LOOK UP AND LIVE

OVERHEAD POWER LINES IN VICINITY OF WORKS.

ENSURE ALL POWER LINES ARE CLEARLY MARKED WITH ORANGE WEATHERPROOF TAPE OR RIBBON

ALL WORKS ARE TO BE CARRIED OUT IN ACCORDANCE WITH THE NSW WORK COVER 'WORK NEAR OVERHEAD POWER LINES CODE OF PRACTICE 2006'

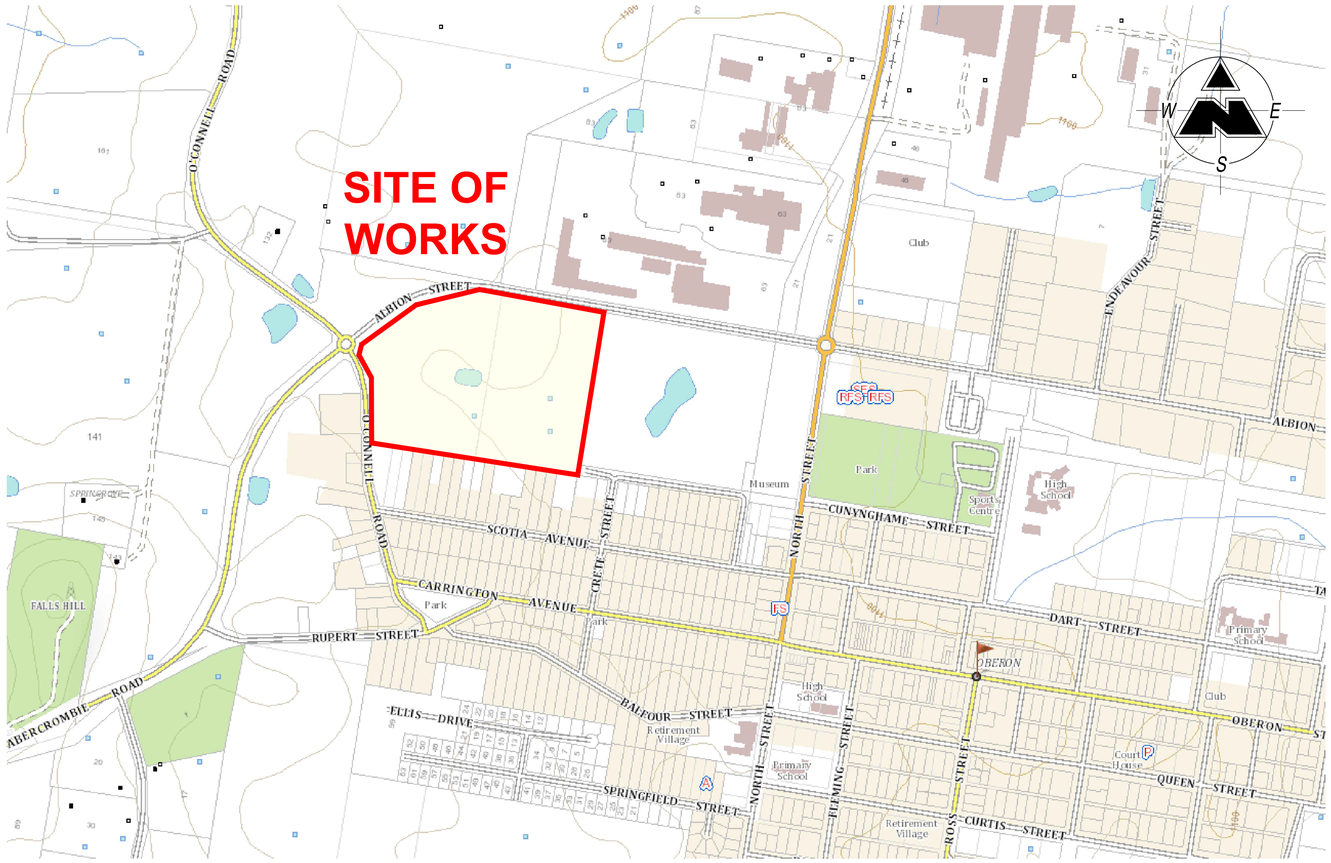
http://www.workcover.nsw.gov.au/health-and-safety/industry-safety/electrical-and-power/power-lines/publications/work-near-overhead-power-lines-code-of-practice-2006

PROPOSED SPORTS COMPLEX
O'CONNELL ROAD
OBERON NSW 2787

FOR
CROSSMULLER

THERE MAY BE EXISTING SERVICES WITHIN THE WORKS AREA THAT ARE NOT SHOWN ON THESE PLANS. THE CONTRACTOR IS TO LOCATE ALL SERVICES PRIOR TO THE COMMENCEMENT OF WORKS.

DIAL BEFORE YOU DIG www.1100.com.au



LOCALITY PLAN
N.T.S.

DRAWING INDEX	
Dwg No.	Title
G01	COVER SHEET
G02	GENERAL ARRANGEMENT PLAN
EW01	BULK EARTHWORKS PLAN - ACCESS & CARPARK
EW02	EARTHWORKS CROSS-SECTIONS
EW03	BULK EARTHWORKS PLAN - WHOLE SITE
C01	CIVIL WORKS PLAN
C02	SITE GRADING PLAN
SW01	STORMWATER CALCULATIONS

Legend

- Bank / Batter
- Kerb
- Edge Of Seal / Bitumen
- Edge Of Gravel
- Building
- Swale
- Stormwater Line (>> SW >>)
- Proposed Building
- Proposed Seal/ Bitumen
- Proposed Concrete
- Proposed Gravel
- Proposed Field
- Proposed Landscaping
- Proposed Water/ Basin
- Existing Landscaping

PLOT INFO: ...\2023.0913-Civil-B.dwg, DATE: Oct 30,2023 - 11:27:36

Amend	Date	Description	By
B	29/09/23	REVISED SITE LEVELS AND EARTHWORKS VOLUMES	TM
A	25/09/23	FOR APPROVAL	JB

Approved for Construction:

Garth Dean
B.E. GDSTT FIEAust CPEng NER APEC Engineer IntPE (Aus) RBP (Vic/NT)

Drawn:	JB	FOR APPROVAL
Designed:	TM	
Checked:	GBL	
Scale (A1):	AS SHOWN	
Date:	25/09/23	...\2023.0913-Civil-B.dwg

PROPOSED SPORTS COMPLEX
O'CONNELL ROAD
OBERON NSW 2787

COVER SHEET

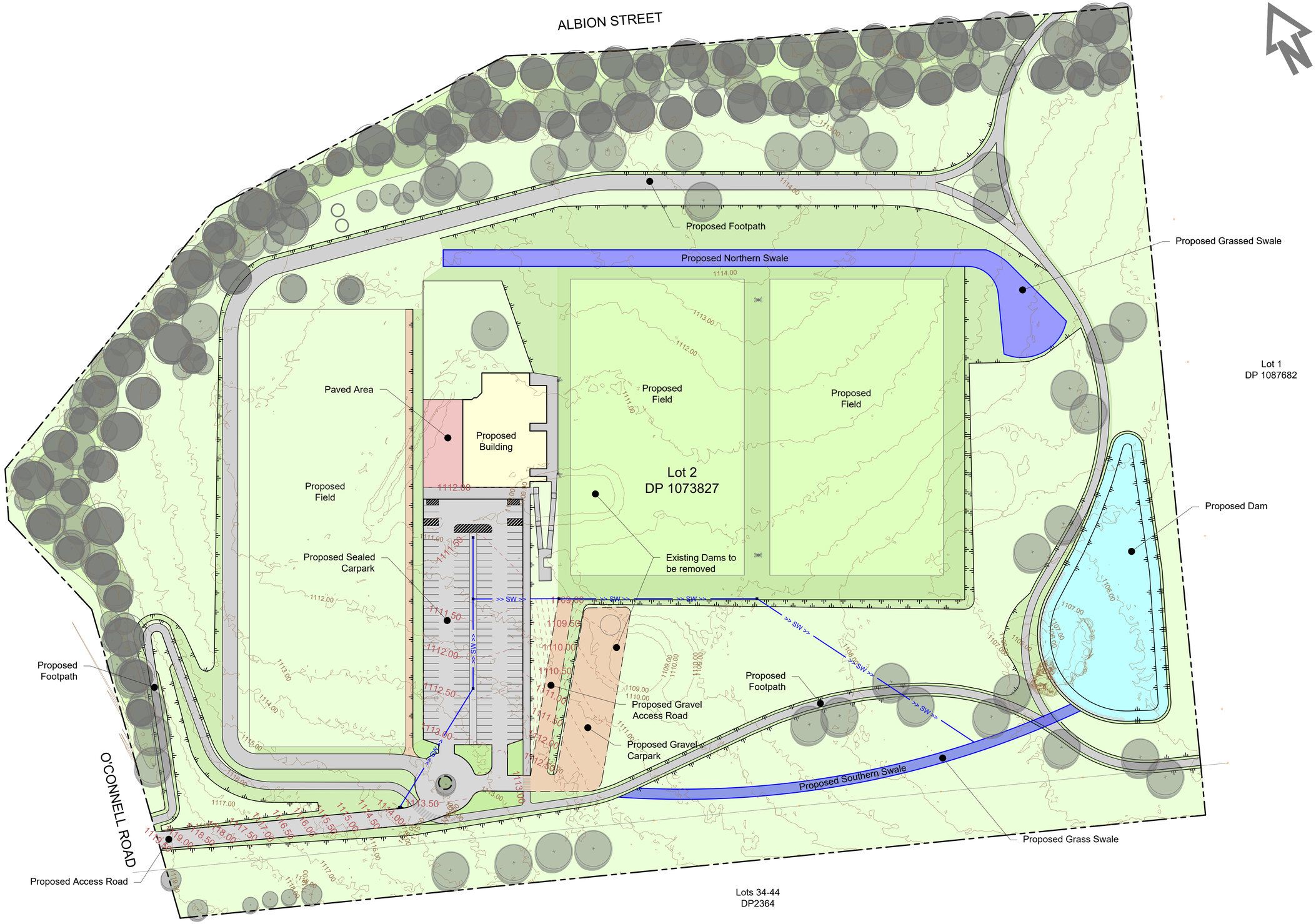
CROSSMULLER

CALARE CIVIL CONSULTING ENGINEERS
170 RANKIN STREET,
BATHURST, N.S.W. 2795
Tel: (02) 63323343 Fax: (02) 63318210

Job No. 2023.0913

DWG. No. G01 | Issue B

No. in set 8



PLOT INFO: ...\2023.0913-Civil-B.dwg, DATE: Oct 30,2023 - 11:27:55

Amend	Date	Description	By	Amend	Date	Description	By
B	29/09/23	REVISED SITE LEVELS AND EARTHWORKS VOLUMES	TM				
A	25/09/23	FOR APPROVAL	JB				

Approved for Construction:

Garth Dean
B.E. GDSTT FIEAust CPEng NER
APEC Engineer IntPE (Aus) RBP (Vic/NT)

Drawn:	JB
Designed:	TM
Checked:	GBL
Scale (A1):	1:750
Date:	25/09/23

FOR APPROVAL

...\2023.0913-Civil-B.dwg

PROPOSED SPORTS COMPLEX
O'CONNELL ROAD
OBERON NSW 2787

GENERAL ARRANGEMENT PLAN

CROSSMULLER

CALARE CIVIL CONSULTING ENGINEERS
170 RANKIN STREET,
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Tel: (02) 63323343 Fax: (02) 63318210

Job No.	2023.0913
DWG. No.	G02
Issue	B
No. in set	8

NOTES:

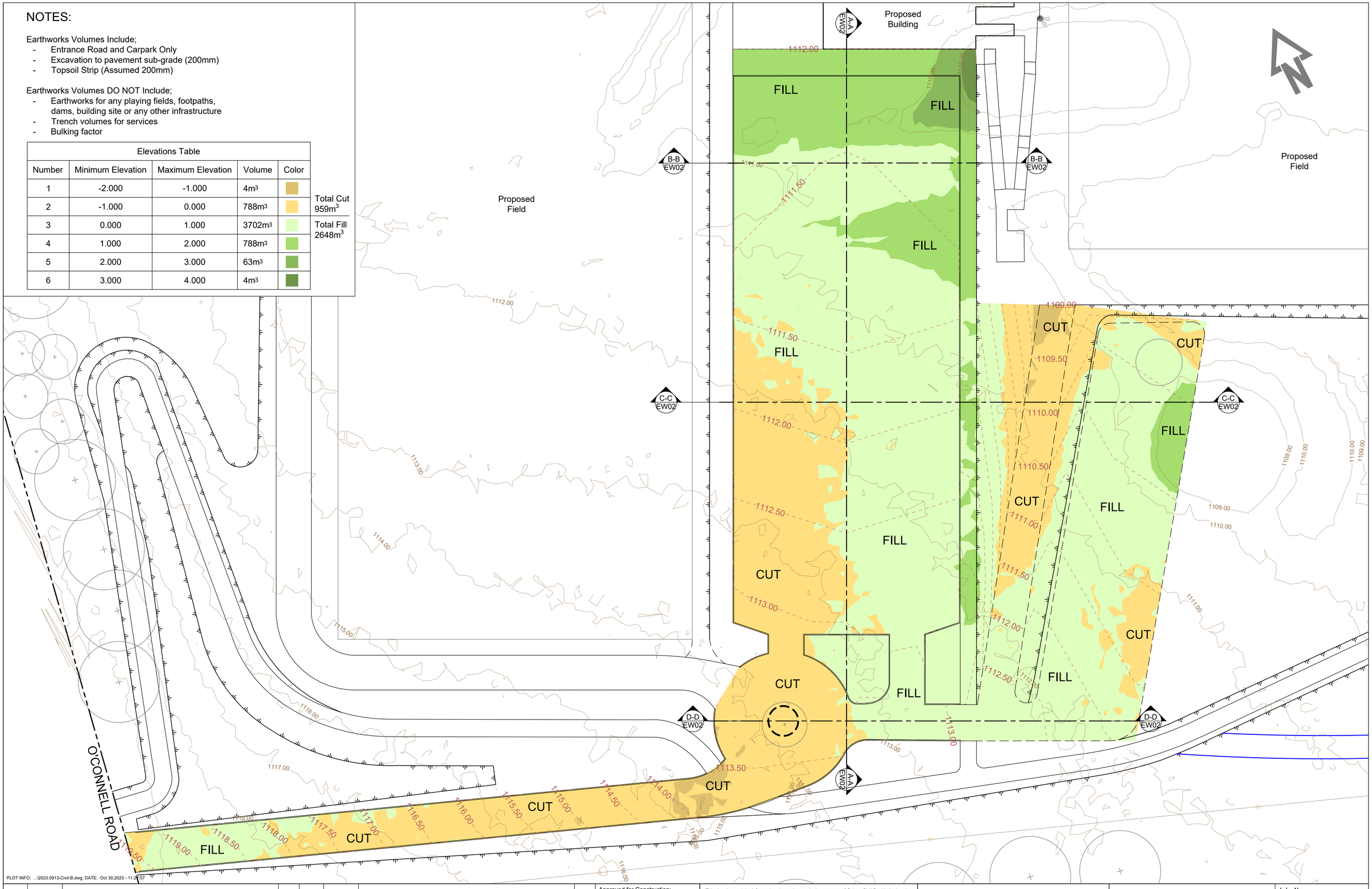
Earthworks Volumes Include;
- Entrance Road and Carpark Only
- Excavation to pavement sub-grade (200mm)
- Topsoil Strip (Assumed 200mm)

Earthworks Volumes DO NOT Include;
- Earthworks for any playing fields, footpaths, dams, building site or any other infrastructure
- Trench volumes for services
- Bulking factor

Elevations Table				
Number	Minimum Elevation	Maximum Elevation	Volume	Color
1	-2.000	-1.000	4m³	
2	-1.000	0.000	788m³	
3	0.000	1.000	3702m³	
4	1.000	2.000	788m³	
5	2.000	3.000	63m³	
6	3.000	4.000	4m³	

Total Cut 959m³

Total Fill 2648m³



PLOT INFO: ...\2023.0913-Civil-B.dwg, DATE: Oct 30,2023 - 11:24:57

Amend	Date	Description	By
B	29/09/23	REVISED SITE LEVELS AND EARTHWORKS VOLUMES	TM
A	25/09/23	FOR APPROVAL	JB

Approved for Construction:

Garth Dean
B.E. GDSTT FIEAust CPEng NER APEC Engineer IntPE (Aus) RBP (Vic/NT)

Drawn:	JB
Designed:	TM
Checked:	GBL
Scale (A1):	1:300
Date:	25/09/23

FOR APPROVAL

...\2023.0913-Civil-B.dwg

PROPOSED SPORTS COMPLEX
O'CONNELL ROAD
OBERON NSW 2787

BULK EARTHWORKS PLAN - ACCESS & CARPARK

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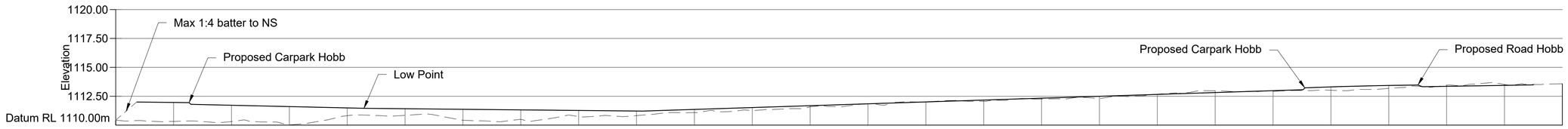
Job No. 2023.0913

DWG. No. EW01 Issue B

No. in set 8



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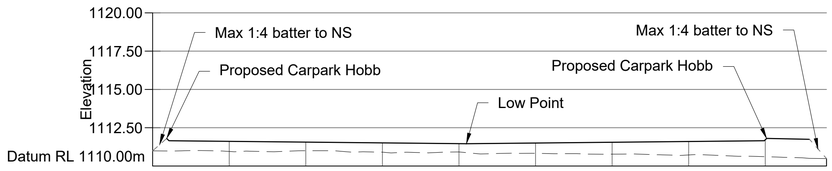

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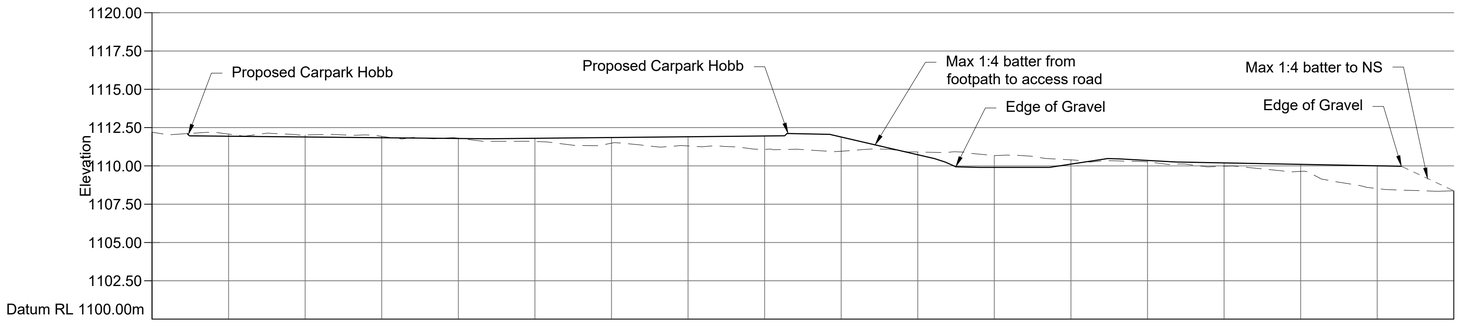
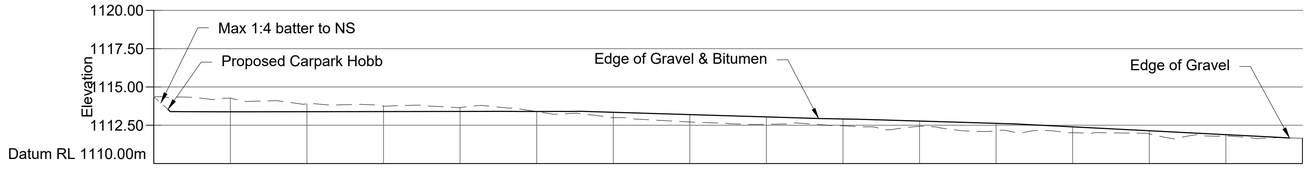


Section C-C
Scale 1:100



Section D-D
Scale 1:100

PLOT INFO: ...\2023.0913-Civil-B.dwg, DATE: Oct 30,2023 - 11:27:58

Amend	Date	Description	By	Amend	Date	Description	By
B	29/09/23	REVISED SITE LEVELS AND EARTHWORKS VOLUMES	TM				
A	25/09/23	FOR APPROVAL	JB				

Approved for Construction:

Garth Dean
B.E. GDSTT FIEAust CPEng NER
APEC Engineer IntPE (Aus) RBP (Vic/NT)

Drawn:	JB
Designed:	TM
Checked:	GBL
Scale (A1):	1:100
Date:	25/09/23

FOR APPROVAL

...\2023.0913-Civil-B.dwg

PROPOSED SPORTS COMPLEX
O'CONNELL ROAD
OBERON NSW 2787

EARTHWORKS CROSS-SECTIONS

CROSSMULLER

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CONSULTING ENGINEERS
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Tel: (02) 63323343 Fax: (02) 63318210

Job No. 2023.0913

DWG. No. EW02 Issue B

No. in set 8

NOTES:

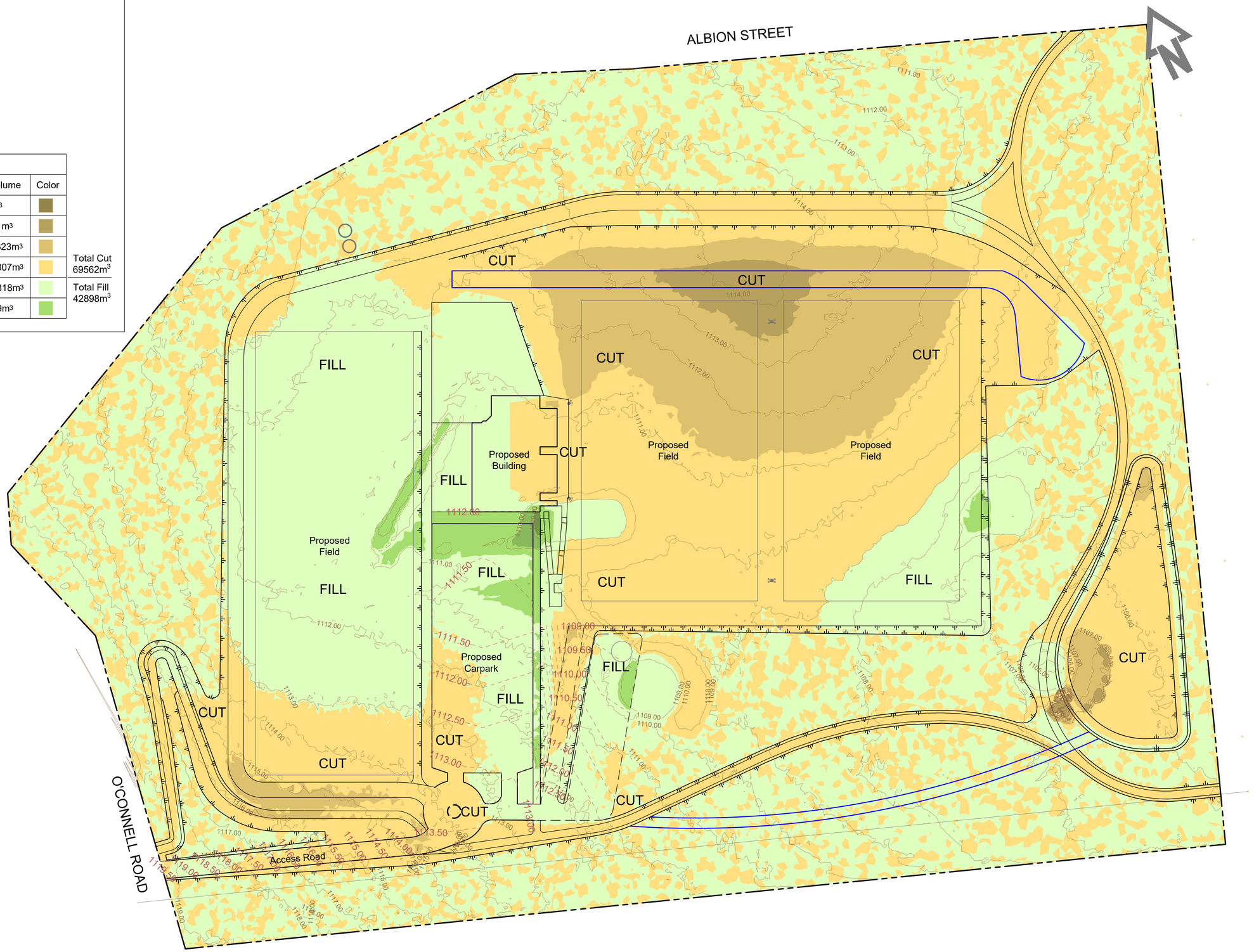
Earthworks Volumes Include;
- Entrance road and carpark to Calare Civil design with excavation to pavement sub-grade (200mm)
- Rest of site earthworks to Space Urban design with excavation to pavement sub-grade (200mm)
- Topsoil Strip (Whole Site - assumed 200mm)

Earthworks Volumes DO NOT Include;
- Trench volumes for services
- Bulking factor
- Northern and southern swale volumes

Elevations Table				
Number	Minimum Elevation	Maximum Elevation	Volume	Color
1	-9.000	-6.750	0m³	
2	-6.750	-4.500	341m³	
3	-4.500	-2.250	10323m³	
4	-2.250	0.000	50807m³	
5	0.000	2.250	42318m³	
6	2.250	4.500	429m³	

Total Cut 69562m³

Total Fill 42898m³



PLOT INFO: ...\2023.0913-Civil-B.dwg, DATE: Oct 30,2023 - 11:28:03

Amend	Date	Description	By
B	29/09/23	REVISED SITE LEVELS AND EARTHWORKS VOLUMES	TM
A	25/09/23	FOR APPROVAL	JB

Approved for Construction:

Garth Dean
B.E. GDSTT FIEAust CPEng NER APEC Engineer IntPE (Aus) RBP (Vic/NT)

Drawn:	JB
Designed:	TM
Checked:	GBL
Scale (A1):	1:750
Date:	25/09/23

FOR APPROVAL

...\2023.0913-Civil-B.dwg

PROPOSED SPORTS COMPLEX
O'CONNELL ROAD
OBERON NSW 2787

BULK EARTHWORKS PLAN - WHOLE SITE

CROSSMULLER

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170 RANKIN STREET,
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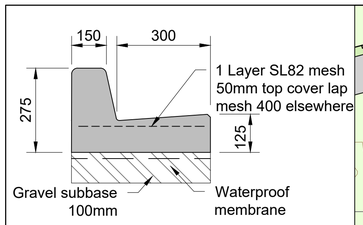
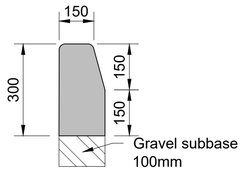
Job No. 2023.0913

DWG. No. EW03 Issue B

No. in set 8



Typical Kerb and Channel Detail
Scale 1:10



Typical Kerb Only (Hobb) Detail
Scale 1:10

Legend

KC - Proposed Typical Kerb and Channel.
Refer to detail above.
KO - Proposed Typical Kerb Only (Hobb).
Refer to detail above.

Proposed Footpath
Proposed Northern Swale
Provide northern grassed swale 3m wide x 0.3m deep with 1:4 side slopes.
Min. grade 1%.
Exact location to be determined on-site pending suitability
Shape ground locally to ensure free discharge of surface runoff around building
Proposed Building
Proposed Field
Provide D_{50}300 angular riprap on A34 geotextile or similar.
Shape drain to retain water flow within riprap
Ground to be shaped locally to ensure free discharge of runoff into proposed dam
Proposed Field
Provide spillway 6.5m wide x 0.3m deep with 1:4 side slopes.
Spillway sized to convey runoff from 1% AEP event.
Rock armour to prevent scour
Proposed perambulator to Oberon Council specifications
Proposed perambulator to Oberon Council specifications
Proposed Field
Disabled parking spaces and shared zones to AS 2890.6
Disabled parking spaces and shared zones to AS 2890.6
Existing dams to be filled and shaped to promote free discharge of runoff toward proposed pits or swales.
To be determined appropriately on-site.
Shape locally to ensure runoff directed away from playing field
Provide 150mm high hobb along edge of carpark and access road.
Refer detail below
Proposed dam.
Maximum capacity 1.16ML, in line with site harvestable rights
Indicative location of proposed stormwater line.
Location to be confirmed at CC stage in conjunction with field and building stormwater designs
Swale to discharge into proposed dam
Proposed Gravel Carpark
Proposed Footpath
Proposed Gravel Access Road
Proposed Southern Swale
Proposed stormwater line to discharge into swale via appropriate headwall installed to manufacturers specifications
Proposed perambulator to Oberon Council specifications
Provide southern swale 1.5m wide x 0.3m deep with 1:4 side slopes.
Min. grade 1%.
Exact location to be determined on-site pending suitability
Proposed perambulator to Oberon Council specifications

PLOT INFO: ...\2023.0913-Civil-B.dwg, DATE: Oct 30,2023 - 11:28:30

Amend	Date	Description	By
B	29/09/23	REVISED SITE LEVELS AND EARTHWORKS VOLUMES	TM
A	25/09/23	FOR APPROVAL	JB

Approved for Construction:

Garth Dean
B.E. GDSTT FIEAust CPEng NER APEC Engineer IntPE (Aus) RBP (Vic/NT)

Drawn:	JB
Designed:	TM
Checked:	GBL
Scale (A1):	1:500
Date:	25/09/23

FOR APPROVAL

...\2023.0913-Civil-B.dwg

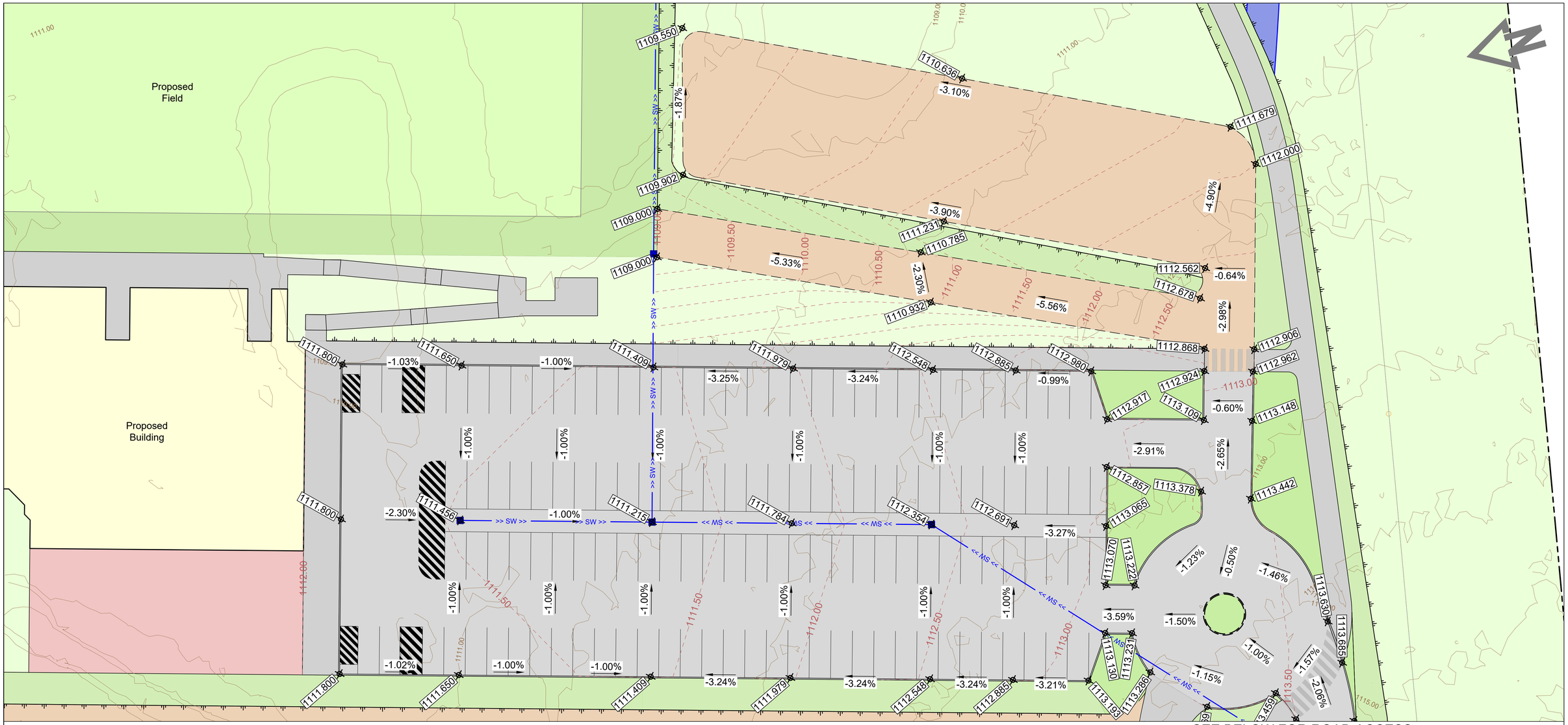
PROPOSED SPORTS COMPLEX
O'CONNELL ROAD
OBERON NSW 2787

CIVIL WORKS PLAN

CROSSMULLER

CALARE CIVIL CONSULTING ENGINEERS
170 RANKIN STREET,
BATHURST, N.S.W. 2795
Tel: (02) 63323343 Fax: (02) 63318210

Job No. 2023.0913
DWG. No. C01
Issue B
No. in set 8



PLOT INFO: ...\2023.0913-Civil-B.dwg, DATE: Oct 30,2023 - 11:28:48

Amend	Date	Description	By
B	29/09/23	REVISED SITE LEVELS AND EARTHWORKS VOLUMES	TM
A	25/09/23	FOR APPROVAL	JB

Approved for Construction:

Garth Dean
B.E. GDSTT FIEAust CPEng NER APEC Engineer IntPE (Aus) RBP (Vic/NT)

Drawn:	JB
Designed:	TM
Checked:	GBL
Scale (A1):	1:250
Date:	25/09/23

FOR APPROVAL

...\2023.0913-Civil-B.dwg

PROPOSED SPORTS COMPLEX
O'CONNELL ROAD
OBERON NSW 2787

SITE GRADING PLAN

CROSSMULLER

CALARE CIVIL CONSULTING ENGINEERS
170 RANKIN STREET,
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Tel: (02) 63323343 Fax: (02) 63318210

Job No. 2023.0913
DWG. No. C02
Issue B
No. in set 8

Overland Flow Path Calculation - Northern Swale

Mannings Channel Calculations

=>	Q	1.92	(m3/sec)					
Mannings								
	$V=(1/n)R^{2/3}S^{1/2}$		R=A/P		Q=AV			
	n =	0.025	Grassed					
Where:	H = depth of channel		P = wetted parameter		A = Sectional Area			
	S = slope of channel							
Width of base			3	m			Top Width	5.4
Batter slope (left)		1:	4					
Batter slope (Right)		1:	4					

CATCHMENT 1 - OVERFLOW 1

H	P	A	S	R	V	Q	to 2% tollerance	VD
0.3	5.4738634	1.26	0.01	0.2301848	1.5023728	1.8929897	OK	0.4507118
	3	0	0.01	0	0	0	Low	0
	3	0	0.01	0	0	0	Low	0

Overflow Calculation - Dam Spillway

Mannings Channel Calculations

=>	Q	3.57	(m3/sec)					
Mannings								
	$V=(1/n)R^{2/3}S^{1/2}$		R=A/P		Q=AV			
	n =	0.025	Grassed					
Where:	H = depth of channel		P = wetted parameter		A = Sectional Area			
	S = slope of channel							
Width of base			6.5	m				
Batter slope (left)		1:	4					
Batter slope (Right)		1:	4					

CATCHMENT 1 - OVERFLOW 1

H	P	A	S	R	V	Q	to 2% tollerance	VD
0.28	8.8089392	2.1336	0.01	0.2422085	1.5542453	3.3161378	Low	0.4351887
0.3	8.9738634	2.31	0.01	0.2574142	1.6186327	3.7390416	High	0.4855898
0.32	9.1387876	2.4896	0.01	0.2724213	1.6809468	4.1848851	High	0.537903

Overland Flow Path Calculation - Southern Swale

Mannings Channel Calculations

=>	Q	1.02	(m3/sec)					
Mannings								
	$V=(1/n)R^{2/3}S^{1/2}$		R=A/P		Q=AV			
	n =	0.025	Grassed					
Where:	H = depth of channel		P = wetted parameter		A = Sectional Area			
	S = slope of channel							
Width of base			1.5	m			Top Width	3.9
Batter slope (left)		1:	4					
Batter slope (Right)		1:	4					

CATCHMENT 1 - OVERFLOW 1

H	P	A	S	R	V	Q	to 2% tollerance	VD
0.3	3.9738634	0.81	0.01	0.2038319	1.3853984	1.1221727	High	0.4156195
	1.5	0	0.01	0	0	0	Low	0
	1.5	0	0.01	0	0	0	Low	0

20% AEP Results

SUB-CATCHMENT DETAILS							
Name	Max Flow Q (cu.m/s)	EIA Max Q (cu.m/s)	Remaining Max Q (cu.m/s)	EIA Tc (cu.m/s)	RIA Tc (min)	PA Tc (min)	Due to Storm (min)
Ex-Cat	1.862	0	1.862	21	2	21	20% AEP, 20 min burst, Storm 9
Dev-Cat	1.863	0.28	1.583	21	2	21	20% AEP, 20 min burst, Storm 5

1% AEP Results

SUB-CATCHMENT DETAILS							
Name	Max Flow Q (cu.m/s)	EIA Max Q (cu.m/s)	Remaining Max Q (cu.m/s)	EIA Tc (cu.m/s)	RIA Tc (min)	PA Tc (min)	Due to Storm (min)
Ex-Cat	3.567	0	3.567	21	2	21	1% AEP, 20 min burst, Storm 6
Dev-Cat	3.568	0.536	3.032	21	2	21	1% AEP, 20 min burst, Storm 4

Note:
- An IL/CL model has been run on Watercom Drains, to determine the increase in site runoff in the post development scenario. This demonstrated a negligible increase in runoff in the 20% AEP and 1% AEP rainfall events, and therefore no stormwater detention is proposed for the development

PLOT INFO: ...\2023.0913-Civil-B.dwg, DATE: Oct 30,2023 - 11:28:48

Amend	Date	Description	By
B	29/09/23	REVISED SITE LEVELS AND EARTHWORKS VOLUMES	TM
A	25/09/23	FOR APPROVAL	JB

Approved for Construction:

Garth Dean
B.E. GDSTT FIEAust CPEng NER APEC Engineer IntPE (Aus) RBP (Vic/NT)

Drawn:	JB
Designed:	TM
Checked:	GBL
Scale (A1):	AS SHOWN
Date:	25/09/23

FOR APPROVAL

...\2023.0913-Civil-B.dwg

PROPOSED SPORTS COMPLEX
O'CONNELL ROAD
OBERON NSW 2787

STORMWATER CALCULATIONS

CROSSMULLER

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170 RANKIN STREET,
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Job No. 2023.0913
DWG. No. SW01 Issue B
No. in set 8