

SITE NAME:  
Integra 61 Greenfield

DRAWING:  
CD90 - Site Overview

DATE ISSUED:  
24/08/2023

SITE ADDRESS:  
Unit 1, Low Main Court,  
Integra 61 North, Bowburn  
Durham DH6 5NP  
UK

LAND LORD:  
-

UTILITY:  
NORTHERN POWERGRID

PAPER SIZE:  
A3

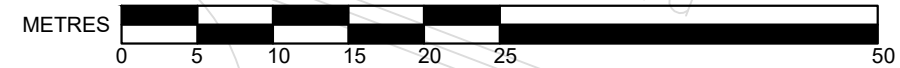
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M 1:500

UNITS:  
centimeters

FILE:  
385 - Integra 61 Greenfield - CD90\_revG1

NOTE:  
Drawing is based on DWG file.

SHEET:  
1.1



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NORTHERN POWERGRID

PAPER SIZE:  
A3

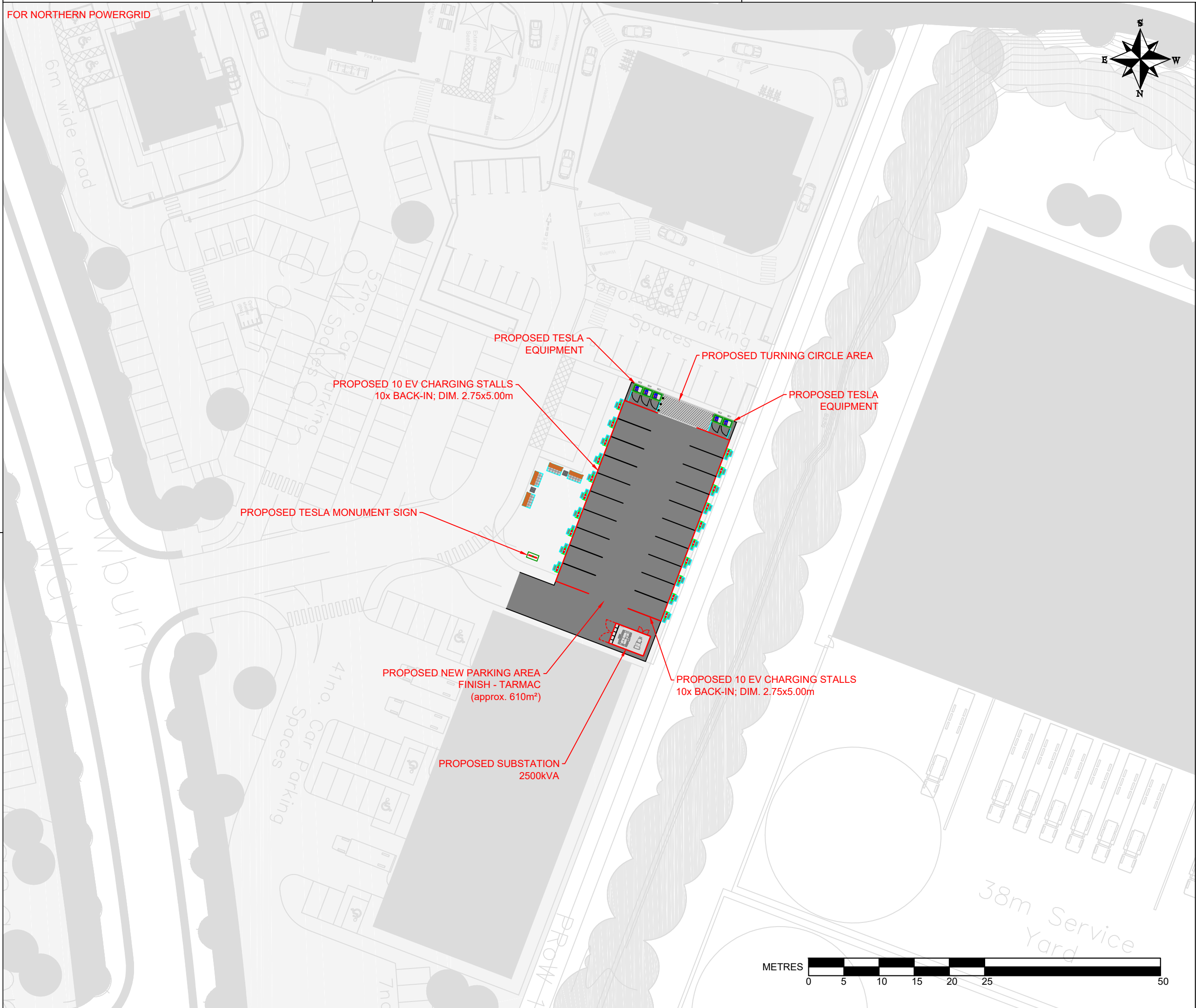
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UNITS:  
centimeters

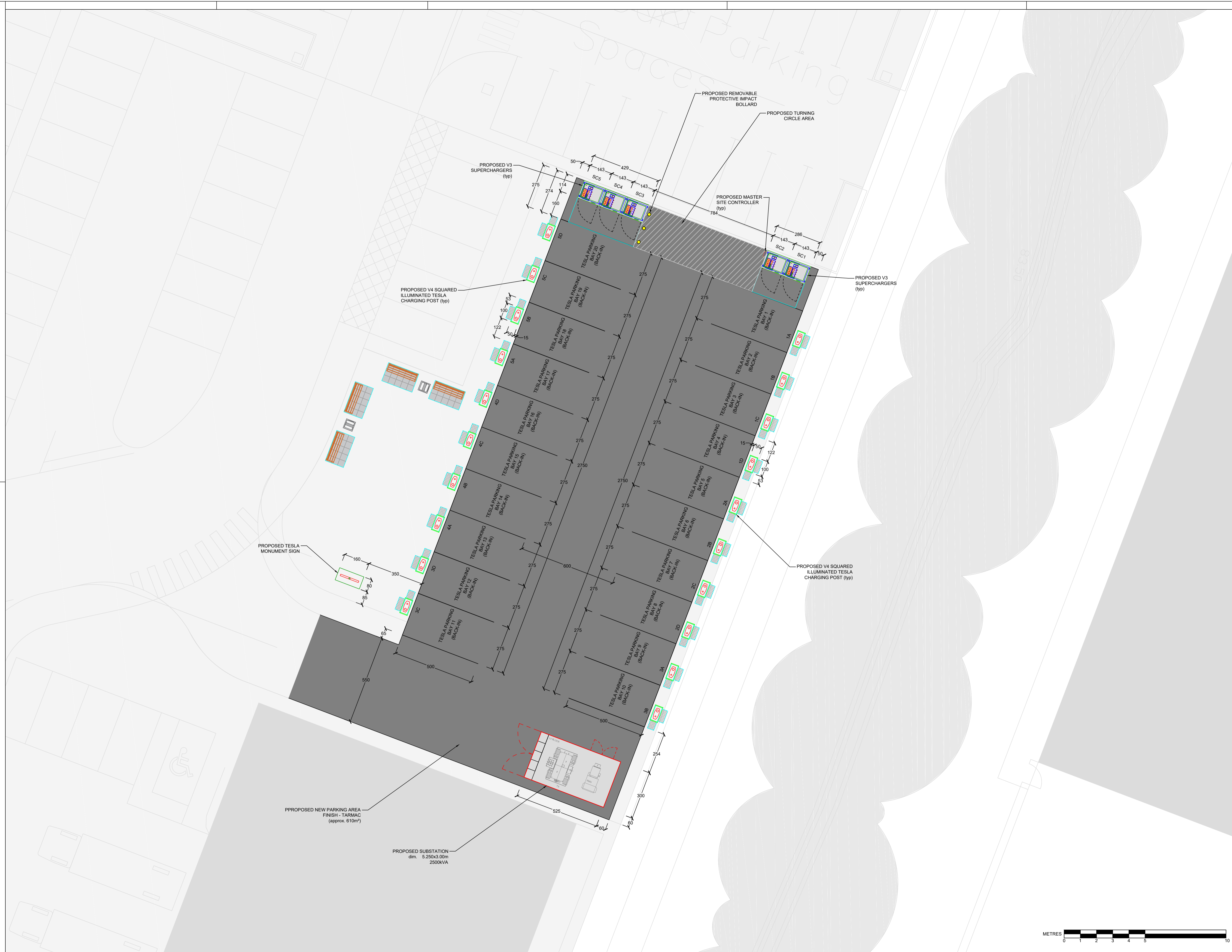
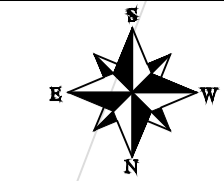
FILE:  
385 - Integra 61 Greenfield - CD90\_revG1

NOTE:  
Drawing is based on DWG file.

SHEET:  
1.2







**TESLA**

SITE NAME:  
Integra 61 Greenfield

DRAWING:  
CD90 - Site Layout

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SITE ADDRESS:  
Unit 1, Low Main Court,  
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Durham DH6 5NP  
UK

LAND LORD:  
-

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NORTHERN POWERGRID

PAPER SIZE:  
A1

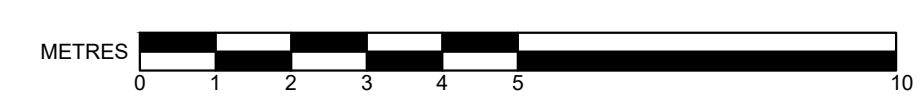
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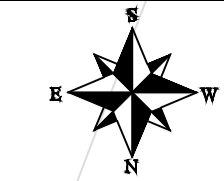
FILE:  
385 - Integra 61 Greenfield - CD90\_rev01

NOTE:  
Drawing is based on DWG file.

SHEET:  
2







**LEGEND - TESLA POWER CABLES**

CABLE COLOR:	CONDUIT/CABLE TYPE
	1x, 125mm, Flex.HDPE Cl.3 1x, Al, NA2XY-O 4x24mm <sup>2</sup> 1x, Al, NA2XY-O 1x120mm <sup>2</sup>
	1x, 125mm, Flex.HDPE Cl.3 1x, Al, NA2XY 4x300/50mm <sup>2</sup>
	2x, 50mm, Flex.HDPE Cl.3 1x, Cu, NYY-J 3x4mm <sup>2</sup>
	1x, 50mm, Flex.HDPE Cl.3 1x, Cu, NYY-J 3x2.5mm <sup>2</sup>

**NOTE:**  
Cable ducts are diagrammatically presented.  
Position of and spacing between cable ducts are not in scale.



**SITE NAME:**  
Integra 61 Greenfield

**DRAWING:**  
CD90 - AC and DC Cable Ducting

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-

**UTILITY:**  
NORTHERN POWERGRID

**PAPER SIZE:**  
A1

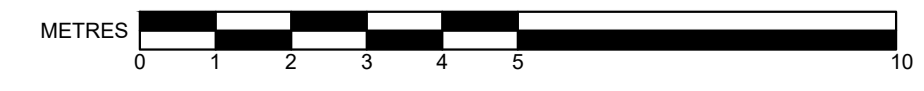
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M 1:100

**UNITS:**  
centimeters

**FILE:**  
385 - Integra 61 Greenfield - CD90\_rev01

**NOTE:**  
Drawing is based on DWG file.

**SHEET:**  
3.1

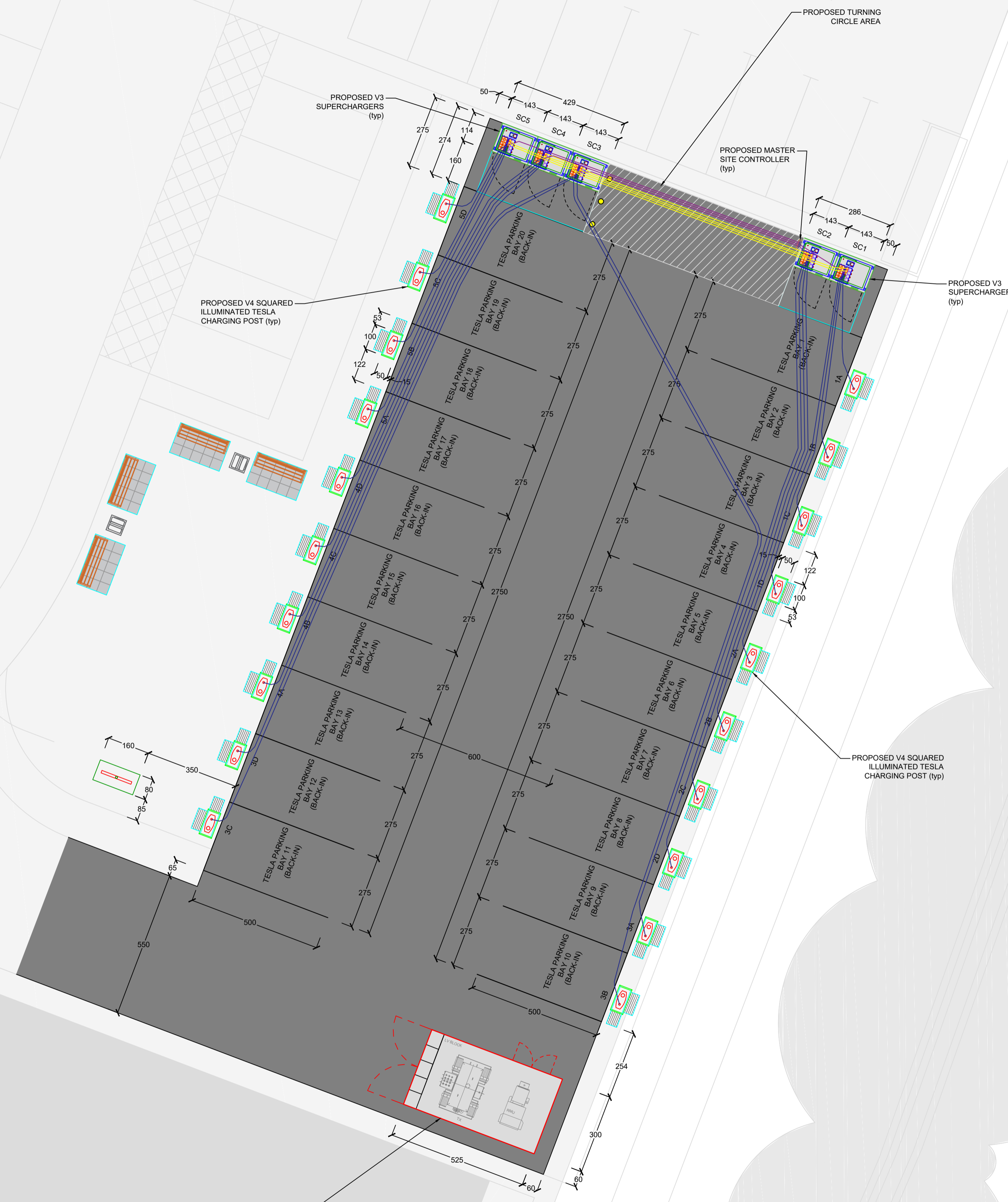
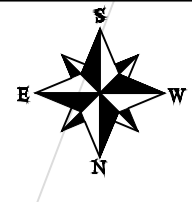




LEGEND - COMM. AND HV DC BUS CABLES

CABLE COLOR:	CONDUIT/CABLE TYPE
	1x 90mm, Flex.HDPE CI.3 2x WK ALU Tower 0.6/1KV 1x150mm <sup>2</sup> 1x Cu. NY-Y-J 1x25mm <sup>2</sup>
	1x 50mm, Flex.HDPE CI.3 1x CAT.7 (PRE-WIRED)
	1x 63mm, Flex.HDPE CI.3 1x TESLA Comm. Cable

NOTE:  
Cable ducts are diagrammatically presented.  
Position of and spacing between cable ducts are not in scale.



SITE NAME:  
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DRAWING:  
CD90 - Communication and HV DC BUS Cable Ducting

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A1

SCALE FACTOR:  
M 1:100

UNITS:  
centimeters

FILE:  
385 - Integra 61 Greenfield - CD90\_rev01

NOTE:  
Drawing is based on DWG file.

SHEET:  
3.2







SITE NAME:  
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DRAWING:  
CD90 - Cable List

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A3

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UNITS:  
centimeters

FILE:  
385 - Integra 61 Greenfield - CD90\_revG1

NOTE:  
Drawing is based on DWG file.

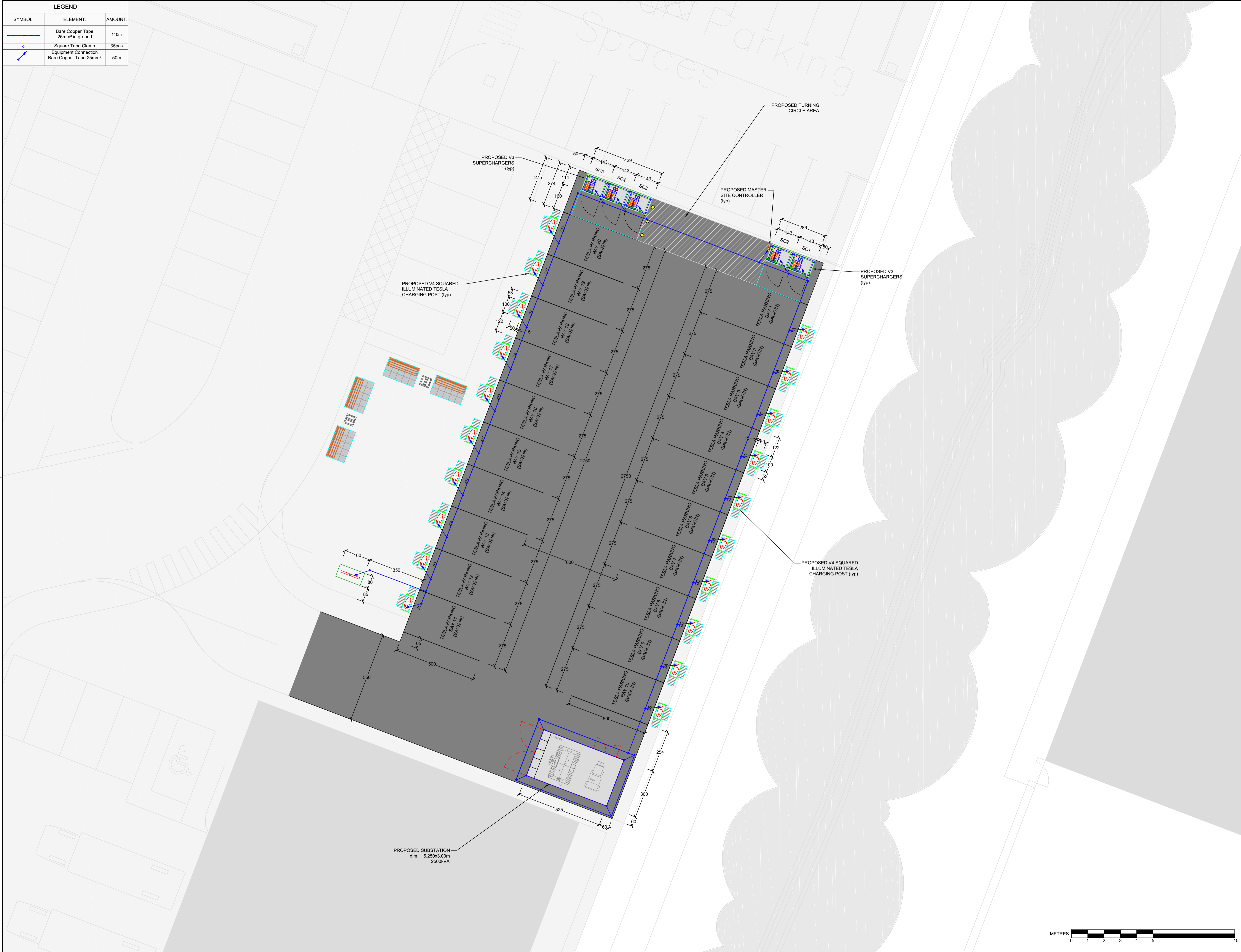
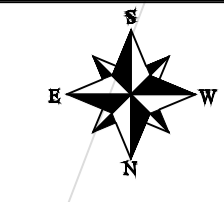
SHEET:  
3.3

DC CIRCUIT SCHEDULE					
FROM	TO	RUN LENGTH CONDUITS (m)	RUN LENGTH CONDUCT. (m)	CONDUIT DESCRIPTION (QUANTITY, SIZE, TYPE)	CONDUCTORS DESCRIPTION (PURPOSE: QUANTITY, QUANTITY PER CONDUIT, MATERIAL, TYPE)
SC 1 (SUPERCHARGER)	1A (CHARGE POST)	9	14	1x, 125mm, Flex.HDPE Cl.3 1X, 63mm, Flex.HDPE Cl.3	DC: 1x, 1x, NA2XY 4x300/50mm <sup>2</sup> 1x Tesla comm. Cable
SC 1 (SUPERCHARGER)	1B (CHARGE POST)	12	17	1x, 125mm, Flex.HDPE Cl.3 1X, 63mm, Flex.HDPE Cl.3	DC: 1x, 1x, NA2XY 4x300/50mm <sup>2</sup> 1x Tesla comm. Cable
SC 1 (SUPERCHARGER)	1C (CHARGE POST)	15	20	1x, 125mm, Flex.HDPE Cl.3 1X, 63mm, Flex.HDPE Cl.3	DC: 1x, 1x, NA2XY 4x300/50mm <sup>2</sup> 1x Tesla comm. Cable
SC 1 (SUPERCHARGER)	1D (CHARGE POST)	18	23	1x, 125mm, Flex.HDPE Cl.3 1X, 63mm, Flex.HDPE Cl.3	DC: 1x, 1x, NA2XY 4x300/50mm <sup>2</sup> 1x Tesla comm. Cable
SC 2 (SUPERCHARGER)	2A (CHARGE POST)	21	26	1x, 125mm, Flex.HDPE Cl.3 1X, 63mm, Flex.HDPE Cl.3	DC: 1x, 1x, NA2XY 4x300/50mm <sup>2</sup> 1x Tesla comm. Cable
SC 2 (SUPERCHARGER)	2B (CHARGE POST)	24	29	1x, 125mm, Flex.HDPE Cl.3 1X, 63mm, Flex.HDPE Cl.3	DC: 1x, 1x, NA2XY 4x300/50mm <sup>2</sup> 1x Tesla comm. Cable
SC 2 (SUPERCHARGER)	2C (CHARGE POST)	26	31	1x, 125mm, Flex.HDPE Cl.3 1X, 63mm, Flex.HDPE Cl.3	DC: 1x, 1x, NA2XY 4x300/50mm <sup>2</sup> 1x Tesla comm. Cable
SC 2 (SUPERCHARGER)	2D (CHARGE POST)	29	34	1x, 125mm, Flex.HDPE Cl.3 1X, 63mm, Flex.HDPE Cl.3	DC: 1x, 1x, NA2XY 4x300/50mm <sup>2</sup> 1x Tesla comm. Cable
SC 3 (SUPERCHARGER)	3A (CHARGE POST)	36	41	1x, 125mm, Flex.HDPE Cl.3 1X, 63mm, Flex.HDPE Cl.3	DC: 1x, 1x, NA2XY 4x300/50mm <sup>2</sup> 1x Tesla comm. Cable
SC 3 (SUPERCHARGER)	3B (CHARGE POST)	39	44	1x, 125mm, Flex.HDPE Cl.3 1X, 63mm, Flex.HDPE Cl.3	DC: 1x, 1x, NA2XY 4x300/50mm <sup>2</sup> 1x Tesla comm. Cable
SC 3 (SUPERCHARGER)	3C (CHARGE POST)	35	40	1x, 125mm, Flex.HDPE Cl.3 1X, 63mm, Flex.HDPE Cl.3	DC: 1x, 1x, NA2XY 4x300/50mm <sup>2</sup> 1x Tesla comm. Cable
SC 3 (SUPERCHARGER)	3D (CHARGE POST)	32	37	1x, 125mm, Flex.HDPE Cl.3 1X, 63mm, Flex.HDPE Cl.3	DC: 1x, 1x, NA2XY 4x300/50mm <sup>2</sup> 1x Tesla comm. Cable
SC 4 (SUPERCHARGER)	4A (CHARGE POST)	28	33	1x, 125mm, Flex.HDPE Cl.3 1X, 63mm, Flex.HDPE Cl.3	DC: 1x, 1x, NA2XY 4x300/50mm <sup>2</sup> 1x Tesla comm. Cable
SC 4 (SUPERCHARGER)	4B (CHARGE POST)	26	31	1x, 125mm, Flex.HDPE Cl.3 1X, 63mm, Flex.HDPE Cl.3	DC: 1x, 1x, NA2XY 4x300/50mm <sup>2</sup> 1x Tesla comm. Cable
SC 4 (SUPERCHARGER)	4C (CHARGE POST)	23	28	1x, 125mm, Flex.HDPE Cl.3 1X, 63mm, Flex.HDPE Cl.3	DC: 1x, 1x, NA2XY 4x300/50mm <sup>2</sup> 1x Tesla comm. Cable
SC 4 (SUPERCHARGER)	4D (CHARGE POST)	21	26	1x, 125mm, Flex.HDPE Cl.3 1X, 63mm, Flex.HDPE Cl.3	DC: 1x, 1x, NA2XY 4x300/50mm <sup>2</sup> 1x Tesla comm. Cable
SC 5 (SUPERCHARGER)	5A (CHARGE POST)	17	22	1x, 125mm, Flex.HDPE Cl.3 1X, 63mm, Flex.HDPE Cl.3	DC: 1x, 1x, NA2XY 4x300/50mm <sup>2</sup> 1x Tesla comm. Cable
SC 5 (SUPERCHARGER)	5B (CHARGE POST)	14	19	1x, 125mm, Flex.HDPE Cl.3 1X, 63mm, Flex.HDPE Cl.3	DC: 1x, 1x, NA2XY 4x300/50mm <sup>2</sup> 1x Tesla comm. Cable
SC 5 (SUPERCHARGER)	5C (CHARGE POST)	12	17	1x, 125mm, Flex.HDPE Cl.3 1X, 63mm, Flex.HDPE Cl.3	DC: 1x, 1x, NA2XY 4x300/50mm <sup>2</sup> 1x Tesla comm. Cable
SC 5 (SUPERCHARGER)	5D (CHARGE POST)	10	15	1x, 125mm, Flex.HDPE Cl.3 1X, 63mm, Flex.HDPE Cl.3	DC: 1x, 1x, NA2XY 4x300/50mm <sup>2</sup> 1x Tesla comm. Cable
CONTRACTOR TO VERIFY ACTUAL LENGTHS AND ENSURE ALL CONDUIT ROUTES DO NOT EXCEED MIN. RECOMM. BEND RADIUS ON SITE!					

AC CIRCUIT SCHEDULE					
FROM	TO	RUN LENGTH CONDUITS (m)	RUN LENGTH CONDUCT. (m)	CONDUIT DESCRIPTION (QUANTITY, SIZE, TYPE)	CONDUCTORS DESCRIPTION (PURPOSE: QUANTITY, QUANTITY PER CONDUIT, MATERIAL, TYPE)
LV SWITCHGEAR	SC 1 (SUPERCHARGER)	45	50	2x, 125mm, Flex.HDPE Cl.3	AC: 2x, 1x, Al, NA2XY-O 4x240mm <sup>2</sup> Pe: 2x, 1x, Al, NA2XY-O 1x120mm <sup>2</sup>
LV SWITCHGEAR	SC 2 (SUPERCHARGER)	44	49	2x, 125mm, Flex.HDPE Cl.3	AC: 2x, 1x, Al, NA2XY-O 4x240mm <sup>2</sup> Pe: 2x, 1x, Al, NA2XY-O 1x120mm <sup>2</sup>
LV SWITCHGEAR	SC 3 (SUPERCHARGER)	43	48	2x, 125mm, Flex.HDPE Cl.3	AC: 2x, 1x, Al, NA2XY-O 4x240mm <sup>2</sup> Pe: 2x, 1x, Al, NA2XY-O 1x120mm <sup>2</sup>
LV SWITCHGEAR	SC 4 (SUPERCHARGER)	45	50	2x, 125mm, Flex.HDPE Cl.3	AC: 2x, 1x, Al, NA2XY-O 4x240mm <sup>2</sup> Pe: 2x, 1x, Al, NA2XY-O 1x120mm <sup>2</sup>
LV SWITCHGEAR	SC 5 (SUPERCHARGER)	47	52	2x, 125mm, Flex.HDPE Cl.3	AC: 2x, 1x, Al, NA2XY-O 4x240mm <sup>2</sup> Pe: 2x, 1x, Al, NA2XY-O 1x120mm <sup>2</sup>
LV SWITCHGEAR	MSC	44	49	2x, 50mm, Flex.HDPE Cl.3	AC: 1x, 1x, Cu, NYY-J 3x4mm <sup>2</sup>
LV SWITCHGEAR	TESLA MONUMENT SIGN	17	22	1x, 50mm, Flex.HDPE Cl.3	AC: 1x, 1x, Cu, NYY-J 3x2.5mm
COMMUNICATION CABLE CIRCUIT SCHEDULE					
MSC	SC 1 (SUPERCHARGER)	8	13	1x, 50mm, Flex.HDPE Cl.3	1x, 1x, CAT.7 (PRE-WIRED)
MSC	SC 2 (SUPERCHARGER)	6	11	1x, 50mm, Flex.HDPE Cl.3	1x, 1x, CAT.7 (PRE-WIRED)
MSC	SC 3 (SUPERCHARGER)	14	19	1x, 50mm, Flex.HDPE Cl.3	1x, 1x, CAT.7 (PRE-WIRED)
MSC	SC 4 (SUPERCHARGER)	16	21	1x, 50mm, Flex.HDPE Cl.3	1x, 1x, CAT.7 (PRE-WIRED)
MSC	SC 5 (SUPERCHARGER)	17	22	1x, 50mm, Flex.HDPE Cl.3	1x, 1x, CAT.7 (PRE-WIRED)
HV DC BUS CIRCUIT SCHEDULE					
SC 3 (SUPERCHARGER)	SC 1 (SUPERCHARGER)	15	18	2x, 90mm, Flex.HDPE Cl.3	4x, 2x, ALU,WK ALU Tower 0.6/1kV 1x150mm <sup>2</sup> 2x, 1x, Cu, NYY-J 1x25mm <sup>2</sup>
SC 3 (SUPERCHARGER)	SC 2 (SUPERCHARGER)	14	17	2x, 90mm, Flex.HDPE Cl.3	4x, 2x, ALU,WK ALU Tower 0.6/1kV 1x150mm <sup>2</sup> 2x, 1x, Cu, NYY-J 1x25mm <sup>2</sup>
SC 3 (SUPERCHARGER)	SC 4 (SUPERCHARGER)	6	9	2x, 90mm, Flex.HDPE Cl.3	4x, 2x, ALU,WK ALU Tower 0.6/1kV 1x150mm <sup>2</sup> 2x, 1x, Cu, NYY-J 1x25mm <sup>2</sup>
SC 3 (SUPERCHARGER)	SC 5 (SUPERCHARGER)	7	10	2x, 90mm, Flex.HDPE Cl.3	4x, 2x, ALU,WK ALU Tower 0.6/1kV 1x150mm <sup>2</sup> 2x, 1x, Cu, NYY-J 1x25mm <sup>2</sup>
TOTAL CONDUITS AMOUNT					
CONDUIT	AMOUNT (m)				
125mm, Flex.HDPE Cl.3	895				
90mm, Flex.HDPE Cl.3	84				
63mm, Flex.HDPE Cl.3	447				
50mm, Flex.HDPE Cl.3	166				
TOTAL CONDUCTORS AMOUNT					
CONDUCTORS	AMOUNT (m)				
NA2XY-O 4x240mm <sup>2</sup>	498				
NA2XY-O 1x120mm <sup>2</sup>	498				
NA2XY 4x300/50mm <sup>2</sup>	547				
Tesla comm. cable	547				
NYJ 3x2.5mm <sup>2</sup>	22				
NYJ 3x4mm <sup>2</sup>	49				
WK ALU Tower 0.6/1kV 1x150mm <sup>2</sup>	216				
NYJ 1x25mm <sup>2</sup>	108				
CAT.7 (PRE-WIRED)	86				
Cover Tape 200mm	100				



LEGEND		
SYMBOL:	ELEMENT:	AMOUNT:
	Bare Copper Tape 25mm <sup>2</sup> in ground	110m
	Square Tape Clamp	35pcs
	Equipment Connection Bare Copper Tape 25mm <sup>2</sup>	50m



**TESLA**

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**DRAWING:**  
CD90 - Earthing

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UK

**LAND LORD:**  
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**UTILITY:**  
NORTHERN POWERGRID

**PAPER SIZE:**  
A1

**SCALE FACTOR:**  
M 1:100

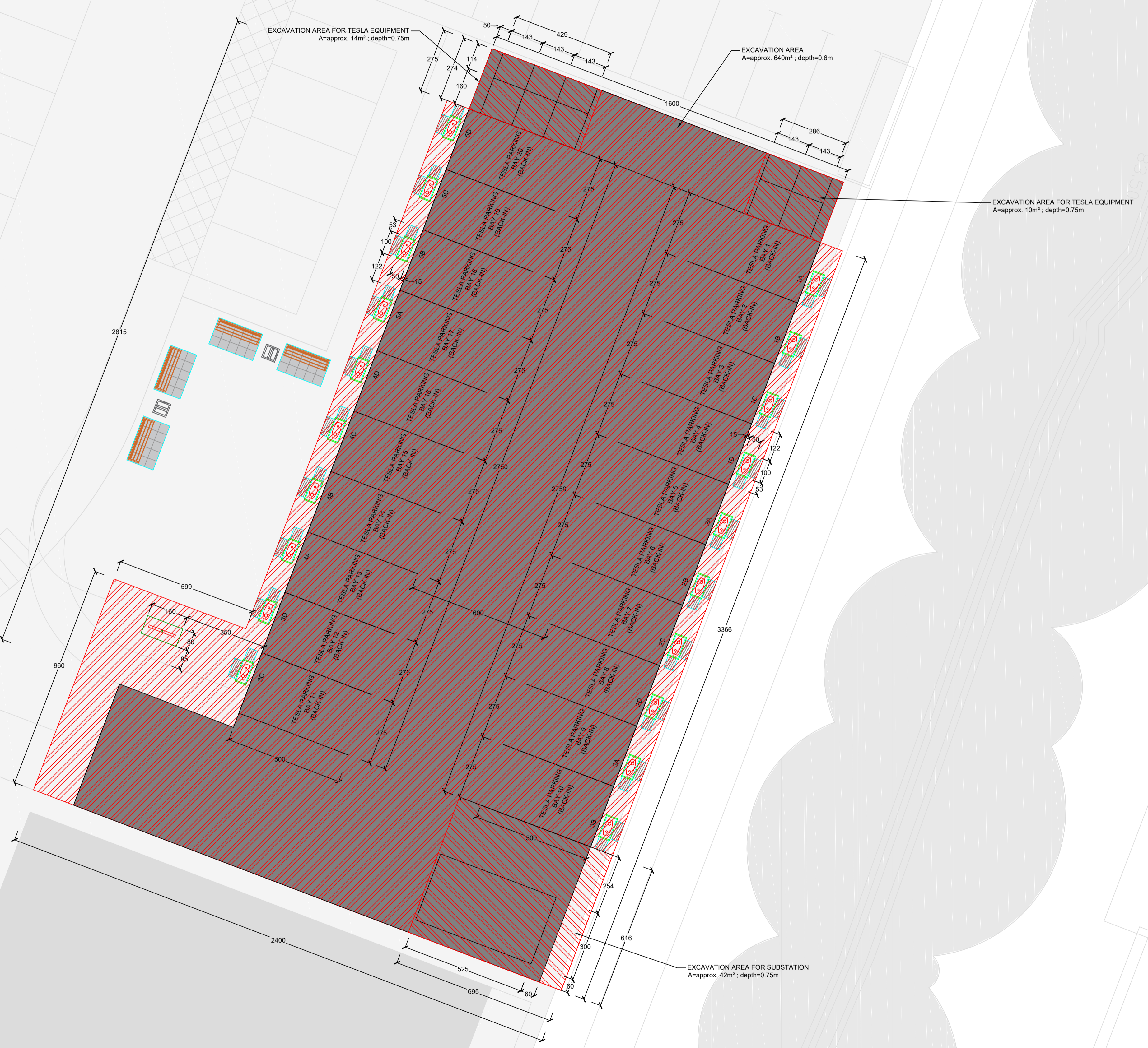
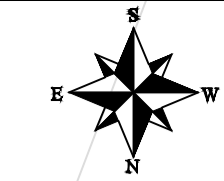
**UNITS:**  
centimeters

**FILE:**  
385 - Integra 61 Greenfield - CD90\_rev01

**NOTE:**  
Drawing is based on DWG file.

**SHEET:**  
4





**SITE NAME:**  
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**DRAWING:**  
CD90 - Excavation

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**UTILITY:**  
NORTHERN POWERGRID

**PAPER SIZE:**  
A1

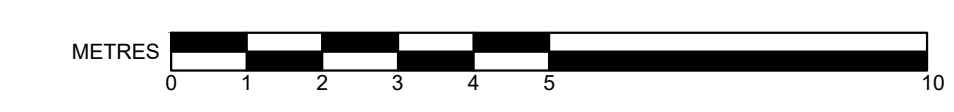
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**UNITS:**  
centimeters

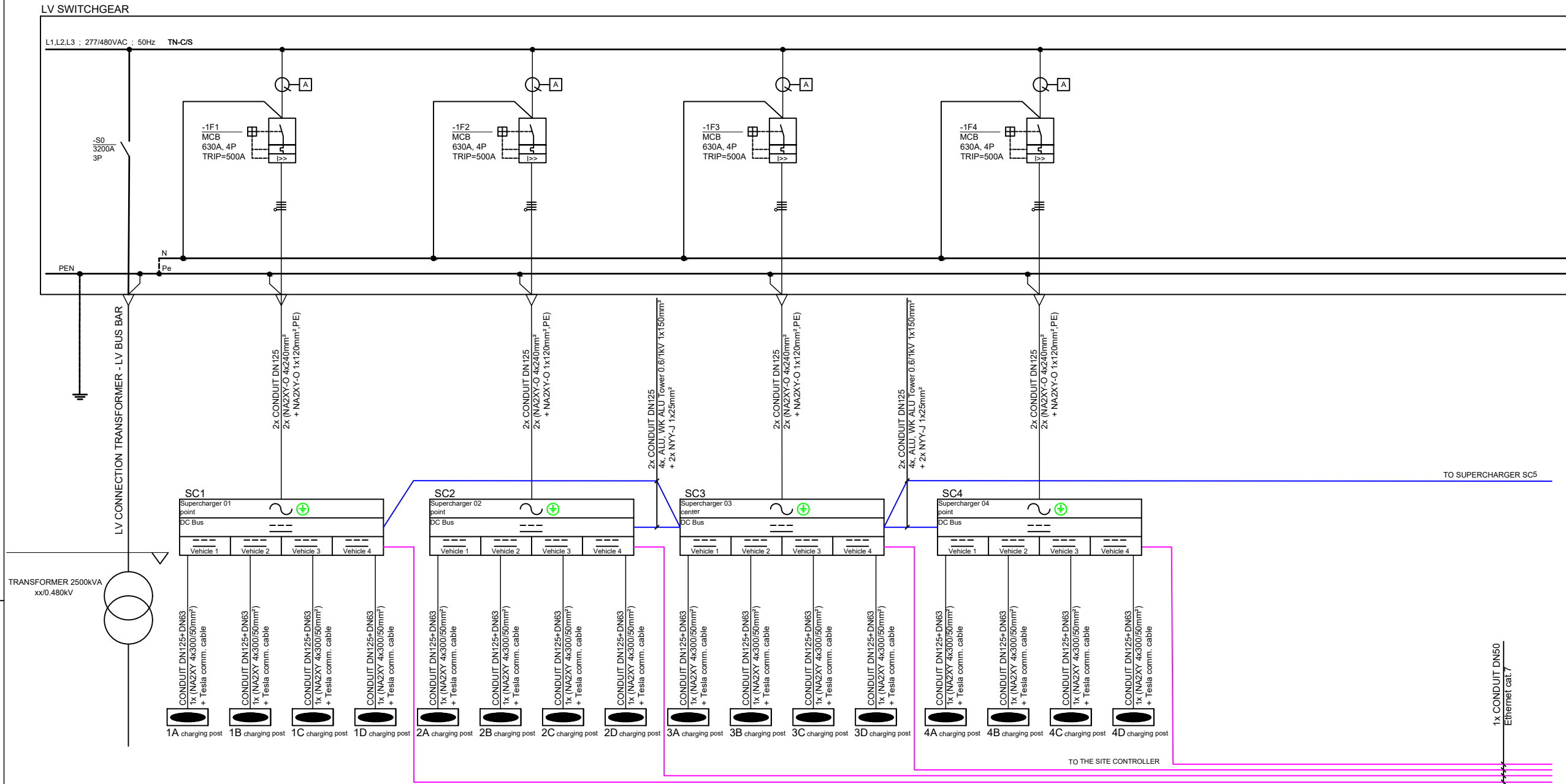
**FILE:**  
385 - Integra 61 Greenfield - CD90\_rev01

**NOTE:**  
Drawing is based on DWG file.

**SHEET:**  
5







**SWITCHGEAR CIRCUIT SCHEDULE**

EQUIPMENT	EQUIPMENT FED	RATING	TRIP SETTING	# OF POLES	
Main Breaker	-S0	All Branch Breakers	3200A	3200A	3
Branch Fuse	-1F1	Supercharger 1	630A	500A	4
Branch Fuse	-1F2	Supercharger 2	630A	500A	4
Branch Fuse	-1F3	Supercharger 3	630A	500A	4
Branch Fuse	-1F4	Supercharger 4	630A	500A	4
Branch Fuse	-1F5	Supercharger 5	630A	500A	4
Branch Fuse	-2F1	Site Master Controller	10A		1
Branch Fuse	-3F1	Auxiliary circuits	20A		1
Branch Fuse	-3F2	Auxiliary circuits	16A		1
Branch Fuse	-3F3	Heater	10A		1
Branch Fuse	-3F4	Cabinet Service Lighting	10A		1
Branch Fuse	-3F5	Light Column (Reserve)	16A		1



SITE NAME:  
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DRAWING:  
CD90 - Electrical Diagram part 2/2

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NORTHERN POWERGRID

PAPER SIZE:  
A3

SCALE FACTOR:  
unscaled

UNITS:  
centimeters

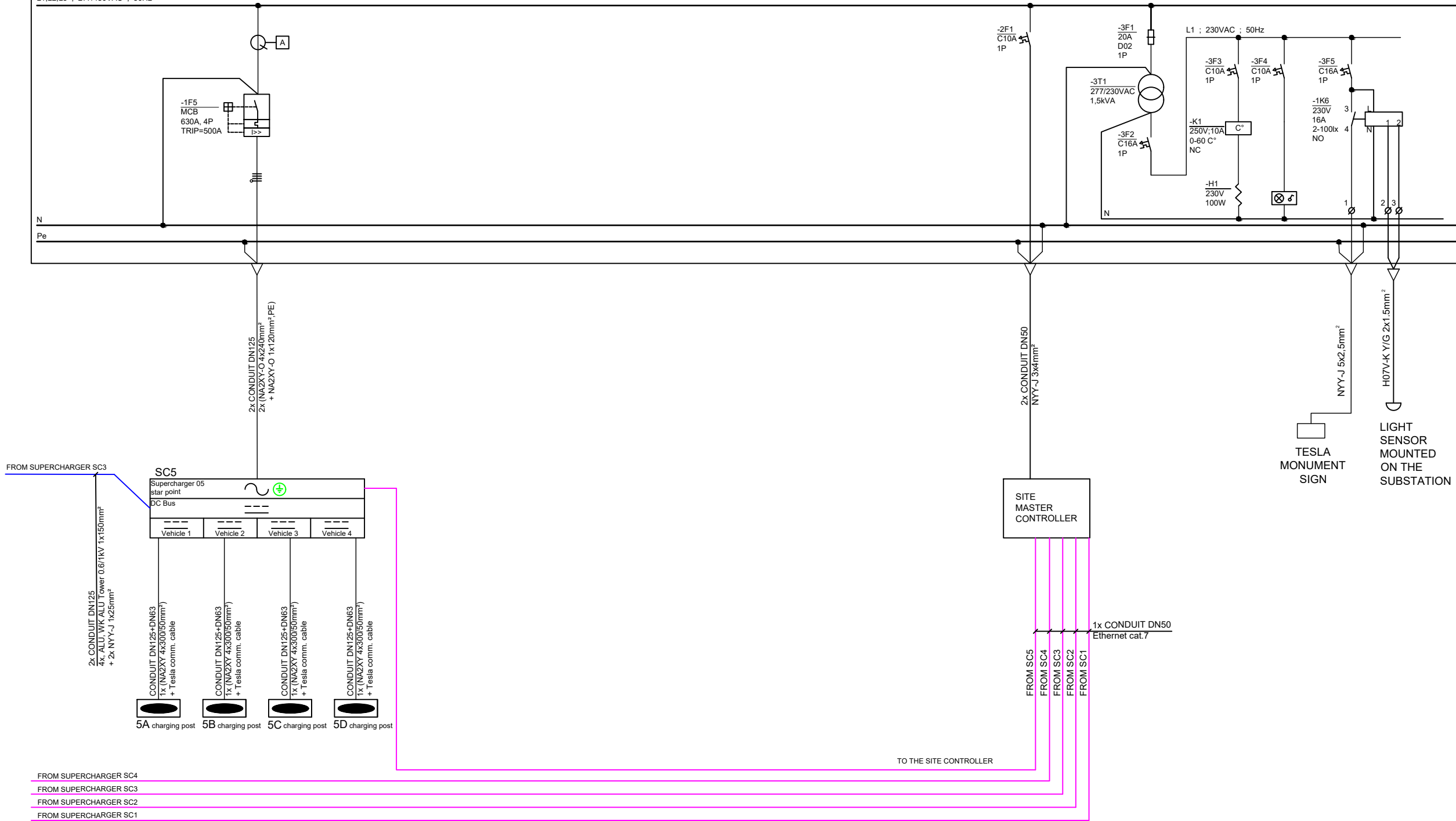
FILE:  
385 - Integra 61 Greenfield - CD90\_revG1

NOTE:  
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SHEET:  
6.2

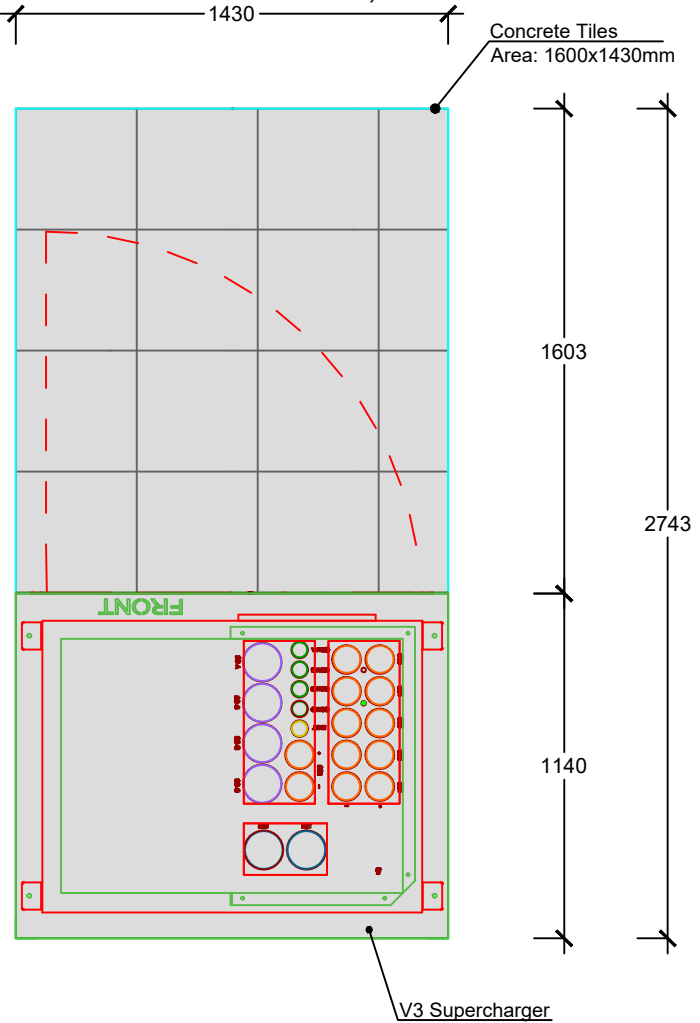
LV SWITCHGEAR - PART 2/2

L1,L2,L3 ; 277/480VAC ; 50Hz



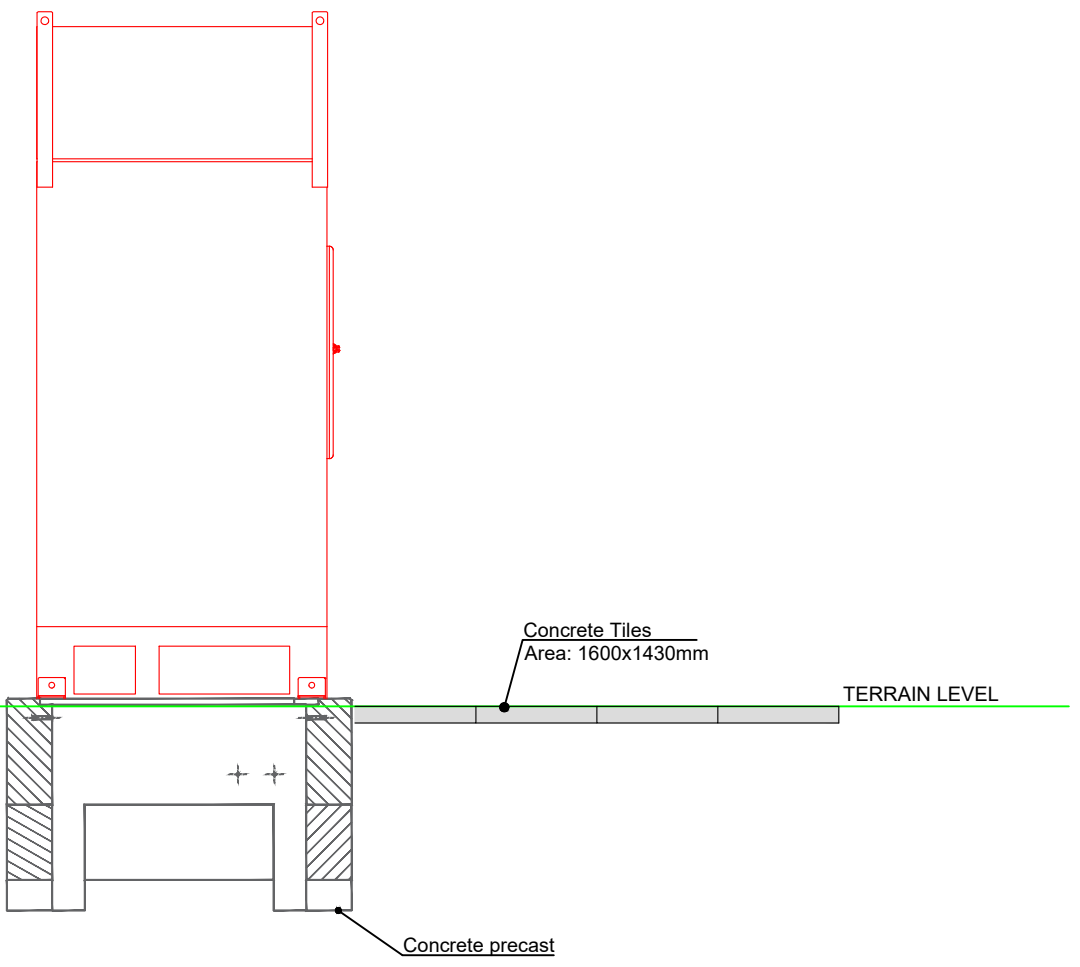
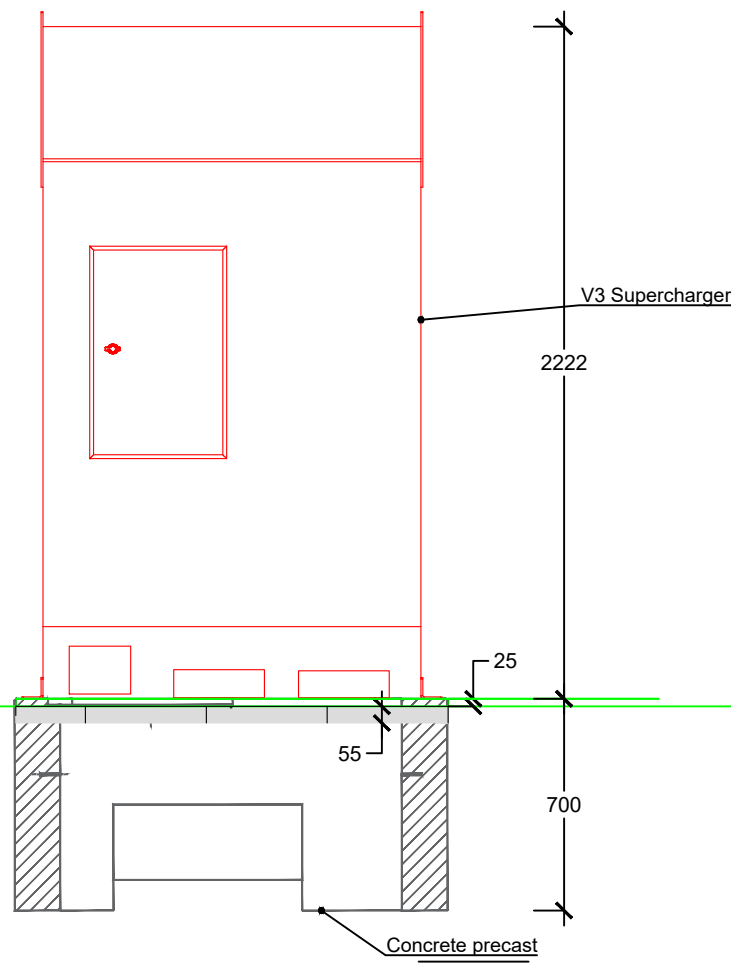
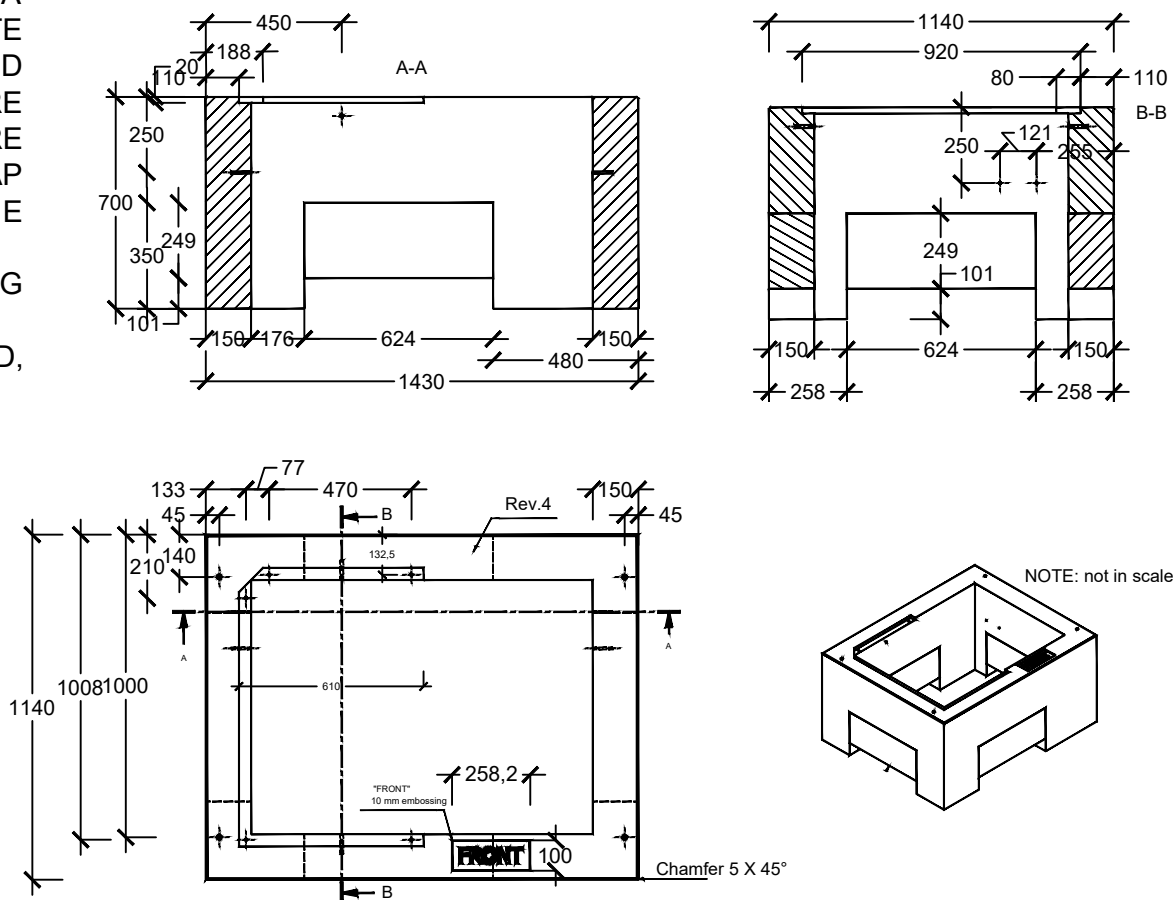


V3 SUPECHARGER - TOP, FRONT AND SIDE VIEW



1. DRY CONCRETE, COMPACTED SAND, ETC. CAN BE USED AS A BASE FOR CONCRETE PRECAST ONLY IF GROUND REQUIRES ONE. SQUARE CONCRETE PRECASTS ARE PLACED, WITHOUT A GAP BETWEEN THEM, OVER THE BASE LAYER.
2. CONDUITS AND GROUNDING WIRE ARE PLACED.
3. AFTER THE GROUND IS FILLED, CONCRETE TILES ARE ADDED.

V3 SUPECHARGER CONCRETE PRECAST



SITE NAME:  
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DRAWING:  
CD90 - Supercharger Design

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SCALE FACTOR:  
-

UNITS:  
millimeters

FILE:  
385 - Integra 61 Greenfield - CD90\_revG1

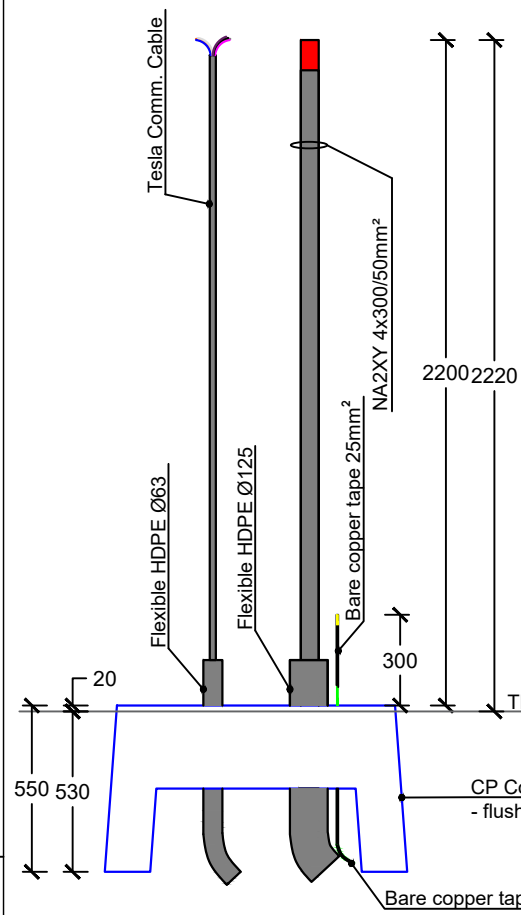
NOTE:  
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SHEET:  
7.1

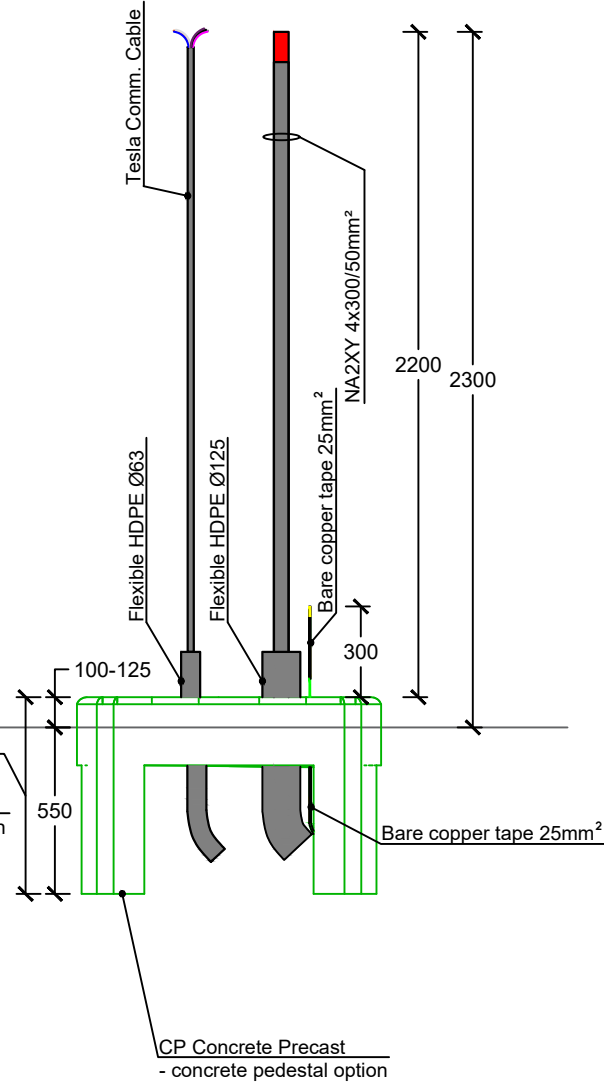


# CHARGE POST CABLES LENGTH

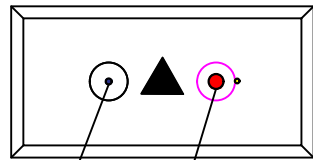
## CHARGE POST - FLUSH WITH KERB OPTION



## CHARGE POST - CONCRETE PEDESTAL OPTION



### FRONT SIDE

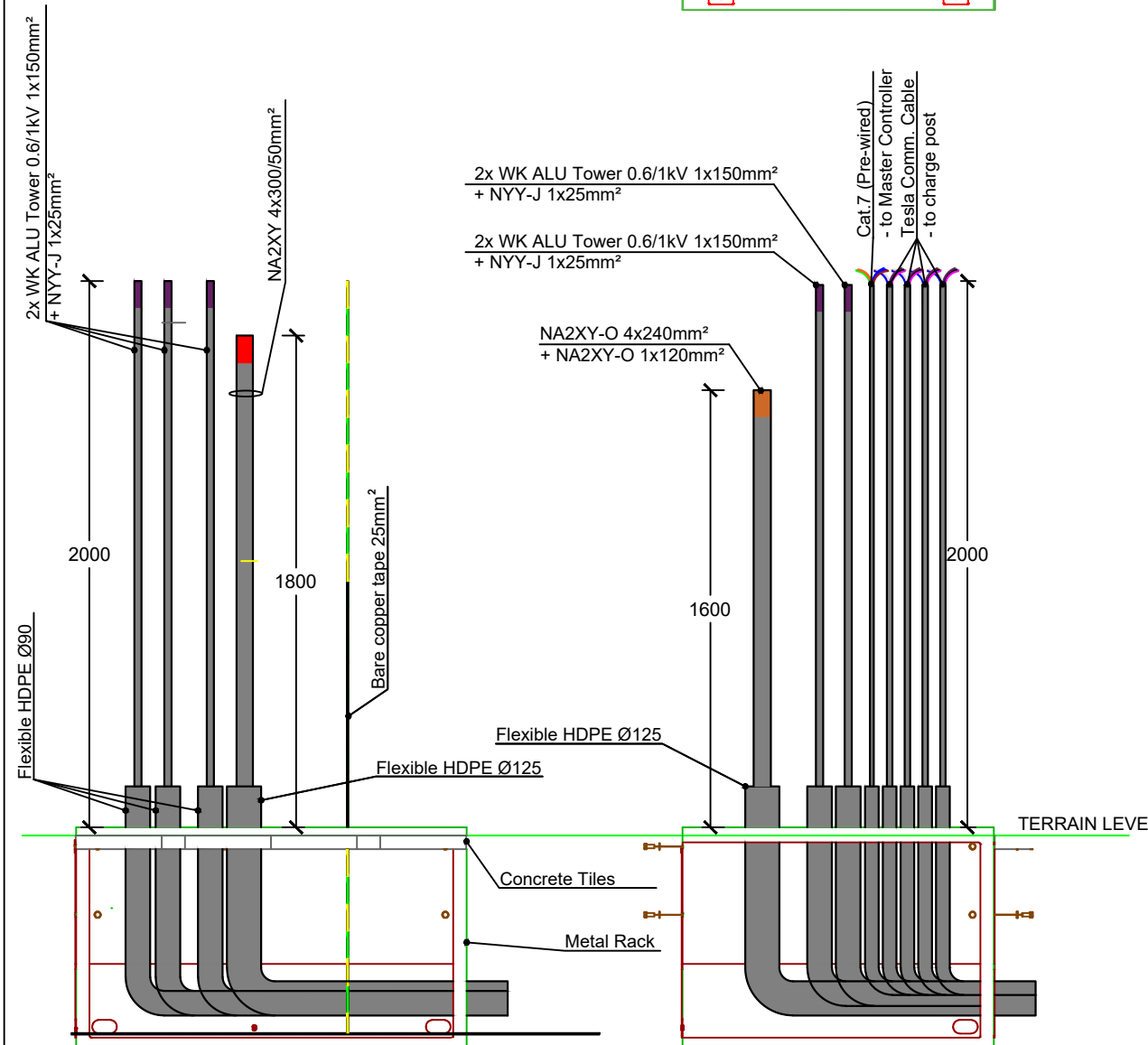
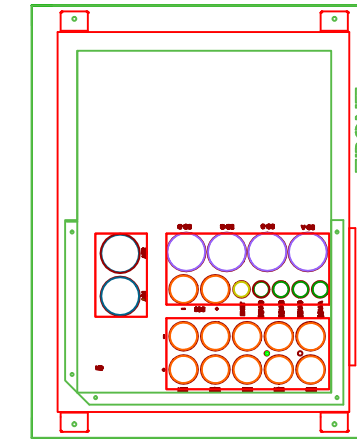
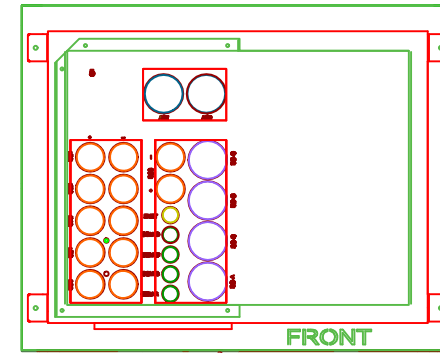


Flexible HDPE Ø63  
Tesla comm. cable

NA2XY 4x300/50mm²

POWER CABLE PULLED INTO THE DC CONDUIT (DN125)!  
THE TESLA COMMUNICATION CABLE IS PULLED INTO THE COMM CONDUIT (DN63)!  
GROUNDING WIRE IS PLACED NEXT TO THE DC CIRCUIT!

# SUPERCHARGER CABLES LENGTH



THESE HEIGHTS ARE ONLY FOR REFERENCE!  
DON'T CUT ANY CABLES BEFORE DOUBLE CHECKING THE LOCAL CONDITIONS!  
HORIZONTAL LENGTHS NEED TO BE ADDED FOR GROUNDING CABLES AND HVDC & HVDC MID CABLES!

### CUT THE CABLES ACCORDING TO THIS AND TABLE:

1. GROUNDING, EQUIPOTENTIAL BONDING 120mm
2. HVDC (-), HVDC (+) & HVDC Mid 200cm
3. AC 160cm
4. COMMUNICATION & ETHERNET 200cm
5. DC 180cm



SITE NAME:  
Integra 61 Greenfield

DRAWING:  
CD90 - SC and CP Cable Connections

DATE ISSUED:  
24/08/2023

SITE ADDRESS:  
Unit 1, Low Main Court,  
Integra 61 North, Bowburn  
Durham DH6 5NP  
UK

LAND LORD:  
-

UTILITY:  
NORTHERN POWERGRID

PAPER SIZE:  
A3

SCALE FACTOR:  
-

UNITS:  
millimeters

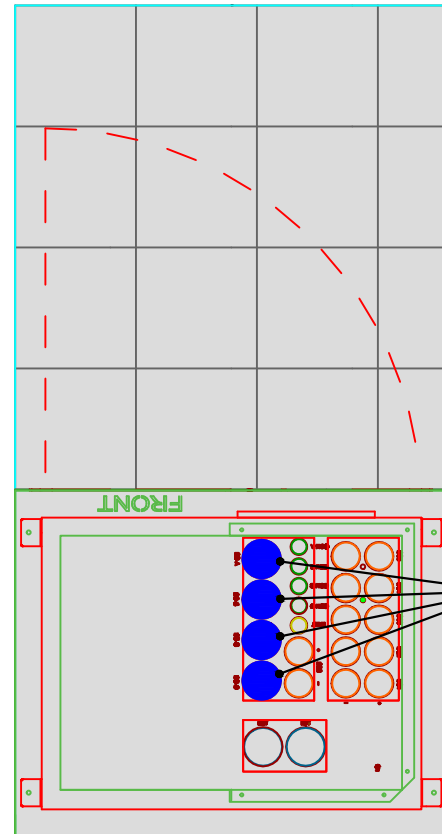
FILE:  
385 - Integra 61 Greenfield - CD90\_revG1

NOTE:  
Drawing is based on DWG file.

SHEET:  
7.2

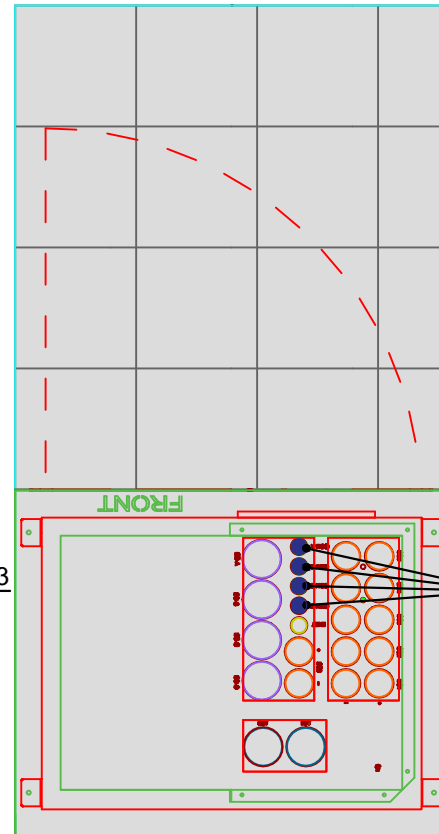


DC CABLES TO CHARGE POSTS



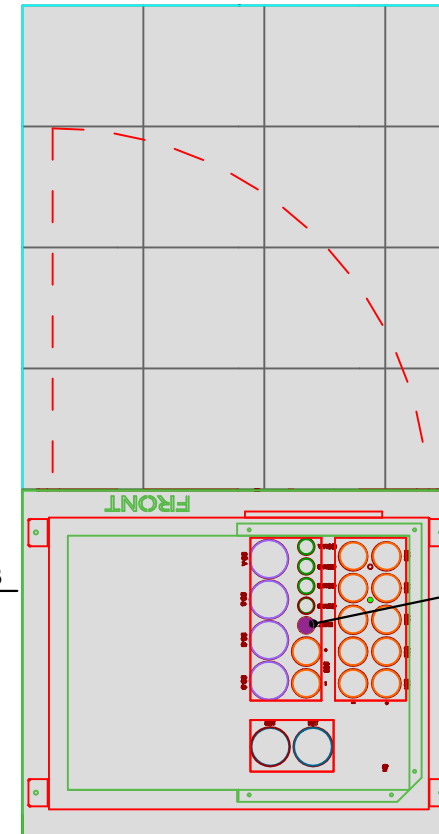
1x, 125mm, Flex.HDPE Cl.3  
1x (NA2XY 4x300/50mm<sup>2</sup>)  
to charge post

TESLA COMM CABLES TO CHARGE POSTS



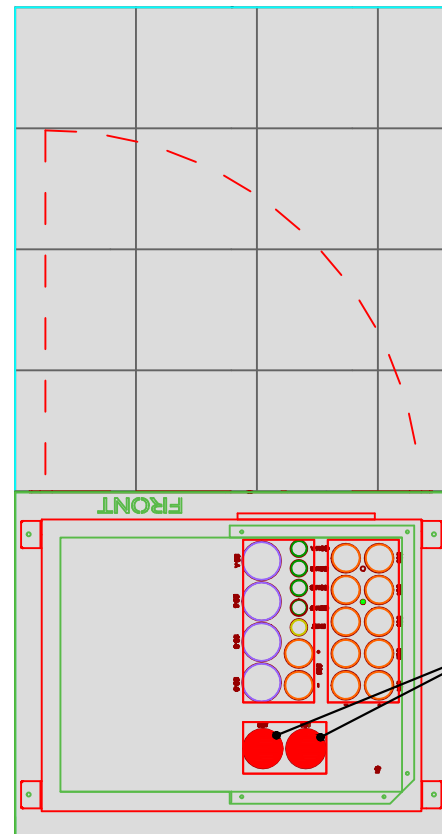
1x, 63mm, Flex.HDPE Cl.3  
TESLA Comm. Cable  
to charge post

COMMUNICATION CABLE TO MASTER CONTROL.



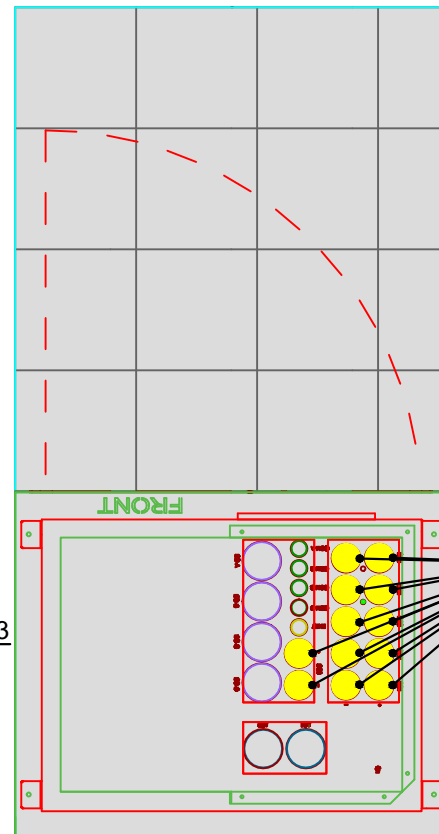
1x, 50mm, Flex.HDPE Cl.3  
CAT.7 (PRE-WIRED)  
from site controller

LV SUPPLY LINE FROM LV SWITCHGEAR



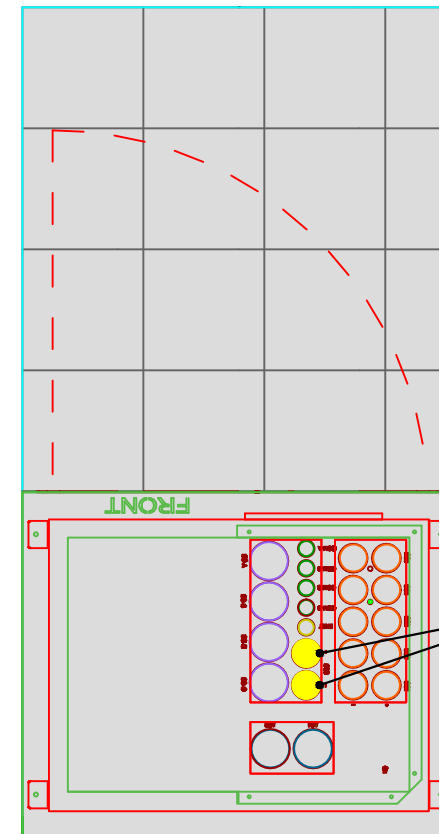
1x, 125mm, Flex.HDPE Cl.3  
NA2XY-O 4x240mm<sup>2</sup>  
+ NA2XY-O 1x120mm<sup>2</sup>  
from LV Switchgear

STAR-CENTER CABINET - HV DC BUS



1x, 90mm, Flex.HDPE Cl.3  
2x (WK ALU Tower 0.6/1kV 1x150mm<sup>2</sup>)  
+ NYY-J 1x25mm<sup>2</sup>  
DC BUS between superchargers

STAR-POINT CABINET - HV DC BUS



1x, 90mm, Flex.HDPE Cl.3  
2x (WK ALU Tower 0.6/1kV 1x150mm<sup>2</sup>)  
+ NYY-J 1x25mm<sup>2</sup>  
DC BUS between superchargers

SITE NAME:  
Integra 61 Greenfield

DRAWING:  
CD90 - SC Cable  
Connections

DATE ISSUED:  
24/08/2023

SITE ADDRESS:  
Unit 1, Low Main Court,  
Integra 61 North, Bowburn  
Durham DH6 5NP  
UK

LAND LORD:  
-

UTILITY:  
NORTHERN POWERGRID

PAPER SIZE:  
A3

SCALE FACTOR:  
-

UNITS:  
millimeters

FILE:  
385 - Integra 61 Greenfield - CD90\_revG1

NOTE:  
Drawing is based on DWG file.

SHEET:  
7.3



SITE NAME:  
Integra 61 Greenfield

DRAWING:  
CD90 - SC and CP Cable Connections

DATE ISSUED:  
24/08/2023

SITE ADDRESS:  
Unit 1, Low Main Court,  
Integra 61 North, Bowburn  
Durham DH6 5NP  
UK

LAND LORD:  
-

UTILITY:  
NORTHERN POWERGRID

PAPER SIZE:  
A3

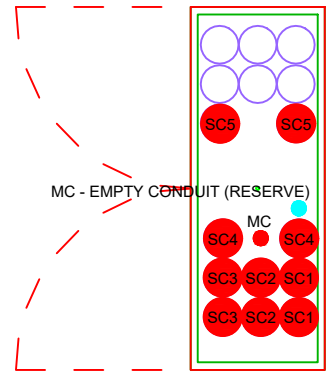
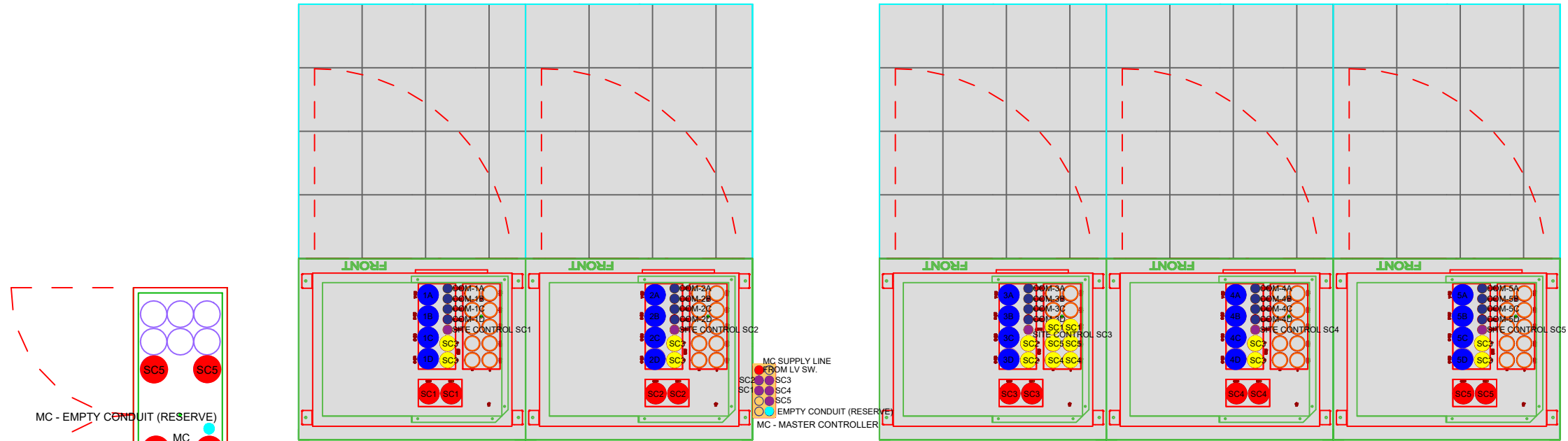
SCALE FACTOR:  
-

UNITS:  
millimeters

FILE:  
385 - Integra 61 Greenfield - CD90\_revG1

NOTE:  
Drawing is based on DWG file.

SHEET:  
7.4



LV SWITCHGEAR INSIDE SUBSTATION

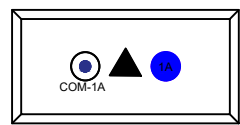
SUPERCHARGER SC1  
STAR-POINT

SUPERCHARGER SC2  
STAR-POINT

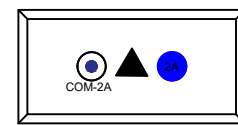
SUPERCHARGER SC3  
STAR-CENTER

SUPERCHARGER SC4  
STAR-POINT

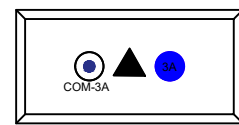
SUPERCHARGER SC5  
STAR-POINT



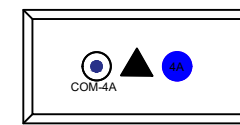
CHARGE POST 1A



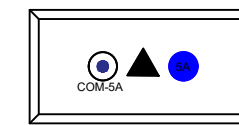
CHARGE POST 2A



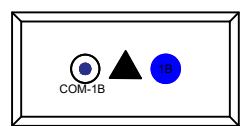
CHARGE POST 3A



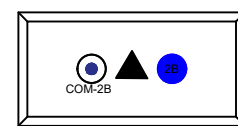
CHARGE POST 4A



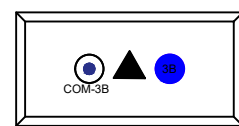
CHARGE POST 5A



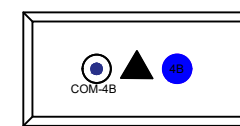
CHARGE POST 1B



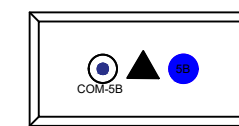
CHARGE POST 2B



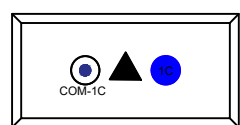
CHARGE POST 3B



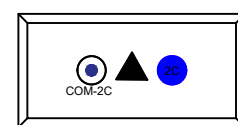
CHARGE POST 4B



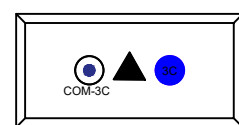
CHARGE POST 5B



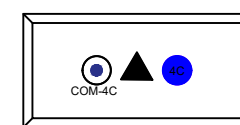
CHARGE POST 1C



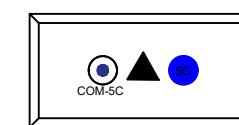
CHARGE POST 2C



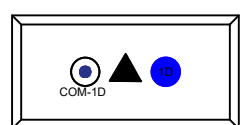
CHARGE POST 3C



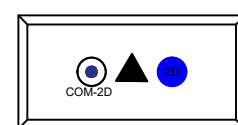
CHARGE POST 4C



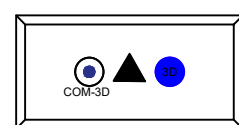
CHARGE POST 5C



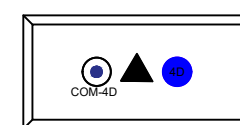
CHARGE POST 1D



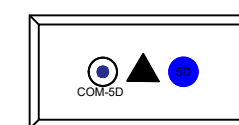
CHARGE POST 2D



CHARGE POST 3D



CHARGE POST 4D



CHARGE POST 5D



SITE NAME:  
Integra 61 Greenfield

DRAWING:  
CD90 - Charge Post  
Details

DATE ISSUED:  
24/08/2023

SITE ADDRESS:  
Unit 1, Low Main Court,  
Integra 61 North, Bowburn  
Durham DH6 5NP  
UK

LAND LORD:  
-

UTILITY:  
NORTHERN POWERGRID

PAPER SIZE:  
A3

SCALE FACTOR:  
M 1:25

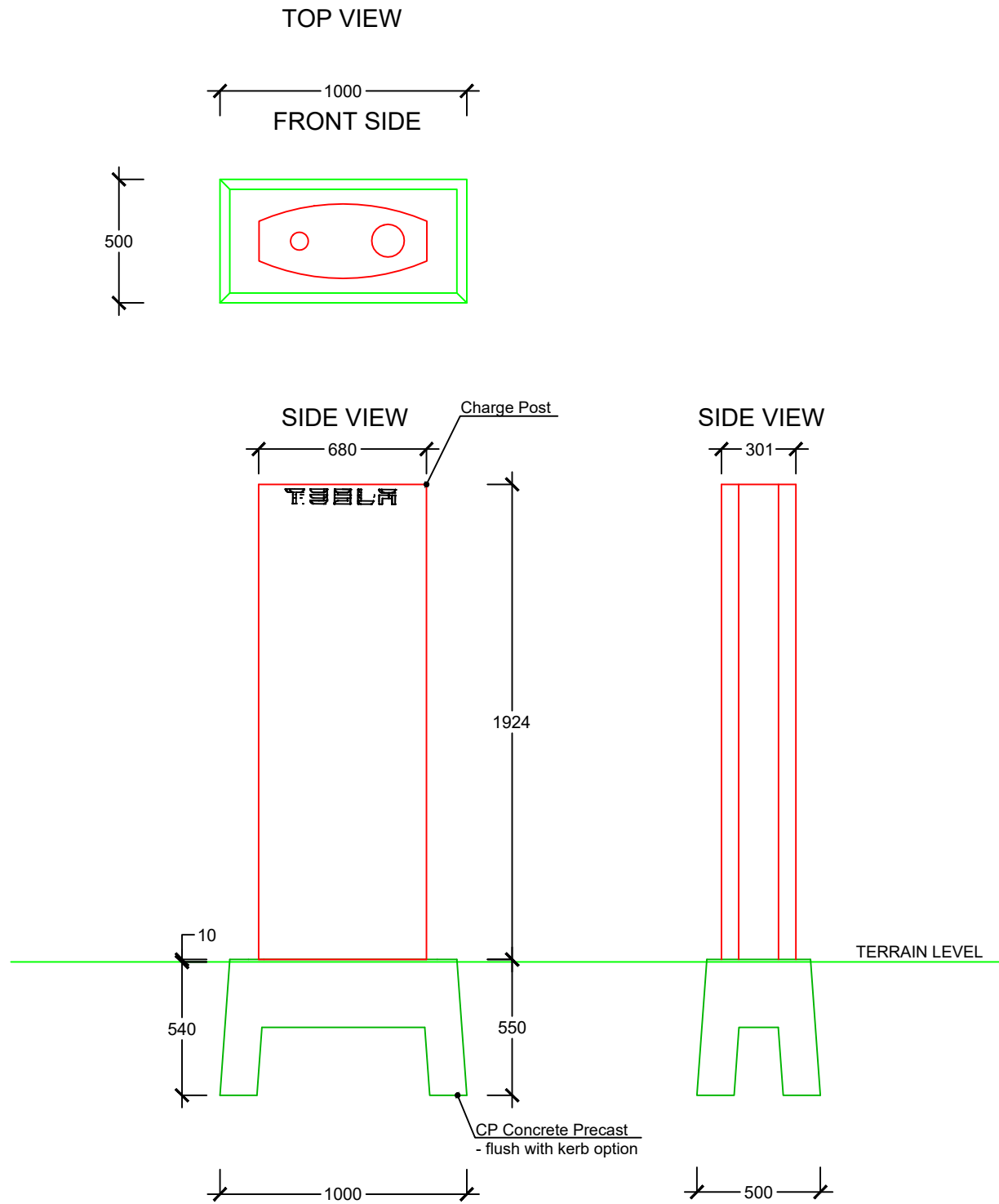
UNITS:  
millimeters

FILE:  
385 - Integra 61 Greenfield - CD90\_revG1

NOTE:  
Drawing is based on DWG file.

SHEET:  
8

CHARGE POST WITH SQUARED CONCRETE PRECAST DETAILS



SITE NAME:  
Integra 61 Greenfield

DRAWING:  
CD90 - Cable and Trench  
Details

DATE ISSUED:  
24/08/2023

SITE ADDRESS:  
Unit 1, Low Main Court,  
Integra 61 North, Bowburn  
Durham DH6 5NP  
UK

LAND LORD:  
-

UTILITY:  
NORTHERN POWERGRID

PAPER SIZE:  
A3

SCALE FACTOR:  
-

UNITS:  
millimeters

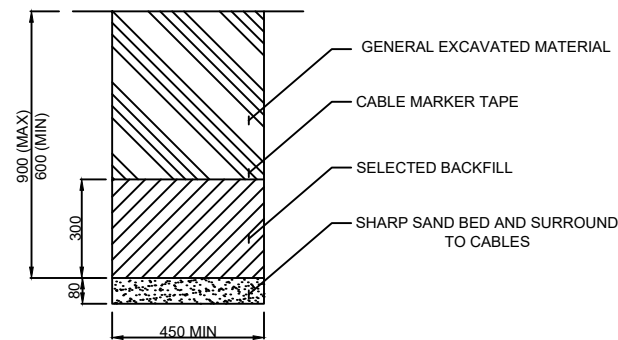
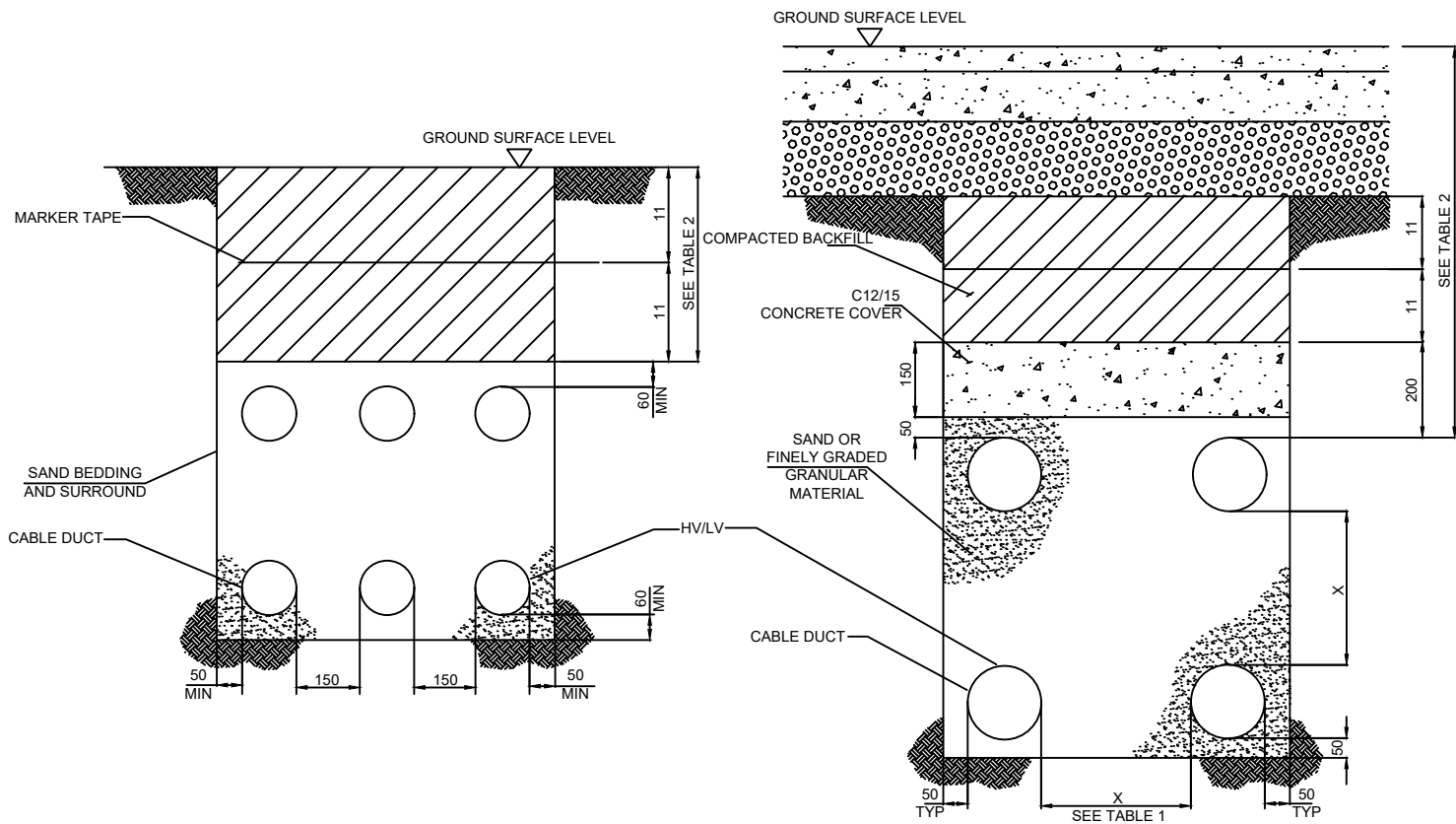
FILE:  
385 - Integra 61 Greenfield - CD90\_revG1

NOTE:  
Drawing is based on DWG file.

SHEET:  
9

**NOTES**

1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE
2. DO NOT SCALE FROM THIS DRAWING
3. TABLE 1 REFERS TO MINIMUM SPACING BETWEEN CABLE DUCTS FOR PARTICULAR CONFIGURATION
4. HV CABLES TO BE LAID IN A SEPARATE TRENCH FROM ICA CABLES WITH MINIMUM SPACING AS INDICATED IN TABLE 1
5. ALL DUCTS 150MM IN DIAMETER UNLESS STATED OTHERWISE
6. ALL DUCTS EXTEND AT LEAST 600MM BEYOND KERB FACE AND CONCRETE SURROUND EXTENDS AT LEAST 300MM BEYOND KERB FACE
7. TABLE 2 REFERS TO MINIMUM DEPTHS, WHICH DEPEND UPON EXISTING PLANT
8. SEE BS EN 1401-1 (1998) FOR PLASTIC PIPING SYSTEMS (NON-PRESSURE UNDERGROUND DRAINAGE AND SEWERAGE)
9. CROSSINGS SHOULD GENERALLY BE AT 90° FOR CABLE/DUCTS EXISTING PLANT LOCATION WAY RESTRICT THIS, HOWEVER TO OBLIQUE CROSSINGS
10. CABLES MAY BE LAID IN OPEN TRENCH UNDER CERTAIN CONDITION
11. SIZE AND ARRANGEMENT OF CABLES DUCTS TO BE VERIFIED BY CABLE DESIGNER



**NOTES**

1. ALL CLAUSES REFER TO SR/UPERCHARGING STATION
2. BEDDING AND SIDEFILL MATERIALS FOR BURIED PIPELINES SHALL BE AS PER CLAUSE 2.88
3. SELECTED BACKFILL MATERIAL SHALL BE TO CLAUSE 2.49.2 AND COMPACTED AS PER CLAUSE 5.4
4. MATERIAL EXCAVATED FROM TRENCHES DUG THROUGH LAND CONTAMINATED WITH DOMESTIC BUILDING OR INDUSTRIAL WASTE SHALL NOT BE USED AS BEDDING OR SIDEFILL MATERIAL
5. BACKFILLING DETAILS DO NOT APPLY TO ROADS
6. MARKER POSTS SHALL BE PROVIDED IN ACCORDANCE WITH CLAUSE 2.75.4.

**SPACING BETWEEN CABLE DUCTS (TABLE 1)**

TYPE OF CABLE	TO HV CABLE/DUCT DIMENSION x (MM)	TO LV CABLE/DUCT DIMENSION x (MM)	CONTROL 110V DIMENSION x (MM)	TO INSTRUMENTATION DUCT DIMENSION x (MM)	TO GAS, WATER ETC PIPES DIMENSION x (MM)
HV	150	300	600	600	600
LV	300	150	150	300	300
CONTROL 110V	600	150	50	50	300
INSTRUMENTATION	600	300	50	50	300

**DEPTHS TO TOP OF CABLE DUCT (TABLE 2)**

TYPE OF CABLE	FOOTPATHS	ACROSS ROAD	ALONG ROADS	AGRICULTURAL LAND
LV	800	700-900*	900	900
LV/ICA	400	500-700*	900	900



SITE NAME:  
Integra 61 Greenfield

DRAWING:  
CD90 - Substation Details

DATE ISSUED:  
24/08/2023

SITE ADDRESS:  
Unit 1, Low Main Court,  
Integra 61 North, Bowburn  
Durham DH6 5NP  
UK

LAND LORD:  
-

UTILITY:  
NORTHERN POWERGRID

PAPER SIZE:  
A3

SCALE FACTOR:  
-

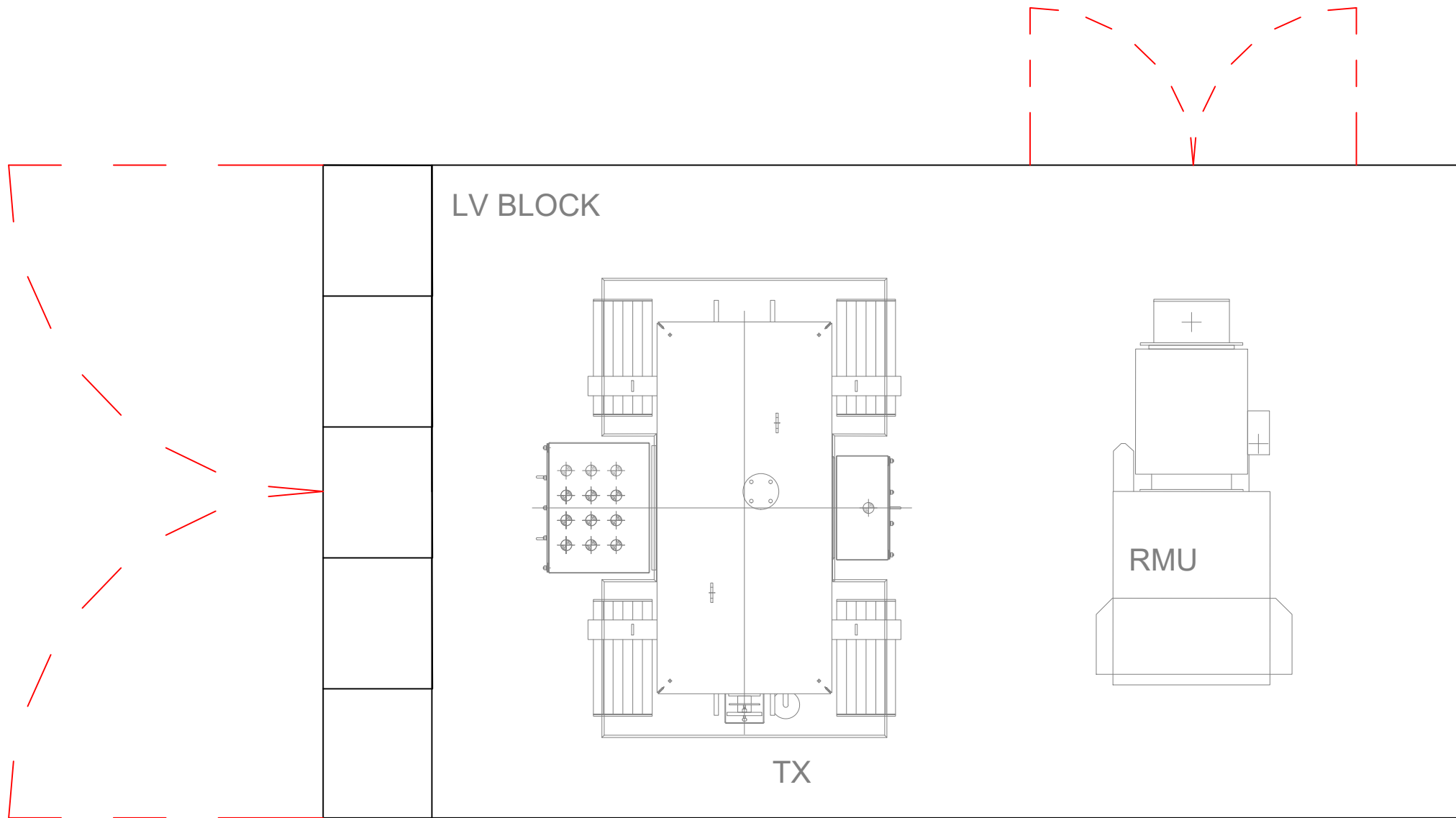
UNITS:  
millimeters

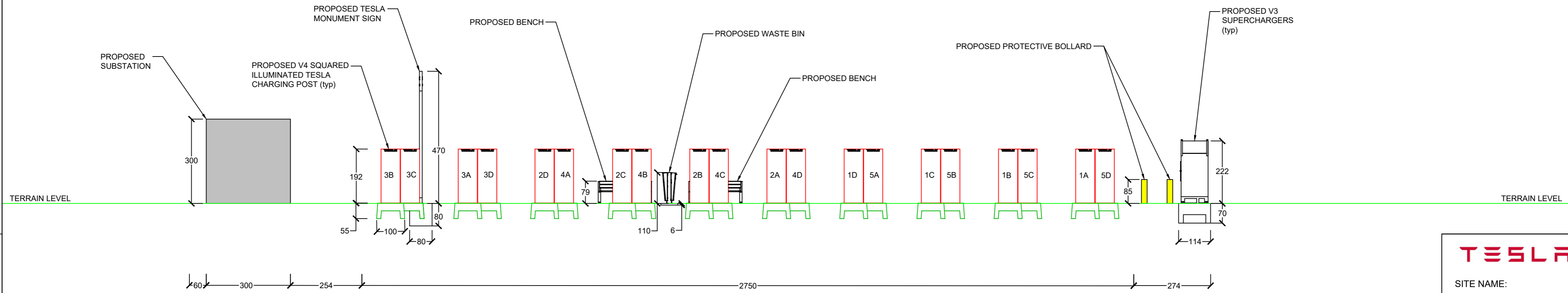
FILE:  
385 - Integra 61 Greenfield - CD90\_revG1

NOTE:  
Drawing is based on DWG file.

SHEET:  
10

5250





**SITE ELEVATION  
LOOKING NORTH**

**SITE ELEVATION  
LOOKING WEST**



**SITE NAME:**  
Integra 61 Greenfield

**DRAWING:**  
CD90 - Site elevation looking north and west

**DATE ISSUED:**  
24/08/2023

**SITE ADDRESS:**  
Unit 1, Low Main Court,  
Integra 61 North, Bowburn  
Durham DH6 5NP  
UK

**LAND LORD:**  
-

**UTILITY:**  
NORTHERN POWERGRID

**PAPER SIZE:**  
A2

**SCALE FACTOR:**  
M 1:100

**UNITS:**  
centimeters

**FILE:**  
385 - Integra 61 Greenfield - CD90\_revG1

**NOTE:**  
Drawing is based on DWG file.

**SHEET:**  
11.

