Structural
Civil
Traffic
Façade

# Civil Engineering Report

## State Significant Development Application for Meriden School for Girls, Strathfield

**Prepared for Allen Jack and Cottier** / 26th of April 2019

181478

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# 1.0 Introduction

## 1.1 Executive Summary

Taylor Thomson Whitting Pty Ltd (TTW) has been engaged to provide civil engineering consulting services for the proposed developments across the three Meriden School campuses.

This report supports a State Significant Development Application (SSDA) submitted to the Department of Planning and Environment (DPE) pursuant to Part 4 of the *Environmental Planning and Assessment Act 1979* (EP&A Act).

This proposed development is identified as a State Significant Development by way of Clause 15(2) of Schedule 1 under *State Environmental Planning Policy (State and Regional Development) 2011* on the basis that the development is for the purpose of an existing school and has a Capital Investment Value of more than $20 million.

## 1.2 Secretary's Environmental Assessment Requirements

Under application number SSD 9692, we have been provided with Secretary's Environmental Assessment Requirements (SEARs) issued on the 22nd November 2018. This report provides a response (in part or full where relevant) to the following SEARs:

**16. Drainage:**
- Detail measures to minimise operational water quality impacts on surface waters and groundwater.
- Stormwater plans detailing the proposed methods of drainage without impacting on the downstream properties.

**17. Flooding:**
- Identify flood risk on-site (detailing the most recent flood studies for the project area) and consideration of any relevant provisions of the NSW Floodplain Development Manual (2005), including the potential effects of climate change, sea level rise and an increase in rainfall intensity. If there is a material flood risk, include design solutions for mitigation.

**20. Sediment, Erosion and Dust Controls:**
- Detail measures and procedures to minimise and manage the generation and off-site transmission of sediment, dust and fine particles.

## 1.3 Relevant Documents

The following documents have been reviewed in preparing this document:
- Strathfield Council Stormwater Management Code (October 1994)
- Strathfield Local Environmental Plan 2012
- Strathfield Interim Flood Prone Land Policy 1999
- Strathfield Consolidated Development Control Plan 2005, Part M – Educational Establishments
- Strathfield Council WSUD Reference Guideline
- Managing Urban Stormwater: Soils and Construction (Landcom NSW)


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# 2.0 Overview of Proposed Development

The proposed State Significant Development Application (SSDA) comprises development on each of the three Meriden School campuses (refer to Figure 2.1). The primary objective of the proposal is to improve the current school facilities to cater for the increased demand for high quality music teaching and learning spaces, additional administration and student facilities and increasing the playground area in the Junior School Campus.

The proposed works comprise the following:

**Site 1: Senior School Campus – New Centre for Music and Drama**
Demolition of the existing music building located towards the south-western corner of the Senior School Campus, and construction of a new 4-storey building incorporating a new music academy, drama facilities, music teaching rooms and staff facilities. Excavation to a depth of 6m below existing ground level to accommodate practice rooms, a recording studio, instrument storage rooms, staff room and drama performance area.

**Site 2: Lingwood Prep School – New Administration and Student Centre**
Demolition of existing single storey Business Office building and construction of a new 2- storey general student services and administration building. The new building will be designed with maximum flexibility to accommodate a wide range of uses, and to adapt with the demands of the school. This will involve the removal of 6 trees.

**Site 3: Junior School – New Landscaped Playground**
Demolition of the existing residential dwelling at 4 Vernon Street to make way for a new landscaped playground area. This will involve the removal of 3 trees. The existing access and parking arrangements will be retained.

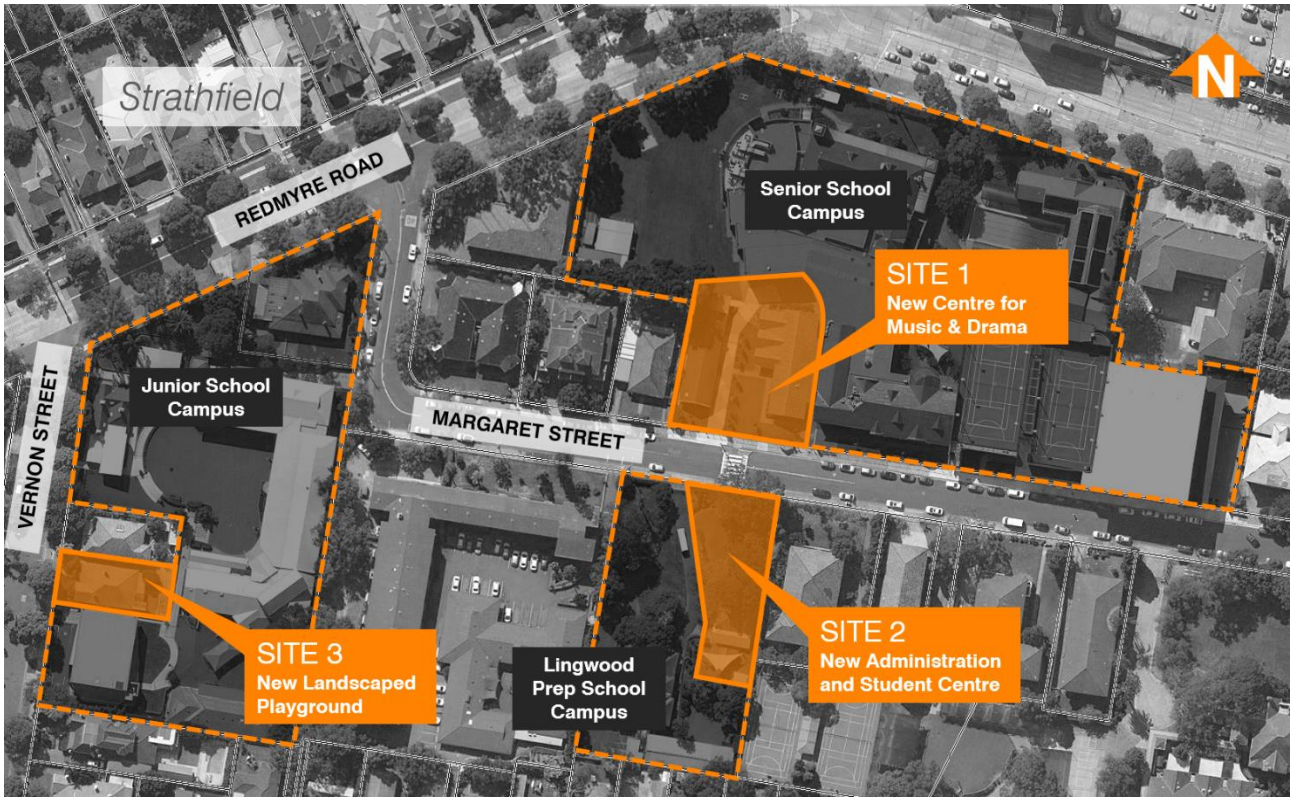



*Figure 2.1: Overall proposed development plan (Map source: NSW Spatial Information Exchange)*


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# 3.0 Concept Design

## 3.1 Stormwater Quantity

In general, all new roof stormwater will be collected in roof gutters and downpipes and conveyed to the in-ground pipe system. Surface stormwater will be collected through site grading and collected in surface inlet pits. This in-ground stormwater will be connected to water quality treatment measures and onsite stormwater detention (OSD) as required.

## 3.2 Stormwater Quality

As the site is developed, water quality modelling will be conducted using the Model for Urban Stormwater Improvement Conceptualisation (MUSIC) in accordance with Strathfield Council WSUD Reference Guideline to determine that the site has been designed in accordance with Council's water quality requirements. It is likely that water quality treatment will include a combination of Water Sensitive Urban Design practices (such as grassed swales and rainwater re-use) and proprietary products (such as pit inserts and gross pollutant trap units).

## 3.3 Sediment and Erosion Control

During the construction stage of the project, sediment and erosion control measures will be installed and maintained until construction is completed. The proposed sedimentation and erosion control measures will prevent sediment laden stormwater from flowing into adjoining properties, bushland, roadways or receiving water bodies. Stormwater controls onsite are detailed in an erosion and sediment control plan which is in accordance with relevant regulatory authority guidelines including Strathfield Council's DCP and Landcom NSW's Managing Urban Stormwater, Soils and Construction ("Blue Book").

Erosion and sediment control plans will be prepared for each site as part of the schematic design process.

## 3.4 Flooding

The site is located within the Powells Creek catchment area which has been the subject of a Flood Study undertaken by Strathfield Council. From the assessment of the flood study, the site was not tagged as being subject to flooding, likely due to the site being upstream from the creek's originating point (refer Figure 3.2)

The proposed concept design does not appear to propose any obstruction to natural overland flow paths through the site. Should this occur, overland flows will be diverted around any proposed buildings.


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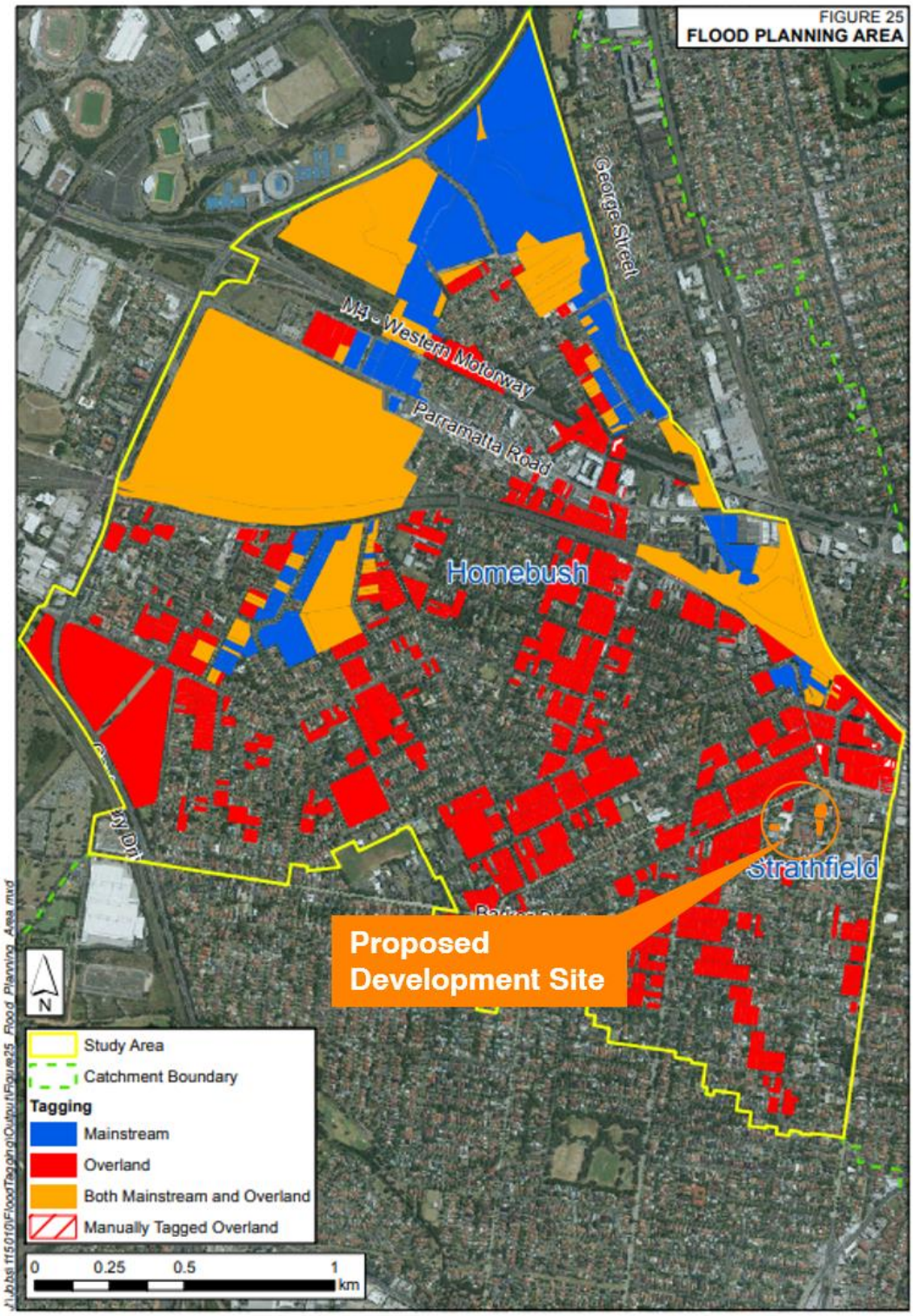



*Figure 3.2: Flood Study Map (Source: Powells Creek Flood Study)*

## 3.5 Pavement

The proposed pavement areas will be designed to withstand proposed loads, suit structural demands, geotechnical conditions, and accessibility. It is expected that the majority of pavements proposed will be concrete finish or brick pavers.


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# 4.0 Site 1: Senior School Campus - New Centre for Music and Drama

## 4.1 Development Site

The New Centre for Music and Drama is proposed to be constructed on the Senior School Campus. The Senior School is located within Strathfield Council's Local Government Area under Lot 101 of Deposited Plan DP 862540. The site contains multiple existing schools buildings and sports facilities, the most recent addition to the site in the new Wallis Auditorium Building which opened in 2017. The site generally grades to the north towards Redmyre Road. Overland flow is captured by a network of grated inlet pits within the site and held in an on-site detention tank before being discharged to the Strathfield Council's drainage network on Redmyre Road.

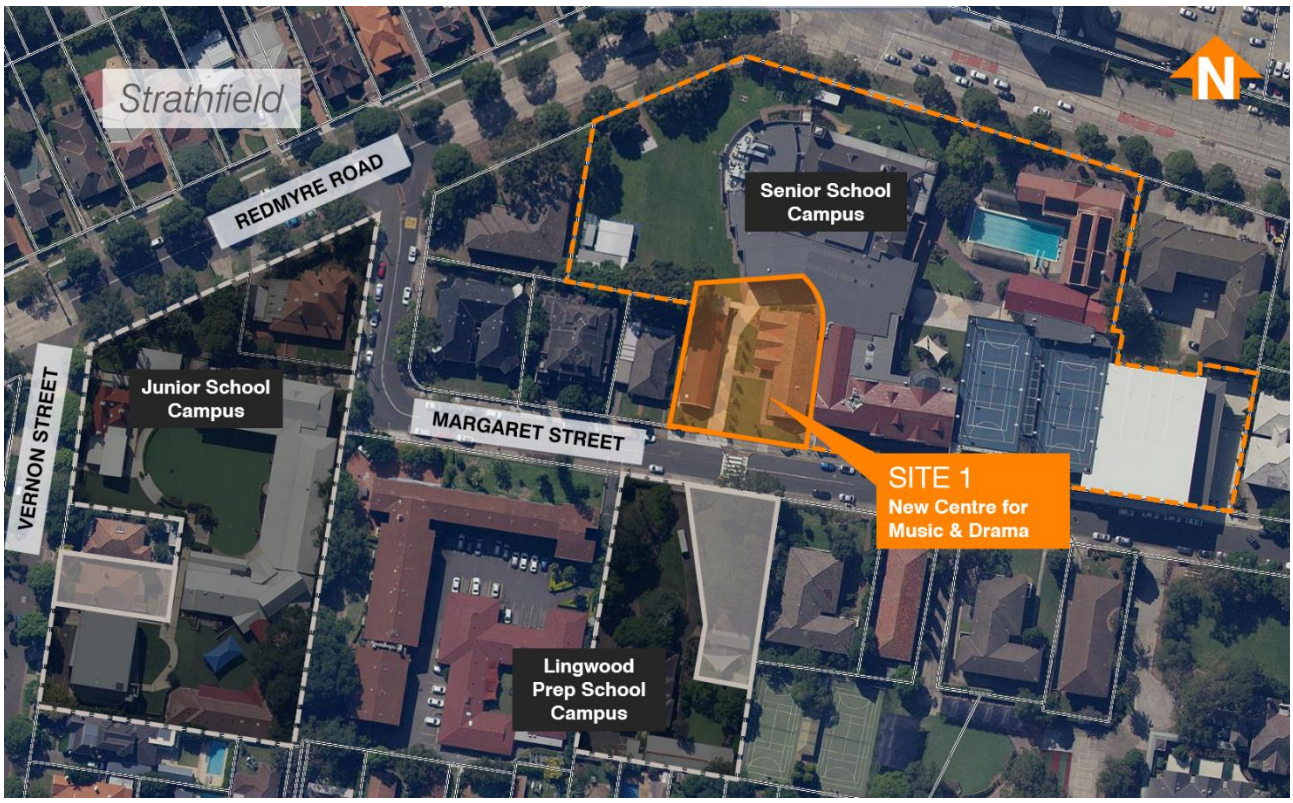



*Figure 4.3: Site 1 Locality Plan (Source: NSW Spatial Information Exchange)*

## 4.2 Proposed Development

The proposed development will involve the demolition of the existing Performing Arts Building and adjacent building to the west and construction of a new four-storey building incorporating a new music academy, drama facilities, music teaching rooms and staff facilities. The total development site including landscaped areas and a new walkway to the west of the proposed building covers an area of approximately 1,750m$^2$.


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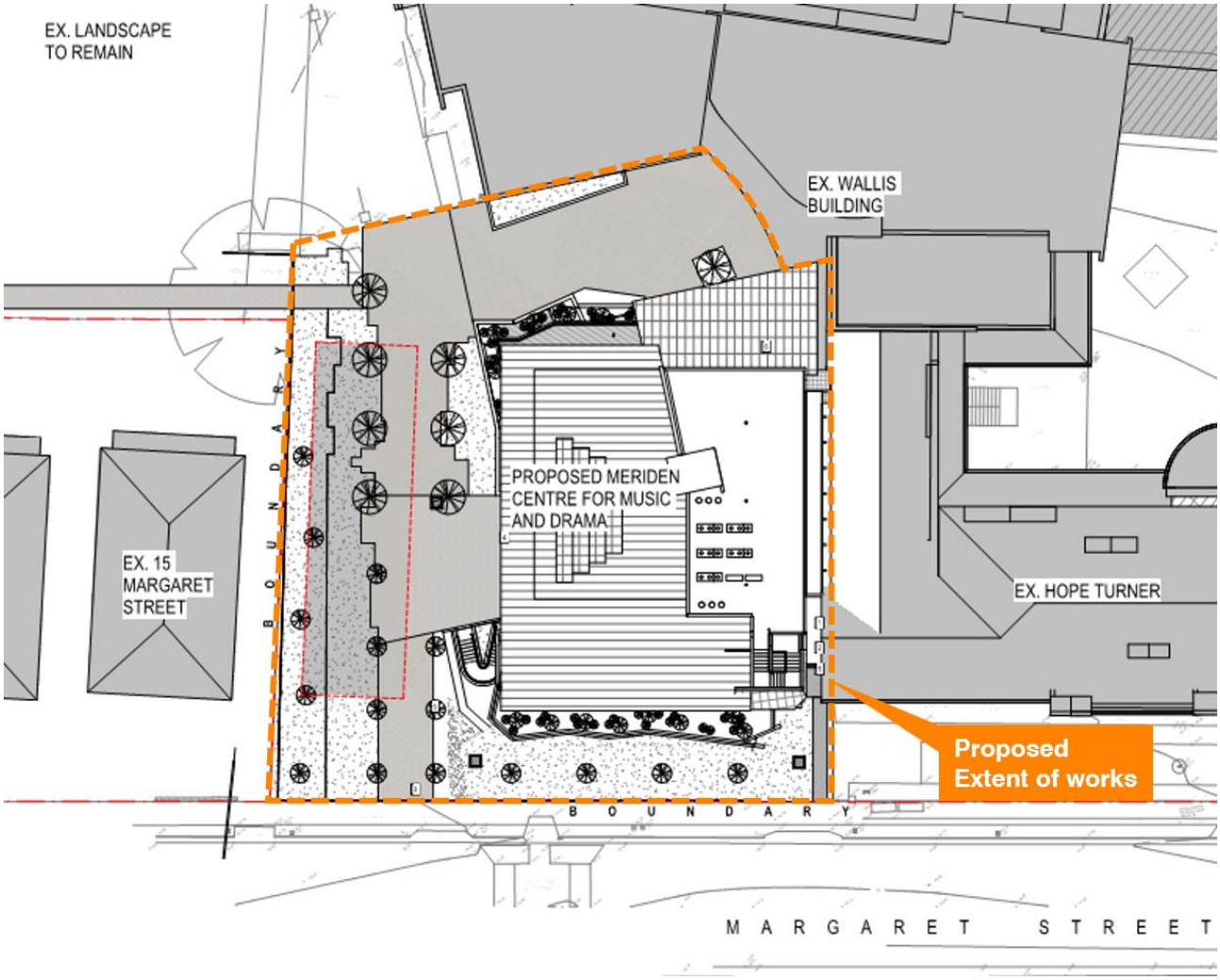



*Figure 4.4: Extent of Proposed Works (Source: Site Plan prepared by Allen Jack and Cottier)*

## 4.3 Stormwater Quantity

The total site area is equal to approximately 1,750m$^2$ and currently consists of 66% impervious area due to the existing buildings and footpath areas. The proposed development will result in 71% impervious area. Pre and post catchment plans are detailed in Figure 4.5.

The site stormwater is currently conveyed to an existing on-site stormwater detention (OSD) tank located to the north. This was constructed as part of Wallis Auditorium Building works in 2017. As a result of the minor increase in impervious area and the existing downstream detention basin, OSD has not been proposed for the site.


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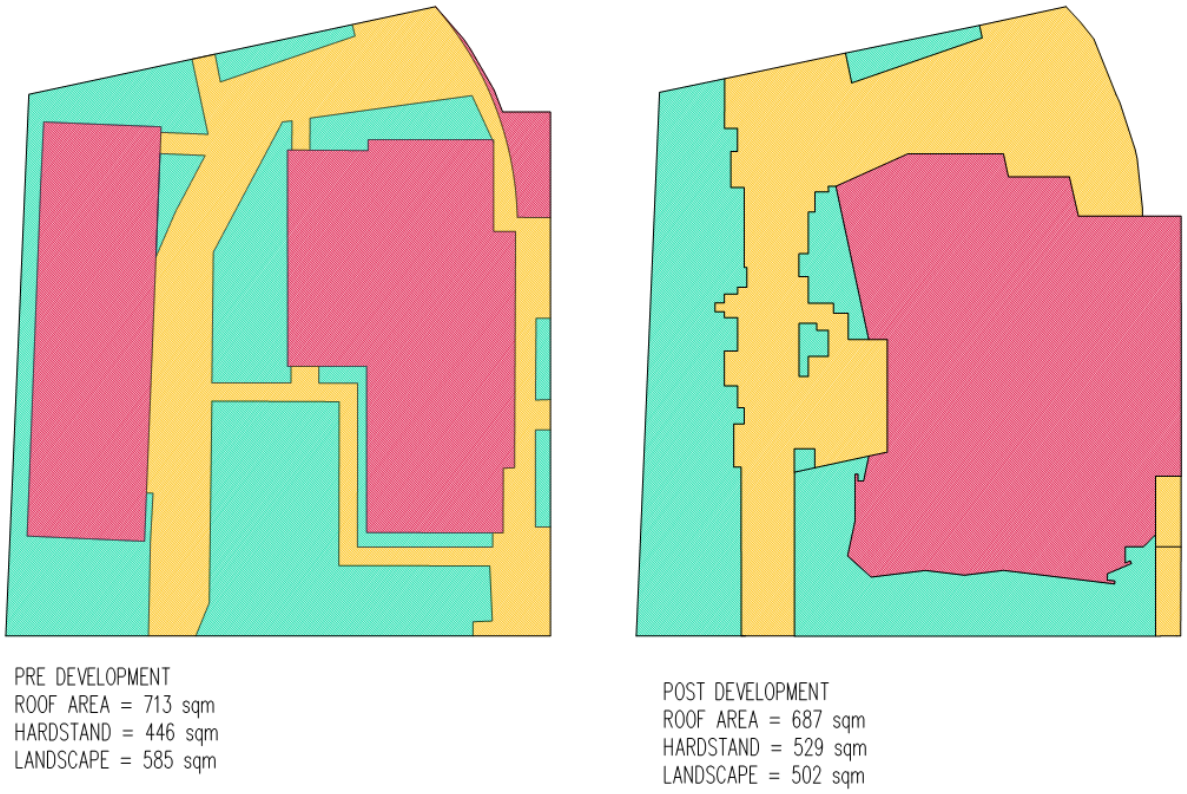



*Figure 4.5: Site 1 Pre and Post Development Catchment Areas*

## 4.4 Stormwater Quality

Part N of Strathfield Council's Consolidated Development Control Plan 2005 states that water quality is required for "All alterations and additions to existing commercial, retail, mixed use and industrial development with a total site area greater than 2,000m$^2$, which results in increase in building footprint or gross floor area of greater than 50%. WSUD is to be applied to the whole site". Since this development is not increasing the building footprint by greater than 50%, this development is exempt from having to meet Council's water quality targets.

## 4.5 Sediment and Erosion Control

A Sediment and Erosion Control Plan specific to the site has been prepared (refer to appendix A for Sediment and Erosion Control Plan) and forms part of the Civil Engineering Documentation.

## 4.6 Summary

The New Centre for Music and Drama proposes to marginally increase impervious area from 66% to 70%. The site proposes to collect stormwater through an inground pit and pipe network that then discharges into the existing stormwater system within the school and a downstream OSD. As a result, no OSD has been proposed. Furthermore, as the development is not increasing the building footprint on the site by more the 50%, no stormwater quality treatment measures/devices have been proposed. Refer to appendix A for Concept Siteworks Plan


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# 5.0 Site 2: Lingwood Prep School – New Administration and Student Centre

## 5.1 Development Site

The new Administration and Student Centre is proposed in the existing Lingwood Prep School. The site generally grades to the east and currently contains a one-storey building and some landscaped area. The site is located within Lot 1 of DP723946 at 16 Margaret Street, Strathfield.

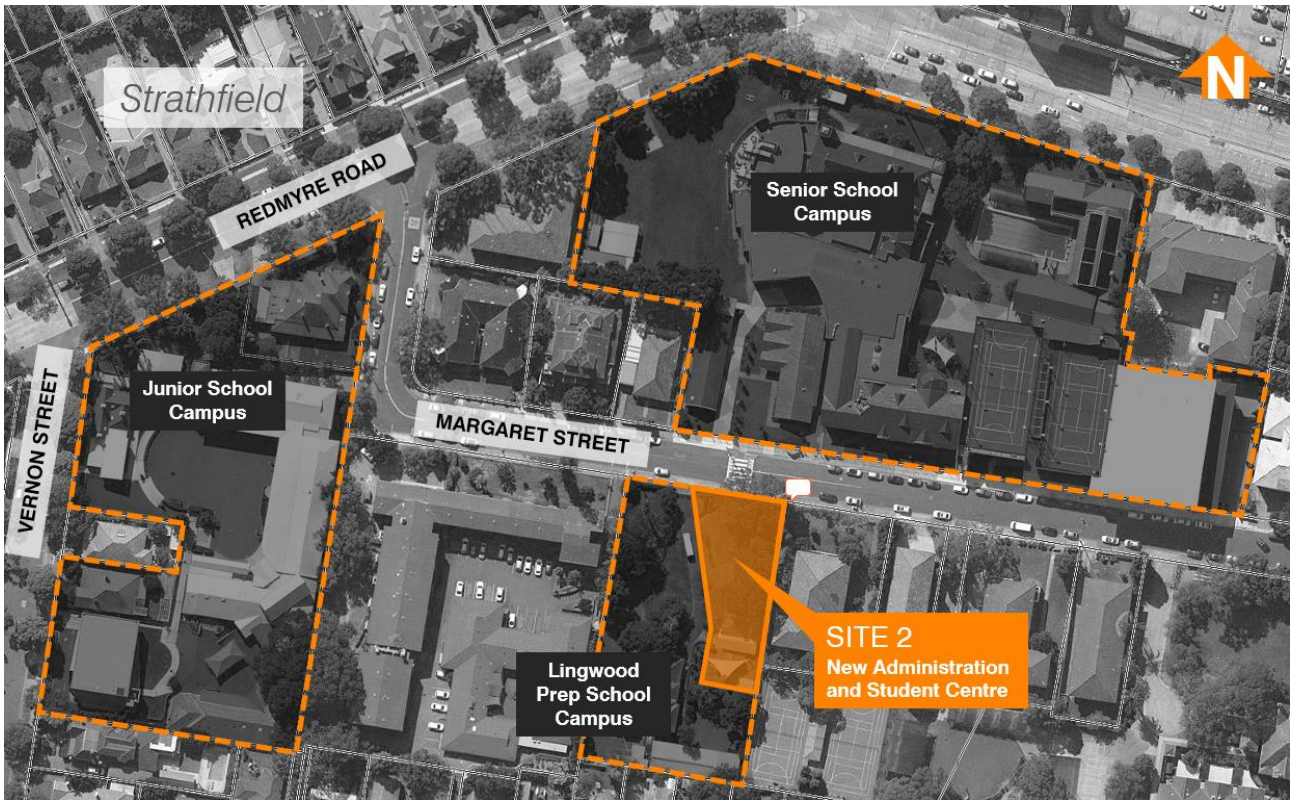



*Figure 5.6: Site 2 Locality Plan (Source: NSW Spatial Information Exchange)*

## 5.2 Proposed Development

The proposed development will involve the demolition of the existing business services building on site, removal of some existing trees and construction of a new two-storey administration and student centre. The total developable area is equal to approximately 840m$^{2}$.


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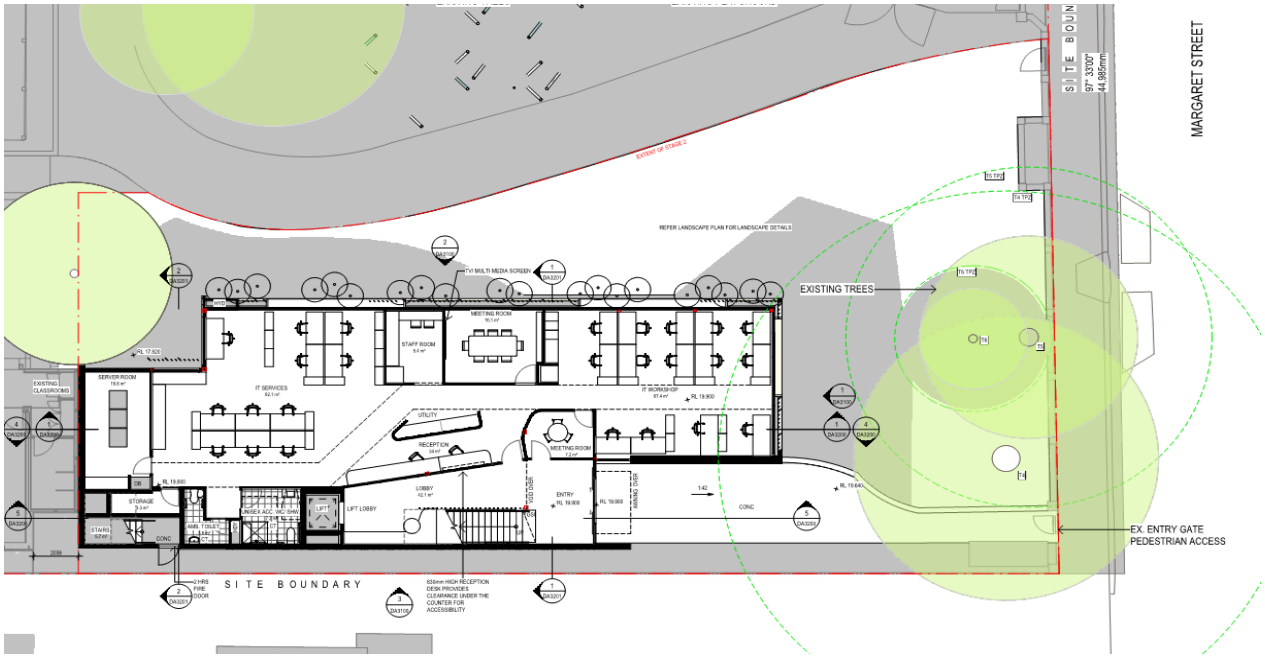



*Figure 5.7: Extent of Proposed Site Works (Source: Ground Floor Plan prepared by Allen Jack and Cottier)*

## 5.3 Stormwater Quantity

The site is proposing to increase impervious area from its current 34% to 55% through an increase in roof area from existing. As a result, OSD has been proposed in accordance with Strathfield Council's requirements. On site stormwater is collected by an inground pit and pipe system and stormwater conveyed to an underground OSD tank. The site provides 12.7m$^3$ detention storage with a 1% AEP discharge flow of 18 L/s into the adjacent building's stormwater system and a bypass of 2L/s. The adjacent sites permissible site discharge (PSD) was calculated to 82.4L/s, and with the addition of this stormwater connection it does not exceed this PSD.

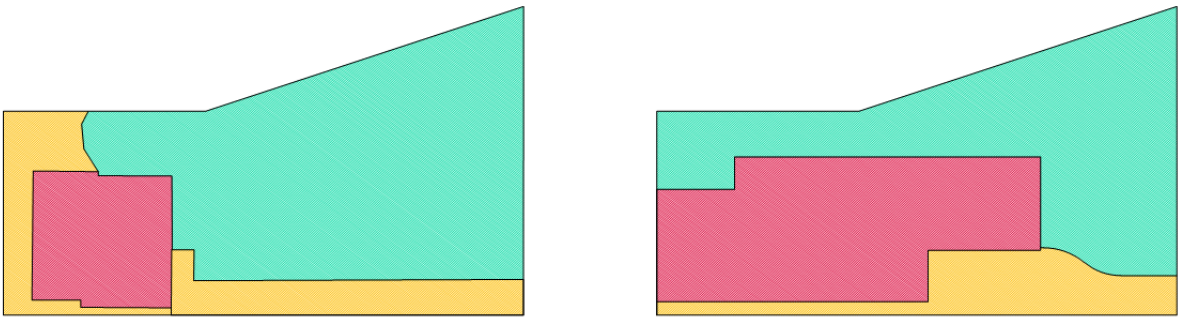



*Figure 5.8 Site 2 Pre and Post Development Catchment Areas*


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## 5.4 Stormwater Quality

Part N of Strathfield Council's Consolidated Development Control Plan 2005 states that water quality is required for "All alterations and additions to existing commercial, retail, mixed use and industrial development with a total site area greater than 2,000m2, which results in increase in building footprint or gross floor area of greater than 50%. WSUD is to be applied to the whole site". Since this development is not increasing the building footprint by greater than 50%, this development is exempt from having to meet Council's water quality targets.

## 5.5 Sediment and Erosion Control

A Sediment and Erosion Control Plan specific to the site has been prepared (refer to appendix A for Sediment and Erosion Control Plan) and forms part of the Civil Engineering Documentation.

## 5.6 Summary

The New Administration and Student Centre is proposed within the existing Lingwood Prep School Campus. Stormwater on site is captured through downpipes and surface inlet pits and conveyed into an on site stormwater detention tank sized in accordance with Strathfield Council's requirements (12.7$m^3$ of storage). The discharge from the OSD tank is proposed to connect into the existing school drainage system. Furthermore, as the development is not increasing the building footprint on the site by more the 50%, no stormwater quality treatment measures/devices have been proposed. Refer to appendix A for Concept Siteworks Plan


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# 6.0 Site 3: Junior School – New Landscaped Playground

## 6.1 Development Site

The New Landscaped Playground is proposed within the existing Junior School and is located within Lot 1 of DP1244199 at 4 Vernon Road, Strathfield. The existing site contains a single storey residential dwelling with the majority of the site area comprising of the building, a brick garage, some footpaths and existing landscaped area.

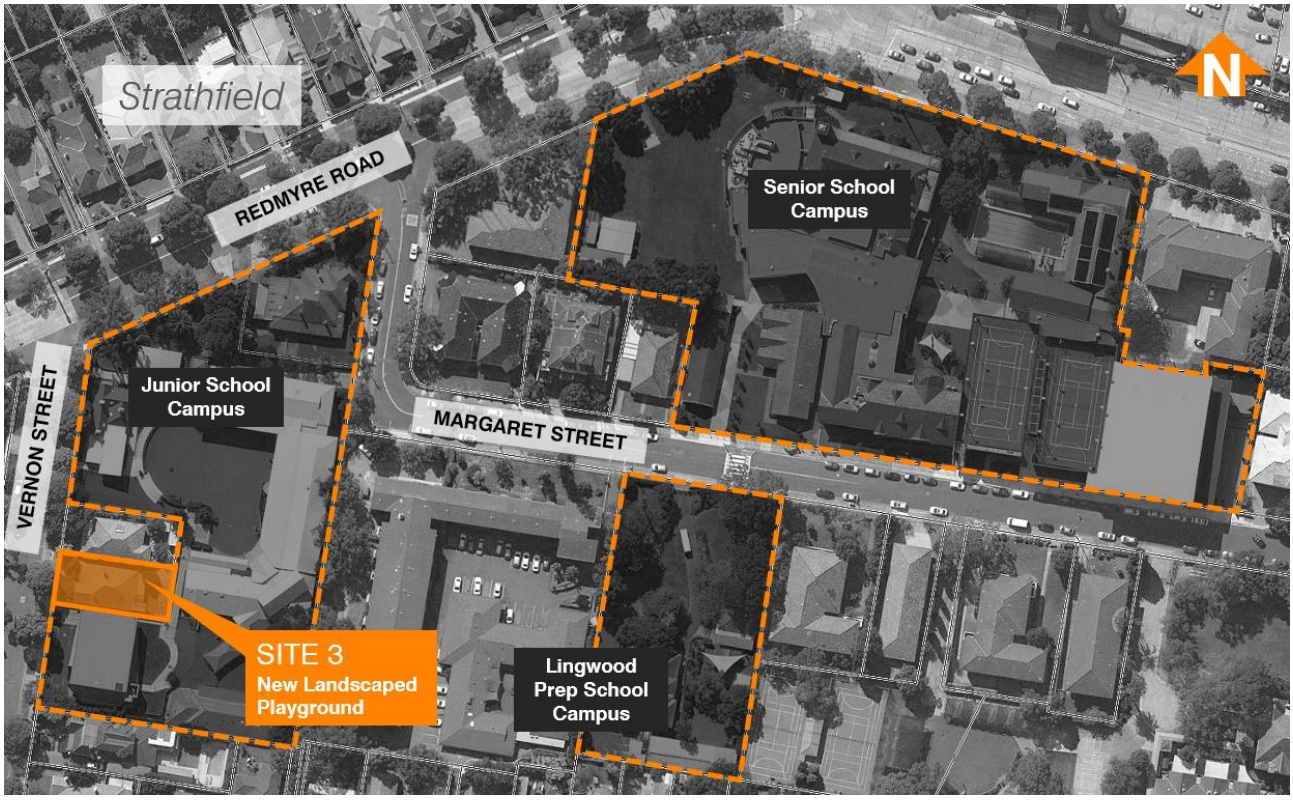



*Figure 6.9: Site 3 Locality Plan (Source: NSW Spatial Information Exchange)*

## 6.2 Proposed Development

The proposed development involves demolition of the existing structures within the site, removal of some existing trees and a new landscaped playground area with retention of the existing parking space. The total site area is approximately 400m$^2$.


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*Figure 6.10: Proposed Site Plan (Source: Proposed Illustrative Plan prepared by Oculus)*

## 6.3 Stormwater Quantity

As the site proposes to demolish the majority of existing impervious area and replace with pervious landscaping, the works will result in a reduction in stormwater discharge from the site. As a result, no OSD has been proposed.

## 6.4 Stormwater Quality

Part N of Strathfield Council's Consolidated Development Control Plan 2005 states that water quality is required for "All alterations and additions to existing commercial, retail, mixed use and industrial development with a total site area greater than 2,000m2, which results in increase in building footprint or gross floor area of greater than 50%. WSUD is to be applied to the whole site". Since this development is not increasing the building footprint by greater than 50%, this development is exempt from having to meet Council's water quality targets.

## 6.5 Sediment and Erosion Control

A Sediment and Erosion Control Plan specific to the site has been prepared (refer to appendix A for Sediment and Erosion Control Plan) and forms part of the Civil Engineering Documentation.

## 6.6 Summary

The New Landscaped Playground is proposed within the existing Junior School. The development proposes to increase pervious area through the demolition of the existing residential building and construction of a largely pervious landscaped playground. Site stormwater drainage will discharge to the existing Council pipeline in Vernon Street. Due to the increase in pervious area, no OSD is proposed. Furthermore, as the development is not increasing the building footprint on the site by more the 50%, no stormwater quality treatment measures/devices have been proposed. Refer to appendix A for Concept Siteworks Plan


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# 7.0 Conclusion

This report provides a summary of the proposed concept civil engineering and stormwater management for alterations and additions to the three campuses at Meriden School, Strathfield. Stormwater on site is proposed to discharge either to the existing inground stormwater network at the School, or to the existing Council stormwater network. On site detention is proposed for the New Administration and Student Centre in accordance with Strathfield Council's requirements.The New Centre for Music and Drama does not propose OSD due to the downstream OSD system and the negligible increase in impervious area. The New Landscaped Playground proposes to significantly increase pervious area and therefore no OSD is proposed. Flood studies conducted by Strathfield Council indicate that the development sites are not within a Flood Planning Area. Finally, as the three sites do not increase the building footprint by more than 50% therefore no water quality treatment has been proposed.

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Technical Director

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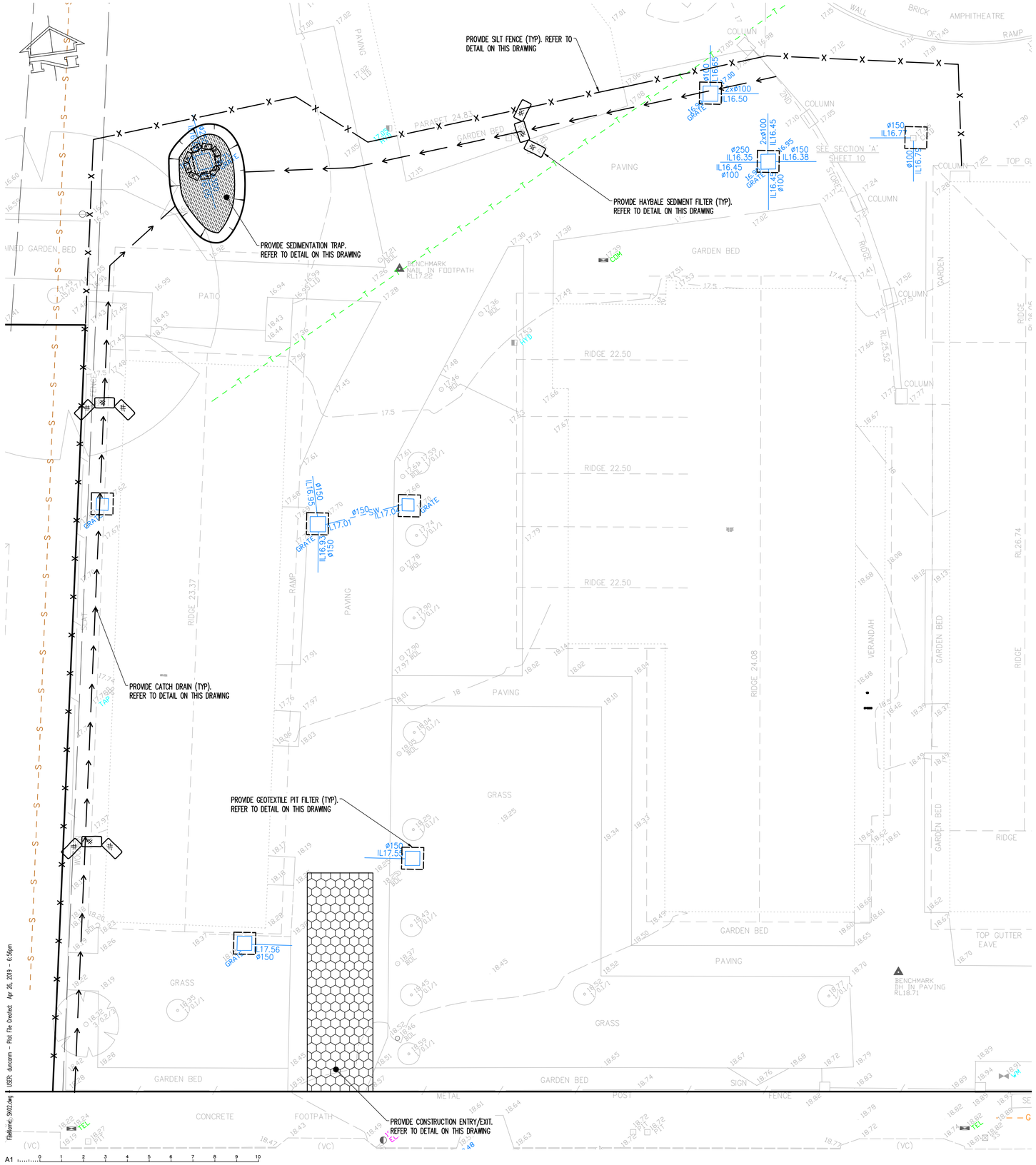

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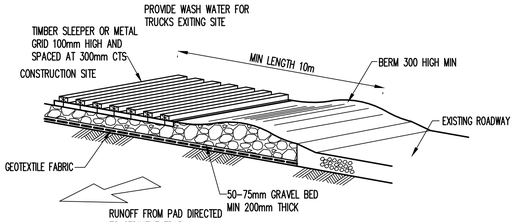
## Appendix A

# Concept Civil Engineering Drawings


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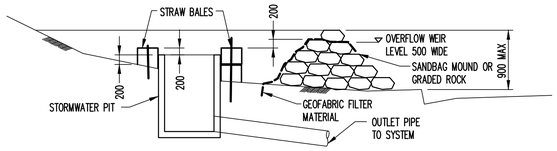
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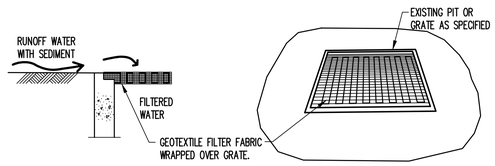

## TEMPORARY CONSTRUCTION VEHICLE EXIT

NTS



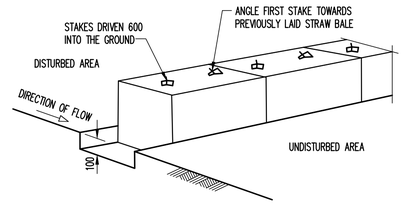

## SEDIMENTATION TRAP

NTS




## GEOTEXTILE PIT FILTER

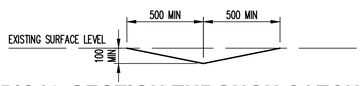
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## HAY BALE SEDIMENT FILTER

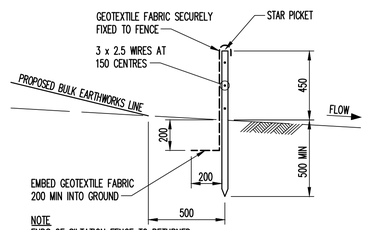
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NOTE: STAKE TO BE EITHER TAR COATED STAR OR 50 x 50 HARDWOOD




## TYPICAL SECTION THROUGH CATCH DRAIN

SCALE 1: 20




NOTE
ENDS OF SILTATION FENCE TO RETURNED UP SLOPE TO PREVENT RUNOFF

## SILTATION FENCE DETAIL

SCALE 1: 20

## EROSION AND SEDIMENT CONTROL NOTES

1. All work shall be generally carried out in accordance with
   (A) Local authority requirements,
   (B) EPA – Pollution control manual for urban stormwater,
   (C) LANDCOM NSW – Managing Urban Stormwater: Soils and Construction ("Blue Book").
2. Erosion and sediment control **drawings and notes are** provided for the whole of the works. Should the Contractor stage these works then the design may be required to be modified. Variation to these details may require approval by the relevant authorities.
   The erosion and sediment control **plan** shall be implemented and adapted to meet the varying situations as work on site progresses.
3. Maintain all erosion and sediment control devices to the satisfaction of the superintendent and the local authority.
4. When stormwater pits are constructed prevent site runoff entering the pits unless silt fences are erected around pits.
5. Minimise the area of site being disturbed at any one time.
6. Protect all stockpiles of materials from scour and erosion. Do not stockpile loose material in roadways, near drainage pits or in watercourses.
7. All soil and water control measures are to be put back in place at the end of each working day, and modified to best suit site conditions.
8. Control water from upstream of the site such that it does not enter the disturbed site.
9. All construction vehicles shall enter and exit the site via the temporary construction entry/exit.
10. All vehicles leaving the site shall be cleaned and inspected before leaving.
11. Maintain all stormwater pipes and pits clear of debris and sediment. Inspect stormwater system and clean out after each storm event.
12. Clean out all erosion and sediment control devices after each storm event.

### Sequence Of Works

1. Prior to commencement of excavation the following soil management devices must be installed.
1.1. Construct silt fences below the site and across all potential runoff sites.
1.2. Construct temporary construction entry/exit and divert runoff to suitable control systems.
1.3. Construct measures to divert upstream flows into existing stormwater system.
1.4. Construct sedimentation traps/basin including outlet control and overflow.
1.5. Construct turf lined swales.
1.6. Provide sandbag sediment traps upstream of existing pits.
2. Construct geotextile filter pit surround around all proposed pits as they are constructed.
3. On completion of pavement provide sand bag kerb inlet sediment traps around pits.
4. Provide and maintain a strip of turf on both sides of all roads after the construction of kerbs.

## WATER QUALITY TESTING REQUIREMENTS

Prior to discharge of site stormwater, groundwater and seepage water into council's stormwater system, contractors must undertake water quality tests in conjunction with a suitably qualified environment consultant outlining the following:

- Compliance with the criteria of the Australian and New Zealand Guidelines for Fresh and Marine Water Quality (2000)
- If required subject to the environmental consultants advice, provide remedial measures to improve the quality of water that is to be discharged into Councils storm water drainage system.This should include comments from a suitably qualified environmental consultant confirming the suitability of these remedial measures to manage the water discharged from the site into Councils storm water drainage system. Outlining the proposed, ongoing monitoring, contingency plans and validation program that will be in place to continually monitor the quality of water discharged from this site. This should outline the frequency of water quality testing that will be undertaken by a suitably qualified environmental consultant.

## EROSION AND SEDIMENT CONTROL LEGEND

- Batter
- Sitation fence
- Stormwater pit with Geotextile filter surround
- Hay bale barriers
- Sandbag sediment trap
- Catch drain
- Overland flow path

0 1 2 3 4 5 6 7 8m

1:100 A1 1:200 A3

**FOR APPROVAL**

| Rev | Description | Eng | Draft | Date |
|---|---|---|---|---|
| P2 | FOR APPROVAL | DM | AI | 26.04.19 |
| P1 | FOR INFORMATION ONLY | DM | AI | 12.04.19 |

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Project
MERIDEN SENIOR SCHOOL
**CENTRE FOR MUSIC AND DRAMA**
13 MARGARET STREET
STRATHFIELD NSW 2135

Sheet Subject
EROSION AND SEDIMENT CONTROL PLAN AND DETAILS

Scale : A1 1:100
Drawn DM
Authorised
Job No 181478
Drawing No SK02
Revision P2
Plot File Created: Apr 26, 2019 - 6:56pm

FileName: SK02.dwg USER: duncanm - Plot File Created: Apr 26, 2019 - 6:56pm

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## SITEWORKS LEGEND

- F22.20 — Finished surface level
- F22.00 — Finished contour
- IL10.00 600 ø 'Z' 1.25% IL9.65 — Stormwater pit, flow direction and line with Invert level upstream, Pipe size and class, Pipe grade, Invert level downstream
- GD — Grated drain
- RW# — Blockwork retaining wall

# PROPOSED CENTRE FOR MUSIC AND DRAMA

EXISTING STORMWATER PIT AND PIPES TO BE REMOVED

IL16.10 ø225 uPVC 2.5% IL16.03

IL16.45 ø150 uPVC 2.0% IL16.13

IL16.55 ø225 uPVC 2.0% IL16.13

IL16.67 ø225 uPVC 1.0% IL16.58

IL16.78 ø225 uPVC 1.0% IL16.70

IL16.87 ø225 uPVC 1.0% IL16.81

IL17.56 ø150

ø150 IL17.04

ø150 IL17.33

30 kL CONCRETE RAINWATER TANK BELOW PAVEMENT 4.2m X2.7mX2.5m

2x ø100 IL16.50

2x ø100 IL16.41

ø150 IL16.77

ø150 IL16.29

ø250 IL16.35

ø150 IL16.38

IL16.45 ø100

IL16.65 IL16.00

2x ø100 IL16.61

SOFTSCAPE REFER TO LANDSCAPE PLANS FOR DETAIL

HOPE WINDOWS TO BE REPLACED. FIXED WINDOW WITH DRENCHER.

NEW ENTRANCE THROUGH TO HOPE TURNER BUILDING 2 HRS FIRE DOOR

RETAINED GARDEN BED

EXISTING LANDSCAPE TO REMAIN

EXISTING BUILDING TO REMAIN

WALLIS BUILDING

HOPE TURNER BUILDING

AMPHITHEATRE

CLASSROOM1 147 m²

CLASSROOM2 167 m²

VOID

VOID OVER

MAIN ENTRY

COMMS 165 m²

LIFT

STORE

STORAGE

FIRE STAIR

2HRS FIRE DOOR

EGRESS PATH

FUTURE OPERABLE WALL

GLAZED SLIDING DOORS

OPEN STAIR

VERANDAH

RIDGE 22.50

RIDGE RL26.74

RIDGE RL26.05

BOTTOM STEP RL20.99

TOP STEP RL21.68

TOP GUTTER

EAVE

GARDEN BED

PAVING

GRASS

CONCRETE FOOTPATH

METAL FENCE

EX. FENCE

POST

SEAT

RL 18.590

RL 18.890

SITE BOUNDARY

1:100 A1 1:200 A3

**FOR APPROVAL**

| Rev | Description | Eng | Draft | Date |
|---|---|---|---|---|
| P6 | FOR APPROVAL | DM | DM | 26.04.19 |
| P5 | FOR INFORMATION ONLY | DM | DM | 29.03.19 |
| P4 | FOR INFORMATION ONLY | DM | DM | 12.03.19 |
| P3 | FOR INFORMATION ONLY | DM | DM | 01.03.19 |
| P2 | FOR INFORMATION ONLY | DM | DM | 13.02.19 |
| P1 | FOR INFORMATION ONLY | NB | DM | 26.11.18 |

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**CENTRE FOR MUSIC AND DRAMA**
13 MARGARET STREET
STRATHFIELD NSW 2135

Sheet Subject
SITEWORKS PLAN

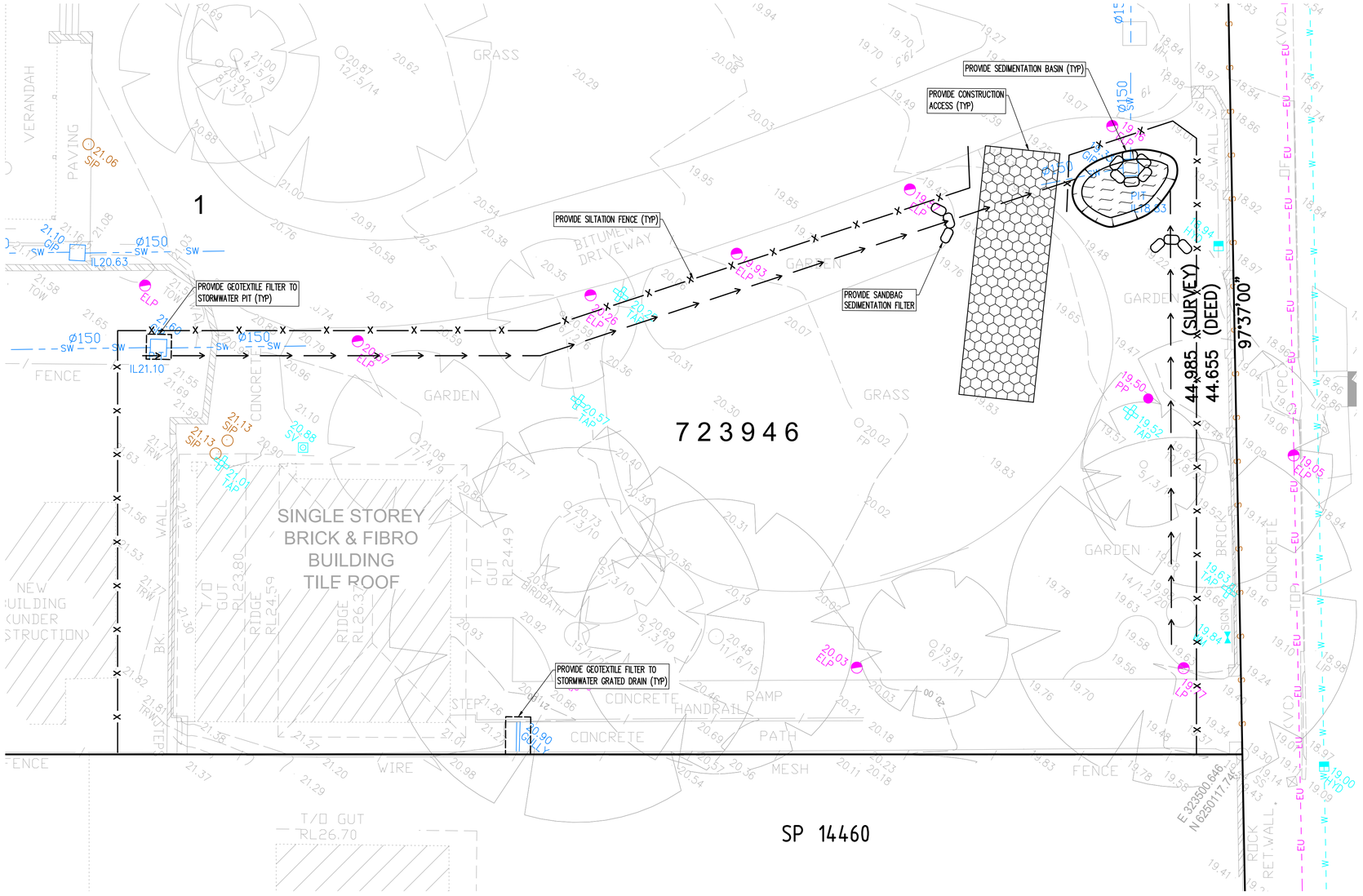
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Job No 181478 | Drawing No SK03 | Revision P6

Plot File Created: Apr 26, 2019 - 7:04pm

FileName: SK03.dwg - USER: duncanm - Plot File Created: Apr 26, 2019 - 7:04pm

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## EROSION AND SEDIMENT CONTROL NOTES

1. All work shall be generally carried out in accordance with
   (A) Local authority requirements,
   (B) EPA – Pollution control manual for urban stormwater,
   (C) LANDCOM NSW – Managing Urban Stormwater: Soils and Construction ("Blue Book").
2. Erosion and sediment control **drawings and notes are** provided for the whole of the works. Should the Contractor stage these works then the design may be required to be modified. Variation to these details may require approval by the relevant authorities.
   The erosion and sediment control **plan** shall be implemented and adapted to meet the varying situations as work on site progresses.
3. Maintain all erosion and sediment control devices to the satisfaction of the superintendent and the local authority.
4. When stormwater pits are constructed prevent site runoff entering the pits unless silt fences are erected around pits.
5. Minimise the area of site being disturbed at any one time.
6. Protect all stockpiles of materials from scour and erosion. Do not stockpile loose material in roadways, near drainage pits or in watercourses.
7. All soil and water control measures are to be put back in place at the end of each working day, and modified to best suit site conditions.
8. Control water from upstream of the site such that it does not enter the disturbed site.
9. All construction vehicles shall enter and exit the site via the temporary construction entry/exit.
10. All vehicles leaving the site shall be cleaned and inspected before leaving.
11. Maintain all stormwater pipes and pits clear of debris and sediment. Inspect stormwater system and clean out after each storm event.
12. Clean out all erosion and sediment control devices after each storm event.

### Sequence Of Works

1. Prior to commencement of excavation the following soil management devices must be installed.
1.1. Construct silt fences below the site and across all potential runoff sites.
1.2. Construct temporary construction entry/exit and divert runoff to suitable control systems.
1.3. Construct measures to divert upstream flows into existing stormwater system.
1.4. Construct sedimentation traps/basin including outlet control and overflow.
1.5. Construct turf lined swales.
1.6. Provide sandbag sediment traps upstream of existing pits.
2. Construct geotextile filter pit surround around all proposed pits as they are constructed.
3. On completion of pavement provide sand bag kerb inlet sediment traps around pits.
4. Provide and maintain a strip of turf on both sides of all roads after the construction of kerbs.

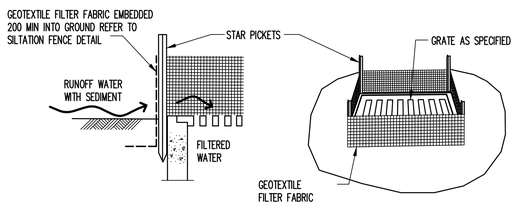
## WATER QUALITY TESTING REQUIREMENTS

Prior to discharge of site stormwater, groundwater and seepage water into council's stormwater system, contractors must undertake water quality tests in conjunction with a suitably qualified environment consultant outlining the following:

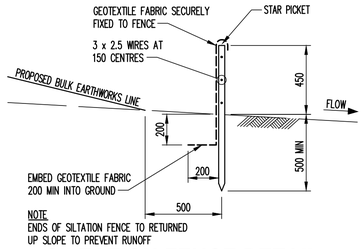
- Compliance with the criteria of the Australian and New Zealand Guidelines for Fresh and Marine Water Quality (2000)
- If required subject to the environmental consultants advice, provide remedial measures to improve the quality of water that is to be discharged into Councils storm water drainage system.This should include comments from a suitably qualified environmental consultant confirming the suitability of these remedial measures to manage the water discharged from the site into Councils storm water drainage system. Outlining the proposed, ongoing monitoring, contingency plans and validation program that will be in place to continually monitor the quality of water discharged from this site. This should outline the frequency of water quality testing that will be undertaken by a suitably qualified environmental consultant.

## EROSION AND SEDIMENT CONTROL LEGEND

- Batter
- Siltation fence
- Stormwater pit with Geotextile filter surround
- Hay bale barriers
- Sandbag sediment trap
- Catch drain
- Overland flow path



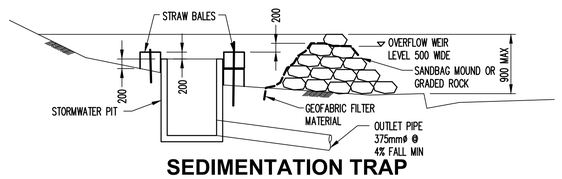

## GEOTEXTILE FILTER PIT SURROUND
NTS



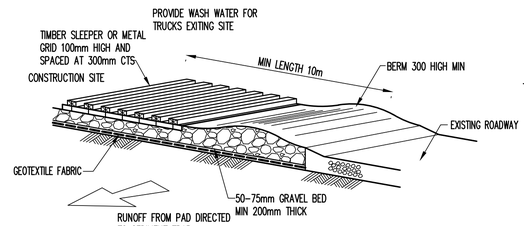

## SILTATION FENCE DETAIL
SCALE 1: 20




## TYPICAL SECTION THROUGH CATCH DRAIN
SCALE 1: 20




## SEDIMENTATION TRAP
NTS




## TEMPORARY CONSTRUCTION VEHICLE EXIT
NTS

0 1 2 3 4 5 6 7 8m
1:100 A1 1:200 A3

**FOR APPROVAL**

FileName: SK102.dwg – USER: dancomm – Plot File Created: Apr 26, 2019 – 6:56pm

A1 0 1 2 3 4 5 6 7 8 9 10

| Rev | Description | Eng | Draft | Date |
|---|---|---|---|---|
| P2 | FOR APPROVAL | DM | DM | 26.04.19 |
| P1 | FOR INFORMATION ONLY | DM | DM | 15.02.18 |

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16 MARGARET STREET
STRATHFIELD NSW 2135

Sheet Subject
EROSION AND SEDIMENT CONTROL PLAN

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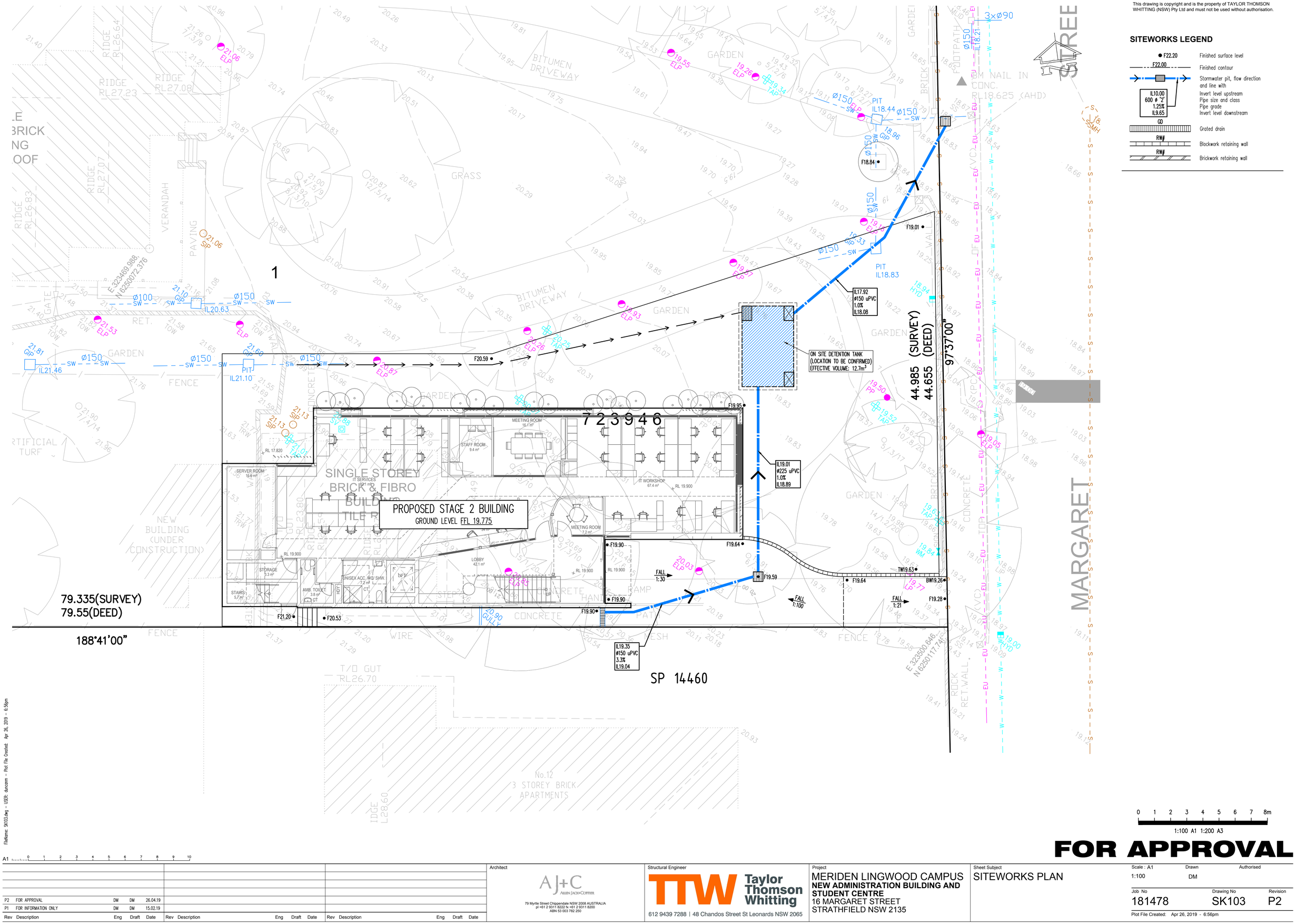
| Job No | Drawing No | Revision |
|---|---|---|
| 181478 | SK102 | P2 |

Plot File Created: Apr 26, 2019 - 6:56pm

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## SITEWORKS LEGEND

- F22.20 — Finished surface level
- F22.00 — Finished contour
- Stormwater pit, flow direction and line with
  - IL10.00
  - 600 ø 'Z'
  - 1.25%
  - IL9.65
  - Invert level upstream
  - Pipe size and class
  - Pipe grade
  - Invert level downstream
- GD — Grated drain
- RW# — Blockwork retaining wall
- RW# — Brickwork retaining wall




0 1 2 3 4 5 6 7 8m

1:100 A1 1:200 A3

**FOR APPROVAL**

FileName: SK103.dwg - USER: duncanm - Plot File Created: Apr 26, 2019 - 6:56pm

A1 0 1 2 3 4 5 6 7 8 9 10

| Rev | Description | Eng | Draft | Date |
|---|---|---|---|---|
| P2 | FOR APPROVAL | DM | DM | 26.04.19 |
| P1 | FOR INFORMATION ONLY | DM | DM | 15.02.19 |

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**NEW ADMINISTRATION BUILDING AND STUDENT CENTRE**
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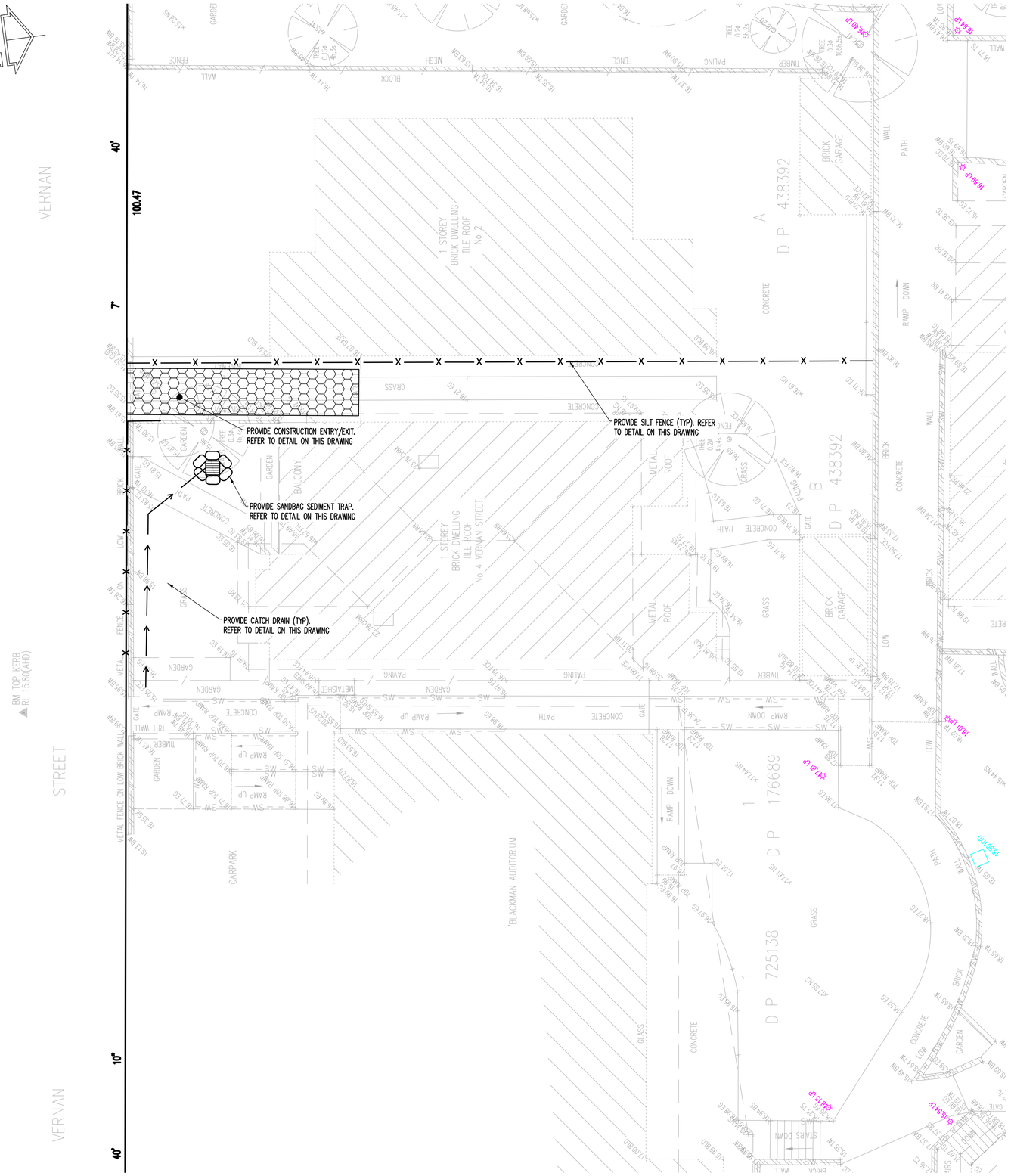
Sheet Subject
SITEWORKS PLAN

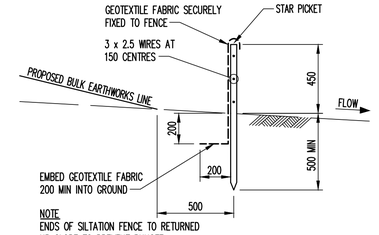
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Job No 181478 | Drawing No SK103 | Revision P2

Plot File Created: Apr 26, 2019 - 6:56pm

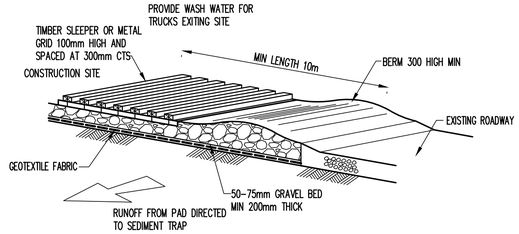
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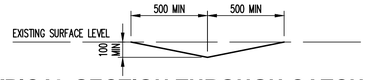

## SILTATION FENCE DETAIL

SCALE 1: 20



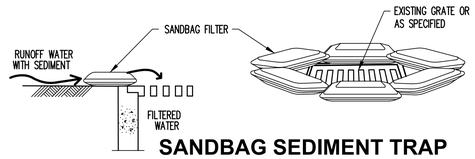

## TEMPORARY CONSTRUCTION VEHICLE EXIT

NTS




## TYPICAL SECTION THROUGH CATCH DRAIN

SCALE 1: 20




## SANDBAG SEDIMENT TRAP

NTS

## EROSION AND SEDIMENT CONTROL NOTES

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## EROSION AND SEDIMENT CONTROL LEGEND

- Batter
- Siltation fence
- Stormwater pit with Geotextile filter surround
- Hay bale barriers
- Sandbag sediment trap
- Catch drain
- Overland flow path

0 1 2 3 4 5 6 7 8m

1:100 A1 1:200 A3

**FOR APPROVAL**

FileName: SK201.dwg - USER: duncanm - Plot File Created: Apr 26, 2019 - 6:56pm

A1 0 1 2 3 4 5 6 7 8 9 10

| Rev | Description | Eng | Draft | Date |
|---|---|---|---|---|
| P2 | FOR APPROVAL | DM | AI | 26.04.19 |
| P1 | FOR INFORMATION ONLY | DM | AI | 12.04.19 |

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Project
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NEW LANDSCAPED PLAYGROUND
4 VERNON STREET
STRATHFIELD NSW 2135

Sheet Subject
EROSION AND SEDIMENT CONTROL PLAN AND DETAILS

Scale : A1 1:100 | Drawn DM | Authorised

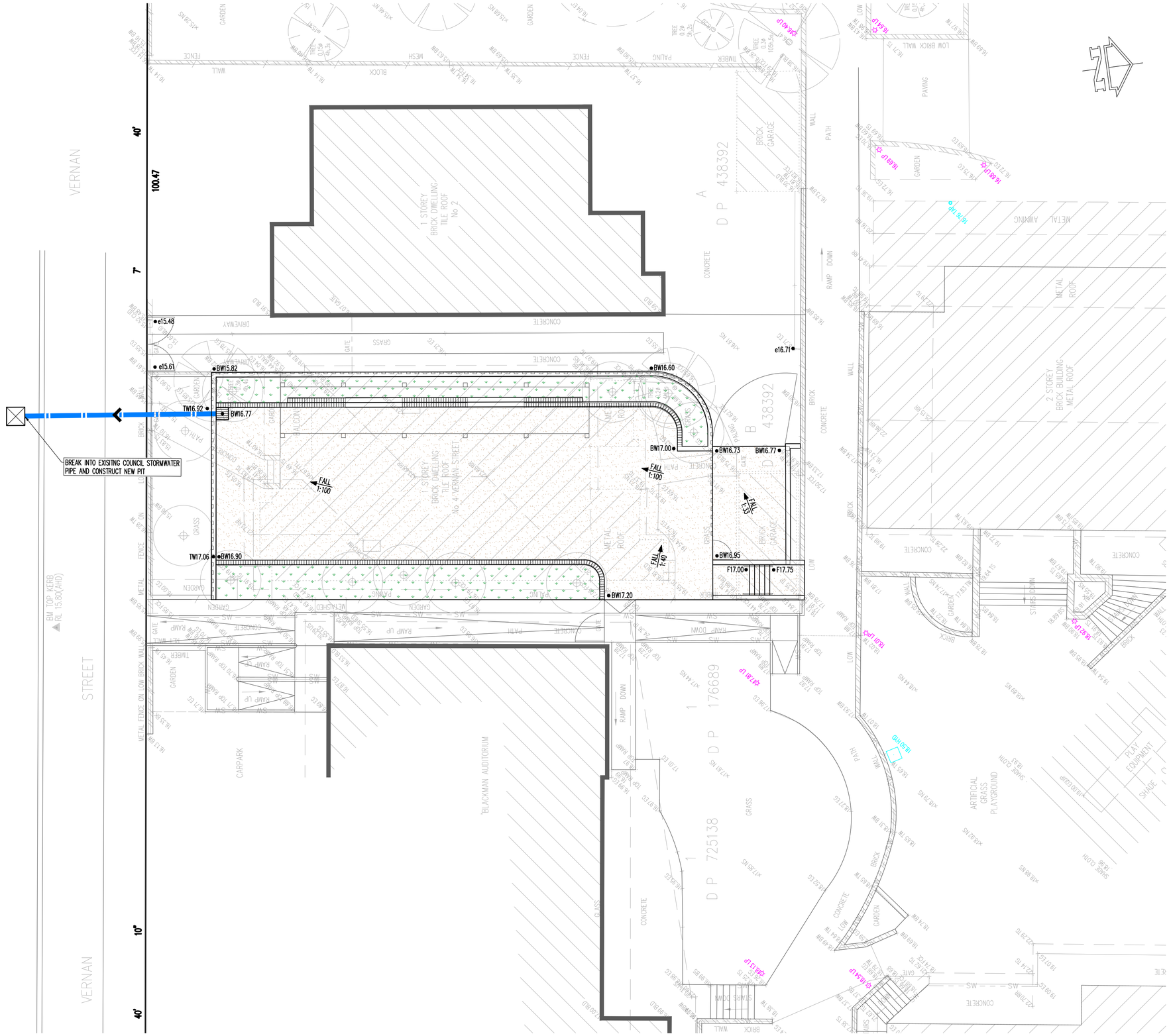
Job No 181478 | Drawing No SK201 | Revision P2

Plot File Created: Apr 26, 2019 - 6:56pm

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## SITEWORKS LEGEND

| | |
|---|---|
| ● F22.20 | Finished surface level |
| F22.00 | Finished contour |
| IL10.00<br>600 ø 'Z'<br>1.25%<br>IL9.65 | Stormwater pit, flow direction and line with<br>Invert level upstream<br>Pipe size and class<br>Pipe grade<br>Invert level downstream |
| GD | Grated drain |
| RW# | Blockwork retaining wall |
| RW# | Brickwork retaining wall |




0 1 2 3 4 5 6 7 8m

1:100 A1 1:200 A3

**FOR APPROVAL**

FileName: SK203.dwg – USER: duncanm – Plot File Created: Apr 26, 2019 - 7:04pm

A1 0 1 2 3 4 5 6 7 8 9 10

| Rev | Description | Eng | Draft | Date |
|---|---|---|---|---|
| P2 | FOR INFORMATION ONLY | DM | DM | 26.04.19 |
| P1 | FOR INFORMATION ONLY | DM | DM | 15.02.19 |

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Project

MERIDEN JUNIOR SCHOOL
NEW LANDSCAPED PLAYGROUND
4 VERNON STREET
STRATHFIELD NSW 2135

Sheet Subject

SITEWORKS PLAN

| Scale : A1 | Drawn | Authorised |
|---|---|---|
| 1:100 | DM | |

| Job No | Drawing No | Revision |
|---|---|---|
| 181478 | SK203 | P2 |

Plot File Created: Apr 26, 2019 - 7:04pm