

HOUSTON SOLAR PHOTOVOLTAIC (PV) AND ENERGY STORAGE FACILITY

Flood Risk Assessment

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2
June 2023

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1 INTRODUCTION

RPS were commissioned by Elgin Energy EsCo Ltd to prepare a Flood Risk Assessment (FRA) for a new solar PV and battery storage facility on lands to the east of Houston, Renfrewshire. The approximate location of the site is shown in Figure 1.1.

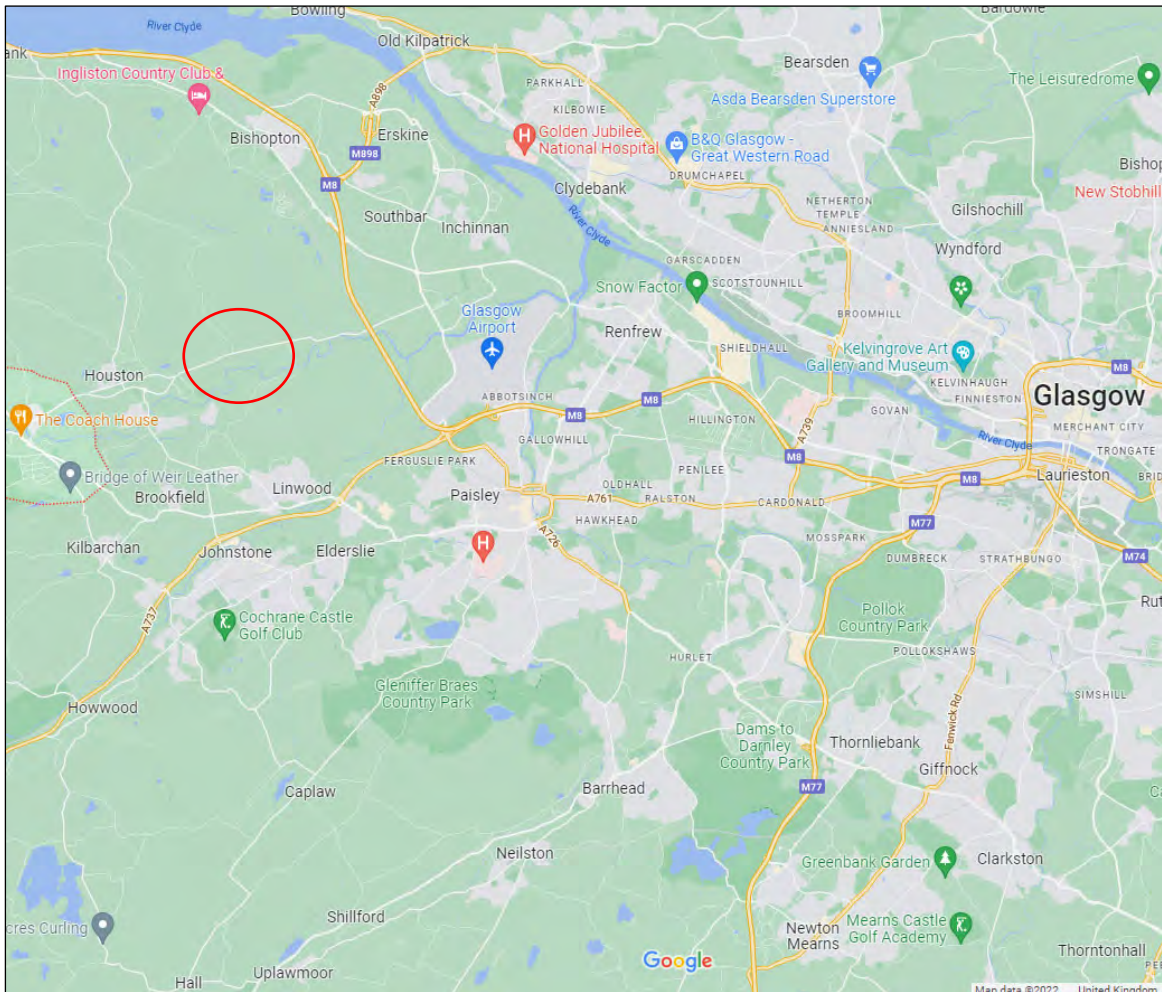


Figure 1.1 Approximate location of site

The FRA has been prepared to meet the requirements of Scottish Planning Policy (SPP), SEPA guidance and the Renfrewshire Council Local Development Plan.

2 OVERVIEW OF THE EXISTING SITE

The proposed development is located on three parcels of land within the Renfrewshire Council Area. At its nearest point, the northernmost parcel of land (Houston North) is located approximately 0.5km northeast of Houston village. It is situated to the north of the B790 Houston Road and is bisected by Turningshaw Road. The other two land parcels (Houston South) are located to the south of the B790 Houston Road, situated to the east and west of Moss Road. At their nearest point the lands are located approximately 1km east of Houston village. A location map is shown in Figure 2.1 and in Appendix A.

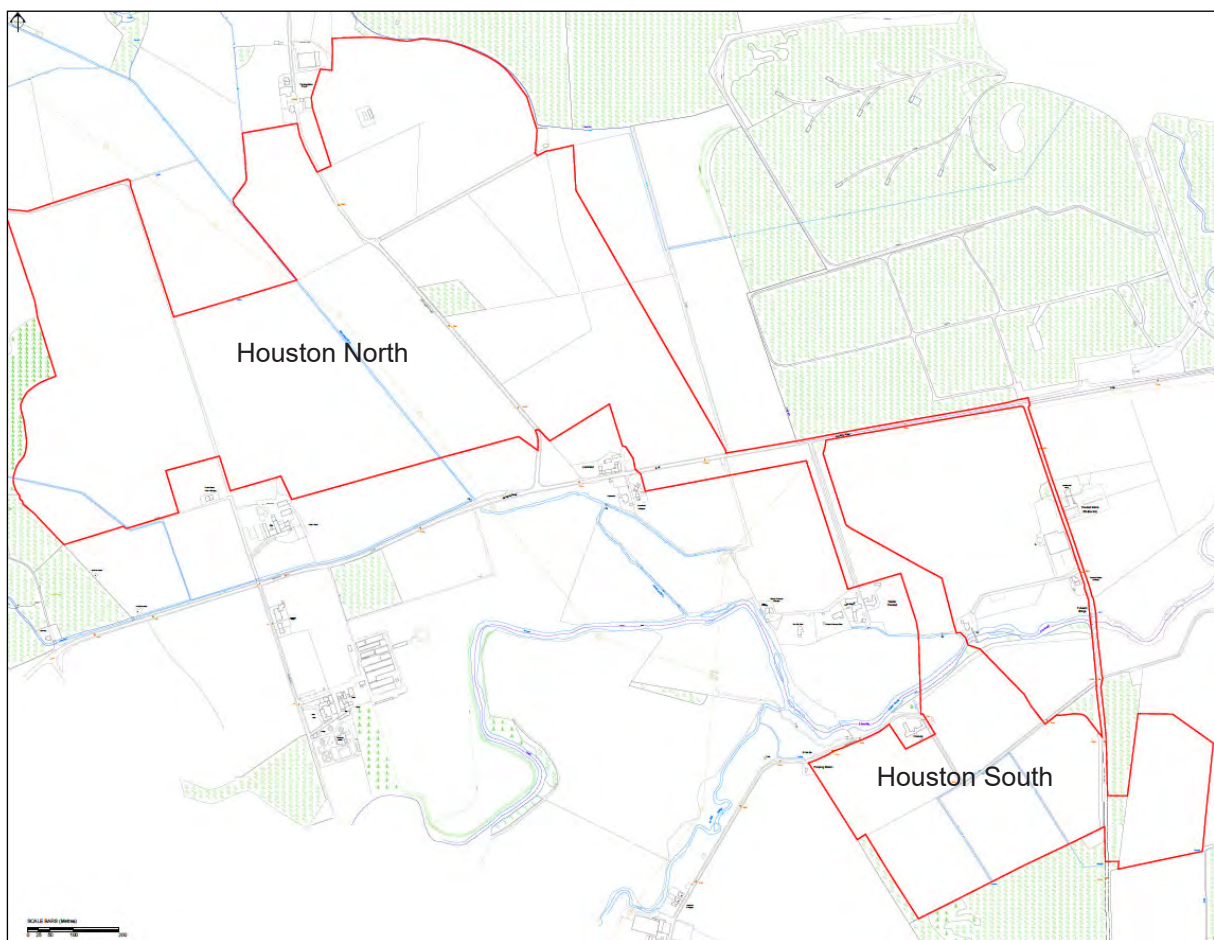


Figure 2.1 Site location map

The main watercourse in the area is the River Gryfe, which is a tributary of the River Clyde. The River Gryfe flows through the southern section of the site (Houston South). The Locher Water flows into the River Gryfe to the west of the southern section of the site (Houston South). The Barochen Burn flows through the northern section of the site (Houston North) to the River Gryfe. The Houston Burn flows to the

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south of the northern section (Houston North) to the Barcochen Burn. The locations of these watercourses are shown in Figure 2.2. There are a number of other minor watercourses/ drainage channels flowing through or adjacent to the sites. The sites have no formal existing drainage network.

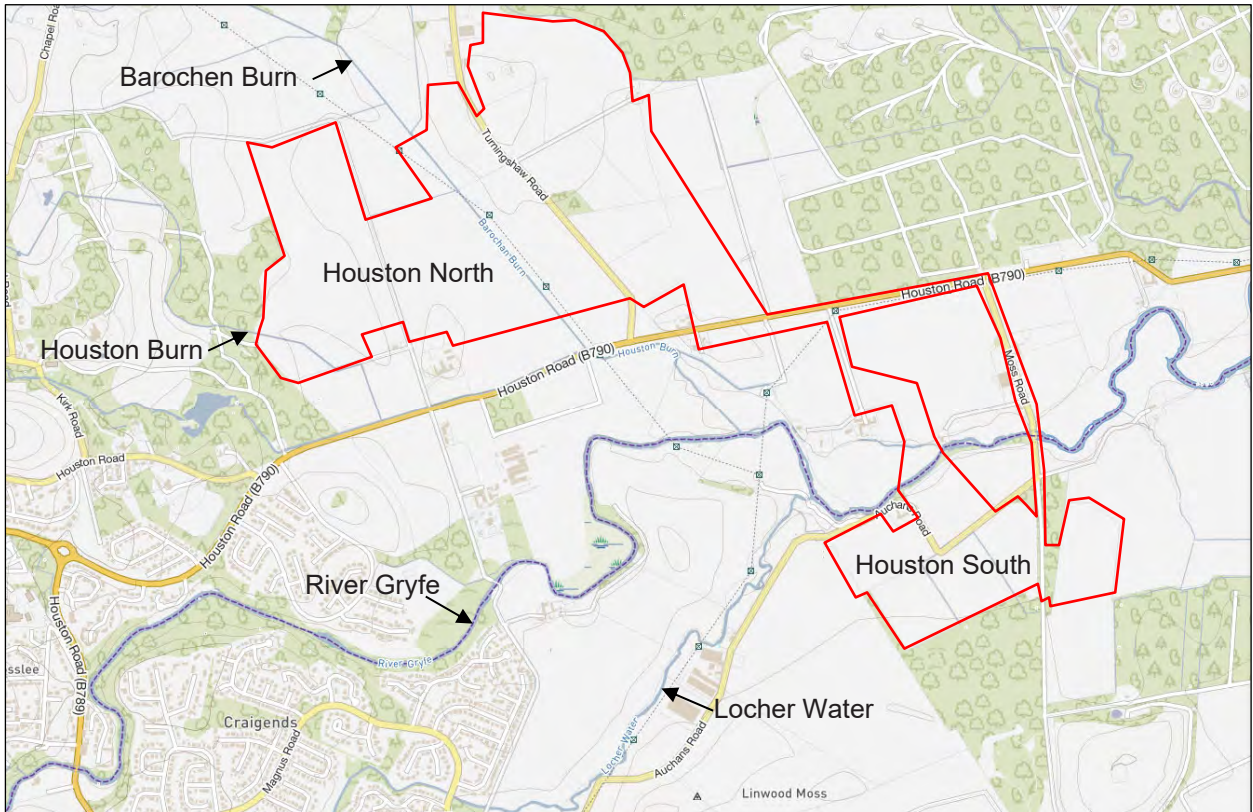


Figure 2.2 Locations of local watercourses

3 PROPOSED DEVELOPMENT

The solar PV layout is shown in Appendix B. The land-holding (red-line boundary) upon which the development is proposed measures c. 129 hectares / 318 acres. As per the application pack drawings, panels will not be placed on this entire area.

When constructed it is anticipated that the solar farm will have an installed capacity of c.75MW. The battery storage facility will have a capacity of c.25MW. It is proposed to locate the battery facility beside the proposed primary substation within the site and near to the south-western boundary of the south-eastern land parcel.

The project components comprise:

- Photovoltaic (PV) Solar Panels erected on steel frames in south-facing arrays;
- A primary substation, comprising electrical infrastructure and associated buildings, including control building, to enable the proposed solar facility to be controlled, monitored, metered and connected to the network. These elements will be located within a compound typically measuring c.20m x c.20m;
- It is proposed to connect the on-site primary substation at Houston South to Houston North via a small connecting substation, through an underground cable connection;
- 26 No. Inverter Substation Containers on concrete plinths, typically measuring 12.2m (l) x 2.5m (w) x 3m (h) to be located across the site;
- A number of strategically located CCTV security cameras (3m high);
- Perimeter post and wire “deer” fencing (c.2.45m high);
- Associated Battery Energy Storage System (BESS) facility comprising 12 No. storage units typically measuring 12.2m (l) x 2.5m (w) x 3.4m (h) set side by side generally 3 metres apart. Each pair of storage units will be facilitated by an associated power conversion system (PCS) unit (6 in total) again typically measuring 12.2mm (l) x 2.5m (w) x 3m (h). The battery storage units and PCS units will sit atop plinths/upstands typically measuring 300mm high but within a range of 100mm to 500mm. Concrete will be limited to the extent of the upstands and will not be placed across the entirety of the Battery Storage Area. The storage units and proposed substation will be placed atop a permeable surface;
- Access to Houston North is via existing field entrances on either side of both N Mains Road and Turningshaw Road; and access to Houston South is via entrances on either side of Moss Road and an entrance on Auchans Road;

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- Two No. temporary construction compounds, to be located (one each) at Houston North and Houston South; and
- Associated internal service tracks.

When operational the site will support a dual renewable/ farming use and the overwhelming land area will remain agricultural. Sheep grazing will take place across the entire area and will not be impeded by the proposed infrastructure.

4 POTENTIAL SOURCES OF FLOOD RISK

Scottish Planning Policy (SPP) states that the planning system should promote a precautionary approach to flood risk from all sources. SEPA flood maps were consulted which show areas which are likely to flood from rivers, the sea and surface water. The SEPA flood maps relevant to each of the proposed development areas are described below. Note that the information shown in the flood maps is indicative.

4.1 River Flooding

An extract from the SEPA river flooding map (present day) is shown in Figure 4.1, with the approximate site extent marked on. The SEPA Flood Maps have been produced following a consistent, nationally applied methodology for catchment areas equal to or greater than 3km², so the fluvial flood risk from minor watercourses has not been modelled or shown on the SEPA Flood Map. The map shows the flood extents from the River Gryfe, Locher Water, Barochen Burn and the Houston Burn. Part of the northern section of the site is affected by the floodplain of the Barochen Burn for all of the mapped events, and part of the southern section of the site is affected by the floodplain of the River Gryfe for all of the mapped events.

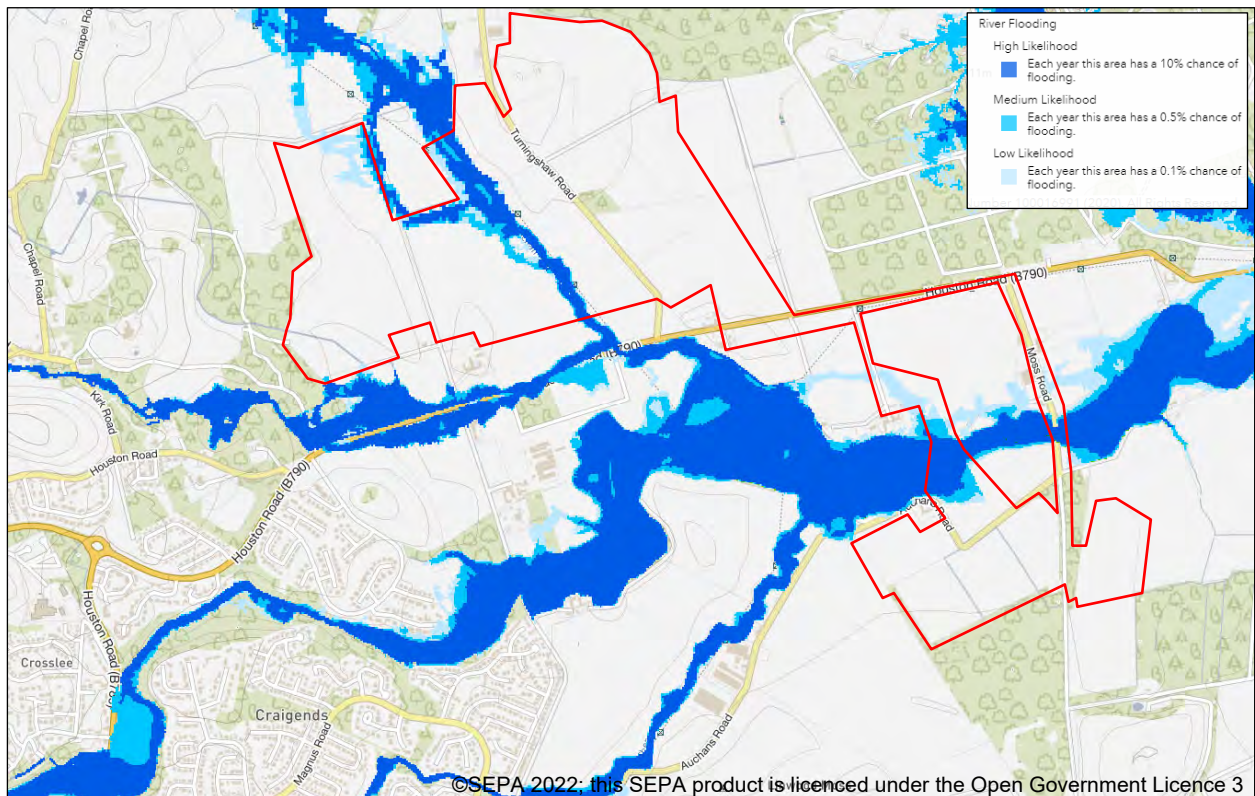


Figure 4.1 Extract from SEPA river flooding map (All likelihoods, present day)

4.2 Coastal Flooding

The River Clyde can be considered as tidal where the River Gryfe joins it. This therefore has an impact on the River Gryfe at Houston. An extract from the SEPA coastal flooding map (present day) is shown in Figure 4.2, with the approximate site extent marked on. Part of the southern section of the site is affected by the coastal floodplain for all of the mapped events. The area affected by coastal flooding is along the River Gryfe and is a lesser extent than the river flooding.

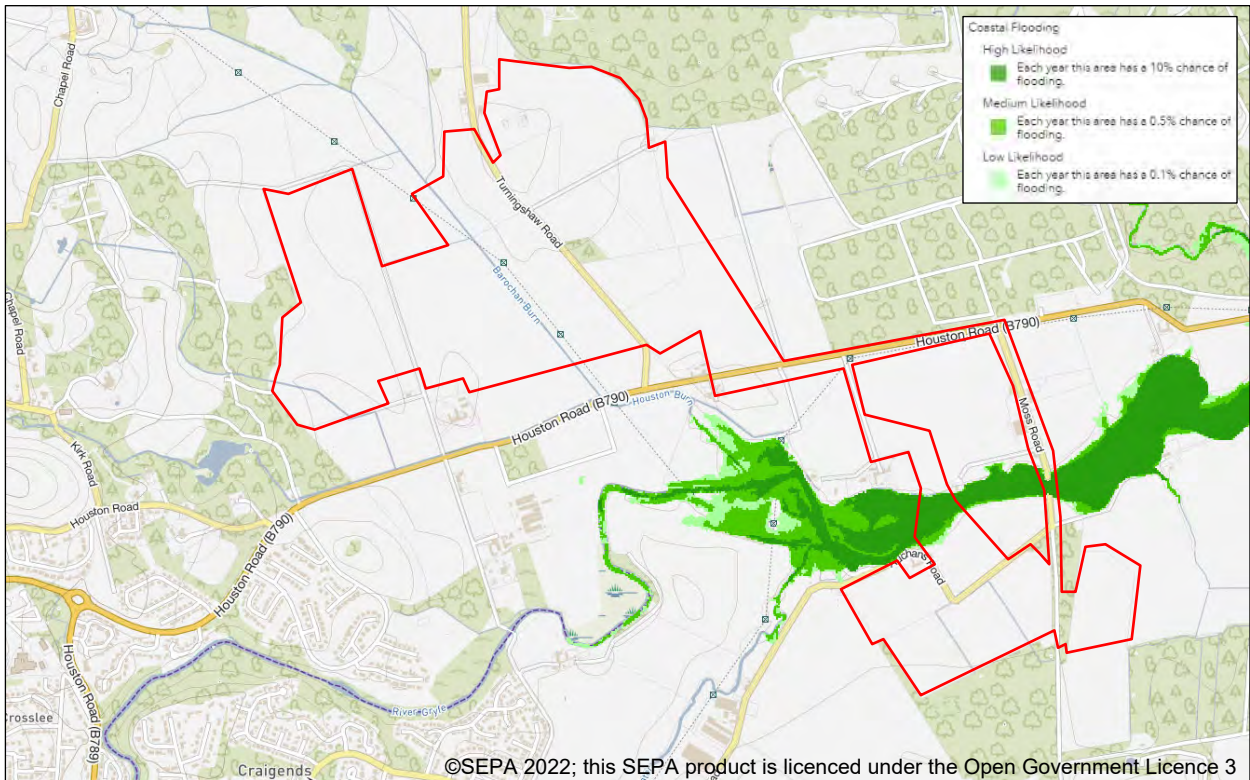


Figure 4.2 Extract from SEPA coastal flooding map (All likelihoods, present day)

4.3 Surface Water Flooding

Surface water flooding occurs after periods of intense and prolonged rainfall which saturate the land or drainage systems and excess water cannot drain away. Surface water flooding is more likely to occur where the ground is naturally poorly drained or has been developed without the implementation of adequate drainage systems. An extract from the SEPA surface water flood extent map is shown in Figure 4.2, with the approximate site extent marked on. The map shows areas of surface water flooding within the site, particularly along the watercourses.

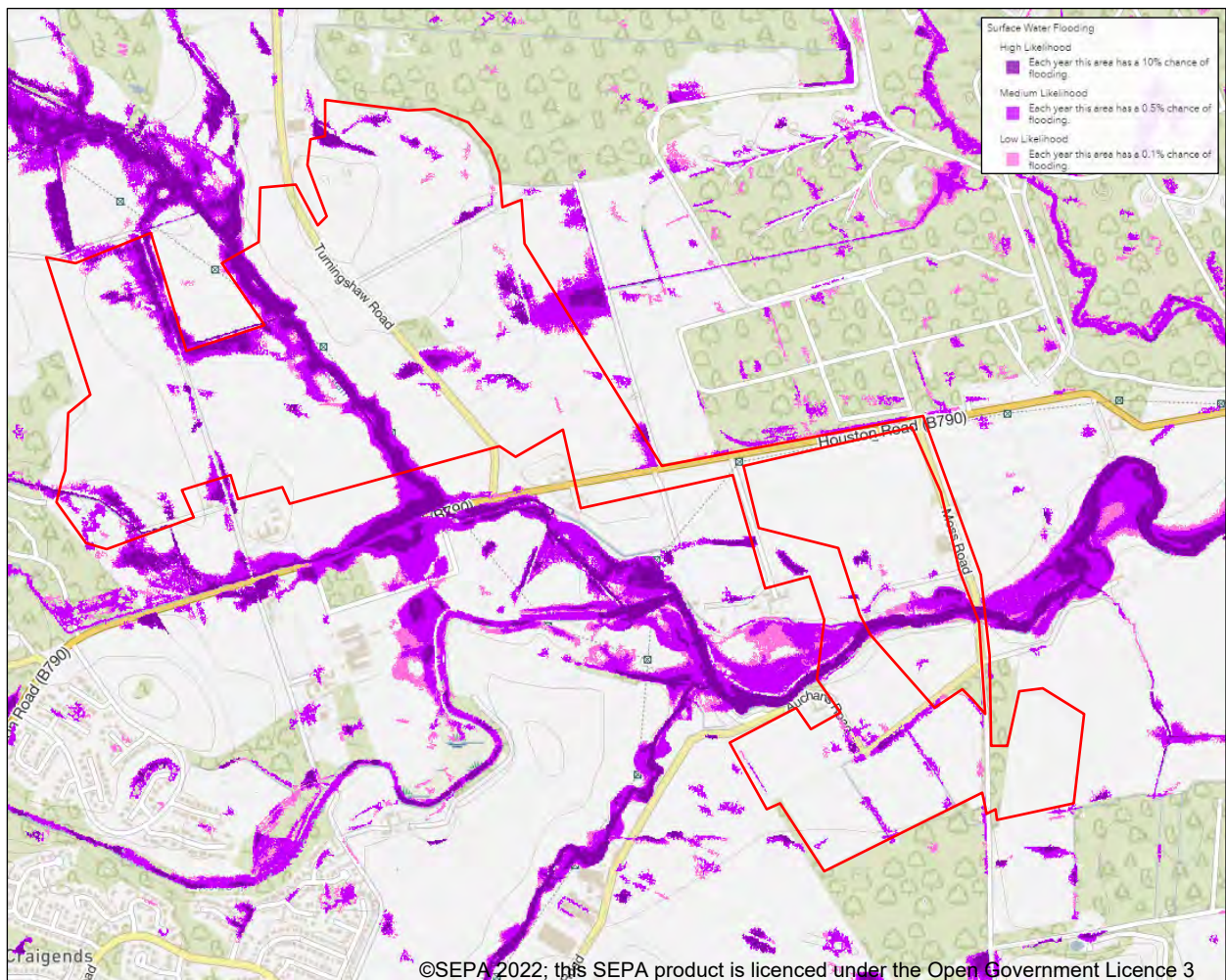


Figure 4.3 Extract from SEPA surface water flood extent map (All likelihoods, present day)

4.4 Groundwater Flooding

Groundwater flooding is most likely to occur in low lying areas which are underlain by permeable rocks such as chalk, sandstone, or localised sands and gravels. During flooding, groundwater can emerge at the ground surface or within man-made underground structures such as basements. The SEPA Flood Map includes an indicative groundwater flood map. The proposed development site is not located within the indicative area of groundwater influenced flooding shown on the SEPA map.

4.5 Flooding from Drainage Systems

Roadside drains, sewers and culverts can also be the cause of flood events if they fail, become blocked or are inundated with water that exceeds their capacity. The site is rural in nature and therefore is not deemed to be at flood risk from sewers.

4.6 Reservoir Flooding

All reservoirs that have the capacity to hold 25,000m³ or more of water above the natural level of the surrounding land are required to be registered with SEPA. The Controlled Reservoirs Register contains key information about each registered reservoir including an inundation map highlighting the area of land that is likely to be flooded in the event of an uncontrolled release of water. An extract from the register is shown in Figure 4.4. This shows that part of the site may be affected by the potential inundation from Loch Thom and Gryfe Reservoir. These reservoirs are located approximately 20km to the west of the site.

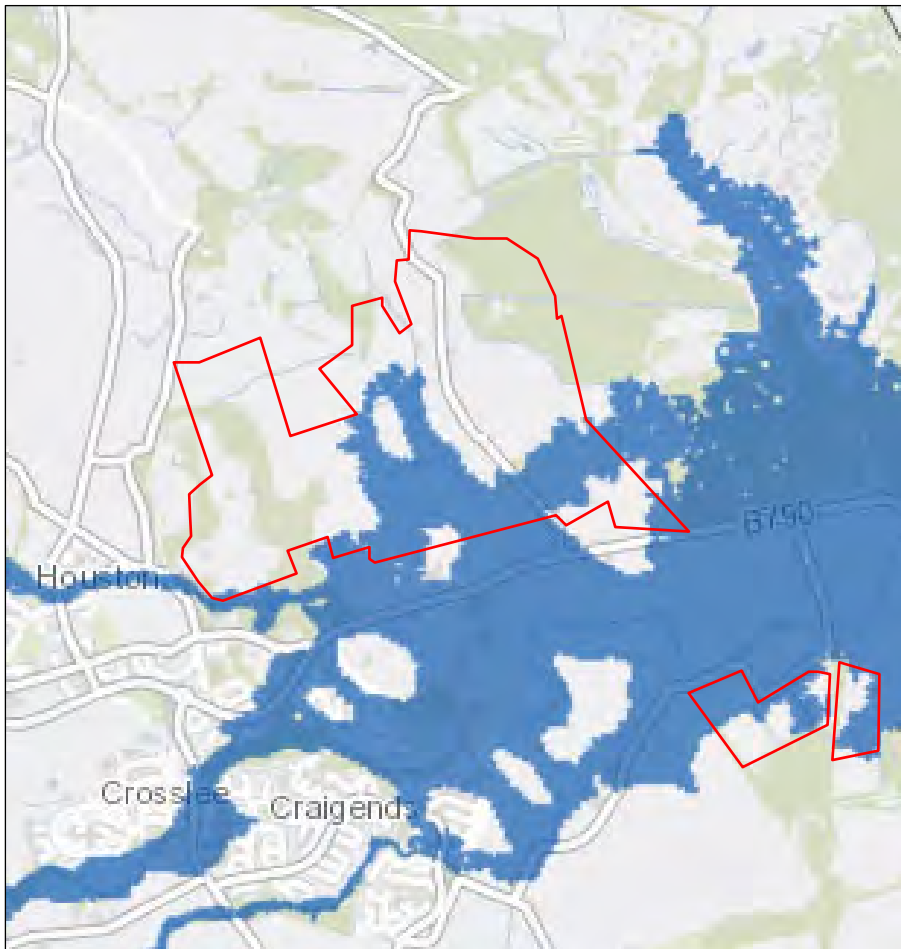


Figure 4.4 Extract from SEPA Controlled Reservoirs Register

SEPA has produced a position statement on the assessment of the potential application of the reservoir inundation maps for land use planning purposes. A key consideration of this assessment is that it is not currently possible to assess the probability of an uncontrolled release of water from a reservoir in a manner consistent with the Flood Risk Framework within Scottish Planning Policy (SPP). Furthermore, the probability of failure of a reservoir structure managed under the 2011 Act is considered to be so low that it is beyond the scope of likely probabilities considered within the SPP Flood Risk Framework. For these reasons, SEPA do not consider that the reservoir inundation maps are appropriate to usefully inform flood risk advice within the context of Section 72 of the FRM Act and Scottish Planning Policy. It has therefore been concluded by SEPA that the reservoir inundation maps should not be used for land use planning purposes.

Reservoir flooding has therefore not been considered in the assessment as no appropriate mapping is available. As the sites are located so far from the reservoirs (approximately 20km), it is unlikely that any potential inundation would pose a significant flood risk. Under the Reservoir (Scotland) Act there is an emphasis on ensuring that Scotland's reservoirs are structurally sound, properly monitored and well maintained.

4.7 Historical Flood Events

Properties and agricultural land in Houston have suffered river flooding in the past between 1874 and 1887, and more recently in December 2006. Surface water flooding has been regularly reported, mainly impacting roads and properties in the Houston area. No historic flood events have been noted at the proposed sites. An extract from the Renfrewshire Local Development Plan Strategic Flood Risk Assessment (SFRA) (2019) shows the locations of historical flood events.



Figure 4.5 Historical flood events (Renfrewshire Local Development Plan SFRA)

4.8 Summary

RPS has considered all possible sources of flooding (coastal, fluvial, surface water, groundwater, and drainage systems) and the results of this are summarised in Table 4.1. The table shows that the possibility of river flooding and surface water flooding should be considered further as per subsequent sections of this report.

Table 4.1 Summary of flood risk

Source of flooding	Description
River	The SEPA map shows the flood extents from the River Gryfe, Locher Water, Barochen Burn and the Houston Burn. Part of the northern section of the site is affected by the floodplain of the Barochen Burn for all of the mapped events, and part of the southern section of the site is affected by the floodplain of the River Gryfe for all of the mapped events.
Coastal	The River Gryfe can be considered to be tidal at this location. Part of the southern section of the site is affected by the coastal floodplain for all of the mapped events. The area affected by coastal flooding is along the River Gryfe and is a lesser extent than the river flooding.
Surface water	The SEPA Flood Map shows areas of potential surface water flooding within the site, particularly along the watercourses.
Groundwater	The proposed development site is not located within the indicative area of groundwater influenced flooding shown on the SEPA Flood Map.
Reservoir	No appropriate mapping is available. As the sites are located so far from the reservoirs (approximately 20km), it is unlikely that any potential inundation would pose a significant flood risk.
Drainage systems	The site is rural in nature and therefore is not deemed to be at flood risk from sewers.

5 RUNOFF FROM THE PROPOSED DEVELOPMENT

The solar panels will not form large impermeable surfaces. Installation of the panels will have minimal impact on the ground as the panel stanchions are small in cross-sectional area and spaced at a distance apart. The front bottom edge of the panels will be typically 0.8m above existing ground level and within a range of 500mm to 1.2m, depending on local topography. Panel rows will be separated by between 2m and 8m, depending on site topography. In addition, there are spaces between each of the panels as they are affixed to the supporting structure, allowing rainwater to pass through the arrays and disperse evenly. These design features combine to ensure permeability within the solar panels, and runoff will be no greater for the developed site than it is for the pre-developed site. Rainfall will fall onto open ground as usual or run-off the panels through the gaps into the ground to be dispersed by the same routes that are currently in place. Photos of the panels from a recently constructed solar farm are shown in the Figures 5.1 and 5.2, where the spaces between the panels are clearly visible.



Figure 5.1 Photo of solar panels (front elevation)



Figure 5.2 Photo of solar panels (underneath)

The panels are being installed on the land as it is currently. When operational the site will support a dual renewable/ farming use and the overwhelming land area will remain agricultural. Therefore, there will be no changes made to existing ground levels or ground cover, and the existing surface runoff paths are unchanged. The existing vegetation beneath and around the solar panels will be retained. Grass cover helps reduce runoff and erosion by slowing movement of water in the affected area. Earth disturbance and grading activities will be minimised. This will therefore replicate the pre-development condition after the construction is finished. Figures 5.1 and 5.2 show how the grass has been retained at the recently constructed solar farm.

Any flows that do not infiltrate will drain to the existing drainage ditches within the site. The overall drainage regime for the site will not therefore be significantly altered as a result of the proposed development. Therefore, no additional drainage works are proposed as part of the development.

There is no other significant infrastructure being installed that will impact significantly on runoff. Access to Houston North will be via existing field entrances on either side of both N Mains Road and Turningshaw Road. Access to Houston South is via entrances on either side of Moss Road and at Auchans Road. The development will utilise existing agricultural lanes for servicing purposes in so far as is reasonably possible. Access will also be achievable via tractor or 4 x 4 vehicles around the periphery of existing fields where buffers to field boundaries are designed into development proposals. As such the extent of proposed new

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access tracks is minimised. Where new tracks are required, these will be permeable and of stone construction.

The primary substation and control building compound measuring approximately 20m (l) x 20m (w) in area is located in the Houston South portion of the site, next to the BESS facility. This substation and control building will sit atop a concrete foundation however the remainder of the compound will be permeable and of stone construction. A typical cross-section is shown in Appendix C. The control and sub-station buildings will have gutters and downpipes, and rudimentary soakaways will be provided for each pipe (consisting of a stone pit).

The BESS facility will comprise of 12 No. storage units typically measuring 12.2m (l) x 2.5m (w) x 3.4m (h) set side by side generally 3 metres apart. Each pair of storage units will be facilitated by an associated power conversion system (PCS) unit (6 in total) again typically measuring 12.2mm (l) x 2.5m (w) x 3m (h). Typical cross-sections are shown in Appendix C. The battery storage units and PCS units will sit atop plinths/ upstands typically measuring 300mm high but within a range of 100mm to 500mm. Concrete will be limited to the extent of the upstands and the remainder of the compound will be permeable and of stone construction.

The inverter stations will be accommodated in small modular cabin like buildings positioned throughout the site. A typical inverter detail is shown in Appendix C. There are 26 containers across the site with typical dimensions are 12.2m (l) x 2.5m (w) and 3m (h). The inverter stations are constructed atop raised concrete plinths. Below the inverter station is 300mm gravel base. The small areas of roofs created by the inverter stations are insignificant compared to the size of the site, and any limited runoff will soak away naturally.

The cable trenches will be approximately 1m deep, depending on the detailed terrain. The first 150mm of trenches will be filled with sand. The remainder of the trenches will be backfilled with the existing topsoil which was previously removed to facilitate the cable laying. There will be no importing of materials to facilitate this process. Vegetation soil turves will be laid beside the trench and used to reinstate the ground to original levels after the cables have been installed. The cable trenches will therefore not cause any additional surface water flow paths to develop.

6 FLOOD MITIGATION MEASURES

Policy 13 'Flooding and Drainage' of the Renfrewshire Local Development Plan 2021 states that development must not have an adverse impact on existing drainage infrastructure, increase the risk of flooding or result in the loss of land that has the potential to contribute to the management of flood risk through natural flood management, green infrastructure or as part of a flood management scheme.

6.1 River Flooding

Scottish Planning Policy (SPP) sets out national planning policies for operation of the planning system and for the development and use of land. SPP proposes a flood risk framework approach which identifies flood risk in three main categories and the appropriate planning approach to each:

- Little or no risk - annual probability of coastal or watercourse flooding is less than 0.1%
- Low to medium risk - annual probability of coastal or watercourse flooding is between 0.1% and 0.5%
- Medium to high risk - annual probability of coastal or watercourse flooding is greater than 0.5%.

As shown in Section 4.1, areas of the site are affected by river floodplains. Areas of the site can therefore be identified as being in the three main categories of flood risk as listed above. The concept of 'flood avoidance' as described in the Scottish Planning Policy has been applied in the layout of the proposed solar farm, which will locate the development away from the functional floodplains and medium to high-risk areas. No development is being located in the areas that have been identified from the SEPA flood mapping as 'Medium likelihood of flooding' (0.5% AEP) in Figure 4.1. Adopting this approach also means that the layout of the solar farm avoids the area identified as coastal floodplain. Figure 6.1 shows the proposed solar panel layout with the river floodplains.

A buffer of between 5 to 10m has been used in the siting of the panels either side of any watercourse/ drain. The front bottom edge of the panels will be typically 0.8m above existing ground level and within a range of 500mm to 1.2m, depending on local topography. The panels will only be at risk of flooding if the depth exceeds this, which is extremely unlikely for small drains.

The substation and battery storage area is located well outside any areas of potential river flooding.

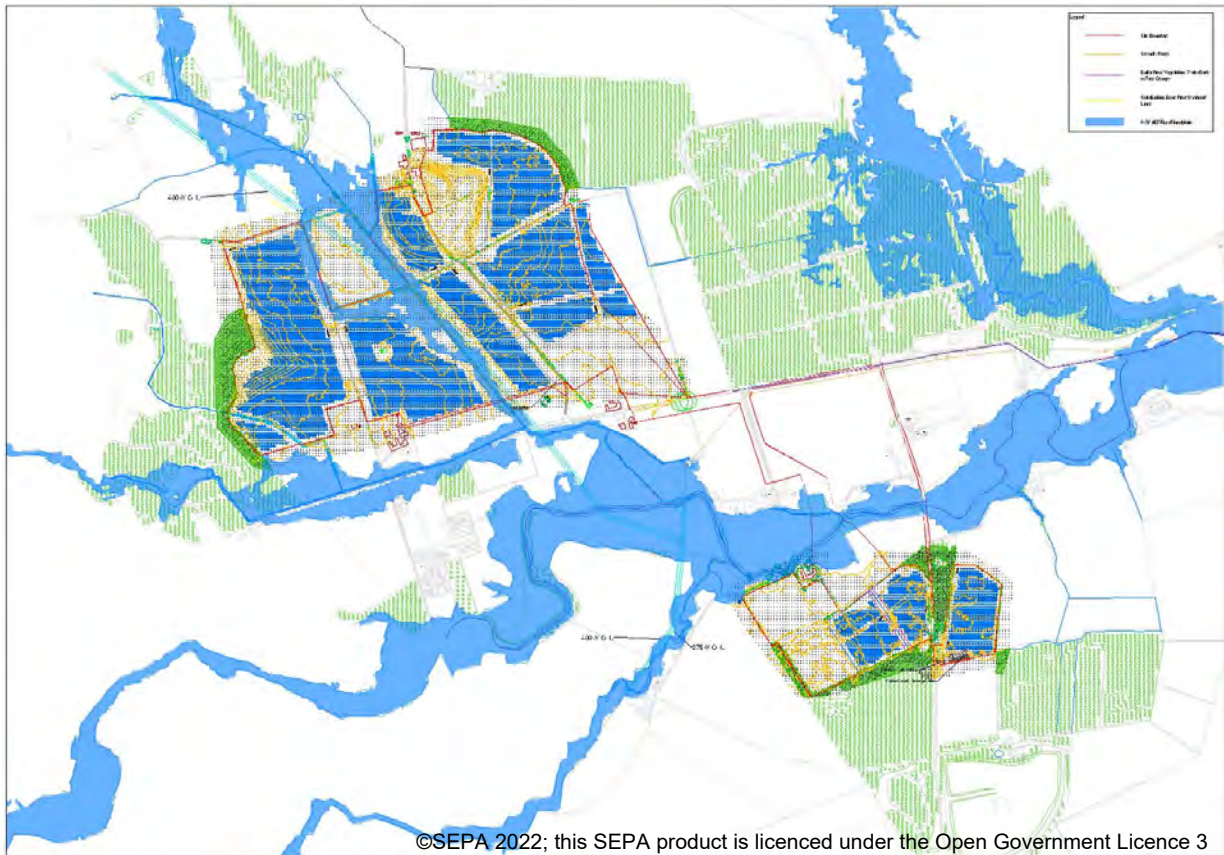


Figure 6.1 Solar panel layout with 0.5% AEP river floodplain

6.2 Surface Water Runoff

Surface water flooding occurs when the ground is unable to absorb the rainwater, causing it to flow over the surface and fill depressions and low spots in the landscape where the local natural and engineered drainage systems are overwhelmed. Some areas of potential flooding from surface runoff have been identified within the site, mostly along the watercourses which are being avoided for the proposed development. There are some areas outside of these, but they will not impact the proposed development as they are likely to be of limited depths and the panels will be typically 0.8m above existing ground level and within a range of 500mm to 1.2m.

As described in Section 5, the proposal will not significantly increase the rate of runoff from the current rates and no formal drainage systems are being installed. Therefore, no further mitigation measures are proposed.

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The retention of the existing grass cover helps reduce runoff and erosion by slowing the movement of water. Earth disturbance and grading activities will be minimised. This will therefore replicate the pre-development condition after the construction is finished. Disturbance during construction will be minimal and grass will be retained. However, where construction activities have impacted on existing areas of vegetation, these areas will be chisel ploughed and re-seeded with agricultural grazing/ silage sward grass species. Chisel ploughing will reduce soil compaction on the site and promote growth; it has been proven to significantly increase infiltration rates thereby reducing runoff rates. Additionally, the planting provides high levels of natural attenuation which will serve to reduce the erosion and limit surface water flows across the site. The site will be actively managed to keep the soil in good condition during the operational phase and maintain the sward where possible.

It is not usual for water channels to form as a result of runoff from the panels, especially if the ground is vegetated. However, checks will be undertaken by staff visiting the site for maintenance visits at 6 monthly intervals. If necessary, erosion control methods will be used.

7 CONCLUSION

This FRA has been prepared to show that the proposal complies with Scottish Planning Policy and SEPA guidance. The main sources of flooding have been considered, based on published flood maps (coastal, river, surface water, groundwater, and drainage systems).

The SEPA Flood Map shows that areas of the site are affected by the floodplains of the Barochan Burn and the River Gryfe. The concept of 'flood avoidance' as described in the Scottish Planning Policy has been applied to the layout of the proposed solar farm, which will locate the development away from the functional floodplains and medium to high-risk areas. No development is being located in the areas that have been identified from the SEPA flood mapping as 'Medium likelihood of flooding' (0.5% AEP). A buffer of between 5 to 10m has been used in the siting of the panels either side of any watercourse/ drain, and the panels will be above the ground by typically 800mm (within a range of 500mm to 1.2m). These measures will ensure that the risk of flooding to the panels is minimised. The substation and battery storage area are located outside any areas of potential river flooding. As the floodplains will not be altered, the development will not cause an increase in flood risk elsewhere. Under the Scottish Planning Policy, as the development is being located in areas of 'little or no risk' then there are no constraints due to coastal or watercourse flooding.

The SEPA Flood Map shows some areas of potential surface water flooding within the site, but these will not impact the proposed development. As has been shown, the proposals for the site will not increase the rate of discharge from the current pre-development surface water run-off rates, and no formal drainage systems will be installed. Disturbance during construction will be minimal and grass will be retained. However, where construction activities have impacted on existing areas of vegetation, these areas will be chisel ploughed and re-seeded with agricultural grazing/ silage sward grass species. The site will be actively managed to keep the soil in good condition during the operational phase and maintain the sward where possible. Checks will be undertaken by staff visiting the site for maintenance visits at 6 monthly intervals.

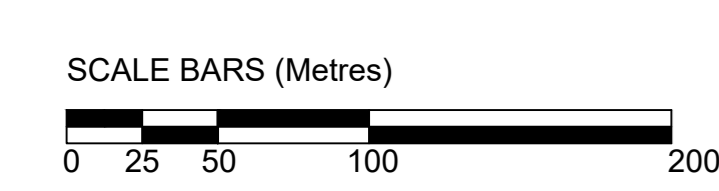
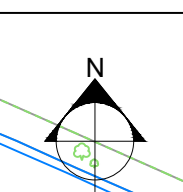
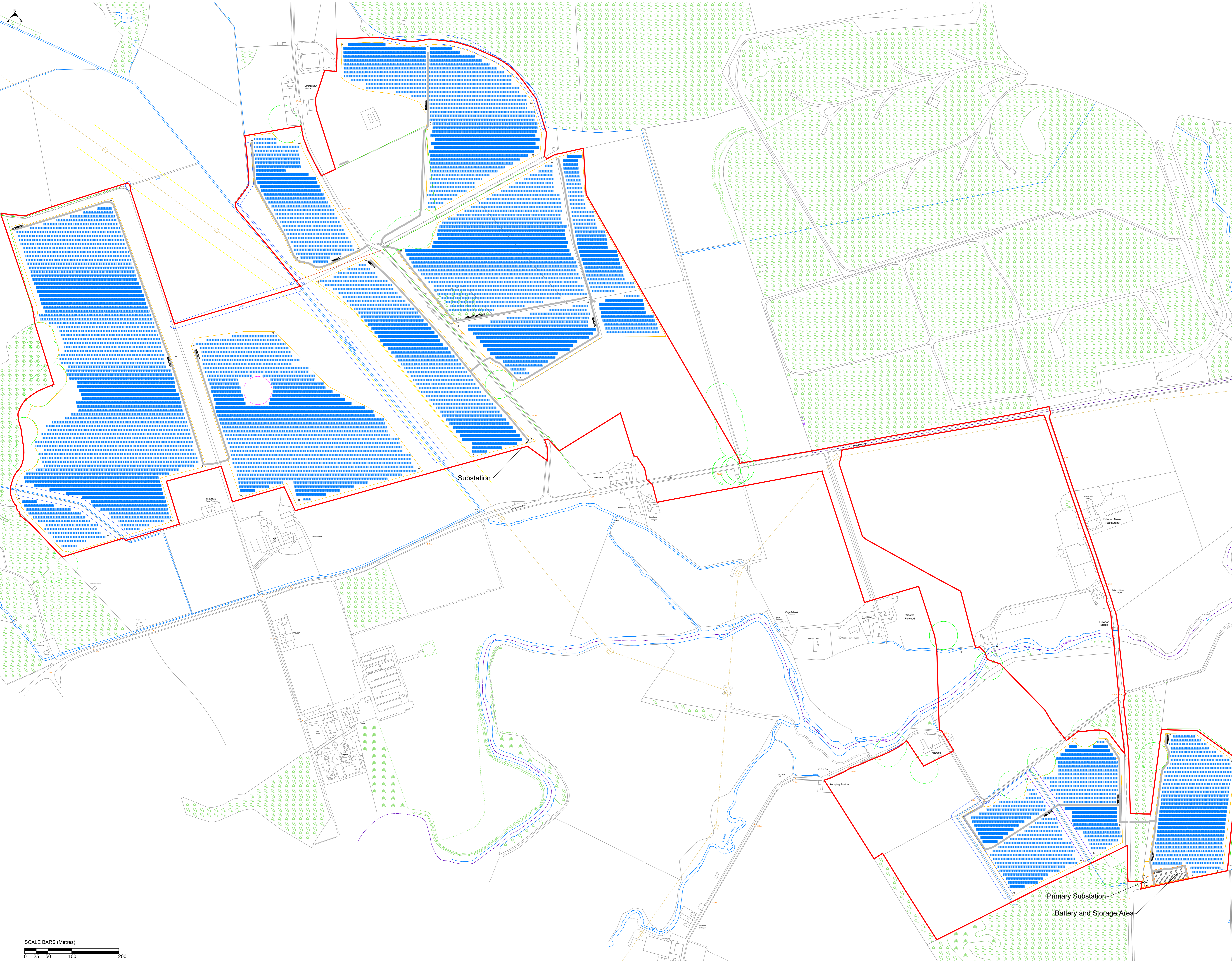
The FRA has shown that the development is at a low risk of flooding and will not increase flooding elsewhere.

Appendix A

Site location

Appendix B

Proposed site layout



- Notes
1. Verifying Dimensions: The contractor shall verify dimensions against such other drawings or site conditions as pertain to this part of the work.
 2. Existing Services: Any information concerning the location of existing services (above and below ground) indicated on this drawing is intended for general guidance only. All services should be checked on site prior to any work commencing.
 3. If received electronically it is the recipient's responsibility to print to correct scale. Only written dimensions should be used.
 4. © Crown copyright and database rights 2022 Ordnance Survey 0100031673.

- LEGEND
- SITE BOUNDARY
 - 2 x 12 = 24 MODULE PANEL (12m)
 - 2 x 24 = 48 MODULE PANEL (24m)
 - 3.5m ACCESS TRACK
 - INVERTER CONTAINER
 - SECURITY FENCE
 - 5m -10m BUFFER FROM VEGETATION, WATER BODY OR TREE CANOPY
 - 30m SERIALIZATION ZONE FROM OVERHEAD LINES
 - CCTV

NOTE
 This plan is for planning purposes only and is intended to give a general indication of the proposed solar layout subject to final design. It should not be used for construction purposes. It does not include any landscaping, please see separate Landscaping Masterplan for this.

Rev	Description	By	CB	Date
H	Revised red line boundary	GG	RC	03/04/2023
G	Revised red line and layout	GG	RC	16/03/2023
F	Revised Red line	GG	RC	20/01/2023
E	Small substation added to northern bank	GG	RC	16/01/2023
D	Access amendments and fence changes	GG	RC	05/01/2023
C	Red line, layout amendments due to ecology	GG	RC	05/12/2022
B	Boundary amendments	GG	RC	04/10/2022
A	Boundary amendments	GG	RC	01/09/2022

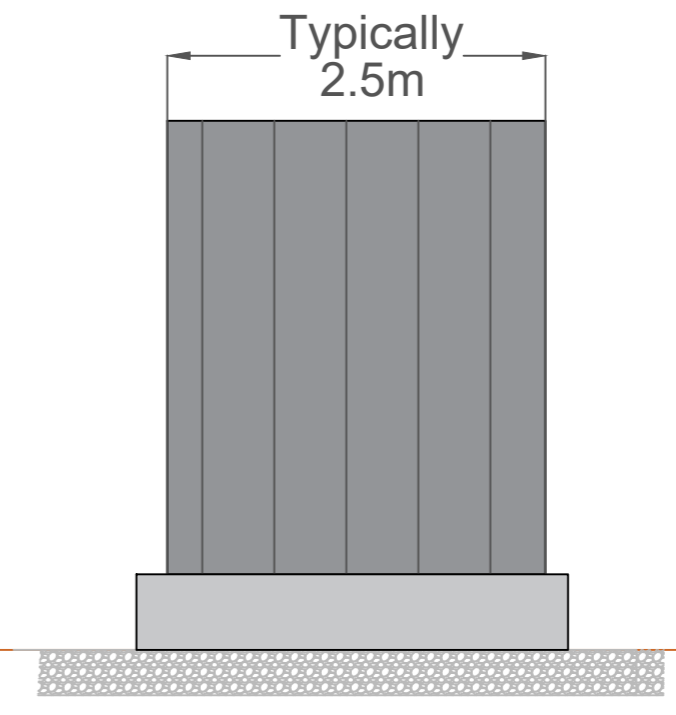
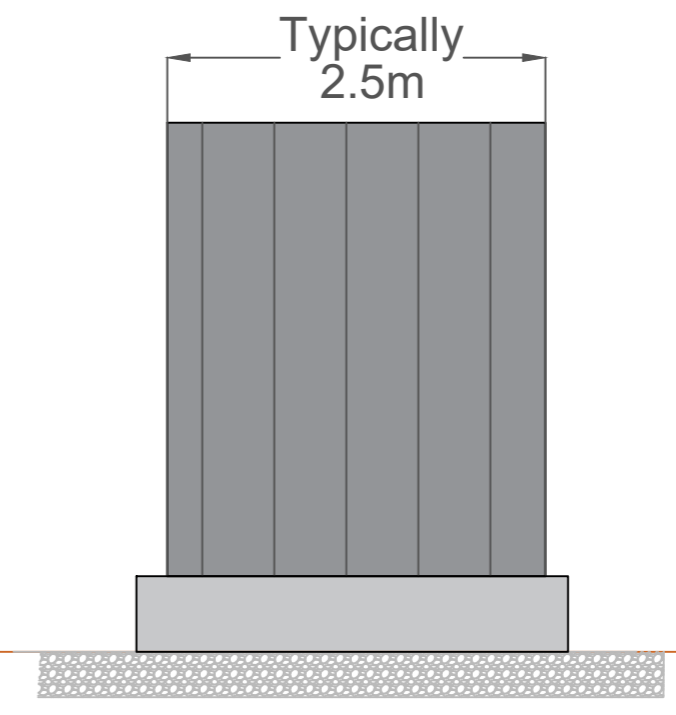
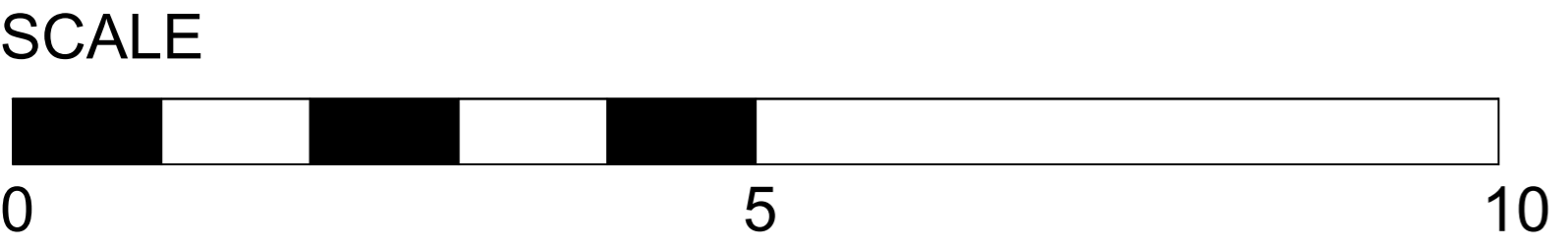
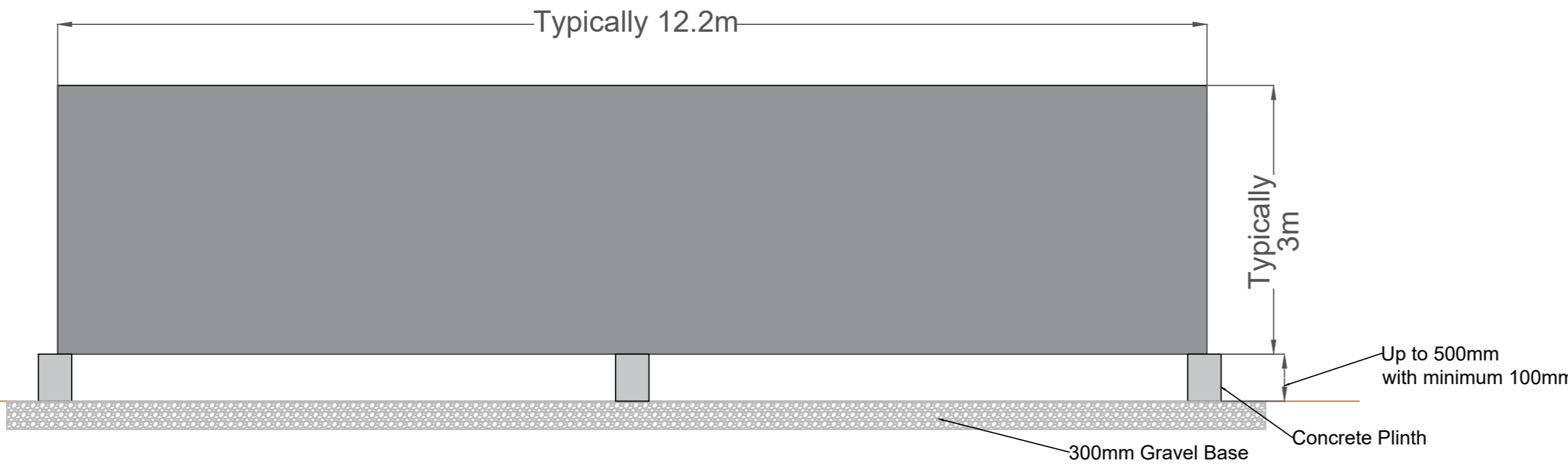
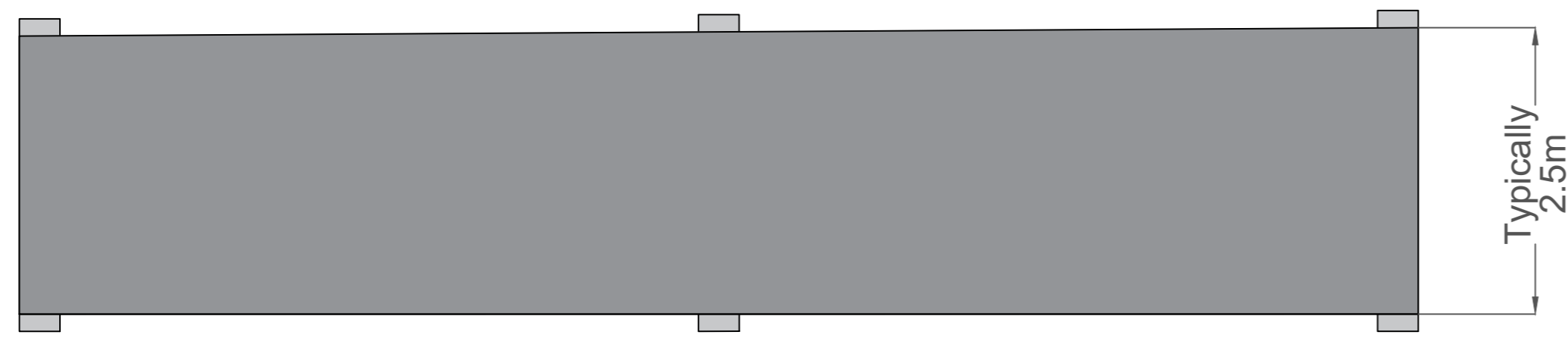
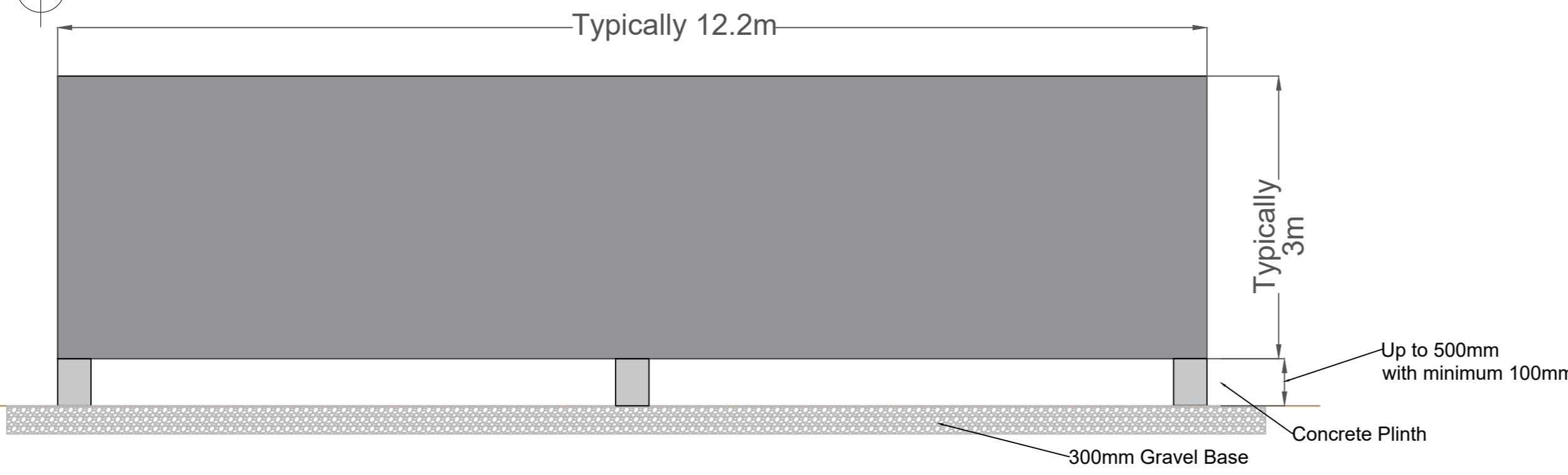
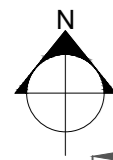


Project HOUSTON SOLAR FARM
 Title SITE LAYOUT PLAN

Status Planning
 Drawn By Gareth Gardener
 PM/Checked by Ronan Clarke
 Site Ref 1101
 Scale @ A0 1:2500
 Original Date Created 27/06/22
 Drawing Number 1101-ELDRSLIE-002
 Rev H

Appendix C

Typical site sections



- Notes**
1. Verifying Dimensions: The contractor shall verify dimensions against such other drawings or site conditions as pertain to this part of the work.
 2. Existing Services: Any information concerning the location of existing services (above and below ground) indicated on this drawing is intended for general guidance only. All services should be checked on site prior to any work commencing.
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LEGEND

Typical Inverter, containerised style shown but uncontainerised version may also be used. External appearance subject to final design and supplier.

Rev	Description	By	CB	Date
A	Minor amendments	GG	RC	20/02/2023

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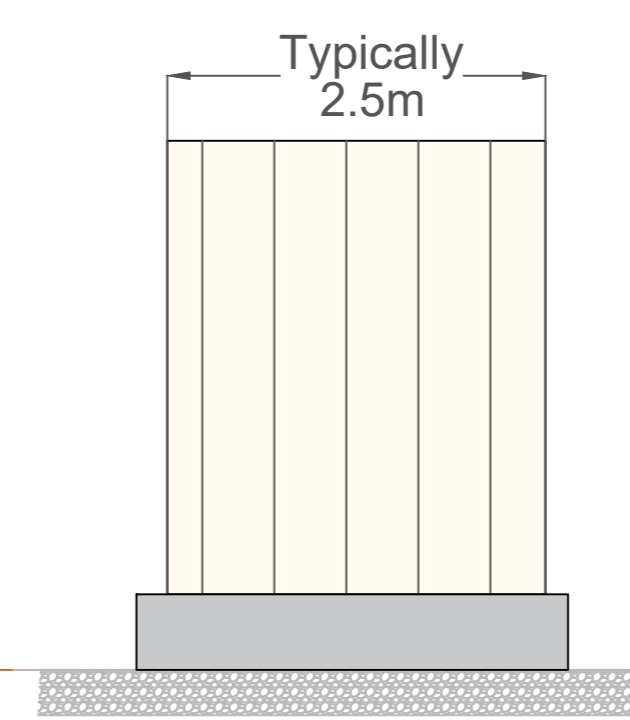
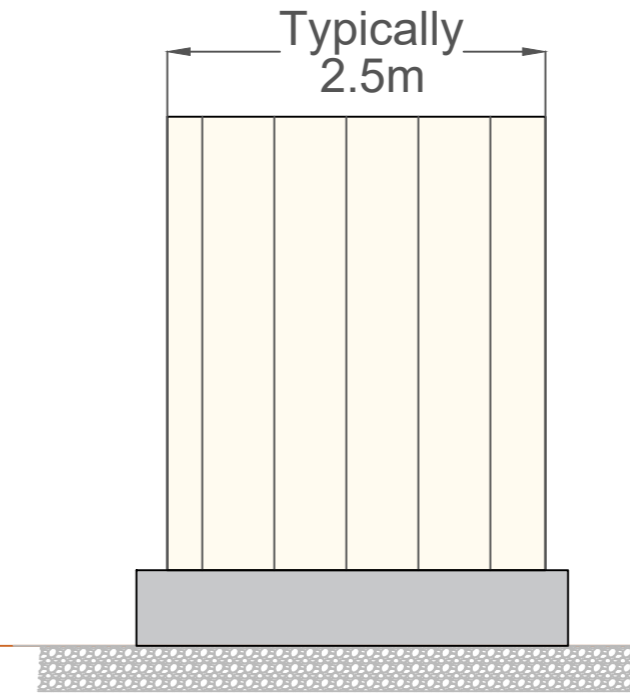
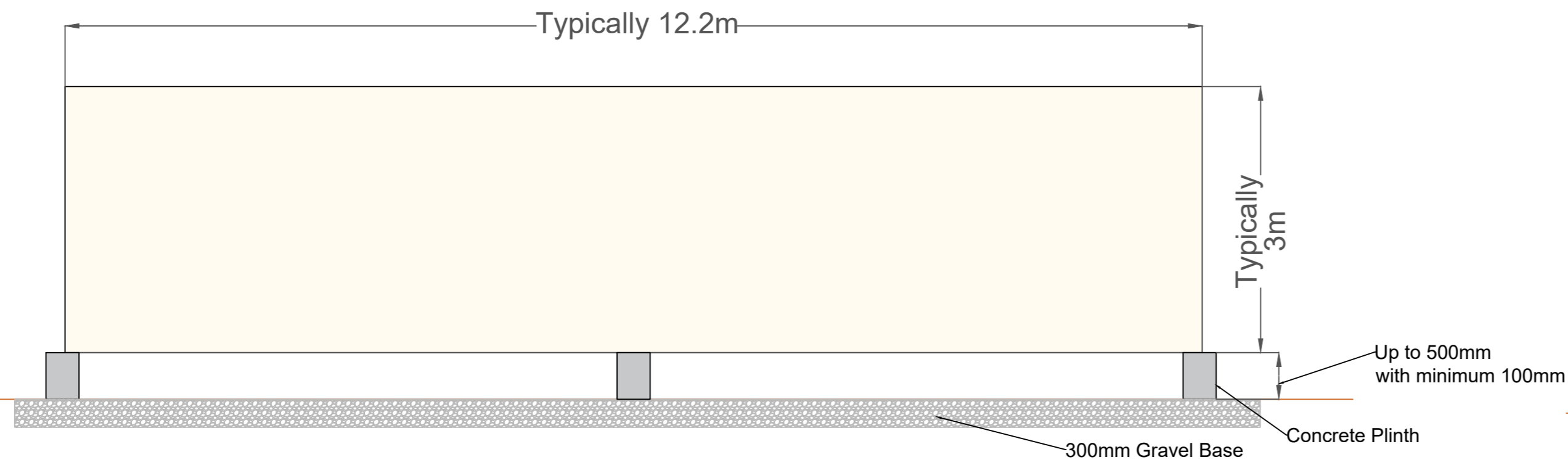
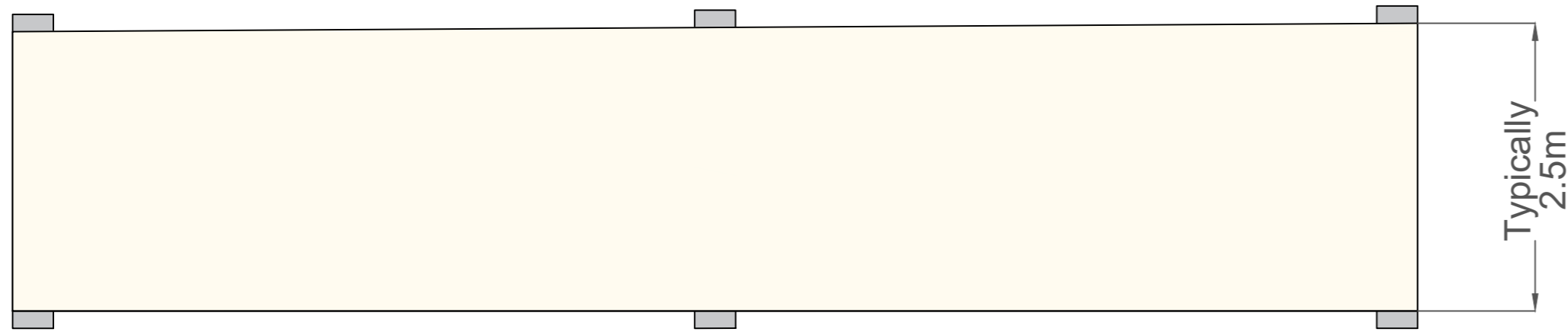
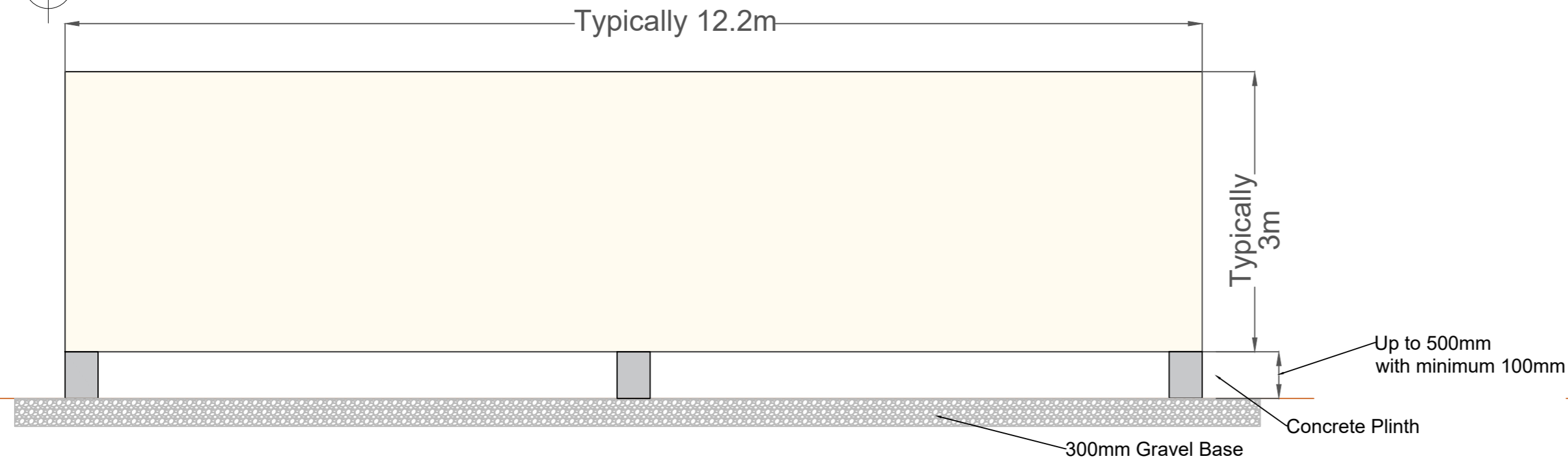
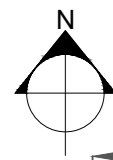
Project **GENERAL**

Title **TYPICAL INVERTER DETAIL**

Status **Planning** Drawn By **Gareth Gardener** PM/Checked by **Elgin**

Site Ref **General** Scale @ A2 **1:50** Original Date Created **23rd Jan 2023**

Drawing Number **ELGIN-INVERTER-001** Rev **H**



Notes

1. Verifying Dimensions: The contractor shall verify dimensions against such other drawings or site conditions as pertain to this part of the work.
2. Existing Services: Any information concerning the location of existing services (above and below ground) indicated on this drawing is intended for general guidance only. All services should be checked on site prior to any work commencing.
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LEGEND

Typical BESS unit, external appearance subject to final design and supplier.

A	Minor amendments to dimensions	GG	RC	20/02/2023
Rev	Description	By	CB	Date

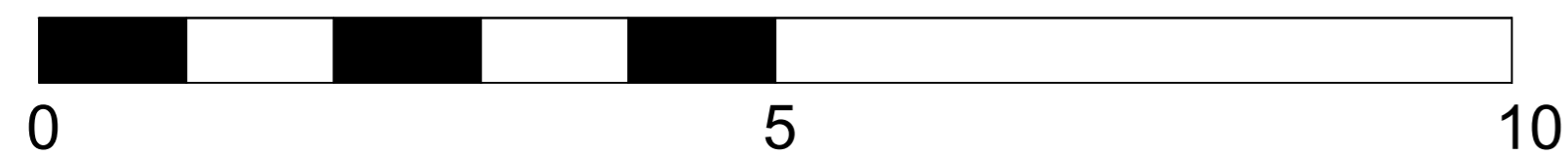


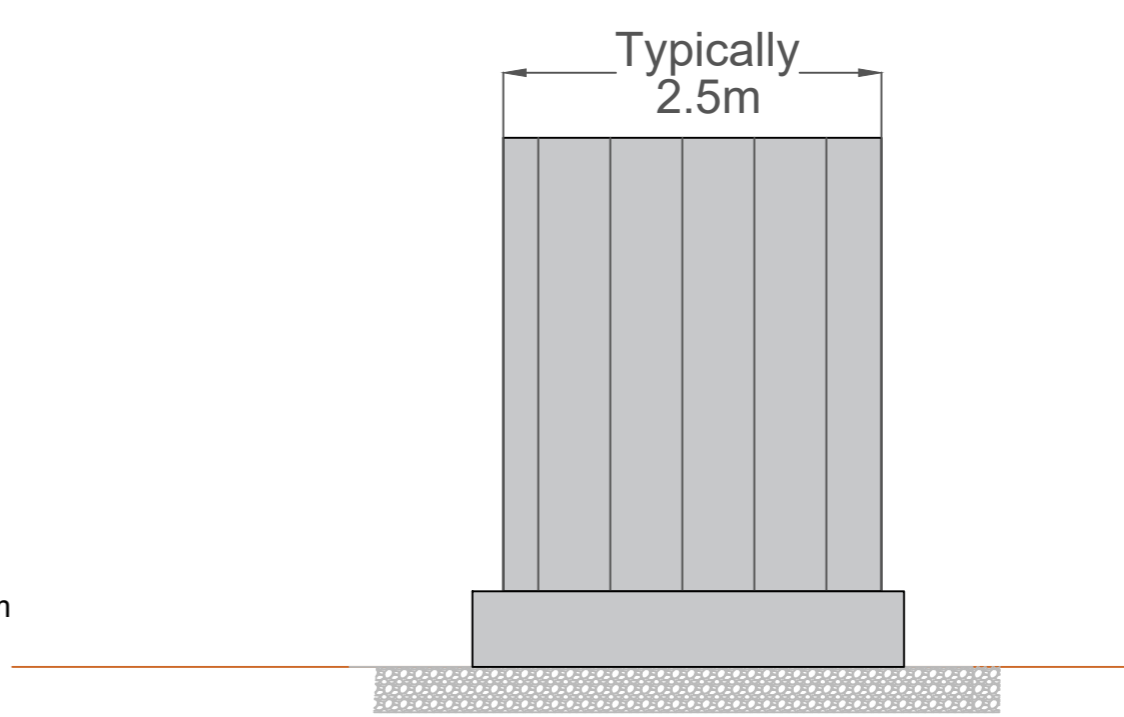
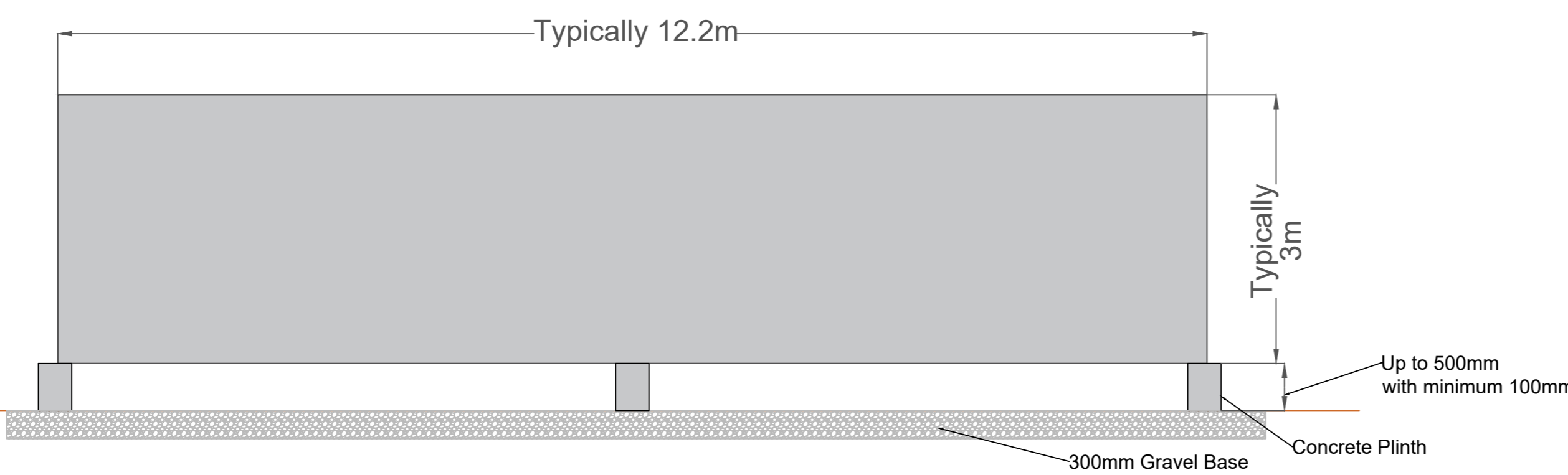
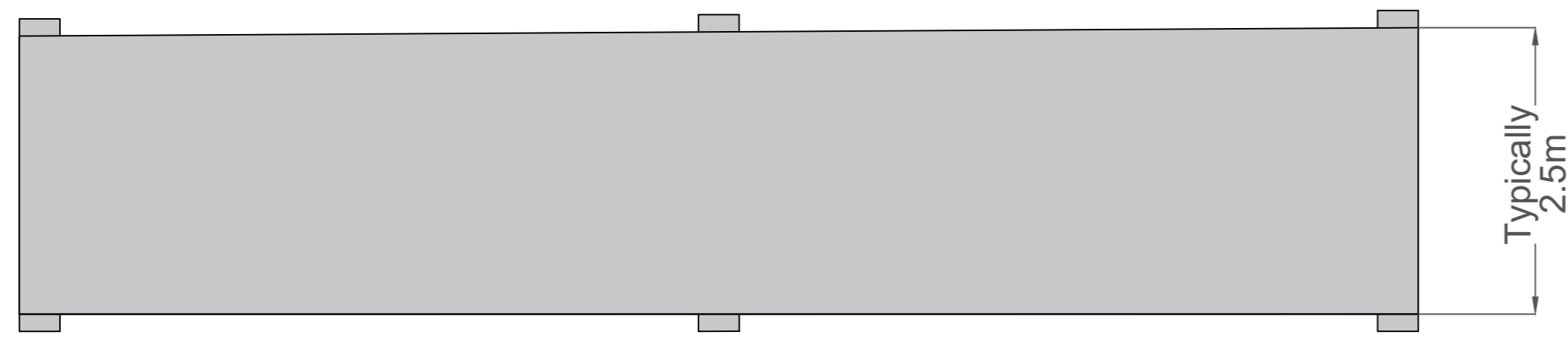
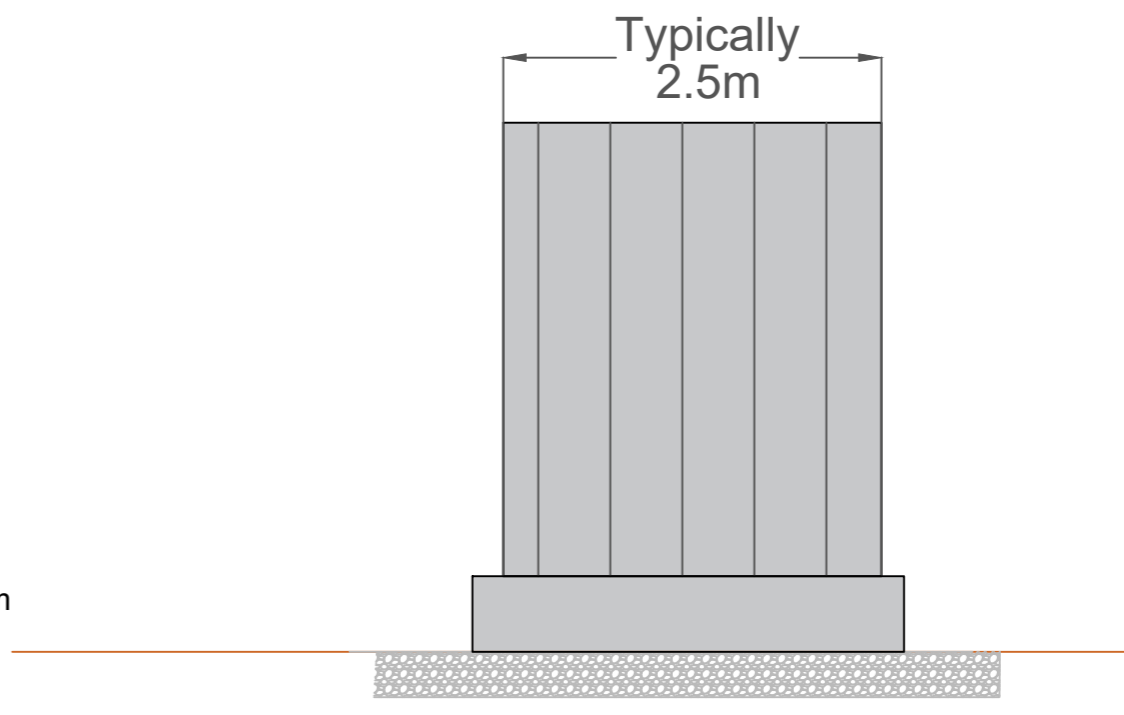
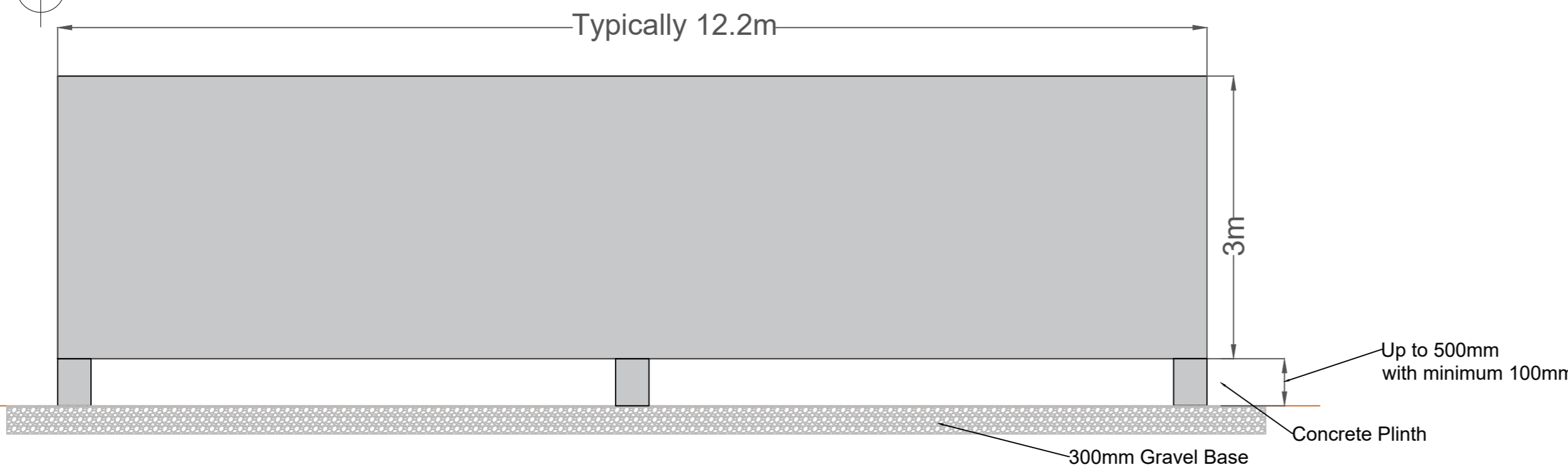
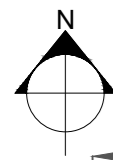
Project GENERAL

Title TYPICAL BESS UNIT

Status Planning
 Drawn By Gareth Gardener
 PM/Checked by Elgin
 Site Ref General
 Scale @ A2 1:50
 Original Date Created 24th Jan 2023
 Drawing Number ELGIN-BESS-001
 Rev A

SCALE





- Notes**
1. Verifying Dimensions: The contractor shall verify dimensions against such other drawings or site conditions as pertain to this part of the work.
 2. Existing Services: Any information concerning the location of existing services (above and below ground) indicated on this drawing is intended for general guidance only. All services should be checked on site prior to any work commencing.
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LEGEND

Typical Power Conversion System (PCS) unit, external appearance subject to final design and supplier.

Rev	Description	By	CB	Date
A	General amendments	GG	RC	20/02/2023

Project GENERAL

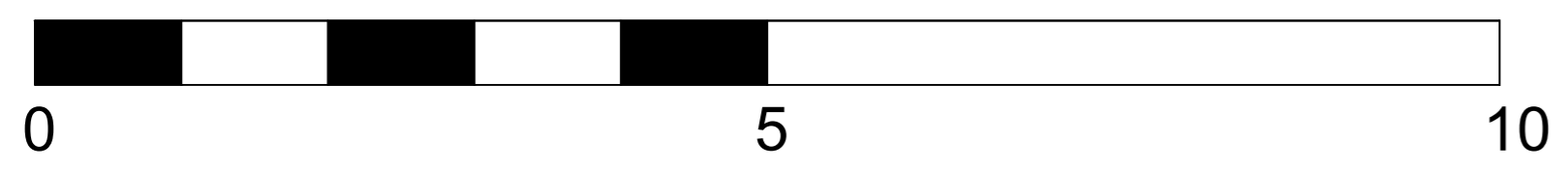
Title TYPICAL POWER CONVERSION SYSTEM UNIT

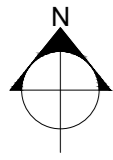
Status Planning Drawn By Gareth Gardener PM/Checked by Elgin

Site Ref General Scale @ A2 1:50 Original Date Created 24th Jan 2023

Drawing Number ELGIN-BESS-002 Rev A

SCALE

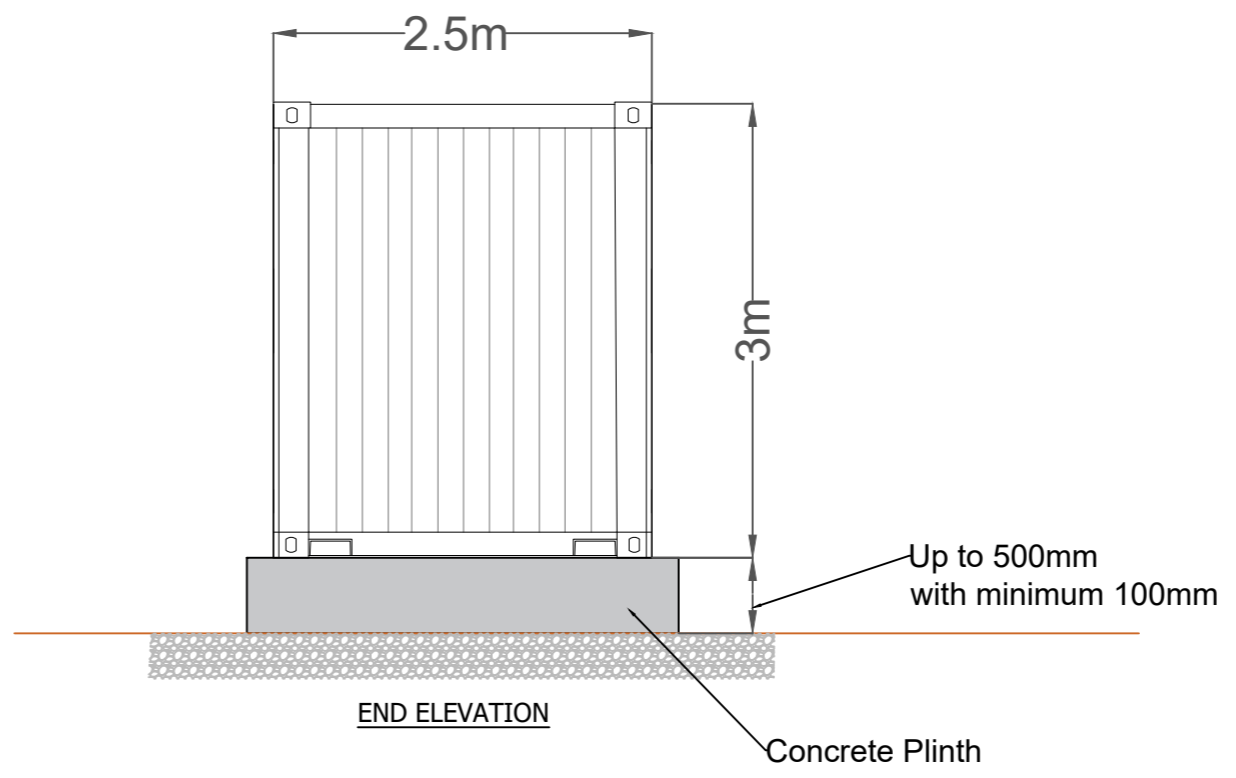
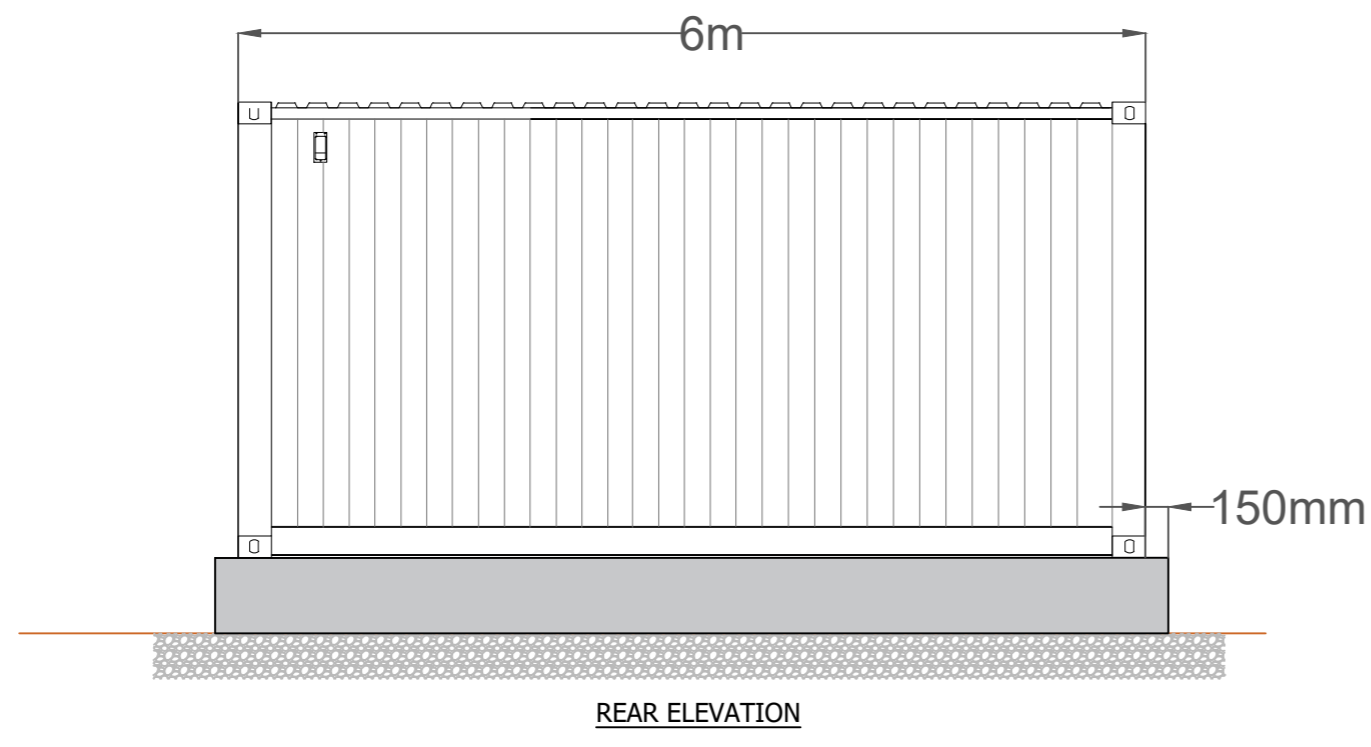
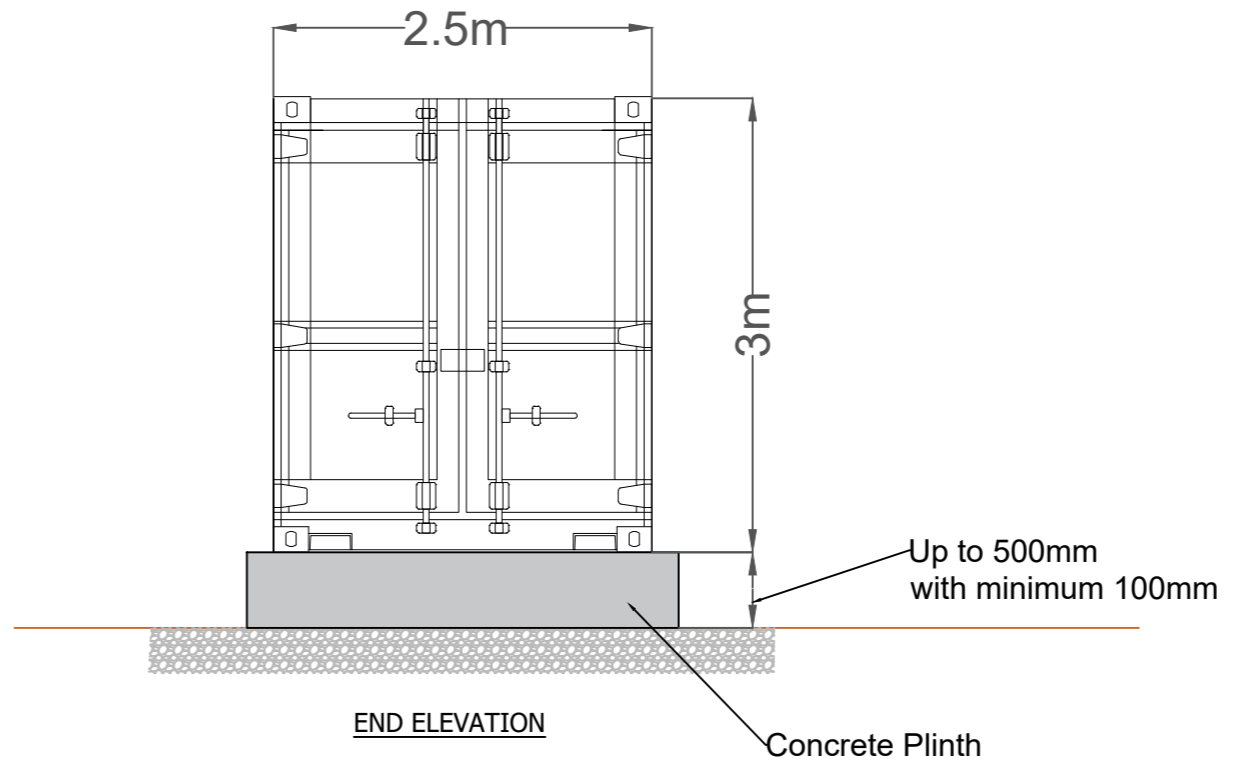
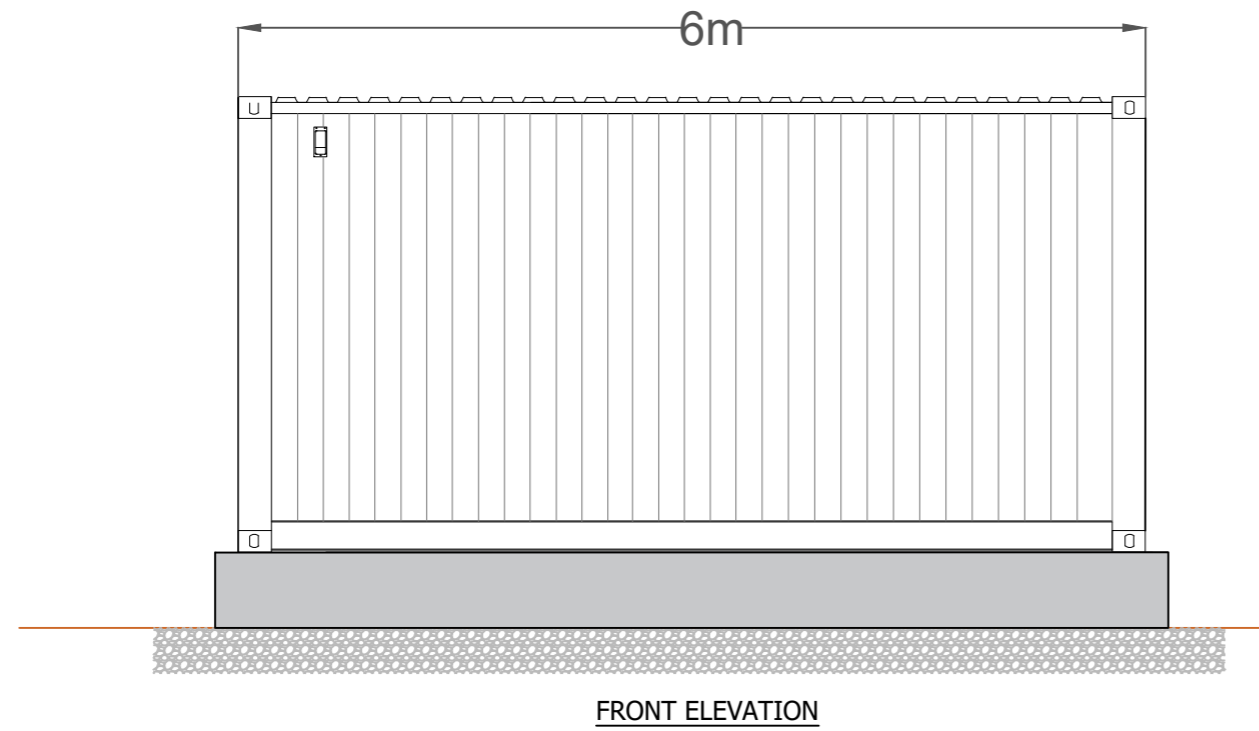




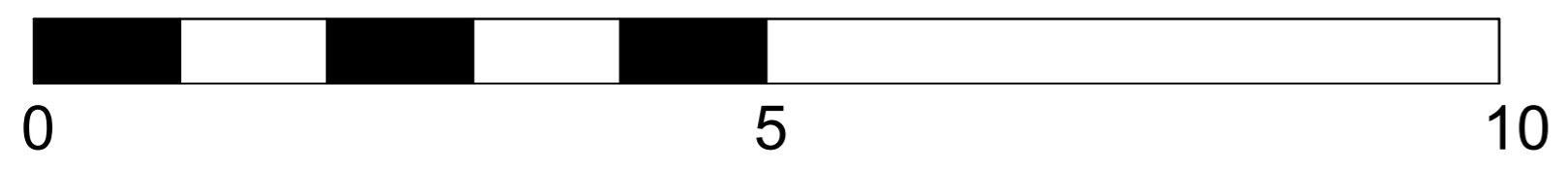
- Notes**
1. Verifying Dimensions: The contractor shall verify dimensions against such other drawings or site conditions as pertain to this part of the work.
 2. Existing Services: Any information concerning the location of existing services (above and below ground) indicated on this drawing is intended for general guidance only. All services should be checked on site prior to any work commencing.
 3. If received electronically it is the recipient's responsibility to print to correct scale. Only written dimensions should be used.
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LEGEND

Typical Storage Container unit, external appearance subject to final design and supplier.



SCALE



Rev	Description	By	CB	Date

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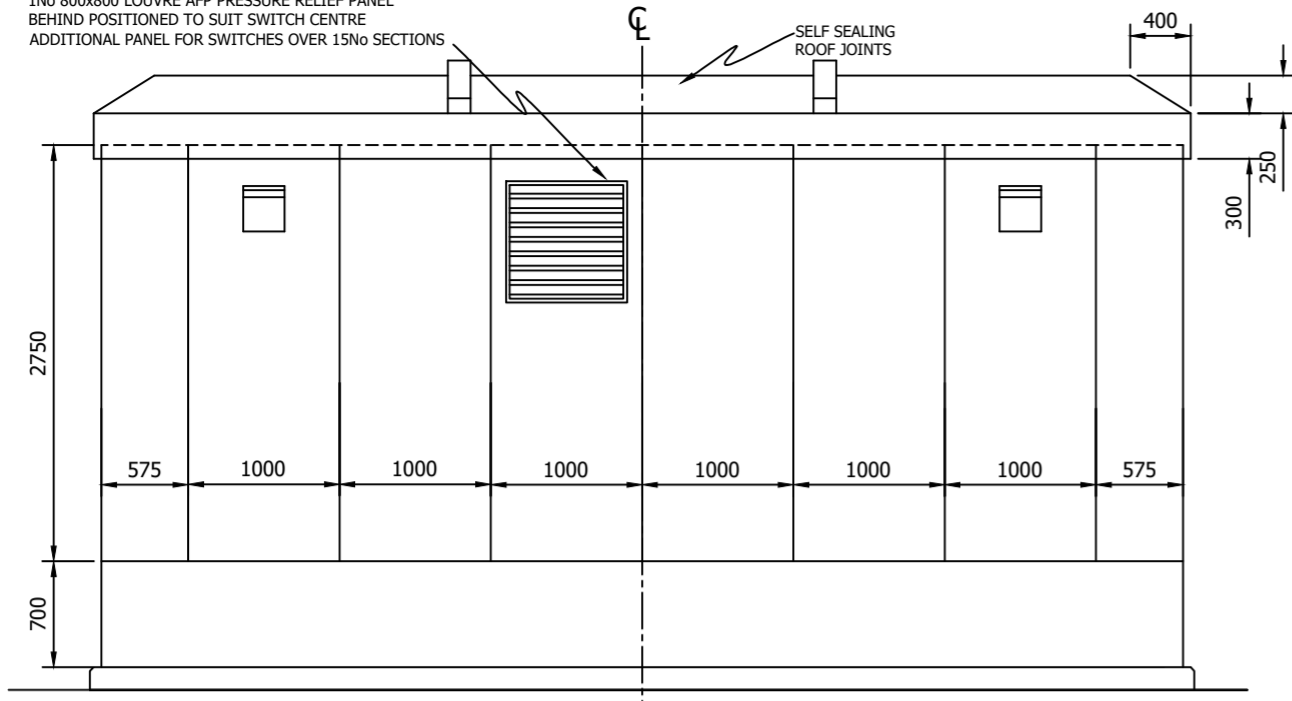
Project GENERAL

Title TYPICAL STORAGE CONTAINER

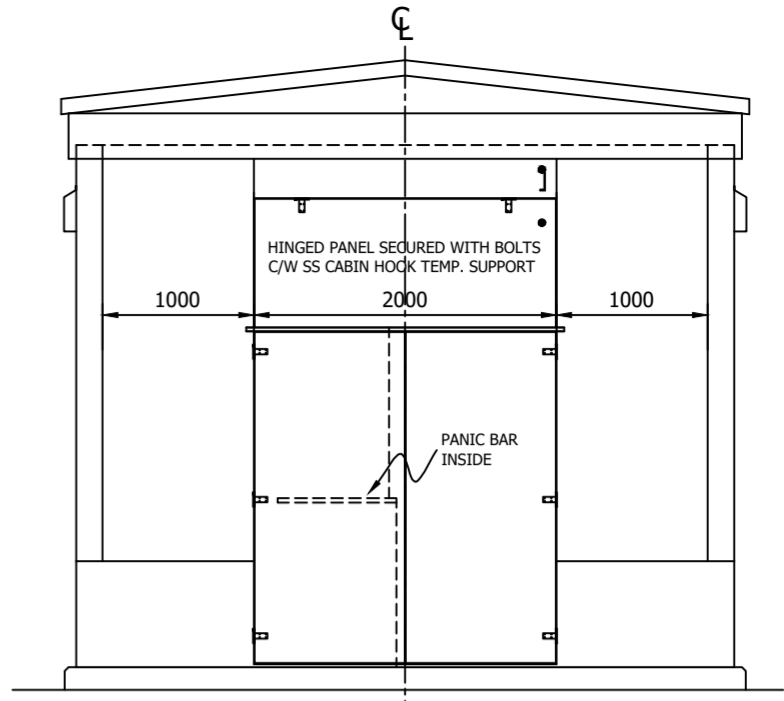
Status Planning Drawn By Gareth Gardener PM/Checked by Elgin
Site Ref General Scale @ A2 1:50 Original Date Created 24th Jan 2023

Drawing Number ELGIN-BESS-003 Rev -

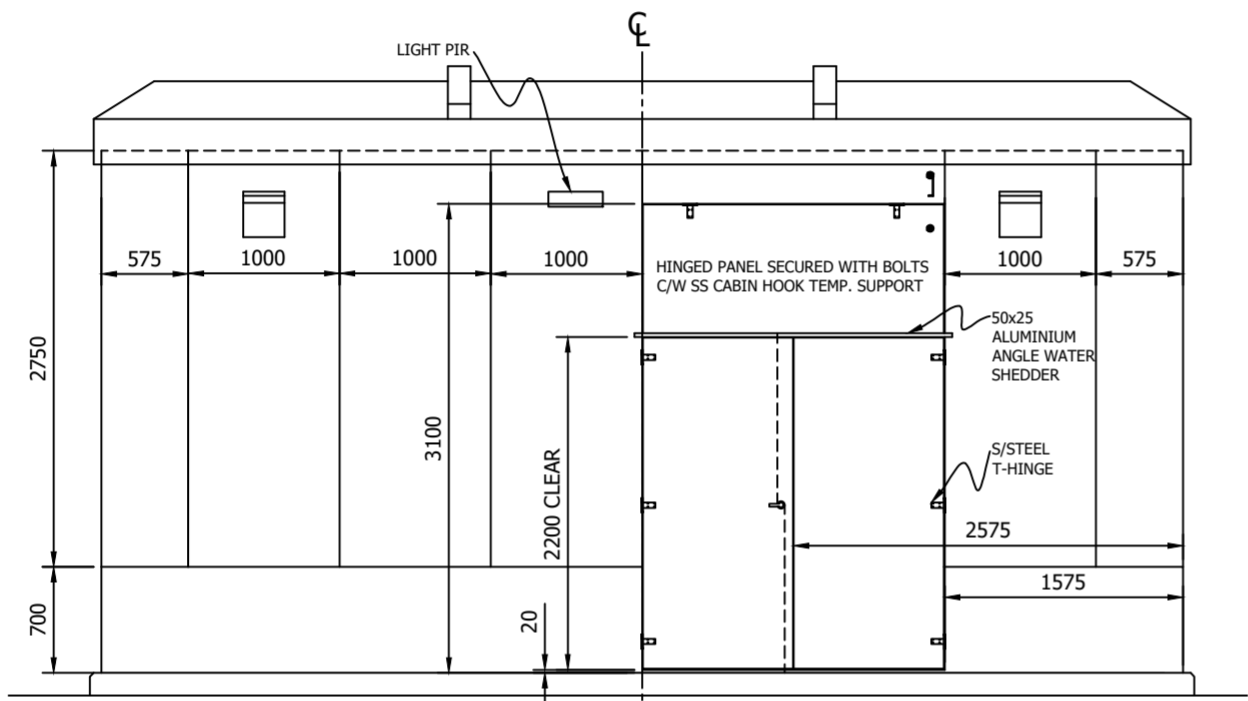
1 No 800x800 LOUVRE AFP PRESSURE RELIEF PANEL
BEHIND POSITIONED TO SUIT SWITCH CENTRE
ADDITIONAL PANEL FOR SWITCHES OVER 15No SECTIONS



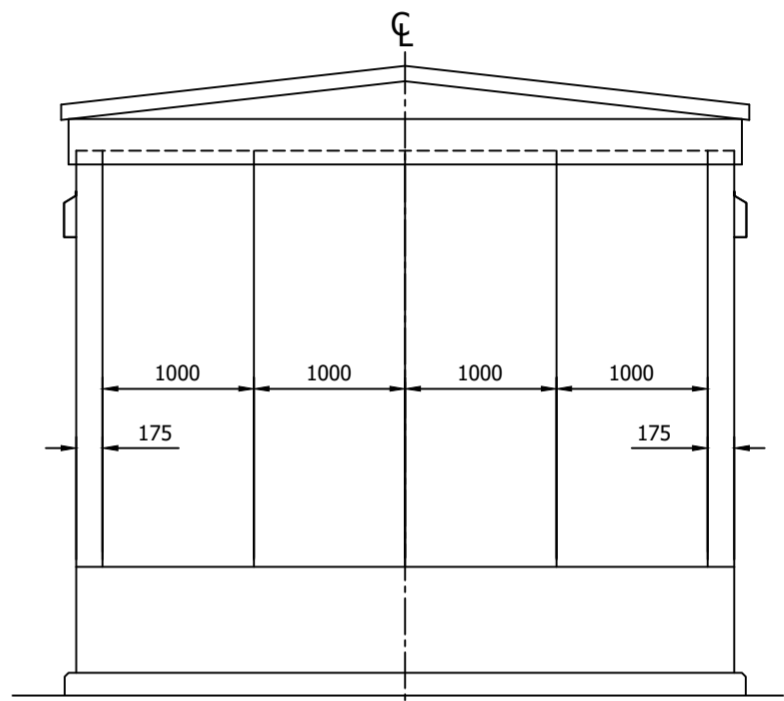
VIEW B



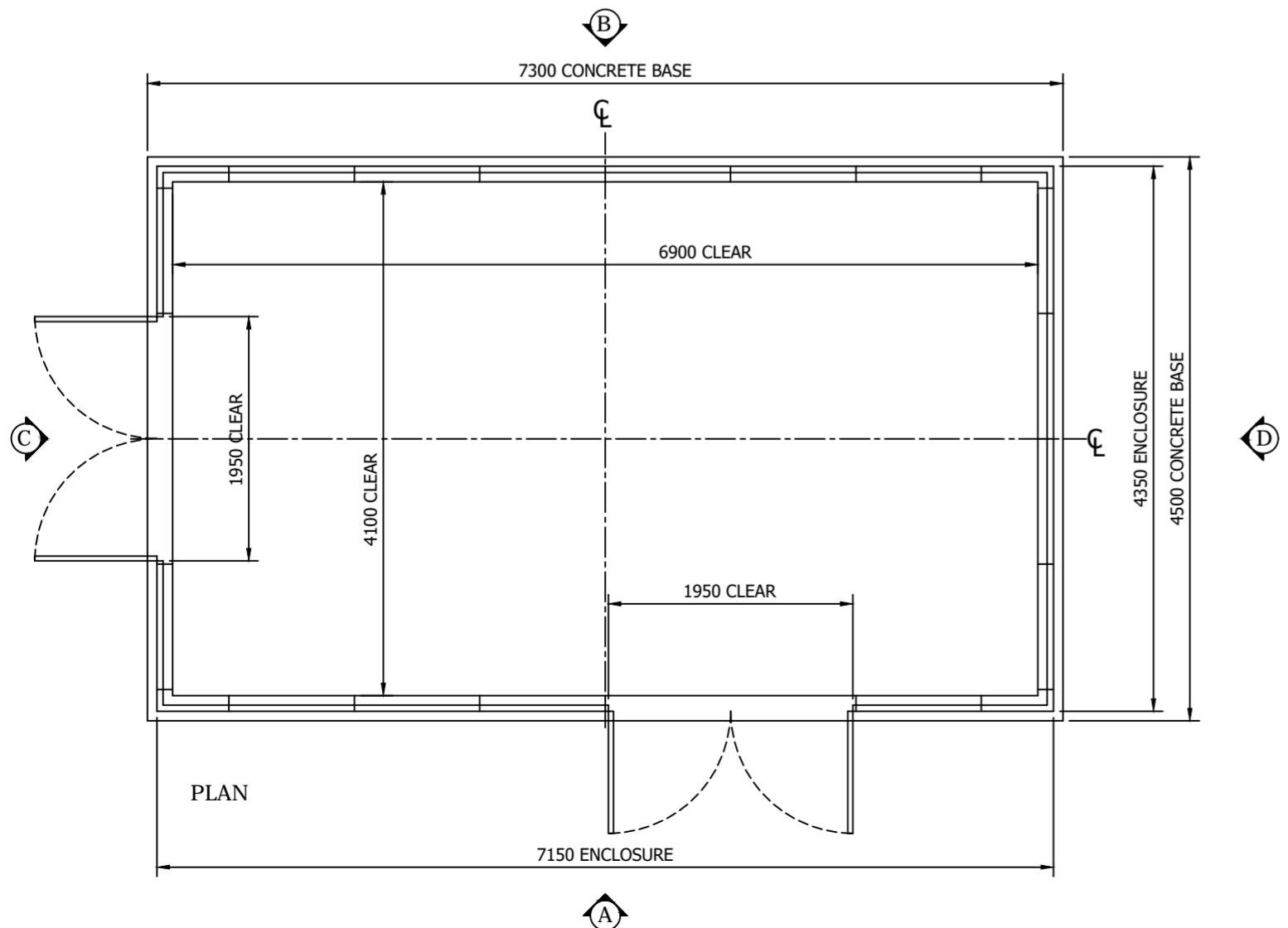
VIEW C



VIEW A



VIEW D



PLAN

Typical 33kV Switchgear Elevations
DNO & Customer