



MOUNT BARKER  
DISTRICT COUNCIL

**NOTICE OF MEETING**

Notice is hereby given that the following meeting will be held in the Council Chambers of the Local Government Centre, 6 Dutton Road, Mount Barker on Wednesday 17 February 2021.

9.30am

Council Assessment Panel

A. Humphries  
**ASSESSMENT MANAGER**

10 February 2021

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**MOUNT BARKER DISTRICT COUNCIL**

**COUNCIL ASSESSMENT PANEL**

**Wednesday 17 February 2021, 9.30 am**

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**1. APOLOGIES**

**2. CONFLICT OF INTEREST DECLARATION**

**3. CONFIRMATION OF MINUTES**

- 3.1. That the minutes of the meeting held on 16 December 2020 as circulated to members be confirmed as a true and accurate record of proceedings.

**4. BUSINESS DEFERRED**

Nil.

**5. REPORTS BY OFFICERS**

**5.1. NON-COMPLYING APPLICATIONS**

Nil.

**5.2. CATEGORY 3 APPLICATIONS**

Nil.

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### 5.3 CATEGORY 2 APPLICATIONS

#### 5.3.1 SUMMARY DETAILS

<b>Application No.</b>	580/270/20
<b>Applicant</b>	Kings Baptist Mt Barker
<b>Subject Land</b>	Lot 1000 in D120098, CT 6216/537, 41 Bollen Road, Mount Barker
<b>Ward</b>	Central
<b>Proposal</b>	Kings Baptist Grammar School - Stage 1: School Building and Early Learning Centre, including associated Decking, Shelter, Pergolas, Car Parking, Landscaping, Fencing, Retaining and Infrastructure
<b>Development Plan</b>	Mount Barker District Council – Consolidated 8 August 2017
<b>Zone</b>	Residential Neighbourhood
<b>Form of Assessment</b>	Merit
<b>Public Notification</b>	Category 2
<b>Representations</b>	1
<b>Persons to be heard</b>	1
<b>Agency Consultation</b>	Nil
<b>Responsible Officer</b>	Derek Henderson
<b>Recommendation</b>	Development Plan Consent

#### 1. **BACKGROUND AND PROPOSAL**

Burke Urban is developing a new urban precinct in the “western sector” of the Mount Barker Growth Area bounded by Flaxley Road to the southeast and Bollen Road to the northeast. To date, a new residential precinct, marketing centre and integrated petrol filling station has been delivered in the “Newenham” estate. In addition, Burke Urban entities have entered into a Recreation Deed with Council which facilitated the purchase of a parcel of land by Council for future recreation/sporting grounds adjacent to Western Flat Creek and Bollen Road. Burke Urban see the benefit to contributing to the recreation needs of future residents of this precinct.

With the commitment to delivery of the recreation/sporting grounds in place, in addition to concept designs endorsed by Council, it was evident to Burke Urban and Council that there was a unique opportunity to establish a new school adjacent to these grounds. This is reflected in the Council endorsed Mount Barker Growth Plan of 9/11/2015 that spatially identified a school at this location (as per Figure 1).

To this end, Kings Baptist Grammar School have investigated this opportunity and secured a 5.1 hectare parcel of land from Burke Urban for the purpose of establishing a new educational facility (Kings Baptist Mount Barker). Mount Barker Baptist Church is also seeking to deliver a building for the dual purpose as a place of worship/assembly building for the school in a separate application. In addition, these entities have entered into a binding agreement with Council for shared responsibilities to develop and use the future recreation grounds for the benefit of the community and the school. This will be developed in time in line with Council and School objectives.

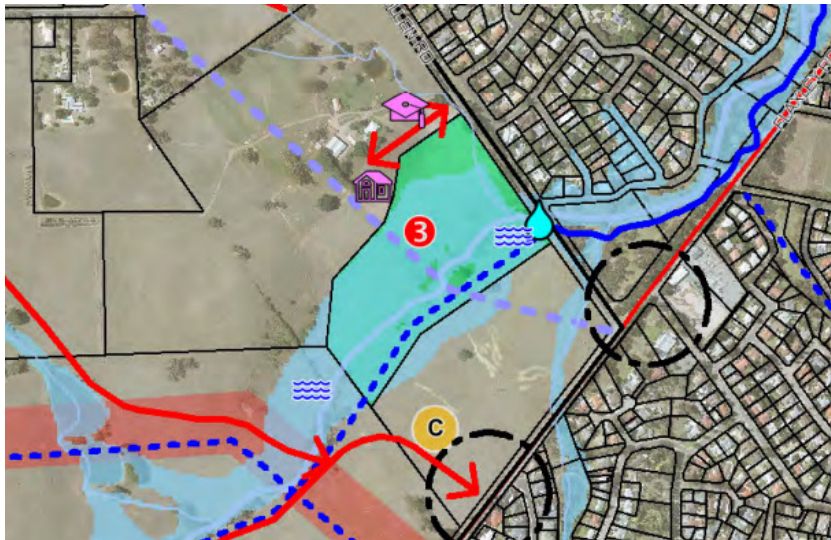
Strategies in relation to stormwater conveyance/management, wastewater provision, future road connections etc. were assessed and determined through the creation of the school allotment, and recently approved land division by Burke Urban for land adjacent to the site (creating 14 residential allotments). The infrastructure and service connections associated with the land divisions consents are to be constructed in 2021 that will service the new residential precinct and the school site.

The lodged application has been submitted as the first stage of the school development, including an early learning centre.

The school site is encumbered by Burke Urban to provide guidance to the design ethos that is being delivered within the Newenham precinct.

The proposal will have synergies with adjoining lands in relation to new road access and piped stormwater conveyance (by Burke Urban), use/development of the recreation/sporting grounds (through shared use agreement with Council) and connection to a Wastewater Entity (Council).

In addition to the above, the Department for Environment and Water has a development authorisation for the removal of a farm dam that is partially located on the school site. The removal is part of the Flows for the Future scheme that seeks to restore natural flows in catchments. The dam removal includes retention of the Significant Remnant River Red Gum that is located at the base of the dam wall.



**Figure 1.** Mount Barker Growth Plan – Bollen Road precinct.

### **Proposal Summary**

The proposal seeks to gain consent for the first stage of a private educational establishment in the form of an R-12 school and an early learning centre in addition to a special purpose “community building” that will have the dual function of being a school assembly building and a place of worship.

Only the first stage is subject to detailed assessment in this development application, located on 1.8 hectares of the northeastern portion of the allotment with frontage to Bollen Road with:

- Two primary buildings – one being a school building that functions as the administration building as well as junior primary classrooms and the other as an Early Learning Centre (ELC).
- School student numbers for Stage 1 are anticipated to be up to 130 (5 classes at 26 per class) with an estimated staff number of 12.
- The Early Learning Centre having a capacity of 60 children, supported by up to 10 staff.
- Carparking for 76 passenger vehicles (2 being for DDA parking), with one dual access onto Bollen Road.
- Associated structures including retaining, pergolas, decking, shelter and landscape walling.
- Works in proximity to two Significant Trees (a remnant River Red Gum and an English Oak).
- Earthworks, including redirection of the farm drainage line.
- Associated fencing and landscaping.

Refer to **Attachment One (1)** for details of the proposal page **33**.

## **2. LOCATION AND LOCALITY**

The subject land was originally part of a farming property, most recently for livestock grazing and hay production. No commencement of urban development has occurred in this precinct adjacent to Bollen Road at this time.

The undeveloped school allotment comprises of:

- A former farm residence which is listed as a local heritage place (House & fr Cemetery Fairfield (Recency Farm, May) ID 18549 with associated outbuildings, farm buildings and landscaping. It is noted that the cemetery is not located within the school allotment.
- Undulating grazing land.
- Portion of a farm dam (now removed as approved in a previous authorisation).
- Planted and remnant trees, including Regulated and Significant Trees.
- Driveway access to Bollen Road.
- Stored soil associated with the removal of the dam and implementation of civil works within the precinct.

The subject site itself does not contain any of the structures and comprises of:

- Cleared, gently undulating grazing land with a portion of the farm dam at the northern end (now removed) and farm drainage line. It is noted that a section of the dam wall has been excavated to drain the dam in preparation for the removal.
- A Significant Remnant River Red Gum tree located at the base of the former farm dam wall.
- A Significant English Oak tree located adjacent to the existing driveway access and excavated drainage line.
- An unmaintained Hawthorn “hedge” located within the property adjacent to Bollen Road, with some branches encroaching into the road reserve area.

The locality reflects the previous township boundary between:

- A residential precinct with primarily conventional single storey dwellings within a landscaped setting. The local streets are kerbed but have no formed footpaths, however the road verges are of sufficient width to accommodate informal pedestrian movement; and
- Farming land in the nature of undulating, pastured grazing land interspersed with remnant and planted trees, Western Flat Creek, farm drainage lines, electricity transmission lines, farm residences with associated outbuildings, farm buildings and associated infrastructure. This land was rezoned as Residential Neighbourhood Zone in the Ministerial Development Plan Amendment.

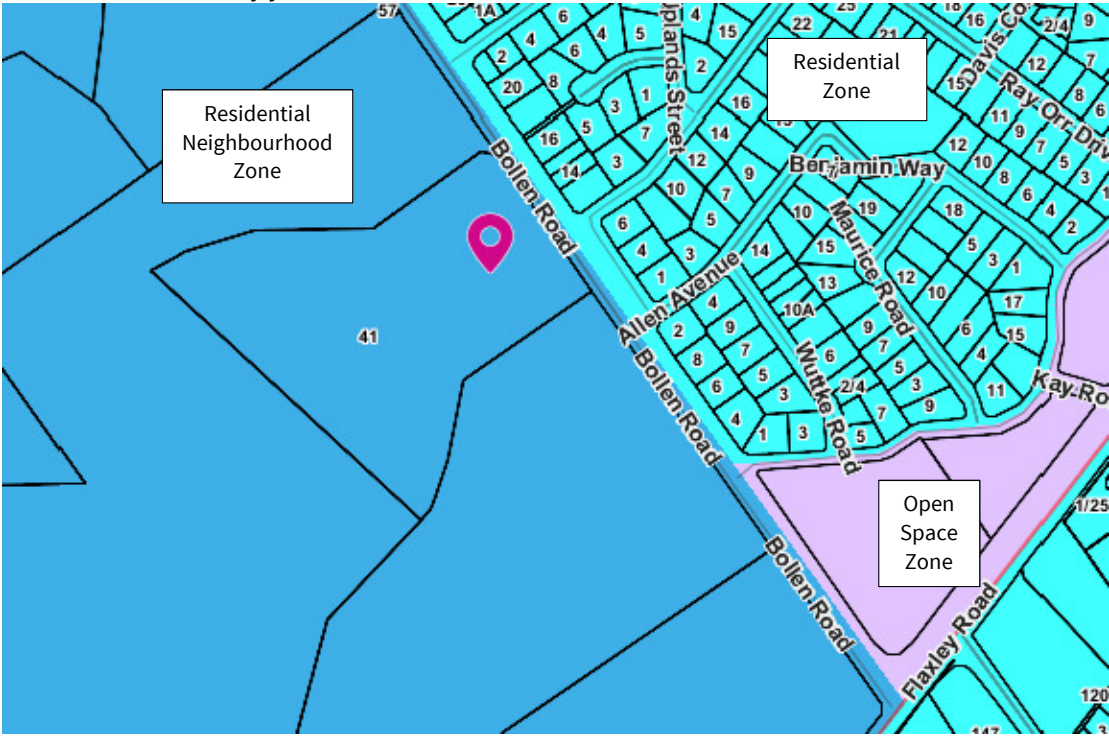
The Bollen Road corridor provides a separation between the established residential area and the new urban area. The attributes of Bollen Road are:

- A two-way sealed rural road.
- No kerbing on the western side. On the eastern side there are sections with kerbing, but not in the vicinity of the school site.
- No footpaths, consistent with the adjoining street network.
- Varying road reserve widths, with:
  - The section between Flaxley Road and Allen Avenue being 25 metres in width, with the paved road located on the western side (with a culvert crossing over Western Flat Creek) interspersed with planted and remnant trees, including several Regulated and Significant Trees.
  - The section between Allen Avenue and Mansfield Road being 37 metres in width and includes Bollen Road pavement on the western side and Mansfield Road pavement on the eastern side, divided by an 18 metre median.
  - The section north of Mansfield Road reverting back to a 25 metre corridor.
- Residential properties facing Bollen Road have driveway accesses to this road (other than the section where they would directly access Mansfield Road).
- Functions as a minor linking road between Flaxley Road to the south and Hawthorn Road to the north.





**Figure 2.** Aerial Photo of site and locality. Stage 1 site identified by blue star. Representatives residence identified by yellow star.



**Figure 3.** Zone Map. Subject land identified by pink marker.





**Photo 1.** View northwest into subject site from existing access off Bollen Road. Significant River Red Gum located in the background.



**Photo 2.** View west into subject site from existing access off Bollen Road. Local heritage place (farm residence) located in the background.





**Photo 3.** View southwest into subject site from existing access off Bollen Road.



**Photo 4.** View southwest into subject site from existing access off Bollen Road. Significant English Oak Tree located in the foreground.





**Photo 5.** View south along Bollen Road from the existing access.



**Photo 6.** View north along Bollen Road from the existing access with Hawthorn "hedge" on the left.

### **3. PROCEDURAL**

In the Residential Neighbourhood Zone, Educational Establishments, Primary Schools and Pre-Schools are all Category 1 developments other than where they are adjacent to an existing dwelling, which is then determined to be Category 2.

The zone is silent about undertaking development on land that is a local heritage place. In the light of no specific reference to heritage places in the Development Plan or Development Regulations, it is concluded that the land use itself is the primary determinant of categorisation and development on land that is local heritage listed (albeit that no development of the listed items is occurring and it is only the setting that is being assessed), and hence does not result in defaulting to being Category 3. To this end, as all proposed uses/structure are designated as being Category 2, then the proposal is categorised as such.

### **4. GOVERNMENT AGENCY SUBMISSIONS**

The proposal does not result in any referrals to State Government Agencies in accordance with Section 37 of the Development Act 1993 and Schedule 8 of the Development Regulations 2008.

### **5. COUNCIL DEPARTMENT COMMENTS**

#### **5.1. Planning Engineer**

Council Engineers have reviewed the proposal, particularly in regard to matters including stormwater management and traffic impacts. The engineers have concluded that the stormwater management plan as proposed satisfies the objectives in relation to onsite management and connectivity to the infrastructure being provided as part of the Newenham development in the wider precinct.

Engineers have also confirmed that the traffic matters have been satisfactorily addressed, albeit the intervention/s for safe pedestrian access across Bollen Road for students will require further consideration in line with Council's strategic investigations for the overall site in combination with the detailed assessment of accessibility to the assembly building (now lodged) and future connection to Council's recreation/sporting grounds.

The full details of the response is outlined in **Attachment Two (2)**, page **235**.

#### **5.2. Heritage Consultant**

Council's Heritage Consultant has assessed the proposal in respect to impacts on the setting of the local heritage place, noting that the listed building itself is not within the Stage 1 development area. In conclusion, the proposal results in a high standard of functional architecture that is reasonable and acceptable in conserving the heritage value of the place.

The full details of the response is outlined in **Attachment Three (3)**, page **237**.

### 5.3. Urban Forest Officer

Council's Urban Forest Officer has provided advice in relation to the two Significant Trees to be retained on the land.

The Remnant River Red Gum had encroachment into the Tree Protection Zone (TPZ) by the bank of the farm dam. Subsequent to the initial inspection, the Department for Environment and Water has enacted on the farm dam removal authorisation and remediated the root zone of the tree in accordance with the development authorisation for these works.

A constructed farm drain and driveway (including culvert) remains within the TPZ of the English Oak Tree.

Council's Urban Forest Officer has confirmed that the remediation of the encroachments in conjunction with the works associated with the proposed development can be suitably undertaken that would result in the long-term retention and health of the trees being achieved in accordance with the conclusion in the submitted Tree Retention Plan.

## 6. PUBLIC NOTIFICATION

The application was notified to adjoining land owners/occupants in accordance with Part 4 of the Development Act 1993 (Category 2 Notification).

Pursuant to Part 4, Section 38(10)(a) of the Development Act 1993 the Council Assessment Panel may, at its discretion, allow a person who made written representation to appear personally or by representative before it to be heard in support of the representation.

### 6.1. Representations

One (1) representation was received as a result of the public notification, as identified below:

	Representor	Address	Nature of representation	Request to be heard (Cat 2)
1	Samantha Rolt	18 Bollen Rd, Mount Barker	Opposed	Yes

Refer to **Attachment Four (4)** for a copy of the representation received page **245**.

### 6.2. Response to Representations

A response to the representation in regard to matters including rural character and habitat, visual impact, noise impact and security has been received by Council.

Refer to **Attachment Five (5)** for a copy of the applicants response to the representation page **247**.

## **7. ASSESSMENT**

### **7.1. Classification of Development**

The proposed development is neither identified as being complying nor non-complying in the Zone, and accordingly is required to be assessed on its merits having regard to the relevant provisions of the Mount Barker District Council Development Plan.

### **7.2. Relevant Development Plan Provisions**

The development application is required to be assessed against the Development Plan in effect at the time of lodgement, being the Mount Barker District Council Development Plan Consolidated – 8 August 2017.

All of the provisions detailed below are considered applicable, however only the most relevant to this site and application are discussed in detail.

#### Zone

Residential Neighbourhood Zone: Objectives 1, 4, 6, 7, 8, 10 Principles of Development Control (PDCs) 1, 2, 5, 7, 8, 26, 27, 28, 29, 30, 32, 33, 34, 35

#### General Section

Centres and Retail Development: Objectives 1, 2, 3, 5, 6 PDCs 1, 2, 3, 4

Community Facilities: Objectives 1, 2 PDCs 1, 2, 3

Crime Prevention: Objective 1 PDCs 1, 2, 3, 4, 5, 6, 7, 10

Design and Appearance: Objectives 1, 2 PDCs 1, 2, 3, 5, 7, 8, 9, 10, 11, 12, 13, 15, 16, 18

Energy Efficiency: Objectives 1, 2, 3 PDCs 1, 2, 3, 4

Hazards: Objectives 1, 2, 4, 5, 8, 9, 11 PDCs 1, 3, 4, 5, 7, 8, 9, 10, 13, 16, 23, 31, 32

Heritage Places: Objectives 1, 2, 3 PDCs 3, 4, 6, 7, 11

Infrastructure: Objectives 1, 2, 5 PDCs 1, 2, 4, 5, 8, 9, 10

Interface between Land Uses: Objectives 1, 2, 3 PDCs 1, 2, 3, 4, 6, 7, 8, 17

Landscaping, Fences and Walls: Objectives 1, 2 PDCs 1, 3, 4, 5, 6, 7

Natural Resources: Objectives 1, 2, 4, 5, 6, 7, 10 PDCs 1, 3, 4, 5, 7, 8, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 28, 29, 43, 44, 45, 46, 47, 48, 49, 50, 51, 57, 58, 59, 60

Orderly and Sustainable Development: Objectives 1, 3, 4, 6, 7 PDCs 1, 2, 3, 4, 6, 7, 8, 11, 12, 13

Significant Trees: Objectives 1, 2 PDCs 1, 2, 3, 4, 5, 6, 7, 8

Siting and Visibility: Objective 1 PDCs 1, 5, 6, 10

Sloping Land: Objective 1 PDCs 1, 2, 3, 4, 5, 7

Transportation and Access: Objective 2 PDCs 1, 2, 5, 6, 8, 9, 10, 14, 18, 19, 20, 21, 22, 25, 26, 27, 29, 30, 31, 32, 36, 38, 39, 41, 42, 43, 44, 45, 46, 47, 48

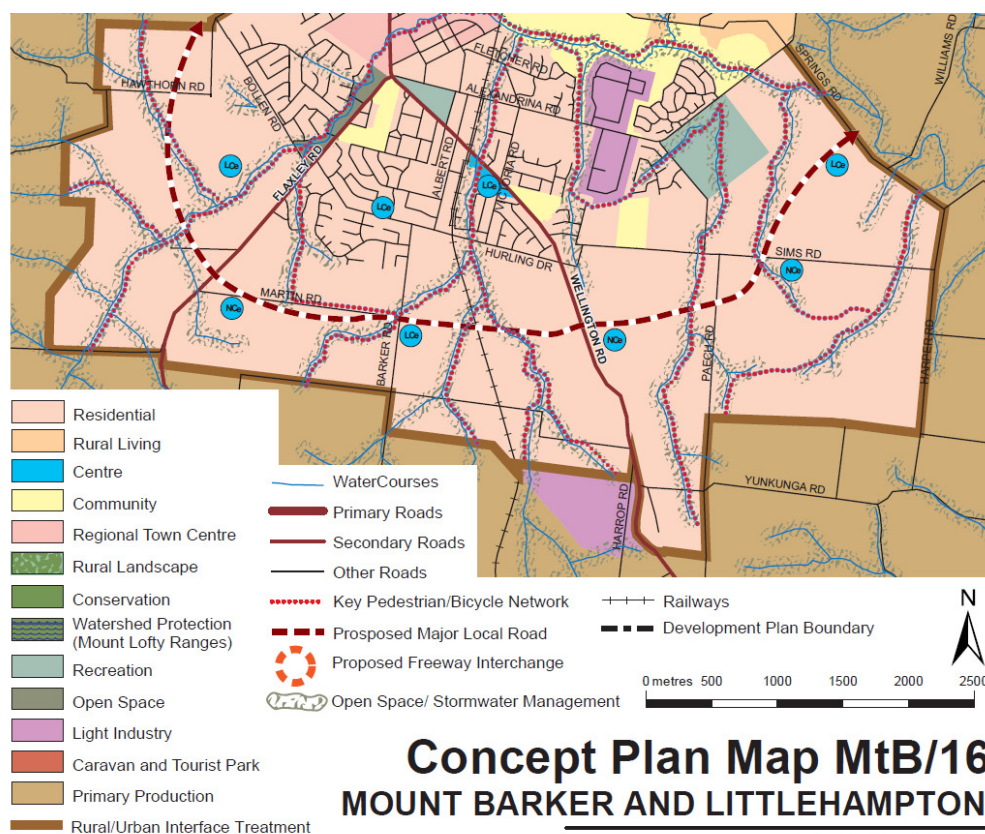
Waste: Objectives 1, 2 PDCs 1, 2, 5, 7, 14, 16



### 7.3. Land Use in the Zone

The Residential Neighbourhood Zone is a unique zone within the Mount Barker township that caters for the expansion of the township and includes local and neighbourhood centres in key strategic locations that are not delineated by specialised zones (which traditionally occurred), but rather are incorporated within the same zoning. A key benefit of this approach is the flexibility that it provides in the facilitation of non-residential development in suitable locations dependent upon ultimate layout of new precincts, specific constraints of the land and siting that optimises opportunities for facilities that service the expanding and existing residential population in the locality and wider district.

To this end, a Concept Plan map (as per below) was included in the Development Plan as part of the Ministerial rezoning of this land to provide guidance as to potential suitable locations of centre precincts within the urban growth areas. For land to the west of Flaxley and Bollen Roads, key attributes included trail links, a major local road connector and a local centre.

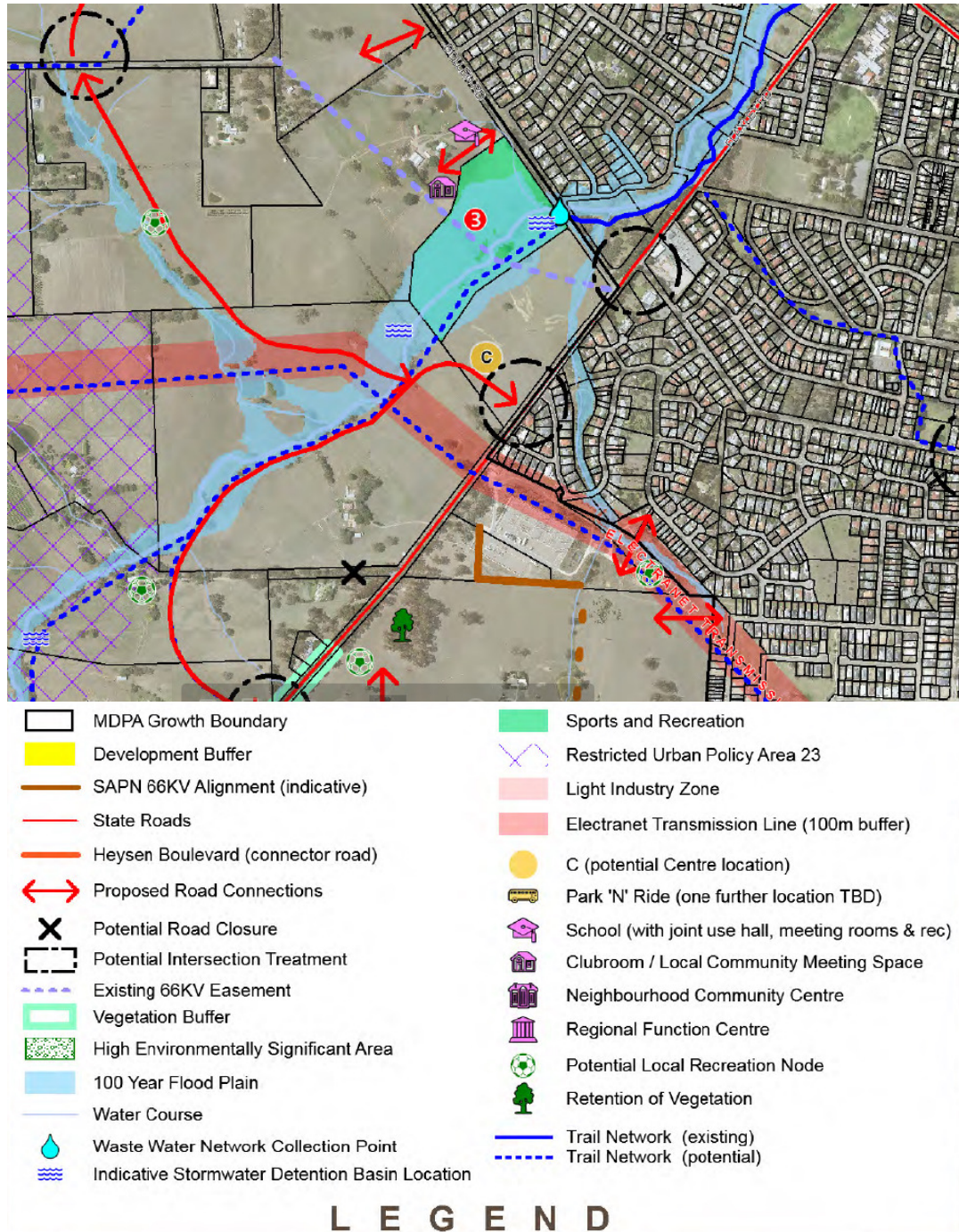


Further substantive detailed analysis of the urban structure on the western side of Flaxley Road has occurred since the original rezoning of the land. This analysis has refined the concept plan to be specific for the functioning of key strategic attributes that would enable delivery of uses and amenities that are anticipated within the township. To this end, key outcomes of these investigations and development authorisations has resulted in:

- Reducing the alternative route importance of the major local road connection through to Hawthorn Road (noting the significant constraints at the Adelaide Road/Hawthorn Road intersection).



- Provision of a substantive future sports and recreation hub along the Western Flat Creek, serving the community in the southwestern area of Mount Barker.
- Opportunity for a school precinct that can contribute to the establishment of the sporting and recreation precinct (through shared-use agreement/s and investment).
- Location of a potential centre precinct on the eastern side of Western Flat Creek, rather than on steep land on the western side that would be isolated from the arterial traffic flow.



The development seeks to provide for the needs of the community in regard to provision of an educational establishment and early learning centre. Early learning centres in particular have

synergies with schools and are typically incorporated as part of a school facility. These non-residential uses are anticipated to be located within designated locations as opposed to being scattered throughout the zone, and being of suitable scale that does not unreasonably impact the amenity of nearby residents. It is important to differentiate between non-residential development within a designated location as opposed to residential precincts to inform the nature of the interface that should be expected in these different situations. This will be discussed further in section 7.8 Interface Between Land Uses.

The proponent has put forward a development that will cater for the educational and childcare needs of the community in a location that has been strategically identified as being best suited for this use. In this regard there is no question that the proposed development is one anticipated within this location in the Residential Neighbourhood Zone, albeit with consideration required at to the proposals compatibility with the adjoining established residential precinct on the eastern side of Bollen Road.

The zone anticipates that development should be undertaken in accordance with suitable upgrades and augmentation of utility services and roads to meet the anticipated need. This will be discussed further below, however it is determined that all utilities can be delivered in an orderly and sustainable manner and that road upgrades are to occur at an appropriate time.

In summary, the siting of, and proposed land uses is the most appropriate, orderly and sustainable interpretation of the enactment of an educational establishment and early learning centre in the precinct located on the western side of Bollen Road, within the Residential Neighbourhood Zone.

#### **7.4. Centres and Retail Development**

The centres and retail development policy framework promotes development which results in the convenient provision of goods and services to the community. The framework also seeks development that contributes to the architectural style established within the centre in which it is proposed to ensure a single theme is carried forward and not diminished.

The proposed development will provide the community of the southwestern area of Mount Barker (and wider district) with additional educational and childcare services for the expanding population. Whilst there are schools within the wider locality (primary and secondary schools), the offering by Kings Baptist Schools is another option available to the community of Mount Barker and can be a drawcard for persons wishing to reside within this precinct due to an increased level of convenience.

The architectural form of the building is consistent with the “country character” theme within the Newenham precinct, with natural colours and materials, pitched roofs, landscaping and single storey built form. Unlike the entrance to be developed along Rainbird Drive, a “main street” layout is not anticipated, hence having buildings built in close proximity to the street edge is not fundamental to the locality.

Educational facilities are typically located outside of commercial precincts due to factors including the land area required, access to recreation grounds, ease of accessibility for staff and students, and potential conflict with commercial uses. As such, the proposal does not act to diminish the importance of the Regional Town Centre as the pre-eminent non-residential precinct within the Mount Barker township.

In summary the educational and childcare facility provided by the development will provide a service to the community of Mount Barker, consistent with the architectural themes being established within the Newenham precinct.

### **7.5. Design and Appearance**

The Development Plan seeks development that has a high architectural standard that responds to and reinforces the positive aspects of the built form established in the locality.

The architectural themes of the building are generally consistent with the design of built form found within the new locality and is determined to provide a positive contribution to the developing precinct through:

- Albeit that the buildings, in particular the school building, is of a size that does not currently exist within the precinct, they do not give the appearance of excessive bulk of scale, particular due to being single storey and substantive articulation and use of natural materials.
- Siting within a landscaped setting that includes retention of Significant Trees between the front boundary and the buildings (River Red Gum and English Oak).
- Stepping the buildings down to minimise the extent of earthworks.

In addition, the building design and siting has been considered in relation to retaining the attributes of the local heritage place (farm residence) and its curtilage as discussed further below.

In summary, the buildings proposed utilise contemporary and natural materials and present a high standard of design that is generally sympathetic to the new precinct and adjoining residential areas to the east.

### **7.6. Heritage Places**

The nature of the local heritage listing on the subject land has been reported in detail by the Heritage Architect engaged by the applicant and as assessed by Council's Heritage Consultant. This proposal does not include any works to the Local Heritage listed farm residence, however due consideration has been given to the siting, design, scale and alterations to the natural surface levels of the development in relation to, most importantly, the conservation of the setting of this place. All of these aspects are deemed to be suitably considered. The prominence of the local heritage building within the new urban precinct is retained whilst facilitating the re-adaptive use of the land for community benefit.

The proposal is considered to satisfy the objectives of the Development Plan in regard to heritage matters.

### **7.7. Hazards**

A Preliminary Site Investigation – Site History Report has been undertaken that includes the subject site as well as the balance of the land. This was undertaken as part of the subdivision proposal that created the allotment. Based on the site inspection and desktop review of historical information, although the land has been used for farming purpose, only low level Potentially Contaminating Activities (PCAs) were identified onsite – in the proximity of the existing farm

buildings which are located to the west of the Stage 1 site. Furthermore, the old quaker cemetery has been identified as not being within the allotment.

The report concluded that the likelihood of gross or widespread soil contamination to exist as a result of current or previous land uses at the site that would be likely to preclude a proposed sensitive use is low. Council is satisfied that the information provided has sufficiently demonstrated that the site is suitable for a more sensitive land use without requiring a Site Contamination Audit Report (SCAR) to be undertaken.

In relation to bushfire hazard, in the Residential Neighbourhood Zone undeveloped land is classified as being High Bushfire Risk until such time as urban development is approved (being land division or land use) which then results in reclassification as Medium Bushfire Risk over the subject area.

The siting of the buildings, access to Bollen Road, alternative escape routes, surrounding locality being primary arable grazing land (which can be managed for fuel loading) and SA Water mains availability in Bollen Road result in the proposed development being able to achieve the requirements of the Ministers Code resulting in a reasonable measure of protection in a bushfire event. Consideration of the specific details of life safety requirements would occur in any subsequent Building Rules assessment of the National Construction Code (NCC) requirements.

The stormwater management plan is determined to be acceptable that would include protection of the proposed buildings from impacts in a flooding event.

It is considered that the proposal satisfies relevant provisions in relation to mitigation of hazards.

## **7.8. Interface Between Land Uses**

The policy framework of the Development Plan seeks development that is designed and sited to prevent adverse impacts and conflict between land uses to promote community health and amenity. Consideration of potential adverse impacts relating to the interface between the proposed development and nearby residences is most clearly articulated in Interfaces between Land Uses PDC1:

- 1 Development should not detrimentally affect the amenity of the locality or cause unreasonable interference through any of the following:
  - (a) the emission of effluent, odour, smoke, fumes, dust or other airborne pollutants
  - (b) noise
  - (c) vibration
  - (d) electrical interference
  - (e) light spill
  - (f) glare
  - (g) hours of operation
  - (h) traffic impacts.

The test of what is unreasonable is to be considered within the context of the balance between what is the envisaged use, the extent of the interface and the attributes of the existing locality. In respect to these matters, it is considered that:

- The land use is envisaged at this locality in the Residential Neighbourhood Zone.
- The Stage 1 interface to existing and proposed sensitive uses (residences) is limited to the established residences located on the eastern side of Bollen Road.
- Bollen Road is a minor collector road that functions as a link between Flaxley Road and Hawthorn Road, with the road verge comprising of established trees and grassed areas that provides a high amenity for the streetscape.

The subject land has been rezoned for urban development. Retention of a quiet, open rural area with no traffic or associated impacts is not envisaged. The activities associated with the operation of a junior primary school and early learning centre are generally confined to daylight hours. Occasional school related events or meetings may occur outside of these hours, but this is not determined to be of a frequency or scale that is unreasonable for an envisaged use at the interface to established residences, particularly due to siting of the activities on the land.

Whilst the representation spoke against the proposal, including noise impacts associated with outdoor activities, the play areas are located behind the buildings (on the western side), at a distance from the residences on the eastern side of Bollen Road and separated by traffic noise from Bollen Road itself.

In conclusion, it is considered that the application has satisfactorily demonstrated that adverse impacts from the operation of the proposal will not result in unreasonable undue impacts on adjoining land users in the context of the envisaged urban development of this land.

#### **7.9. Transportation and Access**

The relevant transportation and access objectives and principles promote development that delivers safe and efficient movement of all motorised and non-motorised transport modes. Currently there is a single-lane farm driveway access to the land from Bollen Road. In addition, there is no footpath network connecting to the subject site nor to the surrounding residential street network.

Bollen Road in this location is currently a 60km/h road with no verge infrastructure and functions as a link between Flaxley Road and Hawthorn Road for the residents in the western area of the township. Council is currently undertaking preliminary work to determine the ultimate design and function of Bollen Road, seeking to:

- Determine when a lowering of the speed limit to 50km/h is to occur (to be approved by the Department for Infrastructure and Transport (DIT)) noting that DIT have indicated in-principle support for this to occur).
- Provide linkages to occur throughout the existing road network, including the suitability of retaining an intersection at Hawthorn Road in its current location.
- Include design parameters that are suitable within an urban environment in balance with retention of existing trees and the amenity of the existing streetscape.
- Provide footpaths and crossings in suitable locations.
- Look at opportunities for on-street parking and potential for kiss-and-drop to complement the community uses for this precinct (including Council's recreation reserve) within the wider road reserve sections.

For the first stage of the school, Council engineers have concurred with the traffic assessment provided by the applicant in that the first stage of the school/early learning centre as proposed does not necessitate an upgrade of Bollen Road to service the traffic associated with this development and does not prejudice the function of the existing road network. Upgrading a portion of Bollen Road at this time could be redundant and prejudice the ultimate desired outcome for Bollen Road.

It is inappropriate for footpaths to be installed at this time without a detailed program to provide a connected network through the new and established areas. There may be a need however for interventions (signage, traffic calming) that would enable safe pedestrian or bicycle passage across Bollen Road for those choosing to access the school or early learning centre by these means. The nature, design and timing of this will be dependent upon the progress of the Bollen Road strategic design.

The access location to the land is determined to be of suitable design for safe traffic movements.

The carparking demand has been determined by the applicant's Traffic Consultant to result in a requirement at full capacity of 29 parking spaces. As a vehicle "kiss-and-drop" has not been included, nor determined to be necessary, as part of the Stage 1 proposal, additional carparking has been provided that exceeds the equivalent for the traffic numbers associated with a kiss-and-drop. Therefore at peak combined demand for the school and early learning centre, there is still an additional 16 spaces available. The analysis is deemed to be acceptable to Council and it is therefore considered that the carpark provision for Stage 1 will not result in undue overflow parking into Bollen Road.

The timeframe associated with the design, assessment, authorisation and construction of a stage for the school would result in the additional carparking requirement, provision of kiss-and-drop/s, interface to Bollen Road etc. being assessed in advance of the full capacity for Stage 1 (being 130 students) being realised. This provides an additional "buffer capacity" that ensures no spill-over onto the street would occur.

No dedicated bus loading/unloading areas are proposed as part of this proposal but is included in a recently lodged application for an assembly building adjacent to the proposed childcare site. Due to excess provision of carparking, there is sufficient area for loading/unloading of a small bus if required in the interim. It is considered not be orderly to necessitate provision of infrastructure that would be soon redundant.

Bollen Road is a designated public transport route (bus) and, in time, there is opportunity for older students (in future stages) to utilise this service. The ideal location/s for bus stops is to be included as part of the overall strategic planning for Bollen Road.

In summary, it is considered that the proposal satisfies the provisions in relation to traffic and parking requirements.

### **7.10. Significant Trees**

The applicant has recognised the value of the two Significant Trees on the land and have designed the development to retain these trees without causing undue impact through the implementation of the development. In fact, the applicant amended the original design once it was discovered that the Remnant River Red Gum could actually be retained as part of the farm dam removal works by the Department for Environment and Water.

The siting of the buildings and associated infrastructure has been determined to be suitable that would enable the long-term health of the trees to occur.

### **7.11. Landscaping, Fences and Walls**

The Development Plan seeks development that incorporates appropriate planting and landscaping works to improve amenity. A landscaping plan has been submitted that details plantings that enhance the built form of the development. The plan will result in reasonable amenity being achieved. There is however opportunity for an increased number of larger trees to be included in the overall design that would complement the two Significant trees that have been retained on the land. This could be examined further through provision of a final detailed landscape plan in the event that consent is granted.

The only removal of vegetation that is necessitated by the proposal is the Hawthorn row adjacent to the front boundary. Removal of this is required to enable drainage infrastructure to be installed in the existing easement, provide the necessary sight lines for safe traffic access/egress to the land and the new road intersection being created by Burke Urban adjacent to the northeast corner of the site. Whilst the Hawthorn row currently provides some amenity, it is not protected by either development nor native vegetation legislation and it is appropriate that this be removed.

The fencing as proposed is open-style timber form that is consistent with the rural themes being delivered within the Newenham precinct and assists in retaining casual surveillance of the site.

### **7.12. Crime Prevention**

The relevant crime prevention objectives and principles promote development that results in a safe, secure land use that facilitates community and/or casual surveillance.

The proposed development would incorporate lighting which enables visibility of the site as well as having capacity for casual surveillance throughout the site from the public realm.

To this end, the proposal does not act to promote anti-social behaviour. It is considered that the design and siting of the buildings and its operation adequately addresses the crime prevention provisions of the Development Plan.



### **7.13. Natural Resources and Stormwater Management**

The relevant natural resources objectives and principles promote development that retains, protects and restores natural resources and environment where practicable. The overarching strategies for stormwater management for the adjacent upstream catchment has been assessed initially through the creation of the school allotment and then refined through the subsequent development authorisation issued for residential land division (as an extension to Newenham) adjacent to the school allotment (to the northwest).

The approved strategy directs all flows for up to the 1-in-100 year ARI event primarily through a piped network. This is in combination with a shallow swale within the existing 5 metre easement for conveyance of road surface water. These flows are directed to the regional detention basin to be delivered by Council on the western side of Bollen Road for mitigation of downstream impacts from flooding events in Western Flat Creek. The stormwater infrastructure directs the farm drainage lines through this small catchment to better manage stormwater through this precinct. The infrastructure is to be constructed as part of the residential subdivision requirements.

The applicant has engaged WSP to devise the stormwater management plan for this proposal in consideration of the overarching strategy. Two scenarios have been analysed that would enable suitable management of stormwater with or without the wider catchment infrastructure being in place. Both of these scenarios are determined to be acceptable to Council engineers, with water quality requirements in conjunction with detention for up to the 1 year ARI event being deemed to be suitable.

A Stormwater, Erosion and Drainage Management Plan (SEDMP) would be required to be established prior to the commencement of any construction that would facilitate protection of the environment during the construction phase. This could be suitably delivered at the relevant time.

In summary, it is considered that the proposal has adequately safeguarded against potential negative impacts on water quality and natural resources. To this end, the proposal is considered to achieve the intent of the Development Plan.

### **7.14. Wastewater Infrastructure**

A sewer mains has been constructed on the eastern side of Western Flat Creek which is of sufficient capacity to service the township expansion. The sewer mains has not yet been extended to the school allotment so there is currently no wastewater connection that services the subject site.

Burke Urban, as the developer of Newenham, is to construct the sewer mains that services the land as approved in adjacent land division DA 580/D025/20 (located to the north/northwest of the school allotment).

The provision of the sewer mains can be achieved, and in a timely manner. If the proposal is supported, then a condition reflecting the requirement to provide a sewer connection, and not any other temporary wastewater solution, would be included.



## **8. CONCLUSION**

The proposal being for the first stage of a school, including early learning centre encompasses uses that are envisaged forms of development within this precinct in the Residential Neighbourhood Zone.

The proposal is considered to:

- Cater for the educational and childcare needs of the growing population of Mount Barker and the wider district in alignment with endorsed structure plans.
- Have built form of high architectural standard with materials, scale, articulation and siting that is suitable for the locality; providing a diversity of interest in the architectural design that is complementary to the “country character” themes being created in the Newenham development and enhanced by landscape plantings.
- Not unduly detract from the heritage value of the local heritage place (farm residence).
- Have satisfactorily safeguarded against potential negative impacts on water quality and Significant Trees.
- Not result in undue impacts on the established residential precinct as a result of the nature of use and siting of activities.
- Not prejudice the delivery of key infrastructure, including the future sports/recreation grounds.
- Provide safe vehicular access to the land.

This is only the first stage for what is ultimately a school catering for 1000 students in addition to the early learning centre, upgrade of Bollen Road to suit the changed urban environment and recreation/sporting facilities to be delivered by Council in partnership with Kings Baptist School and Burke Urban (Newenham). The functionality of this site will evolve through the various stages of the school expansion and detailed assessment over the functionality will occur at each of these stages.

Ideally the existing precinct would have key infrastructure such as footpaths and urban street form in place, however as this is the first land use development along Bollen Road within the Residential Neighbourhood Zone, it is reasonable to expect that there is a point in time as to when this can be delivered in consideration of continuing detailed strategic analysis and commitments by Council. At this time however, it is considered that the proposal, on balance, warrants issuing of Development Plan Consent on the basis of its strong relationship to the policy framework within the Residential Neighbourhood Zone, high quality design and contribution to the educational needs of the community.

## 9. **RECOMMENDATION**

It is recommended that the Council Assessment Panel:

RESOLVE that the proposed development is not seriously at variance with the policies in the Mount Barker District Council Development Plan – Consolidated 8 August 2017.

RESOLVE to GRANT Development Plan Consent to the application by Kings Baptist Mt Barker for the Kings Baptist Grammar School - Stage 1: School Building and Early Learning Centre, including associated decking, shelter, pergolas, carparking, landscaping, fencing, retaining and infrastructure at 41 Bollen Road MOUNT BARKER in Development Application 580/270/20 subject to the following conditions, reserved matters and advisory notes:

- (1) The development herein approved is to be carried out in accordance with the plans and details accompanying this application, including:
  - o Amended Planning Report of URPS titled *King's Baptist Grammar School 41 Bollen Road, Mount Barker Stage 1* dated 21/09/2020
  - o Response to representation by URPS dated 17 November 2020
  - o Amended Plans of Hodgkison Architecture titled *Kings Baptist Grammar School – Mt Barker* Revision 1 dated SEP 20
  - o Tree Protection Plan prepared by Tree Environs Pty Ltd dated 30 June 2020 titled *Kings Baptist School Lot 1000 Bollen Road Mt Barker*
  - o Stormwater Management Plan of WSP – Kings Baptist Grammar School dated December 2020 and the email of WSP to Council dated 3 February 2021
  - o Traffic and Parking Report of MFY dated 11 March 2020 Ref: 20-0030
  - o Carpark Landscaping Layout Concept of French Enviro dated November 2020

except where amended by the following conditions.

- (2) Stormwater management is to occur in accordance with the approved documentation, including:
  - i. All stormwater from the development must be connected to stormwater drainage infrastructure located within the drainage easement in the occurrence that constructed of this has been completed. Any associated costs for the connection are the developer's responsibility.
  - ii. Stormwater infrastructure is to be maintained such that the Water Quality objectives are achieved in regard to pollutants, including gross pollutants.
  - iii. Final detailed design of all stormwater infrastructure, including connections to drainage infrastructure in the drainage easement, is to be approved by Council Planning Engineers prior to construction commencing.
- (3) Prior to the commencement of any earthworks on the site, tree protection zones (TPZs) must be established around all regulated and/or significant trees being retained as part of the development to the reasonable satisfaction of the Council. Tree protection zones must be fenced and sign-posted, and no persons, vehicles or machinery must enter the tree protection zones without the consent of the Council or a professional arborist with a minimum qualification of a Certificate V in Arboriculture.

- (4) Any infrastructure works required to be installed within a tree protection zone of a regulated tree to remain on the land is to be undertaken in a tree-sensitive manner. The works are to be in accordance with the detailed design and methodology and overseen by a professional with a minimum Certificate V in Arboriculture.
- (5) Lighting shall:
  - i. Be provided to the pedestrian areas, manoeuvring areas and car parks in accordance with AS 1158.1 Public Lighting Code and AS 2890.1 Parking facilities – Off-street car parking.
  - ii. Designed to limit overspill of light on adjacent roads and residential areas which may create a nuisance to any neighbour or road user, whilst providing adequate illumination on-site and to perimeters of the site for security purposes, to the reasonable satisfaction of Council.
  - iii. Have non-illuminated elements to be of a material of low reflectivity to minimise impacts of sun/headlamp glare.
- (6) The subject land is not currently serviced by a sewer mains. The developer, at its cost, is to:
  - i. Provide external wastewater infrastructure (sewer mains) to the site that is suitably sized for the catchment, with a connection point to the subject site from the sewer mains. Design approval by Council and SA Health and associated financial and augmentation requirements of Council shall be met in regard to the connection to and construction of wastewater connections, drains and services. An onsite wastewater system, temporary holding tanks or pumped connection to the existing CWMS on the eastern side of Bollen Road are not accepted options.
  - ii. Connection to Council's Sewer System must be provided in accordance with Council's current standards, Australian Standards and relevant codes to the reasonable satisfaction of the Council and be operational prior to the occupation/operation of the development.
- (7) Effective measures shall be implemented during the construction of the development and on-going use of the land in accordance with this consent to:
  - i. Prevent silt run-off from the land to adjoining properties, roads and drains;
  - ii. Control dust arising from the construction and other activities, so as not to, in the opinion of Council, be a nuisance to residents or occupiers on adjacent or nearby land;
  - iii. Ensure that soil or mud is not transferred onto the adjacent roadways by vehicles leaving the site;
  - iv. Ensure that all litter and building waste is contained on the subject site in a suitable bin or enclosure; and
  - v. Ensure that no sound is emitted from any device, plant or equipment or from any source or activity to become an unreasonable nuisance, in the opinion of Council, to the occupiers of adjacent land.
- (8) Following completion of the works and prior to occupation, the contractor shall remove all accumulated material from a permanent drainage infrastructure. The contractor shall arrange for a video survey of all Council stormwater pipes and make a copy of the video plus associated written report available to Council. A further video survey shall be undertaken by the contractor if considered necessary by Council to demonstrate that identified defects in

the pipe system have been satisfactorily repaired. As constructed drawings of all infrastructure to be vested in Council is to be provided.

- (9) An appropriate Stormwater, Erosion and Drainage Management Plan (SEDMP) in accordance with the EPA Stormwater Pollution Prevention Code of Practice must be prepared by an experienced and qualified consultant, to the satisfaction of the Council and must include a range of strategies to collect, treat, store and dispose of stormwater during construction while minimizing the release of pollutants into the environment. The measures recommended in the SEDMP must be in place, to Council satisfaction, prior to any earthworks commencing on site and maintained in good condition and remain in place until the site is sealed, stabilised or suitably re-vegetated in a manner to prevent erosion.
- (10) Traffic management, parking and construction of vehicle manoeuvring and car parking areas is to be in accordance with the submitted plans (other than any amendments conditioned below) and demonstrate the following:
  - a. Car parks and any traffic control devices must be designed and constructed in accordance with AS 2890, in particular AS 2890.1 and AS 2890.2 –Off-Street Car parking along with AS 1742 Manual of Uniform Traffic Control Devices, Notice to Council (Part 1 and 2) under the Road Traffic Act 1961 from the Minister for Transport and Urban Planning (December 1999) and any other relevant Australian Standards and codes, to the reasonable satisfaction of the Council.
  - b. A detailed line marking and traffic control plan is to be submitted to, and endorsed by Council prior to the commencement of construction.
  - c. The driveways and car parking areas shall be paved or surfaced, drained and marked to accepted engineering standards prior to the occupation of the development and shall be maintained in good condition at all times.
  - d. Prior to the occupation of the development, all appropriate traffic interventions that would facilitate safe pedestrian access across Bollen Road is to be provided. The design is to be considerate of all relevant strategic designs for this road and approved by all relevant authorities, including Council.
- (11) The final landscape construction plan (overlaid on the final civil plan) is to be submitted to Council for approval. The landscaping within the carpark area is to be in general accordance with the submitted plans. This is to include opportunities for the establishment of large shade trees as appropriate. Landscaping shall be completed prior to the occupation of the development and be maintained in good condition with losses replaced in a timely manner.
- (12) “As-Constructed” drawings and an asset register shall be submitted to Council for all infrastructure to be vested in Council, including stormwater drainage and wastewater drainage external to the site. The plans are to be provided in accordance with relevant Council standards.

**Notes:**

- (1) Council has declared the area an underground mains area. Any electricity mains must be placed underground in accordance with recognised engineering practice and the requirements of SA Power Networks.
- (2) Any person proposing to undertake building work within the district of Mount Barker is reminded of their obligation to take all reasonable measures to protect Council infrastructure. Any incidental damage to the infrastructure - pipes, footpath, verge, street trees etc., must be reinstated to a standard acceptable to Council at the applicants' expense.
- (3) The applicant is reminded to notify Council in writing when all the Council's conditions and requirements have been complied with. Written Notification should identify each condition and address how the condition has been satisfied, including any relevant documentation.
- (4) The applicant/owner is reminded of its general environmental duty, as required by Section 25 of the Environment Protection Act, to take all reasonable and practical measures to ensure that its activities on the whole site, including during construction, do not pollute the environment in a way which causes, or may cause environmental harm.
- (5) To legally install traffic control devices, a Traffic Control Plan and a Traffic Impact Statement and certification is required to be prepared by a recognised Traffic Engineering Practitioner for approval by Council and/or DPTI.
- (6) As the development hereby approved includes plumbing work, an On-site Wastewater Works Application must be approved by Council prior to the commencement of building work for the approved development.

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# Attachment One (1)



## Development application form

**AMENDED**

Mount Barker District Council

Received

18 March 2020

Development Act 1993

PO BOX 54 MOUNT BARKER SA 5251 TELEPHONE: (08) 8391 7200 <a href="http://www.mountbarker.sa.gov.au">www.mountbarker.sa.gov.au</a>	OR 6 Dutton Road MOUNT BARKER FAX: (08) 8391 7299	<b>Office use only</b> <b>DEVELOPMENT NUMBER:</b>  580 / /
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Please use BLOCK LETTERS and Black or Blue ink so that photocopies can be made of your application

### PLEASE TICK AS REQUIRED

Development Plan Consent ☒ Building Rules Consent ☐ Development Approval (both) ☐

#### APPLICANT'S CONTACT DETAILS:

Name: Kings Baptist Mt Barker Email: darren.mcdonald@kingsbaptist.se.edu.au

Postal Address: 3 Keithcot Farm Drive, Wynn Vale SA 5127 Phone: 08 8289 0222

#### OWNER'S CONTACT DETAILS:

Name: as above Email: \_\_\_\_\_

Postal Address: \_\_\_\_\_ Phone: \_\_\_\_\_

#### BUILDER'S CONTACT DETAILS:

Name: tba Email: \_\_\_\_\_

Postal Address: \_\_\_\_\_ Phone: \_\_\_\_\_

#### CONTACT PERSON:

Name: Kristy McMillan (Hodgkison Architects) Email: kristym@hodgkison.com.au

#### DESCRIPTION OF DEVELOPMENT:

Proposed Development (e.g. Dwelling, Shop, Garage): School Building and early Learning Centre

Existing Use (e.g. Vacant, Dwelling, Grazing): Vacant Land

#### LOCATION OF PROPOSED DEVELOPMENT:

Assessment No: Lot 1000 Parcel No: \_\_\_\_\_

House No: \_\_\_\_\_ Lot / Section No: \_\_\_\_\_ Street: Bollen Road

Town: Mt Barker Volume: \_\_\_\_\_ Folio: \_\_\_\_\_

BUILDING RULES CLASSIFICATION SOUGHT: 9b Present classification: nil

If Class 5, 6, 7, 8 or 9 classification is sought, state the proposed number of employees: Male: 11 Female: 11

If Class 9a classification is sought, state the number of persons for whom accommodation is provided: \_\_\_\_\_

If Class 9b classification is sought, state the proposed number of occupants of the various spaces at the premises: 130 school, 60 ELC

Does either Schedule 21 (Activities of Environmental significance) or 22 (Activities of Major Environmental significance (EPA)) of the Development Regulations, 2008 apply? ☐ Yes ☒ No

DEVELOPMENT COST (do not include shop fitout costs): \$ 7.4M

I acknowledge that copies of this application and supporting documents may be provided to interested persons in accordance with the Development Regulations, 2008.

SIGNATURE: [Signature] DATE: 25/2/20  
Applicant / Owner / Agent

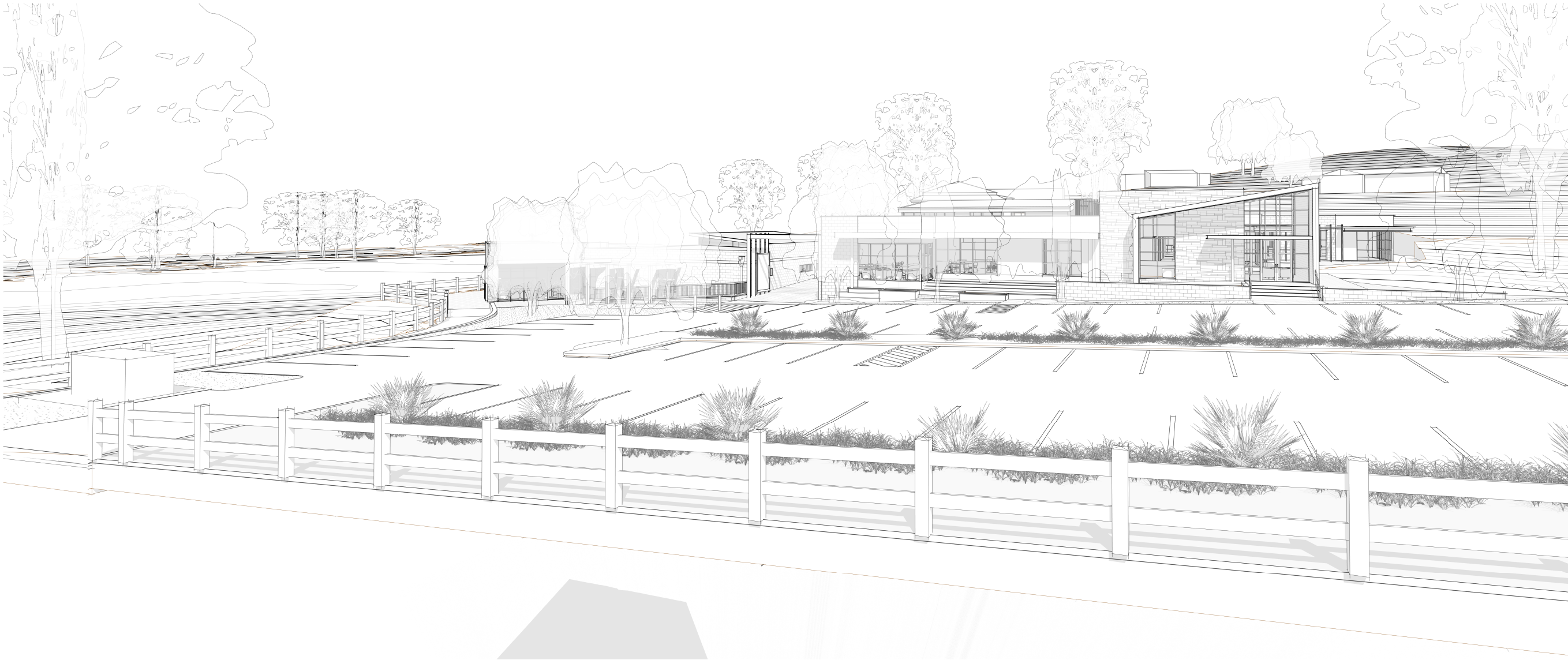
RELEVANT FEES, COPIES OF PLANS & COPIES OF ANY OTHER RELEVANT SUPPORTING DOCUMENTATION  
ARE DUE ON SUBMISSION OF THIS APPLICATION

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AMENDED

# KINGS BAPTIST GRAMMAR SCHOOL - MT BARKER



ARCHITECTURAL DRAWING LIST - PLANNING		
SHEET NO.	DRAWING TITLE	REVISION
PL001	COVER PAGE	1
PL002	LOCATION PLAN	1
PL003	SITE PLAN EXISTING AND DEMOLITION	1
PL004	SITE PLAN PROPOSED	1
PL005	SITE ELEVATIONS	1
PL007	SCHOOL BUILDING FLOOR PLAN	1
PL008	SCHOOL BUILDING ROOF PLAN	1
PL009	SCHOOL BUILDING EXTERNAL ELEVATIONS - SHEET 1	1
PL010	SCHOOL BUILDING EXTERNAL ELEVATIONS - SHEET 2	1
PL011	SCHOOL BUILDING RENDERERS	1
PL012	ELC FLOOR PLAN	1
PL013	ELC ROOF PLAN	1
PL014	ELC EXTERNAL ELEVATIONS	1
PL015	ELC RENDERERS	1

1	PLANNING ISSUE - UPDATED	SEP 20	HA
0	PLANNING ISSUE	8/3/20	HA
Rev	Amendment	Date	Init

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BOLLEN ROAD, MT BARKER

COVER PAGE

Drawn JM	Date SEP 20	Scale A1	Project Number 19060
Review KM	Date SEP 20	Project Leader KM	Date SEP 20
PLANNING		Drawing Number PL001	Amdt 1

Contractor shall check and verify all levels and dimensions on site and report any discrepancies to the Superintendent before undertaking any work or shop drawings

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- STAGE 1 Site boundary
- C.T. boundary lot 100

1	PLANNING ISSUE - UPDATED	SEP 20	HA
0	PLANNING ISSUE	6/3/20	HA
Rev	Amendment	Date	Init

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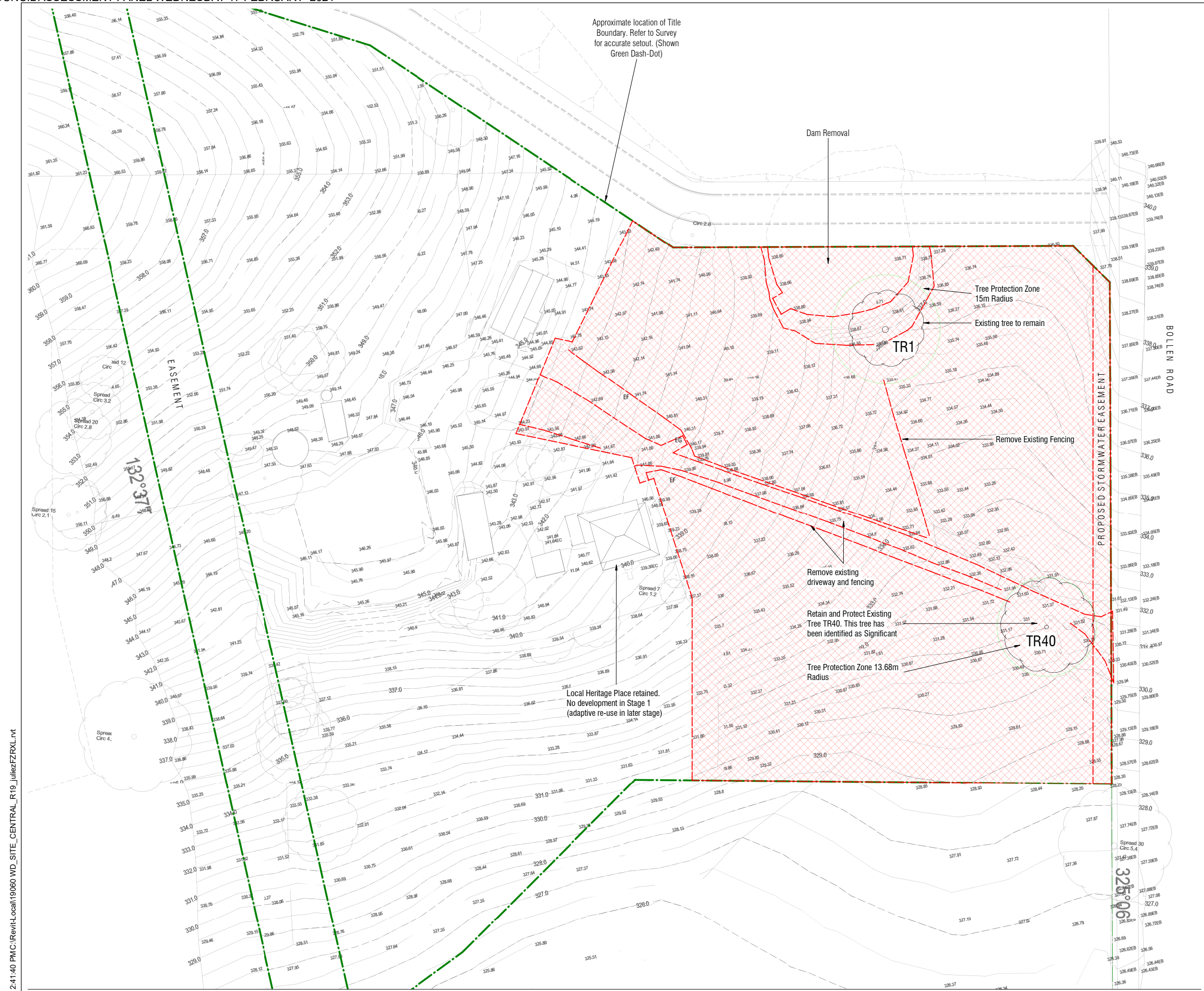
LOCATION PLAN

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Review Checker	Date SEP 20	Project Leader KM	Date SEP 20	Drawing Number PL002
PLANNING				Amdt 1

Contractor shall check and verify all levels and dimensions on site and report any discrepancies to the Superintendent before undertaking any work or shop drawings

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Rev	Amendment	Date	Init

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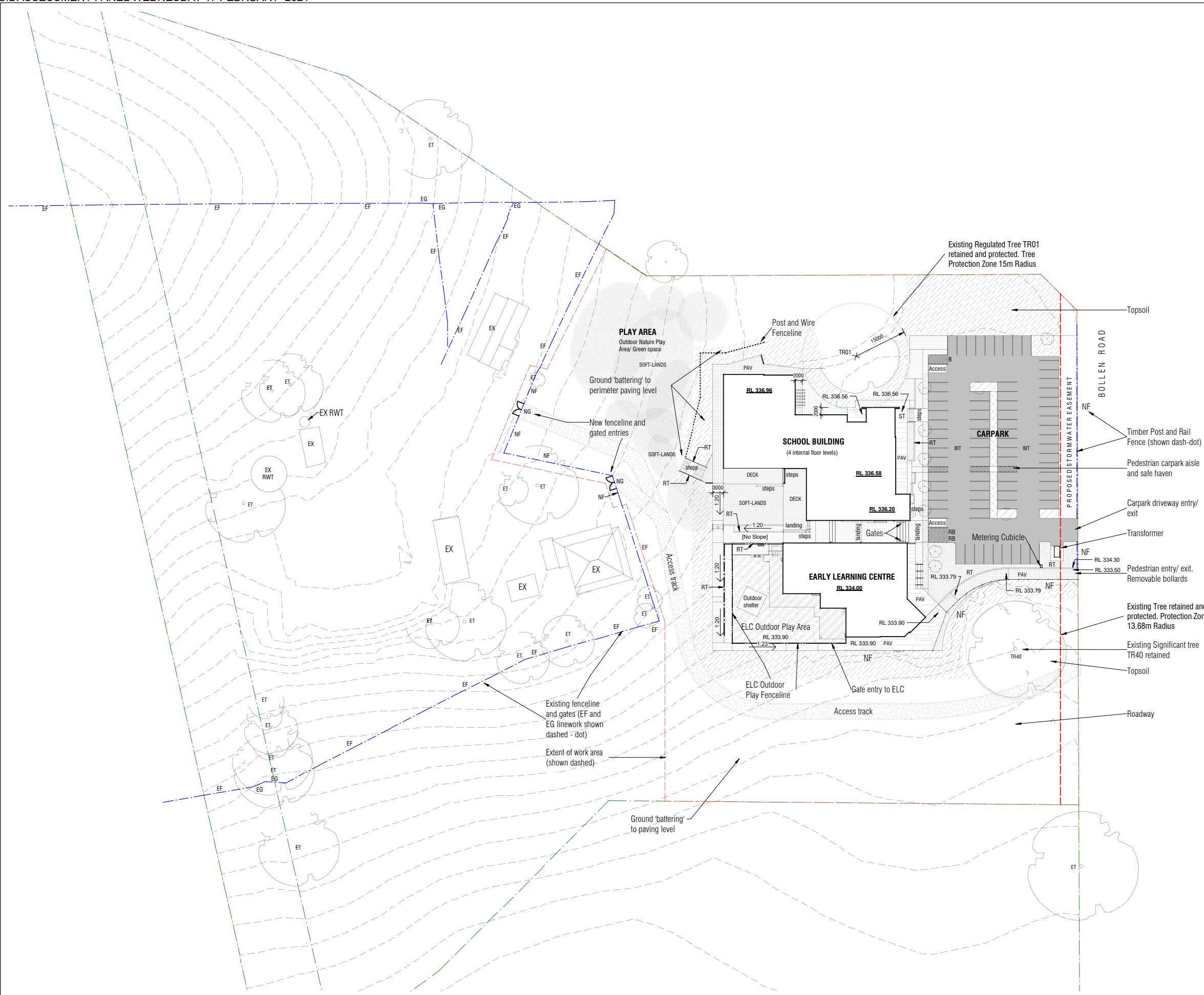
SITE PLAN EXISTING AND DEMOLITION

Drawn JM	Date SEP 20	Scale As indicated	A1	Project Number 19060
Review KM	Date SEP 20	Project Leader KM	Date SEP 20	Drawing Number PL003
PLANNING				Amtd 1

Contractor shall check and verify all levels and dimensions on site and report any discrepancies to the Superintendent before undertaking any work or shop drawings

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- LEGEND**
- |          |   |
|----------|---|
| Access - | ACCESSIBLE CAR PARK                       |
| B -      | BOLLARD                                   |
| BIT -    | BITUMEN                                   |
| EF -     | EXISTING FENCE LINE                       |
| EG -     | EXISTING GATE                             |
| ET -     | EXISTING TREE                             |
| EX -     | EXISTING BUILDING                         |
| EX RWT - | EXISTING RAIN WATER TANK                  |
| NG -     | NEW GATE                                  |
| PAV -    | PAVING                                    |
| RB -     | REMOVABLE BOLLARD                         |
| RT -     | RETAINING WALL / TIER (APPROX 750mm STEP) |
| SS -     | SHADE STRUCTURE                           |
| ST -     | STAIR                                     |



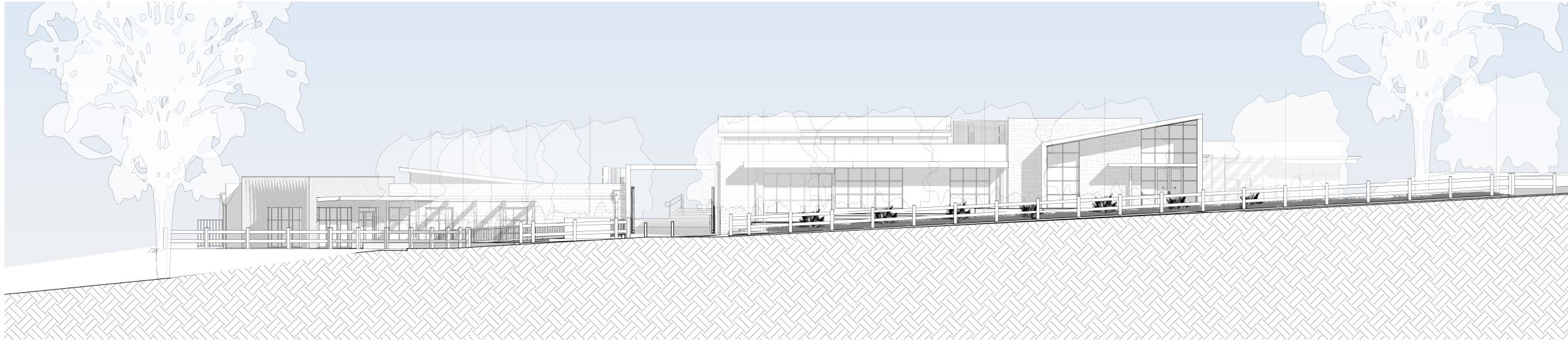
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Rev	Amendment	Date	Init

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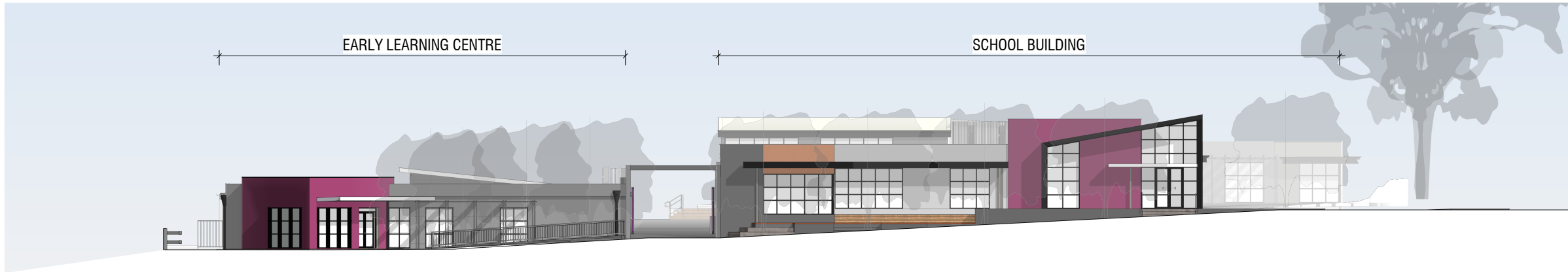
KINGS BAPTIST GRAMMAR SCHOOL BOLLEN ROAD, MT BARKER			
SITE PLAN PROPOSED			
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Review KM	Date SEP 20	Project Leader KM	Date SEP 20
PLANNING		Drawing Number PL004	Amdt 1

Contractor shall check and verify all levels and dimensions on site and report any discrepancies to the Superintendent before undertaking any work or shop drawings

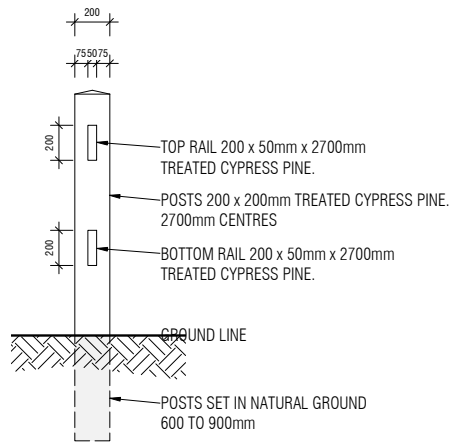




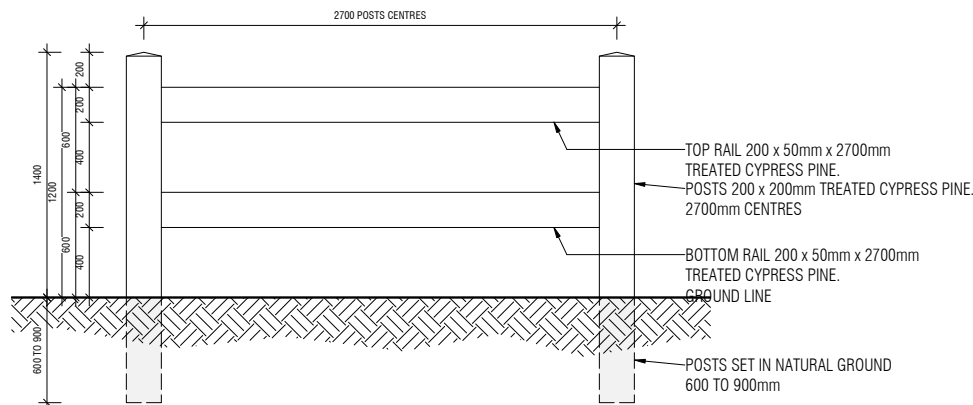
1 BOLLEN ROAD ELEVATION PL  
w\_0004 1 : 150



2 BUILDING ELEVATION PL  
w\_0004 1 : 150



3 TYPICAL FENCE SECTION PL  
wD006 1 : 20



4 TYPICAL FENCE ELEVATION PL  
w1\_00 1 : 20

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0	PLANNING ISSUE	8/3/20	HA
Rev	Amendment	Date	Init

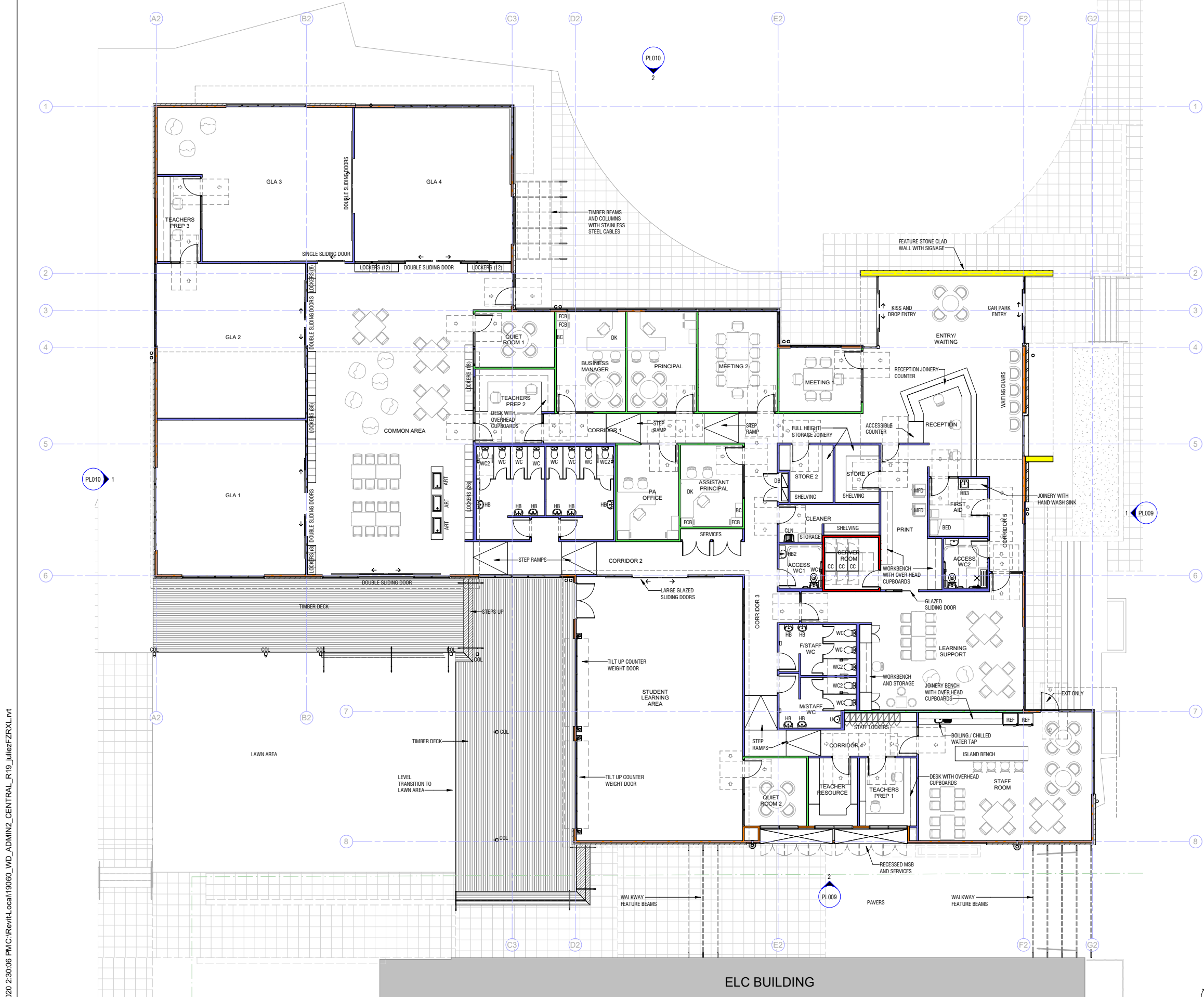
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SITE ELEVATIONS

Drawn JM	Date SEP 20	Scale As indicated	A1	Project Number 19060
Review KM	Date SEP 20	Project Leader KM	Date SEP 20	Drawing Number PL005
PLANNING				Amtd 1

Contractor shall check and verify all levels and dimensions on site and report any discrepancies to the Superintendent before undertaking any work or shop drawings



ROOM AREA SCHEDULE		
ROOM NAME	LEVEL	AREA
QUIET ROOM 2	ADMIN LEVEL 1	13 m <sup>2</sup>
STAFF ROOM	ADMIN LEVEL 1	67 m <sup>2</sup>
TEACHER RESOURCE	ADMIN LEVEL 1	10 m <sup>2</sup>
TEACHERS PREP 1	ADMIN LEVEL 1	12 m <sup>2</sup>
ACCESS WC1	ADMIN LEVEL 2	6 m <sup>2</sup>
ACCESS WC2	ADMIN LEVEL 2	7 m <sup>2</sup>
ASSISTANT PRINCIPAL	ADMIN LEVEL 2	15 m <sup>2</sup>
CLEANER	ADMIN LEVEL 2	10 m <sup>2</sup>
CORRIDOR 1	ADMIN LEVEL 2	28 m <sup>2</sup>
CORRIDOR 2	ADMIN LEVEL 2	30 m <sup>2</sup>
CORRIDOR 3	ADMIN LEVEL 2	33 m <sup>2</sup>
CORRIDOR 4	ADMIN LEVEL 2	14 m <sup>2</sup>
CORRIDOR 5	ADMIN LEVEL 2	9 m <sup>2</sup>
ENTRY/ WAITING	ADMIN LEVEL 2	69 m <sup>2</sup>
F/STAFF WC	ADMIN LEVEL 2	11 m <sup>2</sup>
FIRST AID	ADMIN LEVEL 2	10 m <sup>2</sup>
LEARNING SUPPORT	ADMIN LEVEL 2	65 m <sup>2</sup>
M/STAFF WC	ADMIN LEVEL 2	11 m <sup>2</sup>
MEETING 1	ADMIN LEVEL 2	16 m <sup>2</sup>
MEETING 2	ADMIN LEVEL 2	24 m <sup>2</sup>
PRINT	ADMIN LEVEL 2	22 m <sup>2</sup>
RECEPTION	ADMIN LEVEL 2	18 m <sup>2</sup>
SERVER ROOM	ADMIN LEVEL 2	8 m <sup>2</sup>
STORE 1	ADMIN LEVEL 2	8 m <sup>2</sup>
STORE 2	ADMIN LEVEL 2	8 m <sup>2</sup>
STUDENT LEARNING AREA	ADMIN LEVEL 2	132 m <sup>2</sup>
MALE WC	ADMIN LEVEL 3	18 m <sup>2</sup>
PA OFFICE	ADMIN LEVEL 3	17 m <sup>2</sup>
PRINCIPAL	ADMIN LEVEL 3	21 m <sup>2</sup>
STAFF ROOM	ADMIN LEVEL 3	18 m <sup>2</sup>
BUSINESS MANAGER	ADMIN LEVEL 4	21 m <sup>2</sup>
COMMON AREA	ADMIN LEVEL 4	160 m <sup>2</sup>
GLA 1	ADMIN LEVEL 4	69 m <sup>2</sup>
GLA 2	ADMIN LEVEL 4	69 m <sup>2</sup>
GLA 3	ADMIN LEVEL 4	79 m <sup>2</sup>
GLA 4	ADMIN LEVEL 4	72 m <sup>2</sup>
QUIET ROOM 1	ADMIN LEVEL 4	13 m <sup>2</sup>
TEACHERS PREP 2	ADMIN LEVEL 4	16 m <sup>2</sup>
TEACHERS PREP 3	ADMIN LEVEL 4	11 m <sup>2</sup>

KEYNOTE LEGEND	
CODE	DESCRIPTION
ART	ART SINK
BC	BENCH CLIPBOARD
BED	BED LOCATION
CC	COMMUNICATIONS CABINET
CLN	CLEANERS SINK
COL	COLUMN
DB	DISTRIBUTION BOARD
DK	DESK
FCB	FILING CABINET
HB	HAND BASIN
HB2	HAND BASIN WITH INTEGRAL BENCH
HB3	HAND BASIN, FIRST AID ROOM
MFD	MULTI FUNCTION DEVICE
REF	REFRIGERATOR
U	URINAL
WC	WC PAN & CISTERN
WC1	WC PAN & CISTERN, ACCESSIBLE
WC2	WC PAN & CISTERN, AMBULANT

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Rev	Amendment	Date	Init

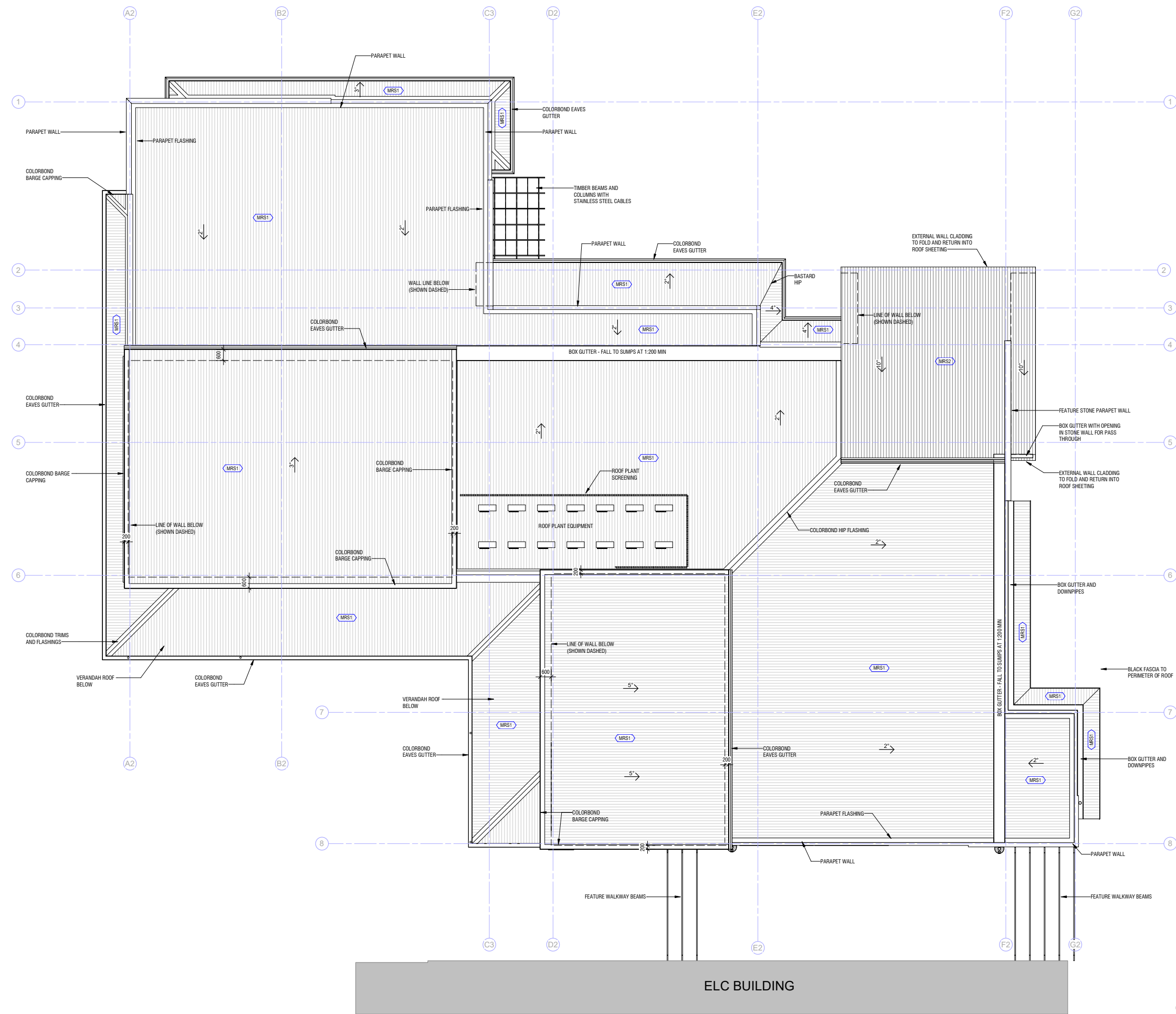
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BOLLEN ROAD, MT BARKER

SCHOOL BUILDING FLOOR PLAN

Drawn JZ	Date	Scale 1:100	A1	Project Number 19060
Review KM	Date	Project Leader GA/KM	Date	Drawing Number PL007
PRELIMINARY				Amdt 1

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Rev	Amendment	Date	Init

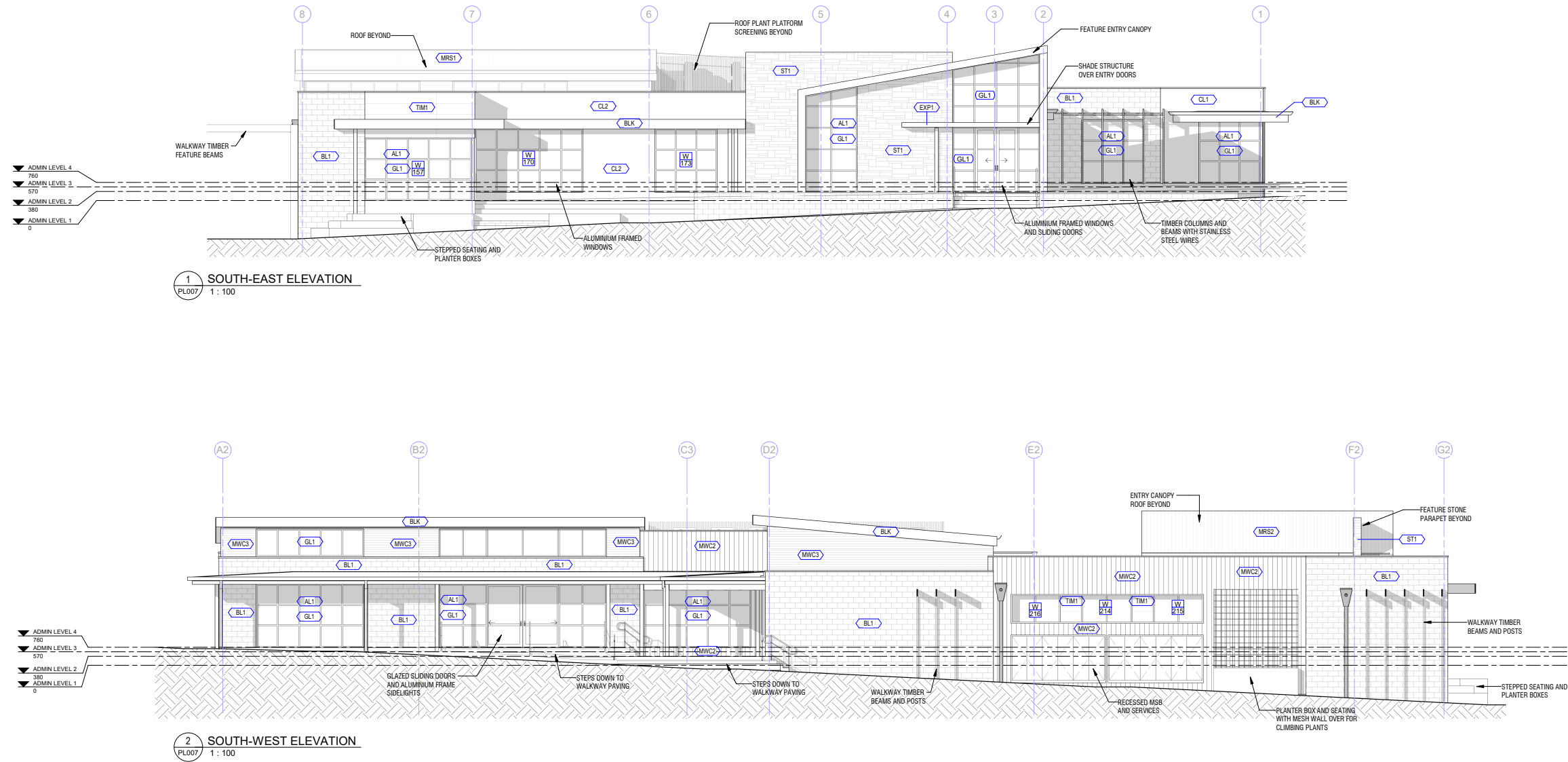
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BOLLEN ROAD, MT BARKER

SCHOOL BUILDING ROOF PLAN

Drawn	Date	Scale	A1	Project Number
Author		1 : 100		19060
Review	Date	Project Leader	Date	Designer
Checker				
PRELIMINARY				Drawing Number PL008
				Amdt 1

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EXTERNAL FINISHES SCHEDULE		
CODE	DESCRIPTION	COLOUR / FINISH
AL1	ALUMINUM WINDOW FRAMES / DOOR FRAMES	BLACK POWERCOAT
BL1	FACE BLOCK	SANDSTONE
BLK	EXPOSED FRAMING, FASCIA, TRIMS	BLACK
GL1	EXOTEC FACADE PANEL 9mm, PAINT FINISH	GREY
GL2	EXOTEC FACADE PANEL 9mm, PAINT FINISH	WHITE
EXP1	EXTERNAL PAINT FINISH	WHITE
GL1	GLAZING	CLEAR
MRS1	METAL ROOF SHEETING - WIDE PAN PROFILE	COLORBOND 'SURFMIST'
MRS2	METAL ROOF SHEETING - FEATURE ENTRY	COLORBOND 'MONUMENT'
MWC1	METAL WALL CLADDING - VERTICAL - WIDE PAN PROFILE	COLORBOND 'MONUMENT'
MWC2	METAL WALL CLADDING - VERTICAL - FINESE BOULEVARD PROFILE	COLORBOND 'MONUMENT'
MWC3	METAL WALL CLADDING - HORIZONTAL - CORRUGATED	COLORBOND 'MONUMENT'
ST1	STONE VENEER	SANDSTONE
TM1	TIMBER LOOK CLADDING - HORIZONTAL	TEAK

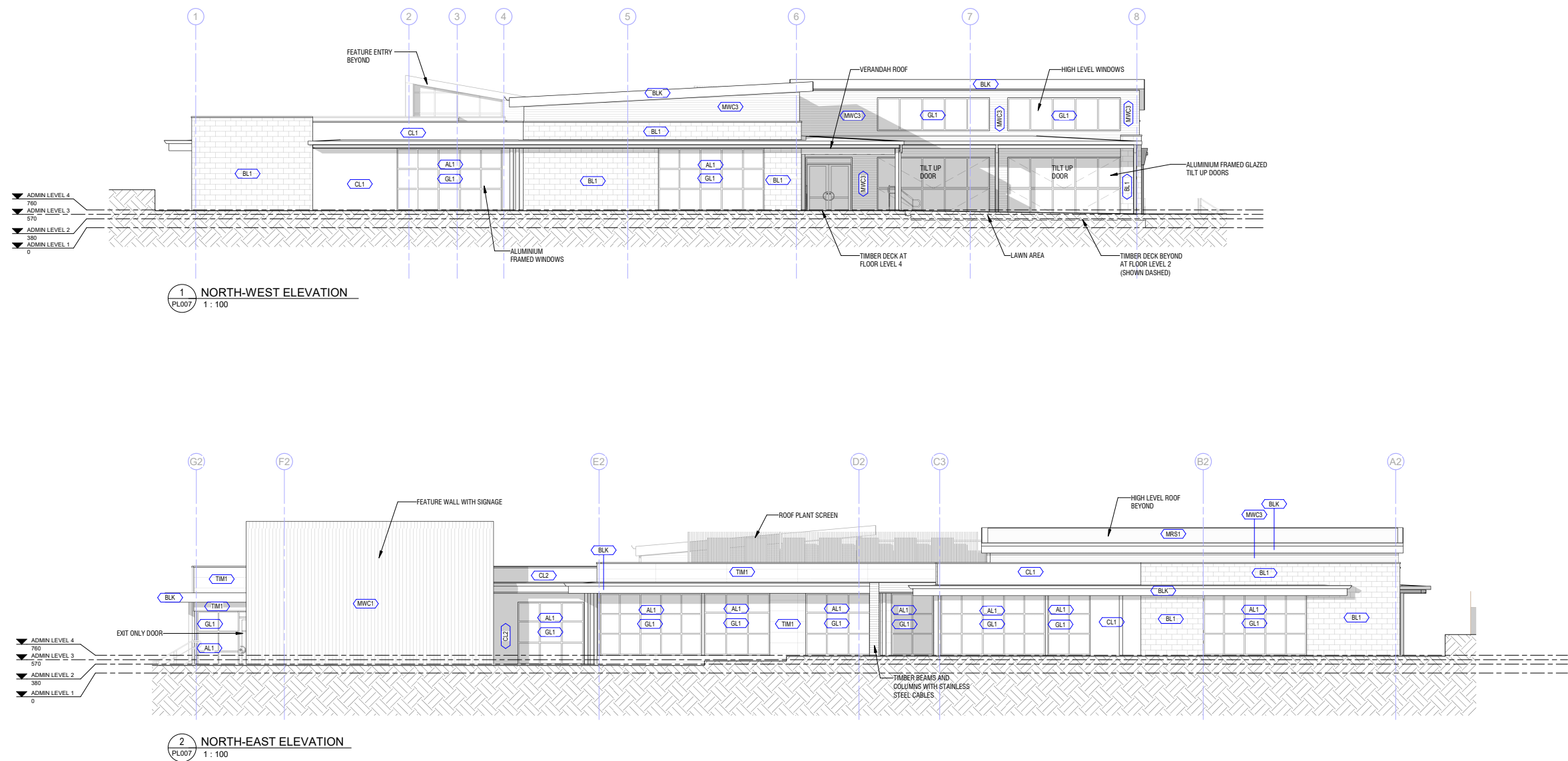
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SCHOOL BUILDING EXTERNAL ELEVATIONS - SHEET 1			
Drawn	Date	Scale	Project Number
Author		1:100	A1
Review	Date	Project Leader	19060
Checker		Designer	
PRELIMINARY		Drawing Number	Amtd
		PL009	1

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EXTERNAL FINISHES SCHEDULE		
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AL1	ALUMINIUM WINDOW FRAMES / DOOR FRAMES	BLACK POWERCOAT
BL1	FACE BLOCK	SANDSTONE
BLK	EXPOSED FRAMING, FASCIA, TRIMS	BLACK
CL1	EXOTEC FACADE PANEL 9mm, PAINT FINISH	GREY
CL2	EXOTEC FACADE PANEL 9mm, PAINT FINISH	WHITE
EXP1	EXTERNAL PAINT FINISH	WHITE
GL1	GLAZING	CLEAR
MRS1	METAL ROOF SHEETING - WIDE PAN PROFILE	COLORBOND SURFMIST
MRS2	METAL ROOF SHEETING - FEATURE ENTRY	COLORBOND MONUMENT
MWC1	METAL WALL CLADDING - VERTICAL - WIDE PAN PROFILE	COLORBOND MONUMENT
MWC2	METAL WALL CLADDING - VERTICAL - FINESE BOULEVARD PROFILE	COLORBOND MONUMENT
MWC3	METAL WALL CLADDING - HORIZONTAL - CORRUGATED	COLORBOND MONUMENT
ST1	STONE VENEER	SANDSTONE
TIM1	TIMBER LOOK CLADDING - HORIZONTAL	TEAK

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Rev	Amendment	Date	Init

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SCHOOL BUILDING EXTERNAL  
ELEVATIONS - SHEET 2

Drawn Author	Date	Scale 1 : 100	A1	Project Number 19060
Review Checker	Date	Project Leader Designer	Date	Drawing Number PL010
PRELIMINARY				Amdt 1

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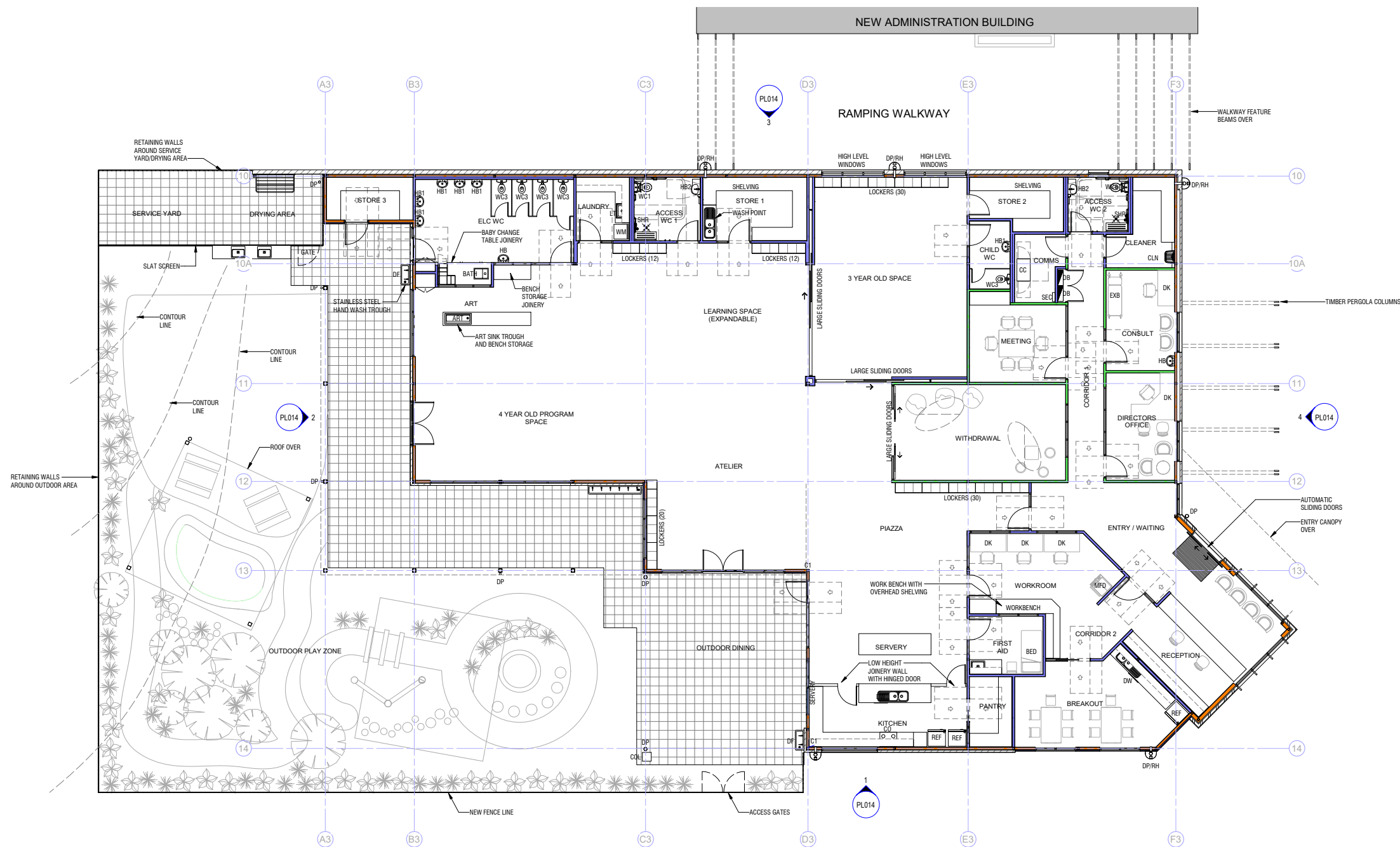
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SCHOOL BUILDING RENDERS

Drawn	Date	Scale	A1	Project Number
Author				19060
Review	Date	Project Leader	Date	
Checker		Designer		
PRELIMINARY		Drawing Number	PL011	Amdt 1

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ROOM AREA SCHEDULE	
ROOM NAME	AREA
3 YEAR OLD SPACE	62 m²
4 YEAR OLD PROGRAM SPACE	63 m²
ACCESS WC 1	8 m²
ACCESS WC 2	7 m²
ART	38 m²
ATELIER	61 m²
BREAKOUT	26 m²
CHILD WC	6 m²
CLEANER	9 m²
COMMS	6 m²
CONSULT	14 m²
CORRIDOR 1	18 m²
CORRIDOR 2	10 m²
DIRECTORS OFFICE	15 m²
DRYING AREA	16 m²
ELC WC	29 m²
ENTRY / WAITING	39 m²
FIRST AID	9 m²
KITCHEN	20 m²
LAUNDRY	7 m²
LEARNING SPACE (EXPANDABLE)	45 m²
MEETING	16 m²
OUTDOOR DINING	58 m²
OUTDOOR PLAY ZONE	507 m²
PANTRY	6 m²
PIAZZA	71 m²
RECEPTION	13 m²
SERVERY	16 m²
SERVICE YARD	17 m²
STORE 1	13 m²
STORE 2	9 m²
STORE 3	7 m²
WITHDRAWAL	33 m²
WORKROOM	22 m²

KEYNOTE LEGEND	
CODE	DESCRIPTION
ART	ART SINK
BATH	BATH
BD	BED LOCATION
CC	COMMUNICATIONS CABINET
CLN	CLEANERS SINK
CO	COOKER/COOKTOP
COL	COLUMN
DB	DISTRIBUTION BOARD
DF	DRINKING FOUNTAIN
DK	DESK
DP	DOWNPIPE
DP/RH	DOWNPIPE AND RAINHEAD
DW	DISHWASHER
EXB	EXAMINATION BED
HB	HAND BASIN
HB1	HAND BASIN, CHILD HEIGHT
HB2	HAND BASIN WITH INTEGRAL BENCH
LT	LAUNDRY TROUGH
MFD	MULTI-FUNCTION DEVICE
REF	REFRIGERATOR
SEC	SECURITY CONTROL PANEL
SHR	SHOWER
WC1	WC PAN & CISTERN, ACCESSIBLE
WC3	WC PAN & CISTERN, CHILD
WM	WASHING MACHINE

1 ELC FLOOR PLAN  
MP-XX-GT 1 : 100

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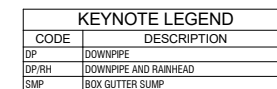
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ELC FLOOR PLAN

Drawn JZ	Date SEPT 20	Scale 1 : 100	A1	Project Number 19060
Review KM	Date SEPT 20	Project Leader KM	Date SEPT 20	Drawing Number PL012
PLANNING				Amdt 1

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EXTERNAL FINISHES SCHEDULE		
CODE	DESCRIPTION	CLOUR / FINISH
AL1	ALUMINIUM WINDOW FRAMES / DOOR FRAMES	BLACK POWDERCOAT
BL1	FACE BLOCK	SANDSTONE
CL1	EXOTIC - EXTERNAL PAINT FINISH	GREY
EP1	EXTERNAL PAINT FINISH	WHITE
GL2	GLAZING	CLEAR
MR1	METAL ROOF SHEETING - WIDE PAN PROFILE	COLORBOND 'SURFIMIST'
MR3	POLYCARBONATE ROOF SHEETING	TRANSLUCENT
MWC3	METAL WALL CLADDING - HORIZONTAL - CORRUGATED	COLORBOND MONUMENT
ST1	STONE VENEER	SANDSTONE
	CURBES (LOOK EXTERNAL) CL ADDING - HORIZONTAL	TEAM

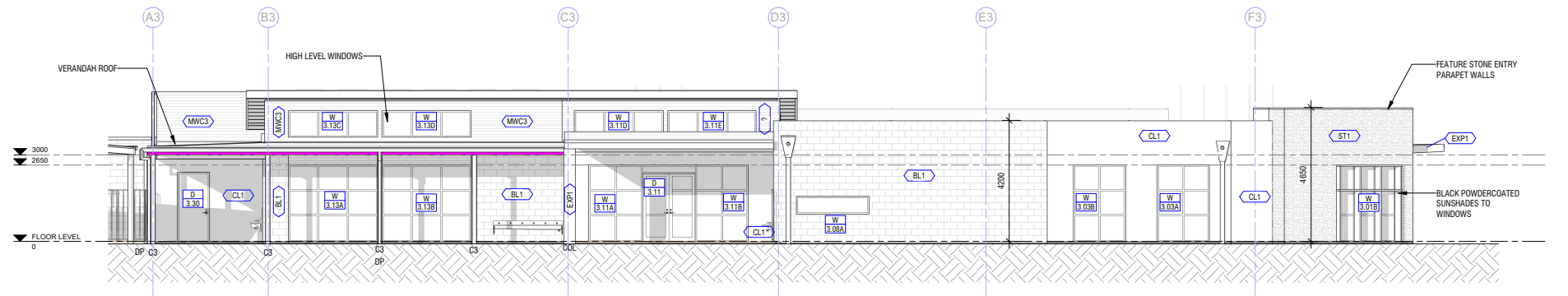
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ELC ROOF PLAN

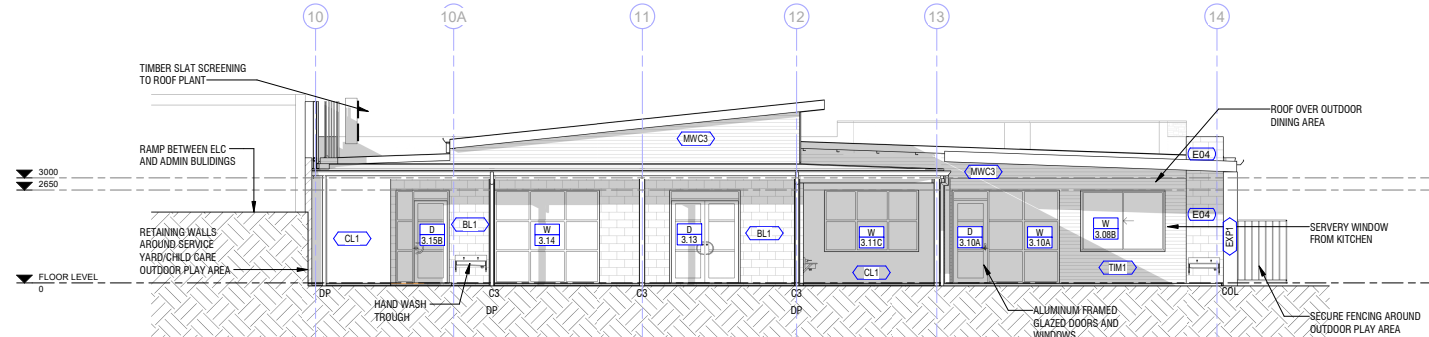
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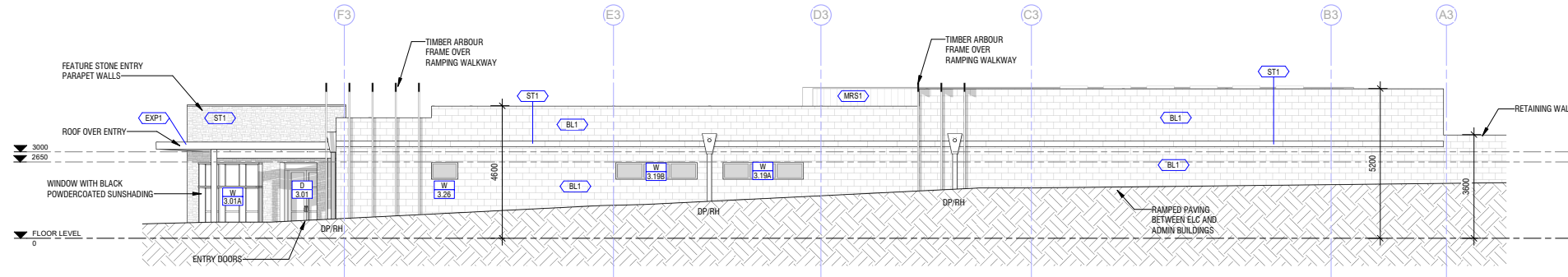
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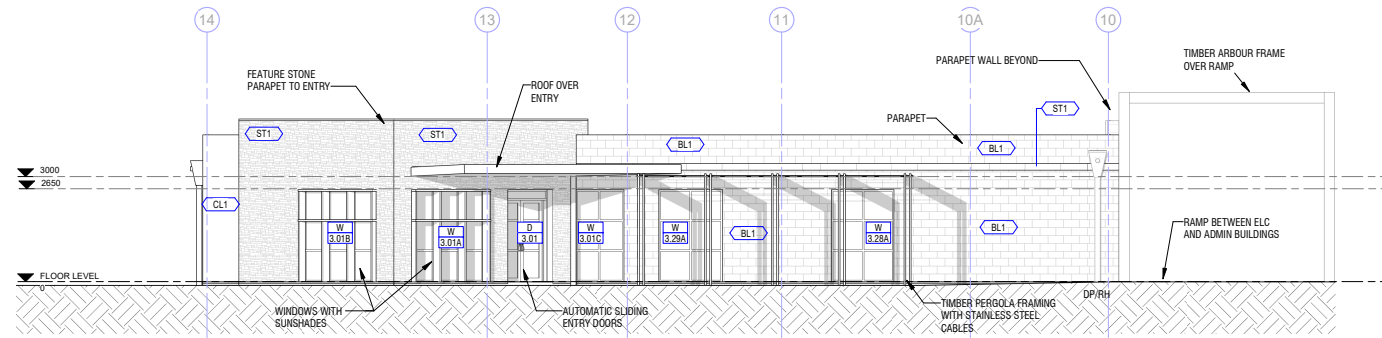
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PL012 1:100



2 PL ELEVATION 2  
PL012 1:100



3 PL ELEVATION 3  
PL012 1:100



4 PL ELEVATION 4  
PL012 1:100

EXTERNAL FINISHES SCHEDULE		
CODE	DESCRIPTION	COLOUR / FINISH
AL1	ALUMINIUM WINDOW FRAMES / DOOR FRAMES	BLACK POWDERCOAT
BL1	FACE BLOCK	SANDSTONE
CL1	EXOTEC - EXTERNAL PAINT FINISH	GREY
EXP1	EXTERNAL PAINT FINISH	WHITE
GL1	GLAZING	CLEAR
MRS1	METAL ROOF SHEETING - WIDE PAN PROFILE	COLORBOND 'SURFMIST'
MRS3	POLYCARBONATE ROOF SHEETING	TRANSLUCENT
MWC3	METAL WALL CLADDING - HORIZONTAL - CORRUGATED	COLORBOND 'MONUMENT'
ST1	STONE VENEER	SANDSTONE
TIM1	TIMBER LOOK EXTERNAL CLADDING - HORIZONTAL	TEAK

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ELC EXTERNAL ELEVATIONS

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Review KM	Date MAR 20	Project Leader KM	Date SEPT 20	Drawing Number PL014
PLANNING				Amdt 1

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ELC RENDERS

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Review	Date	Project Leader	Date	
KM	MAR 20	KM	MAR 20	
PLANNING		Drawing Number	PL015	Amdt
				1

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**AMENDED**

Mount Barker District Council  
Received  
30 Sep 2020

King's Baptist Mt Barker Inc  
19ADL-0121  
September 2020

# King's Baptist Grammar School 41 Bollen Road, Mount Barker

Stage 1: School building and Early Learning Centre  
with associated on-site parking

Mount Barker District Council

Received  
30 Sep 2020



URPS

# King's Baptist Grammar School

September 2020

**Lead Architect** Hodgkison Architecture and Interiors

**Prepared for** Kings Baptist Mt Barker Inc

**URPS Project Manager** Julie Lewis, Senior Associate

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**URPS Ref** 19ADL-0121

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Revision	Date	Reviewed	Approved	Details
R2_V1	21/09/2020	JL	22/09/2020	Issued for Development Plan consent

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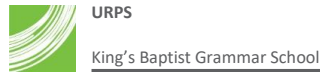
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# 1.0 Introduction

## 1.1 Preface

URPS is acting for the King's Baptist Mount Barker Incorporated, the applicant for a new school 'Stage 1' building and associated Early Learning Centre on Bollen Road, Mount Barker. The site of the proposed King's Baptist Grammar School (KBGS) is in the Residential Neighbourhood Zone in the developing north-west urban area of the Mount Barker township.

The Mount Barker Baptist Church (MBBC) has been established in Mt Barker since 1873. Kings Baptist Mt Barker, an associated entity of the KBGS, has formed a partnership with the MBBC to jointly develop an early learning centre, a Reception-12 school and a community centre.

The coeducational KBGS offers the Australian Curriculum from R-10 and the SACE for years 10-12. KBGS is an active member of the Association of Independent Schools SA and Christian Schools Australia. For sports and interschool activities the school is a member of the South Australian Christian Schools Association.

This application involves the implementation of Stage 1 of the King's Baptist Grammar School Master Plan. Future stage(s) within the same allotment will include additional purpose built school buildings and ancillary facilities. These later stages will accommodate growth in student capacity through enrolments and catering for changing age cohorts as the Junior school levels progress through to Senior school.

In preparing this planning statement, URPS has engaged with the KBGS project team developing the proposal and engaged with the Mount Barker District Council prior to finalising the application.

## 1.2 Background to development in this locality

The site of the Stage 1 development is within lot 1000 (the 'subject allotment'), and represents one part of a larger area envisaged for the development of community and recreational facilities together with a local centre within this area of Residential Neighbourhood Zone. By reference to the zone provisions, the facilities are intended to support a proportion of the zone's planned residential development of at least 7000 dwellings, of which approximately half of that residential area is located north and south of Flaxley Road in the wider locality of the subject allotment.

The southern boundary of the subject allotment shares a common boundary with land designated as Community Land which is owned by the Mount Barker District Council. A number of community facilities are proposed to be established in this locality. The Council has endorsed a community management plan and draft concept which includes future public reserves and shared clubrooms, oval(s) and parking facilities. The Council and the school are negotiating a shared use agreement for use of the adjoining community land and a future Stage 2 community centre building within the school site. In this context the KBGS has considered its Stage 1 site planning and design based on a wider strategy including future internal access and shared parking, civil works such as regional stormwater detention, linkages to existing and proposed recreational trails and connections between the school land and community land.

The planned residential neighbourhood in this locality proposed (by others) to the north and west of the school site is known as the *Newenham Estate*. The early staged divisions created the school allotment (Lot 1000). In this context there are pending works (by others) associated with early land divisions and approved works that are related to the school development and the future expansion of education facilities within the subject allotment, but are not part of the assessment of this application by KBGS, namely:

- 580/D004/19 for Dam Removal: this development authorisation includes the infill of a dam partly within Lot 1000, straddling the northern allotment boundary. The proposed building envelope for the KBGS Stage 1 school building has been determined on the basis that the work approved in 580/D004/19 is completed.
- The above dam removal involves the filling of land which is also required for the construction of a public road (by others) proposed parallel to its northern boundary in approved land division 580/D004/19. The KBGS Stage 1 development does not rely on construction of the future public road for access. Future KBGS staged development (for future development applications) will include an on-site 'kiss and drop' and other future secondary school access points with crossovers to this future public road on the school allotment's northern boundary.

### 1.3 Subject Land and Stage 1 Development Site

The subject land is allotment 1000 as legally defined in Certificate of Title Volume 6216 Folio 537. The allotment has an area of approximately 5 hectares which slopes from a high point in the north-west to relatively flatter land to the south-east. The Stage 1 Development site is defined on the application drawings and comprises approximately one third of the allotment, and incorporates most of the allotment's 137 metre frontage to Bollen Road.

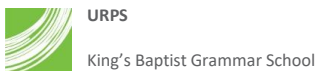
Registered on the title are various easements, one for power infrastructure (parallel to the western boundary) and another for future council drainage infrastructure (parallel to the eastern boundary fronting Bollen Road). No permanent structures proposed in this application impact land affected by easements.

There is an encumbrance registered on the title to *Mt Barker Project Development Pty Ltd*, the developer of adjoining residential land. The encumbrance makes a reference to the meaning of a 'Permitted Use' (ie school, community facility, place of worship or any combination of the same) but is generally concerned with the selection of material and finishes, notwithstanding the guidelines are relate specifically to residential dwellings. This aspect is discussed in more detail in *Section 2.2 Design and Appearance*.

### 1.4 Overview of Stage 1 Development Plan Consent Application

The proposed development is generally described as:

- a single storey school building with administrative and general learning area functions, inclusive of all staff and student amenities, with a planned student capacity up to 2025 (5 classes x 26)
- a single storey early learning centre (ELC) building, with a planned capacity of 60 placements.



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Based on the planned capacity, there is an estimated 12 staff associated with the school and an additional 10 for the ELC.

Although no formal program is in place, like other schools, over time the use is anticipated to offer outside school hours care and potential holiday programs on weekdays. In this context the application does not seek to be restricted to school terms or typical teaching hours. In any case, these types of ancillary activities are able to be accommodated within the same proposed buildings on the site and do not change the function or nature of the land use nor alter the envisaged Stage 1 design capacity.

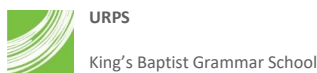
Landscaping, earthworks, outdoor learning and play areas, and on-site parking are included in the Stage 1 Development, are confined to the area within the allotment identified on the Location Plan drawing PL002. This area is referred to in this planning statement as the Stage 1 'development site'.

The key components of the Stage 1 development are listed in the following **Table 1.1** (next page) with corresponding references to application drawings prepared by project architect Hodgkison Pty Ltd and supporting documentation (also see **Table 1.2**).

The subsequent sections of this statement assess the proposal plans and associated reports (see following Tables) relevant to the Stage 1 development against key sections of the Mount Barker Council Development Plan consolidated 8 August 2017.

**Table 1-1 Application Drawings and procedural matters related to the development application**

Stage 1 Development Description	Drawings	Other detail	Procedural matters
<b>School / Administration Building</b>	PL002 Location Plan PL04 Site Plan Proposed PL05 Site Elevations PL007 School Building Floor Plan PL008 School Building Roof Plan PL009 School Building Elevations 1 * PL0010 School Building Elevations 2 * PL011 School Building Renders  (*incorporates external finishes schedule)	All Revision 1 - Sept 2020	Within (ie The proposed school building comprises administration areas for a combined primary and secondary campus which is within the definition of 'Educational Establishment'.  Initially the General Learning areas and common/student learning hubs will be primarily junior school. A <b>primary school</b> is envisaged in the zone, assessed on merit and <b>assigned public notification Category 2 where adjacent to an existing dwelling.</b>
<b>Early Learning Centre</b>	PL002 Location Plan PL04 Site Plan Proposed PL05 Site Elevations PL0012 ELC Floor Plan PL013 ELC Roof Plan PL014 ELC Elevations * PL015 ELC Renders  (*incorporates external finishes schedule)	All Revision 1 - Sept 2020	Within the definition of 'Pre-school' and encompassed by 'educational establishment' when in association with a secondary school.  A <b>pre-school</b> is envisaged in the zone, assessed on merit and <b>assigned public notification Category 2 for where adjacent to an existing dwelling.</b>
<b>Car Parking and access</b>	PL004 Site Plan Proposed	77 spaces (staff and visitor) including 2 accessible spaces, with new two way crossover on Bollen Rd to carpark.  Design capacity to 2025 based on combined ELC and school students (130) and staff (22) with additional capacity for drop-off and pick-up.  Secondary minor service access on Bollen Rd, generally in the location of the existing driveway access.	As the car park is ancillary to the primary education function of the development and undefined as a land use, this activity does not impact on the public notification Category 2.
<b>Landscaping</b>	Refer indicative layout on PL004 Site Plan Proposed and concept illustrated in Renders PL011 and PL015		A landscaping schedule can be provided to the reasonable satisfaction of Council via a condition of planning consent (ie prior to Development Approval).



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Other supporting information accompanying the application is listed in Table 1.2 and provided under separate cover unless otherwise stated.

**Table 1-2 Supporting Documents and information**

Report Title and author	Date/ref.	Other comments
<b>Traffic and Parking Report, MFY Pty Ltd</b>	March 2020	The report details parking and access requirements relevant to Stage 1. The initial assessment was based on an earlier version of the building envelope. Subsequent changes to the building envelope (north side) have not impacted on the traffic generation or the location of the Stage 1 carpark, nor the ability for a future 'kiss and drop' to be implemented on-site as part of the staged development of the school facilities (ie subject to demand).
<b>LBW Environmental Engineer statement</b> (refer Appendix B of this planning statement)	12 March 2020	There are two identified areas of minor contamination within the allotment. There is remediation work planned, including minor works within the Stage 1 Development site. The environmental assessment work carried out to date indicates minor remedial works only are needed within the Stage 1 Development site. This aspect is discussed in more detail in <i>Section 2.1 Form and Character</i> .
<b>Heritage Report – Stage 1, Anaglypta Architecture</b> (refer Appendix C of this planning statement)	26 February 2020	The subject allotment contains a Local Heritage Place (LHP). The site of the LHP is outside the 'development site' that is the subject of the application for Stage 1. By reference to the KBGS Masterplan it is proposed to repurpose the heritage building in the future. The potential adaptive reuse of the LHP therefore does not require assessment as part of this application. However, specialist heritage advice has been sought on the context and setting of the LHP and its curtilage where relevant to the Stage 1 development. This aspect is discussed in more detail in <i>Section 2.1 Form and Character</i> .
<b>Concept Stormwater Management Plan, WSP Adelaide</b>	September 2020	The stormwater concept report for the Stage 1 development site outlines how the development will manage stormwater generated from within the site and manage upstream <i>pre-development flows</i> within the school site, without using the drainage easement along the Bollen Road boundary of the school allotment. The stormwater easement was put in place at the time of the initial land division to assist in facilitating 'up-stream' <i>post-development stormwater management</i> from other Newenham Estate (Burke Urban) land to the north of the school allotment.  To this end, the concept allows Burke Urban to manage their post-development flows within the easement as it is responsible for ensuring that the upstream stormwater will be managed such that no post-development flows are allowed to enter the school site.
<b>Tree Protection Plan, Kings Baptist School</b> <b>Tree Environs Pty Ltd</b>	30 June 2020	Within the subject allotment there are 7 Regulated trees (5 significant and 2 regulated) and 3 trees identified as native vegetation under the Native Vegetation Regulations.  The Stage 1 'development site' includes one Significant tree and one native tree. Both are retained in this application. The arborist report assesses the development impact on the long-term health or stability of the tree as assessed by the arborist recommendations.  Although the subject allotment is dominated by a large number of Cypress pines, and approximately half of these are greater than 2.0 in circumference, the species is exempt from regulation under the Development Act. It is unlikely that all these trees will be retained over time as an initial arborist advice received is that the trees, upon maturity, have a propensity to fall over making them an undesirable retention or replacement species for the site.

## 2.0 Development Assessment

This section provides a planning assessment under a series of headings, incorporating general descriptions of the proposed development relevant to those headings. Selected extracts of the Mount Barker District Council consolidated 8 August 2017 *General Section* and *Residential Neighbourhood Zone* provisions considered in the course of the assessment are reproduced for ease of reference. Underlining is added where the Development Plan text is particularly relevant to the assessment of the use and/or buildings proposed on the subject land and/or the development site.

### 2.1 Land Use and Desired Character

The development proposal involves the change in use of former rural land for community facilities on a proportion of the allotment within a defined site in an area now zoned Residential Neighbourhood (RNZ). The essential nature of the use is education related facilities in the form of a primary school and early learning centre (ELC).

The land is affected by an Encumbrance registered on the Certificate of Title and the registered Encumbrancee is the *Mt Barker Project Development Pty Ltd*. The Encumbrance was approved by the relevant authority in the context of the early staged land divisions associated with the Newenham Estate. The Encumbrance defines the 'Permitted Use' as meaning a school, a community facility, religious worship or any combination of the same.

The Stage 1 development is not a public facility in the traditional sense, but is a community facility on land that is reserved for (via the Encumbrance) and intended to be established and integrated with other public and community facilities in the context of the RNZ.

The proposed education buildings address Bollen Road, a local road providing existing and future connections to the wider neighbourhood in this north-west sector of Mount Barker. The two single storey buildings are proposed to be connected through internal walkways, shared parking and set within a landscaped setting, incorporating general planting and vegetated swales for stormwater management.

#### 2.1.1 Development Plan Provisions

##### GENERAL SECTION

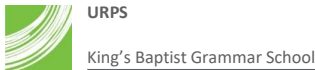
##### COMMUNITY FACILITIES

##### Objectives

- 1 Location of community facilities including social, health, welfare, education and recreation facilities where they are conveniently accessible to the population they serve.
- 2 The proper provision of public and community facilities including the reservation of suitable land in advance of need.

##### Principles of Development Control

- 1 Community facilities should be sited and developed to be accessible by pedestrians, cyclists and public and community transport.
- 2 Community facilities should be integrated in their design to promote efficient land use.
- 3 Design of community facilities should encourage flexible and adaptable use of open space and facilities for a range of uses over time.



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## HERITAGE PLACES

### Objectives

- 2 The continued use, or adaptive re-use of State and Local Heritage Places that supports the conservation of their cultural significance.
- 3 Conservation of the setting of State and Local Heritage Places.

### Principles

- 3 Development of a State or local heritage place should retain those elements contributing to its heritage value, which may include (but not be limited to):
  - (a) principal elevations
  - (b) important vistas and views to and from the place
  - (c) setting and setbacks
  - (d) building materials
  - (e) ....(i)
- 6 New buildings should not be placed or erected between the front street boundary and the façade of existing State or local heritage places.
- 7 Development that materially affects the context within which the heritage place is situated should be compatible with the heritage place. It is not necessary to replicate historic detailing, however design elements that should be compatible include, but are not limited to:
  - (a) scale and bulk
  - (b) width of frontage
  - (c) boundary setback patterns
  - (d) proportion and composition of design elements such as rooflines, openings, fenestration, fencing and landscaping
  - (e) colour and texture of external materials.

## HAZARDS

### Objectives

- 9 Appropriate assessment and remediation of site contamination to ensure land is suitable for the proposed use and provides a safe and healthy living and working environment.

## RESIDENTIAL NEIGHBOURHOOD ZONE

### Objectives

- 1 A predominantly residential area that comprises a range of dwelling types together with local and neighbourhood centres that provide a range of shopping, community, business, and recreational facilities for the surrounding neighbourhood in the locations indicated on Concept Plan Map MtB/16 - Mount Barker and Littlehampton.
- 4 The orderly expansion of the urban area, which allows the economic and effective provision of public infrastructure and services and that is consistent with the development outcomes contained in Concept Plan Map MtB/16 - Mount Barker and Littlehampton.
- 5 Open space systems designed to provide multiple use reserve areas that promote water management, habitat retention and enhancement, and active and passive recreation.
- 6 Sustainable development outcomes through innovation in stormwater management, waste minimisation, water conservation, energy efficiency and urban biodiversity.
- 7 Appropriate assessment and remediation of site contamination to ensure land is suitable for the proposed use and provides a safe and healthy living and working environment.



- 8 Development undertaken in accordance with suitable upgrades and augmentation of utility services and roads to meet anticipated need.
- 10 Development that contributes to the desired character of the zone.

#### Desired Character

The zone will be developed as a series of interconnected neighbourhoods that are designed to promote social interaction, participation and a sense of community for all residents. Equitable access to public open space, local or neighbourhood centres, education facilities, and a range of community services will be integral to the design of the area.....

The operations of surrounding agricultural uses are to be appropriately accommodated and appropriate buffers are to be provided to adjoining agricultural uses....

The zone contains many natural features including areas of remnant vegetation, watercourses and significant trees. These natural features will be primarily retained in open spaces, biodiversity corridors and road reserves to provide safe and attractive places for recreation, create a contrast to and complement urban landscapes and built form, enhance the protection of significant biodiversity assets and assist in the management of water resources.

Modification to the areas identified as 'High Environmentally Significance Area' as shown on Overlay Map(s) MtB/1, MtB/2, MtB/7, MtB/12, MtB/13 - Development Constraints should be avoided unless a greater overall environmental benefit or enhancement of the educative value of such areas is achieved. The layout and design of development should effectively reduce the risk of disturbance of such areas and, in the case of the larger 'High Environmentally Significance Area' identified areas, buffers separating urban development should be provided.

Movement networks will be integral to subdivision and neighbourhood design and will minimise the need for local vehicle trips, reduce travel distances and promote low vehicle speeds in local streets. These networks will encourage walking and cycling to local services and facilities, and encourage longer trips by linking with similar networks adjacent to the zone.

The major local roads identified on Concept Plan Map MtB/16 - Mount Barker and Littlehampton will be established as the pre-eminent movement corridors through the zone and will be identifiable as landscaped boulevards. The major local road network will connect the major features of the zone including centres, schools, key open space areas, recreation hubs and residential areas. Local roads will have a more intimate feel and support walking and cycling with lower traffic volumes and speeds, smaller street setbacks, consistent street tree planting, architectural variety, a pedestrian scale of development and quality street lighting.....

Centres identified on Concept Plan Map MtB/16 - Mount Barker and Littlehampton will include the following key elements:

- street level uses that are primarily retail, service or office
- small to zero setbacks to primary street frontages
- upper floor uses that may include offices but are generally residential
- shared parking and the siting of on-site parking primarily behind buildings, and consideration for the provision of on-street parking to satisfy overall parking demand
- wide footpaths, colonnades, courtyards, awnings and street furniture that create a pedestrian-friendly environment
- public/communal spaces for community interaction.

Low impact non-residential uses will create an appropriate transition between higher impact non-residential activities and residential development. ....

Water Sensitive Urban Design principles will be incorporated into the layout and design of the zone Stormwater discharge from the site will be minimised through on-site retention/detention, and speed and volume of flows will be minimised by design features such as grassed swales and channels.

#### Principles of Development Control

##### Land use

- 1 The following forms of development are envisaged in the zone:
  - community centres
  - educational establishments
  - indoor recreation centres
  - open space
  - small scale non-residential use that serves the local community, for example:
    - child care facility
- 2 The following additional forms of development are envisaged within the centres identified on *Concept Plan Map MtB/16 - Mount Barker and Littlehampton*:
  - pre-school
- 3 Development listed as non-complying is generally inappropriate.
- 5 Non-residential land uses should only be located outside of designated centres where they are small in scale and they achieve all of the following:
  - (i) they are of a nature and scale that is consistent with the character of the locality
  - (ii) they do not compromise the capacity to achieve co-ordinated centre development
  - (iii) they do not detrimentally impact on the amenity of nearby residents.

#### Form and Character

- 7 Development should not be undertaken unless it is consistent with the desired character for the zone.
- 8 Buildings in residential areas should primarily be of one to three storeys. Buildings greater than three storeys should be located within designated neighbourhood centres or adjacent to public open space areas including landscaped open space connections and public transport routes.

#### Local and Neighbourhood Centres

- 26 Local and neighbourhood centres should be of a scale that does not impede the development of other neighbourhood centres within the zone in accordance with the following:
  - (a) located in accordance with *Concept Plan Map MtB/16 - Mount Barker and Littlehampton* to maximise access by walking, cycling or public transport
  - (b) be evenly distributed through the zone to maximise households within walking distance
  - (c) maximise their role as a neighbourhood focus by:
    - (i) including a range of community facilities
    - (ii) incorporating or being located adjacent to open space and recreational facilities
    - (iii) including potential for shared use of facilities such as schools, recreation areas, libraries and community buildings.

#### Interface with Rural Land

- 34 Development that is adjacent to land used for agriculture (within either the zone or adjacent zones) should include appropriate set-backs and vegetative plantings designed to minimise the potential impacts of chemical spray drift and other impacts associated with primary production.
- 35 New urban development should provide a buffer of at least 40 metres wide (inclusive of any fuel break, emergency vehicle access or road) separating urban and rural activities.

### 2.1.2 Assessment Summary

The Development Plan General Section objectives for *orderly and sustainable development* (in addition to those reproduced above) promote:

- urban development located *only* in zones designate for such development (Objectives 6 and 7)
- development undertaken in accordance with Concept Plans, in this case *Concept Plan Map MtB/16 – Mt Barker and Littlehampton*, such that it occurs in an orderly sequence and in a manner that ensures demand on services and infrastructure is commensurate with capacity without impact to the detriment of other users (objective 2, principle 12) or otherwise reserves land or is progressively augmented in an economic manner to accommodate demand.

The proposed development is consistent with the outcomes expressed for the RNZ as it applies to Zone Map MtB/12 and the corresponding area identified on the relevant Mt Barker Concept Plan. The proposed education related facilities are specifically envisaged as one of the desired types of community facilities that together will support the planned neighbourhood development and the economic provision of infrastructure and services.

The suitability of the subject development site for the proposed use of the site (and ultimately) the allotment) is demonstrated by satisfying the following elements of the identified Desired Character of the RNZ:

- There are no “*High Environmentally Significance Area*” (sic) locations within the development site or subject allotment by reference to *Overlay MtB/12-Development Constraints*, hence achieves the intent of the Desired Character which is to avoid such areas characterised by natural watercourses and areas of substantial native vegetation of recognised biodiversity importance (Objective 10 and Desired Character).
- Further to the above, the topography of the development site and its substantial land area, along with its low concentration of regulated trees, enables the land form to be partly modified in a manner that mimics the natural slope (within reason) and minimises the visual impact of the earthworks through new landscape treatments and tree planting without affecting individual notable trees worthy of retention (Desired Character).
- The allotment’s proximity to made local roads and nearby “*primary roads*” that are the intended focus of walking, cycling and future public/community transport connections between local centres (envisaged to the west) and community facilities such as those on the subject land and intended for this locality is consistent with the concept for the development of this area of Mount Barker (objective 4).
- The education related uses proposed do not of themselves comprise a ‘local centre’ as envisaged in Concept Plan Map MtB/16, but are desired within the context of achieving co-ordinated activity centre development (Objective 1, principle 5).
- The existing Bollen Road reserve, a major local road, represents a suitable interface between the development site and the adjoining established Residential Zone. In this context the activities associated with the proposed Stage 1 development will not unreasonably impact on the amenity of nearby residents, noting in any case, the subject allotment has been reserved for the proposed use through the Encumbrance (principle 5).
- Environmental investigations (refer Appendix B) have satisfactorily established that the minor remediation works (inclusive of a small area of road scrapings impacted soil within the Stage 1 site) can be undertaken prior to the construction of the development, to ensure the development site and the balance of the allotment is suitable and safe for the proposed use (Objective 7). The two conditions recommended by LBWco Pty Ltd can be attached to any planning consent and will be met by the applicant.

- The Local Heritage Place (LHP) is not within the Stage 1 Development site, but any development is required to have regard to its setting. Deferring to the independent opinion of Anaglypta Architecture (refer **Appendix C**) the setting of the LHP is appropriately conserved (Heritage Places objective 3) through the reasonable separation of the LHP from the new single storey built form. The primary and secondary views of the LHP are also sufficiently retained.

Having regard to all the above, the proposed development reasonably responds to the objectives for the orderly and economic development of this urban area. The site is suitable based on the achievement of applicable elements of Desired Character. The nature of envisaged educational activities and built form is consistent with the envisaged development outcomes expressed for the RNZ and the *Concept Plan Map MtB/16 – Mt Barker and Littlehampton*.

## 2.2 Design and Appearance

The architectural expression of the single storey built form represents the school's vision to seek a balance between:

- the responsible use of its available resources in the development a modern, accessible school campus, comprised of contemporary multi-functional school buildings incorporating indoor and outdoor learning spaces; and
- minimising development impact on the landscape, where practical, and sensitively managing the building profile as it addresses the street at the interface with an established residential area.

The design, siting and features of the proposal is best considered by reference to the suite of plans for different components of the development as summarised in Section 1.4.

### 2.2.1 Development Plan Provisions

#### GENERAL SECTION

##### COMMUNITY FACILITIES

###### Principles of Development Control

- 2 Community facilities should be integrated in their design to promote efficient land use.
- 3 Design of community facilities should encourage flexible and adaptable use of open space and facilities for a range of uses over time.

#### DESIGN AND APPEARANCE

##### Objectives

- 1 Development of a high architectural standard that responds to and reinforces positive aspects of the local environment and built form.
- 2 Roads, open spaces, buildings and land uses laid out and linked so that they are easy to understand and navigate.

##### Principles

- 1 The design of a building may be of a contemporary nature and exhibit an innovative style provided the overall form is sympathetic to the scale of development in the locality and with the context of its setting with regard to shape, size, material and colour.

- 2 Buildings designed and sited to avoid creating extensive areas of uninterrupted walling facing areas exposed to public view.
- 3 Buildings should be designed to reduce their visual bulk and provide visual interest through design elements such as:
  - (a) articulation
  - (b) colours and detailing
  - (c) small vertical and horizontal components
  - (d) design and placing of windows
  - (e) variations to facades.
- 7 The external walls and roofs of buildings should not incorporate highly reflective materials which will result in glare.
- 8 Structures on roofs of buildings to house plant and equipment should form an integral part of the building design in relation to external finishes, shaping and colours.
- 9 Building design should emphasise pedestrian entry points to provide perceptible and direct access from public street frontage and vehicle parking areas.
- 11 Development should utilise materials which are sympathetic with the natural features of the site.
- 12 Buildings, landscaping and paving and signage should have a coordinated appearance that maintains and enhances the visual attractiveness of the location
- 16 Outdoor lighting should not result in light spillage on adjacent land.

**Building Setbacks from Road Boundaries**

- 18 The setback from public roads should:
  - (a) be similar to, or compatible with, setbacks of buildings on adjoining roads and other buildings in the locality
  - (b) contribute positively to the streetscape character of the locality
  - (c) not result in or contribute to a detrimental impact upon the function, appearance or character of the locality.

*Also refer Table MtB/1 – Building Setbacks from Road Boundaries*

**ENERGY EFFICIENCY**

**Objectives**

- 1 Development design and site to conserve energy, and minimise reliance on non-renewable energy sources.
- 2 Development that provides for on-site power generation include photovoltaic cells and wind power.
- 3 Building design and material selection should maximise thermal performance, comfort, energy and efficiency.

**Principles**

- 1 Development should provide for efficient solar access to buildings and open space all year round.
- 2 Buildings should be sited and designed:
  - (a) to ensure adequate natural light and winter sunlight is available to the main activity areas of adjacent buildings
  - (b) so that open spaces associated with the main activity areas face north for exposure to winter sun.
- 3 Development should facilitate the efficient use of photovoltaic cells and hot water systems by:
  - (a) taking account overshadowing from neighbouring buildings

- (b) designing roof orientation and pitches to maximise exposure to direct sunlight.

## HERITAGE PLACES

### Objectives

- 2 The continued use, or adaptive re-use of State and Local Heritage Places that supports the conservation of their cultural significance.
- 3 Conservation of the setting of State and Local Heritage Places.

### Principles

- 6 New buildings should not be placed or erected between the front street boundary and the façade of existing State or local heritage places.
- 7 Development that materially affects the context within which the heritage place is situated should be compatible with the heritage place. It is not necessary to replicate historic detailing, however design elements that should be compatible include, but are not limited to:
- (a) scale and bulk
  - (b) width of frontage
  - (c) boundary setback patterns
  - (d) proportion and composition of design elements such as rooflines, openings, fenestration, fencing and landscaping
  - (e) colour and texture of external materials.

## RESIDENTIAL ZONE

### Desired Character

To promote compact pedestrian oriented development, building entrances will be oriented to the street and the continuity of large parking areas will be minimised through the provision of landscaping and pathways.

### Energy Efficiency and Water Sensitive Urban Design

- 32 Design and construction of a building should incorporate water harvesting techniques.

### 2.2.2 Appearance of Land

The above provisions seek to achieve a development outcome that responds to and reinforces positive aspects of the appearance of the local environment through:

- appropriate building setbacks from roads
- buildings designed and sited in a manner that responds to local topography
- minimising excessive modification to the land form where it would contribute to a detrimental impact on the function and appearance and character of the locality.

The RNZ does not prescribe a building setback for non-residential development, but the Desired Character contemplates “*smaller street setbacks*” where a more intimate feel in areas of “*lower traffic volumes and speed*” are envisaged. Bollen Road is intended to introduce lower speeds hence “*smaller street setbacks*” are potentially suitable.



*Table MtB/1 – Building Setbacks from Road Boundaries* does not specify a building setback for the RNZ. Where a setback is specified for some zones in that table, it ranges from 8 metres in a Township Zone, up to 20metres in the Rural Landscape Zone.

A minimum building setback of at least 40metres is proposed (but varies between the two buildings). Although larger than other the minimum expressed for some non-urban zones, it is considered appropriate in terms of effectively managing the interface of non-residential development and established residential development. Overall, the larger setback is not detrimental to the desired character more “*intimate feel*” if that is intended for Bollen Road, noting the dwelling opposite are setback from the actual carriageway of the Bollen Road by virtue of a very wide verge on the eastern side compared to the west side. The large setback does not prevent other measures from being employed to create a “*landscaped boulevard*” (such as tree planting and footpaths with consistent use of materials on both sides) which is an approach more suited to a major local road.

### 2.2.3 Built Form

The relevant provisions seek:

- buildings of a high architectural standard through appropriate scale, façade articulation, materials selection and roof form
- buildings primarily of one to three storeys (with potential for more than 3 storeys on land adjacent public opens space
- buildings that optimise principles of energy efficiency.

The external finishes plan illustrates the typical materials selection, colour and texture proposed. The Newenham Estate Design Guidelines inform the selection (refer extract Appendix E) albeit they are written principally for residential development. The Guidelines encourage front building facades that complement the natural environment through the use of quality local and natural materials. The proposed materials selection appropriately complements the range, varied texture and colour of external materials identified as “acceptable” in the Guidelines.

Anaglypta Architecture’s independent assessment (refer **Appendix C**) considers the proposed use of stone, sheet metal, blockwork and render. The assessment concludes the materials and neutral tones proposed appropriately respond to the natural landscape and materials and finishes of the LHP on the subject allotment.

The Bollen Road elevations (PL005) depict the use of glazing and variation if height of canopies over entries and window openings interspersed with solid walling. The pattern and variation in the placement and orientation of different veranda/shade elements creates visual interest in the façade along with the light and shade created through projecting elements and feature beams, adding to the attractiveness of the street elevation along the length of the facade. The repeated use of similar materials on the street façade of each building provides a sense of compatibility in appearance, without necessarily repeating the same form or architecture .

The design incorporates window openings to a reasonable proportion of the north facing façade of school building and other elevations. In the case of the ELC, it is the main larger floor areas that have glazing opening on to the outdoor play spaces. Various east and west elevations include verandas or shade elements over glazed door and window openings for summer shade. Building materials, insulation treatments and selected glazing performance will contribute to thermal efficiency and will be further detailed at the next stage. Opportunities for roof mounted solar panels are “facilitated” through the variation in the roof design, albeit this opportunity has not been fully investigated at this time.

In any case, the general principles are satisfied, including appropriate access to natural light throughout the buildings, including tilt up doors and sliding doors that provide opportunities for natural ventilation to common areas if desired.

Overall the proposed built form is compatible with the scale of low-rise residential development that address the opposite side of Bollen Road. The building materials, articulation of the façade and roof elements are complementary but can readily be interpreted as non-residential particularly through the grander scale of architectural features over entrances and the extent of the built form across the site frontage. The building materials, textures and colours are consistent with the Newenham Design Guidelines, and will therefore result in an appearance complementing future development in the wider neighbourhood.

## 2.3 Environment and Landscape

The site planning and building envelope has particular regard to balancing:

- cut and fill within the Stage 1 site and incorporating built elements and landscape treatments that creatively reflect, where practical, the topography changes between the two buildings and across the site generally
- retention of vegetation and landscape elements, with the desire and need for an accessible environment combined with a level of casual surveillance appropriate for community uses such as schools
- the strategic objectives for adjacent land in the zone which will ultimately include shared community facilities and car parking on land to the south of the Stage 1 site.

As it applies to the Stage 1 development proposed in this application, the proposal:

- retains a significant tree (English Oak) adjacent the existing driveway crossover, and the native tree on the northern side of the building envelope (in the locality of the dam to be filled in)
- incorporates landscaped terraces adjacent the west and southern edges of the building envelope

- new landscaping being predominantly ground cover and other low level planting, with some garden beds providing opportunities for selected tree planting (to be further detailed) commensurate with objectives related to safety and appearance of land
- built elements in the landscape, such as paving, materials for retained garden beds and fencing, that provide a coordinated appearance between the ELC and school sites whilst ensuring a legible and navigable pedestrian network commensurate with accessibility needs for the school community and visitors.

### 2.3.1 Development Plan Provisions

#### GENERAL SECTION

##### Regulated Trees

**Objective 1:** The conservation of regulated trees that provide important aesthetic and/or environmental benefit.

**Objective 2:** Development in balance with preserving regulated trees that demonstrate one or more of the following attributes:

- (a) significantly contributes to the character or visual amenity of the locality;
- (b) indigenous to the locality;
- (c) a rare or endangered species;
- (d) an important habitat for native fauna.

##### Significant Trees

**Objective 1:** The conservation of significant trees, in Metropolitan Adelaide, that provide important aesthetic and environmental benefit.

Trees are a highly valued part of the Metropolitan Adelaide environment and are important for a number of reasons including high aesthetic value, conservation of bio-diversity, provision of habitat for fauna, and conservation of original and remnant vegetation.

**Objective 2:** The conservation of significant trees, should occur in balance with achieving appropriate development while avoid the indiscriminate and inappropriate removal of significant trees.

##### Principles

- 1 Development should preserve the following attribute where a significant tree demonstrates at least one of the following attributes:
  - (a) it makes an important contribution to the character or amenity of the local area
  - (b) it is indigenous to the local area
  - (c) its species is listed under the National Parks and Wildlife Act as a rare or endangered native species
  - (d) it represents an important habitat for native fauna
  - (e) it is part of a wildlife corridor of a remnant area of native vegetation
  - (f) it is important to the maintenance of biodiversity in the local environment
  - (g) it forms a notable visual element to the landscape of the local area.
- 2 Development should be undertaken so that it has a minimum adverse effect on the health of a significant tree.
- 3 Significant trees should be preserved, and tree-damaging activity should not be undertaken, unless:
  - (a) in the case of tree removal;
    - (i) the tree is diseased and its life expectancy is short
    - (ii) the tree represents an unacceptable risk to public or private safety
    - (iii) the tree is within 20 metres of a residential, tourist accommodation or habitable building and is a bushfire hazard within a Bushfire Prone Area



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- (b) the tree is shown to be causing or threatening to cause substantial damage to a substantial building or structure of value
- (c) all other reasonable remedial treatments and measures have been determined to be ineffective
- (d) it is demonstrated that all reasonable alternative development options and design solutions have been considered to prevent substantial tree-damaging activity occurring.
- (e) in any other case;
  - (i) the work is required for the removal of dead wood, treatment of disease, or is in the general interests of the health of the tree
  - (ii) the work is required due to unacceptable risk to public or private safety
  - (iii) the tree is within 20 metres of a residential, tourist accommodation or habitable building and is a bushfire hazard within a Bushfire Prone Area
  - (iv) the tree is shown to be causing, or threatening to cause damage to a substantial building or structure of value
  - (v) the aesthetic appearance and structural integrity of the tree is maintained
  - (vi) it is demonstrated that all reasonable alternative development options and design solutions have been considered to prevent substantial tree-damaging activities occurring.
- 5 Development involving ground work activities such as excavation, filling, and sealing of surrounding surfaces (whether such work takes place on the site of a significant tree or otherwise) should only be undertaken where the aesthetic appearance, health and integrity of a significant tree, including its root system, will not be adversely affected.

*Principles 6 and 7 include measures to protect the tree during construction*

#### Crime Prevention

##### Objectives

- 1 A safe, secure, crime resistant environment where land uses are integrated and designed to facilitate community surveillance.

##### Principles

- 1 Development should be designed to maximise surveillance of public spaces through the incorporation of clear lines of sight, appropriate lighting and the use of visible permeable barriers wherever practicable.
- 2 Buildings should be designed to overlook public and communal streets, pedestrian/cyclist paths, vehicle parking areas and public open space to allow casual surveillance.
- 3 Development should provide a robust environment that is resistant to vandalism and graffiti.
- 4 Development should provide lighting in frequently used public spaces including those:
  - (a) along dedicated cyclist and pedestrian pathways, laneways and access routes
  - (b) around public facilities such as toilets, telephones, bus stops, seating, litter bins, automatic teller machines, taxi ranks and car parks.
- 5 Development, including car park facilities should incorporate signage and lighting that indicate the entrances and pathways to, from and within sites.
- 6 Landscaping should be used to assist in discouraging crime by:
  - (a) screen planting areas susceptible to vandalism
  - (b) planting trees or ground covers, rather than shrubs, alongside footpaths
  - (c) planting vegetation other than ground covers a minimum distance of 2 metres from footpaths to reduce concealment opportunities.

- 7 Site planning, buildings, fences, landscaping and other features should clearly differentiate public, communal and private areas.
- 8 Buildings should be designed to minimise and discourage access between roofs, balconies and windows of adjoining dwellings.
- 10 Development should avoid pedestrian entrapment spots and movement predictors (e.g. routes or paths that are predictable or unchangeable and offer no choice to pedestrians)

*Note, there are additional General provisions under Landscaping, Fences and Walls*

## RESIDENTIAL ZONE

### Hazards

- 30 Bushfire risk within this zone is classified as Medium Bushfire Risk as described in Bushfire Protection Area BPA maps.....MtB/11 ... MtB/13....

*Note - Medium Bushfire Risk applies a mains water is available and the land forms part of a contiguous urban area*

- 31 Buildings and structures should be set-back form hazardous woodland or similar vegetation in accordance with the following...where the vegetation is located on a lower elevation than the building/structure with an average slope between 0-5 degrees ....minimum setback (metres) 41

### Energy Efficiency and Water Sensitive Urban Design

- 32 Design and construction of a building should incorporate water harvesting techniques.
- 33 Design and construction of landscaping and car parking areas should incorporate water harvesting techniques, so that landscape areas function as drainage swales to collect runoff with the excess stormwater flowing to drainage points connected to a stormwater outlet.

## 2.3.2 Assessment

The arborist assessed trees are numbered Tree 1 (River Red Gum, a native tree under the Native Vegetation Regulations which by trunk circumference also qualifies as a Significant tree under the Development Regulations) and Tree 40 (English Oak which is a Significant tree).

### Tree 1

The floor plan of the proposed school building has been designed around the retention of the tree, reflecting the Tree Protection Zone (TPZ) identified in the arborist report (15m radius from the centre of the trunk). Although not part of this current application for development on the school site, the arborist has also considered the filling of the dam in addition to any proposed development activities (eg paving) that encroach into the TPZ.

On the basis of the arborist's observations of the tree and local conditions, and consideration of the application drawings (as amended) against the range of factors outlined in relevant Australian Standards, the arborist concluded that the proposed works are unlikely to impact on the long-term health or stability of the tree.

### Tree 40

The proposed retention of Tree 40 at the location of the existing driveway (for proposed secondary service access) addresses the general provisions seeking to avoid indiscriminate removal of significant

trees and minimise tree damaging activity. The tree represents the *only* non-native significant tree in the Stage 1 Development site that forms a notable visual element in the landscape of the local area.

Retaining the tree within approximately 15metres of the ELC building does not result in any unreasonable bushfire hazard risk in relation to an individual tree compared to a woodland of trees for example.

Retaining the significant tree will involve 'demolishing' the existing internal driveway on the northern side of the tree (replacing it with terraced landscaped garden beds) and repositioning a hard surfaced service accessway on its southern side. It is anticipated that the potential for tree damaging activity will be minimised through the employment of appropriate measures recommended in Significant Tree principles 6 and 7 (not reproduced above) during the demolition and construction of the existing and proposed hard surfacing. A condition associated with the receipt of qualified arborist advice can be adopted in relation to this matter. It is noted that improvements to its local environmental conditions on the north side are anticipated to compensate for new minor areas of hard surfacing (potentially with a section of semi-permeable paving) around the southern perimeter of the drip line of the significant tree.

In this context, it is demonstrated for planning purposes that the design solutions employed and the adoption of Tree Protection Plan measures on arborist advice (ie as part of site works, construction, landscaping and pruning) for both Tree 1 and Tree 40 will prevent substantial tree-damaging activity occurring (principles 2 and 4(d)).

#### Landscape Concept

The Newham Design Guidelines (section 5.1) associated with the Encumbrance, envisages the modest use of retaining walls where it will preserve the landform (tiered walls, with each step not retaining more than 1.0m).

Section 8.1 also promotes the positive effect of soft landscaping in front yards and offers an example selection of native species (predominantly small trees/shrubs and groundcovers). A planting schedule will be informed by the Guidelines and further developed with a response addressing what is appropriate and sustainable in the context of a school campus and to what extent it can maximise site safety (eg landscaping height/location to minimise concealment opportunities where necessary) whilst enhancing the site's appearance and managing erosion potential without increasing bushfire hazard risk.

It is also noted there are several documents forming the Mount Barker Council "*Open Space, Recreation and Public Realm Strategy*". Some of these relate to specific townships and or main street precincts rather than opportunities for the type of community facility proposed. It is recognised nevertheless that as the campus develops in subsequent stages, connections from the school land to the community land to the south, and what relationship this may have to existing/future planned trails (*Mt Barker Littlehampton & Nairne Trails Plan*, Oxigen July 2011) connecting to the district open space to the south-east (corner of Bollen Rd and Flaxley) may be considered against those plans.

Where the Strategy can inform this Stage 1 Development landscaping, the general planting objectives such as preferences for native species, not weed species, and creation of appealing landscapes with trees for shade (*Open Space Provision and Management Framework* March 2013). These outcomes are consistent with the Newenham Guidelines seeking beatification of this semi-rural environment through natural landscaping reflective of many Adelaide Hills townships. The site plans illustrate the area set aside

for site landscaping particularly as viewed from the public road, in addition to landscaped outdoor areas for recreation and play, will provide an attractive landscaped setting for the new buildings. The plan therefore compatible with related strategic objectives applying to landscape character in the public realm.

In summary, a detailed landscaping schedule will be further developed and aim utilise species of plants suited to the area and in sufficient quantity to enhance the appearance of the locality. Maintenance and need for irrigation (where required) can be dealt with via condition.

It is noted that there will be some modification of the existing ground level south of the ELC building in the Stage 1 'development site' to gently grade the land in the area of the future community centre building. The earthworks will not require any retaining and battered slopes will be formed to drain internally into the central undeveloped area of the Stage 1 site. This provides some cost efficiencies in earthworks and will occur in a manner that does not result in any stormwater impact off-site / down stream (refer Appendix B in the WSP Concept Stormwater Management Plan). This area of earthworks will be seeded (grassed) and watered on an as needs basis (manually, most likely by water truck) to manage potential dust impacts and in the interim can be utilised as an accessible but informal outdoor area for students prior to the Stage 2 community centre building construction (subject to consideration of a future application and separate consent).

Overall the site planning and design depicted in the application drawings and conceptualised in the renders incorporates landscape treatments that enhance the character and amenity of the development and its locality. The indicative concept :

- integrates the elements of the site topography, and use of complementary materials and features throughout the site
- provides a sense of separation between the outdoor areas of the individual functions without losing connections around the perimeter for ease of access
- utilises terraced edges to soften the effect of cut or filled and areas of paved surface by separating them into smaller more visually appealing areas
- defines an accessible pedestrian network through key pathways with the site suitable for students and visitors to navigate safely
- incorporates landscaped swales in locations recommended by engineers to manage stormwater in a manner envisaged by the provisions.

It is acknowledged the final detail is important but it is not fundamental to determining the suitability of the land use and the development for the purpose of granting Development Plan Consent. A condition requiring a final planting schedule and layout, lighting (where appropriate), associated details for the timing of planting and ongoing maintenance, and management of the significant tree is considered appropriate if desired by the relevant authority.



## 2.4 Movement, Parking and Access

There is one new two-way access to the proposed school car park on Bollen Road, approximately 120m from the north-east corner of the allotment which will be the location of a future intersection, servicing the future residential estate.

The on-site car park for staff and visitors provides 77 spaces including 2 accessible spaces identified on the application drawings.

Separate service vehicle access is proposed on Bollen Road in the locality of the existing driveway access to the allotment. This will not be accessible to teaching/administration staff and visitors.

Bicycle rails will be provided for students and staff (locations to be determined). Based on the Development Plan rates, 5 bicycle spaces are required. This can be satisfied by applying a condition of consent requiring a minimum of 5 bicycle spaces.

In relation to the provision of on-site parking and the design and location of parking areas and access, URPS defers to the assessment of MFY (Traffic, Parking and Transport engineers) provided under separate cover). URPS concurs with the assessment of the MFY report and provides the following summary of our assessment against the key Development Plan provisions.

### 2.4.1 Development Plan Provisions

#### General Section

#### Movement of People and Goods

##### Objective

- 2 Development that:
- (a) provides safe and efficient movement for all transport modes
  - (b) ensures access for vehicles including emergency services, public infrastructure maintenance and commercial vehicles
  - (c) provides off-street parking
  - (d) is appropriately located so that it supports and makes best use of existing transport facilities and networks
  - (e) provides convenient and safe access to public transport stops.

##### Principles

#### Movement Systems

- 2 Development should be integrated with existing transport networks, particularly major rail, road and public transport corridors as shown on Location Maps and Overlay Maps - Transport, and designed to minimise its potential impact on the functional performance of the transport network.
- 5 Land uses that generate large numbers of visitors such as shopping centres, places of employment, schools, hospitals and medium to high density residential uses should be located so that they can be serviced by the public transport network and encourage walking and cycling.
- 6 Development generating high levels of traffic, such as schools, shopping centres and other retail areas, and entertainment and sporting facilities should incorporate passenger pick-up and set-down areas. The design

of such areas should minimise interference to existing traffic and give priority to pedestrians, cyclists and public and community transport users.

- 7 The location and design of public and community transport set-down and pick-up points should maximise safety and minimise the isolation and vulnerability of users.
- 9 Development at intersections, pedestrian and cycle crossings, and crossovers to allotments should maintain or enhance sightlines for motorists, cyclists and pedestrians to ensure safety for all road users and pedestrians.

#### Cycling and Walking

- 20 Development should ensure that a permeable street and path network is established that encourages walking and cycling through the provision of safe, convenient and attractive routes with connections to adjoining streets, paths, open spaces, schools, pedestrian crossing points on arterial roads, public and community transport stops and activity centres.

#### Access

- 29 Development should have direct access from an all-weather public road.
- 30 Development should be provided with safe and convenient access which:
- (a) avoids unreasonable interference with the flow of traffic on adjoining roads
  - (b) provides appropriate separation distances from existing roads or level crossings
  - (c) accommodates the type and volume of traffic likely to be generated by the development or land use and minimises induced traffic through over-provision
  - (d) is sited and designed to minimise any adverse impacts on the occupants of and visitors to neighbouring properties.
- 31 Development should not restrict access to publicly owned land such as recreation areas.
- 32 The number of vehicle access points onto arterial roads shown on *Overlay Maps - Transport* should be minimised and, where possible, access points should be:
- (a) limited to local roads (including rear lane access)
  - (b) shared between developments.
- 34 Development with access from arterial roads or roads as shown on *Overlay Maps - Transport* should be sited to avoid the need for vehicles to reverse onto or from the road.
- 36 Driveways, access tracks and parking areas should be designed and constructed to:
- (a) follow the natural contours of the land
  - (b) minimise excavation and/or fill
  - (c) minimise the potential for erosion from surface runoff
  - (d) avoid the removal of existing vegetation
  - (e) be consistent with *Australian Standard AS: 2890 - Parking facilities*.

#### Access for People with Disabilities

- 38 Development should be sited and designed to provide convenient access for people with a disability.

#### Vehicle Parking

- 39 Development should provide off-street vehicle parking and specifically marked accessible car parking places to meet anticipated demand in accordance with *Table MtB/2 - Off Street Vehicle Parking Requirements*.
- 41 Development should be consistent with *Australian Standard AS: 2890 - Parking facilities*.
- 42 Vehicle parking areas should be sited and designed to:

- (a) facilitate safe and convenient pedestrian linkages to the development and areas of significant activity or interest in the vicinity of the development
  - (b) include safe pedestrian and bicycle linkages that complement the overall pedestrian and cycling network
  - (c) not inhibit safe and convenient traffic circulation
  - (d) result in minimal conflict between customer and service vehicles
  - (e) avoid the necessity to use public roads when moving from one part of a parking area to another
  - (f) minimise the number of vehicle access points onto public roads
  - (g) avoid the need for vehicles to reverse onto public roads
  - (h) where practical, provide the opportunity for shared use of car parking and integration of car parking areas with adjoining development to reduce the total extent of vehicle parking areas and the requirement for access points
  - (i) not dominate the character and appearance of a site when viewed from public roads and spaces
  - (j) provide landscaping that will shade and enhance the appearance of the vehicle parking areas
  - (k) include infrastructure such as underground cabling and connections to power infrastructure that will enable the recharging of electric vehicles
  - (l) where appropriate, provide for trolley collection areas.
- 44 Vehicle parking areas that are likely to be used during non-daylight hours should provide floodlit entry and exit points and site lighting directed and shaded in a manner that will not cause nuisance to adjacent properties or users of the parking area.
- 45 Vehicle parking areas should be sealed or paved to minimise dust and mud nuisance.
- 46 To assist with stormwater detention and reduce heat loads in summer, outdoor vehicle parking areas should include landscaping.
- 47 Vehicle parking areas should be line-marked to delineate parking bays, movement aisles and direction of traffic flow.
- 48 On-site visitor parking spaces should be sited and designed to:
- (a) not dominate internal site layout
  - (b) be clearly defined as visitor spaces not specifically associated with any particular dwelling
  - (c) be accessible to visitors at all times.

#### RESIDENTIAL NEIGHBOURHOOD ZONE

##### Objective

- 4 The orderly expansion of the urban area, which allows the economic and effective provision of public infrastructure and services and that is consistent with the development outcomes contained in Concept Plan Map MtB/16 – Mount Barker and Littlehampton.

##### Desired Character

....The major local roads identified on Concept Plan Map MtB/16 – Mount Barker and Littlehampton will be established as the pre-eminent movement corridors through the zone and will be identifiable as landscaped boulevards. The major local road network will connect with the major features of the zone including centres, schools, key open space areas, recreation hub and residential areas. Local roads will have more intimate feel and support walking and cycling with lower traffic volumes and speeds, smaller street setbacks....

- 7 Development should not be undertaken unless it is consistent with the desired character for the zone.

##### Car Parking

**28 Car parking should be provided in accordance with Table MtB/2 - Off Street Vehicle Parking Requirements, except where varied as follows: .....**

- (b) it can be demonstrated that fewer car parks would meet the car parking needs associated with the development having regard to one or more of the following:**
  - (i) sufficient on-street parking is available near the site to meet anticipated demand**
  - (ii) the provision of shared use car parking where the peak parking demand for different activities occurs at different times**
  - (iii) evidence is provided that a lesser parking demand has been appropriately and effectively applied to similar uses elsewhere**
  - (iv) ease of access to public transport.**

**Cycling and Walking**

**29 Developments should encourage and facilitate cycling and walking as a mode of transport by incorporating end of journey facilities including:**

- (a) showers, changing facilities, and secure lockers**
- (b) signage indicating the location of bicycle facilities.**

## **2.4.2 Traffic Movement and Access**

### Movement corridors and traffic distribution

The initial planning and design of the land division in this locality in 2018 for the Newenham Estate was also informed with advice from MFY, in particular the consideration of the location of new roads and intersections. In this context, the Council gave consideration to the role of Bollen Road and MFY reports that preference is for it to operate much like a residential street with footpaths on both sides.

By reference to **Overlay Map MtB/12 Transport**, Bollen Road is a local council road which intersects with a Secondary Arterial Road, Flaxley Road, to the south. The current posted speed limit is 60km/hr.

Council's preference that Bollen Road operate as a local residential road is reflected in the **Concept Plan Map MtB/16** on which it is referred to conceptually as 'Other Roads'. The Desired Character statement also uses terms such as '*major local road network*' and '*local roads*' but does not further define these terms.

MFY reports that DPTI has provided in principle support to reduce the speed limit to 50km/hr on Bollen Road, consistent with the intended role of the road. Reducing the speed limit is outside of the control of the applicant in the context of the application, but the school nevertheless supports this approach having regard to the access it provides to the school site and the local neighbourhood. In any case, the development of the school is not the reason to reduce the speed limit, its merely an approach consistent with the movement concept for the urban neighbourhood reflected in the **Concept Plan Map MtB/16**. The Development Plan objectives and principles referring to the arrangement of land uses to support a sustainable movement network (General Section objective 2, Principles 1, 2) are therefore satisfied. The school's location which generates additional traffic volumes on Bollen Road, distributing traffic north and south, is assessed by MFY as compatible with the nature or function of the road network conceptualised for this part of the Residential Neighbourhood Zone in **Concept Plan Map MtB/16**.

In turn, the Residential Neighbourhood Zone objectives and principles are satisfied in that the proposed school development is appropriately connected to the existing and desired local road network, being a network envisaged to support walking and cycling, in addition to future public transport services, and its impact is well within the design capacity envisaged for the road network in this locality.

#### Access

The new car park access was informed by the location of the future local road to the north and its intersection with Bollen Road to the north of the school allotment, and regard to sight lines enabling safe access and egress from the new two way car park access, assuming clearance of the hedge along the road side parallel to the school site. MFY has assessed the access location as conforming with the relevant Australian Standards and sightlines criteria. The access is consistent with outcomes expressed in the Development Plan provisions namely:

- MFY assessment section 5.3.1 concludes it will not generate traffic to an extent that interferes with the flow of traffic on Bollen Road
- MFY assessment section 5.3.2 concludes there is no interference with traffic on the arterial road adjoining Bollen Road
- it is designed for two way access and will not result in vehicles reversing out of the school site as desired under the General section provisions.

It is also noted the two residential driveways opposite the proposed access to school site on the eastern side of Bollen Road (refer MFY Figure 2) are east of a very wide verge on that opposite side of the road. The width of verge currently provides an opportunity for vehicles exiting either of the two residential premises to egress onto Bollen Road in a forward direction. In this context there is minimal detrimental impact on residential neighbours opposite. In any case, the traffic engineer's conclusion is the sight lines are appropriate in the location of the access and the development does not result in any variance with the Development Plan provisions by virtue of facilitating safe and convenient entry and exit in a forward direction.

The minor access for service vehicles will utilise the crossover on Bollen Road associated with the existing driveway and will be controlled with restricted access (eg bollards or similar). It is intended that its use will not coincide with key use of the designated play areas within the school site. As it is to be used a subordinate secondary access, its limited use avoids unreasonable interference with the flow of traffic on Bollen Road within the meaning on the Development Plan provisions (principle 30).

Overall the location and design of the access to the proposed development is safe and convenient for vehicle movement generated by the school and others using Bollen Road.

#### **2.4.3 Parking**

The proposed car park in the Stage 1 Development application is based on the following occupancy numbers which is the planned capacity to 2025:

- School – 130 Students (5 classes of 26); Staff – 12
- ELC – 60 Students; Staff – 10

The school Masterplan envisages a separate 'kiss and drop' with one-way access and egress from the future public road parallel to the northern boundary. The setback of the proposed school building has been determined by the desire to accommodate that planned component in a future stage of development as the school manages growth beyond the 2025 design capacity. The implementation of the planned 'kiss and drop' is reliant on the development of the future northern public road, but note the Stage 1 development more than adequately operates without it. Diverting peak school pick-up and set-down from the proposed car park to the 'kiss and drop' in the future will accommodate increased staff and visitor capacity in the car park associated with future staged development.

However for the purpose of this application, the detail on the application drawings is the focus for the assessment.

The MFY parking assessment concludes that the 77-space on-site car park will accommodate the estimated demand for 62 spaces based on:

- the Stage 1 development parking demand of 29 spaces (14 spaces based on the Department for Education policy (staff, visitors and disability space allocation combined), plus 15 ELC spaces (Development plan rates) and
- parking for parents/ carers (MFY estimates 33 spaces based on junior school data which is typically higher than senior school demand) being utilised for pick-up/set-down in the morning and afternoon peaks for the Stage 1 development (MFY report section 4).

In effect the proposal provides a surplus of 15 spaces. This will assist in the reasonable turn-over and flow of vehicles on site during the peak periods.

The design includes accessible pathways linking the east – west sections of the carpark and 2 disability access spaces, each being as close as practical to the principal entry of one of the buildings.

Overall the proposal provides satisfactory on-site parking to accommodate the Stage 1 activities, and is designed to enable sealing and line-marking to Australian Standards in addition to creating a safe environment for users including pedestrians/children that will moving through the car park.

Stormwater management is incorporated within the design which includes a central 'spine' in the form of a landscaped swale (principle 46). The provision of a 10metre wide stormwater drainage easement is also identified on the plans parallel to Bollen Road and can incorporate low level landscaping that will minimise any impact on future infrastructure within the easement and enable casual surveillance from the public road.

It is noted that principle 42(i) seeks to limit the dominance of parking as viewed from public roads. The car park is at the street frontage, and the land will be more visually apparent through the removal of non-indigenous vegetation, including the hedge along the road frontage, this needs to be balance with other objectives regarding safety (eg inappropriate concealment of spaces), visibility of pedestrians and vehicles accessing the site and the proposal for a range of landscape treatments around the site and building envelope.

Related Development Plan provisions are to be addressed in the further detailed design of the carpark (note not all parts of principle 47 are relevant to a school car park) , and can be achieved by way of condition (ie to be satisfied prior to occupation of the development) namely:

- Any surface painted or other signage to manage parking/ assign accessible spaces, or direction of movement through the car park can be further detailed prior to operation if required (principle 47).
- Low level site lighting (eg bollard lighting, as opposed to high level pole mounted lighting) is envisaged within and around the car park perimeter in selected locations, and adjacent the carpark entry/exit, to support the safe movement of vehicles and pedestrians outside of daylight hours which will only be occasional in the case of Stage 1 (principle 47).
- There will also be some outdoor lighting (possibly wall mounted) to provide security after hours at entry points and other strategic locations within the campus. The reasonable distance of the building from its site boundaries and the established residential area opposite, will ensure light spill will not be a factor, and general provisions directly lighting appropriately will be adopted.

#### 2.4.4 Cycling and Walking

The final location of bicycle parking will be subject to further detailed design, but will likely be located in a position that offers casual surveillance throughout the day, in a location with a reasonable level of weather protection. In stage 1 which is associate with the ELC and Junior school, there will be typically less demand for bicycle parking compared with later stages attributed to senior school trips to school.

As noted elsewhere, the minimum Development Plan requirement of 5 bicycle parking spaces can be managed by way of condition. The site is sufficiently large to enable a number of suitable locations to be identified.

Dedicated bicycle end-of-journey facilities (showers, change rooms, secure lockers) are not envisaged, as schools typically incorporate student and staff amenities that adequately provide this function. The plans illustrate that there is at least one accessible shower in each building if required for this purpose, and other amenities can serve as change facilities if required in the interim. The staged development of the school will consider additional on-site amenities in the future (eg additional change rooms and the like for sport / physical education activities).

The pedestrian network throughout the Stage 1 development site will incorporate accessible paths for disability access. Beyond the school grounds, there is a strategic vision for footpaths on both sides of Bollen Road and ultimately community facilities and recreation areas south of the development site. Although the topography represents a challenge for accessible pedestrian connections to future stages of the school and to other locations south of the development site, in so far as the application is concerned, the proposed development appropriately responds to the provision of accessible pedestrian connections between the ELC and school building (comprising a wide ramped walkway) and between the car park and the building entries.



## 3.0 Assessment Conclusions

With particular reference to the Residential Neighbourhood Zone and the relevant concept plan for the Mount Barker urban area, the proposal as illustrated on the application drawings is a suitable use for the subject land for the following key reasons:

- (a) The school building and ELC are uses envisaged in this urban area and are recognised in the Encumbrance associated with the subject allotment.
- (b) The Stage 1 Development site is sufficiently connected to roads and infrastructure that is necessary to support its development and operation.
- (c) Development of Stage 1 has a positive social and economic effect in terms of supporting the development of the residential estate and therefore is orderly and sustainable in planning terms.
- (d) Traffic and parking is commensurate with existing adjacent road network and consistent with strategic development outcomes for the neighbourhood development.
- (e) The architecture is of a high standard and will make a positive contribution to the emerging urban landscape, complementing the approach and outcomes envisaged in the Newenham Design Guidelines.
- (f) The landscaping concept will foster appreciation of the local environmental conditions and broader natural character of the locality, with notable landscape improvements that are suited and practical for an urban school campus environment.

The proposed is generally consistent with the relevant provisions of the Development Plan outlined in this statement and the application for Development Plan Consent is supported.



URPS

King's Baptist Grammar School

Mount Barker District Council

Received  
30 Sep 2020

Appendix A – Certificate of Title

## Appendix A – Certificate of Title

PERFECTLY CONVEYED (EL - PEXA)  
53 Captain Robertson AV  
Golden Grove SA 5125

Mount Barker District Council  
Received  
30 Sep 2020

23 January 2020

## CONFIRMATION OF REGISTRATION NOTICE

The following dealings have been registered -

**Dealing(s):** DISCHARGE OF MORTGAGE 13239867  
TRANSFER 13239868  
ENCUMBRANCE 13239869  
**Title(s):** CT 6216/537  
**Registration Date:** 23/01/2020  
**Customer Reference:** 190154

Confirmations of registration are attached on the following page(s).



**Brenton Pike**

**Chief Executive Officer**

**Land Services SA**

*Land Services SA acting under delegation of the Registrar-General pursuant to section 17 of the Real Property Act 1886 (SA).*

Mount Barker District Council  
Received  
30 Sep 2020

## CONFIRMATION OF REGISTRATION

### Certificate of Title - Volume 6216 Folio 537

#### Estate Type

FEE SIMPLE

#### Registered Proprietor(s)

KING'S BAPTIST MOUNT BARKER INC  
OF 3 KEITHCOT FARM DRIVE WYNN VALE SA 5127

#### Description of Land

ALLOTMENT 1000 DEPOSITED PLAN 120098  
IN THE AREA NAMED MOUNT BARKER  
HUNDRED OF MACCLESFIELD

#### Easements

SUBJECT TO EASEMENT(S) OVER THE LAND MARKED B ON D120098 TO DISTRIBUTION LESSOR CORPORATION (SUBJECT TO LEASE 8890000) (T 3324926)

SUBJECT TO SERVICE EASEMENT(S) OVER THE LAND MARKED D ON D120098 FOR DRAINAGE PURPOSES TO THE COUNCIL FOR THE AREA (223LG RPA)

#### Schedule of Dealings

Dealing Number	Description
13239869	ENCUMBRANCE TO MT BARKER PROJECT DEVELOPMENT PTY. LTD. (ACN: 166 777 091)

#### Registrar-General

#### Lands Titles Office



## Appendix B – LBW Statement

LBW Environmental Engineer statement, 12 March 2020



Our ref: 191107-03 L01 REV02.docx

12 March 2020

Ms Kristy McMillan  
Hodgkison Pty Ltd  
189 Wakefield Street  
Adelaide, SA 5000

Dear Kristy

**Lot 1000 Bollen Road, Mount Barker  
Site Contamination Assessment and Remediation Status**

## 1 Introduction

LBWco is currently providing environmental consulting services to Kings Baptist Grammar School (KBGS) (c/- Hodgkison) to support the proposed redevelopment of the site at Lot 1000 Bollen Road, Mount Barker SA. Our work has been delivered under the review of SA EPA accredited Site Contamination Auditor, Mr Phil Hitchcock of Australian Environmental Auditors (AEA).

This letter provides a high-level overview of the environmental assessment work carried out to date and the additional assessment and remediation work planned. We've sought to clarify how these works relate to the proposed Stage 1 development of the school, comprising the Administration building and Early Learning Centre.

## 2 Overview of Assessment Findings and Remediation Plan

To date, LBWco has prepared the following reports:

- Preliminary Site Investigation Lot 1000 Bollen Road, Mount Barker, SA (ref: 191107 R01, dated 26.08.2019) (PSI)
- Detailed Site Investigation Lot 1000 Bollen Road, Mount Barker, SA (ref: 191107 -01 R01, dated 29.10.2019) (DSI)
- Remediation Management Plan Lot 1000 Bollen Road, Mount Barker, SA (ref: 191107 -02 R01 DRAFT, dated 03.02.2020) (RMP)

In summary, the assessment found elevated concentrations of metals in fill material the central / western part of the site and localised hydrocarbon contamination where historical releases from storage tanks occurred. Remediation of the impacted soils in this part of the site is required to make the site suitable for its intended future use as a school.

A small area of soil containing road scrapings, impacted with hydrocarbons, was identified in the eastern portion of the site. The total volume of impacted material is estimated to be 3 m<sup>3</sup> and needs to be excavated and removed to make this small area suitable for the proposed school use.



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The RMP has been prepared to cover the remediation requirements for the whole site and LBWco understands that KBGS intends to undertake the total works in accordance with the RMP soon.

The application for Development Plan Consent for Stage 1 of the school development includes the eastern portion of the site, as shown in Figure 1 attached. Minor remedial works only are needed within Stage 1 to remove the road scrapings impacted soil. No other potential for unacceptable site contamination risk was identified within the Stage 1 area.

More significant remediation works are required in the central / western portion of the site to make this area suitable for school use. Hydrocarbon impacted soils and the mound of imported fill material will be remediated by excavation and then retaining these materials onsite in a controlled manner, beneath an appropriate cap of clean soils. These remedial works need only be undertaken at a time appropriate for development of the central/western portion and do not pose an unacceptable risk to the Stage 1 area.

### 3 Site Contamination Audit

In anticipation of the requirements of planning and development processes under the *Development Act 1993*, KBGS commissioned a Site Contamination Audit. Early involvement of the auditor has been undertaken proactively by KBGS as recommended by LBWco in accordance with EPA guidelines. Mr Hitchcock will provide a Site Contamination Audit Report (SCAR) at the appropriate time to demonstrate that the site is suitable for its intended purpose as a school.

See Attachment 2 for an overview of the audit process.

As part of the audit process to date, the auditor has reviewed and approved the PSI and the DSI and has reviewed and provided minor comments to LBWco on the RMP. The final revision of the RMP is currently being prepared by LBWco.

Refer to Attachment 3 for a summary of the site contamination assessment process as it applies to the site and where we are currently up to in the process.

The auditor indicated to LBWco (per comm 11.03.2020) that the removal of the road scrapings impacted soils in the Stage 1 development area can simply be verified by auditor inspection and a confirmatory letter provided prior to full development approval. There is no need for the formality of Interim Audit Advice or a staged audit process producing multiple SCARs for these simple works, in this instance.

### 4 Next Steps

A soil vapour assessment will be carried out to assess whether remediation in the central/western portion needs to include vapour mitigation measures for future buildings to be developed in this part of the site.

Following site remediation via implementation of the RMP and LBWco's preparation of the of the Remediation Validation Report (RVR), the auditor will review the RVR and complete the SCAR. The SCAR is the key document that will confirm the suitability of the site for the proposed land use for reliance by the planning authority.

### 5 Planning and Development Controls

The following key factors should be considered in the setting of planning and development controls in respect of site contamination and the site contamination audit process:





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- remediation works needed within Stage 1 are very simple and will be completed in a matter of hours
- remediation works within the central/western portion of the site pose no unacceptable risk to Stage 1, will require an extended period to complete and are expensive
- the remediation works are only required to be undertaken if there is a commitment to redevelop the site for the proposed school use
- subject to development plan consent for Stage 1, KBGS intends to undertake the total package of remediation works soon, which will result in completion well in advance of construction and occupation of Stage 1.

Based on the above and our extensive experience, LBWco recommends that Development Plan Consent for Stage 1 should include conditions to the effect that:

1. Prior to granting of full development approval, the Site Contamination Auditor shall provide a letter to the authority confirming that the road scrapings impacted soils (identified on Figure 1) was successfully removed.
2. Prior to occupation of Stage 1, a Site Contamination Audit Report shall be provided to the authority, concluding that the site is suitable for the proposed land use.

## 6 Closing

Please do not hesitate to contact the undersigned if you have any questions or require further assistance from our team.

Yours sincerely  
**For LBWco**

Nick Brewer  
Principal Environmental Consultant

Jarrod Bishop  
Director | Senior Principal

### Attachments

1. Figure 1
2. Audit process summary
3. Assessment process flowchart



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## Attachment 1

### Figure 1



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FIGURE 1  
FIGURE 2

#### Extent of Work Area

Lot 1000 Bollen Road,  
Mount Barker SA  
Kings Baptist Grammar  
School, Stage 1

#### LEGEND

- - - Extent of work area
- ..... Property boundary

#### SCALE

0 25 50m

lbw co DELIVERING ENVIRONMENTAL SOLUTIONS

LBW co Details			
Job No.	191107-03		
Drawn	JB	Rev.	01
Checked	NB	Date	12.03.2020



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## Attachment 2

### Audit Process

(extract from EPA 2019, Guidelines for the site contamination audit system)

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**Figure 3 Overview of the audit process showing key stages and requirements for auditors, consultants and the EPA**



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## **Attachment 3**

### Site Contamination Assessment Process

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## The Site Contamination Assessment Process

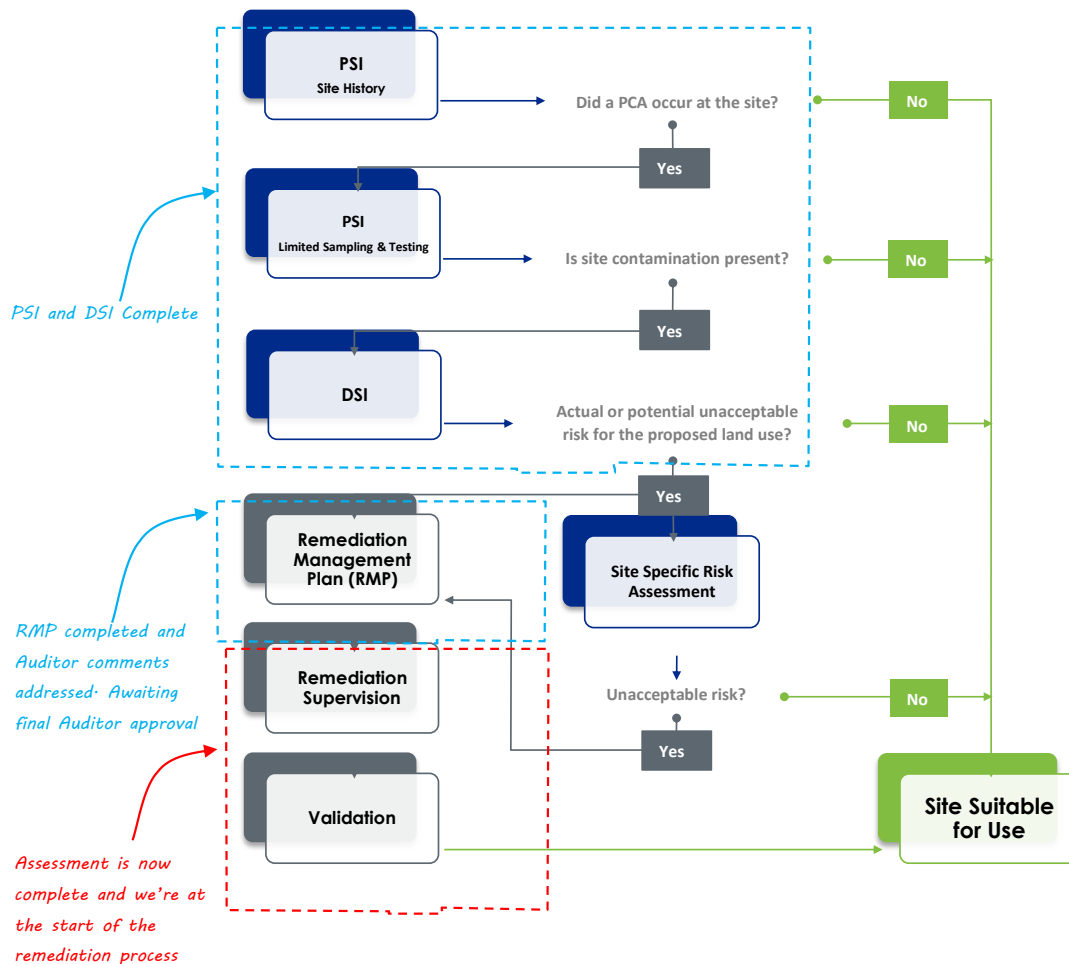


Figure 1 Overview of site contamination assessment and remediation processes completed for Lot 1000 Bollen Road, Mount barker





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Appendix C - Heritage Assessment

## Appendix C - Heritage Assessment

*Heritage Report – Stage 1, Anaglypta Architecture, 26 February 2020*

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Anaglypta

ARCHITECTURE

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## Heritage Report – Stage 1

**Property Address:** Bollen Road, Mount Barker  
CT Vol 6216 Folio 537

**Heritage Listing:** Local Heritage Place 'House & Former Cemetery Fairfield (Regency Farm)'

**General Section:** Heritage Places

**Zone Section:** Residential Neighbourhood

**Policy Area:** n/a

**Ref Maps:** MtB/12

**Report By:** Anaglypta Architecture  
Pippa Buckberry

**Date:** 26/2/2020

### Purpose of this Report:

This report has been prepared for Hodgkison Architects on behalf of Kings Baptist Grammar School to accompany the Development Application – Stage 1

### Existing Heritage Listings:

The property was identified for Local Heritage listing by Pope & Booth in 2004 and authorised as a Local Heritage Place 11 October 2007.

### History & Significance

An extract of the Heritage Survey states;

*"The house and remains of the cemetery at Regency Farm have outstanding associations with one of the district's most significant early properties and settlers: Fairfield and Joseph May. They also have significant associations with the religious and farming development of the area, and the house demonstrates early and later 19th century design & construction."*

The property has been assessed as having met the following criteria for listing as a Local Heritage Place under the Development Act 1993;

*(a) it displays historical, economic or social themes that are of importance to the local area, having outstanding associations with one of the district's most significant early properties and settlers: Fairfield and Joseph May, as well as significant associations with the religious and farming development of the area.*

*(b) it represents customs or ways of life that are characteristic of the local area, demonstrating the typical way of life of the earliest pioneers in the Mount Barker area, including the way in which farms often develop, and the early Quakerism which was adhered to by several local pioneers.*

*(d) it displays aesthetic merit, design characteristics or construction techniques of significance to the local area, being an important example of a mid-to-late-19th-century farmhouse which demonstrates typical local design & construction techniques of the periods in which it was built and then restored.*

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*(e) it is associated with a notable local personality or event, namely Joseph and Hannah May, significant pioneers of the Mount Barker area and founders of the local Quaker meeting place.*

The extent of listing is described as;

*Walls constructed of local stone with hipped cgi gable roof, timber framed openings with timber doors & timber-framed windows, red-brick chimneys with coursing to top, and raked cgi return verandah with timber posts. Also concrete and stone monument with inlaid plaque and surviving fragments of Quaker cemetery headstones.*

Significant historic records, including photographs, newspaper articles and artwork exist. These sources depict the original house and give detailed accounts of the use and activities which occurred on the site, some examples are provided below and in the appendices. (High resolution copies are typically available through the State Library of South Australia.) The level and quantity of information available is unusually high for a Local Heritage Place of this kind.



Figure 1, Sketch by Frederick Mackie, 1854  
Source: <https://trove.nla.gov.au/work/19186960>



Figure 2, Historic Photograph c 1870-1875  
Source: State Library of South Australia B 72166/44

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B 31055

*Figure 3, Historic Photograph c 1860*

Source: <https://trove.nla.gov.au/work/208437921>



B 59568

*Figure 4, Historic Photograph c 1885*

Source: <https://trove.nla.gov.au/work/208488113>



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Figure 5, Historic Photograph c 1880  
Source: <https://trove.nla.gov.au/work/208494735>



Figure 6, Friends Meeting House, Mount Barker, Sketch by Frederick Mackie, c 1854  
Source: <https://trove.nla.gov.au/work/19186974>

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### Description of Property

The site is located on Bollen Road, currently amongst rural farmland in an area being developed for residential housing.

The primary fabric of significance (the house) is situated towards the centre of the existing allotment, with its front façade facing South-East, towards the corner of Bollen Road and Flaxley Road (the historic allotment boundary), marked 'A' in Figure 7 below.

The items of secondary significance (the headstones and plaque of the former cemetery) are located adjacent to Bollen Road in the northern corner of the allotment, marked 'B' in Figure 7 below.



Figure 7, Aerial view of site

Source: Location SA Map Viewer <http://location.sa.gov.au/viewer/>

### House 'Fairfield/Regency Farm'

The most significant difference between the historic records of the property and the current structure is the fact that the building is now single story, not the original double storey structure. This is due to a fire on the property on 28 January 1905. Critically there are a few remaining elements which suggest that the remaining extant fabric is that of the original two-storey structure;

1. Comparisons of the shape, size and location of stonework and openings visible in the front façade match those in earlier photos.
2. The existing hallway of the remaining dwelling, is unusually wide, possibly due to a former stairwell within the space, and are of the proportions you would expect in a grander two-storey dwelling.



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*Figure 8, View from Bollen Road*  
*Source: Anaglypta Architecture, June 2019*

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*Figure 9, View from South*  
*Source: Anaglypta Architecture, June 2019*



*Figure 10, View of existing hallway (note unusually wide proportions)*  
*Source: Anaglypta Architecture, June 2019*

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The condition and integrity of the remaining fabric of the Local Heritage Place (the House) is good, retaining key features of the original appearance, consistent with the heritage datasheet, although the roof sheet is described as corrugated iron, and is in fact metal tiles (likely over the original corrugated iron).

There is some deterioration in the stone, particularly in the south-western corner, which is local pink sandstone commonly found throughout the Mount Lofty Ranges and is known to be extremely soft (and difficult to source).

Other items of note are;

- Verandah  
Originally there was no verandah to the two-storey structure. The shape, proportion and detailing of the posts suggest they have been replaced over time. The verandah is also asymmetrical, wrapping around the eastern corner of the dwelling. There is also evidence that the verandah may have been a bullnosed shape before the current form. The verandah is considered of medium significance and could be removed or altered (its main function is protection of the sandstone from the weather). Consideration to continuing the verandah around the western side should be made. Changing to an eyelash or bullnosed form with more traditional detailing is recommended.
- Extensive underground cellar  
Critical to the stability of the structure, the underground cellar should be conserved so that poor ventilation and stormwater management doesn't undermine the fabric of the place.
- Unsympathetic additions  
There are several unsympathetic additions to the north & north-western sides of the property which should be removed.
- Unsympathetic alterations  
Only a preliminary visit has been undertaken at this point, however it is clear there has been some unsympathetic alterations to the Local Heritage Place, such as rendering of stone walls, installation of metal tiles to the roof and non-traditional gutter profiles. A more detailed inspection should be undertaken and identified items rectified.



*Figure 11, View from SW (note rendering & shape of un-rendered section adjacent verandah  
Source: Anaglypta Architecture, June 2019*



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### Monument to Former Cemetery

The location of the former cemetery is described in a number of sources including a newspaper article from 1930 (refer Figure 12 below).

The location suggested is over 1600m (one mile) SW of the former Quakers Meeting house (Location B in Figure 7 above).

As demonstrated in Figure 13 below, the site would be well clear of the allotment boundary for the proposed Baptist College which is between 300 and 350m from the identified location in a south-westerly direction.

a daughter of Mr. May in 1854. There are people still living who can remember Mr. May with his Quaker hat and antique speech. He built the Quakers' meeting house, about a mile and a half west of Mount Barker. The foundations of the little meeting house are still traceable. It stood in the corner of a paddock, and was a building about 20 x 16 feet. Nearly a mile south-west of the meeting house in the middle of the paddock, is a grave enclosure with four headstones. One bears the name of Henry May, died April 16, 1846, aged 60. Another, Joseph May, junior, died November 17, 1847, aged 22. The third bears the name Ellen Margaret Phillips, died January 21, 1849, aged 1 year. And the fourth, Rupert May, died March 19, 1870, aged 4 months.

Figure 12, Extract of Mount Barker Courier and Onkaparinga and Gumeracha Advertiser (SA : 1880 - 1954), Friday 11 July 1930

Source: National Library of Australia <http://nla.gov.au/nla.news-article147847784>



Figure 13, Aerial Map with dimensions  
Source: Hodgkison June 2019

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With regards to the remaining headstones and plaque, which form part of the listed fabric, these items are located in a discrete part of the site, off Bollen road and are expected to have no impact on the proposed development.



Figure 14, Plaque at location 'B' off Bollen Road  
Source: Anaglypta Architecture June 2019



Figure 15, 16, 17, 18, (clockwise) Gravestone fragments at location 'B' off Bollen Road  
Source: Anaglypta Architecture June 2019





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### **Proposed Development**

The proposed development (Stage 1: Mount Barker School & Community Centre by Hodgkison architects for Kings Baptist Grammar School) consists of two buildings, an Early Learning Centre and Administration Building and siteworks including carparking and landscaping.

These buildings are located to the east of the Local Heritage Place, and in excess of 40m from the Local Heritage Place.

Given the proximity of the proposed new buildings, the impact of Stage 1 works on the Local Heritage Place are predominantly limited to its setting and context. Relevant principles of development control (PDC's) are:

#### *PDC 3*

*Development of a State or Local Heritage Place should retain those elements contributing to its heritage value, which may include (but not be limited to):*

- a) Principle elevations*
- b) Important vistas and views to and from the place*
- c) Setting and setbacks*
- d) Building materials*
- e) Outbuildings and walls*
- f) Trees and other landscaping elements*
- g) Access conditions (driveway form/width/material)*
- h) Architectural treatments*
- i) The use of the place.*

#### *PDC 6*

*New buildings should not be placed or erected between the front street boundary and the façade of existing State or local heritage places.*

#### *PDC 7*

*Development that materially affects the context within which the heritage place is situated should be compatible with the heritage place. It is not necessary to replicate historic detailing, however design elements that should be compatible include, but are not limited to:*

- a) Scale and bulk*
- b) Width of frontage*
- c) Boundary setback patterns*
- d) Proportion and composition of design elements such as rooflines, openings, fenestration, fencing and landscaping*
- e) Colour and texture of external materials*

The existing site is currently farmland, but like many other historic homesteads within the outskirts of Mount Barker, that context is rapidly changing with the urbanisation of this land into new housing estates. (Refer Newnham, Parkindula, The Butress House, Greengables House & Dairy). In this respect, the decision to alter the context of these Local Heritage Places has already been made and the next step is to determine appropriate curtilages, maintain key views to & from the places in question and to ensure the Local Heritage Place still has pride of place (or prominence) within its new setting.



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## 1. Views



*Figure 19, Primary and secondary (dashed) views to/from Local Heritage Place  
Source: Anaglypta Architecture June 2019*

Figure 19 above identifies key primary and secondary views to and from the Local Heritage Place. The primary view being through to Flaxley Road, specifically its intersection with Bollen Road from the frontage of the former dwelling, the secondary views being glimpsed through the existing hedge along Bollen Road.

Maintaining the primary view is assisted by topography of the land, which elevates the structure and enables views to it. In addition, recreational grounds (an oval) are identified for the area, which will help to protect views to the heritage place into the future.

Views from Bollen Road will be affected by the removal of the existing hedge as well as the addition of buildings placed between it and the Local Heritage Place. However, some glimpses of the building should still occur in similar locations to existing vantagepoints (refer Figure 20).

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*Figure 20, Primary and secondary (dashed) views to/from Local Heritage Place  
Source: Anaglypta Architecture June 2019*

Figure 20 above shows the footprint of the proposed new structures with the same primary and secondary views highlighted.

In this respect Stage 1 works can be determined to have a limited impact on the key views to and from the Local Heritage Place.

## **2. Curtilage**

As previously identified, the proposed new buildings are at least 40m from the Local Heritage Place, and in Stage 1 (this proposal) there is ample space maintained around the building.

## **3. Prominence**

In order to maintain the prominence of the Local Heritage Place within its new setting consideration of the design elements referred to in PDC 7 is required, and as identified in PDC 7 imitation of the features on the Local Heritage Place is not necessarily the most appropriate response, what is critical is that the features of new buildings do not detract or distract from those of the Local Heritage Place.

### *a) Scale and bulk*

Appropriately, the proposed new buildings are single storey, and while the new structures are proportionally larger than the Local Heritage Place, with the new site levels their apparent height will be minimised. In addition, the proposed buildings are segmented into portions more domestic in scale through material and form changes, which assists in reducing the apparent bulk.

### *b) Width of frontage*

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Not relevant to this application.

*c) Boundary setback patterns*

Not relevant to this application.

*d) Proportion and composition of design elements such as rooflines, openings, fenestration, fencing and landscaping*

With respect to roof pitches, it is appropriate that the new buildings keep a low profile and flatter roof pitches, through this contrast the Local Heritage Place is given prominence. It will of course be important for roofs on new buildings to be of an appropriate colour which does not draw attention such as neutral or muted tones. While landscaping and fencing details have not yet been provided, these elements have the opportunity to enhance the character of the school and reference the historic, rural setting. Similarly landscaping could be used to enhance the setting of the Local Heritage Place and to reduce the impact of new structures on the site.

*e) Colour and texture of external materials*

The proposed materials and finishes of the new buildings include stone, sheet metal, blockwork and render. Images provided by the architect suggest these selections will be neutral in tone, appropriately responding to the natural landscape and materials and finishes of the Local Heritage Place.

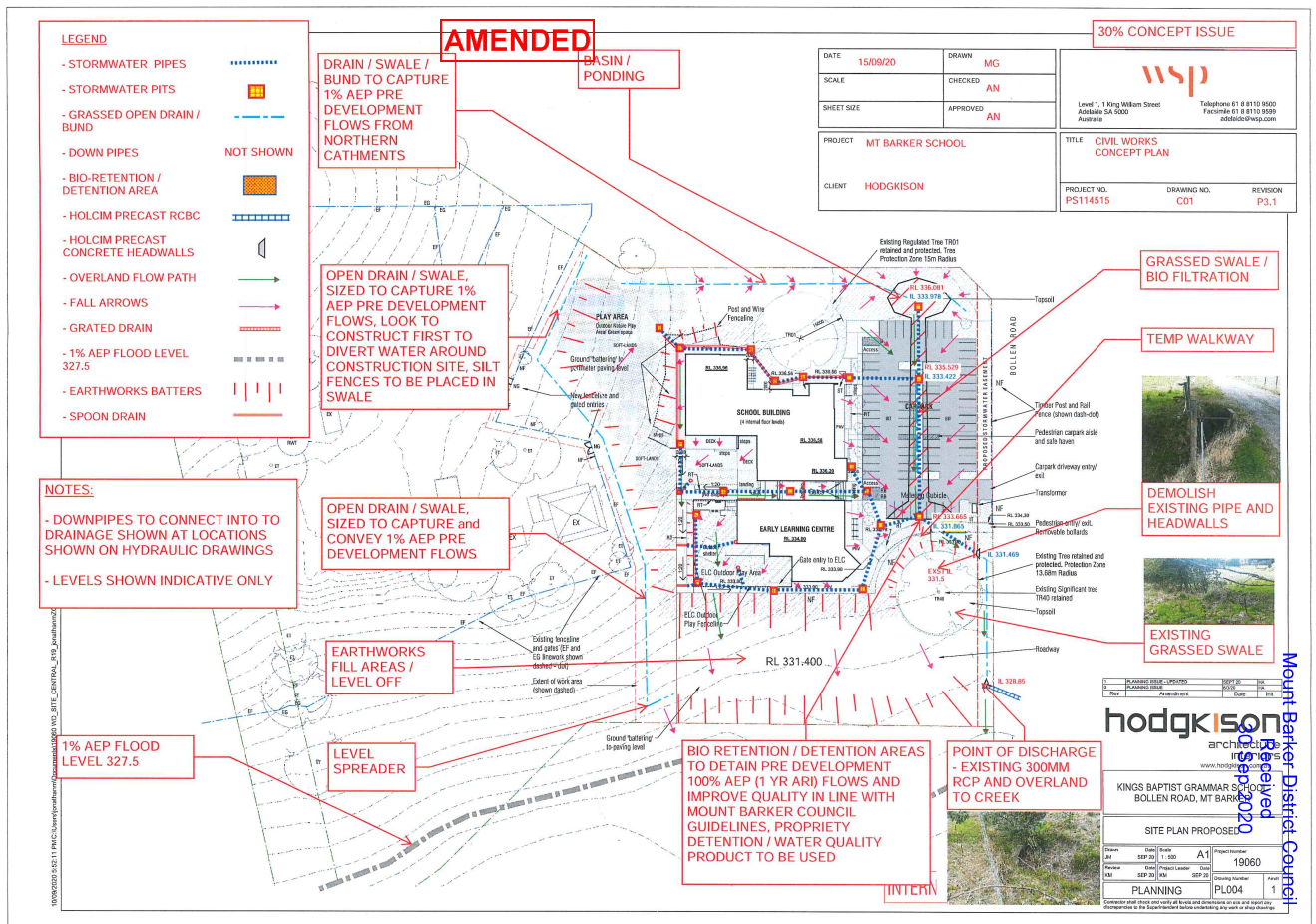
## **Conclusion**

Stage 1 of Kings Baptist Grammar School will have no physical impact on the Local Heritage Place and an acceptable level of impact on the setting and context of the Local Heritage Place. The proposed development of this site will eventually see the adaptive re-use of a building which was one of the earliest and most notable estates within Mount Barker but which has been deteriorating and dormant and for over 110 years.

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## Appendix D-Stormwater/Civil works plan

Extract plan only – Concept Stormwater Management Plan, WSP Adelaide (full report provided under separate cover)







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Appendix E – Design Guidelines

## Appendix E – Design Guidelines

Extract only - Newenham Design Guidelines 2015

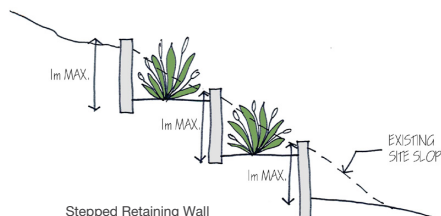


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**Newenham Design Guidelines**

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## 5.2 Retaining Walls

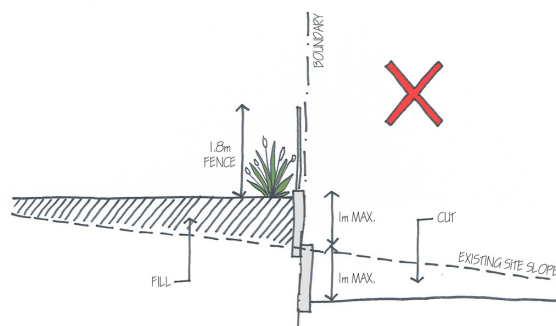
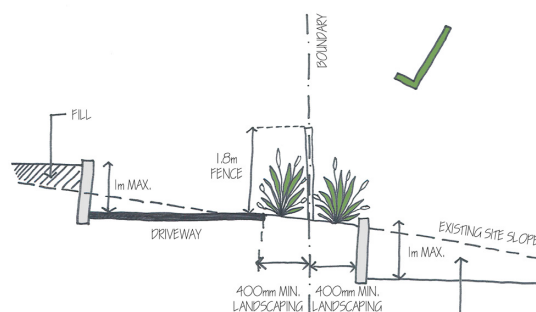
### Intent

Retaining wall guidelines are difficult to describe in general because each allotment has its own character, slope and relationship with adjoining or neighbouring land. Newenham aims to minimise excessive use of retaining walls visible from the street, support quality construction and finishes, and preserve the Newenham landform.

### Outcome

Newenham realises the difficulty in retaining between properties with fall and we will work with you to achieve the best possible outcome.

- » Retaining walls should not be constructed on top of or next to another retaining wall if viewable from the street.
- 10 Maximum height of 1m for all retaining walls viewable from the street.
- 10 If retaining of greater than 1m is required it must be tiered and landscaped to improve visual quality.
- 10 Retaining walls on boundaries between your land and a reserve or roadway can include a fence above the retaining wall. This must be to a maximum height of 2.8 meters (1.8m high fence + 1m retaining wall).
- 10 Retaining walls visible from the street must be constructed from the list of acceptable retaining wall materials.
- 10 Retaining walls must not be built over services pits. If applicable, services pits are indicated on your allotment's Detailed Area Plan.
- 10 On certain unique allotments, the Detailed Area Plan may prescribe locations and the maximum height of retaining walls and embankments.



### Acceptable Materials for Retaining Walls Visible from Streetscape



Natural Stone



Quarry Rock



Moss Rock



Block Wall



Concrete Sleepers



Rendered Masonry



### 6.3 External Materials and Finishes

#### Intent

To encourage front building facades to complement the natural environment through the use of quality, local and natural materials.

#### Outcome

- Homes are to reflect a well balanced material palette particularly where viewable from the public realm.
- The front façade of the residence must be constructed with complementary materials that are part of the list of acceptable external materials for Newenham.
- » Material selections will be assessed on merit. Alternative materials may be approved based on their consistency with the Newenham design vision.
- Highly reflective surfaces that cause glare are not permitted.



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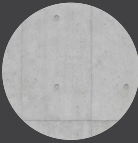
### Acceptable External Materials For Street Frontage



Painted or rendered concrete



Painted or rendered fibre cement cladding



Exposed concrete to a high quality finish



Zinc feature wall



Stone cladding



Limestone /sandstone



Reclaimed brick



Bag rendered and painted brick



Painted or stained timber



Painted weatherboard

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## 8 | Landscaping

### 8.1 Front Yard Landscaping

#### Intent

Landscaping will have a significant impact on the overall appearance of your home and plays an important roll in the overall character of Newenham.

#### Outcome

To help you achieve the required Newenham landscaping vision, we will make available a selection of predesigned and costed gardens for you to choose from. If you prefer, you can submit an alternative landscape design in accordance with the following minimum requirements:

- Ⓜ 1 tree for every 30m<sup>2</sup> of your front yard (excluding driveway).
- Ⓜ 1 plant every 1m<sup>2</sup> for minimum 25% of the total area of front yard (excluding driveway).
- Ⓜ Solid (nonpermeable) surfaces covering more than 50% of the front yard will not be permitted.
- » It is highly recommended that you plant directly behind the front fence, a species which extends up to a height that matches or exceeds your front fence to further enhance the country aesthetic.
- » Lawn which is appropriate for the site conditions.



- » Deciduous trees/vines that provide shade to the windows during summer and allow sunlight in during winter.
- » Feature screens or water features which add interest.
- » All species selections should reflect the Newenham vision and be suitable for the site conditions (e.g. water efficient plants)
- » Gardens should be designed for water efficiency.

» = Recommended Design Criteria  
Ⓜ = Mandatory for Design Guidelines Approval



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EXAMPLE ONLY - ECOLOGICAL COUNTRY GARDEN



Botanical Name	Common Name	
Eucalytus leucoxylon dwarf	Eucky Dwarf	1. Timber Hardwood Decking
Eucalyptus caesia ssp magna	Sliver Princess	2. Selected Timber Fence 1.2m H
Callistemon	Little John	3. Compacted Gravel Driveway With Stone Edge
Grevillea lavandulacea	Lavender Grevillea	4. Crazy Stone Path 1.2m W
Dianella revoluta	Dwarf Flax Lily	5. Front Boundary Edge Planting of Liriope "Just right"
Lomandra longifolia	Dwarf Mat-Rush	6. Single Gate 1.2m W
Correa "Dusty Bells"	Australian Fuschia	7. Tussock Planting To Edges of Path
		8. Organic Garden Mulch for all Garden Beds
		9. 2 x Eucalyptus caesia ssp magna Sliver Princess - 45L
		10. Mix of Native Shrubs, Groundcovers & Tussocks

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# Tree Protection Plan

**Kings Baptist School  
Lot 1000  
Bollen Road  
Mt Barker**

***Prepared for:***

Kristy McMillan  
Director  
Hodgkison Pty Ltd  
189 Wakefield Street  
Adelaide SA 5000

30 June 2020

***Prepared by:***

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## Tree Assessment at Lot 1000 Bollen Road Mt Barker – June 2020

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### Appendices:

Tree Protection Zones Plan





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### Summary

Two trees were assessed within the development site. Both trees qualify as a significant tree. Both trees possess attributes worthy of preservation based on their locally indigenous status. Both trees are open grown trees with good health and structure. A TPZ and SRZ were calculated for each tree. There is a major encroachment by development activities for both trees. After considering a range of factors under AS 4970-2009, and with the relocation of the access track outside the TPZ of tree 40, the proposed works are unlikely to impact on the long-term health or stability of the trees. A range of tree protection measures will be required during the construction phase at the site.





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# Introduction

## Brief

I carried out an assessment of two significant trees at Lot 1000 Bollen Road, Mt Barker on the 19 June 2020 following a request from Kristy McMillan, Director at Hodgkison Pty Ltd.

I was requested to assess the legal status of the trees, tree condition, tree retention suitability and tree management requirements. I am also to assess the possible impacts of the proposed development activities at the site on the trees located on the property and to recommend strategies to minimise these possible impacts.

## Documents and information provided

I was provided with the following documents to assist me in the preparation of this report;

- *Proposed site plan with trees* by Hodgkison dated March 2020.
- *Newenham School Site Surrounds Vegetation Survey and Viability Assessment* by Adelaide Arb Consultants dated 6/02/2018 (not including the two subject trees).
- Link to tree survey data (including the two subject trees) by others  
[https://www.google.com/maps/d/viewer?hl=en&mid=1\\_JAwNSPFxny0QtCTEsi-ghAxl2nHv9IT&ll=-35.077163396585576%2C138.84645008234557&z=18](https://www.google.com/maps/d/viewer?hl=en&mid=1_JAwNSPFxny0QtCTEsi-ghAxl2nHv9IT&ll=-35.077163396585576%2C138.84645008234557&z=18)

A detailed survey drawing showing existing site levels and features was not available at the time of the assessment.

## Relevant background information

Hodgkison are preparing designs for a new school on a vacant rural site. The proposed works include new school buildings and car parking, and other landscaping and site works. I was advised that an existing dam near one of the trees is also to be filled by others as part of road construction works on the adjacent site.

## Scope of this report

This report is concerned with the two significant trees only.

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### Observations

#### Site visit

I had full access to the tree/s in question and observations were from what was visible from within and around the property boundaries. I carried out a level 2 assessment of the trees<sup>a</sup> and all my observations were visual from ground level<sup>b</sup>. All dimensions marked (~) are estimates. All distances are measured from centre of tree trunk.

#### Site description

The site comprises a parcel of currently open rural land. The site falls to the east towards Bollen Road. A farmhouse and outbuildings are located in the western part of the general area, with an access track from Bollen Road adjacent to one of the subject trees (shown as tree 40 on the drawing provided). There is also a large dam on the site adjacent to the north of the second subject tree (shown as tree 1 on the drawing provided). Refer to aerial image below showing the site (defined extent of works) and subject trees.



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### Tree details

Tree 1	<i>Eucalyptus camaldulensis</i> <b>River red gum</b>
Origin	<i>Eucalyptus camaldulensis</i> is the most widespread species of eucalypt in Australia, occurring in every mainland State. It is notably a tree of riverine sites whether of permanent or seasonal water, often extending to adjoining floodplains and into the slopes. It is a medium sized woodland tree (up to 45m) with a short, thick bole, smooth bark in irregular plates of varying colour, rough bark at the base and large open crown. This species naturally occurs in the hills of the Mt Lofty Ranges and plains around Adelaide and the south east of South Australia. It is indigenous to many parts of Adelaide <sup>c</sup> and notably provides a wide range of environmental and amenity benefits to the areas in which it occurs. The tree has a good tolerance to development activities and copes well with challenging growing conditions.
Location	Lot 1000 Bollen Rd Mt Barker ~7m from adjacent dam.
Height	~18m
Crown spread	~18m
Trunk circumference 1m above ground level	4.1m
Legal status under <i>Development Act 1993</i>	Significant tree <sup>d</sup>
Diameter at breast height (DBH) <sup>e</sup>	1290mm
Diameter at ground level	1.33m
Tree health	This is an open grown tree in good health with good foliage colour, distribution, and density. There are a moderate number of dead branches in the crown. The tree is free of notable pests or diseases.
Tree structure	Good.

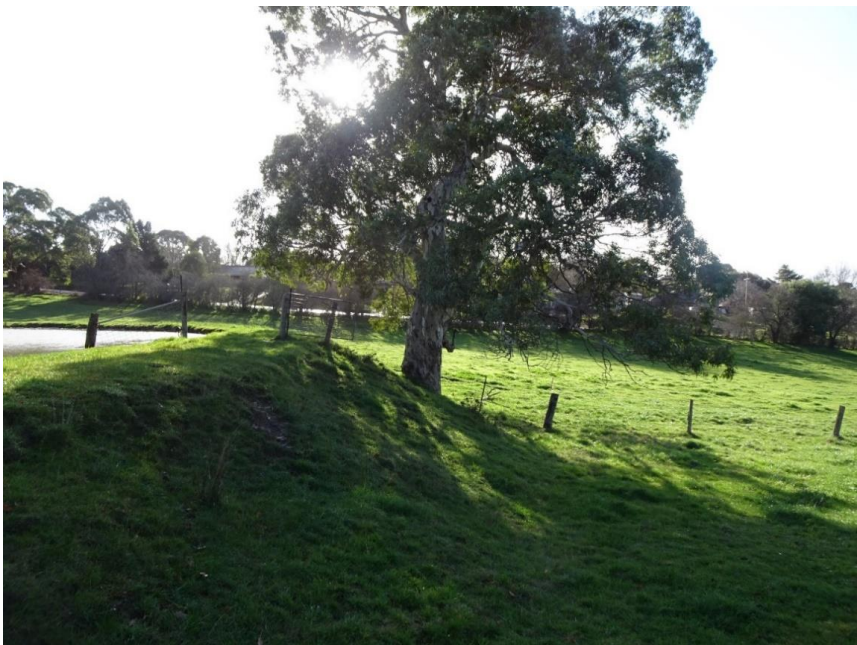
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Tree 1



Tree 1 showing adjacent dam.

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<b>Tree 40</b>	<i>Quercus robur</i> <b>English oak</b>
Origin	<i>Quercus robur</i> is a broad spreading deciduous tree that is native to Europe from Scandinavia extending to the Mediterranean. It will grow in a variety of soils but prefers good drainage. It will also tolerate some moderately saline conditions. It is often used as an ornamental in Adelaide but requires a generous amount of supplemental water and mulch. It can attain heights up to 25 meters in favourable conditions.
Location	Lot 1000 Bollen Rd Mt Barker ~18m from Bollen Road. ~4m from adjacent gravel access track. ~2m from existing drainage channel, ~5m from existing culvert.
Height	~18m
Crown spread	~25m
Trunk circumference 1m above ground level	3.95m
Legal status under <i>Development Act 1993</i>	Significant tree
Diameter at breast height (DBH)	1140mm
Diameter at ground level	1.24m
Tree health	This tree is not in leaf but is an open grown tree which appears to be in good health.
Tree structure	Good structure typical of older trees of this species, with a wide spreading crown overhanging the existing access track. Evidence of some past pruning over access track.



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Tree 40 viewed from west.



Tree 40 showing crown overhang.

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Tree 40 showing existing stormwater channel and culvert.



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### Tree attributes

Trees with a trunk circumference greater than 3.0m qualify as a significant tree<sup>f</sup> under the *Development Act 1993*.

The Principle of Development Control 1 of the City of Mount Barker Council *Development Plan* (consolidated 8 August 2017) states:

*Development should preserve the following attributes where a significant tree demonstrates at least one of the following attributes.*

The following table indicates my opinion on how significant tree 1 relates to these attributes.

(a) Does the tree make an important contribution to the character or amenity of the local area <sup>g</sup> ?	Yes	A large tree, that contributes to the character and amenity of the local area
(b) Is the tree indigenous to the local area and the species listed under the National Parks and Wildlife Act as a rare or endangered native species?	No	
(c) Does the tree represent an important habitat for native fauna <sup>h</sup> ?	Yes	As a locally indigenous tree species, it provides important habitat value.
(d) Is the tree part of a wildlife corridor of a remnant area of native vegetation?	Yes	An isolated paddock tree but likely to form links with other native trees, forming part of a wider wildlife corridor.
(e) Is the tree important to the maintenance of biodiversity in the local environment?	Yes	As a locally indigenous tree species, it provides important biodiversity values.
(f) Does the tree form a notable visual element to the landscape of the local area <sup>i</sup> ?	Yes	The tree is currently located in an open paddock and is visible from the road and surrounding areas.

The following table indicates my opinion on how significant tree 40 relates to these attributes.

(a) Does the tree make an important contribution to the character or amenity of the local area?	Yes	A large spreading tree that contributes to the character and amenity of the local area
(b) Is the tree indigenous to the local area and the species listed under the National Parks and Wildlife Act as a rare or endangered native species?	No	An exotic species.
(c) Does the tree represent an important habitat for native fauna?	No	An exotic species.
(d) Is the tree part of a wildlife corridor of a remnant area of native vegetation?	No	An exotic species.
(e) Is the tree important to the maintenance of biodiversity in the local environment?	No	An exotic species.
(f) Does the tree form a notable visual element to the landscape of the local area <sup>i</sup> ?	Yes	The large spreading tree is in a prominent location visible from the road and surrounding areas.

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### Proposed development activities

The proposed development activities at the site include:

#### Tree 1 (*Eucalyptus camaldulensis*)

- New school buildings located ~18m from tree (south).
- New paving located ~13m from tree (south).
- Filling of existing dam (by others) located ~5m to north of tree.
- New topsoil shown around tree 1 (indicative only).

#### Tree 40 (*Quercus robur*)

- Demolition of existing access track located ~4m to north of tree.
- Demolition of existing culvert located ~5m to north of tree.
- Filling of existing drainage channel located ~2m to north of tree.
- New service track located ~10m south of tree.
- Tiered landscaping (max change in level 900mm) located ~11m to north and north west of tree.
- New topsoil shown around tree 40 (indicative only).

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# Appraisal

### Legal status

Both trees qualify as a significant tree. The trees also possess attributes worthy of preservation and offer a lot to the local community and environment. The proposed development should aim to preserve these attributes.

### Tree health

Both trees are both in good health and do not have a short life expectancy. If the trees and their surrounding growing environment (soil) is protected from the potentially adverse impacts of the entire development process and well maintained in the future, the trees could remain an asset at the site for many years.

Improvements to the growing environment should include the application of organic mulch. Landscaping activities should be low impact and keep the requirements of the trees in mind. Landscaping guidelines are supplied at the end of the report. Topsoil levels should be no greater than 100mm above existing layers and should consist of a sandy loam type soil.

### Tree structure

The trees are both free of notable structural defects at this point in time. They do not present an unacceptable risk to public or private safety.

Pruning may be required to provide suitable clearances for the proposed open space areas and new service track. In addition, larger dead branches should be shortened or removed to reduce risk to future users of the site.

This pruning must not remove tree parts excessively and must not be performed by building contractors. All pruning must conform to the Australian Standard AS 4373 – 2007 *Pruning of Amenity Trees*. All pruning should be carried out or supervised by appropriately qualified and experienced arborists.



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### Impact assessment

To protect a tree from the possible adverse impacts of development activities, a tree protection zone (TPZ) is required. TPZs preserve tree root systems and the immediate soil environs as well as protecting the above ground parts of the tree from inadvertent crown or trunk damage. The zone within the TPZ must be monitored and managed during the development process by qualified Arborists to avoid the many potentially adverse consequences of uncontrolled development. The tree protection zones for these trees is calculated as follows.

	Tree 1	Tree 40
The TPZ radius <sup>k</sup> from the centre of the trunk	15m	13.68m
The TPZ area <sup>l</sup> around tree	707m <sup>2</sup>	587m <sup>2</sup>
The Structural Root Zone <sup>m</sup> (SRZ) radius from the centre of the trunk	3.73m	3.64m

Trees can tolerate some encroachment into their TPZ<sup>n</sup>. The following impact assessment has been carried out for each of these trees.

### Tree 1

The proposed development activities at the site encroach into this TPZ area as follows.

Proposed paving	~32m <sup>2</sup> (4.5%)
Filling of dam	~120m <sup>2</sup> (17.0%)
Total encroachment	~152m <sup>2</sup> (21.5%)
Works within structural root zone (SRZ)	No

Consideration has been given to TPZ occupancy by existing structures and surfaces. The existing dam occupies ~120m<sup>2</sup> (17.0%) of the TPZ. This has been established for a long period of time and the tree will have adapted to its presence. It is likely that fluctuating water levels in the dam will limit oxygenation of the trees root system. This dam is to be drained and filled with soil and base layers as part of the proposed road works on the adjoining land. Overall, there is no significant change to the growing conditions in this zone. The remainder of the TPZ is of an open/rural character.

The total level of encroachment, including filling of the dam is ~152m<sup>2</sup> (21.5%) is a major encroachment (>10% of TPZ area). In assessing impacts on the tree, consideration has been given to a range of factors as outlined in section 3.3.4 TPZ encroachment considerations of Australian Standard AS 4970-2009 *Protection of trees on development sites* as follows:

- *Eucalyptus camaldulensis* (River Red Gum) has a good tolerance of development activities. It is recognized by the arboricultural community that *Eucalyptus camaldulensis* is a tree species with a good tolerance to development activities. This is due to the trees relatively deep root system, ability of its dimorphic<sup>o</sup> root system to draw on underground water sources, and natural adaptation to disturbed riverine sites.
- This is an open grown tree, growing in its preferred environment and has good health and vigour.
- The new encroachment on the tree would be offset by the remaining area within and contiguous with the TPZ which will remain in an open state.
- The filling of the dam is unlikely to significantly alter the current growing environment of the tree.
- Tree sensitive methods are advised for the proposed landscaping works around the tree.

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After considering these factors it is concluded that the proposed works are unlikely to impact on the long-term health or stability of the tree.

### Tree 40

The proposed development activities at the site encroach into this TPZ area as follows.

Proposed service track	~50m <sup>2</sup> (8.5%)
Landscape tiering	~60m <sup>2</sup> (10.5%)
Total encroachment	~112m <sup>2</sup> (19.0%)
Works within structural root zone (SRZ)	No

Consideration has been given to TPZ occupancy by existing surfaces. The existing access track occupies ~80m<sup>2</sup> (13.6%) of the TPZ. This has been established for a long period of time and the tree will have adapted to its presence. This is to be demolished as part of the proposed works and a proportion of the tiered landscape will be constructed in the same location. The remainder of the TPZ is of an open/rural character.

The total level of encroachment is **~112m<sup>2</sup> (19.0%)** is a major encroachment (>10% of TPZ area). In assessing impacts on the tree, consideration has been given to a range of factors as outlined in section 3.3.4 TPZ encroachment considerations of Australian Standard AS 4970-2009 *Protection of trees on development sites as follows:*

- *Quercus robur* is considered to have a moderate tolerance to development activities.
- The tiered landscape area will be constructed partially on top of the existing access track and does not all form 'new' encroachment.
- Much of the current and future root zone is open grown tree and has good health and vigour.
- The new encroachment on the tree would be offset by the remaining area within and contiguous with the TPZ which will remain in an open state.
- Tree sensitive methods are advised for the proposed landscaping works around the tree.
- Consideration should be given to relocating the proposed access road outside the TPZ and crown of the tree.

After considering these factors, and with the relocation of the access track outside the TPZ, the proposed works are unlikely to impact on the long-term health or stability of the tree

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### Tree Protection Plan

To protect those trees to be retained on a development site, consideration must be given to the various activities that are occurring within the vicinity of these trees. Modifications to the design and methodology of installing these structures and surfaces has been considered during the design development for the site. In addition, protective fencing and other protective measures are required during the entire development process. In relation to the proposed development at this site, the following tree protection measures are required. A tree protection plan with tree protection guidelines is attached at the end of the report.

#### Protective fencing

Protective fencing must be erected around the trees to be retained on site prior to any development activities commencing as follows. This fencing is to protect the tree trunk, branches, surrounding soils and tree roots.

- Sturdy 1.8m high chainmesh fence to be erected as indicated on the plans prior to any works.
- The TPZ fence should follow the crown dripline of each tree.
- Protective fencing and other protective measures to remain in place till completion of project.
- TPZ signage to be attached to fencing.
- Area within TPZ to be mulched - 75-100mm deep.
- The fenced area shall not be used for storage of machinery or construction materials.
- The fenced area shall not be used for parking or vehicle access.
- No entry to TPZ without consulting project arborist.
- Fencing can be removed to facilitate final soft landscaping.

#### Site access

- Site access should be directed around tree protection zones.
- Site access for demolition and construction activities should not be from the existing access track, but from a new access track outside the crown of tree 40.
- Any vehicle access through a TPZ will require ground protection consisting of mulch/gravel layers with trackmats suitable for vehicle use placed on top.

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### Demolition and site clearing activities

The demolition of existing structures, surfaces and vegetation will require heavy machinery to move about on the site. If they work within any TPZ area, they can potentially compact the soil and damage tree roots, trunks, and branches. To protect the trees during demolition works, the following is required.

- The tree protection zones must be established prior to demolition and site work activities commencing.
- Demolition of the existing access track within the TPZ of tree 40 should be undertaken with care, removing top layers and gravel to natural ground level with no lowering of natural grade.
- Options for removing the existing concrete culvert include leaving it in place, or carefully lifting it out in sections with light machinery without damaging the tree branches above.
- Any machinery must work with caution adjacent to the tree by removing material in a retreating fashion, starting at the tree, and working away from the tree.
- Existing hard surfaces should be retained where practicable to act as ground protection from vehicles during site works. These can then be removed near the end of the project as required.
- No stockpiling of debris, soil, or any other material within any TPZ.

### Site preparation/earthworks

The preparation of a site for a new development requires a range of activities such as levelling, grade changing and trenching for footings and underground services. These activities usually require heavy machinery to move about on the site and can potentially cause harm to the tree, surrounding soils, and its root system.

- Earthworks at this site include filling of the existing dam (by others) and localized fill in existing drainage channels.
- Localized fill may be required to establish new levels and or landscaping purposed.
- Any new fill in these areas within the TPZs should comprise sandy loam with >5% organic matter (or similar).
- Existing levels are to be retained within the TPZs, with maximum 50-100mm new soil depth following existing contours except where exiting drainage lines are to be filled.
- All earthworks and trenching must stay outside of the TPZ unless approved by council and project arborist.
- Any approved earthworks within the TPZ must be carried out with caution under the supervision of the project arborist.
- No grade changes (cut or fill) within any TPZ without approval.
- Excavation machinery should stand in a position away from the TPZ to avoid soil compaction and conflict with the trunk and branches.

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- No stockpiling of soil within any TPZ.
- Fill material within any TPZ must use coarse, single graded materials with no fines.
- No continuous trenching for underground services within the TPZ without approval.

### Underground services

Several underground services are required to service the site. These should be routed outside of the TPZ areas. If underground services must pass through any TPZ, they must utilise underground boring methods, hydro excavation or manually excavated trenches where tree roots are left intact and undamaged.

### Construction activities

Construction activities are wide and varied. These activities may include but are not limited to; laying of building foundations, building the frame of the structure, brickwork or other walling materials, scaffolding, roofing, interior fitting etc.

These activities require a range of different contractors accessing the site, receiving and storing materials, generating waste and spoil etc. If these activities occur unchecked within a tree protection zone, the cumulative effects of these activities may cause harm to the tree, surrounding soils and its root system.

The trees must be well protected with fencing and other suitable ground protection during all phases of the construction process. Areas for parking, storage, waste disposal, mixing and wash out areas must be clearly defined, well away from the tree protection zone.

### Paving

Paving works often require excavation works, soil compaction and the installation of impervious surfaces. These can all have an adverse impact on the soil and the trees root system which can adversely affect tree health.

Any paving works at the site within any TPZ must be kept to a minimum, must utilize a no dig method, use permeable subbase preparations and permeable paving materials.

### Landscaping

There are a range of landscaping activities that may cause harm to the soil and roots of the tree. These include but are not limited to; grade changes up or down, soil compaction from heavy machinery and stockpiling of materials, damage to tree trunks and branches from machinery, soil contamination from improper chemical use, root cutting from trenching activities for underground services (power and irrigation) and retaining walls, root damage from soil cultivation and planting and from paving activities. This can have an adverse impact on the long-term health of a tree. The following guidelines apply to landscaping around this mature tree.

- TPZ fencing can be removed to facilitate final soft landscaping.
- The landscape design should provide the mature trees with suitable growing conditions.
- Landscaping activities must avoid disturbance to the root system.
- Existing levels are to be retained within the TPZ with maximum 50-100mm new soil depth following existing contours except where exiting drainage lines are to be filled.
- Paving works should be kept to a minimum within the TPZ.



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- The root zone of the trees should have a 75-100mm layer mulch applied.
- Cultivation of the area under the trees should be kept to a minimum and undertaken with hand tools.

### Fencing

Fencing works on the boundaries of the property within the TPZ must not use continuous trenching or excavation, as would be the case for a masonry wall, concrete plinth, retaining wall or other similar fence construction. It is recommended that boundary fencing at the site use lightweight panel fencing on a post and rail support system with concrete pads to support the posts.

### Pruning

The following pruning is recommended to improve tree appearance, provide suitable clearance for the proposed structure and site access and to mitigate any risk issues that may be present in the tree. Tree pruning works should occur prior to development activities commencing according to the pruning specifications below.

- All pruning must conform to the Australian Standard AS 4373 – 2007 *Pruning of Amenity Trees*.
- All pruning should be carried out or supervised by level 3 qualified and experienced arborists (or higher).
- Pruning must not be carried out by building contractors.
- The following pruning is recommended for **tree 1**.
  - Crown lifting on the southern side of the tree over paved areas.
  - Remove dead branches throughout the crown over 40mm in diameter. Dead branches over 100mm in diameter should be retained in the crown for their habitat value but shortened to reduce the risk of failure.
- The following pruning is recommended for **tree 40**.
  - Minor crown lifting on the northern side of the tree over proposed landscape tiering.
  - Crown lifting on southern side to provide vehicle clearances for new service road.
  - Remove dead branches throughout the crown over 40mm in diameter.
- This pruning should occur prior to development activities commencing.
- This tree should be assessed by a qualified arborist every 2-3 years to determine future management requirements.

This pruning is considered maintenance pruning and development approval may not be required. Council should be notified of such pruning to ensure they are satisfied that it is acceptable.

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### Site monitoring and certification

The project arborist should be engaged to brief the project manager about tree protection requirements, undertake inspections and provide certification at the following stages.

- a. Establishment of tree protection zones.
- b. Demolition stage.
- c. Site preparation and earthworks stage.
- d. Installation of underground services.
- e. Pre-construction stage.
- f. Construction stage (several visits may be required).
- g. Post construction stage.
- h. Landscaping stage.

### Fines

Regulated and/or significant trees cannot be removed or damaged without development approval. Failure to adequately protect these trees may constitute a tree damaging activity<sup>P</sup>, which can attract fines of up to \$120,000.

If all these strategies to minimise the impacts on the trees in the tree protection plan are observed, there will be a minimal impact on their long-term health.

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### Conclusion

On the basis of my observations and discussion, I summarise my conclusions as follows:

- Two trees were assessed within the development site.
- Both trees qualify as a significant tree.
- Both trees possess attributes worthy of preservation based on their locally indigenous status.
- Both trees are open grown trees with good health and structure.
- A TPZ and SRZ were calculated for each tree.
- There is a major encroachment by development activities for both trees.
- After considering a range of factors under AS 4970-2009, and with the relocation of the access track outside the TPZ of tree 40, the proposed works are unlikely to impact on the long-term health or stability of the trees.
- A range of tree protection measures will be required during the construction phase at the site.

As the tree qualify as significant trees, an application must be made to your local council to approve this development in relation to them (including tree pruning and/or removals). While I believe the recommendations made above are the most appropriate to minimise the impacts on the tree, Council may take an alternative point of view and refuse consent. Development activities cannot occur until appropriate planning approvals have been granted from your local Council.

If you have any further queries regarding issues raised in this report, please feel free to contact me.

Yours sincerely



Dr. Martin Ely  
B Arch Dip Hort (Arb)  
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Registered Landscape Architect

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I have based this report on my education, experience, ongoing training, site observations and the information provided to me. I have 25 years' experience in the field of landscape architecture and eight years in the field of arboriculture. A summary of my qualifications includes:

- Diploma (Level V) of Horticulture (Arboriculture) (2014)
- Bachelor of Architecture, University of Adelaide 1991.
- PhD, School of Earth and Environmental Sciences, University of Adelaide 2010. *'Integrating Trees into the Design of the City: Developing More Sustainable Practices for Planting Street Trees in Australian Cities'*.
- Member of Arboriculture Australia.
- Member Australian Institute of Landscape Architects (AILA).
- Registered Landscape Architect (No 1419).

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### Endnotes

<sup>a</sup> Tree and risk assessments can be conducted at different levels and may employ various methods and tools. The level of assessment applied should be appropriate for the circumstances.

#### Level 1 - Limited visual assessment.

- A visual assessment from a specified perspective, near specified targets.
- The aim is to identify obvious defects or specified conditions.
- Typically identifies trees with imminent or probable likelihood of failure.
- This is the fastest and least thorough form of assessment intended for larger populations of trees.
- This can be carried out as a walkover, drive-by or fly-over inspection.

#### Level 2 - Standard assessment.

- A level 2 assessment is a detailed ground based visual tree inspection of a tree and its surroundings.
- The use of simple tools (mallet, binoculars, probes, spades), may be required.
- In some instances only limited information may be gained on specific internal, below ground or upper crown factors.
- For the majority of tree assessments the standard assessment provides adequate information to guide tree management.

#### Level 3 - Advanced assessment.

- A level 3 assessment is performed to provide detailed information about specific tree parts, defects, targets or site conditions.
- This assessment is usually conducted after a standard assessment has undertaken if additional information is required and with the approval of the client.
- Specialised equipment is often required for advanced assessment.
- The assessments are generally more time intensive and expensive.
- Advanced assessment techniques may include; aerial inspection, detailed target analysis, detailed site evaluation, decay testing, health evaluation, root inspection, tree stability monitoring and load testing.

NOTE: If tree condition cannot be adequately assessed at the specified level a higher level of assessment may be required.

<sup>b</sup> A visual tree assessment (VTA) is an analytical process undertaken by a qualified Arborist or other suitably trained person to determine the structural soundness of a tree. Biological and mechanical components of trees are assessed, including tree health; presence of pests and diseases, die-back, foliage density and distribution, and vitality; growth rate, wound wood development, capacity to respond to improved conditions. Mechanical components include trunk lean, crown bias, bark inclusions, wounds, hollowing, trunk bulges, ribs, cracks, branch form, failure history, pruning history, condition of trunk flare, and other existing defects. All these factors are examined to determine if internal weaknesses may be present. If abnormalities are detected, we may conduct further investigations using a range of tools. These include sounding mallets, long thin drill bits, Resistograph, Sonic Tomograph, Air spade and other tools as required. Ref: Mattheck, Claus & Breloer, Helga. *The Body Language of Trees. A Handbook for Failure Analysis*. Department of the Environment. London 1997.

<sup>c</sup> Boland, D., Brooker, M., Chippendale, G., Hall, N., Hyland, B., Johnston, R., Kleinig, D., McDonald, M. and Turner, J. *Forest Trees of Australia - Fifth Edition* CSIRO Publishing 2006 and Centre for Plant Biodiversity Research (2006)- Contributors: AV Slee, MIH Brooker, SM Duffy, JG West *EUCLID – Eucalypts of Australia* Interactive CD ROM. Nicolle, D (1997). *Eucalypts of South Australia*.

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<sup>d</sup> **Significant tree** means (as defined in Section 4 Interpretation (1) of the *Development Act 1993*)

(a) a tree declared to be a significant tree, or a tree within a stand of trees declared to be significant trees, by a Development Plan (whether or not the tree is also declared to be a regulated tree, or also falls within a class of trees declared to be regulated trees, by the regulations); or

(b) a tree declared to be a regulated tree by the regulations, or a tree within a class of trees declared to be regulated trees by the regulations that, by virtue of the application of prescribed criteria, is to be taken to be a significant tree for the purposes of this Act;

**6A—Regulated and significant trees (as defined in the *Development Regulations 2008*)**

- (1) Subject to this regulation, the following are declared to constitute classes of regulated trees for the purposes of paragraph (a) of the definition of **regulated tree** in section 4(1) of the Act, namely trees within the designated area under subregulation (3) that have a trunk with a circumference of 2 metres or more or, in the case of trees with multiple trunks, that have trunks with a total circumference of 2 metres or more and an average circumference of 625 millimetres or more, measured at a point 1 metre above natural ground level.
- (2) Subject to this regulation—
  - (a) a prescribed criterion for the purposes of paragraph (b) of the definition of **significant tree** in section 4(1) of the Act is that a regulated tree under subregulation (1) has a trunk with a circumference of 3 metres or more or, in the case of a tree with multiple trunks, has trunks with a total circumference of 3 metres or more and an average circumference of 625 millimetres or more, measured at a point 1 metre above natural ground level; and
  - (b) regulated trees under subregulation (1) that are within the prescribed criterion under paragraph (a) are to be taken to be significant trees for the purposes of the Act.

<sup>e</sup> Diameter at Breast Height (DBH) is the diameter of the trunk measured at breast height. This measurement is taken at 1.40m above ground level. This is the nominal point measured to determine Tree Protection Zones using the Australia Standard method AS 4970-2009 *Protection of trees on development sites*. When calculating a DBH for a tree with multiple trunks, the combined DBH do not accurately represent the root volume or area and the TPZ becomes exaggerated. Combining DBH in the following formula results in a revised total DBH that better represents the total stem cross sectional area as if it were 1 stem. From this a more proportional TPZ can then be calculated.

$$\text{Combined DBH} = \sqrt{A^2 + B^2 + C^2 \text{ etc.}}$$

(A, B and C etc. are the DBH of each individual stem)

<sup>f</sup> **Significant tree** means (as defined in Section 4 Interpretation (1) of the *Development (Regulated Trees) Amendment Act 2009*)

(a) a tree declared to be a significant tree, or a tree within a stand of trees declared to be significant trees, by a Development Plan (whether or not the tree is also declared to be a regulated tree, or also falls within a class of trees declared to be regulated trees, by the regulations); or

(b) a tree declared to be a regulated tree by the regulations, or a tree within a class of trees declared to be regulated trees by the regulations that, by virtue of the application of prescribed criteria, is to be taken to be a significant tree for the purposes of this Act;

**6A—Regulated and significant trees (as defined in the *Development (Regulated Trees) Variation Regulations 2011*)**

- (1) Subject to this regulation, the following are declared to constitute classes of regulated trees for the purposes of paragraph (a) of the definition of **regulated tree** in section 4(1) of the Act, namely trees within the designated area under subregulation (3) that have a trunk with a circumference of 2 metres or more or, in the case of trees with multiple trunks, that have trunks with a total circumference of 2 metres or more and an average circumference of 625 millimetres or more, measured at a point 1 metre above natural ground level.



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- (2) Subject to this regulation—
- (a) a prescribed criterion for the purposes of paragraph (b) of the definition of **significant tree** in section 4(1) of the Act is that a regulated tree under subregulation (1) has a trunk with a circumference of 3 metres or more or, in the case of a tree with multiple trunks, has trunks with a total circumference of 3 metres or more and an average circumference of 625 millimetres or more, measured at a point 1 metre above natural ground level; and
  - (b) regulated trees under subregulation (1) that are within the prescribed criterion under paragraph (a) are to be taken to be significant trees for the purposes of the Act.

<sup>9</sup> Trees and shrubs are proven to provide a range of social, environmental, economic and psychological benefits that improve the pleasantness of a local area that positively affect human wellbeing. The amenity value of trees include gaseous and particulate pollution mitigation, amelioration of climatic extremes (shading, cooling and wind speed reduction), mitigation of heat islands, attenuation of noise pollution, store and sequester carbon (reducing greenhouse gasses), improve air quality, improve water quality, stormwater mitigation and erosion control, visual screening of undesirable views, aesthetically enhance local areas, aesthetically enhance urban structures, improve property values, reduce urban glare, improve human health, wellbeing and relaxation, reduce stress and anxiety, reduce crime and improve healing rates of patients. In addition, locally indigenous plants provide further benefits including; provide important habitat for local fauna, maintain biodiversity in the local environment, provide wildlife corridor links with areas of native and indigenous vegetation.

<sup>h</sup> Important habitat and biodiversity value is considered to be present when the tree is indigenous to the local area and provides an opportunity for native animals to perch, nest, breed, feed and shelter in the tree. Animals that may use the tree include native birds, mammals, insects and other invertebrates, lizards and other reptiles. Australian native trees will also provide some of these benefits, but are not considered to be as important as locally indigenous trees. Exotic trees can also provide some of these benefits, but are considered to provide limited habitat and biodiversity value.

<sup>i</sup> This opinion may need to be verified by a qualified landscape architect.

<sup>j</sup> This opinion may need to be verified by a qualified landscape architect.

<sup>k</sup> The Tree Protection Zone (TPZ) radius is calculated by multiplying the trunk diameter at 1.4m by a factor of 12. The radius is measured from the centre of the trunk at ground level. A TPZ should not be less than 2m nor greater than 15m (except where crown protection is required). This method is outlined in the Australian Standard AS 4970 – 2009 *Protection of trees on development sites*.

<sup>l</sup> TPZ area =  $\pi r^2$

<sup>m</sup> The Structural Root Zone (SRZ) is the area around the base of a tree required for the tree's stability in the ground. The woody root growth and soil cohesion in this area are necessary to hold a tree upright. The SRZ is nominally circular with the trunk at its centre and is expressed as a radius in metres. This zone considers the tree's structural stability only, not the root zone required for the tree's vigour and long-term viability, which will usually be a much larger area. There are many factors that affect the size of the SRZ (e.g. tree height, crown area, soil type, soil moisture). The SRZ may also be influenced by natural or built structures, such as rocks and footings. An indicative SRZ radius can be determined from the following formula. Root investigations may provide more information on the extent of these roots. From AS 4970-2009 *Protection of Trees on Development Sites*.

$$\text{SRZ radius} = (D \times 50)^{0.42} \times 0.64$$

(D= trunk diameter in metres when measured above the root buttress)

Any work within the SRZ should be avoided. Where no alternative exists, the work must be supervised by a qualified Arborist and approved by Local Council. Tree removal may be required depending upon the size and number of roots affected.

<sup>n</sup> It may be possible to encroach into or make variations to the standard Tree Protection Zone (TPZ). Encroachment includes excavation, compacted fill and machine trenching. **Minor encroachment** - If the encroachment is less than 10% of the TPZ area and is outside the Structural Root Zone (SRZ), detailed root investigations should not be required. The area lost to this encroachment should be compensated for elsewhere

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and contiguous with the TPZ. Variations must be made by the project arborist considering relevant factors listed on section 3.3.4 of the standard. **Major encroachment** - If the proposed encroachment is greater than 10% of the TPZ area or inside the SRZ, the project arborist must demonstrate that the tree would remain viable. The area lost to this encroachment should be compensated for elsewhere and contiguous with the TPZ. This may require root investigation by non-destructive methods and consideration of relevant factors including: location and distribution of roots, the potential number and size of root loss, tree species and tolerance to root disturbance, age, vigour and size of tree, lean and stability of the tree, soil characteristics, volume, topography and drainage, the presence of existing or past structures or obstacles and design factors. From Australian Standard AS 4970 – 2009 *Protection of trees on development sites*, section 3.3.

<sup>o</sup> Dimorphic refers to two or dual root systems of many species of trees. The surface or lateral root system utilizes shallow soil layers to source moisture and nutrients and to aid in tree stability. A vertical or sinker root system develops from the lateral roots close to the trunk and grows vertically down to the water table or its capillary fringe, providing a secure moisture source in times of drought. These roots also provide additional anchorage to aid tree stability. Reference: *Water and Salinity issues in agro-forestry* No. 5. RIRDC Publication 99/37 'The Way Trees Use Water' 1999. Paper No. 4. J.H. Knight. 'Root distribution and water uptake patterns in Eucalypts and other species'.

<sup>p</sup> **tree-damaging activity** means

- (a) the killing or destruction of a tree; or
- (b) the removal of a tree; or
- (c) the severing of branches, limbs, stems or trunk of a tree; or
- (d) the ringbarking, topping or lopping of a tree; or
- (e) any other substantial damage to a tree,

and includes any other act or activity that causes any of the foregoing to occur but does not include maintenance pruning that is not likely to affect adversely the general health and appearance of a tree or that is excluded by regulation from the ambit of this definition;

(From section 4 - Interpretation of the *Development Act 2003*)

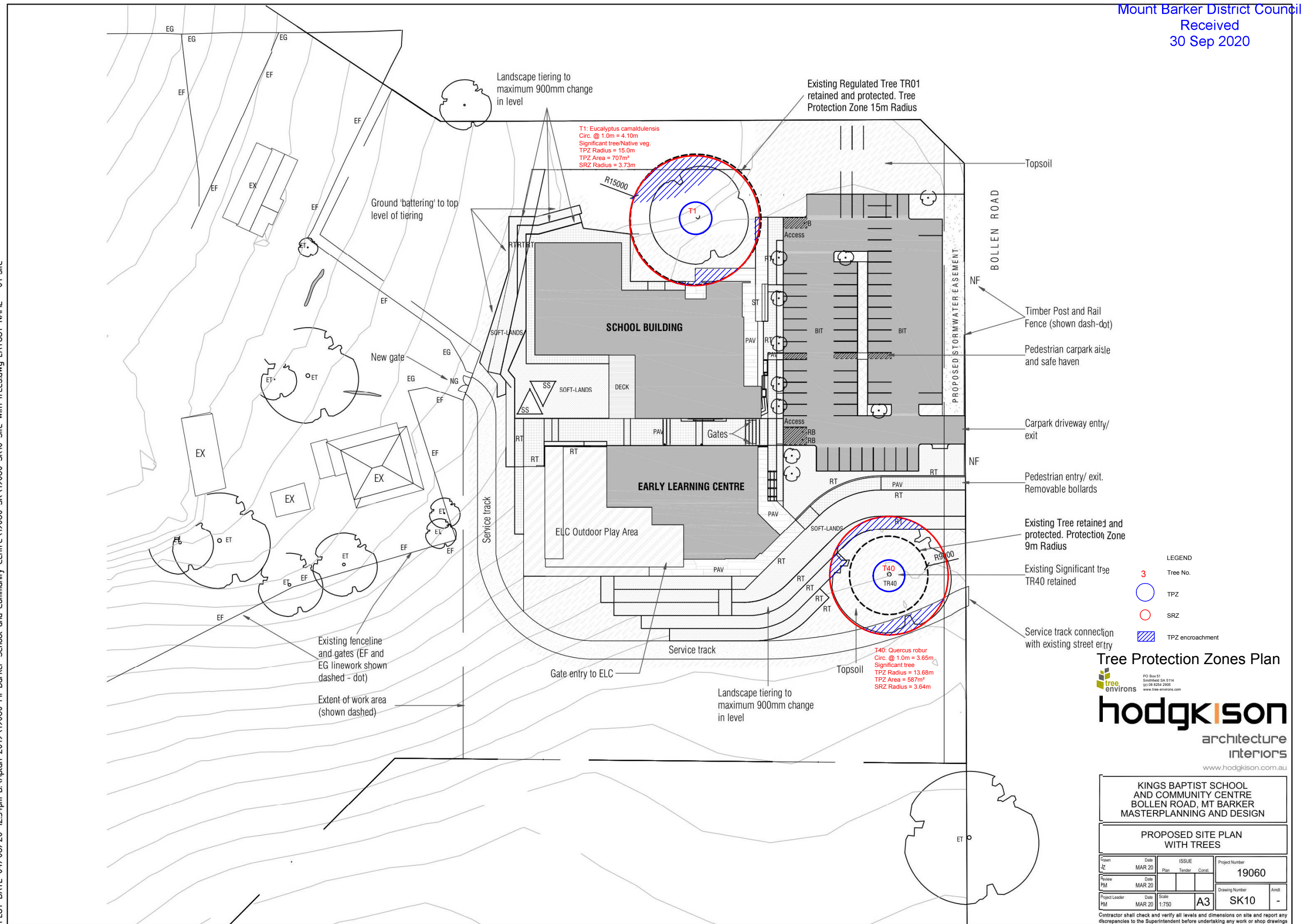
*Development Regulations 2008*

Section 6A (8)

For the purposes of the definition of **tree damaging activity** in section 4(1) of the Act, pruning—

- (a) that does not remove more than 30% of the crown of the tree; and
- (b) that is required to remove—
  - (i) dead or diseased wood; or
  - (ii) branches that pose a material risk to a building; or
  - (iii) branches to a tree that is located in an area frequently used by people and the branches pose a material risk to such people, is excluded from the ambit of that definition.

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for a better  
*future /***

HODGKISON

**STORMWATER  
MANAGEMENT PLAN**

KINGS BAPTIST  
GRAMMAR SCHOOL

wsp

**AMENDED**

DECEMBER 2020  
PUBLIC

# Question today *Imagine tomorrow* Create for the future

## STORMWATER MANAGEMENT PLAN KINGS BAPTIST GRAMMAR SCHOOL




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REV	DATE	DETAILS
P1	20.3.2020	Concept stormwater management plan – Preliminary Planning Approval
P2	07.04.2020	Concept stormwater management plan – Preliminary Planning Approval
P3	14.09.2020	Concept stormwater management plan – Preliminary Planning Approval
C1	14.12.2020	Stormwater Management Plan – Construction Approval

	NAME	DATE	SIGNATURE
Prepared by:	Matt George	14.12.2020	
Reviewed by:	Tyran Bell	17.12.2020	
Approved by:	Tyran Bell	17.12.2020	

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## GLOSSARY

Annual Exceedance Probability (AEP)	The Probability that a given rainfall quantity accumulated over a given duration will be exceeded in one year, expressed as a percentage, which may be an intensity (mm/h) or a depth of Rainfall
Average Recurrence Interval (ARI)	The average or expected interval between events of a given rainfall intensity being exceeded.
On site water detention (OSD)	A device for the temporary storage of stormwater, above or below ground, to reduce the peak flow to the stormwater drainage network.
Stormwater (SW)	Naturally occurring water that results from the rainfall on or around the site, or water flowing onto the site.
Supplementary Areas	An area where rain initially falls on an impervious surface, but is conveyed along the surface over a pervious area before entering the stormwater system



## ABBREVIATIONS

AHD	Australian Height Datum
AEP	Annual Exceedance Probability
ARI	Average Recurrence Interval
ARR	Australian Rainfall and Runoff
BOM	Bureau of Meteorology
EPA	Environmental Protection Agency
RCP	Reinforced concrete Pipe
OSD	On site stormwater detention
SW	Stormwater
SWMP	Storm Water Management Plan
WSP	WSP Global Inc.
WSUD	Water Sensitive Urban design
DCMB	District Council of Mount Barker
HOD	Hodgkinson Architects
KBGS	Kings Baptist Grammar School
MBS	Mount Barker School

# 1 PROJECT BACKGROUND

## 1.1 INTRODUCTION

WSP have developed this Stormwater management plan for Hodgkison (HOD) on behalf of Kings Baptist Grammar School (KBGS) to be issued to the District Council of Mount Barker (DCMB) as part of the development approval process. The proposed development is for a new School consisting of two buildings, car park and general site earthworks. The site is located on a parcel of land to the western side of Mount Barker located on Bollen Road (Figure 1).



Figure 1 - Site Layout and location

This report presents a stormwater strategy for the proposed development to collect, convey, treat and discharge the stormwater for the development site such that all DCMB and other regulatory requirements are met.

Broadly the requirements for the site include:

- Ensuring the development will not adversely affect the existing stormwater infrastructure and overland flow paths
- Ensuring discharge from the site into DCMB networks is not increased, such that it will cause problems to downstream stormwater networks
- Ensuring the development and surrounding properties will not be at a risk of flooding post development
- Incorporating best practice stormwater water quality measures to reduce the impact of the contaminated runoff by treating the captured runoff.

To do this the report will;

- 1 Obtain and review existing data relating to the proposed development and surrounds, including:
  - a Existing council stormwater infrastructure
  - b Existing council flood studies
  - c Existing stormwater management plans
  - d Proposed future developments by councils and/or other developers
- 2 Analysis pre-development and post development stormwater management by:
  - a Determining pre-development and post development catchments
  - b Determining pre-development and post development flow paths both minor and major

- c Completing site plans, showing proposed structure levels, existing levels and flow paths
- d Using the hydraulic software DRAINS to determine;
  - i site stormwater peak flows
  - ii point of discharge peak flows
  - iii identify the need for site detention
- e Using software program MUSIC to determine that water quality targets are in line with Water Sensitive Urban guidelines, the water quality objectives are as follows;
  - i 80% Total Suspended Solids Removed
  - ii 60% Total Phosphorus Removed
  - iii 45% Total Nitrogen Removed
  - iv 90% Gross Pollutants (>5mm) Removed.

## 2 EXISTING DATA REVIEW

To analyse any effect of the proposed development on the existing stormwater management network, first the existing site conditions are to be analysed. WSP conducted a desktop study which included site inspections, reviews of online documents available of the DCMB website, discussions with council and review of any publicly available or provided documentation regarding future works. An overview of the key finding is provided below.

---

### 2.1 SITE INSPECTION

The existing site is a rural property; the land is covered with maintained grass and a few old farm buildings. The land slopes steeply from the north-west side to the south west of the lot. There is an existing dam located to the north east of the lot and a gully running through the eastern side of the lot approximately 40m offset from Bollen Road, which conveys stormwater from both the lot, the west of the lot and from the north of the lot through the property to the point of discharge.



Figure 2 - Proposed development site

---

### 2.2 POINT OF DISCHARGE

The stormwater discharges from the development site into the DCMB stormwater network via two locations, the first is a 300mm diameter reinforced concrete pipe (RCP) located to the western side of the lot which flows across Bollen road, the second point is via sheet flow off the southern boundary of the site directly into the DCMB drainage easement / Western Flat Creek.



Figure 3 – 300mm diameter RCP - Point of discharge



Figure 4 – Looking South to Western Flat Creek



Figure 5 - Existing infrastructure surrounding proposed site

---

## 2.3 FLOOD MAPPING

The DCMB website provides access to several flood studies completed in the area, which can be found at the website link below:

<https://www.mountbarker.sa.gov.au/infrastructure/water/floodmappings>



The probable maximum flood inundation map (see figure below) shows the expected flooding to the south of the site at Western Flat Creek, the proposed development is located outside of this area of flooding. This full flood study can be accessed at the following link:

[https://www.mountbarker.sa.gov.au/data/assets/pdf\\_file/0018/117243/Mount\\_Barker\\_Flood\\_Mapping\\_Study\\_-\\_Flood\\_Inundation\\_Maps.pdf](https://www.mountbarker.sa.gov.au/data/assets/pdf_file/0018/117243/Mount_Barker_Flood_Mapping_Study_-_Flood_Inundation_Maps.pdf)

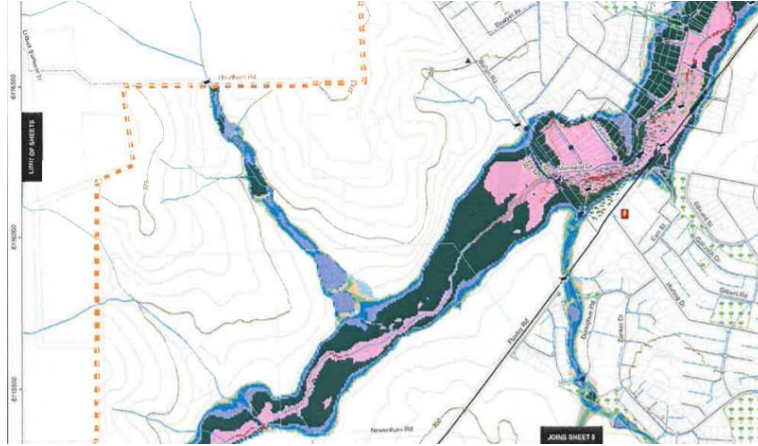


Figure 6 - Probable maximum flood map

---

## 2.4 FUTURE WORKS

### 2.4.1 COUNCIL

In 2016 the DCMB completed a stormwater management plan of Mt Barker, Totness and Littlehampton, the full plan can be found at the following link:

<https://www.mountbarker.sa.gov.au/infrastructure/water/stormwatermanagementplan>

The report recommended works to Western Flat Creek, including detention basin and bunds along Bollen road, the report advises that the 100 year ARI flood level, should these works be undertaken will be 326.5mAHD. Council confirmed that these works are most likely to go ahead, however could not provide a timeframe for the works.



Figure 7 - Southfront report appendix G - recommended works to Western Creek Flat

## 2.4.2 PRIVATE DEVELOPMENT

In 2018, WGA were commissioned to complete a stormwater management plan looking at the Newenham Development School Site. In the report, upstream future developments were identified, refer figure below. As part of these potential future developments it was proposed that a 5m wide drainage easement be provide through the proposed school development to allow upstream stormwater to be conveyance through the School site.

It has been confirmed that a 5m wide easement has been provided by KBGS to MBDC along Bollen road to allow for this conveyance of stormwater.

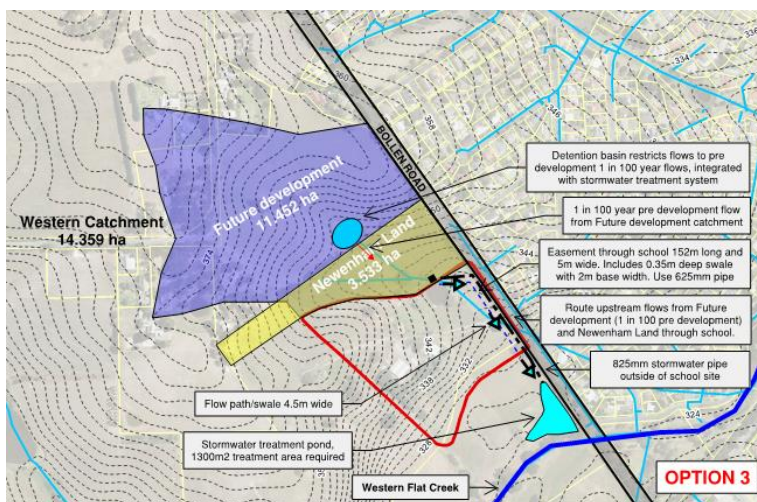


Figure 8 - WGR report showing upstream developments

In 2019 WGA completed a road design to provide access to the proposed Newnham development to the north of the proposed KBGS site. The road is proposed to be constructed immediately to the north of the school development site and passes over the existing dam.

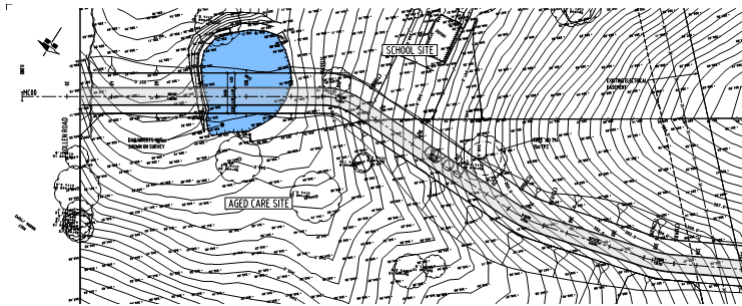


Figure 9 - WGA plans (2019) showing proposed road access to Newnham Development

The proposed future works from both MBDC and private development will need to be considered and coordinated as part of the new school development.

---

## 2.5 COUNCIL DISCUSSIONS

DCMB provides detailed requirements for stormwater drainage for all proposed developments in its online document 'Design, Construction and Development of Infrastructure Assets'. Section 4 of this document covers the stormwater drainage design requirements.

As well as the online documents provided by the DCMB website, two meetings have been held with council to discuss the proposed development site to confirm the stormwater design requirements. The meetings have focussed on how the proposed development will tie in with surrounding / upstream developments and proposed council works, a summary of meeting discussions relating to this development proposal is as follows:

- Due to the large detention basin that the council is proposing to construct at Western Flat Creek, the detention requirements for the proposed development site have been reduced, the proposed development is to provide detention large enough to hold the equivalent of a pre-development 100% AEP (1EY) storm event
- A 5m easement has been provided for future upstream developments / DCMB for the full length of the site along Bollen Road, at this stage the DCMB advised the proposed development can assume this will become a council drainage easement and stormwater from site can be discharged into this easement
- Future upstream developments will have restrictions on the peak flows through this easement, major flows are contained within the drainage easement and do not adversely affect the school
- WSUD techniques such as a grassed / reeds in open swales is the preferred method by council to meet water quality requirements
- DCMB confirmed building levels were not required to be set to surrounding road levels but clear of overland flow paths

### 3 ASSUMPTIONS MADE

WSP have made the following assumptions when looking at the stormwater management of the proposed development site:

- The proposed school development will be required to convey the upstream pre-development flows through the site
- All post development stormwater flows, including major storm events from the upstream developments will be conveyed through the proposed new development to Western flat creek via the 5m easement provided along Bollen Road
- Based on the WGA stormwater management plan, the Northern catchment area was assumed to be 14.359 Ha
- The peak stormwater flows at the two discharge locations have been determined for pre and post developments in line with the latest Australian Rainfall and Runoff Guidelines (ARR 2019) using software program Drains, adopting the Horton / ILSAX method.

## 4 ASSESSMENT / OBSERVATIONS / FINDINGS

### 4.1 PRE-DEVELOPMENT ANALYSIS

#### 4.1.1 SITE PLAN

A sketch of the pre-development site conditions showing catchments and flow paths is shown below.

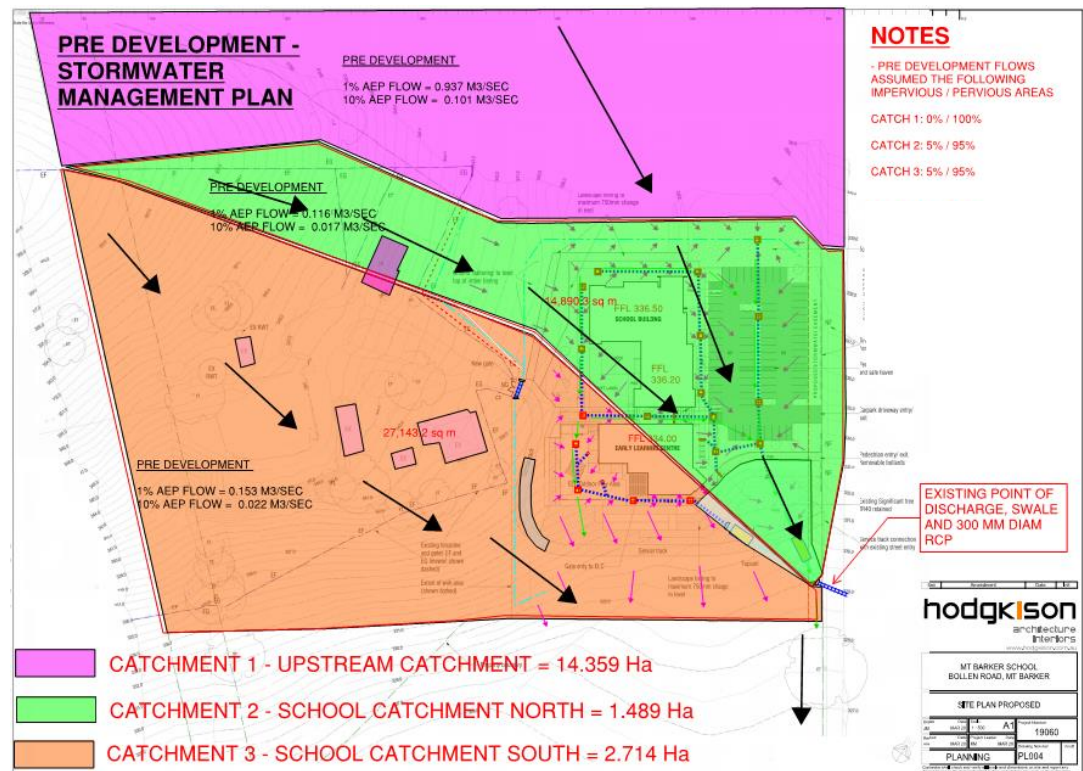


Figure 10 – pre-development site catchment plan (site layout shown indicative only, refer architect plans for current)

#### 4.1.2 CATCHMENTS

The pre-development site can be broken into three distinct catchments:

##### 4.1.2.1 CATCHMENT 1

Is 14.359 Ha (From WGA stormwater report) and is located to the north of the proposed development site. This catchment is undeveloped and consists of grassed land. Stormwater from this catchment is conveyed across the development site in a gully that runs through the north-eastern corner of the site, a man-made swale captures the flow from this gully and directs the flow into a 300mm diameter pipe, which connects into the DCMB trunk stormwater network (point of discharge), any overflow will sheet flow directly to Western Flat Creek. For peak flow calculations, the catchment was assumed to be 100% pervious land. As the land is largely undeveloped and grassed there are no water quality treatments in this catchment.



Table 1 - Pre-development Catchment 1

CATCHMENT	AREA (HA)	% PERVIOUS	% IMPERVIOUS
One	14.359	100	0

#### 4.1.2.2 CATCHMENT 2

Is 1.489Ha and consists of the northern half of the development site, this catchment is generally undeveloped, with a few farm buildings scattered across the catchment. There is a dam to the northern boundary of the site that appears to still be in use, however it is unclear whether the dam is used for stormwater detention or most likely water retention for reuse on the farm. The stormwater is conveyed to the 300mm diameter RCP, point of discharge via sheet flow and a manmade swale that captures the flow. For peak flow calculations, the catchment was assumed to be 95% pervious land. As the land is largely undeveloped and grassed there are no water quality treatments in this catchment.



Figure 11 - Existing condition of catchment 2

Table 2 - Pre-development Catchment 2

CATCHMENT	AREA (HA)	% PERVIOUS	% IMPERVIOUS
Two	1.489	95	5

#### 4.1.2.3 CATCHMENT 3

Is 2.714 Ha, and consists of the southern half of the development site, this catchment is generally undeveloped, with a few farm buildings scattered across the catchment. The stormwater is conveyed via sheet flow directly to Western Flat Creek. For peak flow calculations, the catchment was assumed to be 95% pervious land. As the land is largely undeveloped and grassed there are no water quality treatments in this catchment.



Figure 12 - Existing condition of catchment 3

Table 3 – Pre-development catchment 3

CATCHMENT	AREA (HA)	% PERVIOUS	% IMPERVIOUS
Three	2.714	95	5

#### 4.1.3 PEAK FLOW RESULTS – DRAINS MODELLING

Peak flows determined at each of the discharge locations is show in the table below.

Table 4 - Summary of Peak flows at discharge locations

DISCHARGE LOCATION	AEP 1% PEAK FLOW (M3/SEC)	AEP 10% PEAK FLOW (M3/SEC)
One (300mm RCP pipe)	0.188	0.115
Two (sheet flow)	1.02	0.026
<b>TOTAL</b>	<b>1.208</b>	<b>0.141</b>

## 4.2 POST DEVELOPMENT - DETAIL DESIGN ANALYSIS

### 4.2.1 QUANTITY

#### 4.2.1.1 PLAN

The design drawings are provided in Appendix C. Some key considerations / assumptions of the detailed design are:

- Assumed the upstream 14Ha catchment is not developed and pre-development flow will be conveyed onto the school development site
- The pipe network has been checked and sized to allow future School upstream post development flows to be conveyed through this section of the school, IE if the School is expanded up the hill
- The provision of detention equal to the 1EY pre-development storm event was considered, noting there is negligible runoff generated in a 1EY storm event as the existing site is predominantly pervious. It is assumed the easement drain at the downstream detention basin will be sized to receive undetained flows from the school and therefore dedicated on-site detention in a small tank is not warranted for the school development.
- WSUD has been provided with the inclusion of swales, bio filtration swales and propriety Rocla CDS System (or similar).

#### 4.2.1.2 CATCHMENTS

A summary of the catchments is provided in the table below.

Table 5 - Summary of Design Catchments

CATCHMENT	AREA (M2)	AREA (HA)	PAVED	SUPPLEMENTARY	GRASSED
1	143590	14.359	0	0	100
2	20362	2.0362	0	10	90
3	1276	0.1276	80	0	20
4	622	0.0622	10	0	90
5	250	0.025	25	0	75
6	80	0.008	50	0	50
7	233	0.0233	10	0	90
8	1530	0.153	75	0	25
9	870	0.087	98	0	2
10	831	0.0831	98	0	2
11	318	0.0318	80	0	20
12	589	0.0589	70	0	30

13	217	0.0217	75	0	25
14	181	0.0181	100	0	0
15	486	0.0486	75	0	25
16	1084	0.1084	80	0	20
17	537	0.0537	100	0	0
18	423	0.0423	100	0	0
19	361	0.0361	100	0	0
20	242	0.0242	100	0	0
21	156	0.0156	50	0	50
22	5505	0.5505	0	0	100



Figure 13 – Overview of catchment plan

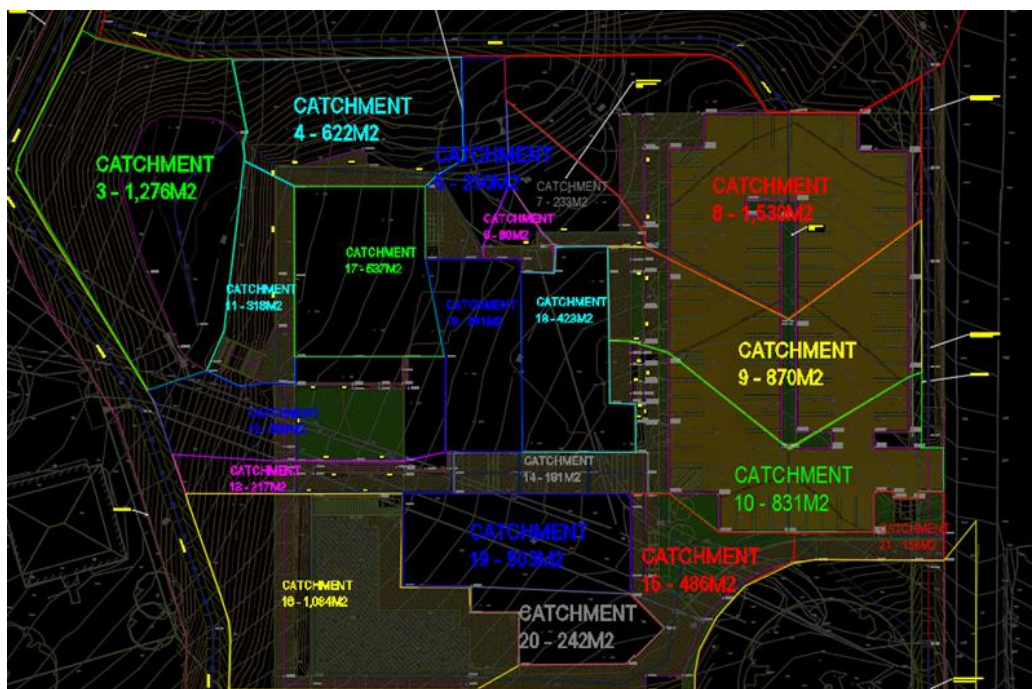


Figure 14 - Detailed Catchment plan

#### 4.2.1.3 DETENTION SIZING

In discussions with council it was agreed that due to the large detention basin located just downstream of the proposed development site, the requirement to maintain post development flows to the pre-development flows was not required. However, it was indicated that some detention may be required equal to the runoff volume of the 1EY storm event.

The 1EY storm event was modelled in Drains and it was determined there was 0m3 of run off from the pre-development site during this event, hence no detention was required for this stage of development



Figure 15 - 1EY Drains modelling



#### 4.2.1.4 PEAK FLOW RESULTS (DRAINS MODELLING)

Post development peak flows determined at each of the discharge locations is show in the table below. Refer Appendix A for Drains model and results.

Table 6 - Summary of Peak flows at discharge locations

DISCHARGE LOCATION	AEP 1% PEAK FLOW (M3/SEC)	AEP 10% PEAK FLOW (M3/SEC)
One (300mm RCP pipe)	0.239	0.193
Two	0.911	0.018
<b>TOTAL</b>	<b>1.15</b>	<b>0.211</b>

#### 4.2.2 QUALITY

The Mt Barker School stormwater design has implemented the following design items to meet the DCMB WSUD criteria. Refer figure below for Music model layout.

- Grassed Swales (Open Drains)
- Bio retention swales
- Proprietary gross pollutant traps, in this case the Rocla, CDS 0708 system (or similar)

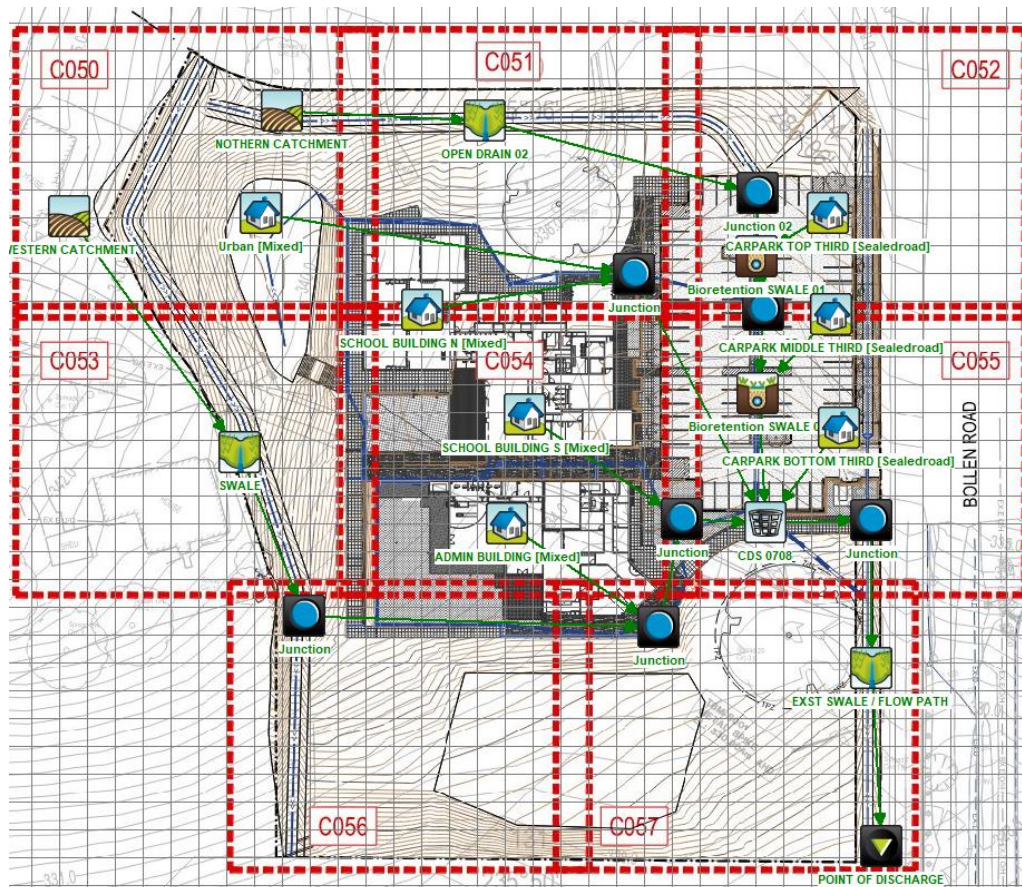


Figure 16 - MUSIC Model

Treatment Train Effectiveness - POINT OF DISCHARGE			
	Sources	Residual Load	% Reduction
Flow (ML/yr)	3.69	2.87	22.1
Total Suspended Solids (kg/yr)	897	55.6	93.8
Total Phosphorus (kg/yr)	1.83	0.416	77.3
Total Nitrogen (kg/yr)	11.6	5.85	49.6
Gross Pollutants (kg/yr)	161	0	100

Figure 17 - MUSIC Model Treatment train effectiveness

#### 4.2.3 WATER QUALITY RESULTS (MUSIC MODELLING)

Water quality reductions achieved for the site are shown in the table below.

Table 7 - MUSIC Results

	SOURCES	RESIDUAL LOAD	% REDUCTION	REQUIRED % REDUCTION
Flow (ML/yr)	3.69	2.87	22.1	
Total Suspended Solids (kg/yr)	897	55.6	93.8	80%
Total Phosphorus (kg/yr)	1.83	0.416	77.3	60%
Total Nitrogen (kg/yr)	11.6	5.85	49.6	45%
Gross Pollutants (kg/yr)	161	0	100	90%

Using the water quality design package MUSIC, it was shown that the proposed detailed design for stage one of the school development meets the required quality reduction targets as set out by the DCMB.

## 5 CONCLUSIONS

Key items to be concluded from this report include:

- The water quantity design results are in line with the required DCMB criteria
- The water quality design results for stage one are in line with the required DCMB criteria
- Any future development upstream of the school site will need to ensure runoff is conveyed around the school site within the future council drainage easement and the future easement drain is coordinate with the school design
- The proposed site development is located above the major storm event flood level

## 6 LIMITATIONS

This Report is provided by WSP Australia Pty Limited (WSP) for Hodgkison (Client) in response to specific instructions from the Client and in accordance with WSP's proposal dated 24/01/2020 and agreement with the Client dated 06/02/2020 (*Agreement*).

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### 6.1 PERMITTED PURPOSE

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---

### 6.2 QUALIFICATIONS AND ASSUMPTIONS

The services undertaken by WSP in preparing this Report were limited to those specifically detailed in the Report and are subject to the scope, qualifications, assumptions and limitations set out in the Report or otherwise communicated to the Client.

Except as otherwise stated in the Report and to the extent that statements, opinions, facts, conclusion and / or recommendations in the Report (*Conclusions*) are based in whole or in part on information provided by the Client and other parties identified in the report (*Information*), those Conclusions are based on assumptions by WSP of the reliability, adequacy, accuracy and completeness of the Information and have not been verified. WSP accepts no responsibility for the Information.

WSP has prepared the Report without regard to any special interest of any person other than the Client when undertaking the services described in the Agreement or in preparing the Report.

---

### 6.3 USE AND RELIANCE

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This Report can only be relied upon for the Permitted Purpose and may not be relied upon for any other purpose. The Report does not purport to recommend or induce a decision to make (or not make) any purchase, disposal, investment, divestment, financial commitment or otherwise. It is the responsibility of the Client to accept (if the Client so chooses) any Conclusions contained within the Report and implement them in an appropriate, suitable and timely manner.

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## 6.4 DISCLAIMER

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## BIBLIOGRAPHY

- DCMB online documentation 'Design, Construction and Development of Infrastructure Assets' Southfront Mt Barker, Totness & Littlehampton Stormwater Management Plan', report and drawings showing proposed council work to Western Flat Creek
- WGA (2016), Newenham Development School Site, Stormwater Management Plan, Doc 130822rp001 School Strategy Rev B

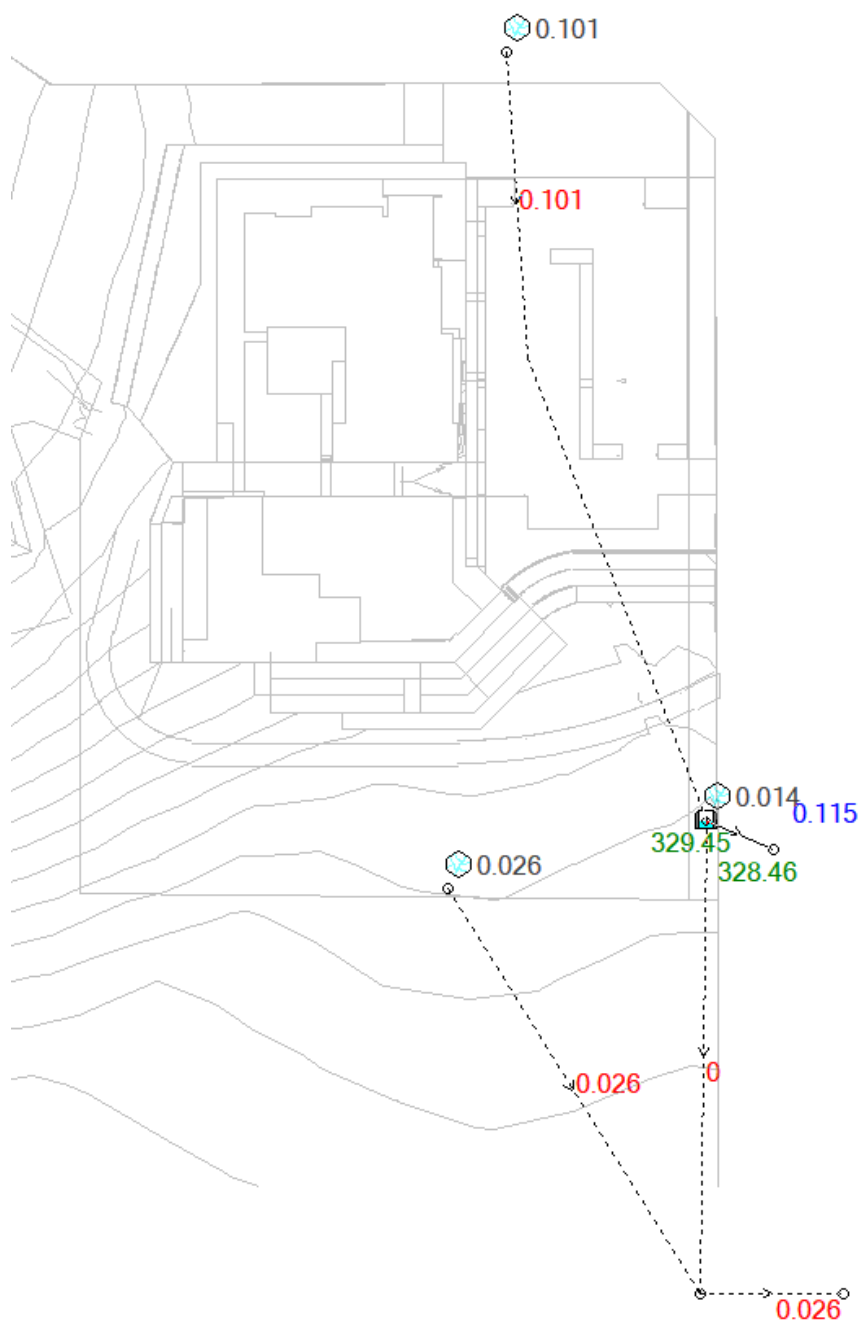
# APPENDIX A

## DRAINS OUTPUTS

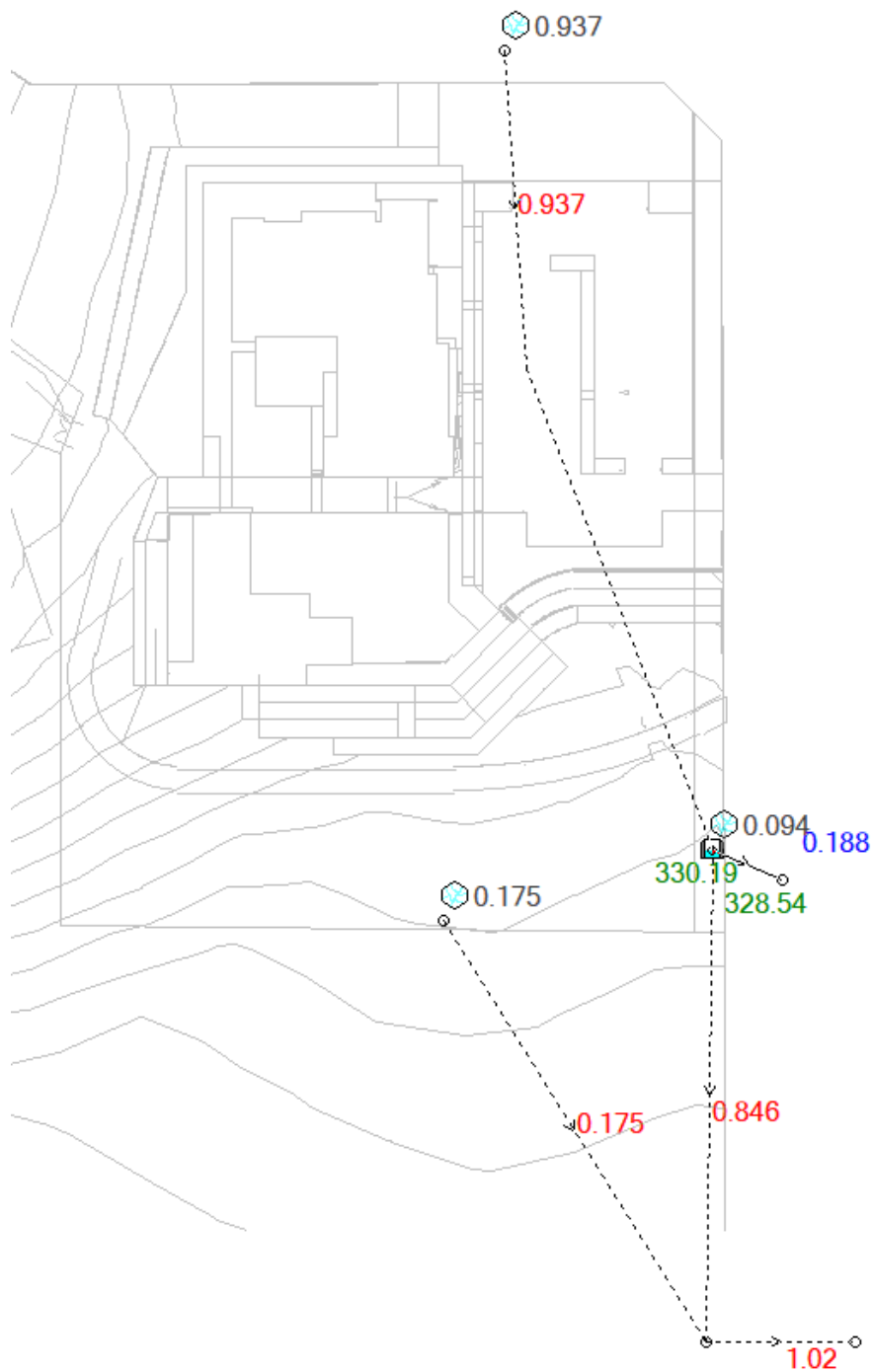


## A1 PRE-DEVELOPMENT

### MINOR 10% AEP RESULTS

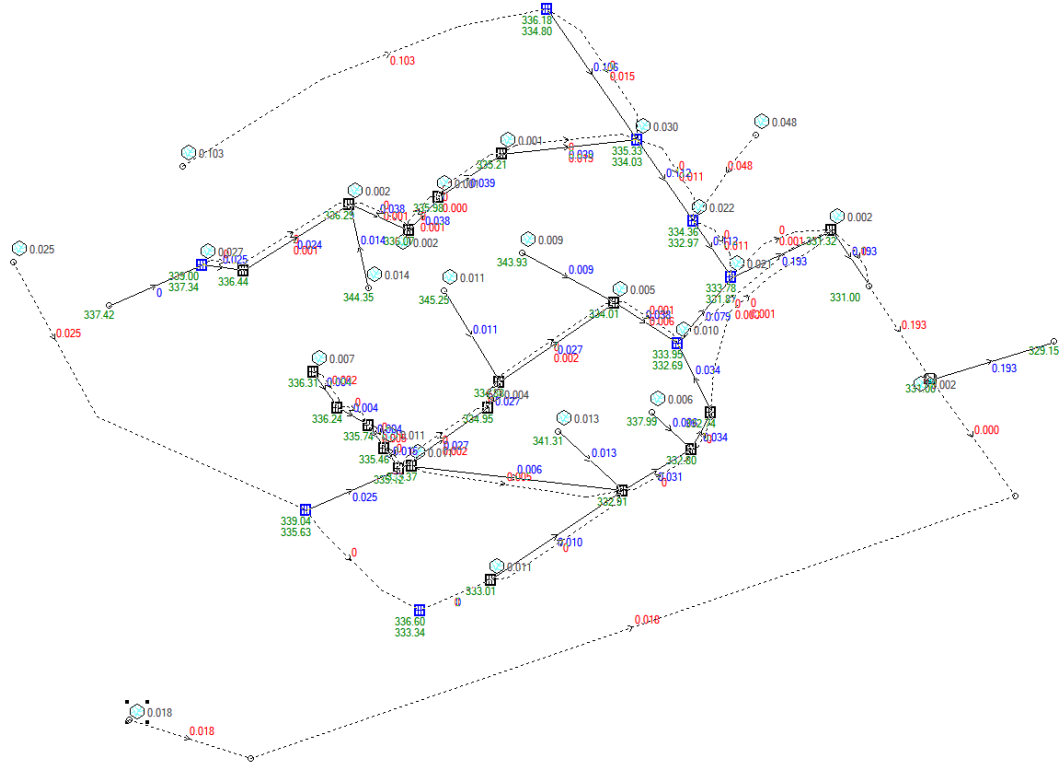


**MAJOR 1% AEP RESULTS**

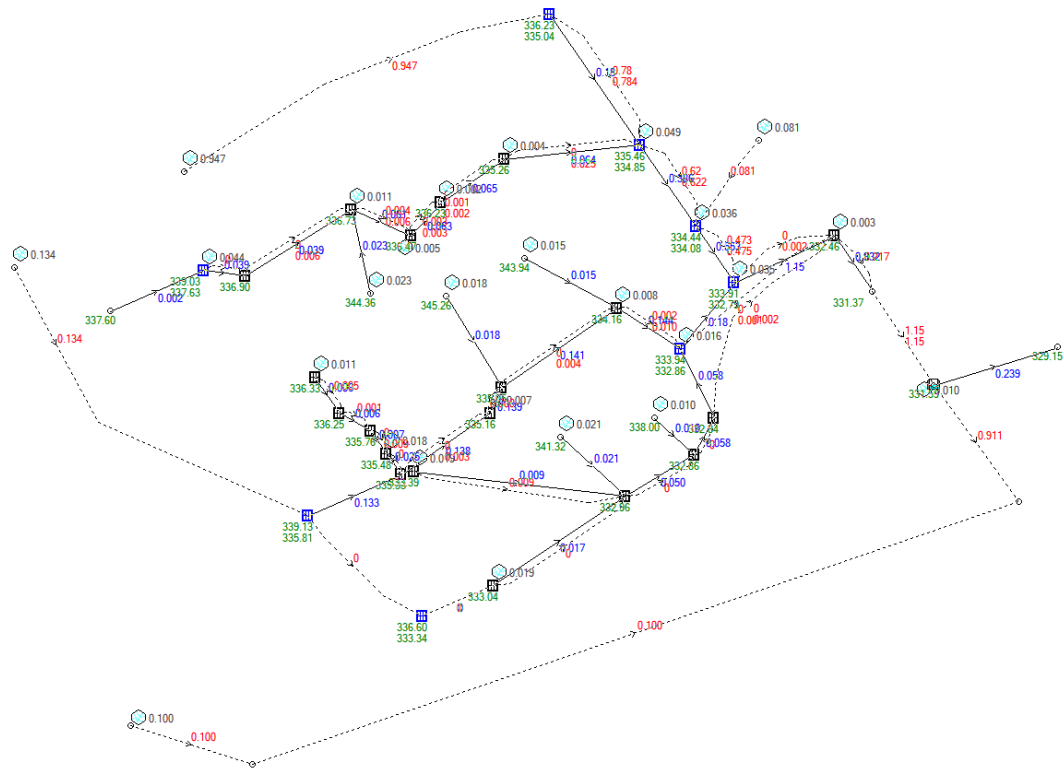




### MINOR 10% AEP RESULTS

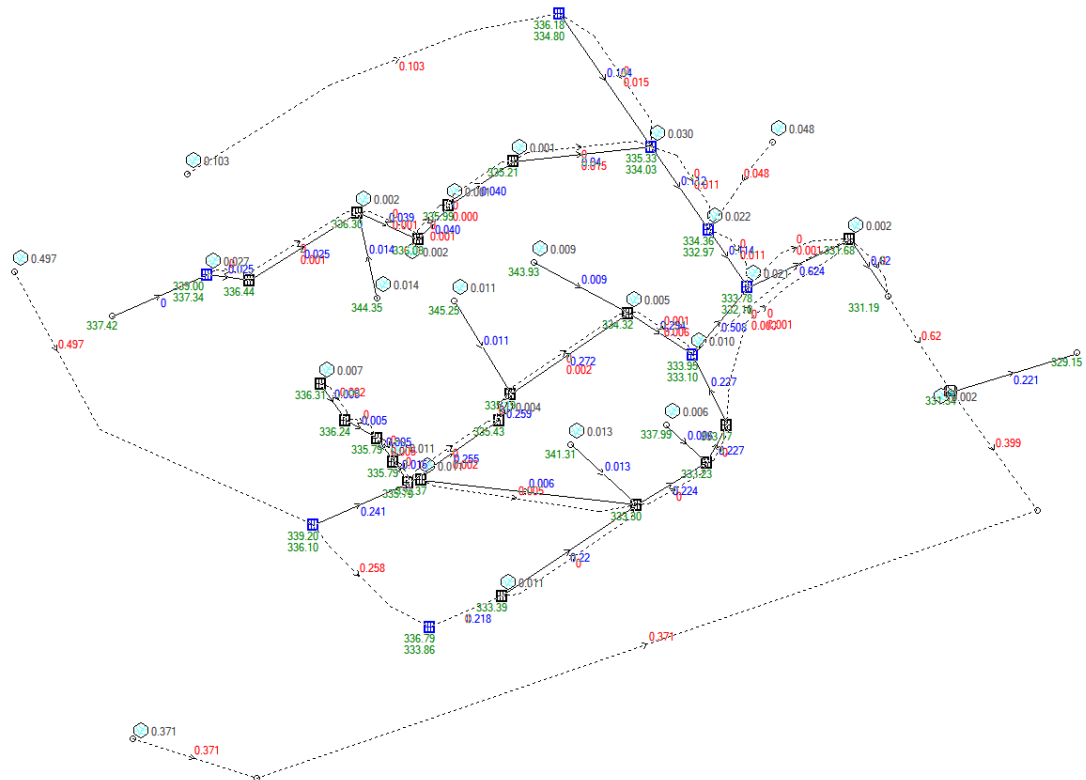


**MAJOR 1% AEP RESULTS**

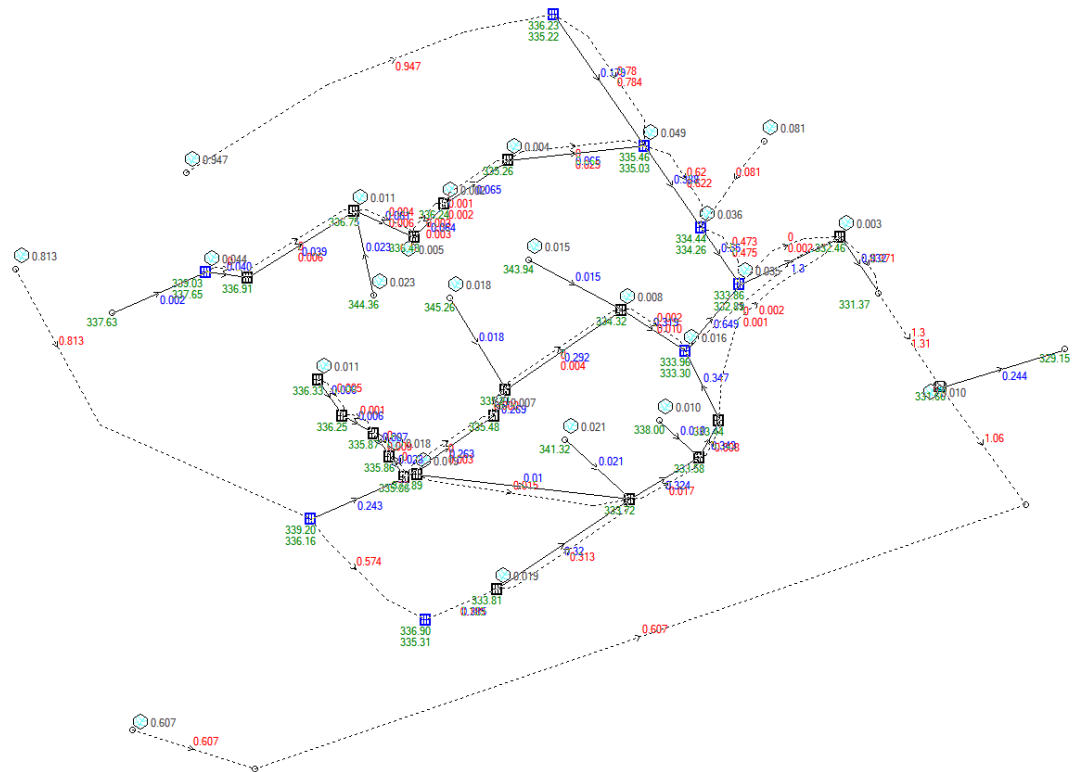


## A3 FUTURE SCHOOL DEVELOPMENT (FOR CHECKING ONLY)

### MINOR 10% AEP RESULTS



## MAJOR 1% AEP RESULTS



# APPENDIX B

## CIVIL CONCEPT PLAN





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30% CONCEPT ISSUE

LEGEND

- STORMWATER PIPES
- STORMWATER PITS
- GRASSED OPEN DRAIN / BUND
- DOWN PIPES
- BIO-RETENTION / DETENTION AREA
- HOLCIM PRECAST RCBC
- HOLCIM PRECAST CONCRETE HEADWALLS
- OVERLAND FLOW PATH
- FALL ARROWS
- GRATED DRAIN
- 1% AEP FLOOD LEVEL 327.5

DRAIN / SWALE / BUND TO CAPTURE 1% AEP PRE DEVELOPMENT FLOWS FROM NORTHERN CATHMENTS

BASIN / PONDING

OPEN DRAIN / SWALE, SIZED TO CAPTURE 1% AEP PRE DEVELOPMENT FLOWS, LOOK TO CONSTRUCT FIRST TO DIVERT WATER AROUND CONSTRUCTION SITE, SILT FENCES TO BE PLACED IN SWALE

CONCRETE RCP AND HEADWALLS

OPEN DRAIN / SWALE, SIZED TO CAPTURE 1% AEP PRE DEVELOPMENT FLOWS

NOTES:  
- DOWNPIPES TO CONNECT INTO TO DRAINAGE SHOWN AT LOCATIONS SHOWN ON HYDRAULIC DRAWINGS  
- LEVELS SHOWN INDICATIVE ONLY

1% AEP FLOOD LEVEL 327.5

LEVEL SPREADER

BIO RETENTION / DETENTION AREAS TO DETAIN PRE DEVELOPMENT 100% AEP (1 YR ARI) FLOWS AND IMPROVE QUALITY IN LINE WITH MOUNT BARKER COUNCIL GUIDELINES, PROPRIETY DETENTION / WATER QUALITY PRODUCT TO BE USED


POINT OF DISCHARGE - EXISTING 300MM RCP AND OVERLAND TO CREEK

GRASSED SWALE / BIO FILTRATION

DEMOLISH EXISTING PIPE AND HEADWALLS

EXISTING GRASSED SWALE

DATE	11/09/20	DRAWN	MG
SCALE		CHECKED	AN
SHEET SIZE		APPROVED	AN
PROJECT	MT BARKER SCHOOL		
CLIENT	HODGKISON		

 Level 1, 1 King William Street Adelaide SA 5000 Australia Telephone 61 8 8110 9500 Facsimile 61 8 8110 9599 adelaide@wsp.com			TITLE CIVIL WORKS CONCEPT PLAN
PROJECT NO. PS114515	DRAWING NO. C01	REVISION P2	



1	PLANNING ISSUE - UPDATED	SEPT 20	HA
0	PLANNING ISSUE	8/3/20	HA
Rev	Amendment	Date	Init

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KINGS BAPTIST GRAMMAR SCHOOL  
BOLLEN ROAD, MT BARKER

SITE PLAN PROPOSED

Drawn JM	Date SEP 20	Scale 1: 500	A1	Project Number 19060
Review KM	Date SEP 20	Project Leader KM	Date SEP 20	Drawing Number PL004
PLANNING				Amdt 1

Contractor shall check and verify all levels and dimensions on site and report any discrepancies to the Superintendent before undertaking any work or shop drawings

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# APPENDIX C

## DESIGN DRAWINGS



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# MT. BARKER KING'S BAPTIST SCHOOL CIVIL WORKS

PREPARED BY



CONSULTING ENGINEERS

DRAWING INDEX	
DRAWING NUMBER	DRAWING TITLE
C000	COVER SHEET, DRAWING INDEX AND LOCALITY PLAN
C001	GENERAL NOTES
C010	EXISTING CONDITIONS PLAN
C030	TYPICAL PAVEMENT DETAILS
C031	TYPICAL STORMWATER DETAILS
C032	TYPICAL CONCRETE DETAILS
C033	TYPICAL WATER SENSITIVE URBAN DESIGN (WSUD) DETAILS
C034	WSUD NOTES

DRAWING INDEX	
DRAWING NUMBER	DRAWING TITLE
C040	GENERAL ARRANGEMENT AND KEY PLAN
C050	SITE WORKS PLAN SHEET 1 OF 8
C051	SITE WORKS PLAN SHEET 2 OF 8
C052	SITE WORKS PLAN SHEET 3 OF 8
C053	SITE WORKS PLAN SHEET 4 OF 8
C054	SITE WORKS PLAN SHEET 5 OF 8
C055	SITE WORKS PLAN SHEET 6 OF 8
C056	SITE WORKS PLAN SHEET 7 OF 8
C057	SITE WORKS PLAN SHEET 8 OF 8



**LOCALITY PLAN**  
N.T.S.

T4	17/12/2020	RB	TENDER ISSUE	MG	TB
T3	20/11/2020	RB	TENDER ISSUE	MG	TB
T2	30/10/2020	RB	TENDER ISSUE	MG	TB
T1	12/10/2020	JP	TENDER ISSUE	MG	TB
REV	DATE	BY	DESCRIPTION	CHK	APD

DRAWING STATUS: **TENDER ISSUE**  
NOT TO BE USED FOR CONSTRUCTION



Level 14, 1 King William Street, GPO Box 398, SA 5001, Australia  
Tel: +61 8 8405 4300 Fax: +61 8 8405 4301  
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SCALE:

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PROJECT: MT. BARKER  
KING'S BAPTIST SCHOOL

TITLE: COVER SHEET, DRAWING INDEX  
AND LOCALITY PLAN

SCALE @ A1: N.T.S.	CHECKED: T.B.	APPROVED: A.N.
PROJECT No: PS114515	DRAWN: R.B.	DATE: 01/09/2020

DRAWING No: C000	REV: T4
---------------------	------------

**PRINTING NOTE**  
ALL DRAWINGS MUST BE PRINTED IN COLOURS.

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SPECIFICATION

- WHERE EITHER CONTRACT SPECIFICATION OR SPECIFICATION IS REFERENCED IN THE NOTES, IT SHALL BE TAKEN TO MEAN 'DEPARTMENT OF PLANNING, TRANSPORT AND INFRASTRUCTURE, (DPTI) MASTER SPECIFICATION STRUCTURES / ROADS'.
- THE SPECIFICATIONS CAN BE LOCATED ONLINE AT: [HTTPS://DPTI.SA.GOV.AU/CONTRACTOR\\_DOCUMENTS/MASTERSPECIFICATIONS](https://dpti.sa.gov.au/contractor_documents/masterspecifications)

PROJECT CONTROLS

- GENERAL CONSTRUCTION WORKS ARE TO BE CONSTRUCTED IN LINE WITH THE SPECIFICATION, INCLUDING BUT NOT LIMITED TO THE FOLLOWING:
  - PC-WHS1 WORK HEALTH AND SAFETY
  - PC-QA1 QUALITY MANAGEMENT REQUIREMENTS
  - PC-ENV1 ENVIRONMENTAL MANAGEMENT
  - PC-SC1 SITE CONTAMINATION
  - PC-SM2 SITE AND ACCESS MANAGEMENT
  - PC-S1 SITE SURVEY
  - PC-S2 SITE INVESTIGATION
  - PC-S3 CONDITIONS SURVEY
  - PC-S5 ENGINEERING SURVEY
  - PC-CN1 TESTING AND COMMISSIONING
  - PC-CN2 ASSET HANDOVER

GENERAL NOTES

- DRAWINGS TO BE READ IN CONJUNCTION WITH THE SPECIFICATION AND ALL OTHER CONTRACT DOCUMENTATION.
- ALL CONSTRUCTION WORKS TO BE CARRIED OUT IN ACCORDANCE WITH THE SPECIFICATION, APPROVED PLANS AND SATISFACTION OF THE SUPERINTENDENT
- ALL WORKS IN THE PUBLIC ROAD RESERVE ARE TO BE CARRIED OUT TO THE SATISFACTION OF THE LOCAL COUNCIL, GOVERNMENTS AND / OR OTHER ASSET OWNERS.
- ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE NOTED AND SHALL BE VERIFIED ON SITE.
- ALL LEVELS ARE IN METERS TO THE AUSTRALIAN HEIGHT DATUM (AHD) AND SHALL BE VERIFIED ON SITE.
- ANY DISCREPANCY ON DRAWINGS SHALL BE REPORTED TO THE SUPERINTENDENT BEFORE WORK PROCEEDS.
- MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE PROJECT SPECIFICATION AND CURRENT AUSTRALIAN STANDARDS. PROJECT SPECIFICATION TAKES PRECEDENCE.
- STOCKPILE SPOIL AS DIRECTED BY THE SUPERINTENDENT AND REMOVE FROM SITE EXCESS MATERIAL NOT USED.
- GRADE FINISHED SURFACES EVENLY BETWEEN DESIGN SURFACE LEVELS.
- DEMOLISH AND REMOVE ALL EXISTING INSTALLATIONS WHICH ARE TO BE AFFECTED BY NEW WORKS. EXTENT OF DEMOLITION TO BE CONFIRMED ON SITE WITH THE SUPERINTENDENT PRIOR TO COMMENCEMENT OF WORKS.
- ALL REDUNDANT ASSETS AND THEIR ASSOCIATED INFRASTRUCTURE (IE PIPE WORK / MANHOLE ETC.) ARE TO BE REMOVED AND DISPOSED OFF SITE AT THE CONTRACTORS EXPENSE.
- ALL EXISTING ASSETS AFFECTED BY THE WORKS; EG SIGNS, VEHICLE CROSSINGS, FOOTPATHS, KERBS AND LINE MARKING, SHALL BE REINSTATED BY THE CONTRACTOR PRIOR TO THE COMPLETION OF THE WORKS TO THE SATISFACTION OF THE SUPERINTENDENT OR THEIR REPRESENTATIVE.
- AT THE COMPLETION OF ALL WORKS, ALL RUBBISH, DEBRIS AND SURPLUS SPOIL SHALL BE REMOVED AND THE SITE SHALL BE CLEARED TO THE SATISFACTION OF THE SUPERINTENDENT OR THEIR REPRESENTATIVE.
- IT IS THE CONTRACTORS RESPONSIBILITY TO SUBMIT THE AS-BUILT DRAWINGS (INCLUDING DIGITAL FORMAT) TO THE SUPERINTENDENT AT THE COMPLETION OF THE CONSTRUCTION WORKS. ANY UNAPPROVED DISCREPANCIES MUST BE RECTIFIED AT THE CONTRACTORS EXPENSE TO THE SATISFACTION OF THE SUPERINTENDENT OR THEIR REPRESENTATIVE.
- ALL WORKS WITHIN THE TREE PROTECTION ZONE (TPZ) TO BE IN ACCORDANCE WITH THE ARBORISTS REPORT, REFER ARCHITECTS / LANDSCAPE DRAWINGS FOR LOCATIONS OF TPZS.
- AT ALL DOORWAYS, CONCRETE PAVEMENT TO BE DOWELED INTO STRUCTURAL BUILDING SLAB, REFER DETAIL DCJ.
- IF NOT SHOWN ON TYPICAL DETAILS OR DRAWING, ALLOW TO PLACE 150mm BASE LAYER OF PM2/20 QG RUBBLE COMPACTED TO 98% MMDD UNDER ALL STRUCTURES INCLUDING BUT NOT LIMITED TO PAVEMENTS, KERBS, KERBS AND GUTTERS, SPOON DRAINS, RETAINING WALLS, PITS, HEADWALLS, STONE PAVING ETC.
- COMPLETE AND PROVIDE FOR REVIEW AS-BUILT DRAWINGS FOR ALL WORKS TO CONFIRM COMPLIANCE TO DRAWINGS AND SPECIFICATIONS.

STARTING SERVICES

- THESE DRAWINGS ARE A SCHEMATIC REPRESENTATION OF SERVICES INFORMATION CONTAINED IN DRAWINGS ISSUED BY THE RELEVANT AUTHORITIES. THE INFORMATION CONTAINED IN THESE DRAWINGS IS INDICATIVE ONLY, AND REFERENCE SHOULD BE MADE TO THE RELEVANT AUTHORITIES DOCUMENTATION TO CONFIRM ACCURACY AND COMPLETENESS. WHERE INFORMATION IS AVAILABLE, THE SUBSURFACE SERVICES INSTALLED BY CONTRACTORS OTHER THAN THE AUTHORITIES HAVE BEEN SHOWN, BUT ADDITIONAL UNDOCUMENTED SERVICES MAY BE PRESENT. SHOULD THE CONTRACTOR BELIEVE THAT SUBSURFACE SERVICES ARE AT RISK OF DAMAGE DURING CONSTRUCTION, THE CONTRACTOR SHOULD NOTIFY THE RELEVANT AUTHORITIES AND ESTABLISH THE EXACT LOCATION OF THE SERVICES.
- OTHER SERVICES AND APPURTENANCES MAY EXIST ON THE SITE.
- BEFORE COMMENCEMENT OF DEMOLITION, EARTHWORKS AND CONSTRUCTION CONTRACTOR SHALL:
  - CONSULT WITH SERVICES AUTHORITIES AND SUPERINTENDENT AND OBTAIN INFORMATION REGARDING EXISTING UNDERGROUND SERVICES IN THE WORK AREAS.
  - IDENTIFY, LOCATE AND UNCOVER AS NECESSARY ALL EXISTING UNDERGROUND SERVICES IN VICINITY OF ALL DEMOLITION, EXCAVATION AND CONSTRUCTION TO BE UNDERTAKEN FOR THE WORKS.
- CONTRACTOR SHALL PROTECT AND MAINTAIN ALL EXISTING SERVICES THAT ARE TO REMAIN THROUGHOUT THE CURRENCY OF THE CONTRACT.
- CONTRACTOR SHALL ALLOW FOR FINDING OF EXISTING STORMWATER DRAINS AND APPROPRIATE POINTS OF CONNECTION, BREAKING IN, CONNECTING AND MAKING GOOD.
- MAINTAIN EXISTING STORMWATER DRAINAGE SERVICES THAT ARE TO REMAIN.
- CONTRACTOR TO ADJUST LIDS OF EXISTING SERVICE PITS TO MATCH FINISHED SURFACE LEVEL. PROVIDE HEAVY DUTY COVER IF IN PAVED AREA TO THE REQUIREMENTS OF THE RELEVANT AUTHORITY, IF APPLICABLE. RELOCATE SERVICE AS REQUIRED.

SURVEY / SETOUT

- PRIOR TO COMMENCEMENT OF WORKS, CONFIRM CURRENCY AND ACCURACY OF SURVEY INFORMATION WITH THE SUPERINTENDENT.
- CONTRACTOR SHALL VERIFY ALL SET OUT COORDINATES, DIMENSIONS AND LEVELS ON SITE BEFORE COMMENCEMENT OF WORKS.
- THESE DRAWINGS ARE NOT CADASTRAL PLANS AND MUST NOT BE USED FOR DETERMINING LOCATION OF BOUNDARIES.
- 3D CAD FILES OR 12d MODEL MAYBE PROVIDED ON REQUEST FOR INFORMATION ONLY.
- SURVEY DATA
  - SURVEY BY: FYFE
  - SURVEY DATE: 01.08.2020
  - HEIGHT DATUM: AHD 3RD ORDER
  - HORIZONTAL DATUM: MGA84 SYSTEM BASED ON PSM 6627 / 1807 26/03/2020

SURVEY CONTROL POINTS				
POINT #	EASTING	NORTHING	LEVEL	DESCRIPTION
TBM-S001	303803.634	6116379.828	330.004	METAL SPIKE
TBM-S003	303927.692	6116203.396	325.182	METAL SPIKE

DEMOLITION

- REFER TO ARCHITECT DRAWINGS FOR EXTENT OF DEMOLITION
- ALL STRUCTURES TO BE DEMOLISHED ARE TO BE REMOVED AND DISPOSED OF OFF SITE IN AN AREA AGREED WITH THE SUPERINTENDENT AT THE CONTRACTOR EXPENSE.
- ALL TREES AND SHRUBS ARE TO BE RETAINED UNLESS OTHERWISE SHOWN ON THE DRAWINGS TO BE REMOVED OR DIRECTED BY THE SUPERINTENDENT OR THEIR REPRESENTATIVE. UNDER NO CIRCUMSTANCES SHALL WORKS BE CARRIED OUT, MATERIAL STORED OR CONSTRUCTION VEHICLES BE PARKED WITHIN THE CANOPY OF EXISTING TREES WITHOUT APPROVAL OF THE SUPERINTENDENT
- THE CONTRACTOR SHALL BRING TO THE ATTENTION OF THE SUPERINTENDENT ANY TREES THAT ARE IN CONFLICT WITH THE PROPOSED WORKS AND SEEK DIRECTION ON HOW TO PROCEED.

GEOTECHNICAL INVESTIGATION INFORMATION

DOCUMENTS DETAILS				
PROJECT No.	202098 Rev A 12TH NOVEMBER 2020			
DOCUMENT TITLE	PROPOSED GRAMMAR SCHOOL, BOLLEN ROAD, MT BARKER - SUPPLEMENTARY GEOTECHNICAL INVESTIGATION			
REPORT PREPARED FOR	KINGS BAPTIST GRAMMER			
DOCUMENT NUMBER	WGA202098-RP-GE-0001			

SITE PREPARATION

- REFER GEOTECHNICAL REPORT FOR SITE PREPARATION REQUIREMENTS, IF NO SITE PREPARATION NOTES ARE PROVIDED THE SITE PREPARATION IS TO BE COMPLETED AS FOLLOWS TO THE ENTIRE SITE OF WORKS:
- PRIOR TO PLACEMENT OF ANY NEW FILLING, PAVEMENT MATERIALS OR CONSTRUCTION OF SLABS OR FOUNDATIONS, THE FOLLOWING SITE PREPARATION SHOULD BE CARRIED OUT:
  - STRIP ALL EXISTING TOPSOIL OR MATERIAL CONTAINING ORGANIC MATTER AND GRUB OUT ANY REMAINING ROOTS FOR THE FULL EXTENT OF WORKS. THIS MATERIAL IS NOT CONSIDERED SUITABLE FOR SELECT FILL BUT CAN BE STOCKPILED FOR LATER USE AS NON-STRUCTURAL FILL.

- REMOVE ALL UNCONTROLLED FILL, LOOSE, DISTURBED AND SOFTENED MATERIAL FOR THE ENTIRE EXTENT OF WORKS, INCLUDING UNDER BATTERS.
- TYNE THE FOUNDATION (IN-SITU SUBGRADE) MATERIAL TO A DEPTH OF 200mm AND ADJUST THE MOISTURE CONTENT TO OPTIMUM MOISTURE CONTENT (OMC) BY WETTING OR DRYING BACK AS REQUIRE.
- IN FILL AREAS:
  - COMPACT THE MOISTURE CONDITIONED SOILS TO A MINIMUM OF 95% SMDD.
  - COMPLETE FINAL TEST ROLLING USING EITHER:
    - STATIC SMOOTH STEEL WHEELED ROLLER WITH A MASS OF NOT LESS THAN 12 TONNE AND A LOAD INTENSITY UNDER EITHER THE FRONT OR REAR WHEELS OF NOT LESS THAN 6 T/M WIDTH OF WHEEL
    - PNEUMATIC TYRED PLANT WITH A MASS OF NOT LESS THAN 20 TONNE AND A GROUND CONTACT PRESSURE UNDER EITHER THE FRONT OR REAR WHEELS OF NOT LESS THAN 450 KPA PER TYRE. THE AREA OVER WHICH GROUND CONTACT PRESSURE IS APPLIED SHOULD BE NOT LESS THAN 0.035 M2 PER TYRE OR
  - HIGHWAY TRUCK WITH REAR AXLE OR AXLES LOADED TO NOT LESS THAN 8 TONNE EACH WITH TYRES INFLATED TO 550 KPA UNDER THE SUPERVISION OF THE SUPERINTENDENT.
- SOFT AREAS IDENTIFIED DURING THE FINAL TEST ROLLING SHALL BE REMOVED AND REPLACED WITH SELECT FILL, PLACED IN LIFTS NOT EXCEEDING 200mm LOOSE THICKNESS WITH EACH LIFT COMPACTED TO 95% SMDD.
- IN CUT AREAS (I.E SUB GRADE SURFACE LEVEL, UNDERSIDE OF PAVEMENT AND UNDERSIDE OF STRUCTURE)
  - OVER EXCAVATE IN AREAS THAT REQUIRE 150mm BASE AS REQUIRED, INCLUDING BUT NOT LIMITED TO PAVEMENTS, KERBS, KERBS AND GUTTERS, SPOON DRAINS, RETAINING WALLS, PITS, HEADWALLS, STONE PITCHING ETC
  - COMPACT THE MOISTURE CONDITIONED SOILS TO A MINIMUM OF 98% SMDD.
  - COMPLETE FINAL TEST ROLLING USING EITHER:
    - STATIC SMOOTH STEEL WHEELED ROLLER WITH A MASS OF NOT LESS THAN 12 TONNE AND A LOAD INTENSITY UNDER EITHER THE FRONT OR REAR WHEELS OF NOT LESS THAN 6 T/M WIDTH OF WHEEL
    - PNEUMATIC TYRED PLANT WITH A MASS OF NOT LESS THAN 20 TONNE AND A GROUND CONTACT PRESSURE UNDER EITHER THE FRONT OR REAR WHEELS OF NOT LESS THAN 450 KPA PER TYRE. THE AREA OVER WHICH GROUND CONTACT PRESSURE IS APPLIED SHOULD BE NOT LESS THAN 0.035 M2 PER TYRE OR
  - HIGHWAY TRUCK WITH REAR AXLE OR AXLES LOADED TO NOT LESS THAN 8 TONNE EACH WITH TYRES INFLATED TO 550 KPA UNDER THE SUPERVISION OF THE SUPERINTENDENT.
- SOFT AREAS IDENTIFIED DURING THE FINAL TEST ROLLING SHALL BE REMOVED AND REPLACED WITH SELECT FILL, PLACED IN LIFTS NOT EXCEEDING 200mm LOOSE THICKNESS WITH EACH LIFT COMPACTED TO 98% SMDD.
- WATER SEEPAGE MAY BE ENCOUNTERED AND THE CONTRACTOR SHOULD MAKE PROVISIONS FOR WATER INGRESS DURING CONSTRUCTION.

EARTHWORKS NOTES

- EARTHWORKS ARE TO BE CONSTRUCTED IN LINE WITH THE SPECIFICATION, INCLUDING BUT NOT LIMITED TO THE FOLLOWING:
  - RD-EW-S1 SUPPLY OF GEOTEXTILES
  - RD-EW-C1 EARTHWORKS
  - RD-EW-C2 TRENCH EXCAVATION AND BACKFILL
  - ST-SP-C1 EARTHWORKS FOR STRUCTURES
- FILL MATERIAL TO MEET TYPE A PROPERTIES, PLACEMENT AND TESTING REQUIREMENTS
- COMPACT THE TYPE A MATERIAL TO A MINIMUM OF 98% SMDD, PLACED IN LIFTS NOT EXCEEDING 150MM COMPACTED THICKNESS, COMPLETE TEST ROLLING OF EACH LAYER OF FILL USING EITHER:
  - STATIC SMOOTH STEEL WHEELED ROLLER WITH A MASS OF NOT LESS THAN 12 TONNE AND A LOAD INTENSITY UNDER EITHER THE FRONT OR REAR WHEELS OF NOT LESS THAN 6 T/M WIDTH OF WHEEL
  - PNEUMATIC TYRED PLANT WITH A MASS OF NOT LESS THAN 20 TONNE AND A GROUND CONTACT PRESSURE UNDER EITHER THE FRONT OR REAR WHEELS OF NOT LESS THAN 450 KPA PER TYRE. THE AREA OVER WHICH GROUND CONTACT PRESSURE IS APPLIED SHOULD BE NOT LESS THAN 0.035 M2 PER TYRE OR
  - HIGHWAY TRUCK WITH REAR AXLE OR AXLES LOADED TO NOT LESS THAN 8 TONNE EACH WITH TYRES INFLATED TO 550 KPA UNDER THE SUPERVISION OF THE SUPERINTENDENT.
- SOFT AREAS IDENTIFIED DURING THE FINAL TEST ROLLING SHALL BE REMOVED AND REPLACED WITH TYPE A FILL MATERIAL, PLACED IN LIFTS NOT EXCEEDING 150mm COMPACTED THICKNESS WITH EACH LIFT COMPACTED TO 98% SMDD.
- WATER SEEPAGE MAY BE ENCOUNTERED AND THE CONTRACTOR SHOULD MAKE PROVISIONS FOR WATER INGRESS DURING CONSTRUCTION.
- INSPECTIONS AND TESTING TO BE COMPLETED IN LINE WITH AS3798 2007, SECTION 8.3 LEVEL 2 SAMPLING AND TESTING UNLESS OTHERWISE NOTED IN CONTRACT DOCUMENTS
- PLACE 100mm ORGANIC TOP SOIL AND PLANT GRASS TO SUPERINTENDENT REQUIREMENTS. GRASS TO BE MAINTAINED UNTIL FIRST CUT. TYPE OF GRASS TO BE CONFIRMED BY SUPERINTENDENT PRIOR TO ORDERING. GRASS COVERAGE TO BE UNIFORM AND COVER A MINIMUM OF 98% OF TOTAL AREA. REFER LANDSCAPE PLANS FOR GRASSING / PLANTING DETAILS.

PAVEMENT NOTES

- PAVEMENTS ARE TO BE CONSTRUCTED IN LINE WITH THE SPECIFICATION, INCLUDING BUT NOT LIMITED TO THE FOLLOWING:
  - RD-PV-S1 SUPPLY OF PAVEMENT MATERIAL
  - RD-PV-S2 PLANT MIXED STABILISED PAVEMENT
  - RD-PV-C1 CONSTRUCTION OF UNSTABILISED GRANULAR PAVEMENT
  - RD-PV-C4 CONSTRUCTION OF SHARED PATH PAVEMENT
  - RD-PV-C5 CONSTRUCTION OF MINOR PAVEMENTS
  - RD-PV-C6 REINSTATEMENT OF EXISTING PAVEMENTS
  - RD-PV-07 PERMEABLE PAVING FOR TREES
- WHERE NOT SPECIFIED ON THE DRAWINGS, THE PAVEMENT MATERIALS ARE TO BE AS FOLLOWS:
  - BASECOURSE: PM1/20QG, COMPACTED TO 100% MMDD, CBR 80 @ 100% MMDD
  - SUB BASE: PM2/20QG, COMPACTED TO 98% MMDD, CBR 50 @ 95% MMDD
- INSPECTIONS AND TESTING TO BE COMPLETED IN LINE WITH AS3798 2007, SECTION 8.3 SAMPLING AND TESTING UNLESS OTHERWISE NOTED IN CONTRACT DOCUMENTS.

ASPHALT SEAL LAYER NOTES

- ASPHALT PAVEMENTS ARE TO BE CONSTRUCTED IN LINE WITH THE SPECIFICATION, INCLUDING BUT NOT LIMITED TO THE FOLLOWING:
  - RD-BP-S1 SUPPLY OF BITUMINOUS MATERIAL
  - RD-BP-S2 SUPPLY OF ASPHALT
  - RD-BP-C1 COLD PLANING
  - RD-BP-C3 CONSTRUCTION OF ASPHALT PAVEMENT
  - RD-BP-C4 APPLICATION OF THIN ASPHALT SURFACING
  - RD-BP-C5 APPLICATION OF SPRAYED BITUMINOUS SURFACING
- WHERE NOT SPECIFIED ON DRAWINGS, THE ASPHALT PROPERTIES ARE TO BE AS FOLLOWS:
  - USE DENSE MIX ASPHALT GRADE AC10 MIX PLACED TO ACHIEVE A 50mm COMPACTED THICKNESS.
- SUPERINTENDENT TO CONFIRM EXACT RATE OF PRIME OR TACK COAT PRIOR TO WORKS COMMENCING BASED ON TEST RESULT PROVIDED AS PER CONTRACT SPECIFICATION.
- APPLICATION RATES FOR FIRST AND SECOND COAT SEAL TO BE PROVIDED TO SUPERINTENDENT FOR APPROVAL PRIOR TO PROCEEDING.
- WHERE NOT SPECIFIED ON DRAWINGS USE BITUMEN CLASS 320 TO BE USED
- WHERE NOT SPECIFIED ON DRAWINGS USE POLYMER MODIFIED BINDER TYPE S10E FOR SPRAY SEALING
- WHERE NOT SPECIFIED ON DRAWINGS USE POLYMER MODIFIED BINDER TYPE A15E FOR ASPHALT

TABLE DRAIN AND OFFLETS / OPEN DRAINS

- REFER EARTHWORKS NOTES
- COMPACT THE TOP 150mm TO 95% MMDD.
- PLACE 100mm ORGANIC TOP SOIL AND PLANT GRASS TO SUPERINTENDENT REQUIREMENTS. GRASS TO BE MAINTAINED UNTIL FIRST CUT. TYPE OF GRASS TO BE CONFIRMED BY SUPERINTENDENT PRIOR TO ORDERING. GRASS COVERAGE TO BE UNIFORM AND COVER A MINIMUM OF 98% OF TOTAL AREA.
- OPEN DRAINS TO FALL AT A MINIMUM OF 0.5% AND CONTINUE UNTIL DAYLIGHTING, THE EXACT DIRECTION AND LENGTH IS TO BE CONFIRMED WITH THE SUPERINTENDENT ONSITE.

DRAINAGE NOTES

- DRAINAGE WORKS ARE TO BE CONSTRUCTED IN LINE WITH THE SPECIFICATION, INCLUDING BUT NOT LIMITED TO THE FOLLOWING:
  - RD-DK-S1 SUPPLY OF PIPES AND CULVERTS
  - RD-DK-C1 INSTALLATION OF STORMWATER DRAINAGE
  - RD-DK-C2 KERBING
  - RD-EW-C2 TRENCH EXCAVATION AND BACKFILL
- CIRCULAR PIPES TO BE INSTALLED AS PER ASINZS 3725:2007.
- STORMWATER PIPES TO BE AS FOLLOWS:

SIZE	NON TRAFFICABLE	TRAFFICABLE
UP TO DN375	UPVC SN4 (MIN)	RCP
> DN375	STORMPRO	RCP
- COVERS TO BE TO AS 3996:2006, ACCESS COVERS AND GRATES SHALL BE CLASS C WHERE VEHICLE ACCESS CAN OCCUR AND CLASS B IN OTHER AREAS

- COVERS AND GRATES USED IN PEDESTRIAN AREAS SHALL HAVE A SLIP RESISTANCE SURFACE AND SHALL HAVE EQUAL SLIP RESISTANCE TO THE SURROUNDING PAVERS OR MEET THE SPECIFICATION AS SPECIFIED IN THE TABLE BELOW WHEN TESTED IN ACCORDANCE WITH AS 4586, WHICHEVER IS THE GREATEST STANDARD.

SLIP RESISTANCE TEST REQUIREMENTS	
TEST CONDITION	REQUIRED CLASS
WET PENDULUM	P5

- BOX CULVERTS WITH SPAN AND HEIGHT NOT EXCEEDING 1200mm TO BE INSTALLED AS PER AS 1597.1 2010
- DRAINAGE PIT AND TRENCH COVERS TO BE AS FOLLOWS:

TRENCH GRATES TO BE AS FOLLOWS:

  - CAST IRON, HEELSAFE, NON SLIP

GRATED INLET PITS TO BE AS FOLLOWS:

  - PEDESTRIAN AREAS - GALVANISED STEEL, HEELS SAFE, NON SLIP
  - NON PEDESTRIAN AREAS - CAST IRON TO AS1428 (MAX 13MM SLOTTED OPENINGS)

JUNCTION PITS

  - PEDESTRIAN AREAS - CAST IRON, INFILL TO MATCH ADJACENT PAVING
  - NON PEDESTRIAN AREAS - CAST IRON STANDARD COVER
- BOX CULVERTS WITH SPAN AND HEIGHT EXCEEDING 1200mm TO BE INSTALLED AS PER AS 1597.2 2013.
- ALL OPEN DRAINS TO BE COVERED WITH 100mm TOPSOIL AND GRASSED, UNLESS SHOWN OTHERWISE ON DRAWINGS.
- PIPE JOINTS TO BE SPIGOT - SOCKET RUBBER RING JOINT (RRJ) OR SOLVENT CEMENT (EXCEPT RCP).
- MAKE GOOD ALL DISTURBED GROUNDS AND REINSTATE TO MATCH EXISTING SURFACE LEVELS AND FINISH.
- ALL DOWNSTREAM STORMWATER PITS AND PIPES TO BE CONFIRMED, CLEANED OUT AND CHECKED TO ENSURE FLOWING AT FULL CAPACITY.
- REFER HYDRAULIC DRAWINGS FOR DOWNPIPE LOCATIONS AND CONNECTIONS TO STORMWATER.
- PROVIDE 1000IA OUTLET FROM BASE OF TRENCH GRATES AT LOWEST INVERT OF TRENCH CONNECTED TO SW NETWORK AT 1:100 MIN SLOPE.
- CONCRETE PIPES TO BE CLASS 2. CONTRACTOR TO USE HIGHER CLASSES IF REQUIRED DURING CONSTRUCTION

LANDSCAPING

- LANDSCAPING AREAS INCLUDING GARDEN BEDS, SANDPITS ETC. IS SHOWN INDICATIVE ONLY ON THESE, PLANS FOR CO-ORDINATION PURPOSES, REFER LANDSCAPE DRAWINGS FOR DETAILS INCLUDING DRAINAGE, GROWING MEDIUM, MULCH, TOPSOIL, PLANTING ETC.
- ALL IRRIGATED GARDEN BEDS, SANDPITS ETC TO HAVE SUBSOIL DRAIN WITH CONNECTION TO SW NETWORK. REFER LANDSCAPE FOR DETAILS.
- CONCRETE NOTES - CIVIL ONLY (KERBS / FOOTPATHS / POSTS / BOLLARDS / RETAINING WALLS ETC.):
  - CIVIL CONCRETE WORKS ARE TO BE CONSTRUCTED IN LINE WITH THE SPECIFICATION, INCLUDING BUT NOT LIMITED TO THE FOLLOWING:
    - ST-SC-S1 NORMAL CLASS CONCRETE
    - ST-SC-S3 PRECAST CONCRETE ELEMENTS
    - ST-SC-S6 STEEL REINFORCEMENT
    - ST-SC-S7 SUPPLY OF CONCRETE
    - ST-SC008 FORMWORK
    - ST-SC-C7 PLACEMENT OF CONCRETE
    - ST-RE-C3 GABION CONCRETE
  - ALL CONCRETE STRUCTURE TO HAVE MINIMUM 150mm OF PM2/20 QUARRY RUBBLE COMPACTED TO 98% MMDD PLACED DIRECTLY UNDER STRUCTURE.
  - WHERE NOT SPECIFIED ON DRAWINGS, ALL CONCRETE TO BE N32, WITH 80mm SLUMP.
  - WHERE NOT SPECIFIED ON DRAWINGS, MINIMUM COVER TO BE 50mm.
  - FORTECON PLASTIC LINER OR SIMILAR TO BE PLACED UNDER ALL CONCRETE POURS
  - WHERE NOT SPECIFIED ON DRAWINGS CONCRETE JOINTS TO BE AS FOLLOWS:
    - DOWELED EXPANSION JOINTS - MAX 12M IN EACH DIRECTION
    - CONTRACTION / CONSTRUCTION JOINTS - MAX 4M IN EACH DIRECTION
    - ISOLATION JOINTS - AT ALL EDGES OF PAVEMENT AND ADJACENT ANY STRUCTURES
  - THRESHOLD RAMPS TO BE INSTALLED AT DOORWAYS, REFER ARCHITECT FOR DETAILS IF NOT SHOWN CONCRETE / PAVERS TO BE RAISED TO MATCH DOOR LEVEL IN LINE WITH THRESHOLD RAMP DIMENSIONS
- PAVERS / TILES:
  - FOR PAVEMENT AND TILE SPECIFICATIONS REFER ARCHITECTURE AND LANDSCAPE ARCHITECTURE DETAILS.
- RETAINING WALL NOTES:

BLOCKWORK

  - GEOTECHNICAL ENGINEER TO CONFIRM A MINIMUM BEARING CAPACITY OF 150KPA PRIOR TO POURING CONCRETE BASE.
  - AG DRAIN TO BE PLACED BEHIND ALL RETAINING WALLS AT THE BASE AND CONVEYED AT MINIMUM GRADE OF 0.5% TO THE NEAREST STORMWATER PIT.
  - WITNESS POINT, PROVIDE PHOTO EVIDENCE PRIOR TO BACK FILLING.

POST AND SLEEPER

  - BACK OF SLEEPS TO BE MADE WATER PROOF AND INSPECTED BY ENGINEER PRIOR TO BACKFILL, USE 2 X LAYERS OF 0.2MM FORTECON, JOINTS TO BE OVERLAPPED 0.3M AND TAPED PRIOR TO BACKFILL.
  - AG DRAIN TO BE PLACED BEHIND ALL RETAINING WALLS AT THE BASE AND CONVEYED AT MINIMUM GRADE OF 0.5% TO THE NEAREST STORMWATER PIT.
  - WITNESS POINT, PROVIDE PHOTO EVIDENCE PRIOR TO BACK FILLING.

PROPRIETARY RETAINING WALLS

  - TYPE 1 (SHOWN PRV1) - OUTBACK SLEEPERS AUSTRALIA DETAIL TO BE CONFIRMED WITH ARCHITECT.
  - TYPE 2 (SHOWN PRV2) - OUTBACK SLEEPERS AUSTRALIA DETAIL TO BE CONFIRMED WITH ARCHITECT.
  - TYPE 3 (SHOWN PRV3) - OUTBACK SLEEPERS AUSTRALIA DETAIL TO BE CONFIRMED WITH ARCHITECT.
- PROPRIETARY RETAINING WALL TYPE AND COLOUR TO BE CONFIRMED BY ARCHITECT PRIOR TO PROCUREMENT.
- FOR WALL OVER 1000mm USE STRUCTURAL WALLS.
- HOLD POINT - SUPPLIER OF PROPRIETARY WALL TO DESIGN WALL TO SUIT DESIGN LOADS FOR EACH APPLICATION.
- TO BE CONSTRUCTED AS PER MANUFACTURERS RECOMMENDATIONS.
- PLACE 150mm BASE LAYER OF PM2/20 QG RUBBLE COMPACTED TO 98% MMDD.
- PLACE AG DRAIN AND DRAINAGE LAYER BEHIND ALL WALLS AND FALL AT 0.5% TOP NEAREST STORMWATER PIT.
- WATER PROOF BACK OF WALLS WITH 2 LAYERS OF 0.2MM THICK FORTECON, LAPPED AND TAPPED.
- WITNESS POINT, PROVIDE PHOTO EVIDENCE PRIOR TO BACKFILLING

TRAFFIC MANAGEMENT

- REFER TRAFFIC MANAGEMENT DRAWINGS, IF NONE PROVIDED CONSTRUCT AS PER BELOW.
- TRAFFIC MANAGEMENT WORKS ARE TO BE CONSTRUCTED IN LINE WITH THE SPECIFICATION, INCLUDING BUT NOT LIMITED TO THE FOLLOWING:
  - RD-LM-D1 TRAFFIC CONTROL DEVICES
  - RD-LM-S1 MATERIALS FOR PAVEMENT MARKINGS
  - RD-LM-S2 SUPPLY OF SIGNS
  - RD-LM-S3 SUPPLY OF GUIDE POST AND DELINEATORS
  - RD-LM-C1 APPLICATION OF PAVEMENT MARKINGS
  - RD-LM-C3 INSTALLATION OF GUIDE POSTS AND DELINEATORS
  - RD-LM-C4 SIGN INSTALLATION
- TRAFFIC CONTROL DEVICES TO BE INSTALLED AS PER AS 1742.1 - 15 MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.
- UNLESS SPECIFIED OTHERWISE, TRAFFIC SIGNS TO BE SIZE B.
- SAFETY IN DESIGN NOTES:
  - IF NOT INCLUDED AS PART OF THE DRAWING SET OR CONTRACT DOCUMENTATION THE CONTRACTOR IS TO REQUEST THE SAFETY IN DESIGN (SID) DOCUMENT FROM THE SUPERINTENDENT FOR REVIEW PRIOR TO WORKS COMMENCING.
  - CONTRACTOR TO MANAGE RISKS / HAZARDS IN LINE WITH CURRENT WHS LEGISLATION.
  - HIGH RISK OR NON STANDARD RISKS IDENTIFIED
    - UNDERGROUND SERVICES
    - OVERHEAD POWER LINES IN EASEMENT
    - CONTAMINATED SOIL
  - REFER SAFETY IN DESIGN DOCUMENTATION FOR SUGGESTED RISK MITIGATION CONTROLS

T4	17/12/2020	RB	TENDER ISSUE	MG	TB
T3	20/11/2020	RB	TENDER ISSUE	MG	TB
T2	30/10/2020	RB	TENDER ISSUE	MG	TB
T1	12/10/2020	JP	TENDER ISSUE	MG	TB

REV	DATE	BY	DESCRIPTION	CHK	APD

DRAWING STATUS: **TENDER ISSUE**  
NOT TO BE USED FOR CONSTRUCTION



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SCALE:

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CLIENT:



PROJECT:

MT. BARKER  
KING'S BAPTIST SCHOOL

TITLE:

GENERAL NOTES

SCALE @ A1: N.T.S	CHECKED: T.B	APPROVED: A.N
PROJECT No: PS114515	DRAWN: R.B	DATE: 01/09/2020
DRAWING No: C001	REV: T4	

PRINTING NOTE  
ALL DRAWINGS MUST BE PRINTED IN COLOURS

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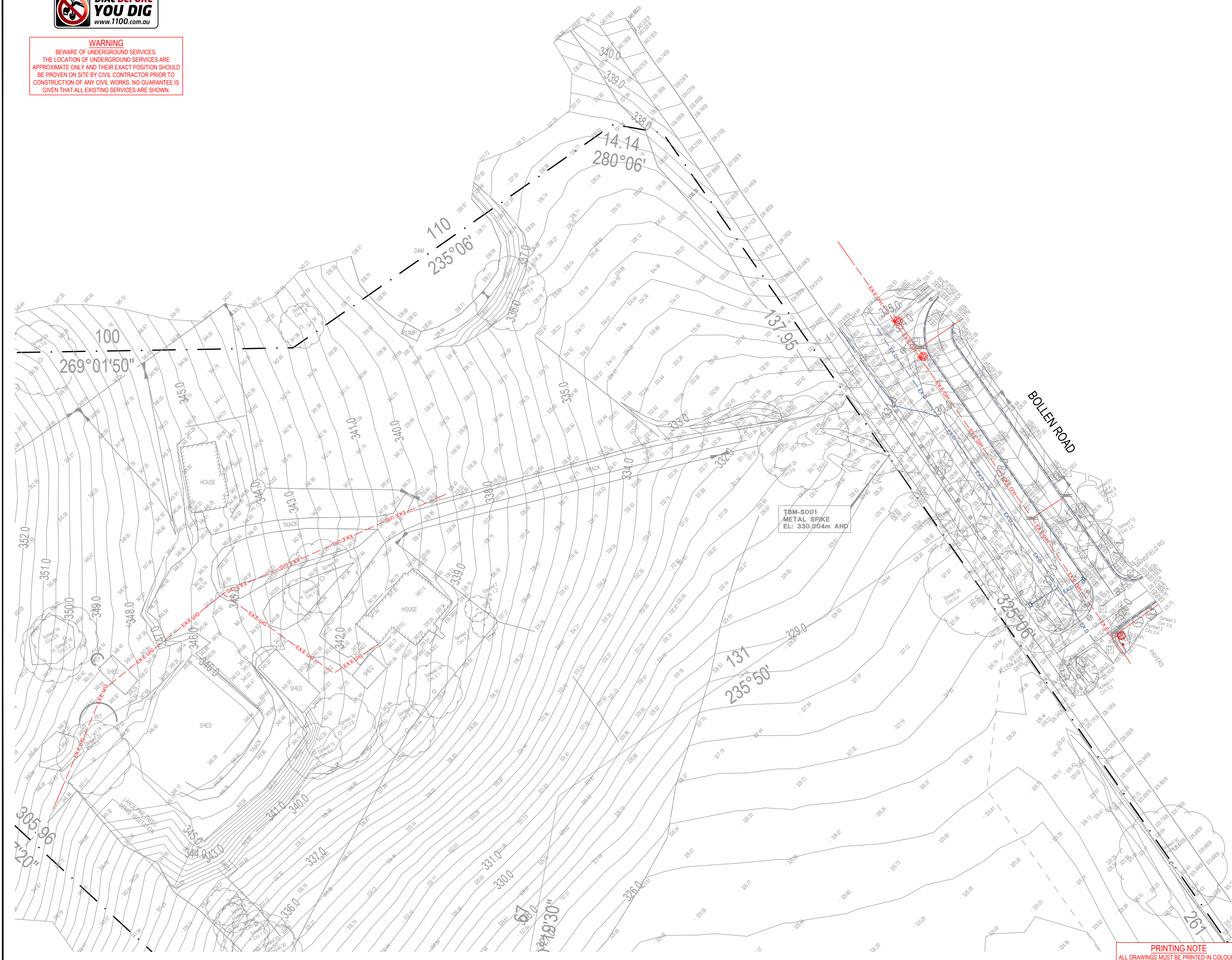
**WARNING**  
BEWARE OF UNDERGROUND SERVICES.  
THE LOCATION OF UNDERGROUND SERVICES ARE APPROXIMATE ONLY AND THEIR EXACT POSITION SHOULD BE PROVEN ON SITE BY CIVIL CONTRACTOR PRIOR TO CONSTRUCTION OF ANY CIVIL WORKS. NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES ARE SHOWN.

**NOTES:**

1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL DRAWINGS AS REFERENCED ON C000. FOR GENERAL NOTES REFER TO DRAWING C001.
2. WARNING: THE LOCATION OF UNDERGROUND SERVICES ARE APPROXIMATE ONLY AND THE EXACT POSITION SHOULD BE PROVEN ON SITE. NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES ARE SHOWN.
3. ALL EXISTING DRAINAGE CHANNELS ARE LIVE. THE CONTRACTOR MUST MAKE ADEQUATE PROVISIONS TO MAINTAIN THESE DURING THE WORKS INCLUDING TEMPORARY RE-ROUTING ETC.

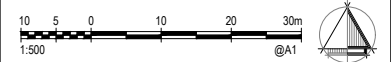
**LEGEND**

- EX.D — EXISTING DRAINAGE
- EX.E OH — EXISTING ELECTRICAL OVERHEAD
- EX.E UG — EXISTING ELECTRICAL UNDERGROUND
- EX.S — EXISTING SEWER
- - - - - TITLE BOUNDARY



T4	17/12/2020	RB	TENDER ISSUE	MG	TB
T3	20/11/2020	RB	TENDER ISSUE	MG	TB
T2	30/10/2020	RB	TENDER ISSUE	MG	TB
T1	12/10/2020	JP	TENDER ISSUE	MG	TB
REV	DATE	BY	DESCRIPTION	CHK	APD

DRAWING STATUS: **TENDER ISSUE**  
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SCALE:

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CLIENT:  
 **hodgkinson**

PROJECT:  
MT. BARKER  
KING'S BAPTIST SCHOOL

TITLE:  
EXISTING CONDITIONS PLAN

SCALE @ A1: N.T.S	CHECKED: T.B	APPROVED: A.N
PROJECT No: PS114515	DRAWN: R.B	DATE: 01/09/2020
DRAWING No: C010	REV: T4	

**PRINTING NOTE**  
ALL DRAWINGS MUST BE PRINTED IN COLOURS

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REFER ARCHITECTS  
DRAWINGS FOR CONCRETE  
FINISH DETAILS

CONCRETE SL72 MESH  
CENTRAL GRADE N25

20mm Q.R. (PM. 2/20QG  
SUBBASE 98% MODIFIED  
COMPACTION)

SUBGRADE  
REFER SITE PREPARATION  
AND EARTHWORKS NOTES

0.2mm THICK FORTECON  
MEMBRANE OR  
APPROVED EQUIVALENT.

100

150

DETAIL P1 - CONCRETE PAVEMENT  
LIGHT DUTY  
1:10

CONCRETE 2 LAYERS  
SL82 MESH 50mm  
COVER GRADE N40

20mm Q.R. (PM. 2/20QG  
SUBBASE 98% MODIFIED  
COMPACTION)

SUBGRADE  
REFER SITE PREPARATION  
AND EARTHWORKS NOTES

0.2mm THICK FORTECON  
MEMBRANE OR  
APPROVED EQUIVALENT.

200

150

DETAIL P2 - CONCRETE PAVEMENT  
HEAVY DUTY  
1:10

REFER TO ARCHITECT'S DRAWINGS FOR PAVER  
DETAIL INCLUDING BEDDING SAND AND PRODUCT  
REQUIREMENTS TO FILL AND LOCK BETWEEN  
PAVERS (TO BE WATER TIGHT TO STOP WATER  
INGRESS)

25mm BEDDING SAND

20mm Q.R. (PM. 2/20QG  
BASECOURSE 98% MODIFIED  
COMPACTION)

TYPE A SELECT FILL,  
COMPACTED TO 95% MDD

SUBGRADE  
REFER SITE PREPARATION  
AND EARTHWORKS NOTES

FLUSH KERB  
REFER TO DETAIL C4

150

150

DETAIL P3 - BRICK / BLOCK PAVEMENT  
(NON-VEHICULAR)  
1:10

SELECTED PAVING  
UNITS (80mm THK)

25mm BEDDING SAND

20mm F.C.R. (PM. 1/20QM  
BASECOURSE 98% MODIFIED  
COMPACTION)

20mm Q.R. (PM. 2/20QG  
SUBBASE 95% MODIFIED  
COMPACTION)

SUBGRADE  
REFER SITE PREPARATION  
AND EARTHWORKS NOTES

150

200

DETAIL P4 - BRICK / BLOCK PAVEMENT  
(VEHICULAR)  
1:10

PRIME AND AC7 DENSE  
MIX ASPHALT

20mm F.C.R. (PM. 1/20QM  
BASECOURSE 98%  
MODIFIED COMPACTION)

20mm Q.R. (PM. 2/20QG  
SUBBASE 95% MODIFIED  
COMPACTION)

SUBGRADE  
REFER SITE PREPARATION  
AND EARTHWORKS NOTES

75

75

DETAIL P5 - ASPHALT PAVEMENT  
LIGHT DUTY  
1:10

PRIME AND AC7 DENSE  
MIX ASPHALT

20mm F.C.R. (PM. 1/20QM  
BASECOURSE 98% MODIFIED  
COMPACTION)

20mm Q.R. (PM. 2/20QG  
SUBBASE 95% MODIFIED  
COMPACTION)

SUBGRADE  
REFER SITE PREPARATION  
AND EARTHWORKS NOTES

40

150

200

DETAIL P6 - ASPHALT PAVEMENT  
HEAVY DUTY  
1:10

EXISTING SEAL

EXISTING BASE

EXISTING SUBGRADE

200mm  
MINIMUM OVERLAP

SAW CUT OR EXISTING PAVER LINE

NEW SEAL

NEW WEARING COURSE  
(ASPHALT/SPRAY SEAL OR PAVER) AS SPECIFIED

NEW BASE LAYER AS SPECIFIED

NEW SUB BASE LAYER

SUBGRADE  
REFER SITE PREPARATION  
AND EARTHWORKS NOTES

200mm  
MIN.

CUT LINE

DETAIL P7 - PAVEMENT STAGGERED LAYER JOINT  
1:10

DOOR

20 MAX.

35 MAX.

280 MAX.

RAMP GRADIENT 1 IN 8 MAX.

DETAIL P8 - THRESHOLD RAMP  
NTS

THRESHOLD RAMPS  
FINISH PAVEMENT TO BE SHAPED AS PER THRESHOLD RAMP IN THE PAVEMENT TYPE SPECIFIED.  
TO BE TO AS PER PAVEMENT SPECIFIED TO THRESHOLD RAMP DIMENSIONS  
THRESHOLD RAMPS AT DOORWAYS ON A CONTINUOUS PATH OF TRAVEL SHALL HAVE -  
(a) A MAXIMUM RISE OF 35mm;  
(b) A MAXIMUM LENGTH OF 280mm;  
(c) A MAXIMUM GRADIENT OF 1:8; AND  
(d) BE LOCATED WITHIN 20mm OF THE DOOR LEAF WHICH IT SERVES, AS SHOWN IN FIGURE 21.  
THE EDGES OF THE THRESHOLD RAMP SHALL BE TAPERED OR SPLAYED AT A MINIMUM OF 45°  
WHERE THE RAMP DOES NOT ABUT A WALL.

CONCRETE PAVEMENT

12mm APPROVED  
JOINT FILLER

10xD

1.5 D

WALL, BUILDING, MANHOLE,  
RETAINING WALL, SLAB OR  
SIMILAR

SUBGRADE, REFER SITE  
PREPARATION  
AND EARTHWORKS  
NOTES

DETAIL P9 - PAVEMENT ISOLATION JOINT  
NTS

THICKENING TO BE PLACED TO ALL EXTERNAL EDGES OF  
CONCRETE PAVEMENT

SUITABLE ELASTOMERIC SEALANT  
TO PREVENT INGRESS OF DIRT.

DOVEL (LENGTH 'L')

30mm MIN COVER  
TO MESH.

40

0.5 D

25

0.5 L

BOND-BREAKING COMPOUND  
TOP DOWEL BAR. (0.5 D + 25mm)

LINE OF TRANSVERSE JOINT

FABRIC MUST BE CUT ONCE CAGE IS  
FIXED TO SUB-BASE AND BEFORE  
PLACING CONCRETE

10mm MIN THICKNESS  
COMPRESSIBLE FILLER MATERIAL  
FOR FULL DEPTH OF PAVEMENT

CAP REQUIRED FOR  
EXPANSION

FABRIC BENT INTO SHAPE  
SHOW AND TACK-WELDED TO  
GIVE CORRECT LOCATION TO  
DOWEL.

DETAIL P10 - DOWELED EXPANSION JOINT  
NTS

MAX SPACING 12M IN EACH DIRECTION  
1.5 D x 10 D EDGE THICKENING REQUIRED FOR  
HEAVY DUTY PAVEMENTS

COVER TO MESH AS  
SPECIFIED, DEPENDING  
ON EXPOSURE CLASS

40 min.  
(TYP.)

0.5 L

0.5 L + 25mm

FABRIC BENT INTO SHAPE SHOW  
AND TACK-WELDED TO GIVE  
CORRECT LOCATION TO DOWEL.  
CUT AT JOINT LOCATION

LINE OF TRANSVERSE JOINT

TOOLED OR SAW CUT JOINT  
WITH FILLER

DOVEL (LENGTH 'L')

BOND-BREAKING COMPOUND  
TOP DOWEL BAR. (0.5 D + 25mm)

DETAIL P11 - CONTRACTION JOINT  
(TOOLED OR SAWCUT)  
NTS

MAX SPACING 4M IN EACH DIRECTION

DOVEL (LENGTH 'L')

COVER TO MESH AS  
SPECIFIED, DEPENDING  
ON EXPOSURE CLASS

75mm

25mm

0.5 L

FORMED JOINT WITH SEALANT AND  
BOND-BREAKING BACKING TAPE

BOND-BREAKING COMPOUND  
TOP DOWEL BAR. (0.5 D + 25mm)

LINE OF TRANSVERSE JOINT

DETAIL P13 - PAVEMENT CONSTRUCTION JOINT  
NTS

MAX SPACING 4m IN EACH DIRECTION  
CONSTRUCTION / CONTRACTION JOINTS ARE INTERCHANGEABLE

REFER PAVEMENTS  
FOR DETAILS

200

150

LEVEL 2 SAMPLING  
AND TESTING

LEVEL 1 INSPECTION AND TESTING (IF  
CALLED UP IN EARTHWORKS NOTES OR  
GEOTECHNICAL SITE PREPARATION ONLY)

DESIGN SUBGRADE  
REFER SITE PREPARATION  
AND EARTHWORKS NOTES

FILL - TO BE PLACED AS  
PER EARTHWORKS NOTES

FOUNDATION / IN-SITU  
SUBGRADE TO BE  
PREPARED AS PER SITE  
PREPARATION NOTES

EXTENT OF BOX OUT -  
BELOW PAVEMENT -  
AS PER NOTES

TYPICAL EARTHWORKS BOX OUT DETAIL  
AND TESTING REQUIREMENTS  
HEAVY DUTY  
1:10

10 x 20 DEEP GROOVE TROWELLED  
IMMEDIATELY

EMER-SEAL ROADSEAL SEALANT TO ALLOW  
JOINT EXPANSION OF ± 25% TO BE APPLIED  
STRICTLY IN ACCORDANCE WITH THE  
MANUFACTURER'S RECOMMENDATIONS

FOAM BACKING ROD

GAP

30

DETAIL P15 - JOINT FILLING  
NTS

REFER TO ARCHITECT'S DRAWINGS FOR PAVER  
DETAIL INCLUDING BEDDING SAND AND PRODUCT  
REQUIREMENTS TO FILL AND LOCK BETWEEN  
PAVERS (TO BE WATER TIGHT TO STOP WATER  
INGRESS)

BEDDING

CONCRETE SLAB GRADE N25  
SL82 MESH PLACED CENTRALLY

20mm Q.R. (PM. 2/20QG  
BASECOURSE 98%  
MODIFIED COMPACTION)

SUBGRADE  
REFER SITE PREPARATION  
AND EARTHWORKS NOTES

FLUSH KERB  
REFER TO DETAIL C4

0.2mm THICK FORTECON  
MEMBRANE OR  
APPROVED EQUIVALENT

100

150

DETAIL P16 - PAVERS ON CONCRETE PAVEMENT  
(NON-VEHICULAR)  
1:10

LEGEND

DETAIL P1 - CONCRETE PAVEMENT -  
LIGHT DUTY

DETAIL P2 - CONCRETE PAVEMENT -  
HEAVY DUTY

DETAIL P3 - BRICK / BLOCK PAVEMENT  
(NON-VEHICULAR)

DETAIL P4 - BRICK / BLOCK PAVEMENT  
(VEHICULAR)

DETAIL P5 - ASPHALT PAVEMENT -  
LIGHT DUTY

DETAIL P6 - ASPHALT PAVEMENT -  
HEAVY DUTY

DETAIL P16 - PAVERS ON CONCRETE SLAB  
(NON-VEHICULAR)

PAVEMENT STAGGERED LAYER JOINT

DOWELLED EXPANSION JOINT

PAVEMENT ISOLATION JOINT

PAVEMENT CONSTRUCTION JOINT

THRESHOLD RAMP

T4

17/12/2020

RB

TENDER ISSUE

MG

TB

T3

20/11/2020

RB

TENDER ISSUE

MG

TB

T2

30/10/2020

RB

TENDER ISSUE

MG

TB

T1

12/10/2020

JP

TENDER ISSUE

MG

TB

REV

DATE

BY

DESCRIPTION

CHK

APD

DRAWING STATUS:

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CLIENT:

KING'S BAPTIST  
Grammar School

hodgkinson

PROJECT:

MT. BARKER  
KING'S BAPTIST SCHOOL

TITLE:

TYPICAL PAVEMENT DETAILS

SCALE @ A1:  
AS SHOWN

CHECKED:  
T.B

APPROVED:  
A.N

PROJECT No:  
PS114515

DRAWN:  
R.B

DATE:  
01/09/2020

DRAWING No:  
C030

REV:  
T4

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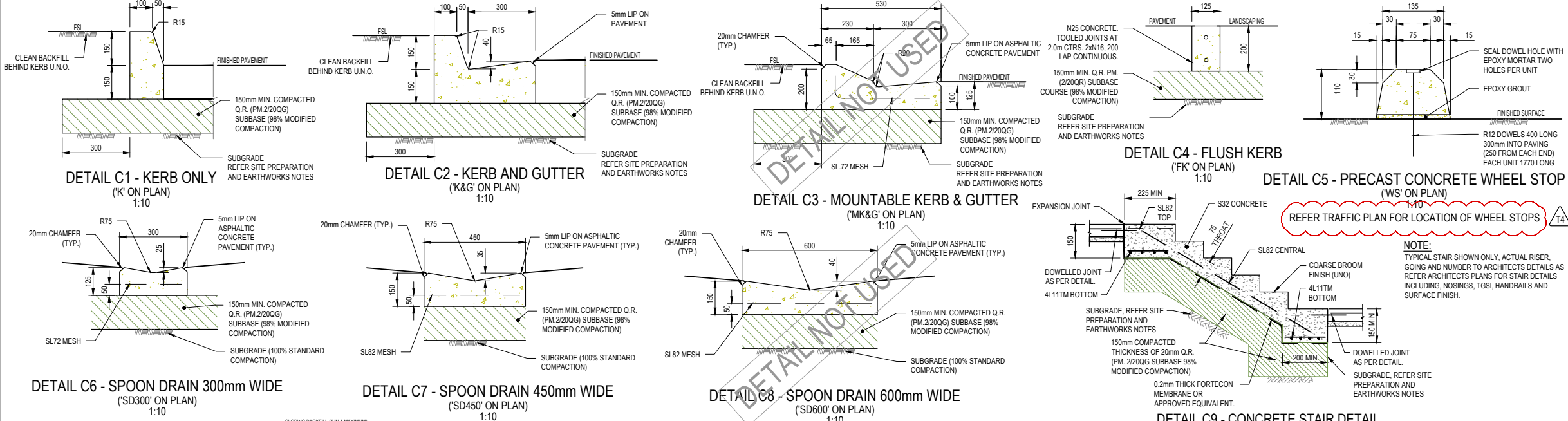
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DATE PLOTTED: 16/12/2020 6:11:56 PM BY: BALBASTRO, RAUL

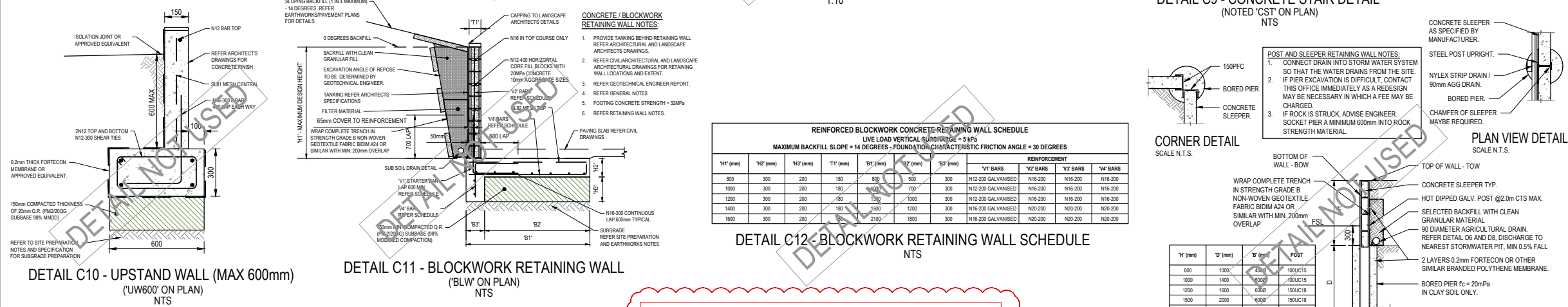
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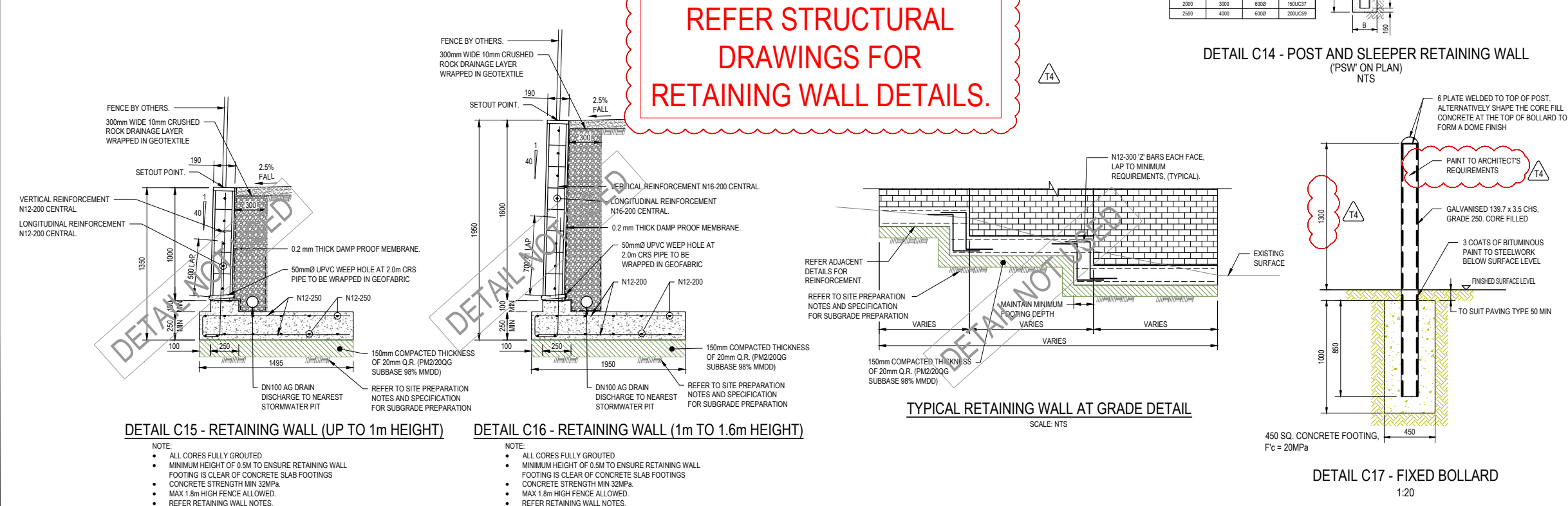




LEGEND	
K	KERB ONLY
K&G	KERB AND GUTTER
MK&G	MOUNTABLE KERB AND GUTTER
FK	FLUSH KERB
WS	PRECAST CONCRETE WHEEL STOP
SD300	SPOON DRAIN 300mm WIDE
SD450	SPOON DRAIN 450mm WIDE
SD600	SPOON DRAIN 600mm WIDE
CST	CONCRETE STAIR
UW600	UPSTAND WALL (MAX. 600mm)
BLW	BLOCKWORK RETAINING WALL
PSW	POST AND SLEEPER RETAINING WALL
PRW	PROPRIETARY RETAINING WALL



REFER STRUCTURAL  
DRAWINGS FOR  
RETAINING WALL DETAILS.



T4

17/12/2020

RB

TENDER ISSUE

MG

TB

T3

20/11/2020

RB

TENDER ISSUE

MG

TB

T2

30/10/2020

RB

TENDER ISSUE

MG

TB

T1

12/10/2020

AP

TENDER ISSUE

MG

TB

REV

DATE

BY

DESCRIPTION

CHK

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CLIENT:

KING'S BAPTIST  
Grammar School

hodgkinson

PROJECT:

MT. BARKER  
KING'S BAPTIST SCHOOL

TITLE:

TYPICAL CONCRETE DETAILS

SCALE @ A1:

AS SHOWN

CHECKED:

T.B

APPROVED:

A.N

PROJECT No:

PS114515

DRAWN:

R.B

DATE:

01/09/2020

DRAWING No:

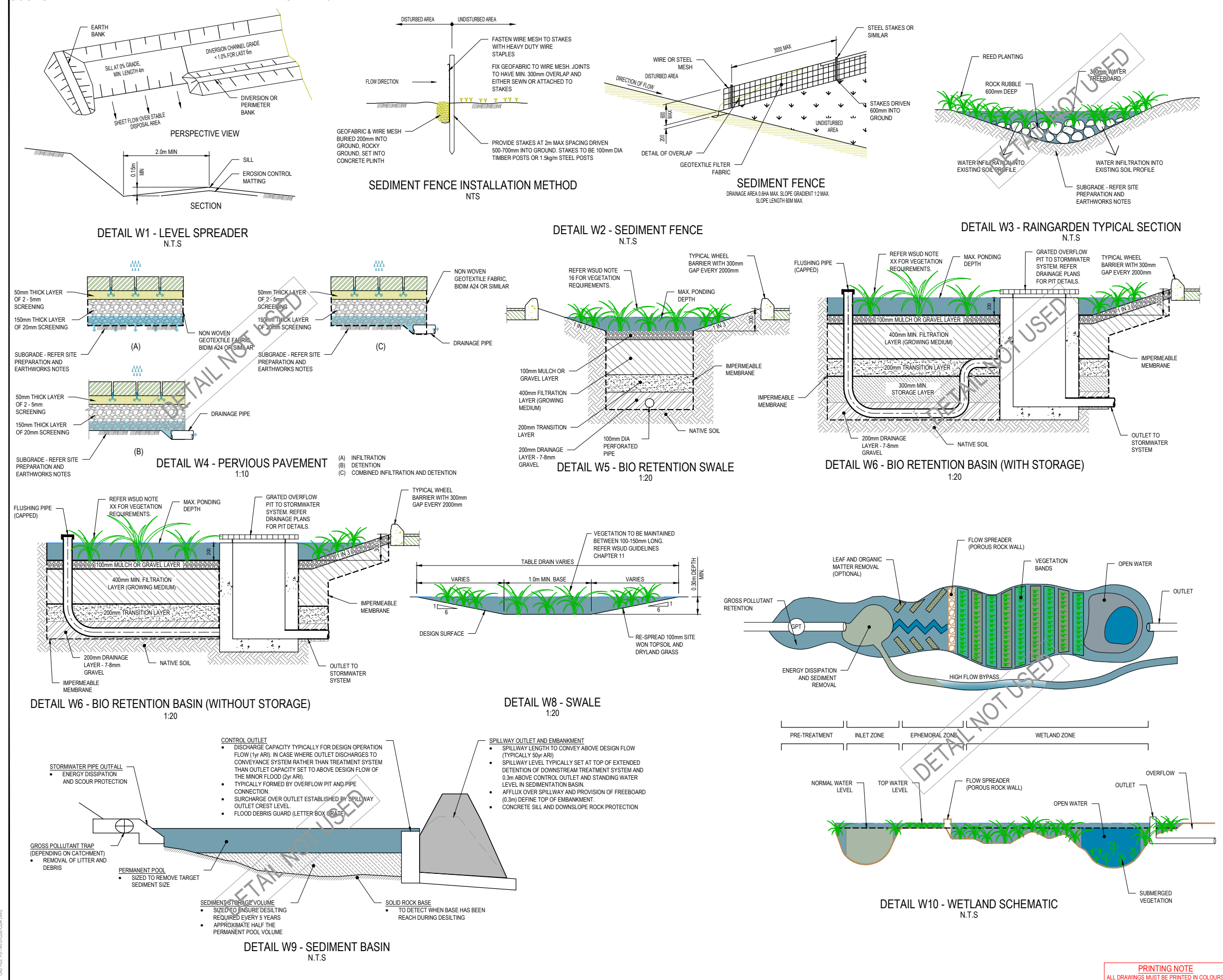
C032

REV:

T4

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LEGEND	
	BIO RETENTION BASIN
	LEVEL SPREADER
	SEDIMENT FENCE
	DETENTION BASIN
	BIO RETENTION SWALE
	RAIN GARDEN
	PERVIOUS PAVEMENT
	GROSS POLLUTANT TRAP REFER SITE PLAN FOR PROPRIETARY SYSTEM AND MODEL
	BUFFER STRIP (TOP SOIL AND GRASSED AREA)
	SWALE
	SEDIMENT BASIN
	WETLANDS
	RAINWATER TANKS. REFER HYDRAULIC DRAWINGS FOR DETAILS.

T4	17/12/2020	RB	TENDER ISSUE	MG	TB
T3	20/11/2020	RB	TENDER ISSUE	MG	TB
T2	30/10/2020	RB	TENDER ISSUE	MG	TB
T1	12/10/2020	JP	TENDER ISSUE	MG	TB
REV	DATE	BY	DESCRIPTION	CHK	APD

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CLIENT:  
**KING'S BAPTIST Grammar School** **hodgkinson**

PROJECT:  
**MT. BARKER KING'S BAPTIST SCHOOL**

TITLE:  
**WATER SENSITIVE URBAN DESIGN TYPICAL DETAILS**

SCALE @ A1: AS SHOWN	CHECKED: T.B	APPROVED: A.N
PROJECT No: PS114515	DRAWN: R.B	DATE: 01/09/2020
DRAWING No: C033	REV: T4	

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WATER SENSITIVE URBAN DESIGN NOTES

GUIDELINES

WHERE SPECIFICATION IS REFERENCED IN THE NOTES IT SHALL BE TAKEN TO MEAN THE DIPT MASTER SPECIFICATION PUBLIC REALM, WHICH IS AVAILABLE ONLINE FROM THE FOLLOWING WEB SITE:  
[https://www.dlt.sa.gov.au/contractor\\_documents/masterspecifications/Public\\_Realm](https://www.dlt.sa.gov.au/contractor_documents/masterspecifications/Public_Realm)

FOR GUIDELINES TO ASSIST CONSTRUCTION REFER WATER SENSITIVE URBAN DESIGN GREATER ADELAIDE REGION - TECHNICAL MANUAL - DECEMBER 2010'  
THE GUIDELINES ARE AVAILABLE FROM THE FOLLOWING WEB SITE:  
<https://www.sa.gov.au/topics/planning-and-property/land-and-property-development/planning-professionals/water-sensitive-urban-design>

BIO RETENTION SYSTEM

THE CONTRACTOR SHALL PROVIDE CERTIFICATION FROM THE SUPPLIER THAT THE BIO-FILTRATION MEDIA COMPLIES WITH THE CURRENT VERSION OF THE SPECIFICATION, INCLUDING BUT NOT LIMITED TO THE FOLLOWING:

- PR-LS-C10 - INSTALLATION OF WATER SENSITIVE URBAN DESIGN.
- SANDY LOAM FILTER MATERIAL PROPERTIES

HYDRAULIC CONDUCTIVITY	200 mm/hr
CLAY AND SILT (<0.05m DIAMETER)	<3%
VERY FINE SAND (0.05-0.15m DIAMETER)	5-30%
FINE SAND (0.15-0.25mm DIAMETER)	10-30%
MEDIUM TO COARSE SAND (0.25-1.00mm DIAMETER)	40-60%
COARSE SAND (1.0-2.0mm DIAMETER)	7-10%
FINE GRAVEL (2.0-3.4mm DIAMETER)	<3%
ORGANIC MATTER CONTENT	<5% w/w
	5.5 - 7.5 pH
ELECTRICAL CONDUCTIVITY	<1.2 ds/m
PHOSPHORUS CONCENTRATION	<100 mg/kg

3. FILTER MEDIA SHOULD BE FREE FROM RUBBISH, DELETERIOUS MATERIAL, TOXICANTS, DECLARED PLANTS AND LOCAL WEEDS. FILTER MEDIA SHOULD NOT BE HYDROPHOBIC OR DISPERSIBLE.
4. ALL LAYERS OF BIORETENTION SYSTEM TO BE INSTALLED DURING DRY WEATHER.
5. FILTER MEDIA SHOULD BE WELL GRADED, WITH NO GAPS IN THE PARTICLE SIZE GRADING.
6. TRANSITION LAYER TO BE CLEAN, WELL-GRADED COARSE SAND (CONTAINING < 2% FINES).
7. DRAINAGE LAYER TO BE CLEAN, FINE GRAVEL WITH 2.5mm WASHED SCREENINGS (CONTAINING < 2% FINES, MIN. SATURATED HYDRAULIC CONDUCTIVITY 400mm/hr).
8. INSTALL FILTER MEDIA IN TWO LIFTS IF DEPTH >500mm.
9. FILTER MEDIA TO BE LIGHTLY COMPACTED DURING INSTALLATION, USING A SINGLE PASS WITH A LIGHT ROLLER. NO OVER TRAFFICKING, MULTIPLE PASSES OR HEAVY COMPACTION TO BE APPLIED TO THE FILTER MEDIA.
10. ENSURE SURFACE OF BIORETENTION BASIN IS FLAT AT DESIGN LEVEL.
11. CONSTRUCTION TOLERANCES SHOULD BE IN ACCORDANCE WITH TABLE BELOW, UNLESS NOTED DIFFERENTLY BY LOCAL AUTHORITY GUIDELINES/STANDARDS.

HYDRAULIC STRUCTURES	± 25mm*
UNDER-DRAINAGE PIPES	± 25mm
EARTHWORKS FOR BASIN BASE	± 50mm
DRAINAGE AND TRANSITION LAYERS	± 25mm
	± 25mm
EMBANKMENT AND BUNDS	-25mm, +50mm

12. UNDER DRAINAGE PIPES SHOULD BE 100mm DIAMETER SLOTTED PVC PIPES AT A MINIMUM GRADE OF 0.5% SLOPED TOWARD OUTLET (UNLESS NOTED OTHERWISE ON DRAWING). PIPE SLOTS TO BE 2MM OR SMALLER (AS2439 PART 1).
13. UNDER DRAINAGE PIPES SHOULD NOT BE WRAPPED IN GEOFABRIC OR FILTER SOCKS AND SHOULD HAVE A MINIMUM OF 50mm OF DRAINAGE MATERIAL ABOVE THE OVERT OF THE PIPE.
14. BASIN BASE TO BE SLOPED TOWARD OUTLET AT MINIMUM GRADE OF 0.5%. BASE OF TRENCH/BASIN TO BE FREE OF LOCALISED DEPRESSIONS.
15. BASIN WALLS, FLOOR AND BATTERS TO BE LINED WITH IMPERMEABLE LINER - FORTECON OR SIMILAR. LINER TO BE KEYED INTO BATTERS AND PINNED TO IN-SITU SOILS. JOINTS TO BE LAPPED MIN. 0.3m AND TAPPED TO CREATE WATER TIGHT SEAL.
16. VEGETATION TO BE PLACED AS PER THE GUIDELINES BUT AS A MINIMUM ALLOW 8-10 PLANTS PER m<sup>2</sup> TO OBTAIN SUFFICIENT COVERAGE.

T4	17/12/2020	RB	TENDER ISSUE	MG	TB
T3	20/11/2020	RB	TENDER ISSUE	MG	TB
T2	30/10/2020	RB	TENDER ISSUE	MG	TB
T1	12/10/2020	JP	TENDER ISSUE	MG	TB
REV	DATE	BY	DESCRIPTION	CHK	APD

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CLIENT:



PROJECT:

MT. BARKER  
KING'S BAPTIST SCHOOL

TITLE:

WSUD NOTES

SCALE @ A1: AS SHOWN	CHECKED: T.B	APPROVED: A.N
PROJECT No: PS114515	DRAWN: R.B	DATE: 01/09/2020
DRAWING No: C034	REV: T4	

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NOTES:  
1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL  
DRAWINGS AS REFERENCED ON C000. FOR GENERAL  
NOTES REFER TO DRAWING C001.



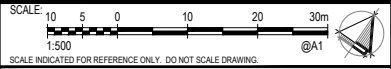
**WARNING**  
BEWARE OF UNDERGROUND SERVICES.  
THE LOCATION OF UNDERGROUND SERVICES ARE  
APPROXIMATE ONLY AND THEIR EXACT POSITION SHOULD  
BE PROVEN ON SITE BY CIVIL CONTRACTOR PRIOR TO  
CONSTRUCTION OF ANY CIVIL WORKS. NO GUARANTEE IS  
GIVEN THAT ALL EXISTING SERVICES ARE SHOWN.

T4	17/12/2020	RB	TENDER ISSUE	MG	TB
T3	20/11/2020	RB	TENDER ISSUE	MG	TB
T2	30/10/2020	RB	TENDER ISSUE	MG	TB
T1	12/10/2020	JP	TENDER ISSUE	MG	TB
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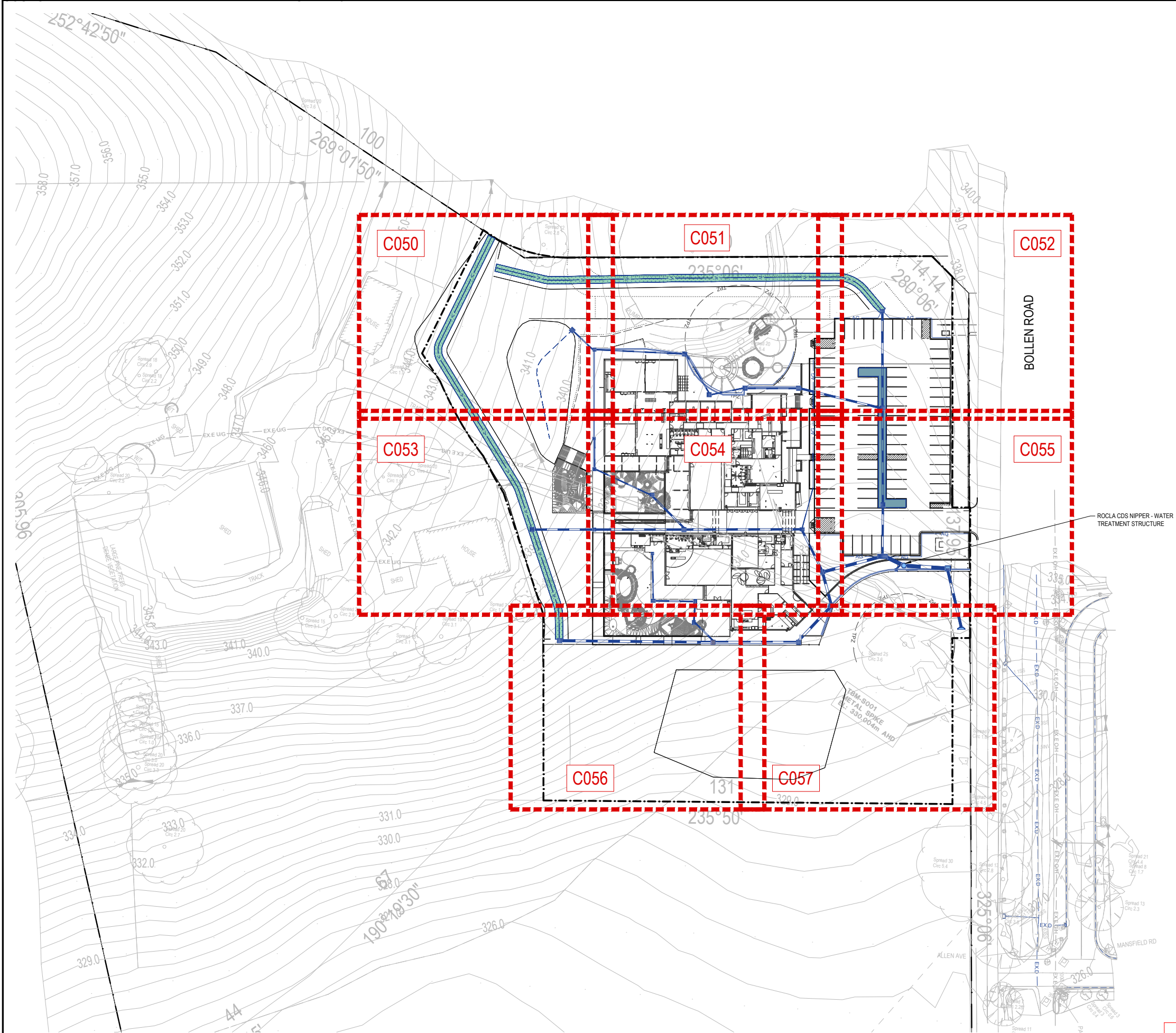
PROJECT: MT. BARKER  
KING'S BAPTIST SCHOOL

TITLE: GENERAL ARRANGEMENT AND KEY PLAN

SCALE @ A1: 1:500	CHECKED: T.B	APPROVED: A.N
PROJECT No: PS114515	DRAWN: R.B	DATE: 07/08/2020
DRAWING No: C040	REV: T4	

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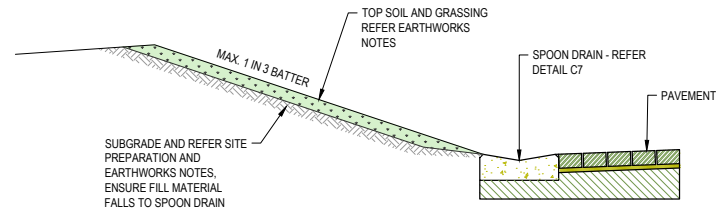
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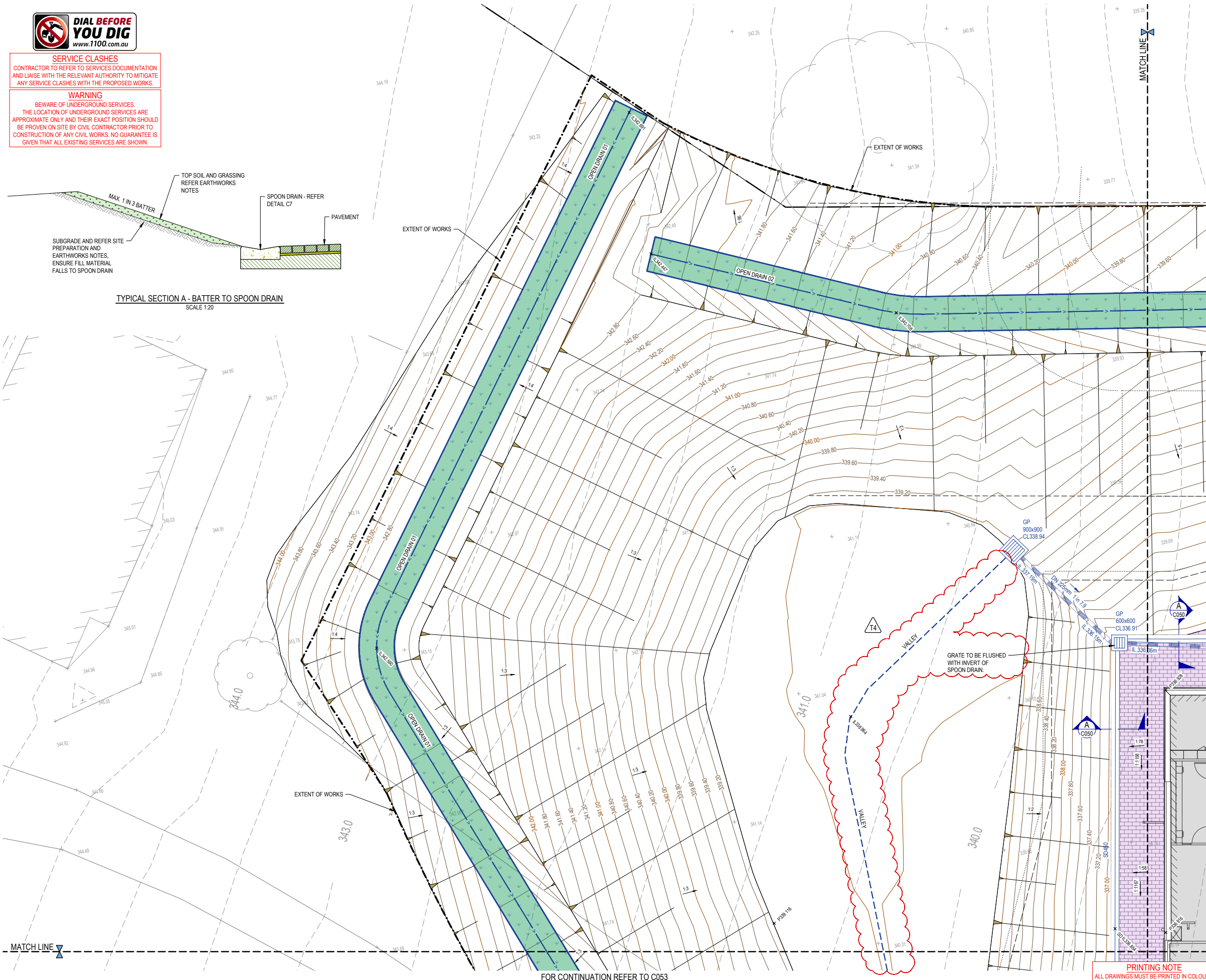


**SERVICE CLASHES**  
CONTRACTOR TO REFER TO SERVICES DOCUMENTATION AND LIAISE WITH THE RELEVANT AUTHORITY TO MITIGATE ANY SERVICE CLASHES WITH THE PROPOSED WORKS.

**WARNING**  
BEWARE OF UNDERGROUND SERVICES. THE LOCATION OF UNDERGROUND SERVICES ARE APPROXIMATE ONLY AND THEIR EXACT POSITION SHOULD BE PROVEN ON SITE BY CIVIL CONTRACTOR PRIOR TO CONSTRUCTION OF ANY CIVIL WORKS. NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES ARE SHOWN.



TYPICAL SECTION A - BATTER TO SPOON DRAIN  
SCALE 1:20



- NOTES:**
1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL DRAWINGS AS REFERENCED ON DRAWING C000. FOR GENERAL NOTES REFER TO DRAWING C001.
  2. ISOLATION JOINT TO BE PLACED AT INTERFACE OF ALL NEW PAVEMENTS AND STRUCTURES/EXISTING FOOTPATHS.
  3. PAVEMENTS TO FALL AWAY FROM BUILDING AT A MIN GRADE OF 1:100 AND MAX. CROSS FALL ON FOOTPATH TO BE 1:40.
  4. FLOOR WASTES ARE TO BE 100mmØ STAINLESS STEEL SLIP SAFE FLOOR WASTES (TYPE SPS TRUEFLO FLAT GRATE RWO) OR APPROVED EQUIVALENT.
  5. ALL PIPE CONNECTIONS FROM FLOOR WASTE TO BE 100mmØ UNO.
  6. ALL EARTHWORKS AREAS NOT SHOWN HATCHED ARE TO BE COVERED WITH TOP SOIL AND GRASS AS PER EARTHWORKS NOTE 6.
  7. SUBSOIL DRAIN REQUIRED BEHIND ALL RETAINING WALLS WITH FLUSH-OUT AT UPSTREAM END AND CONNECTION TO SW NETWORK AT DOWNSTREAM END. REFER TYPICAL DETAILS.
  8. REFER HYDRAULICS DRAWINGS FOR DOWNPIPE LOCATIONS AND CONNECTIONS TO STORMWATER.

- LEGEND**
- EX.D — EXISTING DRAINAGE
  - EX.E OH — EXISTING ELECTRICAL OVERHEAD
  - EX.E U/G — EXISTING ELECTRICAL UNDERGROUND
  - EX.S — EXISTING SEWER
  - — TITLE BOUNDARY
  - 2250 — DRAINAGE PIPE
  - GP — GRATED PIT, REFER DETAIL D1 / D2
  - JP — JUNCTION PIT, REFER DETAIL D1 / D2
  - AG — AG DRAIN, REFER DETAIL D6, D7 AND D8
  - SD — PROPOSED SWALE, REFER DETAIL D16
  - — PROPOSED SPOON DRAIN
  - — TRENCH GRATE, REFER DETAIL D10
  - 449.50 — PROPOSED CONTOURS
  - 444.50 — EXISTING CONTOURS
  - — TPZ — TREE PROTECTION ZONE
  - x x x — SERVICES TO BE REMOVED
  - PRW — REFER RETAINING WALL NOTES
  - FALL — PROPOSED FALL
  - x P335.00 — PAVEMENT LEVEL
  - x TOK335.00 — TOP OF WALL LEVEL
  - x BOW335.00 — BOTTOM OF WALL LEVEL
  - x TOW335.00 — TOP OF KERB LEVEL
  - x BOK335.00 — BOTTOM OF KERB LEVEL
  - — HEAVY DUTY ASPHALT PAVEMENT - REFER DETAIL P6
  - — BRICK / BLOCK PAVEMENT - VEHICULAR, REFER DETAIL P4
  - — BRICK / BLOCK PAVEMENT - NON VEHICULAR, REFER DETAIL P3
  - — LIGHT DUTY CONCRETE PAVEMENT - REFER DETAIL P1
  - — LANDSCAPE - REFER LANDSCAPE DRAWINGS FOR DETAILS INCLUDING DRAINAGE

FOR CONTINUATION REFER TO C051

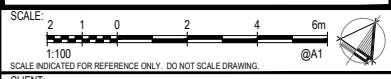
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T3	20/11/2020	RB	TENDER ISSUE	MG	TB
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T1	12/10/2020	JP	TENDER ISSUE	MG	TB

REV	DATE	BY	DESCRIPTION	CHK	APD

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PROJECT: **MT. BARKER KING'S BAPTIST SCHOOL**

TITLE: **SITE WORKS PLAN SHEET 1 OF 8**

SCALE @ A1: 1:100	CHECKED: T.B	APPROVED: A.N
PROJECT No: PS114515	DRAWN: R.B	DATE: 01/09/2020

DRAWING No: **C050** REV: **T4**

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ANY SERVICE CLASHES WITH THE PROPOSED WORKS.

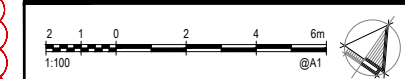
**WARNING**  
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BE PROVEN ON SITE BY CIVIL CONTRACTOR PRIOR TO  
CONSTRUCTION OF ANY CIVIL WORKS. NO GUARANTEE IS  
GIVEN THAT ALL EXISTING SERVICES ARE SHOWN.

- NOTES:**
1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL DRAWINGS AS REFERENCED ON DRAWING C000. FOR GENERAL NOTES REFER TO DRAWING C001.
  2. ISOLATION JOINT TO BE PLACED AT INTERFACE OF ALL NEW PAVEMENTS AND STRUCTURES/EXISTING FOOTPATHS.
  3. PAVEMENTS TO FALL AWAY FROM BUILDING AT A MIN GRADE OF 1:100 AND MAX. CROSS FALL ON FOOTPATH TO BE 1:40.
  4. FLOOR WASTES ARE TO BE 100mmØ STAINLESS STEEL SLIP SAFE FLOOR WASTES (TYPE SPS TRUEFLO FLAT GRATE RWO) OR APPROVED EQUIVALENT.
  5. ALL PIPE CONNECTIONS FROM FLOOR WASTE TO BE 100mmØ UNO.
  6. ALL EARTHWORKS AREAS NOT SHOWN HATCHED ARE TO BE COVERED WITH TOP SOIL AND GRASS AS PER EARTHWORKS NOTE 6.
  7. SUBSOIL DRAIN REQUIRED BEHIND ALL RETAINING WALLS WITH FLUSH-OUT AT UPSTREAM END AND CONNECTION TO SW NETWORK AT DOWNSTREAM END. REFER TYPICAL DETAILS.
  8. REFER HYDRAULICS DRAWINGS FOR DOWNPIPE LOCATIONS AND CONNECTIONS TO STORMWATER.

- LEGEND**
- EX D — EXISTING DRAINAGE
  - EX E O/H — EXISTING ELECTRICAL OVERHEAD
  - EX E U/G — EXISTING ELECTRICAL UNDERGROUND
  - EX S — EXISTING SEWER
  - — TITLE BOUNDARY
  - 2250 — DRAINAGE PIPE
  - GP — GRATED PIT, REFER DETAIL D1 / D2
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  - AG — AG DRAIN, REFER DETAIL D6, D7 AND D8
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  - x BOK335.00 — BOTTOM OF KERB LEVEL
  - — HEAVY DUTY ASPHALT PAVEMENT - REFER DETAIL P6
  - — BRICK / BLOCK PAVEMENT - VEHICULAR, REFER DETAIL P4
  - — BRICK / BLOCK PAVEMENT - NON VEHICULAR, REFER DETAIL P3
  - — LIGHT DUTY CONCRETE PAVEMENT - REFER DETAIL P1
  - — LANDSCAPE - REFER LANDSCAPE DRAWINGS FOR DETAILS INCLUDING DRAINAGE

REV	DATE	BY	DESCRIPTION	CHK	APD
T4	17/12/2020	RB	TENDER ISSUE	MG	TB
T3	20/11/2020	RB	TENDER ISSUE	MG	TB
T2	30/10/2020	RB	TENDER ISSUE	MG	TB
T1	12/10/2020	JP	TENDER ISSUE	MG	TB

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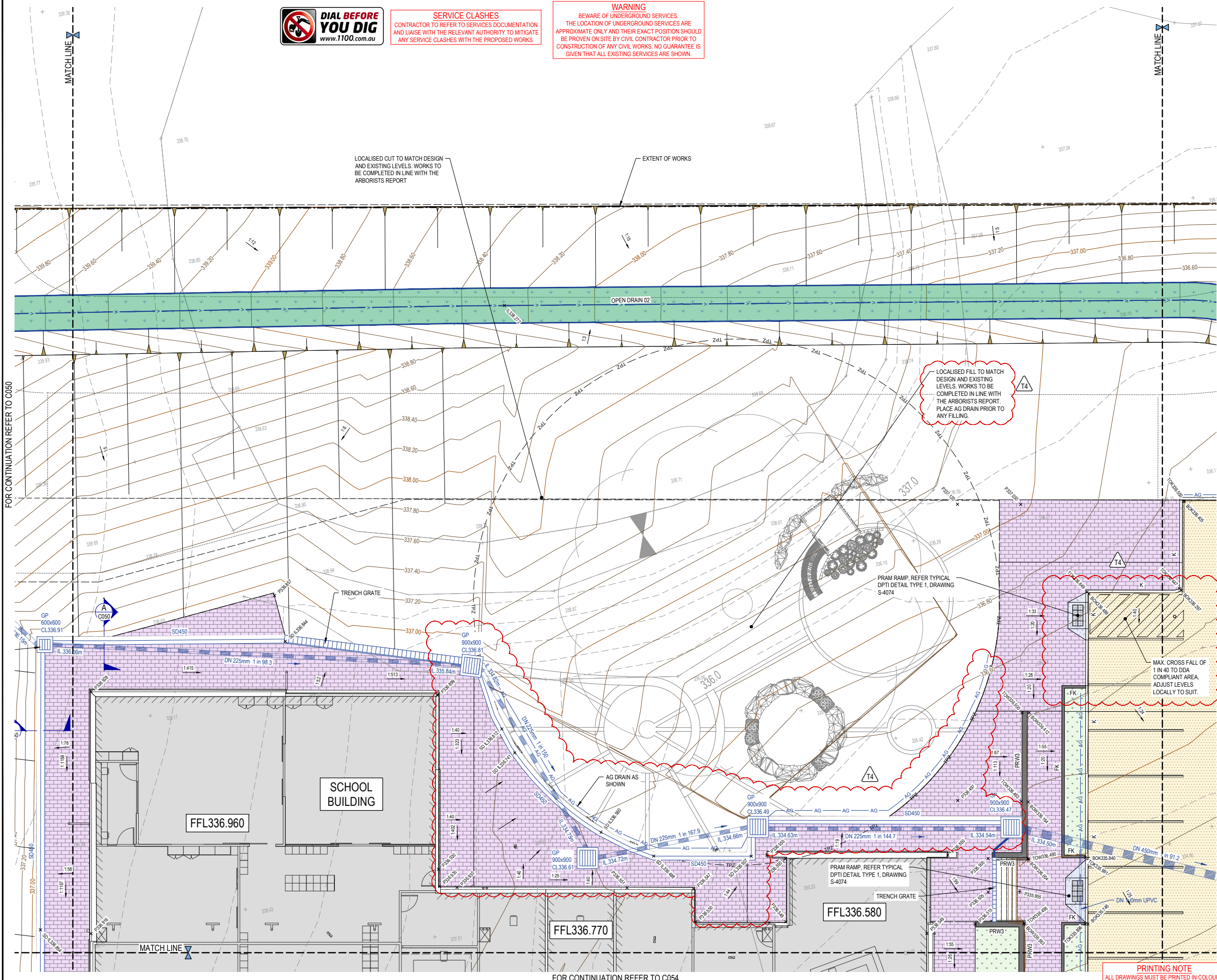
CLIENT:  
**KING'S BAPTIST Grammar School** **hodgkinson**

PROJECT:  
MT. BARKER  
KING'S BAPTIST SCHOOL

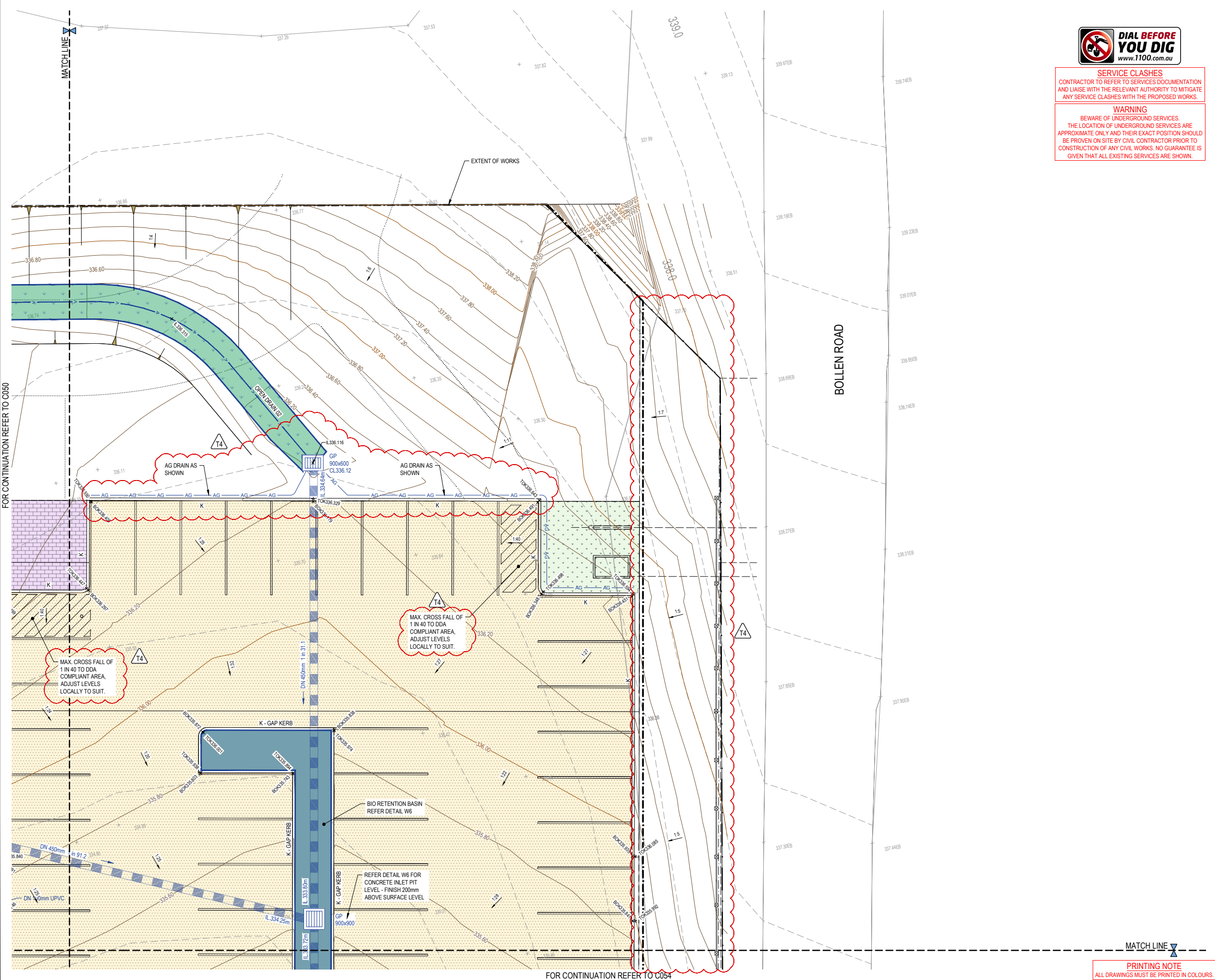
TITLE:  
SITE WORKS PLAN  
SHEET 2 OF 8

SCALE @ A1: 1:100	CHECKED: T.B	APPROVED: A.N
PROJECT No: PS114515	DRAWN: R.B	DATE: 01/09/2020
DRAWING No: C051	REV: T4	

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- REFER HYDRAULICS DRAWINGS FOR DOWNPIPE LOCATIONS AND CONNECTIONS TO STORMWATER.

**LEGEND**

- EXISTING DRAINAGE
- EXISTING ELECTRICAL OVERHEAD
- EXISTING ELECTRICAL UNDERGROUND
- EXISTING SEWER
- TITLE BOUNDARY
- DRAINAGE PIPE
- GRATED PIT, REFER DETAIL D1 / D2
- JUNCTION PIT, REFER DETAIL D1 / D2
- HEADWALL
- AG DRAIN, REFER DETAIL D6, D7 AND D8
- PROPOSED SWALE, REFER DETAIL D16
- PROPOSED SPOON DRAIN
- TRENCH GRATE, REFER DETAIL D10
- PROPOSED CONTOURS
- EXISTING CONTOURS
- TREE PROTECTION ZONE
- SERVICES TO BE REMOVED
- REFER RETAINING WALL NOTES
- PROPOSED FALL
- PAVEMENT LEVEL
- TOP OF WALL LEVEL
- BOTTOM OF WALL LEVEL
- TOP OF KERB LEVEL
- BOTTOM OF KERB LEVEL
- HEAVY DUTY ASPHALT PAVEMENT - REFER DETAIL P6
- BRICK / BLOCK PAVEMENT - VEHICULAR, REFER DETAIL P4
- BRICK / BLOCK PAVEMENT - NON VEHICULAR, REFER DETAIL P3
- LIGHT DUTY CONCRETE PAVEMENT - REFER DETAIL P1
- LANDSCAPE - REFER LANDSCAPE DRAWINGS FOR DETAILS INCLUDING DRAINAGE

REV	DATE	BY	DESCRIPTION	CHK	APD
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T3	20/11/2020	RB	TENDER ISSUE	MG	TB
T2	30/10/2020	RB	TENDER ISSUE	MG	TB
T1	12/10/2020	JP	TENDER ISSUE	MG	TB

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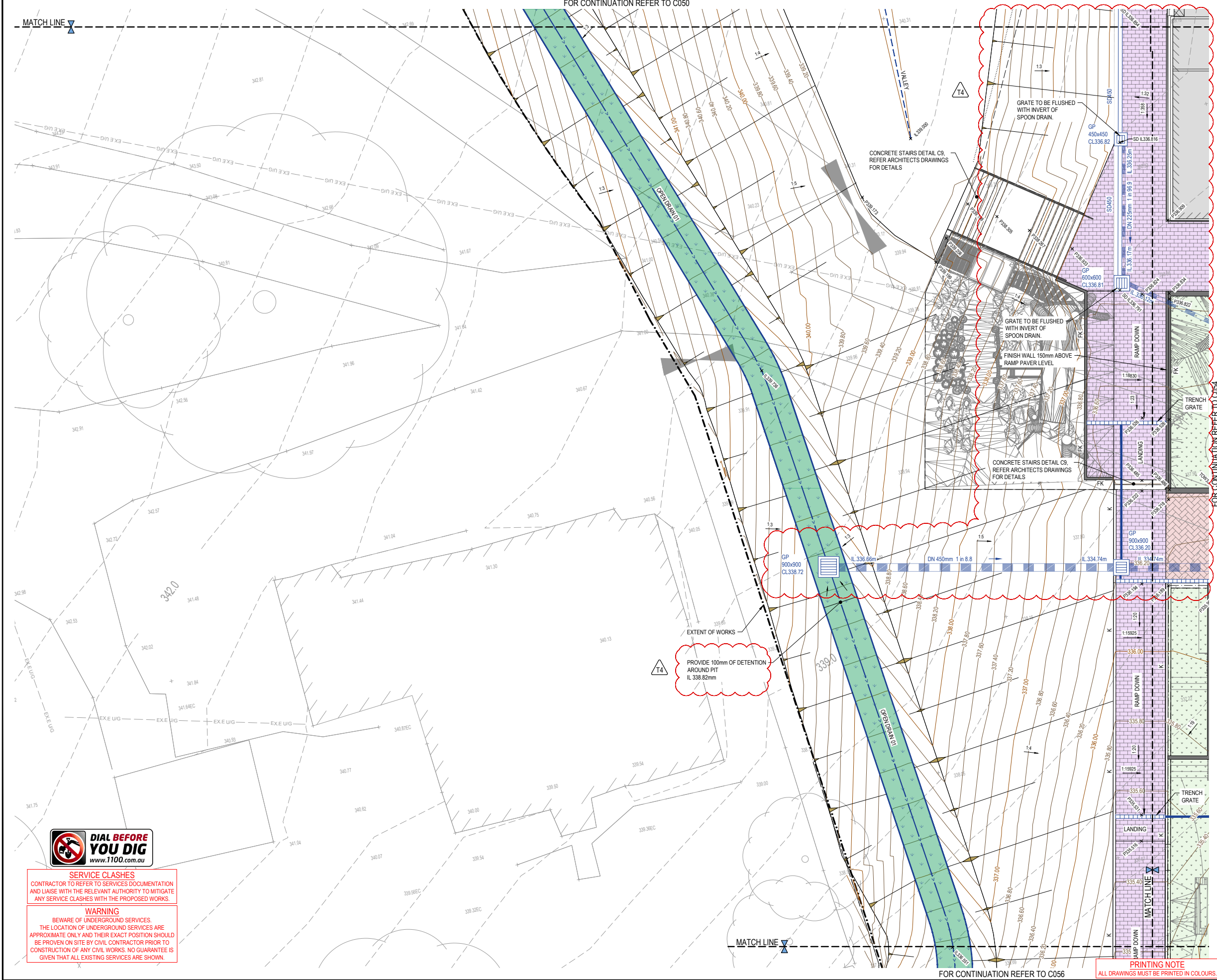
CLIENT: KING'S BAPTIST Grammar School

PROJECT: MT. BARKER KING'S BAPTIST SCHOOL

TITLE: SITE WORKS PLAN  
SHEET 3 OF 8

SCALE @ A1: 1:100	CHECKED: T.B	APPROVED: A.N
PROJECT No: PS114515	DRAWN: R.B	DATE: 01/09/2020
DRAWING No: C052	REV: T4	

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**LEGEND**

EX D	EXISTING DRAINAGE
EX E OH	EXISTING ELECTRICAL OVERHEAD
EX E U/G	EXISTING ELECTRICAL UNDERGROUND
EX S	EXISTING SEWER
---	TITLE BOUNDARY
2250	DRAINAGE PIPE
GP	GRATED PIT, REFER DETAIL D1 / D2
JP	JUNCTION PIT, REFER DETAIL D1 / D2
AG	HEADWALL
AG	AG DRAIN, REFER DETAIL D6, D7 AND D8
SD	PROPOSED SWALE, REFER DETAIL D16
SD	PROPOSED SPOON DRAIN
TG	TRENCH GRATE, REFER DETAIL D10
449.50	PROPOSED CONTOURS
444.50	EXISTING CONTOURS
TPZ	TREE PROTECTION ZONE
X X X	SERVICES TO BE REMOVED
PRW	REFER RETAINING WALL NOTES
FALL	PROPOSED FALL
P335.00	PAVEMENT LEVEL
TOK335.00	TOP OF WALL LEVEL
BOW335.00	BOTTOM OF WALL LEVEL
TOW335.00	TOP OF KERB LEVEL
BOK335.00	BOTTOM OF KERB LEVEL
HEAVY DUTY ASPHALT PAVEMENT - REFER DETAIL P6	
BRICK / BLOCK PAVEMENT - VEHICULAR, REFER DETAIL P4	
BRICK / BLOCK PAVEMENT - NON VEHICULAR, REFER DETAIL P3	
LIGHT DUTY CONCRETE PAVEMENT - REFER DETAIL P1	
LANDSCAPE - REFER LANDSCAPE DRAWINGS FOR DETAILS INCLUDING DRAINAGE	

T4	17/12/2020	RB	TENDER ISSUE	MG	TB
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T2	30/10/2020	RB	TENDER ISSUE	MG	TB
T1	12/10/2020	JP	TENDER ISSUE	MG	TB

REV	DATE	BY	DESCRIPTION	CHK	APD

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CLIENT:  
**KING'S BAPTIST Grammar School** **hodgkinson**

PROJECT:  
MT. BARKER  
KING'S BAPTIST SCHOOL

TITLE:  
SITE WORKS PLAN  
SHEET 4 OF 8

SCALE @ A1: 1:100	CHECKED: T.B	APPROVED: A.N
PROJECT No: PS114515	DRAWN: R.B	DATE: 01/09/2020
DRAWING No: C053	REV: T4	

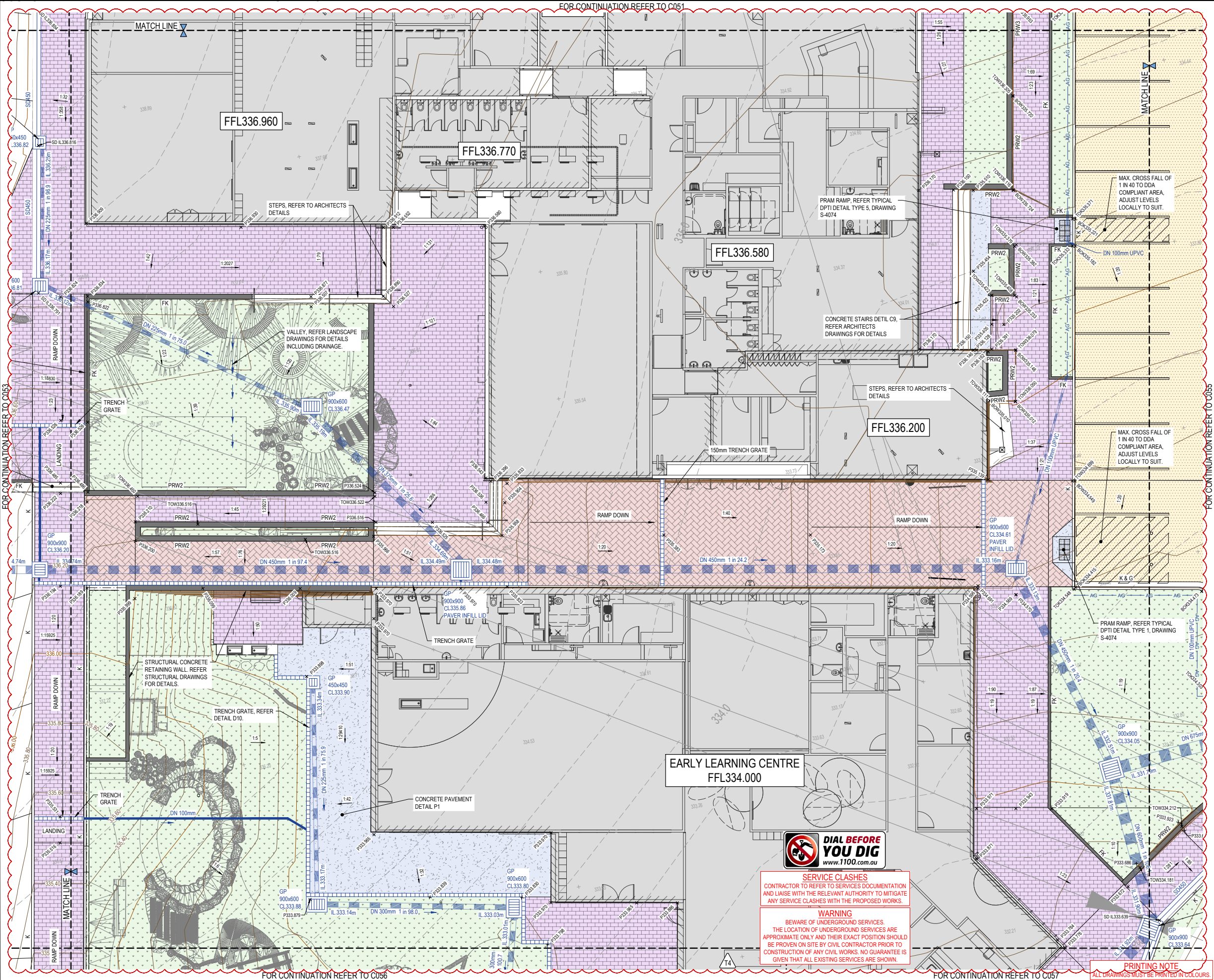
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**LEGEND**

- EXISTING DRAINAGE
- EXISTING ELECTRICAL OVERHEAD
- EXISTING ELECTRICAL UNDERGROUND
- EXISTING SEWER
- TITLE BOUNDARY
- 2250
- GP GRATED PIT, REFER DETAIL D1 / D2
- JP JUNCTION PIT, REFER DETAIL D1 / D2
- AG AG DRAIN, REFER DETAIL D6, D7 AND D8
- SD PROPOSED SWALE, REFER DETAIL D16
- PROPOSED SPOON DRAIN
- TRENCH GRATE, REFER DETAIL D10
- PROPOSED CONTOURS
- EXISTING CONTOURS
- TPZ TREE PROTECTION ZONE
- SERVICES TO BE REMOVED
- REFER RETAINING WALL NOTES
- PROPOSED FALL
- PAVEMENT LEVEL
- TOP OF WALL LEVEL
- BOTTOM OF WALL LEVEL
- TOP OF KERB LEVEL
- BOTTOM OF KERB LEVEL
- HEAVY DUTY ASPHALT PAVEMENT - REFER DETAIL P6
- BRICK / BLOCK PAVEMENT - VEHICULAR, REFER DETAIL P4
- BRICK / BLOCK PAVEMENT - NON VEHICULAR, REFER DETAIL P3
- LIGHT DUTY CONCRETE PAVEMENT - REFER DETAIL P1
- LANDSCAPE - REFER LANDSCAPE DRAWINGS FOR DETAILS INCLUDING DRAINAGE

REV	DATE	BY	DESCRIPTION	CHK	APD
T4	17/12/2020	RB	TENDER ISSUE	MG	TB
T3	20/11/2020	RB	TENDER ISSUE	MG	TB
T2	30/10/2020	RB	TENDER ISSUE	MG	TB
T1	12/10/2020	JP	TENDER ISSUE	MG	TB

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PROJECT:

**MT. BARKER KING'S BAPTIST SCHOOL**

TITLE:

**SITE WORKS PLAN SHEET 5 OF 8**

SCALE @ A1: 1:100	CHECKED: T.B	APPROVED: A.N
PROJECT No: PS114515	DRAWN: R.B	DATE: 01/09/2020
DRAWING No: C054	REV: T4	

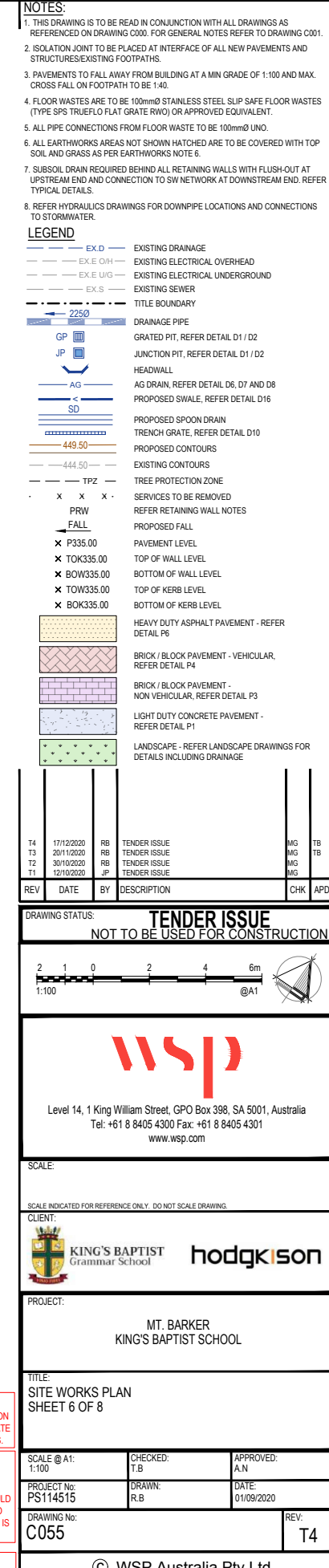
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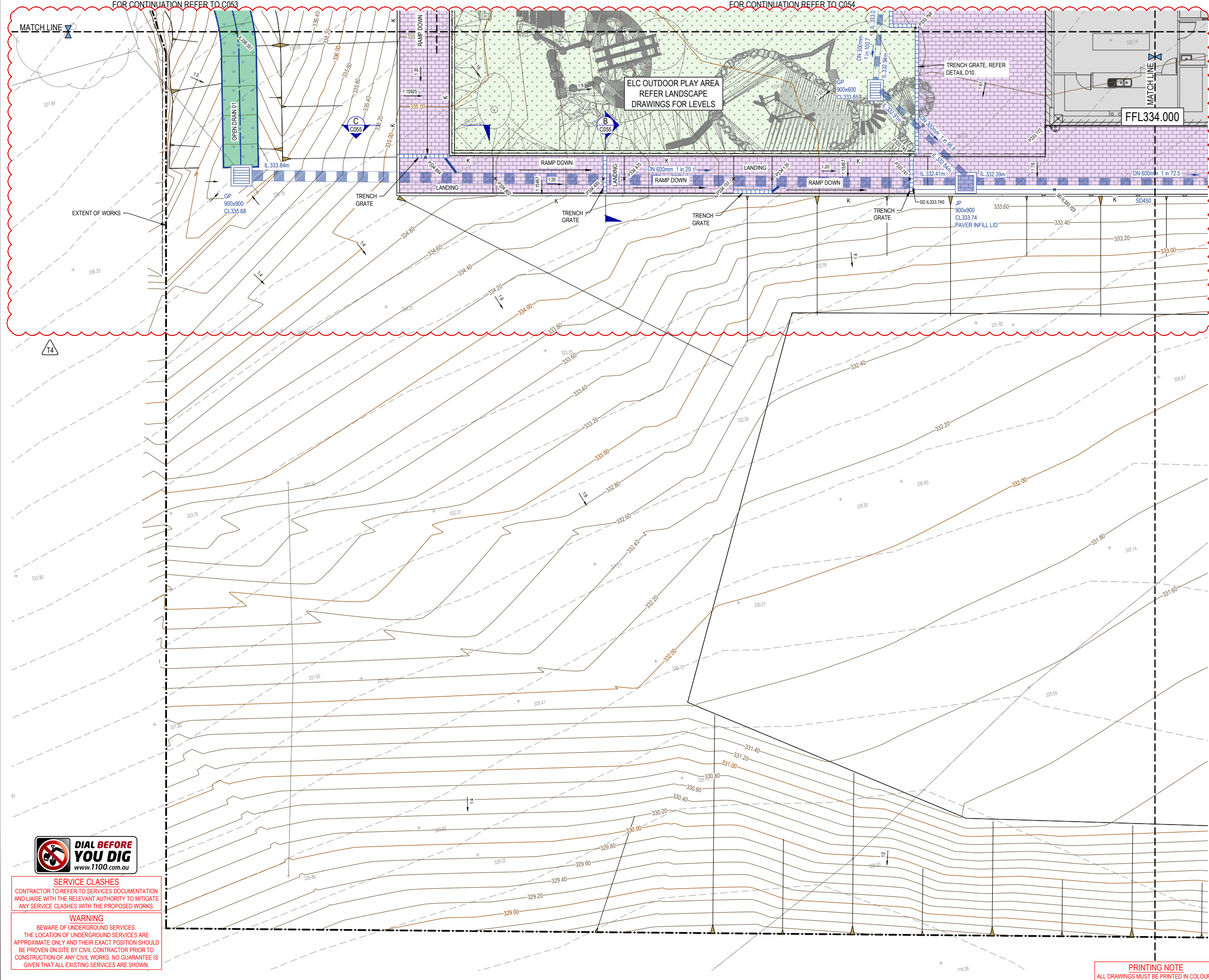
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**LEGEND**

- EX.D — EXISTING DRAINAGE
- EX.E OH — EXISTING ELECTRICAL OVERHEAD
- EX.E UG — EXISTING ELECTRICAL UNDERGROUND
- EX.S — EXISTING SEWER
- — TITLE BOUNDARY
- 2250 — DRAINAGE PIPE
- GP — GRATED PIT, REFER DETAIL D1 / D2
- JP — JUNCTION PIT, REFER DETAIL D1 / D2
- AG — HEADWALL
- AG — AG DRAIN, REFER DETAIL D6, D7 AND D8
- SD — PROPOSED SWALE, REFER DETAIL D16
- SD — PROPOSED SPOON DRAIN
- SD — TRENCH GRATE, REFER DETAIL D10
- 449.50 — PROPOSED CONTOURS
- 444.50 — EXISTING CONTOURS
- — TPZ — TREE PROTECTION ZONE
- x x x — SERVICES TO BE REMOVED
- PRW — REFER RETAINING WALL NOTES
- FALL — PROPOSED FALL
- x P335.00 — PAVEMENT LEVEL
- x TOK335.00 — TOP OF WALL LEVEL
- x BOW335.00 — BOTTOM OF WALL LEVEL
- x TOW335.00 — TOP OF KERB LEVEL
- x BOK335.00 — BOTTOM OF KERB LEVEL
- HEAVY DUTY ASPHALT PAVEMENT - REFER DETAIL P6
- BRICK / BLOCK PAVEMENT - VEHICULAR, REFER DETAIL P4
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T4	17/12/2020	RB	TENDER ISSUE	MG	TB
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T2	20/10/2020	RB	TENDER ISSUE	MG	TB
T1	12/10/2020	JP	TENDER ISSUE	MG	TB

REV	DATE	BY	DESCRIPTION	CHK	APD

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PROJECT:

**MT. BARKER KING'S BAPTIST SCHOOL**

TITLE:

**SITE WORKS PLAN SHEET 7 OF 8**

SCALE @ A1: 1:100	CHECKED: T.B	APPROVED: A.N
PROJECT No: PS114515	DRAWN: R.B	DATE: 01/09/2020
DRAWING No: C056	REV: T4	

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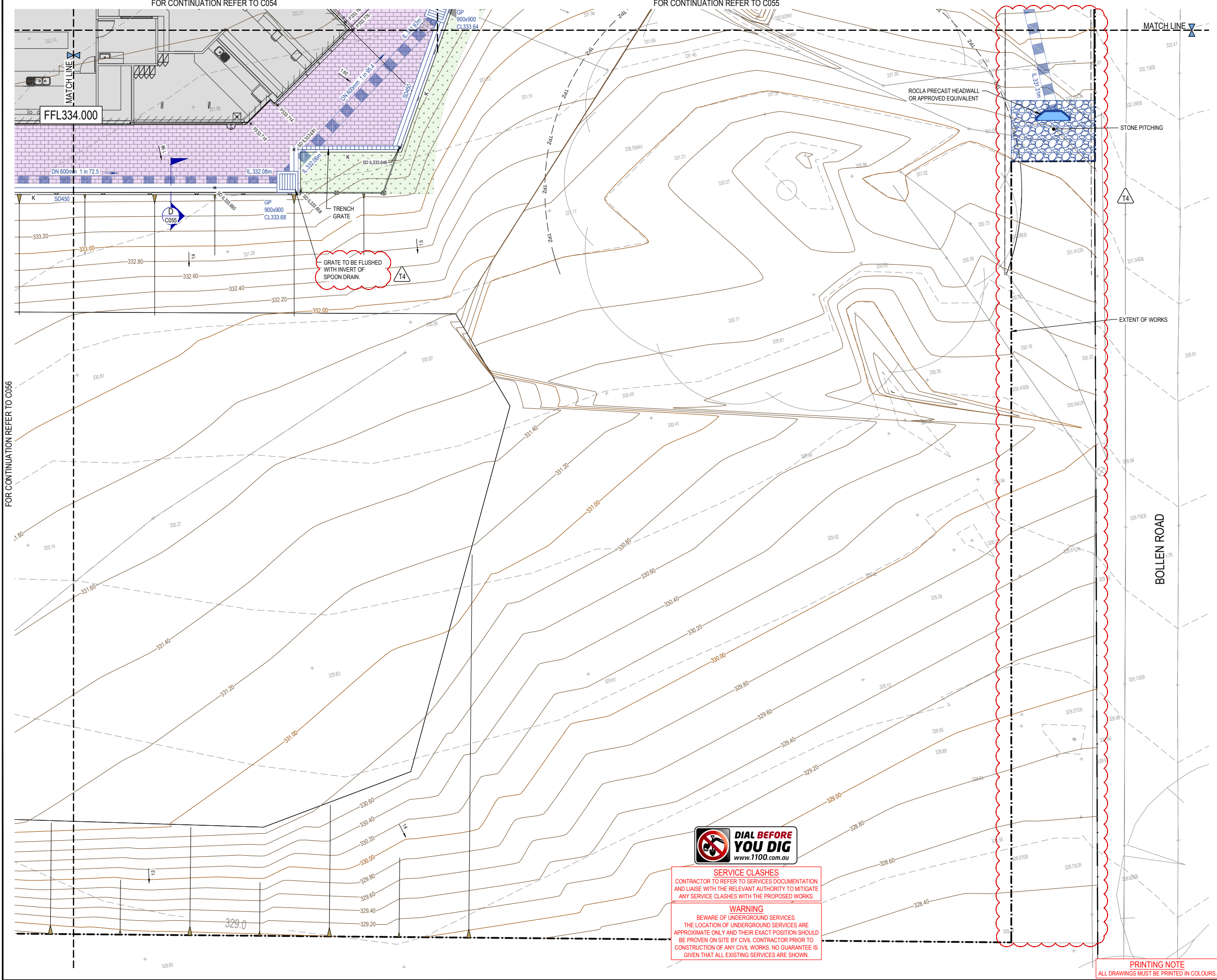
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- EX E OH — EXISTING ELECTRICAL OVERHEAD
- EX E UG — EXISTING ELECTRICAL UNDERGROUND
- EX S — EXISTING SEWER
- — — — — TITLE BOUNDARY
- 2250 — DRAINAGE PIPE
- GP — GRATED PIT, REFER DETAIL D1 / D2
- JP — JUNCTION PIT, REFER DETAIL D1 / D2
- AG — AG DRAIN, REFER DETAIL D6, D7 AND D8
- SD — PROPOSED SWALE, REFER DETAIL D16
- — — — — PROPOSED SPOON DRAIN
- — — — — TRENCH GRATE, REFER DETAIL D10
- — — — — PROPOSED CONTOURS
- — — — — EXISTING CONTOURS
- — — — — TPZ — TREE PROTECTION ZONE
- — — — — SERVICES TO BE REMOVED
- PRW — REFER RETAINING WALL NOTES
- FALL — PROPOSED FALL
- × P335.00 — PAVEMENT LEVEL
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- — — — — HEAVY DUTY ASPHALT PAVEMENT - REFER DETAIL P6
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PROJECT:  
MT. BARKER  
KING'S BAPTIST SCHOOL

TITLE:  
SITE WORKS PLAN  
SHEET 8 OF 8

SCALE @ A1: 1:100	CHECKED: T.B.	APPROVED: A.N.
PROJECT No: PS114515	DRAWN: R.B.	DATE: 01/09/2020
DRAWING No: C057	REV: T4	

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## Derek Henderson

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**From:** George, Matthew <Matthew.George@wsp.com>  
**Sent:** Wednesday, 3 February 2021 11:37 AM  
**To:** Michael Schubert  
**Cc:** Bell, Tyran; Derek Henderson; Newman, Adam  
**Subject:** RE: Kings Baptist Grammar School Site - Council Comments (incl. preliminary comments on Community Centre Site)  
**Attachments:** WSUD\_chapter\_10.pdf

Hi Michael,

As discussed yesterday, please see additional information in the email response below, additions written in red.

Please contact myself to discuss if required.

Regards

**Matthew George**  
Senior Civil Engineer



T: +61 8 84054200

Matthew.George@wsp.com

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1 King William Street  
Adelaide, SA  
5000 Australia

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---

**From:** George, Matthew  
**Sent:** Monday, 11 January 2021 11:50 AM  
**To:** Michael Schubert <mschubert@mountbarker.sa.gov.au>  
**Cc:** Bell, Tyran <Tyran.Bell@wsp.com>; Derek Henderson <dhenderson@mountbarker.sa.gov.au>  
**Subject:** RE: Kings Baptist Grammar School Site - Council Comments (incl. preliminary comments on Community Centre Site)

Hi Michael,

Thanks for the thorough review, much appreciated.

I have just made a few comments below in blue as I was going through FYI.

I will be in touch to discuss / finalise the design, the main issue being what we show on our plans regarding the design of the future 1050 pipe and connection to this, as well as timing of these works etc.

Regards

**Matthew George**  
Senior Civil Engineer



T: +61 8 84054200

[Matthew.George@wsp.com](mailto:Matthew.George@wsp.com)

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1 King William Street  
Adelaide, SA  
5000 Australia

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**From:** Michael Schubert [<mailto:mschubert@mountbarker.sa.gov.au>]  
**Sent:** Thursday, 7 January 2021 3:21 PM  
**To:** George, Matthew <[Matthew.George@wsp.com](mailto:Matthew.George@wsp.com)>  
**Cc:** Bell, Tyran <[Tyran.Bell@wsp.com](mailto:Tyran.Bell@wsp.com)>; Derek Henderson <[dhenderson@mountbarker.sa.gov.au](mailto:dhenderson@mountbarker.sa.gov.au)>  
**Subject:** Kings Baptist Grammar School Site - Council Comments (incl. preliminary comments on Community Centre Site)

Hi Matthew,

I have undertaken an assessment of the following WSP documentation relating to the **Kings Baptist Grammar School**;

- 1) Stormwater Management Plan – Kings Baptist Grammar School (Dated Dec 2020), including
  - a. Appendix A – DRAINS Outputs
  - b. Appendix B – Civil Concept Plan - Kings Baptist Grammar School, Bollen Road Mt Barker - Site Plan Proposed - 30% Concept Issue, project no. 19060, dwg no. PL004, dated Sept 2020, amdt 1
  - c. Appendix C – Design Drawings - Kings Baptist School Civil Works – Detail Design Drawings (Sht C000 to C057 rev T4 dated 17/12/20 as per Drawing Index)

A preliminary assessment of the following WSP documentation relating to the **Mt Barker Community Centre** has also been undertaken;

- 2) Mt Barker Community Centre, Site Plan Proposed Community Centre - 30% Concept Issue, project no. 19060, dwg no. PL204, dated Nov 2020, amdt B

It is noted that the above documentation has been assessed in conjunction with the following WGA documentation that relates to the overall management of the '**Bollen Road Development Precinct**';

- 3) Newenham Development – Overall Stormwater Plan, rev A dated 3/12/20
- 4) Newenham Development – Overall Catchment Plan, rev A dated 3/12/20
- 5) Hawthorn Road Development Newenham – Catchment Plan, rev C dated 3/12/20

Comments in relation to the WSP documentation are as follows;

**Kings Baptist Grammar School Site**

- Dot point 2 in section 1.1 states 'broadly the requirements for the site include: ensuring discharge from the site into DCMB networks is not increased, such that it will cause problems to downstream stormwater networks'. It is noted that flows collected on the school site will enter an existing 300dia pipe crossing

Bollen Rd prior to entering existing pipe network (when inlet reaches capacity, bypass is to occur). Noting the significant increase in impervious area, please confirm the post-development runoff from impervious surface will not have detrimental effect on the existing network (or include appropriate measures to address this), [ok](#)

While this is not envisaged to be an issue as the majority of the upstream catchment (14ha) will be diverted underground by the Newnham development.

If required, a 150mm restriction gate or orifice can be installed to the existing 300 diameter pipe to better control flow through this pipe, restricting this pipe to 150mm will reduce flows to 0.047m<sup>3</sup>/sec 1% AEP and 0.043m<sup>3</sup>/sec 10% AEP (pre dev was 0.188m<sup>3</sup>/sec / 0.115 m<sup>3</sup>/sec respectively).

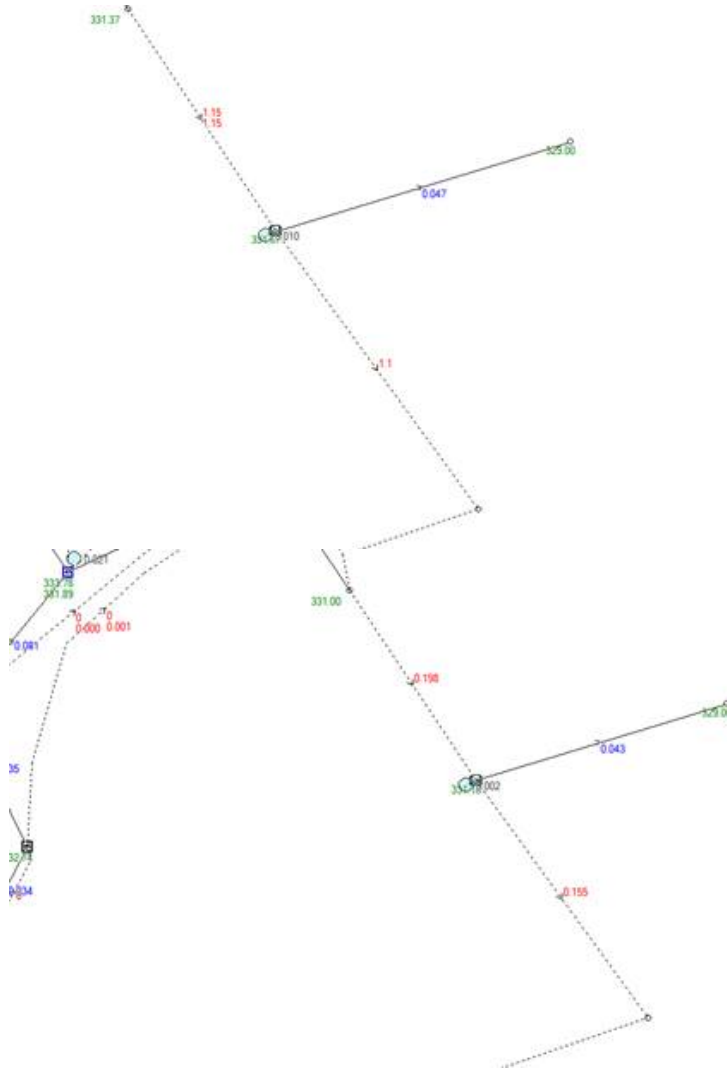


Figure 1 = Drains outputs - 1% AEP with pipe restricted to 0.15m diameter (left) – 10% AEP with pipe restricted to .15m diameter (Right)

- 'Figure 8 – WGA report showing upstream developments' in section 2.4.2 shows superseded catchment areas. Adopt most recent upstream catchment information ([refer attached revised WGA catchment plan](#)), thanks for sending through updated catchments, note our SMP has been based on no upstream development IE the 1% per development flows are coming onto our site, this will be reduced if the development goes ahead and captured this flow and directs around our site, when upstream development is confirmed we will check our design calculations

Noted the new upstream catchment as per the GA catchment plan is 17.5Ha, This will increase both the pre and post development flows. WSP to update report with updated upstream catchment. WSP note this catchment is very likely to be diverted around the School site.

- Further to the above point, 'Figure 10 – pre-development site catchment plan' in section 4.1.1. doesn't appear to include correct catchment area contributing to the site. Please update to reflect correct area of catchment contributing and amend model to suit, [refer above. Note the 14.359Ha upstream catchment came from the original WGA report](#)

The diagram in the repost is indicative only, the actual size of the catchment is as per the catchment 1 size written on the diagram.

- 'Figure 8 – WGA report showing upstream developments' in section 2.4.2. indicates detention basin in upstream future development (11.452 ha area). Note that the basin is not being implemented in future and detention is not to be adopted in any modelling (update models to reflect correct arrangement), [as above, current modeling is assuming no development to the north](#)

This presence of the detention will not affect our model at this stage, as the School connects into the 1050 main proposed by the Newnham development, WSP will require the HGL and will confirm the design is ok.

- Provide summary of tc adopted for each catchment 'pre-development' and the method adopted to determine this, [ILSAX method \(detailed data\) used to model tc, see attached for info on how drains calculates this, but essentially uses the kinematic wave equation](#)

A check of flows was completed using ARR, regional flood frequency estimation model, results indicated the flows obtained via the ILSAX method in the software program DRAINS were conservative.

Note this software calculates flows based on actual observed data. IE rainfall vs flow measured.

<http://rffe.arr-software.org/>

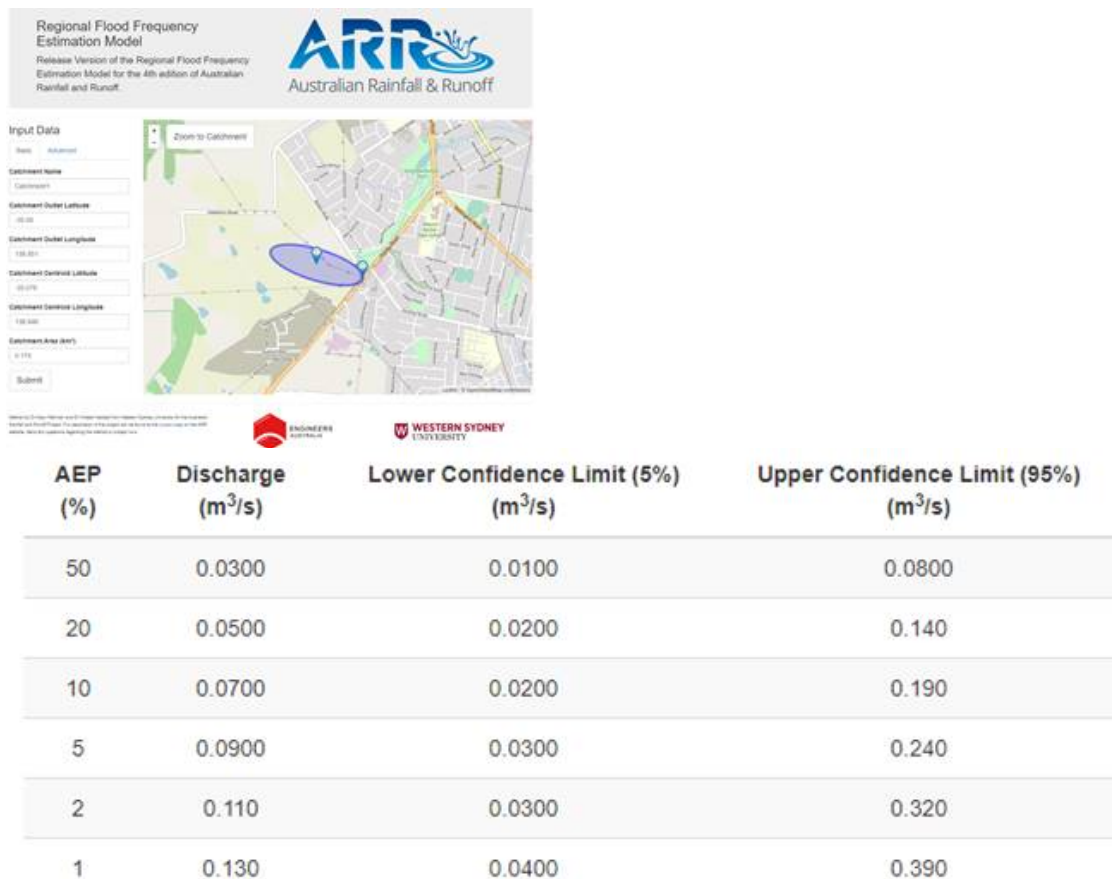


Figure 2 - ARR Regional Flood Frequency - check

- In regards to catchment 1, Section 4.1.2.1. mentions 'Stomwater from this catchment is conveyed across the development site in a gully that runs through the north-eastern corner of the site, a man-made swale captures the flow from this gully and directs the flow into a 300mm diameter pipe...'. Is this correct? [Yes this is the current flow path \(pre development\)](#) Both concept and detail design drawings indicate it flows via pipe through the carpark. [Correct, post development](#). Note, as per findings from dot point 1 & 2 above, with the correct external catchment considered, will the pipe through carpark have sufficient capacity for interim bypass solution? [It has been designed for pre development 1% AEP](#) Also, would upstream flows through carpark swale/bio-retention system also be problematic (or is it being contained in pipe only?). [the northern development \(by others\) is being contained in the pipe, and will not discharge onto our site](#) Note further that a temporary swale situated within 5m easement on eastern boundary (prior to installation of 1% AEP pipe) is an acceptable option as an overland flow path with the appropriate design/treatment, [the School site will handle any pre development flows \(le assuming the northern development does not proceed\)](#)

[WSP can confirm this is ok based on updated upstream catchment of 17.5Ha.](#)

- It is noted that the alignment of pipe in the SMP differs slightly from the detail design drawings. Noting in particular the 600dia pipe on Sht C055 runs approx. in alignment within the 5m easement and will interfere with future 1050 as per WGA plans. Suggest that the design of the mentioned section of pipe is similar to the SMP, taking into consideration the future JB connection in main trunk line within 5m easement (ultimate design), [yeah agree, we will consider any future designs when provided \(noting you have sent some through\)](#), however out preference here is to discharge to the swale above the main pipe, noting the hydraulic grade line of the proposed new main in the easement will affect the School system. We will check this once we have some data from the proposed new pipe.



Are DCMB able to confirm that the 1050 pipe will be of sufficient size for the School to discharge into and a pit will be provided?

Below is a possible connection if the Newnham development proceeds, this will be updated once confirmed ok.

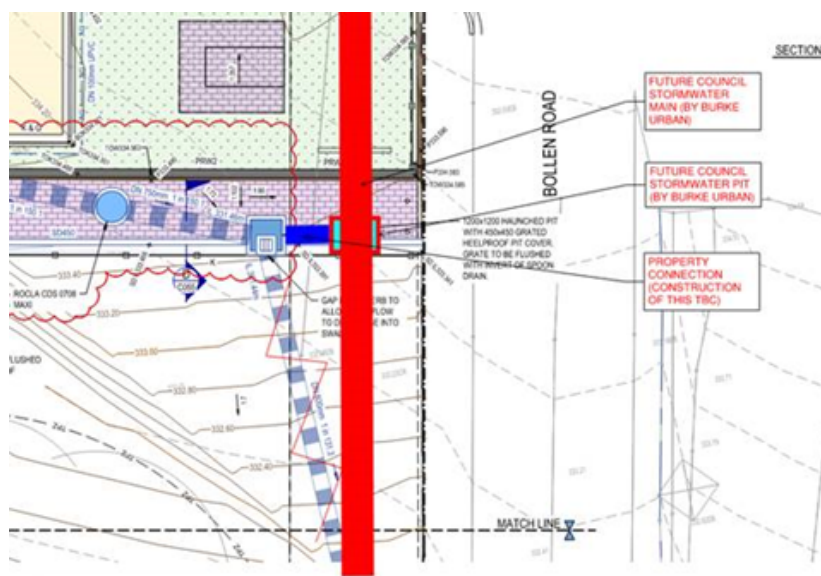


Figure 3 - Possible update required is connecting to 1050 main

- Civil Works Concept Plan nominates an area for basin/ponding in the carpark, although the extent of pooling runs perpendicular to the site levels with 2.416m height difference (RL 336.081-333.665). Please provide commentary on how the water is to be detained given the site grades and whether this pooling area is actually being adopted for detention purposes, **these 2 pits as show are modelled as sag pits, the norther pit, will be graded to create a small depression, the southern pit will be against the 150 kerb**

As mentioned, this will pond against the 150mm high kerb, this has been modelled in DRAINS.

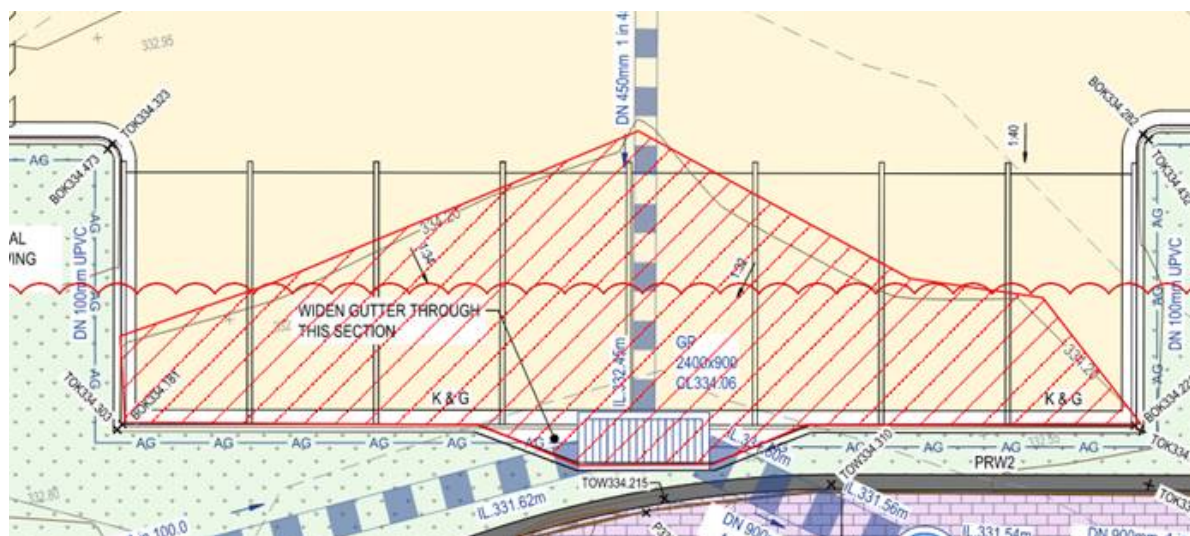


Figure 4 - Max extent of ponding

- It is noted that bio-retention basins have been nominated for the island within carpark (refer Sht C055 – W6 detail being nominated which is a 'bio retention basin'). Should this be W5 – for a swale? Also, confirm that these swales will function correctly on a site with surface fall (noting grated overflow via GIP regulates height of water for 'W6-bio retention' device), **correct, this should be shown a W5 / W7 (without storage), noting there are two D6 details (without storage should be D7)**

**Detail updated, as per detail W7. Music modelling did not incorporate any storage so the results will not change.**

- To address the increase in flows from the developed site and potential scour of external swales/creek, It was a Council requirement to limit the 100% AEP flows to pre-development. Section 4.2.1.3 states that no flows are generated from the 100% AEP event pre-development, although it is noted that frequent flows are likely to be generated post-development. Suggest post-development 100% AEP event be modelled with further commentary provided on how the frequent flows are to be managed and incorporate any necessary treatments of swales/creek discharge point to address this (i.e. justify the need for no detention). FYI the 'regional detention basin' does not offset the requirement for a localised system as indicated in your report, as the school peak flows will contribute to the creek/regional sports field area well in advance of the upstream peak flows, but there should be consideration of the effects of increased flows in open channels etc, **some storage has been allowed in pipes / CDS unit during major events, however it was not considered appropriate to restrict the system by limiting minor event flows, happy to discuss further**

**Austroroads guidelines – Guide to road design part 5B: Drainage open channels, culverts and floodway's recommends maximum velocities for channels (see table below), the calculated design max velocity are below these amounts and hence no erosion is expected even with the potential increase in flows. However if the Newnham development proceeds, this flow is likely to reduce due to the majority of flows being directed into underground pipe networks.**

**Table 2.6: Recommended maximum velocities (design) for consolidated, bare channels and vegetated channels**

Channel gradient (%)	Permissible velocities (m/s) when fraction of stable surface cover <sup>1)</sup> is:			
	0.02	0.5	0.7	1.0
	Erosion resistant soils (e.g. krasnozems and red earths)			
0.5	0.8	1.8	2.4	2.8
1	0.7	1.6	2.1	2.8
2	0.6	1.4	1.8	2.5
3	0.5	1.3	1.7	2.4
4		1.3	1.6	2.3
5		1.2	1.6	2.2
6			1.5	2.1
8			1.5	2.0
10			1.4	1.9
15			1.3	1.8
20			1.3	1.7
	Easily eroded soils (e.g. black earths and fine surface texture – contrast soils)			
0.5	0.6	1.3	1.6	2.3
1	0.5	1.2	1.5	2.1
2	0.5	1.1	1.4	1.9
3	0.4	1.0	1.3	1.8
4		1.0	1.2	1.7
5		0.9	1.2	1.6
6			1.1	1.6
8			1.1	1.5
10			1.1	1.5
15			1.0	1.4
20			0.9	1.3

1 Applies to surface consolidated, but not cultivated.

Notes: Assume the following species under average conditions will provide the fraction of cover indicated:

- Kikuyu, pangola and well maintained couch species – 1.0.
- Rhodes grass, and poorly maintained couch species – 0.7.
- Native species, tussock grasses – 0.5.

Source: Adapted from Department of Environment and Resource Management (2012).

Figure 5 - Extract from Austroroads – Guide to road design part 5B: Drainage open channels, culverts and floodway's

% of downstream catchment flow carried by this channel	<input type="text" value="50"/>	For Major Storms:
Channel slope (%)	<input type="text" value="7.84"/>	Maximum flow = 1.355 cu.m/s
<input type="button" value="Calc Slope"/>		Maximum velocity = 0.6 m/s
		Maximum depth = 0.690 m - UNSAFE
		Maximum width = 11.2 m
		Maximum D x V = 0.43 sq.m/s

Figure 6 - Max velocity in downstream swale 1% AEP

- Confirm that the swales from the site to the creek have adequate capacity to convey flows up to 1% AEP post-development (prior to trunk main being installed), [can confirm it will be contained in existing swales / overland flow \(note road is elevated\)](#)

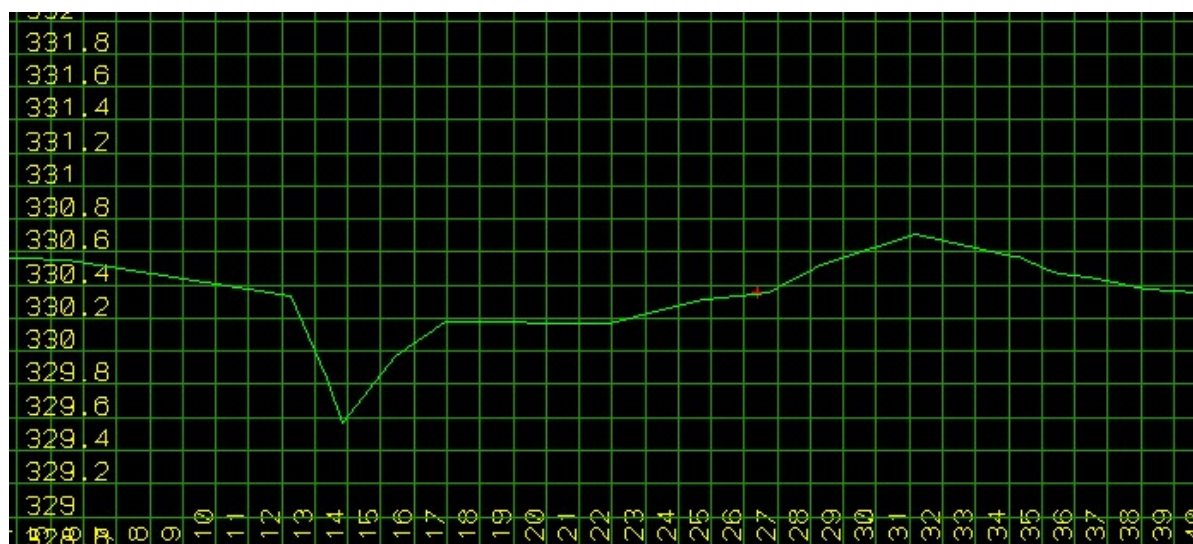


Figure 7 - Typical existing cross section south of School (Note road carriageway is from CH 28 – 34), 5m easement is from 21 to 26

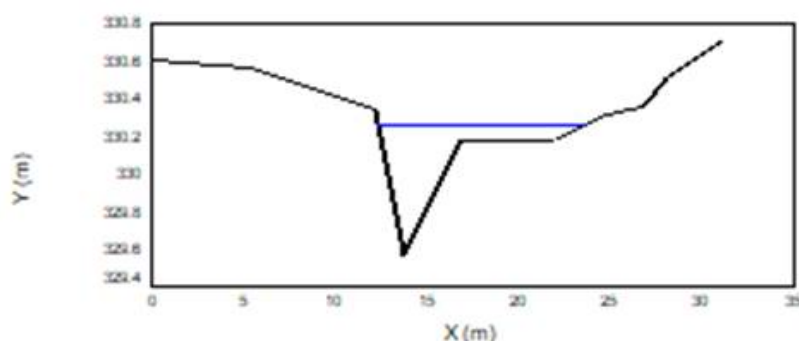


Figure 8 – 1% AEP Drains Outputs in typical downstream exist swale

- Section 4.2.3 mentions 'stage 1 of the school development meeting the required quality reduction targets'. It is noted that WSUD devices are capturing runoff from carpark areas, but confirm if any of the building/path area is being treated (or bypasses the system via RCP within bio retention zone), [A CDS unit has been proposed at the downstream end of the network prior to discharge into the DCMB system, \(see attached for details\)](#) this will treat all stormwater not passing through the bio retention swale

As above, all stormwater runoff will be conveyed through the CDS device. The majority of the carpark will be directed through the bio retention swale and also through the CDS prior to be discharged.

- Furthermore, provide a brief statement on what devices will be implemented to address the overall site in future to achieve the target reduction criteria (noting only treatment devices proposed in carpark at this stage with further building/path works to occur in future), [see above, additional treatment devices will be added to future upstream works to treat at site](#)

The treatment of future developments stormwater runoff will be looked at in the future design stages. It is likely additional treatment devices will be required to be installed in the future developments, upstream of the current design treatment devices.

- Treatment devices typically positioned at end of pipe networks, hence may need to be shown conceptually in this stage, [as above, CDS provided downstream, future devices to be added upstream to treat locally](#)

[As above](#)

- Provide brief summary on what works are proposed south of the school site (indicates possible fill in future regional sports field area?), [the community center is proposed directly south of the School, I am unsure of any additional works further south than this, I believe a sport field has been proposed, plus additional detention basin / bund works](#)

This is currently unknown. Currently we are discharging to the existing surface / swale. Any works south of the site will need to incorporate both the school and Newnham development designs and convey stormwater from each development to the Western flat Creek.

- Advise if pipe/culvert is to be installed at carpark entry/exit as part of this stage (currently not shown). Refer first point below regarding sizing pipe for future connection of trunk main. [Note that WGA plans need to be updated to reflect final connection points from school, to be determined, as above our preference was to discharge to the swale, WSP will look at a pipe discharging into the proposed new pipe](#)

Note the Newnham design shows a 1050 pipe in the easement with an approx. 300mm deep swale in this easement. The construction of any swale and pipe / culvert under the car park entrance will need to be coordinated with the Newnham development. WSP note the council require a swale in the easement to stop water flowing from Bollen road onto the School site, this is to be installed by the Newnham development as part of the stormwater trunk main works. If the Newnham development does not proceed, this may need to be address by the School.

- It is understood that as per the MFY report 'Proposed King's Baptist Grammar School Bollen Road, Mount Barker' dated March 2020, Final Rev, section 3.2, the carpark has been designed in accordance with AS 2890.1:2004. Ensure that typical dimensions are provided on detail design drawings reflecting the requirements. [This is being design by others, traffic management plans should be available](#)

Hodgkison (Architect) will be able to provide any traffic report / design if required. A note referring to the traffic report will be included in the design set of drawings of which any traffic plans will most likely be included.

#### **Community Centre Site (Preliminary Comments Only)**

- It is noted that a culvert with headwalls is proposed to be installed at the carpark driveway entry/exit (noting portion beneath school carpark entrance – refer comment above). Consider sizing for ultimate design to avoid future removal of pipes/rework of entrances, [agree](#)

[Agree, these works will need to be coordinated with the Newnham development works to avoid any rework. Note timing of construction works are likely to determine this.](#)

- Overlay extents of future regional detention bund/sports fields to determine whether the southern entry/exit point can be accommodated in future (note Traffic and Parking Report still to be provided), [ok](#)

[WSP require the proposed design to be provided but can be looked at for future design.](#)

[Note that for both above applications, internal approval for carpark entry/exit point is still being obtained \(Infrastructure team to advise\). Note not by WSP, refer traffic engineers drawings](#)

Further comments will be provided for the Community Centre Site when full suite of supporting documents is obtained by Council. [ok](#)

Happy to discuss any of the above further when you have had a chance to review.

Regards,

**Michael Schubert**  
Development Engineer



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King's Baptist Grammar School

**PROPOSED KING'S BAPTIST GRAMMAR SCHOOL  
BOLLEN ROAD, MOUNT BARKER**

**TRAFFIC AND PARKING REPORT**

March 2020

20-0030

**Traffic • Parking • Transport**

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## DOCUMENT ISSUE

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## 1.0 INTRODUCTION

It is proposed to develop the King's Baptist Grammar School Mount Barker campus on Bollen Road, Mount Barker. The school will be developed in multiple stages.

This report summarises the traffic and parking impacts associated with the Stage 1 development of the school. Stage 1, as document in Hodgkinson drawing PL005, dated 09 March 2020, will service the school from 2022 to 2025 and will include a classroom building and an early learning centre.

The assessment includes a review of the sightlines on Bollen Road to enable suitable access locations to be identified. In addition, consideration has been given to the parking requirements for the school and the early learning centre.

A traffic assessment is also included in the report and includes a review of the potential impacts at the Bollen Road/Flaxley Road intersection, albeit a broader assessment of traffic implications associated with the growth of the township is currently being investigated by Council.



## 2.0 EXISTING SITUATION

The subject site has frontage to Bollen Road and will be bounded by a new road along its northern boundary. This road was created as part of a land division associated with the development of the Newenham Estate. It is yet to be constructed but an assessment completed as part of the land division application identified a forecast volume in the order of 3500 vpd when the adjacent area is fully developed.

Bollen Road is within the care and control of the Mount Barker District Council. It has an average annual daily traffic (AADT) in the order of 1,060 vehicles per day (vpd). The road has a posted speed limit of 60 km/h. There are no pedestrian footpaths on either side of the road. Historically Bollen Road essentially defined the western boundary of the Mount Barker township but the identification of land to the west for development as part of the 30 year growth plan means that this road is now located within the future township and is within a Residential Neighbourhood Zone.

Bollen Road provides access to residential properties on its eastern side and access has been identified to the subject land in an endorsed masterplan. Council has therefore given consideration as to the appropriate role for this road in its network (given that it will now be within the township) and has indicated that there is a preference for Bollen Road to operate akin to a residential street with footpaths and potential treatments which will reduce speed. Further, Council has advised that there is in-principle support from DPTI for the speed limit to be reduced to 50 km/h which is consistent with the intended role of the road.

Bollen Road forms an intersection with Hawthorn Road at its northern end and Flaxley Road at its southern end. Hawthorn Road is a collector road within the care and control of the Council, with an AADT of approximately 2,000 vpd. Flaxley Road is an arterial road within the care and control of the Commissioner of Highways. It has an AADT of 5,700 vpd.





### 3.0 PROPOSAL

The proposal is for Stage 1 of the King's Baptist Grammar School Mount Barker campus. The Stage 1 development will accommodate the school growth to 2025 and will comprise of:

- a building which will accommodate 130 junior school students (R – 5) and 12 staff; and
- an early learning centre with a capacity for 60 children.

#### 3.1 ACCESS

In assessing appropriate access locations, specific consideration has been given to sightline constraints along Bollen Road which are created by the vertical alignment of the road. Measurements were completed along the road to identify locations where safe intersection sight distance (SISD) could be achieved for drivers entering and exiting the site. The assessment was undertaken for a design speed of 70 km/h (existing posted speed limit plus 10 km/h). Figure 1 identifies locations where SISD would be met for the posted speed limit.



**Figure 1: Locations where SISD could be achieved**

Of note is that the sightline restrictions for drivers will be reduced when the speed limit is decreased to 50km/h.



Access for the Stage 1 development is proposed to be provided via one crossover on Bollen Road. Figure 2 identifies the location of the proposed crossover on Bollen Road in respect to the above sightline assessment.



**Figure 2: Proposed crossover location on Bollen Road**

The proposed crossover will be designed in accordance with *Australian/New Zealand Standard, Parking Facilities Part 1: Off-street car parking (AS/NZS 2890.1:2004)*. In particular, appropriate offsets to the existing and future intersections on Bollen Road, as required by Figure 3.3 of the Standard, will be achieved.

Stage 1 of the plans has been designed to permit access for a service vehicle to the rear of the proposed buildings for maintenance/delivery purposes if required. Such access will be limited to when students are not within the play areas to ensure that no vehicle/pedestrian conflict will occur and will be controlled with restricted access (using removable bollards or similar).

### **3.2 PARKING AREA**

The proposal will include 77 parking spaces which will provide for staff and visitor parking and pick-up/set-down in Stage 1 of the development. The proposed parking areas will comply with AS/NZS 2890.1:2004 in that:

- spaces will be 2.6 m wide;
- spaces will be 5.4 long;



- adjacent aisles will be 6.2 m wide; and
- minimum of 300 mm clearance to any raised obstruction.

The proposal will include one space allocated for use by people with a disability. This space will be 2.4 m wide with an adjacent 2.4 m wide shared space. This space will be installed in accordance with the requirements of the Australian/New Zealand Standard, *Parking facilities Part 6: Off-street parking for people with disabilities* (AS/NZS 2890.6:2009).

Bicycle rails will be provided for students and staff. These spaces will be provided in accordance with relevant Australian Standards in convenient secure locations.

The proposal will ensure safe pedestrian access between the parking areas and the entry plaza, with pedestrian routes being developed along desire lines. Paths and ramps will be constructed in accordance with Australian Standards and DDA criteria.



## 4.0 PARKING ASSESSMENT

Mount Barker District Council's Development Plan (Consolidated – 8 August 2017) does not specify a parking rate for schools. Accordingly, reference has been made to the Planning SA "Planning Bulletin - Parking Provisions for selected land uses (Suburban Metropolitan Adelaide)" (October 2001), which identifies the following rate for educational institutions:

- one space per full time equivalent staff; plus
- one space for people with a disability; plus
- an additional 10% of the total for visitors.

The above rate is consistent with the Department for Education policy. On this basis, there will be a requirement to provide 14 spaces on site.

In regard to the early learning centre component, the Council's Development Plan identifies a rate of one space per four children in a childcare centre. Adopting this rate would result in a demand for 15 spaces.

Accordingly, based on the above recommended rates, the proposal would require 29 parking spaces to be provided on-site.

In addition, there will be pick-up/set-down demand associated with the school. While such demands are often accommodated within the local street network, there is an opportunity to combine this demand with future community parked in a shared use arrangement on the site.

MFY has collected data at numerous schools to inform the parking demand during pick-up/set-down periods. These data identify an average rate in the order of one space per four students for pick-up/set-down in junior schools. Accordingly, the proposal to have 130 students will generate a demand for approximately 33 vehicles.

If the pick-up/set-down anticipated demand was to be considered, the proposal will generate a peak demand for approximately 61 spaces for the short pick-up/set-down periods (assuming the visitor space will be used during the pick-up/set-down peak).

Stage 1 of the development will include 77 spaces and will readily provide for the forecast demand, including pick-up/set-down.

In regard to bicycle parking, Council's Development Plan identifies a recommended provision of one bicycle rail for every five students over year 4. On this basis, the proposal would require approximately five spaces.



## 5.0 TRAFFIC ASSESSMENT

### 5.1 TRAFFIC GENERATION

Traffic surveys undertaken at other junior schools have identified a peak traffic generation rate of 1.4 trips per student during the pick-up (typically 8:00 am to 9:00 am) and set-down periods (typically 3:00 pm to 4:00 pm). Accordingly, the school component would be expected to generate approximately 182 trips per hour during these periods.

The Roads and Maritime Services RMS *“Guide to Traffic Generating Developments”* (RMS Guide) identifies the following traffic generation rates for a long day care facility:

- 0.8 trips per child during a two hour morning peak period; and
- 0.7 trips per child during a two hour afternoon peak period.

Accordingly, the proposed ELC facility will generate approximately 48 trips in the morning peak and approximately 42 trips in the afternoon peak. Considering that the ELC is located within the school and it will operate at the same time as the school, it is assumed that the peak hour will coincide with the school’s peak.

Table 1 summarises the traffic generated by the Stage 1 development.

**Table 1: Traffic generation**

	Morning peak hour	Afternoon peak hour
Junior School	182	182
ELC	48	42
<b>Total</b>	<b>230</b>	<b>224</b>

Schools, in general, will generate minimal traffic outside these peak periods. Assuming an additional 25% of traffic occurs during the off-peak periods, Stage 1 of the school development will generate in the order of 570 vpd.

### 5.2 TRAFFIC DISTRIBUTION

The traffic generated by the development will occur to/from Bollen Road and the following assumptions have been made regarding the distribution:

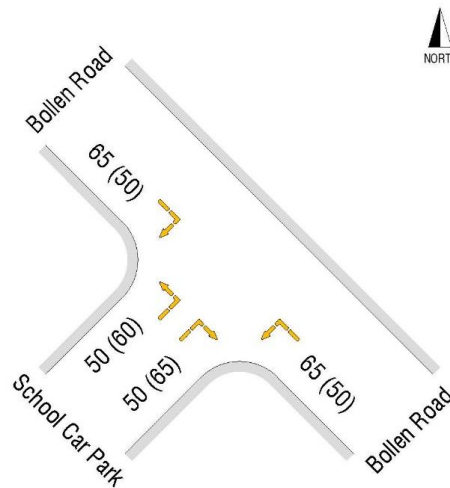
- 50% will access the school via Flaxley Road;
- 50% will access the school via other directions;
- 55% of the trips will be entering the site and 45% of the trips will be exiting the site in the morning peak hour; and





- 45% of the trips will be entering the site and 55% of the trips will be exiting the site in the afternoon peak hour.

Figure 3 identifies the turning movement to/from the school during the morning and afternoon peak hours based on the above assumptions.



**Figure 3: Forecast turning movements to/from the school am(pm)**

### 5.3 TRAFFIC IMPACT

A detailed study of Flaxley Road was undertaken by MFY as part of the Western Sector Connector Road Review in 2013 for the Mount Barker Urban Growth Development Plan Amendment (MDPA). This assessment considered full development of the subject area, including the residential and community components of the site, and identified future potential impacts on the road network which would need to be considered. Development of the subject land was encompassed in this earlier review.

The following traffic assessment considers the specific impact associated with the subject proposal.

#### 5.3.1 BOLLEN ROAD

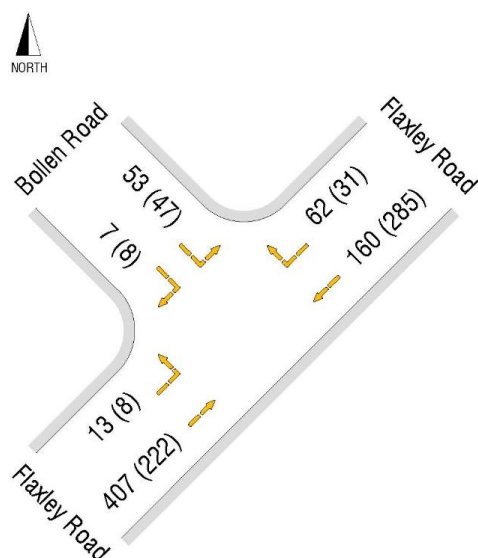
Traffic generated by the school will be distributed to Bollen Road as identified in Section 5.2. Accordingly, the daily traffic on Bollen Road would increase from 1,060 vpd to approximately 1,345 vpd. The increase in volume will not change the function of the road.

#### 5.3.2 BOLLEN ROAD/FLAXLEY ROAD INTERSECTION

Intersection analysis of the Bollen Road/Flaxley Road intersection was undertaken to ascertain the potential impact on the intersection as a result of the proposal.

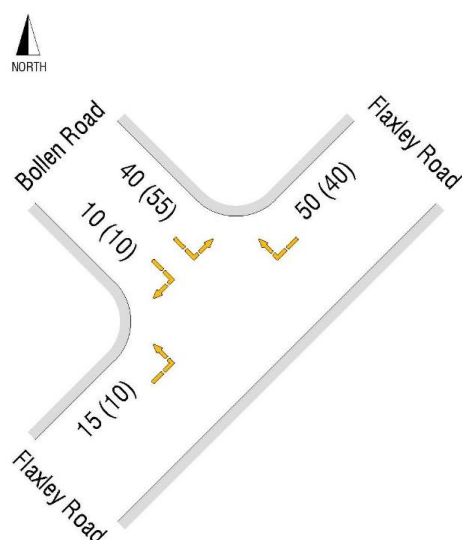


Traffic data were collected at the intersection on Monday, 24 February 2020 during the peak hours to inform the existing turning volumes at the intersection as shown in Figure 4.



**Figure 4: Existing volumes at the Bollen Road/Flaxley Road intersection am(pm)**

The additional traffic generated by the development has been distributed at the intersection in accordance with the turning proportions observed currently. Figure 5 identifies the additional turning movements at the intersection.



**Figure 5: Additional turning volumes at the Bollen Road/Flaxley Road intersection am(pm)**



SIDRA analysis of the intersection was undertaken for the existing and existing plus development scenarios to ascertain the traffic impact associated with the proposal. The assessment considered the two peak periods associated with the development. Table 2 identifies the key performance indicators of the assessment for the two scenarios. The detailed analysis of the SIDRA assessment is provided in Appendix A.

**Table 2: Sidra assessment summary am(pm)**

Key Movements	Degree of Saturation		95 <sup>th</sup> percentile queue (m)		Average Delay (s)	
	Existing	With Dev	Existing	With Dev	Existing	With Dev
Flaxley Road Right Turn	0.15 (0.18)	0.20 (0.21)	5 (2)	8 (4)	7.7 (6.6)	7.7 (6.6)
Bollen Road Right Turn	0.07 (0.05)	0.12 (0.11)	2 (1)	3 (3)	9.8 (8.7)	10.1 (8.9)

The assessment identifies that the Stage 1 of the school will have negligible impact on the operation of the intersection. It is also important to note that the additional turning movements on Flaxley Road will not impact the through movements on the arterial road.



## 6.0 SUMMARY

The Stage 1 development of the school has been designed to accommodate the growth of the school to 2025. It will include facilities for 130 students and 12 staff and an early learning centre with a capacity for 60 students.

Access for the school will be provided on Bollen Road and the future northern road and will be designed in accordance with relevant Australian Standards. The location of the access point on Bollen Road will satisfy appropriate sightlines. The access design will be consistent with Council's desire to develop Bollen Road in accordance with the characteristics of a residential street, albeit safe access will be provided while the speed limit remains at 60km/h.

The proposed parking area will comply with relevant Australian Standards and will accommodate the forecast parking demand, including the anticipated pick-up/set-down demand. The design has also considered emergency and service vehicle access requirements which will be controlled to ensure that the risk of vehicle/pedestrian conflict is minimised.

Traffic generated by the school will not be significant and will be distributed north and south of the site. The additional volumes will not change the nature or function of the road network and will have minimal impact on the adjacent area. An intersection analysis of the Bollen Road/Flaxley Road intersection identified that there will be no appreciable impact on the intersection as a result of the development.



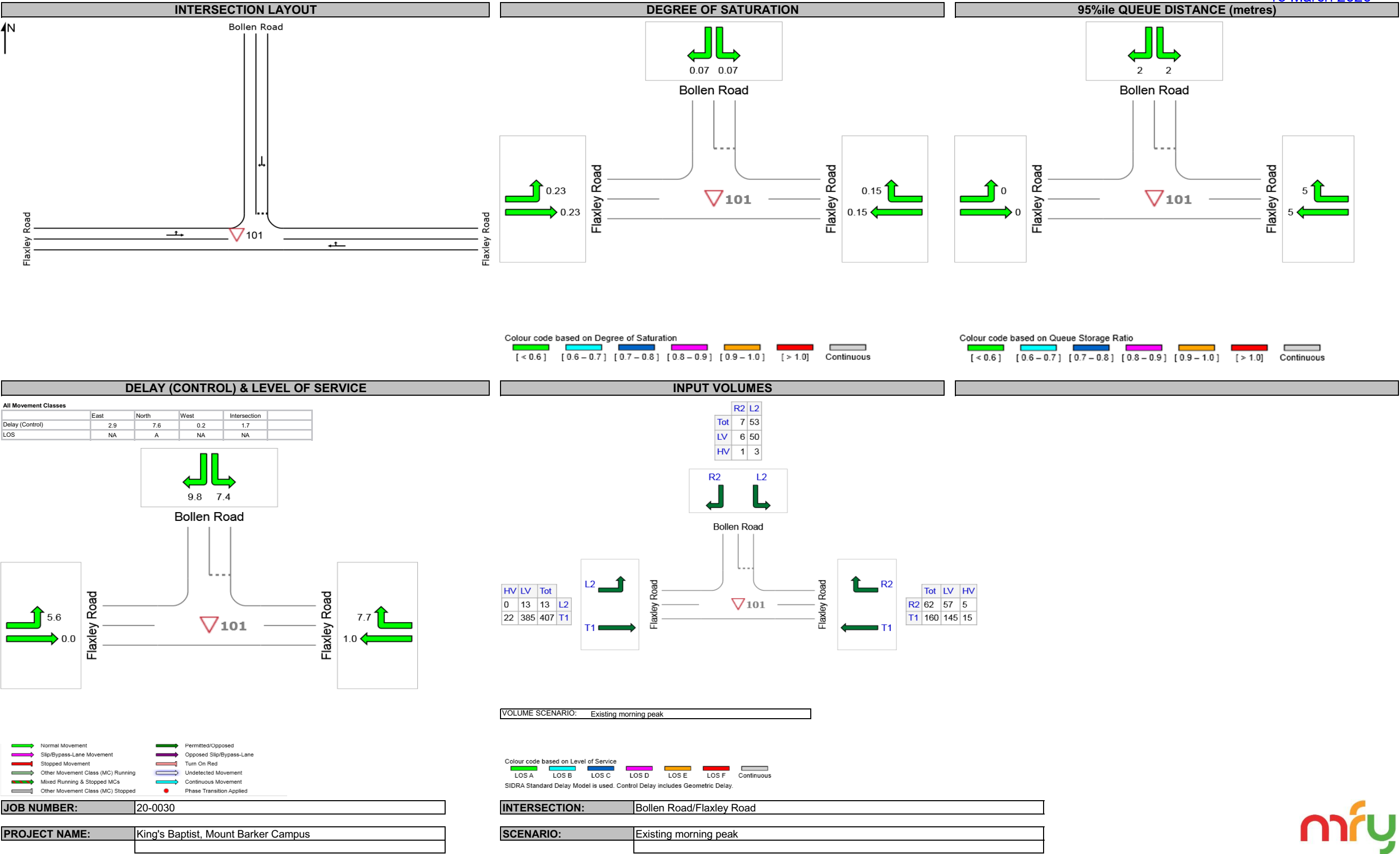
# APPENDIX A

## SIDRA ANALYSIS

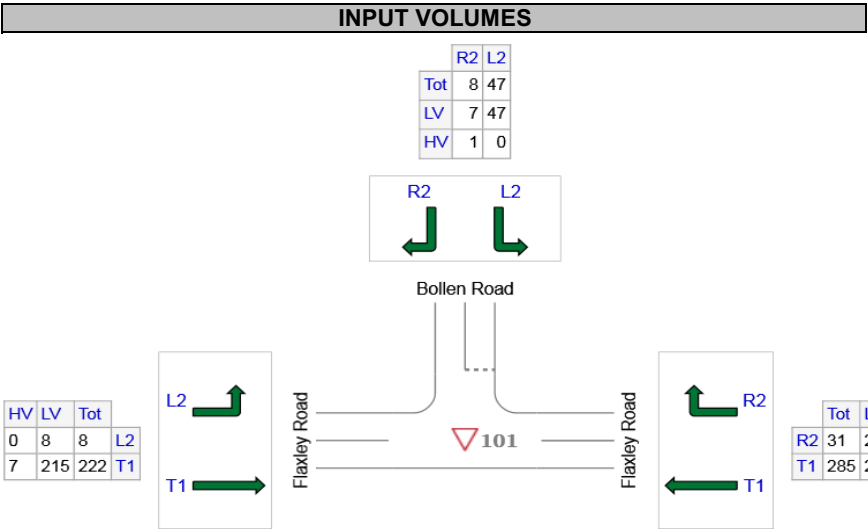
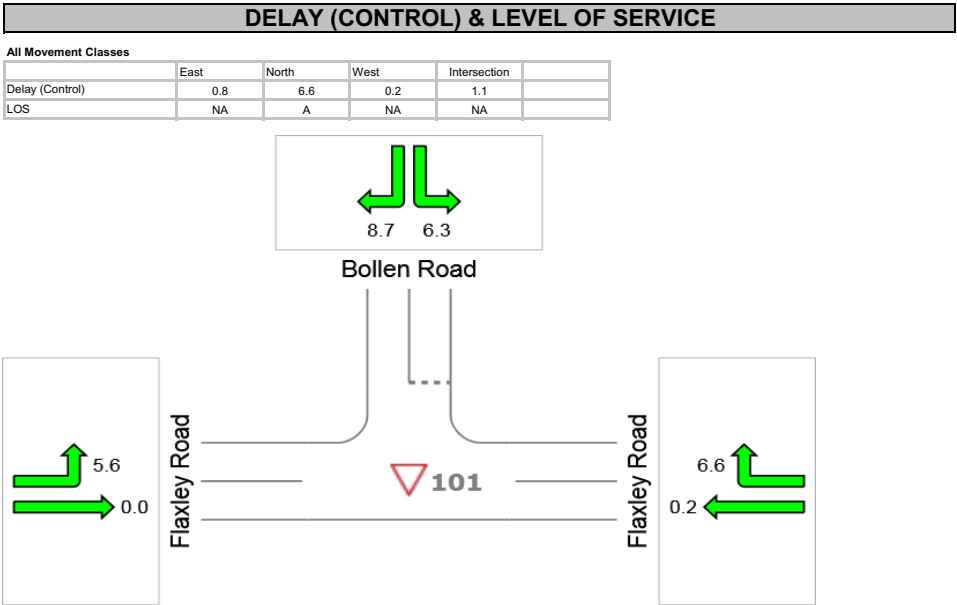
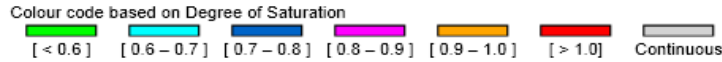
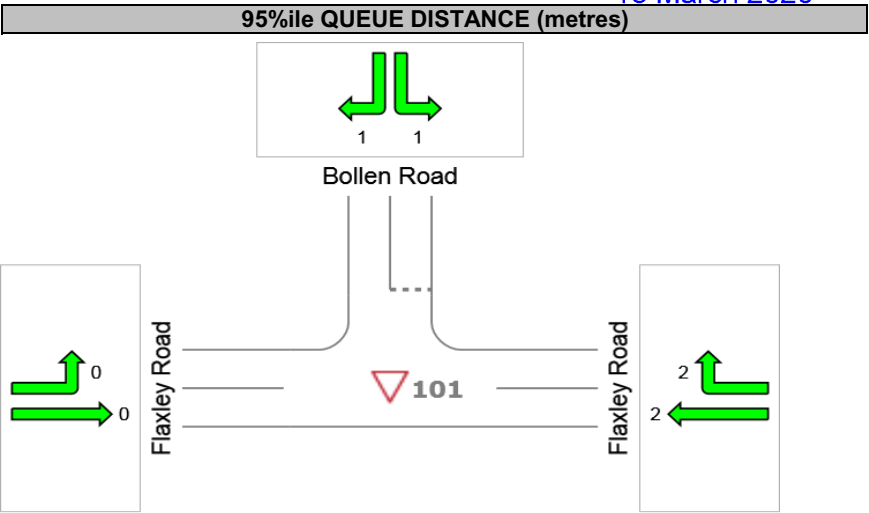
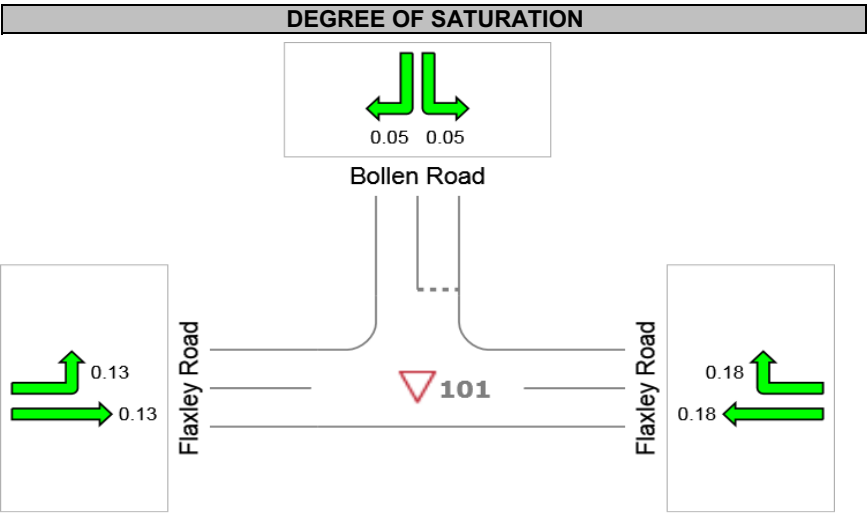
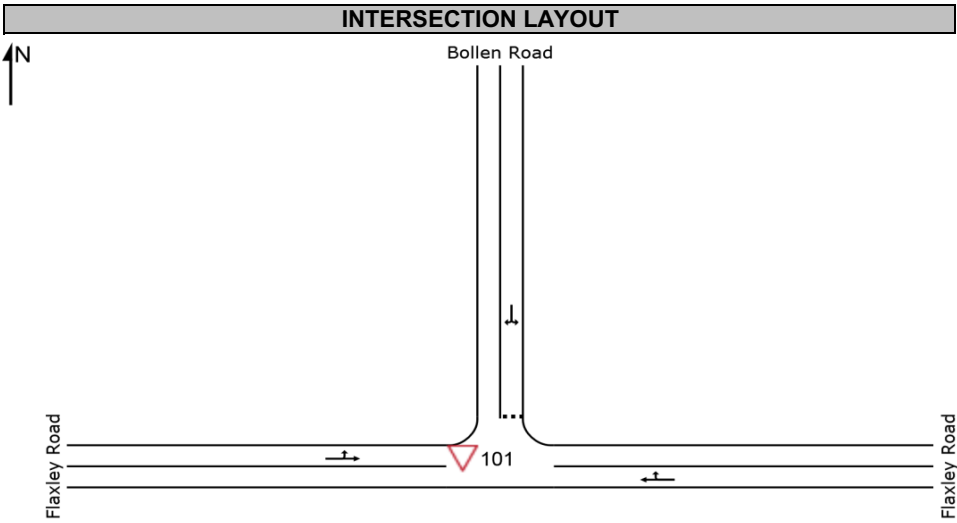


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VOLUME SCENARIO: Existing afternoon peak



**JOB NUMBER:** 20-0030

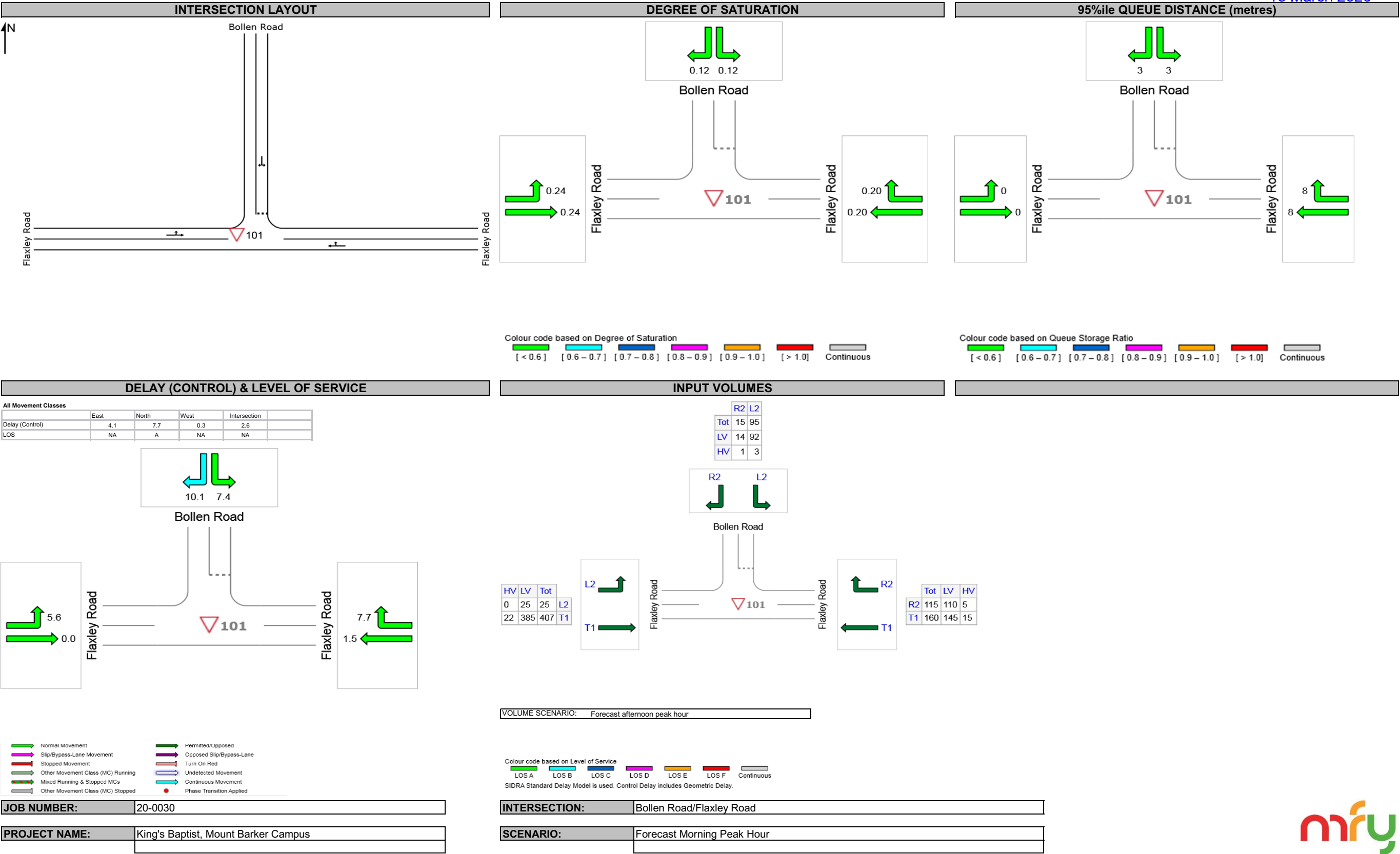
**PROJECT NAME:** King's Baptist, Mount Barker Campus

**INTERSECTION:** Bollen Road/Flaxley Road

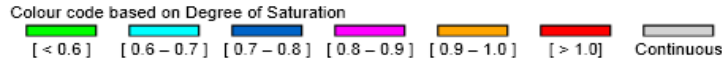
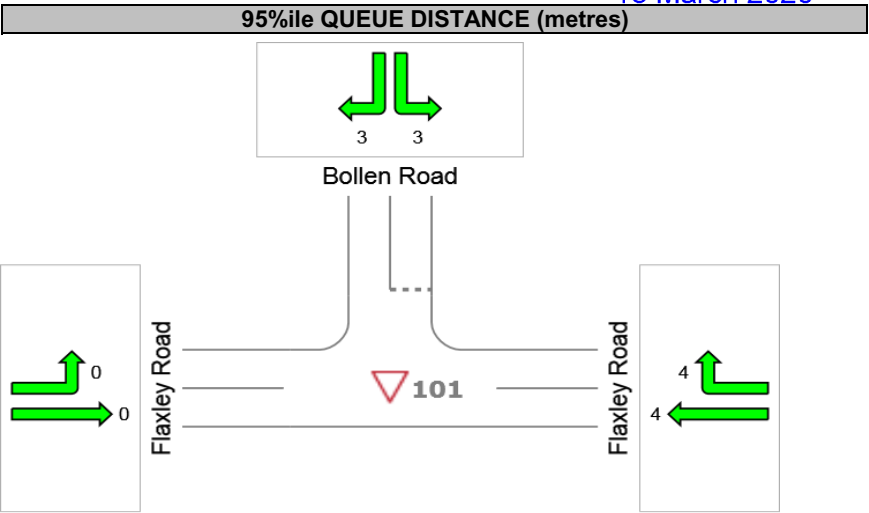
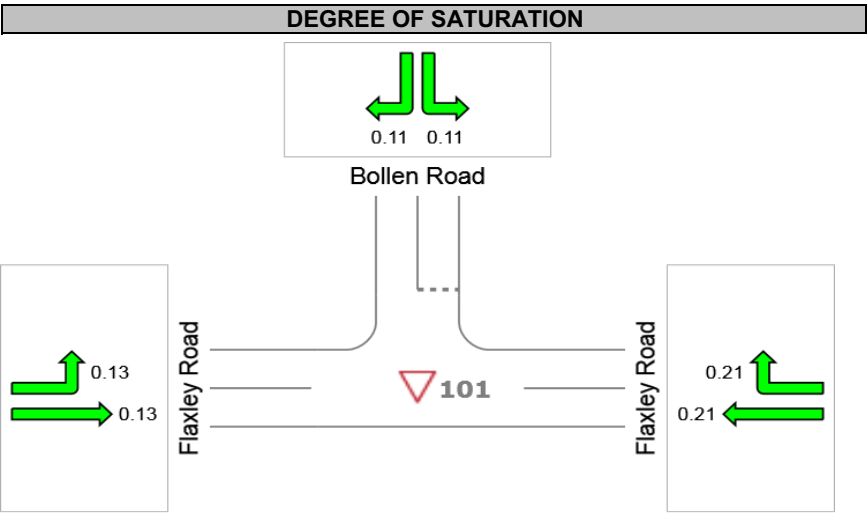
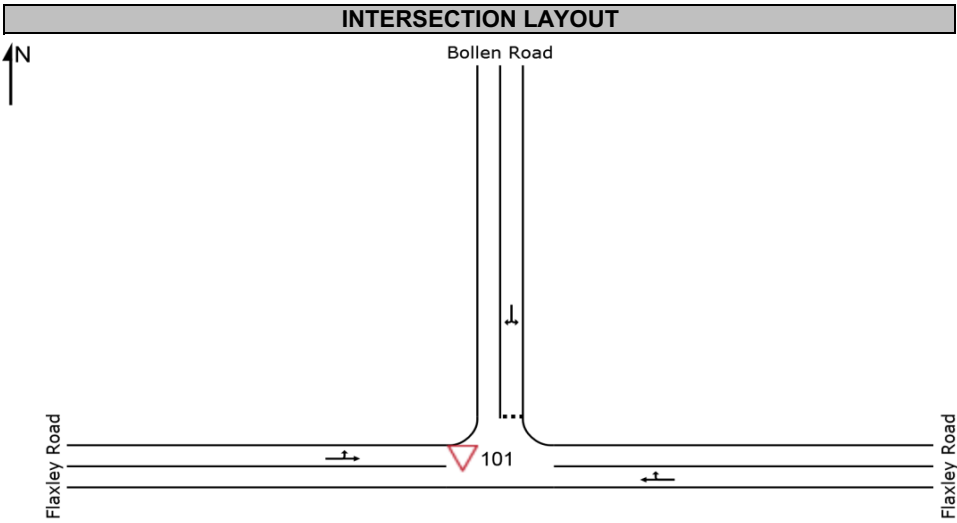
**SCENARIO:** Existing afternoon peak



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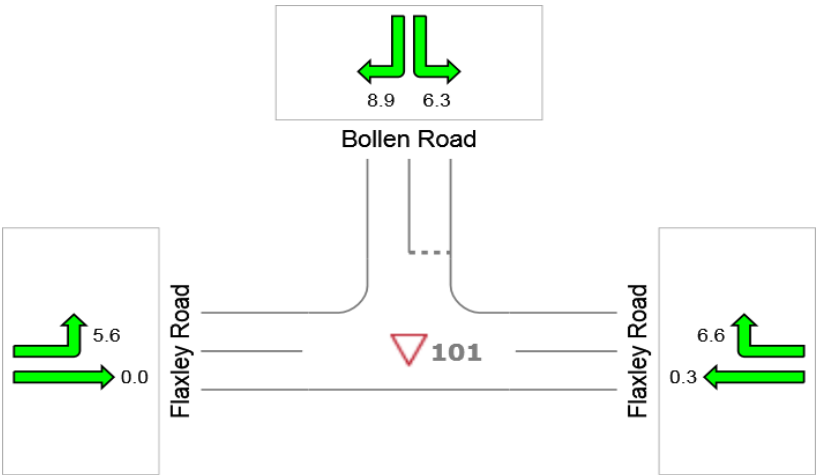
Mount Barker District Council  
Received  
18 March 2020



**DELAY (CONTROL) & LEVEL OF SERVICE**

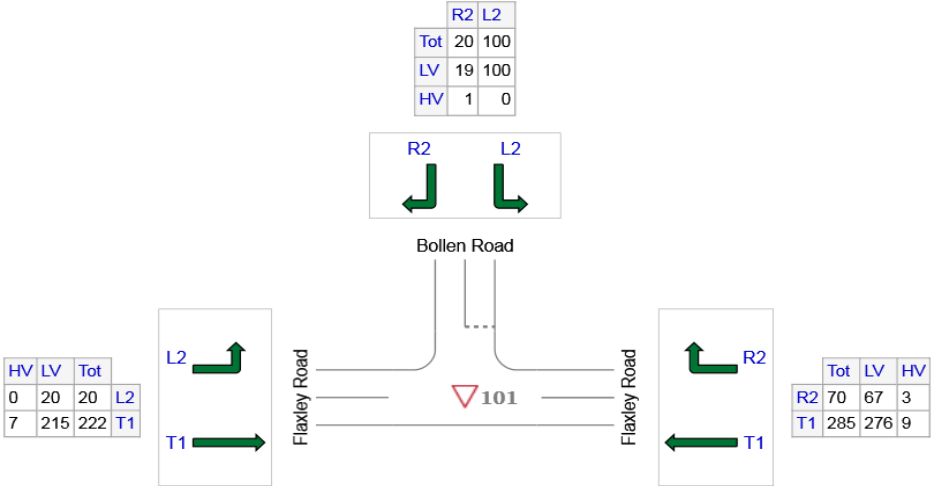
All Movement Classes

	East	North	West	Intersection	
Delay (Control)	1.6	6.8	0.5	2	
LOS	NA	A	NA	NA	



<b>JOB NUMBER:</b>	20-0030
<b>PROJECT NAME:</b>	King's Baptist, Mount Barker Campus

**INPUT VOLUMES**



VOLUME SCENARIO:



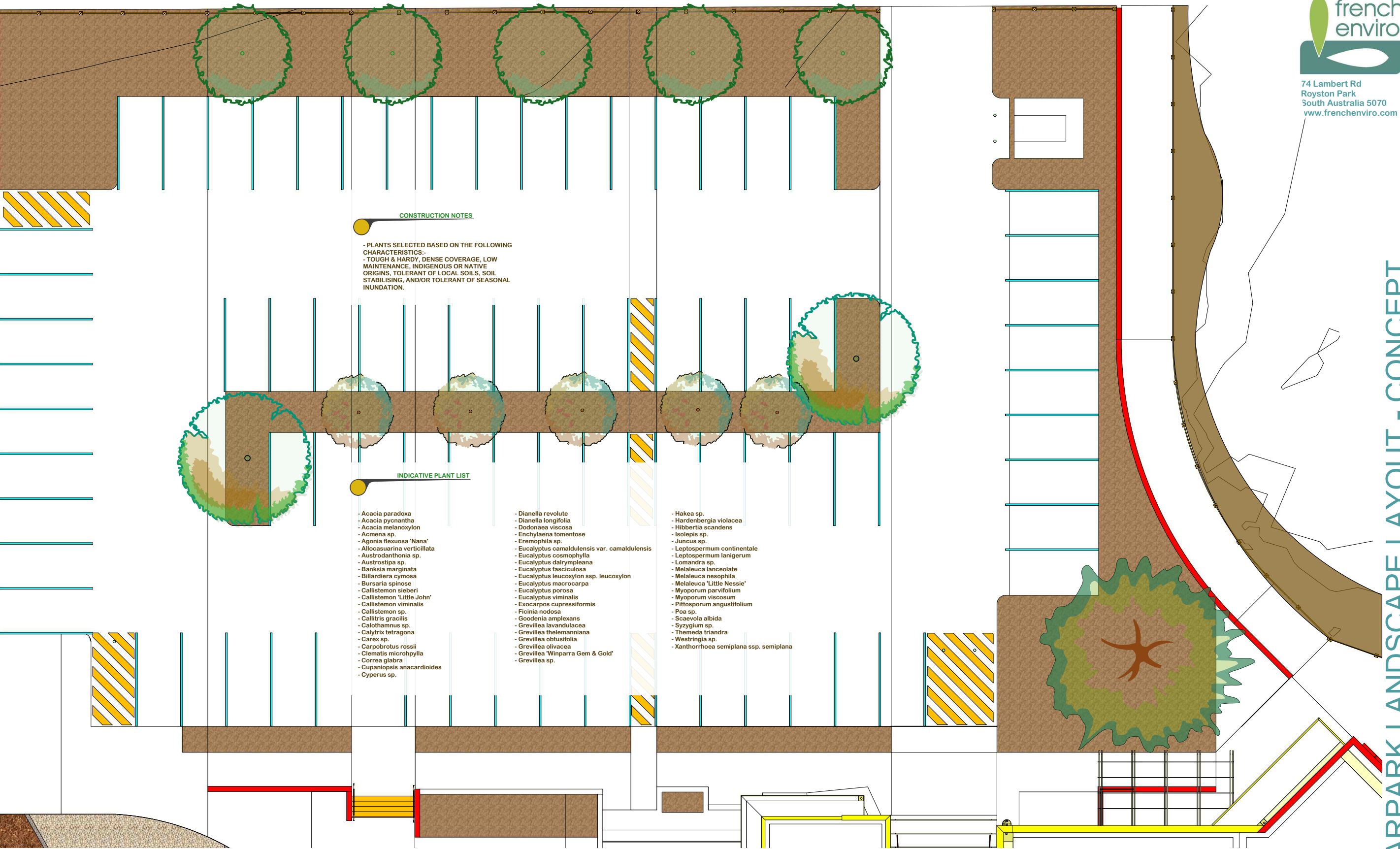
<b>INTERSECTION:</b>	Bollen Road/Flaxley Road
<b>SCENARIO:</b>	Forecast Afternoon Peak Hour







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South Australia 5070  
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**CONSTRUCTION NOTES**

- PLANTS SELECTED BASED ON THE FOLLOWING CHARACTERISTICS:-  
- TOUGH & HARDY, DENSE COVERAGE, LOW MAINTENANCE, INDIGENOUS OR NATIVE ORIGINS, TOLERANT OF LOCAL SOILS, SOIL STABILISING, AND/OR TOLERANT OF SEASONAL INUNDATION.

- INDICATIVE PLANT LIST**
- |  |   |   |
|--|---|---|
| <ul style="list-style-type: none"><li>- Acacia paradoxa</li><li>- Acacia pycnantha</li><li>- Acacia melanoxylon</li><li>- Acmena sp.</li><li>- Agonia flexuosa 'Nana'</li><li>- Allocasuarina verticillata</li><li>- Austrodanthonia sp.</li><li>- Austrostipa sp.</li><li>- Banksia marginata</li><li>- Billardiera cymosa</li><li>- Bursaria spinosa</li><li>- Callistemon sieberi</li><li>- Callistemon 'Little John'</li><li>- Callistemon viminalis</li><li>- Callistemon sp.</li><li>- Callitris gracilis</li><li>- Calothamnus sp.</li><li>- Calytrix tetragona</li><li>- Carex sp.</li><li>- Carpobrotus roosii</li><li>- Clematis microphylla</li><li>- Correa glabra</li><li>- Cupaniopsis anacardioides</li><li>- Cyperus sp.</li></ul> | <ul style="list-style-type: none"><li>- Dianella revolute</li><li>- Dianella longifolia</li><li>- Dodonaea viscosa</li><li>- Enchylaena tomentosa</li><li>- Eremophila sp.</li><li>- Eucalyptus camaldulensis var. camaldulensis</li><li>- Eucalyptus cosmophylla</li><li>- Eucalyptus dairmpleana</li><li>- Eucalyptus fasciculosa</li><li>- Eucalyptus leucoxylon ssp. leucoxylon</li><li>- Eucalyptus macrocarpa</li><li>- Eucalyptus porosa</li><li>- Eucalyptus viminalis</li><li>- Exocarpos cupressiformis</li><li>- Ficinia nodosa</li><li>- Goodenia amplexans</li><li>- Grevillea lavandulacea</li><li>- Grevillea thelemanniana</li><li>- Grevillea obtusifolia</li><li>- Grevillea olivacea</li><li>- Grevillea 'Winparra Gem &amp; Gold'</li><li>- Grevillea sp.</li></ul> | <ul style="list-style-type: none"><li>- Hakea sp.</li><li>- Hardenbergia violacea</li><li>- Hibbertia scandens</li><li>- Isoplepis sp.</li><li>- Juncus sp.</li><li>- Leptospermum continentale</li><li>- Leptospermum lanigerum</li><li>- Lomandra sp.</li><li>- Melaleuca lanceolata</li><li>- Melaleuca nesophila</li><li>- Melaleuca 'Little Nessie'</li><li>- Myoporum parvifolium</li><li>- Myoporum viscosum</li><li>- Pittosporum angustifolium</li><li>- Poa sp.</li><li>- Scaevola albidia</li><li>- Syzygium sp.</li><li>- Themeda triandra</li><li>- Westringia sp.</li><li>- Xanthorrhoea semiplana ssp. semiplana</li></ul> |
|--|---|---|

**PRELIMINARY DRAFT  
NOT FOR CONSTRUCTION**

- These plans are intended as an artistic impression only.  
- These sketches show approximate design characteristics.  
- All dimensions levels and services are approximations only.  
- Have all construction undertaken by a qualified professional to best practice methods and Australian standards.  
- Dimensions, levels and services are to be checked on site before undertaking any construction.  
- Hatching is indicative of style only and is not to be used for construction calculations.  
©THESE PLANS REMAIN THE PROPERTY OF FRENCHENVIRO 2018

**KINGS BAPTIST GRAMMAR SCHOOL**  
41 BOLLEN ROAD, MOUNT BARKER SA 5251

November 2020  
SCALE 1:100 @ A1  
P10 of 12



CARPARK LANDSCAPE LAYOUT - CONCEPT

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## Attachment Two (2)



MOUNT BARKER  
DISTRICT COUNCIL

### Memo

**TO:** Derek Henderson

**FROM:** Michael Schubert

**SUBJECT:** Kings Baptist Grammar School – Engineering Comments (Land Use Consent)

**DATE:** 4<sup>th</sup> February 2020

**REFERENCE:** DA 580/270/20

---

Hi Derek,

I have undertaken an assessment of the following WSP documentation relating to the Kings Baptist Grammar School;

- Stormwater Management Plan – Kings Baptist Grammar School (Dated Dec 2020), including;
  - o Appendix A – DRAINS Outputs,
  - o Appendix B – Civil Concept Plan - Kings Baptist Grammar School, Bollen Road Mt Barker - Site Plan Proposed - 30% Concept Issue, project no. 19060, dwg no. PL004, dated Sept 2020, amdt 1, and
  - o Appendix C – Design Drawings - Kings Baptist School Civil Works – Detail Design Drawings (Sht C000 to C057 rev T4 dated 17/12/20 as per Drawing Index).
- Traffic and Parking Report (MFY), rev Final dated 11 March 2020.

It is noted that the above documentation has been assessed in conjunction with the following WGA documentation that relates to the overall management of the ‘Bollen Road Development Precinct’;

- o Newenham Development – Overall Stormwater Plan, rev A dated 3/12/20
- o Newenham Development – Overall Catchment Plan, rev A dated 3/12/20
- o Hawthorn Road Development Newenham – Catchment Plan, rev C dated 3/12/20

### Stormwater

In regards to stormwater management for the site, the Stormwater Management Plan adequately addresses the requirements and takes into consideration two scenarios being;

- a) development of the site prior to any surrounding land being developed, and
- b) following the development of surrounding land.

Further clarification was sought in regards to various components of the report via Council email dated 7/1/20. An email final from WSP incorporating 2 rounds of responses has been received. Reference to the following email is recommended as part of this DA;

- WSP email 'Kings Baptist Grammar School Site – Council Comments (incl. preliminary comments on Community Centre Site)' dated 3/2/21 (Council ref DOC/21/18379).

Council confirmed that the proposed 1050mm diameter pipe would be of sufficient size for the school to discharge into (one of the queries raised in the email) and a shallow swale in the 5 metre easement adjacent Bollen Rd would be required to convey road reserve runoff.

It is considered that the SMP and above email with responses to Council raised matters (including above follow-up items) is adequate for proceeding with detail design.

### **Traffic Management**

In regards to traffic management for the site, the Traffic and Parking Report provided by MFY addresses the majority of the requirements, however commentary on how pedestrians are to be managed on Bollen Road is still required. It is suggested that a condition addressing this requirement could be incorporated into the 'Land Use Consent'.

It is suggested that condition could specifically request an investigation into the existing pedestrian path network adjacent Bollen Road, selection and placement of a pedestrian crossing point and any necessary safety/speed management devices to ensure the protection of users. The final details will need to be to the satisfaction of Council, with adequate links to existing path networks (if available) to be provided. The devices should be operational prior to the school opening.

It is noted that the final design of the intersection between the carpark entrance and Bollen Road will be determined when Bollen Road is upgraded in future.

Regards,

Michael Schubert – Planning Engineer

## Attachment Three (3)

# flightpath

**01** DA: 580: 270:20

2085DA  
2 April 2020 Amended 21 January 2021

Derek Henderson  
Senior Planner  
Mount Barker District Council  
6 Dutton Road  
Mount Barker  
South Australia 5251

Dear Derek,

### HERITAGE ADVISOR COMMENTS

Kings Baptist Grammar School: Mount Barker: Amended documentation  
DA: 580: 270:20

Thank you for inviting an amended heritage comment and for sending through the amended planning application documentation.

The proposal is for Stage 1 of a 'larger area envisaged for the development of community and recreational facilities, together with a local centre within this area of Residential Neighbourhood Zone.'

The land contains a Local Heritage Place listed in Table MtB/8 as: House & fr Cemetery Fairfield (Regency Farm, May) that is outside of the Stage 1 area.

The Development Application documentation of relevance to this heritage assessment includes the following:

- URPS Amended Report 19ADL-0121;
- Hodgkison drawings 19060 Drawings PL001 to PL015 inclusive plus Exterior Finishes Schedule and Stormwater Plan;
- Anaglypta Architecture Heritage Report dated 26 February 2020.

The proposal does not involve physical works to the LHP other than amendments to fencing.

Stage 1 development is proposed to the east of the LHP and includes:

- Single storey School Building;
- Single storey Early Learning Centre;
- Earthworks, fencing, landscaping, outdoor learning and play areas.

The earthworks include the formation of a stepped plateau for both the two buildings and the associated civil works, transforming open, sloping rural land into relatively large, level portions of land with substantial tiering at the southern end and retaining walls to the north and west.

2085 DA: DA 580:270:20  
2 April 2020 Amended 21 January 2021

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The difference in level to establish the plateau requires cut, fill and tiered, landscaped, retaining walls. The existing driveway to the LHP will be lost and covered by new tiered landscape and the existing entrance connected with a new service track, which acts as a partial stormwater swale at the base of the tiered earthworks.

The amended proposal will retain two trees; one significant at the existing entrance and the second regulated to the north side of the building plateau for the School Building. The retention of the northern tree has required the redesign of the School Building and some site reconfiguration. The retention of the trees results in a narrower frontage being presented to Bollen Road and the new development being framed to each side by trees.

The northern and western edges of the plateau will be cut into the side of the slope, with the earthworks being approximately 25 metres from the LHP.

The Local Heritage Place is described as follows:

*House & fr Cemetery Fairfield (Regency Farm, May); Walls constructed of local stone with hipped cgi gable roof, timber-framed openings with timber doors & timber- framed windows, red-brick chimneys with coursing to top, and raked cgi return veranda with timber posts. Also concrete and stone monument with inlaid plaque and surviving fragments of Quaker cemetery headstones*

The Section 23(4) Criteria adopted and fulfilled in the 2004 Heritage Survey include: (a) (b) (d) (e). This means the following:

23(4)	Reason:
(a)	it displays historical, economic or social themes that are of importance to the local area
(b)	it represents customs or ways of life that are characteristic of the local area
(d)	it displays aesthetic merit, design characteristics or construction techniques of significance to the local area
(e)	it is associated with a notable local personality or event

The two proposed buildings and plateau occupy a considerably larger area of disturbed land than the LHP building, but not when compared to the whole site.

The new buildings will be separated by an entrance breezeway accessed from the carpark. The buildings are set behind the carpark, approximately 40 metres from the allotment boundary. The streetscape elevation indicate the proposed buildings will be stepped down the slope, from north to south.

The School building has a step in level of 380mm, resulting in a significant difference in level between the outside ground and lower floor level of the Administration Building at the breezeway end.

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The ELC will be lower floor level than the walkway ramp, with its north wall a retaining wall.

The buildings will be placed parallel to Bollen Road, in contrast to the LHP, which is angled. The South east corner of the LHP has an angled corner.

The buildings have a combination of skillion and low pitch roof forms, that provide wayfinding through sloping elements and feature elements to the main entrances of each building.

The material palette includes both natural timber to cladding and fencing, blockwork in muted colours with some subtle variation, stone, compressed sheet, and metal cladding to walls and roof.

The floor level provided for the ELC is 334.00, which is 6m lower than the floor level of the Local Heritage Place.

As development affecting a Local Heritage Place I have considered the following:

- Design and Appearance
- OBJECTIVES: 1
- PRINCIPLES OF DEVELOPMENT CONTROL : 1,2,3,5,7,8,9,11,12,13,14,15
- Heritage Places
- OBJECTIVES: 1,2,3
- PRINCIPLES OF DEVELOPMENT CONTROL : 1,2,3,4,5,6,7,8,11

### HERITAGE ADVISOR COMMENTS

The Heritage Report prepared by Anaglypta Architecture includes very useful documentary and physical information on previous alteration of the Local Heritage Place and identifies the remnant fabric of Heritage Value.

Of importance also is the confirmation of the location of the surviving fragments of the cemetery, which is significantly separate from the dwelling and also outside the Stage 1 area.

From a Heritage Advisory perspective, setting aside the important educational, traffic, functional, civil and cost parameters, I consider the key heritage design principles to be:

- Ensuring sufficient separation between the earthworks, buildings and the Local Heritage Place;
- Maintaining views of the Local Heritage Place;
- Proposing buildings that visually connect with the Local Heritage Place and are designed with some contextual reference.

The proximity of the earthworks and new buildings to the LHP is affected by the placement of carparking in front of the new buildings, effectively pushing the new

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buildings and earthworks closer to the Local Heritage Place. The retention of the River Red Gum has had a similar effect.

General Section Design and Appearance Objective 1, in seeking development of a high architectural standard is satisfied by the high functional quality of the new buildings. The new buildings have large footprints and face away from the LHP. The amended design for the School building has resulted in a better articulated floor plan with improved reference to the Local Heritage Place. The material palette proposed also incorporates useful references.

The amended proposal is innovative and contemporary in its design and functional in planning. The amended articulated overall form has improved in relation to the scale of the LHP. The amended shape of plateau and the buildings better reflects the more intimate scale and finer grain of the Local Heritage Place. General Section Design and Appearance PDC 1 is better satisfied by the amendment. The separation and the location of the development to the side of the LHP, effectively preserves its primary frontage, which is considered to be to the south and southeast.

The amended new buildings have an improved articulated frontage to Bollen Road reducing the previously extensive length of walling assisted by some interruption, achieved through stepping of levels, stepping in plan, adopting feature elements such as parapet walling and attractive, elegant entrance structures to each end of the development, having the central walkway between buildings and other visual interest. The amended proposal better satisfies PDC 2 and 3.

The buildings may alter the views available from the east of the development, but there appears to be a general acceptance that rural settings and views are being altered in the expansion of Mount Barker, avoiding the displeasure of PDC 5.

The proposed roofs, while not of a scale, form and pitch of rural areas or the immediate Local Heritage Place, are low pitched, oriented and of a colour to avoid glare, satisfying PDC 7 and providing some visual contrast. The roof mounted plant appears reasonably well screened in a manner that integrates screens with the building form, satisfying PDC 8.

General Section Design and Appearance PDC 9 is satisfied by the simple wayfinding embedded in the site planning and the material selection is also appropriately sympathetic with the natural features of the site.

While the development lacks a more traditional rural vernacular appearance, the overall amended design and material selections of the new portion are well-coordinated, with improved articulation of scale, form and width of frontage, giving improved contextual references to the Local Heritage Place.

The new buildings adopt the advice of PDC 13, by facing the primary street frontage of Bollen Road.

The analysis by Anaglypta Architecture indicates the views from Bollen Road to be secondary. While not totally in agreement with this assessment, I accept the view

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from Flaxley Road will be maintained and am somewhat heartened by the ELC being of a lower floor level and roof form than the LHP, providing some semblance of the current viewing opportunity from Bollen Road.

Objective 1 of Heritage Places is part achieved through an undertaking to eventually integrate the former homestead within the overall enlarged campus.

For now, Council has a Local Heritage Fund that can assist with small conservation works, that should be encouraged. The Local Heritage Place presents an opportunity for training in conservation trades, such as stonework, roofing, carpentry and external painting, all of which will activate the Place and avoid its demise through lack of use.

For now Objective 2 cannot be satisfied because a use for the Place is not identified and its vacancy and deterioration a possible threat. A proactive approach to future use and activation is encouraged.

The setting of the Place is also altered through substantial earthworks to achieve a stepped building plateau that has a lesser slope than the existing rural landscape. Generally, the curtilage to the Place is sufficient and maintained. The Local Heritage Place enjoys greater elevation, form and height retaining most of its dignified setting sought in Objective 3. It has a presence to be maintained and remembered, especially if integrated with future planning and provided with an active use.

The proposal involves no demolition of the described fabric and therefore PDC1 is fulfilled.

PDC 2 of Heritage Places provides guidance for new development, encouraging development that is of a scale, siting, form, roof pitch, detailing and proportion complementary to the heritage character of the area while avoiding confusion between new and old. The buildings are designed to avoid that confusion and the amended design provides improved articulation.

The guidelines seek siting that maintain the prominence of heritage buildings and an orientation that matches or reinforces the placement of heritage buildings. The guidelines seek consideration of scale and encourage transitional elements. Consideration is encouraged with respect to surrounding development and new buildings of a scale and form that complement existing buildings and minimise visual intrusion. Given the disturbance occurs to one side only, the retention of the River Red Gum and the better articulation of the floor plan of the School Building, this aspect has been reasonably addressed with the amendment.

The Guidelines encourage new buildings to be sited to blend with the surrounding landscape and not to detract from any features such as trees, vegetation and landform. The amendment better adopts the guidance of PDC 2 through articulation that better reflects the grain, scale and form of the Local Heritage Place. The Stage 1 development occurs to the east side side, albeit currently a public frontage, ensuring that views will be retained.

## 01 DA: 580: 270:20



The Flaxley Road elevation and views will be retained. The current Master Plan indicates this portion of land to become a community oval, with views of the Place retained into the future. It is considered reasonable to alter some of the Bollen Road, side view, in the interests of maintaining the primary Flaxley Road view.

While the compatibility of use between any former farm and any new ambitious education facility are at odds, especially demonstrated by the substantial earthworks required for safety of the users on a sloping site, the opportunity for the integration of the Local Heritage Place remains through the retention of the LHP and education uses can be compatibly accommodated within a future restoration of the homestead. Therefore PDC 4 remains open and possible.

Also, if Flaxley Road is accepted as the primary frontage, PDC 6 will not be offended, setting aside the practicality of buildings to the Bollen Road side.

The scale and bulk and proportions and composition of the amended development that materially affects the setting of a Local Heritage Place are no longer considered at odds with the Local Heritage Place, and PDC 7 is better addressed with the amended articulated floor plan. There is reliance on separation distance.

It appears that signage may form part of a separate application. It is also noted that the trees to be removed from Bollen Road, that contribute to the setting are not protected.

### CONCLUSION

The proposal is considered to be a further improvement to an already high standard of functional architecture. The amended proposal is reasonable and acceptable for the following reasons:

- Local Heritage Place is retained;
- Adaptive reuse of the Local Heritage Place is possible;
- Setting of the LHP is mostly maintained;
- Primary views to and from the place will be retained.

The new buildings are acceptable for the following reasons:

- They are sufficiently separated from the Local Heritage Place;
- The improved articulation, scale, bulk, proportions, separation and composition of elements while functional, incorporates improved articulation of the large footprint of the new buildings, through entrances and architectural treatments, such as parapet walling and entrance treatments to each end.

It is acceptable to consolidate and minimize earthworks and articulate the proposed buildings in the interests of retaining a regulated tree within an existing treed location.



**01** DA: 580: 270:20

**flightpath**

I trust the commentary is of use for your report. Please feel free to contact me on 8211 6355 or [douglas@flightpatharchitects.com.au](mailto:douglas@flightpatharchitects.com.au) with any queries.

Yours sincerely,  
FLIGHTPATH ARCHITECTS PTY LTD



Douglas Alexander  
Principal Architect and Practice Director

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## Attachment Four (4)

### DISTRICT COUNCIL OF MOUNT BARKER

#### STATEMENT OF REPRESENTATION FOR CATEGORY 2 Pursuant to Section 38(4) of the Development Act, 1993

TO: Chief Executive Officer  
District Council of Mount Barker  
PO Box 54  
MOUNT BARKER SA 5251

THIS SHEET PROVIDES YOU WITH THE OPPORTUNITY TO MAKE COMMENTS IN RELATION TO A PROPOSED DEVELOPMENT; IF YOU WISH TO DO SO. PLEASE FIND ATTACHED DETAILS OF THE PROPOSED DEVELOPMENT.

DEVELOPMENT NO. 580/270/20  
Kings Baptist School - Stage 1: School Building and Early Learning Centre, including associated Decking, Shelter, Pergolas, Car Parking, Landscaping, Fencing, Retaining and Infrastructure

**YOUR DETAILS:** (all fields with an asterix \* must be completed to ensure that this is a valid representation as per Regulation 35 of the Development Regulations 2008).

\* NAME: Samantha Rolt  
\* HOME ADDRESS: 18 Bollen Road, Mount Barker  
\* POSTAL ADDRESS: A.S. ABOVE  
PHONE NO: 0406 028 164 E-MAIL: daisybahlou@gmail.com

My interest/s are affected as: (please tick the following boxes as appropriate)

☒ The owner or the occupier of the property located at: 18 Bollen Road

☐ Other (please state):

#### YOUR COMMENTS:

\* I/We:

☐ Support the proposal and provide the following comments.

☒ Oppose the proposal and provide the following comments.

RECEIVED  
MOUNT BARKER  
DISTRICT COUNCIL

11 NOV 2020

File: 270/20 (pc/34709)  
Doc:

(Please note that your comments should demonstrate reasonable particularity)

My concerns are as follows:

- Increased traffic along Bollen Rd contributing to noise pollution during construction and peak school operating hours, weekend events.
- Aesthetics of the farm land removed and replaced with concrete modern carpark and school building not in keeping with its natural surroundings. The development will be an eyesore from view of my home. This upsets me greatly. This development very well could affect the property price of my home because of the above concerns.

My concerns continue:

There will be an increase of foot traffic on Bollen rd which can be a safety concern for security on my property.

There will be an increase of litter during construction and during the school operating.

The below comments are very concerning for me and important to me:

Animal habitats destroyed, frog and bird life, dam removed.

This dam is a important water source for native animals who live and travel to this habitat. This fragmentation of native

habitats leaving remnant patches of habitat, reducing the biodiversity and having a negative impact of a variety of

species including frog life and nesting birds. I truly hope site clearing will ~~time~~ be timed with nesting birds

taken into consideration and development and construction is sensitive to the above concerns.

There should be plans for re-planting native vegetation to support the remaining wildlife to support biodiversity in the area and bird

and bat boxes created to support and keep remaining wildlife in the area because of the loss of their habitat.

Lastly I want to express my sadness and disappointment that more precious farm land is being developed upon. The sounds of cows  
\* We: during the day will be replaced with traffic and yelling children.

The sound of frogs croaking at night will be lost forever. How sad!

☐

Do not wish to be heard by the Council Assessment Panel in support of my representation. this is!

☒

Wish to be heard by the Council Assessment Panel in support of my representation, and I will be:

☒

Appearing personally,

OR

☐

Be represented by the following person: .....

Contact details: .....

(Please note, matters raised in your representation will not need to be repeated at the Council Assessment Panel meeting).

Development Act 1993 - Part 4, 38 (10)(a)

In the case of a Category 2 development - the relevant authority may, in its absolute discretion, allow a person who made a representation to appear personally or by representative before it to be heard in support of the representation.

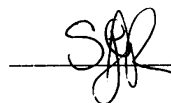
**Your written representation must be received by Council no later than 11.59pm on Wednesday 11 November 2020, to ensure that it is a valid representation and taken into account.**

If you make representation you will be notified by a separate letter of the date and time of the Council's Assessment Panel (CAP) meeting at which CAP will consider the application.

#### Representor's Declaration:

I am aware that the representation will become a public document as prescribed in the Freedom of Information Act 1991, and will be made available to the applicant, agencies and other bodies pursuant to the Development Act 1993 and may be uploaded to the Council's website as an attachment to a Development Assessment Panel agenda.

SIGNED



DATE 10/11/2020

## Attachment Five (5)



**URPS**

ADELAIDE  
12/154 Fullarton Road  
ROSE PARK SA 5067  
(08) 8333 7999

MELBOURNE  
4 Brunswick Place  
FITZROY VIC 3065  
(03) 8593 9650

www.urps.com.au  
ABN 55 640 546 010

Ref: 19ADL-0121

17 November 2020

Mr Derek Henderson  
Senior Planner – City Development  
Mount Barker DC  
PO Box 54  
MOUNT BARKER SA 5251

Email [dhenderson@mountbarker.sa.gov.au](mailto:dhenderson@mountbarker.sa.gov.au)

Dear Derek

### **580/270/2020 – Kings Baptist School Stage 1 - Response to Category 2 Representation**

On behalf of the applicant, URPS provides the following response to the one application received in following public notification of the above Category 2 development.

The representor's land, 18 Bollen Road, is in the Residential Zone and is located diagonally opposite the north-east corner of the school site. The residential property is directly opposite the approved new public road (parallel to the northern boundary of the school) which will intersect with Bollen Road. The dwelling on that allotment is setback approximately 35m from the nearest part of the school allotment. The dwelling is setback approximately 8.0m from its Bollen Road frontage.

The road reserve itself is approximately 25m wide, wider than the majority of the local residential street network to the east of Bollen Road (approx. 14m wide road reserves). The formed carriageway of Bollen Road sits in the Residential Neighbourhood Zone and the wider verge on the east side of the carriageway is located in the Residential Zone.

I have summarised and responded to the key points in the representation under various headings below.

#### **Noise impact**

- (a) The traffic increase on Bollen Road associated with the development will contribute to noise pollution
- during construction
  - peak school operating hours
  - weekend events

The submission later reflects on the disappointment of development replacing the "*sounds of cows ... with traffic and yelling children*".



It's acknowledged that construction and traffic noise will be unavoidable during that period, but these are not unique to the subject development nor the envisaged mixed use nature of an urban neighbourhood.

Noise during construction can be managed through a Construction Environmental Management Plan (CEMP). A CEMP is not a development assessment matter, but a management tool that, for example, sets the hours of construction activity, identify communication and complaint resolution strategies, such that construction impacts on residential amenity or the environment can be mitigated in an efficient manner.

During peak school hours, the majority of activities take place indoors, with regular breaks being the exception. The children do not take breaks in the front of the site which is reserved for parking. Whilst it is the nature of educational facilities that there will be some noise associated with student activity outdoors, the impact is minimised by the location of outdoor activity areas to the rear of the site, behind the new buildings.

As for any school there will be some traffic noise associated with the peak movements in the morning drop-off and afternoon pick-up, but this is for relatively short duration.

School weekend events are not envisaged to be regular occurrences. It is anticipated that majority would be indoors apart from some vehicle movements in and out of the carpark.

As one of several envisaged uses in the Residential Neighbourhood Zone, the school is considered to represent a much lower impact use compared to a neighbourhood shopping centre. For example, commercial/business type activity centres could generate constant vehicle movements throughout typical operating hours. A school is staggered, and the school's primary functions are weekdays and generally confined to school terms rather than 365 days a year.

The Desired Character of the Residential Neighbourhood Zone envisages *"a series of interconnected neighbourhoods designed to promote social interaction....and equitable access to ... education facilities...will be integral to the design of the area"*. This proposal for an envisaged use is considered reasonable in the context of the planned development concept for this neighbourhood. The site is appropriately located as it is accessible via a key local public road and will interconnect with the planned road network within the emerging residential neighbourhood. In this context the site provides equitable access to the existing and growing Mt Barker community in accord with the desired character.

#### *Increase in foot traffic and associated litter/security concerns*

- (b) The increase in foot traffic generated by the development along the road reserve will cause a security risk to the representor's property.

The use of a public thoroughfare by a greater number of people (school community or the public generally) is often considered a positive outcome in planning terms, based on increased opportunities for causal surveillance in the public realm.

#### *Other impacts*

- (c) There will be an increase in litter during construction and once the school is operating.

As a planning matter, this is not strictly relevant to the development assessment. The Construction Environment Management Plan can address this issue for the construction period. The authority can apply general conditions as to the ongoing collection and secure storage of waste on the site.

*Visual impact caused by built form and effect on property value*

- (d) The built form and car park will be an eyesore as viewed from the representor's property. The impact on the value of the representor's property is of great concern to the representor.

The proposed built form is single storey in keeping with the predominant scale of established residential buildings in the locality. Individual perceptions of the appropriateness of the design and appearance of new built form will obviously vary. The proposed buildings are well set back from allotment boundaries and sited to retain two regulated trees adjacent the existing and proposed road boundaries that contribute positively to the landscape character of the site and the area. Overall the visual impact of the development is reasonable having regard to the urban character sought for the zone.

Property value impact is not a relevant planning consideration.

*Impact on rural character and habitat (dam as a source of water, trees as wildlife habitat)*

- (e) The representor is concerned with the loss of the dam, fragmentation of native habitats and reducing biodiversity, adding there should be plans for replanting native species.

The Desired Character statement for the zone refers to avoiding the modification of areas identified as a 'High Environmentally Significance (sic) Area' as shown on the *Overlay Map - Development Constraints*. The subject site is identified on Map series MtB/12 and is not identified as an area of high environmental significance. Nevertheless, the layout and design of the development effectively minimises the impact on the two regulated trees in the subject development site and these are retained in areas of open space and will be managed in accordance with the arborist's recommendations (supporting information already supplied).

The landscaping concept for the school site has been further developed. A copy of the concept plan and planting schedule for the front carpark (the area most visible from the Bollen Road frontage) shows that it will be planted out with locally indigenous and native species, from ground covers through to larger shrubs and trees. The planting schedule will be adapted for other parts of the site (ie the outdoor nature play / greenspace / soft lands area – refer Site Plan drawing PL004 ) consistent with the intent to establish planting based on the following characteristics:

- tolerant of local soils
- low maintenance, tough and hardy
- soil stabilising and or tolerant of seasonal inundation.

The proposal to remove the dam on the subject site was lodged by the previous land owner and preceded this application. URPS is instructed that the works are supported by the Department for Environment and Water (DEW) and are consistent with a State Government strategy supporting a reduction in the number of dams in the catchment. The work involving the demolition/filling in of dam is being undertaken under DEW supervision.

The proposed development represents a reasonable balance between achieving the development intent for the zone and the avoiding modification of the land form where it will impact on features to be retained such as the two regulated trees. Enhancing the landscape character through implementing new planting

suited to the local conditions, is consistent with the Desired Character for the zone as a means to soften built form and complement urban landscapes.

### **Conclusions**

The URPS Planning Report accompanying the application drawings and other supporting information provides an assessment against the relevant provisions of the Mount Barker Development Plan. The planning assessment conclusions in support of the proposed land use and built form, are consistent with the above response to the matters raised in the representation. No amendments to the application are proposed in response to the matters raised in the representation.

Having regard to the intended use of the land and the desired character of the Residential Neighbourhood Zone, the suitability of the site in terms of achieving an appropriate development response to local topography and natural features, the proposed development is compatible with the established residential locality and in an accessible location in the context of the planned neighbourhood.

The applicant wishes to reserve the right to be heard personally or by representative at the Council Assessment Panel meeting scheduled to determine the matter.

Please do not hesitate to contact the undersigned on any matter regarding the application.

Yours sincerely



**Julie Lewis RPIA**  
Senior Associate

Enc     Landscape Concept (Plant list and Carpark landscaping concept), French Enviro, Nov 2020

**5.4. CATEGORY 1 APPLICATIONS**

Nil.

**6. INFORMATION REPORTS**

Nil.

**7. CONFIDENTIAL REPORTS**

Nil.

**8. POLICY MATTERS ARISING FROM THIS AGENDA**

**9. OTHER BUSINESS**

**10. CLOSE**