

Appendix B

Option 1 drawings, reports & datasheet

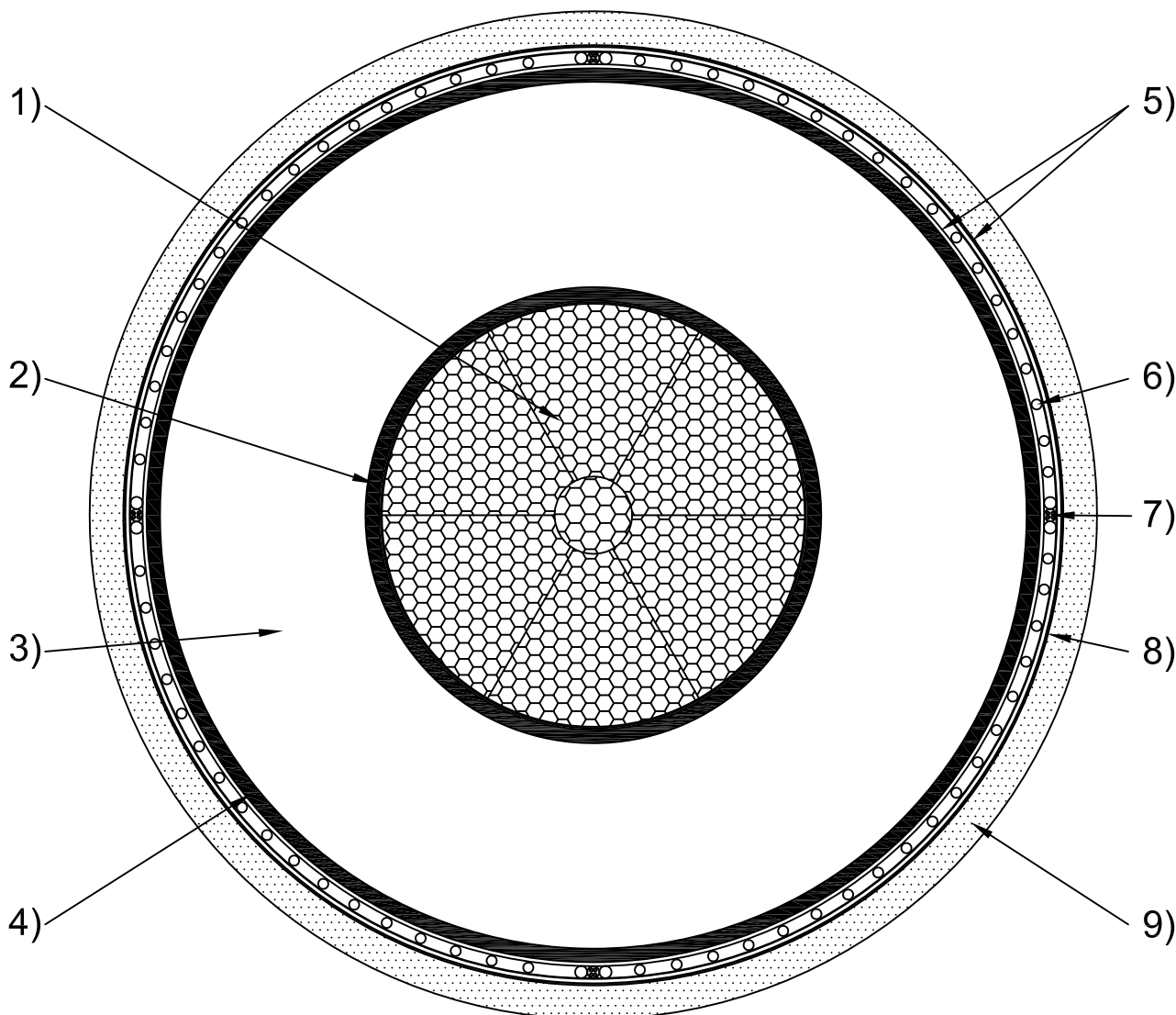
0	For approval	12-Dec-14	E. K. KIM	K. R. PARK	D. Y. KIM
Rev.	Details of revision	Date	Prepared	Checked	Approved
Client  SOUTHERN CALIFORNIA EDISON[®] An EDISON INTERNATIONAL[®] Company					
Project Tehachapi Renewable Transmission Project					
P.O Number 4500687674				Date 12-Dec-14	
Contractor  TAIHAN ELECTRIC WIRE CO., LTD.					
Title 2.2.1 Cable - Section 16848.2.1 " a & b "					
Document No. AP-K141212-2.2.1.a.b				Rev. 0	

Cross section of 500kV 1C x 5000KCMIL XLPE CABLE (CU / XLPE / CWS / FIBER OPTIC / HDPE)
6 seg, compacted copper conductor, XLPE insulation, Copper wire screen + CU-foil sheath, Fiber optic
HDPE outer jacket with Graphite coating

RATED VOLTAGE : 500 kV

CONDUCTOR SIZE : 5000 kcmil

BASIC STANDARD : Tender spec.



No.	DESCRIPTION	MATERIAL	Thickness (mil)	Diameter Approx., inch				
1)	CONDUCTOR	6seg, Compacted Annealed copper wires with Non woven fabric tape	0.107(inch) x 19 str. 0.122(inch) x 61 str.	2.48				
2)	CONDUCTOR SCREEN	Semi - conductive tape & Semi - conductive compound	7.874 78.74	2.67				
3)	INSULATION	Cross - linked polyethylene [XLPE]	Average 1200.0	5.11				
4)	INSULATION SCREEN	Semi-conductive compound	78.74	5.27				
5)	WATER BLOCKING LAYER	Semi-conductive swellable tape	Each 19.6	-				
6)	METALLIC SCREEN	Annealed copper wires with equalizing tape	0.0787(inch) x 50 str.	5.50				
7)	FIBER OPTIC CABLE	2 Muti-mode + 2 Single-mode in S/S	0.0708(inch) x 4 set	-				
8)	METALLIC SHEATH	PE Laminated copper tape	5.0	5.63				
9)	OUTER JACKET	Black HDPE with graphite coating	Min Thickness 197.0	Approx. 6.1				
COMPLETED CABLE		- Weight : Approx. 25.8 lb/ft - Fault duty : 40 kA / 15 cycles - Maximum D.C. resistance of conductor at 20°C : 0.00219 ohm/1000ft - Power frequency test (Withstand) voltage : A.C 580 kV for 60 min						
DWG. No.	500C5000IXOWE-C140210	REV.	1	DIM.	inch	Scale	N/S	 TAIHAN ELECTRIC WIRE CO., LTD

1	Add the comments	23-Sep-15	E. K. KIM	K. R. PARK	J.H.CHOI
0	For approval	7-Sep-15	E. K. KIM	K. R. PARK	J.H.CHOI
Rev.	Details of revision	Date	Prepared	Checked	Approved
Client  SOUTHERN CALIFORNIA EDISON An EDISON INTERNATIONAL® Company					
Project Tehachapi Renewable Transmission Project					
P.O Number 4500687674				Date 7-Sep-15	
Contractor  TAIHAN ELECTRIC WIRE CO., LTD.					
Title 2.2.3 Calculations - Reference Specification Section 16848.3.3.2 2.3.12 Other Electrical Characteristics					
Document No. AP-K150907-2.3.12				Rev. 1	

Revision Record

[illegible]

2.3.12 Other Electrical Characteristics

Item	Response
a. Conductor resistance	Max. 0.002244 Ω/1000ft (at 25℃)
b. Conductor skin effect factor	AP-K150715-2.3.12.b
c. Conductor proximity effect factor	0.37
d. Insulation dielectric constant	2.5
e. Insulation resistance	Max. 2521.74 MΩ.km (at 20℃)
f. Insulation capacitance	Max. 0.07044 μF/1000ft (*Based on AP-P141203-2.1.1a)
g. Charging current	7.702 A/1000ft (Based on ↑)
h. Insulation radial expansion calculations**	3.49 mm(ΔT=75℃)

* Please refer to the FAT Plan & Procedure for Cable AP-P141203-2.1.1a

** **Equation of Insulation radial expansion**

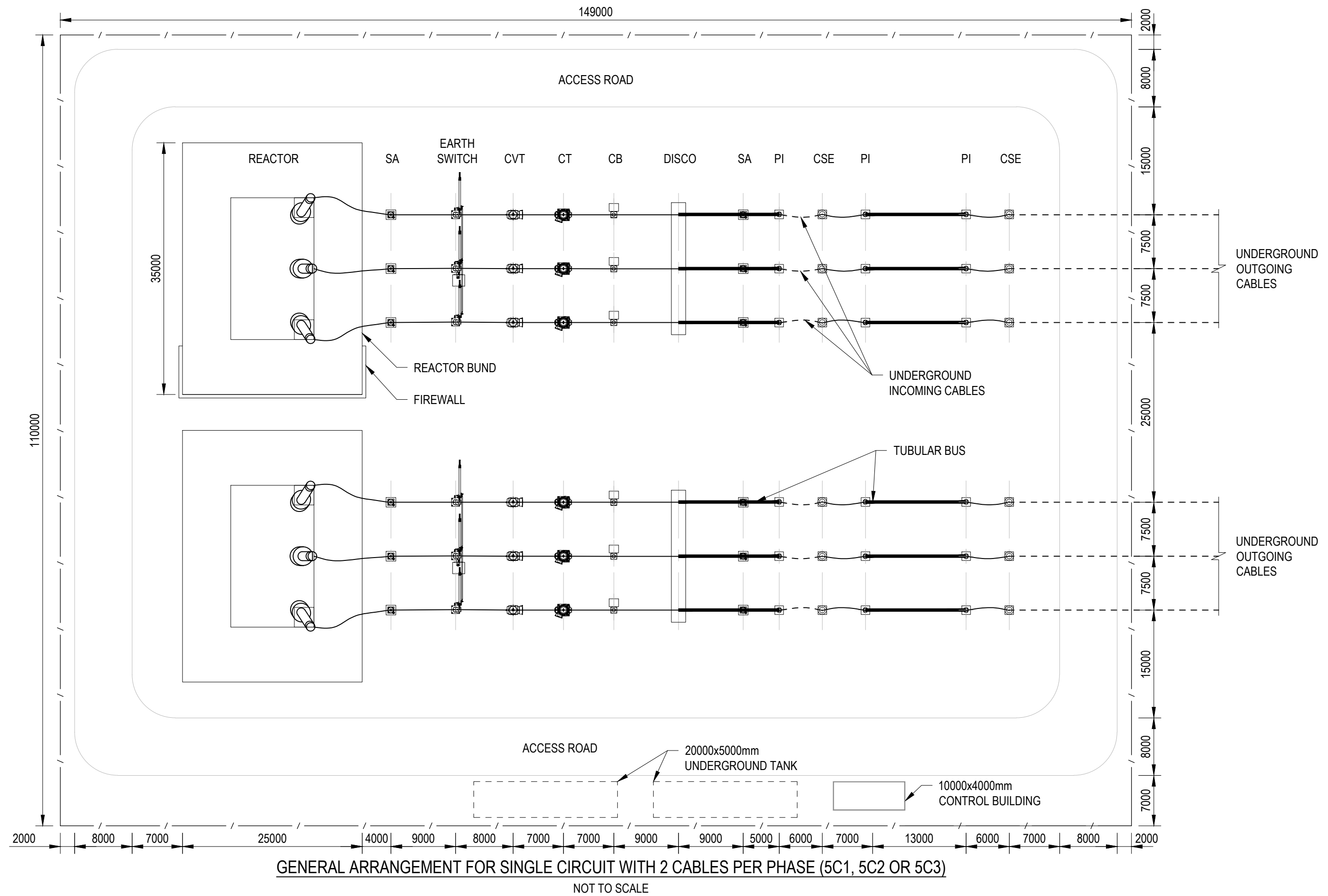
$$\Delta d = \frac{1}{2}\beta \cdot \theta \left\{ 1 - \left(\frac{do}{dl} \right)^2 \right\} \cdot dl$$

B : Coefficient of thermal expansion(XLPE)[/°C]=1.1x10⁻³[/°C]

do : Conductor diameter[mm]=65.0mm

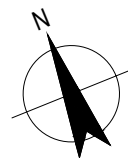
dl : Insulation screen diameter[mm]=135.2mm

Θ : Insulation average temperature[°C]=75°C



A ISSUED FOR REVIEW				27.05.22
Rev	Description	Checked	Approved	Date
Author	C. LUNAR	Drafting Check		
Designer	C. COSTAN	Design Check		

Plot Date: 25 May 2022 - 4:12 AM Plotted by: Cj Lunar File Name: N:\PH\Manila\Projects\21\12567593\CADD\Drawings\12541415-E001.dwg



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Project No.

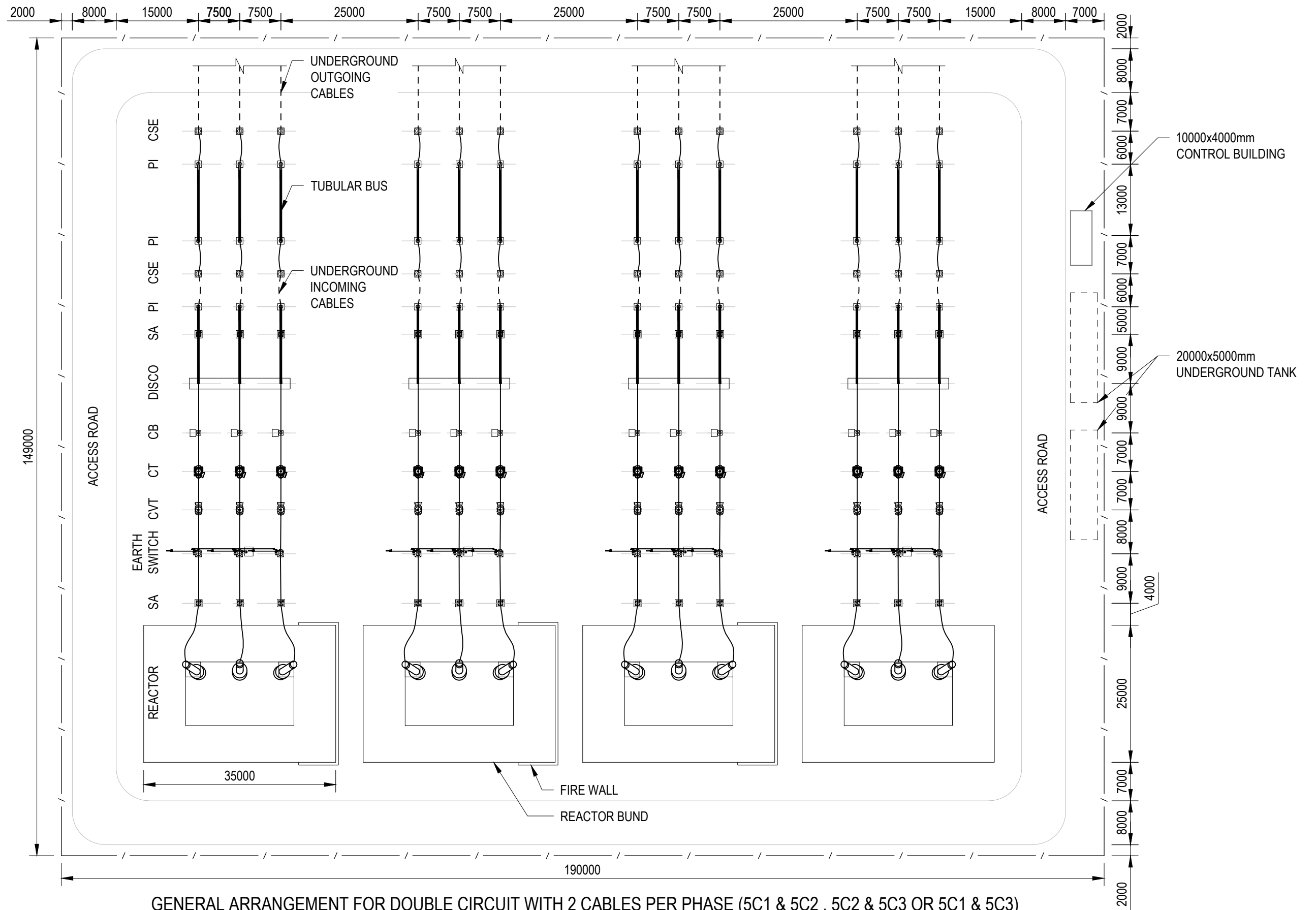
Client	TRANSGRID
Project	HUMLINK PROJECT - UNDERGROUND
Status	CONCEPT DESIGN

Drawing Title
HUMLINK PROJECT - UNDERGROUND
TYPICAL AC REACTOR STATION 1
GENERAL ARRANGEMENT

Drawing No.
12541415-E001

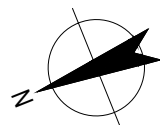
Size
A3

Rev
A



A ISSUED FOR REVIEW				27.05.22
Rev	Description	Checked	Approved	Date
Author	C. LUNAR	Drafting Check		
Designer	C. COSTAN	Design Check		

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Project No.

Client	TRANSGRID
Project	HUMELINK PROJECT - UNDERGROUND
Status	CONCEPT DESIGN

Drawing Title	HUMELINK PROJECT - UNDERGROUND TYPICAL AC REACTOR STATION 2 GENERAL ARRANGEMENT
Drawing No.	12541415-E002

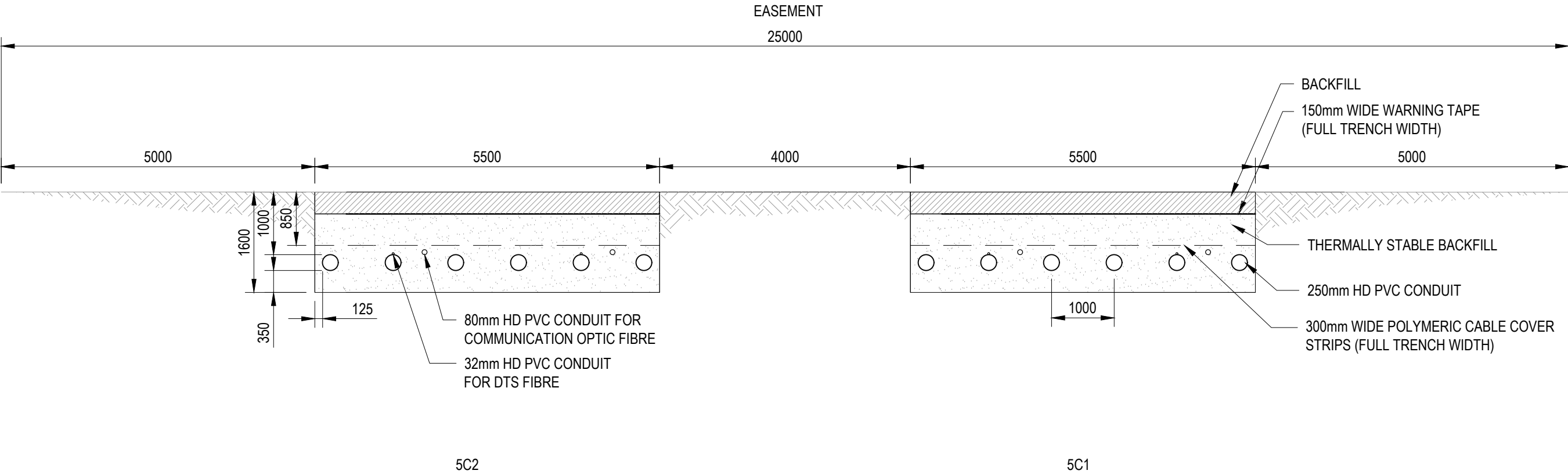
Size	A3
Rev	A

1. TRENCH PROFILES ARE FOR INSTALLATION IN GREENFIELD SITE. CHANGE OF MATERIAL TO TOP LAYERS IF NOT INSTALLED IN ROAD.

[illegible]

NOTES:

1. TRENCH PROFILES ARE FOR INSTALLATION IN GREENFIELD SITE. CHANGE OF MATERIAL TO TOP LAYER IF INSTALLED IN ROAD.
2. INSTALLATION DESIGN BASED ON 500kV 1C x 2500mm² COPPER XLPE CABLE.



LOOKING TOWARDS BANNABY
NOT TO SCALE

B	ISSUED FOR REVIEW		14.06.22
A	ISSUED FOR REVIEW		27.05.22
Rev	Description	Checked	Approved Date
Author	C. LUNAR	Drafting Check	
Designer	S. NAIR	Design Check	

Plot Date: 14 June 2022 - 10:22 AM Plotted by: CJ Lunar File Name: N:\PH\Manila\Projects\21\12567593\CADD\Drawings\12541415-E004.dwg



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Project No.

Client	TRANSGRID
Project	HUMELINK PROJECT - UNDERGROUND
Status	CONCEPT DESIGN

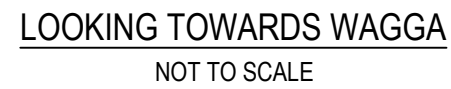
Drawing Title
HUMELINK PROJECT - UNDERGROUND
AC 500kV CABLE
OPTION 1A INSTALLATION PROFILE

Drawing No.
12541415-E004

Size
A3

Rev
B

1. TRENCH PROFILES ARE FOR INSTALLATION IN GREENFIELD SITE. CHANGE OF MATERIAL TO TOP LAYER IF INSTALLED IN ROAD.
2. INSTALLATION DESIGN BASED ON 330kV 1C x 1600mm² COPPER XLPE CABLE.



					14.06.22
A ISSUED FOR REVIEW					
Rev	Description	Checked	Approved	Date	
Author	C. LUNAR	Drafting Check			
Designer	S. NAIR	Design Check			

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Project No.

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Client	TRANSGRID		
Project	HUMELINK PROJECT - UNDERGROUND		
Status	CONCEPT DESIGN		Status Code

Drawing Title	HUMELINK PROJECT - UNDERGROUND AC 330kV CABLE INSTALLATION PROFILE
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Size
A3

Rev
A



Study Summary

CYMCAP Version	8.1 Revision 2
Study:	HumeLink HVDC Concept Design
Execution:	Option 1A - Both Circuits at 50%
Date:	24/05/2022 3:01:05 PM

General Simulation Data

Steady State Option	Temperature
Consider Electrical interaction between circuits	No
Induced currents in metallic layers as a fraction of conductor current (applied to all single phase circuits) :	0.0
Conductor Resistances Computation Option:	IEC-228

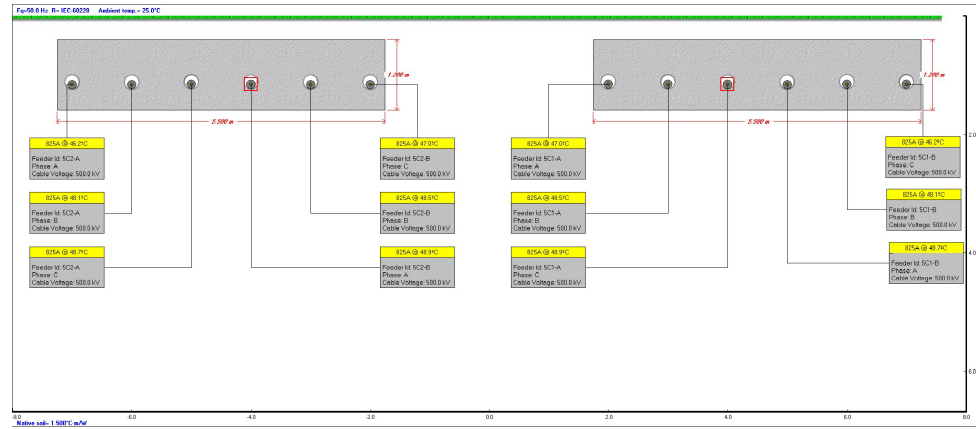
Standard Settings Options

General guidance	Custom
Factor on RAC due to magnetic armour	CIGREGuidance
Factor on RAC due to magnetic duct	CIGREGuidance
Factor on λ due to magnetic armour	CYMCAPGuidance
Factor on λ due to magnetic duct	CIGREGuidance
Factor on λ due to λ'	CYMCAPGuidance
λ'' computation	CIGREGuidance
λ pipe computation	CYMCAPGuidance
Wd computation	CIGREGuidance
T computation	CIGREGuidance
T computation	CYMCAPGuidance

Installation Type:Multiple Ductbanks/Backfills

Ambient Soil Temperature at Installation Depth	[°C]	25.0
Native Soil Thermal Resistivity	[K.m/W]	1.5
Consider Non-Isothermal Earth Surface		No

Layer Name	X [m]	Y [m]	Width [m]	Height [m]	Thermal Resistivity [K.m/W]
FTSB	-4.5	1.0	5.5	1.2	1.0
FTSB	4.5	1.0	5.5	1.2	1.0



Results Summary

Cable No.	Cable ID	Circuit No.	Feeder ID	Cable Phase	Cable Frequency	Daily Load Factor	X coordinate [m]	Y coordinate [m]	Conductor temperature [°C]	Ampacity [A]
1	TAIHAN 4	1	5C2-B	A	50.0	1.0	-4.0	1.16	48.9	825.0
2	TAIHAN 4	1	5C2-B	B	50.0	1.0	-3.0	1.16	48.5	825.0
3	TAIHAN 4	1	5C2-B	C	50.0	1.0	-2.0	1.16	47.0	825.0
4	TAIHAN 4	2	5C1-A	A	50.0	1.0	2.0	1.16	47.0	825.0
5	TAIHAN 4	2	5C1-A	B	50.0	1.0	3.0	1.16	48.5	825.0
6	TAIHAN 4	2	5C1-A	C	50.0	1.0	4.0	1.16	48.9	825.0
7	TAIHAN 4	3	5C2-A	A	50.0	1.0	-7.0	1.16	46.2	825.0
8	TAIHAN 4	3	5C2-A	B	50.0	1.0	-6.0	1.16	48.1	825.0
9	TAIHAN 4	3	5C2-A	C	50.0	1.0	-5.0	1.16	48.7	825.0
10	TAIHAN 4	4	5C1-B	A	50.0	1.0	5.0	1.16	48.7	825.0
11	TAIHAN 4	4	5C1-B	B	50.0	1.0	6.0	1.16	48.1	825.0
12	TAIHAN 4	4	5C1-B	C	50.0	1.0	7.0	1.16	46.2	825.0

Simulation Data

Variable	Description	Unit	Cables											
Cable No.	Cable Index Number		1	2	3	4	5	6	7	8	9	10	11	12
General Input Data														
Cable ID	Cable Equipment ID		TAHAN 4	TAHAN 4	TAHAN 4	TAHAN 4	TAHAN 4	TAHAN 4	TAHAN 4	TAHAN 4	TAHAN 4	TAHAN 4	TAHAN 4	TAHAN 4
Circuit No.	Circuit No.		1	1	1	2	2	2	3	3	3	4	4	4
Phase	Cable Phase		A	B	C	A	B	C	A	B	C	A	B	C
Fq	Operating Frequency	[Hz]	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0
x	X coordinate	[m]	-4.0	-3.0	-2.0	2.0	3.0	-7.0	3.0	-6.0	-5.0	5.0	6.0	7.0
y	Y coordinate	[m]	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16
DLF	Daily Load Factor	[B=]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
	Bonding Type		1 Conductor Crossbonded Flat	1 Conductor Crossbonded Flat	1 Conductor Crossbonded Flat	1 Conductor Crossbonded Flat	1 Conductor Crossbonded Flat	1 Conductor Crossbonded Flat	1 Conductor Crossbonded Flat	1 Conductor Crossbonded Flat	1 Conductor Crossbonded Flat	1 Conductor Crossbonded Flat	1 Conductor Crossbonded Flat	1 Conductor Crossbonded Flat
Ampacity														
I	Steady State Ampacity	[A]	825.0	825.0	825.0	825.0	825.0	825.0	825.0	825.0	825.0	825.0	825.0	825.0
Temperatures														
Bc	Conductor temperature	[°C]	48.9	48.5	47.0	47.0	45.5	44.9	46.2	48.1	48.7	48.1	48.1	46.2
Bs	Sheath/Shield temperature	[°C]	44.9	44.6	43.1	43.1	41.6	41.6	42.3	44.2	44.8	44.8	44.2	42.3
Ba	Armour temperature	[°C]	48.9	48.5	47.0	47.0	45.5	44.9	46.2	48.1	48.7	48.1	48.1	46.2
Bsurf	Cable surface temperature	[°C]	48.2	43.9	43.9	42.4	43.9	42.4	41.6	43.4	44.1	44.1	43.4	41.6
Bduct	Duct surface temperature	[°C]	40.4	40.0	38.6	38.6	40.0	40.4	37.7	39.6	40.3	40.3	39.6	37.7
Resistances														
R	DC Resistance of the conductor at 20°C	[Ω/km]	0.0072	0.0072	0.0072	0.0072	0.0072	0.0072	0.0072	0.0072	0.0072	0.0072	0.0072	0.0072
R	AC Resistance of the Conductor at Operating Temperature	[Ω/km]	0.00914	0.00913	0.00909	0.00909	0.00913	0.00914	0.00907	0.00912	0.00914	0.00914	0.00912	0.00907
yt	Skin Effect Factor		0.1393	0.13958	0.14091	0.14091	0.13958	0.1393	0.13942	0.13998	0.13942	0.13998	0.13942	0.13958
yp	Proximity Effect Factor		0.00072	0.00072	0.00073	0.00073	0.00072	0.00072	0.00073	0.00073	0.00072	0.00072	0.00073	0.00073
Losses														
Wc	Conductor Losses	[W/m]	6.2204	6.21483	6.18909	6.18908	6.21482	6.2204	6.17486	6.20708	6.21795	6.21793	6.20707	6.17481
Ws	Dielectric Losses	[W/m]	6.30092	6.30092	6.30092	6.30092	6.30092	6.30092	6.30092	6.30092	6.30092	6.30092	6.30092	6.30092
Wx	Metallic Screen Losses	[W/m]	0.26531	0.26531	0.26531	0.26531	0.26531	0.26531	0.26511	0.26819	0.26819	0.26819	0.26511	0.26819
Wa	Armour/Pipe Losses	[W/m]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Wt	Total Losses	[W/m]	12.60962	12.57915	12.57915	12.57915	12.57915	12.54601	12.77311	12.68066	12.68066	12.68066	12.77311	12.54604
Jv	Screen Loss Factor	[F]	0.0142	0.04269	0.0144	0.01426	0.04269	0.01434	0.01429	0.04271	0.01434	0.0142	0.04271	0.01443
A	Armour Loss Factor + Pipe Loss Factor		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Thermal resistances														
T1	Thermal resistance of insulation	[K.m/W]	0.4204	0.4204	0.4204	0.4204	0.4204	0.4204	0.4204	0.4204	0.4204	0.4204	0.4204	0.4204
T2	Thermal resistance of bedding/medium inside pipe-type	[K.m/W]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
T3	Thermal resistance of cooler covering	[K.m/W]	0.0567	0.0567	0.0567	0.0567	0.0567	0.0567	0.0567	0.0567	0.0567	0.0567	0.0567	0.0567
T4	External Thermal resistance	[K.m/W]	1.5234	1.47701	1.36322	1.36326	1.47698	1.52329	1.31933	1.44289	1.51239	1.51242	1.44283	1.31901
Others														
ΔTint	Temperature rise due to surrounding heat sources	[°C]	8.8	8.7	6.6	6.6	8.3	8.8	5.7	7.8	8.7	8.7	7.8	5.7
	Induced Voltage (standing) on Sheath	[V/km]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Induced current on Metallic Screen	[A]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



Cables Report

CYMCAP Version	8.1 Revision 2
Study:	HumeLink HVDC Concept Design
Execution:	Option 1A - Both Circuits at 50%
Date:	24/05/2022 3:01:05 PM

No.	Description	Unit	1
General Cable Information			
1	Cable Equipment ID		TAIHAN 4
2	Number of Cores		Single Core
3	Voltage	[kV]	500
4	Conductor Area	[mm ²]	2500.0
5	Cable Overall Diameter	[mm]	155.0
6	Maximum Steady-State Conductor Temperature	[°C]	90
7	Maximum Emergency Conductor Temperature	[°C]	105
Conductor			
8	Material		Copper
9	Electrical Resistivity at 20°C	[μΩ.cm]	1.7241
10	Temperature Coefficient at 20°C	[1/K]	0.00393
11	Reciprocal of Temperature Coefficient of Resistance (BETA)	[K]	234.4529262
12	Volumetric Specific Heat (SH)	[J/(K*cm ³)]	3.45
13	Construction		6 Segments
14	Conductor Insulation System		Extruded
15	Milliken Wires Construction		Bare Unidirectional Wires
16	Ks (Skin Effect Coefficient)		0.35
17	Kp (Proximity Effect Coefficient)		0.2
18	Diameter	[mm]	63.0
Conductor Shield			
19	Thickness	[mm]	5.0
20	Diameter	[mm]	73.0
Insulation			

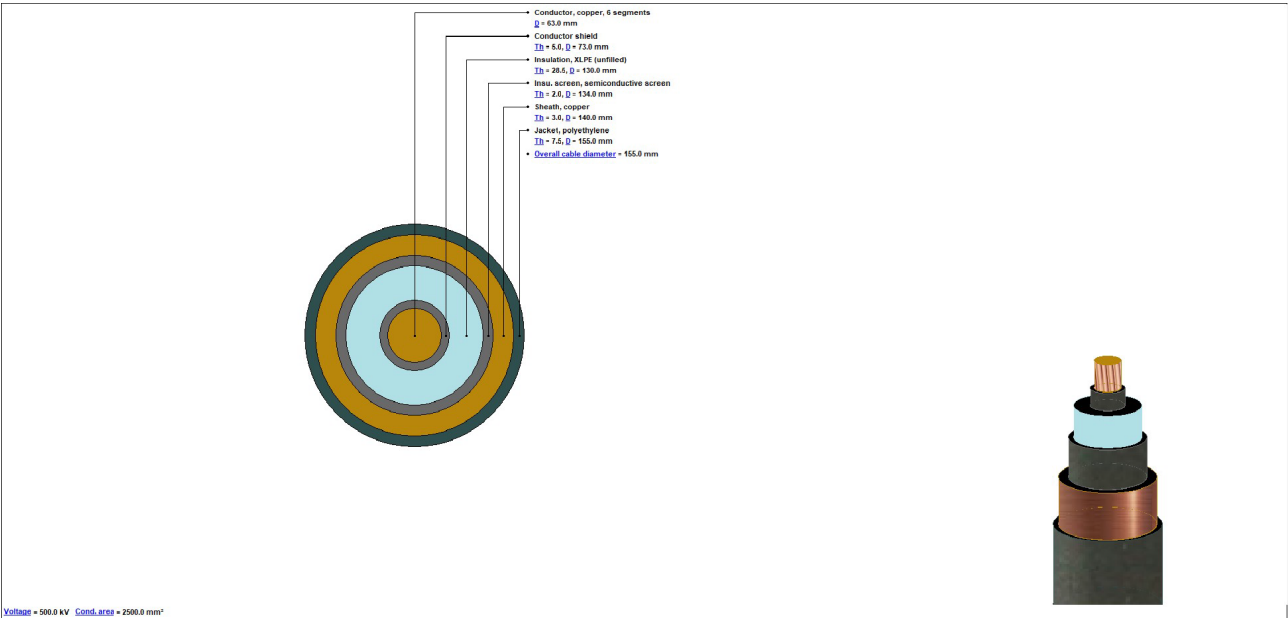
21	Material		XLPE Unfilled
22	Thermal Resistivity	[K.m/W]	3.5
23	Dielectric Loss Factor - (tan delta)		0.001
24	Relative Permittivity - (epsilon)		2.5
25	Specific Insulation Resistance Constant at 60°F - (K)	[MΩ.km]	6096
26	Thickness	[mm]	28.5
27	Diameter	[mm]	130.0
Insulation Screen			
28	Material		Semi Conducting Screen
29	Thickness	[mm]	2.0
30	Diameter	[mm]	134.0
Sheath			
31	Is Sheath Around Each Core?		n/a
32	Material		Copper
33	Electrical Resistivity at 20°C	[μΩ.cm]	1.7241
34	Temperature Coefficient at 20°C	[1/K]	0.00393
35	Reciprocal of Temperature Coefficient of Resistance (BETA)	[K]	234.5
36	Volumetric Specific Heat (SH)	[J/(K*cm³)]	3.45
37	Corrugation Type		Non Corrugated
38	Thickness	[mm]	3.0
39	Diameter	[mm]	140.0
Jacket			
40	Material		Polyethylene
41	Thermal Resistivity	[K.m/W]	3.5
42	Thickness	[mm]	7.5
43	Diameter	[mm]	155.0

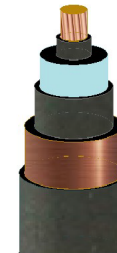
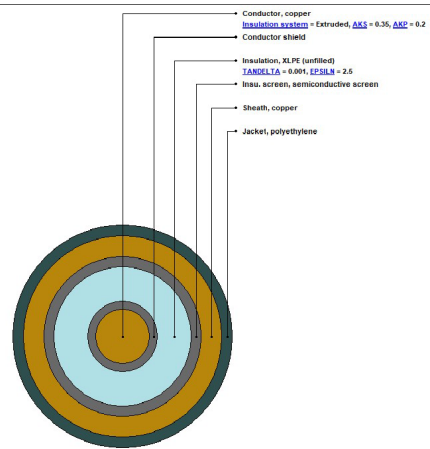
No.	Description	Unit	1
Specific Installation Data			
44	Cable Equipment ID		TAIHAN 4
45	Cable Frequency	[Hz]	50
46	Sheath / Shield Bonding		1 Conductor Crossbonded Flat

47	Loss Factor Constant (ALOS)		0.3
48	Minor section length		Crossbonded Equal Minor Section Lengths
49	Duct construction		0
50	Duct material thermal resistivity	[K.m/W]	6
51	Inner diameter of the conduit	[mm]	240.0
52	Outer diameter of the conduit	[mm]	260.0

Cable ID : TAIHAN 4

Cable Title500 kV 2500 sqmm 1C 6 Milliken Cu _ XLPE _ HDPE





Voltage = 500.0 kV Cond. area = 2500.0 mm²

Max. Steady-State Cond. Temp. = 90 deg.
Max. Transient Cond. Temp. = 105 deg.

[illegible]

[illegible]

[illegible]



Study Summary

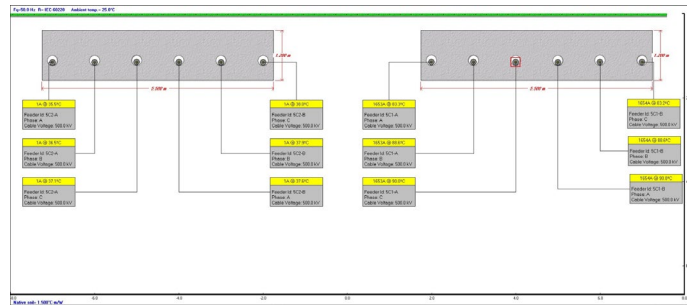
CYMCAP Version	8.1 Revision 2
Study:	HumeLink HVDC Concept Design
Execution:	Option 1A - 1st Circuit OOS _ 2nd Circuit at 100 %
Date:	24/05/2022 2:53:18 PM

General Simulation Data	
Steady State Option	Unequally Loaded
Consider Electrical interaction between circuits	No
Induced currents in metallic layers as a fraction of conductor current (applied to all single phase circuits) :	0.0
Conductor Resistances Computation Option:	IEC-228

Standard Settings Options	
General guidance	Custom
Factor on RAC due to magnetic armour	CIGREGuidance
Factor on RAC due to magnetic duct	CIGREGuidance
Factor on λ due to magnetic armour	CYMCAPGuidance
Factor on λ due to magnetic duct	CIGREGuidance
Factor on λ due to λ'	CYMCAPGuidance
λ'' computation	CIGREGuidance
λ pipe computation	CYMCAPGuidance
Wd computation	CIGREGuidance
T computation	CIGREGuidance
T computation	CYMCAPGuidance

Installation Type:Multiple Ductbanks/Backfills			
Ambient Soil Temperature at Installation Depth	[°C]		25.0
Native Soil Thermal Resistivity	[K.m/W]		1.5
Consider Non-Isothermal Earth Surface			No

Layer Name	X [m]	Y [m]	Width [m]	Height [m]	Thermal Resistivity [K.m/W]
FTSB	-4.5	1.0	5.5	1.2	1.0
FTSB	4.5	1.0	5.5	1.2	1.0



Results Summary

Cable No.	Cable ID	Circuit No.	Feeder ID	Cable Phase	Cable Frequency	Daily Load Factor	X coordinate [m]	Y coordinate [m]	Conductor temperature [°C]	Ampacity [A]
1	TAIHAN 4	1	5C2-B	A	50.0	1.0	-4.0	1.16	37.6	1.0
2	TAIHAN 4	1	5C2-B	B	50.0	1.0	-3.0	1.16	37.9	1.0
3	TAIHAN 4	1	5C2-B	C	50.0	1.0	-2.0	1.16	38.0	1.0
4	TAIHAN 4	2	5C1-A	A	50.0	1.0	2.0	1.16	83.3	1653.2
5	TAIHAN 4	2	5C1-A	B	50.0	1.0	3.0	1.16	88.6	1653.2
6	TAIHAN 4	2	5C1-A	C	50.0	1.0	4.0	1.16	90.0	1653.2
7	TAIHAN 4	3	5C2-A	A	50.0	1.0	-7.0	1.16	35.5	1.0
8	TAIHAN 4	3	5C2-A	B	50.0	1.0	-6.0	1.16	36.5	1.0
9	TAIHAN 4	3	5C2-A	C	50.0	1.0	-5.0	1.16	37.1	1.0
10	TAIHAN 4	4	5C1-B	A	50.0	1.0	5.0	1.16	90.0	1653.7
11	TAIHAN 4	4	5C1-B	B	50.0	1.0	6.0	1.16	88.6	1653.7
12	TAIHAN 4	4	5C1-B	C	50.0	1.0	7.0	1.16	83.2	1653.7

Simulation Data

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Cables Report

CYMCAP Version	8.1 Revision 2
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No.	Description	Unit	1
General Cable Information			
1	Cable Equipment ID		TAIHAN 4
2	Number of Cores		Single Core
3	Voltage	[kV]	500
4	Conductor Area	[mm ²]	2500.0
5	Cable Overall Diameter	[mm]	155.0
6	Maximum Steady-State Conductor Temperature	[°C]	90
7	Maximum Emergency Conductor Temperature	[°C]	105
Conductor			
8	Material		Copper
9	Electrical Resistivity at 20°C	[μΩ.cm]	1.7241
10	Temperature Coefficient at 20°C	[1/K]	0.00393
11	Reciprocal of Temperature Coefficient of Resistance (BETA)	[K]	234.4529262
12	Volumetric Specific Heat (SH)	[J/(K*cm ³)]	3.45
13	Construction		6 Segments
14	Conductor Insulation System		Extruded
15	Milliken Wires Construction		Bare Unidirectional Wires
16	Ks (Skin Effect Coefficient)		0.35
17	Kp (Proximity Effect Coefficient)		0.2
18	Diameter	[mm]	63.0
Conductor Shield			
19	Thickness	[mm]	5.0
20	Diameter	[mm]	73.0
Insulation			

21	Material		XLPE Unfilled
22	Thermal Resistivity	[K.m/W]	3.5
23	Dielectric Loss Factor - (tan delta)		0.001
24	Relative Permittivity - (epsilon)		2.5
25	Specific Insulation Resistance Constant at 60°F - (K)	[MΩ.km]	6096
26	Thickness	[mm]	28.5
27	Diameter	[mm]	130.0

Insulation Screen

28	Material		Semi Conducting Screen
29	Thickness	[mm]	2.0
30	Diameter	[mm]	134.0

Sheath

31	Is Sheath Around Each Core?		n/a
32	Material		Copper
33	Electrical Resistivity at 20°C	[μΩ.cm]	1.7241
34	Temperature Coefficient at 20°C	[1/K]	0.00393
35	Reciprocal of Temperature Coefficient of Resistance (BETA)	[K]	234.5
36	Volumetric Specific Heat (SH)	[J/(K*cm³)]	3.45
37	Corrugation Type		Non Corrugated
38	Thickness	[mm]	3.0
39	Diameter	[mm]	140.0

Jacket

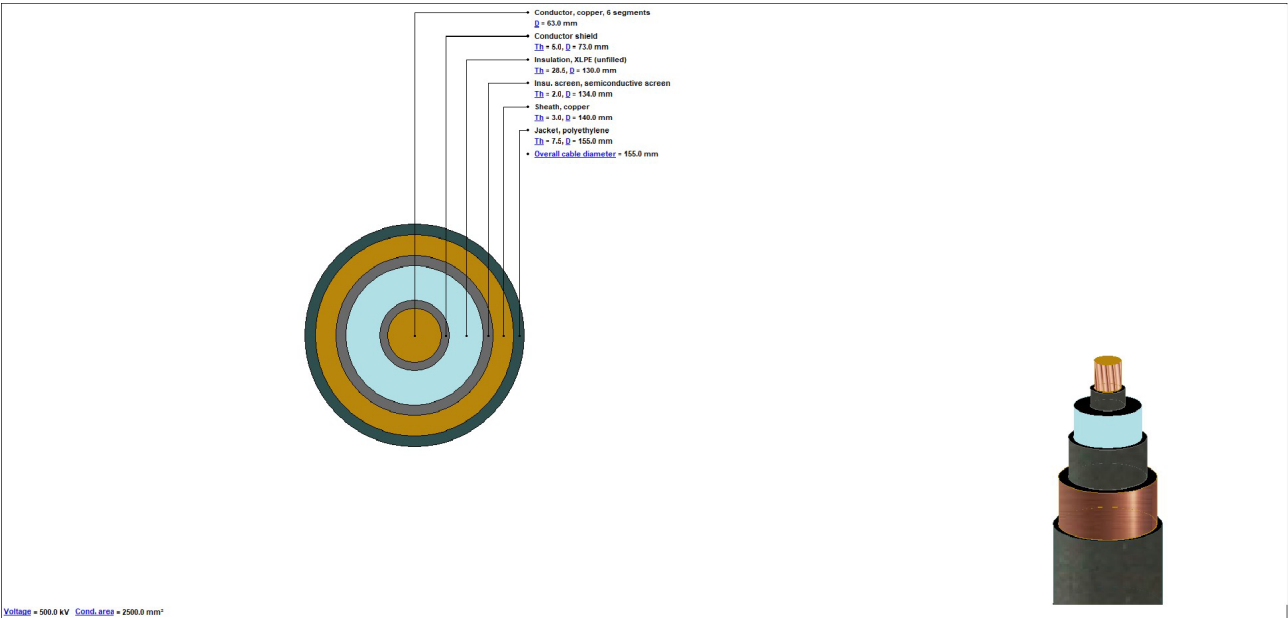
40	Material		Polyethylene
41	Thermal Resistivity	[K.m/W]	3.5
42	Thickness	[mm]	7.5
43	Diameter	[mm]	155.0

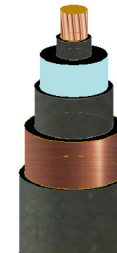
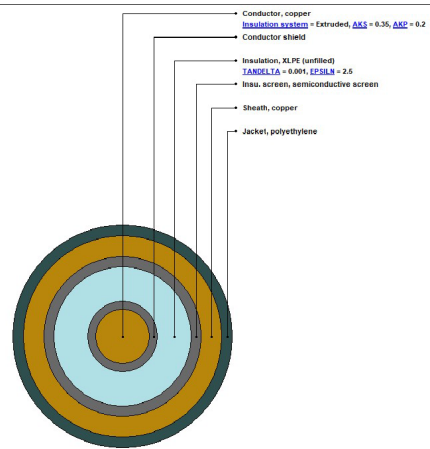
No.	Description	Unit	1
Specific Installation Data			
44	Cable Equipment ID		TAIHAN 4
45	Cable Frequency	[Hz]	50
46	Sheath / Shield Bonding		1 Conductor Crossbonded Flat

47	Loss Factor Constant (ALOS)		0.3
48	Minor section length		Crossbonded Equal Minor Section Lengths
49	Duct construction		0
50	Duct material thermal resistivity	[K.m/W]	6
51	Inner diameter of the conduit	[mm]	240.0
52	Outer diameter of the conduit	[mm]	260.0

Cable ID : TAIHAN 4

Cable Title500 kV 2500 sqmm 1C 6 Milliken Cu _ XLPE _ HDPE





[Voltage](#) = 500.0 kV [Cond. area](#) = 2500.0 mm²

[Max. Steady-State Cond. Temp.](#) = 90 deg.
[Max. Transient Cond. Temp.](#) = 105 deg.

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