

APPENDIX 1

Headland Park and Northern Cove Works Drawings

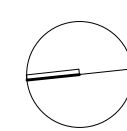
APPENDIX 1A

Landscape and Architecture Drawings



1:1500 @ A1
1:3000 @ A3

0 10 20 40 60 100m



BARANGAROO HEADLAND

PWP Landscape Architecture
739 Alston Way, Berkeley, California 94115 USA

Johnson Pilton Walker
Level 10 Plaza Building Australia Square 95 Pitt Street Sydney NSW
2000 Australia

MAIN WORKS APPLICATION BARANGAROO BARANGAROO PLAN

MW-PWP-L-S0-1001

REV. 00

20th October 2010



1:800 @ A1
1:1600 @ A3

0 10 20 50

BARANGAROO HEADLAND

PWP Landscape Architecture
739 Alston Way, Berkeley, California 94115 USA

Johnson Pilton Walker
Level 10 Plaza Building Australia Square 95 Pitt Street Sydney NSW
2000 Australia

MAIN WORKS APPLICATION BARANGAROO HEADLAND HEADLAND PARK PLAN

XX-PWP-L-S3-1002

REV. 00

22nd October 2010



1:800 @ A3 0 5 10 20 40m

BARANGAROO HEADLAND

PWP Landscape Architecture
739 Allston Way, Berkeley, California 94710
Johnson Pilton Walker
Level 10, Plaza Building Australia Square, 95 Pitt Street, Sydney NSW 2000

MAIN WORKS APPLICATION BARANGAROO HEADLAND PARK HEADLAND SECTION 1

MW-PWP-L-S3-2001

REV. 00

22nd September 2010



1:500 @ A3

0 5 10 20m

BARANGAROO HEADLAND

PWP Landscape Architecture
739 Allston Way, Berkeley, California 94710
Johnson Pilton Walker
Level 10, Plaza Building Australia Square, 95 Pitt Street, Sydney NSW 2000

MAIN WORKS APPLICATION
BARANGAROO HEADLAND PARK
HEADLAND SECTION 2

MW-PWP-L-S3-2002

REV. 00

22nd September 2010



1:200 @ A3 0 1 2 3 5 10m

BARANGAROO HEADLAND

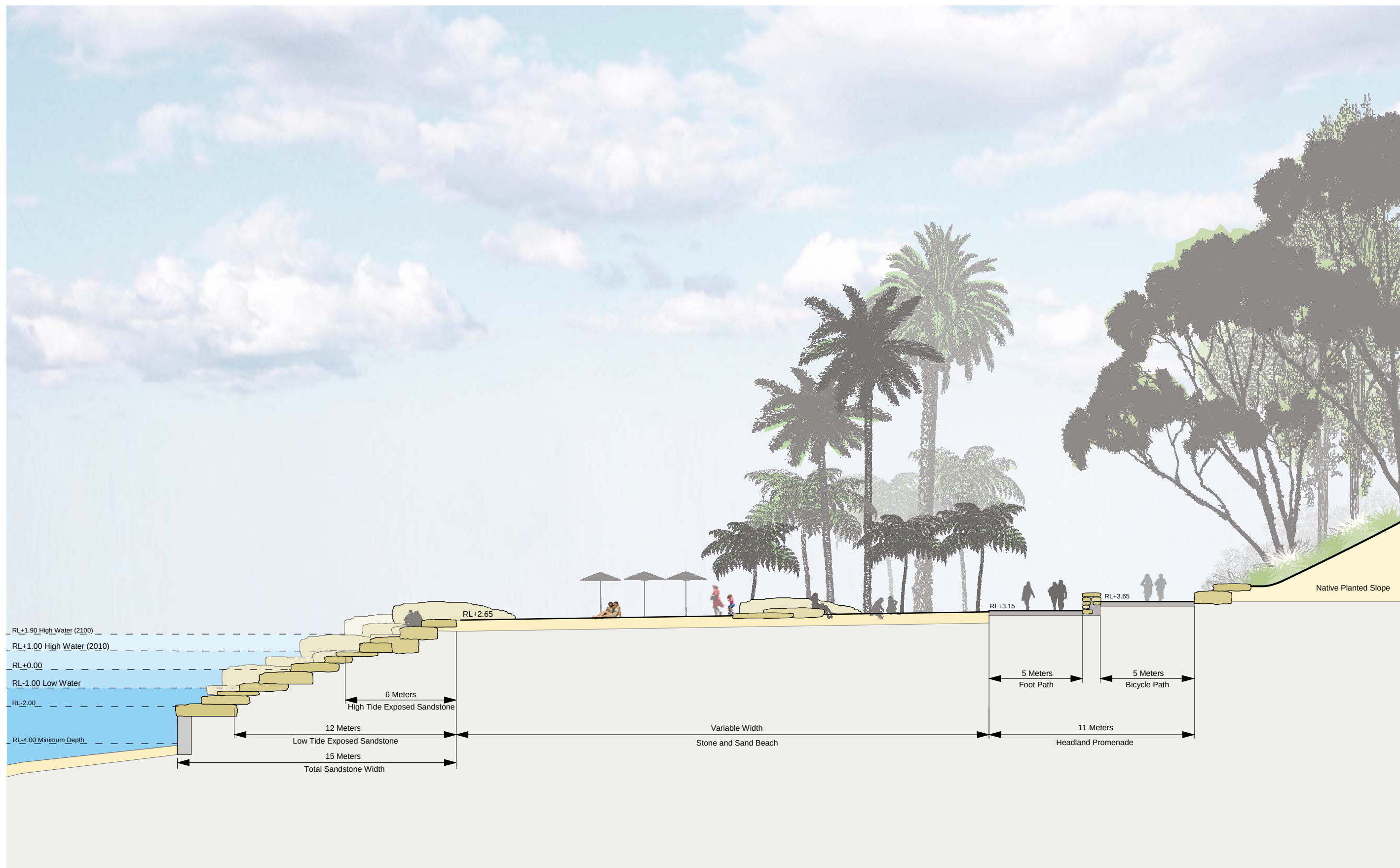
PWP Landscape Architecture
739 Allston Way, Berkeley, California 94710
Johnson Pilton Walker
Level 10, Plaza Building Australia Square, 95 Pitt Street, Sydney NSW 2000

MAIN WORKS APPLICATION BARANGAROO HEADLAND PARK HEADLAND SECTION 3

MW-PWP-L-S3-2003

REV. 00

22nd September 2010



1:200 @ A3



BARANGAROO HEADLAND

PWP Landscape Architecture
739 Allston Way, Berkeley, California 94710

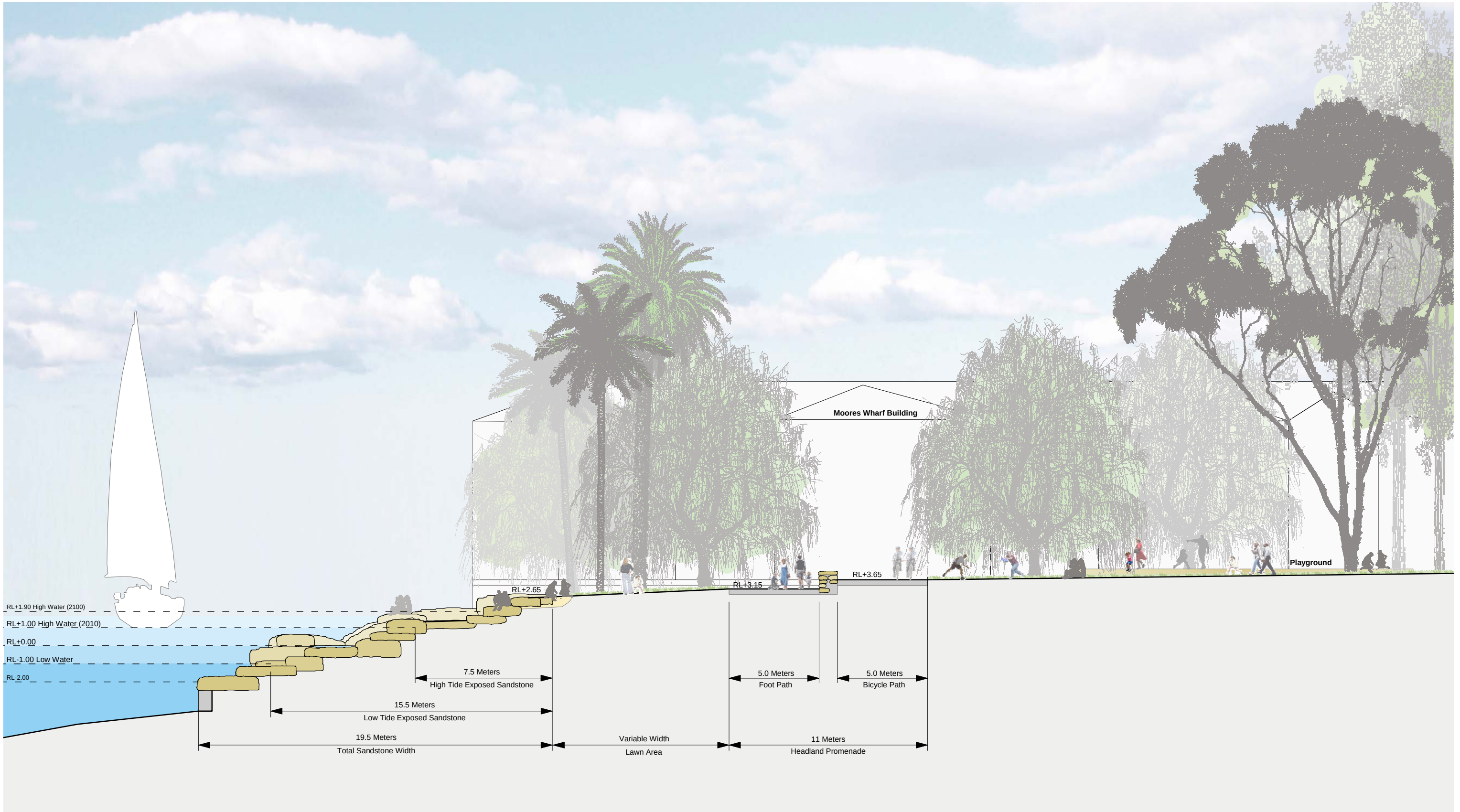
Johnson Pilton Walker
Level 10, Plaza Building Australia Square, 95 Pitt Street, Sydney NSW 2000

MAIN WORKS APPLICATION BARANGAROO HEADLAND PARK HEADLAND SECTION 4

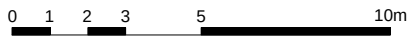
MW-PWP-L-S3-2004

REV. 00

22nd September 2010



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BARANGAROO HEADLAND

PWP Landscape Architecture
739 Allston Way, Berkeley, California 94710

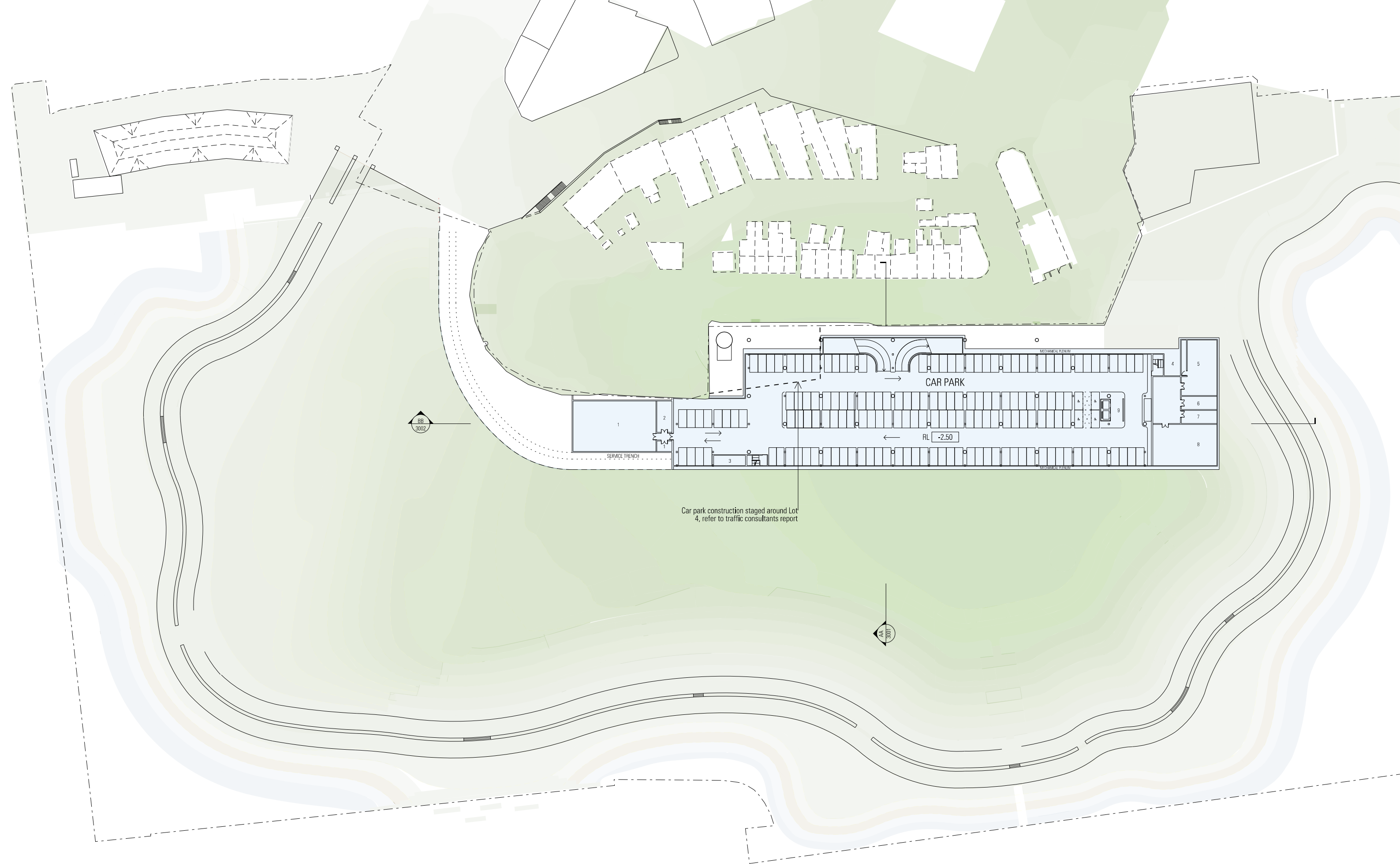
Johnson Pilton Walker
Level 10, Plaza Building Australia Square, 95 Pitt Street, Sydney NSW 2000

MAIN WORKS APPLICATION BARANGAROO HEADLAND HEADLAND SECTION 5

MW-PWP-L-S3-2005

REV. 00

22nd September 2010



Drawing Legend

- 1. Future Plant Space
- 2. Switchroom
- 3. Exhaust Air Plantroom
- 4. Supply Air Plantroom
- 5. Electrical Substation
- 6. Main Switchroom
- 7. Communications Room
- 8. Future Chiller Plantroom
- 9. Public Lift Lobby

1:1000 @ A3

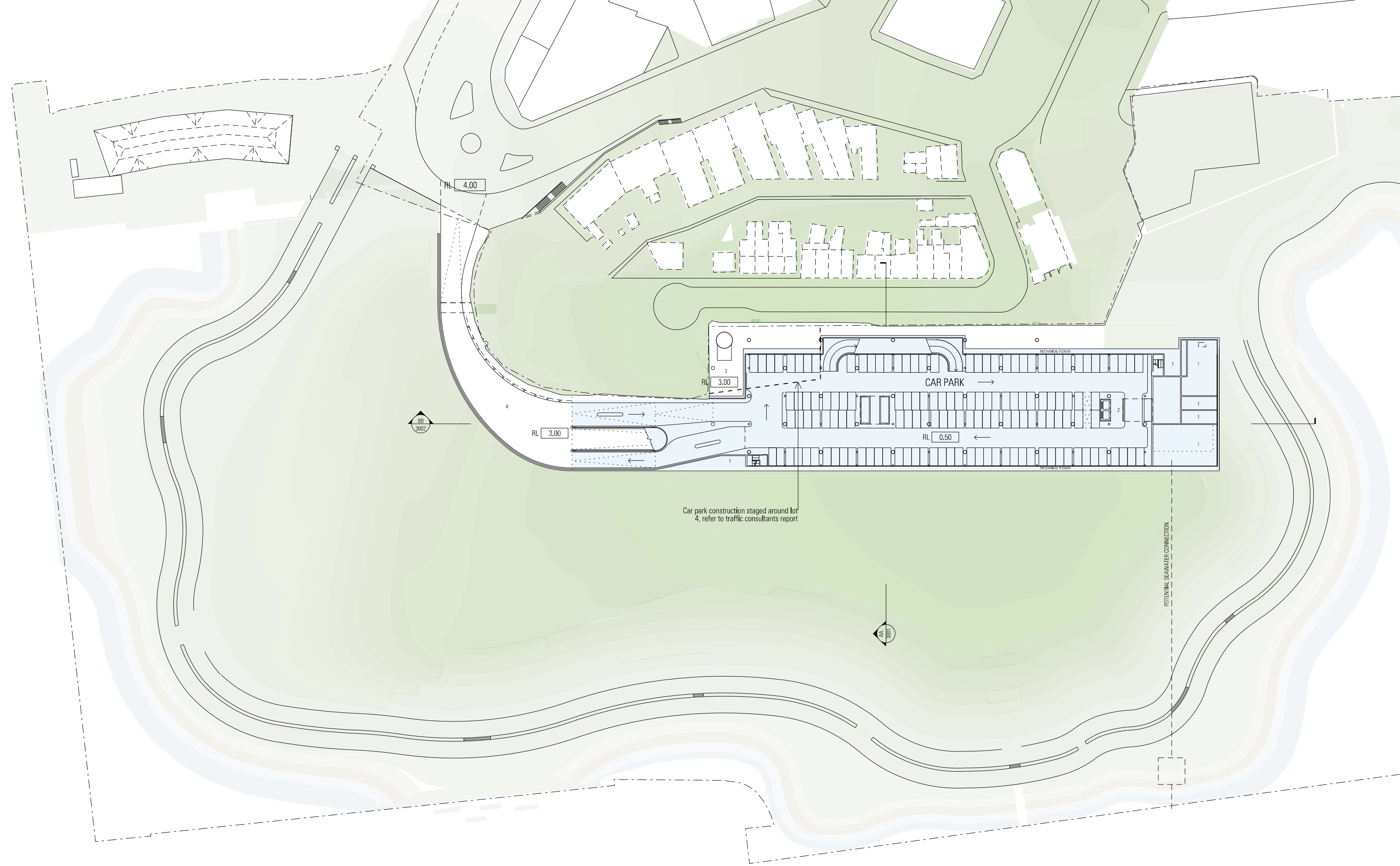


BARANGAROO HEADLAND

PWP Landscape Architecture
739 Allston Way, Berkeley, California 94710
Johnson Pilton Walker
Level 10, Plaza Building Australia Square, 95 Pitt Street, Sydney NSW 2000

MAIN WORKS APPLICATION
CARPARK & FUTURE CULTURAL FACILITY
BASEMENT LEVEL 2

MW-JPW-A-S3-1001 REV. 02 22nd Oct. 2010



Drawing Legend

- 1. Void above plant space
- 2. Public Lift Lobby
- 3. Access area to Harbour Control Tower
- 4. Vehicle Access Road

1:1000 @ A3

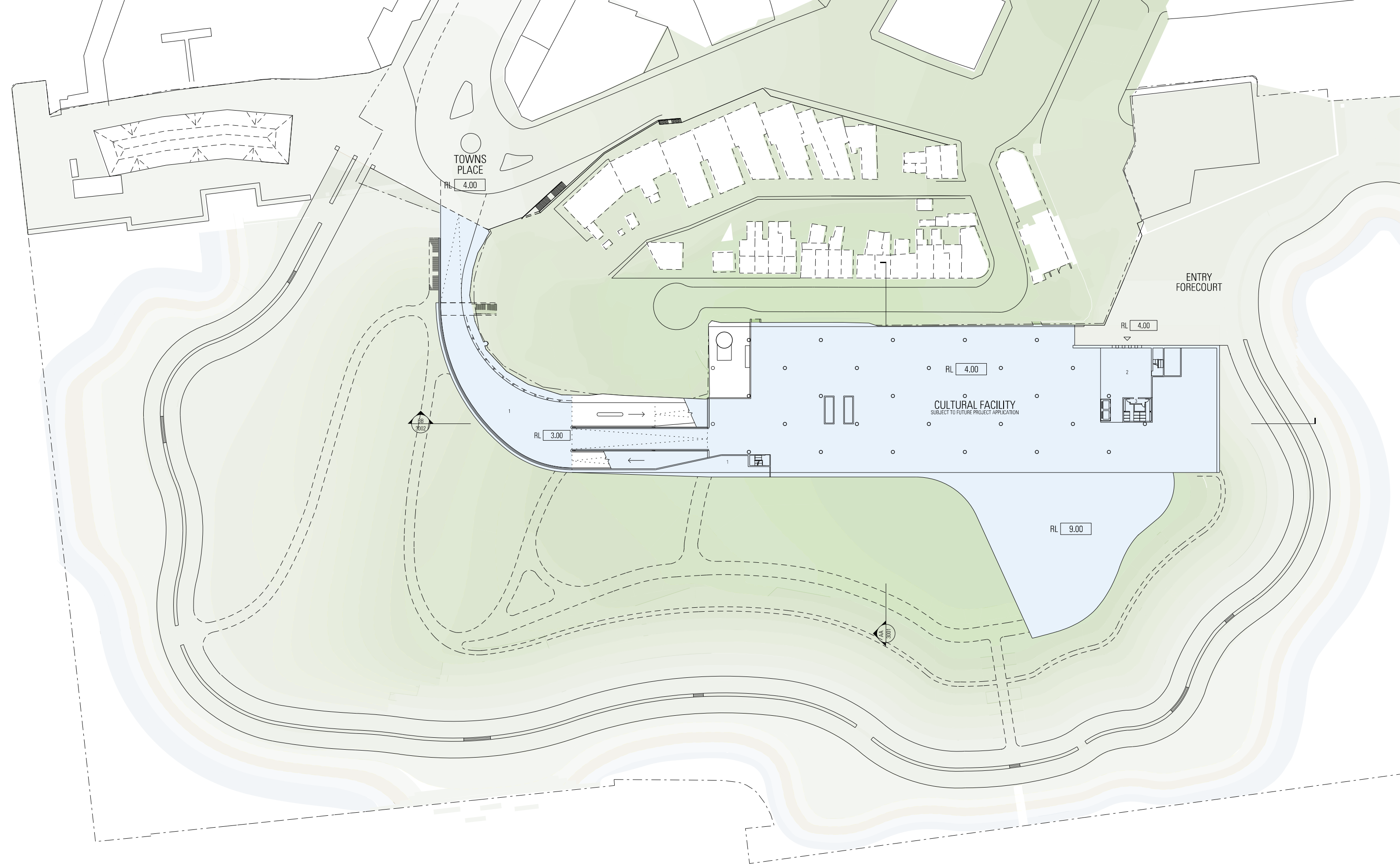


BARANGAROO HEADLAND

PWP Landscape Architecture
 739 Allston Way, Berkeley, California 94710
Johnson Pilton Walker
 Level 10, Plaza Building Australia Square, 95 Pitt Street, Sydney NSW 2000

MAIN WORKS APPLICATION
 CARPARK & FUTURE CULTURAL FACILITY
 BASEMENT LEVEL 1

MW-JPW-A-S3-1002 REV. 02 22nd Oct. 2010



Drawing Legend

- 1. Vehicle Access Road
- 2. Public Lift Lobby, Access to Foreshore level
- 3. Public Lavatories

1:1000 @ A3

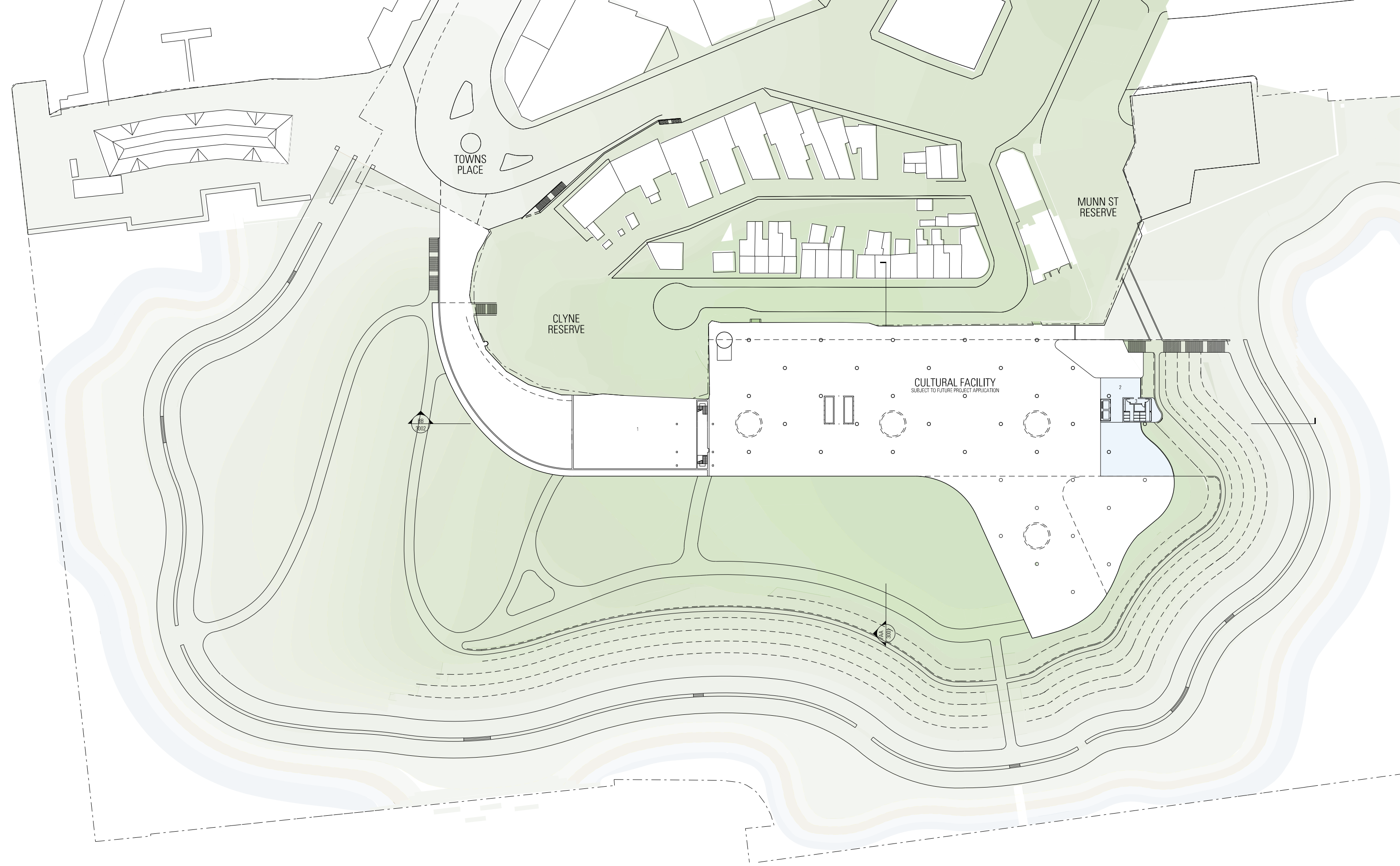


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PWP Landscape Architecture
739 Allston Way, Berkeley, California 94710
Johnson Pilton Walker
Level 10, Plaza Building Australia Square, 95 Pitt Street, Sydney NSW 2000

MAIN WORKS APPLICATION
CARPARK & FUTURE CULTURAL FACILITY
GROUND FLOOR RL4.0

MW-JPW-A-S3-1003 REV. 02 22nd Oct. 2010



Drawing Legend

- 1. Future plant room
- 2. Public Lift Lobby, Access to Munn St Reserve level
- 3. Public Lavatories

1:1000 @ A3

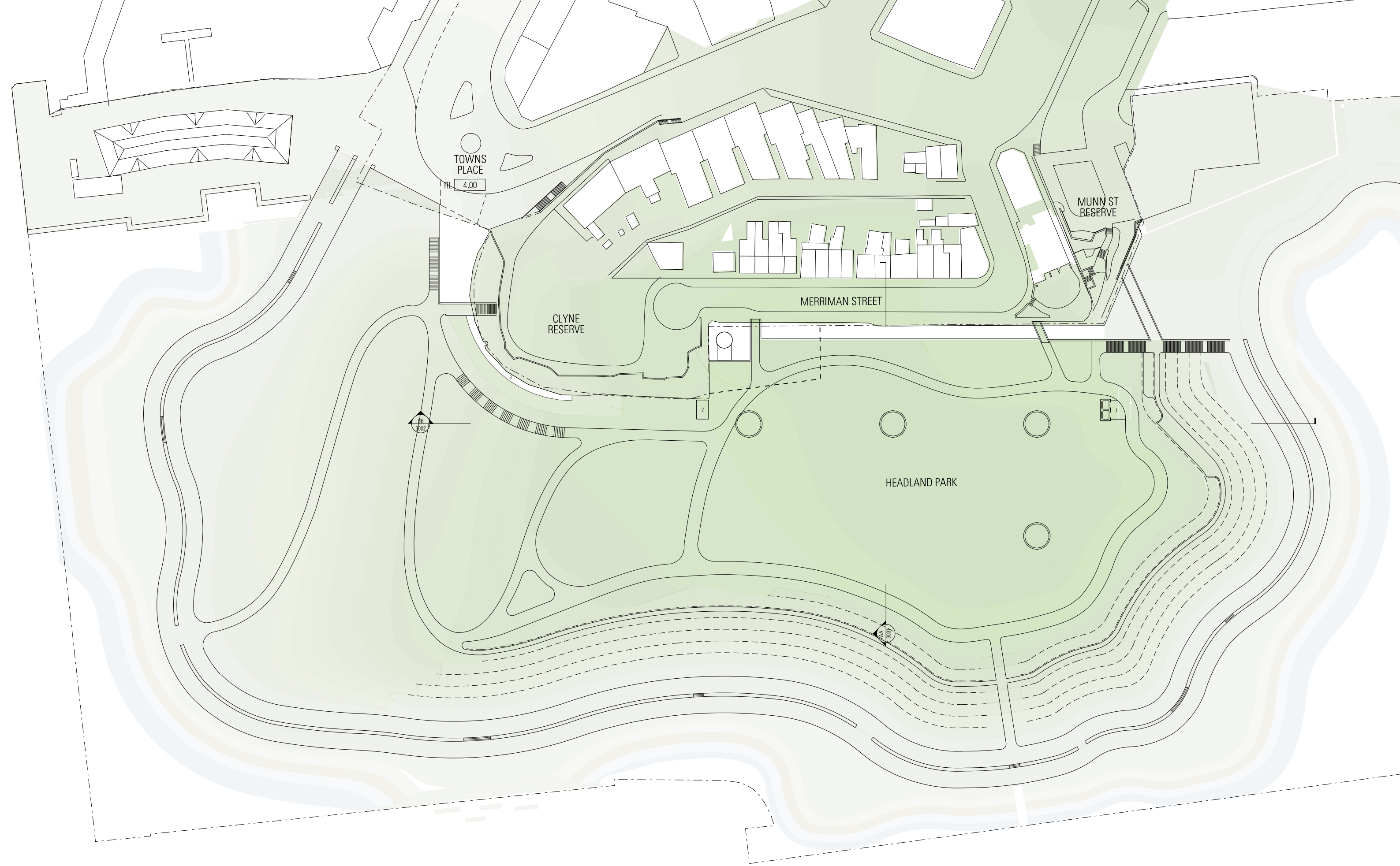


BARANGAROO HEADLAND

PWP Landscape Architecture
739 Allston Way, Berkeley, California 94710
Johnson Pilton Walker
Level 10, Plaza Building Australia Square, 95 Pitt Street, Sydney NSW 2000

**MAIN WORKS APPLICATION
CARPARK & FUTURE CULTURAL FACILITY
PLAN RL 13.0**

MW-JPW-A-S3-1005 REV. 02 22nd Oct. 2010



- Drawing Legend**
- 1. Public Lift Connection to Headland Park upper level
 - 2. Fire egress integrated within landscape
 - 3. Light slot to Access Road

1:1000 @ A3

0 10 20 30 50m

BARANGAROO HEADLAND

PWP Landscape Architecture
739 Allston Way, Berkeley, California 94710
Johnson Pilton Walker
Level 10, Plaza Building Australia Square, 95 Pitt Street, Sydney NSW 2000

**MAIN WORKS APPLICATION
CARPARK & FUTURE CULTURAL FACILITY
PLAN RL 25.0**

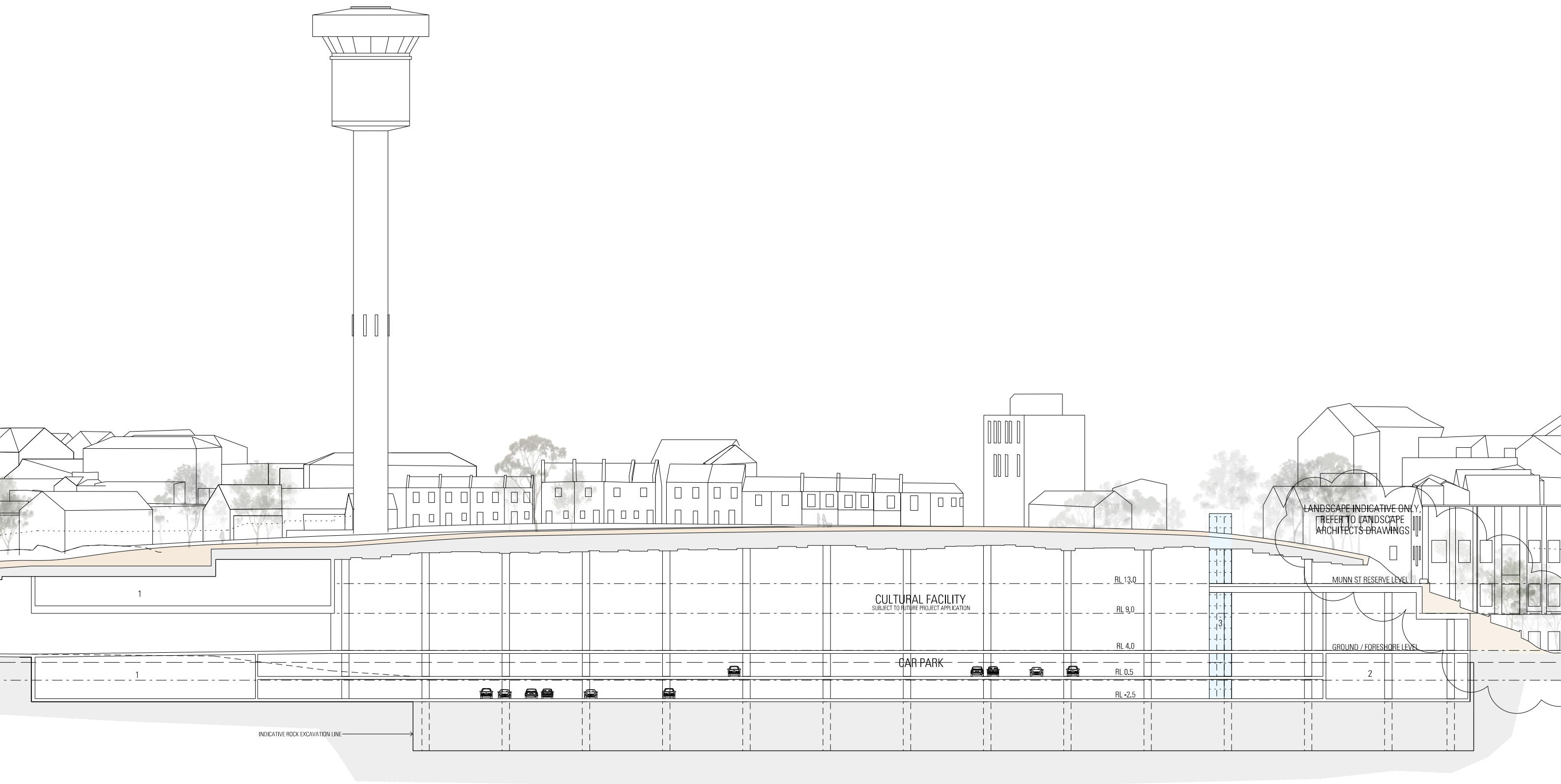
MW-JPW-A-S3-1006 REV. 02 22nd Oct. 2010



BARANGAROO HEADLAND

PWP Landscape Architecture
739 Allston Way, Berkeley, California 94710
Johnson Pilton Walker
Level 10, Plaza Building Australia Square, 95 Pitt Street, Sydney NSW 2000

MAIN WORKS APPLICATION CARPARK & FUTURE CULTURAL FACILITY SECTION AA



Drawing Legend

1. Future Plant Area
2. Plantroom
3. Public Lift Connection

RL'S APPROXIMATE ONLY SUBJECT TO DETAILED DESIGN DEVELOPMENT

1:500 @ A3

0 5 10 15 25m

BARANGAROO HEADLAND

PWP Landscape Architecture
739 Allston Way, Berkeley, California 94710
Johnson Pilton Walker
Level 10, Plaza Building Australia Square, 95 Pitt Street, Sydney NSW 2000

MAIN WORKS APPLICATION CARPARK & FUTURE CULTURAL FACILITY SECTION BB

MW-JPW-A-S3-3002 REV. 02 22nd Oct. 2010



LANDSCAPE INDICATIVE ONLY, REFER TO LANDSCAPE ARCHITECT'S DRAWINGS
RL'S APPROXIMATE ONLY SUBJECT TO DETAILED DESIGN DEVELOPMENT

1:500 @ A3

0 5 10 15 25m

BARANGAROO HEADLAND

PWP Landscape Architecture
739 Allston Way, Berkeley, California 94710
Johnson Pilton Walker
Level 10, Plaza Building Australia Square, 95 Pitt Street, Sydney NSW 2000

**MAIN WORKS APPLICATION
CARPARK & FUTURE CULTURAL FACILITY
SECTION LIFT ENTRY FROM UPPER BLUFF**

MW-JPW-A-S3-3003 REV. 00 22nd Oct. 2010

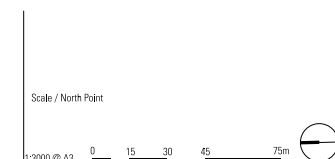


- KEY

 - SANDSTONE FORESHORE PROMENADE
 - ASPHALT WALKING TRACK
 - DECOMPOSED GRANITE GRAVEL BUSH WALK TRACK
- SANDSTONE STEPS
 - TREES IN TURF
 - NATIVE ENDEMIC UNDERSTORY
- NATIVE CANOPY TREES
 - PROMENADE TREES
 - SANDSTONE STEPS
- TIMBER PUBLIC DECK
 - ROCKY FORESHORE

General Notes
Do not scale from drawing. Use marked dimensions.
To be read in conjunction with all other Consultant's drawings.
The Architect / Landscape Architect to be immediately notified of any discrepancies.
Copyright on this drawing retained by the Architect / Landscape Architect.

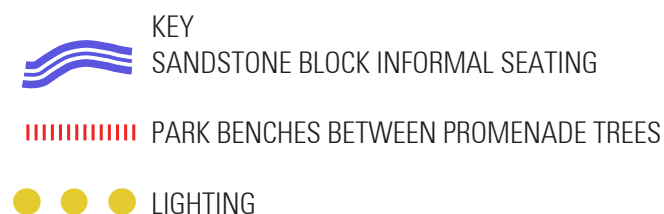
Rev	App	Ckd	Revision or reason for issue	Date



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www.jpw.com.au

Project Name
BARANGAROO HEADLAND PARK
 BARANGAROO SYDNEY AUSTRALIA

Drawing Title
MAIN WORKS MATERIALS AND PLANTING
Project Number
1004
Drawing Number
MW-JPW-L-S3-1002
Documentation Stage
70% DOCUMENTATION
Revision
00



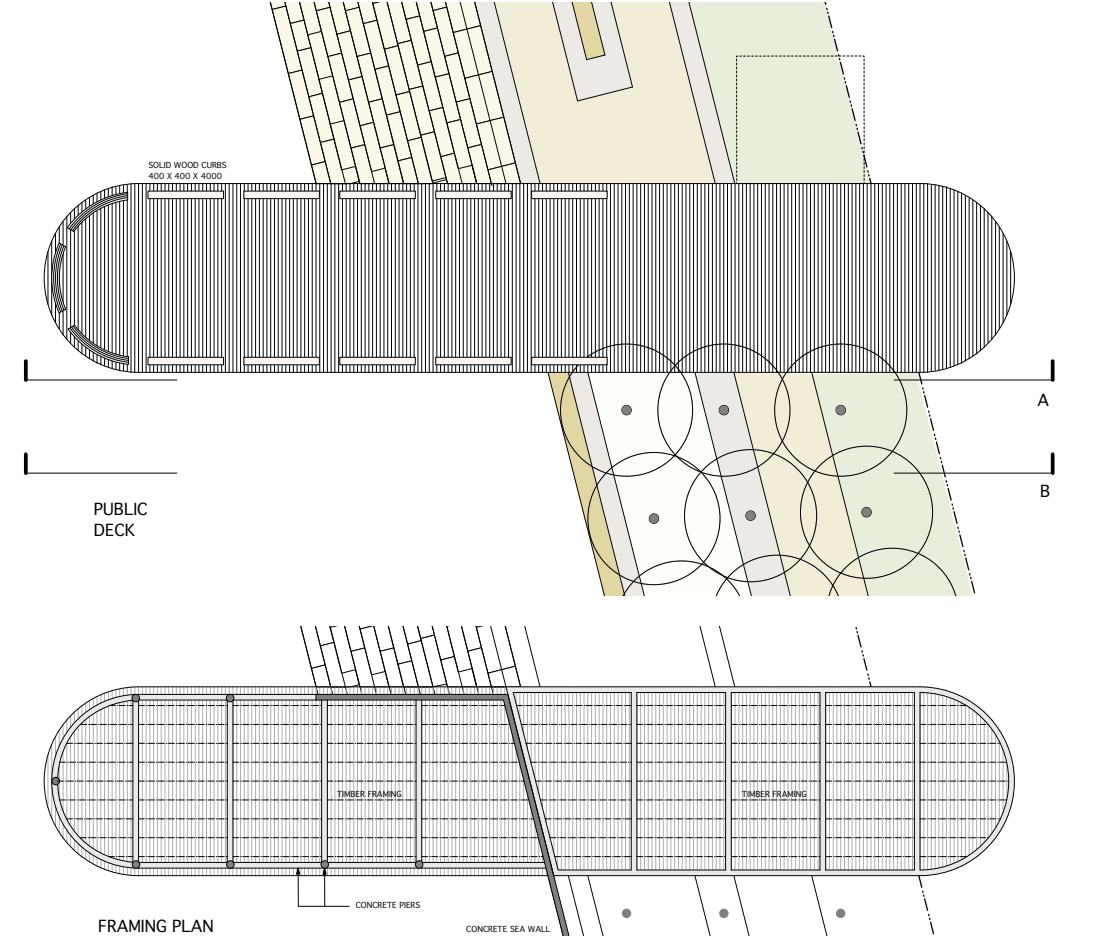
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TIMBER BENCHES AT APPROX. 60m CENTRES ALONG ALL PATHS.
RECYCLING WASTE BINS AT LOCATIONS TO BE DECIDED.



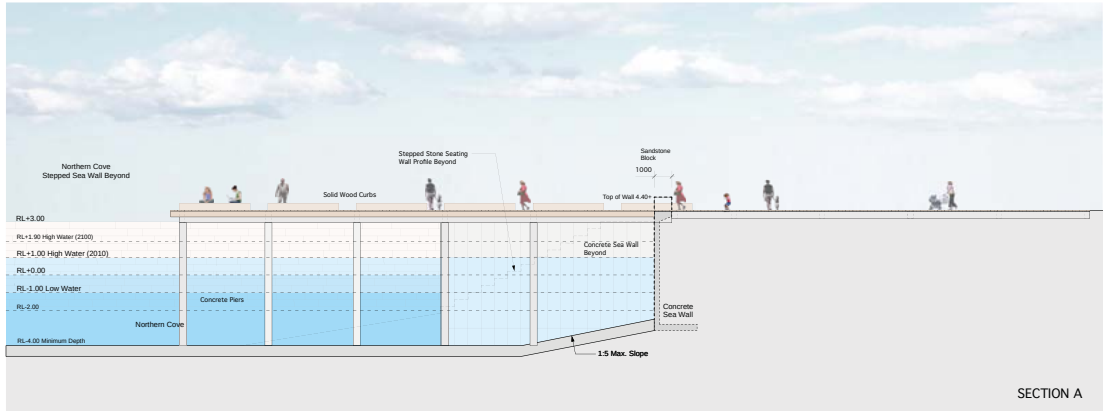
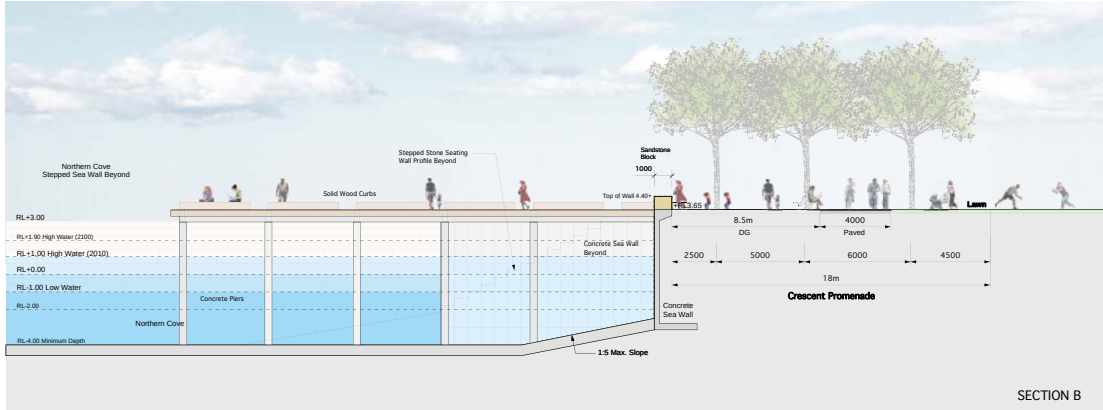
FLOATING PONTOONS



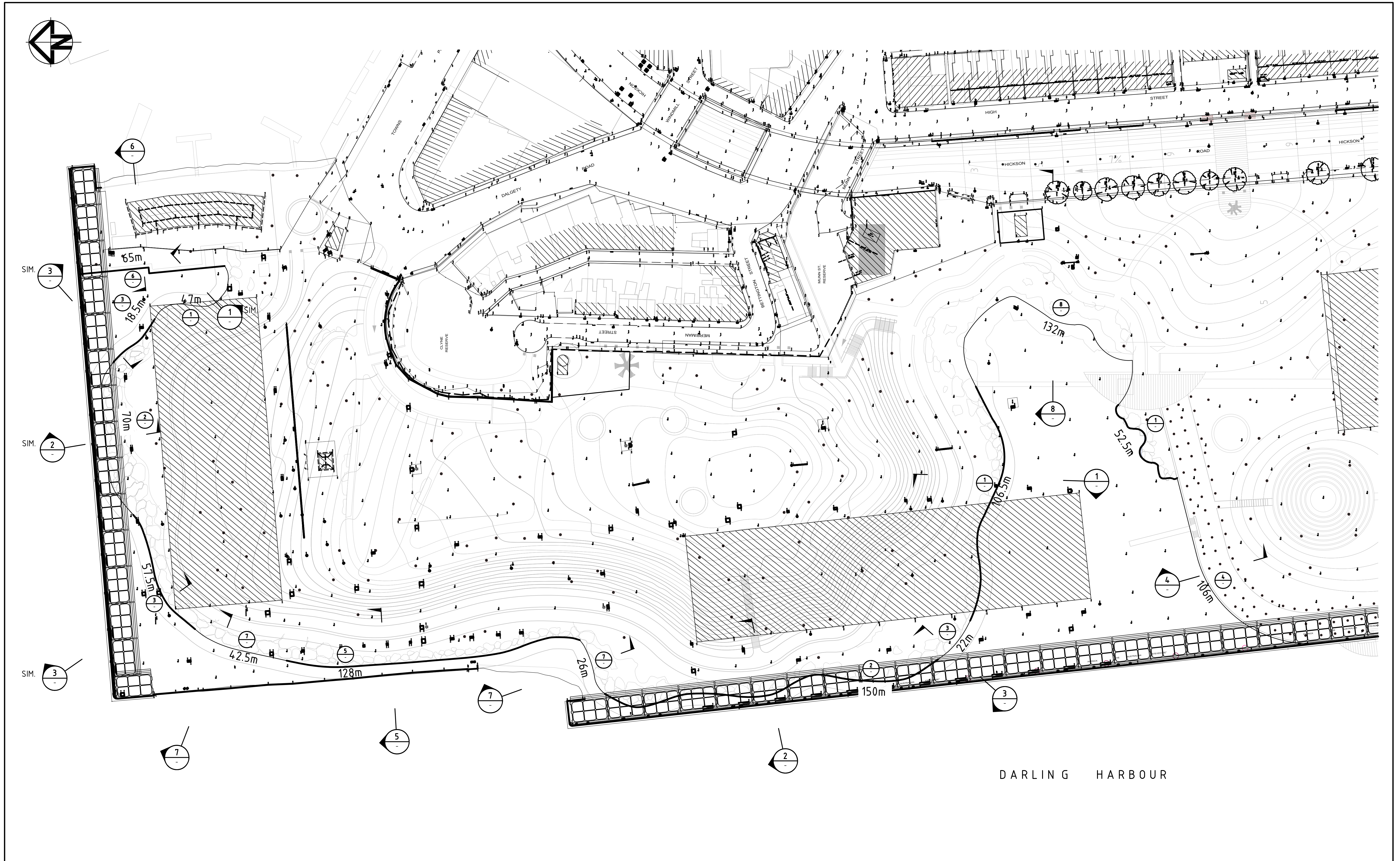
FLOATING PONTOONS



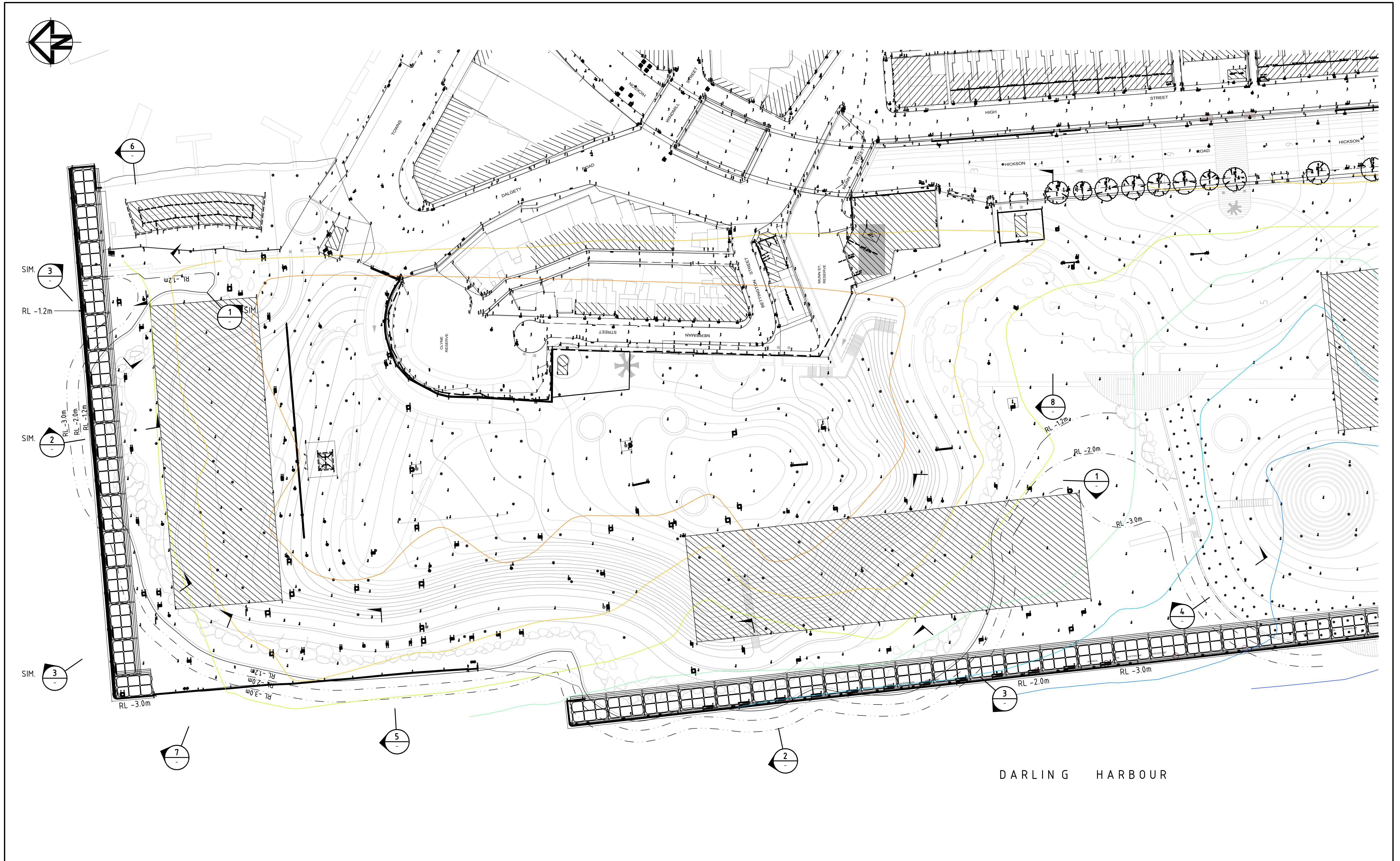
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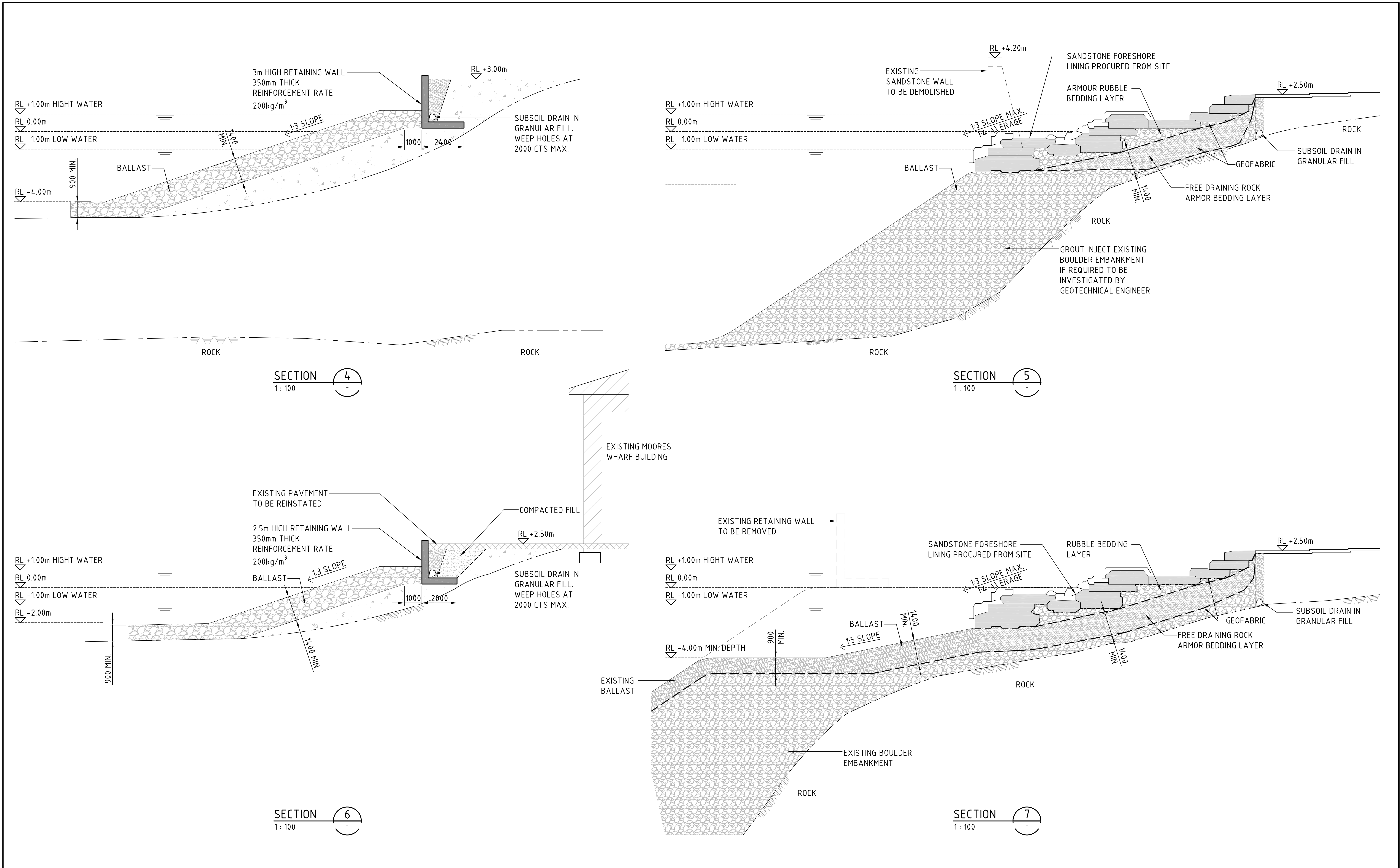
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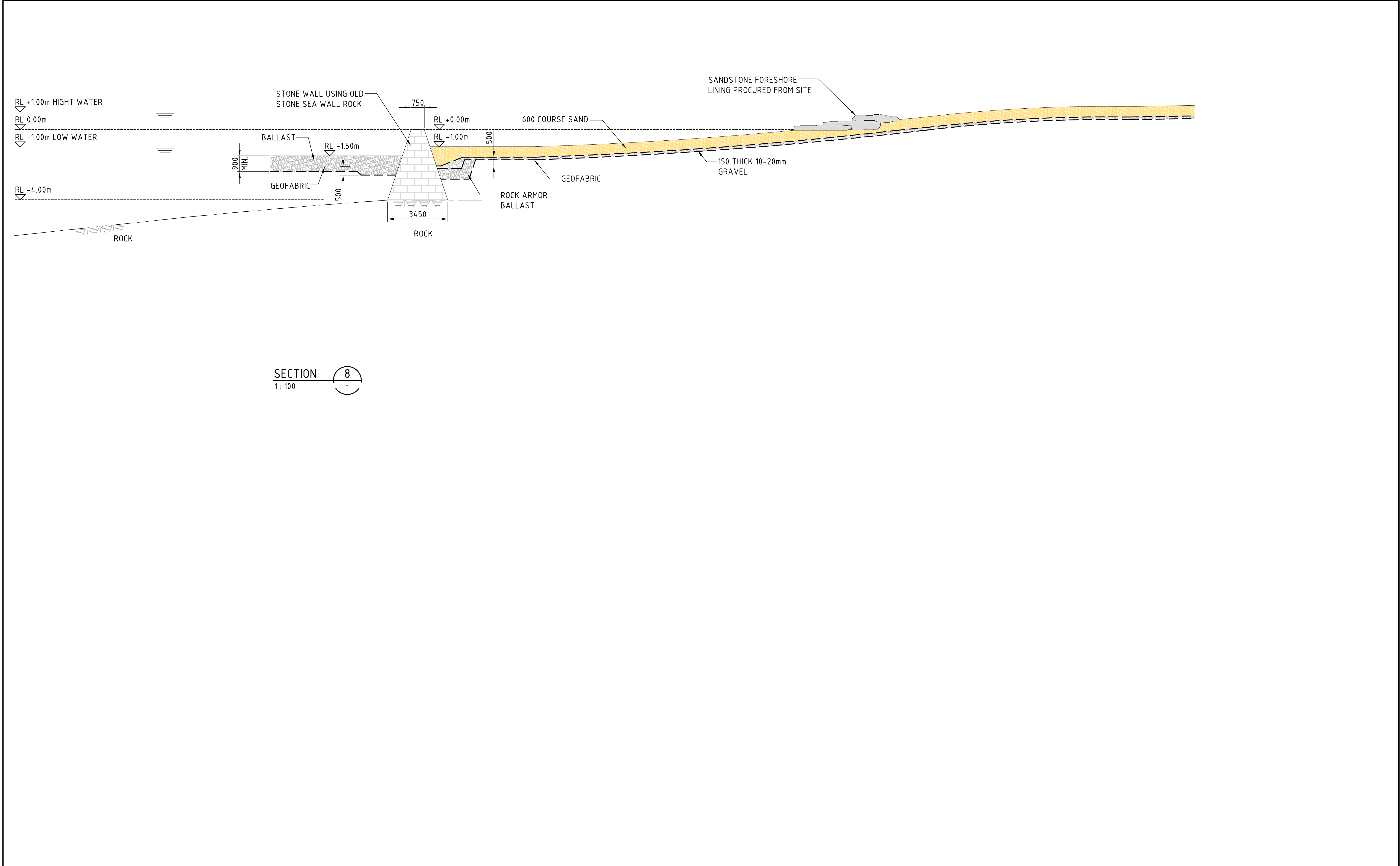
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							HYDER CONSULTING PTY LTD	
							ABN 76 104 485 289 Level 5, 141 Walker St North Sydney NSW 2060 Australia	
							Tel: +61 (0)2 8907 9000 Fax: +61 (0)2 8907 9001 www.hyderconsulting.com © Copyright reserved	
							Hyder	
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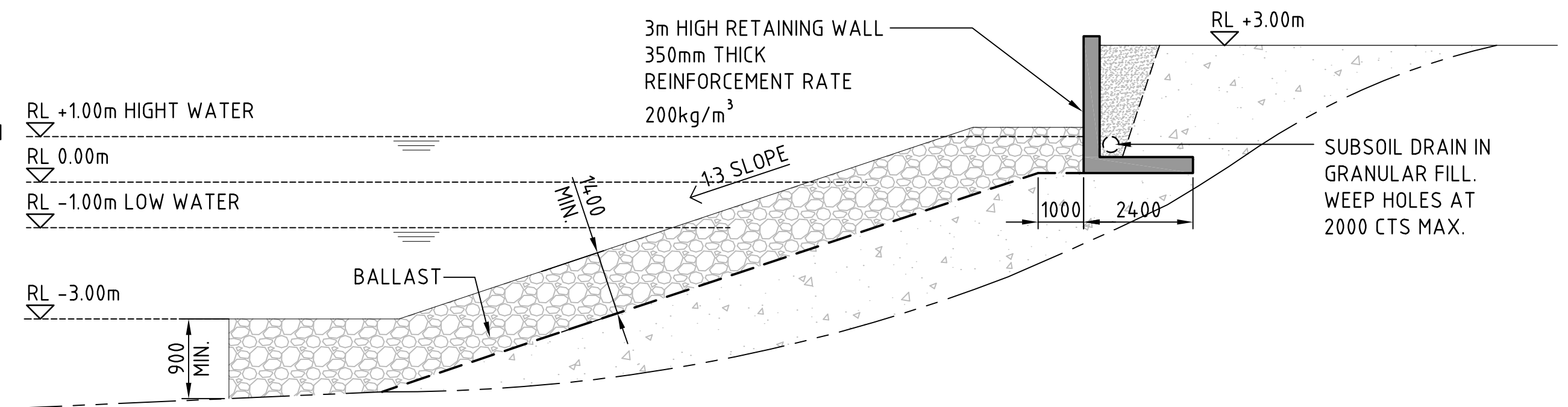
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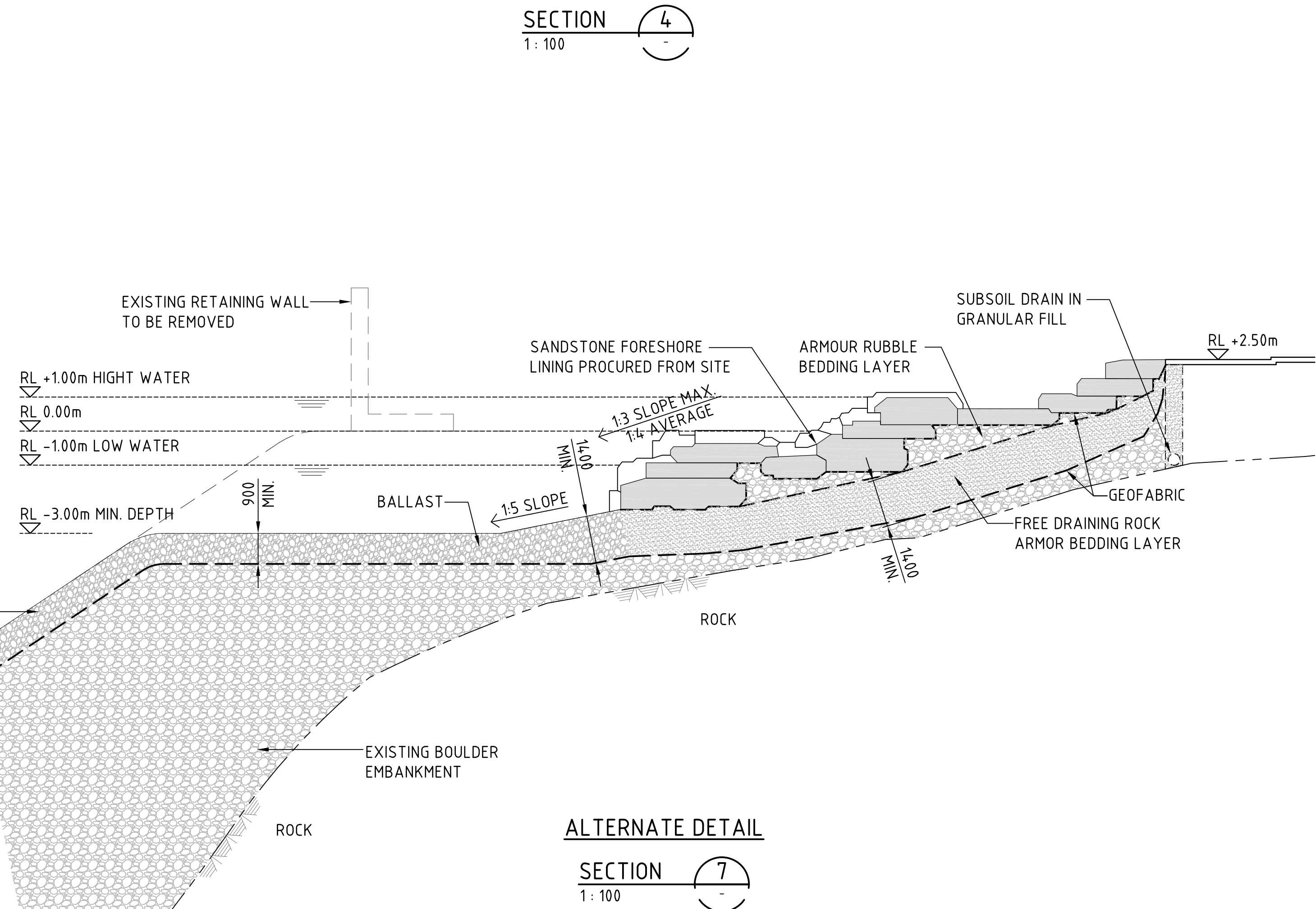
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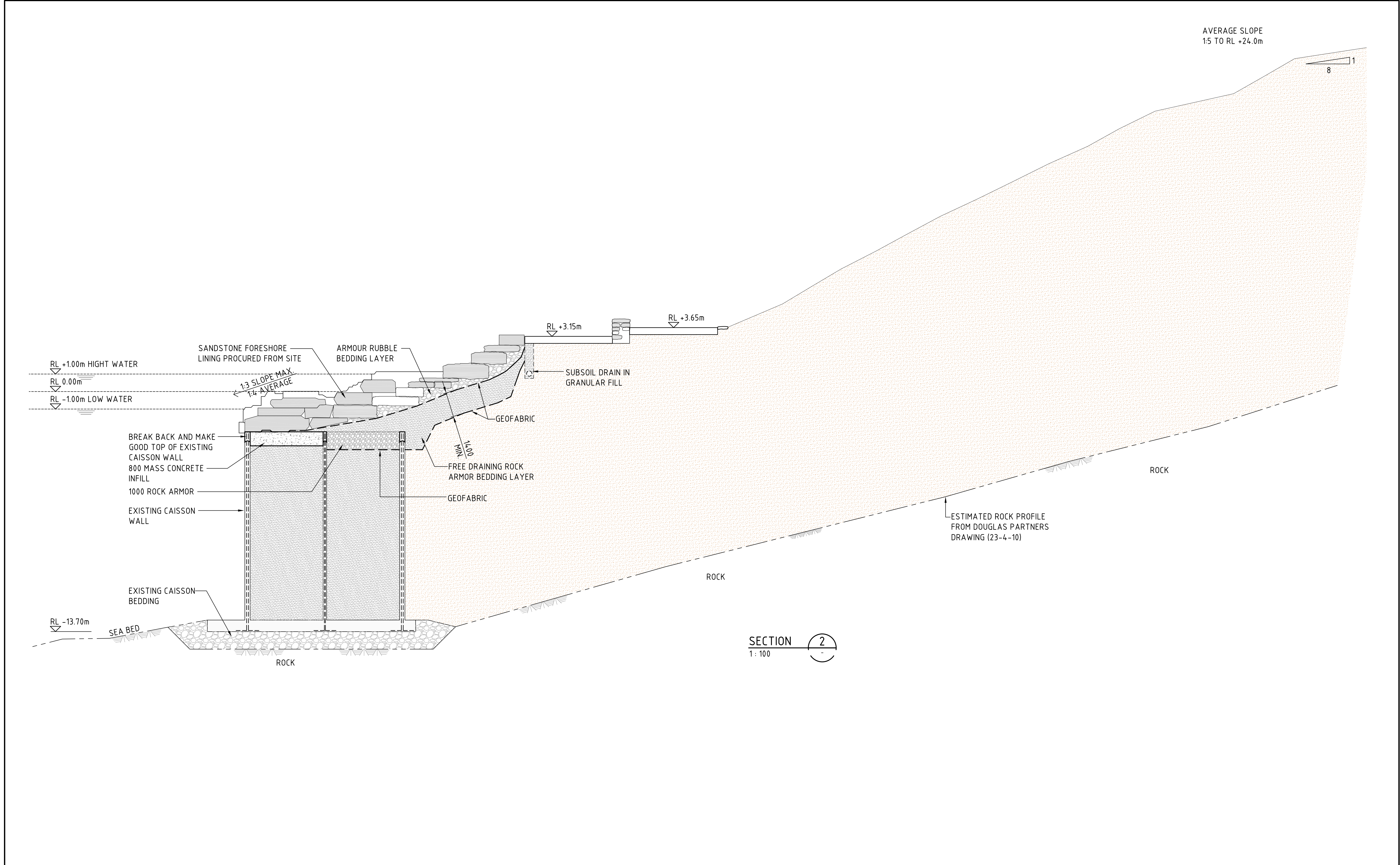
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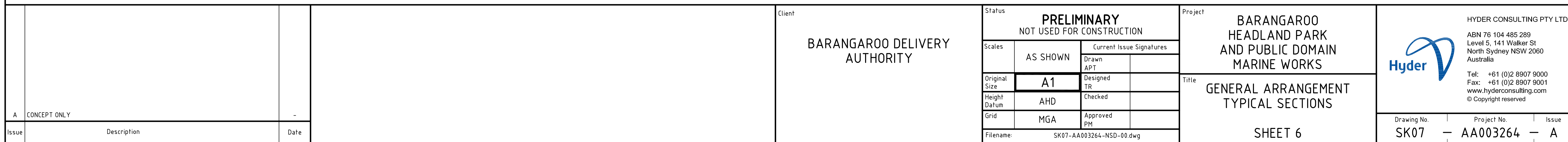
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SECTION 7
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		Client BARANGAROO DELIVERY AUTHORITY	Status PRELIMINARY NOT USED FOR CONSTRUCTION	Project BARANGAROO HEADLAND PARK AND PUBLIC DOMAIN MARINE WORKS		HYDER CONSULTING PTY LTD ABN 76 104 485 289 Level 5, 141 Walker St North Sydney NSW 2060 Australia Tel: +61 (0)2 8907 9000 Fax: +61 (0)2 8907 9001 www.hyderconsulting.com © Copyright reserved
A	CONCEPT ONLY			-		
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- 1 Zero carbon
- 2 Zero waste
- 3 Sustainable transport
- 4 Sustainable materials
- 5 Local and sustainable food
- 6 Sustainable water
- 7 Land and wildlife
- 8 Culture and heritage
- 9 Equity and local economy
- 10 Health and happiness

Headland Park will incorporate Photovoltaics. Yellow zones indicate the areas for the installation. All public domain energy at Barangaroo will be powered by on-site renewables

Recycling waste storage areas will be provided throughout the site

Green waste from the Park will be composted on-site in a vertical composting facility or similar off-site unit.

Bicycle parking for 30 bikes will be provided with the provision for future expansion up to 150 spaces

Should retailers come on-site healthy and sustainable food choices will be included in lease conditions

Low-impact and recycled materials will be used on site, including for street furniture

Storm-water will be captured and treated on-site. Water leaving the site will be treated to National Best Practice Standards

75% of public domain water demand will be met through stormwater captured on-site. The remaining non-potable demand will be served by recycled water from Stage 2

100% of species planted will be native with 90% endemic, attracting native wildlife

Inter-tidal Biodiversity Diversity achieved from multi layered sea walls rather than vertical walls

Artworks will be integrated into Headland Park to make the parklands an artwork

An arts and cultural facility will be integrated into the future Cultural Space

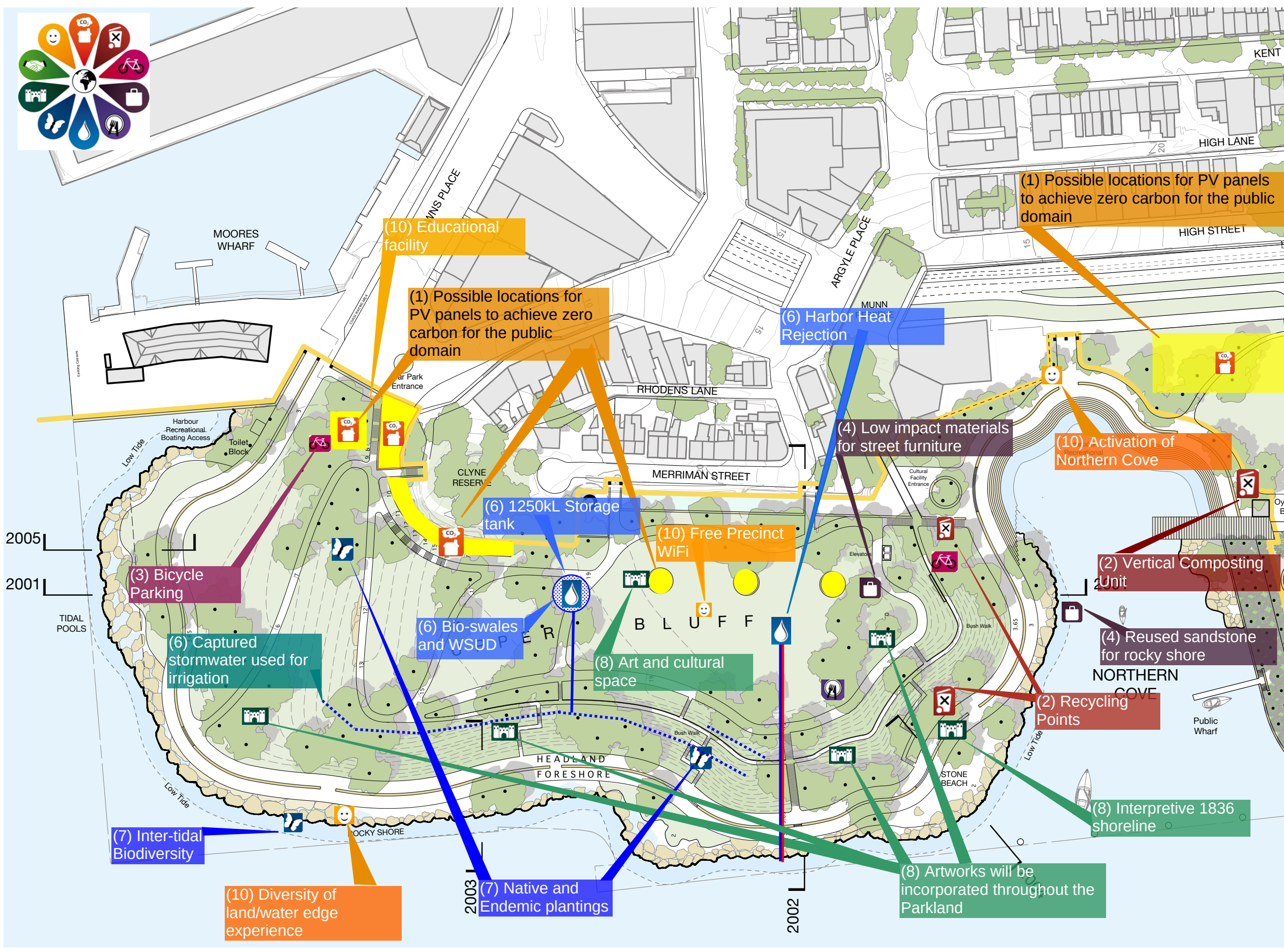
Training and apprenticeship programs will be included within construction contracts

Free WiFi

An integrated educational facility will be provided to bring together the other educative aspects of BHP

Diversity of land/water edge experience provided

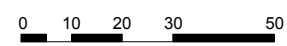
Activation of northern cove for public use



BARANGAROO HEADLAND

ESD Initiatives going forward to
Design Development

1:1500 @ A3



APPENDIX 1B

Services Drawings

BARANGAROO HEADLAND PARK

BARANGAROO DELIVERY AUTHORITY

INTEGRATED WATER MANAGEMENT PLAN



LOCALITY PLAN
Scale: NTS

DRAWING LIST:

MW-WSP-H-1031	TITLE SHEET, DRAWING LIST AND LOCALITY PLAN
MW-WSP-H-1032	LEGEND AND ABBREVIATIONS
MW-WSP-H-1033	KEY PLAN
MW-WSP-H-1034	GENERAL NOTES AND SPECIFICATIONS
MW-WSP-H-1035	STORMWATER CATCHMENT EXISTING CONDITION SHEET 1 OF 2
MW-WSP-H-1036	STORMWATER CATCHMENT EXISTING CONDITION SHEET 2 OF 2
MW-WSP-H-1037	STORMWATER CATCHMENT PROPOSED PARK SHEET 1 OF 1
MW-WSP-H-1038	STORMWATER DRAINAGE LAYOUT PLAN SHEET 1 OF 1
MW-WSP-H-1039	RETAINING WALL SUBSOIL DRAINAGE LAYOUT PLAN SHEET 1 OF 1
MW-WSP-H-1040	IRRIGATION LAYOUT PLAN SHEET 1 OF 1
MW-WSP-H-1041	SEEPAGE WATER LAYOUT PLAN SHEET 1 OF 1
MW-WSP-H-1042	CIVIL DETAILS
MW-WSP-H-1043	SYDNEY WATER CORPORATION GRAVITY SEWER DEVIATION TO SPS1129 AND DECOMMISSIONING OF SPS0014

AUSTRALIAN HEIGHT DATUM

ISSUE FOR APPROVAL

DO NOT SCALE FROM DRAWINGS. CHECK & VERIFY ALL DIMENSIONS & LEVELS BEFORE COMMENCEMENT OF ANY WORK. THIS DRAWING IS NOT TO BE COPIED IN PART OR WHOLE WITHOUT WRITTEN PERMISSION FROM WARREN SMITH AND PARTNERS.		NORTH POINT	NOTES 1. THIS DRAWING SHOW BE READ IN CONJUNCTION WITH WSP 'INTEGRATED WATER MANAGEMENT PLAN' DRAWINGS No. 1031, 1032, 1033 & 1034.	ISSUE		AMENDMENT		DATE		ISSUE		AMENDMENT		DATE		CLIENT		 Barangaroo Delivery Authority Level 5, Foreshore House 66 Harrington Street Sydney 2000 NSW Australia  SERVING THE CONSTRUCTION INDUSTRY SINCE 1981 Consulting Engineers Hydraulic Services Civil Engineering Fire Protection Sydney Water Accredited • Water Servicing Co-ordinator • Design and Project Management		TITLE			
				A B C		PRELIMINARY ISSUE PRELIMINARY ISSUE (ARCH REVISION) ISSUE FOR APPROVAL		01.10.10 07.10.10 13.10.10								PROJECT BARANGAROO HEADLAND PARK				SCALE		DRAWN	
																DATE		DRAWING No.		ISSUE			
																SEPT. 2010		MW-WSP-H-1031		C		JOB No. 3591	

LEGEND

CIVIL DRAINAGE SYMBOLS

STW	STORMWATER DRAINAGE PIPE
STWRM	STORMWATER RISING MAIN
OL	OVERFLOW LEVEL
SL	SURFACE LEVEL
TWL	TOP WATER LEVEL
RW	STORMWATER DRAINAGE CHANNEL
SS	SUB SOIL DRAINAGE WITH CLEAN OUT
SSRM	RAINWATER
SSRM	SUB SOIL RISING MAIN
EB-LF	EARTH BANK LOW FLOW
EB-HF	EARTH BANK HIGH FLOW
EM	EXCAVATED MATERIAL
FLUME	FLUME
DG	DIVERSION DRAIN
DP	DIVERSION DRAIN
OFF	OVERFLOW PATH
OFD	OVERFLOW DRAIN
CLD	CONCRETE LINED DRAIN
RLD	ROCK LINED DRAIN
TD	TABLE DRAIN
V DRAIN (L)	V DRAIN (L)
V DRAIN (R)	V DRAIN (R)
SWALE or SPEED HUMP	SWALE or SPEED HUMP
OVERLAND FLOW DIRECTIONAL ARROW	OVERLAND FLOW DIRECTIONAL ARROW
DOWN PIPE	DOWN PIPE
PAVED AREA DRAIN	PAVED AREA DRAIN
DROP TO DR RISE FROM	DROP TO DR RISE FROM
RISE TO DR DROP FROM	RISE TO DR DROP FROM
TEE DROP	TEE DROP
TEE RISE	TEE RISE
VERTICAL RISER IN DRAINAGE	VERTICAL RISER IN DRAINAGE
FLOW DIRECTIONAL ARROWS ON ALL PIPING SERVICES	FLOW DIRECTIONAL ARROWS ON ALL PIPING SERVICES
PIPELINE TERMINATED WITH BLANK FLANGE	PIPELINE TERMINATED WITH BLANK FLANGE
PIPELINE PLUGGED OFF	PIPELINE PLUGGED OFF
CLEAROUT	CLEAROUT
FLUSHING POINT	FLUSHING POINT
NEW PIPE	NEW PIPE
RISER	RISER
SERVICE	SERVICE
SIZE	SIZE
DROPPER	DROPPER
NON-RETURN FLAP VALVE ON INSIDE FACE OF PIT AT ALL DOWN PIPES & SUB SOIL DRAINAGE LINES TO OSD SYSTEM	NON-RETURN FLAP VALVE ON INSIDE FACE OF PIT AT ALL DOWN PIPES & SUB SOIL DRAINAGE LINES TO OSD SYSTEM

CIVIL ABBREVIATIONS

BWL	DRAINAGE LEVELS
IL	BOTTOM WATER LEVEL
OL	OVERFLOW LEVEL
SL	SURFACE LEVEL
TWL	TOP WATER LEVEL
LD	GRATES & COVERS
MD	LIGHT DUTY CLASS 'B'
HD	MEDIUM DUTY CLASS 'C'
EHD	HEAVY DUTY CLASS 'D'
MP	EXTRA HEAVY DUTY CLASS 'E'
MP	MULTI-PART COVER OR GRATE
CD	PITS
CD	CDR TECHNOLOGIES
DGP	STORMWATER TRAPS
DGP	DISCHARGE CONTROL PIT
DGP	DOUBLE GRATED GULLY PIT
GP	(CAST IRON)
GP	GROSS POLLUTANT TRAP
JP	JUNCTION PIT
KEP	KERB ENTRY PIT
KEU	KERB ENTRY UNIT
MPC	MULTI-PART COVER
MPG	MULTI-PART GRATE
RK	RAINWATER REUSE
SGGP	SINGLE GRATED GULLY PIT (GMS)
SWP	STORMWATER PIT
RW	DRAINAGE LINES
SS	RAIN WATER (REUSE)
STRM	SUBSOIL DRAINAGE
STW	STORMWATER RISING MAIN
GD	STORMWATER DRAIN
OLD	GRADED DRAIN
OLD	OPEN LINED DRAIN
OLD	OPEN UNLINED DRAIN
CD	FEATURES
DP	DOWN PIPE
FP	FLUSHING POINT
IO	INSPECTION OPENING
OF	GUTTER OVERFLOW PIPE
OF	RAINWATER OUTLET
RTU	DRAINAGE TURNUP
OSD	ON-SITE DETENTION
PSD	PERMISSIBLE SITE DISCHARGE
DFP	OVERFLOW PATH
SWMP	STORM WATER MANAGEMENT PLAN
ESCP	EROSION & SEDIMENT CONTROL PLAN

OSD ABOVE GROUND	OSD ABOVE GROUND
KEP - KERB ENTRY PIT	KEP - KERB ENTRY PIT
DOUBLE GRATED GULLY PIT	DOUBLE GRATED GULLY PIT
JUNCTION PIT WITH COVER	JUNCTION PIT WITH COVER
SURFACE INLET PIT (FLUSH/RAISED)	SURFACE INLET PIT (FLUSH/RAISED)
SURFACE INLET PIT (DEPRESSED)	SURFACE INLET PIT (DEPRESSED)
GRADED TRENCH DRAIN	GRADED TRENCH DRAIN

EROSION & SEDIMENTATION SYMBOLS

B	FENCES
B	BARRIER FENCE
X	SEDIMENT FENCE
SILT FENCE ON LEVEL	SILT FENCE ON LEVEL
SILT FENCE ON GRADE	SILT FENCE ON GRADE
W	WIND FENCE
BANKS	BANKS
DIVERSION CHANNEL/BANK	DIVERSION CHANNEL/BANK
LEVEL SPREADER	LEVEL SPREADER
EB	EARTH BANK
EBLF	EARTH BANK LOW FLOW
EBHF	EARTH BANK HIGH FLOW
EM	EXCAVATED MATERIAL
TSAPS	TSAPS
GEOTEXTILE SEDIMENT TRAP	GEOTEXTILE SEDIMENT TRAP
CHECK DAMS	CHECK DAMS
(STRAW BALE OR ROCK)	(STRAW BALE OR ROCK)
CONCRETE ENERGY DISSIPATOR	CONCRETE ENERGY DISSIPATOR
STABILISED CONSTRUCTION SITE	STABILISED CONSTRUCTION SITE
VEHICLE ENTRY/EXIT GRID	VEHICLE ENTRY/EXIT GRID
SEDIMENT TRAP	SEDIMENT TRAP
GEOTEXTILE FILTER BAGS OR SOCK	GEOTEXTILE FILTER BAGS OR SOCK

ROAD LANE MARKING SYMBOLS

C1 CONTINUITY LINE 1m, 3m, w0.200	C1 CONTINUITY LINE 1m, 3m, w0.200
E1 EDGE LINE 35m, 1m, w0.120	E1 EDGE LINE 35m, 1m, w0.120
L1 LANE LINE 3m, 9m, w0.080	L1 LANE LINE 3m, 9m, w0.080
S1 SEPARATION LINE 3m, 9m, w0.100	S1 SEPARATION LINE 3m, 9m, w0.100
S2 SEPARATION LINE 6m, 6m, w0.100	S2 SEPARATION LINE 6m, 6m, w0.100
S3 SEPARATION LINE 3m, 3m, w0.100	S3 SEPARATION LINE 3m, 3m, w0.100
T1 TURN LINE 0.6m, 0.6m, w0.100	T1 TURN LINE 0.6m, 0.6m, w0.100
TB GIVEWAY LINE 0.6m, 0.6m, w0.200	TB GIVEWAY LINE 0.6m, 0.6m, w0.200
PAVEMENT MARKERS SQ, 1m CTS	PAVEMENT MARKERS SQ, 1m CTS

LEGEND

SURVEY & MAPPING SYMBOLS

PROPERTY BOUNDARY	PROPERTY BOUNDARY
EASEMENT	EASEMENT
FENCE OFF BOUNDARY	FENCE OFF BOUNDARY
FENCE ALONG BOUNDARY	FENCE ALONG BOUNDARY
FENCE ON BOUNDARY	FENCE ON BOUNDARY
STATE BOUNDARY	STATE BOUNDARY
COUNTY BOUNDARY	COUNTY BOUNDARY
PARISH BOUNDARY	PARISH BOUNDARY
SHIRE/MUNICIPALITY BOUNDARY	SHIRE/MUNICIPALITY BOUNDARY
NATIONAL PARK BOUNDARY	NATIONAL PARK BOUNDARY
STATE RECREATION BOUNDARY	STATE RECREATION BOUNDARY
STATE FOREST BOUNDARY	STATE FOREST BOUNDARY
TELSTRA EXCHANGE BOUNDARY	TELSTRA EXCHANGE BOUNDARY

GENERAL ABBREVIATIONS

CTS	CENTRES
E	CENTRE LINE
DIA	DIAMETER
DMR	DEPARTMENT OF MAIN ROADS
DWG	DRAWING
EX	EXISTING
GALV	GALVANIZED
HD GALV	HOT DIPPED GALVANIZED
ID	INTERNAL DIAMETER
L.D.C.	LIMIT OF CONTRACT
MAX	MAXIMUM
MIN	MINIMUM
NOM	NOMINAL
N.L.C.	NOT IN CONTRACT
No.	NUMBER
NOM	NOMINAL
NTS	NOT TO SCALE
OD	OUTSIDE DIAMETER
REV	REVISION
RTA	ROADS AND TRAFFIC AUTHORITY
SQ	SQUARE
SRA	STATE RAIL AUTHORITY
STD	STANDARD
UNO	UNLESS NOTED OTHERWISE
VERT	VERTICAL
WBO	WORK BY OTHERS
ESL	EXISTING SEWER LINE 1
ESDP	EXISTING SEWER OVERFLOW LINE 1
CEMP	CONSTRUCTION AND ENVIRONMENTAL MANAGEMENT PLAN
CL	CEILING LEVEL
FFL	FINISHED FLOOR LEVEL
FGL	FINISHED GROUND LEVEL
GL	EXISTING GROUND LEVEL
HL	HIGH LEVEL
HP	HIGH POINT
LL	LOW LEVEL
ML	MID LEVEL
NS	NATURAL SURFACE LEVEL
PL	PLATFORM LEVEL
RL	REDUCED LEVEL
US	UNDER SIDE
USFL	UNDERSIDE FLOOR

ROAD PAVEMENT ABBREVIATIONS

AC	ASPHALTIC CONCRETE
CBR	CALIFORNIA BEARING RATIO
DGB	DENSELY GRADED BASE COURSE
DGS	DENSELY GRADED SUB-BASE
DSL	DESIGN SUBGRADE LEVEL
F.C.R.	FINE CRUSHED ROCK
O.T.R.	OTHER THAN ROCK
RC	REINFORCED CONCRETE
SF	STRIP FOOTING
-	RECYCLED CONCRETE
JOINTS	JOINTS
B/J	BUTT JOINT
CJ	CRACK INDUCED JOINT
CJ	CONSTRUCTION JOINT
CJ	CONTRACTOR JOINT
CJ	CONTROL JOINT
DJ	DOWELLED JOINT
DKJ	DOWELLED KEY JOINT
EJ	EXPANSION JOINT
IJ	ISOLATION JOINT
KJ	KEYED JOINT
SC	SAW CUT
TJ	TOOL JOINT
TkJ	TOBY KEYED JOINT
FEATURES	FEATURES
JK	NEW JERSEY KERB BARRIER
LP	LIGHT POLE
NKL	NOMINAL KERB LINE
PP	POWER POLE
SL	STREET LIGHT
TL	TRAFFIC LIGHT

SURVEY ABBREVIATIONS

AHD	AUSTRALIAN HEIGHT DATUM
BK	BOTTOM OF KERB
BM	BENCH MARK
CL	CENTRE LINE
D.E.	DRAINAGE EASEMENT
D&W	DRILL HOLE & WING
FD	FOUND
INV	INVERT
K & G	KERB & GUTTER
R.O.W.	RIGHT OF CARRIAGEWAY
SSM	STATE SURVEY MARK
TK	TOP OF KERB

RL 165.40	PROPOSED SURFACE LEVEL
-----------	------------------------

SERVICES & UTILITIES SYMBOLS

A	AIR
C	CABLES
D	DRAINS
E	ELECTRICAL
LV	LOW VOLTAGE
HV	HIGH VOLTAGE
V	TRANSMISSION POWER LINES
EFF	COMMON EFFLUENT
ERM	EFFLUENT RISING MAIN
F	FUEL
G	GAS
GHP	GAS HIGH PRESSURE
GMP	GAS MEDIUM PRESSURE
GILP	GAS LOW PRESSURE
GAS	GAS
NG	NATURAL GAS
H	HYDRAULIC POWER
I	IRRIGATION
RTA	RTA ROADS & TRAFFIC AUTHORITY
SRA	SRA STATE RAIL SERVICE
S	SEWER
SRM	SEWER RISING MAIN
T	TELECOMMUNICATIONS TELSTRA
OF	OPTICAL FIBRE OF
SMOF	OPTICAL FIBRE CABLE SMOF
OP	OPTUS
OCC	OVERHEAD COMMUNICATION CABLE
W	WATER
WRM	WATER RISING MAIN
MS	MISCELLANEOUS SERVICE
X	X
Y	Y
Z	Z
Z	DRAINAGE CULVERTS & PIPE SIZES GREATER THAN & INCLUDING 450 DIA TO BE SHOWN IN FULL WIDTH

NOTE:
"X" ON SERVICE LINE REPRESENTS EXISTING SERVICE OR THE USE OF LOWER CASE LETTER.
"Y" ON SERVICE LINE REPRESENTS SERVICE TO BE ABANDONED.

DRAFTING SYMBOLS

SCALE BARS	AMENDMENT No.
2 0 4 8 12m	
SCALE 1:200	
2000 0 4000 8000 12000mm	
SCALE 1:200	

SECTION SYMBOL

SECTION No.	SECTION No.
REFERENCE DRAWING	REFERENCE DRAWING
PIT No.	PIT No.
LINE No.	LINE No.

I	PIPE CAP
PRV	PRESSURE REDUCTION VALVE
X	STOP VALVE
X	STOP VALVE AND PRESSURE REDUCING VALVE PIT

AC	ACCESS CHAMBER
BT	BOUNDARY TRAP
GM	GRAVITY MAIN
HYD	HYDRANT
IO	INSPECTION OUTLET
KL	KILO LITRES
LH	LAMP HOLE
MM	MAN HOLE
PS	PUMP STATION
RM	RISING MAIN
RW	RECYCLED WATER
RWT	RECYCLED WATER TANK
STP	SEWER TREATMENT PLANT
SV	STOP VALVE
W	WATERMAIN
WM	WATER METER
WWTP	WASTE WATER TREATMENT PLANT

WATER & SEWER SYMBOLS

PROPOSED SEWER	PROPOSED SEWER
FUTURE SEWER	FUTURE SEWER
EXISTING SEWER	EXISTING SEWER
EXISTING SEWER	EXISTING SEWER
EXISTING SEWER TO BE DISUSED	EXISTING SEWER TO BE DISUSED

RECYCLED WATER SYMBOLS

RECYCLED WATER PE 125 PN 16 (GRAVITY MAIN)	RECYCLED WATER PE 125 PN 16 (GRAVITY MAIN)
RECYCLED WATER FUTURE (WBO)	RECYCLED WATER FUTURE (WBO)
RECYCLED WATER RISING MAIN PE 250 PN 20	RECYCLED WATER RISING MAIN PE 250 PN 20
EXISTING IRRIGATION PIPELINES	EXISTING IRRIGATION PIPELINES

MATERIALS

BR	BRASS
CI	CAST IRON
OCL	EAST IRON CEMENT LINED
CONC	CONCRETE
CP	CHROMIUM PLATED
Cu	COPPER
DICL	DUCTILE IRON CEMENT LINED
FRC	FIBRE REINFORCED CEMENT GALVANISED
GMS	GALVANIZED MILD STEEL
MS	MILD STEEL
NY	NYLON
PE	POLYETHYLENE
RC	REINFORCED CONCRETE
RC	REINFORCED CONCRETE PIPE
RHS	RECTANGULAR HOLLOW SECTION
SS	STAINLESS-STEEL

CATCHMENT SYMBOLS

PIT CATCHMENT	PIT CATCHMENT
LINE CATCHMENT	LINE CATCHMENT
MAJOR CATCHMENT	MAJOR CATCHMENT
SUB CATCHMENT	SUB CATCHMENT
LIMIT OF CATCHMENT	LIMIT OF CATCHMENT

CATCHMENT ABBREVIATIONS

P1	PAVED CATCHMENT AREA
R1	ROOFED CATCHMENT AREA
LC1	LANDSCAPE CATCHMENT AREA
TL1	TERRACE CATCHMENT AREA
ARI	AVERAGE RECURRENCE INTERVAL CATCHMENT AREA
CA	HECTARE
Hq	LITRES PER SECOND (VELOCITY)
L/s	METRES PER SECOND (VELOCITY)
m/s	CUBIC METRES PER SECOND
Q	QUANTITY OF FLOW

AUSTRALIAN HEIGHT DATUM

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ISSUE

A	PRELIMINARY ISSUE
B	PRELIMINARY ISSUE (ARCH REVISION)
C	ISSUE FOR APPROVAL

DATE

01.10.10
07.10.10
13.10.10

ISSUE

DATE

CLIENT

BARANGAROO SYDNEY AUSTRALIA	Barangaroo Delivery Authority Level 3, Forthright House 66 Harrington Street Sydney 2000 NSW Australia
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PROJECT

BARANGAROO HEADLAND PARK

Warren Smith & Partners Pty Ltd

Hydraulic Services | Civil Engineering | Fire Protection | Sydney Water Accredited | Water Servicing Co-ordinator | Design and Project Management

SINCE 1981

Consulting Engineers
Hydraulic Services | Civil Engineering | Fire Protection | Sydney Water Accredited | Water Servicing Co-ordinator | Design and Project Management

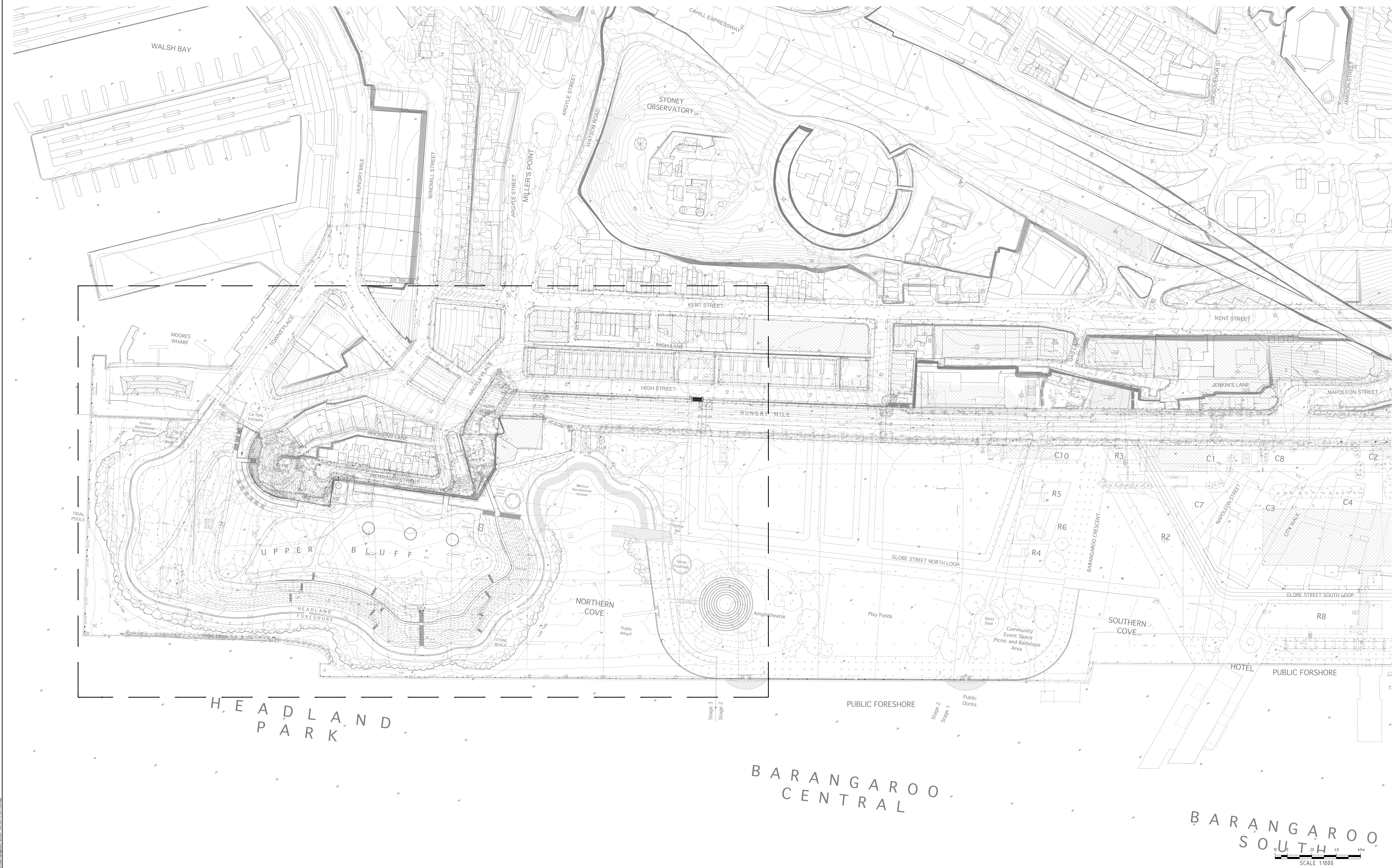
TITLE

**INTEGRATED WATER MANAGEMENT PLAN
LEGEND AND ABBREVIATIONS**

SCALE

DRAWN	DESIGNED	CHECKED	APPROVED
JM	LP		LP
DATE	DRAWING No.	ISSUE	
SEPT. 2010	MW-WSP-H-1032		
JOB No.			
3591			

Plot Date: Wednesday, 13 October 2010 12:41:49 PM



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0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 SHEET SIZE: A0

ISSUE	AMENDMENT	DATE	ISSUE	AMENDMENT	DATE
A	PRELIMINARY ISSUE	01.10.10			
B	PRELIMINARY ISSUE (ARCH REVISION)	07.10.10			
C	ISSUE FOR APPROVAL	13.10.10			

Barangaroo Delivery Authority
Level 3, Foreshore House
66 Harrington Street
Sydney 2000
NSW Australia

PROJECT

BARANGAROO
HEADLAND PARK

SERVING THE CONSTRUCTION INDUSTRY
SINCE 1981

Consulting Engineers
Hydraulic Services | Civil Engineering | Fire Protection |
Sydney Water Accredited • Water Servicing Co-ordinator
• Design and Project Management

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T: 02 9299 1312 F: 02 9299 1395 E: info@warrensmith.com.au
ABN 58 300 420 128

ISSUE FOR APPROVAL					
TITLE					
INTEGRATED WATER MANAGEMENT PLAN KEY PLAN					
SCALE 1:1000	DRAWN JM	DESIGNED LP	CHECKED LP	APPROVED LP	
DATE SEPT. 2010	DRAWING NO. MW-WSP-H-1033	ISSUE		C	
JOB No. 3591					

Plot Date: Wednesday, 13 October 2010 12:41:55 PM

GENERAL

GENERAL

4. THE DESIGN HEREIN HAS BEEN PREPARED BY
WERNER SMITH AND PARTNERS PTY LTD
CONSULTING ENGINEERS
LEVEL 1, 923 CLARENCE ST. SYDNEY NSW 2000.
TEL: - (02) 9299 3132, FAX: - (02) 9290 1285.
5. THE DRAWINGS HEREIN SHALL BE READ AS
REQUIRED IN CONNECTION WITH THE DRAWINGS
BY J.P.W ARCHITECTS PTY LTD.
LEVEL 10, 95 PITT STREET SYDNEY
TEL: - (02) 9258 5000, FAX: - (02) 9259 5959
6. ALL DIMENSIONS IN MILLIMETRES AND
REDUCED LEVELS AND CHANGES IN LEVELS.
DO NOT SCALE DIMENSIONS, USE FIGURED DIMENSIONS.
7. THE PROPOSED WORKS DETAILED HEREIN
SHALL BE CONSTRUCTED TO THE REQUIREMENTS
AS DETAILED HEREUNDER.
8. ALL EXISTING SERVICES SHALL BE VERIFIED FOR
LOCATION AND DEPTH BY POSITION BY PHYSICAL MEANS
PRIOR TO EXCAVATION, ANY DISCREPANCIES SHALL
BE BROUGHT FORTHWITH TO THE CONTRACT ADMINISTRATOR'S
ATTENTION.

STORMWATER & SUB-SOIL DRAINAGE

MATERIALS:

- STW1. PIPES AND FITTINGS FOR STORMWATER DRAINAGE SHALL BE AS FOLLOWS UNDER THE DRAWINGS:
- A. POLYVINYL CHLORIDE (PVC) WITH SOLVENT WELDED JOINTS FOR BELOW GROUND DRAINAGE UP TO 275mm.
 - B. REINFORCED CONCRETE (CLASS 3).
 - C. WITH RUBBER RING JOINTS.
 - D. FOR PIPE DIA'S GREATER THAN APPROX. 900mm.
 - E. INSTALL IN ACCORDANCE WITH AUSTRALIAN STANDARD AS3500 EXCEPT WHERE VARYED BY THE CONTRACT DOCUMENTS.
- STW2. PIPES & FITTINGS FOR SUBSOIL DRAINAGE SHALL BE GLUTHPHENE POLYVINYL CHLORIDE (PVC) WITH SOLVENT WELDED JOINTS, MIN. 150mm DIAMETER.
- STW3. IN GROUND DRAINAGE PIPEWORK SERVING DP'S SHALL BE MINIMUM 150mm DIA. UNO.
- STW4. GRADE DRAINS SHALL BE 150mm NO. 150mm DIA. NO. WIDTH IN NON-TRAFFICABLE AREAS, B. 275mm NO. WIDTH IN TRAFFICABLE AREAS.
- STW5. STORMWATER PITS ARE AS SHOWN & SPECIFIED ON THE PLANS. PRECAST TYPE ACCEPTABLE WITH STEP IRONS INSTEAD OF GREATER THAN 150mm DIA. BENCH ALL PITS MIN 50mm & FLOOR SMOOTH TRANSITION FROM INLET TO DUTILET
- STW6. SELECT FILL SHALL BE MATERIAL OBTAINED FROM EXCAVATION OF THE PIPE TRENCH OR IMPORTED WITH A PARTICLE SIZE NOT GREATER THAN 100mm AND A CBR NOT LESS THAN 4% FOR THE FRACTION PASSING THE 19mm sieve
- STW7. IMPORTED FILL WHERE SPECIFIED SHALL EITHER CONSIST OF SINGLE SIZE AGGREGATE WITH PARTICLE SIZE NOT GREATER THAN 5mm WRAPPED ALL ROUND WITH GEOTEXTILE FILL OR 150mm DIA. OR HIGHER COMPACTION SAND OR IMPORTED CRUSHED ROAD GRAVEL CONFORMING TO RTA FORM 3051 OR SIMILAR.
- STW8. STORMWATER GRADES TO BE SUPPLIED IN CLASS SHOWN ON THE DRAWINGS.
- INSTALLATION REQUIREMENTS:**
- STW9. PIPES SHALL BE TRUE TO GRADES SHOWN AND ALIGNED SO THAT THE CENTRES OF THE INLET PIPES INTERSECT WITH THE CENTRE OF THE OUTLET PIPE AT THE DOWNSTREAM FACE OF THE PIT.
- STW10. MINIMUM GRADES FOR GRAVITY STORMWATER DRAINAGE TO CONFORM TO AS3500 PARTS AS FOLLOWS, UNO:
- 0.5% FOR 100 AND 150 mm DIA
 - 0.5% FOR 225 mm DIA
 - 0.5% FOR 300 mm DIA
 - 0.35% FOR 375 mm DIA
- STW11. MINIMUM DEPTH OF COVER SHALL BE -
- 100mm IN PRIVATE DRIVEWAYS (NON VEHICULAR TRAFFIC).
 - 450mm IN PUBLIC AREAS.
 - 600mm IN VEHICULAR TRAFFICABLE AREAS (FOOTWAY/ROADWAY).
- STW12. BED ALL PIPES FIRMLY AND EVENLY ONTO IMPORTED BEDDING FILL MATERIAL.
- STW13. LAY AND JOINT ALL PIPES IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS AND
- AS 3725-1989 LADDS ON BURRED CONCRETE PIPES
 - AS 2564-1990 BURRED FLEXIBLE PIPELINES
 - AS 2564-1990 PRECAST CONCRETE DRAINAGE BOX CULVERTS,
 - AS 2564-1990 NATURAL PLUMBING & DRAINAGE CODE.

1. ALL SYDNEY WATER GRAVITY SEWER PIPELINES SHALL BE DN 150 CLASS SN8 TO SYDNEY WATER PRODUCT SPECIFICATION

1. PIPES AND FITTINGS SHALL BE PE 100 CLASS PN 20
2. FITTINGS SHALL BE ELECTRO FUSION TYPE

CONCRETE WORKS

- C1. ALL WORKSMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH AS3680, THE STANDARDS ASSOCIATION AUSTRALIA, STANDARDS WITH AS3680, THE CRACKING AND LEAKAGE SPECIFICATION.
- C2. ALL CONCRETE SHALL BE 60mm NOMINAL SLUMP, 20mm MAXIMUM AGGREGATE WITH NO ADMIXTURES OR FLY ASH, UNLESS OTHERWISE APPROVED
- ALL CONCRETE WORK IN CONTACT WITH SEWER TO HAVE 10% PORTLAND CEMENT OTHERWISE TYPE 1 CEMENT FOR BRIDGE WORKS, A MAXIMUM 5% DRY SHRINKAGE OF 600 MICROSTRAIN, A MINIMUM CEMENT CONTENT 350kg/m3 AND MAXIMUM WATER CEMENT RATIO 0.45
- C3. STRENGTH GRADE OF CONCRETE SHALL BE : 25 MPa KERBS, EDGE STRIPS & CONCRETE ENCASEMENT) AND 20 MPa ELSEWHERE
- C4. CRACKING JOINTS SHALL BE PROPERLY FORMED AND USED ONLY WHERE SHOWN OR APPROVED
- GENERALLY FOR HAND PLACED KERB & GUTTER 6mm TIGHT APPROVED BITUMINOUS JOINTING MATERIAL SHALL BE PROVIDED AT INTERVALS NOT EXCEEDING 6m. FOR MACHINE PLACED KERB & GUTTER 6mm TIGHT APPROVED BITUMINOUS JOINTING MATERIAL SHALL BE PROVIDED AT INTERVALS NOT EXCEEDING 10m & GULLIOTED DUMMY GROOVED JOINTS, 25mm IN DEPTH, SHALL BE FORMED EVERY 3m of GUTTER. JOINTS ARE ALSO REQUIRED AT EACH END OF GUTTER CURB AND GULLY PITS. JOINTS SHALL BE SET VERTICAL AND SQUARE TO THE KERB.
- C5. REINFORCEMENT IS REPRESENTED DIAGRAMMATICALLY AND IS NOT NECESSARILY SHOWN IN TRUE POSITION.
- C6. WELDING OR SPLICES IN REINFORCEMENT SHALL BE USED ONLY IN POSITIONS APPROVED BY THE ENGINEER.
- C7. CONCRETE CURING SHALL BE IN ACCORDANCE WITH AS3680, CURING SHALL BE CONTINUED FOR TWO HOURS AFTER FINISH OPERATIONS AND SHALL BE CONTINUED FOR TWO HOURS OF SEVEN DAYS BY AN APPROVED PROPRIETARY COMPOUND OR BY KEEPING CONTINUOUSLY WET
- C8. FORMWORK SHALL BE DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH AS3680, FORMWORK SHALL NOT BE EXTERIOR NOR PROPS REMOVED WITHOUT APPROVAL.
- C9. FABRIC LAP DETAILS SHALL BE IN ACCORDANCE WITH GB13.2.4 OF AS3680.
- C10. HOOKS, LAPS AND BENDS SHALL BE IN ACCORDANCE WITH AS3680 UNO.
- C11. ALL CHEMICAL ANCHORS SHALL BE EITHER 'CHEMSET' BY 'RAMSET' WITH THE GLASS CAPSULE SYSTEM INSTALLED IN STRICT ACCORDANCE WITH MANUFACTURERS INSTRUCTIONS ²⁰⁸
- HELI HUI ADHESIVE ANCHOR WITH FOIL CAPSULE SYSTEM INSTALLED IN STRICT ACCORDANCE WITH MANUFACTURERS INSTRUCTION, ALL CHEMICAL ANCHORS SHALL NOT BE DIPPED GALVANIZED AND BE MIN 5mm DIA. UNO.
- C12. ALL EDGES TO HAVE 20mm CHAMFERS, WHERE VISIBLE

GENERAL EARTHWORKS, SITEWORKS & FILLING

FILLING:

- SE1. STRIP ALL TOPSOIL AND UNDERLYING FILL AND STOCKPILE FOR USE OR LATER REMOVAL TO A NEARBY LOCATION APPROVED BY CONTRACT ADMINISTRATOR.
- SE2. NEW FILL REQUIRED TO RENATECUTE CUT LEVELS TO PROPOSED BENCHING LEVELS SHALL BE SOURCED FROM OTHER PARTS OF THE EXCAVATION AS SELECT FILL OR IMPORTED FILL AS SPECIFIED BELOW IN SEE 3 AND SEE 4.
- SE3. SELECT FILL SHALL CONSIST OF LOCALLY DERIVED OR CUT MATERIAL.
- SE4. IMPORTED FILL SHALL CONSIST OF RIPPED SANDSTONE OR SHALE OR SIMILAR MATERIAL WITH MAXIMUM PARTICLE SIZE NOT GREATER THAN 120mm AND A MOISTURE CONTENT WITHIN 2-3% OF STANDARD OPTIMUM.
- SE5. ALL FILL (COARSE FILL) SHALL BE PLACED IN LAYERS OF 200mm MAXIMUM THICKNESS, COMPACTED BY MACHINE ROLLING TO ACHIEVE A DRY DENSITY RATIO OF NOT LESS THAN 98% STANDARD MAXIMUM AT A CORRESPONDING MOISTURE CONTENT WITHIN 2-3% OF STANDARD OPTIMUM.
- SE6. IN AREAS WHERE HIGH IMPACT ROLLER IS USED TEST EACH FINAL LAYER TO BE GREATER THAN 9500m to 1000m to achieve a DRY DENSITY RATIO OF NOT LESS THAN 98% STANDARD MAXIMUM AT A CORRESPONDING MOISTURE CONTENT WITHIN 2-3% OF STANDARD OPTIMUM.

TRAFFIC NOTE:

1. A TRAFFIC CONTROL PLAN IS TO BE PREPARED AND SUBMITTED FOR APPROVAL TO THE CONTRACT ADMINISTRATOR.

TEMPORARY SEWER PUMPING STATION

1. THE PUMPING STATION WET WELL SHALL CONSIST OF A 18 m INTERNAL DIAMETER FIREGLASS TANK 14 m DEEP NOMINAL FLYGT Model No. TOP 1800 COMPLETE WITH:
 - GALVANISED SAFETY GRILL
 - GALVANISED GUIDE RAILS
 - GALVANISED LIFTING CHAINS
 - MP 3085 MT PUMPS (DUTY AND STANBY)
 - FLYGT SUBMERGED LEVEL SENSOR MODEL LTV 501
 - FLYGT FGC 323 PUMP CONTROL CABINET AND ELECTRICS
2. ALLOW TO PROVIDE CONCRETE BALLAST TO THE BASE OF THE STATION

EXCAVATION BATTERS: [UPPER LIMITS OF SLOPE]

- SGE7. ALL TEMPORARY BATTERS CUT IN CLAY SUBSTRATE SHALL BE 1 HORIZ. 2 VERT. LONG. TEMPORARY BATTERS CUT IN CLAY SUBSTRATE SHALL BE 2 HORIZ. 1 VERT. ALL DETENTION BASIN BATTERS IN CLAY SUBSTRATE SHALL BE 3 HORIZ. 1 VERT. ALL DETENTION BASIN BATTERS IN ROCK SUBSTRATE SHALL BE NEAR VERTICAL.
- SGE8. GEOTECHNICAL TESTING IS TO BE UNDERTAKEN TO AT LEAST LEVEL CONTROL PER FIP COMPACTION STANDARD, AS DEFINED IN AS. 3738 AS FOLLOWS
- FOR GENERAL FILL OR CUT AREAS OVER THE AREA PROVIDE ONE (1) TEST PER 200mm LAYER. OVER AN AREA NOT GREATER THAN 500 m².
- FOR GENERAL FILL AREAS IN DETENTION AREAS ADJACENT TO AND BEHIND THE SUBSTRUCTURE PROVIDE ONE (1) TEST PER LAYER, OVER AN AREA NOT GREATER THAN 50m².
- SGE9. SUBMIT ALL GEOTECHNICAL TEST RESULTS TO THE CONTRACT ADMINSTRATOR FOR REVIEW PRIOR TO COMMUNATION WITH SUBSTRUCTURE CONSTRUCTION.

EARTH WORKS FOR SERVICES

- E1. EXCAVATE TRENCHES AND STOCKPILE ALL MATERIAL FOR INJECTION WITH REGARD TO RE-USE FOR TRENCH BACKFILL. MATERIAL TO BE USED FOR TRENCH BACKFILL SHALL BE APPROVED BY THE CONSULTANT.
- E2. BEDDING MATERIAL SHALL CONSIST OF IMPORTED MATERIAL ONLY. THICKNESS OF BEDDING LAYER SHALL BE 100mm (4") TO 150mm (6").
- E3. EMBED ALL PIPES WITH IMPORTED FILL. PROVIDE 200mm SIDE SUPPORT AND 100mm OVERLAY ABOVE PIPE CROWN.
- E4. TRENCH FILL ABOVE THE EMBEDED ZONE TO THE EXISTING GRADE OF THE ROAD PAVEMENT OR FOOTWAY FILL MATERIAL SHALL BE AS FOLLOWS:
- UNDER ROADWAY
- TRENCH FILL MATERIAL SHALL CONSIST OF IMPORTED FILL AS SPECIFIED HEREIN OF EITHER HIGH GRADE CONFORMANCE SAND OR APPROVED CRUSHED ROAD GRAVEL COMPARING TO A FIRM AND STABLE MATERIAL.
- OTHER THAN ROADWAY
- TRENCH FILL MATERIAL ABOVE SHALL CONSIST OF IMPORTED FILL AS SPECIFIED HEREIN AND SHALL NOT CONTAIN MORE THAN 20% OF STONES OF SIZE BETWEEN 75mm & 150mm (3" & 6") IN SIZE.
- PRIOR TO THE USE OF THE EXCAVATED MATERIAL SHALL BE INSPECTED AND APPROVED BY THE CONSULTANT.
- E5. COMPACT BEDDING, EMBEDEDMENT AND TRENCH FILL MATERIALS AS FOLLOWS:
- EMBEDEDMENT -
- FOR GRAVEL OR FILL (NON-CONVESIVE SOLIDS) EG. COARSE AGGREGATE FILL, HIGH GRADE CONCRETE SAND, THE DENSITY INDEX (DI) SHALL BE NOT LESS THAN 10.

RESTORATION:

- | | |
|--|---|
| RES1: RESTORE ALL TRAFFIC AREAS TO PRE EXISTING CONDITION. | HT: RECYCLED EFFLUENT IRRIGATION OUTLETS, FLUSHING HYDRANTS AND ALL ABOVE GROUND PIPE & FITTINGS SHALL BE IDENTIFIED BY A PURPLE COLOR IN ACCORDANCE WITH AS 2700, BEING NO DARKER THEN P24 JACARANDA, P12 PURPLE & NO LIGHTER THEN P23 LARKER. |
| RES2: FOR ALL SURFACES OTHER THAN IN TRAFFIC AREAS RESTORE DISTURBED SURFACES TO PRE-EXISTING CONDITIONS AND COMPACT AS SPECIFIED. | HR: OUTLETS TO BE USED ON RECYCLED WATER MUST BE CLEARLY & PERMANENTLY IDENTIFIED "RECYCLED WATER - DO NOT DRINK" |

ROAD WORKS, DRIVEWAYS & CARPARKS

1. ALLOW FOR LEVEL 1 TESTING AND SUB-GRADE CONDITION & PAVEMENT THICKNESS TO BE VERIFIED BY GEOTECHNICAL CONSULTANT AFTER INSPECTION OF PRELIMINARY BOXING.
2. ALLOW FOR ANY SUB-GRADE REPLACEMENT WORK TO BE DETERMINED AS REQUIRED BY GEOTECHNICAL CONSULTANT AND THE CONSULTANT SHALL BE RESPONSIBLE FOR THE DESIGN OF ANY REPLACEMENT IN ACCORDANCE WITH CONTRACT CONDITIONS.
3. MINIMUM DRY DENSITY RATIOS (AS L289 3.4-1.1993) TO BE:
BASE-COURSE 98% MODIFIED
SUB-BASE 95% MODIFIED
SUB-GRADE 90% STANDARD
SUB-GRADE REPLACEMENT 100% STANDARD
4. PAVEMENT MATERIALS TO COMPLY WITH TRHA SPECIFICATION NO. 305 OR SIMILAR AS APPROVED BY GEOTECHNICAL CONSULTANT.
5. PROVIDE 1% TEST FOR EACH LAYER NOT EXCEEDING 250mm THICK BEING BASE-COURSE, SUB-BASE & SUB-GRADE OVER AN AREA NOT GREATER THAN 500m².
6. SUBMIT ALL GEOTECHNICAL TEST RESULTS TO CONTRACT ADMINISTRATOR FOR REVIEW PRIOR TO CONTINUATION WITH SUBSEQUENT SECTION.

APPROVALS

- A1. THE AS CONSTRUCTED WORKS SHALL BE INSPECTED BY DESIGN CONSULTANT. MINIMUM 48 HOURS NOTICE SHALL APPLY TO ALL INSPECTIONS.
- A2. THE DESIGN PLANS HEREIN ARE SUBJECT TO APPROVAL OF THE CONTRACT ADMINISTRATOR PRIOR TO CONSTRUCTION. OBTAIN EXPRESS (WRITTEN) ADVICE TO PROCEED FROM CONTRACT ADMINISTRATOR PRIOR TO COMMENCEMENT.
- A3. SUBMIT WORK-AS-EXECUTED DRAWINGS IN CIVILCAD OR DXF DIGITAL FORMAT AND HARD COPY FORMAT. VERIFY ALL CONSTRUCTION WORKS SHOWN HEREON.
- A4. CERTIFY THAT THE AS CONSTRUCTED SYSTEM HAS BEEN BUILT IN ACCORDANCE WITH THE APPROVED PLANS

SERVICES UNDER ROAD SURFACES

- S1. ALL OTHER SERVICES INCLUDING BUT NOT LIMITED TO WATER, HYDRANT, GAS, SEWER, ELECTRICAL AND COMMUNICATIONS CONDUITS OR CABLES SHALL BE LAID WITH MINIMUM 600mm U.N.O. COVER BELOW PROPOSED ROAD SURFACE OR APPROVED OTHER MEANS TO PROTECT DURING CONSTRUCTION.

ROAD SIGNS & LINE MARKING

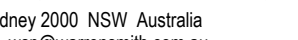
- | | |
|-----|---|
| RS1 | ALL SIGNS AND LINEMARKING SHALL BE TO ROADS & TRAFFIC AUTHORITY STANDARDS AND SPECIFICATIONS AND AS 1742, MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES |
| RS2 | ALL LINEMARKING SHALL BE AUGMENTED BY RETROREFLECTIVE RAISED PAVEMENT MARKERS (RRPMs) AND ALL SHALL BE TO AS 1742-2 - 1994 AND AS 1742.2 /AMDT 1/1997-10-05 |
| RS3 | ALL ROAD SIGNS AND POSTS SHALL BE TO AS 1742.2 - 1994 AND AS 1742.2 /AMDT 1/1997-10-05 |

HYDRAULIC SERVICES

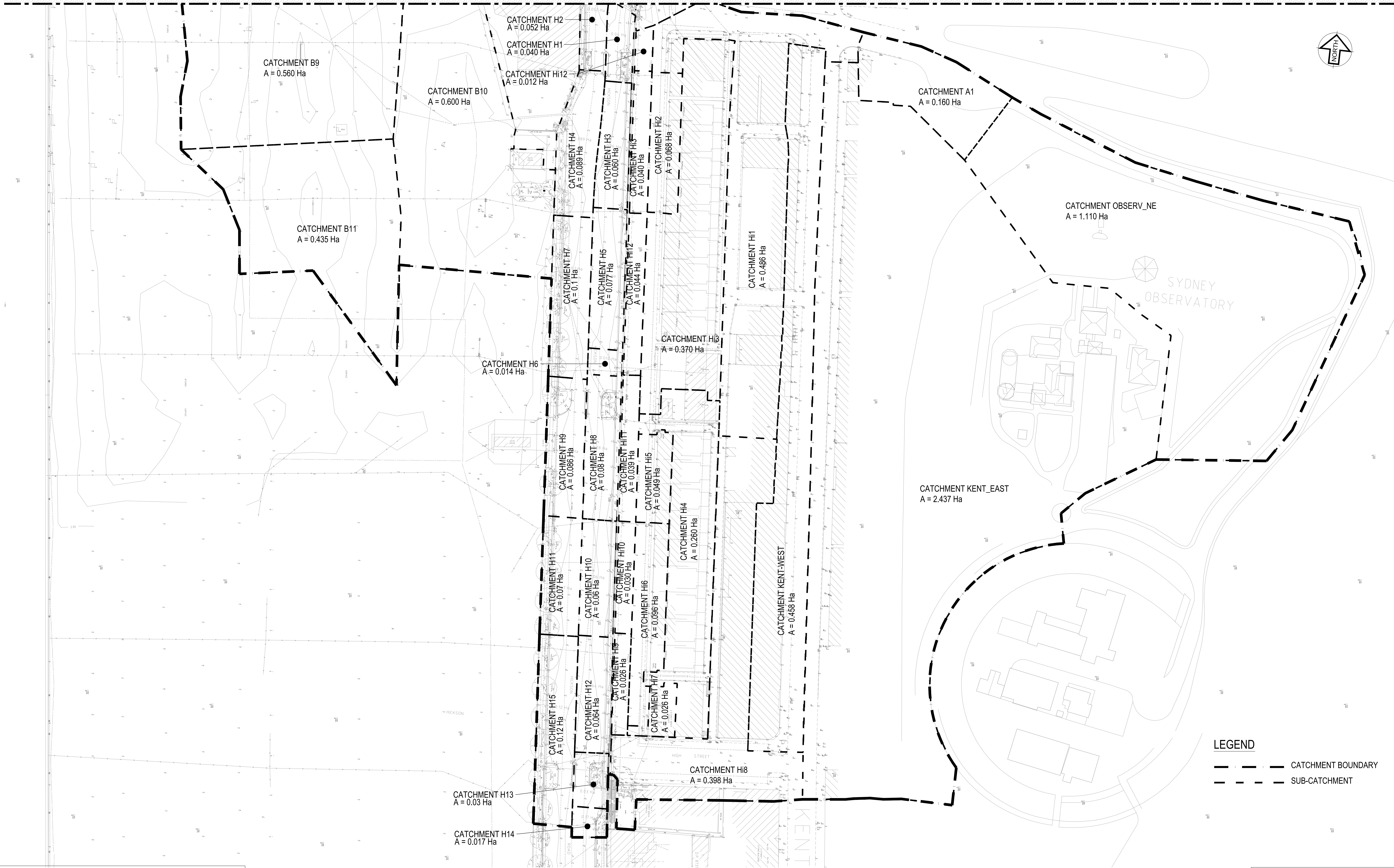
- H1. ALL WORKS REQUIRED SHALL COMPLY FULLY WITH AS-3500 REQUIREMENTS. OBTAIN NECESSARY AUTHORITIES APPROVALS PRIOR TO COMMENCING WORKS.
- H2. PRIOR TO COMMENCING WORKS SURVEY & INSPECT SITE & CONFIRM LOCATION & LEVELS OF ALL HYDRAULIC SERVICES PIPEWORK. NO CLAIMS FOR ADDITIONAL COSTS RESULTING FROM THE LACK OF CONDUCTING SUCH SITE CHECKING RELATING TO WORKS TO BE DONE OR LOCATIONS AND LEVELS OF EXISTING AND NEW SERVICES WILL BE ACCEPTED.
- H3. PRIOR TO CAPPING OFF & REMOVAL OF REDUNDANT SERVICES (E.G. WATER SERVICE) THAT SERVICE IS NOT SUPPLYING EXISTING BUILDINGS OR AMENITIES.
- H4. COLD WATER PIPEWORK SHALL CONSIST OF COPPER TUBE & FITTINGS IN ACCORDANCE WITH AS 1626 TYPE B. PIPES AND FITTINGS SHALL BE INSTALLED TO 100% TYPICAL.
- H5. ALL NEW UNDERGROUND METAL PIPEWORK SHALL BE INSTALLED WITH POLYETHYLENE SLEEVING AND INSTALLED TO MANUFACTURE'S REQUIREMENTS.
- H6. LANDSCAPE IRRIGATION WATERWORKS PIPEWORK SHALL CONSIST OF NEAREST DESIGNATED IRRIGATION PIPE CLASS 900 WITH ELCTRO FUSION JOINTS & FITTINGS TO EXISTING WORKS.

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ISSUE	AMENDMENT	DATE	ISSUE	AMENDMENT	DATE	CLIENT	TITLE
A	PRELIMINARY ISSUE	01.10.10				 Barangaroo Delivery Authority Level 3, Forestrise House 68 Harrington Street Sydney 2000 NSW Australia A 1st Floor, 123 Clarence Street, Sydney 2000 NSW Australia T 02 9250 1234 F 02 9250 1235 E info@barangaroo.nsw.gov.au ABN 38 305 430 126	Warren Smith & Partners Pty Ltd INTEGRATED WATER MANAGEMENT PLAN GENERAL NOTES AND SPECIFICATION
B	PRELIMINARY ISSUE (ARCH REVISION)	07.10.10					
C	ISSUE FOR APPROVAL	13.10.10					
PROJECT						 SERVING THE CONSTRUCTION INDUSTRY SINCE 1981 Consulting Engineers Hydraulic Services Civil Engineering Fire Protection Sydney Water Accredited • Water Servicing Co-ordinator • Design and Project Management	
BARANGAROO HEADLAND PARK						SCALE DRAWN: SM DESIGNED: LP CHECKED: LP APPROVED: LP DATE: SEPT. 2010 DRAWING No.: MW-WSP-H-1034 ISSUE: C JOB No.: 3591	

FOR CONTINUATION REFER TO SHEET 1



AUSTRALIAN HEIGHT DATUM

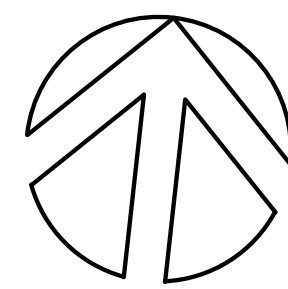
LEGEND

- CATCHMENT BOUNDARY
- - - SUB-CATCHMENT

SCALE 1:500

ISSUE FOR APPROVAL

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CLIENT
BARANGAROO SYDNEY AUSTRALIA
PROJECT
BARANGAROO HEADLAND PARK

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ABN 38 365 420 128

Warren Smith & Partners Pty Ltd
SINCE 1981
SERVING THE CONSTRUCTION INDUSTRY
Consulting Engineers
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Sydney Water Accredited »Water Servicing Co-ordinator
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TITLE INTEGRATED WATER MANAGEMENT PLAN STORMWATER CATCHMENT EXISTING CONDITION					
SCALE	A0 @ 1:500 A2 @ 1:1000	DRAWN	DESIGNED	CHECKED	APPROVED
DATE	SEPT 2010	LM	M.C.	LP	LP
JOB No.	3591	DRAWING No.	MW-WSP-H-1036	ISSUE	C
				SHEET 2 OF 2	

Plot Date: Wednesday, 13 October 2010 12:42:25 PM

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CLIENT	 Barangaroo Delivery Authority Level 5, Foreshore House 66 Harrington Street Sydney 2000 NSW Australia
PROJECT	BARANGAROO HEADLAND PARK

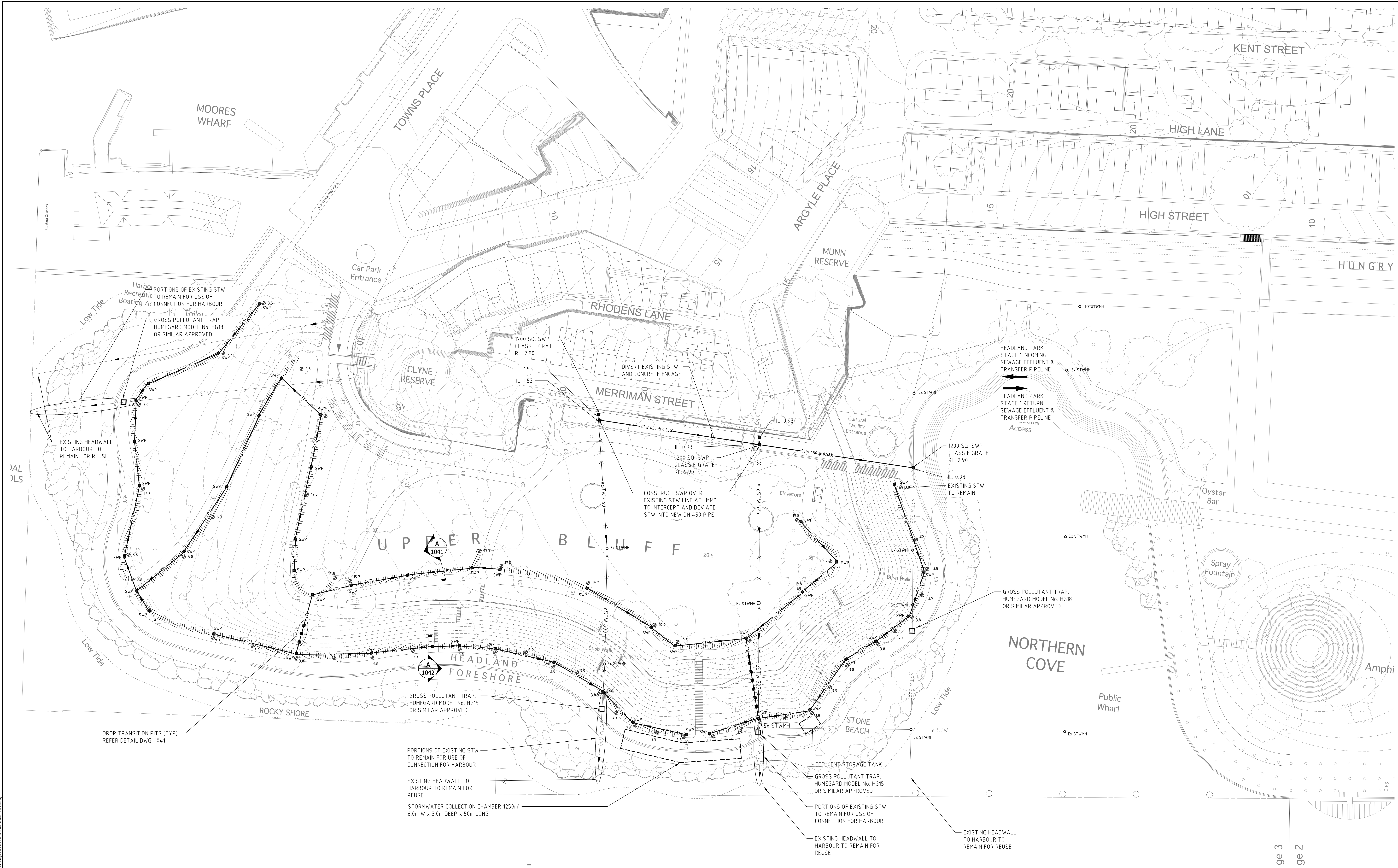


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6 0 10 20 30m

SCALE 1:500

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	ISSUE FOR APPROVAL				

CLIENT

BARANGAROO SYDNEY AUSTRALIA

PROJECT

BARANGAROO HEADLAND PARK

Barangaroo Delivery Authority
Level 3, Foreshore House
66 Harrington Street
Sydney 2000
NSW Australia

Barangaroo Delivery Authority
Level 3, Foreshore House
66 Harrington Street
Sydney 2000
NSW Australia

Barangaroo Delivery Authority
Level 3, Foreshore House
66 Harrington Street
Sydney 2000
NSW Australia

Warren Smith & Partners Pty Ltd

SINCE 1981

Consulting Engineers

Hydraulic Services | Civil Engineering | Fire Protection | Sydney Water Accredited | Water Servicing Co-ordinator | Design and Project Management

TITLE

**INTEGRATED WATER MANAGEMENT PLAN
STORMWATER DRAINAGE LAYOUT PLAN**

SCALE	DRAWN	DESIGNED	CHECKED	APPROVED
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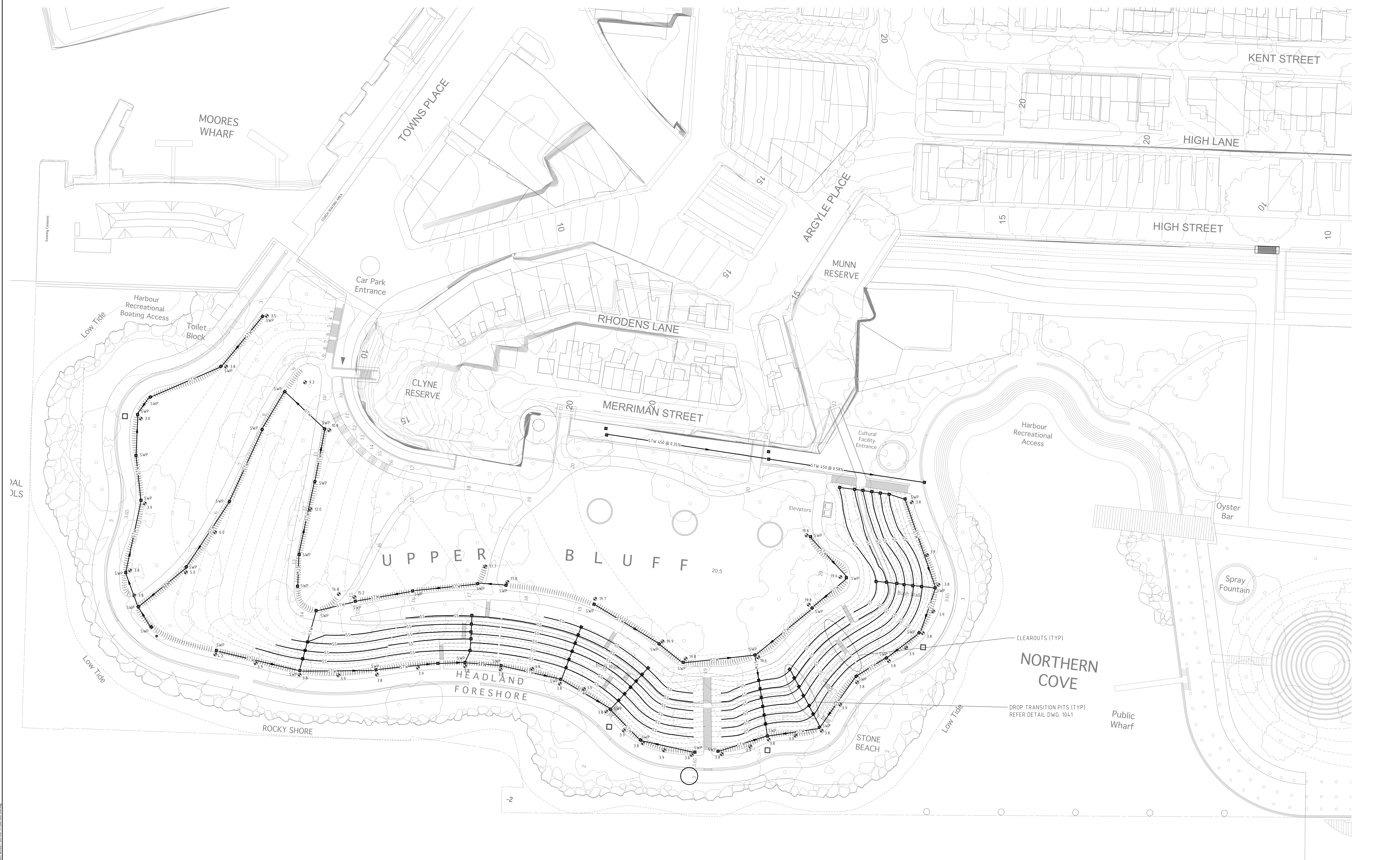
DATE	DRAWING NO.	ISSUE
SEPT. 2010	MW-WSP-H-1038	C

JOB NO. 3591

SHEET 1 OF 1

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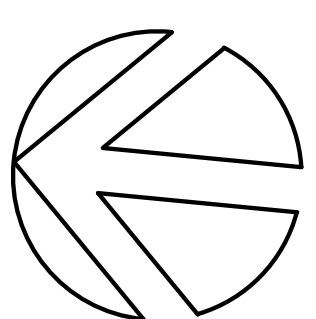
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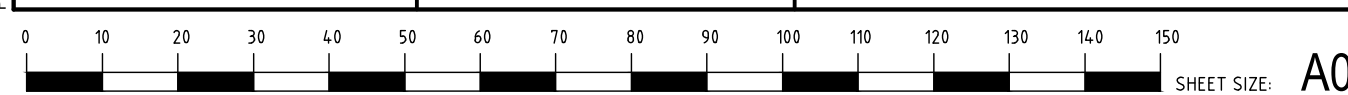
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DO NOT SCALE FROM DRAWINGS. CHECK & VERIFY ALL DIMENSIONS & LEVELS BEFORE COMMENCEMENT OF ANY WORK.

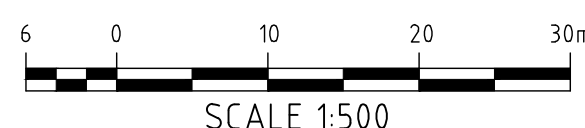
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SHEET SIZE: A0



SCALE 1:500

ISSUE FOR APPROVAL

ISSUE	AMENDMENT	DATE	ISSUE	AMENDMENT	DATE
A	PRELIMINARY ISSUE	01.10.10			
B	PRELIMINARY ISSUE (ARCH REVISION)	07.10.10			
C	ISSUE FOR APPROVAL	13.10.10			

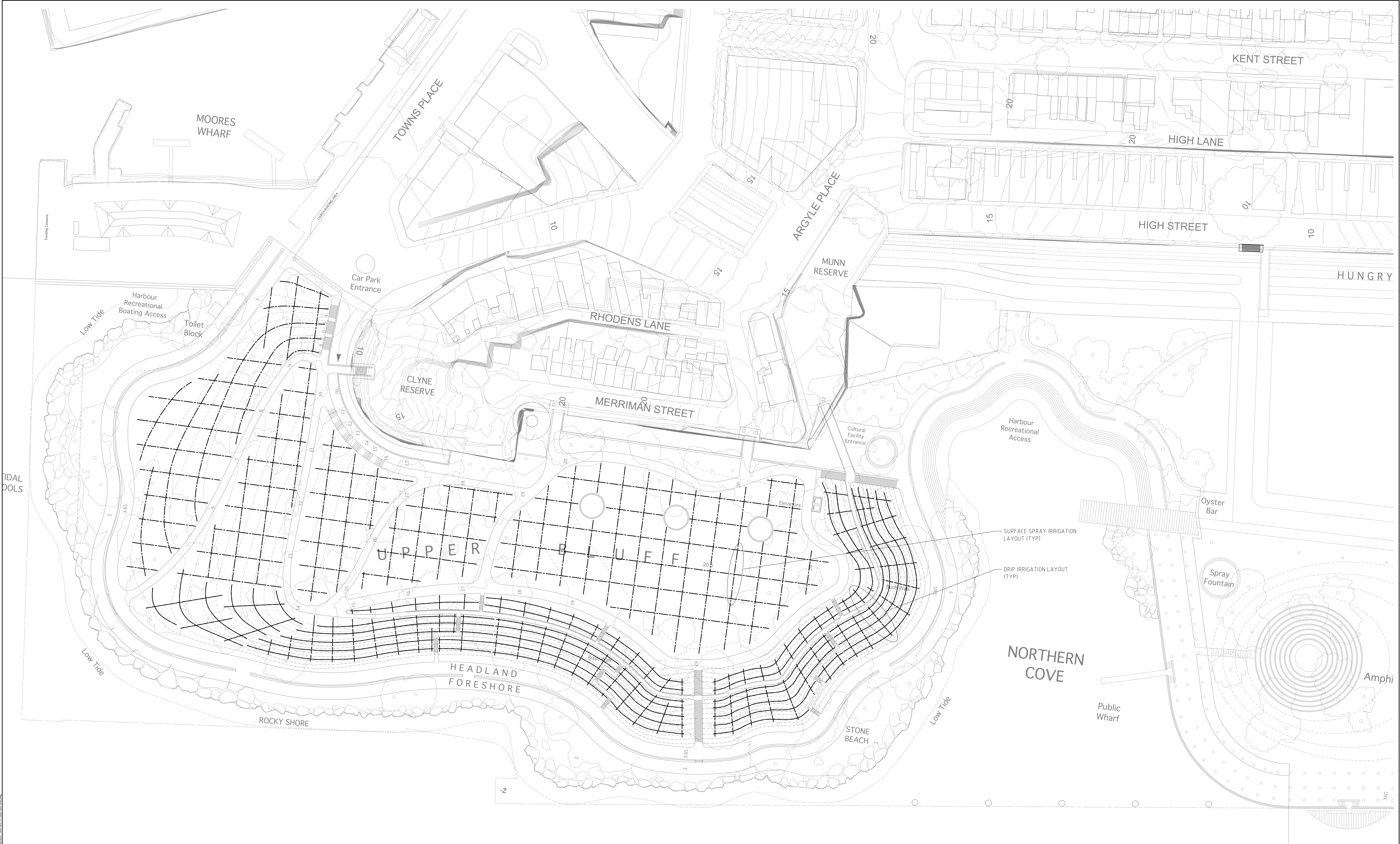
CLIENT
BARANGAROO SYDNEY AUSTRALIA
Barangaroo Delivery Authority
Level 3, Foreshore House
66 Harrington Street
Sydney 2000
NSW Australia
A: Tel: 02 9239 1312 F: 02 9239 1395 E: info@barangaroo.com.au
RPN: 38-390-430-128

PROJECT
BARANGAROO HEADLAND PARK

Warren Smith & Partners Pty Ltd
SINCE 1981
SERVING THE CONSTRUCTION INDUSTRY
Consulting Engineers
Hydraulic Services | Civil Engineering | Fire Protection |
Sydney Water Accredited • Water Servicing Co-ordinator
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TITLE		INTEGRATED WATER MANAGEMENT PLAN RETAINING WALL SUBSOIL DRAINAGE LAYOUT PLAN			
SCALE	A0 @ 1:500 A2 @ 1:1000	DRAWN	DESIGNED	CHECKED	APPROVED
DATE	SEPT. 2010	LM	LP	LP	LP
JOB No.	3591	DRAWING No.	MW-WSP-H-1039	ISSUE	C
		SHEET 1 OF 1			

Plot Date: Wednesday, 13 October 2010 12:42:54 PM



AUSTRALIAN HEIGHT DATUM

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SHEET SIZE: A0

ISSUE	AMENDMENT	DATE	ISSUE	AMENDMENT	DATE
A	PRELIMINARY ISSUE	01.10.10			
B	PRELIMINARY ISSUE (ARCH REVISION)	07.10.10			
C	ISSUE FOR APPROVAL	13.10.10			



PROJECT

BARANGAROO HEADLAND PARK



CLIENT

BARANGAROO DELIVERY AUTHORITY

Warren Smith & Partners Pty Ltd

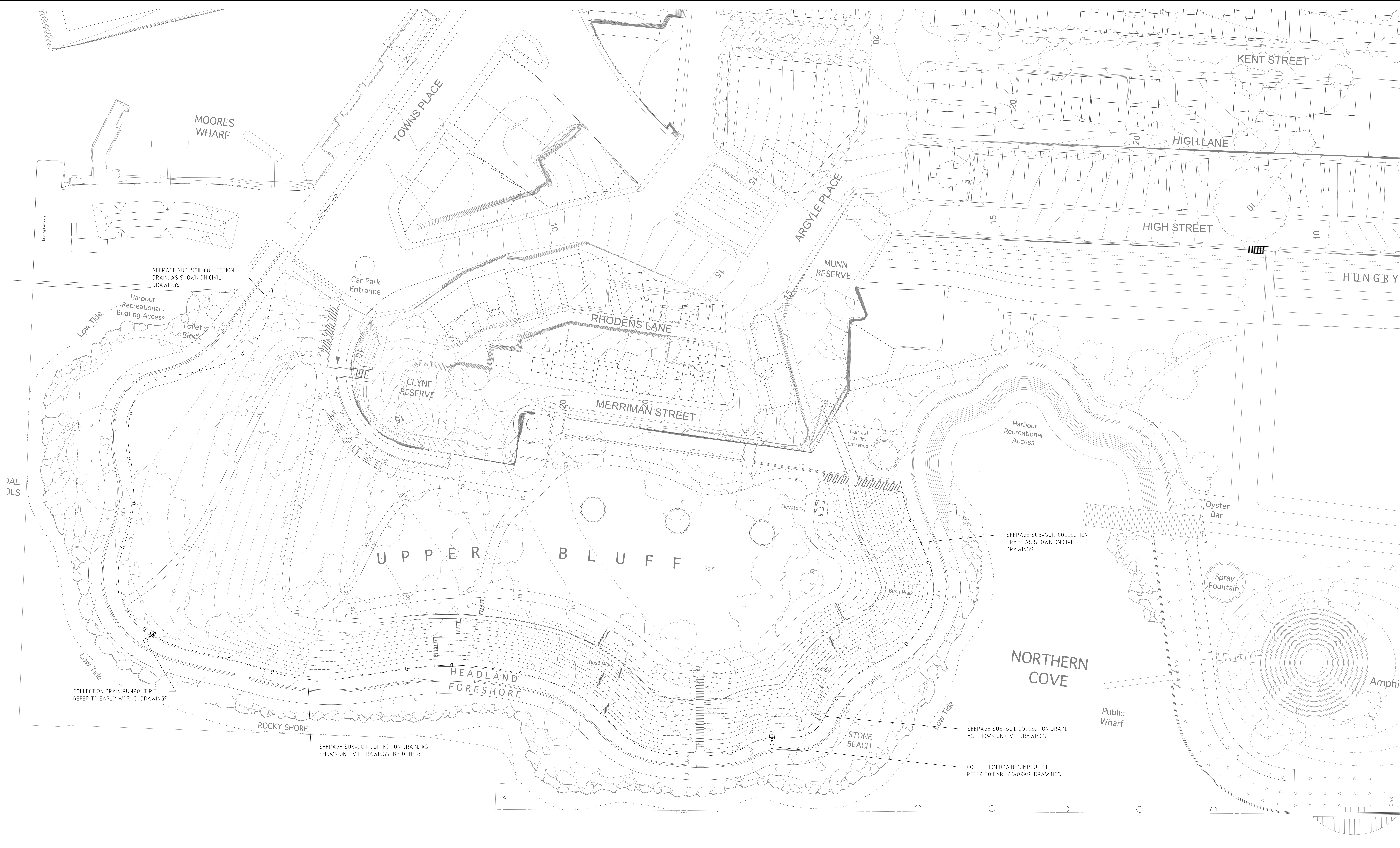
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ISSUE FOR APPROVAL					
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DATE	SEPT. 2010	JM	LP	LP	LP
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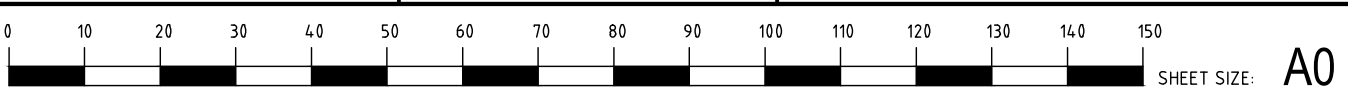


AUSTRALIAN HEIGHT DATUM

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ISSUE	AMENDMENT	DATE	ISSUE	AMENDMENT	DATE
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BARANGAROO SYDNEY AUSTRALIA

PROJECT
BARANGAROO HEADLAND PARK

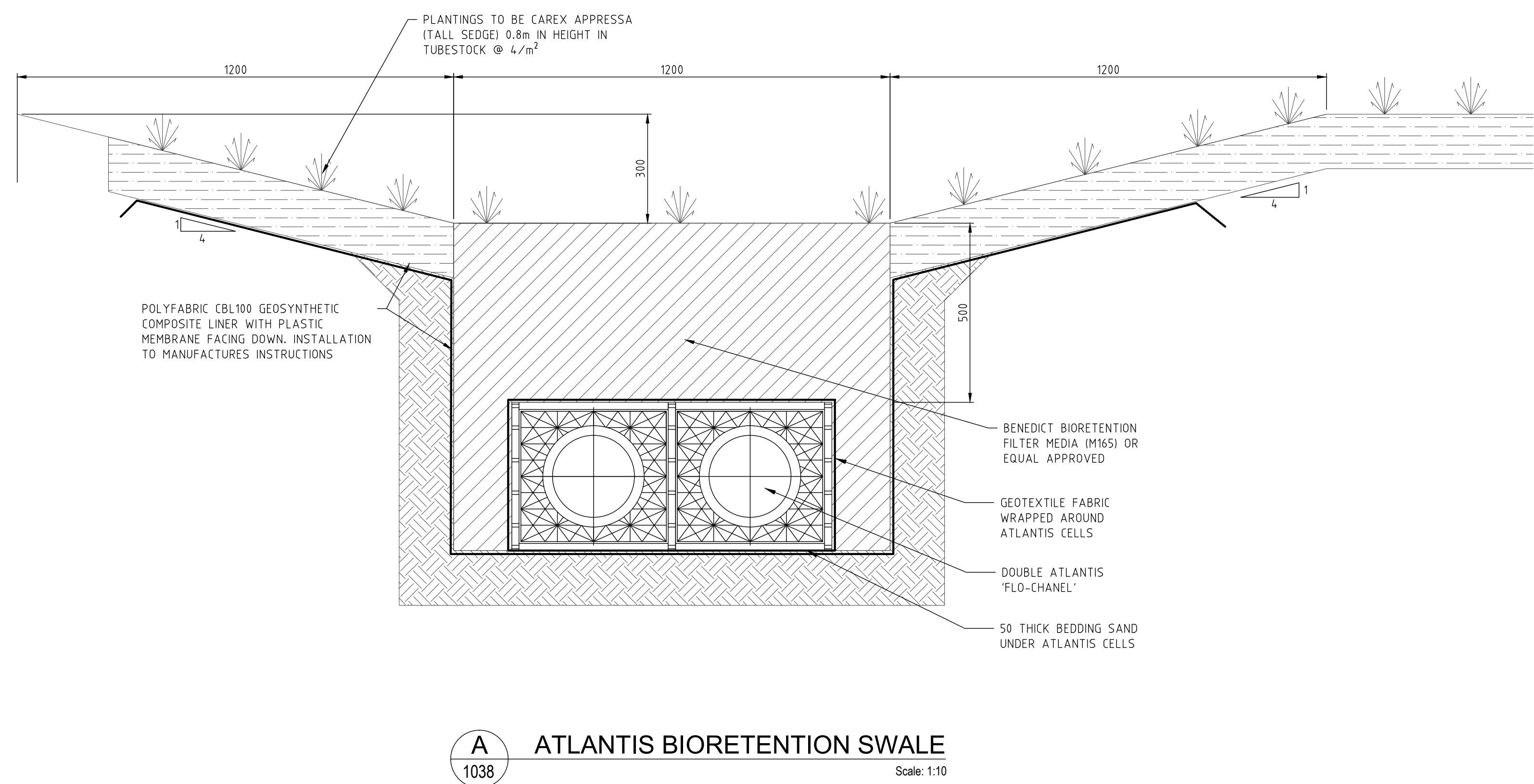
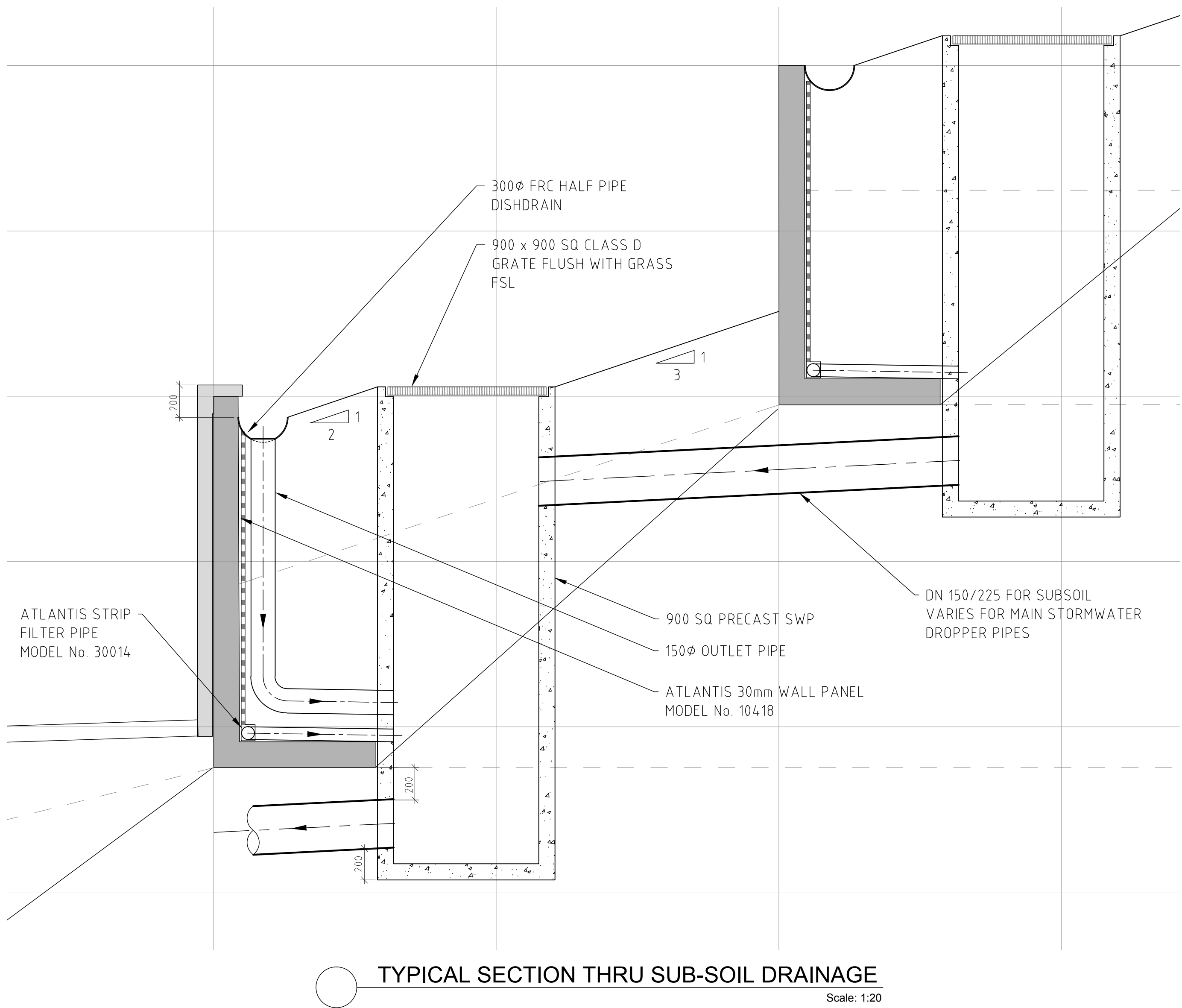
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CLIENT
Barangaroo Delivery Authority
Level 5, Foreshore House
66 Harrington Street
Sydney 2000
NSW Australia

TITLE INTEGRATED WATER MANAGEMENT PLAN SEEPAGE WATER LAYOUT PLAN					
SCALE A0 @ 1:500 A2 @ 1:1000	DRAWN JM	DESIGNED LP	CHECKED LP	APPROVED LP	
DATE SEPT. 2010	DRAWING No. MW-WSP-H-1041	ISSUE C			
JOB No. 3591	SHEET 1 OF 1				

Plot Date: Wednesday, 13 October 2010 12:43:05 PM



AUSTRALIAN HEIGHT DATUM

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NORTH POINT

NOTES
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ISSUE
A
B
C

AMENDMENT
PRELIMINARY ISSUE
PRELIMINARY ISSUE (ARCH REVISION)
ISSUE FOR APPROVAL

DATE
01.10.10
07.10.10
13.10.10

ISSUE
A
B
C

AMENDMENT
PRELIMINARY ISSUE
PRELIMINARY ISSUE (ARCH REVISION)
ISSUE FOR APPROVAL

DATE
01.10.10
07.10.10
13.10.10

CLIENT

BARANGAROO SYDNEY AUSTRALIA

PROJECT
BARANGAROO HEADLAND PARK

Barangaroo Delivery Authority
Level 5, Foreshore House
66 Harrington Street
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Warren Smith & Partners Pty Ltd
A 1st Floor, 123 Clarence Street, Sydney 2000 NSW Australia
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ABN: 38 399 439 128



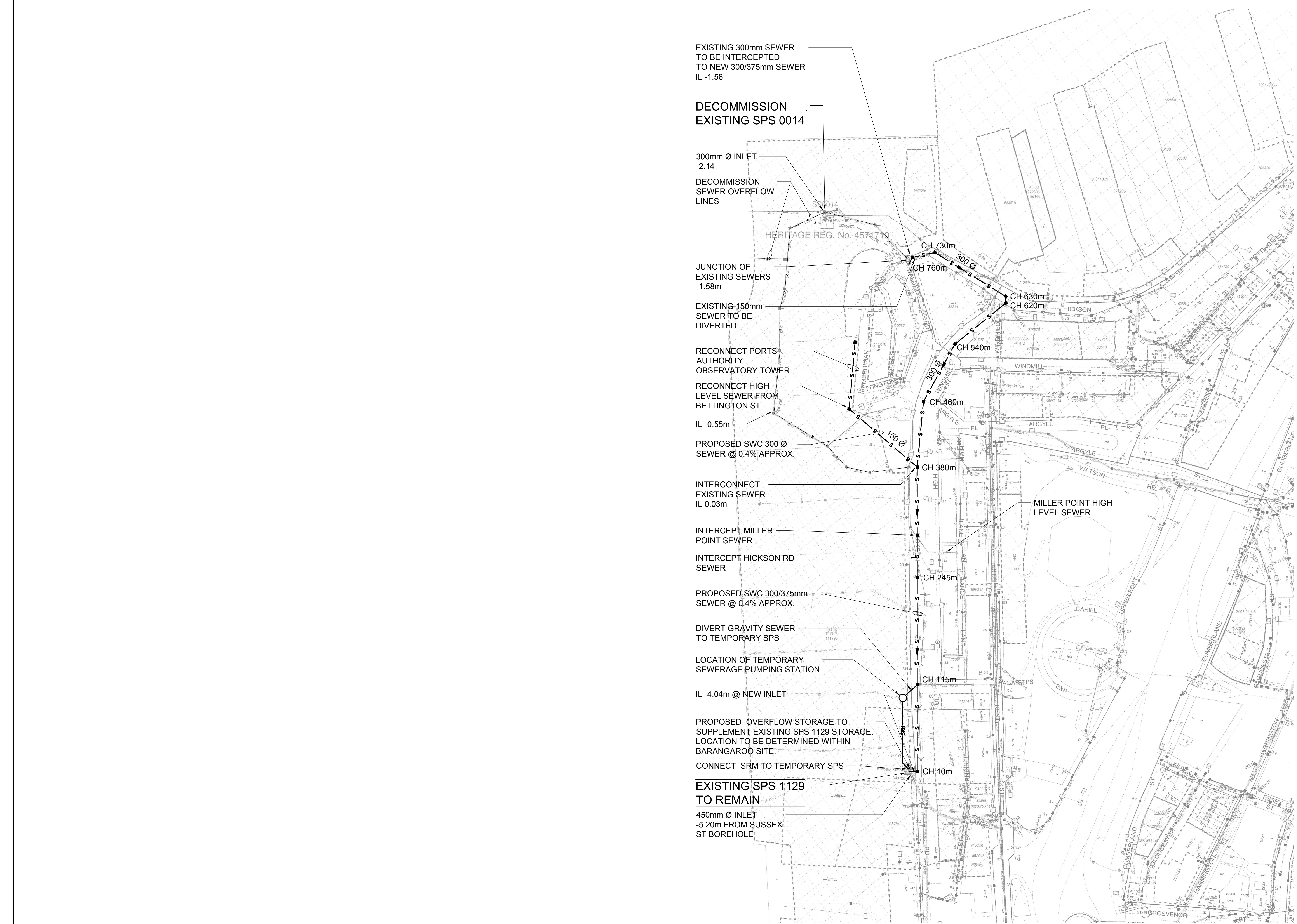
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ISSUE FOR APPROVAL

TITLE
INTEGRATED WATER MANAGEMENT PLAN CIVIL DETAILS

SCALE A0 @ 1:20 A2 @ 1:40	DRAWN JM	DESIGNED MC	CHECKED LP	APPROVED LP
DATE SEPT 2010	DRAWING No. MW-WSP-H-1042	ISSUE C		
JOB No. 3591	SHEET 1 OF 1			

Plot Date: Wednesday, 13 October 2010 12:43:13 PM



LEGEND

- PROPOSED CHAMBER
- s— SWC SEWER
- SRM— SWC SEWER RISING MAIN
- FLOW DIRECTION
- x— EXISTING SEWER TO BE ABANDONED

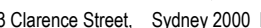
ABBREVIATIONS

- SWC SYDNEY WATER CORPORATION
- SPS SEWERAGE PUMPING STATION
- Ø DIAMETER
- IL REDUCED INVERT LEVEL

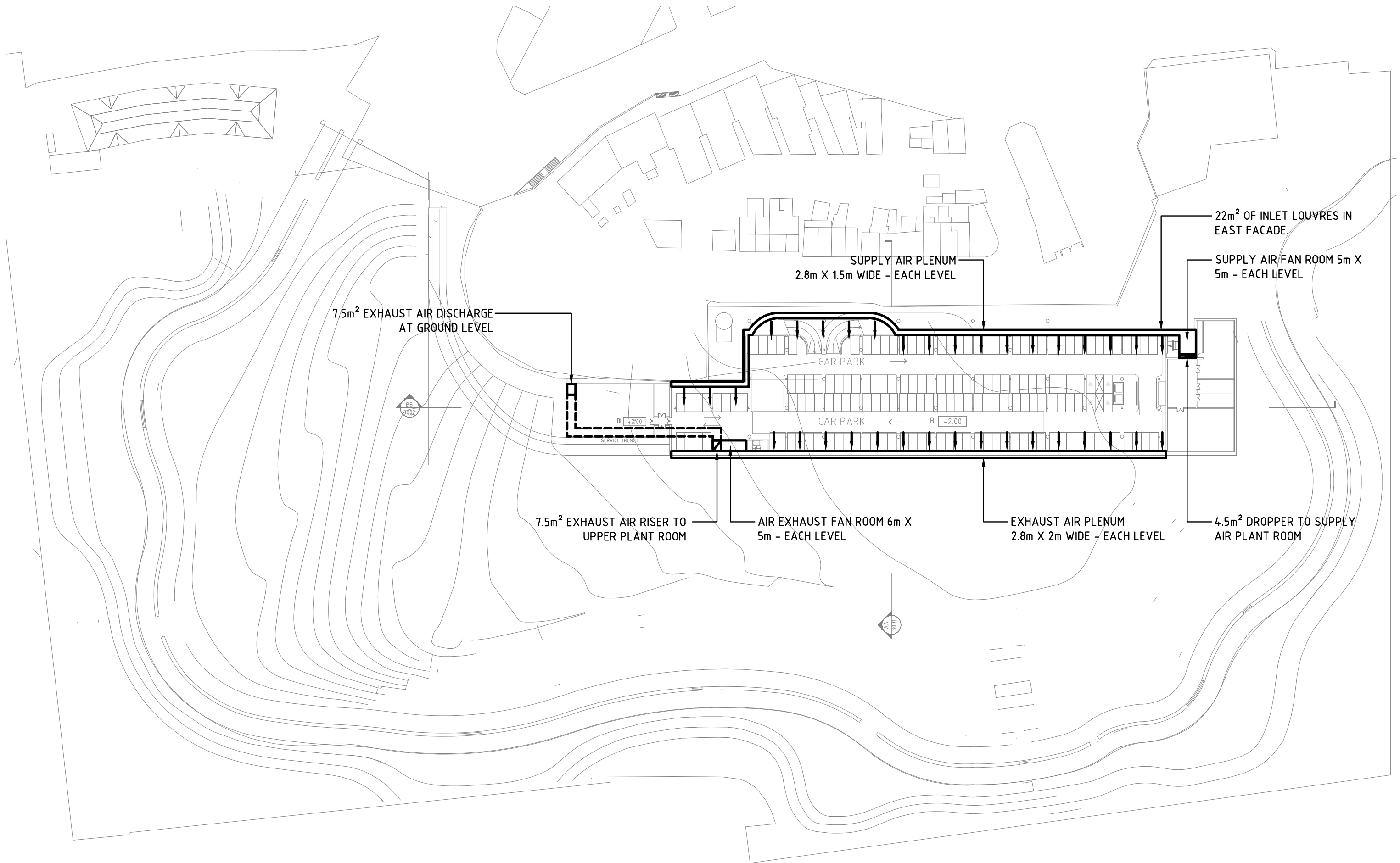
AUSTRALIAN HEIGHT DATUM

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			A	PRELIMINARY ISSUE													 Barangaroo Delivery Authority Level 5, Foreshore House 66 Harrington Street Sydney 2000 NSW Australia T: 02 9299 1312 F: 02 9299 1295 E: info@barangaroo.com.au ABN: 38 369 439 128							
			B	PRELIMINARY ISSUE (ARCH REVISION)														PROJECT BARANGAROO HEADLAND PARK						
			C	ISSUE FOR APPROVAL																				
															WARREN SMITH & PARTNERS  SERVING THE CONSTRUCTION INDUSTRY SINCE 1981 Consulting Engineers Hydraulic Services Civil Engineering Fire Protection Sydney Water Accredited «Water Servicing Co-ordinator» • Design and Project Management		TITLE INTEGRATED WATER MANAGEMENT PLAN SYDNEY WATER CORPORATION GRAVITY SEWER DEVIATION TO SPS1129 AND DECOMMISSIONING OF SPS0014							
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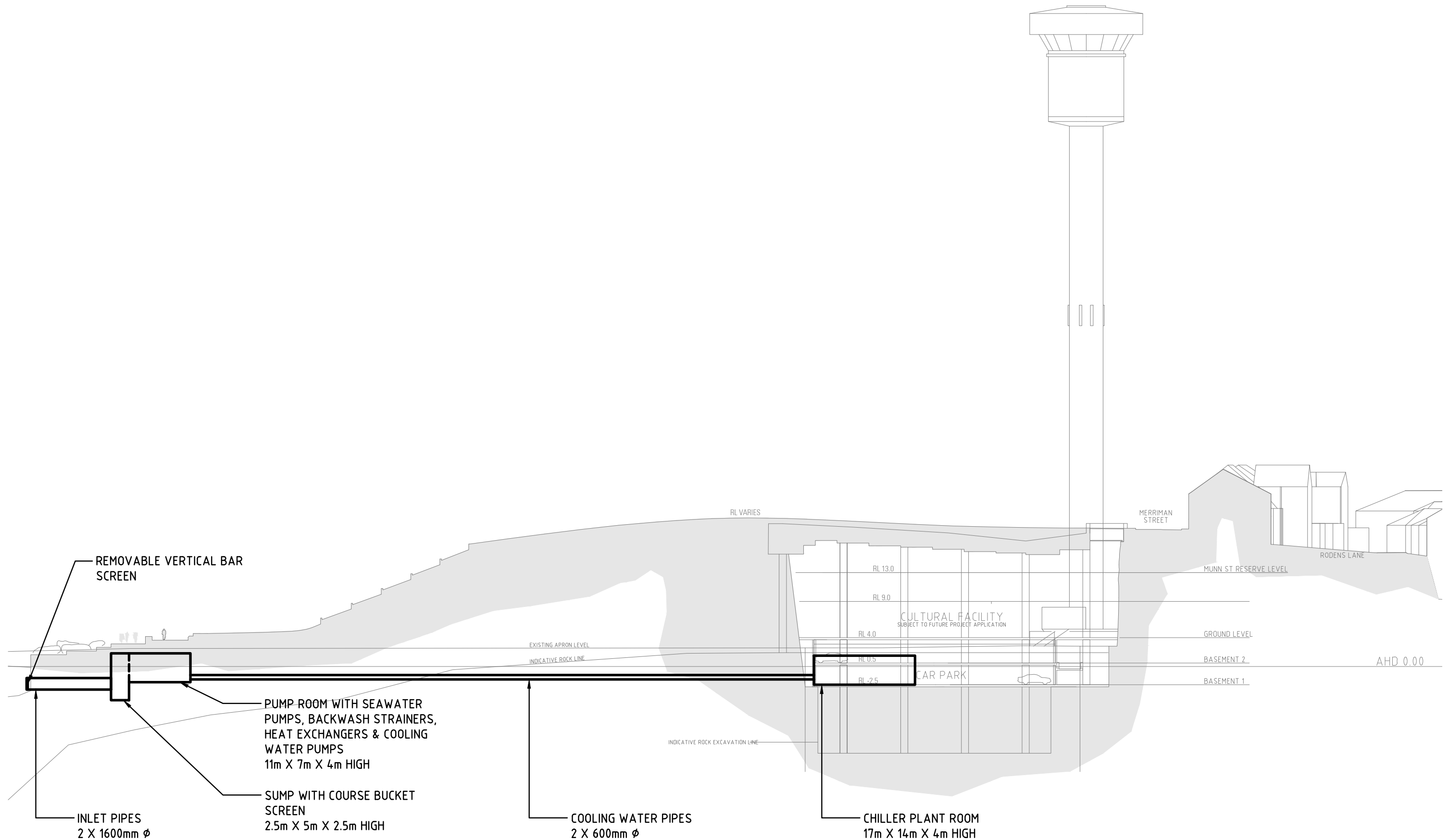


BARANGAROO HEADLAND

PWP Landscape Architecture
739 Allston Way, Berkeley, California 94710
Johnson Pilton Walker
Level 10, Plaza Building Australia Square, 95 Pitt Street, Sydney NSW 2000

MAIN WORKS APPLICATION CARPARK & FUTURE CULTURAL FACILITY CARPARK VENTILATION

MW-WAG-E-S3-1002 REV. 00 11th October 2010



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BARANGAROO HEADLAND

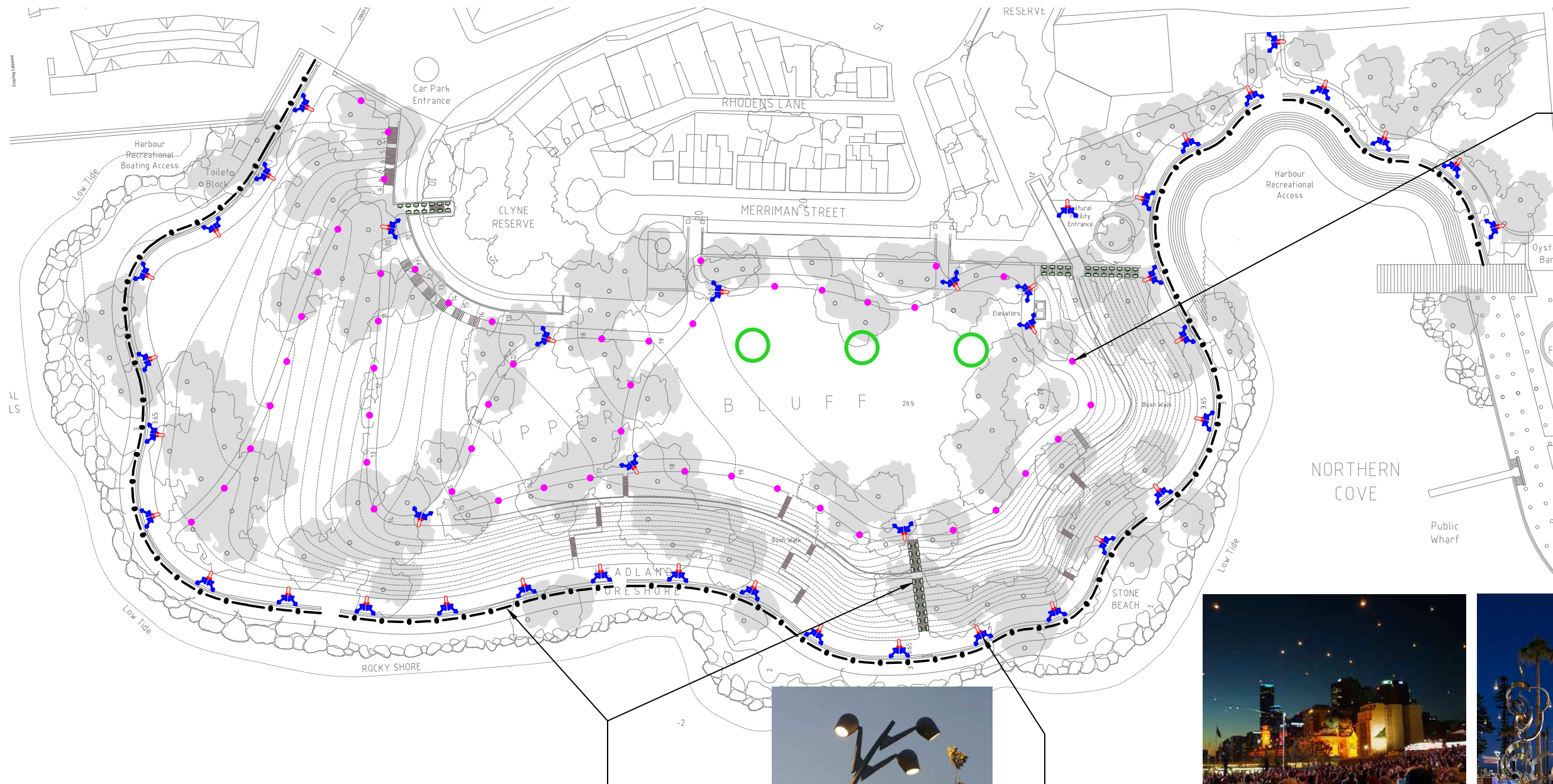
PWP Landscape Architecture
739 Allston Way, Berkeley, California 94710

Johnson Pilton Walker
Level 10, Plaza Building Australia Square, 95 Pitt Street, Sydney NSW 2000

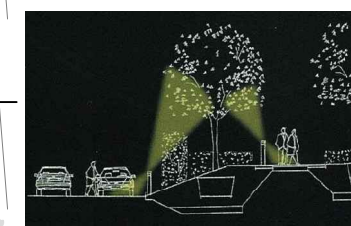
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MW-WAG-E-S3-3001 REV. 00

11th October 2010



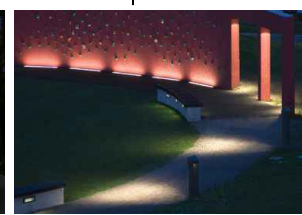
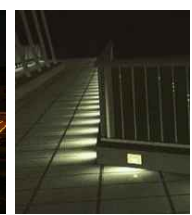
CHARACTER IMAGES



UP/DOWN POLES



CATENARY SYSTEMS & PROJECTIONS



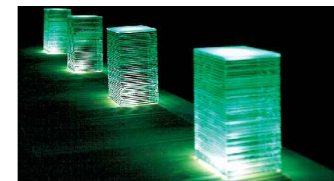
UNDER STEP LIGHTING / FLOOR / WALL WASHING

LEGEND

	4 - 8 OFF LED SPOTLIGHTS WITH MEDIUM BEAM SPREAD ON CUSTOM CURVED POLES WITH RANGE OF ACCESSORIES. IP65. 4000K	8m HIGH. SPOTS @ 5m, 6m & 7m
	2 - 3 OFF LED SPOTLIGHTS WITH MEDIUM BEAM SPREADS FOR PATH & ADJUSTABLE NARROW BEAM SPOTLIGHT FOR TREE FOLIAGE. IP65. 4000K	4m HIGH.
	RECESSED LED WALL LIGHT WITH ASYMMETRIC FLOOR WASH DISTRIBUTION. IP65. 4000K	WALL RECESSED.
	RECESSED LED INGROUND CONTINUOUS STRIP LIGHT WITH ASYMMETRIC WALL WASH DISTRIBUTION. IP68. 3000K	INGROUND.



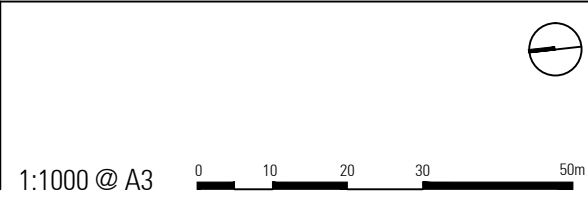
LIT OBJECTS



POLE LIGHTING



UNDERBENCH LIGHTING



BARANGAROO HEADLAND

PWP Landscape Architecture
739 Allston Way, Berkeley, California 94710
Johnson Pilton Walker
Level 10, Plaza Building Australia Square, 95 Pitt Street, Sydney NSW 2000

MAIN WORKS APPLICATION
CARPARK & FUTURE CULTURAL FACILITY
HEADLAND PARK - LIGHTING CONCEPT PLAN

MW-WAG-E-S3-1001 REV. 01 18th October 2010

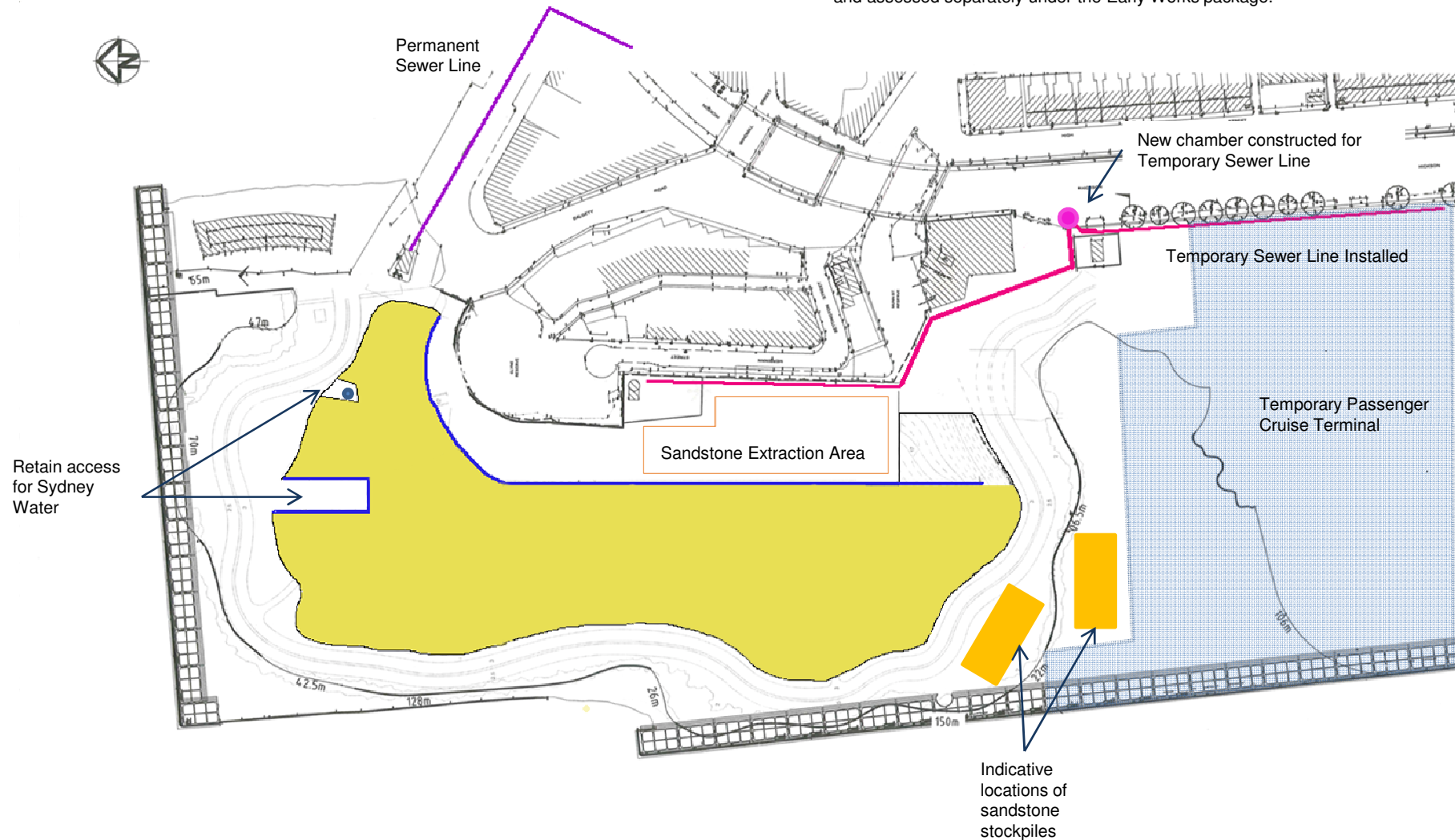
APPENDIX 1C

Construction Staging Drawings

JUNE 2011

January-June 2011 - Key Activities:

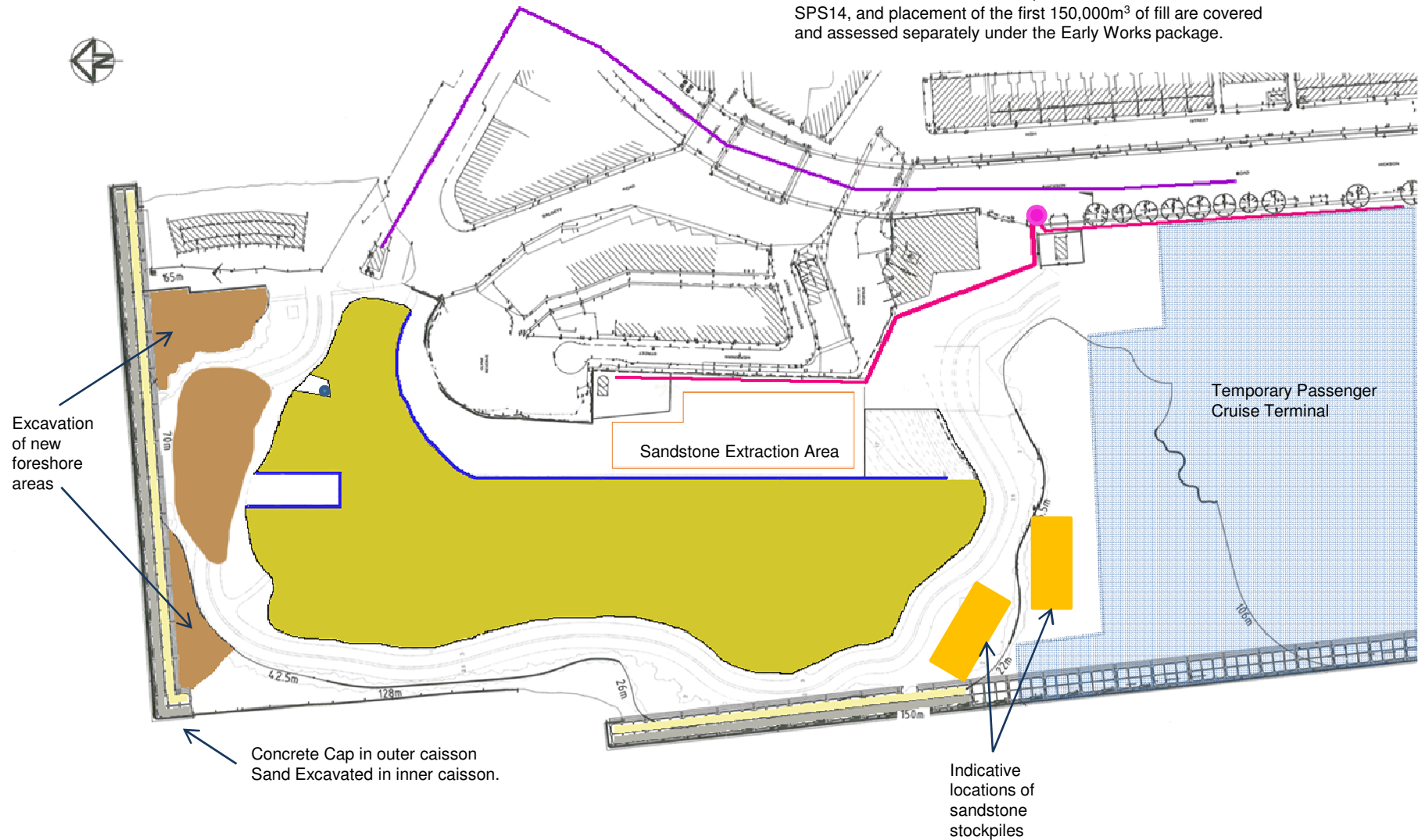
- Receive fill material and continue headland fill from Early Works:
- Note that sandstone extraction, works to sewer lines and SPS14, and placement of the first 150,000m³ of fill are covered and assessed separately under the Early Works package.



DECEMBER 2011

July-December 2011 - Key Activities:

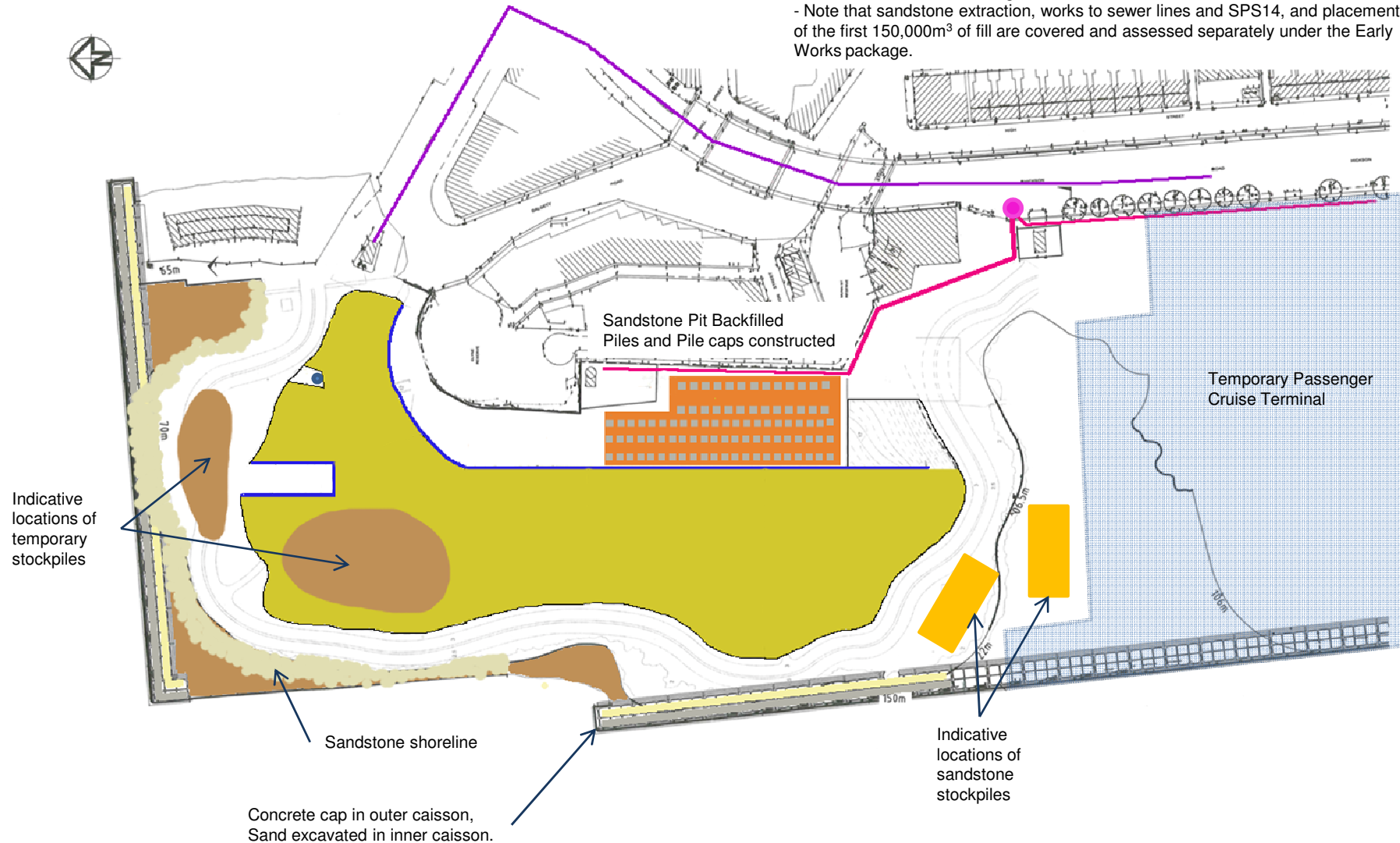
- Receive fill material and continue headland fill:
- Excavate sand in caisson walls at northern end of site.
- Excavate foreshore recession areas at north end of site.
- Note that sandstone extraction, works to sewer lines and SPS14, and placement of the first 150,000m³ of fill are covered and assessed separately under the Early Works package.



JUNE 2012

January-June 2012 - Key Activities:

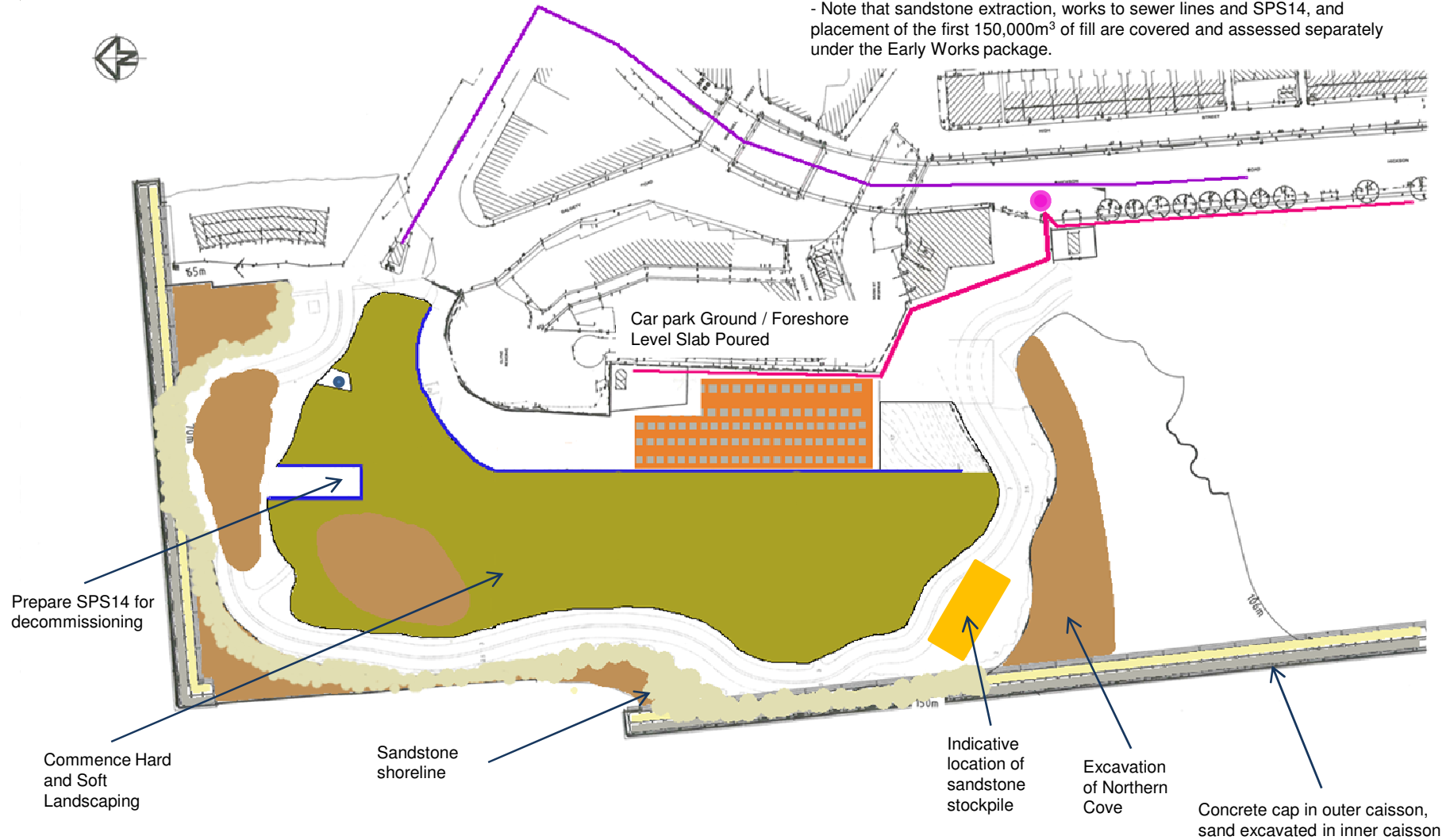
- Receive fill material and continue headland fill: █
- Backfill of sandstone excavation pit complete.
- Car park piles and pile caps poured.
- Excavate foreshore recession areas at northern end of site
- Commence sandstone lining at northern end of site.
- Note that sandstone extraction, works to sewer lines and SPS14, and placement of the first 150,000m³ of fill are covered and assessed separately under the Early Works package.



DECEMBER 2012

June-December 2012 - Key Activities:

- Receive fill material and continue headland fill: █
- Temporary cruise terminal demolished.
- Car park structural construction to ground level.
- Sandstone shoreline completed at northern end of site.
- Excavation of Northern Cove.
- Note that sandstone extraction, works to sewer lines and SPS14, and placement of the first 150,000m³ of fill are covered and assessed separately under the Early Works package.



JUNE 2013 – 2014 Completion

January-July 2014 - Key Activities:

- Bore remaining sewer mains to SPS1129.
- Commence Car Park Fit out.
- Commence structural works for future space.
- Commence sandstone lining and stone seawall in the Northern Cove.
- Commence board walk along the foreshore.
- Commence installation of services and drainage on the headland.
- Note that sandstone extraction, works to sewer lines and SPS14, and placement of the first 150,000m³ of fill are covered and assessed separately under the Early Works package.

