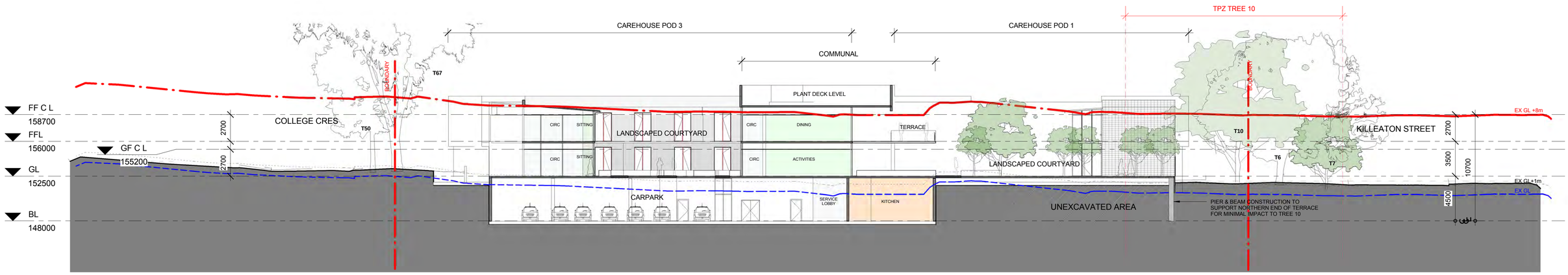

1 SECTION - TREE 10 SITE SECTION

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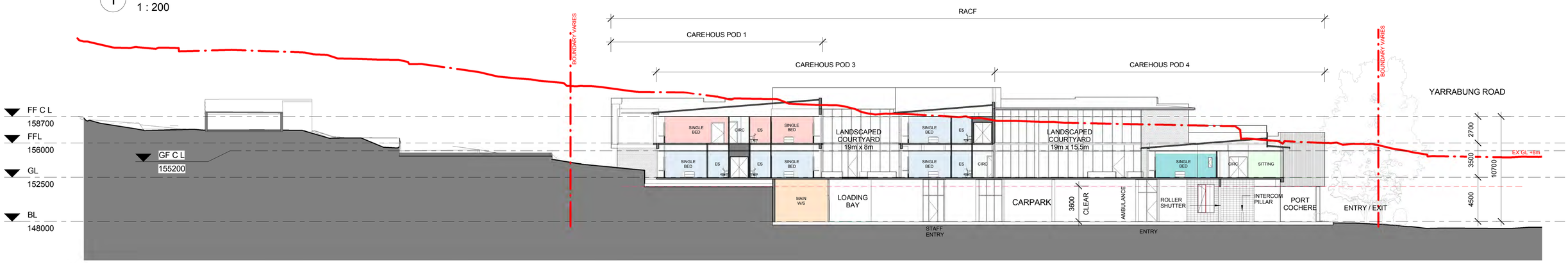

2 SECTION - CARPARK / DRIVE / LOADING DOCK

1 : 200

3 GL PLAN - DA OUTLINE COMPARISON

1 : 200

architecture
interior design
project management

NSW ARB REG ARCHITECT: G. OLLERTON #7621
ACN: 001 595 268 ABN: 44 001 595 268 morrisondesign@mdpa.com.au
Suite 302 69 Christie Street St. Leonards NSW 2065 | 02 99665566 | www.mdpa.com.au

CLIENT: Estia Health

PROJECT:
ST IVES

144-148 KILLEATON STREET
COLLEGE CRES ST IVES NSW 2075

DRAWING TITLE:
COMPARISON PLAN AND TREE 10
SITE SECTION

N

0 5 10m

REV	DATE	AMENDMENT	INITIALS	CHECK
DA01	2017-04-06	AMENDED DA ISSUE	AK	MM

PROJECT NO.	2919	
DRAWING NO.	A305	
REVISION	DA01	
SCALE	1 : 200	
DRAWN	Author	
PROJECT PRINCIPLE	G. OLLERTON	
DATE	28 JUNE 2016	

Morrison Design Partnership ARCHITECTS Since 1969

K:\2919-ESTA - 144 - 148 Killeaton St, ST Ives - GO\WORKING\01_SKETCH

4 9am 22 June
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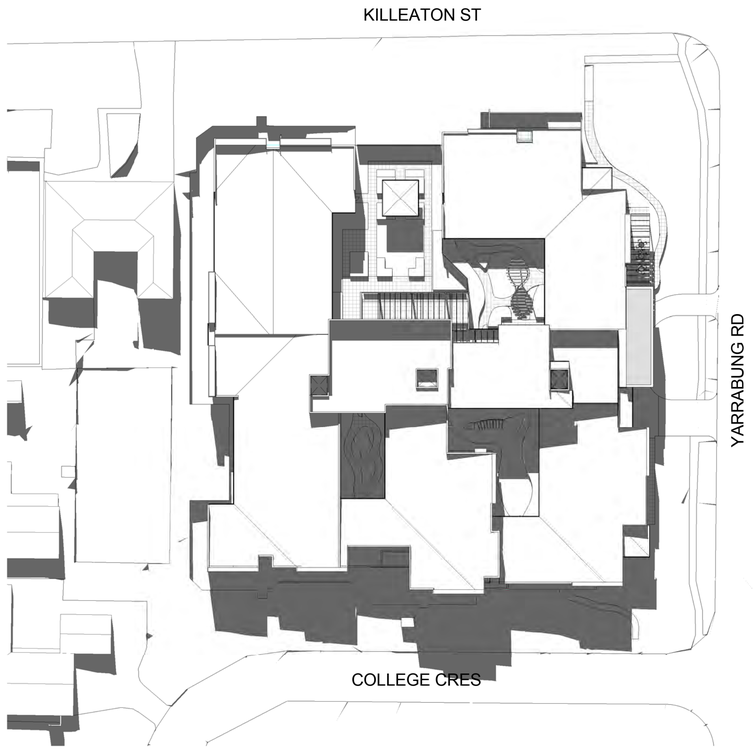

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2 3pm 22 June
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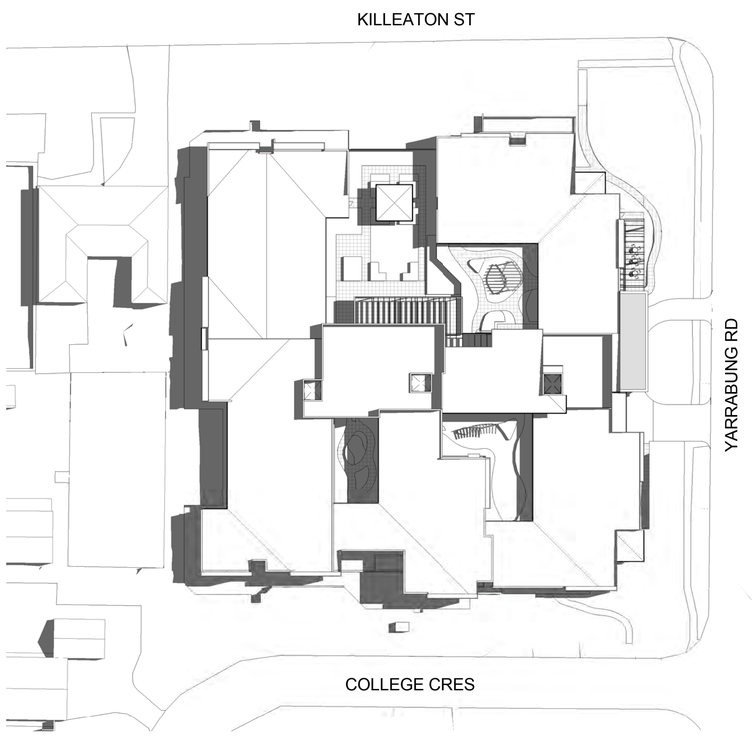

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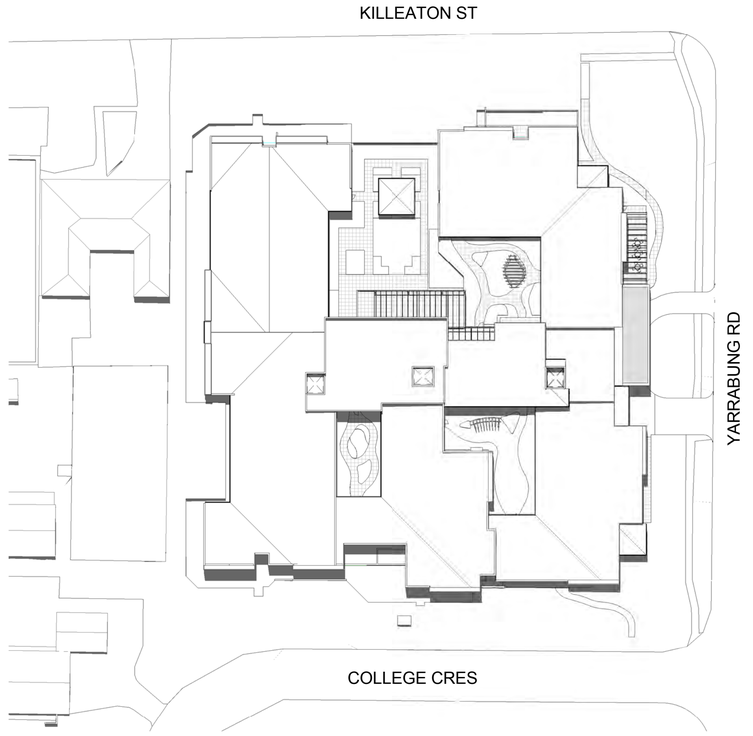

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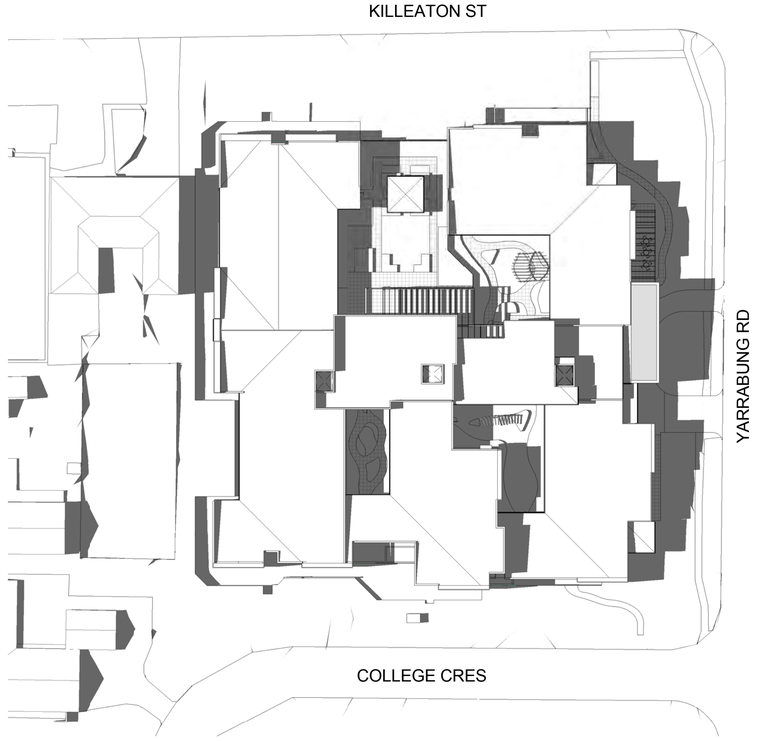

1 3pm 22 Dec
1 : 500

architecture
interior design
project management

NSW ARB REG ARCHITECT: G. OLLERTON #7621
ACN: 001 595 268 ABN: 44 001 595 268 morrisondesign@mdpa.com.au
Suite 302 69 Christie Street St. Leonards NSW 2065 | 02 99665566 | www.mdpa.com.au

CLIENT:
Estia Health

PROJECT:
ST IVES

144-148 KILLEATON STREET
COLLEGE CRES ST IVES NSW 2075

DRAWING TITLE:
SHADOW DIAGRAMS - PROPOSED

K:\2919-ESTIA - 144 - 148 Killeaton St, ST Ives - GO\ WORKING \GS_SKETCH

REV	DATE	AMENDMENT	INITIALS	CHECK
DA01	2016-06-28	DA SUBMISSION	AK	GO
DA02	2016-07-22	DA SUBMISSION	AK	GO
DA03	2017-04-06	AMENDED DA ISSUE	AK	MM

PROJECT NO.	2919	
DRAWING NO.	A900	
REVISION	DA03	
SCALE	1 : 500	
DRAWN	AK	
PROJECT PRINCIPLE	G. OLLERTON	
DATE	28 JUNE 2016	

0 10 20m

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ARCHITECTS
Since 1969

LINE OF GROUND FLOOR INTERFACE WITH LANDSCAPE

LINE OF BASEMENT INTERFACE WITH LANDSCAPE

EXISTING PALM - T25 TRANSPLANTED

DECIDUOUS TREE PLANTING TO WEST AND NORTH FOR SHADE IN SUMMER + SOLAR ACCESS IN WINTER

ROCK DISPERSION AREA. PLANTED 30%. REFER TO ENGINEERS DRAWINGS FOR FLOWPATH AND DETAILS

EXISTING TREES RETAINED TO MAINTAIN NEIGHBORHOOD CHARACTER

NEW LOW PILLARS WITH LIGHTING TO PEDESTRIAN ENTRY

NEW PEDESTRIAN CONNECTION TO FOOTPATH AND BUS STOP

KILLEATON ROAD

T53 - REPLANTED TREE

NEW CANOPY TREE TO REPLACE REMOVED TREE AS PER DA 233/16 1 Tr-Ia

NEW HEDGE TO 1.2 M ON BOUNDARY OF KILLEATON RD AND YARRABUNG RD

DECIDUOUS TREE PLANTING TO WEST AND NORTH FOR SHADE IN SUMMER + SOLAR ACCESS IN WINTER

EXISTING TIMBER PALING FENCE RETAINED

RAISED PLANT BEDS AGAINST BUILDING TO ELEVATE LOW PLANTING INTO RESIDENTS VIEW

PLANTED MAINTENANCE ACCESS PATH + OVERLAND FLOW

T55 - REPLANTED TREE

T56 - REPLANTED TREE

PROPOSED SEWER ALIGNMENT

EXISTING 3M HIGH SCREENING HEDGE RETAINED AND ENHANCED

SOIL DEPTH MIN 800mm

DEEP SOIL PLANTING

TERRACE

RETAINING WALL ON PIER AND BEAM TO STRUCTURAL ENGINEERS DETAILS

ARBOR

ARTIFICIAL TURF

WALK OF LIFE

LINE OF BASEMENT UNDER

RAISED PLANTER ON SLAB

SOIL DEPTH 600mm

R.L. 152.50

LINE OF BASEMENT

ENTRY

SET DOWN

WIRE PERGOLA OVER WITH CLIMBERS OVER SEATING AREA

ARTIFICIAL TURF

RAISED PLANTER ON SLAB

HVC BOOSTER & WATER METER LOCATION

SUBSTATION

COLLEGE CRESCENT

YARRABUNG ROAD

BUS BOARDING POINT IN ACCORDANCE WITH KMC PLAN NO 2013-007A

BUS STOP

T29 - REPLANTED TREE

T72 - REPLANTED PALM

T73 - REPLANTED PALM

OSD RAINWATER TANK 20000L

LOW SHRUB PLANTING TO CORNER OF PROPERTY

LOW HEDGE AND SHRUB PLANTING ADJACENT TO DRIVE WAY TO MAINTAIN VIEWLINES AT EXIT

TALL PLANTING ON GRADE TO ADDRESS FRONT OF BUILDING

FOOTPATH EXTENSION & PRAM RAMP TO EXISTING KERB

EXISTING 4M CONIFER HEDGE RETAINED

HEDGE TO 3m TO MATCH THE EXISTING HEDGE

MAINTENANCE PATH/ OVERLAND FLOW POROUS GRAVEL PATH ON GROWING MEDIUM WITH 30% GROUNDCOVER PLANTING

TURF MAINTENANCE AND OVERLAND FLOW PATH

TaylorBrammer

TAYLOR BRAMMER LANDSCAPE ARCHITECTS PTY LTD

SYDNEY STUDIO

218 Oxford Street
Woollahra, NSW, 2025

T 61 2 9387 8855
F 61 2 9387 8155
E sydney@taylorbrammer.com.au

LEGEND

- SITE BOUNDARY
- EXISTING CONTOUR (20.0)
- PROPOSED NEW CONTOUR (18.5)
- EXISTING TREE RETAINED
- TREE PROTECTION ZONE (TPZ)
- STRUCTURE PROTECTION ZONE (SRZ)
- EX 18.25 EXISTING SPOT LEVEL
- +RL 20.0 PROPOSED SPOT LEVEL
- EXISTING TREE REMOVED
- EXISTING TREE TO BE TRANSPLANTED
- TRANSPLANTED TREE RELOCATED ON SITE
- +TW 21.0 / +SL 24.00 TOP OF WALL LEVEL / TOP OF SLAB LEVEL
- PLANTING ON CONCRETE SLAB - 271,03 m2
- PLANTING ON GRADE - 1632,06 m2
- ARTIFICIAL TURF - 138,14 m2
- TURF ON NATURAL GROUND - 1495,06 m2
- PAVING TYPE 1
- PAVING GRAVEL MAINTENANCE PATH
- PROPOSED SHRUBS
- PROPOSED GROUNDCOVERS
- RAISED PLANTER
- SEAT
- PROPOSED TREES

ISSUE	DESCRIPTION	DATE
E	FOR DA APPROVAL	07.04.2017
D	FOR DA APPROVAL	03.04.2017
C	DEVELOPMENT APPLICATION	21.07.2016
B	AMENDED OVERLAND FLOW	08.07.2016
A	DEVELOPMENT APPLICATION	30.06.2016
P1	PRELIMINARY DRAFT	21.06.2016

PROJECT:
ESTIA HEALTH ST. IVES
144-148 KILLEATON STREET

DRAWING TITLE:
GROUND FLOOR MASTER PLAN

0 2 4 8 12 16 20 m

SCALE:	1:200 @A1	CHECKED:	DMT	DRAWING NO:	REVISION:
CREATED:	29.06.2016	JOB NO:	16-008	LA02	E
DRAWN:	CG	DESIGNED:	JH		

PLANT SCHEDULE (GROUND FLOOR)

ID	BOTANICAL NAME	COMMON NAME	HEIGHT (m)	SPREAD (m)	SIZE	QTY
TREES						
Ac-co	*Acer palmatum 'Coonara Pygmy '*	Japanese Maple	2	1.5	75L	24
Ac-sa	*Acer palmatum 'Sango Kaku'*	Japanese Maple	6	6	75L	7
Ac-sh	*Acer palmatum' Dissectum Inaba Shidare'*	Japanese Maple	2	2	75L	8
Ac-su	*Acmena smithii 'Sublime'*	Lilly Pilly	5	3	45L	9
Ce-av	*Cercis chinensis 'Avondale'*	Avondale Chinese Redbud	3m	2m	75L	19
Ce-fp	*Cercis canadensis 'Forest Pansy'*	Forest Pansy	5	5	100L	9
Ce-gu	*Ceratopetalum gummiferum 'Alberys Red'*	NSW Christmas Bush	5	2	75L	2
Ce-ro	*Cercis canadensis 'Roethgold'*	Chain of Hearts	4	5	100L	3
Ci-au	*Citrus reticulata 'Mandarin Emperor'*	Mandarin Emperor	3-5m		45L	1
Co-gr	*Cotinus coggygria 'Grace'*	Smoke Bush	2-4m	2-4m	45L	2
Co-gu	*Corymbia gummifera*	Red Bloodwood	30	10	75L	1
Cy-co	*Cyathea cooperi*	Australian tree fern	15m	4m	1,5M trunk	2
El-eu	*Elaeocarpus eumundii*	Quandong	10	3	75L	9
El-re	*Elaeocarpus reticulatus*	Blueberry Ash	15	5	75L	13
El-re	*Elaeocarpus reticulatus*	Blueberry Ash	10m	2-5m	75L	
Go-ax	*Gordonia axillaris*	Fried Egg Tree	4	4	150L	4
La-to	*Lagerstroemia fauriei 'Townhouse'*	Japanese Crapemyrtle	8m	8m	150L	4
La-zu	*Lagerstroemia indica x L. fauriei 'Zuni'*	Zuni Crepe Myrtle	4m	3m	75L	5
Ma-al	*Magnolia grandiflora ' Alta'*	Magnolia	9m	4m	100L	7
Ma-dk	*Magnolia x soulangeana 'Burgundy Glow'*	Magnolia Burgundy Glow	5m	1.5m	150L	3
Ma-st	*Magnolia stellata*	Star magnolia	1.5-2.5m	4.6m	45L	10
Ma-te	*Magnolia grandiflora 'Teddy Bear'*	Teddy Pear	4m	3m	150L	2
Ma-to	*Malus 'Matttom' - Tom Matthews*	Crab Apple	3m	3m	75L	4
Mi-fi	*Magnolia figo*	Michelia figo	3-4m	1-2m	45L	31
Pl-ru	*Plumeria rubra*	Frangipanis	3m		100L	
Pr-oa	*Prunus cerasifera 'Oakville Crimson Spire'*	Ornamental Plum	6m	2m	100L	11
Py-gl	*Pyrus calleryana 'Glen's Form' Chanticleer*	Ornamental Pear	11m	6m	75L	2
Py-fr	*Pyrus calleryana 'Fronzam' Frontier*	Ornamental Pear	10m	4m	75L	3
Py-ca	*Pyrus calleryana 'Capital'*	Ornamental Pear	11m	3m	75L	3
Py-br	*Pyrus calleryana 'Bradford'*	Ornamental Pear	12m	9m	75L	3
Sy-pi	*Syzygium australe 'Pinnacle'*	Syzygium	6-10m		45L	43
Tr-la	*Tristaniopsis laurina*	Water Gum	15m		150L	1
Vi-od	*Viburnum odoratissimum*	Sweet Viburnum	4m	3m	45L	65
SHRUBS						
Ca-gb	*Callistemon salignus 'Great Balls of Fire'*	Bottlebrush	1.5m	1.5m	300mm	98
Al-ze	*Alpinia zerumbet*	Shell ginger	2.4-3m		300mm	30
As-au	*Asplenium australasicum*	spleenworts			300mm	45
Ca-mm	*Camelia sasanqua 'Marge Miller '*	Marge Miller Camellia			200mm	131
Ca-ru	*Calathea rufibarba 'Wavestar'*	Peacock Plant	0.6-1m	0.3-0.5m	200mm	63
Ca-sa	*Camellia sasanqua*	Sasanqua Camelia	0.6-1	1m	45L	53
El-ca	*Elettaria cardamomum*	Cardamon	2m	3m	200mm	42
Ha-me	*Hardenbergia violacea 'Meema'*	Native lilac	50cm	2m	200mm	175
La-de	*Lavandula dentata*	French lavender	60 cm			6
Lo-pd	*Loropetalum chinense var. rubrum 'Plum Delight '*	Chinese Witch Hazel	2	2	300mm	48
Lo-pp	*Loropetalum chinense 'Purple Pixie'*	Chinese Witchhazel	50 cm	1.5 m	300mm	57
Ma-be	*Mackaya bella*	Forest bell bush	1.5m		300mm	12
Mu-mi	*Murraya Min a Min*	Murraya Paniculata Dwarf	1m	1m	200mm	89
Na-fl	*Nandina domestica 'Flirt'*	Dwarf Nandina	40 cm	50 cm	300mm	68
Na-Li	*Nandina domestica alba 'Limelight '*	Heavenly Bamboo	70 - 90 cm	71 - 90 cm	200mm	109
Ph-eu	*Photinia glabra Everbright*	Everbright Photinia	1-2m	1-2m		35
Ph-ev	*Photinia glabra 'Photinia Everbright '*	Photinia	1-3m		300mm	6
Ph-xa	*Philodendron 'Xanadu'*	Xanadu	1m	1m	200mm	157
Rh-op	*Rhaphiolepis indica 'Oriental pearl'*	Rhaphiolepis Oriental Pearl , Ir	1m	1m	200mm	40
Rh-sp	*Rhododendron sp.*	Rhodies			150mm	20
St-rd	*Streiltzia Reginae Dwarf*	Streiltzia Dwarf	0.9 - 1m	5	200mm	5
Sy-ca	*Syzygium 'Cascade'*	Lilly Pilly	2-3m	1-2m	45L	27
To-ba	*Todea barbara*	King fern	3m			20
Tu-fr	*Teucrium fruticans*	Tree Germander	0.75-1.2	1.8m	300mm	80
Vi-ma	*Viburnum plicatum f. tomentosum'Mariesii'*	Doublefile viburnum	2m	2m	45L	3
Vi-ti	*Viburnum tinus*	laurestine	2-7m	3m	300mm	57
GROUNDCOVERS						
Cl-mi	*Clivia miniata*	Bush lily	45cm		200mm	51
Di-re	*Dichondra repens*	Kidney weed			125mm	170
Do-as	*Doodia aspera*	Prickly Rasp fern			150mm	222
Ha-mi	*Hardenbergia violacea 'Mini Meema'*	Hardenbergia 'Mini Meema'	45cm	45cm	200mm	102
Hy-pe	*Hydrocotyle pedicellosa* Benth.	Pennywort			125mm	180
Li-mu	*Liriope muscari 'Evergreen Giant'*	Turf lilly	40cm	40cm	150mm	113
My-ya	*Myoporum parvifolium 'Yareena*	Yareena Myoporum				65
Pl-pa	*Plectranthus parviflorus*	Little spurflower	10 - 70 cm		150mm	140
Po-cr	*Pollia crispata*	Pollia	1 m		200mm	170
Ro-pr	*Rosmarinus officinalis 'Prostratus'*	Rosemary	0-0.5	200mm	200mm	115
Tr-ja	*Trachelospermum jasminoides*	Star Jasmine			150mm	254
Vi-he	*Viola hederacea*	Australian native violet			125mm	130

NOTE:

** Plant quantities on planting plan take precedence over quantities identified in this schedule.*

TaylorBrammer

TAYLOR BRAMMER LANDSCAPE ARCHITECTS PTY LTD
SYDNEY STUDIO
218 Oxford Street
Woollahra, NSW, 2025
T 61 2 9387 8855
F 61 2 9387 8155
E sydney@taylorbrammer.com.au

LEGEND

- SITE BOUNDARY
- EXISTING CONTOUR
- PROPOSED NEW CONTOUR
- EXISTING TREE RETAINED
- TREE PROTECTION ZONE
- STRUCTURE PROTECTION ZONE
- EXISTING SPOT LEVEL
- PROPOSED SPOT LEVEL
- EXISTING TREE REMOVED
- EXISTING TREE TO BE TRANSPLANTED
- TRANSPLANTED TREE RELOCATED ON SITE
- TOP OF WALL LEVEL
- TOP OF SLAB LEVEL
- PLANTING ON CONCRETE SLAB - 271,03 m2
- PLANTING ON GRADE - 1632,06 m2
- ARTIFICIAL TURF - 138,14 m2
- TURF ON NATURAL GROUND - 1495,06 m2
- PAVING TYPE 1
- PAVING GRAVEL MAINTENANCE PATH
- PROPOSED SHRUBS
- PROPOSED GROUNDCOVERS
- RAISED PLANTER
- SEAT
- PROPOSED TREES

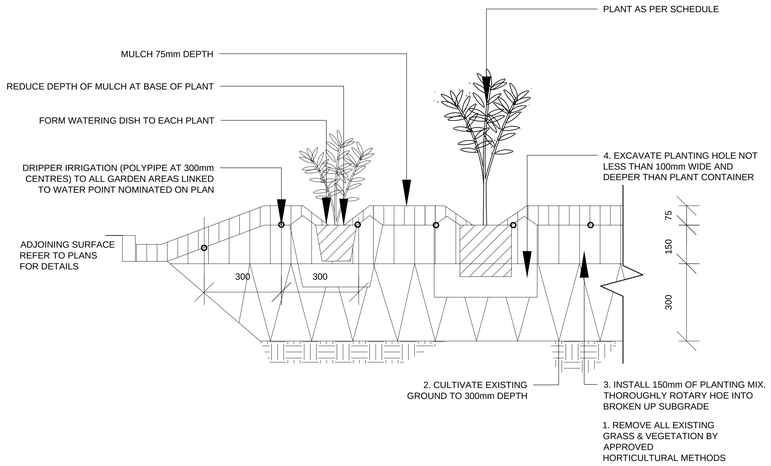
ISSUE	DESCRIPTION	DATE
E	FOR DA APPROVAL	07.04.2017
D	FOR DA APPROVAL	03.04.2017
C	DEVELOPMENT APPLICATION	21.07.2016
B	AMENDED OVERLAND FLOW	08.07.2016
A	DEVELOPMENT APPLICATION	30.06.2016
P1	PRELIMINARY DRAFT	21.06.2016

PROJECT: ESTIA HEALTH ST. IVES

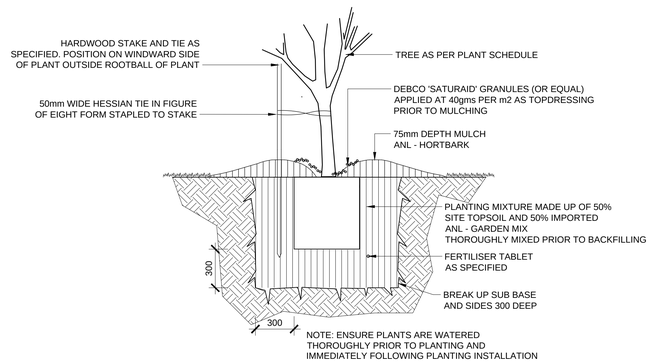
DRAWING TITLE: GROUND FLOOR PLANTING PLAN

0 2 4 8 12 16 20 m

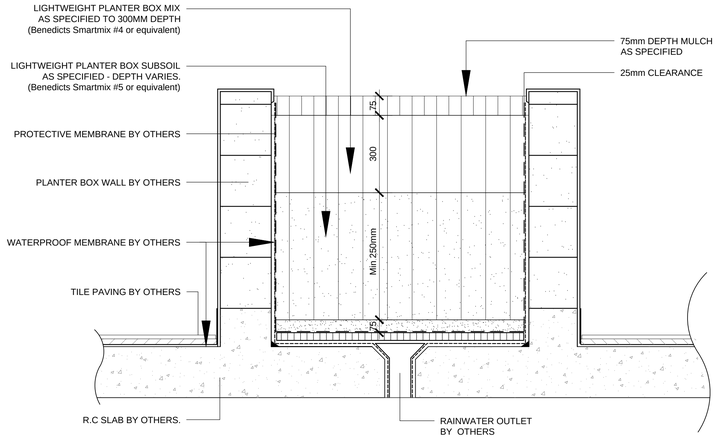
SCALE: 1:200 @81
CREATED: 20.06.2016
DRAWN: CG
CHECKED: DMT
JOB NO: 16-068
DESIGNED: JH
DRAWING NO: LA04
REVISION: E



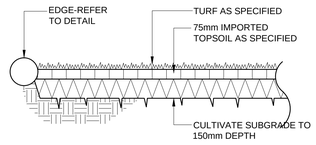
1 MASS PLANTING BED (DRIPPER IRRIGATION DETAIL)
TYPICAL SECTION 1:10



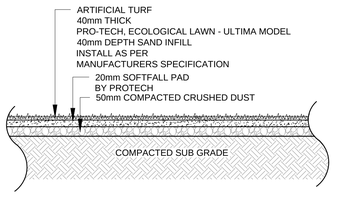
2 TREE PLANTING (75L)
TYPICAL SECTION 1:20



3 RAISED PLANTER BOX
TYPICAL SECTION 1:10



4 TURF
SECTION 1:20



5 ARTIFICIAL TURF
TYPICAL SECTION 1:20

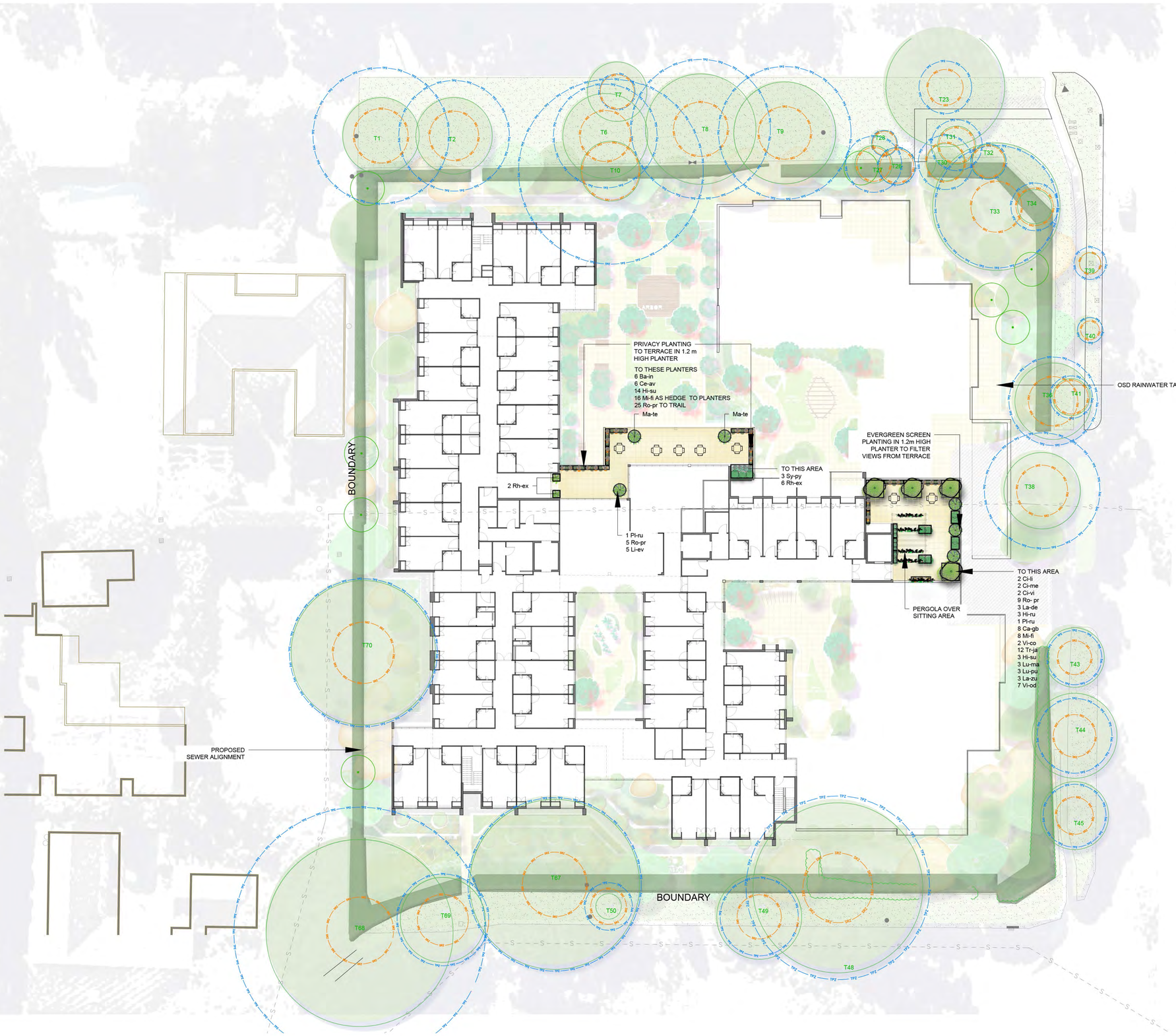
TaylorBrammer
TAYLOR BRAMMER LANDSCAPE ARCHITECTS PTY LTD
SYDNEY STUDIO
218 Oxford Street
Woollahra, NSW, 2025
T 61 2 9387 8855
F 61 2 9387 8155
E sydney@taylorbrammer.com.au

ISSUE	DESCRIPTION	DATE
A	DEVELOPMENT APPLICATION	27.06.2016
P1	PRELIMINARY DRAFT	21.06.2016

PROJECT:
ESTIA HEALTH ST. IVES
144-148 KILLEATON STREET

DRAWING TITLE:
LANDSCAPE DETAILS

SCALE: 1:200 @B1
CREATED: 20.06.2016
DRAWN: CG
CHECKED: DMT
JOB NO: 16-068
DESIGNED: JH
DRAWING NO: LA06
REVISION: A



PLANT SCHEDULE (ROOF TOP GARDEN)

ID	BOTANICAL NAME	COMMON NAME	HEIGHT (m)	SPREAD (m)	SIZE	QTY
TREES						
Ci-li	*Citrus latifolia*	Persian Lime	3m			2
Ci-me	*Citrus × meyeri "Lemon Meyer"*	Lemon Meyer	3m			2
Hi-ru	*Hibiscus tiliaceus rubra*	Red Cottonwood	8m	5m		3
Pl-ru	*Plumeria rubra*	Frangipanis	3m		100L	1
Sy-pi	*Syzygium australe 'Pinnacle'*	Syzygium	6-10m		45L	3
Ba-in	*Banksia integrifolia*	coast banksia	6m	4m		6
Ce-av	*Cercis chinensis 'Avondale'*	Avondale Chinese Redbud	3m	2m	75L	6
Mi-fi	*Magnolia figo*	Michelia figo	3-4m	1-2m	45L	21
Ma-te	*Magnolia grandiflora 'Teddy Bear'*	Teddy Pear	4m	3m	150L	2
Vi-od	*Viburnum odoratissimum*	Sweet Viburnum	4m	3m	45L	7
Ci-au	*Citrus reticulata 'Mandarin Emperor'*	Mandarin Emperor	3-5m			1
SHRUBS						
Ca-gb	*Callistemon salignus 'Great Balls of Fire'*	Bottlebrush	1.5m	1.5m	300mm	8
Hi-su	*Hibiscus rosa-sinensis 'Surfrider'*	Tropical Hibiscus			200mm	17
Lu-ma	*Leucadendron 'Maui Sunset'*					3
Lu–pu	*Leucadendron galpinii female Purple Haze*	Purple Haze	1.2m	1.2m		3
Rh-ex	*Rhapis excelsa*	Lady Palm	1.5m	2m	400mm	2
La-zu	*Lagerstroemia indica x L. fauriei 'Zuni'*	Zuni Crepe Myrtle	4m	3m	75L	3
Rh-op	*Rhaphiolepis indica 'Oriental pearl'*	Rhaphiolepis Oriental Pearl , Indian Hawthorn	1m	1m	200mm	40
La-de	*Lavandula dentata*	French lavender	60 cm			3
GROUNDCOVERS						
Li-ev	*Liriope muscari 'Evergreen Giant'*	Turf lilly	40cm	40cm	150mm	5
Vi-co	*Vitis coignetiae*	Crimson Glory Vine				2
Ro-pr	*Rosmarinus officinalis 'Prostratus'*	Rosemary	0-0.5	200mm	200mm	39
Tr-ja	*Trachelospermum jasminoides*	Star Jasmine			150mm	12

NOTE:

** Plant quantities on planting plan take precedence over quantities identified in this schedule.*

TaylorBrammer

TAYLOR BRAMMER LANDSCAPE ARCHITECTS PTY LTD
SYDNEY STUDIO
218 Oxford Street
Woollahra, NSW, 2025
T 61 2 9387 8855
F 61 2 9387 8155
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LEGEND

- SITE BOUNDARY
- 20.0 EXISTING CONTOUR
- 18.5 PROPOSED NEW CONTOUR
- EXISTING TREE RETAINED
- EXISTING TREE RETAINED
- TPZ TREE PROTECTION ZONE
- SRZ STRUCTURE PROTECTION ZONE
- × EX 18.25 EXISTING SPOT LEVEL
- RL 20.0 PROPOSED SPOT LEVEL
- EXISTING TREE REMOVED
- EXISTING TREE TO BE TRANSPLANTED
- TRANSPLANTED TREE RELOCATED ON SITE
- PAVING TYPE 1
- PROPOSED SHRUBS
- PROPOSED GROUNDCOVERS
- RAISED PLANTER
- SEAT

ISSUE	DESCRIPTION	DATE
E	FOR DA APPROVAL	07.04.2017
D	FOR DA APPROVAL	03.04.2017
C	DEVELOPMENT APPLICATION	21.07.2016
B	AMENDED OVERLAND FLOW	11.07.2016
A	DEVELOPMENT APPLICATION	29.06.2016
P1	PRELIMINARY DRAFT	21.06.2016

PROJECT:
ESTIA HEALTH ST. IVES
144-148 KILLEATON STREET

DRAWING TITLE:
ROOF GARDEN PLANTING PLAN

0 2 4 8 12 16 20 m

SCALE:	1:200 @81	CHECKED:	DMT
CREATED:	20.06.2016	JOB NO:	16-068
DRAWN:	CG	DESIGNED:	JH

DRAWING NO: LA03

REVISION: E

LEGEND

- SITE BOUNDARY
- EXISTING CONTOUR
- PROPOSED NEW CONTOUR
- EXISTING TREE RETAINED
- TREE PROTECTION ZONE
- STRUCTURE PROTECTION ZONE
- EXISTING SPOT LEVEL
- PROPOSED SPOT LEVEL
- EXISTING TREE REMOVED
- EXISTING TREE TO BE TRANSPLANTED
- TRANSPLANTED TREE RELOCATED ON SITE
- +TW 21.0 TOP OF WALL LEVEL
- +SL 24.00 TOP OF SLAB LEVEL
- PLANTING ON CONCRETE SLAB - 271,03 m2
- PLANTING ON GRADE - 1632,06 m2
- ARTIFICIAL TURF - 138,14 m2
- TURF ON NATURAL GROUND - 1495,06 m2
- PAVING TYPE 1
- PAVING GRAVEL MAINTENANCE PATH
- PROPOSED SHRUBS
- PROPOSED GROUNDCOVERS
- RAISED PLANTER
- SEAT
- PROPOSED TREES

TaylorBrammer
TAYLOR BRAMMER LANDSCAPE ARCHITECTS PTY LTD
SYDNEY STUDIO
218 Oxford Street
Woollahra, NSW, 2025
T 61 2 9387 8855
F 61 2 9387 8155
E sydney@taylorbrammer.com.au

ISSUE	DESCRIPTION	DATE
E	FOR DA APPROVAL	07.04.2017
D	FOR DA APPROVAL	03.04.2017
C	DEVELOPMENT APPLICATION	21.07.2016
B	AMENDED OVERLAND FLOW	08.07.2016
A	DEVELOPMENT APPLICATION	27.06.2016
P1	PRELIMINARY DRAFT	21.06.2016

PROJECT:
ESTIA HEALTH ST. IVES
144-148 KILLEATON STREET

DRAWING TITLE:
ON SLAB/ON GRADE SOIL PLAN

0 2 4 8 12 16 20 m

SCALE: 1:200 @B1
CREATED: 20.06.2016
DRAWN: CG
CHECKED: DMT
JOB NO: 16-008
DESIGNED: JH
DRAWING NO: LA05
REVISION: E

1 YARRABUNG ROAD STREETSCAPE
ELEVATION @1:200

2 KILLEATON ROAD STREETSCAPE
ELEVATION @1:200

3 COLLEGE CRESENT STREETSCAPE
ELEVATION @1:200

NB: EXISTING TREES ARE SHOWN AT CURRENT HEIGHT WHILE PROPOSED PLANTINGS ARE SHOWING AT MATURE SIZE

TaylorBrammer
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SYDNEY STUDIO
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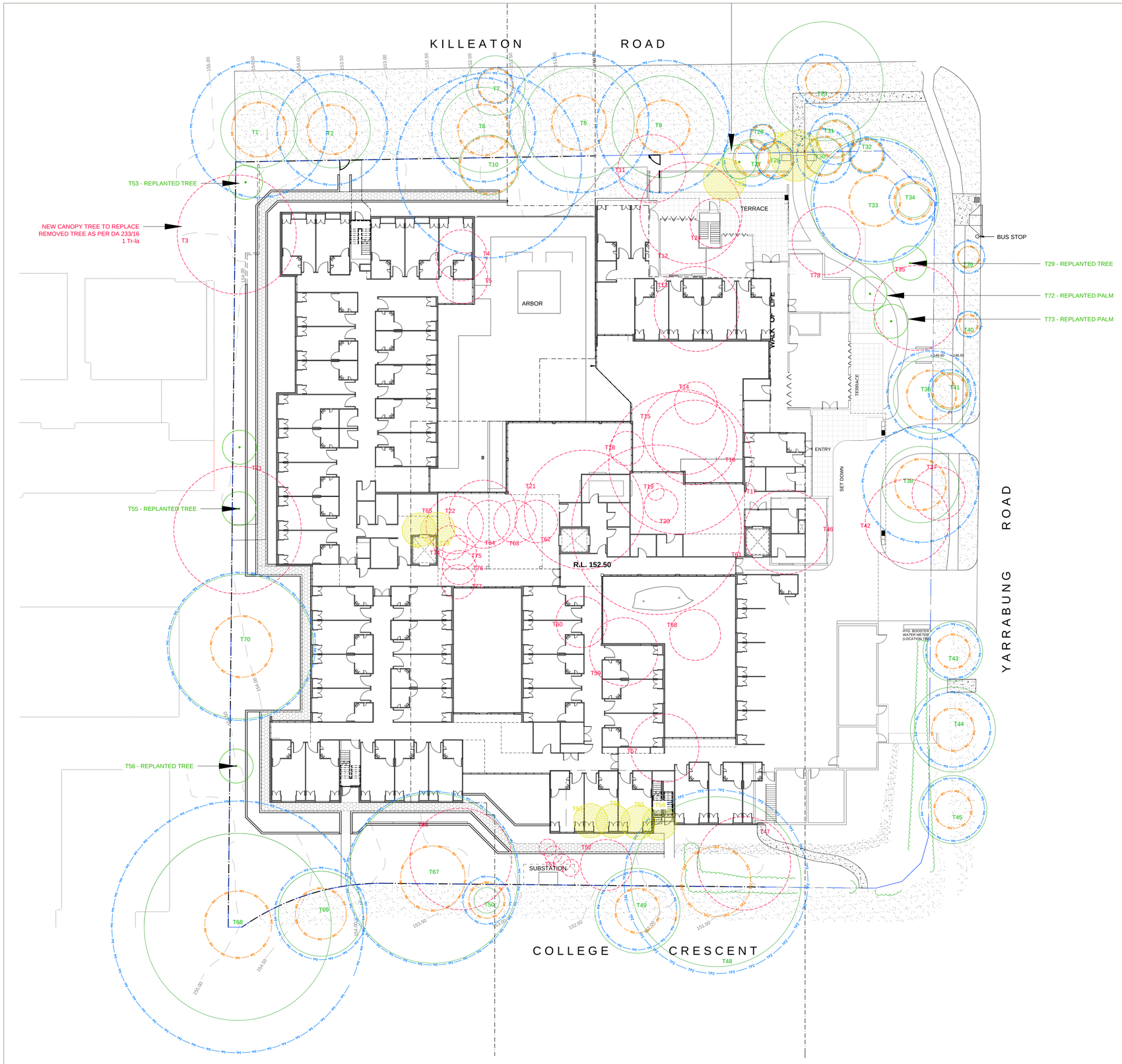
Woollahra, NSW, 2025
T 61 2 9387 8855
F 61 2 9387 8155
E sydney@taylorbrammer.com.au

ISSUE	DESCRIPTION	DATE
A	DEVELOPMENT APPLICATION	27.06.2016

PROJECT:
ESTIA HEALTH ST. IVES
144-148 KILLEATON STREET

DRAWING TITLE:
LANDSCAPE STREETSCAPE ELEVATIONS

SCALE: 1:200 @B1
CREATED: 21.07.2016
DRAWN: VH
CHECKED: JH
JOB NO: 16-068
DESIGNED: JH
DRAWING NO: LA07
REVISION: A



SUMMARY OF TREE RETENTION AND REMOVAL

Refer to "Tree Report, Preliminary Tree Assessment", prepared by:
Stuart Pittendrigh FAILA MAIH M. Arb Aust.
Registered Landscape Architect
Horticulturist/Consultant Arborist
Date: 19 July 2015

NOTE: '*' = Refer to Tree Nominated Arborist for Removal
'**' = Remove to accommodate DA 2338/16

ID	BOTANICAL NAME	COMMON NAME	HEIGHT (m)	SPREAD (m)
TREES/ SHRUBS TO BE RETAINED				
1	*Liquidambar orientalis*	Oriental sweet gum	11	9
2	*Liquidambar orientalis*	Oriental sweet gum	11	9
6	*Liquidambar styraciflua*	Sweet gum	15	10
7	*Pistacia chinensis*	Chinese Pistachio	4.5	7
8	*Liquidambar styraciflua*	Sweet gum	16	13
9	*Liquidambar styraciflua*	Sweet gum	11	12
10	*Agathis robusta*	Queensland Kauri	23	7
23	*Pistacia chinensis*	Chinese Pistachio	5	7
26	*Archontophoenix alexandrae*	Alexander palm	6	4
27	*Araucaria heterophylla*	Norfolk Island pine	12	4
28	*Angophora costata*	Smooth bark apple	9	1.5
30	*Arecastrum romanzoffianum*	Queen palm	10	5
31	*Araucaria heterophylla*	Norfolk Island pine	11	4.5
32	*Araucaria heterophylla*	Norfolk Island pine	9	4
33	*Eucalyptus paniculata*	Grey iron bark	18	15
34	*Melaleuca quinquenervia*	Broad leaf paper-bark	8	4
36	*Tristaniopsis laurina*	Water gum	11	9
38	*Melaleuca quinquenervia*	Broad leaf paper-bark	15	9
39	*Corymbia gummifera*	Red blood wood	11	2.5
40	*Eucalyptus saligna*	Sydney Blue gum	8	3
41	*Eucalyptus saligna*	Sydney Blue gum	12	4
43	*Tristaniopsis laurina*	Water gum	6	7
44	*Tristaniopsis laurina*	Water gum	9	10
45	*Tristaniopsis laurina*	Water gum	7	8
48	*Eucalyptus scoparia*	Willow gum	17	15
49	*Ulmus procera 'Louis van Houtte'*	Golden elm	4	10
50	*Ulmus procera 'Louis van Houtte'*	Golden elm	4	6
67	*Eucalyptus saligna*	Sydney Blue gum	20	20
68	*Eucalyptus saligna*	Sydney Blue gum	33	22
69	*Liquidambar orientalis*	Oriental sweet gum	99	0
70	*Angophora costata*	Smooth bark apple	18	17
TREES / SHRUBS TO BE REMOVED				
3	*Lophostemon confertus***	Brushbox	11	10
4	*Magnolia grandflora 'Exmouth'**	Magnolia 'Exmouth'	4	4
5	*Franklinia axillaris **	Fried - egg tree	5	4
11	*Eucalyptus scoparia **	Willow gum	17	13
12	*Cupressus species **	Cypress tree	16	5
13	*Arbutus unedo **	Strawberry tree	8	7
14	*Eucalyptus scoparia **	Willow gum	13	6
15	*Liquidambar styraciflua**	Sweet gum	9	7
16	*Eucalyptus scoparia **	Willow gum	15	7
17	*Cedrus deodara**	Himalayan cedar	17	11
18	*Cupressus species **	Cypress tree	12	4
19	*Cupressus species **	Cypress tree	12	2
20	*Cupressus species **	Cypress tree	12	3
21	*Harpephyllum caffrum **	Kaffir-plum	11	9
22	*Harpephyllum caffrum **	Kaffir-plum	11	7
24	*Harpephyllum caffrum **	Kaffir-plum	11	8
35	*Eucalyptus scoparia **	Willow gum	14	16
37	*Jacaranda mimosifolia **	Jacaranda tree	8	3
42	*Tecoma stans **	Yellow bells	10	6
46	*Harpephyllum caffrum**	Kaffir-plum	9	11
47	*Eucalyptus robusta**	Swamp mahogany	19	11
51	*Cupressus sempervirens 'Swanes G'*	Swane's golden cypres	8	1.5
52	*Arecastrum romanzoffianum**	Queen palm	9	5
57	*Celtis occidentalis **	Hackberry	9	10
58	*Callistemon viminalis**	Callistemon viminalis	6	6
59	*Tibouchina lepidota**	Lasiandra	6	8
60	*Arecastrum romanzoffianum**	Queen palm	8	5
61	*Celtis occidentalis**	Hackberry	17	15
62	*Cupressus species**	Cypress tree	12	2
63	*Cupressus species**	Cypress tree	15	3
64	*Cupressus species**	Cypress tree	15	3
65	*Cupressus species**	Cypress tree	15	3
66	*Eucalyptus scoparia **	Willow gum	16	10
71	*Acer negundo**	Box elder 394	9	8
74	*Arecastrum romanzoffianum**	Queen palm	8	3
75	*Arecastrum romanzoffianum**	Queen palm	7	3
76	*Arecastrum romanzoffianum**	Queen palm	9	4
77	*Arecastrum romanzoffianum**	Queen palm	7	4
78	*Syzygium australe **	Lillypilly spp.	12	5
TREES / SHRUBS TO BE TRANSPLANTED				
25	*Arecastrum romanzoffianum*	Queen palm	10	5
29	*Arecastrum romanzoffianum*	Queen palm	15	5
53	*Camellia japonica*	Camellia	4	3
54	*Camellia reticulata*	reticulata	4	3
55	*Camellia reticulata*	reticulata	4.5	3
56	*Camellia japonica*	Camellia	4.5	3
72	*Howea forsteriana*	Kentia palm	7	4.5
73	*Howea forsteriana*	Kentia palm	6	4.5

TaylorBrammer
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SYDNEY STUDIO
218 Oxford Street
Woollahra, NSW, 2025
T 61 2 9387 8855
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LEGEND

- SITE BOUNDARY
- EXISTING CONTOUR (20.0)
- PROPOSED NEW CONTOUR (18.0)
- EXISTING TREE RETAINED
- TREE PROTECTION ZONE (TPZ)
- STRUCTURE PROTECTION ZONE (SRZ)
- EX 18.25 EXISTING SPOT LEVEL
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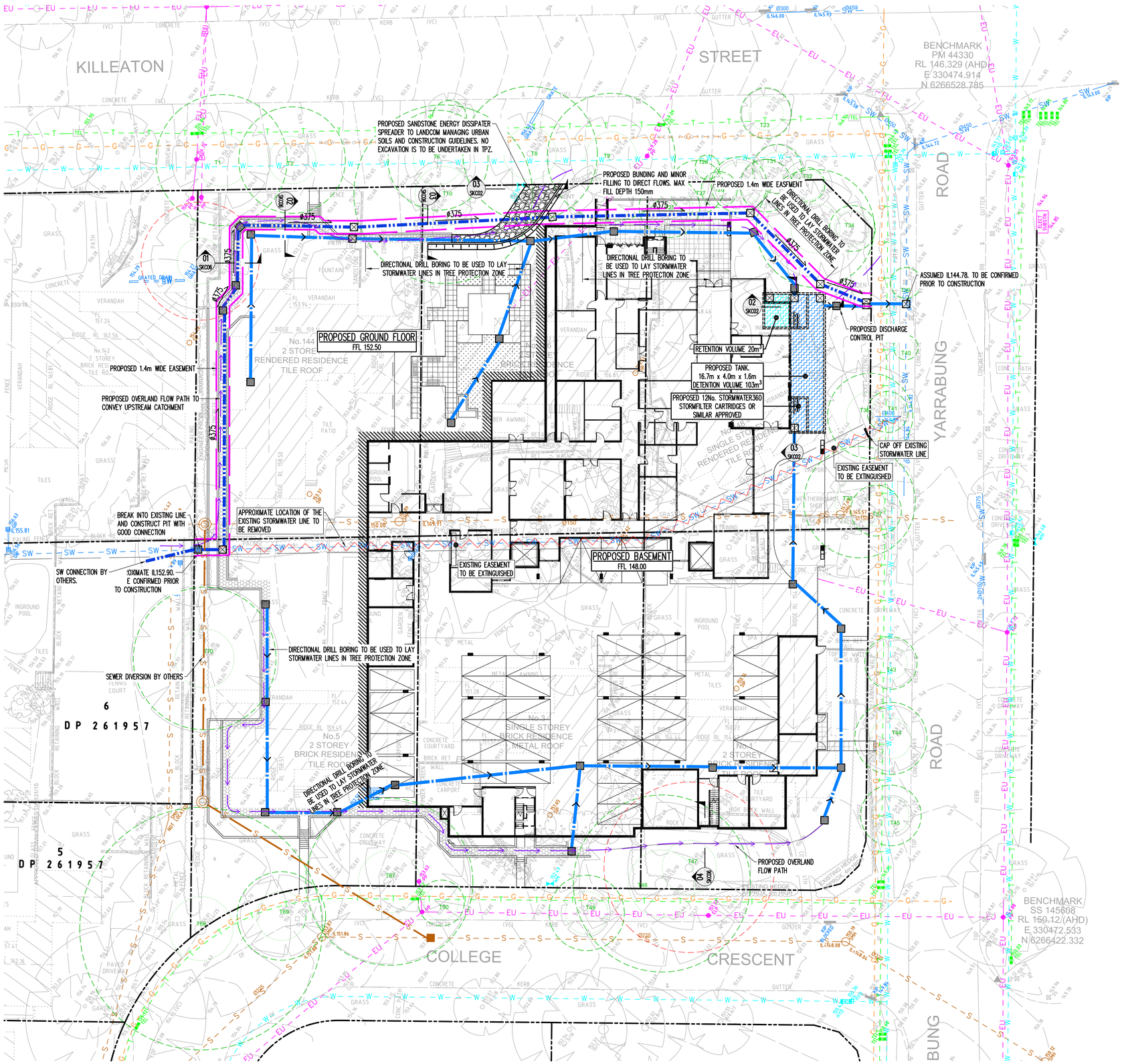
A	DEVELOPMENT APPLICATION	27.06.2016
P1	PRELIMINARY DRAFT	21.06.2016

PROJECT: ESTIA HEALTH ST. IVES
144-148 KILLEATON STREET

DRAWING TITLE: TREE RETENTION AND REMOVAL

0 2 4 8 12 16 20 m

SCALE: 1:200 @B1 | CHECKED: DMT | DRAWING NO: LA01 | REVISION: E
CREATED: 20.06.2016 | JOB NO: 16-068
DRAWN: CG | DESIGNED: JH



STORMWATER DRAINAGE NOTES

1 Stormwater Design Criteria :
- (A) Average recurrence interval –
  - 1:100 years for roof drainage to first external pit
  - 1:20 years for paved and landscaped areas
- (B) Rainfall intensities –
  - Time of concentration: 6 minutes
  - 1:100 years = 250 mm/hr
  - 1:20 years = 196 mm/hr
- (C) Runoff coefficients –
  - Roof areas: C100 = 1.0
  - Roads and paved areas: C20 = 0.95
  - Landscaped areas: C20 = 0.60

2. Pipes 300 dia and larger to be reinforced concrete Class " 2 " approved spigot and socket with rubber ring joints U.N.O.
3. Pipes up to 300 dia shall be sewer grade uPVC with solvent welded joints.
4. Equivalent strength VCP or FRP pipes may be used subject to approval.
5. Precast pits may be used external to the building subject to approval by Engineer
6. Enlargers, connections and junctions to be manufactured fittings where pipes are less than 300 dia.
7. Where subsoil drains pass under floor slabs and vehicular pavements, unslotted uPVC sewer grade pipe is to be used.
8. Grates and covers shall conform with AS 3996–2006, and AS 1428.1 for access requirements.
9. Pipes are to be installed in accordance with AS 3725. All bedding to be type H2 U.N.O.
10. Care is to be taken with levels of stormwater lines. Grades shown are not to be reduced without approval.
11. All stormwater pipes to be 150 dia at 1.0% min fall U.N.O.
12. Subsoil drains to be slotted flexible uPVC U.N.O.
13. Adopt invert levels for pipe installation (grades shown are only nominal).

SITEWORKS LEGEND

- Stormwater diversion with pit
- Stormwater line with pit
- Proposed Easement
- Overland flow path

NOTE

100 YEAR ARI STORM EVENT FLOW TO BE DIRECTED TO DETENTION TANK

TREE PROTECTION NOTES

1. Refer to Arborist Report prior to commencement of any works on site.
2. Trees to be retained and managed throughout the development shall be fenced off from the proposed development or in some situations depending on site access may require trunk protection as detailed in Section 4 – Tree Protection Measures of AS4970 – 2009 The Protection of Trees on Development Sites or in some situation the existing boundary fence shall be retained throughout proposed development so as to provide tree protection barrier
3. Demolition works within the TPZ of trees to be preserved shall be carried out so as to avoid damage to the roots. In sensitive areas manual excavation may be necessary Manual excavation shall be by hand under the direction of the project arborist.
4. Where the project arborist identifies roots to be pruned within or at the outer edge of the TPZ, they should be pruned with a final cut to undamaged wood. Pruning cuts should be made with sharp tools such as secateurs, pruners, handsaws or chainsaws. Pruning wounds should not be treated with dressings or paints. It is totally unacceptable for roots within the TPZ to be 'pruned' with machinery such as backhoes or excavators.
5. Where roots within the TPZ are exposed by excavation, temporary root protection should be installed to prevent them drying out This may include jute mesh or hessian sheeting as multiple layers over exposed roots and excavated soil profile, extending to the full depth of the root zone. Root protection sheeting should be pegged in place and kept moist during the period that the root zone is exposed
6. All areas enclosed by protective fencing must have the entire ground surface mulched to a depth of 100 mm with composted Eucalyptus leaf and woodchip to help retain soil moisture and reduce erosion.
7. Any site activity close to or beneath the drip line of Trees 10, 47 and 70 shall have elevated protection installed clear of the ground to avoid compaction and damage to roots. Protection may comprise timber planks or metal decking supported on scaffolding or the like.
8. Hydraulic plans have provided by the applicant indicate that sub soil stormwater and sewer lines may need to be installed within the TPZ of trees nominated for preservation. Trenching for stormwater / sewer installation within the TPZ and SRZ shall be avoided. Adopt directional drilling / approved under boring techniques as per Section 4 of AS4970 CL.4.4.5 to avoid adverse impacts on tree roots.
9. The directional drilling bore should be at least 600 mm deep. The project arborist shall assess the likely impacts of boring and bore pits on retained trees. Bore pits within the TPZ shall be hand dug under the direction of an Arborist. No excavation shall occur within the Structural Root Zones of trees nominated for preservation.

PRELIMINARY

Rev	Description	Eng	Draft	Date
P6	ISSUED FOR DA	PY	PK	30.06.16
P5	ISSUED FOR DA	PY	PK	30.06.16
P4	ISSUED FOR DA	PY	PK	29.06.16
P3	ISSUED FOR DA	PY	PK	24.06.16
P2	ISSUED FOR COORDINATION	PY	PK	24.06.16
P1	ISSUED FOR COMMENT	PY	PK	10.06.16
P12	ISSUED FOR DA	GC	RG	06.04.17
P11	ISSUED FOR DA	PY	PK	22.07.16
P10	ISSUED FOR REVIEW	PY	PK	22.07.16
P9	ISSUED FOR COORDINATION	PY	PK	21.07.16
P8	ISSUED FOR COORDINATION	PY	PK	11.07.16
P7	ISSUED FOR DA	PY	PK	01.07.16

Architect
Morrison Design Partnership ARCHITECTS Since 1969
302/69 Christie Street, St Leonards, NSW 2065
E: morrisondesign@mdpa.com.au
P: 02 9966 5566

Structural Engineer
Taylor Thomson Whitting
612 9439 7288 | 48 Chandos Street St Leonards NSW 2065

Project: ESTIA HEALTH DEVELOPMENT
144 Killeaton Street St Ives

Sheet Subject: STORMWATER PLAN

Scale : A1 1:250 | Drawn PK | Authorised

Job No 151553 | Drawing No SKC01 | Revision P12

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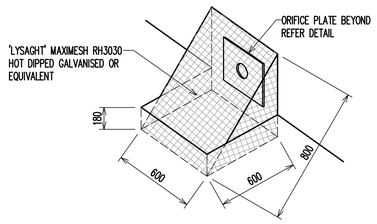
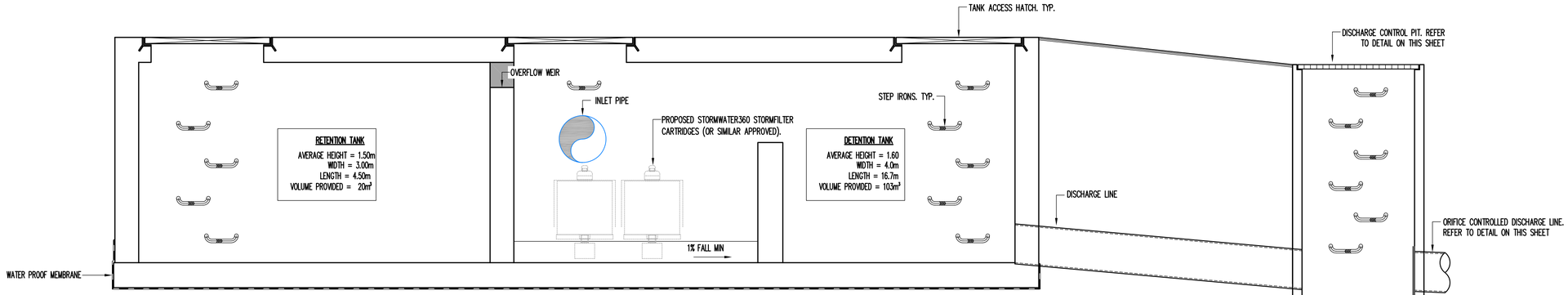


TRASH SCREEN DETAIL
NTS



SECTION THROUGH DETENTION TANK

SECTION 02 / SKC01
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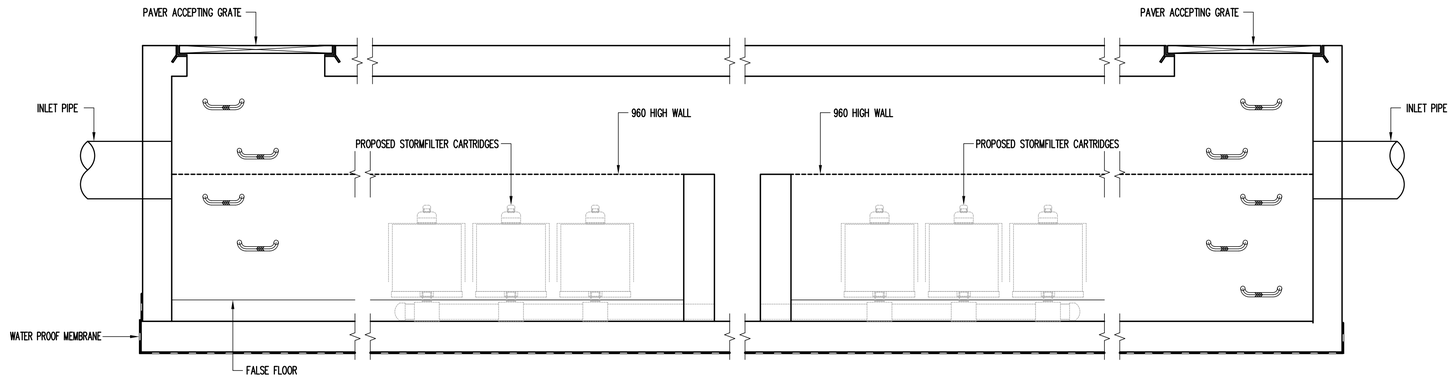

SECTION THROUGH DETENTION TANK

SECTION 03 / SKC01
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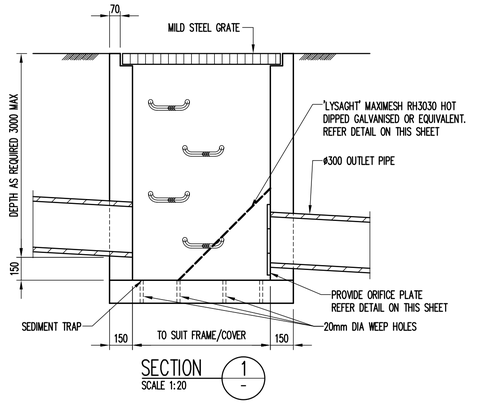

SECTION 1 / -
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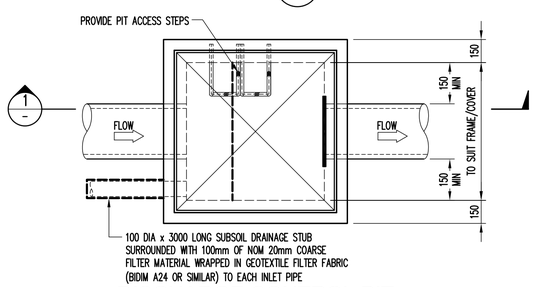
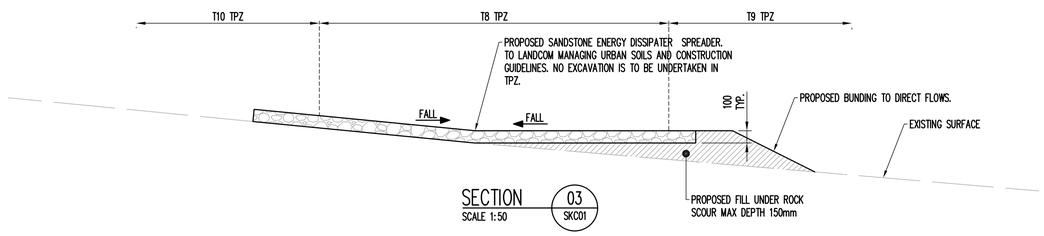


DISCHARGE CONTROL PIT

PLAN
SCALE 1: 20



SECTION 03 / SKC01
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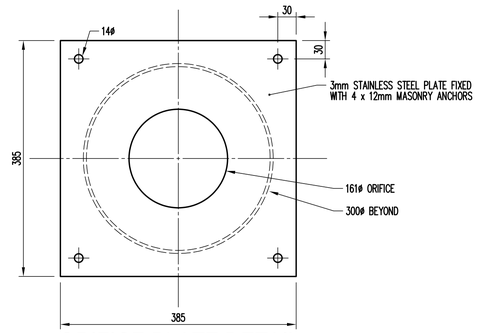

ORIFICE PLATE DETAIL
SCALE 1: 5

PRELIMINARY

Rev	Description	Eng	Draft	Date
P6	ISSUE FOR DA	GC	RG	06.04.17
P5	ISSUE FOR DA	PY	PK	22.07.16
P4	ISSUE FOR COORDINATION	PY	PK	21.07.16
P3	ISSUE FOR DA	PY	PK	29.06.16
P2	ISSUE FOR DA	PY	PK	24.06.16
P1	PRELIMINARY	PY	PK	10.06.16

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Project
ESTIA HEALTH DEVELOPMENT
144 Killeaton Street St Ives

Sheet Subject
DETAILS SHEET 1 OF 2

Scale : A1
AS SHOWN

Drawn
RG

Authorised

Job No
151553

Drawing No
SKC02

Revision
P6

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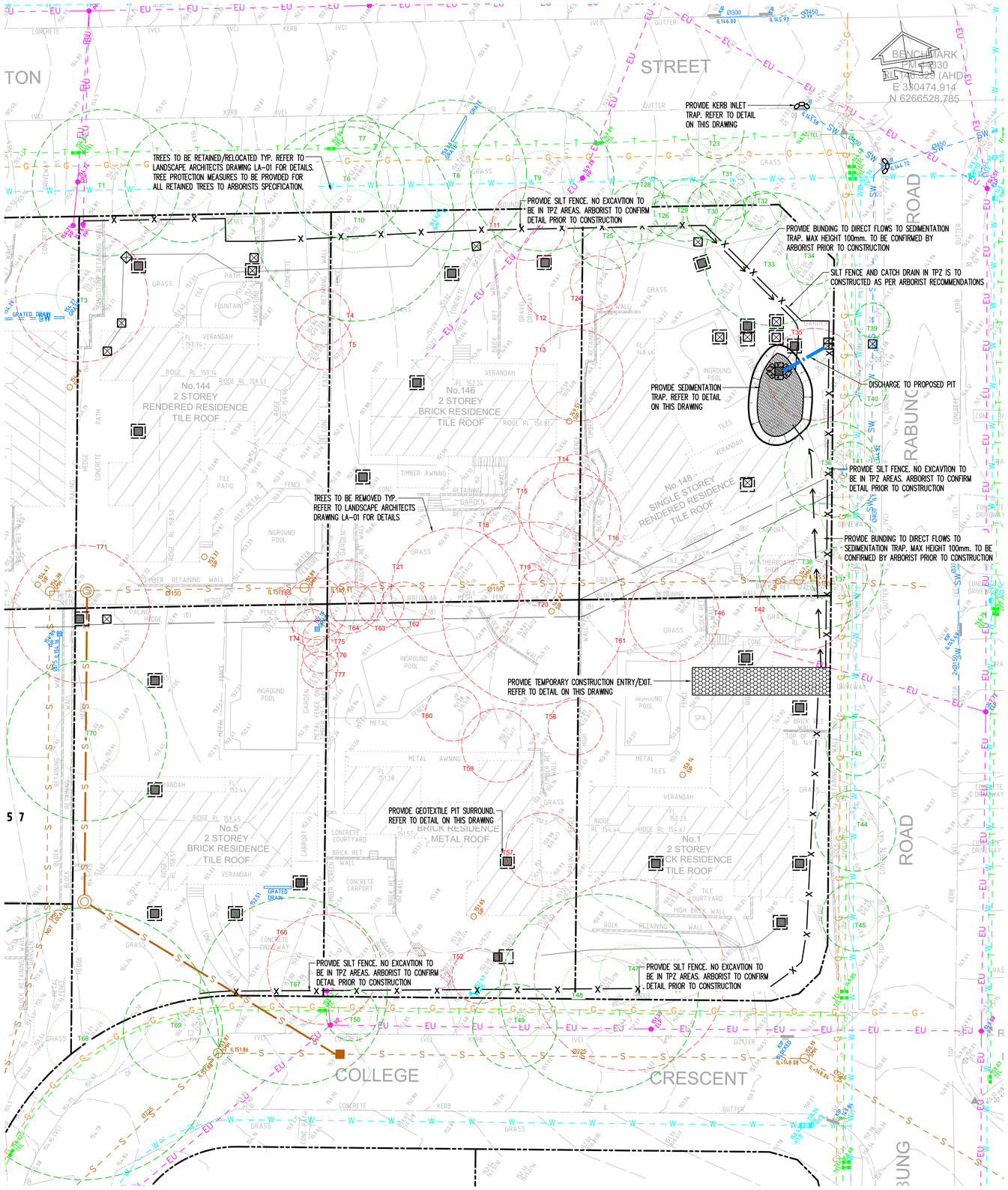

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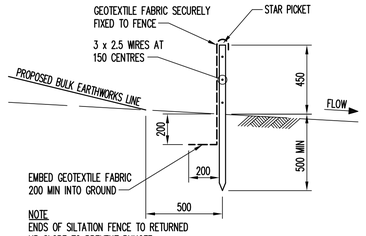
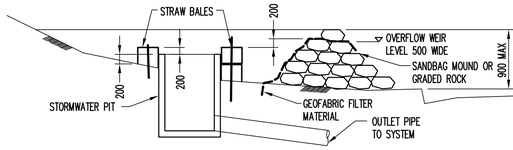


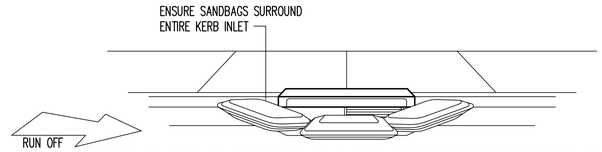
SILTATION FENCE DETAIL

SCALE 1: 20



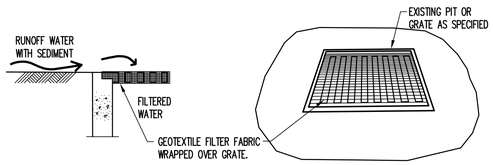
SEDIMENTATION TRAP

NTS



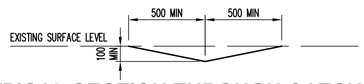
SANDBAG KERB INLET SEDIMENT TRAP

NTS



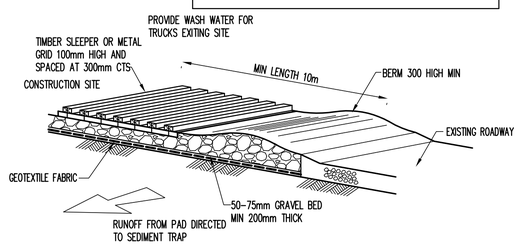
GEOTEXTILE PIT FILTER

NTS



TYPICAL SECTION THROUGH CATCH DRAIN

SCALE 1: 20



TEMPORARY CONSTRUCTION VEHICLE EXIT

NTS

EROSION AND SEDIMENT CONTROL NOTES

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

Sequence Of Works

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

WATER QUALITY TESTING REQUIREMENTS

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

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

EROSION AND SEDIMENT CONTROL LEGEND

- Siltation fence
- Stormwater pit with Geotextile filter surround
- Sandbag sediment trap
- Catch drain

PRELIMINARY

Rev	Description	Eng	Draft	Date
P6	ISSUE FOR DA	GC	RG	06.04.17
P5	ISSUE FOR DA	PY	PK	22.07.16
P4	ISSUE FOR COORDINATION	PY	PK	21.07.16
P3	ISSUE FOR DA	PY	PK	29.06.16
P2	ISSUE FOR DA	PY	PK	24.06.16
P1	PRELIMINARY	PY	PK	10.06.16

Architect
Morrison Design Partnership ARCHITECTS Since 1969
302/69 Christie Street,
St Leonards, NSW 2065
E: morrisondesign@mdpa.com.au
P: 02 9966 5566

Structural Engineer
Taylor Thomson Whitting
612 9439 7288 | 48 Chandos Street St Leonards NSW 2065

Project
ESTIA HEALTH DEVELOPMENT
144 Killeaton Street St Ives

Sheet Subject
ENVIRONMENTAL SITE MANAGEMENT PLAN

Scale : A1	Drawn	Authorised
1:250	RG	

Job No	Drawing No	Revision
151553	SKC03	P6

Plot File Created: Apr 06, 2017 - 4:12pm

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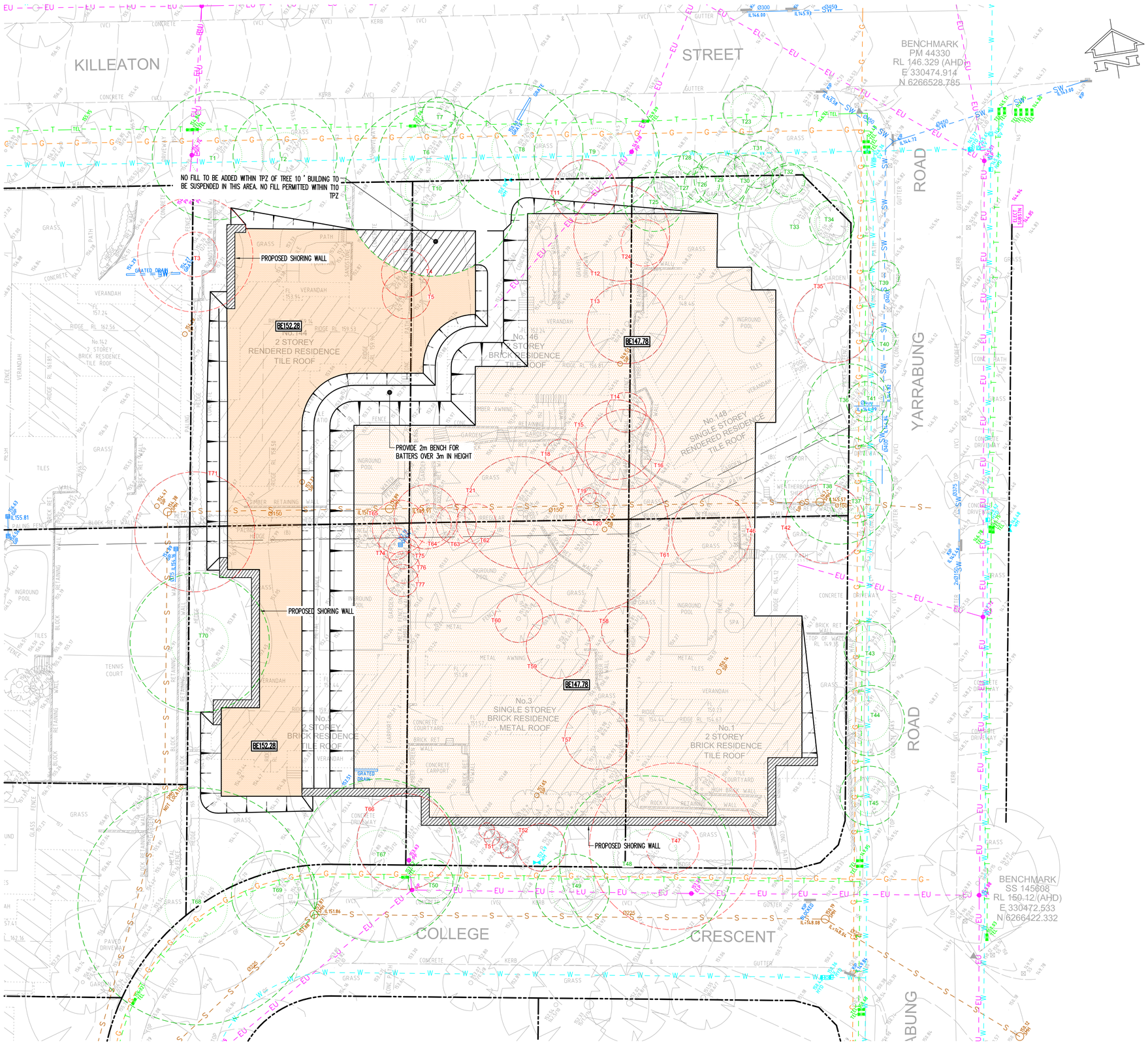

BULK EARTHWORKS NOTES

1. All bulk earthworks setout from grid lines U.N.O.
2. All batters at a slope of 1 (H) : 1 (V) U.N.O.
3. Excavated material may be used as structural fill provided,
   (i) it complies with the specification requirements for fill material,
   (ii) the placement moisture content complies with the Geotechnical Consultants requirements, and allows filling to be placed and proofrolled in accordance with the specification. Where necessary the Contractor must moisture condition the excavated material to meet these requirements.
4. Compact fill areas and subgrade to not less than:

Location	Standard dry density (AS 1289 5.1.1.)	Moisture (OMC)
Under building slabs on ground:	98%	±2%
Under roads and carparks:	98%	±2%
Landscaped areas:	95%	±2%

5. Before placing fill, proof roll exposed subgrade with a 10 tonne minimum roller to test subgrade and then remove soft spots (areas with more than 3mm movement under roller). Soft spots to be replaced with **select** fill U.N.O.
6. Contractor shall place safety barriers around excavations in accordance with relevant safety regulations.
7. For interpretation of bulk earthworks foot print line shown on the bulk earthworks drawings refer to the bulk earthworks construction legend.
8. Bulk earthwork drawings are not to be used for detailed excavation.
9. Refer to Geotechnical Report prepared by – J&K GEOTECHNICS
   REF: 85320.00 DATE: FEBRUARY 2016

ASSUMED BUILDING SLAB THICKNESS 120mm THICK CONCRETE ON 100mm THICK FINE CRUSHED ROCK (DGB20). TO BE CONFIRMED PRIOR TO CONSTRUCTION

TREE PROTECTION NOTES

1. Refer to Arborist Report prior to commencement of any works on site.
2. Trees to be retained and managed throughout the development shall be fenced off from the proposed development or in some situations depending on site access may require trunk protection as detailed in Section 4 – Tree Protection Measures of AS4970 – 2009 The Protection of Trees on Development Sites or in some situation the existing boundary fence shall be retained throughout proposed development so as to provide tree protection barrier
3. Demolition works within the TPZ of trees to be preserved shall be carried out so as to avoid damage to the roots. In sensitive areas manual excavation may be necessary Manual excavation shall be by hand under the direction of the project arborist.
4. Where the project arborist identifies roots to be pruned within or at the outer edge of the TPZ, they should be pruned with a final cut to undamaged wood. Pruning cuts should be made with sharp tools such as secateurs, pruners, handsaws or chainsaws. Pruning wounds should not be treated with dressings or paints. It is totally unacceptable for roots within the TPZ to be 'pruned' with machinery such as backhoes or excavators.
5. Where roots within the TPZ are exposed by excavation, temporary root protection should be installed to prevent them drying out This may include jute mesh or hessian sheeting as multiple layers over exposed roots and excavated soil profile, extending to the full depth of the root zone. Root protection sheeting should be pegged in place and kept moist during the period that the root zone is exposed
6. All areas enclosed by protective fencing must have the entire ground surface mulched to a depth of 100 mm with composted Eucalyptus leaf and woodchip to help retain soil moisture and reduce erosion.
7. Any site activity close to or beneath the drip line of Trees 10, 47 and 70 shall have elevated protection installed clear of the ground to avoid compaction and damage to roots. Protection may comprise timber planks or metal decking supported on scaffolding or the like.
8. Hydraulic plans have provided by the applicant indicate that sub soil stormwater and sewer lines may need to be installed within the TPZ of trees nominated for preservation. Trenching for stormwater / sewer installation within the TPZ and SRZ shall be avoided. Adopt directional drilling / approved under boring techniques as per Section 4 of AS4970 CL.4.4.5 to avoid adverse impacts on tree roots.
9. The directional drilling bore should be at least 600 mm deep. The project arborist shall assess the likely impacts of boring and bore pits on retained trees. Bore pits within the TPZ shall be hand dug under the direction of an Arborist. No excavation shall occur within the Structural Root Zones of trees nominated for preservation.

PRELIMINARY

Rev	Description	Eng	Draft	Date
P5	ISSUED FOR DA	PY	PK	22.07.16
P5	ISSUED FOR REVIEW	PY	PK	22.07.16
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P3	ISSUED FOR DA	PY	PK	29.06.16
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P1	ISSUED FOR DA	PY	PK	24.06.16
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P: 02 9966 5566

Structural Engineer
TTW Taylor Thomson Whitting
612 9439 7288 | 48 Chandos Street St Leonards NSW 2065

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Sheet Subject
BULK EARTHWORKS PLAN

Scale : A1
1:250

Drawn
PK

Authorised

Job No
151553

Drawing No
SKC04

Revision
P6

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