSTRA CABLE
EXISTING WATER MAIN
EXISTING DRAINAGE LINE
EXISTING TRANSMISSION OVERHEAD POWER LINES
EXISTING VOCUS COMMUNICATIONS
EXISTING LOW VOLTAGE UNDERGROUND
EXISTING HIGH VOLTAGE UNDERGROUND
EXISTING WESTERN POWER DATA COMMS
PROPOSED DRAINAGE
AREA OF CONCRETE PATHS/CROSSOVERS
AREA OF GRASS INFILL
AREA OF BRICK PAVING
AREA OF NEW ROAD AND CARPARK
AREA OF LANDSCAPE
EXISTING NORFOLK PINES
EXISTING TREES
GREENHAM STREET
RAILWAY STREET
RAILWAY STREET
ERIC STREET
DIAL BEFORE YOU DIG www.1100.com.au
1:500
PROJECT
RAILWAY ST REALIGNMENT
NORTH COTTESLOE P.S.
B 29-7-2020 SECOND SECTION OF PATH ADDED TO PLAN
A 10-7-2020 PRELIMINARY PLOT FOR APPROVAL
COPYRIGHT
Porter Consulting Engineers
CLIENT
TOWN OF COTTESLOE
DRAWING
OVERALL LAYOUT PLAN
STATUS: FOR APPROVAL
SCALE 1:500
DATE JULY 2020
DESIGN ELW
DRAWN MJV
CHECK
20-4-53/100
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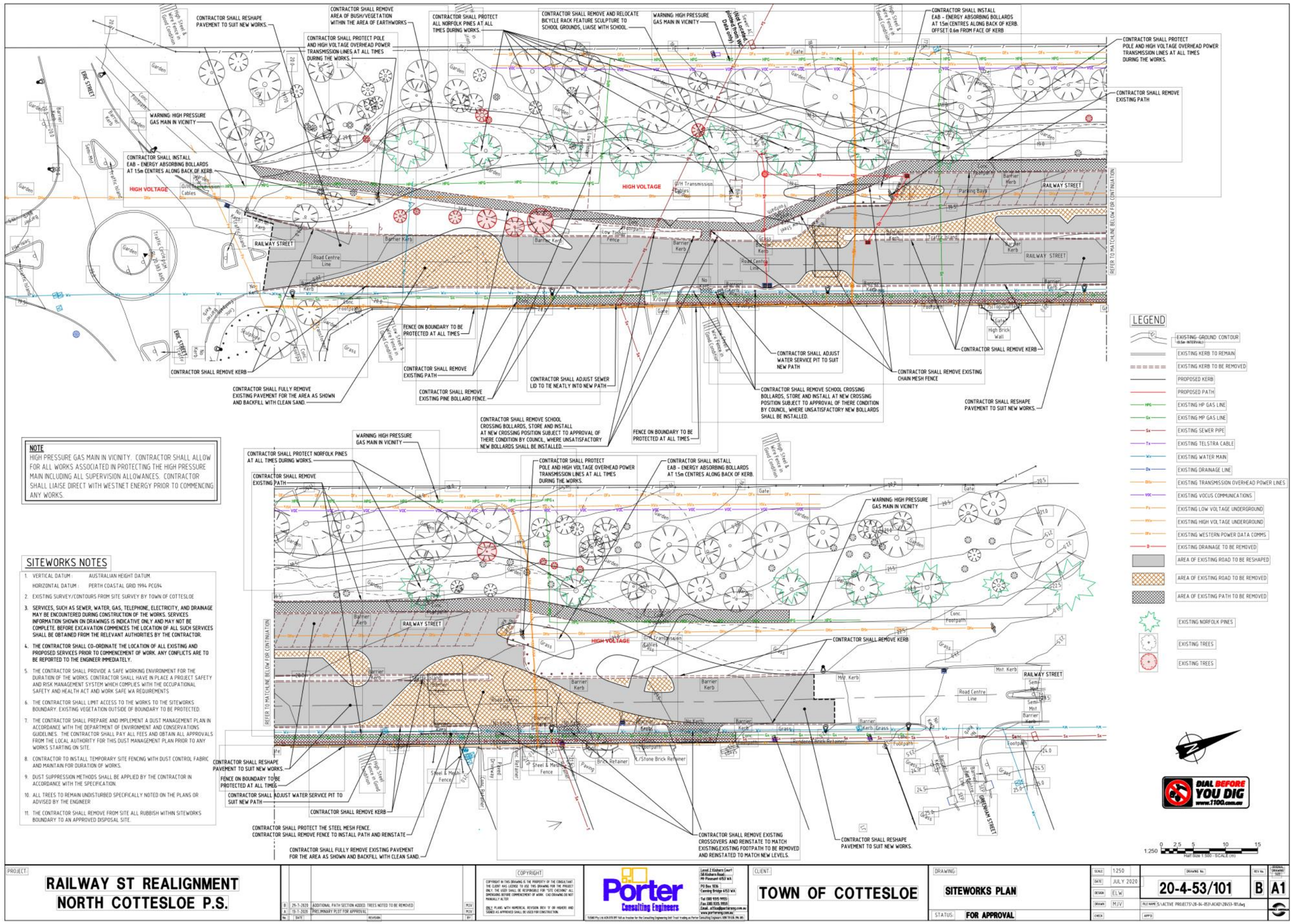
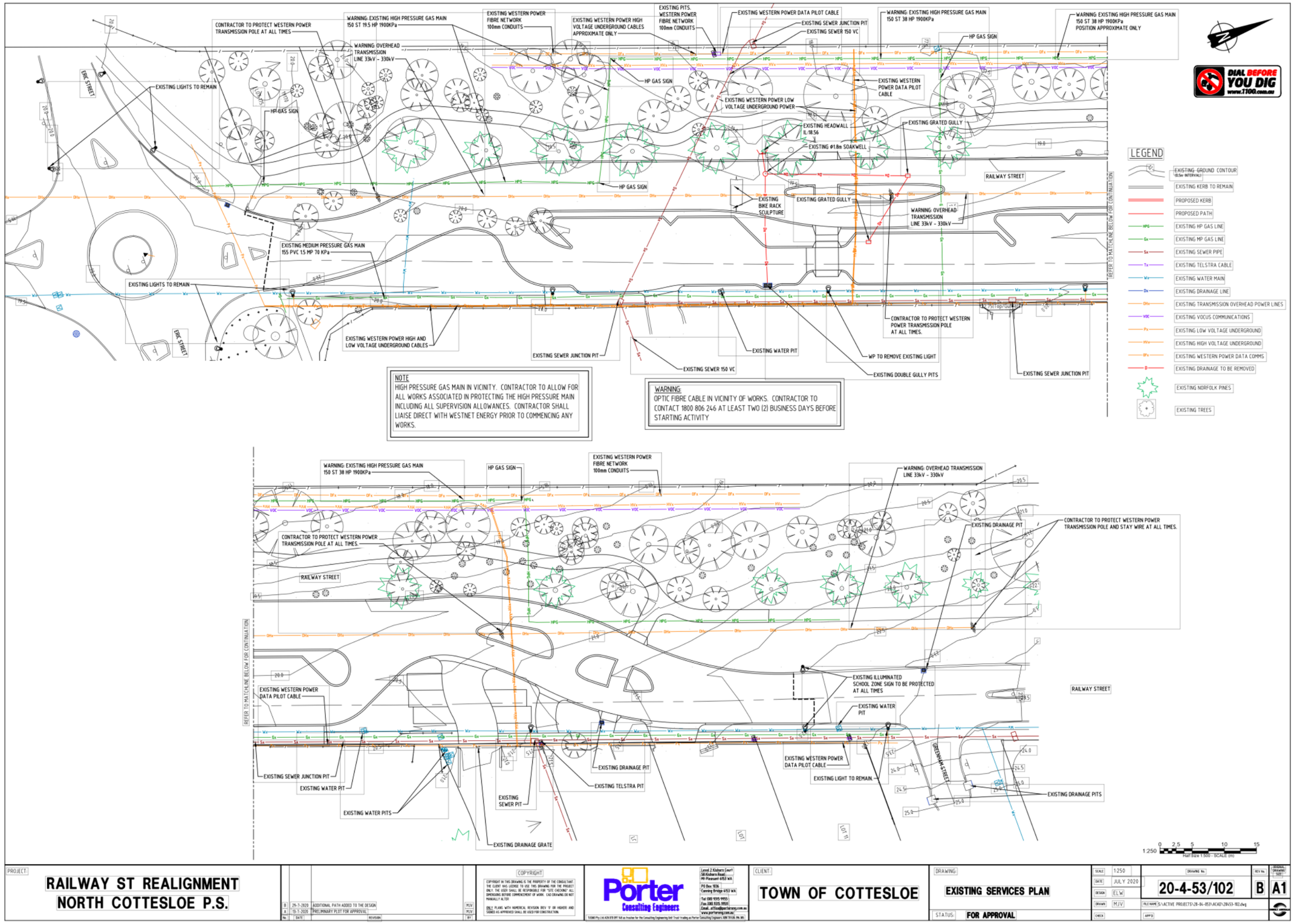

NOTE
HIGH PRESSURE GAS MAIN IN VICINITY. CONTRACTOR SHALL ALLOW FOR ALL WORKS ASSOCIATED IN PROTECTING THE HIGH PRESSURE MAIN INCLUDING ALL SUPERVISION ALLOWANCES. CONTRACTOR SHALL LIAISE DIRECT WITH WESTNET ENERGY PRIOR TO COMMENCING ANY WORKS.
SITEWORKS NOTES
1. VERTICAL DATUM : AUSTRALIAN HEIGHT DATUM.
HORIZONTAL DATUM : PERTH COASTAL GRID 1994 PCG94.
2. EXISTING SURVEY/CONTOURS FROM SITE SURVEY BY TOWN OF COTTESLOE
3. SERVICES, SUCH AS SEWER, WATER, GAS, TELEPHONE, ELECTRICITY, AND DRAINAGE MAY BE ENCOUNTERED DURING CONSTRUCTION OF THE WORKS. SERVICES INFORMATION SHOWN ON DRAWINGS IS INDICATIVE ONLY AND MAY NOT BE COMPLETE. BEFORE EXCAVATION COMMENCES THE LOCATION OF ALL SUCH SERVICES SHALL BE OBTAINED FROM THE RELEVANT AUTHORITIES BY THE CONTRACTOR.
4. THE CONTRACTOR SHALL CO-ORDINATE THE LOCATION OF ALL EXISTING AND PROPOSED SERVICES PRIOR TO COMMENCEMENT OF WORK. ANY CONFLICTS ARE TO BE REPORTED TO THE ENGINEER IMMEDIATELY.
5. THE CONTRACTOR SHALL PROVIDE A SAFE WORKING ENVIRONMENT FOR THE DURATION OF THE WORKS. CONTRACTOR SHALL HAVE IN PLACE A PROJECT SAFETY AND RISK MANAGEMENT SYSTEM WHICH COMPLIES WITH THE OCCUPATIONAL SAFETY AND HEALTH ACT AND WORK SAFE WA REQUIREMENTS
6. THE CONTRACTOR SHALL LIMIT ACCESS TO THE WORKS TO THE SITEWORKS BOUNDARY. EXISTING VEGETATION OUTSIDE OF BOUNDARY TO BE PROTECTED.
7. THE CONTRACTOR SHALL PREPARE AND IMPLEMENT A DUST MANAGEMENT PLAN IN ACCORDANCE WITH THE DEPARTMENT OF ENVIRONMENT AND CONSERVATIONS GUIDELINES. THE CONTRACTOR SHALL PAY ALL FEES AND OBTAIN ALL APPROVALS FROM THE LOCAL AUTHORITY FOR THIS DUST MANAGEMENT PLAN PRIOR TO ANY WORKS STARTING ON SITE.
8. CONTRACTOR TO INSTALL TEMPORARY SITE FENCING WITH DUST CONTROL FABRIC AND MAINTAIN FOR DURATION OF WORKS.
9. DUST SUPPRESSION METHODS SHALL BE APPLIED BY THE CONTRACTOR IN ACCORDANCE WITH THE SPECIFICATION.
10. ALL TREES TO REMAIN UNDISTURBED SPECIFICALLY NOTED ON THE PLANS OR ADVISED BY THE ENGINEER
11. THE CONTRACTOR SHALL REMOVE FROM SITE ALL RUBBISH WITHIN SITEWORKS BOUNDARY TO AN APPROVED DISPOSAL SITE.
CONTRACTOR SHALL RESHAPE PAVEMENT TO SUIT NEW WORKS.
CONTRACTOR SHALL REMOVE AREA OF BUSH/VEGETATION WITHIN THE AREA OF EARTHWORKS
CONTRACTOR SHALL PROTECT POLE AND HIGH VOLTAGE OVERHEAD POWER TRANSMISSION LINES AT ALL TIMES DURING THE WORKS.
CONTRACTOR SHALL PROTECT ALL NORFOLK PINES AT ALL TIMES DURING WORKS.
CONTRACTOR SHALL REMOVE AND RELOCATE BICYCLE RACK FEATURE SCULPTURE TO SCHOOL GROUNDS, LIAISE WITH SCHOOL.
WARNING HIGH PRESSURE GAS MAIN IN VICINITY
CONTRACTOR SHALL INSTALL EAB - ENERGY ABSORBING BOLLARDS AT 1.5m CENTRES ALONG BACK OF KERB. OFFSET 0.6m FROM FACE OF KERB
CONTRACTOR SHALL PROTECT POLE AND HIGH VOLTAGE OVERHEAD POWER TRANSMISSION LINES AT ALL TIMES DURING THE WORKS.
CONTRACTOR SHALL REMOVE EXISTING PATH
WARNING: HIGH PRESSURE GAS MAIN IN VICINITY
CONTRACTOR SHALL INSTALL EAB - ENERGY ABSORBING BOLLARDS AT 1.5m CENTRES ALONG BACK OF KERB.
HIGH VOLTAGE
O/H Transmission Cables
RAILWAY STREET
ERIC STREET
CONTRACTOR SHALL REMOVE KERB
CONTRACTOR SHALL FULLY REMOVE EXISTING PAVEMENT FOR THE AREA AS SHOWN AND BACKFILL WITH CLEAN SAND.
FENCE ON BOUNDARY TO BE PROTECTED AT ALL TIMES
CONTRACTOR SHALL REMOVE EXISTING PATH
CONTRACTOR SHALL REMOVE EXISTING PINE BOLLARD FENCE.
CONTRACTOR SHALL ADJUST SEWER LID TO TIE NEATLY INTO NEW PATH
CONTRACTOR SHALL REMOVE SCHOOL CROSSING BOLLARDS, STORE AND INSTALL AT NEW CROSSING POSITION SUBJECT TO APPROVAL OF THERE CONDITION BY COUNCIL, WHERE UNSATISFACTORY NEW BOLLARDS SHALL BE INSTALLED.
FENCE ON BOUNDARY TO BE PROTECTED AT ALL TIMES
CONTRACTOR SHALL ADJUST WATER SERVICE PIT TO SUIT NEW PATH
CONTRACTOR SHALL REMOVE SCHOOL CROSSING BOLLARDS, STORE AND INSTALL AT NEW CROSSING POSITION SUBJECT TO APPROVAL OF THERE CONDITION BY COUNCIL, WHERE UNSATISFACTORY NEW BOLLARDS SHALL BE INSTALLED.
CONTRACTOR SHALL REMOVE EXISTING CHAIN MESH FENCE
CONTRACTOR SHALL RESHAPE PAVEMENT TO SUIT NEW WORKS.
CONTRACTOR SHALL REMOVE KERB
REFER TO MATCHLINE BELOW FOR CONTINUATION
CONTRACTOR SHALL PROTECT NORFOLK PINES AT ALL TIMES DURING WORKS.
CONTRACTOR SHALL RESHAPE PAVEMENT TO SUIT NEW WORKS.
FENCE ON BOUNDARY TO BE PROTECTED AT ALL TIMES
CONTRACTOR SHALL ADJUST WATER SERVICE PIT TO SUIT NEW PATH
CONTRACTOR SHALL REMOVE KERB
CONTRACTOR SHALL PROTECT THE STEEL MESH FENCE. CONTRACTOR SHALL REMOVE FENCE TO INSTALL PATH AND REINSTATE
CONTRACTOR SHALL FULLY REMOVE EXISTING PAVEMENT FOR THE AREA AS SHOWN AND BACKFILL WITH CLEAN SAND.
CONTRACTOR SHALL REMOVE EXISTING CROSSOVERS AND REINSTATE TO MATCH EXISTING.EXISTING FOOTPATH TO BE REMOVED AND REINSTATED TO MATCH NEW LEVELS.
CONTRACTOR SHALL RESHAPE PAVEMENT TO SUIT NEW WORKS.
LEGEND
EXISTING GROUND CONTOUR (0.5m INTERVAL)
EXISTING KERB TO REMAIN
EXISTING KERB TO BE REMOVED
PROPOSED KERB
PROPOSED PATH
EXISTING HP GAS LINE
EXISTING MP GAS LINE
EXISTING SEWER PIPE
EXISTING TELSTRA CABLE
EXISTING WATER MAIN
EXISTING DRAINAGE LINE
EXISTING TRANSMISSION OVERHEAD POWER LINES
EXISTING VOCUS COMMUNICATIONS
EXISTING LOW VOLTAGE UNDERGROUND
EXISTING HIGH VOLTAGE UNDERGROUND
EXISTING WESTERN POWER DATA COMMS
EXISTING DRAINAGE TO BE REMOVED
AREA OF EXISTING ROAD TO BE RESHAPED
AREA OF EXISTING ROAD TO BE REMOVED
AREA OF EXISTING PATH TO BE REMOVED
EXISTING NORFOLK PINES
EXISTING TREES
EXISTING TREES
DIAL BEFORE YOU DIG www.1100.com.au
1:250 0 2.5 5 10 15 Half Size 1:500 - SCALE (m)
PROJECT
RAILWAY ST REALIGNMENT
NORTH COTTESLOE P.S.
COPYRIGHT
Porter Consulting Engineers
CLIENT
TOWN OF COTTESLOE
DRAWING
SITEWORKS PLAN
STATUS: FOR APPROVAL
SCALE 1:250
DATE JULY 2020
DESIGN ELW
DRAWN MJV
CHECK
DRAWING No. 20-4-53/101
REV No. B
A1


CONTRACTOR TO PROTECT WESTERN POWER TRANSMISSION POLE AT ALL TIMES
WARNING: EXISTING HIGH PRESSURE GAS MAIN 150 ST 19.5 HP 1900KPa
WARNING: OVERHEAD TRANSMISSION LINE 33kV – 330kV
EXISTING WESTERN POWER FIBRE NETWORK 100mm CONDUITS
EXISTING WESTERN POWER HIGH VOLTAGE UNDERGROUND CABLES APPROXIMATE ONLY
EXISTING PITS, WESTERN POWER FIBRE NETWORK 100mm CONDUITS
EXISTING WESTERN POWER DATA PILOT CABLE
EXISTING SEWER JUNCTION PIT
EXISTING SEWER 150 VC
WARNING: EXISTING HIGH PRESSURE GAS MAIN 150 ST 38 HP 1900KPa
WARNING: EXISTING HIGH PRESSURE GAS MAIN 150 ST 38 HP 1900KPa POSITION APPROXIMATE ONLY
HP GAS SIGN
EXISTING LIGHTS TO REMAIN
ERIC STREET
EXISTING WESTERN POWER LOW VOLTAGE UNDERGROUND POWER
EXISTING WESTERN POWER DATA PILOT CABLE
EXISTING HEADWALL IL 18.56
EXISTING Ø1.8m SOAKWELL
EXISTING GRATED GULLY
RAILWAY STREET
EXISTING BIKE RACK SCULPTURE
EXISTING MEDIUM PRESSURE GAS MAIN 155 PVC 1.5 MP 70 KPa
EXISTING WESTERN POWER HIGH AND LOW VOLTAGE UNDERGROUND CABLES
EXISTING WATER PIT
WP TO REMOVE EXISTING LIGHT
EXISTING DOUBLE GULLY PITS
CONTRACTOR TO PROTECT WESTERN POWER TRANSMISSION POLE AT ALL TIMES.
REFER TO MATCHLINE BELOW FOR CONTINUATION
NOTE
HIGH PRESSURE GAS MAIN IN VICINITY. CONTRACTOR TO ALLOW FOR ALL WORKS ASSOCIATED IN PROTECTING THE HIGH PRESSURE MAIN INCLUDING ALL SUPERVISION ALLOWANCES. CONTRACTOR SHALL LIAISE DIRECT WITH WESTNET ENERGY PRIOR TO COMMENCING ANY WORKS.
WARNING:
OPTIC FIBRE CABLE IN VICINITY OF WORKS. CONTRACTOR TO CONTACT 1800 806 246 AT LEAST TWO (2) BUSINESS DAYS BEFORE STARTING ACTIVITY
LEGEND
EXISTING GROUND CONTOUR (0.5m INTERVAL)
EXISTING KERB TO REMAIN
PROPOSED KERB
PROPOSED PATH
EXISTING HP GAS LINE
EXISTING MP GAS LINE
EXISTING SEWER PIPE
EXISTING TELSTRA CABLE
EXISTING WATER MAIN
EXISTING DRAINAGE LINE
EXISTING TRANSMISSION OVERHEAD POWER LINES
EXISTING VOCUS COMMUNICATIONS
EXISTING LOW VOLTAGE UNDERGROUND
EXISTING HIGH VOLTAGE UNDERGROUND
EXISTING WESTERN POWER DATA COMMS
EXISTING DRAINAGE TO BE REMOVED
EXISTING NORFOLK PINES
EXISTING TREES
DIAL BEFORE YOU DIG www.1100.com.au
WARNING: EXISTING HIGH PRESSURE GAS MAIN 150 ST 38 HP 1900KPa
HP GAS SIGN
EXISTING WESTERN POWER FIBRE NETWORK 100mm CONDUITS
WARNING: OVERHEAD TRANSMISSION LINE 33kV – 330kV
CONTRACTOR TO PROTECT WESTERN POWER TRANSMISSION POLE AND STAY WIRE AT ALL TIMES.
EXISTING DRAINAGE PIT
CONTRACTOR TO PROTECT WESTERN POWER TRANSMISSION POLE AT ALL TIMES.
RAILWAY STREET
EXISTING ILLUMINATED SCHOOL ZONE SIGN TO BE PROTECTED AT ALL TIMES
EXISTING WESTERN POWER DATA PILOT CABLE
EXISTING WATER PIT
EXISTING SEWER JUNCTION PIT
EXISTING WATER PIT
EXISTING WATER PITS
EXISTING SEWER PIT
EXISTING DRAINAGE PIT
EXISTING TELSTRA PIT
EXISTING DRAINAGE GRATE
EXISTING WESTERN POWER DATA PILOT CABLE
EXISTING LIGHT TO REMAIN
GREENHAM STREET
EXISTING DRAINAGE PITS
REFER TO MATCHLINE ABOVE FOR CONTINUATION
1:250 0 2.5 5 10 15
PROJECT
RAILWAY ST REALIGNMENT
NORTH COTTESLOE P.S.
B 26-7-2020 ADDITIONAL PATH ADDED TO THE DESIGN MJV
A 13-7-2020 PRELIMINARY PLOT FOR APPROVAL MJV
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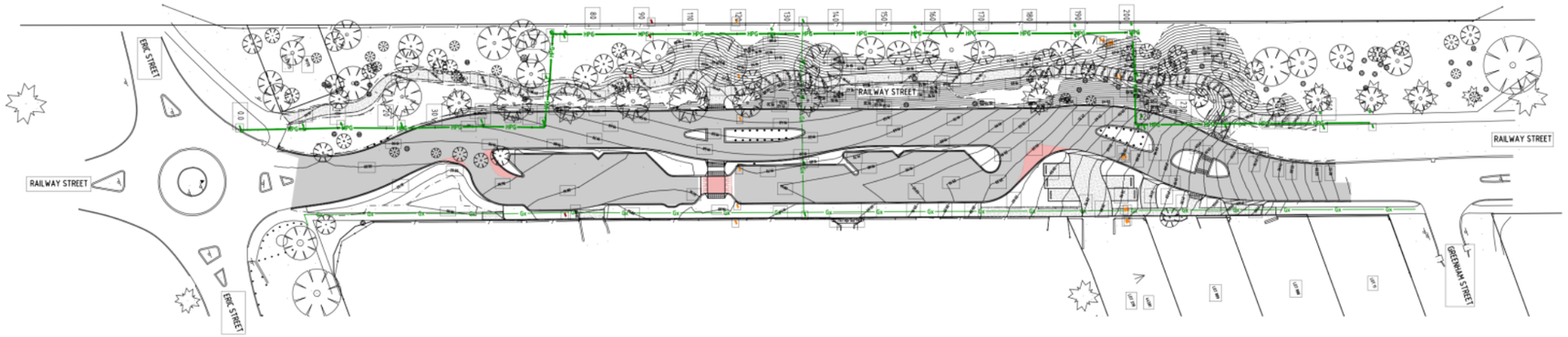
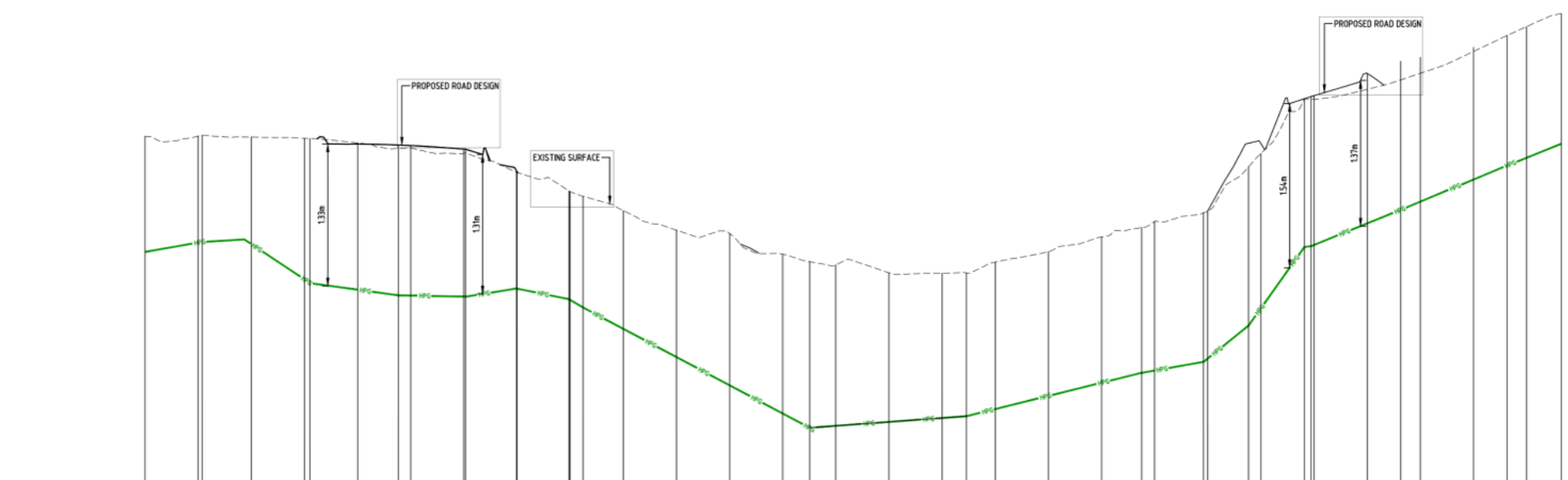
CLIENT
TOWN OF COTTESLOE
DRAWING
EXISTING SERVICES PLAN
STATUS: FOR APPROVAL
SCALE 1:250
DATE JULY 2020
DESIGN ELW
DRAWN MJV
CHECK
DRAWING No. 20-4-53/102
REV No. B
ORIGINAL DRAWING SIZE A1





DATUM 13.0

HP GAS TOP OF PIPE LEVELS	17.788	17.961	17.974	18.021	17.935	17.221	17.201	17.077	16.971	16.966	16.946	16.945	17.099	17.097
DESIGN SURFACE								19.813	19.795	19.785	19.719	19.716	19.312	19.297
NATURAL SURFACE	19.958	19.963	19.978	19.946	19.944	19.923	19.918	19.835	19.728	19.742	19.641	19.647	19.285	19.281
HORIZ. ALIGNMENT	0.000	10.000	10.759	18.706	20.000	30.000	31.052	40.000	47.657	50.000	60.000	60.335	69.903	70.000

HP GAS TOP OF PIPE LEVELS	16.899	16.886	16.741	16.341	15.811	15.281	14.751	14.483	14.519	14.593	14.666	14.700	14.834	15.081	15.328
DESIGN SURFACE															
NATURAL SURFACE	18.927	18.918	18.831	18.563	18.196	18.134	17.743	17.603	17.544	17.393	17.387	17.391	17.595	17.791	18.068
HORIZ. ALIGNMENT	79.771	80.000	82.458	90.000	100.000	110.000	120.000	125.048	130.000	140.000	150.000	154.572	160.000	170.000	180.000

HP GAS TOP OF PIPE LEVELS	15.515	15.558	15.721	15.784	16.402	16.729	17.880	17.895	17.917	18.322	18.578	18.731	19.147	19.409	19.556	19.817
DESIGN SURFACE							20.667	20.707	20.723	21.138	21.367	21.441	21.630			
NATURAL SURFACE	18.245	18.359	18.525	18.550	19.384	19.635	20.663	20.660	20.658	20.841	21.019	21.142	21.553	21.853	22.021	22.264
HORIZ. ALIGNMENT	187.574	190.000	199.211	200.000	207.673	210.000	218.200	219.445	220.000	230.000	236.315	240.000	250.000	256.315	260.000	266.510

HP GAS LONGITUDINAL SECTION
HORIZONTAL SCALE 1:500
VERTICAL SCALE 1:50

1:50 0 0.5 1 2 3
Half Size 1:100 - SCALE (m)

1:500 0 5 10 20 30
Half Size 1:1000 - SCALE (m)

PROJECT:
RAILWAY ST REALIGNMENT
NORTH COTTESLOE P.S.

No.	DATE	REVISION	BY
B	30-7-2020	ADDITIONAL PATH SECTION ADDED TO THE PLAN	MJV
A	13-7-2020	PRELIMINARY PLOT FOR APPROVAL	MJV

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ONLY PLANS WITH NUMERICAL REVISION (REV '0' OR HIGHER) AND SIGNED AS APPROVED SHALL BE USED FOR CONSTRUCTION.

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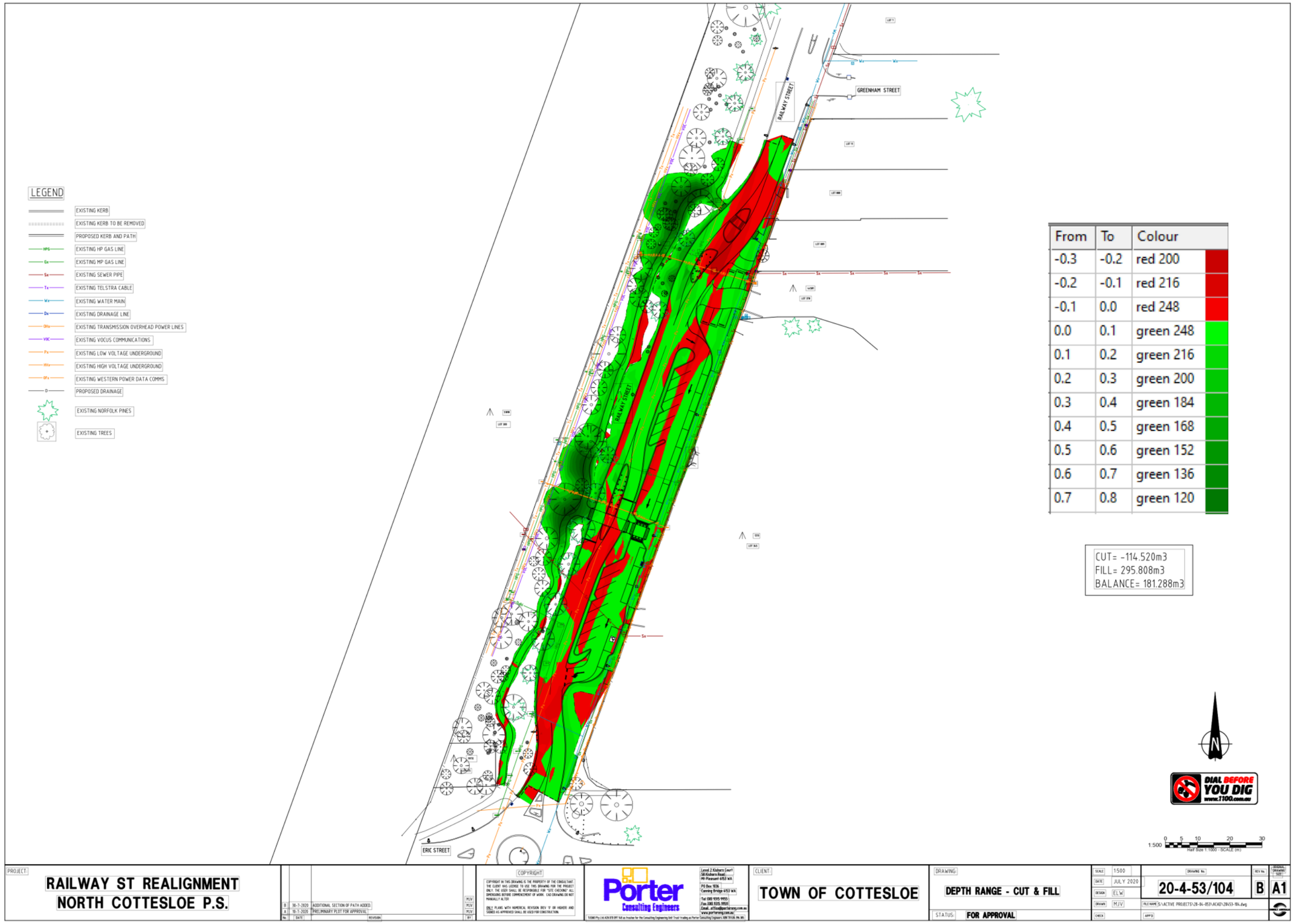
Email office@portereng.com.au
www.portereng.com.au

CLIENT:
TOWN OF COTTESLOE

DRAWING:
HP GAS COVER CHECKS
LONGITUDINAL SECTION
STATUS: **FOR APPROVAL**

SCALE AS SHOWN
DATE JULY 2020
DESIGN ELW
DRAWN MJV
CHECK
DRAWING No. 20-4-53/103
REV No. B
ORIGINAL DRAWING SIZE A1
FILE NAME S:\ACTIVE PROJECTS\20-04-053\ACAD\20453-103.dwg
APP'D


LEGEND
EXISTING KERB
EXISTING KERB TO BE REMOVED
PROPOSED KERB AND PATH
EXISTING HP GAS LINE
EXISTING MP GAS LINE
EXISTING SEWER PIPE
EXISTING TELSTRA CABLE
EXISTING WATER MAIN
EXISTING DRAINAGE LINE
EXISTING TRANSMISSION OVERHEAD POWER LINES
EXISTING VOCUS COMMUNICATIONS
EXISTING LOW VOLTAGE UNDERGROUND
EXISTING HIGH VOLTAGE UNDERGROUND
EXISTING WESTERN POWER DATA COMMS
PROPOSED DRAINAGE
EXISTING NORFOLK PINES
EXISTING TREES
GREENHAM STREET
RAILWAY STREET
ERIC STREET
From To Colour
-0.3 -0.2 red 200
-0.2 -0.1 red 216
-0.1 0.0 red 248
0.0 0.1 green 248
0.1 0.2 green 216
0.2 0.3 green 200
0.3 0.4 green 184
0.4 0.5 green 168
0.5 0.6 green 152
0.6 0.7 green 136
0.7 0.8 green 120
CUT= -114.520m3
FILL= 295.808m3
BALANCE= 181.288m3
DIAL BEFORE YOU DIG www.1100.com.au
1:500
RAILWAY ST REALIGNMENT
NORTH COTTESLOE P.S.
ADDITIONAL SECTION OF PATH ADDED
PRELIMINARY PLOT FOR APPROVAL
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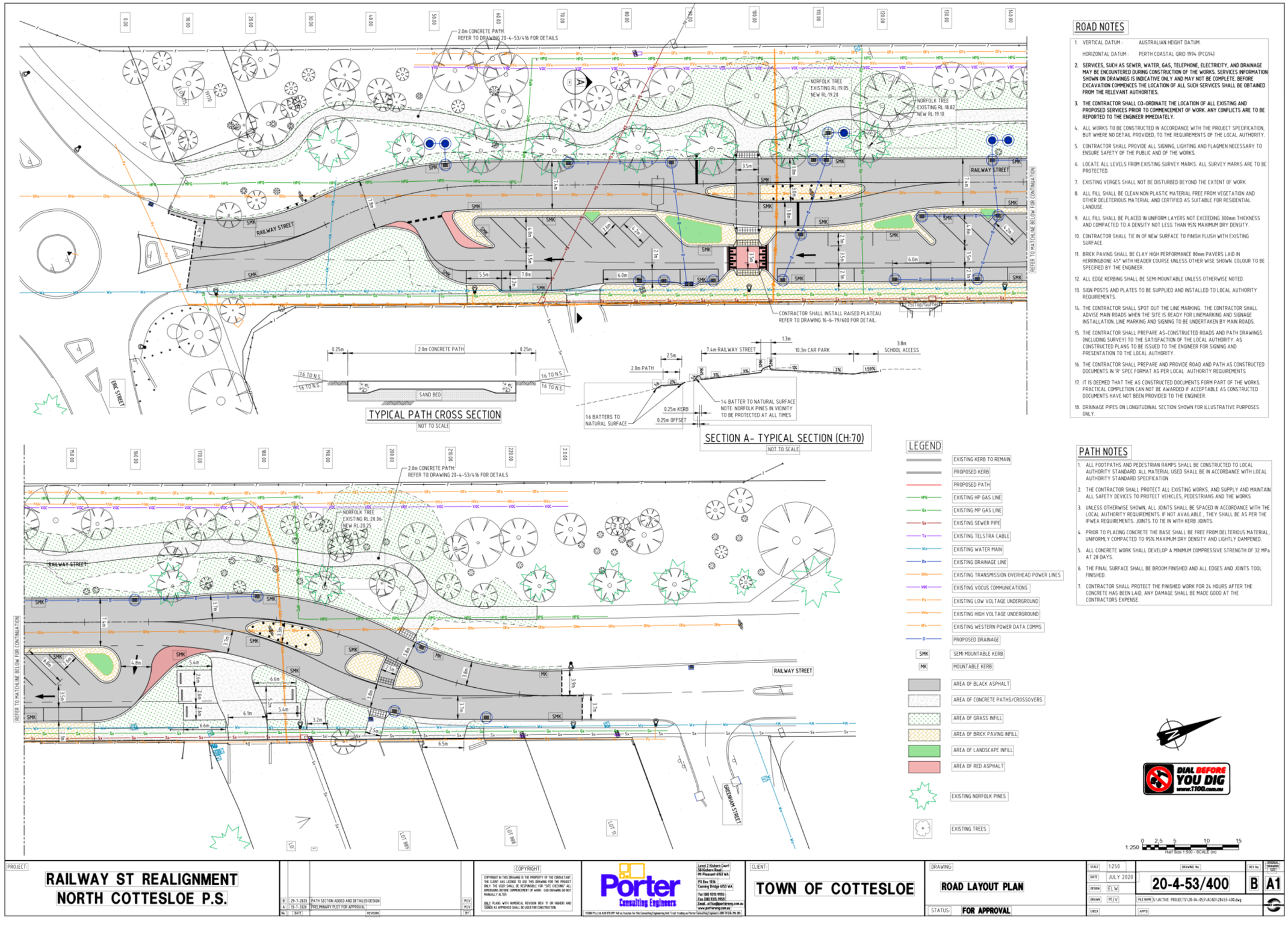
Porter Consulting Engineers
TOWN OF COTTESLOE
DEPTH RANGE - CUT & FILL
STATUS: FOR APPROVAL
SCALE 1:500
DATE JULY 2020
DESIGN ELW
DRAWN MJV
20-4-53/104
B
A1



ROAD NOTES

1. VERTICAL DATUM : AUSTRALIAN HEIGHT DATUM.
   HORIZONTAL DATUM : PERTH COASTAL GRID 1994 (PCG94)
2. **SERVICES, SUCH AS SEWER, WATER, GAS, TELEPHONE, ELECTRICITY, AND DRAINAGE MAY BE ENCOUNTERED DURING CONSTRUCTION OF THE WORKS. SERVICES INFORMATION SHOWN ON DRAWINGS IS INDICATIVE ONLY AND MAY NOT BE COMPLETE. BEFORE EXCAVATION COMMENCES THE LOCATION OF ALL SUCH SERVICES SHALL BE OBTAINED FROM THE RELEVANT AUTHORITIES.**
3. **THE CONTRACTOR SHALL CO-ORDINATE THE LOCATION OF ALL EXISTING AND PROPOSED SERVICES PRIOR TO COMMENCEMENT OF WORK. ANY CONFLICTS ARE TO BE REPORTED TO THE ENGINEER IMMEDIATELY.**
4. ALL WORKS TO BE CONSTRUCTED IN ACCORDANCE WITH THE PROJECT SPECIFICATION, BUT WHERE NO DETAIL PROVIDED, TO THE REQUIREMENTS OF THE LOCAL AUTHORITY.
5. CONTRACTOR SHALL PROVIDE ALL SIGNING, LIGHTING AND FLAGMEN NECESSARY TO ENSURE SAFETY OF THE PUBLIC AND OF THE WORKS.
6. LOCATE ALL LEVELS FROM EXISTING SURVEY MARKS. ALL SURVEY MARKS ARE TO BE PROTECTED.
7. EXISTING VERGES SHALL NOT BE DISTURBED BEYOND THE EXTENT OF WORK.
8. ALL FILL SHALL BE CLEAN NON PLASTIC MATERIAL FREE FROM VEGETATION AND OTHER DELETERIOUS MATERIAL AND CERTIFIED AS SUITABLE FOR RESIDENTIAL LANDUSE.
9. ALL FILL SHALL BE PLACED IN UNIFORM LAYERS NOT EXCEEDING 300mm THICKNESS AND COMPACTED TO A DENSITY NOT LESS THAN 95% MAXIMUM DRY DENSITY.
10. CONTRACTOR SHALL TIE IN OF NEW SURFACE TO FINISH FLUSH WITH EXISTING SURFACE.
11. BRICK PAVING SHALL BE CLAY HIGH PERFORMANCE 80mm PAVERS LAID IN HERRINGBONE 45° WITH HEADER COURSE UNLESS OTHER WISE SHOWN. COLOUR TO BE SPECIFIED BY THE ENGINEER.
12. ALL EDGE KERBING SHALL BE SEMI MOUNTABLE UNLESS OTHERWISE NOTED.
13. SIGN POSTS AND PLATES TO BE SUPPLIED AND INSTALLED TO LOCAL AUTHORITY REQUIREMENTS.
14. THE CONTRACTOR SHALL SPOT OUT THE LINE MARKING. THE CONTRACTOR SHALL ADVISE MAIN ROADS WHEN THE SITE IS READY FOR LINEMARKING AND SIGNAGE INSTALLATION. LINE MARKING AND SIGNING TO BE UNDERTAKEN BY MAIN ROADS.
15. THE CONTRACTOR SHALL PREPARE AS-CONSTRUCTED ROADS AND PATH DRAWINGS (INCLUDING SURVEY) TO THE SATISFACTION OF THE LOCAL AUTHORITY. AS CONSTRUCTED PLANS TO BE ISSUED TO THE ENGINEER FOR SIGNING AND PRESENTATION TO THE LOCAL AUTHORITY.
16. THE CONTRACTOR SHALL PREPARE AND PROVIDE ROAD AND PATH AS CONSTRUCTED DOCUMENTS IN 'R' SPEC FORMAT AS PER LOCAL AUTHORITY REQUIREMENTS
17. IT IS DEEMED THAT THE AS CONSTRUCTED DOCUMENTS FORM PART OF THE WORKS. PRACTICAL COMPLETION CAN NOT BE AWARDED IF ACCEPTABLE AS CONSTRUCTED DOCUMENTS HAVE NOT BEEN PROVIDED TO THE ENGINEER.
18. DRAINAGE PIPES ON LONGITUDINAL SECTION SHOWN FOR ILLUSTRATIVE PURPOSES ONLY.

LEGEND

- EXISTING KERB TO REMAIN
- PROPOSED KERB
- PROPOSED PATH
- EXISTING HP GAS LINE
- EXISTING MP GAS LINE
- EXISTING SEWER PIPE
- EXISTING TELSTRA CABLE
- EXISTING WATER MAIN
- EXISTING DRAINAGE LINE
- EXISTING TRANSMISSION OVERHEAD POWER LINES
- EXISTING VOCUS COMMUNICATIONS
- EXISTING LOW VOLTAGE UNDERGROUND
- EXISTING HIGH VOLTAGE UNDERGROUND
- EXISTING WESTERN POWER DATA COMMS
- PROPOSED DRAINAGE
- SMK SEMI MOUNTABLE KERB
- MK MOUNTABLE KERB
- AREA OF BLACK ASPHALT
- AREA OF CONCRETE PATHS/CROSSOVERS
- AREA OF GRASS INFILL
- AREA OF BRICK PAVING INFILL
- AREA OF LANDSCAPE INFILL
- AREA OF RED ASPHALT
- EXISTING NORFOLK PINES
- EXISTING TREES

PATH NOTES

1. ALL FOOTPATHS AND PEDESTRIAN RAMPS SHALL BE CONSTRUCTED TO LOCAL AUTHORITY STANDARD. ALL MATERIAL USED SHALL BE IN ACCORDANCE WITH LOCAL AUTHORITY STANDARD SPECIFICATION
2. THE CONTRACTOR SHALL PROTECT ALL EXISTING WORKS, AND SUPPLY AND MAINTAIN ALL SAFETY DEVICES TO PROTECT VEHICLES, PEDESTRIANS AND THE WORKS
3. UNLESS OTHERWISE SHOWN, ALL JOINTS SHALL BE SPACED IN ACCORDANCE WITH THE LOCAL AUTHORITY REQUIREMENTS. IF NOT AVAILABLE , THEY SHALL BE AS PER THE IPWEA REQUIREMENTS. JOINTS TO TIE IN WITH KERB JOINTS.
4. PRIOR TO PLACING CONCRETE THE BASE SHALL BE FREE FROM DELTERIOUS MATERIAL, UNIFORMLY COMPACTED TO 95% MAXIMUM DRY DENSITY AND LIGHTLY DAMPENED.
5. ALL CONCRETE WORK SHALL DEVELOP A MINIMUM COMPRESSIVE STRENGTH OF 32 MPa AT 28 DAYS.
6. THE FINAL SURFACE SHALL BE BROOM FINISHED AND ALL EDGES AND JOINTS TOOL FINISHED.
7. CONTRACTOR SHALL PROTECT THE FINISHED WORK FOR 24 HOURS AFTER THE CONCRETE HAS BEEN LAID, ANY DAMAGE SHALL BE MADE GOOD AT THE CONTRACTORS EXPENSE.

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1:250 0 2.5 5 10 15 Half Size 1:500 - SCALE (m)

PROJECT: **RAILWAY ST REALIGNMENT NORTH COTTESLOE P.S.**

No	DATE	REVISION	
B	29-7-2020	PATH SECTION ADDED AND DETAILED DESIGN	MJV
A	13-7-2020	PRELIMINARY PLOT FOR APPROVAL	MJV

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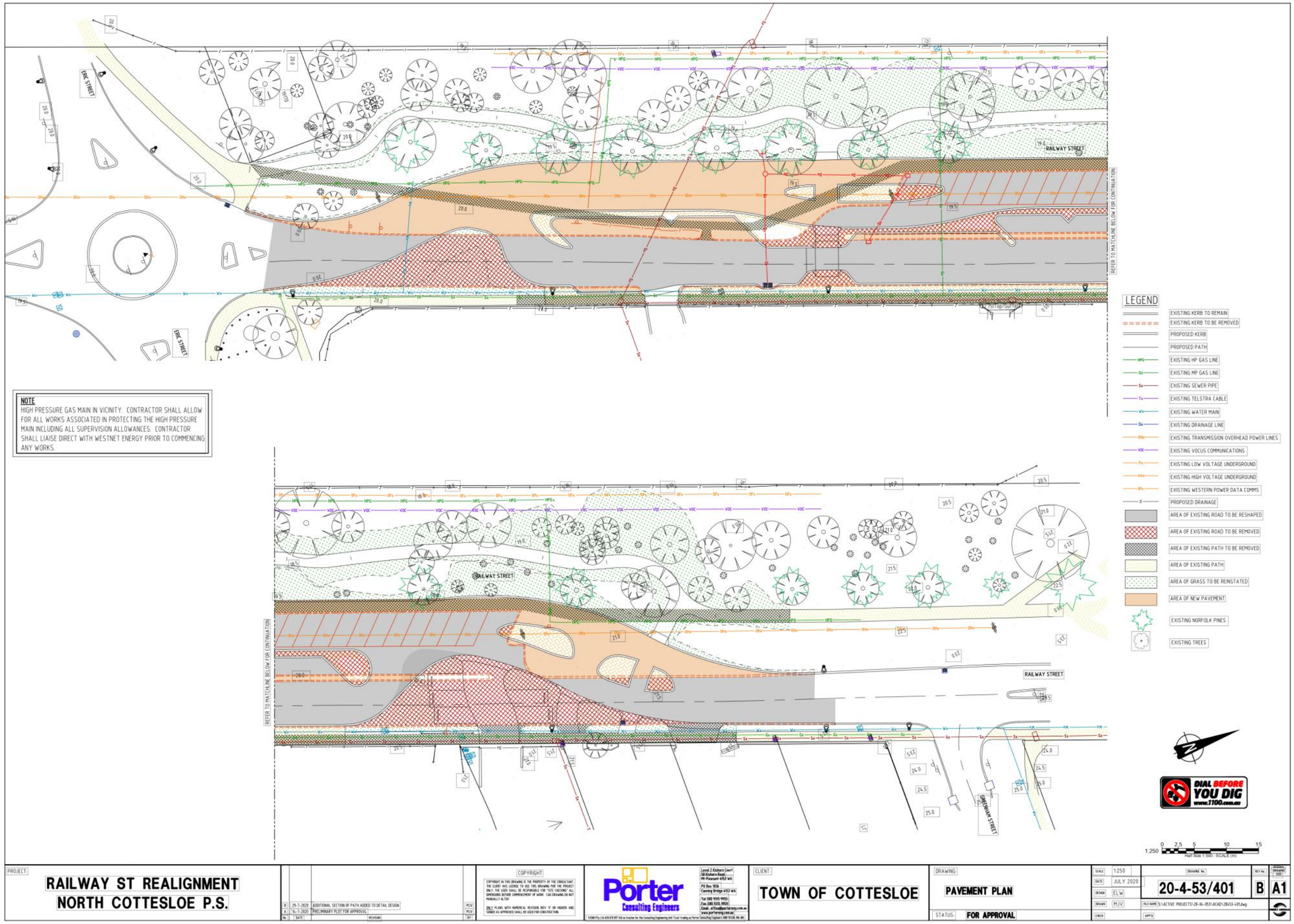
Email...office@porterseng.com.au
www.porterseng.com.au

CLIENT: **TOWN OF COTTESLOE**

DRAWING: **ROAD LAYOUT PLAN**

STATUS: **FOR APPROVAL**

SCALE	1:250
DATE	JULY 2020
DESIGN	ELW
DRAWN	MJV
CHECK	
APP'D	
DRAWING No.	20-4-53/400
REV No.	B
ORIGINAL DRAWING SIZE	A1
FILE NAME	S:\ACTIVE PROJECTS\20-04-053\ACAD\20453-400.dwg


ERIC STREET
RAILWAY STREET
REFER TO MATCHLINE BELOW FOR CONTINUATION
NOTE
HIGH PRESSURE GAS MAIN IN VICINITY. CONTRACTOR SHALL ALLOW FOR ALL WORKS ASSOCIATED IN PROTECTING THE HIGH PRESSURE MAIN INCLUDING ALL SUPERVISION ALLOWANCES. CONTRACTOR SHALL LIAISE DIRECT WITH WESTNET ENERGY PRIOR TO COMMENCING ANY WORKS.
LEGEND
EXISTING KERB TO REMAIN
EXISTING KERB TO BE REMOVED
PROPOSED KERB
PROPOSED PATH
EXISTING HP GAS LINE
EXISTING MP GAS LINE
EXISTING SEWER PIPE
EXISTING TELSTRA CABLE
EXISTING WATER MAIN
EXISTING DRAINAGE LINE
EXISTING TRANSMISSION OVERHEAD POWER LINES
EXISTING VOCUS COMMUNICATIONS
EXISTING LOW VOLTAGE UNDERGROUND
EXISTING HIGH VOLTAGE UNDERGROUND
EXISTING WESTERN POWER DATA COMMS
PROPOSED DRAINAGE
AREA OF EXISTING ROAD TO BE RESHAPED
AREA OF EXISTING ROAD TO BE REMOVED
AREA OF EXISTING PATH TO BE REMOVED
AREA OF EXISTING PATH
AREA OF GRASS TO BE REINSTATED
AREA OF NEW PAVEMENT
EXISTING NORFOLK PINES
EXISTING TREES
DIAL BEFORE YOU DIG
www.1100.com.au
1:250
Half Size 1:500 - SCALE (m)
PROJECT
RAILWAY ST REALIGNMENT
NORTH COTTESLOE P.S.
B 29-7-2020 ADDITIONAL SECTION OF PATH ADDED TO DETAIL DESIGN MJV
A 14-7-2020 PRELIMINARY PLOT FOR APPROVAL MJV
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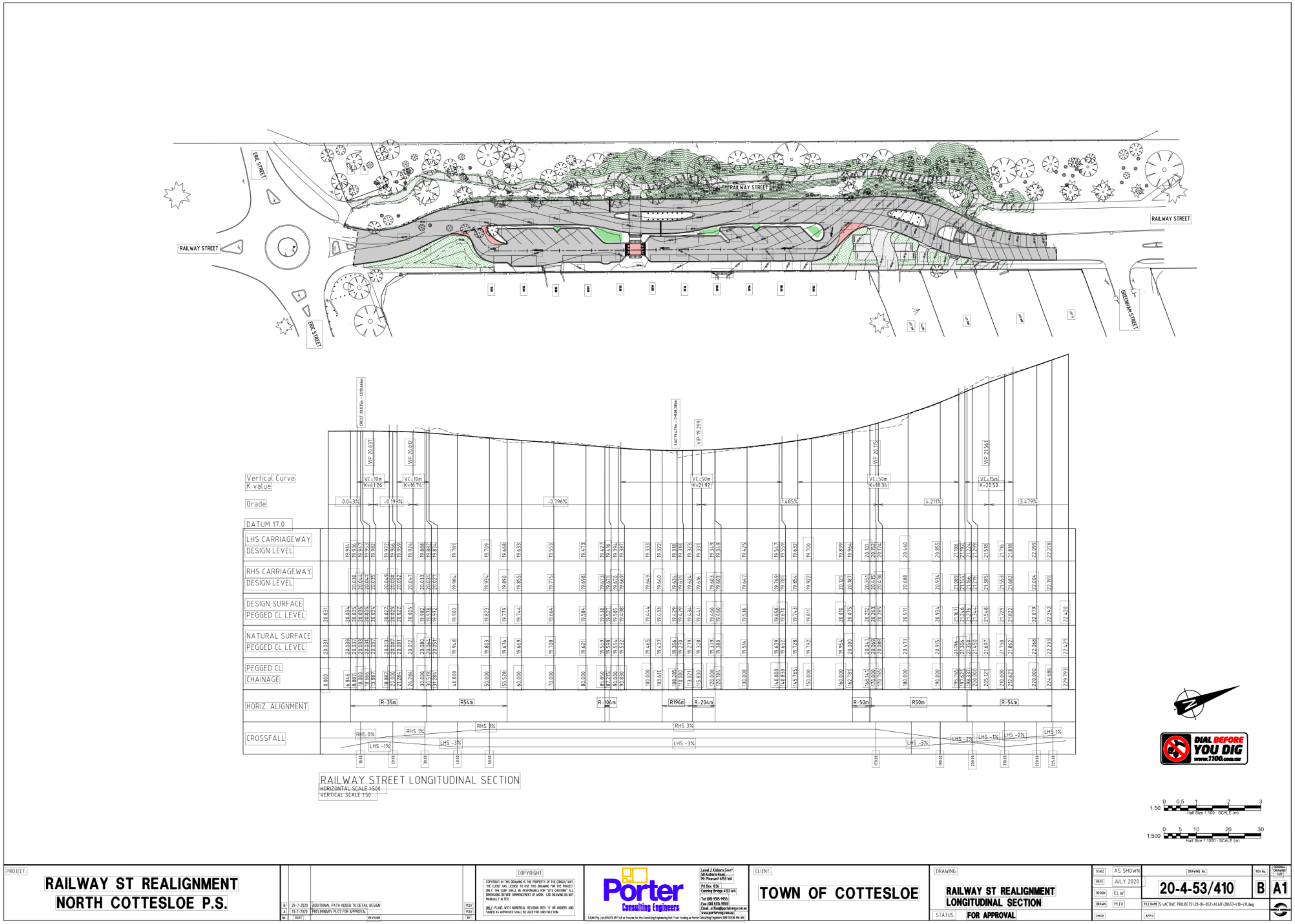
CLIENT
TOWN OF COTTESLOE
DRAWING
PAVEMENT PLAN
STATUS: FOR APPROVAL
SCALE 1:250
DATE JULY 2020
DESIGN ELW
DRAWN MJV
CHECK
DRAWING No. 20-4-53/401
REV No. B
ORIGINAL DRAWING SIZE A1


RAILWAY STREET
ERIC STREET
GREENHAM STREET
Vertical Curve K value
Grade
DATUM 17.0
LHS CARRIAGEWAY DESIGN LEVEL
RHS CARRIAGEWAY DESIGN LEVEL
DESIGN SURFACE PEGGED CL LEVEL
NATURAL SURFACE PEGGED CL LEVEL
PEGGED CL CHAINAGE
HORIZ. ALIGNMENT
CROSSFALL
RAILWAY STREET LONGITUDINAL SECTION
HORIZONTAL SCALE 1:500
VERTICAL SCALE 1:50
DIAL BEFORE YOU DIG
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PROJECT
RAILWAY ST REALIGNMENT
NORTH COTTESLOE P.S.
B 29-7-2020 ADDITIONAL PATH ADDED TO DETAIL DESIGN
A 13-7-2020 PRELIMINARY PLOT FOR APPROVAL
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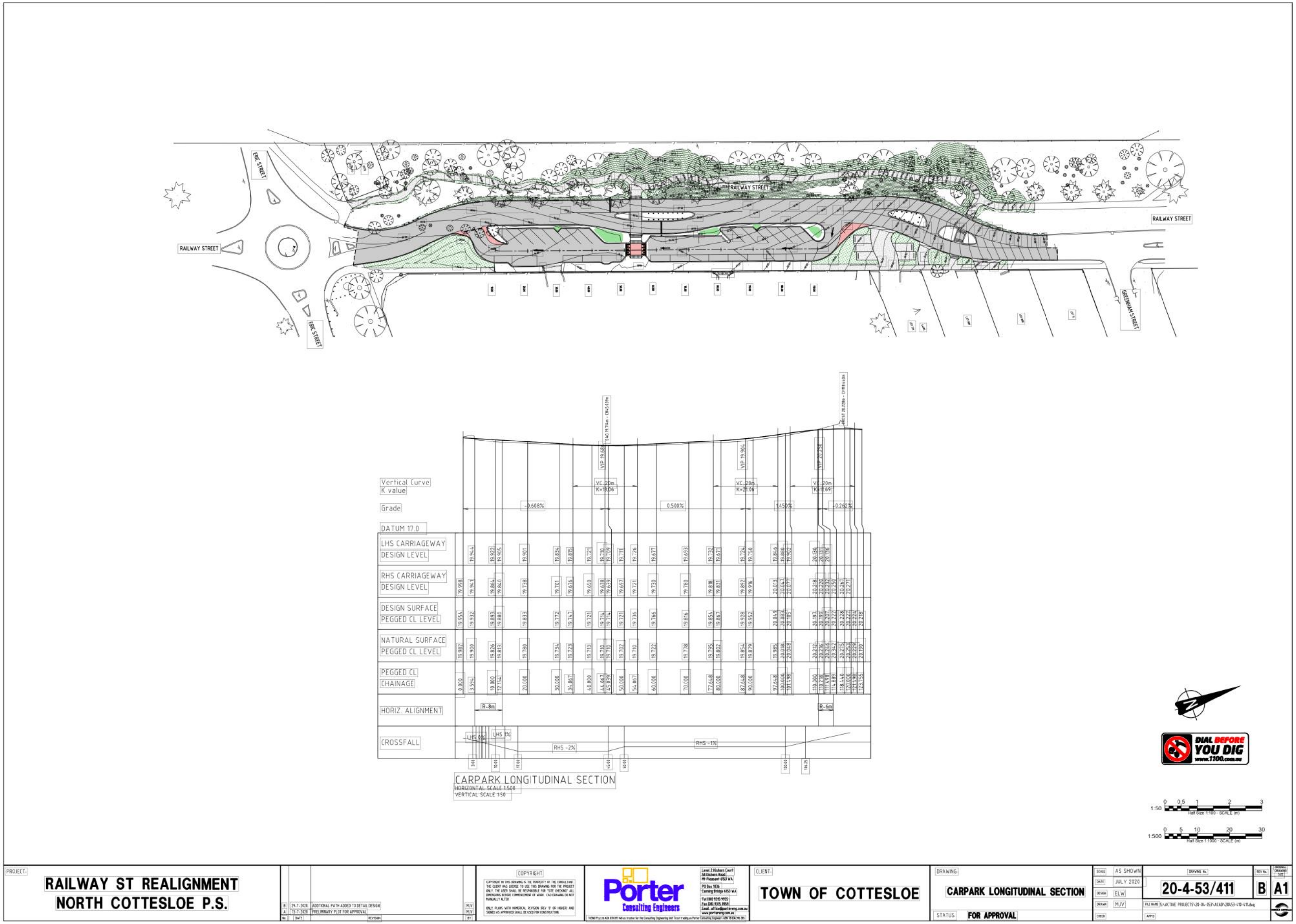
TOWN OF COTTESLOE
DRAWING
RAILWAY ST REALIGNMENT
LONGITUDINAL SECTION
STATUS FOR APPROVAL
AS SHOWN
JULY 2020
20-4-53/410
B
A1


RAILWAY STREET
ERIC STREET
GREENHAM STREET
Vertical Curve
K value
Grade
DATUM 17.0
LHS CARRIAGEWAY DESIGN LEVEL
RHS CARRIAGEWAY DESIGN LEVEL
DESIGN SURFACE PEGGED CL LEVEL
NATURAL SURFACE PEGGED CL LEVEL
PEGGED CL CHAINAGE
HORIZ. ALIGNMENT
CROSSFALL
CARPARK LONGITUDINAL SECTION
HORIZONTAL SCALE 1:500
VERTICAL SCALE 1:50
DIAL BEFORE YOU DIG
www.1100.com.au
PROJECT
RAILWAY ST REALIGNMENT
NORTH COTTESLOE P.S.
COPYRIGHT
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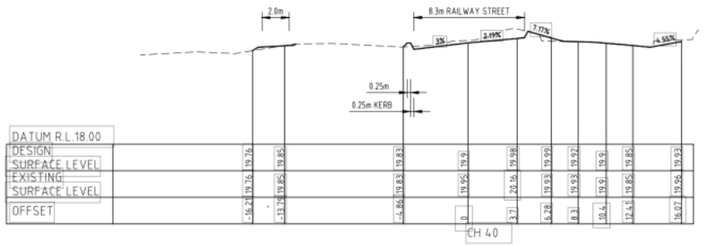
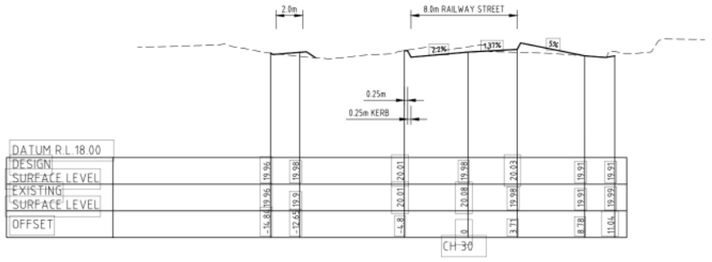
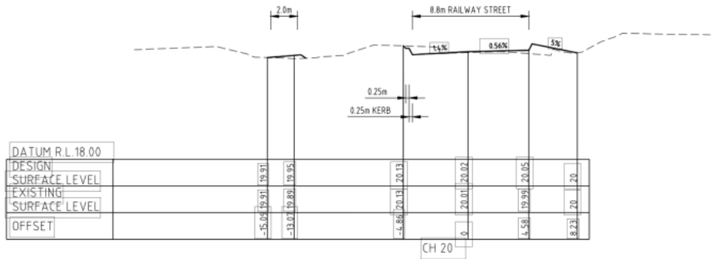
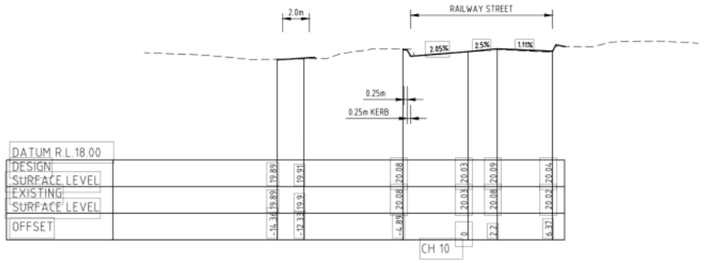
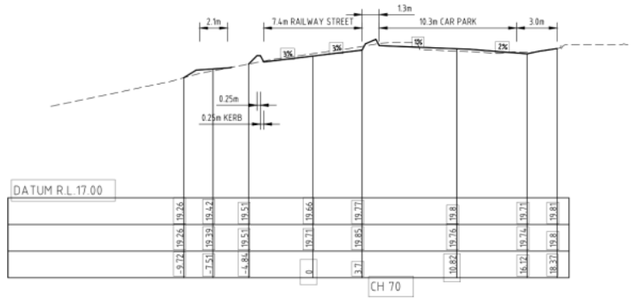
CLIENT
TOWN OF COTTESLOE
DRAWING
CARPARK LONGITUDINAL SECTION
STATUS: FOR APPROVAL
AS SHOWN
JULY 2020
20-4-53/411
B
A1

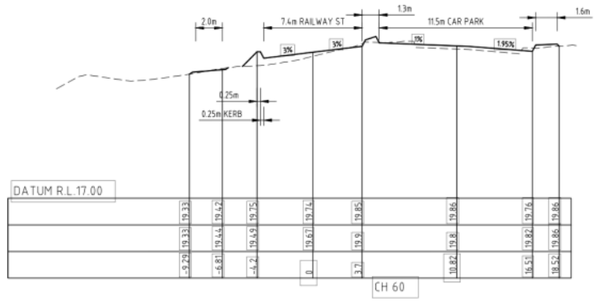


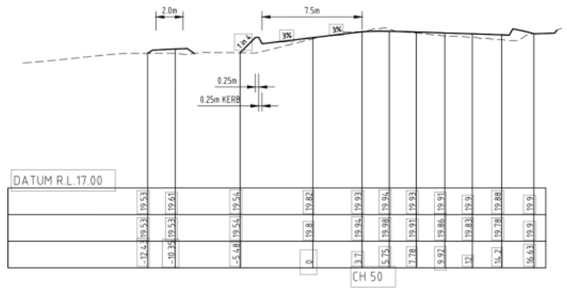












1:250 0 2.5 5 10 15 Half Size 1:500 - SCALE (m)

1:50 0 0.5 1 2 3 Half Size 1:100 - SCALE (m)

PROJECT: **RAILWAY ST REALIGNMENT NORTH COTTESLOE P.S.**

No	DATE	REVISION	BY
B	28-7-2020	REVISED CROSS SECTIONS, NEW PATH ADDED	MJV
A	13-7-2020	PRELIMINARY PLOT FOR APPROVAL	MJV

Porter Consulting Engineers
Level 2 Kishorn Court
58 Kishorn Road
Mt Pleasant 6153 WA
PO Box 1936
Canning Bridge 6153 WA
Tel (08) 9315 9955
Fax (08) 9315 9950
Email...@porterseng.com.au
www.porterseng.com.au

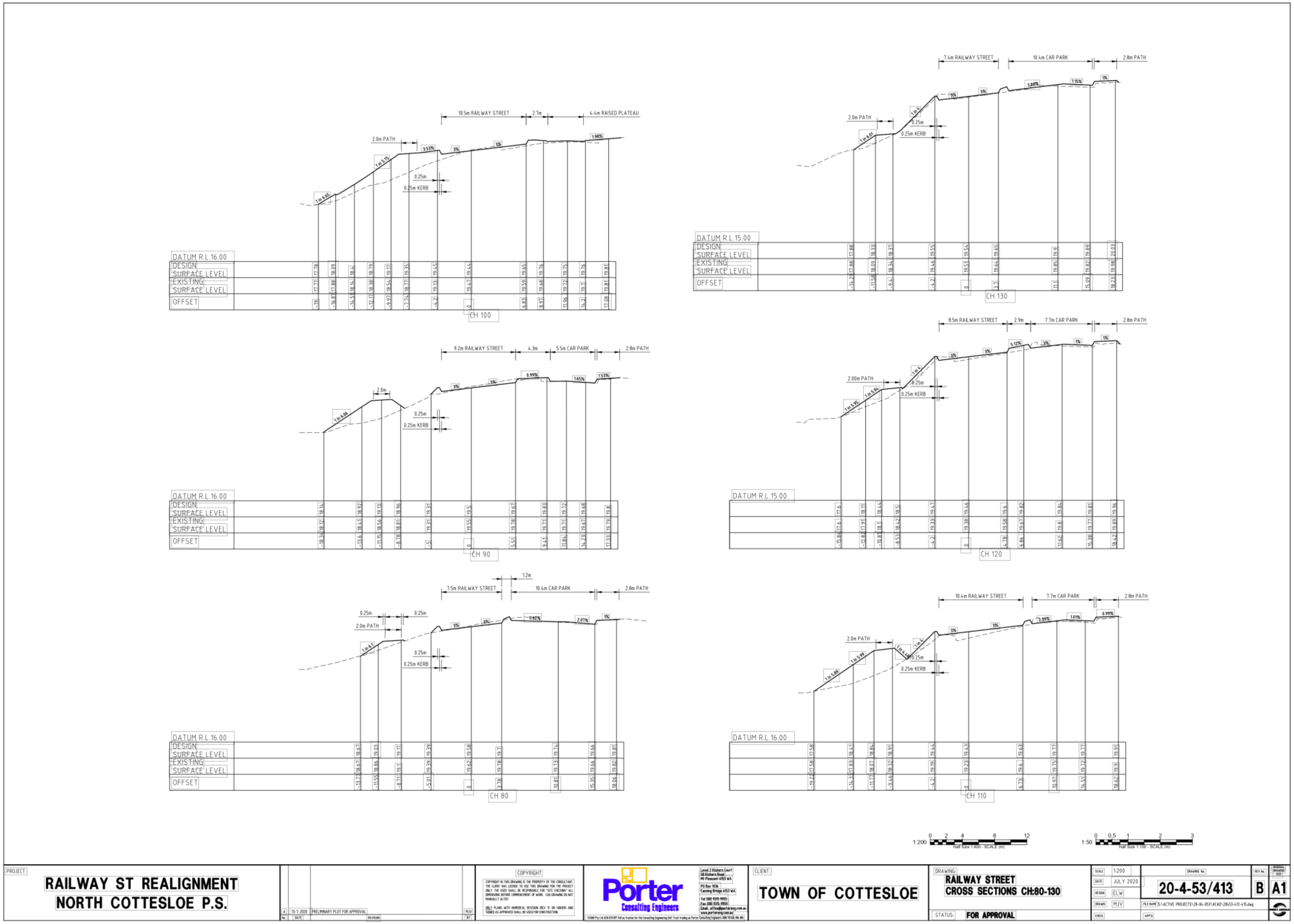
CLIENT: **TOWN OF COTTESLOE**

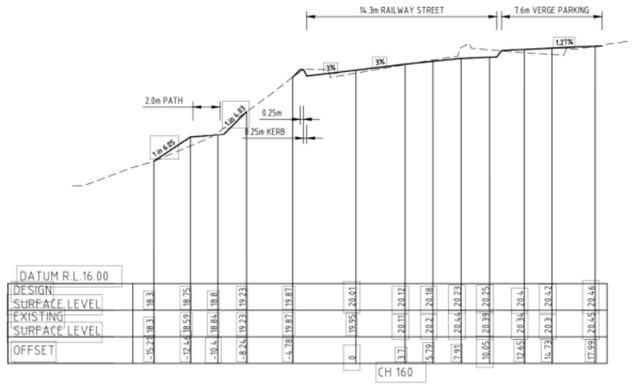
DRAWING: **RAILWAY STREET & CARPARK CROSS SECTIONS CH:10-70**

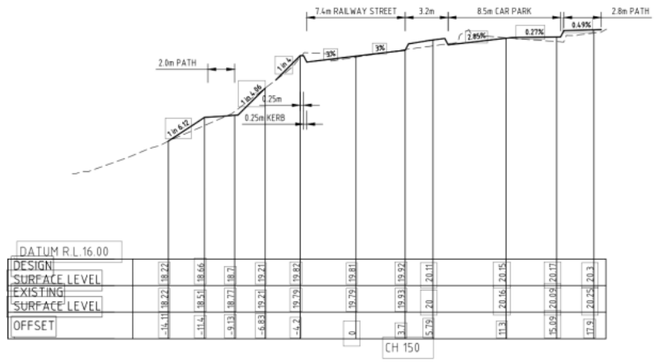
STATUS: **FOR APPROVAL**

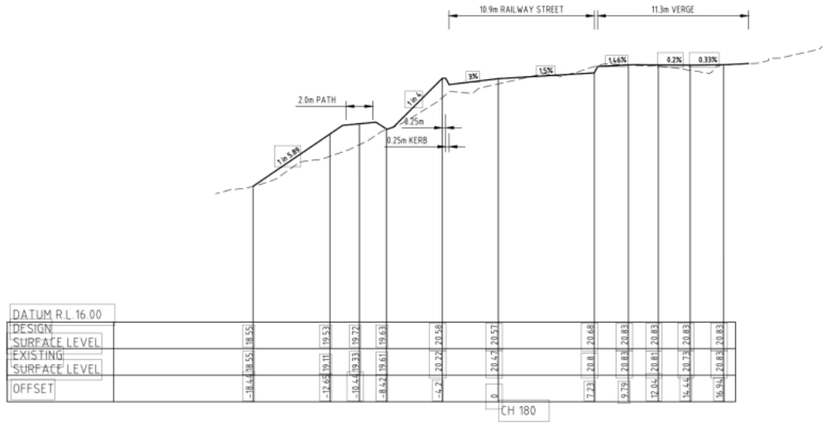
SCALE	1:200
DATE	JULY 2020
DESIGN	ELW
DRAWN	MJV
CHECK	
FILE NAME	S:\ACTIVE PROJECTS\20-04-053\ACAD\20453-412-15.dwg
APP'D	

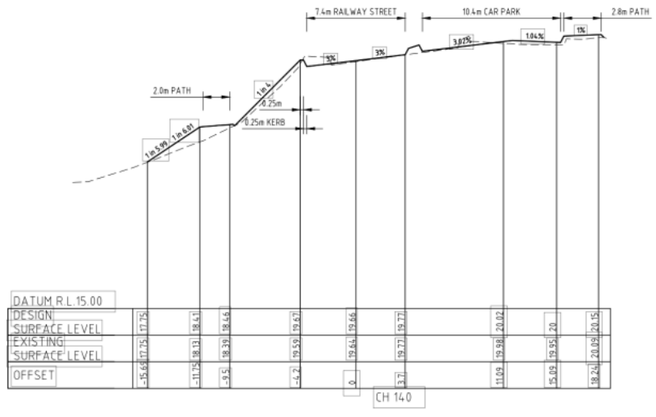
DRAWING No. **20-4-53/412** REV No. **B** ORIGINAL DRAWING SIZE **A1**

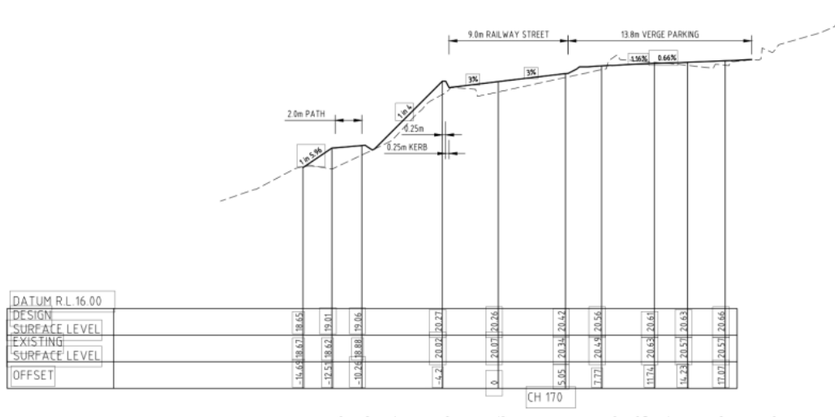

CH 80
CH 90
CH 100
CH 110
CH 120
CH 130
DATUM R.L.16.00
DATUM R.L.15.00
DESIGN SURFACE LEVEL
EXISTING SURFACE LEVEL
OFFSET
2.0m PATH
0.25m KERB
2.8m PATH
RAILWAY ST REALIGNMENT
NORTH COTTESLOE P.S.
TOWN OF COTTESLOE
RAILWAY STREET
CROSS SECTIONS CH:80-130
FOR APPROVAL
Porter
Consulting Engineers
20-4-53/413
B
A1
1:200
JULY 2020
PRELIMINARY PLOT FOR APPROVAL











PROJECT: **RAILWAY ST REALIGNMENT NORTH COTTESLOE P.S.**

No	DATE	REVISION	BY
B	28-7-2020	UPDATED CROSS SECTIONS. EXTRA PATH ADDED TO DESIGN	MJV
A	13-7-2020	PRELIMINARY PLOT FOR APPROVAL	MJV

Porter Consulting Engineers
Level 2 Kishorn Court
58 Kishorn Road
Mt Pleasant 6153 WA
PO Box 1036
Canning Bridge 6153 WA
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Fax (08) 9315 9958
Email...office@porterseng.com.au
www.porterseng.com.au

CLIENT: **TOWN OF COTTESLOE**

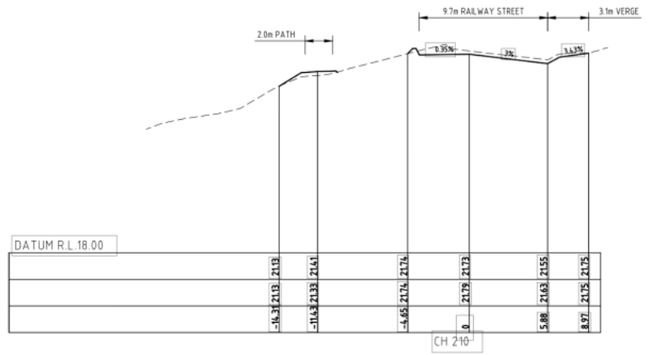
DRAWING: **RAILWAY STREET CROSS SECTIONS CH:140-180**

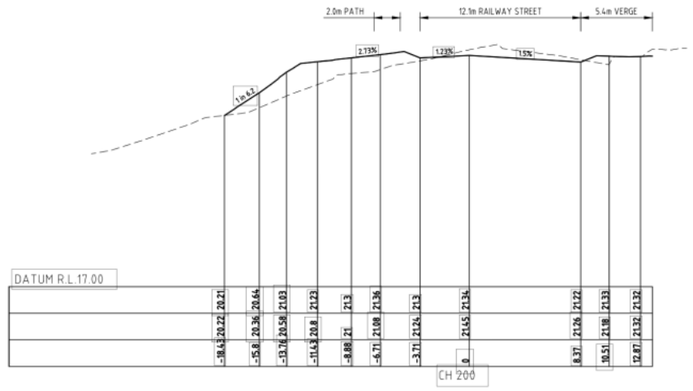
STATUS: **FOR APPROVAL**

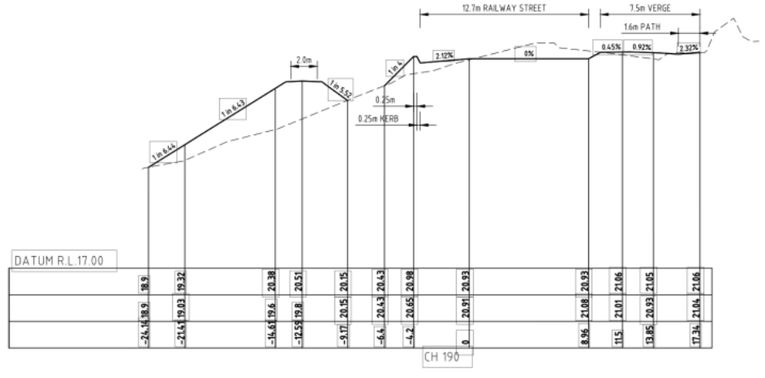
SCALE	1:200
DATE	JULY 2020
DESIGN	ELW
DRAWN	MJV
CHECK	
APP'D	

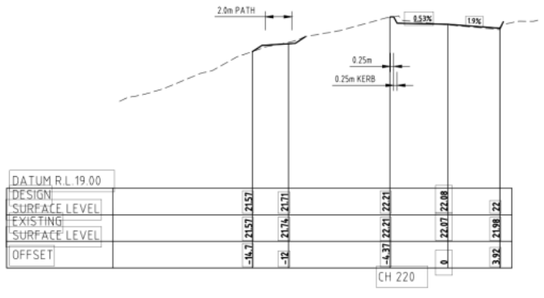
DRAWING No. **20-4-53/414** REV No. **B** ORIGINAL DRAWING SIZE **A1**

FILE NAME S:\ACTIVE PROJECTS\20-04-053\ACAD\20453-412-415.dwg









1:200 1:50

PROJECT: RAILWAY ST REALIGNMENT NORTH COTTESLOE P.S.

A 28-7-2020 PRELIMINARY PLOT FOR APPROVAL

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CLIENT: TOWN OF COTTESLOE

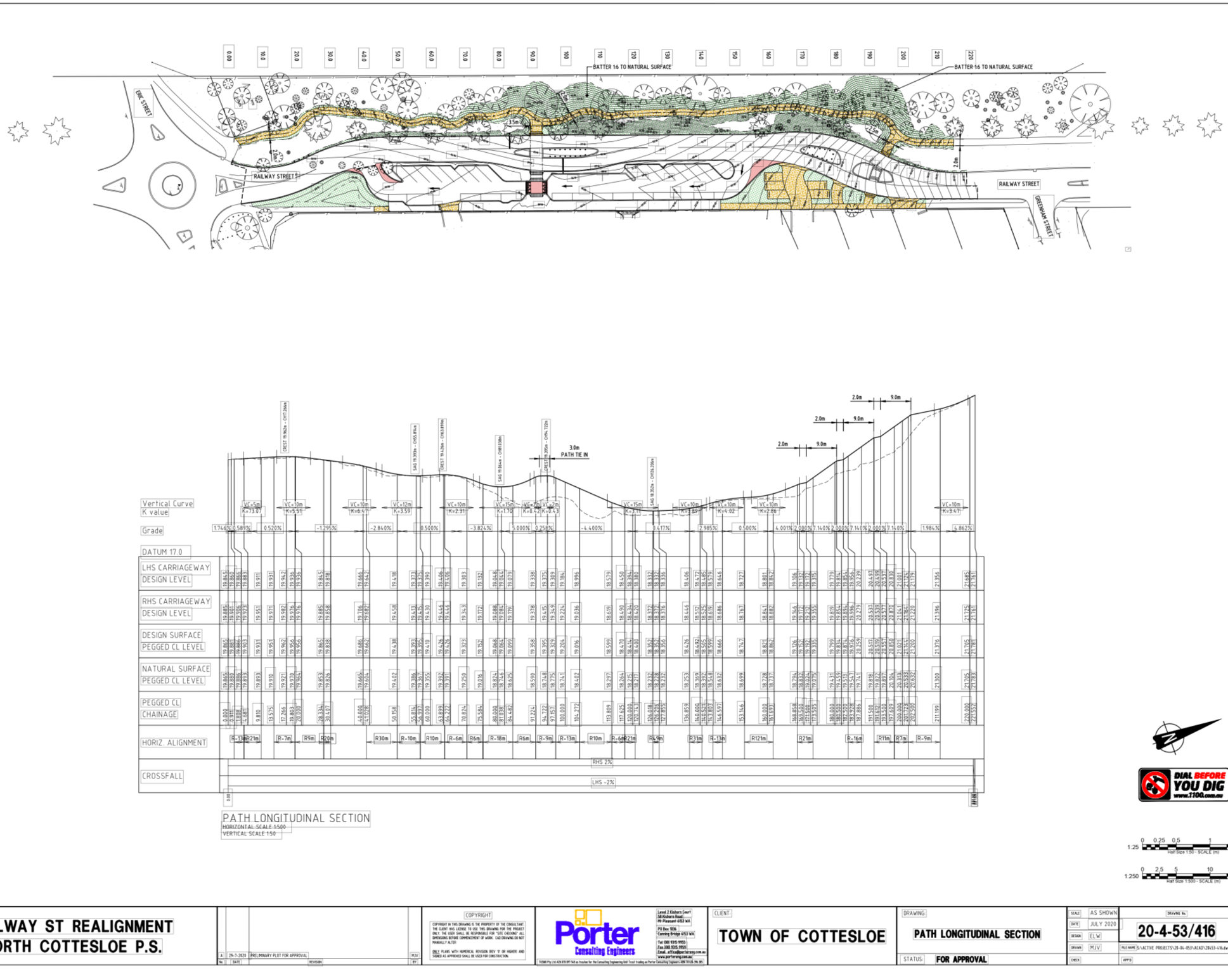
DRAWING: RAILWAY STREET CROSS SECTIONS CH:190-220

STATUS: FOR APPROVAL

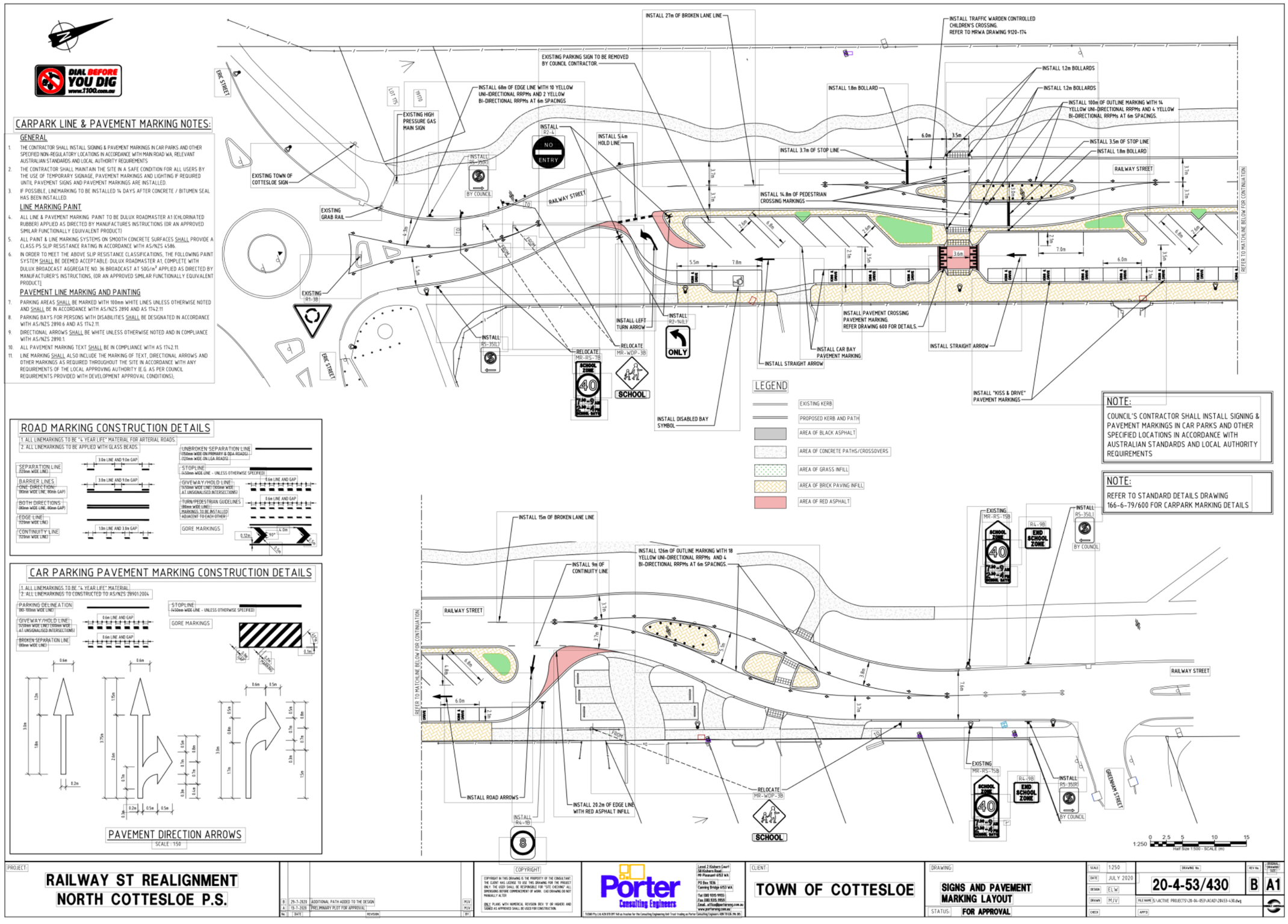
SCALE 1:200 | DATE JULY 2020 | DESIGN ELW | DRAWN MJV | CHECK | APP'D

DRAWING No. 20-4-53/415 | REV No. A | ORIGINAL DRAWING SIZE A1

FILE NAME S:\ACTIVE PROJECTS\20-04-053\ACAD\20453-410-415.dwg



PROJECT: RAILWAY ST REALIGNMENT NORTH COTTESLOE P.S.	A 29-7-2020 PRELIMINARY PLOT FOR APPROVAL MJV	COPYRIGHT	Porter Consulting Engineers	CLIENT: TOWN OF COTTESLOE	DRAWING: PATH LONGITUDINAL SECTION	SCALE: AS SHOWN	DRAWING No: 20-4-53/416	REV No: A	A1
					STATUS: FOR APPROVAL	DATE: JULY 2020			
						DESIGN: ELW			
						DRAWN: MJV			
						CHECK:			


CARPARK LINE & PAVEMENT MARKING NOTES:
GENERAL
1. THE CONTRACTOR SHALL INSTALL SIGNING & PAVEMENT MARKINGS IN CAR PARKS AND OTHER SPECIFIED NON-REGULATORY LOCATIONS IN ACCORDANCE WITH MAIN ROAD WA, RELEVANT AUSTRALIAN STANDARDS AND LOCAL AUTHORITY REQUIREMENTS
2. THE CONTRACTOR SHALL MAINTAIN THE SITE IN A SAFE CONDITION FOR ALL USERS BY THE USE OF TEMPORARY SIGNAGE, PAVEMENT MARKINGS AND LIGHTING IF REQUIRED UNTIL PAVEMENT SIGNS AND PAVEMENT MARKINGS ARE INSTALLED.
3. IF POSSIBLE, LINEMARKING TO BE INSTALLED 14 DAYS AFTER CONCRETE / BITUMEN SEAL HAS BEEN INSTALLED.
LINE MARKING PAINT
4. ALL LINE & PAVEMENT MARKING PAINT TO BE DULUX ROADMASTER A1 (CHLORINATED RUBBER) APPLIED AS DIRECTED BY MANUFACTURES INSTRUCTIONS (OR AN APPROVED SIMILAR FUNCTIONALLY EQUIVALENT PRODUCT)
5. ALL PAINT & LINE MARKING SYSTEMS ON SMOOTH CONCRETE SURFACES SHALL PROVIDE A CLASS P5 SLIP RESISTANCE RATING IN ACCORDANCE WITH AS/NZS 4586.
6. IN ORDER TO MEET THE ABOVE SLIP RESISTANCE CLASSIFICATIONS, THE FOLLOWING PAINT SYSTEM SHALL BE DEEMED ACCEPTABLE: DULUX ROADMASTER A1, COMPLETE WITH DULUX BROADCAST AGGREGATE NO. 36 BROADCAST AT 50G/m² APPLIED AS DIRECTED BY MANUFACTURER'S INSTRUCTIONS, (OR AN APPROVED SIMILAR FUNCTIONALLY EQUIVALENT PRODUCT)
PAVEMENT LINE MARKING AND PAINTING
7. PARKING AREAS SHALL BE MARKED WITH 100mm WHITE LINES UNLESS OTHERWISE NOTED AND SHALL BE IN ACCORDANCE WITH AS/NZS 2890 AND AS 1742.11
8. PARKING BAYS FOR PERSONS WITH DISABILITIES SHALL BE DESIGNATED IN ACCORDANCE WITH AS/NZS 2890.6 AND AS 1742.11.
9. DIRECTIONAL ARROWS SHALL BE WHITE UNLESS OTHERWISE NOTED AND IN COMPLIANCE WITH AS/NZS 2890.1.
10. ALL PAVEMENT MARKING TEXT SHALL BE IN COMPLIANCE WITH AS 1742.11.
11. LINE MARKING SHALL ALSO INCLUDE THE MARKING OF TEXT, DIRECTIONAL ARROWS AND OTHER MARKINGS AS REQUIRED THROUGHOUT THE SITE IN ACCORDANCE WITH ANY REQUIREMENTS OF THE LOCAL APPROVING AUTHORITY (E.G. AS PER COUNCIL REQUIREMENTS PROVIDED WITH DEVELOPMENT APPROVAL CONDITIONS).
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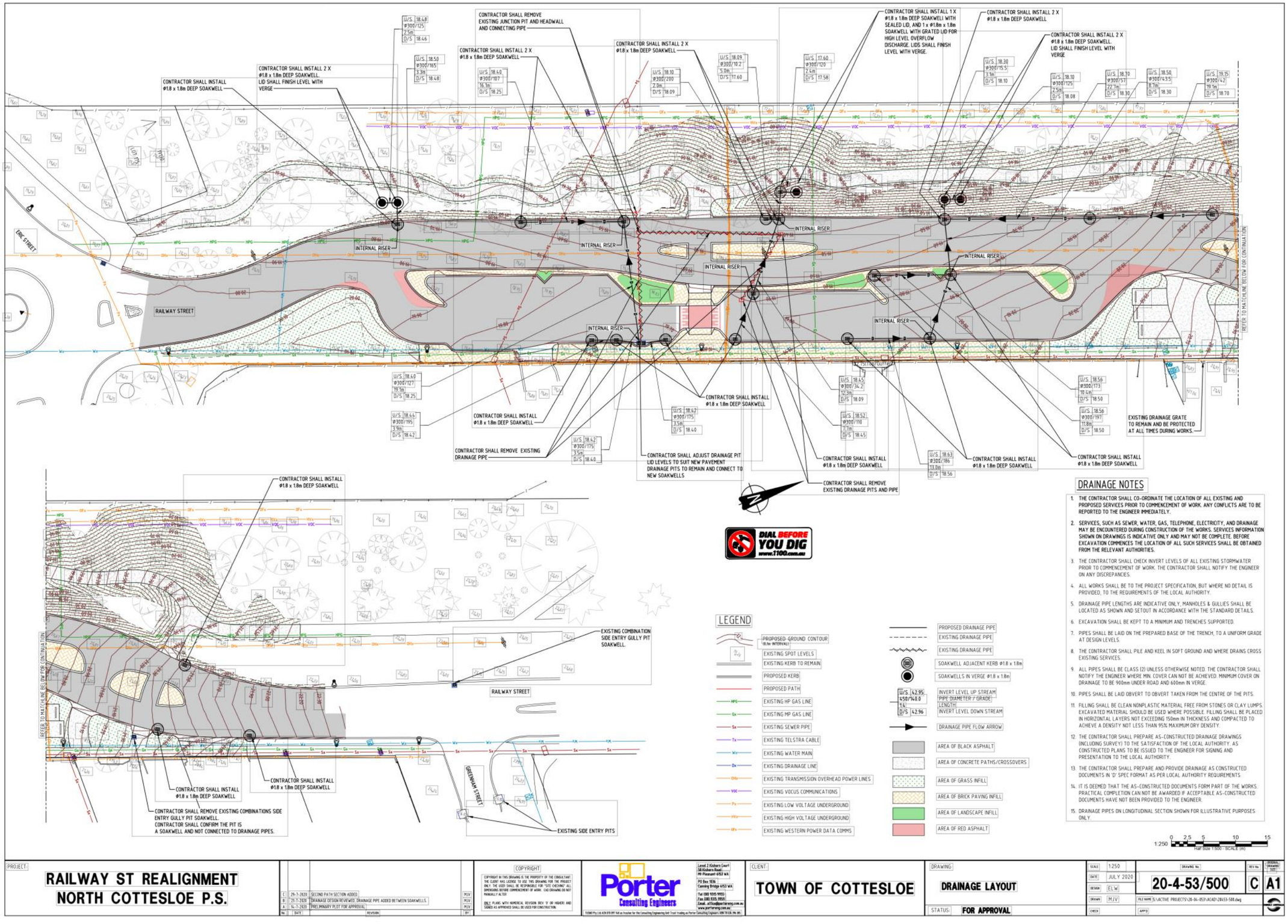
ROAD MARKING CONSTRUCTION DETAILS
1. ALL LINEMARKINGS TO BE "4 YEAR LIFE" MATERIAL FOR ARTERIAL ROADS.
2. ALL LINEMARKINGS TO BE APPLIED WITH GLASS BEADS.
SEPARATION LINE (120mm WIDE LINE)
BARRIER LINES ONE-DIRECTION (180mm WIDE LINE, 180mm GAP)
BOTH DIRECTIONS (180mm WIDE LINE, 180mm GAP)
EDGE LINE (120mm WIDE LINE)
CONTINUITY LINE (120mm WIDE LINE)
3.0m LINE AND 9.0m GAP
3.0m LINE AND 9.0m GAP
1.0m LINE AND 3.0m GAP
UNBROKEN SEPARATION LINE (150mm WIDE ON PRIMARY & DBA ROADS) (120mm WIDE ON LGA ROADS)
STOPLINE (450mm WIDE LINE - UNLESS OTHERWISE SPECIFIED)
GIVEWAY/HOLD LINE (450mm WIDE LINE) (300mm WIDE AT UNSIGNALISED INTERSECTIONS)
TURN/PEDESTRIAN GUIDELINES (100mm WIDE LINE) MARKINGS TO BE INSTALLED ADJACENT TO EACH OTHER
GORE MARKINGS
0.6m LINE AND GAP
0.6m LINE AND GAP
0.12m
6.0m
90°
CAR PARKING PAVEMENT MARKING CONSTRUCTION DETAILS
1. ALL LINEMARKINGS TO BE "4 YEAR LIFE" MATERIAL
2. ALL LINEMARKINGS TO CONSTRUCTED TO AS/NZS 28901:2004
PARKING DELINEATION (90-100mm WIDE LINE)
GIVEWAY/HOLD LINE (450mm WIDE LINE) (300mm WIDE AT UNSIGNALISED INTERSECTIONS)
BROKEN SEPARATION LINE (90mm WIDE LINE)
STOPLINE (450mm WIDE LINE - UNLESS OTHERWISE SPECIFIED)
GORE MARKINGS
0.6m LINE AND GAP
0.6m LINE AND GAP
0.6m
0.6m
0.6m
0.5m
PAVEMENT DIRECTION ARROWS
SCALE: 1:50
INSTALL 27m OF BROKEN LANE LINE
INSTALL TRAFFIC WARDEN CONTROLLED CHILDREN'S CROSSING. REFER TO MRWA DRAWING 9120-174
EXISTING PARKING SIGN TO BE REMOVED BY COUNCIL CONTRACTOR.
INSTALL 68m OF EDGE LINE WITH 10 YELLOW UNI-IDIRECTIONAL RRPMs AND 2 YELLOW BI-DIRECTIONAL RRPMs AT 6m SPACINGS
INSTALL 1.8m BOLLARD
INSTALL 1.2m BOLLARDS
INSTALL 1.2m BOLLARDS
INSTALL 100m OF OUTLINE MARKING WITH 14 YELLOW UNI-DIRECTIONAL RRPMs AND 4 YELLOW BI-DIRECTIONAL RRPMs AT 6m SPACINGS.
ERIC STREET
LOT 175
LOT 9010
EXISTING HIGH PRESSURE GAS MAIN SIGN
INSTALL R2-4
NO ENTRY
INSTALL 5.4m HOLD LINE
INSTALL 3.7m OF STOP LINE
INSTALL 3.5m OF STOP LINE
INSTALL 1.8m BOLLARD
RAILWAY STREET
INSTALL R5-35(R) BY COUNCIL
EXISTING TOWN OF COTTESLOE SIGN
EXISTING GRAB RAIL
INSTALL 14.8m OF PEDESTRIAN CROSSING MARKINGS
EXISTING (R1-3B)
INSTALL LEFT TURN ARROW
INSTALL R2-1(L) ONLY
INSTALL R5-35(L)
RELOCATE MR-RS-7B
RELOCATE MR-WDP-3B
SCHOOL ZONE 40
SCHOOL
INSTALL PAVEMENT CROSSING PAVEMENT MARKING. REFER DRAWING 600 FOR DETAILS.
INSTALL CAR BAY PAVEMENT MARKING
INSTALL STRAIGHT ARROW
INSTALL STRAIGHT ARROW
INSTALL DISABLED BAY SYMBOL
INSTALL "KISS & DRIVE" PAVEMENT MARKINGS
REFER TO MATCHLINE BELOW FOR CONTINUATION
LEGEND
EXISTING KERB
PROPOSED KERB AND PATH
AREA OF BLACK ASPHALT
AREA OF CONCRETE PATHS/CROSSOVERS
AREA OF GRASS INFILL
AREA OF BRICK PAVING INFILL
AREA OF RED ASPHALT
NOTE:
COUNCIL'S CONTRACTOR SHALL INSTALL SIGNING & PAVEMENT MARKINGS IN CAR PARKS AND OTHER SPECIFIED LOCATIONS IN ACCORDANCE WITH AUSTRALIAN STANDARDS AND LOCAL AUTHORITY REQUIREMENTS
NOTE:
REFER TO STANDARD DETAILS DRAWING 166-6-79/600 FOR CARPARK MARKING DETAILS
INSTALL 15m OF BROKEN LANE LINE
INSTALL 9m OF CONTINUITY LINE
INSTALL 126m OF OUTLINE MARKING WITH 18 YELLOW UNI-DIRECTIONAL RRPMs AND 4 BI-DIRECTIONAL RRPMs AT 6m SPACINGS.
RAILWAY STREET
INSTALL ROAD ARROWS
INSTALL 20.2m OF EDGE LINE WITH RED ASPHALT INFILL
INSTALL R4-1B
RELOCATE MR-WDP-3B
SCHOOL
EXISTING MR-RS-15B
R4-9B END SCHOOL ZONE
INSTALL R5-35(L) BY COUNCIL
GREENHAM STREET
1:250 0 2.5 5 10 15
Half Size 1:500 - SCALE (m)
PROJECT: RAILWAY ST REALIGNMENT NORTH COTTESLOE P.S.
B 29-7-2020 ADDITIONAL PATH ADDED TO THE DESIGN MJV
A 13-7-2020 PRELIMINARY PLOT FOR APPROVAL PJH
REVISION BY
COPYRIGHT
Porter Consulting Engineers
Level 2 Kishorn Court 58 Kishorn Road Mt Pleasant 6153 WA
PO Box 1836 Canning Bridge 6153 WA
Tel (08) 9315 9955 Fax (08) 9315 9950
CLIENT: TOWN OF COTTESLOE
DRAWING: SIGNS AND PAVEMENT MARKING LAYOUT
STATUS: FOR APPROVAL
SCALE 1:250
DATE JULY 2020
DESIGN ELW
DRAWN MJV
CHECK
APP'D
DRAWING No. 20-4-53/430
REV No. B
ORIGINAL DRAWING SIZE A1
FILE NAME S:\ACTIVE PROJECTS\20-04-053\ACAD\20453-430.dwg


CONTRACTOR SHALL INSTALL Ø1.8 x 1.8m DEEP SOAKWELL
CONTRACTOR SHALL INSTALL 2 X Ø1.8 x 1.8m DEEP SOAKWELL LID SHALL FINISH LEVEL WITH VERGE
CONTRACTOR SHALL REMOVE EXISTING JUNCTION PIT AND HEADWALL AND CONNECTING PIPE
CONTRACTOR SHALL INSTALL 1 X Ø1.8 x 1.8m DEEP SOAKWELL WITH SEALED LID, AND 1 x Ø1.8m x 1.8m SOAKWELL WITH GRATED LID FOR HIGH LEVEL OVERFLOW DISCHARGE. LIDS SHALL FINISH LEVEL WITH VERGE.
CONTRACTOR SHALL INSTALL 2 X Ø1.8 x 1.8m DEEP SOAKWELL
INTERNAL RISER
RAILWAY STREET
ERIC STREET
GREENMAN STREET
CONTRACTOR SHALL REMOVE EXISTING DRAINAGE PIPE
CONTRACTOR SHALL ADJUST DRAINAGE PIT LID LEVELS TO SUIT NEW PAVEMENT DRAINAGE PITS TO REMAIN AND CONNECT TO NEW SOAKWELLS
CONTRACTOR SHALL REMOVE EXISTING DRAINAGE PITS AND PIPE
EXISTING DRAINAGE GRATE TO REMAIN AND BE PROTECTED AT ALL TIMES DURING WORKS.
REFER TO MATCHLINE BELOW FOR CONTINUATION
REFER TO MATCHLINE RD DW FOR CONTINUATION
EXISTING COMBINATION SIDE ENTRY GULLY PIT SOAKWELL.
CONTRACTOR SHALL REMOVE EXISTING COMBINATIONS SIDE ENTRY GULLY PIT SOAKWELL. CONTRACTOR SHALL CONFIRM THE PIT IS A SOAKWELL AND NOT CONNECTED TO DRAINAGE PIPES.
EXISTING SIDE ENTRY PITS
DIAL BEFORE YOU DIG www.1100.com.au
LEGEND
PROPOSED GROUND CONTOUR (0.5m INTERVAL)
EXISTING SPOT LEVELS
EXISTING KERB TO REMAIN
PROPOSED KERB
PROPOSED PATH
EXISTING HP GAS LINE
EXISTING MP GAS LINE
EXISTING SEWER PIPE
EXISTING TELSTRA CABLE
EXISTING WATER MAIN
EXISTING DRAINAGE LINE
EXISTING TRANSMISSION OVERHEAD POWER LINES
EXISTING VOCUS COMMUNICATIONS
EXISTING LOW VOLTAGE UNDERGROUND
EXISTING HIGH VOLTAGE UNDERGROUND
EXISTING WESTERN POWER DATA COMMS
PROPOSED DRAINAGE PIPE
EXISTING DRAINAGE PIPE
EXISTING DRAINAGE PIPE
SOAKWELL ADJACENT KERB Ø1.8 x 1.8m
SOAKWELLS IN VERGE Ø1.8 x 1.8m
INVERT LEVEL UP STREAM
PIPE DIAMETER / GRADE
LENGTH
INVERT LEVEL DOWN STREAM
DRAINAGE PIPE FLOW ARROW
AREA OF BLACK ASPHALT
AREA OF CONCRETE PATHS/CROSSOVERS
AREA OF GRASS INFILL
AREA OF BRICK PAVING INFILL
AREA OF LANDSCAPE INFILL
AREA OF RED ASPHALT
DRAINAGE NOTES
1. THE CONTRACTOR SHALL CO-ORDINATE THE LOCATION OF ALL EXISTING AND PROPOSED SERVICES PRIOR TO COMMENCEMENT OF WORK. ANY CONFLICTS ARE TO BE REPORTED TO THE ENGINEER IMMEDIATELY.
2. SERVICES, SUCH AS SEWER, WATER, GAS, TELEPHONE, ELECTRICITY, AND DRAINAGE MAY BE ENCOUNTERED DURING CONSTRUCTION OF THE WORKS. SERVICES INFORMATION SHOWN ON DRAWINGS IS INDICATIVE ONLY AND MAY NOT BE COMPLETE. BEFORE EXCAVATION COMMENCES THE LOCATION OF ALL SUCH SERVICES SHALL BE OBTAINED FROM THE RELEVANT AUTHORITIES.
3. THE CONTRACTOR SHALL CHECK INVERT LEVELS OF ALL EXISTING STORMWATER PRIOR TO COMMENCEMENT OF WORK. THE CONTRACTOR SHALL NOTIFY THE ENGINEER ON ANY DISCREPANCIES.
4. ALL WORKS SHALL BE TO THE PROJECT SPECIFICATION, BUT WHERE NO DETAIL IS PROVIDED, TO THE REQUIREMENTS OF THE LOCAL AUTHORITY.
5. DRAINAGE PIPE LENGTHS ARE INDICATIVE ONLY, MANHOLES & GULLIES SHALL BE LOCATED AS SHOWN AND SETOUT IN ACCORDANCE WITH THE STANDARD DETAILS.
6. EXCAVATION SHALL BE KEPT TO A MINIMUM AND TRENCHES SUPPORTED.
7. PIPES SHALL BE LAID ON THE PREPARED BASE OF THE TRENCH, TO A UNIFORM GRADE AT DESIGN LEVELS.
8. THE CONTRACTOR SHALL PILE AND KEEL IN SOFT GROUND AND WHERE DRAINS CROSS EXISTING SERVICES.
9. ALL PIPES SHALL BE CLASS (2) UNLESS OTHERWISE NOTED. THE CONTRACTOR SHALL NOTIFY THE ENGINEER WHERE MIN. COVER CAN NOT BE ACHIEVED. MINIMUM COVER ON DRAINAGE TO BE 900mm UNDER ROAD AND 600mm IN VERGE.
10. PIPES SHALL BE LAID OBVERT TO OBVERT TAKEN FROM THE CENTRE OF THE PITS.
11. FILLING SHALL BE CLEAN NONPLASTIC MATERIAL FREE FROM STONES OR CLAY LUMPS. EXCAVATED MATERIAL SHOULD BE USED WHERE POSSIBLE. FILLING SHALL BE PLACED IN HORIZONTAL LAYERS NOT EXCEEDING 150mm IN THICKNESS AND COMPACTED TO ACHIEVE A DENSITY NOT LESS THAN 95% MAXIMUM DRY DENSITY.
12. THE CONTRACTOR SHALL PREPARE AS-CONSTRUCTED DRAINAGE DRAWINGS (INCLUDING SURVEY) TO THE SATISFACTION OF THE LOCAL AUTHORITY. AS CONSTRUCTED PLANS TO BE ISSUED TO THE ENGINEER FOR SIGNING AND PRESENTATION TO THE LOCAL AUTHORITY.
13. THE CONTRACTOR SHALL PREPARE AND PROVIDE DRAINAGE AS CONSTRUCTED DOCUMENTS IN 'D' SPEC FORMAT AS PER LOCAL AUTHORITY REQUIREMENTS
14. IT IS DEEMED THAT THE AS-CONSTRUCTED DOCUMENTS FORM PART OF THE WORKS. PRACTICAL COMPLETION CAN NOT BE AWARDED IF ACCEPTABLE AS-CONSTRUCTED DOCUMENTS HAVE NOT BEEN PROVIDED TO THE ENGINEER.
15. DRAINAGE PIPES ON LONGITUDINAL SECTION SHOWN FOR ILLUSTRATIVE PURPOSES ONLY.
1:250 0 2.5 5 10 15 Half Size 1:500 - SCALE (m)
PROJECT: RAILWAY ST REALIGNMENT NORTH COTTESLOE P.S.
C 26-7-2020 SECOND PATH SECTION ADDED MJV
B 21-7-2020 DRAINAGE DESIGN REVIEWED. DRAINAGE PIPE ADDED BETWEEN SOAKWELLS. MJV
A 14-7-2020 PRELIMINARY PLOT FOR APPROVAL MJV
No DATE REVISION BY
COPYRIGHT
Porter Consulting Engineers
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PO Box 1936 Canning Bridge 6153 WA
Tel (08) 9315 9955 Fax (08) 9315 9956
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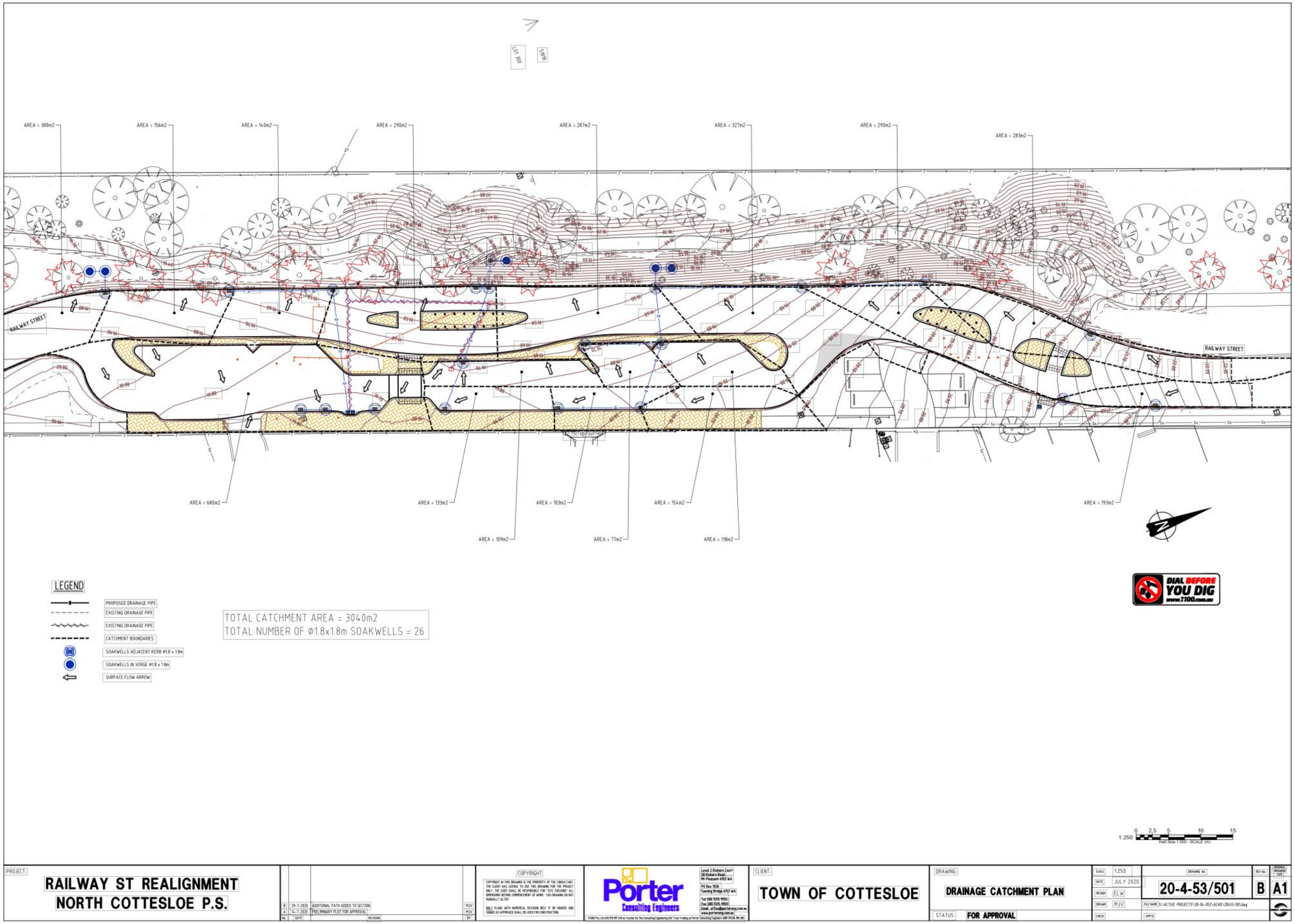
www.porterseng.com.au
CLIENT: TOWN OF COTTESLOE
DRAWING: DRAINAGE LAYOUT
STATUS: FOR APPROVAL
SCALE 1:250
DATE JULY 2020
DESIGN ELW
DRAWN MJV
CHECK
APP'D
DRAWING No. 20-4-53/500
REV No. C
ORIGINAL DRAWING SIZE A1
FILE NAME S:\ACTIVE PROJECTS\20-04-053\ACAD\20453-500.dwg


RAILWAY STREET
AREA = 380m2
AREA = 156m2
AREA = 140m2
AREA = 290m2
AREA = 287m2
AREA = 327m2
AREA = 290m2
AREA = 283m2
AREA = 680m2
AREA = 133m2
AREA = 103m2
AREA = 154m2
AREA = 193m2
AREA = 109m2
AREA = 77m2
AREA = 118m2
LEGEND
PROPOSED DRAINAGE PIPE
EXISTING DRAINAGE PIPE
EXISTING DRAINAGE PIPE
CATCHMENT BOUNDARIES
SOAKWELLS ADJACENT KERB Ø1.8 x 1.8m
SOAKWELLS IN VERGE Ø1.8 x 1.8m
SURFACE FLOW ARROW
TOTAL CATCHMENT AREA = 3040m2
TOTAL NUMBER OF Ø1.8x1.8m SOAKWELLS = 26
DIAL BEFORE YOU DIG
www.1100.com.au
1:250
PROJECT
RAILWAY ST REALIGNMENT
NORTH COTTESLOE P.S.
B 29-7-2020 ADDITIONAL PATH ADDED TO SECTION
A 14-7-2020 PRELIMINARY PLOT FOR APPROVAL
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Porter
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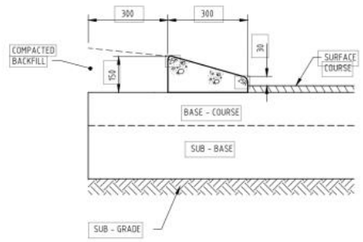
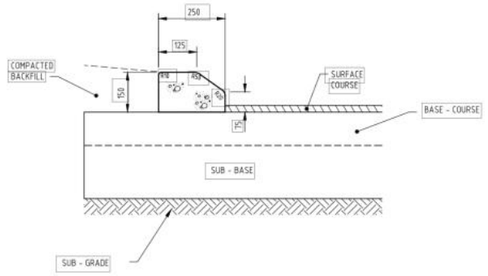
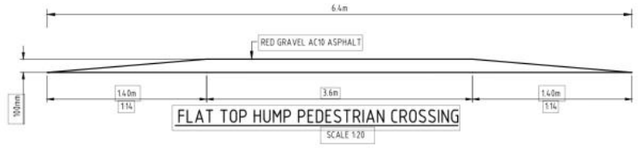
CLIENT
TOWN OF COTTESLOE
DRAWING
DRAINAGE CATCHMENT PLAN
STATUS FOR APPROVAL
1:250
JULY 2020
20-4-53/501
B
A1



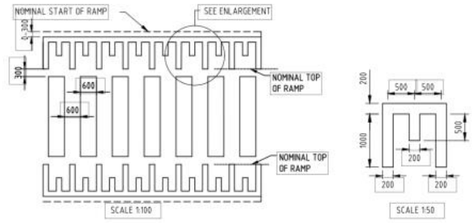
MOUNTABLE KERB
SCALE 1:10



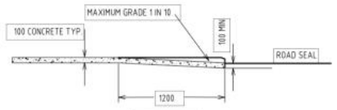
SEMI - MOUNTABLE
SCALE 1:10



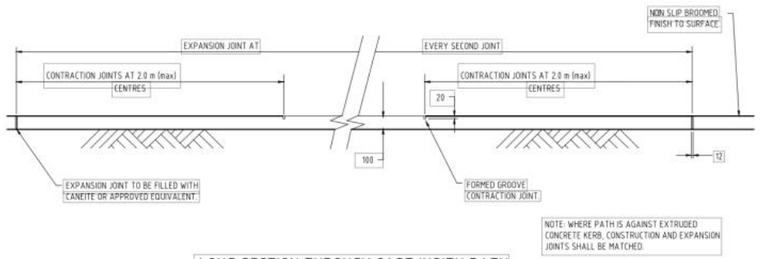
FLAT TOP HUMP PEDESTRIAN CROSSING
SCALE 1:20



PAVEMENT MARKING DETAIL FOR PEDESTRIAN CROSSING
SCALE AS SHOWN

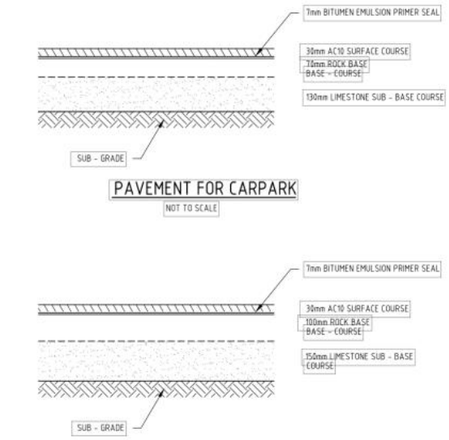


SECTION A-A



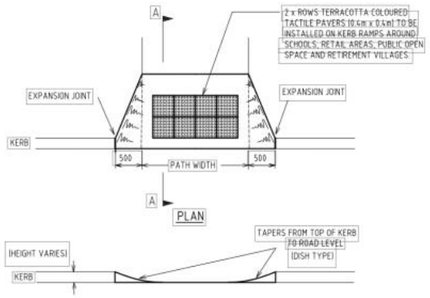
NOTE: WHERE PATH IS AGAINST EXTRUDED CONCRETE KERB, CONSTRUCTION AND EXPANSION JOINTS SHALL BE MATCHED.

LONG SECTION THROUGH CAST INSITU PATH
SCALE 1:20



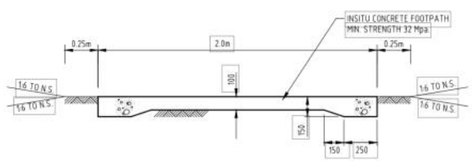
PAVEMENT FOR CARPARK
NOT TO SCALE

PAVEMENT ON SAND SUB GRADE
NOT TO SCALE

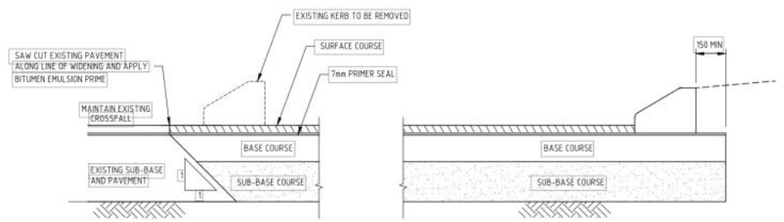


NOTE - 1. EDGE OF RAMP SHALL BE FLUSH WITH ROAD PAVEMENT (ASPHALT OR SEAL)
2. ALL CONCRETE SHALL BE BROOM FINISHED TO PROVIDE A NON-SLIP SURFACE
3. MOLDING RAIL TREATMENT SHALL BE IN ACCORDANCE WITH THE LOCAL AUTHORITY
4. ALL EDGES OF DUAL USE PATHWAYS, INCLUDING TRANSVERSE JOINTS ARE TO BE FINISHED USING A BULLNOSED TROWL

CONCRETE PATH RAMP DETAILS
N.T.S.



PATH CROSS SECTION
NOT TO SCALE



TYPICAL PAVEMENT WIDENING - KERB
NOT TO SCALE

PROJECT: RAILWAY ST REALIGNMENT NORTH COTTESLOE P.S.

No	DATE	REVISION	BY
A	14-7-2020	PRELIMINARY PLOT FOR APPROVAL	MJV

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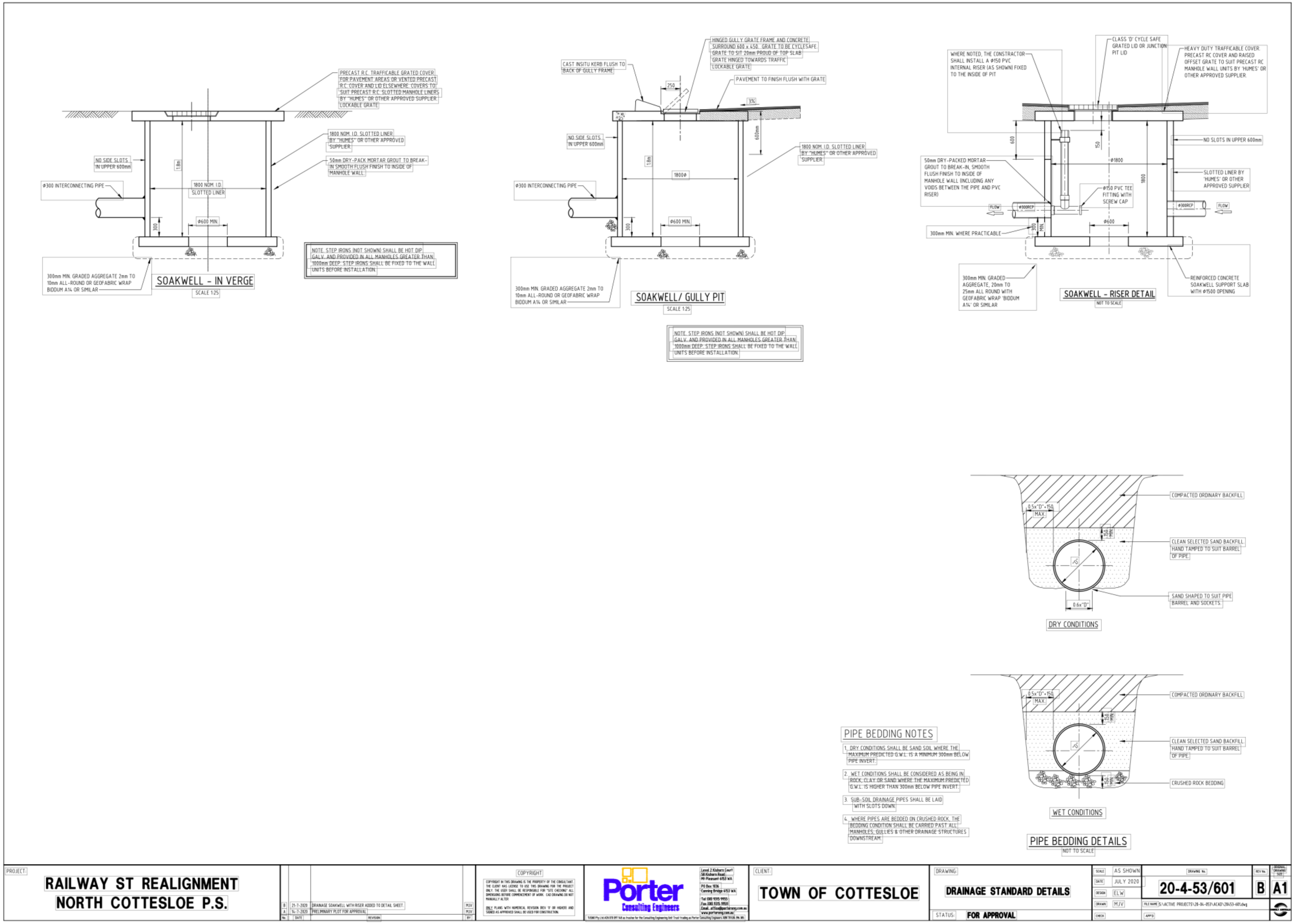
CLIENT: TOWN OF COTTESLOE

DRAWING: PAVEMENT STANDARD DETAILS
STATUS: FOR APPROVAL

SCALE	AS SHOWN
DATE	JULY 2020
DESIGN	ELW
DRAWN	MJV
CHECK	
APP'D	

DRAWING No. 20-4-53/600
REV No. A
ORIGINAL DRAWING SIZE A1
FILE NAME S:\ACTIVE PROJECTS\20-04-053\ACAD\20453-600.dwg



SOAKWELL - IN VERGE
SCALE 1:25
PRECAST R.C. TRAFFICABLE GRATED COVER FOR PAVEMENT AREAS OR VENTED PRECAST R.C. COVER AND LID ELSEWHERE. COVERS TO SUIT PRECAST R.C. SLOTTED MANHOLE LINERS BY "HUMES" OR OTHER APPROVED SUPPLIER. LOCKABLE GRATE
1800 NOM. I.D. SLOTTED LINER BY "HUMES" OR OTHER APPROVED SUPPLIER
50mm DRY-PACK MORTAR GROUT TO BREAK-IN SMOOTH FLUSH FINISH TO INSIDE OF MANHOLE WALL
NO SIDE SLOTS IN UPPER 600mm
Ø300 INTERCONNECTING PIPE
1800 NOM. I.D. SLOTTED LINER
Ø600 MIN.
300mm MIN. GRADED AGGREGATE 2mm TO 10mm ALL-ROUND OR GEOFABRIC WRAP BIDDUM A14 OR SIMILAR
NOTE: STEP IRONS (NOT SHOWN) SHALL BE HOT DIP GALV. AND PROVIDED IN ALL MANHOLES GREATER THAN 1000mm DEEP. STEP IRONS SHALL BE FIXED TO THE WALL UNITS BEFORE INSTALLATION.
SOAKWELL/ GULLY PIT
SCALE 1:25
HINGED GULLY GRATE FRAME AND CONCRETE SURROUND 600 x 450. GRATE TO BE CYCLESAFE. GRATE TO SIT 20mm PROUD OF TOP SLAB. GRATE HINGED TOWARDS TRAFFIC. LOCKABLE GRATE
CAST INSITU KERB FLUSH TO BACK OF GULLY FRAME
PAVEMENT TO FINISH FLUSH WITH GRATE
NO SIDE SLOTS IN UPPER 600mm
1800 NOM. I.D. SLOTTED LINER BY "HUMES" OR OTHER APPROVED SUPPLIER
Ø300 INTERCONNECTING PIPE
SOAKWELL - RISER DETAIL
NOT TO SCALE
WHERE NOTED, THE CONSTRACTOR SHALL INSTALL A Ø150 PVC INTERNAL RISER (AS SHOWN) FIXED TO THE INSIDE OF PIT
CLASS 'D' CYCLE SAFE GRATED LID OR JUNCTION PIT LID
HEAVY DUTY TRAFFICABLE COVER PRECAST RC COVER AND RAISED OFFSET GRATE TO SUIT PRECAST RC MANHOLE WALL UNITS BY 'HUMES' OR OTHER APPROVED SUPPLIER
NO SLOTS IN UPPER 600mm
50mm DRY-PACKED MORTAR GROUT TO BREAK-IN, SMOOTH FLUSH FINISH TO INSIDE OF MANHOLE WALL (INCLUDING ANY VOIDS BETWEEN THE PIPE AND PVC RISER)
Ø150 PVC TEE FITTING WITH SCREW CAP
SLOTTED LINER BY 'HUMES' OR OTHER APPROVED SUPPLIER
300mm MIN. WHERE PRACTICABLE
300mm MIN. GRADED AGGREGATE, 20mm TO 25mm ALL ROUND WITH GEOFABRIC WRAP 'BIDDUM A14' OR SIMILAR
REINFORCED CONCRETE SOAKWELL SUPPORT SLAB WITH Ø1500 OPENING
COMPACTED ORDINARY BACKFILL
CLEAN SELECTED SAND BACKFILL HAND TAMPED TO SUIT BARREL OF PIPE
SAND SHAPED TO SUIT PIPE BARREL AND SOCKETS
DRY CONDITIONS
CRUSHED ROCK BEDDING
WET CONDITIONS
PIPE BEDDING DETAILS
NOT TO SCALE
PIPE BEDDING NOTES
1. DRY CONDITIONS SHALL BE SAND SOIL WHERE THE MAXIMUM PREDICTED G.W.L. IS A MINIMUM 300mm BELOW PIPE INVERT.
2. WET CONDITIONS SHALL BE CONSIDERED AS BEING IN ROCK, CLAY OR SAND WHERE THE MAXIMUM PREDICTED G.W.L. IS HIGHER THAN 300mm BELOW PIPE INVERT.
3. SUB-SOIL DRAINAGE PIPES SHALL BE LAID WITH SLOTS DOWN.
4. WHERE PIPES ARE BEDDED ON CRUSHED ROCK, THE BEDDING CONDITION SHALL BE CARRIED PAST ALL MANHOLES, GULLIES & OTHER DRAINAGE STRUCTURES DOWNSTREAM.
PROJECT
RAILWAY ST REALIGNMENT
NORTH COTTESLOE P.S.
B 21-7-2020 DRAINAGE SOAKWELL WITH RISER ADDED TO DETAIL SHEET
A 14-7-2020 PRELIMINARY PLOT FOR APPROVAL
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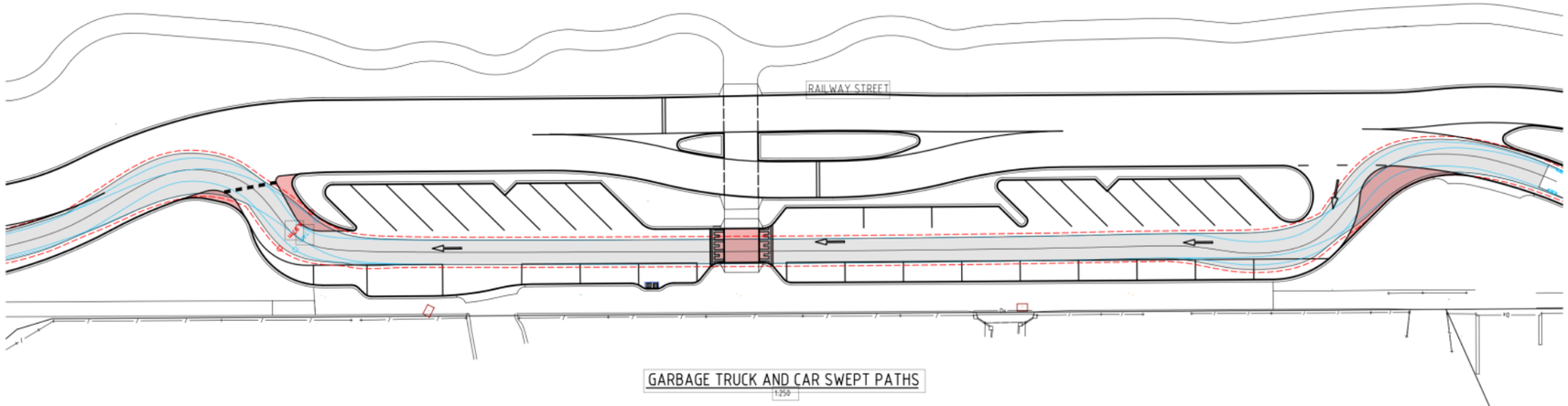
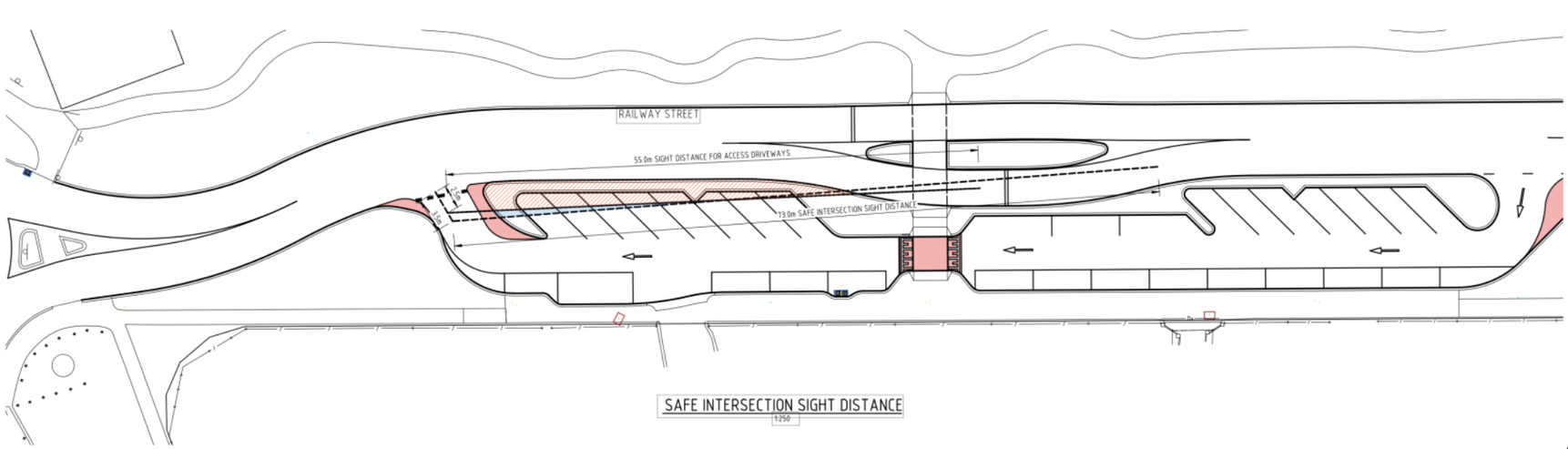
CLIENT
TOWN OF COTTESLOE
DRAWING
DRAINAGE STANDARD DETAILS
STATUS FOR APPROVAL
AS SHOWN
JULY 2020
20-4-53/601
B A1



GARBAGE TRUCK AND CAR SWEPT PATHS
1:250



SAFE INTERSECTION SIGHT DISTANCE
1:250

DIAL BEFORE YOU DIG www.1100.com.au

1:250 0 2.5 5 10 15
Half Size 1:500 - SCALE (m)

PROJECT: NORTH COTTESLOE PRIMARY SCHOOL

No.	DATE	REVISION	BY
C	29-7-2020	ADDITIONAL PATH SECTION ADDED	MJV
B	14-7-2020	GARAGE TRUCK SWEPT PATH AND LINE OF SIGHT ADDED	MJV
A	25-5-2020	ISSUED FOR COMMENT	MJV

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TSOAD Pty Ltd ACN 670 097 168 as trustee for the Consulting Engineering Unit Trust trading as Porter Consulting Engineers ABN 78 636 396 385

CLIENT: NORTH COTTESLOE PRIMARY SCHOOL

DRAWING: SWEPT PATHS AND LINE OF SIGHT CHECKS

STATUS: FOR COMMENT

SCALE	1:250
DATE	JULY 2020
DESIGN	ELW
DRAWN	MJV
CHECK	
APP'D	

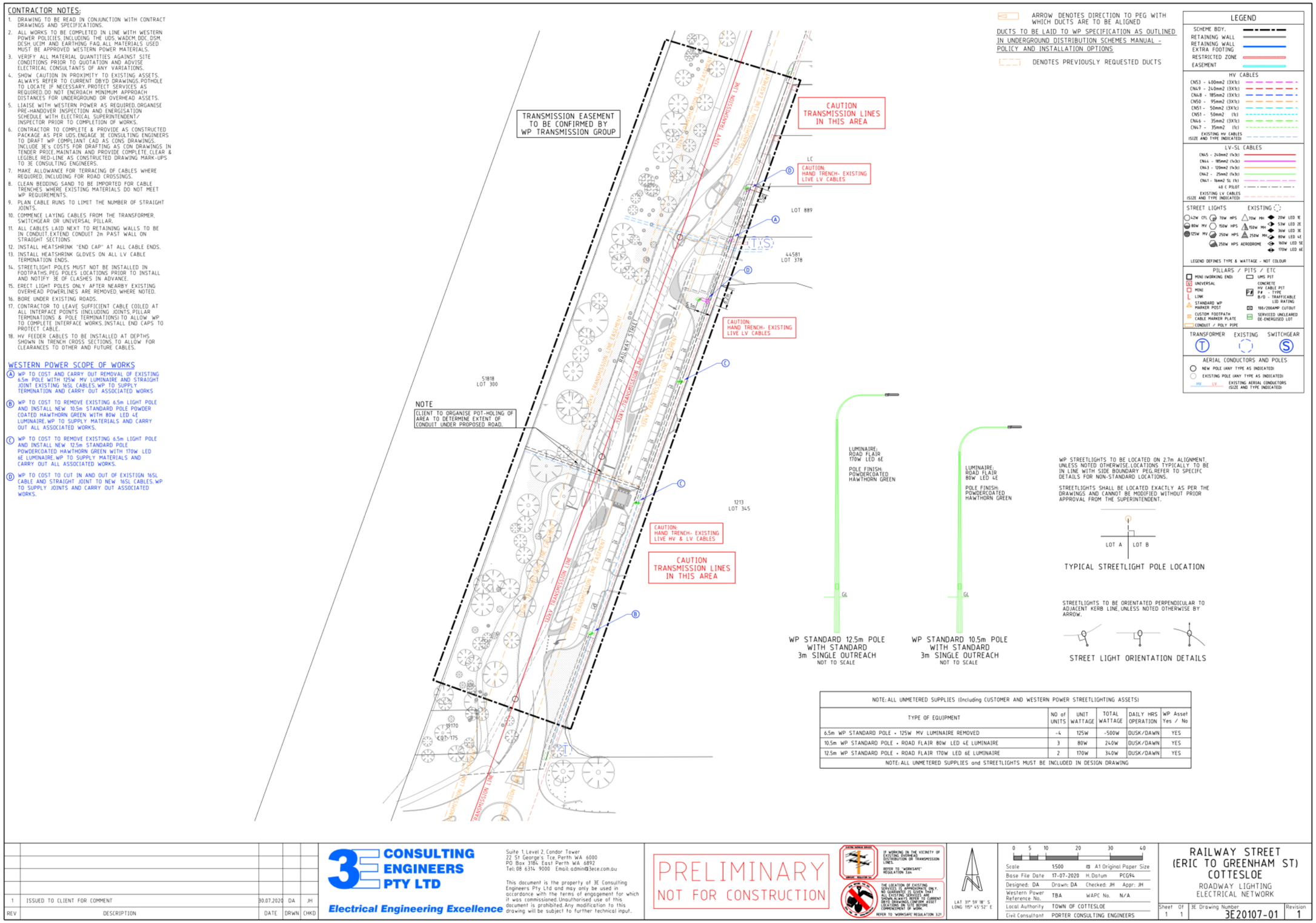
DRAWING No: 20-4-53/800
REV No: C
ORIGINAL SHEET SIZE: A1
FILE NAME: S:\ACTIVE PROJECTS\20-04-053\ACAD\20453-800.dwg

TOWN OF COTTESLOE

NORTH COTTESLOE PRIMARY SCHOOL TRAFFIC SAFETY COMMITTEE MEETING

ATTACHMENT

ITEM 8.1.1C:
NORTH COTTESLOE PRIMARY SCHOOL KISS AND DROP - LIGHTING DESIGN


CONTRACTOR NOTES:
1. DRAWING TO BE READ IN CONJUNCTION WITH CONTRACT DRAWINGS AND SPECIFICATIONS.
2. ALL WORKS TO BE COMPLETED IN LINE WITH WESTERN POWER POLICIES, INCLUDING THE UDS, WADCM, DDC, DSM, DCSH, UCIM AND EARTHING FAQ. ALL MATERIALS USED MUST BE APPROVED WESTERN POWER MATERIALS.
3. VERIFY ALL MATERIAL QUANTITIES AGAINST SITE CONDITIONS PRIOR TO QUOTATION AND ADVISE ELECTRICAL CONSULTANTS OF ANY VARIATIONS.
4. SHOW CAUTION IN PROXIMITY TO EXISTING ASSETS. ALWAYS REFER TO CURRENT DBYD DRAWINGS. POTHOLE TO LOCATE IF NECESSARY. PROTECT SERVICES AS REQUIRED. DO NOT ENCROACH MINIMUM APPROACH DISTANCES FOR UNDERGROUND OR OVERHEAD ASSETS.
5. LIAISE WITH WESTERN POWER AS REQUIRED. ORGANISE PRE-HANDOVER INSPECTION AND ENERGISATION SCHEDULE WITH ELECTRICAL SUPERINTENDENT/ INSPECTOR PRIOR TO COMPLETION OF WORKS.
6. CONTRACTOR TO COMPLETE & PROVIDE AS CONSTRUCTED PACKAGE AS PER UDS. ENGAGE 3E CONSULTING ENGINEERS TO DRAFT WP COMPLIANT CAD AS CONS DRAWINGS. INCLUDE 3E's COSTS FOR DRAFTING AS CON DRAWINGS IN TENDER PRICE. MAINTAIN AND PROVIDE COMPLETE, CLEAR & LEGIBLE RED-LINE AS CONSTRUCTED DRAWING MARK-UPS TO 3E CONSULTING ENGINEERS.
7. MAKE ALLOWANCE FOR TERRACING OF CABLES WHERE REQUIRED, INCLUDING FOR ROAD CROSSINGS.
8. CLEAN BEDDING SAND TO BE IMPORTED FOR CABLE TRENCHES WHERE EXISTING MATERIALS DO NOT MEET WP REQUIREMENTS.
9. PLAN CABLE RUNS TO LIMIT THE NUMBER OF STRAIGHT JOINTS.
10. COMMENCE LAYING CABLES FROM THE TRANSFORMER, SWITCHGEAR OR UNIVERSAL PILLAR.
11. ALL CABLES LAID NEXT TO RETAINING WALLS TO BE IN CONDUIT. EXTEND CONDUIT 2m PAST WALL ON STRAIGHT SECTIONS
12. INSTALL HEATSHRINK "END CAP" AT ALL CABLE ENDS.
13. INSTALL HEATSHRINK GLOVES ON ALL LV CABLE TERMINATION ENDS.
14. STREETLIGHT POLES MUST NOT BE INSTALLED IN FOOTPATHS. PEG POLES LOCATIONS PRIOR TO INSTALL AND NOTIFY 3E OF CLASHES IN ADVANCE.
15. ERECT LIGHT POLES ONLY AFTER NEARBY EXISTING OVERHEAD POWERLINES ARE REMOVED, WHERE NOTED.
16. BORE UNDER EXISTING ROADS.
17. CONTRACTOR TO LEAVE SUFFICIENT CABLE COILED AT ALL INTERFACE POINTS (INCLUDING JOINTS, PILLAR TERMINATIONS & POLE TERMINATIONS) TO ALLOW WP TO COMPLETE INTERFACE WORKS. INSTALL END CAPS TO PROTECT CABLE.
18. HV FEEDER CABLES TO BE INSTALLED AT DEPTHS SHOWN IN TRENCH CROSS SECTIONS, TO ALLOW FOR CLEARANCES TO OTHER AND FUTURE CABLES.
WESTERN POWER SCOPE OF WORKS
(A) WP TO COST AND CARRY OUT REMOVAL OF EXISTING 6.5m POLE WITH 125W MV LUMINAIRE AND STRAIGHT JOINT EXISTING 16SL CABLES. WP TO SUPPLY TERMINATION AND CARRY OUT ASSOCIATED WORKS
(B) WP TO COST TO REMOVE EXISTING 6.5m LIGHT POLE AND INSTALL NEW 10.5m STANDARD POLE POWDER COATED HAWTHORN GREEN WITH 80W LED 4E LUMINAIRE. WP TO SUPPLY MATERIALS AND CARRY OUT ALL ASSOCIATED WORKS.
(C) WP TO COST TO REMOVE EXISTING 6.5m LIGHT POLE AND INSTALL NEW 12.5m STANDARD POLE POWDERCOATED HAWTHORN GREEN WITH 170W LED 6E LUMINAIRE. WP TO SUPPLY MATERIALS AND CARRY OUT ALL ASSOCIATED WORKS.
(D) WP TO COST TO CUT IN AND OUT OF EXISTIGN 16SL CABLE AND STRAIGHT JOINT TO NEW 16SL CABLES. WP TO SUPPLY JOINTS AND CARRY OUT ASSOCIATED WORKS.
TRANSMISSION EASEMENT TO BE CONFIRMED BY WP TRANSMISSION GROUP
CAUTION TRANSMISSION LINES IN THIS AREA
CAUTION: HAND TRENCH- EXISTING LIVE LV CABLES
CAUTION: HAND TRENCH- EXISTING LIVE HV & LV CABLES
CAUTION TRANSMISSION LINES IN THIS AREA
RAILWAY STREET
NOTE
CLIENT TO ORGANISE POT-HOLING OF AREA TO DETERMINE EXTENT OF CONDUIT UNDER PROPOSED ROAD.
LOT 889
44581 LOT 378
51818 LOT 300
1213 LOT 345
19170 LOT 175
132kV TRANSMISSION LINE
132kV TRANSMISSION LINE EASEMENT
ARROW DENOTES DIRECTION TO PEG WITH WHICH DUCTS ARE TO BE ALIGNED
DUCTS TO BE LAID TO WP SPECIFICATION AS OUTLINED IN UNDERGROUND DISTRIBUTION SCHEMES MANUAL - POLICY AND INSTALLATION OPTIONS.
DENOTES PREVIOUSLY REQUESTED DUCTS
LEGEND
SCHEME BDY.
RETAINING WALL
RETAINING WALL EXTRA FOOTING
RESTRICTED ZONE
EASEMENT
HV CABLES
CN53 - 400mm2 (3X1c)
CN49 - 240mm2 (3X1c)
CN48 - 185mm2 (3X1c)
CN50 - 95mm2 (3X1c)
CN51 - 50mm2 (3X1c)
CN51 - 50mm2 (1c)
CN46 - 35mm2 (3X1c)
CN47 - 35mm2 (1c)
EXISTING HV CABLES (SIZE AND TYPE INDICATED)
LV-SL CABLES
CN45 - 240mm2 (4x1c)
CN44 - 185mm2 (4x1c)
CN43 - 120mm2 (4x1c)
CN42 - 25mm2 (4x1c)
CN41 - 16mm2 SL (1c)
40 C PILOT
EXISTING LV CABLES (SIZE AND TYPE INDICATED)
STREET LIGHTS
EXISTING
42W CFL
70W HPS
70W MH
80W MV
150W HPS
150W MH
125W MV
250W HPS
250W MH
250W HPS AERODROME
20W LED 7E
53W LED 2E
36W LED 3E
80W LED 4E
160W LED 5E
170W LED 6E
LEGEND DEFINES TYPE & WATTAGE - NOT COLOUR
PILLARS / PITS / ETC
MINI (WORKING END)
UMS PIT
UNIVERSAL
CONCRETE HV CABLE PIT P# - TYPE B/D - TRAFFICABLE LID RATING
MINI
LINK
STANDARD WP MARKER POST
100/200AMP CUTOUT
CUSTOM FOOTPATH CABLE MARKER PLATE
SERVICED UNCLEARED DE-ENERGISED LOT
CONDUIT / POLY PIPE
TRANSFORMER
EXISTING
SWITCHGEAR
AERIAL CONDUCTORS AND POLES
NEW POLE (ANY TYPE AS INDICATED)
EXISTING POLE (ANY TYPE AS INDICATED)
EXISTING AERIAL CONDUCTORS (SIZE AND TYPE INDICATED)
LUMINAIRE: ROAD FLAIR 170W LED 6E
POLE FINISH: POWDERCOATED HAWTHORN GREEN
GL
WP STANDARD 12.5m POLE WITH STANDARD 3m SINGLE OUTREACH
NOT TO SCALE
LUMINAIRE: ROAD FLAIR 80W LED 4E
POLE FINISH: POWDERCOATED HAWTHORN GREEN
WP STANDARD 10.5m POLE WITH STANDARD 3m SINGLE OUTREACH
NOT TO SCALE
WP STREETLIGHTS TO BE LOCATED ON 2.7m ALIGNMENT, UNLESS NOTED OTHERWISE. LOCATIONS TYPICALLY TO BE IN LINE WITH SIDE BOUNDARY PEG. REFER TO SPECIFC DETAILS FOR NON-STANDARD LOCATIONS.
STREETLIGHTS SHALL BE LOCATED EXACTLY AS PER THE DRAWINGS AND CANNOT BE MODIFIED WITHOUT PRIOR APPROVAL FROM THE SUPERINTENDENT.
LOT A
LOT B
TYPICAL STREETLIGHT POLE LOCATION
STREETLIGHTS TO BE ORIENTATED PERPENDICULAR TO ADJACENT KERB LINE, UNLESS NOTED OTHERWISE BY ARROW.
STREET LIGHT ORIENTATION DETAILS
NOTE: ALL UNMETERED SUPPLIES (Including CUSTOMER AND WESTERN POWER STREETLIGHTING ASSETS)
TYPE OF EQUIPMENT | NO of UNITS | UNIT WATTAGE | TOTAL WATTAGE | DAILY HRS OPERATION | WP Asset Yes / No
6.5m WP STANDARD POLE + 125W MV LUMINAIRE REMOVED | -4 | 125W | -500W | DUSK/DAWN | YES
10.5m WP STANDARD POLE + ROAD FLAIR 80W LED 4E LUMINAIRE | 3 | 80W | 240W | DUSK/DAWN | YES
12.5m WP STANDARD POLE + ROAD FLAIR 170W LED 6E LUMINAIRE | 2 | 170W | 340W | DUSK/DAWN | YES
NOTE: ALL UNMETERED SUPPLIES and STREETLIGHTS MUST BE INCLUDED IN DESIGN DRAWING
REV | DESCRIPTION | DATE | DRWN | CHKD
1 | ISSUED TO CLIENT FOR COMMENT | 30.07.2020 | DA | JH
3E CONSULTING ENGINEERS PTY LTD
Electrical Engineering Excellence
Suite 1, Level 2, Condor Tower
22 St George's Tce, Perth WA 6000
PO Box 3184 East Perth WA 6892
Tel: 08 6314 9000 Email: admin@3ece.com.au
This document is the property of 3E Consulting Engineers Pty Ltd and may only be used in accordance with the terms of engagement for which it was commissioned. Unauthorised use of this document is prohibited. Any modification to this drawing will be subject to further technical input.
PRELIMINARY
NOT FOR CONSTRUCTION
IF WORKING IN THE VICINITY OF EXISTING OVERHEAD DISTRIBUTION OR TRANSMISSION LINES.
REFER TO "WORKSAFE" REGULATION 3.64
THE LOCATION OF EXISTING SERVICES IS APPROXIMATE ONLY. IT SHOULD NOT BE ASSUMED THAT ALL EXISTING SERVICES ARE SHOWN. ALWAYS REFER TO CURRENT DBYD DRAWINGS. CONFIRM ASSET LOCATIONS ON SITE BEFORE COMMENCEMENT OF WORK.
REFER TO WORKSAFE REGULATION 3.71
LAT 31° 59' 18" S
LONG 115° 45' 52" E
0 5 10 20 30 40
Scale 1:500 @ A1 Original Paper Size
Base File Date 17-07-2020 H.Datum PCG94
Designed: DA Drawn: DA Checked: JH Appr: JH
Western Power Reference No. TBA WAPC No. N/A
Local Authority TOWN OF COTTESLOE
Civil Consultant PORTER CONSULTING ENGINEERS
RAILWAY STREET (ERIC TO GREENHAM ST) COTTESLOE
ROADWAY LIGHTING ELECTRICAL NETWORK
Sheet Of 1 1
3E Drawing Number 3E20107-01
Revision 1

TOWN OF COTTESLOE

NORTH COTTESLOE PRIMARY SCHOOL TRAFFIC SAFETY COMMITTEE MEETING

ATTACHMENT

ITEM 8.1.1D:
OCM 25 FEBRUARY 2020 - REPORT/RESOLUTION - ITEM 10.3.1

10.3 REPORTS OF COMMITTEES

NORTH COTTESLOE PRIMARY SCHOOL TRAFFIC SAFETY ADVISORY COMMITTEE - 10 FEBRUARY 2020

10.3.1 KISS AND DROP COMMUNITY ENGAGEMENT

File Ref:	**SUB/2630**
Attachments:	**10.3.1(a) Artist Impression - North Cottesloe Primary School Kiss and Drop**
	10.3.1(b) Summary - All Data - Kiss and Drop Survey
	10.3.1(c) Report - Analysis - Individual Stakeholder Groups
	10.3.1(d) Kiss and Drop Project - Email Submissions [CONFIDENTIAL]
	10.3.1(e) Submission - Mr P Sprivulis [CONFIDENTIAL]
	10.3.1(f) Submission - Mr M Goodlet [CONFIDENTIAL]
Responsible Officer:	**Neil Hartley, Acting Chief Executive Officer**
Author:	**Shaun Kan, Manager, Engineering Services**
Author Disclosure of Interest:	**Nil**

Cr Young declared an IMPARTIALITY INTEREST in item 10.3.1 by virtue "I am a former member of the North Cottesloe Primary School community."

Cr Barrett declared an IMPARTIALITY INTEREST in item 10.3.1 by virtue "I still have a child attending the North Cottesloe Primary School."

SUMMARY

At the September 2019 Ordinary Council Meeting, Council accepted the community engagement plan for implementation.

Council is asked to consider the results from the public consultation, feedback received and the Administration's analysis to decide whether the proposed concept should be accepted to:

- Commence funding negotiations with the State Government;
- Lobby for the Eric Street upgrade with Main Roads Western Australia.

BACKGROUND

At the 9 September 2019 North Cottesloe Primary School Traffic Safety Committee meeting, the committee recommended to Council for the implementation of the Community Consultation Plan. At the September 2019 Ordinary Council Meeting, Council accepted the committee's recommendation.

The consultation occurred between 21 October and 12 November 2019 whereby a concept design, arborist report and a list of frequently asked questions were included as part of the public survey. Prior to the opening of the online survey on 22 October 2019, an after school public display was held at the North Cottesloe Primary School on 21 October 2019. A total of

thirty participants registered for the site tours, conducted during the event to supplement the project information.

A total of 286 responses were received at the conclusion of the public consultation period. This figure comprises of 277 online survey participants and nine email submissions. In summary, 52 percent were against and 48 percent of the respondents were in support of the concept. A detailed analysis of the results is within the Officer Comment section of the report.

STRATEGIC IMPLICATIONS

This report is consistent with the Town's *Strategic Community Plan 2013 – 2023*.

Priority Area 2: Achieving connectivity between east and west Cottesloe

Major Strategy 2.4: Proactively pursue solutions for improved access to North Cottesloe Primary School, with a view to reducing congestion on Eric Street.

This report is consistent with the Town's *Corporate Business Plan 2017 – 2021*.

Priority Area 5: Providing sustainable infrastructure and community amenities.

In the 2017-2018 Corporate Business Plan, 4 actions were contained to the strategy, being:

a. Develop a costed project that relocates the school's parking and drop off point from Eric Street to Railway Street;

b. Develop a costed solution for the intersection of Railway Street and Eric Street;

c. Lobby the State Government to make an appropriate allocation for the parking relocation; and

d. Lobby to the State Government to upgrade the Eric Street rail bridge and the intersection of Curtin Avenue and Railway Street.

Actions a. and b. were allocated to the 2017/2018 year in the Corporate Business Plan, with actions c. and d. to commence in the 2018/2019 financial year.

POLICY IMPLICATIONS

There are no perceived policy implications arising from the officer's recommendation.

STATUTORY ENVIRONMENT

Local Government Act 1995

Local Government (Administration) Regulations 1996

FINANCIAL IMPLICATIONS

The final financial implications will only be known once a preferred concept is approved.

The Town will then negotiate with the Department of Education and Main Roads Western Australia for funding contributions.

Currently, $350,000 has been approved in the 2019/2020 budget. The attached concept is estimated to cost $550,000. This includes provisional sums for known risk and contingencies for unforeseen circumstances. Allowance has only been made for road resurfacing without any major road reconstruction earthworks.

Depending on the preferred option being accepted by Council, outcome of the tender process and State Government funding, Council will need to determine how (or if) any shortfall is funded.

The following table provides a break down of the $18,860 spent to date:

Item Description	Expenditure
Arborist Studies	$5,780.00
Traffic Engineering Report	$4,400.00
Site Feature Survey	$2,980.00
Geotechnical Testing	$5,700.00
Total Expenditure	**$18,860.00**

STAFFING IMPLICATIONS

A construction contractor would need to be engaged for the works through an open tender process as the Town does not have sufficient resources to undertake works of this magnitude. Project management and contract administration functions will be undertaken by the Town's engineering staff.

ENVIRONMENTAL SUSTAINABILITY IMPLICATIONS

The concept is expected to improve traffic flow and safety along Eric Street through a reduction in vehicle queues through the roundabout. New footpaths on the western side of Railway Street provide both pedestrian and cyclist access to Eric Street bridge and new principal shared path to promote cycling and walking as an alternative transport modes.

There will be the loss of a small amount of vegetation; however none of the existing Norfolk Island Pine trees will need to be removed. The detail design will take into consideration the protection of existing mature trees, in particular the existing Norfolk Island Pines from any adverse impacts. Additional trees will also be planted as part of the project.

CONSULTATION

The following stakeholders have been involved with the recent community consultation process:

- North Cottesloe Primary School
- Residents and Business within the school's vicinity
- Broad public consultation
- Main Roads Western Australia
- Department of Education

Further engagement will be undertaken with Main Roads and the Education Department to negotiate funding contribution should Council accept the proposed concept.

Town Staff and Elected Members have been consulted and will continue to be part of the process.

OFFICER COMMENT

A total of 277 responses to the online survey have been received. The overall results have been broken into the following three main stakeholder groups for analysis:

- Residents Near the School;
- Cottesloe and Wider Community;
- School Parent.

Summary of Survey Results

Question 2: Which stakeholder group do you belong to?

Stakeholder Group	Number of Survey	Cottesloe Residents	Non-Cottesloe
Residents Near the School	76	76	0
Cottesloe and Wider Community	79	67	12
School Parent	108	81	27
No Address Provided	14	0	0
Total	277	224	39

Question 3: If you are a parent at North Cottesloe Primary School, how often do you drop your children at school?

Stakeholder Group	Very Frequent	Frequent	Occasionally	Rarely	Never	Not Applicable	Total Responses From Each Stakeholder Category
Residents Near the School	2	0	0	0	3	71	76
Cottesloe and Wider Community	0	1	1	0	0	77	79
School Parent	44	26	20	12	2	1	105
Total	46	27	21	12	5	149	260

Question 4: What is your current drop off point or parking location?

Stakeholder Group	Eric Streeet	Railway Street	Not Applicable	Total Responses From Each Stakeholder Category
Residents Near the School	1	1	74	76
Cottesloe and Wider Community	1	2	76	79
School Parent	57	35	16	108
Total	59	38	166	263

Question 5: What year range are your children currently attending?

Stakeholder Group	Prep to Year 2	Year 3 to 5	Year 6	I have no children at the school but will have in the	Not Applicable	Total Responses From Each Stakeholder Category
Residents Near the School	2	1	1	4	70	78
Cottesloe and Wider Community	2	0	0	3	74	79
School Parent	74	54	11	1	1	141
Total	78	55	12	8	145	298

Question 6: Have you had the opportunity to view the concept design and read the associated documents?

Stakeholder Group	Yes	No	Total Responses From Each Stakeholder Category
Residents Near the School	66	10	76
Cottesloe and Wider Community	71	8	79
School Parent	99	9	108
Total	236	27	263

Question 7: Thinking about the reasons that you are usually in the area, how important is short term parking to you?

Stakeholder Group	Extremely Important	Very Important	Somewhat Important	Not so Important	Not Important at all	Total Responses From Each Stakeholder Category
Residents Near the School	8	6	5	13	43	75
Cottesloe and Wider Community	7	5	7	15	44	78
School Parent	32	29	22	16	8	107
Total	47	40	34	44	95	260

Question 8: Given the above approach, how important to you is it that this plan, including any changes to it protects existing matured trees?
Question 9: Can you tell us why?

Stakeholder Group	Not Important	Slightly Important	Moderately Important	Important	Very Important	Total Responses From Each Stakeholder
Residents Near the School	6	4	8	8	45	71
Cottesloe and Wider Community	1	3	10	10	41	65
School Parent	10	17	27	25	26	105
Total	17	24	45	43	112	241

Question 10: Thinking about your current interaction with the area, how supportive are you of the proposed realignment and "Kiss and Drop" facility?
Question 11: Can you tell us why?

Stakeholder Group	I do support the concept design	I do support the concept design and would use the facility	I do support the concept design and would not use the facility	I do not support the concept design	Total Responses From Each Stakeholder Category
Residents Near the School	10	3	7	48	68
Cottesloe and Wider Community	9	2	5	59	75
School Parent	13	64	3	21	101
Total	32	69	15	128	244

Question 12: What elements of the plan do you like?
Question 13: Others (please specify)

Stakeholder Group	Realignment of railway Street	Footpath	Crossing Locations	Parking Bays	Kiss and Drop Location	Address Congestion on Eric Street	Neither like nor dislike the elements	Others (please specify)	Total Responses From Each Stakeholder Category
Residents Near the School	9	9	8	8	11	14	11	37	107
Cottesloe and Wider Community	8	9	9	6	8	12	11	45	108
School Parent	49	36	38	44	60	67	4	22	320
Total	66	54	55	58	79	93	26	104	405

Question 14: What elements of the plan do you not like?
Question 15: Others (please specify)

Stakeholder Group	Realignment of railway Street	Footpath	Crossing Locations	Parking Bays	Kiss and Drop Location	Address Congestion on Eric Street	Neither like nor dislike the elements	Others (please specify)	Total Responses From Each Stakeholder Category
Residents Near the School	30	12	14	20	21	18	8	27	150
Cottesloe and Wider Community	22	9	14	22	24	20	9	40	160
School Parent	18	10	22	24	17	19	24	47	181
Total	70	31	50	66	62	57	41	114	336

Analysis of Survey Results

The survey results in question ten indicates that 48 percent of the total respondents are supportive and 52 percent are against the re-alignment of Railway Street and relocation of the Kiss and Drop from Eric Street. The school parent stakeholder group have had the highest support rate with approximately 80 percent of respondents in favour of the proposed design. This is followed by the residents residing near the school and Cottesloe and Wider Community stakeholder category that had a support rate of 30 percent and 21 percent respectively. The most liked feature in general identified from responses to question 12 is the location of the kiss and drop whilst the least liked element is the Railway Street realignment.

Approximately 29 percent of the feedbacks provided to question 11 are in the opinion that the proposed design will improve safety and reduce congestion along Eric Street. The remaining 71 percent of comments have opposed the proposed concept for the following key reasons:

- Obstruction to property access along Railway Street;

- Reduce the number of parking bays for the Wellness Centre;
- Design does not promote sustainability and encourages the use of vehicles as a mode of transport;
- Costly project that should be funded by Main Roads and the Department of Education rather than Cottesloe ratepayers;
- The upgrade of Eric Street Bridge will resolve the congestion problem along Eric Street;
- There will be no improvements to the current situation with the possibility of the congestion being moved to Railway Street;
- The current facilities are sufficient and the project is unnecessary.

It would be important to note that the greater difference between supportive and unsupportive comments to question 11 is very likely due to a larger number of the 52 percent of respondents objecting to the concept answering this question compared to the 48% that support the concept. Similar answers to question 11 were also provided in Question 13 and 15 when participants are asked to provide further comments on project components that they either like or dislike.

Whilst the rationales behind objecting to the proposed concept may be valid, the design being consulted on possibly addresses some of these concerns. Elected members would need to take this into consideration when deciding whether to further progress this project.

Given the feedback around State Government funding and the Eric Street Bridge Upgrade remains unresolved, it is open for Council to note the community feedback and ask the Administration to engage with both Main Roads Western Australia and the Department of Education on these matters. An item can then be brought back to the April 2020 Ordinary Council meeting through the North Cottesloe Primary School Traffic Safety Committee for Council to further consider.

VOTING REQUIREMENT

Simple Majority

COMMITTEE RECOMMENDATION AND COUNCIL RESOLUTION

Moved Cr Harkins **Seconded Cr Young**

THAT the Committee recommends;

THAT Council:

1. **THANKS the public and community for taking the time to participate in the survey and providing valued feedback;**
2. **NOTES the survey results and feedback received during the community consultation and ask that the Administration engage with:**
    a. **Main Roads Western Australia to determine the timeline for the design development of the Eric Street Bridge Upgrade;**
    b. **Main Roads Western Australia and the Department of Education to:**

i. request that they undertake an analysis of the safety and traffic issues associated with the current kiss and drop arrangement on Eric St and provide written confirmation that the proposed kiss and drop relocation concept design will result in improved safety for pedestrians and cyclists (particularly school children entering and exiting the school site) as well as for motorists in the vicinity;

ii. determine the possibility of State Government funding for the kiss and drop relocation project to Railway Street.

3. NOTES that upon the completion of Point two, an item will be brought back to an Ordinary Council Meeting through the North Cottesloe Primary School Traffic Safety Committee for consideration.

Carried 9/0

TOWN OF COTTESLOE

NORTH COTTESLOE PRIMARY SCHOOL TRAFFIC SAFETY COMMITTEE MEETING

ATTACHMENT

ITEM 8.1.1E:
CORRESPONDENCE - COTTESLOE RESIDENTS AND RATEPAYERS ASSOCIATION

Cottesloe
RESIDENTS & RATEPAYERS ASSOCIATION
ARN A1005384K

PO Box 494, Cottesloe WA 6911

TOWN OF COTTESLOE
05 AUG 2020
RECEIVED

22 July 2020

The Acting CEO
Town of Cottesloe
109 Broome St
Cottesloe WA 6011

Dear Acting CEO,

North Cottesloe Primary School Carpark

Our Association continues to be interested in relation to a proposed car park at North Cottesloe Primary School.

In its capacity as an Association representing the interests of Cottesloe residents and ratepayers, we respectfully draw to the attention of the Elected Members and the Town Administration the outcome of the community consultation, which was undertaken in relation to the proposed new car park for North Cottesloe Primary School, and the associated realignment of Railway Street.

The outcome of the community consultation can be summarised as follows:

In November 2019, Cottesloe residents were surveyed and asked to comment on this proposal. The survey results found:

- 78% of Cottesloe residents opposed the relocation
- 79% of School & Wellness Cancer Centre staff opposed the relocation
- 71% of nearby residents that is, in the immediate vicinity of the school, also rejected the proposal

Results of the Survey and resident feedback were reported in the Council Minutes of 25 February 2020.

We further draw to the attention of Elected Members and the Administration the fact that the NCPS Traffic Safety Committee accepted a submission by Prof Peter Sprivulis which demonstrates why the design is neither safer for pedestrians *(and is in fact more dangerous)* nor would reduce vehicle traffic around the school, as noted in the Committee's minutes.

In light of the clear opposition to the project by the wider Cottesloe Community, we urge Elected Members and the Administration to act in the expressed interest of residents and ratepayers.

In the absence of any firm timeline or confirmed plans for the upgrade of the Eric Street Bridge, we submit that continued progression or expenditure on the deeply unpopular project is ill advised.

Yours sincerely

Greg Boland
Acting Chairperson