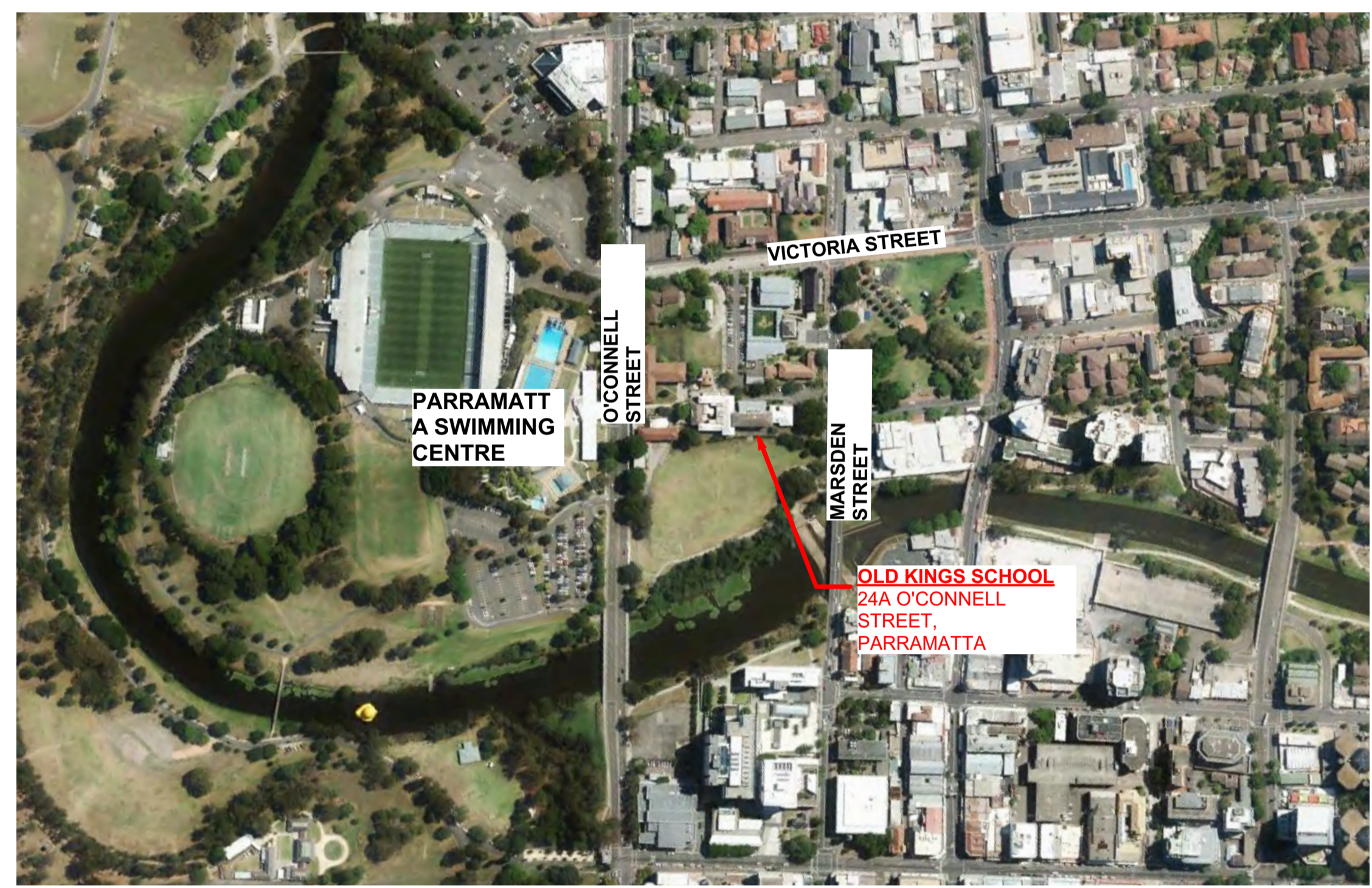


DEPARTMENT OF EDUCATION

NEW O'CONNELL STREET PRIMARY SCHOOL

LANDSCAPE DESIGN



LOCATION PLAN
NTS

OLD KINGS SCHOOL SITE
24A O'CONNELL STREET, PARRAMATTA

- DRAWING SCHEDULE**
- L.CD.001 COVER SHEET
 - L.CD.002 KEY PLAN
 - L.CD.101 FINISHES PLAN 1 OF 4
 - L.CD.102 FINISHES PLAN 2 OF 4
 - L.CD.103 FINISHES PLAN 3 OF 4
 - L.CD.104 FINISHES PLAN 4 OF 4
 - L.CD.310 LANDSCAPE PLANTING DETAILS
 - L.CD.320 LANDSCAPE HARDWORKS DETAILS - SHEET 1
 - L.CD.321 LANDSCAPE HARDWORKS DETAILS - SHEET 2
 - L.CD.322 LANDSCAPE HARDWORKS DETAILS - SHEET 3
 - L.CD.330 LANDSCAPE FURNITURE DETAILS
 - L.CD.411 EXISTING TREE SCHEDULE
 - L.CD.412 EXISTING TREE SCHEDULE
 - L.CD.413 EXISTING TREE SCHEDULE
 - L.CD.420 INDICATIVE PLANTING LIST

<p>GENERAL NOTES</p> <ol style="list-style-type: none"> Do not scale from this drawing. Use figured dimensions only. Verify all dimensions on site. Refer any discrepancies to the Principal's Representative for resolution before proceeding. If this drawing is unclear, ask for direction from the Principal's Representative. Site check the location of utilities and services prior to the commencement of works. Refer any discrepancies to the Principal's Representative for resolution. <p><small>© This drawing is Copyright and may not be used, reproduced or copied wholly or in part without written permission from Spackman Mossop Michaels Pty Ltd. This drawing may only be used for the express purpose and project for which it has been created and delivered.</small></p>		<p>SURVEY</p> <p>RYGATE SURVEYORS 9/89 York St Sydney NSW 2000 PH: (02) 9262 6800</p> <p>SURVEY DRAWING DATE GRID DATUM</p> <p>DIMENSION STANDARD Unless noted otherwise: - all levels are shown in metres - all dimensions are computer generated to 1mm.</p>		<p>ARCHITECTS</p> <p>Tonkin Zulaikha Greer Pty Ltd. 117 Reservoir Street, Surry Hills NSW 2010 PH: + (02) 9215 4900</p> <p>STRUCTURAL ENGINEERS</p> <p>SDA Structures 2/61-63 Victoria Rd, Rozelle NSW 2039</p>		<p>ACCESS CONSULTANTS</p> <p>ENVIRONMENTAL CONSULTANTS</p>		<p>LANDSCAPE ARCHITECT</p> <p>SPACKMAN MOSSOP AND MICHAELS</p> <p>PO Box 880, Darlinghurst NSW 1300 3 Oxford Street, Paddington NSW www.spackmanmossopmichaels.com info@sm2group.com.au TEL: 02 9361 4549 • FAX: 02 9361 4569</p>		<p>CLIENT</p> <p>NSW GOVERNMENT Education Public Schools</p>		<p>DRAWING STATUS</p> <p>Not For Construction</p> <table border="1"> <tr> <td>DESIGNED</td> <td>SMM PROJECT NO.</td> <td>NORTH</td> </tr> <tr> <td>AG</td> <td>15057</td> <td></td> </tr> <tr> <td>DRAWN</td> <td>DATE DRAWN</td> <td></td> </tr> <tr> <td>AS/AG</td> <td>JAN 2016</td> <td></td> </tr> <tr> <td>CHECKED</td> <td>SCALE</td> <td></td> </tr> <tr> <td>MS</td> <td>NTS</td> <td></td> </tr> <tr> <td>SHEET SIZE</td> <td colspan="2">SIZE ON ORIGINAL</td> </tr> <tr> <td>A1</td> <td colspan="2">ORIGINAL IN COLOUR</td> </tr> </table>		DESIGNED	SMM PROJECT NO.	NORTH	AG	15057		DRAWN	DATE DRAWN		AS/AG	JAN 2016		CHECKED	SCALE		MS	NTS		SHEET SIZE	SIZE ON ORIGINAL		A1	ORIGINAL IN COLOUR		<p>PROJECT</p> <p>NEW O'CONNELL STREET PRIMARY SCHOOL Landscape WORKS</p> <p>PROJECT ADDRESS 24A O'Connell St, Parramatta NSW 2150</p> <p>DRAWING</p> <p>COVER SHEET</p> <p>DRAWING NUMBER L.001 ISSUE D</p>	
DESIGNED	SMM PROJECT NO.	NORTH																																					
AG	15057																																						
DRAWN	DATE DRAWN																																						
AS/AG	JAN 2016																																						
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<p>REVISION HISTORY</p> <table border="1"> <thead> <tr> <th>REV</th> <th>DESCRIPTION</th> <th>DATE</th> <th>APPROVED</th> </tr> </thead> <tbody> <tr> <td>D</td> <td>FOR PLANNING APPROVAL</td> <td>15.04.2016</td> <td>MS</td> </tr> <tr> <td>C</td> <td>REVISED 60% ISSUE</td> <td>17.03.2016</td> <td>MS</td> </tr> <tr> <td>B</td> <td>CIVIL COORDINATION</td> <td>09.03.2016</td> <td>MS</td> </tr> <tr> <td>A</td> <td>60% DRAFT DOCUMENTATION</td> <td>29.02.2016</td> <td>MS</td> </tr> </tbody> </table>		REV	DESCRIPTION	DATE	APPROVED	D	FOR PLANNING APPROVAL	15.04.2016	MS	C	REVISED 60% ISSUE	17.03.2016	MS	B	CIVIL COORDINATION	09.03.2016	MS	A	60% DRAFT DOCUMENTATION	29.02.2016	MS																		
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LEGEND

- GENERAL**
- Site Boundary
 - Existing Contours (Refer to Civil Dwg for proposed contours and finished levels)
 - Detail Plans (Refer Dwg L.DD.101-104)
- SURFACES**
- Existing road surface
 - Proposed hardscape surface (Refer to Civil Dwg for construction detail, Refer to Dwg L.101-104 for setout)
 - Proposed road/carpark (Refer to Civil Dwg for Setout and Detail, Refer traffic for signs and linemarkings)
 - New Planting (Refer to landscape specification and Dwg L.310)
 - New Turf (Refer to landscape specification and Dwg L.310)
 - New concrete seating (Refer to landscape specification and Dwg L.330)

GENERAL NOTES

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SURVEY DRAWING DATE GRID DATUM

DIMENSION STANDARD
Unless noted otherwise:
- all levels are shown in metres
- all dimensions are computer generated to 1mm.

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CLIENT

NSW GOVERNMENT
Education Public Schools

DRAWING STATUS

Not For Construction

DESIGNED AG	SMM PROJECT NO. 15057	NORTH
DRAWN AS/AG	DATE DRAWN JAN 2016	
CHECKED MS	SCALE NTS	
SHEET SIZE A1	SIZE ON ORIGINAL ORIGINAL IN COLOUR	

PROJECT

NEW O'CONNELL STREET PRIMARY SCHOOL
Landscape WORKS

PROJECT ADDRESS

24A O'Connell St, Parramatta NSW 2150

DRAWING

KEY PLAN

DRAWING NUMBER

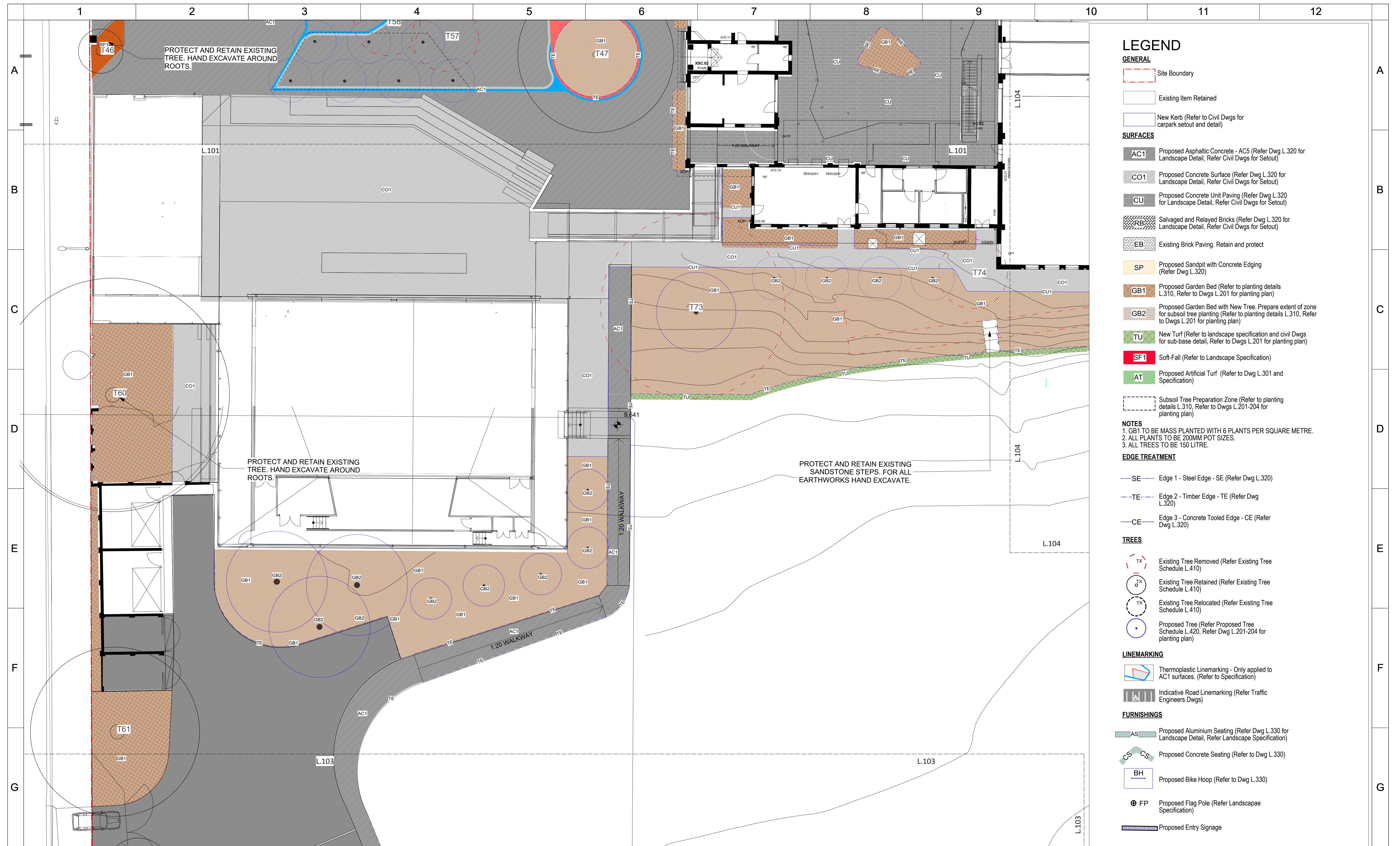
L.002

ISSUE

D

REV	DESCRIPTION	DATE	APPROVED
D	FOR PLANNING APPROVAL	15.04.2016	MS
C	REVISED 60% ISSUE	17.03.2016	MS
B	CIVIL COORDINATION	09.03.2016	MS
A	60% DRAFT DOCUMENTATION	29.02.2016	MS

REVISION HISTORY



LEGEND

GENERAL

- Site Boundary
- Existing Item Retained
- New Kerb (Refer to Civil Dwg for carpark setout and detail)

SURFACES

- AC1 Proposed Asphaltic Concrete - AC5 (Refer Dwg L.320 for Landscape Detail, Refer Civil Dwg for Setout)
- CO1 Proposed Concrete Surface (Refer Dwg L.320 for Landscape Detail, Refer Civil Dwg for Setout)
- CU Proposed Concrete Unit Paving (Refer Dwg L.320 for Landscape Detail, Refer Civil Dwg for Setout)
- RB Salvaged and Relayed Bricks (Refer Dwg L.320 for Landscape Detail, Refer Civil Dwg for Setout)
- EB Existing Brick Paving, Retain and protect
- SP Proposed Sandpit with Concrete Edging (Refer Dwg L.320)
- GB1 Proposed Garden Bed (Refer to planting details L.310, Refer to Dwg L.201 for planting plan)
- GB2 Proposed Garden Bed with New Tree. Prepare extent of zone for subsoil tree planting (Refer to planting details L.310, Refer to Dwg L.201 for planting plan)
- TU New Turf (Refer to landscape specification and civil Dwg for sub-base detail, Refer to Dwg L.201 for planting plan)
- SF1 Soft-Fall (Refer to Landscape Specification)
- AT Proposed Artificial Turf (Refer to Dwg L.301 and Specification)
- Subsoil Tree Preparation Zone (Refer to planting details L.310, Refer to Dwg L.201-204 for planting plan)

NOTES

1. GB1 TO BE MASS PLANTED WITH 6 PLANTS PER SQUARE METRE.
2. ALL PLANTS TO BE 200MM POT SIZES.
3. ALL TREES TO BE 150 LITRE.

EDGE TREATMENT

- SE Edge 1 - Steel Edge - SE (Refer Dwg L.320)
- TE Edge 2 - Timber Edge - TE (Refer Dwg L.320)
- CE Edge 3 - Concrete Tooled Edge - CE (Refer Dwg L.320)

TREES

- TX Existing Tree Removed (Refer Existing Tree Schedule L.410)
- TX Existing Tree Retained (Refer Existing Tree Schedule L.410)
- TX Existing Tree Relocated (Refer Existing Tree Schedule L.410)
- Proposed Tree (Refer Proposed Tree Schedule L.420, Refer Dwg L.201-204 for planting plan)

LINEMARKING

- Thermoplastic Linemarking - Only applied to AC1 surfaces. (Refer to Specification)
- Indicative Road Linemarking (Refer Traffic Engineers Dwg)

FURNISHINGS

- AS Proposed Aluminium Seating (Refer Dwg L.330 for Landscape Detail, Refer Landscape Specification)
- CS Proposed Concrete Seating (Refer to Dwg L.330)
- BH Proposed Bike Hoop (Refer to Dwg L.330)
- FP Proposed Flag Pole (Refer Landscape Specification)
- Proposed Entry Signage

GENERAL NOTES

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DRAWING STATUS
Not For Construction

DESIGNED	SMM PROJECT NO.	NORTH
AG	15057	
DRAWN	DATE DRAWN	
AS/AG	JAN 2016	
CHECKED	SCALE	
MS	1:150	
SHEET SIZE	SIZE ON ORIGINAL	
A1	ORIGINAL IN COLOUR	

PROJECT
 NEW O'CONNELL STREET PRIMARY SCHOOL
 Landscape WORKS

PROJECT ADDRESS
 24A O'Connell St, Parramatta NSW 2150

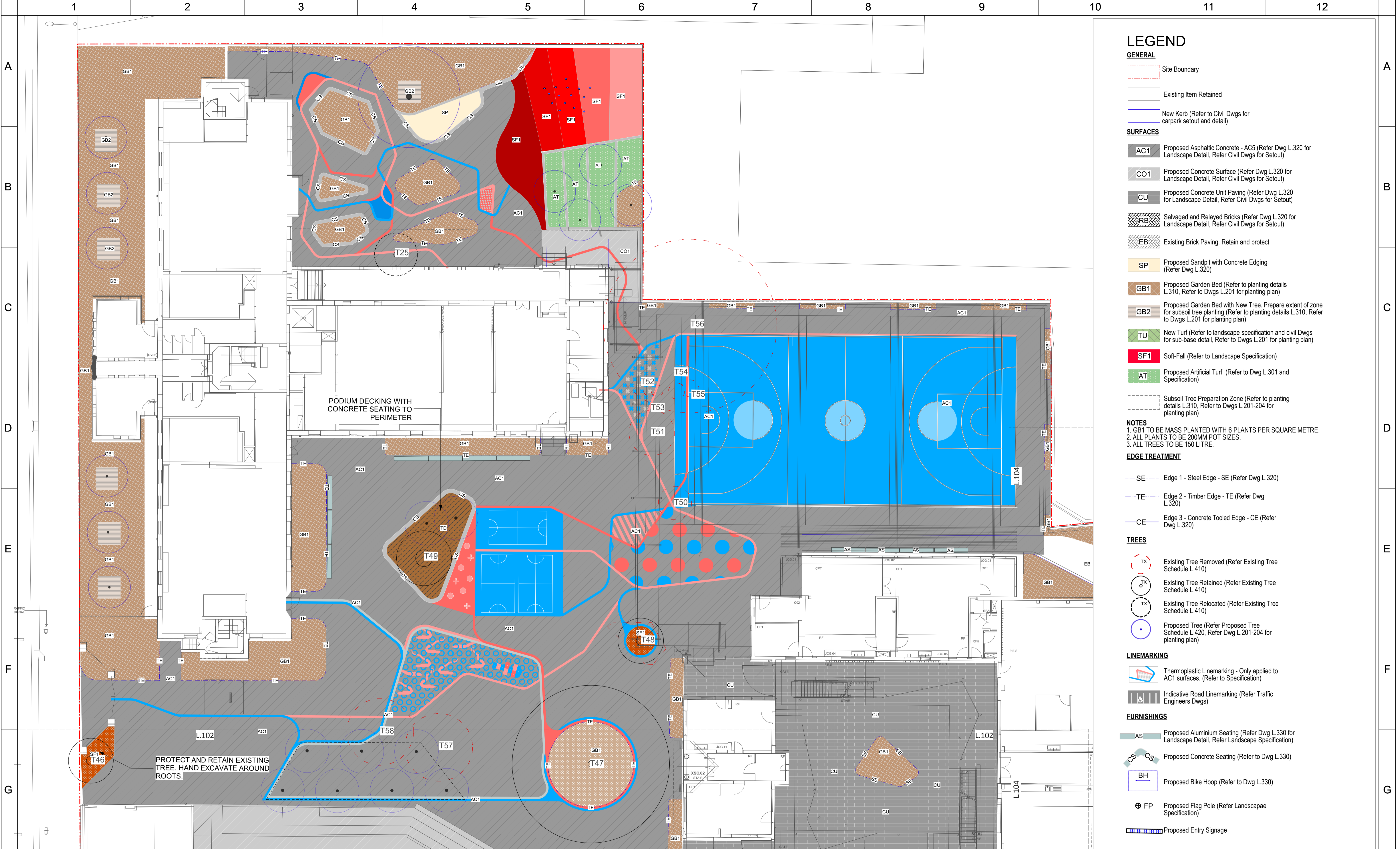
DRAWING
FINISHES PLAN 2 OF 4

DRAWING NUMBER
 L.102

ISSUE
D

REV	DESCRIPTION	DATE	APPROVED
D	FOR PLANNING APPROVAL	15.04.2016	MS
C	REVISED 60% ISSUE	17.03.2016	MS
B	CIVIL COORDINATION	09.03.2016	MS
A	60% DRAFT DOCUMENTATION	29.02.2016	MS

REVISION HISTORY



LEGEND

GENERAL

- Site Boundary
- Existing Item Retained
- New Kerb (Refer to Civil Dwg for carpark setout and detail)

SURFACES

- AC1 Proposed Asphaltic Concrete - AC5 (Refer Dwg L.320 for Landscape Detail, Refer Civil Dwg for Setout)
- CO1 Proposed Concrete Surface (Refer Dwg L.320 for Landscape Detail, Refer Civil Dwg for Setout)
- CU Proposed Concrete Unit Paving (Refer Dwg L.320 for Landscape Detail, Refer Civil Dwg for Setout)
- RB Salvaged and Relayed Bricks (Refer Dwg L.320 for Landscape Detail, Refer Civil Dwg for Setout)
- EB Existing Brick Paving, Retain and protect
- SP Proposed Sandpit with Concrete Edging (Refer Dwg L.320)
- GB1 Proposed Garden Bed (Refer to planting details L.310, Refer to Dwg L.201 for planting plan)
- GB2 Proposed Garden Bed with New Tree. Prepare extent of zone for subsoil tree planting (Refer to planting details L.310, Refer to Dwg L.201 for planting plan)
- TU New Turf (Refer to landscape specification and civil Dwg for sub-base detail, Refer to Dwg L.201 for planting plan)
- SF1 Soft-Fall (Refer to Landscape Specification)
- AT Proposed Artificial Turf (Refer to Dwg L.301 and Specification)

NOTES

1. GB1 TO BE MASS PLANTED WITH 6 PLANTS PER SQUARE METRE.
2. ALL PLANTS TO BE 200MM POT SIZES.
3. ALL TREES TO BE 150 LITRE.

EDGE TREATMENT

- SE- Edge 1 - Steel Edge - SE (Refer Dwg L.320)
- TE- Edge 2 - Timber Edge - TE (Refer Dwg L.320)
- CE- Edge 3 - Concrete Tooled Edge - CE (Refer Dwg L.320)

TREES

- TX Existing Tree Removed (Refer Existing Tree Schedule L.410)
- X Existing Tree Retained (Refer Existing Tree Schedule L.410)
- TX Existing Tree Relocated (Refer Existing Tree Schedule L.410)
- Proposed Tree (Refer Proposed Tree Schedule L.420, Refer Dwg L.201-204 for planting plan)

LINEMARKING

- Thermoplastic Linemarking - Only applied to AC1 surfaces. (Refer to Specification)
- Indicative Road Linemarking (Refer Traffic Engineers Dwg)

FURNISHINGS

- AS Proposed Aluminium Seating (Refer Dwg L.330 for Landscape Detail, Refer Landscape Specification)
- CS Proposed Concrete Seating (Refer to Dwg L.330)
- BH Proposed Bike Hoop (Refer to Dwg L.330)
- FP Proposed Flag Pole (Refer Landscape Specification)
- Proposed Entry Signage

GENERAL NOTES

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DRAWING STATUS
Not For Construction

DESIGNED AG
AG SMM PROJECT NO. NORTH
 15057

DRAWN AS/AG
AS/AG DATE DRAWN
 JAN 2016

CHECKED MS
MS SCALE
 1:150

SHEET SIZE A1
A1 SIZE ON ORIGINAL

PROJECT
 NEW O'CONNELL STREET PRIMARY SCHOOL
 Landscape WORKS

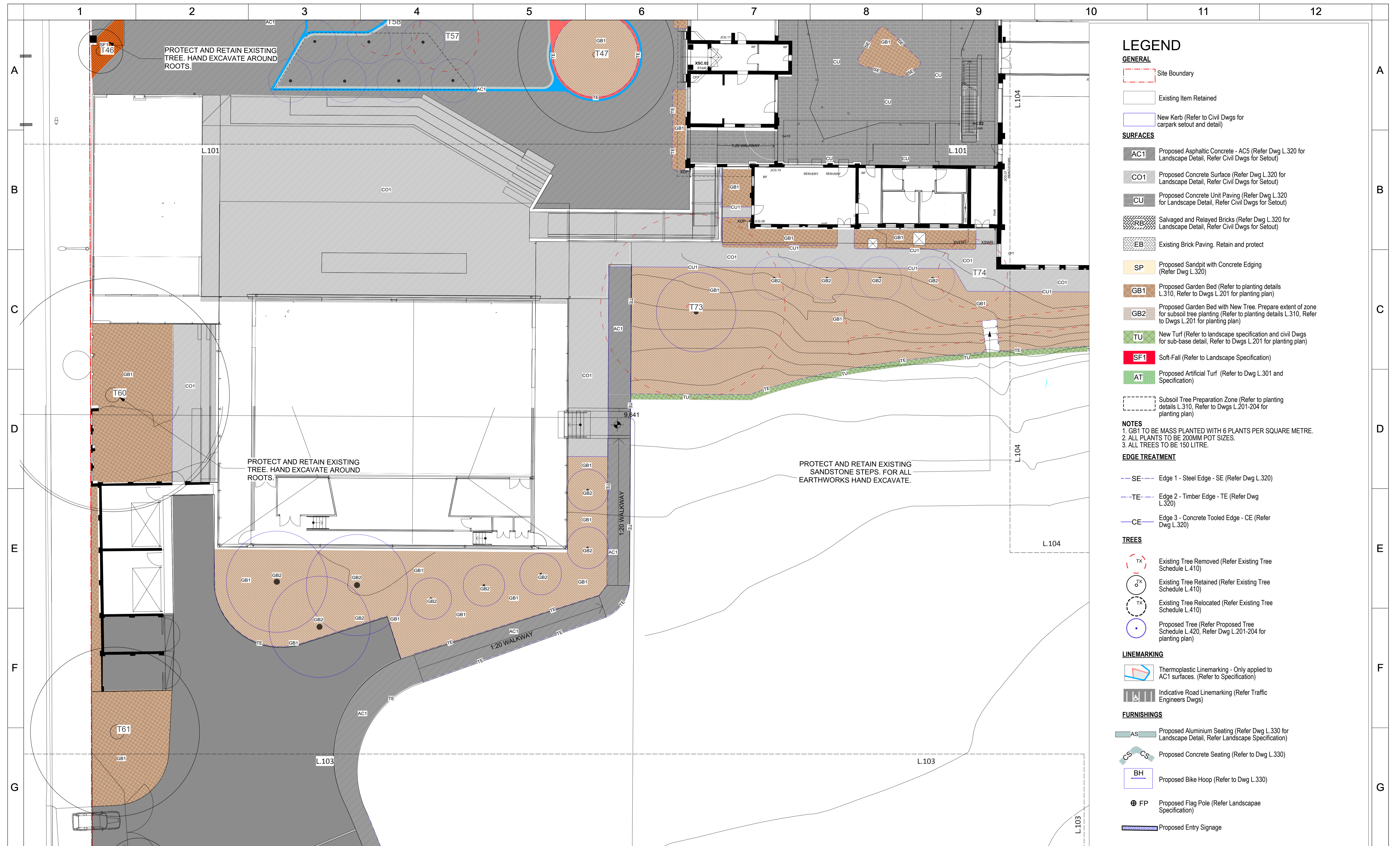
PROJECT ADDRESS
 24A O'Connell St, Parramatta NSW 2150

DRAWING
FINISHES PLAN 1 OF 4

DRAWING NUMBER L.101
L.101 ISSUE
D

REV	DESCRIPTION	DATE	APPROVED
D	FOR PLANNING APPROVAL	15.04.2016	MS
C	REVISED 60% ISSUE	17.03.2016	MS
B	CIVIL COORDINATION	09.03.2016	MS
A	60% DRAFT DOCUMENTATION	29.02.2016	MS

REVISION HISTORY



LEGEND

GENERAL

- Site Boundary
- Existing Item Retained
- New Kerb (Refer to Civil Dwg for carpark setout and detail)

SURFACES

- AC1 Proposed Asphaltic Concrete - AC5 (Refer Dwg L.320 for Landscape Detail, Refer Civil Dwg for Setout)
- CO1 Proposed Concrete Surface (Refer Dwg L.320 for Landscape Detail, Refer Civil Dwg for Setout)
- CU Proposed Concrete Unit Paving (Refer Dwg L.320 for Landscape Detail, Refer Civil Dwg for Setout)
- RB Salvaged and Relayed Bricks (Refer Dwg L.320 for Landscape Detail, Refer Civil Dwg for Setout)
- EB Existing Brick Paving, Retain and protect
- SP Proposed Sandpit with Concrete Edging (Refer Dwg L.320)
- GB1 Proposed Garden Bed (Refer to planting details L.310, Refer to Dwg L.201 for planting plan)
- GB2 Proposed Garden Bed with New Tree. Prepare extent of zone for subsoil tree planting (Refer to planting details L.310, Refer to Dwg L.201 for planting plan)
- TU New Turf (Refer to landscape specification and civil Dwg for sub-base detail, Refer to Dwg L.201 for planting plan)
- SF1 Soft-Fall (Refer to Landscape Specification)
- AT Proposed Artificial Turf (Refer to Dwg L.301 and Specification)
- Subsoil Tree Preparation Zone (Refer to planting details L.310, Refer to Dwg L.201-204 for planting plan)

NOTES

1. GB1 TO BE MASS PLANTED WITH 6 PLANTS PER SQUARE METRE.
2. ALL PLANTS TO BE 200MM POT SIZES.
3. ALL TREES TO BE 150 LITRE.

EDGE TREATMENT

- SE Edge 1 - Steel Edge - SE (Refer Dwg L.320)
- TE Edge 2 - Timber Edge - TE (Refer Dwg L.320)
- CE Edge 3 - Concrete Tooled Edge - CE (Refer Dwg L.320)

TREES

- TX Existing Tree Removed (Refer Existing Tree Schedule L.410)
- TX Existing Tree Retained (Refer Existing Tree Schedule L.410)
- TX Existing Tree Relocated (Refer Existing Tree Schedule L.410)
- Proposed Tree (Refer Proposed Tree Schedule L.420, Refer Dwg L.201-204 for planting plan)

LINEMARKING

- Thermoplastic Linemarking - Only applied to AC1 surfaces. (Refer to Specification)
- Indicative Road Linemarking (Refer Traffic Engineers Dwg)

FURNISHINGS

- AS Proposed Aluminium Seating (Refer Dwg L.330 for Landscape Detail, Refer Landscape Specification)
- CS Proposed Concrete Seating (Refer to Dwg L.330)
- BH Proposed Bike Hoop (Refer to Dwg L.330)
- FP Proposed Flag Pole (Refer Landscape Specification)
- Proposed Entry Signage

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CLIENT
Education Public Schools

DRAWING STATUS
Not For Construction

DESIGNED AG SMM PROJECT NO. 15057 NORTH
 DRAWN AS/AG DATE DRAWN JAN 2016
 CHECKED MS SCALE 1:150
 SHEET SIZE A1 SIZE ON ORIGINAL

PROJECT
 NEW O'CONNELL STREET PRIMARY SCHOOL
 Landscape WORKS
 PROJECT ADDRESS
 24A O'Connell St, Parramatta NSW 2150

DRAWING
FINISHES PLAN 2 OF 4

DRAWING NUMBER L.102 ISSUE **D**

REV	DESCRIPTION	DATE	APPROVED
D	FOR PLANNING APPROVAL	15.04.2016	MS
C	REVISED 60% ISSUE	17.03.2016	MS
B	CIVIL COORDINATION	09.03.2016	MS
A	60% DRAFT DOCUMENTATION	29.02.2016	MS

REVISION HISTORY



LEGEND

GENERAL

- Site Boundary
- Existing Item Retained
- New Kerb (Refer to Civil Dwgs for carpark setout and detail)

SURFACES

- AC1 Proposed Asphaltic Concrete - AC5 (Refer Dwg L.320 for Landscape Detail, Refer Civil Dwgs for Setout)
- CO1 Proposed Concrete Surface (Refer Dwg L.320 for Landscape Detail, Refer Civil Dwgs for Setout)
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- GB2 Proposed Garden Bed with New Tree. Prepare extent of zone for subsoil tree planting (Refer to planting details L.310, Refer to Dwgs L.201 for planting plan)
- TU New Turf (Refer to landscape specification and civil Dwgs for sub-base detail, Refer to Dwgs L.201 for planting plan)
- SF1 Soft-Fall (Refer to Landscape Specification)
- AT Proposed Artificial Turf (Refer to Dwg L.301 and Specification)
- Subsoil Tree Preparation Zone (Refer to planting details L.310, Refer to Dwgs L.201-204 for planting plan)

NOTES

1. GB1 TO BE MASS PLANTED WITH 6 PLANTS PER SQUARE METRE.
2. ALL PLANTS TO BE 200MM POT SIZES.
3. ALL TREES TO BE 150 LITRE.

EDGE TREATMENT

- SE- Edge 1 - Steel Edge - SE (Refer Dwg L.320)
- TE- Edge 2 - Timber Edge - TE (Refer Dwg L.320)
- CE- Edge 3 - Concrete Tooled Edge - CE (Refer Dwg L.320)

TREES

- TX Existing Tree Removed (Refer Existing Tree Schedule L.410)
- Existing Tree Retained (Refer Existing Tree Schedule L.410)
- Existing Tree Relocated (Refer Existing Tree Schedule L.410)
- Proposed Tree (Refer Proposed Tree Schedule L.420, Refer Dwg L.201-204 for planting plan)

LINEMARKING

- Thermoplastic Linemarking - Only applied to AC1 surfaces. (Refer to Specification)
- Indicative Road Linemarking (Refer Traffic Engineers Dwgs)

FURNISHINGS

- AS Proposed Aluminium Seating (Refer Dwg L.330 for Landscape Detail, Refer Landscape Specification)
- CS Proposed Concrete Seating (Refer to Dwg L.330)
- BH Proposed Bike Hoop (Refer to Dwg L.330)
- FP Proposed Flag Pole (Refer Landscape Specification)
- Proposed Entry Signage

GENERAL NOTES

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SURVEY DRAWING DATE GRID DATUM

DIMENSION STANDARD
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 - all dimensions are computer generated to 1mm.

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STRUCTURAL ENGINEERS
 SDA Structures
 2/61-63 Victoria Rd, Rozelle
 NSW 2039

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Education Public Schools

DRAWING STATUS
Not For Construction

DESIGNED AG SMM PROJECT NO. NORTH 15057
 DRAWN AS/AG DATE DRAWN JAN 2016
 CHECKED MS SCALE 1:150
 SHEET SIZE A1 SIZE ON ORIGINAL ORIGINAL IN COLOUR

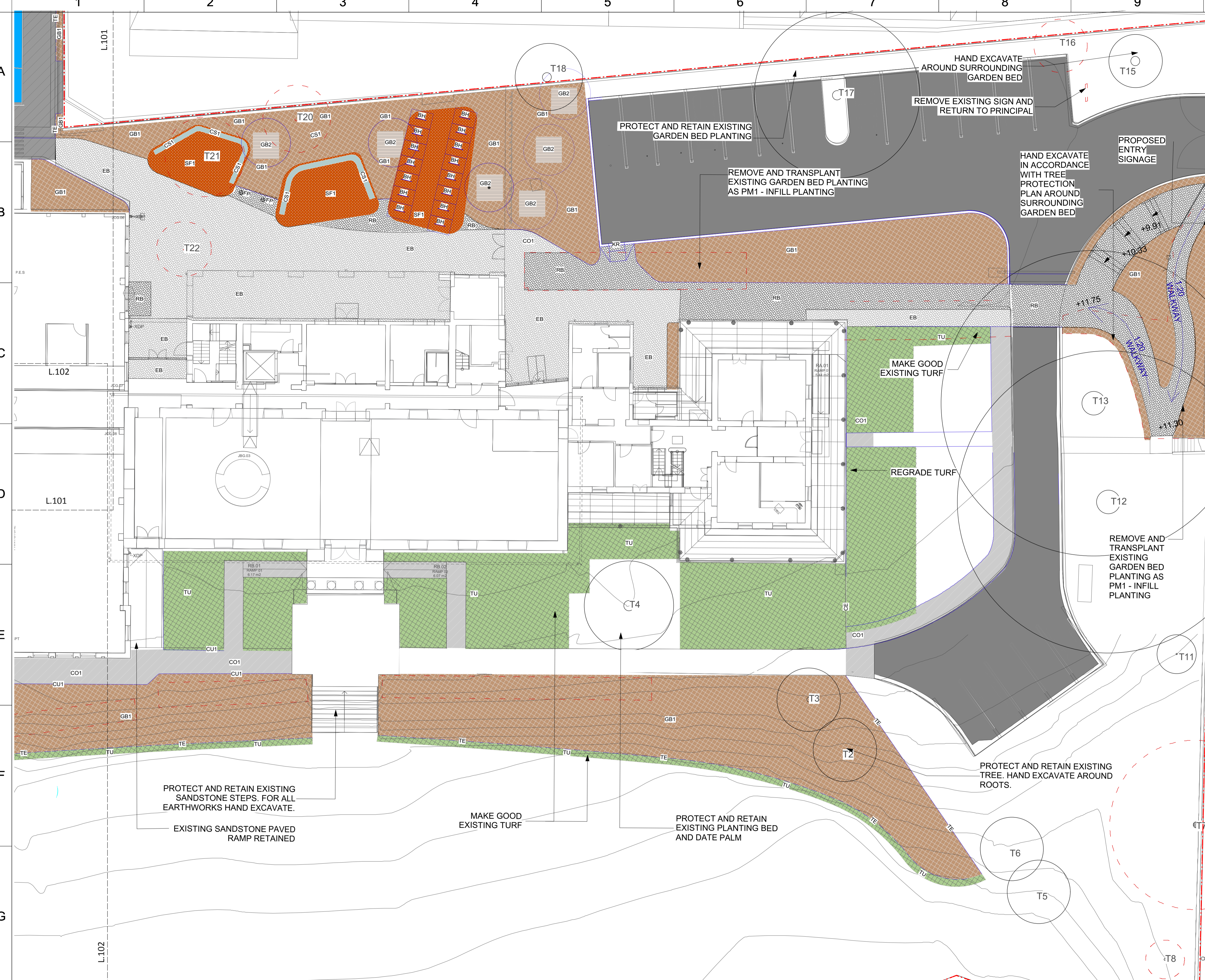
PROJECT
 NEW O'CONNELL STREET PRIMARY SCHOOL
 Landscape WORKS

PROJECT ADDRESS
 24A O'Connell St, Parramatta NSW 2150

DRAWING
FINISHES PLAN 3 OF 4

DRAWING NUMBER L.103 **ISSUE** D

REV	DESCRIPTION	DATE	APPROVED
D	FOR PLANNING APPROVAL	15.04.2016	MS
C	REVISED 60% ISSUE	17.03.2016	MS
B	CIVIL COORDINATION	09.03.2016	MS
A	60% DRAFT DOCUMENTATION	29.02.2016	MS



LEGEND

- GENERAL**
- Site Boundary
 - Existing Item Retained
 - New Kerb (Refer to Civil Dwg for carpark setout and detail)
- SURFACES**
- AC1 Proposed Asphaltic Concrete - AC5 (Refer Dwg L.320 for Landscape Detail, Refer Civil Dwg for Setout)
 - CO1 Proposed Concrete Surface (Refer Dwg L.320 for Landscape Detail, Refer Civil Dwg for Setout)
 - CU Proposed Concrete Unit Paving (Refer Dwg L.320 for Landscape Detail, Refer Civil Dwg for Setout)
 - RB Salvaged and Relayed Bricks (Refer Dwg L.320 for Landscape Detail, Refer Civil Dwg for Setout)
 - EB Existing Brick Paving, Retain and protect
 - SP Proposed Sandpit with Concrete Edging (Refer Dwg L.320)
 - GB1 Proposed Garden Bed (Refer to planting details L.310, Refer to Dwg L.201 for planting plan)
 - GB2 Proposed Garden Bed with New Tree. Prepare extent of zone for subsoil tree planting (Refer to planting details L.310, Refer to Dwg L.201 for planting plan)
 - TU New Turf (Refer to landscape specification and civil Dwg for sub-base detail, Refer to Dwg L.201 for planting plan)
 - SF1 Soft-Fall (Refer to Landscape Specification)
 - AT Proposed Artificial Turf (Refer to Dwg L.301 and Specification)
- NOTES**
- GB1 TO BE MASS PLANTED WITH 6 PLANTS PER SQUARE METRE.
 - ALL PLANTS TO BE 200MM POT SIZES.
 - ALL TREES TO BE 150 LITRE.
- EDGE TREATMENT**
- SE Edge 1 - Steel Edge - SE (Refer Dwg L.320)
 - TE Edge 2 - Timber Edge - TE (Refer Dwg L.320)
 - CE Edge 3 - Concrete Tooled Edge - CE (Refer Dwg L.320)
- TREES**
- TX Existing Tree Removed (Refer Existing Tree Schedule L.410)
 - TX Existing Tree Retained (Refer Existing Tree Schedule L.410)
 - TX Existing Tree Relocated (Refer Existing Tree Schedule L.410)
 - Proposed Tree (Refer Proposed Tree Schedule L.420, Refer Dwg L.201-204 for planting plan)
- LINEMARKING**
- Thermoplastic Linemarking - Only applied to AC1 surfaces. (Refer to Specification)
 - Indicative Road Linemarking (Refer Traffic Engineers Dwg)
- FURNISHINGS**
- AS Proposed Aluminium Seating (Refer Dwg L.330 for Landscape Detail, Refer Landscape Specification)
 - CS Proposed Concrete Seating (Refer to Dwg L.330)
 - BH Proposed Bike Hoop (Refer to Dwg L.330)
 - FP Proposed Flag Pole (Refer Landscape Specification)
 - Proposed Entry Signage

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DRAWING STATUS
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DESIGNED AG SMM PROJECT NO. NORTH 15057
 DRAWN DATE DRAWN 15057
 AS/AG JAN 2016
 CHECKED MS SCALE 1:150
 SHEET SIZE A1 SIZE ON ORIGINAL

PROJECT
 NEW O'CONNELL STREET PRIMARY SCHOOL
 Landscape WORKS

PROJECT ADDRESS
 24A O'Connell St, Parramatta NSW 2150

DRAWING
 FINISHES PLAN 4 OF 4

DRAWING NUMBER
 L.104

ISSUE
 D

REV	DESCRIPTION	DATE	APPROVED
D	FOR PLANNING APPROVAL	15.04.2016	MS
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PROJECT ADDRESS
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DRAWING
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REVISION HISTORY

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PROJECT
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PROJECT ADDRESS
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DRAWING
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ISSUE
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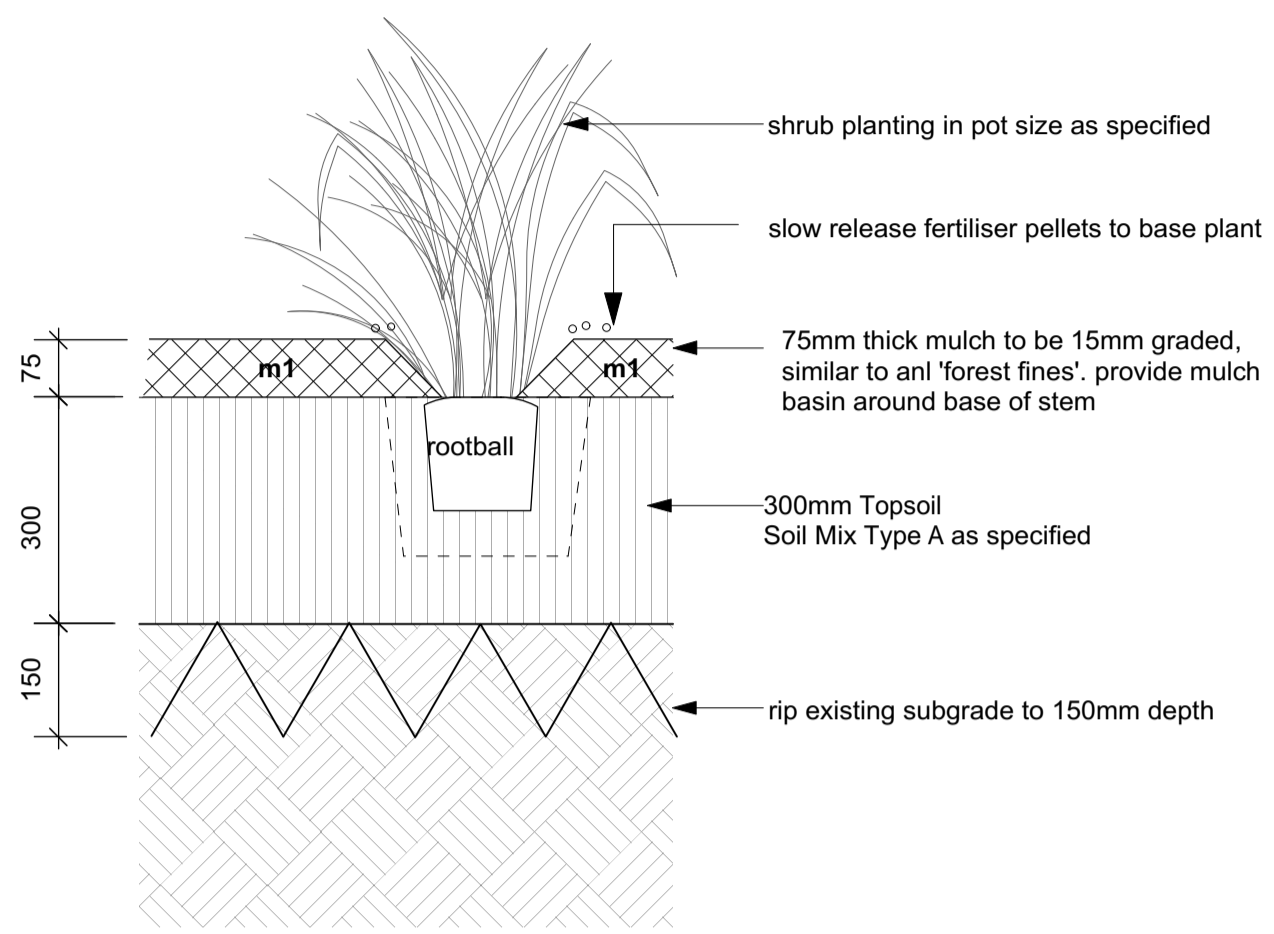
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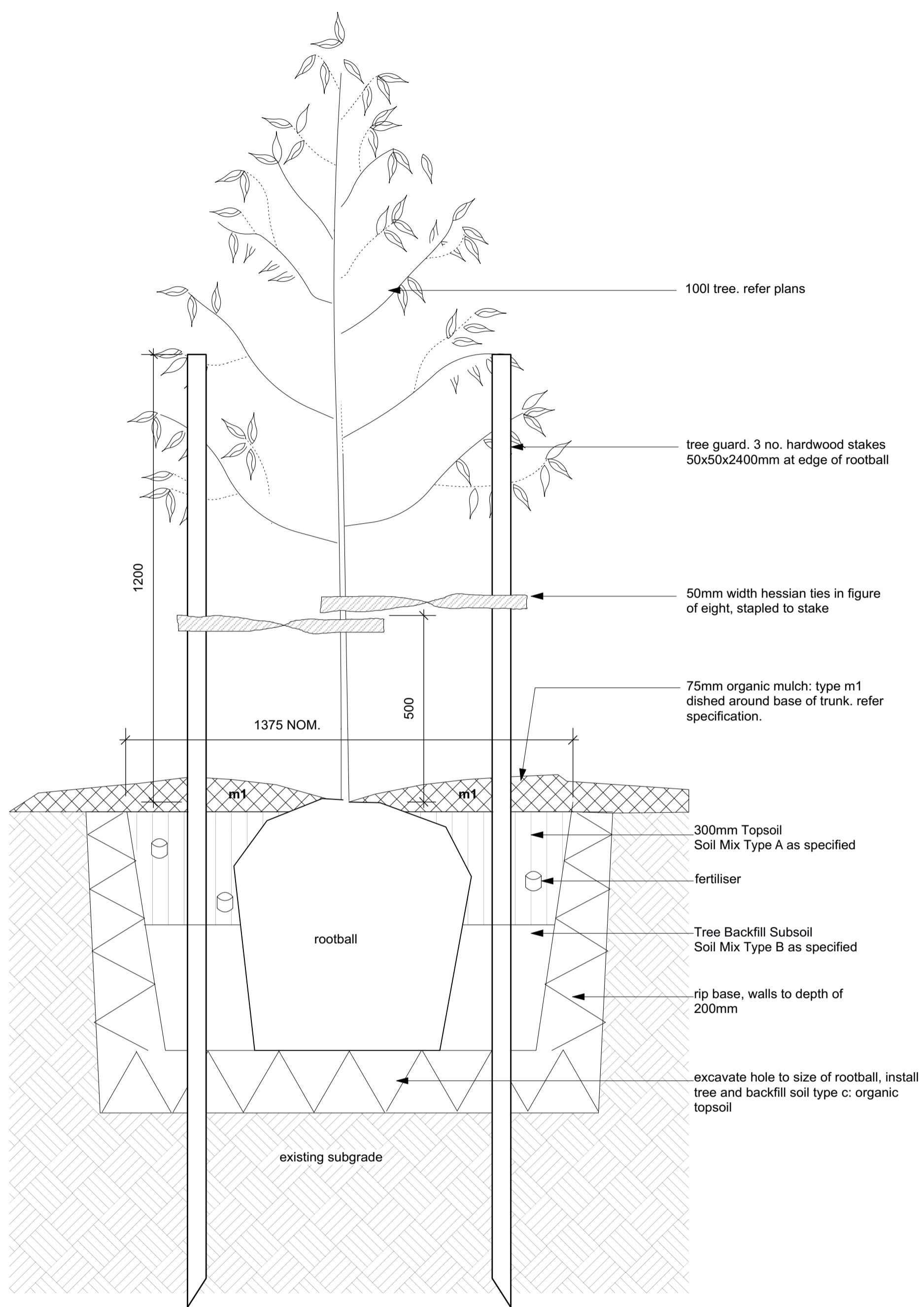
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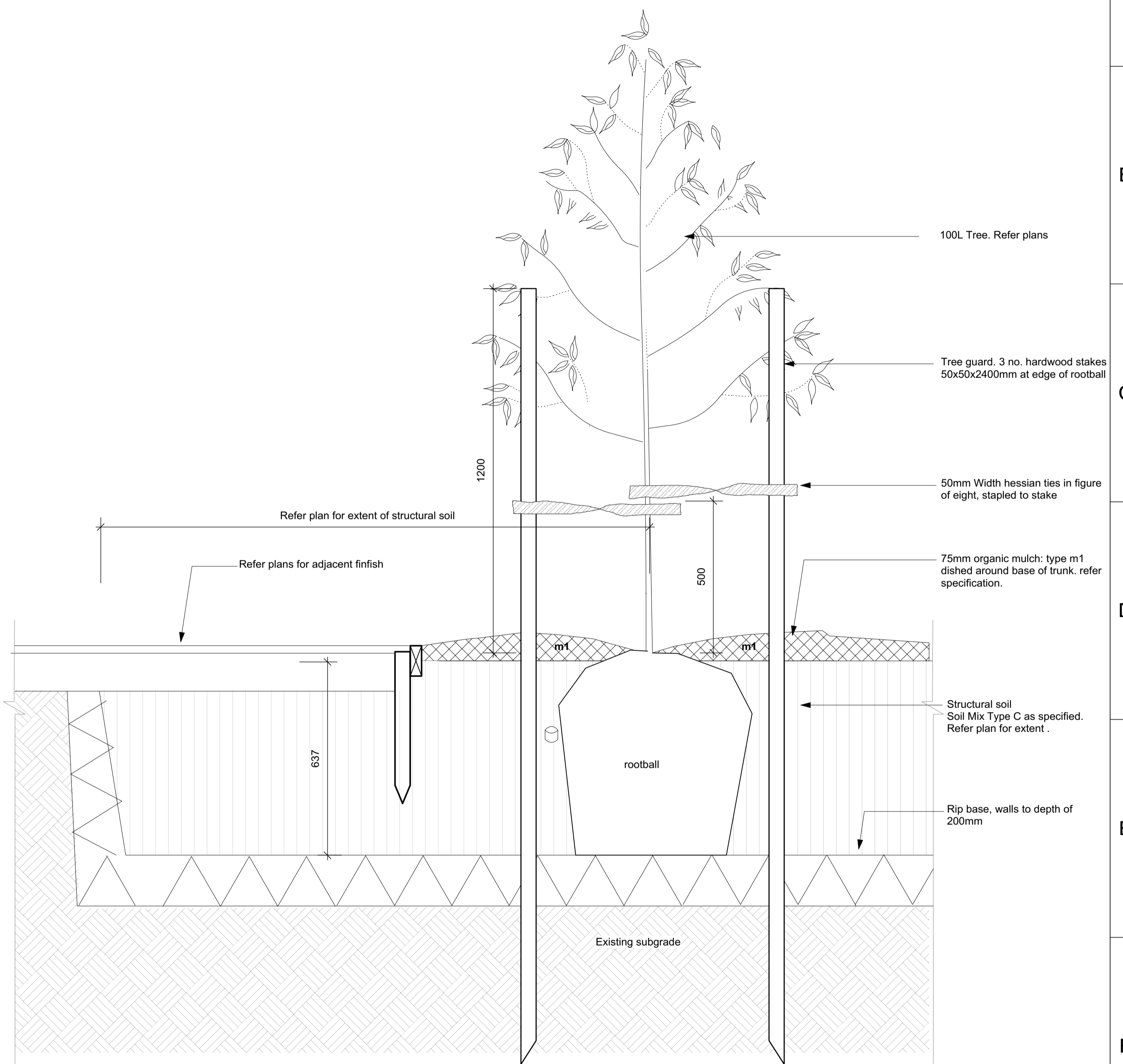
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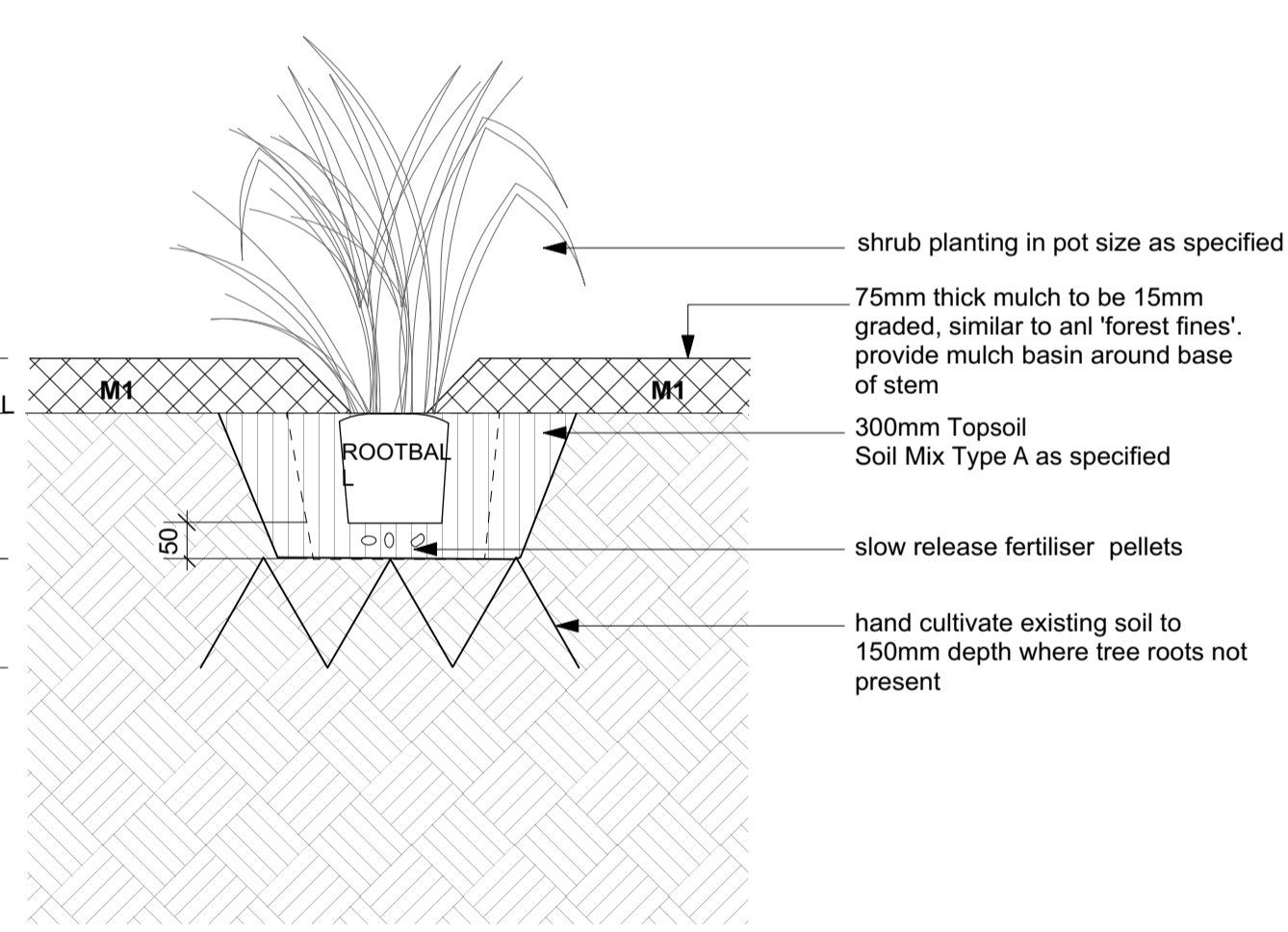
1 MASS PLANTING - IMPORTED TOPSOIL SOIL SECTION AT 1:10 @A1



3 TREE PLANTING - IN IMPORTED TOPSOIL SECTION AT 1:10 @A1



4 TREE PLANTING - IN STRUCTURAL SOIL SECTION AT 1:10 @A1



2 MASS PLANTING IN EXISTING GROUND SECTION AT 1:10 @A1

NOT FOR CONSTRUCTION

REV	DESCRIPTION	DATE	APPROVED
B	FOR PLANNING APPROVAL	15.04.2016	MS
A	DRAFT DA	10.02.2016	MS
REVISION HISTORY			
1			
2			

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SURVEY DRAWING DATE GRID DATUM

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DRAWING STATUS

Not For Construction

DESIGNED AG	SMM PROJECT NO. 15057	NORTH
DRAWN AS/AG	DATE DRAWN JAN 2016	SCALE NTS
CHECKED MS	SCALE NTS	
SHEET SIZE A1	SIZE ON ORIGINAL	

ORIGINAL IN COLOUR

PROJECT

New O'Connell Street Primary School
Landscape WORKS

PROJECT ADDRESS

24A O'Connell St, Parramatta NSW 2150

DRAWING

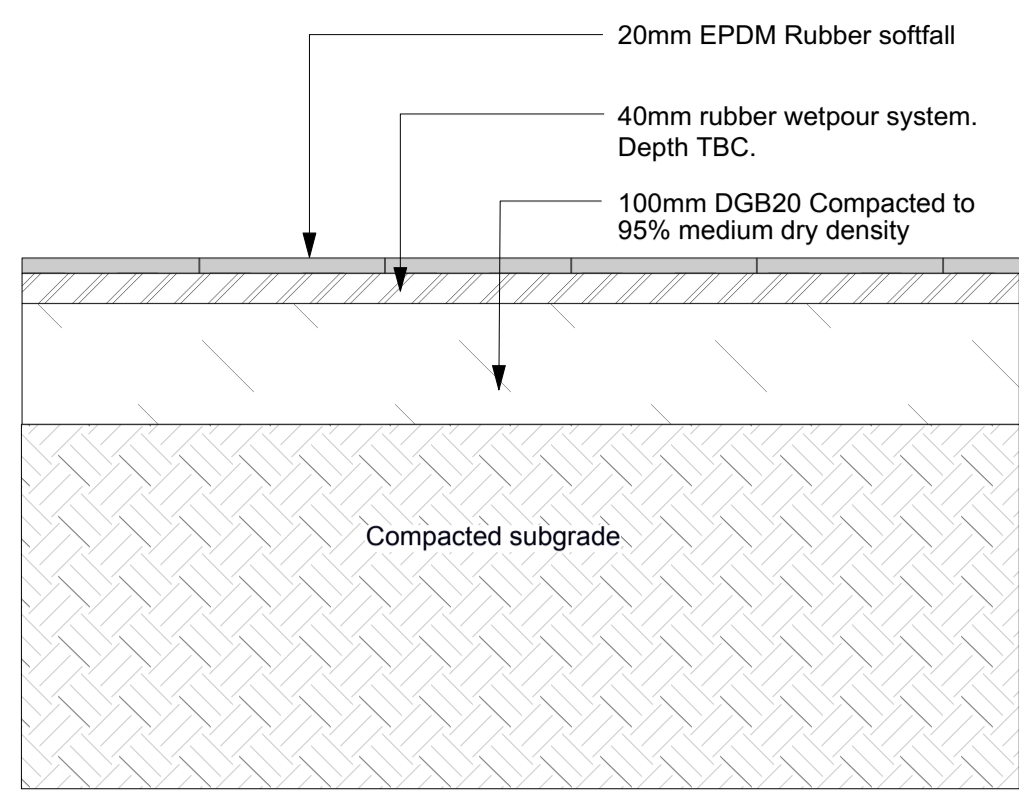
LANDSCAPE PLANTING DETAILS

DRAWING NUMBER

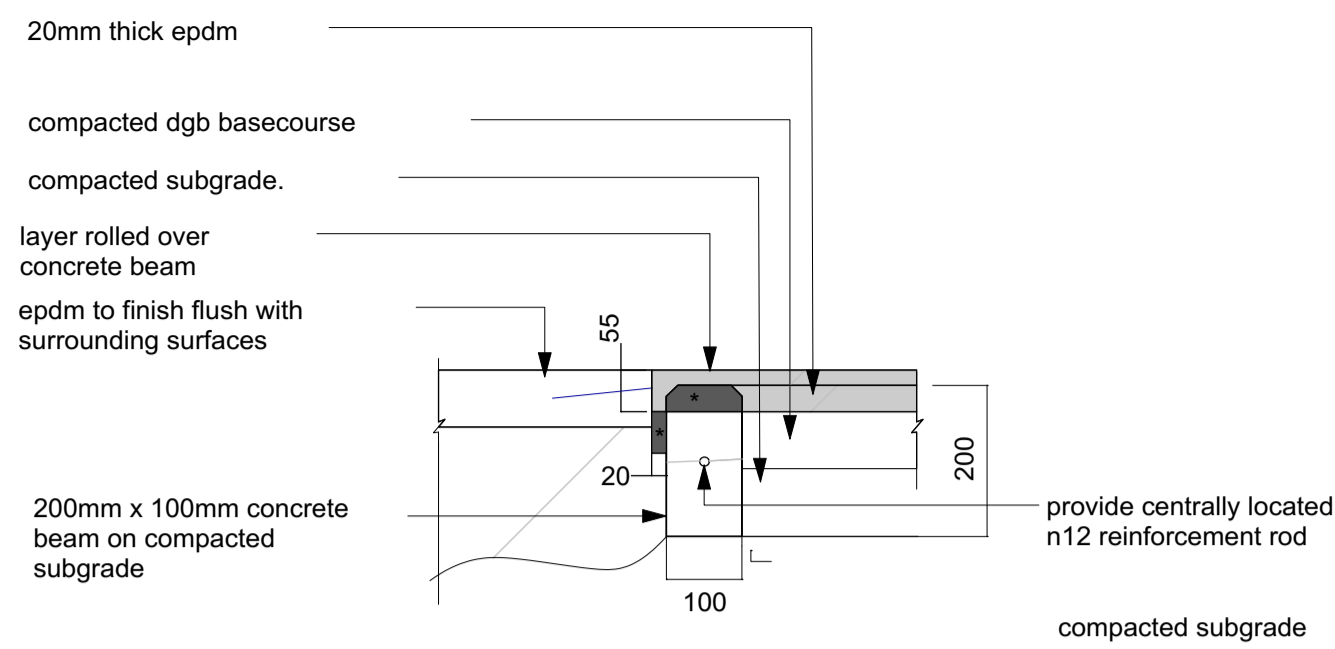
L.CD.310

ISSUE

B

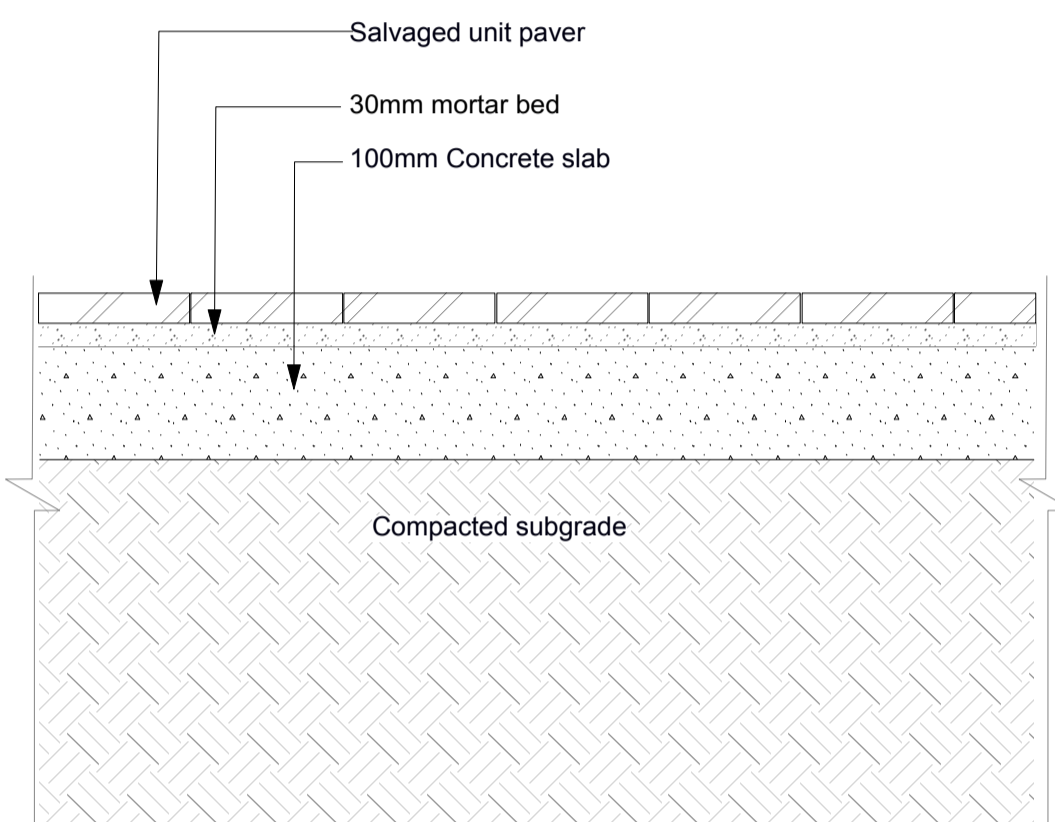


1 RUBBER SOFTFALL SECTION AT 1:10 @A1

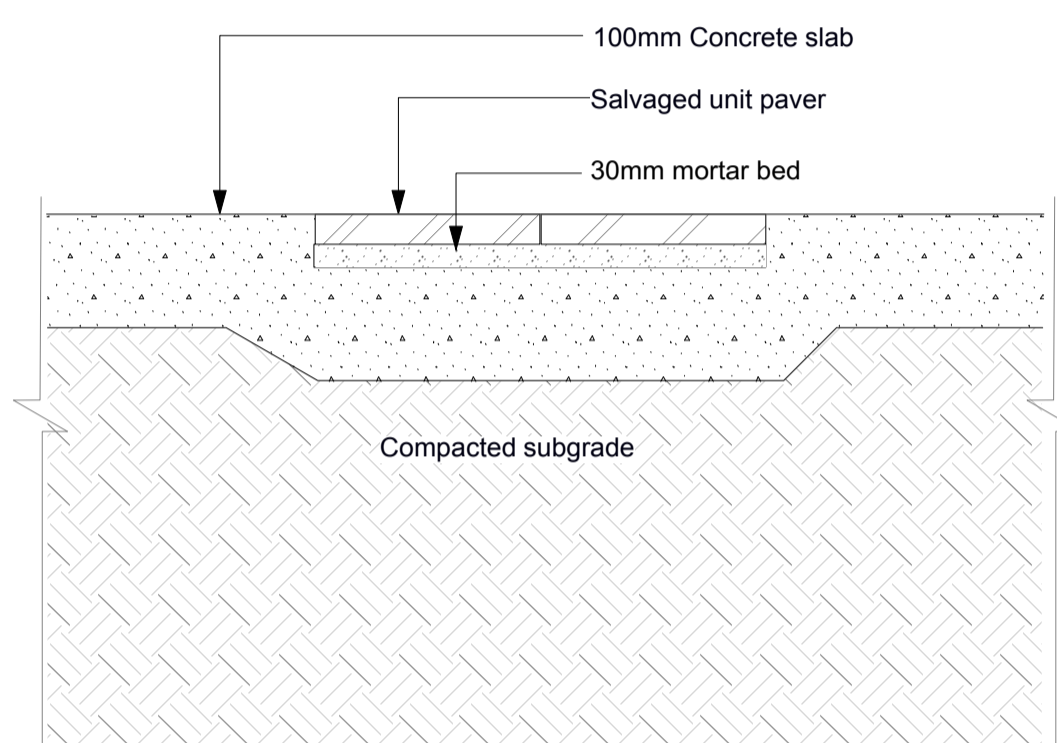


2 RUBBER SOFTFALL EDGE SECTION AT 1:10 @A1

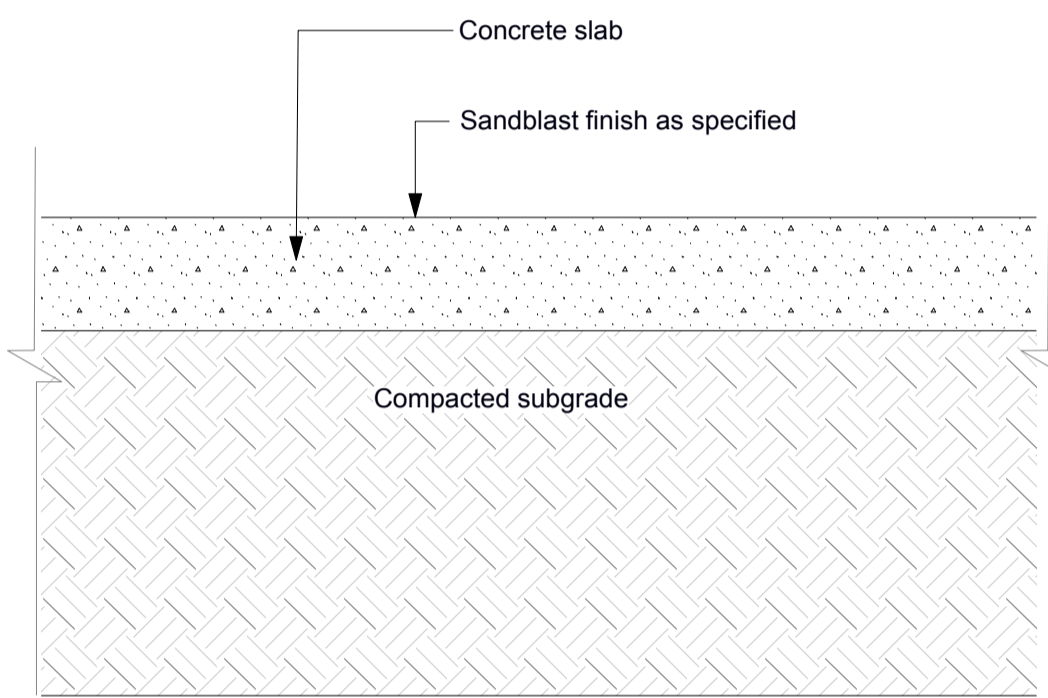
* in condition of edge beam being within equipment fall zone extend required depth of impact absorbing layer to australian standard requirement over beam & wrap epdm layer to depth of 110mm as shown



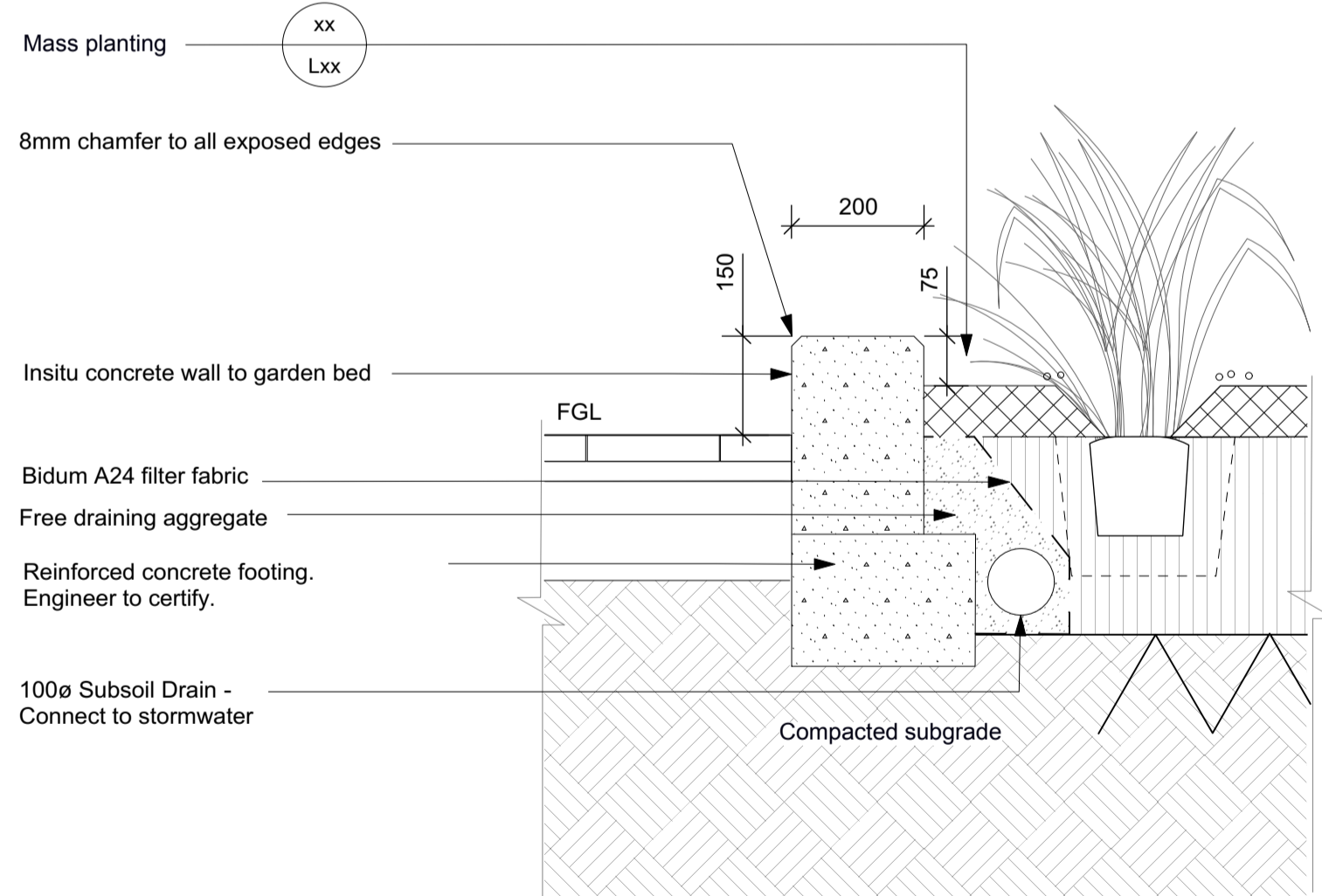
3 SALVAGED AND RELAYED BRICKS SECTION AT 1:10 @A1



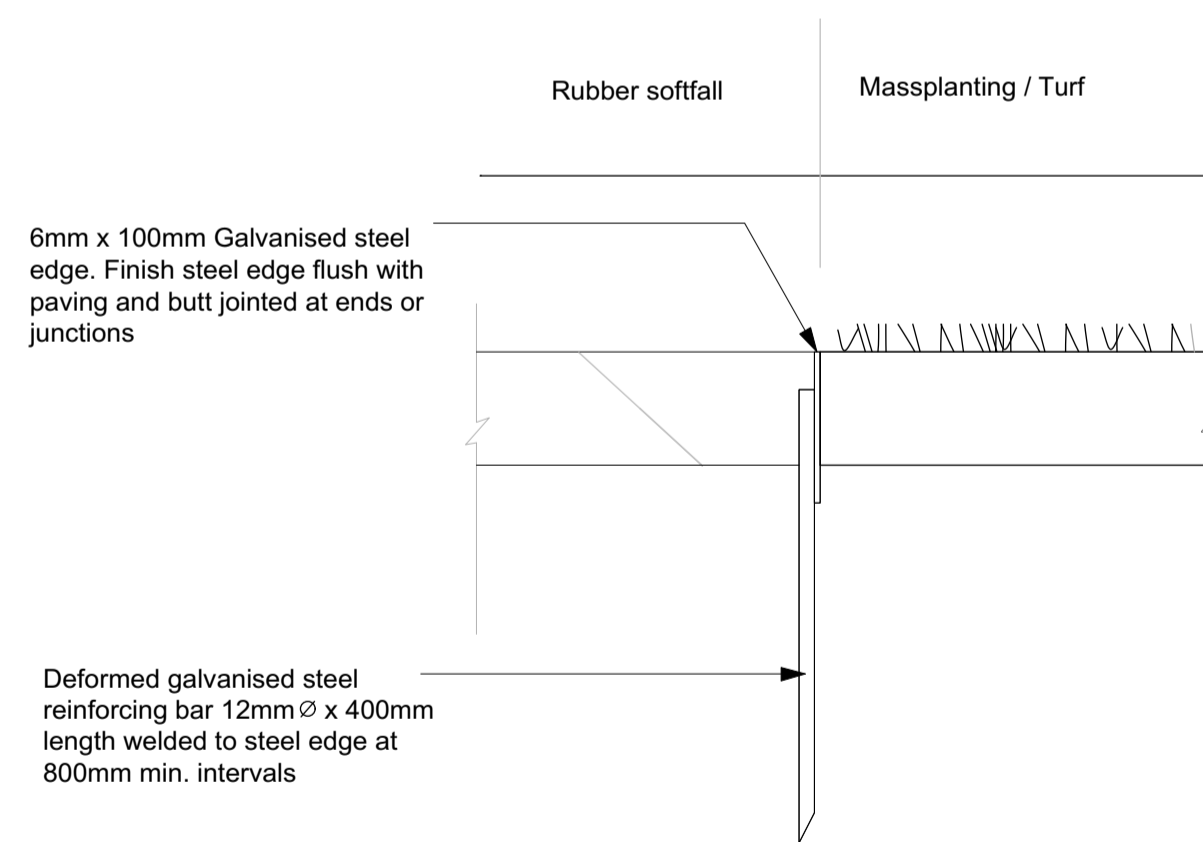
4 INSITU CONCRETE PAVING SECTION AT 1:10 @A1



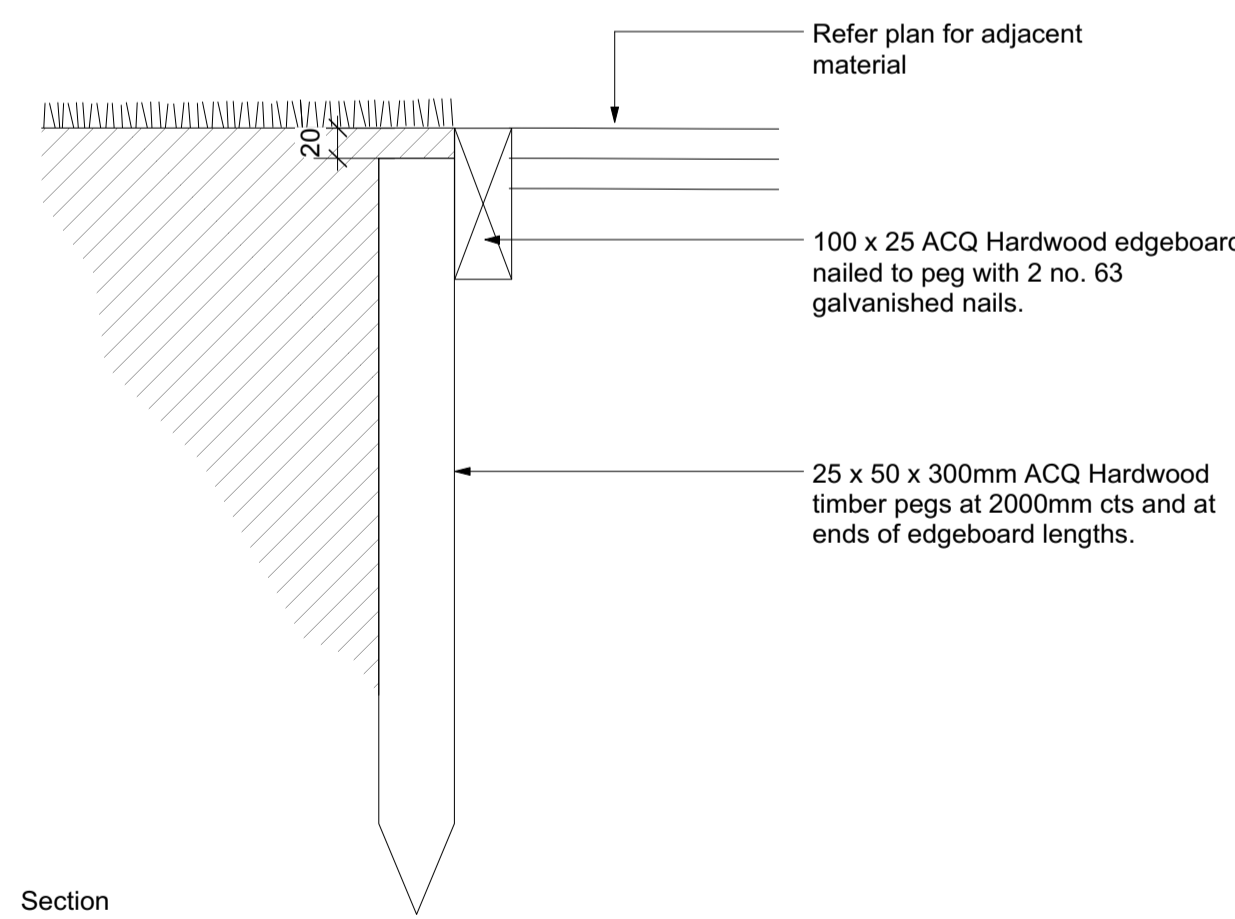
5 ARTIFICIAL TURF SECTION AT 1:10 @A1



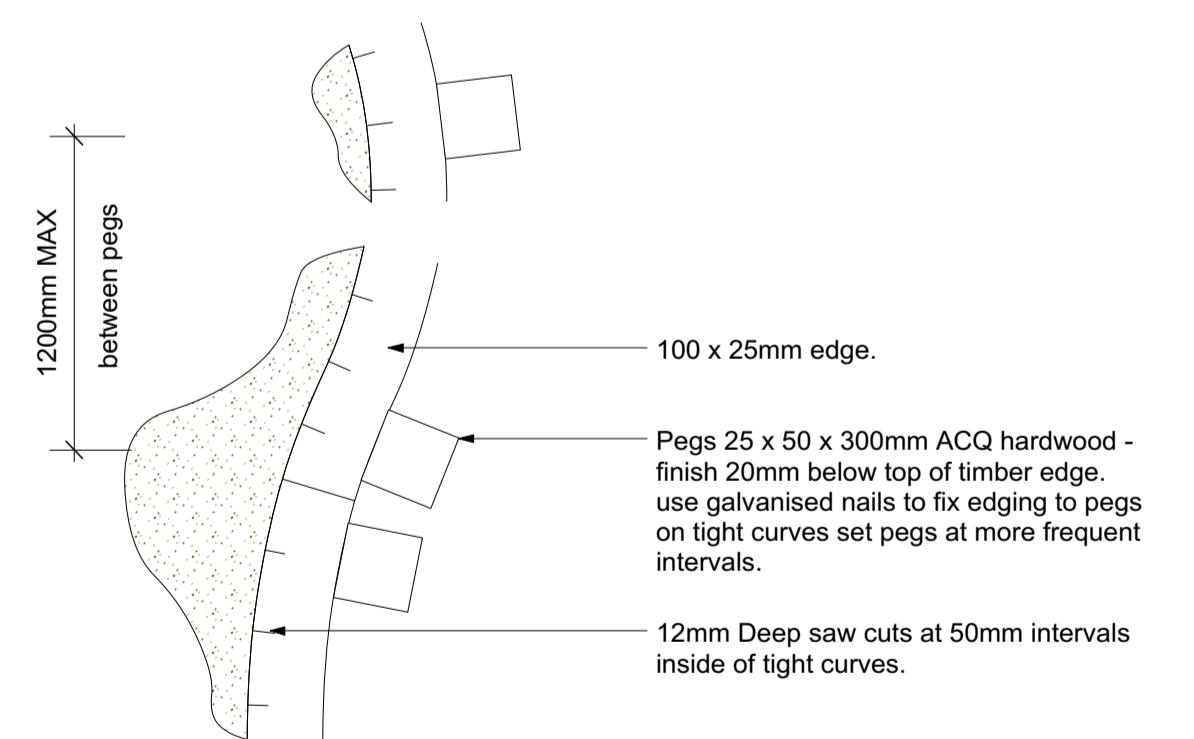
6 SALVAGED AND RELAYED BRICKS SECTION AT 1:10 @A1



10 STEEL EDGE SECTION AT 1:5 @A1



11 TIMBER EDGE PLAN / SECTION AT 1:5 @A1



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SURVEY DRAWING DATE GRID
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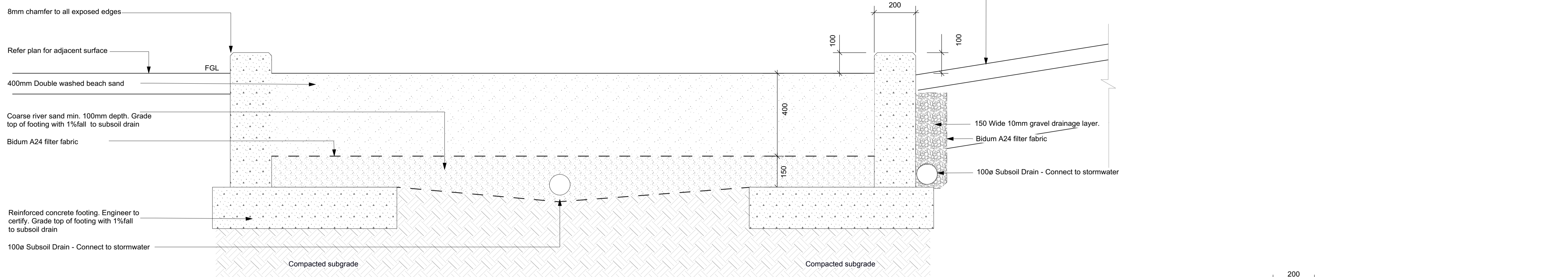
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DESIGNED	SMM PROJECT NO.	NORTH
AG	15057	
DRAWN	DATE DRAWN	
AS/AG	JAN 2016	
CHECKED	SCALE	
MS	NTS	
SHEET SIZE	SIZE ON ORIGINAL	
A1	ORIGINAL IN COLOUR	

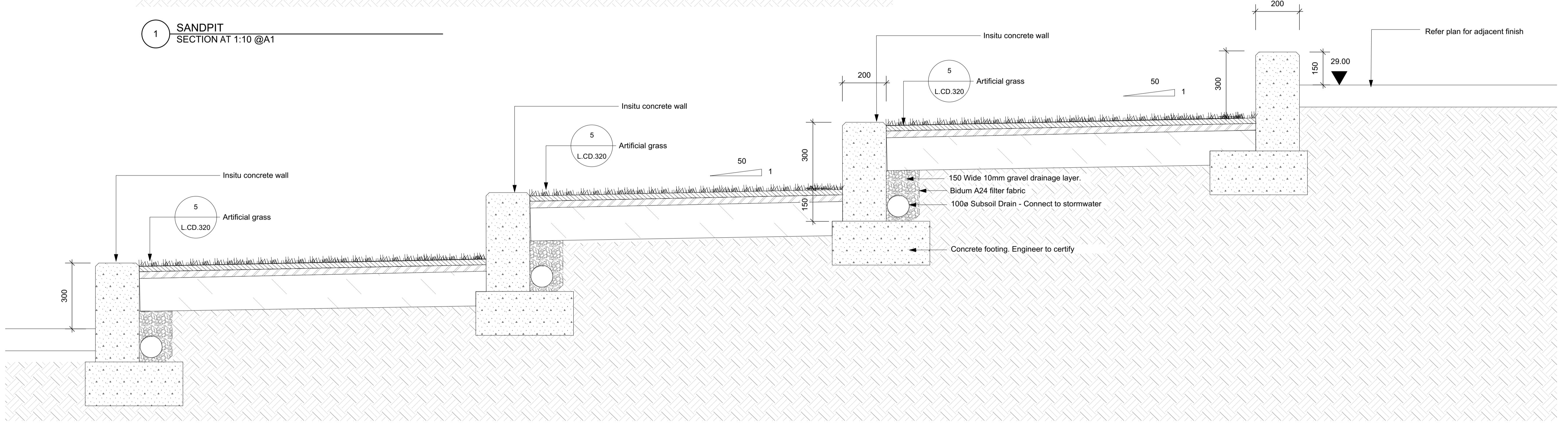
PROJECT

New O'Connell Street Primary School
Landscape WORKS
PROJECT ADDRESS
24A O'Connell St, Parramatta NSW 2150
DRAWING
LANDSCAPE HARDWORKS DETAILS - SHEET 1
DRAWING NUMBER
L.CD.320
ISSUE
B

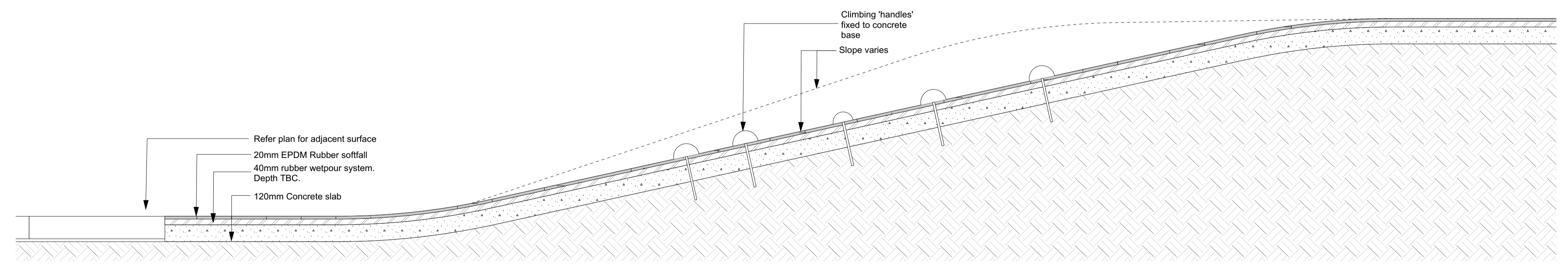
REV	DESCRIPTION	DATE	APPROVED
REVISION HISTORY			
1			
2			



1 SANDPIT SECTION AT 1:10 @A1



2 SEATING TERRACE SECTION AT 1:10 @A1



3 SOFTFALL - CLIMBING EMBANKMENT SECTION AT 1:10 @A1

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REVISION HISTORY <table border="1"> <thead> <tr> <th>REV</th> <th>DESCRIPTION</th> <th>DATE</th> <th>APPROVED</th> </tr> </thead> <tbody> <tr> <td>B</td> <td>FOR PLANNING APPROVAL</td> <td>15.04.2016</td> <td>MS</td> </tr> <tr> <td>A</td> <td>60% DOCUMENTATION</td> <td>29.02.2016</td> <td>MS</td> </tr> </tbody> </table>				REV	DESCRIPTION	DATE	APPROVED	B	FOR PLANNING APPROVAL	15.04.2016	MS	A	60% DOCUMENTATION	29.02.2016	MS										
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TO BE COMPLETED.

1 TIMBER DECKING (ASSEMBLY AREA)
SECTION AT 1:10 @A1

TO BE COMPLETED.

2 300MM HIGH RAISED VEGETABLE GARDEN LEARNING GARDEN)
SECTION AT 1:10 @A1

NOT FOR CONSTRUCTION

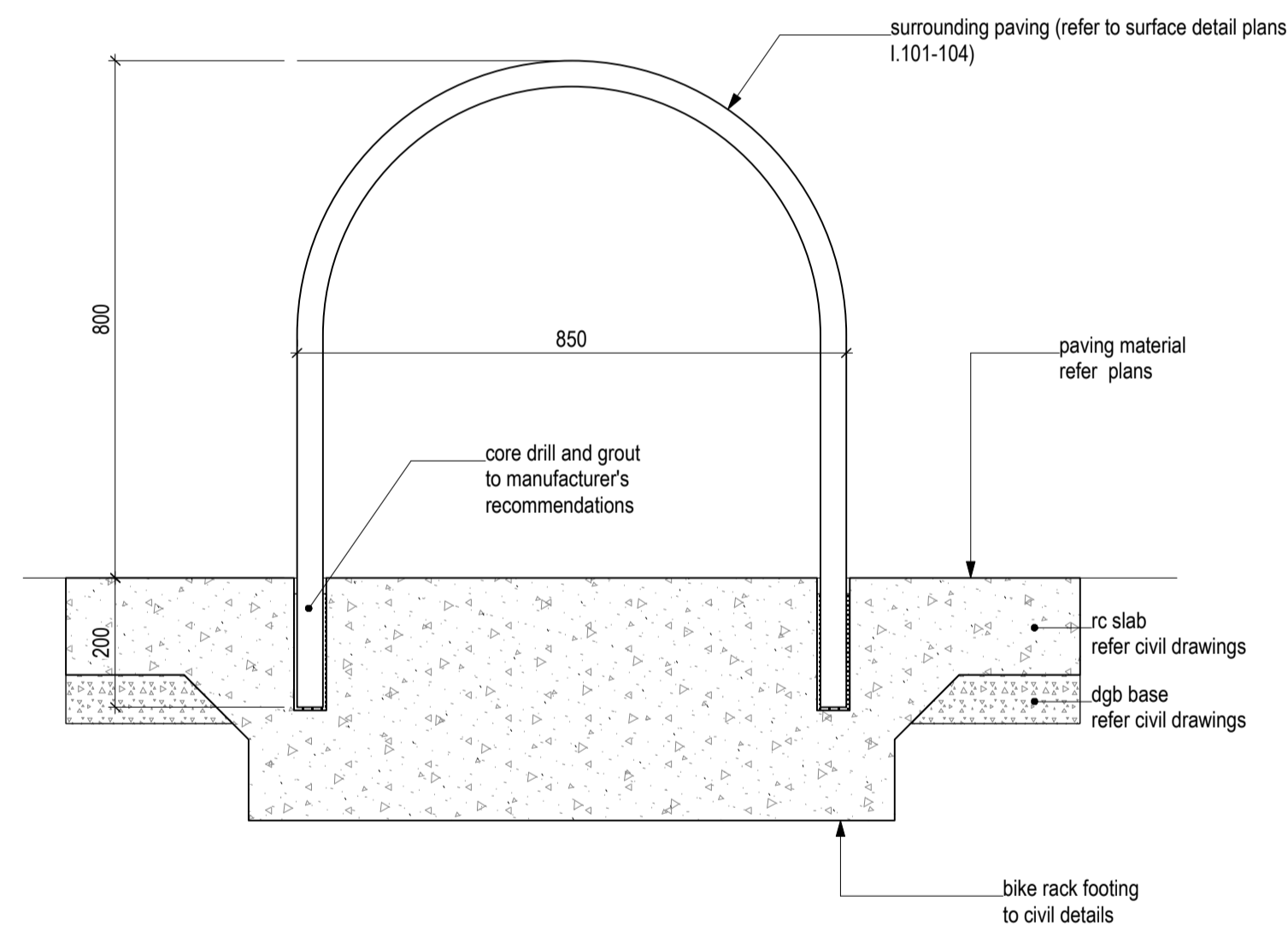
<p>GENERAL NOTES</p> <ol style="list-style-type: none"> Do not scale from this drawing. Use figured dimensions only. Verify all dimensions on site. Refer any discrepancies to the Principal's Representative for resolution before proceeding. If this drawing is unclear, ask for direction from the Principal's Representative. Site check the location of utilities and services prior to the commencement of works. Refer any discrepancies to the Principal's Representative for resolution. <p>© This drawing is Copyright and may not be used, reproduced or copied wholly or in part without written permission from Spackman Mossop Michaels Pty Ltd. This drawing may only be used for the express purpose and project for which it has been created and delivered.</p>		<p>SURVEY</p> <p>RYGATE SURVEYORS 9/89 York St Sydney NSW 2000 PH: (02) 9262 6800</p> <p>SURVEY DRAWING DATE GRID DATUM</p> <p>DIMENSION STANDARD Unless noted otherwise: - all levels are shown in metres - all dimensions are computer generated to 1mm.</p>		<p>ARCHITECTS</p> <p>Tonkin Zulaikha Greer Pty Ltd. 117 Reservoir Street, Surry Hills NSW 2010 PH: +(02) 9215 4900</p> <p>STRUCTURAL ENGINEERS</p> <p>SDA Structures 2/61-63 Victoria Rd, Rozelle NSW 2039</p>		<p>ACCESS CONSULTANTS</p> <p>ENVIRONMENTAL CONSULTANTS</p>		<p>LANDSCAPE ARCHITECT</p> <p>SPACKMAN MOSSOP AND MICHAELS</p> <p>PO Box 880, Darlinghurst NSW 1300 3 Oxford Street, Paddington NSW www.spackmanmossopmichaels.com info@sm2group.com.au</p> <p>TEL: 02 9361 4549 • FAX: 02 9361 4569</p>		<p>CLIENT</p> <p> Education Public Schools</p>		<p>DRAWING STATUS</p> <p>Not For Construction</p> <table border="1"> <tr> <td>DESIGNED</td> <td>SMM PROJECT NO.</td> <td>NORTH</td> </tr> <tr> <td>AG</td> <td>15057</td> <td></td> </tr> <tr> <td>DRAWN</td> <td>DATE DRAWN</td> <td></td> </tr> <tr> <td>AS/AG</td> <td>JAN 2016</td> <td></td> </tr> <tr> <td>CHECKED</td> <td>SCALE</td> <td></td> </tr> <tr> <td>MS</td> <td>NTS</td> <td></td> </tr> <tr> <td>SHEET SIZE</td> <td>SIZE ON ORIGINAL</td> <td></td> </tr> <tr> <td>A1</td> <td>ORIGINAL IN COLOUR</td> <td></td> </tr> </table>		DESIGNED	SMM PROJECT NO.	NORTH	AG	15057		DRAWN	DATE DRAWN		AS/AG	JAN 2016		CHECKED	SCALE		MS	NTS		SHEET SIZE	SIZE ON ORIGINAL		A1	ORIGINAL IN COLOUR		<p>PROJECT</p> <p>New O'Connell Street Primary School Landscape WORKS</p> <p>PROJECT ADDRESS 24A O'Connell St, Parramatta NSW 2150</p> <p>DRAWING LANDSCAPE HARDWORKS DETAILS - SHEET 3</p> <p>DRAWING NUMBER L.CD.322</p> <p>ISSUE B</p>	
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1 ALUMINIUM SEATING
SECTION AT 1:10 @A1

3 300MM CONCRETE BENCH SEATING
SECTION AT 1:10 @A1



2 BICYCLE RACK
SECTION AT 1:10 @A1

NOT FOR CONSTRUCTION

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0250 LANDSCAPE – GARDENING

1 GENERAL

1.1 RESPONSIBILITIES

General

All work specified is to be carried out by a qualified tradespersons and specialists. The Contractor and team members must demonstrate experience in the type of work described in the tender documents including Consulting Arborist, Horticulturist, Landscape Trade Certificate (s) and be able to supply references with a minimum of 5 years experience in their particular field of expertise. Contractors must be members of their respective industry association such as the Landscape Contractors' Association and the Association of Consulting Arborists.

Maintenance: Encourage and maintain healthy growth for the duration of the contract.

1.2 CROSS REFERENCES

General

Requirement: Conform to the following:

- *General requirements.*
- *Earthworks*
- *Site Management*
- *Pavement Ancillaries*
- *Structural Steel*
- *Pavement base and subbase*
- *Roadworks, Pavement and Asphaltic Concrete*
- *Concrete*
- *Masonry Construction*
- *Earthworks*
- *Stormwater - site*
- *External Colours and Finishes Schedule*
-

1.3 STANDARDS

Soils

Soils for landscaping and garden use - imported topsoil: To AS 4419.

Composts, soil conditioners and mulches: To AS 4454 - (2012)

Quality Assurance - AS/NZS 9002

Protection of trees on development sites - AS 4970

Tree supply: Follow the guidance given in NATSPEC Guide: *Specifying Trees – a guide to assessment of tree quality* (Clark R. 2003).

AS/NZ 4422:1996 Playground surfacing – Specifications, Requirements and Test Methods

ASTMF-1292-09 Playground Surfacing – Specifications, Requirements and Test Methods

AS/NZ 1530.3 1999 Simultaneous Determination of Ignitability, Flame Propagations, Heat Release and Smoke Release – Specifications, Requirements and Test Methods

AS/NZ4586:2004 – Slip Resistance Classification – Specifications, Requirements and Test Methods

Playground equipment: AS 4685

AS/NZS 9002 - Quality Assurance

1.4 INTERPRETATION

Definitions

General: For the purposes of this worksection the definitions given below apply.

- Imported topsoil: Suitable for the establishment and on-going viability of the selected vegetation, free of weed propagules (to be included as a test in AS 4419) and of contaminants, and classified by texture to AS 4419 Appendix 1, as follows:
 - . Medium: Sandy loam
 - . Coarse: Sand, loamy sand, for topdressing
- Site topsoil is not to be used for landscaping

1.5 INSPECTION

Notice – on site

Inspection: Give notice so inspection may be made of the following:

- Setting out before commencement of construction of brick edging and brick walling
- Setting out of planting completed.
- Subgrades cultivated or prepared for placing topsoil.
- Installation of subsoil drainage prior to backfilling.
- Timber edging installed.
- Topsoil spread before planting.
- Grassing bed prepared before turfing
- Garden bed preparation, completed prior to planting.
- Water-proofing of planter walls prior to backfilling
- Turfing completed.
- Structural soil installed.
- Installation of filler soil to structural soil prior to covering up of the installation.
- Installation of topsoil to tree pits.
- Plant holes excavated and prepared for planting.
- Planting completed.
- Watering in of planting.
- Steel edging prior to backfilling
- Completion of landscape works.
- Completion of planting establishment work.
- Site locations prepared to receive furniture or fixtures before installation.
- Set-out of line-markings and other coloured play surfaces before colour application/ installation.
- Custom-built fixtures fabricated and ready to be delivered to the site.
- Furniture items delivered to site before installation.
- Installation of underlay for softfall, rubber paving and synthetic turf
- Installation of Thermoplastic line marking and Plexipave
- Steel edging set out prior to fixing and installation
- Set-out of line-markings and other coloured play surfaces before colour application/ installation.
- Completion of landscape works.

1.6 SOIL TESTS

General: To AS 4419,.

Sampling: As recommended in AS 4419 Appendix A.

Laboratory: NATA registered.

Imported topsoil tests: Submit the results of type tests to AS 4419 Appendix B to J (topsoil and propagule testing).

Soil tests for imported topsoil

General: Prior to installing imported topsoil, comprehensive soil tests must be undertaken by a NATA registered soil laboratory to confirm the suitability of the imported soils for use.

Report: Submit a certificate noting the:

- Suitability of each soil type for its specified use.
- Suitability for establishment and on-going viability of the site specified vegetation.
- Absence of any weed propagules or contaminants.

Ameliorants recommendation: If required to include ameliorants, recommend the source of ameliorant material, rates and methods of incorporation.

If amelioration is required, soils must be re-tested post amelioration. Provide test certificates and reports confirming that the ameliorated soils meet the above requirements. Soils must not be installed until such reports and certificates have been received, reviewed and approved by the Authorised Person.

Soil tests for site topsoil

Prior to re-use of existing site soil for landscaping purposes, comprehensive soil tests must be undertaken by a NATA registered soil laboratory to confirm the suitability of the soil. Testing must investigate the soil for any contaminants as per the relevant EPA guidelines and take into consideration the use of the site as a special school and associated higher level of sensitivities and risk. Only soils that meet these criteria are permitted to be used for landscaping purposes or other areas where contact may occur.

Report: Submit a certificate noting the:

- Suitability of the soil for its specified use.
- Suitability for establishment and on-going viability of the site specified vegetation.
- Presence of any weed propagules or contaminants.

1.7 SUBMISSIONS

Execution

Program: Submit a work program in the form of a bar chart, for the landscape works.

Samples

General: Submit representative samples of each material, packed to prevent contamination and labelled to indicate source and content.

Bulk materials: Unless nominated otherwise, submit a 5 kg sample of each type specified. Submit bulk material samples, with required test results, at least 5 working days before bulk deliveries.

- All proposed soil mixed including imported topsoil, topsoil mixtures and structural soil. A separate sample is required for each component of the structural soil
- Mulch
- Rubber soffit (one dry colour mix sample bag for each proposed colour), and one representative swatch, minimum size 10x10 using the same adhesive as for the installation.
- Fertilisers.
- Turf
- Double washed beach sand for sandpit
- Synthetic Turf
-

Suppliers

Statements: Submit statements from suppliers, giving the following, where applicable:

- Particulars of the supplier's experience in the required type of work.
- Production capacity for material of the required type and quantity.
- Lead times for delivery of the material to the site.

Subcontractors

General: Submit names and contact details of proposed suppliers and installers.

Materials

Supplier's data: Submit supplier's data including the following:

- Material source of supply for topsoil, filling, stone and filter fabrics.
- Pre - ordering of specified plant stock.

Compost: Submit a certificate of proof of compost pH value.

Plant provenance

Locality: Provide written certification that all plant material has been grown from local provenance stock. If this is not achievable give notice and provide reasons.

Ordering: Provide proof of ordering of plant material within 8 weeks of being awarded the contract. Ensure plant material will be ready and available for planting at the required time.

Specialist Suppliers:

Bushtucker plants may need to be sourced from specialist suppliers. Allow extra time to ensure availability. Failure to procure plants in a timely fashion will not be accepted as basis for variation or substitution.

Species: Provide written certification that all plant material is true to the required species and type, including replacement plants during the landscape establishment period.

Accreditation

Proof: Submit evidence of accreditation as follows:

All plant material is to be obtained from a quality assured grower under AS/NZS ISO 9001. The proposed grower shall nominate senior personnel experienced in nursery practices and horticulture, who will be responsible during the growing/holding period, for taking and carrying out instructions, and reporting to the contract administrator.

Log book

Records: Log the following on a weekly basis:

- Description, time and method of application of toxic material.
- Maintenance work details.
- Inclement weather to verify inability to carry out work within the specified time frame.

Availability: Upon request.

Replacement plants

Species: Provide written certification that all plant material is true to the required species and type.

Installation of Fixtures and Furniture

General: Submit the manufacturer's standard drawings and details showing methods of construction, assembly and installation; with dimensions and tolerances.

2 PRODUCTS

2.1 TOPSOIL, STRUCTURAL SOIL AND BEDDING/ DRAINAGE LAYERS

General Requirements for Landscaping Soils

General: Import topsoil to the requirements outlined in this section. Only use site topsoil that meets the requirements of 1.6 SOIL TESTS.

Soil blend: Stripped topsoil with ameliorants noted in **SUBMISSIONS** to AS 4419 clause 4.6.

If available and subject to the testing and the amelioration requirements outlined in section 1.6 Soil Tests, material recovered from site may be used.

Topsoil Type U - Turf Underlay

Imported topsoil classed as Quarried Virgin Excavated Natural Material (VENM). Clay/silt content as determined by AS1141.12 (Wash Grading) is to be between 5-10% by weight.

The material is to be compliant by providing a recent test result in accordance with the above requirements for approval prior to delivery.

Topsoil Types to Tree Pits in Paving incorporating Structural Soil (SS)

Tree pits under Timber Decks are comprised of structural soil pits with tree topsoil in the areas under the timber decks. Refer to drawings for extents. There are a number of soil types that make up the tree pits. They include

- Soil Media Mix Type A: Tree Topsoil Backfilling Mix
- Soil Media Mix Type B: Tree Surround Subsoil Backfilling Mix
- Soil Media Mix Type C: Structural Soil Blend comprised of aggregate and filler soil

Soil Mix Type A – Planting Topsoil

General: The mix must meet all the requirements of AS 4419 – Landscape Soils for Soil Blends. In the event of a discrepancy, the specifications provided below must take precedence. It is recommended to test for other nutrients and trace elements and the opinion of a qualified soil agronomist sought as to suitability of the levels.

Soil Mix Type A must be an organically enriched well drained sandy loam topsoil mix designed to provide aeration and nutritional as well as water holding benefits for tree root zones. To obtain the chemical properties a soluble fertilizer is usually needed. The recommended product is given but others may be acceptable.

Location: top 300mm of soil media– refer drawings.

Components by Volume

Medium grade clean sand	50-60%
Sandy loam soil	20-30%
Composted organic matter conforming with AS 4454 SC	20-30%

Alternatively a sandy loam to which 25% composted garden waste is applied could achieve the same particle size properties as a sand/soil mix.

Performance Specification

Property	Units	Requirement
Particle Size Range		
>2 mm	% w/w	<5
1-2 mm	% w/w	<10
0.5-1.0 mm	% w/w	20-40
0.25-0.5 mm	% w/w	25-40
0.1-0.25 mm	% w/w	20-20
<0.1 mm	% w/w	<20
Organic Matter Content (AS 4419)	%w/w	8-15
Permeability fully compacted	mm/hour	50-100
Wettability (AS 4419)	mm/hour	>5
Chemical Properties		
pH 1:5	pH units	5.5 to 6.8
EC 1:5	dS/m	<0.5
Exchangeable Ca/Mg ratio	w/w	3 – 9
Available P	mg/kg ²	0-50
Ammonium N	mg/kg	< 50
Nitrate N	mg/kg	20-50

Note: tests denoted as AS 4419 refer to the methodology used in AS 4419 – Landscape Soils.

Suggested Fertilisers (to be verified by analysis)

Magrilime (or 50/50 lime dolomite mixture)	0.5-1 kg/m ³
Compound NPK general purpose fertiliser	1-2 kg/ m ³
Slow release general purpose 9-12 month controlled Release fertiliser	3-5 kg/m ³ .

Soil Mix Type B – Tree Backfill Subsoil

General: The mix must meet all the requirements of AS 4419 – Landscape Soils for Soil Blends. In the event of a discrepancy, the specifications provided below must take precedence. It is recommended to test for other nutrients and trace elements and the opinion of a qualified soil agronomist sought as to suitability of the levels.

Soil Mix Type B is designed to provide maximum drainage rate and compaction resistance. Water and nutrient holding capacity is enhanced by the addition of some soil but the matrix is very sandy. A very small amount of particulate organic matter (e.g. pine bark) is acceptable to provide better water holding without impeding drainage. If the sand contains some fine material lesser amounts of soil than

those suggested may be required. A small amount of fertiliser is added to promote rapid initial root growth.

Location: Installed at any depth below 300mm to backfill around new rootballs – refer drawings.

Components by Volume

Medium grade clean sand	70-80%
Sandy loam soil	10-20%
Composted organic matter conforming with AS 4454	SC 10 %

Performance Specification

Property	Units	Requirement
Particle Size Range		
>2 mm	% w/w	<5
1-2 mm	% w/w	<10
0.5-1.0 mm	% w/w	20-40
0.25-0.5 mm	% w/w	30-50
0.1-0.25 mm	% w/w	20-30
<0.1 mm	% w/w	<15
Organic Matter Content (AS 4419)	%w/w	2-5
Permeability fully compacted	mm/hour	200-400
Wettability (AS 4419)	mm/hour	>5
Chemical Properties		
pH 1:5	pH units	5.5 to 6.8
EC 1:5	dS/m	<0.5
Exchangeable Ca/Mg ratio	w/w	3 – 9
Available P (Bray)	mg/kg	20-50
Ammonium N	mg/kg	< 50
Nitrate N	mg/kg	20-50

Note: tests denoted as AS 4419 refer to the methodology used in AS 4419 – Landscape Soils.

Suggested Fertilisers (to be verified by analysis)

Magrilime (or 50/50 lime dolomite mixture)	200-500g/tonne (or m3)
Compound NPK turf fertiliser	0.5-1.0 kg/ m3

Soil Mix Type C – Structural Soil Blend (Aggregate and Filler Soil)

General: Structural Soil is engineered to function as a sub-base material under pavements for pedestrian and/or vehicular traffic with the ability to withstand loading of emergency and/or maintenance vehicles. Its intended purpose is for establishing trees in areas where the tree is largely surrounded by pavement and space limitations or other factors preclude the use of non-paved tree zones or large tree planting containerized areas.

Structural Soil is a two (2)-part system comprised of a stone lattice for strength and structural support (load bearing) and soil to service the horticultural needs. The stone lattice provides structural stability through stone-to-stone contact while also providing interconnected voids for root penetration, air and water movement. The system is engineered to maintain a high degree of porosity after installation and compaction. The intention is to “suspend” the horticultural soil component of the blend between stones, which come together during compaction, producing a load-bearing, compacted stone lattice with uncompacted soil in the voids.

To accomplish this objective, the ratio of soil-to-stone is a major consideration. If the stone voids are over-filled, aeration, water movement and the bearing capacity of the system are compromised.

Composition

The Structural Soil blend shall nominally comprise:

- 85% by volume nominal 63mm Aggregate
- 15% by volume Filler Soil (clay loam)
- Fertilisers including:
 - o Gypsum at 500 g/m³
 - o Urea at 500 g/m³
 - o Iron Sulphate at 1.5kg/m³
 - o Magnesium Sulphate at 400 g/m³
 - o Lime or Dolomite at 600 g/m³
 - o Potassium Nitrate at 500 g/m³
 - o Superphosphate at 500 g/m³
 - o Trace Element Mix at 300 g/m³
 - o 8/9 month Controlled Release at 2kg/m³

The final components blend ratio and fertiliser additives shall be determined at approval stage, prior to blending and supply to site. This decision shall be based on the laboratory testing of each component, which will facilitate the preparation of an agronomists report stating the final blend and additives.

Fertility adjustment shall be included as part of the mixing process and not undertaken or adjusted on site after delivery. The testing laboratory shall determine the total void space of the nominal 63mm aggregate in the fully compacted space and calculate a volume of filler soil based on one half of this measured value.

Filler Soil

The Filler Soil Criteria Table describes the Filler Soil component of the Structural Soil blend. In addition to the performance specification listed below, the Filler Soil component shall be a clay loam or similar texture and be of uniform composition without admixture of subsoil. It shall be free of stones greater than 12mm and be free from toxic substances harmful to plant growth.

The **Filler Soil Criteria Table** provides acceptable chemical and physical properties for the Filler Soil component of the Structural Soil blend. Testing of the Filler Soil for these criteria must be undertaken prior to placement and installation of the structural soil blend. Any amendments required to bring the chemistry of the material into specification (as recommended by soil testing) must be applied prior to placement of the soil. It is unacceptable for fertiliser(s) and other amendments to be applied after soil placement. Follow-up testing is required to ensure that this performance specification has been achieved.

Filler Soil Criteria Table

Item	Units	Filler Soil component of Structural Soil blend
Proportion of final Structural Soil blend	% by volume	15
pH	in H ₂ O (1:5) ¹	pH units
	in CaCl ₂ (1:5) ¹	pH units
Electrical Conductivity (1:5)	dS/m	< 2.5
Cation Analysis	Sodium ²	ESP ³
	Potassium ²	% eCEC
	Calcium ²	mg/kg
		% eCEC
	Magnesium ²	mg/kg
		% eCEC
	Ca:Mg	Ratio
Aluminium ²	% eCEC	
Cation Exchange Capacity	meq/100g	
Phosphate ⁴	P sensitive planting	mg/kg
	General plantings	mg/kg
Ammonium + Nitrate ⁵	mg/kg	
Sulphate ⁵	mg/kg	
Micronutrient Analysis	Iron	mg/kg
	Manganese	mg/kg
	Zinc	mg/kg
	Copper	mg/kg
	Boron	mg/kg
Organic Matter ⁶	% by mass	
Toxicity Index ⁷	mm	
Wettability ⁸	mm/minute	
Dispersibility ⁹	in H ₂ O	-
	in CaCl ₂	-
Methods: ¹ AS4419 (2003) Appendix D ² AS4419 (2003) Appendix D ³ Method 15A1 Rayment & Higginson (1992) ⁴ Bray N+1 ⁵ AS4419 (2003) Appendix D and Bradley et al (1983) ⁶ Method 63.1 to 63.5 Black (1983) ⁷ Total C by Leco Furnace ⁸ AS4419 (2003) Appendix H ⁹ AS4419 (2003) Appendix F ¹⁰ AS4419 (2003) Appendix C ¹¹ AS4419 (2003) Appendix G		

Nominal 63mm Aggregate

The following assessment criteria apply to the aggregate to be used in the structural soil blend. The aggregate must be a free-draining granular material capable of sustaining the anticipated load bearing requirements of the pavement. As a guide, an aggregate that conforms to the requirements of AS 2758.7 (1996) for Class L 60mm Railway Ballast is likely to possess the desired properties, is readily available and provides adequate potential for root extension. Larger aggregates may be used but for tree planting but smaller aggregates must not be used.

The main functions of the aggregate are:

- the distribution of loads from the overlying pavement;
- damping of dynamic loads;
- lateral resistance;
- a conduit for air, water and nutrients; and
- provision of a durable highly porous framework to carry the growing medium (filler soil) and facilitate the distribution and expansion of tree roots beneath pavements.

The **Aggregate Table** outlines the acceptable physical properties for the Aggregate component of 63mm Structural Soil blend.

Aggregate Table

Characteristics	Physical Properties	Specification
Test Method AS1141.11	% Passing A.S. sieve	
	75mm	100
	63mm	100
	53mm	85 – 100
	37.5mm	20 – 65
	26.5mm	0 – 20
	19.0mm	0 – 5
	13.2mm	0 – 2
	4.75mm	0 – 1
AS1141.12	Material finer than 0.075mm	0 – 1
AS 1141.14	Misshapen particles (%) Ratio 2:1 Particle shape	Max. 30 Sub-angular to angular. Dimensions shall not exceed 2.5:1 for any two dimensions chosen.
AS 1141.4	Bulk density (kg/m ³) Compacted	Min. 1200
AS 1141.6.1	Particle Density (Dry) (kg/m ³)	Min. 2500
AS 1141.23	Los Angeles Value Grading 'B' (% loss)	Max. 40
AS 1141.22	Wet Strength (KN): Wet/Dry Strength Variation (%)	Min. 110 Max. 40
AS 1141.24	Sodium Sulphate Soundness (Total weight % loss)	Max. 9

Sampling and Testing Frequency for Structural Soil

All sampling must be carried out in accordance with the methods described in AS1141.3 (1986). For each sample required, submit one (1) 20kg sample of the complete Structural Soil blend and one (1) 5kg sample of the unfertilised Filler Soil blend.

At least thirty (30) days prior to ordering materials, the Contractor must submit to the Authorised Person, manufacturers literature and recent (less than 3 months old) test certificates from the nominated NATA accredited soil testing laboratory together with a sample of the Filler Soil and a sample of the Aggregate. These samples must be maintained by the Project Supervisor in good order and must be used as a visual reference for the assessment of deliveries throughout the duration of the project. All delivered materials must closely match the approved samples.

Any material that does not meet these performance specifications may be rejected on or after delivery.

Throughout the duration of the Structural Soil supply and installation, samples must be collected by the Contractor and submitted to the nominated soil testing laboratory for analysis. The number of samples taken must be in accordance with the quantity to be represented as given in the following table. Where variability in quality is evident, the number of samples may be increased at the discretion of the Authorised Person. All testing will be at the expense of the Contractor.

The **Structural Soil Sampling and Testing Table** shows the required testing frequency to achieve compliance testing. Samples shall be tested to the performance criteria indicated in the relevant section of this report.

Structural Soil Sampling and Testing Table

Material Type	Activity	Key Quality Verification Requirements	Minimum Test Frequency
No Fines Bedding Gravel	Bedding layer below permeable pavement above 20mm No Fines Road Base	All requirements identified in the specification, Table 1 and AS2758	1 at approval then 3 per 1,000 m ³ or part thereof.
20mm No Fines Road Base	Base course layer between Bedding layer and 63mm Structural Soil	All requirements identified in Table 2 and additionally AS2758.1	1 at approval then 3 per 1,000 m ³ or part thereof.
63mm Structural Soil	Porous sub-base overlying sub-grade	All requirements identified in Tables 3 (Filler Soil) and 4 (Aggregate)	Filler Soil: 1 at approval then 3 per 1,000 m ³ or part thereof. Aggregate: 1 at approval then 3 per 1,000 m ³ or part thereof.
5/7mm Drainage Gravel	Backfill around slotted drainage pipe	All requirements identified in Tables 7 and AS2758	1 at approval then 1 per 100 m ³ or part thereof.

Samples are to be thoroughly blended and clearly labelled prior to dispatch to the nominated soil testing laboratory for assessment against the performance specification.

Contractors must allow at least ten (10) working days for laboratory results and the preparation of the agronomists report. Delays due to the late submittal of samples for testing or approval will not be authorised.

The nominated testing laboratory is:

Sydney Environmental & Soil Laboratory
16 Chilvers Road, Thornleigh NSW 2120
P 9980 6554

Acceptance Standards

The Authorised Person will inspect the work upon the request of the Contractor. The Authorised Person must receive request for inspection at least ten (10) calendar days before the anticipated date of inspection.

Topdressing

Imported coarse soil to AS 4419, suitable for application to grass areas. turfed areas

Turf

Supplier: Obtain turf from a specialist grower of cultivated turf.

Quality: Provide turf of even thickness, free from weeds and other foreign matter.

Type: Sapphire Soft Leaf Buffalo Turf – low allergen *Stenotaphrum secundatum* 'B12' (minimum depth of sod 50 mm)

2.2 MULCH

Organic Mulch (MO)

Organic playground mulch to AS/NZS 4422.

Equal or equivalent to “screened aged leaf and woodchip mix” by Australian Native Landscapes. P (02) 9677 1374.

Location: all garden beds and ‘mulch only’ areas. Around existing trees.

Sample: Provide samples for approval.

Gravel Mulch (GM)

Smooth rounded pebble mulch. 22-40mm. Equivalent to ‘QR Stone’, available from MPS Paving Systems. P 03 9707 0077”. www.mpspaving.com.au/qr-stone.html

Location: under the timber deck including in the deck opening. Install to min 50mm thickness.

Samples: submit sample & obtain approval prior to installation

2.3 FERTILISER

General: Provide proprietary fertilisers, delivered to the site in sealed bags marked to show manufacturer or vendor, weight, fertiliser type, N:P:K ratio, analysis of constituents, quantity, recommended uses and application rates.

Fertiliser schedule

Fertiliser key	Location	N:P:K ratio	Application rate
MP	Mass planted beds	8:2:10 & Trace Elements, equal or equivalent to 'MacroCote for Australian Natives' slow release	As per manufacturer's recommendation
-	Tree plantings in mass planted areas or turf	20:4:8 equal or equivalent to 'Langleys Tree Tablets for Australian Natives' or equal 20gm tablets	
SS	Tree planting in structural soil pits	Refer section '2.1 Topsoil, Structural Soil and Bedding/ Drainage Layers'	
TF	Turfed areas	10 + 3.0 + 4.5 Patons + Iron No: 17 Lawn Food or equal	

2.4 PLANTS

Labelling

General: Clearly label individual plants and batches.

- Label type: To withstand transit without erasure or misplacement.
- Label frequency: 1 per each batch of 50 plants or part thereof

Health and vigour

Health: Supply plants with foliage size, texture and colour at time of delivery consistent with the size, texture and colour shown in healthy specimens of the nominated species.

Vigour: Supply plants with extension growth consistent with that exhibited in vigorous specimens of the species nominated.

Damage: Supply plants free from damage and from restricted habit due to growth in nursery rows.

Stress: Supply plants free from stress resulting from inadequate watering, excessive shade or excessive sunlight experienced at any time during their development.

Site environment: Supply plants that have been grown and hardened off to suit the conditions that could reasonably be anticipated to exist on site at the time of delivery.

Root development

Containers: Grow plants in their final containers for the following periods:

- Plants < 25 l size: > 6 weeks.
- Plants > 25 l size: > 12 weeks.

Freedom from pests and disease

Pests and disease: Supply plants with foliage free from attack by pests or disease.

Native species with a history of attack by native pests: Restrict plant supply to those with evidence of previous attack to < 15% of the foliage and ensure absence of actively feeding insects.

Root system

Requirement: Supply plant material with the root system:

- Well proportioned in relation to the size of the plant material.

- Conducive to successful transplantation.
 - Free of any indication of having been restricted or damaged.
- Root inspection: If inspection is by the removal of soil test as follows:

- For > 100 samples: Inspect 1%.
- For < 100 samples: Inspect 1 sample.

Sample plants: Replace.

Defective samples: reject the entire line represented by the defective sample

Rejection: Root bound stock.

2.5 TIMBER

General: To AS 2796.1 Section 2.

For structural purposes: To AS 2082.

Durability class: To AS 1720.2.

All timber to be of minimum class 2 unless noted otherwise.

Preservative treatment

Timber type: Provide only timbers with preservative treatment appropriate to the Hazard class. Preservative treatment must be consistent with and appropriate for the intended use of the facility as a special needs school.

Cut surfaces: Provide supplementary preservative treatment to all cut and damaged surfaces.

CCA treated timber: the use of CCA treated timber is not permitted. CCA preservatives are regulated by the Australian Pesticides and Veterinary Medicines Authority (APVMA). The APVMA implemented a number of restrictions on CCA that became effective in March 2006.

The APVMA cancelled the use of copper chrome arsenate for treating timber destined for garden furniture, picnic tables, exterior seating, children's play equipment, patio and domestic decking, and handrails. Timber treated with copper chrome arsenate must be clearly labelled as such and can only be used in situations in which people will not come into regular contact with it. For more information refer www.apvma.gov.au.

Timber Decking (TD)

Product: ModWood composite timber

Size:

Horizontal surfaces: ModWood Wide Decking 137 x 23 mm. Cut boards to remove end groove and sand back to smooth surface to provide vertical edging board. Refer manufacturer's recommendations.

Vertical surfaces (perimeter cladding and balustrade): ModWood Screen Batten 68 x 17mm

Colour: Jarrah

Finish: smooth

Fixing clips: Kleva Modwood Klip concealed stainless steel fixing as per manufacturer's recommendation

Fixing: To manufacturer's recommendation. As ModWood expands in heat and sun, to avoid building stress into the boards and having possible lengthways shrinkage, it is best to fix the boards when the ambient temperature is less than 25°C and when the boards are not sitting in full sun (see "coefficient of thermal linear expansion" at www.modwood.com.au).

Finish & Coating: InnoCoat Clear Coating to achieve slip resistance rating of 'W' as per AS/NZ 4586-2004. Apply as per manufacturer's recommendations.

Storage & Handling: ModWood packs should be stored in a dry, flat area under roof and off the ground. Loose boards should be stored on its edge in a dry, flat area under roof and off the ground. Failure to keep packs dry in storage can lead to the growth of mould spores on boards. When moving product, ModWood should be carried on its edge. Please note ModWood is a finished product – take care.

Manufacturer: ModWood Technologies Pty Ltd

Ph: 03 9357 8866

Email: info@modwood.com.au

Website: www.modwood.com.au

Samples: provide a representative sample (min 1m length) for approval prior to ordering

2.6 TIMBER EDGING (TE)

General: To AS 2796.1 Section 2.

Durability class: To AS 1720.2.

Profile and size to: as shown on the drawings

Location: As shown on Landscape Drawings

2.7 SAND

General: Washed Beach Sand to AS NZS 4486.1:1997 and AS NZS 4422

Location: To sand pits as shown on Landscape Drawings

2.8 SANDPIT COVERS

Type: Permeable woven mesh sandpit covers with dome hook attachments. One for raised sandpit one for lower sandpit.

Supplier: Equal or equivalent to Superior Shade P: 1300 911 430

Size: Custom shapes to suit sandpits. Refer Landscape Drawings

Colour: Purple

Install: to manufacturer’s specifications

2.9 FURNITURE

Aluminium Seating (AS)

Product: Trimlite Aluminium School Seating

Types:

Code	Description	Location
AS(2)	2m long bench seat	Refer drawings
AS(4)	4m long bench seat	Refer drawings
AS(2B)	2m long seat with backrest	Refer drawings
AS(4B)	4m long seat with backrest	Refer drawings

Finishing: All seats to be supplied with end caps.

Installed Seating Heights:

K-2 area: 300mm

Y3-6 area: 350mm

Y7-12 area: 400mm

Finish: Anodised aluminium

Fixing: In-ground fixing to manufacturer’s recommendation. Footings to be concealed below paved surface.

Supplier: Supreme Seating. 47 Lake Road, Tuggerah, NSW 2259. P 02 4353 2905

W: <http://www.supremeseating.com.au>

Basketball Hoop (BH)

General: One proprietary system is to be used for the complete assembly of support post, backboard and ring. Do not use a mix of different manufacturers proprietary items.

Certification: The complete system including posts reinforced footings and assembly must be certified by a registered structural engineer (mandatory). Hand one copy of the certification to The Person with Full Authority/Superintendent.

Product

Model No: S125

Description: Long outreach Basketball tower, with 1m clearance from court base line to pole face
 Size: to comply with all government and sporting authority guidelines
 Installation: In accordance with the “The Official Basketball Rules” produced by Basketball Australia unless otherwise stated.
 Fixing: proprietary
 Footing: to manufacturer’s structural design
 Supplier: OzRing Pty Ltd (Trading as Play Hard Sports Equipment). 24 Ern Harley Drive, Burleigh Gardens Estate, West Burleigh, QLD 4220. P 1300 851 518
http://www.playhardsports.com.au/outdoor_products.php?id=4#Fixed_Units
 Accessories: Polyboard all weather full size backboard. R11b 300kg load capacity ring and net. Ring colour: orange. BP20 pole padding with concealed velcro closure flaps. Minimum height: 2100 mm from base. Padding colour: Red or alternative bright colour in contrast with the background in order that it will be clearly visible. Submit padding colour for approval.
 Support post finish: Red paint finish, UV stabilised colour. Refer School Facilities Standard Specification PAINTING.

Bike Rack (BR)

Type: Slim Line Bike Stand
 Description: hoop bike stand
 Supplier: Street Furniture Australia; T 02 9310 1488. www.streetfurniture.com
 Product No.: BST03
 Material: 316 marine grade stainless steel
 Finish: linished
 Fixing: Sub-surface fixing – refer civil drawings
 Required accessories: ø120 x 12 base plate for sub-surface fixing

Flag pole (FP)

Aluminium flagpole, machine tapered, hot dipped galvanised steel spigot and base plate, complete with “anti-vandal” internal halyard systems and all fittings required to fly flags.
 Standard: to AS1170.2
 Product: equal to Goldspar tapered aluminium flagpole available from Goldspar Australia Pty Ltd. P 02 9997 1211. www.flagpole.com.au

- Height: 9000mm.
- Dimensions: 101mm diameter at base tapering to 45mm (nominal) at top x 2 5mm wall thickness.
- Halyard system: internal
- Finish: Natural clear anodised.
- Fixing: Spigot A in-ground fixed galvanised spigot to manufacturer’s recommendation
- Fittings: supply all fittings as required to fly flags.

<http://www.cobbletac.com/>

2.9 PLAY SURFACES

Definitions:

‘Rubber Softall’(SF) includes all material specified for use in the playground area as required to meet the relevant Codes and Australian Standards and to install the product as per the manufacturer’s recommendations, including the surface wear layer, undersurfacing, the impact attenuating surface layer, rubber base layer, bonding layer and binder.

Standards

General: Comply with the relevant Codes and Australian/International Standards, including;

- AS/NZ 4422: Playground Surfacing – Specifications, Requirements and Test Methods
- ASTM F-1292-09 Playground Surfacing – Specifications, Requirements and Test Methods

- AS/NZ 1530.3 - Simultaneous Determination of Ignitability, Flame Propagations, Heat Release and Smoke Release – Specifications, Requirements and Test Methods
- AS/NZ4586– Slip Resistance Classification – Specifications, Requirements and Test Methods
- European Standard EN1177
- Global Standard BS7188

Rubber Softfall (SF)

Product: Rubber Wetpour EPDM

Composition: EPDM.

Lead Time: Allow adequate lead time as this may be required on some colours.

Performance:

The resultant surface shall exhibit the following:

- Highly durable, wear resistant surface with soft texture and high elastic recovery.
- Granular size 1 – 4mm.
- Non-abrasive surface minimising injury in the event of a fall.
- Superior UV Stability and weather resistant (as per test results measured in a QUV).
- Slip resistant and porous.
- Colour consistency.
- Non allergenic.
- Non carcinogenic.
- Does not leach out black carbon or colour pigments.
- Long wearing.
- Does not contain heavy metals.
- Solid coloured rubber. No bleeding.
- All components shall be non-toxic.
- Use the highest quality dust free rubber buffings and granules.
- Minimum dust levels which achieves less PU usage
- Single piece seamless surface without trip hazards.

Samples

Submit one sample of each colour to the “Authorised Person” for approval prior to work commencing on site.

Warranty:

Provide a product warranty certifying that the product meets the required standards is guaranteed for colour fastness for a minimum of eight years.

Qualified Installers

Rubber Softfall and Rubber paving must be installed by qualified tradespeople that are certified by the manufacturer to install the product

Installation Warranty:

Provide an installation warranty confirming that all materials have been installed to the manufacturer’s recommendation.

The Contractor shall be responsible for the replacement and rectification of all damaged materials and workmanship with a 12 month warranty period. All workmanship and materials must comply with warranty requirements.

Ensure all workmanship and materials are in accordance with AS 4422:1996.

Application method is to be a wet pour (in situ) installation.

The binding agent (polyurethane) to be used with the rubber wetpour is ISO 9001 accredited

Surface Wear Layer

EPDM to AS 4422: 1996.

Colours

Colours are as shown on the plans and to the colour mixes described in the schedule.

EPDM Wetour Safety Surface Colour Schedule

Code	Paving type	Location	Colour tone	Colour specification	EPDM Coloured Wear Layer Thickness
SF1	Rubber Paving 1	Learning Garden	TBC	TBC	20mm
SF2	Rubber Paving 2	Learning Garden	TBC	TBC	20mm
SF3	Rubber Paving 3	Learning Garden	TBC	TBC	20mm
SF4	Rubber Paving 4	Learning Garden	TBC	TBC	20mm

Rubber Base Layer

Where “softfall” (SF) is required, provide a recycled SBR tyre rubber graded to 8-15mm size to match manufacturers test specifications and free from contaminating materials such as nylon or loose wire. All steel, rubber dust and fibres removed.

The impact absorbing rubber base layer is to be mixed as per the top layer in a specified pre-polymer polyurethane and rubber ratio and installed at thickness and density to match certified softball testing. Minimum depth shall be 50mm. Depth of base material is the responsibility of the installer to ensure it complies with the playground manufacturer’s directive (including specified fall heights from nominated play equipment) and all local requirements and standards.

Urethane binder: Single pack urethane highly UV resistant, hydrolysis resistant, and non-toxic when cured. Oxide based inorganic pigment: All metal oxide based, highly UV resistant and non-toxic.

Recycled rubber wetpour soft-fall base to AS 4422: 1996

Acceptable Alternative for Rubber Base Layer: A prefabricated shockpad system comprising of a polymerically bound hybrid mix of 4 mesh trommel screened rubber buffings, granulated expanded polystyrene beads. Each mat must be adhered along all edges and underside to ensure no movement. Depth of base material is the responsibility of the installer to ensure it complies with the playground manufacturer’s directive and all local requirements.

Thermoplastic Linemarking (LM)

Provide preformed thermoplastic line marking to the following areas:

- Learning Garden (Red, light red, blue and beige)
- Assembly Area (Red, light red, blue and beige)

Refer drawings.

Product: equal or equivalent to Ennis Preformed Thermoplastic

Available from: Ennis Traffic Safety Solutions Pty Ltd; 29-31 Memorial Avenue; Ingleburn NSW 2565; P 02 9829 4275

Description: a long life line marking material preformed to size and shape and ready for installation.

Standards: Linemarking material and performance must conform to

- RTA Spec 3357
- AS/NZS 4049.2

Physical Characteristics:

Thickness	2-3mm
Luminance	75 minimum
Melting Point	150°C - 180°C
Skid Resistance (BPN)	50 minimum
Gradation of Mineral Content	pass
Glass Beads Content (%w/w):	not required
Abrasion Resistance (g/100rev)	0.6g maximum
Flash Point	230°C minimum
Density (g/cm³)	1.9 – 2.0

Retroreflectivity (mcd/lux/m ²) after 1 year	not required
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Colour Finish: Provide performed thermoplastics to the colours as described in **Colour Schedule 3**.

Colour Schedule 3

Code	Description
LM1	Red
LM2	Pink
LM3	Blue
LM4	Grey

Transport: Ennis Preformed Thermoplastic is not classed as dangerous goods by the Australian Code for the Transport of Dangerous Goods by Road or Rail (ADG code) and should be transported as a top load.

Storage: Store under cover in a cool area and rotate stock. Do not place heavy items that could cause damage on top of the packages.

PLAYING SURFACE (PS)

Product: Plexipave Allsport all weather multi-layer surface that is suitable for outdoor locations.

<http://www.plexipave.com.au/node/68>

Available from: Court Craft, Silverwater NSW. P 1800 996 353

Playing Surface Colour Schedule

Code	Paving type	Location	Dimension	Colour specification
PS1	Playing Surface Colour 1	Outdoor covered sports court – Base colour (basketball court)	Refer drawing	Blue
PS2	Playing Surface Colour 2	Outdoor covered sports court Infil colour. (basketball courts)	Refer drawing	Light Blue
PS3	Playing Surface Colour 3	Outdoor covered sports court line marking (basketball court)	50mm line width unless nominated otherwise on the drawings	White
PS4	Playing Surface Colour 4	Assembly Area Base colour (handball courts)	Refer drawing	Blue
PS5	Playing Surface Colour 5	Assembly Area Line marking (handball courts)	50mm line width unless nominated otherwise on the drawings	White

Synthetic Turf (ST)

Product Name: Equal or equivalent to 'Nomo Cool 40mm'.

Description: 40mm pile synthetic turf, 4 tone mono filament. Non carcinogenic. Lead and heavy metal free. Treated to reduce heat absorption.

Colour fastness: min ref standard 8 blue scales

'Topdressing' infill: fine washed kiln dried and graded silica sand, application rate as per manufacturer's recommendations.

Manufacturer's warranty: provide min 7 year warranty on UV resistance

Available from: Grassman Grass Manufacturers, Botany NSW. P 02 9316 7244.

www.grassman.com.au

Submit sample for approval prior to installation.

Underlay:

Product: Polymerically bound recycled rubber and polystyrene shockpad consisting of four mesh rubber tire buffing, equal or equivalent to ‘Aero Shockpads’. Available from: A1 Rubber Pty Ltd; P 02 9756 2146; www.a1rubber.com

Thickness: 20mm, unless recommended otherwise by the manufacturer

Density: 450kg/m³

Size: 1m x 1m pads

Tolerances:

Dimensions	+/-1.5%
Density	+/-5%

Joining: Spade ‘Sikaflex’ to join shockpads as per manufacturer’s recommendation

Storage: Store all Aero Shockpads out of direct sunlight and rain.

Submit sample for approval prior to installation.

2.10 STEEL

Steel tubes

Posts, rails, stays: To AS/NZS 1163.

- Grade: C350L0.

Steel Edging (SE)

Provide hot-dipped galvanised steel angles, flats and rods.

Edging: 3000 x 100 x 6 mm steel plate

Reo rods: Y12, 500 mm long.

Protective treatment: Refer to Structure - 3.6 Steel – hot dipped galvanized coatings

Welding: Conform to Structure - welding

Set out: As shown on drawings. If it appears necessary to change alignment give notice.

Check and verify all dimensions prior to commencing fabrication.

Unless specified otherwise all fabrication tolerances shall be within 5mm and all angular tolerances shall be 5mm.

Remove all burrs, sharp edges and corners prior to installation.

Location: As shown on Landscape Drawings

3 EXECUTION

3.1 PREPARATION

Weed eradication

Herbicide: Herbicides must be currently registered for the treatment of weeds by the Australian Pesticides and Veterinary Medicines Authority (APVMA). Eradicate weeds using environmentally acceptable methods, such as a non-residual glyphosate herbicide in any of its registered formulae, at the recommended maximum rate. Repeat after two weeks. Ensure no spraying near water catchment area that may cause environmental concerns or permit any of the herbicide to enter the water . Spraying must not be undertaken on windy days or if rain is likely to follow within 12 hours.

Spraying must be undertaken in a manner and at times to ensure no harm to adjoining residents and users in surrounding areas.

Prior to spraying operations, provide a detailed proposal for spraying operations including work method, timing and measures to protect building occupants and the general public from potential adverse effects of spraying. Due to the chemical sensitivity of the occupants (i.e. children) and the increased risk of ingestion of plants material based on intended end user group of students, spraying operations must not be carried out without the prior written approval from the Authorised Person.

Provide temporary warning signs to alert users.

Areas sprayed with herbicide must remain undisturbed for a minimum period of two weeks or such longer period as is recommended by the herbicide manufacturer. Manual weeding: Regularly remove, by hand, rubbish and weed growth throughout grassed, planted and mulched areas. Remove weed growth from an area 750 mm diameter around the base of the trees in grassed areas. Continue eradication throughout the course of the works and during the planting establishment period.

Vegetative spoil

Remove vegetative spoil from site. Do not burn.

3.2 SUBSOIL

Ripping

General: Rip parallel to the final contours wherever possible. Do not rip when the subsoil is wet or plastic. Do not rip within the dripline of trees and shrubs to be retained.

Ripping depths: Rip the subsoil to the following typical depths:

- Subsoil: 150
- Compacted subsoil: 300 mm.
- Heavily compacted clay subsoil: 450 mm.

Planting beds

Excavated: Excavate to bring the subsoil to at least 300 mm below finished design levels. Shape the subsoil to fall to subsoil drains where applicable. Break up the subsoil to a further depth of 100 mm.

Unexcavated: Remove weeds, roots, builder's rubbish and other debris. Bring the planting bed to 75 mm below finished design levels.

Cultivation

Cultivate to the depths as shown on the drawings.

Services and roots: Do not disturb services or tree roots; if necessary cultivate these areas by hand.

Cultivation: Thoroughly mix in materials required to be incorporated into the subsoil. Cultivate manually within 300 mm of existing paths or structures to be retained. Remove stones exceeding 25 mm, clods of earth exceeding 50 mm, and weeds, rubbish or other deleterious material brought to the surface during cultivation. Trim the surface to design levels after cultivation.

Additives

General: Apply additives after ripping or cultivation and incorporate into the upper 100 mm layer of the subsoil.

Gypsum: Incorporate at the rate of 0.25 kg/m².

Placing topsoil

General: Spread the topsoil on the prepared subsoil and grade evenly, making the necessary allowances to permit the following:

- Required finished levels and contours may be achieved after light compaction.
- Grassed areas may be finished flush with adjacent hard surfaces such as kerbs, paths and mowing strips.

Spreading: On steep batters, ensure there is no danger of batter disturbance.

Finishing: Feather edges into adjoining undisturbed ground.

Consolidation

General: Compact lightly and uniformly in 150 mm layers. Avoid differential subsidence and excess compaction and produce a finished topsoil surface which has the following characteristics:

- Finished to design levels.
- Smooth and free from stones or lumps of soil.
- Graded to drain freely, without ponding, to catchment points.
- Graded evenly into adjoining ground surfaces.
- Ready for planting.

Topsoil depths

General: unless shown otherwise on the drawings, spread topsoil to the following typical depths:

- Excavated mass planting areas: 250 mm.
- Turfed areas generally: 200 mm incorporating 30mm turf underlay.

- Embankments:
 - . Mass planted surfaces: 300 mm.
- Top dressing of turf areas: 10 mm to total surface area.

Surplus topsoil

General: Spread surplus topsoil on designated areas on site, if any; otherwise, dispose off site.

3.3 EDGING

Timber Edging (TE)

Set edgings flush with adjoining surfaces to define planting, grass areas or both. Fix to pegs with galvanized nails, two per fixing. Drive pegs into the ground at 1200mm centres on the planting side of the edging and on both sides of joints between boards, with peg tops 15mm below the top of the edging. Min edging Length 1200mm.

Steel Edging (SE)

Weld rods and equal angles to galvanised edge at junctions and at max 800 mm centres, with peg angle tops finishing 30 mm below the top of the edging, unless shown otherwise on the drawings. Welding to be in accordance with AS 1554.1. Edging and rods equal angles to be hot dip galvanised. Galvanising to be HDG300 as described in AS 4680. Galvanized steel edge shall be laid to accurate curved or straight lines to be approved on site. Deviation from straight line both vertically and horizontally shall not exceed 5mm when measured with a 3m straight edge. Curves must be continuous and free of bumps or corners.

3.4 STRUCTURAL SOIL (SS)

Transport and Placement:

Structural soil materials are prone to segregation during handling at the source and during transport. Particular care must be taken to ensure that all structural soil is thoroughly homogenized prior to placement and compaction.

Structural Soil shall be a uniformly blended mixture of aggregate and filler soil. Ensure that the mixture remains sufficiently moist at all times during mixing, transport, storage and placement to prevent particle segregation. If particle segregation occurs the blend shall be remixed prior to placement to achieve a homogenous blend of all components.

All subsurface drainage systems should be operational prior to installation of the Structural Soil. Subsoil drainage shall be backfilled using 5/7mm Crushed Basalt or Crushed River Gravel.

Install Structural Soil in 150mm lifts and compact each lift. Compact materials to not less than 95% maximum density (standard) with a non-vibrating roller. In confined spaces, a vibrating plate may be used but ensure that particle segregation does not occur.

Protect the installed Structural Soil from contamination by toxic materials, trash, debris and water containing cement, clay, silt or other foreign materials that will alter the particle size distribution of the mix.

Installation of trees:

The following methods of installing trees in Structural Soil have been successfully employed and are acceptable:

1. Mark out location of tree pits. Install Structural Soil in 150mm lifts with filling sand wherever a tree root ball will sit. Following compaction, excavate the filling sand to create the tree pit. Install concrete edge restraint and root ball per detail and backfill below 300mm with inorganic free draining sandy material (Soil Mix Type B as specified above) and above 300mm with a good quality Organic Planting Mix (Soil Mix Type A as specified above).
2. Mark out location of tree pits. Install Structural Soil in 150mm lifts around a prefabricated steel box that acts as a formwork for the tree pits. Once Structural Soil has been compacted to the desired level, the steel formwork is lifted out leaving the tree pit. Install root ball and backfill as above.

Clean-up

Upon completion of the Structural Soil installation, clean areas within the contract limits.

Remove all excess fills, soils and stockpiles and legally dispose of all waste materials, trash and debris. Remove all tools and equipment and provide a clean, clear site. Sweep, do not wash, all paving and other exposed surfaces of dirt and mud until the paving has been installed over the

Structural Soil material. Do no washing until the finished materials covering the Structural Soil are in place.

3.5 TURFING

Supply

Elapsed time: Deliver the turf within 24 hours of cutting, and lay it within 36 hours of cutting. Prevent it from drying out between cutting and laying.

Laying

General: Lay the turf in the following manner:

- In stretcher pattern with the joints staggered and close butted.
- Parallel with the long sides of level areas, and with contours on slopes.
- To finish flush, after tamping, with adjacent finished surfaces of ground, paving edging, or grass seeded areas.

Strip turf laying: Close butt all joints. Apply a layer of top dressing between the strips of turf. Finish with an even surface.

Tamping

General: Lightly tamp to an even surface immediately after laying. Do not use a roller.

Pegging

Stabilising: On steep slopes and in turfed swales peg the turf to prevent downslope movement. Remove the pegs when the turf is established.

Fertilising

General: Mix and place the fertiliser as per the manufacturers recommendation. Apply lawn fertiliser at the completion of the first and last mowings, and at other times as required to maintain healthy grass cover.

Watering

General: Water immediately after laying until the topsoil is moistened to its full depth. Continue watering to maintain moisture to this depth.

Mowing

Height: Mow to maintain the grass height within the required range (30-50mm). Do not remove more than one third of the grass height at any one time. Carry out the last mowing within 7 days before the end of the planting establishment period. Remove grass clippings from the site after each mowing.

Turfing

General: Lay turfing as specified.

Maintenance

General: Maintain turfed areas to attain a dense continuous sward of healthy grass over the whole turfed area, evenly green and of a consistent height.

Failed turf: Lift failed turf and relay with new turf.

Levels: Where levels have deviated from the design levels after placing and watering, lift turf and regrade topsoil to achieve design levels.

Top dressing

General: When the turf is established mow, remove cuttings and lightly top dress to a depth of 10 mm over the total surface area of grass. Rub the dressing well into the joints and correct any unevenness in the turf surface.

3.6 PLANTING

Individual plantings in paved/grassed areas

Method: Excavate a hole to twice the diameter of the root ball and at least 100 mm deeper than the root ball. Break up the base of the hole to a further depth of 100 mm, and loosen compacted sides of the hole to prevent confinement of root growth.

Locations

General: If it appears necessary to vary plant locations and spacings to avoid service lines, or to cover the area uniformly, or for other reasons, give notice.

Planting conditions

Weather: Do not plant in unsuitable weather conditions such as extreme heat, cold, wind or rain. In other than sandy soils, suspend excavation when the soil is wet, or during frost periods.

Watering

Timing: Thoroughly water the plants before planting, immediately after planting, and as required to maintain growth rates free of stress.

Placing

Method: Remove the plant from the container with minimum disturbance to the root ball, ensure that the root ball is moist and place it in its final position, in the centre of the hole and plumb, and with the top soil level of the plant root ball level with the finished surface of the surrounding soil.

Fertilising - plants

Pellets: In planting beds and individual plantings, place fertiliser pellets around the plants at the time of planting.

Application rate (kg/ha): As per manufacturers recommended rates.

Backfilling

General: Backfill with topsoil mixture. Lightly tamp and water to eliminate air pockets. Ensure that topsoil is not placed over the top of the root ball, so that the plant stem remains the same height above ground as it was in the container.

Watering basins for plants in turf

Method: For individual tree plantings in turf other than turf swales, construct a watering basin around the base of each individual plant, consisting of a raised ring of soil capable of holding at least 10 L.

3.7 MULCHING**Placing mulch**

General: Place mulch to the required depth, clear of plant stems, and rake to an even surface flush with the surrounding finished levels, unless shown otherwise on the drawings. Spread mulch so that after settling, it is smooth and evenly graded between design surface levels sloped towards the base of plant stems in beds, and not closer to the stem than 50 mm in the case of gravel mulch .

In mass planted areas: Place after the preparation of the planting bed but before planting and other work.

In individual plants in grass: Place after the preparation of the planting bed, planting and other work.

Extent: To surrounds of plants planted in turfed areas, provide mulch to 1500 mm diameter, unless shown otherwise on the drawings.

Depths: Spread organic mulch to a depth of 75 mm, and gravel mulch to a depth of 50 mm.

Mulching schedule

Mulch key	Location	Mulch type	Depth	Stabilisation method
MP	Mass Planting Beds - refer drawings	Organic mulch	75mm	N/A
MO	Mulch only – around existing and proposed trees		75mm	N/A
TD	Timber Deck	Gravel Mulch	50mm	N/A

3.8 SPRAYING**Notice**

General: Immediately give notice of evidence of insect attack or disease amongst plant material.

Prior to spraying, provide a detailed proposal for spraying operations including work method, timing and measures to protect the general public from potential adverse effects of spraying. Due to the chemical sensitivity of the occupants (i.e. children) and the increased risk of ingestion of plants material based on intended end user group, spraying operations must not be carried out without the prior written approval from the Authorised Person.

Provide temporary warning signs to alert users.

Spraying

Product: Where required and approved in writing by the authorised person, spray with insecticide, fungicide or both.

3.9 RUBBER SOFTFALL (SF)

General: All components shall be mixed ratio on site to ensure the final product is a homogeneous matrix with consistent physical properties throughout the applied depth. The resultant surface shall be seamless, one piece application for the length and width of the specified site. The resultant surface shall be firmly adhered to the subgrade during application. (This can only be achieved if the job is less than approx 150m² per day)

Polyurethane must also be painted to any edges the newly laid rubber will be joining up to. We recommend key joining rubber as this joining technique strengthens the join and eliminates possible gapping which may occur in a straight edge join.

Finished Surface

Variation in surface undulations to comply with the requirements of AS1428.

Scope of Works

Installation of Rubber Softfall (SF) is to include

- Supply and installation of EPDM wetpour wear layer.
- Rubber base layer to softfall areas (SF) under all playground equipment as per playground manufacturer's directive, to comply with all local requirements and standards.

Site preparation and installation

All materials to be free from organic or deleterious matter.

Excavate and remove spoil to a depth as required to accommodate 15mm TPV colour polymer wear layer, recycled rubber soft-fall base (to required depth - softfall areas only) and 100mm of compacted road base.

The road base material after application shall be compacted mechanically to a depth of 100mm and a relative dry density of 98% minimum. The resultant base shall be smooth and contain no variation in height in excess of 5 – 10mm. All materials shall be either ground blue metal dust, crushed limestone, crushed quartz (5mm), fine road base (7mm), fine recycled road base (7 mm).

The subgrade material shall be cement stabilised with a maximum of 4% normal Portland cement added to the quarry material. The material shall be mixed thoroughly prior to application.

Where recycled rubber wetpour surfaces abut steel edging the top surface of the edging is to be covered with a bullnose edge, minimum depth 12 –15mm thickness.

All joins where colour changes occur in the EPDM layer shall be cut at a 45 degree angle to create an overlap in the adjoining material.

Rubber Base Layer

The base layer in softfall areas is to be laid as a single monolithic surface with minimal joins in the same way as the top layer. Once rubber base layer has fully cured, prime the surface in accordance with the EPDM manufacturer's recommendations. When installing the rubber base layer, the following must be observed:

- Rubber is to be applied at recommended thicknesses to achieve desired fall height requirements
- Surface must be smooth and free of loose rubber

3.10 THERMOPLASTIC LINEMARKING (LM)

Clean and prepare the surface. Heat the area to be marked with a blow torch/burner to eliminate moisture trapped in the 'pores'. Heating also helps to burn off oil and grease films on the road surfaces. Use a suitable size burner. Burner head of 75mm diameter would be the minimum to give an even distribution of heat.

Remove the Ennis Preformed Thermoplastic roadmarking material from its protective package and place it in position on the road surface. Large markings may be made up of several pieces.

Apply heat evenly until thermoplastic begins to bubble. Softening the thermoplastic is not enough, the bitumen underneath must melt to allow proper bonding to take place. The marking should be heated to melting point (150°C to 180°C) and care taken not to overheat it. The correct temperature is easy to assess as the material will bubble and melt sufficiently to bond it permanently in position. The heated

marking cools rapidly and is ready for traffic within minutes. Care should be taken not to touch the material whilst it is hot as serious burns can occur from hot thermoplastic materials.

As per Clause 5 of RTA Pavement Marking Specification R141 – “0.4 to 0.7mm white crushed quartz approved equivalent shall be uniformly surface applied to transverse lines and other markings while material is still molten”. This provides initial skid resistance.

3.11 PLAYING SURFACE (PS)

The installation is comprised of fortified Plexipave, acrylic resurfaces and plexicolour line paint, over asphaltic concrete paving.

Pavement cleaning and preparation, and bonding and application of the Plexipave surface to comply with manufacturer’s recommendations

3.12 SYNTHETIC TURF (ST)

Prepare the sub-base – refer drawings. For sub-surface drainage refer civil hydraulic drawings.

Underlay Installation

Setting out: to determine the most advantageous position of the first continuous row of Shockpads include all of the following considerations:

- Ensure that the cut edges around the entire perimeter of the installation will be approximately equal in size.
- The first-continuous-row of tiles should be run through the area that requires the least cutting around posts and other structures.
- A popular starting position is to run down the length of any fixed straight edging that the job may finish against such as a path edge.

Installation: Aero Shockpads should be installed in a runner bond (brick) pattern, to provide greater locking strength. The second run of continuous tiles should be run in the same parallel direction to the first row but this row of tiles should be offset started approximately halfway down the adjacent tile. This will give the tile installation a brick pattern effect.

Lay all full tiles up to the job perimeter or equipment poles and never continue a row of tiles past a pole without first installing the cut-in-tile. Continue running the Aero Shockpads down adjacent and offset to the last installed row of tiles until the entire area is covered.

Install Cut Tiles at the Edges of the Installation or at Posts & Play Equipment.

Marking Tiles for Cutting: Install the shockpad in its desired position overlaying the perimeter of the installation. Where the shockpad passes the perimeter, mark with a suitable marking chalk on both edges where it crosses. If the to-be-cut tile needs a straight cut, mark from one side of the tile to the other using a straight edge between your original markings. If the cut is to be curved, take additional measurements at 200mm intervals along the perimeter until a curve can be accurately marked.

Cutting shockpads: Straight lines or curved perimeter cutting. Use a fine tooth timber circular saw (handyman type) to rip through shockpads. To set up for cutting, adjust the blade depth of the saw to 5mm less than then shockpad thickness. Simply rip the saw through the tile in a fast continuous motion (over cutting the mark where necessary for a Force Reduction Tight Fit - see important notes in step 13). The shockpad can be positioned and cut anywhere, i.e., on the grass, other shockpads or on a cutting table as long as the saw never protrudes the depth of the shockpad being cut.

Cutting around poles or objects: Once the tile is marked for cutting, experienced applicators simply tear away by hand the desired pole size and saw or tear to the tiles edge. Optionally a serrated jigsaw or Stanley knife can be used for more accurate cutting.

Fill in's: When only small slivers or chunks of shock pad material is needed (assuming a shockpad portion is not capable of being installed) simply crumb up by hand off cuts of shockpads and press firmly into and around the area to be filled. Alternatively, a mixed batch of 4 mesh buffings can be troweled in, which is also good for ramping down when necessary.

Completion: Compensate for expansion & contraction of Aero Shockpads via the Force Reduction Tight Fit method. Shockpads like any other rubber product will expand and contract with temperature and atmospheric moisture changes. Tiles exposed to the sun (warmer) will be larger than tiles in the shade (cooler). Tiles laid in the morning at say 15°C will be smaller (cooler) than the same tiles laid in the afternoon at say 30°C.

To minimise the effect of tile contraction in the evening after installation in warm conditions ensure each Aero Shockpad tile is forced hard into each adjacent tile in both directions (without leaving crusher dust between the joins). This can be achieved by force reducing all tile rows by pushing from one end on the last tile to allow for the last tile to then be cut oversize to its actual requirements.

Any contraction of the Aero Shockpads in the cool night temperatures will be compensated by the memory expansion of each tile installed under a Force Reduction Tight Fit.

Adhesive Seaming: Adhesive Seaming of shockpad joins is only necessary where the Force Reduction Tight Fit method was not possible and/or as extra security to ensure gaps between each shockpad don't occur during contraction when an unfinished job goes into a cool night temperature.

To seam the shockpads with adhesive use Sikaflex 221 polyurethane adhesive and the appropriate dispensing gun. A bead of Sika approximately 8mm in diameter should be run down all tile joins.

Generally if two applicators are available one should be the designated applicator of the adhesive and the other the designated spreader. Spread the adhesive by using a 100mm wide scraper tool to follow behind and spread and force the adhesive into the joins and its porous rubber sanctions. All joins and cuts, vertical and horizontal should be adhesive seamed when performing this application. Dispensing tips should be cut at approximately 8mm diameter or greater. Approximately 18 to 20 lineal join metres can be seamed per adhesive sausage. Allow approximately 1 hour for curing in favourable conditions. Once the adhesive has cured satisfactorily the Aero shockpads are ready to have a top layer wetpour rubber surface applied.

Synthetic Turf Installation

Preparation: Using a blower blow any loose contaminates from the surface including loose rubber, leaves and similar debris. Ensure are clean and free of solid protrusions that may penetrate through the synthetic turf.

Edge fixing: To concrete edges: glue all joins and edges to the faces of adjoining concrete paths and edges using a UV stabilised outdoor glue that will attach to concrete and galvanised steel edging, equal or equivalent to Sikaflex 521 UV. Apply glue to sides of concrete paths, kerbs and galvanised edges as per manufacturer's recommendation. Ensure all pile edges are well adhered to adjacent edges on completion.

If required, use a combination of glue and nail spikes may be used to ensure the turf is fixed firmly, will not dislodge or lift to form a tripping hazard.

"Topdressing": securely hold down the turf by brushing an even layer of 15-20mm silica sand (15kg/m²) into the turf, as recommended by the manufacturer.

Warranty: provide an installer's warranty guaranteeing the performance and adhesion of the turf installation for a minimum of 36 months.

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3.13 FIXING

Erection

Line and level: Erect posts or poles vertically. Erect furniture items level. Provide a level area around benches and seats where installed on slopes.

Add any particular installation requirements here. The installation of all proprietary items to the manufacturer's instructions is noted in *General requirements*

3.14 COMPLETION

Product certification

Certification: Submit the supplier's written statement certifying that plants are true to the required species and type, and are free from diseases, pests and weeds.

Maintenance manual (softworks)

General: Submit recommendations for maintenance of plants.

Maintenance manual (furniture and fixtures)

General: Submit the manufacturers' data as follows:

- Recommendations for service use, care and maintenance.
- List of manufacturers and suppliers of replacement parts.

Cleaning

Temporary fences: Remove temporary protective fences at the end of the planting establishment period.

Warranty

Parties: Supplier(s) to the principal.

Form: All the plants supplied under these works are true-to-species and type, and free of disease, fungal infection and/or any other impediment to their future growth and that they have been fully acclimatised for the conditions of the site.

Submission of warranty: At the time of each delivery.

4 ESTABLISHMENT

4.1 GENERAL**Responsibilities**

Plant establishment: Maintain the contract area during the plant establishment period.

Plant establishment period: The period between the date of practical completion and the date of final completion.

Reporting

Monthly report: Submit regular reports by the last Friday of each month:

- Of the general status of works.
- Include soil test results as required for the fertilising programs.
- Plant replacement requirements.

Incident reports: Report immediately verbally and confirmed in writing any disturbance or incidence affecting or likely to affect the day to day scheduling of works.

Disruption of works by others

Other contractors: Make arrangements to work around the disturbance.

4.2 TURF**Mowing and trimming**

Height: Consistent with the growth habit of the turf variety and maintained at 25 mm to 40 mm throughout the year.

Program: Weekly during the mowing season, November to March, and at bi-weekly intervals during April to October. Do not mow under wet conditions.

Raking: Once every month before mowing, during the mowing season, with a flexible rake. On alternate mowings, adopt a north-south and east-west pattern.

Edges: At the same time as mowing, trim lawn edges to plant beds, pathways, base of trees and other obstacles. Ensure trees and shrubs are not damaged.

Clippings distribution: remove from site as directed

Topdressing

Topdressing material for established lawns: Weed free imported sandy loam topsoil to a depth of 10 mm.

Program: The spring following establishment.

Topdressing material for remediation of depressions or irregularities: Apply coarse or medium soil to AS 4419 suitable for application to turf or grass seeded areas.

Fertilising

Fertilising: Apply lawn fertiliser at the completion of the first and last mowings of the plant establishment period, and at other times as required to maintain healthy grass cover.

4.3 PLANTING WORKS**Planting**

Planting: Ensure the general appearance and presentation of the landscape and the quality of plant material at date of practical completion is maintained for the full planting establishment period.

Existing plant material: Maintain existing planting and grass within the landscape contract area as specified for the corresponding classifications of new grassland or planting.

Replacements: Replace failed, dead and/or damaged plants at minimum 3 week intervals as necessary throughout the full plant establishment period.

Pruning

General: Prune to the **Pruning schedule**.

Pruning: To conform to AS 4373. Major tree pruning or lopping should be carried out by a suitably qualified tree surgeon/arborist.

Pruning schedule

Plant species	Shape/description	Critical issues	Pruning date
Native grasses	Tufted clumping grasses	Cut foliage to encourage new growth. Maintain min 200 height following pruning.	Late August or in early spring once nights are frost free
Flowering plants	Flowering shrubs and groundcovers	Prune to shape after flowering to encourage new growth.	varies
Flowering clumping plants	Ornamental groundcovers	Prune to remove spent flowers	varies
Trees	Tree	Prune off superfluous branches from the trunk to encourage development of a single clean trunk true to species. Eliminate diseased or damaged growth, avoid interbranch contact and thin out crowns in a natural manner	Varies: after flowering

Fertilising

Soil tests: Take samples from both planting beds and lawn areas and conduct tests.

Fertilising: Base the fertilisation program on the soil testing results and predominant species and their specific growing/ nutrient requirements. Fertilise trees once every two years except where specific problems exist. Generally apply all fertiliser at recommended rates. Alternatively apply 12 month slow release fertiliser (such as Nutricote) at the manufacturer's recommended rate. Apply all purpose fertiliser to shrubs annually in two bands and cultivated into the soil 100 mm deep.

Season: Fertilise shrubs and trees in September and March according to their seasonal growth requirement.

Insect and disease control

Responsibility for insect and disease control: the landscape contractor

Period for treatment: Until the problem has been eliminated.

Chemical spray: Apply outside of normal working hours. Refer section Spraying.

Weeding

Weeds: Unwanted plants and grasses considered invasive to the locality.

Program:

- Lawns: Quarterly and as determined by the relationship of the general lawn condition and weed growth. Lawns are to be weed free when observed at monthly intervals
- Trees and shrubs: As required for planted, paved and mulched areas to be weed free when observed at bi-weekly intervals.

Method: Clear and keep clear vigorous ground covers 200 mm from the base of any shrub or tree:

- Small areas: By hand.
- Large areas: Proprietary herbicides. Refer section Spraying.

Herbicide application: Refer 3. Preparation and 3.9 Spraying for precautions about herbicide use.

Avoid windy days or if rain is likely to follow within 12 hours and apply:

- To the manufacturer's instructions and material data and safety sheets.

- When the weather is humid with moderate temperatures and maximum sunlight.
- When the ground has the recommended soil moisture level.

Rubbish removal

Rubbish: Remove loose rubbish such as bottles, papers, and cigarette butts from the site. Execute this work regularly so that all areas are free from rubbish when observed at bi-weekly intervals.

Mulched surfaces

Inspection: Monthly to determine mulch requirements.

Mulch depth: Maintain specified depths Re mulching: Maintain the original ground levels around the base of plants.

4.4 WATERING

Establishment

Extent: All irrigated and non-irrigated plantings, lawn areas and tree plantings.

Water quality:

- pH between 5.5 and 7.5.
- Total soluble salts less than 1000 mg/litre.
- No substances that would be toxic to plant growth.

Watering program: Minimum three complete waterings soaking to a depth of 150 mm at fortnightly intervals for the first 6 weeks of plant establishment irrespective of natural rainfall.

Water restrictions: Coordinate the water supply and confirm the watering regime against federal, state and territory government legislation and restrictions at the time.

4.5 COMPLIANCE

Criteria

Generally: Plant establishment shall be deemed complete, subject to the following:

- Repairs to planting media completed.
- Ground surfaces are covered with the specified treatment to the specified depths.
- Pests, disease, or nutrient deficiencies or toxicities are not evident.
- Organic and gravel mulched surfaces have been maintained in a weed free and tidy condition and to the specified depth.
- Vegetation is established and well formed.
- Plants have healthy root systems that have penetrated into the surrounding, undisturbed ground and not able to be lifted out of its planting hole.
- Vegetation is not restricting essential sight lines and signage.
- All hard landscape works have been installed and are operating as specified.
- Collection and removal of litter.
- Removal of mulch from drainage and access areas.
- All non-conformance reports and defects notifications have been closed out.

Plant establishment compliance table

Plant material	Acceptable failure per area	Acceptable concentration of failure
Tube stock	< 10%	< 15% in any given location
140 mm	< 5%	< 15% in any given location
300 mm or larger	< Nil%	Nil %
Turf	< 5%	Nil %

5 SELECTIONS

5.1 PLANT MATERIAL

Plant material supply schedule

Botanical name	Common name	Size	Quantity (+10%)
Refer drawings			

Turfing schedule

Property	Turf code
	TF
Species or variety	Stenotaphrum secundatum 'B12'
Minimum thickness	50mm
Turf roll size (mm)	1800mm (Maxi roll)
Mowing height (mm)	30-50mm

END OF SECTION – 0250 Landscape – gardening


DRAFT

Existing Trees Schedule

Refer to General Arrangement Drawings for tree locations

Tree No.	Genus	Retain	Remove	Not in scope	Tree Protection Zone (radius mm)	Proposed Surface Material (Refer Finishes Plans)	Arborists Comments/Actions
T1	Liquidambar styraciflua. Liquidambar	x			4000	Mulch/Garden Bed	Tree has recently been removed
T2	Ceratonia siliqua Carob Bean Tree	x			5000	Mulch/Garden Bed	Suckers from base mentioned in previous (1994) report have continued to develop. Selectively prune competing or poorly attached/decayed suckers.
T3	Magnolia grandiflora Bull Bay Magnolia	x			4000	Mulch/Garden Bed	Several torn limbs. Minor stem decay in scaffold branches. Reaction wood appears sound.
T4	Phoenix canariensis Canary Island Date Palm	x			3000	Mulch/Garden Bed	Young specimen located in garden bed area. Thorns on falling fronds potentially hazardous in a school environment.
T5	Viburnum tinus Viburnum	x			4000	Mulch/Garden Bed	Multiple suckering stems. May be considered to be part of heritage plantings, and therefore for retention despite low arboricultural amenity.
T6	Laregestroemia indica Crepe Myrtle	x			4000	Mulch/Garden Bed	Previously suppressed by now removed T1. Health and condition likely to improve if retained. Selective removal of competing stems recommended.
T7	Celtis australis Hackberry		x		4000	Mulch/Garden Bed	Growing at base of wall, level change noted between soil level and external path. Limbs extend over road. Future infrastructure conflict possible. REMOVED as per comments 09/04/2016.
T8	Eucalyptus sp Gum Tree		x		3000	Mulch/Garden Bed	Young tree of poor stock or planting/maintenance. Lost main leader. Inclusion at 4m in height. REMOVED as per comments 09/04/2016.
T9	Jacaranda mimosifolia. Jacaranda		x		3000	Mulch/Garden Bed	Tree appears to be terminal decline. Dead limbs extend over road and site access. Decline has been managed through pruning. Removal recommended.
T10	Eucalyptus sp Gum Tree			x	3000	Mulch/Garden Bed	Young tree of poor stock or planting/maintenance. Inclusion at 5m in height. Not in Extent of Works.
T11	Lophostemon confertus			x	2000	Mulch/Garden Bed	Young specimen. Lower limbs lopped (for mowing access?) 15-20m possible future height suggests intended eventual replacment for adjacent Camphor Laurels. Not in Extent of Works.
T12	Cinnamomum camphora Camphor Laurel	x			12000	Mulch/Garden Bed	Each tree one of a pair of mature specimens in early senescence stage. Substantial limbs previously removed. Ongoing management required to reduce risk and manage probable future tree declines. Aerial inspection recommended to assess extent of cavities.
T13	Cinnamomum camphora Camphor Laurel	x					
T14	Absent	-	-	-	-	-	-
T15	Magnolia grandiflora Bull Bay Magnolia	x			2000	Mulch/Garden Bed	Young specimen planted in garden bed. Remove vine from trunk.
T16	Melia azedarach White Cedar		x		3000	Outside scope (Protect Roots)	Likely to have self-sown. Located adjacent to stowm water drain inlet.
T17	Schinus areira Peppercorn Tree	x			6000	Mulch/Garden Bed	Extensive minor deadwood - may be due to water stress caused by root damage and limited soil volume. Possible stress fracture in lower limb extending over car parking area. Inspect and prune as required.
T18	Lophostemon confertus Brush Box			x	6000	Outside scope (Protect Roots)	Minor trunk damage, rection wood good, no decay evident
T19	Cinnamomum camphora Camphor Laurel			x	8000	Outside scope (Protect Roots)	Located on adjacent property. Extensive
T20	Jacaranda mimosifolia. Jacaranda		x		3000	Remove root system	Lower limb previously pruned at 1m in height, callous wood sound.

Tree No.	Genus	Retain	Remove	Not in scope	Tree Protection Zone (radius mm)	Proposed Surface Material (Refer Finishes Plans)	Arborists Comments/Actions
T21	Schinus areira Peppercorn Tree		x		-	Remove root system	Extensive minor deadwood. Tree appears to be in terminal decline. Ivy growing on lower trunk.
T22	Jacaranda mimosifolia. Jacaranda	x			3000	Permeable surface (Refer Finishes Plans)	Located in confined area adjacent to existing building. Leans towards the North. Basal stability appears good.
T23	Lophostemon confertus Brush Box			x	6000	Outside scope (Protect Roots)	Located on adjacent property. Die back of small limbs in upper canopy.
T24	Celtis australis Hackberry			x	2000	Outside scope (Protect Roots)	Located at top of retaining wall on adjacent property. Self-sown.
T25	Plumeria acutifolia Frangipani		x		2000	Asphalt	Assymetrical canopy. Located adjacent to existing building.
T26	Callistemon sp. Bottlebrush			x	-	Outside scope (Protect Roots)	Retained during recent demolition works.
T27	Cupressus sempervirens Italian Cypress			x	3000	Outside scope (Protect Roots)	Minor trunk damage sustained during recent site works.
T28	Jacaranda mimosifolia. Jacaranda			x	-	Outside scope (Protect Roots)	Growing over footpath. Conflicting limbs. 'Hangers' from previously damaged limbs to be removed.
T29	Cinnamomum camphora Camphor Laurel			x	-	Outside scope (Protect Roots)	Extensive deadwood.
T30	Jacaranda mimosifolia. Jacaranda			x	-	Outside scope (Protect Roots)	Supressed form. Asymmetricla canopy growing towards the West.
T31	Jacaranda mimosifolia. Jacaranda			x	-	Outside scope (Protect Roots)	Lower limbs cracked and damaged.
T32	Jacaranda mimosifolia. Jacaranda			x	-	Outside scope (Protect Roots)	Suckering stump. Recommend removal before stems become large enough to fail.
T33	Callistemon sp. Bottlebrush			x	-	Outside scope (Protect Roots)	Senescent specimen.
T34	Eucalyptus scoperia White Gum			x	-	Outside scope (Protect Roots)	Dead wood in canopy. Species typically does not do well in Sydney.
T35	Citharexylum spinosum Fiddlewood			x	4000	Outside scope (Protect Roots)	Two leaders from close to ground level.
T36	Phoenix canariensis Canary Island Date Palm			x	3000	Outside scope (Protect Roots)	Young specimen located in open area of site. Thorns on falling fronds potentially hazardous in aschool environment. May be considered for transplantingif required.
T37	Jacaranda mimosifolia. Jacaranda			x	8000	Outside scope (Protect Roots)	Mature specimen in corner of site, likely to be in excess of 70yrs of age. Previous limb loss. Aerial inspection may be required depending on taget for potential future failed limbs.
T38	Syncarpia glomulifera Turpentine			x	4000	Outside scope (Protect Roots)	Specimens planted on site boundary. Limb town from lower trunk due to inclusion. New decay evident.
T39	Syncarpia glomulifera Turpentine			x	4000	Outside scope (Protect Roots)	Minor dead wood.
T40	Corymbia maculata Spotted Gum			x	10000	Outside scope (Protect Roots)	Significant Tree. Deadwood throughout canopy.


B FOR PLANNING APPROVAL 60% DRAFT DOCUMENTATION	15.04.2016	MS	GENERAL NOTES 1. Do not scale from this drawing. Use figured dimensions only. 2. Verify all dimensions on site. Refer any discrepancies to the Principal's Representative for resolution before proceeding. 3. If this drawing is unclear, ask for direction from the Principal's Representative. 4. Site check the location of utilities and services prior to the commencement of works. Refer any discrepancies to the Principal's Representative for resolution.	SURVEY RYGATE SURVEYORS 9189 York St Sydney NSW 2000 PH: (02) 9262 6900	ARCHITECTS Tenkin Zulaikha Greer Pty Ltd. 117 Reservoir Street, Surry Hills NSW 2010 PH: (02) 9215 4900	ACCESS CONSULTANTS ENVIRONMENTAL CONSULTANTS	LANDSCAPE ARCHITECT SPACKMAN MOSSOP AND MICHAELS PO Box 880, Darlinghurst NSW 1300 3 Oxford Street, Paddington NSW www.spackmanmossopmichaels.com info@sm2group.com.au TEL: 02 9361 4549 • FAX: 02 9361 4569	CLIENT  Education Public Schools	DRAWING STATUS Not For Construction DESIGNED AG 15057 DRAWN AS/AG JAN 2016 CHECKED MS SCALE NTS SHEET SIZE A1 SIZE ON ORIGINAL ORIGINAL IN COLOUR	PROJECT Old King's School Landscape WORKS PROJECT ADDRESS 24A O'Connell St, Parramatta NSW 2150 DRAWING EXISTING TREE SCHEDULE 1 OF 3 DRAWING NUMBER L.411 ISSUE B
	29.02.2016	MS								
REVISION HISTORY			© This drawing is Copyright and may not be used, reproduced or copied wholly or in part without written permission from Spackman Mossop Michaels Pty Ltd. This drawing may only be used for the express purpose and project for which it has been created and delivered.	DIMENSION STANDARD Unless noted otherwise: - all levels are shown in metres - all dimensions are computer generated to 1mm.						

Existing Trees Schedule

Refer to General Arrangement Drawings for tree locations

Tree No.	Genus	Retain	Remove	Not in scope	Tree Protection Zone (radius mm)	Proposed Surface Material (Refer Finishes Plans)	Arborists Comments/Actions
T41	Corymbia maculata Spotted Gum			x	10000	Outside scope (Protect Roots)	Habitat Tree - Nesting hollows forming in old limbs. Aerial inspection recommended.
T42	Syncarpia glomulifera Turpentine			x	3000	Outside scope (Protect Roots)	Suppressed by adjacent trees.
T43	Syncarpia glomulifera Turpentine			x	3000	Outside scope (Protect Roots)	Suppressed by adjacent trees.
T44	Syncarpia glomulifera Turpentine			x	4000	Outside scope (Protect Roots)	Minor deadwood.
T45	Callistemon sp. Bottlebrush			x	-	Outside scope (Protect Roots)	Supressed by T44.
T46	Washingtonia filifera Cotton Palm	x			3000	Mulch/Garden Bed	Growing at base of brick fence. Future infrastructure conflict possible. Contributes to streetscape.
T47	Jacaranda mimosifolia. Jacaranda	x			6000	Permeable surface (Refer Finishes Plans)	Leans towards the North. Surface roots evident. Minor town limbs. Suggest pruning of watershoot / conflicting branches.
T48	Washingtonia filifera Cotton Palm	x			4000	Permeable surface (Refer Finishes Plans)	Service pit and concrete adjacent to root plate. Past trunk injuries appear stable.
T49	Stenocarpus sinuatus Firewheel Tree	x			4000	In podium seating / decking	Present canopy formed from basal suckers. Suggest thinning to strongest leaders and check attachment.
T50	Magnolia sp Magnolia		x		-	Within garden bed	Tree is now dead. Remove as part of garden maintenance.
T51	Cupressus torulosa Bhutan Cypress		x		4000	Within garden bed	Basal Lean. Root plate has lifted in distant past, but runk has straightened over many years and roots show no signs of further movement.
T52	Cupressus torulosa Bhutan Cypress		x		4000	Within garden bed	Lean - recent compared to T51. Lower limbs pruned away from building. Previously lopped at 2m in height.
T53	Cupressus torulosa Bhutan Cypress		x		4000	1500 x 1550	Asymmetrical caopy due to suppression and competition from adjacent trees. Regrown from previous pruning at 2-3m in height.
T54	Cupressus torulosa Bhutan Cypress		x		4000	Within garden bed	Asymmetrical caopy due to suppression and competition from adjacent trees. Regrown from previous pruning at 2-3m in height.
T55	Cupressus torulosa Bhutan Cypress		x		4000	1700 x 5500	Co-dominant canopy form. Two main leaders at 3m in height.
T56	Jacaranda mimosifolia. Jacaranda		x		6000	1500 x 1400	Lean to North due to suppression by adjacent trees. Bow in lower trunk and wood growth optimisation apparetn.
T57	Callistemon sp. Bottlebrush		x		3000	1400 x 1400	Two leaders at base.
T58	Callistemon sp. Bottlebrush		x		3000	1400 x 1400	Basal bark inclusion
T59	Washingtonia filifera Cotton Palm		x		2000	1400 x 1400	Probable self-sown specimen.
T60	Platanus orientalis Plane Tree	x			10000	1400 x 1400	Probably the healthiest of the three large plans on the West side of the site. Basal suckers, minor girdling roots, infrastructure conflict. Bark injury at 2m in height. Lopped around 9m in height in distant past. Aerial inspection recommended due to location near road.

Tree No.	Genus	Retain	Remove	Not in scope	Tree Protection Zone (radius mm)	Proposed Surface Material (Refer Finishes Plans)	Arborists Comments/Actions
T61	Platanus orientalis Plane Tree	x			10000	1400 x 1400	Trunk cavity at 3m in height, callous growth good. Previously lopped limbs appear sound. Aerial inspection recommended due to location near road
T62	Melaleuca quinquenervia	x			4000	1600 x 1700	Surface roots. Suckers from lower trunk. Co-dominate form. Torn limb at 3m adjacent to the current site access.
T63	Melaleuca quinquenervia	x			3000	1600 x 1600	Suppressed by T62 and T72. Minor deadwood. Trunk injury (vehicle?) at 1m in height.
T64	Melaleuca quinquenervia	x			6000	Within garden bed	Lower limb, trunk and basal roots damaged (vehicle) Co-dominant canopy form. Surface roots.
T65	Melaleuca quinquenervia	x			3000	Within garden bed	Suppressed form. Trunk injury.
T66	Melaleuca quinquenervia	x			6000	Within garden bed	Basal root flare and surface roots. Removed as conflicting with carpark.
T67	Melaleuca quinquenervia	x			5000	1800	Suppressed form.
T68	Melaleuca quinquenervia	x			5000	2550	Co-dominant form.
T69	Melaleuca quinquenervia	x			5000	2450	Co-dominant form. Basal root damage near parking area.
T70	Melaleuca quinquenervia		x		4000	1500 x1500	Suppressed by adjacent trees. Minor deadwood.
T71	Melaleuca quinquenervia	x			6000	1500 x 2400	End of row tree. Has broader canopy due to reduced competition.
T72	Platanus orientalis Plane Tree		x		10000	1500 x 2400	Canopy formed from three large leaders at 2m in height. Deadwood and decay evident in multiple locatons. Aerial inspection strongly recommended before decision to retian.
T73	Eucalyptus robusta		x		8000	Within garden bed	Tree now around 25 years old and contributes to the site's arboricultural amenity. 'Hanger' in canopy from old failed limb.
T74	Ceratonia siliqua Carob		x		7000	1500 x 2400	Tree has continued to decline since 1994 report. Trunk extensively decayed Canopy now formed from basal suckers.
T75	Ficus macrophylla Moreton Bay Fig			x	12000	1500 x 2400	Species with large buttress roots. Potential conflict with retaining wall for weir
T76	Populus alba Whie poplar			x	6000	Within garden bed	Trunk injury and die-back. Inspection recommended.
T77	Schinus areira Peppercorn Tree			x	5000	Within garden bed	Trunk cavity, basal suckers. Growing at the top of retaining wall.
T78	Celtis australis Hackberry			x	6000	Within garden bed	Has caused bow in retaining wall.
T79	Grevillea robusta Silky Oak			x	6000	Within garden bed	Co-dominant form. Die back evident in canopy.
T80	Jacaranda mimosifolia. Jacaranda			x	6000	Within garden bed	Minor deadwood.

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	29.02.2016	MS								
REV	DESCRIPTION	DATE	APPROVED							

Existing Trees Schedule

Refer to General Arrangement Drawings for tree locations

Tree No.	Genus	Retain	Remove	Not in scope	Tree Protection Zone (radius mm)	Proposed Surface Material (Refer Finishes Plans)	Arborists Comments/Actions
T81	Populus alba White poplar			x	-	Within garden bed	Approximate locations of trees that appear to have failed at the root plate and been cut back from the pedestrian access path.
T82	Populus alba White poplar			x	-	Within garden bed	
T83	Multiple Species along river			x	-	Within garden bed	Approximately 40 trees and associated shrubs along river. Regroth of weeds and self-sown trees may have amenity in river bank protection but may be augmented or replaced with suitable native species.

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B A	FOR PLANNING APPROVAL 60% DRAFT DOCUMENTATION	15.04.2016 29.02.2016	MS MS
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SURVEY DRAWING DATE GRID

DATUM

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DRAWING STATUS

Not For Construction

DESIGNED AG	SMM PROJECT NO. 15057	NORTH
DRAWN AS/AG	DATE DRAWN JAN 2016	
CHECKED MS	SCALE NTS	
SHEET SIZE A1	SIZE ON ORIGINAL ORIGINAL IN COLOUR	

PROJECT

Old King's School
Landscape WORKS

PROJECT ADDRESS
24A O'Connell St, Parramatta NSW 2150

DRAWING
EXISTING TREE SCHEDULE 3 OF 3

DRAWING NUMBER
L.413

ISSUE
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INDICATIVE PLANT LIST			
<i>Proposed Plants</i>			
Genus	Common Name		
HERITAGE PLANTING			
TREES			
Magnolia soulangeana	Saucer Magnolia		
Pyrus ussuriensis	Manchurian Pear		
Platanus orientalis	Oriental Plane		
SHRUBS			
Alpinia zerumbet Variegata	Variagated Shell Ginger		
Acanthus mollis	Oyster PLant		
Agave attenuata	Century plant		
Asplenium australasicum	Birds Nest fern		
Blechnum gibbum	Dwarf Tree Fern		
Crassula arborescens	Silver Dollar Plant		
Calathea zebrina	The zebra plant		
Doryanthes excelsa	Gynea Lily		
Echium Sp.	Echium		
Alpinia caerulea	Native Ginger		
Euphorbia characias "Wulfenii"	Black Spurge		
Nandina domestica 'Gulf Stream'	Nandina 'Gulf Stream'		
Philodendron 'Xanadu'	Xanadu		
Westringia fruticosa 'Naringa'	Compact Coastal Rosemary		
Plectranthus Blue Spires	Plectranthus		
Limonium Perezii Blue	Perez's sea lavender		
Pittosporum 'Miss Muffet'	Pittosporum 'Miss Muffet'		
Salvia leucantha	Mexican Sage		
Zamia furfuracea	Cardboard palm		
GRASSES & GROUNDCOVERS			
Liriope muscari 'Just Right'	Big Blue Lily Turf		
Ajuga reptans	blue bugle		
NATIVE + FOOD / AGRICULTURE			
TREES			
Podocarpus elatus	Brown Pine		
Elaeocarpus reticulatus	Blueberry ash		
Eucalyptus robusta	Swamp mahogany		
SHRUBS			
Acmena smithii	Common Lilly Pilly		
Banksia spinulosa	Hairpin Banksia		
Banksia robur	Swamp Banksia		
Correa alba	Coastal Correa		
Pimelea ferruginea Pink	Rice flower		
Pimelea white	Rice flower		
Xanthorrhoea	Grass Tree		
GRASSES & GROUNDCOVERS			
Dianella caerulea	Blue Flax Lily		
Crinum pedunculatum	Swamp Lilly		
Festuca glauca	Blue Fescue		
Isolepis nodosa	Knobby club rush		
Lomandra longifolia 'Tanika'	Tanika		
Lomandra Longifolia	Spiny-headed mat rush		
Microlaena stipoides	Weeping Grass		
Pennisetum 'Nafray'	Fountain grasses		
Poa labillardieri	Common Tussock-Grass		
Viola hederacea	Native violet		

HERITAGE PLANTING



Agave attenuata Century plant



Acanthus mollis - Oyster Plant



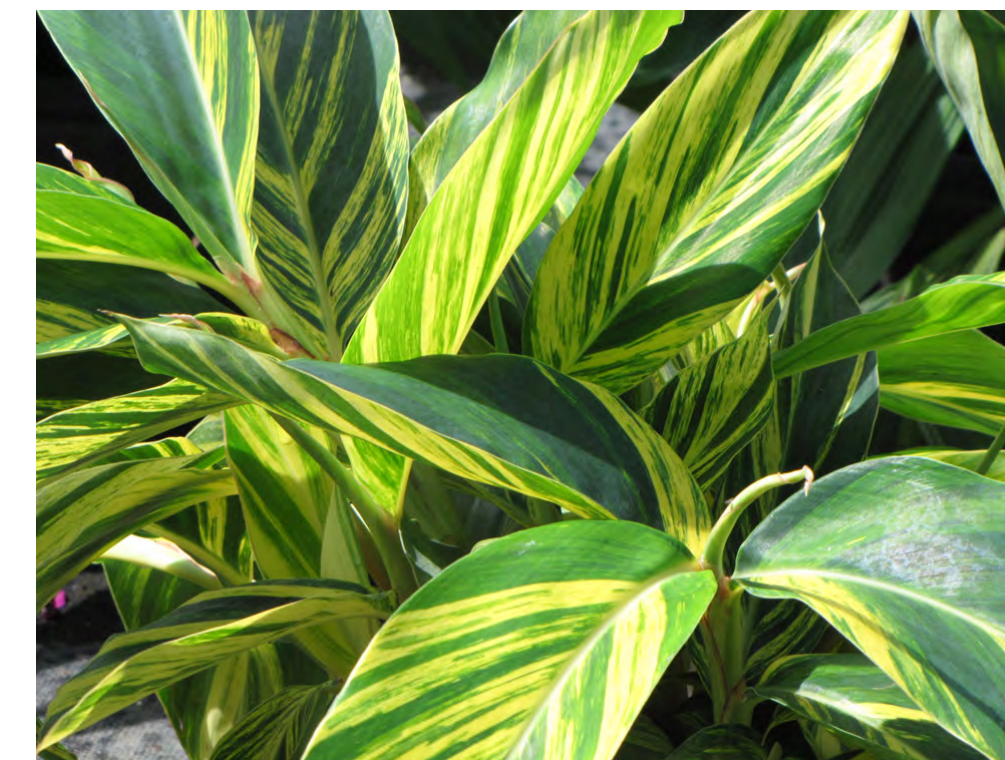
Euphorbia characias "Wulfenii" - Black Spurge



Echium sp.



Magnolia soulangeana - Saucer Magnolia



Alpinia zerumbet Variegata - Variagated Shell Ginger

NATIVE + FOOD / AGRICULTURE



Banksia spinulosa - Hairpin Banksia



Dianella caerulea - Blue Flax Lily



Podocarpus elatus - Brown Pine



Lomandra Longifolia - Spiny-headed mat rush



Acmena smithii - Common Lilly Pilly



Xanthorrhoea - Grass Tree

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FOR PLANNING APPROVAL	15.04.2016	MS	
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ORIGINAL IN COLOUR

PROJECT

Old King's School
Landscape WORKS

PROJECT ADDRESS
24A O'Connell St, Parramatta NSW 2150

DRAWING INDICATIVE PLANT LIST

DRAWING NUMBER
L.420

ISSUE
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