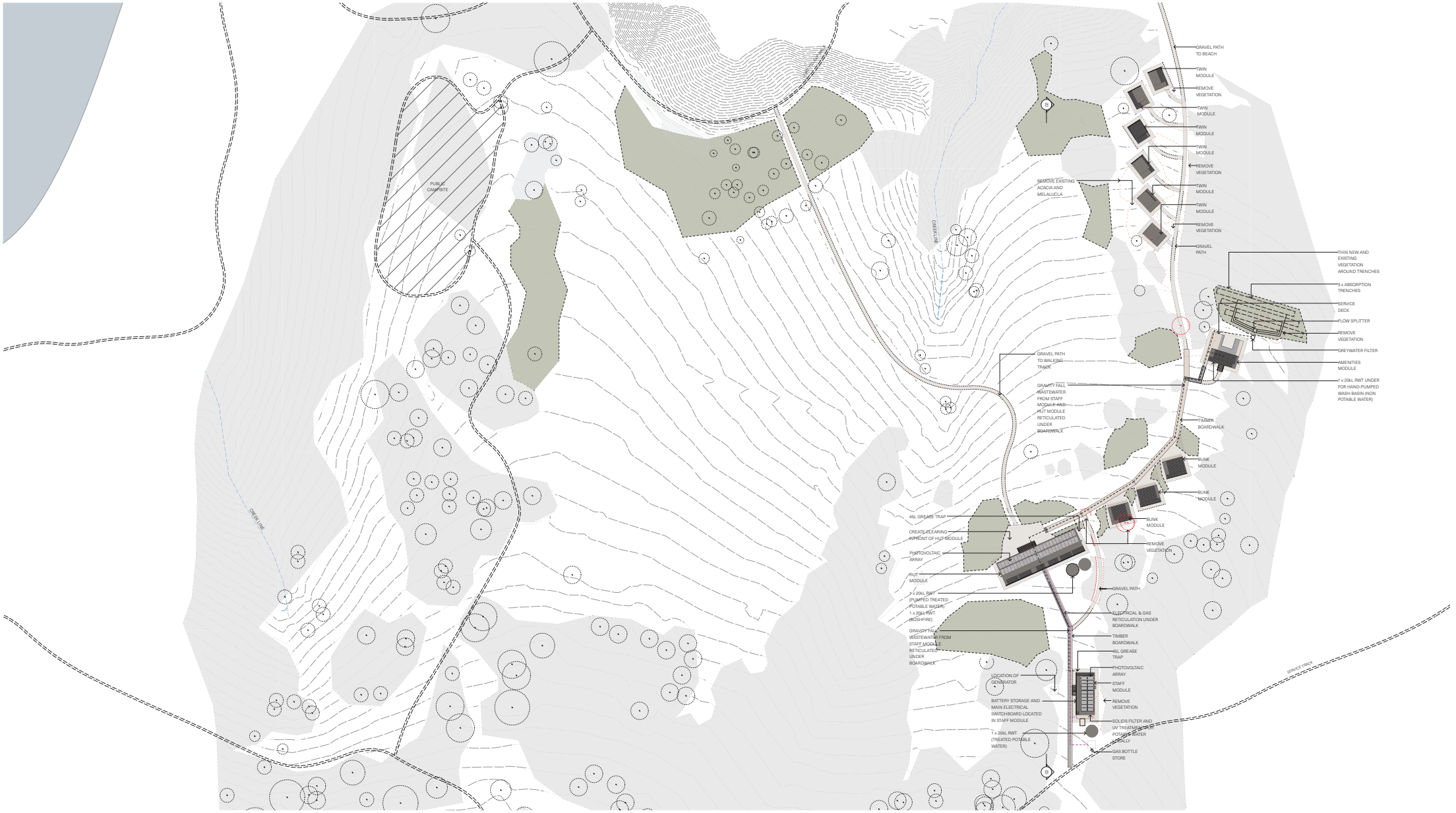
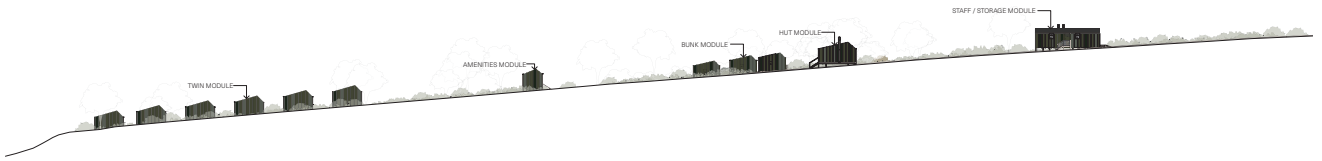
APPENDIX G.1
LIGHT TO LIGHT ARCHITECTURAL DESIGNS



01 MOWARRY SITE PLAN / ROOF PLAN - 1:500



02 MOWARRY SITE SECTION - 1:500

COMPLIANCE
- COMPLY WITH ALL RELEVANT AUTHORITIES REQUIREMENTS
- COMPLY WITH THE BUILDING CODE OF AUSTRALIA
- COMPLY WITH ALL RELEVANT AUSTRALIAN STANDARDS
- DIMENSIONS IN MILLIMETRES
- DO NOT SCALE, USE FIGURED DIMENSIONS ONLY
- NOTIFY ARCHITECT IF DISCREPANCY EXISTS

LEGEND REFER TO SCHEDULES FOR MORE INFORMATION

CR-XX	CONCRETE	MT-XX	METAL	ST-XX	STONE	SW-XX	SANITARY FITTINGS
FC-XX	FIBRE CEMENT	PB-XX	PLASTERBOARD	TL-XX	TILE	LF-XX	LIGHT FITTINGS
GL-XX	GLASS	PT-XX	PAINT	WM-XX	WATERPROOF MEMBRANE	EF-XX	OTHER ELEC. FITTINGS
IN-XX	INSULATION	RF-XX	ROOFING	WM-XX	WALL TYPE	FE-XX	FURNITURE / EQUIP

AC	AIRCONDITIONER	DP	RAINWATER OVERFLOW	ABV	ABOVE
AW	4 PANE SASHLESS WINDOW	RWH	RAINWATER HEAD	RL	RELATIVE LEVEL
DP	DOWNPIPE	RWO	RAINWATER OUTLET	SL	SLAB LEVEL
VP	VENT PIPE	SGD	SINGLE GLAZED DOOR	FFL	FINISHED FLOOR LEVEL
FG	FIXED GLAZING	SK	SKYLIGHT	FCL	FINISHED CEILING LEVEL
FW	FLOOR WASTE	SWP	STORMWATER PIT	AFF	ABOVE FINISH FLOOR
HWS	HOT WATER SYSTEM	TGSI	TACTILE SURFACE GROUND INDICATOR		
HR	HANDRAIL	TW	TRADE WASTE		
LD	LINEAR DRAIN	WPM	WATERPROOF MEMBRANE		

KEY
- VEG. REMOVAL
- NEW PLANTING
- EXISTING VEG.
- CULTURAL ZONE

ISSUE	DATE	DESCRIPTION
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COVA

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SECTION J
INTEGRECO

BUSHFIRE CONSULTANT
ECO LOGICAL

STRUCTURAL ENGINEER
SDA

CLIENT
NSW GOVERNMENT

STATUS
DESIGN DEVELOPMENT

DRAWN JS
CHECKED AB

SCALE 1:500
NORTH

PROJECT NUMBER
2006

DRAWING
MOWARRY SITE PLAN / ROOF PLAN

DRAWING NUMBER
2006-DD002-C

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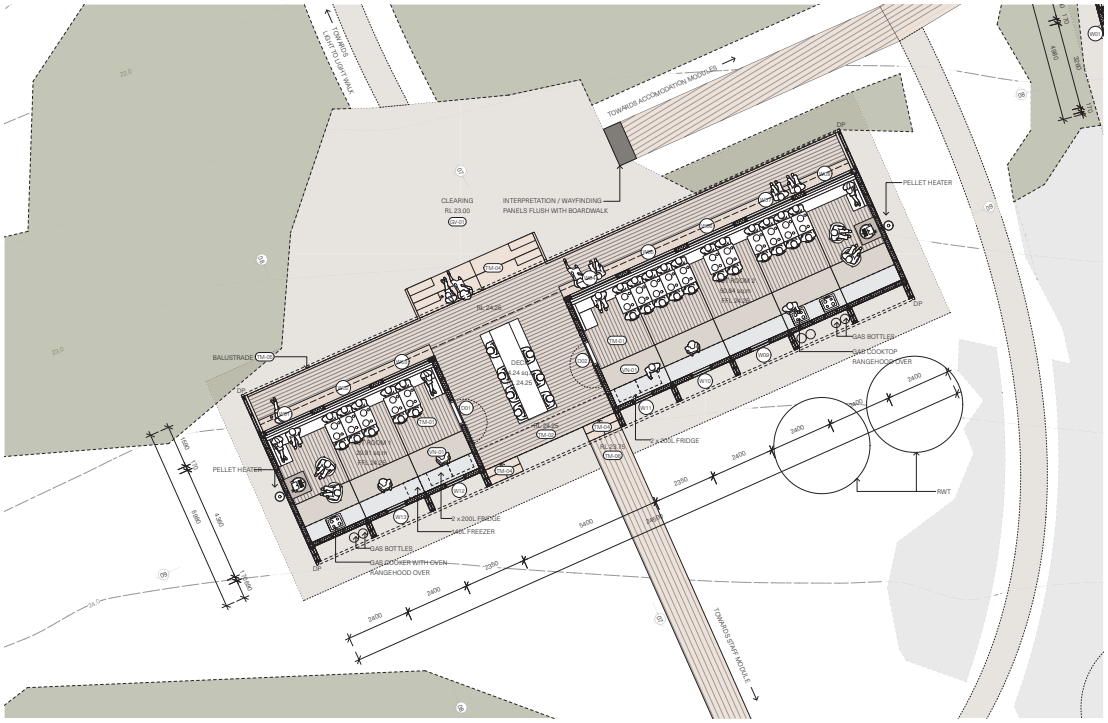
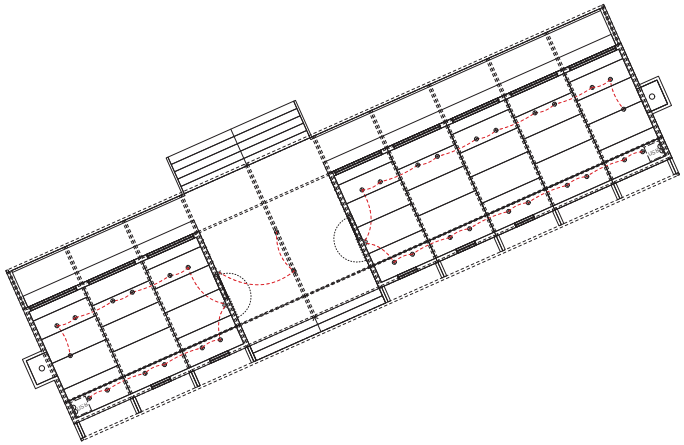
Fascimile: (02) 9212 2858
www.andrewburns.net.au

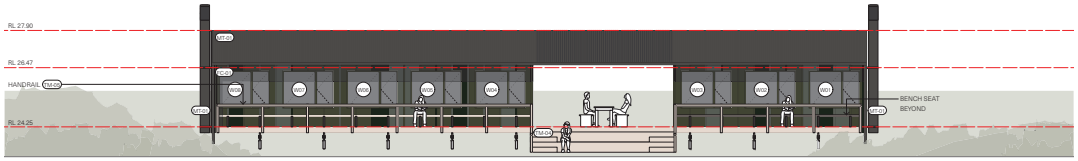
PROJECT
LIGHT TO LIGHT WALK



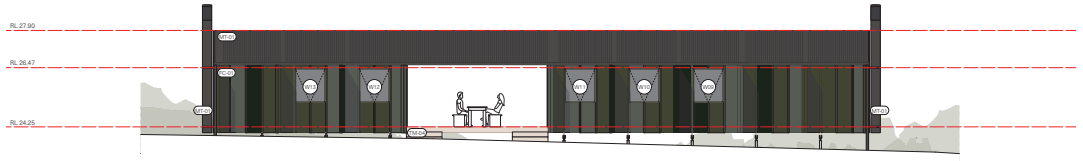
01 HUT MODULE - MOWARRY
GROUND FLOOR PLAN - 1:100



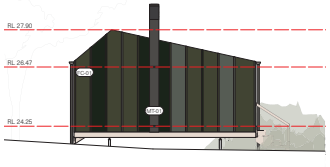
02 HUT MODULE - MOWARRY
RCP / ELECTRICAL PLAN - 1:100



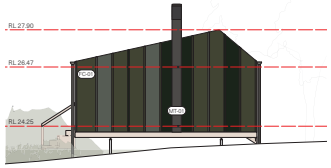
03 HUT MODULE - MOWARRY
NORTH ELEVATION - 1:100



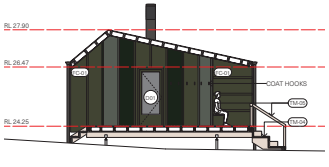
04 HUT MODULE - MOWARRY
SOUTH ELEVATION - 1:100



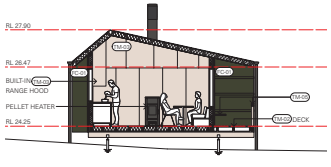
05 HUT MODULE - HEGARTYS
EAST ELEVATION - 1:100



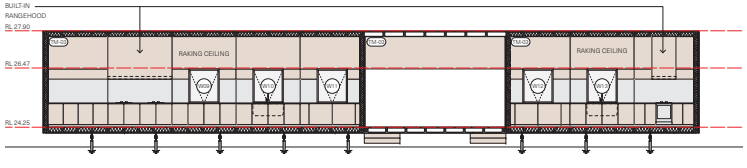
06 HUT MODULE - HEGARTYS
WEST ELEVATION - 1:100



07 HUT MODULE - HEGARTYS
SECTION AA - 1:100



08 HUT MODULE - HEGARTYS
SECTION BB - 1:100



09 HUT MODULE - HEGARTYS
SECTION CC - 1:100

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STRUCTURAL ENGINEER
SDA

CLIENT
NSW GOVERNMENT

STATUS
DESIGN DEVELOPMENT

DRAWN JS
CHECKED AB

SCALE 1:100
NORTH

PROJECT NUMBER
2006

DRAWING
HUT MODULE PLANS - MOWARRY

DRAWING NUMBER
2006-DD101-C

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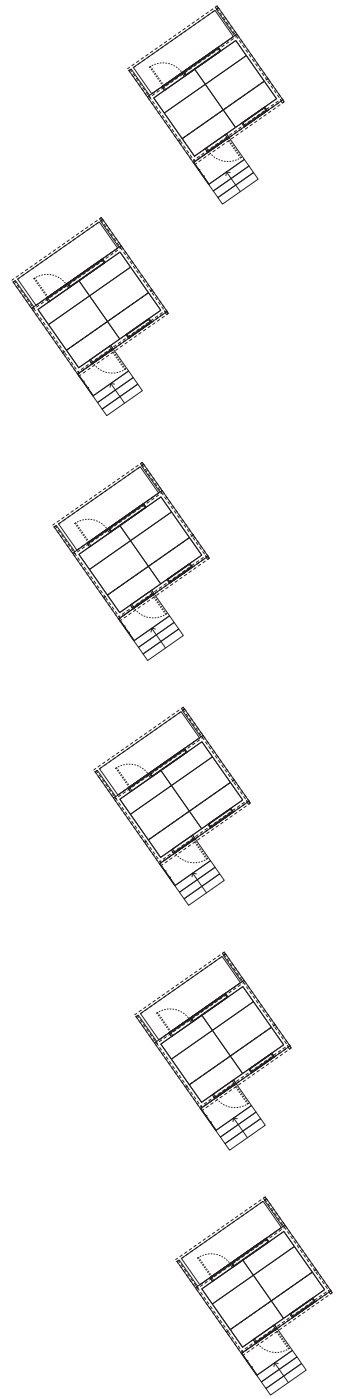
www.andrewburns.net.au

PROJECT
LIGHT TO LIGHT WALK

01 TWIN MODULES - MOWARRY
GROUND FLOOR PLAN - 1:100



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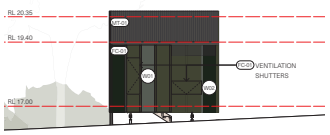
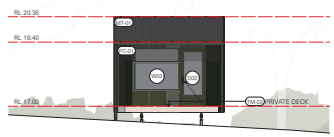
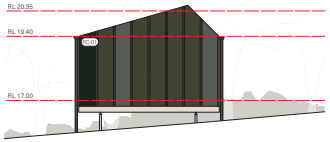
RCP - 1:100



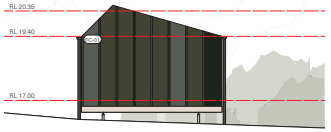
03 TWIN MODULES - MOWARRY
NORTH ELEVATION - 1:100



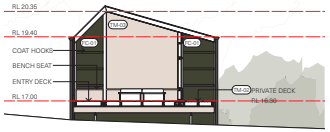
04 TWIN MODULES - MOWARRY
SOUTH ELEVATION - 1:100



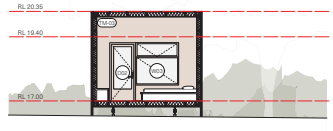
05 TWIN MODULES - MOWARRY
EAST ELEVATION - 1:100



06 TWIN MODULES - MOWARRY
WEST ELEVATION - 1:100



07 TWIN MODULES - MOWARRY
SECTION AA - 1:100



08 STAFF MODULE - MOWARRY
SECTION BB - 1:100

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IN-XX	INSULATION	RF-XX	ROOFING	MM-XX	WALL TYPE	FE-XX	FURNITURE / EQUIP

AC	AIRCONDITIONER	OF	RAINWATER OVERFLOW	ABV	ABOVE
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KEY
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- NEW PLANTING
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ACCESS CONSULTANT
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SECTION J
INTEGRECO

BUSHFIRE CONSULTANT
ECO LOGICAL

STRUCTURAL ENGINEER
SDA

CLIENT
NSW GOVERNMENT

STATUS
DESIGN DEVELOPMENT

DRAWN JS
CHECKED AB

SCALE 1:100
NORTH

PROJECT NUMBER
2006

DRAWING
TWIN MODULE PLANS - MOWARRY

DRAWING NUMBER
2006-DD104-C

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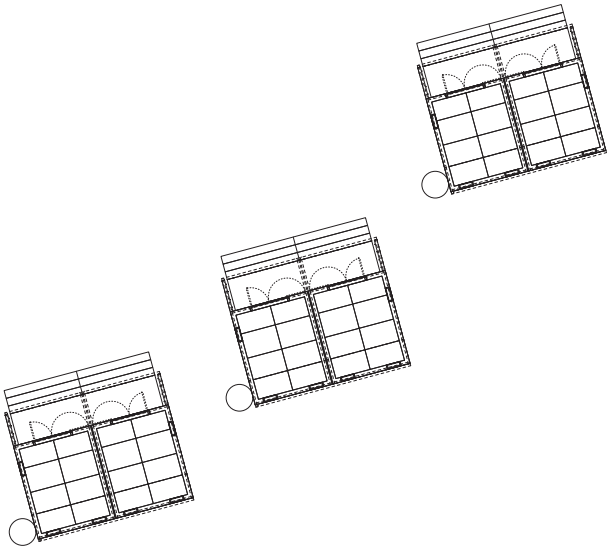
www.andrewburns.net.au

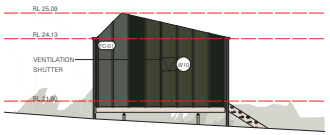
PROJECT
LIGHT TO LIGHT WALK

01 BUNK MODULES - MOWARRY
GROUND FLOOR PLAN - 1:100



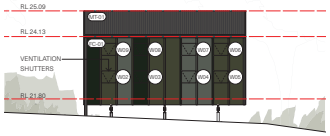
02 BUNK MODULES - MOWARRY
RCP - 1:100

03 BUNK MODULES - MOWARRY
NORTH ELEVATION - 1:100

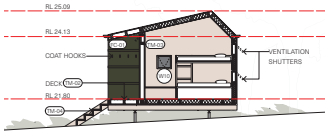


04 BUNK MODULE - MOWARRY
EAST ELEVATION - 1:100

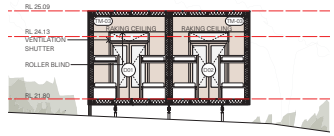
05 BUNK MODULE - MOWARRY
WEST ELEVATION - 1:100



06 BUNK MODULES - MOWARRY
SOUTH ELEVATION - 1:100



07 BUNK MODULE - MOWARRY
SECTION AA - 1:100



08 BUNK MODULE - MOWARRY
SECTION BB - 1:100

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CHECKED AB

SCALE 1:100
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DRAWING
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DRAWING NUMBER
2006-DD106-C

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PROJECT
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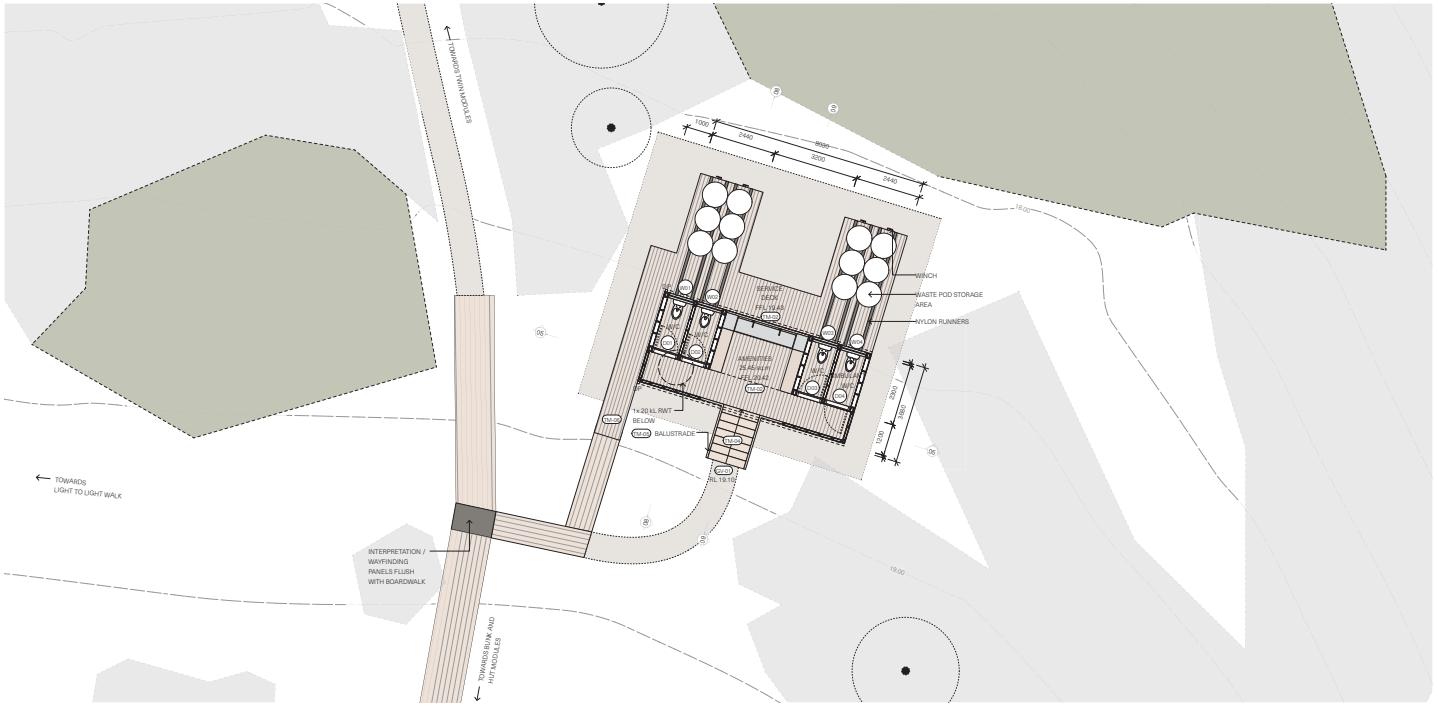
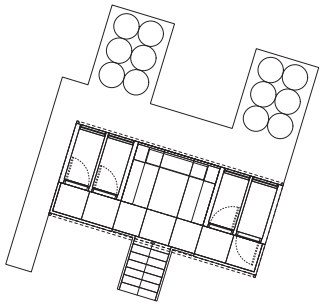
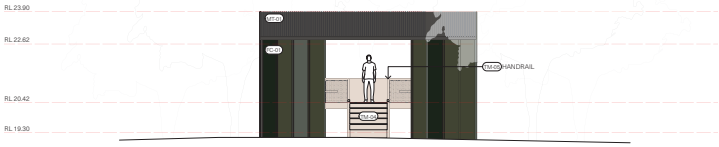


01 AMENITIES MODULE - MOWARRY
GROUND FLOOR PLAN - 1:100

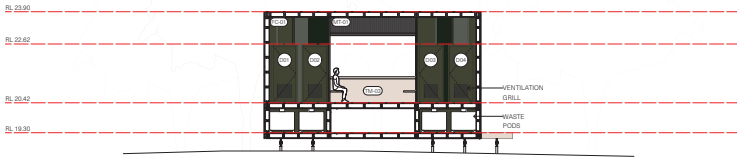


02 AMENITIES MODULE - MOWARRY
RCP / ELECTRICAL PLAN - 1:100

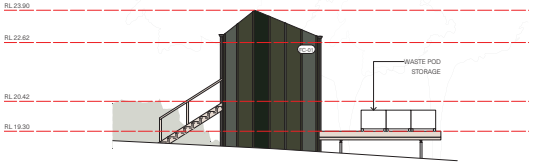


03 AMENITIES MODULE - MOWARRY
SOUTH ELEVATION - 1:100

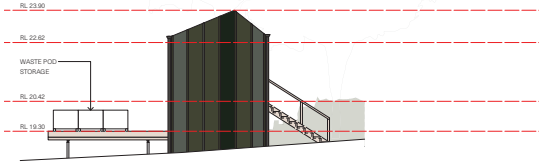
04 AMENITIES MODULE - MOWARRY
NORTH ELEVATION - 1:100



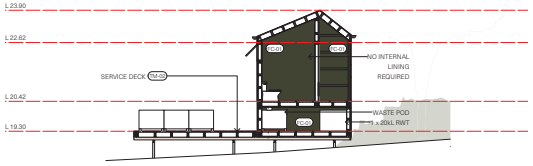
05 AMENITIES MODULE - MOWARRY
SECTION AA - 1:100



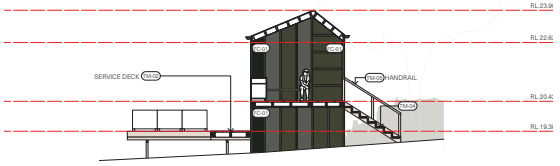
06 AMENITIES MODULE - MOWARRY
EAST ELEVATION - 1:100



07 AMENITIES MODULE - MOWARRY
WEST ELEVATION - 1:100



08 AMENITIES MODULE - MOWARRY
SECTION BB - 1:100



09 AMENITIES MODULE - MOWARRY
SECTION CC - 1:100

COMPLIANCE
- COMPLY WITH ALL RELEVANT AUTHORITIES REQUIREMENTS
- COMPLY WITH THE BUILDING CODE OF AUSTRALIA
- COMPLY WITH ALL RELEVANT AUSTRALIAN STANDARDS
- DIMENSIONS IN MILLIMETRES
- DO NOT SCALE, USE FIGURED DIMENSIONS ONLY
- NOTIFY ARCHITECT IF DISCREPANCY EXISTS

LEGEND REFER TO SCHEDULES FOR MORE INFORMATION

CR-XX	CONCRETE	MT-XX	METAL	ST-XX	STONE	SW-XX	SANITARY FITTINGS
FC-XX	FIBRE CEMENT	PB-XX	PLASTERBOARD	TL-XX	TILE	LF-XX	LIGHT FITTINGS
GL-XX	GLASS	PT-XX	PAINT	WM-XX	WATERPROOF MEMBRANE	EF-XX	OTHER ELEC. FITTINGS
IN-XX	INSULATION	RF-XX	ROOFING	WM-XX	WALL TYPE	FE-XX	FURNITURE / EQUIP

AC	AIRCONDITIONER	OF	RAINWATER OVERFLOW	ABV	ABOVE		
AW	4 PANE SASHLESS WINDOW	RWH	RAINWATER HEAD	RL	RELATIVE LEVEL		
DP	DOWNPIPE	RWO	RAINWATER OUTLET	SL	SLAB LEVEL		
VP	VENT PIPE	SGD	SINGLE GLAZED DOOR	FFL	FINISHED FLOOR LEVEL		
FG	FIXED GLAZING	SK	SKYLIGHT	FCL	FINISHED CEILING LEVEL		
FW	FLOOR WASTE	SWP	STORMWATER PIT	AFF	ABOVE FINISH FLOOR		
HWS	HOT WATER SYSTEM	TGSI	TACTILE SURFACE GROUND INDICATOR				
HR	HANDRAIL	TW	TRADE WASTE				
LD	LINEAR DRAIN	WPM	WATERPROOF MEMBRANE				

KEY
- VEG. REMOVAL
- NEW PLANTING
- EXISTING VEG.
- CULTURAL ZONE

ISSUE	DATE	DESCRIPTION
-	28.04.21	FOR CLIENT REVIEW
A	07.05.21	FOR CONSULTANTS
B	20.05.21	50% DD
C	16.06.21	FOR CONSULTANTS

BCA / PCA
BUILDCERT

SERVICES CONSULTANT
COVA

ACCESS CONSULTANT
ERIC MARTIN

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JOHN OULTRAM

GEOTECH / WASTEWATER
STODDARD ENGINEERING

SECTION J
INTEGRECO

BUSHFIRE CONSULTANT
ECO LOGICAL

STRUCTURAL ENGINEER
SDA

CLIENT
NSW GOVERNMENT

STATUS
DESIGN DEVELOPMENT

DRAWN JS
CHECKED AB

SCALE 1:100
NORTH

PROJECT NUMBER
2006

DRAWING
AMENITIES MODULE PLANS - MOWARRY

DRAWING NUMBER
2006-DD108-C

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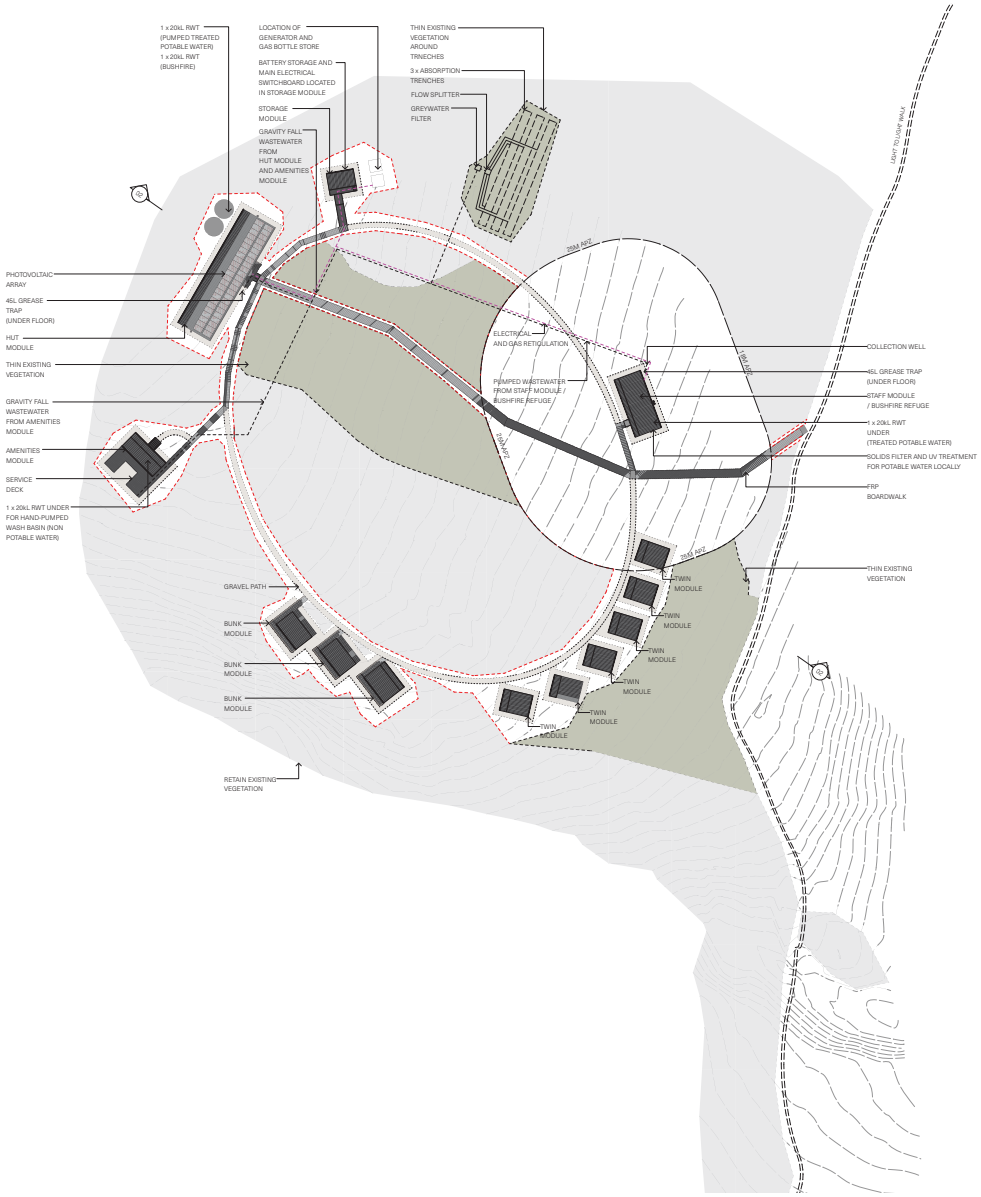
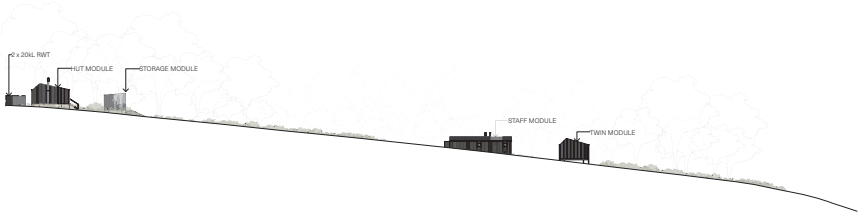
www.andrewburns.net.au

PROJECT
LIGHT TO LIGHT WALK



01 HEGARTYS SITE PLAN / ROOF PLAN - 1:500



02 HEGARTYS SITE SECTION - 1:500

LEGEND REFER TO SCHEDULES FOR MORE INFORMATION

CR-XX	CONCRETE	MT-XX	METAL	ST-XX	STONE
FC-XX	FIBRE CEMENT	PB-XX	PLASTERBOARD	TL-XX	TILE
GL-XX	GLASS	PT-XX	PAINT	MM-XX	WATERPROOF MEMBRANE
IN-XX	INSULATION	RF-XX	ROOFING	WM-XX	WALL TYPE

SW-XX	SANITARY FITTINGS		
LF-XX	LIGHT FITTINGS		
EF-XX	OTHER ELEC. FITTINGS		
FE-XX	FURNITURE / EQUIP		

AC	AIRCONDITIONER	OF	RAINWATER OVERFLOW
AW	4 PANE SASHLESS WINDOW	RWH	RAINWATER HEAD
DP	DOWNPIPE	RWO	RAINWATER OUTLET
VP	VENT PIPE	SGD	SINGLE GLAZED DOOR
FG	FIXED GLAZING	SK	SKYLIGHT
FW	FLOOR WASTE	SWP	STORMWATER PIT
HWS	HOT WATER SYSTEM	TGSI	TACTILE SURFACE GROUND INDICATOR
HR	HANDRAIL	TW	TRADE WASTE
LD	LINEAR DRAIN	WPM	WATERPROOF MEMBRANE

ABV	ABOVE		
RL	RELATIVE LEVEL		
SL	SLAB LEVEL		
FFL	FINISHED FLOOR LEVEL		
FCL	FINISHED CEILING LEVEL		
AFF	ABOVE FINISH FLOOR		

KEY
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- CULTURAL ZONE

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ECO LOGICAL

STRUCTURAL ENGINEER
SDA

CLIENT
NSW GOVERNMENT

STATUS
DESIGN DEVELOPMENT

DRAWN JS
CHECKED AB

SCALE 1:500
NORTH

PROJECT NUMBER
2006

DRAWING
HEGARTYS SITE PLAN / ROOF PLAN

DRAWING NUMBER
2006-DD003-C

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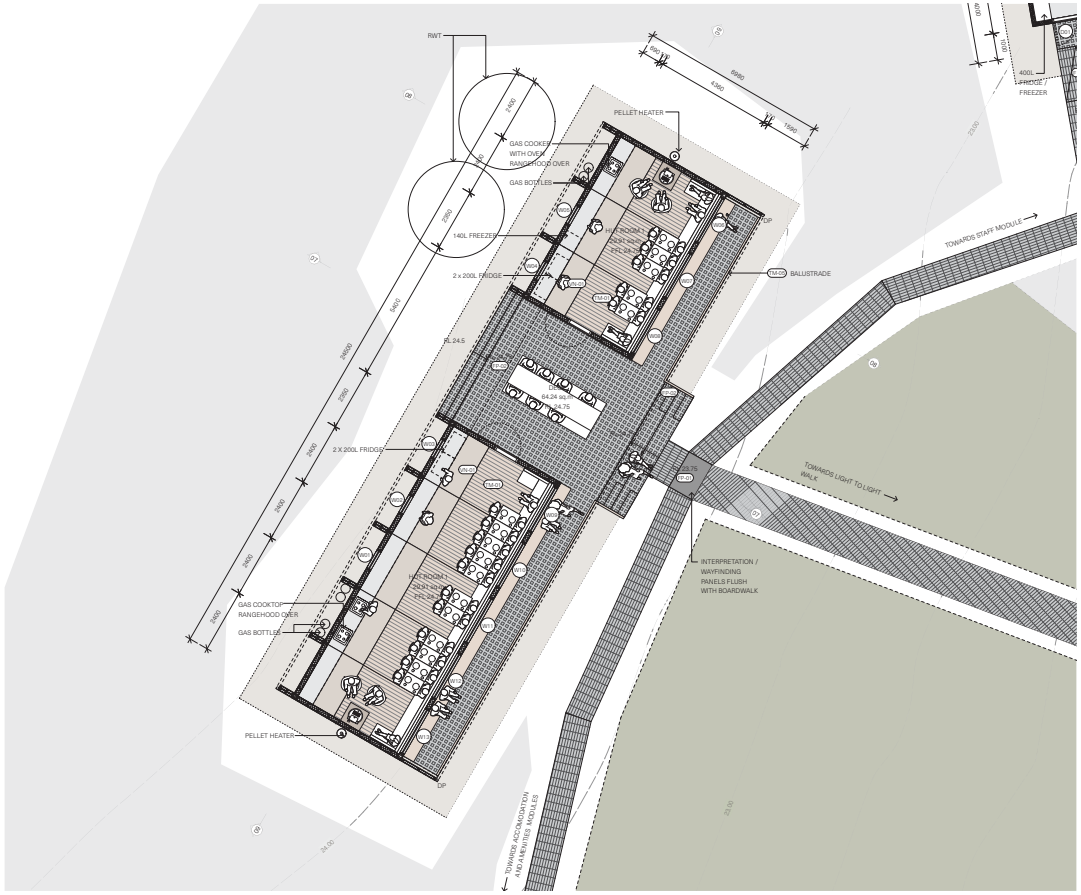
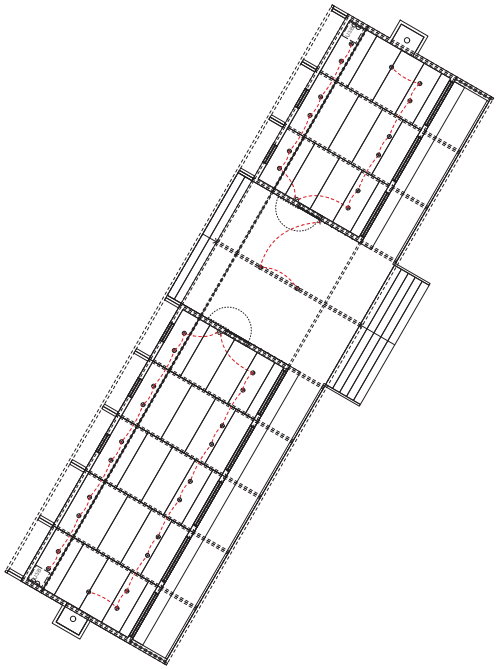
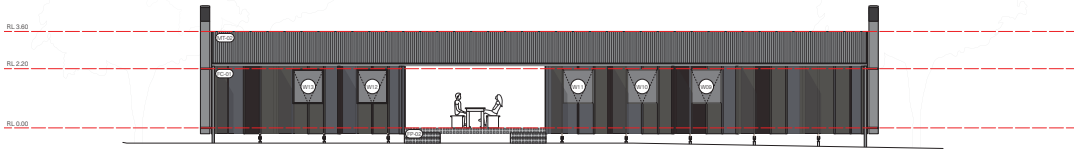
PROJECT
LIGHT TO LIGHT WALK





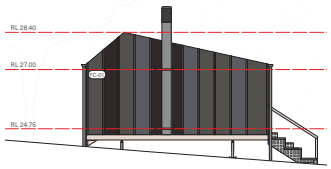
01 HUT MODULE - HEGARTYS
GROUND FLOOR PLAN - 1:100

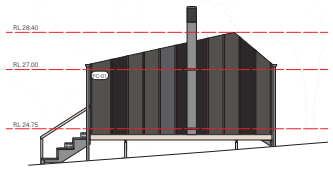
02 HUT MODULE - HEGARTYS
RCP / ELECTRICAL PLAN - 1:100

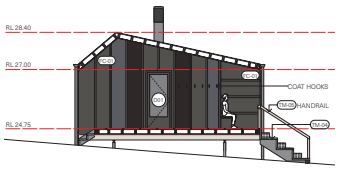


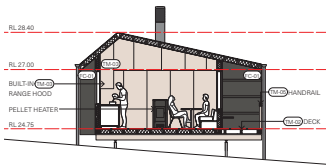
03 HUT MODULE - HEGARTYS
EAST ELEVATION - 1:100

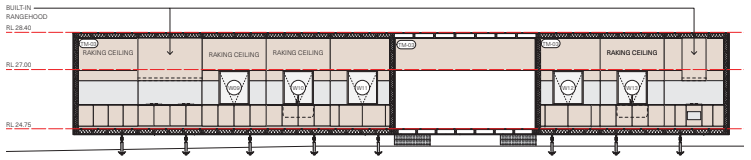
04 HUT MODULE - HEGARTYS
WEST ELEVATION - 1:100











05 HUT MODULE - HEGARTYS
NORTH ELEVATION - 1:100

06 HUT MODULE - HEGARTYS
SOUTH ELEVATION - 1:100

07 HUT MODULE - HEGARTYS
SECTION AA - 1:100

08 HUT MODULE - HEGARTYS
SECTION BB - 1:100

09 HUT MODULE - HEGARTYS
SECTION CC - 1:100

COMPLIANCE
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- COMPLY WITH THE BUILDING CODE OF AUSTRALIA
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INTELLECTUAL PROPERTY

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AC	AIRCONDITIONER	CF	RAINWATER OVERFLOW	ABV	ABOVE	KEY	
AW	4 PANE SASHLESS WINDOW	RWH	RAINWATER HEAD	RL	RELATIVE LEVEL		VEG. REMOVAL
DP	DOWNPIPE	RWG	RAINWATER OUTLET	SL	SLAB LEVEL		NEW PLANTING
VP	VENT PIPE	SGD	SINGLE GLAZED DOOR	FFL	FINISHED FLOOR LEVEL		EXISTING VEG.
FG	FIXED GLAZING	SK	SKYLIGHT	FCL	FINISHED CEILING LEVEL		CULTURAL ZONE
FW	FLOOR WASTE	SWP	STORMWATER PIT	AFF	ABOVE FINISH FLOOR		
HWS	HOT WATER SYSTEM	TGSI	TACTILE SURFACE GROUND INDICATOR				
HR	HANDRAIL	TW	TRADE WASTE				
LD	LINEAR DRAIN	WPM	WATERPROOF MEMBRANE				

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COVA

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INTEGRECO

BUSHFIRE CONSULTANT
ECO LOGICAL

STRUCTURAL ENGINEER
SDA

CLIENT
NSW GOVERNMENT

STATUS
DESIGN DEVELOPMENT

DRAWN JS | CHECKED AB

SCALE 1:100 | NORTH

PROJECT NUMBER
2006

DRAWING
HUT MODULE PLANS - HEGARTYS

DRAWING NUMBER
2006-DD102-C

PROJECT
LIGHT TO LIGHT WALK

ANDREW BURNS ARCHITECT
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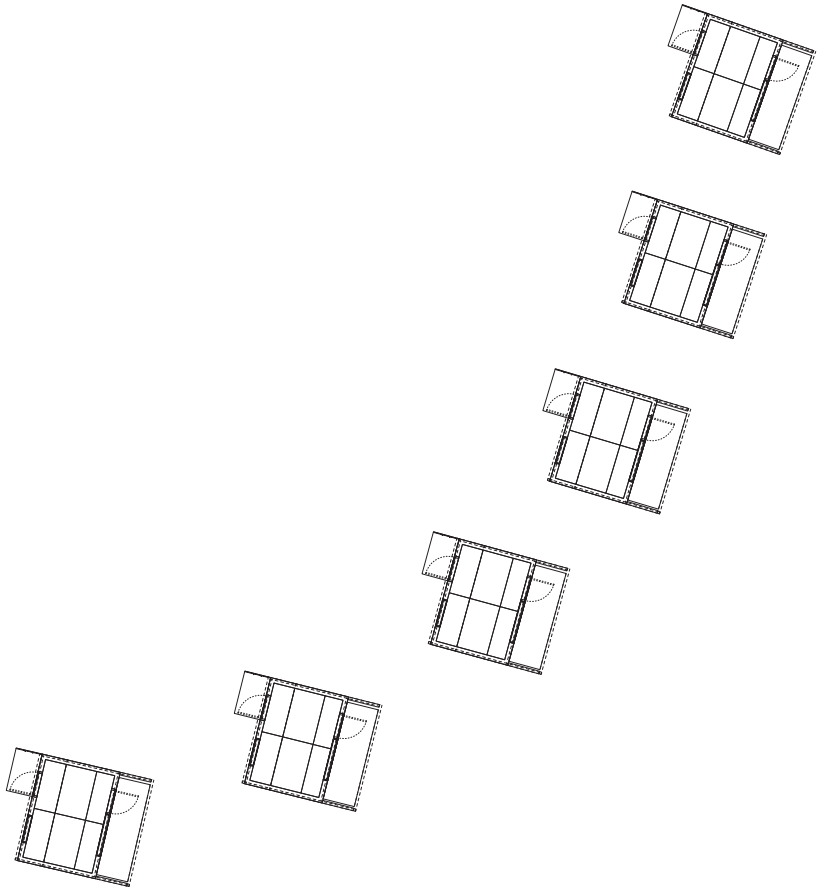
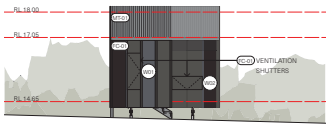
Fascimile: (02) 9212 2858
www.andrewburns.net.au

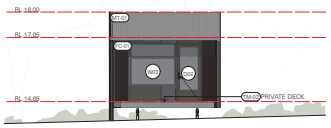
01 TWIN MODULES - HEGARTYS
GROUND FLOOR PLAN - 1:100



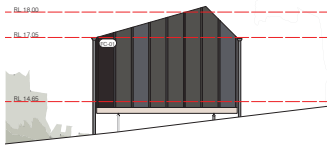
02 TWIN MODULES - HEGARTYS
RCP- 1:100



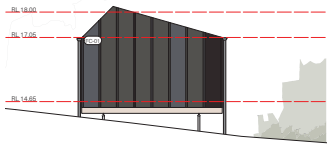
03 TWIN MODULES - HEGARTYS
EAST ELEVATION - 1:100



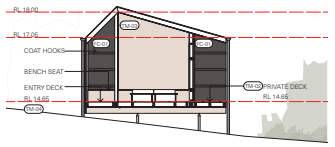
04 TWIN MODULES - HEGARTYS
WEST ELEVATION - 1:100



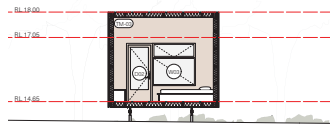
05 TWIN MODULES - HEGARTYS
NORTH ELEVATION - 1:100



06 TWIN MODULES - HEGARTYS
SOUTH ELEVATION - 1:100



07 TWIN MODULES - HEGARTYS
SECTION AA - 1:100



08 STAFF MODULE - HEGARTYS
SECTION BB - 1:100

COMPLIANCE
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- COMPLY WITH THE BUILDING CODE OF AUSTRALIA
- COMPLY WITH ALL RELEVANT AUSTRALIAN STANDARDS
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LEGEND REFER TO SCHEDULES FOR MORE INFORMATION

CR-XX	CONCRETE	MT-XX	METAL	ST-XX	STONE	SW-XX	SANITARY FITTINGS
FC-XX	FIBRE CEMENT	PB-XX	PLASTERBOARD	TL-XX	TILE	LF-XX	LIGHT FITTINGS
GL-XX	GLASS	PT-XX	PAINT	WM-XX	WATERPROOF MEMBRANE	EF-XX	OTHER ELEC. FITTINGS
IN-XX	INSULATION	RF-XX	ROOFING	WM-XX	WALL TYPE	FE-XX	FURNITURE / EQUIP

AC	AIRCONDITIONER	CF	RAINWATER OVERFLOW	ABV	ABOVE
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FW	FLOOR WASTE	SWP	STORMWATER PIT	AFF	ABOVE FINISH FLOOR
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KEY
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- EXISTING VEG.
- CULTURAL ZONE

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DRAWN JS
CHECKED AB

SCALE 1:100
NORTH

PROJECT NUMBER
2006

DRAWING
TWIN MODULE PLANS - HEGARTYS

DRAWING NUMBER
2006-DD105-C

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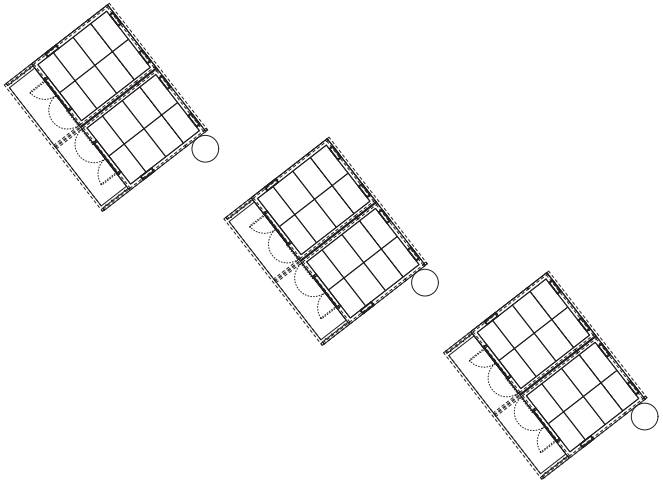
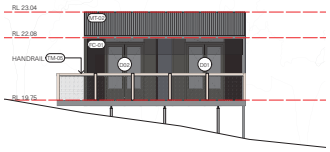
www.andrewburns.net.au

PROJECT
LIGHT TO LIGHT WALK

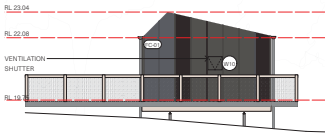
01 BUNK MODULES - HEGARTYS
GROUND FLOOR PLAN - 1:100



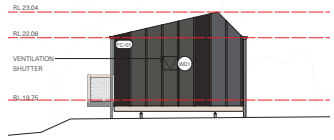
02 BUNK MODULE - HEGARTYS
RCP - 1:100



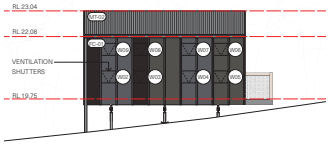
03 BUNK MODULES - HEGARTYS
WEST ELEVATION - 1:100



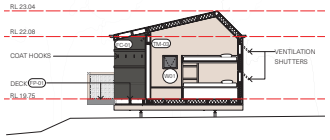
04 BUNK MODULES - HEGARTYS
SOUTH ELEVATION - 1:100



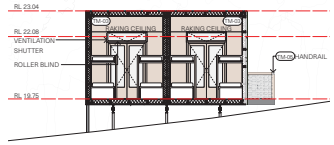
05 BUNK MODULE - HEGARTYS
NORTH ELEVATION - 1:100



06 BUNK MODULES - HEGARTYS
EAST ELEVATION - 1:100



07 BUNK MODULES - HEGARTYS
SECTION AA - 1:100



08 BUNK MODULE - HEGARTYS
SECTION BB - 1:100

COMPLIANCE
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- COMPLY WITH ALL RELEVANT AUSTRALIAN STANDARDS
- DIMENSIONS IN MILLIMETRES
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DP	DOWNPIPE	RWO	RAINWATER OUTLET	SL	SLAB LEVEL
VP	VENT PIPE	SGD	SINGLE GLAZED DOOR	FFL	FINISHED FLOOR LEVEL
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KEY
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- NEW PLANTING
- EXISTING VEG.
- CULTURAL ZONE

ISSUE	DATE	DESCRIPTION
A	28.04.21	FOR CLIENT REVIEW
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C	20.05.21	50% DD
D	16.06.21	FOR CONSULTANTS

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DRAWN JS
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NORTH

PROJECT NUMBER
2006

DRAWING
BUNK MODULE PLANS - HEGARTYS

DRAWING NUMBER
2006-DD107-C

ANDREW BURNS ARCHITECT
Registered Architect #7447
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Redfern NSW 2016
Telephone: (02) 9212 1141
Fascimile: (02) 9212 2858
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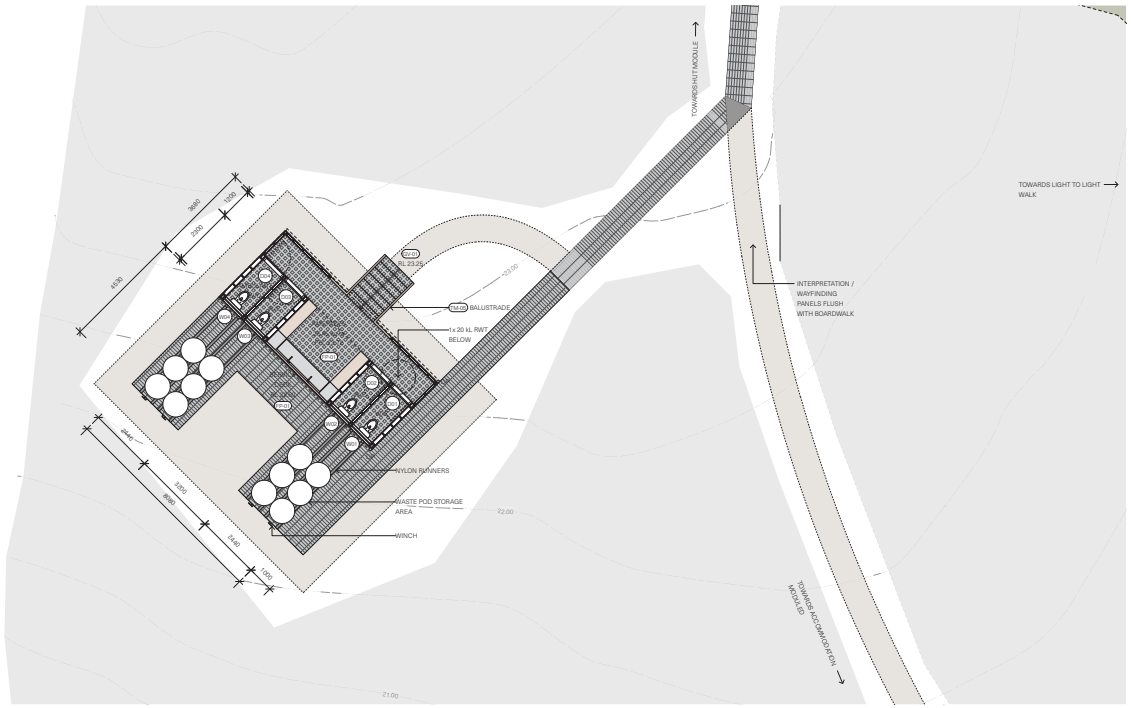
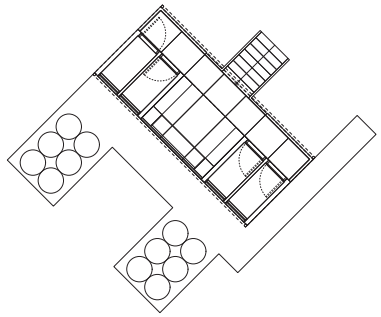
PROJECT
LIGHT TO LIGHT WALK



01 AMENITIES MODULE - MOWARRY
GROUND FLOOR PLAN - 1:100



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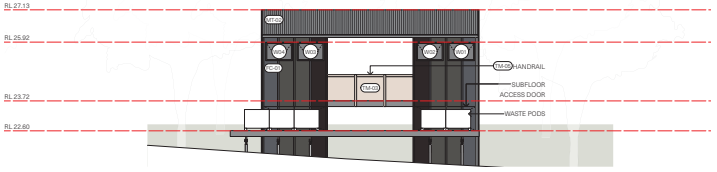
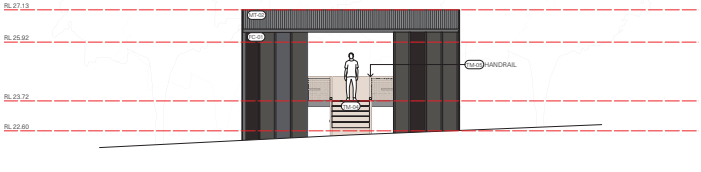
RCP / ELECTRICAL PLAN - 1:100



03 AMENITIES MODULE - MOWARRY
EAST ELEVATION - 1:100



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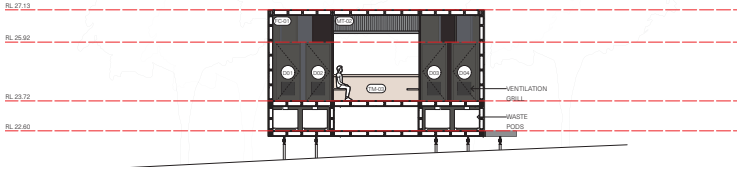
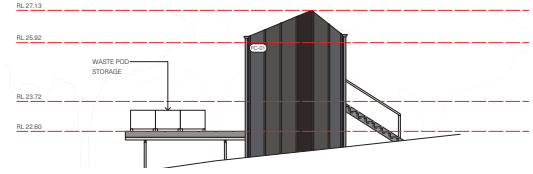
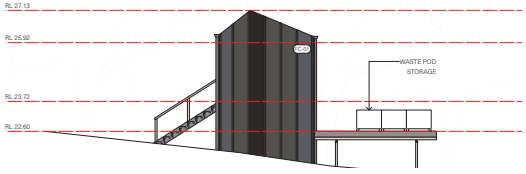
WEST ELEVATION - 1:100



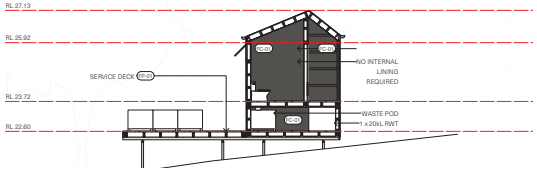
05 AMENITIES MODULE - MOWARRY
SECTION AA - 1:100



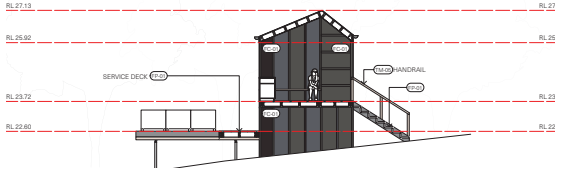
06 AMENITIES MODULE - MOWARRY
NORTH ELEVATION - 1:100



07 AMENITIES MODULE - MOWARRY
SOUTH ELEVATION - 1:100



08 AMENITIES MODULE - MOWARRY
SECTION BB - 1:100



09 AMENITIES MODULE - MOWARRY
SECTION CC - 1:100

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AMENITIES MODULE PLANS - HEGARTYS

DRAWING NUMBER
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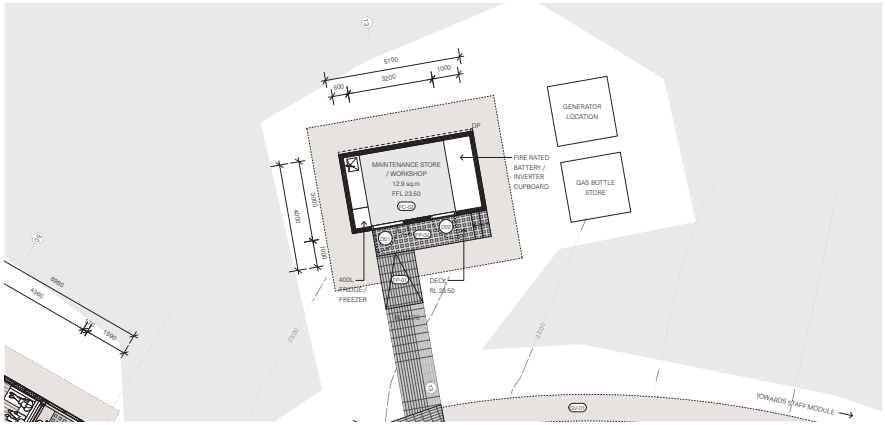
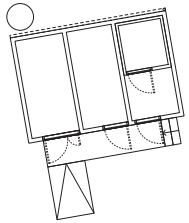
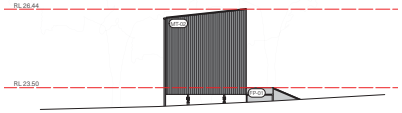


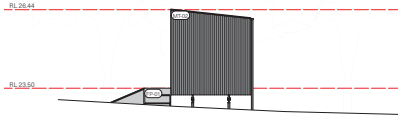
01 STORAGE MODULES - HEGARTY
GROUND FLOOR PLAN - 1:100



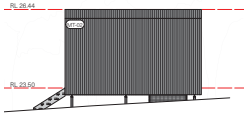
02 STORAGE MODULES
RCP & ELECTRICAL PLAN - 1:100



03 STORAGE MODULES - HEGARTY
EASTERN ELEVATION - 1:100

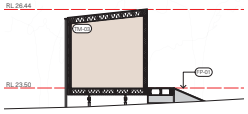


04 STORAGE MODULES - HEGARTY
WESTERN ELEVATION - 1:100



05 STORAGE MODULES - HEGARTY
SOUTHERN ELEVATION - 1:100

06 STORAGE MODULES - HEGARTY
NORTHERN ELEVATION - 1:100



07 STORAGE MODULES - HEGARTY
SECTION AA - 1:100

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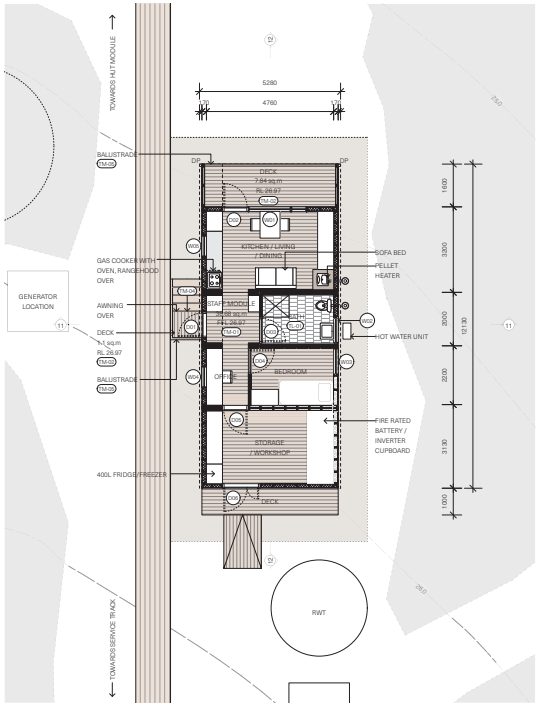
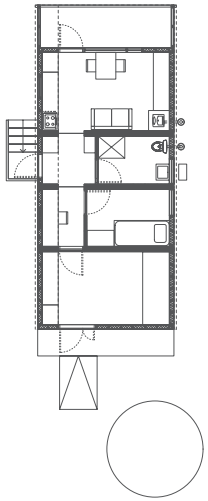
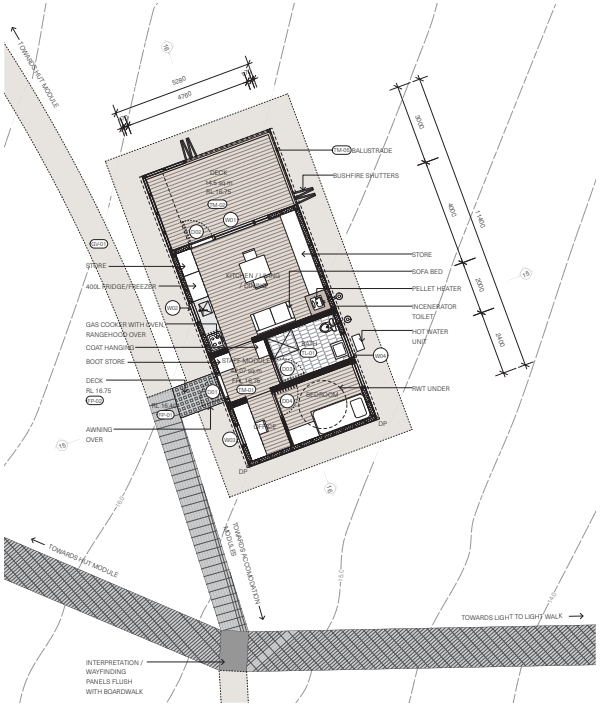


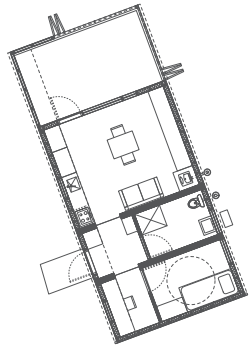
01 STAFF MODULE - MOWARRY
GROUND FLOOR PLAN - 1:100



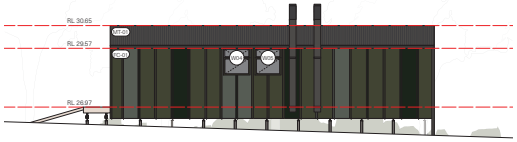
02 STAFF MODULE - MOWARRY
RCP / ELECTRICAL PLAN - 1:100



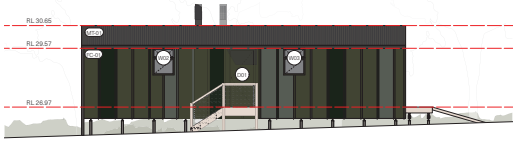
03 STAFF MODULE - HEGARTYS
GROUND FLOOR PLAN - 1:100



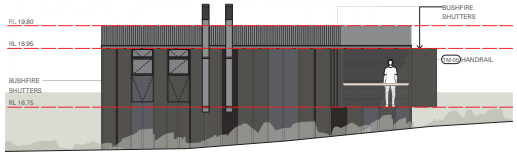
04 STAFF MODULE - HEGARTYS
RCP / ELECTRICAL PLAN - 1:100



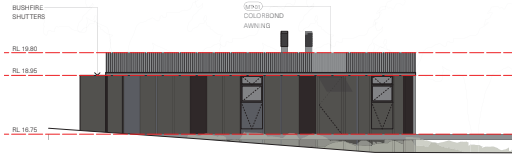
05 STAFF MODULE - MOWARRY
EAST ELEVATION - 1:100



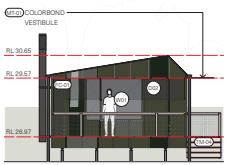
06 STAFF MODULE - MOWARRY
WEST ELEVATION - 1:100



07 STAFF MODULE - HEGARTYS
EAST ELEVATION - 1:100

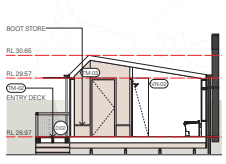


08 STAFF MODULE - HEGARTYS
WEST ELEVATION - 1:100

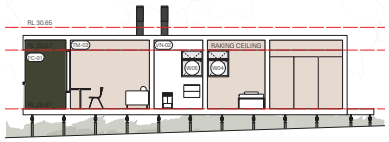


09 STAFF MODULE - MOWARRY
NORTH ELEVATION - 1:100

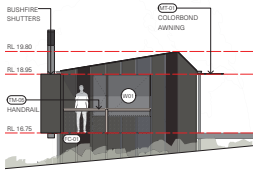
10 STAFF MODULE - MOWARRY
SOUTH ELEVATION - 1:100



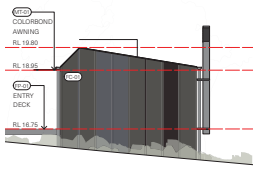
11 STAFF MODULE - MOWARRY
SECTION AA - 1:100



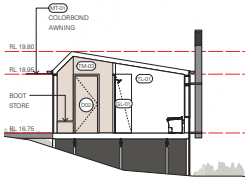
12 STAFF MODULE - MOWARRY
SECTION BB - 1:100



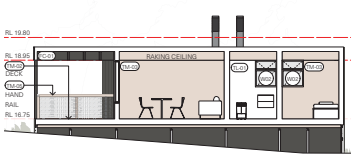
13 STAFF MODULE - HEGARTYS
NORTH ELEVATION - 1:100



14 STAFF MODULE - HEGARTYS
SOUTH ELEVATION - 1:100



15 STAFF MODULE - HEGARTYS
SECTION AA - 1:100



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DP	DOWNPIPE	RWO	RAINWATER OUTLET	SL	SLAB LEVEL
VP	VENT PIPE	SGD	SINGLE GLAZED DOOR	FFL	FINISHED FLOOR LEVEL
FG	FIXED GLAZING	SK	SKYLIGHT	FCL	FINISHED CEILING LEVEL
FW	FLOOR WASTE	SWP	STORMWATER PIT	AFF	ABOVE FINISH FLOOR
HWS	HOT WATER SYSTEM	TGSI	TACTILE SURFACE GROUND INDICATOR		
HR	HANDRAIL	TW	TRADE WASTE		
LD	LINEAR DRAIN	WPM	WATERPROOF MEMBRANE		

KEY
- VEG. REMOVAL
- NEW PLANTING
- EXISTING VEG.
- CULTURAL ZONE

ISSUE	DATE	DESCRIPTION
A	28.04.21	FOR CLIENT REVIEW
B	07.05.21	FOR CONSULTANTS
C	10.06.21	50% DD
		FOR CONSULTANTS

BCA / PCA
BUILDCERT

SERVICES CONSULTANT
COVA

ACCESS CONSULTANT
ERIC MARTIN

HERITAGE CONSULTANT
JOHN OULTRAM

GEOTECH / WASTEWATER
STODDARD ENGINEERING

SECTION J
INTEGRECO

BUSHFIRE CONSULTANT
ECO LOGICAL

STRUCTURAL ENGINEER
BDA

CLIENT
NSW GOVERNMENT

STATUS
DESIGN DEVELOPMENT

DRAWN JS
CHECKED AB

SCALE 1:100
NORTH

PROJECT NUMBER
2006

DRAWING
STAFF MODULE PLANS

DRAWING NUMBER
2006-DD103-C

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PROJECT
LIGHT TO LIGHT WALK

APPENDIX G.2
MOWARRY POINT CAMPGROUND DESIGN

PRELIMINARY

SHANNON ARCHITECTS

N

0 5 10 15 20

1:500

Issue B Date 21/06/09 Revision/Description Drawn JL Appvd DS

BEN BOYD NATIONAL PARK PRECINCTS
MOWARRY POINT
SPATIAL PLAN

SCALE 1 : 1000

DRAWN JL DATE 21/06/09

DRAWING No. 20014 - Sk7 B

43 Glen Osmond Road Eastwood SA 5063 Telephone 08 8373 1611 www.shannonarchitects.com.au

APPENDIX G.3

PULPIT ROCK CAR PARK DESIGN

PRELIMINARY

SHANNON ARCHITECTS

Issue A Date 21/06/07 Revision/Description Drawn NV Appvd DS

BEN BOYD NATIONAL PARK PRECINCTS
PULPIT ROCK
CONCEPT

SCALE 1 : 500

DRAWN NV DATE 21/06/07

DRAWING No. 20014 -Sk29 A

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APPENDIX G.4
EXTRACTS FROM THE NPWS PARK FACILITIES MANUAL AND ROAD MAINTENANCE MANUAL

Class 4 Hiking Track

Provide opportunities for visitors to explore and discover relatively undisturbed natural environments along defined and distinct tracks with minimal (if any) facilities. Users can expect opportunities to observe and appreciate the natural environment without provision of interpretive signage. Users can expect opportunities for solitude with few encounters with others.

AS 2156		
Item	**Description**	**NPWS interpretation**
Elements for classification		
According to *AS 2156 Walking Tracks*, it is only necessary to meet the requirements listed below to classify a track.		
Track conditions	Generally distinct without major modification to the ground. Encounters with fallen debris and other obstacles are likely.	600mm maximum width with surface modified to appropriate level for minimising environmental impact – refer *Tracks and Related Structures* table (following page).
Gradient	Limited to environmental and maintenance considerations.	Track gradient dependent on local topography and may be quite steep for extended sections where its provision is sustainable without high levels of erosion and/or maintenance. Visitors using track may need a reasonably high level of fitness.
Signage	Minimal signage for management and directional purposes.	Minimal signage required, but directional markers may be provided at track intersections – Refer *Park Signage Manual*
Infrastructure	Facilities generally not provided except for specific safety and environmental considerations.	Refer *Tracks and Related Structures* table (following page).
Terrain	Users require a moderate level of specialised skills such as navigation skills. Users may require maps and navigation equipment to successfully complete the track. Users need to be self-reliant, particularly in regard to emergency first aid and possible weather hazards.	
Weather	Storms and severe weather may affect navigation and safety.	Risks generally related to visibility of path surface, route and hazards during poor weather conditions.
Guidance for managers		
Facilities	Track head facilities may include toilets, picnic facilities, carparking, drinking water, campsites and information shelters.	Low level of facilities provision preferably coordinated through precinct planning exercise.
Management intervention	Low to moderate.	
Risk management	Tracks will be inspected on a regular basis and after major natural events such as cyclones or fires. Any built facilities will be managed for public risk. Inspection interval: 6 to 12 months.	
Track information	Track details may be shown on local maps and brochures. Route-guide authors should seek the approval of the managing authority.	
Usage and group size	The managing authority may impose conditions on group sizes and total numbers. Access and use to be in accordance with permit conditions.	
Publicity	May be shown on maps produced by the managing authority.	
Activity registration	Self-registration may be appropriate for some activities.	
Route guides	Route-guide authors encouraged to seek managing authority input and approval prior to publication.	
Campsites	Visibly impacted sites for up to 8 tent sites, preferably dispersed in groups of no more than three tents. Toilets to be provided where required for environmental protection.	

Facilities in the table below are approved for class 4 tracks

	Tracks and related structures – design and materials
Item	**Design element**
Track signage description	Class 4 Hiking Track – Moderate walk requiring above average levels of fitness and navigation. Minimal directional signage.
Tracks	600mm maximum width with surface modified to appropriate level for minimising environmental impact – generally dependent on visitor numbers and geology. *5.3.3 Natural surface* *5.3.4 Gravel* *5.3.5 Mulch and woodchip*
Drainage	Provide coordinated drainage system aimed at preserving tracks and related infrastructure in good condition. *5.4.2 Swales* *5.4.3 Cross drains* *5.4.4 Water bars* *5.4.5 Culverts* *5.4.6 Subsoil*
Steps and stairways	Provide steps and stairs as required to facilitate level changes along track alignment and reduce erosion. In-ground steps preferred for visual integration with natural areas and lower capital cost, however stair structures acceptable to reduce impact on sensitive environments, high traffic areas or in situations where in-ground steps can not be constructed (e.g. escarpments). *5.5.4 Stone riser* *5.5.5 Sleeper*
Retaining walls	Minimise need for walls where possible. *5.6.3 Sleeper* *5.6.4 Sleeper seating wall* *5.6.5 Mortared stone* *5.6.6 Dry packed stone* *5.6.7 Dry packed random rubble* *5.6.8 Rock filled gabion* *5.6.9 Sandstone log*
Handrail barriers	Provide barriers for general tracks and related infrastructure dependent on track class and effective fall height (as per AS 2156.2): h_{eff} 1 – NONE h_{eff} 1.5 – barrier type D* h_{eff} 3 – barrier type C* Note: * = Barriers may be provided on one side only in these cases
Viewing platforms	Lookout provision should generally be 'low key' and 'incidental'. 5.8.2 At grade
Boardwalks and bridges	Potential use of boardwalks to minimise impact on sensitive natural areas. *5.9.2 Duckboard* *5.9.3 Floating grate* *5.9.4 Concrete* *5.9.6 Footbridge*
Furniture	Generally not required and only provided to limited locations aimed at minimising impact on the natural environment. *7.2.5 Table seat*

5.3.1 Standard track profiles

Flat terrain
- Difficult to build a successful track in flat terrain as its very hard to get the water off the track surface
- The existing ground surface should not be disturbed unnecessarily in order to obtain a base for the track
- If drainage is needed, track base should be built up rather than cut in

Sideslopes
- On sideslopes, benching (cut and fill) of the track formation will be necessary
- Stable or mineral soils allow the use of the cut soil for fill on the downslope side of the track and this material, if stabilised, can form the outer part of the track tread
- However, in unstable or peat soils the fill may not be suitable for load bearing, and the track must be on cut only

Cut and fill batter angles

The two primary objectives in sloping batters are to:
- control erosion by establishing slopes that are more nearly natural, thus enabling vegetation to grow on the cut and fill surface
- reduce the possibility of damage to the track from water saturated batters collapsing.

The slopes of cuttings and embankments are usually made as steep as the material will allow without slipping. While past experience and local example are the best indicators, the table below offers a guide to the maximum slopes that can be considered for varying soil types.

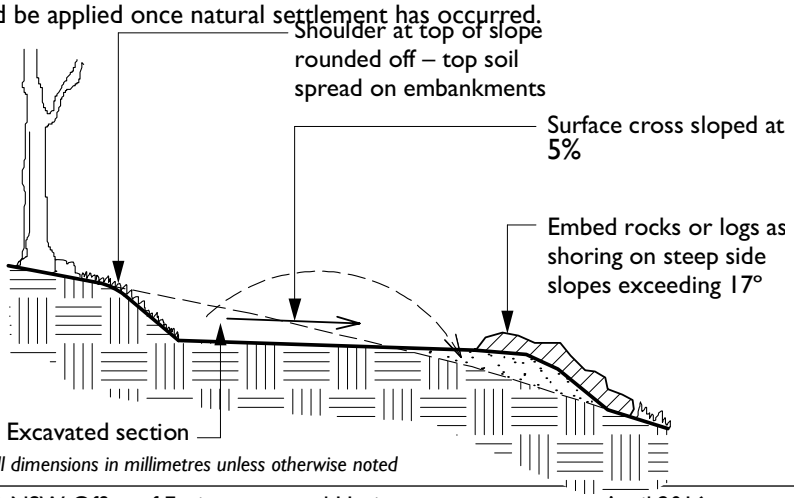
The angle of repose is the greatest angle at which the soil will stand without slippage.

Batter stabilisation

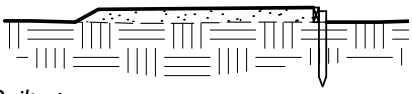
On embankments where erosion is likely to be a problem, plant growth should be encouraged by spreading topsoil and humus.

Shoulders at the top of the excavation should be rounded off to prevent soil from sliding onto the track. Boulders, logs and other debris that might fall onto the track should also be removed. Disturb plants at the top of cut slopes and at the base of embankments as little as possible. Neatly trim exposed roots flush with the soil surface. Do not bury tree bases in fill batters as this may suffocate and cause death of the tree.

Where thorough compaction of fill material is not possible, additional material should be applied once natural settlement has occurred.

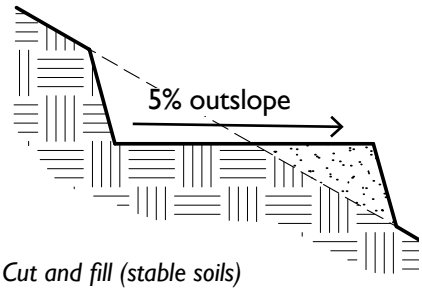


All dimensions in millimetres unless otherwise noted

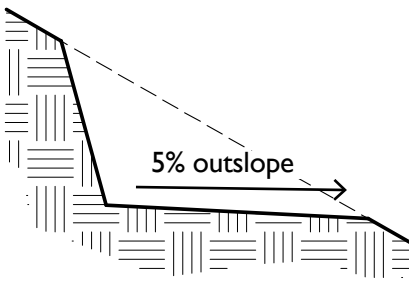


Built up

Refurbish eroding track



Cut and fill (stable soils)

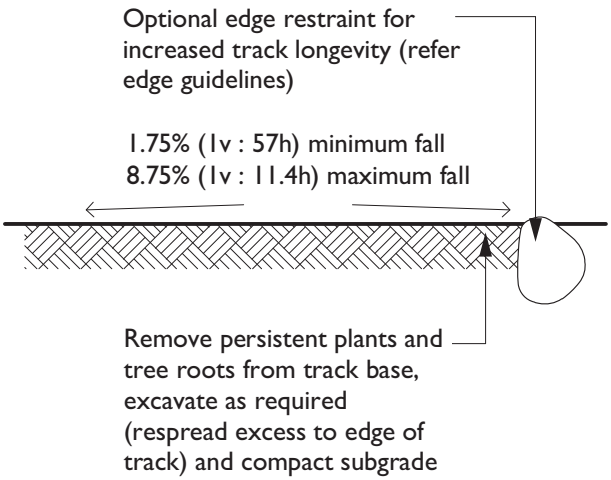


Cut only (unstable soils)

Weight and angle of repose for different soil types

Material	*Condition*	*Angle of repose (° from horizon)*
Sand	dry	30
Gravel	dry	35
	wet	30
Clay	dry	40–45
	wet	33
Loam	dry, loose	40
	dry, firm	45
	moist	45
	saturated	25
Shale/ compact	gravelly soil	53–63
Rock		75–90

5.3.3 Natural surface



Typical section

Location
Suitable for class 4–5 tracks

See also *5.1.5 Track siting and alignment*

Principles
- Least costly and simplest form of track construction
- With adequate drainage this will often be adequate to carry normal intermittent foot traffic
- If the natural soil is deemed unsuitable due to structural weakness or unacceptable slipperiness etc. then some form of surfacing will be required
- Existing soil profile can be stabilised (optional)

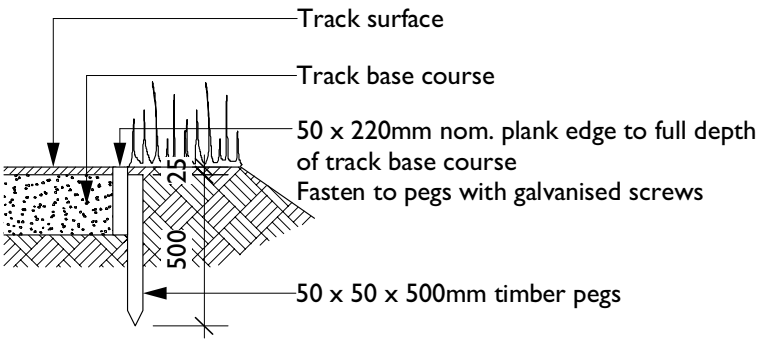
Technical
Track surface
- Natural soil found in situ

Edging
Should be minimal, but can be provided to minimise erosion:
- Timber
- Rock

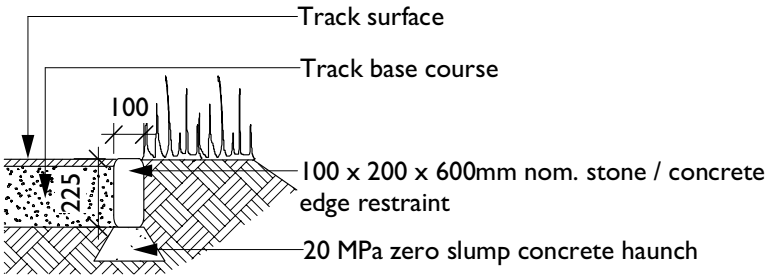
Stabilisation of wearing surface (optional)
- Variety of stabilisation mixes can be added – refer *5.3.8 Lime stabilisation* and *5.3.9 Cement stabilisation*

All dimensions in millimetres unless otherwise noted

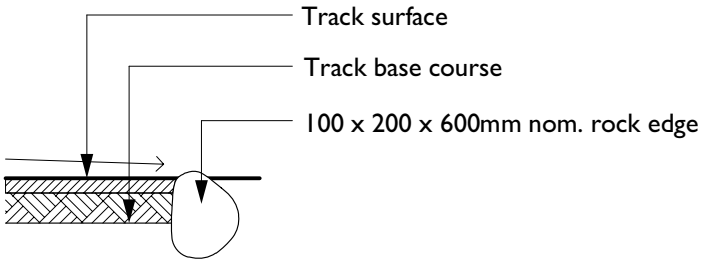
5.3.7 Edge restraints



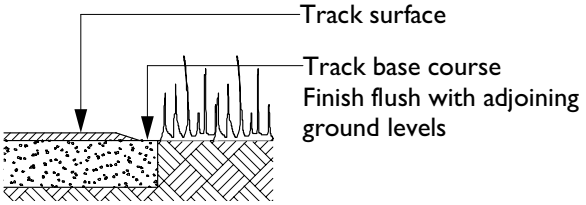
Timber edge



Stone/concrete edge



Rock edge



No edging

Location
Track classes 1–4 on asphalt, two coat seal, gravel and natural soil tracks

Principles
- Hard edges retain track surface and base course to improve longevity and reduce maintenance requirements
- Deeper edges are more effective for long-term stability
- Note that tracks without edging are generally cheaper to construct
- Avoid formalised edges to track surfaces running downslope which could channel/drainage and cause erosion

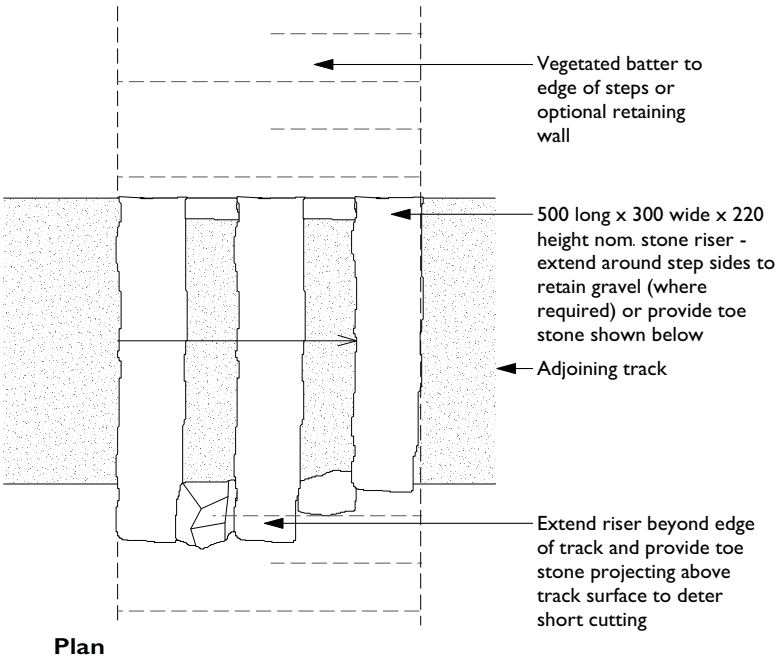
Technical
Stone/rock edge
- Use of locally occurring stone types preferred
- Bush rock not to be used due to key threatening process

Timber edge
- Class 1–2 hardwood (untreated) or
- Preservative treated softwood for in-ground use (H4 Hazard level)
- A recycled plastic edge may be used in place of timber where extremely hot temperatures are not expected

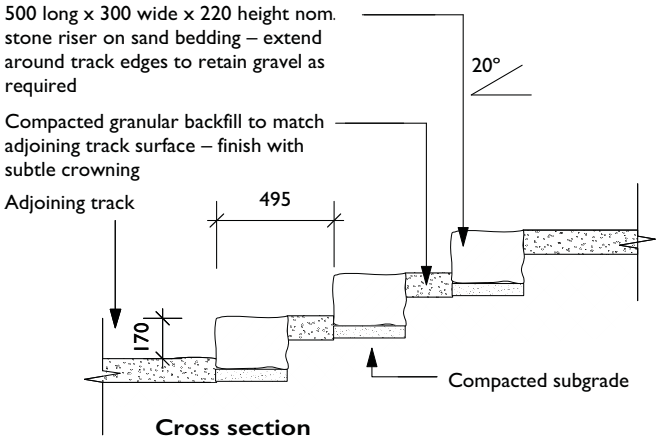
Track class	*Edging type*
1–2	Stone, concrete, timber
3	Rock
4	Rock (where required)
5	None

All dimensions in millimetres unless otherwise noted

5.5.4 Stone tread



Plan



Cross section

Bradleys Head, Sydney Harbour NP

Location
Class 3, 4 and 5 tracks

Principles
- Hard-wearing treatment with long life expectancy (depending on hardness of the stone) – generally not affected by bushfire
- Traditional construction technique that blends well with most natural settings
- Suitable for use with bitumen, stone, gravel and mulch tracks (refer technical sheets – *5.3 Tracks*)
- Gravel step treads should be finished level (no cross fall) to minimise erosion
- Install with toe stone to reduce erosion of tread material
- Extend step risers beyond track width to deter short cutting along edges

Technical
Stone
- Stone for steps can be sawn, rock face or roughly shaped to suit the setting
- Use of locally occurring stone type preferred

Maintenance
- Top up gravel treads periodically
- Check stability of stone risers

Riser/going dimensions
- The stair slope (20°) and riser/going dimensions shown on detail are indicative
- Refer *Steps and stairways / 5.5.1 General requirements / Preferred step ratios* for a number of predefined ratios compliant with AS 2156

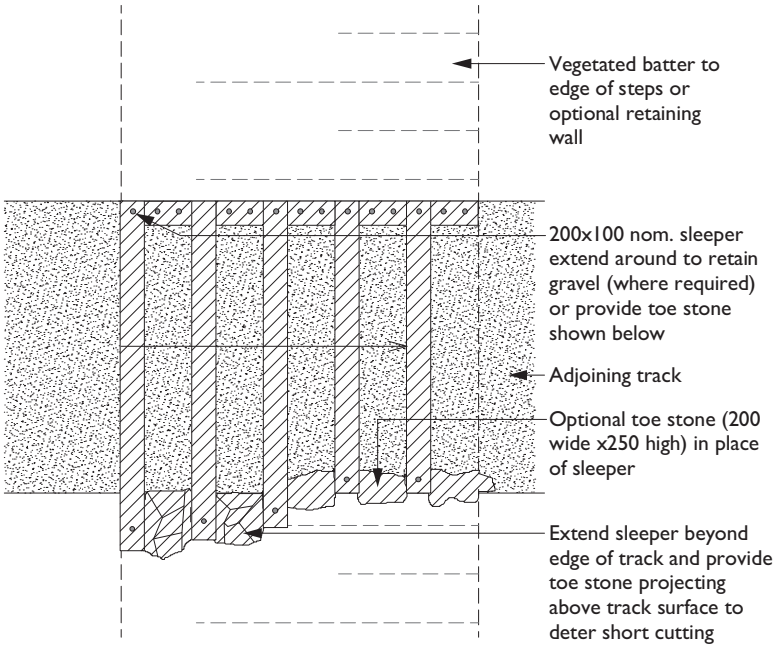
All dimensions in millimetres unless otherwise noted

5.5.5 Sleeper

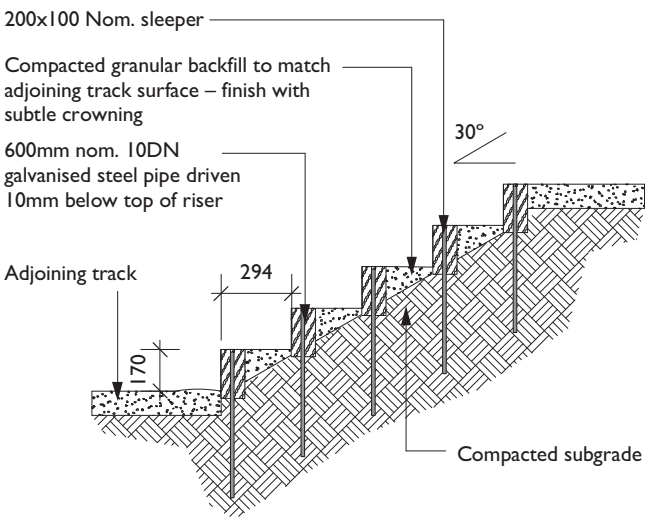
1200 long half rounds are typically used in the Blue Mountains

600 long rectangular profile at Sublime Point

Rectangular profile at Royal NP



Plan



Cross section

Location

Class 3,4 and 5 tracks

Principles

- Traditional construction technique that blends well with most natural setting
- Concrete riser provides hard wearing treatment with long life expectancy – not affected by bushfires
- Suitable for use with bitumen, gravel and mulch tracks (refer technical sheets – *5.3 Tracks*)
- Gravel step treads should be finished level (no cross fall) to minimise erosion
- Return riser at step edges where required, or install with toe stone to reduce erosion of tread material

Technical

Sleeper

- Timber riser or precast concrete step riser
- Fix with galvanised steel pipe driven through precast hole in riser
- 200 high x 1200 long half rounds typically used in Blue Mountains
- 200 high x 100 wide x 600 long sleepers used in Illawarra Area
- Timber to be class 1–2 hardwood or preservative-treated softwood (e.g. Copper Azole, ACQ)

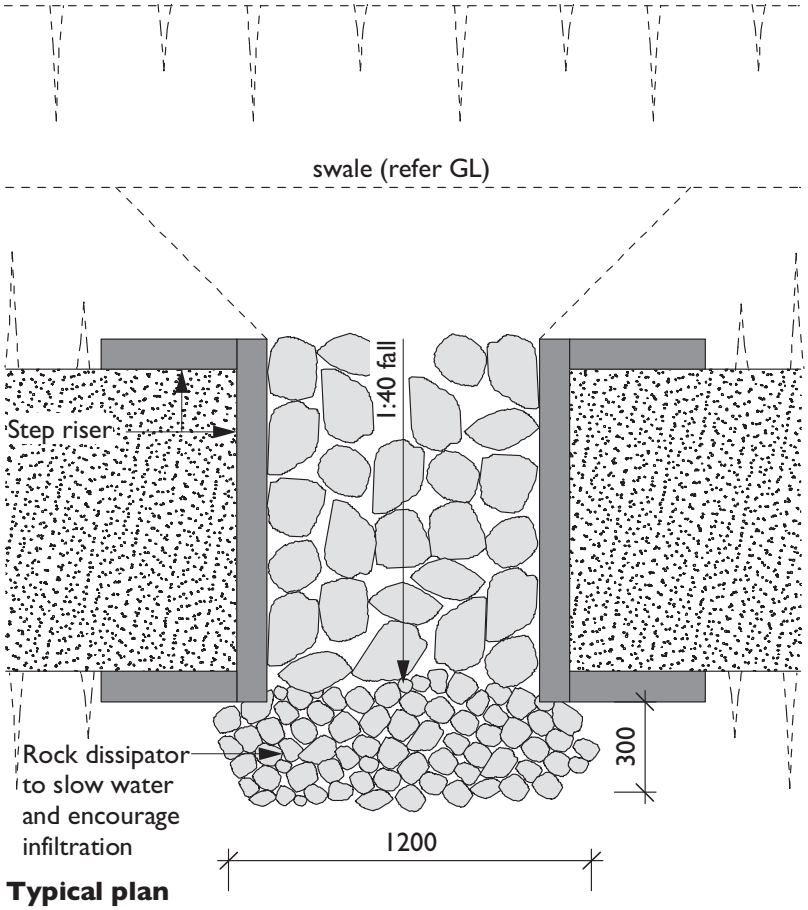
Maintenance

- Top up gravel treads periodically
- Check stability of risers and make sure that pipe is not projecting above track surface
- Check condition of riser top edge – can be turned upside down when it becomes worn

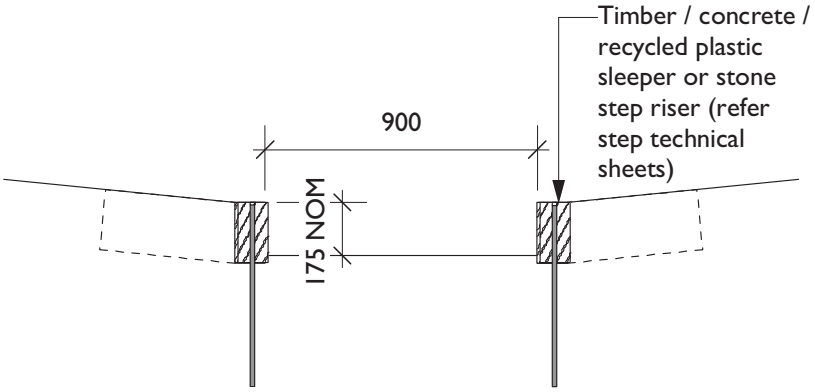
Riser/going dimensions

- The stair slope (30°) and riser/going dimensions shown on detail are indicative. Refer *Steps and stairways / 5.5.1 General requirements / Preferred step ratios* for a number of predefined ratios compliant with AS 2156 and the BCA

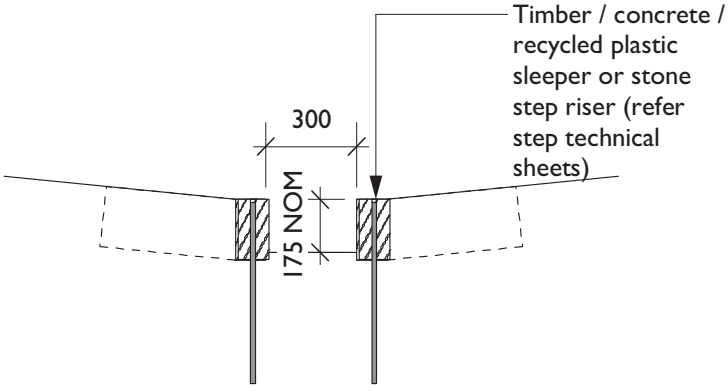
5.4.3 Cross drains



Typical plan



Cross section – walk-through drain



Cross section – step-over drain

All dimensions in millimetres unless otherwise noted

Standard cross drain

Cross drain with fibreglass mesh grate (Wentworth Falls, Blue Mountains National Park)

Location

Track class 2–5

Principles

- Provides a point in the drainage system for water to cross a track and can also divert water from the track surface
- Locate at low points in natural drainage lines
- Two main types:
  - walk-through drains (900mm internal width)
  - step-over drains (300mm internal width)
- Riser height to be coordinated with nearby steps (where applicable)

Technical

Drain

- Base of drain can incorporate standard track surface or stone pavement for greater stability

Dissipator

- Rock dissipator to incorporate well graded rock and gravel 10–100mm nom. to 300mm depth
- Where rock dissipator not feasible due to steep slope, provide corrugated plastic dissipator to prevent erosion of bank at outlet

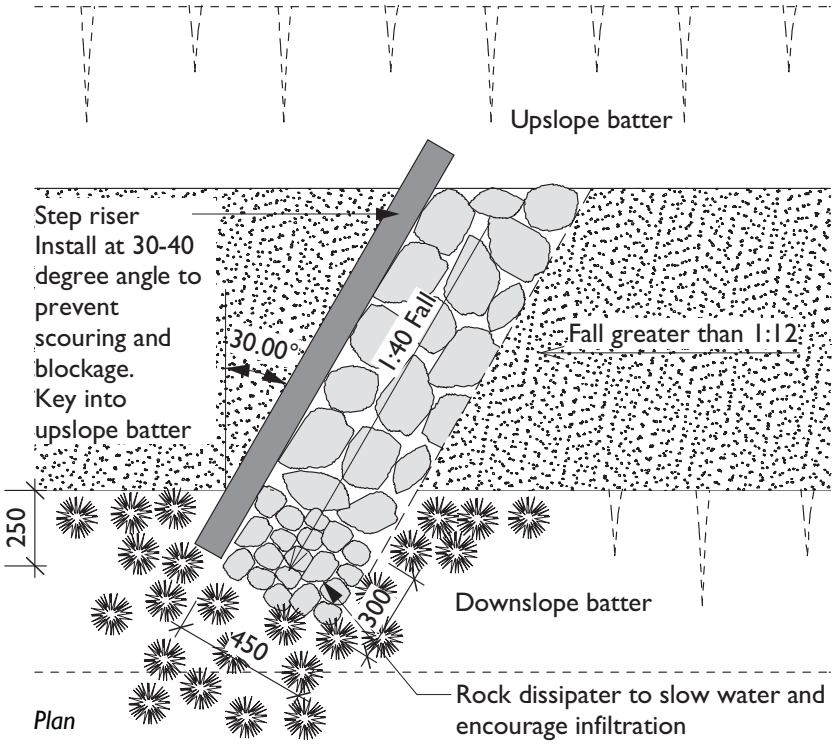
Step

- Range of appropriate step riser materials including timber, stone, recycled plastic and concrete. Timber not suitable for applications where drain is constantly wet

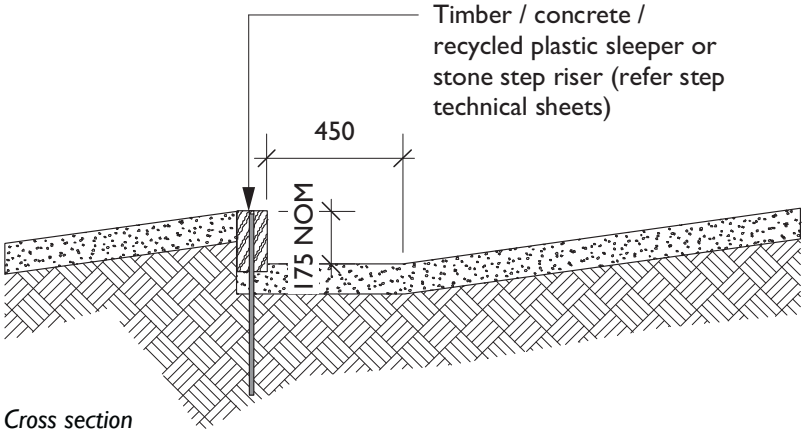
Maintenance

- Check regularly for structural stability and blockages

5.4.4 Water bars

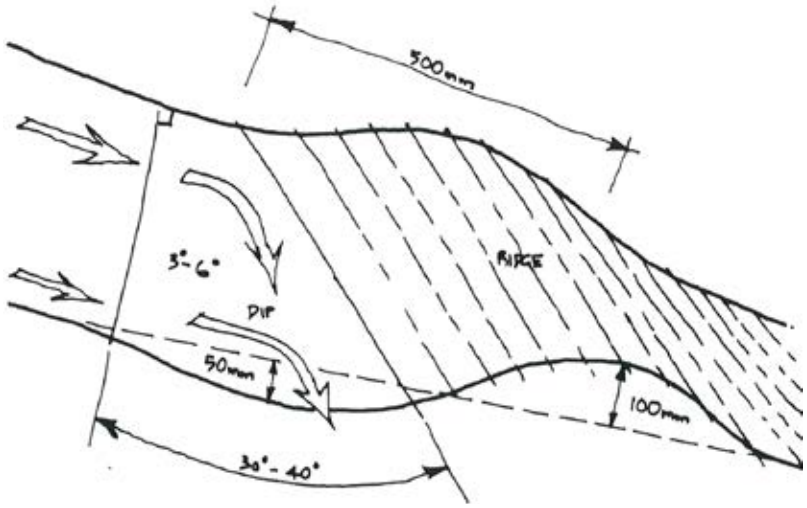


Plan



Cross section

Step type construction



Use hard stable soil – cement stabilised clay/gravel if necessary

Roll over construction

All dimensions in millimetres unless otherwise noted

Location

Track class 2–5

Principles

- Required at regular intervals to drain surface water along steep tracks where longitudinal gradients greater than 1:12 make cross slope gradients ineffective.
- Only suitable for tracks with single direction cross slope drainage (not suitable for crowned profile tracks)
- Two main types:
  - step-type is easily constructed and visible to walkers
  - roll over construction provides good vehicle access and minimal visual impact
- Should be self-cleaning when properly constructed
- Angle of water bar depends on slope of track and speed of water (generally 30–40 degrees)
- Riser height to be coordinated with nearby steps (where applicable)

Technical

Drain

- Base of drain can incorporate standard track surface or stone pavement for greater stability

Dissipator

- Rock dissipator to incorporate well graded rock and gravel 10–100mm nom. to 300mm depth
- Where rock dissipator not feasible due to steep slope, provide corrugated plastic dissipator to prevent erosion of bank at outlet

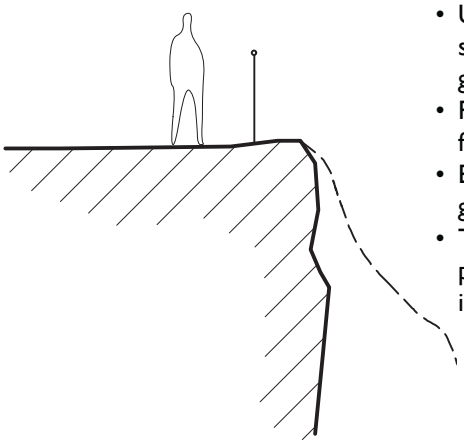
Step

- Range of appropriate step riser materials including timber, stone, recycled plastic and concrete. Timber not suitable for applications where drain is constantly wet

Maintenance

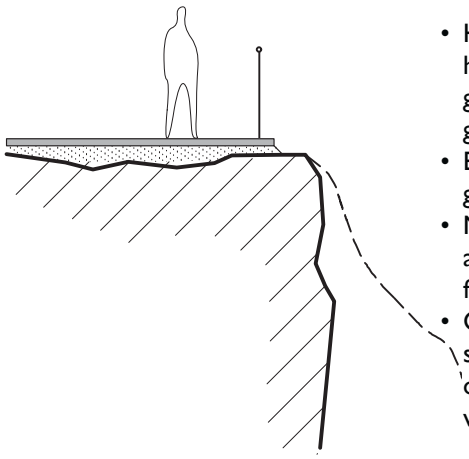
- Check regularly for structural stability and blockages

5.8.2 At grade



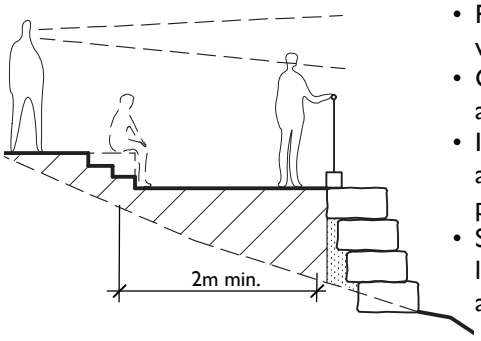
- Use of existing natural ground surface, for example rockface, gravel
- Review ground surface suitability for pedestrian traffic
- Barrier positioning subject to geotechnical assessment
- Type A4 balustrade fixing preferred where ground surface is undulating

Viewing platform on natural surface



- Hard pavement or surface hardening (e.g. concrete, asphalt, gravel) over undulating natural ground surface
- Barrier positioning subject to geotechnical assessment
- Modified surface should generally allow type A2 or A3 balustrade fixing
- Consider the effect of stormwater runoff and the effect of leachate on surrounding vegetation

Viewing platform on modified surface



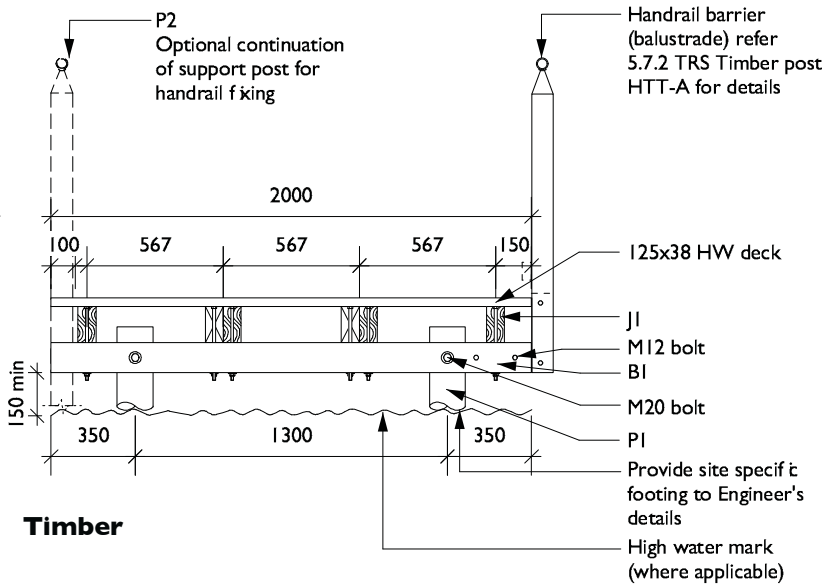
- Raised and filled area retained by walling
- Ground surface to suit site and adjoining track class
- Integrate change in levels to afford views over barrier and provide incidental seating
- Seating must be positioned at least 2m back from balustrade at all lookouts

Viewing platform on fill

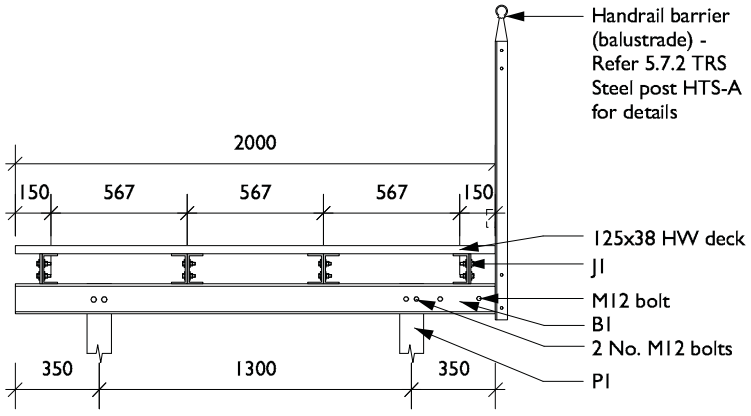
Overall benefits of at-grade viewing platforms:

- Generally lower maintenance
- Generally lower implementation cost

5.9.5 Elevated boardwalk



Timber



Steel

Steel frame and timber deck boardwalk at the Weir Precinct, Lane Cove NP

Location

Class 1–3 tracks in all park areas

Principles

- Provides minimal-impact access through natural areas once installed
- Provides smooth and consistent walking surface for safe and easy access
- Post height can be modified to provide greater flexibility in response to undulating ground
- Where boardwalks cross water the beams should be above the high water mark
- Provide 2.5m vertical clearance free from obstructions (e.g. tree branches, etc.) above deck level
- Timber deck can be slippery – needs a non-slip surface in wet, shady and icy conditions, for example chicken wire or asphalt

Technical

Building codes and standards

- Can extend over water
- Boardwalks must conform to the BCA where they form part of access to or between buildings
- Boardwalks must conform to *AS 2156 Walking Track* for all applications in national parks
- Boardwalks on class 1 tracks must comply with *AS 1428 Design for Access and Mobility*

Materials

- Timber or steel posts, beams and joists
- Decking material options:
  - 125x38 hardwood
  - 125x50 recycled plastic
  - galvanised steel mesh grate
  - fibreglass mesh grate

Refer A3 technical sheets:

BET for timber

BES for steel

MMB for mini mesh


Royal NP Coast Walk
- Composite frame boardwalk with FRP decking
- 2.4m spans between post
- Doesn't require concrete for footings
- Refer Coast Walk technical package


Hermitage Foreshore Walk, Sydney Harbour NP
- Composite frame with timber decking
- Closely follows the ground surface
- Can incorporate steps and curved timber handrail (laminated)

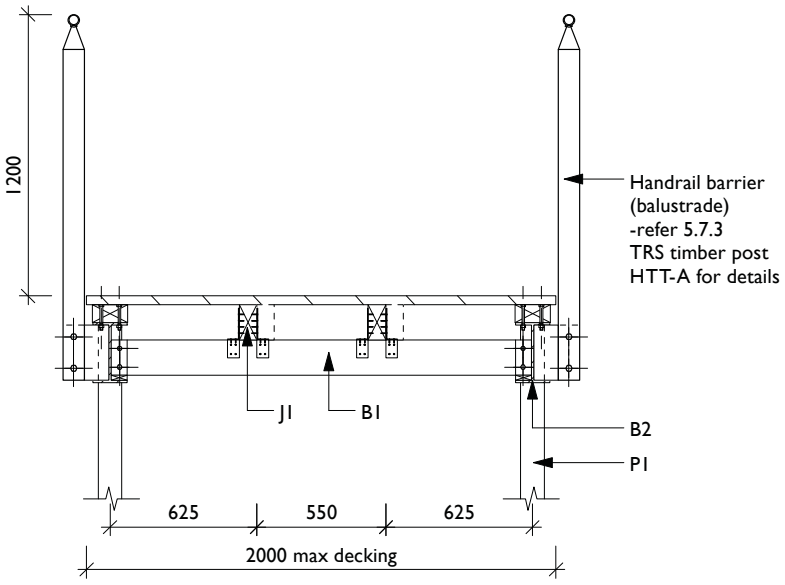


Floating elevated boardwalk, Maddens Plains (Illawarra)
- Sits on timber sleepers and doesn't require footings
- Removable
- Refer Maddens Plains technical package

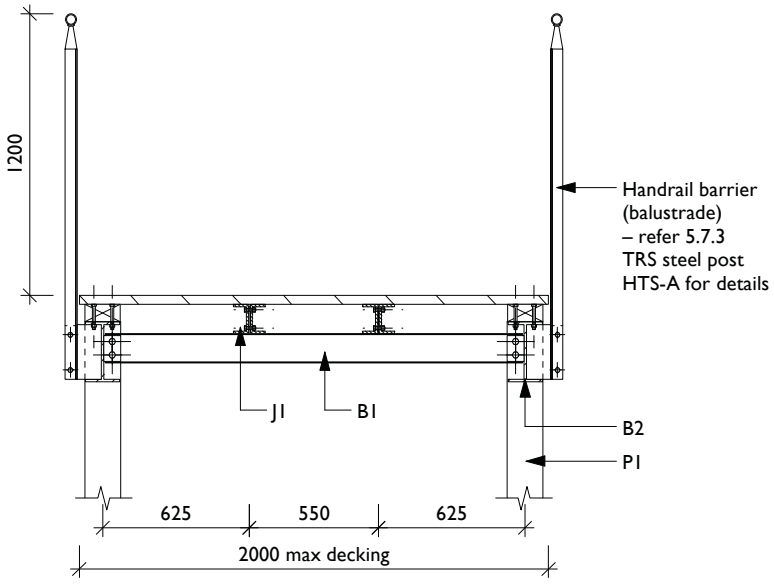
5.9.6 Footbridge

Steel frame and timber deck bridge at Warrumbungle NP

Steel frame and timber deck bridge at Lane Cove NP



Timber



Steel

All dimensions in millimetres unless otherwise noted

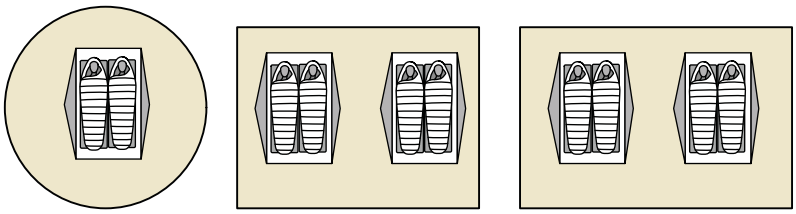
Location
To all visitation categories

Principles
- Bridge span up to 8m
- For pedestrian and cycle use only – not for vehicle access
- Proposed width prevents access by most vehicles
- Bollard can be installed either side in line with centre of deck to deter use by smaller vehicles (e.g. quad bikes) if required
- TRS handrail barrier to be 1200mm high for all bridges

Techncial
- Steel posts and universal beams support
- Hardwood timber or steel folded channel joists and beams
- Decking material options:
  - 125x38 hardwood
  - 125x50 recycled plastic
  - galvanised steel mesh grate
  - fibreglass mesh grate

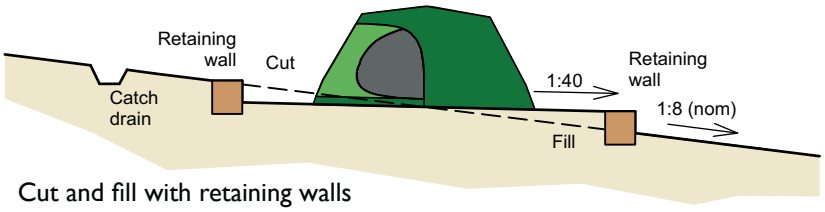
Refer A3 technical sheets:
BFT for timber
BFS for steel

2.4.5 Hike-in camping

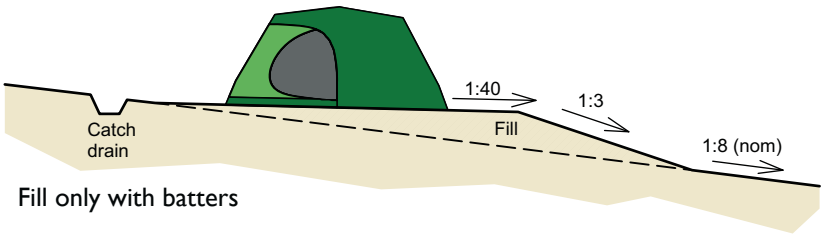


Size options

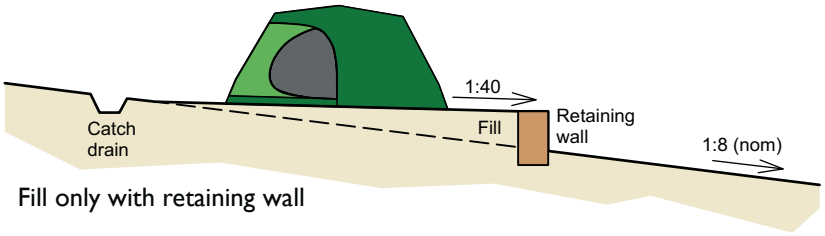
Cut and fill with batters



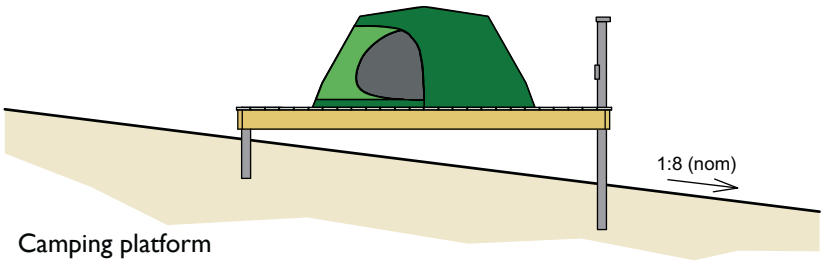
Cut and fill with retaining walls



Fill only with batters



Fill only with retaining wall



Camping platform

Typical sections

Location
Hike-in camping areas along multi-day hikes and areas within drivable camping destinations that are reserved for hike-in tents

Siting
Considerations for selection of campgrounds:
- Sheltered from prevailing winds
- Access to views
- Receives morning sun
- Away from damp / poorly drained areas
- Separation of sites – depends on visitor experience e.g. low experience will find reassurance from camping closer to other walkers

Principles (typical sections)
- Cut and fill banks can be blended into the landscape for a less structured and more cost effective solution
- Excavation that balances cut and fill is easier to implement in remote areas and results in lower batters that are more easily blended with the landscape
- Filling only and/or camping platforms are recommended where excavation is not permitted, however filling only requires fill to be transported to the site
- Use of retaining walls instead of banks may be required in 'tight' spaces and can also be used as incidental seating
- Walling is more expensive and creates a formal landscape character
- Camping platforms have the least environmental impact with no catch drain or cut/fill required
- Uphill catch drains are recommended for all cut and/or fill options to reduce rainwater pooling around tent areas
- 1(vertical): 40(horizontal) crossfall on camping pads provides adequate drainage whilst still being flat enough to sleep on

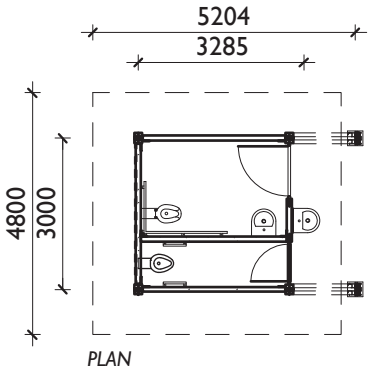
Technical
At grade surface options:
- Grass
- Gravel

Refer *7.5.8 Camping platforms*

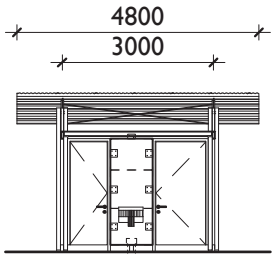
6.4.7 Skillion double stall

Timber frame

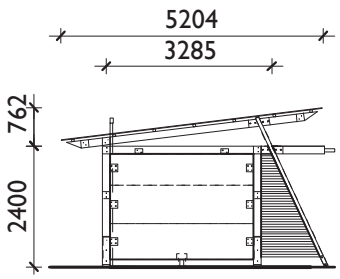
Steel frame



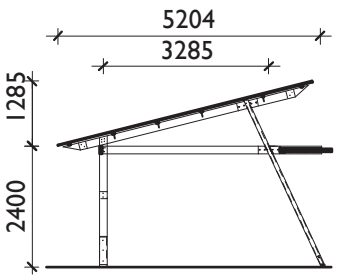
PLAN



FRONT ELEVATION



7° roof pitch



14° roof pitch

Location
Park areas where a double-stall toilet is required

Principles
- Designed to accommodate various sewage treatment systems
- Vehicle access required for pumpout and/or servicing
- Install with a range of ancillary elements to suit site-specific physical and character requirements
- Two buildings can be installed side by side to create a central breezeway which can be used for outdoor showers etc.
- Select frame materials based on suitability for environmental conditions, visual settings, existing structures etc.
- Select roof pitch based on visual settings, level of exposure, views etc.
- Toilets, showers and taps (where applicable) should be 4-star WELS rated
- Where possible, rainwater tanks should be plumbed to toilets

Technical
- Refer *6.1.8 Shelters & toilets drawing matrix* for guidance in assembling A3 technical drawing packages
- Refer *6.5 Shelter & buildings ancillaries* for structural components and engineering considerations required for shelters and buildings and optional fixtures that supplement the function, usage and look of the standard shelters
- Refer *10.2 Colours and finishes* for coating systems, corrosion protection, graffiti protection, external paint, internal paint, timber, corrugated steel and concrete technical sheets

A3 technical sheets
SSD for steel stall
SSDC for steel conc stall
TSD for timber stall

All dimensions in millimetres unless otherwise noted

ACTIVITY SPECIFICATION	LIGHT MAINTENANCE GRADE

ACTIVITY DEFINITION

The road maintenance of the gravel sections of PWG roads and trails. The work zones include the table drains of the roads.

For **"Light Maintenance Grade"** **NO RE-SHEETING** of the existing gravel surface is envisaged.

All gravel shall be won from the existing road, table drains and shoulders.
The maintenance grading shall include the grading , tyning, (where practical) and rolling and shall allow for the inclusion of water as required to adequately “wet down” and compact the existing gravel that is moved and disturbed by the grader. All work shall be carried out to the satisfaction of the Superintendent.

PERFORMANCE DISTRESS & DEFECTS

All existing potholes, corrugations, channels, rutting, shoving, shall be alleviated by the maintenance grading, rolling and watering over the entire work area. The operation shall include the processing of all existing coarse and loose materials on site.

PERFORMANCE CRITERIA

The maintenance grading rolling and watering of the unsealed gravel road shall ensure that the roads formation is re-establish, including but not limited to the roads crossfall and superelevation. The completed Maintenance grading rolling and watering shall improve the ride quality and the work shall re-establish all drainage in the table drains. The work shall enhance the safety performance of the road.

PERFORMANCE STANDARDS

1. Road Grading is to maintain an acceptable ride quality on the roads and trails and to maintain the assets value.
2. Nominated staff engaged in specific activities shall have current certificate or licences for those specific activities.
3. The maintenance grading rolling and watering shall ensure the following occurs:

   Lateral Drainage: Cross fall on straight’s is to be where possible 3% where road is crowned and no more than 7% on superelevated sections.

   Surface Defects: No defects such as channels, corrugations, rutting, shoving and soft spots shall occur at completion of the works.

   Drainage: The invert level in table drains is to be >300mm below the surface at the edge of formation directly after grading, where practical.

WORK METHOD REQUIREMENTS

Works by contractor

If a contractor utilised for the works, the following information is required prior to commencement of the works.

☐ Contract has been signed or contractor is pre-qualified (e.g panel contract)

☐ Current Liability Insurance Policy

☐ Current Workers Compensation insurance Policy

☐ Site Specific OH&S Plan, JSA, SWMS

☐ Site specific Environmental Plan (EMP)

☐ Site specific Traffic Control Plan (TCP)

☐ Inspection and Test Plan including Hold points and witness Points

Works by PWG Staff

If PWG staff to be utilised for the works, the following information is required prior to commencement of the works:

☐ Work order has been raised

☐ Site specific JSA & JSB

☐ Plan for compliance with environmental approval (CRA, REF etc) as required for the works

☐ Site specific Traffic Control Plan (TCP)

☐ Confirmation of quality requirements

Operational

1. Whilst on site all parties are required to adhere to the following operational requirements:
2. Grader Operator and Grader are to be approved for the contract.
3. All underground services must be identified and marked so as to protect that service.
4. Before execution of any works operation appropriate traffic advisory signs must be erected.
5. Grading operations shall involve drainage cleaning where practical, grading shall include scarifying of corrugations and potholes where required to a minimum depth of 100mm and at sufficient lateral frequency to avoid leaving hard areas between scarifications as practical. Pavement material shall then be worked sufficiently to re-instate crownage to a minimum of 3% where practical and Superelevation to a maximum of 7% (Compacted).
6. Grading operations shall also include the use of water cart to provide sufficient moisture facilitating pavement cutting and compaction.
7. Rolling is to be by a self propelled vibrating smooth drum roller or rubber tyred roller (not less than 6 tonne) or other equipment specifically approved by the Superintendent.

WORK METHOD REQUIREMENTS

8. Disturbance to grassed Table Drains, Mitre Drains and Catch Drains should be minimised wherever possible. Earth Table drains are to be "turned out" to cross country drainage as often as practical to re-establish the natural "water shed" (maximum spacing of turnouts to be 100m longitudinally, if practical) Turnouts are not to deliver drainage directly downhill. Where there is a likelihood of excess sedimentation entering the watercourse this is to be minimised by the use of sedimentation control devices.

9. Any large particles or other debris likely to pose a danger to traffic are to be removed from the formation to the outside of the table drains.

10. Grading operations shall avoid unnecessary widening of the road formation or alteration of the established drainage pattern.

11. Grading operations shall not windrow excessive amounts of material into vegetated areas and particularly around trees

12. Grading operations shall be carried out in a homogeneous and continuous manner.

13. The cutting of drains shall wherever possible avoid areas under tree canopies or adjacent to trees where damage could be inflicted on roots, trunks and limbs.

14. Guideposts may be removed prior to grading and replaced after grading.

15. Culvert inlets and outlets are to be cleared of any windrow material.

16. The road is to be left safe for traffic overnight with any hazard clearly signposted. No windrows to be left overnight.

17. The Contractor is responsible for the safe passage of traffic through the work at all times and also for the safe movement of the Contractor's vehicles involved in the work.
18. On Public access roads/trails the Contractor shall implement a relevant Traffic control plan conforming to RTA Traffic Control at work site. A copy of the proposed T.C.P to be used shall be submitted to the Principal for approval at time of Tendering.
19. The person required to design a new T.C.P must have successfully completed the Design and Audit new T.C.P course (Orange Ticket). The person selecting the T.C.P must have completed the Select/Modify T.C.P Certificate (Red Ticket).
20. The Person on site who marks the location of the Traffic Control Signage at the work site must have successfully completed the Introduction to Traffic Control at worksites certificate (Yellow Ticket).

21. The person/s on site that erect the Traffic Control Signage and/ or control the traffic using a STOP/SLOW bat must have completed the Traffic Controllers Certificate (Blue Ticket).

22. Erosion and Sediment Control to be in accordance with PWG Field Guide for Erosion and Sediment Control Maintenance Practices on Unsealed Roads.

CHECKLIST

- ☐ Work Order No.
- ☐ Signs and Traffic provisions as required erected during works program
- ☐ Adequate sized Grader and Roller used. Type ……
- ☐ No. of water carts used.
- ☐ Guideposts replaced.
- ☐ Dust suppression control measures operational
- ☐ All underground serviced located and clearly marked
- ☐ Technical completion entered in AMS

SITE SPECIFIC COMMENTS

Do not disturb existing grassed areas on road verges or drain unless so instructed by the Superintendent's Representative.

WORK LOCATIONS

ROAD NAME (Nº)	SEG # Start	SEG # Finish	Formation & Gravel Width	Cost Output for Maintenance Regime (Per Km)	Job ID

To be completed daily by the Contractor. Use additional sheets if required.

TEST REQUIREMENTS

MATERIAL OR PROCESS	TEST TYPE	TEST FREQUENCY	TEST METHOD	ACCEPTANCE LIMITS
Existing Gravel on Roads	Visual	Daily	N/A	Rideability of the Graded Section of Road

ACTIVITY SPECIFICATION	ROAD FORMATION MOWING, TREE AND VEGETATION CONTROL

ACTIVITY DEFINITION

This activity covers the:

- Slashing or mowing of the Road Shoulder, Road Formation and those areas classified by NPWS as "grassed areas";
- Trimming of growth on trees and shrubs; and
- Minor lopping about the Road Formation.

Major tree (bough diameter >150mm) lopping and removal, weed spraying and bush fire fuel reduction are excluded from this activity.

The work locations are on Parks Management Roads and Exclusive Roads in Kosciuszko National Park (as per Annexure Two of the Roads Maintenance Agreement).

PERFORMANCE DISTRESS & DEFECTS

Long grass or vegetation obscuring sight distance for road users, obstructing road guide signs, obstructing effective cross drainage, not providing a neat appearance to the road users or that may be a source for bush fires. Insufficient clearance to overhanging branches over roads.

PERFORMANCE CRITERIA

1. Roadside areas are slashed or mowed to provide adequate sight distance for road users, effective cross drainage and assist in the prevention of bush fires;
2. Tree and vegetation control is required to maintain safe road conditions;
3. Trees are lopped or pruned to restore driver sight distance to signs, or across horizontal curves in the road alignment;
4. Low or overhanging branches are trimmed to provide clearance for legal vehicle movements;
5. Wind damage may leave trees in a dangerous condition requiring action; and
6. Tree roots may affect structures or drainage systems.

PERFORMANCE STANDARDS

1. Mowing, and tree and vegetation control to maintain appropriate road user sight distance, adequate drainage control, a neat appearance, safe road conditions and to assist in bush fire reduction works;
2. Tree overhangs not to impede any vehicle movements. Root growth not to damage structures or drainage systems;
3. All work shall be carried out to the satisfaction of the NPWS Regional Manager Representative or SHL equivalent. Under no circumstance is the contractor to undertake tree and vegetation control outside the limits detailed in the NPWS KNP Line of Site and Verge Mowing Drawings or as defined by the NPWS Regional Manager Representative or SHL equivalent;
4. Unless specified otherwise, all works are to be carried out in accordance with the NPWS *KNP Line of Site and Verge Mowing Drawings* (attached);
5. Grassed areas are to be maintained at the following target growth limits:

Road Pavement	Road Shoulder and Road Formations
<75mm	<250mm

6. The height of grass after cutting is to be no less than 50mm and no greater than 100mm;

PERFORMANCE STANDARDS

7. On completion of work branches must be up to 4.6m vertically clear of road formation; and
8. All mowing, tree and vegetation trimming and cutting shall conform to accepted horticultural practice. All participating staff must be suitably trained.

WORK METHOD REQUIREMENTS

Works by contractor

If a contractor utilised for the works, the following information is required prior to commencement of the works.

☐ Contract has been signed or contractor is pre-qualified (e.g panel contract)

☐ Current Liability Insurance Policy

☐ Current Workers Compensation insurance Policy

☐ Site Specific OH&S Plan, JSA, SWMS

☐ Site specific Environmental Plan (EMP)

☐ Site specific Traffic Control Plan (TCP)

☐ Inspection and Test Plan including Hold points and witness Points

Works by PWG Staff

If PWG staff to be utilised for the works, the following information is required prior to commencement of the works:

☐ Work order has been raised

☐ Site specific JSA & JSB

☐ Plan for compliance with environmental approval (CRA, REF etc) as required for the works

☐ Site specific Traffic Control Plan (TCP)

☐ Confirmation of quality requirements

Operational

Whilst on site all parties are required to adhere to the following operational requirements:

1. Comply with all requirements in **Performance Standards**;
2. At all times comply with the site specific plans detailed in **Work Method Requirements - Prior to commencement of works (1)**;
3. At all times comply with the *Occupational Health and Safety Act 2000* as amended;
4. At all times comply with the relevant Principal's policies and procedures with respect to workplace safety;
5. No work is to be carried out during high intensity storms (ie heavy rainfall, trees down, water on roads) unless instructed by the NPWS Regional Manager Representative or SHL equivalent;
6. Before execution of any works operation appropriate traffic advisory signs must be erected;
7. On total fire ban days, no equipment is to be used that is capable of starting a fire or as directed by the NPWS Regional Manager Representative;
8. All man made debris collected shall be deposited to the nearest approved disposal site;

WORK METHOD REQUIREMENTS

9. Grass, tree and vegetation cuttings are to be disposed of directly into the existing vegetation on the low side of road in such a manner as to "blend" into the surrounding bush. Do not concentrate the cuttings when disposing of them. Do not leave any material in road corridor. Do not burn off the cuttings;
10. If any excavation is to be within 1m of underground services/pipes the excavation must be made by hand;
11. The operator(s) shall be fully trained to carry out the works specified and briefed on requirements necessary to avoid damage to native vegetation, including native ground cover and any identified "Environmentally Sensitive Areas";
12. Avoid damage to "Environmentally Sensitive Areas";
13. Avoid damage to tree roots, trunk and limbs caused by plant working within the tree canopy;
14. Note occurrences of noxious weeds and appropriate eradication method(s);
15. Equipment must be maintained and operated so as to minimise the danger of initiating a fire or projecting stones or debris in a hazardous fashion. Grass and other debris must not be projected onto the road surface or into open surface drains, grates or culverts;
16. Hand mowing and/or vegetation trimming shall be undertaken adjacent to structures such as signs, guardfences, walls, poles and roadside furniture, etc;
17. Mulching mowers shall only be used at locations approved by the NPWS Regional Manager Representative or SHL equivalent;
18. Plan work to be carried out within normal working hours, excepting emergency work;
19. Written Works Order are to be requested from the NPWS Regional Manager Representative or SHL equivalent for removal of any bough or limb >150mm in diameter; and
20. Carry spill kits for any chemicals and be appropriately trained in their use.

CHECKLIST FOR PRINCIPAL OR CONTRACTOR

☐ Complete Principal's standard checklist (NPWS draft standard checklist attached as example)

☐ Are all works being carried out in accordance with the NPWS *KNP Line of Siteand Verge Mowing Drawings* (attached)?

☐ Resultant mown growth height is 50-100mm?

☐ On completion of work are branches up to 4.6m vertically clear of road formation?

☐ Is sight distance to signs and at curves and intersections adequate?

☐ Is hand mowing/trimming only being undertaken around structures?

☐ Are mulching mowers only being used at NPWS or SHL approved locations?

☐ Was a Work Order for oversize boughs required?

☐ Is all vegetation removed to low side of road and "blended"?

NOMINATED HOLD POINTS

1. The items detailed in **Work Method Requirements**.