DISTRIBUTION CONSTRUCTION STANDARDS

Date Published: 27 July 2023

PART 10 – SUBSTATIONS

G6 – MISCELLANEOUS

For application to
Horizon Power
Electricity Distribution Networks

G6 - DISTRIBUTION SUBSTATION MISCELLANEOUS – Drawing Register

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G6-12/8	Sole Use Substation – Up to 1000kVA (Non MPS) Fire Rated With MV Switchgear – Earthing Details
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Number	Description
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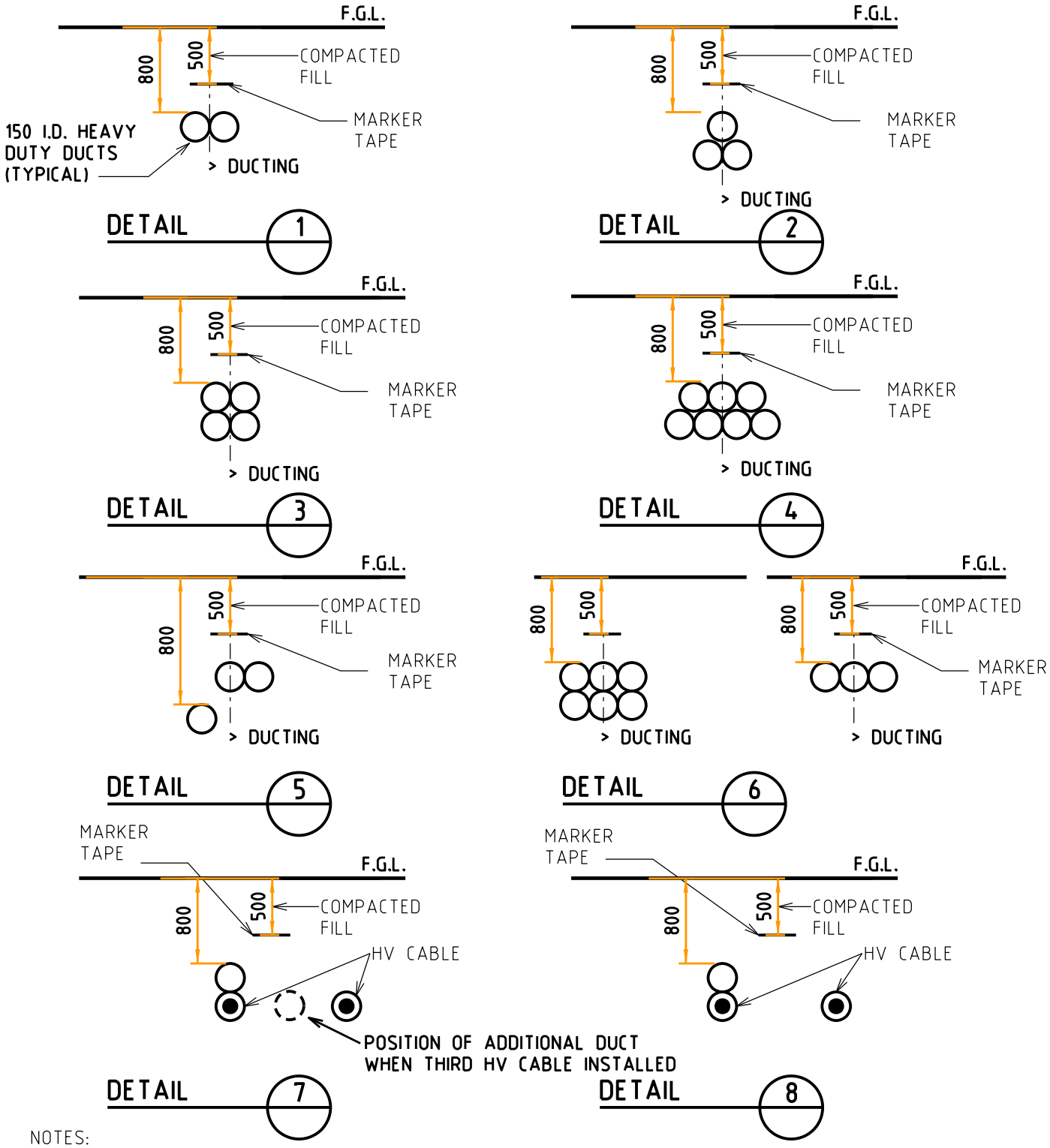


NOTES:

1. CONCRETE ENCASEMENT REQUIRED IF LIGHT DUTY PIPE USED. DUCTS TO BE INSTALLED TO AS/NZS 3000 (CATEGORY 'A' WIRING SYSTEM)
2. DEPTH OF DUCTS TO BE 800mm FROM FGL TO TOP OF DUCT
3. CONDUIT IS FOR LV CABLE U.N.O.
4. MV CABLES SPACED 500mm APART FROM EACH OTHER TO ACCOUNT FOR DERATING. NO DERATING APPLIED FOR LV CABLES.

THIS DRAWING TO BE READ IN CONJUNCTION WITH THE DISTRIBUTION DESIGN RULES - HPC-9DJ-01-0002-2015.

HORIZON POWER

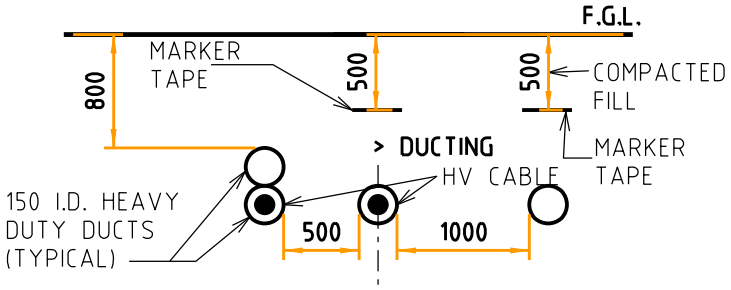
DISTRIBUTION CONSTRUCTION STANDARDS

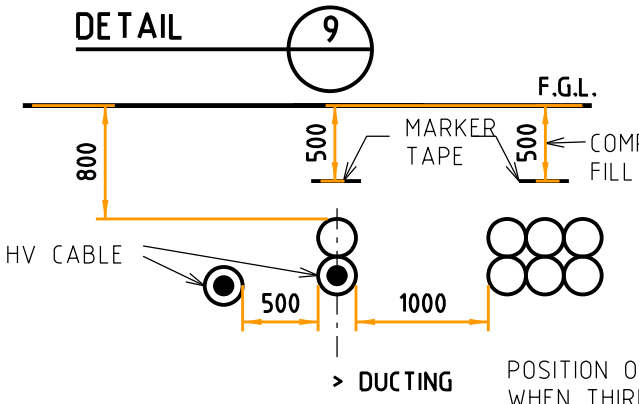
SUBSTATION DUCTING CROSS-SECTION

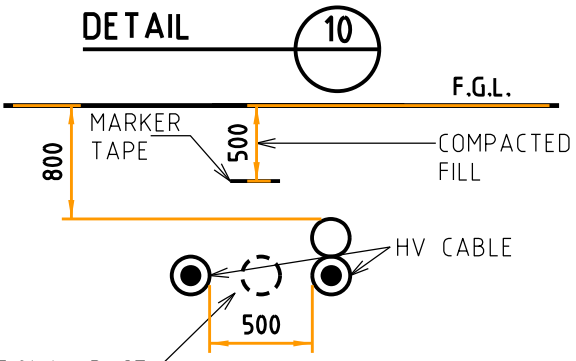
CIVIL REQUIREMENTS

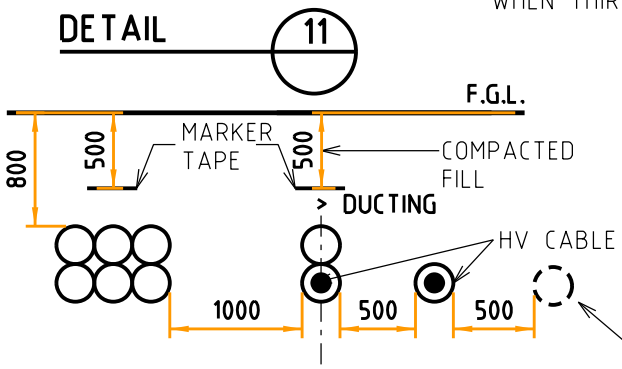
REVISION	DATE
B	MAY 18

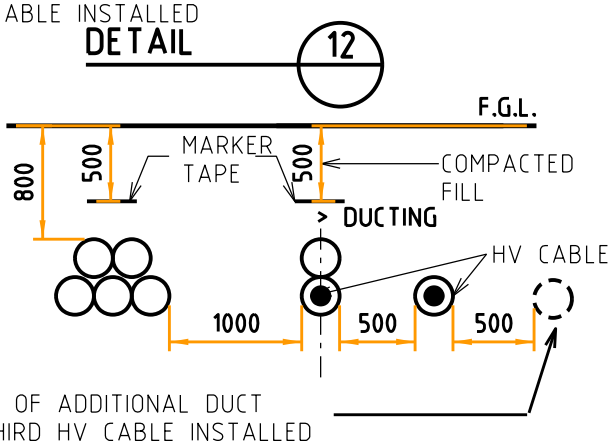
DRAWING No. G6-1/1

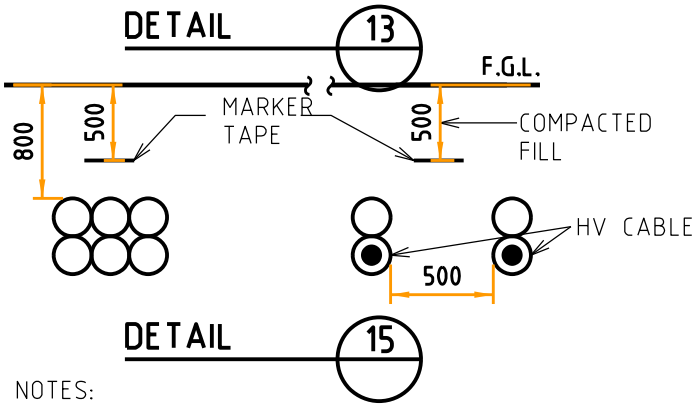


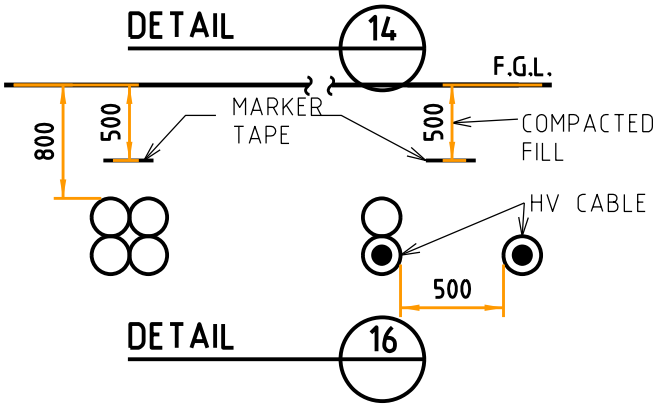












NOTES:

1. CONCRETE ENCASEMENT REQUIRED IF LIGHT DUTY PIPE USED. DUCTS TO BE INSTALLED TO AS/NZS 3000 (CATEGORY 'A' WIRING SYSTEM)
2. DEPTH OF DUCTS TO BE 800mm FROM FGL TO TOP OF DUCT
3. CONDUIT IS FOR LV CABLE U.N.O.
4. MV CABLES SPACED 500mm APART FROM EACH OTHER TO ACCOUNT FOR DERATING. NO DERATING APPLIED FOR LV CABLES.

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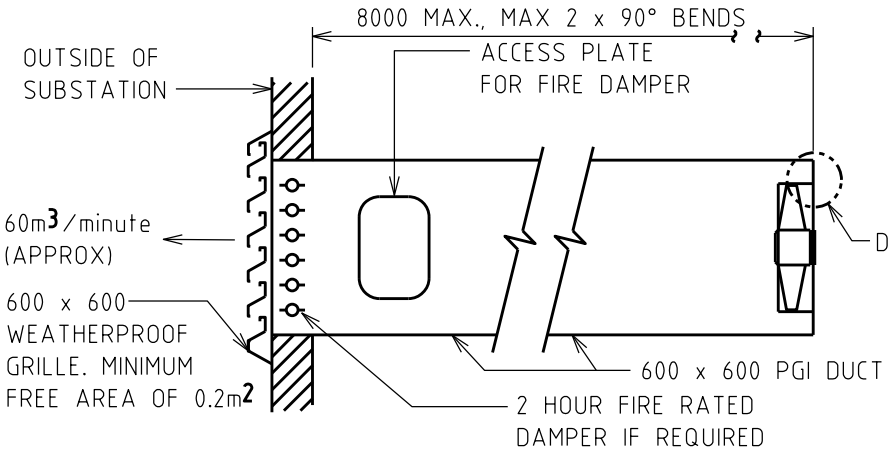
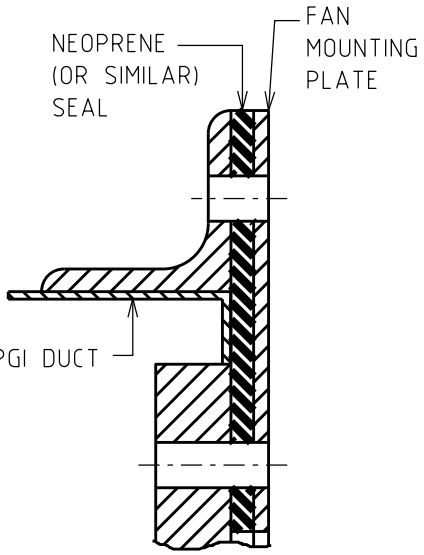
HORIZON POWER DISTRIBUTION CONSTRUCTION STANDARDS	SUBSTATION DUCTING CROSS-SECTION CIVIL REQUIREMENTS	REVISION B	DATE MAY 18
		DRAWING No. G6-1/2	

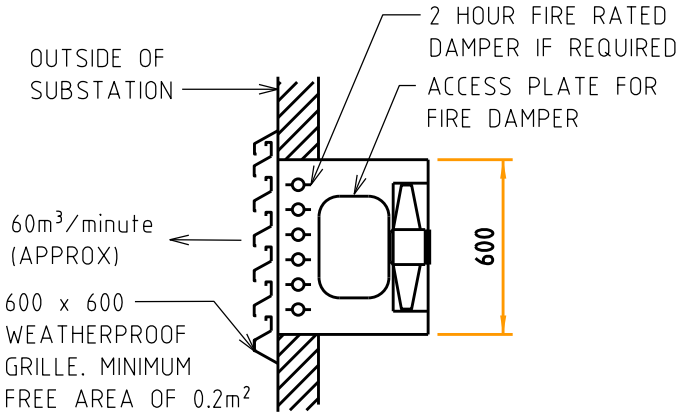


TYPE 1 - END DUCT MOUNTED EXHAUST FAN

SIDE VIEW

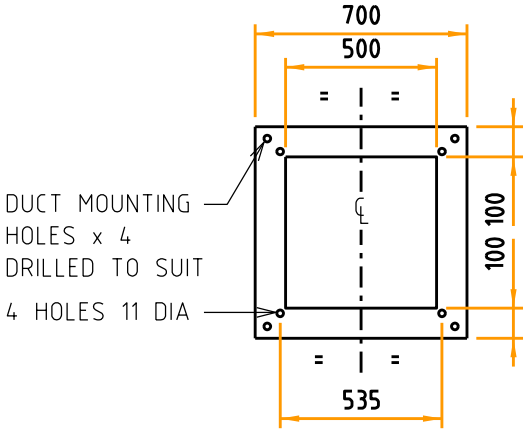


DETAIL A



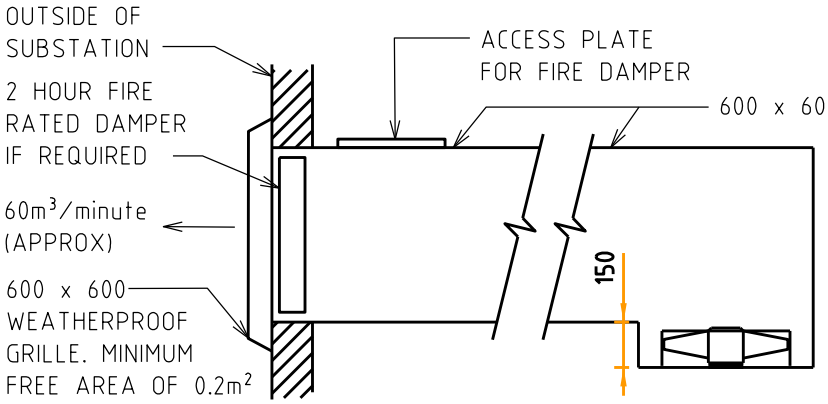
TYPE 2 - WALL MOUNTED EXHAUST FAN

SIDE VIEW



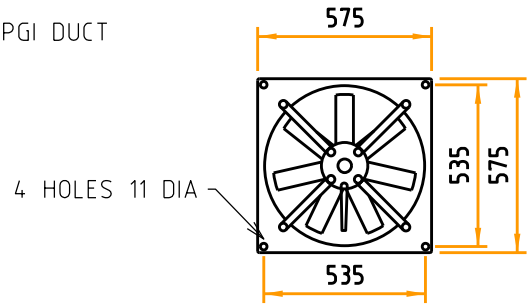
FAN MOUNTING PLATE

MATERIAL: MS PLATE



TYPE 3 - SIDE DUCT MOUNTED EXHAUST FAN

PLAN VIEW

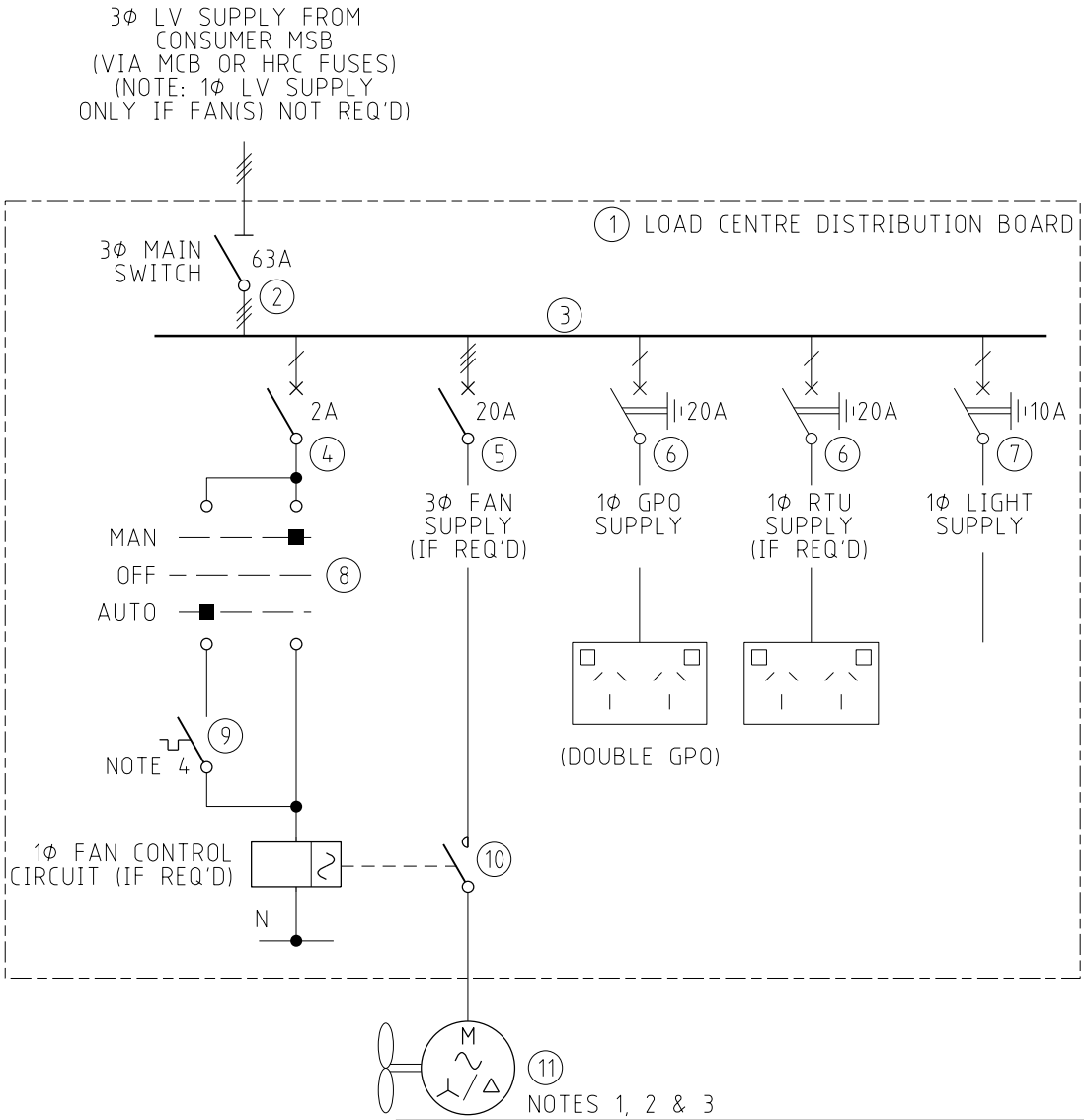


FAN DETAILS

AXIAL FLOW RATE
45m3/minute

THIS DRAWING TO BE READ IN CONJUNCTION WITH THE DISTRIBUTION DESIGN RULES - HPC-9DJ-01-0002-2015.

HORIZON POWER DISTRIBUTION CONSTRUCTION STANDARDS	SUBSTATION EXHAUST FANS DETAILS	REVISION B	DATE MAY 18
		DRAWING No. G6-2/1	

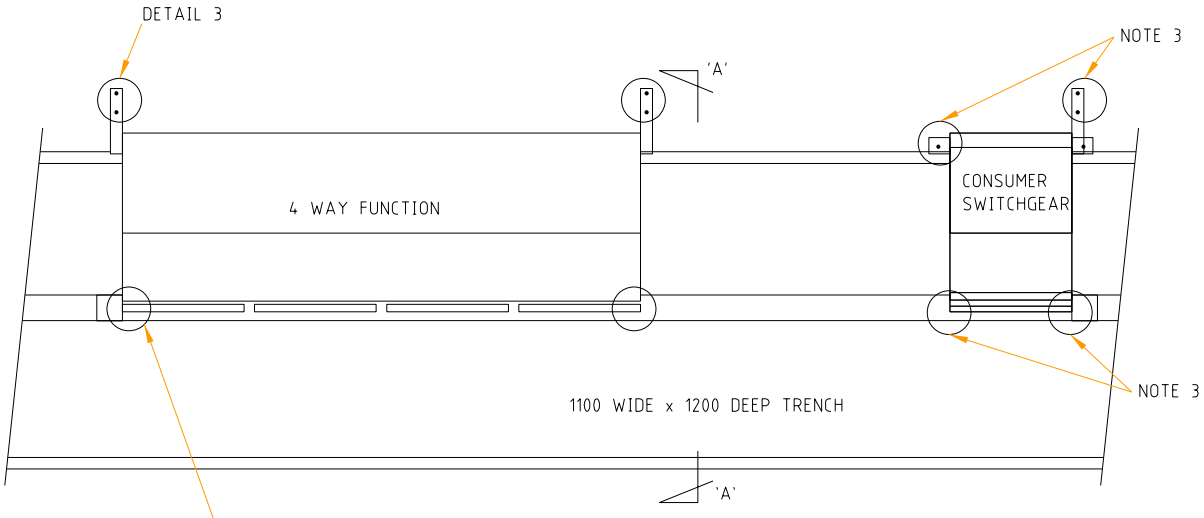


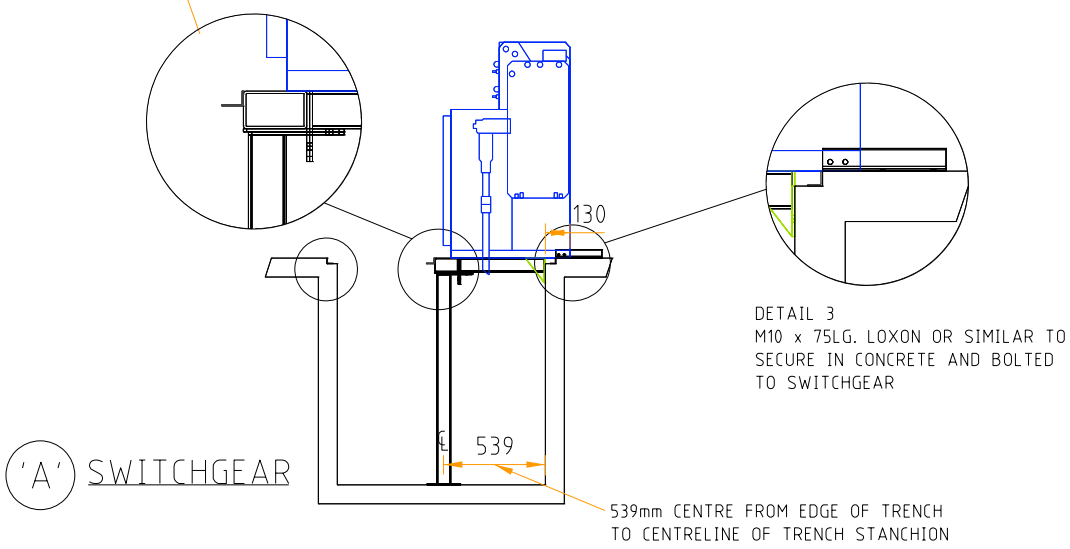
ITEM	QTY	DESCRIPTION
1	1	DISTRUBUTION LOAD CENTRE ENCLOSURE, IP42 (MIN)
2	1	3Φ MAIN SWITCH, 63A, 25kA/0.1s RATING
3	1	3Φ; 440V CHASSIS OR COMB BUSBAR, 80A (MIN)
4	1	1Φ MCB; 2A; 25kA/ 0.1s
5	1	3Φ MCB; 20A; 25kA/ 0.1s
6	2	1Φ MCB/RCD; 20A; 25kA/0.1s; 30mA
7	1	1Φ MCB/RCD; 10A; 25kA/0.1s; 30mA
8	1	AUTO/OFF/MANUAL SEL'R SW. 3 POSITION; 2 POLE
9	1	THERMOSTAT
10	1	3Φ CONTACTOR. SIEMENS #1 OR APPR'D ALTERNATIVE
11	1	AXIAL FAN Ebm-papst W4D450-DO14-10 230/400VAC FLOW; 2700m°/HR (LOW SPEED) (ALTERNATIVE HIGH EFFICIENCY MOTOR PREFERRED)

NOTES:
1. FAN MOTOR Y-CONNECTED FOR TRANSFORMERS UP TO 500kVA (LOW SPEED FLOW RATE 45m°/MINUTE; 2700m°/HOUR)
2. FAN MOTOR △-CONNECTED FOR TRANSFORMERS ABOVE 500kVA, (HIGH SPEED OPERATION)
3. FAN MOTOR ELECTRICAL LOADS:
   Y (LOW SPEED)-340W/0.58 AMPS
   △ (HIGH SPEED)-490W/1.0 AMPS
4. FAN THERMOSTAT TO BE INSTALLED DIRECTLY ABOVE THE TRANSFORMER, SET AT 50°C

THIS DRAWING TO BE READ IN CONJUNCTION WITH THE DISTRIBUTION DESIGN RULES HPC-9DJ-01-0002-2015.

HORIZON POWER DISTRIBUTION CONSTRUCTION STANDARDS	REFERENCE DRAWING	REVISION C	DATE APRIL 23
	SUBSTATION EXHAUST FAN SUB-DISTRIBUTION BOARD FOR INDOOR SUBSTATION SCHEMATIC	DRAWING No. G6-3/1	



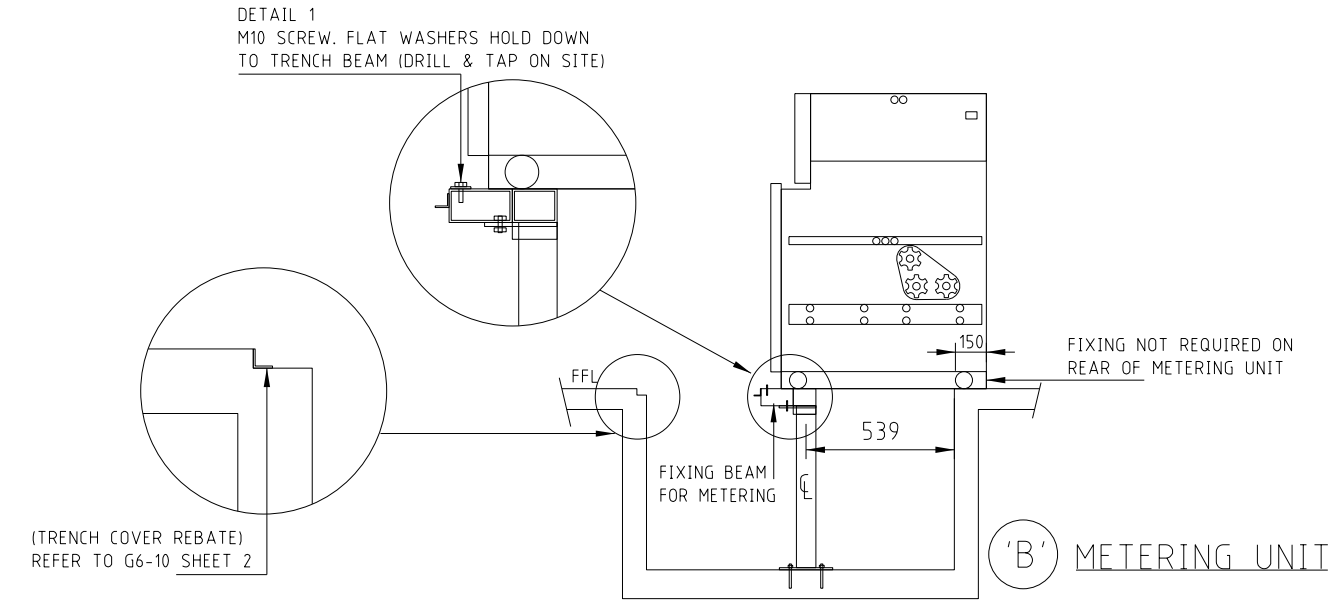


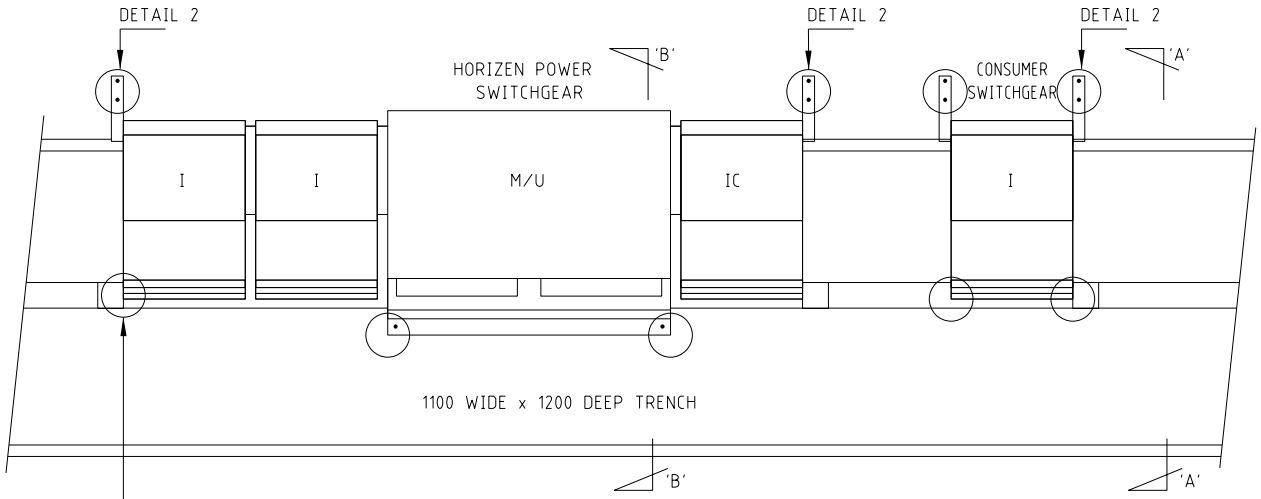
NOTE:

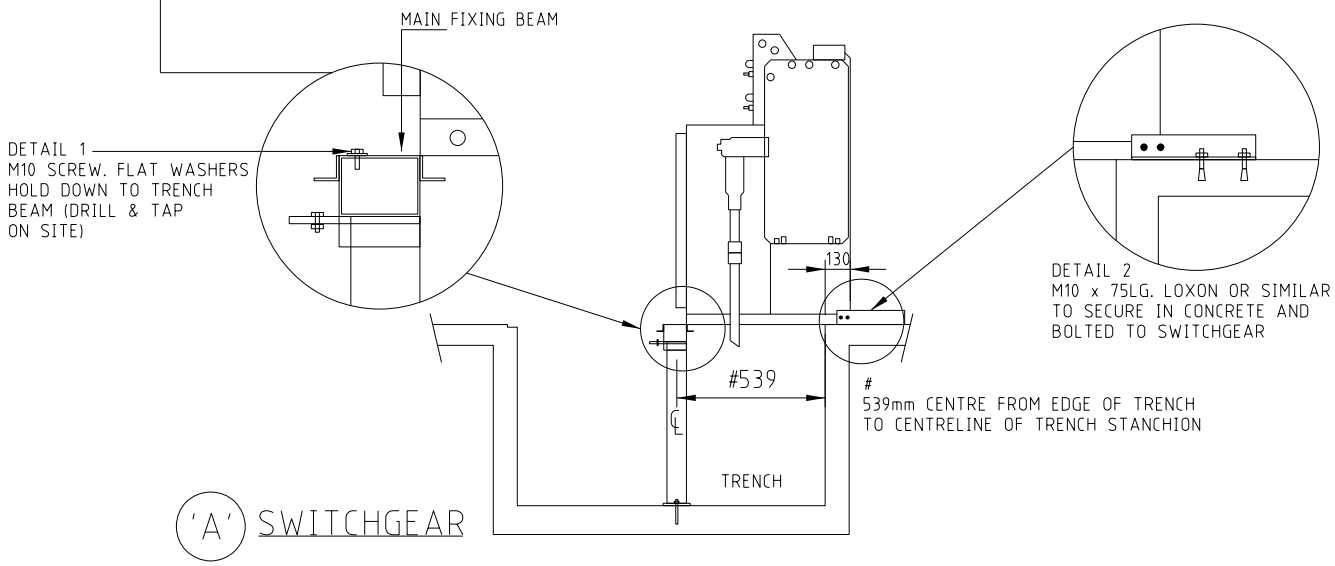
1. PLACEMENT OF RM6 IS 130mm FROM THE TRENCH WALL TO THE REAR OF THE RM6 FUNCTION
2. REFER G6-07 SHEETS 1 & 2 FOR MATERIALS AND FABRICATION DETAILS.
3. CONSUMER SWITCHGEAR SUPPORT SHOWN FOR ILLUSTRATION ONLY. CONSUMER IS RESPONSIBLE FOR THE DESIGN OF SUPPORTS FOR EQUIPMENT.

THIS DRAWING TO BE READ IN CONJUNCTION WITH THE DISTRIBUTION DESIGN RULES - HPC-9DJ-01-0002-2015.

HORIZON POWER DISTRIBUTION CONSTRUCTION STANDARDS	SCHNEIDER RM6 INDOOR METERING SWITCHGEAR ONLY SWITCHGEAR SUPPORT DETAILS	REVISION C / DATE MAR 23 DRAWING No. G6-4/1





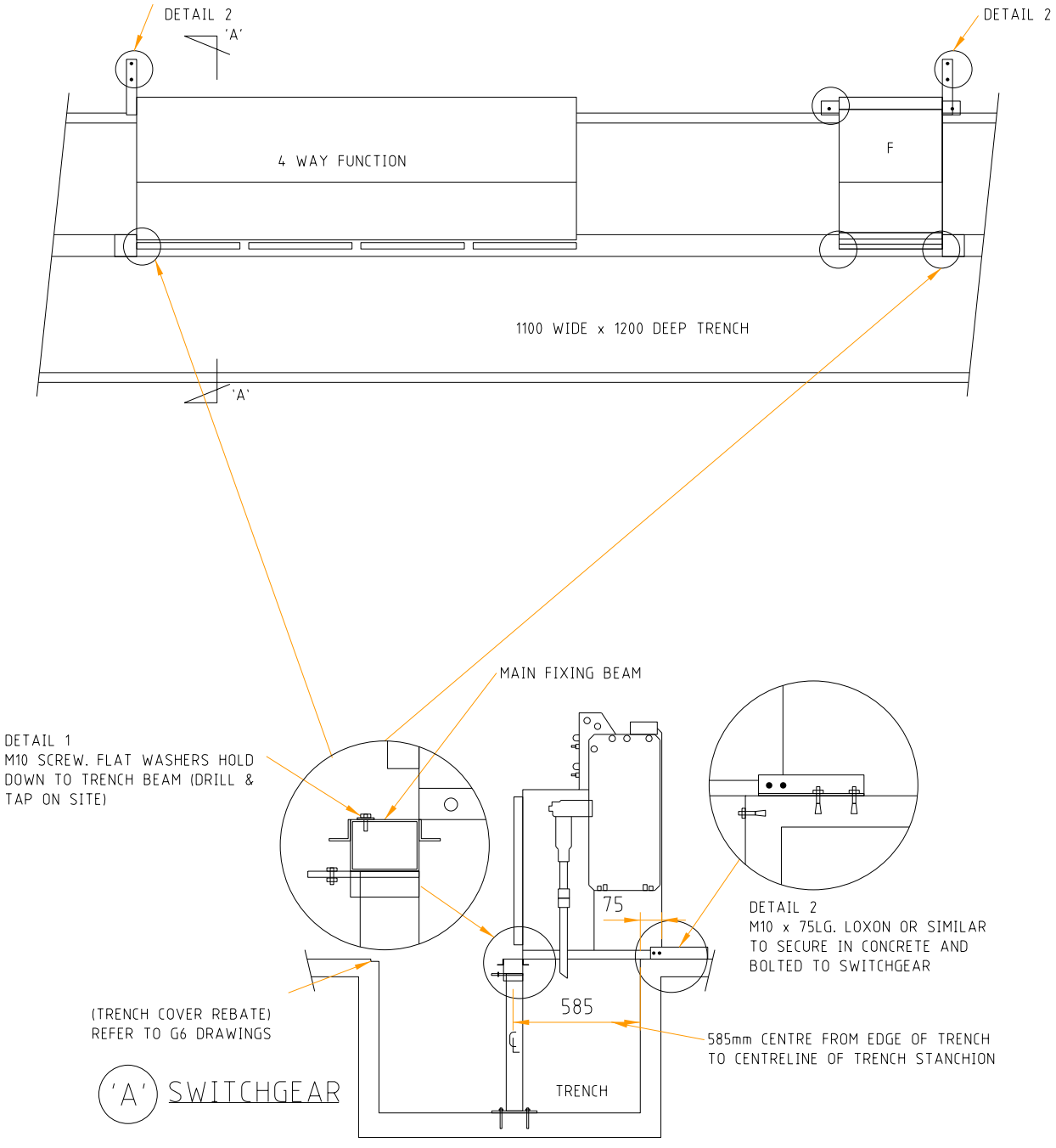


NOTE:

1. POSITION OF M/U IS SET @ 150mm FROM REAR OF M/U TO TRENCH WALL PLACEMENT OF RM6 IS SET @ 130mm FROM THE TRENCH WALL TO THE REAR OF THE RM6 FUNCTION
2. REFER TO G6-07 SHEETS 3 & 4 FOR MATERIALS AND FABRICATION DETAILS

THIS DRAWING TO BE READ IN CONJUNCTION WITH THE DISTRIBUTION DESIGN RULES - HPC-9DJ-01-0002-2015.

HORIZON POWER DISTRIBUTION CONSTRUCTION STANDARDS	REFERENCE DRAWING	REVISION C	DATE 20.07.23
	SCHNEIDER RM6 INDOOR METERING CABLE CONNECTION SWITCHGEAR SUPPORT DETAILS	DRAWING No. G6-4/2	
OPERATIONS			



NOTE:

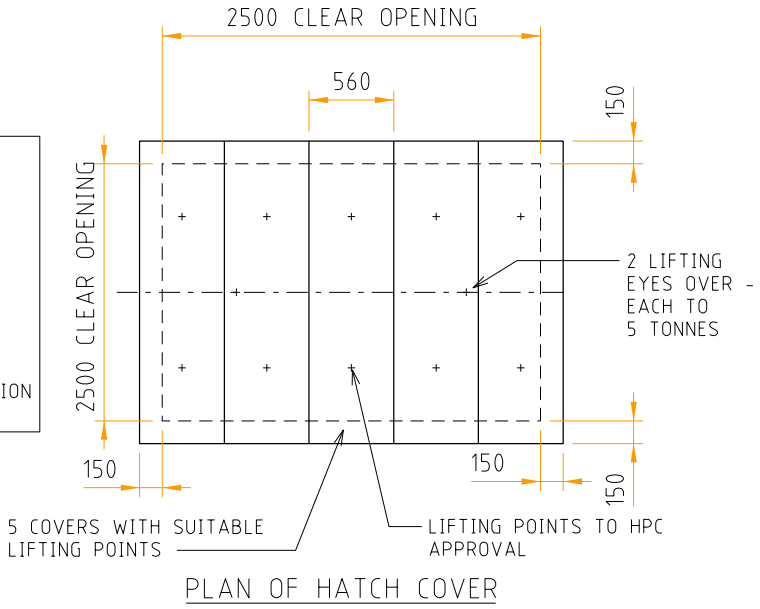
1. POSITION OF M/U IS SET @ 150mm FROM REAR OF M/U TO TRENCH WALL
2. PLACEMENT OF RM6 IS SET @ 130mm FROM THE TRENCH WALL TO THE REAR OF THE RM6 FUNCTION
3. REFER TO G6-07 SHEETS 5 & 6 FOR MATERIALS AND FABRICATION DETAILS.
4. CONSUMER SWITCHGEAR SUPPORT SHOWN FOR ILLUSTRATION ONY, CONSUMER IS RESPONSIBLE FOR THE DESIGN OF SUPPORTS FOR EQUIPMENT.

THIS DRAWING TO BE READ IN CONJUNCTION WITH THE DISTRIBUTION DESIGN RULES HPC-9DJ-01-0002-2015.

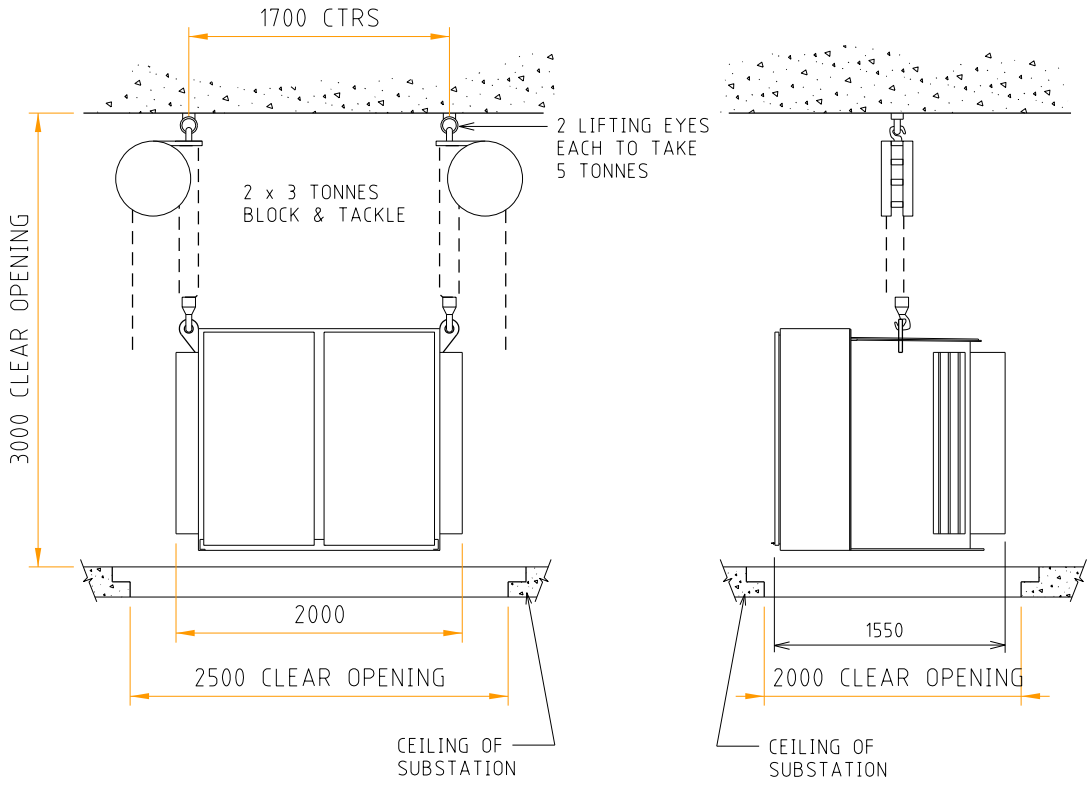
HORIZON POWER DISTRIBUTION CONSTRUCTION STANDARDS	REFERENCE DRAWING	REVISION C	DATE APRIL 23
	SCHNEIDER RM6 INDOOR METERING SWITCHGEAR ONLY SWITCHGEAR SUPPORT DETAILS	DRAWING No. G6-4/3	

PROCEDURE TO INSTALL TRANSFORMERS

1. REMOVE HATCH COVER (GATIC)
2. PLACE MS CHANNEL OVER OPENING
3. ROLL TRANSFORMER ONTO CHANNELS
4. LIFT TRANSFORMER WITH 2 x 3 TONNES BLOCK & TACKLE UNITS
5. REMOVE CHANNELS
6. LOWER TRANSFORMER INTO SUBSTATION



PLAN OF HATCH COVER



NOTES:

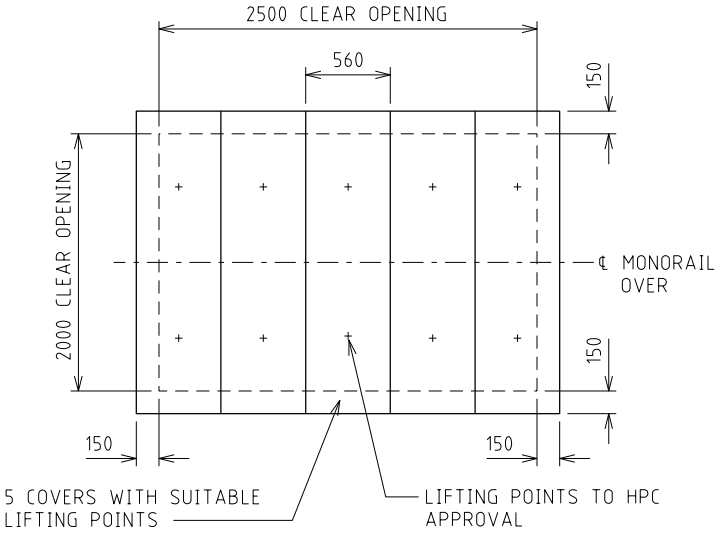
1. WEIGHT OF TRANSFORMER - 5 TONNES (1000kVA).
2. THE FLOOR OVER WHICH THE TRANSFORMER IS TO BE TRANSPORTED IS TO BE CAPABLE OF SAFELY SUPPORTING THE TRANSFORMER

THIS DRAWING TO BE READ IN CONJUNCTION WITH THE DISTRIBUTION DESIGN RULES - HPC-9DJ-01-0002-2015.

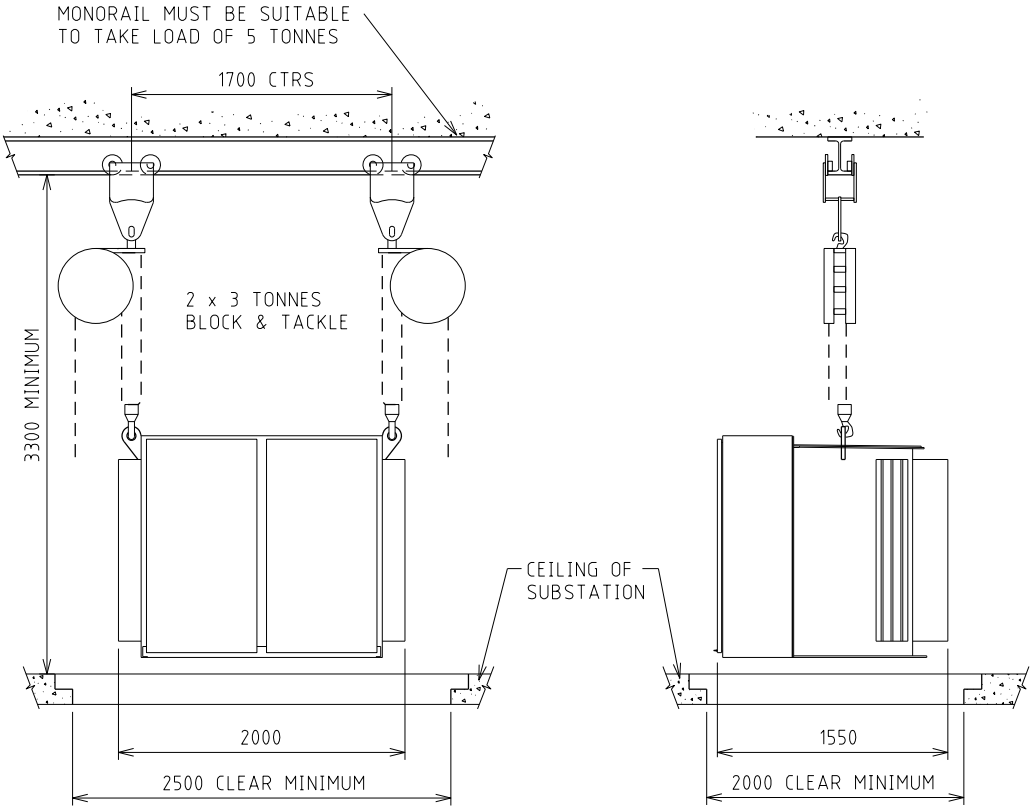
HORIZON POWER DISTRIBUTION CONSTRUCTION STANDARDS		REVISION C	DATE 29/05/23
	TRANSFORMER LIFTING DETAILS LIFTING EYES	DRAWING No. G6-5/1	

PROCEDURE TO INSTALL TRANSFORMERS

1. REMOVE HATCH COVER (GATIC)
2. PLACE MS CHANNEL OVER OPENING
3. ROLL TRANSFORMER ONTO CHANNELS
4. LIFT TRANSFORMER WITH 2 x 3 TONNES BLOCK & TACKLE UNITS
5. REMOVE CHANNELS
6. LOWER TRANSFORMER INTO SUBSTATION



PLAN OF HATCH COVER

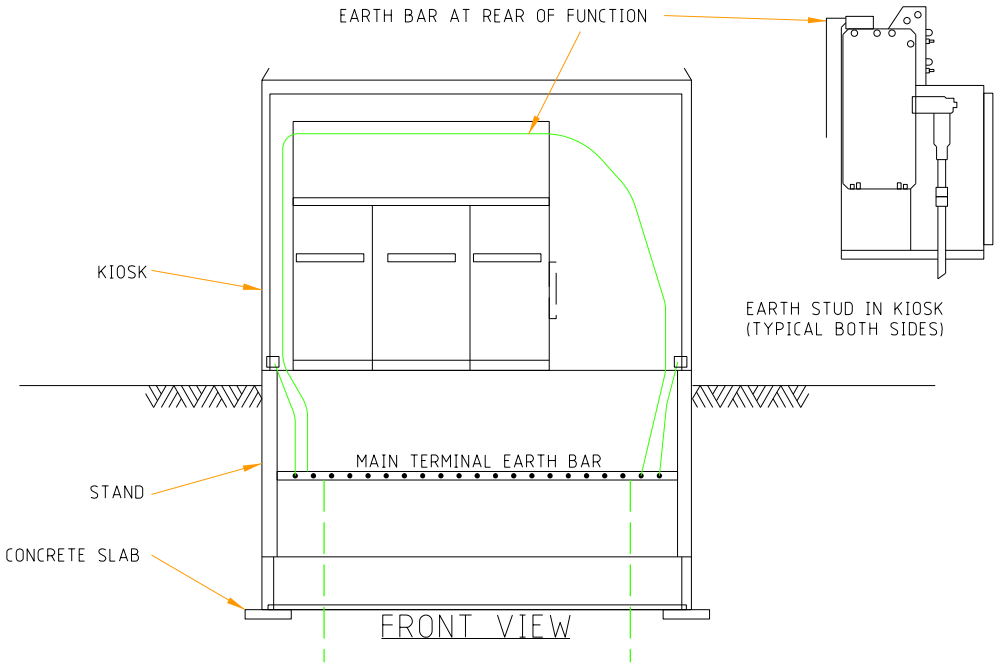


NOTES:

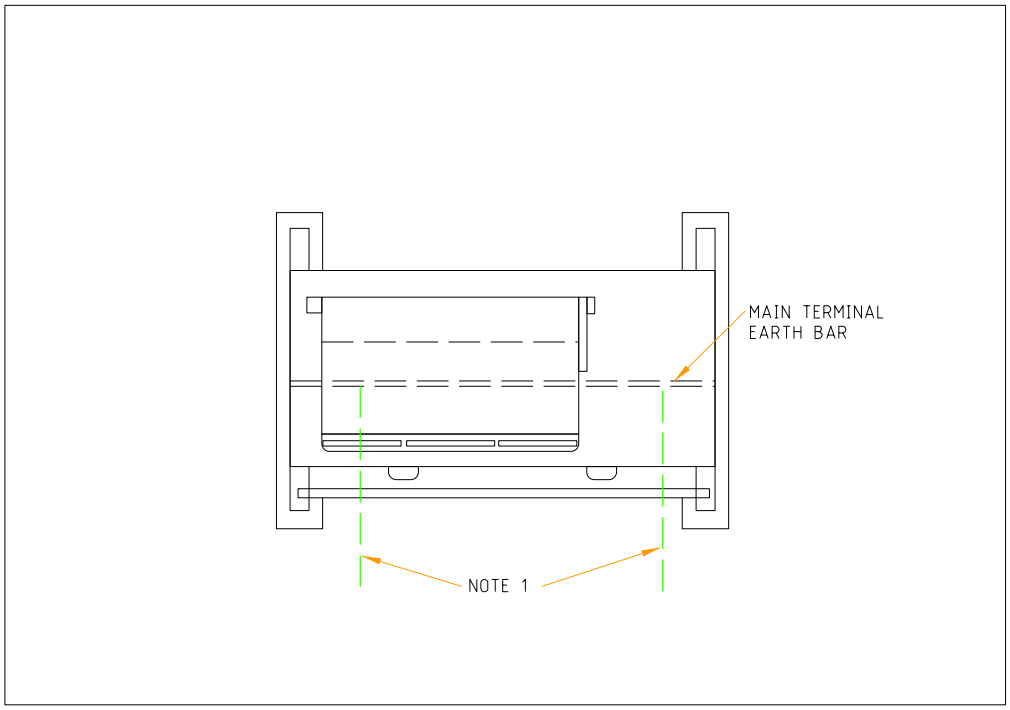
1. WEIGHT OF TRANSFORMER - 5 TONNES (1000kVA).
2. THE FLOOR OVER WHICH THE TRANSFORMER IS TO BE TRANSPORTED IS TO BE CAPABLE OF SAFELY SUPPORTING THE TRANSFORMER
3. MONORAILS FOR TRANSFORMER LIFTING SHOULD BE 152 OR 200mm WIDE TO SUIT GIRDER TROLLEYS OF THESE SIZES
4. IT IS THE RESPONSIBILITY OF THE CONSUMER TO PROVIDE THE MONORAIL & ENGAGE A STRUCTURAL ENGINEER TO ENSURE THE CORRECT DESIGN & CONSTRUCTION OF THE MONORAIL SUPPORT & FLOOR.

THIS DRAWING TO BE READ IN CONJUNCTION WITH THE DISTRIBUTION DESIGN RULES - HPC-9DJ-01-0002-2015.

HORIZON POWER DISTRIBUTION CONSTRUCTION STANDARDS		REVISION C	DATE 29/05/23
	TRANSFORMER LIFTING DETAILS MONORAIL	DRAWING No. G6-5/2	



FRONT VIEW

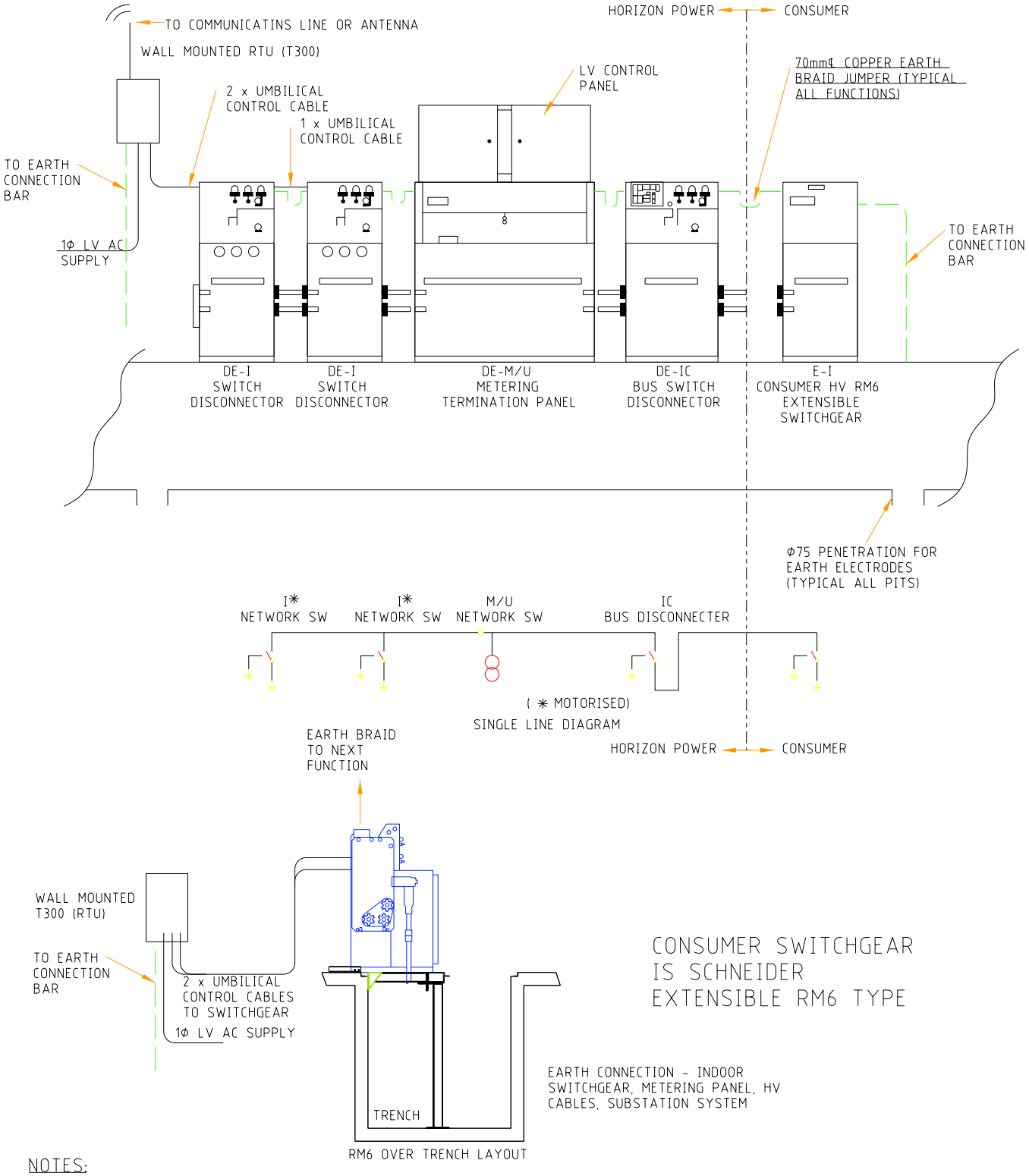


PLAN VIEW KIOSK

NOTES:
1. REFER TO G6-11 FOR DETAILED INFORMATION FOR INSTALLATION OF EARTHING.

THIS DRAWING TO BE READ IN CONJUNCTION WITH THE DISTRIBUTION DESIGN RULES HPC-9DJ-01-0002-2015.

HORIZON POWER DISTRIBUTION CONSTRUCTION STANDARDS	REFERENCE DRAWING	REVISION C	DATE APRIL 23
	SCHNEIDER RM6 STAND ALONE SUBSTATION OUTDOOR APPLICATION	DRAWING No. G6-6/1	



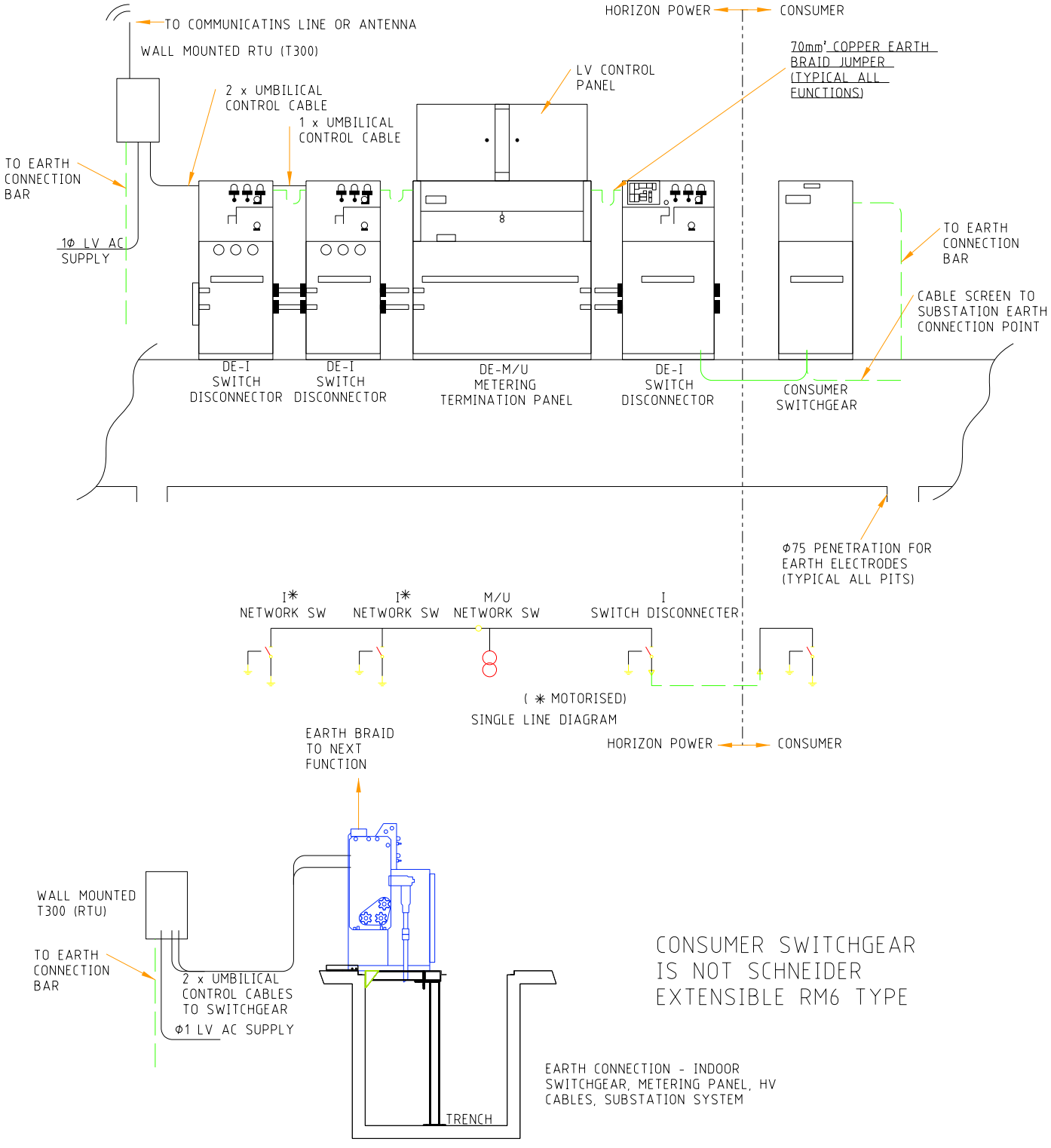
CONSUMER SWITCHGEAR IS SCHNEIDER EXTENSIBLE RM6 TYPE

NOTES:

1. REFER TO G6-12 FOR DETAILED INFORMATION FOR INSTALLATION OF EARTHING.

THIS DRAWING TO BE READ IN CONJUNCTION WITH THE DISTRIBUTION DESIGN RULES HPC-9DJ-01-0002-2015.

HORIZON POWER DISTRIBUTION CONSTRUCTION STANDARDS	REFERENCE DRAWING	REVISION C	DATE APRIL 23
	SCHNEIDER RM6 INDOOR SWITCHGEAR (DIRECT BUS APPLICATION)	DRAWING No. G6-6/2	

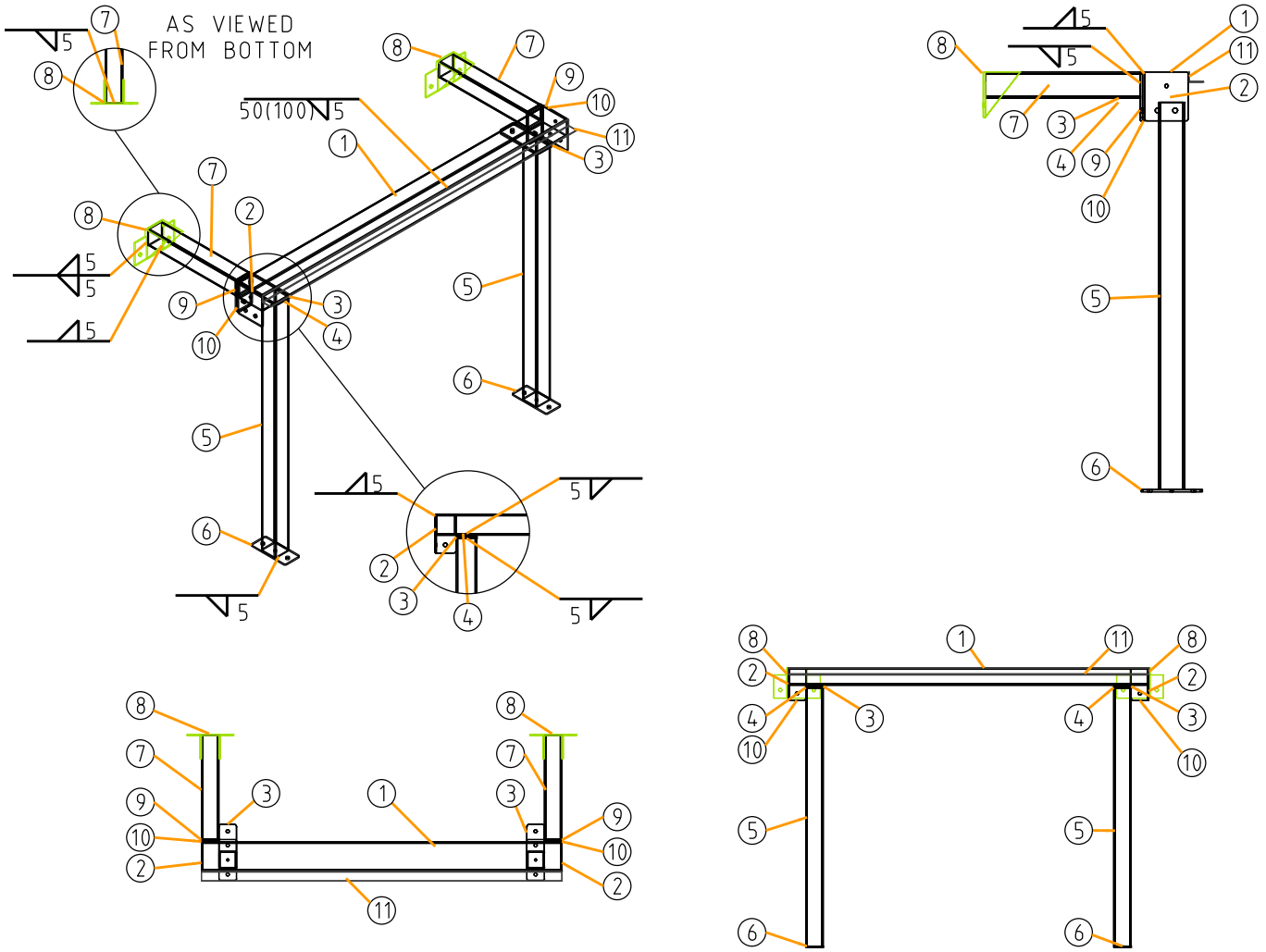


NOTES:

1. REFER TO G6-12 FOR DETAILED INFORMATION FOR INSTALLATION OF EARTHING.

THIS DRAWING TO BE READ IN CONJUNCTION WITH THE DISTRIBUTION DESIGN RULES HPC-9DJ-01-0002-2015.

HORIZON POWER DISTRIBUTION CONSTRUCTION STANDARDS	REFERENCE DRAWING	REVISION C	DATE APRIL 23
	SCHNEIDER RM6 INDOOR SWITCHGEAR (CABLE APPLICATION)	DRAWING No. G6-6/3	



REF	QUANT	MATERIALS	REMARKS
BEAM			
1	1	125 x 75 x 5.0 RHS	LENGTH DETERMINED BY REQUIREMENTS (MINUS 12mm)
2	2	125 x 140 x 6.0 PL	BEAM END PLATES
3		200 x 75 x 6.0 PL	ONE FOR EACH STANCHION
STANCHION (EACH)			
4	1	190 x 75 x 6.0 PL	
5	1	75 x 75 x 5.0 SHS x 1106 LONG	
6	1	175 x 75 x 6.0 PL	
SUPPORT BEAM (EACH)			
7	1	75 x 75 x 5.0 RHS x 443 LONG	
8	1	FABRICATED FROM 1) 200 x 130 x 6 AND 2) 100 x 100 x 6	GUSSET
9	1	140 x 75 x 6.0 PL	
10	1	140 x 75 x 6.0 PL	
ANGLE FLOOR SUPPORTS			
11	1	35 x 35 x 6.0 EA ANGLE	LENGTH DETERMINED BY REQUIREMENTS
REAR FLOOR BRACE			
12		45 x 45 x 5.0 EA ANGLE x 245 LONG	SEE NOTE 1

NOTES

1 REFER DRAWINGS G6-04 SHEET 1 FOR SWITCHGEAR FIXING DETAILS
2 REFER DRAWINGS G3-22B SHEETS 1 TO 3 FOR SWITCH ROOM DETAILS
3 ALL WELDED CONSTRUCTION SHALL 10× WEEP HOLES FOR EXPANSION ON HDG, REMOVE ALL BURRS AND SHARP EDGES, HOT DIP GALV AFTER CONSTRUCTION TO AS/NZS 4680:2006

THIS DRAWING TO BE READ IN CONJUNCTION WITH THE DISTRIBUTION DESIGN RULES - HPC-9DJ-01-0002-2015

HORIZON POWER

DISTRIBUTION CONSTRUCTION STANDARDS

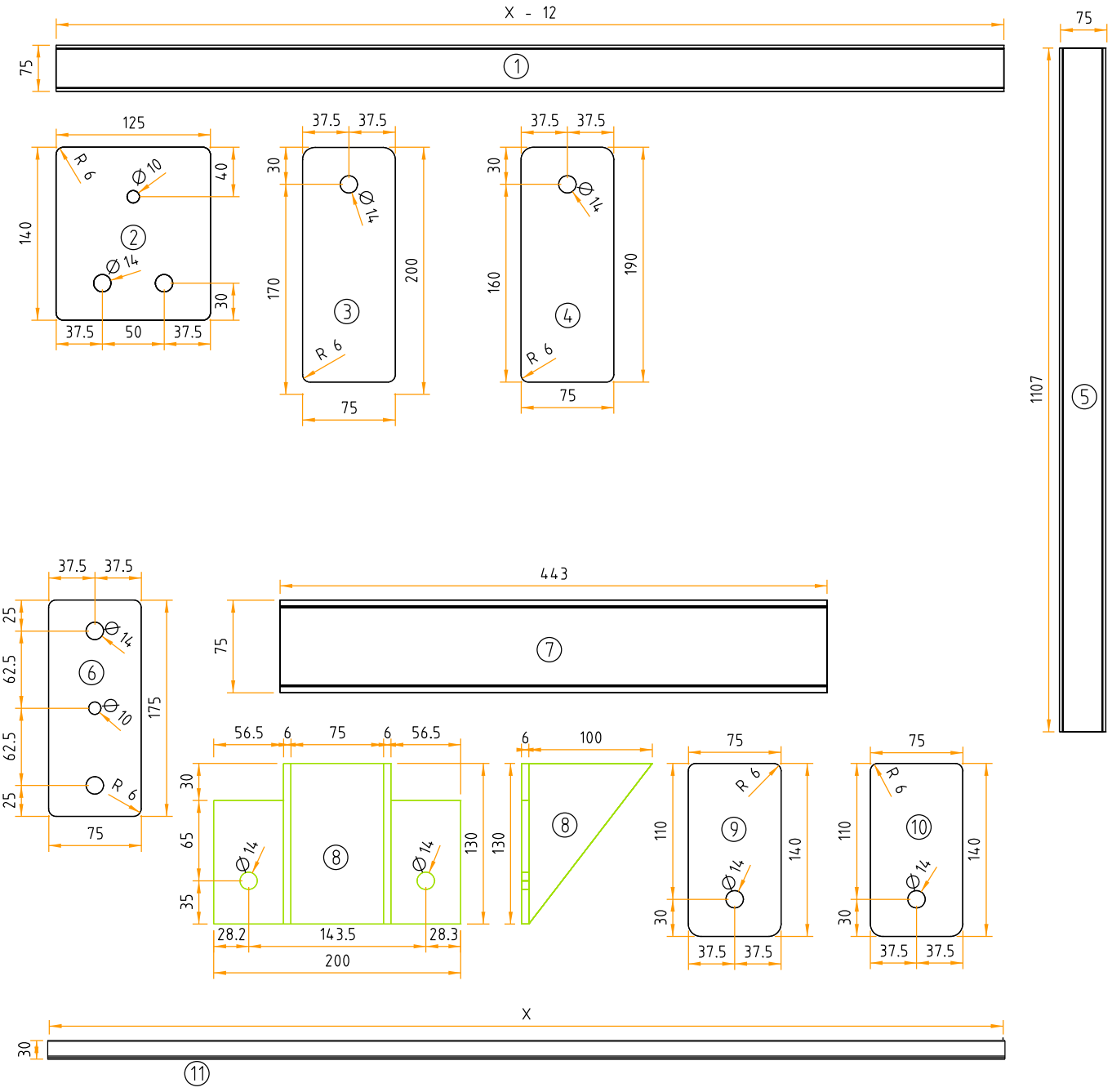
INDOOR SUBSTATION SUPPORT NO METERING SUPPORT BEAM FABRICATION

DESIGN DETAILS

REVISION	DATE
B	MARCH 18

DRAWING No.

G6-7/1



RM6 TYPE	X (mm)
3 WAY	1216
4 WAY	1649
5 WAY	2151

THIS DRAWING TO BE READ IN CONJUNCTION WITH THE DISTRIBUTION DESIGN RULES - HPC-9DJ-01-0002-2015.

HORIZON POWER

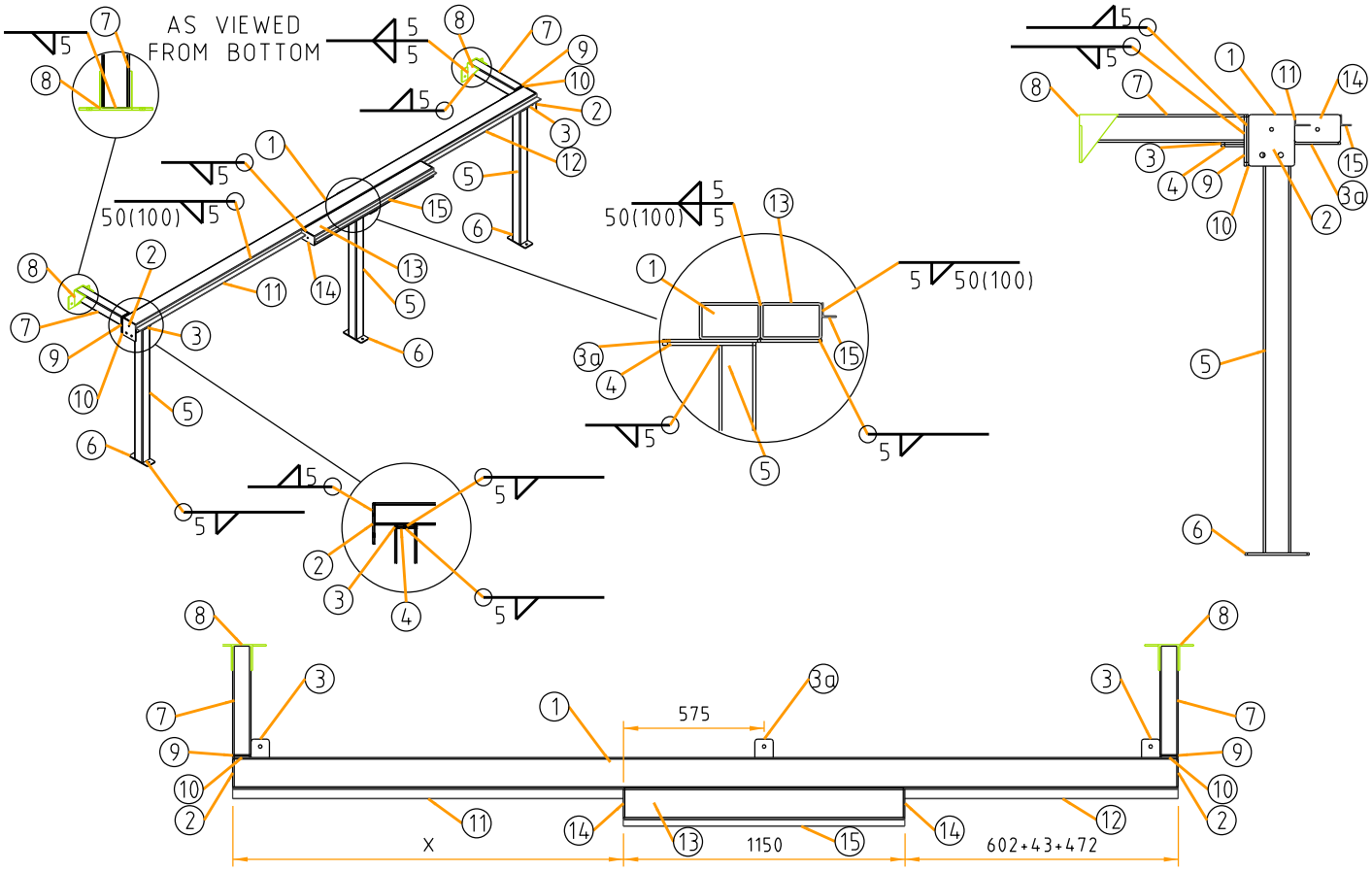
DISTRIBUTION CONSTRUCTION STANDARDS

INDOOR SUBSTATION SUPPORT NO METERING SUPPORT BEAM FABRICATION COMPONENET DETAILS

REVISION	DATE
B	MAY 18

DRAWING No.

G6-7/2



REF	QUANT	MATERIALS	REMARKS
BEAM			
1	1	125 x 75 x 5.0 RHS	LENGTH DETERMINED BY REQUIREMENTS (MINUS 12mm)
2	2	140 x 125 x 6.0 PL	BEAM END PLATES
3	2	200 x 75 x 6.0 PL	ONE FOR EACH STANCHION
3a	1	325 x 75 x 6.0 PL	ONE FOR EACH STANCHION
STANCHION (EACH)			
4	1	190 x 75 x 6.0 PL	
5	1	75 x 75 x 5.0 SHS x 1107 LONG	
6	1	175 x 75 x 6.0 PL	
SUPPORT BEAM (EACH)			
7	1	75 x 75 x 5.0 RHS x 443 LONG	
8	1	FABRICATED FROM 1) 200 x 130 x 6 2) 100 x 100 x 6 GUSSET	
9	1	140 x 75 x 6.0 PL	
10	1	140 x 75 x 6.0 PL	
ANGLE FLOOR SUPPORTS			
11	1	35 x 35 x 6.0 EA ANGLE	LENGTH DETERMINED BY REQUIREMENTS
12	1	35 x 35 x 6.0 EA ANGLE x 1164	
METERING BEAM			
13	1	125 x 75 x 5.0 RHS x 1138 LONG	
14	2	125 x 75 x 6.0 PL	BEAM END PLATES
15	1	35 x 35 x 6.0 EA ANGLE x 1150	
REAR FLOOR BRACE			
16		45 x 45 x 5.0 EA ANGLE x 245 LONG	SEE NOTE 1

NOTES

1. REFER DRAWINGS G6-04 SHEET 2 FOR SWITCHGEAR FIXING DETAILS
2. REFER DRAWINGS G3-22B SHEETS 1 TO 3 FOR SWITCH ROOM DETAILS
3. ALL WELDED CONSTRUCTION SHALL 10× WEEP HOLES FOR EXPANSION ON HDG, REMOVE ALL BURRS AND SHARP EDGES, HOT DIP GALV AFTER CONSTRUCTION TO AS/NZS 4680 2006

THIS DRAWING TO BE READ IN CONJUNCTION WITH THE DISTRIBUTION DESIGN RULES - HPC-9DJ-01-0002-2015.

HORIZON POWER

DISTRIBUTION CONSTRUCTION STANDARDS

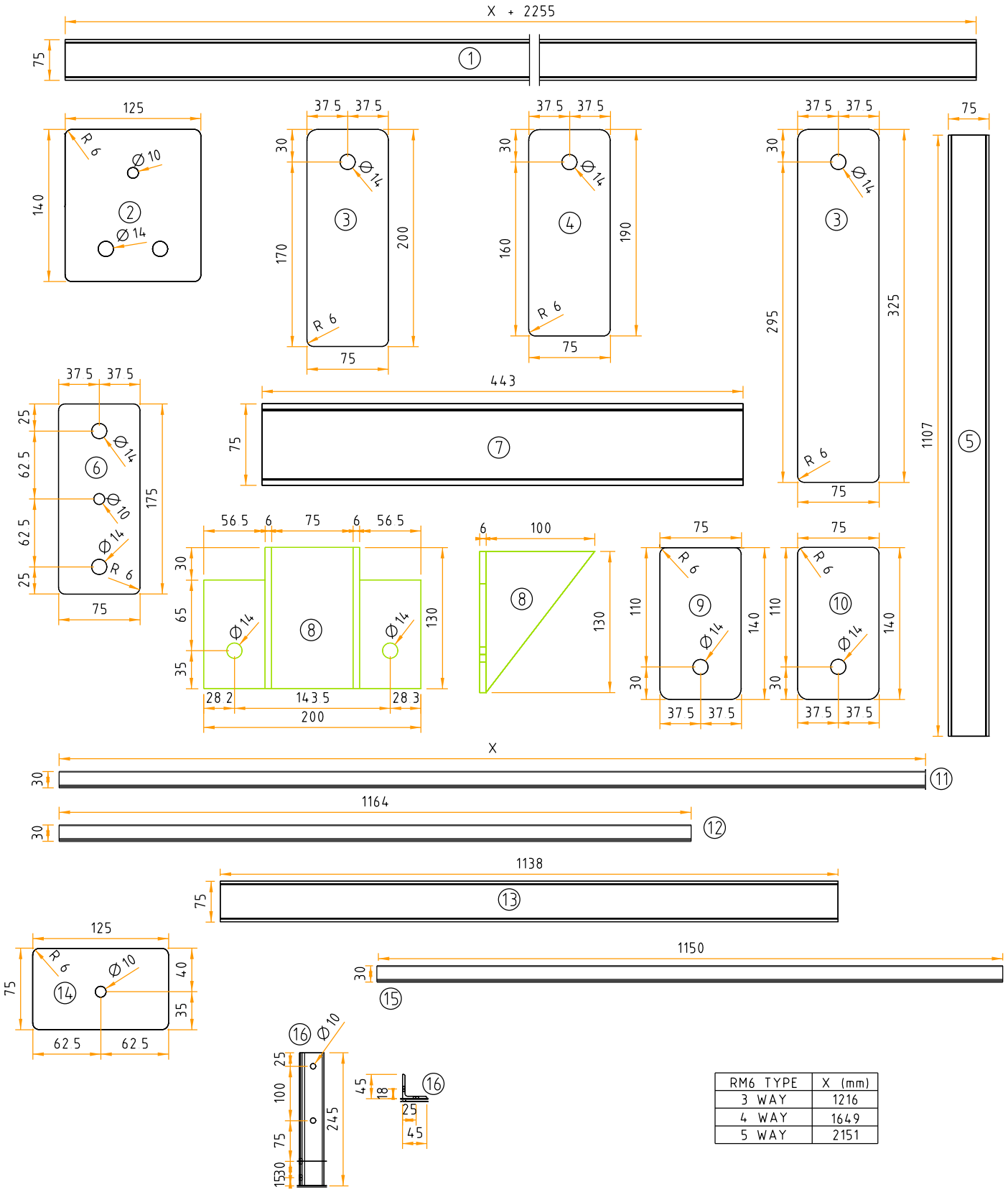
INDOOR SUBSTATION SUPPORT NO METERING SUPPORT BEAM FABRICATION

DESIGN DETAILS

REVISION	DATE
B	MAY 18

DRAWING No.

G6-7/3



THIS DRAWING TO BE READ IN CONJUNCTION WITH THE DISTRIBUTION DESIGN RULES - HPC-9DJ-01-0002-2015

HORIZON POWER

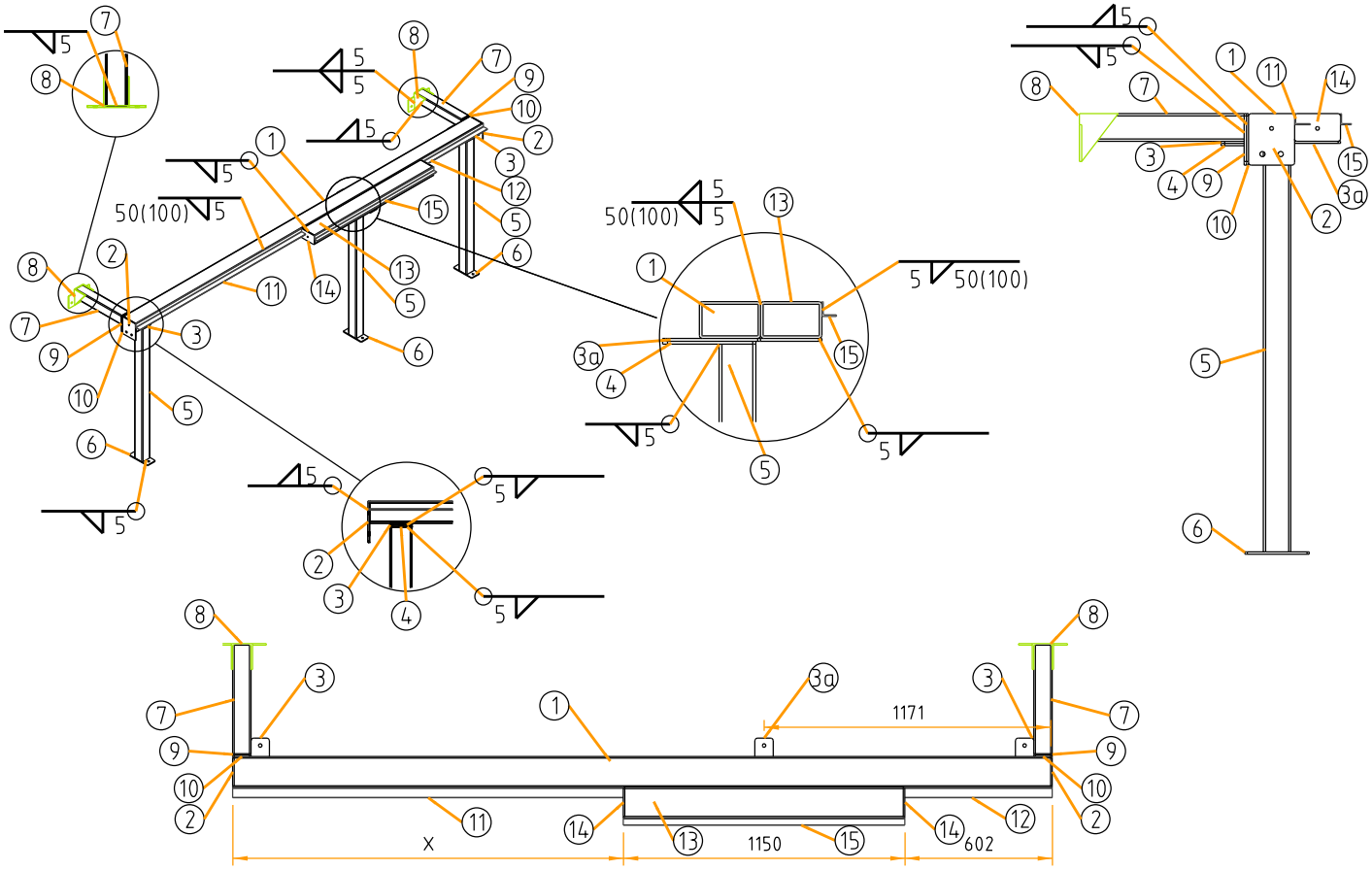
DISTRIBUTION CONSTRUCTION STANDARDS

INDOOR SUBSTATION SUPPORT DIRECT BUS APPLICATION WITH METERING SUPPORT BEAM FABRICATION COMPONENT DETAILS

REVISION	DATE
B	MAY 18

DRAWING No

G6-7/4



REF	QUANT	MATERIALS	REMARKS
BEAM			
1	1	125 x 75 x 5.0 RHS	LENGTH DETERMINED BY REQUIREMENTS (MINUS 12mm)
2	2	140 x 125 x 6.0 PL	BEAM END PLATES
3	2	200 x 75 x 6.0 PL	ONE FOR EACH END STANCHION
3a	1	325 x 75 x 6.0 PL	FOR CENTER STANCHION
STANCHION (EACH)			
4	1	190 x 75 x 6.0 PL	
5	1	75 x 75 x 5.0 SHS x 1107 LONG	
6	1	175 x 75 x 6.0 PL	
SUPPORT BEAM (EACH)			
7	1	75 x 75 x 5.0 RHS x 443 LONG	
8	1	FABRICATED FROM 1) 200 x 130 x 6 AND 2) 100 x 100 x 6 GUSSET	
9	1	140 x 75 x 6.0 PL	
10	1	140 x 75 x 6.0 PL	
ANGLE FLOOR SUPPORTS			
11	1	35 x 35 x 6.0 EA ANGLE	LENGTH DETERMINED BY REQUIREMENTS
12	1	35 x 35 x 6.0 EA ANGLE x 602 LONG	
METERING BEAM			
13	1	125 x 75 x 5.0 RHS x 1138 LONG	
14	2	125 x 75 x 6.0 PL	BEAM END PLATES
15	1	35 x 35 x 6.0 EA ANGLE x 1150	
REAR FLOOR BRACE			
16		45 x 45 x 5.0 EA ANGLE x 245 LONG	SEE NOTE 1

NOTES:

1. REFER DRAWINGS G6-04 SHEET 3 FOR SWITCHGEAR FIXING DETAILS
2. REFER DRAWINGS G3-22B SHEETS 1 TO 3 FOR SWITCH ROOM DETAILS
3. ALL WELDED CONSTRUCTION SHALL 10× WEEP HOLES FOR EXPANSION ON HDG, REMOVE ALL BURRS AND SHARP EDGES, HOT DIP GALV AFTER CONSTRUCTION TO AS/NZS 4680:2006

THIS DRAWING TO BE READ IN CONJUNCTION WITH THE DISTRIBUTION DESIGN RULES - HPC-9DJ-01-0002-2015.

HORIZON POWER

DISTRIBUTION CONSTRUCTION STANDARDS

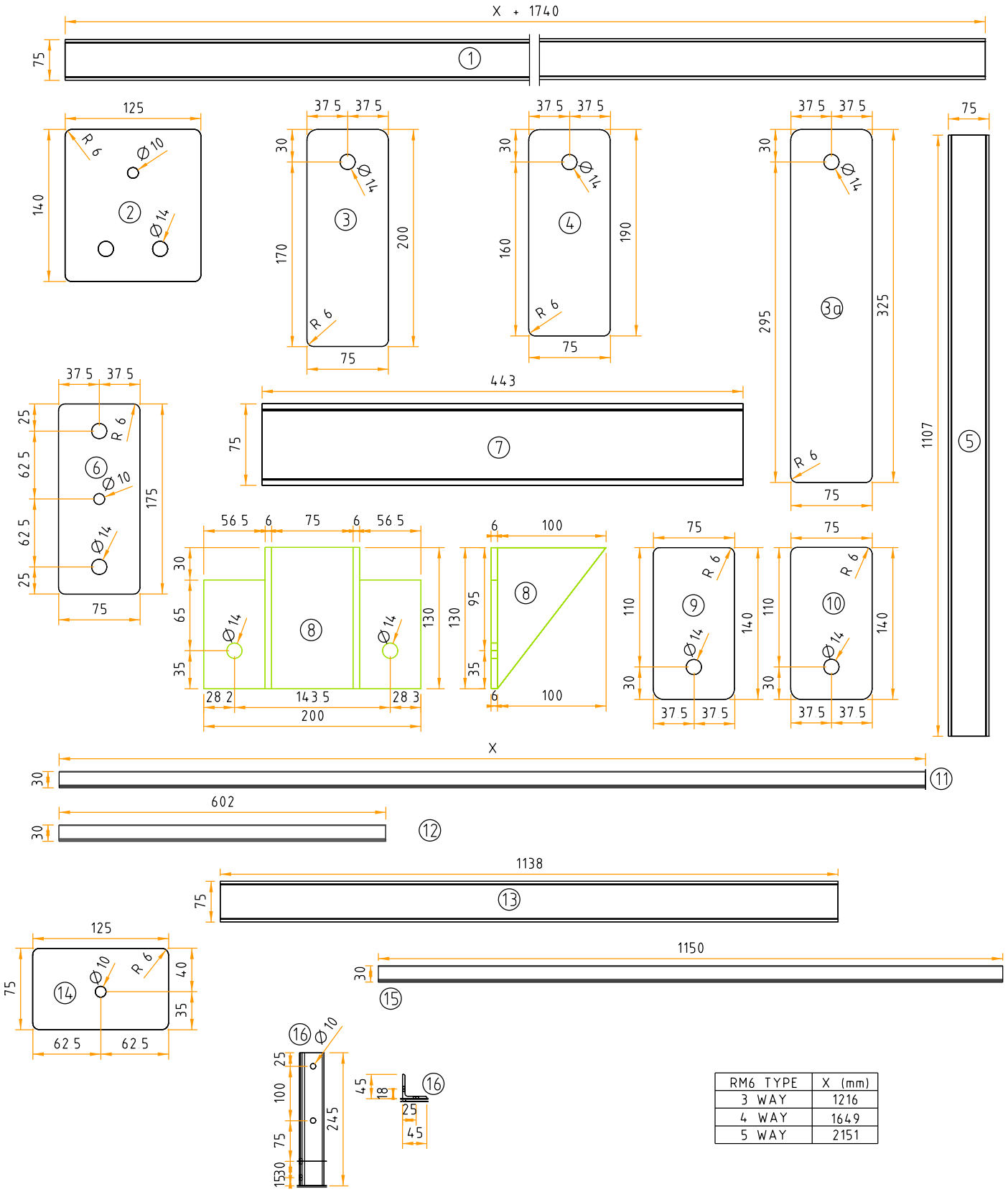
INDOOR SUBSTATION SUPPORT CABLE CONNECTION WITH METERING SUPPORT BEAM FABRICATION

DESIGN DETAILS

REVISION	DATE
B	MAY 18

DRAWING No.

G6-7/5



RM6 TYPE	X (mm)
3 WAY	1216
4 WAY	1649
5 WAY	2151

THIS DRAWING TO BE READ IN CONJUNCTION WITH THE DISTRIBUTION DESIGN RULES - HPC-9DJ-01-0002-2015.

HORIZON POWER

DISTRIBUTION CONSTRUCTION STANDARDS

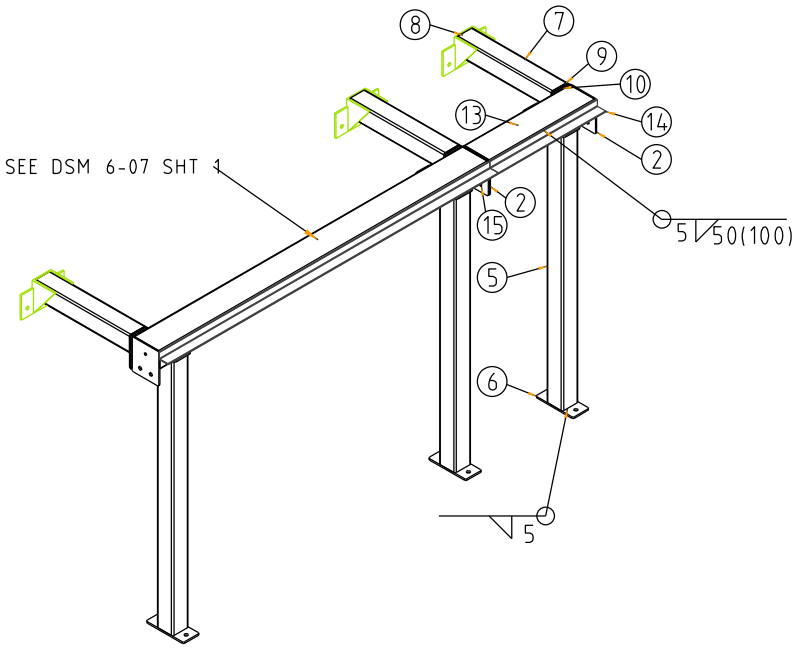
INDOOR SUBSTATION SUPPORT CABLE CONNECTION WITH METERING SUPPORT BEAM FABRICATION

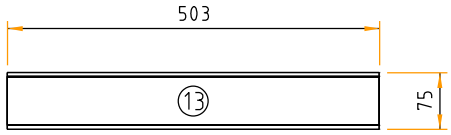
COMPONENT DETAILS

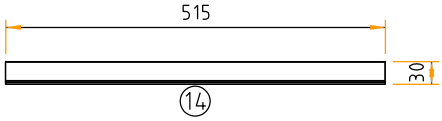
REVISION	DATE
B	MAY 18

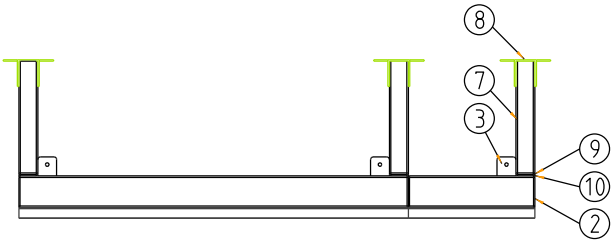
DRAWING No.

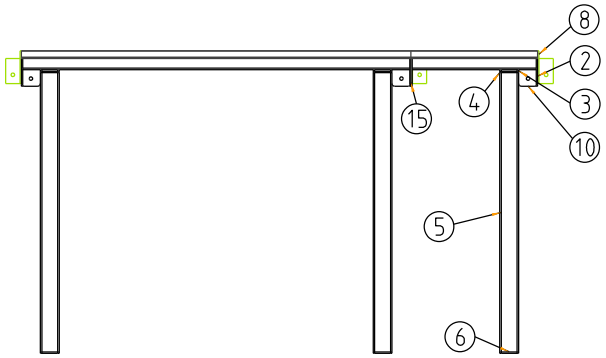
G6-7/6











REF	QUANT	MATERIALS	REMARKS
BEAM			
13	1	125 x 75 x 5.0 RHS	FOR ONE WAY EXTENSION (472 + 43 - 12)
2	2	125 x 140 x 6.0 PL	BEAM END PLATES
3		200 x 75 x 6.0 PL	ONE FOR EACH STANCHION
STANCHION (EACH)			
4	1	190 x 75 x 6.0 PL	
5	1	75 x 75 x 5.0 SHS x 1106 LONG	
6	1	175 x 75 x 6.0 PL	
SUPPORT BEAM (EACH)			
7	1	75 x 75 x 5.0 RHS x 443 LONG	
8	1	FABRICATED FROM 1) 200 x 130 x 6 AND 2) 100 x 100 x 6	GUSSET
9	1	140 x 75 x 6.0 PL	
10	1	140 x 75 x 6.0 PL	
ANGLE FLOOR SUPPORTS			
14	1	35 x 35 x 6.0 EA ANGLE	FOR ONE WAY EXTENSION
REAR FLOOR BRACE			
12		45 x 45 x 5.0 EA ANGLE x 245 LONG	SEE NOTE 1
BOLTS FOR FIXING ONE WAY EXTENSION			
15	2	2 x M12 BOLTS COMPLETE WITH WASHERS AND SPRING WASHERS	

NOTES

1 REFER DRAWINGS G6-04 SHEET 1 FOR SWITCHGEAR FIXING DETAILS
2 REFER DRAWINGS G3-22B SHEETS 1 TO 3 FOR SWITCH ROOM DETAILS
3 ALL WELDED CONSTRUCTION SHALL 10× WEEP HOLES FOR EXPANSION ON HDG, REMOVE ALL BURRS AND SHARP EDGES, HOT DIP GALV AFTER CONSTRUCTION TO AS/NZS 4680 2006

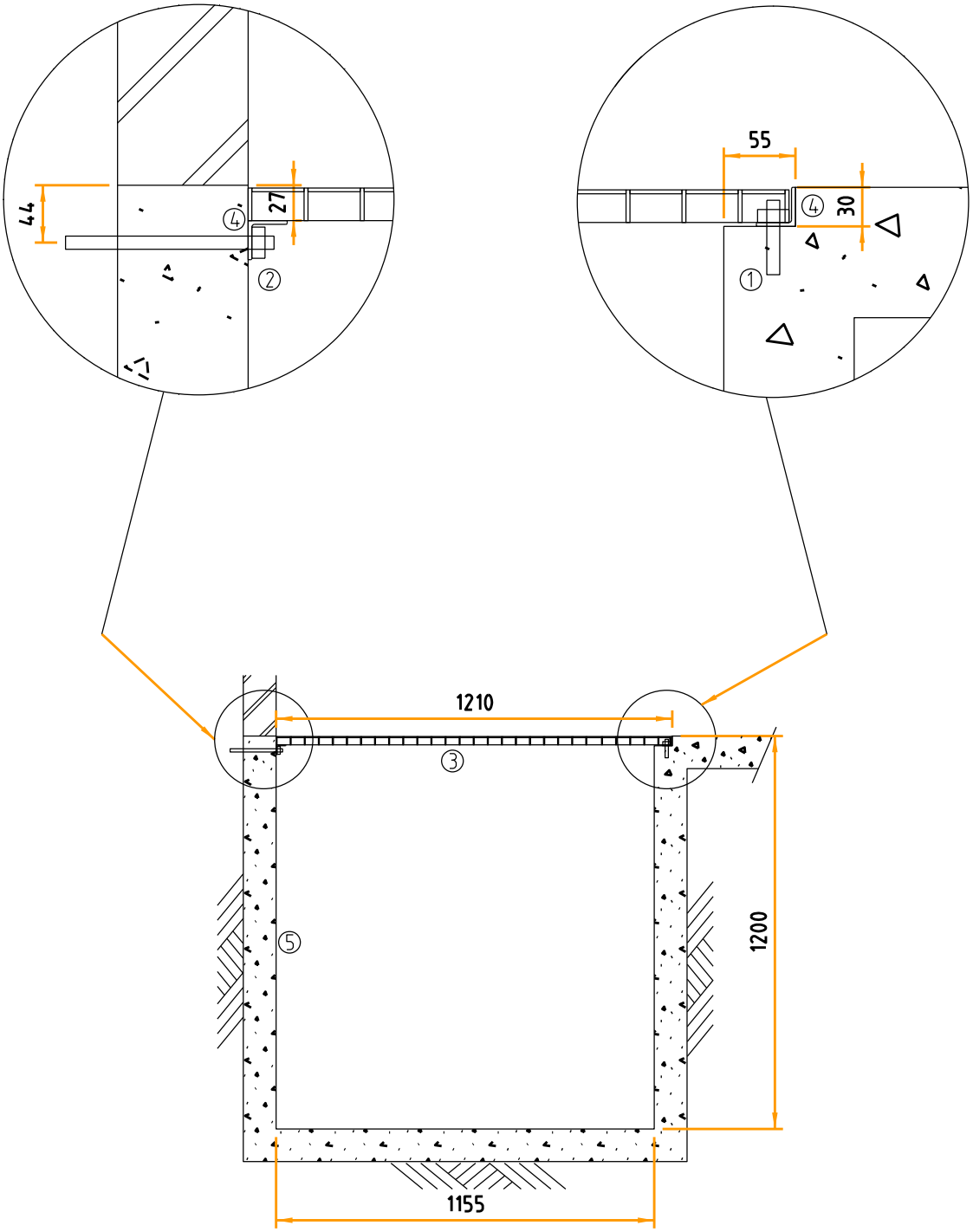
THIS DRAWING TO BE READ IN CONJUNCTION WITH THE DISTRIBUTION DESIGN RULES - HPC-9DJ-01-0002-2015.

HORIZON POWER
DISTRIBUTION CONSTRUCTION STANDARDS

INDOOR SUBSTATION SUPPORT 3 - 4 WAY TO 5 WAY CONNECTION SWITCHGEAR SUPPORT DETAILS

REVISION	DATE
B	MAY 18

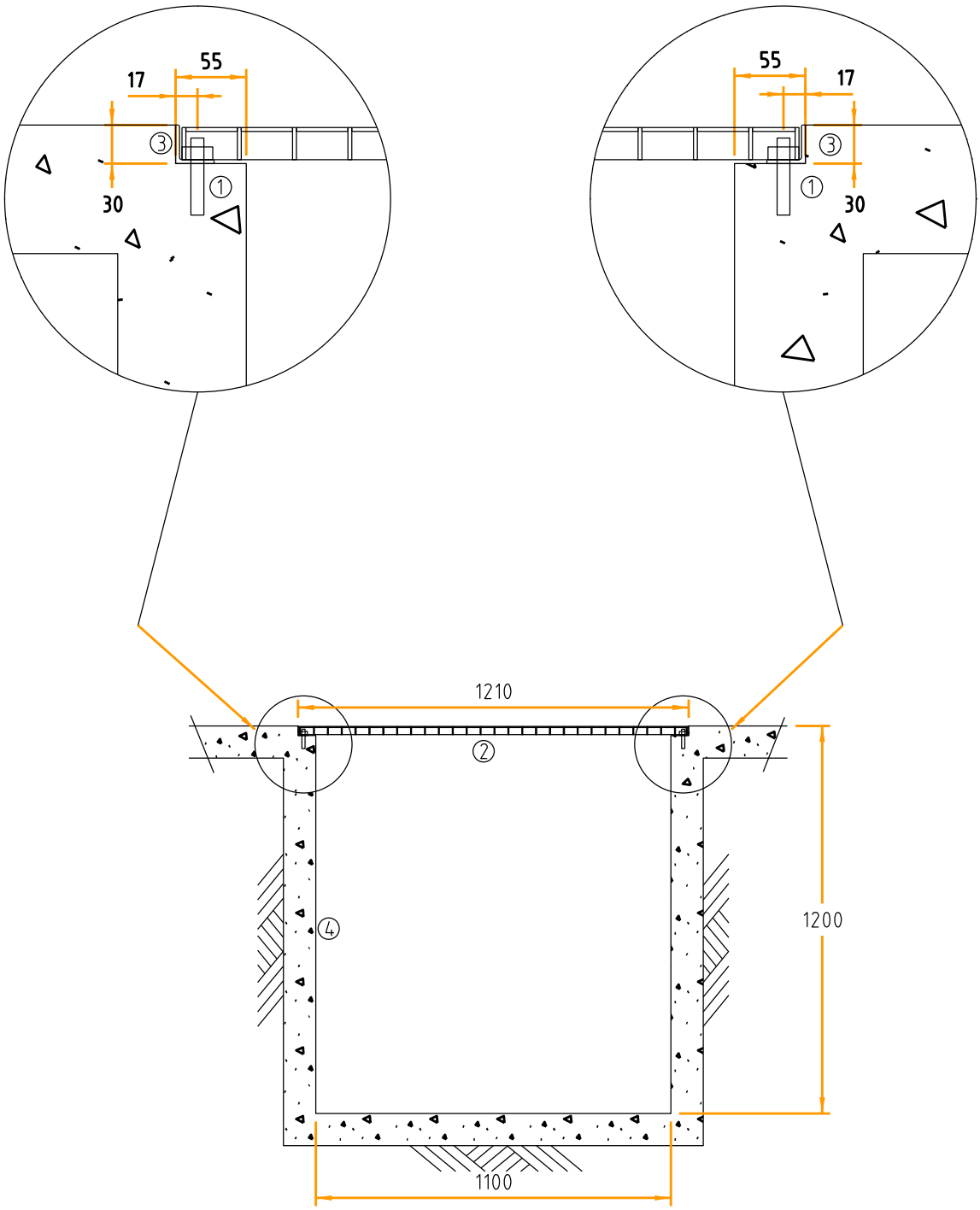
DRAWING No.
G6-7/7



NOTES:
1. M6 x 40 MDA AT 1000c/c 150 MIN FROM ENDS
2. M12 x 140 MDA AT 750c/c 150 MIN FROM ENDS
3. REFER TO SHEET 11 FOR EXAMPLE SHAPES OF GRATING.
4. 30 x 30 x 6 EA ANGLE.
5. CONCRETE WIDTH TO BE 200mm MIN.

THIS DRAWING TO BE READ IN CONJUNCTION WITH THE DISTRIBUTION DESIGN RULES - HPC-9DJ-01-0002-2015.

HORIZON POWER DISTRIBUTION CONSTRUCTION STANDARDS	INDOOR SUBSTATION TRENCH COVER SUPPORT TRENCH AGAINST WALL INSTALLATION DETAILS	REVISION B DATE MAY 18 DRAWING No. G6-10/1



NOTES:
1. M6 x 40 MDA AT 1000c/c 150 MIN FROM ENDS
2. REFER TO SHEET 11 FOR EXAMPLE SHAPES OF GRATING.
3. 30 x 30 x 6 EA ANGLE.
4. CONCRETE WIDTH TO BE 200mm MIN.

THIS DRAWING TO BE READ IN CONJUNCTION WITH THE DISTRIBUTION DESIGN RULES - HPC-9DJ-01-0002-2015.

HORIZON POWER

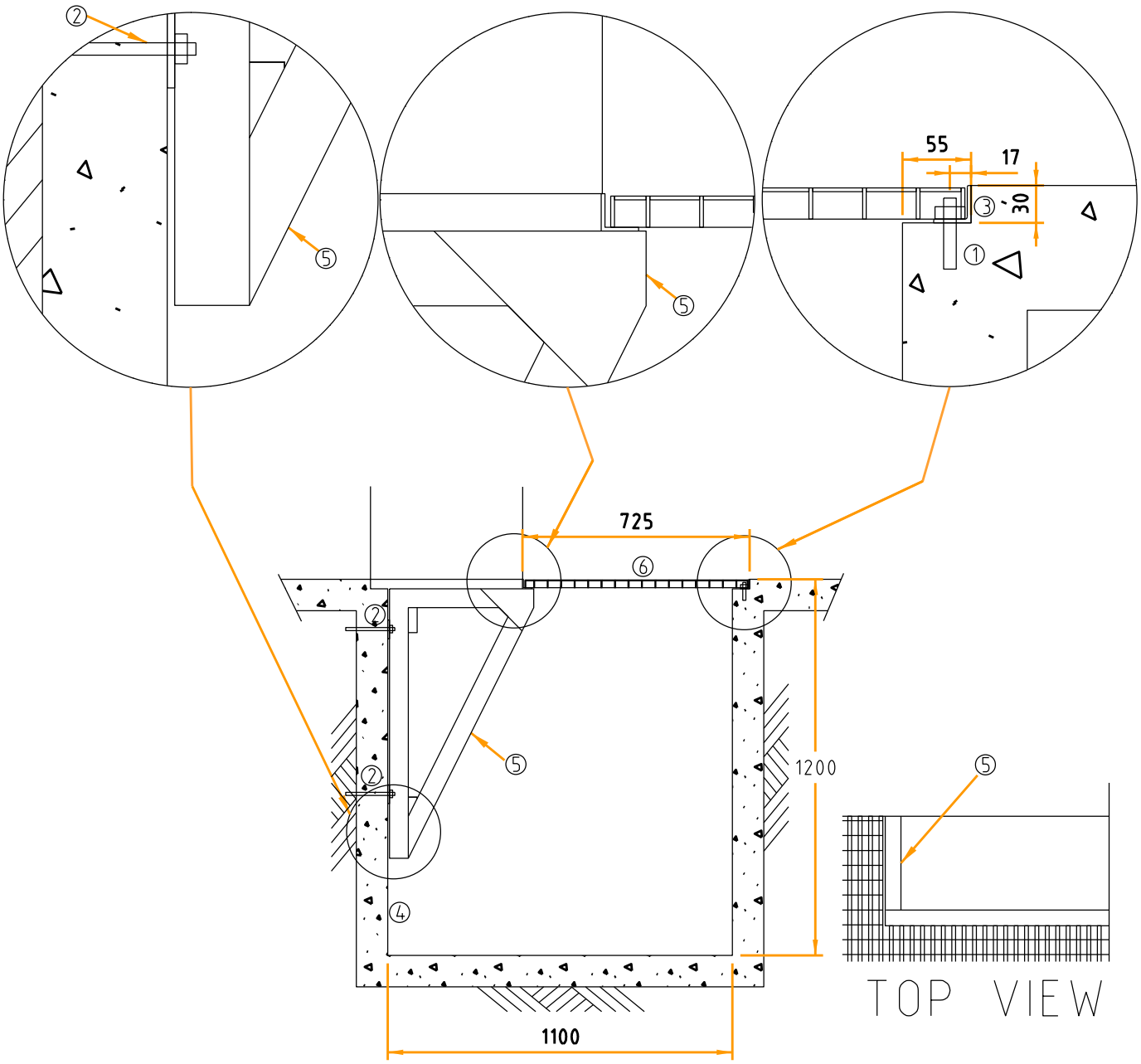
DISTRIBUTION CONSTRUCTION STANDARDS

INDOOR SUBSTATION TRENCH COVER SUPPORT TRENCH MIDDLE OF FLOOR

REVISION	DATE
B	MAY 18

DRAWING No.

G6-10/2



NOTES

1 M6 x 40 MDA AT 1000c/c 150 MIN FROM ENDS
2 2M12 x 140 MDA PER PLATE
3 30 x 30 x 6 EA ANGLE
4 CONCRETE WIDTH TO BE 200mm MIN
5 REFER TO SHEET 4 FOR BRACE DETAILS
6 REFER TO SHEET 11 FOR EXAMPLE SHAPES OF GRATING

THIS DRAWING TO BE READ IN CONJUNCTION WITH THE DISTRIBUTION DESIGN RULES - HPC-9DJ-01-0002-2015

HORIZON POWER

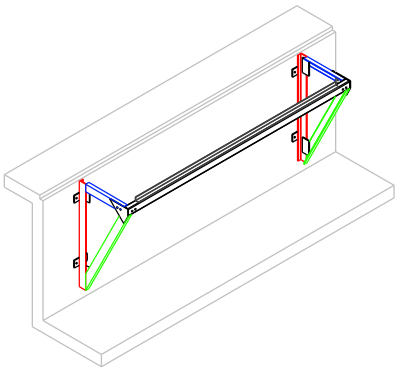
DISTRIBUTION CONSTRUCTION STANDARDS

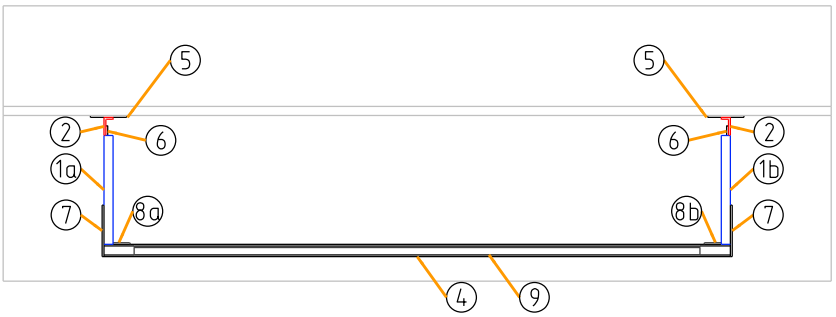
INDOOR SUBSTATION TRENCH CANTILEVER SUPPORT TRANSFORMER APPLICATION INSTALLATION DETAILS

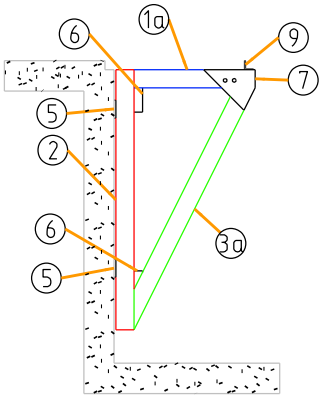
REVISION	DATE
B	MAY 18

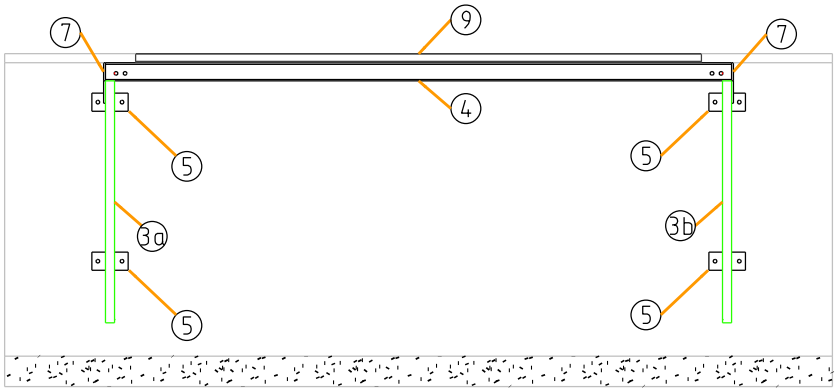
DRAWING No

G6-10/3









REF	QUANT	MATERIALS	REMARKS
1	2	60 x 30 x 6 UA x 360 LONG	
2	2	60 x 30 x 6 UA 860 LONG	
3	2	60 x 30 x 6 UA x 894 4 LONG	
4	2	60 x 40 x 5 RHS x 2070 LONG	
5	4	120 x 60 x 6 PL	
6	4	120 x 60 x 6 PL	FULLY WELD GUSSET TO ANGLE
7	2	170 x 135 x 6 PL	FULLY WELD GUSSET TO ANGLE
8	2	80 x 80 x 6 EA x 50 LONG	HOLES ARE THE SAME ON BOTH FLANGES
9	1	30 x 30 x 3 EA x 1870 LONG	WELD TO TOP OF ITEM 4

NOTES:

1. FIX "5" TO WALL WITH 2M10 x 140 MDA PER PLATE
2. ALL WELDED CONSTRUCTION WITH 5mm FILLET WELDS LONG LENGTHS STICT WELD 50 (100) x10 HOLES FOR EXPANTION ON HSG REMOVE ALL BURRS AND SHARP EDGES HD GALV AFTER CONSTRUCTION TO AS/NZS 4680:2006
3. REFERANCE DRAWINGS G3- SHEETS 1 TO 3 FOR SWITCH ROOM DETAILS

THIS DRAWING TO BE READ IN CONJUNCTION WITH THE DISTRIBUTION DESIGN RULES - HPC-9DJ-01-0002-2015.

HORIZON POWER

DISTRIBUTION CONSTRUCTION STANDARDS

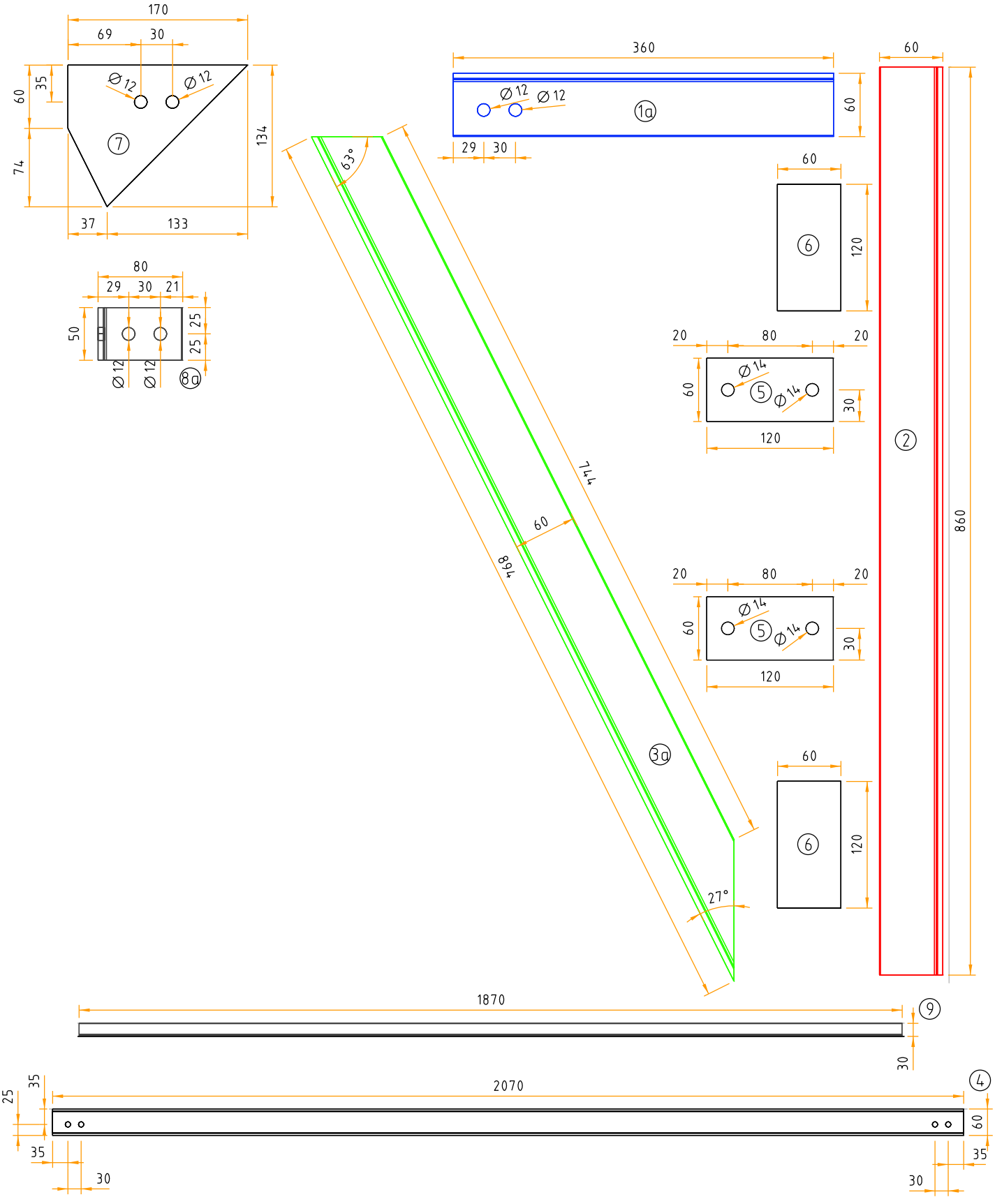
INDOOR SUBSTATION
TRENCH COVER SUPPORT
CANTILEVER SUPPORT AT TRANSFORMER

DESIGN DETAILS

REVISION	DATE
B	MARCH 18

DRAWING No.

G6-10/4



THIS DRAWING TO BE READ IN CONJUNCTION WITH THE DISTRIBUTION DESIGN RULES - HPC-9DJ-01-0002-2015

HORIZON POWER

DISTRIBUTION CONSTRUCTION STANDARDS

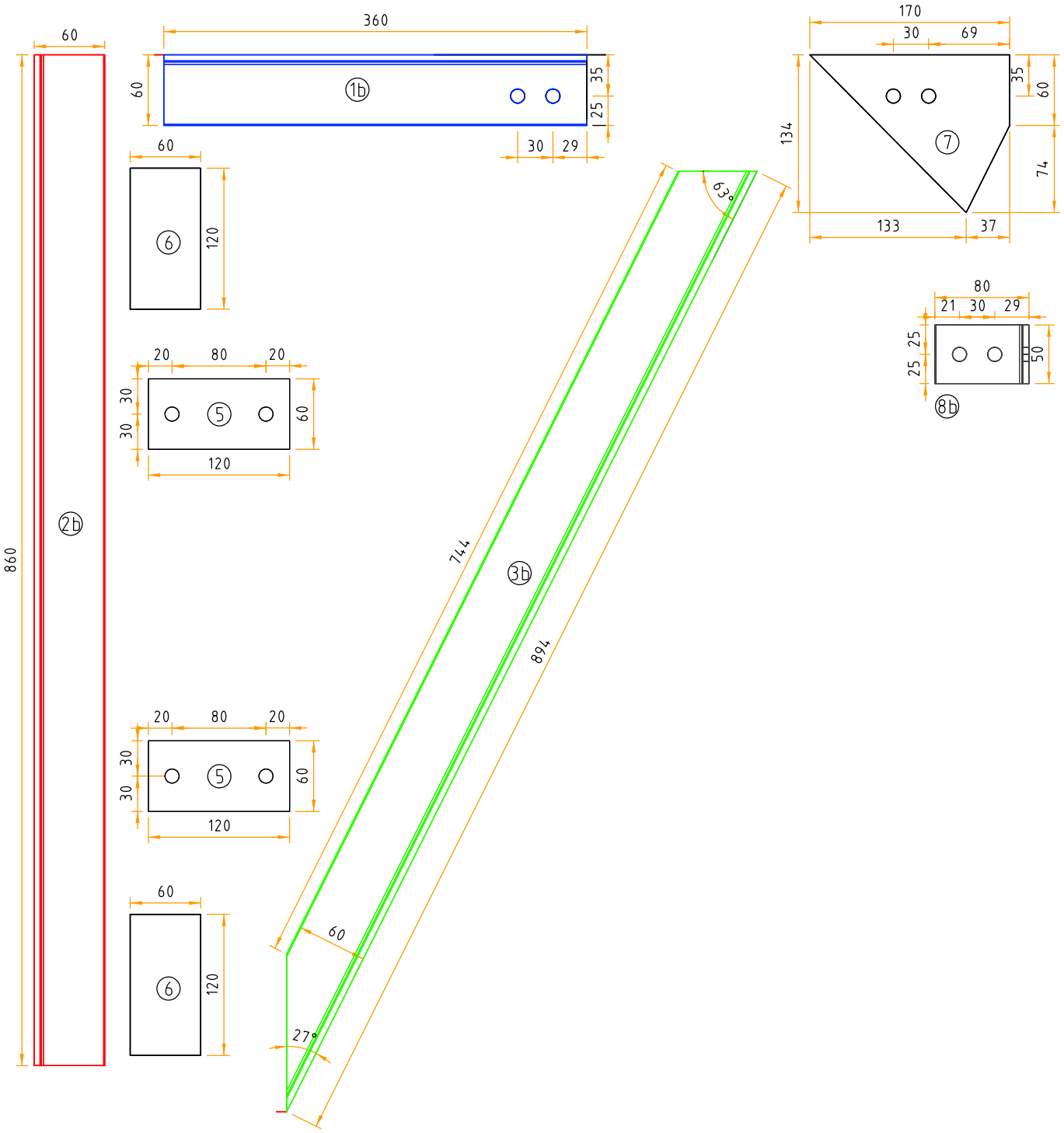
INDOOR SUBSTATION
TRENCH COVER SUPPORT
CANTILEVER SUPPORT AT TRANSFORMER

COMPPONENT DETAILS

REVISION	DATE
B	MAY 18

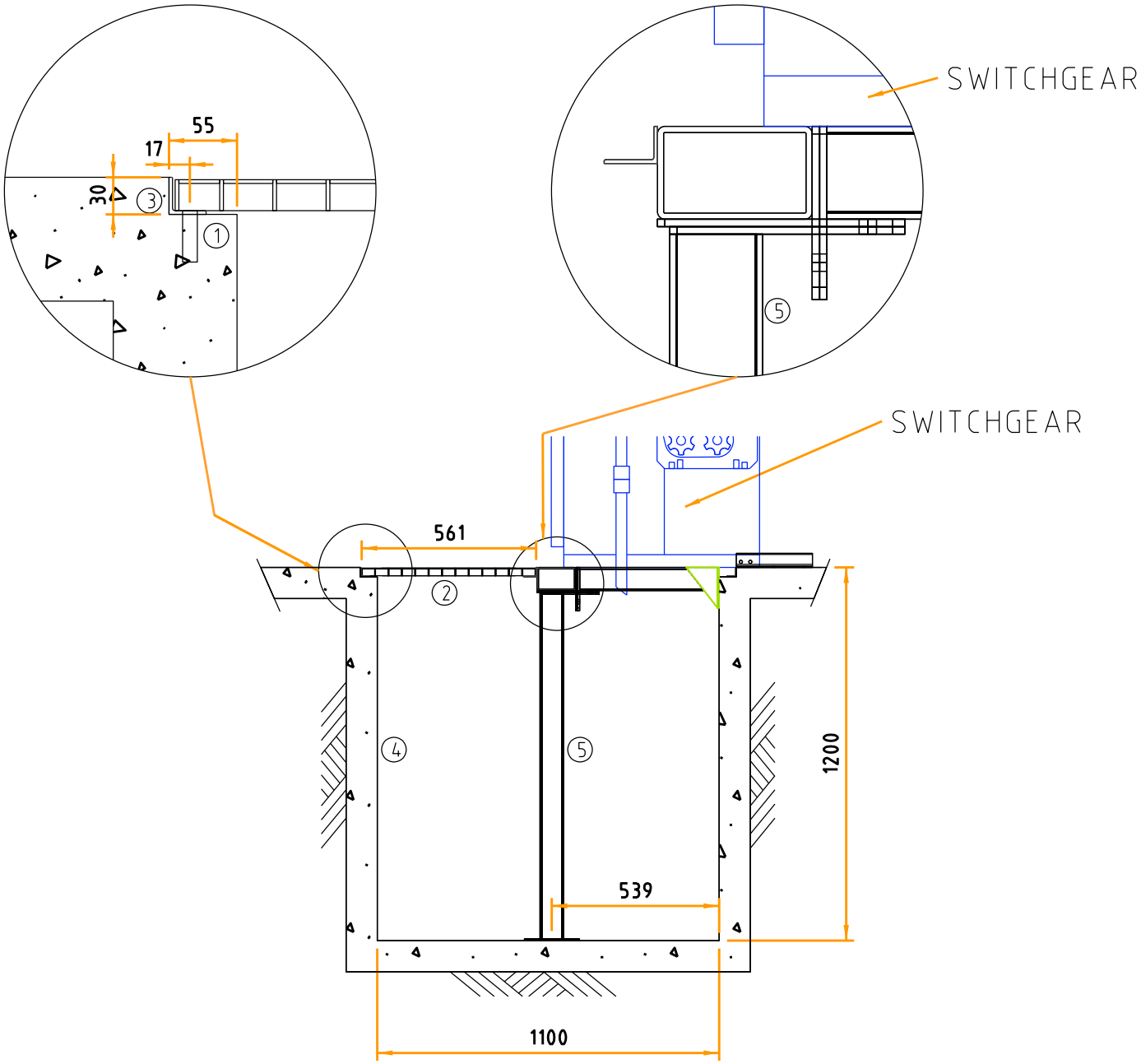
DRAWING No

G6-10/5



THIS DRAWING TO BE READ IN CONJUNCTION WITH THE DISTRIBUTION DESIGN RULES - HPC-9DJ-01-0002-2015

HORIZON POWER DISTRIBUTION CONSTRUCTION STANDARDS	INDOOR SUBSTATION TRENCH COVER SUPPORT CANTILEVER SUPPORT AT TRANSFORMER COMPPONENT DETAILS	REVISION B	DATE MAY 18
		DRAWING No G6-10/6	



NOTES:
1. M6 x 40 MDA AT 1000c/c 150 MIN FROM ENDS
2. REFER TO SHEET 11 FOR EXAMPLE SHAPES OF GRATING
3. 30 x 30 x 6 EA ANGLE
4. CONCRETE WIDTH TO BE 200mm MIN
5. REFER TO SHEET G6-07 FOR BRACE DETAILS

THIS DRAWING TO BE READ IN CONJUNCTION WITH THE DISTRIBUTION DESIGN RULES - HPC-9DJ-01-0002-2015

HORIZON POWER

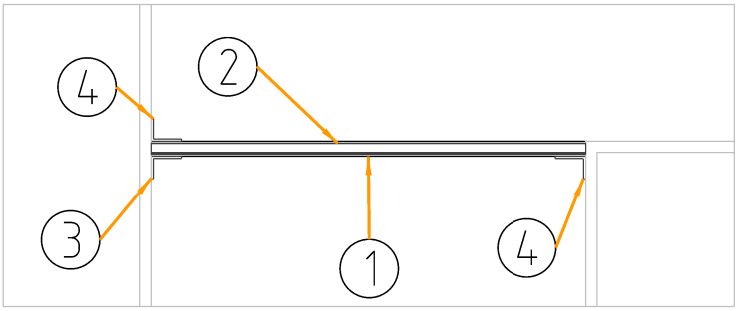
DISTRIBUTION CONSTRUCTION STANDARDS

INDOOR SUBSTATION TRENCH COVER SUPPORT CENTRAL SUPPORT FOR SWITCHGEAR

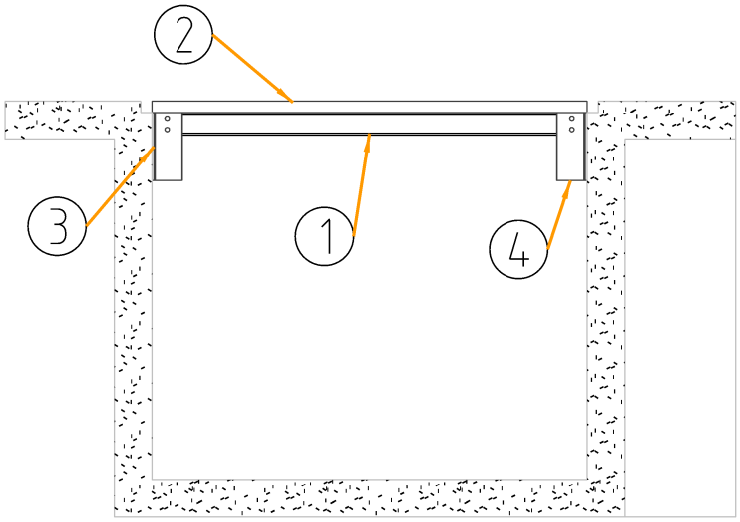
REVISION	DATE
B	MAY 18

DRAWING No.

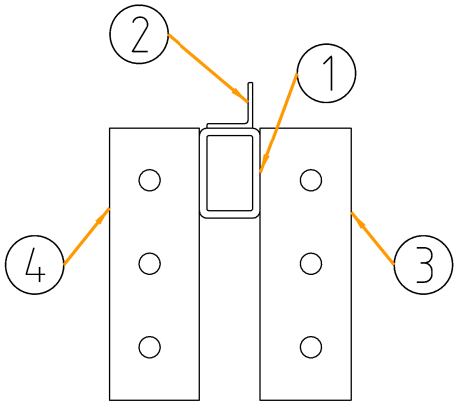
G6-10/7



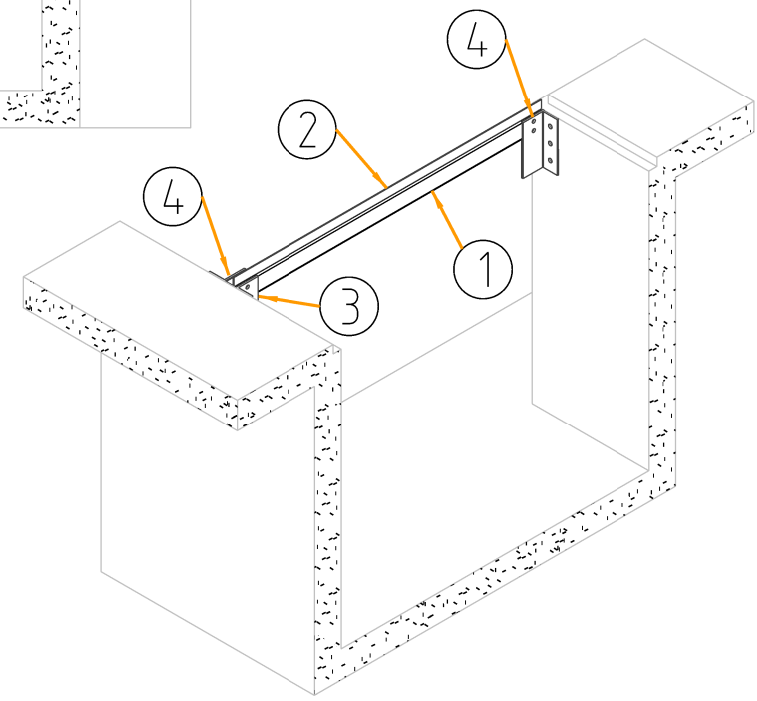
TOP VIEW



FRONT VIEW



SIDE VIEW

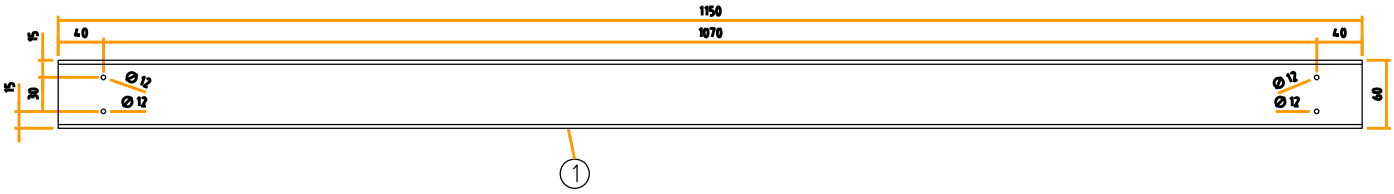


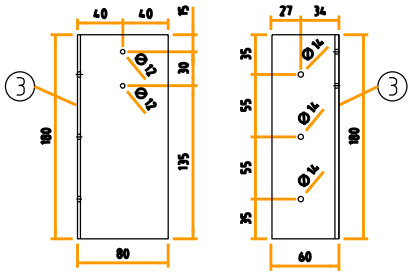
ISOMETRIC VIEW

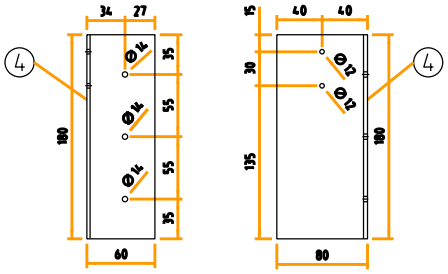
NOTES:
1. REFER TO SHEET 10 FOR DETAILS

THIS DRAWING TO BE READ IN CONJUNCTION WITH THE DISTRIBUTION DESIGN RULES - HPC-9DJ-01-0002-2015.

HORIZON POWER DISTRIBUTION CONSTRUCTION STANDARDS	INDOOR SUBSTATION TRENCH COVER SUPPORT CORNER IN TRENCH SUPPORT	REVISION B DATE MAY 18 DRAWING No. G6-10/8







REF	QUANT	MATERIALS	REMARKS
1	1	60 x 40 x 5.0 RHS x 1150 LONG	
2	1	30 x 30 x 6.0 EA x 1150 LONG	WELD ON TOP OF '1'
3	1	80 x 60 x 6.0 UA x 180 LONG	
4	2	80 x 60 x 6.0 UA x 180 LONG	

NOTES:
1. 9M12 x 140 MDA REQUIRED TO FIX TO CONCRETE WALL
2. 4M10 BOLTS REQUIRED TO FIX RHS TO SUPPORT ANGLES
3. WELD 30 x 30 x 6.0 EA ON TOP OF RHS
4. REFERANCE DRAWINGS G3 SHEETS 1 TO 3 FOR SWITCH ROOM DETAILS

THIS DRAWING TO BE READ IN CONJUNCTION WITH THE DISTRIBUTION DESIGN RULES - HPC-9DJ-01-0002-2015.

HORIZON POWER

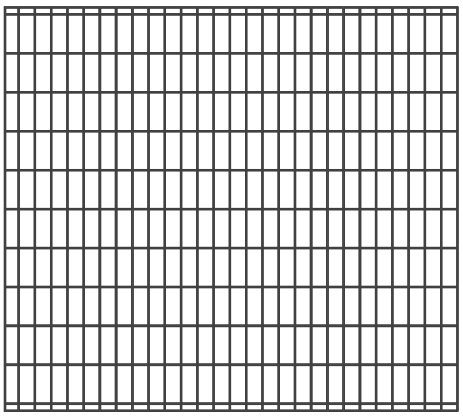
DISTRIBUTION CONSTRUCTION STANDARDS

INDOOR SUBSTATION TRENCH COVER SUPPORT FABRICATION DETAILS

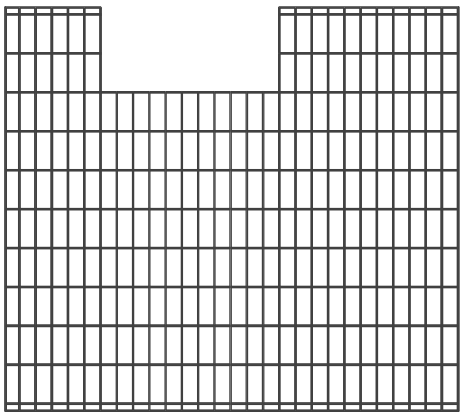
REVISION	DATE
B	MAY 18

DRAWING No.

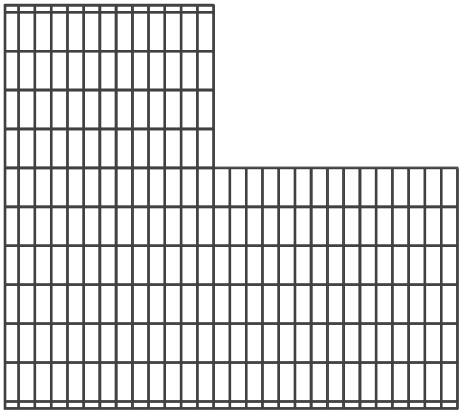
G6-10/9



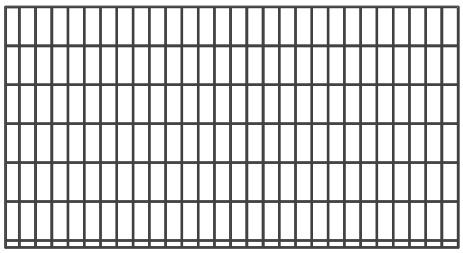
TRENCH COVER PLATE



TRENCH COVER PLATE AT LV KIOSK LOCATION



TRENCH COVER PLATE AT
TRANSFORMER AND
SWITCHGEAR EDGE LOCATION



TRENCH COVER PLATE AT
TRANSFORMER AND HV
SWITCHGEAR LOCATION

NOTES:
1. THESE ARE EXAMPLES OF POSSIABLE SHAPES OF GRATING TO BE USED
2. RECOMENDED GRATE TO BE USED IS WEBFORGE C253MP OR EQUIVALENT

THIS DRAWING TO BE READ IN CONJUNCTION WITH THE DISTRIBUTION DESIGN RULES - HPC-9DJ-01-0002-2015.

HORIZON POWER

DISTRIBUTION CONSTRUCTION STANDARDS

INDOOR SUBSTATION TRENCH COVER

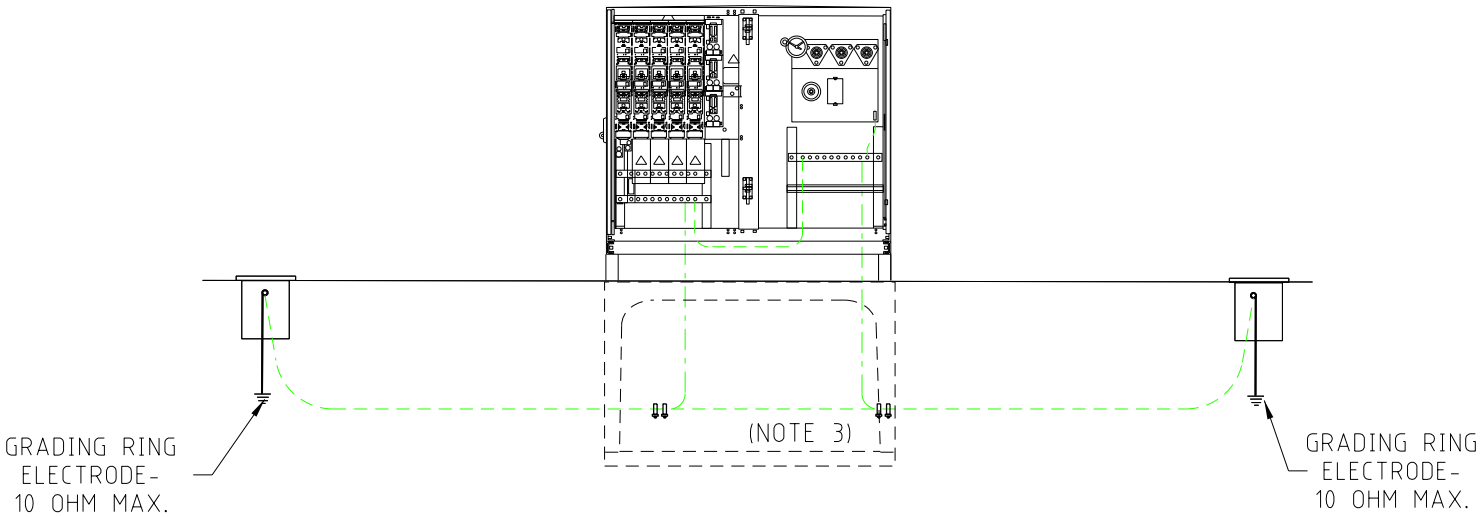
GRATE FORMATIONS

REVISION	DATE
B	MAY 18

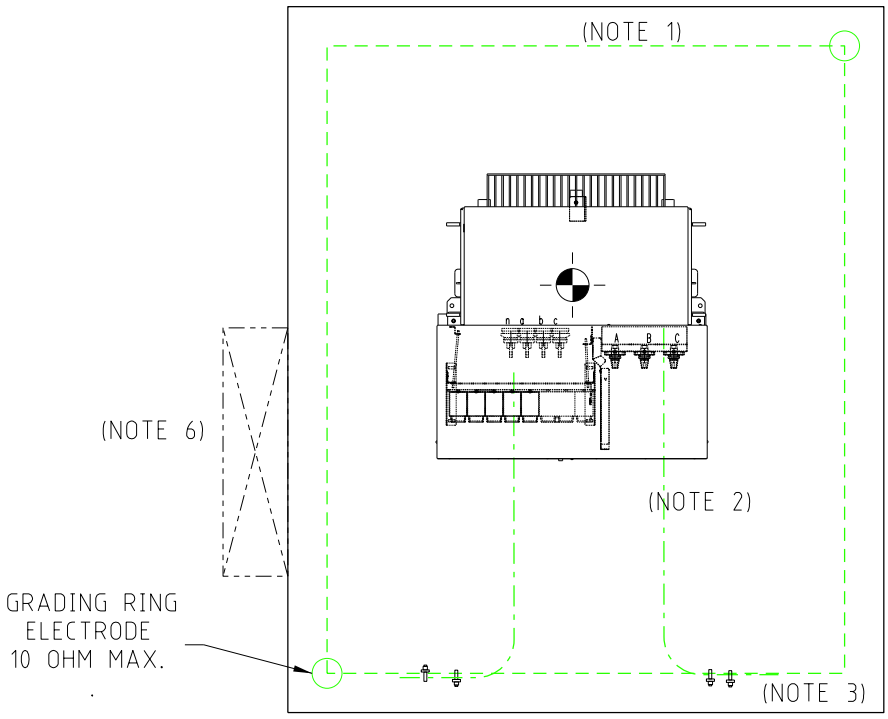
DRAWING No.

G6-10/10

MPS WITHOUT MV SWITCHGEAR



ALL EARTHING TO BE BURIED AT A DEPTH OF 500mm



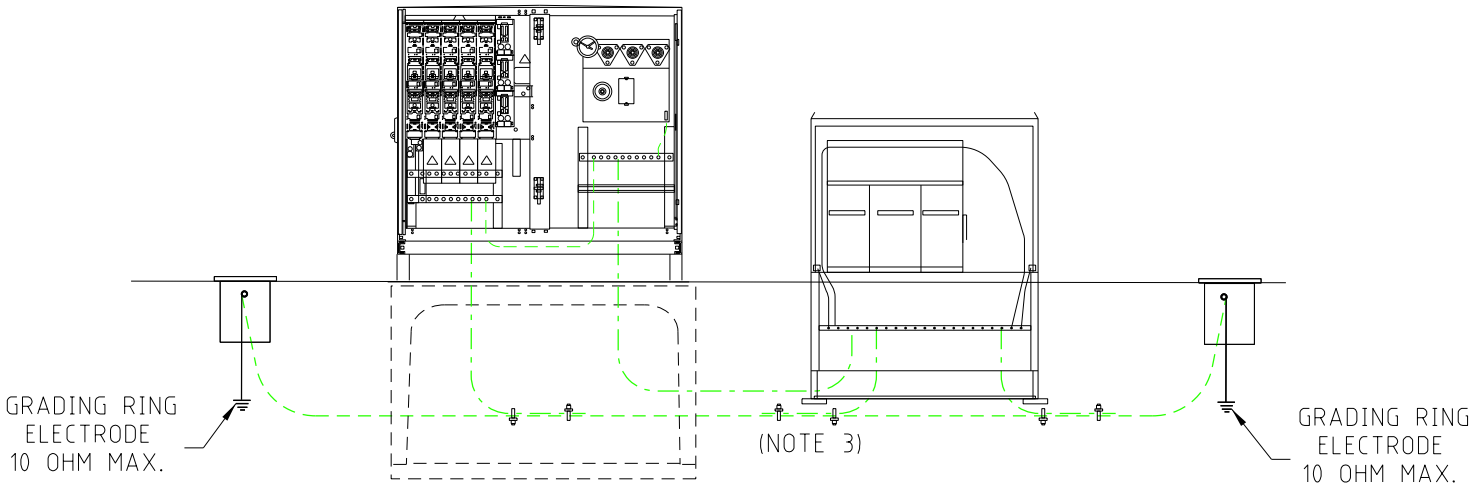
NOTES:

1. EARTH GRADING RING TO BE 70mm² (MINIMUM) BARE COPPER CONDUCTOR.
2. PVC INSULATED COPPER GREEN/YELLOW CONDUCTOR. (SIZED PER AS 2067).
3. DOUBLE SADDLE TYPE EARTH ROD CLAMP.
4. COMBINED EARTHING RESISTANCE (WITH MEN/CMEN) SHALL BE NO MORE THAN 1 OHMS. UNLESS OTHERWISE STATED IN DESIGN PACKAGE.
5. REFER TO DCS G3 SET FOR DIMENSIONS.
6. CONSUMER MAIN SWITCHBOARD (IF REQUIRED).

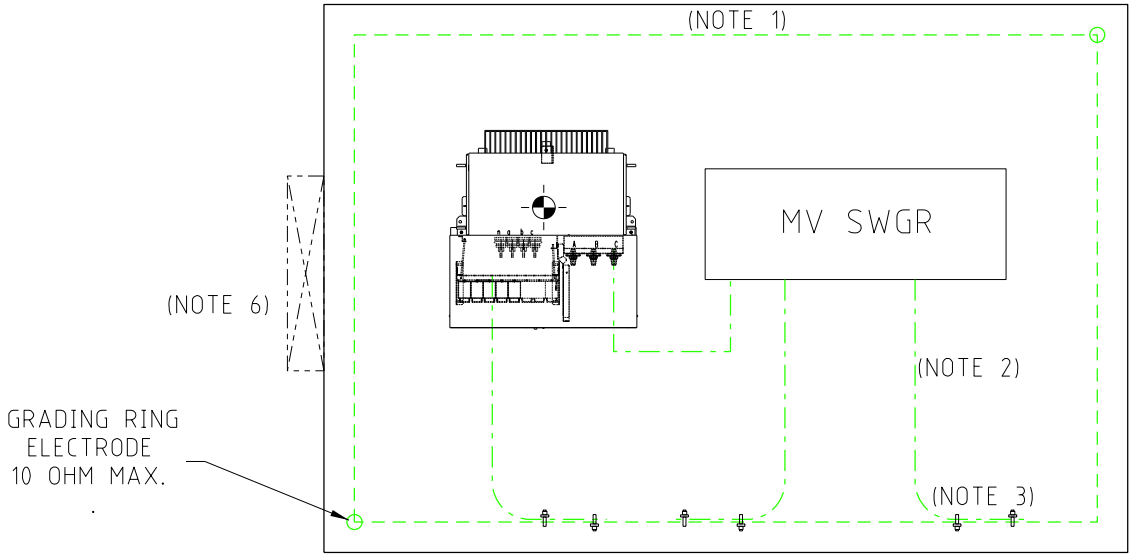
THIS DRAWING TO BE READ IN CONJUNCTION WITH THE DISTRIBUTION DESIGN RULES HPC-9DJ-01-0002-2015.

HORIZON POWER DISTRIBUTION CONSTRUCTION STANDARDS		REVISION C	DATE MAR 23
	DISTRICT & SOLE SUBSTATION NON FIRE RATED-WITHOUT MV SWGR EARTHING REQUIREMENTS	DRAWING No. G6-11/1	

MPS WITH MV SWITCHGEAR



ALL EARTHING TO BE BURIED AT A DEPTH OF 500mm

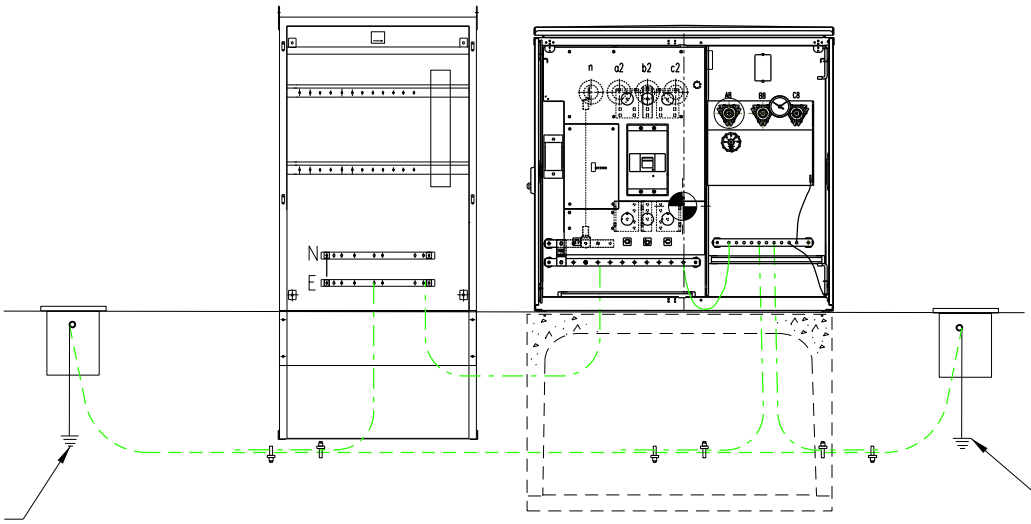


NOTES:
1. EARTH GRADING RING TO BE 70mm² (MINIMUM) BARE COPPER CONDUCTOR.
2. PVC INSULATED COPPER GREEN/YELLOW CONDUCTOR. (SIZED PER AS 2067).
3. DOUBLE SADDLE TYPE EARTH ROD CLAMP.
4. COMBINED EARTHING RESISTANCE (WITH MEN/CMEN) SHALL BE NO MORE THAN 1 OHMS. UNLESS OTHERWISE STATED IN DESIGN PACKAGE.
5. REFER TO DCS G3 SET FOR DIMENSIONS.
6. CONSUMER MAIN SWITCHBOARD (IF REQUIRED).

THIS DRAWING TO BE READ IN CONJUNCTION WITH THE DISTRIBUTION DESIGN RULES HPC-9DJ-01-0002-2015.

HORIZON POWER DISTRIBUTION CONSTRUCTION STANDARDS		REVISION C	DATE MAR 23
	DISTRICT & SOLE SUBSTATION NON FIRE RATED-WITH MV SWGR EARTHING REQUIREMENTS	DRAWING No. G6-11/2	

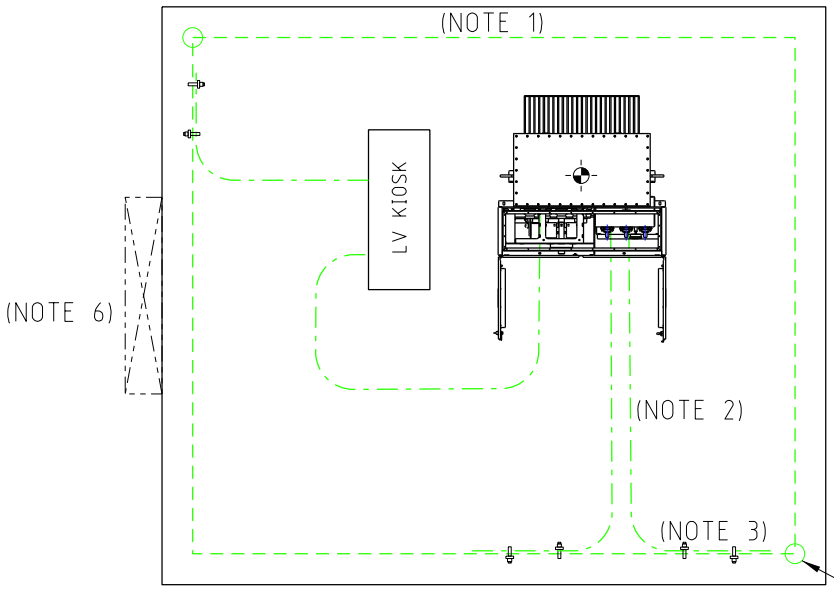
NON MPS WITHOUT MV SWITCHGEAR



GRADING RING ELECTRODE- 10 OHM MAX.

ALL EARTHING TO BE BURIED AT A DEPTH OF 500mm

GRADING RING ELECTRODE- 10 OHM MAX.



GRADING RING ELECTRODE 10 OHM MAX.

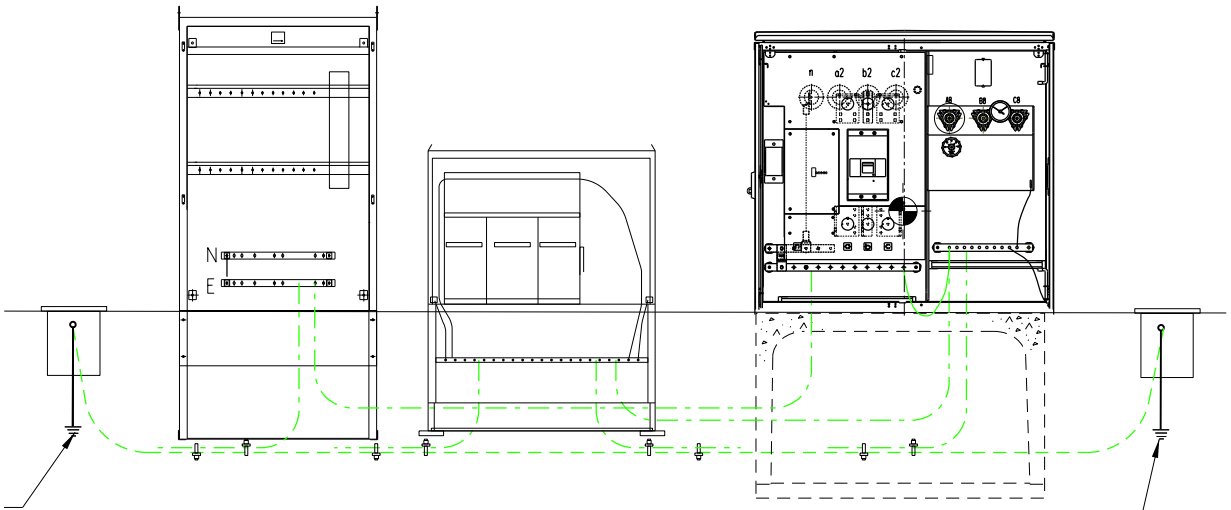
NOTES:

1. EARTH GRADING RING TO BE 70mm² (MINIMUM) BARE COPPER CONDUCTOR.
2. PVC INSULATED COPPER GREEN/YELLOW CONDUCTOR. (SIZED PER AS 2067).
3. DOUBLE SADDLE TYPE EARTH ROD CLAMP.
4. COMBINED EARTHING RESISTANCE (WITH MEN/CMEN) SHALL BE NO MORE THAN 1 OHMS. UNLESS OTHERWISE STATED IN DESIGN PACKAGE.
5. REFER TO DCS G3 SET FOR DIMENSIONS.
6. CONSUMER MAIN SWITCHBOARD (IF REQUIRED).

THIS DRAWING TO BE READ IN CONJUNCTION WITH THE DISTRIBUTION DESING RULES HPC-9DJ-01-0002-2015.

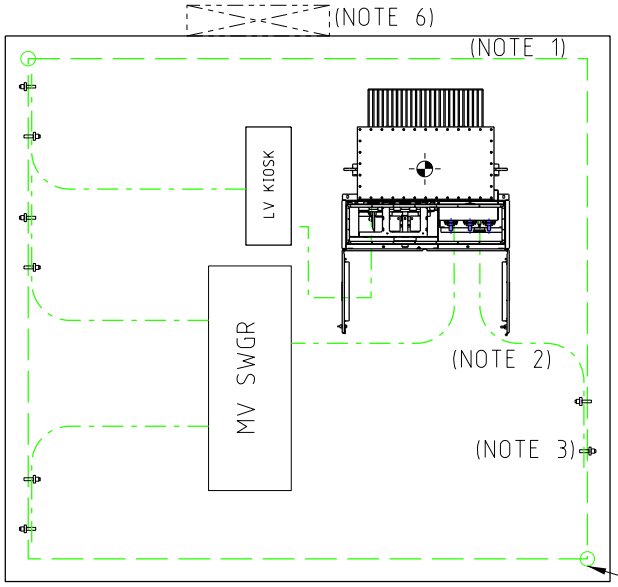
HORIZON POWER DISTRIBUTION CONSTRUCTION STANDARDS		REVISION C	DATE MAR 23
	DISTRICT SUBSTATION NON FIRE RATED-WITHOUT MV SWGR EARTHING REQUIREMENTS	DRAWING No. G6-11/3	

NON MPS WITH MV SWITCHGEAR



GRADING RING ELECTRODE- 10 OHM MAX.

ALL EARTHING TO BE BURIED AT A DEPTH OF 500mm



GRADING RING ELECTRODE- 10 OHM MAX.

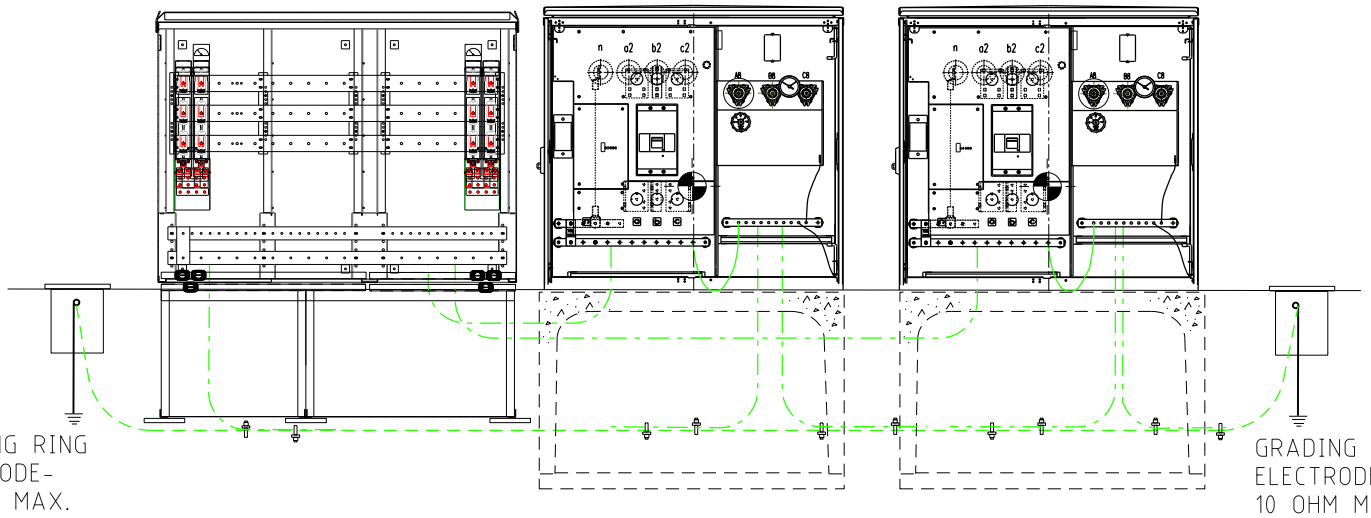
GRADING RING ELECTRODE 10 OHM MAX.

NOTES:
1. EARTH GRADING RING TO BE 70mm² (MINIMUM) BARE COPPER CONDUCTOR.
2. PVC INSULATED COPPER GREEN/YELLOW CONDUCTOR. (SIZED PER AS 2067).
3. DOUBLE SADDLE TYPE EARTH ROD CLAMP.
4. COMBINED EARTHING RESISTANCE (WITH MEN/CMEN) SHALL BE NO MORE THAN 1 OHMS. UNLESS OTHERWISE STATED IN DESIGN PACKAGE.
5. REFER TO DCS G3 SET FOR DIMENSIONS.
6. CONSUMER MAIN SWITCHBOARD (IF REQUIRED).

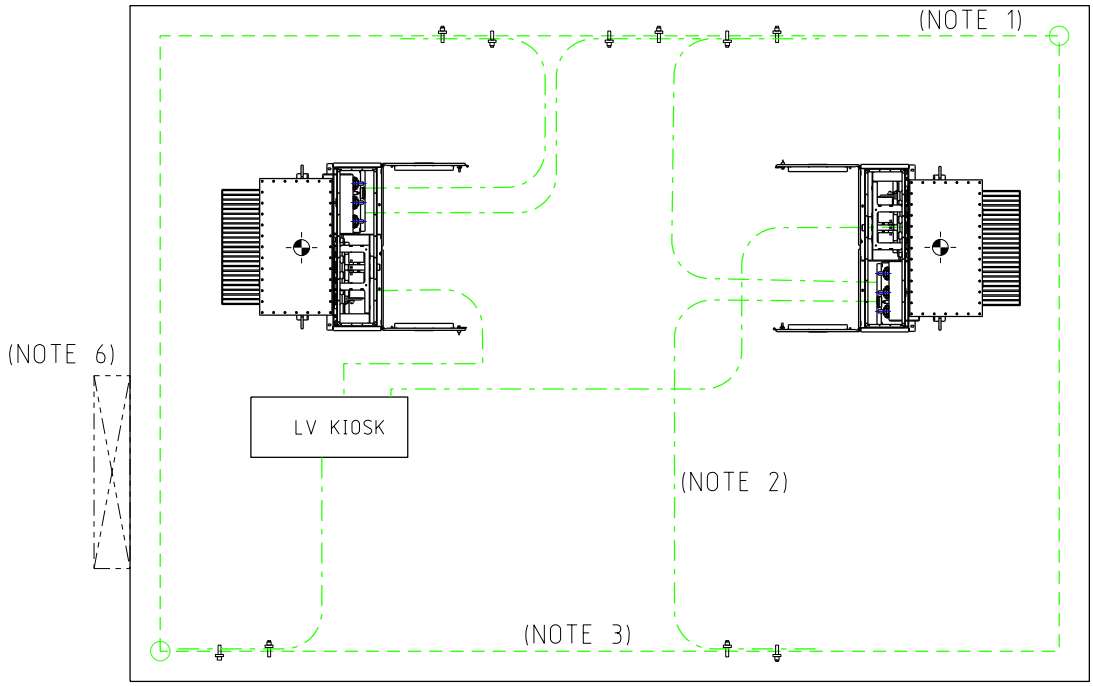
THIS DRAWING TO BE READ IN CONJUNCTION WITH THE DISTRIBUTION DESIGN RULES HPC-9DJ-01-0002-2015.

HORIZON POWER DISTRIBUTION CONSTRUCTION STANDARDS		REVISION C	DATE MAR 23
	DISTRICT SUBSTATION NON FIRE RATED-WITH MV SWGR EARTHING REQUIREMENTS	DRAWING No. G6-11/4	

NON MPS WITHOUT MV SWITCHGEAR



ALL EARTHING TO BE BURIED AT A DEPTH OF 500mm



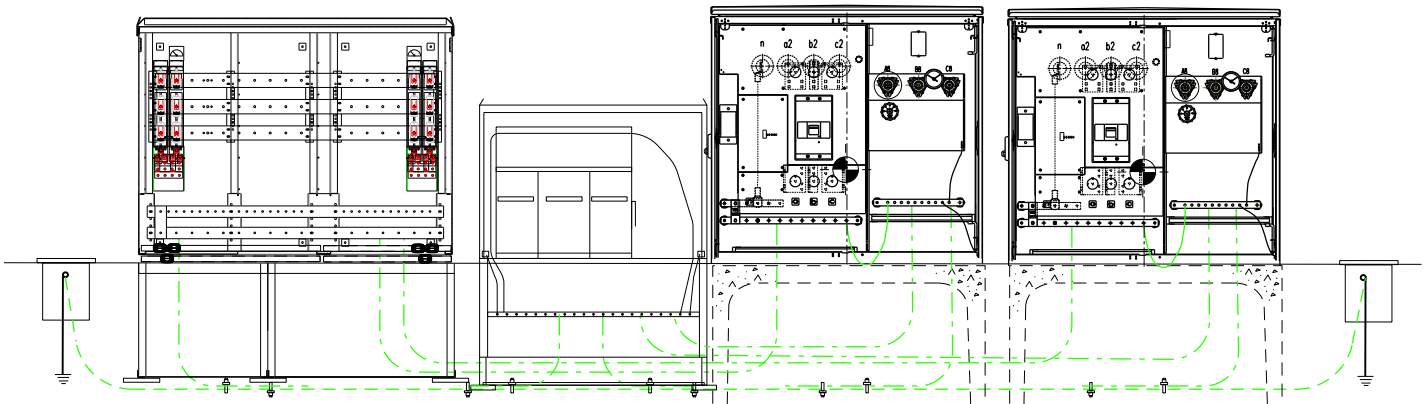
NOTES:

1. EARTH GRADING RING TO BE 70mm² (MINIMUM) BARE COPPER CONDUCTOR.
2. PVC INSULATED COPPER GREEN/YELLOW CONDUCTOR. (SIZED PER AS 2067).
3. DOUBLE SADDLE TYPE EARTH ROD CLAMP.
4. COMBINED EARTHING RESISTANCE (WITH MEN/CMEN) SHALL BE NO MORE THAN 1 OHMS. UNLESS OTHERWISE STATED IN DESIGN PACKAGE.
5. REFER TO DCS G3 SET FOR DIMENSIONS.
6. CONSUMER MAIN SWITCHBOARD (IF REQUIRED).

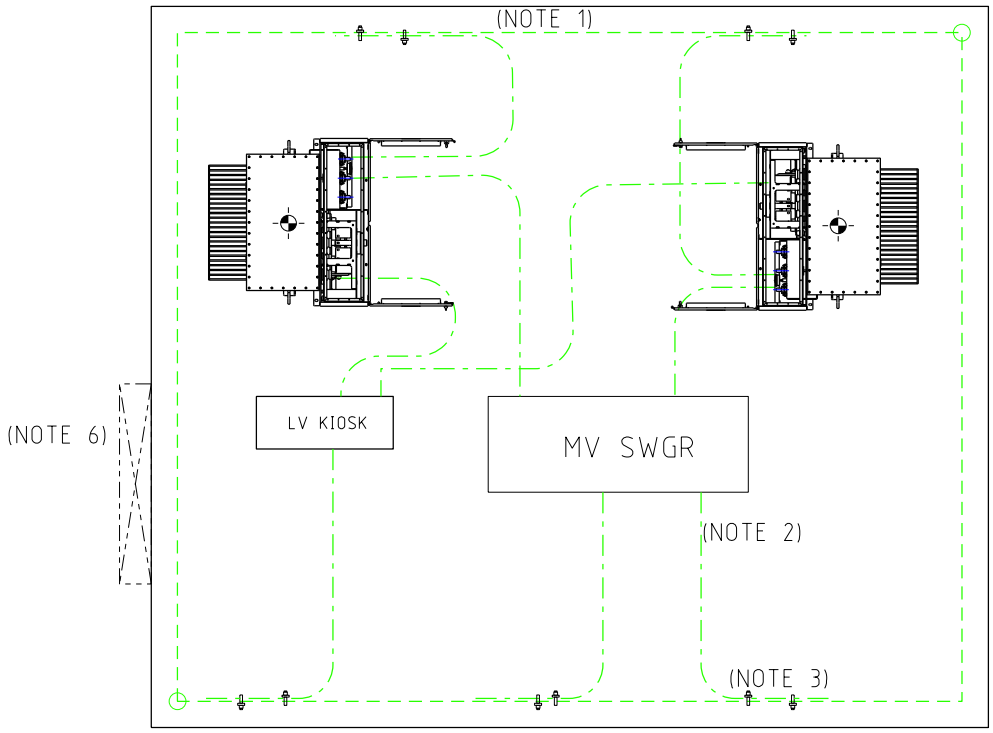
THIS DRAWING TO BE READ IN CONJUNCTION WITH THE DISTRIBUTION DESIGN RULES HPC-9DJ-01-0002-2015.

HORIZON POWER DISTRIBUTION CONSTRUCTION STANDARDS		REVISION C	DATE APRIL 23
	DISTRICT SUBSTATION NON FIRE RATED-WITHOUT MV SWGR UP TO 2000kVA EARTHING REQUIREMENTS	DRAWING No. G6-11/5	

NON MPS WITH MV SWITCHGEAR



ALL EARTHING TO BE BURIED AT A DEPTH OF 500mm



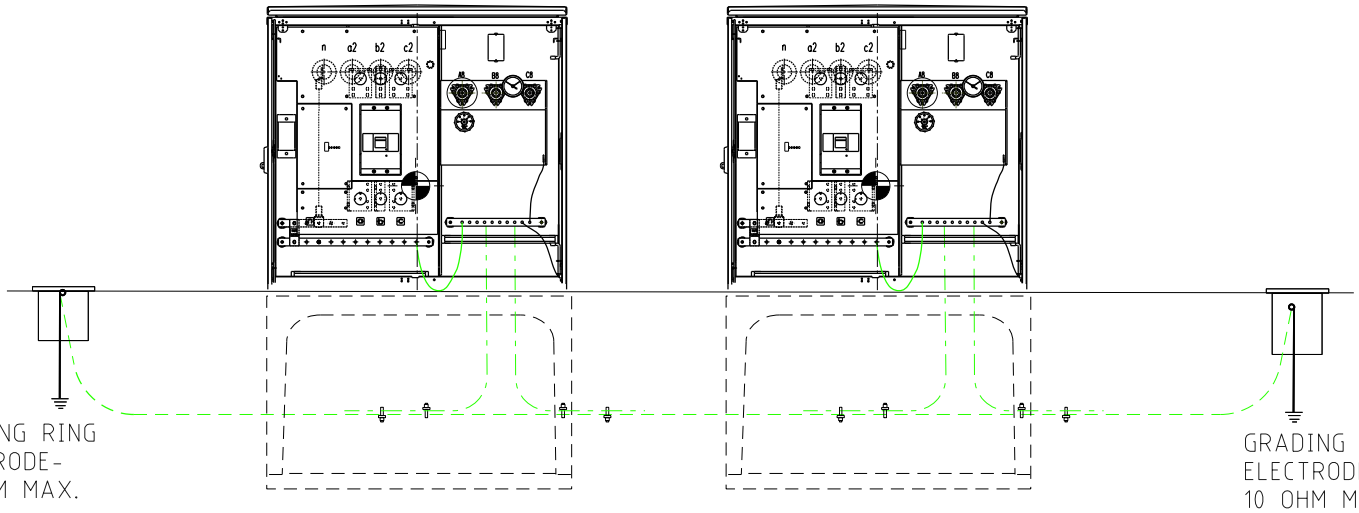
NOTES:

1. EARTH GRADING RING TO BE 70mm² (MINIMUM) BARE COPPER CONDUCTOR.
2. PVC INSULATED COPPER GREEN/YELLOW CONDUCTOR. (SIZED PER AS 2067).
3. DOUBLE SADDLE TYPE EARTH ROD CLAMP.
4. COMBINED EARTHING RESISTANCE (WITH MEN/CMEN) SHALL BE NO MORE THAN 1 OHMS. UNLESS OTHERWISE STATED IN DESIGN PACKAGE.
5. REFER TO DCS G3 SET FOR DIMENSIONS.
6. CONSUMER MAIN SWITCHBOARD (IF REQUIRED).

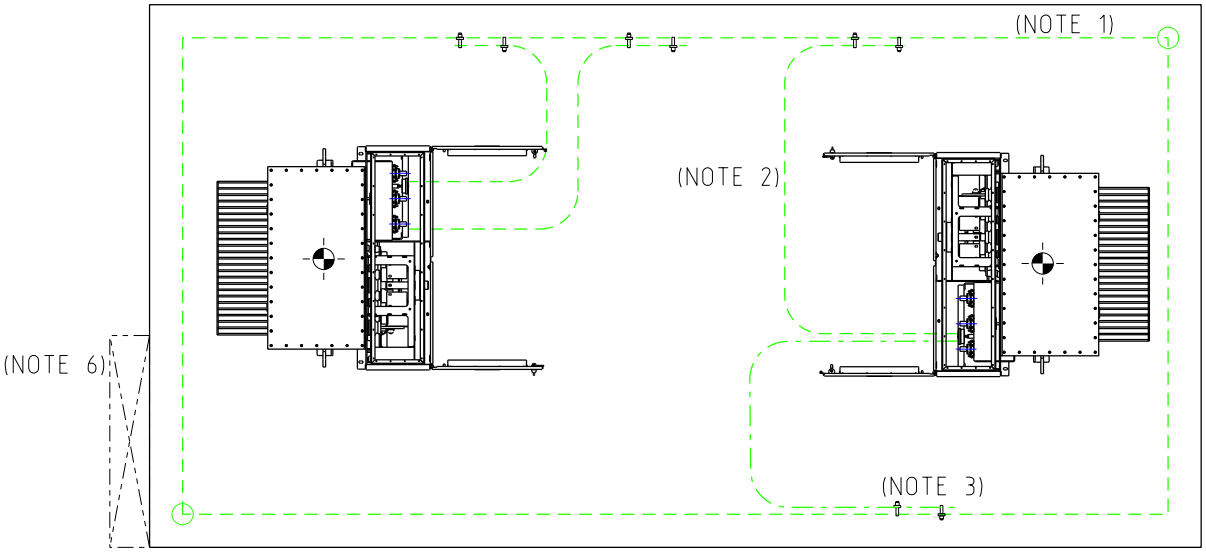
THIS DRAWING TO BE READ IN CONJUNCTION WITH THE DISTRIBUTION DESIGN RULES HPC-9DJ-01-0002-2015.

HORIZON POWER DISTRIBUTION CONSTRUCTION STANDARDS		REVISION C	DATE APRIL 23
	DISTRICT SUBSTATION NON FIRE RATED-WITH MV SWGR UP TO 2000 kVA EARTHING REQUIREMENT	DRAWING No. G6-11/6	

NON-MPS WITHOUT MV SWITCHGEAR



ALL EARTHING TO BE BURIED AT A DEPTH OF 500mm



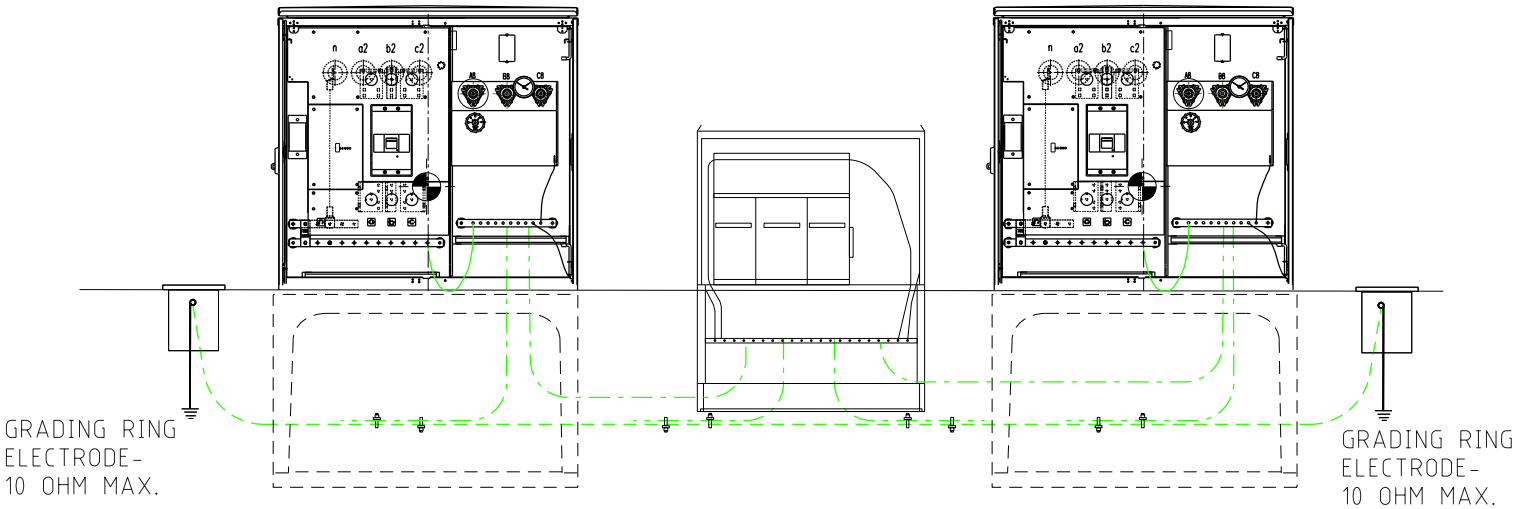
NOTES:

1. EARTH GRADING RING TO BE 70mm² (MINIMUM) BARE COPPER CONDUCTOR.
2. PVC INSULATED COPPER GREEN/YELLOW CONDUCTOR. (SIZED PER AS 2067).
3. DOUBLE SADDLE TYPE EARTH ROD CLAMP.
4. COMBINED EARTHING RESISTANCE (WITH MEN/CMEN) SHALL BE NO MORE THAN 1 OHMS. UNLESS OTHERWISE STATED IN DESIGN PACKAGE.
5. REFER TO DCS G3 SET FOR DIMENSIONS.
6. CONSUMER MAIN SWITCHBOARD (IF REQUIRED).

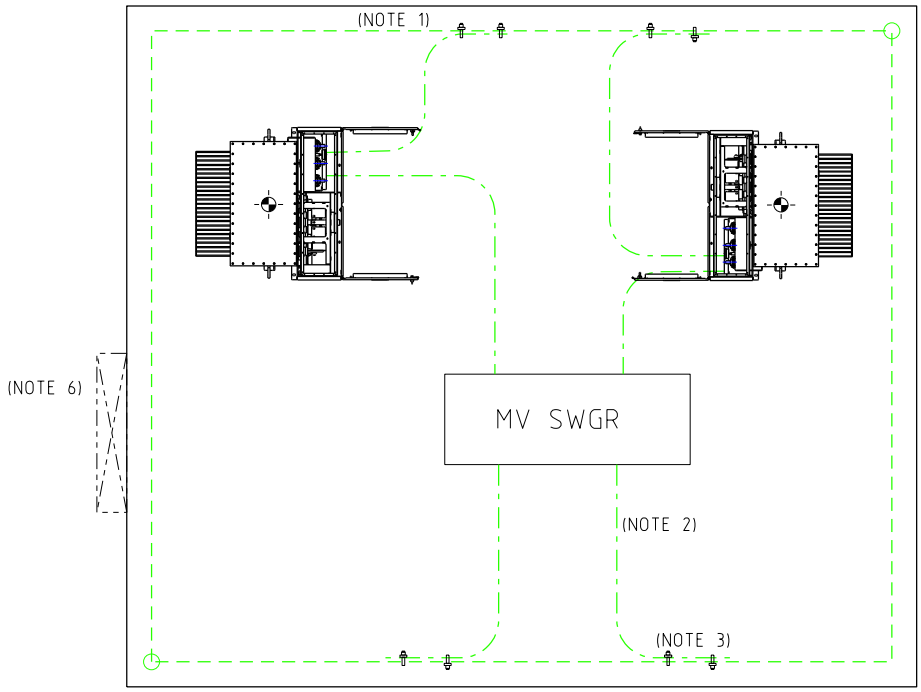
THIS DRAWING TO BE READ IN CONJUNCTION WITH THE DISTRIBUTION DESIGN RULES HPC-9DJ-01-0002-2015.

HORIZON POWER DISTRIBUTION CONSTRUCTION STANDARDS		REVISION C	DATE APRIL 23
	SOLE USE SUBSTATION NON FIRE RATED-WITHOUT MV SWGR (UPTO 2000kVA) EARTHING REQUIREMENTS	DRAWING No. G6-11/7	

NON MPS WITH MV SWITCHGEAR



ALL EARTHING TO BE BURIED AT A DEPTH OF 500mm



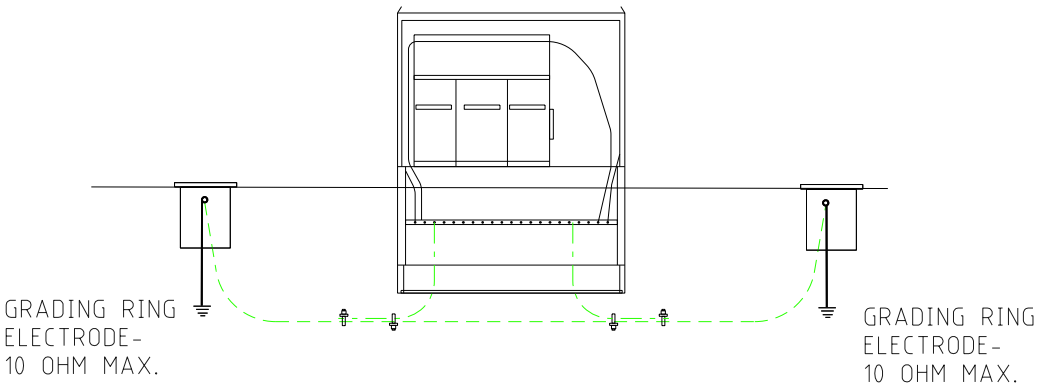
NOTES:

1. EARTH GRADING RING TO BE 70mm² (MINIMUM) BARE COPPER CONDUCTOR.
2. PVC INSULATED COPPER GREEN/YELLOW CONDUCTOR. (SIZED PER AS 2067).
3. DOUBLE SADDLE TYPE EARTH ROD CLAMP.
4. COMBINED EARTHING RESISTANCE (WITH MEN/CMEN) SHALL BE NO MORE THAN 1 OHMS. UNLESS OTHERWISE STATED IN DESIGN PACKAGE.
5. REFER TO DCS G3 SET FOR DIMENSIONS.
6. CONSUMER MAIN SWITCHBOARD (IF REQUIRED).

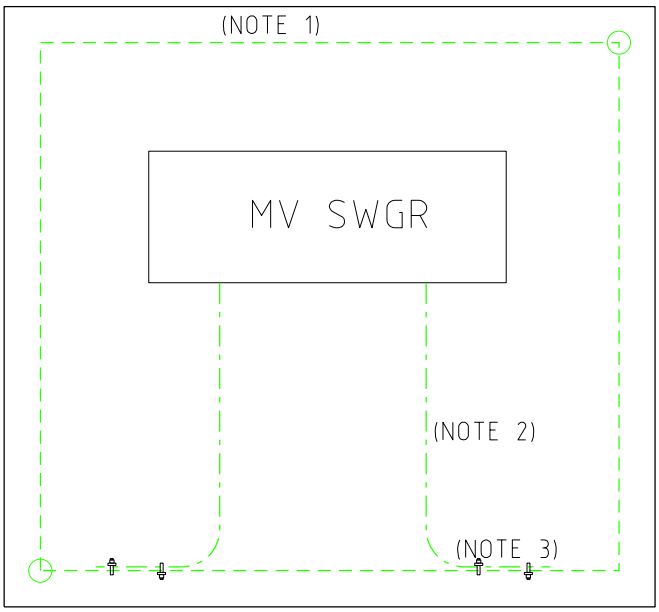
THIS DRAWING TO BE READ IN CONJUNCTION WITH THE DISTRIBUTION DESIGN RULES HPC-9DJ-01-0002-2015.

HORIZON POWER DISTRIBUTION CONSTRUCTION STANDARDS		REVISION C	DATE MAR 23
	SOLE USE SUBSTATION NON FIRE RATED-WITH MV SWGR (UPTO 2000kVA) EARTHING REQUIREMENTS	DRAWING No. G6-11/8	

MV SWITCHGEAR



ALL EARTHING TO BE BURRIED AT A DEPTH OF 500mm

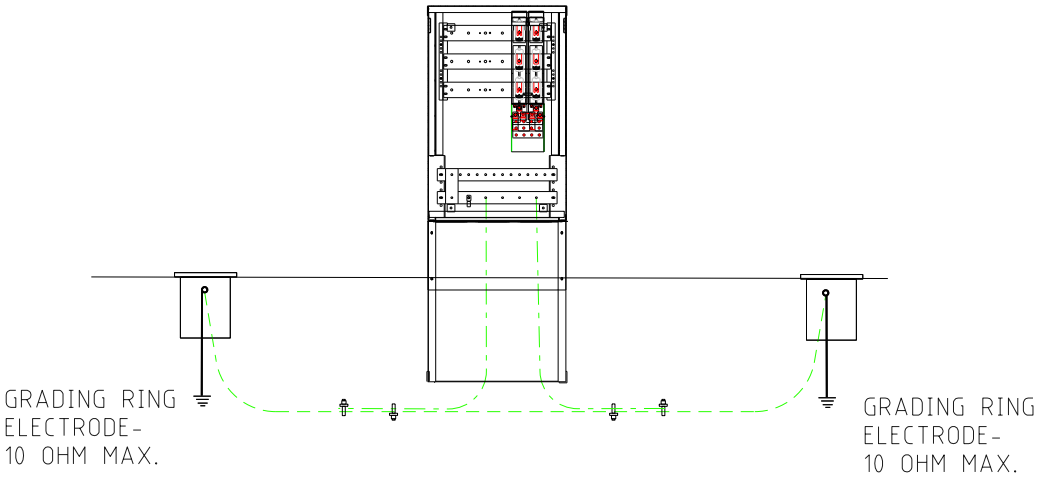


NOTES:
1. EARTH GRADING RING TO BE 70mm² (MINIMUM) BARE COPPER CONDUCTOR.
2. PVC INSULATED COPPER GREEN/YELLOW CONDUCTOR. (SIZED PER AS 2067).
3. DOUBLE SADDLE TYPE EARTH ROD CLAMP.
4. COMBINED EARTHING RESISTANCE (WITH MEN/CMEN) SHALL BE NO MORE THAN 1 OHMS. UNLESS OTHERWISE STATED IN DESIGN PACKAGE.
5. REFER TO DCS G3 SET FOR DIMENSIONS.

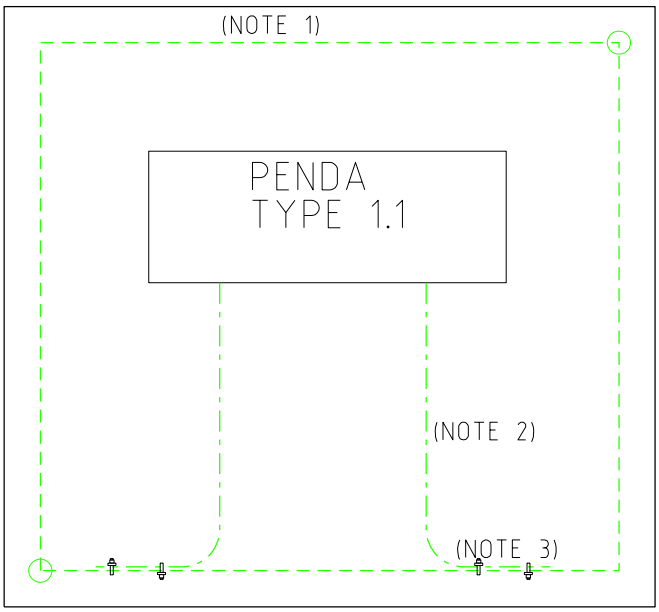
THIS DRAWING TO BE READ IN CONJUNCTION WITH THE DISTRIBUTION DESIGN RULES HPC-9DJ-01-0002-2015.

HORIZON POWER DISTRIBUTION CONSTRUCTION STANDARDS		REVISION C	DATE APRIL 23
	MV SWITCHGEAR SUBSTATION MV OUTDOOR GROUND MOUNTED SWGR EARTHING REQUIREMENTS	DRAWING No. G6-11/9	

LV SWITCHGEAR



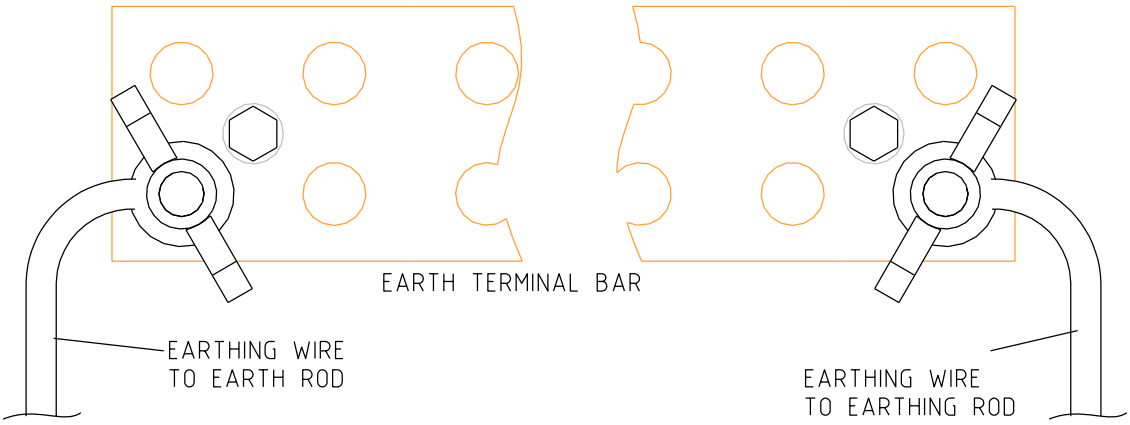
ALL EARTHING TO BE BURRIED AT A DEPTH OF 500mm

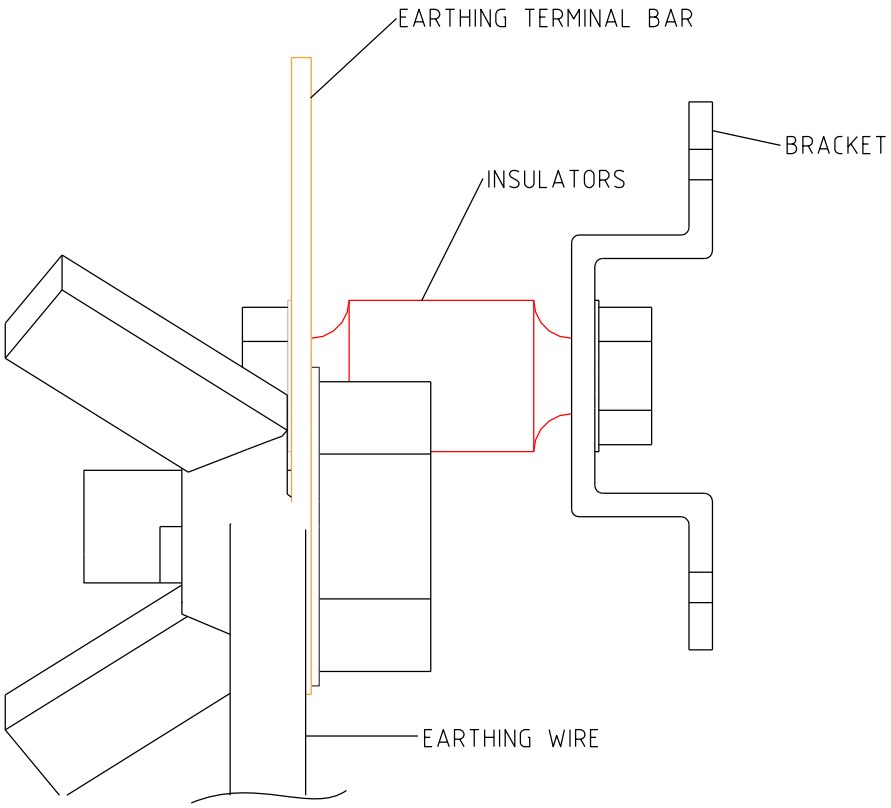


NOTES:
1. EARTH GRADING RING TO BE 70mm² (MINIMUM) BARE COPPER CONDUCTOR.
2. PVC INSULATED COPPER GREEN/YELLOW CONDUCTOR. (SIZED PER AS 2067).
3. DOUBLE SADDLE TYPE EARTH ROD CLAMP.
4. COMBINED EARTHING RESISTANCE (WITH MEN/CMEN) SHALL BE NO MORE THAN 1 OHMS. UNLESS OTHERWISE STATED IN DESIGN PACKAGE.

THIS DRAWING TO BE READ IN CONJUNCTION WITH THE DISTRIBUTION DESIGN RULES HPC-9DJ-01-0002-2015.

HORIZON POWER DISTRIBUTION CONSTRUCTION STANDARDS		REVISION A	DATE 29/05/23
	LV KIOSK TYPE 1.1 EARTHING REQUIREMENTS	DRAWING No. G6-11/10	

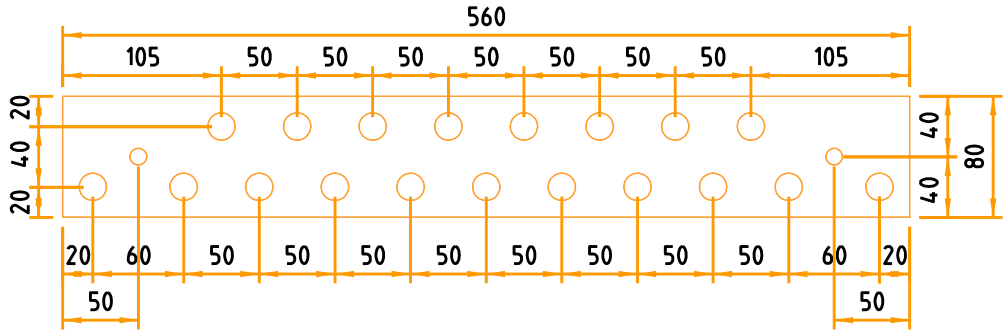


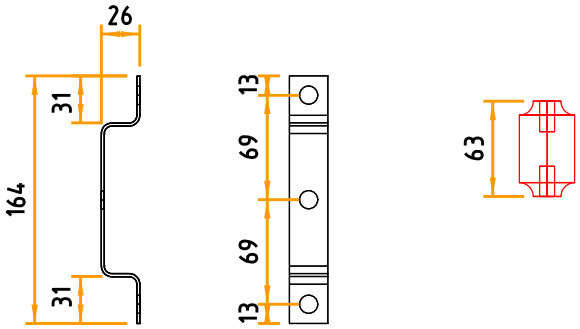


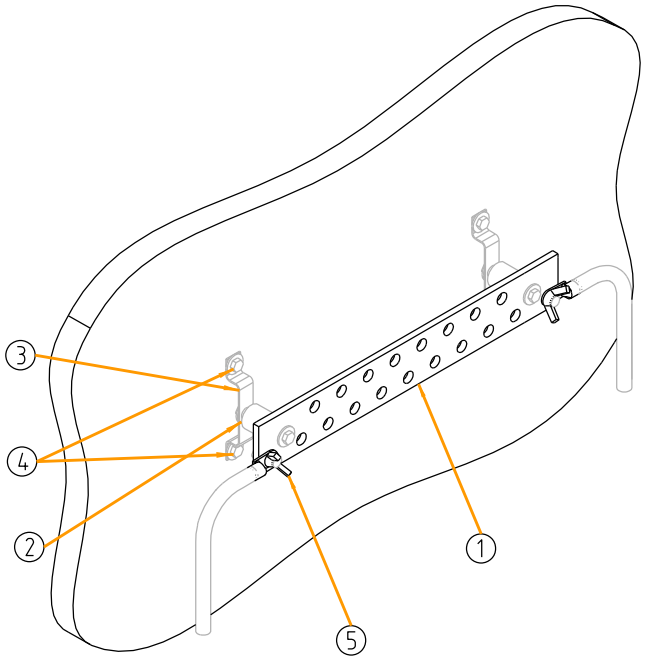
NOTES:
1. EARTHING CONNECTION PLATE MINIMUM OF 21 HOLES.
2. EARTHING CONNECTION PLATE INSULATED FROM CONCRETE.
3. PVC INSULATION WIRE TO EARTHING ROD.
4. REFER TO SHEET 2 FOR DETAILS.

THIS DRAWING TO BE READ IN CONJUNCTION WITH THE DISTRIBUTION DESIGN RULES HPC-9DJ-01-0002-2015.

HORIZON POWER DISTRIBUTION CONSTRUCTION STANDARDS	REFERENCE DRAWING	REVISION B	DATE OCT 17
	DISTRICT SUBSTATION EARTHING CONNECTION BAR EARTHING DETAILS	DRAWING No. G6-12/1	





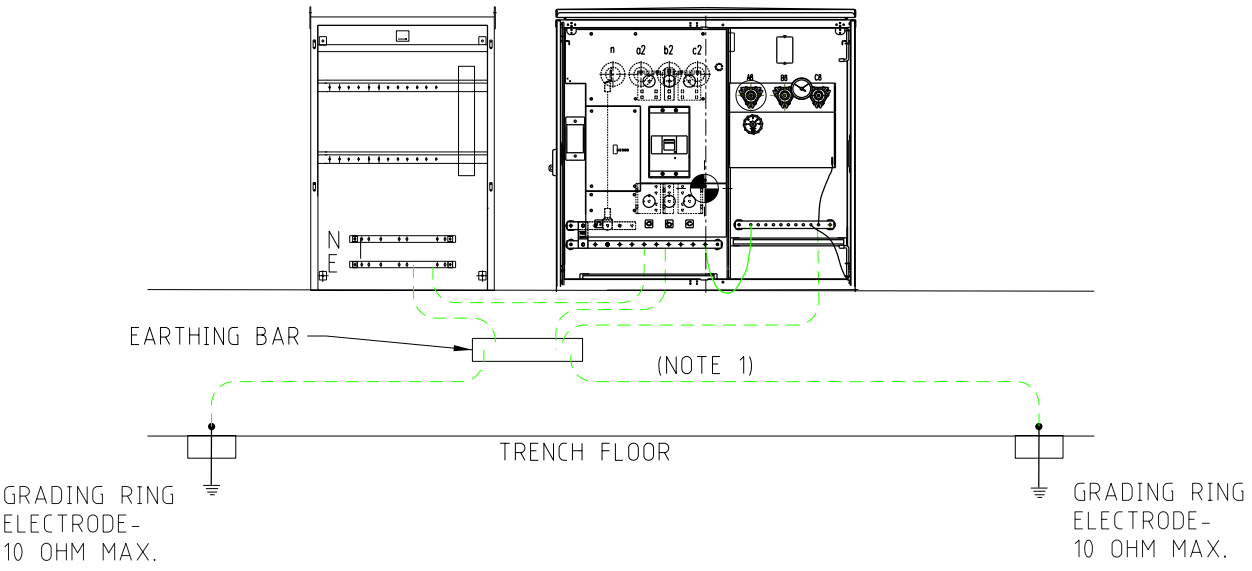


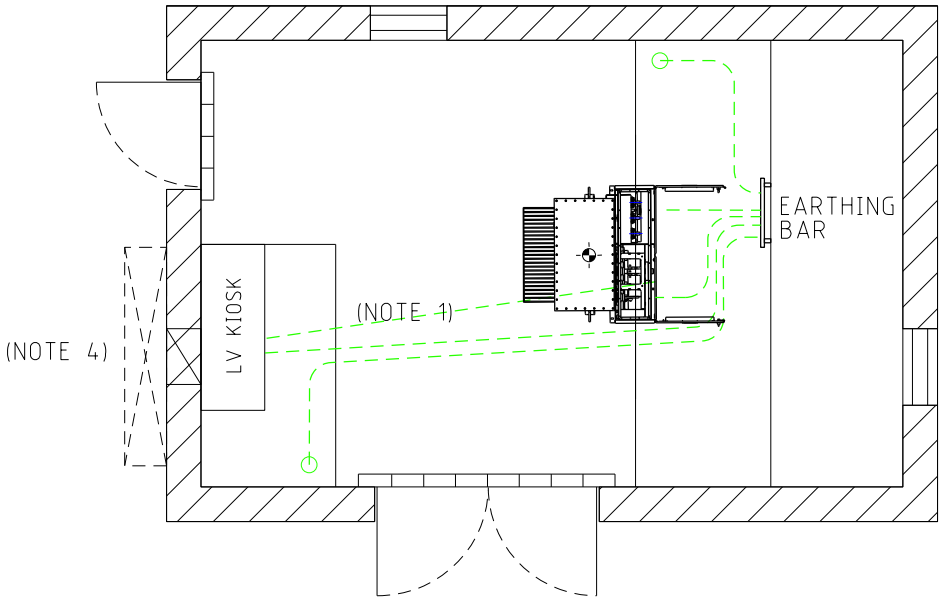
NOTES:
1. 560 x 80 x 10 COPPER EARTH BAR.
2. INSULATOR FOR SPACER.
3. BRACKET FOR MOUNTING TO WALL.
4. 2xM6 MDA PER WALL BRACKET.
5. 2xM6 x 25mm PER INSULATOR.
6. 1xM12 AND WING NUT PER CABLE CONNECTION TO EARTH BAR.

THIS DRAWING TO BE READ IN CONJUNCTION WITH THE DISTRIBUTION DESIGN RULES HPC-9DJ-01-0002-2015.

HORIZON POWER DISTRIBUTION CONSTRUCTION STANDARDS		REVISION B	DATE OCT 17
	DISTRICT SUBSTATION EARTHING CONNECTION BAR DETAILS EARTHING DETAILS	DRAWING No. G6-12/2	

NON MPS WITHOUT MV SWITCHGEAR





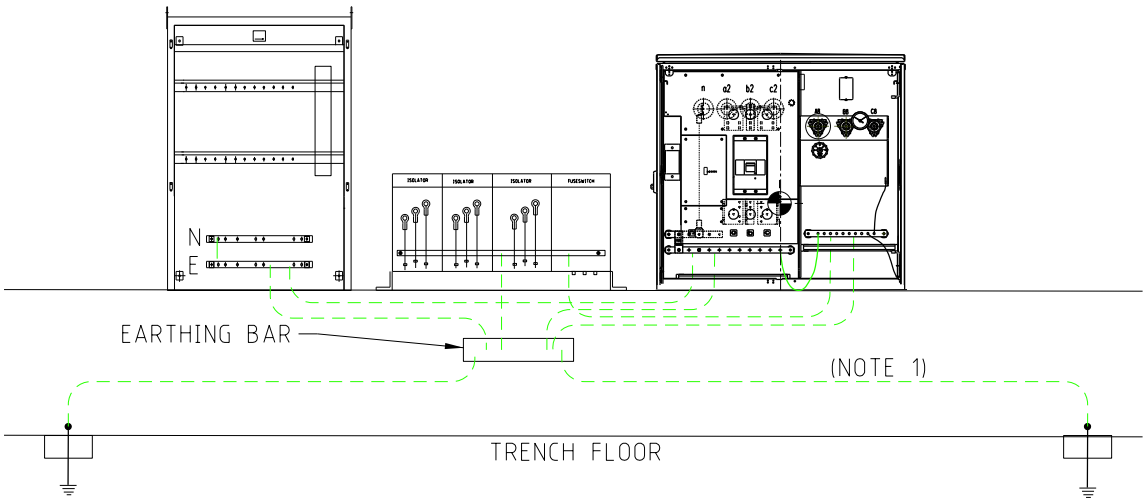
NOTES:

1. PVC INSULATED COPPER GREEN/YELLOW CONDUCTOR. (SIZED PER AS 2067).
2. COMBINED EARTHING RESISTANCE (WITH MEN/CMEN) SHALL BE NO MORE THAN 1 OHMS. UNLESS OTHERWISE STATED IN DESIGN PACKAGE.
3. REFER TO DCS G3 SET FOR DIMENSIONS.
4. CONSUMER MAIN SWITCHBOARD (IF REQUIRED).

THIS DRAWING TO BE READ IN CONJUNCTION WITH THE DISTRIBUTION DESIGN RULES HPC-9DJ-01-0002-2015.

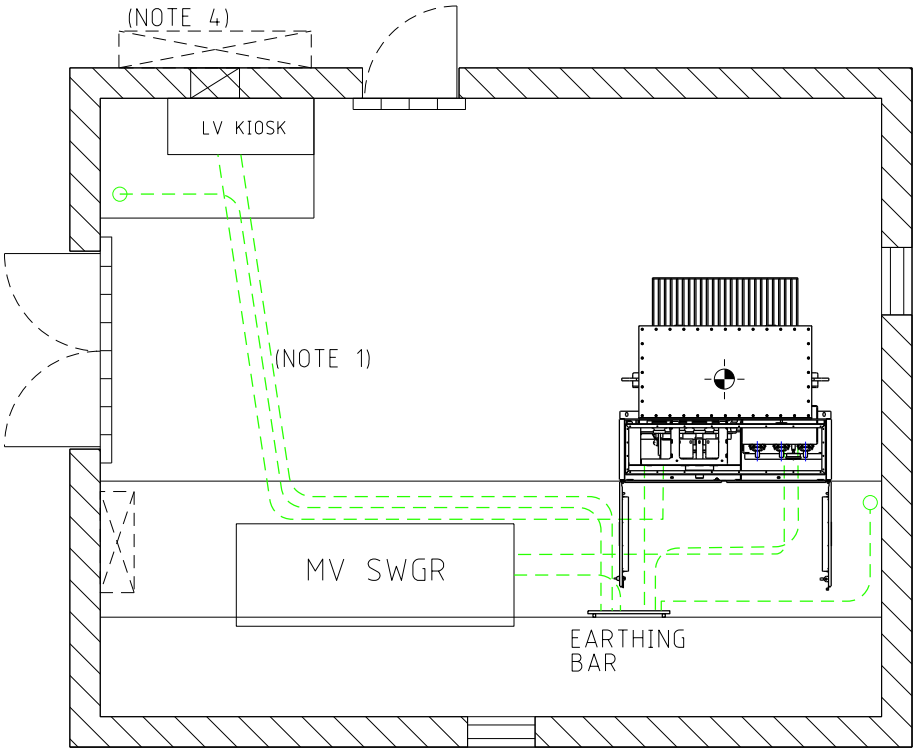
HORIZON POWER DISTRIBUTION CONSTRUCTION STANDARDS		REVISION C	DATE APRIL 23
	DISTRICT SUBSTATION UP TO 1000kVA (NON MPS) FIRE RATED WITHOUT MV SWGR - EARTHING DETAILS	DRAWING No. G6-12/3	

NON MPS WITH MV SWITCHGEAR



GRADING RING ELECTRODE- 10 OHM MAX.

GRADING RING ELECTRODE- 10 OHM MAX.

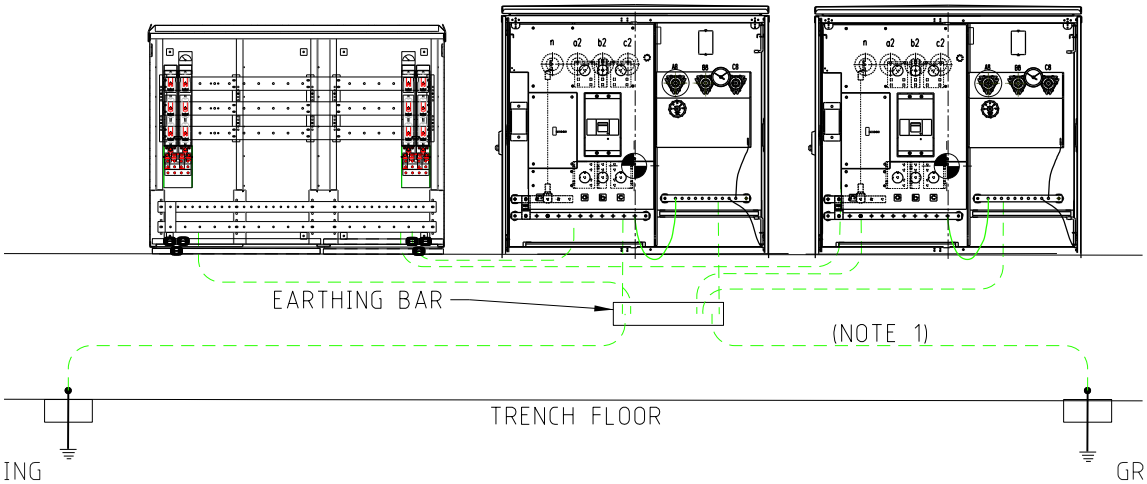


NOTES:
1. PVC INSULATED COPPER GREEN/YELLOW CONDUCTOR. (SIZED PER AS 2067).
2. COMBINED EARTHING RESISTANCE (WITH MEN/CMEN) SHALL BE NO MORE THAN 1 OHMS. UNLESS OTHERWISE STATED IN DESIGN PACKAGE.
3. REFER TO DCS G3 SET FOR DIMENSIONS.
4. CONSUMER MAIN SWITCHBOARD (IF REQUIRED).

THIS DRAWING TO BE READ IN CONJUNCTION WITH THE DISTRIBUTION DESIGN RULES HPC-9DJ-01-0002-2015.

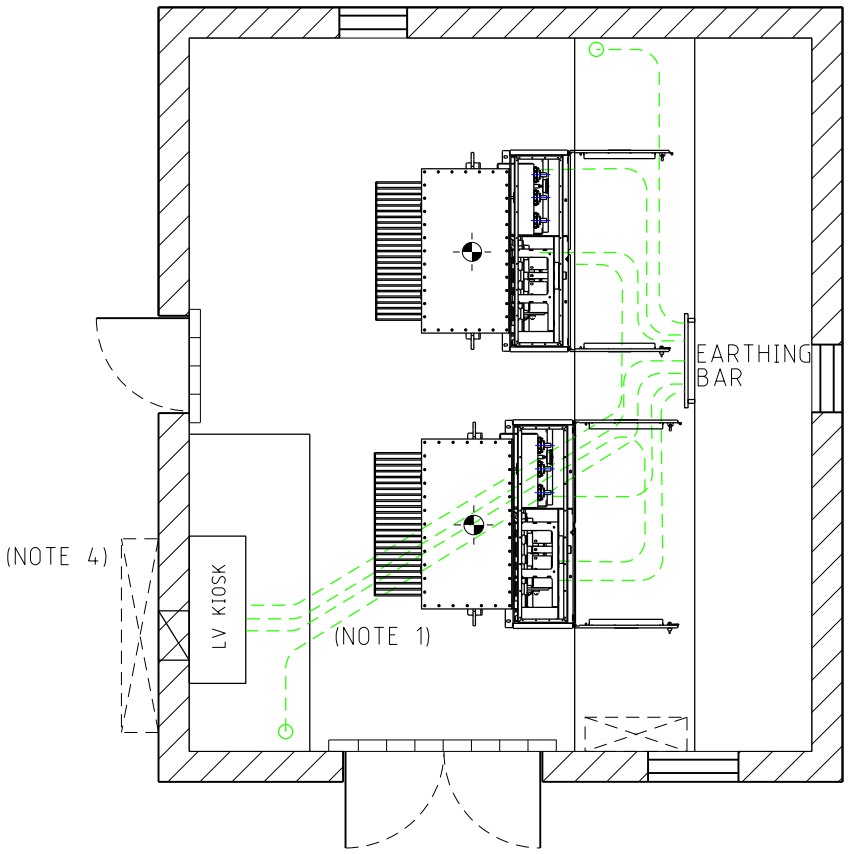
HORIZON POWER DISTRIBUTION CONSTRUCTION STANDARDS	REFERENCE DRAWING	REVISION C	DATE APRIL 23
	DISTRICT SUBSTATION UP TO 1000kVA (NON MPS) FIRE RATED WITH MV SWGR - EARTHING DETAILS	DRAWING No. G6-12/4	

NON MPS WITHOUT MV SWITCHGEAR



GRADING RING ELECTRODE- 10 OHM MAX.

GRADING RING ELECTRODE- 10 OHM MAX.

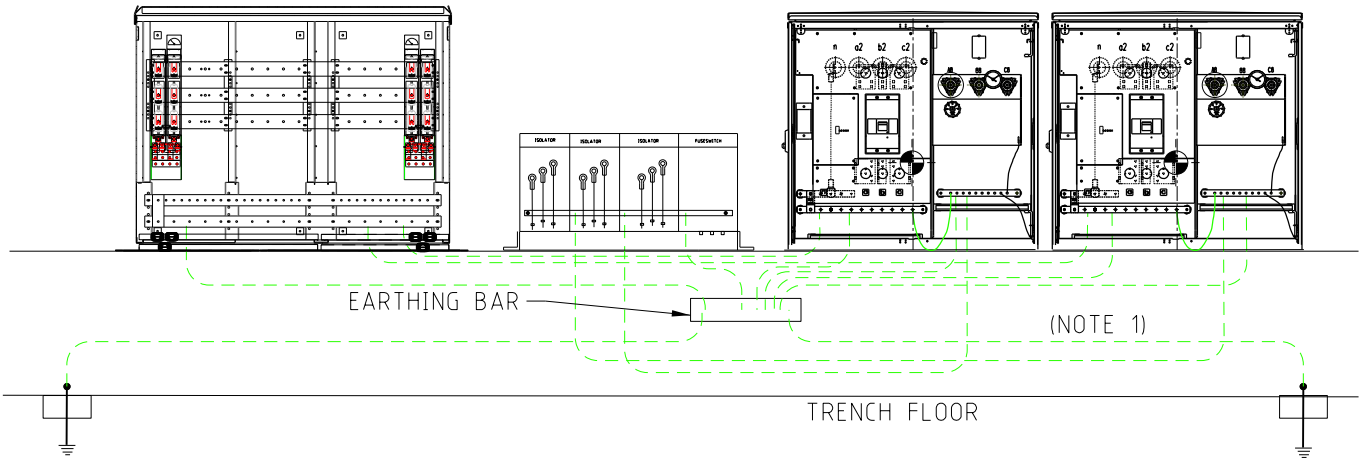


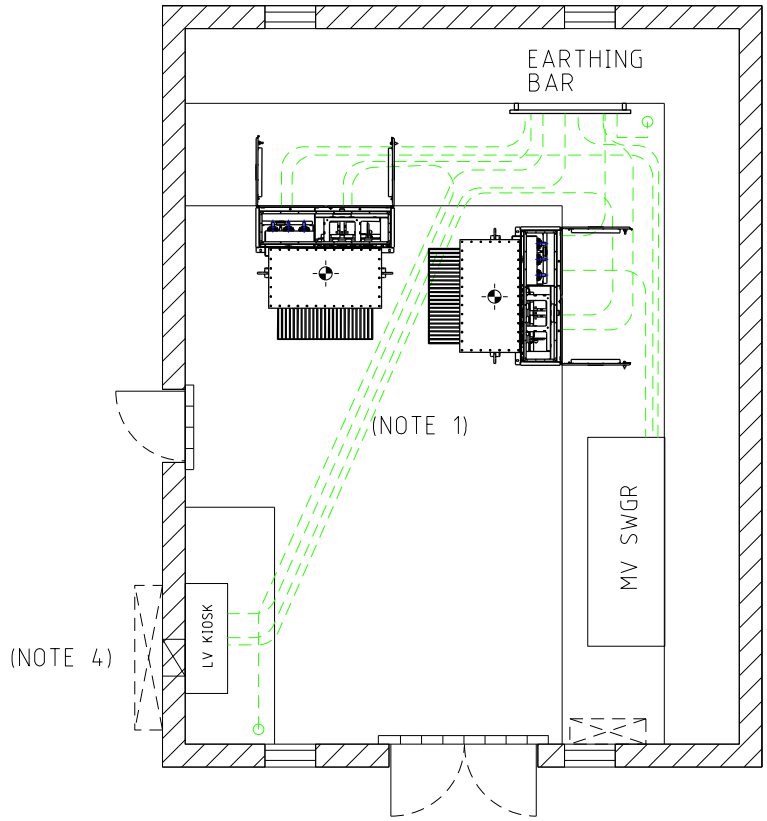
NOTES:
1. PVC INSULATED COPPER GREEN/YELLOW CONDUCTOR. (SIZED PER AS 2067).
2. COMBINED EARTHING RESISTANCE (WITH MEN/CMEN) SHALL BE NO MORE THAN 1 OHMS. UNLESS OTHERWISE STATED IN DESIGN PACKAGE.
3. REFER TO DCS G3 SET FOR DIMENSIONS.
4. CONSUMER MAIN SWITCHBOARD (IF REQUIRED).

THIS DRAWING TO BE READ IN CONJUNCTION WITH THE DISTRIBUTION DESIGN RULES HPC-9DJ-01-0002-2015.

HORIZON POWER DISTRIBUTION CONSTRUCTION STANDARDS	REFERENCE DRAWING	REVISION C	DATE APRIL 23
	DISTRICT SUBSTATION UP TO 2000kVA (NON MPS) FIRE RATED WITHOUT MV SWGR - EARTHING DETAILS	DRAWING No. G6-12/5	

NON MPS WITH MV SWITCHGEAR





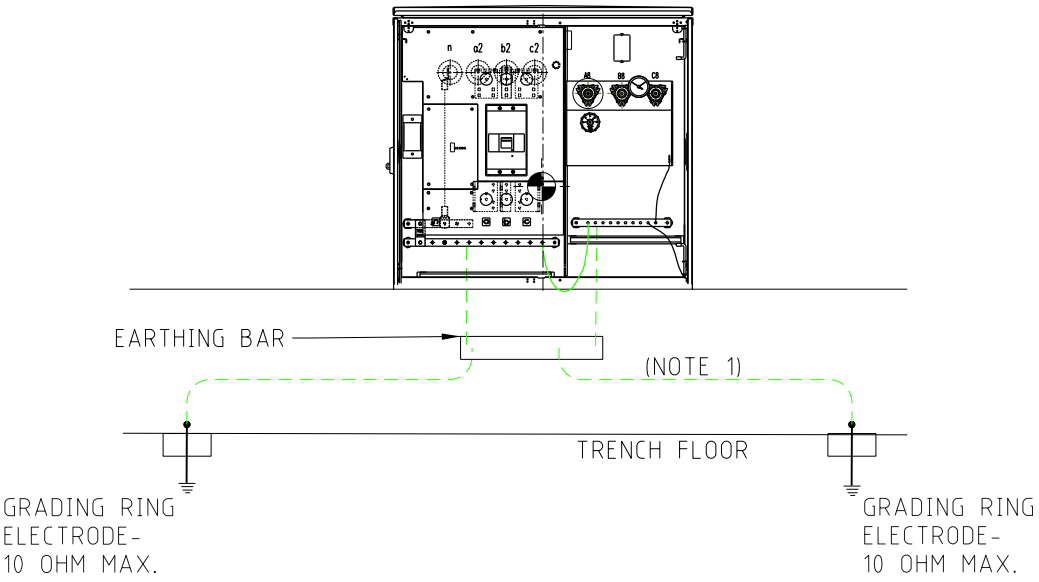
NOTES:

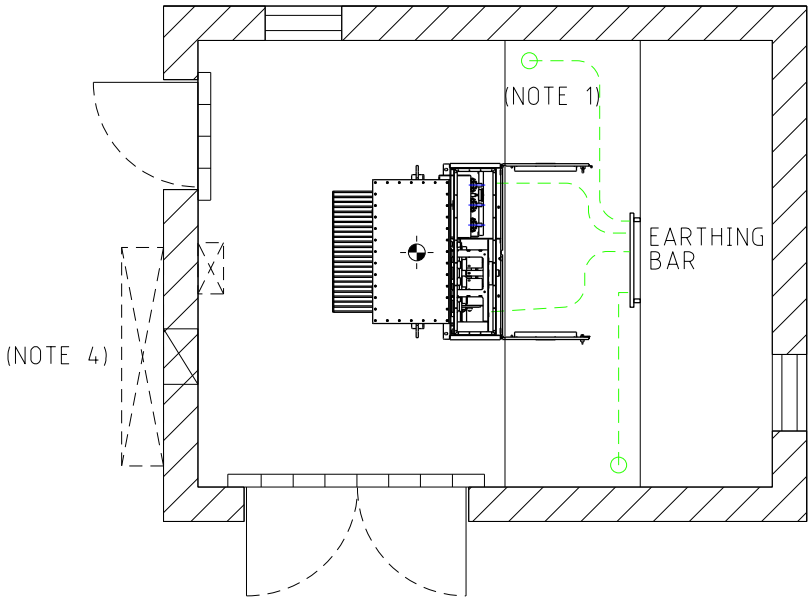
1. PVC INSULATED COPPER GREEN/YELLOW CONDUCTOR. (SIZED PER AS 2067).
2. COMBINED EARTHING RESISTANCE (WITH MEN/CMEN) SHALL BE NO MORE THAN 1 OHMS. UNLESS OTHERWISE STATED IN DESIGN PACKAGE.
3. REFER TO DCS G3 SET FOR DIMENSIONS.
4. CONSUMER MAIN SWITCHBOARD (IF REQUIRED).

THIS DRAWING TO BE READ IN CONJUNCTION WITH THE DISTRIBUTION DESIGN RULES HPC-9DJ-01-0002-2015.

HORIZON POWER DISTRIBUTION CONSTRUCTION STANDARDS	REFERENCE DRAWING	REVISION C	DATE APRIL 23
	DISTRICT SUBSTATION UP TO 2000kVA (NON MPS) FIRE RATED WITH MV SWGR - EARTHING DETAILS	DRAWING No. G6-12/6	

NON MPS WITH MV SWITCHGEAR



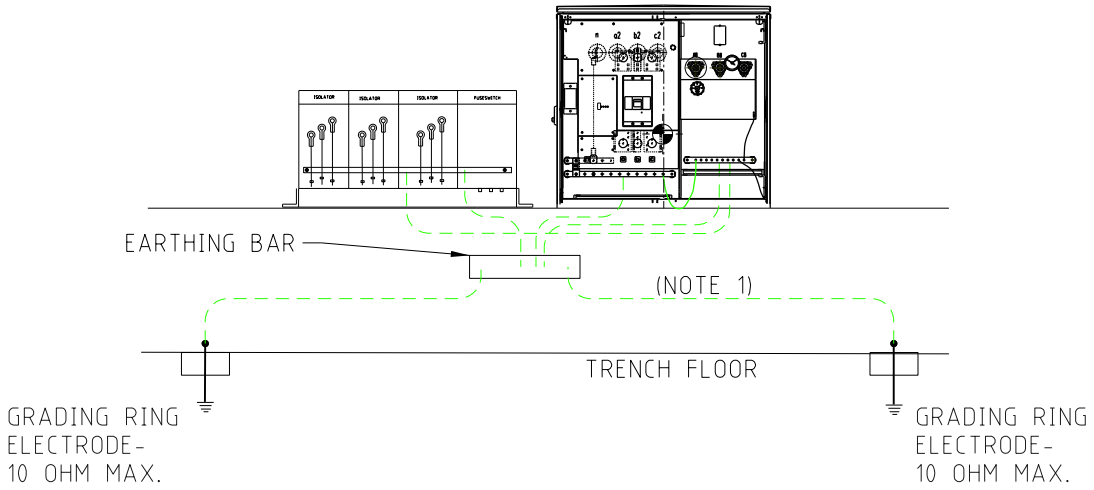


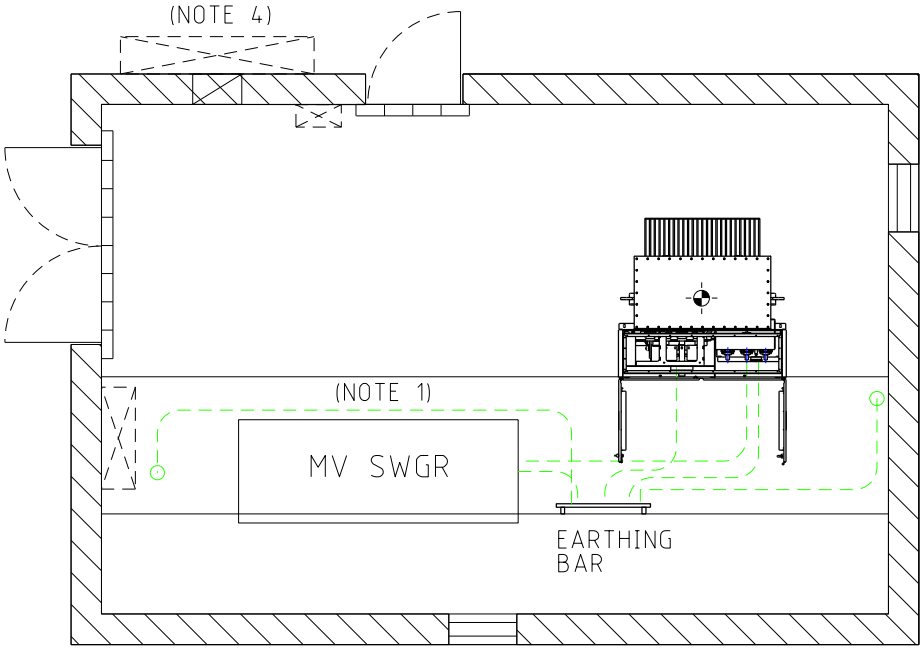
NOTES:
1. PVC INSULATED COPPER GREEN/YELLOW CONDUCTOR. (SIZED PER AS 2067).
2. COMBINED EARTHING RESISTANCE (WITH MEN/CMEN) SHALL BE NO MORE THAN 1 OHMS. UNLESS OTHERWISE STATED IN DESIGN PACKAGE.
3. REFER TO DCS G3 SET FOR DIMENSIONS.
4. CONSUMER MAIN SWITCHBOARD (IF REQUIRED).

THIS DRAWING TO BE READ IN CONJUNCTION WITH THE DISTRIBUTION DESIGN RULES HPC-9DJ-01-0002-2015.

HORIZON POWER DISTRIBUTION CONSTRUCTION STANDARDS	REFERENCE DRAWING	REVISION C	DATE APRIL 23
	SOLE USE SUBSTATION UP TO 1000kVA (NON MPS) FIRE RATED WITHOUT MV SWGR - EARTHING DETAILS	DRAWING No. G6-12/7	

NON MPS WITH MV SWITCHGEAR



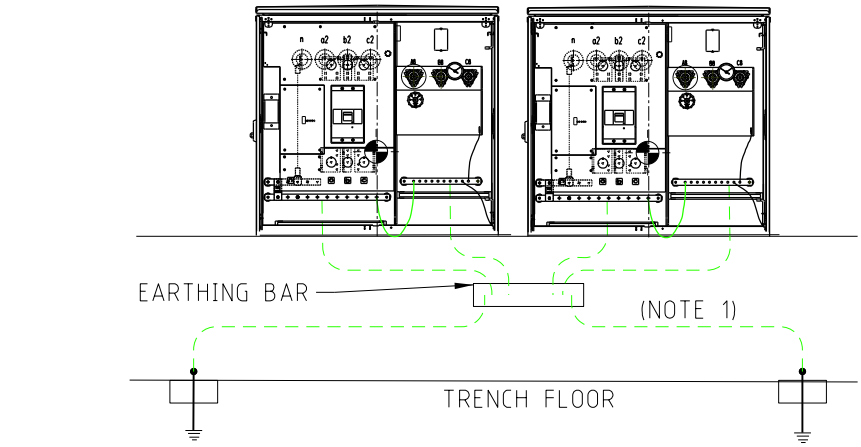


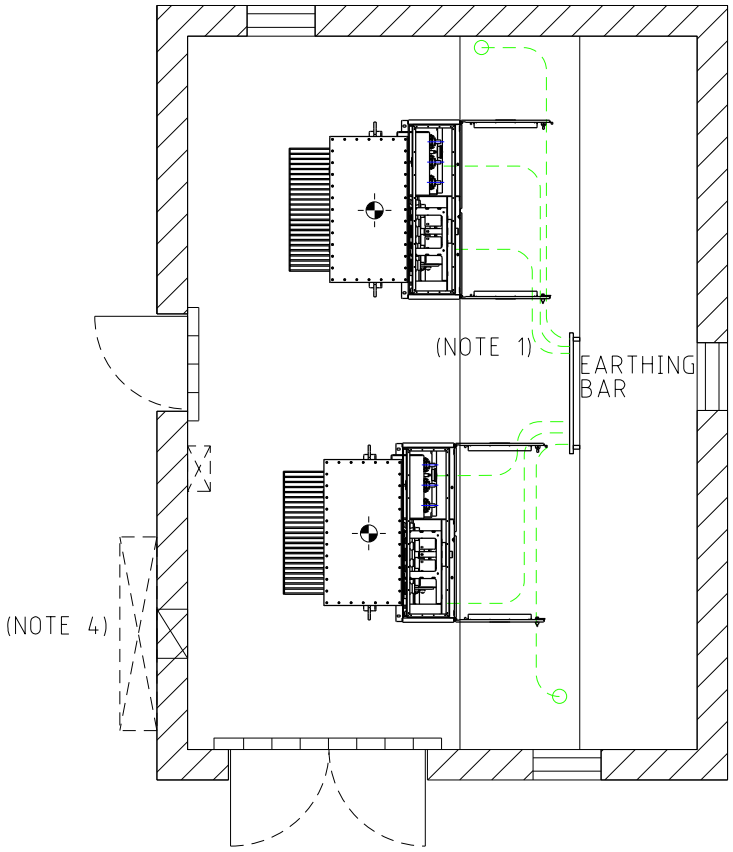
NOTES:
1. PVC INSULATED COPPER GREEN/YELLOW CONDUCTOR. (SIZED PER AS 2067).
2. COMBINED EARTHING RESISTANCE (WITH MEN/CMEN) SHALL BE NO MORE THAN 1 OHMS. UNLESS OTHERWISE STATED IN DESIGN PACKAGE.
3. REFER TO DCS G3 SET FOR DIMENSIONS.
4. CONSUMER MAIN SWITCHBOARD (IF REQUIRED).

THIS DRAWING TO BE READ IN CONJUNCTION WITH THE DISTRIBUTION DESIGN RULES HPC-9DJ-01-0002-2015.

HORIZON POWER DISTRIBUTION CONSTRUCTION STANDARDS	REFERENCE DRAWING	REVISION C	DATE APRIL 23
	SOLE USE SUBSTATION UP TO 1000kVA (NON MPS) FIRE RATED WITH MV SWGR - EARTHING DETAILS	DRAWING No. G6-12/8	

NON MPS WITHOUT MV SWITCHGEAR



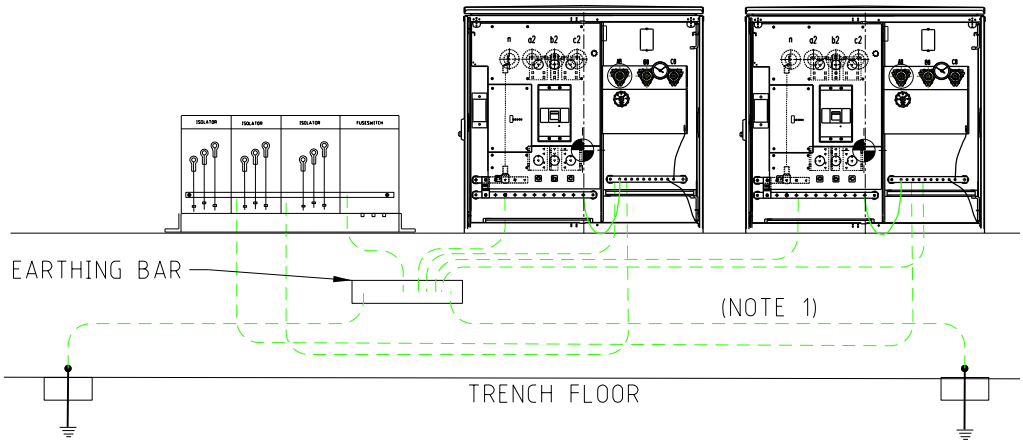


NOTES:
1. PVC INSULATED COPPER GREEN/YELLOW CONDUCTOR. (SIZED PER AS 2067).
2. COMBINED EARTHING RESISTANCE (WITH MEN/CMEN) SHALL BE NO MORE THAN 1 OHMS. UNLESS OTHERWISE STATED IN DESIGN PACKAGE.
3. REFER TO DCS G3 SET FOR DIMENSIONS.
4. CONSUMER MAIN SWITCHBOARD (IF REQUIRED).

THIS DRAWING TO BE READ IN CONJUNCTION WITH THE DISTRIBUTION DESIGN RULES HPC-9DJ-01-0002-2015.

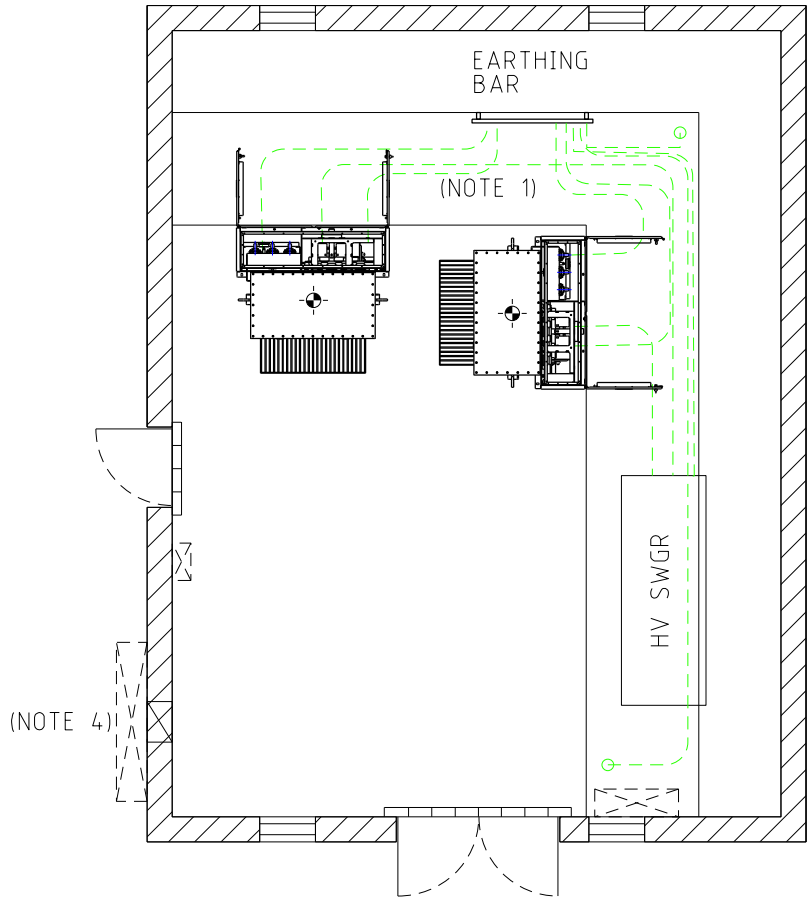
HORIZON POWER DISTRIBUTION CONSTRUCTION STANDARDS		REVISION C	DATE APRIL 23
	SOLE USE SUBSTATION UP TO 2000kVA (NON MPS) FIRE RATED WITHOUT MV SWGR - EARTHING DETAILS	DRAWING No. G6-12/9	

NON MPS WITH MV SWITCHGEAR



GRADING RING ELECTRODE- 10 OHM MAX.

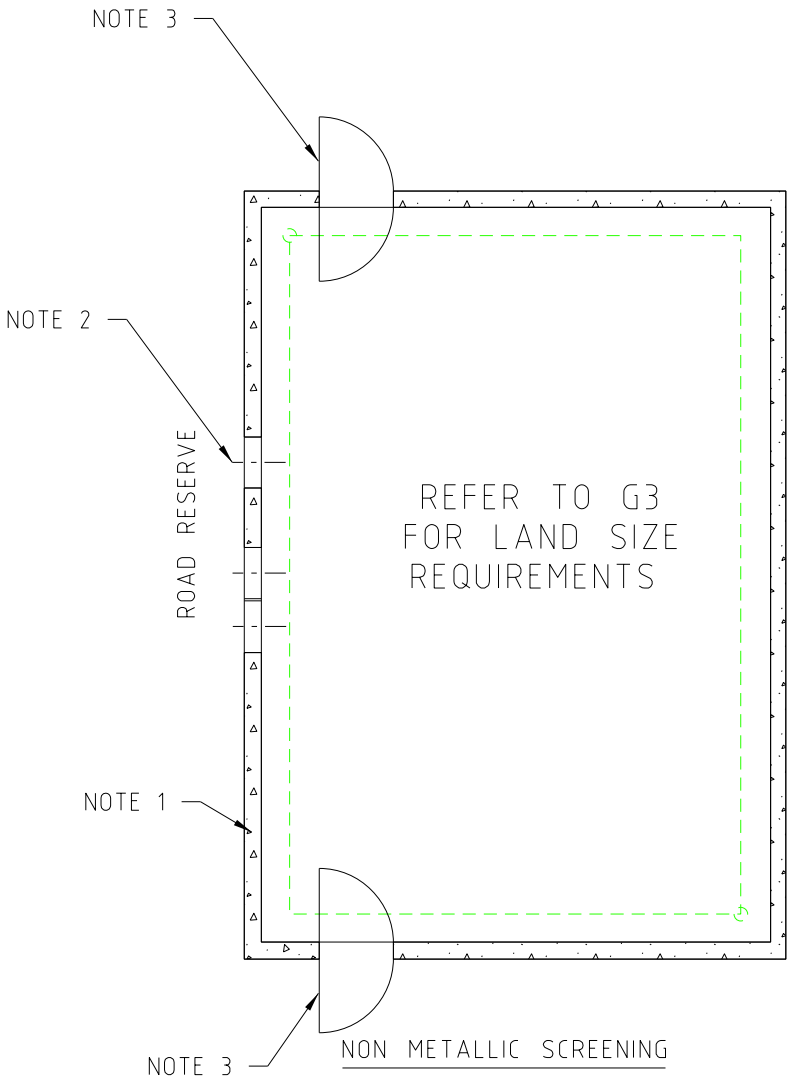
GRADING RING ELECTRODE- 10 OHM MAX.



NOTES:
1. PVC INSULATED COPPER GREEN/YELLOW CONDUCTOR. (SIZED PER AS 2067).
2. COMBINED EARTHING RESISTANCE (WITH MEN/CMEN) SHALL BE NO MORE THAN 1 OHMS. UNLESS OTHERWISE STATED IN DESIGN PACKAGE.
3. REFER TO DCS G3 SET FOR DIMENSIONS.
4. CONSUMER MAIN SWITCHBOARD (IF REQUIRED).

THIS DRAWING TO BE READ IN CONJUNCTION WITH THE DISTRIBUTION DESIGN RULES HPC-9DJ-01-0002-2015.

HORIZON POWER DISTRIBUTION CONSTRUCTION STANDARDS	REFERENCE DRAWING	REVISION C	DATE APRIL 23
	SOLE USE SUBSTATION UP TO 2000kVA (NON MPS) FIRE RATED WITH MV SWGR - EARTHING DETAILS	DRAWING No. G6-12/10	

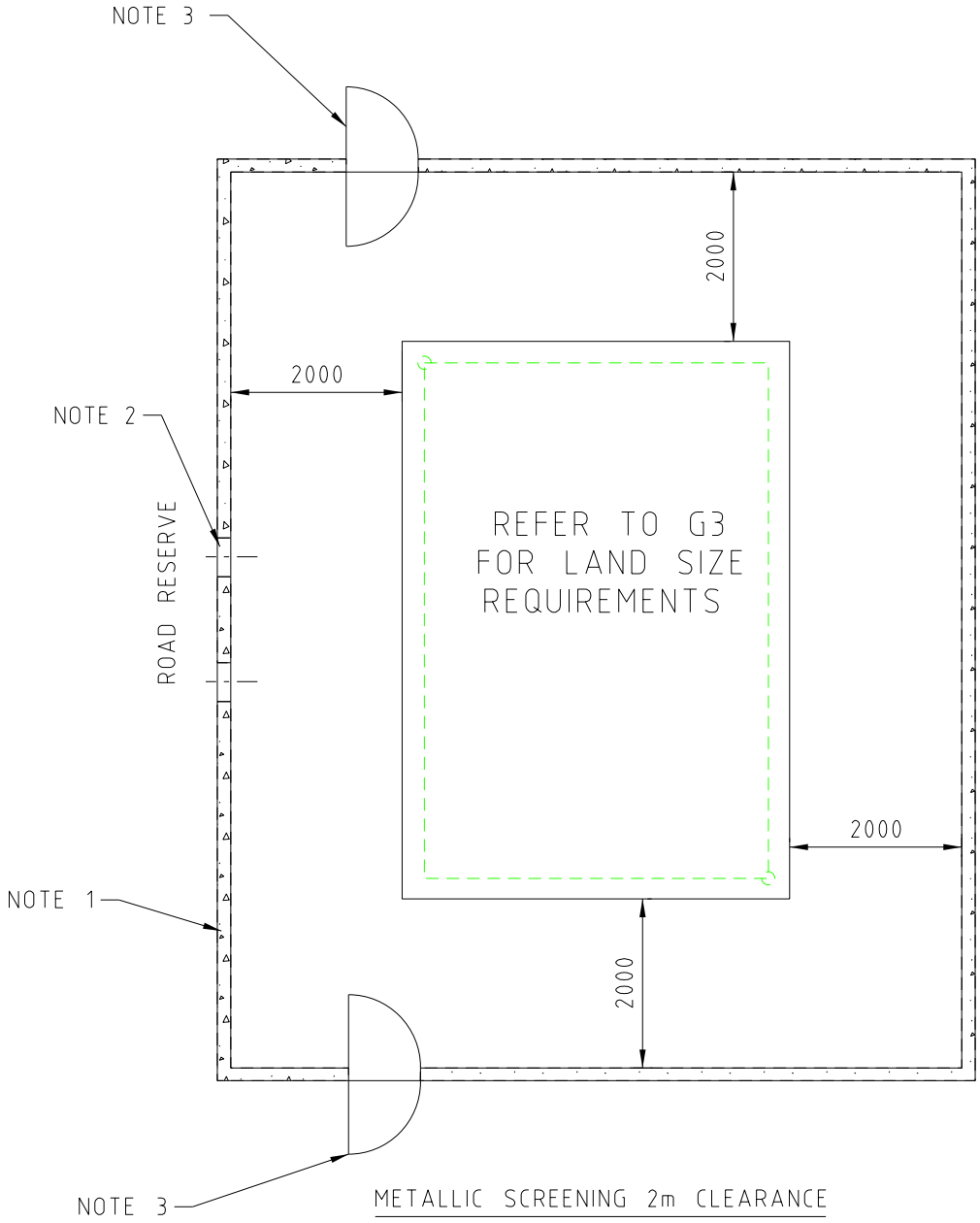


NOTES:

1. MAXIUMUM EXTENT OF SCREENING IF REQUIRED BY CONSUMER (TO BE APPROVED BY H.P. PRIOR TO CONSTRUCTION).
   SCREENING NOT TO ENCROACH INTO SUBSTATION LAND REQUIREMENTS.
   SCREENING TYPES CAN BE FENCING, WALLS etc... MATERIAL TO BE NON-CONDUCTIVE AND NON-COMBUSTIBLE (2 HOUR FIRE RATED).
2. INDICATIVE OF DUCTING ONLY, FOR DETAILS REFER TO G3
3. DOORS ARE OPTIONAL. OPENINGS MUST BE A MINIMUM OF 820mm WIDE.

THIS DRAWING TO BE READ IN CONJUNCTION WITH THE DISTRIBUTION DESIGN RULES - HPC-9DJ-01-0002-2015.

HORIZON POWER DISTRIBUTION CONSTRUCTION STANDARDS	OUTDOOR SUBSTATION NON-METALIC PERMISSIBLE SCREENING ARRANGEMENTS	REVISION C	DATE MAR 23
		DRAWING No. G6-13/1	



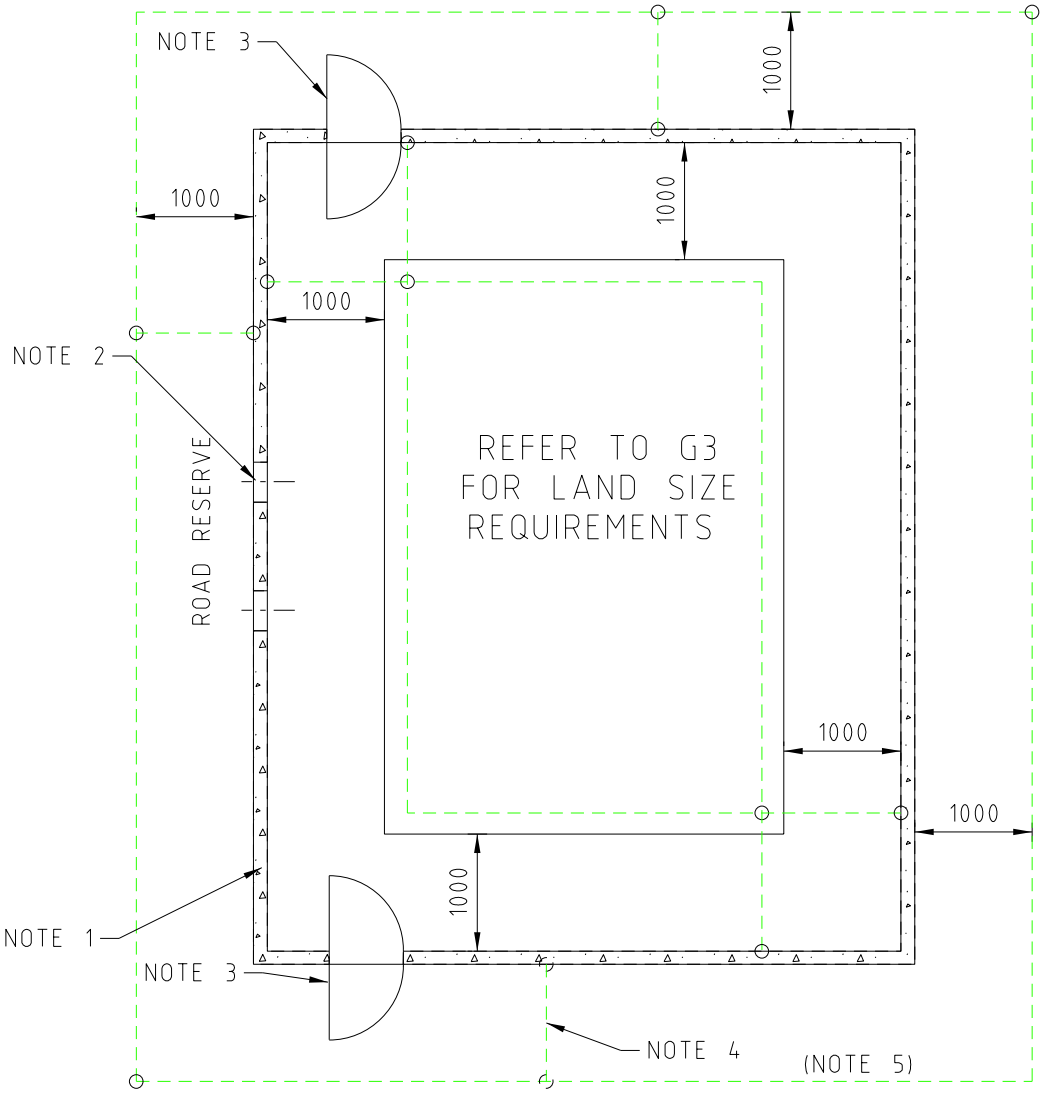
METALLIC SCREENING 2m CLEARANCE

NOTES:

1. 2m CLEARANCE FOR SCREENING IF REQUIRED BY CONSUMER WITH (TO BE APPROVED BY H.P. PRIOR TO CONSTRUCTION). SCREENING CAN BE METALIC FENCING, WALLS etc... BUT NON-COMBUSTIBLE (2 HOUR FIRE RATED).
2. INDICATIVE OF DUCTING ONLY, FOR DETAILS REFER TO G3
3. DOORS ARE OPTIONAL. OPENINGS MUST BE A MINIMUM OF 820mm WIDE.

THIS DRAWING TO BE READ IN CONJUNCTION WITH THE DISTRIBUTION DESIGN RULES - HPC-9DJ-01-0002-2015.

HORIZON POWER DISTRIBUTION CONSTRUCTION STANDARDS	OUTDOOR SUBSTATION METALIC PERMISSIBLE SCREENING ARRANGEMENTS	REVISION C	DATE MAR 23
		DRAWING No. G6-13/2	



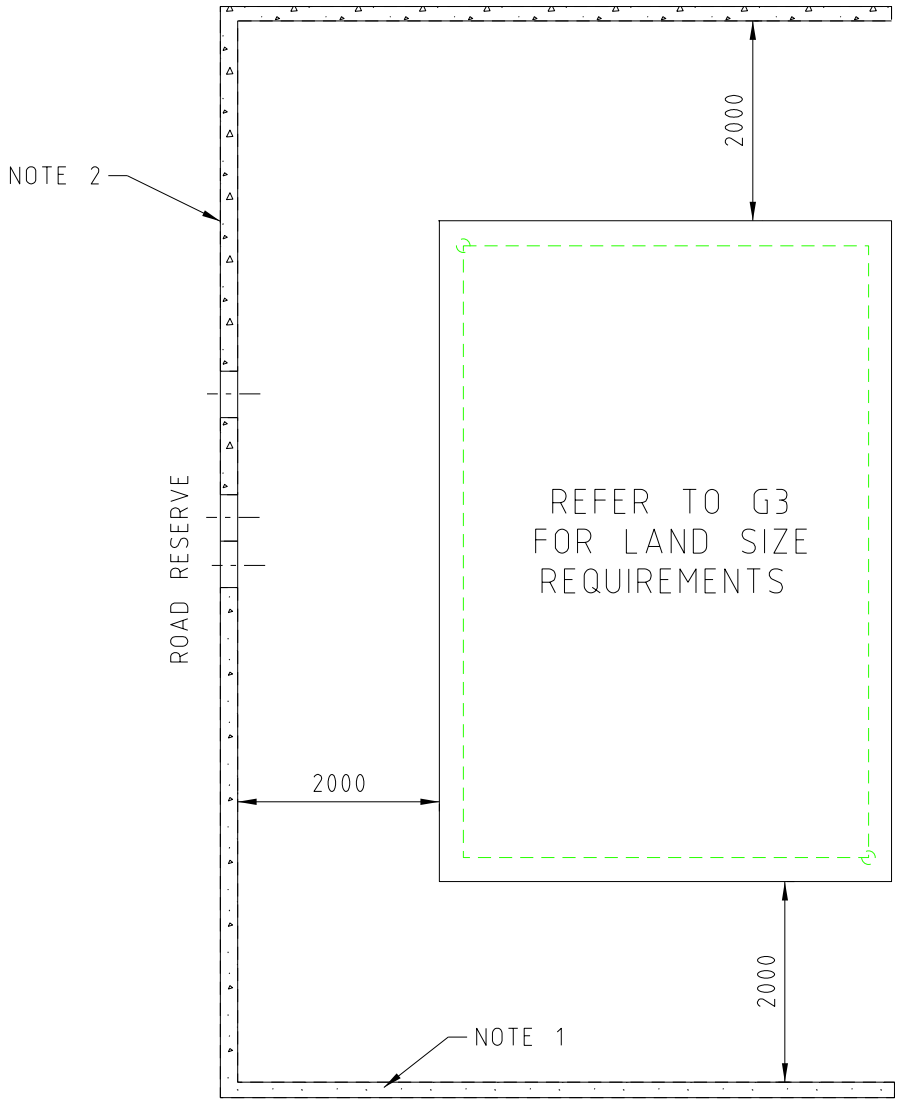
METALLIC SCREENING WITH 1m EARTH GRID AROUND

NOTES:

1. 1m CLEARANCE FOR SCREENING IF REQUIRED BY CONSUMER WITH 1m SPACED EARTH GRID AROUND SCREEN (TO BE APPROVED BY H.P. PRIOR TO CONSTRUCTION). SCREENING TYPES CAN BE METALIC FENCING, WALLS etc... BUT NON-COMBUSTIBLE (2 HOUR FIRE RATED).
2. INDICATIVE OF DUCTING ONLY, FOR DETAILS REFER TO G3
3. DOORS ARE OPTIONAL. OPENINGS MUST BE A MINIMUM OF 820mm WIDE.
4. 70mm PVC - INSULATED COPPER CONDUCTOR
5. 70mm BARE COPPER CONDUCTOR

THIS DRAWING TO BE READ IN CONJUNCTION WITH THE DISTRIBUTION DESIGN RULES - HPC-9DJ-01-0002-2015.

HORIZON POWER DISTRIBUTION CONSTRUCTION STANDARDS	OUTDOOR SUBSTATION METALIC PERMISSIBLE SCREENING ARRANGEMENTS	REVISION C	DATE MAR 23
		DRAWING No. G6-13/3	



PARTIAL METALIC SCREENING 2m

NOTES:
1. 2m CLEARANCE FOR SCREENING IF REQUIRED BY CONSUMER (TO BE APPROVED BY H.P. PRIOR TO CONSTRUCTION). SCREENING TYPES CAN BE METALIC FENCING, WALLS etc... BUT NON-COMBUSTIBLE (2 HOUR FIRE RATED).
2. INDICATIVE OF DUCTING ONLY, FOR DETAILS REFER TO G3

THIS DRAWING TO BE READ IN CONJUNCTION WITH THE DISTRIBUTION DESIGN RULES - HPC-9DJ-01-0002-2015.

HORIZON POWER DISTRIBUTION CONSTRUCTION STANDARDS	OUTDOOR SUBSTATION METALIC PERMISSIBLE SCREENING ARRANGEMENTS	REVISION C	DATE MAR 23
		DRAWING No. G6-13/4	