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VALENCIA WASTE MANAGEMENT LTD

SHELFORD LANDFILL VARIATION APPLICATION (EPR/XP3434HX)

FIRE PREVENTION PLAN

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FEBRUARY 20244

PREPARED BY:

Katie Heath Senior Waste and
Resources Consultant



REVIEWED BY:

Dominiqua Drakeford-Allen Principal Waste and
Resources Consultant



APPROVED BY:

Alison Cook Technical Director



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DRAWINGS	TITLE	SCALE
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ST20075-002	Receptor Plan	1:10,000@A3
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1 INTRODUCTION

- 1.1.1 Wardell Armstrong has been appointed to prepare an application to vary the permit for Shelford Landfill Site at Shelford Farm Estate near Kent. The site is operated by Valencia Waste Management Ltd (Valencia) under permit number EPR/XP3434HX.
- 1.1.2 The site is permitted to accept non-hazardous commercial, industrial and household waste for disposal, as well as for the treatment of leachate arising from the landfill.
- 1.1.3 Valencia is seeking to prevent recyclable and recoverable wastes from going to disposal, in accordance with the principles of the waste hierarchy. The variation will allow mixed non-hazardous waste arriving at the landfill to be first treated to recover metals, wood and plastic for recycling, then further treated to remove non-combustible material to prepare the combustible wastes for energy recovery off-site. The residual non-combustible waste will be utilised in landfill engineering or will be placed in the landfill.
- 1.1.4 This Fire Prevention Plan has been prepared in adherence to Environment Agency guidance and applies to the storage of combustible wastes at the site. The plan identifies the activities on site that present a risk of fire, the prevention measures in place to minimise the potential for a fire, techniques to suppress a fire and the measures which will be implemented to protect the environment in the event of a fire.
- 1.1.5 This Fire Prevention Plan has been designed to meet the 3 objectives of the Environment Agency's Fire Prevention Plan Guidance:
- minimise the risk of a fire occurring;
 - aim for a fire to be extinguished within 4 hours; and
 - minimise the spread of any fire within the site and to neighbouring sites.
- 1.1.6 This plan forms part of the Environmental Management System for the site and a standalone copy will be retained on site, easily accessible to site staff.
- 1.1.7 This Plan applies to combustible materials that will be accepted on site under the conditions of the environmental permit. Section 2 provides details about the site activities and combustible materials stored on site.
- 1.1.8 Staff will be provided training and procedures will be in place to ensure that the measures contained within this Fire Prevention Plan are adhered to at all times, as outlined in Section 3.

- 1.1.9 All sensitive receptors within a 1km radius that may be affected by a fire on site have been identified and described in section 4. A receptor plan has also been provided as ST20075-002.
- 1.1.10 The MRF will comprise of a dedicated building with a waste reception area, fixed waste treatment plant and storage for treated waste streams. An overview of the site layout, including storage and infrastructure is provided in section 5.
- 1.1.11 A number of measures and systems are in place to ensure that a fire is detected at the earliest opportunity both during and outside of site operating hours. In the event a fire, a number of suppression techniques will be available both on-site and off-site to tackle the fire. Further details of fire detection and suppression is provided in section 6.
- 1.1.12 Common causes of fire on the site have been identified and will be managed to ensure the risk of a fire starting is maintained at a minimum, as detailed in section 7.
- 1.1.13 During a fire, the site will be managed to ensure the safety of all staff, public and contractors on the site. Measures will be implemented to prevent emissions to air, land and water resulting from a fire and its suppression. Further details are provided in section 8.
- 1.1.14 Following a fire, a number of measures will be undertaken prior to the site being reopened to ensure that it is safe to do so, as described in section 9.

2 SITE ACTIVITIES AND COMBUSTIBLE MATERIALS

2.1 Activities at the Site

2.1.1 The MRF will be permitted to allow up to 250,000 tonnes per year of mixed non-hazardous waste arriving at the landfill to be first treated to recover metals for recycling, then further treated to remove non-combustible material to prepare the combustible wastes for energy recovery off-site.

2.1.2 Household commercial and industrial waste which is suitable for treatment will be unloaded inside the MRF building into the waste reception bay. Mixed wastes may be stored in the bay for short periods but the aim will be to treat waste on the day of receipt. Waste will not be stored on site for more than 72 hours.

2.1.3 Waste will be treated via an overband magnet, eddy current separator and trommel to separate it into discrete outputs ready for recycling, recovery or disposal.

2.1.4 The following combustible materials may be stored or treated inside the MRF:

- mixed municipal waste and similar materials;
- refuse derived fuel (RDF);
- wood for recycling;
- plastic for recycling.

2.1.5 The MRF will not accept wastes contaminated with persistent organic pollutants (POPs) at levels that would require them to be managed as POPs waste.

2.1.6 Outputs from waste treatment will be as follows:

- ferrous metal;
- non-ferrous metal;
- “heavies” which will be generally inert material including stone, glass etc;
- trommel fines;
- plastics;
- wood;
- refuse derived fuel (RDF); and
- residual waste.

- 2.1.7 Outputs will be stored in dedicated containers or bays pending loading and removal to a permitted recycling site, energy from waste site or the landfill.
- 2.1.8 The site will operate under a first in first out policy to ensure no waste remains on site longer than necessary. Waste will be stored in a way that allows the oldest waste to be accessed first and removed from the site this can be done by filing one side of the bay first and then the other or moving waste in the bays to the front to make space for new wastes to be placed in the back. A record shall be kept of when was the waste accepted to ensure the oldest waste is removed first.
- 2.1.9 Wastes will be sorted by their material type into piles, these will not be treated further and will therefore be stored in their largest form. The aim is to remove waste from site as soon as possible following treatment.
- 2.1.10 The location of the MRF building is shown on drawing SHF118.

3 ADHERANCE TO THE FIRE PREVENTION PLAN

- 3.1.1 This plan has been prepared for all site staff to ensure that they understand the steps to be taken to minimise the risk of fires and to minimise the impacts of a fire should it occur.
- 3.1.2 All site staff will receive appropriate training on their responsibilities in relation to this Fire Prevention Plan. Any contractors on site will also be made aware of their responsibilities to prevent a fire happening, and where applicable this plan will be shared with them. Contractors or other visitors to the site should be accompanied by a member of staff familiar with this plan or should receive an induction, including as a minimum:
- confirmation that smoking is not allowed on site, other than in a designated smoking area;
 - how the alarm is raised in the event of a fire;
 - location of fire alarms and fire assembly points; and
 - any specific precautions relating to their particular work.
- 3.1.3 A copy of the Fire Prevention Plan will be retained in the site office and site staff will be made aware of its location, should they need to refer to it.
- 3.1.4 The plan will be shared with local Fire and Rescue Service to facilitate their understanding of site operations. The plan will be made available to them when they attend an incident on site. It may also be shared during any routine visits or discussions regarding fire prevention.
- 3.1.5 Annual exercises will be carried out to confirm that all staff understand this Fire Prevention Plan and know what to do in the event of a fire.
- 3.1.6 The Fire Prevention Plan will be kept under regular review and revised as necessary. Review and update of the Fire Prevention Plan will be managed as part of the Site's Environmental Management System.

4 ENVIRONMENTAL SETTING

4.1 Site Setting

- 4.1.1 Shelford Landfill is located on Shelford Farm Estate off Shalloak Road, 2.5 miles northeast of Canterbury, Kent. The nearest postcode is CT2 0PU, and the new MRF will be located at national grid reference (NGR) TR 16335 60113, south of the existing landfill site.
- 4.1.2 The land surrounding the site is mixed in use. The landfill area extends north from the proposed location of the MRF building, with the land beyond being predominantly agriculture and interspersed woodland in the northwest, north and northeast, while land use to the south is mixed residential, commercial and industrial, with large areas of parkland and woodland.
- 4.1.3 According to Met Office data from the nearest airfield (Southend) the prevailing wind direction is from the southwest.

4.2 Sensitive Receptors

- 4.2.1 The nearest residential properties are 2 houses located approximately 200m east of the proposed MRF on Shalloak road. Further residential areas in proximity to the proposed MRF include Hales Place (850m west), Broadoak (1.1km northeast), Sturry (1.1km east), Mayton Cottages (1.4km north), and Fordwich (1.5km east).
- 4.2.2 Approximately 100m east of the proposed MRF, a car dealership is the nearest commercial receptor to the site. There are further commercial and industrial units within Canterbury Retail Park, 300m to the south of the MRF location.
- 4.2.3 There are five European sites within 10km of the proposed MRF location, the nearest of which is Stodmarsh (SAC, SPA and Ramsar, SSSI, NNR) located approximately 1.9km east. The remaining four European Sites are located over 4km away from the site at Blean Complex (SAC), The Swale (Ramsar and SPA), Tankerton Slopes and Swalecliffe (SAC), and Thanet Coast & Sandwich Bay (Ramsar and SPA). There are four SSSIs within 2km of the site, including Stodmarsh. The nearest is West Blean and Thornden Woods SSSI which lies adjacent to the landfill north and north-eastern permit boundary. There are also a number of areas of ancient woodland and local wildlife sites.
- 4.2.4 There is also some notable infrastructure in close proximity to the site. A railway line (Ashford–Ramsgate line) passes east-west approximately 150m south of the MRF; a 400kV substation sits 550m southwest of the site, with pylons passing within 100m of

the MRF; and a wastewater treatment works sits approximately 550m southeast of the MRF.

4.2.5 Table 2.1 below provides a list identifying the sensitive receptors within 1km of the site, which have the potential to be affected by a fire at the MRF.

Table 4.1: Receptors with 1km of the proposed MRF		
Receptor Name	Receptor Type	Distance/ Direction
Human Receptors		
Motorline Car Dealership	Commercial	100m east
CVS Canterbury and Canterbury Audi car dealerships	Commercial	150m South
6 Shalloak Road	Residential	200m East
Caravan Site	Residential	250m South
Retail Park (Vauxhall Road)	Commercial	350m South
Canterbury Wastewater Treatment Works	Industrial	450m southeast
Canterbury North 400kV Substation	Industrial	550m Southwest
Broad Oak Lodge Farm	Residential	550m Northeast
Vauxhall Avenue and Vauxhall Crescent	Residential	600m South
Businesses on Broad Oak Road	Commercial	600m Southwest
Retail Park (Marshwood Close)	Commercial	700m Southwest
Sturry Road Allotments	Leisure	700m South
Sturry Road (A28)	Residential	700m South
Caravan Park	Residential	750m Northeast
Maytree Canterbury Garden Centre	Commercial	800m Southeast
Bicknor Close	Residential	800m Southwest
Kilndown Gardens	Residential	800m Southwest
Field Avenue	Residential	850m South
Reed Avenue	Residential	850m South
Sturry Road Community Park	Leisure	850m Southeast
22-38 Shalloak Road	Residential	850m Northeast
Headcorn Drive	Residential	850m Southwest
Kemsing Gardens	Residential	850m Southwest
Halstead Close	Residential	900m Southwest
Westerham Close	Residential	900m Southwest
Hunton Gardens	Residential	900m West
East Street	Residential	900m South
Sandhurst Close	Residential	950m Southwest
Goudhurst Close	Residential	950m West

Table 4.1: Receptors with 1km of the proposed MRF		
Receptor Name	Receptor Type	Distance/ Direction
Junior King's School Sports Facility	Leisure/ School	1km East
Habitats Receptors		
Woods in Southern extend of permit boundary	Priority Habitat Inventory - Deciduous Woodland	Adjacent
Great Stour, Ashford to Fordwich Local Wildlife Site	Local Wildlife Site,	170m South
Great Stour	River	250m South
West Blean and Thornden Woods	SSSI, Ancient Woodland, Priority Habitat Inventory - Deciduous Woodland	400m East
Woods adjacent to Canterbury City Park and Ride	Priority Habitat Inventory - Deciduous Woodland	700m Southeast
Dengrove Wood	Ancient Woodland, Priority Habitat Inventory - Deciduous Woodland	750m Northeast
Brickhouse Wood	Ancient Woodland, Priority Habitat Inventory - Deciduous Woodland	780m Northwest
Little Hall and Kemberland Woods and Pasture	Local Wildlife Site, Priority Habitat Inventory - Deciduous Woodland	800m Northwest

4.2.6 Drawing No ST20075-002 provides a drawing highlighting all of the proximal sensitive receptors and important infrastructure within 1km of the MRF.

5 SITE LAYOUT AND INFRASTRUCTURE

5.1 Site Layout

- 5.1.1 The MRF will be contained within a purpose-built building sited on the southern extent of the permit boundary, next to the leachate treatment plant and landfill gas engine compound.
- 5.1.2 The internal layout of the building will comprise a waste tipping area for the MRF feedstock, fixed waste treatment plant (trommel, overband magnet and eddy current separator), a bay for the refuse derived fuel, and bays for other process outputs (ferrous and non-ferrous metal, heavies and trommel fines). The plant layout is provided in Appendix 1.
- 5.1.3 The MRF building will benefit from an impermeable reinforced concrete floor, ensuring that no leachate will enter soils under the site. A sleeping policeman ramp will be placed at each of the MRF building doors, creating 392m³ capacity for the containment of firewater within the footprint of the building..

5.2 Waste Storage

- 5.2.1 All skips will be readily accessible so that any fire inside can be extinguished. Skips/containers can be isolated from other waste piles in the event of a fire, mobile plant will be available to move the skips if safe to do so to prevent the spread of fire to other waste storage areas.
- 5.2.2 There will be waste storage bays and a quarantine area, each with high fire walls with 3-hour fire resistance. Waste piles will not be allowed to exceed 4m in height, with the 1m freeboard clearly marked on the bays. There will also be skips provided for the storage of specific waste streams, for which the waste storage capacity will not be exceeded.

5.3 Proposed Waste Storage Capacities

- 5.3.1 Combustible wastes will be stored in the bays in accordance with the requirements of the Environment Agency's Fire Prevention Plan guidance. The location of each waste storage area is provided in Appendix 1.
- 5.3.2 Proposed storage capacities for waste storage areas are provided below in Table 5.1. The maximum pile volumes have been assumed to be maximum pile size allows by section 9.2 of the Fire Prevention Plan Guidance, thereby providing a worst-case scenario for the provision of firewater.

Table 5.1: Waste Storage Capacities						
Waste stream	How it is stored	Max. length (m)	Max. width (m)	Max. height (m)	Volume/ m³	Max. Storage Time
Mixed waste	Internal Bay	12.5	8.0	4.0	400	72 hours
Low CV RDF	MRF Bay	7.0	3.5	4.0	200	48 hours
Plastics	MRF Bay	7.0	3.5	4.0	98	1 month
Other (50-300mm mid-heavy residue)	MRF Bay	7.0	3.5	4.0	98	72 hours
High CV RDF and Residue	MRF Bay	7.0	6.5	4.0	200	48 hours
FE Metals	Skip x4	N/A	N/A	N/A	N/A	1 month
Non FE Metals	MRF Bay	4.5	3.5	3.5	55	1 month
Hardcore	MRF Bay	10.0	3.5	4.0	140	1 month
Other (50-300mm lights residue)	MRF Bay	10.0	3.5	4.0	140	72 hours
Rigid Plastics	MRF Bay	10.0	3.5	4.0	140	1 month
Wood	MRF Bay	10.0	3.5	4.0	140	1 month
10-50mm Lights	MRF Bay	4.5	3.5	3.5	55	72 hours
0-10mm fines	MRF Bay	12.6	4.5	4.0	226	72 hours
Long parts	MRF Bay	4.5	4.0	4.0	72	72 hours
Bulky Waste	Internal Bay	8.0	6.3	4.0	200	72 hours

5.4 Water Supply

- 5.4.1 To ensure an adequate water supply, a firewater storage tank has been installed to supply the MRF building. The tank has been sized based on the need to provide 3 hours supply for fire suppression in the RDF bay.
- 5.4.2 Fire water storage volume has been calculated in accordance with Environment Agency methodology, shown in Table 14.1 below.

Table 5.1: Calculation of Fire Water Supply			
Maximum pile size in cubic metres	Water supply needed litres per minute	Overall Water Supply for 3 hours in litres	Total Water Available on Site in litres
400	$400 \times 6.67 = 2,668 \text{ l/m}$	$2,668 \times 180 = 480,240$ litres	A [60,000] litres in tank serving the foam cannon system, supplemented by mains supply. Rainwater collected in site lagoon will be available to supplement supply if required.

5.4.3 The automatic foam cannon system will be fed by a 60,000-litre water storage tank providing an approximate 60-minute system run time. The tank capacity is 12.5% of the calculated overall water supply required, however as the system uses targeted expanding foam, much less water will be required for the same levels of suppression and suffocation of the fire.

5.4.4 During a fire, the tank will be refilled from the mains supply. Additionally, rainwater collected in the site lagoon, located less than 100m southeast of the building, will be available to supplement supply if required.

5.4.5 Because an advanced foam cannon system is being used, adequate water will be available to ensure that a fire in the largest stockpile is suffocated and extinguished within 3 hours. There is a mains water supply to the site which will be used to refill the firewater supply tank. In the event that additional supply is required there are significant surface water attenuation ponds in close proximity to the MRF.

5.5 Fire Water Containment

5.5.1 The building has an impermeable concrete floor which is designed to prevent the escape of any emissions to land and water. The seam between the building floor and walls are sealed, allowing firewater and foam will be held within the footprint of the building.

5.5.2 The building is approximately 66m long by 66m wide. A 90mm sleeping policeman will be placed at each of the MRF's doors. This provides up to c.392m³ holding capacity on the building floor for water, while foam will be contained by the building walls and

sealed doors. The building footprint therefore provides adequate capacity to contain firewater for the proposed foam cannon system.

5.5.3 In the event of a fire, all doors will be closed, ensuring that foam is contained within the building only. Foam will not be allowed to escape the footprint of the building during the emergency and will be contained throughout the subsequent clean-up.

5.5.4 These measures are therefore believed adequate to minimise any loss of contaminated fire water into the environment.

5.6 Quarantine Area

5.6.1 The quarantine area is shown on the site layout plan provided as Drawing SHF118. The quarantine area will be approximately 8m by 6m and will be an internal bay on the north side of the MRF.

5.6.2 The quarantine area will have a dual purpose. Firstly, it will be used to segregate any hot loads, to ensure they are kept away from other wastes and prevent fire spreading. Waste will be managed and removed as soon as possible so as to keep the quarantine area available for use.

5.6.3 Secondly, in the event of a fire waste may be moved into the quarantine area, to prevent fire spreading, by moving it away from burning wastes, or to facilitate extinguishing the fire by allowing a wider area to cool or smother the waste (assuming that it can be moved safely, and this will not increase the risk of fire spreading).

5.7 Fire Detection and Suppression Systems

5.7.1 Systems and measures to support the detection and suppression of fires will be present across the site to ensure that any instance of fire can be quickly identified and subsequently brought under control in a safe manner. Further information Provided in Section 6.

6 FIRE DETECTION AND SUPPRESSION TECHNIQUES

6.1 Fire Detection Systems

6.1.1 Staff will remain vigilant and a fire watch will take place during and following hot works and at the end of the working day.

6.1.2 In addition, an 8 camera multi-detection (combined flame, smoke & thermal detector) system will be in place. Where this detects an increase in heat or other indicator of a fire the Company Control Room will be automatically notified and foam cannons will be automatically triggered, directly targeting pre-set suppression zones.

6.1.3 Fire detection systems will be certified to UKAS accreditation standards.

6.2 Fire Suppression

6.2.1 An automatic UKAS accredited foam cannon system will be located in the roof of the building. If a fire is detected, the cannon will be automatically directed towards the waste storage bays where combustible waste is stored, providing oscillations to give maximum suppression and cooling into the area. The foam expands to provide highly effective fire suppression and suffocation.

6.2.2 The foam cannons can be operated by:

- a control panel at the site entrance;
- remotely via the control room; or
- automatically by the infrared heat detection system.

6.2.3 In the event of a fire, smoke and heat vents in the building roof will automatically open. As the name suggests, these serve to release smoke and heat from the building. This allows for cooling, a better air supply and better visibility to improve safety for firefighters.

6.3 Active Firefighting

6.3.1 A member of staff will act as the trained fire warden and will give a lead in managing any incident involving a fire. The priority will always be to ensure personal safety and to ensure the building is evacuated and staff are protected.

6.3.2 Active firefighting may also be employed where it is safe to do so. Fire extinguishers will be located around the building, as shown on preliminary drawing SHF2000.

6.3.3 Fire extinguishers will be used only by staff trained in their proper use.

6.3.4 Where it is safe to do, so the fire extinguishers will be deployed to extinguish small fires.

7 MANAGING COMMON CAUSES OF FIRE AND PREVENTING SPREAD

7.1 Site Security and Arson

- 7.1.1 The site has suitable security measures in place to prevent access by unauthorised persons. This includes security fencing to the landfill.
- 7.1.2 The MRF is located inside a building, which will be manned during the day and locked shut outside of operational hours.
- 7.1.3 All security measures will be routinely inspected and maintained to deter access to the site.
- 7.1.4 The site will benefit from CCTV which will be connected via an app to Valencia's 24/7 Central Control Room.
- 7.1.5 Fire detection and suppression measures will be in place, see later in this document.

7.2 Plant and Equipment

- 7.2.1 Plant and equipment will include the trommel, overband magnet and eddy current separator as described above, along with associated conveyors and a loading shovel to move waste around the site.
- 7.2.2 All plant will be inspected and maintained in accordance with the manufacturers' recommendations. Damaged plant will be taken out of use until it has been repaired by a competent person.
- 7.2.3 Plant will be cleaned as necessary, to prevent parts jamming and to avoid any build-up of dust or waste on hot surfaces.

7.3 Electrical Faults

- 7.3.1 All electrical work will be carried out by a qualified electrician. All electrical installations will be certified to demonstrate that were installed correctly by a competent person. This will also apply to repairs and alterations.
- 7.3.2 Copies of the certificates will be maintained in the site office.
- 7.3.3 Plant will be maintained in accordance with the manufacturer's recommendations with the frequency set out in the Preventative Maintenance Programme for the site. Electrical installations such as wiring will be subject to safety checks every five years portable appliances will be checked annually.

7.3.4 Staff trained to use the equipment will make a visual inspection at the start of the working day. Where there are loose or damaged wires or other indications that the plant may be unsafe the site manager will be advised and an electrician will be asked to attend site and check the equipment before it is turned on.

7.4 Discarded Smoking Materials

7.4.1 A strict no smoking policy will be applied to the site. Smoking will only be permitted in the designated smoking area. Within this area adequate ash trays will be maintained to ensure that materials can be extinguished safely, and litter will be prevented.

7.4.2 Smoking will be prohibited in any other part of the site.

7.5 Hot Works

7.5.1 Hot works will include activities such as cutting and welding which may occur on an occasional basis as part of the maintenance of the plant and building. Hot works are not expected to be required on a regular basis but where they are needed a safe system will be in place.

7.5.2 A permit to work will be required for all hot works. Before this is issued a safe system of work must be prepared and provided to the site manager. This should include ensuring that all waste is cleared from the area where the work is required. Works should not take place within 2m of any stored waste. Where appropriate the distance may need to be increased or appropriate screens may be required to contain sparks.

7.5.3 During and following the works, a firewatch should be in place to ensure that no wastes or other materials have ignited. This should take place as a minimum at the end of the works and following one hour.

7.6 Industrial Heaters

7.6.1 If it is necessary to use heaters to maintain the welfare of staff, these will be used with care.

7.6.2 The heaters will be located at least 6m away from waste storage areas.

7.6.3 Heaters will be maintained in line with the manufacturer's recommendations.

7.6.4 Litter will be removed from on around the heater during the working day as required and dust will not be allowed to build up on any hot surfaces.

7.6.5 The heaters will be included in the fire watch at the end of the day.

7.7 Hot Exhausts

- 7.7.1 Plant and equipment will be monitored during the working day to ensure there is no fire risk from dust or litter building up on hot surfaces. Where necessary machinery will be switched off and allowed to cool before removing dust and debris.
- 7.7.2 As far as possible plant employed on site will be fitted with angled exhausts to minimise the opportunity for dust or litter to gather on or in the exhaust.
- 7.7.3 All site mobile plant will be fitted with fire extinguishers. Waste delivery vehicles typically carry fire extinguishers however, Valencia does not control third party delivery vehicles so this cannot be guaranteed.
- 7.7.4 When not in used plant will be switched off and mobile plant will be parked at least 6m away from waste storage areas.
- 7.7.5 Plant will be cleaned and maintained as appropriate to minimise the risk of fire.
- 7.7.6 At the end of the working day a firewatch will be carried out. Plant will be inspected when it is switched off for the night and then again before the building is locked for the night.

7.8 Batteries and Small WEEE

- 7.8.1 Batteries and small WEEE are not to be accepted into the MRF. However, batteries and small appliances containing batteries disposed of incorrectly may be present in loads of mixed municipal waste.
- 7.8.2 Loads consisting wholly or mainly of batteries will be rejected. At the pre-acceptance stage, waste producers will be advised not to place batteries or WEEE in their general waste but to collect them separately for recycling.
- 7.8.3 Wastes are inspected during unloading and any loads containing large numbers of batteries or WEEE will be rejected.
- 7.8.4 Where a load contains a small number of batteries or WEEE and these can be easily identified and removed by hand, they will be picked out and placed in a container in the quarantine bay.
- 7.8.5 Customers who regularly supply waste contaminated with batteries and /or WEEE will be sent a reminder that these should be collected separately and not placed in general waste.

7.8.6 It will be impossible to detect and prevent all batteries or WEEE entering the treatment plant due to their small size. However, fire detection and fire suppression measures are in place should a fire occur as the result of short-circuiting battery. See below.

7.9 Leaks and Spills of Oils and Fuels

7.9.1 Oils and fuels will be stored in appropriate containers with bunding provided. Oils for plant maintenance will be stored in a dedicated area. Diesel will be stored in a bunded tank separate from the building.

7.9.2 Plant will be properly maintained to avoid any leaks or spills. Plant will be subject to a daily visual inspection at the start of the working day. Any leaks identified will be investigated and appropriate repairs will be made as soon as possible.

7.9.3 Should a spill or leak of a flammable liquid occur, this will be cleared using a suitable absorbent material as soon as possible. The used absorbent will be placed in a suitable container and sent off site for disposal.

7.10 Reactions Between Wastes

7.10.1 Only non-hazardous waste will be stored and treated at the MRF. In addition, checks will be made at the pre-acceptance stage to ensure that wastes are suitable for treatment. Waste acceptance procedures are in place to ensure only permitted wastes are received. As such no incompatible wastes will be accepted on site and no reactions between wastes are expected.

7.11 Hot Loads

7.11.1 Waste will be inspected on arrival at site, to ensure that they are in line with permit conditions and can be stored safely.

7.11.2 Should there be any sign that a hot load has been received (e.g. visible smoke or steam or the waste feels hot) then it will be directed to the quarantine area. Waste will be spread within the quarantine area to allow it to cool. It will then be moved to the reception bay if it is safe and appropriate to do so.

7.11.3 If a fire has taken hold, the fire will be extinguished within the quarantine bay and arrangements will be taken to dispose of the residues at a permitted site.

7.12 Hot and Dry Weather

7.12.1 Hot and dry weather is not expected to cause an issue regarding fire risk. All waste is unloaded stored and treated inside the building providing some shelter from the sun.

7.12.2 It is the intention that combustible waste will be treated and removed from site within 72 hours limiting the extent to which it will dry out and become more flammable.

7.13 Loose combustible waste, dust and fluff

7.13.1 Daily cleaning will be undertaken at the site to reduce the build up of loose dust and fluff. Daily inspections will be undertaken at the site to ensure that good housekeeping measures are being employed and that there is no evidence of accumulation of fugitive combustible waste.

7.13.2 Electric panels and all equipment will be cleaned daily to ensure dust does not collect in these more high risk areas.

8 MANAGING IMPACTS DURING AN INCIDENT

8.1 Dealing With Issues During a Fire

8.1.1 In the event of a fire the fire warden will ensure the building has been evacuated safely and liaise with the Fire and Rescue Service to aid safe access for firefighting. They will keep the site manager informed of what is happening.

8.1.2 During a fire event, the site will be closed and no unauthorised personnel will be allowed to enter the site until the fire has been suppressed and clean-up operations are completed.

8.1.3 The site manager will contact the Environment Agency and Valencia's senior managers to advise them of the fire.

8.1.4 No further waste will be accepted on site. Customers will be contacted and will be directed to another of Valencia's sites or, if necessary, to another permitted facility.

8.1.5 The site will remain closed until the residues have been cleared, the building has been made safe and plant has been repaired or replaced.

8.2 Notifying Residents and Businesses

8.2.1 A list of contact details for local businesses, residents and other nearby receptors to be notified in the event of a fire are kept on site. Notifications will be undertaken as soon as possible by phone as a priority should a fire break out on the site.

8.3 Preventing Emission to Water

8.3.1 Measures will be implemented in the event of a fire to ensure that firewater (including foam) will be prevented from leaving the site and will therefore be unable to enter any watercourse.

8.3.2 Firewater will be contained within the footprint of the building, as described in section 5.5. The building has an impermeable concrete floor which is designed with a holding capacity of up to 392m³ on the building floor.

8.3.3 Following the extinguishment of a fire, contaminated water will be removed by a vacuum tanker and taken to an appropriately permitted facility for disposal. These measures will prevent any loss of contaminated fire water into the environment.

8.4 Preventing Emissions to Air

8.4.1 Burning waste can produce smoke and particulates can cause respiratory irritation if inhaled. Flora and fauna may also be harmed through exposure to emissions of smoke

and deposition of particulates. Waste fires may also produce a variety of toxic gases such as carbon monoxide (CO), volatile organic compounds (VOCs) and polycyclic aromatic hydrocarbons (PAHs).

- 8.4.2 Wind-blown soot and dust produced by the fire can spread locally and potentially over a wider area. The dominant wind direction in the area is south-westerly. The prevailing wind direction in the area means that any smoke produced may travel towards industrial, residential and habitat receptors. The measures that are detailed in this Fire Prevention Plan will ensure that the risk of smoke production is kept to a minimum.
- 8.4.3 Site staff and visitors will be evacuated to a safe area in the event of a fire. Neighbouring businesses and residents will be kept informed of the size of the fire. They will be informed of any toxic gas releases and advised to keep doors and windows closed.
- 8.4.4 Firefighting by both suitably trained staff and the emergency services will ensure that a fire is extinguished as quickly as possible.

8.5 Preventing Emissions to Land

- 8.5.1 Ash that is produced as a result of a fire can contain hazardous components. Fire damaged wastes will be disposed to landfill. This will minimise the potential for emissions to land.

9 CLEAR-UP AND RE-OPENING

9.1 Clearing and Decontamination After a Fire

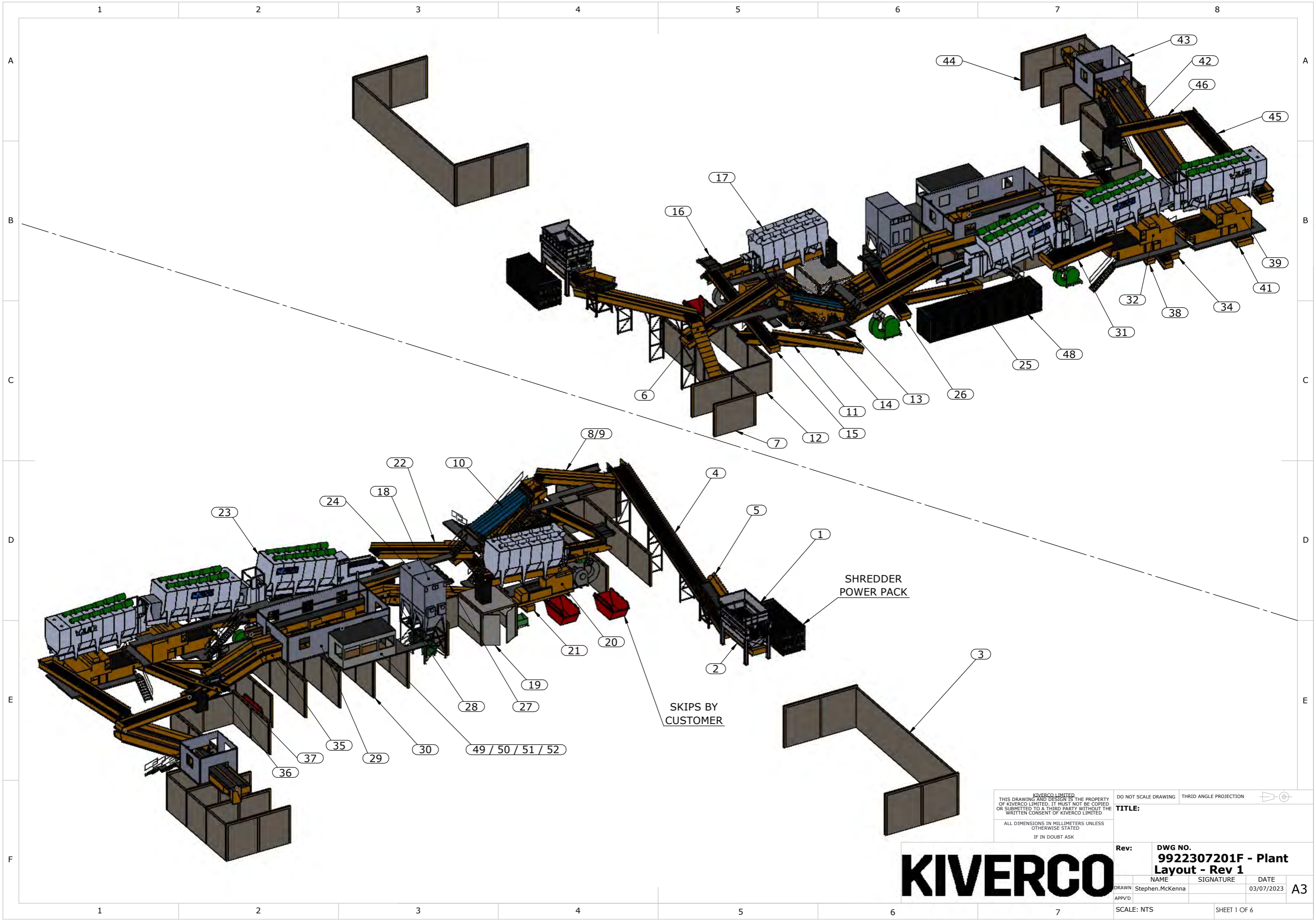
- 9.1.1 A building inspection will be made by a competent engineer to determine whether the building is safe and appropriate repairs will be scheduled.
- 9.1.2 Firewater and waters used to clear foam will be tested to determine levels of contamination and arrangements will be made for it to be collected by tanker and disposed of at a suitably permitted site.
- 9.1.3 Fire-damaged residues will be sent off-site for disposal at the landfill. Residues may remain in place for a short time whilst the site is made safe and any required investigation into the cause of the fire is carried out.

9.2 Making the Site Operational After a Fire

- 9.2.1 Once the building is made safe and firewater has been cleared, plant and equipment will be inspected by a qualified engineer and arrangements will be made to repair or replace as necessary.
- 9.2.2 The building will be opened to waste deliveries once it is safe, residues have been cleared and plant and infrastructure has been repaired to the extent that waste can be received and managed without risk to the environment.
- 9.2.3 The Environment Agency will be notified of any inspections and repairs undertaken following a fire and the recommencement of full site operations.

APPENDIX 1

Plant List



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<small>ALL DIMENSIONS IN MILLIMETERS UNLESS OTHERWISE STATED IF IN DOUBT ASK</small>				
Rev:		DWG NO. 9922307201F - Plant Layout - Rev 1		
<small>DRAWN</small> Stephen.McKenna	<small>SIGNATURE</small> 	<small>DATE</small> 03/07/2023	A3	
<small>SCALE:</small> NTS		<small>SHEET</small> 1 OF 6		

KIVERCO

Item	Detail	Width (m)	Length (m)	Item Installed Power (kW)	Control
1	M&J PreShred 6000S			501.1	Metso Control Panel
2	Shredder Collection Conveyor	1.40	5.50	7.5	Kiverco Control Panel
3	Shredded Bulky Waste Bay				
4	Incline Conveyor	1.40	22.00	7.5	Kiverco Control Panel
5	Belt Feeder Conveyor 1.2m x 4m	1.20	4.00	2.2	Kiverco Control Panel
6	Long Part Separator			1.5	Kiverco Control Panel
7	Longs Bay				
8	Screen Feed Conveyor	1.40	10.00	7.5	Kiverco Control Panel
9	Belt Weighing Scales				
10	Combi Screen	2.40	7.0	45	Kiverco Control Panel
11	0-10mm Collection Conveyor	1.60	10.00	5.5	Kiverco Control Panel
12	Fines Bay				
13	10-60mm Collection Conveyor	1.00	3.50	5.5	Kiverco Control Panel
14	10-60mm Transfer Conveyor	1.00	10.00	5.5	Kiverco Control Panel
15	10-60mm Transfer Conveyor 2	1.00	12.00	5.5	Kiverco Control Panel
16	Magnapower Inline Overband Magnet			3	Kiverco Control Panel
17	Walair 2-Way Drum Separator			50.2	Kiverco Control Panel
18	Walair Dust Filter			1.24	Kiverco Control Panel
19	10-60mm Lights & FE Metals Bays				
20	Magnapower Eddycurrent Separator			7.9	Kiverco Control Panel
21	ECS Residue Collection Conveyor	0.80	4.00	5.5	Kiverco Control Panel
22	+60mm Collection Conveyor	1.60	10.50	5.5	Kiverco Control Panel
23	Walair 4-Way Drum Separator			147.6	Kiverco Control Panel
24	Walair Dust Filter			1.24	Kiverco Control Panel
25	+60mm Heavies Collection Conveyor	1.00	8.00	5.5	Kiverco Control Panel
26	+60mm Heavies Transfer Conveyor	1.00	6.50	5.5	Kiverco Control Panel
27	Magnapower Inline Overband Magnet			4	Kiverco Control Panel
28	Heavies Picking Station Conveyor			4	Kiverco Control Panel
29	3 Bay Double Sided Picking Station Cabin			7.68	Kiverco Control Panel
30	Picking Station Bays				
31	Mid-Heavies Collection Conveyor	2.40	6.50	5.5	Kiverco Control Panel
32	Mistral+ 2800 Connect Full package			11.75	
33	Walair Dust Extraction - Optical Sorter			5.5	Kiverco Control Panel
34	Rigid Plastics Conveyor	0.80	10.50	5.5	Kiverco Control Panel
35	Mid-Heavies Picking Station Conveyor			4	Kiverco Control Panel
36	Residue Collection Conveyor	0.80	16.00	5.5	Kiverco Control Panel
37	Magnapower Overband Magnet			3	Kiverco Control Panel
38	Wood Collection Conveyor	0.80	9.50	5.5	Kiverco Control Panel
39	Mistral+ 2800 Connect Full package			12.45	
40	Walair Dust Extraction - Optical Sorter			5.5	Kiverco Control Panel
41	Lights Optical Collection Conveyor	1.60	11.00	5.5	Kiverco Control Panel
42	Lights Picking Station Conveyor			4	Kiverco Control Panel
43	1 Bay Double Sided Picking Station Cabin			3.03	Kiverco Control Panel
44	Lights Picking Bays				
45	Super Lights Collection Conveyor	1.20	15.00	7.5	Kiverco Control Panel
46	Super Lights Stockpile Conveyor	1.20	8.00	5.5	Kiverco Control Panel
47	Stair Access & Walkways				
48	Compressed Air System			73.3	Airwise Control Panel
49	Plant Electrical Control Room			0.03	Distribution Board
50	Control Panel				
51	Control Room Air Conditioning			12.6	Distribution Board
52	CCTV Camera System				
53	Plant Paint Colour - Kiverco Tan				
Total Installed Power				1018.82 kW	

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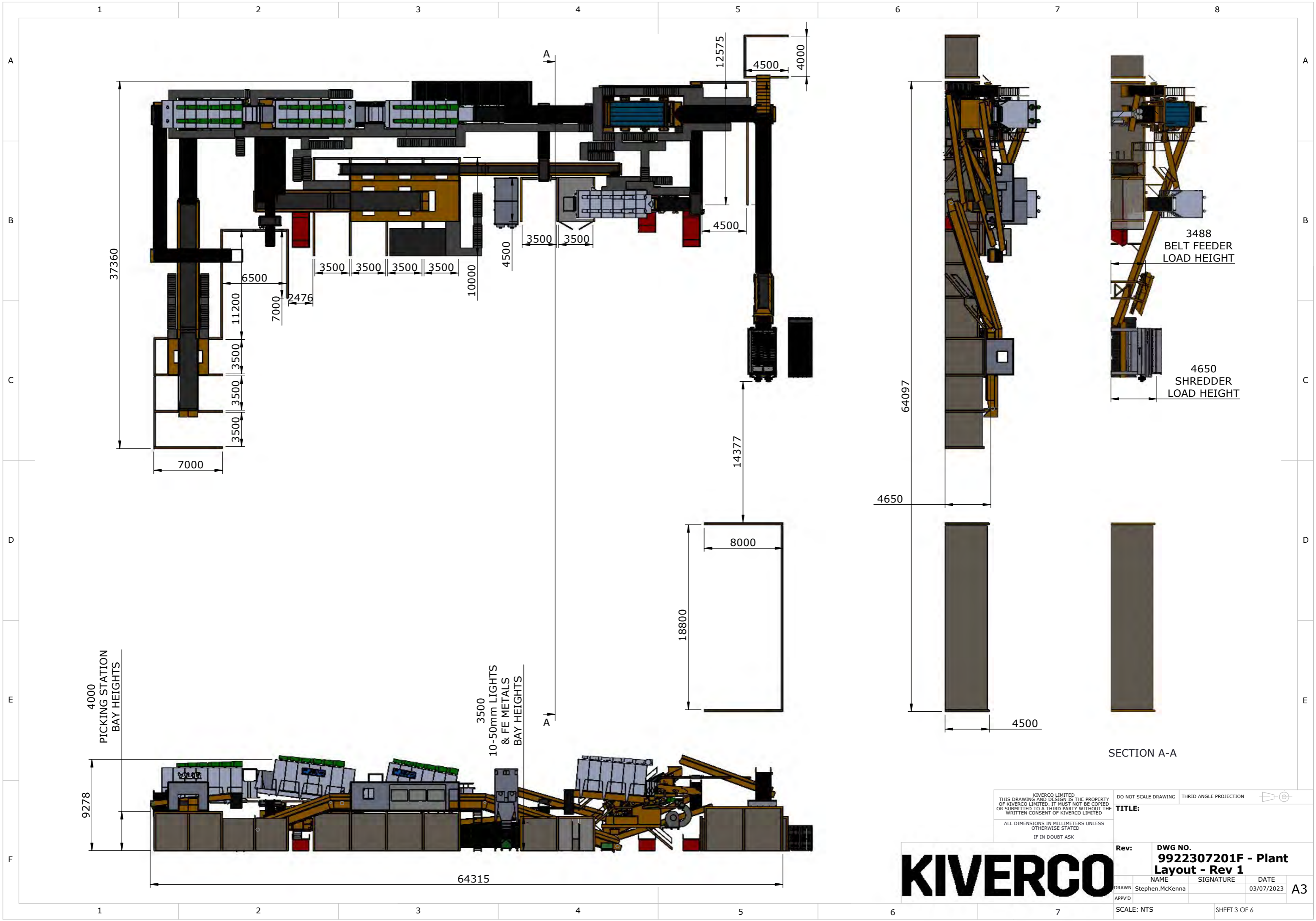
Rev: DWG NO.

DRAWN	NAME	SIGNATURE	DATE
APP'VD	Stephen.McKenna		03/07/2023

SCALE: NTS SHEET 2 OF 6



A3



4000
PICKING STATION
BAY HEIGHTS

3500
10-50mm LIGHTS
& FE METALS
BAY HEIGHTS

3488
BELT FEEDER
LOAD HEIGHT

4650
SHREDDER
LOAD HEIGHT

SECTION A-A

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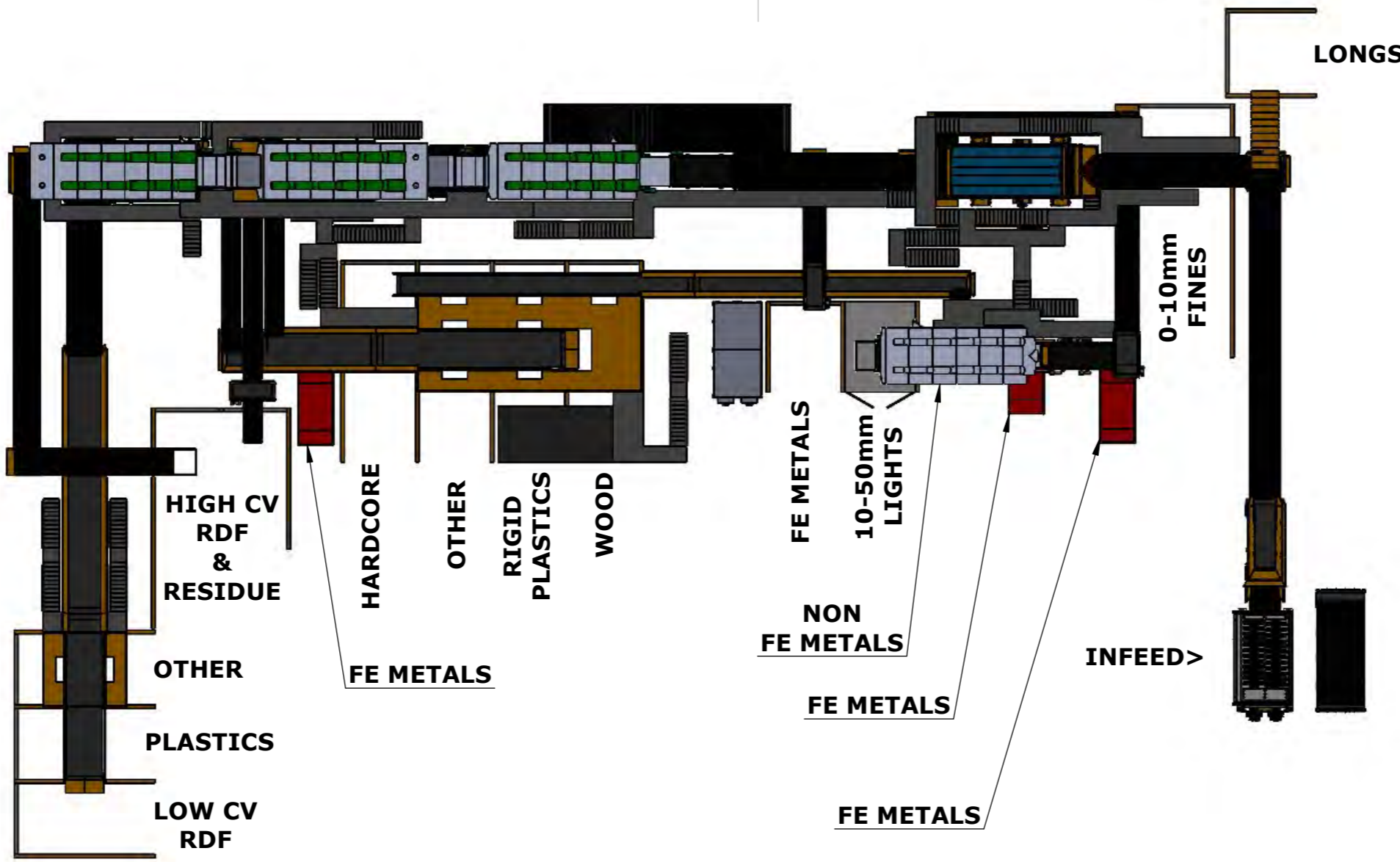
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TITLE:

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Rev:	DWG NO. 9922307201F - Plant Layout - Rev 1		
	NAME	SIGNATURE	DATE
DRAWN	Stephen.McKenna		03/07/2023
APPV'D			
SCALE: NTS	SHEET 3 OF 6		

A3



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 IF IN DOUBT ASK

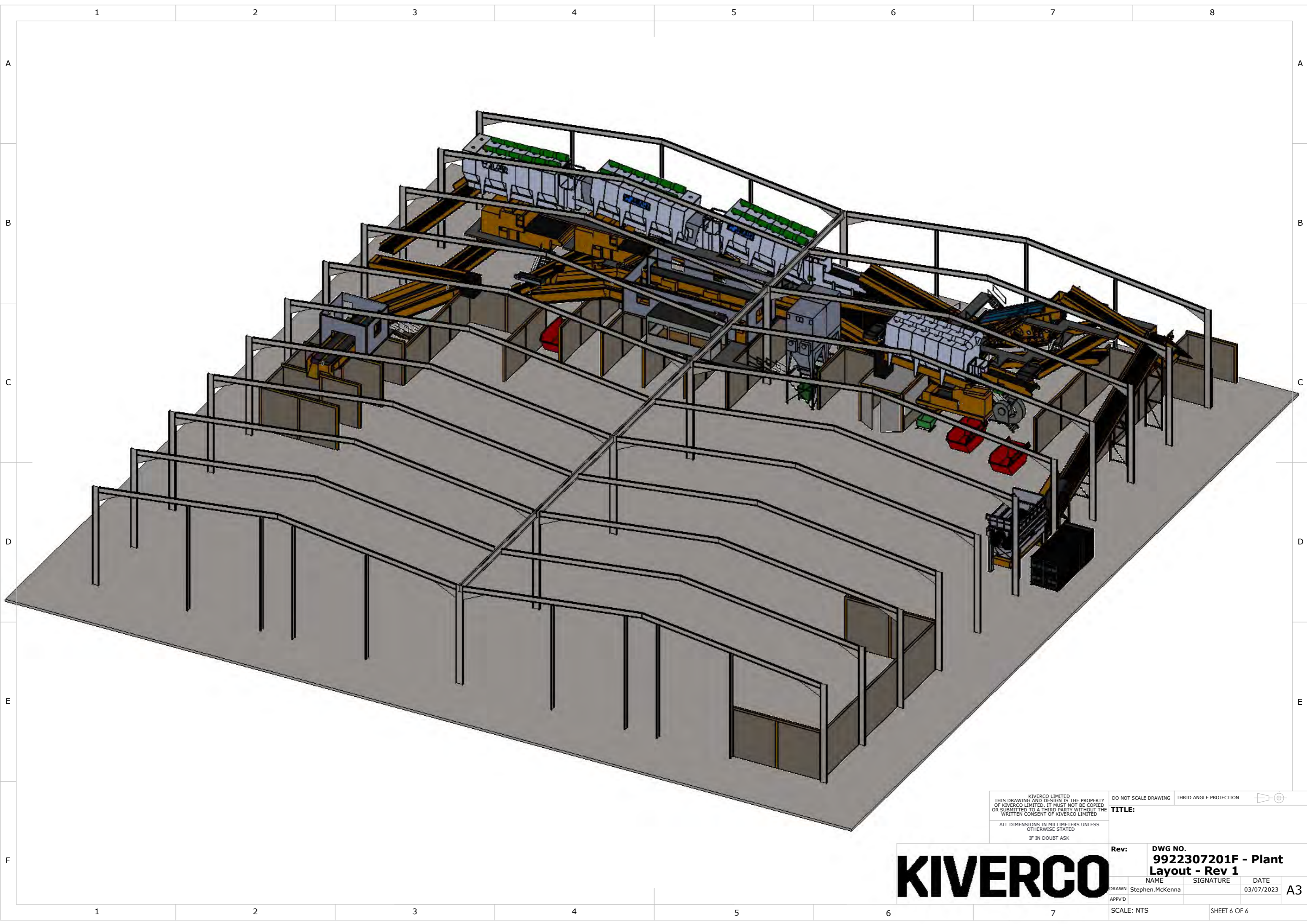
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NAME	SIGNATURE	DATE	A3
Stephen.McKenna		03/07/2023	
APPV'D			

KIVERCO



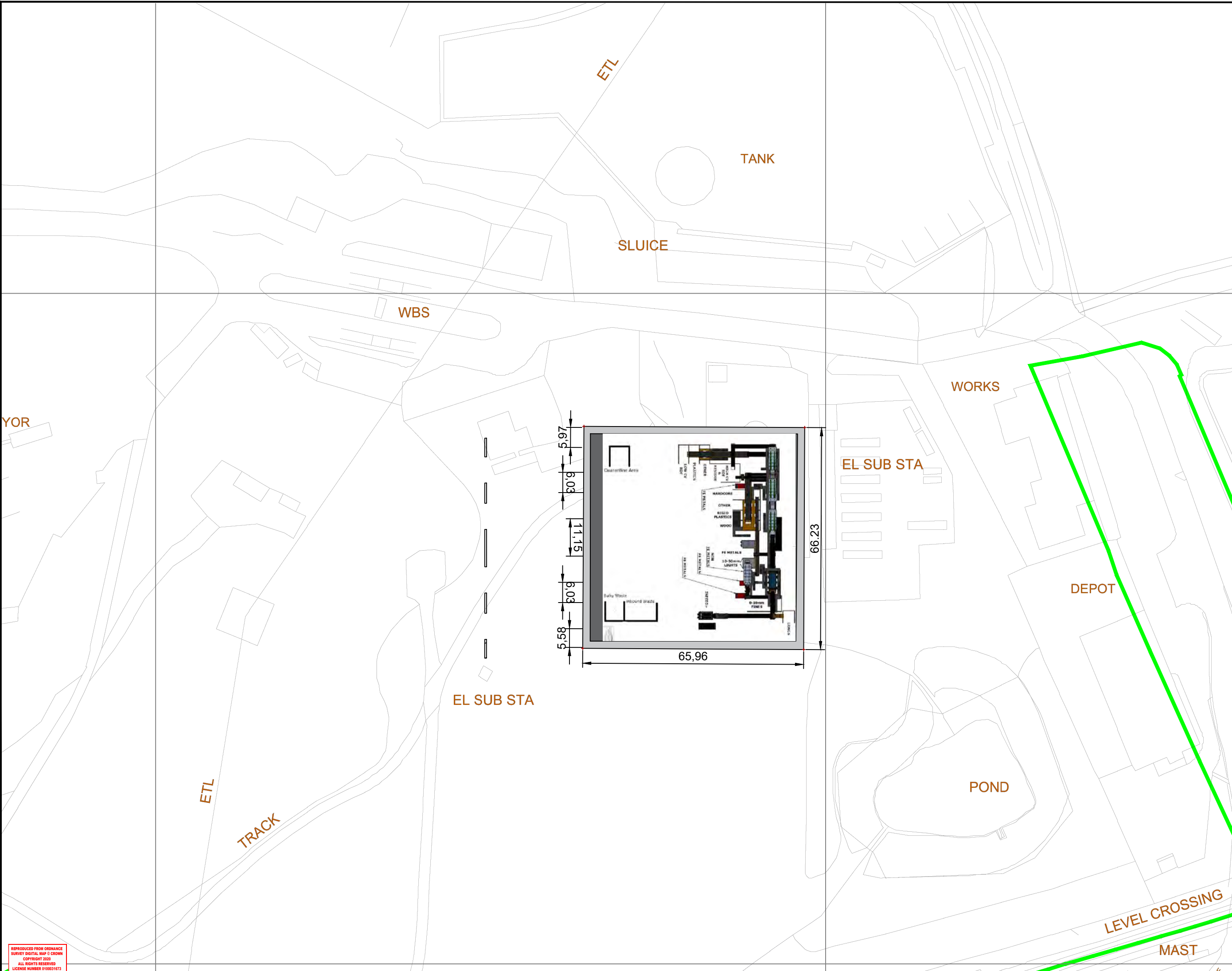
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Rev:		DWG NO. 9922307201F - Plant Layout - Rev 1		
<small>NAME</small> Stephen.McKenna	<small>SIGNATURE</small>	<small>DATE</small> 03/07/2023	A3	
<small>SCALE:</small> NTS		<small>SHEET</small> 5 OF 6		

KIVERCO



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<small>ALL DIMENSIONS IN MILLIMETERS UNLESS OTHERWISE STATED IF IN DOUBT ASK</small>		TITLE:		
		Rev:	DWG NO. 9922307201F - Plant Layout - Rev 1	
<small>DRAWN</small>	<small>NAME</small> Stephen.McKenna	<small>SIGNATURE</small>	<small>DATE</small> 03/07/2023	A3
<small>APPV'D</small>	<small>SCALE:</small> NTS		<small>SHEET</small> 6 OF 6	

DRAWINGS



SITE NAME
**SHELFORD
LANDFILL**

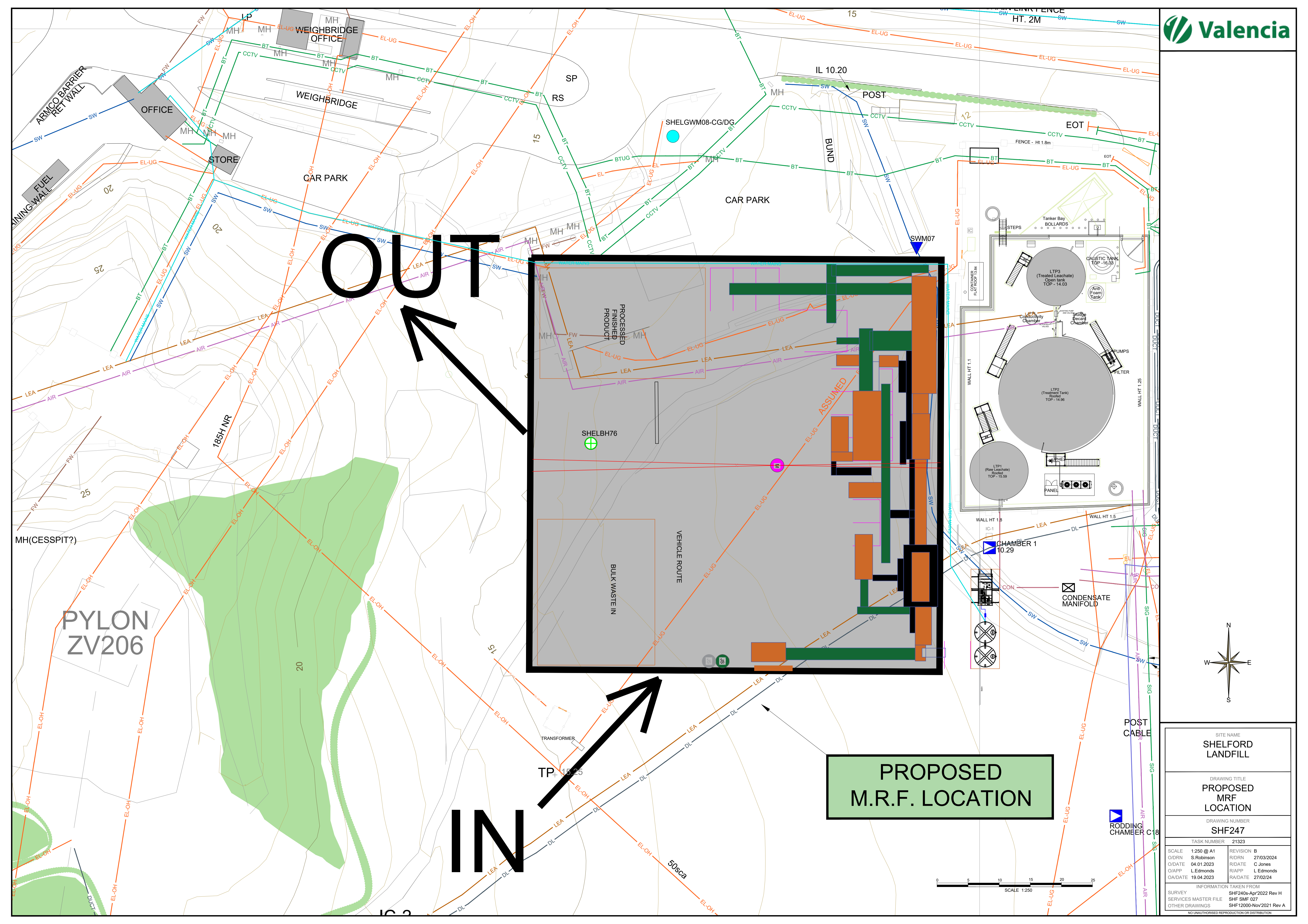
DRAWING TITLE
**SITE
BOUNDARY
PLAN**

DRAWING NUMBER
SHF118

TASK NUMBER 10070

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O/DRN	C Jones	R/DRN	C Jones
O/DATE	18/09/2023	R/DATE	19/10/2023
O/APP		R/APP	
O/DATE		R/DATE	

INFORMATION TAKEN FROM
SURVEY SERVICES MASTER FILE
OTHER DRAWINGS



OUT

IN

**PROPOSED
M.R.F. LOCATION**

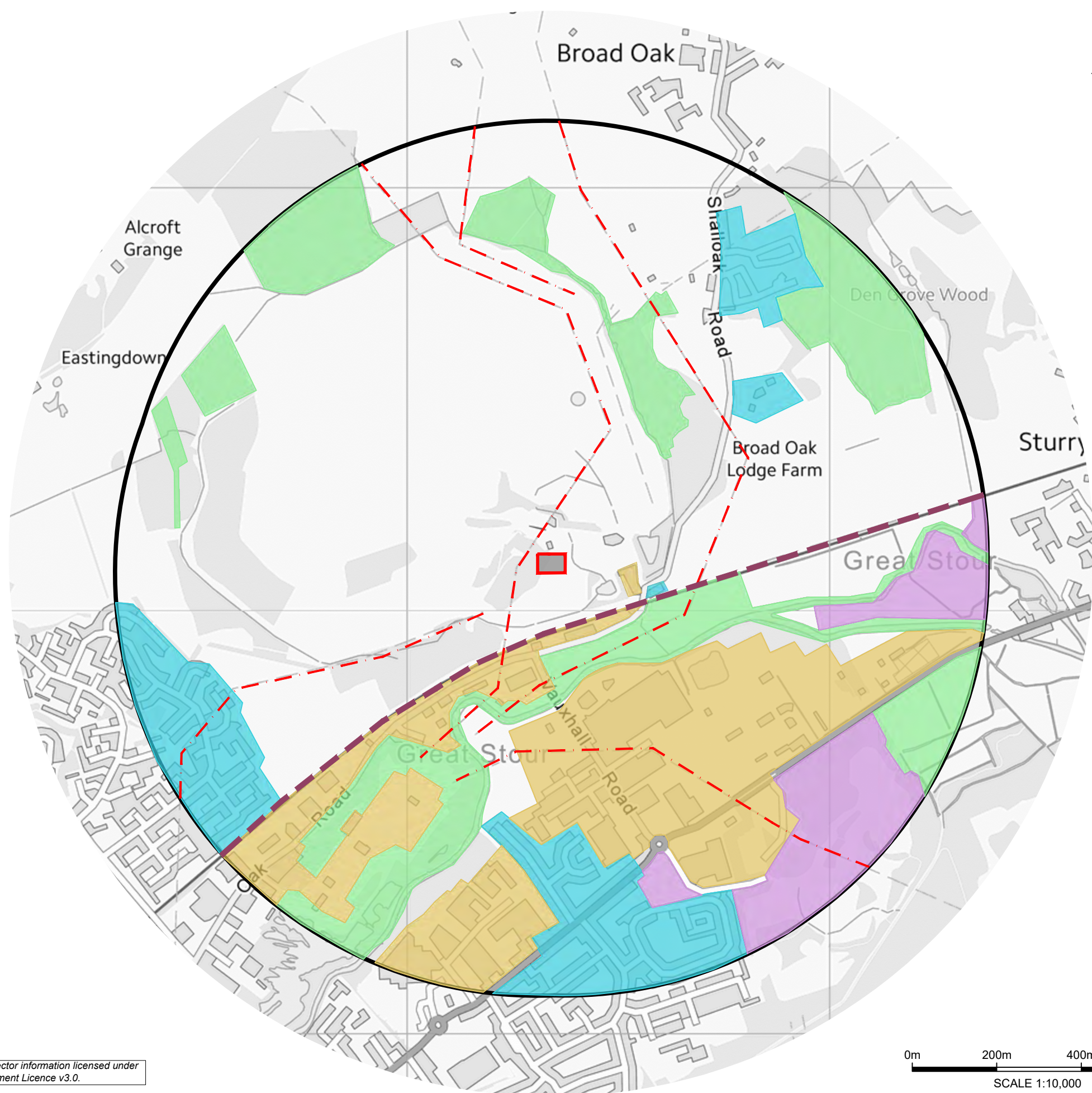
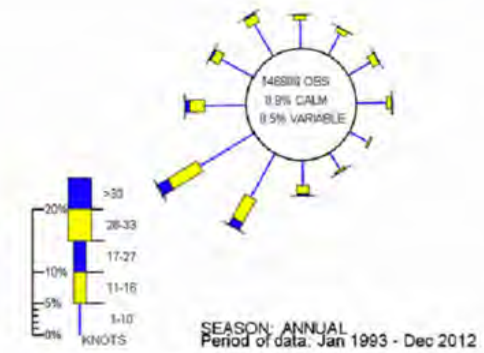
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DRAWING TITLE		PROPOSED MRF LOCATION	
DRAWING NUMBER		SHF247	
TASK NUMBER	21323	REVISION	B
SCALE	1:250 @ A1	R/DRN	27/03/2024
O/DRN	S.Robinson	R/DATE	C Jones
O/DATE	04.01.2023	R/APP	L Edmonds
O/APP	L Edmonds	RA/DATE	27/02/24
O/DATE	19.04.2023		
INFORMATION TAKEN FROM			
SURVEY	SHF240s-Apr'2022 Rev H		
SERVICES MASTER FILE	SHF SMF 027		
OTHER DRAWINGS	SHF 12000-Nov'2021 Rev A		
NO UNAUTHORISED REPRODUCTION OR DISTRIBUTION			

DO NOT SCALE FROM THIS DRAWING

KEY

- MRF BUILDING
- 1km OFFSET
- HABITAT RECEPTORS
- RESIDENTIAL RECEPTORS
- INDUSTRIAL/COMMERCIAL RECEPTORS
- LEISURE RECEPTORS
- RAILWAY LINE
- ELECTRICITY TRANSMISSION LINES

WIND ROSE FOR SOUTHEND AIRPORT
N.G.R: 5886E 1893N ALTITUDE: 15 metres a.m.s.l.



A	FIRST ISSUE	27-04-23	DR	KH	AC
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REVISION	DETAILS	DATE	DRN	CHK'D	APP'D
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CLIENT
VALENCIA WASTE MANAGEMENT

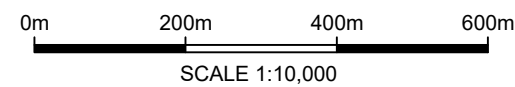
PROJECT
INSTALLATION OF LANDFILL MRFs

DRAWING TITLE
RECEPTOR PLAN

DRG No.	ST20075-002	REV	A	SUIT. CODE
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DRG SIZE	A3	SCALE	1:10,000	DATE	13-04-23
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DRAWN BY	DR	CHECKED BY	KH	APPROVED BY	AC
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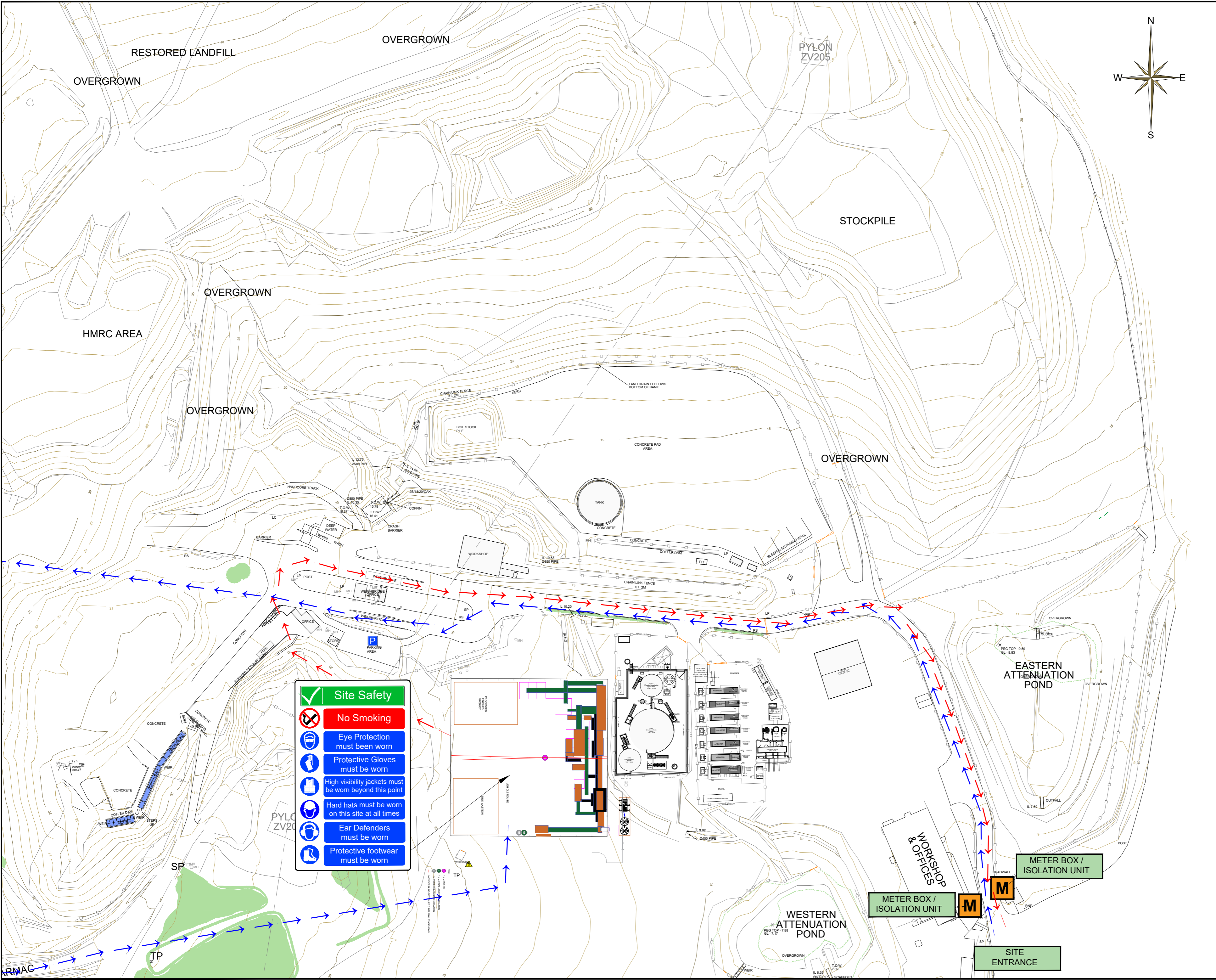
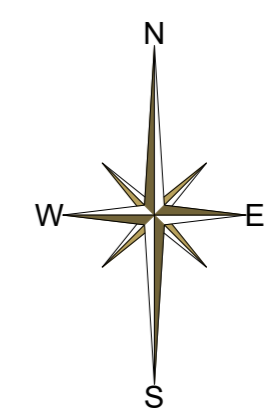


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EMERGENCY ISOLATION POINTS

HAZARDOUS MATERIALS

KEY PERSONNEL

FIRST AIDERS:

FIRE WARDENS:

EMERGENCY TEL:

INCIDENT HOTLINE: xxxxxx xxxxxxxx

ASSOCIATED DRAWINGS

Site Safety

- No Smoking
- Eye Protection must be worn
- Protective Gloves must be worn
- High visibility jackets must be worn beyond this point
- Hard hats must be worn on this site at all times
- Ear Defenders must be worn
- Protective footwear must be worn

SITE NAME
SHELFORD MRF (PROPOSED)

DRAWING TITLE
SITE SAFETY & INDUCTION LAYOUT SHEET 1 OF 2

DRAWING NUMBER
SHF-MRF2000

TASK NUMBER
21340

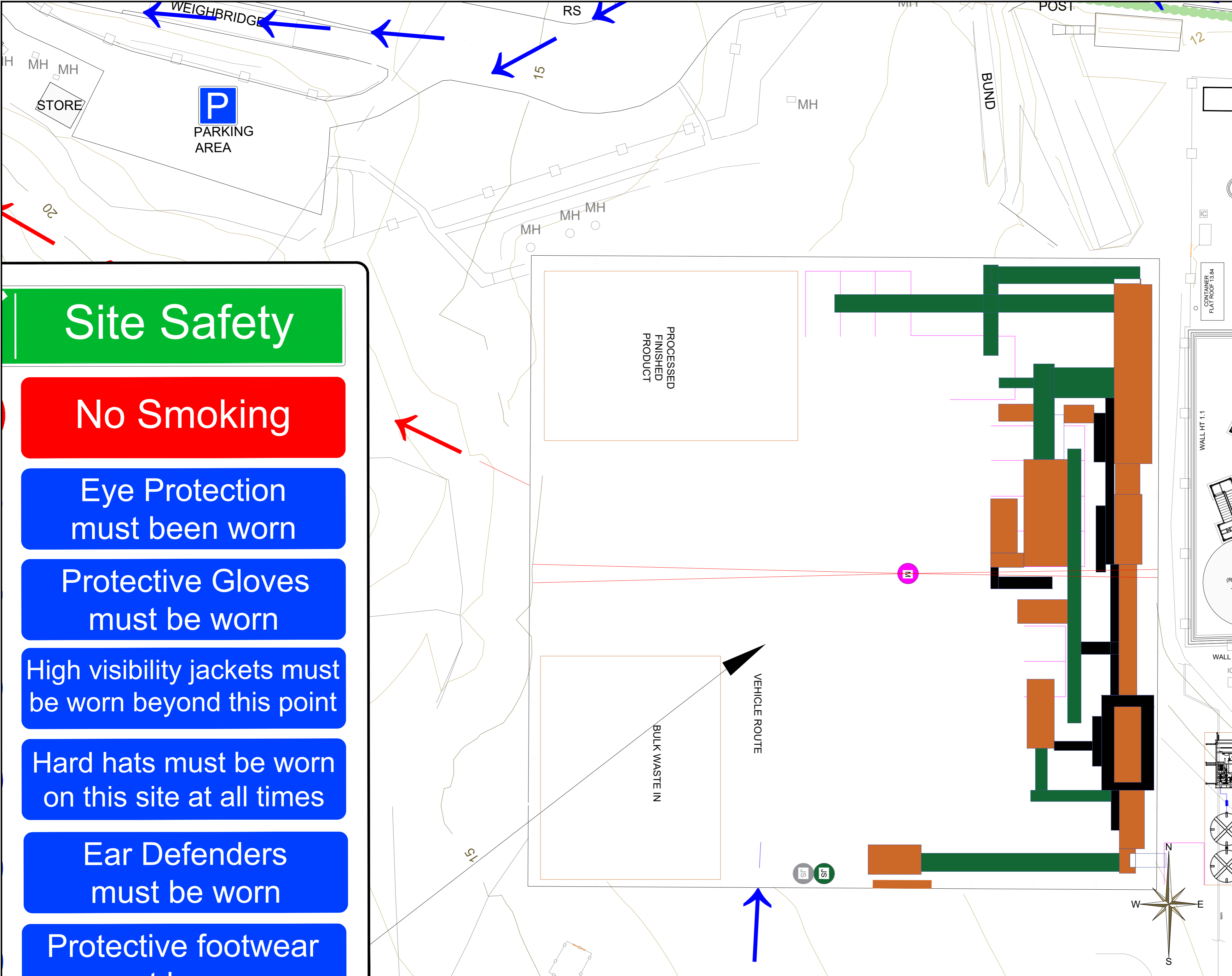
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O/DATE: 20.04.2023	R/DATE: 27/03/24
O/APP: L.Edmonds	R/APP: L.Edmonds
O/DATE: 26.04.2023	R/DATE: 27/03/24

INFORMATION TAKEN FROM: SHF240s-Apr2022 Rev H

SURVEY SERVICES MASTER FILE: SHF247 - Proposed MRF Loc

OTHER DRAWINGS: SHF247 - Proposed MRF Loc

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EMERGENCY ISOLATION POINTS

HAZARDOUS MATERIALS

KEY PERSONNEL

FIRST AIDERS:

FIRE WARDENS:

EMERGENCY TEL:

INCIDENT HOTLINE: xxxxxx xxxxxxxx

ASSOCIATED DRAWINGS:

EMERGENCY ISOLATION POINTS

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HAZARDOUS MATERIALS

KEY PERSONNEL

FIRST AIDERS:

FIRE WARDENS:

EMERGENCY TEL:

INCIDENT HOTLINE: xxxxxx xxxxxxxx

ASSOCIATED DRAWINGS:

SITE NAME
SHELFORD MRF (PROPOSED)

DRAWING TITLE
SITE SAFETY & INDUCTION LAYOUT SHEET 2 OF 2

DRAWING NUMBER
SHF-MRF2000

TASK NUMBER
21340

SCALE: 1:250 @ A2	REVISION A
OIDRN: R.L.Meaden	R/DRN: C Jones
O/DATE: 20.04.2023	R/DATE: 27/03/2024
O/APP: L.Edmonds	R/APP: L.Edmonds
O/DATE: 26.04.2023	R/DATE: 27/03/2024

INFORMATION TAKEN FROM

SURVEY: SERVICES MASTER FILE
OTHER DRAWINGS: SHF247 - Proposed MRF Loc

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Site Safety

No Smoking

Eye Protection must be worn

Protective Gloves must be worn

High visibility jackets must be worn beyond this point

Hard hats must be worn on this site at all times

Ear Defenders must be worn

Protective footwear must be worn



Valencia

REPORT TITLE

Shelford MRF Surface Water

Reference

ECL.9592.R05.001 Shelford MRF Drainage Strategy

Date 29/02/2024



Context

Surface water run-off from the proposed MRF will be intercepted by building drainage and directed to an attenuation basin via a subsurface gravity pipe drainage system.

The landfill site is located in the Stour Management Catchment within Kent. It is noted from EA guidance that the climate change allowances are:

- 3.33% AEP for 2070s epoch - 40%
- 1.00% AEP for 2070s epoch - 45%

The MRF building roof is the main source of surface water runoff with runoff interception achieved via conventional downpipes.

To ensure suitable attenuation, the new surface water drainage system will form a separate element to the existing landfill surface water drainage network. The new MRF roof and hardstanding areas will generate substantial runoff during periods of heavy rainfall necessitating a separate system which will be directed to the new attenuation basin.

Rainfall

FEH rainfall parameters (see Appendix 3) are to be used in assessing the Site attenuation requirements. It is noted that the BFIHOST19 is 0.455 which indicates soils are relatively impermeable (sites with values >0.65 defined as permeable).

Impermeable area

The proposed masterplan has following overall parameters: Proposed impermeable area = 0.411ha
The existing impermeable area is 0.02ha, if we assume a betterment of 50% then the equivalent surface water runoff value (Q) using Rational Method is:

$$\begin{aligned} O_e &= 2.78 A_i \\ &= 2.78 \times 0.01 \times 50\text{mm} \\ &= 1.39 \text{ l/sec} \end{aligned}$$

Greenfield runoff

The greenfield runoff rate determined through the FEH statistical method (Appendix 4) is given as:
0GR = 1.19l/sec

Permitted discharge

The permitted discharge is therefore:

$$\begin{aligned} O_t &= O_e + 0GR \\ &= 1.19 + 1.39 \\ &= 2.58 \text{ l/sec} \end{aligned}$$

1. Design criteria summary

There are particular design criteria namely:

- Flood mitigation system is to be designed to 1:100 plus 45% climate change storm event;
- The associated pipe network is to be designed to 1:30 plus 40% climate change storm event (undertaken as part of detailed design);
- The modelling is to utilise FEH rainfall data;
- The permitted surface water discharge rate= 2.58l/s;
- Infiltration systems are expected to be unsuitable.

Other measures



Pollution control and treatment of the surface water run-off generated from Site needs to be considered through the design process. The UKSUDs 'Water Quality SuDS Tool' has been used within the design to ensure a suitable treatment train.

Surface water runoff from the roof will not be contaminated however there is some contributions from hardstandings/access road. Any silt/detritus entering the system is to be intercepted by catchpits on the pipe system upstream of the attenuation basin. If required further treatment measures can be introduced between the access road and the attenuation pond such as a filter trench.

Modelling

Preliminary modelling using InfoDrainage has been undertaken based on the catchment of 0.411ha; this includes the building and sections of new access road.

The modelling parameters are provided within Figure 1 below; note the maximum runtime is 20160 minutes with the number of storms 76.

Figure 1

Input	
Input Type	User Input
Area (ha)	0.411
Volumetric Runoff Coefficient	0.850
Discharge Rate (L/s)	2.58
Infiltration Rate (m/hr)	0.0
Safety Factor	2.0
	Quick
<input type="button" value="Calculate"/>	
<input type="radio"/> Create New <input checked="" type="radio"/> From Library	
<input checked="" type="checkbox"/> All	
<input checked="" type="checkbox"/> FEH	
Method	FEH
Number of Storms	38
Max. Run Time (mins)	20160

Similarly, set out in Figure 12 below are the modelling outputs. This indicates that the maximum storage volume required, assuming no infiltration, will be 564m³ within the attenuation basin. Assuming greater efficiency is achieved in the system (i.e. using vortex controls), it is likely the attenuation will be no greater than 500m³.

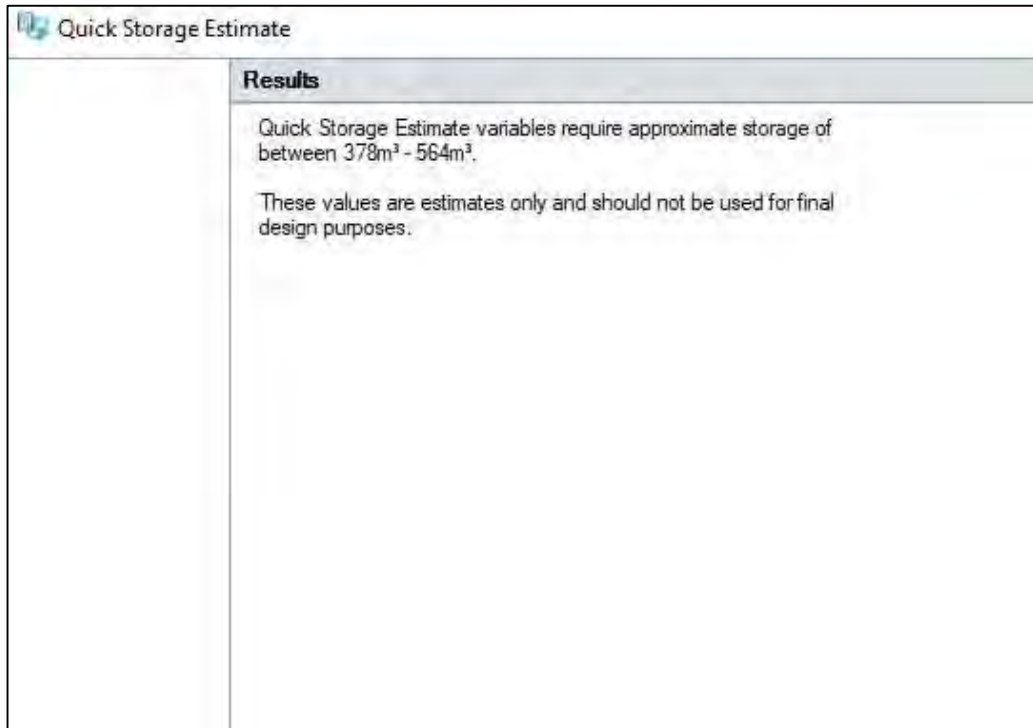
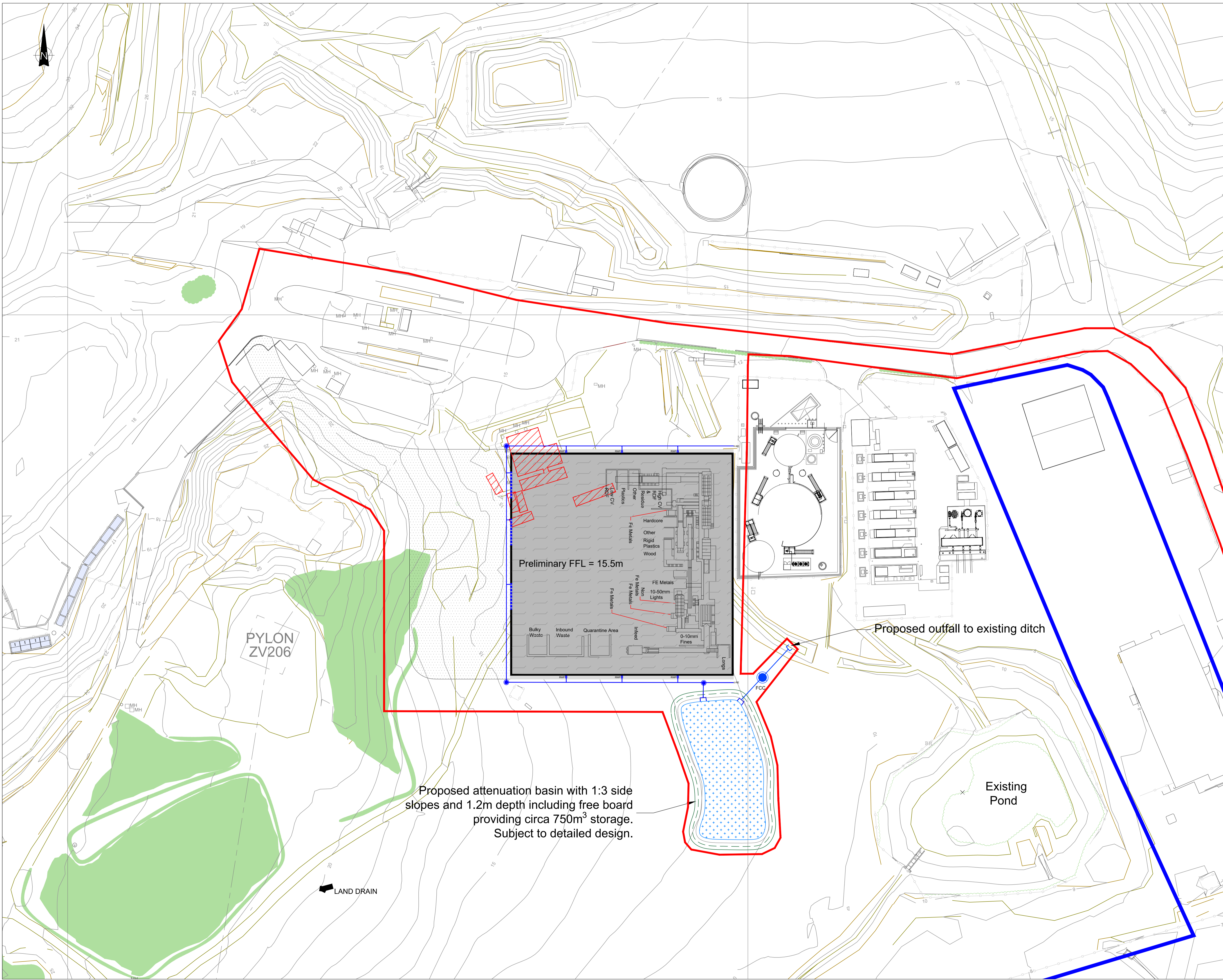


Figure 2: Preliminary modelling output

The indicative attenuation basin on the Drainage Strategy Plan (Appendix 2) assumes 1:3 side slopes, a single inlet headwall and freeboard of circa 250mm. The outfall from the new attenuation basin will discharge to the nearby ditch upstream of the Existing Pond.

Note the final detailed design is subject to detailed modelling, including the pipe network. It is assumed that the pipe network will likely be formed of dia225 and dia300mm pipework connecting any downpipes of the building or linear channel drains.



- Notes
1. Survey information provided by Valencia Waste Management Ltd
 2. All dimensions in Metres and all levels in metres Above Ordnance Datum Newlyn.
 3. Do not scale from this drawing.
 4. Any anomalies on this drawing should be brought to the attention of Egniol Consulting Ltd.
 5. Key.

- Site boundary
- 1.2m width pedestrian access
- Rain water pipe
- ACO drain
- SW drainage pipe
- Filter drain system
- Flow control chamber
- SW manhole
- Attenuation basin
- Concrete link road
- Proposed building roof
- Existing building to demolish
- Existing foliage / trees

A	Revised MRF Location	LE	DH	DH	28.02.24
Rev	Modification	By	Chk	App	Date



Egniol Consulting Limited
 Unit 7, Llys Onnen, Ffordd y Llyn
 Parc Menai, Bangor,
 LL57 4DF
 Telephone: 01248 355996
 Email: info@egniol.com

Valencia Waste Management Ltd

Shelford Landfill Site

Drainage Strategy Plan

Drawn by	Checked by	Approved by
LE	DH	RK
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STOKE-ON-TRENT

Sir Henry Doulton House
Forge Lane
Etruria
Stoke-on-Trent
ST1 5BD
Tel: +44 (0)1782 276 700

BIRMINGHAM

Two Devon Way
Longbridge Technology Park
Longbridge
Birmingham
B31 2TS
Tel: +44 (0)121 580 0909

BOLTON

41-50 Futura Park
Aspinall Way
Middlebrook
Bolton
BL6 6SU
Tel: +44 (0)1204 227 227

BRISTOL

Temple Studios
Temple Gate
Redcliffe
Bristol
BS1 6QA
Tel: +44 (0)117 203 4477

BURY ST EDMUNDS

Armstrong House
Lamdin Road
Bury St Edmunds
Suffolk
IP32 6NU
Tel: +44 (0)1284 765 210

CARDIFF

Tudor House
16 Cathedral Road
Cardiff
CF11 9LJ
Tel: +44 (0)292 072 9191

CARLISLE

Marconi Road
Burgh Road Industrial Estate
Carlisle
Cumbria
CA2 7NA
Tel: +44 (0)1228 550 575

EDINBURGH

Great Michael House
14 Links Place
Edinburgh
EH6 7EZ
Tel: +44 (0)131 555 3311

GLASGOW

24 St Vincent Place
Glasgow
G1 2EU
Tel: +44 (0)141 428 4499

LEEDS

36 Park Row
Leeds
LS1 5JL
Tel: +44 (0)113 831 5533

LONDON

Third Floor
46 Chancery Lane
London
WC2A 1JE
Tel: +44 (0)207 242 3243

NEWCASTLE UPON TYNE

City Quadrant
11 Waterloo Square
Newcastle upon Tyne
NE1 4DP
Tel: +44 (0)191 232 0943

TRURO

Baldhu House
Wheal Jane Earth Science Park
Baldhu
Truro
TR3 6EH
Tel: +44 (0)187 256 0738

International office:

ALMATY

29/6 Satpaev Avenue
Hyatt Regency Hotel
Office Tower
Almaty
Kazakhstan
050040
Tel: +7(727) 334 1310