BASE LOAD POWER HUB (BLPH)

Electrical Typical Installation Details

Earthing System

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	26/08/24	GRA	AMA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	10/06/24	SPS	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	21/11/23	SPS	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL TYPICAL INSTALLATION DETAILS–EARTHING SYSTEM
FRONT PAGE

CONTRACT NO./TITLE CW–I–WP4–2023–05/HOLLANDSE KUST NOORD WIND PARK

SCALE : NTS

A3

DRAWING NO. 123A90–DDL–EL–DD–20090

SHEET 001

REV. 02

F.to UNI A3: 420mmx297mm

File Name : 123A90-DDL-EL-DD-20090 REV.02.DWG

REV.	SHEET NUMBER	DESCRIPTION	REF. CODE
02	001	FRONT PAGE	
02	002	SUMMARY and GENERAL NOTES	
02	003	SINGLE EARTHING CONNECTION	E11A-C-D-E
02	004	EARTHING BAR INSTALLED ON WELDED PROFILE OR THREADED STUD	E03A-E03D
02	005	EARTHING ELECTRICAL MOTOR	E07
02	006	EARTHING FOR ELECTRICAL EQUIPMENTS	E05
02	007	EARTHING FOR ELECTRICAL JB MOUNTED ON RACK SUPPORT	E15
02	008	EARTHING FOR CABLE ARMOUR INSIDE ELECTRICAL PANELS AND I&TEL CABINETS	E06A
02	009	EARTHING FOR CABLE ARMOUR WITH TOROIDAL CURRENT TRANSF.	E06B
02	010	EARTHING FOR CABLE ARMOUR BY CABLE GLAND	E04
02	011	EARTHING FOR PANELS/BOARDS IN TECHNICAL ROOM	E23
02	012	EARTHING FOR POLE/SUPPORT OF GENERIC EQUIPMENTS	E24
02	013	EARTHING FOR CABLE LADDERS & TRAYS	E25
02	014	EARTHING FOR SKID BASEFRAME	E14
02	015	EARTHING FOR STAIRS AND LADDERS BOLTED ON STRUCTURE	E17
02	016	EARTHING FOR VESSEL WITH LEGS BOLTED ON STRUCTURE	E13
02	017	EARTHING FOR HVAC DUCT AND ITS COMPONENTS	E26
02	018	EARTHING FOR PROCESS PIPING	E22
02	019	EARTHING FOR AIR TERMINAL LIGHTNING	E20
02	020	BLANK SHEET	
02	021	EARTHING FOR FIELD REMOVABLE TYPE HANDRAIL	E16
02	022	EARTHING FOR GENERIC INSTRUMENT INDOOR WALL MOUNTING	E31
02	023	EARTHING - OUTDOOR LINEAR LIGHTING FIXTURE	E32
02	024	NEUTRAL EARTHING	E33
02	025	NER EARTHING	E34
02	026	SIZE & TYPICAL Y/G INSULATING COPPER CONDUCTOR	
02	027	BLANK SHEET	

02

GENERAL NOTES

1) AS MATERIAL OF THE EQUIPMENT SUPPORTS AND CABLE TRAYS, IN ADDITION TO THE PAINTED CARBON STEEL SUPPORTS, USE U-CHANNEL IN AISI 316L STAINLESS STEEL ON BOTH OUTSIDE AND INSIDE TECHNICAL ROOMS.
2) OUTSIDE AND INSIDE TECHNICAL ROOMS WILL BE INSTALLED AISI 316L STAINLESS STEEL CABLE WAYS.
3) INSTALLATION HEIGHTS OF THE EQUIPMENTS AND CABLE WAYS ARE INDICATED IN THE RESPECTIVE LAYOUTS.
4) ARRANGEMENTS SHOWN ON THIS DOCUMENT ARE GUIDELINES AND SHOULD BE MODIFIED TO SUIT THE LOCATION.
5) PROVIDE NYLON SHEET BETWEEN AISI 316L STAINLESS STEEL AND CARBON STEEL ITEMS TO AVOID GALVANIC CORROSION.
6) SHAPE, DIMENSION AND QUANTITY OF SUPPORTS AND ACCESSORIES FOR INSTALLATION ARE INDICATIVE ONLY.
7) WHEN CABLE GLAND IS USED, ALWAYS ENSURE TO LEAVE AS MUCH CABLE RICHNESS AS POSSIBLE INSIDE JB AND ANY OTHER TYPE OF ENCLOSURE.
8) ALWAYS ENSURE TO LEAVE ENOUGH CABLE RICHNESS FOR FUTURE MAINTENANCE. THIS IS NOT APPLICABLE FOR EARTHING AND BONDING CONDUCTORS (GREEN/YELLOW) SINCE THIS LINK SHOULD BE AS DIRECT AS POSSIBLE. IT SHOULD ALSO NOT BE APPLIED TO SINGLE CORE CABLES.
9) IN THE CASE OF “INCREASED SAFETY” (Ex e) JBs, IN ORDER NOT TO EXCEED THE TEMPERATURE CLASS T OF THE CERTIFICATE, IT IS RECOMMENDED THAT THE MAXIMUM LENGTH OF EACH CONDUCTOR PER TERMINAL TO BE CONNECTED BE HALF THE LONGEST DIAGONAL OF THE JB. (IEC 60079-14:2013 CLAUSE 15.2).
10) CABLE ROUTING TO THE ITEM/EQUIPMENT SHALL BE DONE IN ORDER TO PREVENT DROP-OFF (CABLE SHALL ROUTE LOWER THAN CABLE GLAND SO THAT ANY DROP OF CONDENSATION OR WATER DUE TO ATMOSPHERIC CAUSES WILL DRAINS DOWNWARDS).
11) ALL UNARMOURED CABLES SHALL BE MECHANICAL PROTECTED FOR THE ENTIRE CABLE LENGTH

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ROSETTI MARINO

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00	21/11/23	SPS	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL TYPICAL INSTALLATION DETAILS–EARTHING SYSTEM
SUMMARY and GENERAL NOTES

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK

SCALE : NTS

A3

DRAWING NO. 123A90–DDL–EL–DD–20090

SHEET 002

REV. 02

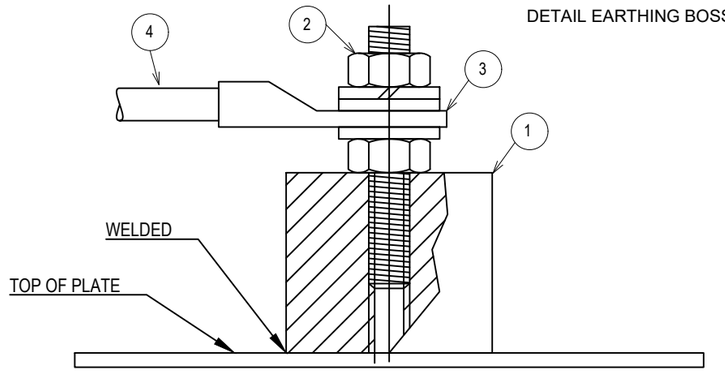
F.to UNI A3: 420mmx297mm

File Name : 123A90-DDL-EL-DD-20090 REV.02.DWG

POS.	DESCRIPTION	MATERIAL	SIZE	Q.TY	NOTE
1	EARTHING BOSS WITH THREADED HOLE M10	AISI 316L	50X50 50X150	1	NOTE 2
2	STUD BOLT WITH PLANE WASHER, GROWER AND NUT	AISI 316L	M10X50		
3	COMPRESSION TYPE LUG FOR INSULATION COPPER CONDUCTOR	TINNED COPPER			NOTE 3
4	Y/G INSULATING COPPER CONDUCTOR				NOTE 1 NOTE 5
5	EARTHING PLATE	AISI 316L (NOT PAINTED)	50X50X5		NOTE 4
6	HEXAGONAL BOLT WITH PLANE WASHERS, GROWER AND NUT.	AISI 316L	M10X30		
7	THREADED STUD COMPLETE WITH GROWER AND NUTS	AISI 316L	M10X28		NOTE 6 NOTE 7

E11A

DETAIL EARTHING BOSS 50x50

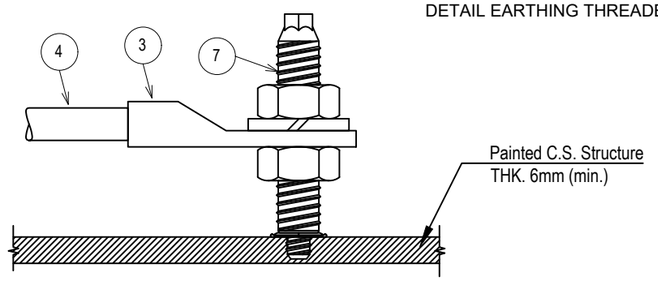


E11D

SEE NOTE 6

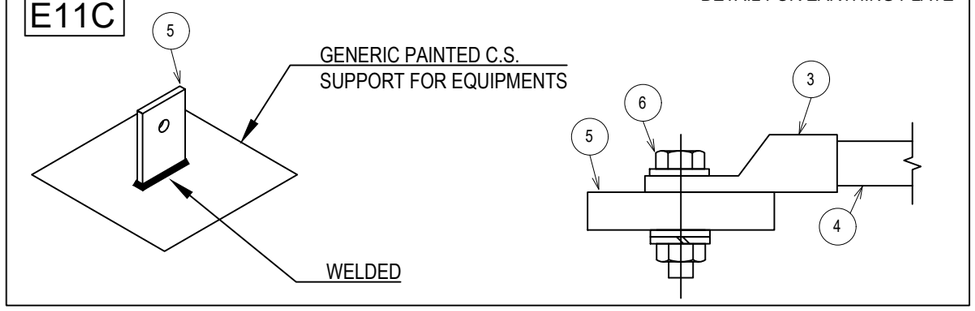
FOR CABLE
MAX 10mm²

DETAIL EARTHING THREADED STUD



E11C

DETAIL FOR EARTHING PLATE

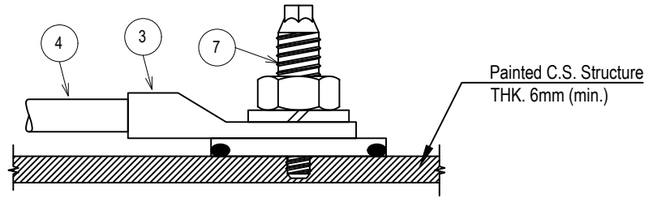


E11E

SEE NOTE 7

FOR CABLE
MAX 35mm²

DETAIL EARTHING THREADED STUD



NOTES:
1) ONLY ONE PROTECTIVE CONDUCTOR TERMINATION LUG SHALL BE CONNECTED TO A DEDICATED EARTHING BOSS, EARTH PLATE OR EARTH STUD.
2) EXTERNAL EARTHING CONNECTION ONLY SHALL BE PROTECTED AGAINST CORROSION USING OXIDE RESISTANT COMPOUND (E.G. COPPER GREASE).
3) CABLE LUG CRIMPING METHOD SHALL BE HEXAGONAL COMPRESSION DIES ONLY.
4) EARTHING PLATE SHALL BE DEDICATED TO CABLE TRAY AND PIPE SUPPORTS, JUNCTION BOX, LOCAL CONTROL STATION AND SMALL EQUIPMENT SUPPORTS, LIGHTING POLES, RECEPTACLE SUPPORTS AND REMOVABLE HANDRAILS, ONLY.
5) FOR SIZE OF THE EARTHING CABLE SEE EARTHING LAYOUT DRAWINGS OF RESPECTIVE AREAS
6) HILTI S-BT-ER M10/15 SN6 CERTIFIED FOR EARTHING SYSTEM. RECOMMENDED MAX CONDUCTOR SIZE 10mm².
7) HILTI S-BT-ER M10 HC 120 CERTIFIED FOR EARTHING SYSTEM. RECOMMENDED MAX CONDUCTOR SIZE 35mm².

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CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL TYPICAL INSTALLATION DETAILS–EARTHING SYSTEM
SINGLE EARTHING CONNECTION

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK

SCALE : NTS

A3

DRAWING NO. 123A90–DDL–EL–DD–20090

SHEET 003

REV. 02

F.to UNI A3: 420mmx297mm

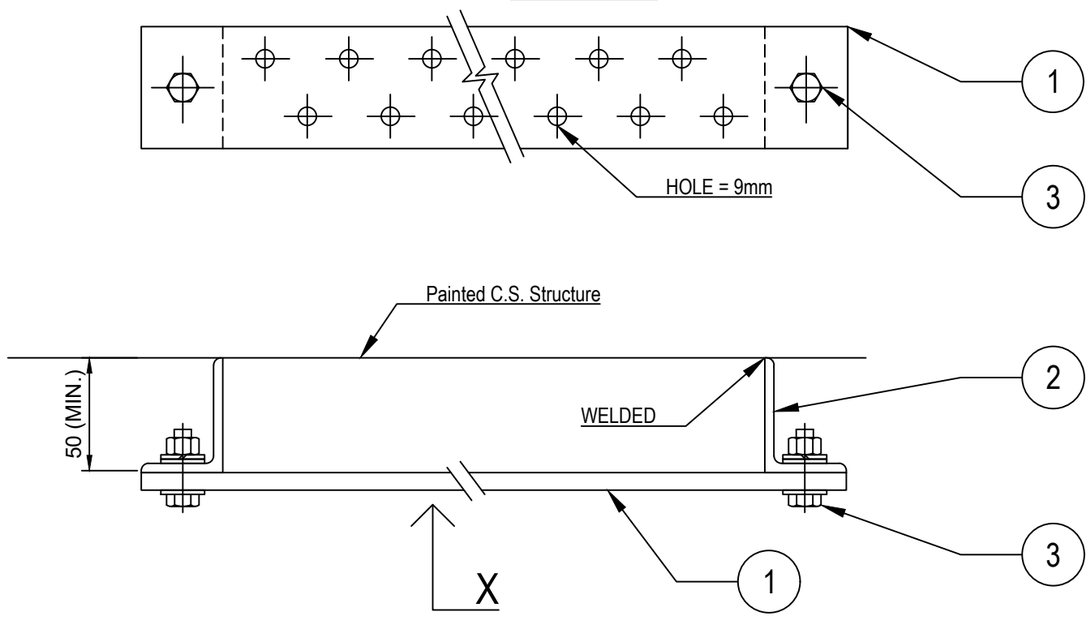
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TYPICAL DETAIL VALID FOR EXTERNAL USE ONLY

POS.	DESCRIPTION	MATERIAL	SIZE	Q.TY	NOTE
1	EARTHING BAR	TINNED COPPER	285X50X5	1	
2	PROFILE SUPPORT	AISI 316L		2	
3	HEXAG. BOLTS, PLANE WASHERS, GROWER SPRING WASHER AND NUT	AISI 316L	M10X30	2	
4	THREADED STUD	AISI 316L	M10X28	2	NOTE 1
5	FEMALE / MALE COUPLING	AISI 316L	M10X50	2	NOTE 2
6	PLANE WASHER, GROWER AND NUT	AISI 316L	M10	2	

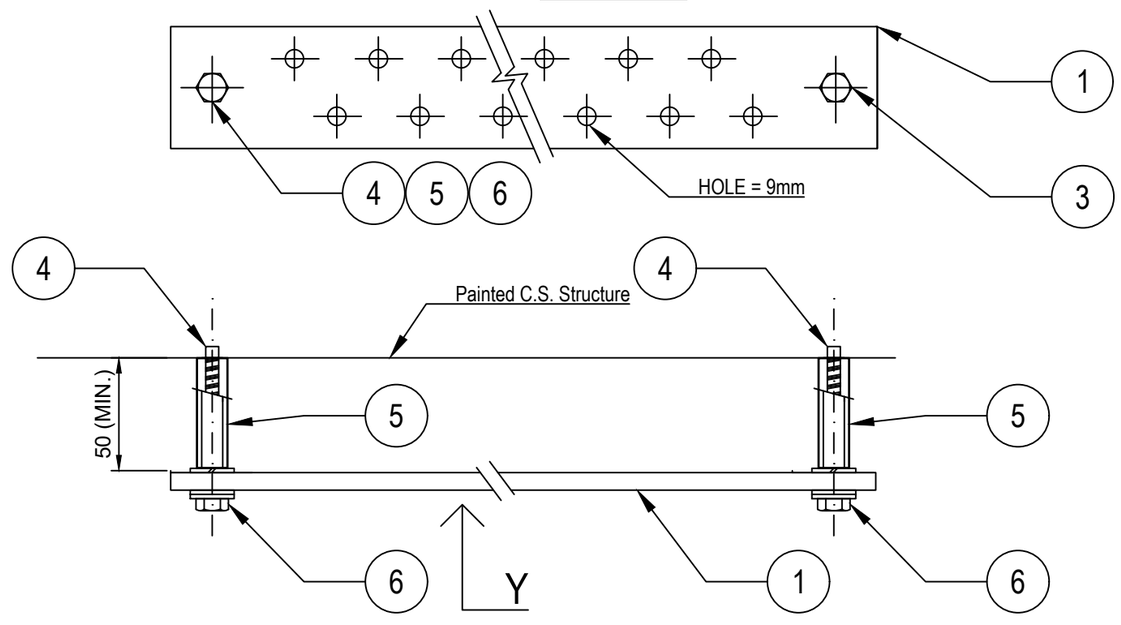
E03A

VIEW "X"



E03D

VIEW "Y"



NOTES:

1) THREADED STUD mod. HILTI S-BT-ER M10/15 SN6 CERTIFIED FOR EARTHING SYSTEM.

2) STANDOFF ADAPTER mod. HILTI M10-MR50.

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
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00	21/11/23	SPS	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL TYPICAL INSTALLATION DETAILS–EARTHING SYSTEM
EARTHING BAR INSTALLED ON WELDED PROFILE OR THREADED STUD

CONTRACT NO./TITLE CW–I–WP4–2023–05/HOLLANDSE KUST NOORD WIND PARK | SCALE : NTS

A3 | DRAWING NO. 123A90–DDL–EL–DD–20090 | SHEET 004 | REV. 02

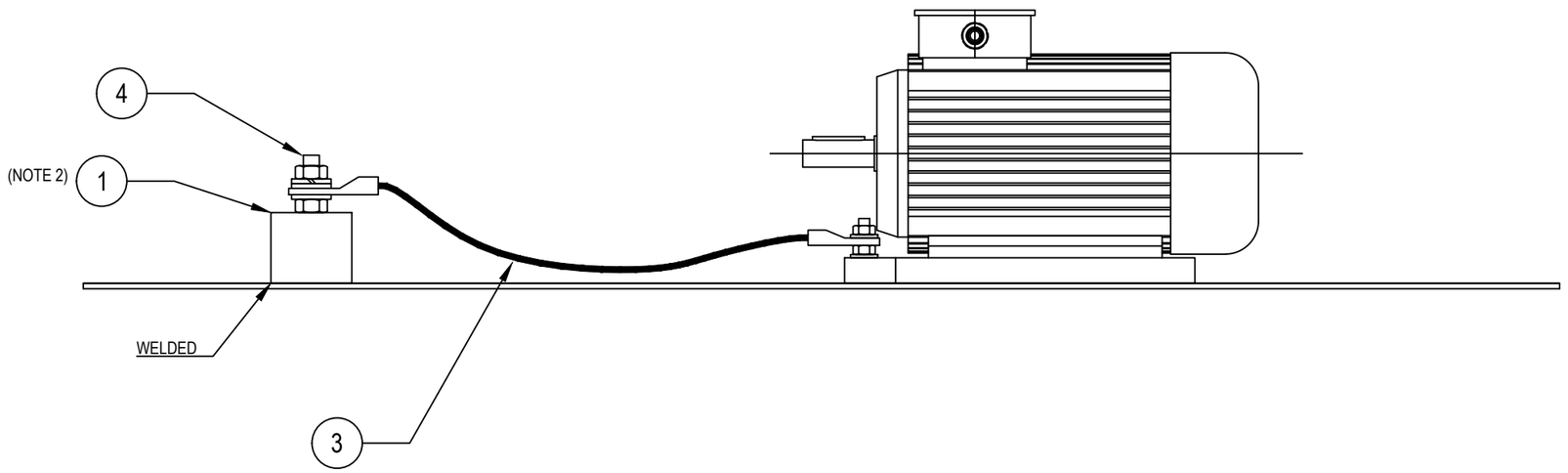
F.to UNI A3: 420mmx297mm

File Name : 123A90-DDL-EL-DD-20090 REV.02.DWG

E07

POS.	DESCRIPTION	MATERIAL	SIZE	Q.TY	NOTE
1	EARTHING BOSS WITH THREADED HOLE M10	AISI 316L	50X50		NOTE 3
2	COMPRESSION TYPE LUG FOR INSULATION COPPER CONDUCTOR	TINNED COPPER	$35mm^2$		NOTE 1
3	Y/G INSULATING COPPER CONDUCTOR	COPPER	$35mm^2$		NOTE 1
4	STUD BOLT WITH PLANE WASHER, SPRING WASHER AND NUT	AISI 316L	M10X50		
5	HEXAG. BOLT COMPLETE WITH PLANE WASHERS, SPRING WASHER AND NUT	AISI 316L	M10X30		

MOTORS



NOTES:
1) CABLE LUG CRIMPING METHOD SHALL BE HEXAGONAL COMPRESSION DIES ONLY.
2) FOR EARTHING BOSS/PLATE DETAIL SEE TYPICAL E11A
3) EARTHING BOSS SHALL BE PROTECTED AGAINST CORROSION USING AN OXIDE RESISTANT COMPOUND

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
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00	21/11/23	SPS	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL TYPICAL INSTALLATION DETAILS–EARTHING SYSTEM
EARTHING ELECTRICAL MOTOR

CONTRACT NO./TITLE CW–I–WP4–2023–05/HOLLANDSE KUST NOORD WIND PARK

SCALE : NTS

A3

DRAWING NO. 123A90–DDL–EL–DD–20090

SHEET 005

REV. 02

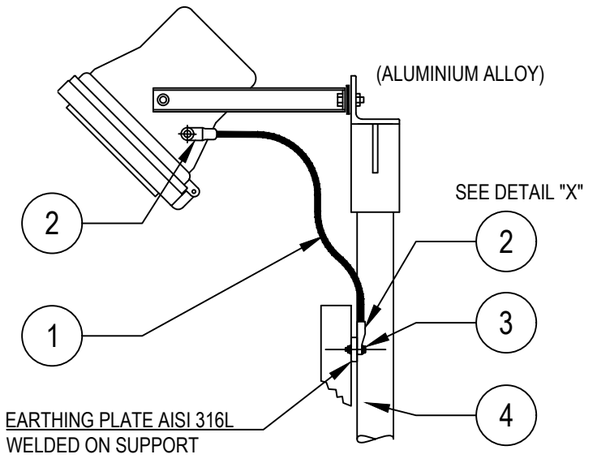
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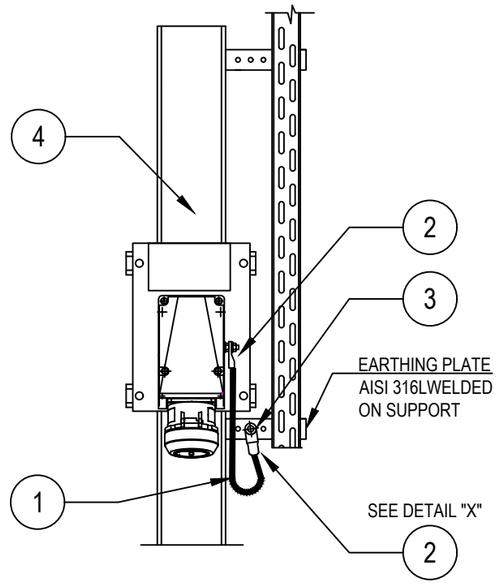
E05

POS.	DESCRIPTION	MATERIAL	SIZE	Q.TY	NOTE
1	Y/G INSULATING COPPER CONDUCTOR	COPPER	$6mm^2$		
2	COMPRESSION TYPE LUG FOR INSULATION COPPER CONDUCTOR	TINNED COPPER	$6mm^2$	2	
3	HEXAG. BOLTS, PLANE WASHERS, SPRING WASHER AND NUT	AISI 316L	M8X30	1	

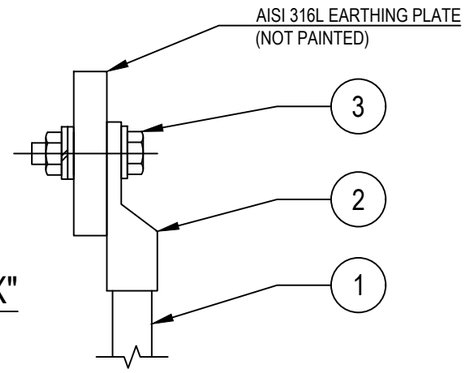
LIGHTING FIXTURE/GENERAL ITEM ON POLE



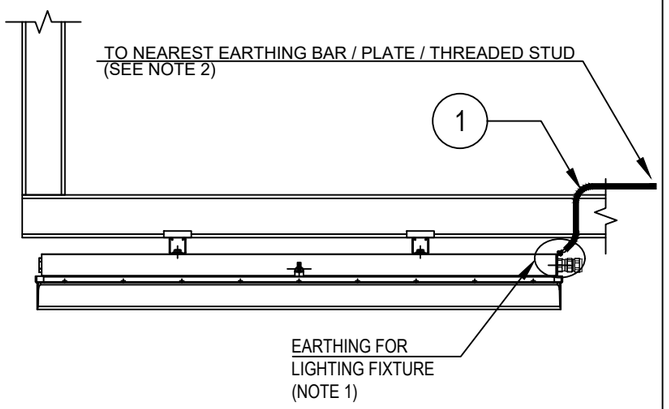
POWER SOCKET OUTLET



DETAIL "X"



LIGHTING FIXTURES



Refer also to TYP. "E32" (SEE SHEET 23)

TYPICAL VALID ALSO FOR NAVAID LIGHTS

NOTES:

1) ALL LIGHTING FIXTURES AND RELEVANT ARMOUR OF THE CABLE, ARE CONNECTED TO EARTH CONNECTION THROUGH THE EARTHING TAG OF THE CABLE GLAND

2) FOR EARTHING POINT USE ONE OF THE FOLLOWING METHODS:
TYP. E03A-D sh. 004 (EARTHING BAR ON STRUCT. UNISTRUT AND CABLE TRAY)
TYP. E11C sh. 003 (EARTHING PLATE)
TYP. E11D sh. 003 (THREADED STUD ON EXTERNAL STRUCTURE)

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00	21/11/23	SPS	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

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ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL TYPICAL INSTALLATION DETAILS–EARTHING SYSTEM
EARTHING FOR ELECTRICAL EQUIPMENTS

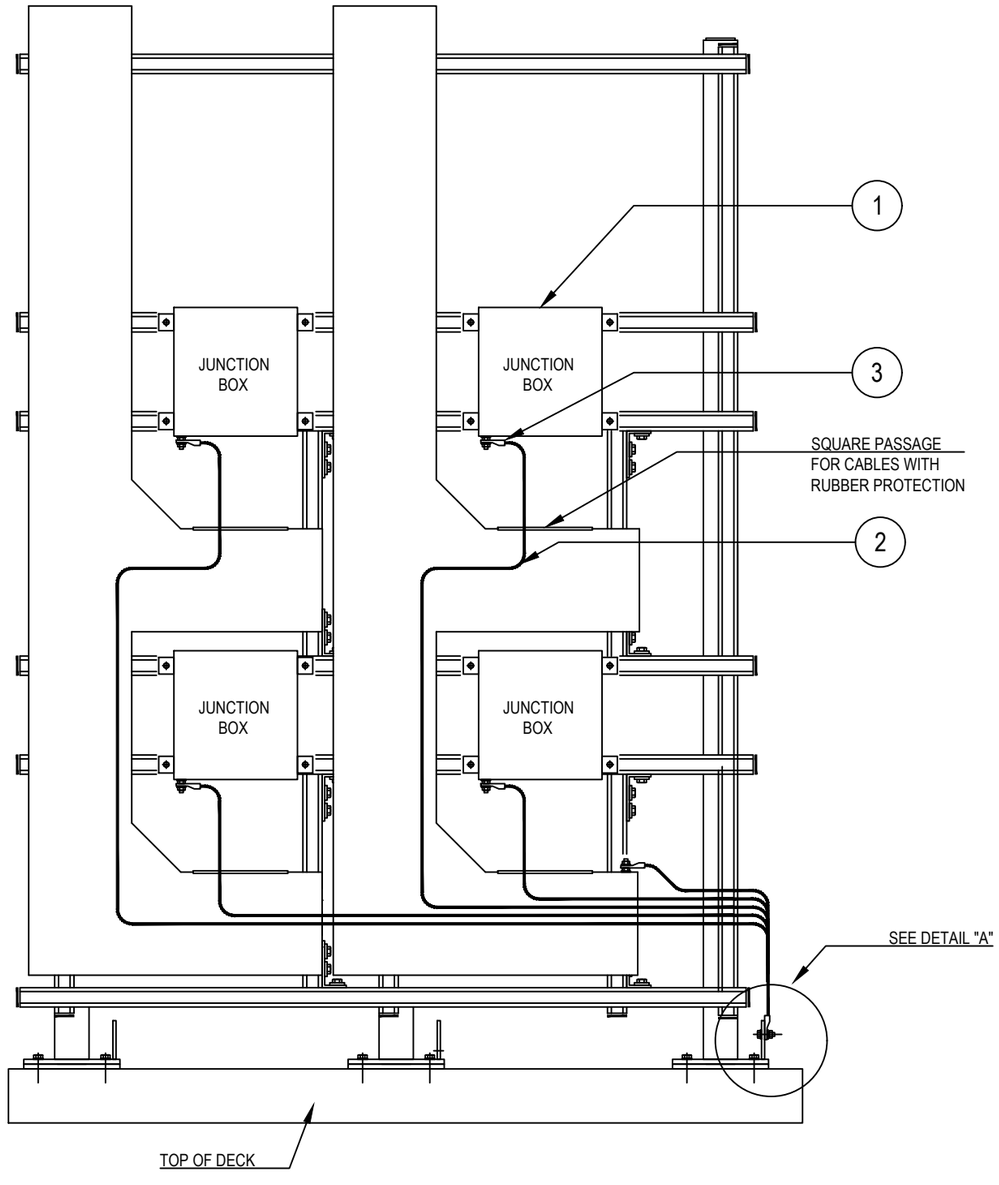
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK | SCALE : NTS

A3 | DRAWING NO. 123A90-DDL-EL-DD-20090 | SHEET 006 | REV. 02

F.to UNI A3: 420mmx297mm

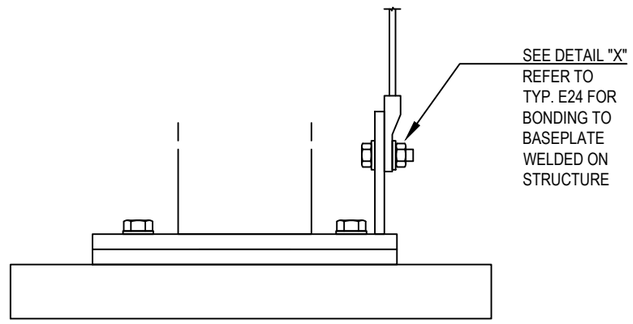
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E15

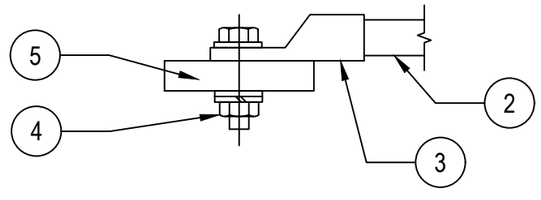


POS.	DESCRIPTION	MATERIAL	SIZE	Q.TY	NOTE
1	JUNCTION BOX (Ex)	GRP			
2	Y / G INSULATING COPPER CONDUCTOR	COPPER	$6mm^2$		
3	COMPRESSION TYPE LUG FOR INSULATION COPPER CONDUCTOR	AISI 316L	$6mm^2$		NOTE 1
4	HEXAD BOLTS, PLANE WASHERS, GROWER SPRING WASHER AND NUT	AISI 316L	M8X30		
5	EARTHING PLATE	AISI 316L			NOTE 2

DETAIL "A"



DETAIL "X"



NOTES:

1) CABLE LUG CRIMPING METHOD SHALL BE HEXAGONAL COMPRESSION DIES ONLY.
2) EARTHING PLATE WELDED ON BASE PLATE OF THE COLUM SUPPORT. SEE TYPICAL DETAIL E24
2) EXTERNAL EARTHING CONNECTION ONLY SHALL BE PROTECTED AGAINST CORROSION USING OXIDE RESISTANT COMPOUND (E.G. COPPER GREASE)

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
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CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL TYPICAL INSTALLATION DETAILS–EARTHING SYSTEM
EARTHING FOR ELECTRICAL AND INSTRUMENTALE JB MOUNTED ON RACK SUPPORT

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK | SCALE : NTS

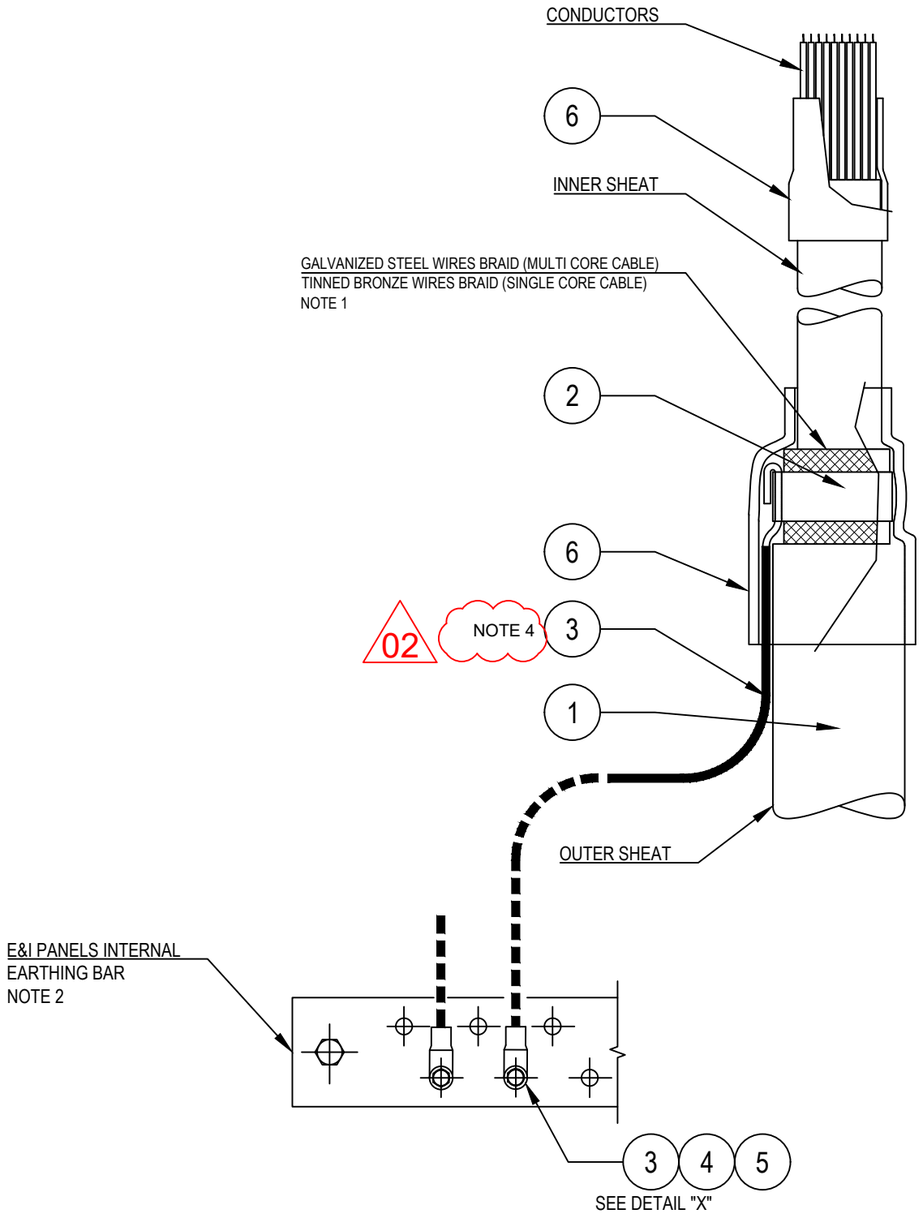
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F.to UNI A3: 420mmx297mm

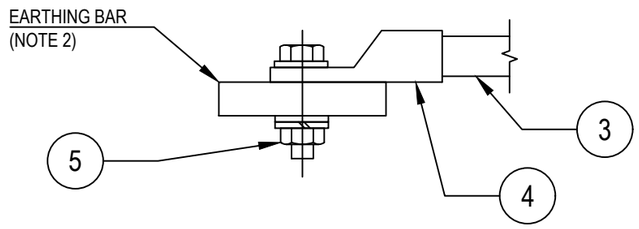
File Name : 123A90-DDL-EL-DD-20090 REV.02.DWG

E06A

POS.	DESCRIPTION	MATERIAL	SIZE	Q.TY	NOTE
1	ARMOURED CABLE				
2	CONSTANT FORCE SPRING FOR EARTHING ARMOUR CABLE	AISI 316L			02
3	Y/G INSULATING COPPER CONDUCTOR	COPPER	6mm^2		NOTE 4
4	COMPRESSION TYPE LUG FOR INSULATION COPPER CONDUCTOR	TINNED COPPER	6mm^2		NOTE 4
5	HEXAG. BOLTS, PLANE WASHERS, GROWER SPRING WASHER AND NUT	AISI 316L	M8X30		
6	BLACK HEAT SHRINKABLE SLEEVE				



DETAIL "X"



NOTES:

1) CABLE ARMOUR SHALL BE EARTHED AT BOTH ENDS.
2) FOR EARTHING BAR INSIDE SWITCHBOARD SEE VENDOR DOCUMENTATION.
3) CABLE LUG CRIMPING METHOD SHALL BE HEXAGONAL COMPRESSION DIES ONLY.
4) FOR 6.6kV CABLE USE Y/G INSULATING COPPER CONDUCTOR AND COMPRESSION TYPE LUG WITH SIZE 16mm^2

02

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	26/08/24	GRA	AMA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	10/06/24	SPS	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	21/11/23	SPS	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL TYPICAL INSTALLATION DETAILS–EARTHING SYSTEM
EARTHING FOR CABLE ARMOUR INSIDE ELECTRICAL PANELS AND I&TEL CABINETS

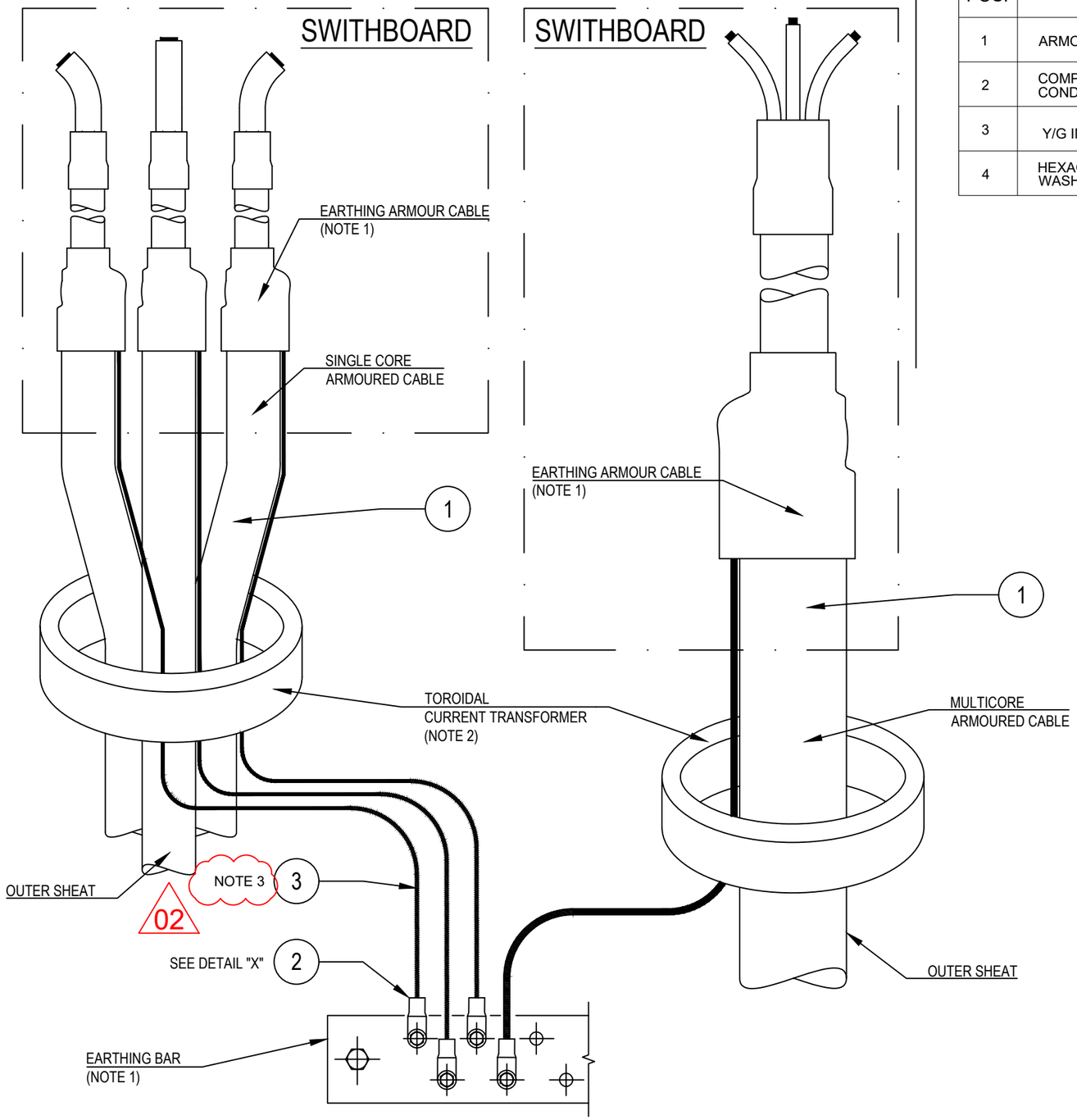
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK | SCALE : NTS

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F.to UNI A3: 420mmx297mm

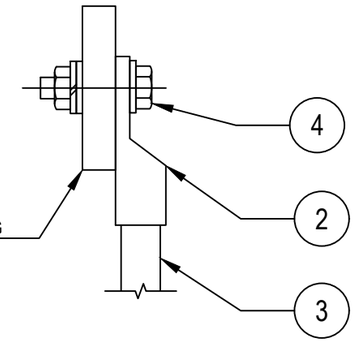
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E06B



POS.	DESCRIPTION	MATERIAL	SIZE	Q.TY	NOTE
1	ARMOURED CABLE				02
2	COMPRESSION TYPE LUG FOR INSULATION COPPER CONDUCTOR	TINNED COPPER	6mm^2		NOTE 3
3	Y/G INSULATING COPPER CONDUCTOR	COPPER	6mm^2		NOTE 3
4	HEXAG. BOLTS, PLANE WASHERS, GROWER SPRING WASHER AND NUT	AISI 316L	M8X30		

DETAIL "X"



NOTES:

1) FOR EARTHING BAR SEE TYPICAL DETAIL E03
2) CABLE LUG CRIMPING METHOD SHALL BE HEXAGONAL COMPRESSION DIES ONLY.
3) FOR 6.6kV CABLE USE Y/G INSULATING COPPER CONDUCTOR AND COMPRESSION TYPE LUG WITH SIZE 16mm^2

02

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	26/08/24	GRA	AMA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	10/06/24	SPS	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	21/11/23	SPS	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL TYPICAL INSTALLATION DETAILS–EARTHING SYSTEM
EARTHING FOR CABLE ARMOUR WITH TOROIDAL CURRENT TRANSF.

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK

SCALE : NTS

A3

DRAWING NO. 123A90-DDL-EL-DD-20090

SHEET 009

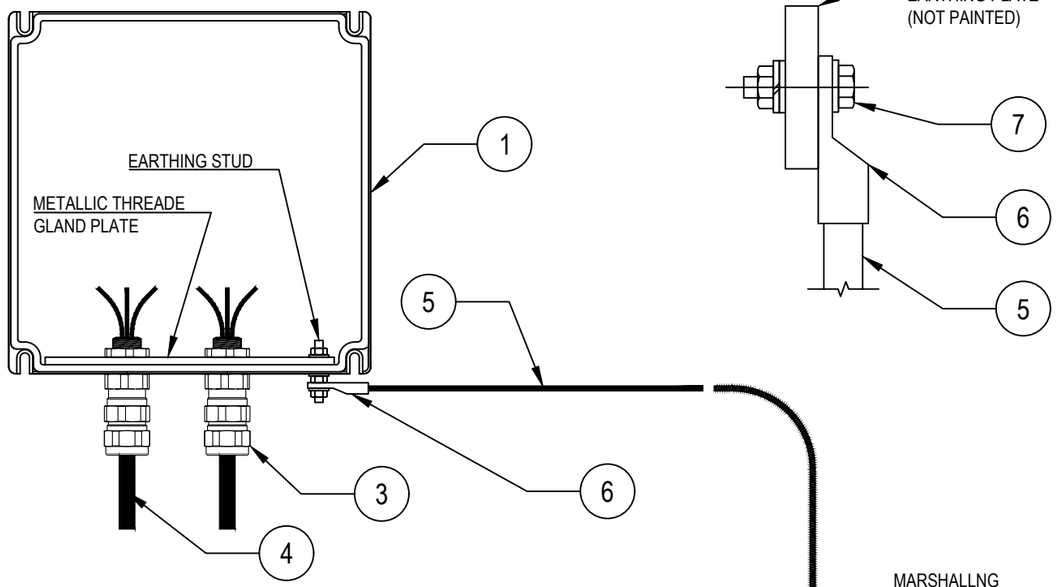
REV. 02

F.to UNI A3: 420mmx297mm

File Name : 123A90-DDL-EL-DD-20090 REV.02.DWG

E04

DETAIL OF NON METALLIC ENCLOSURE WITH METALLIC GLAND PLATE



DETAIL "X"

DETAIL OF NON METALLIC ENCLOSURE WITHOUT METALLIC GLAND PLATE

POS.	DESCRIPTION	MATERIAL	SIZE	Q.TY	NOTE
1	JUNCTION BOX WITH PLATE (EX)	GRP			
2	JUNCTION BOX WITHOUT GLAND PLATE (EX)	GRP			
3	DOUBLE SEAL CABLE GLAND (EX) FOR ARMOURED CABLE	NICK.PL.BRASS			NOTE 2
4	ARMOURED CABLE				
5	Y/G INSULATING COPPER CONDUCTOR	COPPER	$6mm^2$		NOTE 1
6	COMPRESSION TYPE LUG FOR INSULATION COPPER CONDUCTOR	TINNED COPPER	$6mm^2$		NOTE 1
7	BOLT, PLANE WASHER, GROWER SPRING WASHER AND NUT	AISI 316L			

NOTES:
1) FOR EARTHING BAR SEE TYPICAL DETAILS E03
2) CABLE LUG CRIMPING METHOD SHALL BE HEXAGONAL COMPRESSION DIES ONLY.

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	26/08/24	GRA	AMA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	10/06/24	SPS	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	21/11/23	SPS	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL TYPICAL INSTALLATION DETAILS–EARTHING SYSTEM
EARTHING FOR CABLE ARMOUR BY CABLE GLAND

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK

SCALE : NTS

A3

DRAWING NO. 123A90–DDL–EL–DD–20090

SHEET 010

REV. 02

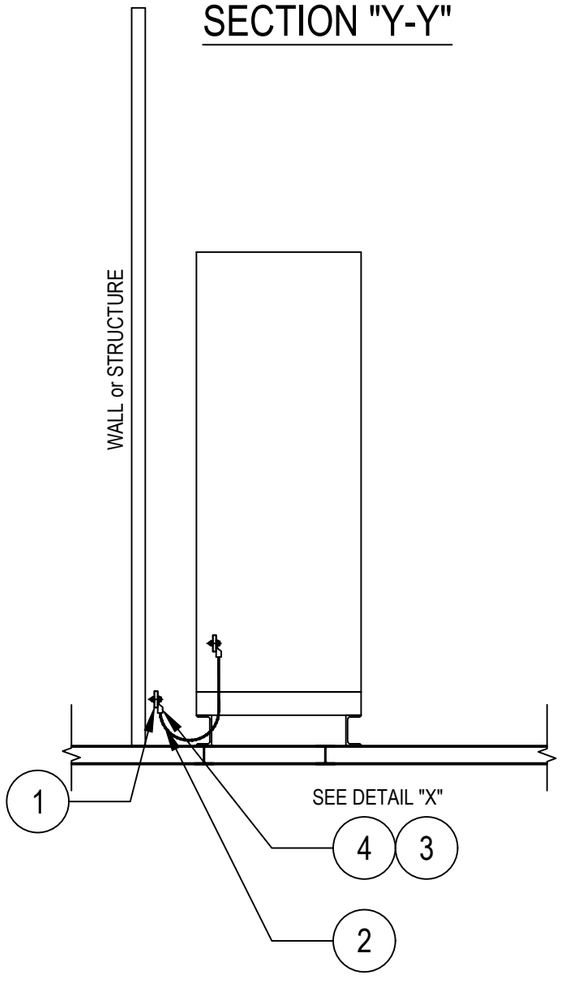
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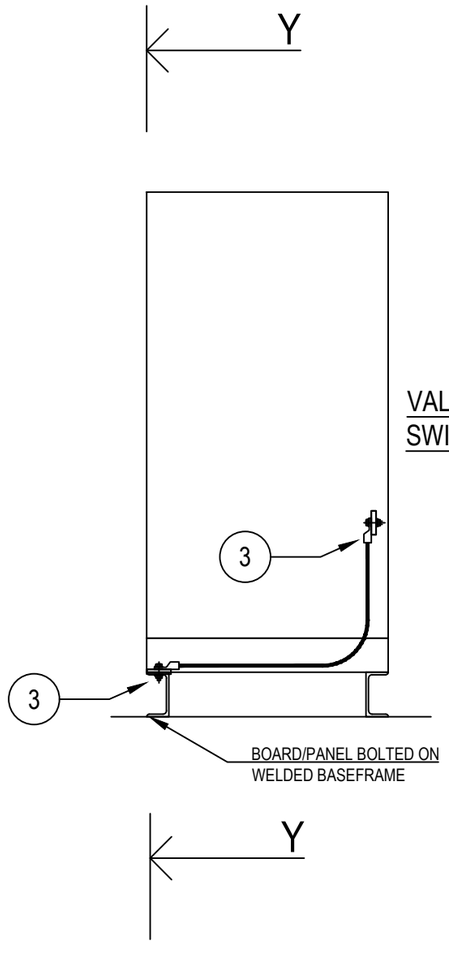
File Name : 123A90-DDL-EL-DD-20090 REV.02.DWG

E23

POS.	DESCRIPTION	MATERIAL	SIZE	Q.TY	NOTE
1	MARSHALLING EARTHING BAR	TINNED COPPER	50X5		NOTE 1
2	Y/G INSULATING COPPER CONDUCTOR	COPPER			NOTE 1
3	COMPRESSION TYPE LUG FOR INSULATION COPPER CONDUCTOR	TINNED COPPER	$35mm^2$	4	NOTE 1
4	BOLT, PLANE WASHER, GROWER SPRING WASHER AND NUT	AISI 316L	M10X30	4	

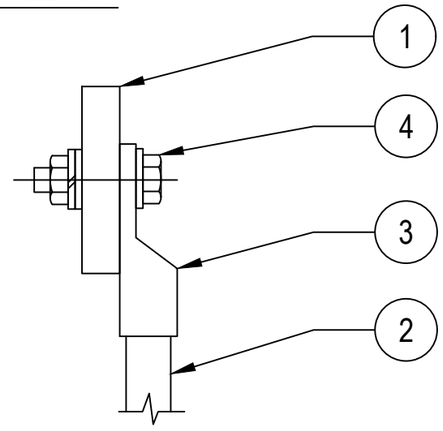
SECTION "Y-Y"





VALID FOR HV/LV SWITCHGEAR

DETAIL "X"



NOTES:

1) FOR SIZE OF THE EARTHING CABLE SEE EARTHING LAYOUT DRAWINGS OF RESPECTIVE AREAS

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	26/08/24	GRA	AMA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	10/06/24	SPS	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	21/11/23	SPS	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL TYPICAL INSTALLATION DETAILS–EARTHING SYSTEM
EARTHING FOR PANELS/BOARDS IN TECHNICAL ROOM

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK

SCALE : NTS

A3

DRAWING NO. 123A90–DDL–EL–DD–20090

SHEET 011

REV. 02

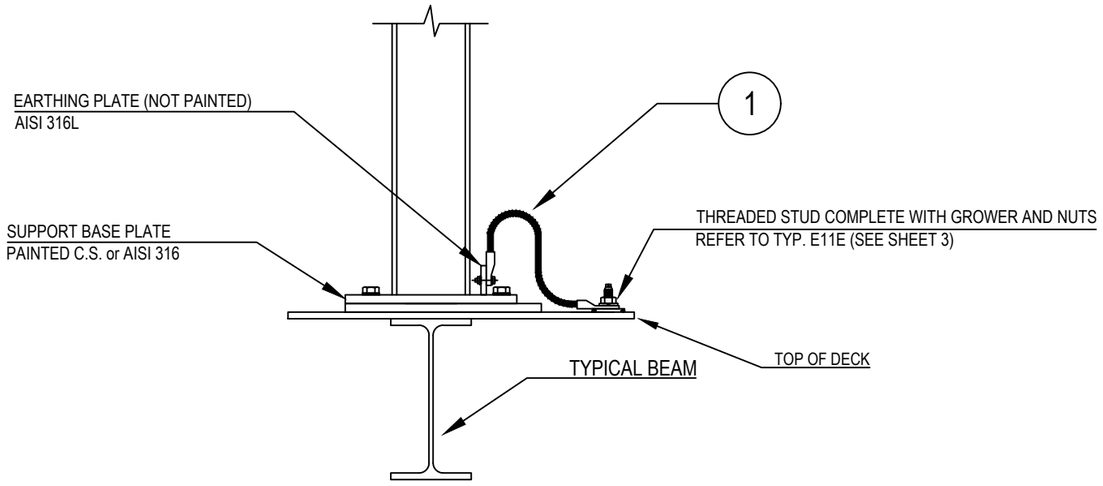
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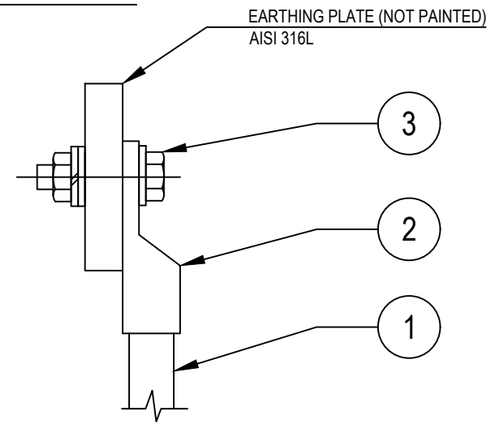
E24

POS.	DESCRIPTION	MATERIAL	SIZE	Q.TY	NOTE
1	As. R. Y/G INSULATING COPPER CONDUCTOR	COPPER	$35mm^2$		
2	COMPRESSION TYPE LUG FOR INSULATION COPPER CONDUCTOR	TINNED COPPER	$35mm^2$	2	NOTE 1
3	HEXAG. BOLT M10X30 COMPLETE WITH PLANE WASHERS, SPRING WASHER AND NUT	AISI 316L	M10X30	2	

GENERIC SUPPORT BOLTED ON STRUCTURE



DETAIL "X"



NOTES:
1) CABLE LUG CRIMPING METHOD SHALL BE HEXAGONAL COMPRESSION DIES ONLY
2) EXTERNAL EARTHING CONNECTION ONLY SHALL BE PROTECTED AGAINST CORROSION USING OXIDE RESISTANT COMPOUND (E.G. COPPER GREASE)

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	26/08/24	GRA	AMA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	10/06/24	SPS	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	21/11/23	SPS	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL TYPICAL INSTALLATION DETAILS–EARTHING SYSTEM
EARTHING FOR POLE/SUPPORT OF GENERIC EQUIPMENTS

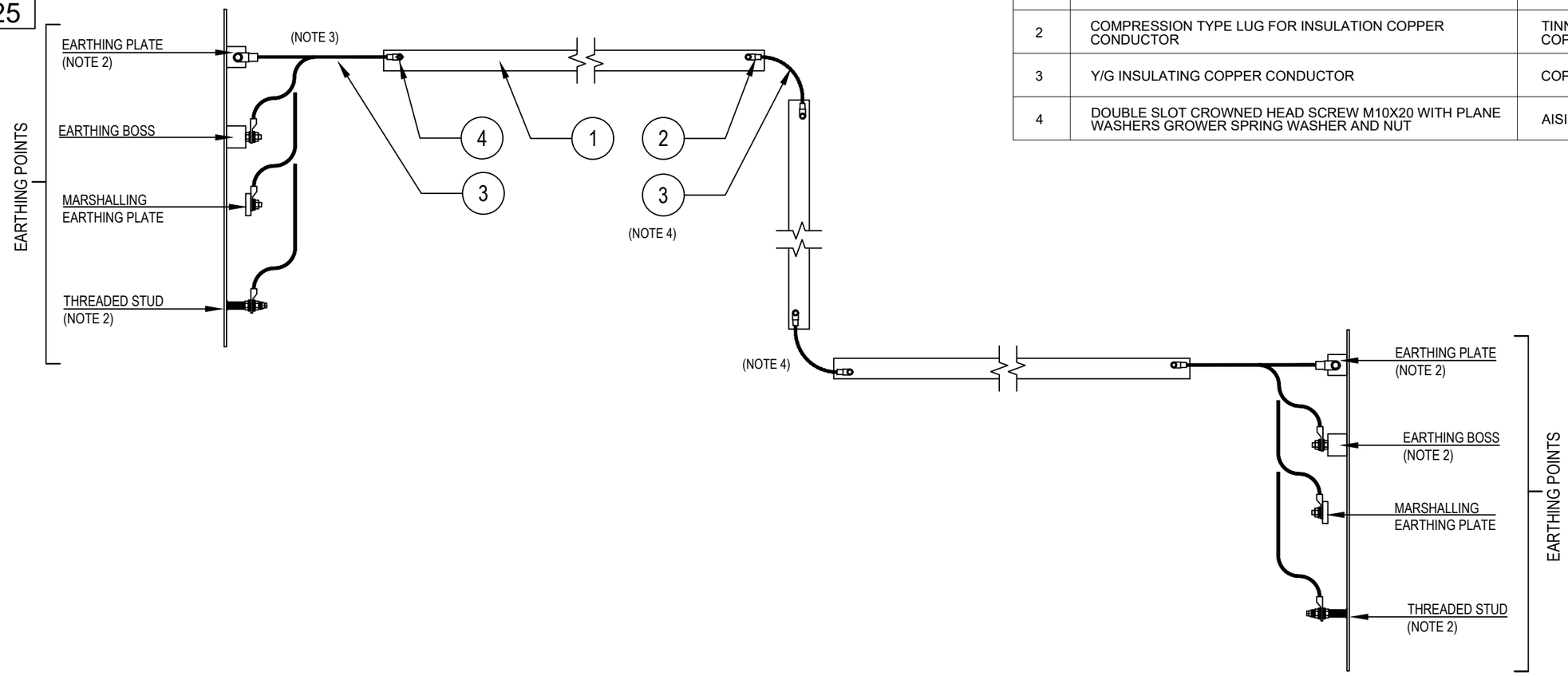
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK | SCALE : NTS

A3 | DRAWING NO. 123A90–DDL–EL–DD–20090 | SHEET 012 | REV. 02

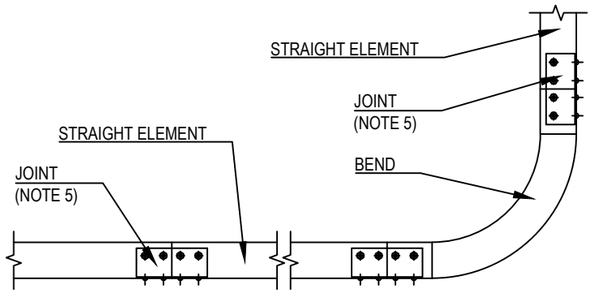
F.to UNI A3: 420mmx297mm

File Name : 123A90-DDL-EL-DD-20090 REV.02.DWG

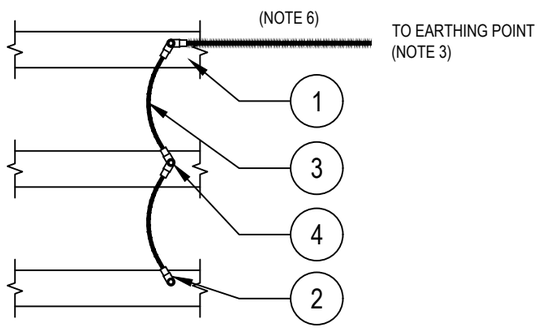
E25



POS.	DESCRIPTION	MATERIAL	SIZE	Q.TY	NOTE
1	CABLE LADDER/TRAY	FRP/GRP			
2	COMPRESSION TYPE LUG FOR INSULATION COPPER CONDUCTOR	TINNED COPPER	$16mm^2$		NOTE 1
3	Y/G INSULATING COPPER CONDUCTOR	COPPER	$16mm^2$		
4	DOUBLE SLOT CROWNED HEAD SCREW M10X20 WITH PLANE WASHERS GROWER SPRING WASHER AND NUT	AISI 316L	M10X20		



PARALLEL ROUTING



NOTES:
1) CABLE LUG CRIMPING METHOD SHALL BE HEXAGONAL COMPRESSION DIES ONLY.
2) FOR DETAIL OF EARTHING PLATE, EARTHING BOSS AND THREADED STUD SEE TYP. "E11" Sh.003.
3) FOR EARTHING USE NEAREST EXISTING EARTHING POINT OR A NEW DEDICATED.
4) ON EVERY CHANGE OF DIRECTION MADE WITHOUT A PREFABBRICATED BEND, BONDING CONNECTION IS REQUIRED BY MEAN OF INSULATED Y/G EARTHING CONDUCTOR.
5) THE ELECTRIC CONTINUITY BETWEEN THE VARIOUS PREFABRICATED COMPONENTS IS GUARANTEED BY THE JOINTS INSTALLED ACCORDING TO THE ASSEMBLY INSTRUCTIONS OF THE CABLE TRAY/LADDER MANUFACTURER.
6) CABLE LADDER/TRAY SHALL BE CONNECTED TO THE EQUIPOTENTIAL BONDING SYSTEM AT BOTH ENDS. FULL CONTINUITY SHALL BE ENSURED. IN CASE OF SHORT LENGHT ELEMENTS (LESS THAN 3 m) ONE END ONLY MAY BE CONNECTED TO THE EQUIPOTENTIAL BONDING SYSTEM.
7) EXTERNAL EARTHING CONNECTION ONLY SHALL BE PROTECTED AGAINST CORROSION USING OXIDE RESISTANT COMPOUND (E.G. COPPER GREASE).

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	26/08/24	GRA	AMA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	10/06/24	SPS	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	21/11/23	SPS	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL TYPICAL INSTALLATION DETAILS–EARTHING SYSTEM
EARTHING FOR CABLE LADDERS & TRAYS

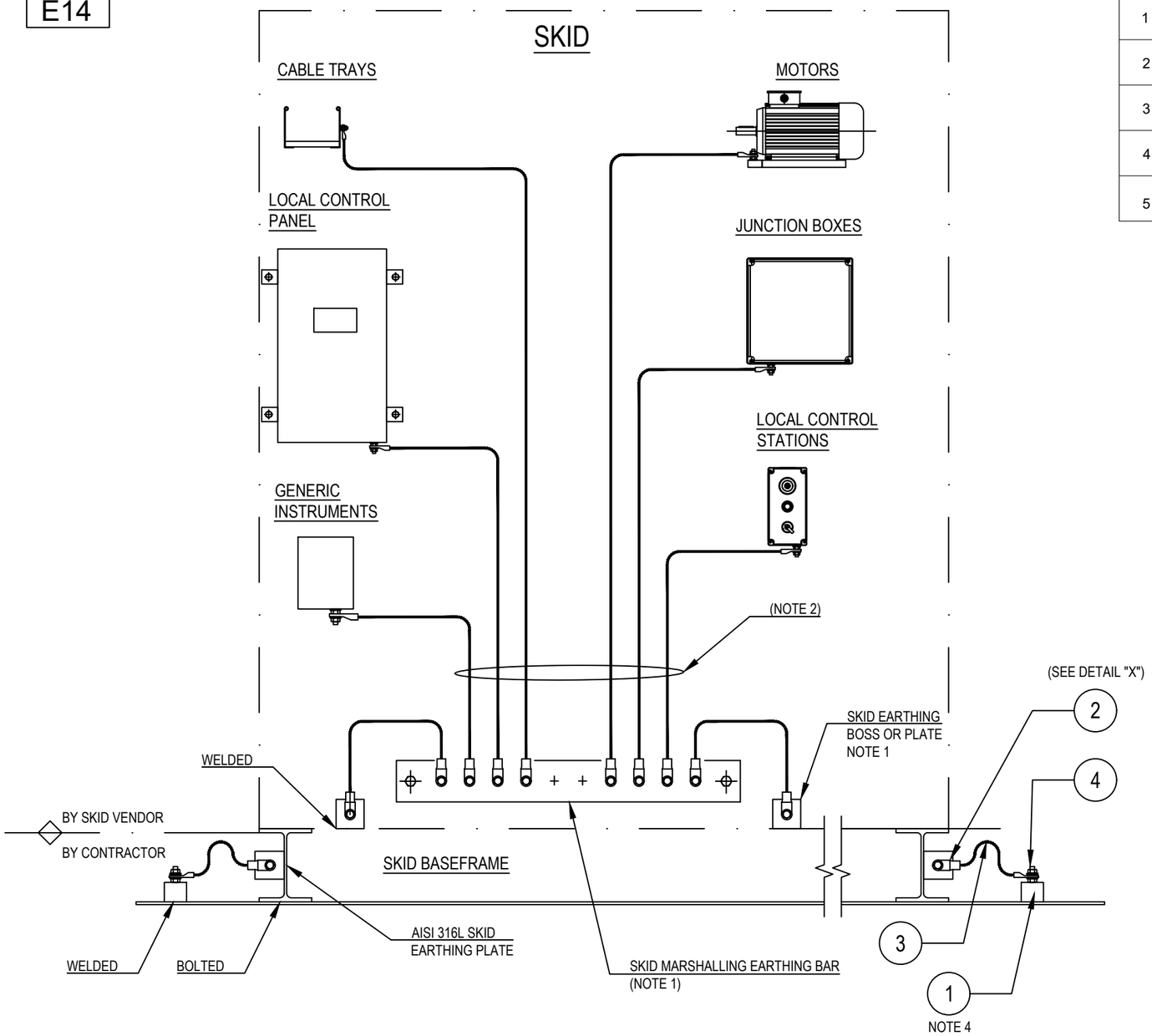
CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK | SCALE : NTS

A3 | DRAWING NO. 123A90-DDL-EL-DD-20090 | SHEET 013 | REV. 02

F.to UNI A3: 420mmx297mm

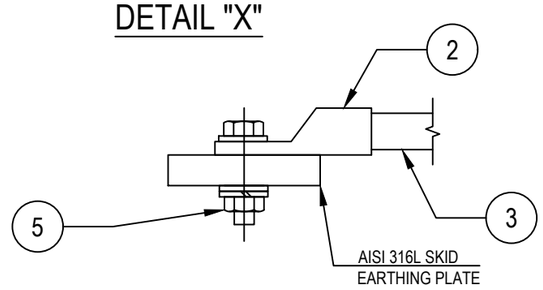
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E14



POS.	DESCRIPTION	MATERIAL	SIZE	Q.TY	NOTE
1	EARTHING BOSS WITH THREADED HOLE M10	AISI 316L	50X50		NOTE 5
2	COMPRESSION TYPE LUG FOR INSULATION COPPER CONDUCTOR	TINNED COPPER	$35mm^2$		NOTE 3
3	Y/G INSULATING COPPER CONDUCTOR	COPPER	$35mm^2$		NOTE 3
4	STUD BOLT WITH PLANE WASHER, SPRING WASHER AND NUT	AISI 316L	M10X50		
5	HEXAG. BOLT COMPLETE WITH PLANE WASHERS, SPRING WASHER AND NUT	AISI 316L	M10X30		

DETAIL "X"



NOTES:
1) EARTHING BAR/BOSS/PLATE SUPPLIED BY SKID MANUFACTURER
2) ALL EQUIPMENTS AND CABLE TRAYS WILL BE EARTHING ON SKID EARTHING BAR BY SKID MANUFACTURER
3) CABLE LUG CRIMPING METHOD SHALL BE HEXAGONAL COMPRESSION DIES ONLY
4) FOR EARTHING BOSS TYPICAL DETAIL E11
5) EXTERNAL EARTHING CONNECTION ONLY SHALL BE PROTECTED AGAINST CORROSION USING OXIDE RESISTANT COMPOUND (E.G. COPPER GREASE)

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	26/08/24	GRA	AMA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	10/06/24	SPS	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	21/11/23	SPS	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL TYPICAL INSTALLATION DETAILS–EARTHING SYSTEM
EARTHING FOR SKID BASEFRAME

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK

SCALE : NTS

A3

DRAWING NO. 123A90-DDL-EL-DD-20090

SHEET 014

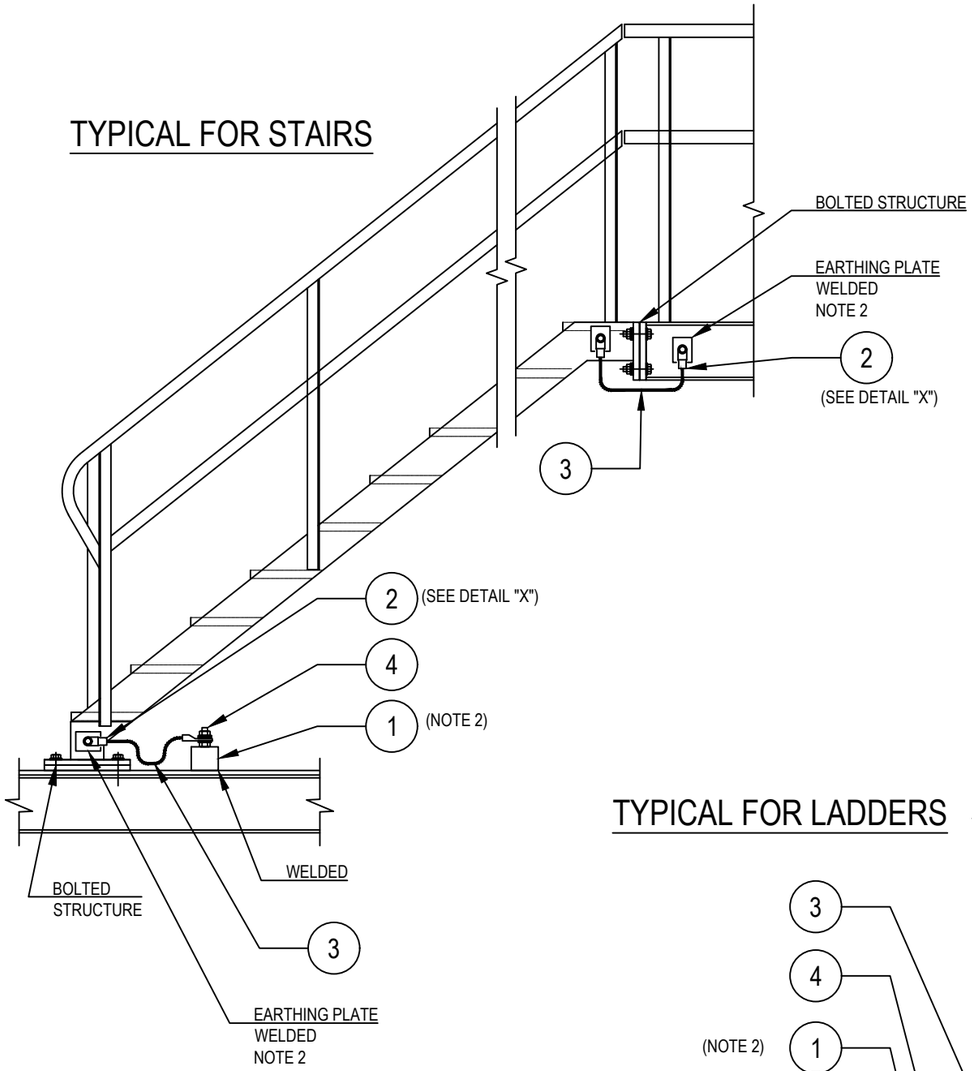
REV. 02

F.to UNI A3: 420mmx297mm

File Name : 123A90-DDL-EL-DD-20090 REV.02.DWG

E17

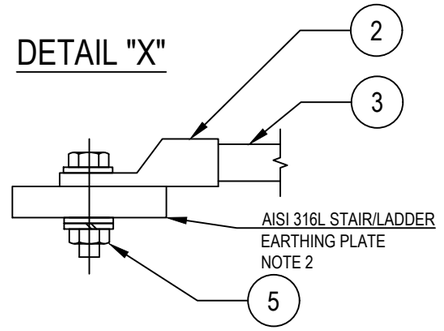
TYPICAL FOR STAIRS



TYPICAL FOR LADDERS

POS.	DESCRIPTION	MATERIAL	SIZE	Q.TY	NOTE
1	EARTHING BOSS WITH THREADED HOLE M10	AISI 316L	50X50		NOTE 3
2	COMPRESSION TYPE LUG FOR INSULATION COPPER CONDUCTOR	TINNED COPPER	35mm^2		NOTE 1
3	Y/G INSULATING COPPER CONDUCTOR	COPPER	35mm^2		NOTE 1
4	STUD BOLT WITH PLANE WASHER, SPRING WASHER AND NUT	AISI 316L	M10X50		
5	HEXAG. BOLT COMPLETE WITH PLANE WASHERS, SPRING WASHER AND NUT	AISI 316L	M10X30		

DETAIL "X"



NOTES:
1) CABLE LUG CRIMPING METHOD SHALL BE HEXAGONAL COMPRESSION DIES ONLY.
2) FOR EARTHING BOSS/PLATE DETAIL SEE TYPICAL E11
3) EARTHING BOSS SHALL BE PROTECTED AGAINST CORROSION USING AN OXIDE RESISTANT COMPOUND

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	26/08/24	GRA	AMA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	10/06/24	SPS	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	21/11/23	SPS	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL TYPICAL INSTALLATION DETAILS–EARTHING SYSTEM
EARTHING FOR STAIRS AND LADDERS BOLTED ON STRUCTURE

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK | SCALE : NTS

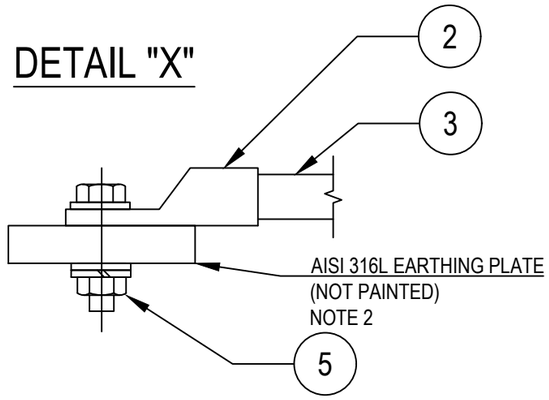
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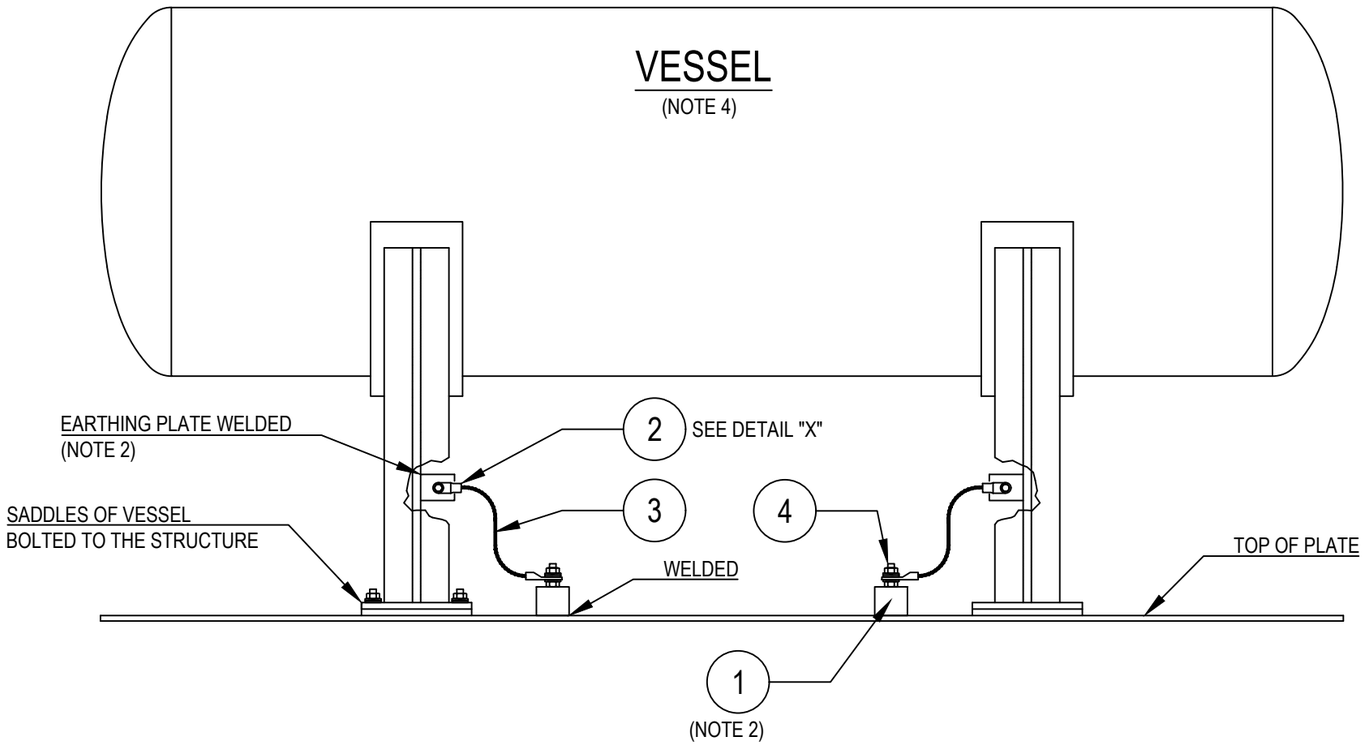
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E13

DETAIL "X"



POS.	DESCRIPTION	MATERIAL	SIZE	Q.TY	NOTE
1	EARTHING BOSS WITH THREADED HOLE M10	AISI 316L	50X50	2	NOTE 3
2	COMPRESSION TYPE LUG FOR INSULATION COPPER CONDUCTOR	TINNED COPPER	$35mm^2$	4	NOTE 1
3	Y/G INSULATING COPPER CONDUCTOR	COPPER	$35mm^2$		NOTE 1
4	STUD BOLT WITH PLANE WASHER, SPRING WASHER AND NUT	AISI 316L	M10X50	2	
5	HEXAG. BOLT COMPLETE WITH PLANE WASHERS, SPRING WASHER AND NUT	AISI 316L	M10X30	2	



NOTES:
1) CABLE LUG CRIMPING METHOD SHALL BE HEXAGONAL COMPRESSION DIES ONLY.
2) FOR EARTHING BOSS/PLATE DETAIL SEE TYPICAL DETAIL E11
3) EARTHING BOSS SHALL BE PROTECTED AGAINST CORROSION USING AN OXIDE RESISTANT COMPOUND

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	26/08/24	GRA	AMA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	10/06/24	SPS	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	21/11/23	SPS	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL TYPICAL INSTALLATION DETAILS–EARTHING SYSTEM
EARTHING FOR VESSEL WITH LEGS BOLTED ON STRUCTURE

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK | SCALE : NTS

A3 | DRAWING NO. 123A90-DDL-EL-DD-20090 | SHEET 016 | REV. 02

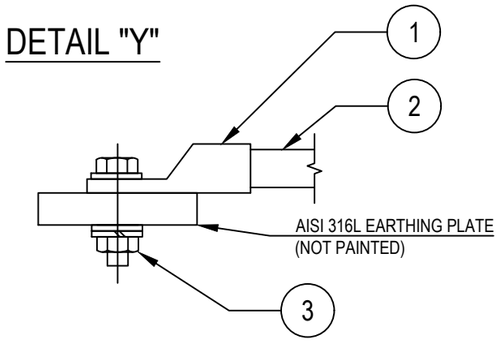
F.to UNI A3: 420mmx297mm

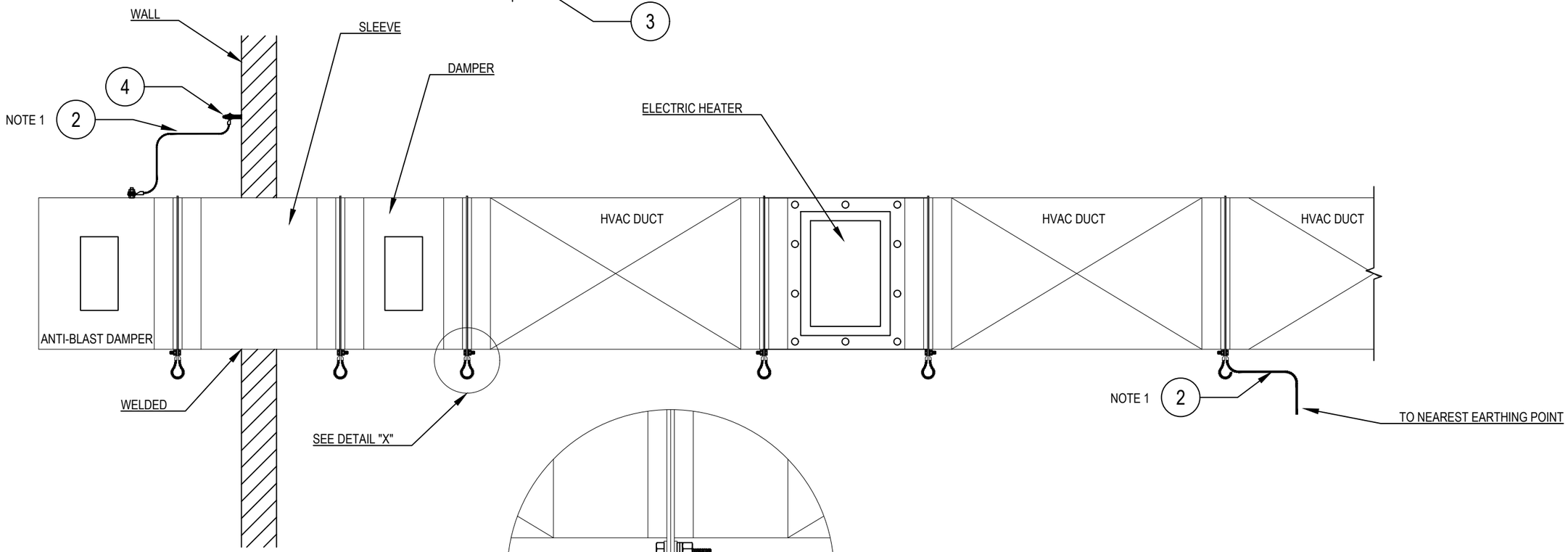
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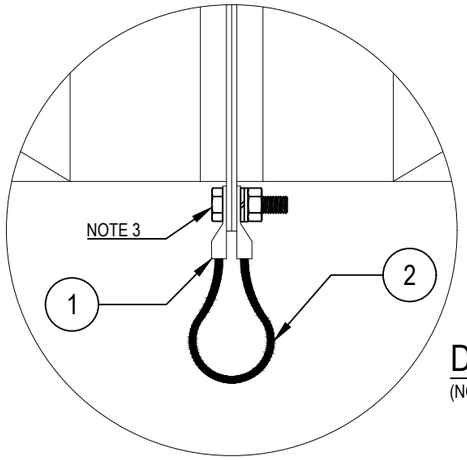
E26

POS.	DESCRIPTION	MATERIAL	SIZE	Q.TY	NOTE
1	COMPRESSION TYPE LUG FOR INSULATION COPPER CONDUCTOR	TINNED COPPER	$6mm^2$	1	
2	Y/G INSULATING COPPER CONDUCTOR	COPPER	$6mm^2$	1	
3	HEXAG. BOLT COMPLETE WITH PLANE WASHERS, SPRING WASHER AND NUT	AISI 316L	M10X30	1	
4	HILTI S-BT-ER M10/15 SN6	AISI 316L		1	NOTE 4

DETAIL "Y"







DETAIL "X"

(NOTE 2)

NOTES:
1) HVAC DUCT SHALL BE CONNECTED TO THE EQUIPOTENTIAL BONDING SYSTEM AT BOTH ENDS AND EVERY 25 m. FULL CONTINUITY SHALL BE ENSURED. IN CASE OF SHORT LENGTH ELEMENTS (LESS THAN 3 M) ONE END ONLY MAY BE CONNECTED TO THE EQUIPOTENTIAL BONDING SYSTEM.
2) REACH EARTHING BONDING SHALL BE INSTALLED WHEN CONTINUITY CANNOT BE ENSURED.
3) AISI 316L HARDWARE INCLUDED WITH HVAC DUCT.
4) REFER TO TYP. "E11D" SHEET 003.

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	26/08/24	GRA	AMA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	10/06/24	SPS	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	21/11/23	SPS	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL TYPICAL INSTALLATION DETAILS–EARTHING SYSTEM
EARTHING FOR HVAC DUCT AND ITS COMPONENTS

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK

SCALE : NTS

A3

DRAWING NO. 123A90-DDL-EL-DD-20090

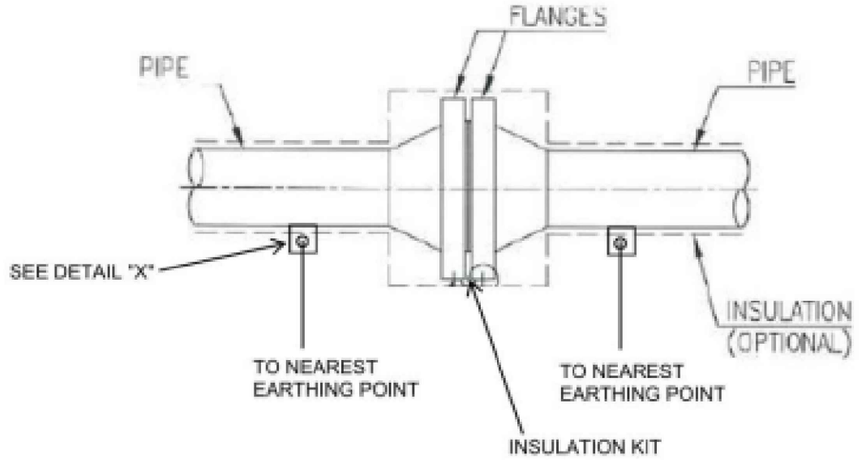
SHEET 017

REV. 02

F.to UNI A3: 420mmx297mm

File Name : 123A90-DDL-EL-DD-20090 REV.02.DWG

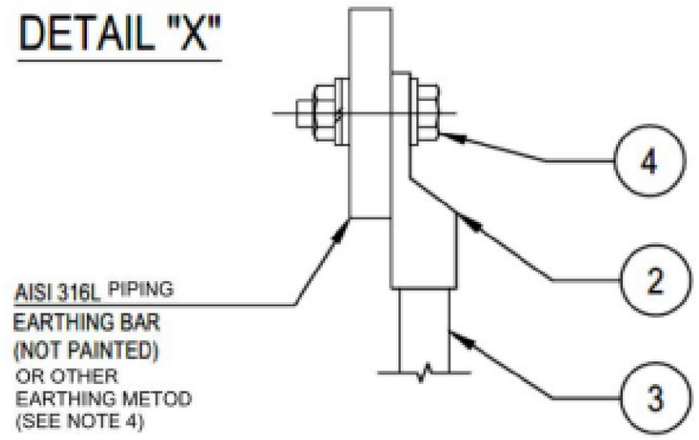
E22

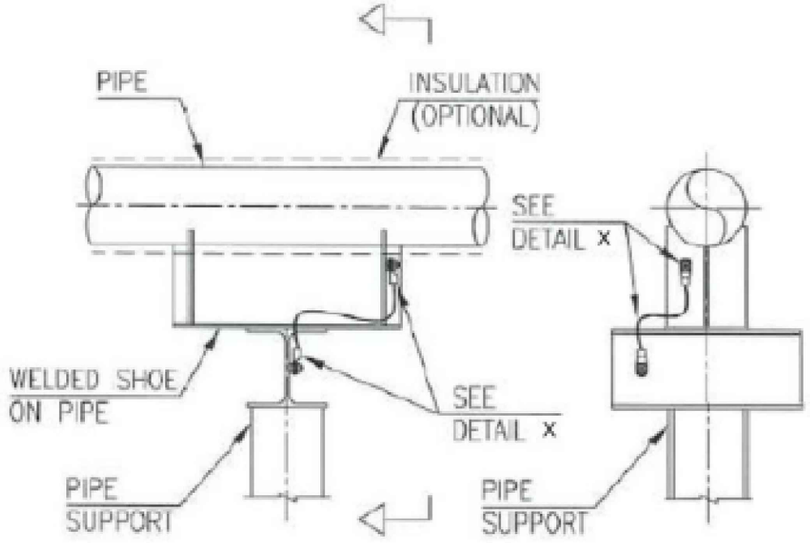


FLANGE TYPICAL BONDING

POS.	DESCRIPTION	MATERIAL	SIZE	Q.TY	NOTE
2	COMPRESSION TYPE LUG FOR INSULATION COPPER CONDUCTOR	TINNED COPPER	6mm²		NOTE 2
3	Y/G INSULATING COPPER CONDUCTOR	COPPER	6mm²		
4	HEXAG. BOLTS, PLANE WASHERS, GROWER SPRING WASHER AND NUT	AISI 316L	M8X30		

DETAIL "X"





PIPE SHOE AND SUPPORT TYPICAL BONDING

NOTES:
1) FLANGES SHALL BE BONDED ONLY FOR PIPE FLANGE WITH INSULATION KIT.
2) PROCESS PIPE SHALL BE CONNECTED TO THE EQUIPOTENTIAL BONDING SYSTEM AT BOTH ENDS AND EVERY 25 m. FULL CONTINUITY SHALL BE ENSURED. IN CASE OF SHORT LENGTH ELEMENTS (LESS THAN 3 m) ONE END ONLY MAY BE CONNECTED TO THE EQUIPOTENTIAL BONDING SYSTEM.
3) CABLE LUG CRIMPING METHOD SHALL BE HEXAGONAL COMPRESSION DIES ONLY
4) FOR DETAIL OF EARTHING PLATE, EARTHING BOSS OR THREADED STUD SEE TYP. "E11" Sh.003.
5) THE EXACT DIMENSIONS WILL BE DEFINED DURING ASSEMBLYPHASE. (THK=3mm)
6) LENGHT OF EARTHING PLATE SHALL BE EXCEED THE INSULATION THICKNESS OF THE PIPE (IF ANY).
7) FOR PIPING WHICH IS IN DIRECT WITH STRUCTURAL STEELWORK NO BONDING CONNECTIONS ARE REQUIRED BETWEEN THE PIPE AND THE METALLIC STRUCTURE. NEVERTHELESS THE ELECTRICAL RESISTENCE BETWEEN FLANGES AND BETWEEN PIPES AND EARTHING NETWORK SHALL BE MEASURED AND FOUND LESS THAN 1 MΩ.

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	26/08/24	GRA	AMA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	10/06/24	SPS	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	21/11/23	SPS	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL TYPICAL INSTALLATION DETAILS–EARTHING SYSTEM
EARTHING FOR PROCESS PIPING

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK

SCALE : NTS

A3

DRAWING NO. 123A90–DDL–EL–DD–20090

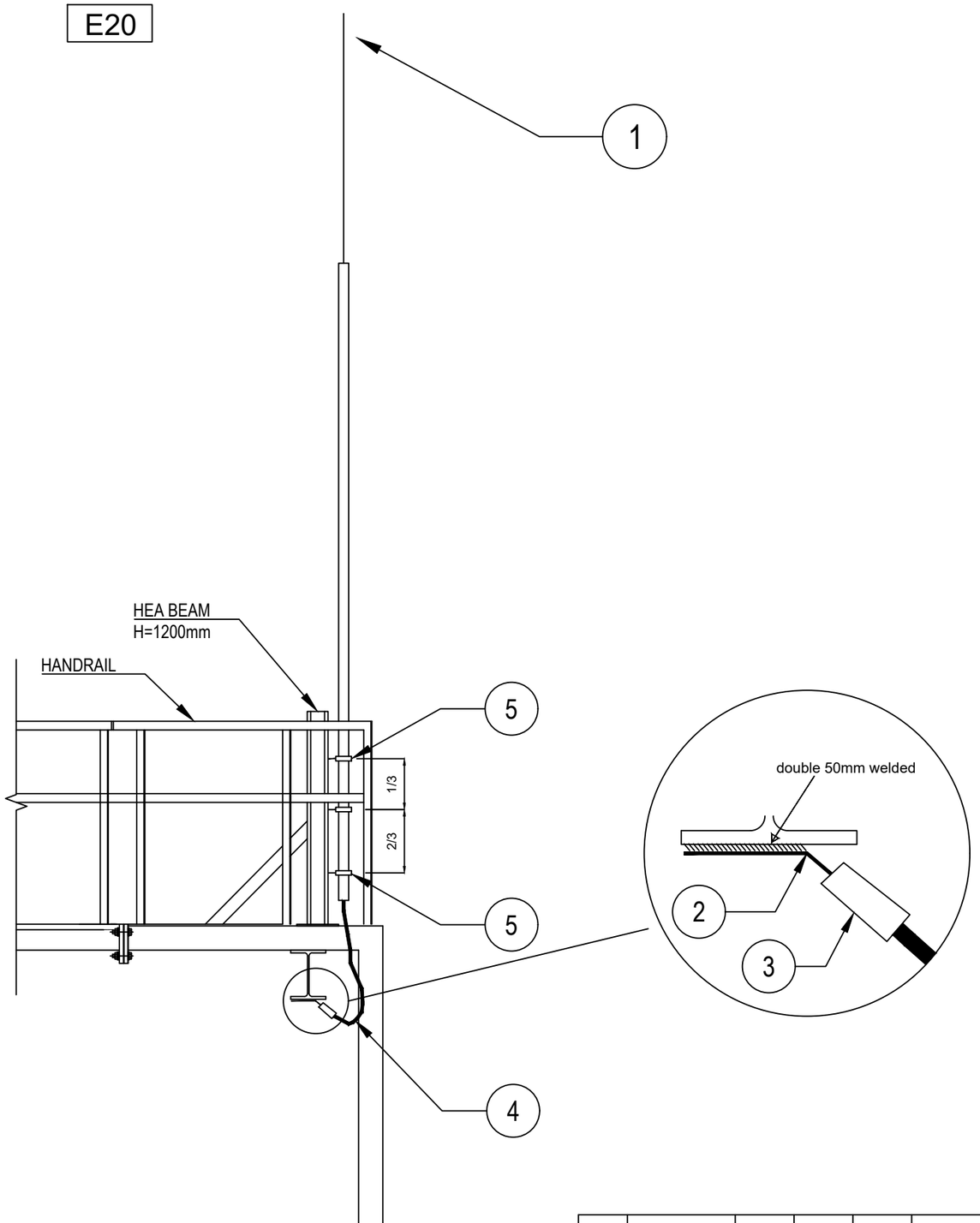
SHEET 018

REV. 02

F.to UNI A3: 420mmx297mm

File Name : 123A90-DDL-EL-DD-20090 REV.02.DWG

E20



POS.	DESCRIPTION	MATERIAL	SIZE	Q.TY	NOTE
1	AIR TERMINAL LIGHTNING	AISI316L	6m	3	
			8m	2	
2	THREADED ROD	HDG	M12 L=200mm		
3	CRIMP JOINT SLEEVE	ALDREY			
4	INSULATING CONDUCTOR (VENDOR SUPPLY)	ALDREY	$70mm^2$	1m	
5	LIGHTING AIR ROD BRACKET	AISI316L	by vendor	3	

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	26/08/24	GRA	AMA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	10/06/24	SPS	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	21/11/23	SPS	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL TYPICAL INSTALLATION DETAILS–EARTHING SYSTEM
EARTHING FOR AIR TERMINAL LIGHTNING

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK

SCALE : NTS

A3

DRAWING NO. 123A90-DDL-EL-DD-20090

SHEET 019

REV. 02

F.to UNI A3: 420mmx297mm

File Name : 123A90-DDL-EL-DD-20090 REV.02.DWG

BLANK SHEET

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	26/08/24	GRA	AMA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	10/06/24	SPS	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	21/11/23	SPS	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL TYPICAL INSTALLATION DETAILS-EARTHING SYSTEM
BLANK SHEET

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK

SCALE : NTS

A3

DRAWING NO. 123A90-DDL-EL-DD-20090

SHEET 020

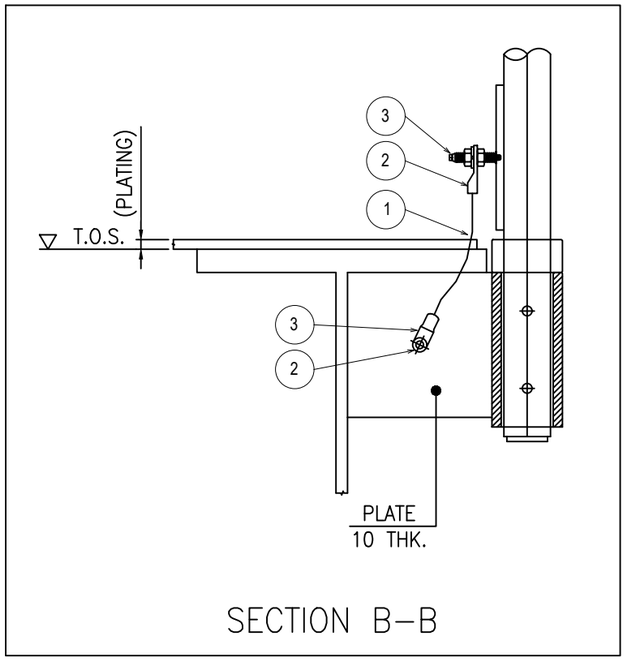
REV. 02

F.to UNI A3: 420mmx297mm

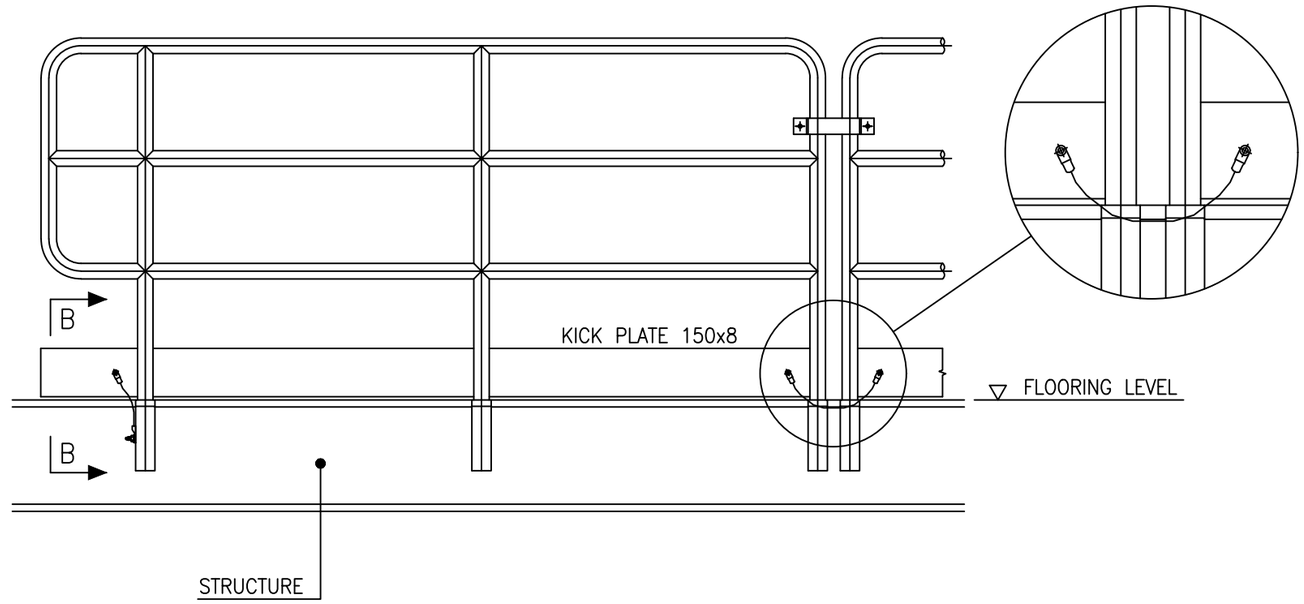
File Name : 123A90-DDL-EL-DD-20090 REV.02.DWG

E16

POS.	DESCRIPTION	MATERIAL	SIZE	Q.TY	NOTE
1	Y/G INSULATION COPPER CONDUCTOR	COPPER	16mm^2		
2	COMPRESSION TYPE LUG FOR INSULATION COPPER	TINNED COPPER	16mm^2		NOTE 3
3	HILTI S-BT-ER				



SECTION B–B



NOTES:
1. SEE SHEET 3 FOR EARTH POIN ASSEMBLY
2. CABLE LUG CRIMPING METHOD SHALL SE HEXAGONAL COMPRESSION DIES ONLY
3. CABLE LUG SHALL BE SUITABLE FOR M10 STUD SIZE
4. EQUIPOTENTIAL BONDING GROUPS WILL BE DEFINED DURING ASSEMBLY PHASE

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	26/08/24	GRA	AMA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	10/06/24	SPS	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	21/11/23	SPS	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL TYPICAL INSTALLATION DETAILS–EARTHING SYSTEM
EARTHING FOR FIELD REMOVABLE TYPE HANDRAIL

CONTRACT NO./TITLE CW–I–WP4–2023–05/HOLLANDSE KUST NOORD WIND PARK

SCALE : NTS

A3

DRAWING NO. 123A90–DDL–EL–DD–20090

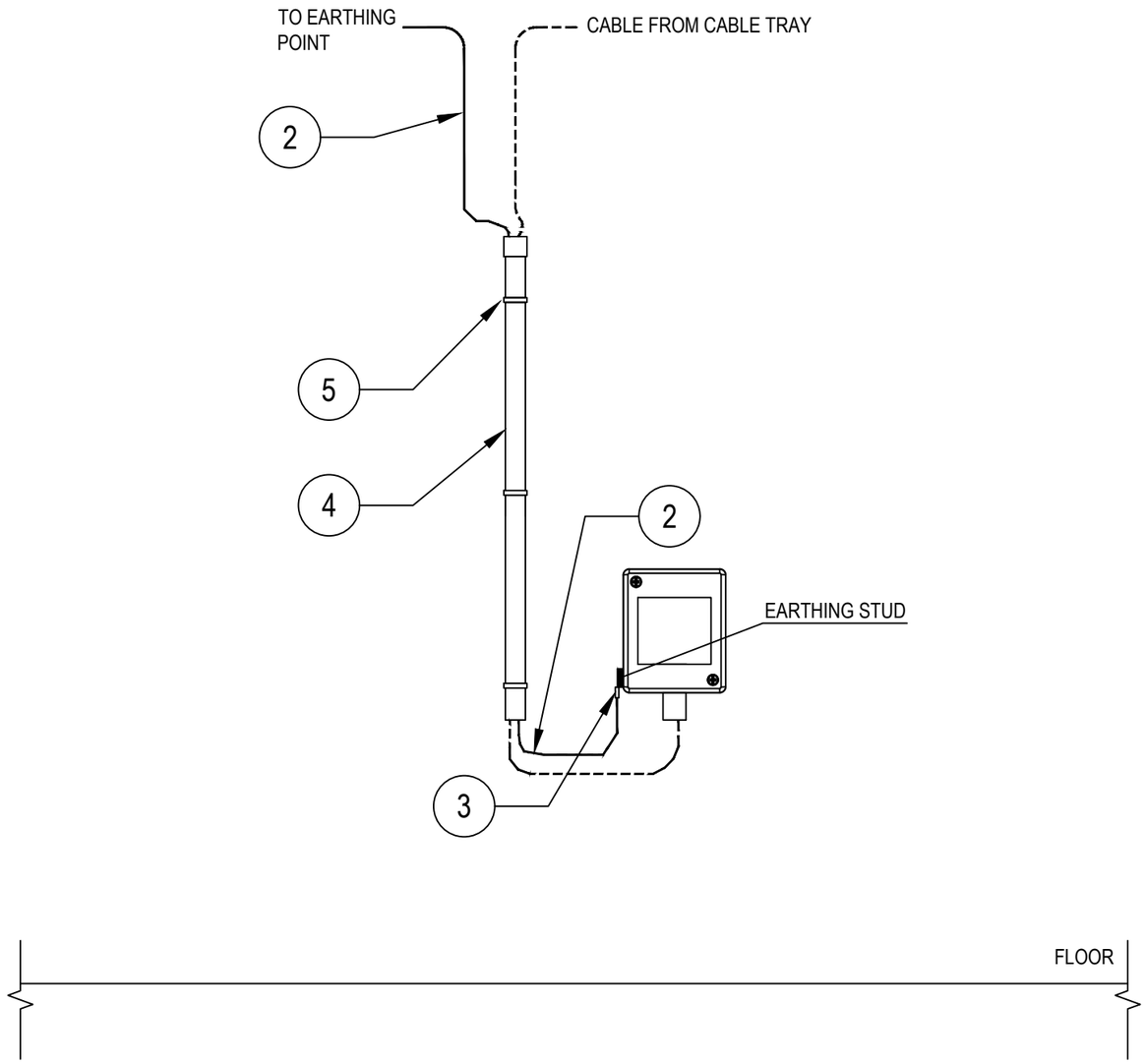
SHEET 021

REV. 02

F.to UNI A3: 420mmx297mm

File Name : 123A90-DDL-EL-DD-20090 REV.02.DWG

E31



POS.	DESCRIPTION	MATERIAL	SIZE	Q.TY	NOTE
1	GENERIC INSTRUMENT (Ex)			1	
2	Y/G INSULATION COPPER CONDUCTOR	COPPER		AS R	
3	COMPRESSION TYPE LUG FOR INSULATION COPPER CONDUCTOR			1	
4	RIGID CONDUIT, GREY	THERMOPLASTIC		AS R	NOTE 1
5	PIPE FIXING SUPPORT, GREY	ABS		3	

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	26/08/24	GRA	AMA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	10/06/24	SPS	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	21/11/23	SPS	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL TYPICAL INSTALLATION DETAILS–EARTHING SYSTEM
EARTHING FOR GENERIC ITEM/DEVICE INDOOR WALL MOUNTING

CONTRACT NO./TITLE CW–I–WP4–2023–05/HOLLANDSE KUST NOORD WIND PARK

SCALE : NTS

A3

DRAWING NO. 123A90–DDL–EL–DD–20090

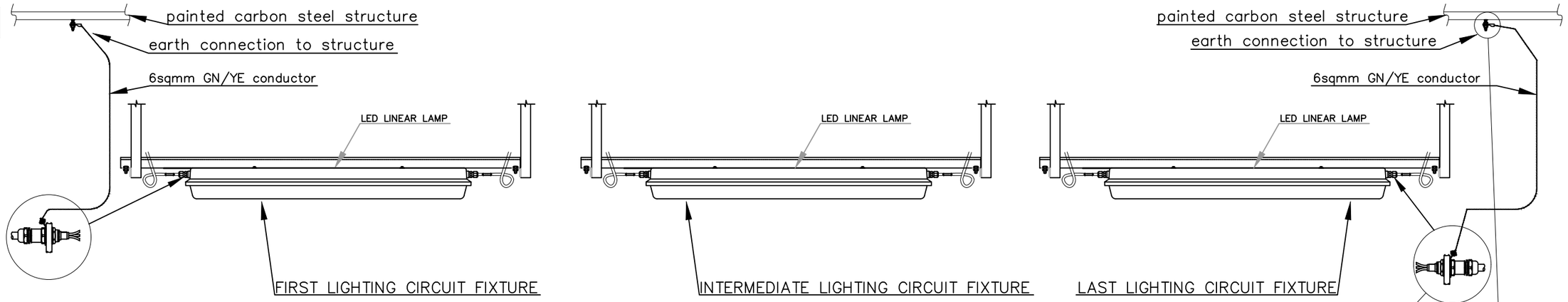
SHEET 022

REV. 02

F.to UNI A3: 420mmx297mm

File Name : 123A90-DDL-EL-DD-20090 REV.02.DWG

E32

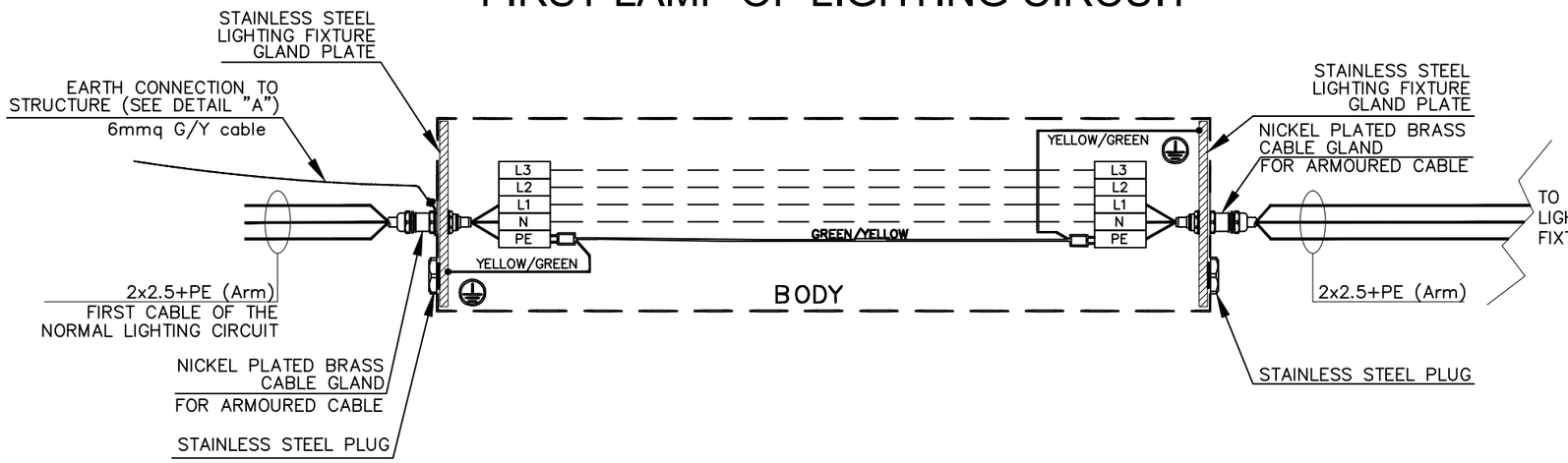


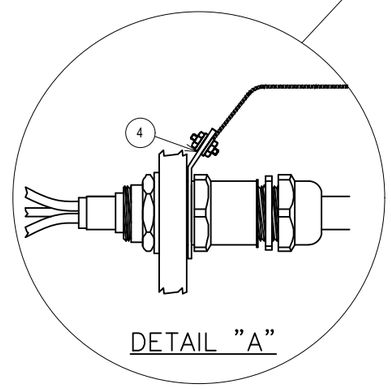
ONLY the first and the last lighting fixture of all circuits are connected to earthing system. The earthing continuity of the intermediate lighting fixtures of the circuits is guaranteed by the using of the first and the last lighting fixture earthing connection which is permanently connected to the earthing system as per the typical below.

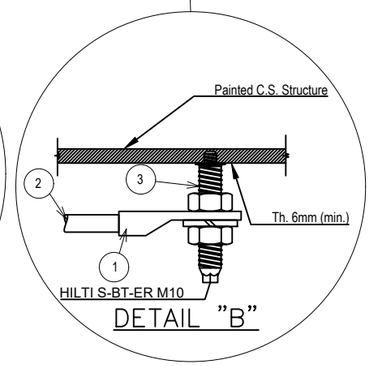
Refer also to TYP. "E05" for Lighting Fixtures.

NORMAL LIGHTING CIRCUIT EARTHING CONTINUITY TYPICAL

FIRST LAMP OF LIGHTING CIRCUIT







POS.	DESCRIPTION	MATERIAL	SIZE	Q.TY	NOTE
1	COMPRESSION TYPE LUG FOR INSULATION COPPER CONDUCTOR	TINNED COPPER			
2	Y/G INSULATING COPPER CONDUCTOR		6sqmm	ASR	
3	HILTI S-BT-ER M10/15 SN6 C/W NUTS AND GROWER	AISI 316L	M10X28		NOTE 1
4	CABLE GLAND EARTH TAG	NPB	M20		

The same logic is used for the earthing continuity of Emergency Lighting Circuits. The above typical has been done to represent the Earthing Continuity of G/Y conductors, the correct connections of all conductors in the respective Terminal Strips are shown in doc. AR-FEN-10-ROEC-600132 Lighting and Socket Circuit Diagrams.

NOTES:
1) HILTI S-BT-ER M10/15 SN6 CERTIFIED FOR EARTHING SYSTEM FOR SINGLE EQUIPMENTS EARTHING CONNECTION.

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	26/08/24	GRA	AMA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	10/06/24	SPS	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	21/11/23	SPS	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL TYPICAL INSTALLATION DETAILS–EARTHING SYSTEM
EARTHING – OUTDOOR LINEAR LIGHTING FIXTURE

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK

SCALE : NTS

A3

DRAWING NO. 123A90-DDL-EL-DD-20090

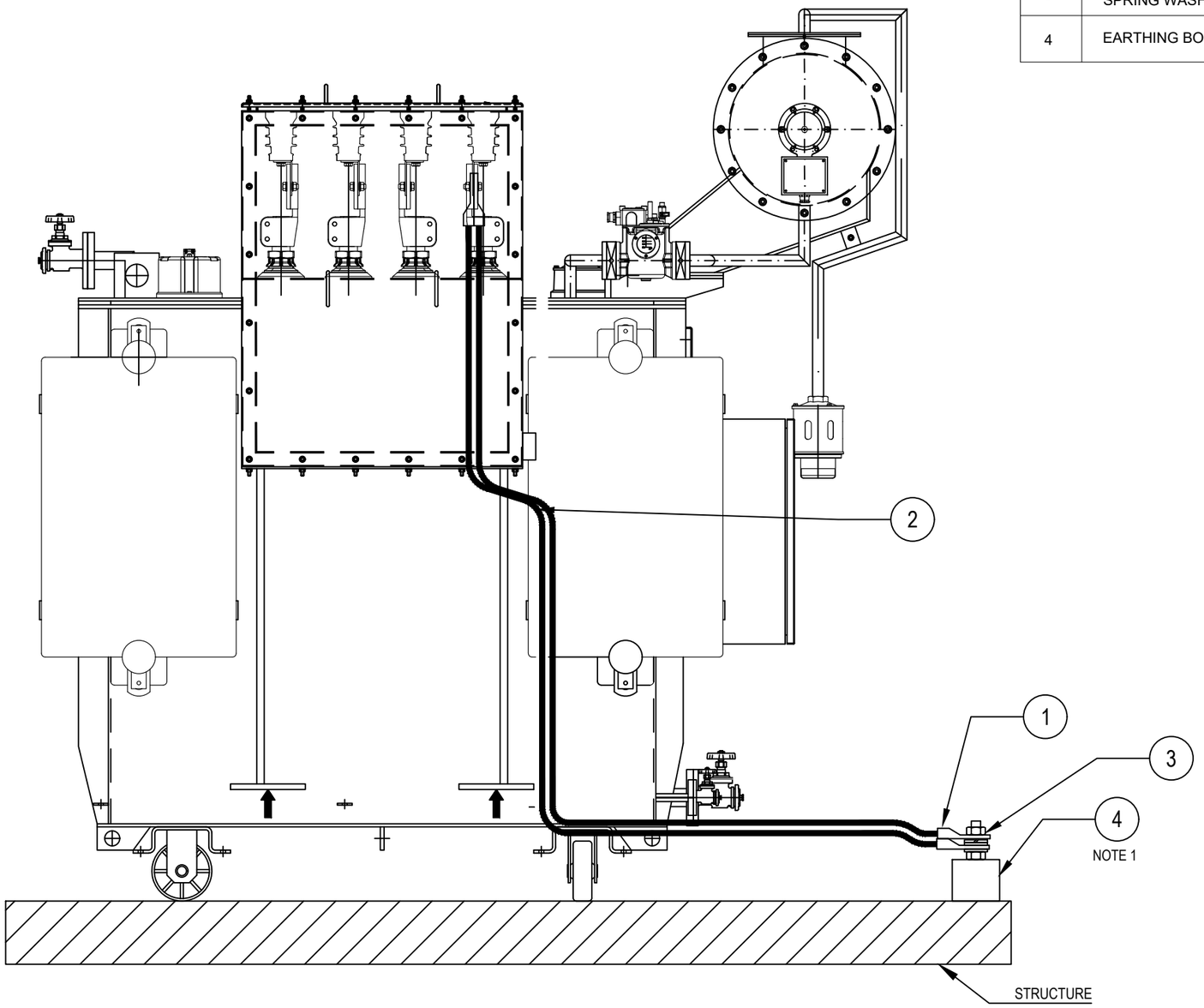
SHEET 023

REV. 02

F.to UNI A3: 420mmx297mm

File Name : 123A90-DDL-EL-DD-20090 REV.02.DWG

E33



POS.	DESCRIPTION	MATERIAL	SIZE	Q.TY	NOTE
1	COMPRESSION TYPE LUG FOR INSULATION COPPER CONDUCTOR	TINNED COPPER		1	
2	Y/G INSULATING COPPER CONDUCTOR	COPPER	2(1x150mm^2)	AS R	
3	HEXAG. BOLT COMPLETE WITH PLANE WASHERS, SPRING WASHER AND NUT	AISI 316L	M10X30	1	
4	EARTHING BOSS WITH THREADED HOLE M10	AISI 316L	50X50		NOTE 2

NOTES:
1) FOR EARTHING BOSS TYPICAL DETAIL E11
2) EXTERNAL EARTHING CONNECTION ONLY SHALL BE PROTECTED AGAINST CORROSION USING OXIDE RESISTANT COMPOUND (E.G. COPPER GREASE)

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	26/08/24	GRA	AMA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	10/06/24	SPS	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	21/11/23	SPS	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL TYPICAL INSTALLATION DETAILS–EARTHING SYSTEM
NEUTRAL EARTHING

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK

SCALE : NTS

A3

DRAWING NO. 123A90-DDL-EL-DD-20090

SHEET 024

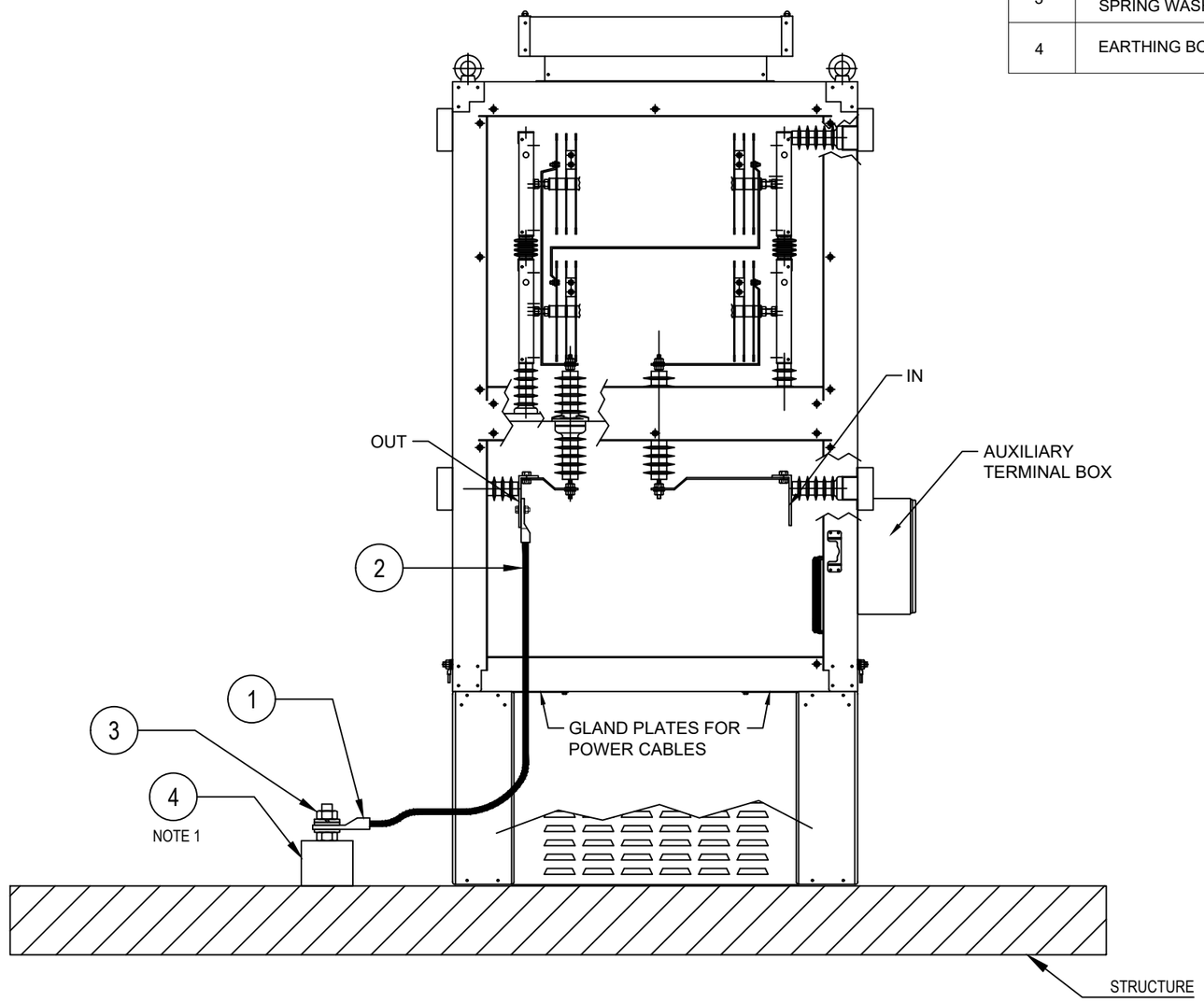
REV. 02

F.to UNI A3: 420mmx297mm

File Name : 123A90-DDL-EL-DD-20090 REV.02.DWG

E34

POS.	DESCRIPTION	MATERIAL	SIZE	Q.TY	NOTE
1	COMPRESSION TYPE LUG FOR INSULATION COPPER CONDUCTOR	TINNED COPPER		1	
2	Y/G INSULATING COPPER CONDUCTOR	COPPER	120mm^2	AS R	
3	HEXAG. BOLT COMPLETE WITH PLANE WASHERS, SPRING WASHER AND NUT	AISI 316L	M10X30	1	
4	EARTHING BOSS WITH THREADED HOLE M10	AISI 316L	50X50		NOTE 2



NOTES:
1) FOR EARTHING BOSS TYPICAL DETAIL E11
2) EXTERNAL EARTHING CONNECTION ONLY SHALL BE PROTECTED AGAINST CORROSION USING OXIDE RESISTANT COMPOUND (E.G. COPPER GREASE)

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	26/08/24	GRA	AMA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	10/06/24	SPS	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	21/11/23	SPS	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL TYPICAL INSTALLATION DETAILS–EARTHING SYSTEM
NER EARTHING

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK

SCALE : NTS

A3

DRAWING NO. 123A90-DDL-EL-DD-20090

SHEET 025

REV. 02

F.to UNI A3: 420mmx297mm

File Name : 123A90-DDL-EL-DD-20090 REV.02.DWG

SIZE & TYPICAL Y/G INSULATING COPPER CONDUCTOR

SIZE	TYPICAL INSTALLATION
6mm^2	E05 - E15 - E06A - E06B - E04 - E26 - E19 - E22
16mm^2	E25 - E16
35mm^2	E07 - E13 - E14 - E24 - E17
120mm^2	E34
150mm^2	E33

CROSSWIND

ROSETTI MARINO

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	26/08/24	GRA	AMA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	10/06/24	SPS	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	21/11/23	SPS	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL TYPICAL INSTALLATION DETAILS-EARTHING SYSTEM
SIZE & TYPICAL Y/G INSULATING COPPER CONDUCTOR

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK | SCALE : NTS

A3 | DRAWING NO. 123A90-DDL-EL-DD-20090 | SHEET 026 | REV. 02

F.to UNI A3: 420mmx297mm

File Name : 123A90-DDL-EL-DD-20090 REV.02.DWG

BLANK SHEET

REV.	DATE	DRN	CHKD	APPD	DESCRIPTION
02	26/08/24	GRA	AMA	DLO	ACCEPTED FOR CONSTRUCTION (AFC)
01	10/06/24	SPS	FMA/AMA	FPA/DLO	ACCEPTED FOR CONSTRUCTION (AFC)
00	21/11/23	SPS	FMA/AMA	FPA/DLO	ISSUE FOR REVIEW (IFR)

CROSSWIND

ROSETTI MARINO

TITLE : BASE LOAD POWER HUB (BLPH)
ELECTRICAL TYPICAL INSTALLATION DETAILS-EARTHING SYSTEM
BLANK SHEET

CONTRACT NO./TITLE CW-I-WP4-2023-05/HOLLANDSE KUST NOORD WIND PARK

SCALE : NTS

A3

DRAWING NO. 123A90-DDL-EL-DD-20090

SHEET 027

REV. 02

F.to UNI A3: 420mmx297mm

File Name : 123A90-DDL-EL-DD-20090 REV.02.DWG