INDUSTRIAL DEVELOPMENT
158-164 OLD BATHURST ROAD, EMU PLAINS, NSW 2750
CIVIL ENGINEERING SERVICES - DEVELOPMENT APPLICATION

DWG No.	DESCRIPTION	REV
C1.001	COVER SHEET AND DRAWING INDEX	C
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C7.402	STORMWATER MANAGEMENT - LONGITUDINAL SECTION - SHEET 2	C
C7.403	STORMWATER MANAGEMENT - LONGITUDINAL SECTION - SHEET 3	C
C7.404	STORMWATER MANAGEMENT - LONGITUDINAL SECTION - SHEET 4	C
C7.405	STORMWATER MANAGEMENT - LONGITUDINAL SECTION - SHEET 5	C
C7.406	STORMWATER MANAGEMENT - LONGITUDINAL SECTION - SHEET 6	C
C7.407	STORMWATER MANAGEMENT - LONGITUDINAL SECTION - SHEET 7	C
C7.408	STORMWATER MANAGEMENT - LONGITUDINAL SECTION - SHEET 8	C
C7.409	STORMWATER MANAGEMENT - LONGITUDINAL SECTION - SHEET 9	C
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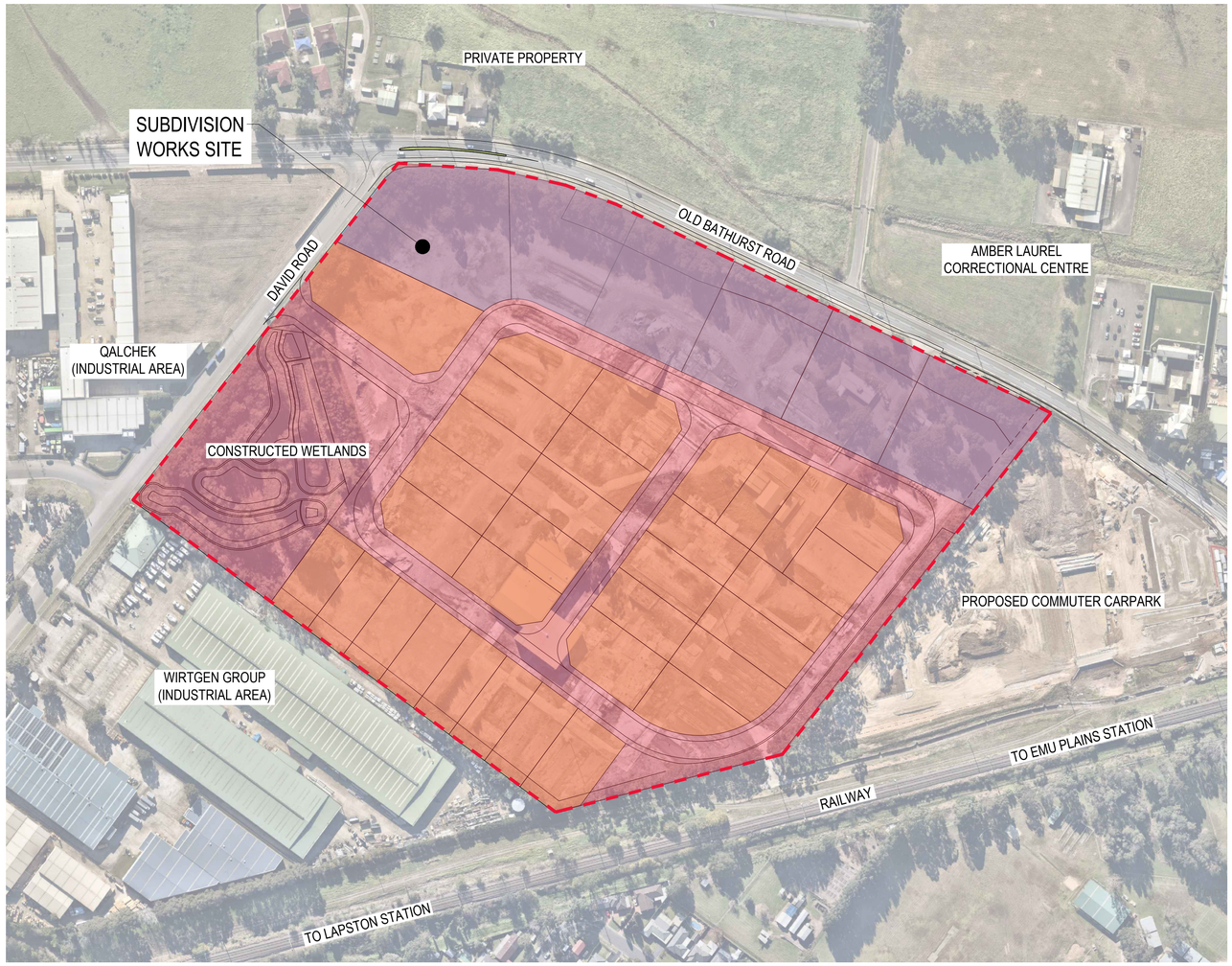
C11.001	WASTE MANAGEMENT - PLAN	C
C15.001	TURNING PATHS - SHEET 1	C
C15.002	TURNING PATHS - SHEET 2	C



LOCALITY PLAN
NOT TO SCALE

SCALE 1:2000 @ A1
SCALE 1:4000 @ A3
0 20 40 80 120 160 200 metres

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-1 0 1cm at full size 10cm 20cm

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Project
EMU PLAINS INDUSTRIAL PARK
158-164 OLD BATHURST ROAD
EMU PLAINS, NSW 2750

Drawing Title
COVER SHEET AND DRAWING INDEX

Drawn	Date	Scale A1	Q.A. Check	Date
UF	SEP 2022	1:2000		
Designed	Project No.	Dwg. No.	Issue	
VG	NSW211637	C1.001	D	

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Oct 17, 2022 - 4:27pm

GENERAL NOTES

1. ALL WORK TO BE IN ACCORDANCE WITH PENRITH CITY COUNCIL STANDARD DRAWINGS AND SPECIFICATIONS, AND TO THE REQUIREMENTS OF COUNCIL ENGINEERS.
2. A SURVEY OF THE SITE HAS BEEN UNDERTAKEN BY VINCE MORGAN SURVEYORS AS RECEIVED BY ACOR CONSULTANTS PTY LTD' ON 24.03.22 ALL LEVELS TO A.H.D. DRAWINGS SHOW DETAILS AT THE TIME OF SURVEY. REFERENCE NUMBER: 23978T(D)
3. ALL RUBBISH, DEBRIS, UNDERGROWTH, FENCES & TREES NOTED ON THE PLAN WITHIN THE LIMIT OF WORKS ARE TO BE REMOVED FROM SITE AREA TO THE SATISFACTION OF COUNCIL OR THE SUPERINTENDENT
4. NO DISTURBANCE TO THE SITE SHALL BE PERMITTED OTHER THAN IN THE IMMEDIATE AREA OF THE WORKS AND NO MATERIAL SHALL BE REMOVED FROM SITE WITHOUT COUNCIL APPROVAL
5. NO WORK WITHIN ADJOINING PROPERTIES TO BE UNDERTAKEN WITHOUT WRITTEN PERMISSION FROM THE OWNERS OR RESPONSIBLE AUTHORITY
6. THE CONTRACTOR SHALL OBTAIN LEVELS FROM ESTABLISHED BENCHMARKS ONLY
7. THE LOCATION OF RECOVERY MARKS AND BENCH MARKS SHOULD BE VERIFIED AND CONFIRMED BY THE CONTRACTOR AND ANY DISCREPANCIES SHOULD BE CLARIFIED IN WRITING WITH THE SURVEYOR PRIOR TO THE COMMENCEMENT OF WORK
8. THE CONTRACTOR SHALL ERECT A POLLUTION WARNING SIGN AT THE ENTRANCE TO THE SUBDIVISION OR PROPOSED DEVELOPMENT
9. SERVICE CONDUITS SHALL BE PLACED AS DIRECTED BY INTEGRAL ENERGY, NBN / TELSTRA, AND AS REQUIRED BY THE RELEVANT SERVICE AUTHORITY AND AS PER SERVICE AUTHORITY APPROVED PLANS
10. STREET SIGNS REQUIRED WHERE SHOWN. STREET SIGNS TO COUNCIL STANDARD SHALL BE INSTALLED BY THE CONTRACTOR.
11. SIGNPOSTING AND LINEMARKING TO CONFORM WITH AS1742.2 & AS1743. RAISED RETRO-REFLECTIVE PAVEMENT MARKERS TO CONFORM WITH AS1906 & AS1743.
12. KERB RAMP CROSSINGS TO BE PROVIDED WHERE SHOWN ON PLAN AND CONSTRUCTED AS DETAILED AND TO COUNCIL STANDARDS
13. NO TREES ARE TO BE REMOVED OR LOPPED OTHER THAN THOSE SHOWN AND THOSE IN ROAD RESERVES, WITHOUT COUNCILS WRITTEN PERMISSION. A TREE INSPECTION WITH COUNCIL SHALL BE ARRANGED ONCE LOTS HAVE BEEN PEGGED.
14. ALL NEW WORKS ARE TO MAKE SMOOTH JUNCTIONS WITH ALL EXISTING CONDITIONS. AC JOINTS TO BE SAW CUT AT CONNECTION TO EXISTING PAVEMENT. THE CONTRACTOR IS TO MAKE ALL DUE ALLOWANCES FOR WORKS DURING CONSTRUCTION.
15. SUBSOIL DRAINAGE TO BE PROVIDED BEHIND KERBING AS PER APPROVED PLANS AND AS DIRECTED BY COUNCIL OR THE CERTIFIER DURING CONSTRUCTION.
16. THE THICKNESS OF ROAD PAVEMENTS SHALL BE CONFIRMED BY THE CONTRACTOR UPON COMPLETION OF SUBGRADE TESTING UNDERTAKEN BY THE CONTRACTOR.
17. SERVICES TO EXISTING DEVELOPMENTS ARE TO BE MAINTAINED AT ALL TIMES.
18. PROPOSED SERVICES CROSSING EXISTING ROADS SHALL BE THRUST BORED UNDER THE ROAD SO AS NOT TO DAMAGE EXISTING SURFACES.
19. CONTRACTOR IS TO VERIFY THE LOCATION OF ALL EXISTING SERVICES WITH EACH RELEVANT AUTHORITY PRIOR TO COMMENCEMENT OF CONSTRUCTION. ANY DAMAGE TO SERVICES SHALL BE REPAIRED BY THE CONTRACTOR OR THE RELEVANT AUTHORITY AT THE CONTRACTOR'S EXPENSE. SERVICES SHOWN ON THESE PLANS ARE ONLY THOSE EVIDENT AT THE TIME OF SURVEY. ANY UTILITIES ADJUSTMENTS REQUIRED TO BE AT THE CONTRACTORS EXPENSE.
20. ENSURE ADEQUATE TRENCH FOUNDATION AND BEDDING COMPACTION SPECIFICALLY ADJACENT TO DRAINAGE STRUCTURES AND PROTECTION TO PIPES FROM CONSTRUCTION TRAFFIC. CRACKED STORMWATER PIPES WILL NOT BE ACCEPTED.
21. PROVIDE GALVANISED STEEL KERB OUTLETS PLACED IN KERB ON LOW SIDE OF LOTS, 500mm FROM BOUNDARY OR WHERE SHOWN. PROVIDE SUITABLE ADAPTOR TO ALLOW CONNECTION OF 90mm DIA. S.W.PIPE IN ACCORDANCE WITH COUNCIL STANDARDS
22. NO MATERIALS TO BE STOCKPILED ON FUTURE ALLOTMENTS WITHOUT APPROVAL IN WRITING FROM THE CLIENTS REPRESENTATIVE.
23. MINIMUM SITE DISTURBANCE AND MAXIMUM VEGETATION AND TREE PRESERVATION TO BE MAINTAINED AT ALL TIMES.
24. EROSION AND SILT PROTECTION MEASURES ARE TO BE MAINTAINED AT ALL TIMES AND THE LENGTH OF TRENCH OPENINGS MINIMISED.
25. THE CONTRACTORS ITP SHALL ALLOW FOR A HOLD POINT TO ALLOW CHECK LEVELS AND PROOF ROLL PRIOR TO PLACEMENT OF
    - SUB BASE COURSE
    - BASE COURSE MATERIAL
    - WEARING COURSE MATERIAL, PRIME COAT TWO WEEKS PRIOR TO AC SEAL, THICKNESS OF AC SEAL AS SPECIFIED
26. ALL PIPES TO BE SOCKET/SPIGOT RUBBER RING JOINT FRC PIPES CLASS '3' OR REINFORCED CONCRETE CLASS '3'. UNLESS NOTED OTHERWISE.
27. GRATES TO COMPLY WITH COUNCIL STANDARDS, ALL GRATES TO BE CYCLE FRIENDLY GALVANISED BOLT DOWN TYPE.
28. STEP IRONS REQUIRED IN PITS GREATER THAN 1.0m DEPTHS.
29. THE CONTRACTOR WILL BE RESPONSIBLE FOR THE FULL QA DOCUMENTATION OF THE PROJECT TO ENSURE WORKS MEET THE RELEVANT SECTIONS OF THE CC FOR ROADS AND DRAINAGE WORKS. A COMPLETE ITP PLAN SHALL BE SUBMITTED TO THE SUPERINTENDENT FOR APPROVAL PRIOR TO WORKS COMMENCING ON SITE, COVERING ALL ASPECTS OF THE CONTRACT.

GENERAL NOTES

30. ALL WORKS ARE TO BE SETOUT BY A REGISTERED SURVEYOR.
31. THE CLIENT WILL PREPARE WAE DRAWINGS AT COMPLETION TO ENSURE THE WORKS MEET THE REQUIREMENTS OF THE DESIGN.
32. A TRAFFIC CONTROL PLAN IS TO BE SUBMITTED TO COUNCIL BY THE CONTRACTOR FOR APPROVAL PRIOR TO WORKS COMMENCING.
33. CONTRACTOR IS TO PROVIDE A 3m LONG LENGTH OF 100Ø SUBSOIL DRAINAGE LINE ON THE UPSTREAM SIDE OF DRAINAGE PITS, INCLUDING GEOFABRIC SOCK AND NOM. 20mm GRAVEL
34. ALL DRAINAGE TRENCHES WITHIN THE ROAD RESERVE ARE TO BE BACKFILLED WITH CLEAN SHARP SAND.
35. SUB-BASE AND BASE MATERIALS FOR ROADS MUST COMPLY WITH RMS SPECIFICATION 3051. ALL OTHER ROAD PAVEMENT MATERIALS MUST COMPLY WITH THE RELEVANT RMS SPECIFICATION.
36. ALL ROADS ARE TO HAVE A TEMPORARY SINGLE COAT SEAL APPLIED PRIOR TO LAYING OF THE ASPHALTIC CONCRETE SEAL. AC TO BE BONDED.
37. POWER & LIGHT POLES TO HAVE A 1m X 1m ISOLATION ZONE REGARDLESS OF LOCATION.
38. ALL INTER-ALLOTMENT PIPELINES TO HAVING RODDING EYES IMMEDIATELY DOWNSTREAM OF ALL SLOPE JUNCTIONS.
39. CONCRETE PATHS, DRIVEWAYS, & BATTLE-AXE HANDLES TO BE BONDED PENDING COMPLETION OF SERVICES IN ACCORDANCE WITH COUNCIL REQUIREMENTS AND AS DIRECTED BY THE PRINCIPAL
40. ALL MAJOR & NON-STANDARD STRUCTURES TO HAVE ENGINEERING CERTIFICATION.
41. HIGH EROSION AREAS, INCLUDING BATTERS TO BE STABILISED WITHIN 7 DAYS OF COMPLETION OF WORKS AND EARLIER IF DIRECTED BY THE SUPERINTENDENT.
42. ALL STABILISED WORKS ARE TO BE MAINTAINED UNTIL EXPIRY OF MAINTENANCE PERIOD.
43. ALL STRABILISED WORKS ARE TO BE MAINTAINED UNTIL EXPIRY OF MAINTENANCE PERIOD. OVERFLOW PATHS TO BE FORMED AT THE TIME OF CONSTRUCTION TO SUIT DESIGN ARI
44. VARIATIONS NEED TO BE APPROVED PRIOR TO COMMENCEMENT OF WORK. IF IN DOUBT, CONTACT ACOR CONSULTANTS

EARTHWORKS NOTES

1. EARTHWORKS TO BE CARRIED OUT TO THE SATISFACTION OF COUNCIL'S AND RELEVANT AUSTRALIAN STANDARD AND GEOTECH ENGINEER. UNSOUND MATERIALS ARE TO BE REMOVED FROM ROADS AND LOTS AND TESTED PRIOR TO FILLING. THE CONTRACTOR IS TO PROVIDE PLANS OF TEST LOCATIONS AND TEST CERTIFICATES AS PER THE SPECIFICATION WHERE REQUIRED. THE CONTRACTOR MUST ENSURE COUNCIL APPROVAL OF MATERIALS, PRIOR TO DELIVERY TO SITE.
2. DEWATER AND REMOVE SLUDGE FROM EXISTING DAM - ENSURE ALL DAM DEWATERING AND SLUDGE REMOVAL IS IN ACCORDANCE WITH SEPARATE REPORT BY OTHERS.
3. ALL EARTHWORKS TO BE APPROVED BY A GEOTECHNICAL ENGINEER TO LEVEL 1 MONITORING, SAMPLING, TESTING AND CERTIFICATION.
4. TOPSOIL FROM SITE FILLING AND REGRADING AREAS TO BE STRIPPED, STOCKPILED AND RESPREAD AS SHOWN ON PLAN. EXCESS MATERIAL TO BE CARTED OFFSITE TO APPROVED LOCATION. ALL SITE FILLING TO BE COMPACTED IN ACCORDANCE WITH AS3798 TO A MIN. OF 98% SMDD AT ±2% OF O.M.C. A GEOTECHNICAL CERTIFICATE FROM A N.A.T.A REGISTERED LABORATORY IS TO BE SUPPLIED BY CONTRACTOR.
5. WHERE THE SLOPE OF THE NATURAL SURFACE EXCEEDS ONE IN FOUR (1:4) BENCHES ARE TO BE CUT TO PREVENT SLIPPING OF THE PLACED FILL MATERIAL AS REQUIRED BY THE DEVELOPER'S GEOTECH ENGINEER TO STANDARD PRACTICE.
6. ALL BATTERS ARE TO SCARIFIED TO ASSIST WITH ADHESION OF TOP SOIL TO BATTER FACE.
7. PROVIDE MIN. 50mm - 75mm TOPSOIL WITH COUCH GRASS TURF ON ALL FOOTPATHS. ALL BARE AREAS OTHER THAN FOOTPATHS TO BE SOWN WITH SEED, FERTILISED AND HAY MULCHED TO COUNCIL'S SPECIFICATION. GRASS / TURF TO BE MAINTAINED BY CONTRACTOR AT ALL TIMES INCLUDING PERIODS OF INSUFFICIENT RAIN.
8. THE CONTROL TESTING OF EARTHWORKS SHALL BE IN ACCORDANCE WITH THE GUIDELINES IN AUSTRALIAN STANDARD 3798-1990. WHERE IT IS PROPOSED TO USED TEST METHOD AS1289 E8.1 OR AS1289 E82 TO DETERMINE THE FIELD DENSITY, A SAND REPLACEMENT METHOD SHALL BE USED TO CONFIRM THE RESULTS AS DIRECTED BY COUNCIL.
9. THE CONTRACTOR SHALL CONTROL SEDIMENTATION, EROSION AND POLLUTION DURING CONSTRUCTION IN ACCORDANCE WITH THE REQUIREMENTS OF COUNCIL AND APPROVED PLANS.
10. A 1.2 METER WIDE, CONTINUOUS STRIP OF COUCH GRASS SHALL BE PLACED BEHIND THE BACK OF ALL KERBS AND PERIMETER OF ALL INLET PITS IMMEDIATELY AFTER THE COMPLETION OF THE FOOTPATH GRADING AND CONSTRUCTION OF PITS RESPECTIVELY, MAINTAINED AND REPLACED AS REQUIRED DURING THE MAINTENANCE PERIOD. TURFING / LANDSCAPE GRASS SHALL ALSO BE PLACED TO THE FULL WIDTH OF ROAD SWALE DRAINS UPON COMPLETION.
11. SOIL AND SEDIMENT PROTECTION TO BE PROVIDED AND THOROUGHLY MAINTAINED AROUND DRAINAGE SYSTEM FOR THE DURATION OF WORKS. DIVERSION OF WATER AND THE PROTECTION OF WORKS IS THE CONTRACTORS RESPONSIBILITY.
12. LOTS REQUIRING FILL SHALL BE CONSTRUCTED TO LEVEL 1 SUPERVISION WITH TESTING AND DOCUMENTATION SUITABLE TO DETERMINE FUTURE LOT CLASSIFICATION.
13. CONTROLLED EARTHWORKS SHALL BE CERTIFIED BY A N.A.T.A REGISTERED LABROITORY. ALL TEST CERTIFICATION AND PLANS LOCATION TO BE SUBMITTED TO THE PRINCIPAL AND SHALL BE TO COUNCILS SATISFACTION

IMPORTANT NOTES

1. REFER TO PENRITH CITY COUNCIL STANDARD DRAWINGS FOR DETAILS OF THE FOLLOWING

1.1. STANDARD KERB & GUTTER, LAYBACKS & DISH CROSSING - SHEET 1of2 SD.1003/1

1.2. STANDARD KERB & GUTTER, LAYBACKS & DISH CROSSING - SHEET 2of2 SD.1003/2

1.3. STANDARD FOOTPATH DETAIL SD.1001

1.4. VEHICULAR CROSSING, REFER TO DRAWING SD.1004

CIVIL LEGEND PROPOSED

K&G	KERB AND GUTTER
DC	DISH CROSSING
56.2	FINISHED SURFACE CONTOUR MINOR
57	FINISHED SURFACE CONTOUR MAJOR
60.5	EXISTING SURFACE CONTOUR
1:4	BATTER
01/6	STORMWATER DRAINAGE STRUCTURE WITH NUMBER
Ø375	STORMWATER DRAINAGE LINE, SIZE AND FLOW DIRECTION
	PROPOSED ROAD PAVEMENT
	PROPOSED FOOTPATH PAVEMENT
	PERVIOUS ACCESS ROAD
	BUILDING SETBACKS
	EASEMENT
SSD	SUBSOIL DRAINAGE
	MINIMUM LOT SIZE 6000m²
	MINIMUM LOT SIZE 2000m²
	STORMWATER OVERLAND FLOW PATH
	SAFETY FENCE

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North

-1 0 1cm at full size 10cm 20cm

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Project
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158-164 OLD BATHURST ROAD
EMU PLAINS, NSW 2750

Drawing Title
NOTES AND LEGENDS

Drawn	Date	Scale A1	Q.A. Check	Date
UF	SEP 2022	NOT TO SCALE		
Designed	Project No.	Dwg. No.	Issue	
VG	NSW211637	C1.101	D	

Sep 13, 17:12 GMT+10 | R:\Projects\2022\NSW\NSW211637 EMU PLAINS INDUSTRIAL PARK\Civil\Drawings\C1.101 NOTES AND LEGENDS.dwg | Oct 17, 2022 - 12:47pm | uf

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1:1000 (AT A1)
1:2000 (AT A3)

20 10 0 10 20 30 40 50 60 70 80 90 100
METRES

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EMU PLAINS, NSW 2750

Drawing Title
SUBDIVISION
PLAN

Drawn	Date	Scale A1	Q.A. Check	Date
UF	SEP 2022	1:1000		
Designed	Project No.		Dwg. No.	Issue
VG	NSW211637		C1.401	D

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Oct 17, 2022 - 4:28pm

LEGEND

	DISTURBED AREA
100	TREE TO BE RETAINED (326)
102	TREE TO BE REMOVED (400)

NOTE:
- COORDINATION WITH GROUP GSA AND CIVICA

TREE TAG No.						
1	93	284	373	478	592	650
2	102	285	374	479	593	651
3	104	286	375	480	594	652
4	105	287	376	481	595	653
5	106	288	377	482	596	654
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7	112	290	379	484	598	656
8	118	291	380	485	599	657
9	122	292	381	486	600	658
10	183	293	382	488	601	659
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14	220	297	386	505	605	663
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26	246	314	398	517	617	675
27	247	315	399	518	618	676
28	248	325	400	519	619	677
29	249	329	401	520	620	678
30	250	330	402	522	621	679
31	251	334	403	523	622	690
32	252	336	404	524	623	691
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34	254	340	406	531	625	693
35	255	341	407	535	626	694
36	256	349	408	538	627	695
37	257	350	409	551	628	696
38	258	352	410	571	629	697
39	260	353	411	572	630	698
40	265	354	412	573	631	699
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58	274	363	463	582	640	708
59	275	364	466	583	641	709
60	276	365	469	584	642	722
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62	278	367	472	586	644	722
63	279	368	473	587	645	723
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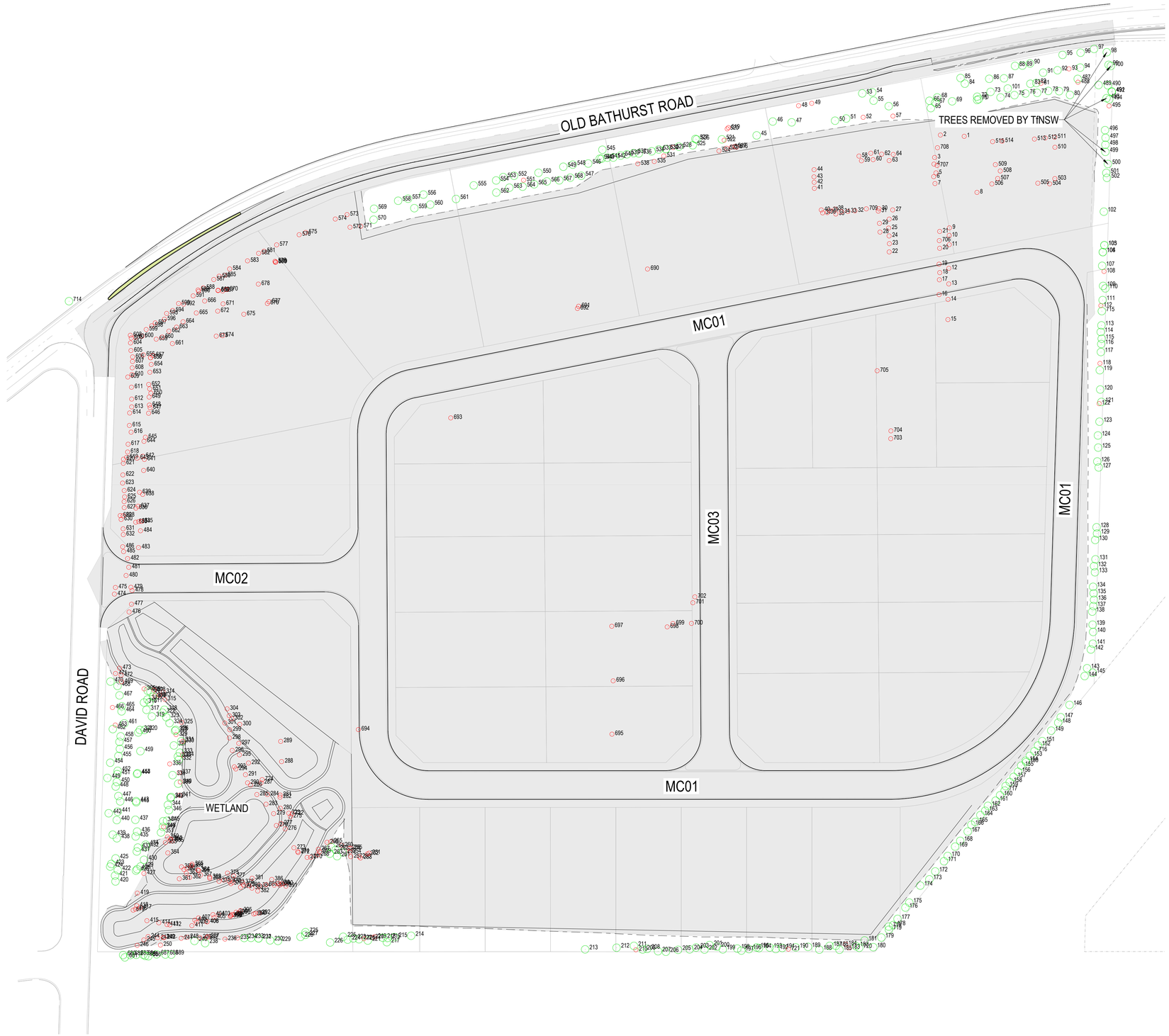

1:1000 (AT A1)
1:2000 (AT A3)

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METRES

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Project
EMU PLAINS INDUSTRIAL PARK

158-164 OLD BATHURST ROAD
EMU PLAINS, NSW 2750

Drawing Title
TREE MANAGEMENT PLAN

Drawn	Date	Scale A1	Q.A. Check	Date
UF	SEP 2022	1:1000		
Designed	Project No.		Dwg. No.	Issue
VG	NSW211637		C1.501	D

Dwg. C1.501 Oct 17, 2022 - 4:28pm

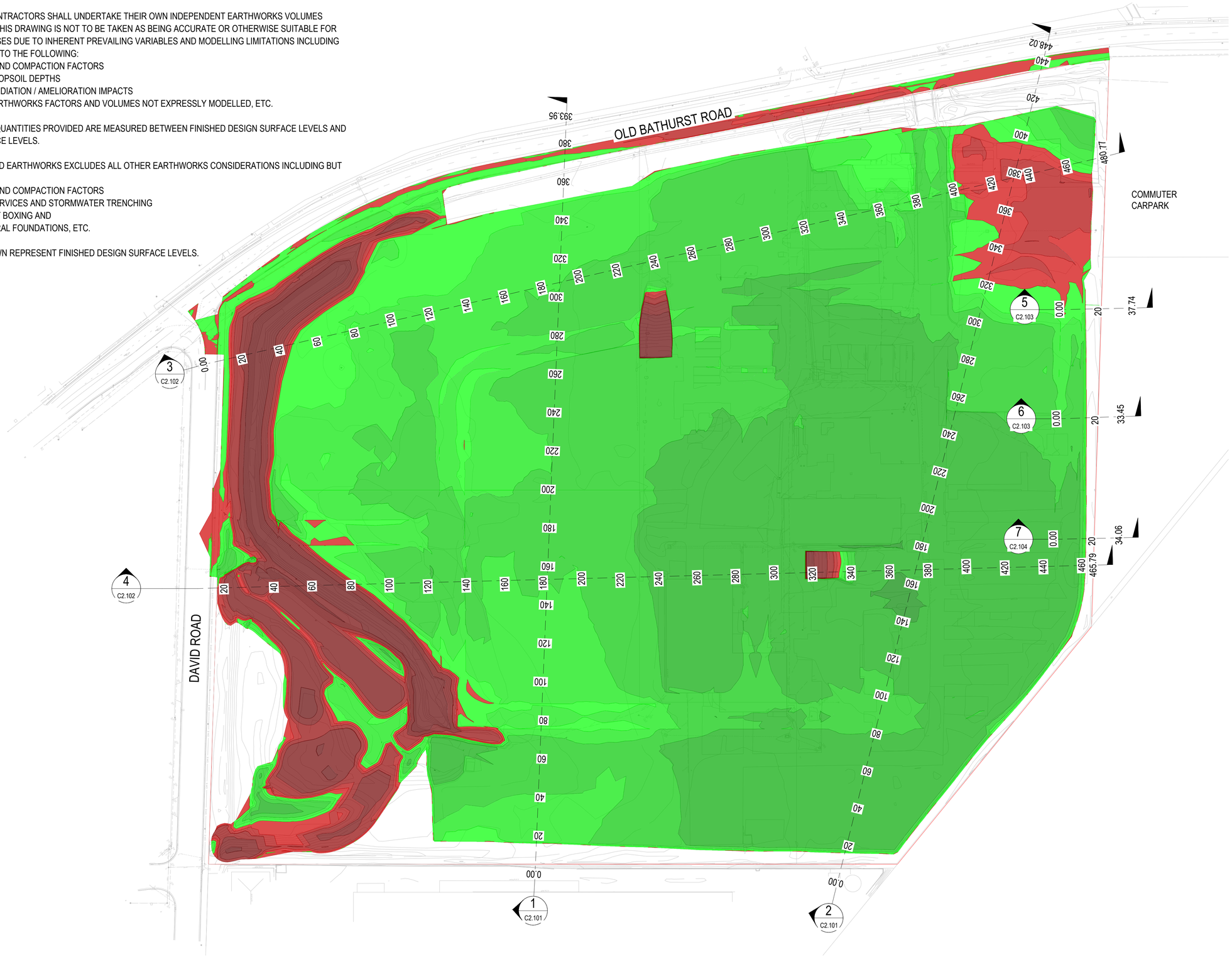
CUT FILL LEGEND

LOWER VALUE		UPPER VALUE	COLOUR
-5.00 m	to	-2.00 m	
-2.00 m	to	-1.00 m	
-1.00 m	to	-0.50 m	
-0.50 m	to	-0.25 m	
-0.25 m	to	0.00 m	
0.000 m	to	0.250 m	
0.250 m	to	0.500 m	
0.500 m	to	1.000 m	
1.000 m	to	2.000 m	
2.000 m	to	5.000 m	

CUT = 24,390m³
FILL = 105,125m³
IMPORT = 80,735m³

NOTES:

1. TENDERERS / CONTRACTORS SHALL UNDERTAKE THEIR OWN INDEPENDENT EARTHWORKS VOLUMES CALCULATIONS. THIS DRAWING IS NOT TO BE TAKEN AS BEING ACCURATE OR OTHERWISE SUITABLE FOR COSTING PURPOSES DUE TO INHERENT PREVAILING VARIABLES AND MODELLING LIMITATIONS INCLUDING BUT NOT LIMITED TO THE FOLLOWING:
   - BULKING AND COMPACTION FACTORS
   - APPLIED TOPSOIL DEPTHS
   - SOIL REMEDIATION / AMELIORATION IMPACTS
   - OTHER EARTHWORKS FACTORS AND VOLUMES NOT EXPRESSLY MODELLED, ETC.
2. THE INDICATIVE QUANTITIES PROVIDED ARE MEASURED BETWEEN FINISHED DESIGN SURFACE LEVELS AND EXISTING SURFACE LEVELS.
3. THE DOCUMENTED EARTHWORKS EXCLUDES ALL OTHER EARTHWORKS CONSIDERATIONS INCLUDING BUT NOT LIMITED TO;
   - BULKING AND COMPACTION FACTORS
   - UTILITY SERVICES AND STORMWATER TRENCHING
   - PAVEMENT BOXING AND
   - STRUCTURAL FOUNDATIONS, ETC.
4. CONTOURS SHOWN REPRESENT FINISHED DESIGN SURFACE LEVELS.



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1:1000 (AT A1)
1:2000 (AT A3)

20 10 0 10 20 30 40 50 60 70 80 90 100
METRES

NOT FOR CONSTRUCTION

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Issue	Description	Date	Drawn	Approved
D	ISSUE FOR DEVELOPMENT APPLICATION	17.10.22	UF	VG
C	ISSUE FOR DEVELOPMENT APPLICATION	11.10.22	UF	VG
A	ISSUE FOR COORDINATION	14.09.22	UF	VG

-1 0 1cm at full size 10cm 20cm

North

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Project
EMU PLAINS INDUSTRIAL PARK
158-164 OLD BATHURST ROAD
EMU PLAINS, NSW 2750

Drawing Title
BULK EARTHWORKS PLAN

Drawn	Date	Scale A1	Q.A. Check	Date
UF	SEP 2022	1:1000		
Designed	Project No.		Dwg. No.	Issue
VG	NSW211637		C2.001	D

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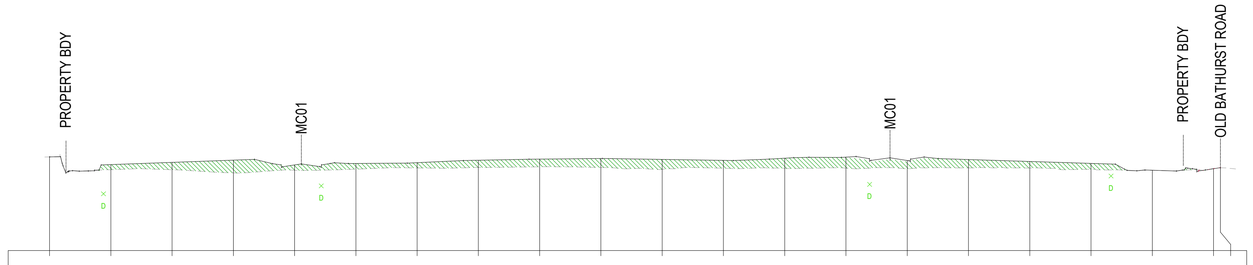
Oct 17, 2022 - 4:29pm



DATUM R.L 19.2

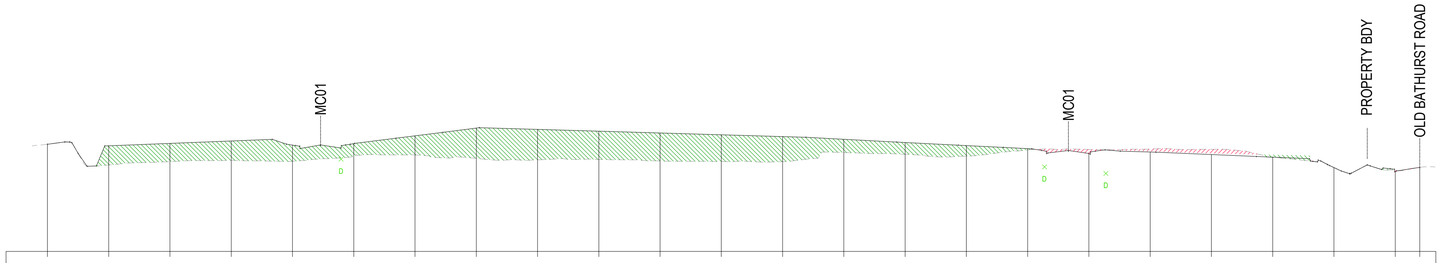
CHAINAGE	CUT / FILL DEPTH	DESIGN LEVELS	EXISTING LEVELS
0	0.00	25.31	25.31
20	0.33	24.81	24.48
40	0.48	24.95	24.47
60	0.84	25.10	24.26
80	0.35	24.79	24.44
100	0.37	24.88	24.51
120	0.34	24.93	24.59
140	0.48	25.09	24.62
160	0.50	25.17	24.66
180	0.59	25.21	24.62
200	0.65	25.15	24.50
220	0.51	25.08	24.57
240	0.67	25.23	24.56
260	0.72	25.30	24.58
280	0.54	25.08	24.54
300	0.55	25.14	24.59
320	0.43	25.02	24.59
340	0.39	24.89	24.50
360	-0.00	24.44	24.44
380	-0.02	24.54	24.56
382.25	-0.00	24.61	24.61

SITE SECTION 01

A1 Horizontal Scale 1 : 1000
A1 Vertical scale 1 : 200

LEGEND

- PROPOSED CUT
- PROPOSED FILL



DATUM R.L 18.3

CHAINAGE	CUT / FILL DEPTH	DESIGN LEVELS	EXISTING LEVELS
0	0.00	25.29	25.29
20	1.25	25.19	23.94
40	1.19	25.35	24.16
60	1.26	25.50	24.24
80	1.06	25.24	24.17
100	0.83	25.34	24.50
120	1.25	25.84	24.59
140	1.97	26.35	24.38
160	1.99	26.26	24.27
180	1.85	26.14	24.30
200	1.83	26.03	24.20
220	1.75	25.91	24.16
240	1.63	25.79	24.16
260	0.86	25.62	24.75
280	0.77	25.41	24.64
300	0.69	25.21	24.52
320	0.09	25.01	24.92
340	-0.27	24.69	24.96
360	-0.20	24.78	24.98
380	-0.34	24.62	24.96
400	0.01	24.45	24.44
420	-0.00	23.77	23.77
440	-0.06	23.52	23.58
448.02	-0.00	23.78	23.78

SITE SECTION 02

A1 Horizontal Scale 1 : 1000
A1 Vertical scale 1 : 200

1:1000 (AT A1)
1:2000 (AT A3)
20 10 0 10 20 30 40 50 60 70 80 90 100
METRES

V 1:200 (AT A1)
4 2 0 4 8 12 16 20
METRES

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C	ISSUE FOR DEVELOPMENT APPLICATION	11.10.22	UF	VG
A	ISSUE FOR COORDINATION	14.09.22	UF	VG

North

-1 0 1cm at full size 10cm 20cm

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Project
EMU PLAINS INDUSTRIAL PARK
158-164 OLD BATHURST ROAD
EMU PLAINS, NSW 2750

Drawing Title
BULK EARTHWORKS SECTIONS
SECTION 01 - 02

Drawn	Date	Scale A1	Q.A. Check	Date
UF	SEP 2022	AS SHOWN		
Designed	Project No.	Dwg. No.	Issue	
VG	NSW211637	C2.101	D	

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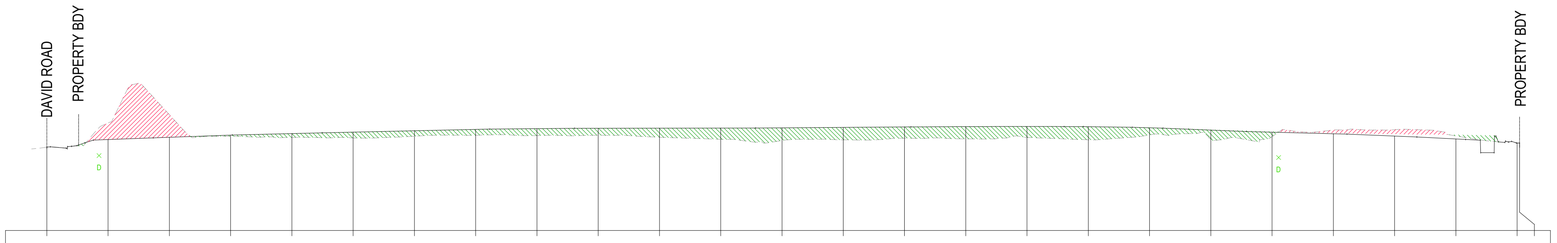
Oct 17, 2022 - 4:29pm

LEGEND

- PROPOSED CUT
- PROPOSED FILL

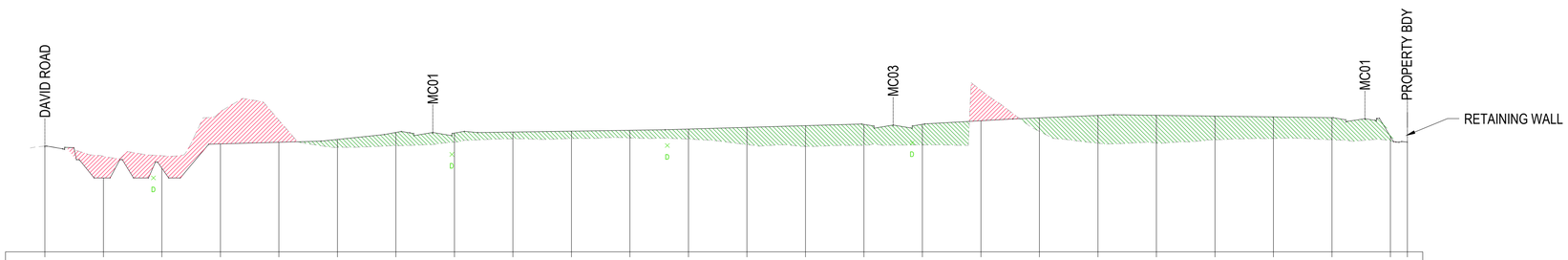


DATUM R.L 18.4

CHAINAGE	CUT / FILL DEPTH	DESIGN LEVELS	EXISTING LEVELS
0	0.00	23.84	23.84
20	-1.08	24.34	25.42
40	-1.48	24.49	25.97
60	0.08	24.63	24.54
80	0.25	24.73	24.48
100	0.38	24.82	24.44
120	0.36	24.91	24.55
140	0.39	25.00	24.61
160	0.45	25.05	24.60
180	0.46	25.08	24.61
200	0.60	25.08	24.49
220	0.73	25.09	24.35
240	0.83	25.10	24.27
260	0.81	25.13	24.32
280	0.74	25.16	24.42
300	0.80	25.18	24.38
320	0.72	25.19	24.47
340	0.86	25.18	24.32
360	0.47	25.11	24.64
380	0.58	24.96	24.37
400	0.29	24.82	24.53
420	-0.24	24.72	24.96
440	-0.42	24.57	24.99
460	-0.20	24.37	24.58
480	0.00	24.11	24.11
480.77		24.10	

SITE SECTION 03

A1 Horizontal Scale 1 : 1000
A1 Vertical scale 1 : 200



DATUM R.L 16.9

CHAINAGE	CUT / FILL DEPTH	DESIGN LEVELS	EXISTING LEVELS
0	-0.01	24.11	24.12
20	-1.48	21.95	23.43
40	-0.86	22.61	23.47
60	-2.19	24.27	26.46
80	-1.51	24.38	25.89
100	0.54	24.58	24.04
120	0.91	25.06	24.15
140	0.63	25.01	24.39
160	0.46	25.08	24.62
180	0.50	25.14	24.64
200	0.52	25.20	24.68
220	0.69	25.29	24.60
240	1.18	25.40	24.22
260	1.42	25.52	24.10
280	1.44	25.61	24.17
300	1.41	25.61	24.20
320	-2.08	25.85	27.94
340	0.92	26.05	25.13
360	1.90	26.22	24.32
380	1.89	26.22	24.33
400	1.62	26.17	24.55
420	1.48	26.12	24.64
440	1.51	26.07	24.55
460	0.29	24.77	24.48
465.79		24.39	

SITE SECTION 04

A1 Horizontal Scale 1 : 1000
A1 Vertical scale 1 : 200

1:1000 (AT A1)
1:2000 (AT A3)
20 10 0 10 20 30 40 50 60 70 80 90 100
METRES

V 1:200 (AT A1)
4 2 0 4 8 12 16 20
METRES

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Issue	Description	Date	Drawn	Approved
D	ISSUE FOR DEVELOPMENT APPLICATION	17.10.22	UF	VG
C	ISSUE FOR DEVELOPMENT APPLICATION	11.10.22	UF	VG
A	ISSUE FOR COORDINATION	14.09.22	UF	VG

North

1 0 1cm at full size 10cm 20cm

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Project
EMU PLAINS INDUSTRIAL PARK
158-164 OLD BATHURST ROAD
EMU PLAINS, NSW 2750

Drawing Title
BULK EARTHWORKS SECTIONS
SECTION 03 - 04

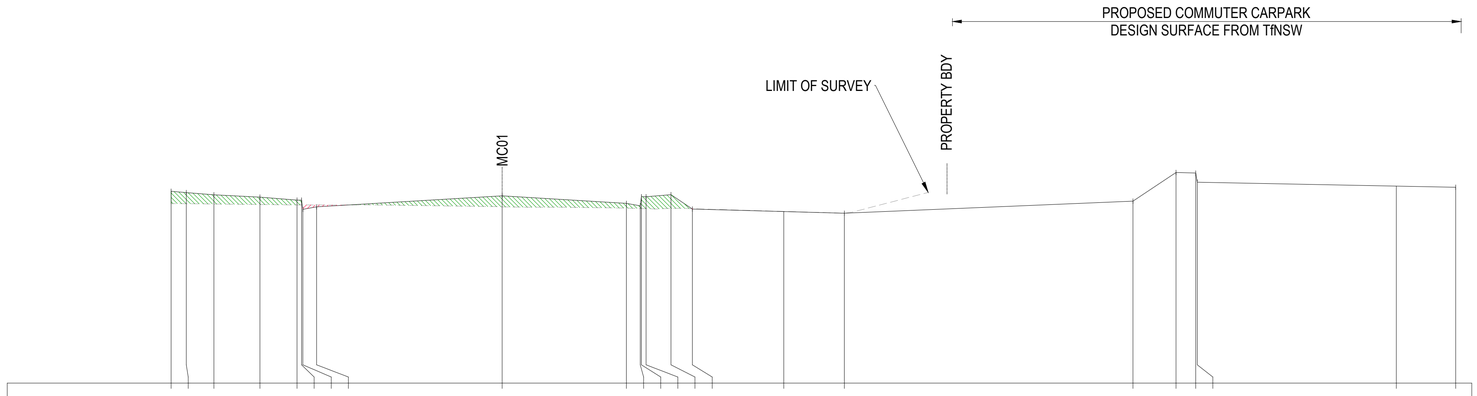
Drawn	Date	Scale A1	Q.A. Check	Date
UF	SEP 2022	AS SHOWN		

Designed	Project No.	Dwg. No.	Issue
VG	NSW211637	C2.102	D

Sep 96, C:\21\21\0\1\0\0\0\Mwm\0\0\0

LEGEND

- PROPOSED CUT
- PROPOSED FILL

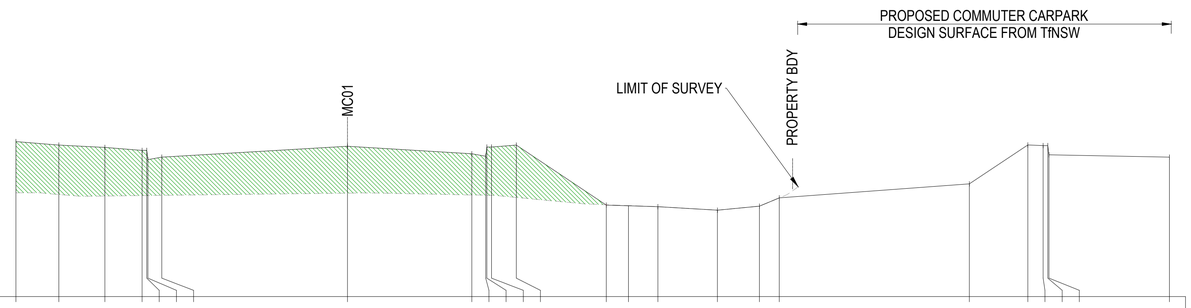


DATUM R.L 22

CHAINAGE	CUT / FILL DEPTH	DESIGN LEVELS	EXISTING LEVELS
0	0.20	25.13	24.93
0.49	0.18	25.11	24.93
1.4	0.15	25.07	24.92
2.9	0.12	25.04	24.91
4.11	0.08	24.99	24.91
4.26	0.08	24.99	24.91
4.3	-0.07	24.84	24.91
4.75	-0.03	24.88	24.91
10.81	0.18	25.06	24.88
14.86	0.08	24.93	24.86
15.32	0.04	24.89	24.85
15.35	0.19	25.04	24.85
15.51	0.20	25.04	24.85
16.32	0.22	25.07	24.85
17.02	-0.01	24.84	24.85
20	-0.00	24.80	24.80
21.98	0.00	24.77	24.77
31.4		24.97	
32.81		25.44	
33.45		25.43	
33.5		25.28	
40		25.22	
41.94		25.20	

SITE SECTION 05

A1 Horizontal Scale 1 : 100
A1 Vertical scale 1 : 50



DATUM R.L 23

CHAINAGE	CUT / FILL DEPTH	DESIGN LEVELS	EXISTING LEVELS
0	0.84	25.53	24.69
1.4	0.81	25.47	24.66
2.91	0.79	25.43	24.64
4.12	0.74	25.38	24.65
4.27	0.74	25.38	24.65
4.31	0.59	25.23	24.65
4.76	0.62	25.27	24.65
10.83	0.77	25.45	24.69
14.88	0.67	25.33	24.66
15.34	0.64	25.29	24.65
15.38	0.79	25.44	24.65
15.53	0.79	25.44	24.65
16.34	0.85	25.47	24.62
19.28	-0.01	24.49	24.50
20	-0.00	24.48	24.48
20.96	0.00	24.47	24.47
22.9	0.00	24.41	24.41
24.27	0.00	24.47	24.47
24.92	0.00	24.61	24.61
31.13		24.84	
33.04		25.47	
33.54		25.46	
33.69		25.46	
33.73		25.31	
37.66		25.27	

SITE SECTION 06

A1 Horizontal Scale 1 : 100
A1 Vertical scale 1 : 50

H 1:100 (AT A1) 2 1 0 1 2 3 4 5 6 7 8 9 10 METRES

1:50 (AT A1)
1:100 (AT A3) 1 0 1 2 3 4 5 METRES

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C	ISSUE FOR DEVELOPMENT APPLICATION	11.10.22	UF	VG
A	ISSUE FOR COORDINATION	14.09.22	UF	VG

North

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Project
EMU PLAINS INDUSTRIAL PARK
158-164 OLD BATHURST ROAD
EMU PLAINS, NSW 2750

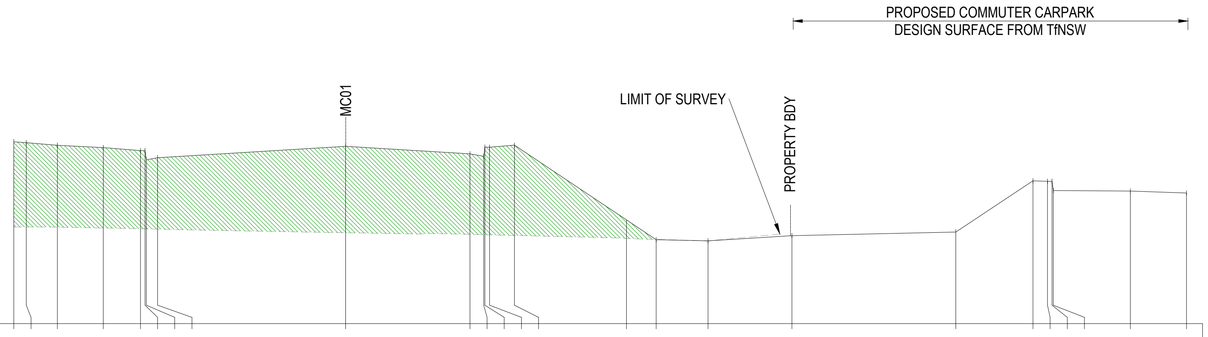
Drawing Title
BULK EARTHWORKS SECTIONS
SECTION 05 - 06

Drawn	Date	Scale A1	Q.A. Check	Date
UF	SEP 2022	AS SHOWN		
Designed	Project No.		Dwg. No.	Issue
VG	NSW211637		C2.103	D

Oct 17, 2022 - 4:29pm

LEGEND

- PROPOSED CUT
- PROPOSED FILL



DATUM R.L 23

CHAINAGE	CUT / FILL DEPTH	DESIGN LEVELS	EXISTING LEVELS
0	1.39	25.97	24.58
0.41	1.37	25.95	24.58
1.42	1.34	25.91	24.57
2.92	1.31	25.87	24.56
4.13	1.28	25.82	24.55
4.28	1.28	25.82	24.55
4.32	1.13	25.67	24.55
4.69	1.16	25.71	24.54
10.83	1.41	25.89	24.48
14.89	1.31	25.77	24.46
15.34	1.28	25.73	24.45
15.38	1.43	25.88	24.45
15.53	1.43	25.88	24.45
16.34	1.47	25.91	24.44
20	0.30	24.69	24.39
20.97	-0.00	24.37	24.37
22.66	0.00	24.35	24.35
25.4		24.44	
30.75		24.49	
33.27		25.33	
33.74		25.32	
33.89		25.32	
33.93		25.17	
36.45		25.16	
38.28		25.13	

SITE SECTION 07

A1 Horizontal Scale 1 : 100
A1 Vertical scale 1 : 50

H 1:100 (AT A1) 2 1 0 1 2 3 4 5 6 7 8 9 10 METRES

1:50 (AT A1)
1:100 (AT A3) 1 0 1 2 3 4 5 METRES

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C	ISSUE FOR DEVELOPMENT APPLICATION	11.10.22	UF	VG
A	ISSUE FOR COORDINATION	14.09.22	UF	VG

-1 0 1cm at full size 10cm 20cm

North

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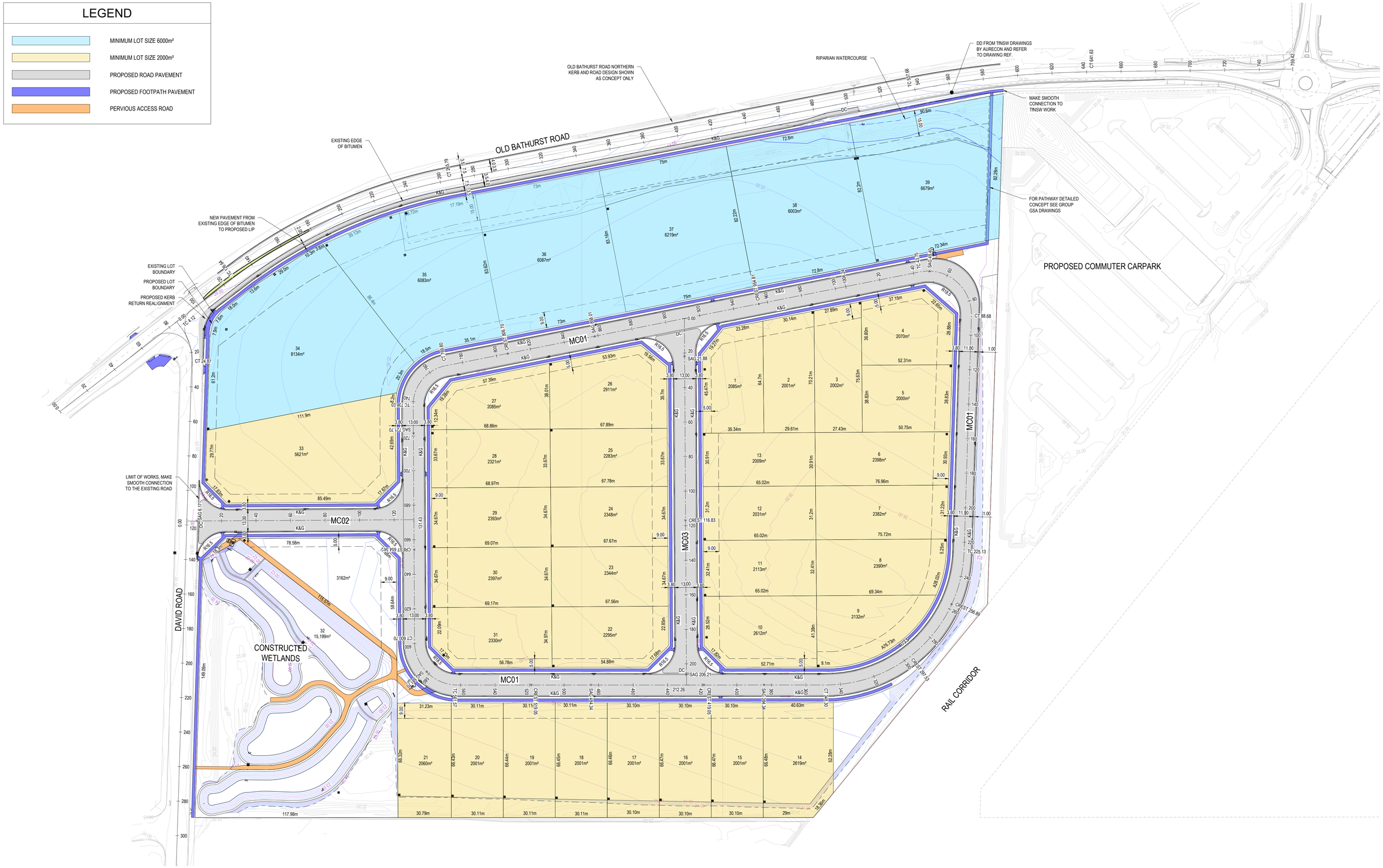
Project
EMU PLAINS INDUSTRIAL PARK
158-164 OLD BATHURST ROAD
EMU PLAINS, NSW 2750

Drawing Title
BULK EARTHWORKS SECTIONS
SECTION 07

Drawn	Date	Scale A1	Q.A. Check	Date
UF	SEP 2022	AS SHOWN		
Designed	Project No.		Dwg. No.	Issue
VG	NSW211637		C2.104	D

Oct 17, 2022 - 4:29pm



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1:1000 (AT A1)
1:2000 (AT A3)

20 10 0 10 20 30 40 50 60 70 80 90 100
METRES

NOT FOR CONSTRUCTION

This drawing has been assigned an electronic code that signifies the drawing has been checked and approved by:

Issue	Description	Date	Drawn	Approved
B	ISSUE FOR DEVELOPMENT APPLICATION	08.04.22	UF	VG
A	ISSUE FOR FINAL COORDINATION	05.04.22	UF	VG

1cm at full size 10cm 20cm

North

Client
601 HIGH STREET
PENRITH, NSW 2750
PHONE : (02) 4732 7777
PENRITH CITY COUNCIL

PLANNER
LEVEL 10, 70 PITT STREET
SYDNEY, NSW 2000
PHONE : (02) 9249 4100
gln. planning consulting strategy

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Baulkham Hills NSW 2153
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ACOR CONSULTANTS
ENGINEERS | MANAGERS | INFRASTRUCTURE PLANNERS | DEVELOPMENT CONSULTANTS

Project
EMU PLAINS INDUSTRIAL PARK
158-164 OLD BATHURST ROAD
EMU PLAINS, NSW 2750

Drawing Title
GENERAL ARRANGEMENT
SITEWORKS AND GRADING
SHEET 1

Drawn	Date	Scale A1	Q.A. Check	Date
UF	MAR 2022	1:500		
Designed	Project No.		Dwg. No.	Issue
VG	NSW211637		C3.001	B

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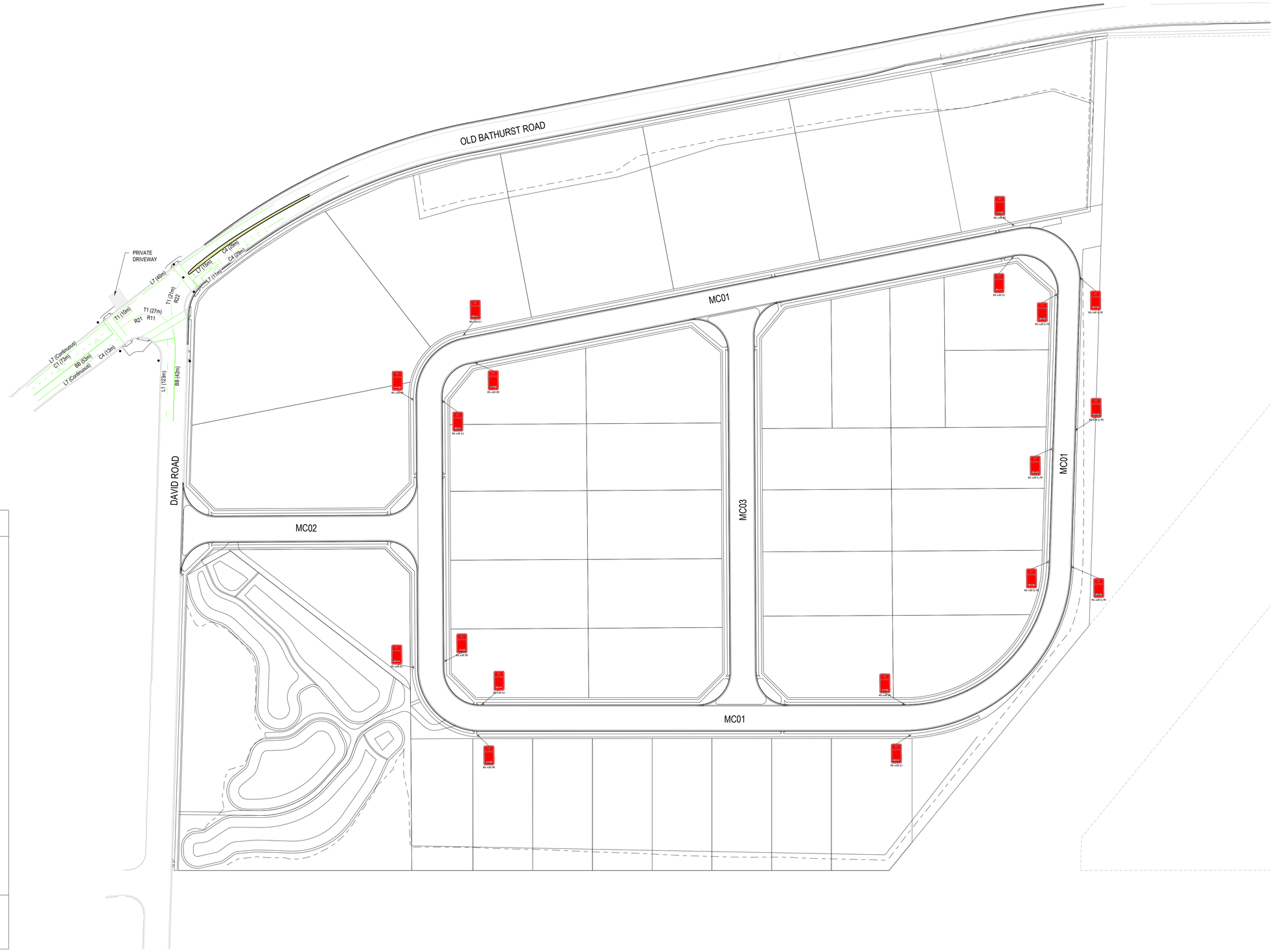
Oct 17, 2022 - 4:30pm



PAVEMENT MARKING & SIGNAGE LEGEND

●	PROPOSED TRAFFIC SIGN
●	TRAFFIC SIGNAL
100 / 100 / 100 — BB	DIVIDING BARRIER LINE - BOTH DIRECTIONS
150 — 100, 300, 100, 300 — C1	CONTINUITY LINE
150 — E4	EDGE LINE
100 — L3	LANE LINE
100 — 600, 600, 600, 600 — T1	TURN LINE
300 — 600, 600, 600, 600 — TB	GIVEWAY LINE
300 — TF	STOP LINE

NOTES

1. ALL PAVEMENT MARKING AND SIGNAGE SHALL BE IN ACCORDANCE WITH AS1742, 1743 & 2890 AND RMS

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1:1000 (AT A1)
1:2000 (AT A3)

20 10 0 10 20 30 40 50 60 70 80 90 100
METRES

NOT FOR CONSTRUCTION

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Issue	Description	Date	Drawn	Approved
D	ISSUE FOR DEVELOPMENT APPLICATION	17.10.22	UF	VG
C	ISSUE FOR DEVELOPMENT APPLICATION	11.10.22	UF	VG
A	ISSUE FOR COORDINATION	14.09.22	UF	VG

-1 0 1cm at full size 10cm 20cm

North

Client
601 HIGH STREET
PENRITH, NSW 2750
PHONE : (02) 4732 7777

PENRITH CITY COUNCIL

PLANNER
LEVEL 10, 70 PITT STREET
SYDNEY, NSW 2000
PHONE : (02) 9249 4100

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Project
EMU PLAINS INDUSTRIAL PARK

158-164 OLD BATHURST ROAD
EMU PLAINS, NSW 2750

Drawing Title
GENERAL ARRANGEMENT
SIGNAGE AND LINEMARKING

Drawn	Date	Scale A1	Q.A. Check	Date
UF	SEP 2022	1:1000		
Designed	**Project No.**		**Dwg. No.**	**Issue**
VG	NSW211637		C3.101	D

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Oct 17, 2022 - 4:30pm

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1:1000 (AT A1)
1:2000 (AT A3)

20 10 0 10 20 30 40 50 60 70 80 90 100
METRES

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Issue	Description	Date	Drawn	Approved
D	ISSUE FOR DEVELOPMENT APPLICATION	17.10.22	UF	VG
C	ISSUE FOR DEVELOPMENT APPLICATION	11.10.22	UF	VG
A	ISSUE FOR COORDINATION	14.09.22	UF	VG

-1 0 1cm at full size 10cm 20cm

North

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PENRITH, NSW 2750
PHONE : (02) 4732 7777

PENRITH CITY COUNCIL

PLANNER
LEVEL 10, 70 PITT STREET
SYDNEY, NSW 2000
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gln. planning consulting strategy

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Project
EMU PLAINS INDUSTRIAL PARK

158-164 OLD BATHURST ROAD
EMU PLAINS, NSW 2750

Drawing Title
GENERAL ARRANGEMENT
COMBINED SERVICES PLANS

Drawn	Date	Scale A1	Q.A. Check	Date
UF	SEP 2022	1:1000		
Designed	Project No.	Dwg. No.	Issue	
VG	NSW211637	C3.301	D	

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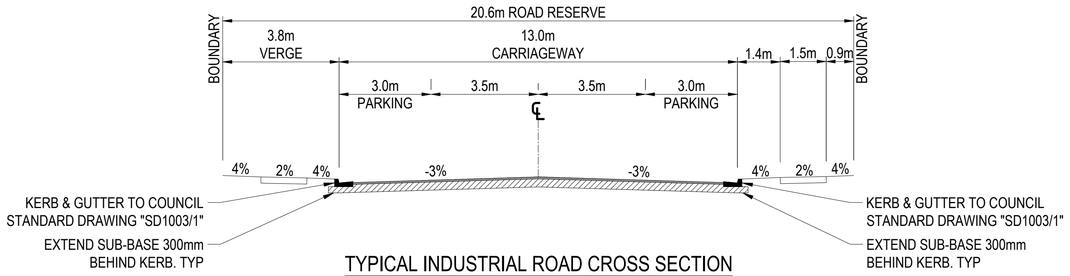
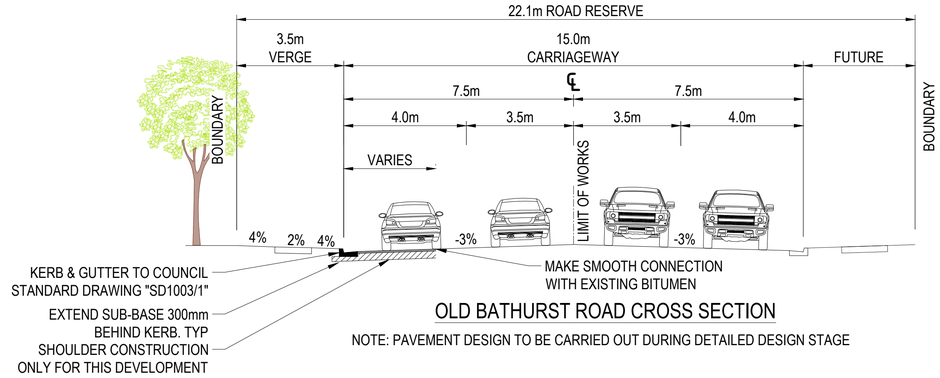


TYPICAL INDUSTRIAL ROAD CROSS SECTION

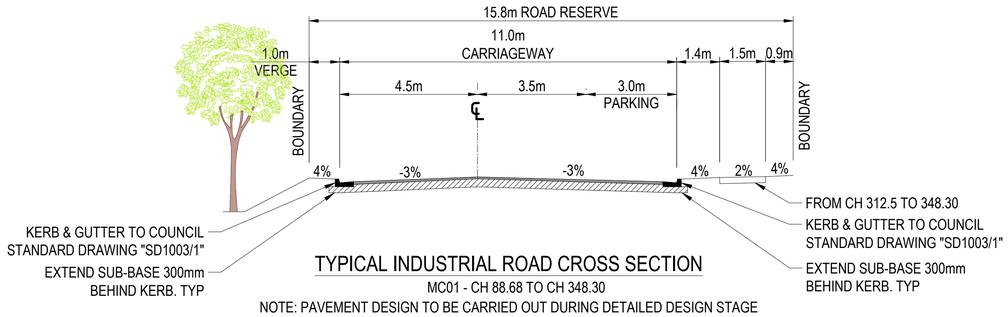
MC01 - MC02 - MC03

NOTE: PAVEMENT DESIGN TO BE CARRIED OUT DURING DETAILED DESIGN STAGE



OLD BATHURST ROAD CROSS SECTION

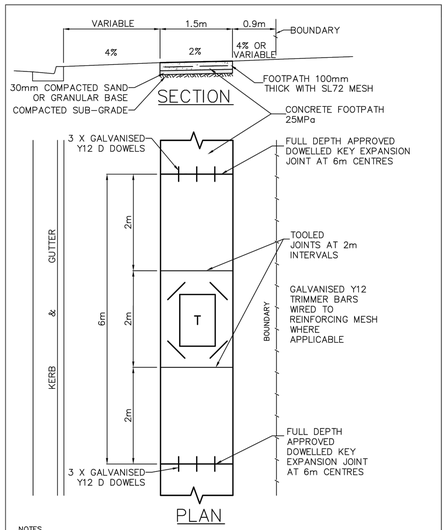
NOTE: PAVEMENT DESIGN TO BE CARRIED OUT DURING DETAILED DESIGN STAGE



TYPICAL INDUSTRIAL ROAD CROSS SECTION

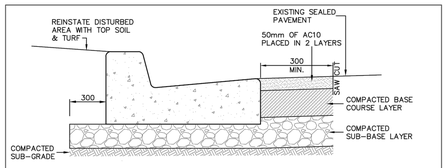
MC01 - CH 88.68 TO CH 348.30

NOTE: PAVEMENT DESIGN TO BE CARRIED OUT DURING DETAILED DESIGN STAGE



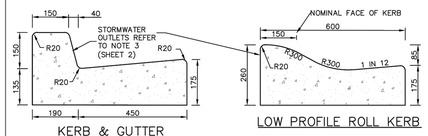
NOTES
1. LONGITUDINAL EDGING IS REQUIRED ON FOOTPATHS. ALL EXPANSION JOINTS SHALL ALSO BE EDGED.
2. THE FOOTPATH SHALL BE FINISHED WITH A BROOM FINISH PERPENDICULAR TO THE DIRECTION OF TRAVEL.
3. FOR MACHINE LAID FOOTPATHS, REFER TO SECTION 7 OF COUNCIL'S CONSTRUCTION SPECIFICATION.
4. FOR CYCLEWAYS, REFER TO SECTION 7 OF COUNCIL'S CONSTRUCTION SPECIFICATION.

DRAWN: M.WARDA	STANDARD FOOTPATH DETAILS	APPROVED:
PENRITH CITY COUNCIL		PLAN No. SD1001



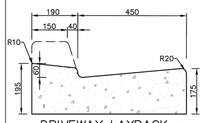
TYPICAL KERB & GUTTER RECONSTRUCTION

REFER NOTE 6 (SHEET 2)

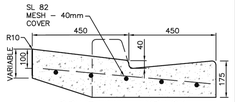


KERB & GUTTER

LOW PROFILE ROLL KERB

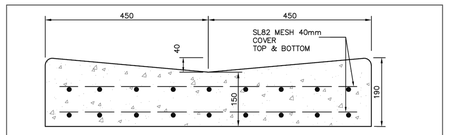


DRIVEWAY LAYBACK – RESIDENTIAL

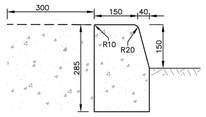


DRIVEWAY LAYBACK – COMMERCIAL & INDUSTRIAL AND LOW LEVEL RESIDENTAIL

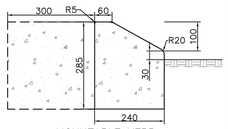
DRAWN:	STANDARD KERB & GUTTER, LAYBACKS & DISH CROSSING SHEET 1 OF 2	APPROVED:
PENRITH CITY COUNCIL		PLAN No: SD1003/1



REINFORCED DISH CROSSING



KERB EDGING

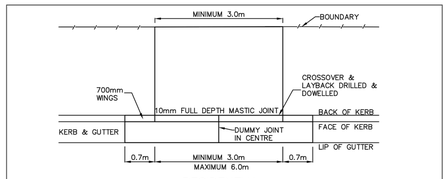


MOUNTABLE KERB

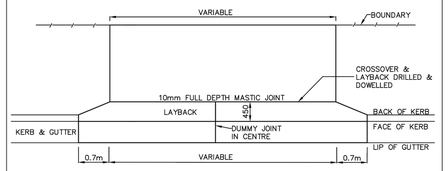
NOTES

1. CONCRETE COMPRESSIVE STRENGTH (F'c) AT 28 DAYS, TO BE 25MPa FOR KERB & GUTTER AND DISH CROSSINGS.
2. ROAD SUB-BASE SHALL BE EXTENDED 300mm BEHIND BACK OF KERB WITH THE THICKNESS TO BE NOT LESS THAN THE ROAD PAVEMENT SUB-BASE THICKNESS.
3. GALVANIZED STEEL OR SIMILAR APPROVED STORMWATER KERB ADAPTORS THE FULL HEIGHT OF THE KERB SHALL BE USED. THE KERB OUTLETS ARE TO MATCH THE PROFILE OF THE KERB. SEE SPECIFICATION
4. ALL DIMENSIONS ARE IN MILLIMETERS, UNLESS OTHERWISE STATED.
5. ALL EXPOSED EDGES TO BE ROUNDED TO 20mm RADIUS UNLESS SHOWN OTHERWISE
6. SPECIFICATIONS FOR RECONSTRUCTION WORKS TO BE DETERMINED BY COUNCIL'S ENGINEER.
7. SERVICE CONDUIT LOCATIONS SHALL BE MARKED ON KERB FACE WITH AN APPROVED TOOL OR AS OTHERWISE DIRECTED.

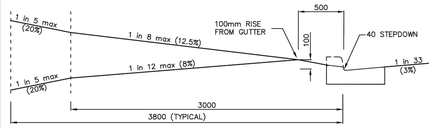
DRAWN:	STANDARD KERB & GUTTER, LAYBACKS & DISH CROSSING SHEET 2 OF 2	APPROVED:
PENRITH CITY COUNCIL		PLAN No: SD1003/2



RESIDENTIAL



INDUSTRIAL/COMMERCIAL



VEHICULAR CROSSING PROFILE – HIGH & LOW LEVEL

DRAWN:	TYPICAL VEHICULAR CROSSOVER	APPROVED:
PENRITH CITY COUNCIL		PLAN No: SD1004

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Issue	Description	Date	Drawn	Approved
D	ISSUE FOR DEVELOPMENT APPLICATION	17.10.22	UF	VG
C	ISSUE FOR DEVELOPMENT APPLICATION	11.10.22	UF	VG
A	ISSUE FOR COORDINATION	14.09.22	UF	VG

North

1cm at full size 10cm 20cm

Client: 601 HIGH STREET PENRITH, NSW 2750 PHONE : (02) 4732 7777 — PENRITH CITY COUNCIL

PLANNER: LEVEL 10, 70 PITT STREET SYDNEY, NSW 2000 PHONE : (02) 9249 4100 — gln. planning consulting strategy

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Baulkham Hills NSW 2153
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ACOR CONSULTANTS — ENGINEERS | MANAGERS | INFRASTRUCTURE PLANNERS | DEVELOPMENT CONSULTANTS

Project: EMU PLAINS INDUSTRIAL PARK

158-164 OLD BATHURST ROAD
EMU PLAINS, NSW 2750

Drawing Title: ROAD DESIGN
TYPICAL ROAD CROSS SECTION
STANDARD DETAILS

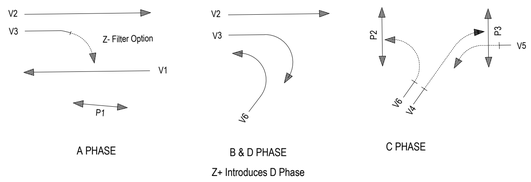
Drawn	Date	Scale	A1	Q.A. Check	Date
UF	SEP 2022	NOT TO SCALE			
Designed	Project No.	Dwg. No.	Issue		
VG	NSW211637	C5.101	D		

Oct 17, 2022 4:31 pm

TCS 0000

DATE IN SERVICE : 00/00/00

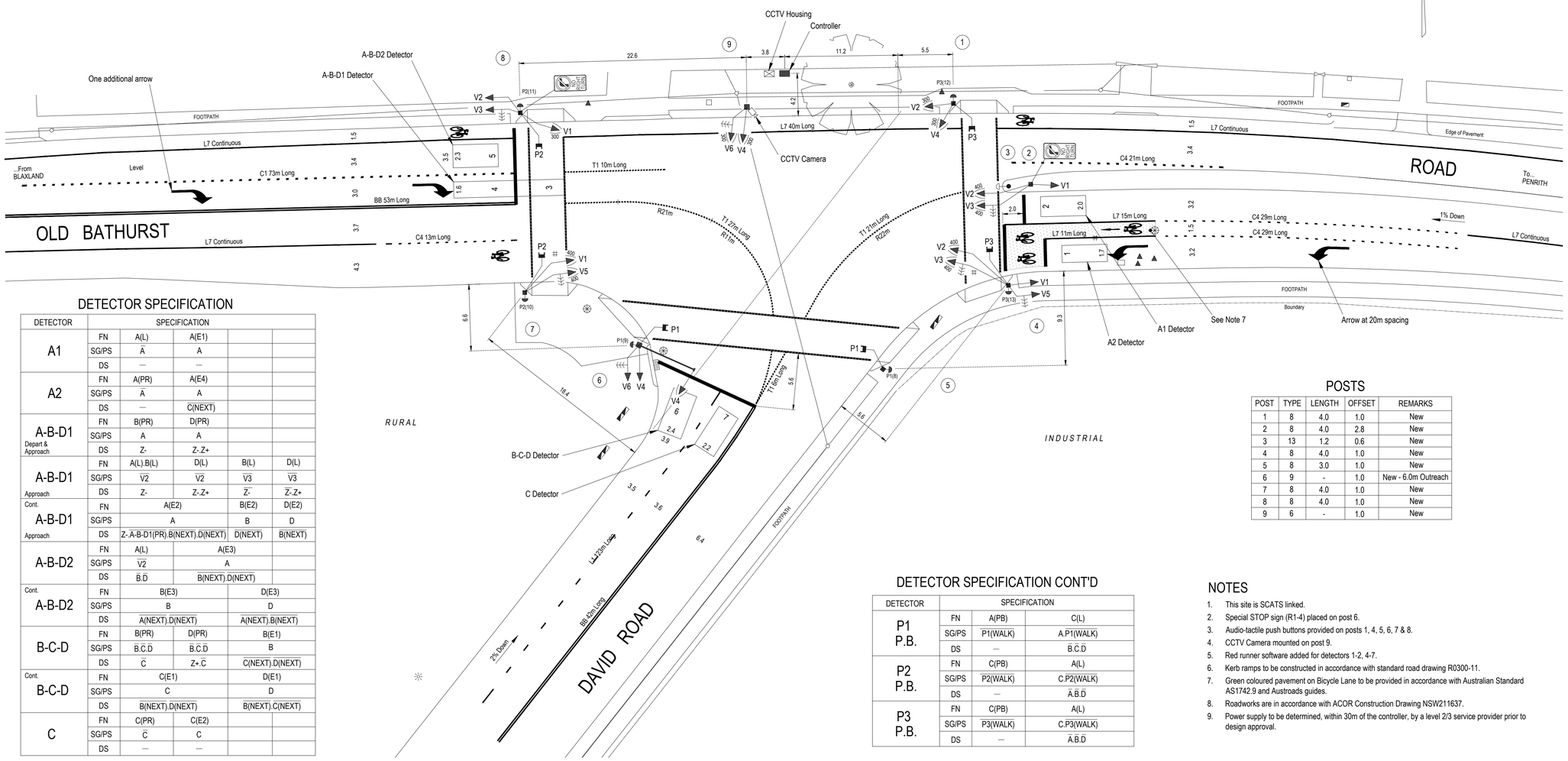
NSW GOVERNMENT | Transport for NSW



MOVEMENTS

SIGNAL GROUP PHASE CHART

SIGNAL GROUP	PHASE WHEN GREEN				STANDARD TABLE	REMARKS
	A	B	C	D		
V1	X				1	
V2	X	X		X	3	
V3		X		X	81	Z- Filter Option. Timed RA protection for 'P1' Pedestrians. Push button on Post 6 extends RA subject to timer.
V4			C		74	Timed RA protection for 'P3' Pedestrians. Push button on Post 4 extends RA subject to timer.
V5			C		76	Timed RA protection for 'P1' Pedestrians. Push button on Post 6 extends RA subject to timer.
V6		X	C	X	77	Timed RA protection for 'P2' Pedestrians. Push button on Post 8 extends RA subject to timer.
P1	X				2	
P2			X		2	
P3			X		2	



DETECTOR SPECIFICATION

DETECTOR	SPECIFICATION				
A1	FN	A(L)	A(E1)		
	SG/PS	$\bar{A}$	A		
	DS	—	—		
A2	FN	A(PR)	A(E4)		
	SG/PS	$\bar{A}$	A		
	DS	—	$\overline{C(NEXT)}$		
A-B-D1 Depart & Approach	FN	B(PR)	D(PR)		
	SG/PS	A	A		
	DS	Z-	Z-.Z+		
A-B-D1 Approach	FN	A(L).B(L)	D(L)	B(L)	D(L)
	SG/PS	$\overline{V2}$	$\overline{V2}$	$\overline{V3}$	$\overline{V3}$
	DS	Z-	Z-.Z+	$\overline{Z-}$	$\overline{Z-}$.Z+
A-B-D1 Cont. Approach	FN	A(E2)		B(E2)	D(E2)
	SG/PS	A		B	D
	DS	Z-.A-B-D1(PR).$\overline{B(NEXT)}$.$\overline{D(NEXT)}$		$\overline{D(NEXT)}$	$\overline{B(NEXT)}$
A-B-D2	FN	A(L)	A(E3)		
	SG/PS	$\overline{V2}$	A		
	DS	$\overline{B.\bar{D}}$	$\overline{B(NEXT).D(NEXT)}$		
A-B-D2 Cont.	FN	B(E3)		D(E3)	
	SG/PS	B		D	
	DS	$\overline{A(NEXT)}$.$\overline{D(NEXT)}$		$\overline{A(NEXT)}$.$\overline{B(NEXT)}$	
B-C-D	FN	B(PR)	D(PR)	B(E1)	
	SG/PS	$\overline{B.\bar{C}.\bar{D}}$	$\overline{B.\bar{C}.\bar{D}}$	B	
	DS	$\bar{C}$	Z+.$\bar{C}$	$\overline{C(NEXT)}$.$\overline{D(NEXT)}$	
B-C-D Cont.	FN	C(E1)		D(E1)	
	SG/PS	C		D	
	DS	$\overline{B(NEXT)}$.$\overline{D(NEXT)}$		$\overline{B(NEXT)}$.$\overline{C(NEXT)}$	
C	FN	C(PR)	C(E2)		
	SG/PS	$\bar{C}$	C		
	DS	—	—		

POSTS

POST	TYPE	LENGTH	OFFSET	REMARKS
1	8	4.0	1.0	New
2	8	4.0	2.8	New
3	13	1.2	0.6	New
4	8	4.0	1.0	New
5	8	3.0	1.0	New
6	9	-	1.0	New - 6.0m Outreach
7	8	4.0	1.0	New
8	8	4.0	1.0	New
9	6	-	1.0	New

DETECTOR SPECIFICATION CONT'D

DETECTOR	SPECIFICATION		
P1 P.B.	FN	A(PB)	C(L)
	SG/PS	$\overline{P1(WALK)}$	A.$\overline{P1(WALK)}$
	DS	—	$\overline{B.\bar{C}.\bar{D}}$
P2 P.B.	FN	C(PB)	A(L)
	SG/PS	$\overline{P2(WALK)}$	C.$\overline{P2(WALK)}$
	DS	—	$\bar{A}.\overline{B.\bar{D}}$
P3 P.B.	FN	C(PB)	A(L)
	SG/PS	$\overline{P3(WALK)}$	C.$\overline{P3(WALK)}$
	DS	—	$\bar{A}.\overline{B.\bar{D}}$

NOTES

1. This site is SCATS linked.
2. Special STOP sign (R1-4) placed on post 6.
3. Audio-tactile push buttons provided on posts 1, 4, 5, 6, 7 & 8.
4. CCTV Camera mounted on post 9.
5. Red runner software added for detectors 1-2, 4-7.
6. Kerb ramps to be constructed in accordance with standard road drawing R0300-11.
7. Green coloured pavement on Bicycle Lane to be provided in accordance with Australian Standard AS1742.9 and Austroads guides.
8. Roadworks are in accordance with ACOR Construction Drawing NSW211637.
9. Power supply to be determined, within 30m of the controller, by a level 2/3 service provider prior to design approval.

A ORIGINAL ISSUE

INCOMPLETE

1. Proposed supply location and asset number
2. Drainage pits to be added, if there any new pits
3. Street lighting to be added

PUBLIC UTILITY LEGEND	
HYDRANT	
STOP VALVE	
GAS VALVE	
SEWER MANHOLE	
COMMS PIT	
ELECT LIGHT POLE	
POWER POLE	
STAY POLE	
TELEPHONE BOX	
COMMS PILLAR	

REFERENCE PLANS	
SYMBOLS/ABRVS	VD003-6
STD POSN CMPT	VD001-5
INSTL STOP DET	VC005-17
VEH GROUP OP	TS-TN-019
DET LOGIC OP	TS-TN-020
PED MVT OP	TS-TN-021
SURVEYOR : ACOR	
DATE : 2022	

U.B.D. Ref. Map 162 L6
I.S.G. CO-ORDS E : 268 725 N : 1 264 880

DESIGNED : R BATES
CHECKED : J BATES
J BATES
SITE CHECKED
J BATES
RECOMMENDED

DESIGN APPROVAL
APPROVED
NAME
POSITION MANAGER
DATE 11/10/22
DESIGN PREPARED BY
B-Line Drafting on behalf of ACOR

TFNSW RECOMMENDATION
ROAD DESIGN ENGINEERING
NAME
POSITION
DATE
NETWORK OPERATIONS
NAME
POSITION
DATE

TFNSW ACCEPTANCE
ACCEPTED
NAME
POSITION
DATE
ACCEPTED BY
SECTION

TRANSPORT FOR NEW SOUTH WALES

PENRITH COUNCIL AREA
TRAFFIC SIGNALS AT
OLD BATHURST ROAD AND
DAVID ROAD
EMU PLAINS

DESIGN LAYOUT

EXISTING ☐ PROPOSED ☒
CADD FILE: VV0000_XA_DES.dgn
SCALE (1:200)
FILE SF0000/000000
SUPERSEDES SHEET/ISSUE -/-
ISSUE A
REG No. DS0000/000000
TCS No. 0000
SHEET 1

Revision 7 - August 2021

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Issue	Description	Date	Drawn	Approved
D	ISSUE FOR DEVELOPMENT APPLICATION	17.10.22	UF	VG
C	ISSUE FOR DEVELOPMENT APPLICATION	11.10.22	UF	VG
-	-	-	-	-

North

-1 0 1cm at full size 10cm 20cm

Client
601 HIGH STREET
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PENRITH CITY COUNCIL

PLANNER
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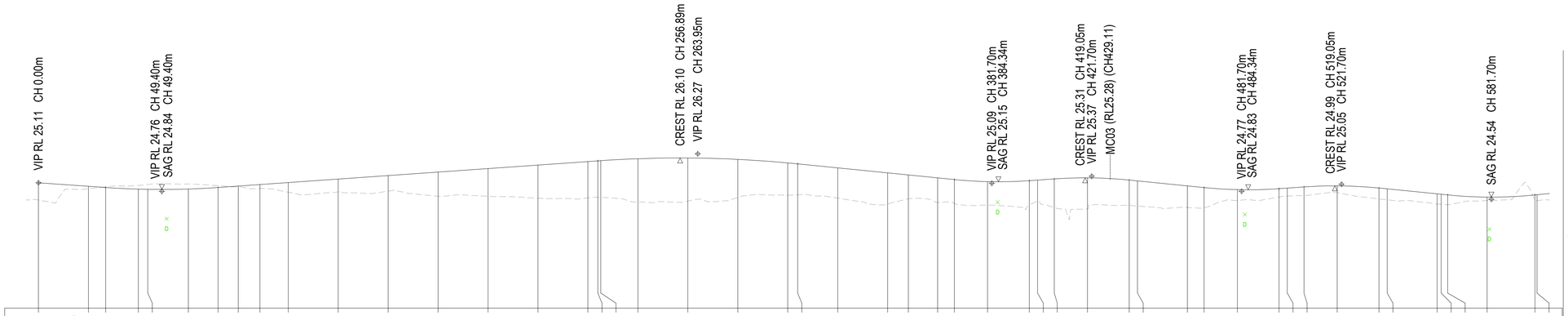
ACOR CONSULTANTS
ENGINEERS | MANAGERS | INFRASTRUCTURE PLANNERS | DEVELOPMENT CONSULTANTS

Project
EMU PLAINS INDUSTRIAL PARK
158-164 OLD BATHURST ROAD
EMU PLAINS, NSW 2750

Drawing Title
ROAD DESIGN
TCS DESIGN

Drawn	Date	Scale A1	Q.A. Check	Date
UF	OCT 2022	NOT TO SCALE		
Designed	Project No.		Dwg. No.	Issue
VG	NSW211637		C5.102	D

\\192.168.1.3\arenap\Projects\NSW\nsw211637\Drawings\CADD\Drawings\NSW211637-D01-C5.101-C5.102.dwg
Oct 17, 2022 - 4:31pm



DATUM R.L 20.1

VERTICAL GEOMETRY

G = -0.7% | K = 32.15, L = 45 | G = 0.7% | K = 47.06, L = 80 | G = -1% | K = 17.65, L = 30 | G = 0.7% | K = 17.65, L = 30 | G = -1% | K = 17.65, L = 30 | G = 0.7% | K = 17.65, L = 30 | G = -1% | K = 17.5, L = 35 | G = 1%

HORIZONTAL GEOMETRY

L = 43.75 | R = 25 | L = 136.45 | R = 80 | L = 213.27 | R = 25

CHAINAGE	CUT / FILL DEPTH	DESIGN LEVELS	EXISTING LEVELS
0	0.69	25.11	24.42
20	0.10	24.97	24.87
26.9	-0.02	24.92	24.95
40	-0.15	24.86	25.00
43.75	-0.19	24.85	25.04
60	-0.20	24.86	25.06
71.9	-0.08	24.92	25.00
80	0.04	24.98	24.94
88.68	0.16	25.04	24.88
100	0.39	25.12	24.73
120	0.51	25.26	24.75
140	0.62	25.40	24.77
160	0.96	25.54	24.57
180	1.11	25.68	24.57
200	1.33	25.82	24.49
220	1.45	25.96	24.51
223.95	1.46	25.99	24.53
225.13	1.47	25.99	24.52
240	1.73	26.07	24.34
260	1.72	26.10	24.38
280	1.52	26.04	24.52
300	1.29	25.90	24.61
303.95	1.24	25.87	24.63
320	1.21	25.70	24.50
340	1.25	25.50	24.25
348.3	0.95	25.42	24.47
360	0.98	25.30	24.32
366.7	0.95	25.24	24.28
380	0.94	25.16	24.22
396.7	0.97	25.19	24.22
400	0.84	25.22	24.38
406.7	1.14	25.26	24.12
420	1.24	25.31	24.07
436.7	1.01	25.22	24.21
440	1.01	25.18	24.18
460	0.87	24.98	24.12
466.7	0.81	24.92	24.11
480	0.43	24.84	24.41
496.7	0.33	24.87	24.54
500	0.32	24.90	24.58
506.7	0.34	24.94	24.60
520	0.27	24.99	24.71
536.7	0.43	24.90	24.46
540	0.44	24.86	24.43
560	0.40	24.66	24.26
561.57	0.40	24.65	24.25
564.2	0.40	24.62	24.23
580	0.14	24.54	24.40
599.2	0.24	24.62	24.39
600	0.24	24.63	24.39

REFER TO DRAWING C5.202 FOR CONTINUATION

MC01

A1 Horizontal Scale 1 : 1000
A1 Vertical scale 1 : 100

1:1000 (AT A1)
1:2000 (AT A3)
20 10 0 10 20 30 40 50 60 70 80 90 100
METRES

V 1:100 (AT A1)
2 1 0 1 2 3 4 5 6 7 8 9 10
METRES

NOT FOR CONSTRUCTION

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-1 0 1cm at full size 10cm 20cm

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Project
EMU PLAINS INDUSTRIAL PARK
158-164 OLD BATHURST ROAD
EMU PLAINS, NSW 2750

Drawing Title
ROAD DESIGN
LONGITUDINAL SECTION
MC01

Drawn	Date	Scale A1	Q.A. Check	Date
UF	SEP 2022	AS SHOWN		
Designed	Project No.	Dwg. No.	Issue	
VG	NSW211637	C5.201	D	

Oct 17, 2022 - 4:32pm
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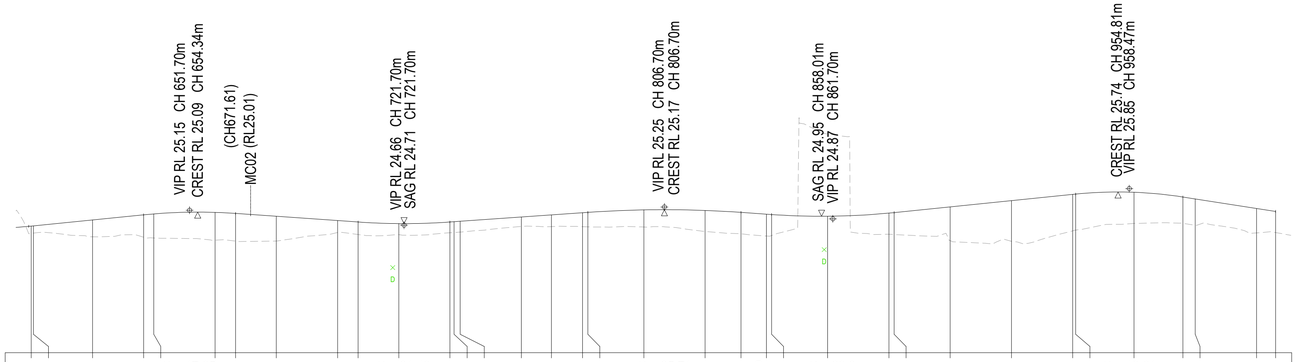
REFER TO DRAWING C5.201 FOR CONTINUATION



DATUM R.L 20.5

VERTICAL GEOMETRY: G = 1% | K = 17.65, L = 30 | G = -0.7% | K = 21.43, L = 30 | G = 0.7% | K = 35.71, L = 50 | G = -0.7% | K = 23.3, L = 40 | G = 1.02% | K = 13.61, L = 35

HORIZONTAL GEOMETRY: R = 25 | L = 137.33 | R = 23 | L = 236.44

CHAINAGE	CUT / FILL DEPTH	DESIGN LEVELS	EXISTING LEVELS
600	0.24	24.63	24.39
600.7	0.24	24.64	24.40
620	0.55	24.83	24.28
636.7	0.73	25.00	24.27
640	0.79	25.03	24.24
660	0.91	25.08	24.17
666.7	0.90	25.04	24.14
680	0.81	24.95	24.14
700	0.39	24.81	24.42
706.7	0.41	24.76	24.36
720	0.36	24.71	24.35
736.7	0.35	24.76	24.41
738.03	0.35	24.77	24.42
740	0.35	24.79	24.43
760	0.31	24.93	24.62
769.8	0.38	24.99	24.61
780	0.45	25.07	24.61
781.7	0.47	25.08	24.61
800	0.56	25.16	24.60
820	0.69	25.14	24.45
831.7	0.70	25.08	24.38
840	0.72	25.02	24.30
841.7	0.69	25.01	24.32
860	-2.68	24.95	27.64
880	0.69	25.05	24.36
881.7	0.72	25.07	24.35
900	1.10	25.26	24.16
920	1.33	25.46	24.13
940	1.19	25.66	24.48
940.97	1.18	25.67	24.50
960	1.02	25.73	24.72
975.97	0.86	25.58	24.72
980	0.86	25.52	24.66
1000	0.80	25.21	24.41
1006.24	0.69	25.11	24.42

MC01

A1 Horizontal Scale 1 : 1000
A1 Vertical scale 1 : 100

1:1000 (AT A1)
1:2000 (AT A3)
20 10 0 10 20 30 40 50 60 70 80 90 100
METRES

V 1:100 (AT A1)
2 1 0 1 2 3 4 5 6 7 8 9 10
METRES

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A	ISSUE FOR COORDINATION	14.09.22	UF	VG

-1 0 1cm at full size 10cm 20cm

North

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Project
EMU PLAINS INDUSTRIAL PARK
158-164 OLD BATHURST ROAD
EMU PLAINS, NSW 2750

NOT FOR CONSTRUCTION

Drawing Title
ROAD DESIGN
LONGITUDINAL SECTION
MC01

Drawn	Date	Scale A1	Q.A. Check	Date
UF	SEP 2022	AS SHOWN		
Designed	Project No.	Dwg. No.	Issue	
VG	NSW211637	C5.202	D	

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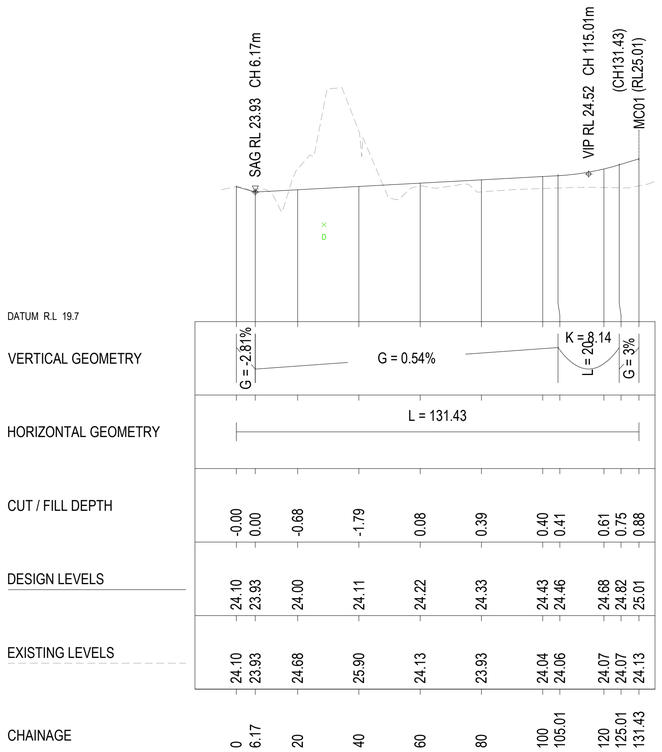

MC02

A1 Horizontal Scale 1 : 1000
A1 Vertical scale 1 : 100

1:1000 (AT A1)
1:2000 (AT A3)
20 10 0 10 20 30 40 50 60 70 80 90 100
METRES

V 1:100 (AT A1)
2 1 0 1 2 3 4 5 6 7 8 9 10
METRES

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C	ISSUE FOR DEVELOPMENT APPLICATION	11.10.22	UF	VG
A	ISSUE FOR COORDINATION	14.09.22	UF	VG

North

-1 0 1cm at full size 10cm 20cm

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Project
EMU PLAINS INDUSTRIAL PARK
158-164 OLD BATHURST ROAD
EMU PLAINS, NSW 2750

Drawing Title
ROAD DESIGN
LONGITUDINAL SECTION
MC02

Drawn	Date	Scale A1	Q.A. Check	Date
UF	SEP 2022	AS SHOWN		
Designed	Project No.	Dwg. No.	Issue	
VG	NSW211637	C5.203	D	

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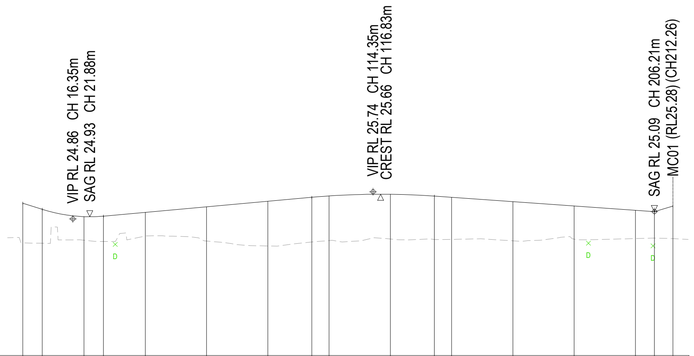

DATUM R.L 20.4

VERTICAL GEOMETRY

G = -3.14% | K = 4.95 L = 20 | G = 0.9% | K = 24.9 L = 40 | G = -0.7% | G = 3%

HORIZONTAL GEOMETRY

L = 212.26

CUT / FILL DEPTH

1.30	1.11	0.77	0.83	0.77	1.12	1.46	1.46	1.46	1.42	1.37	1.28	1.08	0.92	0.87	1.06

DESIGN LEVELS

25.37	25.17	24.93	24.95	25.07	25.25	25.43	25.56	25.61	25.66	25.60	25.56	25.42	25.28	25.14	25.09	25.28

EXISTING LEVELS

24.07	24.06	24.16	24.12	24.30	24.13	23.97	24.10	24.15	24.20	24.18	24.19	24.14	24.20	24.21	24.23	24.21

CHAINAGE

0	6.35	20	26.35	40	60	80	94.35	100	120	134.35	140	160	180	200	206.21	212.26

MC03

A1 Horizontal Scale 1 : 1000
A1 Vertical scale 1 : 100

1:1000 (AT A1)
1:2000 (AT A3)

20 10 0 10 20 30 40 50 60 70 80 90 100
METRES

V 1:100 (AT A1)

2 1 0 1 2 3 4 5 6 7 8 9 10
METRES

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A	ISSUE FOR COORDINATION	14.09.22	UF	VG

North

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Project
EMU PLAINS INDUSTRIAL PARK
158-164 OLD BATHURST ROAD
EMU PLAINS, NSW 2750

Drawing Title
ROAD DESIGN
LONGITUDINAL SECTION
MC03

Drawn	Date	Scale A1	Q.A. Check	Date
UF	SEP 2022	AS SHOWN		

Designed	Project No.	Dwg. No.	Issue
VG	NSW211637	C5.204	D

Oct 17, 2022 - 4:32pm
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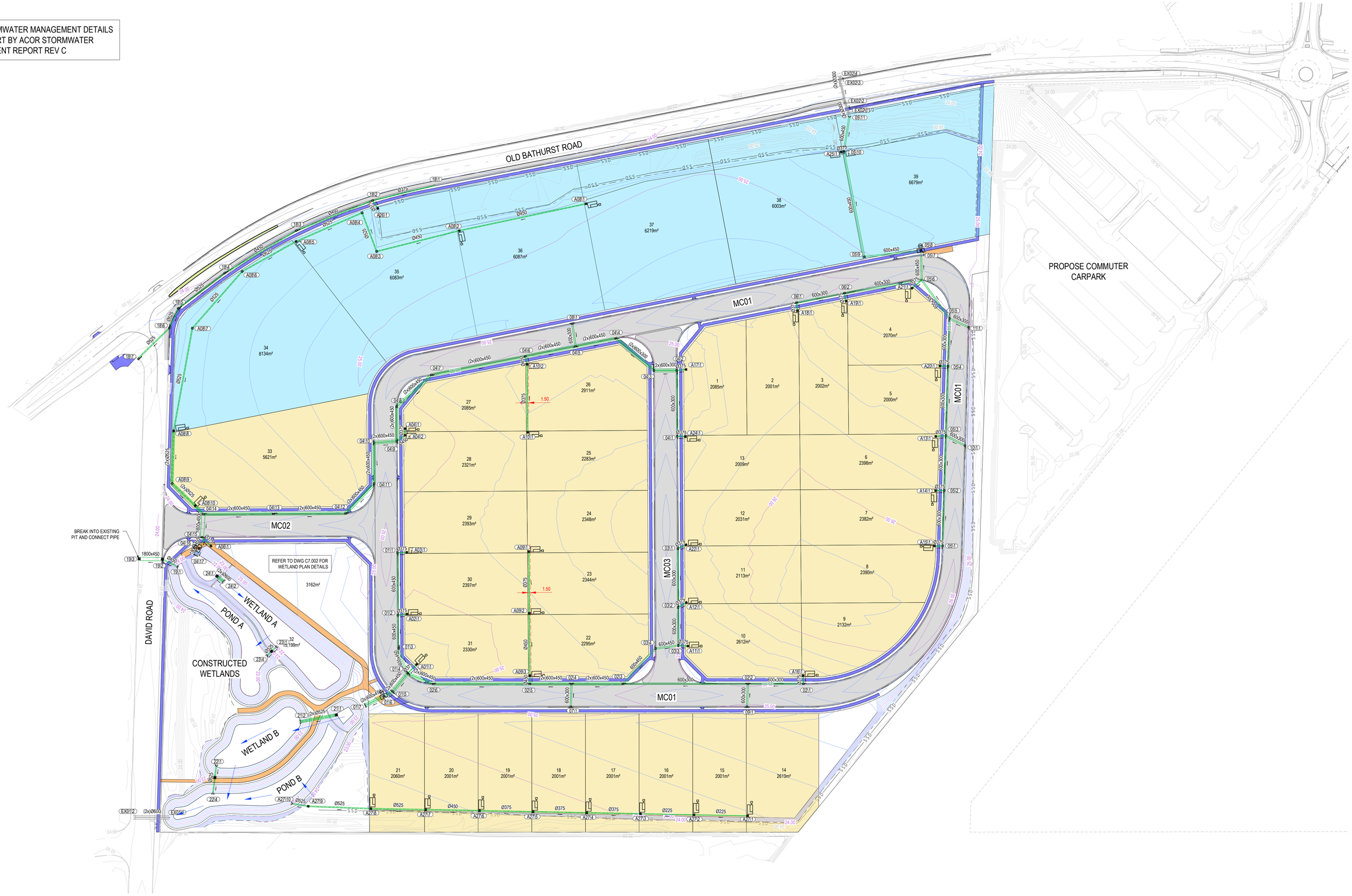
FOR STORMWATER MANAGEMENT DETAILS
SEE REPORT BY ACOR STORMWATER
MANAGEMENT REPORT REV C



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1:1000 (AT A1)
1:2000 (AT A3)

20 10 0 10 20 30 40 50 60 70 80 90 100
METRES

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-1 0 1cm at full size 10cm 20cm

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Project
EMU PLAINS INDUSTRIAL PARK
158-164 OLD BATHURST ROAD
EMU PLAINS, NSW 2750

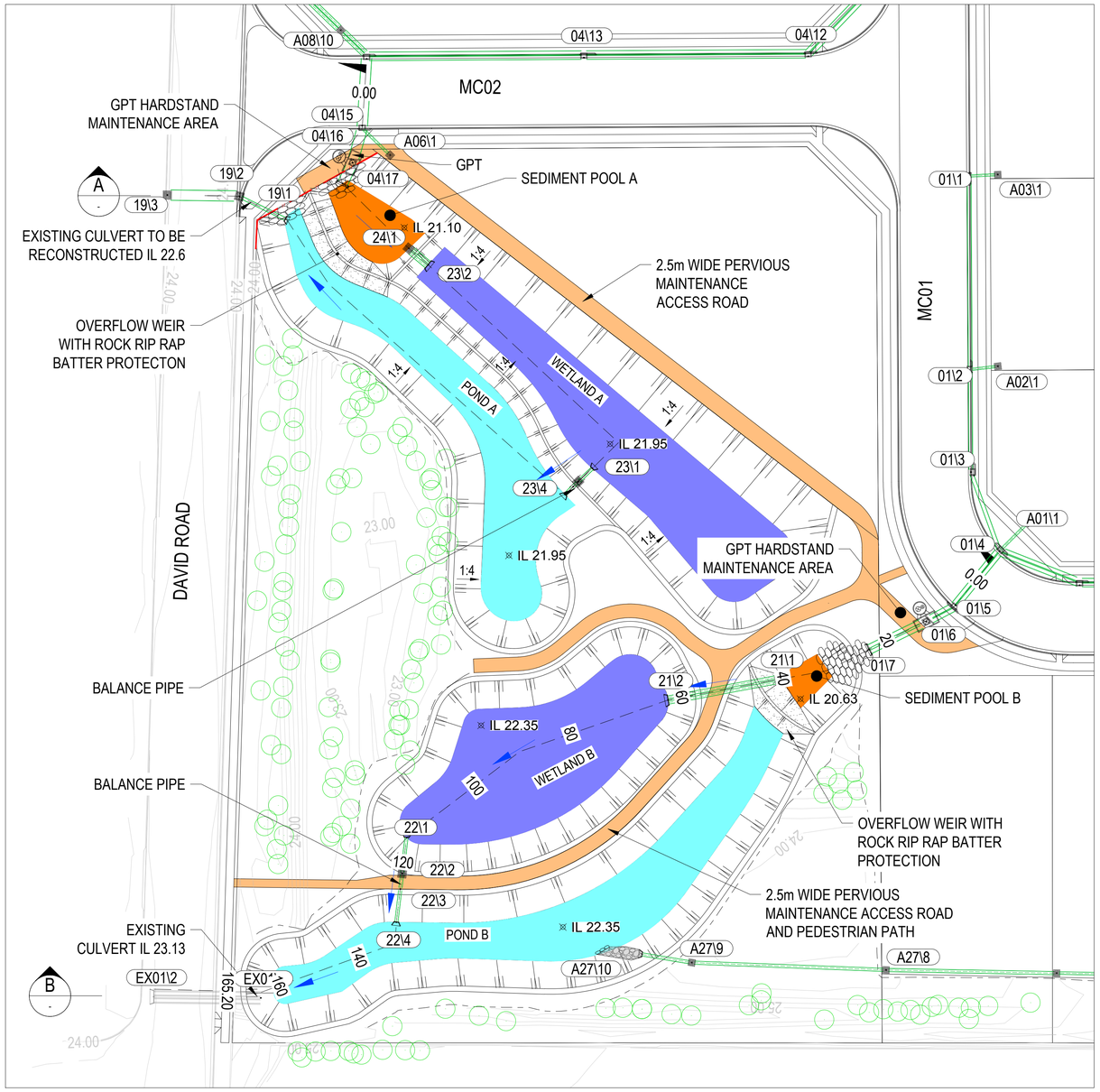
Drawing Title
STORMWATER MANAGEMENT PLAN

Drawn	Date	Scale A1	Q.A. Check	Date
UF	SEP 2022	1:1000		
Designed	Project No.	Dwg. No.	Issue	
VG	NSW211637	C7.001	D	

Oct 17, 2022 - 4:32pm

LEGEND

- TOP WATER LEVEL
- WETLANDS
- PONDS
- SEDIMENTATION POOLS



PLAN OF CONSTRUCTED WETLANDS

SCALE 1:500

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1:500 (AT A1)
1:1000 (AT A3)

10 0 10 20 30 40 50
METRES

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Project
EMU PLAINS INDUSTRIAL PARK
158-164 OLD BATHURST ROAD
EMU PLAINS, NSW 2750

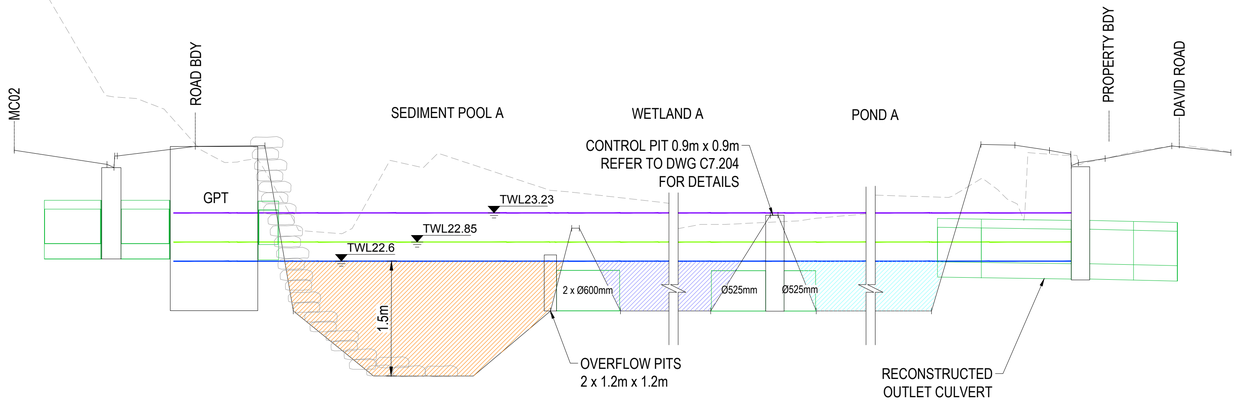
Drawing Title
STORMWATER MANAGEMENT PLAN
WETLAND

Drawn	Date	Scale A1	Q.A. Check	Date
UF	SEP 2022	AS SHOWN		
Designed	Project No.		Dwg. No.	Issue
VG	NSW211637		C7.002	D

1192 188.5 Parramatta\Projects\NSW211637\SHT\SD-C7.002-C7.003.dwg
Oct 17, 2022 - 4:33pm

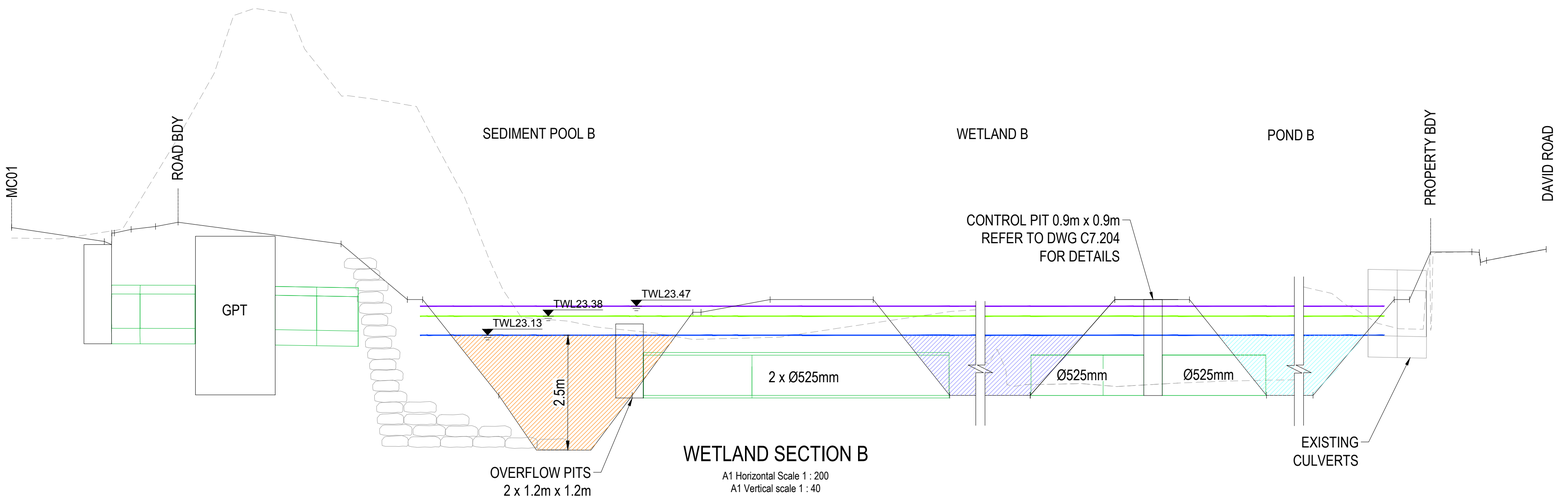
LEGEND

- TOP WATER LEVEL
- WETLANDS
- PONDS
- SEDIMENTATION POOLS
- DESIGN LEVELS
- EXISTING LEVELS
- NORMAL WATER LEVEL
- TOP OF EXTENDED DETENTION
- ARI 100 YEARS WATER LEVEL



WETLAND SECTION A

A1 Horizontal Scale 1 : 200
A1 Vertical scale 1 : 40



WETLAND SECTION B

A1 Horizontal Scale 1 : 200
A1 Vertical scale 1 : 40

H 1:200 (AT A1) 4 2 0 4 8 12 16 20 METRES

V 1:100 (AT A1) 2 1 0 1 2 3 4 5 6 7 8 9 10 METRES

1:500 (AT A1)
1:1000 (AT A3) 10 0 10 20 30 40 50 METRES

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North

-1 0 1cm at full size 10cm 20cm

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Project
EMU PLAINS INDUSTRIAL PARK
158-164 OLD BATHURST ROAD
EMU PLAINS, NSW 2750

Drawing Title
STORMWATER MANAGEMENT
SECTIONS
WETLAND

Drawn	Date	Scale A1	Q.A. Check	Date
UF	SEP 2022	AS SHOWN		
Designed	Project No.		Dwg. No.	Issue
VG	NSW211637		C7.003	D

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Oct 17, 2022 - 4:33pm

LEGEND

- LOT AREA DRAINING TO SUBCATCHMENT A = 45,173m²
- LOT AREA DRAINING TO SUBCATCHMENT B = 37,041m²
- LOT AREA DRAINING TO SUBCATCHMENT C = 24,179m²
- BYPASS AREA = 519m²
- ROAD AREA DRAINING TO SUBCATCHMENT A = 10,613m²
- ROAD AREA DRAINING TO SUBCATCHMENT B = 10,291m²
- ROAD AREA DRAINING TO SUBCATCHMENT C = 5,909m²
- FEATURE POND = 1,626m²
- WETLAND POOL COMBINED = 1,848m²
- PRE-WETLAND SEDIMENTATION AREA = 192m²
- UNDEVELOPMENT AREA = 19,438m²

SCALE 1:1000 @ A1
SCALE 1:2000 @ A3

0 10 20 40 60 80 100 metres

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Issue	Description	Date	Drawn	Approved
D	ISSUE FOR DEVELOPMENT APPLICATION	17.10.22	UF	VG
C	ISSUE FOR DEVELOPMENT APPLICATION	11.10.22	UF	VG
A	ISSUE FOR COORDINATION	14.09.22	UF	VG

North

Client
601 HIGH STREET
PENRITH, NSW 2750
PHONE : (02) 4732 7777
PENRITH CITY COUNCIL

PLANNER
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gln. planning consulting strategy

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ACOR CONSULTANTS
ENGINEERS | MANAGERS | INFRASTRUCTURE PLANNERS | DEVELOPMENT CONSULTANTS

Project
EMU PLAINS INDUSTRIAL PARK

158-164 OLD BATHURST ROAD
EMU PLAINS, NSW 2750

Drawing Title
STORMWATER MANAGEMENT STRATEGY PLAN

Drawn	Date	Scale A1	Q.A. Check	Date
UF	SEP 2022	1:1000		
Designed	Project No.		Dwg. No.	Issue
VG	NSW211637		C7.101	D

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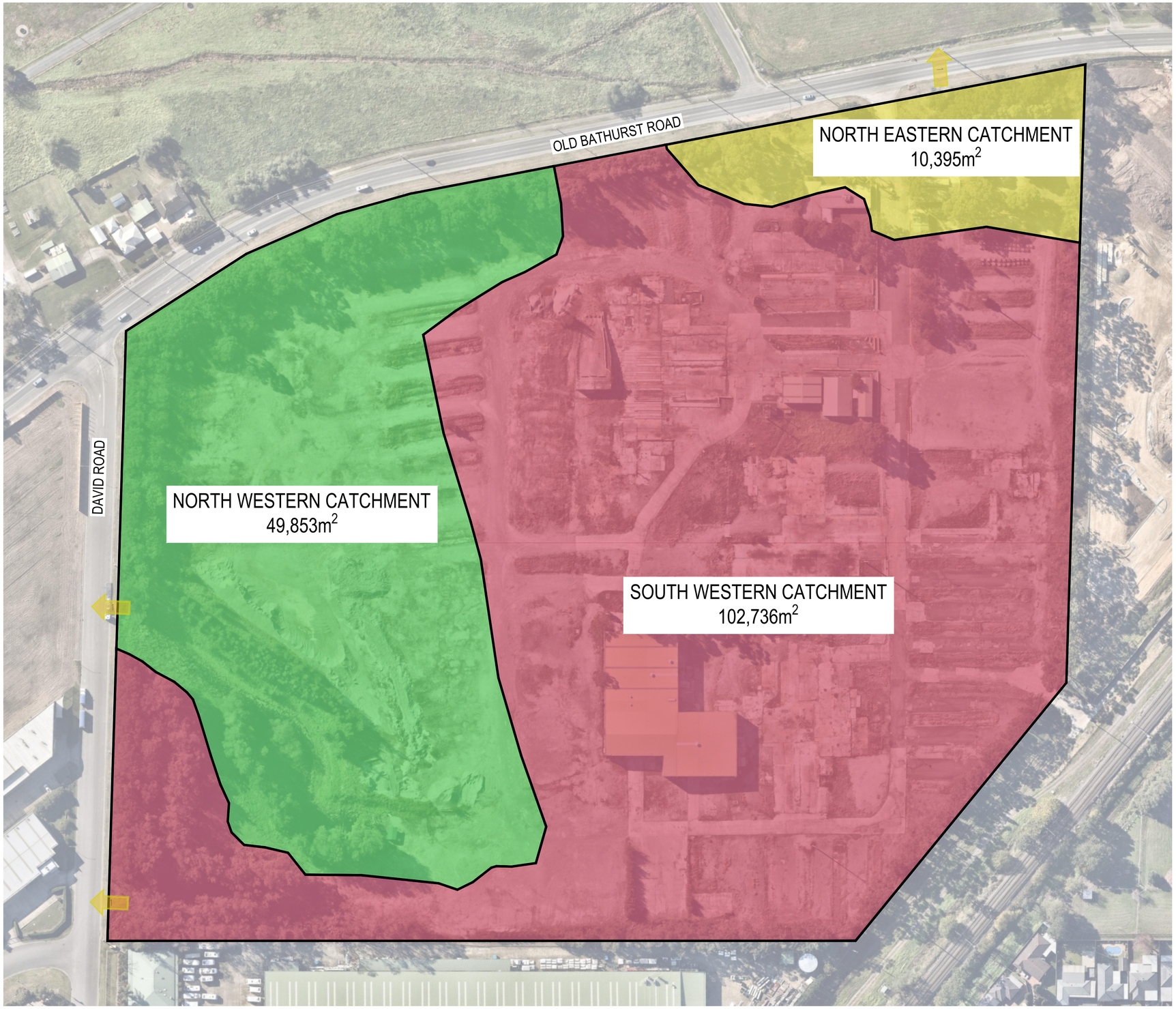
LEGEND
NORTH EASTERN AREA
NORTH WESTERN AREA
SOUTH WESTERN AREA



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SCALE 1:1000 @ A1
SCALE 1:2000 @ A3

0 10 20 40 60 80 100 metres

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A	ISSUE FOR COORDINATION	14.09.22	UF	VG

-1 0 1cm at full size 10cm 20cm

North

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Project
EMU PLAINS INDUSTRIAL PARK

158-164 OLD BATHURST ROAD
EMU PLAINS, NSW 2750

Drawing Title
STORMWATER MANAGEMENT
CATCHMENT PLAN
PRE-DEVELOPMENT

Drawn	Date	Scale A1	Q.A. Check	Date
UF	SEP 2022	1:1000		
Designed	**Project No.**		**Dwg. No.**	**Issue**
VG	NSW211637		C7.102	D

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Oct 17, 2022 - 4:34pm

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SCALE 1:1000 @ A1
SCALE 1:2000 @ A3

0 10 20 40 60 80 100 metres

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Issue	Description	Date	Drawn	Approved
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North

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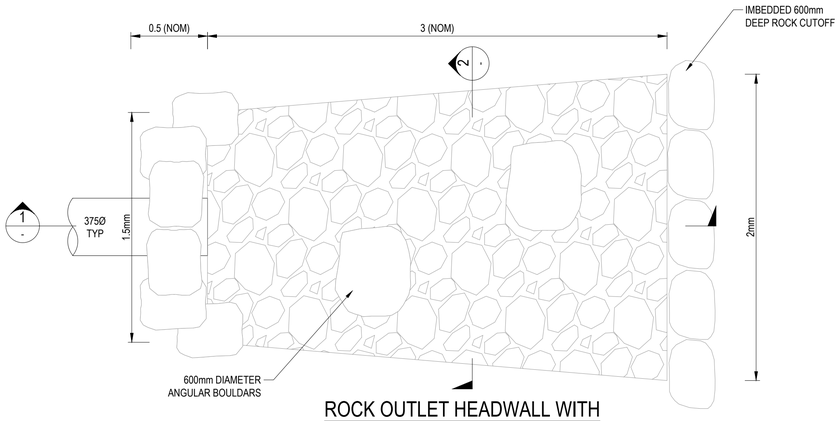
Project
EMU PLAINS INDUSTRIAL PARK
158-164 OLD BATHURST ROAD
EMU PLAINS, NSW 2750

Drawing Title
STORMWATER MANAGEMENT
CATCHMENT PLAN

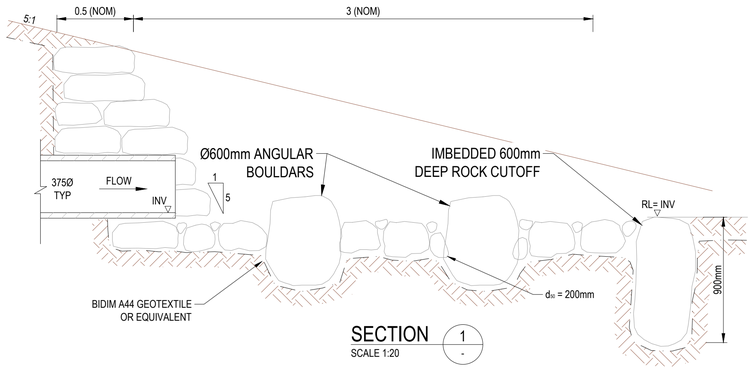
Drawn	Date	Scale A1	Q.A. Check	Date
UF	SEP 2022	1:1000		
Designed	Project No.		Dwg. No.	Issue
VG	NSW211637		C7.111	D

Seq: 1 Oct 17 - 2:22:45 pm



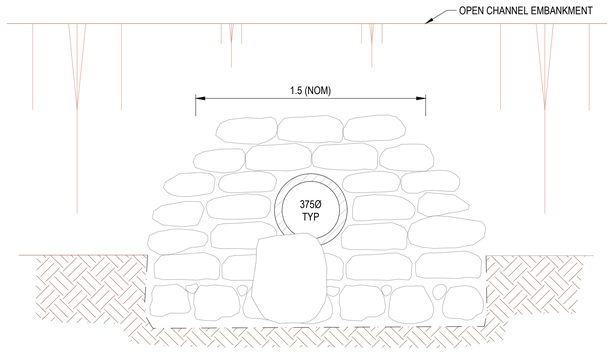
ROCK OUTLET HEADWALL WITH ROCK POOL SCOUR PROTECTION

SCALE 1:20



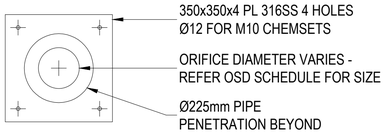
SECTION 1

SCALE 1:20



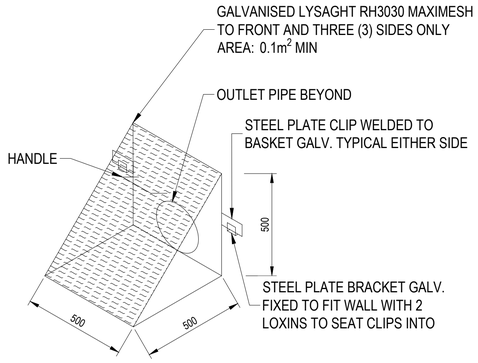
SECTION 2

SCALE 1:20



ORIFICE PLATE

SCALE 1:10



TRASH SCREEN DETAIL

SCALE 1:10

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SCALE 1:20 @ A1
SCALE 1:40 @ A3
0 200 400 800 1200 1600 2000mm

SCALE 1:10 @ A1
SCALE 1:20 @ A3
0 100 200 400 600 800 1000mm

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North

-1 0 1cm at full size 10cm 20cm

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Project
EMU PLAINS INDUSTRIAL PARK

158-164 OLD BATHURST ROAD
EMU PLAINS, NSW 2750

Drawing Title
STORMWATER MANAGEMENT
TYPICAL DETAILS
SHEET 1

Drawn	Date	Scale A1	Q.A. Check	Date
UF	SEP 2022	AS SHOWN		
Designed	Project No.		Dwg. No.	Issue
VG	NSW211637		C7.201	D

Oct 17, 2022 - 4:33pm
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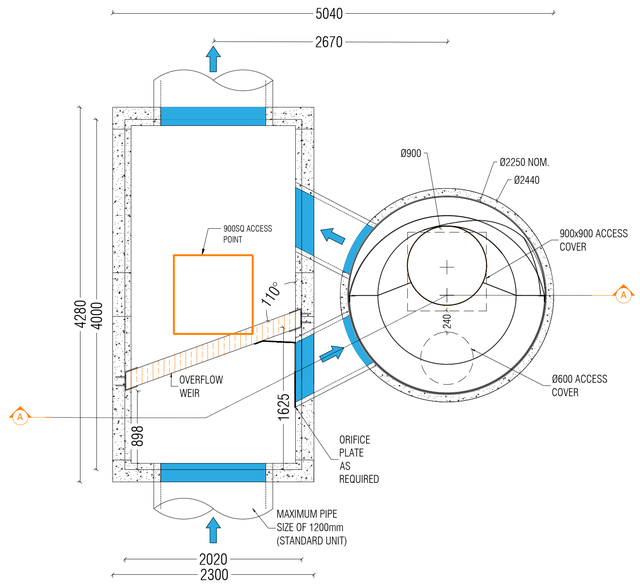
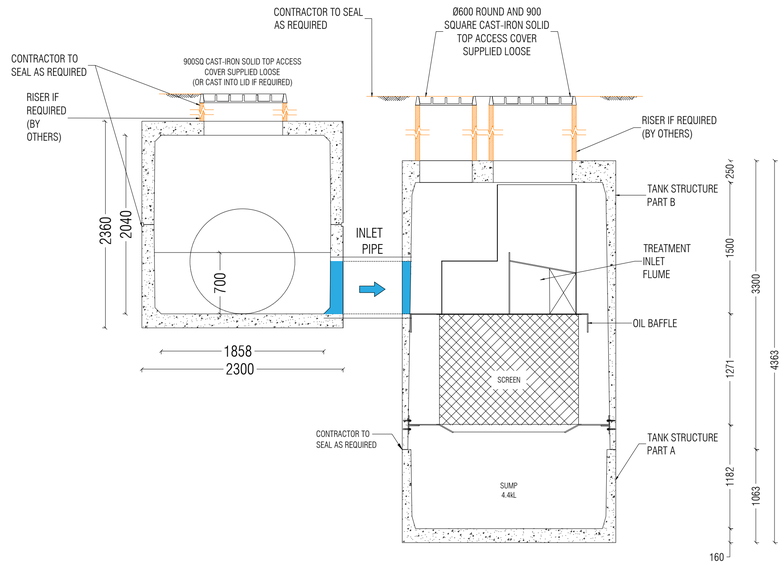
NOT FOR CONSTRUCTION



OCEANSAVE PLAN



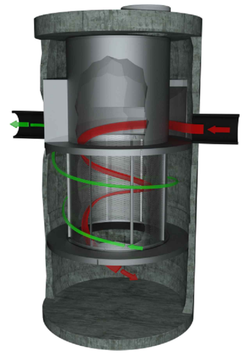
OCEANSAVE SECTION

LAST MODIFIED: 11-12-19

OCEANSAVE DESIGN TABLE

TO BE INSTALLED ONLINE THE TOTAL INLET PIPE FLOW RATE MUST BE LESS THAN THE SPECIFIED UNITS LISTED MAXIMUM TOTAL FLOW RATE; THE UNIT MUST BE PLACED OFFLINE WHERE THE INLET FLOW RATE EXCEEDS THIS VALUE.

TREATABLE FLOWRATE [L/s]	250
MAXIMUM TOTAL FLOWRATE [L/s]	3800
WEIR HEIGHT [mm]	700



SITE SPECIFIC DATA REQUIREMENTS

FLOWRATE INTO DIVERSION CHAMBER[L/S]	[ ]

PIPE DATA:	I.L.	MATERIAL	DIAMETER
INLET PIPE	[ ]	[ ]	[ ]
OUTLET PIPE	[ ]	[ ]	[ ]

UPPER DIVERSION TANK WEIGHT	8567kg
LOWER DIVERSION TANK WEIGHT	8567kg
UPPER TANK WEIGHT	6760kg
UPPER TANK WEIGHT	4430kg

NOTE: TANK SUPPLIED IN TWO PARTS; PARTS A & B TO BE JOINED ON SITE

GENERAL NOTES

1. OCEANSAVE WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING. CONTRACTOR TO CONFIRM STRUCTURE MEETS REQUIREMENTS OF THE PROJECT.
2. PRECAST STRUCTURE SUPPLIED WITH CORE HOLES TO SUIT OUTER DIAMETER OF NOMINATED PIPE SIZE / MATERIAL.
3. PRECAST STRUCTURE SHALL MEET W80 WHEEL LOAD RATING ASSUMING A MAXIMUM EARTH COVER OF 1.5m AND A GROUND WATER ELEVATION AT, OR BELOW, THE OUTLET PIPE INVERT ELEVATION. ENGINEER TO CONFIRM ACTUAL GROUNDWATER ELEVATION.PRECAST STRUCTURE SHALL BE IN ACCORDANCE WITH AS3600.
4. ALL WATER QUALITY TREATMENT DEVICES REQUIRE PERIODIC MAINTENANCE. REFER TO OPERATION AND MAINTENANCE MANUAL FOR GUIDELINES AND ACCESS REQUIREMENTS.
5. SITE SPECIFIC PRODUCTION DRAWING WILL BE PROVIDED ON PLACEMENT OF ORDER.
6. DRAWING NOT TO SCALE.

INSTALLATION NOTES

A. ANY SUB-BASE, BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE SPECIFIC DESIGN CONSIDERATION AND SHALL BE SPECIFIED BY THE SITE CIVIL ENGINEER.

B. CONTRACTOR TO PROVIDE ALL EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE STRUCTURE (LIFTING DETAIL PROVIDED SEPARATELY).

C. CONTRACTOR TO INSTALL AND LEVEL THE STRUCTURE, APPLY SEALANT TO ALL JOINTS AND TO PROVIDE, INSTALL AND GROUT INLET AND OUTLET PIPES.

D. CONTRACTOR TO TAKE APPROPRIATE MEASURES TO PROTECT SCREEN & SEPARATION CYLINDER COMPONENTS DURING INSTALLATION

OCEAN PROTECT

PHONE: 1300 354 722 www.oceanprotect.com.au

OCEAN PROTECT
OCEANSAVE 1612 OFFLINE
SPECIFICATION DRAWING

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A	ISSUE FOR COORDINATION	14.09.22	UF	VG

North

1cm at full size 10cm 20cm

Client
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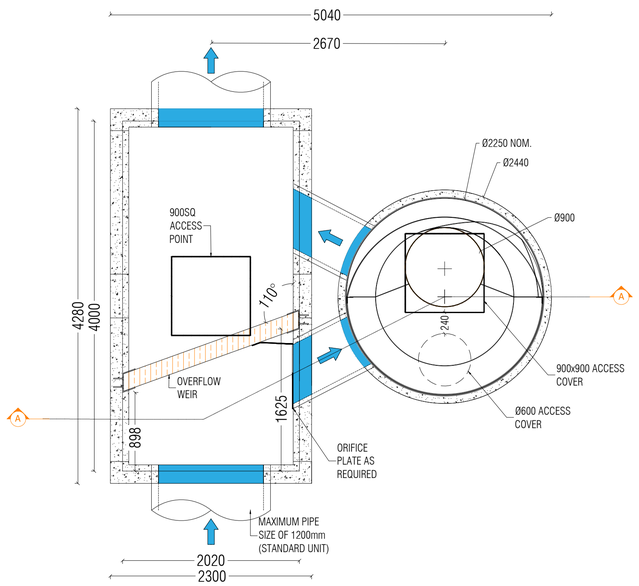
Project
EMU PLAINS INDUSTRIAL PARK
158-164 OLD BATHURST ROAD
EMU PLAINS, NSW 2750

Drawing Title
STORMWATER MANAGEMENT
TYPICAL DETAILS
SHEET 2

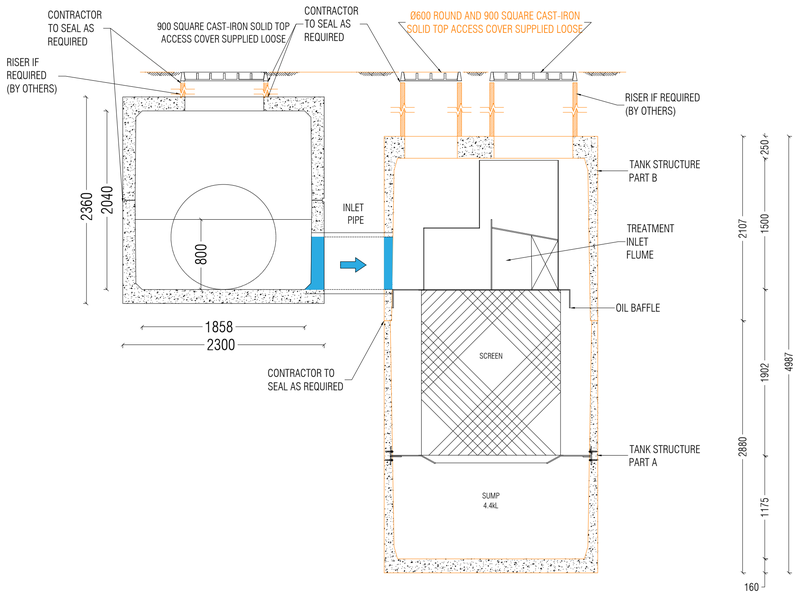
Drawn	Date	Scale A1	Q.A. Check	Date
UF	SEP 2022	NOT TO SCALE		
Designed	Project No.	Dwg. No.	Issue	
VG	NSW211637	C7.202	D	

Oct 17, 2022 - 4:33pm

NOT FOR CONSTRUCTION



OCEANSAVE PLAN



OCEANSAVE SECTION

LAST MODIFIED: 11-12-19

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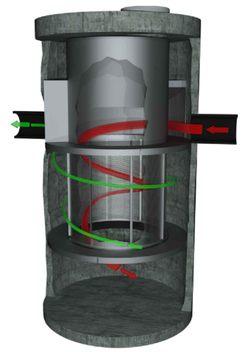
TREATABLE FLOWRATE [L/s]	350
MAXIMUM TOTAL FLOWRATE [L/s]	3800
WEIR HEIGHT [mm]	800



SITE SPECIFIC DATA REQUIREMENTS

FLOWRATE INTO DIVERSION CHAMBER[L/S]	[ ]

PIPE DATA:	I.L.	MATERIAL	DIAMETER
INLET PIPE	[ ]	[ ]	[ ]
OUTLET PIPE	[ ]	[ ]	[ ]

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UPPER TANK WEIGHT	6760kg
UPPER TANK WEIGHT	4430kg

NOTE: TANK SUPPLIED IN TWO PARTS; PARTS A & B TO BE JOINED ON SITE

GENERAL NOTES

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A	ISSUE FOR COORDINATION	14.09.22	UF	VG

North

1 0 1cm at full size 10cm 20cm

Client: 601 HIGH STREET PENRITH, NSW 2750 PHONE : (02) 4732 7777 — PENRITH CITY COUNCIL

PLANNER: LEVEL 10, 70 PITT STREET SYDNEY, NSW 2000 PHONE : (02) 9249 4100 — gln. planning consulting strategy

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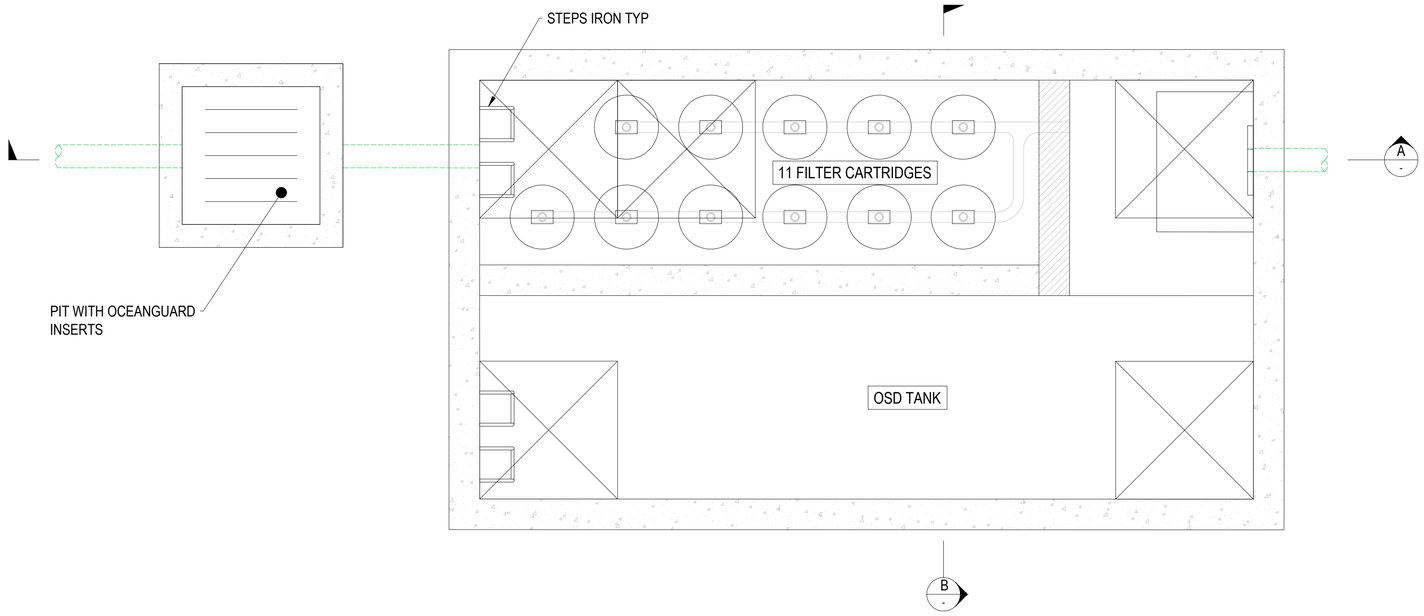
ENGINEERS | MANAGERS | INFRASTRUCTURE PLANNERS | DEVELOPMENT CONSULTANTS

Project: EMU PLAINS INDUSTRIAL PARK
158-164 OLD BATHURST ROAD
EMU PLAINS, NSW 2750

Drawing Title: STORMWATER MANAGEMENT TYPICAL DETAILS SHEET 3

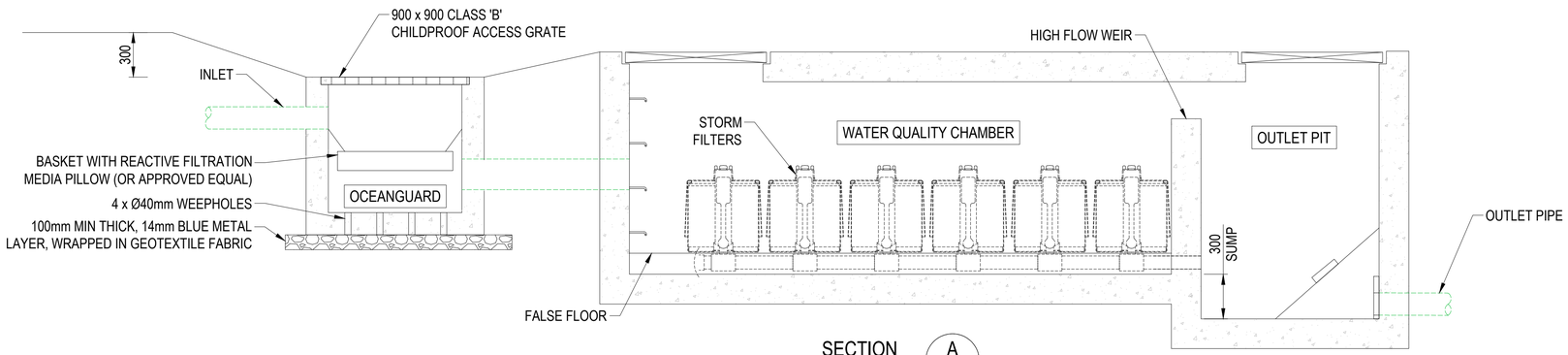
Drawn	Date	Scale A1	Q.A. Check	Date
UF	SEP 2022	NOT TO SCALE		
Designed	Project No.		Dwg. No.	Issue
VG	NSW211637		C7.203	D

ACOR Consultants Pty Ltd ABN 40 079 306 246 ACN 079 306 246 Level 1, No.1 Maitland Place, Baulkham Hills NSW 2153 Tel: (02) 9634 6311 Fax: (02) 9634 6322 www.acor.com.au

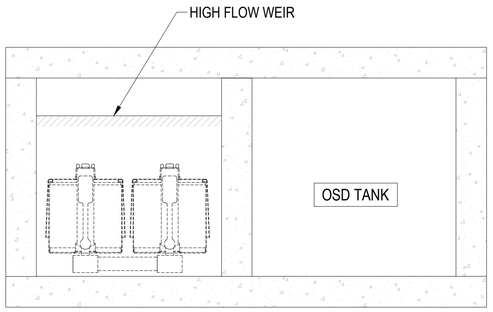


TYPICAL OSD TANK WITH STORMWATER FILTER

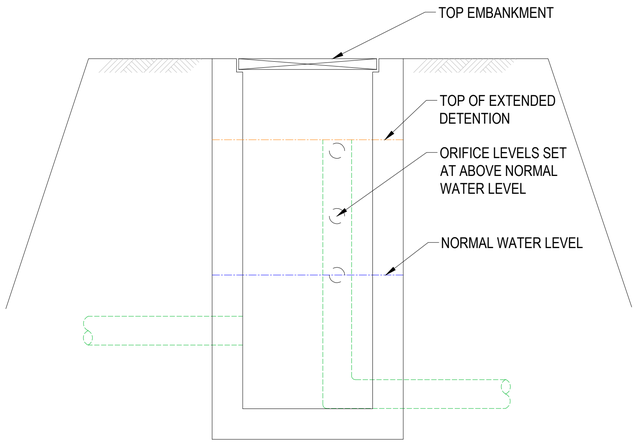
SCALE 1:20



SECTION A
SCALE 1:20



SECTION B
SCALE 1:20



WETLAND TYPICAL CONTROL PIT DETAILS

NOT TO SCALE

SCALE 1:20 @ A1
SCALE 1:40 @ A3

0 200 400 800 1200 1600 2000mm

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North

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C	ISSUE FOR DEVELOPMENT APPLICATION	11.10.22	UF	VG
A	ISSUE FOR COORDINATION	14.09.22	UF	VG

-1 0 1cm at full size 10cm 20cm

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Project
EMU PLAINS INDUSTRIAL PARK
158-164 OLD BATHURST ROAD
EMU PLAINS, NSW 2750

Drawing Title
STORMWATER MANAGEMENT
TYPICAL DETAILS
SHEET 4

Drawn	Date	Scale A1	Q.A. Check	Date
UF	SEP 2023	AS SHOWN		
Designed	Project No.	Dwg. No.	Issue	
VG	NSW211637	C7.204	D	

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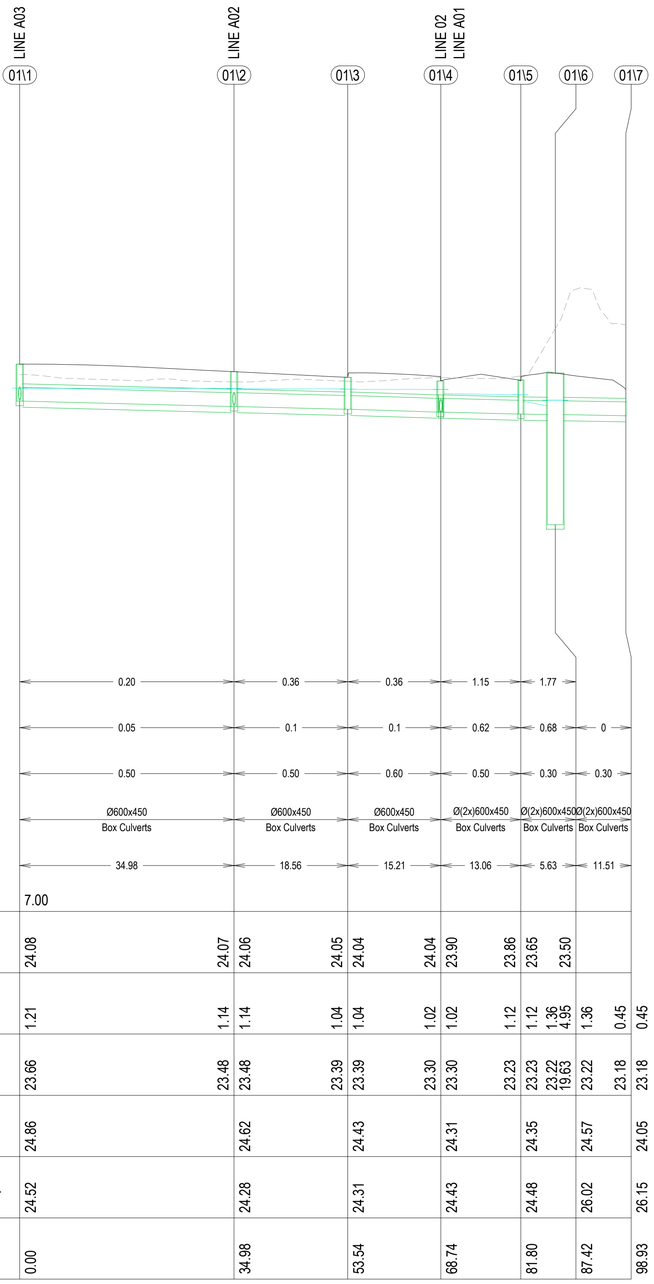
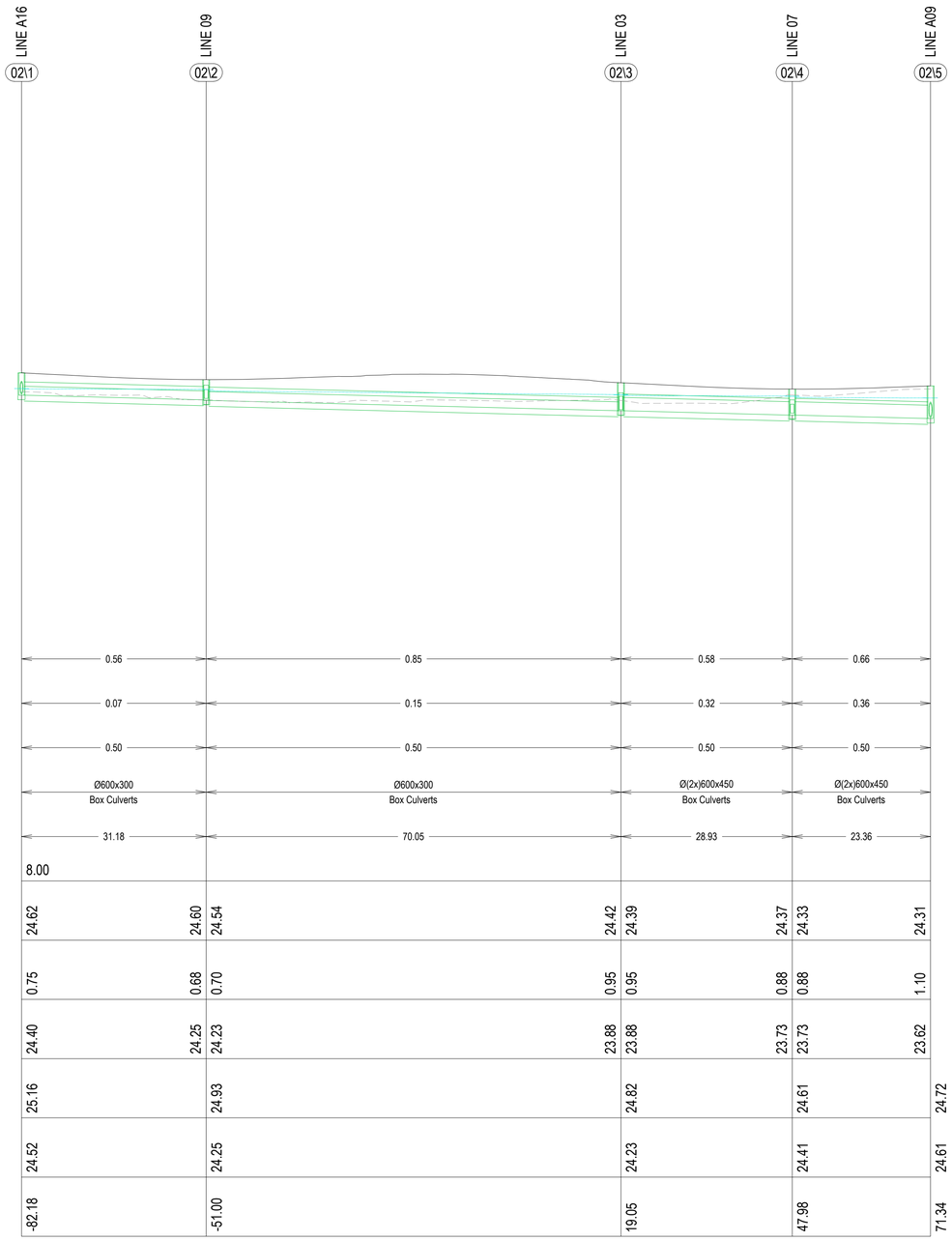
Oct 17, 2022 - 4:39pm

DETAILS IN DRAINS MODELS BY
ACOR IN SEPARATE FILES





VELOCITY (m/s)	0.20			0.36		0.36		1.15		1.77														
PIPE FLOW (m3/s)	0.05			0.1		0.1		0.62		0.68		0												
PIPE GRADE (%)	0.50			0.50		0.60		0.50		0.30		0.30												
PIPE SIZE (mm) PIPE CLASS	Ø600x450 Box Culverts			Ø600x450 Box Culverts		Ø600x450 Box Culverts		Ø(2x)600x450 Box Culverts		Ø(2x)600x450 Box Culverts		Ø(2x)600x450 Box Culverts												
LENGTH (m)	34.98			18.56		15.21		13.06		5.63		11.51												
DATUM R.L.	7.00																							
HYDRAULIC GRADE LINE	24.08		24.07	24.06		24.05	24.04		24.04	23.90		23.86	23.65	23.50										
DEPTH TO INVERT FROM DESIGN SURFACE	1.21		1.14	1.14		1.04	1.04		1.02	1.02		1.12	1.12	1.36 4.95	1.36		0.45	0.45						
INVERT LEVEL	23.66		23.48	23.48		23.39	23.39		23.30	23.30		23.23	23.23	23.22 19.63	23.22		23.18	23.18						
DESIGN SURFACE LEVEL	24.86			24.62			24.43			24.31			24.35		24.57			24.05						
EXISTING SURFACE LEVEL	24.52			24.28			24.31			24.43			24.48		26.02			26.15						
CHAINAGE	0.00			34.98			53.54			68.74			81.80		87.42			98.93						

LINE 01

VELOCITY (m/s)	0.56			0.85									0.58			0.66								
PIPE FLOW (m3/s)	0.07			0.15									0.32			0.36								
PIPE GRADE (%)	0.50			0.50									0.50			0.50								
PIPE SIZE (mm) PIPE CLASS	Ø600x300 Box Culverts			Ø600x300 Box Culverts									Ø(2x)600x450 Box Culverts			Ø(2x)600x450 Box Culverts								
LENGTH (m)	31.18			70.05									28.93			23.36								
DATUM R.L.	8.00																							
HYDRAULIC GRADE LINE	24.62		24.60	24.54								24.42	24.39		24.37	24.33		24.31						
DEPTH TO INVERT FROM DESIGN SURFACE	0.75		0.68	0.70								0.95	0.95		0.88	0.88		1.10						
INVERT LEVEL	24.40		24.25	24.23								23.88	23.88		23.73	23.73		23.62						
DESIGN SURFACE LEVEL	25.16			24.93									24.82			24.61			24.72					
EXISTING SURFACE LEVEL	24.52			24.25									24.23			24.41			24.61					
CHAINAGE	-82.18			-51.00									19.05			47.98			71.34					

LINE 02

H 1:500 (AT A1) 10 0 10 20 30 40 50 METRES

V 1:100 (AT A1) 2 1 0 1 2 3 4 5 6 7 8 9 10 METRES

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North

-1 0 1cm at full size 10cm 20cm

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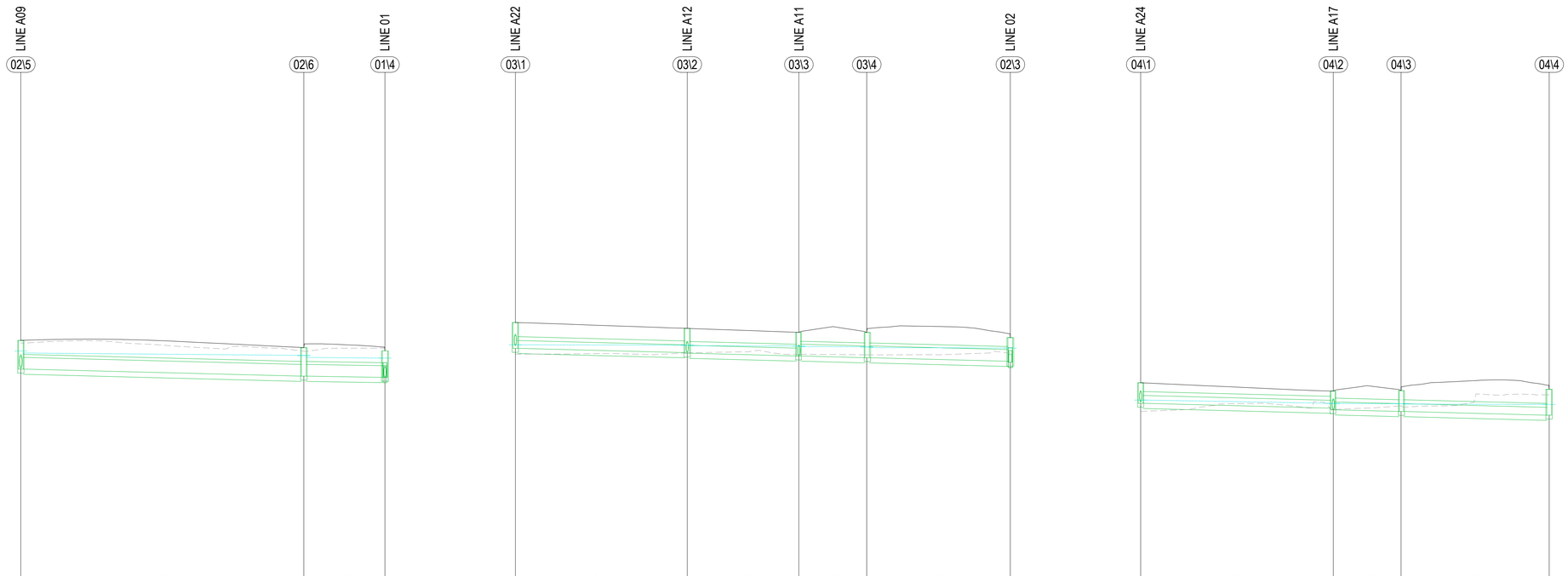
Project
EMU PLAINS INDUSTRIAL PARK
158-164 OLD BATHURST ROAD
EMU PLAINS, NSW 2750

Drawing Title
STORMWATER MANAGEMENT
LONGITUDINAL SECTION
SHEET 1

Drawn	Date	Scale A1	Q.A. Check	Date
UF	SEP 2022	AS SHOWN		
Designed	Project No.		Dwg. No.	Issue
VG	NSW211637		C7.401	D

Oct 17, 2022 - 4:36pm



	LINE 02																							
VELOCITY (m/s)		0.86							0.88															
PIPE FLOW (m3/s)		0.47							0.48															
PIPE GRADE (%)		0.50							0.30															
PIPE SIZE (mm) PIPE CLASS		Ø(2x)600x450 Box Culverts							Ø(2x)600x450 Box Culverts															
LENGTH (m)		54.25							15.57															
DATUM R.L.		8.00																						
HYDRAULIC GRADE LINE	24.31	24.23						24.14	24.07					24.04	23.90									
DEPTH TO INVERT FROM DESIGN SURFACE	1.10	1.10						1.10	1.10					1.02	1.02									
INVERT LEVEL	23.62	23.62						23.35	23.35					23.30	23.30									
DESIGN SURFACE LEVEL		24.72							24.44						24.31									
EXISTING SURFACE LEVEL		24.61							24.30						24.43									
CHAINAGE		71.34							125.59						141.16									

	LINE 03																							
VELOCITY (m/s)		0.42							0.48				0.60							0.66				
PIPE FLOW (m3/s)		0.04							0.08				0.13							0.16				
PIPE GRADE (%)		0.50							0.50				0.50							0.50				
PIPE SIZE (mm) PIPE CLASS		Ø600x300 Box Culverts							Ø600x300 Box Culverts				Ø600x450 Box Culverts							Ø600x450 Box Culverts				
LENGTH (m)		32.95							21.41				13.02							27.53				
DATUM R.L.		8.00																						
HYDRAULIC GRADE LINE		24.55						24.53	24.51				24.50	24.48			24.47	24.44					24.42	24.39
DEPTH TO INVERT FROM DESIGN SURFACE		0.99						0.93	0.95				0.91	0.91			0.97	0.97					0.91	0.95
INVERT LEVEL		24.41						24.25	24.23				24.12	24.12			24.06	24.06					23.92	23.88
DESIGN SURFACE LEVEL		25.41							25.18					25.03				25.02						24.82
EXISTING SURFACE LEVEL		24.19							24.24					24.19				24.17						24.23
CHAINAGE		-32.95							0.00					21.41				34.43						61.96

	LINE 04																							
VELOCITY (m/s)		0.76								0.45							0.50							
PIPE FLOW (m3/s)		0.06								0.13							0.17							
PIPE GRADE (%)		0.50								0.50							0.50							
PIPE SIZE (mm) PIPE CLASS		Ø600x300 Box Culverts								Ø(2x)600x300 Box Culverts							Ø(2x)600x300 Box Culverts							
LENGTH (m)		36.93								13.01							28.39							
DATUM R.L.		10.00																						
HYDRAULIC GRADE LINE		24.43						24.30	24.30					24.29	24.28						24.26			
DEPTH TO INVERT FROM DESIGN SURFACE		0.79						0.65	0.72					0.80	0.80						1.00			
INVERT LEVEL		24.31						24.12	24.06					23.99	23.99						23.85			
DESIGN SURFACE LEVEL		25.09								24.78					24.79									24.84
EXISTING SURFACE LEVEL		23.99								24.07					24.21									24.63
CHAINAGE		-155.57								-118.64					-105.63									-77.25

H 1:500 (AT A1) 10 0 10 20 30 40 50 METRES

V 1:100 (AT A1) 2 1 0 1 2 3 4 5 6 7 8 9 10 METRES

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C	ISSUE FOR DEVELOPMENT APPLICATION	11.10.22	UF	VG
A	ISSUE FOR COORDINATION	14.09.22	UF	VG

North

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Project
EMU PLAINS INDUSTRIAL PARK
158-164 OLD BATHURST ROAD
EMU PLAINS, NSW 2750

Drawing Title
STORMWATER MANAGEMENT
LONGITUDINAL SECTION
SHEET 2

Drawn	Date	Scale A1	Q.A. Check	Date
UF	SEP 2022	AS SHOWN		
Designed	Project No.		Dwg. No.	Issue
VG	NSW211637		C7.402	D

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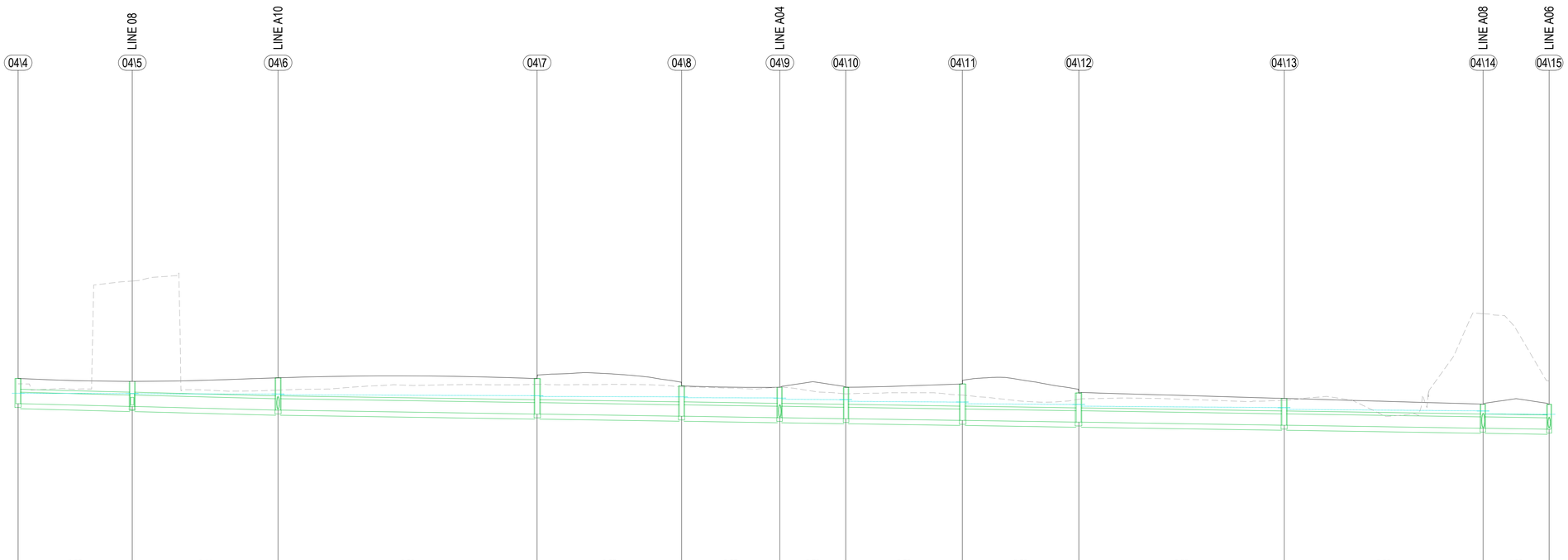

VELOCITY (m/s)	0.35		0.41		0.56		0.57		0.57		0.73		0.79		0.79		0.80		0.82		1.08							
PIPE FLOW (m3/s)	0.17		0.22		0.3		0.31		0.31		0.4		0.42		0.43		0.43		0.44		0.87							
PIPE GRADE (%)	0.50		0.50		0.30		0.30		0.30		0.30		0.30		0.30		0.30		0.30		0.30							
PIPE SIZE (mm) PIPE CLASS	Ø(2x)600x450 Box Culverts		Ø(2x)600x450 Box Culverts		Ø(2x)600x450 Box Culverts		Ø(2x)600x450 Box Culverts		Ø(2x)600x450 Box Culverts		Ø(2x)600x450 Box Culverts		Ø(2x)600x450 Box Culverts		Ø(2x)600x450 Box Culverts		Ø(2x)600x450 Box Culverts		Ø(2x)600x450 Box Culverts		Ø1800x450 Box Culverts							
LENGTH (m)	22.53		28.80		51.15		28.54		19.40		13.02		23.03		22.99		40.56		39.29		13.03							
DATUM R.L.	10.00																											
HYDRAULIC GRADE LINE	24.26	24.25		24.25	24.24		24.23	24.20			24.16	24.13		24.12	24.09		24.07	24.02	24.00	23.94		23.91	23.85		23.82	23.75		23.69	23.62		23.57	23.45	23.43	
DEPTH TO INVERT FROM DESIGN SURFACE	1.00	1.00		0.99	0.99		1.28	1.28			1.40	1.40		1.20	1.20		1.20	1.20	1.24	1.24		1.44	1.44		1.15	1.15		1.06	1.06		0.95	0.95	0.98	
INVERT LEVEL	23.85	23.85		23.74	23.74		23.59	23.59			23.44	23.44		23.35	23.35		23.30	23.30	23.26	23.26		23.19	23.19		23.12	23.12		23.00	23.00		22.88	22.88	22.84	
DESIGN SURFACE LEVEL		24.84			24.73			24.87				24.84			24.55			24.49		24.49			24.63			24.27			24.06			23.83		23.82
EXISTING SURFACE LEVEL		24.63			28.69			24.38				24.61			24.51			24.50		24.23			24.19			24.03			23.98			27.40		24.74
CHAINAGE		-77.25			-54.71			-25.91				25.24			53.78			73.18		86.20			109.23			132.22			172.78			212.07		225.10

LINE 04

H 1:500 (AT A1) 10 0 10 20 30 40 50 METRES

V 1:100 (AT A1) 2 1 0 1 2 3 4 5 6 7 8 9 10 METRES

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North

-1 0 1cm at full size 10cm 20cm

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Project
EMU PLAINS INDUSTRIAL PARK
158-164 OLD BATHURST ROAD
EMU PLAINS, NSW 2750

Drawing Title
STORMWATER MANAGEMENT
LONGITUDINAL SECTION
SHEET 3

Drawn	Date	Scale A1	Q.A. Check	Date
UF	SEP 2022	AS SHOWN		
Designed	Project No.		Dwg. No.	Issue
VG	NSW211637		C7.403	D

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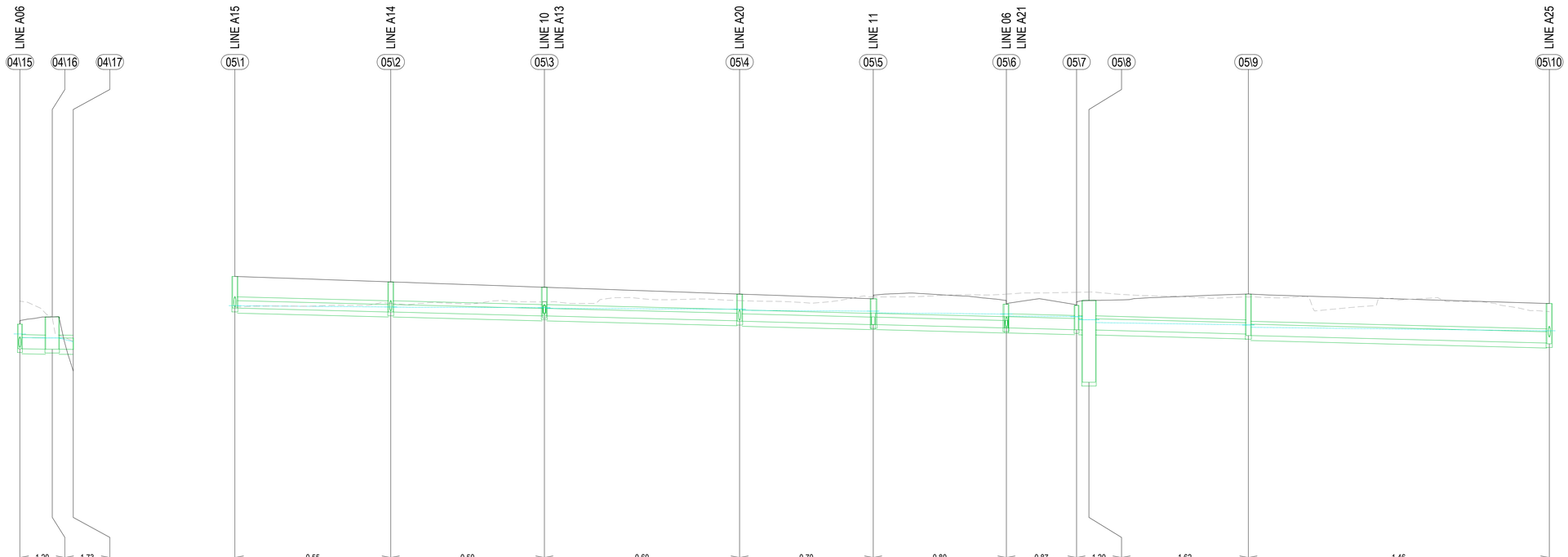

VELOCITY (m/s)	1.20	1.73	0.55	0.50	0.60	0.70	0.80	0.87	1.20	1.62	1.46
PIPE FLOW (m3/s)	0.96	0.96	0.03	0.06	0.11	0.13	0.14	0.23	0.29	0.29	0.29
PIPE GRADE (%)	0.30	0.12	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
PIPE SIZE (mm)	Ø1800x450	Ø1800x450	Ø600x300	Ø600x300	Ø600x300	Ø600x300	Ø600x300	Ø600x450	Ø600x450	Ø600x450	Ø600x450
PIPE CLASS	Box Culverts	Box Culverts	Box Culverts	Box Culverts	Box Culverts	Box Culverts	Box Culverts	Box Culverts	Box Culverts	Box Culverts	Box Culverts
LENGTH (m)	6.47	4.20	31.17	30.72	39.04	26.72	26.64	14.02	2.49	31.87	60.18
DATUM R.L.	7.00		7.00								
HYDRAULIC GRADE LINE	23.43 23.28	23.27 23.27	23.12 23.12	24.56 24.51	24.50 24.48	24.45 24.42	24.38 24.34	24.28 24.23	24.15 24.13	24.01 24.00	23.89 23.79	23.70 23.56
DEPTH TO INVERT FROM DESIGN SURFACE	0.98 0.98	1.29 1.29	0.45 0.45	1.27 1.21	1.21 1.14	1.14 1.07	1.09 1.03	1.03 0.95	0.95 0.97	0.97 1.18 3.27	1.18 1.60	1.66 1.58
INVERT LEVEL	22.84 22.84	22.82 22.82	22.82 22.82	24.46 24.31	24.31 24.15	24.15 23.96	23.94 23.80	23.80 23.67	23.67 23.60	23.60 23.59 21.50	23.59 23.43	23.37 23.07
DESIGN SURFACE LEVEL	23.82	24.11	21.95	25.73	25.51	25.30	25.02	24.84	24.62	24.57	24.77	25.03 24.65
EXISTING SURFACE LEVEL	24.74	24.09	23.14	24.51	24.65	24.71	24.76	24.91	25.02	25.10	25.10	24.91 24.32
CHAINAGE	225.10	231.58	235.78	0.00	31.17	61.89	100.93	127.65	154.29	168.31	170.80	202.68 262.85

LINE 04

LINE 05

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H 1:500 (AT A1) 10 0 10 20 30 40 50 METRES

V 1:100 (AT A1) 2 1 0 1 2 3 4 5 6 7 8 9 10 METRES

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-1 0 1cm at full size 10cm 20cm

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Project
EMU PLAINS INDUSTRIAL PARK
158-164 OLD BATHURST ROAD
EMU PLAINS, NSW 2750

Drawing Title
STORMWATER MANAGEMENT
LONGITUDINAL SECTION
SHEET 4

Drawn	Date	Scale A1	Q.A. Check	Date
UF	SEP 2022	AS SHOWN		
Designed	Project No.	Dwg. No.	Issue	
VG	NSW211637	C7.404	D	

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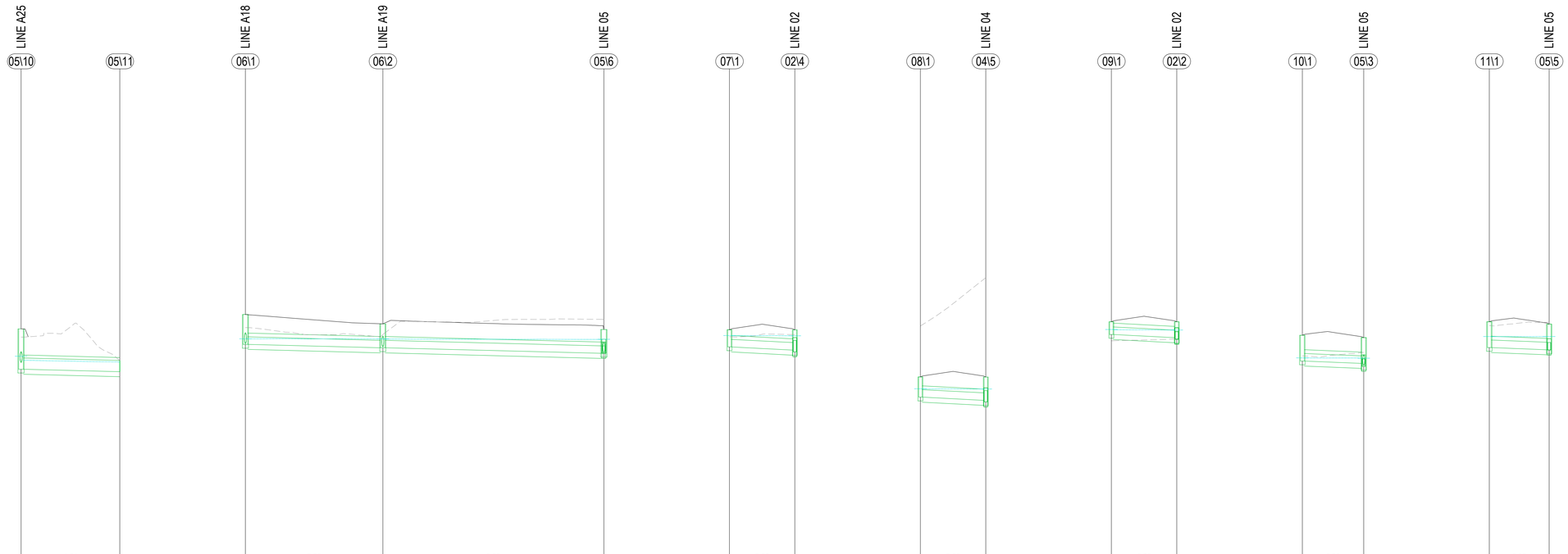
Oct 17, 2022 - 4:39pm



	LINE 05			LINE 06			LINE 07			LINE 08			LINE 09			LINE 10			LINE 11		
VELOCITY (m/s)		1.61			0.20	0.30		0.25			0.28			0.56			0.32			0.09	
PIPE FLOW (m3/s)		0.35			0.03	0.06		0.04			0.05			0.06			0.02			0.02	
PIPE GRADE (%)		0.50			0.50	0.50		1.00			1.00			1.00			0.77			0.75	
PIPE SIZE (mm) PIPE CLASS		Ø600x450 Box Culverts			Ø600x300 Box Culverts	Ø600x300 Box Culverts		Ø600x300 Box Culverts			Ø600x300 Box Culverts			Ø600x300 Box Culverts			Ø600x300 Box Culverts			Ø600x300 Box Culverts	
LENGTH (m)		19.65			27.35	43.99		13.01			13.02			13.01			12.21			11.91	
DATUM R.L.		8.00			8.00			8.00			10.00			8.00			9.00			8.00	
HYDRAULIC GRADE LINE	23.56	23.39	23.33	23.33	24.25	24.24	24.23	24.15	24.37	24.37	24.33	24.25	24.25	24.24	24.61	24.60	24.54	24.49	24.48	24.45	24.34	24.34	24.28
DEPTH TO INVERT FROM DESIGN SURFACE	1.58	1.61	0.45	0.45	1.19	0.95	0.95	0.95	0.68	0.81	0.88	0.80	0.93	0.99	0.50	0.64	0.70	1.03	1.03	1.14	1.03	1.02	1.03
INVERT LEVEL	23.07	23.04	22.94	22.94	24.03	23.89	23.89	23.67	23.93	23.80	23.73	23.93	23.80	23.74	24.42	24.29	24.23	24.37	24.27	24.15	23.90	23.81	23.80
DESIGN SURFACE LEVEL		24.65	23.39		25.22	24.85	24.62		24.61	24.61		24.73	24.73		24.93	24.93		25.39	25.30		24.93	24.84	
EXISTING SURFACE LEVEL		24.32	23.38		24.70	24.42	25.02		24.33	24.41		26.76	28.69		24.17	24.25		24.57	24.71		24.78	24.91	
CHAINAGE		262.85	282.50		0.00	27.35	71.35		0.00	13.01		0.00	13.02		0.00	13.01		0.00	12.21		0.00	11.91	

H 1:500 (AT A1) 10 0 10 20 30 40 50 METRES

V 1:100 (AT A1) 2 1 0 1 2 3 4 5 6 7 8 9 10 METRES

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Issue	Description	Date	Drawn	Approved
D	ISSUE FOR DEVELOPMENT APPLICATION	17.10.22	UF	VG
C	ISSUE FOR DEVELOPMENT APPLICATION	11.10.22	UF	VG
A	ISSUE FOR COORDINATION	14.09.22	UF	VG

North

-1 0 1cm at full size 10cm 20cm

Client
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Project
EMU PLAINS INDUSTRIAL PARK
158-164 OLD BATHURST ROAD
EMU PLAINS, NSW 2750

Drawing Title
STORMWATER MANAGEMENT
LONGITUDINAL SECTION
SHEET 5

Drawn	Date	Scale A1	Q.A. Check	Date
UF	SEP 2022	AS SHOWN		
Designed	Project No.		Dwg. No.	Issue
VG	NSW211637		C7.405	D

Oct 17, 2022 - 4:36pm
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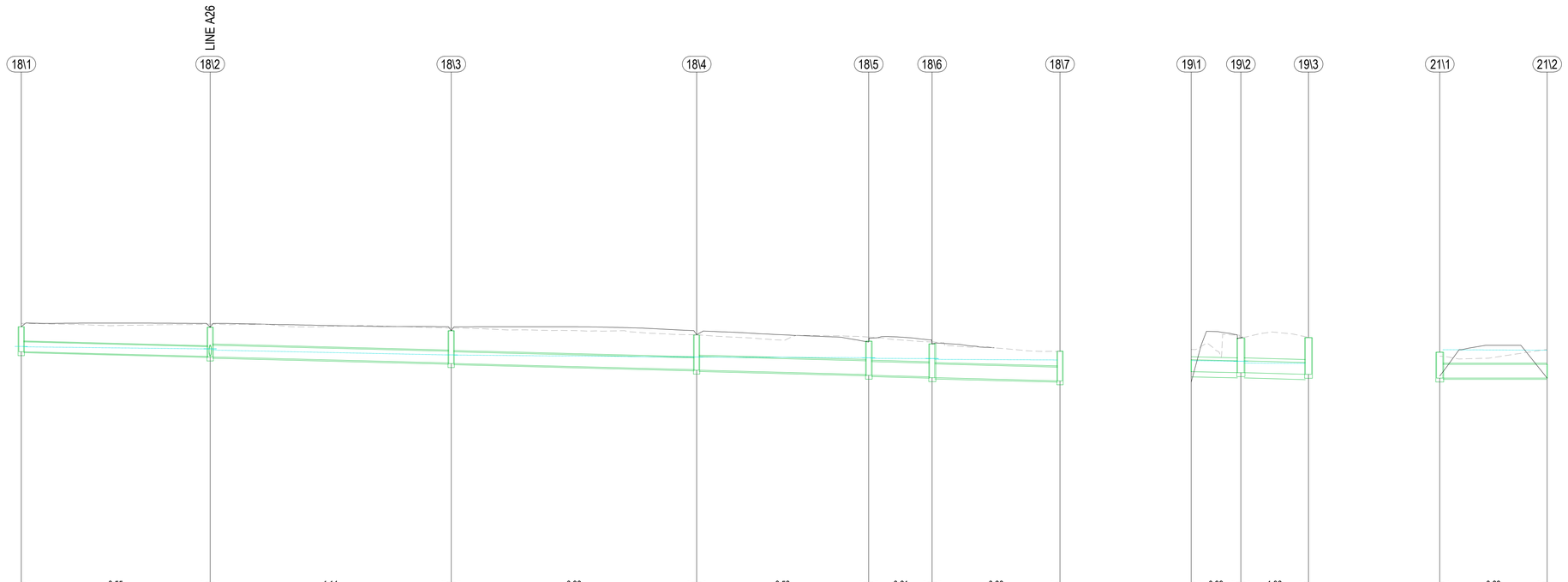

	18\1 – 18\2	18\2 – 18\3	18\3 – 18\4	18\4 – 18\5	18\5 – 18\6	18\6 – 18\7	19\1 – 19\2	19\2 – 19\3	21\1 – 21\2
VELOCITY (m/s)	0.55	1.14	0.96	0.58	0.61	0.66	0.93	1.06	0.83
PIPE FLOW (m3/s)	0.03	0.11	0.12	0.12	0.13	0.14	0.7	0.7	0.26
PIPE GRADE (%)	0.50	0.50	0.50	0.50	0.50	0.50	0.43	0.50	-0.01
PIPE SIZE (mm)	Ø375	Ø450	Ø450	Ø525	Ø525	Ø525	Ø450	Ø1800x450	Ø(2x)525
PIPE CLASS	RCP Class 2	RCP Class 2	RCP Class 2	RCP Class 2	RCP Class 2	RCP Class 2	Box Culverts	Box Culverts	RCP Class 2
LENGTH (m)	35.99	45.92	46.75	32.77	12.10	24.36	9.46	12.88	20.46
DATUM R.L.	7.00						7.00		7.00
HYDRAULIC GRADE LINE	23.54	23.46 / 23.41	23.23 / 23.22	23.15 / 23.15	23.12 / 23.10	23.09 / 23.06	23.04 / 23.04	23.01 / 22.99	22.92 / 22.91	22.91 / 23.43	23.41 / 23.41
DEPTH TO INVERT FROM DESIGN SURFACE	0.95	1.11 / 1.13	1.23 / 1.25	1.32 / 1.34	1.27 / 1.30	1.26 / 1.29	1.13 / 1.13	0.45	1.31 / 1.31	1.40 / 1.40	0.98	0.52 / 0.52
INVERT LEVEL	23.35	23.17 / 23.15	22.92 / 22.90	22.67 / 22.65	22.48 / 22.45	22.39 / 22.36	22.24 / 22.24	22.59	22.55 / 22.55	22.49 / 22.49	22.35	22.35 / 22.35
DESIGN SURFACE LEVEL	24.30	24.28	24.15	24.00	23.72	23.65	23.37	22.19	23.88	23.89	22.42	22.35
EXISTING SURFACE LEVEL	24.43	24.40	24.25	23.99	23.91	23.72	23.34	23.44	23.87	23.89	23.18	23.44
CHAINAGE	-81.65	-45.66	0.26	47.01	79.78	91.88	116.24	0.00	9.46	22.34	0.00	20.46

LINE 18 LINE 19 LINE 21

H 1:500 (AT A1) 10 0 10 20 30 40 50 METRES

V 1:100 (AT A1) 2 1 0 1 2 3 4 5 6 7 8 9 10 METRES

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A	ISSUE FOR COORDINATION	14.09.22	UF	VG

North

-1 0 1cm at full size 10cm 20cm

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Project
EMU PLAINS INDUSTRIAL PARK
158-164 OLD BATHURST ROAD
EMU PLAINS, NSW 2750

Drawing Title
STORMWATER MANAGEMENT
LONGITUDINAL SECTION
SHEET 6

Drawn	Date	Scale A1	Q.A. Check	Date
UF	SEP 2022	AS SHOWN		
Designed	Project No.	Dwg. No.	Issue	
VG	NSW211637	C7.406	D	

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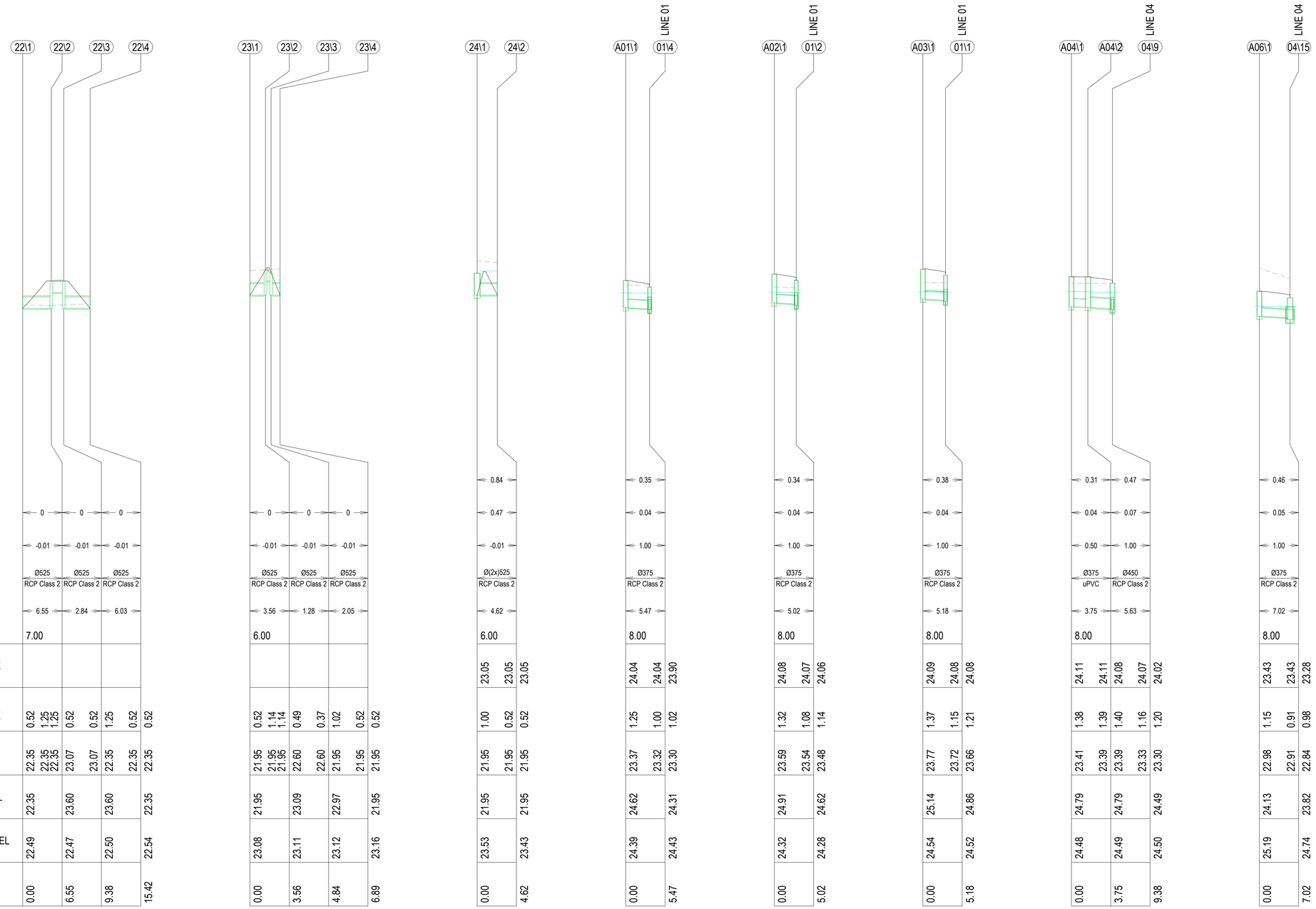

	LINE 22				LINE 23				LINE 24			LINE A01			LINE A02			LINE A03			LINE A04			LINE A06		
VELOCITY (m/s)									0.84			0.35			0.34			0.38			0.31	0.47		0.46		
PIPE FLOW (m3/s)	0	0	0		0	0	0		0.47			0.04			0.04			0.04			0.04	0.07		0.05		
PIPE GRADE (%)	-0.01	-0.01	-0.01		-0.01	-0.01	-0.01		-0.01			1.00			1.00			1.00			0.50	1.00		1.00		
PIPE SIZE (mm)	Ø525	Ø525	Ø525		Ø525	Ø525	Ø525		Ø(2x)525			Ø375			Ø375			Ø375			Ø375	Ø450		Ø375		
PIPE CLASS	RCP Class 2	RCP Class 2	RCP Class 2		RCP Class 2	RCP Class 2	RCP Class 2		RCP Class 2			RCP Class 2			RCP Class 2			RCP Class 2			uPVC	RCP Class 2		RCP Class 2		
LENGTH (m)	6.55	2.84	6.03		3.56	1.28	2.05		4.62			5.47			5.02			5.18			3.75	5.63		7.02		
DATUM R.L.	7.00				6.00				6.00			8.00			8.00			8.00			8.00			8.00		
HYDRAULIC GRADE LINE									23.05	23.05	23.05	24.04	24.04	23.90	24.08	24.07	24.06	24.09	24.08	24.08	24.11	24.11		23.43	23.43	23.28
DEPTH TO INVERT FROM DESIGN SURFACE	0.52	1.25 1.25	0.52	0.52	1.25	0.52	0.52	0.52	0.52	1.00	0.52	0.52	1.25	1.00	1.02	1.32	1.08	1.14	1.37	1.15	1.21	1.38	1.39	1.40	1.16	1.20	1.15	0.91	0.98
INVERT LEVEL	22.35	22.35 22.35	23.07	23.07	22.35	22.35	22.35	22.35	21.95	21.95	21.95	23.37	23.32	23.30	23.59	23.54	23.48	23.77	23.72	23.66	23.41	23.39	23.39	23.33	23.30	22.98	22.91	22.84
DESIGN SURFACE LEVEL	22.35		23.60		23.60		22.35	21.95		23.09		22.97		21.95	21.95	24.62	24.31	24.91	24.62	24.86	25.14	24.79	24.79	24.49	24.13	23.82
EXISTING SURFACE LEVEL	22.49		22.47		22.50		22.54	23.08		23.11		23.12		23.16	23.53	23.43	24.39	24.43	24.32	24.28	24.52	24.54	24.48	24.49	24.50	25.19	24.74
CHAINAGE	0.00		6.55		9.38		15.42	0.00		3.56		4.84		6.89	0.00	4.62	0.00	5.47	0.00	5.02	0.00	5.18	0.00	3.75	9.38	0.00	7.02

H 1:500 (AT A1) 10 0 10 20 30 40 50 METRES

V 1:100 (AT A1) 2 1 0 1 2 3 4 5 6 7 8 9 10 METRES

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C	ISSUE FOR DEVELOPMENT APPLICATION	11.10.22	UF	VG
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-1 0 1cm at full size 10cm 20cm

North

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Project
EMU PLAINS INDUSTRIAL PARK
158-164 OLD BATHURST ROAD
EMU PLAINS, NSW 2750

Drawing Title
STORMWATER MANAGEMENT
LONGITUDINAL SECTION
SHEET 7

Drawn	Date	Scale A1	Q.A. Check	Date
UF	SEP 2022	AS SHOWN		
Designed	Project No.	Dwg. No.	Issue	
VG	NSW211637	C7.407	D	

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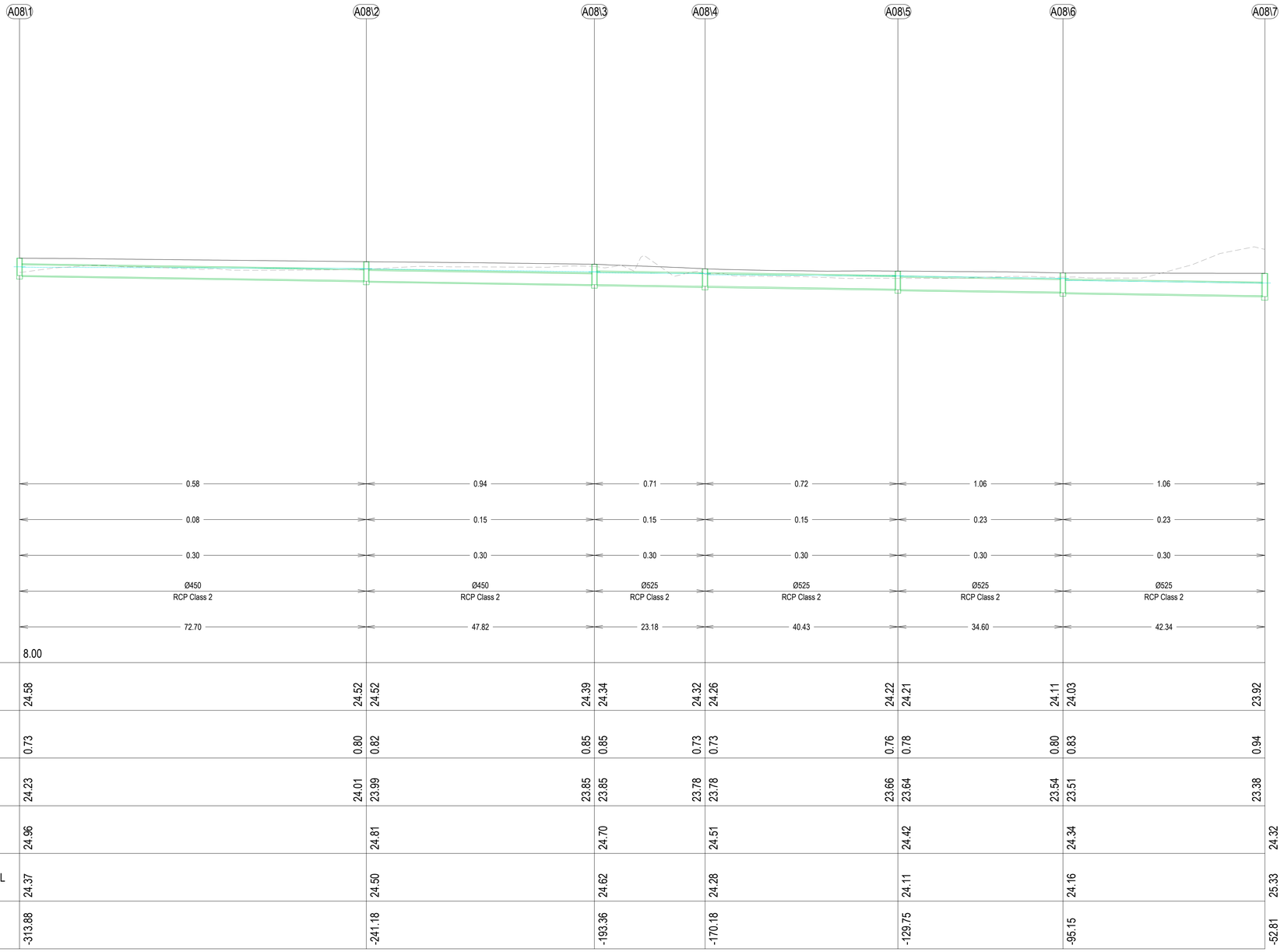

LINE A08

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V 1:100 (AT A1) 2 1 0 1 2 3 4 5 6 7 8 9 10 METRES

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C	ISSUE FOR DEVELOPMENT APPLICATION	11.10.22	UF	VG
A	ISSUE FOR COORDINATION	14.09.22	UF	VG

North

-1 0 1cm at full size 10cm 20cm

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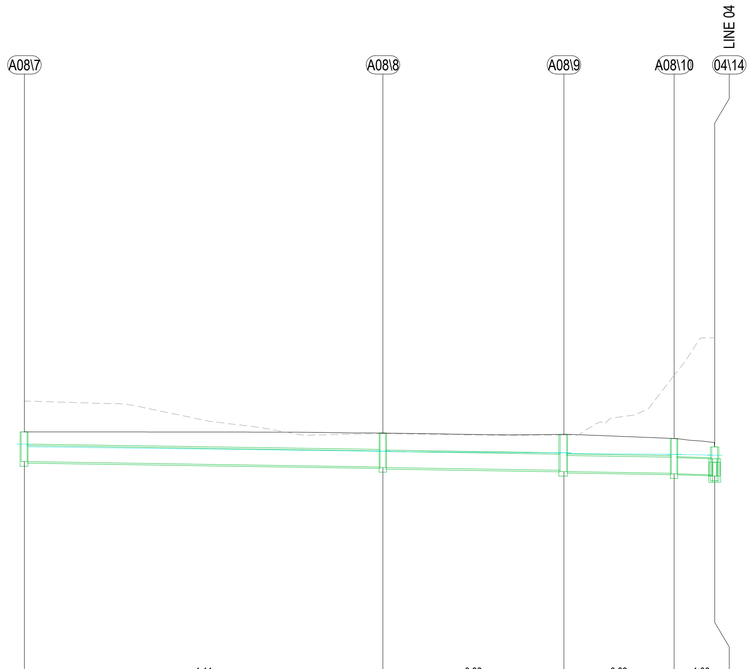
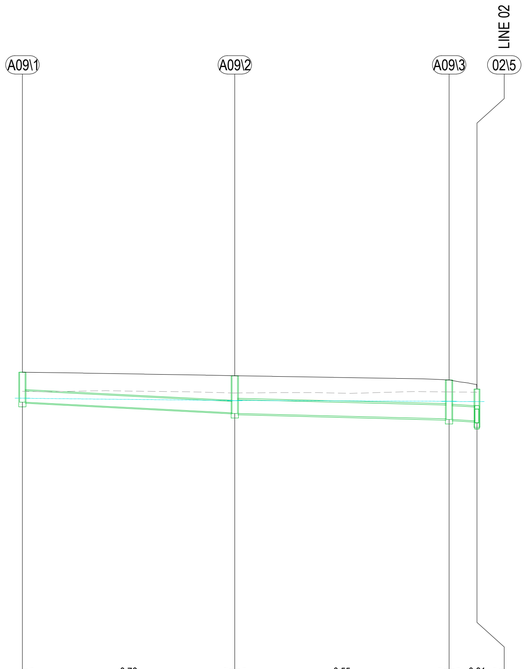
Project
EMU PLAINS INDUSTRIAL PARK
158-164 OLD BATHURST ROAD
EMU PLAINS, NSW 2750

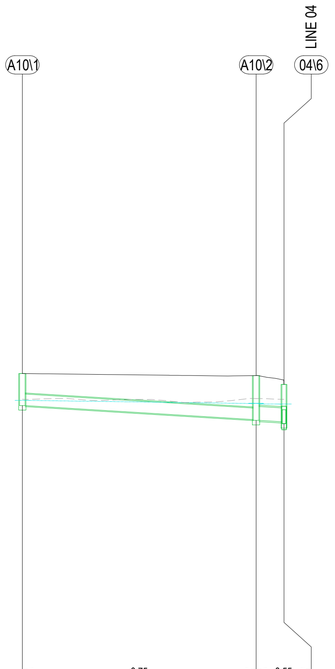
Drawing Title
STORMWATER MANAGEMENT
LONGITUDINAL SECTION
SHEET 8

Drawn	Date	Scale A1	Q.A. Check	Date
UF	SEP 2022	AS SHOWN		
Designed	Project No.		Dwg. No.	Issue
VG	NSW211637		C7.408	D

Oct 17, 2022 - 4:36pm







VELOCITY (m/s)	1.11	0.82	0.83	1.00
PIPE FLOW (m3/s)	0.23	0.36	0.36	0.45
PIPE GRADE (%)	0.30	0.30	0.30	0.50
PIPE SIZE (mm)	Ø525	Ø(2x)525	Ø(2x)525	Ø(2x)525
PIPE CLASS	RCP Class 2	RCP Class 2	RCP Class 2	FRC Class 2
LENGTH (m)	58.52	29.55	17.99	6.63
DATUM R.L.	9.00			
HYDRAULIC GRADE LINE	23.92, 23.83, 23.69	23.68, 23.64	23.62, 23.59	23.58, 23.57, 23.45
DEPTH TO INVERT FROM DESIGN SURFACE	0.94, 0.97, 1.11	1.13, 1.17	1.21, 1.13	1.15, 0.91, 0.95
INVERT LEVEL	23.38, 23.35, 23.17	23.15, 23.07	23.03, 22.97	22.95, 22.92, 22.88
DESIGN SURFACE LEVEL	24.32	24.28	24.24	24.10, 23.83
EXISTING SURFACE LEVEL	25.33	24.26	24.21	26.16, 27.40
CHAINAGE	-52.81	5.71	35.26	53.25, 59.88

LINE A08

VELOCITY (m/s)	0.76	0.55	0.81
PIPE FLOW (m3/s)	0.04	0.09	0.13
PIPE GRADE (%)	1.00	0.50	1.00
PIPE SIZE (mm)	Ø375	Ø450	Ø450
PIPE CLASS	RCP Class 2	RCP Class 2	RCP Class 2
LENGTH (m)	34.67	34.98	4.55
DATUM R.L.	8.00		
HYDRAULIC GRADE LINE	24.42, 24.34	24.34, 24.32	24.32, 24.31, 24.23
DEPTH TO INVERT FROM DESIGN SURFACE	0.98, 1.21	1.23, 1.27	1.29, 1.04, 1.10
INVERT LEVEL	24.29, 23.94	23.92, 23.75	23.73, 23.68, 23.62
DESIGN SURFACE LEVEL	25.27	25.16	25.01, 24.72
EXISTING SURFACE LEVEL	24.64	24.59	24.62, 24.61
CHAINAGE	0.00	34.67	69.65, 74.20

LINE A09

VELOCITY (m/s)	0.75	0.55
PIPE FLOW (m3/s)	0.04	0.09
PIPE GRADE (%)	1.20	1.00
PIPE SIZE (mm)	Ø375	Ø450
PIPE CLASS	RCP Class 2	RCP Class 2
LENGTH (m)	38.16	4.55
DATUM R.L.	8.00	
HYDRAULIC GRADE LINE	24.35, 24.25	24.23, 24.23, 24.20
DEPTH TO INVERT FROM DESIGN SURFACE	1.05, 1.44	1.46, 1.22, 1.28
INVERT LEVEL	24.18, 23.72	23.70, 23.65, 23.59
DESIGN SURFACE LEVEL	25.23	25.16, 24.87
EXISTING SURFACE LEVEL	24.39	24.41, 24.38
CHAINAGE	0.00	38.16, 42.71

LINE A10

H 1:500 (AT A1) 10 0 10 20 30 40 50 METRES

V 1:100 (AT A1) 2 1 0 1 2 3 4 5 6 7 8 9 10 METRES

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Project
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158-164 OLD BATHURST ROAD
EMU PLAINS, NSW 2750

Drawing Title
STORMWATER MANAGEMENT
LONGITUDINAL SECTION
SHEET 9

Drawn	Date	Scale A1	Q.A. Check	Date
UF	SEP 2022	AS SHOWN		
Designed	Project No.		Dwg. No.	Issue
VG	NSW211637		C7.409	D

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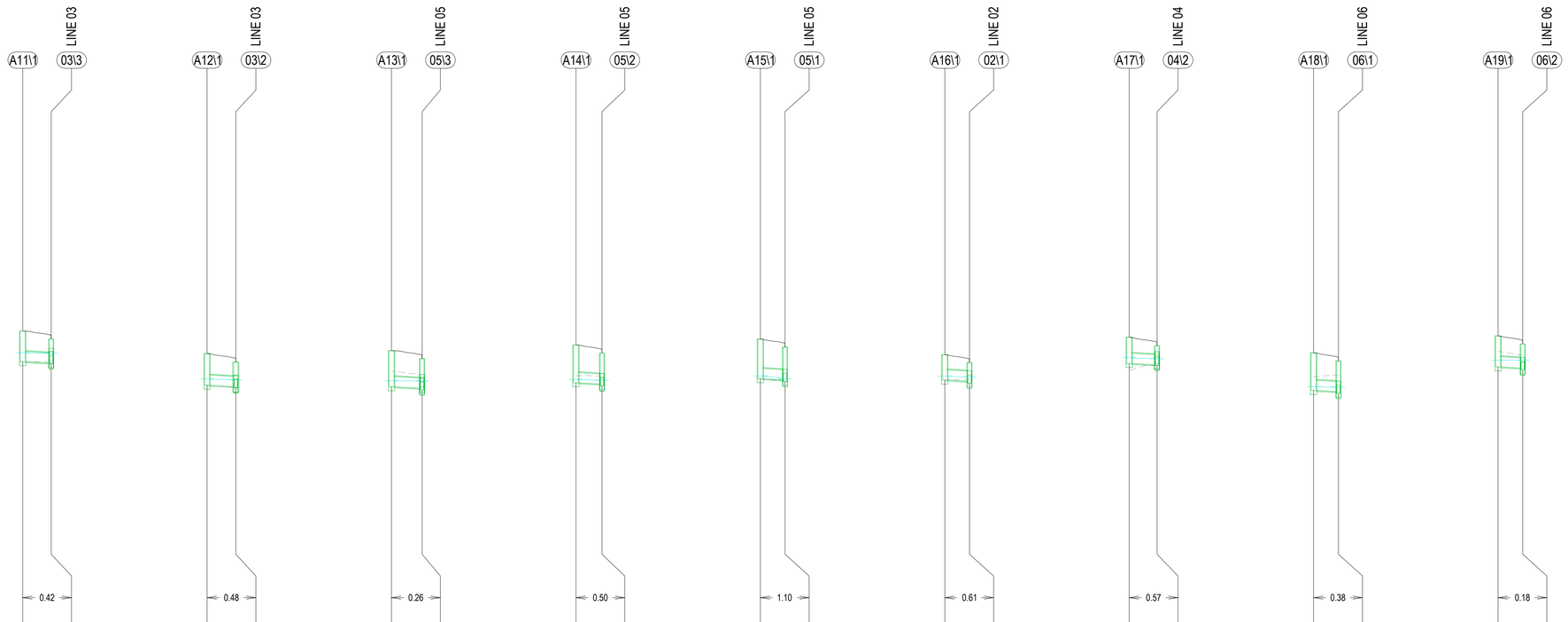
Oct 17, 2022 - 4:36pm



	LINE A11			LINE A12			LINE A13			LINE A14			LINE A15			LINE A16			LINE A17			LINE A18			LINE A19		
VELOCITY (m/s)	0.42			0.48			0.26			0.50			1.10			0.61			0.57			0.38			0.18		
PIPE FLOW (m3/s)	0.04			0.03			0.02			0.01			0.02			0.03			0.03			0.01			0.01		
PIPE GRADE (%)	1.00			1.00			1.00			1.00			1.00			1.00			1.00			1.00			1.00		
PIPE SIZE (mm)	Ø375			Ø375			Ø375			Ø375			Ø375			Ø375			Ø375			Ø375			Ø375		
PIPE CLASS	RCP Class 2			RCP Class 2			RCP Class 2			RCP Class 2			RCP Class 2			RCP Class 2			RCP Class 2			RCP Class 2			RCP Class 2		
LENGTH (m)	5.26			5.30			5.63			4.81			4.55			4.55			5.13			4.58			4.56		
DATUM R.L.	8.00			9.00			9.00			9.00			9.00			9.00			8.00			9.00			8.00		
HYDRAULIC GRADE LINE	24.51	24.50	24.48	24.54	24.53	24.51	24.49	24.48	24.45	24.54	24.51	24.50	24.67	24.59	24.56	24.66	24.63	24.62	24.32	24.30	24.30	24.27	24.25	24.25	24.25	24.25	24.24
DEPTH TO INVERT FROM DESIGN SURFACE	1.13	0.89	0.91	1.17	0.90	0.95	1.33	1.08	1.14	1.39	1.15	1.21	1.46	1.21	1.27	0.94	0.69	0.75	0.97	0.70	0.72	1.38	1.13	1.19	1.14	0.89	0.95
INVERT LEVEL	24.19	24.14	24.12	24.33	24.27	24.23	24.27	24.21	24.15	24.41	24.37	24.31	24.57	24.52	24.46	24.51	24.47	24.40	24.13	24.08	24.06	24.13	24.09	24.03	24.00	23.96	23.89
DESIGN SURFACE LEVEL	25.32		25.03	25.49		25.18	25.60		25.30	25.81		25.51	26.02		25.73	25.45		25.16	25.09		24.78	25.52		25.22	25.14		24.85
EXISTING SURFACE LEVEL	24.20		24.19	24.29		24.24	24.82		24.71	24.67		24.65	24.53		24.51	24.45		24.52	23.87		24.07	24.63		24.70	24.58		24.42
CHAINAGE	0.00		5.26	0.00		5.30	0.00		5.63	0.00		4.81	0.00		4.55	0.00		4.55	0.00		5.13	0.00		4.58	0.00		4.56

H 1:500 (AT A1) 10 0 10 20 30 40 50 METRES

V 1:100 (AT A1) 2 1 0 1 2 3 4 5 6 7 8 9 10 METRES

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D	ISSUE FOR DEVELOPMENT APPLICATION	17.10.22	UF	VG
C	ISSUE FOR DEVELOPMENT APPLICATION	11.10.22	UF	VG
A	ISSUE FOR COORDINATION	14.09.22	UF	VG

North

-1 0 1cm at full size 10cm 20cm

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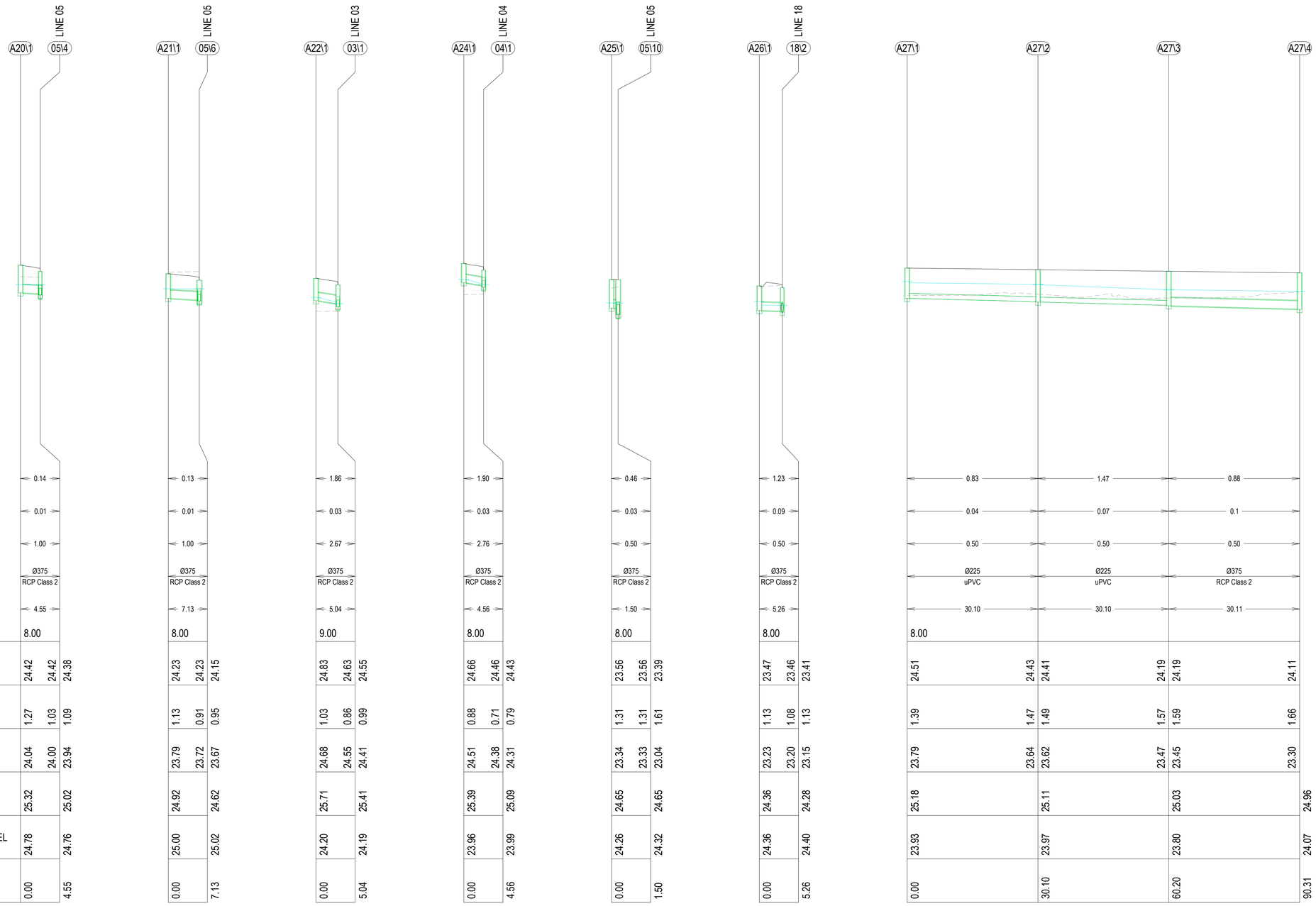
Project
EMU PLAINS INDUSTRIAL PARK
158-164 OLD BATHURST ROAD
EMU PLAINS, NSW 2750

Drawing Title
STORMWATER MANAGEMENT
LONGITUDINAL SECTION
SHEET 10

Drawn	Date	Scale A1	Q.A. Check	Date
UF	SEP 2022	AS SHOWN		
Designed	Project No.		Dwg. No.	Issue
VG	NSW211637		C7.410	D

\\192.168.3.2\drawings\Projects\NSW\211637\Drawings\DWG\DWG\C7.410 C7.412.dwg
Oct 17, 2022 - 4:30pm



	LINE A20			LINE A21			LINE A22			LINE A24			LINE A25			LINE A26			LINE A27				
VELOCITY (m/s)	0.14			0.13			1.86			1.90			0.46			1.23			0.83	1.47	0.88		
PIPE FLOW (m3/s)	0.01			0.01			0.03			0.03			0.03			0.09			0.04	0.07	0.1		
PIPE GRADE (%)	1.00			1.00			2.67			2.76			0.50			0.50			0.50	0.50	0.50		
PIPE SIZE (mm)	Ø375			Ø375			Ø375			Ø375			Ø375			Ø375			Ø225	Ø225	Ø375		
PIPE CLASS	RCP Class 2			RCP Class 2			RCP Class 2			RCP Class 2			RCP Class 2			RCP Class 2			uPVC	uPVC	RCP Class 2		
LENGTH (m)	4.55			7.13			5.04			4.56			1.50			5.26			30.10	30.10	30.11		
DATUM R.L.	8.00			8.00			9.00			8.00			8.00			8.00			8.00				
HYDRAULIC GRADE LINE	24.42	24.42	24.38	24.23	24.23	24.15	24.83	24.63	24.55	24.66	24.46	24.43	23.56	23.56	23.39	23.47	23.46	23.41	24.51	24.41	24.19	24.19	24.11
DEPTH TO INVERT FROM DESIGN SURFACE	1.27	1.03	1.09	1.13	0.91	0.95	1.03	0.86	0.99	0.88	0.71	0.79	1.31	1.31	1.61	1.13	1.08	1.13	1.39	1.49	1.57	1.59	1.66
INVERT LEVEL	24.04	24.00	23.94	23.79	23.72	23.67	24.68	24.55	24.41	24.51	24.38	24.31	23.34	23.33	23.04	23.23	23.20	23.15	23.79	23.62	23.47	23.45	23.30
DESIGN SURFACE LEVEL	25.32		25.02	24.92		24.62	25.71		25.41	25.39		25.09	24.65		24.65	24.36		24.28	25.18	25.11		25.03	24.96
EXISTING SURFACE LEVEL	24.78		24.76	25.00		25.02	24.20		24.19	23.96		23.99	24.26		24.32	24.36		24.40	23.93	23.97		23.80	24.07
CHAINAGE	0.00		4.55	0.00		7.13	0.00		5.04	0.00		4.56	0.00		1.50	0.00		5.26	0.00	30.10		60.20	90.31

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H 1:500 (AT A1) 10 0 10 20 30 40 50 METRES

V 1:100 (AT A1) 2 1 0 1 2 3 4 5 6 7 8 9 10 METRES

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North

0 1cm at full size 10cm 20cm

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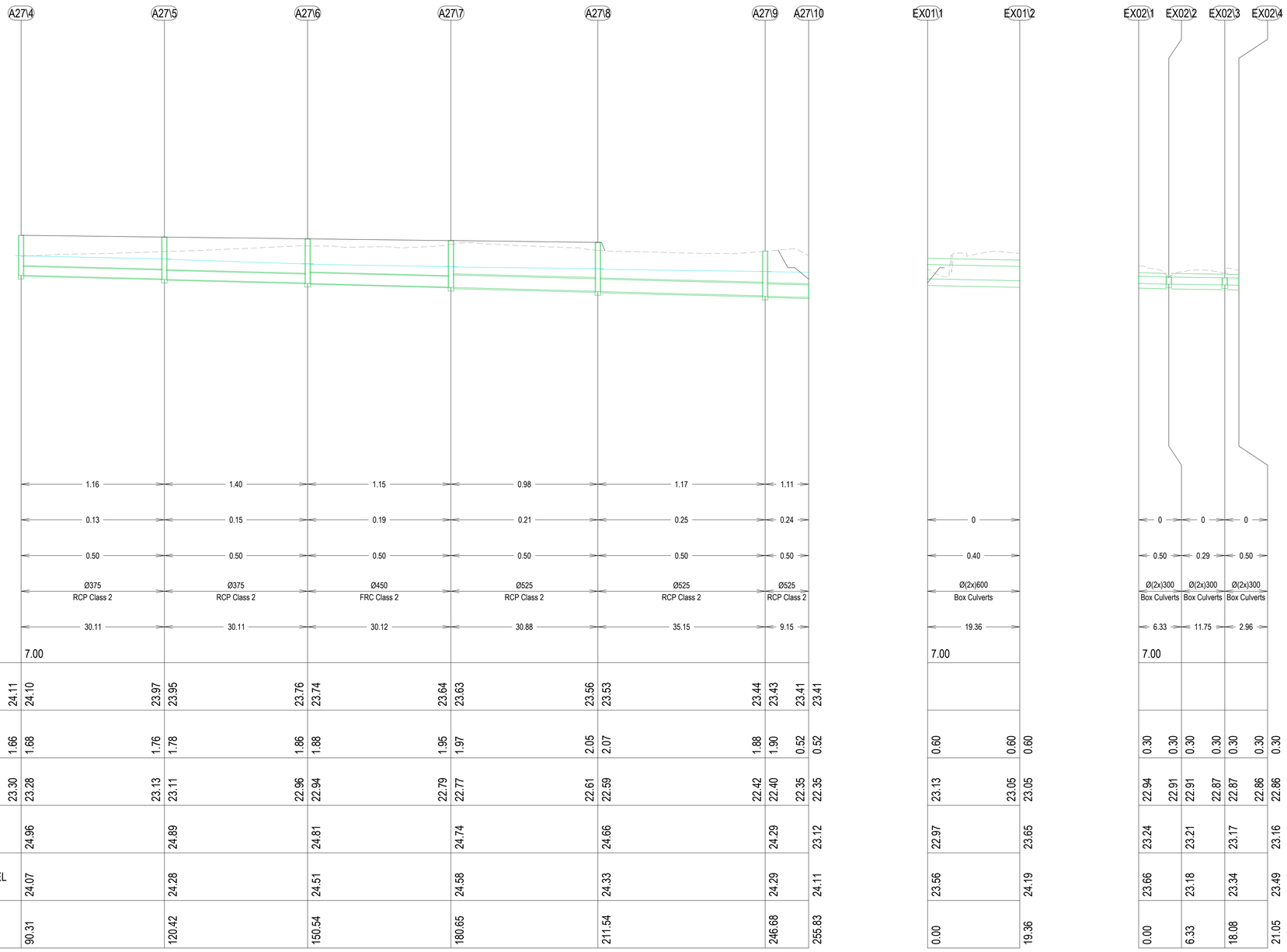
Project
EMU PLAINS INDUSTRIAL PARK
158-164 OLD BATHURST ROAD
EMU PLAINS, NSW 2750

Drawing Title
STORMWATER MANAGEMENT
LONGITUDINAL SECTION
SHEET 11

Drawn	Date	Scale A1	Q.A. Check	Date
UF	SEP 2022	AS SHOWN		
Designed	Project No.		Dwg. No.	Issue
VG	NSW211637		C7.411	D

Oct 17, 2022 - 4:36pm



	A27\4	A27\5	A27\6	A27\7	A27\8	A27\9	A27\10	EX01\1	EX01\2	EX02\1	EX02\2	EX02\3	EX02\4
VELOCITY (m/s)	1.16	1.40	1.15	0.98	1.17	1.11							
PIPE FLOW (m3/s)	0.13	0.15	0.19	0.21	0.25	0.24		0		0	0	0	
PIPE GRADE (%)	0.50	0.50	0.50	0.50	0.50	0.50		0.40		0.50	0.29	0.50	
PIPE SIZE (mm)	Ø375	Ø375	Ø450	Ø525	Ø525	Ø525		Ø(2x)600		Ø(2x)300	Ø(2x)300	Ø(2x)300	
PIPE CLASS	RCP Class 2	RCP Class 2	FRC Class 2	RCP Class 2	RCP Class 2	RCP Class 2		Box Culverts		Box Culverts	Box Culverts	Box Culverts	
LENGTH (m)	30.11	30.11	30.12	30.88	35.15	9.15		19.36		6.33	11.75	2.96	
DATUM R.L.	7.00							7.00		7.00			
HYDRAULIC GRADE LINE	24.11 24.10	23.97 23.95	23.76 23.74	23.64 23.63	23.56 23.53	23.44 23.43	23.41 23.41						
DEPTH TO INVERT FROM DESIGN SURFACE	1.66 1.68	1.76 1.78	1.86 1.88	1.95 1.97	2.05 2.07	1.88 1.90	0.52 0.52	0.60	0.60 0.60	0.30	0.30 0.30	0.30 0.30	0.30
INVERT LEVEL	23.30 23.28	23.13 23.11	22.96 22.94	22.79 22.77	22.61 22.59	22.42 22.40	22.35 22.35	23.13	23.05 23.05	22.94	22.91 22.91	22.87 22.87	22.86 22.86
DESIGN SURFACE LEVEL	24.96	24.89	24.81	24.74	24.66	24.29	23.12	22.97	23.65	23.24	23.21	23.17	23.16
EXISTING SURFACE LEVEL	24.07	24.28	24.51	24.58	24.33	24.29	24.11	23.56	24.19	23.66	23.18	23.34	23.49
CHAINAGE	90.31	120.42	150.54	180.65	211.54	246.68	255.83	0.00	19.36	0.00	6.33	18.08	21.05

LINE A27 LINE EX01 LINE EX02

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H 1:500 (AT A1) 10 0 10 20 30 40 50 METRES

V 1:100 (AT A1) 2 1 0 1 2 3 4 5 6 7 8 9 10 METRES

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A	ISSUE FOR COORDINATION	14.09.22	UF	VG

North

-1 0 1cm at full size 10cm 20cm

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Project
EMU PLAINS INDUSTRIAL PARK
158-164 OLD BATHURST ROAD
EMU PLAINS, NSW 2750

Drawing Title
STORMWATER MANAGEMENT
LONGITUDINAL SECTION
SHEET 12

Drawn	Date	Scale A1	Q.A. Check	Date
UF	SEP 2022	AS SHOWN		
Designed	Project No.	Dwg. No.	Issue	
VG	NSW211637	C7.412	D	

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Oct 17, 2022 - 4:38pm

EROSION AND SEDIMENT CONTROL NOTES

1. THIS DRAWING IS FOR GUIDANCE PURPOSES ONLY - THE SOIL AND EROSION CONTROLS ARE INDICATIVE AND REMAIN SUBJECT TO CONSTRUCTION METHODOLOGY - THE CONTRACTOR SHALL AT ALL TIMES REMAIN RESPONSIBLE FOR COMPLIANCE WITH ALL LAWS AND REGULATIONS PERTAINING TO SAFETY AND PROTECTION OF ENVIRONMENT
2. ALL SOIL AND EROSION CONTROLS TO BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH COUNCIL GUIDELINES AND CONDITIONS AND THE CURRENT NSW GOVERNMENT "MANAGING URBAN STORMWATER - SOILS AND CONSTRUCTION" HANDBOOK
3. CONTRACTOR TO ENSURE THAT SEDIMENT IS NOT ALLOWED TO ENTER ADJACENT LOTS TO DOWNSTREAM STORMWATER SYSTEMS. ANY DAMAGE WHATSOEVER CAUSED THROUGH BREACH OF THIS CONDITION BY THE CONTRACTOR SHALL BE RECTIFIED SOLELY AT THE CONTRACTORS COST
4. ANY FINE, FEE, LEVY OR THE LIKE IMPOSED BY THE REGULATORY AUTHORITY AS A CONSEQUENCE OF THE CONTRACTORS ACTS OR OMISSIONS SHALL BE PAID BY THE CONTRACTOR EITHER DIRECTLY OR INDIRECTLY VIA CREDIT OR VARIATION TO THE CONTRACT SUM

EROSION AND SEDIMENT CONTROL LEGEND

- SEDIMENT CONTROL FENCE
- DROP INLET SEDIMENT FILTER
- SANDBAG KERB INLET PROTECTION
- TEMPORARY CONSTRUCTION EXIT

1:1000 (AT A1)
1:2000 (AT A3)

20 10 0 10 20 30 40 50 60 70 80 90 100
METRES

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C	ISSUE FOR DEVELOPMENT APPLICATION	11.10.22	UF	VG
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-1 0 1cm at full size 10cm 20cm

North

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Project
EMU PLAINS INDUSTRIAL PARK
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EMU PLAINS, NSW 2750

Drawing Title
SOIL EROSION AND SEDIMENT CONTROL PLAN

Drawn	Date	Scale A1	Q.A. Check	Date
UF	SEP 2022	1:1000		
Designed	Project No.		Dwg. No.	Issue
VG	NSW211637		C8.001	D

1192 188.3 /Drawings/Projects/NSW211637/Drawings/CADCAD/Drawings/NSW211637-SHT-SDC-C8.001.dwg
Oct 17, 2022 - 4:23pm

EROSION AND SEDIMENT CONTROL NOTES

GENERAL INSTRUCTIONS

1. THIS SOIL AND WATER MANAGEMENT PLAN IS TO BE READ IN CONJUNCTION WITH OTHER ENGINEERING PLANS RELATING TO THIS DEVELOPMENT.

2. CONTRACTORS WILL ENSURE THAT ALL SOIL AND WATER MANAGEMENT WORKS ARE UNDERTAKEN AS INSTRUCTED IN THIS SPECIFICATION AND CONSTRUCTED FOLLOWING THE GUIDELINES OF "MANAGING URBAN STORMWATER SOILS AND CONSTRUCTION", DEPT OF HOUSING, 1998 (BLUE BOOK).

3. ALL SUBCONTRACTORS WILL BE INFORMED OF THEIR RESPONSIBILITIES IN REDUCING THE POTENTIAL FOR SOIL EROSION AND POLLUTION TO DOWNSLOPE AREAS.

LAND DISTURBANCE INSTRUCTIONS

1. DISTURBANCE TO BE NO FURTHER THAN 5 (PREFERABLY 2) METRES FROM THE EDGE OF ANY ESSENTIAL ENGINEERING ACTIVITY AS SHOWN ON APPROVED PLANS. ALL SITE WORKERS WILL CLEARLY RECOGNISE THESE ZONES THAT, WHERE APPROPRIATE, ARE IDENTIFIED WITH BARRIER FENCING (UPSLOPE) AND SEDIMENT FENCING (DOWNSLOPE) OR SIMILAR MATERIALS.

2. ACCESS AREAS ARE TO BE LIMITED TO A MAXIMUM WIDTH OF 10 METRES THE SITE MANAGER WILL DETERMINE AND MARK THE LOCATION OF THESE ZONES ON-SITE. ALL SITE WORKERS WILL CLEARLY RECOGNISE THESE BOUNDARIES THAT, WHERE APPROPRIATE, ARE IDENTIFIED WITH BARRIER FENCING (UPSLOPE) AND SEDIMENT FENCING (DOWNSLOPE) OR SIMILAR MATERIALS.

3. ENTRY TO LANDS NOT REQUIRED FOR CONSTRUCTION OR ACCESS IS PROHIBITED EXCEPT FOR ESSENTIAL THINNING OF PLANT GROWTH.

4. WORKS ARE TO PROCEED IN THE FOLLOWING SEQUENCE:

   a. INSTALL ALL BARRIER AND SEDIMENT FENCING WHERE SHOWN ON THE PLAN.
   b. CONSTRUCT THE STABILISED SITE ACCESS.
   c. CONSTRUCT DIVERSION DRAINS AS REQUIRED.
   d. INSTALL MESH AND GRAVEL INLETS FOR ANY ADJACENT KERB INLETS.
   e. INSTALL GEOTEXTILE INLET FILTERS AROUND ANY ON-SITE DROP INLET PITS.
   f. CLEAR SITE AND STRIP AND STOCKPILE TOPSOIL IN LOCATIONS SHOWN ON THE PLAN.
   g. UNDERTAKE ALL ESSENTIAL CONSTRUCTION WORKS ENSURING THAT ROOF AND/OR PAVED AREA STORMWATER SYSTEMS ARE CONNECTED TO PERMANENT DRAINAGE AS SOON AS PRACTICABLE.
   h. GRADE LOT AREAS TO FINAL GRADES AND APPLY PERMANENT STABILISATION (LANDSCAPING) WITHIN 20 DAYS OF COMPLETION OF CONSTRUCTION WORKS.
   i. REMOVE TEMPORARY EROSION CONTROL MEASURES AFTER THE PERMANENT LANDSCAPING HAS BEEN COMPLETED.

5. ENSURE THAT SLOPE LENGTHS DO NOT EXCEED 80 METRES WHERE PRACTICABLE. SLOPE LENGTHS ARE DETERMINED BY SILTATION FENCING AND CATCH DRAIN SPACING. 6. ON COMPLETION OF MAJOR WORKS LEAVE DISTURBED LANDS WITH A SCARIFIED SURFACE TO ENCOURAGE WATER INFILTRATION AND ASSIST WITH KEYING TOPSOIL LATER.

6. CONTRACTOR TO MANAGE THE ALIGNMENT OF CATCH DRAINS ON SITE AND TO ENSURE THAT CATCH DRAINS INTERCEPT THE SITE SURFACE RUNOFF AND DIRECT THE RUNOFF TOWARDS THE SEDIMENTATION BASINS.

SITE INSPECTION AND MAINTENANCE INSTRUCTIONS

1. THE SITE SUPERINTENDENT WILL INSPECT THE SITE AT LEAST WEEKLY AND AT THE CONCLUSION OF EVERY STORM EVENT TO:

   a. ENSURE THAT DRAINS OPERATE PROPERLY AND TO EFFECT ANY NECESSARY REPAIRS.
   b. REMOVE SPILLED SAND OR OTHER MATERIALS FROM HAZARD AREAS, INCLUDING LANDS CLOSER THAN 5 METRES FROM AREAS OF LIKELY CONCENTRATED OR HIGH VELOCITY FLOWS ESPECIALLY WATERWAYS AND PAVED AREAS.
   c. REMOVE TRAPPED SEDIMENT WHENEVER THE DESIGN CAPACITY OF THAT STRUCTURE HAS BEEN EXCEEDED.
   d. ENSURE REHABILITATED LANDS HAVE EFFECTIVELY REDUCED THE EROSION HAZARD AND TO INITIATE UPGRADING OR REPAIR AS NECESSARY.
   e. CONSTRUCT ADDITIONAL EROSION AND/OR SEDIMENT CONTROL WORKS AS MIGHT BECOME NECESSARY TO ENSURE THE DESIRED PROTECTION IS GIVEN TO DOWNSLOPE LANDS AND WATERWAYS. MAKE ONGOING CHANGES TO THE PLAN WHERE IT PROVES INADEQUATE IN PRACTICE OR IS SUBJECTED TO CHANGES IN CONDITIONS ON THE WORK-SITE OR ELSEWHERE IN THE CATCHMENT.
   f. MAINTAIN EROSION AND SEDIMENT CONTROL STRUCTURES IN A FULLY FUNCTIONING CONDITION UNTIL ALL EARTHWORK ACTIVITIES ARE COMPLETED AND THE SITE IS REHABILITATED.

2. THE SITE SUPERINTENDENT WILL KEEP A LOGBOOK MAKING ENTRIES AT LEAST WEEKLY, IMMEDIATELY BEFORE FORECAST RAIN AND AFTER RAINFALL. ENTRIES WILL INCLUDE:

   a. THE VOLUME AND INTENSITY OF ANY RAINFALL EVENTS.
   b. THE CONDITION OF ANY SOIL AND WATER MANAGEMENT WORKS.
   c. THE CONDITION OF VEGETATION AND ANY NEED TO IRRIGATE.
   d. THE NEED FOR DUST PREVENTION STRATEGIES.
   e. ANY REMEDIAL WORKS TO BE UNDERTAKEN. THE LOGBOOK WILL BE KEPT ON-SITE AND MADE AVAILABLE TO ANY AUTHORISED PERSON UPON REQUEST. IT WILL BE GIVEN TO THE PROJECT MANAGER AT THE CONCLUSION OF THE WORKS.

EROSION AND SEDIMENT CONTROL NOTES

SEDIMENT CONTROL INSTRUCTIONS

1. SEDIMENT FENCES WILL BE INSTALLED AS SHOWN ON THE PLAN AND ELSEWHERE AT THE DISCRETION OF THE SITE SUPERINTENDENT TO CONTAIN SOIL AS NEAR AS POSSIBLE TO THEIR SOURCE.

2. SEDIMENT FENCES WILL NOT HAVE CATCHMENT AREAS EXCEEDING 900 SQUARE METRES AND HAVE A STORAGE DEPTH OF AT LEAST 0.6 METRES.

3. SEDIMENT REMOVED FROM ANY TRAPPING DEVICES WILL BE RELOCATED WHERE FURTHER POLLUTION TO DOWNSLOPE LANDS AND WATERWAYS CANNOT OCCUR.

4. STOCKPILES ARE NOT TO BE LOCATED WITHIN 5 METRES OF HAZARD AREAS INCLUDING AREAS OF HIGH VELOCITY FLOWS SUCH AS WATERWAYS, PAVED AREAS AND DRIVEWAYS.

5. WATER WILL BE PREVENTED FROM DIRECTLY ENTERING THE PERMANENT DRAINAGE SYSTEM UNLESS THE CATCHMENT AREA HAS BEEN PERMANENTLY LANDSCAPED AND/OR WATER HAS BEEN TREATED BY AN APPROVED DEVICE. 6. TEMPORARY SEDIMENT TRAPS WILL REMAIN IN PLACE UNTIL AFTER THE LANDS THEY ARE PROTECTING ARE COMPLETELY REHABILITATED.

6. ACCESS TO SITES SHOULD BE STABILISED TO REDUCE THE LIKELIHOOD OF VEHICLES TRACKING SOIL MATERIALS ONTO PUBLIC ROADS AND ENSURE ALL-WEATHER ENTRY/EXIT.

SOIL EROSION CONTROL INSTRUCTIONS

1. EARTH BATTERS WILL BE CONSTRUCTED WITH AS LOW A GRADIENT AS PRACTICABLE BUT NO STEEPER, UNLESS OTHERWISE NOTED, THAN:

   a. 2(H):1(V) WHERE SLOPE LENGTH LESS THAN 12 METRES
   b. 2.5(H):1(V) WHERE SLOPE LENGTH BETWEEN 12 AND 16 METRES.
   c. 3(H):1(V) WHERE SLOPE LENGTH BETWEEN 16 AND 20 METRES.
   d. 4(H):1(V) WHERE SLOPE LENGTH GREATER THAN 20 METRES.

2. ALL WATERWAYS, DRAINS, SPILLWAYS AND THEIR OUTLETS WILL BE CONSTRUCTED TO BE STABLE IN AT LEAST THE 1:20 YEAR ARI, TIME OF CONCENTRATION STORM EVENT.

3. WATERWAYS AND OTHER AREAS SUBJECT TO CONCENTRATED FLOWS AFTER CONSTRUCTION ARE TO HAVE A MAXIMUM GROUNDCOVER C-FACTOR OF 0.05 (70% GROUND COVER) WITHIN 10 WORKING DAYS FROM COMPLETION OF FORMATION. FLOW VELOCITIES ARE TO BE LIMITED TO THOSE SHOWN IN TABLE 5-1 OF "MANAGING URBAN STORMWATER - SOILS AND CONSTRUCTION", DEPT OF HOUSING 1998 (BLUE BOOK). FOOT AND VEHICULAR TRAFFIC WILL BE PROHIBITED IN THESE AREAS.

4. STOCKPILES AFTER CONSTRUCTION ARE TO HAVE A MAXIMUM GROUND-COVER C-FACTOR OF 0.1 (60% GROUND-COVER) WITHIN 10 WORKING DAYS FROM COMPLETION OF FORMATION.

5. ALL LANDS, INCLUDING WATERWAYS AND STOCKPILES, DURING CONSTRUCTION ARE TO HAVE A MAXIMUM GROUND-COVER C-FACTOR OF 0.15 (50% GROUND COVER) WITHIN 20 WORKING DAYS FROM INACTIVITY EVEN THOUGH WORKS MAY CONTINUE LATER.

6. FOR AREAS OF SHEET FLOW USE THE FOLLOWING GROUND COVER PLANT SPECIES FOR TEMPORARY COVER: JAPANESE MILLET 20 KG/HA AND OATS 20 KG/HA.

7. PERMANENT REHABILITATION OF LANDS AFTER CONSTRUCTION WILL ACHIEVE A GROUND-COVER C-FACTOR OF LESS THAN 0.1 AND LESS THAN 0.05 WITHIN 60 DAYS. NEWLY PLANTED LANDS WILL BE WATERED REGULARLY UNTIL AN EFFECTIVE COVER IS ESTABLISHED AND PLANTS ARE GROWING VIGOROUSLY. FOLLOW-UP SEED AND FERTILISER WILL BE APPLIED AS NECESSARY.

8. RE-VEGETATION SHOULD BE AIMED AT RE-ESTABLISHING NATURAL SPECIES. NATURAL SURFACE SOILS SHOULD BE REPLACED AND NON-PERSISTANT ANNUAL COVER CROPS SHOULD BE USED.

WASTE CONTROL INSTRUCTIONS

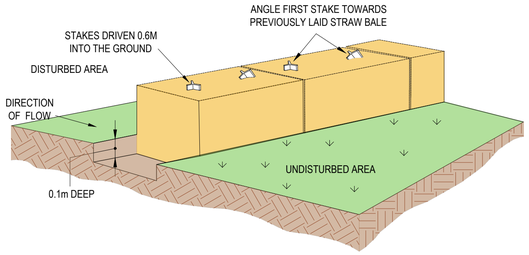
1. ACCEPTABLE BINS WILL BE PROVIDED FOR ANY CONCRETE AND MORTAR SLURRIES, PAINTS, ACID WASHING, LIGHTWEIGHT WASTE MATERIALS AND LITTER. CLEARANCE SERVICES WILL BE PROVIDED AT LEAST WEEKLY. DISPOSAL OF WASTE WILL BE IN A MANNER APPROVED BT THE SITE SUPERINTENDENT.

2. ALL POSSIBLE POLLUTANT MATERIALS ARE TO BE STORED WELL CLEAR OF ANY POORLY DRAINED AREAS, FLOOD PRONE AREAS, STREAMBANKS, CHANNELS AND STORMWATER DRAINAGE AREAS. STORE SUCH MATERIALS IN A DESIGNATED AREA UNDER COVER WHERE POSSIBLE AND WITHIN CONTAINMENT BUNDS.

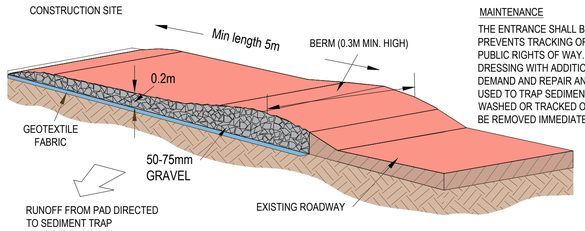
3. ALL SITE STAFF AND SUB-CONTACTORS ARE TO BE INFORMED OF THEIR OBLIGATION TO USE WASTE CONTROL FACILITIES PROVIDED.

4. 4. ANY DE-WATERING ACTIVITIES ARE TO BE CLOSELY MONITORED TO ENSURE THAT WATER IS NOT POLLUTED BY SEDIMENT, TOXIC MATERIALS OR PETROLEUM PRODUCTS.

5. PROVIDE DESIGNATED VEHICULAR WASHDOWN AND MAINTENANCE AREAS WHICH ARE TO HAVE CONTAINMENT BUNDS.



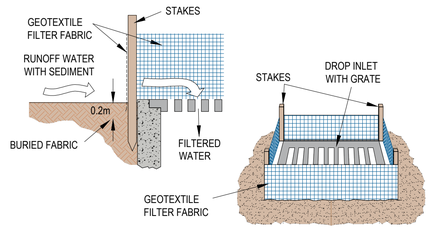
STRAW BALE SEDIMENT FILTER (ALTERNATE)



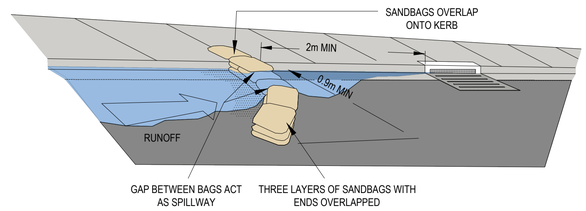
MAINTENANCE

THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH PREVENTS TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS OF WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL GRAVEL AS CONDITIONS DEMAND AND REPAIR AND / OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS OF WAY MUST BE REMOVED IMMEDIATELY.

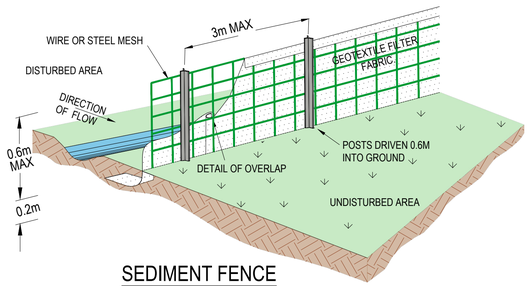
TEMPORARY CONSTRUCTION EXIT



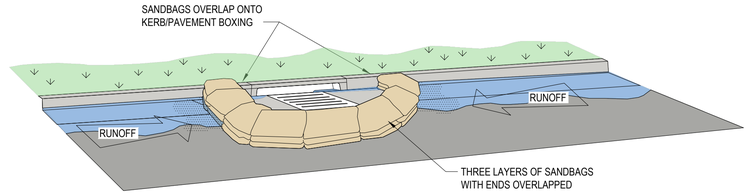
GEOTEXTILE FILTER FABRIC DROP INLET SEDIMENT TRAP



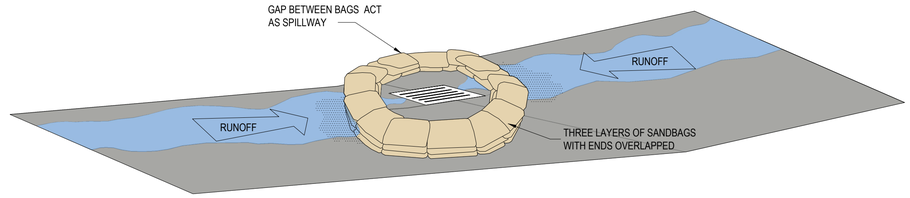
SANDBAG KERB INLET SEDIMENT TRAP



SEDIMENT FENCE



SANDBAG SEDIMENT TRAP - AT KERB SAG PIT



SANDBAG SEDIMENT TRAP - AT OTHER THAN KERB SAG PIT

SANDBAG SEDIMENT TRAP DETAILS

EROSION AND SEDIMENT CONTROL NOTES

IMPORTANT NOTES:

1. THIS DRAWINGS IS FOR GUIDANCE PURPOSES ONLY - THE SOIL AND EROSION CONTROLS ARE INDICATIVE AND REMAIN SUBJECT TO CONSTRUCTION METHODOLOGY - THE CONTRACTOR SHALL AT ALL TIMES REMAIN RESPONSIBLE FOR COMPLIANCE WITH ALL LAWS AND REGULATIONS PERTAINING TO SAFETY AND PROTECTION OF ENVIRONMENT

2. ALL SOIL AND EROSION CONTROLS TO BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH COUNCIL GUIDELINES AND CONDITIONS AND THE CURRENT NSW DEPT OF CONSERVATION AND LAND MANAGEMENT "URBAN EROSION AND SEDIMENT CONTROL" HANDBOOK

3. CONTRACTOR TO ENSURE THAT SEDIMENT IS NOT ALLOWED TO ENTER ADJACENT LOTS TO DOWNSTREAM STORMWATER SYSTEMS OR ANY PUBLIC ROAD OR ROAD RELATED AREA. ANY DAMAGE WHATSOEVER CAUSED THROUGH BREACH OF THIS CONDITION BY THE CONTRACTOR SHALL BE RECTIFIED SOLELY AT THE CONTRACTORS COST

4. THE CONTRACTOR IS TO REMOVE ANY SEDIMENT DEPOSITS OUTSIDE THE SITE BY THE END OF EACH WORKING DAY BY VACUUM SWEEPER TRUCKS.

5. WHOLE OF SITE TO BE REVEGETATED WITH HYDROMULCH WITHIN FIVE DAYS OF REACHING FSL AND COMPLETION OF TRENCH WORKS TO "MANAGING URBAN STORMWATER - SOILS AND CONSTRUCTION VOL. 1" REQUIREMENTS.

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Issue	Description	Date	Drawn	Approved
D	ISSUE FOR DEVELOPMENT APPLICATION	17.10.22	UF	VG
C	ISSUE FOR DEVELOPMENT APPLICATION	11.10.22	UF	VG
A	ISSUE FOR COORDINATION	14.09.22	UF	VG

North

-1 0 1cm at full size 10cm 20cm

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PENRITH CITY COUNCIL

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Project
EMU PLAINS INDUSTRIAL PARK
158-164 OLD BATHURST ROAD
EMU PLAINS, NSW 2750

Drawing Title
SOIL EROSION AND SEDIMENT CONTROL NOTES AND DETAILS

Drawn	Date	Scale A1	Q.A. Check	Date
UF	SEP 2022	NOT TO SCALE		
Designed	Project No.		Dwg. No.	Issue
VG	NSW211637		C8.101	D

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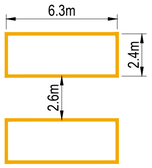
Oct 17, 2022 - 4:37pm

STOCKPILING LEGEND

1	HAZARDOUS HOUSE DEMOLITION WASTE (IF REQUIRED. SEPARATE SITE VALIDATION AND CERTIFICATION BY OTHERS AS REQUIRED PRIOR TO COMMENCEMENT OF WORKS)
2	GREEN WASTE
3	ROOF TILES
4	TIMBER
5	PLASTERBOARD
6	BRICKS
7	CONCRETE
8	GENERAL WASTE
9	EXCAVATED MATERIAL
10	METAL
- - - - - -	SEDIMENT CONTROL FENCE



TYPICAL 30 HOOK SKIP BIN (BINGO INDUSTRIES)
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1:2000 (AT A3)

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METRES

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158-164 OLD BATHURST ROAD
EMU PLAINS, NSW 2750

Drawing Title
WASTE MANAGEMENT PLAN

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Oct 17, 2022 - 4:38pm
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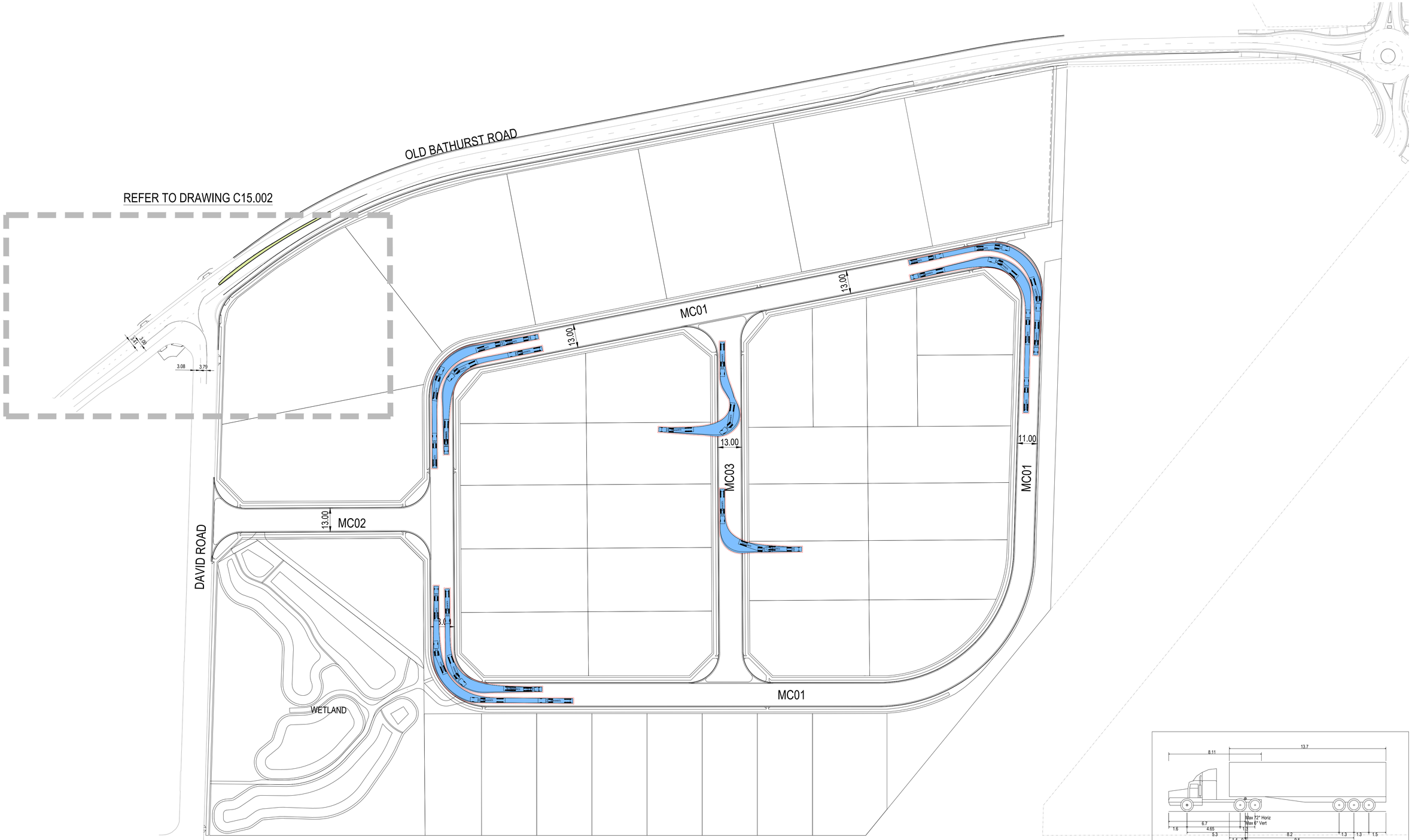

Prime mover and semi-trailer (19 m)	
Overall Length	19.000m
Overall Width	2.500m
Overall Body Height	4.300m
Min Body Ground Clearance	0.540m
Track Width	2.500m
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	12.500m

TURNING PATH OVERALL - SEMI TRAILER (DESIGN VEHICLE)

SCALE 1:1000

1:1000 (AT A1)
1:2000 (AT A3)

20 10 0 10 20 30 40 50 60 70 80 90 100

METRES

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EMU PLAINS, NSW 2750

Drawing Title
TURNING PATHS
SHEET 1

Drawn	Date	Scale A1	Q.A. Check	Date
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Designed	Project No.		Dwg. No.	Issue
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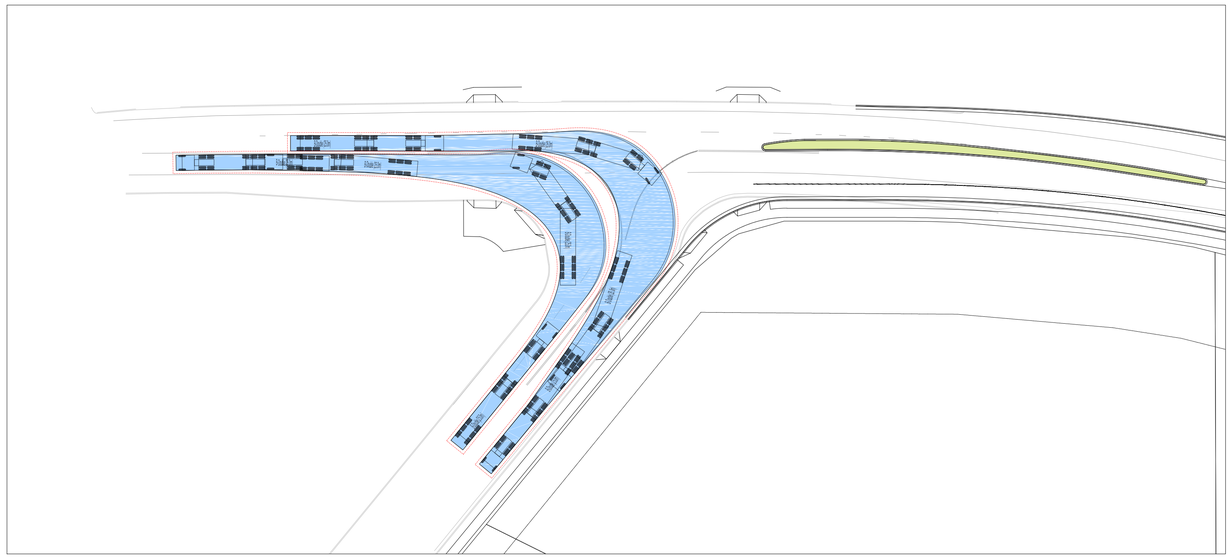
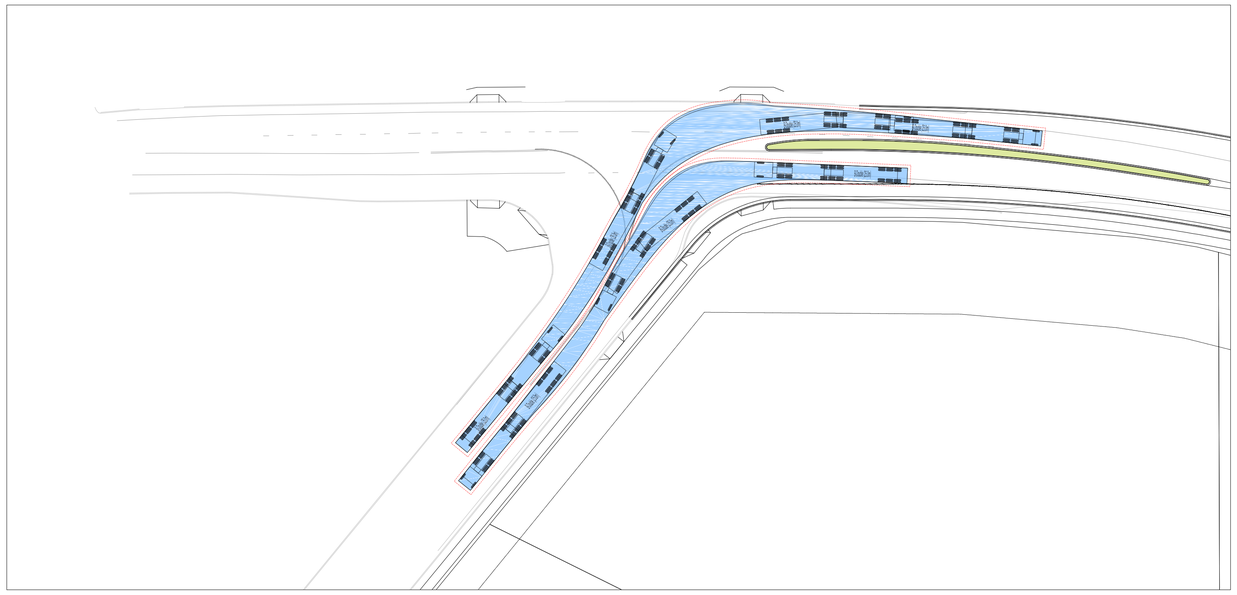


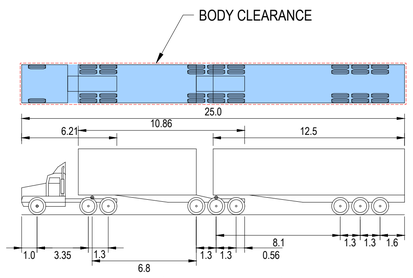
INTERSECTION OLD BATHURST ROAD WITH DAVID ROAD (SOUTH BOUND)

SCALE 1:500



INTERSECTION OLD BATHURST ROAD WITH DAVID ROAD (EAST/WEST BOUND)

SCALE 1:500



CHECK VEHICLE

25m ARTICULATED VEHICLE (B-DOUBLE)

OVERALL LENGTH	25.000m
OVERALL WIDTH	2.500m
OVERALL BODY HEIGHT	4.300m
MIN BODY GROUND CLEARANCE	0.540m
TRACK WIDTH	2.500m
LOCK-TO-LOCK TIME	6.00s
KERB TO KERB TURNING RADIUS	15.000m
DESIGN SPEED	15km/h

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1:500 (AT A1)
1:1000 (AT A3)

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METRES

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Project
EMU PLAINS INDUSTRIAL PARK

158-164 OLD BATHURST ROAD
EMU PLAINS, NSW 2750

Drawing Title
TURNING PATHS
SHEET 2

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