



## CITY OF PARRAMATTA COUNCIL

### Traffic Engineering Advisory Group Agenda Item

**ITEM NO:** 2303 B1  
**SUBJECT:** Hill Road, Wentworth Point – Update on the proposed improvements on Hill Road  
**APPLICANT:** City of Parramatta Council  
**REPORT OF:** Traffic and Transport Investigations Engineer  
**WARD:** Rosehill  
**SED:** Auburn

#### Purpose

The purpose of this report is to provide an update to Council regarding the proposed improvements on Hill Road, Wentworth Point.

#### **OFFICER'S RECOMMENDATIONS:**

That Council note the updates regarding the proposed improvements on Hill Road, Wentworth Point.

#### Background

Council, at its meeting held on 14 March 2022 considered a report regarding Hill Road and resolved:

- 1. That a monthly update be provided to Ward Councillors regarding the status of the Federal Funding application under its Stimulus Program.*
- 2. That should the outcomes of the Federal Funding be unsuccessful or not received by end of July 2022, that Council will endeavour to secure alternative funding for the traffic signal upgrade at Hill Road and Bennelong Parkway, to ensure these works are completed in the 2022/23 financial year.*
- 3. That Council continue to contact the developer advising of Council's resolution calling for the urgent construction of the planned roundabout and street crossing at the corner of Hill Road and Burroway Road.*
- 4. Further, that updates on both projects referred to in this report be provided to each meeting of the Parramatta Traffic Committee and included in the minutes reported to Council until the projects are complete.*

In addition, an email from Councillor Noack was received on 5 April 2022 requesting the following items also be included within each TEAG agenda:

1. *As per Council resolution a report on the work being done on the traffic lights at the corner of Bennelong Parkway and Hill Road*
2. *As per Council resolution a report on work being done on the roundabout and pedestrian crossing at Hill Road and Burroway Road*
3. *Update on lighting on Hill Road. This is the change to LED lightning*
4. *Update on drainage for Hill Road*
5. *Haslams Creek Bridge Update on Bennelong Road*
6. *Crossing from Wentworth Common across Bennelong Road*

#### Proposed Traffic Signals at Bennelong Parkway Intersection

The contractor has now commenced preliminary works which includes the preparation of a cabling and ducting plan for submission to Transport for NSW (TfNSW) for approval, locating any services on site through potholing and ground penetrating radar and, survey set out of the approved design.

The next step for the project is for the enabling and electrical works which include the installation of erosion, sediment and dust control measures, delivery of water barriers and site toilets and, commencement of street lighting works. It is anticipated that traffic control will be installed and civil works will commence on-site on 15 March 2023. Accordingly, the project is currently on schedule and due for practical completion in June 2023.

As advised in the previous TEAG report on the subject, Council has a dedicated webpage which provides the community with updates on the projects. 'What's Happening Here' corflute signs have been installed around the site which have a QR Code link to this page. The page can be accessed through the below link:

<https://www.cityofparramatta.nsw.gov.au/vision/precinct-planning/installation-of-traffic-and-pedestrian-signals-at-wentworth-point>

#### Federal Election Commitments

As part of a Federal Election promise, the Federal Government has committed \$8.5 million for the upgrade of Hill Road, Wentworth Point. It is envisaged that these funds will be utilised to implement various components of the Hill Road Masterplan which include but are not limited to the following:

1. Lighting upgrades in Hill Road
2. Stormwater Drainage Works
3. Embellishment of pathways and pedestrian facilities

Council Officers are currently working to formally apply for the funds as requested by the Federal Government.

#### Proposed roundabout and pedestrian crossing at Burroway Road intersection





Council has appointed BECA to detail design a new pedestrian and cyclist bridge over Haslams Creek at Bennelong Parkway. The project also includes designing pedestrian and cyclist paths to connect to the west, and a refuge island south of existing road bridge at Wentworth Common (subject to Sydney Olympic Park Authority approval). Works include extensive investigations into existing utilities and an ecological review which are currently underway. Once the design has progressed it will be placed on public exhibition for community feedback, which is anticipated for first half of 2023. Subject to the results of consultation and reporting to Council, Council would seek external grant funding for construction in the 2023/24 financial year.

#### Drainage upgrades for Hill Road (No updates since previous report)

The Technical Civil Works Design Brief of the Stormwater Masterplan for Hill Road has now been completed. Council staff are currently investigating funding opportunities in order to engage a consultant to undertake the study for the drainage masterplan. Potential sources of funds include the Federal Election commitments for the upgrade of Hill Road.

#### Lighting upgrades for Hill Road (No updates since previous report)

Council is currently working with Ausgrid, SOPA and electrical contractor to find a solution to handover of the street lighting assets in Hill Road which were never formally handed over to Ausgrid by Auburn Council at that time. It is noted that the light poles and lamps do not currently meet Ausgrid's requirements and therefore need to be upgraded before Ausgrid can accept them as their assets.

Currently, there are no Council funds allocated in completing the required upgrade works, however, it is noted that Council plans to utilise parts of the \$8.5 million Federal Election commitments for the upgrade of Hill Road as a source of funds to upgrade lighting once the funds are made available.

## **FINANCIAL IMPLICATIONS**

This report only provides an update on the proposed traffic improvements and other proposed works on Hill Road and Bennelong Parkway, Wentworth Point and Sydney Olympic Park. Therefore, this matter has no financial impact upon Council's budget.

Behzad Saleh

**Traffic and Transport Investigations Engineer**

28/02/2023

**Attachments – Nil**



## CITY OF PARRAMATTA COUNCIL

# Traffic Engineering Advisory Group Agenda Item

**ITEM NO:** 2303 B2

**SUBJECT:** Hill Road and Burroway Road, Wentworth Point – Proposed Roundabout, Pedestrian and Cyclist Crossings and Pedestrian Refuge Islands

**APPLICANT:** City of Parramatta Council

**REPORT OF:** Traffic and Transport Investigations Engineer

**WARD:** Rosehill

**SED:** Auburn

### Purpose

City of Parramatta Council has received an updated detail design of the proposed roundabout with pedestrian crossing facilities at the intersection of Hill Road and Burroway Road, Wentworth Point. This report is to advise Council of the changes to the design from what was previously endorsed by the Parramatta Traffic Committee and Council.

### **OFFICER'S RECOMMENDATIONS:**

That Council note the changes to the scope for the proposed roundabout at the intersection of Hill Road and Burroway Road, Wentworth Point to be delivered by the developer at 14-16 Hill Road prior to occupation of the next stage of their development.

### Background

The Parramatta Traffic Committee at its meeting held on 21 January 2021 considered a report on a proposal to construct a roundabout at the intersection of Hill Road and Burroway Road, Wentworth Point. Council at its meeting on 22 February 2021 considered the Committee's recommendations and resolved as follows:

- 1. That a roundabout with associated signs and pavement markings be installed at the intersection of Hill Road, Burroway Road and Lapwing Street, Wentworth Point is shown in the concept plan attached to this report.*
- 2. That a median island incorporating a pedestrian refuge island be installed in Hill Road between Footbridge Boulevard and Park Street North, Wentworth Point as shown in the concept plan attached to this report.*
- 3. That combined raised pedestrian and cyclist crossings be installed in Lapwing Street (new access loop road near the southern and northern property boundaries) at Hill Road, Wentworth Point as shown in the concept plan attached to this report.*

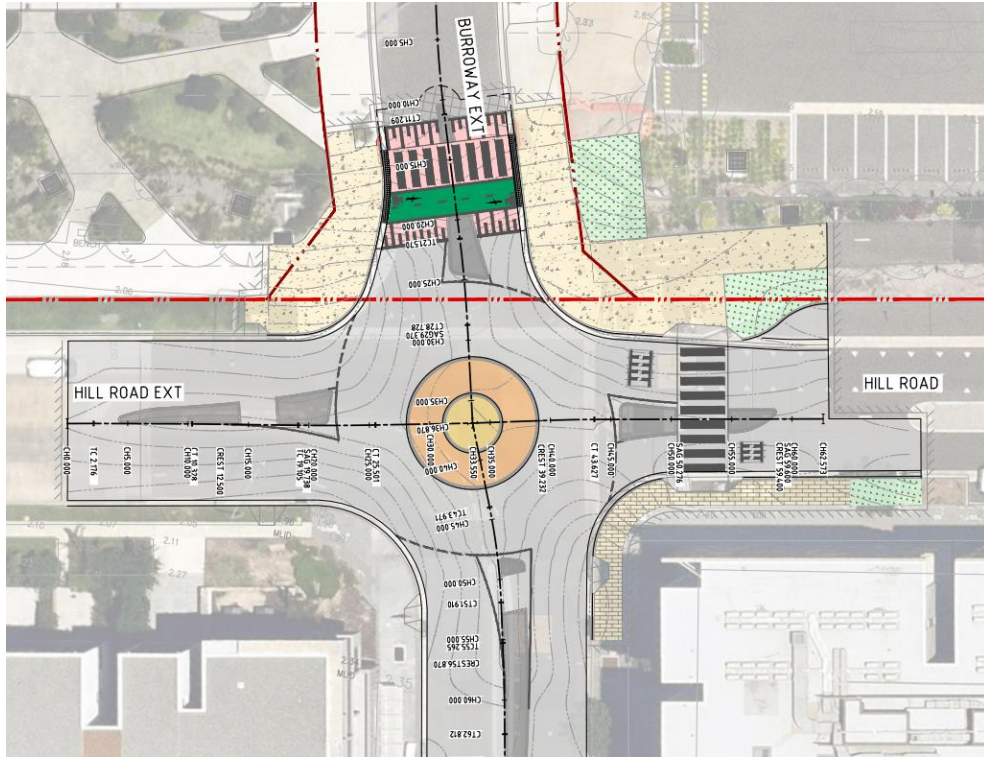
4. *That the design of the roundabout at the intersection of Hill Road and Burroway Road, Wentworth Point/Sydney Olympic Park be modified to include a raised pedestrian crossing on the north leg of the intersection.*
5. *That a Work Permit application be lodged to Sydney Olympic Park Authority (SOPA) prior to commencement of works. It is to be noted that the proposed works encroach onto Hill Road (north) (also known as Ferry Wharf Circuit) which is owned by SOPA. Land owner's consent is required for the works to be carried out on Ferry Wharf Circuit, noting that it is a privately owned road that is publicly accessible.*
6. *That recommendations 1-4 are subject to detailed designs of the proposed traffic facilities being approved by the Transport for New South Wales (TfNSW) prior to the commencement of construction.*

During the detail design stage for the approved roundabout, Council officers and the developer, Sekisui House held further discussions regarding the scope of works. It was agreed that Council will no longer require the construction of a raised pedestrian crossing in the northern leg of Hill Road (also known as Ferry Wharf Circuit) as per resolution 4 above to limit the impact on stormwater drainage. Instead, the scope could be revised to have an at-grade pedestrian crossing with a speed cushion on both approaches. Accordingly, the developer has revised their plans and have submitted them to Council.

It is to be noted that Ferry Wharf Circuit is a privately owned road under the care and control of Sydney Olympic Park Authority (SOPA). Accordingly, Council approval is not required for this change of scope and these plans have been forwarded to SOPA for review.



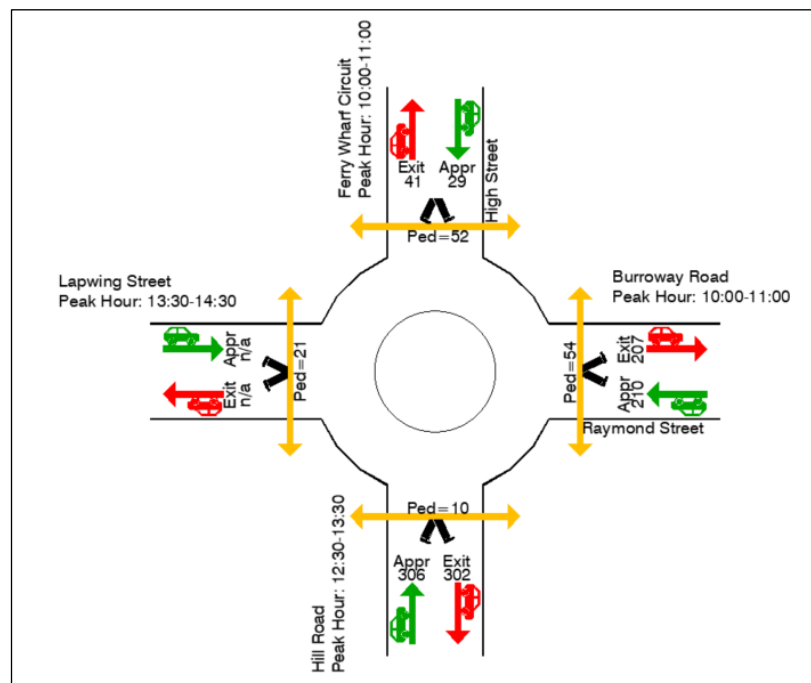
**Figure 1: Street view of the intersection of Hill Road, Burroway Road and Lapwing Street, Wentworth Point looking in a northbound direction**



**Figure 2: Updated proposed layout of the proposed roundabout at the intersection of Hill Road, Burroway Road and Lapwing Street, Wentworth Point**

### Traffic Counts and Roundabout Design Features

Council has previously undertaken traffic and pedestrian counts at the intersection of Hill Road and Burroway Road in January 2021. These counts showed that during the weekend peak hour, a total of 51 pedestrians crossed the road at the northern leg of this intersection with the vehicle volume being 70. Details of the traffic count are summarised in Figure 3 below.



**Figure 3: A summary of traffic and pedestrian counts undertaken in January 2021 at the intersection Hill Road, Burroway Road and Lapwing Street, Wentworth Point. It is noted that the pedestrian counts include any cyclists crossing the road.**



A review of the recorded crash history during the five-year period between July 2017 and June 2022 showed that there has been one injury crash at this intersection. This crash involved a northbound vehicle performing a U-turn and colliding with a cyclist.

As noted above in the report, the design will now exclude a raised crossing in Ferry Wharf Circuit and will instead have an at grade crossing with two speed cushions. The speed cushions will still ensure that vehicles will still slow down when driving past the crossing, however, they will have much less impact on stormwater drainage within the road. All other aspects of the design are largely as previously approved through the Parramatta Traffic Committee and include the following features:

1. A combined raised pedestrian and cyclists crossing on the western leg of the proposed roundabout
2. Pedestrian refuge islands incorporated into the splitter islands on both the southern and eastern leg of the proposed roundabout
3. A pedestrian refuge island in Hill Road immediately north of Footbridge Boulevard

The design of the pedestrian refuge islands in Hill Road north of Footbridge Boulevard will also be referred to TfNSW due to traffic signals proposed as part of Parramatta Light Rail Stage 2.



**Figure 4: An aerial map of the proposed pedestrian facilities as well as existing pedestrian crossings near the development site**

## FINANCIAL IMPLICATIONS

The proposed traffic facilities and all associated works are to be installed by the developer of 14-16 Hill Road, Sydney Olympic Park at no cost to Council. Therefore, this proposal has no direct financial impact upon Council's budget.

Behzad Saleh

**Traffic and Transport Investigations Engineer**

28/02/2023

**Attachments –** 1. Detail Design Plans.  
2. PTC 2101 A3



# HILL ROAD, PROPOSED TRAFFIC FACILITIES

## CIVIL ENGINEERING PACKAGE



Sheet List Table	
Sheet Number	Sheet Title
C10.01	COVER SHEET, LOCALITY PLAN AND DRAWING SCHEDULE
C11.01	SPECIFICATION NOTES
C12.01	CONCEPT SEDIMENT AND EROSION CONTROL PLAN - ROUNDABOUT
C12.11	CONCEPT SEDIMENT AND EROSION CONTROL PLAN - PEDESTRIAN CROSSING
C12.21	SEDIMENT AND EROSION CONTROL DETAILS
C14.01	SITEWORKS PLAN - ROUNDABOUT
C14.11	SITEWORKS PLAN - PEDESTRIAN CROSSING
C14.21	SIGNAGE AND LINEMARKING PLAN - ROUNDABOUT
C14.31	SIGNAGE AND LINEMARKING PLAN - PEDESTRIAN CROSSING
C15.01	ROAD ALIGNMENT CONTROL PLAN - ROUNDABOUT
C15.11	KERB RETURN ALIGNMENT CONTROL PLAN - ROUNDABOUT
C15.21	MEDIAN ALIGNMENT CONTROL PLAN - ROUNDABOUT
C15.31	MEDIAN ALIGNMENT CONTROL PLAN - PEDESTRIAN CROSSING
C15.32	RAISED THRESHOLD ALIGNMENT CONTROL PLAN - ROUNDABOUT
C15.33	RAISED THRESHOLD ALIGNMENT CONTROL PLAN - PEDESTRIAN CROSSING
C15.41	ROUNDABOUT SETOUT TABLES
C15.51	PEDESTRIAN CROSSING SETOUT TABLES
C15.61	MEDIAN SETOUT TABLES - SHEET 01
C15.62	MEDIAN SETOUT TABLES - SHEET 02
C16.01	ROAD LONGITUDINAL SECTIONS
C16.21	KERB RETURN PROFILES - SHEET 01
C16.22	KERB RETURN PROFILES - SHEET 02
C16.23	KERB RETURN PROFILES - SHEET 03
C16.24	KERB RETURN PROFILES - SHEET 04
C17.01	EXISTING CATCHMENT PLAN - OVERALL
C17.02	EXISTING CATCHMENT PLAN - PROPOSED AREA OF WORKS
C17.11	PROPOSED CATCHMENT PLAN
C18.01	DETAILS - SHEET 01
C18.02	DETAILS - SHEET 02
C18.03	DETAILS - SHEET 03
C18.04	DETAILS - SHEET 04
C18.05	DETAILS - SHEET 05
C18.06	DETAILS - SHEET 06
C18.07	DETAILS - SHEET 07
C19.01	SWEPT PATHS PLAN - SHEET 01 12.5m HRV DESIGN VEHICLE
C19.02	SWEPT PATHS PLAN - SHEET 02 8.8m MRV DESIGN VEHICLE
C19.03	SWEPT PATHS PLAN - SHEET 03 8.8m MRV DESIGN VEHICLE
C19.04	SWEPT PATHS PLAN - SHEET 04 8.8m MRV DESIGN VEHICLE
C19.05	SWEPT PATHS PLAN - SHEET 05 8.8m MRV DESIGN VEHICLE
C19.06	SWEPT PATHS PLAN - SHEET 06 19m AV CHECKING VEHICLE
C19.07	SWEPT PATHS PLAN - SHEET 07 12.5m HRV DESIGN VEHICLE
C19.08	SWEPT PATHS PLAN - SHEET 08 12.5m HRV CHECKING VEHICLE
C19.09	SWEPT PATHS PLAN - SHEET 08 8.8m MRV DESIGN VEHICLE

DRAWN: A.MARGARIS    DESIGNED: B.LAWRENCE    JOB MANAGER: B.LAWRENCE    VERIFIER:

REVISION	DESCRIPTION	ISSUED	VER'D	APP'D	DATE
01	ISSUED FOR TRAFFIC COMMITTEE APPROVAL	AM		BL	26.10.20
02	ISSUED FOR CONTRACTOR REVIEW AND PRICING	AM		BL	05.11.20
03	ISSUED FOR APPROVAL	AM		BL	10.08.21
04	RE-ISSUED FOR APPROVAL	AF		BL	25.01.23




**SEKISUI HOUSE**

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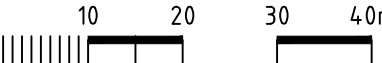
ARCHITECT

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PROJECT

14 - 16 HILL ROAD,  
SYDNEY OLYMPIC PARK

PROPOSED TRAFFIC FACILITIES

DRAWING TITLE

CIVIL ENGINEERING PACKAGE

COVER SHEET, LOCALITY PLAN  
AND DRAWING SCHEDULE

JOB NUMBER

170973

DRAWING NUMBER

C10.01

REVISION

04

DRAWING SHEET SIZE = A1



NOTE: ALL CIVIL ENGINEERING CONSTRUCTION WORKS TO BE CARRIED OUT IN ACCORDANCE WITH PARRAMATTA COUNCIL DEVELOPMENT GUIDELINES . READ IN CONJUNCTION WITH THE NOTES PROVIDED BELOW.  
IF CONFLICT ARISE , PARRAMATTA COUNCIL GUIDELINES AND SPECIFICATIONS TAKE PRECEDENCE. WHERE PARRAMATTA COUNCIL GUIDELINES AND SPECIFICATIONS ARE SILENT, THE SPECIFICATION NOTES BELOW TAKE PRECEDENCE

ACCESS AND SAFETY
1. THE CONTRACTOR SHALL COMPLY WITH ALL STATUTORY AND INDUSTRIAL REQUIREMENTS FOR PROVISION OF A SAFE WORKING ENVIRONMENT INCLUDING TRAFFIC CONTROL.
2. THE CONTRACTOR SHALL PROVIDE TRAFFIC MANAGEMENT PLANS FOR THE PROPOSED WORKS COMPLETED BY A <u>SUITABLY QUALIFIED PERSON AND APPROVED BY COUNCIL / REGULATORY AUTHORITY. WORK IS NOT TO COMMENCE ON SITE PRIOR TO APPROVAL OF TRAFFIC MANAGEMENT SCHEME.</u>
3. THE CONTRACTOR SHALL ENSURE THAT AT ALL TIMES ACCESS TO BUILDINGS ADJACENT THE WORKS IS NOT DISRUPTED.
4. WHERE NECESSARY THE CONTRACTOR SHALL PROVIDE SAFE PASSAGE OF VEHICLES AND/OR PEDESTRIANS THROUGH OR BY THE SITE.
5. THE CONTRACTOR SHALL ENSURE PUBLIC ACCESS EXTERNAL TO THE SITE IS IN ACCORDANCE WITH COUNCILS REQUIREMENTS.

TREE PROTECTION
1. REFER TO LANDSCAPE / ARCHITECTS PLAN FOR TREES TO BE RETAINED AND PROTECTED.
2. ANY EXISTING TREES WHICH FORM PART OF THE FINAL LANDSCAPING PLAN SHALL BE PROTECTED FROM CONSTRUCTION ACTIVITIES BY: 2.1. PROTECTING THEM WITH BARRIER FENCING OR SIMILAR MATERIALS INSTALLED OUTSIDE THE DRIP LINE. 2.2. ENSURING THAT NOTHING IS NAILED TO ANY PART OF THE TREE. 2.3. CARE IS TAKEN NOT TO CUT ROOTS UNNECESSARILY. COUNCILS AND/OR INDEPENDENT ARBORISTS TO BE CONSULTED WHERE TREE ROOTS ARE TO BE REMOVED AND/OR CUT.

SEDIMENT AND SOIL EROSION
1. THE SEDIMENT & EROSION CONTROL PLAN PRESENTS CONCEPTS ONLY. THE CONTRACTOR SHALL AT ALL TIMES BE RESPONSIBLE FOR THE ESTABLISHMENT & MANAGEMENT OF A DETAILED SCHEME MEETING COUNCILS DESIGN, OTHER REGULATORY AUTHORITY REQUIREMENTS AND MAKE GOOD PAYMENT OF ALL FEES.
2. THE CONTRACTOR SHALL INSTIGATE ALL SEDIMENT AND EROSION CONTROL MEASURES IN ACCORDANCE WITH STATUTORY REQUIREMENTS AND IN PARTICULAR THE 'BLUE BOOK' (MANAGING URBAN STORMWATER SOILS AND CONSTRUCTION), PRODUCED BY THE DEPARTMENT OF HOUSING AND COUNCILS POLICIES. THESE MEASURES ARE TO BE INSPECTED AND MAINTAINED ON A DAILY BASIS.
3. THE SITE SUPERINTENDENT SHALL ENSURE THAT ALL SOIL AND WATER MANAGEMENT WORKS ARE LOCATED AS INSTRUCTED IN THE DRAWINGS AND ADHERE TO ALL REGULATORY AUTHORITY REQUIREMENTS.
4. THE CONTRACTOR SHALL INFORM ALL SUB CONTRACTORS OF THEIR RESPONSIBILITIES IN MINIMISING THE POTENTIAL FOR SOIL EROSION AND POLLUTION TO DOWNSLOPE LANDS AND WATERWAYS.
5. WHERE PRACTICAL, THE SOIL EROSION HAZARD ON THE SITE SHALL BE KEPT AS LOW AS POSSIBLE. TO THIS END, WORKS SHOULD BE UNDERTAKEN IN THE FOLLOWING SEQUENCE; 5.1 <u>CONSTRUCT TEMPORARY STABILISED SITE ACCESS INCLUSIVE OF SHAKE DOWN / WASH PAD.</u> 5.2 <u>INSTALL ALL TEMPORARY SEDIMENT FENCES AND BARRIER FENCES. WHERE FENCES ADJACENT EACH OTHER, THE SEDIMENT FENCE CAN BE INCORPORATED INTO THE BARRIER FENCE.</u> 5.3 <u>INSTALL SEDIMENT CONTROL MEASURES AS OUTLINED ON THE APPROVED PLANS.</u>
6. UNDERTAKE SITE DEVELOPMENT WORKS SO THAT LAND DISTURBANCE IS CONFINED TO AREAS OF MINIMUM WORKABLE SIZE.
7. AT ALL TIMES AND IN PARTICULAR DURING WINDY AND DRY WEATHER, LARGE UNPROTECTED AREAS WILL BE KEPT MOIST (NOT WET) BY SPRINKLING WITH WATER TO KEEP DUST UNDER CONTROL ENSURING CONFORMITY TO REGULATORY AUTHORITY REQUIREMENTS.
8. ANY SAND USED IN THE CONCRETE CURING PROCESS (SPREAD OVER THE SURFACE) SHALL BE REMOVED AS SOON AS POSSIBLE AND WITHIN 10 WORKING DAYS FROM PLACEMENT.
9. WATER SHALL BE PREVENTED FROM ENTERING THE PERMANENT DRAINAGE SYSTEM UNLESS THE CATCHMENT AREA HAS BEEN STABILISED AND/OR ANY LIKELY SEDIMENT BEEN FILTERED OUT.
10. TEMPORARY SOIL AND WATER MANAGEMENT STRUCTURES SHALL BE REMOVED ONLY AFTER THE LANDS THEY ARE PROTECTING ARE STABILISED / REHABILITATED.
11. ALLOW FOR GRASS STABILISATION OF EXPOSED AREAS, OPEN CHANNELS AND ROCK BATTERS DURING ALL PHASES OF CONSTRUCTION.
12. EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSPECTED TO ENSURE THAT THEY OPERATE EFFECTIVELY. REPAIRS AND/OR MAINTENANCE SHALL BE UNDERTAKEN REGULARLY AND AS REQUIRED, PARTICULARLY FOLLOWING RAIN EVENTS.
13. RECEPTORS FOR CONCRETE AND MORTAR SLURRIES, PAINTS, ACID WASHINGS, LIGHT-WEIGHT WASTE MATERIALS AND LITTER SHALL BE DISPOSED OF IN ACCORDANCE WITH REGULATORY AUTHORITY REQUIREMENTS. CONTRACTOR TO PAY ALL FEES AND PROVIDE EVIDENCE OF SAFE DISPOSAL.

EXISTING SERVICES
1. ALL UTILITY SERVICES INDICATED ON THE DRAWINGS ORIGINATE FROM SUPPLIED DATA OR DIAL BEFORE YOU DIG SEARCHES, THEREFORE THEIR ACCURACY AND COMPLETENESS IS NOT GUARANTEED. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO DETERMINE AND CONFIRM THE LOCATION AND LEVEL OF ALL EXISTING SERVICES PRIOR TO THE COMMENCEMENT OF ANY WORK. ANY DISCREPANCIES SHALL BE REPORTED TO THE SUPERINTENDENT. CLEARANCES SHALL BE OBTAINED FROM THE RELEVANT SERVICE AUTHORITY. <u>NOTE SERVICE AUTHORITY REQUIREMENTS FOR LOCATING OF SERVICES PRIOR TO COMMENCEMENT OF WORKS.</u>
2. CARE TO BE TAKEN WHEN EXCAVATING NEAR EXISTING SERVICES. NO MECHANICAL EXCAVATIONS AREA TO BE UNDERTAKEN OVER COMMUNICATION, GAS OR ELECTRICAL SERVICES. HAND EXCAVATION ONLY IN THESE AREAS.
3. THE CONTRACTOR SHALL PROTECT AND MAINTAIN ALL EXISTING SERVICES THAT ARE TO BE RETAINED IN THE VICINITY OF THE PROPOSED WORKS. ANY AND ALL DAMAGE TO THESE SERVICES AS A RESULT OF THESE WORKS SHALL BE REPAIRED BY THE CONTRACTOR UNDER THE DIRECTION OF THE SUPERINTENDENT <u>AT THE CONTRACTORS EXPENSE.</u>
4. THE CONTRACTOR SHALL ALLOW IN THE PROGRAM FOR THE ADJUSTMENT (IF REQUIRED) OF EXISTING SERVICES IN AREAS AFFECTED BY WORKS.
5. THE CONTRACTOR SHALL ALLOW IN THE PROGRAM FOR THE CAPPING OFF, EXCAVATION AND REMOVAL (IF REQUIRED) OF EXISTING SERVICES IN AREAS AFFECTED BY WORKS UNLESS DIRECTED OTHERWISE ON THE DRAWINGS OR BY THE SUPERINTENDENT.
6. THE CONTRACTOR SHALL ENSURE THAT AT ALL TIMES SERVICES TO ALL BUILDINGS NOT AFFECTED BY THE WORKS ARE NOT DISRUPTED AND MAINTAINED.
7. PRIOR TO COMMENCEMENT OF ANY WORKS THE CONTRACTOR SHALL GAIN APPROVAL OF THE PROGRAM FOR THE RELOCATION AND/OR CONSTRUCTION OF TEMPORARY SERVICES AND FOR ANY ASSOCIATED INTERRUPTION OF SUPPLY.
8. THE CONTRACTOR SHALL CONSTRUCT TEMPORARY SERVICES TO MAINTAIN EXISTING SUPPLY TO BUILDINGS REMAINING IN OPERATION DURING WORKS TO THE SATISFACTION AND APPROVAL OF THE SUPERINTENDENT. ONCE DIVERSION IS COMPLETE AND COMMISSIONED THE CONTRACTOR SHALL REMOVE ALL SUCH TEMPORARY SERVICES AND MAKE GOOD TO THE SATISFACTION OF THE SUPERINTENDENT.

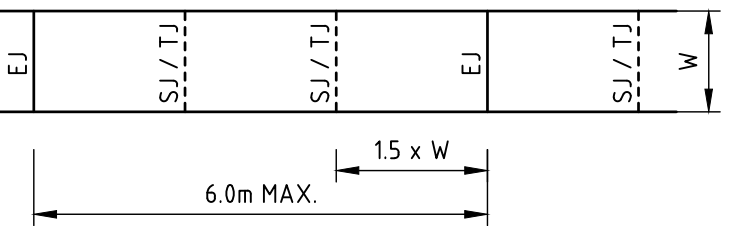
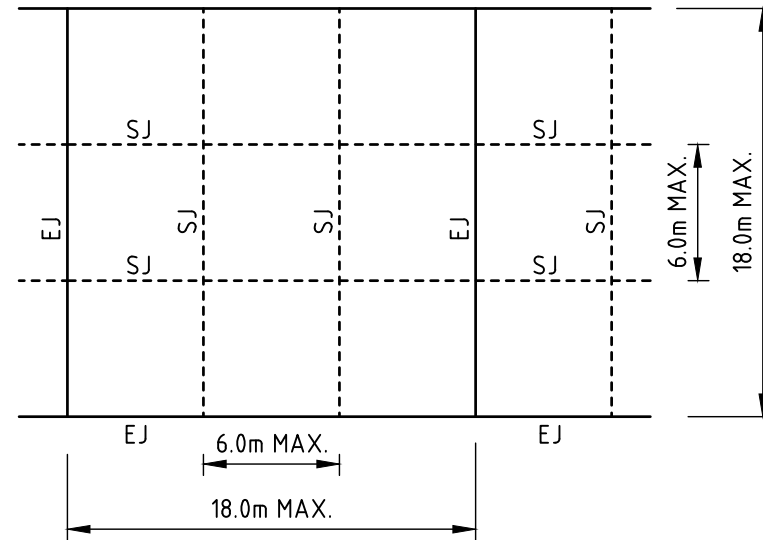
SITEWORKS
1. ALL WORKS TO BE IN ACCORDANCE WITH RELEVANT LOCAL COUNCIL / REGULATORY AUTHORITIES REQUIREMENTS, ALL SPECIFICATIONS AND AUSTRALIAN STANDARDS. <u>CONFLICTS BETWEEN SAID DOCUMENTS SHALL BE REFERRED TO THE SUPERINTENDENT FOR DIRECTION.</u>
2. THE CONTRACTOR IS TO DESIGN, OBTAIN APPROVALS AND CARRY OUT REQUIRED TEMPORARY TRAFFIC CONTROL PROCEDURES DURING CONSTRUCTION IN ACCORDANCE WITH ALL REGULATORY AUTHORITIES, INCLUSIVE OF LOCAL COUNCIL REGULATIONS AND REQUIREMENTS.
3. THE CONTRACTOR IS TO OBTAIN ALL AUTHORITY APPROVALS AS REQUIRED <u>PRIOR TO COMMENCEMENT OF WORKS.</u>
4. RESTORE ALL PAVED, COVERED, GRASSED AND LANDSCAPED AREAS TO THEIR ORIGINAL CONDITION OR AS DIRECTED BY THE SITE SUPERINTENDENT ON COMPLETION OF WORKS. WHERE PLANTING OF NEW GRASS IS NECESSARY REFER TO LANDSCAPE ARCHITECT AND / OR ARCHITECT DOCUMENTATION.
5. ON COMPLETION OF ANY TRENCHING WORKS, ALL DISTURBED AREAS SHALL BE RESTORED TO THEIR ORIGINAL CONDITION OR AS DIRECTED BY THE SITE SUPERINTENDENT, INCLUDING KERBS, FOOTPATHS, CONCRETE AREAS, GRAVEL, GRASSED AREAS AND ROAD PAVEMENTS.
6. THE CONTRACTOR SHALL ARRANGE ALL SURVEY SETOUT TO BE CARRIED OUT BY A REGISTERED SURVEYOR <u>PRIOR TO COMMENCEMENT OF WORKS.</u>
7. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND EXISTING LEVELS ONSITE PRIOR TO LODGMET OF TENDER AND ONSITE WORKS. THE PRICE AS TENDERED SHALL BE INCLUSIVE OF ALL WORKS SHOWN ON THE TENDER PROJECT DRAWINGS. ADDITIONAL PAYMENTS FOR WORKS SHOWN ON THE TENDER PROJECT DRAWINGS WILL NOT BE APPROVED.
8. DO NOT OBTAIN DIMENSIONS BY SCALING DRAWINGS.
9. IN CASE OF DOUBT OR DISCREPANCY REFER TO SUPERINTENDENT FOR CLARIFICATION OR CONFIRMATION PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.
10. WHERE NEW WORKS ABOUT EXISTING THE CONTRACTOR SHALL ENSURE THAT A SMOOTH EVEN PROFILE, FREE FROM ABRUPT CHANGES IS OBTAINED. MAKE SMOOTH TRANSITION TO EXISTING FEATURES AND MAKE GOOD WHERE JOINED.
11. TRENCHES THROUGH EXISTING ROAD AND CONCRETE PAVEMENTS SHALL BE SAWCUT TO FULL DEPTH OF CONCRETE AND A MIN 50mm IN BITUMINOUS PAVING.
12. ALL CIVIL ENGINEERING DESIGN HAS BEEN DOCUMENTED UNDER THE ASSUMPTION THAT ALL NECESSARY SITE CONTAMINATION REMEDIATION WORKS HAVE BEEN SATISFACTORILY COMPLETED (IF APPLICABLE) AND THAT THE SITE IS NOT AFFECTED BY ANY SOIL STRATA OR GROUNDWATER TABLE CONTAMINATION.



STORMWATER DRAINAGE
1. ALL PIPES SHALL BE CLASS 4 RUBBER-RING JOINTED RCP U.N.O. WHERE uPVC PIPES HAVE BEEN SPECIFIED, THE FOLLOWING CLASS PIPEWORK IS TO BE ADOPTED U.N.O. ø100mm OR LESS TO BE CLASS 'SN10' AND ABOVE ø100mm TO BE CLASS 'SN8'.
2. FRC PIPES EQUAL TO THAT OF THE STEEL REINFORCED CONCRETE PIPE CLASS SPECIFIED ON THE DRAWINGS MAY BE USED SUBJECT TO APPROVAL FROM THE SUPERINTENDENT.
3. ALL PIPE ARE TO BE LAID AT 1.0% MIN GRADE U.N.O.
4. <u>COVERS</u> 4.1. USE HOT DIPPED GALVANISED COVERS AND GRATES COMPLYING WITH RELEVANT COUNCIL AND AUSTRALIAN STANDARDS. 4.2. ALL COVERS AND GRATES TO BE POSITION IN A FRAME AND MANUFACTURED AS A UNIT. 4.3. ALL COVERS AND GRATES TO BE FITTING WITH POSITIVE COVER LIFTING KEYS 4.4. OBTAIN SUPERINTENDENTS APPROVAL FOR THE USE OF CAST IRON SOLID COVERS AND GRATES. CAST IRON SOLID COVERS (IF APPROVED) TO CONSIST OF CROSS-WEBBED, CELLULAR CONSTRUCTION WITH THE RIBS UPPERMOST TO ALLOW INFILLING WITH CONCRETE. INSTALL POSITIVE COVER LIFTING KEYS AND PLASTIC PLUGS. 4.5. UNLESS DETAILED OR SPECIFIED OTHERWISE, COVERS AND GRATES TO BE CLASS 'D' IN VEHICULAR PAVEMENTS AND CLASS 'B' ELSEWHERE. 4.6. ALL GRATED TRENCH DRAINS SHOULD BE 'CLASS D' CAST IRON WITHIN VEHICULAR PAVEMENTS AND CLASS 'B' HEEL SAFE WITHIN PEDESTRIAN PAVEMENTS.
5. ALL PIPE BENDS, JUNCTIONS, ETC ARE TO BE PROVIDED USING PURPOSE MADE FITTINGS OR STORMWATER PITS.
6. ALL CONNECTIONS TO EXISTING DRAINAGE STRUCTURES SHALL BE MADE IN A TRADESMAN-LIKE MANNER AND CEMENT RENDERED TO ENSURE A SMOOTH FINISH.
7. STORMWATER PIPEWORK TO FINISH FLUSH WITH INTERNAL PIT WALLS AND MUST NOT PROTRUDE. CONNECTION TO BE NEATLY RENDER AND MADE NEAT.
8. THE CONTRACTOR SHALL SUPPLY AND INSTALL ALL FITTINGS AND SPECIALS INCLUDING VARIOUS PIPE ADAPTORS TO ENSURE PROPER CONNECTION BETWEEN DISSIMILAR PIPEWORK.
9. U.N.O. MATERIAL USED FOR BEDDING OF PIPES SHALL BE APPROVED NON-COHESIVE GRANULAR MATERIAL HAVING HIGH PERMEABILITY AND HIGH STABILITY WHEN SATURATED AND FREE OF ORGANIC AND CLAY MATERIAL.
10. WHERE TRENCHES ARE IN ROCK, THE PIPE SHALL BE BEDDED ON A MIN 50mm CONCRETE BED (OR 75mm THICK BED OF 12mm BLUE METAL) UNDER THE BARREL OF THE PIPE. THE PIPE COLLAR AT NO POINT SHALL BEAR ON THE ROCK.
11. BEDDING SHALL BE U.N.O TYPE HS2 UNDER ROADS AND H2 UNDER GENERAL AREAS IN ACCORDANCE WITH CURRENT RELEVANT INDUSTRY STANDARDS AND GUIDELINES.
12. THE CONTRACTOR SHALL ENSURE AND PROTECT THE INTEGRITY OF ALL STORMWATER PIPES DURING CONSTRUCTION. ANY AND ALL DAMAGE TO THESE PIPES AS A RESULT OF THESE WORKS SHALL BE REPAIRED BY THE CONTRACTOR UNDER THE DIRECTION OF THE SUPERINTENDENT AND AT NO EXTRA COST.
13. NOTE THAT THE PIT COVER LEVEL NOMINATED IN GUTTERS ARE TO THE INVERT OF THE GUTTER WHICH ARE 40mm LOWER THAN THE PAVEMENT LEVEL AT LIP OF GUTTER. REFER KERB DETAILS FOR CONFIRMATION.
<u>SUBSOIL DRAINAGE</u> 14. ø100mm SUBSOIL DRAINAGE LINES WITH NON-WOVEN GEOTEXTILE FILTER SOCK SURROUND SHALL BE CONNECTED TO A STORMWATER DRAINAGE PIT (AT MIN 1% LONGITUDINAL GRADE) AND PROVIDED IN THE FOLLOWING LOCATIONS; 14.1. THE HIGH SIDE OF PROPOSED TRAFFICKED PAVEMENT AREAS. 14.2. ALL PLANTER AND TREE BEDS PROPOSED ADJACENT TO PAVEMENT AREAS. 14.3. BEHIND RETAINING WALLS (IN ACCORDANCE WITH RETAINING WALL DETAILS) 14.4. ALL OTHER AREAS SHOWN ON DRAWINGS. 14.5. <u>CONTRACTOR IS TO MAKE ALLOWANCE IN BOTH TENDER AND CONSTRUCTION COSTING TO ALLOW FOR SUBSURFACE DRAINAGE BEHIND ALL RETAINING WALLS / ABOVE LOCATIONS AND TO MAKE CONNECTION TO STORMWATER SYSTEM.</u>
15. WHERE SUBSOIL DRAINAGE PASSES BENEATH BUILDINGS / PAVED AREAS AND/OR PAVEMENTS. CONTRACTOR TO ENSURE ø100mm CLASS 'SN10' uPVC DRAINAGE LINE IS USED AND THAT PROPRIETARY FITTINGS ARE USED TO RECONNECT SUBSOIL DRAINAGE LINE.
16. THE CONTRACTOR SHALL INSTALL INSPECTION OPENINGS / CLEAROUTS TO ALL SUBSOIL DRAINAGE LINES AND DOWNPIPE LINES AS SPECIFIED ON DRAWINGS AND IN ACCORDANCE WITH COUNCIL SPECIFICATIONS AT MAXIMUM 30m CENTRE AND AT ALL UPSTREAM ENDPOINTS.
17. PROVIDE 3.0m LENGTH OF ø100 SUBSOIL DRAINAGE LINE WRAPPED IN NON-WOVEN GEOTEXTILE FILTER FABRIC TO THE UPSTREAM SIDE OF STORMWATER PITS, LAID IN STORMWATER PIPE TRENCHES AND CONNECTED TO DRAINAGE PIT.
18. THE USE OF PRE-CAST STORMWATER DRAINAGE PITS IS NOT ACCEPTED WITHOUT CONFIRMATION BETWEEN NORTHROP ENGINEERS AND THE CONTRACTOR REGARDING QUALITY CONTROL AND CERTIFICATION OF FINISHES.

PAVEMENTS
1. ALL PAVEMENT MATERIALS SHALL COMPLY WITH CURRENT RMS SPECIFICATIONS. PROVIDE MECHANICAL ANALYSIS FOR EACH BATCH OF PAVEMENT MATERIAL TO ENSURE CONFORMITY.
2. <u>COMPACTION STANDARDS</u> BASE            98% MODIFIED MAXIMUM DRY DENSITY SUBBASE      98% MODIFIED MAXIMUM DRY DENSITY SUBGRADE    98% STANDARD MAXIMUM DRY DENSITY
3. <u>THE CONTRACTOR SHALL CONFIRM THE DESIGN CBR WITH A MINIMUM OF 3 TESTS TAKEN AT SUBGRADE LEVEL. WHERE DISCREPANCY IS FOUND, CONTACT THE DESIGN ENGINEER.</u>
4. ALLOW FOR COMPACTION TESTING BY A N.A.T.A. REGISTERED LABORATORY FOR BASE LAYER, SUBBASE LAYER AND SUBGRADE LAYER IN ACCORDANCE WITH THE LATEST VERSION OF AS3798 FOR PAVEMENTS (MINIMUM 2 TESTS PER LAYER). ALLOW FOR AT LEAST TWO SUCCESSFUL COMPACTION TESTS IN EACH LAYER.
5. MATCH NEW PAVEMENTS NEATLY AND FLUSH WITH EXISTING
6. AFTER BASE IS APPROVED, SWEEP CLEAN AND PRIME AT NOMINAL RATE OF 1.0L PER 1.0 sq.m.
7. <u>PAVEMENT HOLD POINTS</u> 7.1. SUB-GRADE PROOF ROLL PRIOR TO SET-UP AND FORM FOR CONCRETE POUR. 7.2. INSPECTION OF FORMWORK / STEEL PRIOR TO CONCRETE POUR. 7.3. SUBMISSION OF SUB-GRADE AND BASE DENSITY TESTS.

ASPHALTIC CONCRETE
1. <u>GENERAL</u> 1.1. ALL ASPHALTIC CONCRETE (AC) WORK TO BE PREPARED AND CARRIED OUT IN ACCORDANCE WITH GOOD ASPHALTIC PAVING PRACTICE AS DESCRIBED IN AS2150-2005 'ASPHALT (HOT-MIXED) PAVING - GUIDE TO GOOD PRACTICE" AND CURRENT RMS SPECIFICATIONS.
2. <u>PAVEMENT PREPARATION</u> 2.1. THE FINISHED PAVEMENT SURFACE TO BE SEALED SHALL BE WITHIN +/- 2% OF THE OPTIMUM AND BROOMED BEFORE COMMENCEMENT OF WORK TO ENSURE COMPLETE REMOVAL OF ALL SUPERFICIAL FOREIGN MATTER. 2.2. PRIME ALL SURFACES TO BE SEALED. ALLOW PRIME TO SETTLE FOR A MINIMUM OF 3 DAYS BEFORE APPLYING TACK COAT AND ASPHALT. 2.3. SWEEP PRIMED SURFACES BEFORE APPLYING TACK COAT. 2.4. ALL DEPRESSIONS OR UNEVEN AREAS ARE TO BE TACK-COATED AND BROUGHT UP TO GENERAL LEVEL OF PAVEMENT WITH ASPHALTIC CONCRETE BEFORE LAYING OF MAIN COURSE. 2.5. ALL DEFECTS IN THE BASE COURSE INCLUDING CRACKS, SURFACE DEFORMATION AND THE LIKE SHALL BE REPAIRED AS DIRECTED BY THE SUPERINTENDENT PRIOR TO PLACEMENT OF TACK COAT AND/OR AC COURSES.
3. <u>PLACEMENTS</u> 3.1. ALL ASPHALT SHALL BE PLACED UTILISING APPROVED MECHANICAL PAVING MACHINES. DO NOT HAND PLACE ASPHALT WITHOUT PRIOR APPROVAL FROM ENGINEER.
4. <u>JOINTS</u> 4.1. THE NUMBER OF JOINTS BOTH LONGITUDINAL AND TRANSVERSE SHALL BE KEPT TO A MINIMUM. 4.2. THE DENSITY AND SURFACE FINISH AT JOINTS SHALL BE SIMILAR TO THOSE OF THE REMAINDER OF THE LAYER.
5. <u>COMPACTION</u> 5.1. ALL COMPACTION SHALL BE UNDERTAKEN USING SELF PROPELLED ROLLERS. 5.2. INITIAL ROLLING SHALL BE COMPLETED BEFORE THE MIX TEMPERATURE FALLS BELOW 105°C USING A STEEL DRUM ROLLER HAVING A MINIMUM WEIGHT OF 8 TONNES AND A MAXIMUM UNIT LOAD ON THE REAR DRUM EQUIVALENT TO 55kN/m WIDTH OF DRUM. 5.3. SECONDARY ROLLING SHALL BE COMPLETED BEFORE THE MIX TEMPERATURE FALLS BELOW 80°C USING A PNEUMATIC TYRED ROLLER OF AT LEAST 10 TONNES MASS. A MINIMUM TYRE PRESSURE OF 550kPa AND A MINIMUM TOTAL LOAD OF 1 TONNE ON EACH TYRE. 5.4. <u>ROLLED SURFACES SHALL BE SMOOTH AND FREE OF UNDULATIONS, BONY AND/OR UNEVEN SURFACES WILL BE REJECTED.</u> 5.5. PROVIDE 2 No. MINIMUM COMPACTION TESTS.
6. <u>FINISHED SURFACE PROPERTIES</u> 6.1. FINISHED SURFACES SHALL BE SMOOTH, DENSE AND TRUE OF SHAPE AND SHALL NOT VARY MORE THAN; 6.1.1. 3mm FROM THE SPECIFIED PLAN LEVEL AT ANY POINT. 6.1.2. 3mm FROM THE BOTTOM OF A STRAIGHT EDGE LAID TRANSVERSELY. 6.1.3. 5mm FROM THE BOTTOM OF A STRAIGHT EDGE LAID LONGITUDINALLY. 6.1.4. MINUS 0 TO PLUS 2mm ADJACENT TO OTHER ELEMENTS SUCH AS KERBS AND THE LIKE TO AVOID POOLING OF SURFACE WATER. 6.1.5. MINUS 0 FROM THE SPECIFIED THICKNESS.
7. DO NOT STORE PLANT EQUIPMENT OR TRAFFIC NEWLY LAID ASPHALTIC CONCRETE PAVEMENTS WITHOUT PRIOR APPROVAL FROM THE ENGINEER.
8. DO NOT APPLY MARKING PAINTS UNTIL ASPHALT HAS CURED IN ACCORDANCE WITH PAINT MANUFACTURERS SPECIFICATIONS.

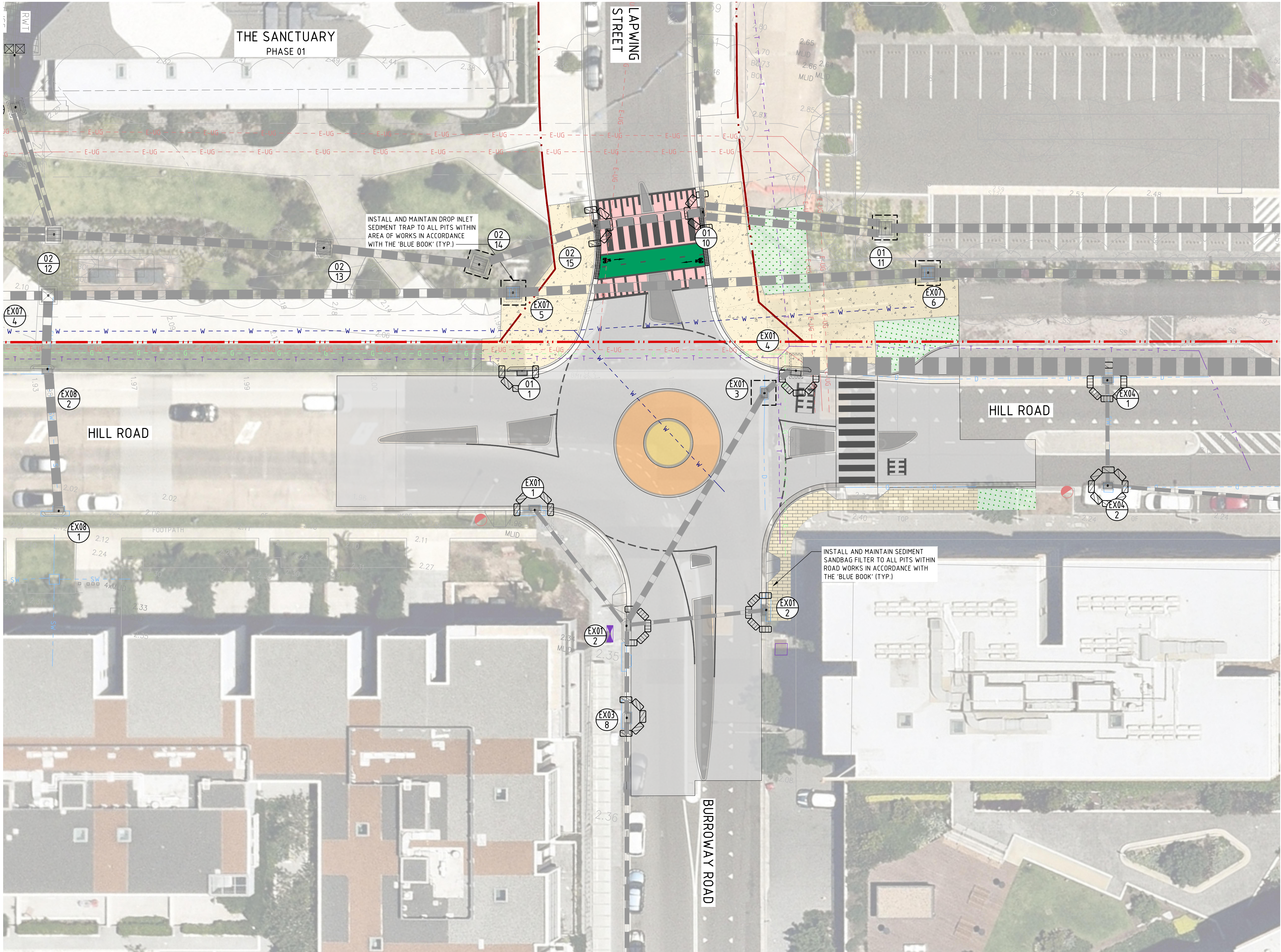
SIGNAGE AND LINEMARKING
1. ALL SIGNAGE TO BE INSTALLED IN ACCORDANCE WITH AUSTRALIAN STANDARDS 1742 / RMS STANDARDS AND SPECIFICATIONS.
2. LINE MARKING AND PAINT SHALL BE IN ACCORDANCE WITH AS1742.3 AND RMS STANDARDS.
3. PAINT SHALL BE TYPE 3 CLASS 'A' AND THE COLOUR SHALL BE WHITE AND NOT SUBJECT TO DISCOLOURATION BY BITUMEN FROM ROAD SURFACE. ALL PAINT TO BE APPLIED BY MECHANICAL SPRAYER.
4. LINE MARKING SHALL BE SPOTTED OUT AND APPROVED PRIOR TO SPRAYING.
5. PAINT SHALL BE APPLIED AT A WET THICKNESS OF BETWEEN 0.35mm AND 0.40mm.
6. CARPARK LINEMARKING TO BE 80mm WIDE.

PAVEMENT JOINTS
1. PROVIDE 10mm ABLEFLEX BETWEEN NEW CONCRETE WORKS AND EXISTING STRUCTURES.
2. LOCAL AUTHORITY REQUIREMENTS SHALL TAKE PRECEDENCE WITHIN THE PUBLIC ROAD RESERVE.
3. DOWELS TO BE PLACED ON PROPRIETARY CRADLES TO ENSURE CORRECT SPACING AND ALIGNMENT.
4. <u>PEDESTRIAN PAVEMENTS</u> ALL PEDESTRIAN PAVEMENTS ARE TO BE JOINTED AS FOLLOWS U.N.O. ON THE DESIGN DRAWINGS.
5. EXPANSION JOINTS ARE TO BE LOCATED WHERE POSSIBLE AT TANGENT POINTS OF CURVES AND ELSEWHERE AT MAX. 6.0m CENTRES.
6. WEAKENED PLANE JOINTS (SAWN OR TOOL JOINTS) ARE TO BE LOCATED AT A MAX. SPACING OF 1.5m x WIDTH OF THE PAVEMENT.
7. WHERE POSSIBLE JOINTS SHOULD BE LOCATED TO MATCH KERBING AND OR ADJACENT PAVEMENT JOINTS.
8. TYPICAL PEDESTRIAN PAVEMENT JOINT DETAIL 
9. <u>VEHICULAR PAVEMENTS</u> ALL VEHICULAR PAVEMENTS TO BE JOINTED AS FOLLOWS U.N.O. ON THE DESIGN DRAWINGS.
10. TIED KEYED CONSTRUCTION JOINTS SHOULD GENERALLY BE LOCATED LONGITUDINALLY AT A MAX. OF 6.0m CENTRES.
11. SAWN JOINTS SHOULD GENERALLY BE LOCATED Laterally AT A MAX. OF 6.0m CENTRES WITH DOWELED EXPANSION JOINTS AT MAX. 18.0m CENTRES.
12. TYPICAL VEHICULAR PAVEMENT JOINT DETAIL. 
13. KERB EXPANSION JOINTS SHALL BE FORMED FROM 10mm ABLEFLEX FOR FULL DEPTH OF SECTION.
14. KERB EXPANSION JOINTS TO BE LOCATED AT DRAINAGE PITS, TANGENT POINTS OF CURVES / CORNERS AND AT 12m MAX CENTRES.
15. KERB TOOLED JOINTS TO BE MIN 3mm WIDE AND LOCATED AT MAX 3m CENTRES.
16. INTEGRAL KERB JOINTS SHALL MATCH THE LOCATION OF PAVEMENT JOINTS.

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01	ISSUED FOR TRAFFIC COMMITTEE APPROVAL	AM		BL	26.10.20	 <b>SEKISUI HOUSE</b> DRAWING NOT TO BE USED FOR CONSTRUCTION UNLESS VERIFICATION SIGNATURE HAS BEEN ADDED	 <b>NORTHROP</b> Sydney Level 11 345 George Street, Sydney NSW 2000 Ph (02) 9241 4188 Fax (02) 9241 4324 Email sydney@northrop.com.au ABN 81 094 433 100	<b>14 - 16 HILL ROAD, SYDNEY OLYMPIC PARK</b>  <b>PROPOSED TRAFFIC FACILITIES</b>	<b>CIVIL ENGINEERING PACKAGE</b>  <b>SPECIFICATION NOTES</b>	<b>170973</b>	
02	ISSUED FOR CONTRACTOR REVIEW AND PRICING	AM		BL	05.11.20					DRAWING NUMBER	REVISION
03	ISSUED FOR APPROVAL	AM		BL	10.08.21					<b>C11.01</b>	<b>04</b>
04	RE-ISSUED FOR APPROVAL	AF		BL	25.01.23						
DRAWING SHEET SIZE = A1											



DRAWN: A.MARGARIS    DESIGNED: B.LAWRENCE    JOB MANAGER: B.LAWRENCE    VERIFIER:



LEGEND

BOUNDARY LINE

PHASE 01 INTERNAL BOUNDARY

EXISTING CONTOURS

SANDBAG SEDIMENT FILTER

DROP INLET SEDIMENT TRAP

SERVICES LEGEND

EXISTING WATER SERVICE

EXISTING ELECTRICAL SERVICE

EXISTING GAS SERVICE

EXISTING TELSTRA SERVICE

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SCALE 1:200@A1

0 2 4 6 8 10m

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PROJECT

14 - 16 HILL ROAD,  
SYDNEY OLYMPIC PARK

PROPOSED TRAFFIC FACILITIES

DRAWING TITLE

CIVIL ENGINEERING PACKAGE

CONCEPT SEDIMENT AND EROSION  
CONTROL PLAN - ROUNDABOUT

JOB NUMBER

170973

DRAWING NUMBER

C12.01

REVISION

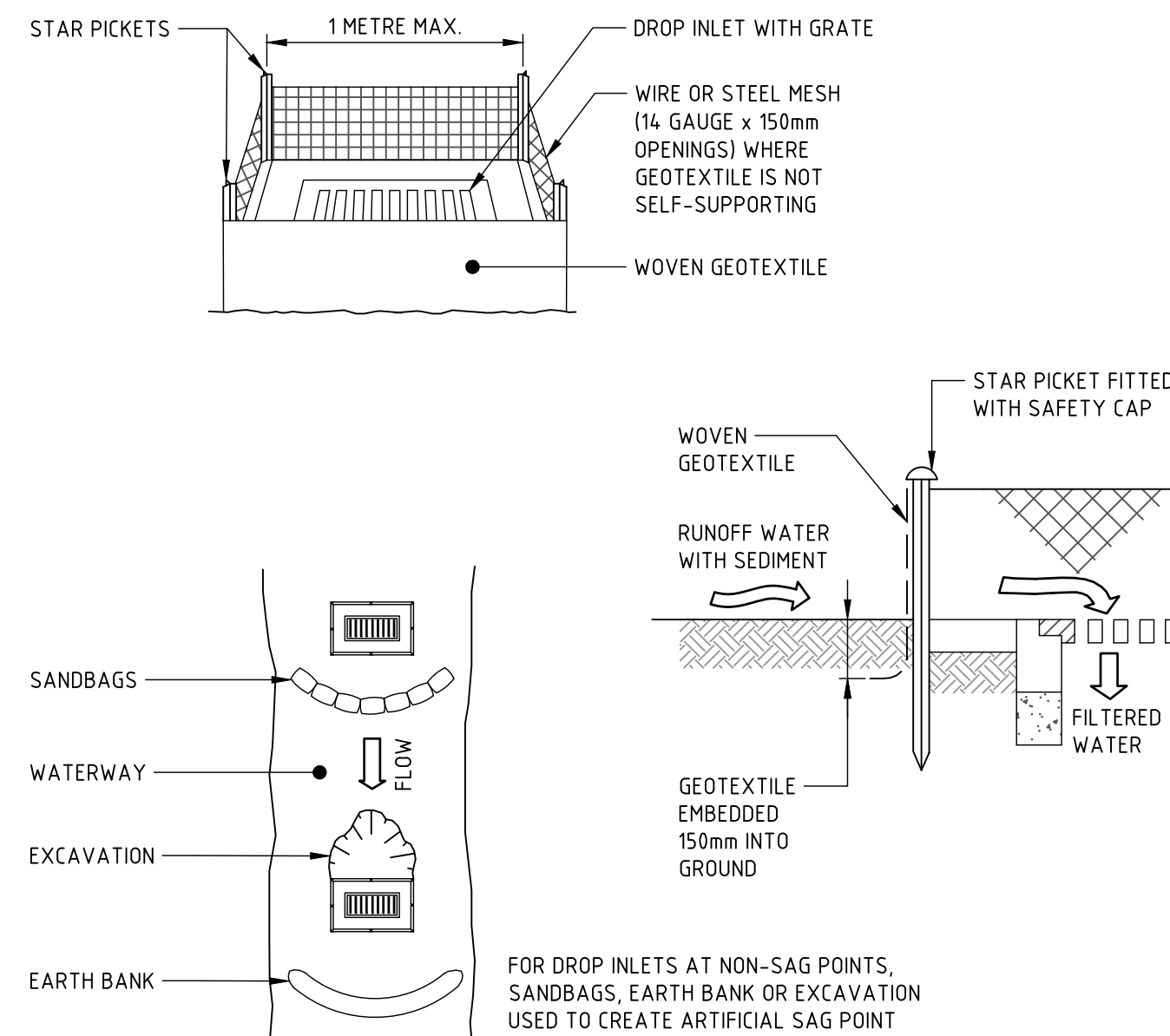
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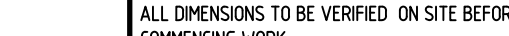





### CONSTRUCTION NOTES

1. FABRICATE A SEDIMENT BARRIER MADE FROM GEOTEXTILE OR STRAW BALES.
2. FOLLOW STANDARD DRAWING 6-7 AND STANDARD DRAWING 6-8 FOR INSTALLATION PROCEDURES FOR THE STRAW BALES OR GEOBAGS. REDUCE THE PICKET SPACING TO 1 METRE CENTRES.
3. IN WATERWAYS, ARTIFICIAL SAG POINTS CAN BE CREATED WITH SANDBAGS OR EARTH BANKS AS SHOWN IN THE DRAWING.
4. DO NOT COVER THE INLET WITH GEOTEXTILE UNLESS THE DESIGN IS ADEQUATE TO ALLOW FOR ALL WATERS TO BYPASS IT.

## GEOTEXTILE INLET FILTER TRAPS

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01	ISSUED FOR TRAFFIC COMMITTEE APPROVAL	AM		BL	26.10.20	 <b>SEKISUI HOUSE</b>				 <b>Sydney</b> Level 11 345 George Street, Sydney NSW 2000 Ph (02) 9241 4188 Fax (02) 9241 4324 Email sydney@northrop.com.au ABN 81 094 433 100	<b>14 - 16 HILL ROAD, SYDNEY OLYMPIC PARK</b>  <b>PROPOSED TRAFFIC FACILITIES</b>	<b>CIVIL ENGINEERING PACKAGE</b>  <b>SEDIMENT AND EROSION CONTROL DETAILS</b>	<b>170973</b>					
02	ISSUED FOR CONTRACTOR REVIEW AND PRICING	AM		BL	05.11.20									DRAWING NOT TO BE USED FOR CONSTRUCTION UNLESS VERIFICATION SIGNATURE HAS BEEN ADDED	THE COPYRIGHT OF THIS DRAWING REMAINS WITH NORTHROP CONSULTING ENGINEERS PTY LTD	DRAWING NUMBER <b>C12.21</b>	REVISION <b>04</b>	
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04	RE-ISSUED FOR APPROVAL	AF		BL	25.01.23													



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PROJECT  
**14 - 16 HILL ROAD,  
SYDNEY OLYMPIC PARK**  
**PROPOSED TRAFFIC FACILITIES**

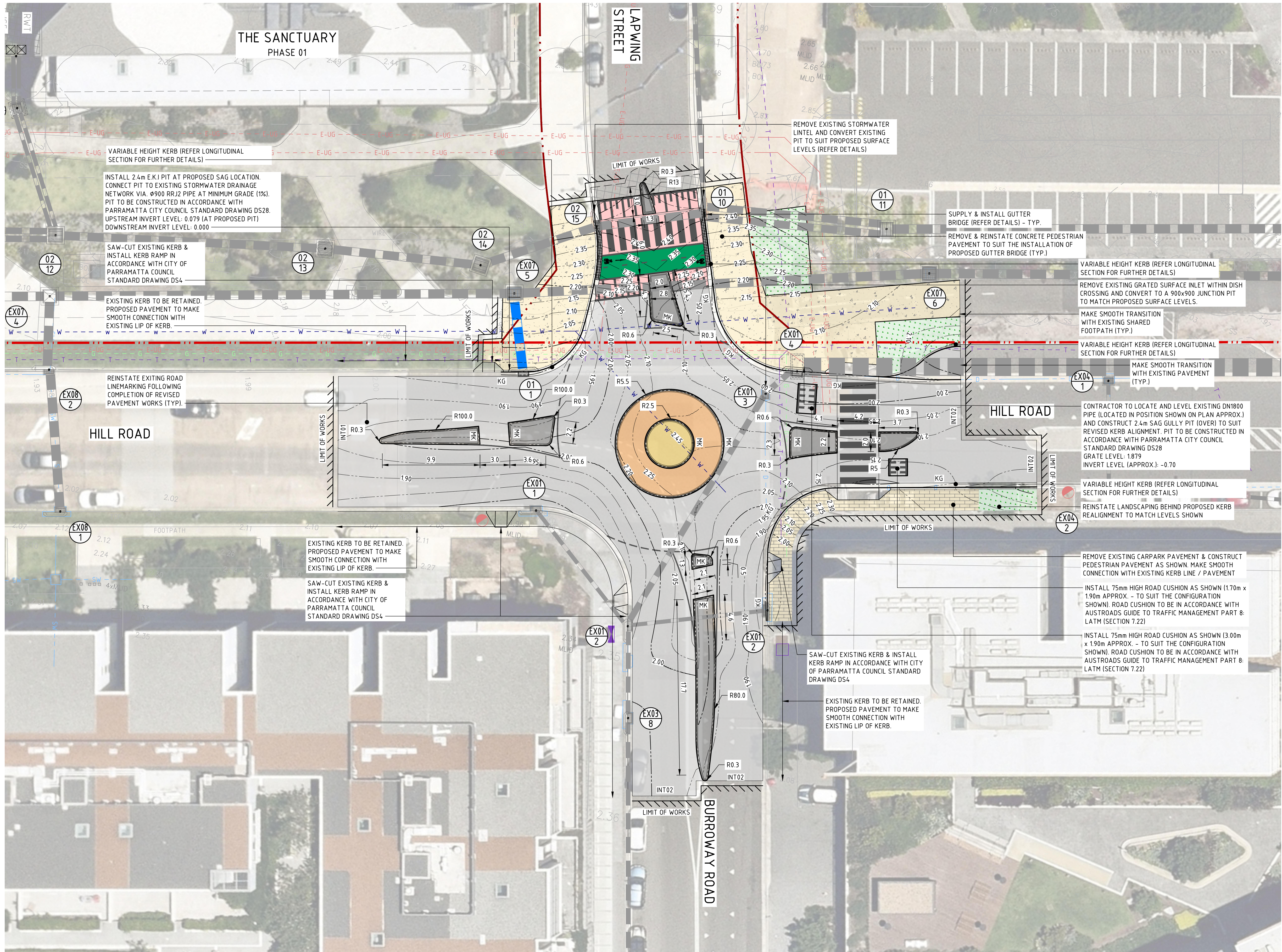
DRAWING TITLE  
**CIVIL ENGINEERING PACKAGE**  
**SITEWORKS PLAN - ROUNDABOUT**

JOB NUMBER  
**170973**

DRAWING NUMBER  
**C14.01**

REVISION  
**04**

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**LEGEND**

- BOUNDARY LINE
- PHASE 01 INTERNAL BOUNDARY
- PROPOSED KERB - REFER DETAILS (PCC - DS1)
- EXISTING KERB
- PROPOSED KERB RAMP - REFER DETAILS (PCC - DS4)
- U-RAIL
- GUTTER BRIDGE - REFER TO DETAILS
- PROPOSED CONTOURS
- EXISTING CONTOURS
- KG KERB AND GUTTER
- MK MOUNTABLE KERB
- DRAINAGE STRUCTURE WITH EXTENDED CHAMBER (NEW / EXTG)
- GRADED INLET PIT (NEW / EXTG)
- KERB INLET PIT (NEW / EXTG)
- JUNCTION PIT (NEW / EXTG)
- STORMWATER PIT TAG LINE ID / STRUCTURE No.

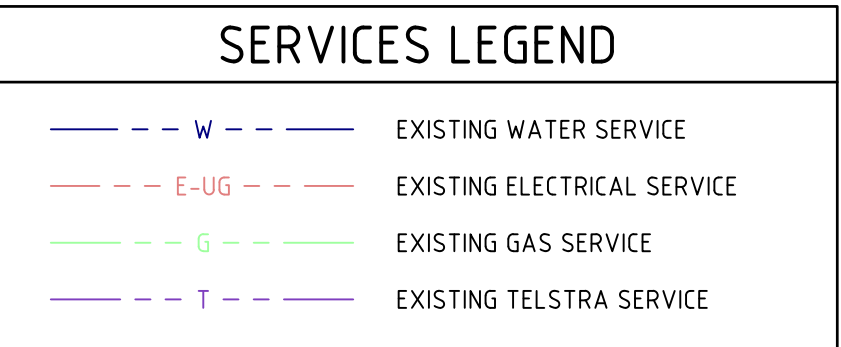
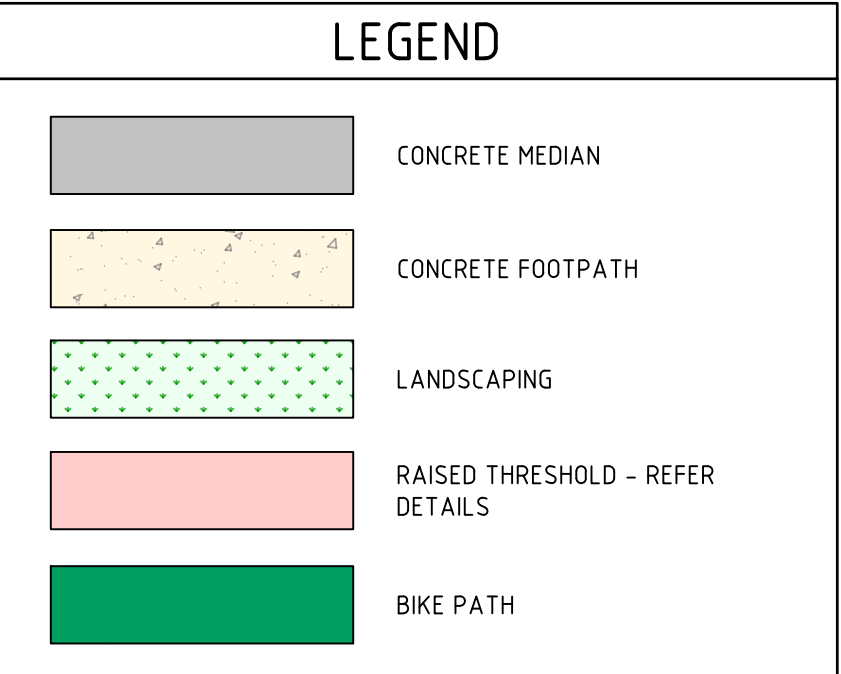
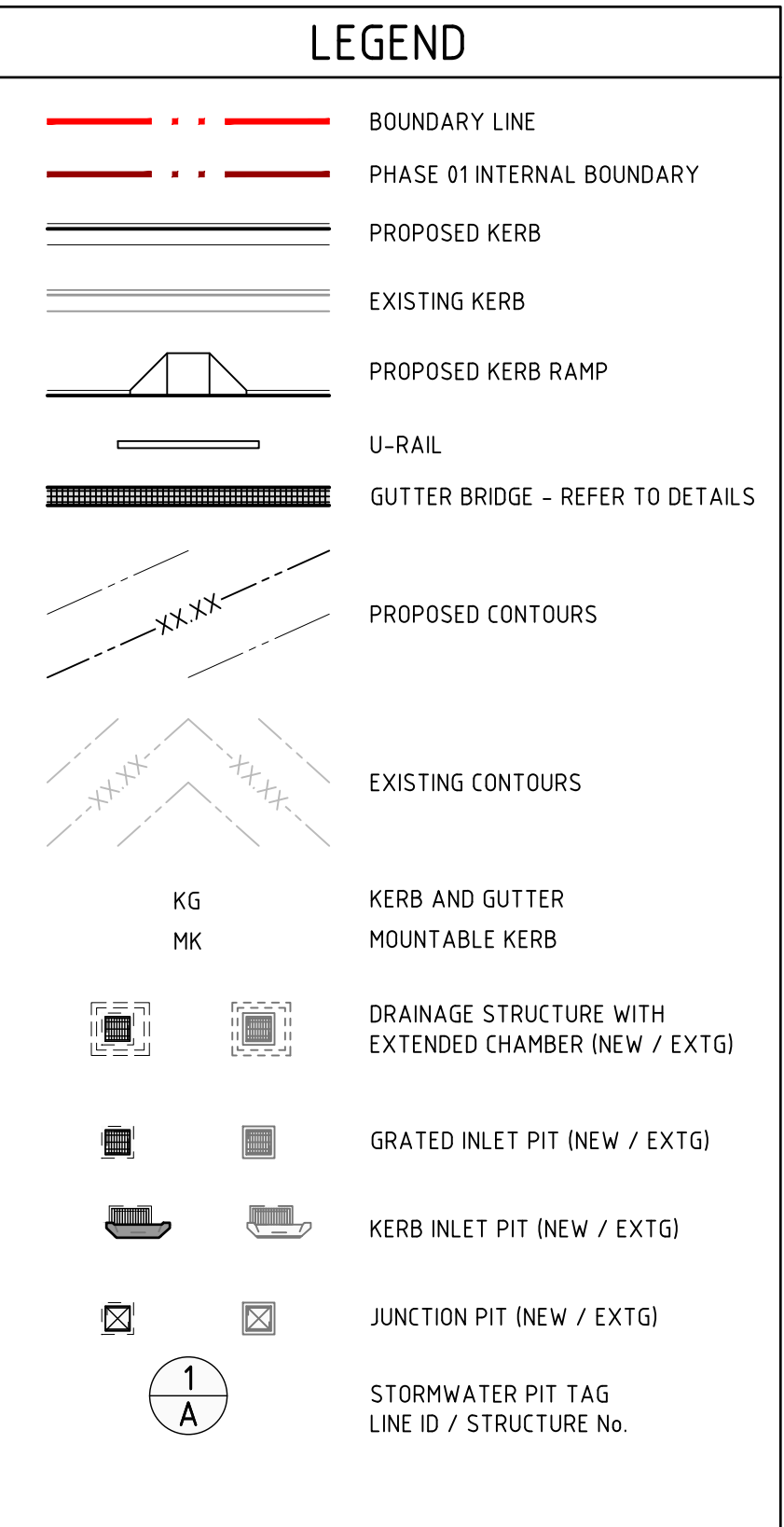
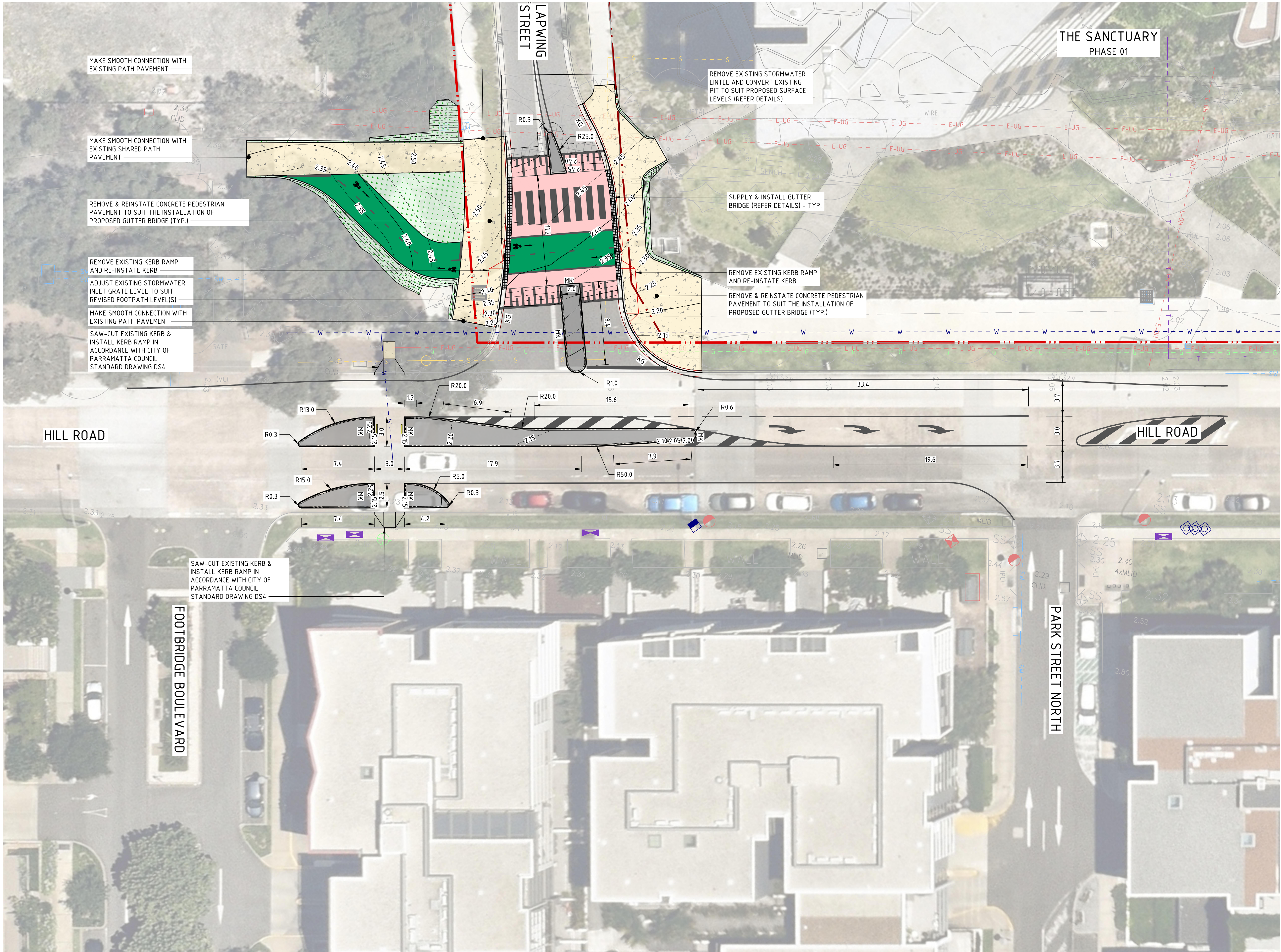
**LEGEND**

- VEHICULAR PAVEMENT
- CONCRETE MEDIAN
- ROUNDABOUT APRON
- ROUNDABOUT ANNULUS
- CONCRETE FOOTPATH
- CONCRETE FOOTPATH OVERLaid WITH PAVERS (REFER LANDSCAPE ARCHITECT)
- LANDSCAPING
- RAISED THRESHOLD
- BIKE PATH

**SERVICES LEGEND**

- EXISTING WATER SERVICE
- EXISTING ELECTRICAL SERVICE
- EXISTING GAS SERVICE
- EXISTING TELSTRA SERVICE





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0 1 2 3 4 5m

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PROJECT

**14 - 16 HILL ROAD,  
SYDNEY OLYMPIC PARK**

**PROPOSED TRAFFIC FACILITIES**

DRAWING TITLE

**CIVIL ENGINEERING PACKAGE**

**SITEWORKS PLAN -  
PEDESTRIAN CROSSING**

JOB NUMBER

**170973**

DRAWING NUMBER

**C14.11**

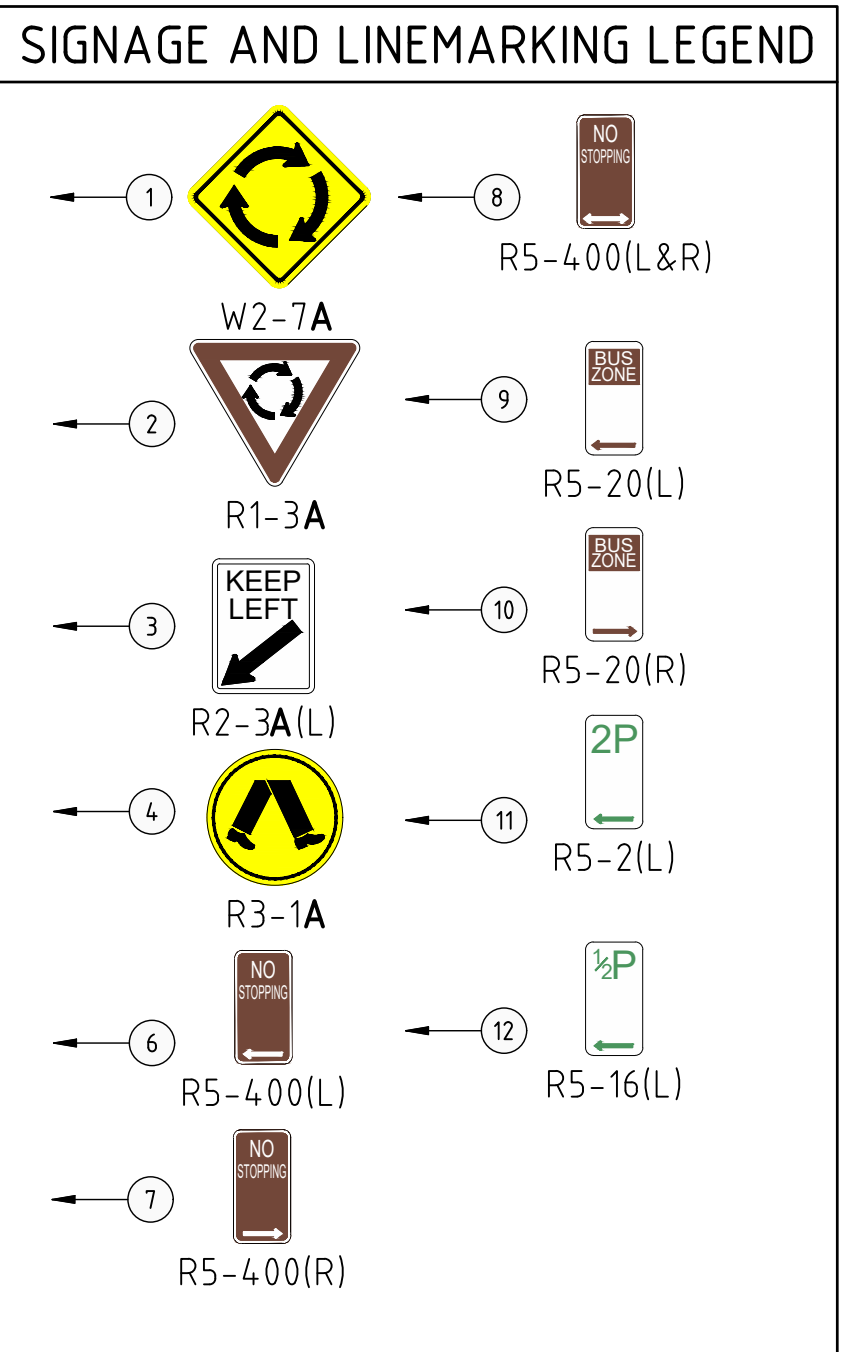
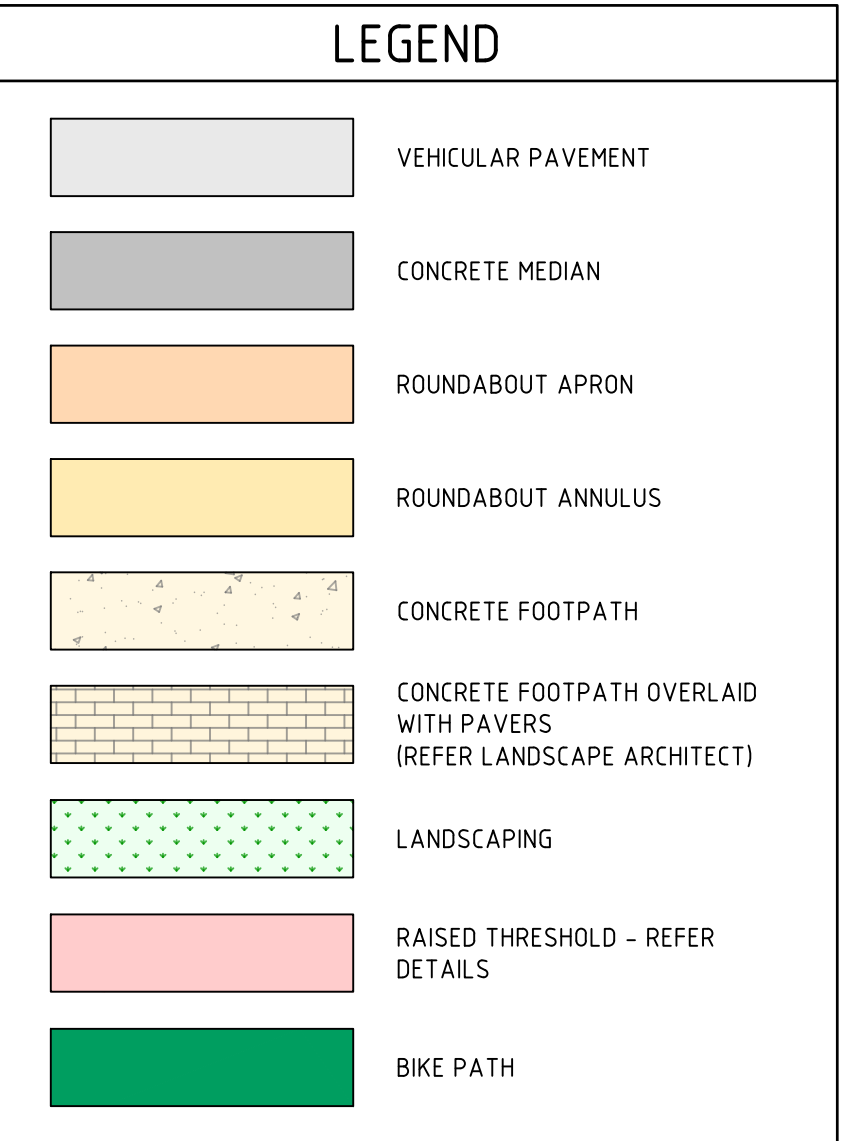
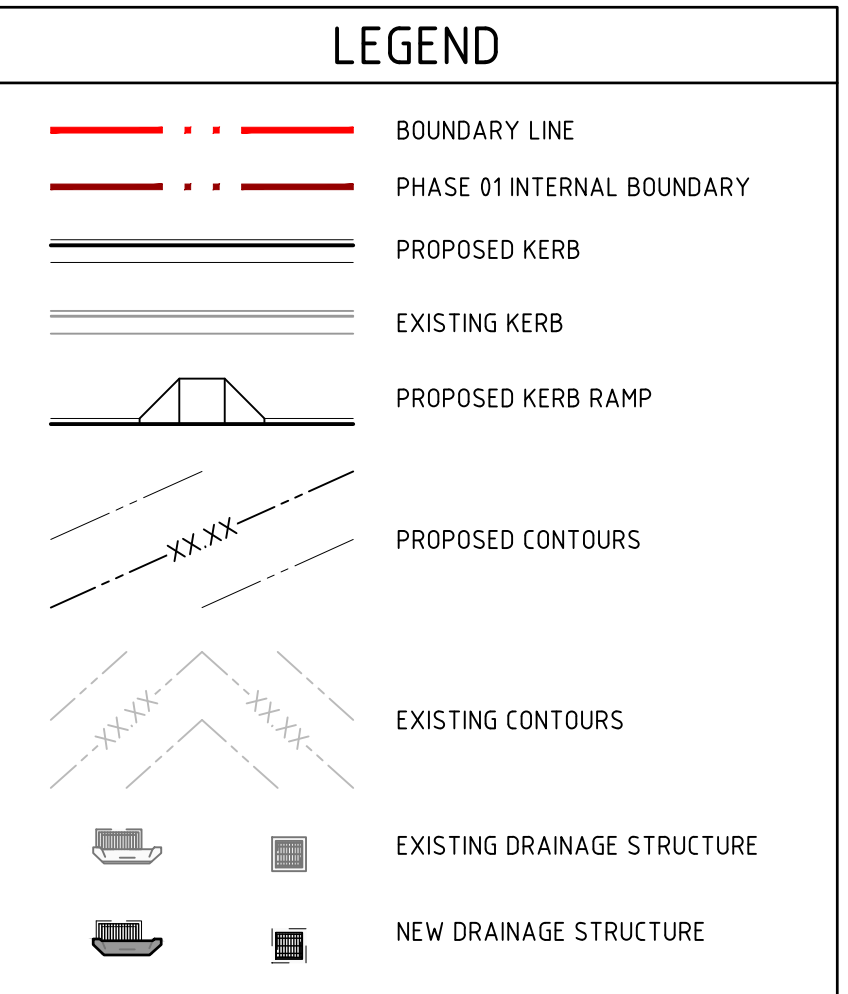
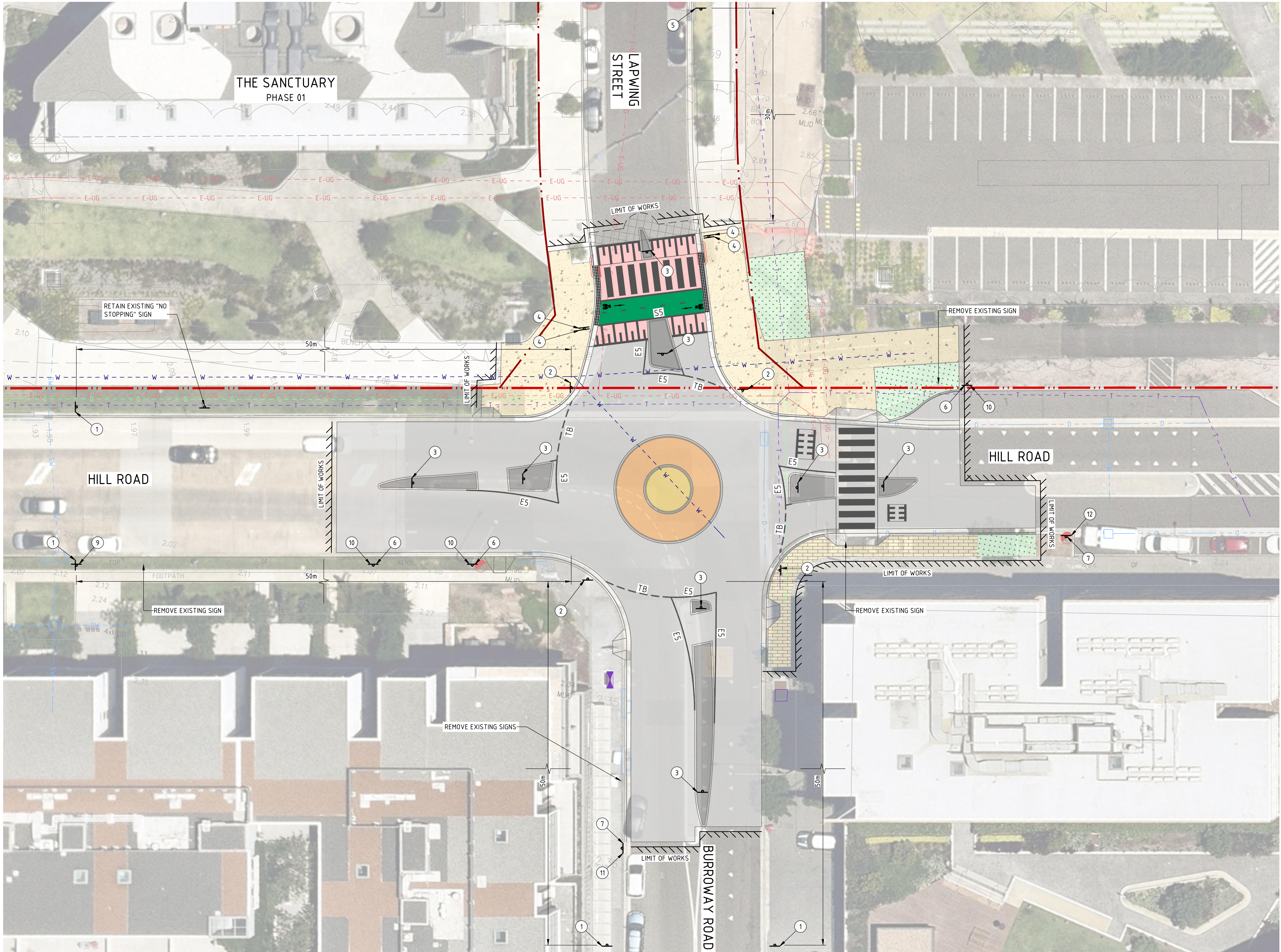
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DESIGNED: B.LAWRENCE  
JOB MANAGER: B.LAWRENCE  
VERIFIER:



REVISION	DESCRIPTION	ISSUED	VER'D	APP'D	DATE	CLIENT
01	ISSUED FOR TRAFFIC COMMITTEE APPROVAL	AM	BL	26.10.20		
02	ISSUED FOR CONTRACTOR REVIEW AND PRICING	AM	BL	05.11.20		
03	ISSUED FOR TRAFFIC COMMITTEE APPROVAL	ML	GC	08.01.21		
04	ISSUED FOR APPROVAL	AM	BL	10.08.21		
05	RE-ISSUED FOR APPROVAL	AF	BL	25.01.23		

**SEKISUI HOUSE**

Drawn: A.MARGARIS  
Designed: B.LAWRENCE  
Job Manager: B.LAWRENCE  
Verifier:

**ARCHITECT**

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**PROJECT**

14 - 16 HILL ROAD,  
SYDNEY OLYMPIC PARK  
PROPOSED TRAFFIC FACILITIES

**DRAWING TITLE**

CIVIL ENGINEERING PACKAGE  
SIGNAGE AND LINEMARKING  
PLAN - ROUNDBOAT

**JOB NUMBER**

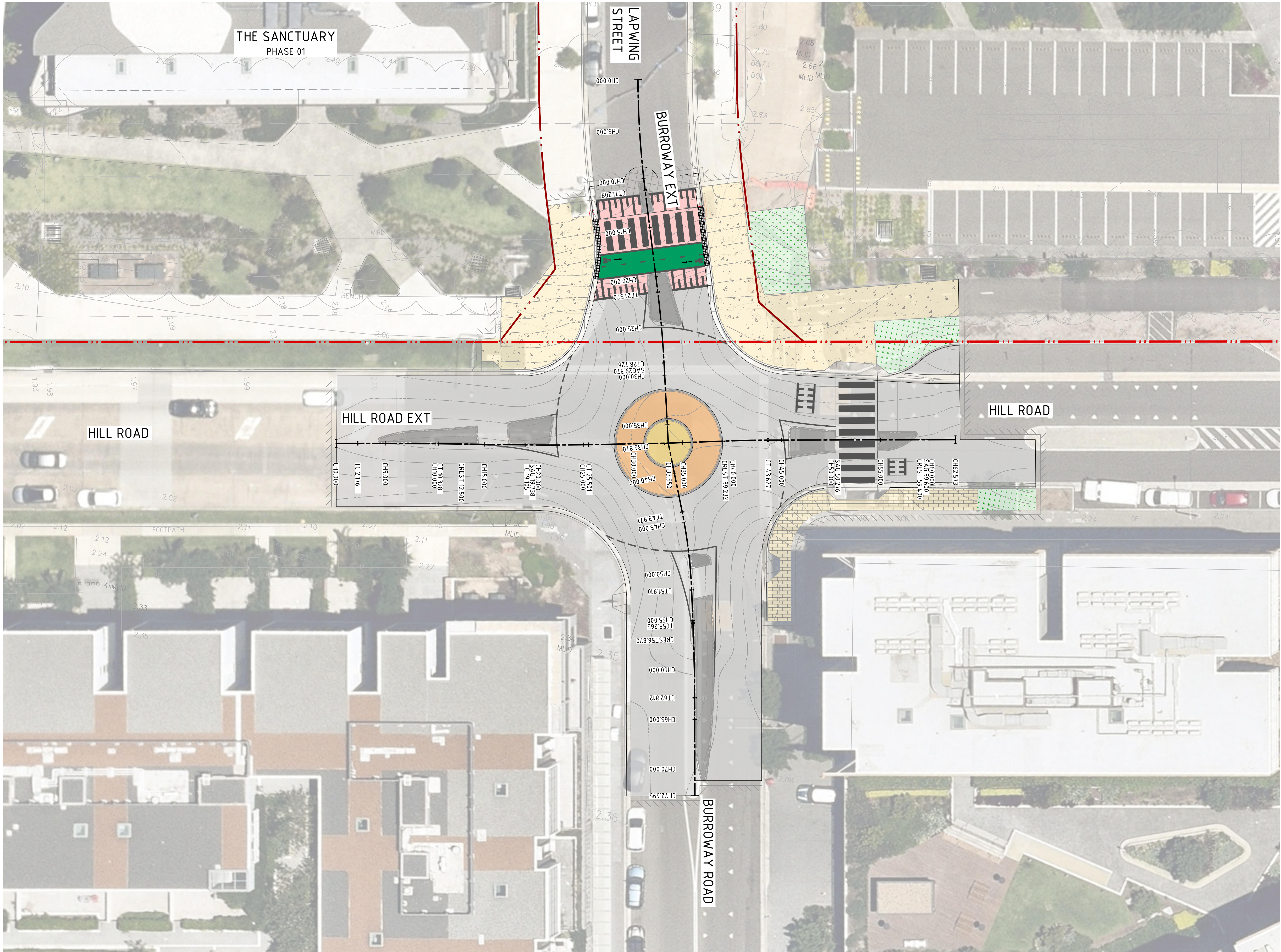
170973  
DRAWING NUMBER  
C14.21  
REVISION  
05  
DRAWING SHEET SIZE = A1







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LEGEND	
	BOUNDARY LINE
	PHASE 01 INTERNAL BOUNDARY
	CONTROL LINE
	CHAINAGE
	TANGENT POINT

REVISION	DESCRIPTION	ISSUED	VER'D	APP'D	DATE
01	ISSUED FOR TRAFFIC COMMITTEE APPROVAL	AM		BL	26.10.20
02	ISSUED FOR CONTRACTOR REVIEW AND PRICING	AM		BL	05.11.20
03	ISSUED FOR APPROVAL	AM		BL	10.08.21
04	RE-ISSUED FOR APPROVAL	AF		BL	25.01.23

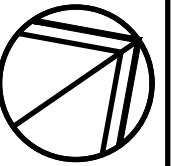


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PROJECT

**14 - 16 HILL ROAD,  
SYDNEY OLYMPIC PARK**

**PROPOSED TRAFFIC FACILITIES**

DRAWING TITLE

**CIVIL ENGINEERING PACKAGE**

**ROAD ALIGNMENT CONTROL  
PLAN - ROUNDABOUT**

JOB NUMBER

**170973**

DRAWING NUMBER

**C15.01**

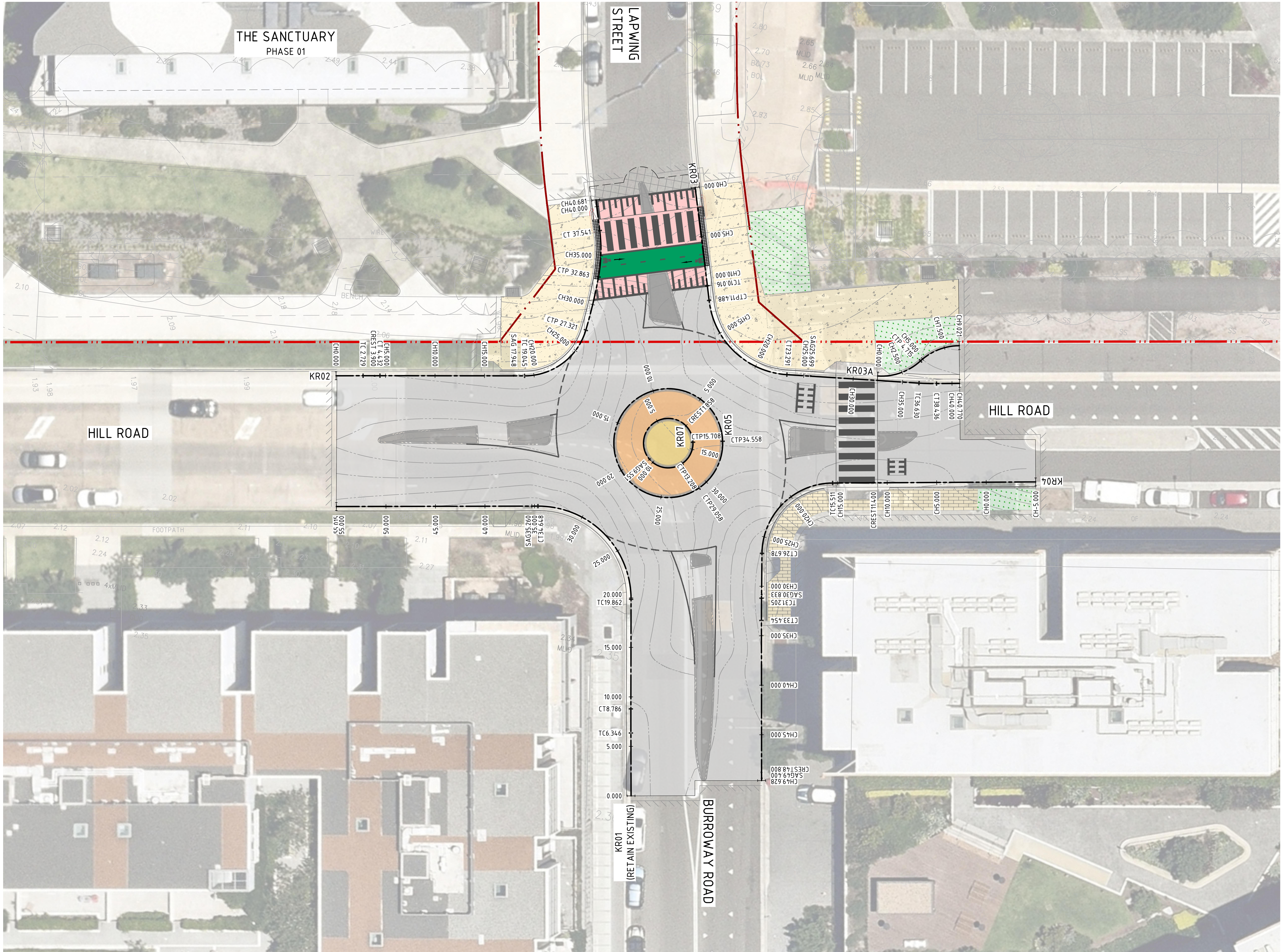
REVISION

**04**

DRAWING SHEET SIZE = A1



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LEGEND	
<span style="color: red;">---</span>	BOUNDARY LINE
<span style="color: red;">- . - . -</span>	PHASE 01 INTERNAL BOUNDARY
<span style="color: black;">---</span>	CONTROL LINE
CH0.000	CHAINAGE
TC0.000	TANGENT POINT

REVISION	DESCRIPTION	ISSUED	VER'D	APP'D	DATE
01	ISSUED FOR TRAFFIC COMMITTEE APPROVAL	AM		BL	26.10.20
02	ISSUED FOR CONTRACTOR REVIEW AND PRICING	AM		BL	05.11.20
03	ISSUED FOR APPROVAL	AM		BL	10.08.21
04	RE-ISSUED FOR APPROVAL	AF		BL	25.01.23

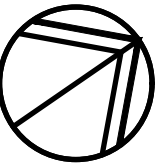


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PROJECT

**14 - 16 HILL ROAD,  
SYDNEY OLYMPIC PARK**

**PROPOSED TRAFFIC FACILITIES**

DRAWING TITLE

**CIVIL ENGINEERING PACKAGE**

**KERB RETURN ALIGNMENT  
CONTROL PLAN - ROUNDABOUT**

JOB NUMBER

**170973**

DRAWING NUMBER

**C15.11**

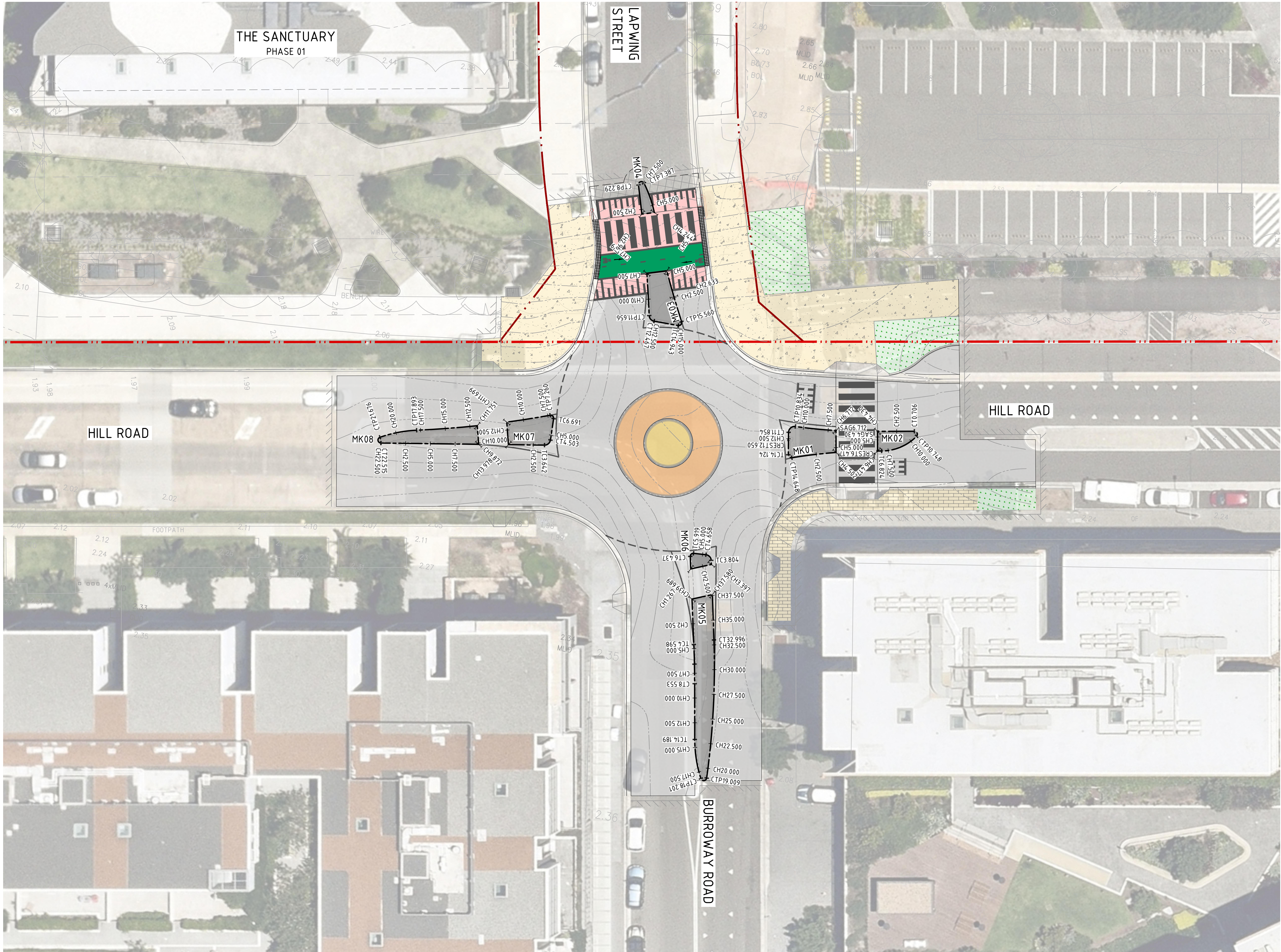
REVISION

**04**

DRAWING SHEET SIZE = A1



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LEGEND	
<span style="color: red;">---</span>	BOUNDARY LINE
<span style="color: red;">---</span>	PHASE 01 INTERNAL BOUNDARY
<span style="color: black;">---</span>	CONTROL LINE
<span style="color: black;">---</span> CH0.000	CHAINAGE
<span style="color: black;">---</span> TC0.000	TANGENT POINT

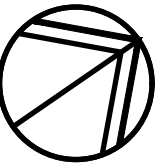
REVISION	DESCRIPTION	ISSUED	VER'D	APP'D	DATE
01	ISSUED FOR TRAFFIC COMMITTEE APPROVAL	AM		BL	26.10.20
02	ISSUED FOR CONTRACTOR REVIEW AND PRICING	AM		BL	05.11.20
03	ISSUED FOR APPROVAL	AM		BL	10.08.21
04	RE-ISSUED FOR APPROVAL	AF		BL	25.01.23



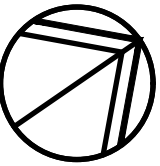
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PROJECT

**14 - 16 HILL ROAD,  
SYDNEY OLYMPIC PARK**

**PROPOSED TRAFFIC FACILITIES**

DRAWING TITLE

**CIVIL ENGINEERING PACKAGE**

**MEDIAN ALIGNMENT CONTROL  
PLAN - ROUNDABOUT**

JOB NUMBER

**170973**

DRAWING NUMBER

**C15.21**

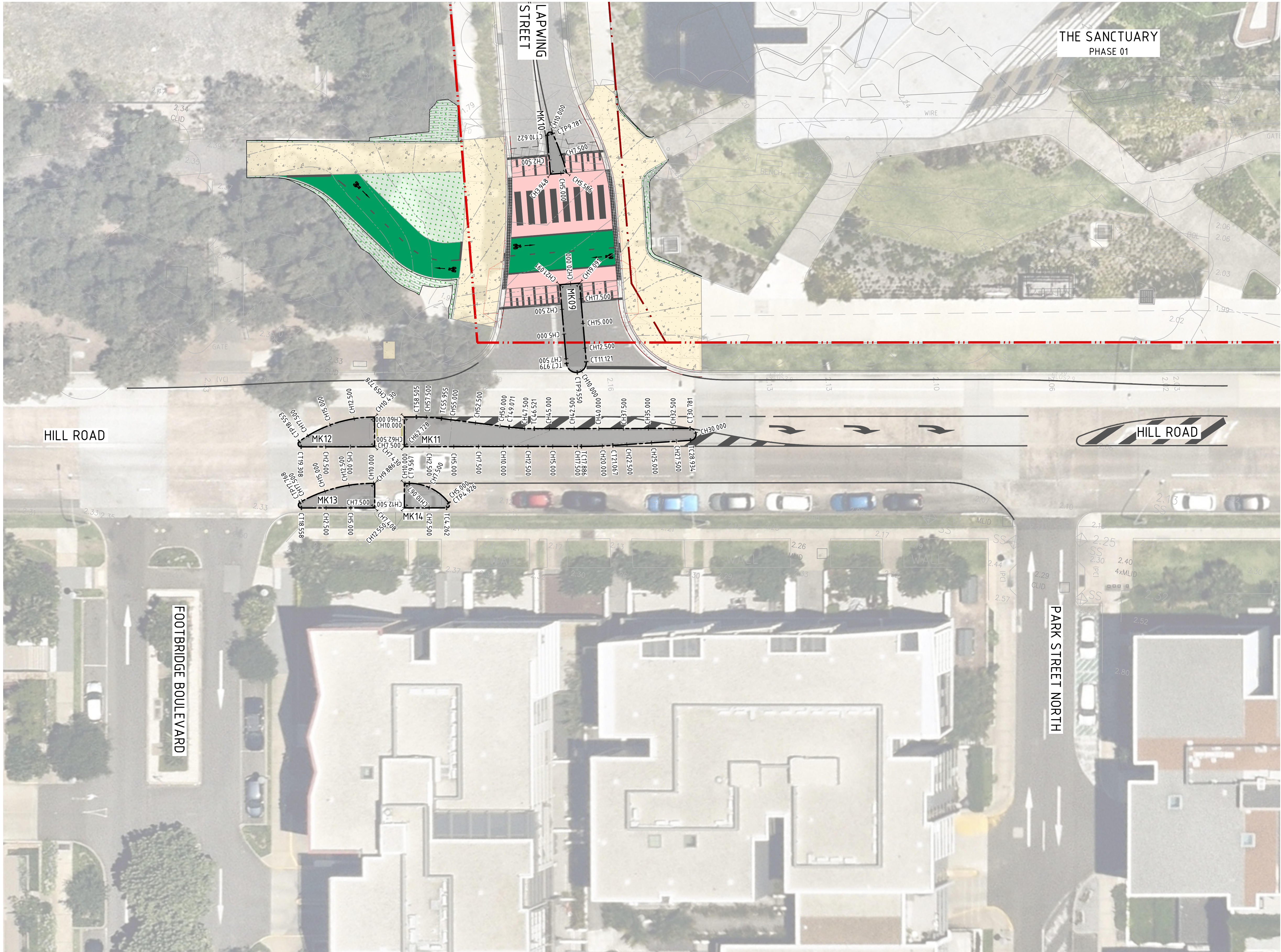
REVISION

**04**

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LEGEND	
<span style="color: red;">---</span>	BOUNDARY LINE
<span style="color: red;">---</span>	PHASE 01 INTERNAL BOUNDARY
---	CONTROL LINE
— CH0.000	CHAINAGE
● TC0.000	TANGENT POINT

REVISION	DESCRIPTION	ISSUED	VER'D	APP'D	DATE
01	ISSUED FOR TRAFFIC COMMITTEE APPROVAL	AM		BL	26.10.20
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04	RE-ISSUED FOR APPROVAL	AF		BL	25.01.23

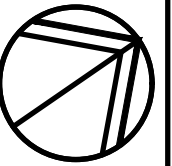


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0 2 4 6 8 10m



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PROJECT

**14 - 16 HILL ROAD,  
SYDNEY OLYMPIC PARK**

**PROPOSED TRAFFIC FACILITIES**

DRAWING TITLE

**CIVIL ENGINEERING PACKAGE**

**MEDIAN ALIGNMENT CONTROL  
PLAN - PEDESTRIAN CROSSING**

JOB NUMBER

**170973**

DRAWING NUMBER

**C15.31**

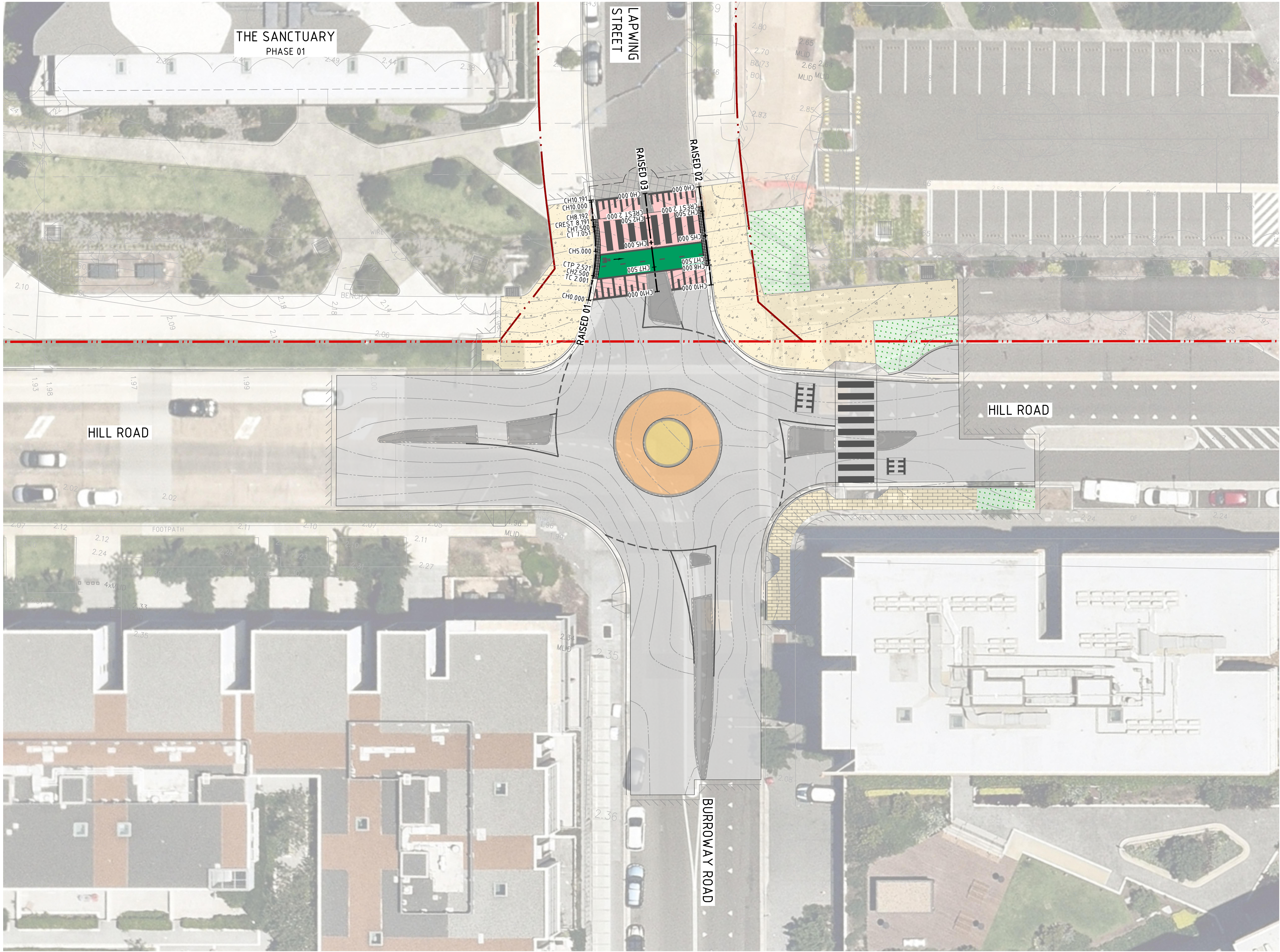
REVISION

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LEGEND	
	BOUNDARY LINE
	PHASE 01 INTERNAL BOUNDARY
	CONTROL LINE
	CHAINAGE
	TANGENT POINT

REVISION	DESCRIPTION	ISSUED	VER'D	APP'D	DATE
01	ISSUED FOR TRAFFIC COMMITTEE APPROVAL	AM		BL	26.10.20
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03	ISSUED FOR APPROVAL	AM		BL	10.08.21
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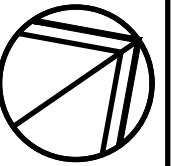


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PROJECT

14 - 16 HILL ROAD,  
SYDNEY OLYMPIC PARK

PROPOSED TRAFFIC FACILITIES

DRAWING TITLE

CIVIL ENGINEERING PACKAGE

RAISED THRESHOLD ALIGNMENT  
CONTROL PLAN - ROUNDABOUT

JOB NUMBER

170973

DRAWING NUMBER

C15.32

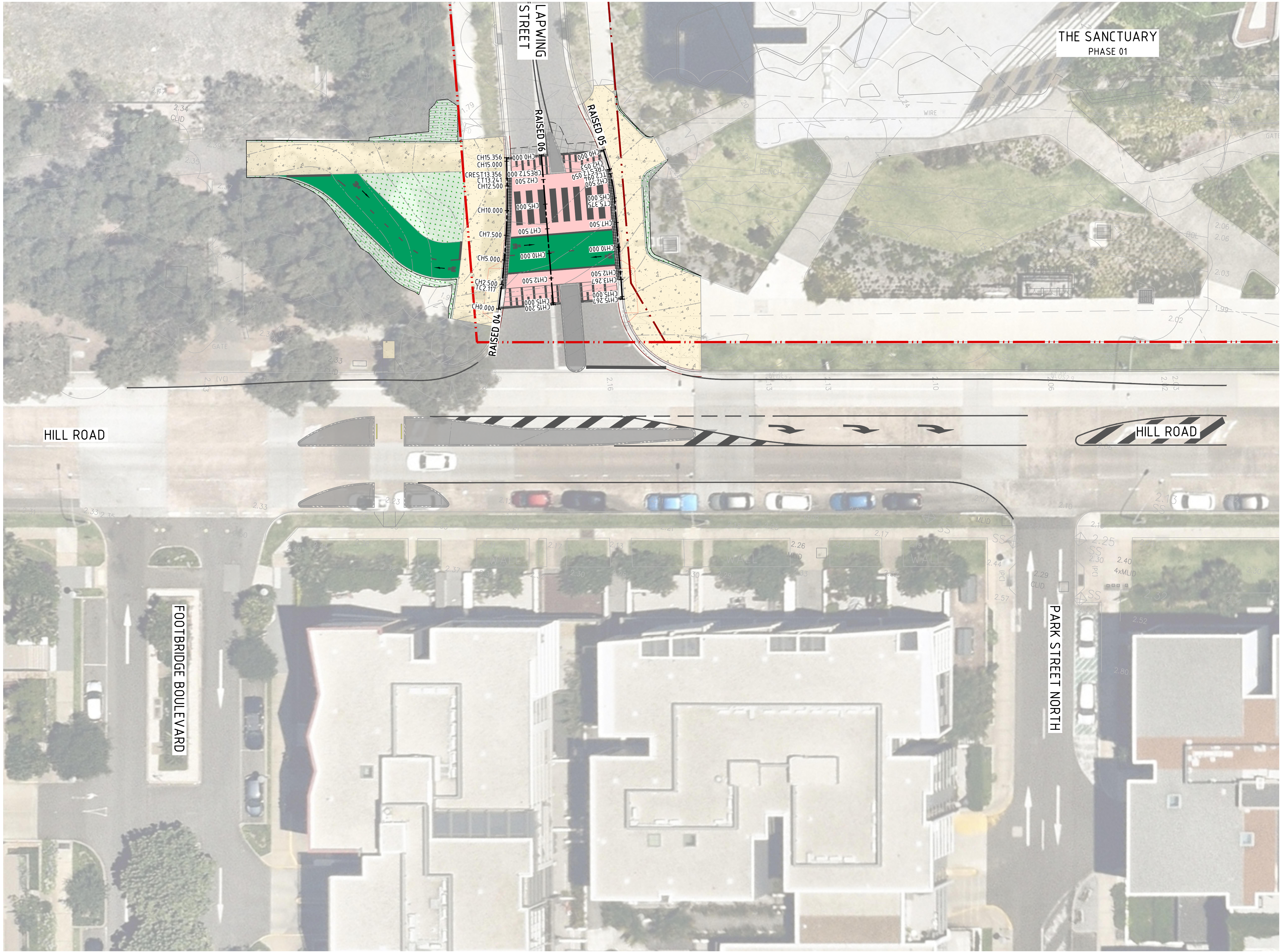
REVISION

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LEGEND	
	BOUNDARY LINE
	PHASE 01 INTERNAL BOUNDARY
	CONTROL LINE
	CHAINAGE
	TANGENT POINT

REVISION	DESCRIPTION	ISSUED	VER'D	APP'D	DATE
01	ISSUED FOR TRAFFIC COMMITTEE APPROVAL	AM		BL	26.10.20
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03	ISSUED FOR APPROVAL	AM		BL	10.08.21
04	RE-ISSUED FOR APPROVAL	AF		BL	25.01.23

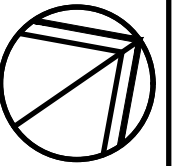


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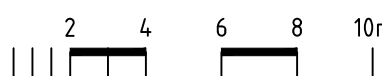
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PROJECT

**14 - 16 HILL ROAD,  
SYDNEY OLYMPIC PARK**

**PROPOSED TRAFFIC FACILITIES**

DRAWING TITLE

**CIVIL ENGINEERING PACKAGE**

**RAISED THRESHOLD  
ALIGNMENT CONTROL PLAN -  
PEDESTRIAN CROSSING**

JOB NUMBER

**170973**

DRAWING NUMBER

**C15.33**

REVISION

**04**

DRAWING SHEET SIZE = A1



DRAWN: A.MARGARIS      DESIGNED: B.LAWRENCE      JOB MANAGER: B.LAWRENCE      VERIFIER:

D MK->MK 01 HORIZONTAL POINTS (CLOSED)

PT	CHAINAGE	EASTING	NORTHING	HEIGHT	BEARING	RAD/SPIRAL	A.LENGTH	DEFL.ANGLE
IP 1	0.000	322101.587	6255764.293	1.992				
	5.000	322104.478	6255768.372	2.016	35°19'50.87"			
	10.000	322107.370	6255772.451	2.018	35°19'50.87"			
	15.000	322110.261	6255776.530	2.006	35°19'50.87"			
TC	16.525	322111.143	6255777.774	2.008	35°19'50.87"			
IP 2	16.956	322111.446	6255778.202	2.009		R = -0.600	0.861	82°15'15.52"
CT	17.386	322111.063	6255778.560	2.004	313°04'35.35"			
TC	19.574	322109.466	6255780.054	1.949	313°04'35.35"			
IP 3	19.859	322109.160	6255780.340	1.941		R = -0.300	0.569	108°45'40.25"
	20.000	322109.075	6255780.070	1.939	231°41'36.25"			
CC	20.143	322108.987	6255779.958	1.937	204°18'55.10"			
	25.000	322106.881	6255775.583	1.949	207°05'52.66"			
IP 4	28.738	322105.439	6255772.106	1.971		R = 100.000	17.190	9°50'57.00"
	30.000	322104.493	6255771.190	1.975	209°57'45.90"			
	35.000	322101.889	6255766.923	1.976	212°49'39.14"			
IP 5	37.333	322100.601	6255764.977	1.968				
IP 6	37.802	322100.267	6255764.485	1.969		R = -0.600	0.936	89°25'03.61"
CC	38.270	322100.755	6255764.147	1.976	124°44'54.14"			
IP 7	38.738	322101.243	6255763.808	1.986		R = -0.600	0.936	89°25'03.61"
CT	39.206	322101.587	6255764.293	1.992	35°19'50.52"			

D MK->MK 02 HORIZONTAL POINTS (CLOSED)



PT	CHAINAGE	EASTING	NORTHING	HEIGHT	BEARING	RAD/SPIRAL	A.LENGTH	DEFL.ANGLE
IP 1	0.000	322148.176	6255771.769	1.991				
IP 2	0.214	322148.324	6255771.984	1.990		R = -0.300	0.429	81°55'02.98"
CC	0.429	322148.132	6255772.160	1.989	312°37'02.68"			
	5.000	322144.682	6255775.158	2.006	309°21'23.97"			
IP 3	7.423	322142.973	6255776.908	2.018		R = -80.320	13.988	9°58'40.48"
	10.000	322140.720	6255778.206	2.027	305°47'23.79"			
CT	14.416	322137.068	6255780.689	2.029	302°38'22.19"			
	15.000	322136.577	6255781.004	2.028	302°38'22.19"			
	20.000	322132.366	6255783.701	2.027	302°38'22.19"			
TC	22.456	322130.298	6255785.025	2.036	302°38'22.19"			
IP 4	22.883	322129.862	6255785.305	2.043		R = -0.600	0.855	81°35'56.84"
CT	23.310	322129.522	6255784.914	2.057	221°02'25.35"			
IP 5	24.571	322128.695	6255783.964	2.099				
IP 6	24.830	322128.464	6255783.700	2.106		R = -0.300	0.518	98°57'20.31"
	25.000	322128.693	6255783.570	2.107	139°11'57.82"			
IP 7	25.089	322128.760	6255783.512	2.107				
	30.000	322132.913	6255780.891	2.108	122°15'40.33"			
	35.000	322137.142	6255778.222	2.105	122°15'40.33"			
IP 8	35.978	322137.968	6255777.700	2.101				
	40.000	322141.282	6255775.420	2.073	124°31'38.84"			
	45.000	322145.401	6255772.586	2.021	124°31'38.84"			
IP 9	47.149	322147.172	6255771.368	2.005				
IP 10	47.620	322147.666	6255771.028	2.000		R = -0.600	0.942	90°00'00.00"
CT	48.091	322148.006	6255771.522	1.995	34°32'05.66"			

D MK->MK 03 HORIZONTAL POINTS (CLOSED)

PT	CHAINAGE	EASTING	NORTHING	HEIGHT	BEARING	RAD/SPIRAL	A.LENGTH	DEFL.ANGLE
IP 1	0.000	322129.949	6255806.431	2.039				
	5.000	322126.633	6255802.688	2.053	221°32'40.51"			
IP 2	8.995	322123.984	6255799.698	2.073				
IP 3	9.499	322123.540	6255799.197	2.080		R = -0.600	1.008	96°14'30.72"
	10.000	322124.084	6255798.812	2.093	125°34'33.56"			
CT	10.003	322124.086	6255798.811	2.093	125°18'15.98"			
TC	12.273	322125.939	6255797.499	2.094	125°18'15.98"			
IP 4	12.544	322126.250	6255797.278	2.092		R = -0.300	0.542	103°33'36.53"
CC	12.816	322126.391	6255797.632	2.092	21°44'39.45"			
	15.000	322127.244	6255799.643	2.092	24°14'50.69"			
IP 5	17.340	322128.071	6255801.846	2.081		R = 50.000	9.048	10°22'05.20"
	20.000	322129.522	6255804.092	2.062	29°58'37.17"			
CC	21.863	322130.483	6255805.688	2.049	32°06'44.65"			
IP 6	22.285	322130.753	6255806.119	2.046		R = -0.600	0.844	80°34'04.13"
CC	22.707	322130.373	6255806.456	2.043	311°32'40.51"			
IP 7	22.943	322130.148	6255806.655	2.041		R = -0.300	0.471	90°00'06.18"
IP 8	23.178	322129.949	6255806.431	2.039				

D MK->MK 04 HORIZONTAL POINTS (CLOSED)

PT	CHAINAGE	EASTING	NORTHING	HEIGHT	BEARING	RAD/SPIRAL	A.LENGTH	DEFL.ANGLE
IP 1	0.000	322096.564	6255800.709	2.454				
IP 2	0.225	322096.307	6255800.818	2.461		R = -0.300	0.450	85°51'03.36"
CC	0.450	322096.179	6255800.571	2.468	207°20'04.69"			
IP 3	0.674	322096.051	6255800.323	2.462		R = -0.300	0.450	85°51'03.36"
CC	0.899	322096.289	6255800.177	2.455	121°29'01.33"			
	5.000	322099.782	6255798.028	2.333	121°43'07.21"			
IP 4	6.839	322101.355	6255797.075	2.278		R = 1000.000	11.880	0°40'50.33"
	10.000	322104.029	6255795.389	2.186	122°00'18.54"			
CC	12.779	322106.383	6255793.913	2.136	122°09'51.66"			
IP 5	13.184	322106.790	6255793.657	2.139		R = -0.600	0.810	77°23'01.98"
IP 6	13.589	322107.128	6255793.998	2.145				
	15.000	322108.122	6255795.000	2.142	44°46'57.04"			
IP 7	16.064	322108.872	6255795.755	2.113				
IP 8	16.373	322109.222	6255796.108	2.105		R = -0.300	0.617	117°47'44.04"
IP 9	16.681	322108.747	6255796.253	2.103				
	20.000	322105.586	6255797.267	2.157	288°34'24.88"			
IP 10	23.170	322102.535	6255798.151	2.251		R = 120.000	12.978	6°11'47.68"
	25.000	322100.881	6255798.958	2.310	290°57'39.24"			

REVISION	DESCRIPTION	ISSUED	VER'D	APP'D	DATE	CLIENT	ARCHITECT		ALL DIMENSIONS TO BE VERIFIED ON SITE BEFORE COMMENCING WORK. NORTHROP ACCEPTS NO RESPONSIBILITY FOR THE USABILITY, COMPLETENESS OR SCALE OF DRAWINGS TRANSFERRED ELECTRONICALLY. THIS DRAWING MAY HAVE BEEN PREPARED USING COLOUR, AND MAY BE INCOMPLETE IF COPIED TO BLACK & WHITE	 Sydney Level 11 345 George Street, Sydney NSW 2000 Ph (02) 9241 4188 Fax (02) 9241 4324 Email sydney@northrop.com.au ABN 81 094 433 100	PROJECT  14 - 16 HILL ROAD, SYDNEY OLYMPIC PARK  PROPOSED TRAFFIC FACILITIES	DRAWING TITLE  CIVIL ENGINEERING PACKAGE  ROUNDAABOUT SETOUT TABLES	JOB NUMBER  170973	
01	ISSUED FOR TRAFFIC COMMITTEE APPROVAL	AM		BL	26.10.20	 <b>SEKISUI HOUSE</b>  DRAWING NOT TO BE USED FOR CONSTRUCTION UNLESS VERIFICATION SIGNATURE HAS BEEN ADDED	THE COPYRIGHT OF THIS DRAWING REMAINS WITH NORTHROP CONSULTING ENGINEERS PTY LTD						DRAWING NUMBER	REVISION
02	ISSUED FOR CONTRACTOR REVIEW AND PRICING	AM		BL	05.11.20								C15.41	04
03	ISSUED FOR APPROVAL	AM		BL	10.08.21									
04	RE-ISSUED FOR APPROVAL	AF		BL	25.01.23									
													DRAWING SHEET SIZE = A1	

**VERIFIER:**

## AWRENC

## 8 MANAGING

## REFERENCE

**SIGNED:**

PARIS

## DRAWN:


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DRAWN: A.MARGARIS  
DESIGNED: B.LAWRENCE  
JOB MANAGER: B.LAWRENCE  
VERIFIER:

D MKR->MK01 HORIZONTAL POINTS (CLOSED)								
PT	CHAINAGE	EASTING	NORTHING	HEIGHT	BEARING	RAD/SPIRAL	A.LENGTH	DEFL.ANGLE
IP 1	0.000	322126.384	6255797.616	2.132				
IP 2	2.251	322127.341	6255799.654	2.135		R = 50.000	4.502	5°09'30.12"
	2.500	322127.503	6255799.851	2.135	28°01'45.58"			
IP 3	4.502	322128.479	6255801.598	2.132				
	5.000	322128.068	6255801.881	2.123	304°28'32.03"			
IP 4	6.712	322126.656	6255802.850	2.082				
	7.500	322126.167	6255802.233	2.084	218°49'52.07"			
IP 5	8.773	322125.388	6255801.223	2.087		R = 50.000	4.122	4°43'23.43"
	10.000	322124.551	6255800.325	2.090	221°41'45.31"			
CC	10.834	322123.991	6255799.707	2.092	222°39'06.66"			
IP 6	11.344	322123.529	6255799.205	2.104		R = -0.600	1.019	97°20'50.68"
CT	11.854	322124.086	6255798.811	2.122	125°18'15.98"			
	12.500	322124.613	6255798.437	2.141	125°18'15.98"			
TC	14.124	322125.939	6255797.499	2.133	125°18'15.98"			
IP 7	14.386	322126.231	6255797.291	2.132		R = -0.300	0.524	100°08'23.64"

D MKR->MK02 HORIZONTAL POINTS (CLOSED)								
PT	CHAINAGE	EASTING	NORTHING	HEIGHT	BEARING	RAD/SPIRAL	A.LENGTH	DEFL.ANGLE
IP 1	0.000	322131.758	6255809.216	2.098				
IP 2	0.177	322131.721	6255809.413	2.094		R = -0.300	0.353	67°25'21.92"
CT	0.353	322131.525	6255809.454	2.090	281°53'53.95"			
IP 3	0.530	322131.329	6255809.496	2.087		R = -0.300	0.353	67°25'21.92"
CT	0.706	322131.216	6255809.331	2.085	214°28'32.03"			
	2.500	322130.201	6255807.852	2.081	214°28'32.03"			
IP 4	4.430	322129.108	6255806.261	2.078				
	5.000	322129.578	6255805.938	2.092	124°28'32.03"			
IP 5	6.417	322130.746	6255805.136	2.128				
TC	6.824	322130.975	6255805.473	2.128	34°17'44.49"			
	7.500	322131.318	6255806.055	2.126	26°32'41.79"			
IP 6	8.786	322132.142	6255807.182	2.118		R = -5.000	3.925	44°58'28.62"
	10.000	322131.841	6255808.473	2.108	357°53'49.39"			

D MKR->MK03 HORIZONTAL POINTS (CLOSED)								
PT	CHAINAGE	EASTING	NORTHING	HEIGHT	BEARING	RAD/SPIRAL	A.LENGTH	DEFL.ANGLE
IP 1	0.000	322108.747	6255796.253	2.105				
IP 2	1.316	322107.488	6255796.638	2.120		R = 120.000	2.633	1°15'25.42"
	2.500	322106.363	6255797.009	2.142	288°10'57.21"			
IP 3	2.633	322106.237	6255797.050	2.146				
IP 4	3.992	322104.947	6255797.476	2.217		R = 75.000	2.718	2°04'34.32"
	5.000	322104.001	6255797.827	2.296	290°03'16.10"			
IP 5	5.351	322103.672	6255797.948	2.322				
IP 6	7.379	322102.736	6255796.148	2.327				
	7.500	322102.839	6255796.086	2.320	120°47'06.60"			
IP 7	9.518	322104.574	6255795.055	2.180		R = 161.122	4.277	1°31'15.02"
	10.000	322104.977	6255794.790	2.168	121°40'27.05"			
CC	11.656	322106.382	6255793.913	2.144	122°15'47.19"			
IP 8	12.062	322106.789	6255793.656	2.147		R = -0.600	0.811	77°28'50.15"
CT	12.467	322107.128	6255793.998	2.153	44°46'57.04"			
	12.500	322107.151	6255794.021	2.153	44°46'57.04"			
TC	14.943	322108.872	6255795.755	2.116	44°46'57.04"			
	15.000	322108.908	6255795.799	2.114	33°54'37.82"			
IP 9	15.251	322109.222	6255796.108	2.106		R = -0.300	0.617	117°47'37.01"

D MKR->MK04 HORIZONTAL POINTS (CLOSED)								
PT	CHAINAGE	EASTING	NORTHING	HEIGHT	BEARING	RAD/SPIRAL	A.LENGTH	DEFL.ANGLE
IP 1	0.000	322094.901	6255800.517	2.476				
IP 2	1.483	322096.216	6255799.831	2.460		R = 161.122	2.967	1°03'18.15"
	2.500	322097.108	6255799.344	2.482	118°26'27.39"			
IP 3	2.967	322097.519	6255799.121	2.489				
IP 4	4.244	322098.108	6255800.253	2.488				
	5.000	322097.400	6255800.519	2.477	288°52'53.12"			
IP 5	5.815	322096.646	6255800.850	2.464		R = -13.000	3.143	13°51'12.77"
CC	7.387	322095.083	6255801.080	2.496	278°21'42.56"			
	7.500	322094.971	6255801.075	2.496	256°44'46.67"			
IP 6	7.597	322094.833	6255801.117	2.496		R = -0.300	0.421	80°24'17.81"
CC	7.808	322094.754	6255800.876	2.490	197°57'24.75"			
IP 7	8.018	322094.676	6255800.634	2.483		R = -0.300	0.421	80°24'17.81"

D MKR->MK05 HORIZONTAL POINTS (CLOSED)								
PT	CHAINAGE	EASTING	NORTHING	HEIGHT	BEARING	RAD/SPIRAL	A.LENGTH	DEFL.ANGLE
IP 1	0.000	322132.408	6255781.210	2.108				
	2.500	322134.522	6255779.876	2.108	122°15'40.33"			
TC	4.598	322136.296	6255778.756	2.107	122°15'40.33"			
	5.000	322136.635	6255778.540	2.106	122°29'29.31"			
IP 2	6.576	322137.968	6255777.700	2.102		R = 100.000	3.955	2°15'58.52"
	7.500	322138.727	6255777.171	2.097	123°55'25.93"			
CT	8.553	322139.598	6255776.579	2.091	124°31'38.84"			
	10.000	322140.790	6255775.759	2.079	124°31'38.84"			
	12.500	322142.849	6255774.342	2.052	124°31'38.84"			
TC	14.189	322144.241	6255773.384	2.034	124°31'38.84"			
	15.000	322144.923	6255772.946	2.026	120°57'15.92"			
IP 3	16.195	322145.907	6255772.238	2.014		R = -13.000	4.012	17°40'53.82"
	17.500	322147.177	6255771.874	2.002	109°56'09.61"			
CC	18.201	322147.842	6255771.652	1.995	106°50'45.02"			
IP 4	18.403	322148.071	6255771.583	1.993		R = -0.300	0.404	77°06'51.17"
CC	18.605	322148.190	6255771.791	1.991	29°43'53.85"			
IP 5	18.807	322148.308	6255771.998	1.989		R = -0.300	0.404	77°06'51.17"
CC	19.009	322148.132	6255772.160	1.989	312°37'02.68"			
	20.000	322147.399	6255772.827	1.994	311°54'36.92"			
	22.500	322145.512	6255774.468	2.002	310°07'36.82"			
	25.000	322143.576	6255776.049	2.013	308°20'36.73"			
IP 6	26.002	322142.973	6255776.908	2.019		R = -80.320	13.988	9°58'40.48"
	27.500	322141.592	6255777.569	2.025	306°33'36.64"			
	30.000	322139.561	6255779.027	2.029	304°46'36.55"			
	32.500	322137.485	6255780.420	2.029	302°59'36.46"			
CT	32.996	322137.068	6255780.689	2.029	302°38'22.19"			
	35.000	322135.381	6255781.770	2.025	302°38'22.19"			
	37.500	322133.276	6255783.118	2.026	302°38'22.19"			
IP 7	37.580	322133.209	6255783.161	2.026				

D MKR->MK06 HORIZONTAL POINTS (CLOSED)								
PT	CHAINAGE	EASTING	NORTHING	HEIGHT	BEARING	RAD/SPIRAL	A.LENGTH	DEFL.ANGLE
IP 1	0.000	322128.760	6255783.512	2.107				
IP 2	1.267	322129.832	6255782.836	2.106				
	2.500	322130.300	6255783.976	2.066	22°19'00.19"			
IP 3	3.397	322130.641	6255784.806	2.037				
TC	3.804	322130.298	6255785.025	2.039	302°38'22.19"			
IP 4	4.231	322129.862	6255785.305	2.046		R = -0.600	0.855	81°35'56.84"
CT	4.658	322129.522	6255784.914	2.059	221°02'25.35"			
	5.000	322129.298	6255784.656	2.070	221°02'25.35"			
TC	5.919	322128.694	6255783.963	2.099	221°02'25.35"			
IP 5	6.178	322128.465	6255783.699	2.106		R = -0.300	0.517	98°46'45.02"
CT	6.437	322128.760	6255783.512	2.107	122°15'40.33"			

D MKR->MK07 HORIZONTAL POINTS (CLOSED)								
PT	CHAINAGE	EASTING	NORTHING	HEIGHT	BEARING	RAD/SPIRAL	A.LENGTH	DEFL.ANGLE
IP 1	0.000	322109.037	6255774.803	2.010				
	2.500	322110.483	6255776.843	2.008	35°19'50.87"			
TC	3.642	322111.143	6255777.774	2.011	35°19'50.87"			
IP 2	4.073	322111.446	6255778.202	2.011		R = -0.600	0.861	82°15'15.52"
CT	4.503	322111.063	6255778.560	2.008	313°04'35.35"			
	5.000	322110.701	6255778.899	1.996	313°04'35.35"			
TC	6.691	322109.466	6255780.054	1.952	313°04'35.35"			
IP 3	6.976	322109.160	6255780.340	1.944		R = -0.300	0.569	108°45'40.25"
CC	7.260	322108.987	6255779.958	1.940	204°18'55.10"			
	7.500	322108.888	6255779.740	1.940	204°27'09.13"			
IP 4	9.480	322108.873	6255777.935	1.937		R = 100.000	4.439	2°32'35.54"
	10.000	322107.825	6255777.477	1.937	205°53'05.75"			
IP 5	11.699	322107.070	6255775.955	1.946				
	12.500	322107.761	6255775.550	1.968	120°21'38.39"			

D MKR->MK08 HORIZONTAL POINTS (CLOSED)								
PT	CHAINAGE	EASTING	NORTHING	HEIGHT	BEARING	RAD/SPIRAL	A.LENGTH	DEFL.ANGLE
IP 1	0.000	322101.587	6255764.293	1.992				
	2.500	322103.032	6255766.332	2.007	35°19'50.87"			
	5.000	322104.478	6255768.372	2.016	35°19'50.87"			
	7.500	322105.924	6255770.412	2.019	35°19'50.87"			
IP 2	9.872	322107.295	6255772.346	2.018				
	10.000	322107.185	6255772.411	2.014	300°21'38.39"			
IP 3	11.751	322105.674	6255773.296	1.965				
	12.500	322105.313	6255772.640	1.969	209°00'29.85"			
IP 4	14.822	322104.204	6255770.599	1.977		R = 100.000	6.141	3°31'07.71"
	15.000	322104.073	6255770.469	1.977	210°26'26.47"			
	17.500	322102.780	6255768.330	1.979	211°52'23.09"			
CC	17.893	322102.572	6255767.997	1.978	212°05'53.11"			
IP 5	19.785	322101.559	6255766.383	1.978		R = -13.000	3.784	16°40'32.30"
	20.000	322101.601	6255766.129	1.978	202°48'37.71"			
CC	21.676	322101.053	6255764.546	1.980	195°25'20.82"			
IP 6	21.886	322100.986	6255764.303	1.982		R = -0.300	0.419	80°02'44.97"
CT	22.095	322101.213	6255764.195	1.985	115°22'35.84"			
IP 7	22.305	322101.441	6255764.087	1.990		R = -0.300	0.419	80°02'44.97"
	22.500	322101.578	6255764.281	1.992	38°06'22.02"			
CT	22.515	322101.587	6255764.293	1.992	35°19'50.87"			



DRAWN: A.MARGARIS  
DESIGNED: B.LAWRENCE  
JOB MANAGER: B.LAWRENCE  
VERIFIER:

D MKR->MK09 HORIZONTAL POINTS (CLOSED)								
PT	CHAINAGE	EASTING	NORTHING	HEIGHT	BEARING	RAD/SPIRAL	A.LENGTH	DEFL.ANGLE
IP 1	0.000	322025.432	6255682.072	2.353				
	2.500	322027.603	6255680.831	2.173	119°45'43.59"			
	5.000	322029.773	6255679.590	2.109	119°45'43.59"			
	7.500	322031.943	6255678.349	2.043	119°45'43.59"			
TC	7.979	322032.359	6255678.111	2.029	119°45'43.59"			
IP 2	8.765	322033.227	6255677.615	1.995		R = -1.000	1.571	90°00'00.00"
CC	9.550	322033.724	6255678.483	1.973	29°45'43.59"			
	10.000	322033.853	6255678.910	1.985	3°58'55.58"			
	10.335	322034.220	6255679.351	2.004		R = -1.000	1.571	90°00'00.00"
	11.121	322033.352	6255679.847	2.020	299°45'43.59"			
CT	12.500	322032.155	6255680.532	2.050	299°45'43.59"			
	15.000	322029.984	6255681.773	2.110	299°45'43.59"			
	17.500	322027.814	6255683.014	2.192	299°45'43.59"			
	19.091	322026.433	6255683.804	2.338				
IP 4	20.000	322025.978	6255683.016	2.345	210°01'41.00"			

D MKR->MK10 HORIZONTAL POINTS (CLOSED)								
PT	CHAINAGE	EASTING	NORTHING	HEIGHT	BEARING	RAD/SPIRAL	A.LENGTH	DEFL.ANGLE
IP 1	0.000	322012.282	6255689.592	2.404				
	2.500	322014.452	6255688.351	2.416	119°45'43.59"			
	3.948	322015.710	6255687.632	2.486				
	5.000	322016.236	6255688.542	2.479	30°01'41.00"			
IP 3	5.586	322016.529	6255689.049	2.475				
	7.500	322014.707	6255689.635	2.373	285°36'23.69"			
	7.683	322014.553	6255689.768	2.366		R = -25.000	4.195	9°36'52.96"
	9.781	322012.485	6255690.147	2.391	280°22'43.96"			
CC	9.991	322012.236	6255690.193	2.395		R = -0.300	0.420	80°18'30.19"
	10.000	322012.275	6255690.108	2.395	238°33'21.52"			
	10.202	322012.149	6255689.955	2.400	200°04'13.78"			
	10.412	322012.062	6255689.717	2.403		R = -0.300	0.420	80°18'30.19"
CT	10.622	322012.282	6255689.592	2.404	119°45'43.59"			

D MKR->MK11 HORIZONTAL POINTS (CLOSED)								
PT	CHAINAGE	EASTING	NORTHING	HEIGHT	BEARING	RAD/SPIRAL	A.LENGTH	DEFL.ANGLE
IP 1	0.000	322029.976	6255659.844	2.080				
	2.500	322031.393	6255661.904	2.065	34°31'14.58"			
	5.000	322032.810	6255663.963	2.046	34°31'14.58"			
	7.500	322034.226	6255666.023	2.024	34°31'14.58"			
	10.000	322035.643	6255668.083	2.003	34°31'14.58"			
	12.500	322037.060	6255670.143	1.998	34°31'14.58"			
	15.000	322038.477	6255672.203	1.993	34°31'14.58"			
	17.500	322039.893	6255674.262	1.989	34°31'14.58"			
TC	17.886	322040.112	6255674.580	1.988	34°31'14.58"			
IP 2	19.476	322041.014	6255675.891	1.986		R = -50.000	3.180	3°38'40.10"
	20.000	322041.1273	6255676.347	1.986	32°05'54.36"			
	21.067	322041.830	6255677.256	1.985	30°52'34.48"			
	22.500	322042.566	6255678.487	1.983	30°52'34.48"			
	25.000	322043.849	6255680.632	1.981	30°52'34.48"			
	27.500	322045.132	6255682.778	1.978	30°52'34.48"			
	28.934	322045.868	6255684.009	1.976	30°52'34.48"			
	29.396	322046.166	6255684.508	1.976		R = -0.600	0.923	88°10'39.95"
CT	29.857	322045.677	6255684.822	1.977	302°41'54.53"			
	30.000	322045.549	6255684.884	1.978	289°05'06.84"			
	30.319	322045.188	6255685.136	1.979		R = -0.600	0.923	88°10'39.95"
	30.781	322044.858	6255684.657	1.980	214°31'14.58"			
IP 4	32.500	322043.884	6255683.240	1.982	214°31'14.58"			
	35.000	322042.467	6255681.181	1.985	214°31'14.58"			
	37.500	322041.050	6255679.121	1.989	214°31'14.58"			
	40.000	322039.634	6255677.061	1.992	214°31'14.58"			
	42.500	322038.217	6255675.001	1.995	214°31'14.58"			
	45.000	322036.800	6255672.941	2.000	214°31'14.58"			
	46.521	322035.938	6255671.688	2.003	214°31'14.58"			
	47.500	322035.364	6255670.895	2.005	217°19'34.35"			
IP 5	47.796	322035.215	6255670.637	2.006		R = 20.000	2.550	7°18'16.99"
	49.071	322034.364	6255669.685	2.009	221°49'31.56"			
	50.000	322033.744	6255668.993	2.011	221°49'31.56"			
	52.500	322032.077	6255667.130	2.029	221°49'31.56"			
TC	55.000	322030.409	6255665.267	2.051	221°49'31.56"			
	55.955	322029.772	6255664.555	2.057	221°49'31.56"			
	57.230	322028.921	6255663.604	2.064		R = -20.000	2.550	7°18'16.99"
	57.500	322028.788	6255663.365	2.066	217°23'59.53"			
IP 7	58.505	322028.198	6255662.552	2.072	214°31'14.58"			
	59.728	322027.504	6255661.544	2.080				
	60.000	322027.728	6255661.390	2.080	124°31'14.58"			
	62.500	322029.788	6255659.973	2.080	124°31'14.58"			

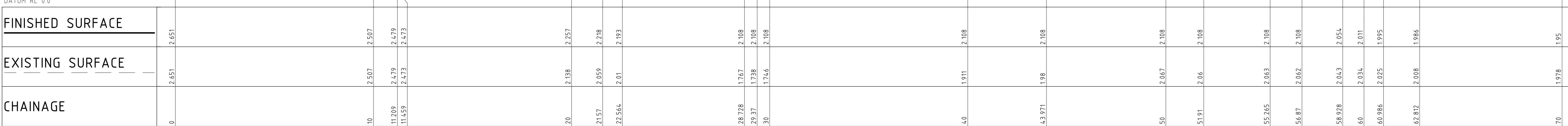
D MKR->MK12 HORIZONTAL POINTS (CLOSED)								
PT	CHAINAGE	EASTING	NORTHING	HEIGHT	BEARING	RAD/SPIRAL	A.LENGTH	DEFL.ANGLE
IP 1	0.000	322024.066	6255651.250	2.142				
	2.500	322025.482	6255653.310	2.128	34°31'14.58"			
	5.000	322026.899	6255655.370	2.113	34°31'14.58"			
	7.430	322028.276	6255657.372	2.098				
IP 2	7.500	322028.218	6255657.412	2.098	304°31'14.58"			
	10.000	322026.158	6255658.829	2.098	304°31'14.58"			
	10.430	322025.804	6255659.072	2.098				
	12.500	322024.771	6255657.280	2.110	205°23'45.64"			
IP 4	14.491	322023.424	6255655.612	2.122		R = -13.000	8.124	35°48'14.17"
	15.000	322023.922	6255654.933	2.125	194°22'39.33"			
	17.500	322023.538	6255652.467	2.138	183°21'33.02"			
	18.553	322023.518	6255651.414	2.143	178°43'00.41"			
CC	18.742	322023.523	6255651.195	2.144		R = -0.300	0.378	72°05'52.91"
	18.931	322023.733	6255651.133	2.144	106°37'07.49"			
	19.120	322023.942	6255651.071	2.143		R = -0.300	0.378	72°05'52.91"
	19.308	322024.066	6255651.250	2.142	34°31'14.58"			

D MKR->MK13 HORIZONTAL POINTS (CLOSED)								
PT	CHAINAGE	EASTING	NORTHING	HEIGHT	BEARING	RAD/SPIRAL	A.LENGTH	DEFL.ANGLE
IP 1	0.000	322029.164	6255647.770	2.140				
	2.500	322030.582	6255649.829	2.126	34°34'27.85"			
	5.000	322032.001	6255651.887	2.112	34°34'27.85"			
	7.408	322033.368	6255653.870	2.098				
IP 2	7.500	322033.292	6255653.922	2.098	304°31'14.58"			
	9.886	322031.326	6255655.274	2.099				
	10.000	322031.260	6255655.181	2.099	214°57'24.70"			
	12.500	322030.005	6255653.022	2.114	205°24'27.38"			
IP 4	13.827	322028.989	6255651.985	2.121		R = -15.000	7.882	30°06'29.41"
	15.000	322029.125	6255650.686	2.127	195°51'30.06"			
	17.500	322028.645	6255648.235	2.140	186°18'32.74"			
	17.768	322028.618	6255647.968	2.141	185°17'01.68"			
CC	17.966	322028.596	6255647.737	2.142		R = -0.300	0.395	75°21'16.92"
	18.163	322028.814	6255647.658	2.142	109°55'44.76"			
	18.360	322029.032	6255647.579	2.141		R = -0.300	0.395	75°21'16.92"
	18.558	322029.164	6255647.770	2.140	34°34'27.85"			

D MKR->MK14 HORIZONTAL POINTS (CLOSED)								
PT	CHAINAGE	EASTING	NORTHING	HEIGHT	BEARING	RAD/SPIRAL	A.LENGTH	DEFL.ANGLE
IP 1	0.000	322035.071	6255656.340	2.081				
	2.500	322036.487	6255658.400	2.061	34°31'14.58"			
	4.262	322037.486	6255659.852	2.046	34°31'14.58"			
	4.428	322037.591	6255660.004	2.044		R = -0.300	0.332	63°24'41.40"
CC	4.594	322037.501	6255660.166	2.044	331°06'33.17"			
	4.760	322037.412	6255660.329	2.043		R = -0.300	0.332	63°24'41.40"
	4.926	322037.227	6255660.321	2.044	267°41'51.77"			
	5.000	322037.153	6255660.318	2.045	266°51'13.51"			
IP 4	7.247	322034.726	6255660.221	2.062		R = -5.000	4.641	53°10'37.19"
	7.500	322034.793	6255659.575	2.064	238°12'21.11"			
	9.567	322033.308	6255658.159	2.078	214°31'14.58"			
	10.000	322033.063	6255657.802	2.080	214°31'14.58"			
IP 5	10.067	322033.025	6255657.747	2.081				
	12.500	322035.029	6255656.368	2.081	124°31'14.58"			

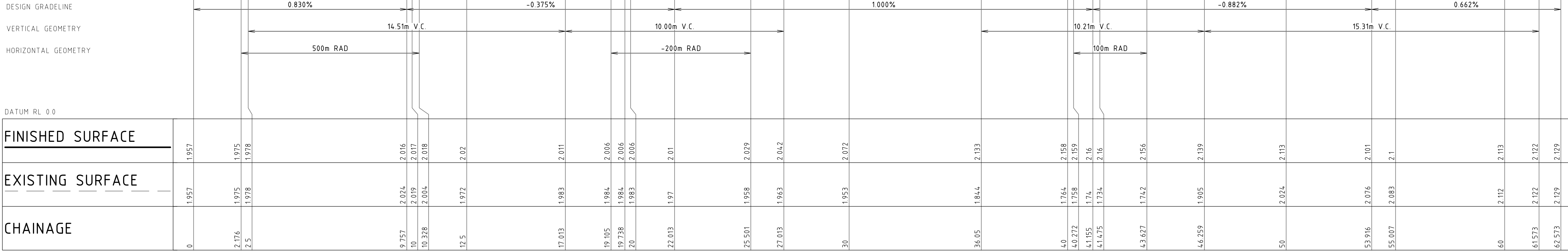
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LONGITUDINAL SECTION ALONG BURROWAY EXT

HORIZONTAL SCALE 1:100@A1  
VERTICAL SCALE 1:20@A1



LONGITUDINAL SECTION ALONG HILL ROAD EXT

HORIZONTAL SCALE 1:100@A1  
VERTICAL SCALE 1:20@A1

REVISION	DESCRIPTION	ISSUED	VER'D	APP'D	DATE
01	ISSUED FOR TRAFFIC COMMITTEE APPROVAL	AM		BL	26.10.20
02	ISSUED FOR CONTRACTOR REVIEW AND PRICING	AM		BL	05.11.20
03	ISSUED FOR APPROVAL	AM		BL	10.08.21
04	RE-ISSUED FOR APPROVAL	AF		BL	25.01.23




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PROJECT

**14 - 16 HILL ROAD,  
SYDNEY OLYMPIC PARK**

**PROPOSED TRAFFIC FACILITIES**

DRAWING TITLE

**CIVIL ENGINEERING PACKAGE**

**ROAD LONGITUDINAL  
SECTIONS**

JOB NUMBER

**170973**

DRAWING NUMBER

**C16.01**

REVISION

**04**

DRAWING SHEET SIZE = A1

JOB NUMBER

**170973**

DRAWING NUMBER

**C16.01**

REVISION

**04**

DRAWING SHEET SIZE = A1



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PROJECT

14 - 16 HILL ROAD,  
SYDNEY OLYMPIC PARK

PROPOSED TRAFFIC FACILITIES

DRAWING TITLE

CIVIL ENGINEERING PACKAGE

KERB RETURN PROFILES -  
SHEET 01

JOB NUMBER

170973

DRAWING NUMBER

C16.21

REVISION


03

DRAWING SHEET SIZE = A1


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LEGEND

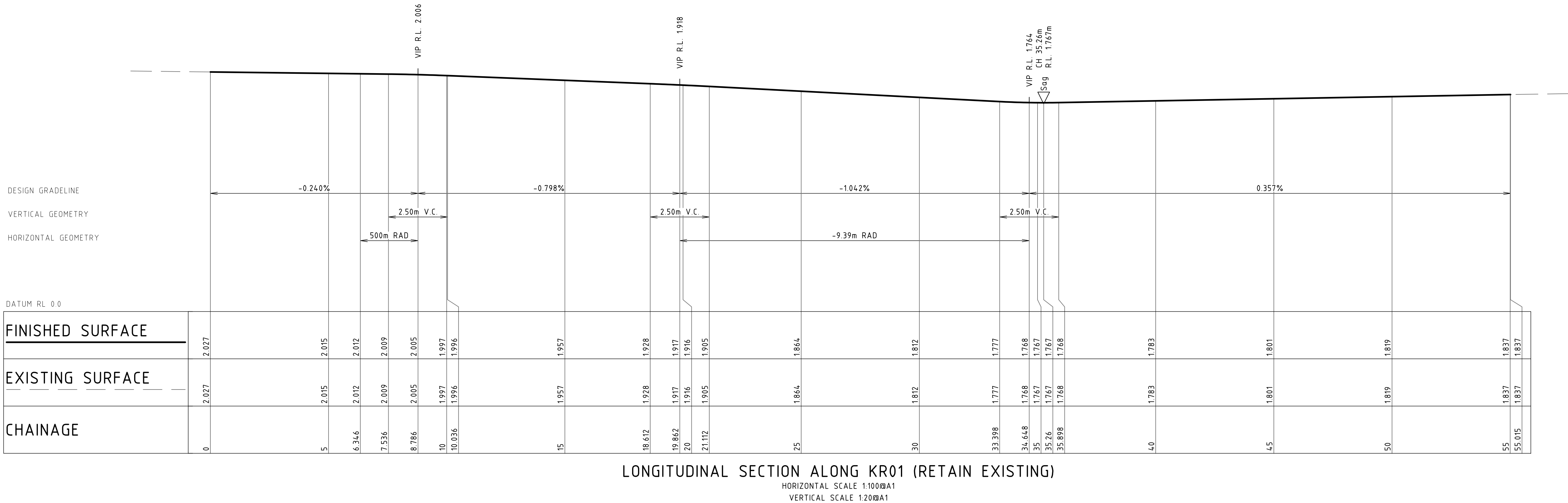
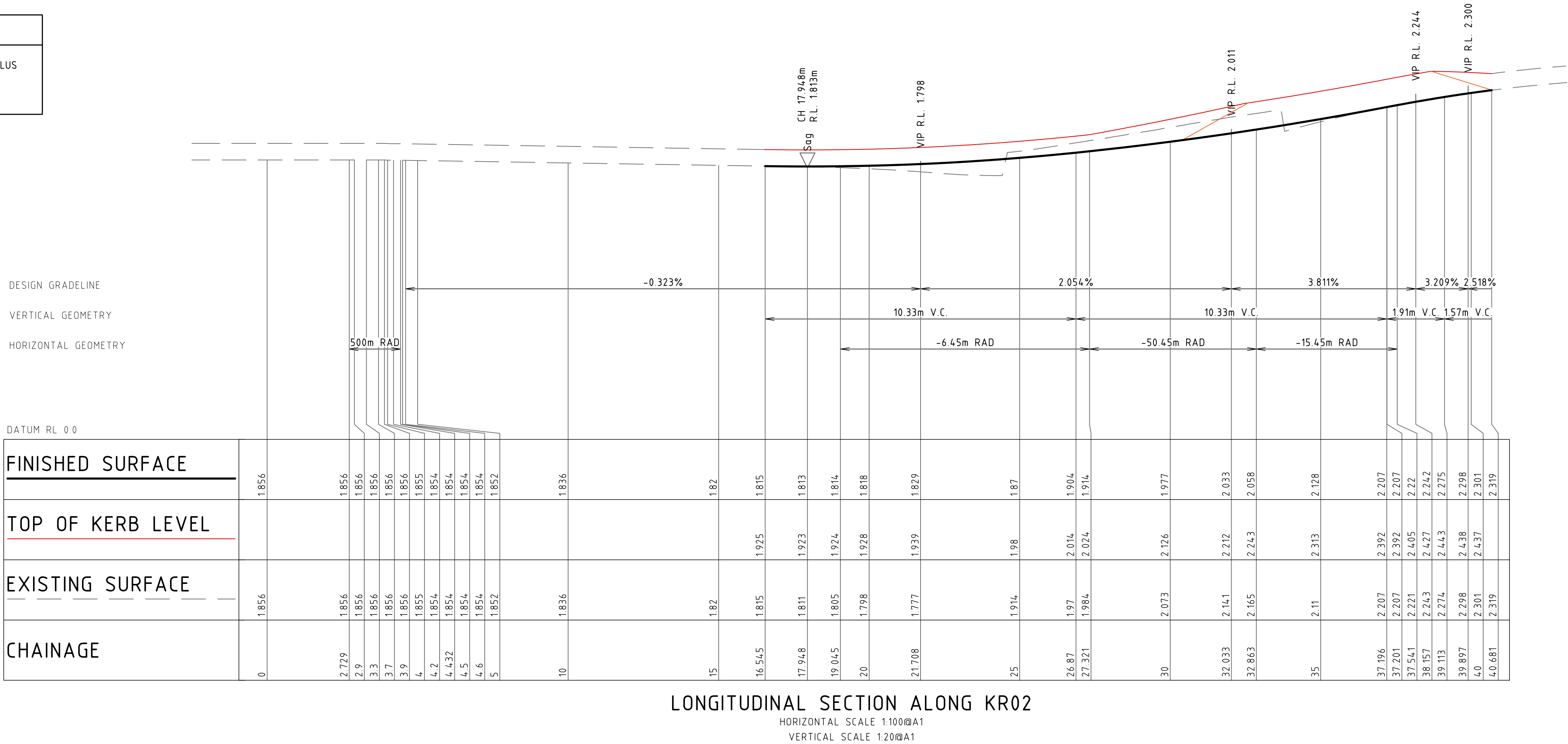


MEDIAN / ROUNDABOUT ANNULUS



RAISED THRESHOLD

NOTE: REFER SETOUT INFORMATION FOR LEVEL DETAILS





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01	ISSUED FOR TRAFFIC COMMITTEE APPROVAL	AM		BL	26.10.20
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03	ISSUED FOR APPROVAL	AM		BL	10.08.21
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PROJECT

**14 - 16 HILL ROAD,  
SYDNEY OLYMPIC PARK**

**PROPOSED TRAFFIC FACILITIES**

DRAWING TITLE

**CIVIL ENGINEERING PACKAGE**

**KERB RETURN PROFILES -  
SHEET 02**

JOB NUMBER

**170973**

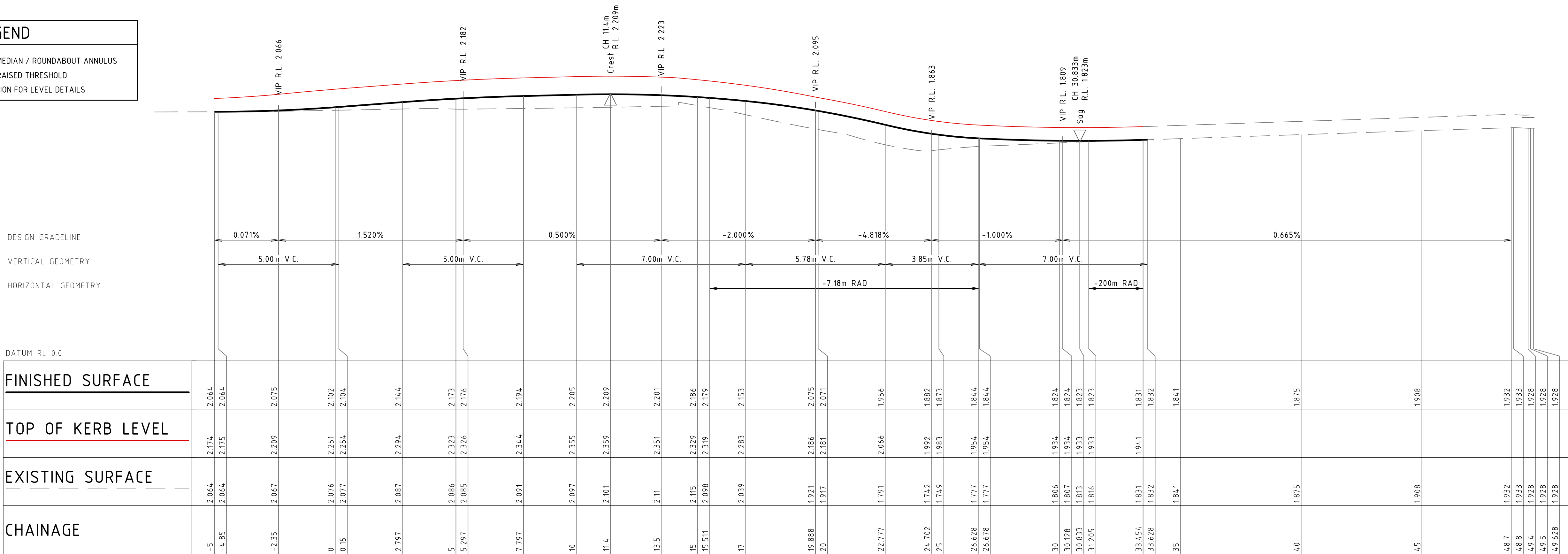
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REVISION

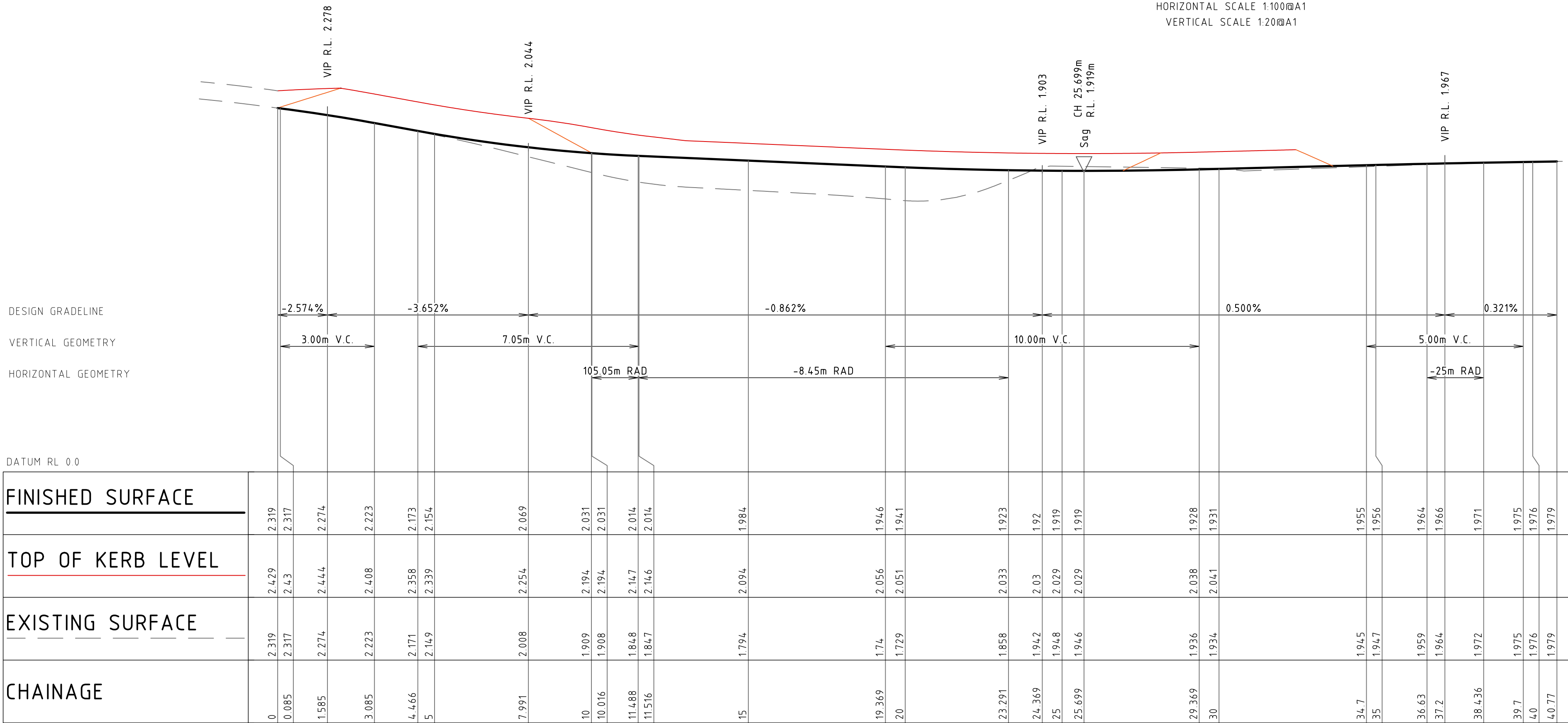
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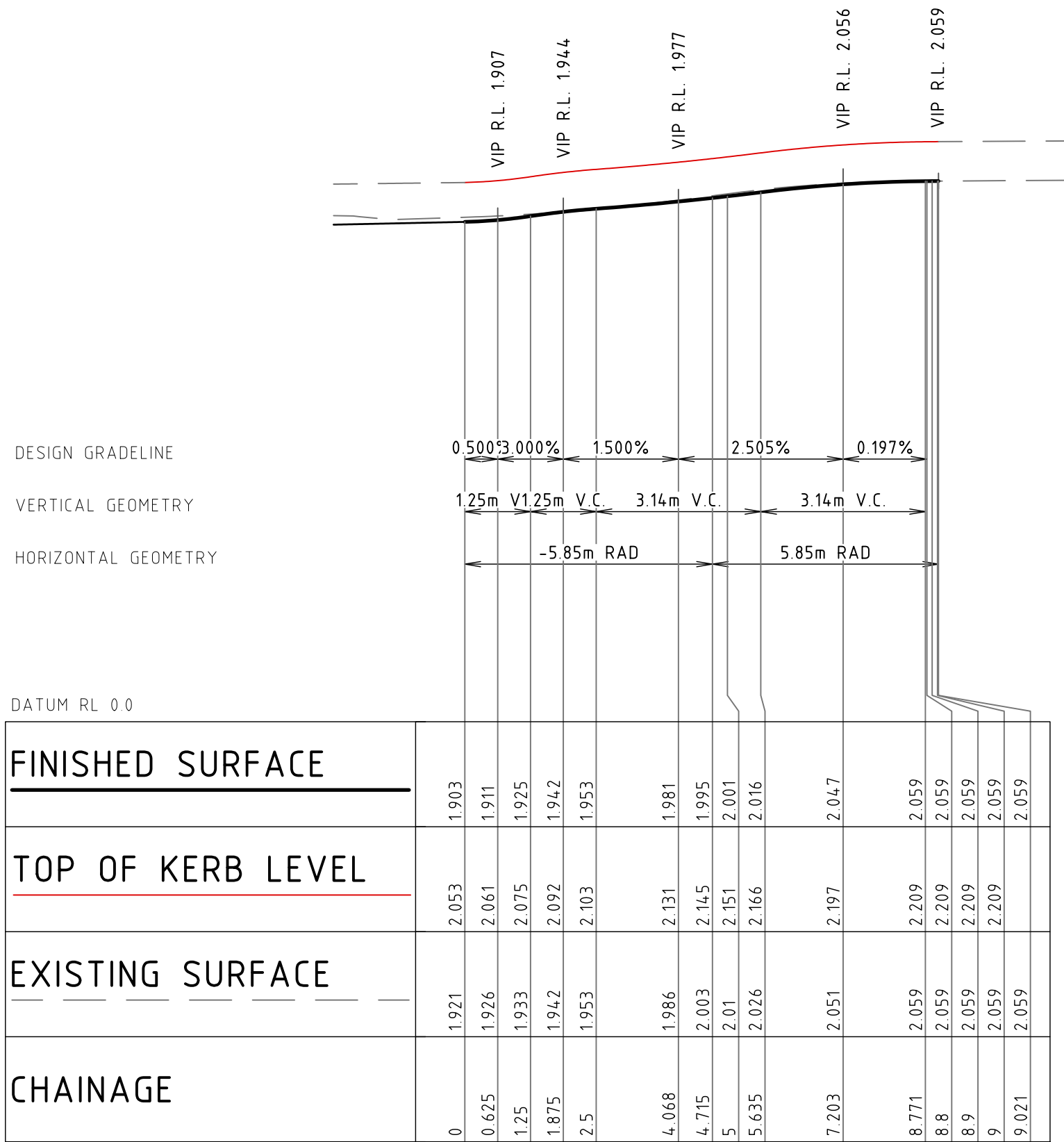
LONGITUDINAL SECTION ALONG KR04

HORIZONTAL SCALE 1:100@A1  
VERTICAL SCALE 1:20@A1



LONGITUDINAL SECTION ALONG KR03

HORIZONTAL SCALE 1:100@A1  
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LONGITUDINAL SECTION ALONG KR03A

HORIZONTAL SCALE 1:100@A1  
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Date: 15.02.2018 11:24 AM

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01	ISSUED FOR TRAFFIC COMMITTEE APPROVAL	AM		BL	26.10.20
02	ISSUED FOR CONTRACTOR REVIEW AND PRICING	AM		BL	05.11.20
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PROJECT  
**14 - 16 HILL ROAD,  
SYDNEY OLYMPIC PARK**  
**PROPOSED TRAFFIC FACILITIES**

DRAWING TITLE  
**CIVIL ENGINEERING PACKAGE**  
**KERB RETURN PROFILES -  
SHEET 03**

JOB NUMBER  
**170973**

DRAWING NUMBER  
**C16.23**

REVISION  
**03**

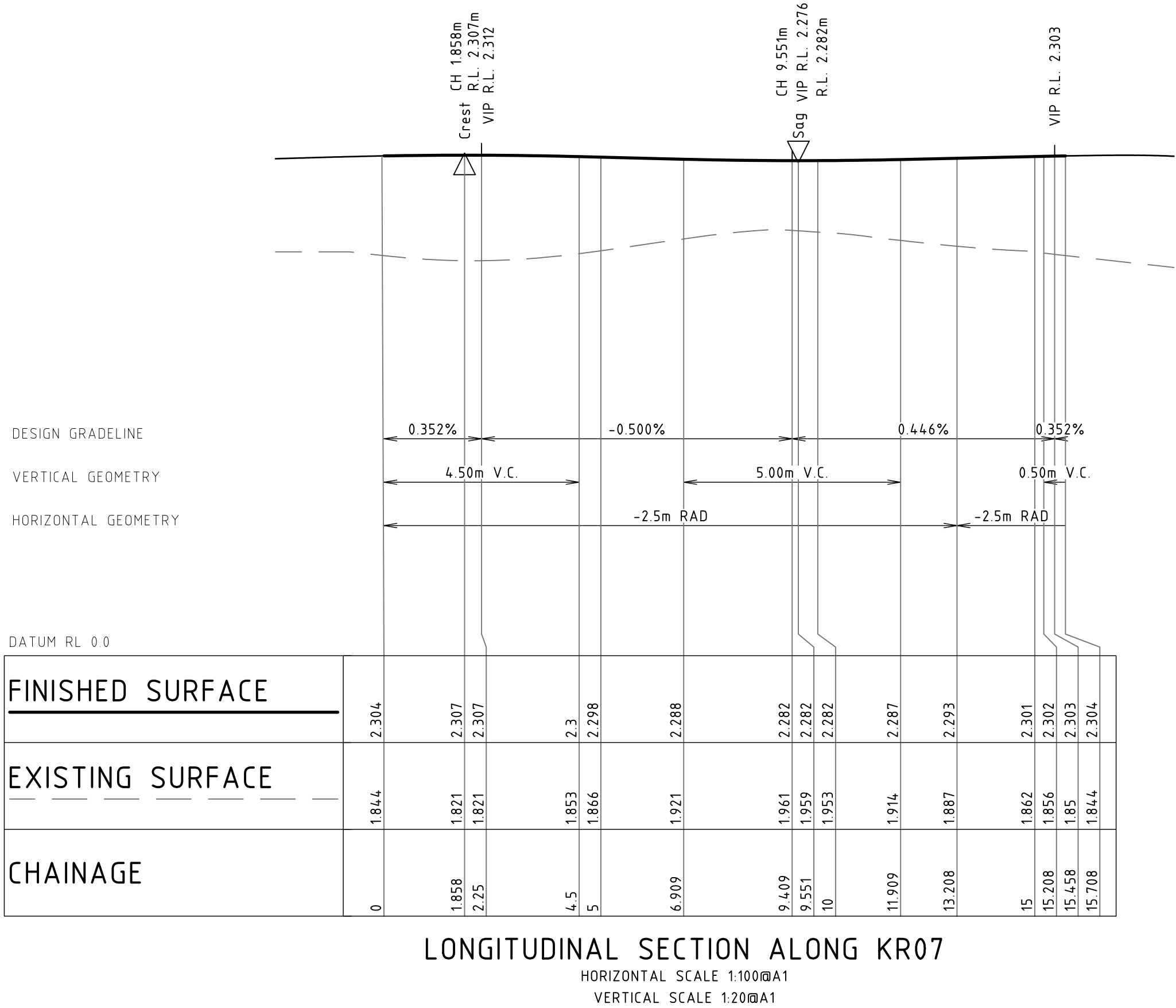
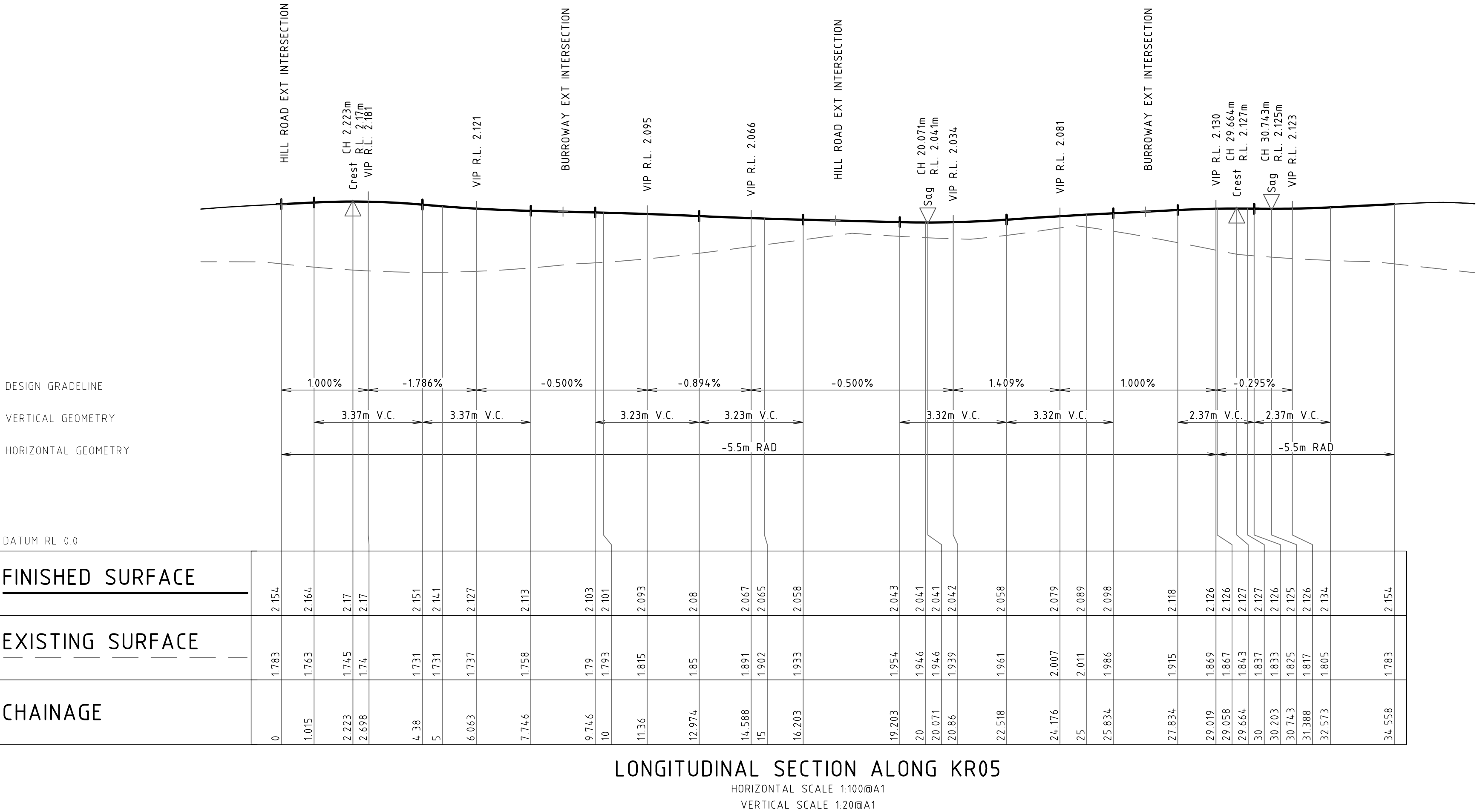
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LEGEND

MEDIAN / ROUNDABOUT ANNULUS

RAISED THRESHOLD

NOTE: REFER SETOUT INFORMATION FOR LEVEL DETAILS



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LEGEND

MEDIAN / ROUNDABOUT ANNULUS

RAISED THRESHOLD

NOTE: REFER SETOUT INFORMATION FOR LEVEL DETAILS

HORIZONTAL GEOMETRY

DATUM RL 0.0

FINISHED SURFACE						
TOP OF KERB LEVEL						
EXISTING SURFACE						
CHAINAGE						

LONGITUDINAL SECTION ALONG KR09

HORIZONTAL SCALE 1:100@A1  
VERTICAL SCALE 1:20@A1

VERTICAL GEOMETRY

HORIZONTAL GEOMETRY

DATUM RL 0.0

FINISHED SURFACE																			
TOP OF KERB LEVEL																			
EXISTING SURFACE																			
CHAINAGE																			

LONGITUDINAL SECTION ALONG KR08

HORIZONTAL SCALE 1:100@A1  
VERTICAL SCALE 1:20@A1

REVISION	DESCRIPTION	ISSUED	VER'D	APP'D	DATE
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PROJECT

14 - 16 HILL ROAD,  
SYDNEY OLYMPIC PARK

PROPOSED TRAFFIC FACILITIES

DRAWING TITLE

CIVIL ENGINEERING PACKAGE

KERB RETURN PROFILES -  
SHEET 04

JOB NUMBER

170973

DRAWING NUMBER

C16.24

REVISION

02

DRAWING SHEET SIZE = A1



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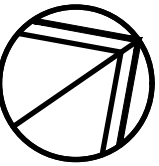


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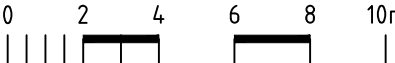
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SCALE 1:200@A1





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PROJECT

14 - 16 HILL ROAD,  
SYDNEY OLYMPIC PARK

PROPOSED TRAFFIC FACILITIES

DRAWING TITLE

CIVIL ENGINEERING PACKAGE

EXISTING CATCHMENT PLAN  
- OVERALL

JOB NUMBER

170973

DRAWING NUMBER

C17.01

REVISION

01

DRAWING SHEET SIZE = A1



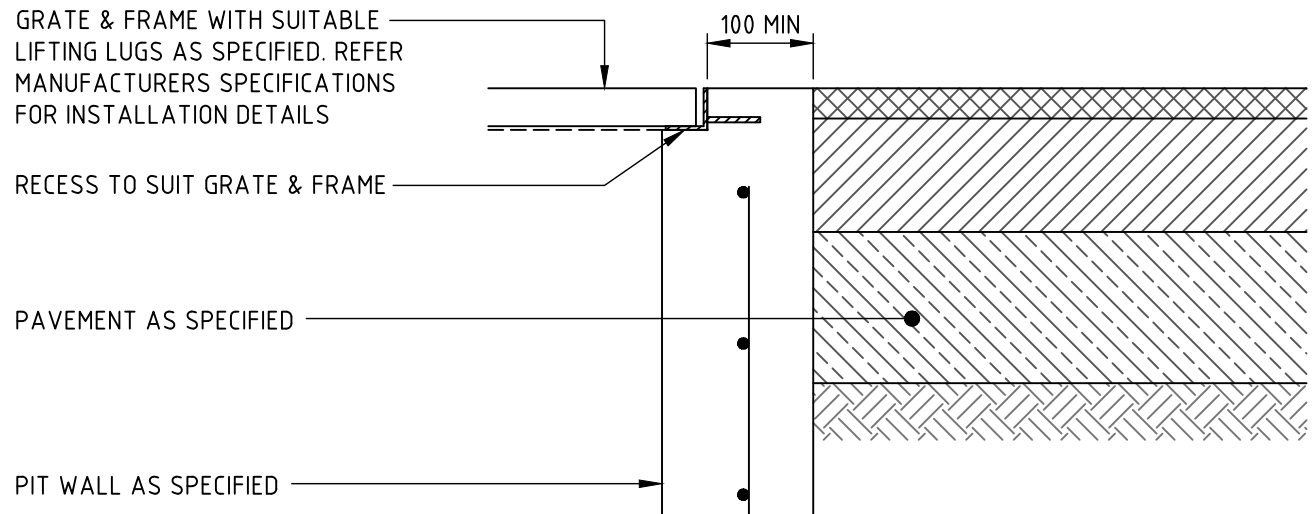




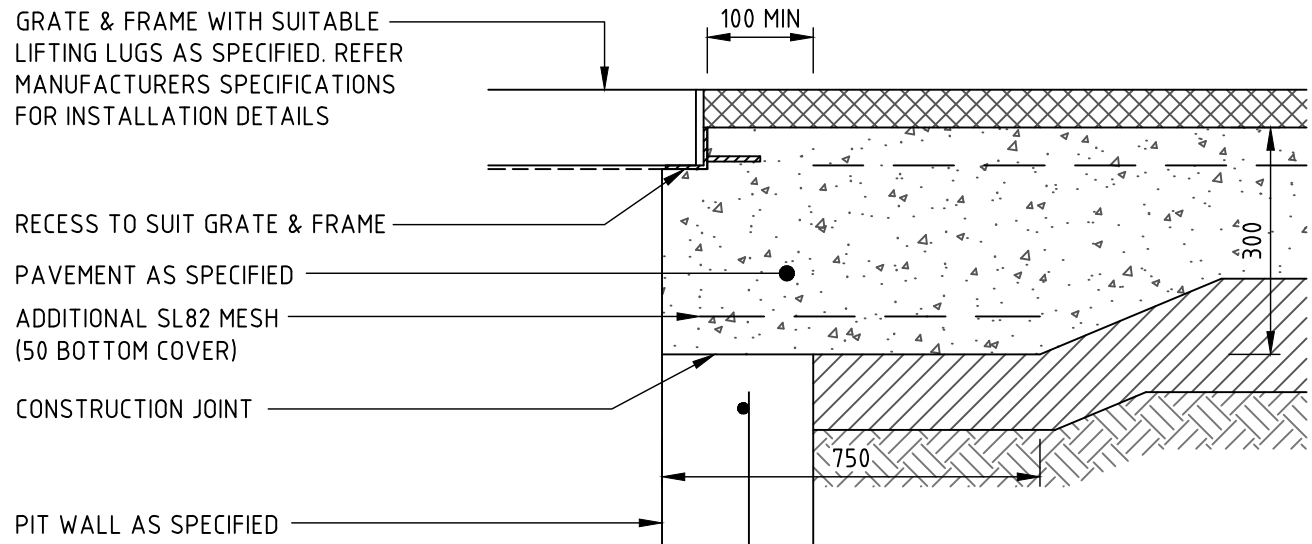




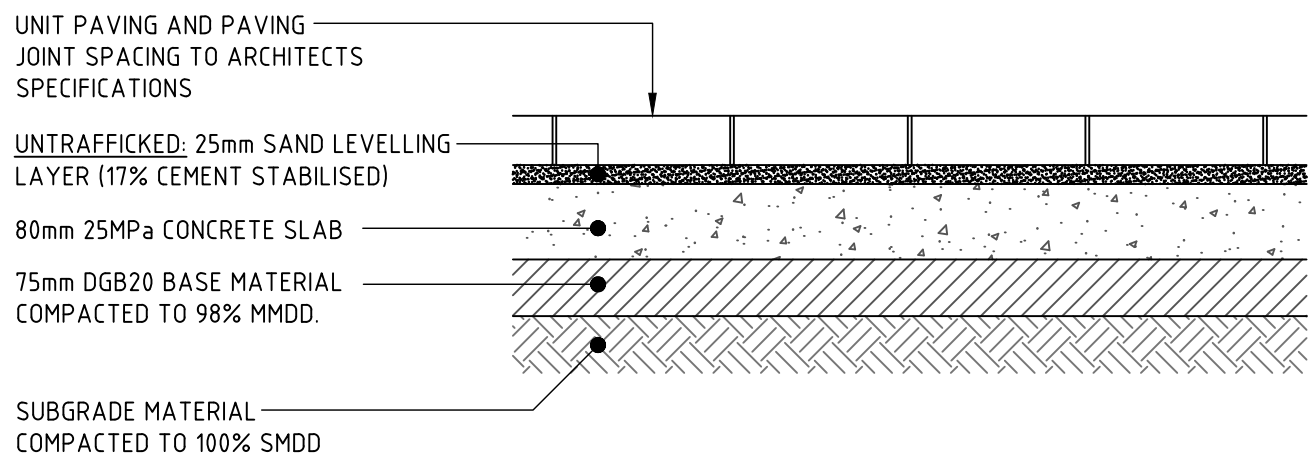
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DESIGNED: B.LAWRENCE  
JOB MANAGER: B.LAWRENCE  
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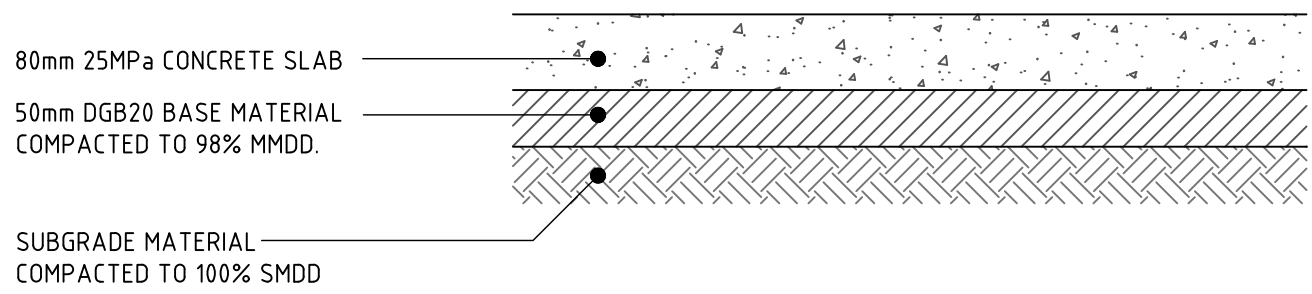
PIT INTERFACE - DETAIL 'A'



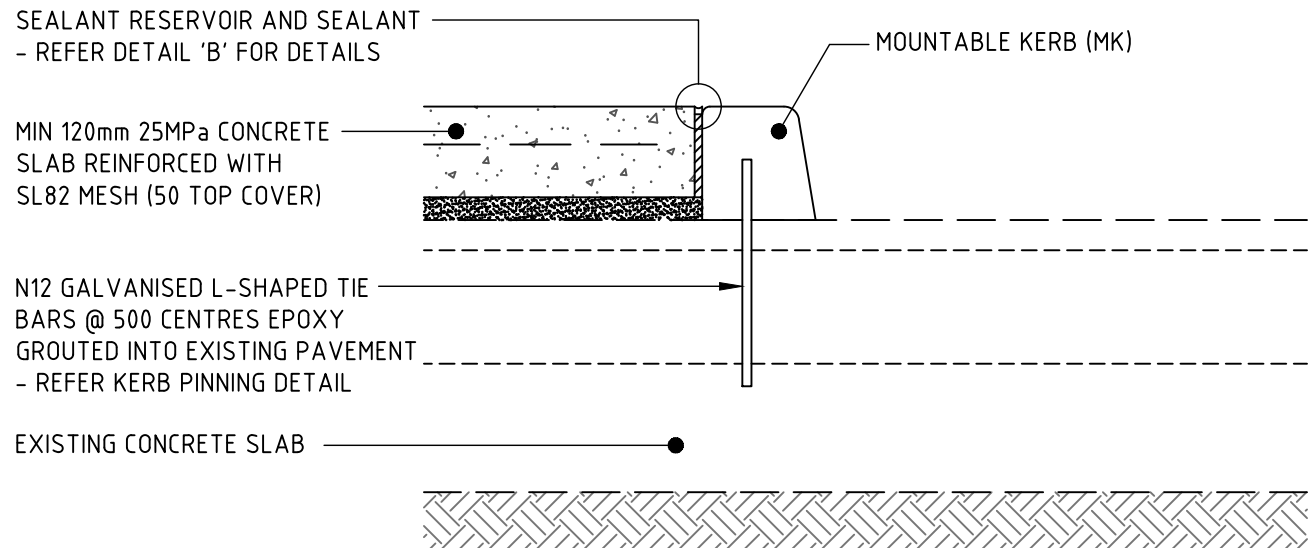
PIT INTERFACE - DETAIL 'B'



FOOTPATH PAVEMENT (PAVERS)

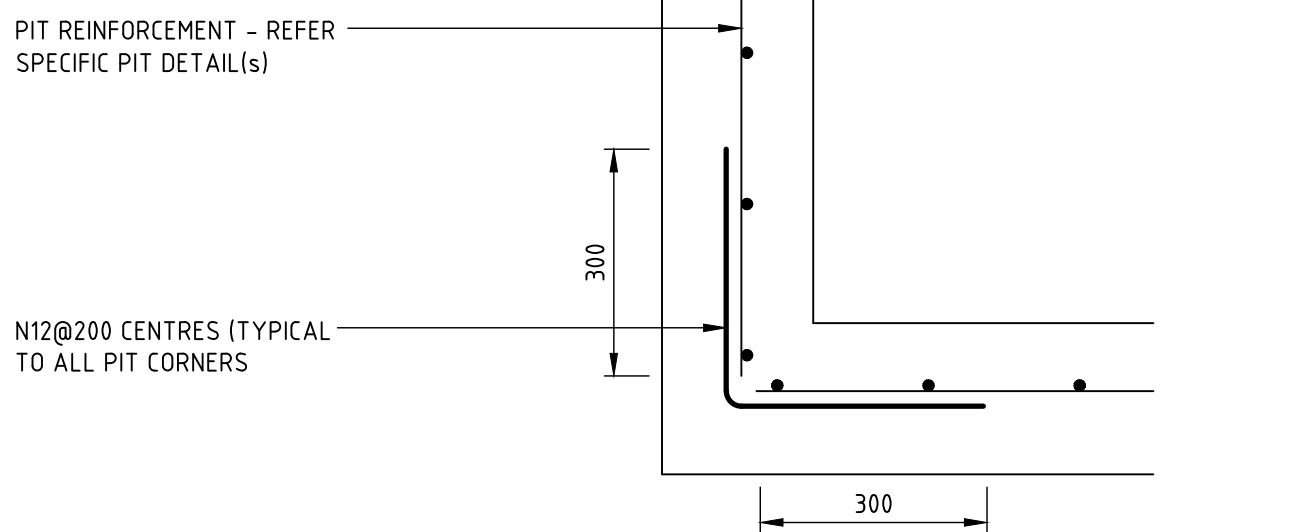


FOOTPATH PAVEMENT



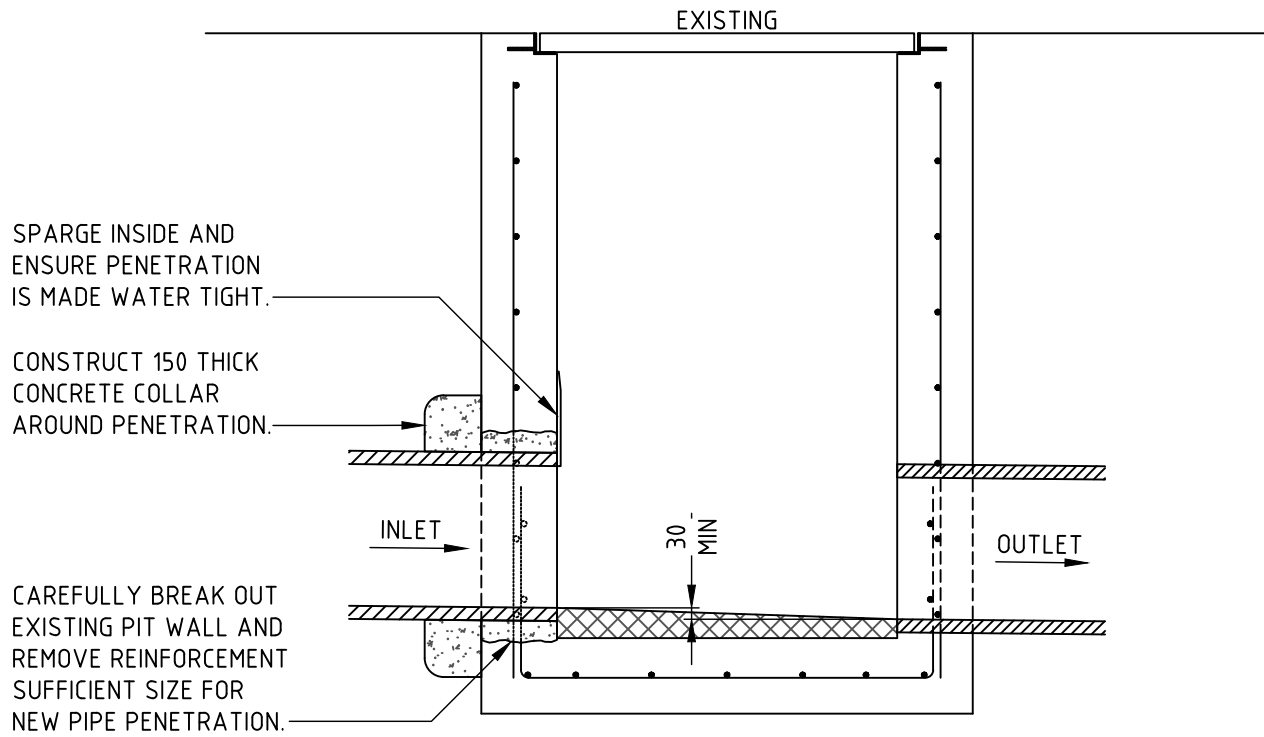
CONCRETE MEDIAN

JOINTS IN CONCRETE SLAB (BELOW) TO BE TRANSLATED IN PROPOSED CONCRETE MEDIAN



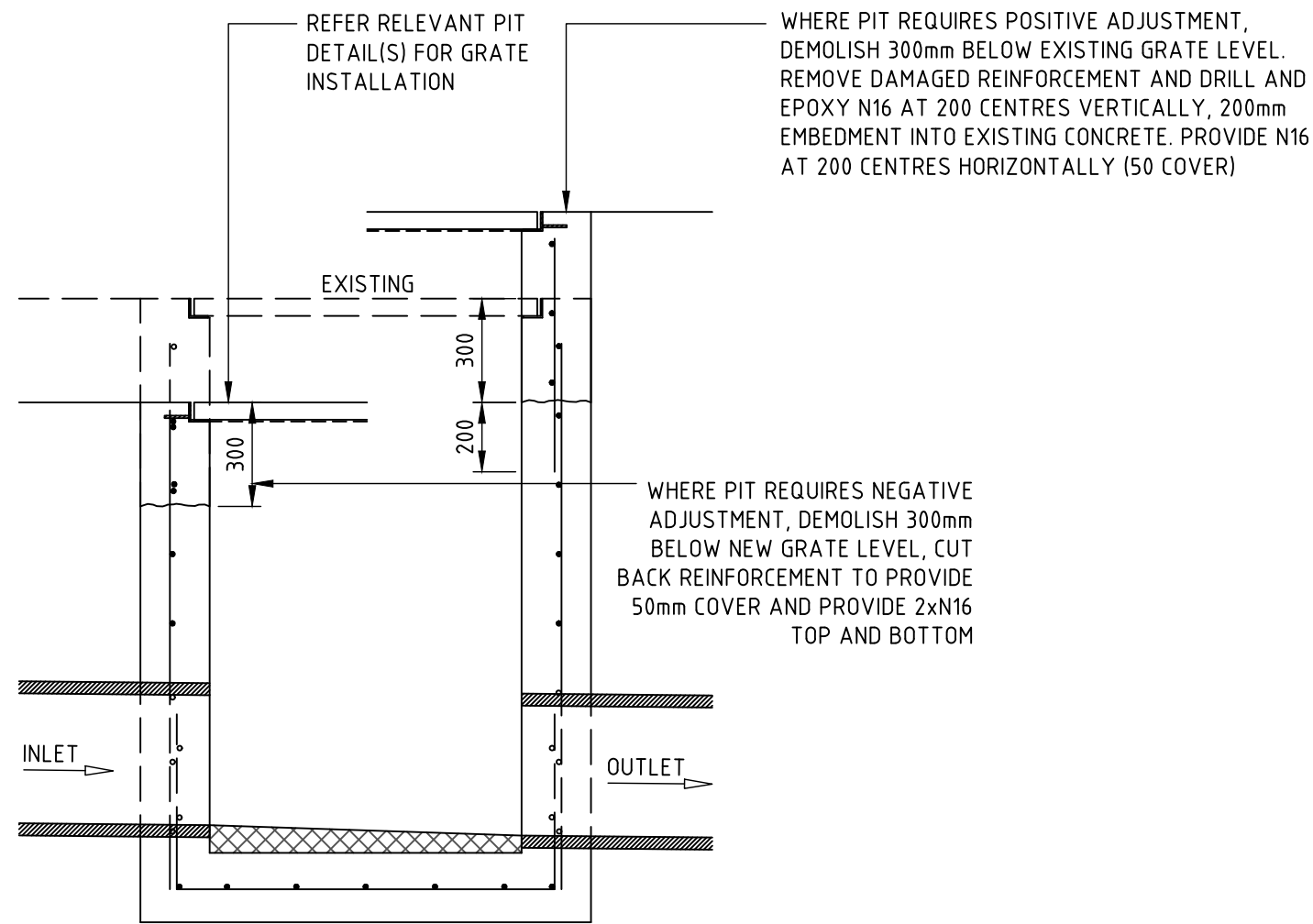
PIT INTERFACE (PLAN VIEW) - DETAIL 'F'

APPLICABLE TO ALL STORMWATER DRAINAGE STRUCTURES



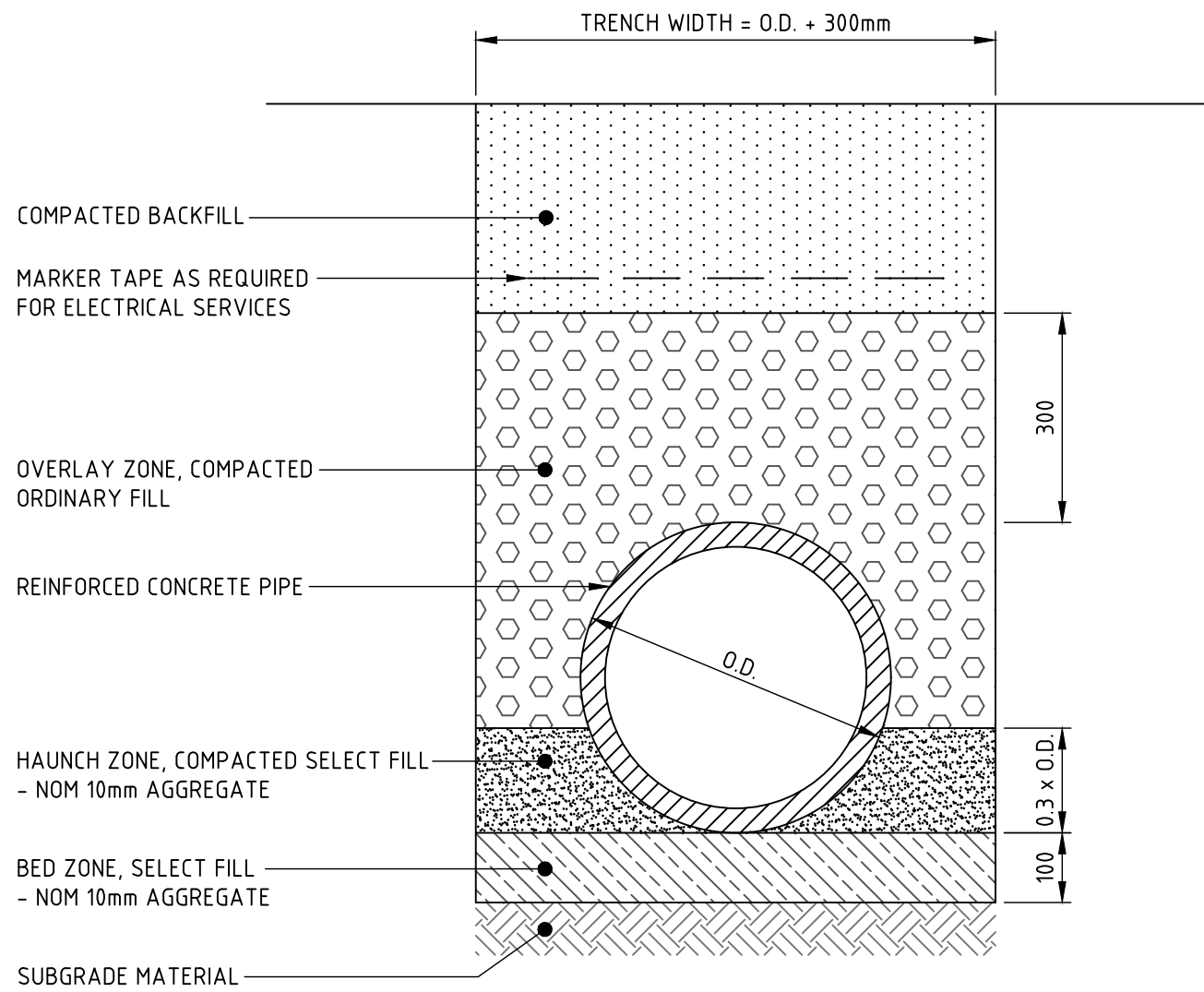
DRAINAGE PIT - NEW PIPE CONNECTION

THE CONTRACTOR SHALL REQUEST THE SUPERINTENDENT INSPECT THE CONDITION OF THE EXISTING PIT PRIOR TO MODIFICATION. IF THE EXISTING PIT IS IN POOR CONDITION, THE CONTRACTOR SHALL REMOVE AND RECONSTRUCT A NEW PIT IN ACCORDANCE WITH SUPERINTENDENTS INSTRUCTIONS.



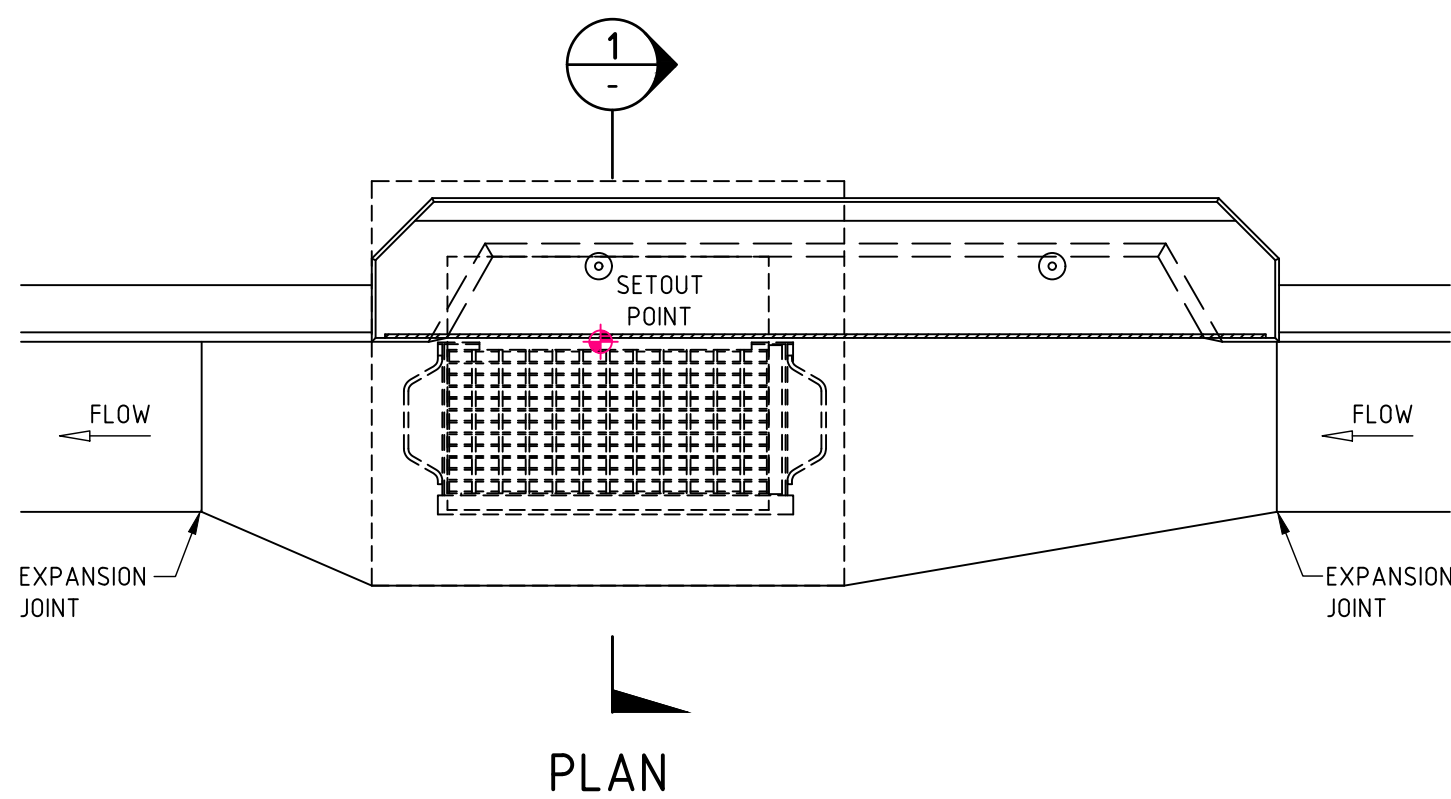
DRAINAGE PIT - LEVEL ADJUSTMENTS

ENSURE NEAT FINISH IS ACHIEVE AT INTERFACE WITH EXISTING, REFER RELEVANT PIT DETAIL(S) FOR GRATE INSTALLATION

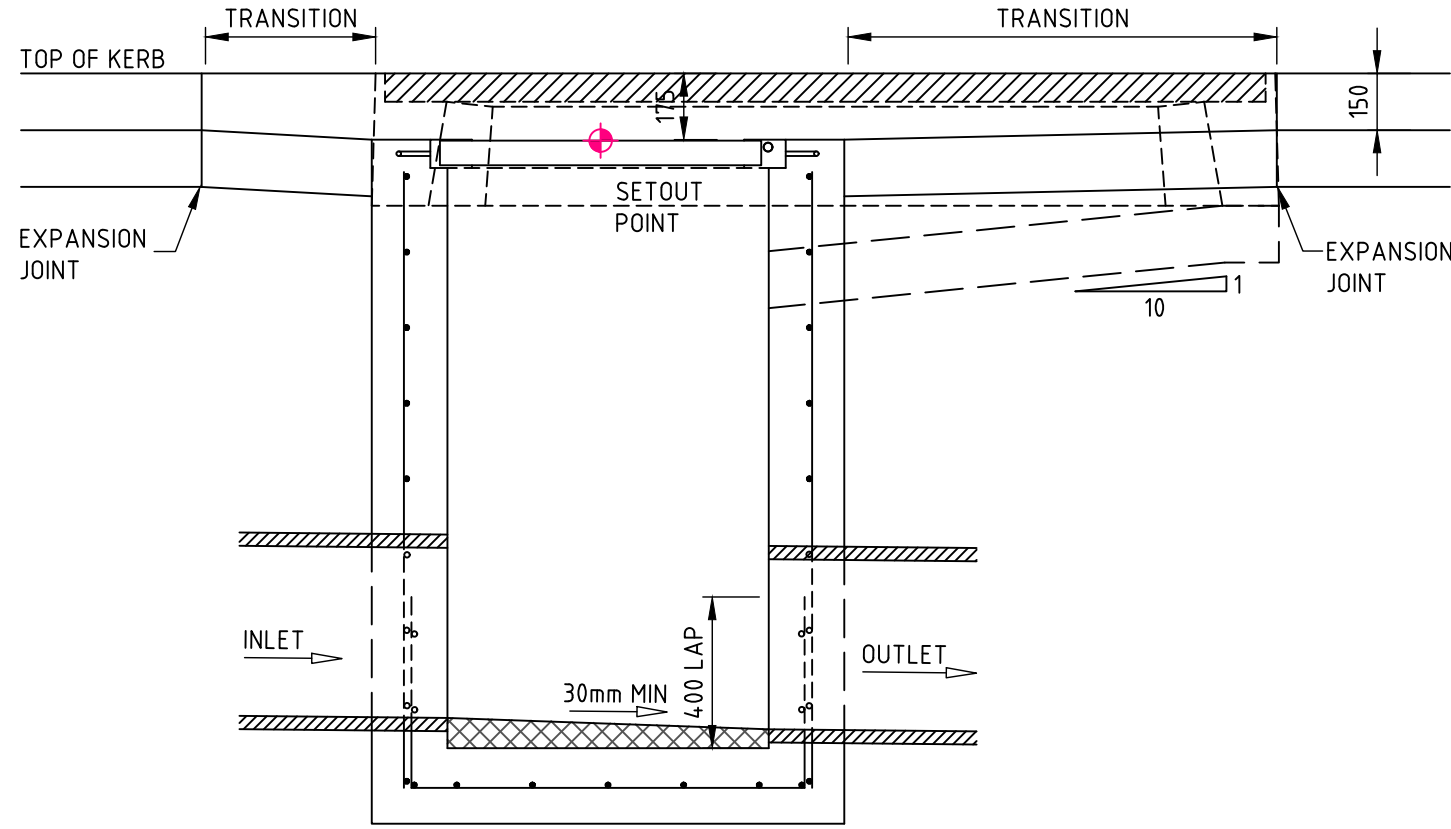


TYPICAL PIPE TRENCH - GENERAL AREAS

1. TRENCH WIDTH MAY NEED TO BE INCREASED SUBJECT TO ACHIEVING COMPACTION. ENSURE MINIMUM 300mm CLEARANCE BETWEEN, WHEN USING MULTIPLE PIPES TO ACHIEVE ADEQUATE COMPACTION.
2. MINIMUM PIPE COVER NOT UNDER ROADS TO BE 300mm U.N.O.
3. THE CONTRACTOR SHALL ENSURE THAT SHORING OF TRENCHES IS INSTALLED AS REQUIRED BY STATUTORY REQUIREMENTS.
4. ENSURE BACKFILLING COMPACTION MEETS THE FOLLOWING STANDARDS;
  - 4.1. TRENCHES UNDER PAVED AREAS / BUILDING - 100% SMDD
  - 4.2. TRENCHES NOT UNDER PAVEMENTS - 95% SMDD



PLAN

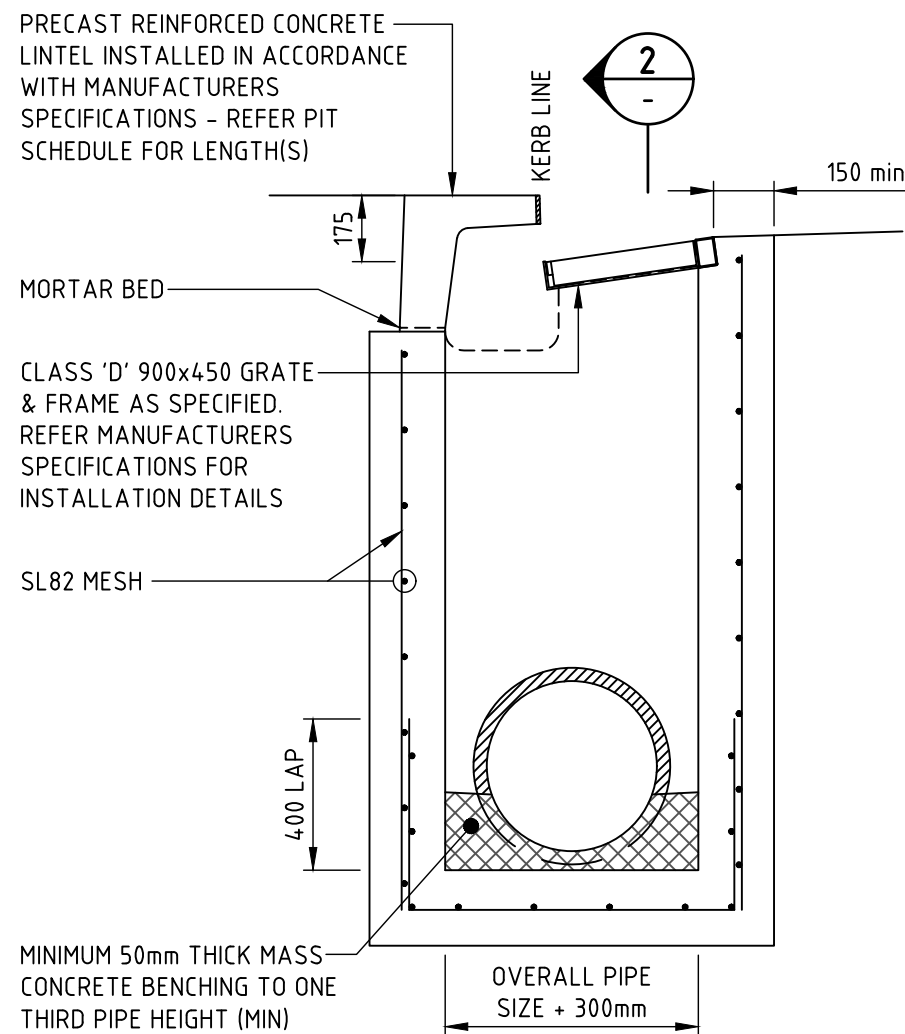


SECTION 2

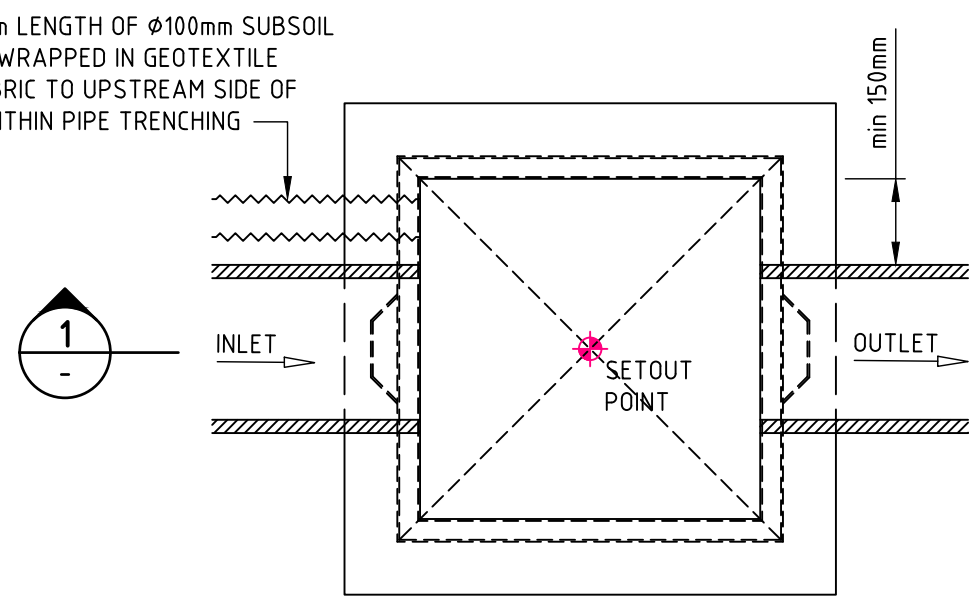
KERB INLET PIT 'KIP'

PIT STRUCTURE TO BE 200mm THICK UNLESS SHOWN OTHERWISE. DRILL AND EPOXY PLASTIC PROPRIETARY STEP IRONS IN ACCORDANCE WITH AUSTRALIAN STANDARDS AND MANUFACTURERS SPECIFICATIONS (PITS > 1000mm DEPTH). REFER PIT INTERFACE DETAIL 'F' FOR CORNER REINFORCEMENT

FOR SAG PITS, ENSURE PIT LINTEL IS LOCATED CENTRAL TO PIT GRATE AND FRAME AND 1:10 CHUTE IS CONSTRUCTED TO BOTH SIDES OF PIT

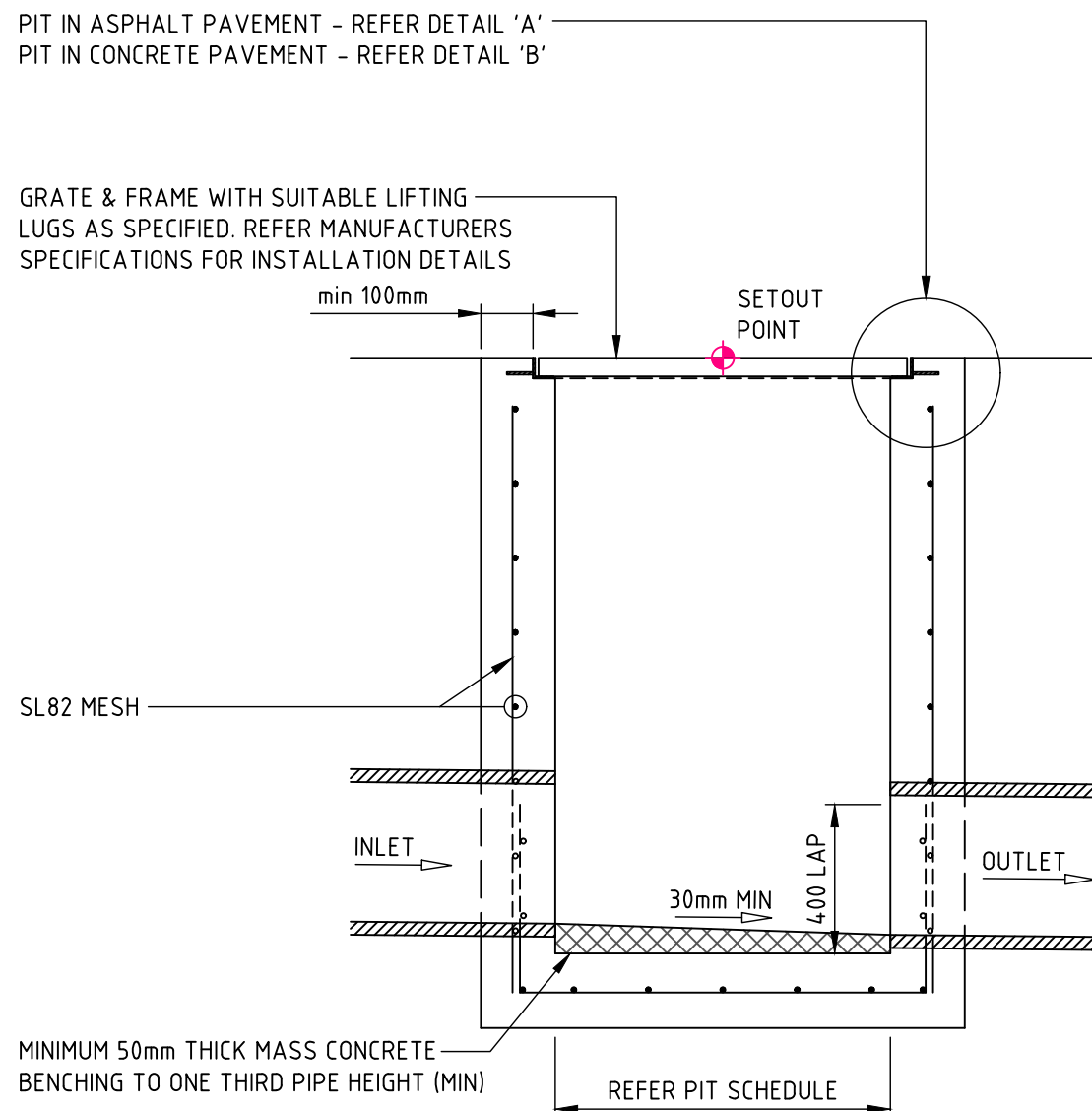


SECTION 1



PLAN  
SURFACE INLET 'SIP' / JUNCTION PIT 'JP'

PIT STRUCTURE TO BE 200mm THICK UNLESS SHOWN OTHERWISE. DRILL AND EPOXY PLASTIC PROPRIETARY STEP IRONS IN ACCORDANCE WITH AUSTRALIAN STANDARDS AND MANUFACTURERS SPECIFICATIONS (PITS > 1000mm DEPTH). REFER PIT INTERFACE DETAIL 'F' FOR CORNER REINFORCEMENT



SECTION 1

REVISION	DESCRIPTION	ISSUED	VER'D	APP'D	DATE
01	ISSUED FOR CONTRACTOR REVIEW AND PRICING	AM		BL	05.11.20
02	ISSUED FOR APPROVAL	AM		BL	10.08.21
03	RE-ISSUED FOR APPROVAL	AF		BL	25.01.23



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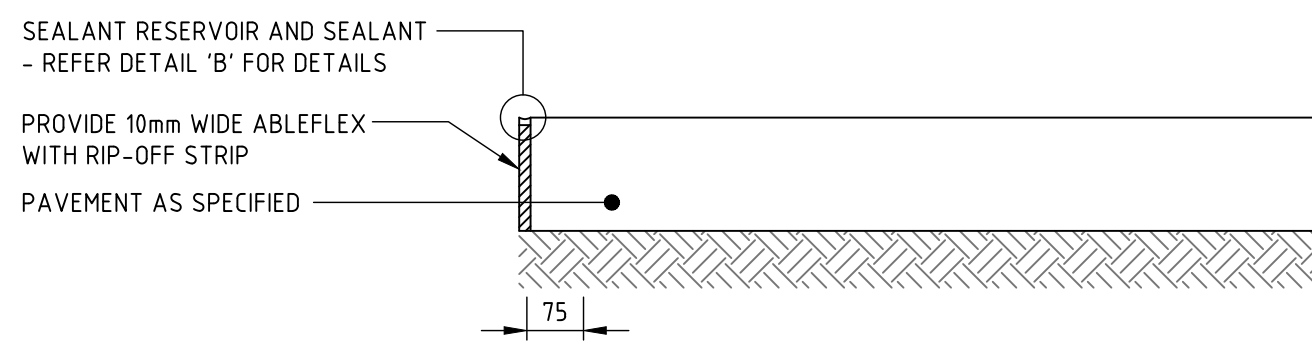
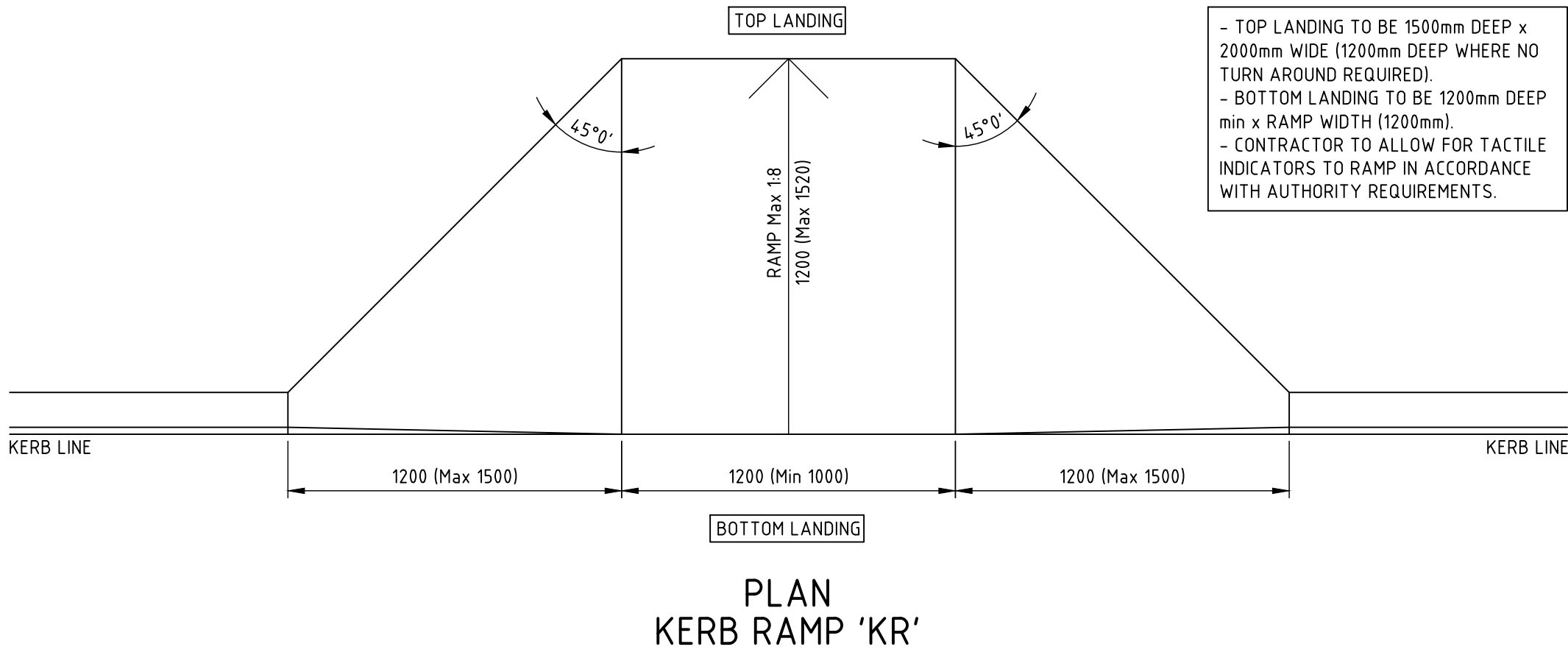
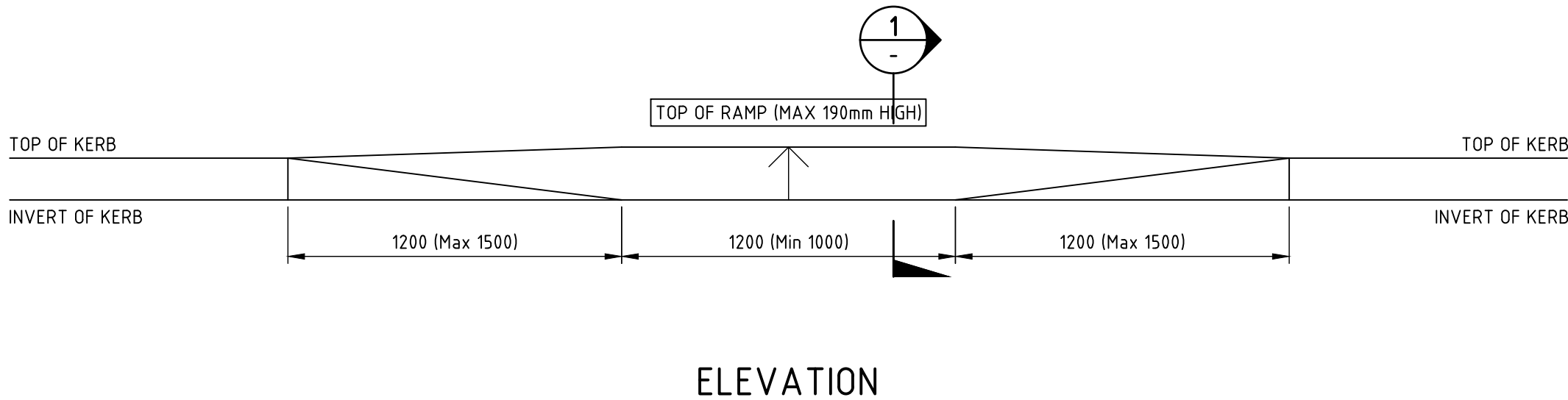
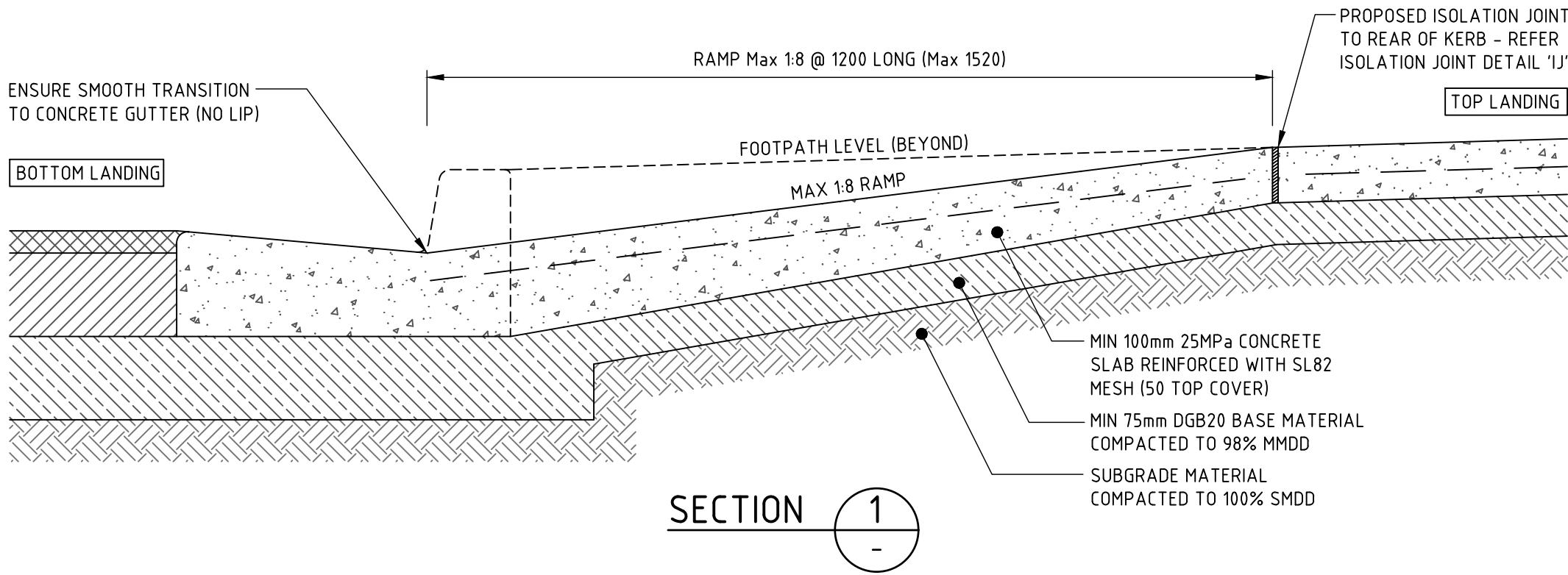


PROJECT
14 - 16 HILL ROAD, SYDNEY OLYMPIC PARK PROPOSED TRAFFIC FACILITIES

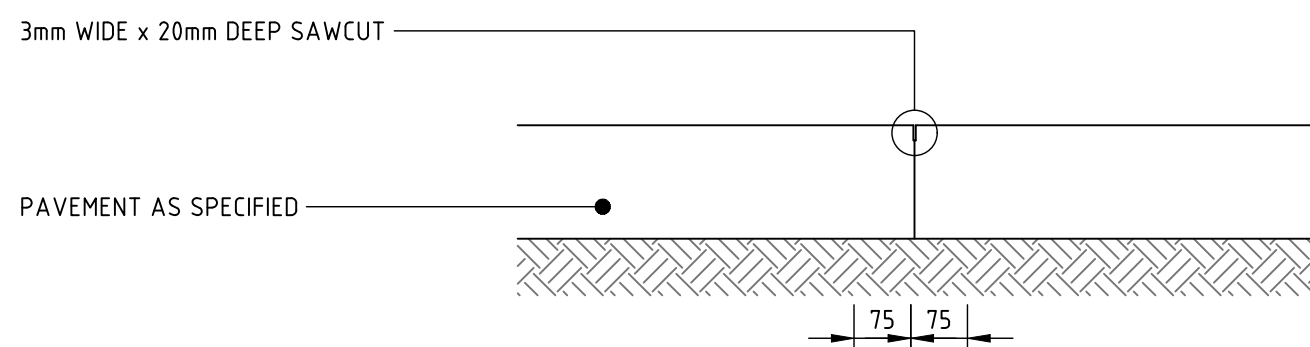
DRAWING TITLE
CIVIL ENGINEERING PACKAGE DETAILS - SHEET 01

JOB NUMBER
170973
DRAWING NUMBER
C18.01
REVISION
03
DRAWING SHEET SIZE = A1



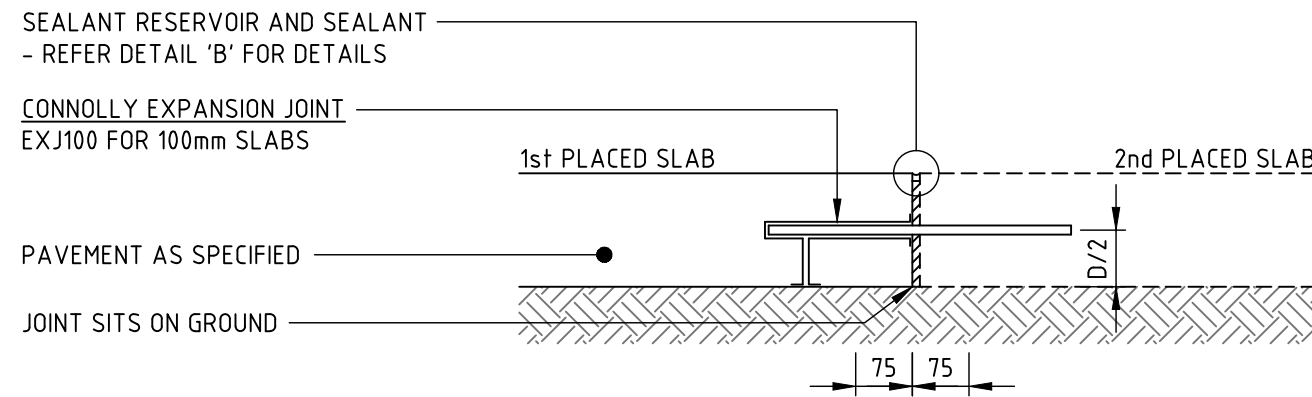


- PROVIDE JOINT BETWEEN ALL NEW CONCRETE AND EXISTING STRUCTURES
- JOINT TO BE USED AGAINST ALL WALLS, FOOTINGS, COLUMNS, BACK OF KERB, SERVICE PITS, DRAINAGE PITS AND ALL SLAB PENETRATIONS



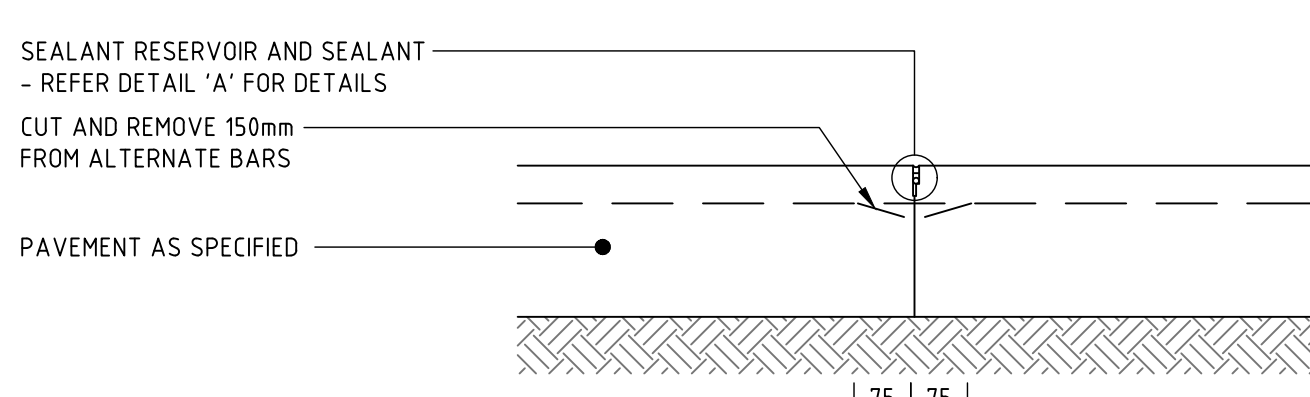
#### FOOTPATH SAWN / CONTRACTION JOINT 'SJ'

- JOINT TO BE SAWN AS SOON AS CONCRETE HAS HARDENED SUFFICIENTLY THAT IT WILL NOT BE DAMAGED BY SAWING (MAX 24HRS)
- REFER SPECIFICATION NOTES FOR JOINT SPACINGS (2m UNO)



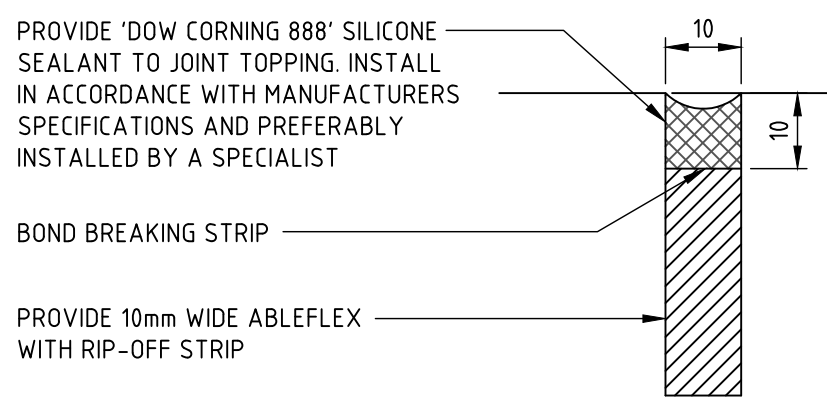
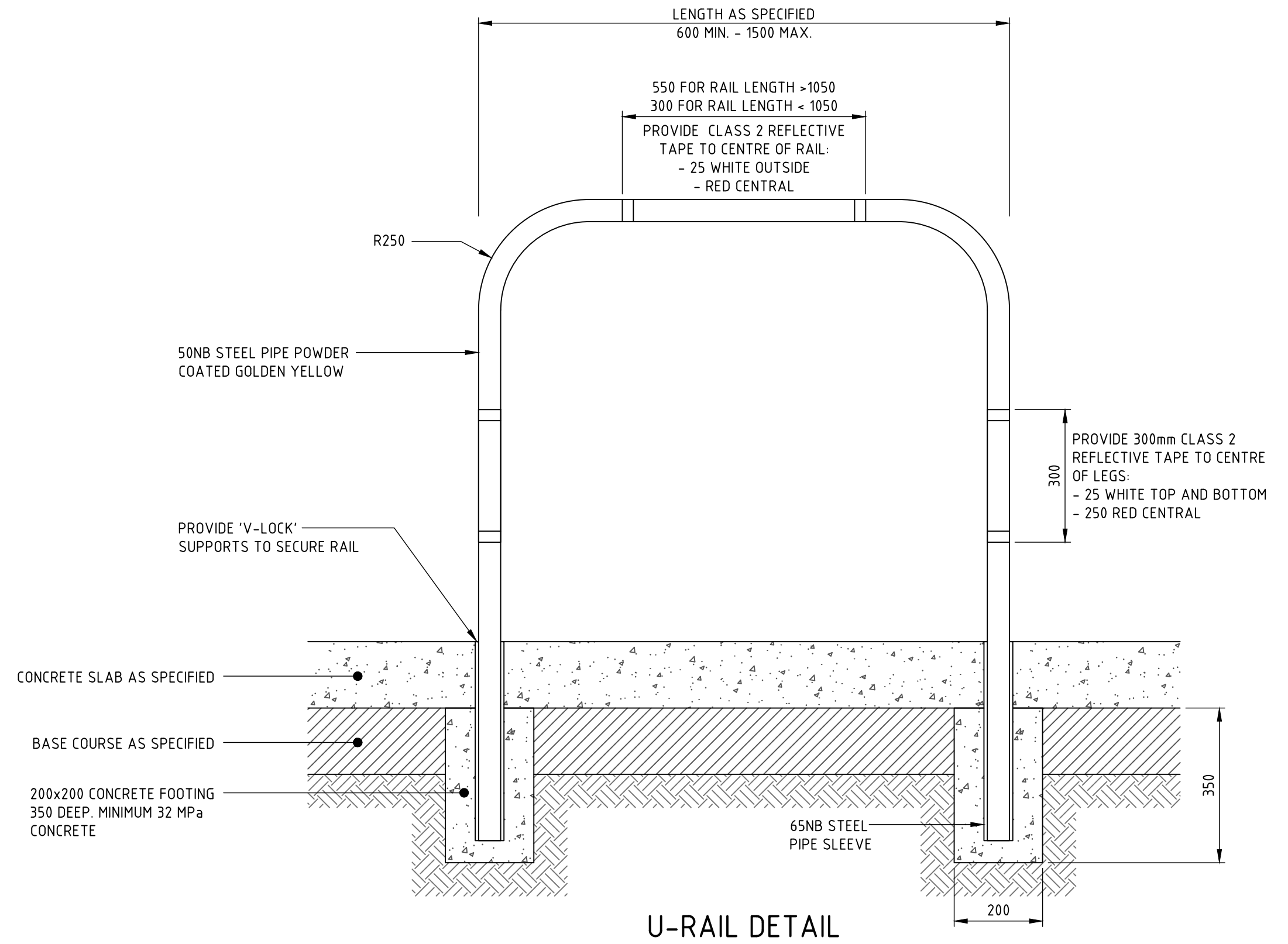
#### FOOTPATH EXPANSION JOINT 'EJ'

- TO ALSO BE USED AS A 'STOPWORK JOINT'
- MAXIMUM CONTINUOUS POUR NOT TO EXCEED 36m
- JOINT TO BE INSTALLED TO MANUFACTURERS SPECIFICATIONS
- REFER SPECIFICATION NOTES FOR JOINT SPACINGS (6m UNO)

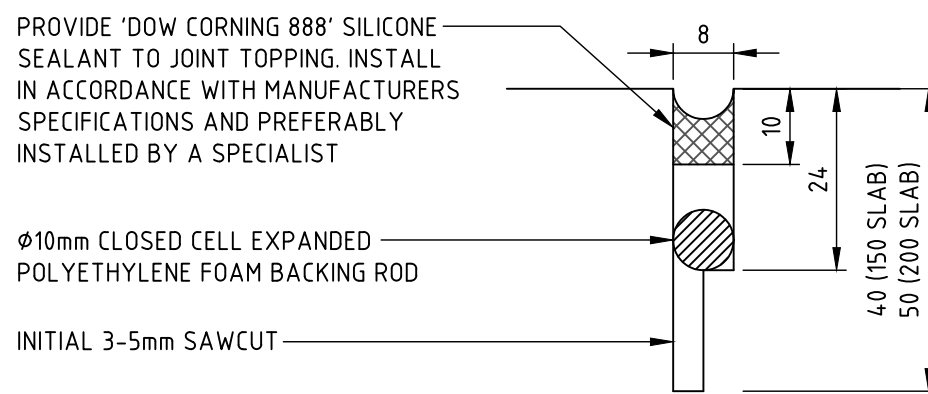


#### TRAFFICKED SAWN / CONTRACTION JOINT 'SJ'

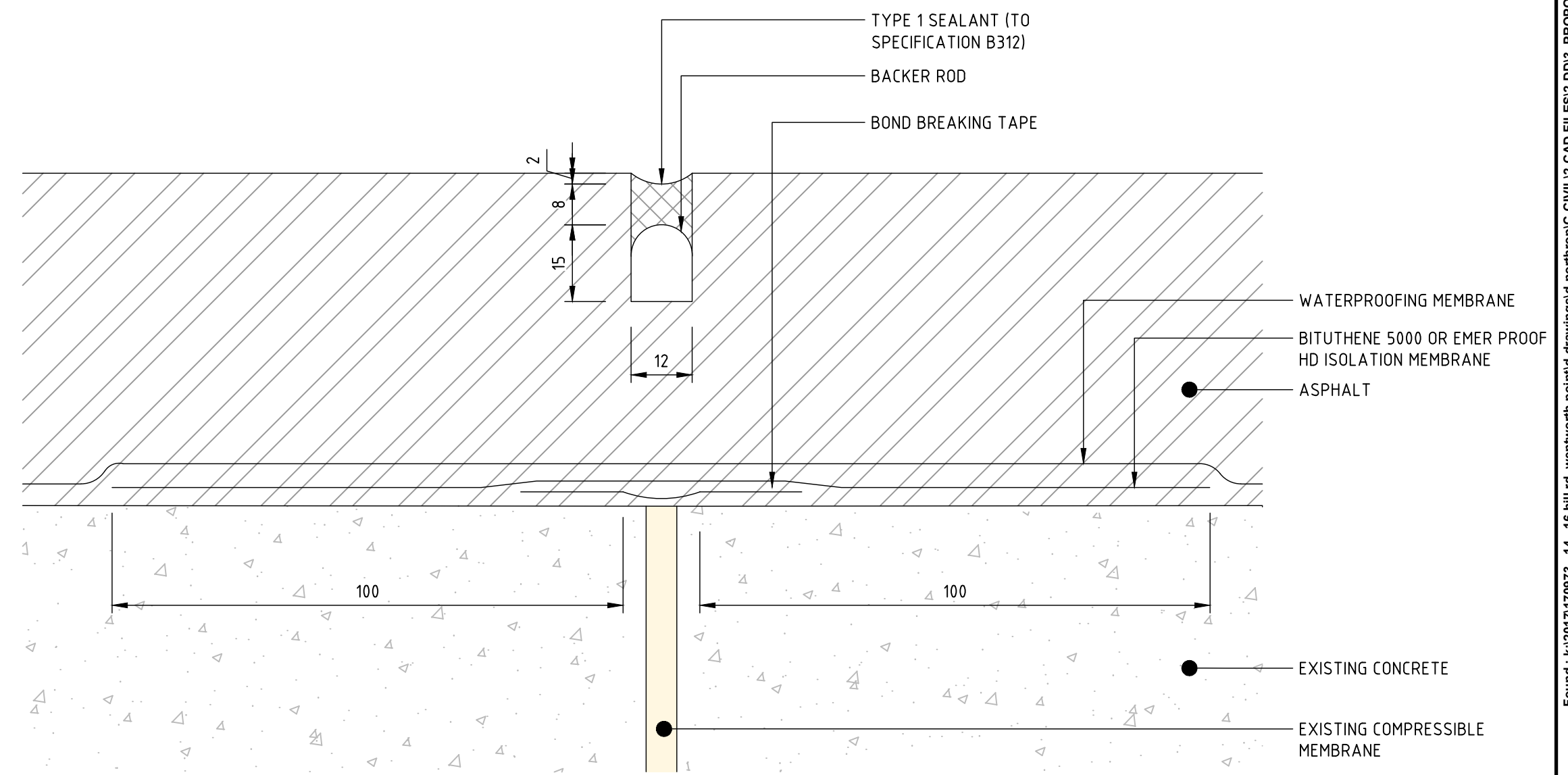
- JOINT TO BE SAWN AS SOON AS CONCRETE HAS HARDENED SUFFICIENTLY THAT IT WILL NOT BE DAMAGED BY SAWING (MAX 24HRS)
- REFER SPECIFICATION NOTES FOR JOINT SPACINGS (6m UNO)



#### DETAIL 'B'



#### DETAIL 'A'



#### ASPHALT TREATMENT OVER EXISTING CONCRETE PAVEMENT JOINTS

VERIFIER: BLA WRENCE  
JOB MANAGER: BLA WRENCE  
DESIGNED: BLA WRENCE  
DRAWN: A HARGREAVES

REVISION	DESCRIPTION	ISSUED	VER'D	APP'D	DATE
01	ISSUED FOR CONTRACTOR REVIEW AND PRICING	AM		BL	05.11.20
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PROJECT

14 - 16 HILL ROAD,  
SYDNEY OLYMPIC PARK

PROPOSED TRAFFIC FACILITIES

DRAWING TITLE

CIVIL ENGINEERING PACKAGE

DETAILS - SHEET 02

JOB NUMBER

170973

DRAWING NUMBER

C18.02

REVISION

03

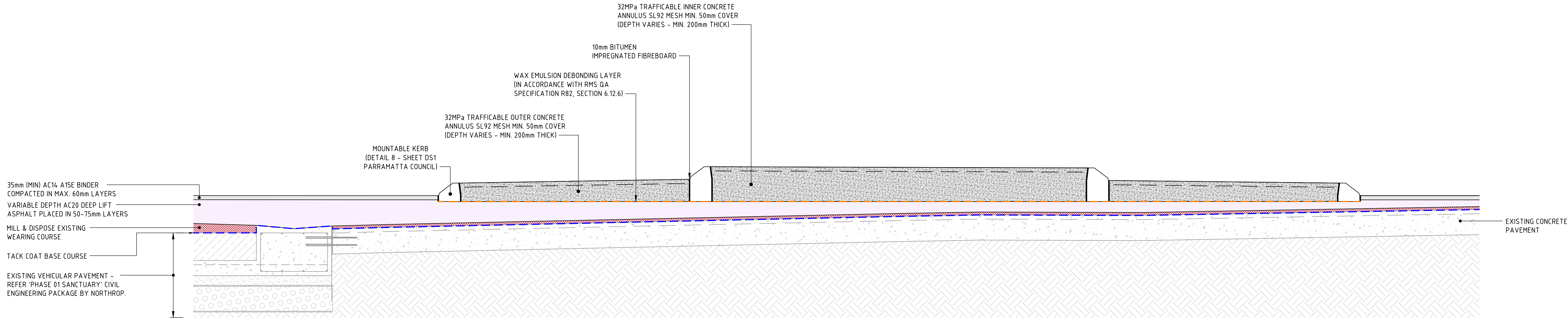
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Date: 15.02.2018 11:24 AM

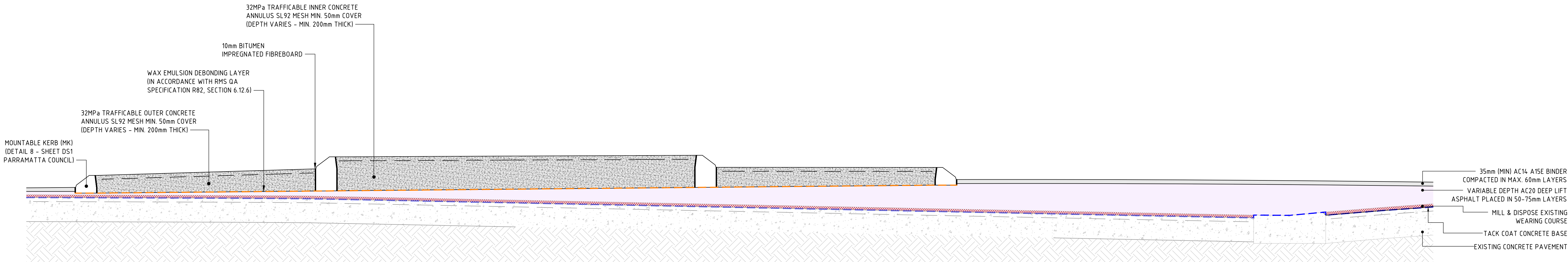


GENERAL NOTE

CONTRACTOR TO CONFIRM EXISTING PAVEMENT PROFILE WITH DESIGN ENGINEER PRIOR TO COMMENCEMENT OF CONSTRUCTION



ROUNDBOUT SECTION A-A  
SCALE 1:25



ROUNDBOUT SECTION B-B  
SCALE 1:25

DRAWN: A.MARGARIS  
DESIGNED: B.LAWRENCE  
JOB MANAGER: B.LAWRENCE  
VERIFIER:

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01	ISSUED FOR CONTRACTOR REVIEW AND PRICING	AM		BL	05.11.20
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SCALE 1:25@A1





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PROJECT

**14 - 16 HILL ROAD,  
SYDNEY OLYMPIC PARK**

**PROPOSED TRAFFIC FACILITIES**

DRAWING TITLE

**CIVIL ENGINEERING PACKAGE**

**DETAILS - SHEET 03**

JOB NUMBER

**170973**

DRAWING NUMBER

**C18.03**

REVISION

**03**

DRAWING SHEET SIZE = A1



DRAWN: A.MARGARIS  
DESIGNED: B.LAWRENCE  
JOB MANAGER: B.LAWRENCE  
VERIFIER:

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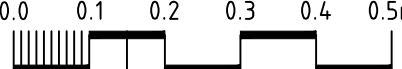
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SCALE 1:10 @ A1





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PROJECT

14 - 16 HILL ROAD,  
SYDNEY OLYMPIC PARK

PROPOSED TRAFFIC FACILITIES

DRAWING TITLE

CIVIL ENGINEERING PACKAGE

DETAILS - SHEET 04

JOB NUMBER

170973

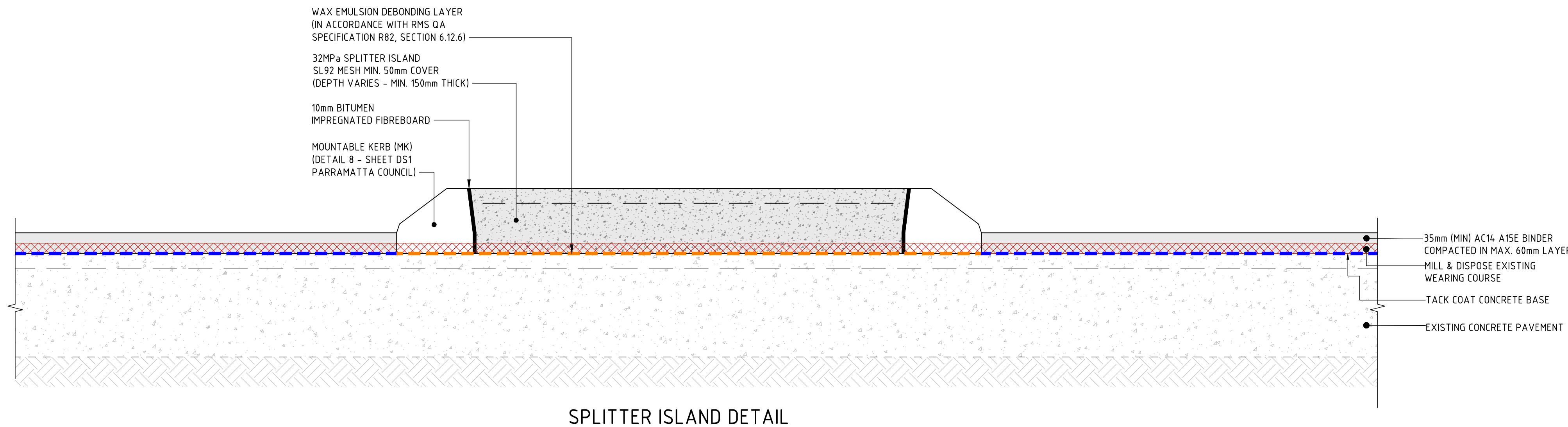
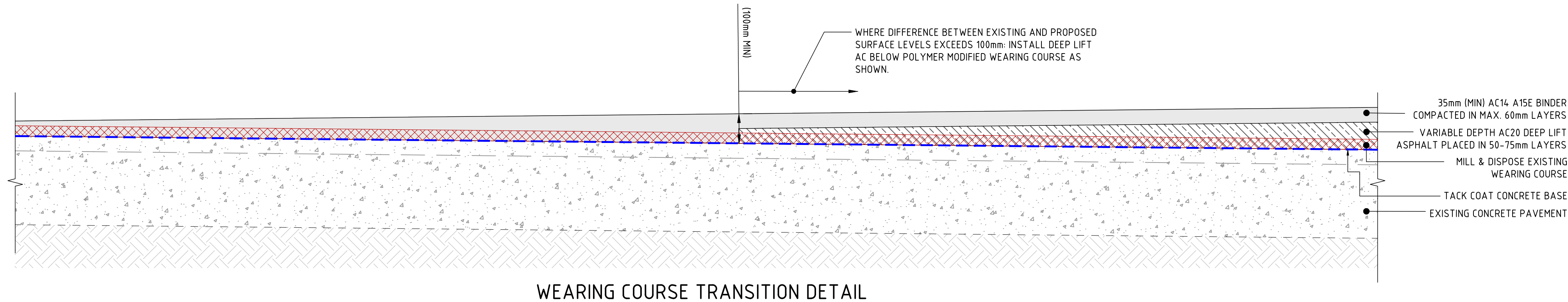
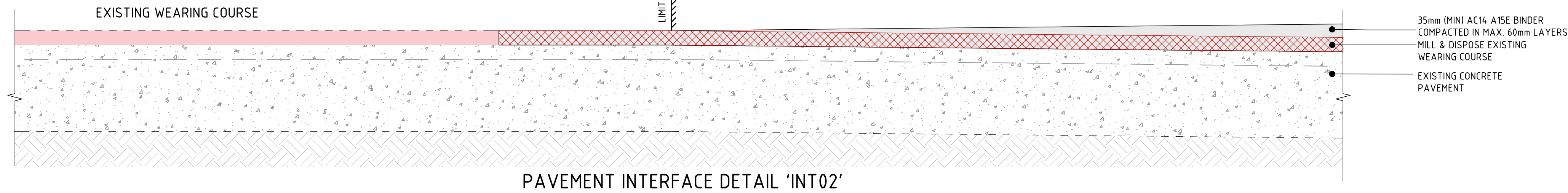
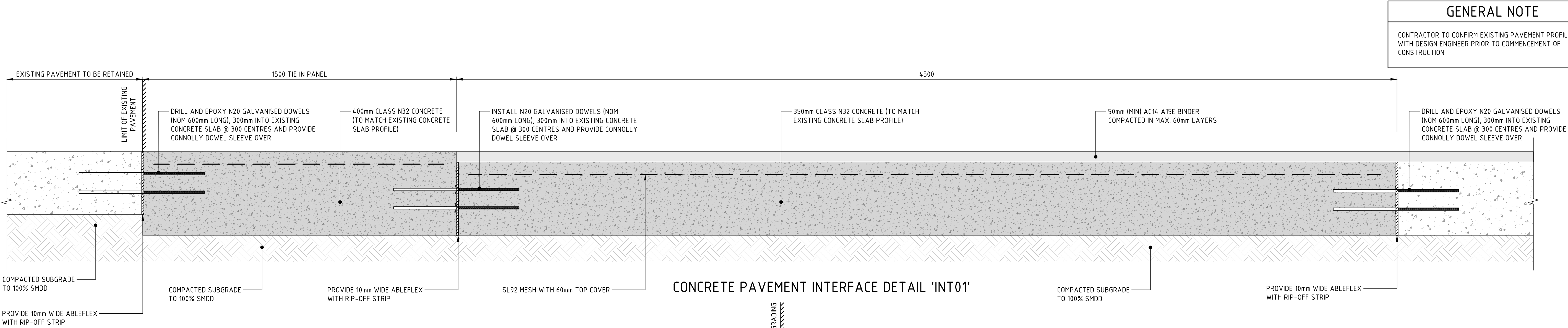
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C18.04

REVISION

03

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## GENERAL NOTE

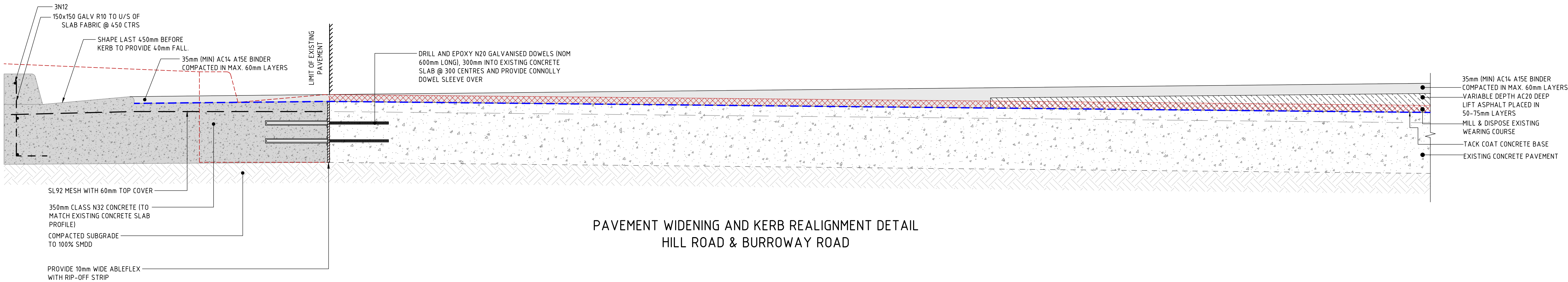
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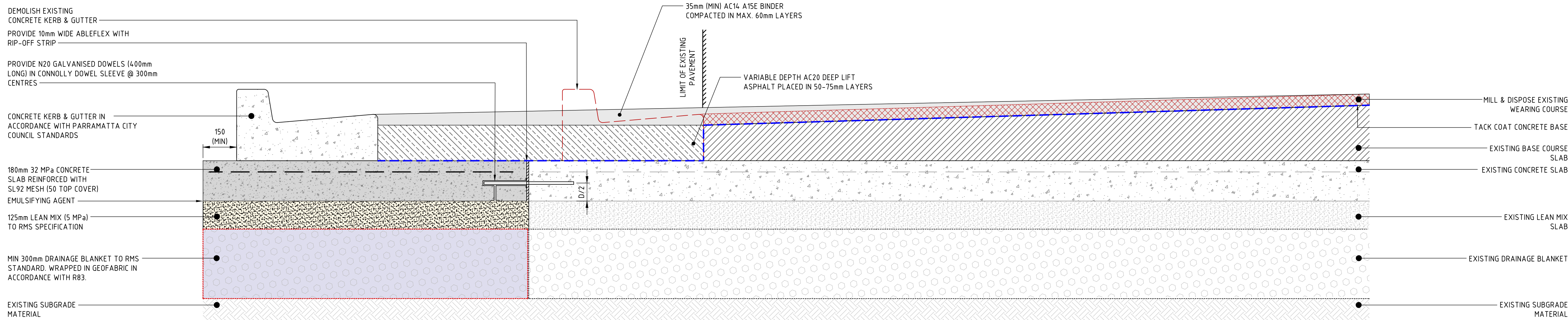


GENERAL NOTE

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PAVEMENT WIDENING AND KERB REALIGNMENT DETAIL  
HILL ROAD & BURROWAY ROAD



PAVEMENT WIDENING AND KERB REALIGNMENT DETAIL  
LAPWING STREET

DRAWN: A.MARGARIS  
DESIGNED: B.LAWRENCE  
JOB MANAGER: B.LAWRENCE  
VERIFIER:

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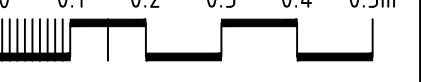
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PROJECT

**14 - 16 HILL ROAD,  
SYDNEY OLYMPIC PARK**

**PROPOSED TRAFFIC FACILITIES**

DRAWING TITLE

**CIVIL ENGINEERING PACKAGE**

**DETAILS - SHEET 05**

JOB NUMBER

**170973**

DRAWING NUMBER

**C18.05**

REVISION

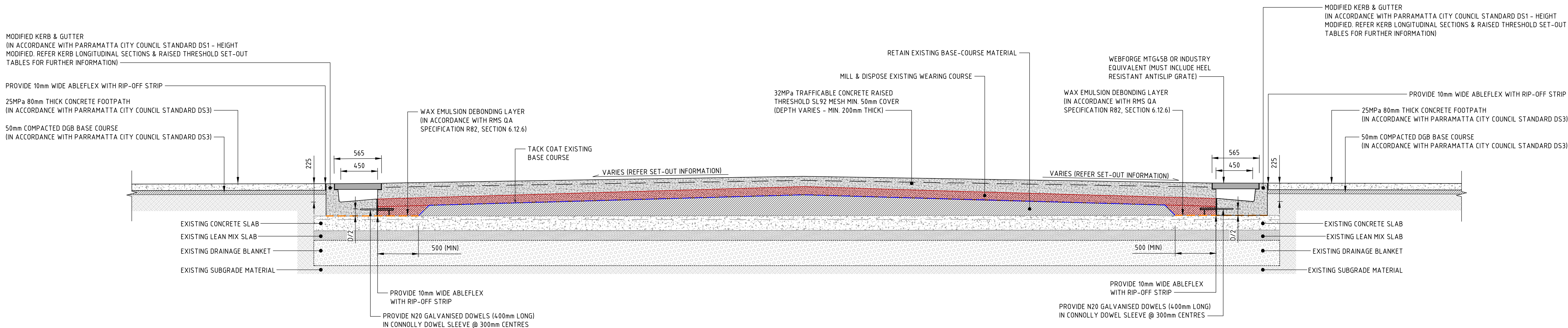
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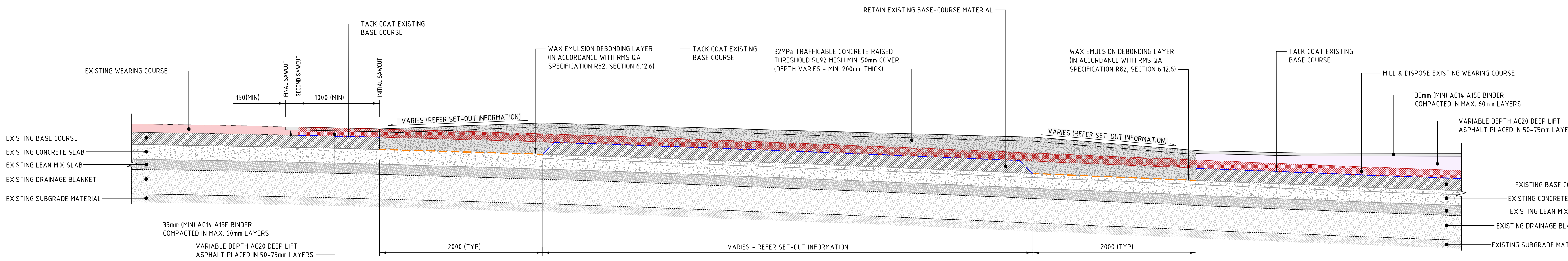
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Plotted By: ANGUS FALLINS  
Date: 15.02.2018 11:24 AM



DRAWN: A.MARGARIS  
DESIGNED: B.LAWRENCE  
JOB MANAGER: B.LAWRENCE  
VERIFIER:



TYPICAL RAISED THRESHOLD SECTION A-A  
SCALE 1:25



TYPICAL RAISED THRESHOLD SECTION B-B  
SCALE 1:25

REVISION	DESCRIPTION	ISSUED	VER'D	APP'D	DATE
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PROJECT

**14 - 16 HILL ROAD,  
SYDNEY OLYMPIC PARK**

**PROPOSED TRAFFIC FACILITIES**

DRAWING TITLE

**CIVIL ENGINEERING PACKAGE**

**DETAILS - SHEET 06**

JOB NUMBER

**170973**

DRAWING NUMBER

**C18.06**

REVISION

**02**

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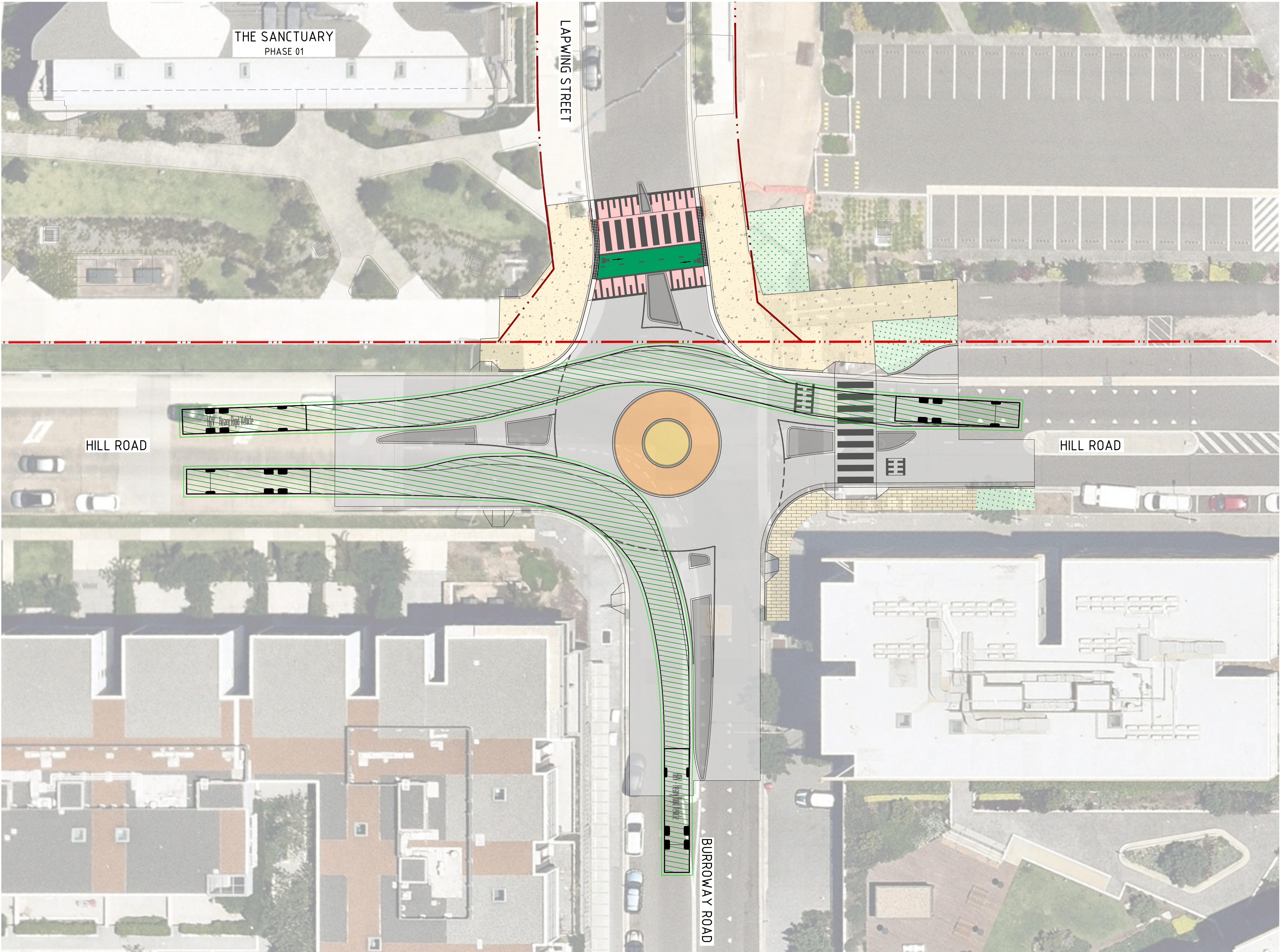
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Plotted By: ANGUS FALLINS  
Date: 15.02.2018 11:24 AM







DRAWN: A.MARGARIS    DESIGNED: B.LAWRENCE    JOB MANAGER: B.LAWRENCE    VERIFIER:



VEHICLE MOVEMENTS

FORWARD MOVEMENT

VEHICLE BODY

VEHICLE WHEELS

VEHICLE PROFILE

HRV / SINGLE UNIT TRUCK/BUS (12.5 m)

OVERALL LENGTH	12.500m
OVERALL WIDTH	2.500m
OVERALL BODY HEIGHT	4.300m
MIN BODY GROUND CLEARANCE	0.490m
TRACK WIDTH	2.500m
LOCK-TO-LOCK TIME	6.00s
CURB TO CURB TURNING RADIUS	12.500m

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01	ISSUED FOR TRAFFIC COMMITTEE APPROVAL	AM		BL	26.10.20
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PROJECT

14 - 16 HILL ROAD,  
SYDNEY OLYMPIC PARK

PROPOSED TRAFFIC FACILITIES

DRAWING TITLE

CIVIL ENGINEERING PACKAGE

SWEPT PATHS PLAN - SHEET 01

12.5M HRV DESIGN VEHICLE

JOB NUMBER

170973

DRAWING NUMBER

C19.01

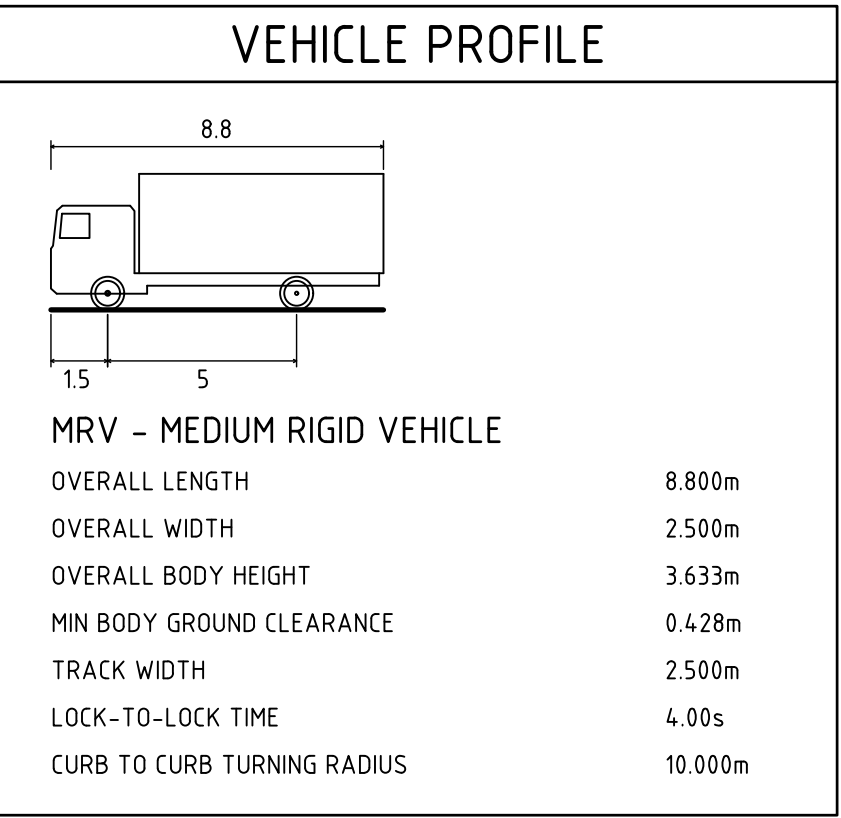
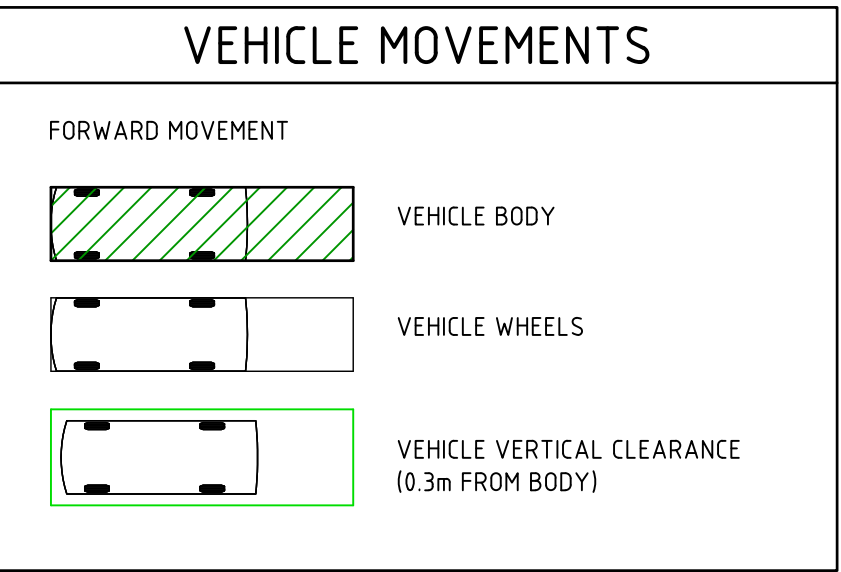
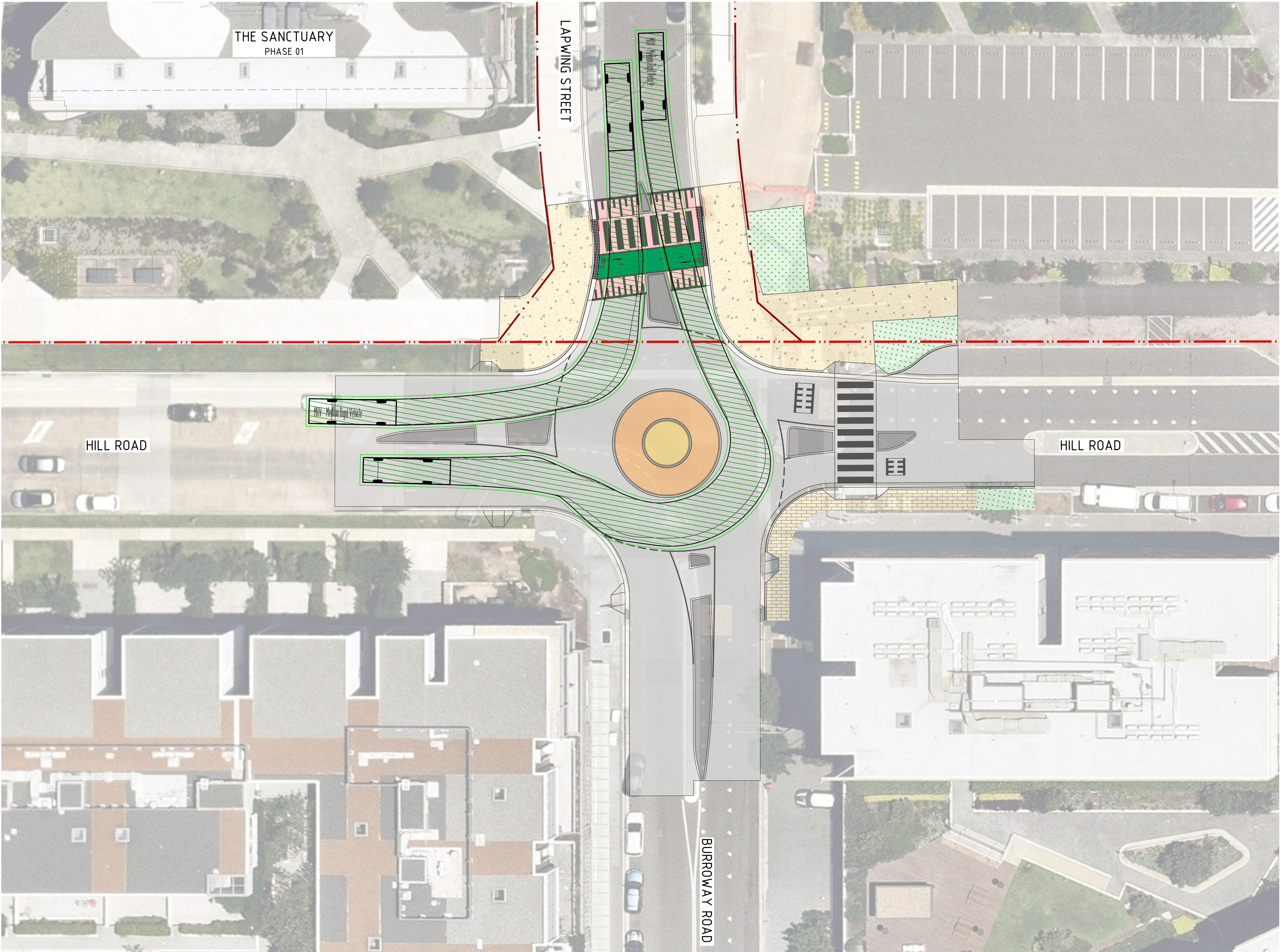
REVISION

04

DRAWING SHEET SIZE = A1



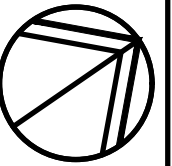
DRAWN: A.MARGARIS    DESIGNED: B.LAWRENCE    JOB MANAGER: B.LAWRENCE    VERIFIER:



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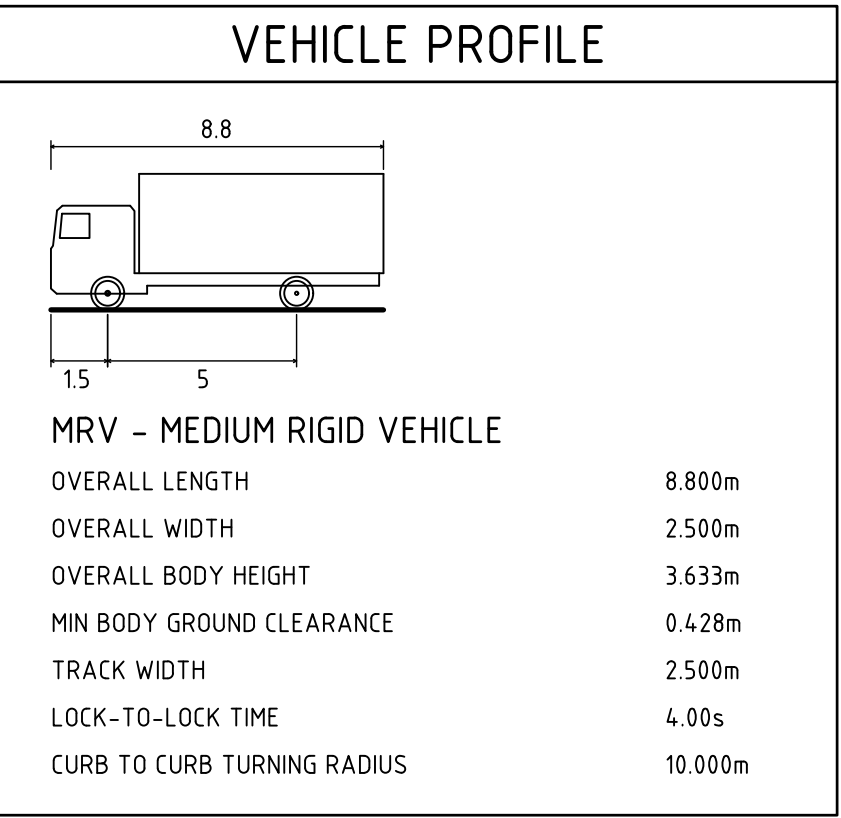
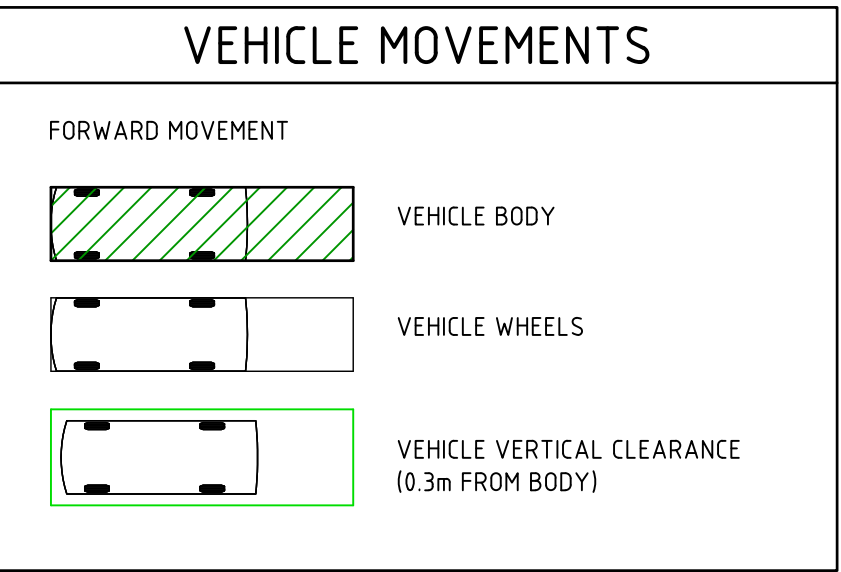
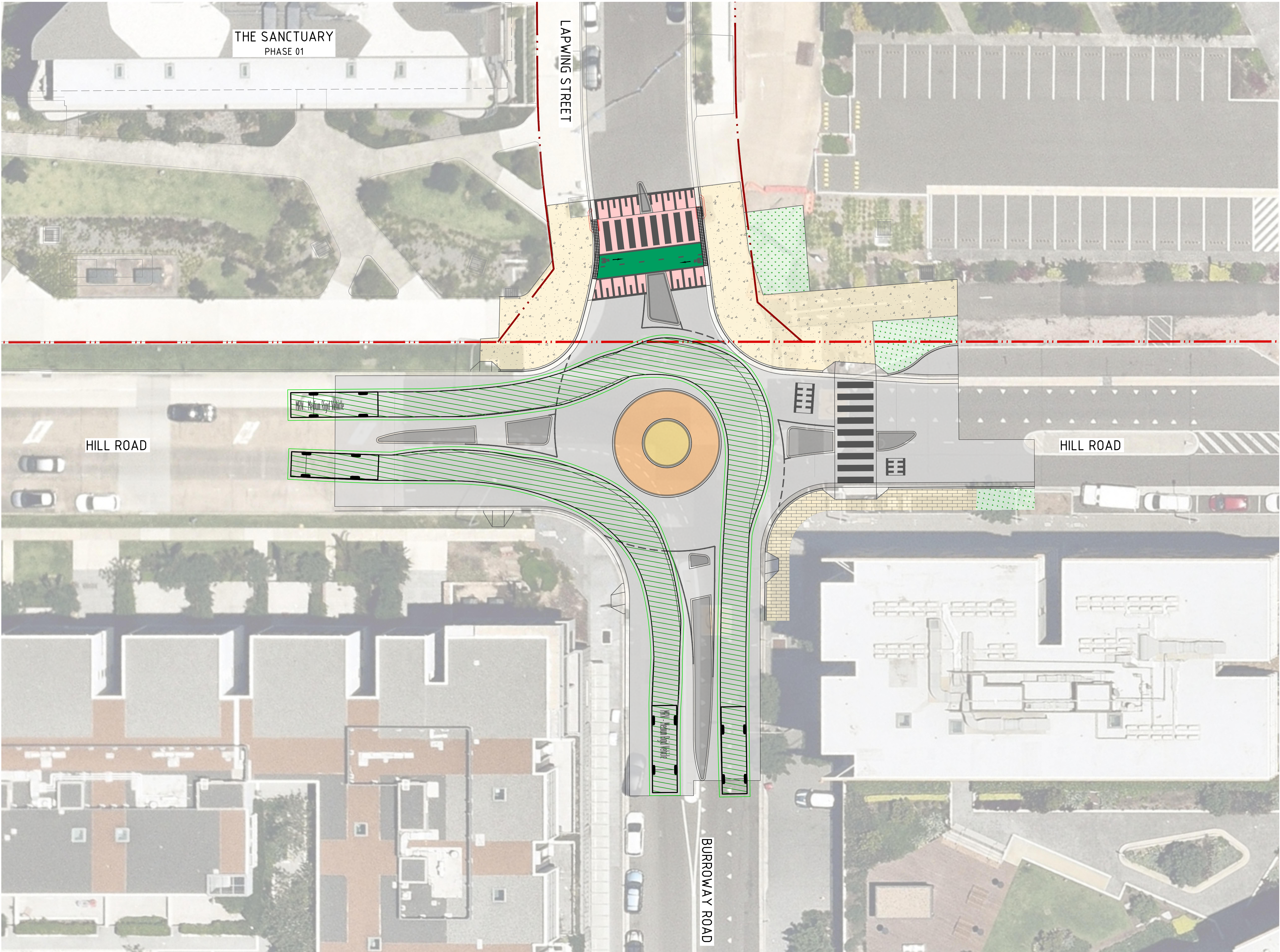
PROJECT  
**14 - 16 HILL ROAD,  
SYDNEY OLYMPIC PARK**  
**PROPOSED TRAFFIC FACILITIES**

DRAWING TITLE  
**CIVIL ENGINEERING PACKAGE**  
**SWEPT PATHS PLAN - SHEET 02**  
**8.8M MRV DESIGN VEHICLE**

JOB NUMBER <b>170973</b>	
DRAWING NUMBER <b>C19.02</b>	REVISION <b>04</b>
DRAWING SHEET SIZE = A1	



DRAWN: A.MARGARIS    DESIGNED: B.LAWRENCE    JOB MANAGER: B.LAWRENCE    VERIFIER:



REVISION	DESCRIPTION	ISSUED	VER'D	APP'D	DATE
01	ISSUED FOR TRAFFIC COMMITTEE APPROVAL	AM		BL	26.10.20
02	ISSUED FOR CONTRACTOR REVIEW AND PRICING	AM		BL	05.11.20
03	ISSUED FOR APPROVAL	AM		BL	10.08.21
04	RE-ISSUED FOR APPROVAL	AF		BL	25.01.23

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PROJECT

14 - 16 HILL ROAD,  
SYDNEY OLYMPIC PARK

PROPOSED TRAFFIC FACILITIES

DRAWING TITLE

CIVIL ENGINEERING PACKAGE

SWEPT PATHS PLAN - SHEET 03  
8.8M MRV DESIGN VEHICLE

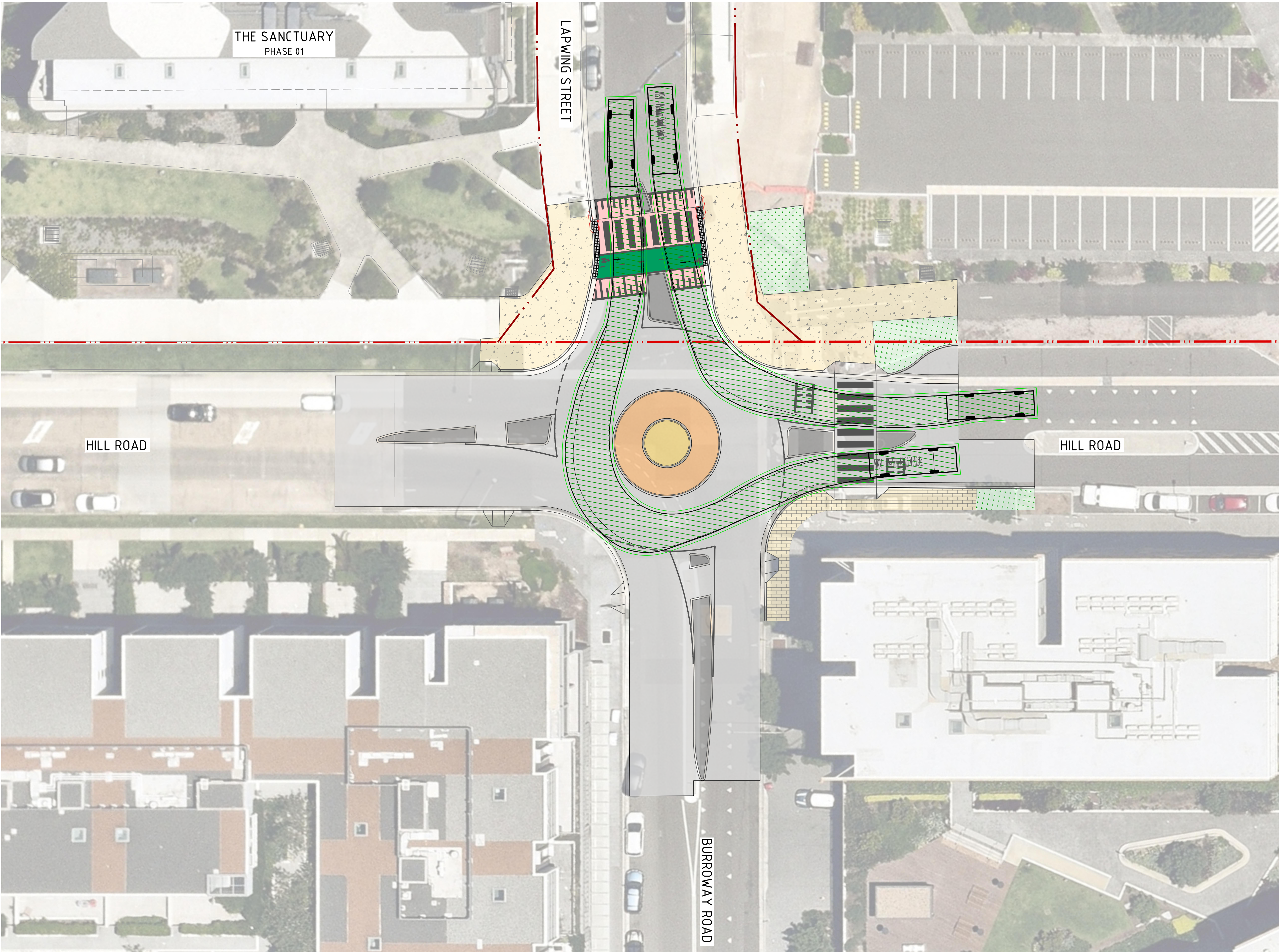
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DRAWING NUMBER <b>C19.03</b>	REVISION <b>04</b>
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VEHICLE MOVEMENTS

FORWARD MOVEMENT

VEHICLE BODY

VEHICLE WHEELS

VEHICLE VERTICAL CLEARANCE  
(0.3m FROM BODY)

VEHICLE PROFILE

MRV – MEDIUM RIGID VEHICLE

OVERALL LENGTH	8.800m
OVERALL WIDTH	2.500m
OVERALL BODY HEIGHT	3.633m
MIN BODY GROUND CLEARANCE	0.428m
TRACK WIDTH	2.500m
LOCK-TO-LOCK TIME	4.00s
CURB TO CURB TURNING RADIUS	10.000m

REVISION	DESCRIPTION	ISSUED	VER'D	APP'D	DATE
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SEKISUI HOUSE

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PROJECT

14 - 16 HILL ROAD,  
SYDNEY OLYMPIC PARK

PROPOSED TRAFFIC FACILITIES

DRAWING TITLE

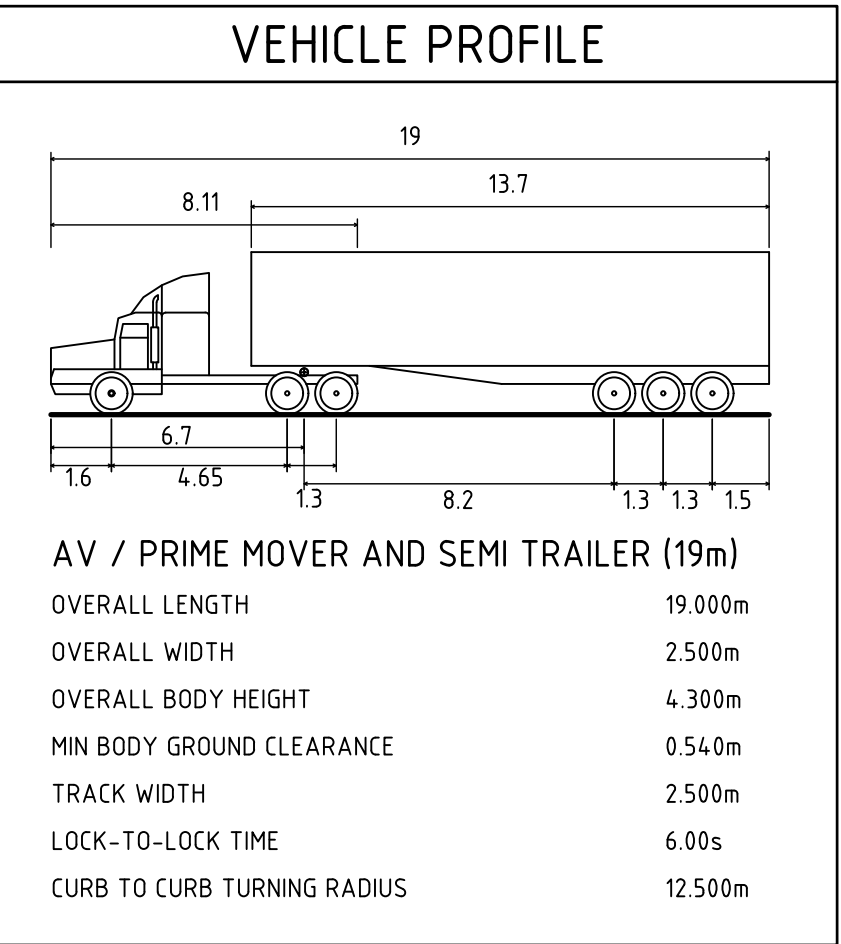
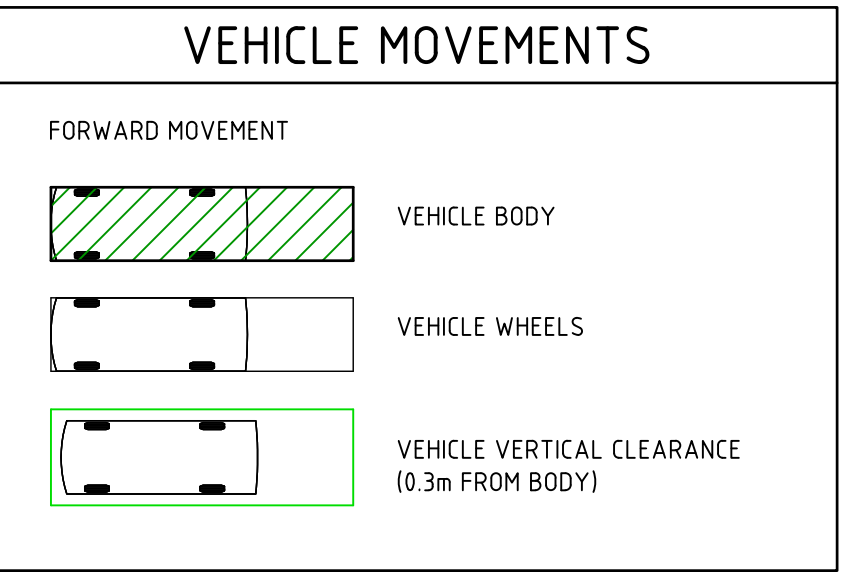
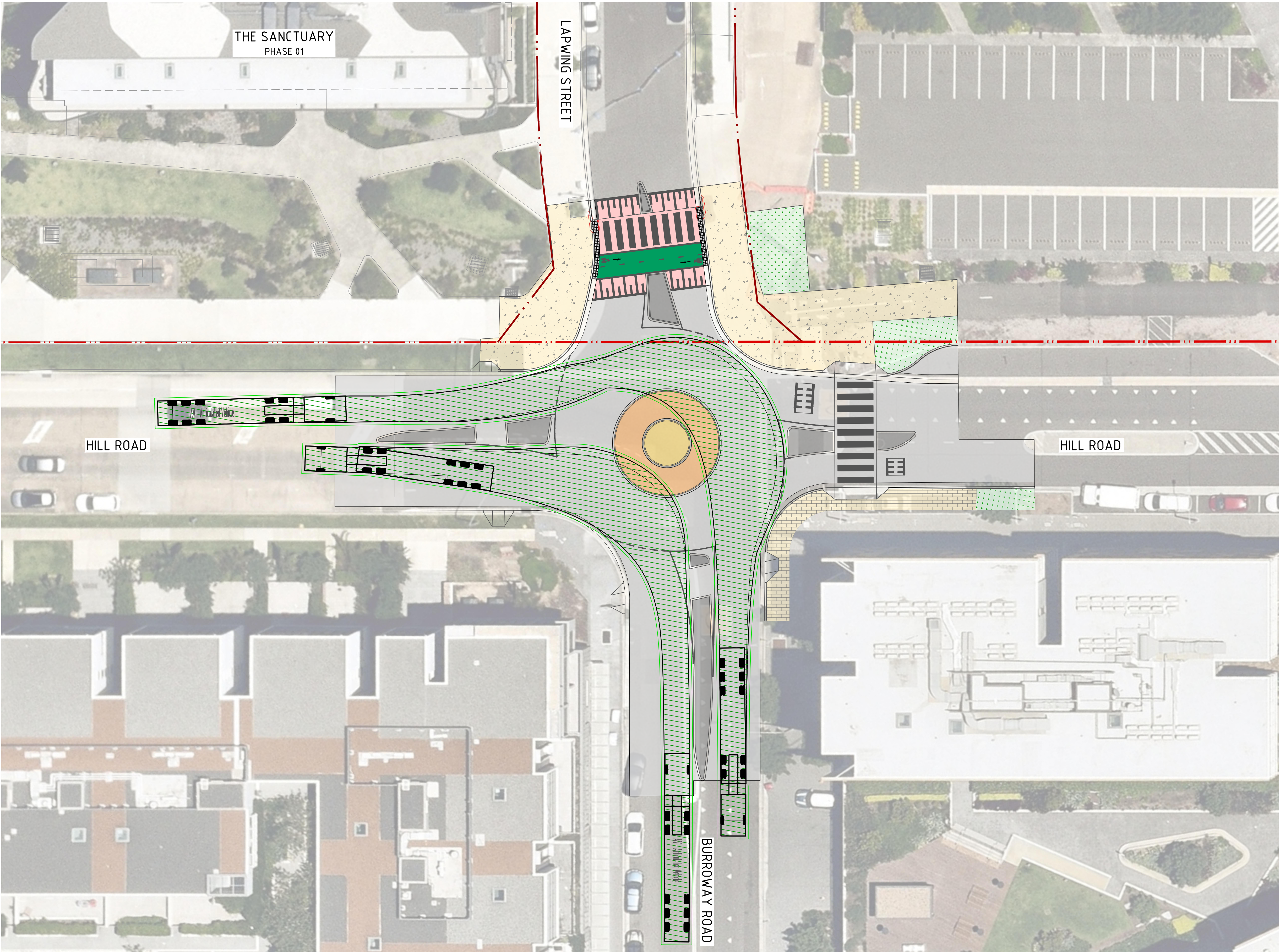
CIVIL ENGINEERING PACKAGE

SWEPT PATHS PLAN - SHEET 05  
8.8M MRV DESIGN VEHICLE

JOB NUMBER 170973	
DRAWING NUMBER C19.05	REVISION 04
DRAWING SHEET SIZE = A1	



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03	ISSUED FOR APPROVAL	AM		BL	10.08.21
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**SEKISUI HOUSE**

THE SANCTUARY PHASE 01

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0 2 4 6 8 10m

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**PROJECT**

14 - 16 HILL ROAD,  
SYDNEY OLYMPIC PARK

**PROPOSED TRAFFIC FACILITIES**

**DRAWING TITLE**

CIVIL ENGINEERING PACKAGE

**SWEPT PATHS PLAN - SHEET 06**  
19M AV CHECKING VEHICLE

**JOB NUMBER**

170973

**DRAWING NUMBER**

C19.06

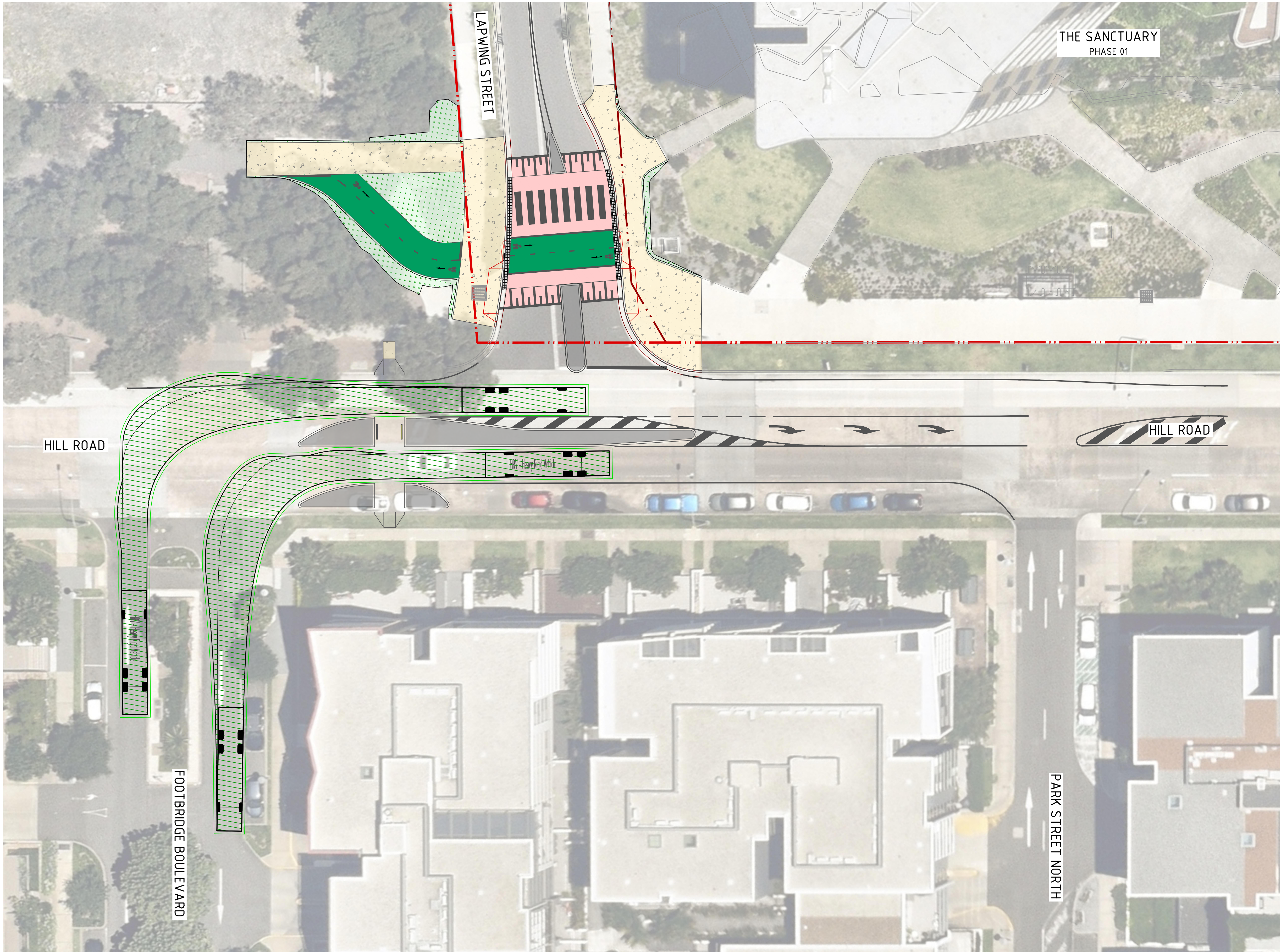
**REVISION**

04

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VEHICLE MOVEMENTS

FORWARD MOVEMENT

VEHICLE BODY

VEHICLE WHEELS

VEHICLE VERTICAL CLEARANCE  
(0.3m FROM BODY)

VEHICLE PROFILE

HRV / SINGLE UNIT TRUCK/BUS (12.5 m)

OVERALL LENGTH	12.500m
OVERALL WIDTH	2.500m
OVERALL BODY HEIGHT	4.300m
MIN BODY GROUND CLEARANCE	0.490m
TRACK WIDTH	2.500m
LOCK-TO-LOCK TIME	6.00s
CURB TO CURB TURNING RADIUS	12.500m

REVISION	DESCRIPTION	ISSUED	VER'D	APP'D	DATE
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PROJECT

14 - 16 HILL ROAD,  
SYDNEY OLYMPIC PARK

PROPOSED TRAFFIC FACILITIES

DRAWING TITLE

CIVIL ENGINEERING PACKAGE

SWEPT PATHS PLAN - SHEET 07  
12.5M HRV DESIGN VEHICLE

JOB NUMBER

170973

DRAWING NUMBER

C19.07

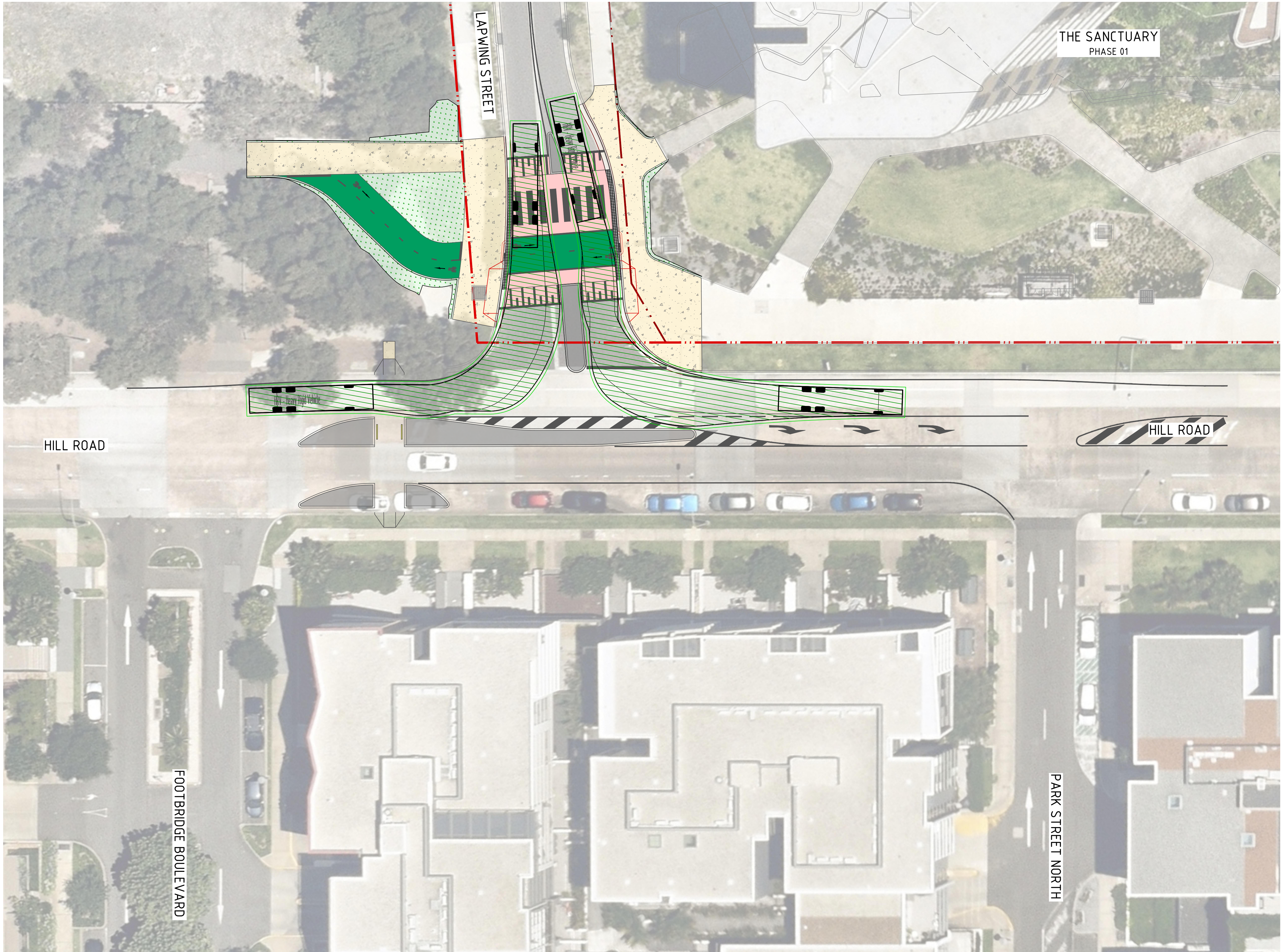
REVISION

04

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VEHICLE MOVEMENTS

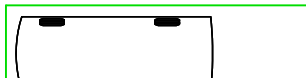
FORWARD MOVEMENT



VEHICLE BODY

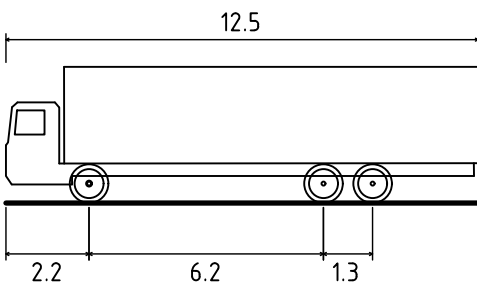


VEHICLE WHEELS



VEHICLE VERTICAL CLEARANCE  
(0.3m FROM BODY)

VEHICLE PROFILE



HRV / SINGLE UNIT TRUCK/BUS (12.5 m)	
OVERALL LENGTH	12.500m
OVERALL WIDTH	2.500m
OVERALL BODY HEIGHT	4.300m
MIN BODY GROUND CLEARANCE	0.490m
TRACK WIDTH	2.500m
LOCK-TO-LOCK TIME	6.00s
CURB TO CURB TURNING RADIUS	12.500m

REVISION	DESCRIPTION	ISSUED	VER'D	APP'D	DATE
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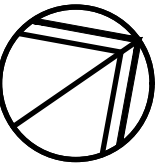


**SEKISUI HOUSE**

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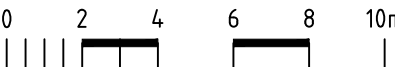
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PROJECT

14 - 16 HILL ROAD,  
SYDNEY OLYMPIC PARK

PROPOSED TRAFFIC FACILITIES

DRAWING TITLE

CIVIL ENGINEERING PACKAGE

SWEPT PATHS PLAN - SHEET 08  
12.5M HRV CHECKING VEHICLE

JOB NUMBER

170973

DRAWING NUMBER

C19.08

REVISION

04

DRAWING SHEET SIZE = A1









## CITY OF PARRAMATTA COUNCIL

# Parramatta Traffic Committee Agenda Item

**ITEM NO:** 2101 A3  
**SUBJECT:** Hill Road, Wentworth Point – Proposed Roundabout, Pedestrian and Cyclist Crossings, and Pedestrian Refuge Island  
**APPLICANT:** Sekisui House Australia Pty Ltd  
**REPORT OF:** Senior Traffic and Transport Engineer  
**WARD:** Rosehill  
**SED:** Auburn

### Purpose

This report seeks approval for the installation of a new roundabout at the intersection of Hill Road and Burroway Road, a median island in Hill Road at Footbridge Boulevard and Park Street North and combined raised pedestrian and cyclist crossings in Lapwing Street (north and south), Wentworth Point/Sydney Olympic Park.

### **OFFICER'S RECOMMENDATIONS:**

1. That a roundabout with associated signs and pavement markings be installed at the intersection of Hill Road, Burroway Road and Lapwing Street, Wentworth Point is shown in the concept plan attached to this report.
2. That a median island incorporating a pedestrian refuge island be installed in Hill Road between Footbridge Boulevard and Park Street North, Wentworth Point as shown in the concept plan attached to this report.
3. That combined raised pedestrian and cyclist crossings be installed in Lapwing Street (new access loop road near the southern and northern property boundaries) at Hill Road, Wentworth Point as shown in the concept plan attached to this report.
4. That a Work Permit application be lodged to Sydney Olympic Park Authority (SOPA) prior to commencement of works. It is to be noted that the proposed works encroach onto Hill Road (north) (also known as Ferry Wharf Circuit) which is owned by SOPA. Land owner's consent is required for the works to be carried out on Ferry Wharf Circuit, noting that it is a privately owned road that is publicly accessible.
5. That recommendations 1-3 are subject to detailed designs of the proposed traffic facilities being approved by the Transport for New South Wales (TfNSW) prior to the commencement of construction.

### Background

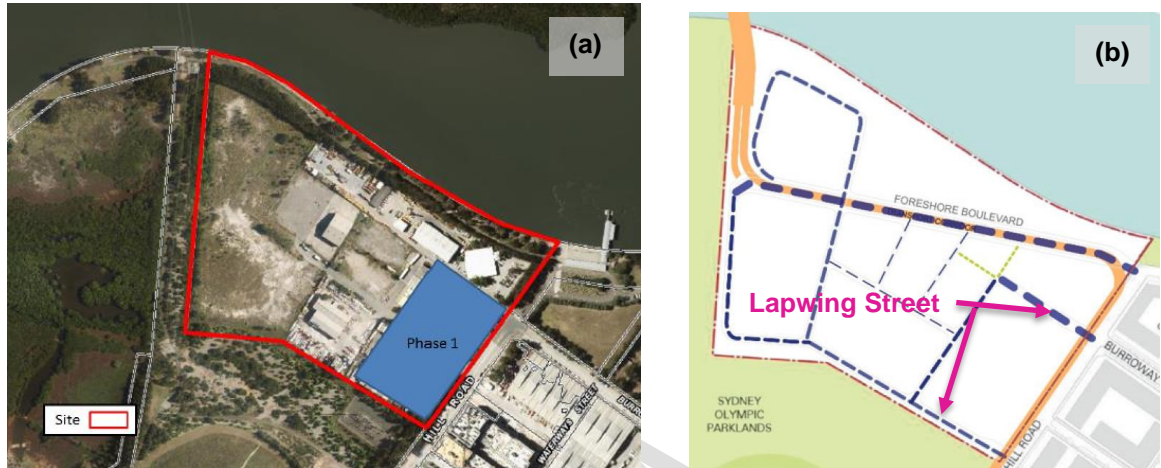
City of Parramatta Council approved a development application (Ref. DA/763/2017) on 6 June 2018 for Phase 1 of construction of four (4) residential flat buildings incorporating a total of 364 units at 14-16 Hill Road, Sydney Olympic Park. According to Condition No. 132 of the consent, the developer is required to undertake the below traffic works in Hill Road:

- Intersection improvement works in Hill Road at Lapwing Street (new northern property access road) and Burroway Road, and

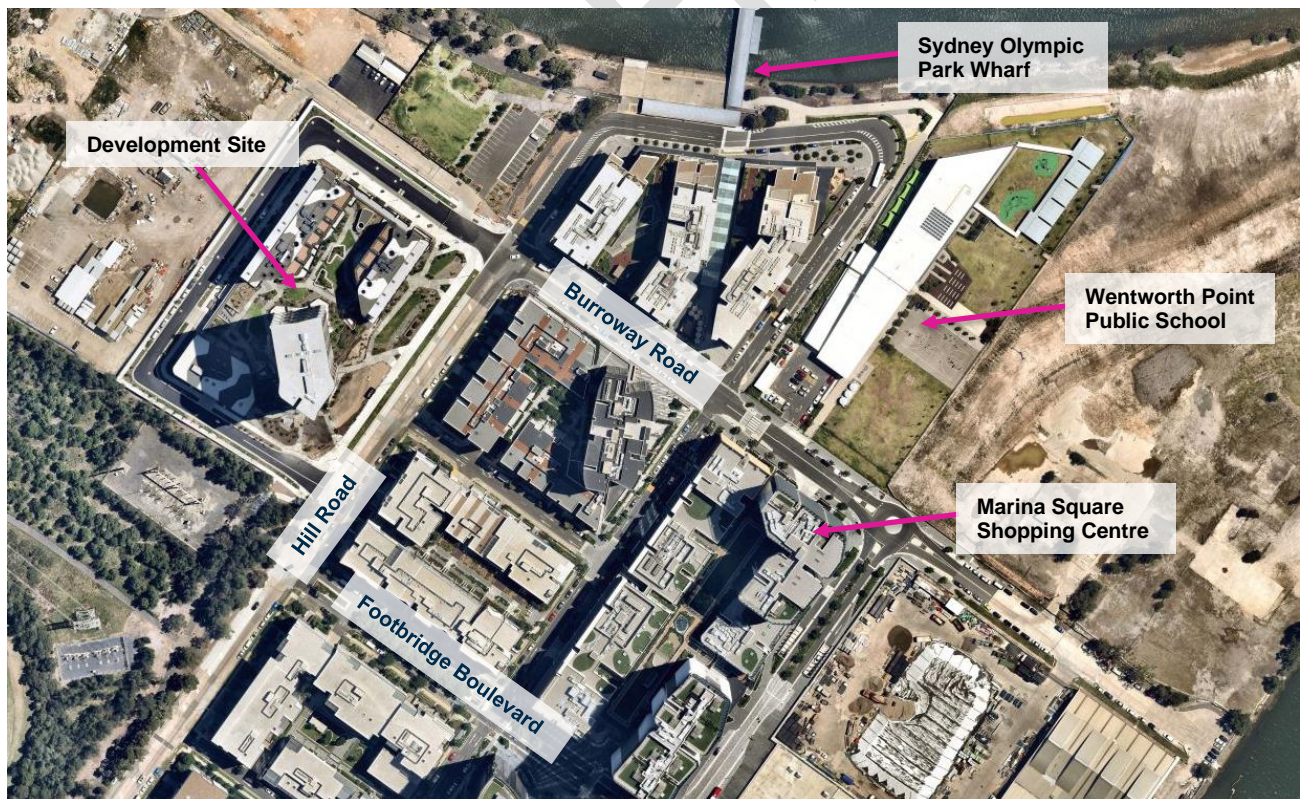


- A median island in Hill Road between Footbridge Boulevard and Park Street North to restrict vehicle access to left-in left-out for Lapwing Street (new access road near the southern property boundary).

The proposed road network within the site is shown in Figure 1b. A shared path on the west side of Hill links the River Walk to the shared path network including Louise Sauvage Pathway. Sydney Olympic Park Wharf and Wentworth Point Public School are located northeast of the intersection of Hill Road and Burroway Road. Figure 2 shows the aerial view of the area near the development site at 14-16 Hill Road.



**Figure 1: Map of the area showing (a) the development site including Phase 1 site and (b) the proposed road network within the site (Note, the blue dashed lines represent proposed internal roads and the orange line indicates the Light Rail Stage 2 corridor)**

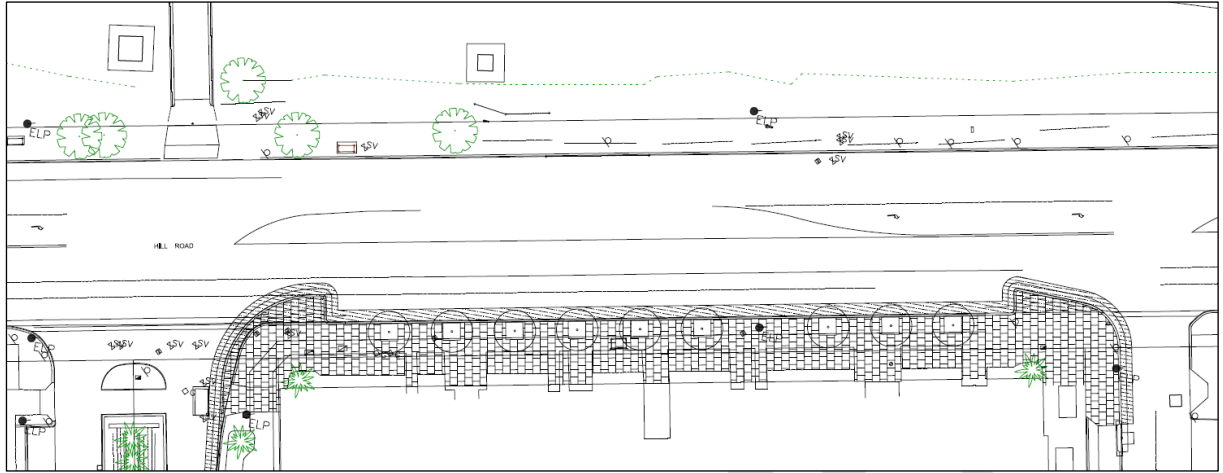


**Figure 2: An aerial view of the road network around the development site**

### Proposed Traffic Works



Council is undertaking a project in the current financial year to improve drainage on the east side of Hill Road between Footbridge Boulevard and Park Street North. The works include kerb extensions as shown in Figure 3. Accordingly, the developer is not required to undertake any works on the east side of Hill Road. Council will amend its design to incorporate the works proposed by the developer on the east side of Hill Road. The design levels for the two projects are being coordinated and the detailed design for the roundabout is currently being undertaken.



**Figure 3: Draft concept of Council's works in Hill Road between Footbridge Boulevard and Park Street North**

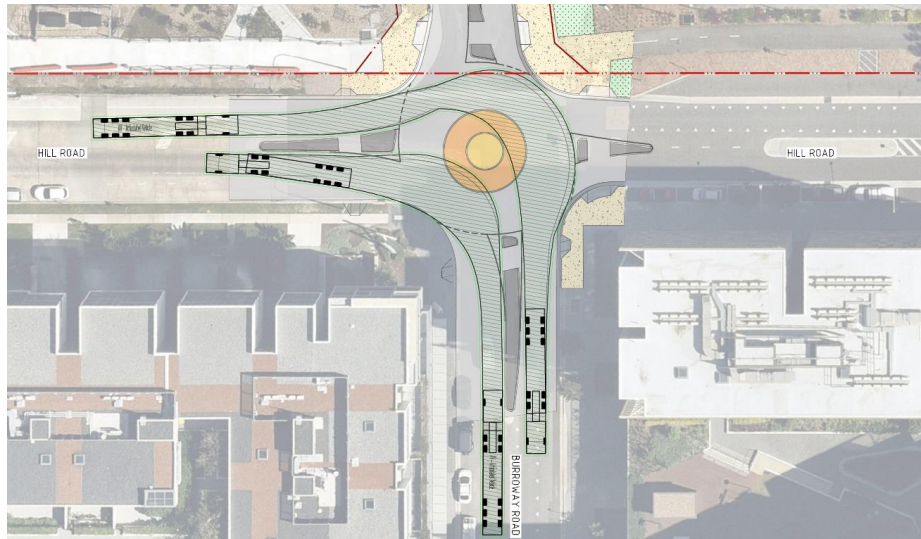
#### *Roundabout at Hill Road and Burroway Road*

As part of the Phase 1 of the development at 14-16 Hill Road, a new road (Lapwing Street) has been constructed within the site off Hill Road at Burroway Road (refer to Figure 1b). This converts the Hill Road and Burroway Road T-intersection to a 4-way intersection. Priorities at this intersection are not clear. There is an existing dish drain in Hill Road at the northern leg of this intersection. The developer has also constructed an additional dish drain in Lapwing Street perpendicular to the existing. These dish drains confuse motorists in regards to intersection priorities.

In an effort to improve road safety and to provide an overall benefit to the community, the developer is proposing to construct a roundabout at the intersection of Hill Road, Burroway Road and Lapwing Street, and has submitted initial concept plans in accordance with Condition 132 of the consent.

The roundabout is being designed to accommodate access for 19m Articulated Vehicles to the existing properties in Burroway Road including the loading dock for Marina Square Shopping Centre (refer to the swept path in Figure 4). The roundabout design incorporates a combined pedestrian and cyclist crossing in Lapwing Street and pedestrian refuge islands on all other 3 approaches of the intersection (refer to the attached plans).

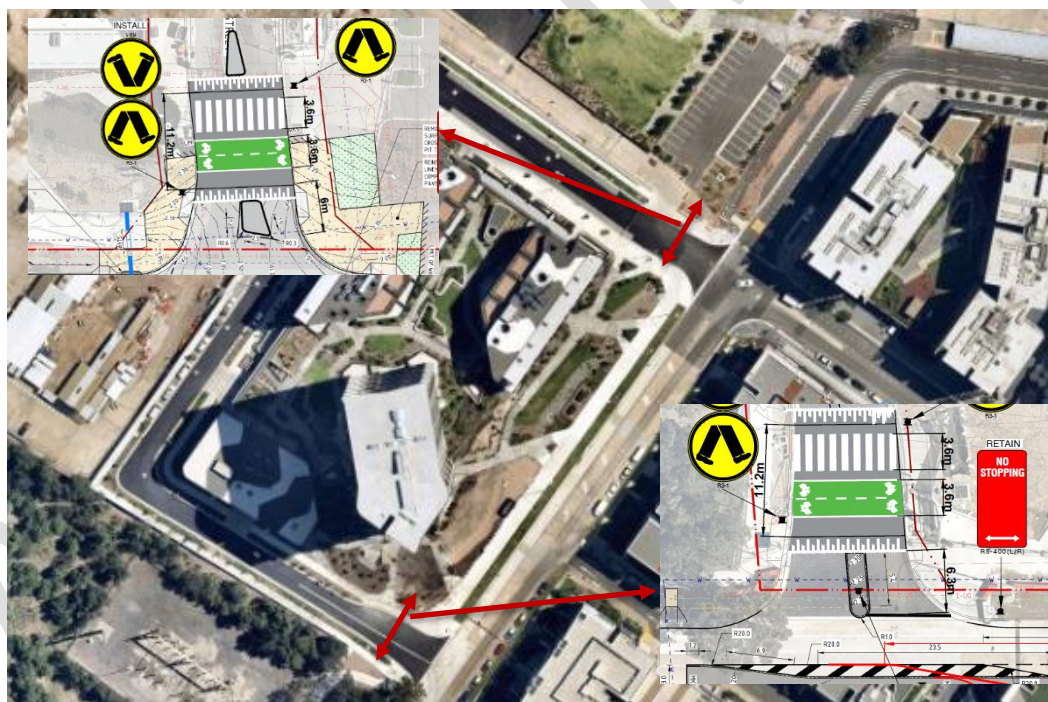




**Figure 4: Swept path diagram of a 19m Articulated Vehicle at the proposed roundabout**

### *Combined Raised Pedestrian and Cyclist Crossings*

In order to ensure cyclist safety on the shared path along the west side of Hill Road, it is proposed to install combined raised pedestrian and cyclist crossings in Lapwing Street, the new loop access roads near the northern and southern property boundaries of the development site (refer to Figure 5). Both crossings are to be set back at least 6m from Hill Road to provide a queuing area for one vehicle between Hill Road and the crossing.



**Figure 5: Proposed combined raised pedestrian and cyclist crossings in Lapwing Street at Hill Road, Sydney Olympic Park**

Note that a report has been included in this Traffic Engineering Advisory Group (TEAG) agenda to develop guidelines for the installation of pedestrian crossings on local roads. According to the report, a raised pedestrian crossing can be installed at locations where the pedestrian volume is 20 or more in a one-hour period.

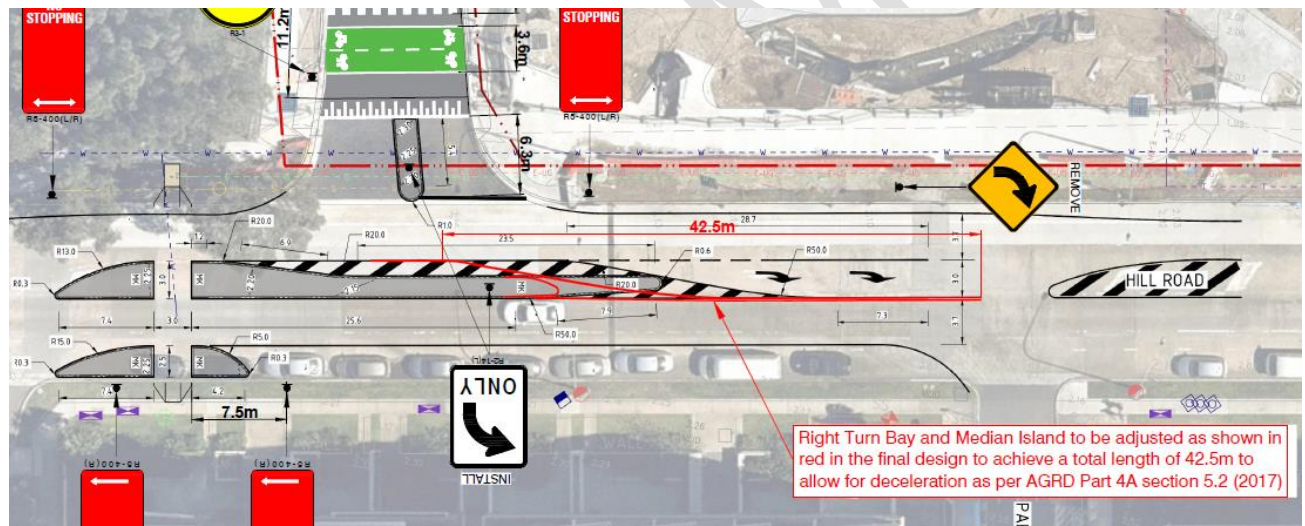


Lapwing Street is a new access road within the high density residential development at 14-16 Hill Road. As part of Phase 1, 364 residential units are nearing completion. Residents in these apartments will cross the north leg of Lapwing Street to access Wentworth Point Public School, shops, and Sydney Olympic Park Wharf. The existing path (crossing both legs of Lapwing Street) is well used by visitors to the area and existing residents on the east side of Hill Road, primarily for recreational purposes. Pedestrian counts will be provided to the PTC at the time this report is considered by the Committee. Based on counts in nearby locations and knowledge of future development, it is likely that the volume of pedestrians that cross Lapwing Street (north and south) will be higher than 20.

In light of the above, Lapwing Street (north and south) at Hill Road is suitable for the installation of a combined raised pedestrian and cyclist crossings.

#### *Median Island with incorporated Refuge Island in Hill Road*

According to Condition 132 of the consent, a concrete median island is also proposed in Hill Road between Footbridge Boulevard and Park Street North (refer to Figure 6). The purpose of the median island is to physically restrict right turn access for Lapwing Street (south) at Hill Road. A pedestrian refuge island near Footbridge Boulevard has also been included in the design to allow pedestrians to cross Hill Road safely in two stages. The median island has been designed to accommodate 12.5m long vehicles accessing Lapwing Street (south) and Footbridge Boulevard (refer to swept path diagram in Figure 7). Note that the length of the median island will be adjusted to increase the length of the right turn bay to accommodate 3 vehicles (refer to red lines on the median island in Figure 6).



**Figure 6: Proposed median island with pedestrian refuge island in Hill Road north of Footbridge Boulevard**





**Figure 7: Swept path diagrams of a 12.5m Heavy Rigid Vehicle at the proposed median island in Hill Road north of Footbridge Boulevard**

### Community Consultation

Consultation letters were sent to affected residents and businesses inviting submissions by 30 November 2020 on the proposed roundabout in Hill Road at Burroway Road and the median island with a pedestrian refuge island in Hill Road north of Footbridge Boulevard. Two corflute signs were also installed in Hill Road and Burroway Road to advise motorists of the proposal. On 2 November 2020, the proposal was advertised in the Parramatta News newspaper in accordance with the Roads Act 1993 and on Council's website.

City of Parramatta Council received nine (9) responses to the consultation from 7 residents, Council's Waste Services and Sydney Olympic Park Authority (SOPA). Of these 9 responses, 8 respondents supported and 1 objected to the proposal. The resident who objected to the proposal indicated that the roundabout would increase traffic congestion in Hill Road and motorists would use local streets to avoid the intersection.

The detailed community feedback and Council Officer's responses are available in Attachment 1 of this report.

### **FINANCIAL IMPLICATIONS**

The proposed traffic facilities and all associated works are to be installed by the developer of 14-16 Hill Road, Sydney Olympic Park at no cost to Council. Therefore, this proposal has no direct financial impact upon Council's budget.

Behzad Saleh  
**Senior Traffic and Transport Engineer**  
 13/01/2021

**Attachments –** 1. Feedback received from public consultation and Council Officer's Response  
 2. Design Plans



## Attachment 1: Public Consultation Comments and Council Officer's Response

Date	Stakeholder	Stakeholder Comment	Council Officer Response
2/11/2020	CoP Waste Services	No objections raised	--
1/12/2020	SOPA	<p>No objections raised</p> <p>However, requested the below:</p> <ol style="list-style-type: none"> <li>1. The proposed works encroach onto Ferry Wharf Circuit, which is owned by the Authority. As Land Owner SOPA's consent is required for the works to be carried out on Ferry Wharf Circuit, noting that it is a privately owned road that is publicly accessible.</li> <li>2. Requested that the traffic management impact report that supports the proposed intersection upgrade works be forwarded to SOPA for review and to concur on the detailed design impacting the Authority's land.</li> <li>3. Detailed design should address the change in levels between Hill Road, Burroway Road and Ferry Wharf Circuit.</li> <li>4. Footpath finishes need to be consistent with the existing footpath on SOPA land</li> <li>5. Lighting at the roundabout is to be made compliant to the relevant standards</li> </ol>	Noted



		6. A Work Permit application must be submitted to SOPA. prior to commencement of works.	
10/11/2020	Resident	Supported the roundabout  Also requested that landscaping works be incorporated into the roundabout.	Noted.
9/11/2020	Resident	Supported the roundabout  Also requested that gree landscaping or trees be incorporated into the roundabout.	Noted.
11/11/20	Resident	Supported the roundabout and the median island.  The residents also requested that a median island and pedestrian refuge island be installed in Burroway Road west of Waterways Street to improve pedestrian safety.	Burroway Street near Waterways Street is outside the scope of this project.
11/11/2020	Resident	Not supported  The resident raised concerns that the roundabout would increase traffic congestion at the intersection of Hill Road and Burroway Road during peak hours. This will encourage motorists to use local streets to avoid the intersection.  The resident suggested that Council improve traffic conditions at the intersection of Hill Road and Bennelong Parkway.	The alternative traffic arrangement for the intersection of Hill Road and Burroway Road would be the installation of 'Give Way' restrictions on Hill Road. This restriction would increase traffic congestion in Hill Road as Hill Road motorists would require to give way to motorists on Burroway Road and Lapwing Street. Whereas, the roundabout would promote a continuous flow of traffic. Drivers would not require to stop but only yield. As a result, compared to other intersection controls, roundabout would allow handling of more traffic in the same amount of time.



			<p>Furthermore, the proposed roundabout will be delivered by the developer of 14-16 Hill Road to address the impact of traffic generated from the development site. The developer would not undertake works for the intersection of Hill Road and Bennelong Parkway, as the intersection would not be directly impacted by the development.</p> <p>It is to be noted that Council is currently undertaking the design for the installation of Traffic Control Signals at the intersection of Hill Road and Bennelong Parkway. It is intended that the construction of traffic signals will be undertaken once the design is complete and approved by TfNSW.</p>
11/11/2020	Resident	<p>Supported the roundabout</p> <p>Also requested that a roundabout be constructed at the intersection of Hill Road and Bennelong Parkway.</p>	<p>Council is currently undertaking the design for the installation of Traffic Control Signals at the intersection of Hill Road and Bennelong Parkway. It is intended that the construction of traffic signals will be undertaken once the design is complete and approved by TfNSW.</p>
23/11/2020	Resident	<p>Supports the roundabout.</p> <p>The resident also requested the below:</p> <ol style="list-style-type: none"> <li>1. Bike crossings at the road are made clear</li> <li>2. The dip in Hill Road is addressed as part of the design</li> <li>3. Install speed humps at exists to the roundabout to control speeding vehicles</li> <li>4. Install Speed Cameras to enforce</li> </ol>	<ol style="list-style-type: none"> <li>1. The proposal includes combined raised pedestrian and cyclist crossings in Lapwing Street at Hill Road.</li> <li>2. The dip in Hill Road north of Burroway Road will be addressed as part of the proposal.</li> <li>3. Speed humps on the departure of the roundabout are not supported as it would increase the chances of rear end collisions</li> </ol>



		<p>the 40km/h School Zone speed limit.</p> <p>5. Install 'Stop' signs at T-intersections along east side of Hill Road</p>	<p>as they may not be seen by turning motorists. Furthermore, the community is likely to have concerns particularly in regards to perceptions of noise.</p> <p>4. Speed cameras are under the care and control of TfNSW and are outside of the scope for developer works.</p> <p>5. The installation of 'Stop' restrictions at other T-intersections are outside of the scope of developer works.</p>
26/11/2020	Resident	Supports the pedestrian refuge island in Hill Road north of Footbridge Boulevard.	--





## CITY OF PARRAMATTA COUNCIL

# Traffic Engineering Advisory Group Agenda Item

**ITEM NO:** 2303 B3  
**SUBJECT:** Albert Street, Granville – Review of Traffic Conditions  
**APPLICANT:** City of Parramatta Council  
**REPORT OF:** Traffic and Transport Investigations Engineer  
**WARD:** Rosehill  
**SED:** Granville

### Purpose

This report seeks Council support to progress a proposal to install a 'No Left Turn' restriction in Parramatta Road, Granville at Albert Street. The purpose of this restriction is to prevent motorists from using Albert, Victoria and Prince Streets as a shortcut route between Parramatta Road and Good Street.

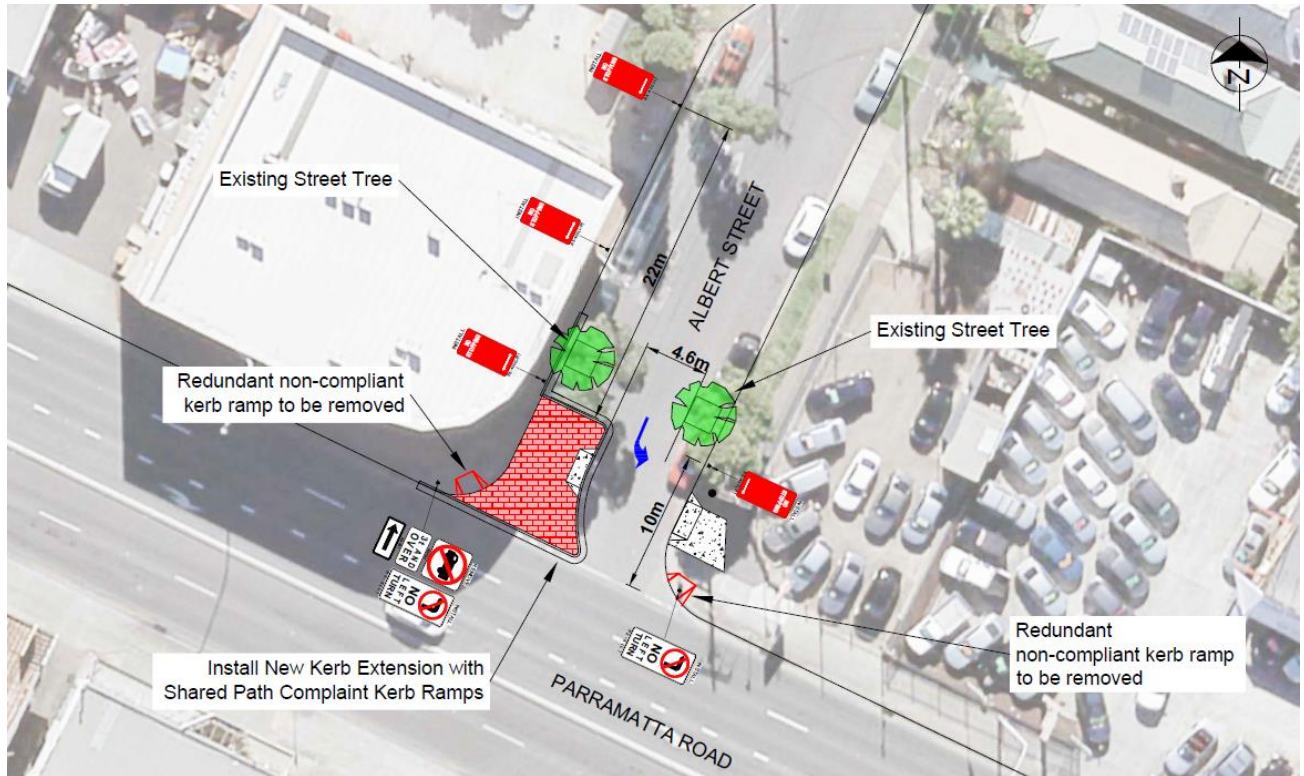
### **OFFICER'S RECOMMENDATION:**

1. That Council provide in principle support for a kerb extension with a 'No Left Turn' restriction into Albert Street, Granville from Parramatta Road as shown in Figure 1 of this report subject to community consultation, traffic modelling and funding being available for construction.
2. That Council explore funding opportunities to construct the kerb extension in Albert Street, Parramatta at the intersection with Parramatta Road.

### Background

City of Parramatta Council has received representation from a Councillor on behalf of a local resident who has raised concerns regarding eastbound motorists in Parramatta Road using Albert Street as a shortcut route to Good Street. As a result, Council Officers have undertaken a review of the traffic conditions in Albert, Victoria and Prince Streets and have identified a 'No Left Turn' restriction being suitable to prevent through traffic. This proposal includes a kerb extension which would act as a physical barrier to restrict this movement to assist with enforcement of the proposed restriction.





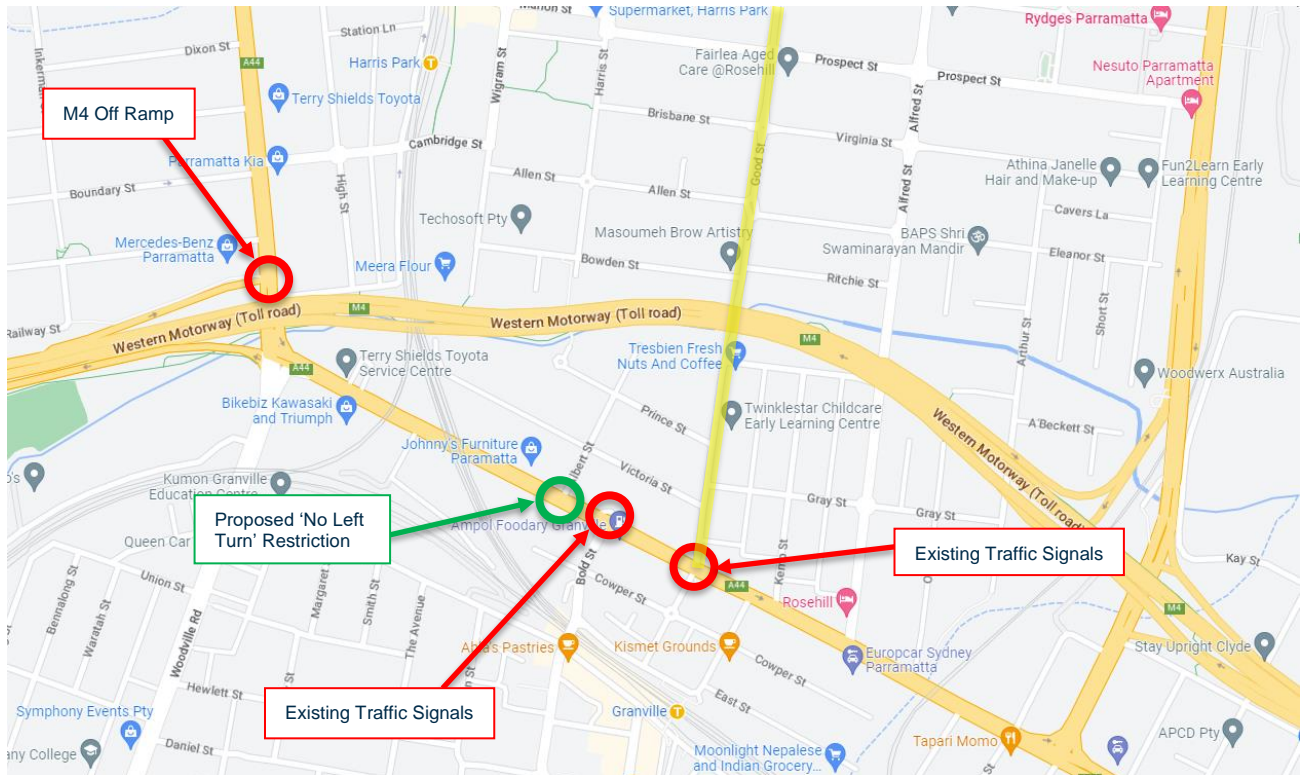
**Figure 1: A concept plan of the proposed 'No Left Turn' restriction including a kerb extension in Albert Street, Granville**

### Location Description

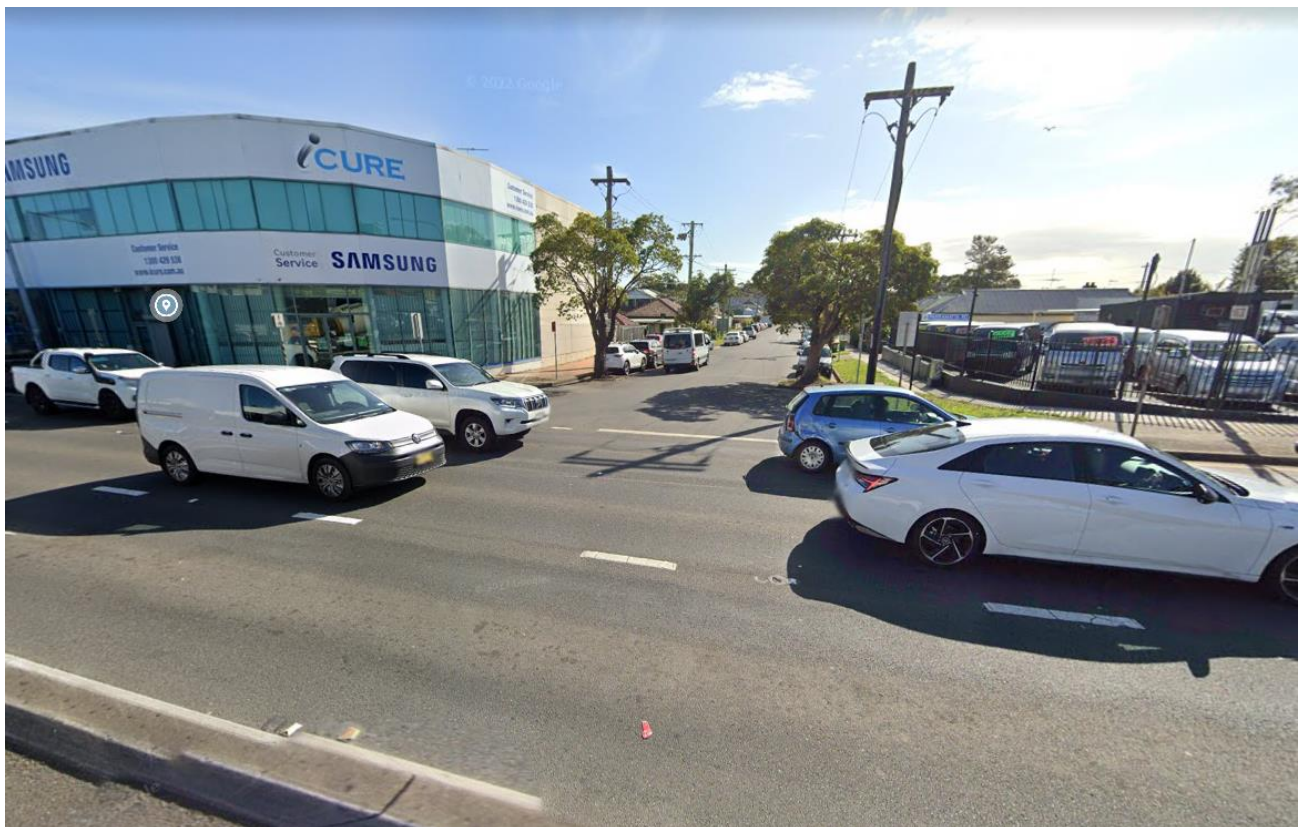
Albert, Victoria and Prince Streets are local roads which predominantly serve low density residential developments however, there are a number of mixed commercial and retail developments fronting Parramatta Road within the locality. The streets are in a grid format which creates through links between Parramatta Road and Good Street that are used by motorists to bypass traffic congestion and two traffic signals.

The intersection of Albert Street and Victoria Road is priority controlled with an existing left-in left-out restriction. There is also an existing signposted 'No Trucks, 3t and Over' restriction within Albert Street between Parramatta Road and Victoria Street. The intersection is located approximately 450m from Granville Station and 500m away from the M4 off-ramp.





**Figure 2: A location map showing the proposed 'No Left Turn' restriction and the surrounding area**



**Figure 3: Street view of Albert Street, Granville looking northbound from Parramatta Road**

### Proposed Developments

The Parramatta Road Corridor Urban Transformation Strategy (PRCUTS) is the NSW Government's 30-year plan to drive and inform land use planning and development decisions as well as long-term infrastructure delivery programs in the Parramatta Road Corridor. The purpose of the strategy is to facilitate the coordinated transformation of Parramatta Road and its adjoining lands to a *'high-quality multi-use corridor with improved amenity, better*



*transport choices, more job opportunities and an increased quantity and diversity of housing’.* A key part of this transformation will be to support developments which promote more sustainable transport modes and reduce the reliance on private vehicle ownership.

In line with the PRCUTS, Council is currently assessing a site-specific Development Control Plan (DCP) for a block of land bounded by Parramatta Road, Albert Street, Victoria Street and Duke Street. The DCP, should it be approved by Council, will allow for the future construction of mixed-use developments including up to 82m high residential towers with retail and commercial outlets at street and podium levels fronting Parramatta Road. It is noted that there are to be no commercial or retail uses along Victoria Street.

As part of this proposal, the podium levels have been setback 6m from the Parramatta Road boundary to future proof the site for possible road widening. In accordance with previous area wide studies undertaken as part of the PRCUTS, possible uses that have been identified include but are not limited to, turning lanes, bus priority lanes and/or footpath widening to improve pedestrian and cyclists’ facilities. It is noted that at this time, Council is not aware of any definitive TfNSW plans to make use of this provision.



**Figure 4: An indicative view of potential future developments at the corner of Parramatta Road and Albert Street, Granville**

### Existing Traffic Conditions

A seven (7) day traffic and speed survey was carried out in Albert Street in November 2022. This showed that on a typical weekday, there were 118 vehicles in the AM peak hour and 65 vehicles in the PM peak hour travelling in a northbound direction. In comparison, there were only 20 vehicles in the AM peak hour and 27 in the PM peak hour travelling in the southbound direction. The survey further showed that five percent of vehicles in the northbound direction were heavy vehicles despite an existing signposted ‘No Trucks 3t and Over’ restriction in Albert Street.

A peak hour traffic movement survey undertaken at the intersection of Parramatta Road and Good Street in 2020 demonstrated that during the AM peak hour, 301 vehicles from Parramatta Road turned left into Good Street with only 4 of these being heavy vehicles. During the PM peak hour, this was 183 vehicles in total with 2 being heavy vehicles.

A review of the crash history during the five (5) year period between July 2017 and June 2022 has revealed that there has been one reported injury crash in Parramatta Road for eastbound traffic at the intersection with Albert Street. This crash involved a vehicle changing

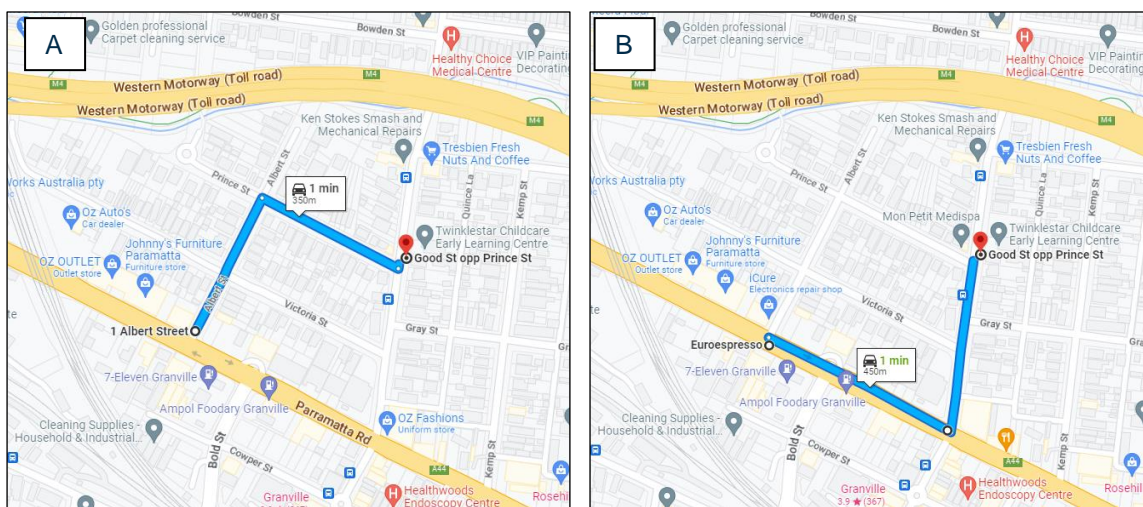


lanes and is not believed to be related to a vehicle turning into Albert Street. For the same period, there have been no other reported crashes within Albert, Victoria or Prince Streets.

### Alternative Route for Motorists

Based on the traffic count data, a total of 118 vehicles in the AM peak hour and 65 vehicles in the PM peak hour will be impacted by the proposed 'No Left Turn' restriction. It is believed that the majority of these motorists are using Albert Street as a through route given that relatively small population that the street provides direct access to. Accordingly, these motorists will be able to instead turn left at the intersection of Parramatta Road and Good Street as shown in Figure 5 below which adds an additional 100m of travel.

For motorists that need to travel to a property within Albert Street, the alternative route will be for motorists to turn left at Good Street followed by another left turn at Victoria Street. This will add a maximum of 600m to a motorist's journey and travel through two traffic signal controlled intersections.



**Figure 5: The existing route to Good Street shown in image “A” with the alternative route to be taken by motorists following the implementation of the turn restriction in Albert Street shown in image “B”**

It is noted that the more significant impact by the proposed restriction will be on the capacity of the intersections of Parramatta Road and Bold Street and Parramatta Road and Good Street. Traffic modelling has previously been conducted at these two intersection in 2020 as part of a separate Council project for a one-way southbound restriction in Good Street between Cowper Street and Bridge Street. Modelling undertaken at that time showed that the eastbound traffic lanes in Parramatta Road performed at a Level of Service (LoS) 'B' (good operation with spare capacity) for both the AM and PM peaks at Bold Street. For the intersection with Good Street, the eastbound lanes in Parramatta Road performed at a LoS 'D' (acceptable operation but nearing capacity) for the AM peak and a LoS 'B' for the PM peak. The dedicated left turn lane from Parramatta Road into Good Street was not modelled as part of this study.

Given the above result, it is recommended that updated traffic modelling be undertaken to assess the impacts of the reassignment of traffic due to the proposed 'No Left Turn' restriction in Parramatta Road at Albert Street.

## **FINANCIAL IMPLICATIONS**



Should Council provide in principle support for the restriction, Council will undertake traffic modelling to further assess the impact. The cost to undertake the modelling will be covered under existing budgets.

At this stage, Council does not have funds allocated to complete the construction works for the kerb extension, however Council will explore funding opportunities should Council provide in principle support for the works.

Behzad Saleh  
**Traffic and Transport Investigations Engineer**  
2/03/2023

**Attachments –**            1. SIDRA Traffic Modelling undertaken in 2020



# Attachment 1: SIDRA Modelling Outputs from 2020 (Modelling output assumes a one-way southbound restriction in Good Street between Cowper Street and Bridge Street)

 Site: TCS 0887 [1. AM Parramatta Road - Bold Street]

 Network: 1 [AM Peak]

Site Category: Southbound Scenario

Signals - Fixed Time Coordinated Cycle Time = 130 seconds (Network Site User-Given Phase Times)

Timings based on settings in the Network Timing dialog

Phase Times specified by the user

Phase Sequence: Two-Phase

Reference Phase: Phase A

Input Phase Sequence: A, B1, C

Output Phase Sequence: A, B1, C

Movement Performance - Vehicles														
Mov ID	Turn	Demand Flows		Arrival Flows		Deg. Satn	Average Delay	Level of Service	Aver. Queue Vehicles	Back of Queue Distance	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed
		Total veh/h	HV %	Total veh/h	HV %	v/c	sec		veh	m				km/h
South: Bold Street - S														
1	L2	253	7.1	252	7.1	1.058	138.5	LOS F	8.2	60.0	1.00	1.19	1.76	11.8
3	R2	658	5.1	656	5.1	1.058	144.4	LOS F	8.2	60.0	1.00	1.22	1.83	1.8
Approach		911	5.7	908 <sup>N1</sup>	5.6	1.058	142.8	LOS F	8.2	60.0	1.00	1.21	1.81	4.9
East: Parramatta Road - E														
4	L2	55	9.6	55	9.6	0.771	23.0	LOS B	15.5	120.6	0.62	0.59	0.62	20.5
5	T1	1351	13.2	1350	13.2	0.771	15.2	LOS B	15.5	120.6	0.62	0.58	0.62	43.1
Approach		1405	13.0	1405	13.0	0.771	15.5	LOS B	15.5	120.8	0.62	0.58	0.62	42.7
West: Parramatta Road - W														
11	T1	1212	12.5	1212	12.5	0.654	16.6	LOS B	17.1	132.7	0.69	0.63	0.69	39.2
12	R2	140	7.5	140	7.5	1.147	213.2	LOS F	10.9	81.1	1.00	1.38	2.36	7.4
Approach		1352	12.0	1352	12.0	1.147	36.9	LOS C	17.1	132.7	0.72	0.71	0.86	27.1
All Vehicles		3667	10.8	3665 <sup>N1</sup>	10.8	1.147	54.9	LOS D	17.1	132.7	0.75	0.78	1.01	20.6

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

<sup>N1</sup> Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.



Site Category: Southbound Scenario

Signals - Fixed Time Coordinated Cycle Time = 130 seconds (Network Site User-Given Phase Times)

Timings based on settings in the Network Timing dialog

Phase Times specified by the user

Phase Sequence: Two-Phase

Reference Phase: Phase A

Input Phase Sequence: A, B

Output Phase Sequence: A, B

Movement Performance - Vehicles													
Mov ID	Turn	Demand	Flows	Arrival	Flows	Deg. Satn	Average Delay	Level of Service	Aver. Back of Queue	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed
		veh/h	HV %	Total veh/h	HV %	v/c	sec		Vehicles	Distance m			km/h
South: Good Street - S													
1	L2	48	8.7	48	8.7	0.539	53.0	LOS D	6.4	47.2	0.94	0.94	5.1
2	T1	360	4.4	359	4.4	0.539	48.3	LOS D	7.6	55.5	0.93	0.93	23.1
Approach		408	4.9	407 <sup>N1</sup>	4.9	0.539	48.9	LOS D	7.6	55.5	0.93	0.93	21.7
East: Parramatta Road - E													
4	L2	7	28.6	7	28.6	0.914	48.2	LOS D	10.3	80.0	0.92	1.12	7.1
5	T1	1354	13.2	1354	13.2	0.914	43.2	LOS D	10.3	80.0	0.92	1.12	7.1
Approach		1361	13.3	1361	13.3	0.914	43.2	LOS D	10.3	80.0	0.92	1.12	7.1
North: Good Street - N													
7	L2	27	7.7	27	7.7	0.540	53.0	LOS D	7.8	56.1	0.94	0.94	21.7
8	T1	427	3.2	427	3.2	0.540	48.3	LOS D	8.0	57.2	0.94	0.94	21.8
Approach		455	3.5	455	3.5	0.540	48.6	LOS D	8.0	57.2	0.94	0.94	21.8
West: Parramatta Road - W													
10	L2	317	1.3	311	1.3	0.247	12.0	LOS A	3.2	22.4	0.29	0.29	40.5
11	T1	1553	11.7	1523	11.8	0.653	9.6	LOS A	14.3	110.0	0.47	0.47	29.1
Approach		1869	9.9	1834 <sup>N1</sup>	10.0	0.653	10.0	LOS A	14.3	110.0	0.44	0.44	33.5
All Vehicles		4094	9.8	4057 <sup>N1</sup>	9.9	0.914	29.4	LOS C	14.3	110.0	0.70	0.77	19.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

<sup>N1</sup> Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.



Site Category: Southbound Scenario

Signals - Fixed Time Coordinated Cycle Time = 130 seconds (Network Site User-Given Phase Times)

Timings based on settings in the Network Timing dialog

Phase Times specified by the user

Phase Sequence: Two-Phase

Reference Phase: Phase A

Input Phase Sequence: A, B1, C

Output Phase Sequence: A, B1, C

Movement Performance - Vehicles														
Mov ID	Turn	Demand Flows	Arrival Flows	Deg. Satn	Average Delay	Level of Service	Aver. Back of Queue	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed			
		Total veh/h	HV %	Total veh/h	HV %	v/c	sec	Vehicles veh	Distance m					
South: Bold Street - S														
1	L2	242	5.7	242	5.7	0.820	55.7	LOS D	8.4	60.0	1.00	0.91	1.09	22.5
3	R2	459	1.6	459	1.6	0.820	57.5	LOS E	8.5	60.0	0.99	0.92	1.13	4.4
Approach		701	3.0	701	3.0	0.820	56.9	LOS E	8.5	60.0	0.99	0.92	1.11	12.3
East: Parramatta Road - E														
4	L2	40	7.9	40	7.9	0.690	25.6	LOS B	14.2	108.7	0.64	0.59	0.64	18.8
5	T1	1215	11.1	1214	11.1	0.690	18.5	LOS B	14.2	108.7	0.62	0.57	0.62	40.6
Approach		1255	11.0	1254 <sup>N1</sup>	11.0	0.690	18.8	LOS B	14.2	108.7	0.62	0.57	0.62	40.3
West: Parramatta Road - W														
11	T1	1286	7.0	1286	7.0	0.727	18.5	LOS B	19.8	147.3	0.75	0.69	0.75	37.6
12	R2	161	5.2	161	5.2	1.299	339.1	LOS F	16.4	119.9	1.00	1.63	2.92	4.8
Approach		1447	6.8	1447	6.8	1.299	54.2	LOS D	19.8	147.3	0.78	0.80	1.00	21.5
All Vehicles		3403	7.6	3403	7.6	1.299	41.7	LOS C	19.8	147.3	0.77	0.74	0.88	25.0

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

<sup>N1</sup> Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.



Site Category: Southbound Scenario

Signals - Fixed Time Coordinated Cycle Time = 130 seconds (Network Site User-Given Phase Times)

Timings based on settings in the Network Timing dialog

Phase Times specified by the user

Phase Sequence: Two-Phase

Reference Phase: Phase A

Input Phase Sequence: A, B

Output Phase Sequence: A, B

Movement Performance - Vehicles														
Mov ID	Turn	Demand Flows		Arrival Flows		Deg. Satn	Average Delay	Level of Service	Aver. Queue Vehicles	Back of Queue Distance	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed
		Total veh/h	HV %	Total veh/h	HV %	v/c	sec		veh	m				km/h
South: Good Street - S														
1	L2	54	2.0	53	2.0	0.334	48.7	LOS D	4.0	28.4	0.87	0.74	0.87	5.4
2	T1	222	3.3	221	3.3	0.334	44.2	LOS D	4.9	35.2	0.87	0.72	0.87	24.1
Approach		276	3.1	274 <sup>N1</sup>	3.1	0.334	45.1	LOS D	4.9	35.2	0.87	0.73	0.87	21.7
East: Parramatta Road - E														
4	L2	9	0.0	9	0.0	0.685	19.2	LOS B	10.4	80.0	0.66	0.61	0.66	17.5
5	T1	1197	11.3	1197	11.3	0.685	14.0	LOS A	10.4	80.0	0.66	0.61	0.66	17.5
Approach		1206	11.3	1206	11.3	0.685	14.0	LOS A	10.4	80.0	0.66	0.61	0.66	17.5
North: Good Street - N														
7	L2	31	0.0	31	0.0	0.588	52.0	LOS D	9.1	65.3	0.94	0.80	0.94	21.9
8	T1	499	3.6	499	3.6	0.588	47.4	LOS D	9.2	66.6	0.94	0.80	0.94	22.0
Approach		529	3.4	529	3.4	0.588	47.7	LOS D	9.2	66.6	0.94	0.80	0.94	22.0
West: Parramatta Road - W														
10	L2	193	1.1	193	1.1	0.156	12.3	LOS A	1.9	13.6	0.28	0.65	0.28	40.4
11	T1	1553	6.2	1553	6.2	0.645	11.1	LOS A	15.6	115.0	0.51	0.47	0.51	27.0
Approach		1745	5.6	1745	5.6	0.645	11.3	LOS A	15.6	115.0	0.48	0.49	0.48	30.5
All Vehicles		3757	6.9	3755 <sup>N1</sup>	6.9	0.685	19.8	LOS B	15.6	115.0	0.63	0.59	0.63	23.9

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

<sup>N1</sup> Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.





## CITY OF PARRAMATTA COUNCIL

# Traffic Engineering Advisory Group Agenda Item

**ITEM NO:** 2303 B4

**SUBJECT:** Projects Recently Completed, Projects Currently Funded and Projects Lists for Consideration of Future Funding

**APPLICANT:** City of Parramatta Council

**REPORT OF:** Senior Traffic and Transport Engineer

**WARD:** All

**SED:** All

### Purpose

This report provides information on traffic and pedestrian projects recently completed or currently funded and projects lists that City of Parramatta Council maintains for budget planning purposes.

### **OFFICER'S RECOMMENDATIONS:**

1. That the information regarding progress on 2022/23 funded projects be received and noted.
2. That the Projects Lists for proposed traffic works be received and noted.
3. That Council note that one (2) traffic project have been completed since the last TEAG meeting.

### Recently Completed Projects

Information on recently completed projects is provided below.

#### **Projects Completed by Council**

##### **1. Bartlett Street at Ashcroft Street, Ermington**

Project Details:	Installation of speed cushions
Total cost of the project:	\$7,434.20
Funding Details:	100% funded by the PTC Admin Fund.



## Projects Completed by Council

BEFORE



AFTER



### 2. Baker Street at Pennant Hills Road, Carlingford

Project Details: Installation of Traffic Control Signals

Total cost of the project: N/A

Funding Details: 100% funded by private developer



## Projects Completed by Council

BEFORE	
AFTER	Commenced on 6 March 2023. Photo is not yet available.

## Projects to be undertaken in 2022/23

Information regarding the progress on currently funded projects is provided at the start of the attachment to this report.

## Future Projects

Traffic projects that are to be considered for future funding are categorised into one of four lists as detailed below:

- *Development Contributions Plan List - outside the Parramatta City Centre*

Council adopted this list on 12 July 2021 as part of the City of Parramatta (Outside Parramatta CBD) Contributions Plan 2021 (refer to Tables 37 and 38 of the Plan via the link <https://cityofparramatta.co/3HaPxLw>). This list is prioritised into three categories; high (5 years), medium (5-10 years) and low (10-20 years). This work is proposed to be funded from Development Contributions, unless grant funding, a Voluntary Planning Agreement, or other source of funding is obtained.

The Development Contributions Plan is reviewed and set approximately every 5 years. Therefore, the lists shown in Tables 37 and 38 of the City of Parramatta (Outside Parramatta CBD) Contributions Plan 2021 would also be set and fixed every 5 years (approximately) at the same time the Development Contributions Plan is approved by Council.

These projects have a range of purposes such as improving pedestrian safety and amenity; improving sight distance (or reducing speed where sight distance is limited); upgrading an existing facility; reducing congestion; guard rail or barriers; and reducing illegal or unsafe driving. The list includes projects that would be on the Black Spot list



except they have a low Benefit Cost Ratio and would not attract grant funds.

- *Traffic Projects List – within the Parramatta City Centre*

This list includes projects that are located within the Parramatta City Centre. These projects will generally be funded from the Parramatta City Centre Developer Contributions Plan (known as Civic Improvement Plan, CIP), unless otherwise noted.

- *Black Spot Projects List*

This list is for the projects where funding is being or is proposed to be sought, from the State or Federal Government under their Black Spot and Safer Roads Programs.

The Black Spot locations generally have a high number of collisions, and the proposed work is forecast to have a significant reduction on accidents. Projects under Black Spot Program are ranked on Benefit Cost Ratio (BCR); whereas projects under Safer Roads Programs are ranked on Safety Performance Indicator (SPI). The individual funding programs also have different criteria regarding the number of accidents with injuries that have occurred. At present, a minimum of 2 injury accidents over a 5-year period is generally required for a project to be eligible for funding.

- *List of Traffic Projects Supported by Community Petition*

This list includes locations where Council has received requests from at least 50% of households within the street for traffic calming to be installed in the street or part of the street. This support can be in the form of a petition or letters. Meeting this requirement demonstrates that the local community wants this treatment in the street. These streets often do not have a specific hazard, crash history, or concentration of vulnerable road users such as pedestrians. Often, in streets not on the list, many residents do not support traffic calming and have concerns regarding the installation of traffic calming, particularly in regard to perceptions of noise, loss of parking, and prioritisation of funds.

Development Contribution Funds are not suitable for these projects as these projects are not related to supporting growth in the area. These projects are generally unfunded.

## **FINANCIAL IMPLICATIONS:**

Council's Traffic and Transport Services maintains four (4) projects lists with the funding options as detailed below:

- Development Contributions Plan list - outside the Parramatta City Centre:

These projects have been grouped into 3 categories of priority (high, medium, and long term). It is proposed to deliver the high priority projects from 2021/22 to 2025/26 using Development Contributions fund for part, or all projects.

Applications are also lodged for State and Federal Government funding for projects that would meet the requirements of funding applications at the time of lodgement. Applications are generally lodged between August and October each year for



consideration under these programs.

- Traffic Projects List – within the Parramatta City Centre:

These projects will generally be funded from the Parramatta City Centre Section 7.11 Contribution Plan (known as Civic Improvement Plan, CIP), unless otherwise noted.

- Black Spot Projects List:

These projects will generally be funded from the State or Federal Government under their Blackspot and Safer Roads Programs. Applications are lodged between August and October each year for consideration under these programs.

- List of Traffic Projects Supported by Community Petition:

These projects could be funded from General Revenue. Councillors may wish to use part of the ward initiatives budget to deliver these projects.

Approved External Funding for the 2022/23 Projects is detailed below:

- Council has received a 100% funding offer totalling \$454,000 under the FY22/23 Australian Government Black Spot Program for four (4) traffic projects. Refer to 'Blackspot Projects List' section of the attachment for details.
- Council has received a 100% funding offer under the State Government's FY22/23 Get NSW Active program for the construction of the following traffic facility projects:
  - Avenue of Oceania at Louise Sauvage Pathway, Newington - \$240,000 for the construction of a combined pedestrian and cyclists crossing
  - M4 Cycleway at Good Street and Alfred Street, Granville - \$600,000 for the construction of two combined pedestrian and cyclist crossings
  - Orchard Road at Plympton Road, Carlingford - \$250,000 for the construction of a raised pedestrian crossing
  - Alamein Avenue, Carlingford - \$240,000 for the construction of a raised pedestrian crossing
  - Victoria Street at Bridge Street, Epping - \$250,000 for the construction of a combined raised pedestrian and cyclists crossing
  - John Ian Wing Parade, Sydney Olympic Park - \$240,000 for the construction of a combined raised pedestrian and cyclists crossing

Internal Funding:

- Council's Draft Delivery Program and Operational Plan generally allocates funding of \$1.5 million per year for the Active Transport Program over four financial years (2020/21 – 2023/24) for the delivery of traffic projects using Development Contributions Funds. Due to the recent grant funding offers received from Get NSW Active and the capacity to deliver projects in short time frames, the amount from Active Transport Funding is to be reduced in 2022/23 with the only likely project being the pedestrian refuge island in Park Parade near the Parramatta Aquatic Centre.



- Council at its meeting on 5 December 2022 approved the tender for the appointment of the preferred proponent for the installation of the Traffic Control Signals and associated works at the intersection of Hill Road and Bennelong Parkway, Wentworth Point. Construction works are on track to commence in February 2023 with the completion of the works to be in June 2023. This project has funding available as part of Council's Delivery Program and Operational Plan which includes \$3.85 million allocated specifically for the upgrade of the Hill Road and Bennelong Parkway intersection in the 2022/23 financial year and \$1.5 million from the 2022/23 Active Transport Program.



Randil Pohorambage  
**Senior Traffic and Transport Engineer**  
7/03/2023

**Attachments – A. Project Lists**



## Projects for 2022/23

Location	Treatment Type	Estimated Cost	Comments
<b>Ward: Epping; SED: Epping</b>			
Alamein Avenue west of Bardia Road, Carlingford	Construction of a new raised pedestrian crossing	\$240,000	This project is approved by Council on 14 March 2022. This project has received 100% from the State Government's Get NSW Active program.  Detailed design has also been approved by TfNSW. Request for Quotation is in progress.  Completion will be in FY 23/24
Carlingford Road at Hepburn Avenue, Carlingford	Design and cost estimate for new traffic signals.	\$70,000	Traffic Control Signal (TCS) plan has been submitted to TfNSW for review and approval. This is a 2019/20 project and 100% funded by Council.  Funding application has been lodged to TfNSW under Federal Government's Stimulus Program.
Orchard Road north of North Rocks Road and Plympton Road, Beecroft	Construction of a new raised pedestrian crossing	\$250,000	This project is approved by Council on 14 March 2022. This project has received 100% from the State Government's Get NSW Active program.  Detailed design is complete and forwarded to TfNSW for approval.  Completion will be in FY 23/24
Victoria Street, Epping	Construction of a combined raised pedestrian and cyclist crossing	\$250,000	This project has received 100% from the State Government's Get NSW Active program.  Community consultation is complete. A report will be referred to the Traffic Committee meeting on 8 February and Council on 13 March 2023 for determination.  Completion will be in FY 23/24
<b>Ward: North Rocks; SED: Seven Hills</b>			
Intersection of Caroline Chisholm Drive and Hillcrest Avenue, Winston Hills	Install speed cushions at all approaches to the roundabout	\$16,000	This project is 100% funded by the 2022/23 Australian Government Black Spot Program  Funding accepted on 15/09/2022. This project has been endorsed by Council in December 2022 through PTC process. Request for quotation



Location	Treatment Type	Estimated Cost	Comments
			will commence in late March 2023 after the other speed cushion projects are determined by Council.
<b>Ward: Parramatta; SED: Parramatta</b>			
Barrack Lane, Parramatta	Shared Zone for entire length	\$1,250,000	Funded for construction in 2022/23, but likely to be deferred due to heritage and service utility issues.
<b>Ward: Parramatta; SED: Seven Hills</b>			
Fitzwilliam Road at Binalong Road and Reynolds Street, Old Toongabbie (Toongabbie Public School)	Install missing kerb ramps on the west leg and upgrade existing kerb ramps to current standards and install a channelised right turn treatment for motorists exiting Reynolds Street	\$1,000,000	Construction was delayed due to the traffic signal plan approval which was provided by TfNSW on the 9 June 2022. Construction works started on the 20 June 2022. The project has been delayed by wet weather with an expected completion in March 2023.  This project is 100% funded by Federal Government under its Stimulus Commitments on Road Safety Program (School Zone Infrastructure).
Intersection of Bulli Road and Binalong Road, Toongabbie	Install speed cushions at all approaches to the roundabout	\$16,000	This project is 100% funded by the 2022/23 Australian Government Black Spot Program  The Traffic Committee, on 8 February 2023, recommended this project for approval. This project will now be considered by Council on 13 March 2023 for determination.
Pendle Hill	High Pedestrian Activity Area Study	\$30,000	Study only. Consultant has been appointed and is undertaking the study.
<b>Ward: Rosehill; SED: Granville</b>			
Parramatta Road at Marsh Street, Clyde	Construction of pedestrian/cyclist legs on existing signals at Parramatta Road-Marsh Street along with connecting shared paths along Parramatta Road between M4 Cycleway/Duck River/Parkline	\$1,039,222	Construction has commenced and the expected date of completion is March 2023.  This project is 100% funded by NSW Government's Active Transport Program for its construction in 2020/21.
M4 Cycleway at Good Street and Alfred Street, Granville	Construct combined raised pedestrian and cyclists crossing	\$600,000	The Traffic Committee, on 8 February 2023, recommended this project for approval. This project will now be considered by Council on 13 March 2023 for determination.  Completion will be in FY 23/24
Granville	High Pedestrian Activity Area Study	\$30,000	Study only. Consultant has been appointed and is undertaking the study.



Location	Treatment Type	Estimated Cost	Comments
<b>Ward: Rosehill; SED: Parramatta</b>			
Asquith Street, Stubbs Street and Beaconsfield Street, Silverwater	<ul style="list-style-type: none"> <li>• Install speed cushions, median islands and kerb blister islands in Asquith Street at Stubbs Street and at Melton Street N and</li> <li>• Install speed cushions at all approaches to the roundabout at the intersection of Stubbs Street and Beaconsfield Street</li> </ul>	\$160,000	<p>This project is 100% funded by the 2022/23 Australian Government Black Spot Program</p> <p>The Traffic Committee, on 8 February 2023, recommended this project for approval. This project will now be considered by Council on 13 March 2023 for determination.</p>
Park Parade south side of railway line at pedestrian underpass to Parramatta Park, Westmead	(Design Only) Installation of a pedestrian refuge with kerb extension and pedestrian fencing	\$402,000	<p>Civil design is complete.</p> <p>The design is 100% funded by Council through its 2022/23 Active Transport Program (from Parramatta CBD Development Contributions Plan).</p>
Intersection of High Street at Raymond Street, Parramatta	Install a raised pedestrian crossing in High St (north leg) and speed cushions at other 3 legs.	\$262,000	<p>This project is 100% funded by the 2022/23 Australian Government Black Spot Program.</p> <p>The Traffic Committee, on 8 February 2023, recommended this project for approval. This project will now be considered by Council on 13 March 2023 for determination.</p>
<b>Ward: Rosehill; SED: Auburn</b>			
Avenue of Oceania at Louise Sauvage Pathway, Newington	Construction of combined raised pedestrian and cyclist crossing	\$240,000	<p>Civil design has been completed. Request for Quotation is in progress.</p> <p>Construction is 100% funded under the FY22/23 Get NSW Active program.</p>
Hill Road at Bennelong Parkway, Wentworth Point	Construction of new Traffic Signals	Approx \$3.5m including contingency and project management costs	<p>TfNSW have now approved the TCS design, and the detailed design has been approved through the PTC process (Ref PTC 2209 A4).</p> <p>Construction of the facility has commenced</p>
Newington Retail Precinct	Install a 40 km/h High Pedestrian Activity Area restrictions with traffic calming	\$100,000	<p>Installation of speed cushions is <b>COMPLETE</b></p> <p>It is to be noted that TfNSW will install signs and pavement markings for the installation of 40km/h HPAA restriction.</p> <p>This project is funded by Federal Government's Black Spot Program.</p>



Location	Treatment Type	Estimated Cost	Comments
John Ian Wing Parade, Sydney Olympic Park	Construct combined raised pedestrian and cyclists crossing at Louise Savaugue Pathway	\$240,000	Construction is 100% funded under the FY22/23 Get NSW Active program.  The Traffic Committee, on 8 February 2023, recommended this project for approval. This project will now be considered by Council on 13 March 2023 for determination.

## Parramatta City Centre Traffic Projects List

Location	Treatment Type	Estimated Cost	Comments
Argyle Street at Church Street, Parramatta	Upgrade Kerb Ramps at existing Traffic Control Signals (TCS) to current standards	\$750,000	To be considered for funding following Barrack Lane and following construction of signals at the intersection of Carlingford Road and Hepburn Road, Carlingford.
Argyle Street at Marsden Street, Parramatta	Upgrade Kerb Ramps at existing Traffic Control Signals (TCS) to current standards	\$750,000	To be considered for funding following Barrack Lane and following construction of signals at the intersection of Carlingford Road and Hepburn Road, Carlingford.
Barrack Lane, Parramatta	Shared Zone for entire length	\$1,250,000	Funded for construction in 2022/23, likely to be delayed due to heritage and utility services issues.
Charles Street at Union Street, Parramatta	Install a pedestrian refuge island	\$250,000	Not currently a priority for funding
City Ring Road	All other proposals that are part of the City Ring Road and not listed in this list.	TBA	Implementation of various projects along the route are currently being investigated.
George Street at Freemason Arms Lane and Phillip Street at Andrew Nash Lane, Parramatta	Install continuous footpath	\$1,000,000	Application has been lodged for NSW Government funding under its Active Transport Program
Macquarie Street at Marsden Street, Parramatta	TCS upgrades - Upgrade Kerb Ramps at existing traffic signals to current standards	N/A	To be considered for funding following Barrack Lane and following construction of signals at the intersection of Carlingford Road and Hepburn Road, Carlingford.



Location	Treatment Type	Estimated Cost	Comments
O'Connell Street at Hunter Street, Parramatta	Upgrade Kerb Ramps at the existing Traffic Control Signals (TCS)	\$950,000	To be considered for funding following Barrack Lane and following construction of signals at the intersection of Carlingford Road and Hepburn Road, Carlingford.
Parkes Street at Wigram Street and at Harris Street, Parramatta	Installation of dedicated eastbound left turn lane at Harris Street; eastbound right turn bay at Wigram Street; and a dual right turn from Harris Street (southbound) into Parkes Street	TBA	Design to determine concept plan and land reservation details has been completed.
Union Street at Charles Street, Parramatta	Install a Pedestrian Refuge Island	\$250,000	Not currently a priority for funding
Park Parade, Parramatta at Pedestrian tunnel near Domain creek)	Install a Pedestrian refuge with kerb extension and pedestrian fence (drainage works are needed at the tunnel as part of this project)	\$405,000	<p>The design is 100% funded by Council through its 2021/22 Active Transport Program (from Parramatta CBD Development Contributions Plan 2007).</p> <p>A report proposing the installation of a pedestrian refuge with kerb extension and pedestrian fencing was considered in the 25 May 2022 PTC meeting and adopted by Council on 27 June 2022.</p>



## Black Spot Projects List

BCR	Location	Treatment Type	Estimated Cost	Injury Accidents (over 5-year Period) that can be treated by the treatment	Funding Status	Comments
20.3	Intersection of Caroline Chisholm Drive and Hillcrest Avenue, Winston Hills	Install speed cushions at all approaches to the roundabout	\$16,000	4	Funded	Funded under 2022/23 Australian Government Black Spot Program  Funding accepted on 15/09/2022. This project has been endorsed by Council in December 2022 through PTC process. Request for quotation will commence in late March 2023 after the other speed cushion projects are determined by Council.
8.03	Intersection of Bulli Road and Binalong Road, Toongabbie	Install speed cushions at all approaches to the roundabout	\$16,000	2	Funded	Funded under 2022/23 Australian Government Black Spot Program  The Traffic Committee, on 8 February 2023, recommended this project for approval. This project will now be considered by Council on 13 March 2023 for determination.
6.18	Derby St at Wetherill Street North, Silverwater	Install speed cushions in Derby Street at both approaches to Wetherill St North	\$16,000	1	Not yet funded	Applied for funding under Federal and State Governments' Black Spot Programs in 2022/23
5.87	Asquith Street, Stubbs Street and Beaconsfield Street, Silverwater	<ul style="list-style-type: none"> <li>Install speed cushions, median islands and kerb blister islands in Asquith Street at Stubbs Street and at Melton Street N and</li> <li>Install speed cushions at all approaches to the roundabout at the intersection of Stubbs Street and Beaconsfield Street</li> </ul>	\$160,000	5	Funded	Funded under 2022/23 Australian Government Black Spot Program  The Traffic Committee, on 8 February 2023, recommended this project for approval. This project will now be considered by Council on 13 March 2023 for determination.
5.52	Redbank Road at Balmoral Road, Northmead	Install 4 speed cushions (concrete) at north and	\$68,000	8	Not yet funded	Applied for funding under Federal Stimulus Program in 2022/23



BCR	Location	Treatment Type	Estimated Cost	Injury Accidents (over 5-year Period) that can be treated by the treatment	Funding Status	Comments
		southbound approaches to the intersection				
3.37	Intersection of High Street at Raymond Street, Parramatta	<u>Option 1:</u> Install a raised pedestrian crossing in High St (north leg) and speed cushions at other 3 legs.	\$262,000	4	Funded	Funded under 2022/23 Australian Government Black Spot Program  The Traffic Committee, on 8 February 2023, recommended this project for approval. This project will now be considered by Council on 13 March 2023 for determination.
2.31	Carnarvon St at Melton St North, Silverwater	Install a chicane	\$215,000	3	Not yet funded	Applied for funding under Federal and State Governments' Black Spot Programs in 2022/23
1.82	Intersection of Ballandella Road and Burrabogee Road, Toongabbie	Install a roundabout	\$469,000	2	Not yet funded	Applied for funding under Federal Stimulus Program in 2022/23
1.58	Intersection of Melton Street North and Beaconsfield Road, Silverwater	Install a roundabout	\$539,760	2	Not yet funded	Applied for funding under Federal Stimulus Program in 2022/23
1.32	Intersection of Bulli Road at Bungaree Road, Toongabbie	Install a roundabout	\$645,000	2	Not yet funded	Applied for funding under Federal Stimulus Program in 2022/23
0.96	Loyalty Road and North Rocks Road, North Rocks	Install a roundabout	\$790,840	3	Not yet funded	Applied for funding under Federal Stimulus Program in 2022/23
0.63	Gladstone Street at Brickfield Street and at Buller Street, North Parramatta	Install two roundabouts	\$900,000	3	Not yet funded	Applied for funding under Federal Stimulus Program in 2022/23
Supported by Road Safety Audit	Intersection of Wentworth Street and Martha Street, Clyde	Install street lighting under the M4 bridge and raised thresholds in Marta St on	Design: \$20,000 Construction: \$544,000	N/A	Not yet funded	Applied for funding under Federal Stimulus Program for design in 2021/22 and construction in 2022/23.



BCR	Location	Treatment Type	Estimated Cost	Injury Accidents (over 5-year Period) that can be treated by the treatment	Funding Status	Comments
		both approaches to Wentworth Street				
--	Bold Street south of Cowper Street, Granville Ward: Rosehill SED: Granville	Install a raised threshold	\$180,000	4	Not yet funded	<p>Liaising with TfNSW to determine the appropriate treatment options for this location.</p> <p>Reviewed the crash history and noted that the appropriate treatments cannot be installed at the intersection due to following reasons:</p> <ul style="list-style-type: none"> <li>• Close proximity to two traffic signals (at Parramatta Road and at Railway Parade)</li> <li>• Required to maintain 3 travel lanes (including a bus lane) in the northbound and 2 travel lanes in the southbound directions.</li> <li>• Required to maintain right turn access between Bold Street and Cowper Street (west leg)</li> </ul>



## Traffic Projects supported by Community Petition

Location	Proposed Treatment	Year Included on List
<b>Ward: Epping;</b>		
Lexington Avenue at Raimonde Road, Eastwood	Concrete median islands	2014
George Street, Epping	Chicanes (2)	2020
<b>Ward: Parramatta</b>		
Ballandella Road between Fitzwilliam Road and Barangaroo Road, Toongabbie	Raised Thresholds or Chicanes (2)	2015
Frances Street, Northmead	Speed humps (3) or chicanes (2)	2021
Harris Street, Constitution Hill	Speed Humps (3)	2015
<b>Ward: North Rocks</b>		
Barnetts Road, Winston Hills	Chicanes	2011
<b>Ward: Rosehill</b>		
Alice Street between Alfred and Arthur Streets	Speed Humps (2)	2020
Deakin Street, Silverwater (between Stubbs Street and the cul-de-sac)	Speed Humps	2018