

# Kilmarnock 500MW Battery Energy Storage System

Volume 2

Appendix 1-D Scheme Drawings

Kilmarnock Energy Centre Limited

September 2023



APPLICATION BOUNDARY 10.278 ha ( 102782 m<sup>2</sup> )

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**PLANNING**

No	Revision	Note	Drawn	Job Manager	Project Director	Date	No	Revision	Note	Drawn	Job Manager	Project Director	Date
00	ISSUED FOR PLANNING					26.09.23							

Drawn	Job Manager	Project Director	Date

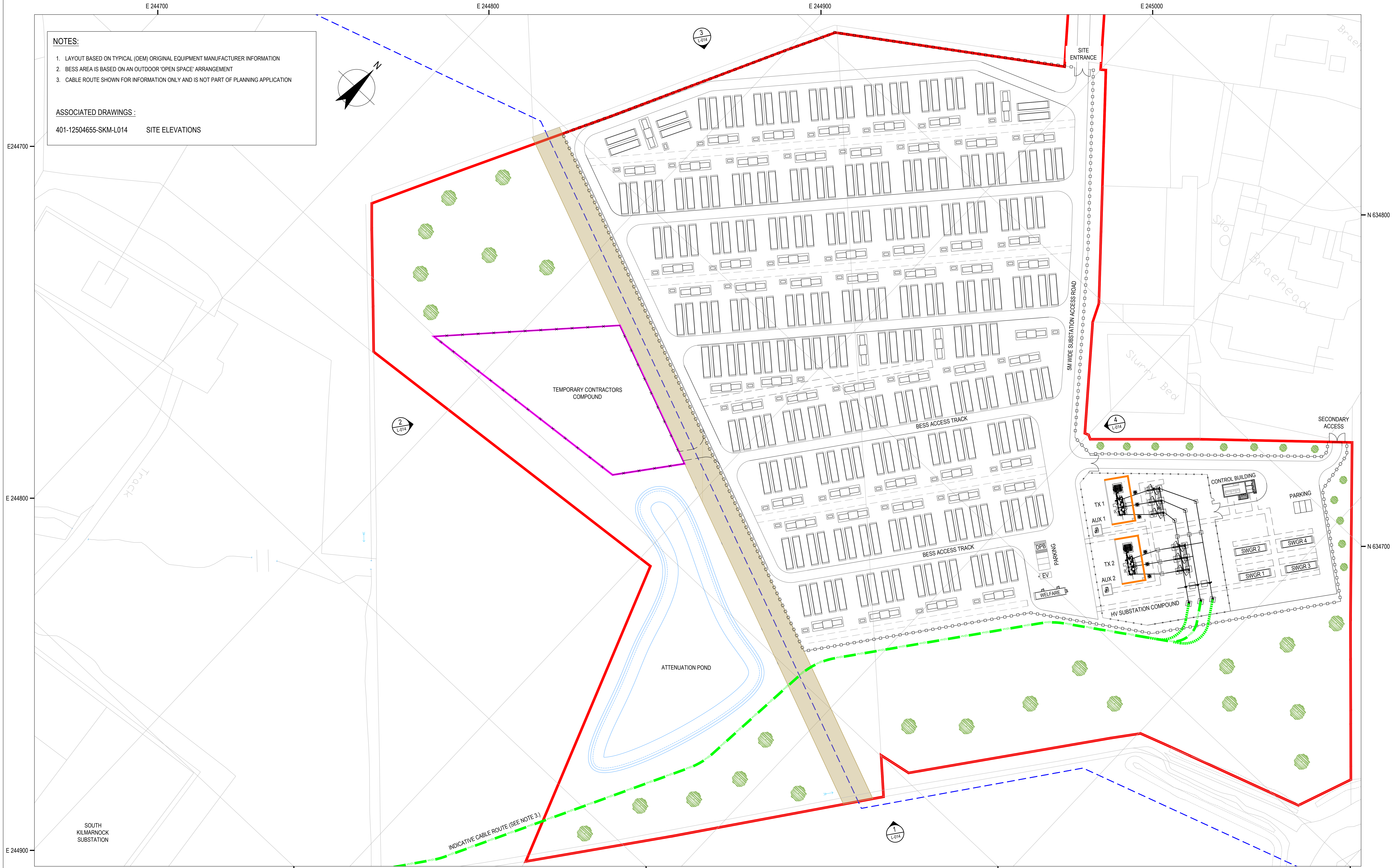


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Drawn	Designer	Checked	Design Check	Approved	Date	Scale
PDO	PDO			(Project Director)		1:1250

Client	Project	Title	Original Size
KILMARNOCK ENERGY CENTRE LIMITED	KILMARNOCK BATTERY ENERGY STORAGE SYSTEM	SITE LOCATION PLAN	A0

Drawing No: **401-12504655-SKM-L005** Rev: **00**



**NOTES:**

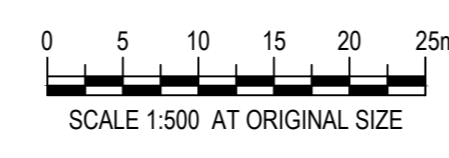
- LAYOUT BASED ON TYPICAL (OEM) ORIGINAL EQUIPMENT MANUFACTURER INFORMATION
- BESS AREA IS BASED ON AN OUTDOOR 'OPEN SPACE' ARRANGEMENT
- CABLE ROUTE SHOWN FOR INFORMATION ONLY AND IS NOT PART OF PLANNING APPLICATION

**ASSOCIATED DRAWINGS:**

401-12504655-SKM-L014 SITE ELEVATIONS

- APPLICATION BOUNDARY (PART)
- PROPOSED HV CABLE ROUTE TO SOUTH KILMARNOCK 400kV SUBSTATION (500m)  
(CABLE ROUTE NOT PART OF PLANNING APPLICATION)
- TEMPORARY CONTRACTORS COMPOUNDS / STORAGE (3300 m<sup>2</sup>)
- 10 METRE HIGH ACOUSTIC FIREWALLS (NOISE ATTENUATION)
- PERIMETER SECURITY FENCE
- SCOTTISH WATER MAIN ROUTE  
(MINIMUM ACCESS DISTANCE 6m)  
NO CONSTRUCTION IN THIS ZONE
- LANDSCAPING / SCREENING
- ATTENUATION POND

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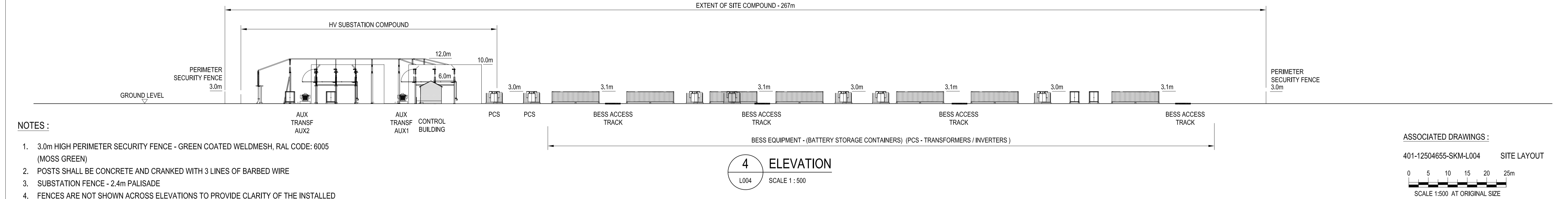
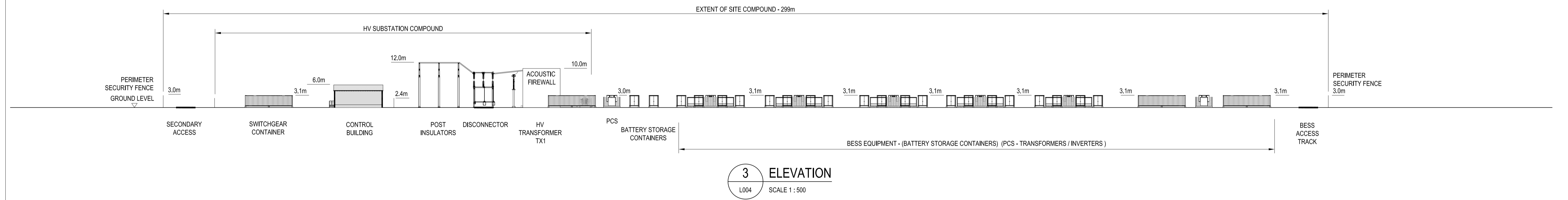
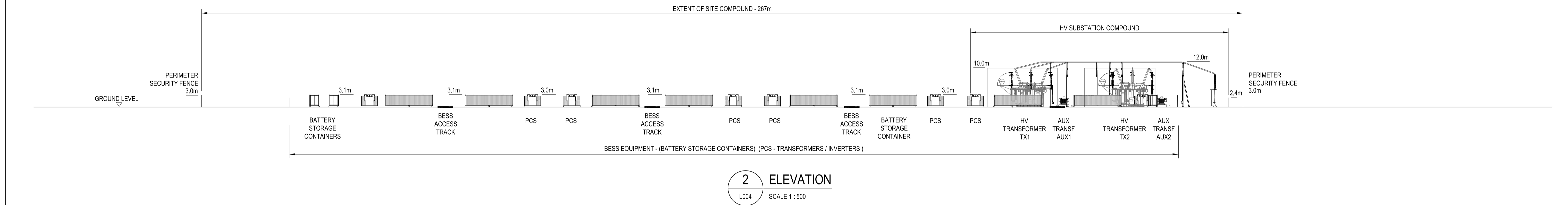
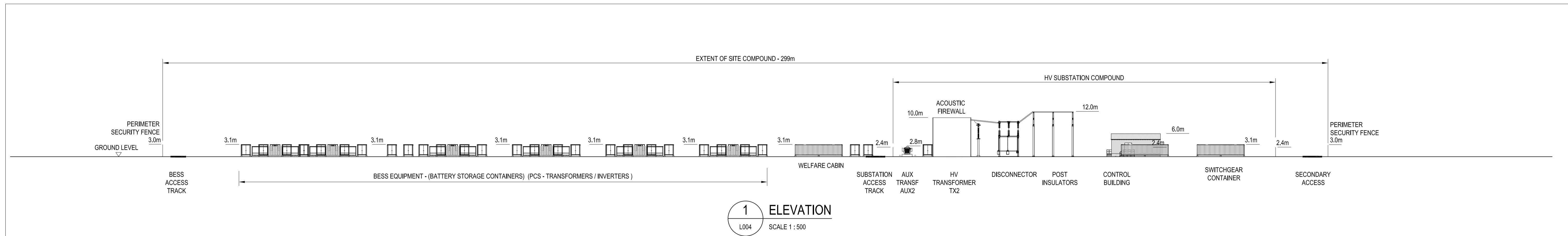
Drawn	PDO	Designer	PDO
Drafting	CL	Design	CM
Checked	CL	Check	CM
Approved	(Project Director)	Date	
Scale	1:500	This Drawing must not be used for Construction unless signed as Approved	

**PLANNING**

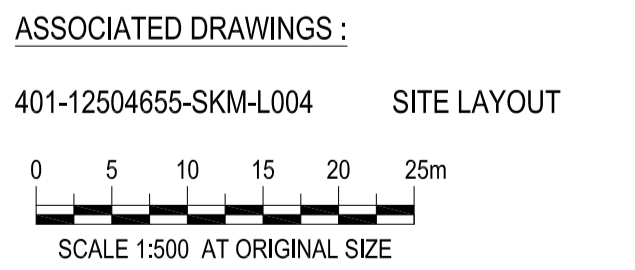
Client: **KILMARNOCK ENERGY CENTRE LIMITED**  
Project: **KILMARNOCK BATTERY ENERGY STORAGE SYSTEM**  
Title: **PROPOSED SITE LAYOUT (500 MW FOR 2 hrs)**

Original Size: **A0**  
Drawing No: **401-12504655-SKM-L004** Rev: **01**

No	Revision	Note	Drawn	Job Manager	Project Director	Date	No	Revision	Note	Drawn	Job Manager	Project Director	Date
01		PERIMETER FENCE REVISED - ATTENUATION POND REVISED				27.09.23							
00		ISSUED FOR PLANNING				01.09.23							



- NOTES :**
- 3.0m HIGH PERIMETER SECURITY FENCE - GREEN COATED WELDMESH, RAL CODE: 6005 (MOSS GREEN)
  - POSTS SHALL BE CONCRETE AND CRANKED WITH 3 LINES OF BARBED WIRE
  - SUBSTATION FENCE - 2.4m PALISADE
  - FENCES ARE NOT SHOWN ACROSS ELEVATIONS TO PROVIDE CLARITY OF THE INSTALLED PLANT / EQUIPMENT BEYOND THEM
  - ALL FENCE COMPONENTS SHALL BE TO BS 1722

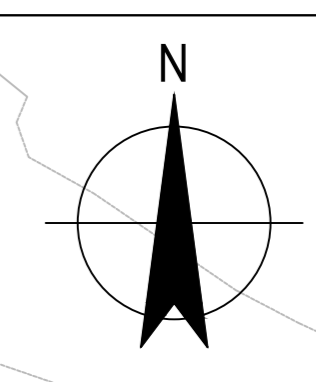


**PLANNING**

00	ISSUED FOR PLANNING	PDO	* CL	* CM	29.09.23	
No	Revision	Note: * indicates signatures on original issue of drawing or last revision of drawing	Drawn	Job Manager	Project Director	Date



<b>DO NOT SCALE</b>	Drawn PDO	Designer PDO	Client <b>KILMARNOCK ENERGY CENTRE LIMITED</b>
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	Approved (Project Director) Date		Title <b>SITE ELEVATIONS</b>
	Scale 1:500	This Drawing must not be used for Construction	Original Size <b>A1</b> Drawing No: <b>401-12504655-SKM-L014</b> Rev: <b>00</b>



- NOTES**
1. LEVELS ARE IN METRES ABOVE ORDNANCE DATUM UNLESS STATED OTHERWISE.
  2. PROVISION SUBJECT TO GROUND INVESTIGATION AND LAYOUT CONFIRMATION.
  3. EXISTING TOPOGRAPHY TAKEN FROM TOPO SURVEY UNDERTAKEN BY SPECT LAND SURVEYORS, SURVEY DATE 13th APRIL 2021.

- KEY**
- MINOR CONTOURS AT 0.25m INTERVALS
  - MAJOR CONTOURS AT 1m INTERVALS
  - EXISTING MINOR CONTOURS AT 0.25m INTERVALS
  - EXISTING MAJOR CONTOURS AT 1m INTERVALS
  - EXISTING WATER MAIN ROUTE (INDICATIVE LOCATION FROM J40057)
  - 45.1m AOD CONTOUR LINE

- HOLD**
1. THE PROPOSED LEVEL OF COVER TO THE EXISTING WATER MAIN SHALL BE AGREED WITH SCOTTISH WATER PRIOR TO COMMENCEMENT OF THE WORKS.
  2. PROPOSALS ARE SUBJECT TO DETAILED DESIGN.
  3. PROPOSALS ARE SUBJECT TO REVIEW AND ASSESSMENT FOLLOWING SITE INVESTIGATION.

- REFERENCE DRAWINGS**
- 401-1254655-SKM-J04-MDL 1500MW SITE LAYOUT
  - 12579086-GHD-00-00-DR-C-00002 & 03 SITE CROSS SECTIONS
  - 12579086-GHD-00-00-DR-C-00004 SITE ISOPACHYTE

- GRADING CRITERIA**
- ALL INDIVIDUAL EQUIPMENT AND COMPOUNDS PLACED ON PLATFORMS WITH SLOPES LESS THAN 1:200.
  - LONGITUDINAL ACCESS TRACK GRADIENTS HAVE BEEN LIMITED TO A MAXIMUM OF 1:12 (I.E. THE UPPER LIMIT FOR HGV'S ADVISED BY THE HSE).
  - MAXIMUM CUT AND FILL SLOPES OF 1:3 ASSUMED.
  - ALL SITE PLATFORM LEVELS KEPT ABOVE THE 45M CONTOUR.
  - BULKING FACTORS OF 1 ASSUMED THROUGHOUT.
  - TOPSOIL STRIP NOT ACCOUNTED FOR.
  - ONLY BULK EARTHWORKS VOLUMES ACCOUNTED FOR. ADDITIONAL EXCAVATION OR FILL FOR PLATFORM MAKE-UP, FOUNDATIONS, SERVICES ETC NOT INCLUDED.
  - SUITABILITY OF REUSE OF SITE WON MATERIAL TO BE CONFIRMED FOLLOWING GROUND INVESTIGATION.



Rev	Description	Checked	Approved	Date
P04	SITE LAYOUT AND LEVELS REVISED	RS	SB	26.09.23
P03	SITE LAYOUT AND LEVELS REVISED	RS	A.J.	10.03.23
P02	UPDATED TO SUIT REVISED SUBSTATION LAYOUT	RS	SB	21.09.22
P01	INFORMATION SUITABLE FOR REVIEW & COMMENT	RS	SB	16.09.22

Author	CH	Drafting Check	RS
Designer	CH	Design Check	SB

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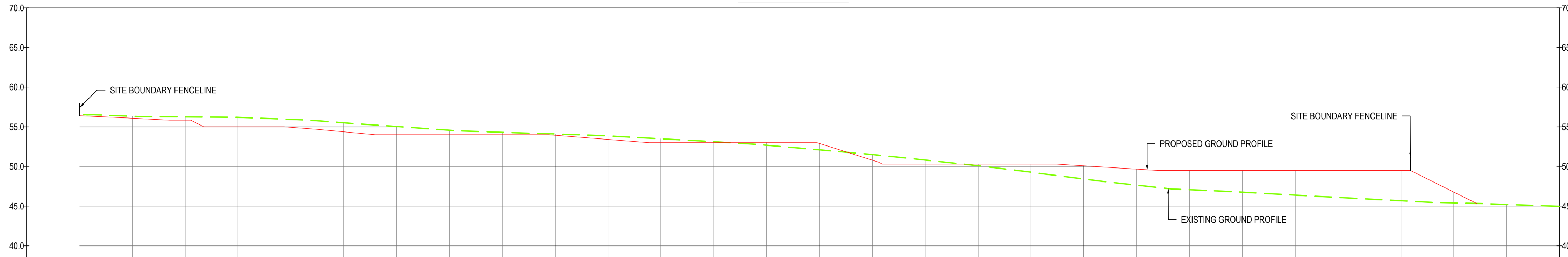
Project **KILMARNOCK BATTERY ENERGY STORAGE SYSTEM**

Status **PLANNING** Status Code **S3**

Drawing Title **PROPOSED SITE LEVELS** Size **A0**

Drawing No. **12579086-GHD-00-00-DR-C-00001** Rev **P04**

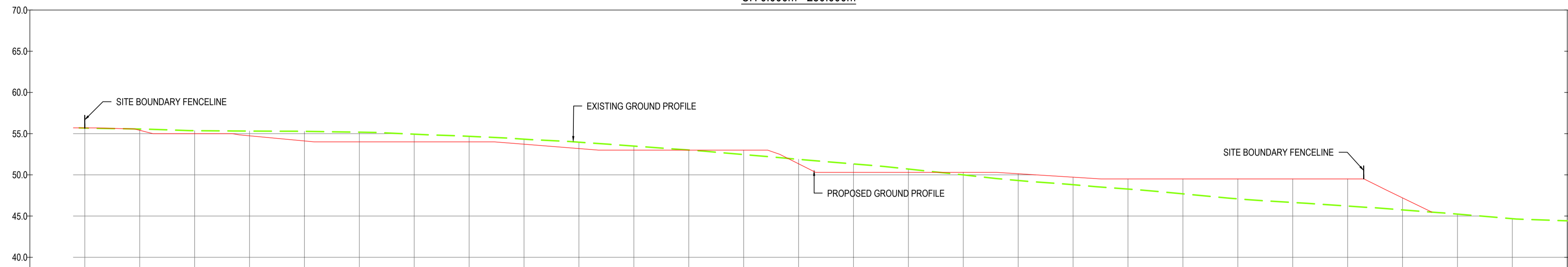
SECTION A-A  
CH 0.000m - 290.000m



VERTICAL EXAGGERATION x1.50

CHAINAGE	10.000	20.000	30.000	40.000	50.000	60.000	70.000	80.000	90.000	100.000	110.000	120.000	130.000	140.000	150.000	160.000	170.000	180.000	190.000	200.000	210.000	220.000	230.000	240.000	250.000	260.000	270.000	280.000	
EXISTING SURFACE LEVEL		56.327	56.248	56.196	56.930	55.506	55.043	54.569	54.306	54.100	53.864	53.491	53.125	52.679	52.094	51.506	50.807	50.097	49.284	48.421	47.649	47.069	46.762	46.390	46.033	45.679	45.410	45.209	44.977
PROPOSED SURFACE LEVEL		56.062	55.833	55.000	54.935	54.371	54.000	54.000	54.000	53.934	53.408	53.000	53.000	53.000	52.905	50.796	50.300	50.300	50.300	49.284	49.664	49.500	49.500	49.500	49.500	49.500	49.500	46.773	
LEVEL DIFFERENCE CUT - / FILL +		0.265	0.415	1.196	0.995	1.135	1.043	0.569	0.306	0.166	0.456	0.491	0.125	0.321	0.811	0.710	0.507	0.263	-1.016	-1.662	-2.015	-2.431	-2.738	-3.110	-3.467	-3.821	-1.363		

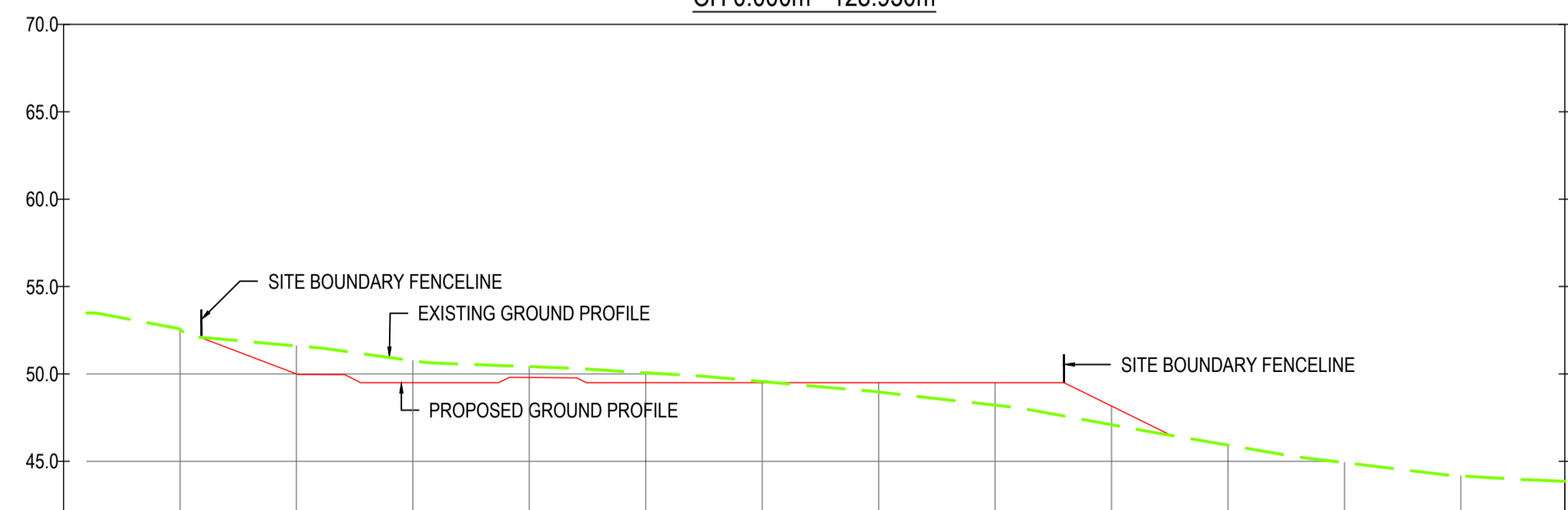
SECTION B-B  
CH 0.000m - 280.000m



VERTICAL EXAGGERATION x1.50

CHAINAGE	10.000	20.000	30.000	40.000	50.000	60.000	70.000	80.000	90.000	100.000	110.000	120.000	130.000	140.000	150.000	160.000	170.000	180.000	190.000	200.000	210.000	220.000	230.000	240.000	250.000	260.000	270.000	
EXISTING SURFACE LEVEL	55.678	55.560	55.360	55.312	55.277	55.176	54.935	54.673	54.330	53.963	53.490	53.009	52.459	51.883	51.325	50.703	49.993	49.315	48.805	48.275	47.694	47.085	46.647	46.212	45.747	45.234	44.660	44.420
PROPOSED SURFACE LEVEL	55.689	55.405	55.000	54.734	54.110	54.000	54.000	54.000	53.714	53.188	53.000	53.000	53.000	51.340	50.300	50.300	50.300	50.134	49.714	49.500	49.500	49.500	49.500	49.500	49.500	47.202		
LEVEL DIFFERENCE CUT - / FILL +	-0.021	0.154	0.360	0.578	1.167	1.176	0.935	0.673	0.616	0.776	0.490	0.009	-0.541	0.543	1.025	0.403	-0.307	-0.819	-0.909	-1.225	-1.806	-2.415	-2.853	-3.288	-1.455			

SECTION C-C  
CH 0.000m - 128.930m



VERTICAL EXAGGERATION x1.50

CHAINAGE	0.000	10.000	20.000	30.000	40.000	50.000	60.000	70.000	80.000	90.000	100.000	110.000	120.000	128.930
EXISTING SURFACE LEVEL	52.565	51.600	50.752	50.417	50.065	49.562	49.963	48.210	47.050	45.923	44.925	44.160	43.855	
PROPOSED SURFACE LEVEL		49.998	49.500	49.796	49.500	49.500	49.500	49.500	48.161					
LEVEL DIFFERENCE CUT - / FILL +		1.602	1.252	0.621	0.565	0.062	-0.537	-1.290	-1.071					

NOTES

- LEVELS ARE IN METRES ABOVE ORDNANCE DATUM UNLESS STATED OTHERWISE.
- REFER TO DRAWING 12579086-GHD-00-00-DR-C-00001 FOR GENERAL NOTES, HOLDS AND REFERENCES.

KEY

- EXISTING GROUND PROFILE
- PROPOSED GROUND PROFILE

Rev	Description	Checked	Approved	Date
P04	SITE LAYOUT AND LEVELS REVISED	RS	SB	26.09.23
P03	SITE LAYOUT AND LEVELS REVISED	RS	AJL	10.03.23
P02	UPDATED TO SUIT REVISED SUBSTATION LAYOUT	RS	SB	21.09.22
P01	INFORMATION SUITABLE FOR REVIEW & COMMENT	RS	SB	16.09.22

Author	CH	Drafting Check	RS
Designer	CH	Design Check	SB

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Project No. 12579086

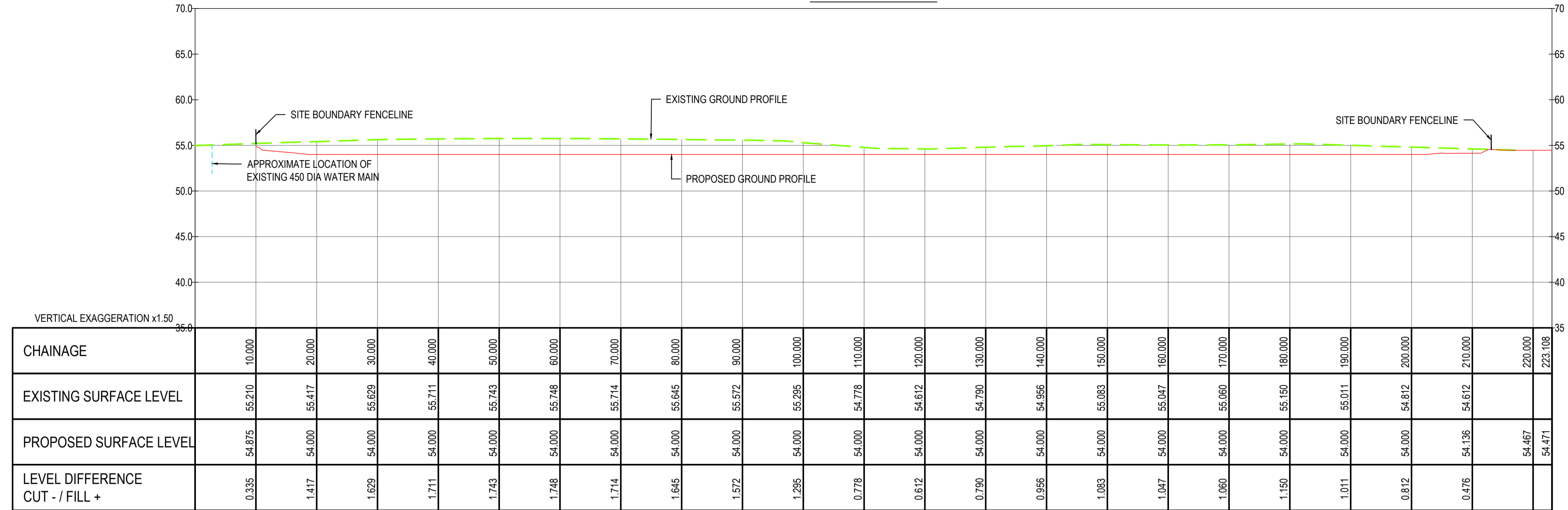
Client **KILMARNOCK ENERGY CENTRE LIMITED**

Project **KILMARNOCK BATTERY ENERGY STORAGE SYSTEM**

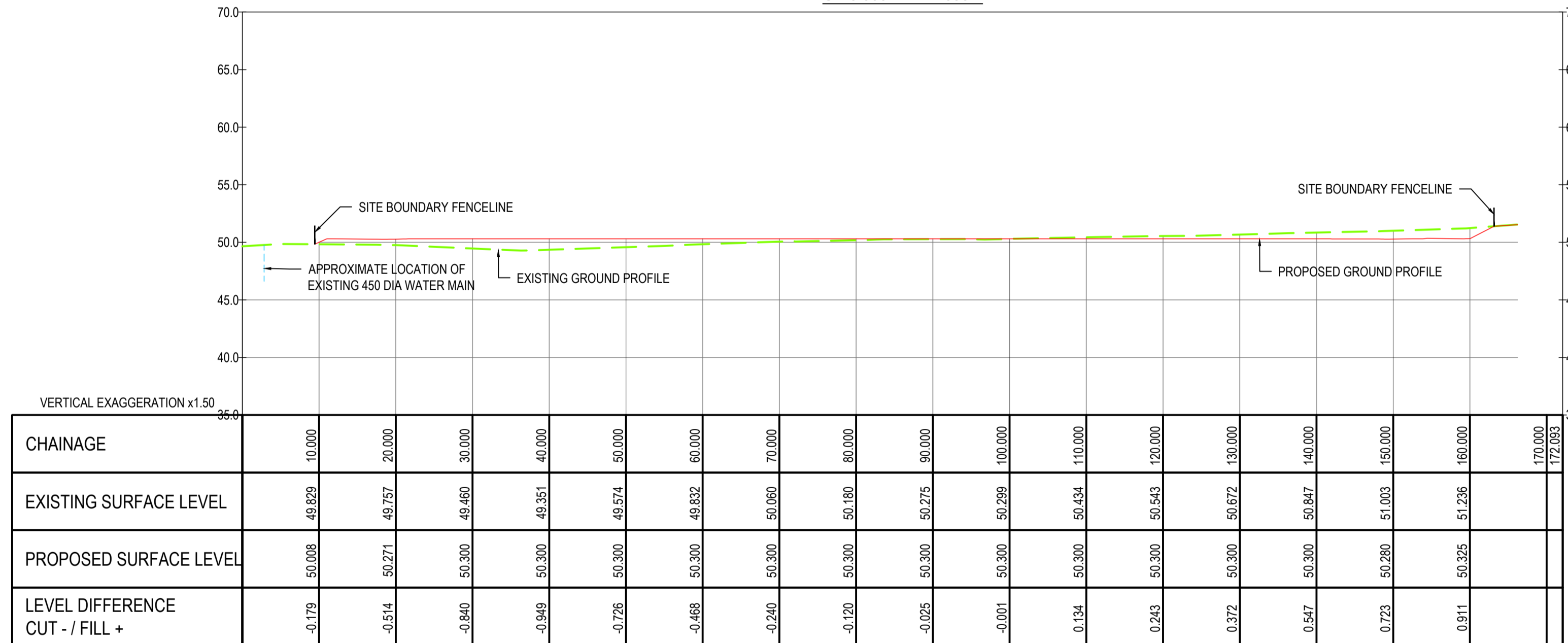
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Drawing Title **SITE CROSS-SECTIONS (SHEET 1 OF 2)** Size **A1**

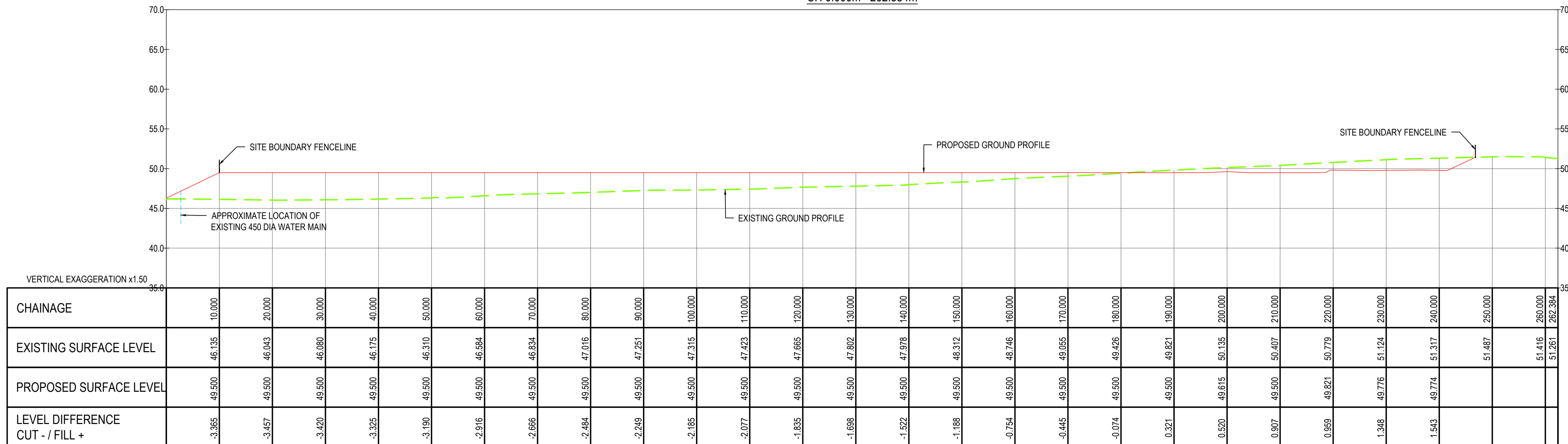
SECTION D-D  
CH 0.000m - 223.108m



SECTION E-E  
CH 0.000m - 172.093m



SECTION F-F  
CH 0.000m - 262.384m



NOTES

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KEY

- EXISTING GROUND PROFILE
- PROPOSED GROUND PROFILE

Rev	Description	Checked	Approved	Date
P04	SITE LAYOUT AND LEVELS REVISED	RS	SB	26.09.23
P03	SITE LAYOUT AND LEVELS REVISED	RS	AJL	10.03.23
P02	UPDATED TO SUIT REVISED SUBSTATION LAYOUT	RS	SB	21.09.22
P01	INFORMATION SUITABLE FOR REVIEW & COMMENT	RS	SB	16.09.22

Author	CH	Drafting Check	RS
Designer	CH	Design Check	SB

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Project No. 12579086

Client KILMARNOCK ENERGY CENTRE LIMITED

Project KILMARNOCK BATTERY ENERGY STORAGE SYSTEM

Status PLANNING Status Code S3

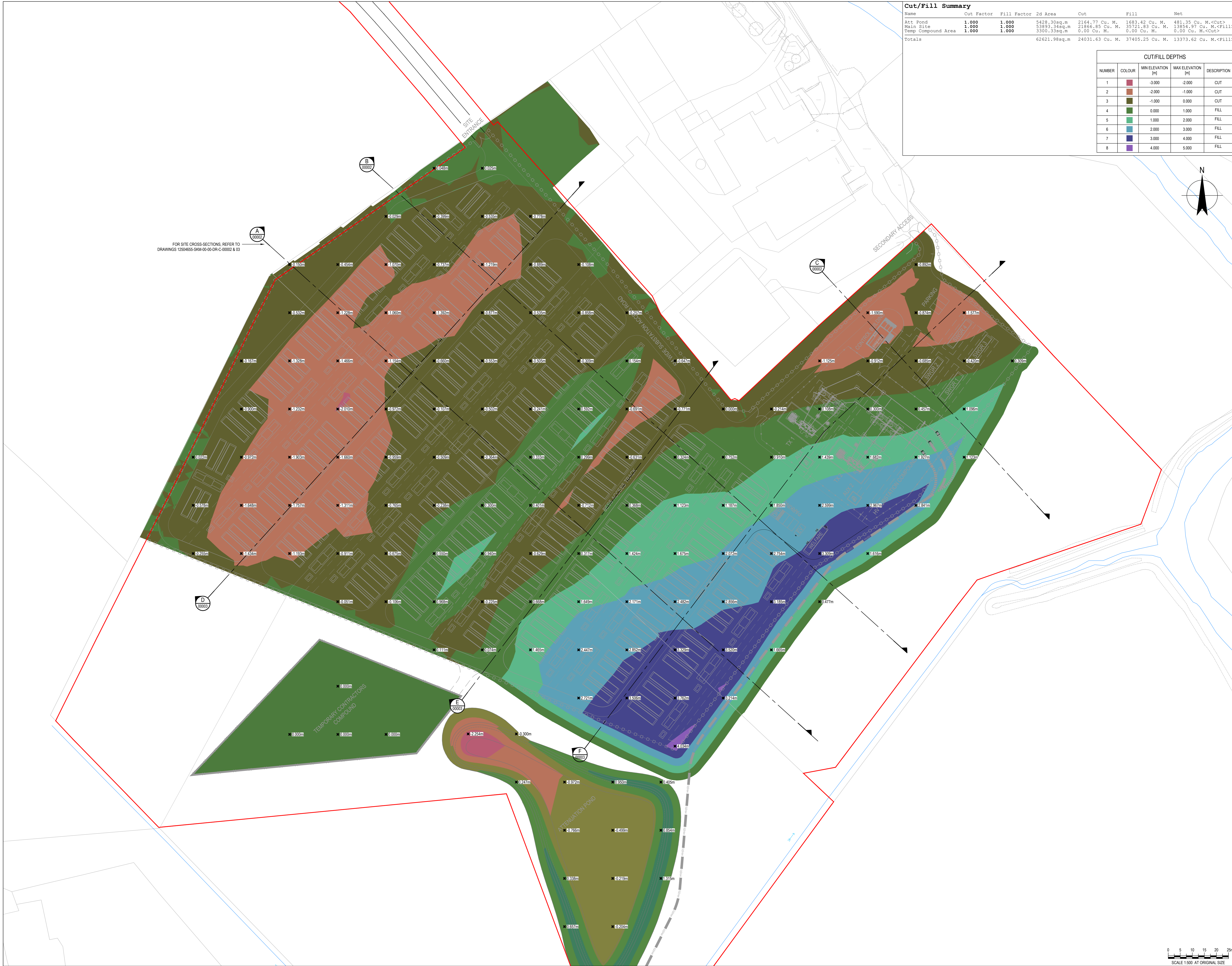
Drawing Title SITE CROSS-SECTIONS (SHEET 2 OF 2) Size A1

Cut/Fill Summary						
Name	Cut Factor	Fill Factor	2d Area	Cut	Fill	Net
Att Pond	1.000	1.000	5428.30sq.m	2164.77 Cu. M.	1683.42 Cu. M.	481.35 Cu. M.<Cut>
Main Site	1.000	1.000	53893.34sq.m	21866.85 Cu. M.	35721.83 Cu. M.	13854.97 Cu. M.<Fill>
Temp Compound Area	1.000	1.000	3300.33sq.m	0.00 Cu. M.	0.00 Cu. M.	0.00 Cu. M.<Cut>
<b>Totals</b>			<b>62621.98sq.m</b>	<b>24031.63 Cu. M.</b>	<b>37405.25 Cu. M.</b>	<b>13373.62 Cu. M.&lt;Fill&gt;</b>

CUT/FILL DEPTHS				
NUMBER	COLOUR	MIN ELEVATION [m]	MAX ELEVATION [m]	DESCRIPTION
1	Red	-3.000	-2.000	CUT
2	Brown	-2.000	-1.000	CUT
3	Dark Green	-1.000	0.000	CUT
4	Light Green	0.000	1.000	FILL
5	Medium Green	1.000	2.000	FILL
6	Blue-Green	2.000	3.000	FILL
7	Blue	3.000	4.000	FILL
8	Purple	4.000	5.000	FILL

- NOTES
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  - REFER TO DRAWING 12579086-GHD-00-00-DR-C-0001 FOR GENERAL NOTES, HOLDS AND REFERENCES
  - 100% USABILITY OF MATERIAL HAS BEEN ASSUMED
  - SULKING FACTORS STATED IN THE CUT/FILL SUMMARY TABLE ON THIS DRAWING



Rev	Description	Checked	Approved	Date
P04	SITE LAYOUT AND LEVELS REVISED	RS	SB	26.09.23
P03	SITE LAYOUT AND LEVELS REVISED	RS	A.J.	10.03.23
P02	UPDATED TO SUIT REVISED SUBSTATION LAYOUT	RS	SB	21.09.22
P01	INFORMATION SUITABLE FOR REVIEW & COMMENT	RS	SB	16.09.22

Author	CH	Drafting Check	RS
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Client: **KILMARNOCK ENERGY CENTRE LIMITED**

Project: **KILMARNOCK BATTERY ENERGY STORAGE SYSTEM**

Status: **PLANNING** Status Code: **S3**

Drawing Title: **SITE ISOPACHYTE** Size: **A0**

12579086-GHD-00-00-DR-C-00004





The existing vegetation will be retained within the proposed planting. The exact location of this will be confirmed at the detailed design stage.

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**PROJECT**  
**KILMARNOCK BATTERY ENERGY STORE SYSTEM**

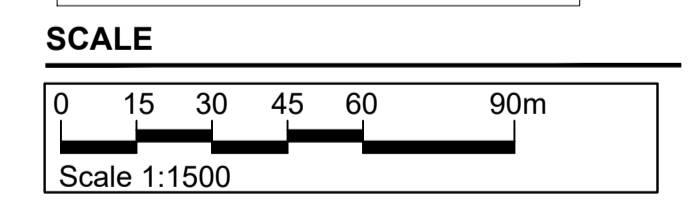
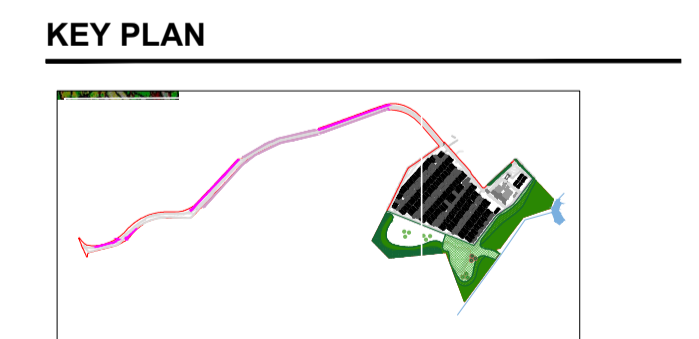
**CLIENT**  
**KILMARNOCK ENERGY CENTRE LIMITED**

**CONSULTANT**  
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 The Colmore Building  
 20 Colmore Circus Queensway, Birmingham  
 0121 212 3035 tel B4 6AT  
 https://aecom.com

- LEGEND**
- Woodland Buffer Planting
  - Scrub Edge
  - Wet Grassland
  - Wildflower Grassland
  - Native Tree Planting
  - Proposed Hedgerow
  - Existing Hedgerow/ Vegetation to be retained
  - Existing verge Grassland to be trimmed

**ISSUE/REVISION**

I/R	DATE	DESCRIPTION
P01	29/09/2023	SUBMISSION FOR CLIENT



**PROJECT NUMBER**  
 12504655

**SHEET TITLE**  
 LANDSCAPE GENERAL ARRANGEMENT PLAN  
 2 OF 2

**SHEET NUMBER**  
 2



The existing vegetation will be retained within the proposed planting. The exact location of this will be confirmed at the detailed design stage.














**PROJECT**  
**KILMARNOCK BATTERY ENERGY STORE SYSTEM**

**CLIENT**  
**KILMARNOCK ENERGY CENTRE LIMITED**

**CONSULTANT**  
 AECOM  
 The Colmore Building  
 20 Colmore Circus Queensway, Birmingham  
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 https://aecom.com

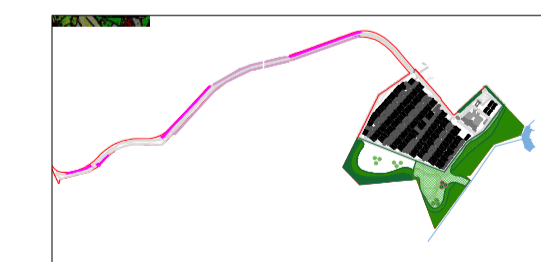
**LEGEND**

-  Woodland Buffer Planting
-  Wet Woodland
-  Scrub Edge
-  Wet Grassland
-  Wildflower Grassland
-  Native Tree Planting (Wetland)
-  Native Tree Planting
-  Existing Running Water/ Swamp
-  Proposed Hedgerow
-  Existing Hedgerow/ Vegetation to be Retained
-  Attenuation Pond

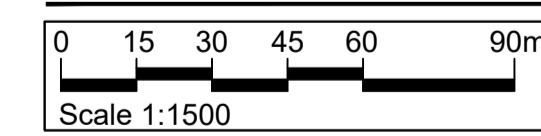
**ISSUE/REVISION**

I/R	DATE	DESCRIPTION
P01	29/09/2023	SUBMISSION FOR CLIENT

**KEY PLAN**



**SCALE**



@A1

**PROJECT NUMBER**

12504655

**SHEET TITLE**

LANDSCAPE GENERAL ARRANGEMENT PLAN  
 1 OF 2

**SHEET NUMBER**

1

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