APPLICANT'S RESPONSE TO LANDSUL AND MUNSTER JOINERY'S DEADLINE 5 SUBMISSION: 9.32

DECARBONISATION

Cory Decarbonisation Project

PINS Reference: EN010128

April 2025

Revision A

The Infrastructure Planning (Examination Procedure) Rules 2010 – Rule 8(1)c

TABLES

APPENDICES

EXECUTIVE SUMMARY

This document constitutes the Applicant's response to the submissions made by Landsul and Munster Joinery at Deadline 5 of the Examination for the Cory Decarbonisation Project (the 'Proposed Scheme') (REP5-051).

It responds to each of the topics set out in REP5-051 and seeks to build on, but not repeat, the Applicant's previous submissions in response to Landsul and Munster Joinery throughout the course of the Examination. These topics are:

- The Approach to Electrical Distribution;
- The Applicant's Heat Note;
- Alternative Layout;
- Benchmarking Exercise; and
- Socio Economic Impacts.

1. INTRODUCTION

1.1. PURPOSE OF THIS DOCUMENT

1.1.1. This Report provides a response to the issues raised in the submissions of Landsul Limited ('Landsul') and Munster Joinery (UK) ('Munster Joinery') **(REP5-051)** at Deadline 5 (25 March 2025).

1.2. STRUCTURE OF THE APPLICANT'S RESPONSE

1.2.1. Section 2 of this document presents the Applicant's response to the 'front end' of REP5-051, which summarises the rest of Landsul and Munster Joinery's submissions on the following topics:

- The Approach to Electrical Distribution;
- The Applicant's Heat Note;
- Alternative Layout;
- Benchmarking Exercise; and
- Socio Economic Impacts.

1.2.2. Within Section 2, the Applicant has responded to these topics in a separate section for each topic. In so doing, the Applicant has also considered the detail of the reports appended to that 'front end' submission and, where necessary, its response accounts for that detail.

2. RESPONSES TO MATTERS RAISED IN DEADLINE 5 SUBMISSION

2.1. THE APPROACH TO ELECTRICAL DISTRIBUTION

Table 2-1 Applicant's Response to Electrial Distribution matters Deadline 5 Submission

Table ref	Summary of Issue Raised	Applicant's Previous Response
2.1.1	5. At CAH2, the Applicant's representatives confirmed that distribution at 11kv was preferable, but cited the practicalities of providing an 11Kv connection from Riverside 1 and Riverside 2 as the reason for proposing a large new substation, with a consequent increase in the land take, cost, and system losses which would be incurred. It should be recalled that this concern was not evidenced before CAH2, and was not explained in writing under Deadline 4. However, the proposed 132Kv distribution has been a feature of the Applicant's indicative design throughout. The concern appears to have been put forward as ex post facto justification, having been presented with the Blake Clough report.	Electrical import at 132kV has been the base case for the Carbon Capture Facility from an early stage of development of the plant design. This was based on the Applicant's review of the electrical infrastructure at the site, its configuration, capacity, etc. as summarised in the Applicant's CAH2 submissions. A summary of the reasons for adopting this approach was provided in **Appendix E: Electrical Connections** **Note to the Written Summary of the Applicant's Oral Submissions at CAH2 (REP4-034)**. For all the reasons given by the Applicant, the 11kv option is not a 'reasonable alternative' to the 132kV approach put forward and so was not a feature of the Applicant's submissions until its approach was challenged in Examination.
2.1.2	6. The Applicant's Deadline 4 submissions (REP4-034 Appendix E: Electrical Connections Note) have been reviewed by Blake Clough Consulting Ltd and its second report is annexed hereto as Annex A. The key conclusion is that providing a 2x100% 11Kv connection from Riverside 1 and Riverside 2 is challenging but achievable: a. For Riverside 1, providing this connection would not require any shutdown of the facility. The practical issue will relate to the space required for an 11kV Generator Circuit Breaker (GCB), but this could be housed in a small room or containerised switch room located near to the transformer area; b. For Riverside 2, again a small room or containerised switch room located near to the transformer area could be provided. Since Riverside 2 is not yet commissioned, it would be possible to make the necessary connections before energisation of the system, which would avoid any need for later shutdown. If the Applicant did not wish to carry out the works prior to making Riverside 2 operational, Blake Clough estimate that a "shutdown" of 2 to 3 weeks would be required.	The Applicant notes that the second report from Blake Clough Consulting Ltd is proposing a "tee-off" connection from the Air Insulated Busduct (AIB) into a new dedicated CCS Generator Circuit Breaker (GCB) housed in an external containerised switchroom for Riverside 1. A similar arrangement is suggested for Riverside 2, with a "tee-off" connection from the Isolated Phase Busducts (IPB) into a new GCB in an external containerised switchroom. As noted in the latest report from Black Clough Consulting Ltd, the challenge is finding a suitable location for the external containerised switchrooms, which must be located close to the transformer compounds for either supply, in order to minimise busduct routing, avoid routing busduct over roads, etc. In addition, the proposed location of the external containerised switchroom must avoid existing underground services on site to prevent damage to existing cables, electrical hazards, compromising the structural integrity of the switchroom, etc. Appendix A (a drawing produced to assist in the appointment of the construction contractor for Riverside 1 to show the constraints) shows the existing site services, including underground cable ducts and water pipes. The drawing highlights the congestion of underground services that are in proximity to the existing Riverside 1 and under construction Riverside 2 transformer compounds, where the proposed "tee-off" connections are being proposed in Blake Clough Consulting Ltd's report. Considering the dimensions of the existing GCB for Riverside 1 (see Appendix B for a general arrangement as built drawings) and Riverside 2 (see Appendix C for general arrangement drawings that have been used as the basis of construction of Riverside 2) as the assumed dimensions of the new GCB at each location, the estimated minimum required dimensions of the external containerised switchrooms would be W6710xL5200xH4900mm for Riverside 1 and W6590xL4480xH4600mm for Riverside 2 respectively. Note, this assumes that there is sufficient electrical capacity on the existing LV service boards, space is available in the existing switchrooms for power supply equipment (e.g. battery charger and batteries) to the GCB, and that the proposed dimensions of containerised switchrooms can be custom ordered.

Table ref	Summary of Issue Raised	Applicant's Previous Response
		Even with this space saving approach, it is clear from Appendix A there would not be any space available for the proposed external containerised switchrooms considering the required footprint and navigating existing buildings and underground services around the transformer compounds.
2.1.3	7. Accordingly, there is no practical impediment to the 11Kv connection. There would be no interruption to electricity generation for Riverside 1. Whether there was an interruption to generation at Riverside 2 would be a choice for the Applicant, i.e. whether to carry out the works before energisation of Riverside 2 (expected to be in 2026). The Applicant is therefore wrong to conclude that the Applicant's 132kV supply is "the only feasible method of supplying the new CCF development from the existing Riverside 1 and under-construction Riverside 2"	The Applicant notes that Landsul/Munster Joinery are correct in their response that if an 11kV connection were implemented, there would be no interruption to electricity generation at Riverside 1, due to the N+1 configuration (one in service; one in reserve) of step-up transformers and GCBs allowing for one set to remain online while the new "tee-off" connection would be made to the isolated second circuit. However, due to the infeasibility of installing a new GCB as discussed in response 2.1.2 above, the N+1 configuration offers no benefit. The Applicant disagrees that shutdown of, or delay to, Riverside 2 could be avoided. Construction of Riverside 2 continues at pace and is due to be operational in early 2026. For all the reasons identified previously an 11Kv connection is not part of the design philosophy for the Carbon Capture Facility and has not been considered for Riverside 2 (that project having been consented in 2020 and construction started in January 2023). An aggressive programme of 1 month for design, 1 month for procurement activities, 6 months for manufacturing and delivery of equipment, and 2 months for installation, testing and commissioning activities, would place the new GCB installation works due for completion some time around March 2026, when Riverside 2 should be operational. Even if that optimistic timetable for GCB installation was achieved (which is only remotely possible if design and procurement was started now, ahead of a decision being made on the Carbon Capture Facility) it would still delay Riverside 2 being operational and being able to deliver contractual residual waste management obligations. Munster Joinery/Landsul are seeking a design change (that is not sought by the Applicant and which would not be to the Proposed Scheme's benefit) to be made, not only to the Carbon Capture Facility, but also to separate consented infrastructure, at risk, and with no resultant outcome that would avoid the Munster Joinery premises on Norman Road.
2.1.4	8. It should also be noted that the "supplementary comments" in Section 5 of the Electrical Connections Note have been addressed in full by Blake Clough. Notably, the Applicant is wrong to claim that Blake Clough's proposals, as shown on the Alternative Layout, would leave insufficient space for the switchyard, for the reasons explained in section 3 of Blake Clough's report.	The Applicant notes that its previous objection to the proposed space allocation of 10m x 7m (as detailed in Blake Clough Consulting Ltd's report submitted at Deadline 4 (Annex A of REP4-042)) for a 2 x 100% 11kV supply was correct. The Applicant agrees that the Alternative Site Layout with increased space allocation for a 30m x 10m 11kV switchroom area would be likely sufficient.
2.1.5	9. Further, the Blake Clough report considers the need for a 2 x 100% 11kV supply to be debateable, noting that the need for a second 100% 11kV supply would arise for about 1.5 hours per year. As such, Blake Clough concludes that a 2 x 50% power circuit (as detailed in Blake Clough's report submitted at D4 (Annex A of REP4-042)) would be adequate, and that the Applicant should reconsider this option.	It should be noted that the design requirement for the CCS supply was for a N+1 secure supply, such that supply could handle the full load of the plant with only one supply circuit in service and maximise resilience for all operational scenarios of Riverside 1, Riverside 2 and the Carbon Capture Facility. The Applicant maintains its position that this design requirement is essential for the continuous and reliable supply to the carbon capture facility. The back-pressure turbines (BPT) that would supply some of the CCS load are conditional on the corresponding energy from waste facilities being operational, and the design currently includes the flexibility to have a single BPT, rather than 2 x 50% capacity BPT. There is a requirement for each CCS power supply to handle the full load, in case of a BPT outage (e.g. routine maintenance or trip) coinciding with an outage of the steam turbine generator in the other energy from waste facility (e.g. routine maintenance or trip).

Table ref	Summary of Issue Raised	Applicant's Previous Response
		Furthermore, while the Applicant agrees that a reduced supply circuit capacity would reduce the number of cables required per circuit, this would not reduce the equipment footprint required.
2.1.6	10. The consequence is that the Applicant has not justified the case for acquiring c. 4,000m2 of land to accommodate the 132Kv substation.	As explained in the Technical Note submitted at Deadline 4 (**Appendix E: Electrical Connections Note to the Written Summary of the Applicant's Oral Submissions at CAH2 (REP4-034)**) and further justified in response 2.1.2 above, the proposed implementation of an 11kV supply utilising a "tee-off" connection from the busduct between the existing facilities' GCB and the step-up transformers complete with new external containerised switchrooms housing new GCB, is not technically feasible. Therefore, Munster Joinery/Landsul's subsequent arguments (responded to in 2.1.3 to 2.1.5 above) are negated by the fact there is no practical engineering solution to providing a connection to the existing 11kV infrastructure.

2.2. THE APPLICANT'S HEAT NOTE

Table 2-2 Applicant's Response to the Heat Note matters at Deadline 5 Submission

Table ref	Summary of Issue Raised	Applicant's Response
2.2.1	11. In REP4-034 Appendix H, the Applicant seeks to justify the inclusion of a heat transfer station in the proposed development. It is surprising that the Applicant seeks to provide this justification so late in the examination, when the transfer station has been an integral part of the proposals from the outset.	The Applicant has not provided a late justification; it has responded to queries as they have been raised throughout the process. The inclusion of a heat transfer station (HTS) as one element of the Proposed Scheme has been part of the DCO application since its submission. **Appendix H** to the **Written Summary of the Applicants Oral Submissions at Compulsory Acquisition Hearing 2 (CAH2) (REP4-034)** was submitted to the Examination following CAH2 and Munster Joinery/Landsul's objection to the provision of heat transfer equipment as part of the Proposed Scheme. This is confirmed in the Executive Summary which states: '*The Applicant in this report dispels these assertions. Firstly, by outlining the extensive national and local policy which supports this technology and by highlighting the heat opportunities and relevant existing planning consents relevant to each of its facilities. Secondly, by confirming that there is in fact significant demand for heat within London (the Applicant having signed or currently negotiating MOU to supply heat networks with forecast demand of 907MW by the early 2030s). It clarifies the onsite supply and demand of Cory's facilities and interaction between Riverside 1 and 2 and the Proposed Scheme; describes the Riverside Heat Network and other existing and developing heat networks elsewhere in London and the opportunities currently being explored by Cory; and then demonstrates how delivery of this heat demand is technically and economically viable. ...*' It presented little new information about the HTS element of the Proposed Scheme, instead providing additional detail in relation the extensive demand for heat across London in the context where Munster Joinery/Landsul were suggesting that there is not sufficient heat demand.
2.2.2	12. In any event, whilst it may be desirable to make provision for a heat transfer station, it does not follow that there is a compelling case in the public interest for the acquisition of land for that purpose. As paragraph 9 of the Compulsory Acquisition Guidance makes clear, the applicant must have a "clear idea of how they intend to use the land" and show that there is a "reasonable prospect of the funds for acquisition being available". It is also necessary to show that impediments to implementation have been addressed (see paragraph 19). The Governments CPO Guidance further explains these points: a. "The acquiring authority should have a clear idea of how it intends to use the land which it is proposing to acquire and show that all the necessary resources are likely to be available to achieve that end within a reasonable timescale" (13.3) b. "funding should generally be available now or early in the process. Failing that, the confirming authority would expect funding to be available to complete the compulsory acquisition within the statutory period (see section 4 of the Compulsory Purchase Act 1965) following the operative date" (14.1(b)). c. "The acquiring authority will however need to be able to show that the implementation of the scheme following the confirmation decision being made is unlikely to be blocked by any physical or legal impediments" (15.1)	Compelling public interest is demonstrated extensively by reference to national, regional and local policy, as detailed in **Written Summary of Oral Submissions at ISH1 (REP1-025), and its Appendix A (REP1-026); its Written Summary of Oral Submissions at CAH2 (REP4-048) and its appendices (REP4-034)** and was covered in oral responses to questions during the CAH. The same documents make clear how the land is intended to be used, and costs for acquisition of the land are included in overall project costings, funding for which has been explained. In particular, the Applicant has made clear that it could fund all compulsory acquisition costs for the Proposed Scheme, including the land necessary for the HTS, from its balance sheet, without the need for any other funding structure being in place In addition, the Applicant refers to the consultation draft NPS EN-1 (and EN-3) (April 2025) in which the Government proposes to place new expectations on efficient EfW facilities (such as Riverside 1 and Riverside 2) to be Decarbonisation Ready and to optimise heat recovery in a timely manner (see particularly NPS EN-1 paragraphs 3.3.40 and 4.8.12 and NPS EN-3 paragraphs 2.7.15, 2.7.19, 2.7.89 and 2.7.98), demonstrating the Government' continued commitment to, and expectation of, heat network roll-out, which the Applicant stands ready to deliver, as a leading resource management company.
2.2.3	13. In respect of funding, there is no evidence that the HTS will be funded. Section 1.3 of the Heat Note simply explains that grants may be available and that revenues would be	The Applicant does not understand this point. For the Proposed Scheme as a whole, the Applicant has explained the funding structure in terms of the government revenue support for

Table ref	Summary of Issue Raised	Applicant's Response
	available, but this does not mean that the specific scheme has a reasonable prospect of being funded within the seven year lifetime of the compulsory purchase powers.	CCS projects. In respect of the HTS and associated infrastructure, the Applicant has explained the funding structure in terms of the government capital support for heat projects and the industry standard funding model of recovering heat revenue costs directly from consumers. While the Applicant's ongoing commercial negotiations are confidential, several relevant public projects and potential consumers have been highlighted. Munster Joinery/Landsul seem to have accepted that large scale heat networks are being brought forward in central London. They also seem to have dropped the assertion that supply to these networks is not technically or economically viable (or at least this point is not repeated in their latest statement of issues). If those public networks are viable, and supply from the Riverside Campus is viable, and the government support mechanics for heat export are clear and leading to project completions across the country (as they are for both CCS and EfW heat export) it is unclear on what basis Munster Joinery/Landsul feel the funding of these projects is uncertain. Further, the Applicant has a strong track record in raising funds. Specifically, the Applicant secured £540 million in 2008 for Riverside 1, which was completed on time and within budget. Furthermore, the Applicant raised £896 million in 2022 for Riverside 2, which remains under budget and on schedule deep into the construction programme with operations due to commence in 2026. It's also notable that Riverside 2 proceeded at a time of severe inflationary headwinds including from Covid and the war in Ukraine. In parallel with Riverside 2 the Applicant has progressed the purchase and redevelopment of Barking Waste Transfer Station – an investment of c. £100 million – which will be operational in early 2026. The **Heat Note (Appendix H (REP4-034))** demonstrates the extensive demand for heat across London and Cory's ability to respond to it, demonstrating the reasonable prospect that funding for this element of the Proposed Scheme will be secured. In April 2025, Cory submitted applications to the Green Heat Network Fund (GHNF) as joint submissions with multiple partners. This further demonstrates that the heat transfer element of the Proposed Scheme has a reasonable prospect of being funded within the lifetime of the DCO. Appendix D to this response presents letters from a cross-section of (but not all) the organisations that Cory is working to partner with, demonstrating industry support for heat from the Riverside Campus.
2.2.4	14. It is notable in this regard that no heat transfer from Riverside 1 has been delivered despite there being an obligation for the past 8 years to submit a scheme for CHP where viable opportunities are identified for a CHP scheme. Although details were submitted (see the Heat Note at 2.2.10), no scheme has been progressed. In respect of Riverside 2, it does not appear that any steps have been taken to identify technically and commercially viable actions to deliver CHP (See 2.2.18-20).	The **Heat Note (Appendix H (REP4-034))** presents the current position in regard to Riverside 1 and Riverside 2. It also explains the steps that Cory is taking as part of its wider heat strategy both addressing the reasons for delay to date and actively responding to broader demand than just the Riverside Heat Network. In any event, as confirmed in the **Applicant's Response to Relevant Representations (AS-043)** (see paragraph 4.2.14) Cory had recently *'created (and filled) the role of Managing Director for Heat."* On 26 March 2025, David Carter (as MD for Heat) held the first meeting of the Riverside 2 CHP Working Group (as required under the Riverside 2 DCO) including attendance by the GLA and London Boroughs of Bexley and Greenwich, which agreed the next steps for the updated Riverside 2 CHP Review. Significant heat demand has been demonstrated as detailed in the Heat Note and much of this has spanned both Riverside 1 and 2.

Table ref	Summary of Issue Raised	Applicant's Response
2.2.5	15. In respect of the Riverside Heat Network, paragraph 3.3.8 appears to indicate the pipework would not be laid in Norman Road until after the completion of construction of Riverside 2. However, it is unclear where the Riverside 1 and 2 heat transfer stations would be located, or how they would be consented. The pipework consent (3.3.7) only provides a heat connection to the end of Norman Road. As already explained, the Riverside Heat Network could be served by heat from Riverside 1 and Riverside 2 alone.	The information requested is in the **Heat Note (Appendix H (REP4-034))**: • Figure 2-1 of indicates the location of the HTS for each of Riverside 1 and Riverside 2. • From paragraph 2.2.5, explanation that the s.36 consent for Riverside 1 (as amended) required (condition 31) submission of CHP Feasibility Review and a scheme for the provision of the necessary heat transfer plant and equipment. • A CHP Feasibility Review and scheme for HTS were separately approved on 27 January 2022. • From paragraph 2.2.13, explanation that the DCO for Riverside 2 (as amended) required sufficient space to be left for a heat export system (requirement 2) and CHP Review (requirement 24). • The relevant plans under Requirement 2 were approved on 26 January 2022. • The Terms of Reference for the Riverside 2 CHP Working Group were approved on 30 October 2024 and (subsequent to submission of the Heat Note) that Group has now met. The Riverside Heat Network could be served by heat from Riverside 1 and 2 alone, but in this statement Munster Joinery/Landsul have disregarded the other, extensive heat demand that exists across London and which the Riverside Campus is able, and intended, to supply, including the heat arising from the Proposed Scheme. These are all set out in the **Heat Note (Appendix H (REP4-034))** and updated by the above confirmation that submissions have been made to the Green Heat Network Fund jointly with partner organisations (letters of support from some of these are provided at Appendix D to this response.
2.2.6	16. In section 3.4 of the Heat Note, the Applicant refers to "other heat demand". These proposals are at a very early stage of development. The Applicant appears to accept that to meet this heat demand, it would be necessary to transfer heat by barge or to construct a "long range transmission main". In respect of these solutions, the Applicant claims they are "eminently feasible" but: a. They are not currently funded; b. They are not consented; and c. They would require complex construction. For example, transfer by barges would require suitable piers and transfer stations both at the Riverside Campus and at the destination in central London; a long range transmission main would require, amongst other things, a new river crossing. These would all be complex projects in the middle of a major city.	The *'other heat demand'* is not at a *'very early stage of development'*. Transmission design (via barge or pipework) is mostly completed to a RIBA 2 level or higher (outstanding aspects should be completed within the next 6 weeks). This is the threshold maturity required for GHNF subsidy support, and within the industry taken as the cross-over point from 'Development' to 'Commercialisation'. Several of the offtake heat networks are advanced, in that they have already received GHNF support, and are in late-stage commercialisation. Some networks already have operating assets (supplemented with major growth plans). Whilst some networks are at an earlier stage of development, this is in the context of strongly supportive national, regional and local policy. The Applicant rejects the implication that the offtakes are speculative, or that there is not a strong expectation that they will be funded and consented within the lifetime of the DCO. The **Heat Note (Appendix H (REP4-034))** presents an accurate overview of these heat demands. In terms of complexity, this is acknowledged but should not be overstated. It is also helpful in this context that there is strong support from local government, for instance as demonstrated by the GLA's recent (December 2024) publication of its report 'London Energy Accelerator. Waste Heat Strategic Areas Summary' (submitted under Annex B to the Heat Note). Under regulations anticipated under the Energy Act 2023 before the end of 2025, planning permission will not be required for heat transmission pipework laid in the highway, and it is not required for heat to be transported by barge to existing jetties (as has been confirmed (in the **Heat Note**) to be technically and commercially viable).

Table ref	Summary of Issue Raised	Applicant's Response
		The Applicant reaffirms that it is 'eminently feasible' for it to supply all of the heat demand opportunities identified in the **Heat Note (Appendix H (REP4-034))**.
2.2.7	17. The short point is that the Applicant has not secured or promoted a comprehensive CHP scheme from the Riverside Campus despite existing planning obligations. Further heat export, at the scale suggested, is not funded or consented.	Munster Joinery/Landsul here fail to address any of the current situation: the very real, extensive, demand that is evident across London; that Cory has a dedicated MD for Heat, now supported by a discrete team, to deliver to this demand; that Cory has demonstrated that Mobile Heat is technically and commercially viable; that recent publication by the GLA identifies the Riverside Campus as an important, strategy heat source; and that applications have been submitted to Green Heat Network Fund.
2.2.8	18. It follows that, contrary to part 4 of the Heat Note, even if there was a case for consenting the HTS, there is not a case for authorising compulsory acquisition for that purpose as the need for a HTS is uncertain, unfunded, and potentially undeliverable.	The need for a HTS is driven by national and local policy (as set out at section 2.1 of the **Heat Note**); not least as established at NPS EN-1 paragraph 3.4.27: *'Heat networks are a crucial technology for decarbonising the UK's heating, particularly in dense urban areas. They are uniquely able to unlock otherwise inaccessible sources of larger scale renewable and recovered heat such as waste heat and heat from waterways and mines. By using recovered heat from industry, geothermal energy and power generation, and accessing sources of ambient heat, heat networks can reduce overall production requirements for gas, as well as offering a way of storing and balancing energy needs overall. In parts of the UK, heat networks will represent a lower cost route to decarbonisation than alternatives such as repurposing the gas network for low carbon hydrogen.*' Demonstrated, extensive demand that is eminently deliverable is set out at sections 3 and 4 of the **Heat Note (Appendix H (REP4-034))** as is the ability, and appropriateness, for the Riverside Campus, including the Carbon Capture Facility to deliver to that demand. Not least this is recognised by the Secretary of State in the s.35 Direction Letter (12 December 2023). One of the reasons given by the Secretary of State for making this Direction is that: '*The carbon capture element of the Proposed Project would provide and support the decarbonisation of energy from waste derived CO2 emissions in the UK, delivering over a million tonnes of CO2 savings per annum, and supporting the achievement of a fully decarbonised district heating network that crosses local authority areas. …*' The need for a HTS is far from being uncertain, has clear route to funding and is demonstrably deliverable.
2.2.9	19. Finally, contrary to section 4.4 of the Heat Note, there is no reason why any future heat transfer station could not be located to the south of the Landsul/Munster Joinery land. The Applicant wishes to make provision for the transfer station to be operated independently from the CCF and from Riverside 1 and Riverside 2. There is no practical impediment to providing connections to the heat transfer station along Norman Road, and thus providing connections both landward and towards the river. The Applicant's desire for "flexibility in the Company's commercial design" does not amount to a reason to authorise compulsory acquisition, and the reliance on this argument suggests that there is no actual impediment to locating any HTS to the south of the Landsul/Munster Joinery site. There is no clear technical reason as to why connections could not be provided. If further space was required, it could be achieved by using land immediately to the west of the Landsul/Munster Joinery site, thus avoiding any constraints on Norman Road. The Heat Note fails to engage with this possibility at all.	**The Heat Note (Appendix H (REP4-034))** is not drafted to address the locational requirements of the HTS; that is addressed, appropriately, in the Applicant's responses to the Munster Joinery/Landsul submissions including their Alternative Site Layout proposals. In short, the Applicant is, deliberately, not definitive on whether the HTS will be operated by another entity or by a company within the Cory Group. In any event, as heat capture is a key part of the overall process for the Proposed Scheme and its benefits, the Applicant considers it is important for reasons of operational efficiency to manage and maintain them together in one site. The Applicant also reaffirms the practical difficulties of having a non-contiguous site: • the need to pass and re-pass multiple security gates and traverse Norman Road (noting the footway is on the other side of the road to the Carbon Capture Facility land) in times of equipment failure or security failure where time is of the essence;

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		• the need for pipework between both parts of the plant, including hot water supply and return pipework and make up water supply where: ○ given the constraints of the ditch and Norman Road Field (as MOL and SINC land), there would be appear to be insufficient space to direct all such pipework behind the Munster building, or maintenance to it, and/or as an access route between two parts of a split site; and ○ in front of the Munster building, this would require pipework to be built within Munster's cark park and external hand standing areas (assuming that they would not the impact of above ground pipes). This would cause disruption to Munster both in construction and at maintenance stages; and would be a particular concern for the water pipes, where speed of access to damaged pipes will be vital to minimise knock on impacts to the Carbon Capture Facility, which would not be possible if buried in a third party's car park. Finally, the Applicant confirms its fundamental position: that even if a non-contiguous site was accepted, Landsul/Munster Joinery land cannot be avoided; the balance of plant could not fit to the north of their plot due to: • the size of the remaining infrastructure and the access/pipework requirements associated with it; • the need for electrical infrastructure; and • the need for sufficient space for carbon storage.
		Applicant's Conclusion on Heat On the basis of the above and its previous Examination submissions, the Applicant considers that it is clear that the heat transfer station will be brought forward as part of the Proposed Scheme. Taking the three key summary points from Landsul/Munster Joinery's commentary in turn: • it is certain – not least as demonstrated by the numerous Government, policy and stakeholder commitments and ambitions for heat delivery in London and the UK; • it is fundable – the land costs are able to be met by Cory's reserves, and the project cost of the HTS is within the overall budget set out in the Funding Statement. That statement (and the Applicant's Examination submissions) demonstrate that it is likely that the funding will be in place to deliver the HTS. The Applicant notes in particular that the relevant Guidance is not the CPO Guidance quoted by LMJ, but instead is the MHCLG Guidance on Compulsory Acquisition under the Planning Act 2008. As per paragraph 17 and 18 of that MHCLG Guidance, the Applicant has demonstrated how the cost of the HTS will be able to be underwritten within the time period that the Applicant's land powers can be used; and • it is deliverable – there is no impediments to the ability of the Applicant to deliver the HTS itself. The wider heat networks are deliverable in the context of the political will and economic support for decarbonised heat evidenced in the Applicant's submissions.

Table ref	Summary of Issue Raised	Applicant's Response
		In this context and having shown in its Examination submission that the HTS is required for the Proposed Scheme, separate from heat capture requirements of Riverside 1 and Riverside 2, the Applicant considers it has demonstrated that compulsory acquisition powers for the HTS are based on its land requirements being required. The Applicant stands by these submissions, however, it also recognises that the Secretary of State may in any event consider that it, and Landsul/Munster Joinery's, need even further certainty that the HTS will be delivered and therefore that land for it is 'required'. As such, whilst it considers it is not necessary for this to be imposed, the Applicant can confirm that, given its commitment to delivery of heat infrastructure, it would be willing to accept DCO drafting which requires the Applicant to deliver the HTS and for this to be linked to the use of the relevant land powers. With such drafting in place, there can be no doubt at all that it will be delivered, as to not do so would be a breach of the DCO. If the Secretary of State considers that this is necessary, the Applicant considers that this could be achieved by the following amends to the DCO: **Requirement 25** The Applicant proposes that in the aforementioned scenario, Requirement 25 could be amended as follows: **Heat Strategy** **25.**—(2) No part of the authorised development may be commenced until the undertaker has submitted a heat strategy to the relevant planning authority for its written approval. (3) The heat strategy submitted under sub-paragraph (2) must— (a) provide an explanation of how the heat to be produced as a result of the authorised development, Riverside 1 and Riverside 2 could be captured and exported off-site; (b) provide details (including the programme) of, demonstrate the ability to, and commit to the delivery of, a 4,000m^2 heat transfer station and associated heat infrastructure within the limits of deviation for Work No. 1E by a date no later than five years from the date of commencement of Work No.1~~set out the appropriate infrastructure that could be brought forward within the Order limits to enable the capture and export of heat from the site;~~ (c) identify potential connection points for export of heat produced as a result of the authorised development, Riverside 1 and Riverside 2; and (d) provide an update on discussions with potential heat network providers. (4) The heat strategy submitted, and the relevant planning authority approval under sub-paragraph (2) must not require the undertaker to repeat actions already undertaken pursuant to— (a) requirement 24 (combined heat and power) of the REP Order; (b) any document produced pursuant to requirement 24 of the REP Order; (c) condition 31 of planning permission 16/02167/FUL relating to Riverside 1 issued by the London Borough of Bexley; (d) condition 31 of the consent issued under section 36C of the Electricity Act 1989 in respect of Riverside 1 dated 17 December 2021; (e) any condition of planning permission 22/00728/FUL issued by the London Borough of Bexley; and

Table ref	Summary of Issue Raised	Applicant's Response
		(f) any document produced pursuant to the requirements and conditions referred to in sub-paragraphs (a) to (e). (5) The heat strategy must be implemented as approved (including constructing the 4,000m^2 heat transfer station and associated heat infrastructure within the limits of deviation for Work No. 1E in accordance with that strategy) and such implementation does not constitute a breach of the documents, conditions and requirements referred to in sub-paragraphs (4)(a) to (4)(f). This approach ensures that the heat transfer station is delivered, but also that its delivery is not seen in isolation by LBB. **DCO Land Powers** The Applicant also considers that the following wording could be included in the DCO. This will ensure that the powers cannot be used absent LBB being satisfied that a HTS will ultimately be delivered, whilst still ensuring that progress with the authorised development can continue whilst that approval is waited (e.g. through building out construction compounds). "*The powers in article (1) may not be utilised in respect of any land within the limits of deviation for Work No. 1 until a heat strategy has been approved by the relevant planning authority under Requirement 25*". This wording could be added as a new: • article 28(4) (compulsory acquisition of land); • article 30(9) (compulsory acquisition of rights); • article 31(5) (acquisition of subsoil or airspace only); and • article 37(13) (temporary use of land for carrying out the authorised development). As noted, the Applicant considers that such drafting is not necessary in light of the imperatives the Applicant faces, and the commitment the Applicant already has, to enabling the use of heat from the Riverside Campus such that it is clear that the heat transfer location, and its land requirements, will be required for the Proposed Scheme. This suggested potential drafting simply puts a statutory impetus to those imperatives and commitments but will enable the Secretary of State to have absolute certainty on this point, if he considers this is necessary.

2.3. ALTERNATIVE SITE LAYOUT

Table 2-3 Applicant's Response to Alternative Site Layout matters Deadline 5 Submission

Table ref	Summary of Issue Raised	Applicant's Response
2.3.1	20. Dr Edgar has produced a Technical Note together with an updated Alternative Layout to address the Applicant's concerns with the Alternative Layout as raised at CAH2. These are annexed hereto as Annex B. Specifically, the Alternative Layout has been updated to: a. Take account of the Applicant's Design Code including providing for watercourse buffers to meet the concerns in REP4-048, p 17-8 and REP4-034 Appendix G; b. Maintain the Thames Water Access Road on its existing alignment, addressing the concerns about vehicle tracking (REP4-048, p 17 and REP4-034 Appendix F) and Thames Water's objection to compulsory acquisition of their access road; c. Avoid the use of land above the underground water tank, to address the matters set out in REP4-048, p 15; and d. Relocate certain equipment to accommodate the buffer/working zones shown on the Applicant's layout around watercourses (again addressing REP4-048, p 17-8 and REP4-034 Appendix G).	The Applicant notes the changes made to the Alternative Site Layout, which address several of the issues raised by the Applicant at CAH2, as noted in points a to d by Landsul/Munster Joinery. However, the Applicant notes that the plot areas of individual equipment items and packages are unchanged from the previous version of the Alternative Layout. As previously stated, the Applicant has analysed the plot areas of individual process areas in Landsul/Munster Joinery's Alternative Site Layout and compared them against the equivalent plot areas in the Applicant's Indicative Equipment Layout. From this analysis, it is clear that for a number of the plant areas where Landsul/Munster Joinery have stated that they agree with the footprint area included in the Applicant's Indicative Equipment Layout, the Alternative Site Layout includes a reduced footprint area. The Applicant also considers that the Alternative Site Layout does not take full account of all space requirements that are necessary for the proper operation of Carbon Capture Plant, such as access for maintenance, or auxiliary equipment. The Applicant further advises that the development of the footprint requirements shown on the Indicative Equipment Layout (and which has ultimately led to the development zoning provided for in the Works Plans for which consent is sought) has been informed by requirements specified by world-leading carbon capture technology providers such as Shell and MHI, equipment suppliers and the Applicant's technical advisors. The equipment and package footprints included in the Indicative Equipment Layout are therefore robust, having been developed specifically for the Applicant's Carbon Capture Facility by organisations and professionals with expertise in their fields. In contrast, the Alternative Site Layout has been developed by extrapolation of plot areas from an unspecified project of a different capacity, and rules of thumb. Therefore, the Applicant remains of the opinion that Landsul/Munster Joinery's Alternative Site Layout does not represent a valid, like-for-like alternative arrangement of the necessary equipment items, buildings and supporting infrastructure necessary for the safe and efficient operation of the Carbon Capture Facility. The Alternative Site Layout therefore does not demonstrate that the overall land requirement in the Indicative Equipment Layout is excessive. Consequently, the Alternative Site Layout is not a reasonable alternative to the Proposed Scheme as it is not physically suitable for its land requirements. It is therefore not a reasonable alternative in the context of paragraph 4.3.27 of NPS EN-1 or a reasonable alternative in compulsory acquisition terms. In the context of NPS EN-1 paragraph 4.3.29, the Applicant recognises that the onus is on it to demonstrate that there are no reasonable alternatives to the compulsory acquisition of the Landsul/Munster Joinery land, and considers that through the basis of its Proposed Scheme, and its Examination submissions, it has demonstrated this to be the case.
2.3.2	21. The Alternative Layout has been the subject of expert review by Fabrik to consider whether the Design Code's objectives could be realised through the Alternative Layout. Fabrik have prepared a landscape strategy for the Alternative Layout using the same design principles and objectives, and conclude that a landscape setting with the same	That Fabrik consider the Alternative Site Layout satisfies the Design Principles and Design Code is not relevant as, for the reasons outlined above, the Alternative Site Layout does not represent a valid, like-for-like alternative arrangement of the necessary equipment items,

Table ref	Summary of Issue Raised	Applicant's Response
	functionality can be achieved, respecting the principles and objectives which the Applicant proposes to secure through the LaBARDS. A copy of Fabrik's report and Landscape Strategy is annexed hereto as Annex C.	buildings and supporting infrastructure necessary for the safe and efficient operation of the Carbon Capture Facility. In any event, the Applicant has reviewed the Fabrik design against the **Design Principles and Design Code** and notes that: • There has been no allowance made for provisions towards fulfilling **DP_PE 1.6** Create a new campus workplace and an enhanced visitor experience that is fully inclusive and accessible to the community or **DP_VA 1.4** Support the delivery of a more attractive and useable CLNR through any alteration of area or configuration, support to improved management and provision of improved access, interpretation, and activation recognising the sensitivity of existing habitats, or **DC_LNR 1.15** Parking and improved access through the MOL/enhanced grazing marsh areas should be provided where practicable. This should create new links to nearby footpath network and all-weather routes including causeways, bridges, and boardwalks. • There is no defined location for back-up generators shown, therefore it is not possible to assess whether the following **DC_CCF 1.9** Allow for a minimum 25m offset between back-up generators and the Crossness Local Nature Reserve boundary where practicable, to minimise the impact of noise and emission has been applied.
2.3.3	22. Dr Edgar notes that the Alternative Layout would still allow substantial space for growth: a. There is space to the west of the laydown area / liquid CO2 storage vessels that could be used to accommodate additional storage vessels should it be determined during detail design that 6 smaller vessels are preferred to the 3 larger vessels shown in the current layout. Accordingly, the Applicant's preference for 6 smaller vessels could be accommodated in the Alternative Layout; b. There is space to the south of the dehydration / liquefaction equipment should there be additional equipment identified / growth in equipment sizing; c. There is space above the Underground Water Tank, the use of which still remains feasible; d. The single storey buildings could be designed as two storey buildings freeing up additional space for facilities and/or equipment.	Taking each of these points in turn: a. The Applicant agrees that 6 smaller liquid CO2 storage vessels could be accommodated in the area allocated to liquid CO2 storage in the alternative layout, noting the constraint in this part of the site to maintain a buffer to the Public Right of Way to the west of the storage vessels. However, since the Alternative Site Layout does not represent a valid, like-for-like alternative arrangement of the necessary equipment items, buildings and supporting infrastructure necessary for the safe and efficient operation of the Carbon Capture Facility, then this point is not material. Furthermore, as discussed in the Applicant's previous submissions, the question of the number, size and layout of the storage vessels is a matter that is not able to be finalised until detailed design. • The footprints of the dehydration/liquefaction equipment (and the refrigeration package associated with liquefaction) in the Alternative Site Layout are less than the footprints required for these items, as shown in the Applicant's Indicative Equipment Layout. This is despite Dr Edgar having previously agreed that the footprints of these elements are appropriate. Therefore, the space referred to the south of these items is not available, since it would be utilised if the dehydration, liquefaction and refrigeration equipment had been correctly sized on the Alternative Layout. • The Applicant reiterates that locating other equipment in the Water Management Area is impractical, for the reasons previously outlined. Even if it were possible to locate other equipment in the Water Management Area, this would not reduce the overall plot requirement of the Carbon Capture Facility to such an extent that it would avoid the need to acquire the Landsul/Munster Joinery land. • The Applicant advises that two storey buildings are already included in the Indicative Equipment Layout: the control room, office and welfare facilities are located on the first floor, with stores and workshops on the ground floor.

Table ref	Summary of Issue Raised	Applicant's Response
		Notwithstanding the above specific points, the Applicant reiterates that Landsul/Munster Joinery's Alternative Site Layout does not represent a valid, like-for-like alternative arrangement of the necessary equipment items, buildings and supporting infrastructure necessary for the safe and efficient operation of the Carbon Capture Facility and underestimates the overall plot requirements.
2.3.4	23. Further, as previously explained, it is not considered that there is any technical or practical impediment to locating certain plant and equipment (such as the heat transfer station) to the south of the Landsul/Munster Joinery land should that be necessary. However, the Alternative Layout does not require the use of that land.	The Applicant agrees that certain plant and equipment can be located to the south of the Landsul/Munster Joinery land, but only as part of a contiguous site, including the Landsul/Munster Joinery land, as illustrated in the Applicant's Indicative Equipment Layout. The Applicant reiterates that the Indicative Equipment Layout developed and presented by the Applicant represents the minimum overall development footprint required for the Carbon Capture Facility, and that acquisition of the Landsul/Munster Joinery land is necessary for the development of the facility.

2.4. BENCHMARKING EXERCISE

Table 2-4 Applicant's Response to Benchmarking Exercise matters at Deadline 5 Submission

<table>
<tr><th>Table ref</th><th>Summary of Issue Raised</th><th>Applicant's response</th></tr>
<tr><td>2.4.1</td><td>25. Dr Edgar's further technical note (annexed as Annex D) seeks to compare the land required for the Applicant's design and for the Alternative Layout against benchmark information on the required footprint for a carbon capture facility.</td><td rowspan="2">The Applicant is grateful to Landsul/Munster Joinery for sharing the AECOM benchmarking report, and for the comparison of the Indicative Equipment Layout and Alternative Site Layout against the benchmark indicative footprint requirements.</td></tr>
<tr><td>2.4.2</td><td>26. In 2022, AECOM prepared a report for the predecessor to the Department for Energy Security and Net Zero which was intended to assist in updating and expanding the guidance on demonstrating carbon capture readiness. A copy of this report is annexed hereto as Annex E.</td></tr>
<tr><td>2.4.3</td><td>27. One of the relevant assessments for carbon capture readiness is "that sufficient space is available on or near the site to accommodate carbon capture equipment in the future" (see p 8 of the report). One of the objectives of this report was to "update the land footprint estimates for addition of a carbon capture site to a power station". As part of this exercise, data was presented showing the footprints for various carbon capture facilities.</td><td rowspan="2">Benchmarks provide a very useful tool in determining indicative overall footprints in the very early stages of a project development, and indeed the Applicant utilised such benchmarks during initial feasibility assessment of the Carbon Capture Facility. However, benchmarks can only be considered to be indicative and are no match for plant layouts and footprint requirements developed on a project specific basis, taking full account of the requirements and unique features of the project and site under consideration. Indeed, Landsul/Munster Joinery's technical advisor Dr Edgar identifies and lists several site-specific factors that would result in a larger overall footprint for the Cory Carbon Capture Facility, when compared against the AECOM benchmark. Other factors not identified by Dr Edgar include the higher electrical power consumption and cooling duty resulting from the inclusion of CO_2 liquefaction, storage and export, which have consequent impacts on the size and footprint of electrical infrastructure and cooling towers, respectively, when compared against a typical benchmark.

The Applicant reiterates that the development of the Indicative Equipment Layout has been informed by footprint requirements specified by world-leading carbon capture technology providers such as Shell and MHI, whose experience in carbon capture is summarised in the tables below, equipment suppliers and the Applicant's technical advisors. The equipment and package footprints included in the Indicative Equipment Layout are therefore robust, having been developed specifically for the Applicant's Carbon Capture Facility by organisations and professionals with expertise in their fields.

MHI – Operational Carbon Capture Projects
<table><tr><th>Date</th><th>Project</th><th>Capacity (tpd CO_2)</th></tr><tr><td>1999</td><td>Petronas Fertilizer, Malaysia</td><td>210</td></tr><tr><td>2005</td><td>'A' chemical company, Japan</td><td>330</td></tr><tr><td>2006</td><td>Indian Farmers Fertiliser Co-Operative, India</td><td>450</td></tr><tr><td>2006</td><td>Indian Farmers Fertiliser Co-Operative, India</td><td>450</td></tr><tr><td>2009</td><td>Nagarjuna Fertilizers and Chemicals, India</td><td>450</td></tr><tr><td>2009</td><td>Gulf Petrochemicals Industries, Bahrain</td><td>450</td></tr><tr><td>2010</td><td>Ruwais Fertilizer Industries, UAE</td><td>400</td></tr><tr><td>2010</td><td>Petrovietnam Fertilizer and Chemicals, Vietnam</td><td>240</td></tr><tr><td>2011</td><td>Engro Fertilizers, Pakistan</td><td>340</td></tr><tr><td>2012</td><td>National Fertilizers Limited, India</td><td>450</td></tr><tr><td>2014</td><td>Qatar Fuel Additives Company, Qatar</td><td>500</td></tr><tr><td>2016</td><td>Petra Nova Parish Holdings, USA</td><td>4,776</td></tr></table></td></tr>
<tr><td>2.4.4</td><td>28. Comparison with the relevant data shows that both the Alternative Layout and the Applicant's Layout have a greater land footprint estimate than the suggested benchmark determined from the AECOM report. Even allowing for the assumptions that are likely to lead to an increase in required footprint, the Applicant's suggested footprint is very much out of line with suggested benchmark from the AECOM study and other projects. The Alternative Layout is closer to the benchmark but still higher, likely due to some of the conservative assumptions that have been used.</td></tr>
</table>

Table ref	Summary of Issue Raised	Applicant's response

2017	Nippon Ekitan Corporation, Japan	283
2023	Bangladesh Chemical Industries, Bangladesh	240
2024	Eni, Italy	89

MHI – Active Carbon Capture Projects in the UK

Project	Capacity (tpd CO_2)	Status
Heidelberg Materials, Padeswood Cement (a project which recently received DNS consent from the Welsh Government)	2,400	FEED
SSE/Equinor, Peterhead Power Station	4,500	FEED
Drax BECCS	24,300	FEED
Evero, InBECCS	760	Pre-FEED

Shell Cansolv – Operational Carbon Capture Projects

Date	Project	Capacity (tpd CO_2)
2013	Lanxess, South Africa	190
2014	SaskPower, Boundary Dam, Canada	3,000

Shell Cansolv – Active Carbon Capture Projects in the UK

Project	Capacity (tpd CO_2)	Status
BP/Equinor, Net Zero Teesside Power	6,500	EPC
VPI, Immingham	10,000	FEED
Phillips 66, Immingham	1,800	FEED
Viridor, Runcorn EfW	2,700	FEED

The Applicant therefore considers that the AECOM benchmarking study is not appropriate to evidence that the overall land requirement in the Indicative Equipment Layout is excessive, and confirms that the Indicative Equipment Layout represents the minimum overall development footprint required for the Carbon Capture Facility.

2.4.5	29. The AECOM report provides objective corroboration that the scheme could be delivered within the footprint identified through the Alternative Layout, and therefore without the acquisition of the Landsul/Munster Joinery land. It is surprising that the Applicant has not put the AECOM report before the Examination, particularly as the document was approved by one of its own witnesses at CAH2 (Andy Cross).	As stated above, the Applicant considers that the AECOM benchmarking study cannot be used to evidence that the overall land requirement in the Indicative Equipment Layout is excessive. A benchmarking exercise cannot be used to 'objectively corroborate' the design of a scheme that is subject to its own unique constraints. Given the Applicant's familiarity with the limitations of the AECOM report, through Mr Cross' involvement in the production of this report, the Applicant considered that there would be no value in submitting the AECOM report, when more detailed, project-specific data is available.

2.5. SOCIO-ECONOMIC IMPACTS

Table 2-5 Applicant's Response to Socio-economic matters at Deadline 5 Submissions

Table ref	Summary of issue raised	Applicant's response
2.5.1	30. A further response has been prepared by Lichfields, which is annexed here to as Annex F. In answer to ExQ2, the response confirms that Munster Joinery (U.K.) Limited employ 823 people in the UK, of which 67 are based at Norman Road, representing 8% of the organisation's workforce. All employees based at the Norman Road site are permanent Full Time Equivalents. Lichfields also emphasises that the site functions not only as a warehouse but also as a regional hub for the operations of Munster Joinery. Consequently, the roles supported by the site extend beyond warehouse and delivery operatives, encompassing highly skilled fitting crews responsible for installing Munster Joinery's products across London and the South East as well as aftercare service technicians providing post-installation services.	The Applicant notes that the **Munster Joinery (U.K.) Limited Deadline 5 Submission (REP5-051)** details that 67 permanent full-time equivalent employees are based at the Norman Road site undertaking a variety of roles. However, Munster Joinery/Landsul do not explain, how the roles listed can be considered to be location dependent. The Applicant considers that a similar alternative premise within the London Borough of Bexley (or another outer London borough) could offer the same functionality as the Norman Road site, with no change in the ability of the aforementioned warehouse and delivery operatives, aftercare service technicians and fitting crews undertaking their roles. Being a regional hub, the premises at Norman Road is described by Munster Joinery/Landsul as being relevant to an extensive area across London and the South East of England – there is nothing to demonstrate that the premises can only function effectively at this location. Not least, the fitting and maintenance crews responsible for installing and repairing Munster Joinery's products across London and the South East will, in their very nature, be going out to jobs across the region and do not rely on being at the Norman Road site, specifically (as opposed to any other relocation site), in order to be able to perform their role. The Applicant reaffirms that the roles listed as based at the Norman Road premises are all capable of being accommodated at an alternative similar site.
2.5.2	31. Furthermore, the site serves a broader purpose, housing a showroom utilised by sales coordinators throughout the region as a central base for engaging with their customers. As part of Munster Joinery's wider expansion plans, including the completion of the development of the site, the site will employ over 120 people by the end of 2025.	The **Munster Joinery (U.K.) Limited Deadline 5 Submission (REP5-051)** outlines that the Norman Road premises' 'broader purpose' is to house a showroom utilised by sales coordinators for engaging with their customers in London and the South East. The Applicant points out that this is not a public facing showroom, it does not serve passing trade, and that visits from customers are by appointment only. As such, this is not a location dependent function of the site, and a similar alternative premise within the London Borough of Bexley (or another outer London borough) could offer the same functionality as the Norman Road site. Sales coordinators could engage with customers and offer showroom appointments at an alternative location, with no change in their ability to fulfil their roles.
2.5.3	32. Lichfields go on to explain that the Applicant's response to Landsul and Munster Joinery's submission at Deadline 3 has failed to sufficiently address the issues raised relating to the significant adverse socio-economic effects resulting from the compulsory purchase of the site on Norman Road. The Applicant has not provided sufficient evidence or justification for their assessment approach, and significant inconsistencies exist between the assessment in Environmental Statement [APP-064] and other key documents, including the Scoping Report, the overarching methodology outlined in Chapter 4 [APP-064], and other assessments within the ES, particularly Chapter 14 [APP-063]. Accordingly, to reach a lawful conclusion on the likely significant effects of the proposed development the Applicant should be required to reassess the socio-economic effects to ensure a comprehensive range of impacts from the Proposed Scheme on Munster Joinery is thoroughly considered, and to provide a precise, wellsupported, and justifiable assessment. Consequently,	The Applicant does not agree that its response to Landsul and Munster Joinery's submission within the **Applicant's Response to Interested Parties' Deadline 3 Submissions (REP4-033)** has failed sufficiently to address the issues raised relating to the compulsory purchase of their site on Norman Road. The Applicant considered the loss of the Munster Joinery premises as a worst case scenario as part of the Environmental Statement as, at the time of writing (and reflecting the Applicant's on-going commitment to offering this), Landsul Limited and Munster Joinery were being approached regarding relocation assistance. This is the appropriate approach when undertaking environmental assessment, in order to ensure that the worst case scenario has been considered in assessment terms. **Chapter 15: Socio-economics of the Environmental Statement (Volume 1) (APP-064)** is based on professional judgement and is in accordance with best practice and industry standards, which finds that (assuming a worst case scenario) there would be a minor

Table ref	Summary of issue raised	Applicant's response
	appropriate mitigation measures for the significant adverse effects identified within the Lichfields Report should be considered. This includes the reconsideration of the design and footprint of the Proposed Scheme to avoid the compulsory purchase of the Munster Joinery site on Norman Road, and the resulting employment loss and disruption to wider Munster Joinery business operations.	beneficial effect in relation to the local study area and employment, however this would not be significant in socio-economic terms. As outlined previously, the Applicant emphasises that **Chapter 14: Population, Health and Land Use of the Environmental Statement (Volume 1) (APP-063)** concludes that there would be a significant adverse effect on Munster Joinery, if a relocation site is not agreed. As such, the Applicant emphasises that that these chapters present two different, separate topics which assess impacts in line with the agreed scope of the Environmental Statement separately; it is not correct to say that this is an inconsistency. The Applicant has always been willing to assist Landsul Limited and Munster Joinery in relocating, including within Belvedere, in order to avoid any loss of jobs; that offer has not been taken up to date. Given the impacts of the Proposed Scheme to Landsul and Munster Joinery's land, and the Applicant's position that the land cannot be avoided, relocation assistance is the only appropriate mitigation measure which could be offered.
2.5.5	34. Unless and until there is a proper comprehensive assessment of the impacts of the loss of the Munster Joinery business, it will not be possible to conclude that there is a compelling case in the public interest since the impacts on Munster Joinery will not be capable of being weighed against the claimed benefits of the proposal.	As set out in **Paragraph 3.1.2** of the **Applicant's Response to Landsul and Munster Joinery's Deadline 1 Submission (REP2-021)**, the Applicant's fundamental position is that pursuant to the **Statement of Reasons (APP-020)** and **Planning Statement (APP-040)**: • the compelling case in the public interest for the Proposed Scheme outweighs the worst case loss of Munster Joinery/Landsul's land and operations; and • that the benefits of the Proposed Scheme outweigh the socio-economic impacts of the loss of Munster Joinery's site, no matter how they are characterised.

Appendices

Appendix A – Riverside 1 Multi Utility Services Layout

IP RATED ELECTRICAL CABINET TO RELOCATE FEED PILLAR & GREEN HUT ON WEST OF NORMAN ROAD

NEW CHAMBER TO BE SUPPLIED & INSTALLED OPENREACH

CONNECTIONS POINT FOR TEMPORARY TELECOMS SUPPLY FOR HZI CONSTRUCTION VILLAGE

BONDING DUCT TO BE SPLIT TO FOLLOW BOTH THE ENTRY TO THE SUBSTATION & THE BYPASS ROUTE

SURFACE WATER DRAIN REROUTED TO REALIGNED DITCH

TEMPORARY DRAINAGE DURING RELOCATION

HIGHLIGHTED SERVICES TO BE REMOVED ONCE REDIVERTED

NEW TELECOMS DUCT TO BE RUN FROM EXISTING CHAMBER. CHAMBER TO BE SUPPLIED & INSTALLED BY OPENREACH TO HIGHWAY STANDARD

TEMPORARY EXCAVATION TO ENABLE JOINTING OF CABLES

CUTLINE

RRRF

REP

MAIN WATER VALVE CHAMBER

RRRF (EXISTING) REP (NEW)

600

LV DUCTING

BONDING DUCT

HV DUCTING

TYPICAL LV/HV DUCT ARRANGEMENT FROM SUBSTATION TOWARDS GREAT BREACH PUMPHOUSE

ALL INFORMATION ON THIS DRAWING IS INDICATIVE ONLY, AND MAY BE SUBJECT TO FURTHER DESIGN DEVELOPMENT.

DO NOT SCALE

NOTES:

BREHENY DRAWING - DWG No. JBC_4050_13_Rev C
DUCT LAYOUT 33kV-132kV. DATED 19-08-08.

HV and LV Electricity cable. For further information refer to drawing number JBC/4050/14

1 X 75mm Dia Bonding Cable Duct

6 X 160mm Dia EHV Cable Duct

90mm Dia BT Duct

Water Main

RIVERSIDE ENERGY FS 2 NORMAN ROAD CABLE ROUTE SURVEY
20-0517-FS-020 Rev 1 (Compass) dated 24/05/21

Existing 11kV/400V supply to Great Breach pumping station

COMBINED SERVICES AS BUILT WITHIN RRRL SITE
DWG REF B4.10 Chap.4.3 19CAB1 002

EXTERNAL DRAINAGE

- Penstock valve
- Surface water network pipe and manhole
- Slag water network pipe and manhole
- Slag water rising main
- Thames roof water network pipe and manhole
- Thames roof water rising main
- Wetland roof water network pipe and manhole
- Filter carrier drain and catchpit manhole
- Linear drainage
- Road gully
- Ramp gully
- Foul sewer network pipe and manhole
- Foul pumped main

INTERNAL DRAINAGE

- Foul above ground network and riser
- Surface Water Drainage & Manhole
- Pipework cast into concrete foundation
- Internal Gully
- Pipe Upstand

FIREMAIN & POTABLE WATER

- Firemain
- Valve
- Hydrant
- Electro-fusion Joint
- Potable Water

CABLEWAYS AND DRAWPITS

- Drawpit (DP) and cable ducts
- Drawpit and 11kV cable ducts
- BT cable ducts
- EDF cable ducts
- 11kv Drawpit and cable ducts
- 50 - 100mm dia small power cable ducts
- Earthing tape
- Earthing Rod Location
- LC Lighting Column
- CCTV CCTV Column

JBC 4050 15 DRAINAGE LAYOUT

MB - MINI BEANY
SURFACE WATER DRAINAGE
ROAD GULLIES

UKPN 'IDLE' CABLES

HV
LV

REV.	DETAILS OF REVISION	DRAWN	CHKD	APR	DATE
R9.0	MANHOLE S45 ADDED TO DWG, BONDING CABLE NOTE ADDED & SECTION D-D ADDED	DTW	AO1	SP1	01.03.22

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CONSULTING ENGINEERS LIMITED

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Website: www.fichtner.co.uk

CLIENT: CORY RIVERSIDE ENERGY

SITE: CORY RIVERSIDE, LONDON

PROJECT: RIVERSIDE ENERGY PARK

TITLE: MULTI UTILITY SERVICES AND DITCH 9 TENDER DRAWING

DRAWING STATUS:	PRELIMINARY	
DRAWN BY:	DTW	DATE: 22.11.21
CHECKED BY:	AO1	DATE: 22.11.21
APPROVED BY:	SP1	DATE: 22.11.21
FILENAME:	S3259-8310-0029DW MULTI UTILITY ALL SERVICES AND DITCH 9 TENDER DRAWING R9.0	
OFFICE OF ISSUE:	STOCKPORT	
SHEET SIZE:	A1	SCALE: 1:1250

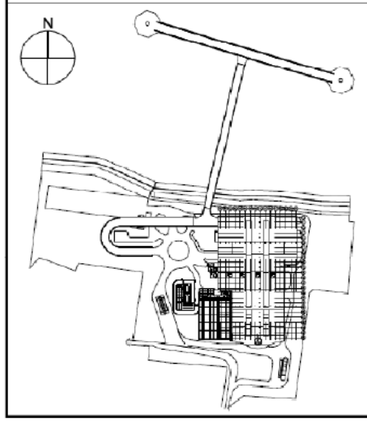
DRAWING No.: 3259-8310-0029 sheet 1 of 6

REVISION: R9.0

Appendix B – Riverside 1 - Generator Circuit Breaker - General Arrangement

KUNDE	:	
CUSTOMER	:	*Riverside Rescource Recovery Facility (RRRL*
CLIENT	:	
CLIENTE	:	
BESTELLUNG	:	
ORDER	:	*504394*
COMMANDE	:	
PEDIDO	:	
ANLAGE	:	
PLANT	:	*ENERGY FROM WASTE FACILITY IN BELVEDERE, LONDON: THE RIVERSIDE PROJECT*
INSTALLATION	:	
INSTALACION	:	
ANLAGETEIL	:	
EQUIPMENT	:	*GENERATOR CIRCUIT BREAKER*
EQUIPEMENT	:	
EQUIPO	:	
TITEL	:	
TITLE	:	*DIMENTIONAL DRAWINGS*
TITRE	:	
TITULO	:	

Riverside Resource Recovery Facility (RRRL)



ENERGY FROM WASTE FACILITY IN BELVEDERE, LONDON:

THE RIVERSIDE PROJECT

Construction / Ausführung :
vonRoll INOVA
Von Roll Enviromental Technology Ltd.
Hardturmstrasse 127, 8037 Zurich, Switzerland

GENERATOR CIRCUIT BREAKER
GENERAL ARRANGEMENTS
Riverside Rescource Recovery Facility

SCALE n.a.

CUSTOMER DRAWING NUMBER: 17BAC1-G-1KHK011618-01-AB

REV: 01

Modification:							
AA	2009-01-23	GRIMM	Prepared:	2009-09-10	SOLLBERGER		
AB	2011-07-26	GRIMM	Checked:	2009-09-10	PENEDER		
			Approved	2009-09-10	PENEDER		

ABB Switzerland Ltd

Depart. resp.: PSSE

Title: **GENERATOR CIRCUIT BREAKER**
GENERAL ARRANGEMENT
Riverside Rescource Recovery Facility

n.a

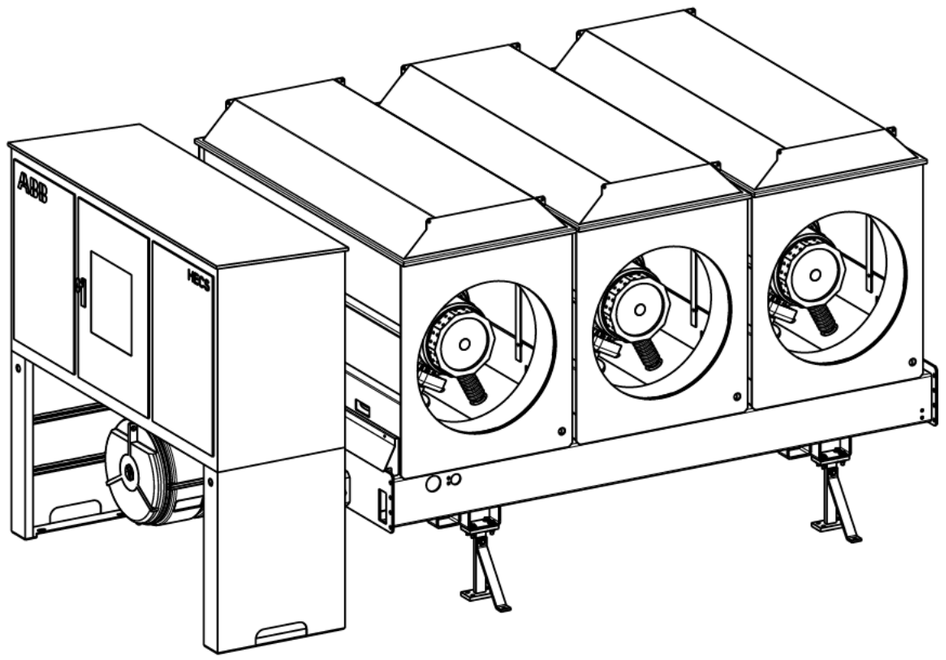
= -.- COVRE SHEET
\+ ELECTRICAL

Document number: 1KHK011618

Sheet no.: 1

No. sheets: 17

GENERATOR CIRCUIT-BREAKER HECS-80S



AS BUILT

RIVERSIDE

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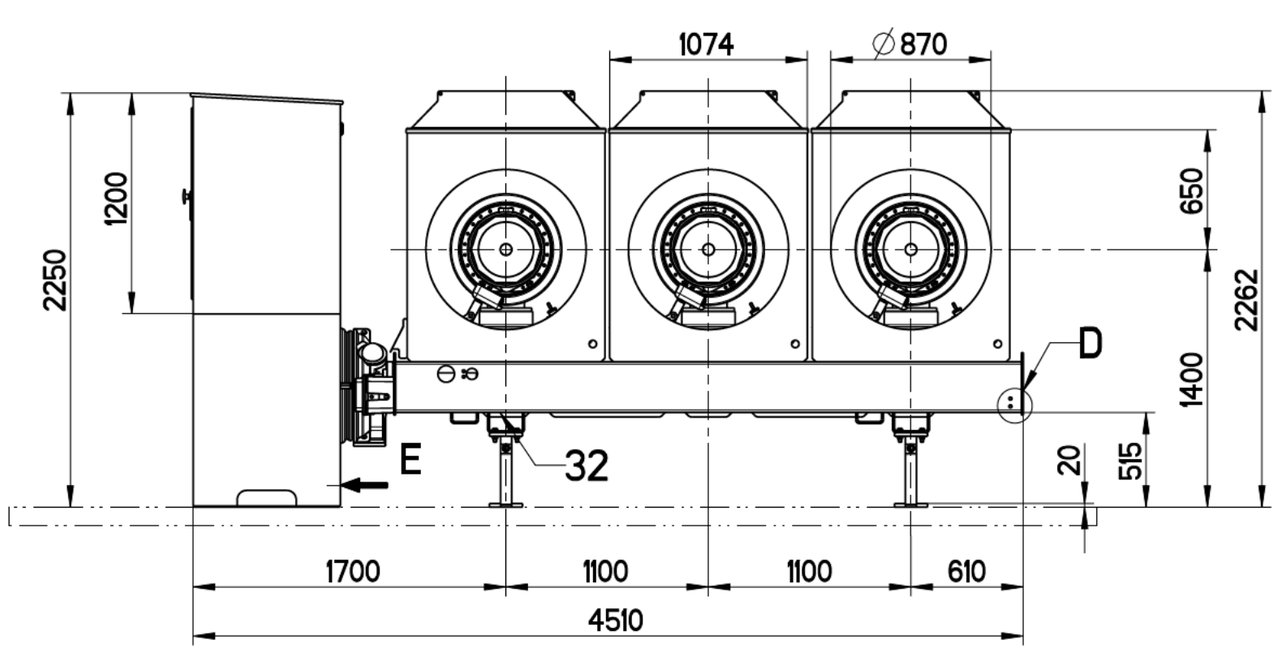
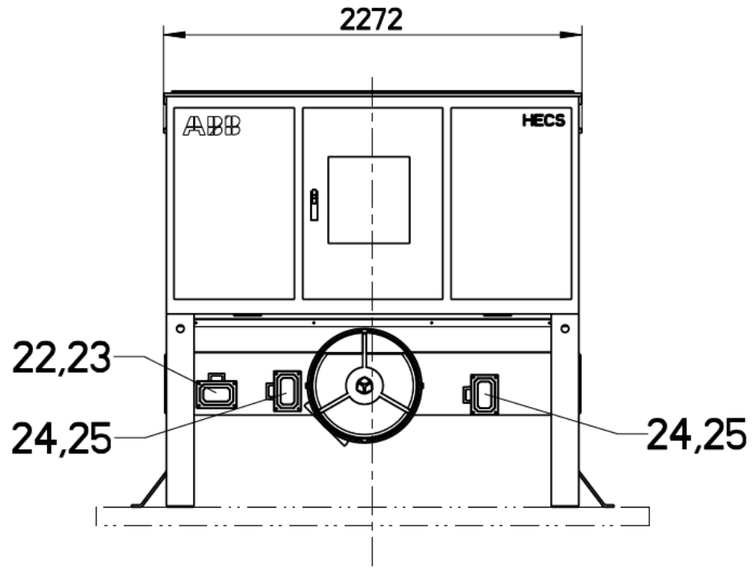
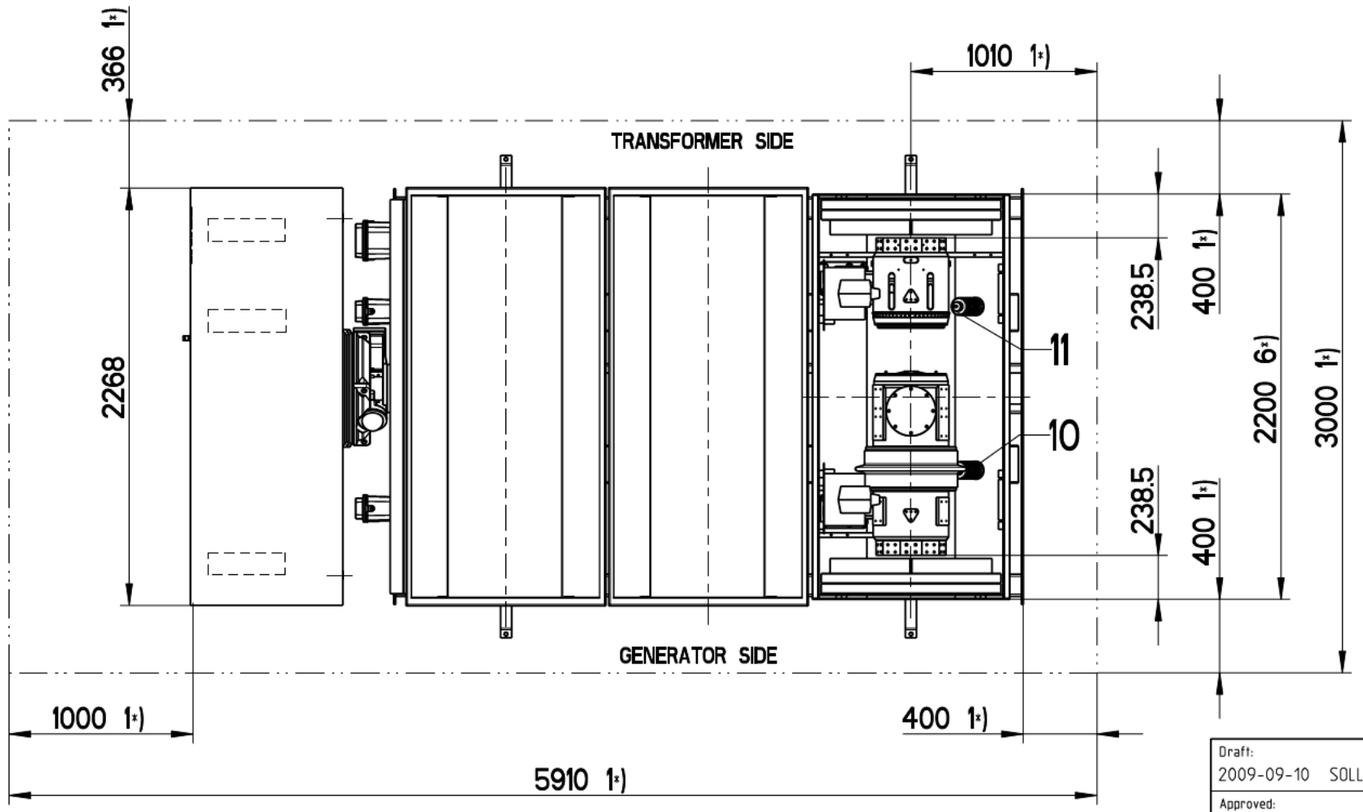
Approved: 2009-09-10 PENEDER	Replaces:	GENERATOR CIRCUIT-BREAKER OUTLINE DRAWING			Language: EN
Released: 2009-09-10 SOLLBERGER	Responsible department: PTHG-P2				No. Sheets: 8
Order number: 10787	Revision: AB	TYPE HECS-80S			Sheet. no.: 1
ABB Switzerland Ltd		Document number: 1HC0066546			







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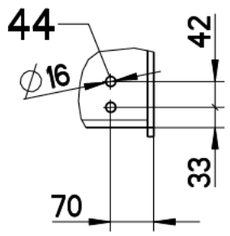

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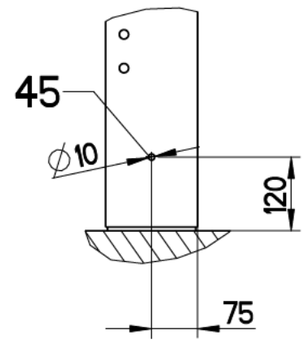

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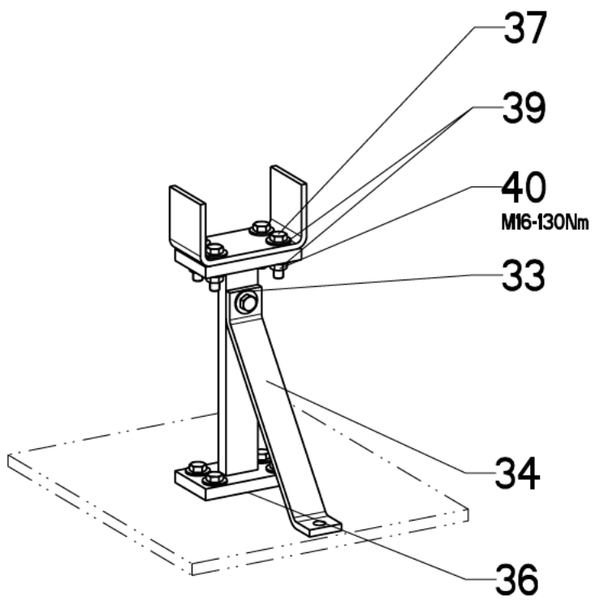
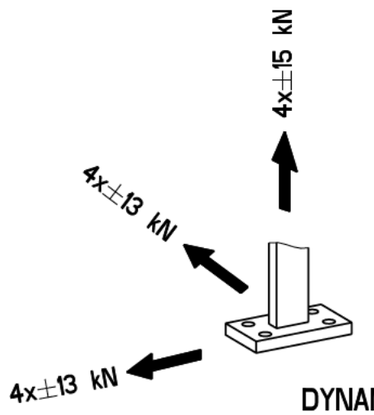
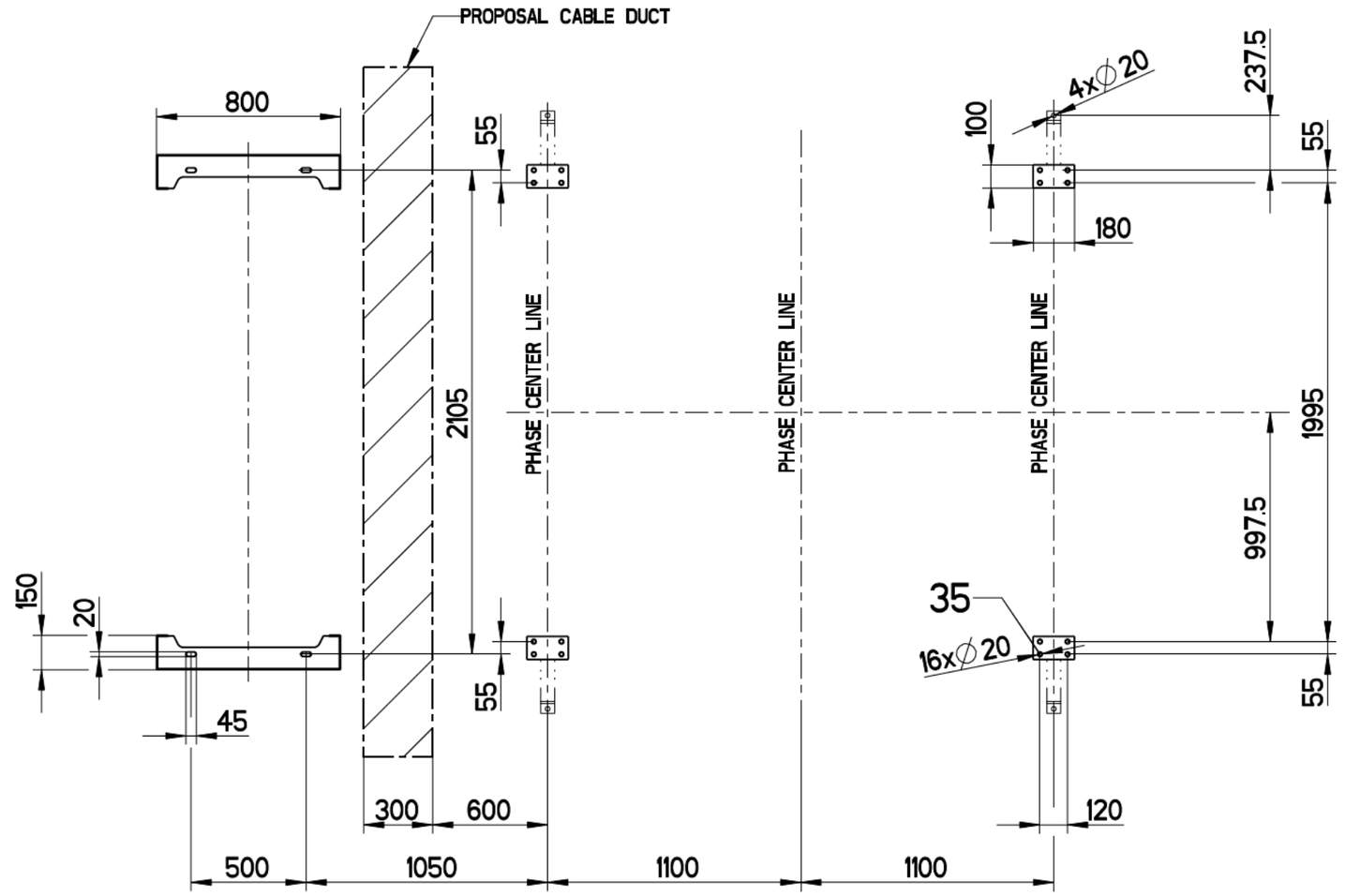




DYNAMIC FORCES
DURING SWITCHING

FLOOR PLAN CIRCUIT-BREAKER



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Released: 2009-09-10 SOLLBERGER	Responsible department: PTHG-P2				No. Sheets.: 8
Order number: 10787	Revision: AB	TYPE HECS-80S			Sheet. no.: 3
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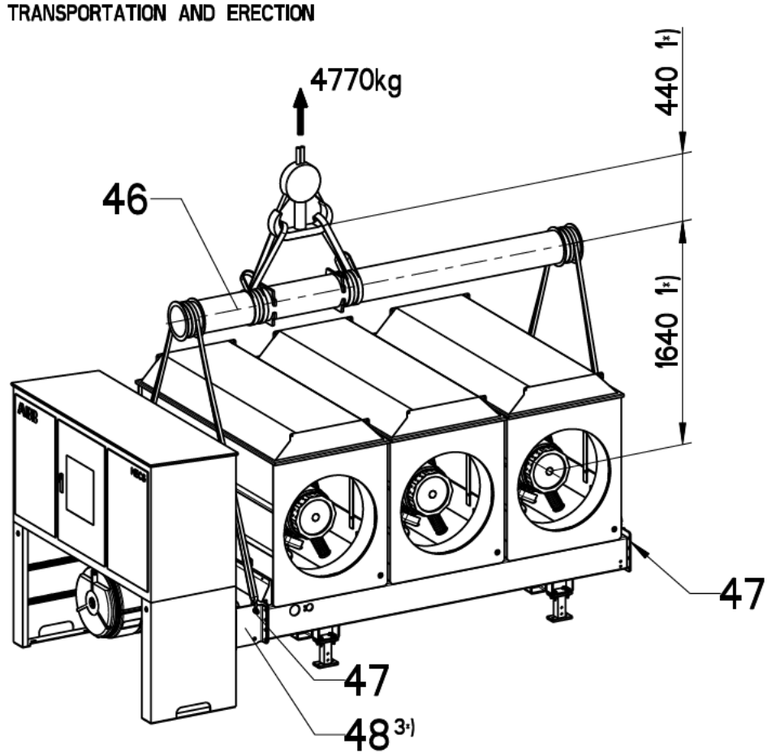
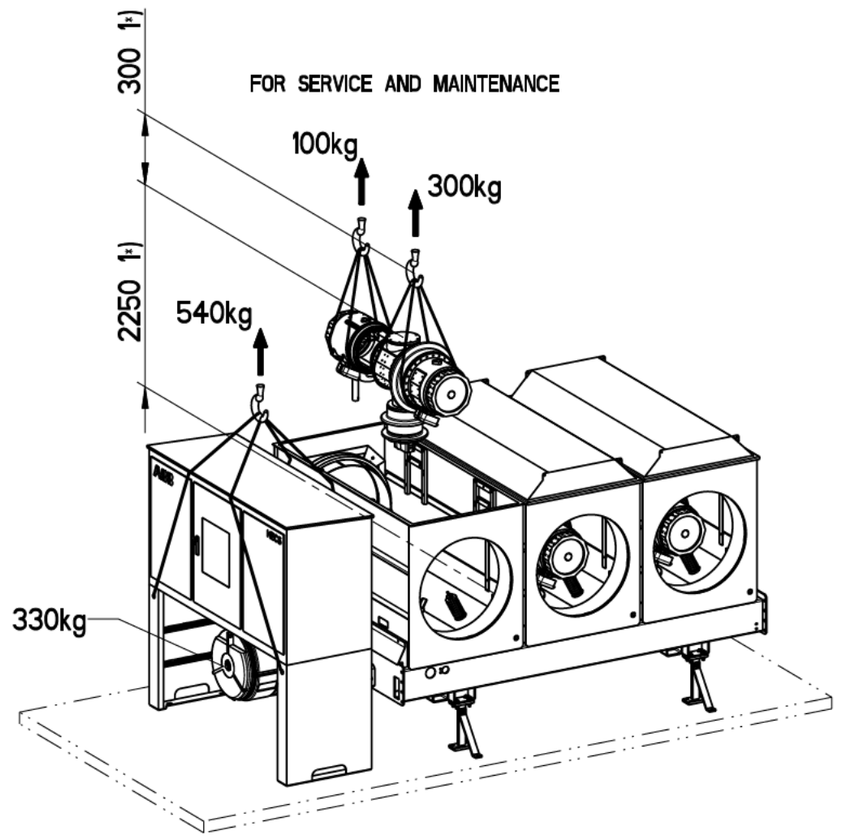
LIFTING INSTRUCTION 5x)
FOR TRANSPORTATION AND ERECTION



FOR SERVICE AND MAINTENANCE



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Order number: 10787	Revision: AB	TYPE HECS-80S			Sheet. no.: 4
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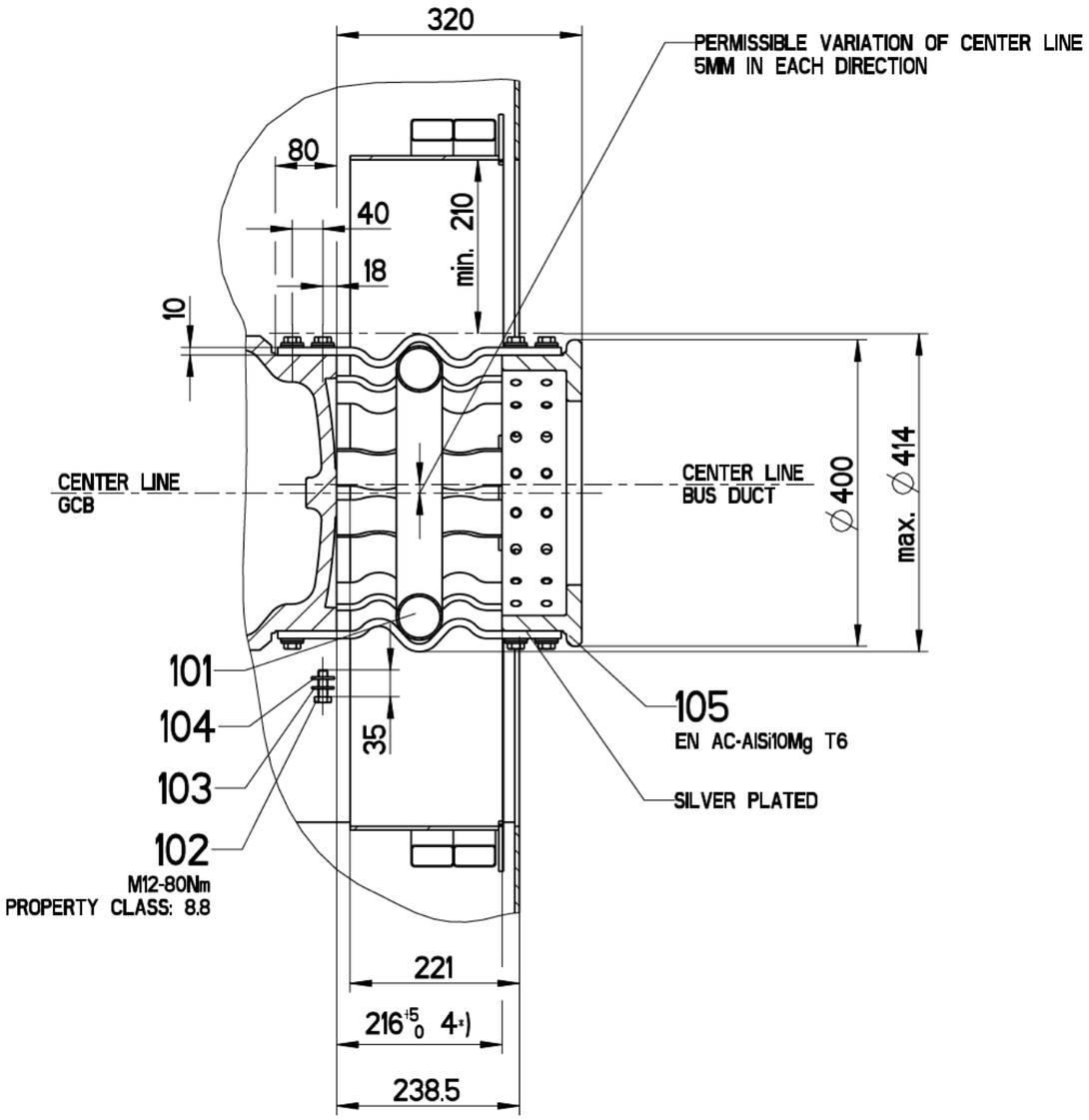
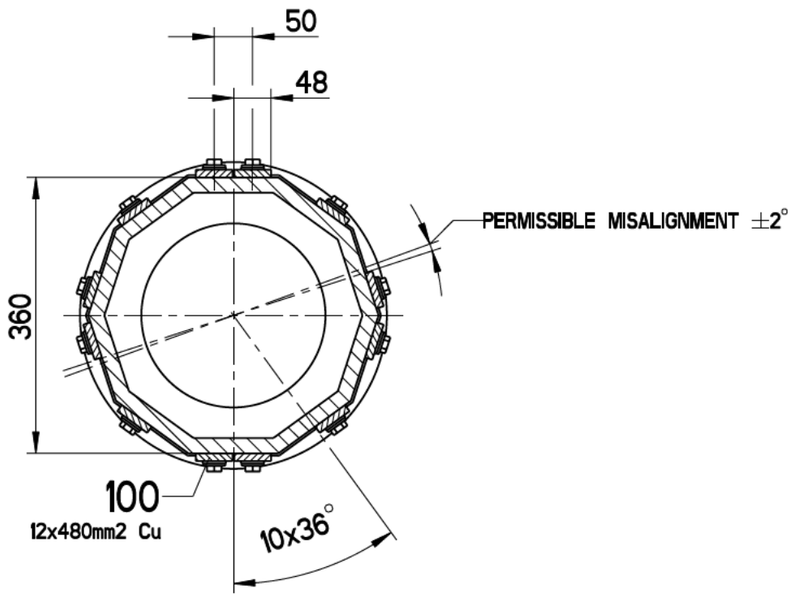
FLEXIBLE CONNECTION GENERATOR SIDE BIL 125kV 10*)

(TESTED CONNECTION ZONE ACC. IEC 61936-1, ANY DEVIATION
FROM THIS DRAWING AND / OR METHOD OF INSTALLATION
COULD CAUSE INJURY TO PEOPLE AND DAMAGE TO EQUIPMENT)





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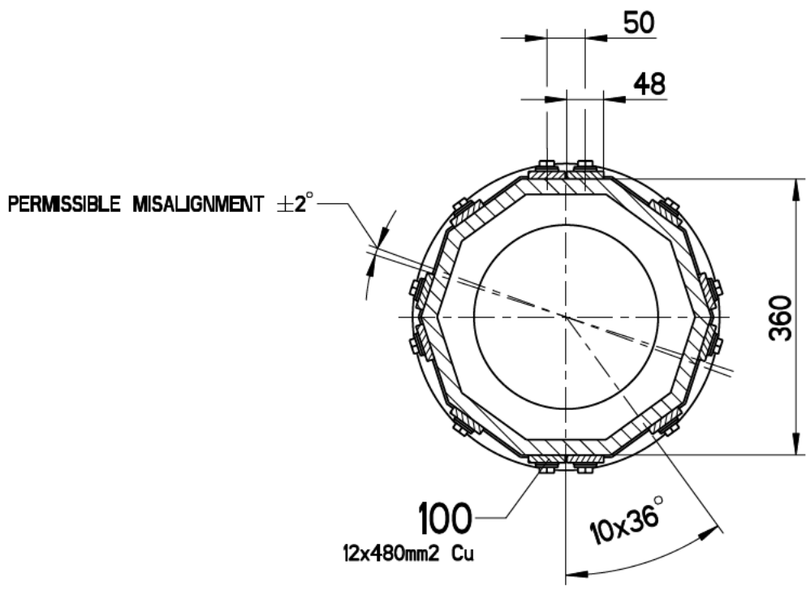
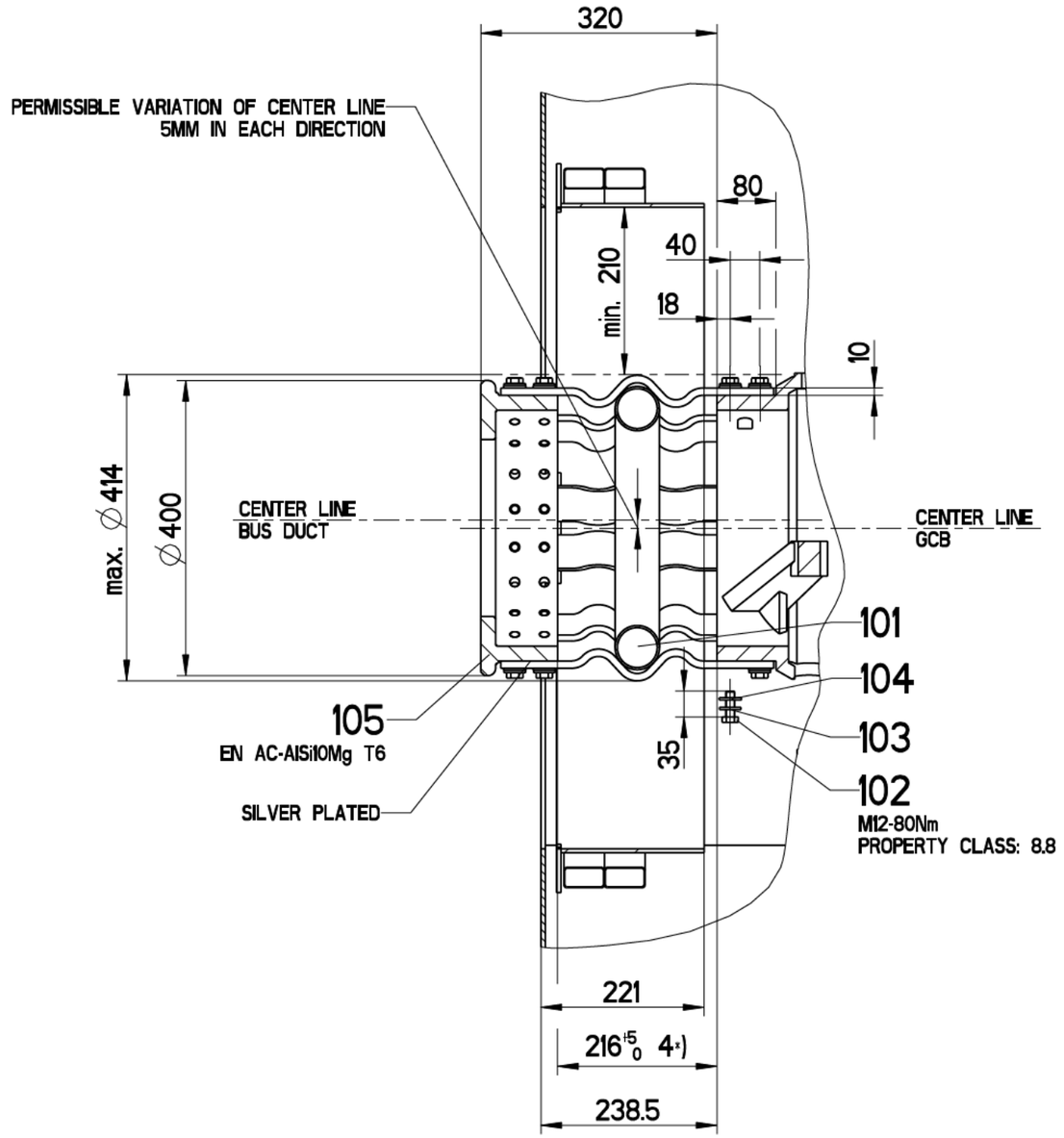
Released: 2009-09-10 SOLLBERGER	Responsible department: PTHG-P2				No. Sheets: 8
Order number: 10787	Revision: AB	TYPE HECS-80S			Sheet. no.: 5
ABB Switzerland Ltd		Document number: 1HC0066546			

FLEXIBLE CONNECTION TRANSFORMER SIDE BIL 125kV 10*)

(TESTED CONNECTION ZONE ACC. IEC 61936-1, ANY DEVIATION
FROM THIS DRAWING AND / OR METHOD OF INSTALLATION
COULD CAUSE INJURY TO PEOPLE AND DAMAGE TO EQUIPMENT)





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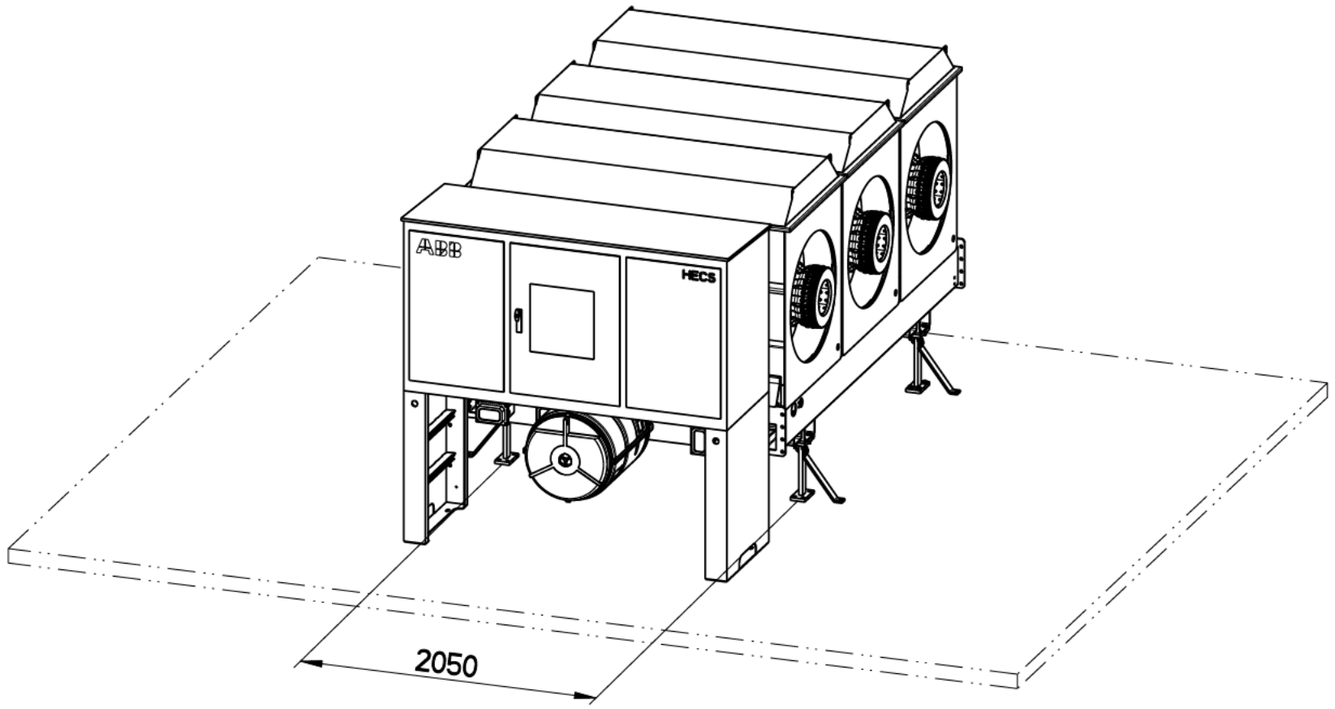
Order number: 10787	Revision: AB	TYPE HECS-80S			Sheet. no.: 6
ABB Switzerland Ltd		Document number: 1HC0066546			

INSTALLATION (PROPOSAL)



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Order number: 10787	Revision: AB	TYPE HECS-80S			No. Sheets: 8
ABB Switzerland Ltd		Document number: 1HC0066546			Sheet. no.: 7

SCOPE OF SUPPLY
(ABB SWITZERLAND LTD.)

1 CIRCUIT-BREAKER
2 DISCONNECTOR
3 EARTHING SWITCH (CIRCUIT-BREAKER SIDE)
4 EARTHING SWITCH (DISCONNECTOR SIDE)
6 CONTROL CABINET
7 POLE FRAME
8 ENCLOSURE INCLUDING COVER
10 CAPACITOR (CIRCUIT-BREAKER SIDE)
11 CAPACITOR (DISCONNECTOR SIDE)
12 CURRENT TRANSFORMER (CIRCUIT-BREAKER SIDE)
13 CURRENT TRANSFORMER (DISCONNECTOR SIDE)
14 VOLTAGE TRANSFORMER (CIRCUIT-BREAKER SIDE)
15 VOLTAGE TRANSFORMER (DISCONNECTOR SIDE)
20 CIRCUIT-BREAKER OPERATING MECHANISM
21 MECHANICAL POSITION INDICATOR
22 DISCONNECTOR MOTOR DRIVE
23 MANUAL OPERATION FACILITY OF DISCONNECTOR AND MECHANICAL POSITION INDICATOR
24 EARTHING SWITCH MOTOR DRIVE
25 MANUAL OPERATION FACILITY OF EARTHING SWITCH AND MECHANICAL POSITION INDICATOR
30 DENSITY INDICATOR (SF6)
31 SF6-CONNECTION, DILO M26x1,5
32 DENSITY MONITOR (SF6)
33 SUPPORT
34 DIAGONAL SUPPORT
35 FIXING HOLE
36 LEVELING SHIM
37 HEXAGONAL BOLT
39 WASHER
40 HEXAGONAL NUT
41 LOCAL OPERATION PANEL
42 RATING PLATE
44 EARTHING POINT POLE FRAME (2x)
45 EARTHING POINT CONTROL CABINET (2x)
46 LIFTING DEVICE
47 LIFTING HOLE
48 TRANSPORT ANGLE CONTROL CABINET

OPTIONAL ITEMS
(MAY BE ORDERED SEPARATELY)

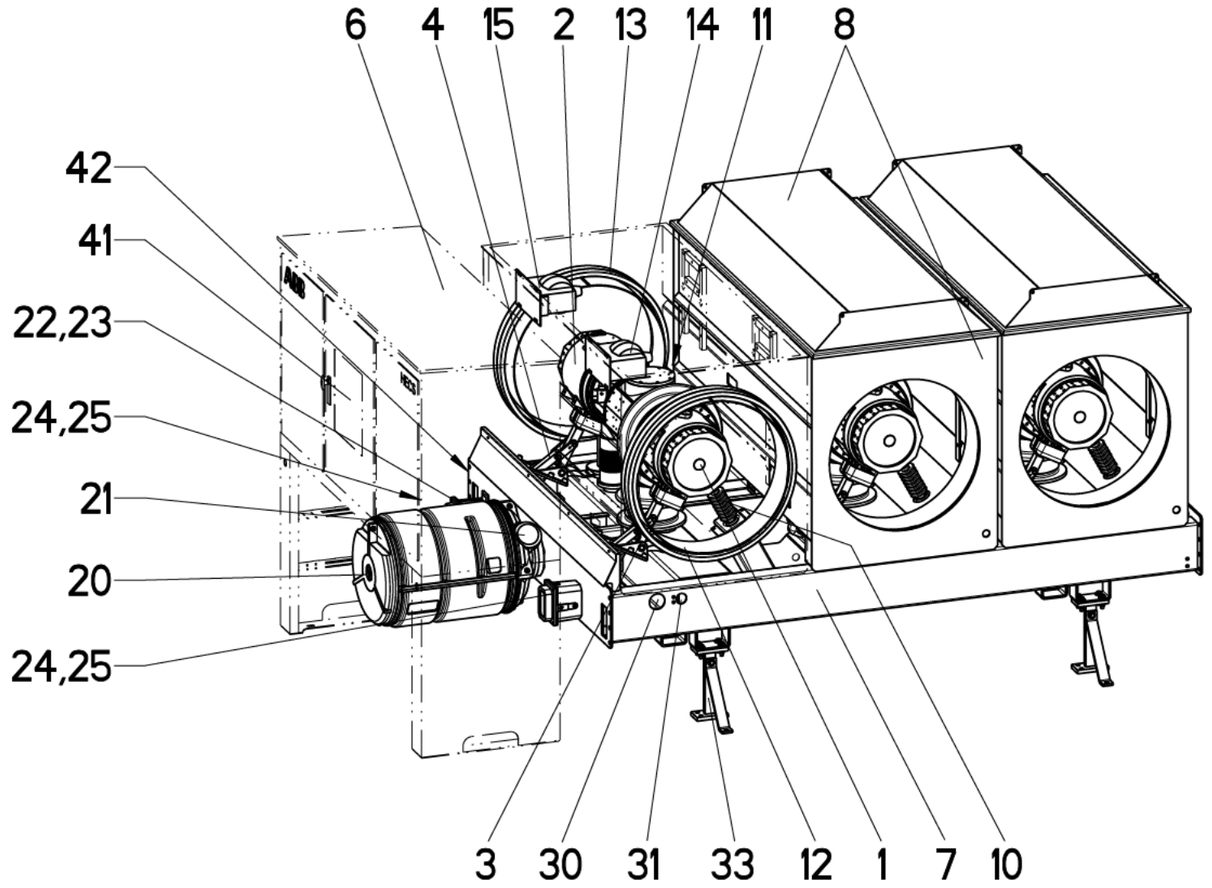
100 FLEXIBLE CONNECTIONS
101 SUPPORT FOR THE FLEXIBLE CONNECTIONS (DUE TO ELECTRODYNAMIC REASONS)
102 HEXAGONAL BOLT
103 SPRING WASHER
104 WASHER
105 CONDUCTOR TERMINAL

NOTES

1•) MIN. SPACE REQUIRED FOR ERECTION AND MAINTENANCE
3•) CONTROL CABINET ITEM 6 MUST BE MECHANICALLY SEPARATED FROM POLE FRAME ITEM 7
4•) SPACE REQUIRED TO DISMANTLE THE CURRENT TRANSFORMER
5•) TRANSPORT AND ERECTION OF THE BREAKER SYSTEM ACCORDING TO THE INSTRUCTION MANUAL AND SUPPLIED SHIPPING DOCUMENTS
6•) LENGTH OF ENCLOSURE
10•) THE CLIENT HAS TO TAKE NOTE OF AND HAS TO COMPREHEND THAT IN CASE OF DISREGARDING THE VALUES OF THE "TESTED CONNECTING ZONES" ON THE DIMENSION DRAWING (BREAKER TO BUSBAR, STARTING SWITCH TO CABLES), OPERATIONAL HAZARDS, ENDANGERING OF OPERATIONAL STAFF AND DETERIORATION OF ENVIRONMENT CANNOT BE EXCLUDED.

11•) MECHANICAL FORCES
F= MAX. 2000N

TOTAL WEIGHT : 4520kg



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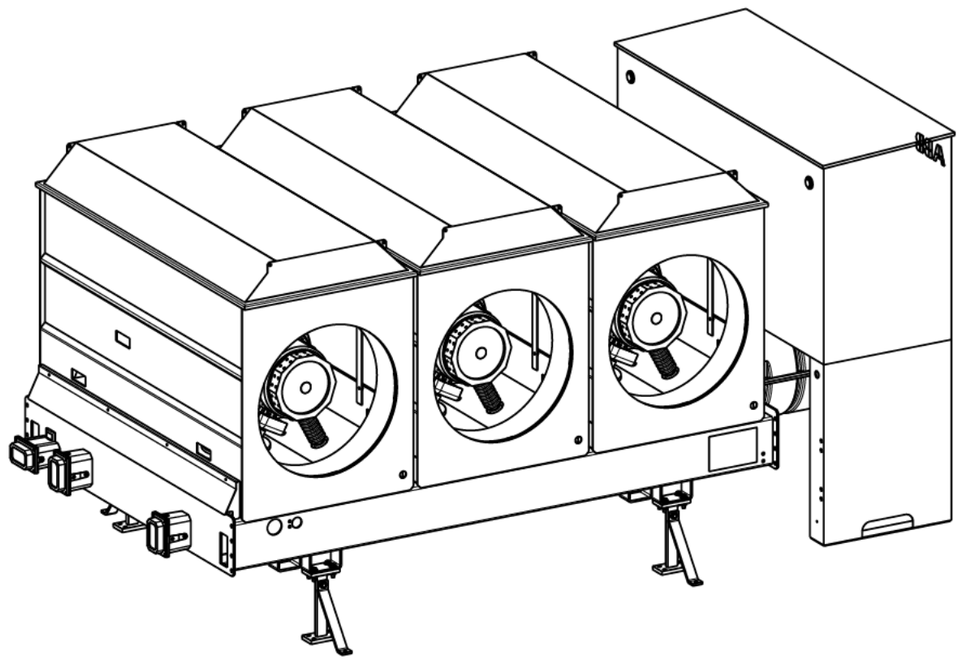
Order number: 10787	Revision: AB	TYPE HECS-80S			Sheet. no.: 8
ABB Switzerland Ltd		Document number: 1HC0066546			

GENERATOR CIRCUIT-BREAKER HECS-80S



TITLE OF SHEET	SHEET NO.
COVER SHEET	1
TOP VIEW / FRONT VIEW / SIDE VIEW	2
FLOOR PLAN	3
DETAILS	4
CONNECTIONS GENERATOR SIDE TO THE BUS DUCT BIL 125kV	5
CONNECTIONS TRANSFORMER SIDE TO THE BUS DUCT BIL 125kV	6
INSTALLATION	7
MAIN COMPONENTS OF THE CIRCUIT-BREAKER / LEGEND	8

AS BUILT

RIVERSIDE

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Approved: 2009-09-11 PENEDER	Replaces:	GENERATOR CIRCUIT-BREAKER OUTLINE DRAWING			Language: EN
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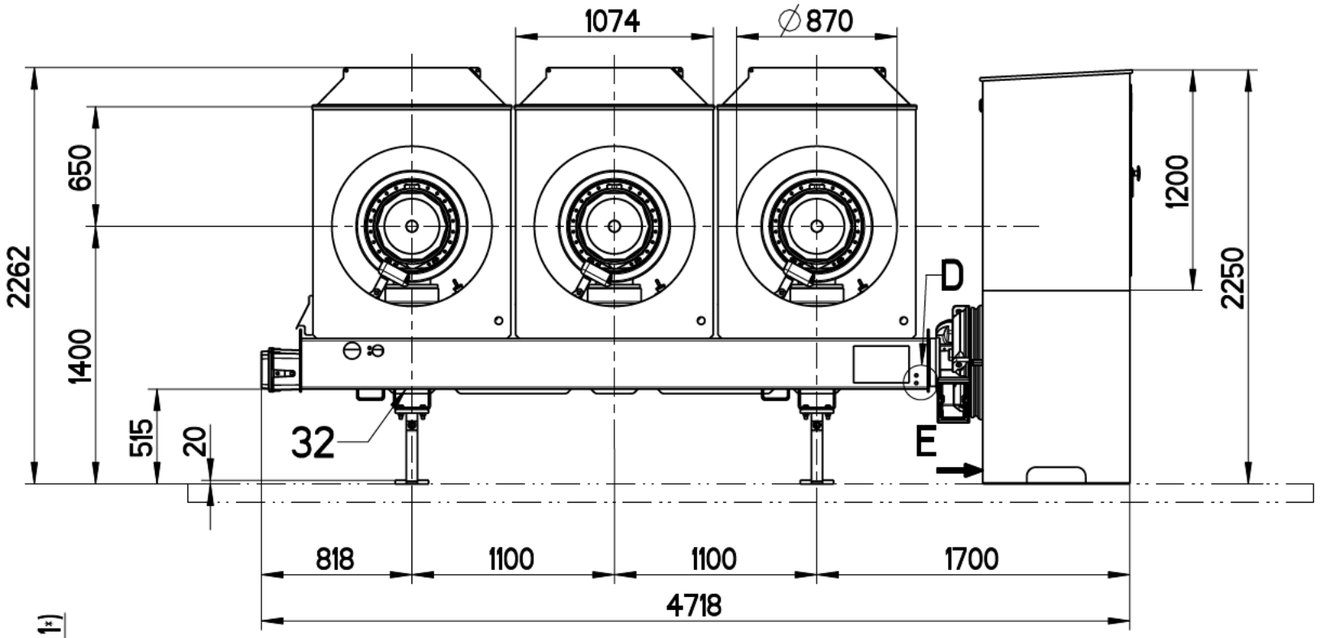
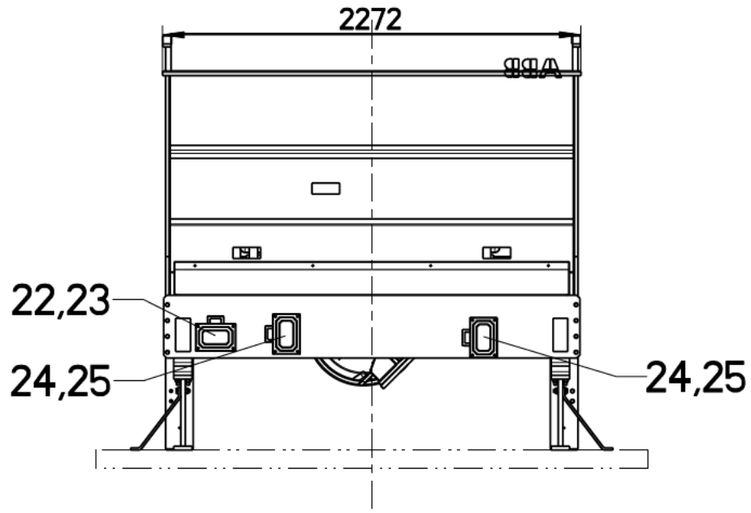
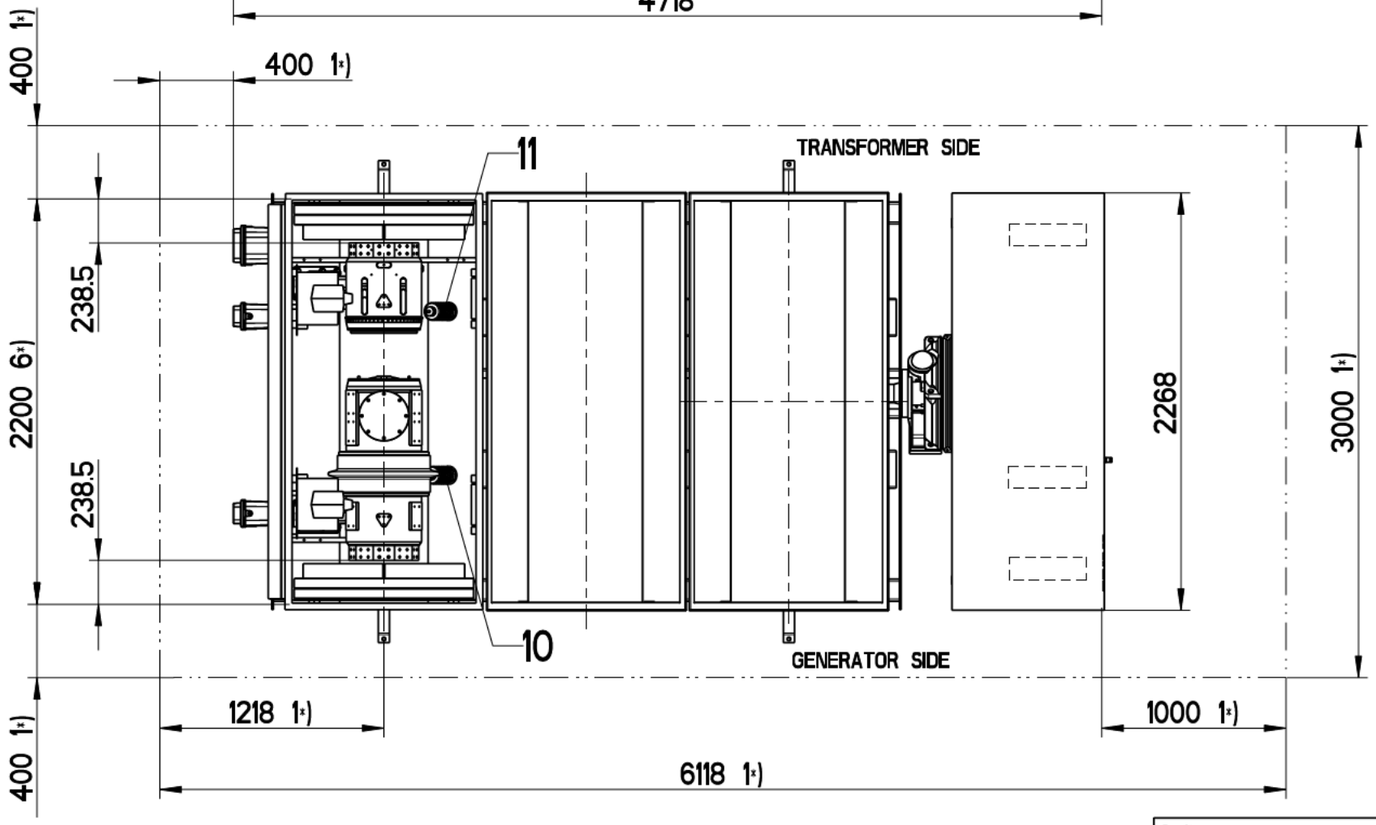
ABB Switzerland Ltd		Document number: 1HC0066547			







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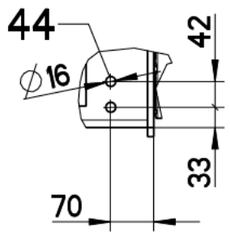

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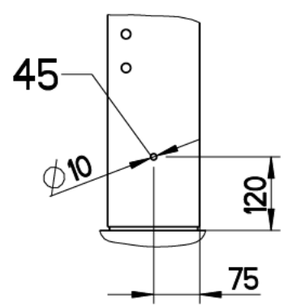

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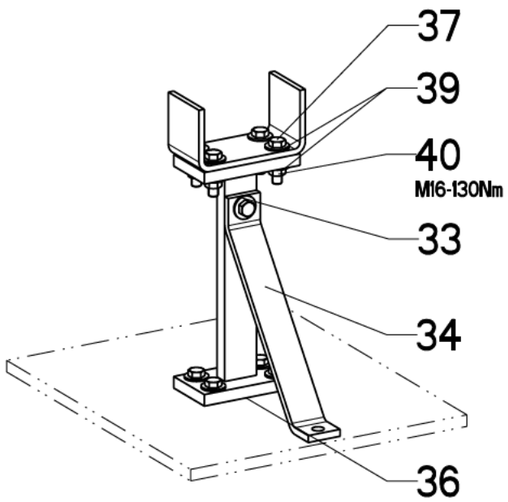

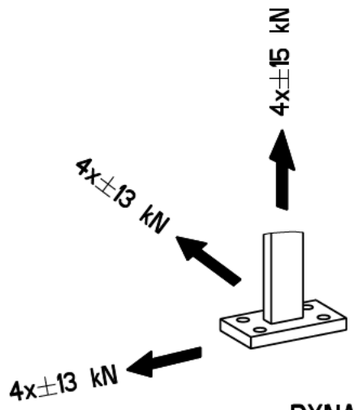

DYNAMIC FORCES
DURING SWITCHING

FLOOR PLAN CIRCUIT-BREAKER

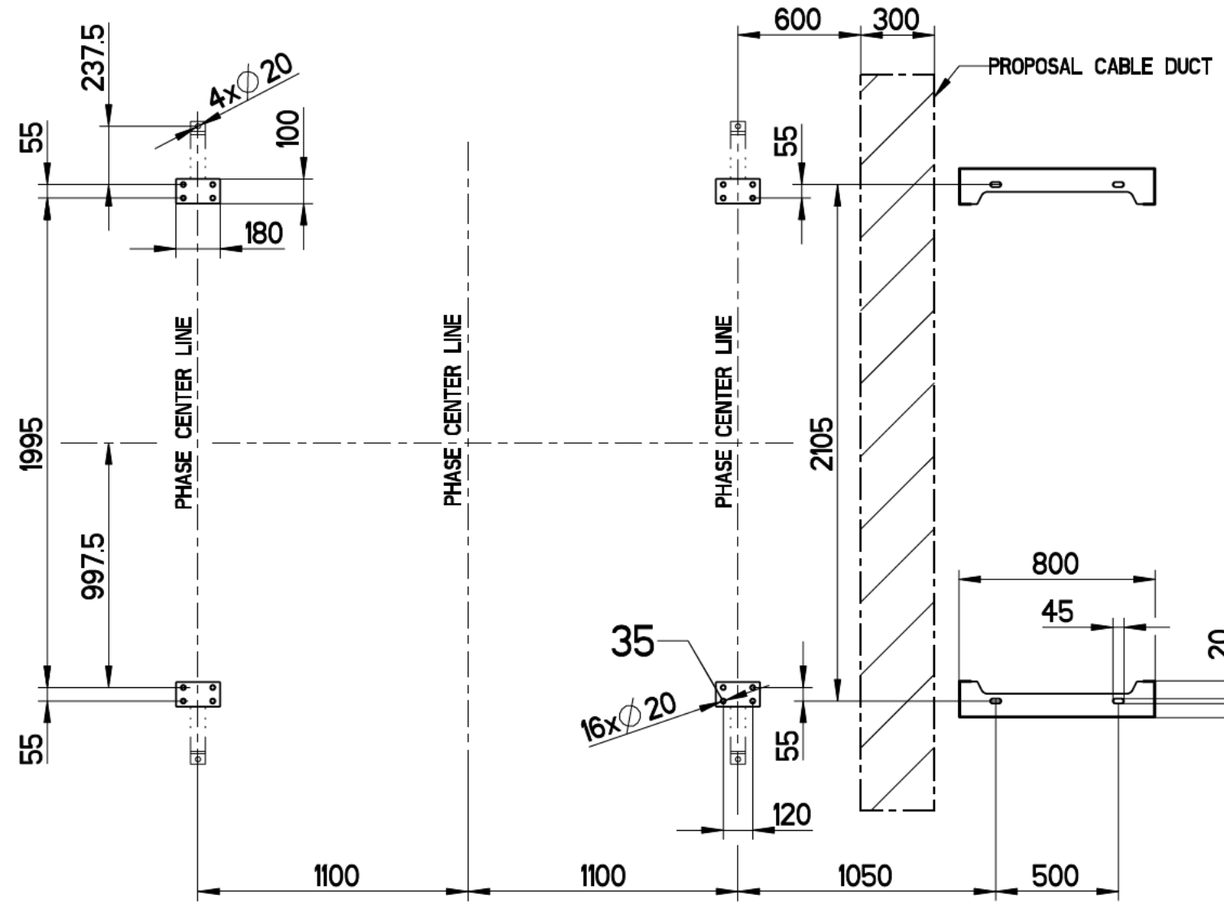

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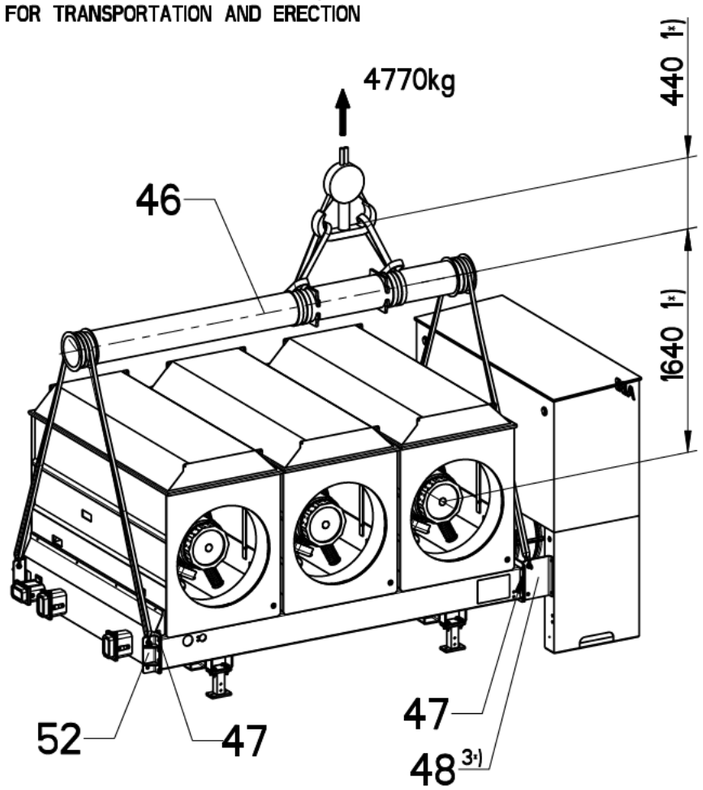
ABB Switzerland Ltd		Document number: 1HC0066547			Sheet. no.: 3

LIFTING INSTRUCTION 5+)
FOR TRANSPORTATION AND ERECTION



FOR SERVICE AND MAINTENANCE

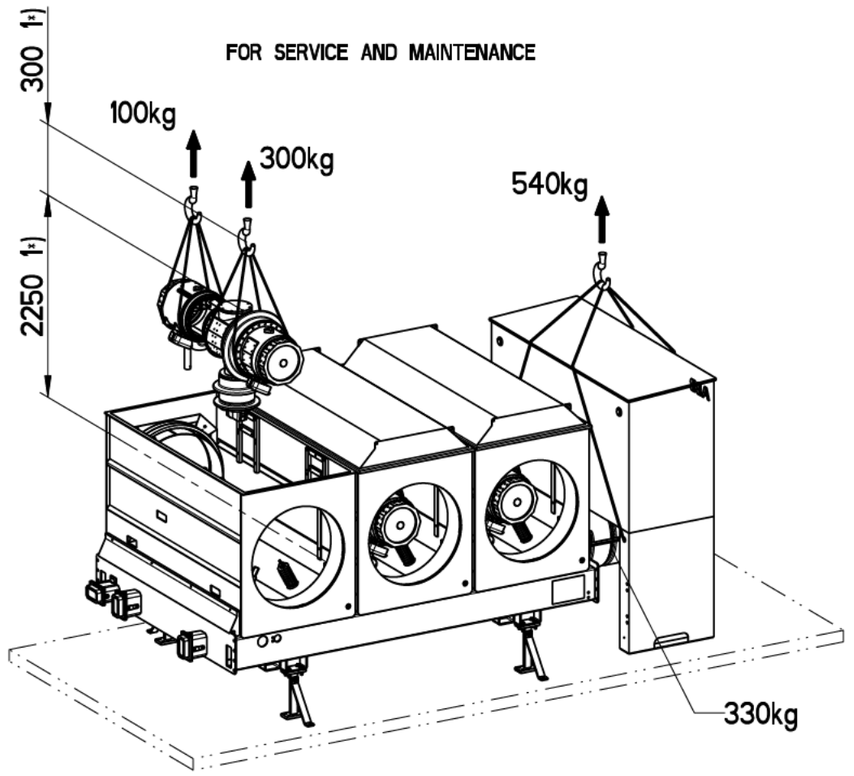


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ABB Switzerland Ltd		Document number: 1HC0066547			Sheet. no.: 4

FLEXIBLE CONNECTION GENERATOR SIDE BIL 125kV 10*)

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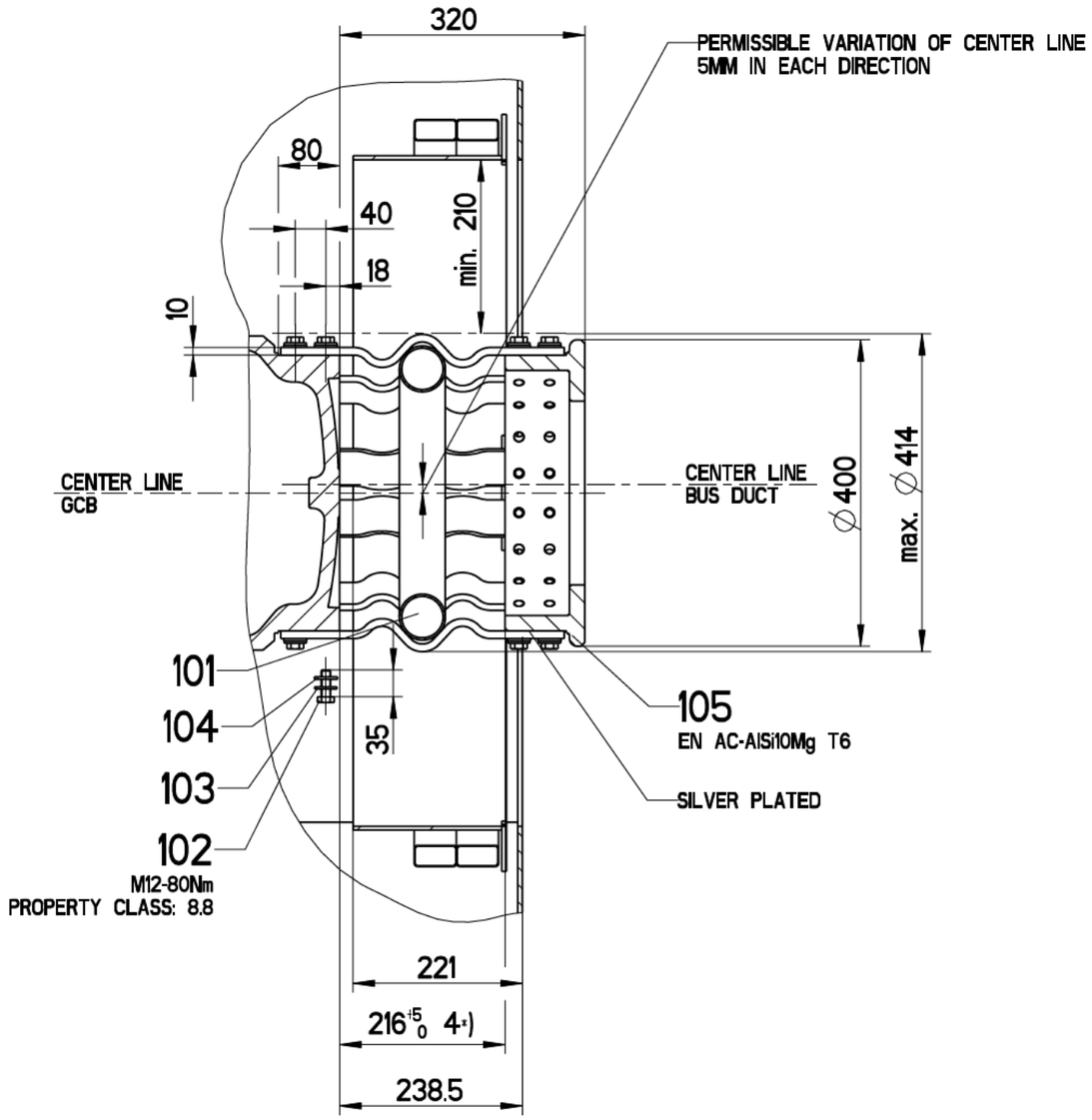
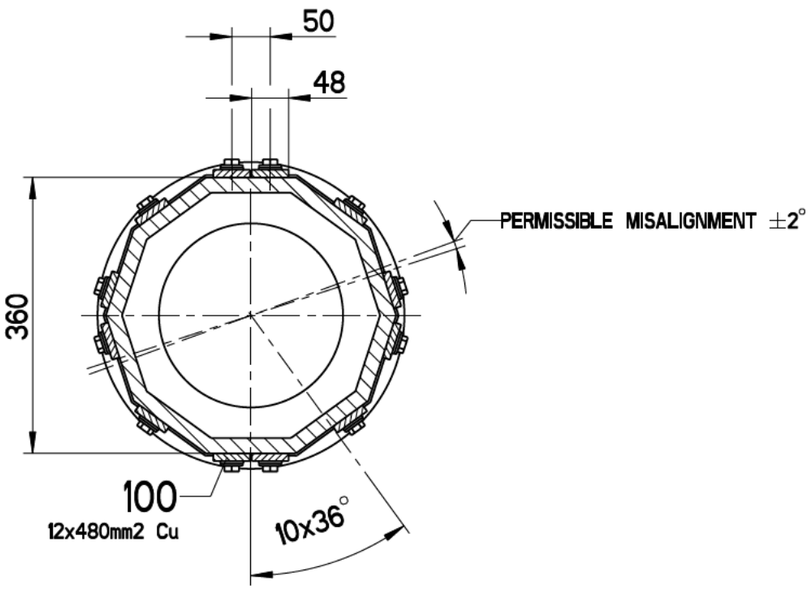


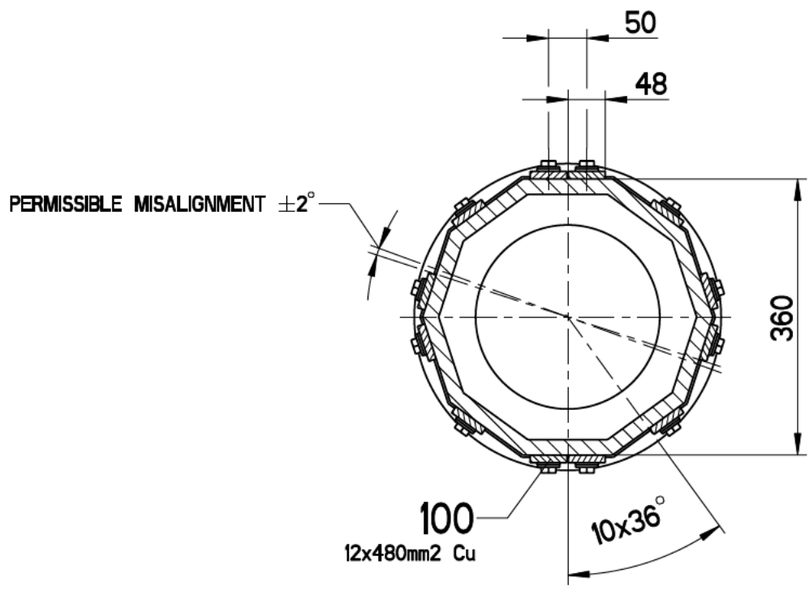


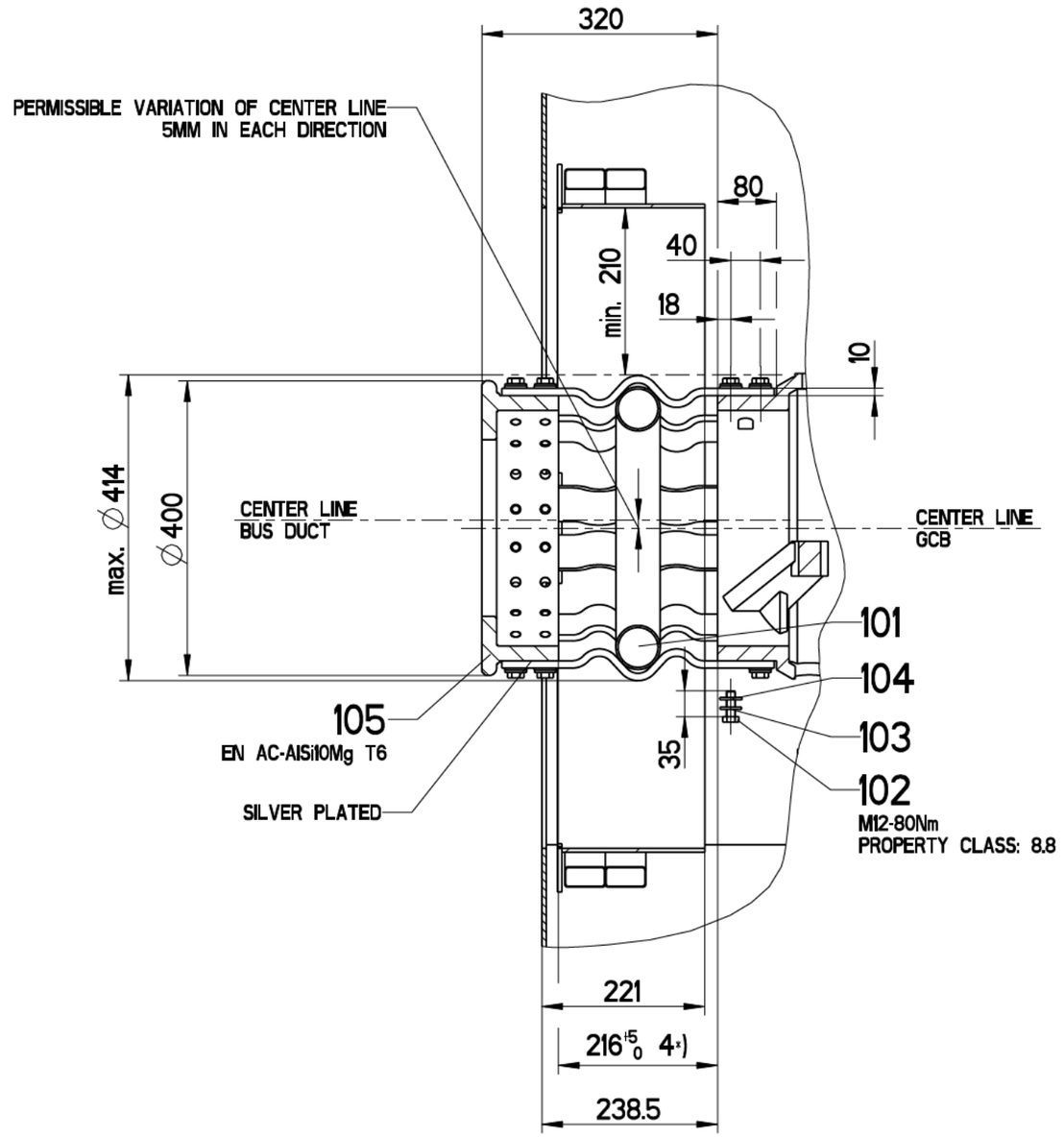
Draft: 2009-09-11 SOLLBERGER	Derived from:	Separate BOM:	Scale: %	Doc.type: ZEI	Format: A3
Approved: 2009-09-11 PENEDER	Replaces:	GENERATOR CIRCUIT-BREAKER OUTLINE DRAWING			
Released: 2009-09-11 SOLLBERGER	Responsible department: PTHG-P2				Language: EN
Order number: 10787	Revision: AB	TYPE HECS-80S			No. Sheets: 8
ABB Switzerland Ltd		Document number: 1HC0066547			Sheet. no.: 5

Pro/Engineer-Drawing

FLEXIBLE CONNECTION TRANSFORMER SIDE BIL 125kV 10*)

(TESTED CONNECTION ZONE ACC. IEC 61936-1, ANY DEVIATION
FROM THIS DRAWING AND / OR METHOD OF INSTALLATION
COULD CAUSE INJURY TO PEOPLE AND DAMAGE TO EQUIPMENT)





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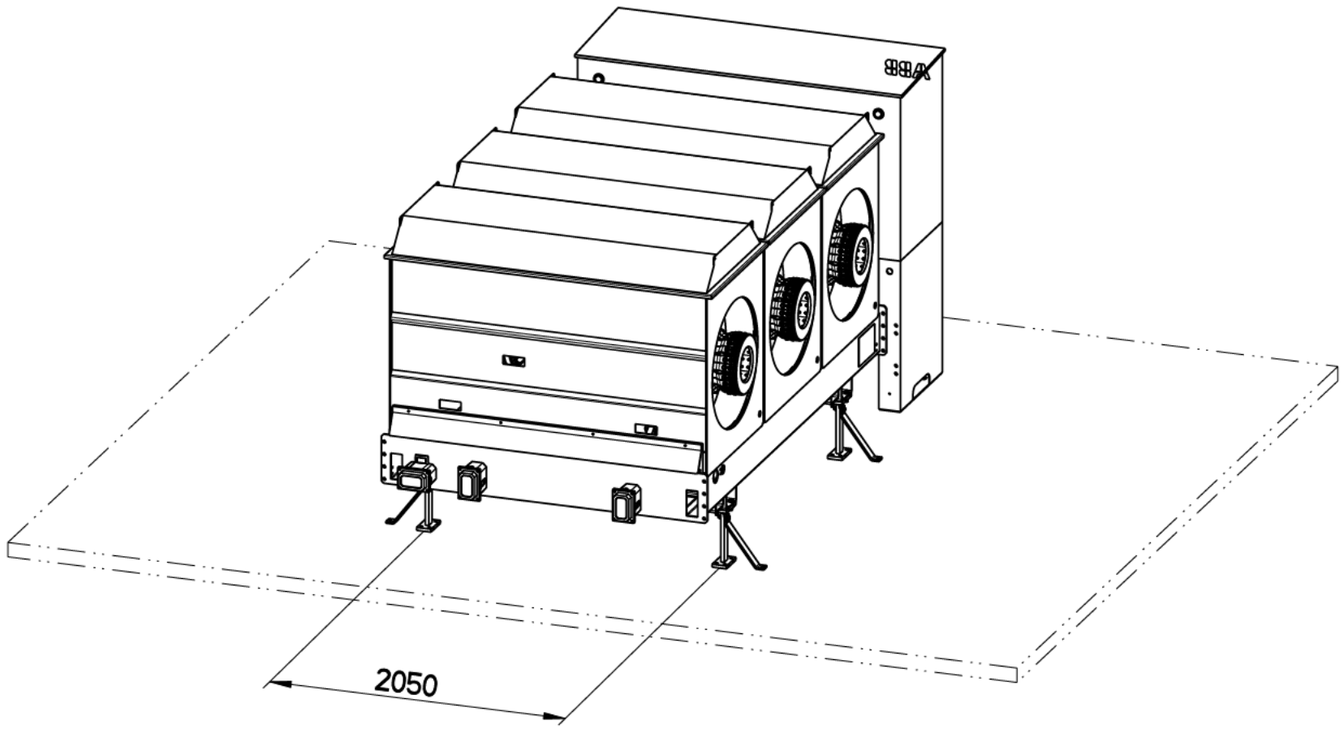
Approved: 2009-09-11 PENEDER	Replaces:	GENERATOR CIRCUIT-BREAKER OUTLINE DRAWING			Language: EN
Released: 2009-09-11 SOLLBERGER	Responsible department: PTHG-P2				No. Sheets: 8
Order number: 10787	Revision: AB	TYPE HECS-80S			Sheet. no.: 6
ABB Switzerland Ltd		Document number: 1HC0066547			

Pro/Engineer-Drawing

INSTALLATION (PROPOSAL)



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Approved: 2009-09-11 PENEDER	Replaces:	GENERATOR CIRCUIT-BREAKER OUTLINE DRAWING			
Released: 2009-09-11 SOLLBERGER	Responsible department: PTHG-P2				Language: EN
Order number: 10787	Revision: AB	TYPE HECS-80S			No. Sheets: 8
ABB Switzerland Ltd		Document number: 1HC0066547			Sheet. no.: 7

Pro/Engineer-Drawing

SCOPE OF SUPPLY
(ABB SWITZERLAND LTD.)

1 CIRCUIT-BREAKER
2 DISCONNECTOR
3 EARTHING SWITCH (CIRCUIT-BREAKER SIDE)
4 EARTHING SWITCH (DISCONNECTOR SIDE)
6 CONTROL CABINET
7 POLE FRAME
8 ENCLOSURE INCLUDING COVER
10 CAPACITOR (CIRCUIT-BREAKER SIDE)
11 CAPACITOR (DISCONNECTOR SIDE)
12 CURRENT TRANSFORMER (CIRCUIT-BREAKER SIDE)
13 CURRENT TRANSFORMER (DISCONNECTOR SIDE)
14 VOLTAGE TRANSFORMER (CIRCUIT-BREAKER SIDE)
15 VOLTAGE TRANSFORMER (DISCONNECTOR SIDE)
20 CIRCUIT-BREAKER OPERATING MECHANISM
21 MECHANICAL POSITION INDICATOR
22 DISCONNECTOR MOTOR DRIVE
23 MANUAL OPERATION FACILITY OF DISCONNECTOR AND MECHANICAL POSITION INDICATOR
24 EARTHING SWITCH MOTOR DRIVE
25 MANUAL OPERATION FACILITY OF EARTHING SWITCH AND MECHANICAL POSITION INDICATOR
30 DENSITY INDICATOR (SF6)
31 SF6-CONNECTION, DILO M26x1,5
32 DENSITY MONITOR (SF6)
33 SUPPORT
34 DIAGONAL SUPPORT
35 FIXING HOLE
36 LEVELING SHIM
37 HEXAGONAL BOLT
39 WASHER
40 HEXAGONAL NUT
41 LOCAL OPERATION PANEL
42 RATING PLATE
44 EARTHING POINT POLE FRAME (2x)
45 EARTHING POINT CONTROL CABINET (2x)
46 LIFTING DEVICE
47 LIFTING HOLE
48 TRANSPORT ANGLE CONTROL CABINET
52 TRANSPORT ANGLE

OPTIONAL ITEMS
(MAY BE ORDERED SEPARATELY)

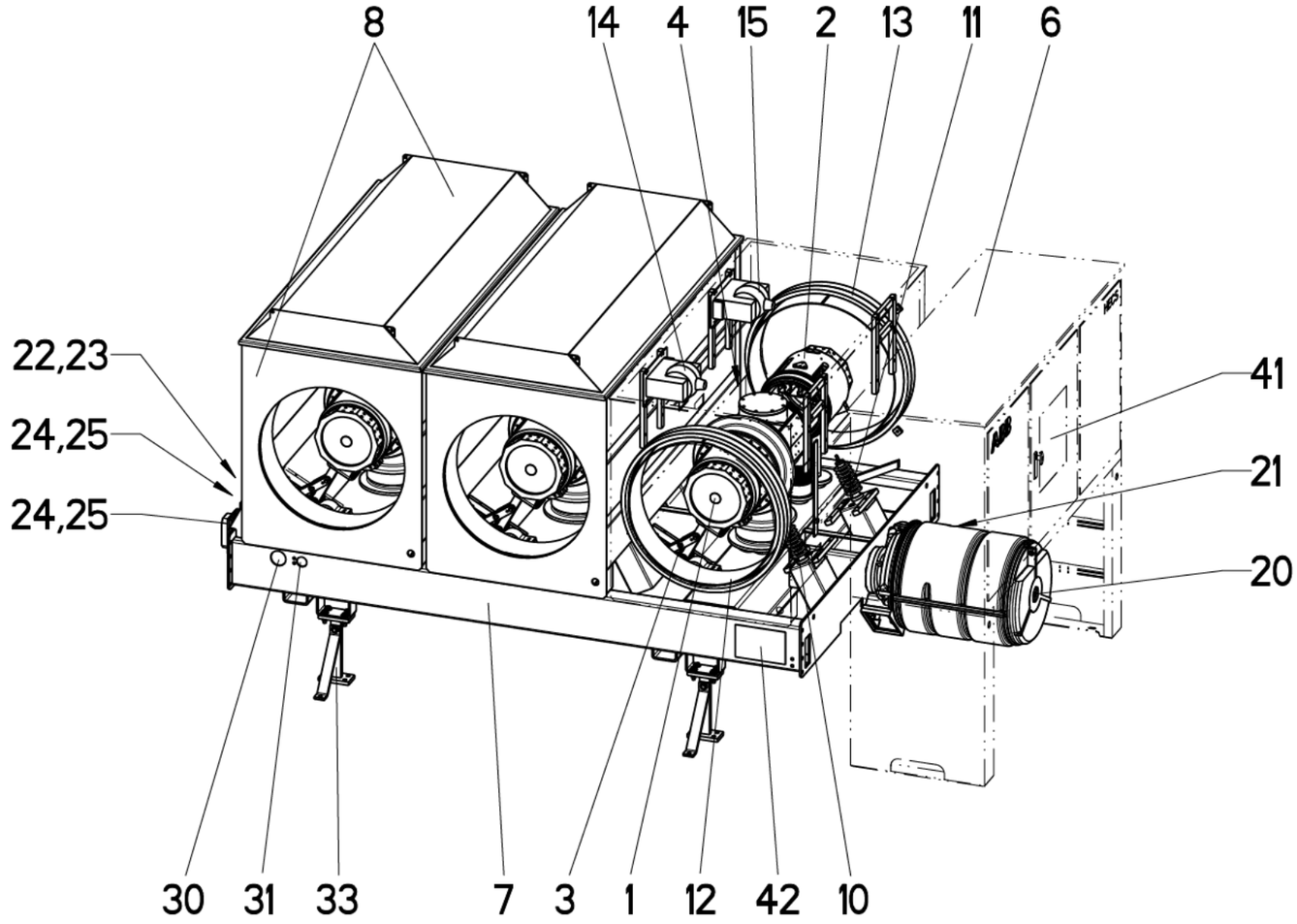
FLEXIBLE CONNECTIONS
100 SUPPORT FOR THE FLEXIBLE CONNECTIONS
101 (DUE TO ELECTRODYNAMIC REASONS)
HEXAGONAL BOLT
102 SPRING WASHER
103 WASHER
104 CONDUCTOR TERMINAL
105

NOTES

MIN. SPACE REQUIRED FOR ERECTION AND MAINTENANCE
1•) CONTROL CABINET ITEM 6 MUST BE MECHANICALLY SEPARATED
3•) FROM POLE FRAME ITEM 7
SPACE REQUIRED TO DISMANTLE THE CURRENT TRANSFORMER
4•) TRANSPORT AND ERECTION OF THE BREAKER SYSTEM ACCORDING
5•) TO THE INSTRUCTION MANUAL AND SUPPLIED SHIPPING DOCUMENTS
LENGTH OF ENCLOSURE
6•) THE CLIENT HAS TO TAKE NOTE OF AND HAS TO COMPREHEND THAT IN CASE
10•) OF DISREGARDING THE VALUES OF THE "TESTED CONNECTING ZONES" ON THE DIMENSION DRAWING (BREAKER TO BUSBAR, STARTING SWITCH TO CABLES), OPERATIONAL HAZARDS, ENDANGERING OF OPERATIONAL STAFF AND DETERIORATION OF ENVIRONMENT CANNOT BE EXCLUDED.

MECHANICAL FORCES
11•) F= MAX. 2000N

TOTAL WEIGHT : 4520kg



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Approved: 2009-09-11 PENEDER	Replaces:	GENERATOR CIRCUIT-BREAKER OUTLINE DRAWING			
Released: 2009-09-11 SOLLBERGER	Responsible department: PTHG-P2				Language: EN
Order number: 10787	Revision: AB	TYPE HECS-80S			No. Sheets.: 8
ABB Switzerland Ltd		Document number: 1HC0066547			Sheet. no.: 8

Pro/Engineer-Drawing

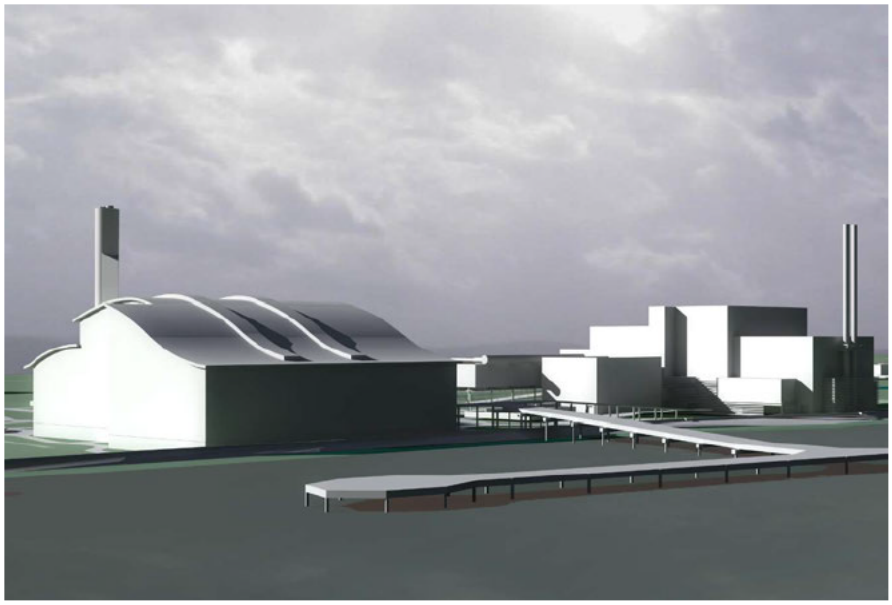
Appendix C - Riverside 2 - Generator Circuit Breaker - General Arrangement

Project Number	P-3362
Project Name	

Riverside 2

Issued by:

Hitachi Energy Ltd.
Bworn-Boveri-Str. 5
8050 Zürich
Switzerland



Riverside Energy Park
Norman Road North
Belvedere
DA17 6JY

Hitachi Zosen Inova AG
Hardturmstrasse 127
8005 Zurich, Switzerland
www.hz-inova.com
[redacted] [redacted]

Rev	Author (Name, Date, Signature)	Reviewer (Name, Date, Signature)	Approver (Name, Date, Signature)	Short description of change
0.0	[redacted]			First Issue
1.0	[redacted]			IPB height update
2.0				
3.0				

DocType	TB010	HZI Doc No _ Rev	2GHE198352_1.0
Issued by (acronym)	HECH	Outline drawing	

HITACHI
Inspire the Next

GENERATOR CIRCUIT-BREAKER SYSTEM

RIVERSIDE 2

TYPE HVS-63S

HITACHI ENERGY ORDER 123678

Hitachi Energy

Client: RIVERSIDE2
NormanRoadNorth
BelvedereDA176JY
UnitedKingdom

Building Section: BS00 - Site Overall

Rev.	Modification	Drawn	Checked	Approved
C	Initial Revision	Mensah 26.08.2024	Violi 26.08.2024	Violi 26.08.2024

Project-No.: P-3362
ProjectName: Riverside2
Description: Outline Drawing
Title: Riverside 2

AIC	10AAF101
Weight	---
Scale	1 : 500
Status	RELEASED
Size	A3

Replacedby: | Replacedfor:

Sheet	DocType	Supplier	Drawing-No.	Revision
1/9	AA030	HZI	2GHE198352	C

Hitachi Zosen INOVA

Product	Order	Based on	Comments
HVS-63S	123678		

Prepared by	State	Set on	Set by
Mensah	Released	26-08-2024	Violi

Security level	Document kind	Issued by
Internal	Drawing	PGHV-GE2

Hitachi Energy Ltd

Title: Outline Drawing
Cover Sheet

Doc. id.	Sub.	Rev.	Lang	Page
2GHE198352		C	en	1(8)

Unit: mm

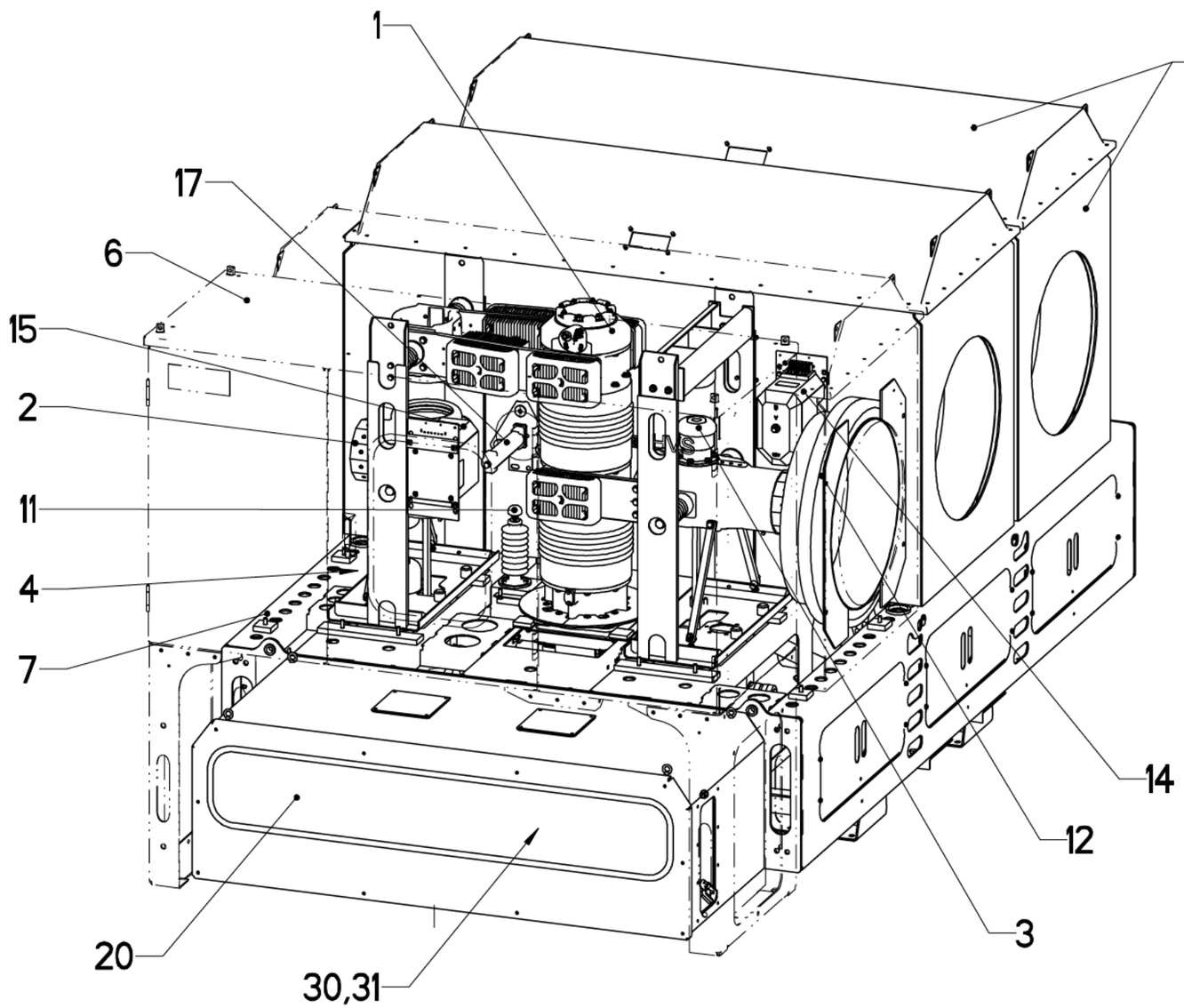
CREO Parametric Drawing
Drawing sheet ISO 5457 - A3T - TBL - Scale %

SCOPE OF SUPPLY (Hitachi Energy LTD.)

1	CIRCUIT-BREAKER
2	DISCONNECTOR
3	EARTHING SWITCH (CIRCUIT-BREAKER SIDE)
4	EARTHING SWITCH (DISCONNECTOR SIDE)
6	CONTROL CABINET
7	POLE FRAME
8	ENCLOSURE INCLUDING COVER
11	CAPACITOR (DISCONNECTOR SIDE)
12	CURRENT TRANSFORMER (CIRCUIT-BREAKER SIDE)
14	VOLTAGE TRANSFORMER (CIRCUIT-BREAKER SIDE)
15	VOLTAGE TRANSFORMER (DISCONNECTOR SIDE)
17	SURGE ARRESTER (DISCONNECTOR SIDE)
20	DRIVE BOX
30	DENSITY INDICATOR (SF6)
31	SF6-CONNECTOR

TOTAL WEIGHT 6000kg

SHADE OF COLOUR	RAL
CIRCUIT-BREAKER ENCLOSURE	7035
CONTROL CABINET	7035



Product	Order	Based on	Comments
HVS-63S	123678		

Prepared by	State	Set on	Set by
Mensah	Released	26-08-2024	Violi

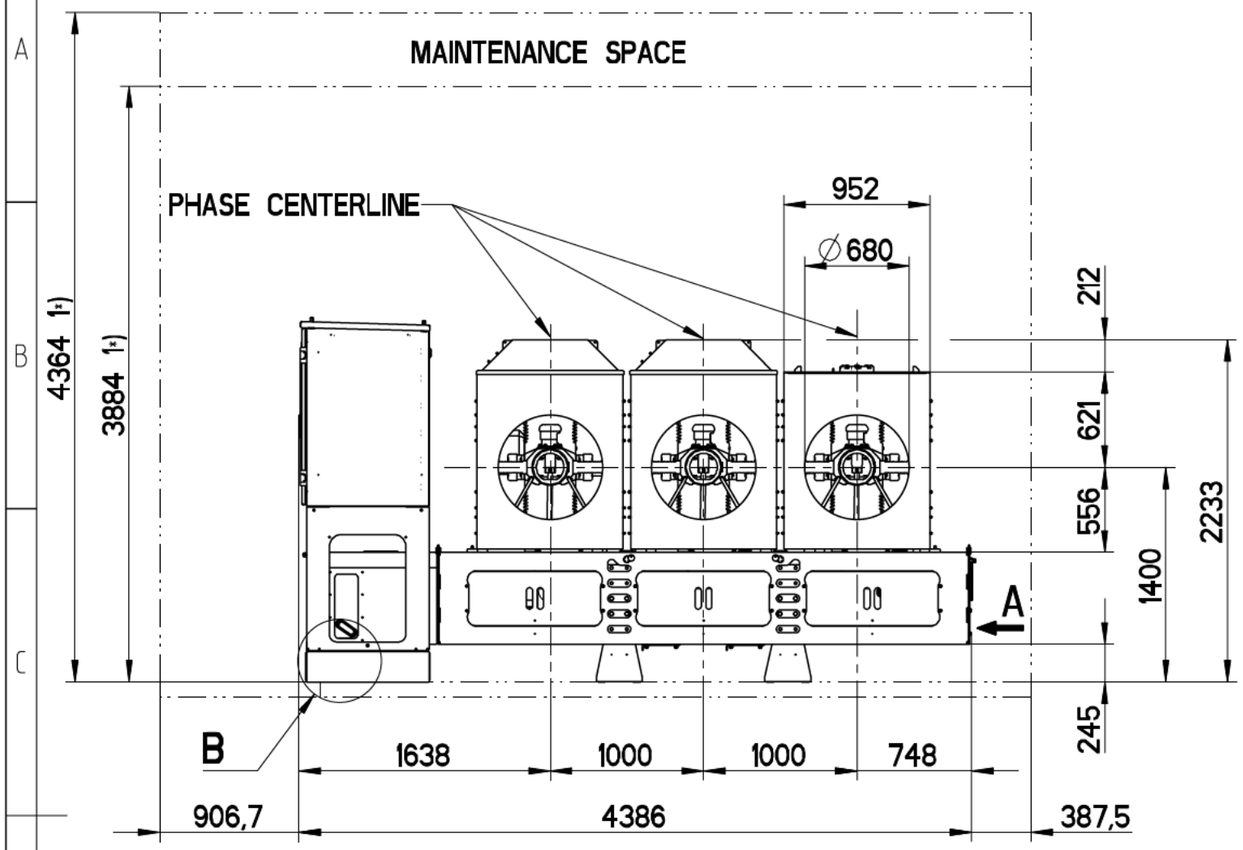
Security level	Document kind	Issued by
Internal	Drawing	PGHV-GE2

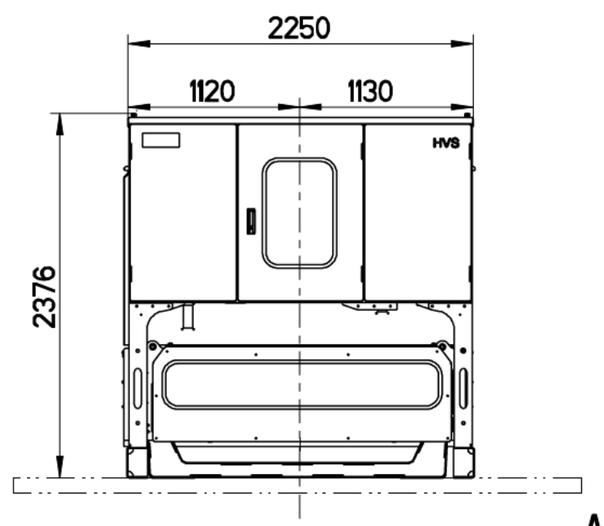
Title: Outline Drawing
Legend of Components

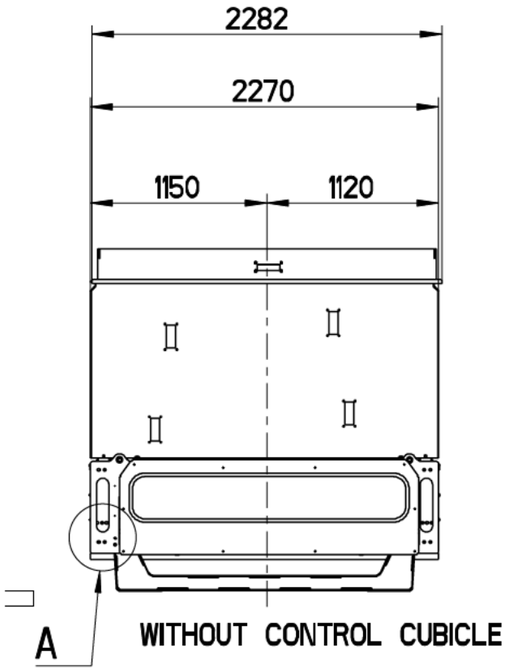
Unit: mm

Hitachi Energy Ltd

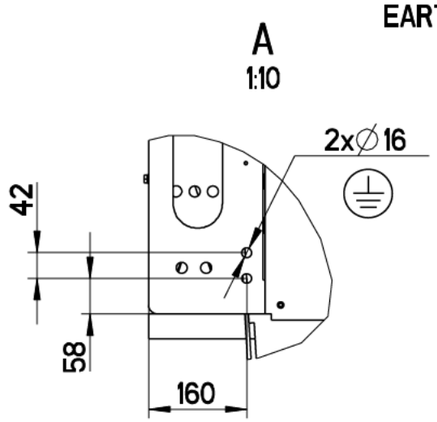
Doc. id.	Sub.	Rev.	Lang	Page
2GHE198352		C	en	2(8)

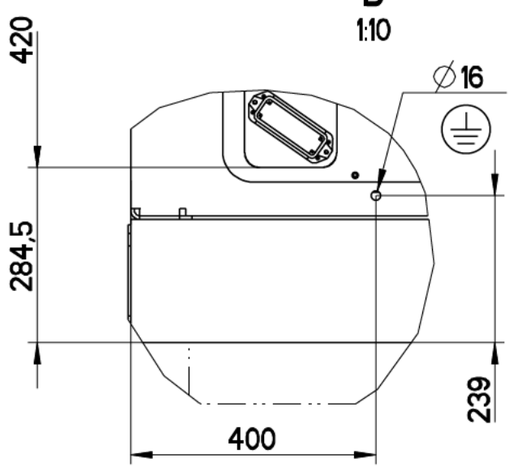






EARTHING POINTS





1*)	MIN. SPACE REQUIRED FOR ERECTION AND MAINTENANCE
	CENTERLINE DISPLAYED IS THE CENTERLINE OF THE ARCHING CHAMBER

Product	Order	Based on	Comments
HVS-63S	123678		

Prepared by	State	Set on	Set by
Mensah	Released	26-08-2024	Violi

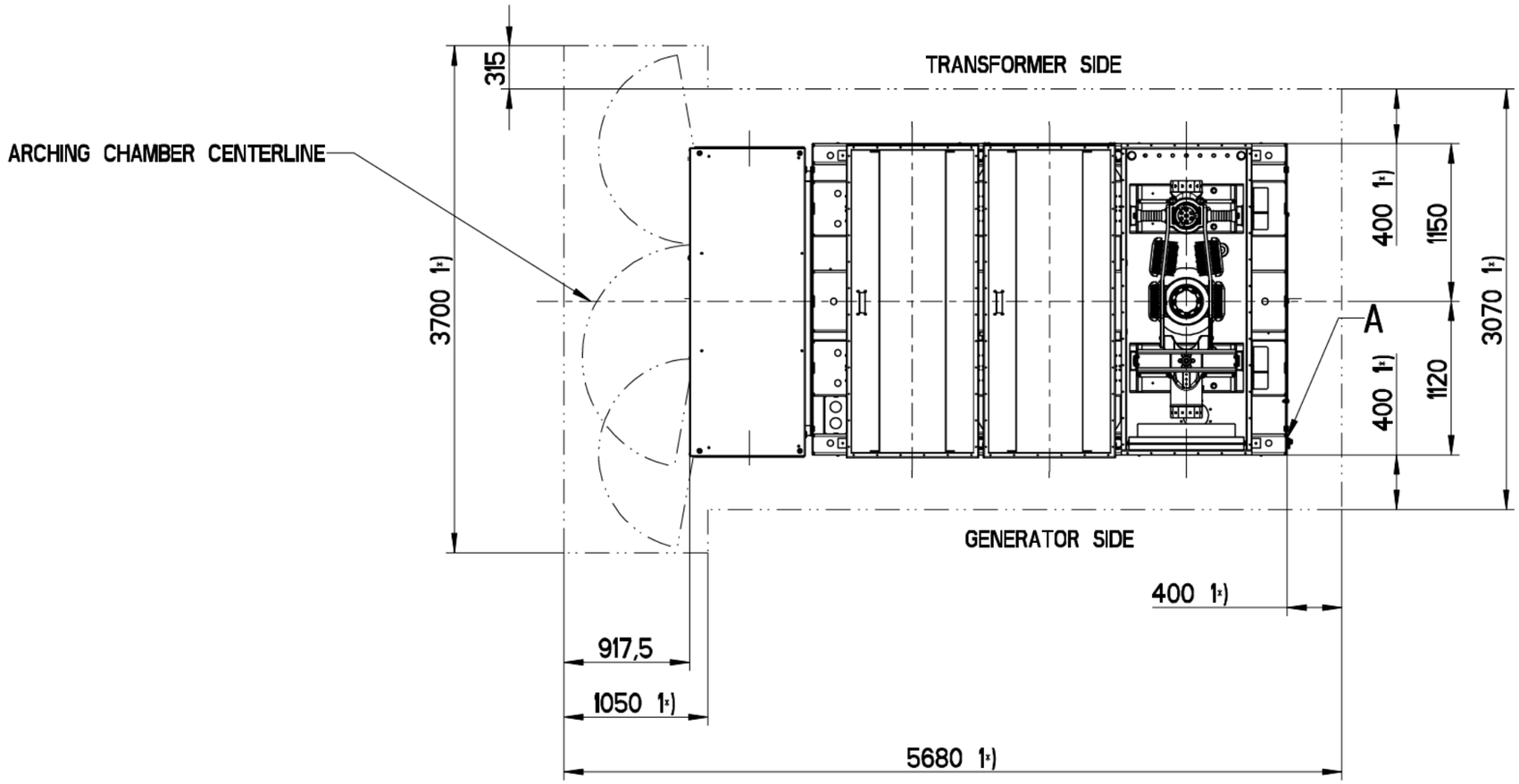
Security level	Document kind	Issued by
Internal	Drawing	PGHV-GE2

Hitachi Energy Ltd

Title: Outline Drawing
Front View / Side View

Unit: mm

Doc. id.	Sub.	Rev.	Lang.	Page
2GHE198352		C	en	3(8)



1*)	MIN. SPACE REQUIRED FOR ERECTION AND MAINTENANCE

NOTES: THE CABINET DOOR BE OPENED TO 130° IS ENOUGH FOR THE MAINTENANCE NEEDS OF THE EQUIPMENTS IN THE CABINET.

Product	Order	Based on	Comments
HVS-63S	123678		

Prepared by	State	Set on	Set by
Mensah	Released	26-08-2024	Violi

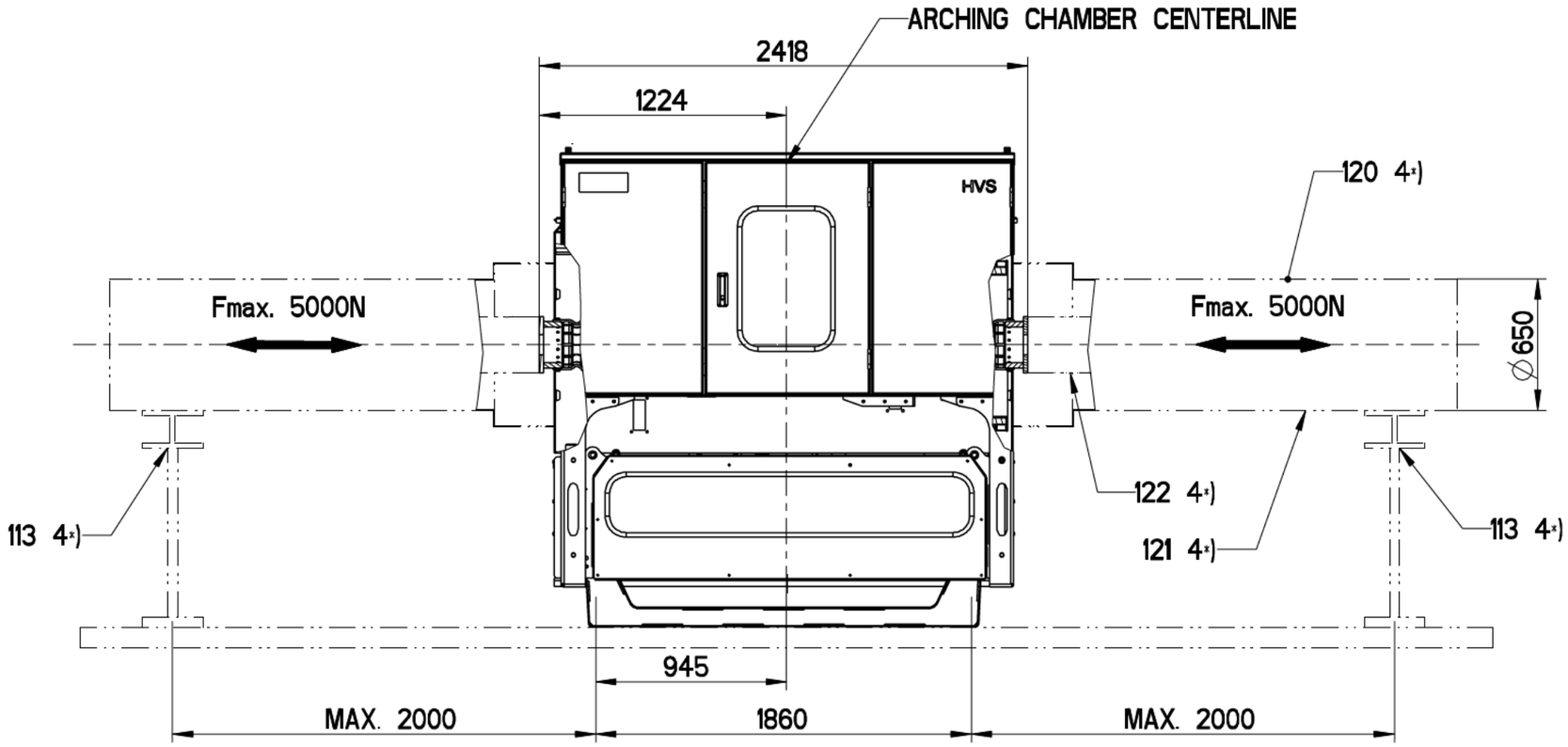
Security level	Document kind	Issued by
Internal	Drawing	PGHV-GE2

Title: Outline Drawing
Top View

Unit: mm

Hitachi Energy Ltd

Doc. id.	Sub.	Rev.	Lang	Page
2GHE198352		C	en	4(8)



4x)	EXCLUDED FROM SCOPE OF DELIVERY BY HITACHI ENERGY LTD.

113	FIXED SUPPORT OF THE ENCLOSURE AND SUPPORT OF THE CONDUCTOR	HITACHI ENERGY RECOMMENDS A MAN HOLE IN THE IPB FOR ASSEMBLY AND MAINTENANCE
120	ISOLATED PHASE BUS	
121	ENCLOSURE OF IPB	
122	CONDUCTOR OF IPB	

Product	Order	Based on	Comments
HVS-63S	123678		

Prepared by	State	Set on	Set by
Mensah	Released	26-08-2024	Violi

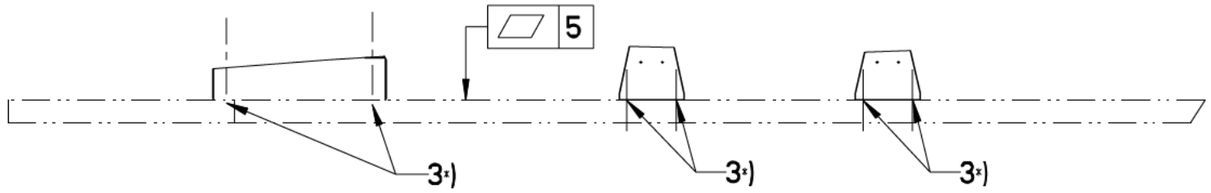
Security level	Document kind	Issued by
Internal	Drawing	PGHV-GE2

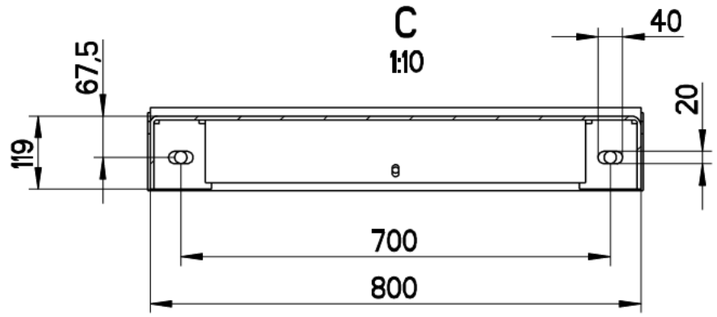
Hitachi Energy Ltd

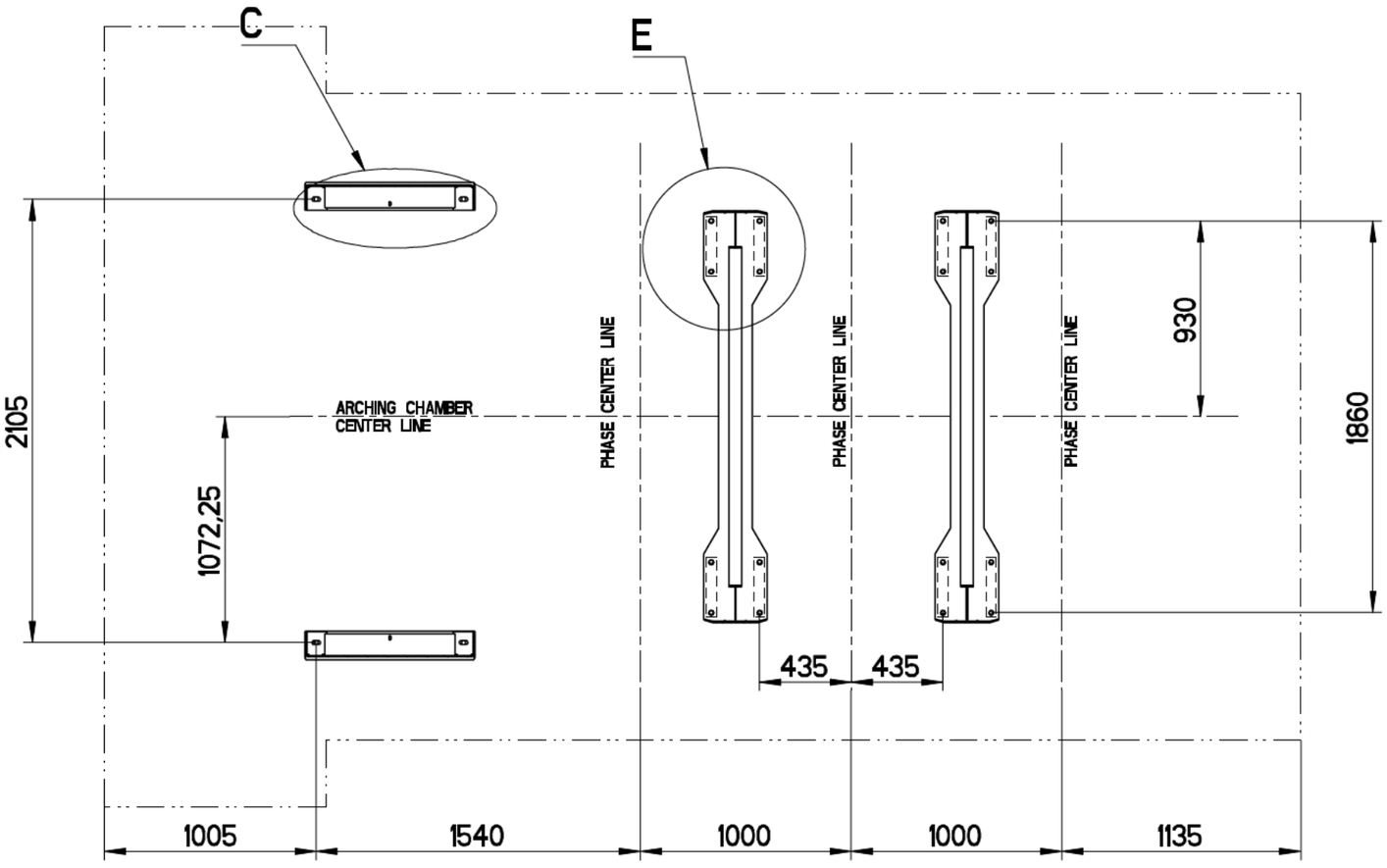
Title: Outline Drawing Installation

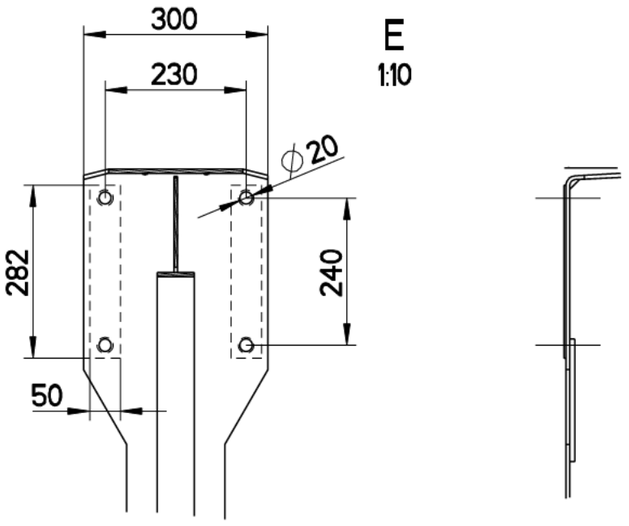
Doc. id.	Sub.	Rev.	Lang	Page
2GHE198352		C	en	5(8)

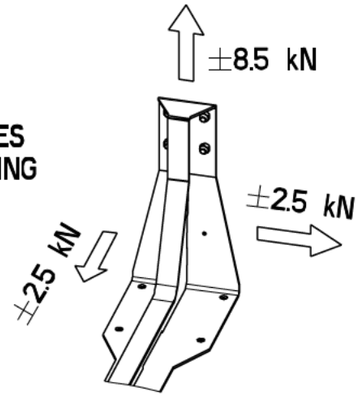
Unit: mm











3+)	LEVELING SHIM

Product	Order	Based on	Comments
HVS-63S	123678		

Prepared by	State	Set on	Set by
Mensah	Released	26-08-2024	Violi

Security level	Document kind	Issued by
Internal	Drawing	PGHV-GE2

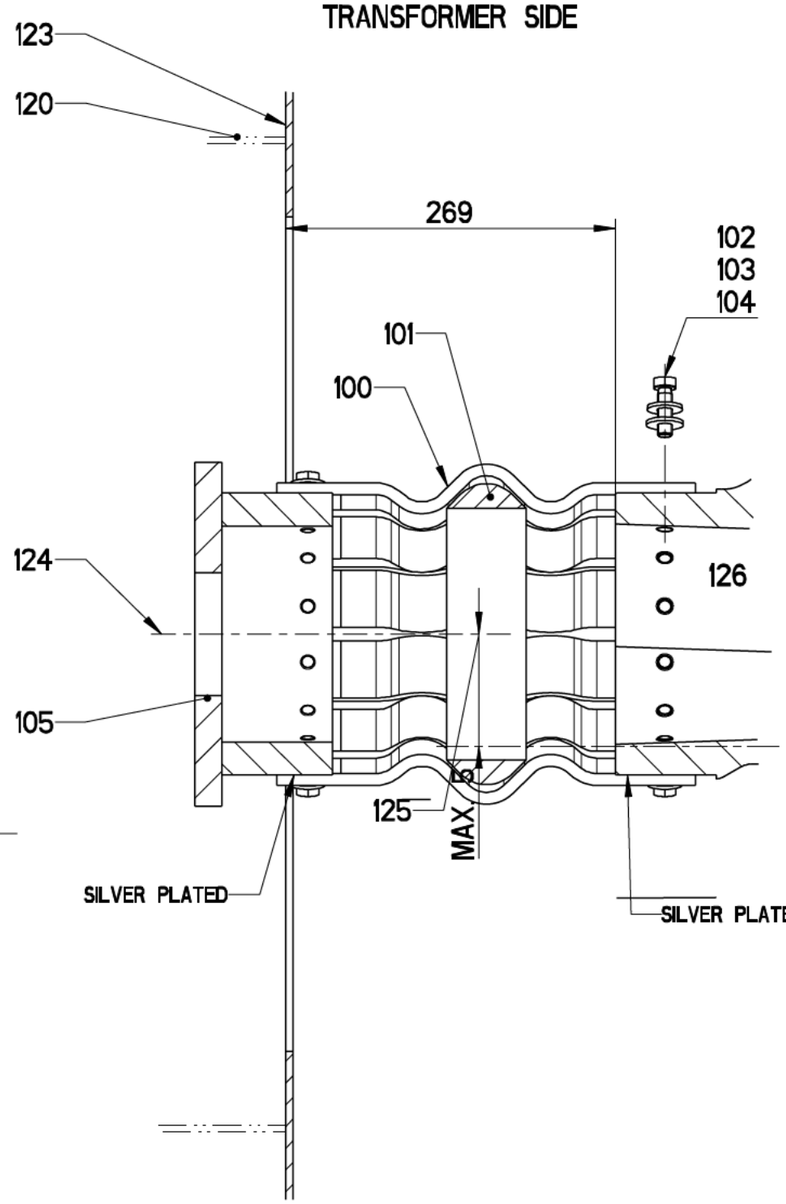
Hitachi Energy Ltd

Title: Outline Drawing
Floor Plan

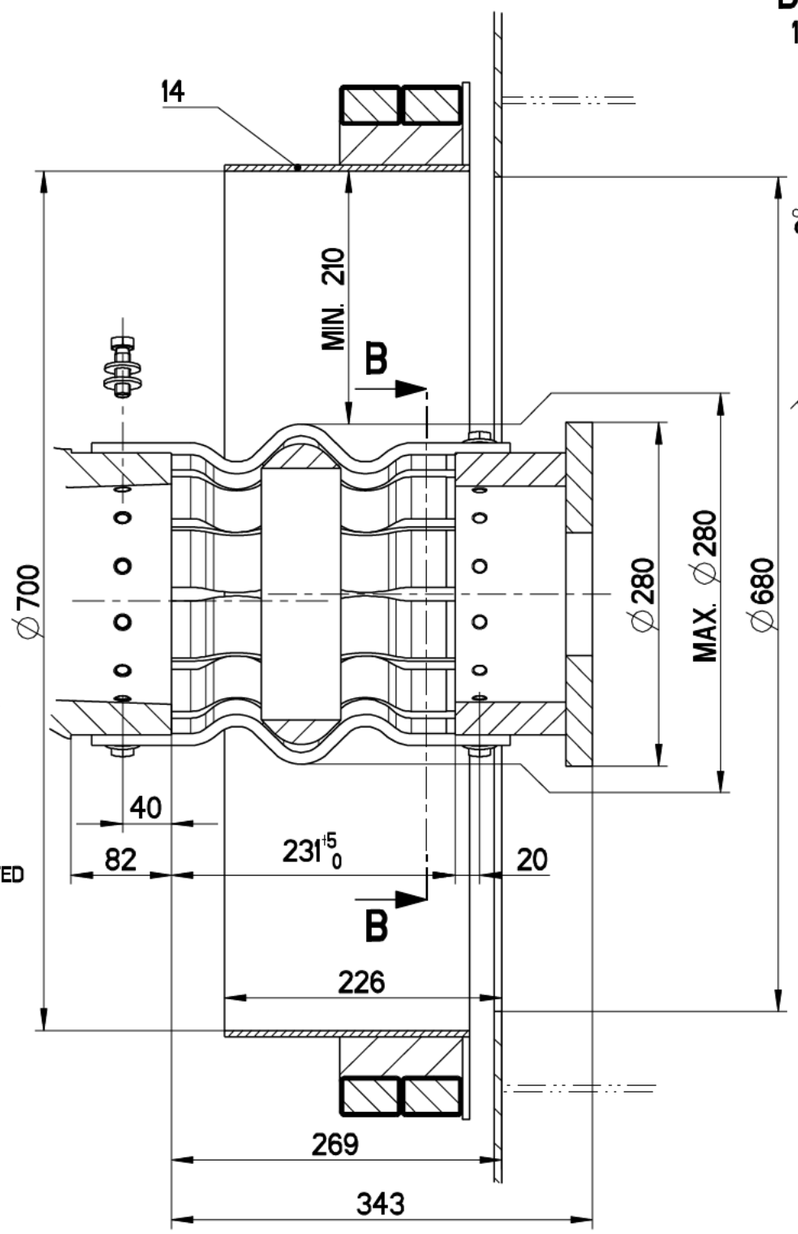
Unit: mm

Doc. id.	Sub.	Rev.	Lang	Page
2GHE198352		C	en	6(8)

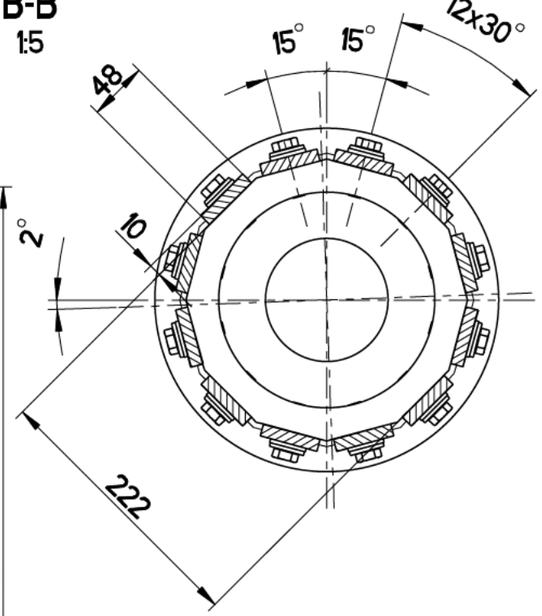
TRANSFORMER SIDE



GENERATOR SIDE



B-B
1:5



14	CURRENT TRANSFORMER
OPTIONAL ITEMS MAY BE ORDERED SEPARATELY	
100	FLEXIBLE CONNECTIOS 12x480mm2 CU
101	SUPPORT FOR THE FLEXIBLE CONNECTIONS
102	HEXAGONAL BOLT M12x40 CLASS 8.8 80Nm
103	SPRING WASHER
104	WASHER
105	CONDUCTOR TERMINAL, EN AC-ALSI10Mg T6
NOTES	
120	ISOLATED PHASE BUS
123	ENCLOSURE
124	CENTER LINE BUS DUCT
125	PERMISSIBLE VARIATON OF CENTER LINE IN EACH DIRECTION
126	CENTER LINE GCB
2¹)	SPACE REQUIRED TO DISMANTEL THE CURRENT TRANSFORMER

FLEXIBLE CONNECTION BIL 125kV
(TESTED CONNECTION ZONE ACC. IEC 61936-1, ANY DEVIATION FROM THIS DRAWING AND / OR METHOD OF INSTALLATION COULD CAUSE INJURY TO PEOPLE AND DAMAGE TO EQUIPEMENT)

DIELECTRIC DESIGN OUTSIDE OF THE GCB ENCLOSURE IS NOT PART OF HITACHI ENERGY's SCOPE OF SUPPLY

THE CLIENT HAS TO TAKE NOTE OF AND HAS TO COMPREHEND THAT IN CASE OF DISREGARDING THE VALUES OF THE "TESTED CONNECTING ZONES" ON THE DIMENSION DRAWING (BREAKER TO BUSBAR, STARTING SWITCH TO CABLES), OPERATIONAL HAZARDS; ENDANGERING OF OPERATIONAL STAFF AND DETERIORATION OF ENVIRONMENT CANNOT BE EXCLUDED.

Product	Order	Based on	Comments
HVS-63S	123678		

Prepared by	State	Set on	Set by
Mensah	Released	26-08-2024	Violi

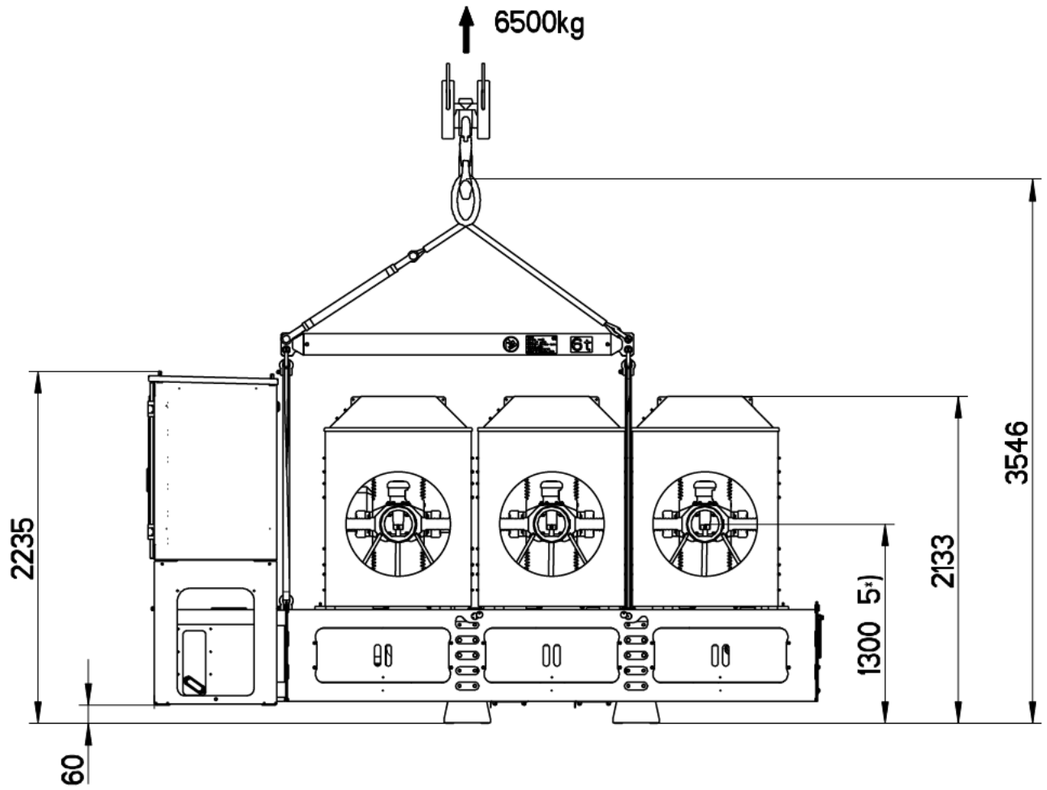
Security level	Document kind	Issued by
Internal	Drawing	PGHV-GE2

Hitachi Energy Ltd

Title: Outline Drawing
Connection Zone

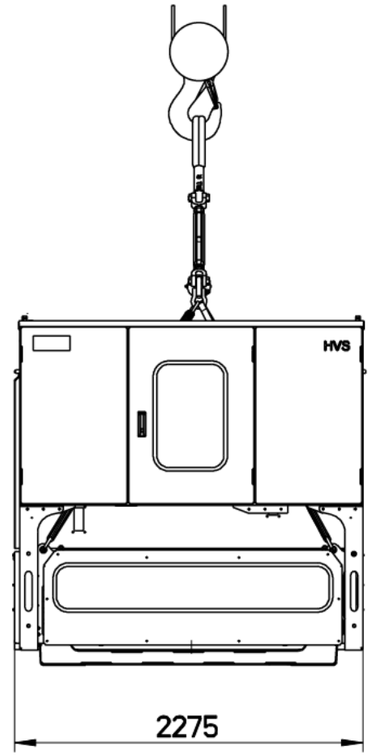
Unit: mm

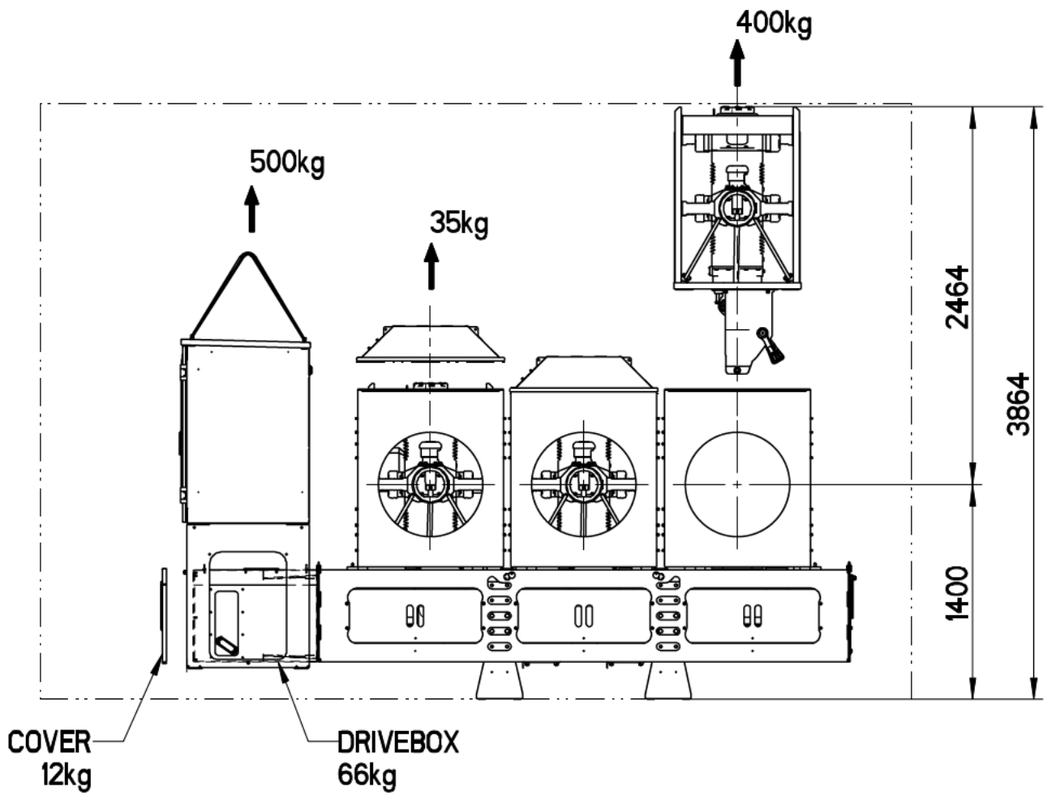
Doc. id.	Sub.	Rev.	Lang	Page
2GHE198352		C	en	7(8)



LIFTING INSTRUCTION

FOR TRANSPORT AND ERECTION ACCORDING TO THE INSTRUCTION MANUAL AND SUPPLIED SHIPPING DOCUMENTS





5*)	HEIGHT OF PHASE CENTER DURING TRANSPORT

Product	Order	Based on	Comments	
HVS-63S	123678			
Prepared by	State	Set on	Set by	Title
Mensah	Released	26-08-2024	Violi	Outline Drawing
Security level	Document kind	Issued by		Lifting / Service
Internal	Drawing	PGHV-GE2		Unit: mm
Hitachi Energy Ltd			Doc. id. 2GHE198352 Sub. Rev. C	Lang: en
				Page: 8(8)

Appendix D - Letters from Partner Organisations

4 April 2025

To Whom it May Concern

Thames Mobile Heat

The City of London Corporation
(the **Corporation**) is the governing body of the City of London (the **City**).

Heat decarbonization is an area of focus for the Corporation. Space and water heating currently makes up c.50% of the City's territorial carbon footprint.

We have been in discussion with Cory about the proposal to transport waste heat by barge from the Riverside EfW facility to heat networks in central London (**Thames Mobile Heat**) since mid 2024. We are also aware that Thames Mobile Heat has been included in studies procured by DESNZ under the Advanced Zoning Program to examine zonal scale heat networks within the City. We intend to continue to engage with Cory, and to progress Thames Mobile Heat as a heat source for the City. We are supportive of developments elsewhere on the river engaging with the Thames Mobile Heat project.

Yours faithfully

[redacted]

Senior Energy Engineer – Heat Network Lead

City of London Corporation

City of London PO Box 270, Guildhall, London, EC2P 2EJ
Switchboard [redacted]
www.cityoflondon.gov.uk

ENERGY SOLUTIONS FOR OUR FUTURE

Century House, Roman Road
Blackburn
United Kingdom, BB1 2LD
Tel: [redacted]
Fax [redacted]
Email: sales@vitalenergi.co.uk
Web: www.vitalenergi.co.uk

FAO: To Whom it May Concern

Date: 9th April 2025

Re: Thames Mobile Heat

Vital Energi are a leading contractor and developer of heat networks in the UK. Working with partners, Vital Energi are expanding an operating heat network adjacent to the river Thames at Barking Riverside (working with L&Q), developing the new South Westminster Area Network (**SWAN**, in partnership with Hemiko), developing the new Guy's and St Thomas Energy as a Service Project and decarbonisation of the Battersea Power Station (in partnership with Bring Energy).

A key constraint in scaling heat networks in London is securing well priced, low carbon heat. We have been in discussion with Cory about the potential to supply heat from Riverside EfW by barge along the Thames (**Thames Mobile Heat**). For some sites this has included techno-economic evaluation based on heat loads, supply arrangements and potential pricing, and for SWAN an initial appraisal was completed by AECOM acting for DESNZ, prior to network tendering.

The Thames Mobile Heat project – and longer-term potential for a transmission main from Cory – offers a potential heat supply solution to networks we are involved with including Barking Riverside and SWAN. It is under active consideration, and we intend to continue collaborating with Cory.

Yours faithfully

[redacted]

[redacted]
Managing Director

FAO Green Heat Network Fund
Department for Energy Security and Net Zero
3 Whitehall Place
London
SW1A 2AW

9th April 2025

To Whom it May Concern

Thames Mobile Heat

1Energy are a leading developer of heat networks in the UK. 1Energy plan to develop a heat network adjacent to the river Thames at London Bridge and are also part of a competitive process to decarbonise the St Thomas' Hospital estate.

A key constraint in scaling heat networks in London is securing well priced, low carbon heat.

We have been in discussion with Cory about the potential to supply heat from Riverside EfW by barge along the Thames (**Thames Mobile Heat**) since 2024. This has included techno-economic evaluation based on heat loads, supply arrangements and potential pricing.

The Thames Mobile Heat project – and longer-term potential for a transmission main from Cory – offers a potential heat supply solution to our network at London Bridge and/or St Thomas'. It is under active consideration, and we intend to continue collaborating on it with Cory.

Yours faithfully

[redacted]

[redacted]

Strategic Development Director

Citigen (London) Ltd
Westwood Way
Westwood Business Park
Coventry
West Midlands
CV4 8LG

10th April 2025

To Whom it May Concern

Thames Mobile Heat

E.ON are a leading developer of heat networks in the UK. E.ON operate the Citigen heat network near the river Thames in the City of London. E.ON is developing potential expansion plans, that will be enabled under the new Heat Network Zoning regulation, to the river frontage.

A key constraint in scaling heat networks in London is securing well priced, low carbon heat.

We have been in discussion with Cory about the potential to supply heat from Riverside EfW by barge along the Thames (**Thames Mobile Heat**) since mid 2024. This has included techno-economic evaluation based on heat loads, supply arrangements and potential pricing.

The Thames Mobile Heat project – and longer-term potential for a transmission main from Cory – offers a potential heat supply solution to our network at Citigen. It is under active consideration and we intend to continue collaborating on it with Cory.

Yours faithfully

[redacted]

[redacted]
Head of Heat Zone Development

Cory Environmental Holdings Limited
Level 5
10 Dominion Street
London
EC2M 2EF

SSE Energy Solutions
Inveralmond House
200 Dunkeld Road
Perth
PH1 3AQ

Date: 25/04/2025

To Whom it May Concern

Thames Mobile Heat

SSE Heat Networks Limited ("**SSE**") is a leading developer of heat networks in the UK. SSE is planning to develop a heat network central London. A key constraint in scaling heat networks in London is securing well priced, low carbon heat.

We have been in discussion with Cory Environmental Holdings Limited ("**Cory**") about the potential to supply heat from Riverside EfW by barge along the Thames ("**Thames Mobile Heat**"). This has included early stage techno-economic evaluation based on heat loads, supply arrangements and potential pricing.

The Thames Mobile Heat project – and longer-term potential for a transmission main from Cory – offers a potential heat supply solution to our planned network in London. It is under active consideration and we intend to continue collaborating on it with Cory.

This letter may be disclosed by Cory to the Department for Energy Security & Net Zero (DESNZ) or its agents in connection with an application for Green Heat Network Funding, or otherwise with SSE's express permission.

Yours faithfully,

[redacted] Apr 25, 2025 15:28 GMT+1)
[redacted]
Director

DECARBONISATION

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