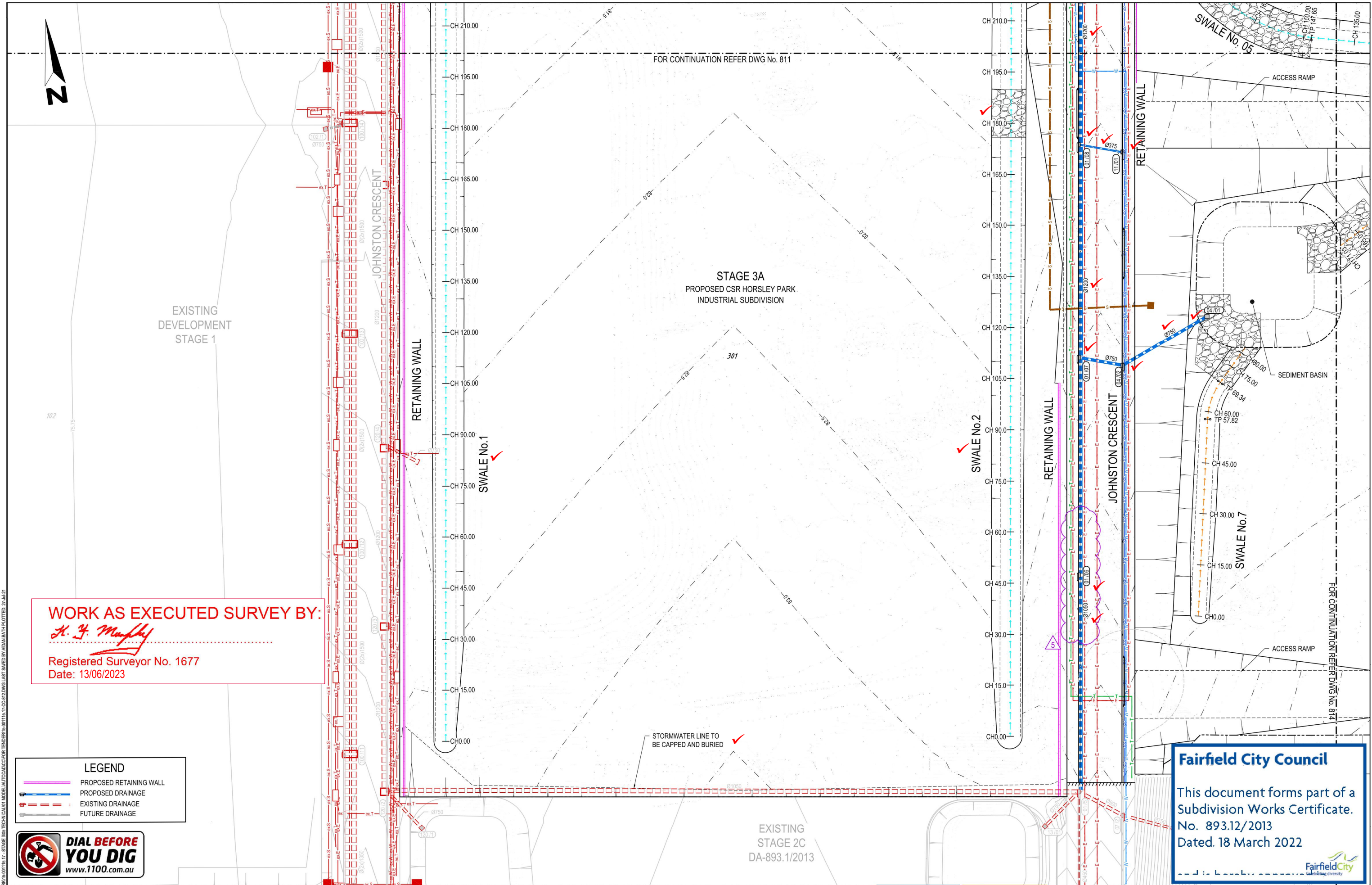




FILE: H1515-01115 - CSR HORSLEY PARK 15-01115-17 - STAGE 303 TECHNICAL MODEL AUTOCAD FOR TENDER 15-01115-17-CC-02.DWG LAST SAVED BY ADMIN@H1515-17-22-21

LEGEND	
	PROPOSED RETAINING WALL
	PROPOSED DRAINAGE
	EXISTING DRAINAGE
	FUTURE DRAINAGE



FIRST ISSUE	DESIGN	DRAWN	CHECK	APPD.	DATE
1	AV	JS	LF	EF	20/03/2020
2	AV	AB	LF	BH	09/10/2020
3	AV	AB	LF	BH	16/10/2020
4	AV	AB	LF	BH	06/05/2021
5	AV	AB	CK	EF	23/07/2021

AMENDMENT DETAILS					

STATUS

FOR CONSTRUCTION CERTIFICATE

AUTHORISED FOR ISSUE:
BY: ENRIQUE FRANCO
BE(Hons) MIEAust. CPEng NER

SIGN:

DATE: 23/7/24

SCALE

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

CLIENT

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PROJECT

CSR HORSLEY PARK
STAGE 3 SUBDIVISION DESIGN

DISCLAIMER
ALL DIMENSIONS TO BE CHECKED ON SITE BY CONTRACTOR
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NOT SCALE. NOT FOR CONSTRUCTION UNLESS STAMPED BY
CERTIFYING AUTHORITY

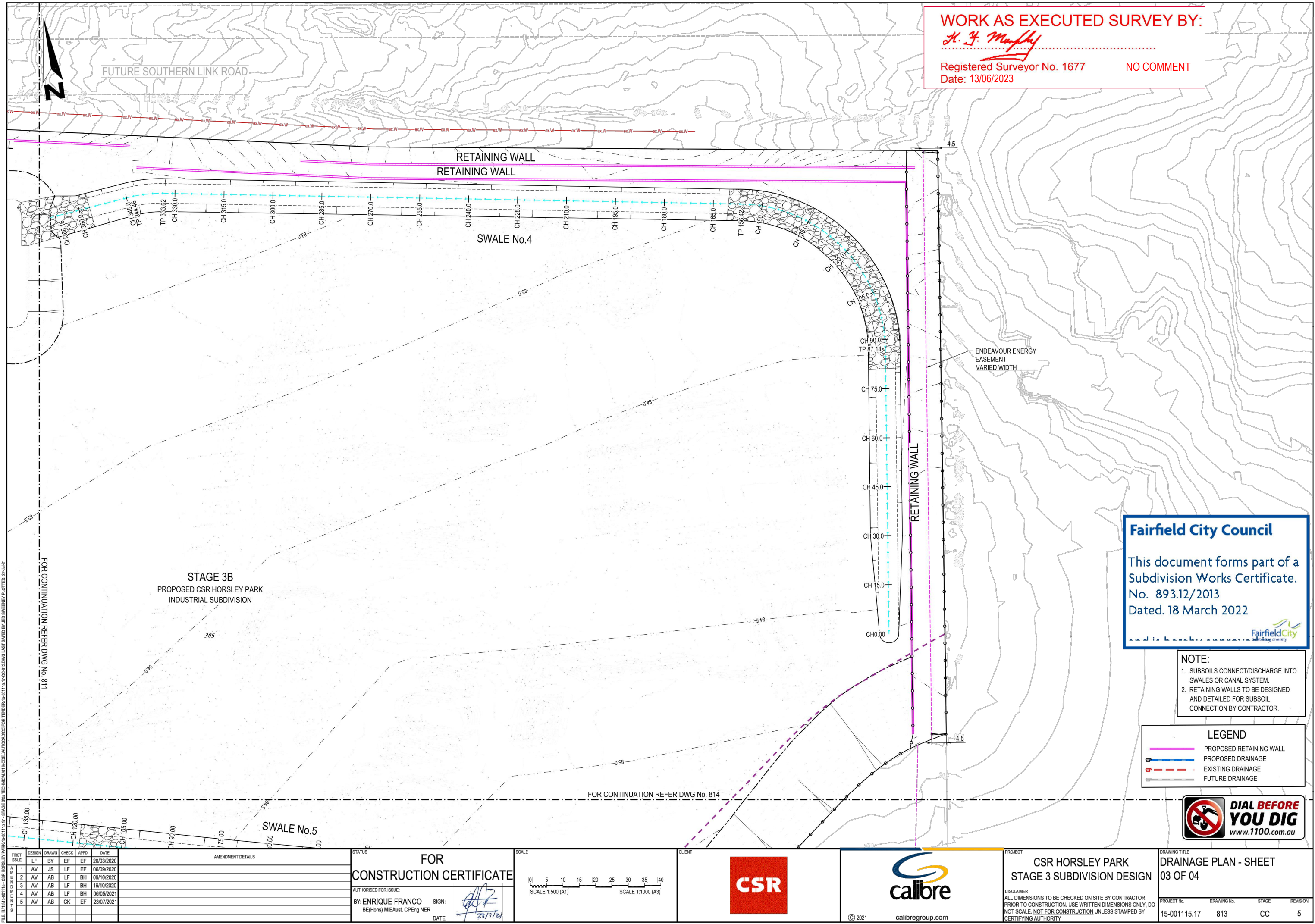
DRAWING TITLE

DRAINAGE PLAN - SHEET
02 OF 04

PROJECT No. 15-001115.17
DRAWING No. 812
STAGE CC
REVISION 5

Fairfield City Council

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Dated. 18 March 2022



WORK AS EXECUTED SURVEY BY:
H. J. Murphy
Registered Surveyor No. 1677
Date: 13/06/2023
NO COMMENT

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Dated. 18 March 2022

Fairfield City
Building diversity

- NOTE:
- 1. SUBSOILS CONNECT/DISCHARGE INTO SWALES OR CANAL SYSTEM.
 - 2. RETAINING WALLS TO BE DESIGNED AND DETAILED FOR SUBSOIL CONNECTION BY CONTRACTOR.

LEGEND

- PROPOSED RETAINING WALL
- PROPOSED DRAINAGE
- EXISTING DRAINAGE
- FUTURE DRAINAGE



REV	DATE	BY	CHKD	APPD	DATE
1	20/03/2020	AV	JS	EF	20/03/2020
2	06/09/2020	AV	AB	LF	06/09/2020
3	09/10/2020	AV	AB	LF	09/10/2020
4	16/10/2020	AV	AB	LF	16/10/2020
5	06/05/2021	AV	AB	LF	06/05/2021
6	23/07/2021	AV	AB	CK	23/07/2021

FOR CONSTRUCTION CERTIFICATE

AUTHORISED FOR ISSUE:
By: ENRIQUE FRANCO
BE(Hons) MIEAust. CPEng NER
DATE: 23/7/21

SCALE

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

CLIENT

CSR

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PROJECT

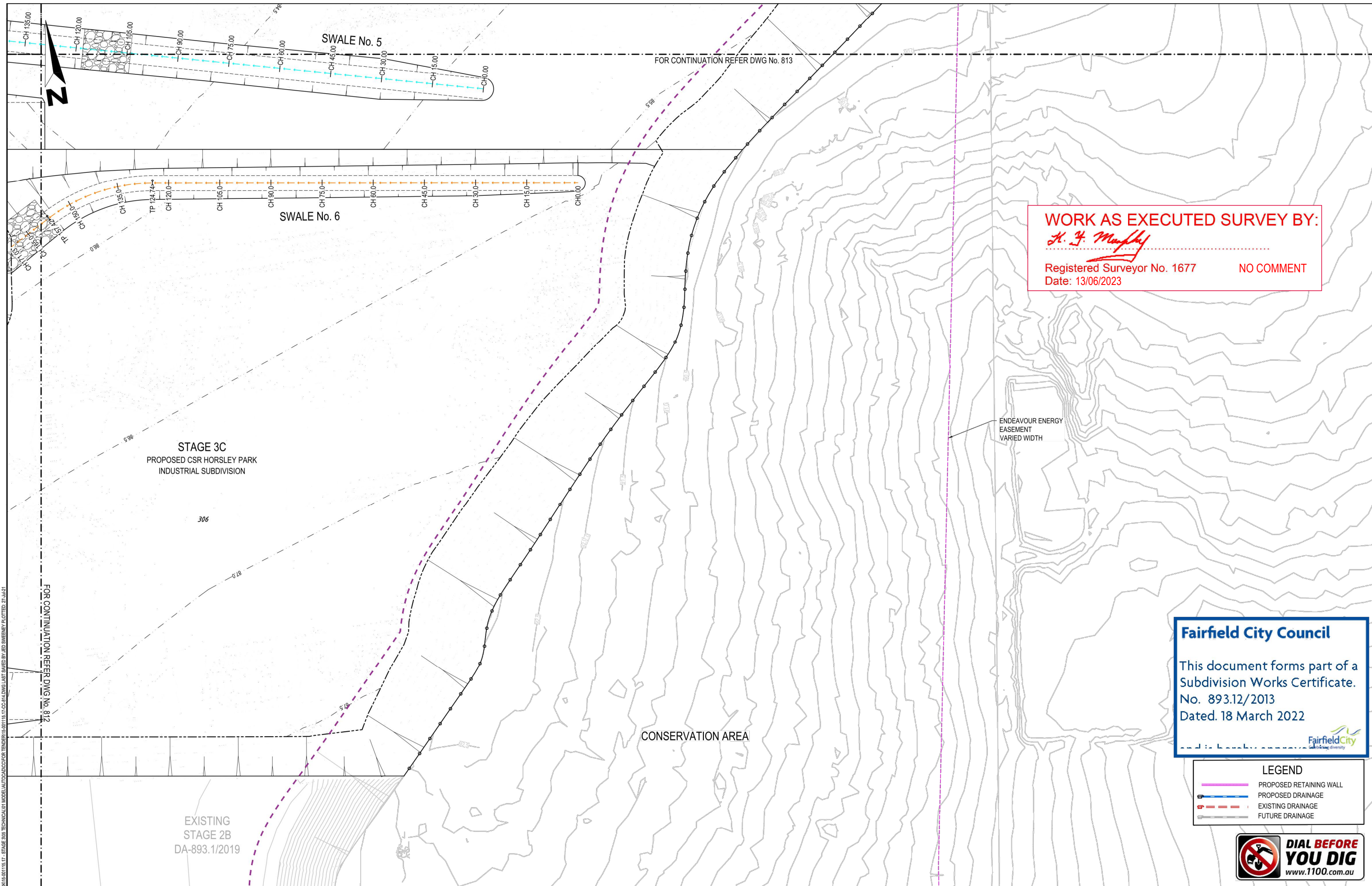
**CSR HORSLEY PARK
STAGE 3 SUBDIVISION DESIGN**

DISCLAIMER
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CERTIFYING AUTHORITY

DRAWING TITLE

**DRAINAGE PLAN - SHEET
03 OF 04**

PROJECT No.	DRAWING No.	STAGE	REVISION
15-001115.17	813	CC	5



WORK AS EXECUTED SURVEY BY:
H. J. Murphy
Registered Surveyor No. 1677
Date: 13/06/2023
NO COMMENT

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No. 893.12/2013
Dated: 18 March 2022



LEGEND	
	PROPOSED RETAINING WALL
	PROPOSED DRAINAGE
	EXISTING DRAINAGE
	FUTURE DRAINAGE



AMENDMENT DETAILS						STATUS		SCALE		CLIENT		PROJECT		DRAWING TITLE	
FIRST ISSUE	DESIGN	DRAWN	CHECK	APPD.	DATE	FOR CONSTRUCTION CERTIFICATE		0 5 10 15 20 25 30 35 40				CSR HORSLEY PARK STAGE 3 SUBDIVISION DESIGN		DRAINAGE PLAN - SHEET 04 OF 04	
1	AV	JS	LF	EF	20/03/2020	AUTHORISED FOR ISSUE:		SCALE 1:500 (A1)				DISCLAIMER		PROJECT No.	
2	AV	AB	LF	BH	09/10/2020	By: ENRIQUE FRANCO		SCALE 1:1000 (A3)		© 2021		ALL DIMENSIONS TO BE CHECKED ON SITE BY CONTRACTOR PRIOR TO CONSTRUCTION. USE WRITTEN DIMENSIONS ONLY. DO NOT SCALE. NOT FOR CONSTRUCTION UNLESS STAMPED BY CERTIFYING AUTHORITY		DRAWING No.	
3	AV	AB	LF	BH	16/10/2020	BE(Hons) MIEAust. CPEng NER				calibre group.com		STAGE		15-001115.17	
4	AV	AB	LF	BH	06/05/2021	SIGN: <i>[Signature]</i>						REVISION		814	
5	AV	AB	CK	EF	23/07/2021	DATE: 23/7/21						CC		5	

WORK AS EXECUTED SURVEY BY:

H. J. Murphy

Registered Surveyor No. 1677

Date: 13/06/2023

EXISTING STORMWATER LINE 1/5-120/2 TO
BE CAPPED AND BURIED. DIVERT FLOWS
TO PROPOSED STORMWATER LINE

BREAK INTO EXISTING PIT &
MAKE SMOOTH CONNECTION

FUTURE REFER TO STAGE 2 CC APPROVAL

5 YEAR A.R.I.

VELOCITY (m/s)	0.89	1.37	1.50	1.78	3.41	2.88
PIPE FLOW (cu.m/s)	0.01	0.02	0.04	0.06	2.48	2.49
PIPE FLOW CAPACITY (cu.m/s)	0.19	0.42	0.37	0.4	2.99	2.73
PIPE COVER (m)	1.63	1.78	1.54	1.43	1.69	1.24
PIPE SIZE (mm) & CLASS	375RRJ2	450RRJ2	450RRJ2	450RRJ2	1050RRJ2	1050RRJ2
DESIGN GRADE	1.15%	2.19%	1.7%	2%	1.2%	1%
DATUM R.L.	83.0					
DEPTH TO INVERT	2.01	2.15	2.28	2.37	2.43	
H.G.L. LEVEL	86.12	85.97	85.85	84.92	84.89	
INVERT LEVEL	86.06	85.81	85.78	84.85	84.79	
SURFACE LEVEL	86.07	86.06	87.22	85.82	84.44	83.21
ROAD CHAINAGE	1045	1046.54	1088.09	1147.1	1205.1	1268.64
PIPE CHAINAGE	0	13.09	42.55	55.64	58.01	113.65

LINE No.01

DRAINAGE LONGITUDINAL SECTIONS

SCALE: 1:500 (H)

SCALE: 1:100 (V)

REV	DATE	BY	CHKD	APPD	DATE
1	20/03/2020	AV	JS	EF	
2	06/09/2020	AV	AB	LF	
3	09/10/2020	AV	AB	LF	
4	16/10/2020	AV	AB	LF	
5	06/05/2021	AV	AB	LF	
6	23/07/2021	AV	AB	CK	

DESIGN	DRAWN	CHECK	APPD	DATE
1	AV	JS	EF	20/03/2020
2	AV	AB	LF	06/09/2020
3	AV	AB	LF	09/10/2020
4	AV	AB	LF	16/10/2020
5	AV	AB	LF	06/05/2021
6	AV	AB	CK	23/07/2021

STATUS	FOR
	CONSTRUCTION CERTIFICATE
AUTHORISED FOR ISSUE:	
BY: ENRIQUE FRANCO	SIGN: <i>[Signature]</i>
BE(Hons) MIEAust. CPEng NER	DATE: 23/7/21

SCALE	CLIENT
SCALE 1:500 (A1)	CSR
SCALE 1:100 (A1)	
SCALE 1:1000 (A3)	
SCALE 1:200 (A3)	

CLIENT	PROJECT
CSR	CSR HORSLEY PARK
	STAGE 3 SUBDIVISION DESIGN

PROJECT	DRAWING TITLE
CSR HORSLEY PARK	DRAINAGE LONGITUDINAL
STAGE 3 SUBDIVISION DESIGN	SECTIONS - SHEET 01 OF 04

DISCLAIMER	PROJECT No.	DRAWING No.	STAGE	REVISION
ALL DIMENSIONS TO BE CHECKED ON SITE BY CONTRACTOR PRIOR TO CONSTRUCTION. USE WRITTEN DIMENSIONS ONLY. DO NOT SCALE. NOT FOR CONSTRUCTION UNLESS STAMPED BY CERTIFYING AUTHORITY	15-001115.17	821	CC	5

DISCLAIMER	PROJECT No.	DRAWING No.	STAGE	REVISION
ALL DIMENSIONS TO BE CHECKED ON SITE BY CONTRACTOR PRIOR TO CONSTRUCTION. USE WRITTEN DIMENSIONS ONLY. DO NOT SCALE. NOT FOR CONSTRUCTION UNLESS STAMPED BY CERTIFYING AUTHORITY	15-001115.17	821	CC	5

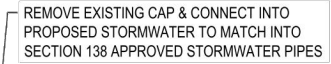
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No. 893.12/2013
Dated: 18 March 2022



H. J. Murphy

Date: 13/06/2023



PROPOSED
REFER TO S138 BY COUNCIL

LINE No.01

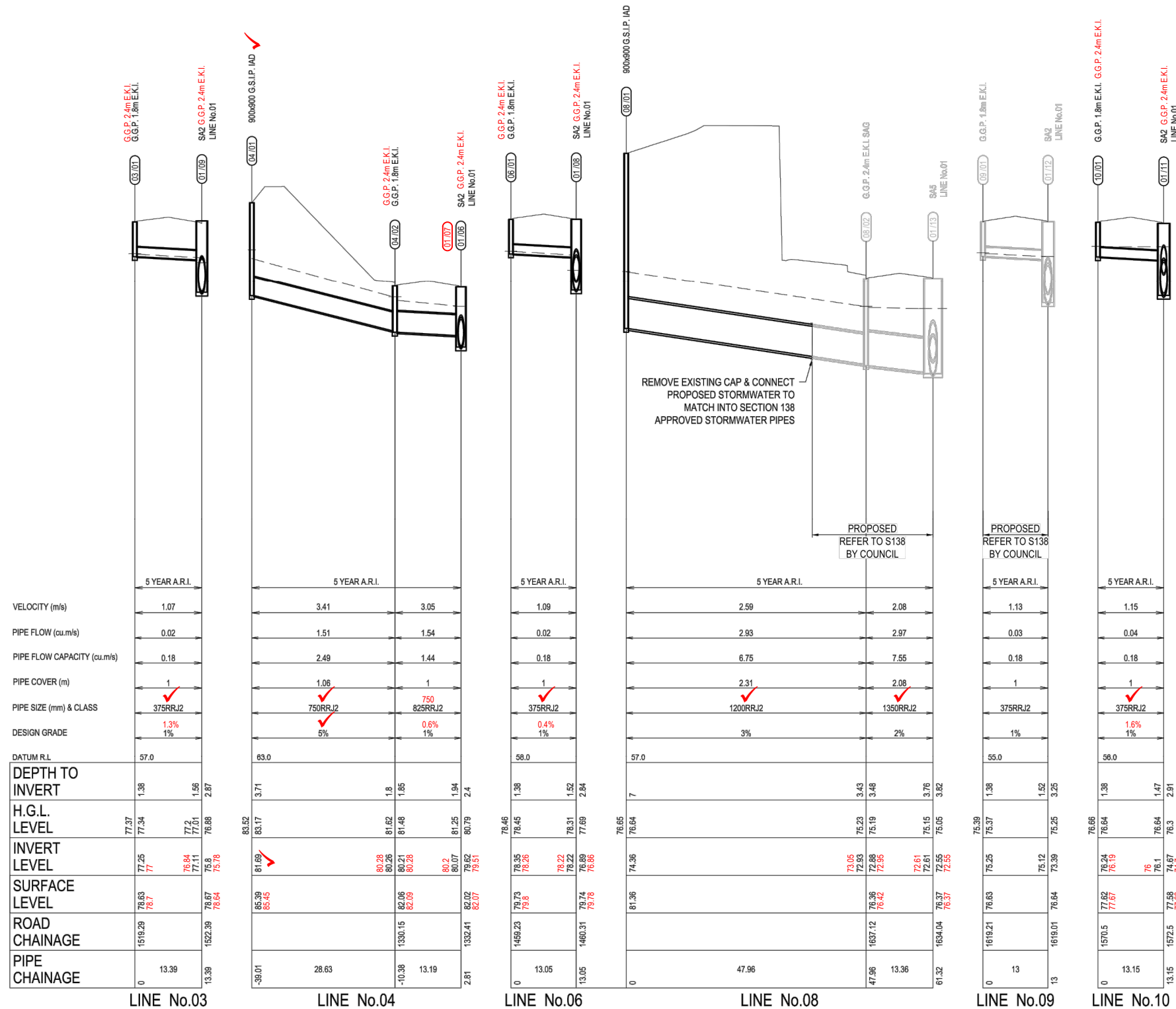
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SCALE: 1:100 (V)

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	2	AV	AB	LF	BH	09/10/2020
	3	AV	AB	LF	BH	18/10/2020
	4	AV	AB	LF	BH	06/05/2021
	5	AV	AB	CK	EF	23/07/2021
AMENDMENT DETAILS						
STATUS						
FOR CONSTRUCTION CERTIFICATE						
AUTHORISED FOR ISSUE:						
BY: ENRIQUE FRANCO SIGN: [Signature] 23/7/21						
BE(Hons) MIEAust. CPEng NER						
DATE:						
SCALE						
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SCALE 1:500 (A1) SCALE 1:1000 (A3)						
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SCALE 1:100 (A1) SCALE 1:200 (A3)						
CLIENT						
[CSR Logo]						
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PROJECT						
CSR HORSLEY PARK						
STAGE 3 SUBDIVISION DESIGN						
DISCLAIMER						
ALL DIMENSIONS TO BE CHECKED ON SITE BY CONTRACTOR						
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NOT SCALE. NOT FOR CONSTRUCTION UNLESS STAMPED BY						
CERTIFYING AUTHORITY						
DRAWING TITLE						
DRAINAGE LONGITUDINAL						
SECTIONS - SHEET 02 OF 04						
PROJECT No. DRAWING No. STAGE REVISION						
15-001115.17 822 CC 5						

WORK AS EXECUTED SURVEY BY:

H. J. Murphy

Registered Surveyor No. 1677
Date: 13/06/2023



DRAINAGE LONGITUDINAL SECTIONS

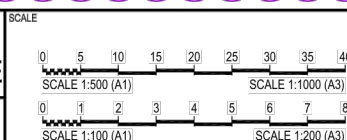
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SCALE: 1:100 (V)

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2	06/09/2020	AV	AB	LF	06/09/2020
3	09/10/2020	AV	AB	LF	09/10/2020
4	16/10/2020	AV	AB	LF	16/10/2020
5	06/05/2021	AV	AB	LF	06/05/2021
6	23/07/2021	AV	AB	CK	23/07/2021

AMENDMENT DETAILS

STATUS	FOR
CONSTRUCTION CERTIFICATE	CONSTRUCTION CERTIFICATE
AUTHORISED FOR ISSUE:	BY: ENRIQUE FRANCO
BE(Hons) MIEAust. CPEng NER	SIGN: <i>[Signature]</i>
DATE: 23/7/21	



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PROJECT

CSR HORSLEY PARK
STAGE 3 SUBDIVISION DESIGN

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DRAWING TITLE

DRAINAGE LONGITUDINAL
SECTIONS - SHEET 03 OF 04

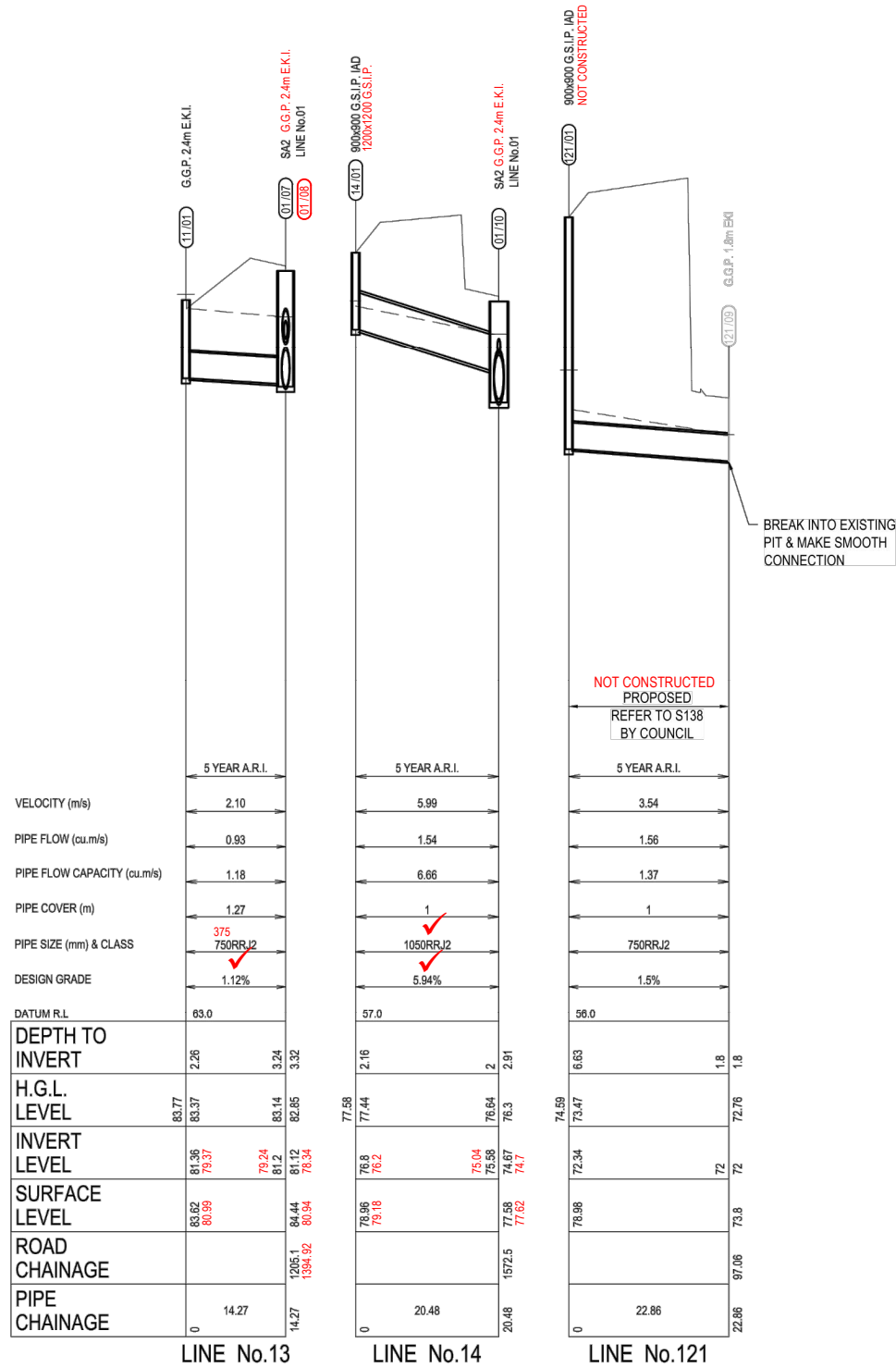
PROJECT No. 15-001115.17
DRAWING No. 823
STAGE CC
REVISION 5

Fairfield City Council

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Dated. 18 March 2022



FILE: H:\15-001115 - CSR HORSLEY PARK\15-001115_17_STAGE 305 TECHNICAL\DRAWINGS\15-001115_17-02-DRAINAGE LAST SAVED BY ADMIN\DWG PLOTTED: 27-02-21



WORK AS EXECUTED SURVEY BY:

H. J. Murphy

Registered Surveyor No. 1677
Date: 13/06/2023

Fairfield City Council

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Dated. 18 March 2022



DRAINAGE LONGITUDINAL SECTIONS

SCALE: 1:500 (H)

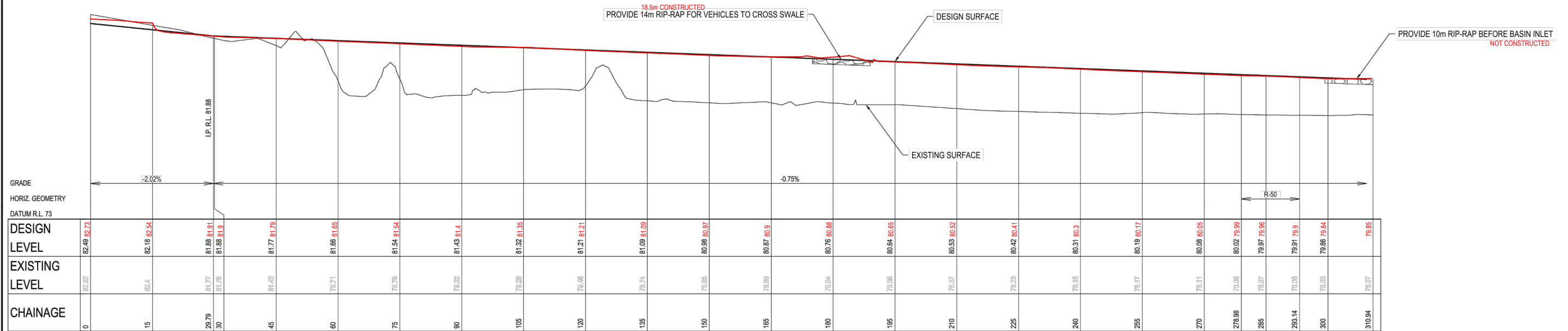
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2	AV	AB	LF	BH	09/10/2020			SCALE 1:500 (A1)		STAGE 3 SUBDIVISION DESIGN	SECTIONS - SHEET 04 OF 04
3	AV	AB	LF	BH	16/10/2020			0 1 2 3 4 5 6 7 8			
4	AV	AB	LF	BH	06/05/2021			SCALE 1:100 (A1)			
5	AV	AB	CK	EF	23/07/2021			SCALE 1:200 (A3)			
						AUTHORISED FOR ISSUE:				DISCLAIMER	
						BY: ENRIQUE FRANCO	SIGN:			ALL DIMENSIONS TO BE CHECKED ON SITE BY CONTRACTOR	
						BE(Hons) MIEAust. CPEng NER	DATE:			PRIOR TO CONSTRUCTION. USE WRITTEN DIMENSIONS ONLY. DO	
										NOT SCALE. NOT FOR CONSTRUCTION UNLESS STAMPED BY	
										CERTIFYING AUTHORITY	
										PROJECT No.	
										DRAWING No.	
										STAGE	
										REVISION	
										15-001115.17	
										824	
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WORK AS EXECUTED SURVEY BY:

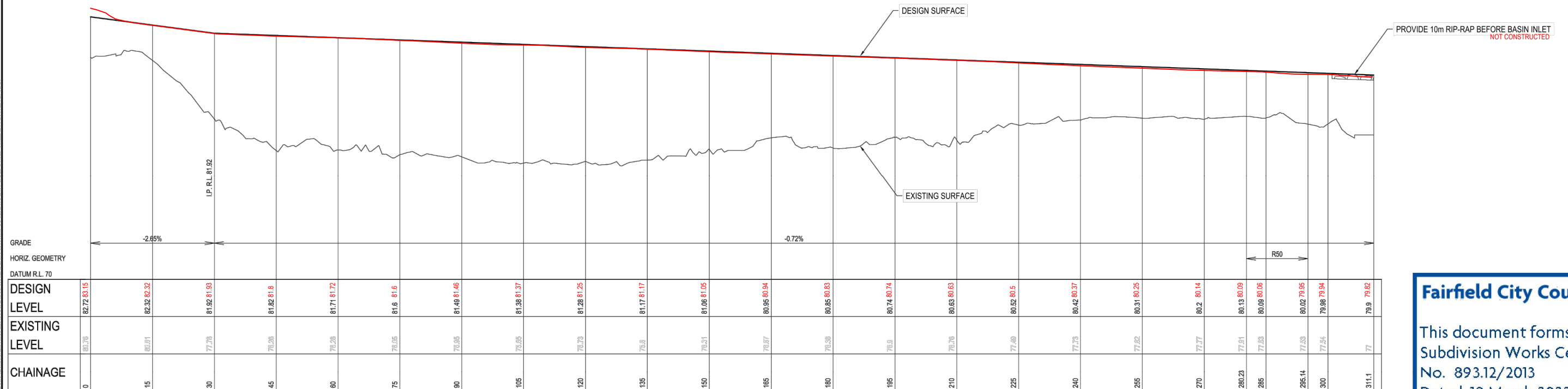
H. J. Murphy

Registered Surveyor No. 1677
Date: 13/06/2023



LONGITUDINAL SECTION CENTRELINE - SWALE No.02

SCALE 1:500 (H)
SCALE 1:100 (V)



LONGITUDINAL SECTION CENTRELINE - SWALE No.01

SCALE 1:500 (H)
SCALE 1:100 (V)

Fairfield City Council

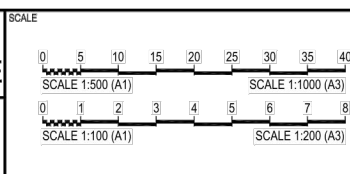
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No. 893.12/2013
Dated: 18 March 2022



FIRST ISSUE	DESIGN	DRAWN	CHECK	APPD.	DATE
1	AV	JS	LF	EF	20/03/2020
2	AV	AB	LF	BH	06/09/2020
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4	AV	AB	LF	BH	06/05/2021
5	AV	AB	CK	EF	23/07/2021

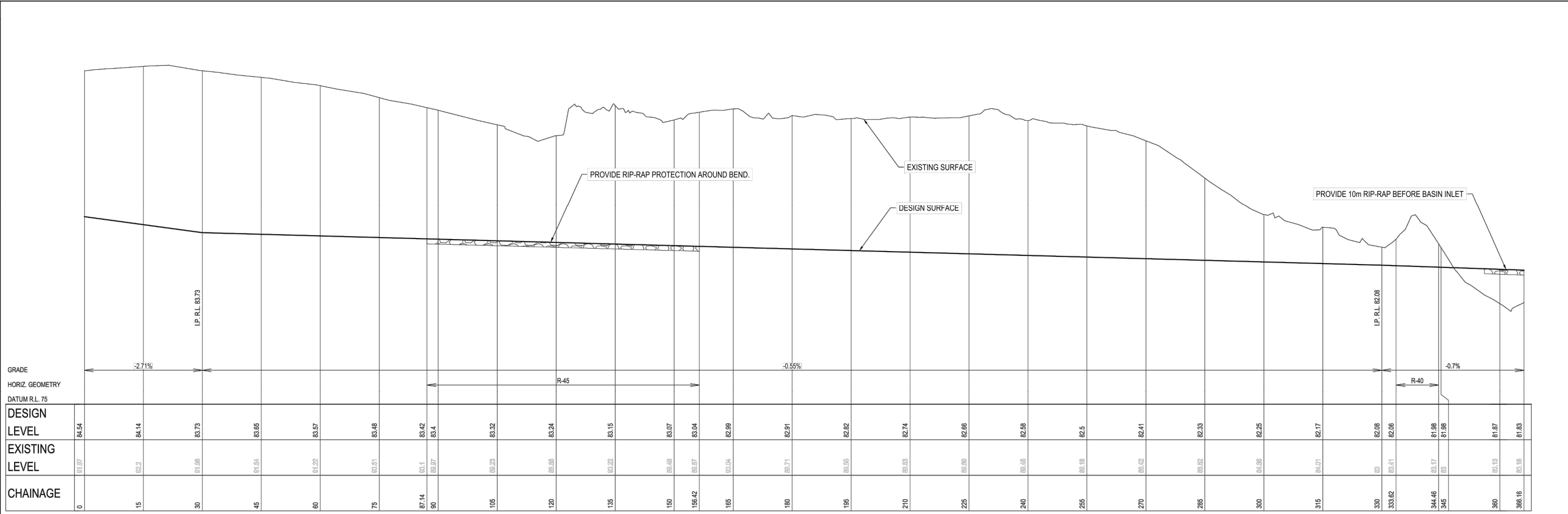
AMENDMENT DETAILS

STATUS
FOR CONSTRUCTION CERTIFICATE
AUTHORISED FOR ISSUE:
By: ENRIQUE FRANCO SIGN: <i>[Signature]</i> BE(Hons) MIEAust. CPEng NER
DATE: 23/7/21



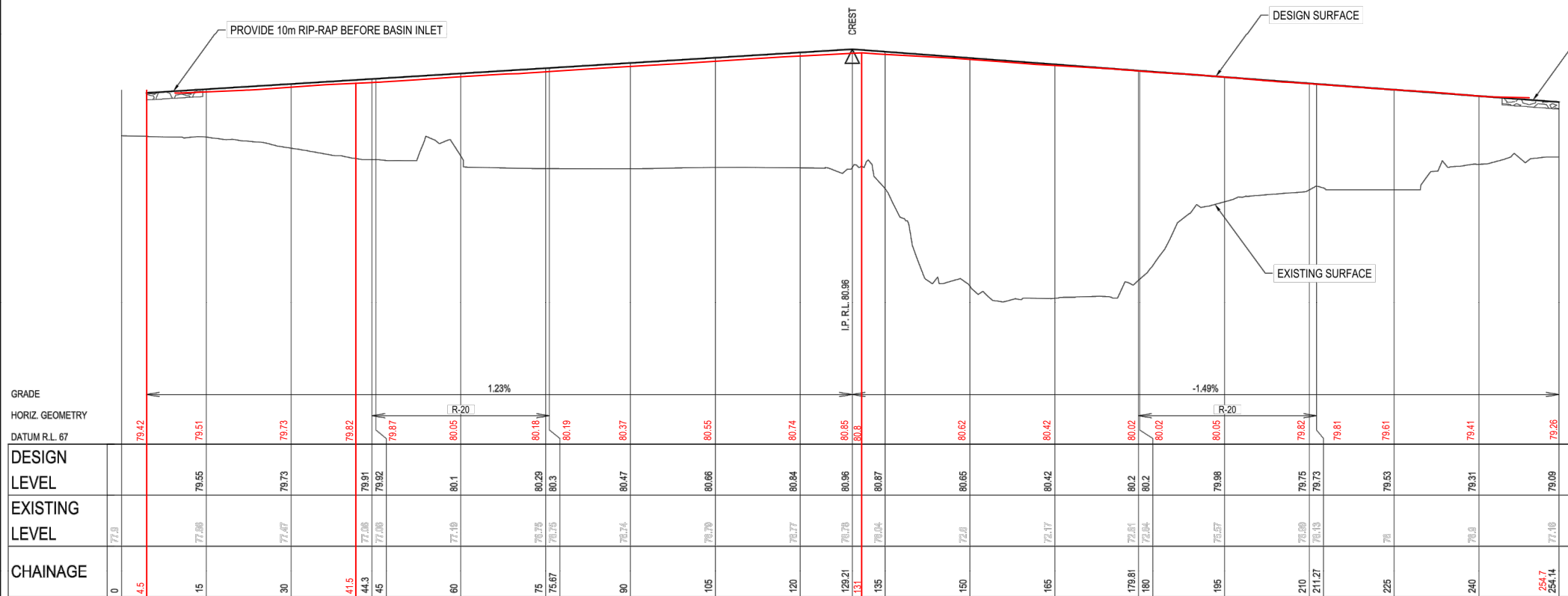
PROJECT
CSR HORSLEY PARK STAGE 3 SUBDIVISION DESIGN
DISCLAIMER ALL DIMENSIONS TO BE CHECKED ON SITE BY CONTRACTOR PRIOR TO CONSTRUCTION. USE WRITTEN DIMENSIONS ONLY, DO NOT SCALE. NOT FOR CONSTRUCTION UNLESS STAMPED BY CERTIFYING AUTHORITY

DRAWING TITLE
SWALE No. 01 & No. 02 LONGITUDINAL SECTIONS
PROJECT No. 15-001115.17
DRAWING No. 825
STAGE CC
REVISION 5



LONGITUDINAL SECTION CENTRELINE - SWALE No.04

SCALE 1:500 (H)
SCALE 1:100 (V)



LONGITUDINAL SECTION CENTRELINE - SWALE No.03

SCALE 1:500 (H)
SCALE 1:100 (V)

WORK AS EXECUTED SURVEY BY:

H. J. Murphy

Registered Surveyor No. 1677

Date: 13/06/2023

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No. 893.12/2013

Dated. 18 March 2022



ISSUE	DESIGN	DRAWN	CHECK	APPD.	DATE
1	AV	JS	LF	EF	20/03/2020
2	AV	AB	LF	BH	09/10/2020
3	AV	AB	LF	BH	16/10/2020
4	AV	AB	LF	BH	06/05/2021
5	AV	AB	CK	EF	23/07/2021

AMENDMENT DETAILS
1. AV JS LF EF 20/03/2020
2. AV AB LF BH 09/10/2020
3. AV AB LF BH 16/10/2020
4. AV AB LF BH 06/05/2021
5. AV AB CK EF 23/07/2021

STATUS
FOR CONSTRUCTION CERTIFICATE
AUTHORISED FOR ISSUE:
BY: ENRIQUE FRANCO SIGN: <i>[Signature]</i>
BE(Hons) MIEAust. CPEng NER
DATE: 23/7/21

SCALE
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SCALE 1:500 (A1)
0 1 2 3 4 5 6 7 8
SCALE 1:100 (A1)
SCALE 1:1000 (A3)
SCALE 1:200 (A3)

CLIENT
CSR

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PROJECT
CSR HORSLEY PARK
STAGE 3 SUBDIVISION DESIGN
DISCLAIMER
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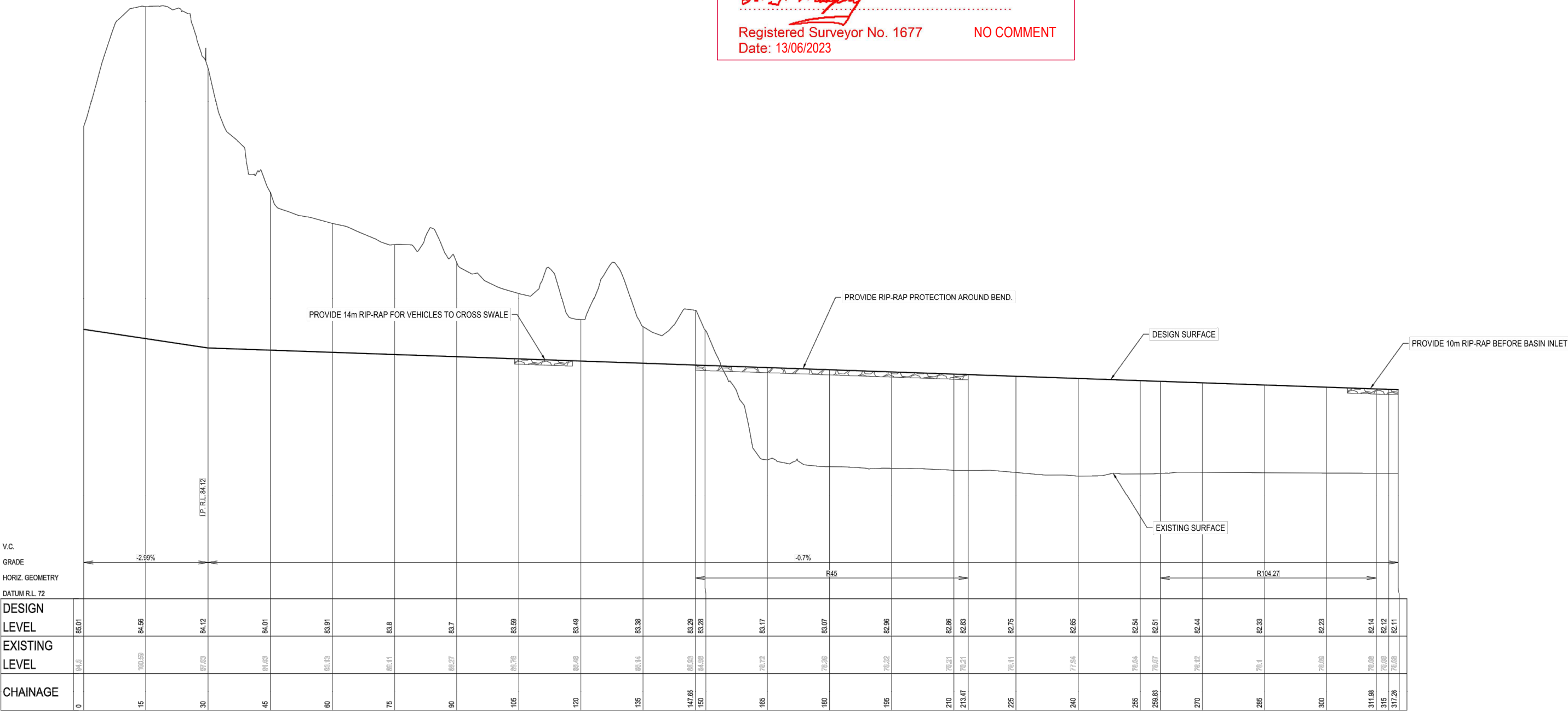
DRAWING TITLE
SWALE No. 03 & No. 04
LONGITUDINAL SECTIONS
PROJECT No.
DRAWING No.
STAGE
REVISION
15-001115.17
826
CC
5



WORK AS EXECUTED SURVEY BY:

H. J. Murphy

Registered Surveyor No. 1677 NO COMMENT
Date: 13/06/2023



LONGITUDINAL SECTION CENTRELINE - SWALE No.05

FIRST ISSUE					AMENDMENT DETAILS					STATUS		FOR		SCALE		CLIENT		PROJECT		DRAWING TITLE	
LF	BY	EF	EF	DATE																	
1	AV	JS	LF	EF	20/03/2020																
2	AV	AB	LF	BH	09/10/2020																
3	AV	AB	LF	BH	16/10/2020																
4	AV	AB	LF	BH	06/05/2021																
5	AV	AB	CK	EF	23/07/2021																
										AUTHORISED FOR ISSUE:		BY: ENRIQUE FRANCO		SIGN: 							
										BE(Hons) MIEAust. CPEng NER				DATE: 23/7/21							

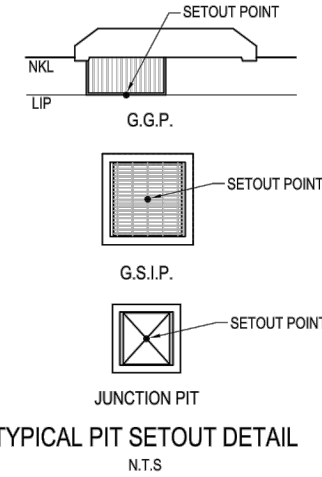


Registered Surveyor No. 1677 NO COMMENT
Date: 13/06/2023

DESIGN							DRAWN		CHECK		APPD.		DATE		AMENDMENT DETAILS										STATUS		FOR CONSTRUCTION CERTIFICATE										SCALE		CLIENT		PROJECT										DRAWING TITLE																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
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PIT SETOUT TABLE

Line	Pit	Code	Line chainage	Setout Data		Level	Pit centre levels		Pipes	Invert levels		Diameter	Length
				Easting	Northing		Design	Existing		US	DS		
1	01105	SA2	171.6536	298673.6	6254378	84.4437	84.4437	84.4437	RRJ2	81.12	80.35752	1050	63.53992
1	01106	SA2	235.1935	298683	6254441	83.1646	83.1646	83.1646	RRJ2	80.30752	79.66982	1050	63.76966
1	01107	SA2	298.9632	298692.5	6254504	82.01701	82.01701	82.01701	RRJ2	79.61982	78.5605	1200	62.50865
1	01108	SA2	361.4718	298701.7	6254565	80.9397	80.9397	80.9397	RRJ2	78.45542	77.27951	1200	65.38603
1	01109	SA2	426.8578	298711.4	6254630	79.73712	79.73712	79.73712	RRJ2	76.89337	75.85238	1350	62.0806
1	01110	SA2	488.9384	298720.6	6254691	78.67132	78.67132	78.67132	RRJ2	75.63477	74.56363	1350	50.11265
1	01111	SA2	539.0511	298728.1	6254741	77.57731	77.57731	77.57731	RRJ2	74.67179	73.78848	1350	46.49857
2	02101	900x900 G.S.I.P. IAD	0	298760.1	6254817	76.87187	76.87187	76.87187	RRJ4	74.26	73.49	375	38.42306
3	03101	G.G.P. 1.8m E.K.I.	0	298732.1	6254687	78.63014	78.63014	78.63014	RRJ2	77.24755	77.11364	375	13.39086
4	04101	900x900 G.S.I.P. IAD	-39.0112	298731.2	6254510	85.39477	85.39477	85.39477	RRJ2	81.68746	80.25599	750	28.62943
4	04102	G.G.P. 1.8m E.K.I.	-10.3817	298704.1	6254500	82.05712	82.05712	82.05712	RRJ2	80.20599	80.0741	825	13.18874
6	06101	G.G.P. 1.8m E.K.I.	0	298723.2	6254627	79.73381	79.73381	79.73381	RRJ2	78.35221	78.22171	375	13.05088
8	08101	900x900 G.S.I.P. IAD	0	298793.8	6254784	81.36429	81.36429	81.36429	RRJ2	74.3643	72.9268	1200	47.9607
8	08102	G.G.P. 2.4m E.K.I. SAG	47.9607	298749.3	6254803	76.35643	76.35643	76.35643	RRJ2	72.8768	72.60955	1350	13.36253
9	09101	G.G.P. 1.8m E.K.I.	0	298746.9	6254785	76.63472	76.63472	76.63472	RRJ2	75.25371	75.1237	375	13.00109
10	10101	G.G.P. 1.8m E.K.I.	0	298739.7	6254737	77.61765	77.61765	77.61765	RRJ2	76.23553	76.104	375	13.15273
11	11101	G.G.P. 2.4m E.K.I.	0	298713.4	6254562	80.92944	80.92944	80.92944	RRJ2	79.54737	79.41553	375	13.18412
14	14101	900x900 G.S.I.P. IAD	0	298707.8	6254736	78.96322	78.96322	78.96322	RRJ2	76.79838	75.58171	1050	20.47834
121	121101	900x900 G.S.I.P. IAD	0	298545.2	6254760	78.9767	78.9767	78.9767	RRJ2	72.34469	72.00089	750	22.8644
121	121102	G.G.P. 1.8m E.K.I.	22.8644	298527.4	6254775	73.80289	73.80289	73.80289					



WORK AS EXECUTED SURVEY BY:

H. F. Murphy

Registered Surveyor No. 1677

Date: 13/06/2023

NO COMMENT

DRAINAGE CALCULATIONS MINOR - 12D ILSAX 2

MINOR 5 YEAR STORM EVENT

Node	Node Type	Catchment Areas (ha)	Area 1 Percent Impervious (%)	Tc (min)	Perv 1	Catchment Flow (L/s)	Approach Flow (L/s)	Inlet Efficiencies				Uncaptured Flow (L/s)	Bypass Node	Bypass HGL	Node HGL	Freeboard (m)	Grate level	Flooded Depth (m)	Bypass Top US Width (m)	Bypass Velocity Depth	Bypass Top DS Width (m)	Link HGL Upstream	Link HGL Downstream	Ku (at max headloss)	Ku headloss	Link Flow (L/s)	Capacity Depth Ratio	Velocities			
								Minor SAG	Ongrade	Major SAG	Ongrade																	Upstream (m/s)	Link (m/s)	Downstream (m/s)	
01105	SA2	0.0622	100	5	5	22	17	17	100	100	80	80	0	01106	84.491	83.141	1.303	84.444	0.047	0.697	1.311	82.849	81.88	2.1	0.312	2478	0.8	2.86	2.96	3.41	
01106	SA2	0.0675	100	5	5	24	9	9	100	100	80	80	0	01107	83.23	81.88	1.285	83.165	0.065	1.311	1.329	81.878	81.25	0.2	0.053	2494	0.9	3.19	2.88	2.88	
01107	SA2	0.0664	100	5	5	24	23	22	100	100	80	80	1	01108	82.083	81.25	0.767	82.017	0.066	1.329	1.329	80.79	79.491	1.8	0.46	4022	0.8	3.56	3.93	4.79	
01108	SA2	0.0659	100	5	5	24	23	23	100	100	80	80	1	01109	81.006	79.307	1.633	80.94	0.066	1.326	1.326	79.298	78.076	0.2	0.01	4071	0.8	4.85	4.96	5.11	
01109	SA2	0.0686	100	5	5	25	24	23	100	100	80	80	1	01110	79.803	77.69	2.047	79.737	0.065	1.313	1.314	77.69	77.007	0.2	0	4089	0.6	4.95	4.78	4.75	
01110	SA2	0.0653	100	5	5	24	23	22	100	100	80	80	1	01111	78.725	77.007	1.665	78.671	0.053	0.908	1.04	76.88	76.638	0.3	0.202	4295	0.6	5	4.23	4.19	
01111	SA2	0.0518	100	5	5	18	18	18	100	100	80	80	0	01112	77.635	76.638	0.939	77.577	0.057	1.04	1.04	76.296	75.246	1.4	0.345	5591	0.8	4.16	4.5	4.92	
02101	900x900 G.S.I.P. IAD	0.6911	100	5	5	249	249	249	100	100	80	80	0	01114	76.872	75.82	1.052	76.872	0	0	0	75.618	74.548	6.3	0.255	247	1	2.24	2.24	2.24	
03101	G.G.P. 1.8m E.K.I.	0.0627	100	5	5	23	22	21	100	100	80	80	0	1001	78.694	77.367	1.264	78.63	0.064	1.257	1.377	77.345	77.202	4.5	0.021	21	0.1	0.71	0.85	1.07	
04101	900x900 G.S.I.P. IAD	4.1865	100	5	5	1511	1511	1511	100	100	80	80	0	04102	85.427	83.518	1.876	85.395	0.033	0.375	0.05	1.402	83.166	81.621	3.2	0.399	1506	0.6	3.41	3.41	3.41
04102	G.G.P. 1.8m E.K.I.	0.1333	100	5	5	49	49	42	100	100	80	80	7	11101	82.125	81.621	0.436	82.057	0.068	1.402	1.402	81.478	81.25	0.6	0.167	1540	1.1	2.88	2.88	3.05	
06101	G.G.P. 1.8m E.K.I.	0.0677	100	5	5	24	23	22	100	100	80	80	1	03101	79.798	78.463	1.271	79.734	0.064	1.263	1.263	78.452	78.312	9.7	0.011	22	0.1	0.84	0.94	1.09	
08101	900x900 G.S.I.P. IAD	8.1277	100	5	5	2934	2934	2934	100	100	80	80	0	08102	81.414	76.652	4.712	81.364	0.049	0.773	0.07	0.771	76.638	75.235	6.4	0.673	2934	0.4	4.41	2.59	2.59
08102	G.G.P. 2.4m E.K.I. SAG	0.0867	100	5	5	32	32	38	100	100	80	80	0	01113	76.392	75.235	1.121	76.356	0.035	0	0	75.192	75.153	0.2	0.044	2972	0.4	2.08	2.08	2.08	
09101	G.G.P. 1.8m E.K.I.	0.077	100	5	5	28	27	26	100	100	80	80	1	08102	76.686	75.394	1.241	76.635	0.051	0.834	0.03	0.833	75.367	75.246	4.5	0.028	26	0.1	0.73	0.89	1.13
10101	G.G.P. 1.8m E.K.I.	0.0644	100	5	5	23	22	22	100	100	80	80	0	09101	77.685	76.661	0.956	77.618	0.067	1.377	0.05	1.377	76.642	76.638	9.7	0.06	36	0.2	1.22	1.16	1.15
11101	G.G.P. 2.4m E.K.I.	0.063	100	5	5	23	26	26	100	100	80	80	0	06101	80.995	79.672	1.257	80.929	0.065	1.31	0.05	1.311	79.656	79.514	9.7	0.016	26	0.1	0.84	0.96	1.14
14101	900x900 G.S.I.P. IAD	4.2972	100	5	5	1551	1551	1551	100	100	80	80	0	01111	78.993	77.584	1.379	78.963	0.03	0.349	0.03	1.04	77.441	76.638	6.3	0.35	1542	0.2	3.49	3.96	5.99
121101	900x900 G.S.I.P. IAD	4.336	100	5	5	1565	1565	1565	100	100	80	80	0		78.977	74.594	4.382	78.977	0				73.471	72.76	2.5	1.123	1565	1.1	3.54	3.54	3.54
121102	G.G.P. 1.8m E.K.I.		100			0	0	0	100	100	80	80	0		72.001	72.76	-0.759	73.803	0												

DRAINAGE CALCULATIONS MAJOR - 12D ILSAX 2

MAJOR 100 YEAR STORM EVENT

Node	Node Type	Catchment Areas (ha)	Area 1 Percent Impervious (%)	Tc (min)	Perv 1	Perv 1	Catchment Flow (L/s)	Approach Flow (L/s)	Inlet Efficiencies				Uncaptured Flow (L/s)	Bypass Node	Bypass HGL	Node HGL	Freeboard (m)	Grate level	Flooded Depth (m)	Bypass Top US Width (m)	Bypass Velocity Depth	Bypass Top DS Width (m)	Link HGL Upstream	Link HGL Downstream	Ku (at max headloss)	Ku headloss	Link Flow (L/s)	Capacity Depth Ratio	Velocities			
									Minor SAG	Major SAG	Ongrade	Ongrade																	Upstream (m/s)	Link (m/s)	Downstream (m/s)	
01105	SA2	0.0622	100	5	5	5	35	37	26	100	100	80	80	11	01106	84.503	83.758	0.686	84.444	0.059	1.093	0.04	1.643	83.468	82.609	2	0.469	2581	0.9	2.98	2.98	3.41
01106	SA2	0.0675	100	5	5	5	37	17	14	100	100	80	80	3	01107	83.24	82.609	0.555	83.165	0.075	1.643	0.06	1.779	82.544	81.91	0.2	0.085	2588	0.9	3.29	2.99	2.99
01107	SA2	0.0664	100	5	5	5	36	37	27	100	100	80	80	11	01108	82.096	81.911	0.106	82.017	0.079	1.779	0.07	1.815	81.407	80.357	1.5	0.674	4566	0.9			
01108	SA2	0.0659	100	5	5	5	36	44	30	100	100	80	80	13	01109	81.02	80.361	0.579	80.94	0.08	1.815	0.07	1.862	80.3	79.516	0.2	0.198	4586	0.9			
01109	SA2	0.0686	100	5	5	5	38	48	33	100	100	80	80	15	01110	79.819	79.52	0.217	79.737	0.082	1.862	0.07	1.861	79.516	78.738	0	0.012	4779	0.7			
01110	SA2	0.0653	100	5	5	5	36	49	33	100	100	80	80	14	01111	78.742	78.738	-0.067	78.671	0.071	1.488	0.06	0.589	78.729	77.804	0.4	0.25	4926	0.6			
01111	SA2	0.0518	100	5	5	5	28	127	-345	100	100	80	80	1375	01112	77.804	77.804	-0.226	77.577	0.226	0.589	0.42	0.567	77.459	76.38	1.2	0.544	6417	0.9			
02101	900x900 G.S.I.P. IAD	0.6911	100	5	5	5	379	379	301	100	100	80	80	91	01114	76.968	76.966	-0.094	76.872	0.096	2.344	0.1	5.171	76.606	75.241	3.4	0.382	297	1.2			
03101	G.G.P. 1.8m E.K.I.	0.0627	100	5	5	5	34	408	134	100	100	80	80	208	10101	78.769	78.769	-0.139	78.63	0.139	3.787	0.19	4.082	78.701	78.694	4.5	0.525	-205	-1.2			
04101	900x900 G.S.I.P. IAD	4.1865	100	5	5	5	2296	2296	2196	100	100	80	80	177	04102	85.509	85.481	-0.086	85.395	0.114	2.94	0.29	7.043	84.273	82.254	1.8	1.221	2188	0.9			
04102	G.G.P. 1.8m E.K.I.	0.1333	100	5	5	5	73	647	128	100	100	80	80	994	11101	82.254	82.254	-0.197	82.057	0.197	7.043	0.31	7.028	82.092	81.91	0.6	0.432	2111	1.5			
06101	G.G.P. 1.8m E.K.I.	0.0673	100	5	5	5	37	583	177	100	100	80	80	395	06102	79.897	79.813	-0.219	79.734	0.219	4.685	0.37	4.687	79.367	78.992	8.9	0.306	240	1.4			
08101	900x900 G.S.I.P. IAD	8.1277	100	5	5	5	4457	4457	4457	100	100	80	80	0	08102	81.421	81.421	0.057	81.364	0.057	1.015	0.05	0.167	80.784	78.447	0.7	0.673	4465	0.6			
08102	G.G.P. 2.4m E.K.I. SAG	0.0867	100	5	5	5	48	358	348	100	100	80	80	0	01113	76.521	76.521	-0.164	76.356	0.165	2.906	0.13	5.088	76.428	76.213	0.5	0.103	4570	0.6			
09101	G.G.P. 1.8m E.K.I.	0.077	100	5	5	5	42	373	142	100	100	80	80	231	08102	76.769	76.769	-0.134	76.635	0.134	3.608	0.16	5.167	76.493	76.38	4.5	0.275	142	0.8			
10101	G.G.P. 1.8m E.K.I.	0.0644	100	5	5	5	35	303	101	100	100	80	80	172	09101	77.766	77.766	-0.148	77.618	0.148	4.092	0.22	4.086	77.766	77.766	9.7	0.284	109	0.6			
11101	G.G.P. 2.4m E.K.I.	0.063	100	5	5	5	35	831	267	100	100	80	80	565	06101	81.106	81.106	-0.177	80.929	0.177	5.858	0.26	5.846	80.446	80.357	4.9	0.541	266	1.5			
14101	900x900 G.S.I.P. IAD	4.2972	100	5	5	5	2357	2356	2305	100	100	80	80	90	01111	79.043	79.043	-0.08	78.963	0.08	1.813	0.14	8.589	79.016	77.804	6.2	0.587	2305	0.3			
121101	900x900 G.S.I.P. IAD	4.336	100	5	5	5	2378	2378	2378	100	100	80	80	0		78.977	76.468	2.508	78.977	0				74.052	72.76	1.8	2.416	2376	1.7			
121102	G.G.P. 1.8m E.K.I.		100				0	0	0	100	100	80	80	0		72.001	72.76	-0.759	73.803	0												

Fairfield City Co

This document forms part of the Fairfield City Council Subdivision Works Contract No. 893.12/2013 Dated. 18 March 2023 and is hereby approved

- 1.1. ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH;
1.2. AS1170(2002) - STRUCTURAL DESIGN ACTIONS,
1.3. AS3600(2018) - CONCRETE STRUCTURES,
1.4. AS4678(2002) - EARTH-RETAINING STRUCTURES,
1.5. STANDARDS ASSOCIATION OF AUSTRALIA (SAA) CODES, AND
1.6. THE BUILDING CODE OF AUSTRALIA (BCA).
2. ALL WORK SHALL BE UNDERTAKEN IN A SAFE AND RESPONSIBLE MANNER AND IN ACCORDANCE WITH ALL WORKCOVER REQUIREMENTS AND WH&S ACT REGULATIONS.
3. DO NOT SCALE FROM THE DRAWINGS. VERIFY ALL DIMENSIONS AND LEVELS FOR SETTING OUT AND OFF-SITE WORK BEFORE CONSTRUCTION AND FABRICATION BEGIN.
4. UNLESS NOTED OTHERWISE, ALL DIMENSIONS ARE IN MILLIMETRES AND ALL LEVELS ARE IN METRES TO THE AUSTRALIAN HEIGHT DATUM.
5. DURING CONSTRUCTION MAINTAIN THE STRUCTURE IN A STABLE CONDITION AND ENSURE NO PART IS OVERSTRESSED. PROVIDE ALL TEMPORARY PROPPING AND BRACING NECESSARY TO ACHIEVE THIS. ANY TEMPORARY WORKS SHOWN ON THE DRAWINGS ARE INDICATIVE ONLY.
6. WHERE STRUCTURAL CERTIFICATION IS REQUIRED, 'CALIBRE' WILL CARRY OUT INSPECTIONS AT HOLD POINTS DESCRIBED IN THE INSPECTION & TEST PLANS PREPARED BY 'CALIBRE' OR AS AGREED BETWEEN THE CONTRACTOR & THE ENGINEER. GIVE THE INSPECTOR A MINIMUM OF 24 HOURS NOTICE THAT AN INSPECTION IS REQUIRED.
7. PRIOR TO THE COMMENCEMENT OF WORKS THE CONTRACTOR IS TO IDENTIFY ALL EXISTING SERVICES. ANY DAMAGE TO EXISTING SERVICES IS TO BE RECTIFIED AT THE CONTRACTORS EXPENSE. SERVICES SHOWN ON 'CALIBRE' DRAWINGS ARE INDICATIVE ONLY.
8. ENSURE THAT SUFFICIENT TOLERANCES ARE PROVIDED AND INTEGRATED THROUGHOUT ALL ELEMENTS OF THE WORKS.
9. COPYRIGHT OF ALL DRAWINGS AND DOCUMENTS PROVIDED BY CALIBRE FOR THIS PROJECT REMAIN ITS PROPERTY. THE PRINCIPAL ALONE SHALL HAVE A LICENCE TO USE THESE DOCUMENTS IN CONNECTION WITH THE PROJECT BUT SHALL NOT USE OR MAKE COPIES OF SUCH DOCUMENTS OTHER THAN IN CONNECTION WITH THIS PROJECT.
10. ALL LEVELS SHOWN ARE FOR INFORMATION ONLY.

<u>ABBREVIATION</u>	<u>DESCRIPTION</u>
HORIZ	HORIZONTAL
VERT	VERTICAL
CRS	CENTRES
BTM	BOTTOM
EF	EACH FACE
EW	EACH WAY
UNO	UNLESS NOTED OTHERWISE
TYP	TYPICAL
CL	CENTRELINE
DWG	DRAWING
N.T.S.	NOT TO SCALE

1. COMPRESSIVE STRENGTH (F_c) FOR CAST IN SITU CONCRETE SHALL BE A MINIMUM 32MPa AT 28 DAYS.
2. NO ADMIXTURES SHALL BE USED IN CONCRETE UNLESS APPROVED IN WRITING.
3. ALL CONCRETE FORMWORK SHALL BE DESIGNED, ERECTED, SUPPORTED, BRACED AND MAINTAINED IN ACCORDANCE WITH AS3610(2018).
4. NO HOLES, CHASES OR EMBEDMENT OF PIPES OTHER THAN THOSE SHOWN ON THE STRUCTURAL DRAWINGS SHALL BE MADE IN CONCRETE MEMBERS WITHOUT THE PRIOR WRITTEN APPROVAL OF THE ENGINEER.
5. CONSTRUCTION JOINTS SHALL BE LOCATED TO THE APPROVAL OF THE ENGINEER.
6. CURING OF CONCRETE IS TO BE ACHIEVED BY KEEPING SURFACES CONTINUOUSLY WET FOR A PERIOD OF 3 DAYS, AND PREVENTION OF LOSS OF MOISTURE FOR A TOTAL OF 7 DAYS FOLLOWED BY A GRADUAL DRYING OUT.
7. CONDUITS, PIPES, ETC. SHALL ONLY BE LOCATED IN THE MIDDLE THIRD OF THE SLAB DEPTH. PIPES OR CONDUITS SHALL NOT BE PLACED WITHIN THE COVER TO REINFORCEMENT.
8. SIZES IF CONCRETE MEMBERS DO NOT INCLUDE THE THICKNESS OF APPLIED FINISHES.

9. REINFORCEMENT SYMBOLS:

S	DENOTES GRADE 250 S HOT ROLLED DEFORMED BARS TO AS4671
N	DENOTES GRADE 250 N BARS TO AS4671
SL & RL	DENOTES GRADE 250 HOT ROLLED PLAIN BARS TO AS4671
	SQUARE AND RECTANGULAR MESH RESPECTIVELY

NUMBER OF BARS IN GROUP ———— BAR GRADE & TYPE

2N12-200

NOMINAL BAR SIZE IN mm ———— BAR SPACING IN mm

10. COVER TO REINFORCEMENT SHALL BE 45mm U.N.O.

IF DURING CONSTRUCTION THE WALL THICKNESS IS GREATER THAN SPECIFIED, COVER TO REINFORCEMENT SHALL BE NO GREATER THAN 80mm TO INTERNAL FACE OF WALL.

13. ALL REINFORCEMENT SHALL BE FIRMLY SUPPORTED ON PLASTIC CHAIRS AT NO GREATER THAN 1.0 METRE CENTRES BOTH WAYS. BARS SHALL BE TIED AT ALTERNATIVE INTERSECTIONS.

14. REINFORCEMENT IS REPRESENTED DIAGRAMMATICALLY AND NOT NECESSARILY IN TRUE PROJECTION.

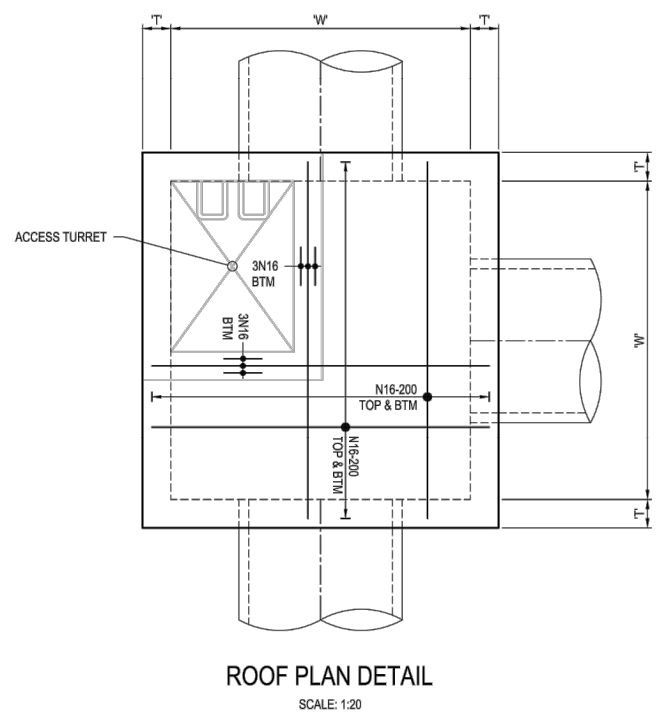
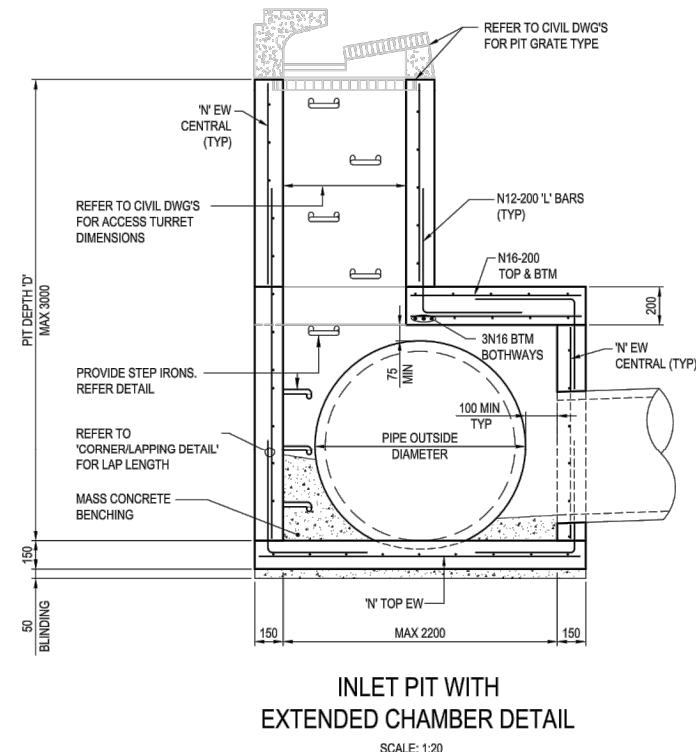
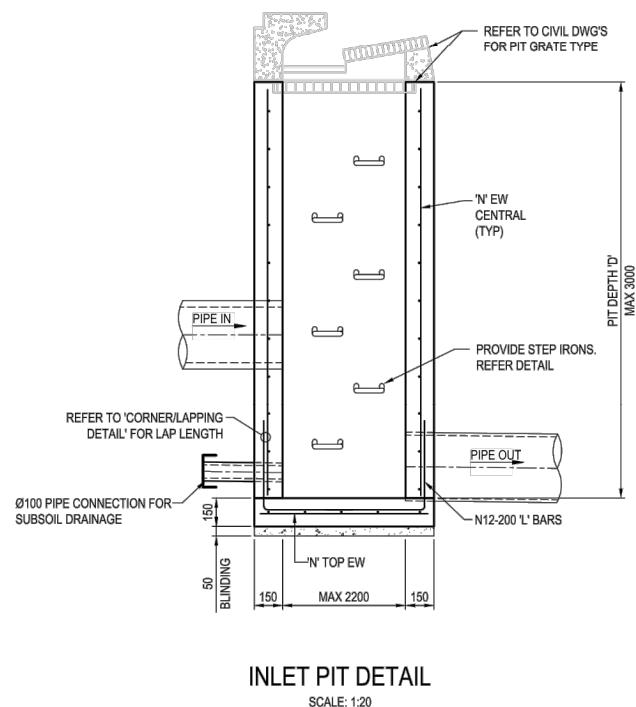
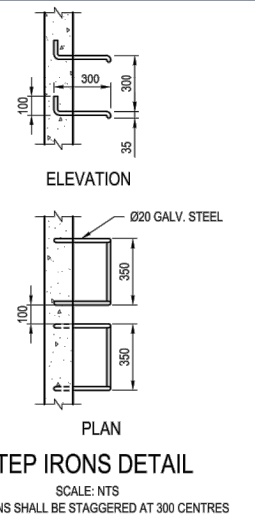
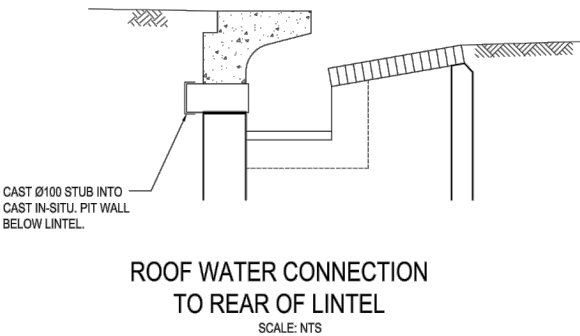
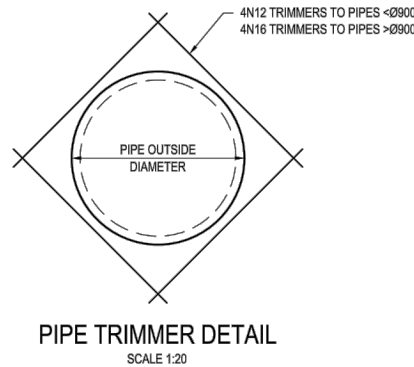
1. DESIGN AND CONSTRUCTION AND STRIPPING TIMES TO COMPLY WITH AS3610 AND AS3600 UNLESS OTHERWISE APPROVED BY THE ENGINEER.
2. THE DESIGN CERTIFICATION & PERFORMANCE OF THE FORMWORK AND FALSE WORK IS THE RESPONSIBILITY OF THE BUILDER.
3. DURING CONSTRUCTION, SUPPORT PROPPING WILL BE REQUIRED WHERE LOADS FROM STACKED MATERIALS, FORMWORK AND OTHER SUPPORTED SLABS INDUCE LOADS IN A SLAB OR BEAM WHICH EXCEED THE DESIGN LOAD FOR STRENGTH OR SERVICEABILITY AT THAT AGE. ONCE THE NOMINATED 28 DAY STRENGTH HAS BEEN ATTAINED, THESE LOADS SHALL NOT EXCEED THE DESIGN SUPERIMPOSED LOADS SET OUT ON THE DRAWINGS.
4. FORMWORK TO REMAIN IN POSITION FOR A MINIMUM OF 14 DAYS UNO AFTER CONCRETE POUR.

1. POST-INSTALLED ANCHORS SHALL ONLY BE USED WHERE SPECIFIED ON DRAWINGS. CONTRACTOR SHALL OBTAIN APPROVAL FROM ENGINEER PRIOR TO USING POST-INSTALLED ANCHORS.
2. ALL REINFORCEMENT ANCHORS SHALL BE GRADE N500.
3. HOLES SHALL BE DRILLED AND CLEANED PER MANUFACTURER'S INSTRUCTIONS.
4. ANCHORS SHALL BE INSTALLED PER MANUFACTURER'S INSTALLATION INSTRUCTIONS AT NOT LESS THAN MINIMUM EDGE DISTANCES AND/OR SPACINGS INDICATED IN THE MANUFACTURERS' LITERATURE.
5. CARE SHALL BE GIVEN TO AVOID CONFLICTS WITH EXISTING REINFORCEMENT WHEN DRILLING HOLES.
6. POST-INSTALLED ANCHORS SHALL ALWAYS BE INSTALLED IN CONJUNCTION WITH AN ADHESIVE SPECIFIED BY THE MANUFACTURER.

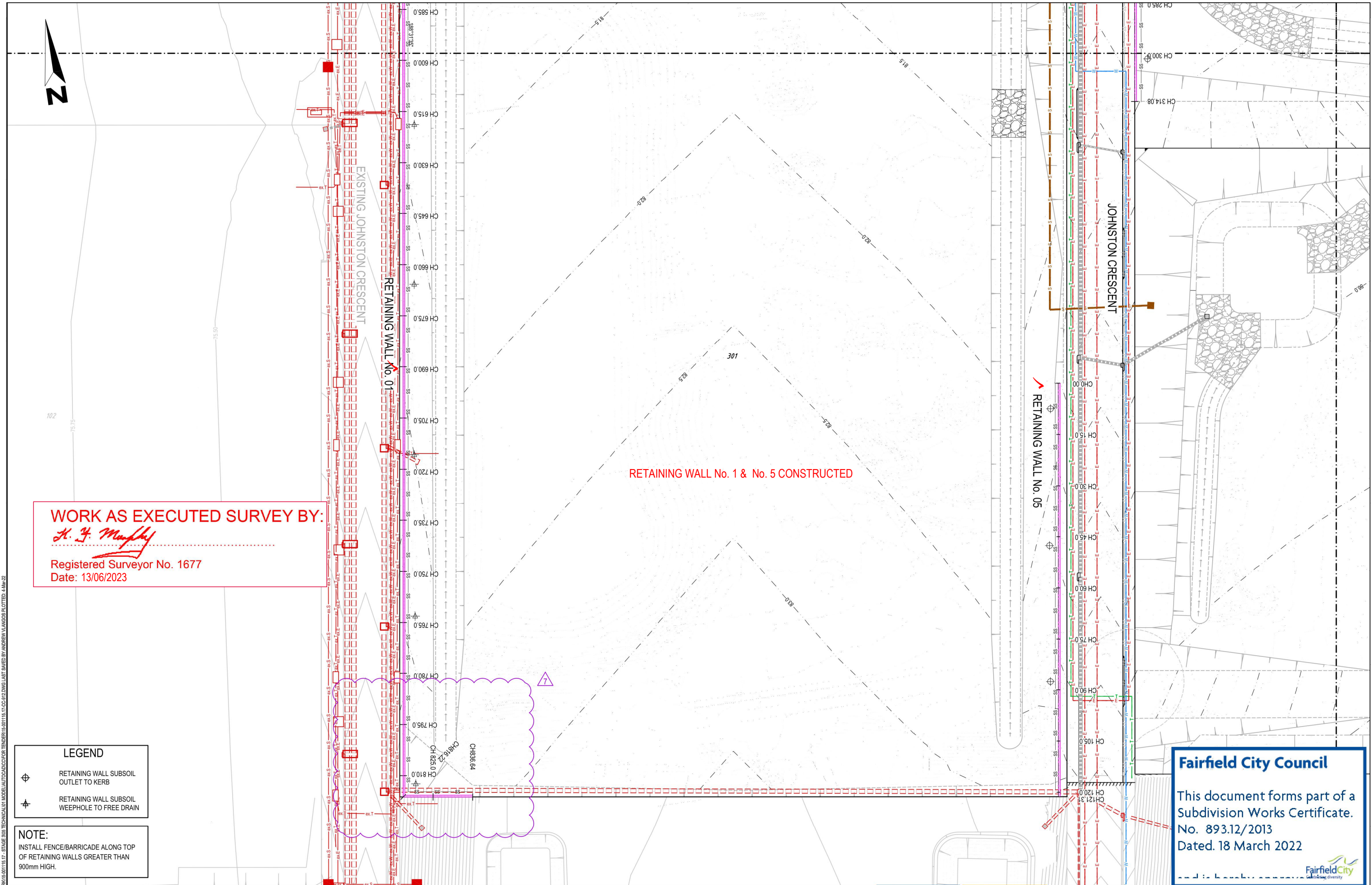
1. FOOTINGS HAVE BEEN DESIGNED TO BEAR ON CONTROLLED FILL WITH AN ALLOWABLE BEARING PRESSURE OF 150kPa, TO BE VERIFIED BY A GEOTECHNICAL ENGINEER PRIOR TO CONSTRUCTION.
2. PIERS HAVE BEEN DESIGNED ON STIFF CLAY WITH AN UN-DRAINED COHESION " c_u " OF 50kPa. TO BE VERIFIED ON SITE BY A GEOTECHNICAL ENGINEER.
3. THE BUILDER SHALL OBTAIN APPROVAL OF THE FOUNDATION MATERIAL BEFORE PLACING CONCRETE.
4. FOOTINGS SHALL BE LOCATED CENTRALLY UNDER WALLS AND COLUMNS UNLESS NOTED OTHERWISE.
5. DO NOT BACKFILL BEHIND CANTILEVER RETAINING WALLS BEFORE THEY REACH THEIR REQUIRED DESIGN STRENGTH.
6. FOOTINGS TO BE CONSTRUCTED AND BACKFILLED AS SOON AS POSSIBLE FOLLOWING EXCAVATION TO AVOID SOFTENING OR DRYING OUT BY EXPOSURE. ENSURE FREE DRAINING BACKFILL AND DRAINAGE IS IN PLACE.
7. ALL FOUNDATIONS SHALL BE FREE OF WATER AND LOOSE MATERIAL.

H. J. Murphy
 Registered Surveyor No. 1677
 Date: 13/06/2023

NO COMMENT



AMENDMENTS	DESIGN	DRAWN	CHECK	APPD.	DATE	AMENDMENT DETAILS	STATUS	FIRST ISSUE	FOR CONSTRUCTION CERTIFICATE	SCALE	CLIENT			PROJECT CSR HORSLEY PARK STAGE 3 SUBDIVISION DESIGN	DRAWING TITLE STANDARD STRUCTURAL PITS			
	1	LF	BY	EF	EF											20/03/2020		
	2	AV	JS	LF	EF											06/09/2020		
	3	AV	AB	LF	BH											09/10/2020		
	4	AV	AB	LF	BH											16/10/2020		
	5	AV	AB	LF	BH											06/05/2021		
	6	AV	AB	CK	EF											23/07/2021		
AMENDMENT 1 BY: ENRIQUE FRANCO BE(Hons) MIEAust. CPEng NER DATE: 23/7/21						AUTHORISED FOR ISSUE: 	SCALE 1:20 (A1) SCALE 1:40 (A3)							DISCLAIMER ALL DIMENSIONS TO BE CHECKED ON SITE BY CONTRACTOR PRIOR TO CONSTRUCTION. USE WRITTEN DIMENSIONS ONLY, DO NOT SCALE. NOT FOR CONSTRUCTION UNLESS STAMPED BY CERTIFYING AUTHORITY	PROJECT No. 15-001115.17	DRAWING No. 901	STAGE CC	REVISION 5



WORK AS EXECUTED SURVEY BY:
H. J. Murphy
Registered Surveyor No. 1677
Date: 13/06/2023

LEGEND

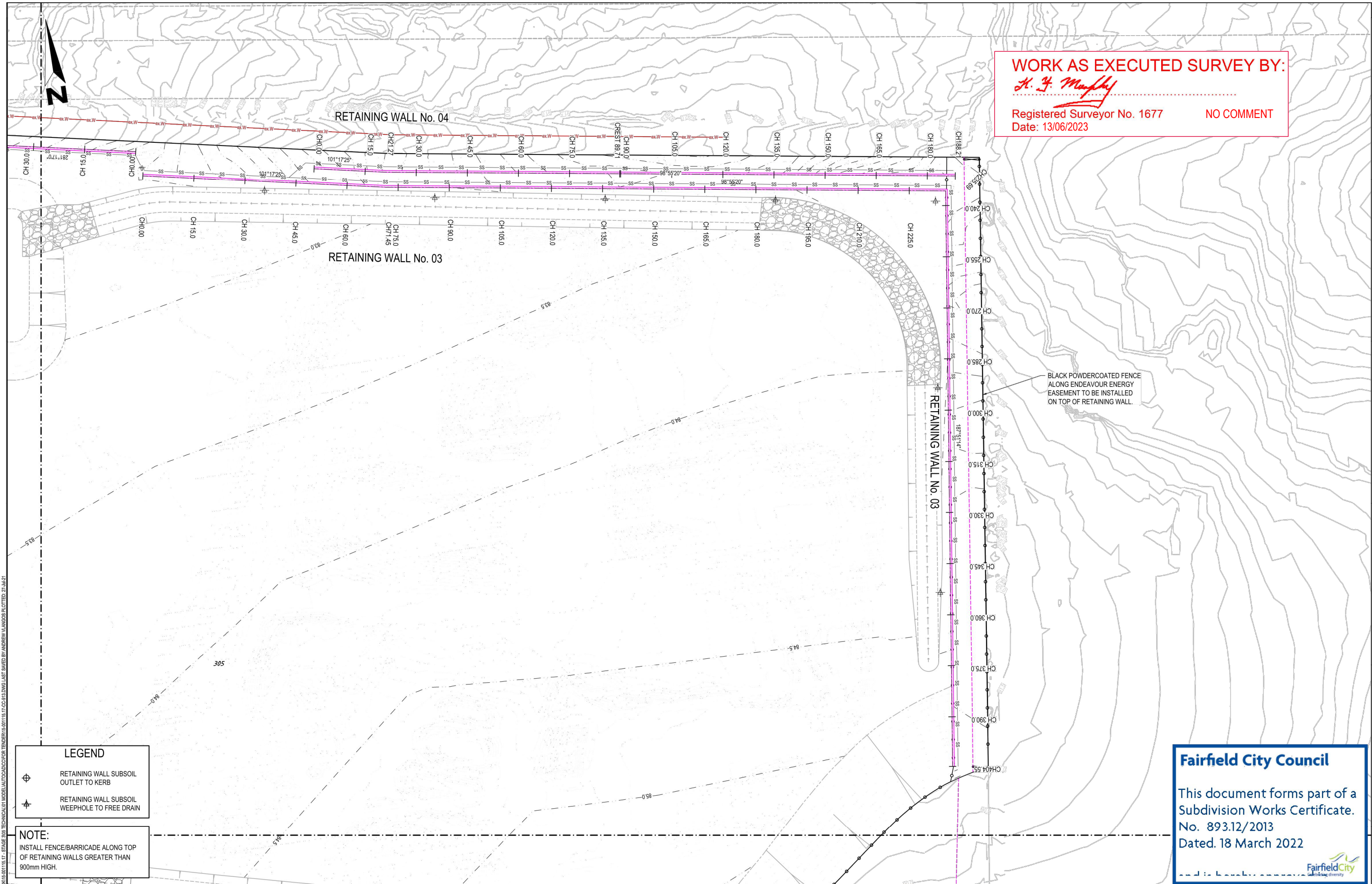
RETAINING WALL SUBSOIL OUTLET TO KERB

RETAINING WALL SUBSOIL WEEPHOLE TO FREE DRAIN

NOTE:

INSTALL FENCE/BARRICADE ALONG TOP OF RETAINING WALLS GREATER THAN 900mm HIGH.

FIRST ISSUE AMENDMENTS	DESIGN	DRAWN	CHECK	APPD.	DATE	AMENDMENT DETAILS		STATUS	FOR CONSTRUCTION CERTIFICATE		SCALE	CLIENT	PROJECT	DRAWING TITLE		
	LF	BY	EF	EF	20/03/2020											
	1	AV	JS	LF	EF	06/09/2020										
	2	AV	AB	LF	BH	09/10/2020										
	3	AV	AB	LF	BH	16/10/2020										
	4	AV	AB	LF	BH	06/05/2021										
	5	AV	AB	CK	EF	23/07/2021										
	6	DT	PS	CK	EF	26/11/2021										
7	AV	PS	CK	EF	15/02/2022											
						AUTHORISED FOR ISSUE:		BY: ENRIQUE FRANCO		SIGN:			© 2021		calibregroup.com	
								BE(Hons) MIEAust. CPEng NER								
										DATE:						



WORK AS EXECUTED SURVEY BY:
H. J. Murphy
Registered Surveyor No. 1677
Date: 13/06/2023
NO COMMENT

LEGEND

- RETAINING WALL SUBSOIL OUTLET TO KERB
- RETAINING WALL SUBSOIL WEEPHOLE TO FREE DRAIN

NOTE:

INSTALL FENCE/BARRICADE ALONG TOP OF RETAINING WALLS GREATER THAN 900mm HIGH.

Fairfield City Council

This document forms part of a Subdivision Works Certificate.
No. 893.12/2013
Dated. 18 March 2022

AMENDMENT DETAILS						STATUS		SCALE		CLIENT		PROJECT		DRAWING TITLE			
FIRST ISSUE	DESIGN	DRAWN	CHECK	APPD.	DATE	FOR CONSTRUCTION CERTIFICATE		0 5 10 15 20 25 30 35 40		CSR		calibre		CSR HORSLEY PARK STAGE 3 SUBDIVISION DESIGN			
1	AV	JS	LF	EF	20/03/2020	BY: ENRIQUE FRANCO		SCALE 1:500 (A1)		DATE: 23/1/24		15-001115.17		RETAINING WALL PLAN SHEET 03 OF 03			
2	AV	AB	LF	BH	09/10/2020	SIGN: [Signature]		SCALE 1:1000 (A3)		[Signature]		913		15-001115.17			
3	AV	AB	LF	BH	16/10/2020	BE(Hons) MIEAust. CPEng NER		[Signature]		[Signature]		CC		15-001115.17			
4	AV	AB	LF	BH	06/05/2021	DATE: 23/1/24		[Signature]		[Signature]		CC		15-001115.17			
5	AV	AB	CK	EF	23/07/2021	[Signature]		[Signature]		[Signature]		CC		15-001115.17			

WORK AS EXECUTED SURVEY BY:

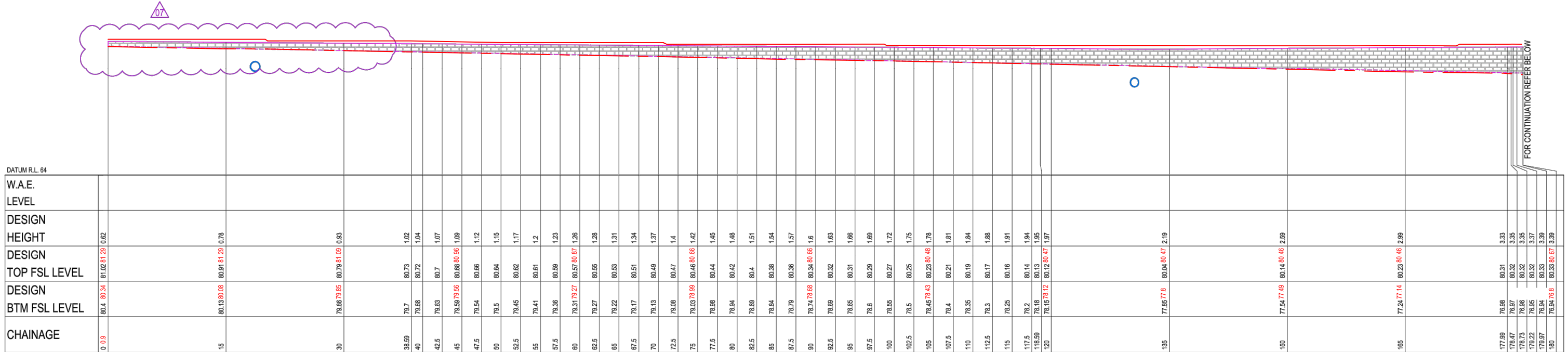
H. J. Murphy

Registered Surveyor No. 1677
Date: 13/06/2023

NOTE:
REFER TO DRAWINGS BY OTHERS
FOR STRUCTURAL DESIGN
DETAILS.

LEGEND

- DESIGN TOP F.S.L.
- DESIGN BTM F.S.L.
- PROPOSED STORMWATER
- EXISTING STORMWATER



LONGITUDINAL SECTION CENTRELINE - RW No.01 BTM

SCALE 1:250 (H)
SCALE 1:250 (V)



LONGITUDINAL SECTION CENTRELINE - RW No.01 BTM

SCALE 1:250 (H)
SCALE 1:250 (V)

Fairfield City Council

This document forms part of a
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Dated. 18 March 2022



FIRST ISSUE	DESIGN	DRAWN	CHECK	APPD.	DATE
1	AV	JS	LF	EF	20/03/2020
2	AV	AB	LF	BH	09/10/2020
3	AV	AB	LF	BH	16/10/2020
4	AV	AB	LF	BH	06/05/2021
5	AV	AB	CK	EF	23/07/2021
6	DT	PS	CK	EF	28/11/2021
7	AV	PS	CK	EF	15/02/2022

AMENDMENT DETAILS

STATUS

FOR CONSTRUCTION CERTIFICATE

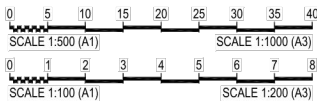
AUTHORISED FOR ISSUE:

By: ENRIQUE FRANCO
BE(Hons) MIEAust. CPEng NER

SIGN:

DATE: 15/02/2022

SCALE



CLIENT



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PROJECT

CSR HORSLEY PARK
STAGE 3 SUBDIVISION DESIGN

DISCLAIMER
ALL DIMENSIONS TO BE CHECKED ON SITE BY CONTRACTOR
PRIOR TO CONSTRUCTION. USE WRITTEN DIMENSIONS ONLY. DO
NOT SCALE. NOT FOR CONSTRUCTION UNLESS STAMPED BY
CERTIFYING AUTHORITY

DRAWING TITLE

RETAINING WALL LONGITUDINAL
SECTIONS - SHEET 01 OF 06

PROJECT No.	DRAWING No.	STAGE	REVISION
15-001115.17	921	CC	7

WORK AS EXECUTED SURVEY BY:

H. F. Murphy

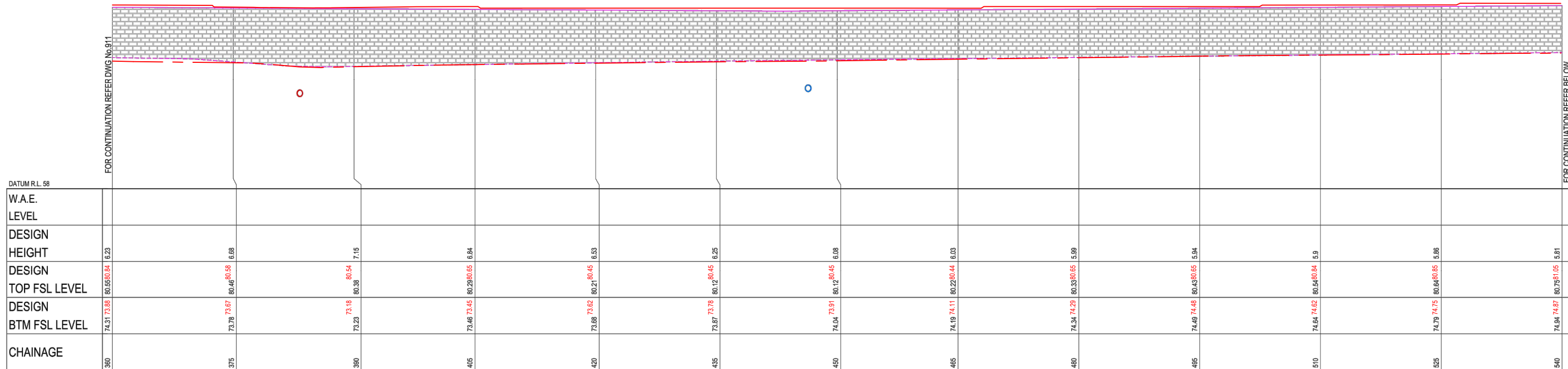
Registered Surveyor No. 1677

Date: 13/06/2023

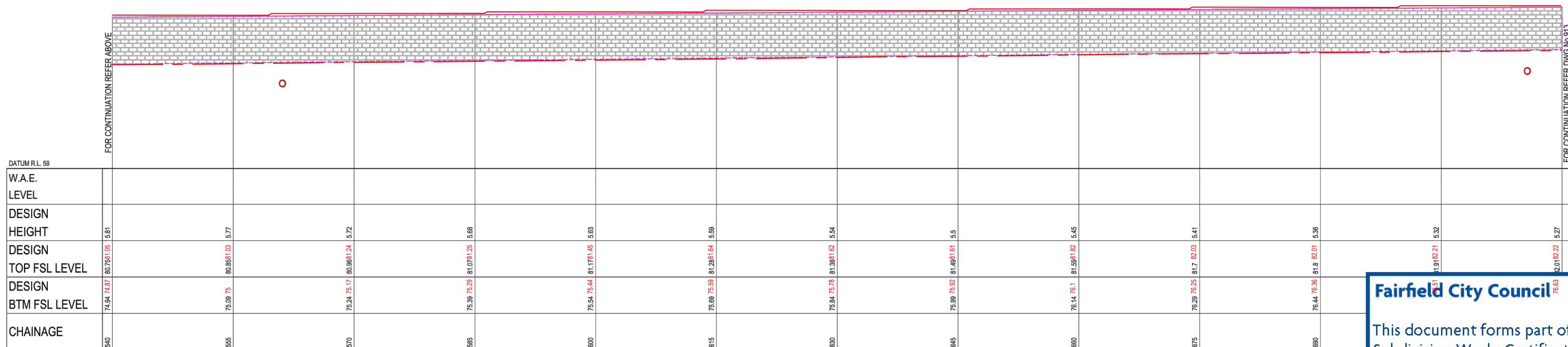
NOTE:

REFER TO DRAWINGS BY OTHERS
FOR STRUCTURAL DESIGN
DETAILS.

LEGEND

— DESIGN TOP F.S.L.
— DESIGN BTM F.S.L.○ PROPOSED
STORMWATER○ EXISTING
STORMWATER

LONGITUDINAL SECTION CENTRELINE - RW No.01 BTM

SCALE 1:250 (H)
SCALE 1:250 (V)

LONGITUDINAL SECTION CENTRELINE - RW No.01 BTM

SCALE 1:250 (H)
SCALE 1:250 (V)

Fairfield City Council

This document forms part of a
Subdivision Works Certificate.
No. 893.12/2013
Dated. 18 March 2022

FILE: H:\15-00115 - CSR HORSLEY PARK\15-00115-17-STAGE 305 TECHNICAL MODEL\AUTOCAD\DWG\TENDER\15-00115-17-02-02.DWG LAST SAVED BY: JED SWINNEY PLOTTED: 27-04-21

AMENDMENT DETAILS						STATUS		SCALE		CLIENT		PROJECT		DRAWING TITLE	
FIRST ISSUE	DESIGN	DRAWN	CHECK	APPD.	DATE	FOR CONSTRUCTION CERTIFICATE		0 5 10 15 20 25 30 35 40		CSR		CSR HORSLEY PARK STAGE 3 SUBDIVISION DESIGN		RETAINING WALL LONGITUDINAL SECTIONS - SHEET 02 OF 06	
1	AV	JS	LF	EF	20/03/2020	AUTHORISED FOR ISSUE:		SCALE 1:500 (A1)		calibre		DISCLAIMER		PROJECT No.	
2	AV	AB	LF	BH	09/10/2020	BY: ENRIQUE FRANCO		SCALE 1:1000 (A3)		15-00115.17		ALL DIMENSIONS TO BE CHECKED ON SITE BY CONTRACTOR PRIOR TO CONSTRUCTION. USE WRITTEN DIMENSIONS ONLY. DO NOT SCALE. NOT FOR CONSTRUCTION UNLESS STAMPED BY CERTIFYING AUTHORITY		DRAWING No.	
3	AV	AB	LF	BH	16/10/2020	BE(Hons) MIEAust. CPEng NER		0 1 2 3 4 5 6 7 8		922		STAGE		REVISION	
4	AV	AB	LF	BH	06/05/2021	DATE: 23/1/21		SCALE 1:100 (A1)		CC		15			
5	AV	AB	CK	EF	23/07/2021			SCALE 1:200 (A3)							

LEGEND

	DESIGN TOP F.S.L.
	DESIGN BTM. F.S.L.
	PROPOSED STORMWATER
	EXISTING STORMWATER



FIRST ISSUE DESIGN DRAWN CHECK APPD. DATE AMENDMENT DETAILS	DESIGN	DRAWN	CHECK	APPD.	DATE	AMENDMENT DETAILS	STATUS FOR CONSTRUCTION CERTIFICATE	AUTHORISED FOR ISSUE: BY: ENRIQUE FRANCO SIGN:  BE(Hons) MIEAust. CPEng NER DATE: 	SCALE  SCALE 1:500 (A1)  SCALE 1:100 (A1)  SCALE 1:200 (A3)	CLIENT 	 © 2021 calibregroup.com	PROJECT CSR HORSLEY PARK STAGE 3 SUBDIVISION DESIGN DISCLAIMER ALL DIMENSIONS TO BE CHECKED ON SITE BY CONTRACTOR PRIOR TO CONSTRUCTION. USE WRITTEN DIMENSIONS ONLY. DO NOT SCALE. NOT FOR CONSTRUCTION UNLESS STAMPED BY CERTIFYING AUTHORITY.	DRAWING TITLE RETAINING WALL LONGITUDINAL SECTIONS - SHEET 03 OF 06 PROJECT No. DRAWING No. STAGE REVISION 15-001115.17 923 CC 7	
	LF	BY	EF	EF	20/03/2020									
	1	AV	JS	LF	EF									06/09/2020
	2	AV	AB	LF	BH									09/10/2020
	3	AV	AB	LF	BH									18/10/2020
	4	AV	AB	LF	BH									06/05/2021
	5	AV	AB	CK	EF									23/07/2021
	6	DT	PS	CK	EF									26/11/2021
7	AV	PS	CK	EF	15/02/2022									

LEGEND

	DESIGN TOP F.S.L.
	DESIGN BTM. F.S.L.
	PROPOSED STORMWATER
	EXISTING STORMWATER



SCALE 1:250 (H)
SCALE 1:250 (V)



SCALE 1:250 (H)
SCALE 1:250 (V)

Fairfield City
Celebrating diversity

AMENDMENTS 1. LE: H1501115 - CSR HORSLEY PARK STAGE 3 SUBDIVISION DESIGN	DESIGN	DRAWN	CHECK	APPD.	DATE	AMENDMENT DETAILS	STATUS FOR CONSTRUCTION CERTIFICATE	AUTHORISED FOR ISSUE: BY: ENRIQUE FRANCO SIGN:  BE(Hons) MIE Aust. CP Eng NER DATE: 15/12/2020	SCALE SCALE 1:500 (A1) SCALE 1:1000 (A3) SCALE 1:100 (A1) SCALE 1:200 (A3)	CLIENT   © 2021 calibregroup.com	PROJECT CSR HORSLEY PARK STAGE 3 SUBDIVISION DESIGN DISCLAIMER ALL DIMENSIONS TO BE CHECKED ON SITE BY CONTRACTOR PRIOR TO CONSTRUCTION. USE WRITTEN DIMENSIONS ONLY. DO NOT SCALE. NOT FOR CONSTRUCTION UNLESS STAMPED BY CERTIFYING AUTHORITY.	DRAWING TITLE RETAINING WALL LONGITUDINAL SECTIONS - SHEET 04 OF 06	
	FIRST ISSUE	LF	BY	EF	EF								20/03/2020
	1	AV	JS	LF	EF								06/09/2020
	2	AV	AB	LF	BH								09/10/2020
	3	AV	AB	LF	BH								18/10/2020
	4	AV	AB	LF	BH								06/05/2021
	5	AV	AB	CK	EF								23/07/2021
	6	DT	PS	CK	EF								26/11/2021
7	AV	PS	CK	EF	15/02/2022								

PROJECT No.	DRAWING No.	STAGE	REVISION
15-001115.17	924	CC	7

LEGEND

- DESIGN TOP F.S.L.
- DESIGN BTM. F.S.L.
- PROPOSED STORMWATER
- EXISTING STORMWATER



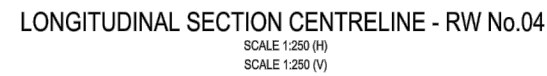
Registered Surveyor No. 1677
Date: 13/06/2023

[illegible]

Registered Surveyor No. 1677
Date: 13/06/2023

LEGEND

	DESIGN TOP F.S.L.
	DESIGN BTM. F.S.L.
	PROPOSED STORMWATER
	EXISTING STORMWATER



This document forms part of a
[202] subdivision Works Certificate.
No. 893.12/2013
Dated. 18 March 2022

DRAWING TITLE			
RETAINING WALL LONGITUDINAL SECTIONS - SHEET 06 OF 06			
PROJECT No.	DRAWING No.	STAGE	REVISION
15-001115.17	926	CC	7

1. ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH;
 - 1.1. AS1170(2002) - STRUCTURAL DESIGN ACTIONS,
 - 1.2. AS3600(2018) - CONCRETE STRUCTURES,
 - 1.3. AS4678(2002) - EARTH-RETAINING STRUCTURES,
 - 1.4. STANDARDS ASSOCIATION OF AUSTRALIA (SAA) CODES, AND
 - 1.5. THE BUILDING CODE OF AUSTRALIA (BCA).
2. ALL WORK SHALL BE UNDERTAKEN IN A SAFE AND RESPONSIBLE MANNER AND IN ACCORDANCE WITH ALL WORKCOVER REQUIREMENTS AND WH&S ACT REGULATIONS.
3. DO NOT SCALE FROM THE DRAWINGS. VERIFY ALL DIMENSIONS AND LEVELS FOR SETTING OUT AND OFF-SITE WORK BEFORE CONSTRUCTION AND FABRICATION BEGIN.
4. UNLESS NOTED OTHERWISE, ALL DIMENSIONS ARE IN MILLIMETRES AND ALL LEVELS ARE IN METRES TO THE AUSTRALIAN HEIGHT DATUM.
5. DURING CONSTRUCTION MAINTAIN THE STRUCTURE IN A STABLE CONDITION AND ENSURE NO PART IS OVERSTRESSED. PROVIDE ALL TEMPORARY PROPPING AND BRACING NECESSARY TO ACHIEVE THIS. ANY TEMPORARY WORKS SHOWN ON THE DRAWINGS ARE INDICATIVE ONLY.
6. WHERE STRUCTURAL CERTIFICATION IS REQUIRED, 'CALIBRE' WILL CARRY OUT INSPECTIONS AT HOLD POINTS DESCRIBED IN THE INSPECTION & TEST PLANS PREPARED BY 'CALIBRE' OR AS AGREED BETWEEN THE CONTRACTOR & THE ENGINEER. GIVE THE INSPECTOR A MINIMUM OF 24 HOURS NOTICE THAT AN INSPECTION IS REQUIRED.
7. PRIOR TO THE COMMENCEMENT OF WORKS THE CONTRACTOR IS TO IDENTIFY ALL EXISTING SERVICES. ANY DAMAGE TO EXISTING SERVICES IS TO BE RECTIFIED AT THE CONTRACTORS EXPENSE. SERVICES SHOWN ON 'CALIBRE' DRAWINGS ARE INDICATIVE ONLY.
8. ENSURE THAT SUFFICIENT TOLERANCES ARE PROVIDED AND INTEGRATED THROUGHOUT ALL ELEMENTS OF THE WORKS.
9. COPYRIGHT OF ALL DRAWINGS AND DOCUMENTS PROVIDED BY CALIBRE FOR THIS PROJECT REMAIN ITS PROPERTY. THE PRINCIPAL ALONE SHALL HAVE A LICENCE TO USE THESE DOCUMENTS IN CONNECTION WITH THE PROJECT BUT SHALL NOT USE OR MAKE COPIES OF SUCH DOCUMENTS OTHER THAN IN CONNECTION WITH THIS PROJECT.
10. ALL LEVELS SHOWN ARE FOR INFORMATION ONLY. REFER DRAINAGE LONGITUDINAL SECTIONS FOR ALL LEVELS.

<u>ABBREVIATION</u>	<u>DESCRIPTION</u>
HORIZ	HORIZONTAL
VERT	VERTICAL
CRS	CENTRES
BTM	BOTTOM
EF	EACH FACE
EW	EACH WAY
UNO	UNLESS NOTED OTHERWISE
TYP	TYPICAL
CL	CENTRELINE
DWG	DRAWING
N.T.S.	NOT TO SCALE

1. FOOTINGS HAVE BEEN DESIGNED TO BEAR ON CONTROLLED FILL WITH AN ALLOWABLE BEARING PRESSURE OF 150kPa, TO BE VERIFIED BY A GEOTECHNICAL ENGINEER PRIOR TO CONSTRUCTION.
2. PIERS HAVE BEEN DESIGNED ON STIFF CLAY WITH AN UN-DRAINED COHESION "Cu" OF 50kPa, TO BE VERIFIED ON SITE BY A GEOTECHNICAL ENGINEER.
3. THE BUILDER SHALL OBTAIN APPROVAL OF THE FOUNDATION MATERIAL BEFORE PLACING CONCRETE.
4. FOOTINGS SHALL BE LOCATED CENTRALLY UNDER WALLS AND COLUMNS UNLESS NOTED OTHERWISE.
5. DO NOT BACKFILL BEHIND CANTILEVER RETAINING WALLS BEFORE THEY REACH THEIR REQUIRED DESIGN STRENGTH.
6. FOOTINGS TO BE CONSTRUCTED AND BACKFILLED AS SOON AS POSSIBLE FOLLOWING EXCAVATION TO AVOID SOFTENING OR DRYING OUT BY EXPOSURE. ENSURE FREE DRAINING BACKFILL AND DRAINAGE IS IN PLACE.
7. ALL FOUNDATIONS SHALL BE FREE OF WATER AND LOOSE MATERIAL.

1. DESIGN AND CONSTRUCTION AND STRIPPING TIMES TO COMPLY WITH BS8007 AND BS3600 UNLESS OTHERWISE APPROVED BY THE ENGINEER.
2. THE DESIGN CERTIFICATION & PERFORMANCE OF THE FORMWORK AND FALSE WORK IS THE RESPONSIBILITY OF THE BUILDER.
3. DURING CONSTRUCTION, SUPPORT PROPPING SHALL BE REQUIRED WHERE LOADS FROM STACKED MATERIALS, FORMWORK AND OTHER SUPPORTED SLABS INDUCE LOADS IN A SLAB OR BEAM WHICH EXCEED THE DESIGN LOAD OR STRENGTH OR SERVICEABILITY AT THAT AGE. ONCE THE NOMINATED 28 DAY STRENGTH HAS BEEN ATTAINED, THESE LOADS SHALL NOT EXCEED THE DESIGN SUPERIMPOSED LOADS SET OUT ON THE DRAWINGS.
4. FORMWORK TO REMAIN IN POSITION FOR A MINIMUM OF 14 DAYS UNO AFTER CONCRETE POUR.

1. ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH AS3700.
2. REINFORCED CONCRETE BLOCKWORK SHALL COMPLY WITH THE FOLLOWING, UNO:
 - 2.1. BLOCKS SHALL BE STRENGTH GRADE 15 CONFORMING TO AS 2733
 - 2.2. MORTAR SHALL COMPRISE 1 CEMENT : 5 SAND.
 - 2.3. PROVIDE CLEANOUT HOLES AT BASE OF ALL WALLS AND ROD CORE HOLES TO REMOVE PROTRUDING MORTAR FINIS.
 - 2.4. PROVIDE 60mm COVER FROM THE OUTSIDE OF THE BLOCKWORK TO ALLOW ADEQUATE GROUT COVER.
3. PROVIDE VERTICAL CONTROL JOINTS AT 10m MAX CENTRES, AND 5m MAXIMUM FROM CORNERS IN ALL MASONRY WALLS.
4. BACKFILL TO RETAINING WALLS TO BE FREE DRAINING GRANULAR MATERIAL. PROVIDE SUB-SOIL DRAIN OR WEEP HOLES.

1. ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH AS3600(2018) AND AS4678(2002).
2. COMPRESSIVE STRENGTH (F_c) FOR CAST IN SITU CONCRETE SHALL BE A MINIMUM 32MPa AT 28 DAYS.
3. NO ADMIXTURES SHALL BE USED IN CONCRETE UNLESS APPROVED IN WRITING.
4. ALL CONCRETE FORMWORK SHALL BE DESIGNED, ERECTED, SUPPORTED, BRACED AND MAINTAINED IN ACCORDANCE WITH AS3610(2018).
5. NO HOLES, CHASES OR EMBEDMENT OF PIPES OTHER THAN THOSE SHOWN ON THE STRUCTURAL DRAWINGS SHALL BE MADE IN CONCRETE MEMBERS WITHOUT THE PRIOR WRITTEN APPROVAL OF THE ENGINEER.
6. CONSTRUCTION JOINTS SHALL BE LOCATED TO THE APPROVAL OF THE ENGINEER.
7. CURING OF CONCRETE IS TO BE ACHIEVED BY KEEPING SURFACES CONTINUOUSLY WET FOR A PERIOD OF 3 DAYS, AND PREVENTION OF LOSS OF MOISTURE FOR A PERIOD OF 7 DAYS FOLLOWED BY A GRADUAL CURING OF CONCRETE.
8. CONDUITS, PIPES, ETC. SHALL ONLY BE LOCATED TO THE MIDDLE OF THE SLAB DEPTH. PIPES OR CONDUITS SHALL NOT BE PLACED WITHIN THE COVER TO REINFORCEMENT.
9. NO CONCRETE MEMBER SHOULD NOT INCLUDE THICKNESS OF APPLIED FINISHES.

REINFORCEMENT SYMBOLS;

S DENOTES GRADE 250 S HOT ROLLED DEFORMED BARS TO AS4671

N DENOTES GRADE D 500 N BARS TO AS4671

SL & PL DENOTES GRADE 250 HOT ROLLED PLAIN BARS TO AS4671

SQUARE AND RECTANGULAR MESH RESPECTIVELY

NUMBER OF BARS IN GROUP

2N12-200

BAR SIZE & TYPE

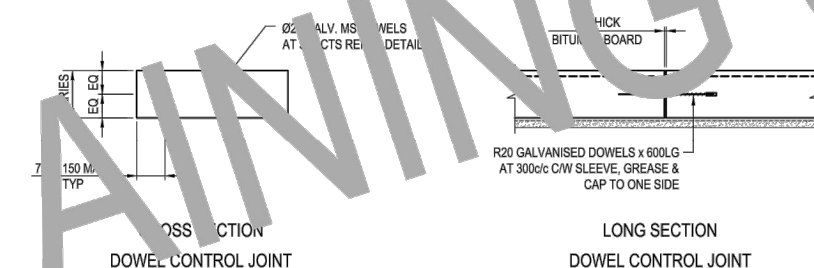
NOMINAL BAR SIZE IN mm

BAR SPACING IN mm

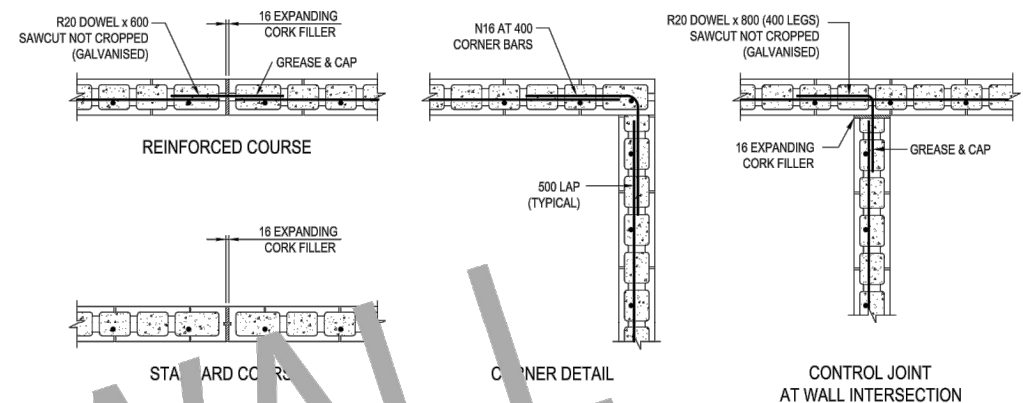
11. COVER TO REINFORCEMENT SHALL BE 45mm U.O.C.

12. ALL REINFORCEMENT SHALL BE FIRE RESISTANT ON PLASTIC CHAIRS AT NO GREATER THAN 1.0 METRE CENTRES IN ALL DIRECTIONS. BARS SHALL BE LAPPED AT ALTERNATIVE INTERSECTIONS.

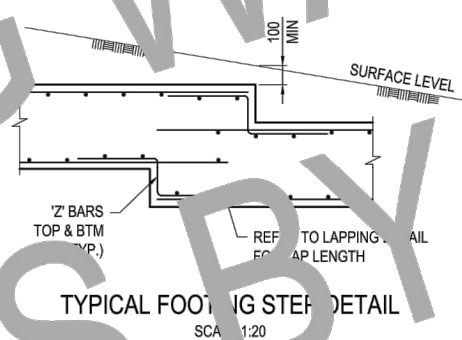
13. REINFORCEMENT IS REPRESENTED DIAGONALLY AND NOT NECESSARILY IN TRUE PROJECTION.



SCALE 1:20

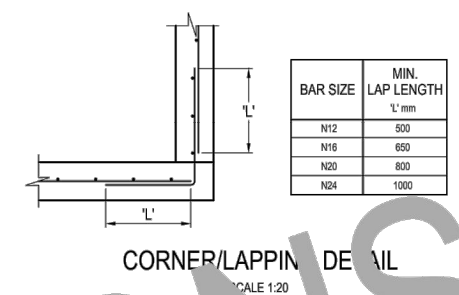


SCALE N.T.S.

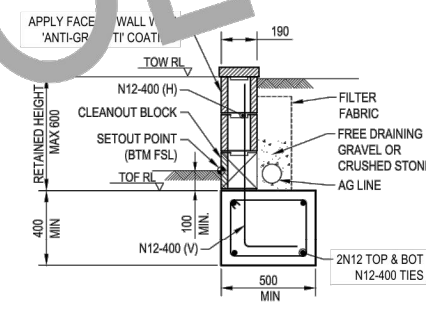


SCA 1:20

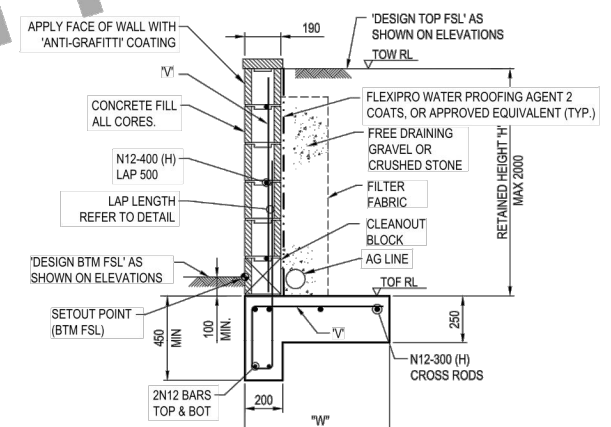
2. REINFORCEMENT AS PER RETAINING WALL DETAILS.
3. THE STEPS ARE TO BE LOCATED ON THE HIGH SIDE OF THE WALL SUCH THAT THEY SUIT THE DESIGN LEVEL ON THE HIGH SIDE OF RETAINING WALL.
4. THE STEPS ARE TO BE LOCATED ON THE BOUNDARY IF APPROPRIATE.



SCALE 1:20



SCALE 1:20
(5.0 KPa SURCHARGE)

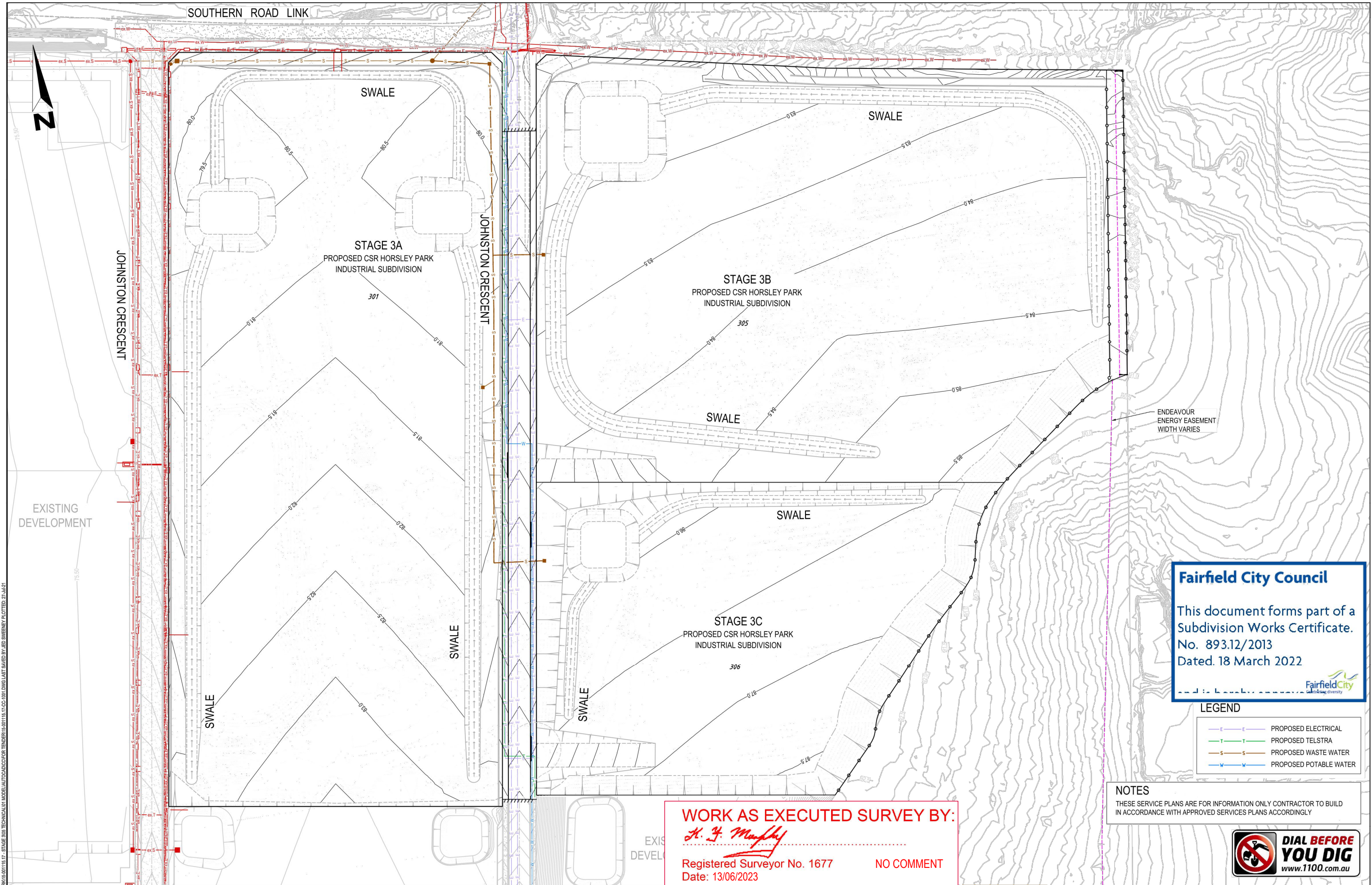


(5.0 K) **Fairfield**

WALL TYPE	MAX HEIGHT
200 SERIES BLOCK	1000
	1600
	2000

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FIRST ISSUE	DESIGN	DRAWN	CHECK	APPD.	DATE	AMENDMENT DETAILS	
	LF	BY	EF	EF	20/03/2020		
	1	AV	JS	LF	EF		06/09/2020
	2	AV	AB	LF	BH		09/10/2020
	3	AV	AB	LF	BH		18/10/2020
	4	AV	AB	LF	BH		06/05/2021
5	AV	AB	CK	EF	23/07/2021		



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LEGEND

	PROPOSED ELECTRICAL
	PROPOSED TELSTRA
	PROPOSED WASTE WATER
	PROPOSED POTABLE WATER

NOTES
THESE SERVICE PLANS ARE FOR INFORMATION ONLY CONTRACTOR TO BUILD
IN ACCORDANCE WITH APPROVED SERVICES PLANS ACCORDINGLY



WORK AS EXECUTED SURVEY BY:
H. J. Murphy
Registered Surveyor No. 1677
Date: 13/06/2023
NO COMMENT

FIRST ISSUE	DESIGN	DRAWN	CHECK	APPD.	DATE	AMENDMENT DETAILS		STATUS		FOR CONSTRUCTION CERTIFICATE		SCALE		CLIENT		PROJECT		DRAWING TITLE		
	LF	BY	EF	EF	20/03/2020			AUTHORISED FOR ISSUE:				0 10 20 30 40 50 60 70 80 SCALE 1:1000 (A1) SCALE 1:2000 (A3)				CSR HORSLEY PARK STAGE 3 SUBDIVISION DESIGN		SERVICES PLAN		
	1	AV	JS	LF	EF	08/09/2020			BY: ENRIQUE FRANCO		SIGN: 						DISCLAIMER ALL DIMENSIONS TO BE CHECKED ON SITE BY CONTRACTOR PRIOR TO CONSTRUCTION. USE WRITTEN DIMENSIONS ONLY. DO NOT SCALE. NOT FOR CONSTRUCTION UNLESS STAMPED BY CERTIFYING AUTHORITY		PROJECT No. DRAWING No. STAGE REVISION	
	2	AV	AB	LF	BH	08/10/2020			BE(Hons) MIEAust. CPEng NER		DATE: 23/7/21								15-001115.17 1001 CC 5	
	3	AV	AB	LF	BH	16/10/2020														
	4	AV	AB	LF	BH	06/05/2021														
5	AV	AB	CK	EF	23/07/2021															

KEYSTONE COMPAC II STANDARD / GEOGRID KEYSTONE TW3 / TENSAR RE GEOGRID REINFORCED EARTH WALLS

A GENERAL

- ALL DIMENSIONS SHOWN ARE IN MILLIMETRES U.N.O
ALL REDUCED LEVELS ARE IN METRES.
- ALL PLAN DIMENSIONS MUST BE VERIFIED BY THE PROJECT ENGINEER. THE PROJECT ENGINEER MUST BE NOTIFIED OF ANY DISCREPANCIES BEFORE THE CONTRACTOR BEGINS WITH WORK.
- PRECAUTIONS MUST BE TAKEN WHERE OTHER BUILDING WORK, SERVICE TRENCHES, GARDEN BEDS ETC. MAY BE EXCAVATED IN FRONT OF THE WALL.
- IF THE TOP OF THE REINFORCED FILL ZONE IS TO BE PLANTED, PLANTS WITH ROOT SYSTEMS THAT MAY ADVERSELY AFFECT THE FACING UNITS SHALL NOT BE USED.
- WHERE A SAFETY FENCE IS REQUIRED BY COUNCIL IT SHALL BE SET BACK A MINIMUM OF 1000 mm FROM THE TOP OF THE WALL.

B REINFORCED BACKFILL

- BACKFILL MATERIAL IN THE REINFORCED SOIL STRUCTURE SHALL BE GRANULAR AND NON-EXPANSIVE AND COMPLY WITH THE DESIGN PARAMETERS SPECIFIED ON THE PROJECT DRAWINGS. THE MATERIAL SHALL BE CAPABLE OF BEING COMPACTED IN ACCORDANCE WITH THE SPECIFIED REQUIREMENTS TO FORM A STABLE MASS OF FILL. THE pH VALUE OF THE FILL SHALL BE BETWEEN 4 AND 9.
- BACKFILL MATERIAL SHALL BE PLACED IN LAYERS THAT ARE NO MORE THAN 300mm AND EACH LAYER SHALL BE THOROUGHLY COMPACTED.

THE FILL MOISTURE CONTENT SHALL BE 2%-3% DRY OF OF THE OPTIMUM MOISTURE CONTENT FOR COMPACTION.

C REINFORCED FILL COMPACTION ZONES

- ZONE 1: BEYOND 1.5M FROM RSW FACING BLOCKS AND UP TO UNDERSIDE OF THE SMZ. 98% STANDARD COMPACTION, AS1289.5.1.1, AS1289.5.7.1, T111 1 TEST PER 100M2, AS1289.5.8.1, AS.5.3.2, T173, T199
- ZONE 2: BEYOND 1.5M FROM THE RSW FACING BLOCKS AND WITHIN THE SMZ. 102% STANDARD COMPACTION, AS1289.5.1.1, AS1289.5.7.1, T111 AS PER RMS Q, AS1289.5.8.1, AS.5.3.2, T173, T199
- ZONE 3: WITHIN 1.5M FROM THE RSW FACING BLOCKS 95% STANDARD COMPACTION, AS1289.5.1.1, AS1289.5.7.1, T111 1 TEST PER 100M2, AS1289.5.8.1, AS.5.3.2, T173, T199
- DENSITY TESTING SHALL BE PERFORMED IN EACH COMPACTED LIFT IN ACCORDANCE WITH AS3798
- FREQUENCY OF BACKFILL TESTING AND COMPACTION REQUIRMENTS SHALL BE CARRIED OUT IN ACCORDANCE WITH RSOLN TECHNICAL SPECIFICATION RSS_01 AND RELEVANT AUSTRALIAN STANDARDS.
- THE PLACEMENT AND COMPACTION OF FILL MATERIAL SHALL BE CARRIED OUT IN A DIRECTION PARALLEL TO THE FACE OF THE WALL, AND SHALL BE COMPLETED IN STAGES TO FOLLOW CLOSELY THE ERECTION OF THE KEYSTONE COMPAC STANDARD UNITS AND PLACEMENT OF GEOGRID REINFORCING ELEMENTS.
- CONSTRUCTION VEHICLES AND EQUIPMENT WEIGHING MORE THAN 500kg SHALL BE KEPT MORE THAN 1.5 m AWAY FROM THE KEYSTONE COMPAC UNITS. BACKFILL MATERIAL CLOSER THAN 1.5 m BEHIND THE KEYSTONE COMPAC STANDARD UNITS MAY BE COMPACTED USING HAND OPERATED MECHANICAL EQUIPMENT, SUCH AS A VIBRATING PLATE, TRENCH COMPACTOR OR SIMILAR.

D GEOGRID REINFORCEMENT ELEMENTS

- GEOGRID REINFORCING ELEMENTS TO BE STORED, TRANSPORTED, HANDLED AND PLACED TO THE RSOLN TECHNICAL SPECIFICATION RSS_01. THEY SHALL NOT BE DAMAGED OR DISPLACED DURING PLACEMENT AND COMPACTION OF THE REINFORCED BACKFILL. VEHICLES SHALL NOT BE OPERATED DIRECTLY ABOVE GEOGRID REINFORCING ELEMENTS THAT ARE NOT COVERED BY AT LEAST 100 mm OF FILL.
- THE GEOGRID REINFORCING ELEMENTS SHALL BE LAID ON TOP OF THE KEYSTONE COMPAC STANDARD UNITS AND HORIZONTALLY ON COMPACTED FILL. THE STRONG AXIS OF THE GEOGRID SHALL BE LAID PERPENDICULAR TO THE WALL FACE. THE NEXT COURSE OF UNITS SHALL BE PLACED. PULL GEOGRID TAUT, AND ANCHOR GEOGRID TO COMPACTED BACKFILL PRIOR TO PLACING BACKFILL. SLACK IN THE GEOGRID AT THE WALL UNIT CONNECTION SHALL BE REMOVED.

E DRAINAGE AGGREGATE ZONE (INTERNAL DRAINAGE)

- PROVIDE A DRAINAGE LAYER DIRECTLY BEHIND THE KEYSTONE COMPAC STANDARD FACING UNITS. DRAINAGE AGGREGATE TO FILL COMPAC STANDARD UNIT VOIDS WITHIN, BETWEEN ADJACENT UNITS AND EXTEND MIN. 150mm, MAX 300mm BEHIND. (RECOMMENDED SIZE TO BE 12mm TO 20mm FREE DRAINING HARD STONE).
- PROVIDE 100mm DIAMETER AG. PIPE (SLOTTED/SOCKED) AT TOE OF WALL FACING COLUMN. WITHIN DRAINAGE AGGREGATE ZONE, AND CONNECT TO EXTERNAL DRAINAGE SYSTEM AT 30m MAX SPACING
- A NONWOVEN GEOTEXTILE FABRIC MAY BE USED AS A SEPARATION LAYER BETWEEN THE DRAINAGE AGGREGATE ZONE AND THE REINFORCED BACKFILL. SUBJECT TO WALL BEING INUNDATED - WATER APPLICATION ONLY.
- ALL DRAINAGE OUTLET REQUIREMENTS SHALL BE DESIGNED AND SPECIFIED BY A SUITABLY QUALIFIED AND EXPERIENCED GEOTECHNICAL ENGINEER. (ENGAGED BY MULGOA QUARRIES PTY LTD)

F CHIMNEY DRAINS (EXTERNAL DRAINAGE)

- CHIMNEY DRAIN OR DRAINAGE AT THE REAR OF THE MASS SOIL BLOCK IS TO BE CONFIRMED ON SITE BY THE GEOTECHNICAL ENGINEER AND DESIGNER FOLLOWING PREPARATION OF THE FOUNDATION AND PRIOR TO CONSTRUCTION OF THE MASS SOIL BLOCK
- IF THE REINFORCED BACKFILL IS NOT FREE-DRAINING, A CHIMNEY DRAINAGE LAYER SHALL BE PROVIDED AT THE REAR OF THE REINFORCED FILL ZONE, TO A MINIMUM 2/3rds OF THE WALL HEIGHT.
- ALL EXCAVATED CUT BATTERS SHALL BE EXAMINED TO DETERMINE DEGREE OF WATER SEEPAGE FLOWS. CHIMNEY DRAIN REQUIREMENTS AND DEGREE OF COVERAGE ALONG THE CUT FACE SHALL THEN BE DESIGNED AND SPECIFIED.
- LOW TO MEDIUM WATER FLOWS: PARTIAL COVERAGE STRIPDRAIN OR CORDRAIN PRODUCTS AT 30 TO 50% MAX. COVERAGE.
- HIGH WATER FLOWS: FULL 100% COVERAGE GRAVEL DRAIN GEOTEXTILE ENCAPSULATED
- ALL CHIMNEY DRAINS TO BE LINKED UP TO DRAINAGE ZONE AT FRONT FACE OF WALL. ALL DRAINAGE COLLECTION PIPES TO BE SLOTTED AND SOCKED WITH ASSOCIATED TEE JOINTS.
- ALL DRAINAGE OUTLET REQUIREMENTS SHALL BE DESIGNED AND SPECIFIED BY A SUITABLY QUALIFIED AND EXPERIENCED GEOTECHNICAL ENGINEER. (ENGAGED BY MULGOA QUARRIES PTY LTD)

G DESIGN ASSUMPTIONS

- THE DESIGN PRESENTED HEREIN IS BASED ON SOIL PARAMETERS, FOUNDATION CONDITIONS, GROUNDWATER CONDITIONS, AND LOADINGS STATED IN THE PROVIDED REPORTS & SPECIFICATIONS. SHOULD ACTUAL CONDITIONS VARY FROM THOSE ASSUMED, THE PROJECT ENGINEER SHOULD BE NOTIFIED PRIOR TO CONSTRUCTION TO DETERMINE IF REDESIGN OF THE PROPOSED STRUCTURE IS REQUIRED. REDESIGN MAY INCLUDE INTERNAL, EXTERNAL, GLOBAL STABILITY AND DRAINAGE CAPACITY CHECKS.

H FOUNDATIONS

- FOUNDATION MINIMUM ALLOWABLE BEARING CAPACITY - ALL WALLS OTHER THAN RW1 (SLS):

MAXIMUM WALL HEIGHT	BEARING PRESSURE SLS
2.4m	100kPa
3.6m	150kPa
4.8m	175kPa
5.6m	200kPa
7.0m	250kPa
7.6m	280kPa
8.0m	300kPa

- NOTE: FOR RW3 CH0-235.69 REQUIRED ALLOWABLE BEARING CAPACITY (SLS) IS 350kPa
- FOUNDATION MINIMUM ALLOWABLE BEARING CAPACITY - RW1 (SLS):

MAXIMUM WALL HEIGHT	BEARING PRESSURE SLS
2.4m	160kPa
3.6m	200kPa
4.8m	250kPa
5.6m	260kPa
7.2m	310kPa
7.6m	330kPa

- BEFORE COMMENCEMENT OF CONSTRUCTION, THE FOUNDATION SHALL BE INSPECTED & VERIFIED BY A SUITABLY QUALIFIED AND EXPERIENCED GEOTECHNICAL ENGINEER (ENGAGED BY MULGOA QUARRIES PTY LTD)
- FOUNDATION MATERIAL NOT MEETING DESIGN REQUIREMENTS SHALL BE EXCAVATED AND REPLACED WITH APPROVED MATERIAL. MORE DETAILED ALTERNATIVE FOUNDATION TREATMENTS MAY BE REQUIRED.
- ALL FOUNDATION TREATMENTS SHALL BE DESIGNED, SPECIFIED AND VERIFIED BY A SUITABLY QUALIFIED AND EXPERIENCED GEOTECHNICAL ENGINEER (ENGAGED BY MULGOA QUARRIES PTY LTD)
- MINIMUM WALL EMBEDMENT AT TOE OF WALL = 100mm (MIN.) OR H/20.

Fairfield City Council

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No. 893.13/2013

Dated. 18 March 2022

and is hereby approved in accordance with Section 6.3(1)(B) of the Environmental Planning and Assessment Act 1979.

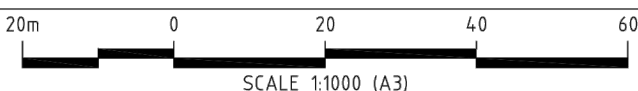


WORK AS EXECUTED SURVEY BY:

H. J. Murphy

Registered Surveyor No. 1677
Date: 14/06/2023

ENGINEERING DESIGN SERVICES FOR ALL
TYPE OF RETAINING STRUCTURES
GABIONS, TERRAMESH, CRIB WALLS, SEGMENTAL WALLS
AND REINFORCED SOIL STRUCTURES



PROJECT TITLE

CSR STAGE 3

CLIENT/DEVELOPER

MULGOA QUARRIES

NOTES 1 OF 2

PROJECT NO

RS 2389

AUTOCAD REF RS 2389 2

DWG. NO

RS-2389-NOTES-1

REVISION

0

KEYSTONE COMPAC II STANDARD / GEOGRID KEYSTONE TW3 / TENSAR RE GEOGRID REINFORCED EARTH WALLS

I ASSUMED DESIGN PARAMETERS

1. DESIGN OF THE REINFORCED SOIL STRUCTURES ARE BASED UPON THE FOLLOWING ASSUMED PARAMETERS:

REINFORCED FILL ZONE

THE REINFORCED FILL MATERIAL SHALL BE FREE OF DEBRIS AND CONSIST OF EITHER OF THE FOLLOWING INORGANIC SOIL TYPES ACCORDING TO THEIR USCS DESIGNATIONS (GP, GW, SW, SP, SM, ML)

EFFECTIVE INTERNAL PEAK FRICTION ANGLE	ϕ'	=	32°-34°
EFFECTIVE COHESION	C'	=	0 kPa
MOIST UNIT WEIGHT		=	22 kN/m ³

RETAINED MATERIAL RW1, 2, 5 & 3 FROM CH235.69-404.55

EFFECTIVE INTERNAL FRICTION ANGLE	ϕ'	=	28°
EFFECTIVE COHESION	C'	=	2 kPa
MOIST UNIT WEIGHT		=	19 kN/m ³

RETAINED MATERIAL RW3 FROM CH0-235.69 & RW4

STIFF TO HARD CLAY

EFFECTIVE INTERNAL FRICTION ANGLE	ϕ'	=	26°
EFFECTIVE COHESION	C'	=	5 kPa
MOIST UNIT WEIGHT		=	20 kN/m ³

SHALE, VERY LOW STRENGTH

EFFECTIVE INTERNAL FRICTION ANGLE	ϕ'	=	28°
EFFECTIVE COHESION	C'	=	20 kPa
MOIST UNIT WEIGHT		=	22 kN/m ³

SHALE, LOW STRENGTH

EFFECTIVE INTERNAL FRICTION ANGLE	ϕ'	=	32°
EFFECTIVE COHESION	C'	=	40 kPa
MOIST UNIT WEIGHT		=	22 kN/m ³

SHALE, MEDIUM STRENGTH

EFFECTIVE INTERNAL FRICTION ANGLE	ϕ'	=	34°
EFFECTIVE COHESION	C'	=	80 kPa
MOIST UNIT WEIGHT		=	23 kN/m ³

NOTE: FOR RLS OF RESPECTIVE LAYERS, REFER TO GEOTECHNICAL REPORT, PROJECT 76582.22 DATED 7 JULY 2021 PREPARED BY DOUGLAS PARTNERS
BEFORE COMMENCEMENT OF CONSTRUCTION, RETAINED MATERIAL SHALL BE INSPECTED & VERIFIED BY A SUITABLY QUALIFIED AND EXPERIENCED GEOTECHNICAL ENGINEER (ENGAGED BY MULGOA QUARRIES)

FOUNDATION MATERIAL (ALL WALLS OTHER THAN RW3 FROM CH235.69-404.55)

DRAINED CONDITION (LONG-TERM)

INTERNAL FRICTION ANGLE	ϕ'	=	28°
COHESION	C'	=	2 kPa

UNDRAINED CONDITION (SHORT-TERM)

INTERNAL FRICTION ANGLE	ϕ_u	=	0°
COHESION	C_u	=	75 kPa
MOIST UNIT WEIGHT		=	19 kN/m ³

FOUNDATION MATERIAL (RW3 FROM CH235.69-404.55)

DRAINED CONDITION (LONG-TERM)

INTERNAL FRICTION ANGLE	ϕ'	=	33°
COHESION	C'	=	2 kPa

UNDRAINED CONDITION (SHORT-TERM)

INTERNAL FRICTION ANGLE	ϕ_u	=	0°
COHESION	C_u	=	75 kPa
MOIST UNIT WEIGHT		=	19 kN/m ³

ABOVE ASSUMED DESIGN PARAMETERS MUST BE CONFIRMED IN WRITING PRIOR TO FINAL DESIGN / CONSTRUCTION.

NOTE: IF FOUNDATION MATERIAL SOIL PROPERTIES FOR RW3 FROM CH235.69-404.55 IS LESS THAN THE ABOVE, FOUNDATION REPLACEMENT OF UNSUITABLE MATERIAL UP TO 2.0m DEPTH WITH 36° OR GREATER MATERIAL IS REQUIRED

2. ALL ASSUMED SOIL PARAMETERS SHALL BE TESTED AND VERIFIED BY A SUITABLY QUALIFIED AND EXPERIENCED GEOTECHNICAL ENGINEER (ENGAGED BY MULGOA QUARRIES PTY LTD)
3. SURCHARGE LOADS APPLIED TO REINFORCED SOIL STRUCTURES :
- LIVE LOAD SURCHARGE
RW1, 2 & 3 FROM CH235.69 TO 404.55 - 20kPa
RW3 FROM CH0 TO 235.69, RW4 & RW5 - 5kPa
LIVE LOAD CONSTRUCTION SURCHARGE - 10kPa
 - DEAD LOAD SURCHARGE
RW1 & 2 - 7.5kPa
RW3, 4 & RW5 - 0kPa
 - RW1 HAS BEEN DESIGNED TO ALLOW FOR FUTURE 1.5m HIGH WALL EXTENSION
4. NO HORIZONTAL BREAKING LOADS ARE TO BE TAKEN BY KEYSTONE WALLS (INDEPENDANT TO CRASH BARRIER DESIGN, BY OTHERS)
5. THE DESIGN ASSUMES NO WATER PRESSURE ACTS ON THE FACING BLOCKS OR REINFORCED FILL BLOCK.
6. THE DESIGN HAS NOT CONSIDERED SEISMIC FORCES 0.06g.
7. GLOBAL STABILITY HAS BEEN CHECKED FOR CIRCULAR AND NON-CIRCULAR FAILURE MODES.
8. WALLS HAVE BEEN DESIGNED IN ACCORDANCE WITH AS4678 "EARTH RETAINING STRUCTURES.
9. DESIGN LIFE OF STRUCTURES IS TO BE 100 YEARS.

WORK AS EXECUTED SURVEY BY:

H. F. Murphy

Registered Surveyor No. 1677

Date: 14/06/2023

NO COMMENT

Fairfield City Council

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No. 893.13/2013
Dated. 18 March 2022

ISSUED

and is hereby approved



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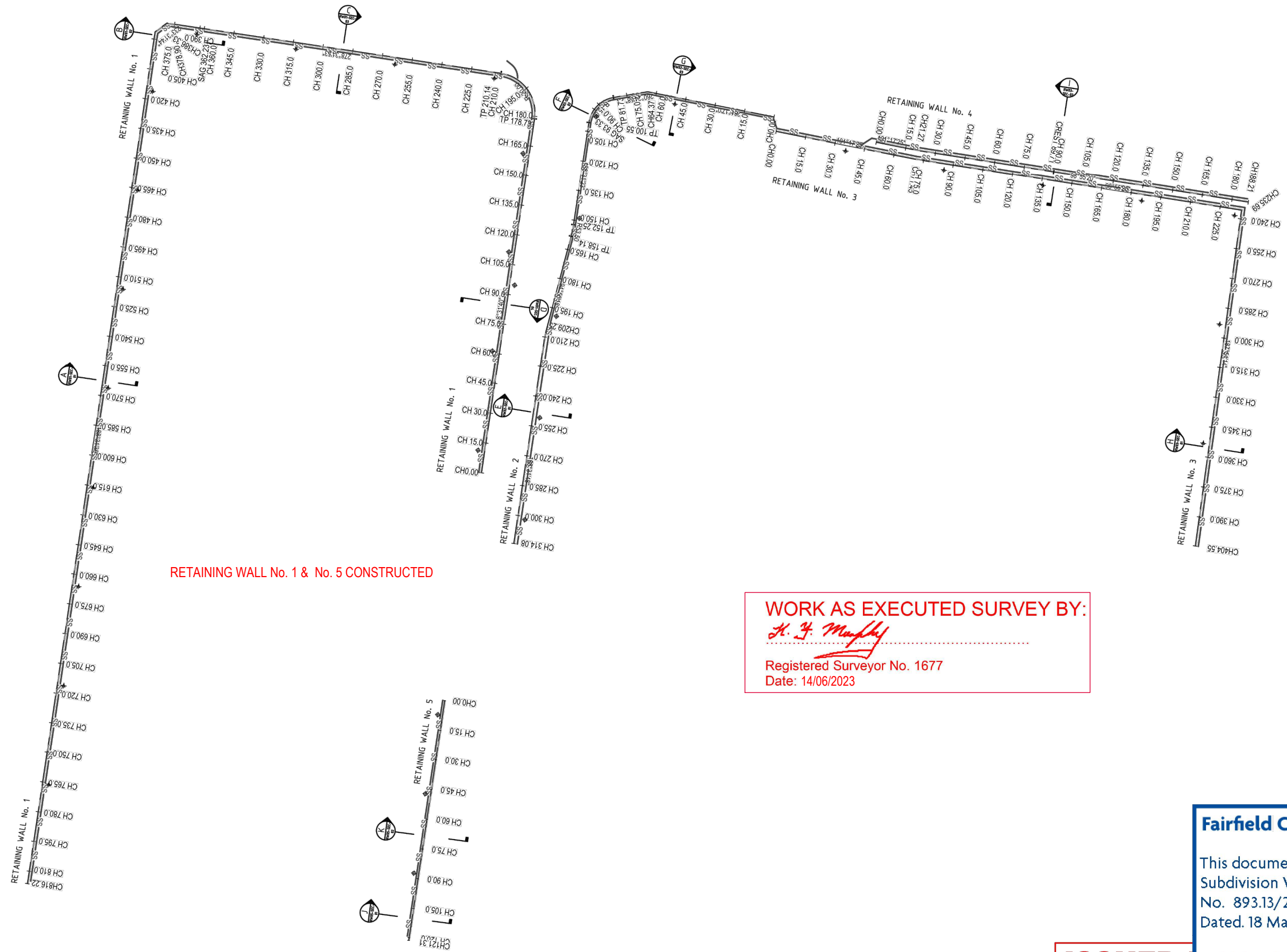
0	FOR APPROVAL PURPOSES	BB	PW		14-07-21
REV	REVISION DESCRIPTION	DRAWN	DESIGNED	APPROVED	DATE

ABN 16 103 223 721 PHONE (02)9899 2111 FACSIMILE (02)9899 2112 SYDNEY AUSTRALIA

ENGINEERING DESIGN SERVICES FOR ALL TYPE OF RETAINING STRUCTURES GABIONS, TERRAMESH, CRIB WALLS, SEGMENTAL WALLS AND REINFORCED SOIL STRUCTURES
20m 0 20 40 60 SCALE 1:1000 (A3)

PROJECT TITLE CSR STAGE 3
CLIENT/DEVELOPER MULGOA QUARRIES

NOTES 2 OF 2		
PROJECT NO RS 2389	AUTOCAD REF RS 2389 2	
	DWG. NO RS-2389-NOTES-2	REVISION 0



0	FOR APPROVAL PURPOSES	BB	PW		14-07-21
REV	REVISION DESCRIPTION	DRAWN	DESIGNED	APPROVED	DATE

ABN 16 103 223 721
PHONE (02)9899 2111 FACSIMILE (02)9899 2112
SYDNEY AUSTRALIA

**ENGINEERING DESIGN SERVICES FOR ALL
TYPE OF RETAINING STRUCTURES**
GABIONS, TERRAMESH, CRIB WALLS, SEGMENTAL WALLS
AND REINFORCED SOIL STRUCTURES

NTS

PROJECT TITLE
CSR STAGE 3

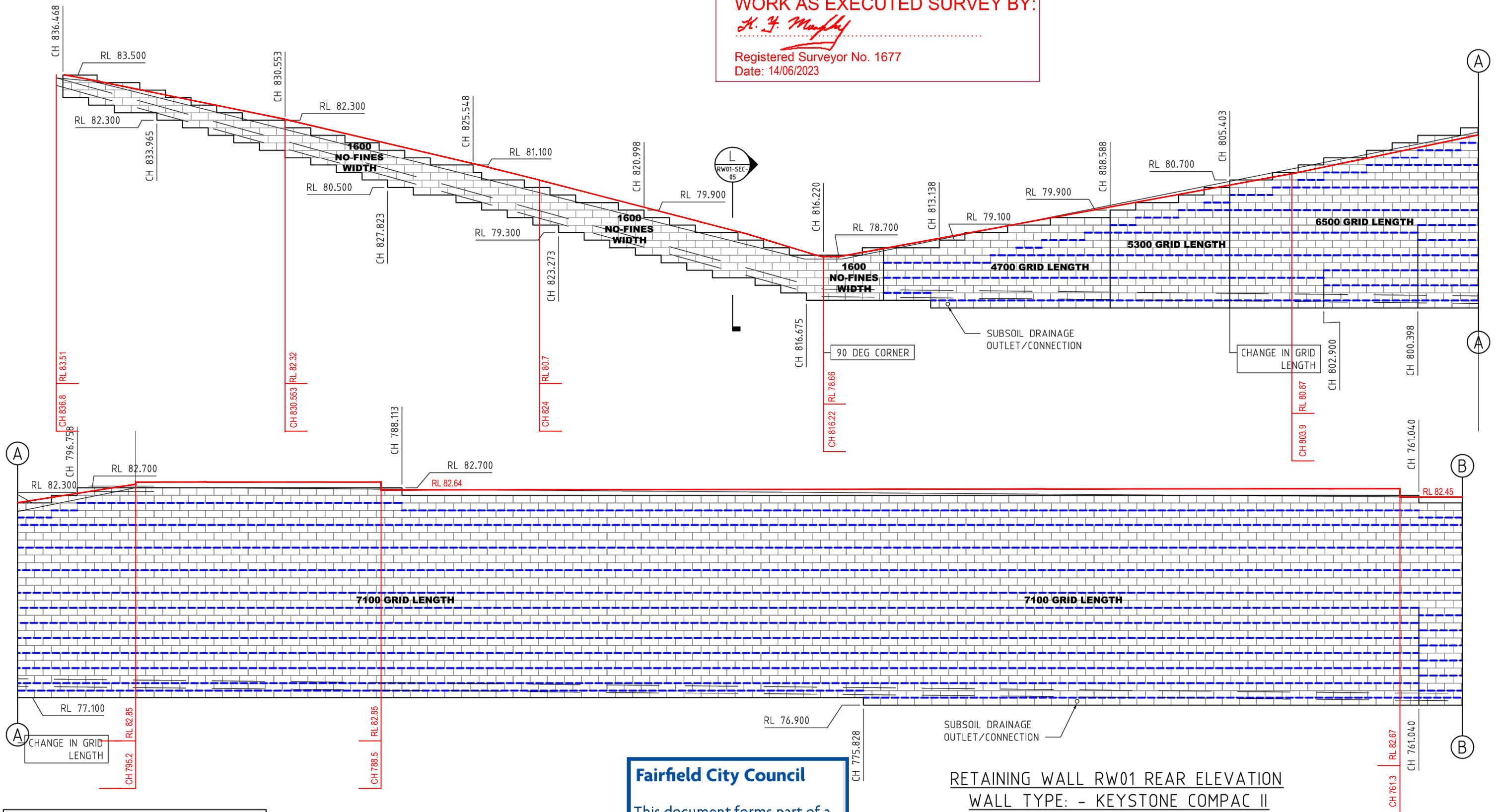
CLIENT/DEVELOPER
MULGOA QUARRIES

PLAN	
PROJECT NO RS 2389	AUTOCAD REF RS 2389 2
DWG. NO RS-2389-PLAN	REVISION 0

WORK AS EXECUTED SURVEY BY:

H. J. Murphy

Registered Surveyor No. 1677
Date: 14/06/2023



NOTE:
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DENOTES - ACEGrid GG60  
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DENOTES - ACEGrid GG120

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and is hereby approved by



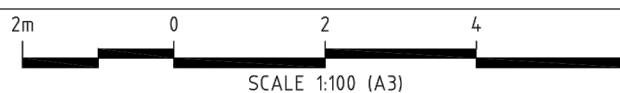
RETAINING WALL RW01 REAR ELEVATION  
WALL TYPE: - KEYSTONE COMPAC II  
SCALE 1:100  
WALL SURFACE AREA-4151m<sup>2</sup> (EXCL CAPS)

**ISSUED FOR APPROVAL**

| REV | REVISION DESCRIPTION  | DRAWN | DESIGNED | APPROVED | DATE     |
|-----|-----------------------|-------|----------|----------|----------|
| 1   | ELEVATION AMENDED     | BB    | PW       |          | 21-02-22 |
| 0   | FOR APPROVAL PURPOSES | BB    | PW       |          | 14-07-21 |

ABN 16 103 223 721  
PHONE (02)9899 2111 FACSIMILE (02)9899 2112  
SYDNEY AUSTRALIA

**ENGINEERING DESIGN SERVICES FOR ALL  
TYPE OF RETAINING STRUCTURES**  
GABIONS, TERRAMESH, CRIB WALLS, SEGMENTAL WALLS  
AND REINFORCED SOIL STRUCTURES

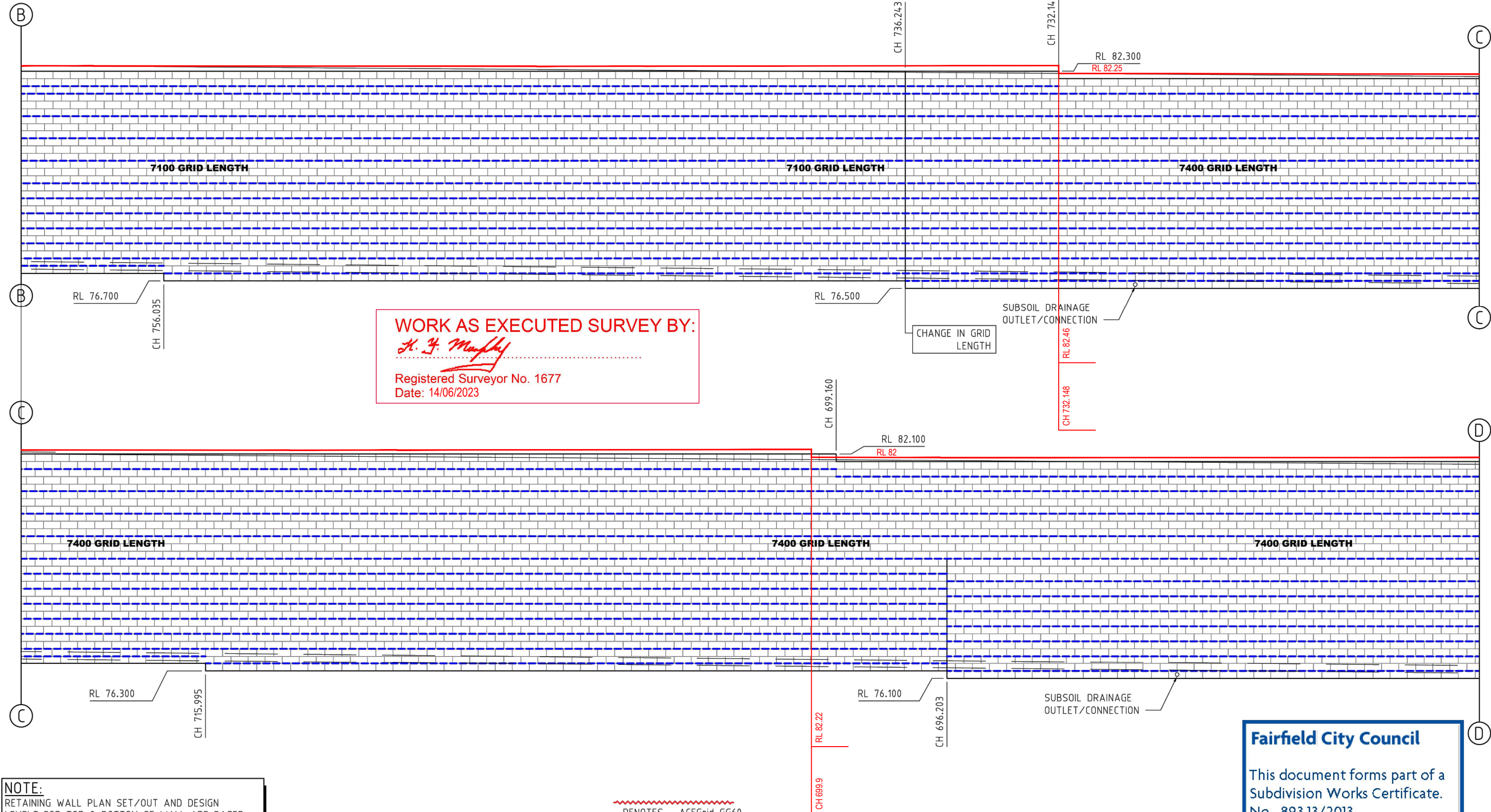


PROJECT TITLE  
CSR STAGE 3

CLIENT/DEVELOPER  
MULGOA QUARRIES

RW01 - REAR ELEVATION  
SHEET 1 OF 10

|                           |                          |
|---------------------------|--------------------------|
| PROJECT NO<br>RS 2389     | AUTOCAD REF<br>RS 2389 2 |
| DWG. NO<br>RS-2389-RW01-1 | REVISION<br>1            |



**NOTE:**  
RETAINING WALL PLAN SET/OUT AND DESIGN LEVELS FOR TOP & BOTTOM OF WALL ARE BASED UPON DRAWINGS PROVIDED BY CALIBRE. RETAINING SOLUTIONS WILL NOT BE HELD RESPONSIBLE FOR ANY RL'S DISCREPANCIES ON SITE.

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DENOTES - ACEGrid GG60

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Dated. 18 March 2022

ISSUED and is hereby approved

1	ELEVATION AMENDED	BB	PW		21-02-22
0	FOR APPROVAL PURPOSES	BB	PW		14-07-21
REV	REVISION DESCRIPTION	DRAWN	DESIGNED	APPROVED	DATE

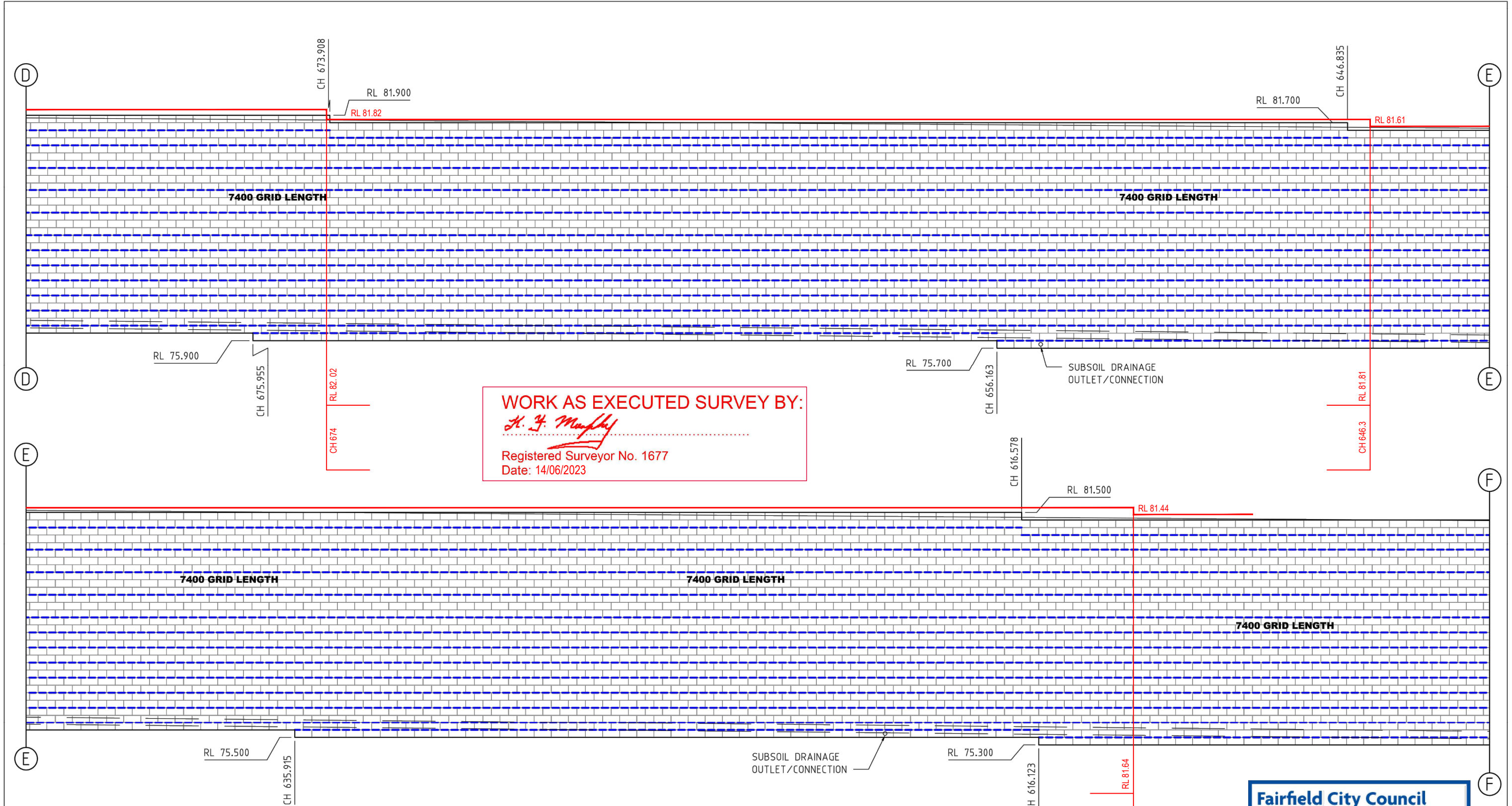
ABN 16 103 223 721
PHONE (02)9899 2111 FACSIMILE (02)9899 2112
SYDNEY AUSTRALIA

**ENGINEERING DESIGN SERVICES FOR ALL
TYPE OF RETAINING STRUCTURES**
GABIONS, TERRAMESH, CRIB WALLS, SEGMENTAL WALLS
AND REINFORCED SOIL STRUCTURES

2m 0 2 4 6
SCALE 1:100 (A3)

PROJECT TITLE CSR STAGE 3
CLIENT/DEVELOPER MULGOA QUARRIES

RW01 - REAR ELEVATION SHEET 2 OF 10	
PROJECT NO RS 2389	AUTOCAD REF RS 2389 2
DWG. NO RS-2389-RW01-2	REVISION 1



NOTE:
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DENOTES - ACEGrid GG60  
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DENOTES - ACEGrid GG120

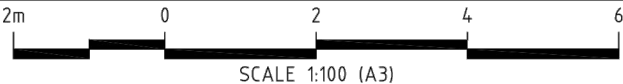
**Fairfield City Council**  
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No. 893.13/2013  
Dated. 18 March 2022

**ISSUED** and is hereby approved **AL**

|     |                       |       |          |          |          |
|-----|-----------------------|-------|----------|----------|----------|
|     |                       |       |          |          |          |
|     |                       |       |          |          |          |
| 1   | ELEVATION CHANGES     | BB    | PW       |          | 21-02-22 |
| 0   | FOR APPROVAL PURPOSES | BB    | PW       |          | 14-07-21 |
| REV | REVISION DESCRIPTION  | DRAWN | DESIGNED | APPROVED | DATE     |

ABN 16 103 223 721  
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SYDNEY AUSTRALIA

**ENGINEERING DESIGN SERVICES FOR ALL  
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GABIONS, TERRAMESH, CRIB WALLS, SEGMENTAL WALLS  
AND REINFORCED SOIL STRUCTURES

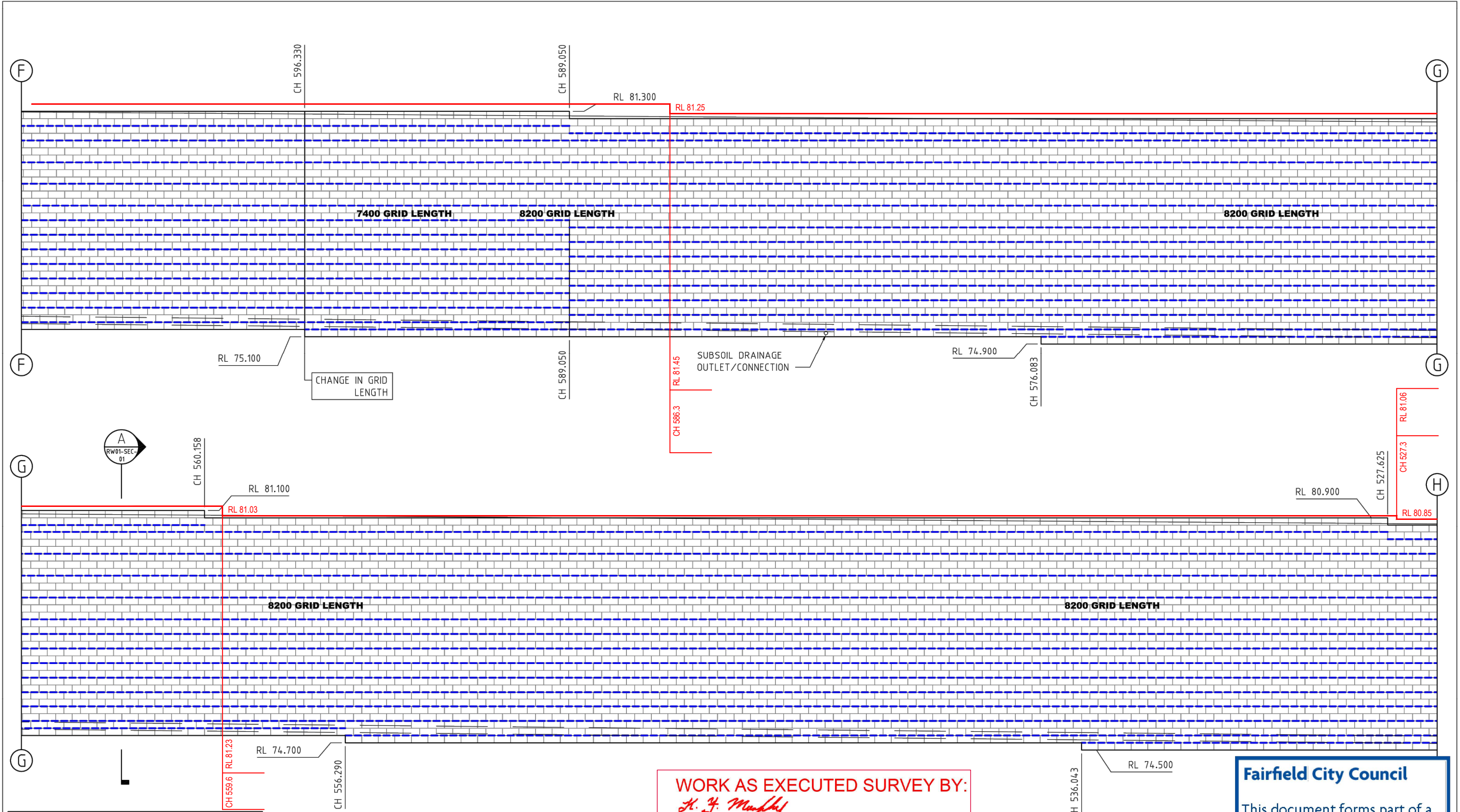


PROJECT TITLE  
CSR STAGE 3

CLIENT/DEVELOPER  
MULGOA QUARRIES

RW01 - REAR ELEVATION  
SHEET 3 OF 10

|                       |                          |               |
|-----------------------|--------------------------|---------------|
| PROJECT NO<br>RS 2389 | AUTOCAD REF<br>RS 2389 2 | REVISION<br>1 |
|-----------------------|--------------------------|---------------|



**NOTE:**  
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~~~~~  
DENOTES - ACEGrid GG60

DENOTES - ACEGrid GG120

WORK AS EXECUTED SURVEY BY:
H. J. Murphy
Registered Surveyor No. 1677
Date: 14/06/2023

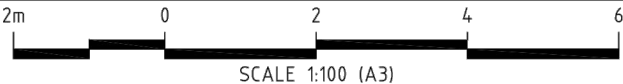
Fairfield City Council
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Dated. 18 March 2022
and is hereby approved

ISSUED

1	ELEVATION CHANGES	BB	PW		21-02-22
0	FOR APPROVAL PURPOSES	BB	PW		14-07-21
REV	REVISION DESCRIPTION	DRAWN	DESIGNED	APPROVED	DATE

ABN 16 103 223 721
PHONE (02)9899 2111 FACSIMILE (02)9899 2112
SYDNEY AUSTRALIA

**ENGINEERING DESIGN SERVICES FOR ALL
TYPE OF RETAINING STRUCTURES**
GABIONS, TERRAMESH, CRIB WALLS, SEGMENTAL WALLS
AND REINFORCED SOIL STRUCTURES



PROJECT TITLE
CSR STAGE 3

CLIENT/DEVELOPER
MULGOA QUARRIES

RW01 - REAR ELEVATION
SHEET 4 OF 10

PROJECT NO RS 2389	AUTOCAD REF RS 2389 2	REVISION 1
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WORK AS EXECUTED SURVEY BY:

H. J. Murphy

Registered Surveyor No. 1677

Date: 14/06/2023

CH 502.828

RL 80.700

RL 80.64

8200 GRID LENGTH

8200 GRID LENGTH

SUBSOIL DRAINAGE
OUTLET/CONNECTION

RL 74.300

CH 515.795

CH 476.210

RL 80.500

CH 469.840

RL 80.44

CH 502.828

RL 80.84

CH 502.7

RL 74.100

CH 496.003

SUBSOIL DRAINAGE
OUTLET/CONNECTION

8200 GRID LENGTH

8500 GRID LENGTH

8500 GRID LENGTH

RL 73.900

CHANGE IN GRID
LENGTH

RL 80.65

CH 468.1

SUBSOIL DRAINAGE
OUTLET/CONNECTION

CH 456.418

NOTE:

RETAINING WALL PLAN SET/OUT AND DESIGN
LEVELS FOR TOP & BOTTOM OF WALL ARE BASED
UPON DRAWINGS PROVIDED BY CALIBRE. RETAINING
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DENOTES - ACEGrid GG60

DENOTES - ACEGrid GG120

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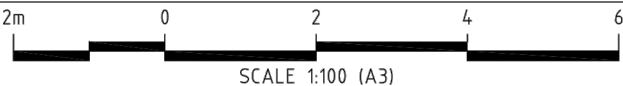
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REV	REVISION DESCRIPTION	DRAWN	DESIGNED	APPROVED	DATE
1	ELEVATION CHANGES	BB	PW		21-02-22
0	FOR APPROVAL PURPOSES	BB	PW		14-07-21

ABN 16 103 223 721
PHONE (02)9899 2111 FACSIMILE (02)9899 2112
SYDNEY AUSTRALIA

ENGINEERING DESIGN SERVICES FOR ALL
TYPE OF RETAINING STRUCTURES

GABIONS, TERRAMESH, CRIB WALLS, SEGMENTAL WALLS
AND REINFORCED SOIL STRUCTURES

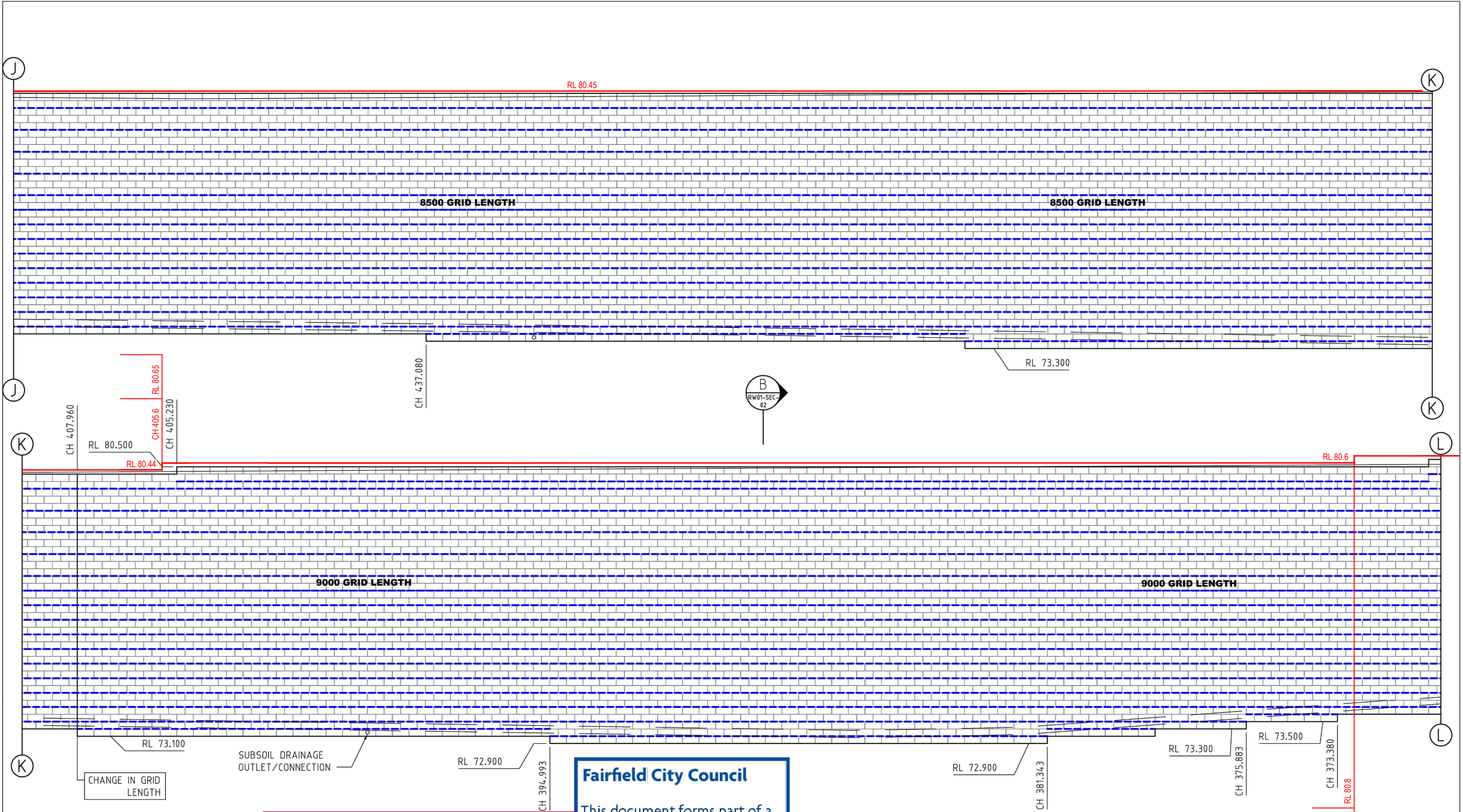


PROJECT TITLE
CSR STAGE 3

CLIENT/DEVELOPER
MULGOA QUARRIES

RW01 - REAR ELEVATION
SHEET 5 OF 10

PROJECT NO	AUTOCAD REF	REVISION
RS 2389	RS 2389 2	1



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WORK AS EXECUTED SURVEY BY:
H. F. Murphy
Registered Surveyor No. 1677
Date: 14/06/2023

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Dated 18 March 2022

and is hereby approved

~~~~~  
DENOTES - ACEGrid GG60  
-----  
DENOTES - ACEGrid GG120

**ISSUED FOR APPROVAL**

| REV | REVISION DESCRIPTION  | DRAWN | DESIGNED | APPROVED | DATE     |
|-----|-----------------------|-------|----------|----------|----------|
| 1   | ELEVATION CHANGES     | BB    | PW       |          | 21-02-22 |
| 0   | FOR APPROVAL PURPOSES | BB    | PW       |          | 14-07-21 |

ABN 16 103 223 721  
PHONE (02)9899 2111 FACSIMILE (02)9899 2112  
SYDNEY AUSTRALIA

**ENGINEERING DESIGN SERVICES FOR ALL  
TYPE OF RETAINING STRUCTURES**

GABIONS, TERRAMESH, CRIB WALLS, SEGMENTAL WALLS  
AND REINFORCED SOIL STRUCTURES

SCALE 1:100 (A3)

|                  |                 |
|------------------|-----------------|
| PROJECT TITLE    | CSR STAGE 3     |
| CLIENT/DEVELOPER | MULGOA QUARRIES |

|                                        |             |
|----------------------------------------|-------------|
| RW01 - REAR ELEVATION<br>SHEET 6 OF 10 |             |
| PROJECT NO                             | AUTOCAD REF |
| RS 2389                                | RS 2389 2   |
| DWG. NO                                | REVISION    |
| RS-2389-RW01-6                         | 1           |

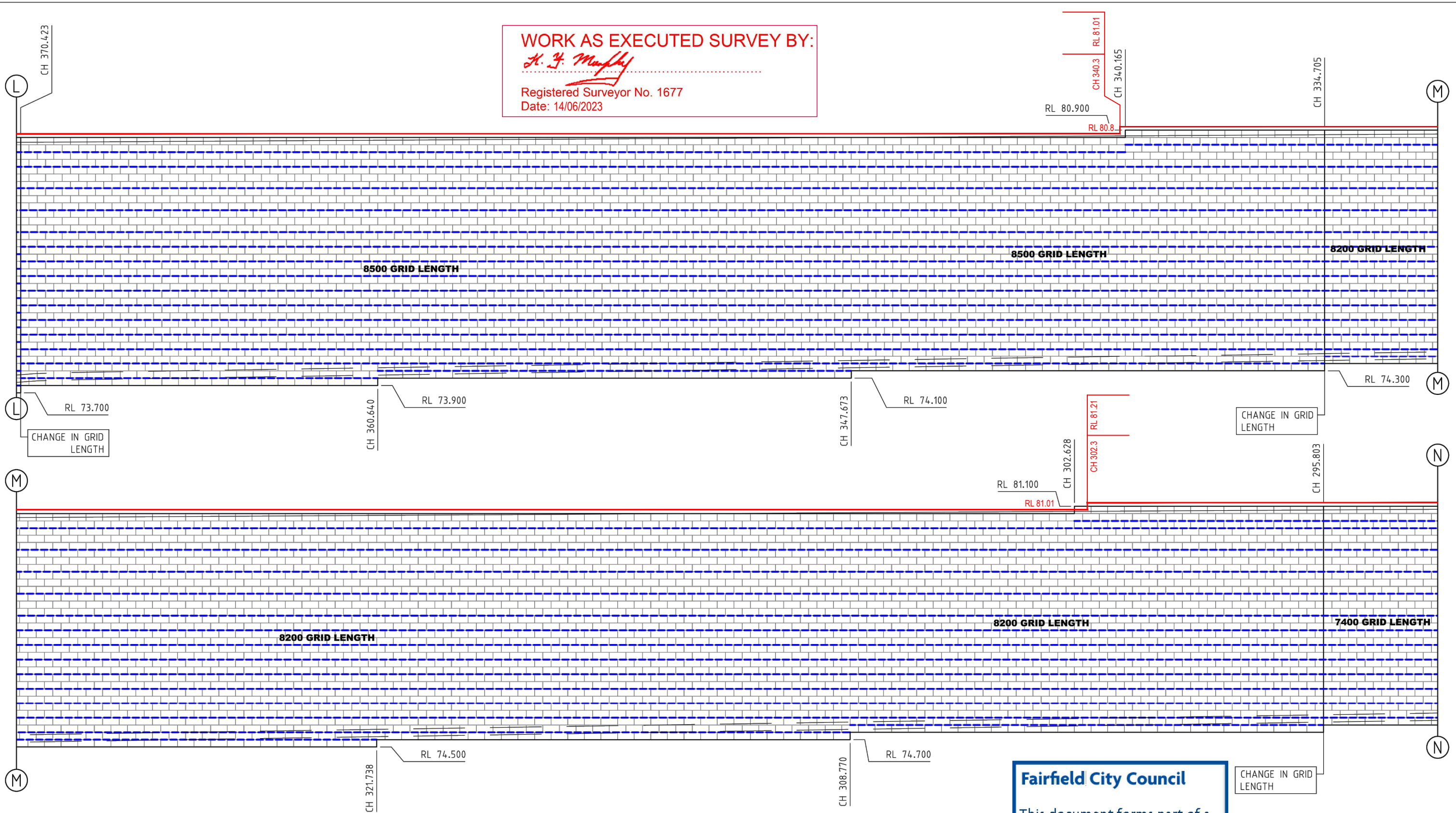


WORK AS EXECUTED SURVEY BY:

*H. F. Murphy*

Registered Surveyor No. 1677

Date: 14/06/2023



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DENOTES - ACEGrid GG60

DENOTES - ACEGrid GG120

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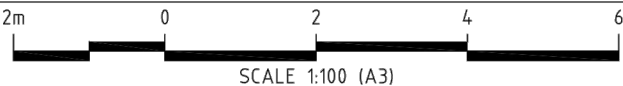


FOR APPROVAL

REV	REVISION DESCRIPTION	DRAWN	DESIGNED	APPROVED	DATE
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0	FOR APPROVAL PURPOSES	BB	PW		14-07-21

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SYDNEY AUSTRALIA

**ENGINEERING DESIGN SERVICES FOR ALL
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GABIONS, TERRAMESH, CRIB WALLS, SEGMENTAL WALLS
AND REINFORCED SOIL STRUCTURES

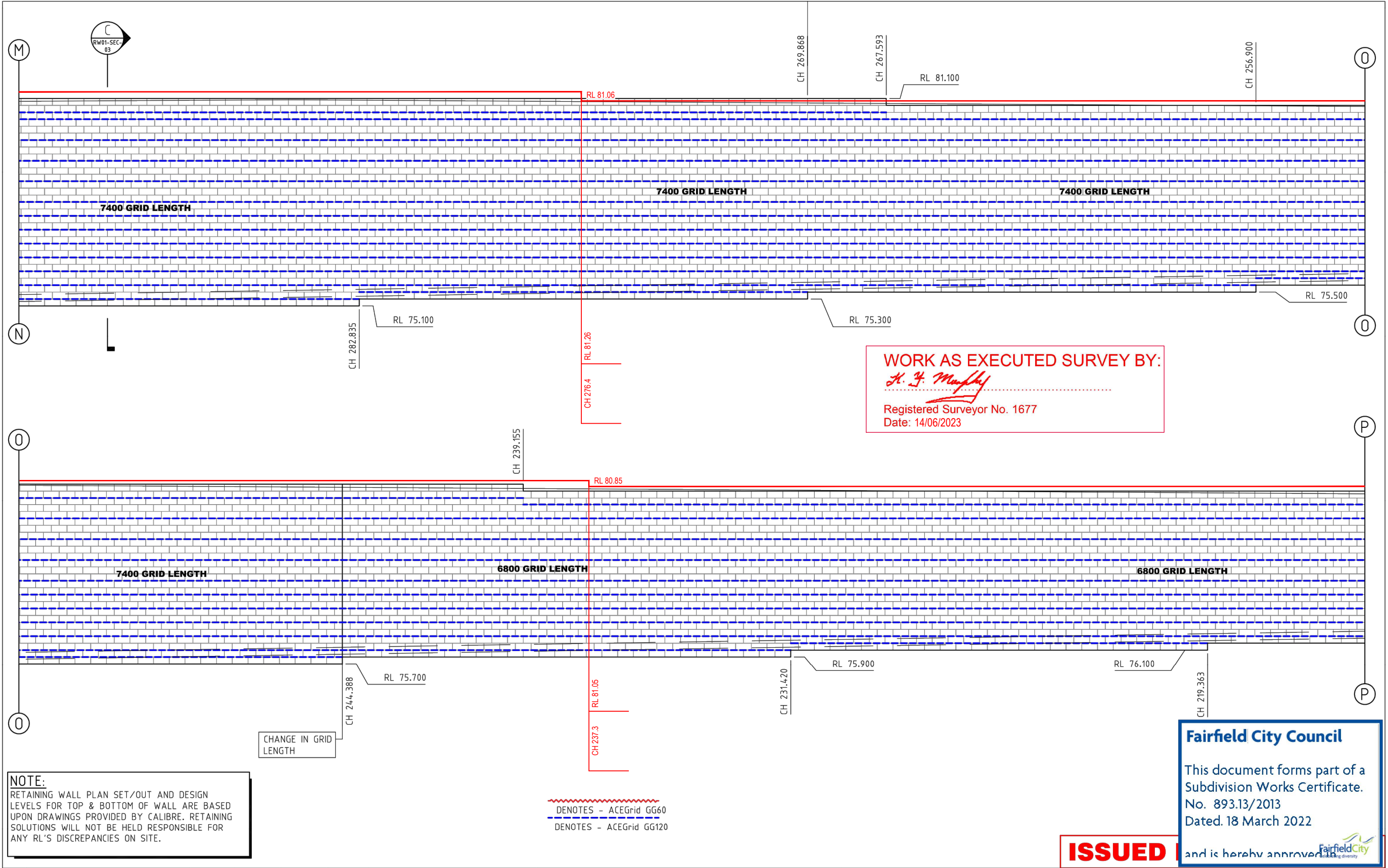


PROJECT TITLE
CSR STAGE 3

CLIENT/DEVELOPER
MULGOA QUARRIES

RW01 - REAR ELEVATION
SHEET 7 OF 10

PROJECT NO RS 2389	AUTOCAD REF RS 2389 2
DWG. NO RS-2389-RW01-7	REVISION 1



NOTE:
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	ELEVATION CHANGES	BB	PW		21-02-22
0	FOR APPROVAL PURPOSES	BB	PW		14-07-21
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SYDNEY AUSTRALIA

ENGINEERING DESIGN SERVICES FOR ALL TYPE OF RETAINING STRUCTURES
GABIONS, TERRAMESH, CRIB WALLS, SEGMENTAL WALLS AND REINFORCED SOIL STRUCTURES

2m 0 2 4 6
SCALE 1:100 (A3)

PROJECT TITLE
CSR STAGE 3

CLIENT/DEVELOPER
MULGOA QUARRIES

RW01 - REAR ELEVATION SHEET 8 OF 10	
PROJECT NO RS 2389	AUTOCAD REF RS 2389 2
DWG. NO RS-2389-RW01-8	REVISION 1

Fairfield City Council

This document forms part of a Subdivision Works Certificate.
No. 893.13/2013
Dated. 18 March 2022

ISSUED and is hereby approved