FIRE PREVENTION PLAN

Stonebrook Way, Longford, Coventry CV6 6LN

Tom White Waste Ltd

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Site Information & Key Contacts List

Site Address:	**Stonebrook Way, Longford, Coventry CV6 6LN**		
Site Operator:	**Tom White Waste Ltd**	**National Grid Ref:**	**SP 34167 83652**

Contact	**Description**	**Office Hours**	**Out of Hours**
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Michael Trueman Bart Dodanowicz	Site managers / foreman's & TCMs	02476 662525	07816 370028
University Hospital Coventry & Warwickshire Clifford Bridge Road, Coventry, CV2 2DX	Main NHS Hospital	024 7696 4000	999
	Accident & Emergency (A&E) – 12-hour service	999	999
The Gables Medicentre 268 Holbrook Lane, Coventry, CV2 2DX	Local Doctor Surgery (GP)	024 7668 8340	999 or 112
West Midlands Police Police Station Stoney Stanton Road, Coventry, CV6 5DG	Local Police Non-Emergency	101 or 0845 113 5000	999 or 112
	Police Emergency	999 or 112	999 or 112
West Midlands Fire & Rescue Service Foleshill Fire Station Foleshill Road, Coventry, CV6 5HN	Fire and Rescue Service (in Emergency Dial 999)	999 or 0121 380 7525	999 or 112
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1 Introduction

1.1 Overview of site

1.1.1 This document considers the risks associated with Tom White Waste Ltd's site situated at Stonebrook Way, Longford, Coventry CV6 6LN. The site will be operated as an A11 - household, commercial and industrial (HCI) waste transfer station with treatment and a Section 5.4 (a)(iii) and b(ii) non-hazardous waste installation. The A11 activity will comprise the acceptance, storage and treatment of mixed and pre-sorted HCI wastes and the Section 5.4 (a)(iii) and b(ii) activity will involve the primary acceptance residual waste under EWC codes 19 12 10 and 19 12 12 from other waste transfer stations and residual waste produced under the A11 activity to produce a solid recovery fuel (SRF) which will be sent for incineration.

1.2 Fire prevention objectives

1.2.1 This Fire Prevention Plan (FPP) has been designed to meet the following objectives:

- To minimise the likelihood of a fire happening;
- To aim for a fire to be extinguished within 4 hours;
- To minimise the spread of a fire within the site and to surrounding neighbouring sites; and,
- To minimise impact of fire on people, environment and businesses.

1.3 General site information

1.3.1 In addition to this document the site is managed and operated in accordance with a fully comprehensive Environmental Management System (EMS); also prepared Oaktree Environmental Ltd and reference should be made to Document Ref. STONE-3206-A for its content.

1.3.2 The operator will be carrying out the following treatment activities at the site; manual sorting, separation, screening, blending, baling, shredding, wrapping, crushing or

compaction of waste. The above activities will take place as per the site layout and fire plan (Drawing No. STONE/3206/03) which should be reviewed in addition to this written document. The above plan is shown in Appendix I of this document.

1.3.3 This FPP document will be kept in the site office and all operational staff must be aware and understand the contents of the Fire Prevention Plan (FPP) and what they must do during a fire.

1.4 Reviewing and monitoring this FPP

1.4.1 This document will be due for review two years from the date of approval, as a result of any incidents which may lead to the requirement for immediate review, or the FPMP guidance changing, whichever is the sooner. The circumstances which would warrant a review are the following:

- Experiencing a fire incident.
- Additional combustible waste streams accepted on site.
- Increase waste volumes accepted.
- Development of site infrastructure – new buildings.
- Installation of new equipment or plant – baler/loading shovel/sort-line/ etc.

1.5 Staffing and management

1.5.1 The operator has at least 50 staff working at the site, these roles comprise site supervisor, site foreman's, site managers, technically competent managers, compliance managers, trained fire marshals (site management) administrative staff, machine / plant operators, site operatives, drivers. There will be a suitable number of staff working on site required when the site is open for the reception and processing of waste and, therefore, a suitable number of staff available to tackle a fire on site during all operational hours.

1.6 Plant and equipment

1.6.1 The table below details the plant/equipment on site. Only trained operators will be permitted to drive/operate the plant/equipment listed below. The equipment shown in red can be used for assisting in tackling a fire at the site.

Table 1.1 - Plant & Equipment

Item	Number	Function
Weighbridge	2	Determine load weights in/out
360° excavator / crane grab	6	Loading/unloading/movement/sorting of waste material
Loading shovels	4	Loading/unloading/movement/sorting of waste material
Diesel forklift	4	Loading/unloading/movement/sorting of waste material
Baler	1	Baling paper/cardboard waste
Mobile screener	1	Screening of soils and stones
Mobile crusher	1	Crushing of stone, bricks, tiles, ceramics and hardcore
Mobile shredder	1	Shredding/size reduction of wood waste
Mobile dust cannons	2	Dust suppression

1.6.2 The numbers of the above plant may vary throughout the lifetime of the permitted operations.

1.6.3 There is also various fixed plant comprising the mechanical recycling facility, details of which are shown on Drawing No. STONE/3206/03

1.7 Hours of operation

1.7.1 The site will be operated according to the hours specified below:

WASTE RECEPTION AND REMOVAL OF WASTE

Monday to Saturday	24 hours a day
Sundays, Bank/Public holidays	Closed

WASTE PROCESSING (INTERNALLY)

Monday to Sunday	24 hours a day
Bank/Public holidays	24 hours a day

WASTE PROCESSING (EXTERNALLY)

Monday to Saturday	06:00 – 18:00
Sundays, Bank/Public holidays	Closed

1.7.2 The only activities on site which will be permitted outside of these hours are maintenance works, general administrative duties and emergency processing due to unavoidable events such as staff shortages, plant breakdowns or poor weather conditions.

1.7.3 During times where the site is closed or not in operation, the site will be locked and secured to prevent unauthorised vehicular or pedestrian access.

1.8 Sensitive Receptors

1.8.1 Two Sensitive Receptors Plans have been provided in Appendix I to highlight the following:

- Drawing No. STONE/3206/04A, with a 1,000m radius detailing schools, hospitals, nursing and care homes, residential areas, workplaces, protected habitats, watercourses, groundwater, boreholes, wells and springs supplying water for human consumption

- Drawing No. STONE/3206/04B, this plan clearly details receptors within a 500m radius detailing road names, railways, bus stations, on or immediately adjacent to the site and within the radius of 500m

1.8.2 To minimise the impact on the local area and associated receptors from a fire on site, this document details mitigation measures which will decrease the likelihood of a fire occurring on site and limit the size and duration of a fire if it does occur (as per Section 1.2 above). These measures will ensure the potential impact on any of the surrounding land is as minimal as practicably possible.

1.8.3 Procedures of how receptors would be notified of a fire, including surrounding industrial, commercial, retail and leisure premises are shown in Section 9.5.

1.8.4 The table overleaf details a risk assessment of all the receptor types within 1km radius of site, and likely impacts on each - e.g. smoke, road closures, impacts on businesses etc…

Table 1.2 – Sensitive Receptor Table

Receptor	Receptor Type	Source	Harm	Pathway	Probability of Exposure	Consequence	Magnitude of Risk	Risk Management
Numerous surrounding industrial and commercial uses	Industrial / commercial premises	Fire causing the release of polluting materials to air (smoke, fumes and particulate matter)	Respiratory irritation, illness and nuisance to local population. Financial loss of businesses due to closure of adjacent roads/evacuation of premises.	Air transport of smoke.	High	Medium	Medium	Procedures set out in this FPP. Toolbox talks and liaison meetings with receptors to review procedures in the event the site is subject of a fire.
Residential dwellings and schools in the surrounding area	Residential/ schools	As above	Respiratory irritation, illness and nuisance to local population.	Air transport of smoke.	High	Medium	Medium	As above
Surrounding highway and public transport networks	Major road networks	As above	Closure of roads due to excessive smoke fumes. Increased risk of accidents due to poor visibility.	Air transport of smoke.	High	Medium	Medium	As above
Coventry Train Station and railway line	Railway	As above	Closure of railway due to excessive smoke fumes. Increased risk of accidents due to poor visibility.	Air transport of smoke.	High	Medium	Medium	As above
Nearby leisure / retail	Leisure / retail	As above	Respiratory irritation, illness and nuisance to local population. Financial loss of businesses due to closure of adjacent roads/evacuation of premises.	Air transport of smoke.	Medium	Medium	Low	Procedures set out in this FPP. Toolbox talks and liaison meetings with receptors to review procedures in the event the site is subject of a fire.
Surface Waters (Coventry Canal and River Sowe	Surface Waters	Direct run off of fire water across site or to surface waters. Fire causing the release of polluting materials to air (smoke, fumes and particulate matter).	Loss of amenity, deterioration of water quality, killing of flora / fauna and other local wildlife	Air transport of smoke. Direct run off of fire water across site to surface waters.	Med	Medium	Low	Procedures set out in this FPP. The site has a sealed drainage system.
Habitats and species including Deciduous Woodlands, protected species and Local Nature Reserves	Protected sites and species	As above	Harm to protected site through toxic contamination, nutrient enrichment, smothering, disturbance, predation etc.	Air transport of smoke.	Med	Medium	Low	Procedures set out in this FPP

2 Managing common causes of fire

2.1 Details

2.1.1 The following list outlines common causes of fire and outlines specific examples of these sources, the associated risks and any mitigation measures necessary to manage them:

Table 2.1– Managing common causes of fire

Source	Risk	Magnitude of Risk / Likelihood	Brief outline of Mitigation (refer to Section 4 for storage/monitoring procedures)	Magnitude of risk / likelihood following mitigation
Arson or vandalism	Deliberate ignition of wastes by intruder(s) and/or vandalism of site infrastructure, plant and/or machinery which may give rise to malfunction or compromise the integrity of waste storage/containment measures	Medium	• Appropriate site security infrastructure. • Vehicle checks on arrival to the site. • Plant & equipment daily checks and preventative maintenance of plant / equipment by manufacturer. • Staff training / toolbox talks.	Near-zero
Plant or equipment	Spillages of fuel, sparks from machinery or malfunction caused by ineffective maintenance	Medium	• Plant & equipment daily checks and preventative maintenance of plant / equipment by manufacturer. • Fuel stored in a bunded area. • Daily checks of site surfacing and spill kits. • Staff training / toolbox talks.	Near zero
Electrical appliances and cabling	Faulty appliances or damaged/ exposed electrical cables may spark as a result of a power surge	Medium	• Fixed wiring testing is carried out 5 years and portable appliances are PAT tested 12 months in accordance with Legislation. • Daily checks for dust and fluff on wiring / electrical appliances.	Low
Discarded smoking materials	Risk of ignition of stored wastes from smoking materials which have not been fully distinguished	Low	• No smoking or e-cigarettes allowed on site	Near-zero
Sparks from loading buckets/shovels	Scraping of loading buckets/shovels causing sparks which may ignite stored wastes	Low	• Fire extinguishers are fitted in the cab of all loading plant. • Staff training / toolbox talks. • Plant & equipment daily checks and preventative maintenance of plant / equipment by manufacturer.	Low
Hot works	e.g. welding, soldering, cutting, etc. which involve the use of high temperature equipment which may be a source of both primary and residual heat to stored wastes	Medium	• Only trained staff can use 'hot works' equipment i.e. oxy-acetylene. • Staff and contractors follow safe working practices including a permit to works system when carrying out hot works. • Daily fire watch for a suitable period after hot works have ended, particularly at the end of a working day.	Low
Industrial heating	Industrial heaters and/or pipework used to heat internal and external areas on site which may, in turn, supply heat to stored wastes increasing the risk of combustion	Low	• There are no industrial heaters on site	Low
Hot exhausts	Potential source of both primary and residual heat to stored wastes	High	• Fire extinguishers are fitted in the cab of all loading plant. • Staff training / toolbox talks for continuous monitoring throughout the day to detect signs of a fire caused by dust settling on hot exhausts and engine parts. • Plant & equipment daily checks and preventative maintenance of plant / equipment by manufacturer. • Out-of-hours storage of plant & equipment away from combustible or flammable wastes. • Daily checks for dust and fluff on plant/equipment before and use of equipment.	Low

Source	Risk	Magnitude of Risk / Likelihood	Brief outline of Mitigation (refer to Section 4 for storage/monitoring procedures)	Magnitude of risk / likelihood following mitigation
Build-up of loose combustible waste, dust and fluff	Light waste and ambient particulates with high combustibility settling and building up in key areas in and around plant/machinery and around exhausts	High	• Fire extinguishers are fitted in the cab of all loading plant. • Staff training / toolbox talks for continuous monitoring throughout the day to detect signs of a fire caused by dust settling on hot exhausts and engine parts. • Plant & equipment daily checks and preventative maintenance of plant / equipment by manufacturer. • Minimum daily checks for dust and fluff on plant/equipment before and use of equipment at the start/end of each working day.	Low
Hot loads	Imported wastes which may contain materials which are above ambient temperature	High	• All loads are inspected in accordance with strict waste acceptance procedures. • Quarantine area and rejected waste containers on site for quick isolation of load. • No designated storage area for containers as they will moved to areas on site depending on operations.	Low
Overhead power lines	Any overhead power lines on or around the site may ignite in the event of a fire and worsen the effects	Low	• There are no overhead power lines which traverse the site.	Near-zero
Ignition sources	Activities or appliances which use a source of both primary and residual heat to treat waste or manufacturer material or plant/equipment	Medium	• Hot works undertaken 6m from any combustible/flammable waste and only under a permit to works. • There are no space heaters, furnaces, incinerators and sources of ignition will be kept 6 metres away from combustible and flammable waste.	Low
Batteries within waste deposits	Ignition of stored wastes via batteries within imported wastes	High	• All loads are inspected in accordance with strict waste acceptance procedures including wastes received into satellite sites. • Quarantine area and rejected waste containers on site for quick isolation of load containing batteries.	Medium
Other combustible non-waste materials on or near the site not mentioned above i.e. gas cylinders / LPG tanks	Any combustible non-waste materials on or near the site may ignite in the event of a fire and worsen the effects	High	• All loads are inspected in accordance with strict waste acceptance procedures. • Quarantine area and rejected waste containers on site for quick isolation of load. • Dedicated storage areas for cylinders and gas bottles on site.	Low
Reaction between wastes	Combustible waste piles may ignite in the event of a fire and worsen the effects if wastes react	High	• All loads are inspected in accordance with strict waste acceptance procedures. • Quarantine area and rejected waste containers on site for quick isolation of load.	Low
Leaks and spillages of oils and fuels	Fuels and combustible liquids leaking or trailing from site vehicles and ELVs can combust or cause accidents leading to combustion	High	• Spill kits available throughout the site. • Suitable and sealed drainage system. • No ELVs accepted into the site • Minimum daily checks for spillages around the site. • Staff training / toolbox talks.	Low
“Tramp” metal	Metal could be hot from mechanical processing and interact with lighter waste causing a fire	High	• The treatment plant has various overband magnets which will remove any tramp metal from the waste. • There are no current proposals for any other mechanical treatment of scrap metal.	Low

2.2 Fuel/Oil Storage

2.2.1 The location of fuel storage on site is shown on Drawing No. STONE/3206/03 and procedures for fuel storage on site are as follows:

- Tanks are surrounded by a bund capable of containing a minimum of 110% of the volume of fuel stored in the tank.
- All pipework and associated infrastructure will be enclosed within the bund.
- A lock will be fitted to the tank valve to prevent unauthorised operation.
- All valves and gauges on the bund will be constructed to prevent damage caused by frost.
- No combustible waste will be stored within 6 metres of the tank.

2.2.2 The tanks clearly marked showing the product within and also its capacity.

2.3 Other hazardous (non-waste) material storage

2.3.1 There is a dedicated cylinder storage on site as shown on Drawing No. STONE/3206/03A and Drawing No. STONE/3206/03. The site will not store any other aerosols or combustible liquids and there will be no chemicals present on site. In the event the site needs to store any of these materials they will be stored in a suitable area and this FPP will be updated accordingly.

2.4 Hot works procedure

2.4.1 Hot works would only take place for immediate repairs therefore it is not possible to designate an area for this. The site's hot works procedure permit to work example is show in Appendix III.

2.5 Smoking policy

2.5.1 Smoking is prohibited in all waste management and storage areas and a designated smoking area is available on site as shown on Drawing No. STONE/3206/03.

2.6 Mobile and fixed plant maintenance

2.6.1 All mobile and fixed plant on site including vehicles in the fleet are subject to annual manufacturer maintenance to ensure proper working order in the form of service contracts.

2.6.2 Site management will undertake or delegate additional preventative maintenance checks on a more frequent basis i.e. daily, before, during and 1 hour at the end of each working day using a checklist similar to that in Appendix II to ensure the following:

- Machinery is mechanically sound for use and no presence of black fumes or trailing liquids visible prior to use or following shutoff of plant/equipment.
- Mobile plant is stored in the out-of-hours plant storage area as shown on Drawing No STONE/3206/03 following cessation of activities and external separation distances of 6m are observed between plant and any combustible or flammable material.
- In the building, all plant will be powered down and completely shut off prior to cessation of operations on any given day.
- Plant which is not in use for any extended period is stored at least 6 metres from combustible waste.
- All plant and equipment vehicles are fitted with fire extinguishers in the cab. Rubber strips are not considered appropriate as they are usually removed via uneven and bumpy ground.
- Dust from processing/treatment operations on site can settle throughout the working day but the operator has a continuous training regime to prevent this happening. The plant will be cleaned at least once every 12 hours.

2.7 Site security

2.7.1 The boundary of the site is protected from unauthorised access by members of the public for security. The site's boundary treatment measures (including type and height of the boundary treatments) are shown on Drawing No. STONE/3206/03 and ensures the site has full coverage of the site boundary. The site access gates are of steel construction and are lockable should the site be left unmanned at any time, to prevent unauthorised vehicular or pedestrian access.

2.7.2 There is 24/7 remotely accessible CCTV fitted with full site coverage and off-site supervision. The location of CCTV cameras are indicatively shown on Drawing No STONE/3206/03. The CCTV is serviced and maintained by IP Pro Ltd who are suitably qualified security installation company ensuring the system is suitable and repairs can take place instantaneously. In terms of external CCTV, it is designed to detect intrusions when the site is closed but will also detect animals, falling waste or any other sudden movements so in the event of one of these scenarios, the CCTV will log a call with at least two members of staff who can quickly get to the site if required i.e. if there was incident such as a break in, fire etc.. In the event of any unusual or suspicious activity picked up which is not in line with site specific procedures, this will mean a call to the emergency services which would present the risk of arson.

2.7.3 In addition to the above, there will be a mobile security guard who will patrol the site every hour on a Sunday when the site is closed. It must be noted that between Monday – Saturday the site will be operated for 24 hours each day so there will always be trained personnel on site during these times.

2.7.4 The site security measures will be inspected on a daily basis and any defects which impair the effectiveness of the security will be repaired by the end of the working day. If this is not possible, temporary measures will be put in place to ensure no unauthorised access to the site can be gained until the proper repairs can be carried out as soon as practicably possible.

2.7.5 If unauthorised access becomes apparent as a problem at the site the security measures will be reviewed and improvements implemented.

2.8 Electrical faults or damaged/exposed electrical cables

2.8.1 All fixed wiring electrical cabling on site will be inspected daily by staff and serviced in accordance with Legislation (3 years) by fully qualified and certified electrical contractors to undertake both Planned Preventative Maintenance and Reactive Maintenance (under contract) of the following:

a) Fire detection & alarm system;
b) Emergency lighting;
c) Machinery checks / services (as per manufacturers' instructions).

2.8.2 In terms of portable appliance testing (PAT), this will be serviced annually by qualified and certified electrical contractors.

2.8.3 Daily inspections of cabling, etc. will be undertaken and the daily Fire Checklist can be used as a reference. Any potential ignition sources from suspected electrical faults will be isolated and the appointed electrical contractors will be contacted immediately to rectify the situation. Where possible, staff will immediately remove any stored wastes from the vicinity of the fault area or cable traverse if safe to do so.

3 Waste acceptance procedures

3.1 Waste acceptance

3.1.1 Strict waste acceptance procedures are in place at the site as shown below.

3.1.2 The following details will be recorded for every load deposited at the site:

a) The date and time of delivery.
b) The name and address of the waste producer.
c) The detailed and accurate description of the waste including type, quantity (in tonnes and/or cubic metres) and EWC codes.
d) How the waste is contained e.g. loose, container type.
e) The carrier's name and address.
f) Driver's name, signature and vehicle registration No.
g) Signature or initials of person(s) producing/ accepting/ inspecting/ carrying the waste.
h) Additional handling details/notes made by the driver after inspection of the load.
i) SIC code of the premises which produced the waste (where relevant).
j) Waste hierarchy declaration.
k) Information on previous treatment of the waste e.g. manual or mechanical.

3.1.3 Any wastes identified during the incoming waste inspections which do not conform to site acceptance criteria will not be accepted. If the non-conforming waste is discovered following deposit (see section 3.2.1), the waste will be loaded back into the skip and/or onto the tipper vehicle and removed off site or and quarantined immediately to await safe removal. Where the waste cannot be identified, the EA will be contacted to agree a procedure to remove the waste from site.

3.2 Third-party waste deliveries

3.2.1 The site also accepts third party deliveries which would be tipped and inspected prior to arrival into the site and following deposit in the relevant waste reception areas. Third party tips will be subject to the same procedures above and also a thorough inspection following

tipping to ensure the waste is compatible for further treatment. This inspection will be carried out by site operatives who are suitably trained in detecting the following:

- Pressurised vessels, hot loads
- wastes containing incidental batteries, in particular lithium-ion batteries
- Oils or other flammable contaminants, rags soaked in oils or chemicals etc.,
- Light fibrous dusty wastes
- The presence of hazardous components i.e. batteries
- The presence of other components which could lead to a flame or audible event
- Gas cylinders, sealed containers

3.2.2 In addition to this, Tom White Waste Ltd have issued warning letters to customers for them not to dispose of any of the above items in skips and if any are found, Tom White Waste Ltd enforce the following:

i) A fine will be administered in confirmed cases of deliberate placement of the above items
ii) If the customer continues to send in the above items, Tom White Waste Ltd will contact the customer to discuss the incident and to develop an understanding of root cause and how the issue can be prevented in future.

3.3 Combustible waste reception

3.3.1 The site is essentially split into three separate sites as shown on Drawing No STONE/3206/03

i) Longford 1 comprising the commercial and industrial waste transfer and treatment operations. This site will primarily accept mixed construction and demolition wastes inside the waste transfer building from various surrounding activities and also the recovered stone, hardcore, wood and soils from Longford 2 (see below). This site will also accept soils, stone and hardcore for crushing and screening and non-hazardous wood for shredding.
ii) Longford 2 comprising the main hub of the facility which will house the main recycling line which will accept and treat mixed household and commercial waste and also

produce an SRF which will be sent for incineration. All waste transfer and treatment activities for this aspect of the site will take place inside a large waste transfer building.

iii) Longford 3 comprising the depot for the storing empty skips, the large number of fleet held by the operator when not in use, an overflow storage area for -sorted waste material arising from Longford 1 and 2 and also loads which arrive at the site pre-segregated. This area of the site also comprises a separate paper and card baling building and workshop.

3.3.2 Combustible wastes will be tipped inside the transfer buildings within the mixed waste reception areas and only manoeuvred into the relevant storage area once the waste has passed inspection. The main waste types tipped at the site will be as follows and in the following areas:

- **EWC code 17 09 04** - Mixed construction, demolition, and excavation (CDE) waste – Longford 1
- **EWC code s17 09 04 / 20 03 01** - Mixed municipal (MM) waste and mixed household and commercial waste – Longford 2
- **EWC codes 19 12 10 / 19 12 12** – RDF and SRF – Longford 2
- **EWC code 20 03 07** - Bulky waste – Longford 2
- **EWC code 17 08 02** – Plasterboard – Longford 1
- **EWC code various wood (non-hazardous)** – Longford 1
- **EWC code various paper/card** – Longford 3
- **Various pre-sorted wastes** – Longford 3

3.3.3 Other wastes not listed above may also be accepted but the above comprise the most common on a daily basis, Drawing No. STONE/3206/03 indicates where other wastes would be stored and treated at the site if accepted.

3.3.4 Any waste brought into the site already separated will be stored in the relevant storage bays /skips located at the site as shown on Drawing No. STONE/3206/03.

3.3.5 In terms of mixed waste, this is tipped and spread on the floor so any non-conforming material detailed in Section 3.2.1 can be picked out and immediately quarantined either in

the quarantine areas on site or sealed container depending on the waste. The location of the rejected waste skip may vary but will always be kept inside the building which has an impermeable concrete surface and sealed drainage system.

3.4 Rejected Waste

3.4.1 Any rejected/non-conforming waste is either stored in a dedicated area on site or within a mobile sealed skip. The non-conforming is removed from the site within 48 hours or sooner following agreement with the EA. The rejected waste skip will be a sealed 8-cubic yard skip which would have a capacity of approximately 4-8 tonnes depending on the contents within.

4 Managing waste piles

4.1 Stored combustible waste/materials

4.1.1 The main wastes accepted and stored on site which have been identified as having combustible potential are summarised in the table below which is also shown on Drawing No. STONE/3206/03. The following table details the maximum pile sizes and duration for all wastes stored on site. Wastes considered non-combustible are highlighted in blue.

Table 4.1 - Waste storage table for stored combustible wastes in Longford 2

Waste Storage Area Details - Longford 2 - PILE SIZES BASED ON AREA OF STOCKPILE ON SITE PLAN NOT LENGTH X WIDTH												
Plan Ref	**Description**	**Storage type**	**Containment**	**Height / width of firewall (m)**	**Max Width (m)**	**Max Length (m)**	**Height (m)**	**Max area (m2)**	**Conversion factor used**	**Volume (m3)**	**Tonnage (approx.)**	**Maximum storage durations**
AREA 1	Waste reception (tipping), inspection and sorting area (**clear out-of-hours)**	Free-standing / unprocessed	N/A	N/A	15	10	2	150	0.333	100	50	<2 hours
AREA 2 (i)	Short term quarantined waste	Hand sorted arising from tipping area (AREA 1)	Free-standing against concrete interlocking block fire wall with 0.3m wide concrete wall behind	1 / 0.8 & 5 / 0.3	6	3	0.5	18	0.5	5	2	<48 hours
AREA (ii)	Pre-sorted metals	As above	Open topped, moveable 8 cubic yard skip	N/A	1.68	3.66	1.22	6.1488	1	8	8	<48 hours
AREA 3	Non-recyclable waste - sorted but will contain mixture of different wastes	As above	Free-standing against	5 / 0.3	10	5	0.5	50	0.5	13	6	<48 hours
AREA 4	Mixed H&C waste - primary shredder infeed bay	Partly hand sorted arising from tipping area (AREA 1)	Free-standing against concrete interlocking block fire wall	4 / 0.8	12	9	3	108	0.75	243	182	<48 hours
AREA 5	Mixed waste storage prior to processing - also acts as holding bay feeding the plant	Partly hand sorted arising from tipping area (AREA 1)	Free-standing against concrete interlocking block fire wall	4 / 0.8	12	9	3	108	0.75	243	182	<48 hours
AREA 6	Plastics	Sorted (mechanical recycling line)	Free-standing and party contained inside a three-sided concrete panel wall	3.0 / 0.18	5	5	2	25	0.75	38	19	<48 hours
AREA 7	Heavies	Sorted (mechanical recycling line)	As above	3.0 / 0.18	5	5	2	25	0.75	38	38	<48 hours
AREA 8	Ferrous metal	Sorted (mechanical recycling line) and by overband magnet	Open topped, moveable 20 cubic yard roll on roll off skip	N/A	6.1	2.44	1.4	14.884	1	21	21	<48 hours
AREA 9	<10mm screened fines	Sorted (mechanical recycling line)	Free-standing and party contained inside a three-sided concrete panel wall	3.0 / 0.18	10	5.5	2	55	0.75	83	83	<48 hours
AREA 10	10mm - 40mm heavies	As above	As above	3.0 / 0.18	10	3.5	2	35	0.75	53	53	<48 hours
AREA 11	10mm - 40mm lights	As above	As above	3.0 / 0.18	10	4.5	2	45	0.75	68	68	<48 hours
AREA 12	>150mm heavies	As above	As above	3.0 / 0.18	5	5	2	25	0.75	38	38	<48 hours
AREA 13	40mm - 150mm heavies	As above	As above	3.0 / 0.18	5	5	2	25	0.75	38	38	<48 hours
AREA 14	40mm - 300mm lights (SRF)	Articulated walk-in floor trailer	Trailer	N/A	16.5	2.5	2.5	41.25	1	103	34	<48 hours
AREA 15	Metals	Sorted by overband magnet	Free-standing and party contained inside a three-sided concrete panel wall	3.0 / 0.18	7	5.5	2	38.5	0.75	58	58	<48 hours
AREA 16	Plastics	Sorted (mechanical recycling line)	As above	3.0 / 0.18	3.7	4.5	2	16.65	0.75	25	12	<48 hours
AREA 17	PVC	Sorted (mechanical recycling line)	As above	3.0 / 0.18	3.7	4.5	2	16.65	0.75	25	12	<48 hours
AREAS 18 & 19	Residual waste	Sorted (mechanical recycling line) and hand sorted by picking line	As above	3.0 / 0.18	3.7	4.5	2	16.65	0.75	25	12	<48 hours
AREA 20	<40mm SRF	Sorted (mechanical recycling line)	Free-standing against concrete interlocking block fire wall	4 / 0.8	10	12	3	120	0.75	270	90	<48 hours
AREA 21	Overflow bay (see AREAS 14, 20 & 22)	Sorted (mechanical recycling line)	Free-standing against concrete interlocking block fire wall	4 / 0.8	10	12	3	120	0.75	270	90	<48 hours
AREA 22	Waste containing POPs or waste shown in AREAS 14 and 21	Sorted (mechanical recycling line)	Free-standing inside sealed storage bunker	3 / 0.5	30	2.5	3	75	1	225	75	<48 hours

Table 4.2 - Waste storage table for stored combustible wastes in Longford 1

Waste Storage Area Details - Longford 2 - PILE SIZES BASED ON AREA OF STOCKPILE ON SITE PLAN NOT LENGTH X WIDTH												
Plan Ref	**Description**	**Storage type**	**Containment**	**Height / width of firewall (m)**	**Max Width (m)**	**Max Length (m)**	**Height (m)**	**Max area (m2)**	**Conversion factor used**	**Volume (m3)**	**Tonnage (approx.)**	**Maximum storage durations**
AREA 1A	Mixed C&D reception and sorting (**clear out--of-hours**)	Free-standing / unprocessed	N/A	N/A	7	7	2	49	0.333	33	24	<2 hours
AREA 2A	Bulky wastes	Hand sorted arising from tipping area (AREA 1A)	Free-standing against 0.3m wide concrete wall	4 / 0.3	8.5	6.5	3	55.25	0.5	83	83	<48 hours
AREA 3A	Mixed C&D infeed pile (80% inert) and non-combustible	Free-standing / hand sorted	Free-standing against 0.3m wide concrete wall	4 / 0.3	10	7	2	70	0.5	70	53	<48 hours
AREA 4A	<40mm C&D fines (non-combustible)	Free-standing / processed by trommel	N/A	N/A	7	7	2	49	0.333	33	33	<48 hours
AREA 5A	Various containers of sorted wastes (pile based on largest container)	Containers / hand sorted	Open topped, moveable 40 cubic yard skip	N/A	2.5	6.11	2.62	15.275	1	40	40	<48 hours
AREA 6A	Waste storage bays beneath picking station (contents in each bay will vary)	Sorted (mechanical recycling line) and hand sorted by picking line	As above	3.0 / 0.18	3.2	5.5	2	17.6	0.75	26	20	<48 hours
AREA 7A	Hardcore	Sorted (mechanical recycling line)	As above	3.0 / 0.18	3.2	5.5	2	17.6	0.75	26	20	<48 hours
AREA 8A	Storage area for wood, soils or hardcore prior to processing	Pre-sorted / mechanically sorted from other areas of the site	Free-standing against 0.3m wide concrete wall	4 / 0.3	11	11	3	121	0.5	182	182	<48 hours
AREA 9A	Short term quarantined waste	Hand sorted arising from tipping area (AREA 1A)	Free-standing against concrete interlocking block fire wall with 0.3m wide concrete wall behind	3 / 0.8 & 0.3	5	5	2	25	0.5	25	13	<48 hours
AREA 10A	Short term quarantined waste	Hand sorted arising from tipping area (AREA 1A)	Free-standing against concrete interlocking block fire wall	0.8 / 3	5	5	2	25	0.5	25	25	<48 hours

Table 4.3 - Waste storage table for stored combustible wastes in Longford 3

Waste Storage Area Details - Longford 2 - PILE SIZES BASED ON AREA OF STOCKPILE ON SITE PLAN NOT LENGTH X WIDTH												
Plan Ref	**Description**	**Storage type**	**Containment**	**Height / width of firewall (m)**	**Max Width (m)**	**Max Length (m)**	**Height (m)**	**Max area (m2)**	**Conversion factor used**	**Volume (m3)**	**Tonnage (approx.)**	**Maximum storage durations**
AREAS 1B - 7B	Waste storage bays for bulking and transfer, also acting as overflow from bays from other wastes stored at the site (contents in each bay will vary)	Mixture of processed and unprocessed	Free-standing against concrete interlocking block fire wall	0.8 / 4	6.6	6.6	3	43.56	1	131	131	<48 hours
AREA 8B	Loose paper & card	Partly hand sorted arising from other areas of the site	Free-standing against 0.3m wide concrete wall	5 / 0.3	10	6	3	60	0.75	135	45	<48 hours
AREA 9B	Baled paper & card	Baled in stacks (max 3 in length/width and 3 high)	Free-standing stack against 0.3m wide concrete wall	5 / 0.3	4	8	3	32	1	96	96	<48 hours
AREA 10B & 11B	Baled paper & card	Baled in stacks (max 3 in length/width and 3 high)	Free-standing stack against 0.3m wide concrete wall	4 / 0.3	5	7	3	35	1	105	105	<48 hours

4.2 Conversion factors

4.2.1 The following conversion factors for calculating waste pile sizes are set out below.

Table 4.4 – Conversion Factors

Conversion Factors
Conversion factors for waste piles are worked out using the following methods set out by the Environment Agency
The maximum length width pile is based on the largest dimension – the volume of the pile has been calculated using the area x height x relevant conversion factor
Conversion of 1 for materials stored within containers, area of storage in stackable containers and waste/bale stacks
Conversion of 0.75 for waste stored within a bay comprising volume of rectangle + pyramid
Conversion of 0.3333 for waste stored in a free-standing stockpile
All containers can be moved and are accessible from one side so a fire can be extinguished

4.3 Waste storage residence times

4.3.1 The site will ensure more than one contract is set up with destination sites who can take their recycled waste to prevent a backlog building up on site.

4.3.2 Each pile is inspected throughout the day by operational staff and in the event of a fire has suitable techniques shown in various sections of this FPP to ensure any fire could be extinguished within the limitations set out in the FPP guidance.

4.3.3 The waste material will be stored in its largest form for as long as practicably possible before treating and moving it off site.. This FPP will be updated if the operator decides to shred waste.

4.4 Free standing piles / waste stored in bays

4.4.1 The table overleaf details the combustible waste piles stored on site which are free-standing or in bays including a summary of procedures to reduce the risk of the waste combusting. It must be noted **AREAS 7, 9, 10, 12, 13 & AREAS 3A. 4A & 7A and 8A** are not included in the tables as the wastes in these storage areas are considered to be combustible.

Table 4.5 – Combustible waste storage table for waste stored free-standing piles or bays (Longford 2).

Pile Ref:	Storage/monitoring procedures to reduce the risk of fire
AREA 1 Waste reception and sorting area	• This area is the main waste reception / tipping area for mixed C & I waste which is inside the building at Longford 2. • Any large visible recyclables will be hand-picked or extracted using the mechanical grab and placed into one of relevant storage areas at the site (see Sections 3.1 – 3.4. • In the event of non-conforming or reactive waste was discovered which could lead to a significant (see section 3.2), the waste will be immediately consigned to the quarantine area using the above plant or loaded back onto the delivery vehicle and removed off site. • Stock rotation – It is proposed the maximum duration of waste stored in this area would be 1-2 hours and clear 30 minutes before the site closes on a Saturday or significant period of downtime. • As the tipping area stockpile is dynamic, the process of tipping and excavating from the pile will be ongoing which will reduce the actual amount of time the piles will be stored prior to processing. • The pile is easily accessible for firefighting purposes as the building has various large roller shutters with good access. • The pile will be visually monitored continuously throughout the day by trained site operatives. The operatives have been trained via toolbox talks from site management in recognition of fire i.e. the early signs. • In addition to the above, the building benefits from a fully automated UKAS accredited detection and suppression system. The detection system will send an alert to site management and monitoring company if the waste exceeds a temperature of 70^0C, site management can then initiate the suppression system if required. • The areas will also benefit from an hourly patrol by the security guard when the site is closed. • No further storage or monitoring procedures required for this area
AREAS 2 (i), 2 (ii) & 3 Non-recyclable waste - sorted but will contain mixture of different wastes	• These wastes will be rejected items and large items such as heavy scrap, mattresses and other bulky waste which is too large too be processed in the MTF. • The same procedures would apply as above. • As these wastes have not been through the mechanical treatment process, the risk of combustion is considered to be very low. • No further storage or monitoring procedures required for these areas.
AREAS 4 & 5 Mixed waste storage prior to processing – AREA 5 also acts as holding bay feeding the plant	• These areas act as the main waste holding areas for mixed HCI waste awaiting treatment via the MTF. • The same procedures would apply as above. • The above wastes are stored in 0.8m wide concrete interlocking block storage bays and 1m below the height of the wall. • The height of the waste can be monitored by counting the joints on each block (0.8m) to ensure the 1m freeboard is maintained at all times. • Waste will be tipped to the left-hand side of the pile and extracted from the right ensuring the first in- first out principle apples. • The bays have been designed to ensure the waste stored is below that of the maximum permitted din the FPP guidance. • The waste is not stored in excess of 12 weeks where additional monitoring to what is current proposed is required, in fact, far less. • As these wastes have not been through the mechanical treatment process, the risk of combustion is considered to be very low. • To comply fully with the FPP guidance, the entire pile will be cleared every 12 weeks and deep cleaned to prevent any build-up of material. • No further storage or monitoring procedures required for these areas.

AREAS 6 & 11 Plastics and lights	• These waste comprise those which have been sorting using the fines clean-up process of the mechanical recycling line. • The recycling line will deposit the waste inside the bays below. • The same procedures would apply as above. • The waste in these bays would be monitored continuously by staff and once they reach 80% capacity, the contents will be removed ensuring waste does not pile up and clog the recycling line. • Based on the processing capability and operating hours of the site, the waste is unlikely to be stored longer than a 12-24 hour period. • No further storage or monitoring procedures required for these areas.
AREAS 15, 16, 17, 18, & 19 Various mechanically sorted wastes from the recycling line	• These waste comprise those which have been sorting using the SRF production process of the mechanical recycling line. • The recycling line will deposit the waste inside the bays below with the exception of AREAS 18 & 19 which have been removed by staff on a picking line. • No further storage or monitoring procedures required for these areas.
AREAS 14, 20, 21 & 22 Mechanically treated and pre-sorted RDF/SRF wastes	• These waste comprise the infeed bays for the SRF production aspect of the recycling line with the exception of AREA 14 comprising an articulated bulker / trailer for SRF waste (produced) which will be removed from the site when full. • The same procedures apply as AREAS 4 & 5 and AREA 1 in terms of storing and monitoring procedures. • In terms of AREA 22, this waste would be used to store wastes which may contain Pops. The area would also store RDF or SRF waste. The type of waste stored would depend on the demand for each material or amount of sorted material produced by other wastes received at the site. • If the site is intending on processing waste which could contain POPs, the line will be, no other wastes would be processed at the same time to ensuring potentially POPs waste does not contaminate other wastes on site. Once all POPs waste has been processed, the line will continue to treat the non-hazardous RDF waste to produce SRF. • AREA 22 will comprise a steel bunder with incline conveyor attached. The conveyor is manually activated and will only be activated when the waste in AREA 22 is full. • No further storage or monitoring procedures required for these areas.

Table 4.6 – Combustible waste storage table for waste stored free-standing piles or bays (Longford 1 & 3).

Pile Ref:	Storage/monitoring procedures to reduce the risk of fire
AREA 1A Waste reception and sorting area	• This area is the main waste reception / tipping area for mixed C &D waste which is inside the building at Longford 1 • Any large visible recyclables will be hand-picked or extracted using the mechanical grab and placed into one of relevant storage areas at the site (see Sections 3.1 – 3.4). • The same procedures apply to AREA 1 in Longford 2. • This building does not have a fully automated detection or suppression system given the waste stored and processed is predominately inert i.e. over 80%. The quantity of waste stored is also much lower than that in Longford 2. • The building also has two open accesses from the south which make suppression from the external yard suitable without having to access the building. • In the event of non-conforming or reactive waste was discovered which could lead to a significant (see section 3.2), the waste will be immediately • The areas will also benefit from an hourly patrol by the security guard when the site is closed. • No further storage or monitoring procedures required for this area.
AREA 2A Bulky wastes not suitable for processing	• See AREAS 2 (i), 2 (ii) & 3 of Longford 1. • No further storage or monitoring procedures required for this area.
AREA 6A Hand sorted recyclables i.e. wood, plastic, residual waste etc..	• These storage areas comprise concrete storage bays below a picking cabin for various waste types which staff have removed from the conveyor. The contents in the bays may vary on day-to-day basis. • The waste will be stored 1m below the height of bay ensuring a freeboard is always maintained. All bays are open at the front meaning access is available in the event of a fire at all times. • Stock rotation – It is proposed the maximum duration of waste stored in these areas will be 5 days i.e. during a Bank Holiday if the waste cannot be processed or moved prior to shut down before. • It is proposed to limit the amount of waste stored internally by continually transferring the waste in these bays to the external bays with the exception of any odorous waste i.e. residual. • To comply fully with the FPP guidance, the entire pile will be cleared every 12 weeks and deep cleaned to prevent any build-up of material. • As the waste in these areas have been sorted, the waste is unlikely to contain any material which is likely to cause combustion i.e. a hot load or lithium battery. • In the event of a fire breaking out in these piles during operational hours, the waste can be dragged into the quarantine area (if safe to do so) by mobile plant through the various shutter doors to reduce the spread i.e. to an adjacent waste pile. • In terms of moving the waste in a fire incident, site management or the FRS will decide on the best course of action from a practical and safety point of view. • When the site is closed, the intruder alarm system will be initiated and checked to see if it is working before the site closes. As the waste internally is stored for no longer than >5 days and the waste is essentially sorted externally with good access, it is considered no further automated detection/monitoring is required.

AREA 8A Sorted wood	• The waste in this stockpile will vary depending on the material required for the destination site, it will predominantly be a holding area for non-hazardous wood sorted from the recycling lines or arriving at the site pre-sorted. • The holding area can hold a maximum of 182m^3 (approx.. 60 - 100 tonnes of wood waste) at any one time. • There would be shredder adjacent to the pile which has a processing capability of 20 – 30 tonnes per hour so when there is a suitable amount of wood to process i.e. when the bay is full, it will be loaded into the adjacent shredder and the shredded wood would be loaded into bulker for removal of site. The site would not look to store shredded wood at this area of the site, if it needed to, the wood would be stored in one of the bays at Longford 3. • No further storage or monitoring procedures required for this area.
AREAS 9A & 10A Non-recyclable waste/short term quarantined waste	• These wastes will be rejected items. • The same procedures would apply AREAS 2 (i), 2 (ii). • No further storage or monitoring procedures required for these areas.
AREAS 1B – 7B Sorted recyclables i.e. wood, green, C&D, residual waste etc. (contents in each bay may vary	• These are external storage bays which store wastes which will have been delivered to the site pre-separated or as a result from the wastes sorted in the internal recycling lines. • The waste in these stockpiles will be tipped at right hand side of the stockpile and extracted from the left in an anti-clockwise formation ensuring the first in first out principle will applies. The stockpiles are therefore dynamic and, given the material throughput of the site, waste will not be stored in these piles for longer than two weeks, which is a worst-case scenario in the event of a breakdown or plant malfunctions. • All waste is stored is within a concrete firewall bay and underneath a covered structure/building with an open access. • As the piles are largely free standing, the waste will be 2m at the top centre of the pile which will form a dome shape so there is a suitable free board of at least 1m between the top of the pile and where the waste hits the wall at a 45-degree angle. • The piles are visually monitored throughout the day by site operatives and trained personnel who will be trained via toolbox talks in recognition of fire. • Apart from the use of loading equipment no other mechanical processing of waste takes place within 6m of waste piles. • A full deep clean of the bay will take place every 12 weeks to ensure there are no contrary items of waste which have been stored longer than necessary. • In addition to the CCTV, the waste will be visually monitored throughout the day by site operatives. • All site staff will be given instructions and advised of the importance of stock rotation as part of their training. • No further storage or monitoring procedures required for this area.
AREA 8B Loose paper and card	• The waste in this stockpile will be a holding area for paper and card sorted from the recycling lines or arriving at the site pre-sorted. The waste is stored prior to baling. • The same procedures apply as AREAS 2A and 8A in Longford 1 in terms of storage, monitoring and when the waste ill be processed/baled. • No further storage or monitoring procedures required for these areas.

4.5 Baled waste storage

4.5.1 The following table overleaf details the procedures for managing baled waste storage on site and reference should be made to Drawing No. STONE/3206/03A for details of the locations of the storage areas:

Table 4.7 – Combustible waste storage table for waste stored in bales

Pile Reference	Storage/monitoring procedures to reduce the risk of fire
AREAS 8B – 11B Baled Paper / cardboard storage	• The bales will be stored 3m high i.e. three bales high in blocks of • 3-4. • There is a 4m high fire all adjacent to the bale storage and the bales are not stored within 6m of any other combustible or flammable waste. • The bales are visually monitored throughout the day by site operatives and trained personnel who will be trained via toolbox talks in recognition of fire. • Apart from the use of loading equipment (the location of which varies throughout the building) no other mechanical processing of waste takes place within 6m of waste piles. • I n terms of AREA 9B, there is suitable access via the front of the building to aid in suppressing or removing the bales in the event of a fire. • The area will only be full for a few hours whilst awaiting an articulated load; in reality the area will be less than shown on Drawing No. STONE/3206/03. It is considered that no turning of bales is necessary as they will not be stored for longer than one week and monitored using the techniques below. • In the event the bales need to be stored longer, further monitoring of the bales may be used using a probe or thermal imagery. If this method is used, the centre bale stacks will be removed meaning a the operator can provide a full representation of the bale surface temperature and inside the centre of the bales. • If the operator did monitor using the above method, if a temperature of above 70^0C is recorded, the bale will be transferred into the quarantine area, broken and doused with water until the temperature has reduced. The other bales will then be re-assessed using the same monitoring **techniques.**

4.6 Waste stored in containers

4.6.1 The table below details the waste types which are stored in containers at the site.

Table 4.8 - Combustible waste storage table for waste stored in containers

Pile Ref:	Storage/monitoring procedures to reduce the risk of fire
AREAS 2 (i) Battery boxes (non-conforming)	• This area will store any batteries which have been identified within incoming loads. • The batteries will be stored inside the building in a secure acid resistant base containers which has a volume of 800 litres. • If any lead acid batteries are stored, they will be positioned upright in the container with the electrical connectors pointing upwards. • The site will not accept any waste i.e. vehicles with any different types of batteries (lithium) at present. • It is expected to remove the containers-weekly basis (maximum) where a contract is set up with a permitted waste site who can task them. • If any batteries are re-useable require charging, this will be done during operational hours where staff are present as electrical charging equipment will be powered down 1 hour before the site closes. • The operator will not mix batteries with different chemistries. • There will always be someone working in this area throughout the day so the area will never be left unmanned. • No form of monitoring other than visual during operational hours.
AREAS 2 (ii) & 6 Metals	• AREA 2 (ii) will store metals removed from AREA 1 and AREA 6 will store metals metal removed from an overband magnet on the recycling line in Longford 2. • Both of the above areas will store metals in open topped skips/containers. • Containers are stored on the ground and replaced by an empty container once removed off site. • The waste in containers has been sorted so unlikely to contain any hot loads or incompatible waste which could lead to a spark or overheating causing a fire. • The containers will be removed from site within 5-days or sooner if full. • The container is accessible from at least on side and from the top in the event of a fire occurring allowing suitable access for firefighting. • The waste will not exceed the height of the containers. • In the event of a fire breaking out in the containers, all can be dragged into the quarantine area by mobile plant to reduce the spread i.e. to another skip or adjacent waste piles. • Waste can be visually monitored 24/6 throughout the day by site operatives. • No further storage or monitoring procedures required for these areas.
AREA 5A Sorted waste containers	• The waste stored in these containers will comprise sorted wastes that come to the site per-sorted or arising from the recycling line in Longford 1. The waste is likely to be plasterboard, scrap metal, WEEE, green etc.. The contents in each skip/container may vary on a daily basis. • All containers are stored on the ground and replaced by empty containers once removed off site. • The waste in containers has been sorted so unlikely to contain any hot loads or incompatible waste which could lead to a spark or overheating causing a fire. • The containers will be removed from site within 5-days or sooner if full. • The containers are accessible from at least on side and from the top in the event of a fire occurring in the skip to allow access for firefighting. • The waste will not exceed the height of the containers.

	• In the event of a fire breaking out in the containers, all can be dragged into the quarantine area by mobile plant to reduce the spread i.e. to another skip or adjacent waste piles. • Waste can be visually monitored 24/6 throughout the day by site operatives and CCTV. In addition to the CCTV, the waste will be visually monitored throughout the day by site operatives. • In terms of moving the waste in a fire incident, site management or the FRS will decide on the best course of action from a practical and safety point of view. • No further storage or monitoring procedures required for this area.

4.6.2 In addition to the above, AREA 2 (ii) may be used to store isolated (rejected items) such as batteries discovered. Procedures for storing any contrary items in containers such as batteries are as follows:

- The batteries will be stored inside the building in a secure acid resistant base containers which has a volume of 800 litres.
- If any lead acid batteries are stored, they will be positioned upright in the container with the electrical connectors pointing upwards.
- The site will not accept any waste i.e. vehicles with any different types of batteries (lithium) at present.
- It is expected to remove the containers-weekly basis (maximum) where a contract is set up with a permitted waste site who can task them.
- If any batteries are re-useable require charging, this will be done during operational hours where staff are present as electrical charging equipment will be powered down 1 hour before the site closes.
- The operator will not mix batteries with different chemistries.
- There will always be someone working in this area throughout the day so the area will never be left unmanned.
- If gas bottles/pressurised items are discovered, they would be stored in a delineated caged area near the weighbridge office in Longford 2 as shown on Drawing No. STONE/3206/03.
- No form of monitoring other than visual during operational hours.

4.7 Waste reception buildings

4.7.1 There are three buildings used for accepting storing waste on site, these comprise:

i) Longford 1 – 34m x 22.9 measuring approximately 780m^2. The building is also approximately 8m to the eaves and has a pitched roof making the building approximately 9m at its highest point.
ii) Longford 2 – An approximate floorspace of 4,800m2 measuring 100m x 48m. The building is also 10m to the eaves and has a pitched roof making the building approximately 11.5m at its highest point.
iii) Longford 3 – An approximate floorspace of 470m. The building is also 5m to the eaves and has a pitched roof making the building approximately 6m at its highest point.

4.7.2 There are no steel portal frames within the confines of the buildings, only on the sides and roof. The buildings all have roller shutter doors or open accesses and consist of steel sheeted cladding and steel portal frames connected onto a mixture of 5m concrete panels or 5m high solid concrete breeze blocks. The roller shutters and access points of the buildings in Longford 1 & 3 ensure there is suitable access to suppress waste without having to enter the building. The roller shutters are approximately 5m high and 5m wide. In terms of Longford 2, there is a fully automated detection and suppression system

4.7.3 The waste reception building has an approximate floorspace of 4,800m^2 measuring 100m x 48m. The building is also 10m to the eaves and has a pitched roof making the building approximately 11.5m at its highest point. There are no steel portal frames within the confines of the building, only on the sides and roof. The building has 4 no. roller shutter doors which are south-west and consists of steel sheeted cladding and steel portal frames connected onto a mixture of 5m concrete panels or 5m high solid concrete breeze blocks. The 4 no. roller shutters ensure there is suitable access to suppress waste without having to enter the building. The roller shutters are approximately 5m high and 5m wide.

4.7.4 The largest pile in the building at one time would be approximately 240 - 270m^3 (of waste material (**AREAS 4- 5 and 21 - 22**) but it is important to note this is a holding area and not an area which will typically '*store*' waste.

4.8 Stock rotation and seasonal variations

4.8.1 In the event of destination site closures or seasonal demands for wastes leading to a longer storage duration, the operator can divert incoming waste and send stored waste to one of their alternative sites situated at the following locations:

- EPR/HP3193LV - 1, Coronel Avenue, Coventry, West Midlands, CV6 6A. Located approximately 680m away (10-minute journey) situated north-west of this site.

4.8.2 The operator also has at least three no. diversion/alternative sites who could take this material including a contract set up with a Waste-to-Energy company.

4.8.3 The list of outlets has not been provided due to confidentiality purposes however the contracts will range from weekly – monthly depending on seasonal variations and demand for material.

5 Prevent fire spreading

5.1 Waste storage general / fire breaks

5.1.1 Combustible waste will be stored as per Drawing No. STONE/3206/03 and within the limit of EA's FPP guidance. All stockpiles of stored wastes are detailed in the Storage Area Details table on Drawing No. STONE/3206/03 in respect of their description, maximum length and width, area, volume and storage duration.

5.1.2 Fire breaks are clearly shown on Drawing No. STONE/3206/03.

5.1.3 The aim of the site is to process the incoming material and arrange for its export off site as soon as practicably possible following sorting to minimise over-stocking which in-turn minimises the risk of overheating and spontaneous combustion which is clearly detailed throughout Table 4.2.

5.1.4 The site will ensure 'first in, first out' principle is met.

5.1.5 **Storage on flat ground**: Site surfaces where wastes are stored are flat and, therefore, reduce the risk of falling materials which would accelerate the spread of fire.

5.2 Freestanding waste piles

5.2.1 All free-standing piles will be stored against or within concrete bays and as staff will be working in these areas on during operational hours so they can report to site management in the event waste is exceeding the bay/wall height. Should this issue arise, site management will inform staff to not tip in these areas until they have been cleared. If the waste cannot be cleared, no waste will be accepted in these areas and the waste will be sent to a diversion site. The site will only accept waste in these areas once the pile size has been reduced to an acceptable level.

5.3 Fire walls and bays

5.3.1 The concrete firewalls on site are constructed to the BS8110 Pt2 'Structural use of concrete Part 2 Code of practice for special circumstances' and BSEN1992-1-2 'Design of concrete structures. General rules. Structural fire design'. In accordance with BSEN1992, the fire resistance of concrete structures over 100mm will have a fire resistance of 1200°C for 4 hours. This means the fire walls:

- Reduce the need for 6m separation distances between different waste piles; and
- Reduce the need to provide a 6m separation from the waste and permit or site boundary.

5.3.2 The table overleaf details the type of wall and demonstrates their properties to:

a) resist fire (both radiative heat and flaming); and,
b) have a fire resistance period of at least 120 minutes to allow waste to be isolated and to enable a fire to be extinguished within 4 hours.

Table 5.1 – Fire wall details and specifications

Firewall type	Width	Site location / use	Specification
Concrete panel wall	0.15m	See waste storage table	Class A under EN 13501-1:2007+1:20009: Fire classification of construction products and building elements. Classification using test data from reaction to fire tests: concrete structures over 100mm will have a fire resistance of 1200°C for 4 hours.
Concrete breeze blocks	0.3m	See waste storage table	As above.
Elite Precast concrete interlocking blocks	0.8m	See waste storage table	As above.

5.3.3 The above walls are checked throughout the day by staff via daily inspections if any gaps or damage to the walls are present which could compromise their integrity will be repaired and sealed as soon as practically possible.

5.3.4 All waste stored against fire walls will have a suitable freeboard of at least 1m but it is not possible to scientifically calculate the flame height as each waste pile is different and could contain a number of different sizes/grades of waste leading to a lesser or greater flame height.

5.3.5 The height of the concrete walls which store waste beneath the mechanical recycling plant are lower than the machinery i.e. conveyors so the 1m freeboard will ensure there is a suitable separation to prevent a serious plant malfunction.

6 Site inspection programme

6.1 Daily checks

6.1.1 Site management are responsible for carrying out daily site walks for checking drainage systems, security measures and waste storage areas. Site management can reference the fire checklist shown in Appendix II but may use internal check sheets. The site also carries out weekly inspections for firefighting equipment to ensure they are fit for purpose.

6.1.2 Carrying out the above checks daily will keep the levels of dust, fibre, paper and other loose combustible materials, which could aid in the acceleration of a fire, on site surfaces to a minimum and ensure all containment of wastes on site are functioning effectively in accordance with the storage limitations provided in the table on Drawing No. STONE/3206/03.

6.2 Staff training

6.2.1 Operational staff will be subject to site inductions which includes basic fire emergency procedures by site management. If necessary, a third-party fire consultant will be contacted to carry out additional training.

6.2.2 A full test (drill) of the procedures in this document will be carried out every 12 months to test that the plan works. The first test will take place within one month of the agreement of this document with the EA. The outcome and any follow up training for staff will be documented in the site diary and relevant forms in the EMS. The fire checklist may also be used during the drill.

6.3 Toolbox talks

6.3.1 All operational and out-of-hours staff including the out-of-hours security guard will receive fire awareness training / tool box talks by trained site management to detect early signs of fire and to minimise the chance of a fire breaking out; which will also include the procedures shown in this FPP.

7 Quarantine area

7.1 Quarantine Area Details

7.1.1 There will be two quarantine areas on site, one inside the building of Longford 2 and as Longford 1 and 3 are connected, a further quarantine area in the external yard of Longford 3.

7.1.2 The largest pile in Longford 2 will equate to 270m^3 in volume and comprise AREAS 20 or 21 meaning the quarantine area will need to hold 135m^3 of waste material.

7.1.3 The quarantine area in Longford 2 will measure 150m^2 and if wastes were stored to a height of 3m, the quarantine area could hold 150m^3 of waste material based on an agreed conversion factor of 0.333 i.e. l x w x h x 0.333.

7.1.4 The largest pile in Longford 1 and 3 will equate to 182m^3 in volume and comprise AREA 8A meaning the quarantine area will need to hold >140m^3 of waste material.

7.1.5 The quarantine area in Longford 1 and 3 will measure 100m^2 and if wastes were stored to a height of 3m, the quarantine area could hold 100m^3 of waste material based on an agreed conversion factor of 0.333 i.e. l x w x h x 0.333.

7.1.6 Wastes will only be moved to the quarantine area if safe to do so following recommendation of the FRS.

7.1.7 It is proposed that any fire on site is likely to be fought in situ as there is access to all piles stored at the site therefore the quarantine areas would likely be used to store waste materials at risk of catching fire to reduce the fire spreading. The site would only store smouldering waste in the quarantine area once the fire has been extinguished, it is expected at this time, the waste previously moved into the pile will be manoeuvred into the relevant stockpile. Based on this, it is considered a 3m storage height would be suitable as this is below the height of other stockpiles on site.

7.1.8 **Alternative measures** - The quarantine area in Longford 2 is located inside the large building due to the constraints of the permit boundary and external drainage system. Due to the size of the building (see section 4.7), it is considered suitable having the quarantine area internally also with the benefit of the suppression system.

7.1.9 The quarantine area will be clearly marked on the ground so operational staff (with the help of site management) can ensure it is clear. The areas will be re-painted if daily checks show the outline is not visible. at all times marked on ground .

7.1.10 The site also has smaller quarantine areas/skips for non-conforming wastes which cannot be recycled such as batteries, paint tins, tyres etc.. which can be found in skips. These areas are shown as **AREA 2 (i & ii) and 9A**.

8 Fire detection procedure

8.1 Fire detection procedure (manual)

8.1.1 If a fire is detected or suspected by a member of staff during operational hours, it must be immediately reported to the site manager, TCM or fire marshal. The relevant person will then conduct the following procedure:

a) Raise the fire alarm (if not already done by another staff member).
b) Initiate evacuation of staff and visitors on site to the meeting point and instruct delegated person(s) to conduct a roll-call to ensure all site users are accounted for.
c) Assess the intensity and scale of the fire and make a judgment as to whether the fire can be managed without the requirement for assistance from the emergency services i.e. using the hose or fire extinguishers.
d) If viable and safe, instruct necessary site staff to commence extinguishment.

8.2 Fire wardens

8.2.1 All fire wardens on site have received fire awareness training annually and on their staff induction to detect early signs of fire and to minimise the chance of a fire breaking out in order to meet the three objectives.

8.3 Fire detection (automated)

8.3.1 In terms of Longford 2, the waste transfer building benefits from a number of UV/IR cameras which directly link to a fire suppression system. The location of the cameras are shown on Drawing No. STONE/3206/03 and details of the IR/UV fire detection and suppression system are detailed in Appendix IV of this FPP.

8.3.2 The above system has been designed and installed Argus Fire Protection Company Limited to UKAS/BAFE/NIS standards as can be seen in Appendix IV.

8.3.3 **ALTERNATIVE MEASURES** - The buildings in Longford 1 and 3 do not have automated systems but given the low storage volumes, types of wastes stored, operating hours and

available access from external areas, it is considered there are suitable measures for accessing and extinguish the fire meeting the objectives in shown in Section 1.2.

8.3.4 In terms of wastes stored in external areas, it is considered the above measures will apply in addition to the intruder alert system described in Section 2.7 being suitable.

9 Fire response procedures

9.1 Response procedure

9.1.1 Further to the above measures, the following procedure would apply if a large fire is detected:

a) Call the Fire Response Service (FRS) immediately using 999.
b) Call the EA's Emergency Contact Number.
c) Prior to the FRS arriving, inform all neighbouring premises likely to be affected.
d) If not previously informed, senior management of the company will be informed at this point of the details, nature and extent of the fire and whether assistance from staff from other depots is required.
e) Ensure access routes are clear.
f) If safe to do so, the TCM or a senior member of staff will inspect the location of the fire, to identify immediate risks to surrounding premises and the FRS.
g) Ensure operators of appropriate machinery are standing by in a safe location to help create fire breaks, under the direction of the FRS when they arrive.
h) Ensure relevant site staff are standing by in a safe location to deploy surface water protection equipment under the direction of the FRS when they arrive.
i) The site manager / TCM will identify themselves to the fire service as soon as they arrive on site and will provide them with a copy of this document and update them with relevant information that will assist them in dealing with a fire more effectively.
j) Implement pollution control measures only when safe to do so.

9.1.2 In the event of the site manager or TCM being absent from the site, the operator will ensure a suitable person is employed and familiar with the site.

9.2 Staff/Visitor Response Procedure

9.2.1 The following quick actions will be undertaken by site operatives where a fire is detected or suspected on site:

a) Don't panic
b) Inform the site manager or technically competent manager immediately
c) Raise the alarm (if not done so already)
d) Do not try to tackle the fire yourself unless you are trained in doing so and you are sure of the nature of the fire
e) Leave the site using the nearest exit as quickly and as orderly as possible
f) Assemble at the specified fire assembly point
g) The site manager or delegated operative will be in charge of calling the emergency services on "999" and ensuring that all persons who were working in the building are assembled safely
h) Do not return to the site until you have been given the 'all clear' by the emergency services and/or site management / responsible person.

9.3 Evacuation of Staff (and Drill Procedure)

9.3.1 An evacuation plan has been formulated for the site and all operational staff will be made aware of the actions through site inductions, refresher training, toolbox talks etc.). The fast and effective evacuation of staff to the fire assembly point will increase safety on site and limit the impact of a fire on any persons on site.

9.3.2 Fire drills will take place every 12 months and 1 month after site operations commence to ensure evacuation times are acceptable and that site staff remain informed of evacuation procedures.

9.3.3 The drill will be a simulation of an emergency with the location of a mock fire notified to staff in order to test the response speed in deploying pollution control equipment i.e. including drain mats/plugs and ensure all firefighting equipment is sound. The fire check

form may also be completed and a detailed report of the outcome of the exercise will be prepared to assist with staff training.

9.4 Access for emergency services

9.4.1 The nearest fire station is Foleshill Fire Station which is situated 0.8 miles away on Foleshill Road and the FRS could be at the site and begin fighting a fire within 5 minutes of a call.

9.4.2 The site has direct access from Stonebrook Way and the width of the surrounding roads and the gateway provide sufficient access onto the site for the FRS.

9.4.3 Access routes for emergency services around the site for firefighting are clearly shown on Drawing No. STONE/3206/03.

9.5 Notifying nearby properties

9.5.1 The contact numbers of key sensitive receptors identified within 1km of the site who could be directly affected in the event of a fire along with the Receptor Plan will be stored within

9.5.2 The above receptors will be contacted by a co-ordinated approach where staff from Tom White Waste Ltd will contact them by phone, face to face or email.

9.5.3 Once Emergency Services arrive on site i.e. FRS, Police, the lead authority (usually the Police) will co-ordinate a systematic approach to ensure all the relevant sensitive receptors within 1,000m are notified. This will involve via telephone calls, personal visits (knocking on doors). In addition to this, the Emergency Services would also publicise the fire on their Social Media outlets and contact local news websites, radios who can also provide updates on the incident.

9.5.4 The police with the assistance of ECSS and any other attending authority will ensure all relevant properties are informed of the fire event and given clear instructions of the actions they need to take.

10 Suppressing fires & firefighting techniques

10.1 General

10.1.1 Section 16 of the EA's FPP mentions the site should have enough water available for firefighting to take place and to manage a worst-case scenario. A worst-case scenario would be the largest waste pile catching fire.

10.1.2 Based on the above scenario, the largest waste pile on site is AREAS 20/21 and measure 270m^3 when at full capacity which would require 360,180 litres (380m3) of water to extinguish the fire within 4 hours which equates to 2,001 litres per minute.

Table 10.1 - Water supply calculations

Maximum pile volume in m^3	Water supply needed in litres per minute	Overall water supply needed over 3 hours in litres	Total water available on/off site in litres
270 (Longford 2)	270 x 6.67 = 1,801	1,801 x 180	324,180 (324m^3)
182 (Longford 1 & 3)	182 x 6.67 = 1,214	1,214 x 180	218,520 (219m^3)

10.2 Internal suppression

10.2.1 The waste transfer building in Longford 2 benefits from an automated fire suppression (sprinkler) system installed by Argus Fire Protection Company Limited as detailed in Section 8.3. The fire suppression system is linked to external water tank holding 1,184,000 litres (1,184m^3) of water as shown on Drawing No. STONE/3206/03. Details of the location of suppression system are shown in Appendix V of this FPP. The two shredders inside the building are also fitted with their own separate dust extractions hoods and suppression systems. In summary, the entire waste transfer building including all fixed plant and waste storage areas benefits from an automated fire suppression system which was installed by a UKAS accredited company. In addition to the above, there are also additional suppression points located inside the building at Longford 2 comprising misting fans between roller shutter doors 1 and 2, this spans all the way to the main mixed waste tipping area and there are also suppression nozzles at the end of the trommel at the conveyor belts. These areas are all highlighted on Drawing No. STONE/3206/03.

10.2.2 In terms of the two shredders inside the building of Longford 2, these automatically shut down and initiate suppression if a dangerous temperature is reached, this would be if the engine was overheating to a point which could lead to it combusting or a fire breaks out in the shredder i.e. if a battery passes through the shredder. It must be noted all mobile plant is decommissioned 1 hour before the site closes.

10.2.3 There are also 2 no. manual fire hose reels providing 80 – 120 (combined) litres per minute equating to 20,000 – 21,600 litres over a three-hour period. These would be used for smaller fire events which are quickly detected by staff.

10.3 Site-wide suppression (including covered area)

10.3.1 There are a number of fire extinguishers located around the site which can be deployed in the event of an incident to tackle the fire or for fire suppression in the intervening time between discovery of the fire and the arrival of the FRS.

10.3.2 The firefighting equipment and water points would not extinguish a worst-case scenario fire but they would be used stop smaller fires and aid in reducing the impact of a large fire whilst awaiting the arrival of the FRS.

10.4 External suppression - fire hydrants

10.4.1 The operator would rely on assistance from the FRS if a fire broke out in Longford 1 and 3.

10.4.2 Following a consultation with Severn Trent Water, they have mentioned the following:

- Our records show a fire hydrant as well as an STW-owned end washout as highlighted on the attached plan and I've put two scenarios together for you
- The predicted fire-fighting flow range through a single hydrant/washout is 7.5 to 8.0 l/s depending on system demand
- The predicted total fire-fighting flow range through two hydrants/washouts being run simultaneously is 11.7 (702 l/m) to 14.0 l/s (840 l/m) depending on system demand

10.4.3 The location of the hydrants are shown on Drawing No. STONE/3206/03, however, it is considered these would not be necessary given the suppression system inside the waste transfer building. The largest pile in :Longford 1 and 3 comprises 182m^3 and a flow of 1,214 litres of water per minute being required so although the hydrants fall short of approximately 400 l/m – 500 l/m, the external water tank could also be utilised by the FRS. The water tank is situated <150m from the piles stored in Longford 1 and <100m in Longford 3. The water tank is fitted with required couplings so the FRS can connect their hoses and use the water for suppression.

10.4.4 In summary, it is considered there are suitable water supplies on and off site to suppress a fire on site and meet the objectives shown in Section 1.2.

11 Managing fire water

11.1 Drainage

11.1.1 In terms of wastes stored inside buildings or covered areas, the buildings/covered areas are sealed to prevent ingress of rainwater and egress of contaminated substances, the buildings/covered areas are also surfaced with an impermeable concrete floor meaning they acts as sealed drainage systems. The site would also deploy fire water booms near the roller shutters of the building in Longford 2 (see Sections 11.2 and 11.3 below).

11.1.2 In terms of Longford 1 and 3, all areas in connection with storing and treating waste drain to foul sewer with trade effluent consents issued by Severn Trent Water; Longford 1 under permission ref. 0011023V and Longford 3 under permission ref. 03519SVL. Both of these consents have been supplied to local environment officers.

11.1.3 In terms of Longford 2, external areas of site which are used for vehicle manoeuvring and car parks drain to a series of surface gullies and an ACO drainage channel which connects to the mains sewer system to the east of the site. Before the water enters the sewer, it is treated in two no. bypass separators and then stored in two no. underground holding tanks which have a capacity of 350^3. The smaller tank to the north connects to the southern tank which is fitted with a hydrobrake flow restriction device limiting the flow to 5 l/s as required by planning permission. The

11.1.4 In terms of foul drainage, all foul from toilets, sinks etc.. drains directly underground into the foul system.

11.1.5 The drainage system is clearly illustrated on Drawing No. STONE/3206/03.

11.2 Containment of fire water

11.2.1 As detailed in Section 10.1.2, the largest pile would require containment for $219m^3$ of water at Longford 1 and 3 and $324m^3$ of water at Longford 2 in accordance with the FPP guidance.

11.2.2 In terms of containing a firewater in Longford 1 and 3, all perimeters of the site are sealed other than accesses so in the event of a fire, the operator would initiate the penstock valves on the two interceptors and deploy the fire water booms in the locations shown on Drawing No. STONE/3206/03. causing a back-up of the drainage system meaning the site/s would flood. Table 11.1 below details there is suitable containment available to prevent fire water escaping off site.

11.2.3 In terms of Longford 2, it is proposed any fire at the site would be extinguished by the suppression system inside the building and also from the use of external supplies through the 4 no. roller shutters by the FRS. This would mean the site would look to contain all fire water within the building and provided the roller shutters are sealed using a boom (see section 11.3), there would ample containment inside the building.

11.2.4 The table below provides a summary of the amount of fire water requiring containment for area of the site.

Table 11.1 - Firewater Containment Calculation Longford

Volume of Water (m^3)	Approx. Containment Area (m^2) (minus fixed plant and waste storage areas)	Containment Required	Total Containment available
219 (Longford 1 & 3)	6,300 – sealed concrete pad	219 / 6,300 = 0.03	+0.12 (booms, measuring 0.16m high and surrounding walls/kerbs at 0.15m height)
324 (Longford 2)	3,250 – sealed building	324 / 3,250 = 0.1	+0.05 (booms, measuring 0.16m high and surrounding walls/kerbs at 0.15m height)

11.2.5 If there is any deviation from the above drainage arrangement, an amended FPP will be submitted for approval by the EA and FRS.

11.3 Fire water boom deployment procedure

11.3.1 The fire water booms will be located within the site office and would be deployed in the event of a fire at the site access as shown on Drawing No. STONE/3206/03 to contain any fire water runoff. The booms have a 160mm diameter tube each side and using a standard water main i.e. the hose from the site could be filled and provide containment in <5 minutes.

11.3.2 A key member of senior staff will be responsible for arranging the deployment of the fire water booms and will be trained in this procedure.

11.3.3 Upon confirmation that a significant volume of water is likely to be required for extinguishing a fire on site, the following deployment procedure for the poly booms will be observed:

a) Take the boom roll from the site office;
b) Emplace the boom as shown on Drawing No. STONE/3206/03 by rolling the necessary length;
c) Use supplied cable ties (also available in the site office) to seal the front end of the boom;
d) Using a sharp knife, cut the laid-out section from the remaining roll;
e) Using the Hose Reel, begin filling the first of the two chambers of the boom being sure to elevate the 'fill' end to prevent the water leaving the tube;
f) Once the first chamber is filled, repeat in second chamber ensuring the 'fill' end is kept elevated to prevent escape of water;
g) When both chambers are full the 'fill' end should be sealed using a cable tie thus completing deployment.
h) Typically, one side of the roll would be filled which has a 160mm diameter,

11.3.4 The above process should be completed as above for all lengths of boom shown on Drawing No. STONE/3206/03.

11.3.5 Once deployed, all booms should be regularly checked during a fire event to ensure that they are providing effective containment and that there are no breaches. Secondary/additional lengths of boom can be deployed in addition to the compulsory locations using the same procedure (as above) if deemed necessary.

11.3.6 The fire water booms will be industry approved and consist of the same product as those issued to the FRS by the EA in their grab packs which all appliances now have. The firewater booms come in 10m rolls which is suitable for the site.

11.3.7 **Using the boom - the boom is used as follows:**

- Unroll the boom and seal one end with either an overhand knot or by using cable ties provided.
- Position boom and fill two large outer compartments with water from a hose reel.
- Seal open end with second cable tie.

11.3.8 An example of the boom is shown below referenced as (f) extracted from the EA grab pack.

Figure 1 – Contents of the Environmental Agency Grab Pack

Component parts

a. Grab Pack bag (empty)
b Ready-Mixed clay sealing putty
c Clay Drain Mat
d. Disposable Gloves
e. Absorbent Pads
f. Polyboom
g. Plastic Waste Bags
h. Cable Ties
i. Environment Agency warning tape
j. Laminated Instruction Sheet (not shown)
k. Clay Equipment Resistance table (not shown)
l. Laminated guide for waste disposal responsibilities (not shown)

11.3.9 If there is any deviation from the above drainage arrangement, an amended FPP will be submitted for approval by the EA and FRS.

11.4 Removal of fire water

11.4.1 Upon successfully extinguishing a fire all standing fire water would be pumped using a hired-in vacuum tanker and deposited to a suitably permitted site for treatment.

11.4.2 The operator would also contact the water company to see if the fire water could be discharged into the foul system; this would obviously depend on the type of fire and the contamination of the fire water.

12 After an incident

12.1 Contingency Planning

12.1.1 In the event of a fire the site will cease accepting waste. All customers who wish to deliver wastes during a fire will be notified by site admin staff and any who arrive without prior notification will be turned away. If urgent, deliveries will be directed to an alternative waste facility in the borough; details of which can be found on the EA's public register.

12.1.2 No waste will be accepted on site until the post-fire site recovery procedures outlined in the section below have been fully implemented and the site is authorised to re-open for trade and waste acceptance.

12.2 General recovery procedure

12.2.1 When the fire has been successfully dealt with the following actions will take place:

a) All fires will be reported to the EA on the working day that they occur and will be confirmed in writing by email or letter within 24 hours (unless in extenuating circumstances), including all steps taken by site staff, management and/or emergency services to deal with the fire.
b) Removal of burnt material using appropriate and lawful disposal.
c) Investigation into the cause of the fire, to ensure it does not reoccur.
d) A review of the FPP and EMS, associated amendments will be implemented.
e) Review of any additional training requirements for site personnel as a result of the incident.
f) All fire extinguishers used to tackle the fire will be serviced and replaced after use.

12.2.2 In addition to the abovementioned procedures, the sections below outline specific procedures following a fire

12.3 Site decontamination

12.3.1 Surface water on site will be cleared using the following method:

a) Using a bowser, all standing fire water should be sucked up and taken off site or stored in a tank/bowser prior to removal off site.
b) Using all available resources, manually clean out surface water gullies removing the debris to the pile of fire damaged waste for removal to landfill or permitted site.
c) Using a road sweeper, sweep the yard (damp as required using the bowser) until all ash and clinker has been removed.
d) All debris has now been isolated and all contaminated water holding areas have been cleaned and emptied.
e) Wash the yard down in entirety using clean water or allow a reasonably heavy rain shower to wash the yard down.
f) It is at this stage that site management should decide whether it is appropriate to remove the surface water protection measures or repeat areas of the clean-up.

12.3.2 If the clean-up operation has been deemed complete, the surface water protection measures can now be removed. This will be achieved using the following methods:

a) Remove any temporary bungs/valves
b) Surface water discharge from the site is now possible the next time it rains to discharge sewer. Ensure that surface water checks are made during the next rainfall event to validate that clean-up has been undertaken satisfactorily. Record all findings and actions in the site diary.
c) Account for all consumables that have been used in the fire and re-order / replace immediately.
d) Restack, and re-locate all items used for the surface water protection during the fire to their storage locations ready for future deployment.
e) Check monthly that items are still present and correct and still serviceable for use in an emergency.

12.3.3 The operator will liaise with the EA throughout the event ensuring they are satisfied with the clean-up programme and notify the operator when the site can begin accepting waste again onto site.

12.3.4 Due to the nature of the site's customers, there are no regular waste contracts which need to be dealt with if the site is closed for a period of time due to any incidents.

12.4 Post fire site recovery

12.4.1 If a recovery procedure is required, the operator would instigate the following;

a) Remove damaged material to a permitted facility that is able to deal with it legally.
b) Ask engineers to carry out repairs on any plant, vehicles and/or infrastructure.
c) Assist the FRS with the fire investigation and where necessary engage the advice from a professional fire consultant.
d) Review the FPP and EMS procedures and improve upon where found deficient.
e) Review training requirements for staff.
f) Assess whether further preventative measure could be implemented.
g) Ensure all fire equipment, where used, is replenished.
h) Remove fire water to a permitted facility for disposal.

Appendix I

Drawings

Scale Bar (1:300)
0 m 10 m 20 m

NOTES
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REVISION HISTORY

Rev:	Date:	Init:	Description:
-	10.11.23	CP	Initial draft
A	17.11.23	CP	Application copy

Key:
- Proposed permit boundary
- Waste storage areas
- Non-waste storage areas
- Hazardous waste storage areas
- Non-waste fuels, oils and other liquids storage
- Temporary waste storage areas (clear prior to shutdown)
- Waste recycling / storage buildings (impermeable concrete floor)
- Other buildings i.e. workshops/offices
- Impermeable concrete surfaces
- Covered canopy (impermeable concrete beneath)
- Tarmac/hardstanding areas - used for car parking only
- Grassed / landscaped area
- Dust / mist air & odour suppression coverage (indicative)
- Dust extraction hoods (no discharge to air, filtered / emptied)
- Surface water drainage fall direction
- Foul drainage
- Surface and mains water drainage
- Surface gully
- Clean and foul manholes (yellow denotes penstock)
- Quarantine areas
- Hose reels (indicative location)
- Fire fighting equipment / extinguishers (indicative locations)
- Plant/electrical shutoff points (indicative location)
- Manual fire alarms (break glass / horns) - indicative location
- Spill kits (indicative location)
- Access route for emergency services
- Fire hydrants
- Fire assembly points
- Out-of-hours plant storage
- Pan, tilt and zoom cameras with 360° 50m coverage
- Infra-red pan, tilt and zone cameras with 360° 50m coverage
- 0.15m wide concrete fire walls (height varies throughout)
- 0.3m wide concrete fire walls (height varies throughout)
- 0.8m wide concrete fire walls (height varies throughout)

Waste Storage Area Details - Longford 2 - PILE SIZES BASED ON AREA OF STOCKPILE ON SITE PLAN NOT LENGTH X WIDTH

Plan Ref	Description	Storage type	Containment	Height / width of firewall (m)	Max Width (m)	Max Length (m)	Height (m)	Max area (m2)	Conversion factor used	Volume (m3)	Tonnage (approx.)	Maximum storage durations
AREA 1	Waste reception (tipping), inspection and sorting area (**clear out-of-hours**)	Free-standing / unprocessed	N/A	N/A	15	10	2	150	0.333	100	50	<2 hours
AREA 2 (i)	Short term quarantined waste	Hand sorted arising from tipping area (AREA 1)	Free-standing against concrete interlocking block fire wall with 0.3m wide concrete wall behind	1 / 0.8 & 5 / 0.3	6	3	0.5	18	0.5	5	2	<48 hours
AREA 2 (ii)	Pre-sorted metals	As above	Open topped, moveable 8 cubic yard skip	N/A	1.68	3.66	1.22	6.1488	1	8	8	<48 hours
AREA 3	Non-recyclable waste - sorted but will contain mixture of different wastes	As above	Free-standing against	5 / 0.3	10	5	0.5	50	0.5	13	6	<48 hours
AREA 4	Mixed H&C waste - primary shredder infeed bay	Partly hand sorted arising from tipping area (AREA 1)	Free-standing against concrete interlocking block fire wall	4 / 0.8	12	9	3	108	0.75	243	182	<48 hours
AREA 5	Mixed waste storage prior to processing - also acts as holding bay feeding the plant	Partly hand sorted arising from tipping area (AREA 1)	Free-standing against concrete interlocking block fire wall	4 / 0.8	12	9	3	108	0.75	243	182	<48 hours
AREA 6	Plastics	Sorted (mechanical recycling line)	Free-standing and party contained inside a three-sided concrete panel wall	3.0 / 0.18	5	5	2	25	0.75	38	19	<48 hours
AREA 7	Heavies	Sorted (mechanical recycling line)	As above	3.0 / 0.18	5	5	2	25	0.75	38	38	<48 hours
AREA 8	Ferrous metal	Sorted (mechanical recycling line) and by overband magnet	Open topped, moveable 20 cubic yard roll on roll off skip	N/A	6.1	2.44	1.4	14.884	1	21	21	<48 hours
AREA 9	<10mm screened fines	Sorted (mechanical recycling line)	Free-standing and party contained inside a three-sided concrete panel wall	3.0 / 0.18	10	5.5	2	55	0.75	83	83	<48 hours
AREA 10	10mm - 40mm heavies	As above	As above	3.0 / 0.18	10	3.5	2	35	0.75	53	53	<48 hours
AREA 11	10mm - 40mm lights	As above	As above	3.0 / 0.18	10	4.5	2	45	0.75	68	68	<48 hours
AREA 12	>150mm heavies	As above	As above	3.0 / 0.18	5	5	2	25	0.75	38	38	<48 hours
AREA 13	40mm - 150mm heavies	As above	As above	3.0 / 0.18	5	5	2	25	0.75	38	38	<48 hours
AREA 14	40mm - 300mm lights (SRF)	Articulated walk-in floor trailer	Trailer	N/A	16.5	2.5	2.5	41.25	1	103	34	<48 hours
AREA 15	Metals	Sorted by overband magnet	Free-standing and party contained inside a three-sided concrete panel wall	3.0 / 0.18	7	5.5	2	38.5	0.75	58	58	<48 hours
AREA 16	Plastics	Sorted (mechanical recycling line)	As above	3.0 / 0.18	3.7	4.5	2	16.65	0.75	25	12	<48 hours
AREA 17	PVC	Sorted (mechanical recycling line)	As above	3.0 / 0.18	3.7	4.5	2	16.65	0.75	25	12	<48 hours
AREAS 18 & 19	Residual waste	Sorted (mechanical recycling line) and hand sorted by picking line	As above	3.0 / 0.18	3.7	4.5	2	16.65	0.75	25	12	<48 hours
AREA 20	<40mm SRF	Sorted (mechanical recycling line)	Free-standing against concrete interlocking block fire wall	4 / 0.8	10	12	3	120	0.75	270	90	<48 hours
AREA 21	Overflow bay (see AREAS 14, 20 & 22)	Sorted (mechanical recycling line)	Free-standing against concrete interlocking block fire wall	4 / 0.8	10	12	3	120	0.75	270	90	<48 hours
AREA 22	Waste containing POPs or waste shown in AREAS 14 and 21	Sorted (mechanical recycling line)	Free-standing inside sealed storage bunker	3 / 0.5	30	2.5	3	75	1	225	75	<48 hours

Waste Storage Area Details - Longford 1 - PILE SIZES BASED ON AREA OF STOCKPILE ON SITE PLAN NOT LENGTH X WIDTH

Plan Ref	Description	Storage type	Containment	Height / width of firewall (m)	Max Width (m)	Max Length (m)	Height (m)	Max area (m2)	Conversion factor used	Volume (m3)	Tonnage (approx.)	Maximum storage durations
AREA 1A	Mixed C&D reception and sorting (**clear out-of-hours**)	Free-standing / unprocessed	N/A	N/A	7	7	2	49	0.333	33	24	<2 hours
AREA 2A	Bulky wastes	Hand sorted arising from tipping area (AREA 1A)	Free-standing against 0.3m wide concrete wall	4 / 0.3	8.5	6.5	3	55.25	0.5	83	83	<48 hours
AREA 3A	Mixed C&D infeed pile (80% inert) and non-combustible	Free-standing / hand sorted	Free-standing against 0.3m wide concrete wall	4 / 0.3	10	7	2	70	0.5	70	53	<2 hours
AREA 4A	<40mm C&D fines (non-combustible)	Free-standing / processed by trommel	N/A	N/A	7	7	2	49	0.333	33	33	<2 hours
AREA 5A	Various containers of sorted wastes (pile based on largest container)	Containers / hand sorted	Open topped, moveable 40 cubic yard skip	N/A	2.5	6.11	2.62	15.275	1	40	40	<48 hours
AREA 6A	Waste storage bays beneath picking station (contents in each bay will vary)	Sorted (mechanical recycling line) and hand sorted by picking line	As above	3.0 / 0.18	3.2	5.5	2	17.6	0.75	26	20	<48 hours
AREA 7A	Hardcore	Sorted (mechanical recycling line)	As above	3.0 / 0.18	3.2	5.5	2	17.6	0.75	26	20	<48 hours
AREA 8A	Storage area for wood, soils or hardcore prior to processing	Pre-sorted / mechanically sorted from other areas of the site	Free-standing against 0.3m wide concrete wall	4 / 0.3	11	3	1	121	0.5	182	182	<48 hours
AREA 9A	Short term quarantined waste	Hand sorted arising from tipping area (AREA 1A)	Free-standing against concrete interlocking block fire wall with 0.3m wide concrete wall behind	3 / 0.8 & 0.3	5	5	2	25	0.5	25	13	<48 hours
AREA 10A	Short term quarantined waste	Hand sorted arising from tipping area (AREA 1A)	Free-standing against concrete interlocking block fire wall	0.8 / 3	5	5	2	25	0.5	25	25	<48 hours

Waste Storage Area Details - Longford 3 - PILE SIZES BASED ON AREA OF STOCKPILE ON SITE PLAN NOT LENGTH X WIDTH

Plan Ref	Description	Storage type	Containment	Height / width of firewall (m)	Max Width (m)	Max Length (m)	Height (m)	Max area (m2)	Conversion factor used	Volume (m3)	Tonnage (approx.)	Maximum storage durations
AREAS 1B - 7B	Waste storage bays for bulking and transfer, also acting as overflow from bays from other wastes stored at the site (contents in each bay will vary)	Mixture of processed and unprocessed	Free-standing against concrete interlocking block fire wall	0.8 / 4	6.6	6.6	3	43.56	1	131	131	<48 hours
AREA 8B	Loose paper & card	Partly hand sorted arising from other areas of the site	Free-standing against 0.3m wide concrete wall	5 / 0.3	10	6	3	60	0.75	135	45	<48 hours
AREA 9B	Baled paper & card	Baled in stacks (max 3 in length/width and 3 high)	Free-standing stack against 0.3m wide concrete wall	5 / 0.3	4	8	3	32	1	96	96	<48 hours
AREA 10B & 11B	Baled paper & card	Baled in stacks (max 3 in length/width and 3 high)	Free-standing stack against 0.3m wide concrete wall	4 / 0.3	5	7	3	35	1	105	105	<48 hours

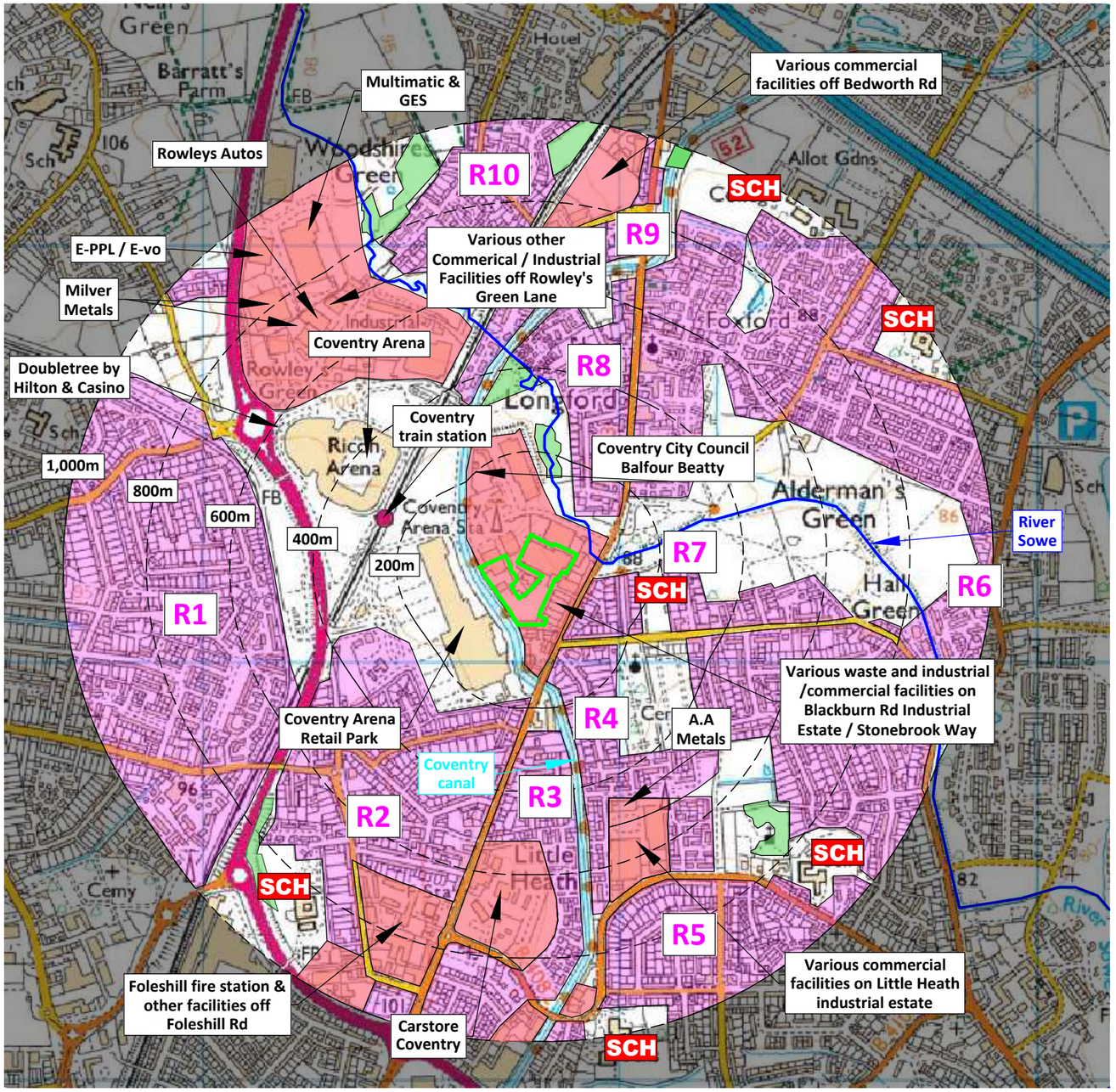
Oaktree Environmental Ltd
Waste, Planning and Environmental Consultants
Lime House, Road Two, Winsford, Cheshire, CW7 3QZ
t: 01606 558833 | e: sales@oaktree-environmental.co.uk

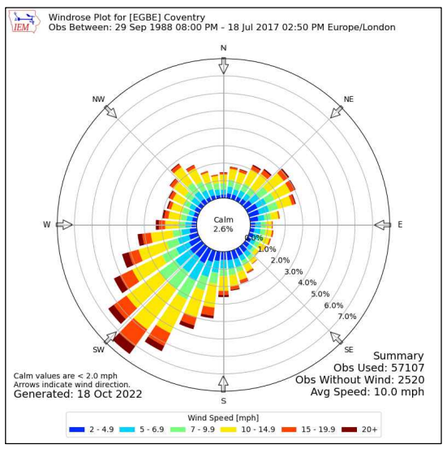
DRAWING TITLE: SITE LAYOUT & FIRE PLAN
CLIENT: Tom White Waste Ltd
PROJECT/SITE: Stonebrook Way, Longford, Coventry CV6 6LN

SCALE @ A0	CLIENT NO	JOB NO
1:300	3206	007
DRAWING NUMBER	REV	STATUS
STONE/3206/03	A	Issued
DRAWN BY	CHECKED	DATE
CP	MT	17.11.23

KEY:

- Permit boundary
- Main river
- Residential receptor blocks (may include small retail/leisure also)
- Surface water body (river / stream / pond / pool / lake)
- Workplaces (includes agriculture industry, commerce and retail)
- Areas with mix of industrial, retail, manufacturing and commercial properties
- Class A roads
- Class B roads
- Class C roads
- Railway line
- SCH — School
- Woodland areas (not protected)
- Priority Habitat (deciduous woodland)





Compass Wind Rose for (EGBE) Coventry
Period 1988-2017
- source: Iowa State University

Scale Bar (1:12,500)

0 km 500 m 1 km

NOTES

1. Boundaries are shown indicatively.
2. Wind rose data shows the prevailing wind direction to be Southerly.

REVISION HISTORY

Rev:	Date:	Init:	Description:
-	14.11.23	JH	Initial drawing

Oaktree Environmental Ltd
Waste, Planning and Environmental Consultants

DRAWING TITLE
RECEPTOR PLAN - 1,000m

CLIENT
Tom White Waste Ltd

PROJECT/SITE
Building adjacent to Shawn Dream Cars, Off Longford Road, Coventry CV6 6LN

SCALE @ A3	CLIENT NO	JOB NO
1:12,500	3206	007

DRAWING NUMBER	REV	STATUS
STONE/3206/04A	-	Issued

DRAWN BY	CHECKED	DATE
JH	RS	14.11.23

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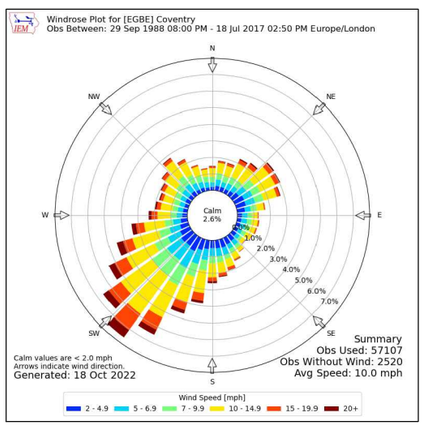
t: 01606 558833 | e: sales@oaktree-environmental.co.uk

KEY:

Permit boundary



Compass Wind Rose for (EGBE) Coventry Period 1988-2017
- source: Iowa State University

NOTES

1. Boundaries are shown indicatively.
2. Wind rose data shows the prevailing wind direction to be Southerly.

REVISION HISTORY

Rev:	Date:	Init:	Description:
-	14.11.23	JH	Initial drawing

Scale Bar (1:5,000)

0 m 50 100 150 200 250 m

Oaktree Environmental Ltd
Waste, Planning and Environmental Consultants

DRAWING TITLE
RECEPTOR PLAN- 500m

CLIENT
Tom White Waste Ltd

PROJECT/SITE
Building adjacent to Shawn Dream Cars, Off Longford Road, Coventry CV6 6LN

SCALE @ A3	CLIENT NO	JOB NO
1:5,000	3206	007

DRAWING NUMBER	REV	STATUS
STONE/3206/04B	-	Issued

DRAWN BY	CHECKED	DATE
JH	RS	14.11.23

Lime House, Road Two, Winsford, Cheshire, CW7 3QZ
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Appendix II

Record Keeping Forms

TOM WHITE WASTE LTD
SITE INSPECTION FORM

DAY													
TYPE OF INSPECTION													
TIME OF INSPECTION (START)													
TIME OF INSPECTION (FINISH)													
SITE ENTRANCE/NOTICE BOARD													
SECURITY - GATES													
SECURITY - FENCING													
SITE ROADS (CLEAR FROM HAZARDS)													
IMPERMEABLE CONCRETE AREAS (INTEGRITY)													
BUND AROUND CONCRETE PAD (INTEGRITY)													
HOLDING TANK / SUMP													
WASTE CONTAINERS & BAY WALLS													
WASTE STORAGE LIMITS	INERT												
WASTE STORAGE LIMITS	BIODEGRADABLE												
WASTE STORAGE LIMITS	COMBUSTIBLE												
COMBUSTIBLE WASTES (AWAY FROM POTENTIAL IGNITION SOURCES)													
REJECTED WASTE TYPES / STORAGE													
NOISE LEVELS													
FIRES (ANY INCIDENTS REPORTED)													
QUARANTINE AREA CLEAR OF WASTE													
NO SMOKING SIGNS IN PLACE													
FIRE FIGHTING EQUIPMENT													
FIRE BREAKS IMPLEMENTED													
PLANT/EQUIPMENT MAINTENANCE CHECKS													
HOT EXHAUSTS FIRE WATCH (DUST/FLUFF CLEANED REMOVED)													
SPILLAGES OF OIL/LIQUIDS CLEARED													
OFFICE/WELFARE FIRE RISKS CHECKED													
ELECTRICAL APPLIANCES AND CABLING CHECK													
FUEL TANK/BUND													
LITTER													
DUST													
ODOUR													
VERMIN													
RECORDS													
COMPLAINTS RECEIVED													
OTHER (SEE NOTES BELOW)													
INSPECTION CARRIED OUT BY													

NOTES/ACTION (CONTINUE ON A SEPARATE SHEET IF NECESSARY):

CHECKED BY		**SIGNATURE**	
POSITION		**DATE**	
Sheet		***of***	

TOM WHITE WASTE LTD - PREVENTATIVE MAINTENANCE CHECKLIST

CHECKED BY	**POSITION**
DATE	**DATE OF LAST CHECKLIST**

	EQUIPMENT ITEM					
OFFICIAL MAINTENANCE CHECK REQUIRED (Y/N)						
IF NO, DATE OF LAST CHECK						
IF YES, DATE OF NEXT CHECK						
IS ITEM IN CORRECT WORKING ORDER						
LEAKAGES OF OIL/DIESEL ON MOBILE PLANT / VEHICLES						
IF NO, WHAT REPAIRS ARE REQUIRED (USE SEPARATE SHEET IF REQUIRED)						
WERE REPAIRS DETAILED ON THE LAST CHECKLIST						
IF YES, HAVE THEY BEEN CARRIED OUT						
ADDITIONAL REPAIRS OR ACTIONS REQUIRED						

TOM WHITE WASTE LTD - EMPLOYEE TRAINING NEEDS ASSESSMENT / REVIEW

EMPLOYEE NAME				**DATE COMPLETED**			
POSITION				**REVIEW DUE**			
TRAINER				**OUTCOME**	**PASSED**		
POSITION					**FURTHER TRAINING REQUIRED**		
CARRIED OUT /SIGN OFF >	**Y/N**	**SIGNED BY EMPLOYEE**	**SIGNED BY TRAINER**		**Y/N**	**SIGNED BY EMPLOYEE**	**SIGNED BY TRAINER**
ENVIRONMENTAL PERMIT				**FIRE PREVENTION PLAN**			
MANAGEMENT SYSTEM				**FIRE SAFETY**			
SITE RULES				**EMERGENCY PROCEDURES**			
RECORD KEEPING / TRANSFER NOTES				**STORAGE /PILE SIZE LIMITS**			
RECOGNITION OF WASTE TYPES				**STORAGE DURATION**			
SECURITY				**FIRE DETECTION**			
VEHICLE CHECKS				**FIRE ALARMS**			
PLANT OPERATION				**FIRE FIGHTING EQUIPMENT**			
PLANT CHECKS				**FIRE WATER CONTAINMENT MEASURES**			
AMENITY - LITTER, ODOUR, PESTS etc.				**SPILL CLEARANCE**			
NOTES AND ACTIONS:							

Appendix III

Hot Works (Permit to Work)

Hot-work permits are required for any operation involving open flames or producing heat and/or sparks and must be prepared by a competent person. Hot works include brazing, torch cutting, grinding, soldering and welding.

Company Name		**Project title**			
Location		**Project no.**			
Supervisor		**Permit no**			
Equipment used					
Date of works		**between**	hrs	**and**	hrs

Precautions to be taken	**Yes**	**No**	**N/A**
Hot work must cease at least one hour before end of shift. Areas where hot works have been carried out should be checked before leaving site.			
Services affected must be isolated before work commences.			
Isolate smoke detectors in the vicinity of hot works.			
A suitable fire extinguisher must be available and be kept close at hand, at all times.			
Supervisors must ensure suitable personal protective equipment (PPE) is provided and worn by			
operatives.			
All cylinders must be transported and secured upright.			
Valves and hoses must be in good condition.			
All cylinders must have flashback arrestors fitted.			
When not in use, cylinders must be shut off and returned to store.			
LPG cylinders must not be left in the building overnight without formal approval.			
Arc welding equipment will comply with current standards.			
Spent welding rods must be immersed in a bucket of water.			
Minimum radius of hot work must be 2 m from other persons working. Screens should be erected			
if needed.			
Where hot works are required adjacent to combustible material, a fireproof protective mat should be			
placed between the material and the heat source during the hot works. (Check both sides of partition walls			
Precautions to be taken	**Yes**	**No**	**N/A**
understand the permit conditions and the fire and safety precautions			
be in possession of a permit at all times			
stop work if required to do so by an authorised person			
immediately report any hazard likely to affect the fire and safety precautions			
ensure satisfactory access to and egress from the work area.			

Confirmation by contractor's supervisor: I confirm that the precautions specified above will be complied with and I will ensure that the persons carrying out the work described above are fully briefed on the safe method of work.

Name		**Position**		**Signature**		**Date**	

Confirmation by operator: I understand the precautions to be taken in carrying out the hot works.

Name		**Position**		**Signature**		**Date**	

Site management authorisation: I certify that the above work can commence with the precautions listed above.

Cancellation of permit by operator: (Note: hot works must cease at least one hour before end of shift.) I confirm that the work has been completed and the area has been checked and is safe.

Name		**Position**		**Signature**		**Date**	

Cancellation of permit by site management

Name		**Position**		**Signature**		**Date**	

Inspection of area covered by hot-work permit by fire warden/site management after cancellation of permit				Inspection completed after			hr (s)
e		**Position**		**Signature**		**Date**	

Appendix IV

Automated IR/UV Fire Detection System In Longford 2

apollo
WORLD CLASS FIRE SOLUTIONS

XP95 DUAL IR FLAME DETECTOR

FUNCTION

The XP95 Dual Infra-red (IR) Flame Detector is designed to protect areas where open flaming fires may be expected.

FEATURES

The XP95 Dual IR Flame Detector is sensitive to low-frequency, flickering infra-red radiation emitted by flames during combustion. Since it responds to flickering radiation the XP95 Dual IR Flame Detector can operate even if the lens is contaminated by a layer of oil, dust, water-vapour or ice.

The XP95 Dual IR Flame Detector is set to respond to low-frequency radiation at 1 to 15Hz (1 to 2.7µm) in order to detect all flickering flames, including those invisible to the naked eye, eg, those emitted by hydrogen fires.

The XP95 Dual IR Flame Detector has two IR sensors that respond to different IR wavelengths in order to discriminate between flames and spurious sources of radiation. False alarms due to such factors as flickering sunlight are avoided by a combination of filters and signal processing techniques.

PROTOCOL COMPATIBILITY

The XP95 Dual IR Flame Detector operates only with control equipment using the Apollo XP95 or Discovery digital protocol (or any development of it).

Part no: *55000-280*
Shown with Stainless Steel Bracket **Part No.** *29600-203*

ELECTRICAL CONSIDERATIONS

The XP95 Dual IR Flame Detector is loop powered and needs no external supply. A remote LED alarm indicator may be connected to the flame detector.

INVESTOR IN PEOPLE

A HALMA COMPANY

Overseas offices:
America | China | Germany | Ireland | Spain

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Hampshire, PO9 1JR, UK.

Tel: +44 (0)23 9249 2412
Fax: +44 (0)23 9249 2754

Email: sales@apollo-fire.co.uk
Web: www.apollo-fire.co.uk

Technical Data

Supply voltage	17–28V DC
Quiescent current	2.2mA
Maximum power-up time	4 seconds
Remote LED current	Limited to 2mA
Range of view	0.1m2 n-heptane at 25m
(EN54-10)	0.2m2 n-heptane at 35m
	0.4m2 n-heptane at 45m
Field of view	90° cone
Spectral response	1.0 to 2.7µm
Sensitivity	High—Class 1
	Low—Class 3
Operating temperature	–10° C to +55° C
Storage temperature	–20° C to +65° C
Relative humidity	95%, non-condensing
IP rating	65
Housing material	die-cast zinc alloy
Housing colour	blue
Dimensions	See Fig 3
Weight	1kg
Cable gland entries	2x20mm

CE marked

ACCESSORIES

A range of accessories and test equipment is available for the XP95 Dual IR Flame Detector:

Weathershield, part no 29600-206, (see Fig. 5).
Flame Sensor Test Unit and case, part no 29600-226.
Stainless steel 2 axis adjustable mounting bracket, part no 29600-203.

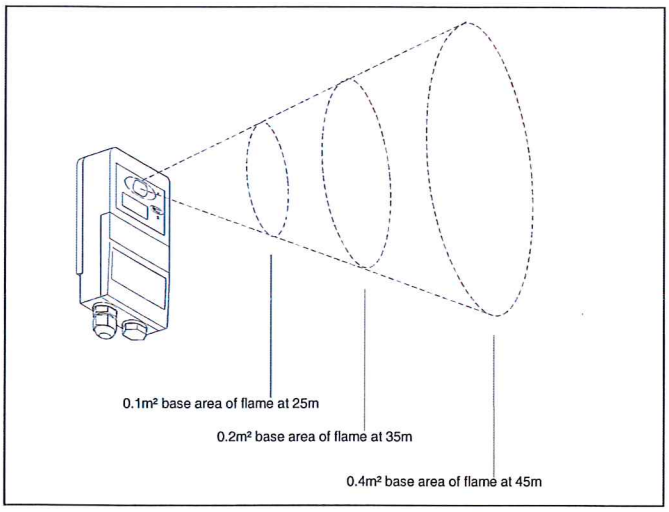

Fig 1
Flame detection as a function of flame size and distance

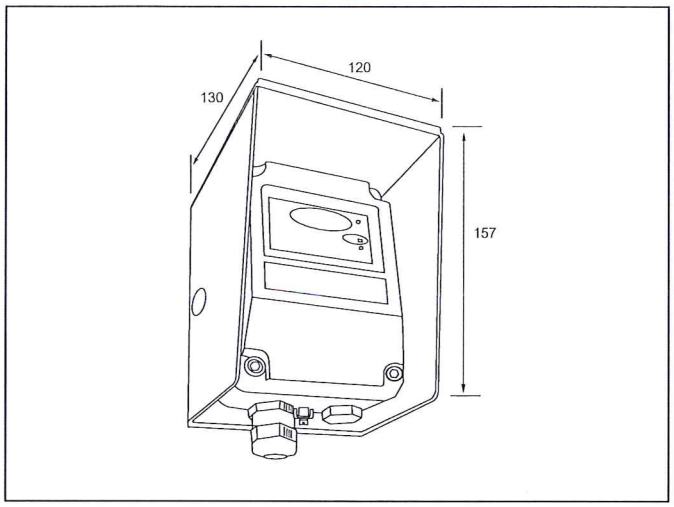

Fig 5 *XP95 Dual IR Flame Detector with Weathershield (Part no 29600-206)*

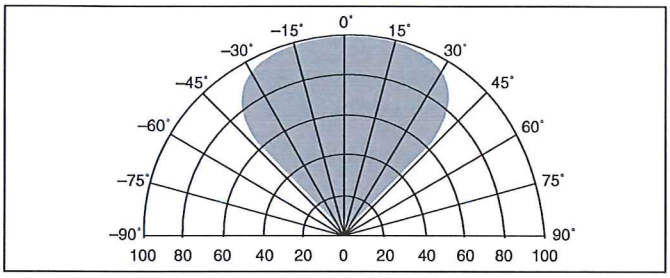

Fig 2 *Range of view of XP95 Flame Detector*

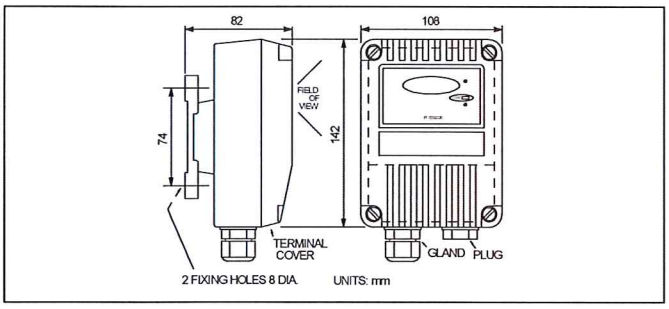

Fig 3 *Front and side view to show dimensions of flame detector*

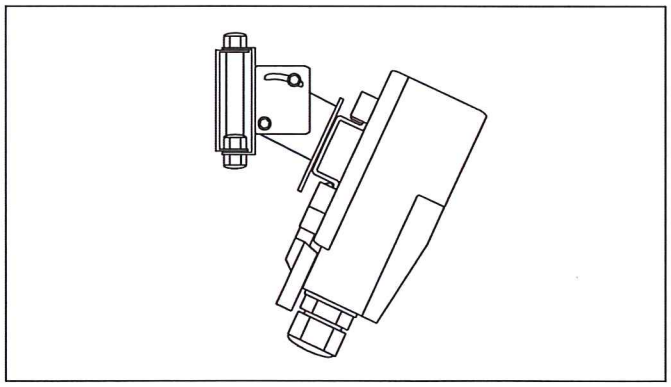

Fig 4 *XP95 Dual IR Flame Detector on stainless steel 2 axis adjustable mounting bracket (Part no 29600-203)*

Advanced

MxPro

The Leading Multiprotocol
Intelligent Fire Panel

Advanced

EvacGo makes meeting BS 8629 easy.

EvacGo, the evacuation alert system from Advanced, brings you peace of mind that your tall residential building meets the new code of practice recommendations.

Built using our industry-leading MxPro 5 panel technology, EvacGo delivers proven performance, quality and ease of use.

Combining robustness and reliability with speed and simplicity, our evacuation alert system comes in a range of flexible formats with wired, wireless and hybrid options available.

This versatility ensures complete freedom to create the best possible evacuation alert solution, as specified by your local fire and rescue service.

Failing to properly meet new life safety rules is high risk; choosing Advanced leaves nothing to chance.

Building a safer future

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Discover more: advancedco.com | marketing@advancedco.com | +44 (0)345 894 7000

Advanced
The Standard in Fire Systems

Contents

Advanced – Made in the UK. Trusted around the world

At Advanced, we're committed to building a safer future. We create fire protection and life safety solutions that protect people and property in more than 80 countries across the globe.

Our products are shaped by decades of research and development expertise as well as ongoing investment in new technologies. This ensures they provide years of high performance and reliability – for ultimate peace of mind.

Everything we deliver is rigorously tested and approved to exacting quality standards – which is why Advanced products are trusted by customers the world over and synonymous with **quality, performance** and **ease of use**.

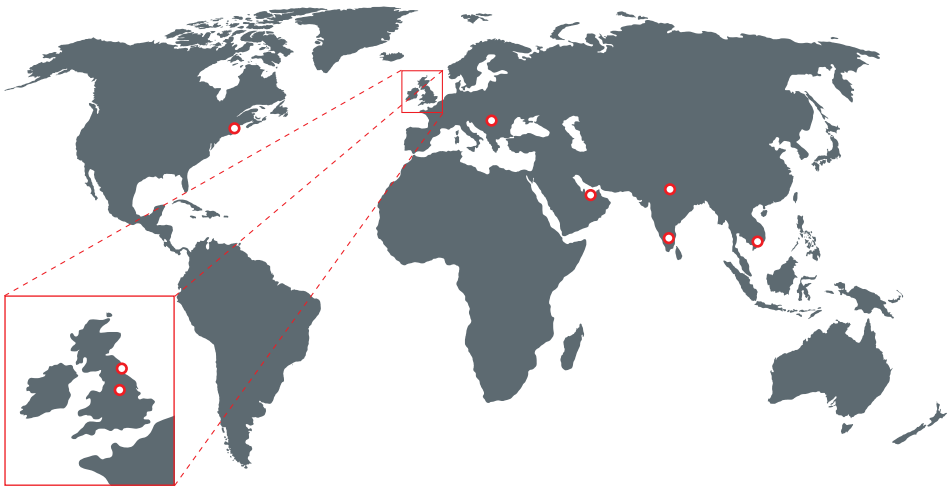
Advanced headquarters, Newcastle, UK

We understand that few fire protection challenges are the same, so as well as our mass-customised ranges, we also offer fully-customised solutions. This flexibility gives you complete control over the functions, format and finish of products to suit your site's unique specification.

We are dedicated to providing excellent service and have an international network of offices and agents to help you access sales support with ease – wherever you are in the world. In addition, our

training and technical services are free of charge to all our direct customers and consistently rated as excellent.

For added reassurance, Advanced is part of the safety sector of FTSE 100 company Halma plc. This global group of life-saving technology companies has a clear purpose to grow a safer, cleaner, healthier future for everyone, every day.



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Welcome to the world of Advanced

The Unbeatable Multiprotocol Solution from Advanced

1. Choose your panel.
2. Choose your detector.
3. Choose your Installer.

Real freedom, Advanced quality.

EN 54-2, 4 & 13

The multiprotocol market is driven by freedom. Specifiers want to choose the best performing panel and match it with the most appropriate detector range.

End users want freedom from expensive maintenance contracts and installers want to work with easy to use systems, free of restrictive agreements.

MxPro is the market-leading solution and delivers performance, choice and real freedom.

MxPro includes two panel ranges, the advanced MxPro 5 and the benchmark MxPro 4. Both come in 1-8 loop formats. MxPro 5 is compatible with Apollo, Argus, Hochiki and Nittan protocols, whilst MxPro 4 is compatible with Apollo and Hochiki protocols. MxPro is simply the best multiprotocol solution available.

We do not lock customers into an installer network. We design our panels to be easy to install, configure and operate, from single panel installations to 200 panel networks. We offer our installers full, free training and the most comprehensive customer support available.

We were the first panel manufacturer to offer a three year guarantee as standard but your MxPro system will last a lifetime. It's a reliable, scaleable solution that can grow as your specification changes and we offer lifetime support.

apollo ARGUS SECURITY HOCHIKI NITTAN

MxPro 5

Our Most Advanced Panel

MxPro 5 is our highest performance, analogue addressable fire panel and is fully approved to EN54 Parts 2, 4 and 13.

FM APPROVED

VdS EN 54-2, 4 & 13

FM APPROVED

MxPro 5 fire panels have been certified by FM Approvals, enabling them to carry the FM APPROVED diamond, one of the most prestigious certifications marks in the world.

MxPro is the result of decades of fire alarm and detection experience and research and development involving installers, specifiers, consultants and end users across the world.

MxPro 5 has been designed to offer industry leading power and performance. It packs more configuration, display, status and control options into its interface as standard than any other Advanced fire panel to date.

MxPro 5 utilises the latest technology making it significantly more powerful than the MxPro 4. Its processing power means it delivers more features than other panels, an advantage it will maintain for years to come.

Every MxPro 5 panel supports Advanced's unbeatable networking capabilities as well as our Dynamix Tools fire panel software making it both easy to use and configure, from the smallest to the largest of sites with the most complicated cause-and effects.

- Advanced diagnostics includes 'scope on board'

Features

- 1, 2, 4 or 8 loop formats
- Up to 254 devices per loop (protocol dependent)
- Up to 2,000 fire detection zones
- Over 200,000 devices per network
- True peer-to-peer networking
- Networkable up to 200 nodes
- Supports intelligent remote terminals, BMS interface, IP Gateway and I/O programmable I/O devices
- Built in oscilloscope, voltage and current meters
- Circuit monitoring from any panel or repeater
- On board or optional remote battery temperature sensor
- Direct USB and RS232 PC connections
- Advanced's simple select and click programming and configuration
- Autolearn and loop detection
- Quick start and protect - a working system after an autolearn
- Peripheral expansion built in
- 20 built-in, fully programmable LEDs
- 4 programmable push buttons
- 5,000 event log entries
- Complete device history from each panel
- 200 programmable false alarm management areas per panel
- Programmable screen logo
- Timed enablement of isolated zones, input and output devices
- Advanced logic delivering huge configuration opportunities
- Backward compatible with MxPro 4 network
- Compatible with Apollo Discovery and XP95, Argus Vega, Hochiki ESP and Nittan Evolution protocols
- Approved to EN54 Parts 2, 4 and 13

Why do I need Part 13?

Part 13 compliance ensures that a fire system will continue to perform to its maximum capability during a fire situation. Increased current in alarm conditions combined with a high resistance connection (e.g. an incorrectly tightened screw in a sounder base), could prevent the sounders and beacons from operating on what would have incorrectly appeared to have been an acceptable 'fault free' installation.

Advanced's MxPro 5 is one of the few EN54 Part 13 approved panels available. MxPro 5 continuously monitors all transmission lines for compliance, checking and reporting faults every minute of every day.

MxPro 5

MxPro 5 - 1 Loop

- Single loop
- Small enclosure
- Maximum 7Ah internal batteries
- 20 programmable LEDs
- Optional programmable key switch
- Programmable Input
- Medium, Large and Deep enclosure options

MxPro 5 - 2 Loop

- One or two loops
- Medium enclosure
- Maximum 12Ah internal batteries
- Up to 50 additional programmable LEDs
- Up to 8 programmable key switches or 4 plus printer
- Plexi-glass door option
- Large and Deep enclosure options

MxPro 5 - 4 Loop

- One to four loops
- Large enclosure
- Maximum 17Ah internal batteries
- Up to 200 additional programmable LEDs
- Up to 8 programmable key switches or 4 plus printer
- Plexi-glass door option
- Deep and Extended enclosure options

MxPro 5 - 8 Loop

- Two to eight loops
- Extended enclosure
- Maximum 45Ah internal batteries
- Up to 200 additional programmable LEDs, 2 x switch cards or mimic
- Up to 8 programmable key switches or 4 plus printer
- Plexi-glass door and external battery box option

MxPro 5 - Integrated Peripheral Bus

- Integrated P-Bus as standard on all MxPro 5 panels
- Up to 32 expansion cards can be added to an MxPro 5 panel
- Peripheral expansion option cards include
  - 4 way relay card
  - 4 way sounder card
  - 10 way monitored input card
  - 10 way relay card
  - Conventional zone card (8 class B or 4 class A zones + 3 programmable relays)
  - 16 way push button/48 LED card
  - 16 way input/48 output (direct drive LED outputs)
  - Fire and Fault Routing/Protection Card
  - Redundant Controller

MxPro 5 - Rack Mount

- Rack mountable control panels
- Additional 16U and 20U high IP55 enclosures
- Rack mount peripheral chassis plate, LED and switch card module options
- Dedicated Mimic door option

MxPro 5 - Remote Terminals

- Four types available including;
  - TouchControl touchscreen with active maps
  - Remote Display Terminal
  - Remote Control Terminal with additional Mute, Silence, Reset and Resound keys
  - Remote Control Terminal with additional LED status indication, four programmable push buttons, Mute, Silence, Reset, Resound, Lamp Test and Evacuate Keys.
- Optional level 2 access enable key switch. (Not TouchControl).
- Integrated standard or fault-tolerant network interface with screen termination point
- Programmable display for up to 2,000 zones along with sector based controls

MxPro 4

The Benchmark Fire Panel

The industry workhorse, performing across the world, in all kinds of applications.

MxPro 4 is approved to EN54 Parts 2 & 4

MxPro 4 is a world-proven multiprotocol fire panel range. Built on Advanced's well established Mx-4000 platform, it's a fire system installed in 100,000s of locations worldwide, from single panel, single loop installations to large multi-panel networks.

The precursor to the MxPro 5, it offers uncomplicated operation as standard and can be expanded with a huge range of peripherals and accessories to meet most needs and configurations.

MxPro 4 utilises a simplified version of our Dynamix Tools fire system software allowing easy set up and management.

BS EN 54-2 & 4

Features

- 1, 2 and 4 loop formats
- Up to 254 devices per loop (Protocol dependent)
- Up to 1,000 fire detection zones
- Up to 203,200 devices per network
- True peer-to-peer networking
- Networkable up to 200 nodes
- Supports intelligent remote terminals, BMS interface, IP Gateway and I/O programmable I/O devices
- Circuit monitoring of local panel circuits
- Autolearn and loop detection
- Simple select and click programming
- 1,000 event log entries
- Simplified logic delivers click and go configuration
- Built in voltage and current meters
- Quick start and protect – a working system after an autolearn
- Single area false alarm management facility
- Programmable logo on screen
- Compatible with Apollo Discovery and XP95, and Hochiki ESP protocols
- Approved to EN54 parts 2 and 4

MxPro 4

MxPro 4 - 1 Loop

- Single loop
- Maximum 7Ah internal batteries
- Aperture for 20 zone fire LEDs
- Optional programmable key switch

MxPro 4 - 2 Loop

- One or two loops
- Maximum 17Ah internal batteries
- Up to 100 additional zone fire LEDs
- Optional access enable key switches

MxPro 4 - 4 Loop

- One to four loops
- Maximum 17Ah internal batteries
- Up to 100 additional zone fire LEDs
- Optional access enable key switches

MxPro 4 - Remote Terminals

- Three types available including;
  - TouchControl touchscreen with active maps
  - Remote Display Terminal
  - Remote Control Terminal with additional Silence, Resound, Reset and Evacuate Keys
- Optional level 2 access enable key switch
- Integrated standard or fault-tolerant network interface with screen termination point
- Programmable display for up to 1,000 zones along with sector based controls

Panel Comparison

	MxPro 4	MxPro 5
Hardware Features		
Display Backlight	Green backlit display Manual contrast adjustment	White backlit display Improved efficiency with programmable dimming options Software driven contrast adjustment via menu
PC Connections	RS232	USB, RS232
Peripheral Expansion Bus	None	Built in as standard on all panels Extended range of P-Bus option cards
Wiring Fault Monitoring	EN54-2: Open circuit, short circuit	EN54-2: Open circuit, short circuit EN54-13: Continuous checking for increases in resistance, (loose terminations), partial shorts etc.
Control Keys	Reset, Mute, Silence/Resound and Evacuate	Mute, Silence, Reset, LED Test, Resound, Evacuate and dedicated More Alarms buttons on control panels and large repeater Configurable keypad repeat keys
Front Panel Push Buttons	None	4 programmable function buttons on control panels and large repeater
Battery Charging	Charger current and voltage can be viewed on local display Built in battery temperature sensor	Charger current, voltage and temperature available from any display on a network Built in or remote battery temperature sensor
Zone LEDs	None as standard Option 20 zone fire red LED card on 1 loop Options for up to 100 red zone fire LEDs on 2-4 loops	20 integral red LED indicators included as standard on control panels and large repeater. Can be assigned to any fire zone or programmable for other uses. Up to 200 additional LEDs with Large, Deep and Extended enclosures. (Up to 50 in Medium enclosure). Options include red, yellow and (bi-colour) red/yellow or green/yellow column format with slide-in labels.
Programmable Input	None	Dedicated monitored switch input as standard on all panels
Programmable Key Switch Inputs	One optional access enable key switch	Built in as standard on all panels
Printer	None	Optional on-board printer. No additional battery pack required. Integral paper feed button. Printer fault conditions displayed on panel, prints customer logo
Standards	EN54-2 and 4	EN54-2, 4 and 13
Software Features		
Independent General Event and Fire Event Logs	Yes – control panels only Not on remote terminals	Yes – on all panels and repeaters Any panel can be configured as a network-wide main event log
Event log entries	1,000 + 500 Fire	5,000 + 500 Fire Additional logging for Investigation delays and any Enable/Disable actions
Timed Disable Options	Permanent only	Permanent or automatic timed re-enablement of any input or output device
Enable/Disable Inputs by zone	• All Inputs • All Inputs except Call Points • Selected Inputs	• All Inputs • Selected Inputs • Only Automatic Inputs • Only Manual Inputs • All Other Inputs
Enable/Disable Outputs	All Local Panel sounders, relays or individual outputs	Disable by Output Purpose Configurable Disable Outputs Menu options include; Sounders, Relays, Beacons, Fire Routing, Fault Routing, Fire Protection, Pager, All or Selected Disablement of outputs across network configurable by sector mask
Real Time Clock	Yes - requires lithium battery	Yes - no lithium battery required
Languages	Supports Western European languages	Supports multiple different character sets (code pages) and languages

	MxPro 4	MxPro 5
Network Features		
Max devices per network	188,800	200,000
Max nodes on network	200	200
Sectors	50	200
Maximum Fire Zones Displayed	250 1 loop 1,000 2 and 4 loop	2,000 on all panels
Programming Features		
Independent Building Areas for False Alarm Management	Single area processing	201 areas per panel Local or global alarm acknowledgement facility
Zone LEDs	No programmable options	All LEDs fully programmable PC configuration presented graphically Primary/secondary activation
Buzzer Options	No programmable options	Smart latch of faults Fault notification can resound daily Service option to Inhibit by time clock
Programmable Input actions	19	22 - including new Supervisory, Fire Routing and Fire Protection confirmed + Alarm Acknowledgement actions
Output Purpose	n/a	Output purpose configurable
Output Ringing styles	20	40 - Output activation priority configurable
Zone Qualifiers	15 categories of zone qualifiers	24 categories of zone qualifiers
Logic statements	500 Logic lines – Programmable options – • Inputs • General Events • Time Clocks	1,500 Logic lines – Programmable options – • Inputs • Any 2 inputs • Zone qualifiers • Any 2 zones • General Events • Time Clocks
General Events	10 categories	36 categories
Blocking Rules	No options	Programmable blocking rules – by General Event or Output Groups
Service and Diagnostic Features		
Device History	n/a	For every device the time and date of the :- • Last activation • Last Test • Last Disable • Last Enable • Date Created
On-board Digital Storage Scope	n/a	Yes
View Panel Voltages and Currents	Available for local panel circuits only	Available from any MxPro 5 repeater or panel on the network.
View Panel Status	Local hardware and panel firmware version	View status of all panel circuits across network Firmware version of all internal hardware and peripheral devices can be viewed at the panel
Firmware updates	Panel firmware flash upgradable	All hardware flash upgradable via panel USB or serial port
Detector Status Information	View drift information at local panel	New Warning state allows any devices nearing drift contamination limits to be identified during routine servicing before a fault level is reached
Service tool	Download device information	Download device information Extract Event log information Download device History View drift (contaminated) status of detectors Network simulation and test facility

Advanced Networking

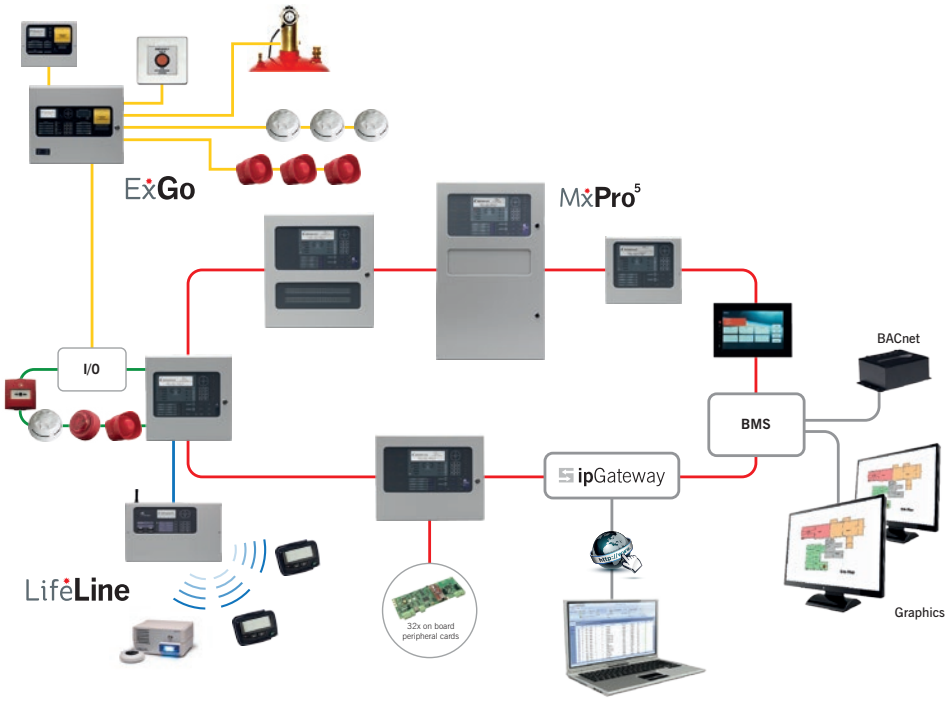
Our high performance network technology works across the MxPro range delivering the easiest setup and best performing fire panel networks available.

Advanced Networking allows all MxPro series control panels, remote terminals and network peripherals to be connected together using standard fire resistant two-core cable. It provides both the benefits of distributed intelligence and reduced installation costs whilst catering for the smallest two-panel network through to the largest 200 panel, wide-area, networked system. The network operates as a true peer-to-peer system and is therefore not reliant on a single 'master' panel to function. It allows information from any input or output device to be passed over the network and displayed on any MxPro control panel or remote terminal as required. Details include Fire, General Alarm, Pre-alarm, Fault, Control Inputs and Disablement as well as analogue values, test instructions and status information.

The zoning facility allows the networked system to share up to 2,000 zones giving non-confusing indication and allowing true peer-to-peer cross panel report, control and site-wide cause and effect functionality.

Simply adding and connecting a network card allows any MxPro control panel or remote terminal to be networked. Autolearning the devices, adding text and assigning the zone numbers allows a working and compliant fire system to be achieved easily. All other nodes on the system will be instantly aware of a panel as soon as it is given a valid network node address, allowing additional panels to be added at any time with a minimum amount of reprogramming.

All panels provide valuable diagnostic and status information and also have the facility to prevent the transmission of fires or faults during commissioning. For more complex systems, our Dynamix Tools software makes for easy configuration of complicated cause-and-effect, whilst all the configuration data is contained within one user-friendly network configuration file.



ipGateway

ipGateway provides a secure, remote internet connection to an Advanced fire system via a standard web browser. No special software is required.

The state of each device on the network is displayed and users can Enable/Disable zones, Enable/Disable devices, Reset, Mute, and Silence/ Resound sounders on the network.

The ipGateway can also be configured to react to events on the network by sending emails or SMS messages to configured recipients.

PC-Net Graphical Control Software

- Highly configurable to specific system
- Our graphical control software monitors the entire fire system through site maps, text and icons
- Users can isolate by selecting icons and devices
- Fire panel controls include Mute, Silence, Re-sound, Reset, Disable/Enable and Evacuate
- Event reports and log with analysis features

Advanced BMS

The BMS Interface allows any MxPro system to interconnect and communicate with independent 3rd party BMS (building management systems) as well as PC based graphical control systems. This allows the fire system to be managed using existing fire or facilities management systems.

Physical connection to the external system is via a serial connection allowing the external BMS/Graphics systems to issue commands and receive information whilst the BMS interface handles all network traffic and event prioritisation. Multiple BMS interfaces can be connected to an AdNet network allowing independent connections to a wide range of control systems.

Dynamix Tools

Dynamix Tools is fire system software designed for users. It is easy to operate, easy to understand and makes the complicated simple.

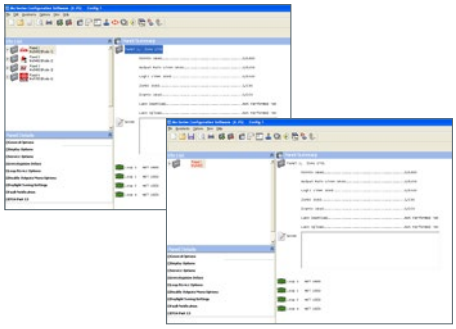
Dynamix Tools comprises a range of specific tools allowing users to achieve what they want quickly and easily, not get bogged down in large, clumsy and complicated software.

Dynamix Tools is being continually developed for the MxPro 5 panel range, adding new features and performance enhancements. Recently these have included comprehensive false alarm management and alarm verification features.

Our position in the global fire industry means we help guide legislation and can implement software changes quickly, keeping our customer systems right up to date. We also listen closely to our customers and often produce features for specific client requirements.

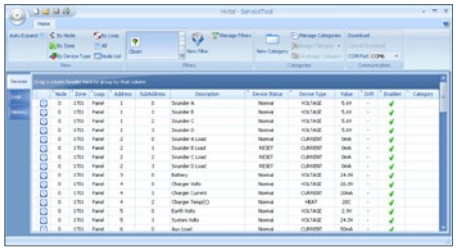
Config Tool

- Full configuration of single panel or network system
- Automatic design check of site configuration
- Assistants menu helps the engineer to easily configure panels
- Import, export information and print configuration reports



Service Tool

- Extract device information and event logs from single or multiple panels
- Device History including last activation, test, enable, disable and date created
- User defined filters allow data to be grouped and searched in many different ways
- View device status, analogue values and drift (contaminated) information
- Network simulation and test feature
- Categorise events and create User defined reports

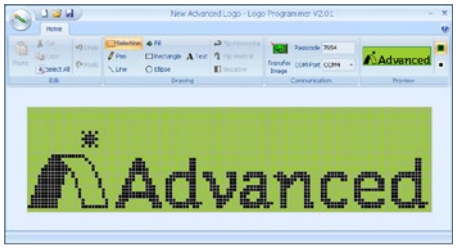


Terminal Tool

- Virtual panel display supports remote interrogation
- Direct USB/RS232 or remote Modem/ IP connection
- Real time status information and control
- Event log can be downloaded

Logo Tool

- Allows the installer's logo to be displayed on the panels graphical LCD display during Normal Operation
- Uploads standard bitmap images
- Tool allows creation of logos
- JPG and GIF images can be imported



Map App

- Used to easily add site maps to TouchControl touch screen repeater
- Can use any illustration from a photo to a line drawing, isometric or plan.
- Simply draw hotspots onto drawing to add fire zone
- Export to microSD card to add to TouchControl RCT

TouchControl

Touchscreen. Remote Control Terminal. Active Maps & Zone Plans.

TouchControl is Advanced's innovative new remote control terminal and repeater.

Easily installed, its HD display enhances any architectural environment and takes system control and monitoring to the next level.

Features:

- **Attractive, low-profile HD display**
  10" screen enhances prestigious environments.
- **Easy Slide-in Installation**
  Two-part slide in assembly for quick first fix and final install.
- **Cost Minimising**
  It's a stand alone unit, you don't add cost to the fire panel with a compromised touchscreen.
- **Easily Configured**
  Fully active remote control terminal and network device almost immediately after installation.
- **Interactive Maps and Zone Plans**
  Easily added, using any diagram via our Map App.
- **'At a Glance' System Status**
  Unique interface allows easy monitoring and management of zones and devices.
- **Complete Control**
  Three level access to all the controls you'd find on an Advanced RCT via an easy to use interface.
- **Customisable Screen**
  Choose from the preloaded background screens or add your own including installer logos. Run reception presentations. Immediately reverts to Fire use when system signal received.

Visit touchcontrol.advancedco.com or contact us now for a demo

Fast Hardware

Simple Software

Intelligent Loop Devices

AlarmCalm

Red Line False Alarms

Complete False Alarm Management.

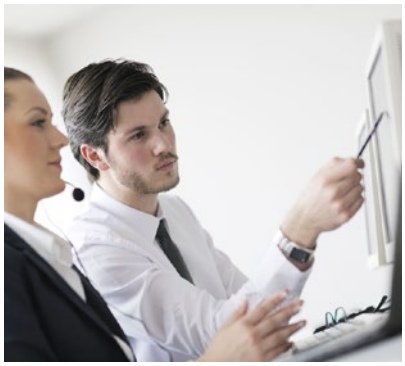
AlarmCalm uses fast hardware, powerful software and intelligent loop devices to build a total solution to false alarms that's powerful and easy to configure.

The AlarmCalm Button is a fully intelligent verification device that is installed on the loop and works with the AlarmCalm software to allow occupants to acknowledge a fire alarm signal locally, if they believe it has been caused by say smoke from toast or shower vapour.

Features:

- **Complete Case-and-Effect**
  In depth control over alarm verification and investigation delays to outputs.
- **Customised Management for any Site**
  Divide your building(s) into Building Areas, each with quickly applied group or unique false alarm management settings. 200 Building Areas per panel or 40,000 per network.
- **Unlimited points**
  No restriction to the number of points in a Building Area and you can configure by point.
- **Global Acknowledgement**
  Panel inputs can be programmed to manage verification and output delays.
- **Full Event Log**
  All verification and output delays recorded in panel event logs.
- **Flexible Verification**
  Set verification by Building Area, day/night, on or off, change verification times, verification by second device of device mode change.
- **Multiple Verification Inputs and Outputs**
  Inputs can include optical, heat and multisensors, callpoints and AlarmCalm Button or other input modules. Outputs can be sounders, beacons and relays etc. Sounder ring styles can be configured.
- **Failsafe Operation**
  Total control over verification times. Users can only extend Verification once. Set max number of areas in Verification before full Fire is signaled.
- **Easy Management of Outputs**
  Output delays are handled in exactly the same way as Verifications, making set up very simple.

Visit alarmcalm.advancedco.com or contact us now for a demo



Advanced360

Highly-Rated Customer Support. In Person and Online.

Advanced360 offers total customer care from a staff of industry experts and engineers.

Support can cover help specifying a system or during installation or maintenance. Advanced360 also delivers full, free-of-charge installer training, online and telephone support and system and fault modeling services. It's advanced, end-to-end fire system support, free to all customers.

Lifetime Support Portals

For as long as you are an Advanced customer, you will receive personalised support via Advanced360. Services include:

- **Technical Support**
  Open and view support tickets and see full support history.
- **Training**
  View and book training slots. Download your certificates at any time.
- **Software**
  Download software and save software packages by installation/site.
- **Literature**
  Manuals, specifications and technical information etc all available for download.
- **Product Demos**
  Book a demo and request brochures, literature and technical information.
- **Approved Partner Certificates**
  Available for order and download.
- **Warranty Certificates**
  Download warranty certs for your sites. Include your company details for end users. Request marketing and PR support for interesting sites.

Sign up now at advancedco.com

AdSpecials

The Best Custom Build in the Industry.

Advanced's special engineering team develops unique interfaces and panel solutions to specific customer requirements.

Solutions can include mimic panels, special enclosures, environmental protection, high specification control units, third party system monitors, interfaces and control units and 8+ loop panels in a variety of enclosures.

The AdSpecials team can manage the whole process from specification and design to manufacture and delivery and will project manage the process so deadlines are maintained.

Contact us now to discuss your requirements

Project Leadership

The quality, performance and ease-of-use of Advanced's fire systems means we are a supplier of choice to fire and facilities professionals globally.

Our systems hold global approvals and can scale from single panel, single loop to huge, multi-loop, high-speed networks covering vast areas.

We are specified and installed in some of the most prestigious and challenging locations in over 60 countries worldwide.

Visit www.advancedco.com for more info.

MxPro Parts list

MxPro 5 Fire Control Panels

Product Code	Description
	MxPro 5 Fire Control panels (Apollo/Hochiki Protocol)
	MxPro 5 - 1 Loop Panels
MX-5101	1 Loop fire panel in small enc.
MX-5101M	1 Loop fire panel in medium enc.
MX-5101L	1 Loop fire panel in large enc.
MX-5101D	1 Loop fire panel in large-deep enc.
MX-5101R	1 Loop 19" rack mount FACP
	MxPro 5 - 2 Loop Panels
MX-5201	1-2 Loop fire panel c/w 1 loop card in medium enc.
MX-5201L	1-2 Loop fire panel c/w 1 loop card in large enc.
MX-5201D	1-2 Loop fire panel c/w 1 loop card in large-deep enc.
MX-5201R	1-2 Loop 19" rack mount FACP c/w 1 loop card
MX-5202	1-2 Loop fire panel c/w 2 loop cards in medium enc.
MX-5202L	1-2 Loop fire panel c/w 2 loop cards in large enc.
MX-5202D	1-2 Loop fire panel c/w 2 loop cards in large-deep enc.
MX-5202R	1-2 Loop 19" rack mount FACP c/w 2 loop cards
	MxPro 5 - 4 Loop Panels
MX-5401	1-4 Loop fire panel c/w 1 loop card in large enc.
MX-5401D	1-4 Loop fire panel c/w 1 loop card in deep enc.
MX-5401R	1-4 Loop 19" rack mount FACP c/w 1 loop card
MX-5401E	1-4 Loop fire panel c/w 1 loop card in extended enc.
MX-5402	1-4 Loop fire panel c/w 2 loop cards in large enc.
MX-5402D	1-4 Loop fire panel c/w 2 loop cards in deep enc.
MX-5402R	1-4 Loop 19" rack mount FACP c/w 2 loop cards
MX-5402E	1-4 Loop fire panel c/w 2 loop cards in extended enc.
MX-5403	1-4 Loop fire panel c/w 3 loop cards in large enc.
MX-5403D	1-4 Loop fire panel c/w 3 loop cards in deep enc.
MX-5403R	1-4 Loop 19" rack mount FACP c/w 3 loop card
MX-5403E	1-4 Loop fire panel c/w 3 loop cards in extended enc.
MX-5404	1-4 Loop fire panel c/w 4 loop cards in large enc.
MX-5404D	1-4 Loop fire panel c/w 4 loop cards in deep enc.
MX-5404R	1-4 Loop 19" rack mount FACP c/w 4 loop card
MX-5404E	1-4 Loop fire panel c/w 4 loop cards in extended enc.
	MxPro 5 - 8 Loop Panels
MX-5802	2-8 Loop fire panel c/w 2 loop cards. Standard network
MX-5803	2-8 Loop fire panel c/w 3 loop cards. Standard network
MX-5804	2-8 Loop fire panel c/w 4 loop cards. Standard network
MX-5805	2-8 Loop fire panel c/w 5 loop cards. Standard network
MX-5806	2-8 Loop fire panel c/w 6 loop cards. Standard network
MX-5807	2-8 Loop fire panel c/w 7 loop cards. Standard network
MX-5808	2-8 Loop fire panel c/w 8 loop cards. Standard network
MX-5802/FT	2-8 Loop fire panel c/w 2 loop cards. Fault-tolerant network
MX-5803/FT	2-8 Loop fire panel c/w 3 loop cards. Fault-tolerant network
MX-5804/FT	2-8 Loop fire panel c/w 4 loop cards. Fault-tolerant network
MX-5805/FT	2-8 Loop fire panel c/w 5 loop cards. Fault-tolerant network
MX-5806/FT	2-8 Loop fire panel c/w 6 loop cards. Fault-tolerant network
MX-5807/FT	2-8 Loop fire panel c/w 7 loop cards. Fault-tolerant network
MX-5808/FT	2-8 Loop fire panel c/w 8 loop cards. Fault-tolerant network
	MxPro 5 Series Fire Control panels (AV Protocol)
	MxPro 5 - 1 Loop V Series Panels
MX-5101V	1 Loop fire panel in small enc.
MX-5101VM	1 Loop fire panel in medium enc.
MX-5101VL	1 Loop fire panel in large enc.
MX-5101VD	1 Loop fire panel in large-deep enc.
MX-5101VR	1 Loop 19" rack mount FACP

Product Code	Description
	MxPro 5 - 2 Loop V Series Panels
MX-5201V	1-2 Loop fire panel c/w 1 loop card in medium enc.
MX-5201VL	1-2 Loop fire panel c/w 1 loop card in large enc.
MX-5201VD	1-2 Loop fire panel c/w 1 loop card in large-deep enc.
MX-5201VR	1-2 Loop 19" rack mount FACP c/w 1 loop card
MX-5202V	1-2 Loop fire panel c/w 2 loop cards in medium enc.
MX-5202VL	1-2 Loop fire panel c/w 2 loop cards in large enc.
MX-5202VD	1-2 Loop fire panel c/w 2 loop cards in large-deep enc.
MX-5202VR	1-2 Loop 19" rack mount FACP c/w 2 loop cards
	MxPro 5 - 4 Loop V Series Panels
MX-5401V	1-4 Loop fire panel c/w 1 loop card in large enc.
MX-5401VD	1-4 Loop fire panel c/w 1 loop card in deep enc.
MX-5401VR	1-4 Loop 19" rack mount FACP c/w 1 loop card
MX-5401VE	1-4 Loop fire panel c/w 1 loop card in extended enc.
MX-5402V	1-4 Loop fire panel c/w 2 loop cards in large enc.
MX-5402VD	1-4 Loop fire panel c/w 2 loop card in deep enc
MX-5402VR	1-4 Loop 19" rack mount FACP c/w 2 loop cards
MX-5402VE	1-4 Loop fire panel c/w 1 loop card in extended enc.
MX-5403V	1-4 Loop fire panel c/w 3 loop cards in large enc.
MX-5403VD	1-4 Loop fire panel c/w 3 loop card in deep enc
MX-5403VR	1-4 Loop 19" rack mount FACP c/w 3 loop card
MX-5403VE	1-4 Loop fire panel c/w 1 loop card in extended enc.
MX-5404V	1-4 Loop fire panel c/w 4 loop card in large enc.
MX-5404VD	1-4 Loop fire panel c/w 4 loop card in deep enc
MX-5404VR	1-4 Loop 19" rack mount FACP c/w 4 loop card
MX-5404VE	1-4 Loop fire panel c/w 1 loop card in extended enc.
	MxPro5 - 8 Loop V Series Panels
MX-5802V	2-8 Loop fire panel c/w 2 loop cards. Standard network
MX-5803V	2-8 Loop fire panel c/w 3 loop cards. Standard network
MX-5804V	2-8 Loop fire panel c/w 4 loop cards. Standard network
MX-5805V	2-8 Loop fire panel c/w 5 loop cards. Standard network
MX-5806V	2-8 Loop fire panel c/w 6 loop cards. Standard network
MX-5807V	2-8 Loop fire panel c/w 7 loop cards. Standard network
MX-5808V	2-8 Loop fire panel c/w 8 loop cards. Standard network
MX-5802V/FT	2-8 Loop fire panel c/w 2 loop cards. Fault tolerant network
MX-5803V/FT	2-8 Loop fire panel c/w 3 loop cards. Fault tolerant network
MX-5804V/FT	2-8 Loop fire panel c/w 4 loop cards. Fault tolerant network
MX-5805V/FT	2-8 Loop fire panel c/w 5 loop cards. Fault tolerant network
MX-5806V/FT	2-8 Loop fire panel c/w 6 loop cards. Fault tolerant network
MX-5807V/FT	2-8 Loop fire panel c/w 7 loop cards. Fault tolerant network
MX-5808V/FT	2-8 Loop fire panel c/w 8 loop cards. Fault tolerant network
	MxPro 5 Series Fire Control panels (Nittan Evolution Protocol)
	MxPro 5 - 1 Loop N Series Panels
MX-5101N	1 Loop fire panel in small enc.
MX-5101NM	1 Loop fire panel in medium enc.
MX-5101NL	1 Loop fire panel in large enc.
MX-5101ND	1 Loop fire panel in large-deep enc.
MX-5101NR	1 Loop 19" rack mount FACP
	MX-5200N Series panels
MX-5201N	1-2 Loop fire panel c/w 1 loop card
MX-5201NL	1-2 Loop fire panel c/w 1 loop card in large enc.
MX-5201ND	1-2 Loop fire panel c/w 1 loop card in large-deep enc.
MX-5201NR	1-2 Loop 19" rack mount FACP c/w 1 loop card
MX-5202N	1-2 Loop fire panel c/w 2 loop cards
MX-5202NL	1-2 Loop fire panel c/w 2 loop cards in large enc.
MX-5202ND	1-2 Loop fire panel c/w 2 loop cards in large-deep enc.
MX-5202NR	1-2 Loop 19" rack mount FACP c/w 2 loop cards

MxPro Parts list

Product Code	Description
	MX-5400N Series panels
MX-5401N	1-4 Loop fire panel c/w 1 loop card in large enc.
MX-5401ND	1-4 Loop fire panel c/w 1 loop card in deep enc.
MX-5401NR	1-4 Loop 19" rack mount FACP c/w 1 loop card
MX-5401NE	1-4 Loop fire panel c/w 1 loop card in extended enc.
MX-5402N	1-4 Loop fire panel c/w 2 loop cards in large enc.
MX-5402ND	1-4 Loop fire panel c/w 2 loop card in deep enc.
MX-5402NR	1-4 Loop 19" rack mount FACP c/w 2 loop cards
MX-5402NE	1-4 Loop fire panel c/w 1 loop card in extended enc.
MX-5403N	1-4 Loop fire panel c/w 3 loop cards in large enc.
MX-5403ND	1-4 Loop fire panel c/w 3 loop card in deep enc.
MX-5403NR	1-4 Loop 19" rack mount FACP c/w 3 loop card
MX-5403NE	1-4 Loop fire panel c/w 1 loop card in extended enc.
MX-5404N	1-4 Loop fire panel c/w 4 loop card in large enc.
MX-5404ND	1-4 Loop fire panel c/w 4 loop card in deep enc.
MX-5404NR	1-4 Loop 19" rack mount FACP c/w 4 loop card
MX-5404NE	1-4 Loop fire panel c/w 1 loop card in extended enc.

	MX-5800N Series panels
MX-5802N	2-8 Loop fire panel c/w 2 loop cards. Standard network
MX-5803N	2-8 Loop fire panel c/w 3 loop cards. Standard network
MX-5804N	2-8 Loop fire panel c/w 4 loop cards. Standard network
MX-5805N	2-8 Loop fire panel c/w 5 loop cards. Standard network
MX-5806N	2-8 Loop fire panel c/w 6 loop cards. Standard network
MX-5807N	2-8 Loop fire panel c/w 7 loop cards. Standard network
MX-5808N	2-8 Loop fire panel c/w 8 loop cards. Standard network
MX-5802N/FT	2-8 Loop fire panel c/w 2 loop cards. Fault tolerant network
MX-5803N/FT	2-8 Loop fire panel c/w 3 loop cards. Fault tolerant network
MX-5804N/FT	2-8 Loop fire panel c/w 4 loop cards. Fault tolerant network
MX-5805N/FT	2-8 Loop fire panel c/w 5 loop cards. Fault tolerant network
MX-5806N/FT	2-8 Loop fire panel c/w 6 loop cards. Fault tolerant network
MX-5807N/FT	2-8 Loop fire panel c/w 7 loop cards. Fault tolerant network
MX-5808N/FT	2-8 Loop fire panel c/w 8 loop cards. Fault tolerant network

	MxPro 5 Remote Terminals
MX-5010	Remote display terminal (RDT). Standard network
MX-5010/FT	Remote display terminal (RDT). Fault tolerant
MX-5020	Remote control terminal (RCT) small. Standard network
MX-5020/FT	Remote control terminal (RCT) small. Fault tolerant
MX-5030	Remote control terminal (RCT) large. Standard network
MX-5030/FT	Remote control terminal (RCT) large. Fault tolerant

	Touch Control
TOUCH-10	Touch-screen terminal (standard network)
TOUCH-10/FT	Touch-screen terminal (fault-tolerant network)
TOUCH-10-SBB	Touch-screen terminal - surface back box

	Peripheral Expansion Network Node NEW
MXP-545	PENN - (standard network)
MXP-545/FT	PENN - (fault-tolerant network)

Product Code	Description
	MxPro 5 Peripherals
Note; Additional Peripherals listed under MxPro4 / MxPro 5 Universal Peripherals	
MXP-501	Remote battery temperature sensor
MXP-502	Loop driver card - Apollo, Hochiki, Argus, Vega
MXP-567	Loop driver card - Nittan
MXP-503 *	Network card - standard
MXP-505	Sounder (pt13) active EOL
MXP-506	Routing termination card
MXP-507 *	2-way relay card
MXP-509 *	Network card - fault tolerant
MXP-512 *	Printer assembly
MXS-509	Spare paper roll for Mxp-512 printer
MXP-532 *	Routing / protection interface
MXP-536 *	P-BUS 8-way conventional zone card
MXP-537 *	P-BUS 10-way switch input card
MXP-538	P-BUS 16-way switch (form factor) module 16 switches, 3 integrated, programmable LED's per switch (red, yellow, green)
MXP-539	P-BUS MIMIC driver card (16 input + 48 output) 16 switch inputs and 48 LED driver outputs. Supports up to 5 Mxp-052 10 relay output modules
MXP-547 *	ESPA pager interface
** Add F - for fitted*	

	MxPro5 AlarmCalm
MXP-541A-002	AlarmCalm button w buzzer (Apollo)
MXP-541V-002	AlarmCalm button w buzzer (Argus)

	MxPro 5 LED Indication
MXP-513M-050RD *	50 Zone fire (red) - medium enc
MXP-513M-050RY *	25 Zone fire (red) + fault (yel) - medium enc.
MXP-513M-050YL *	50 Zone fault (yel) - medium enc.
MXP-513L-050RD *	50 Zone fire (red) - large enc
MXP-513L-050RY *	25 Zone fire (red) + fault (yel) - large enc.
MXP-513L-050YL *	50 Zone fault (yel) - large enc.
MXP-513L-100RD *	100 Zone fire (red) - large enc.
MXP-513L-100RY *	50 Zone fire (red) + fault (yel) - large enc.
MXP-513L-100YL *	100 Zone fault (yel) - large enc.
MXP-513L-200RY *	200 Zone - large enc (red/yel)
MXP-513L-050CRY *	50 Zone column format - large enc (red/yel)
MXP-513L-050CRYG *	50 Zone column format - large enc. (30 x red/yel - 20 grn/yel)
MXP-513-050RD *	50 Zone fire (red) - extended enc.
MXP-513-050RY *	25 Zone fire (red) + fault (y) - extended enc.
MXP-513-050YL *	50 Zone fault (yel) - extended enc.
MXP-513-100RD *	100 Zone fire (red) - extended enc.
MXP-513-100RY *	50 Zone fire (red) + fault (y) - extended enc.
MXP-513-100YL *	100 Zone fault (yel) - extended enc.
MXP-513-200RY *	200 Zone - extended enc. (red/yel)
MXP-513-050CRY *	50 Zone column format - extended enc. (red/yel)
MXP-513-050CRYG *	50 Zone column format - extended enc. (30 x red/yel - 20 grn/yel)
** Add F - for fitted*	

	MxPro5 Modems
MXP-528	Modem card (24V)
MXP-528F	Modem card (24V) - fitted*
MXP-028-BX	Modem card (24V) - boxed
** Can be fitted to a medium, large or extended enclosure only*	

Product Code	Description
	MxPro 5 Key Switches
MXP-511	Access enable key switch
MXP-511F	Access enable key switch - fitted
MXP-516	2-POS key switch (trapped)
MXP-516F	2-POS key switch (trapped) - fitted
MXP-517	2-POS key switch (untrapped)
MXP-517F	2-POS key switch (untrapped) - fitted
MXP-515	3-POS key switch (trapped)
MXP-515F	3-POS key switch (trapped) - fitted
MXP-518-001	Access enable key switch for 5010/5020
MXP-518-001F	Access enable key switch for 5010/5020 - fitted
MXP-518-002	Access enable key switch for 5030
MXP-518-002F	Access enable key switch for 5030 - fitted
MXP-519	2-POS key switch (Mom - trapped)
MXP-519F	2-POS key switch (Mom - trapped) - fitted

	MxPro 5 Spares
MXS-501 *	Spare single loop base card c/w PSU (no loop cards) **Add V for AV protocol, N for Evolution*
MXS-502 *	Spare two loop base card c/w PSU (no loop cards) **Add V for AV protocol*
MXS-503 *	Spare four loop base card c/w PSU (no loop cards) **Add V for AV protocol*
MXS-504	Spare display card
MXS-506	Spare MX-5010 card only
MXS-506/FT	Spare MX-5010 card only - fault-tolerant
MXS-507	Spare MX-5020 card only
MXS-507/FT	Spare MX-5020 card only - fault-tolerant
MXS-508	Spare MX-5030 card only
MXS-508/FT	Spare MX-5030 card only - fault-tolerant
MXS-511	Spare access enable key switch (Lorlin style)
MXS-516	Spare 2-position key switch - trapped (Lorlin style)
MXS-517	Spare 2-position key switch - un-trapped (Lorlin style)
MXS-511-KEY	Spare Mxp-511 access enable key
MXS-518	MX-5000 spare kits
MXS-519	MX-5000 rack mount spare kit
MXS-520	MX-5000 remote terminal spares kit
MXS-521	MX-5000 battery leads
MXS-522	MX-5000 rack mount battery leads
MXS-5-FP-S	Spare fascia plate and membrane - small
MXS-5-FP-ML	Spare fascia plate and membrane - medium / large

	MxPro 5 Flushing Bezels
MXM-501	Semi-flushing bezel - small enc.
MXM-502	Semi-flushing bezel - medium enc.
MXM-503	Semi-flushing bezel - large enc.
MXM-509	Semi-flushing bezel - MX-5030 RCT - large
MXM-521	Semi-flushing bezel - MX-5010 / 5020
MXM-536	Semi-flushing bezel - extended enc.

	MxPro 5 Plexi glass (Lexan) Door - Retro-fit
MXM-507	Glazed door kit - large enclosure
MXM-507Z	Glazed door kit (double aperture) - large enc.
MXM-508	Glazed door kit - medium enclosure
MXM-508Z	Glazed door kit (double aperture) - medium enc.
MXS-505	Spare key - MxPro 5 glazed door
MXM-538-D1	Glazed door kit with zone aperture - extended enc.
MXM-538-D2	Glazed door kit with 2 x glazed apertures - extended enc.
MXM-538-D3	Glazed door kit with mimic aperture - extended enc.

Product Code	Description
	MxPro 5 Enclosures
MXM-504	Medium termination enc.
MXM-505	Large termination enc.
MXM-506	Large-deep termination enc.
MXM-516	Medium battery (18ah) / utility enc.
MXM-517	Large battery (18ah) / utility enc.
MXM-518	Deep utility enc.
MXM-519	Chassis mounting plate for utility enc. (3 cards)
MXM-546	MX-5000 deep battery (45ah) enc.
MXM-522-BB	Small enc. - spare back box
MXM-522-D1	Small enc. - spare door
MXM-523-BB	Medium enc. - spare back box
MXM-523-D1	Medium enc. - spare door
MXM-523-D2	Medium enc. - spare door (c/w zone aperture)
MXM-524-BB	Large enc. - spare back box
MXM-524-D1	Large/deep enc. - spare door
MXM-524-D2	Large/deep enc. - spare door (c/w zone aperture)
MXM-524-D3	Large/deep enc. - spare door (c/w 2 x switch apertures)
MXM-524-D4	Large/deep enc. - mimic door with single aperture
MXM-524-D5	Large/deep enc. - blank door
MXM-525-BB	Deep enclosure - spare back box
MXM-530	Cable clamp
MXM-531	Medium document enc.
MXM-532	Large document enc.
MXM-533	Modem/ESPA/BMS interface enc.
MXM-537-BB	Extended enc. - back box
MXM-537-BP	Extended enc. - Blank plate for zone LED aperture
MXM-537-D1	Extended enc. - spare door
MXM-537-D2	Extended enc. - spare panel door with mimic aperture
MXM-543-BB	Mx-5010/5020 - spare back box
MXM-544-BB	Mx-5030 - spare back box
MXM-543-D1	Mx-5010/5020 - spare panel cover
MXM-543-D2	Mx-5010/5020 - spare panel cover + k/s app
MXM-544-D1	Mx-5030 - spare panel cover
MXM-543-D2	Mx-5030 - spare panel cover + k/s app

	MxPro 5 Special Finishes
MXM-501-SSB	Semi-flushing bezel - small enc. stainless steel brushed
MXM-501-SSM	Semi-flushing bezel - small enc. stainless steel mirrored
MXM-502-SSB	Semi-flushing bezel - medium enc. stainless steel brushed
MXM-502-SSM	Semi-flushing bezel - medium enc. stainless steel mirrored
MXM-503-SSB	Semi-flushing bezel - large enc. stainless steel brushed
MXM-503-SSM	Semi-flushing bezel - large enc. stainless steel mirrored
MXM-509-SSB	Semi-flushing bezel - RCT large. Stainless steel brushed
MXM-509-SSM	Semi-flushing bezel - RCT large stainless steel mirrored
MXM-521-SSB	Semi-flushing bezel - MX-5010 / 5020 stainless steel brushed
MXM-521-SSM	Semi-flushing bezel - MX-5010 / 5020 stainless steel mirrored
MXM-522-D1-SSB *	Small enc. - spare door. Stainless steel brushed
MXM-522-D1-SSM	Small enc. - spare door. Stainless steel mirrored
MXM-523-D1-SSB *	Medium enc. - spare door. Stainless steel brushed
MXM-523-D1-SSM	Medium enc. - spare door. Stainless steel mirrored
MXM-523-D2-SSB *	Medium enc. - spare door (c/w zone aperture). Stainless steel brushed
MXM-523-D2-SSM	Medium enc. - spare door (c/w zone aperture). Stainless steel mirrored
MXM-524-D1-SSB *	Large/deep enc. - spare door. Stainless steel brushed
MXM-524-D1-SSM	Large/deep enc. - spare door. Stainless steel mirrored
MXM-524-D2-SSB *	Large/deep enc. - spare door (c/w zone aperture). Stainless steel brushed

MxPro Parts list

Product Code	Description
MXM-524-D2-SSM	Large/deep enc. - spare door (c/w zone aperture). Stainless steel mirrored
MXM-543-D1-SSB	MX-5010/5020 - panel cover. Stainless steel brushed
MXM-543-D1-SSM	MX-5010/5020 - panel cover. Mirror polished
MXM-543-D2-SSB	MX-5010/5020 - panel cover + KS Ap. Stainless steel brushed.
MXM-543-D2-SSM	MX-5010/5020 - panel cover + KS Ap. Mirror polished
MXM-544-D1-SSB	MX-5030 RCT - panel cover. Stainless steel brushed.
MXM-544-D1-SSM	MX-5030 RCT - panel cover. Mirror polished
MXM-544-D2-SSB	MX-5030 RCT - panel cover + KS Ap. Stainless steel brushed
MXM-544-D2-SSM	MX-5030 RCT - panel cover + KS Ap. Mirror polished
MXM-524-BB-SSB	Spare large back box for use w/SS door (MW334E)
MXM-523-BB-SSB	Spare medium back box for use w/SS door (MW334E)
MXM-522-BB-SSB	Spare small back box for use w/SS door (MW334E)
MXM-525-BB-SSB	Spare deep back box for use w/SS door (MW334E)
** Add F - fitted (includes Silver back box & hinge strip)*	

	MxPro 5 Rack Mount Enclosure
MXM-510-16U	IP55 19" Rack mount enclosure - 16U high
MXM-510-20U	IP55 19" Rack mount enclosure - 20U high
MXM-510-KL	CAM key-lock kit for outer door
MXM-510-BS	19" Rack mount - battery shelf
MXM-510-BS1	19" Rack mount - battery shelf lower
MXM-510-CP	19" Rack mount - chassis plate
MXP-513R-050RD	19" Rack mount 4U LED card - 50 zone fire (red)
MXP-513R-050RY	19" Rack mount 4U LED card - 50 zone fire/flt (r/y)
MXP-513R-050YL	19" Rack mount 4U LED card - 50 zone flt (yel)
MXP-513R-100RD	19" Rack mount 4U LED card - 100 zone fire (red)
MXP-513R-100RY	19" Rack mount 4U LED card - 100 zone fire/flt (r/y)
MXP-513R-100YL	19" Rack mount 4U LED card - 100 zone fault (yellow)
MXP-513R-200RY	19" Rack mount 4U programmable LED card - 200 zone (red/yel)
MXP-513R-050CRY	19" Rack mount 4U programmable LED card - 50 zone column format (red/yel)
MXP-513R-050CRYG	19" Rack mount 4U programmable LED card 50 zone column format (30 x red/yel - 20 x grn/yel)
MXP-514	MxPro 5 rack AC filter card
MXM-511-1U	19" Rack mount blanking plate - 1U
MXM-511-2U	19" Rack mount blanking plate - 2U
MXM-511-3U	19" Rack mount blanking plate - 3U
MXM-511-4U	19" Rack mount blanking plate - 4U
MXM-511-6U	19" Rack mount blanking plate - 6U
MXM-511-1U-TOP	19" Rack mount blanking plate - 1U-TOP
MXM-512	19" Rack mount blanking LED plate - 4U
MXM-513-BB	19" Rack mount back box - 6U
MXM-513-BP	19" Rack mount switch / LED blank plate - 6U
MXM-513-D1	19" Rack mount door D1 blank - 6U
MXM-513-D2	19" Rack mount door D2 LED - 6U
MXM-513-D3	19" Rack mount door D1 c/w aperture - 6U
MXM-513-FP	19" Rack mount fascia plate blank - 6U
MXM-513-MF	19" Rack mount switch / LED mounting frame - 6U
MXM-514-BB	19" Rack mount back box - 8U
MXM-514-D1	19" Rack mount door D1 c/w aperture - 8U
MXM-514-FP	19" Rack mount fascia plate blank - 8U

Product Code	Description
MXM-515-6U	19" Rack mount chassis plate - 6U
MXM-515-8U	19" Rack mount chassis plate - 8U
MXM-535-D1	19" Rack mount 13U hinged door (accepts 9 x MXP-538 switch cards or blank plates)

MxPro 4 / MxPro 5 Universal Peripherals

	Network Boosters and Convertors
MXP-030	Standard network booster/isolator (DIN-rail module)
MXP-631-MM	Ad-Net / fibre optic converter multi-mode
MXP-631-SM	Ad-Net / fibre optic converter single-mode
MXP-542	24VDC - 24VDC convertor / isolator (for use with Mxp-631 Fibre network convertors and MxPro 5)

	Mimic Driver Cards, Indicators & Network I/O Controllers
MXP-020-100	100 way remote LED mimic driver (un-boxed)
MXP-020-100/FT	Fault tolerant 100-way remote LED mimic driver (un-boxed)
MXP-045	50-way network I/O controller (un-boxed)
MXP-045/FT	50 way fault-tolerant network I/O controller (un-boxed)
MXS-026	High intensity red LED & 600mm lead for Mxp-020 / 027 & 045
MXS-026-YEL	High intensity yellow LED & 600mm lead for Mxp-020 / 027 & 045
MXS-026-GRN	High intensity green LED & 600mm lead for Mxp-020 / 027 & 045
MXP-052	Mimic driven 10-way relay output card
MXP-052-DIN	Mimic driven 10-way relay output card in din-rail carrier
MXS-031-2T	2-Position key switch trapped for Mxp-045
MXS-031-2U	2-Position key switch un-trapped for Mxp-045
MXS-031-3U	3-Position key switch un-trapped for Mxp-045

	P-Bus Expansion Cards
MXP-034 (F)*	Peripheral bus - 4-way sounder card
MXP-034-BXP	Peripheral bus - 4-way sounder card with 4A PSU (boxed)
MXP-035(F)*	Peripheral bus - 4-way relay card
MXP-035-BXP	Peripheral bus - 4-way relay card with 1.5A PSU (boxed)
** Add F - for fitted (except Mx-4100, Mx-5100)*	

	EN54-4 'Approved' Power Supply Units
MXP-549	1.5A EN54-4 PSE & battery charger
MXP-550	3A EN54-4 PSE & battery charger
MXP-550/D	3A EN54-4 PSE & battery charger. Deep enc.
MXP-551	5A EN54-4 PSE & battery charger
MXP-551/D	5A EN54-4 PSE & battery charger. Deep enc.
MXP-049	1.5A EN54-4 PSU & charger (boxed - 7Ah battery capacity)
MXP-050-001	3A EN54-4 PSU & charger (boxed - 7Ah battery capacity)
MXP-050-002	3A EN54-4 PSU & charger (boxed - 17Ah battery capacity)
MXP-051	5A EN54-4 PSU & charger (boxed - 17Ah battery capacity)
MXP-051/D	5A EN54-4 PSU & charger (boxed - 38Ah battery capacity)

	MxPro Input and Output Cards
MXP-046	Damper interface module (Apollo protocol)
MXP-046-BX1	Damper interface module - boxed (Apollo protocol)
MXP-053	2-way input stretch / latch module

Product Code	Description
	MxPro Interfaces
MXP-510-BX	BMS / Graphics I/F (boxed)
MXP-510-BX/FT	BMS / Graphics I/F (boxed) fault tolerant
MXP-510	BMS / Graphics I/F (card only)
MXP-510/FT	BMS / Graphics I/F (card only) fault tolerant
MXP-547-BX	ESPA Pager interface (boxed)
MXP-554-BX	IP Gateway (boxed)
MXP-554-BX/FT	IP Gateway (boxed) fault tolerant
MXP-554	IP Gateway (card only)
MXP-554/FT	IP Gateway (card only) fault tolerant
MXP-642	Commander- BACnet / Modbus (IP) interface (standard/basic) **
MXP-642C	Commander- BACnet / Modbus (IP) interface (configured) **
23-PSU/250	Power supply for commander 12VDC 2.5A
** Add F - fitted (except Mx-4100, Mx-5100). ** Requires Mxp-510 BMS Interface*	

	Dynamix Tools PC Software
See "Cables & Connectors" section for spare and USB compatible upload / download leads	
PC-NET-003	MxPro configuration software & lead
PC-NET-003-USB	MxPro configuration software & USB upload/download lead
PC-NET-004	MxPro remote dial-up software (virtual panel)
PC-NET-005-L1	Graphical control software* standard version up to 3 panels
PC-NET-005-L2	Graphical control software* standard version up to 15 panels
PC-NET-005-L2p	Graphical control software* premium version up to 15 panels
PC-NET-005-L3	Graphical control software* standard version up to 200 panels
PC-NET--005-L3p	Graphical control software* premium version up to 200 panels
PC-NET-005-SWM	Smart watch module
PC-NET-005-SWM6	Smart watch module (4-6 panel)
PC-NET-005-SWM15	Smart watch module (7-15 panel)
PC-NET-005-SWM4R	Smart watch module - 4 inputs
PC-NET-005-SCU	Smart cube unit
PC-NET-05-L1R-L2R	Dongle upgrade L1R - L2R
PC-NET-05-L2R-L3R	Dongle upgrade L2R to L3R
PC-NET-05-L2R-L2P	Dongle upgrade L2R to L2P
PC-NET-05-L2P-L3P	Dongle upgrade L2P to L3P
PC-NET-05-L3R-L3P	Dongle upgrade L3R to L3P
PC-NET-007	MxPro logo programming software
PC-NET-015	MxPro service tool software
** requires Mxp-510 BMS interface*	

	Cables & Connectors (Upload/Download Leads)
UP-001	RS232 9-way to 3-way plug in connector (MX upload/ download lead)
UP-006	USB upload /download lead for MX config software

Product Code	Description
	MxPro 4 Fire Control Panels (Apollo/Hochiki Protocol)
	MxPro 4 - 1 Loop panels
MX-4100	1 Loop fire panel (no loop driver required)
	MxPro 4 - 2 Loop panels
MX-4200	1-2 Loop fire panel (no loop cards)
MX-4201	1-2 Loop fire panel c/w 1 loop card
MX-4202	1-2 Loop fire panel c/w 2 loop cards
	MxPro 4 - 4 Loop panels
MX-4400	1-4 Loop fire panel (no loop cards)
MX-4401	1-4 Loop fire panel c/w 1 loop card
MX-4402	1-4 Loop fire panel c/w 2 loop cards
MX-4403	1-4 Loop fire panel c/w 3 loop cards
MX-4404	1-4 Loop fire panel c/w 4 loop cards
	MxPro 4 Loop Drivers
MXP-002	Loop driver for MX-4400/4200 (Apollo or Hochiki protocol)

	MxPro 4 Series Remote Terminals
MX-4010	Remote display terminal with standard network interface, 24V DC
MX-4020	Remote control terminal with standard network interface, 24V DC
MX-4010/FT	Remote display terminal with fault-tolerant network interface, 24V DC
MX-4020/FT	Remote control terminal with fault-tolerant network interface, 24V DC

	MxPro 4 Network Cards
MXP-003(F)*	Standard network card
MXP-009(F)*	Fault tolerant network card
** Add F - fitted to a Mx-4100, Mx-4200 or Mx-4400*	

	MxPro 4 Zonal LED Indication
MXP-024(F)*	20 Zone LED card for Mx-4100 - fitted
MXP-013-050F	50 zone LED card for Mx-4200/4400/4800 - fitted
MXP-013-050	50 zone LED card for Mx-4200 /4400 with door and label (retro-fit)
MXP-013-100F	100 zone LED card for Mx-4200/4400/4800 - fitted
MXP-013-100	100 zone LED card for Mx-4200/4400 with door and label (retro-fit)
** Add F - for fitted*	
Note; 20 zone card cannot be fitted with an onboard printer.	

	MxPro 4 Series Printers
MXS-014	Spare shrink wrap battery pack for Mxp-012 printer
MXS-008	Spare paper roll for Mxp-012 printer (pack of 10)
** Add F - for fitted (**to a Mx-4200D or Mx-4400D only)*	
Note: onboard printer cannot be fitted with a 20 zone LED card.	

	MxPro 4 Modem & Pager Interface
MXP-028 (F)*	Modem card (24V)
MXP-028-BX	Modem card (24V) boxed
MXP-047 (F) *	ESPA Pager interface
** Add F - for fitted to Mx-4200/4400/4800*	

	MxPro 4 Key Switches
MXP-011	Access enable key switch assembly
MXP-011F	Access enable Key switch assembly - fitted
** Add F - for fitted*	

MxPro Parts list

Product Code	Description
	MxPro 4 Mounting Bezels
MXM-001	Semi-flushing bezel for Mx-4100
MXM-002	Semi-flushing bezel for Mx-4200/Mx-4400
MXM-008	Semi-flushing bezel for Mx-4010/Mx-4020
** Add F - for fitted*	
	MxPro 4 Enclosures, blanking plates and spare doors
MXM-018	Spare back-box for Mx-4100
MXM-018-002	Spare back-box for Mx-4100 without transformer
MXM-017	Spare back-box for Mx-4200/Mx-4400
MXM-030	Spare back-box for Mx-4010/Mx-4020
MXM-028	Termination enc. - 1-4 loop panel
MXM-040	Spare enc. c/w door for Mx-4200/Mx-4400
MXM-049	Spare lid for Mx-4100
MXM-047	Spare door for Mx-4200/Mx-4400
MXM-047-001	Spare door (double aperture) for Mx-4200/Mx-4400
MXM-031	Blanking plate for lower apeture on Mx-4200/Mx-4400 door
MXM-045	Spare lid for Mx-4010/4020

	MxPro 4 Spares
MXS-001	Spare Mx-4100 single loop base card
MXS-002 (N) (V)*	Spare Mx-4200 1 - 2 loop base card (*Add N for Nittan Evolution or V for AV protocol)
MXS-003 (N) (V)*	Spare Mx-4400 1 - 4 loop base card (*Add N for Nittan Evolution or V for AV protocol)
MXS-004	Spare Mx-4000 graphic display card
MXS-005	Spare power supply unit for Mx-4400
MXS-006	Spare power supply unit for Mx-4200
MXS-008	Spare paper roll for Mxp-012 printer (pack of 10)
MXS-009-050	Spare 50 zone LED card
MXS-009-100	Spare 100 zone LED card
MXS-010	BMS/graphics network interface card
MXS-011	Spare panel door key
MXS-012	Spare access enable key
MXS-013	Spare panel lock and key
MXS-019	8-way input /output card (Hochiki protocol)
MXS-021	4-way sounder splitter card
MXS-024	20 Zone LED Card (PCB only)
MXS-025	5A Sounder booster card
MXS-027	Local 100 zone mimic driver card
MXS-028	Spare peripheral fault tolerant network interface
MXS-029	Spare 10-way earthing block for Mx-4200/Mx-4400/ Mx-4800
MXS-034	2-way pluggable lead for key switch input card
MXS-030	Non-illuminated push button + 450mm long 2-way cable
MXS-030-R	Illuminated (red) push button + 450mm long 2-way cable
MXS-030-G	Illuminated (green) push button + 450mm long 2-way cable
MXS-038-xxx	20-way ribbon cable (xxx = 320, 550, 650mm)
MXS-039-xxx	Cable, 2-way plug to plug (xxx = 320, 550, 650mm)
MXS-049	Spare 24V 1.5A EN54-4 PSU and battery charger card
MXS-050	Spare 24V 3A EN54-4 PSU and battery charger card
MXS-051	Spare 24V 5A EN54-4 PSU and battery charger card
MXS-055	Spare key for Mxm-059-001 Lexan door kit (alternate key)
MXS-056	Spare lock and key for Mxm-059-001 Lexan door kit (alternate key)
MXS-057	Spares kit for Mx-4200/Mx-4400
MXS-058	Spare transformer assembly for Mx-4100

Advanced

Go

The powerful, flexible, single-loop fire panel

Designed to be fast to fit, quick to configure and easy to use, Go saves install time whilst bringing you complete peace of mind that your single-panel site has the highest levels of fire protection.

Offering cost-effective access to popular premium features from our MxPro 5 range in a simpler, non-networkable format, Go provides powerful protection for a wide range of smaller sites.

Packed with future-proof technology and flexible features – including false alarm management, built-in zonal LEDs and a handy service tool – Go's ready to become your Go-to!

Creating a safer future

Advanced – made in the UK. Trusted around the world.

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www.nationalbimlibrary.com/advanced-electronics-ltd

A **Halma** company

SSD4471 [Edition 12]

For an:

Automatic Sprinkler Fire Protection System including Oscillating Monitors, UV IR Detection System and Sprinkler Water Supplies at Tom White Waste, Coventry.

Argus Fire Protection Company Limited

Hendglade House
46 New Road
Stourbridge
DY8 1PA
West Midlands
United Kingdom

telephone *01384 376256*
email *b.smith@argusfire.co.uk*
internet *www.argusfire.co.uk*

LPS 1048-1 Approved Sprinkler Contractor
Certificate No. ASC-005

Project	Tom White Waste, Coventry	
Customer	**FSL Associates**	
Argus Ref	1345-BDS	
Date	31.10.16	Revision 0
Author	Ben Smith	
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CONTENTS

Section 1 Introduction to Argus Fire Protection Company Limited

ARGUS is one of the UK's leading independent Loss Prevention Certification Board (LPCB) approved designers and installers of Fixed Fire Protection and Detection Systems, specialising in full turnkey packages from initial design concept through to end-user training and servicing. We offer a wide range of Fixed Fire Protection systems such as Automatic Sprinklers, Deluge Water Spray, Water Mist, Expanding Foam, Inert Gas Suppression Systems (CO2, Argonite and FM200), as well as the allied Fire Detection and Fire Alarm Systems

ARGUS has vast experience and knowledge of providing many Fire System applications, including:-

- Offices, Commercial Buildings, Retail Stores, Shopping Centres
- Sport & Leisure Facilities, Stadiums, Hotels, Libraries, Schools
- Hospitals, Care Homes, Government Buildings, Airports, MOD Facilities
- Warehouses, Manufacturing Plants, Power Generation, Petrochemical Facilities

ARGUS is based in Stourbridge in the West Midlands and was established in 1982, and predominantly operates in the UK, Europe and the Middle East.

ARGUS are accredited for quality and competency through certifications by British Standards (ISO 9001:2000) and have LPCB listing under their **LPS 1048** – 1: issue 4 scheme as a level 4 Approved Sprinkler Contractor and their **LPS 1014**:issue 5 as an approved contractor for Fire Detection and Alarm Systems. All works are carried out to the highest standards.

ARGUS Health & Safety Management system is also accredited to OHSAS 18001 standards and approved by National Britannia under their SAFEcontractors Health & Safety Scheme.

ARGUS Senior Management have sat on the council of the British Automatic Fire Sprinkler Association (BAFSA), the UK's leading trade association for water based active fire protection systems, and played a leading role on their Technical, Training and Marketing committees. www.basa.org.uk.

ARGUS is the ***preferred*** fire engineering contractor across many public and commercial market sectors.

Section 2 Proposed Scope of Work

We propose to provide the following based on the enquiry information and recent emailed correspondence. Within section 20 of this offer are sketches identifying what we have included for which will assist with reading our scope of works.

- Extend the sprinkler Tank Infill Pipework from an assumed above ground flanged connection (by the water authority/main contractor) located next to the proposed sprinkler water storage tank.
- Provide a new water storage tank having a capacity of 1148m³.
- Provide a GRP Pump house.
- Provide 3no. New LPC approved Horizontal End Suction Sprinkler Fire Pump Sets (3 Half Duty Diesels)
- Provide Pump-house Pipework and Valves / Controls
- 1 No. 200mm Wet Sprinkler Alarm Valve
- Sprinkler protection to building main roof structure designed to provide 33.0mm/min over a 300m² area (see sketch 1)
- Open head sprinkler protection to above the main feed designed to provide 10.0mm/min (see sketch 2).
- Open head sprinkler protection to the end bay bunkers on the picking building designed to provide 10.0mm/min (also see sketch 2 & 5)
- Sprinkler protection directly above the conveyors in the picking building designed to provide 10.0mm/min (see sketch 3 & 5).
- Provide 3 Oscillating Water Monitors to discharge 1500l/min at 7.0bars for the process building (see sketch 4 & 5).
- Provide a single knock Apollo UV/IR detection system to operate the open head system above the main feed conveyor, this will have a motorised valve which opens when the signal off the UV/IR System received (see sketch 6).
- Provide a single knock Apollo UV/IR detection system to operate the open head system at the end bay bunker next to the picking line, this will have a motorised valve which opens when the signal off the UV/IR System received (see sketch 6).
- Provide a single knock Apollo UV/IR detection system to operate the two monitors for the intake area in the process building and a UV/IR detection system to operate the single monitor for the free standing storage area in the process building (see sketch 6).

- A manual override push button facility to activate the drencher / monitors manually.
- Trace heating and lagging to the process building internal sprinkler and monitor pipework and the tank infill and suction pipework (shown as a separate price).

General

We will also provide:

- Programme indicating Pre-construction, Drawings, Builders works, Technical Submission, Testing & Commissioning
- Quality Plan
- Method Statements and Risk Assessments
- As installed record drawings and wiring diagrams
- Operating and maintenance manual
- Certification as appropriate
- Staff training & Handover
- Spares and accessories

Clarifications and Notes

We have based our price on the following documents:-

- Blue Southern render sketch.
- Kiverco drawing no. 3278S-TWW Installed Plant.
- Sketch showing incoming tank supply, tank and pump house location received 21.10.16.
- Steelwork drawings reference 13020A_7A and 13020A_6A.
- Email sent to FSL and Tom White Waste 11.10.16 reference BS EN 12845 and how we calculate the sprinkler density requirement and reference tank size.
- Email received and sent 11.10.16 reference GRP Housing.
- Email received 04.10.16 reference planning for the sprinkler tank.
- Email received 04.10.16 reference building heights.

General Notes:-

1. Our price is based on details available from the drawings provided with the enquiry and does not take into account any structural detail, plant or services which are not shown on the drawings and about which we do not have full and proper information.

Section 3 Prices, Terms of Payment & Conditions of Contract

Our nett price for design, supply, installation, testing and commissioning of the sprinkler, monitor and UV/IR systems is:-

Sprinkler and Monitor System

UV/IR Detection System

Trace Heating and Lagging

The price is subject to variations in the costs of materials, labour, plant and transport.
This tender shall remain open for acceptance for a period of 90 days from the date hereof.

Programme

To be developed in detail should we be successful.

Terms of Payment

To be discussed and agreed prior to acceptance of an order.

Retention : To be set at 3%, which will be held against all payments to the Sub Contractor throughout the duration of the Sub Contract works. This will reduce to 1.5% on Practical Completion of, and handover of, the Sub Contract works, or section of Sub Contract works (as relevant). The final moiety of retention will become due 12 months after the date of PC and handover of the Sub Contract works, or section of Sub Contract works (as relevant). All retention money will be held as a Trustee Account. The Trustees shall be appointed by us jointly.

Conditions of Contract

Our tender is based upon the Sub Contract between Argus Fire Protection Company Limited and our Employer, being the more relevant at the time of tender of:

SBCSub/G 2011, Standard Building Sub Contract 2011

Conditions of Contract cont'd.....

Or,

DBSub/G 2011, Design and Build Sub Contract 2011

We will not accept any amendments, deletions or alterations of the standard clauses nor the inclusion of additional clauses if their effect is to reduce or restrict our rights or our employer's responsibilities under the standard forms.

Originator : -	Checked : -
SIGNED : Ben Smith *Senior Manager*	SIGNED : Matthew Lincoln *Managing Director*

Section 4 Health & Safety

In order to provide a safe working environment, Argus Fire has a major commitment to Health and Safety for all its employees.

Our Health & Safety Management Systems are approved to OHSAS 18001, and we are also approved by National Britannia under their SAFE contractors Scheme.

All Project Managers and Engineers are trained in Health and Safety awareness, and have attended the IOSH course “Managing Safely” and all have an engineering services skill card (affiliated with CSCS)

Prior to commencing on site the Project Manager/Engineer will produce a detailed method statement and risk assessment. These Health and Safety procedures will be produced in accordance with our approved format, and made specific to the project, where additional risks are identified as a hazard to personnel.

All site operatives would be familiar with our Health and Safety procedures, and seek to enhance our commitment to provide a safe working environment for all.

Health & Safety Manager

Our full time Health & Safety Manager is Mark Hayward :-

☎ 01384 376256 extension 245 / Mobile 07812 011789

Section 5 Design Standards

We are a Loss Prevention Schedule (LPS) 1048:1 Approved Level 4 Sprinkler Installer.
We are authorised by the Loss Prevention Certification Board (LPCB) to design, install and certificate installations to the Loss Prevention Council (LPC) “Rules for Automatic Sprinkler Installations”.
These rules incorporate BSEN 12845 Fixed Fire Fighting systems – Automatic sprinkler systems – Design, installation and maintenance.

The LPCB recommends that specifiers should demand Certificates of Conformity for all sprinkler contracts including extensions and alterations. This will ensure that the work is carried out in accordance with the LPC Rules and LPS 1048 requirements. Please note however for this project we would only be able to issue a LPCB completion certificate as the Monitors and open head systems do not fall in line with these rules and requirements.

Hazard Classification

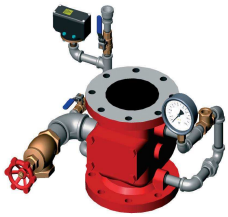
Our Tender is based on protecting the various areas listed below, the design and installation is based on the LPC Rules for Automatic Sprinkler Installations 2015 Incorporating BS EN 12845.

Location	Hazard Class	Design Density of Discharge (mm/min)	Assumed Area of Operation (m2)
Process Building Main Roof	High	33.0mm/min (see Technical Bulletin 234:2015:1)	300
Open head system (operated via a motorised valve) to the feed conveyor and end bunker	High	10.0mm/min	260
Sprinkler protection to picking building directly above the conveyors	Ordinary	5.0mm/min	216

British Standards

Where any of the material or components we supply is covered by a British Standard, then they will conform to that Standard.
Relevant British Standards are : -

- BS EN 10255:2004 : Specification for screwed and socketed steel tubes and tubulars. For plain end steel tubes suitable for welding or for screwing to BS 21:1985 pipe threads.
- BS EN 10216-2 : Specification for carbon steel pipes and tubes with specified room temperature properties for pressure purposes.
- BS 2971: Specification for Class II arc welding of carbon steel pipework for carrying fluids.
- BS EN 10242:1995 :Specification for malleable cast iron and threaded pipe fittings.
- BS 21:1985 : Specification for pipe threads for tubes and fittings where pressure-tight joints are made on the threads (metric dimensions).
- BS EN 1092-1:2007 : Specification for steel flanges.
- BS EN 10143:1993 : Specification for continuously hot-dip zinc coated and iron zinc alloy coated steel of structural qualities: wide strip, sheet/plate and slit wide strip.



Section 6 Fire Water Storage Tank

Sprinkler Tank

We have allowed for extending the existing sprinkler tank to accommodate the new overall capacity of 1148 m3. The new tank height will be 12.99m diameter x 9.367m high to the rim, 10.067m high overall to the top of the ball valve housing, 10.591m to the top of the ladder.

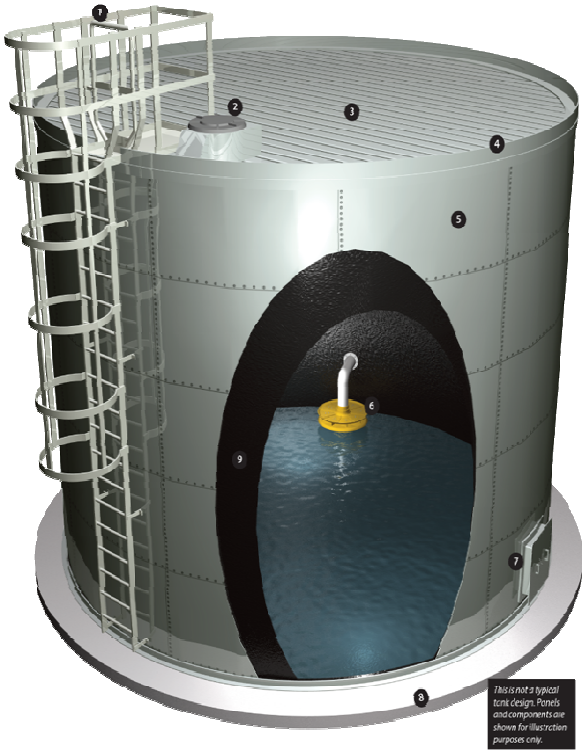
Tank Foundation (by others)

The tank requires a ground bearing capacity of not less than 100kN/m2, (the actual requirement will be determined at design stage) Provided this is available the tank base should consist of a 200mm (minimum) reinforced concrete slab on 100mm consolidated hard-core.
The cost of the ground test and any required ground preparation to be borne by others.
The base must have a smooth float finish and be level to within +/- 5mm.

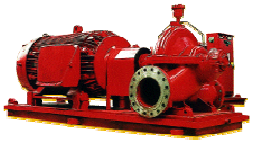
Please note that we will accept no responsibility for damage caused by settlement of the tank foundation.

Tank Liner

A EPDM liner will be installed. The liner is properly secured at the top and around all the tank fittings.



Section 7 Fire Pump Sets



Sprinkler Pumps

We will install Three half duty automatically operated diesel fire pump sets in the sprinkler pump house.

Each Fire Pump would be rated at 7200LPM @ 9.0 BARS.

Diesel Engine Driven Pump Sets

This will have an approved compression ignition direct injection type diesel engine capable of running continuously on full load at site elevation for not less than six hours.

This set will be 'packaged' complete with:

- Water cooling system
- Fuel tank and fuel delivery system
- Fuel and oil filters
- Volt electric starting equipment
- Two sets of batteries, leads and connectors
- Exhaust system and silencer
- Engine mounted instrument panel
- Automatic starting control panel
- Spare parts and tools

Jockey Pump

This will be of the vertical shaft centrifugal type with close-coupled electric motor of such a rating as not to overload at any point on the pump curve from the design flow to shut-off. We will supply the starter.

Pump Controls

The fire pump sets will each be controlled by a pressure switch with adjustment for setting the cut-in pressure. The switches will be arranged to automatically start the pump set in the event of system pressure falling to a pre-determined point. Once any of the pumps are started they will continue running until stopped manually.

The Jockey Pump will be controlled by a pressure switch with adjustment for setting the cut-in and cut-out points. It will compensate automatically for minor fluctuations in system pressure not requiring the operation of the main fire pump sets.

Pump Remote Alarm Panel (RAP)

We will provide a wall mounted alarm panel with stand-by battery and charger to be installed and wired by others in a suitable location. The panel will provide audible and visible warning of the following conditions:-

- Diesel pump on demand
- Diesel pump running
- Diesel pump failed to start

Power Supplies to the Pump House / Pumps (By Others)

The power supply arrangements must conform to those detailed in BS EN 12845 (copies can be obtained from Argus Fire upon request).

Pump house Valves and Pipe Work

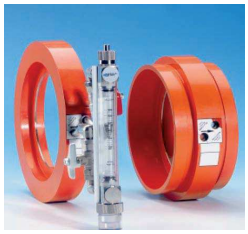
The pump house installation will be complete with all necessary:-

- Isolating valve, with open and shut indicator, on each pump suction connection.

Pump house Valves and Pipe Work cont'd.....

- Isolating valve, with open and shut indicator, and non-return valve on each pump delivery connection.

- Pump test arrangement with isolating and flow control valves, FM approved flow measuring device and outlet pipe work discharging back into the water storage tank.
- Pressure switch and drain arrangement for both automatic and manual operation of the pumps.
- Automatic pump start and test switch arrangement.
- Diesel engine cooling water discharge pipe work (to drain within pump room)
- Automatic sprinkler protection



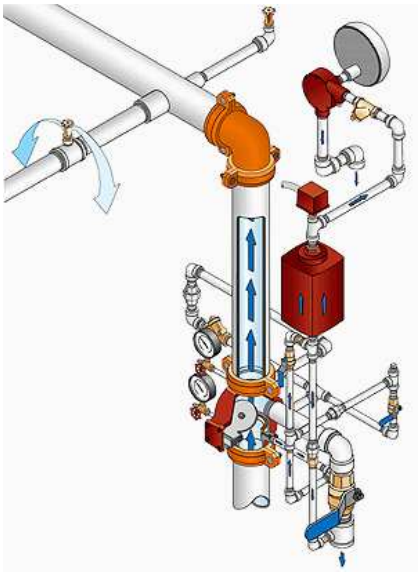
Typical Flow Meter

Section 8 Installation Control Valve Set

Wet Pipe System

We have included for 1 No. LPCB approved Wet Pipe Installation Control Valve Sets, the main components of which are: -

- Stop valve to isolate the pipe work system from below the alarm valve. The valve has an indicator to show whether it is open or shut.
- Alarm valve designed to ring the alarm gong when water flows to the pipe work system from the alarm valve.
- Alarm gong complete with all necessary fittings and pipe work. The gong is driven by a hydraulic motor and sounds a continuous alarm outside the building when the alarm valve trips.
- Volt free water flow pressure alarm switch. The switch is operated by the water flow to the alarm gong and facilitates remote indication of a fire condition.
- 50 mm drain valve and pipe work. This drains the system of water from above the valve. With a suitable orifice plate, it can be used to test the characteristics of the water supply.



- 15 mm test valve and pipe work. This simulates the action of one sprinkler head discharging and thereby activates the alarm valve and gong.
- Two pressure gauges with combined cocks and unions or no – loss connectors. These display the water pressure above and below the alarm valve.
- Leather straps and padlocks to secure the various valves in the required position, e.g., main stop valve and bell line valves ‘open’; main drain and test valves ‘shut.’

Please Note.

The building occupier must maintain the area in which the control valves and the sprinkler installation are located above freezing point at all times to avoid frost damage.

Section 9 Sprinkler Heads

The sprinkler head is the most recognisable and often the most visible part of an installation.

Modern sprinkler heads are:-

- Unobtrusive
- Quick acting
- Efficient at distributing water
- Virtually fault-free
- Low maintenance
- Available in various finishes and colours

We propose to use sprinkler heads which are **LPCB** Approved.

Table indicating Proposed Types of Sprinkler Head

Location	Type	Style	Finish	K-Factor	Photograph
Roof System Process Building	Glass Bulb	Upright	Brass	K160	
Above the main feed conveyor and below the soffit of the end bunker at the end of the picking line.	Glass Bulb	Conventional	Brass	K115	
Above the main conveyor in the picking building.	Glass Bulb	Conventional	Brass	K80	

Note : Photographs for illustration purposes only.

The installed sprinkler may be by an alternative supplier or pattern to that shown.

Section 10 Sprinkler Pipe work, Fittings & Support

Pipe Work

- Above ground pipes 150mm nb and below will be steel to BS 1387, medium weight.
- Above ground pipes 150mm nb and above will be API Schedule 20.

Pipe Joints

- Welding of pre-fabricated pipework will be in accordance with BS 2640
- BS 2971 the Heating and Ventilating Contractor's Association manual. Welding fittings will be seamless steel with wall thickness the same as the pipe to which they are welded.
- Joints made on site for above ground pipe of sizes 50 mm and below will generally be screwed. Screwed fittings will be black malleable iron to BS 143 or BS 1256. Threads on pipe and fittings will be to BS 21. Screwed joints will be sealed with a Water Authority approved jointing compound.
- Joints for above ground pipe of sizes 65 mm and over will be either mechanical couplings or flanged.
- Flanges will be to BS 4504: Part 3.1, Table PN16.

Pipe Supports

All piping will be installed with the supports manufactured, spaced and located in accordance with the design standard.

It is the client's responsibility to establish that the building structure will support the composed load of the fire protection system covered in the proposal.

Argus can provide point loads for the system once the systems are designed but cannot be responsible for the effects on the building structure.

Painting of Sprinkler Pipework (Powder Coat)

All above ground pipe work will be powder coated red finish.

Section 10 cont'd.....

Pipe Sleeves and Fire Stopping

We have excluded providing or installing any pipe sleeves or fire stopping where our pipes pass through walls and floors, as sleeves are not required for a static, cold water fire protection system.

Holes through walls

We have allowed for making holes up to 50mm diameter in non-structural walls. We have presumed holes greater than 50mm diameter or holes in structural walls and floors would be provided by others.

Section 11 Apollo UV / IR Detection System

- Provide a single knock Apollo UV/IR detection system to operate the two open head system areas, these will have motorised valves which open when the signal off the UV/IR System received.
- Provide a single knock Apollo UV/IR detection system to operate the two monitors in the intake area and a UV/IR detection system to operate the monitors for the free standing storage area as discussed at our site meeting
- A manual override push button facility to activate the drencher / monitors manually.

The Intelligent IR² Flame Detector is designed for use in areas where flaming fires may be expected. The detector has two sensors which respond to different IR wavelengths to discriminate between flames and spurious sources of radiation. Applications include aircraft hangars, coal handling and paper manufacturing plants and woodworking environments.

- Sensitive to flickering IR radiation
- Detects through films of oil, dust, water and ice
- Responds to flickering flames, including those invisible to the naked eye
- Compatible with Discovery and XP95 protocols
- Remote optical self-test function

Section 12 Electrical Installation

We have based our proposal on suitable power supplies, terminating in the pump room, being provided by others (requirements can be provided on request).

Our contract would commence from the incoming power supply to the pumphouse, we shall provide and wire :-

- Automatic Fire Pump Start Arrangements
- 1 no. Jockey Pump

We would also wire the various pump alarm signals to a junction box, mounted on an internal wall of the pump house. A RAP (Remote Alarm Panel) will be provided to be located and wired by your site electricians. These signals will need to be picked up via your Fire Alarm contractor.

Section 13 Water Monitors

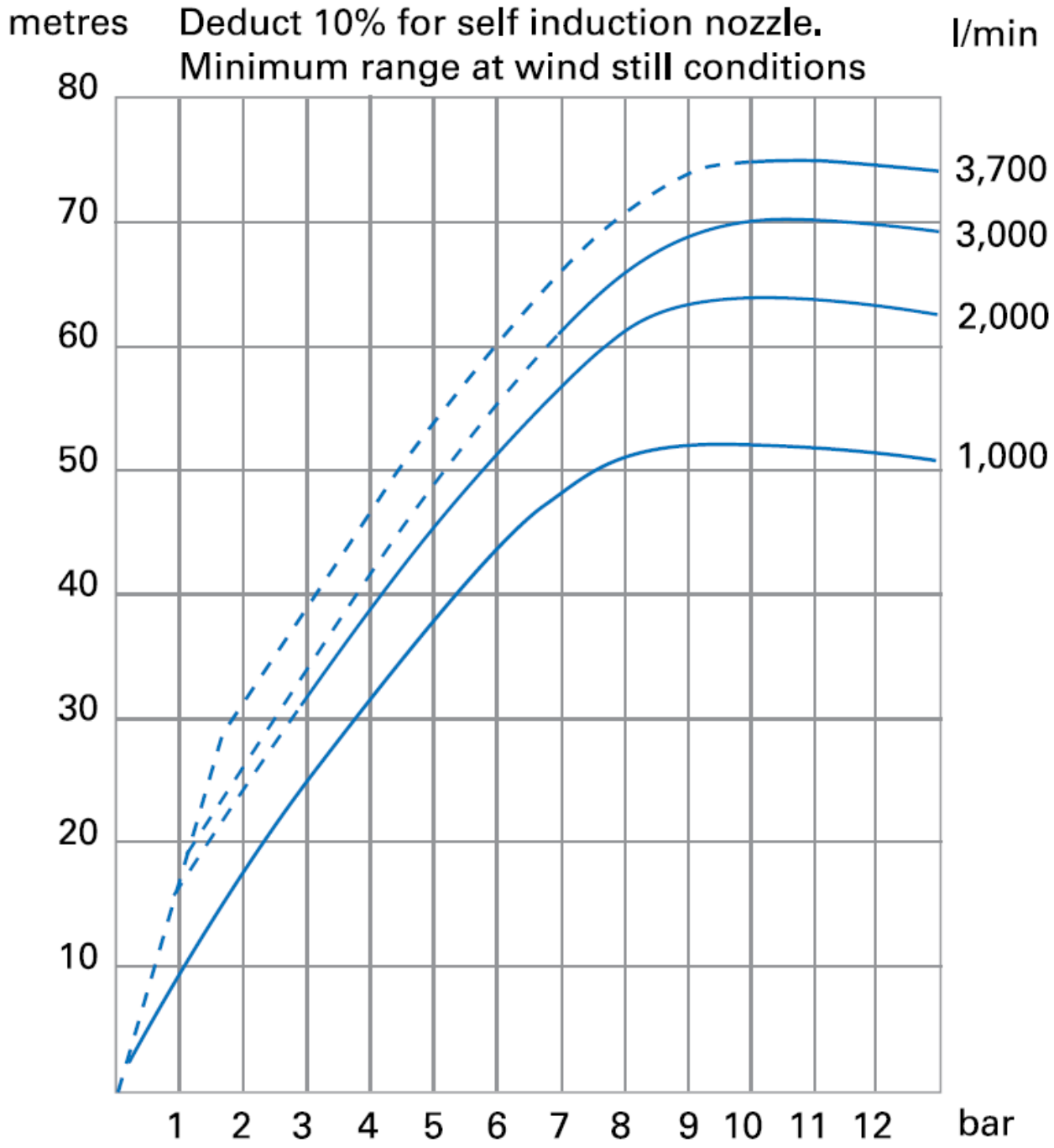
We will provide 3no. Oscillating Water Monitors to discharge 1500l/min at 7.0bars for the process building (see sketch 4 & 5). The calculation has been carried out to allow for two monitors operating simultaneously.

These units are designed for fixed mounting (to your walls/structure), enabling an effective application of the wide flow range optimised jet range and spray patterns. The loose flange allows for easy mounting and adjustment for oscillating area sweep.

The units will be activated via a signal received off the Apollo UV/IR Detector System.

A manual override push button facility will also be provided to activate the monitors manually.

FJM-80 Monitor - Range of Jet



Project	Tom White Waste, Coventry	
Customer	**FSL Associates**	
Argus Ref	1345-BDS	
Date	31.10.16	Revision 0
Author	Ben Smith	
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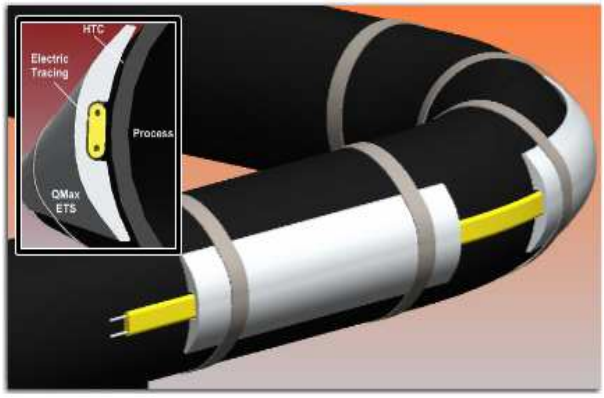
Section 14 Trace Heating and Lagging

We have allowed for the trace heating of the exposed sprinkler tank infill, pump suction pipework and the process building pipework.

The trace heating will consist of a single self-regulating tape controlled by a digi temp thermostat with 10Watts per metre constant wattage with a final covering of H&V Mineral Wool Glass Fibre Sections with all joints sealed. The external pipework will also be PIB wrapped.



Section 15 Spares & Ancillaries

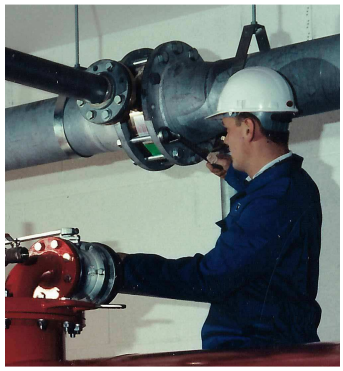
The following ancillary equipment will be provided:-.

Spares cabinet containing a sprinkler spanner and replacement sprinklers.

Location plate fixed to the outside of an external wall near to the main stop valve(s) bearing the words “SPRINKLER STOP VALVE INSIDE”.

Plan of the premises with the position of the main stop valve(s) clearly indicated. It should be fixed within the building where it can be readily seen by firemen or others responding to the alarm.

Section 16 Testing, Commissioning & Maintenance



We will test the system as required by BS EN 12845. Your representative should be at the tests and his signature on a test certificate will confirm a satisfactory test.

We will commission the system and attend at the Client's Insurers proving test and inspection.

We will supply three copies of an Operation and Maintenance Manual together with three sets of 'as installed' drawings and copies of certificates of the completion and testing of the installation.

Section 17 Working Hours & Site Facilities

We have calculated our price on the basis that all works including testing and commissioning will be carried out during normal working hours, i.e., 0800 hours to 1730 hours, Monday to Friday but excluding Public Holidays.

We have not made any allowance for work outside these hours.

We have included for mobile towers and mechanical lifts: we have not included for fixed scaffolding.

.

Please make available, **free of charge, to us;**

- A suitably sized, safe area, immediately adjacent to the workplace for storage of our equipment on site.
- A power supply for hand tools and small cutting machine
- Your welfare and first aid facilities on site for use by our operatives.

Section 18 Exclusions

We have not included in our price the cost of the following works in connection with the installation;

Preliminaries

- Planning Supervisor/Principle Contractor role under CDM
- Application for planning permissions
- Costs associated with Structural calculations for support of pipework from structure.

Water Supplies

- Provision of tank infill connection from a suitable public water supply up to a flanged connection next to the sprinkler tank.
- Any associated civil's or builders works.

Electrical

- Provision of power supplies to the Pump room
- Wiring from the control valve alarm switch and the anti-tamper switches to any alarm equipment (FA company)
- Any Fire Alarm Panel Upgrade costs
- Mains power supplies to any of our equipment

Builders Work

- Construction of base/foundation for water storage tank
- Construction of base and housing for the pumps
- Trenching for below ground pipes, nor backfill & making good.
- Provision of drains at any water discharge point
- Forming and making good holes through walls, floor and roofs for pipework
- Chlorination of any part of the sprinkler installation.

General

- Secondary steelwork for bracketing
- Fire cladding
- Pipe sleeves, fire stopping, and identification bonding.
- Sprinkler protection below/around any services / steelwork to which we have no information.

Work in any other trades unless specifically included elsewhere in the specification.

Section 19 Certification & Insurance

Briefly Detailed below are our current Fire Industry related certification and Insurance details:-

- Loss Prevention Schedule **LPS 1048-1** as a Level 4 Approved Sprinkler Contractor (LPCB Certificate No. ASC-005) Certificate of Installer Approval
- Loss Prevention Schedule **LPS 1014** Requirements for Certificated Fire Detection & Fire Alarms Firms (LPC Certificate No. CFA-148)
- Quality System Registration to ISO 9001:2008 (LPCB Certificate No. 011)
- Occupational Health & Safety Management System Certification
- OHSAS 18001 : 2007 (LPCB Certificate No. 011-HS)

LPS 1048-1 Approved Sprinkler Contractor
Certificate No. ASC-005

☎ For further information regarding our current certification, please contact our head office on 01384 376256

Section 20 Sketches

Advanced

MxPro

The Leading Multiprotocol
Intelligent Fire Panel

Advanced

EvacGo makes meeting BS 8629 easy.

EvacGo, the evacuation alert system from Advanced, brings you peace of mind that your tall residential building meets the new code of practice recommendations.

Built using our industry-leading MxPro 5 panel technology, EvacGo delivers proven performance, quality and ease of use.

Combining robustness and reliability with speed and simplicity, our evacuation alert system comes in a range of flexible formats with wired, wireless and hybrid options available.

This versatility ensures complete freedom to create the best possible evacuation alert solution, as specified by your local fire and rescue service.

Failing to properly meet new life safety rules is high risk; choosing Advanced leaves nothing to chance.

Building a safer future

Advanced – made in the UK. Trusted around the world.

Discover more: advancedco.com | marketing@advancedco.com | +44 (0)345 894 7000

Advanced
The Standard in Fire Systems

Contents

Advanced – Made in the UK. Trusted around the world

At Advanced, we're committed to building a safer future. We create fire protection and life safety solutions that protect people and property in more than 80 countries across the globe.

Our products are shaped by decades of research and development expertise as well as ongoing investment in new technologies. This ensures they provide years of high performance and reliability – for ultimate peace of mind.

Everything we deliver is rigorously tested and approved to exacting quality standards – which is why Advanced products are trusted by customers the world over and synonymous with **quality, performance** and **ease of use**.

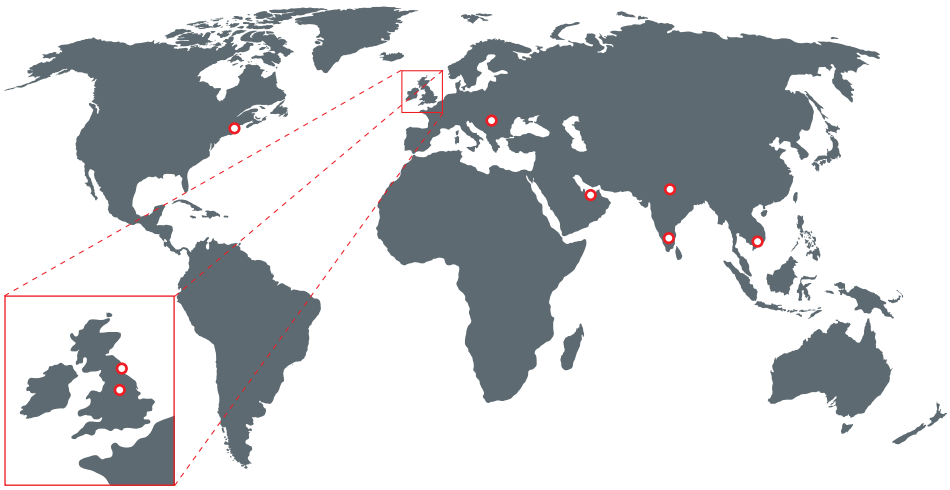
Advanced headquarters, Newcastle, UK

We understand that few fire protection challenges are the same, so as well as our mass-customised ranges, we also offer fully-customised solutions. This flexibility gives you complete control over the functions, format and finish of products to suit your site's unique specification.

We are dedicated to providing excellent service and have an international network of offices and agents to help you access sales support with ease – wherever you are in the world. In addition, our

training and technical services are free of charge to all our direct customers and consistently rated as excellent.

For added reassurance, Advanced is part of the safety sector of FTSE 100 company Halma plc. This global group of life-saving technology companies has a clear purpose to grow a safer, cleaner, healthier future for everyone, every day.



A Halma company

Welcome to the world of Advanced

The Unbeatable Multiprotocol Solution from Advanced

1. Choose your panel.
2. Choose your detector.
3. Choose your Installer.

Real freedom, Advanced quality.

EN 54-2, 4 & 13

The multiprotocol market is driven by freedom. Specifiers want to choose the best performing panel and match it with the most appropriate detector range.

End users want freedom from expensive maintenance contracts and installers want to work with easy to use systems, free of restrictive agreements.

MxPro is the market-leading solution and delivers performance, choice and real freedom.

MxPro includes two panel ranges, the advanced MxPro 5 and the benchmark MxPro 4. Both come in 1-8 loop formats. MxPro 5 is compatible with Apollo, Argus, Hochiki and Nittan protocols, whilst MxPro 4 is compatible with Apollo and Hochiki protocols. MxPro is simply the best multiprotocol solution available.

We do not lock customers into an installer network. We design our panels to be easy to install, configure and operate, from single panel installations to 200 panel networks. We offer our installers full, free training and the most comprehensive customer support available.

We were the first panel manufacturer to offer a three year guarantee as standard but your MxPro system will last a lifetime. It's a reliable, scaleable solution that can grow as your specification changes and we offer lifetime support.

apollo ARGUS SECURITY HOCHIKI NITTAN

MxPro 5

Our Most Advanced Panel

MxPro 5 is our highest performance, analogue addressable fire panel and is fully approved to EN54 Parts 2, 4 and 13.

FM APPROVED

VdS EN 54-2, 4 & 13

FM APPROVED

MxPro 5 fire panels have been certified by FM Approvals, enabling them to carry the FM APPROVED diamond, one of the most prestigious certifications marks in the world.

MxPro is the result of decades of fire alarm and detection experience and research and development involving installers, specifiers, consultants and end users across the world.

MxPro 5 has been designed to offer industry leading power and performance. It packs more configuration, display, status and control options into its interface as standard than any other Advanced fire panel to date.

MxPro 5 utilises the latest technology making it significantly more powerful than the MxPro 4. Its processing power means it delivers more features than other panels, an advantage it will maintain for years to come.

Every MxPro 5 panel supports Advanced's unbeatable networking capabilities as well as our Dynamix Tools fire panel software making it both easy to use and configure, from the smallest to the largest of sites with the most complicated cause-and effects.

- Advanced diagnostics includes 'scope on board'

Features

- 1, 2, 4 or 8 loop formats
- Up to 254 devices per loop (protocol dependent)
- Up to 2,000 fire detection zones
- Over 200,000 devices per network
- True peer-to-peer networking
- Networkable up to 200 nodes
- Supports intelligent remote terminals, BMS interface, IP Gateway and I/O programmable I/O devices
- Built in oscilloscope, voltage and current meters
- Circuit monitoring from any panel or repeater
- On board or optional remote battery temperature sensor
- Direct USB and RS232 PC connections
- Advanced's simple select and click programming and configuration
- Autolearn and loop detection
- Quick start and protect - a working system after an autolearn
- Peripheral expansion built in
- 20 built-in, fully programmable LEDs
- 4 programmable push buttons
- 5,000 event log entries
- Complete device history from each panel
- 200 programmable false alarm management areas per panel
- Programmable screen logo
- Timed enablement of isolated zones, input and output devices
- Advanced logic delivering huge configuration opportunities
- Backward compatible with MxPro 4 network
- Compatible with Apollo Discovery and XP95, Argus Vega, Hochiki ESP and Nittan Evolution protocols
- Approved to EN54 Parts 2, 4 and 13

Why do I need Part 13?

Part 13 compliance ensures that a fire system will continue to perform to its maximum capability during a fire situation. Increased current in alarm conditions combined with a high resistance connection (e.g. an incorrectly tightened screw in a sounder base), could prevent the sounders and beacons from operating on what would have incorrectly appeared to have been an acceptable 'fault free' installation.

Advanced's MxPro 5 is one of the few EN54 Part 13 approved panels available. MxPro 5 continuously monitors all transmission lines for compliance, checking and reporting faults every minute of every day.

MxPro 5

MxPro 5 - 1 Loop

- Single loop
- Small enclosure
- Maximum 7Ah internal batteries
- 20 programmable LEDs
- Optional programmable key switch
- Programmable Input
- Medium, Large and Deep enclosure options

MxPro 5 - 2 Loop

- One or two loops
- Medium enclosure
- Maximum 12Ah internal batteries
- Up to 50 additional programmable LEDs
- Up to 8 programmable key switches or 4 plus printer
- Plexi-glass door option
- Large and Deep enclosure options

MxPro 5 - 4 Loop

- One to four loops
- Large enclosure
- Maximum 17Ah internal batteries
- Up to 200 additional programmable LEDs
- Up to 8 programmable key switches or 4 plus printer
- Plexi-glass door option
- Deep and Extended enclosure options

MxPro 5 - 8 Loop

- Two to eight loops
- Extended enclosure
- Maximum 45Ah internal batteries
- Up to 200 additional programmable LEDs, 2 x switch cards or mimic
- Up to 8 programmable key switches or 4 plus printer
- Plexi-glass door and external battery box option

MxPro 5 - Integrated Peripheral Bus

- Integrated P-Bus as standard on all MxPro 5 panels
- Up to 32 expansion cards can be added to an MxPro 5 panel
- Peripheral expansion option cards include
  - 4 way relay card
  - 4 way sounder card
  - 10 way monitored input card
  - 10 way relay card
  - Conventional zone card (8 class B or 4 class A zones + 3 programmable relays)
  - 16 way push button/48 LED card
  - 16 way input/48 output (direct drive LED outputs)
  - Fire and Fault Routing/Protection Card
  - Redundant Controller

MxPro 5 - Rack Mount

- Rack mountable control panels
- Additional 16U and 20U high IP55 enclosures
- Rack mount peripheral chassis plate, LED and switch card module options
- Dedicated Mimic door option

MxPro 5 - Remote Terminals

- Four types available including;
  - TouchControl touchscreen with active maps
  - Remote Display Terminal
  - Remote Control Terminal with additional Mute, Silence, Reset and Resound keys
  - Remote Control Terminal with additional LED status indication, four programmable push buttons, Mute, Silence, Reset, Resound, Lamp Test and Evacuate Keys.
- Optional level 2 access enable key switch. (Not TouchControl).
- Integrated standard or fault-tolerant network interface with screen termination point
- Programmable display for up to 2,000 zones along with sector based controls

MxPro 4

The Benchmark Fire Panel

The industry workhorse, performing across the world, in all kinds of applications.

MxPro 4 is approved to EN54 Parts 2 & 4

MxPro 4 is a world-proven multiprotocol fire panel range. Built on Advanced's well established Mx-4000 platform, it's a fire system installed in 100,000s of locations worldwide, from single panel, single loop installations to large multi-panel networks.

The precursor to the MxPro 5, it offers uncomplicated operation as standard and can be expanded with a huge range of peripherals and accessories to meet most needs and configurations.

MxPro 4 utilises a simplified version of our Dynamix Tools fire system software allowing easy set up and management.

BS EN 54-2 & 4

Features

- 1, 2 and 4 loop formats
- Up to 254 devices per loop (Protocol dependent)
- Up to 1,000 fire detection zones
- Up to 203,200 devices per network
- True peer-to-peer networking
- Networkable up to 200 nodes
- Supports intelligent remote terminals, BMS interface, IP Gateway and I/O programmable I/O devices
- Circuit monitoring of local panel circuits
- Autolearn and loop detection
- Simple select and click programming
- 1,000 event log entries
- Simplified logic delivers click and go configuration
- Built in voltage and current meters
- Quick start and protect – a working system after an autolearn
- Single area false alarm management facility
- Programmable logo on screen
- Compatible with Apollo Discovery and XP95, and Hochiki ESP protocols
- Approved to EN54 parts 2 and 4

MxPro 4

MxPro 4 - 1 Loop

- Single loop
- Maximum 7Ah internal batteries
- Aperture for 20 zone fire LEDs
- Optional programmable key switch

MxPro 4 - 2 Loop

- One or two loops
- Maximum 17Ah internal batteries
- Up to 100 additional zone fire LEDs
- Optional access enable key switches

MxPro 4 - 4 Loop

- One to four loops
- Maximum 17Ah internal batteries
- Up to 100 additional zone fire LEDs
- Optional access enable key switches

MxPro 4 - Remote Terminals

- Three types available including;
  - TouchControl touchscreen with active maps
  - Remote Display Terminal
  - Remote Control Terminal with additional Silence, Resound, Reset and Evacuate Keys
- Optional level 2 access enable key switch
- Integrated standard or fault-tolerant network interface with screen termination point
- Programmable display for up to 1,000 zones along with sector based controls

Panel Comparison

	MxPro 4	MxPro 5
Hardware Features		
Display Backlight	Green backlit display Manual contrast adjustment	White backlit display Improved efficiency with programmable dimming options Software driven contrast adjustment via menu
PC Connections	RS232	USB, RS232
Peripheral Expansion Bus	None	Built in as standard on all panels Extended range of P-Bus option cards
Wiring Fault Monitoring	EN54-2: Open circuit, short circuit	EN54-2: Open circuit, short circuit EN54-13: Continuous checking for increases in resistance, (loose terminations), partial shorts etc.
Control Keys	Reset, Mute, Silence/Resound and Evacuate	Mute, Silence, Reset, LED Test, Resound, Evacuate and dedicated More Alarms buttons on control panels and large repeater Configurable keypad repeat keys
Front Panel Push Buttons	None	4 programmable function buttons on control panels and large repeater
Battery Charging	Charger current and voltage can be viewed on local display Built in battery temperature sensor	Charger current, voltage and temperature available from any display on a network Built in or remote battery temperature sensor
Zone LEDs	None as standard Option 20 zone fire red LED card on 1 loop Options for up to 100 red zone fire LEDs on 2-4 loops	20 integral red LED indicators included as standard on control panels and large repeater. Can be assigned to any fire zone or programmable for other uses. Up to 200 additional LEDs with Large, Deep and Extended enclosures. (Up to 50 in Medium enclosure). Options include red, yellow and (bi-colour) red/yellow or green/yellow column format with slide-in labels.
Programmable Input	None	Dedicated monitored switch input as standard on all panels
Programmable Key Switch Inputs	One optional access enable key switch	Built in as standard on all panels
Printer	None	Optional on-board printer. No additional battery pack required. Integral paper feed button. Printer fault conditions displayed on panel, prints customer logo
Standards	EN54-2 and 4	EN54-2, 4 and 13
Software Features		
Independent General Event and Fire Event Logs	Yes – control panels only Not on remote terminals	Yes – on all panels and repeaters Any panel can be configured as a network-wide main event log
Event log entries	1,000 + 500 Fire	5,000 + 500 Fire Additional logging for Investigation delays and any Enable/Disable actions
Timed Disable Options	Permanent only	Permanent or automatic timed re-enablement of any input or output device
Enable/Disable Inputs by zone	• All Inputs • All Inputs except Call Points • Selected Inputs	• All Inputs • Selected Inputs • Only Automatic Inputs • Only Manual Inputs • All Other Inputs
Enable/Disable Outputs	All Local Panel sounders, relays or individual outputs	Disable by Output Purpose Configurable Disable Outputs Menu options include; Sounders, Relays, Beacons, Fire Routing, Fault Routing, Fire Protection, Pager, All or Selected Disablement of outputs across network configurable by sector mask
Real Time Clock	Yes - requires lithium battery	Yes - no lithium battery required
Languages	Supports Western European languages	Supports multiple different character sets (code pages) and languages

	MxPro 4	MxPro 5
Network Features		
Max devices per network	188,800	200,000
Max nodes on network	200	200
Sectors	50	200
Maximum Fire Zones Displayed	250 1 loop 1,000 2 and 4 loop	2,000 on all panels
Programming Features		
Independent Building Areas for False Alarm Management	Single area processing	201 areas per panel Local or global alarm acknowledgement facility
Zone LEDs	No programmable options	All LEDs fully programmable PC configuration presented graphically Primary/secondary activation
Buzzer Options	No programmable options	Smart latch of faults Fault notification can resound daily Service option to Inhibit by time clock
Programmable Input actions	19	22 - including new Supervisory, Fire Routing and Fire Protection confirmed + Alarm Acknowledgement actions
Output Purpose	n/a	Output purpose configurable
Output Ringing styles	20	40 - Output activation priority configurable
Zone Qualifiers	15 categories of zone qualifiers	24 categories of zone qualifiers
Logic statements	500 Logic lines – Programmable options – • Inputs • General Events • Time Clocks	1,500 Logic lines – Programmable options – • Inputs • Any 2 inputs • Zone qualifiers • Any 2 zones • General Events • Time Clocks
General Events	10 categories	36 categories
Blocking Rules	No options	Programmable blocking rules – by General Event or Output Groups
Service and Diagnostic Features		
Device History	n/a	For every device the time and date of the :- • Last activation • Last Test • Last Disable • Last Enable • Date Created
On-board Digital Storage Scope	n/a	Yes
View Panel Voltages and Currents	Available for local panel circuits only	Available from any MxPro 5 repeater or panel on the network.
View Panel Status	Local hardware and panel firmware version	View status of all panel circuits across network Firmware version of all internal hardware and peripheral devices can be viewed at the panel
Firmware updates	Panel firmware flash upgradable	All hardware flash upgradable via panel USB or serial port
Detector Status Information	View drift information at local panel	New Warning state allows any devices nearing drift contamination limits to be identified during routine servicing before a fault level is reached
Service tool	Download device information	Download device information Extract Event log information Download device History View drift (contaminated) status of detectors Network simulation and test facility

Advanced Networking

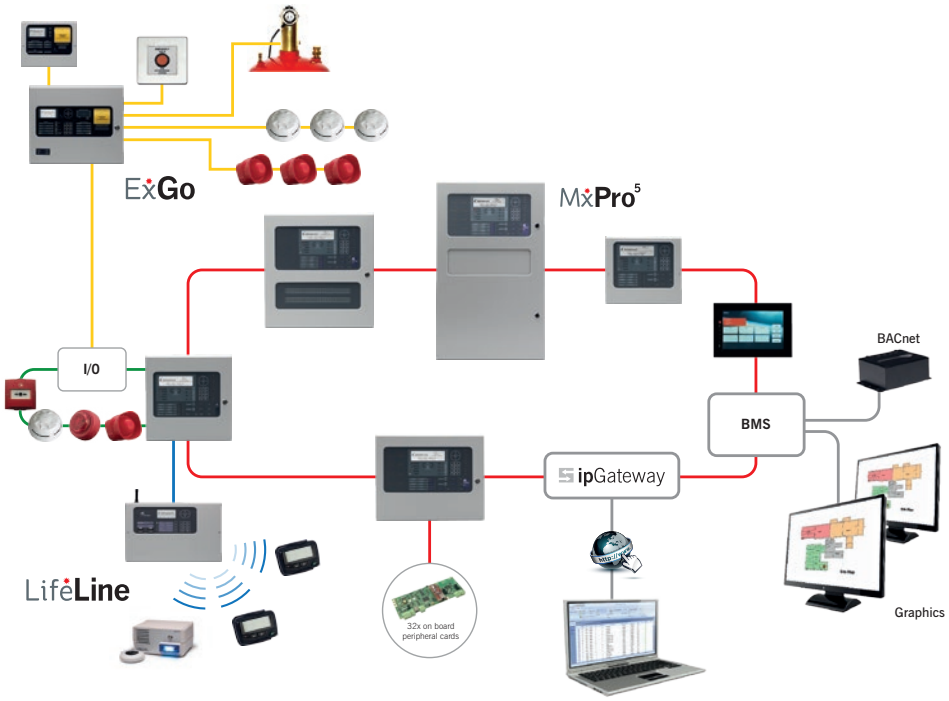
Our high performance network technology works across the MxPro range delivering the easiest setup and best performing fire panel networks available.

Advanced Networking allows all MxPro series control panels, remote terminals and network peripherals to be connected together using standard fire resistant two-core cable. It provides both the benefits of distributed intelligence and reduced installation costs whilst catering for the smallest two-panel network through to the largest 200 panel, wide-area, networked system. The network operates as a true peer-to-peer system and is therefore not reliant on a single 'master' panel to function. It allows information from any input or output device to be passed over the network and displayed on any MxPro control panel or remote terminal as required. Details include Fire, General Alarm, Pre-alarm, Fault, Control Inputs and Disablement as well as analogue values, test instructions and status information.

The zoning facility allows the networked system to share up to 2,000 zones giving non-confusing indication and allowing true peer-to-peer cross panel report, control and site-wide cause and effect functionality.

Simply adding and connecting a network card allows any MxPro control panel or remote terminal to be networked. Autolearning the devices, adding text and assigning the zone numbers allows a working and compliant fire system to be achieved easily. All other nodes on the system will be instantly aware of a panel as soon as it is given a valid network node address, allowing additional panels to be added at any time with a minimum amount of reprogramming.

All panels provide valuable diagnostic and status information and also have the facility to prevent the transmission of fires or faults during commissioning. For more complex systems, our Dynamix Tools software makes for easy configuration of complicated cause-and-effect, whilst all the configuration data is contained within one user-friendly network configuration file.



ipGateway

ipGateway provides a secure, remote internet connection to an Advanced fire system via a standard web browser. No special software is required.

The state of each device on the network is displayed and users can Enable/Disable zones, Enable/Disable devices, Reset, Mute, and Silence/ Resound sounders on the network.

The ipGateway can also be configured to react to events on the network by sending emails or SMS messages to configured recipients.

PC-Net Graphical Control Software

- Highly configurable to specific system
- Our graphical control software monitors the entire fire system through site maps, text and icons
- Users can isolate by selecting icons and devices
- Fire panel controls include Mute, Silence, Re-sound, Reset, Disable/Enable and Evacuate
- Event reports and log with analysis features

Advanced BMS

The BMS Interface allows any MxPro system to interconnect and communicate with independent 3rd party BMS (building management systems) as well as PC based graphical control systems. This allows the fire system to be managed using existing fire or facilities management systems.

Physical connection to the external system is via a serial connection allowing the external BMS/Graphics systems to issue commands and receive information whilst the BMS interface handles all network traffic and event prioritisation. Multiple BMS interfaces can be connected to an AdNet network allowing independent connections to a wide range of control systems.

Dynamix Tools

Dynamix Tools is fire system software designed for users. It is easy to operate, easy to understand and makes the complicated simple.

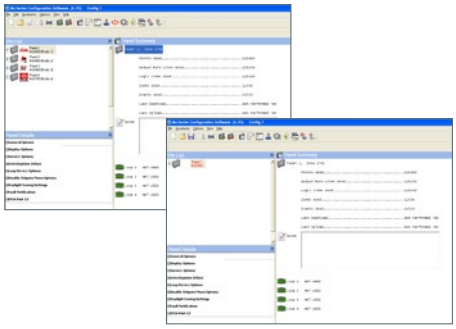
Dynamix Tools comprises a range of specific tools allowing users to achieve what they want quickly and easily, not get bogged down in large, clumsy and complicated software.

Dynamix Tools is being continually developed for the MxPro 5 panel range, adding new features and performance enhancements. Recently these have included comprehensive false alarm management and alarm verification features.

Our position in the global fire industry means we help guide legislation and can implement software changes quickly, keeping our customer systems right up to date. We also listen closely to our customers and often produce features for specific client requirements.

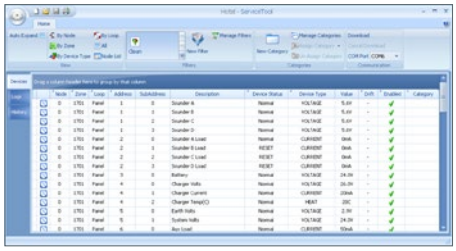
Config Tool

- Full configuration of single panel or network system
- Automatic design check of site configuration
- Assistants menu helps the engineer to easily configure panels
- Import, export information and print configuration reports



Service Tool

- Extract device information and event logs from single or multiple panels
- Device History including last activation, test, enable, disable and date created
- User defined filters allow data to be grouped and searched in many different ways
- View device status, analogue values and drift (contaminated) information
- Network simulation and test feature
- Categorise events and create User defined reports

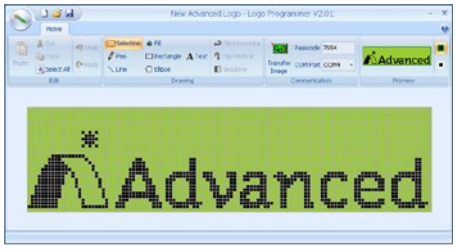


Terminal Tool

- Virtual panel display supports remote interrogation
- Direct USB/RS232 or remote Modem/ IP connection
- Real time status information and control
- Event log can be downloaded

Logo Tool

- Allows the installer's logo to be displayed on the panels graphical LCD display during Normal Operation
- Uploads standard bitmap images
- Tool allows creation of logos
- JPG and GIF images can be imported



Map App

- Used to easily add site maps to TouchControl touch screen repeater
- Can use any illustration from a photo to a line drawing, isometric or plan.
- Simply draw hotspots onto drawing to add fire zone
- Export to microSD card to add to TouchControl RCT

TouchControl

Touchscreen. Remote Control Terminal. Active Maps & Zone Plans.

TouchControl is Advanced's innovative new remote control terminal and repeater.

Easily installed, its HD display enhances any architectural environment and takes system control and monitoring to the next level.

Features:

- **Attractive, low-profile HD display**
  10" screen enhances prestigious environments.
- **Easy Slide-in Installation**
  Two-part slide in assembly for quick first fix and final install.
- **Cost Minimising**
  It's a stand alone unit, you don't add cost to the fire panel with a compromised touchscreen.
- **Easily Configured**
  Fully active remote control terminal and network device almost immediately after installation.
- **Interactive Maps and Zone Plans**
  Easily added, using any diagram via our Map App.
- **'At a Glance' System Status**
  Unique interface allows easy monitoring and management of zones and devices.
- **Complete Control**
  Three level access to all the controls you'd find on an Advanced RCT via an easy to use interface.
- **Customisable Screen**
  Choose from the preloaded background screens or add your own including installer logos. Run reception presentations. Immediately reverts to Fire use when system signal received.

Visit touchcontrol.advancedco.com or contact us now for a demo

Fast Hardware

Simple Software

Intelligent Loop Devices

AlarmCalm

Red Line False Alarms

Complete False Alarm Management.

AlarmCalm uses fast hardware, powerful software and intelligent loop devices to build a total solution to false alarms that's powerful and easy to configure.

The AlarmCalm Button is a fully intelligent verification device that is installed on the loop and works with the AlarmCalm software to allow occupants to acknowledge a fire alarm signal locally, if they believe it has been caused by say smoke from toast or shower vapour.

Features:

- **Complete Case-and-Effect**
  In depth control over alarm verification and investigation delays to outputs.
- **Customised Management for any Site**
  Divide your building(s) into Building Areas, each with quickly applied group or unique false alarm management settings. 200 Building Areas per panel or 40,000 per network.
- **Unlimited points**
  No restriction to the number of points in a Building Area and you can configure by point.
- **Global Acknowledgement**
  Panel inputs can be programmed to manage verification and output delays.
- **Full Event Log**
  All verification and output delays recorded in panel event logs.
- **Flexible Verification**
  Set verification by Building Area, day/night, on or off, change verification times, verification by second device of device mode change.
- **Multiple Verification Inputs and Outputs**
  Inputs can include optical, heat and multisensors, callpoints and AlarmCalm Button or other input modules. Outputs can be sounders, beacons and relays etc. Sounder ring styles can be configured.
- **Failsafe Operation**
  Total control over verification times. Users can only extend Verification once. Set max number of areas in Verification before full Fire is signaled.
- **Easy Management of Outputs**
  Output delays are handled in exactly the same way as Verifications, making set up very simple.

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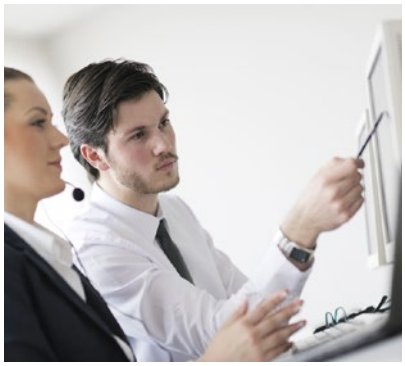

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The Best Custom Build in the Industry.

Advanced's special engineering team develops unique interfaces and panel solutions to specific customer requirements.

Solutions can include mimic panels, special enclosures, environmental protection, high specification control units, third party system monitors, interfaces and control units and 8+ loop panels in a variety of enclosures.

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Contact us now to discuss your requirements

Project Leadership

The quality, performance and ease-of-use of Advanced's fire systems means we are a supplier of choice to fire and facilities professionals globally.

Our systems hold global approvals and can scale from single panel, single loop to huge, multi-loop, high-speed networks covering vast areas.

We are specified and installed in some of the most prestigious and challenging locations in over 60 countries worldwide.

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MxPro Parts list

MxPro 5 Fire Control Panels

Product Code	Description
	MxPro 5 Fire Control panels (Apollo/Hochiki Protocol)
	MxPro 5 - 1 Loop Panels
MX-5101	1 Loop fire panel in small enc.
MX-5101M	1 Loop fire panel in medium enc.
MX-5101L	1 Loop fire panel in large enc.
MX-5101D	1 Loop fire panel in large-deep enc.
MX-5101R	1 Loop 19" rack mount FACP
	MxPro 5 - 2 Loop Panels
MX-5201	1-2 Loop fire panel c/w 1 loop card in medium enc.
MX-5201L	1-2 Loop fire panel c/w 1 loop card in large enc.
MX-5201D	1-2 Loop fire panel c/w 1 loop card in large-deep enc.
MX-5201R	1-2 Loop 19" rack mount FACP c/w 1 loop card
MX-5202	1-2 Loop fire panel c/w 2 loop cards in medium enc.
MX-5202L	1-2 Loop fire panel c/w 2 loop cards in large enc.
MX-5202D	1-2 Loop fire panel c/w 2 loop cards in large-deep enc.
MX-5202R	1-2 Loop 19" rack mount FACP c/w 2 loop cards
	MxPro 5 - 4 Loop Panels
MX-5401	1-4 Loop fire panel c/w 1 loop card in large enc.
MX-5401D	1-4 Loop fire panel c/w 1 loop card in deep enc.
MX-5401R	1-4 Loop 19" rack mount FACP c/w 1 loop card
MX-5401E	1-4 Loop fire panel c/w 1 loop card in extended enc.
MX-5402	1-4 Loop fire panel c/w 2 loop cards in large enc.
MX-5402D	1-4 Loop fire panel c/w 2 loop cards in deep enc.
MX-5402R	1-4 Loop 19" rack mount FACP c/w 2 loop cards
MX-5402E	1-4 Loop fire panel c/w 2 loop cards in extended enc.
MX-5403	1-4 Loop fire panel c/w 3 loop cards in large enc.
MX-5403D	1-4 Loop fire panel c/w 3 loop cards in deep enc.
MX-5403R	1-4 Loop 19" rack mount FACP c/w 3 loop card
MX-5403E	1-4 Loop fire panel c/w 3 loop cards in extended enc.
MX-5404	1-4 Loop fire panel c/w 4 loop cards in large enc.
MX-5404D	1-4 Loop fire panel c/w 4 loop cards in deep enc.
MX-5404R	1-4 Loop 19" rack mount FACP c/w 4 loop card
MX-5404E	1-4 Loop fire panel c/w 4 loop cards in extended enc.
	MxPro 5 - 8 Loop Panels
MX-5802	2-8 Loop fire panel c/w 2 loop cards. Standard network
MX-5803	2-8 Loop fire panel c/w 3 loop cards. Standard network
MX-5804	2-8 Loop fire panel c/w 4 loop cards. Standard network
MX-5805	2-8 Loop fire panel c/w 5 loop cards. Standard network
MX-5806	2-8 Loop fire panel c/w 6 loop cards. Standard network
MX-5807	2-8 Loop fire panel c/w 7 loop cards. Standard network
MX-5808	2-8 Loop fire panel c/w 8 loop cards. Standard network
MX-5802/FT	2-8 Loop fire panel c/w 2 loop cards. Fault-tolerant network
MX-5803/FT	2-8 Loop fire panel c/w 3 loop cards. Fault-tolerant network
MX-5804/FT	2-8 Loop fire panel c/w 4 loop cards. Fault-tolerant network
MX-5805/FT	2-8 Loop fire panel c/w 5 loop cards. Fault-tolerant network
MX-5806/FT	2-8 Loop fire panel c/w 6 loop cards. Fault-tolerant network
MX-5807/FT	2-8 Loop fire panel c/w 7 loop cards. Fault-tolerant network
MX-5808/FT	2-8 Loop fire panel c/w 8 loop cards. Fault-tolerant network
	MxPro 5 Series Fire Control panels (AV Protocol)
	MxPro 5 - 1 Loop V Series Panels
MX-5101V	1 Loop fire panel in small enc.
MX-5101VM	1 Loop fire panel in medium enc.
MX-5101VL	1 Loop fire panel in large enc.
MX-5101VD	1 Loop fire panel in large-deep enc.
MX-5101VR	1 Loop 19" rack mount FACP

Product Code	Description
	MxPro 5 - 2 Loop V Series Panels
MX-5201V	1-2 Loop fire panel c/w 1 loop card in medium enc.
MX-5201VL	1-2 Loop fire panel c/w 1 loop card in large enc.
MX-5201VD	1-2 Loop fire panel c/w 1 loop card in large-deep enc.
MX-5201VR	1-2 Loop 19" rack mount FACP c/w 1 loop card
MX-5202V	1-2 Loop fire panel c/w 2 loop cards in medium enc.
MX-5202VL	1-2 Loop fire panel c/w 2 loop cards in large enc.
MX-5202VD	1-2 Loop fire panel c/w 2 loop cards in large-deep enc.
MX-5202VR	1-2 Loop 19" rack mount FACP c/w 2 loop cards
	MxPro 5 - 4 Loop V Series Panels
MX-5401V	1-4 Loop fire panel c/w 1 loop card in large enc.
MX-5401VD	1-4 Loop fire panel c/w 1 loop card in deep enc.
MX-5401VR	1-4 Loop 19" rack mount FACP c/w 1 loop card
MX-5401VE	1-4 Loop fire panel c/w 1 loop card in extended enc.
MX-5402V	1-4 Loop fire panel c/w 2 loop cards in large enc.
MX-5402VD	1-4 Loop fire panel c/w 2 loop card in deep enc
MX-5402VR	1-4 Loop 19" rack mount FACP c/w 2 loop cards
MX-5402VE	1-4 Loop fire panel c/w 1 loop card in extended enc.
MX-5403V	1-4 Loop fire panel c/w 3 loop cards in large enc.
MX-5403VD	1-4 Loop fire panel c/w 3 loop card in deep enc
MX-5403VR	1-4 Loop 19" rack mount FACP c/w 3 loop card
MX-5403VE	1-4 Loop fire panel c/w 1 loop card in extended enc.
MX-5404V	1-4 Loop fire panel c/w 4 loop card in large enc.
MX-5404VD	1-4 Loop fire panel c/w 4 loop card in deep enc
MX-5404VR	1-4 Loop 19" rack mount FACP c/w 4 loop card
MX-5404VE	1-4 Loop fire panel c/w 1 loop card in extended enc.
	MxPro5 - 8 Loop V Series Panels
MX-5802V	2-8 Loop fire panel c/w 2 loop cards. Standard network
MX-5803V	2-8 Loop fire panel c/w 3 loop cards. Standard network
MX-5804V	2-8 Loop fire panel c/w 4 loop cards. Standard network
MX-5805V	2-8 Loop fire panel c/w 5 loop cards. Standard network
MX-5806V	2-8 Loop fire panel c/w 6 loop cards. Standard network
MX-5807V	2-8 Loop fire panel c/w 7 loop cards. Standard network
MX-5808V	2-8 Loop fire panel c/w 8 loop cards. Standard network
MX-5802V/FT	2-8 Loop fire panel c/w 2 loop cards. Fault tolerant network
MX-5803V/FT	2-8 Loop fire panel c/w 3 loop cards. Fault tolerant network
MX-5804V/FT	2-8 Loop fire panel c/w 4 loop cards. Fault tolerant network
MX-5805V/FT	2-8 Loop fire panel c/w 5 loop cards. Fault tolerant network
MX-5806V/FT	2-8 Loop fire panel c/w 6 loop cards. Fault tolerant network
MX-5807V/FT	2-8 Loop fire panel c/w 7 loop cards. Fault tolerant network
MX-5808V/FT	2-8 Loop fire panel c/w 8 loop cards. Fault tolerant network
	MxPro 5 Series Fire Control panels (Nittan Evolution Protocol)
	MxPro 5 - 1 Loop N Series Panels
MX-5101N	1 Loop fire panel in small enc.
MX-5101NM	1 Loop fire panel in medium enc.
MX-5101NL	1 Loop fire panel in large enc.
MX-5101ND	1 Loop fire panel in large-deep enc.
MX-5101NR	1 Loop 19" rack mount FACP
	MX-5200N Series panels
MX-5201N	1-2 Loop fire panel c/w 1 loop card
MX-5201NL	1-2 Loop fire panel c/w 1 loop card in large enc.
MX-5201ND	1-2 Loop fire panel c/w 1 loop card in large-deep enc.
MX-5201NR	1-2 Loop 19" rack mount FACP c/w 1 loop card
MX-5202N	1-2 Loop fire panel c/w 2 loop cards
MX-5202NL	1-2 Loop fire panel c/w 2 loop cards in large enc.
MX-5202ND	1-2 Loop fire panel c/w 2 loop cards in large-deep enc.
MX-5202NR	1-2 Loop 19" rack mount FACP c/w 2 loop cards

MxPro Parts list

Product Code	Description
	MX-5400N Series panels
MX-5401N	1-4 Loop fire panel c/w 1 loop card in large enc.
MX-5401ND	1-4 Loop fire panel c/w 1 loop card in deep enc.
MX-5401NR	1-4 Loop 19" rack mount FACP c/w 1 loop card
MX-5401NE	1-4 Loop fire panel c/w 1 loop card in extended enc.
MX-5402N	1-4 Loop fire panel c/w 2 loop cards in large enc.
MX-5402ND	1-4 Loop fire panel c/w 2 loop card in deep enc.
MX-5402NR	1-4 Loop 19" rack mount FACP c/w 2 loop cards
MX-5402NE	1-4 Loop fire panel c/w 1 loop card in extended enc.
MX-5403N	1-4 Loop fire panel c/w 3 loop cards in large enc.
MX-5403ND	1-4 Loop fire panel c/w 3 loop card in deep enc.
MX-5403NR	1-4 Loop 19" rack mount FACP c/w 3 loop card
MX-5403NE	1-4 Loop fire panel c/w 1 loop card in extended enc.
MX-5404N	1-4 Loop fire panel c/w 4 loop card in large enc.
MX-5404ND	1-4 Loop fire panel c/w 4 loop card in deep enc.
MX-5404NR	1-4 Loop 19" rack mount FACP c/w 4 loop card
MX-5404NE	1-4 Loop fire panel c/w 1 loop card in extended enc.

	MX-5800N Series panels
MX-5802N	2-8 Loop fire panel c/w 2 loop cards. Standard network
MX-5803N	2-8 Loop fire panel c/w 3 loop cards. Standard network
MX-5804N	2-8 Loop fire panel c/w 4 loop cards. Standard network
MX-5805N	2-8 Loop fire panel c/w 5 loop cards. Standard network
MX-5806N	2-8 Loop fire panel c/w 6 loop cards. Standard network
MX-5807N	2-8 Loop fire panel c/w 7 loop cards. Standard network
MX-5808N	2-8 Loop fire panel c/w 8 loop cards. Standard network
MX-5802N/FT	2-8 Loop fire panel c/w 2 loop cards. Fault tolerant network
MX-5803N/FT	2-8 Loop fire panel c/w 3 loop cards. Fault tolerant network
MX-5804N/FT	2-8 Loop fire panel c/w 4 loop cards. Fault tolerant network
MX-5805N/FT	2-8 Loop fire panel c/w 5 loop cards. Fault tolerant network
MX-5806N/FT	2-8 Loop fire panel c/w 6 loop cards. Fault tolerant network
MX-5807N/FT	2-8 Loop fire panel c/w 7 loop cards. Fault tolerant network
MX-5808N/FT	2-8 Loop fire panel c/w 8 loop cards. Fault tolerant network

	MxPro 5 Remote Terminals
MX-5010	Remote display terminal (RDT). Standard network
MX-5010/FT	Remote display terminal (RDT). Fault tolerant
MX-5020	Remote control terminal (RCT) small. Standard network
MX-5020/FT	Remote control terminal (RCT) small. Fault tolerant
MX-5030	Remote control terminal (RCT) large. Standard network
MX-5030/FT	Remote control terminal (RCT) large. Fault tolerant

	Touch Control
TOUCH-10	Touch-screen terminal (standard network)
TOUCH-10/FT	Touch-screen terminal (fault-tolerant network)
TOUCH-10-SBB	Touch-screen terminal - surface back box

	Peripheral Expansion Network Node NEW
MXP-545	PENN - (standard network)
MXP-545/FT	PENN - (fault-tolerant network)

Product Code	Description
	MxPro 5 Peripherals
Note; Additional Peripherals listed under MxPro4 / MxPro 5 Universal Peripherals	
MXP-501	Remote battery temperature sensor
MXP-502	Loop driver card - Apollo, Hochiki, Argus, Vega
MXP-567	Loop driver card - Nittan
MXP-503 *	Network card - standard
MXP-505	Sounder (pt13) active EOL
MXP-506	Routing termination card
MXP-507 *	2-way relay card
MXP-509 *	Network card - fault tolerant
MXP-512 *	Printer assembly
MXS-509	Spare paper roll for Mxp-512 printer
MXP-532 *	Routing / protection interface
MXP-536 *	P-BUS 8-way conventional zone card
MXP-537 *	P-BUS 10-way switch input card
MXP-538	P-BUS 16-way switch (form factor) module 16 switches, 3 integrated, programmable LED's per switch (red, yellow, green)
MXP-539	P-BUS MIMIC driver card (16 input + 48 output) 16 switch inputs and 48 LED driver outputs. Supports up to 5 Mxp-052 10 relay output modules
MXP-547 *	ESPA pager interface
** Add F - for fitted*	

	MxPro5 AlarmCalm
MXP-541A-002	AlarmCalm button w buzzer (Apollo)
MXP-541V-002	AlarmCalm button w buzzer (Argus)

	MxPro 5 LED Indication
MXP-513M-050RD *	50 Zone fire (red) - medium enc
MXP-513M-050RY *	25 Zone fire (red) + fault (yel) - medium enc.
MXP-513M-050YL *	50 Zone fault (yel) - medium enc.
MXP-513L-050RD *	50 Zone fire (red) - large enc
MXP-513L-050RY *	25 Zone fire (red) + fault (yel) - large enc.
MXP-513L-050YL *	50 Zone fault (yel) - large enc.
MXP-513L-100RD *	100 Zone fire (red) - large enc.
MXP-513L-100RY *	50 Zone fire (red) + fault (yel) - large enc.
MXP-513L-100YL *	100 Zone fault (yel) - large enc.
MXP-513L-200RY *	200 Zone - large enc (red/yel)
MXP-513L-050CRY *	50 Zone column format - large enc (red/yel)
MXP-513L-050CRYG *	50 Zone column format - large enc. (30 x red/yel - 20 grn/yel)
MXP-513-050RD *	50 Zone fire (red) - extended enc.
MXP-513-050RY *	25 Zone fire (red) + fault (y) - extended enc.
MXP-513-050YL *	50 Zone fault (yel) - extended enc.
MXP-513-100RD *	100 Zone fire (red) - extended enc.
MXP-513-100RY *	50 Zone fire (red) + fault (y) - extended enc.
MXP-513-100YL *	100 Zone fault (yel) - extended enc.
MXP-513-200RY *	200 Zone - extended enc. (red/yel)
MXP-513-050CRY *	50 Zone column format - extended enc. (red/yel)
MXP-513-050CRYG *	50 Zone column format - extended enc. (30 x red/yel - 20 grn/yel)
** Add F - for fitted*	

	MxPro5 Modems
MXP-528	Modem card (24V)
MXP-528F	Modem card (24V) - fitted*
MXP-028-BX	Modem card (24V) - boxed
** Can be fitted to a medium, large or extended enclosure only*	

Product Code	Description
	MxPro 5 Key Switches
MXP-511	Access enable key switch
MXP-511F	Access enable key switch - fitted
MXP-516	2-POS key switch (trapped)
MXP-516F	2-POS key switch (trapped) - fitted
MXP-517	2-POS key switch (untrapped)
MXP-517F	2-POS key switch (untrapped) - fitted
MXP-515	3-POS key switch (trapped)
MXP-515F	3-POS key switch (trapped) - fitted
MXP-518-001	Access enable key switch for 5010/5020
MXP-518-001F	Access enable key switch for 5010/5020 - fitted
MXP-518-002	Access enable key switch for 5030
MXP-518-002F	Access enable key switch for 5030 - fitted
MXP-519	2-POS key switch (Mom - trapped)
MXP-519F	2-POS key switch (Mom - trapped) - fitted

	MxPro 5 Spares
MXS-501 *	Spare single loop base card c/w PSU (no loop cards) **Add V for AV protocol, N for Evolution*
MXS-502 *	Spare two loop base card c/w PSU (no loop cards) **Add V for AV protocol*
MXS-503 *	Spare four loop base card c/w PSU (no loop cards) **Add V for AV protocol*
MXS-504	Spare display card
MXS-506	Spare MX-5010 card only
MXS-506/FT	Spare MX-5010 card only - fault-tolerant
MXS-507	Spare MX-5020 card only
MXS-507/FT	Spare MX-5020 card only - fault-tolerant
MXS-508	Spare MX-5030 card only
MXS-508/FT	Spare MX-5030 card only - fault-tolerant
MXS-511	Spare access enable key switch (Lorlin style)
MXS-516	Spare 2-position key switch - trapped (Lorlin style)
MXS-517	Spare 2-position key switch - un-trapped (Lorlin style)
MXS-511-KEY	Spare Mxp-511 access enable key
MXS-518	MX-5000 spare kits
MXS-519	MX-5000 rack mount spare kit
MXS-520	MX-5000 remote terminal spares kit
MXS-521	MX-5000 battery leads
MXS-522	MX-5000 rack mount battery leads
MXS-5-FP-S	Spare fascia plate and membrane - small
MXS-5-FP-ML	Spare fascia plate and membrane - medium / large

	MxPro 5 Flushing Bezels
MXM-501	Semi-flushing bezel - small enc.
MXM-502	Semi-flushing bezel - medium enc.
MXM-503	Semi-flushing bezel - large enc.
MXM-509	Semi-flushing bezel - MX-5030 RCT - large
MXM-521	Semi-flushing bezel - MX-5010 / 5020
MXM-536	Semi-flushing bezel - extended enc.

	MxPro 5 Plexi glass (Lexan) Door - Retro-fit
MXM-507	Glazed door kit - large enclosure
MXM-507Z	Glazed door kit (double aperture) - large enc.
MXM-508	Glazed door kit - medium enclosure
MXM-508Z	Glazed door kit (double aperture) - medium enc.
MXS-505	Spare key - MxPro 5 glazed door
MXM-538-D1	Glazed door kit with zone aperture - extended enc.
MXM-538-D2	Glazed door kit with 2 x glazed apertures - extended enc.
MXM-538-D3	Glazed door kit with mimic aperture - extended enc.

Product Code	Description
	MxPro 5 Enclosures
MXM-504	Medium termination enc.
MXM-505	Large termination enc.
MXM-506	Large-deep termination enc.
MXM-516	Medium battery (18ah) / utility enc.
MXM-517	Large battery (18ah) / utility enc.
MXM-518	Deep utility enc.
MXM-519	Chassis mounting plate for utility enc. (3 cards)
MXM-546	MX-5000 deep battery (45ah) enc.
MXM-522-BB	Small enc. - spare back box
MXM-522-D1	Small enc. - spare door
MXM-523-BB	Medium enc. - spare back box
MXM-523-D1	Medium enc. - spare door
MXM-523-D2	Medium enc. - spare door (c/w zone aperture)
MXM-524-BB	Large enc. - spare back box
MXM-524-D1	Large/deep enc. - spare door
MXM-524-D2	Large/deep enc. - spare door (c/w zone aperture)
MXM-524-D3	Large/deep enc. - spare door (c/w 2 x switch apertures)
MXM-524-D4	Large/deep enc. - mimic door with single aperture
MXM-524-D5	Large/deep enc. - blank door
MXM-525-BB	Deep enclosure - spare back box
MXM-530	Cable clamp
MXM-531	Medium document enc.
MXM-532	Large document enc.
MXM-533	Modem/ESPA/BMS interface enc.
MXM-537-BB	Extended enc. - back box
MXM-537-BP	Extended enc. - Blank plate for zone LED aperture
MXM-537-D1	Extended enc. - spare door
MXM-537-D2	Extended enc. - spare panel door with mimic aperture
MXM-543-BB	Mx-5010/5020 - spare back box
MXM-544-BB	Mx-5030 - spare back box
MXM-543-D1	Mx-5010/5020 - spare panel cover
MXM-543-D2	Mx-5010/5020 - spare panel cover + k/s app
MXM-544-D1	Mx-5030 - spare panel cover
MXM-543-D2	Mx-5030 - spare panel cover + k/s app

	MxPro 5 Special Finishes
MXM-501-SSB	Semi-flushing bezel - small enc. stainless steel brushed
MXM-501-SSM	Semi-flushing bezel - small enc. stainless steel mirrored
MXM-502-SSB	Semi-flushing bezel - medium enc. stainless steel brushed
MXM-502-SSM	Semi-flushing bezel - medium enc. stainless steel mirrored
MXM-503-SSB	Semi-flushing bezel - large enc. stainless steel brushed
MXM-503-SSM	Semi-flushing bezel - large enc. stainless steel mirrored
MXM-509-SSB	Semi-flushing bezel - RCT large. Stainless steel brushed
MXM-509-SSM	Semi-flushing bezel - RCT large stainless steel mirrored
MXM-521-SSB	Semi-flushing bezel - MX-5010 / 5020 stainless steel brushed
MXM-521-SSM	Semi-flushing bezel - MX-5010 / 5020 stainless steel mirrored
MXM-522-D1-SSB *	Small enc. - spare door. Stainless steel brushed
MXM-522-D1-SSM	Small enc. - spare door. Stainless steel mirrored
MXM-523-D1-SSB *	Medium enc. - spare door. Stainless steel brushed
MXM-523-D1-SSM	Medium enc. - spare door. Stainless steel mirrored
MXM-523-D2-SSB *	Medium enc. - spare door (c/w zone aperture). Stainless steel brushed
MXM-523-D2-SSM	Medium enc. - spare door (c/w zone aperture). Stainless steel mirrored
MXM-524-D1-SSB *	Large/deep enc. - spare door. Stainless steel brushed
MXM-524-D1-SSM	Large/deep enc. - spare door. Stainless steel mirrored
MXM-524-D2-SSB *	Large/deep enc. - spare door (c/w zone aperture). Stainless steel brushed

MxPro Parts list

Product Code	Description
MXM-524-D2-SSM	Large/deep enc. - spare door (c/w zone aperture). Stainless steel mirrored
MXM-543-D1-SSB	MX-5010/5020 - panel cover. Stainless steel brushed
MXM-543-D1-SSM	MX-5010/5020 - panel cover. Mirror polished
MXM-543-D2-SSB	MX-5010/5020 - panel cover + KS Ap. Stainless steel brushed.
MXM-543-D2-SSM	MX-5010/5020 - panel cover + KS Ap. Mirror polished
MXM-544-D1-SSB	MX-5030 RCT - panel cover. Stainless steel brushed.
MXM-544-D1-SSM	MX-5030 RCT - panel cover. Mirror polished
MXM-544-D2-SSB	MX-5030 RCT - panel cover + KS Ap. Stainless steel brushed
MXM-544-D2-SSM	MX-5030 RCT - panel cover + KS Ap. Mirror polished
MXM-524-BB-SSB	Spare large back box for use w/SS door (MW334E)
MXM-523-BB-SSB	Spare medium back box for use w/SS door (MW334E)
MXM-522-BB-SSB	Spare small back box for use w/SS door (MW334E)
MXM-525-BB-SSB	Spare deep back box for use w/SS door (MW334E)
** Add F - fitted (includes Silver back box & hinge strip)*	

	MxPro 5 Rack Mount Enclosure
MXM-510-16U	IP55 19" Rack mount enclosure - 16U high
MXM-510-20U	IP55 19" Rack mount enclosure - 20U high
MXM-510-KL	CAM key-lock kit for outer door
MXM-510-BS	19" Rack mount - battery shelf
MXM-510-BS1	19" Rack mount - battery shelf lower
MXM-510-CP	19" Rack mount - chassis plate
MXP-513R-050RD	19" Rack mount 4U LED card - 50 zone fire (red)
MXP-513R-050RY	19" Rack mount 4U LED card - 50 zone fire/flt (r/y)
MXP-513R-050YL	19" Rack mount 4U LED card - 50 zone flt (yel)
MXP-513R-100RD	19" Rack mount 4U LED card - 100 zone fire (red)
MXP-513R-100RY	19" Rack mount 4U LED card - 100 zone fire/flt (r/y)
MXP-513R-100YL	19" Rack mount 4U LED card - 100 zone fault (yellow)
MXP-513R-200RY	19" Rack mount 4U programmable LED card - 200 zone (red/yel)
MXP-513R-050CRY	19" Rack mount 4U programmable LED card - 50 zone column format (red/yel)
MXP-513R-050CRYG	19" Rack mount 4U programmable LED card 50 zone column format (30 x red/yel - 20 x grn/yel)
MXP-514	MxPro 5 rack AC filter card
MXM-511-1U	19" Rack mount blanking plate - 1U
MXM-511-2U	19" Rack mount blanking plate - 2U
MXM-511-3U	19" Rack mount blanking plate - 3U
MXM-511-4U	19" Rack mount blanking plate - 4U
MXM-511-6U	19" Rack mount blanking plate - 6U
MXM-511-1U-TOP	19" Rack mount blanking plate - 1U-TOP
MXM-512	19" Rack mount blanking LED plate - 4U
MXM-513-BB	19" Rack mount back box - 6U
MXM-513-BP	19" Rack mount switch / LED blank plate - 6U
MXM-513-D1	19" Rack mount door D1 blank - 6U
MXM-513-D2	19" Rack mount door D2 LED - 6U
MXM-513-D3	19" Rack mount door D1 c/w aperture - 6U
MXM-513-FP	19" Rack mount fascia plate blank - 6U
MXM-513-MF	19" Rack mount switch / LED mounting frame - 6U
MXM-514-BB	19" Rack mount back box - 8U
MXM-514-D1	19" Rack mount door D1 c/w aperture - 8U
MXM-514-FP	19" Rack mount fascia plate blank - 8U

Product Code	Description
MXM-515-6U	19" Rack mount chassis plate - 6U
MXM-515-8U	19" Rack mount chassis plate - 8U
MXM-535-D1	19" Rack mount 13U hinged door (accepts 9 x MXP-538 switch cards or blank plates)

MxPro 4 / MxPro 5 Universal Peripherals

	Network Boosters and Convertors
MXP-030	Standard network booster/isolator (DIN-rail module)
MXP-631-MM	Ad-Net / fibre optic converter multi-mode
MXP-631-SM	Ad-Net / fibre optic converter single-mode
MXP-542	24VDC - 24VDC convertor / isolator (for use with Mxp-631 Fibre network convertors and MxPro 5)

	Mimic Driver Cards, Indicators & Network I/O Controllers
MXP-020-100	100 way remote LED mimic driver (un-boxed)
MXP-020-100/FT	Fault tolerant 100-way remote LED mimic driver (un-boxed)
MXP-045	50-way network I/O controller (un-boxed)
MXP-045/FT	50 way fault-tolerant network I/O controller (un-boxed)
MXS-026	High intensity red LED & 600mm lead for Mxp-020 / 027 & 045
MXS-026-YEL	High intensity yellow LED & 600mm lead for Mxp-020 / 027 & 045
MXS-026-GRN	High intensity green LED & 600mm lead for Mxp-020 / 027 & 045
MXP-052	Mimic driven 10-way relay output card
MXP-052-DIN	Mimic driven 10-way relay output card in din-rail carrier
MXS-031-2T	2-Position key switch trapped for Mxp-045
MXS-031-2U	2-Position key switch un-trapped for Mxp-045
MXS-031-3U	3-Position key switch un-trapped for Mxp-045

	P-Bus Expansion Cards
MXP-034 (F)*	Peripheral bus - 4-way sounder card
MXP-034-BXP	Peripheral bus - 4-way sounder card with 4A PSU (boxed)
MXP-035(F)*	Peripheral bus - 4-way relay card
MXP-035-BXP	Peripheral bus - 4-way relay card with 1.5A PSU (boxed)
** Add F - for fitted (except Mx-4100, Mx-5100)*	

	EN54-4 'Approved' Power Supply Units
MXP-549	1.5A EN54-4 PSE & battery charger
MXP-550	3A EN54-4 PSE & battery charger
MXP-550/D	3A EN54-4 PSE & battery charger. Deep enc.
MXP-551	5A EN54-4 PSE & battery charger
MXP-551/D	5A EN54-4 PSE & battery charger. Deep enc.
MXP-049	1.5A EN54-4 PSU & charger (boxed - 7Ah battery capacity)
MXP-050-001	3A EN54-4 PSU & charger (boxed - 7Ah battery capacity)
MXP-050-002	3A EN54-4 PSU & charger (boxed - 17Ah battery capacity)
MXP-051	5A EN54-4 PSU & charger (boxed - 17Ah battery capacity)
MXP-051/D	5A EN54-4 PSU & charger (boxed - 38Ah battery capacity)

	MxPro Input and Output Cards
MXP-046	Damper interface module (Apollo protocol)
MXP-046-BX1	Damper interface module - boxed (Apollo protocol)
MXP-053	2-way input stretch / latch module

Product Code	Description
	MxPro Interfaces
MXP-510-BX	BMS / Graphics I/F (boxed)
MXP-510-BX/FT	BMS / Graphics I/F (boxed) fault tolerant
MXP-510	BMS / Graphics I/F (card only)
MXP-510/FT	BMS / Graphics I/F (card only) fault tolerant
MXP-547-BX	ESPA Pager interface (boxed)
MXP-554-BX	IP Gateway (boxed)
MXP-554-BX/FT	IP Gateway (boxed) fault tolerant
MXP-554	IP Gateway (card only)
MXP-554/FT	IP Gateway (card only) fault tolerant
MXP-642	Commander- BACnet / Modbus (IP) interface (standard/basic) **
MXP-642C	Commander- BACnet / Modbus (IP) interface (configured) **
23-PSU/250	Power supply for commander 12VDC 2.5A
** Add F - fitted (except Mx-4100, Mx-5100). ** Requires Mxp-510 BMS Interface*	

	Dynamix Tools PC Software
See "Cables & Connectors" section for spare and USB compatible upload / download leads	
PC-NET-003	MxPro configuration software & lead
PC-NET-003-USB	MxPro configuration software & USB upload/download lead
PC-NET-004	MxPro remote dial-up software (virtual panel)
PC-NET-005-L1	Graphical control software* standard version up to 3 panels
PC-NET-005-L2	Graphical control software* standard version up to 15 panels
PC-NET-005-L2p	Graphical control software* premium version up to 15 panels
PC-NET-005-L3	Graphical control software* standard version up to 200 panels
PC-NET--005-L3p	Graphical control software* premium version up to 200 panels
PC-NET-005-SWM	Smart watch module
PC-NET-005-SWM6	Smart watch module (4-6 panel)
PC-NET-005-SWM15	Smart watch module (7-15 panel)
PC-NET-005-SWM4R	Smart watch module - 4 inputs
PC-NET-005-SCU	Smart cube unit
PC-NET-05-L1R-L2R	Dongle upgrade L1R - L2R
PC-NET-05-L2R-L3R	Dongle upgrade L2R to L3R
PC-NET-05-L2R-L2P	Dongle upgrade L2R to L2P
PC-NET-05-L2P-L3P	Dongle upgrade L2P to L3P
PC-NET-05-L3R-L3P	Dongle upgrade L3R to L3P
PC-NET-007	MxPro logo programming software
PC-NET-015	MxPro service tool software
** requires Mxp-510 BMS interface*	

	Cables & Connectors (Upload/Download Leads)
UP-001	RS232 9-way to 3-way plug in connector (MX upload/ download lead)
UP-006	USB upload /download lead for MX config software

Product Code	Description
	MxPro 4 Fire Control Panels (Apollo/Hochiki Protocol)
	MxPro 4 - 1 Loop panels
MX-4100	1 Loop fire panel (no loop driver required)
	MxPro 4 - 2 Loop panels
MX-4200	1-2 Loop fire panel (no loop cards)
MX-4201	1-2 Loop fire panel c/w 1 loop card
MX-4202	1-2 Loop fire panel c/w 2 loop cards
	MxPro 4 - 4 Loop panels
MX-4400	1-4 Loop fire panel (no loop cards)
MX-4401	1-4 Loop fire panel c/w 1 loop card
MX-4402	1-4 Loop fire panel c/w 2 loop cards
MX-4403	1-4 Loop fire panel c/w 3 loop cards
MX-4404	1-4 Loop fire panel c/w 4 loop cards
	MxPro 4 Loop Drivers
MXP-002	Loop driver for MX-4400/4200 (Apollo or Hochiki protocol)

	MxPro 4 Series Remote Terminals
MX-4010	Remote display terminal with standard network interface, 24V DC
MX-4020	Remote control terminal with standard network interface, 24V DC
MX-4010/FT	Remote display terminal with fault-tolerant network interface, 24V DC
MX-4020/FT	Remote control terminal with fault-tolerant network interface, 24V DC

	MxPro 4 Network Cards
MXP-003(F)*	Standard network card
MXP-009(F)*	Fault tolerant network card
** Add F - fitted to a Mx-4100, Mx-4200 or Mx-4400*	

	MxPro 4 Zonal LED Indication
MXP-024(F)*	20 Zone LED card for Mx-4100 - fitted
MXP-013-050F	50 zone LED card for Mx-4200/4400/4800 - fitted
MXP-013-050	50 zone LED card for Mx-4200 /4400 with door and label (retro-fit)
MXP-013-100F	100 zone LED card for Mx-4200/4400/4800 - fitted
MXP-013-100	100 zone LED card for Mx-4200/4400 with door and label (retro-fit)
** Add F - for fitted*	
Note; 20 zone card cannot be fitted with an onboard printer.	

	MxPro 4 Series Printers
MXS-014	Spare shrink wrap battery pack for Mxp-012 printer
MXS-008	Spare paper roll for Mxp-012 printer (pack of 10)
** Add F - for fitted (**to a Mx-4200D or Mx-4400D only)*	
Note: onboard printer cannot be fitted with a 20 zone LED card.	

	MxPro 4 Modem & Pager Interface
MXP-028 (F)*	Modem card (24V)
MXP-028-BX	Modem card (24V) boxed
MXP-047 (F) *	ESPA Pager interface
** Add F - for fitted to Mx-4200/4400/4800*	

	MxPro 4 Key Switches
MXP-011	Access enable key switch assembly
MXP-011F	Access enable Key switch assembly - fitted
** Add F - for fitted*	

MxPro Parts list

Product Code	Description
	MxPro 4 Mounting Bezels
MXM-001	Semi-flushing bezel for Mx-4100
MXM-002	Semi-flushing bezel for Mx-4200/Mx-4400
MXM-008	Semi-flushing bezel for Mx-4010/Mx-4020
** Add F - for fitted*	
	MxPro 4 Enclosures, blanking plates and spare doors
MXM-018	Spare back-box for Mx-4100
MXM-018-002	Spare back-box for Mx-4100 without transformer
MXM-017	Spare back-box for Mx-4200/Mx-4400
MXM-030	Spare back-box for Mx-4010/Mx-4020
MXM-028	Termination enc. - 1-4 loop panel
MXM-040	Spare enc. c/w door for Mx-4200/Mx-4400
MXM-049	Spare lid for Mx-4100
MXM-047	Spare door for Mx-4200/Mx-4400
MXM-047-001	Spare door (double aperture) for Mx-4200/Mx-4400
MXM-031	Blanking plate for lower apeture on Mx-4200/Mx-4400 door
MXM-045	Spare lid for Mx-4010/4020

	MxPro 4 Spares
MXS-001	Spare Mx-4100 single loop base card
MXS-002 (N) (V)*	Spare Mx-4200 1 - 2 loop base card (*Add N for Nittan Evolution or V for AV protocol)
MXS-003 (N) (V)*	Spare Mx-4400 1 - 4 loop base card (*Add N for Nittan Evolution or V for AV protocol)
MXS-004	Spare Mx-4000 graphic display card
MXS-005	Spare power supply unit for Mx-4400
MXS-006	Spare power supply unit for Mx-4200
MXS-008	Spare paper roll for Mxp-012 printer (pack of 10)
MXS-009-050	Spare 50 zone LED card
MXS-009-100	Spare 100 zone LED card
MXS-010	BMS/graphics network interface card
MXS-011	Spare panel door key
MXS-012	Spare access enable key
MXS-013	Spare panel lock and key
MXS-019	8-way input /output card (Hochiki protocol)
MXS-021	4-way sounder splitter card
MXS-024	20 Zone LED Card (PCB only)
MXS-025	5A Sounder booster card
MXS-027	Local 100 zone mimic driver card
MXS-028	Spare peripheral fault tolerant network interface
MXS-029	Spare 10-way earthing block for Mx-4200/Mx-4400/ Mx-4800
MXS-034	2-way pluggable lead for key switch input card
MXS-030	Non-illuminated push button + 450mm long 2-way cable
MXS-030-R	Illuminated (red) push button + 450mm long 2-way cable
MXS-030-G	Illuminated (green) push button + 450mm long 2-way cable
MXS-038-xxx	20-way ribbon cable (xxx = 320, 550, 650mm)
MXS-039-xxx	Cable, 2-way plug to plug (xxx = 320, 550, 650mm)
MXS-049	Spare 24V 1.5A EN54-4 PSU and battery charger card
MXS-050	Spare 24V 3A EN54-4 PSU and battery charger card
MXS-051	Spare 24V 5A EN54-4 PSU and battery charger card
MXS-055	Spare key for Mxm-059-001 Lexan door kit (alternate key)
MXS-056	Spare lock and key for Mxm-059-001 Lexan door kit (alternate key)
MXS-057	Spares kit for Mx-4200/Mx-4400
MXS-058	Spare transformer assembly for Mx-4100

Advanced

Go

The powerful, flexible, single-loop fire panel

Designed to be fast to fit, quick to configure and easy to use, Go saves install time whilst bringing you complete peace of mind that your single-panel site has the highest levels of fire protection.

Offering cost-effective access to popular premium features from our MxPro 5 range in a simpler, non-networkable format, Go provides powerful protection for a wide range of smaller sites.

Packed with future-proof technology and flexible features – including false alarm management, built-in zonal LEDs and a handy service tool – Go's ready to become your Go-to!

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SSD4471 [Edition 12]

Appendix V

Automated Fire Suppression (Sprinkler/Cannon) System in Longford 2

U1598 TOM WHITE WASTE COVENTRY
FIRE PROTECTION SYSTEM

Sprinkler protection has been provided to the roof area of the main process building and picking area and has been designed to BSEN12845 to suit the potential risk and environment of the specific area. The level of 'fire risk' for a specific area determines that areas 'hazard classification' which therefore determines the density of water and the number, type and spacing of the sprinkler heads/nozzles required.

The main process building area has also been provided with 3 water monitors which are automatically operated from UVIR detectors or can be manually operated from the fire panel / manual call points in the area.

The main conveyor / hopper and end bay bunker have also been provided with deluge sprinkler systems that again are automatically operated from UVIR detectors or can be manually operated from the fire panel / manual call points in the area.

Area Protected:	Process Building	Picking Area	Conveyor / Hopper, end bay bunker	Process Building Water Monitor
Design / Hazard Classification:	High Hazard 31mm/min over 300m	High Hazard 10mm/min over 216m	High Hazard 10mm/min over area	High Hazard 1000l/min at 5.5 bar
Category of Goods:	Cat3 ST1	Cat3 ST1	Cat3 ST1	Cat3 ST1
Type of System:	Wet Sprinklers	Wet Sprinklers	Electrically Actuated Deluge Sprinkler	Electrically Actuated Water Monitor System
Number of Sprinkler Heads:	522	8	3 / 12	NA

The fire systems are supplied by a Franklin Hodge LPS 1278 Ref No: 037/06e galvanised firestone water storage tank with an effective capacity of 1184dm cubed.

Two diesel and one electric Armstrong fire pumps supply water to the systems. The fire pumps are rated at 7200l/min at 8.5 bars.

The wet sprinkler system at roof and picking area is controlled via a Tyco AV-1-300 WET control valve.

The sprinkler heads at roof level are Tyco Model K17-231 upright sprinkler 20mm very large orifice k factor 242 - SIN No: TY7151

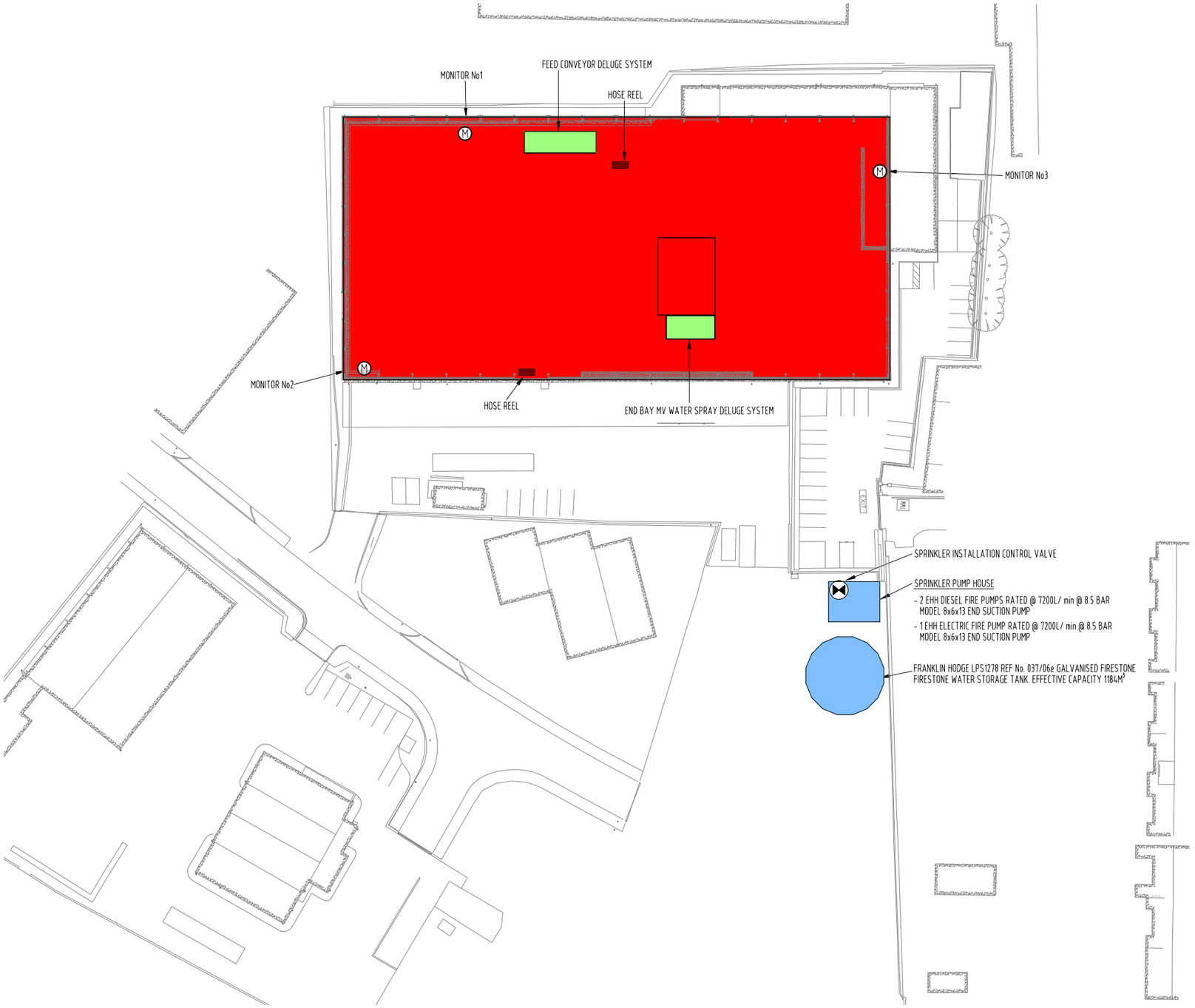
The sprinkler heads in the picking area are Tyco Model TY-B 20mm k factor 115 SIN No: TY4651

The deluge systems to the conveyor and end bunker are controlled by electrically actuated valves the sprinkler heads installed at the conveyor / hopper are Tyco Model TY-B 20mm k factor 115 SIN No: TY4651. The end bay bunker has Tyco MV 21 spray nozzles installed k factor 36.

The fire monitors system is fed via an isolation valve in the fire pump house. Each fire monitor is controlled via an electrically actuated valve. The monitors are Tyco FJM-80-WTO- Self oscillating monitors.

The hose reel system is fed via an isolation valve in the fire pump house. The hose reels are located in the main process building. There are 2 No 19mm x 30m long Elite type hose reels installed.

SPRINKLER FIRE BLOCK PLAN



PROTECTED AREAS

INSTALLATION No.1

- PROCESS BUILDING MAIN ROOF SPRINKLER PROTECTION
- PICKING AREA CONVEYOR SPRINKLER PROTECTION

DELUGE SYSTEMS

- FEED CONVEYOR DELUGE SYSTEM
- END BAY MV WATER SPRAY DELUGE SYSTEM

FIRE PUMP HOUSE

- SPRINKLER PROTECTED THROUGHOUT

PICKING AREA CONVEYOR SPRINKLER DESIGN PARAMETERS

DESIGN STANDARDS / CODES	LPC RULES FOR AUTOMATIC SPRINKLER INSTALLATIONS (2015) INCORPORATING BS EN 12845
TYPE OF SYSTEM	WET PIPE SPRINKLER SYSTEM
HAZARD CLASSIFICATION	HIGH HAZARD PROCESS - CONVEYOR PROTECTION ONLY
AREA OF OPERATION	TOP OF CONVEYORS WITHIN PICKING AREA
DISCHARGE DENSITY	10mm/min/m²
HYDRANT ALLOWANCE	NIL
MINIMUM SPRINKLER PRESSURE	0.5 Bar
HIGHEST SPRINKLER HEAD	+7.275m

END BAY DELUGE SYSTEM DESIGN PARAMETERS

DESIGN STANDARDS / CODES	LPC RULES FOR AUTOMATIC SPRINKLER INSTALLATIONS (2015) INCORPORATING BS EN 12845
TYPE OF SYSTEM	TAIL-END MV SPRAY NOZZLE DELUGE SYSTEM VIA SOLENOID VALVE
HAZARD CLASSIFICATION	HIGH HAZARD
AREA OF OPERATION	PICKING AREA END BAY
DISCHARGE DENSITY	10mm/min/m² OVER BAY AREA
AREA OF OPERATION	ENTIRE BAY AREA 44m²
MINIMUM NOZZLE PRESSURE	1.4 BarG
MINIMUM FLOW	440 L/min

FEED CONVEYOR DELUGE SYSTEM DESIGN PARAMETERS

DESIGN STANDARDS / CODES	LPC RULES FOR AUTOMATIC SPRINKLER INSTALLATIONS (2015) INCORPORATING BS EN 12845
TYPE OF SYSTEM	TAIL-END OPEN SPRINKLER DELUGE SYSTEM
HAZARD CLASSIFICATION	HIGH HAZARD PROCESS
AREA OF OPERATION	THREE HEADS ONLY TO TOP END OF CONVEYOR
DISCHARGE DENSITY	10mm/min/m² OVER LINEAR CONVEYOR AREA
AREA OF OPERATION	19m²
MINIMUM NOZZLE PRESSURE	0.5 BarG
MINIMUM FLOW	3 x (115 x SQRT 0.5) = 244 L/min

SPRINKLER DESIGN PARAMETERS

DESIGN STANDARDS / CODES	LPC RULES FOR AUTOMATIC SPRINKLER INSTALLATIONS (2015) INCORPORATING BS EN 12845
TYPE OF SYSTEM	WET PIPE SPRINKLER SYSTEM
HAZARD CLASSIFICATION	HIGH HAZARD STORAGE ROOF ONLY, CATEGORY 3, ST1
AREA OF OPERATION	300 m²
DISCHARGE DENSITY	31mm/min/m²
HYDRANT ALLOWANCE	NIL
MINIMUM SPRINKLER PRESSURE	1.33 Bar
HIGHEST SPRINKLER HEAD	17.14m

PROCESS BUILDING MONITOR DESIGN PARAMETERS

DESIGN STANDARDS / CODES	CLIENTS SPECIFICATION
TYPE OF SYSTEM	ELECTRICALLY ACTUATED WATER CANNON SYSTEM
MONITOR PERFORMANCE	1000 L/min AT 5.5 Bar

Argus fire

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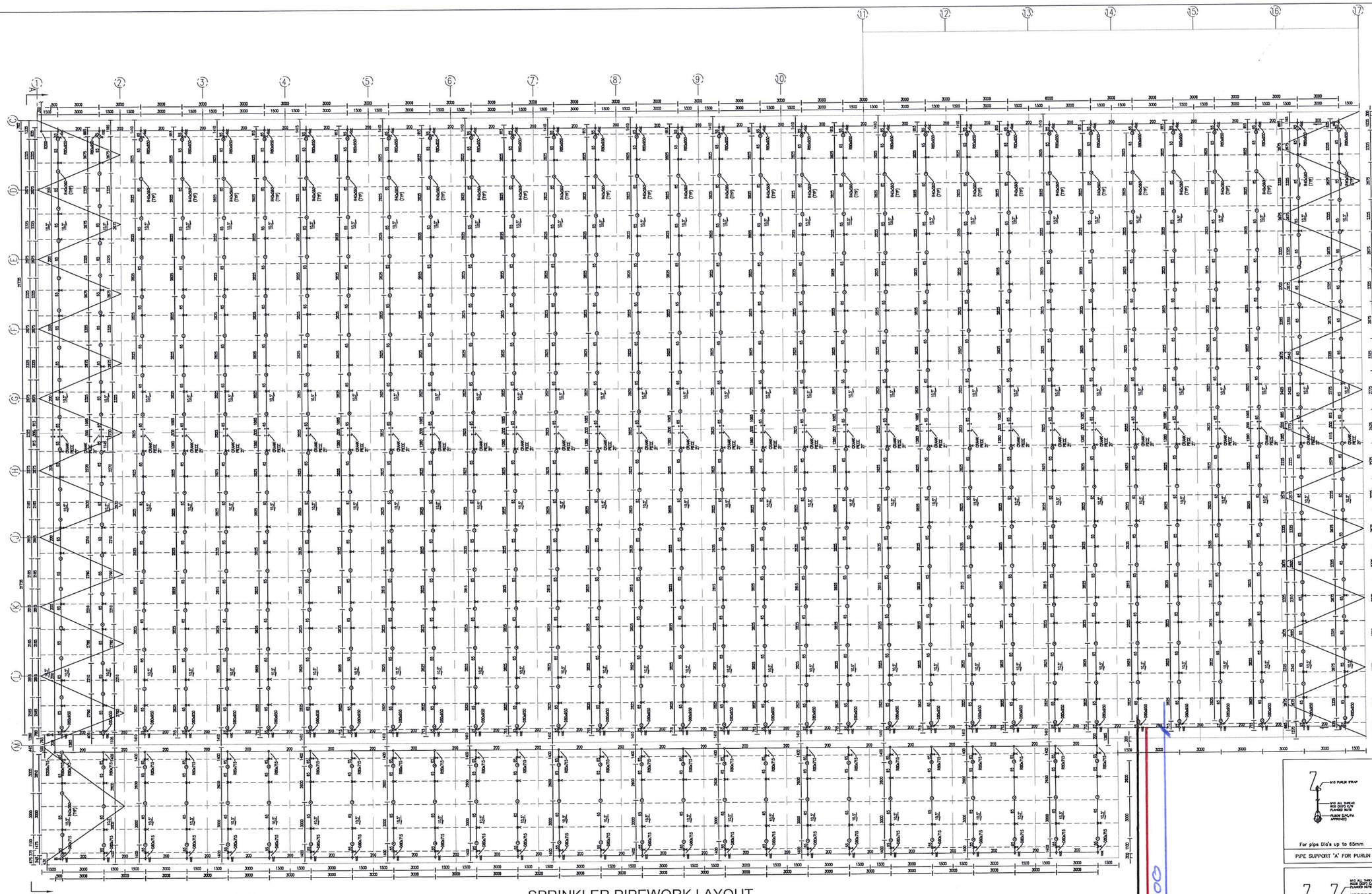
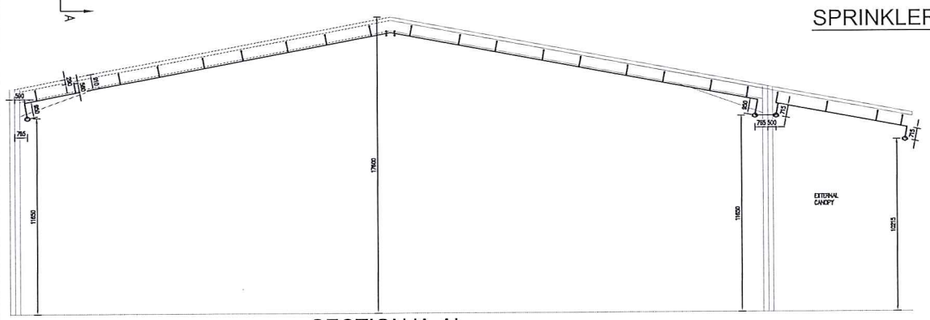
ARGUS FIRE CONTRACT No. U1598



SPRINKLER PIPEWORK LAYOUT
SCALE 1:100

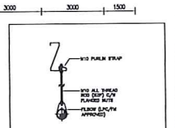


SECTION 'A-A'
SCALE 1:125

Sprinkler Main →

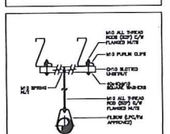
Monitor Main →

33,000



For pipe Dia's up to 65mm

PIPE SUPPORT 'A' FOR PURLIN



For pipe Dia's up to 100mm

PIPE SUPPORT 'B' FOR PURLIN

POINT LOADINGS PER HANGER PER PIPE SIZE

PIPE SIZE	POINT LOADING KG	WEIGHT OF PIPE & WATER PER M	MAX SUPPORT SPACING/PIPE
#15mm	6 KG	1.43 KG/M	4.0M
#20mm	8 KG	1.98 KG/M	4.0M
#25mm	13 KG	3.04 KG/M	4.0M
#32mm	17 KG	4.18 KG/M	4.0M
#40mm	21 KG	5.02 KG/M	4.0M
#50mm	30 KG	7.37 KG/M	4.0M
#65mm	53 KG	10.55 KG/M	5.0M
#80mm	53 KG	13.77 KG/M	5.0M
#100mm	127 KG	21.11 KG/M	5.0M
#150mm	233 KG	38.77 KG/M	5.0M
#200mm	400 KG	58.49 KG/M	5.0M

MECHANICAL JOINTS: AT LEAST 1 BRACKET PER SECTION/PIPE WHEN TH OF JOINT

General Notes

1. Sprinkler deflectors must be installed parallel to ceiling or roof.
2. Sprinkler heads must be installed using PTFE tape only, and threaded pipe joints must have a water council approved jointing compound. (e.g. Water Hawk or equivalent).
3. Sprinkler heads must be a minimum distance of 150mm from pipe supports.
4. All pipework must be installed with the following minimum slopes for drainage; Range pipes - 4mm per 1 metre run - 0.4%. Distribution pipes - 2mm per 1 metre run - 0.2%.
5. All levels shown are to pipe centre lines.
6. Sprinkler heads, multiple controls and nozzles MUST NOT be painted.
7. Argus Fire Protection Co. Ltd does not accept any responsibility for damage to any part of the installation due to frost. Clients must take adequate precautions to prevent freezing of water charged pipework and valves.
8. A clear space of 1.0m must be maintained below the sprinkler deflector at all times for High Hazard systems and 0.5m for Light & Ordinary Hazard.

Standard Tube Specification

Pipework above ground	BS EN 10255
Pipework below ground	N/A
Fittings above ground	BS 143, BS EN 10241, 10242 & BS 2035
Fittings below ground	N/A
Pipe Joints, up to 50mm	Screwed Fittings
Pipe Joints, 65mm & more	Mechanical

Design Parameters

Location	
Hazard Classification	
Storage Category	
Area of Operation	
Maximum stack height	
Discharge Density	
Design Standard	
System Design	
Design Spacing	
Pipework Table	
Design Flow	
Highest Sprinkler	

Schedule

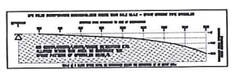
Installation Number	
Area / Size of	
Installation Type	
Area Description	
Construction	
Number of Sprinklers	599
Temperature rating	68°c
Size	20mm
Model/Type	K240 Sprinkler Heads
Finish	Brass

Equipment Schedule

	Information
Fire Pump	
Sprinkler Tank	
Alarm Valves	
Flow Switches	
NPSH Available	

Legend

- Sprinkler Installed upright
- Sprinkler Installed pendent
- Sidewall Sprinkler
- Sprinkler Installed on rise or drop
- Concealed Sprinkler Head
- Open Sprinkler
- Low level Sprinkler Head
- Pipe support (type and location)
- Mechanical coupling
- Drain/Fall
- Design Point
- Multiple Control unit
- Flow Switch
- N New Sprinkler Head
- R Re-position Sprinkler Head
- Ex Existing Sprinkler Head
- Existing Sprinkler Pipework



Rev	Date	Description	Drawn	Chk'd
O	10.10.16	Original Issue For Approval	PB	PE

Argus fire

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Facsimile : +44 (0) 1384 393955 website : www.argusfire.co.uk

Client

Project

Drawing Title

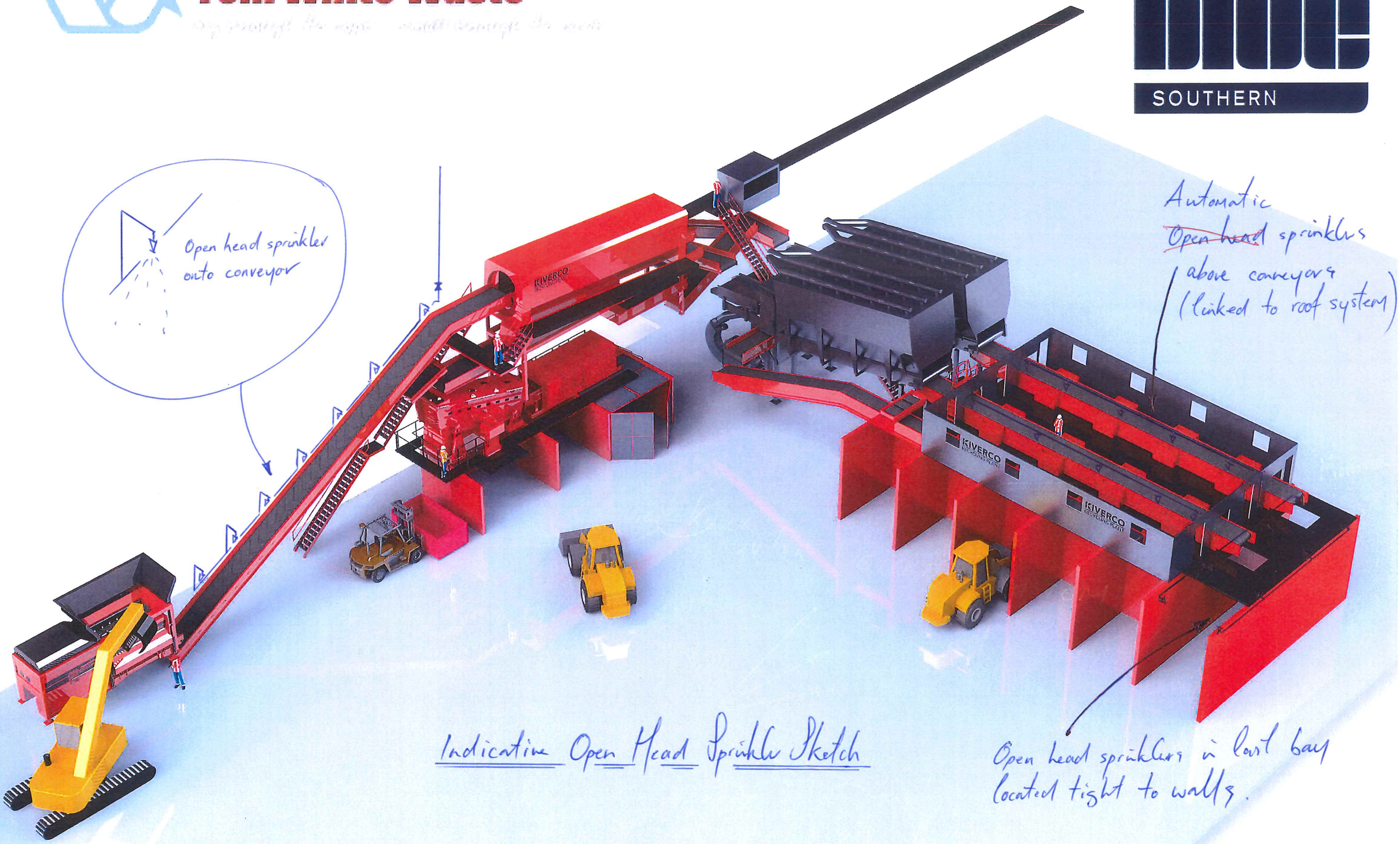
Sprinkler Pipework Layout

Orig Date	Scale	Drawing No	Rev	Drawn	Chk'd
10.10.16	1:100	-	O	-	-

SKETCH No. 1

Tom White Waste

blue SOUTHERN



Automatic ~~Open head~~ sprinklers above conveyors (linked to roof system).

Indicative Open Head Sprinkler Sketch

Open head sprinklers in last bay located tight to walls.

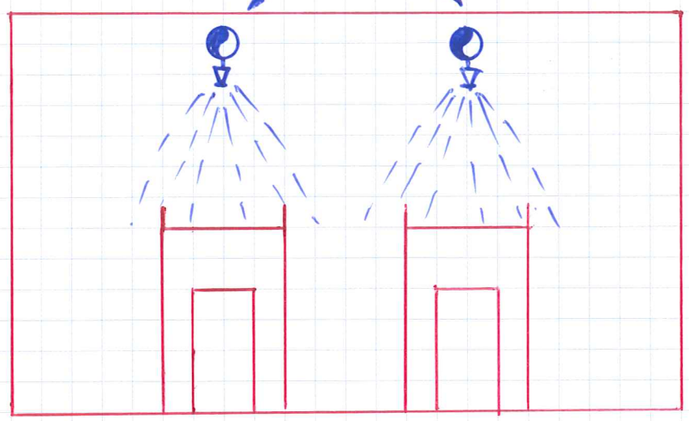
SKETCH No. 2

Argus fire

The **preferred** company for the design, supply, installation, commissioning, service and maintenance of fixed fire fighting systems

Subject: _____ **Date:** _____

Row of ~~open~~ sprinkler heads above the conveyors



Section Above Conveyor's

Argus fire

Hendglade House,
46 New Road, Stourbridge,
West Midlands DY8 1PA
United Kingdom

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Facsimile: +44 (0) 1384 393955
E-Mail: info@argusfire.co.uk
Website: www.argusfire.co.uk

SKETCH No. 3

STONEBROOK WAY

M 2

M 1

3. M

77

Pump house &
Switch gear room

Wet Valve
Set

RS

Sprinkler
Tank

1" Valve for
3x Monitor's.

Water mains
supply route

FH

LONGFORD ROAD

89.(

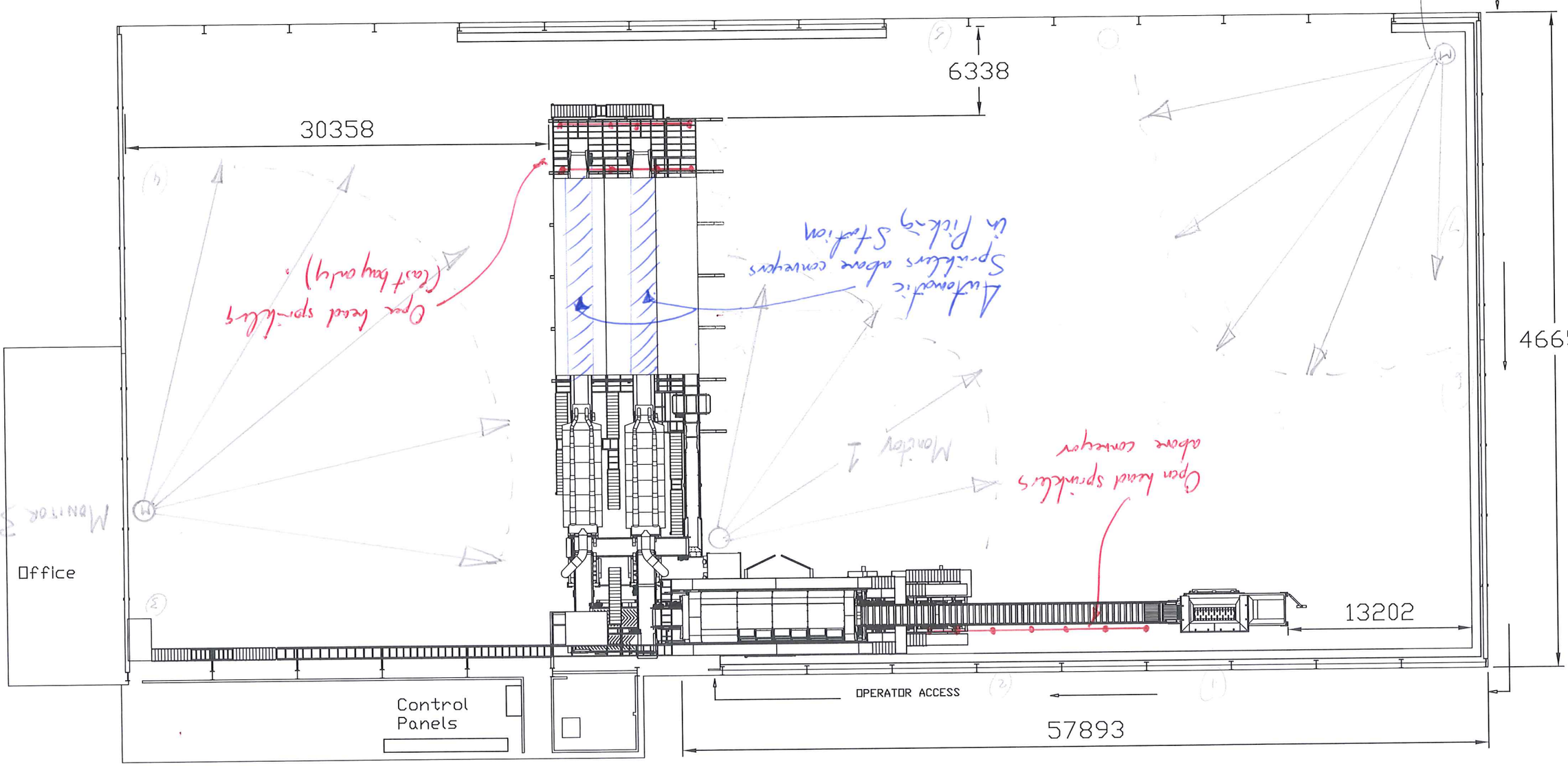
73

63

62

SKETCH No. 4

SKETCH No. 5



UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN MILLIMETERS TOLERANCES: 0 - ±1.0mm, 0.0 - ±0.25mm, 0.00 - ±0.05mm, ANGLES - ±0.5°	KIVERCO LIMITED THIS DRAWING AND DESIGN IS THE PROPERTY OF KIVERCO LIMITED. IT MUST NOT BE COPIED OR SUBMITTED TO A THIRD PARTY WITHOUT THE WRITTEN CONSENT OF KIVERCO LIMITED	DO NOT SCALE DRAWING	THIRD ANGLE PROJECTION
		TITLE:	
REV COMMENT(S)		Rev: —	DWG NO. 3278S-TWV Installed Plant
DEBUR AND BREAK SHARP EDGES	MATERIAL:	NAME / SIGNATURE / DATE	A3
	THICKNESS: mm	DRAWN P.H.G 13/09/2016	
	WEIGHT: Kg	APP'D	SCALE: NTS SHEET 1 OF 1

KIVERCO™ RECYCLING PLANT

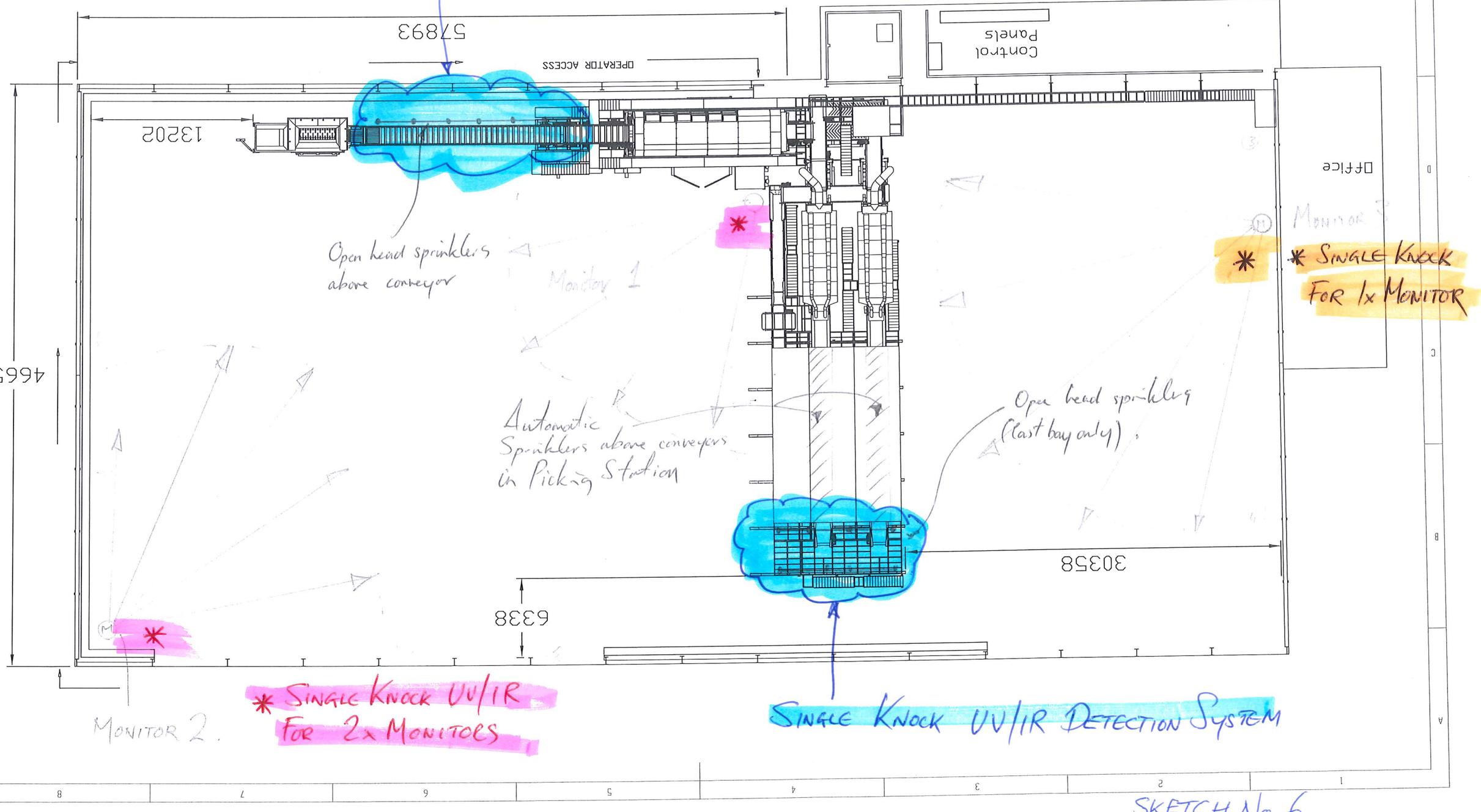
KIVERCO LIMITED
26 GORTNAGLOUGH ROAD
DUNGANNON, CO. TYRONE
BT71 5EE
TEL - 028 87 738811
FAX - 028 87 738841
E-MAIL: info@kiverco.com

KIVERCO RECYCLING PLANT

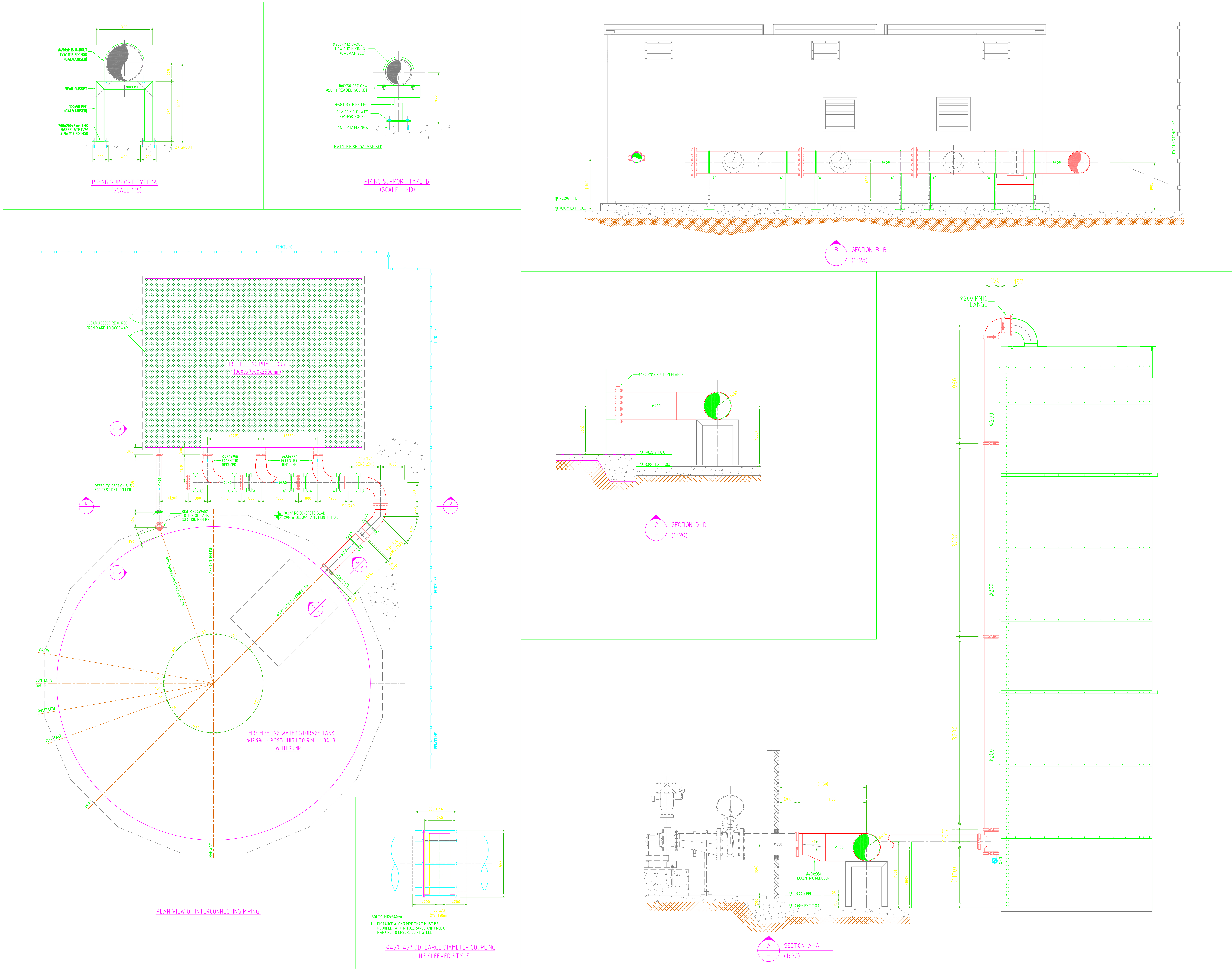
KIVERCO LIMITED
26 CORTLANDT DOCK ROAD
DUNDONALD, CO. TYRONE
TEL - 028 97 738881
FAX - 028 97 738891
E-MAIL: info@kiverco.com

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN MILLIMETERS TOLERANCES: 0 -±1mm 00 -±025mm 000 -±005mm ANGLES -±05°	KIVERCO LIMITED THIS DRAWING AND DESIGN IS THE PROPERTY OF KIVERCO LIMITED IT MUST NOT BE COPIED OR SUBMITTED TO A THIRD PARTY WITHOUT THE WRITTEN CONSENT OF KIVERCO LIMITED	DEBUR AND BREAK SHARP EDGES	THICKNESS: mm
REV COMMENT(S)	DWG NO 32785-TWW Installed Plant	MATERIAL:	APPV'D
	Rev: —	NAME	DRAWN
		SIGNATURE	
		DATE	
TITLE:	DO NOT SCALE DRAWING	THIRD ANGLE PROJECTION	A3

WEIGHT: Kg | SCALE: NTS | SHEET 1 OF 1



SKETCH No. 6.



Standard Specification

TUBE Ø15 TO Ø150NB	BS EN 10255 MEDIUM SERIES (REPLACES BS 1387)
Ø200 & ABOVE	BS EN 10216-2 (REPLACES BS 3601) STANDARD WEIGHT
FINISH	TEST RETURN LINE - GALVANISED / SUCTION PIPING - ONE COAT PRIMER
BUTT WELD FITTINGS	BS EN 10253-1:1999, CARBON STEEL
WELD FLANGES	BS4504, PN16, STEEL (UNLESS NOTED OTHERWISE)
WELD SOCKETS	BS EN 10241:2000
GROOVED MECHANICAL JOINTS	LPC APPROVED, PAINTED / GALVANISED
GROOVED MECHANICAL FITTINGS	LPC APPROVED, PAINTED / GALVANISED
THREADED FITTINGS	MALLEABLE IRON TO BS EN 10242:1995 (BS 143)
THREADED JOINTS	BS 21:1985 BSP THREADS EXCEPT WHERE EXPRESSLY IDENTIFIED AS NPT
FLANGE JOINTS	BS4504 PN16 (U.N.O) GASKETS SHALL BE EPDM RUBBER
FLANGE BOLTS	BS4190:2001 ISO METRIC HEX HEAD BOLTS (PLATED)
THREAD SEALANT (WATER SYSTEMS)	COTTON AND BOSS WHITE FOR FITTING THREADS, PTFE FOR SPRINKLERS.
THREAD SEALANT (AIR SYSTEMS)	LOCTITE 577 MEDIUM STRENGTH PIPE SEALANT
PIPE SUPPORT COMPONENTS	BRIGHT ZINC PLATED, FABRICATIONS GALVANISED / PAINTED AS SHOWN
WELDING	SHALL COMPLY WITH BS2640 OR BS2971 CLASS II
NDT	10% MPI
APPROVALS	WELDERS APPROVED TO EN 287-1
FABRICATION DELIVERY	PLASTIC ENDS REQUIRED, DELIVERED BUNDLED/PACKED IN LINE WITH ARGUS P/O.

General Notes

1) SPRINKLER DEFLECTORS MUST BE INSTALLED PARALLEL TO CEILING OR ROOF.

2) SPRINKLER HEADS MUST BE INSTALLED USING PTFE TAPE ONLY, AND THREADED PIPE JOINTS MUST HAVE A WATER COUNCIL APPROVED JOINTING COMPOUND. (E.G. WATER HAWK OR EQUIVALENT).

3) SPRINKLER HEADS MUST BE A MINIMUM DISTANCE OF 150MM FROM PIPE SUPPORTS.

4) ALL PIPEWORK MUST BE INSTALLED WITH THE FOLLOWING MINIMUM SLOPES FOR DRAINAGE: RANGE PIPES - 4MM PER 1 METRE RUN - DISTRIBUTION PIPES - 2MM PER 1 METRE RUN.

5) ALL LEVELS SHOWN ARE TO PIPE CENTRE LINES, UNLESS WHERE NOTED OTHERWISE.

6) SPRINKLER HEADS, MULTIPLE CONTROLS AND NOZZLES MUST NOT BE PAINTED.

7) ARGUS FIRE PROTECTION CO. LTD DOES NOT ACCEPT ANY RESPONSIBILITY FOR DAMAGE TO ANY PART OF THE INSTALLATION DUE TO FROST. CLIENTS MUST TAKE ADEQUATE PRECAUTIONS TO PREVENT DAMAGE TO OR ADEQUATELY MAINTAIN ANY TRACE HEAT AND /OR LAGGING PROVIDED TO PROTECT WATER FILLED PIPING.

8) A CLEAR SPACE OF 1.0M MUST BE MAINTAINED BELOW THE SPRINKLER DEFLECTOR AT ALL TIMES FOR HIGH HAZARD SYSTEMS AND 0.5M FOR LIGHT & ORDINARY HAZARD. ANY OTHER HIGH LEVEL SERVICES INSTALLED HIGHER, MUST BE COORDINATED WITH SPRINKLER POSITIONS.

ABBREVIATIONS

No. : NUMBER
LVL : LEVEL
C/W : COMPLETE WITH
T.B.C : TO BE CONFIRMED
Ø NB : DIAMETER (NOMINAL BORE)
AFFL : ABOVE FLOOR LEVEL
T.O.P : TOP OF PIPE
B.O.P : BOTTOM OF PIPE
C/W : COMPLETE WITH
T/C : TO CUT (ON SITE)
A/F : ACROSS FLATS
EA : BRITISH STD EQUAL ANGLE
PFC : PARALLEL FACE CHANNEL
ASSY : ASSEMBLY
N.T.S : NOT TO SCALE
O/D : OUTSIDE DIAMETER
ECC : SPECIFICALLY ECCENTRIC

NON-FUNCTIONAL DIMENSIONS SHOWN IN BRACKETS

SYMBOL LEGEND

SYSTEM PIPEWORK
PIPE UNION
DRAIN VALVE C/W PLUG
GROOVED COUPLING
BRACKET OF NOTED TYPE
PIPE RISE/DROP
(+) LEVEL ABOVE FFL
(-) LEVEL BELOW SOFFIT

Clients Reference Drawings

Argus Reference Drawings

1598-DRG-001	FIRE PUMPHOUSE ENCLOSURE GENERAL ELEVATIONS
1598-DRG-002	CIVIL WORK GUIDE DRAWING
1598-DRG-003	FIRE PUMP HOUSE INTERCONNECTION PIPING G.A
1598-DRG-004	FIRE PUMPHOUSE G.A
1598-DRG-005	SECTIONS AND DETAILS
1598-DRG-006	FIRE WATER TANK G.A
1598-DRG-017	FEED MAINS PIPING G.A

ISSUED FOR CONSTRUCTION

ALL SUCTION PIPING TO BE TRACE HEATED AND LAGGED

ALL TEST RETURN PIPING TO BE GALVANISED

Rev	Date	Description	Drawn	Chk'd
D	13.06.17	DETAIL AMENDED	P.B	AY
C	20.04.17	DETAIL AMENDED - ISSUED FOR CONSTRUCTION	S.MILL	AY
B	14.02.17	REVISED TO ORIGINAL TANK SIZE - P/HOUSE ROTATED	S.MILL	AY
A	10.02.17	NARROW BODY TANK OPTION INCORPORATED	S.MILL	AY
0	19.01.17	ORIGINAL ISSUE	S.MILL	AY

Argus fire

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Facsimile : +44 (0) 1384 393955 website : www.argusfire.co.uk

Assessed to OHSAS 18001 LPCB ref. no. 011-HS
LPS 1014 Certificated Fire Detection and Alarm System Firm Certificate No. CFA-148
LPS 1048-1 Approved Sprinkler Contractor Certificate No. ASC-005
Assessed to ISO 9001 LPCB ref. no. 011

Client

Tom White Waste

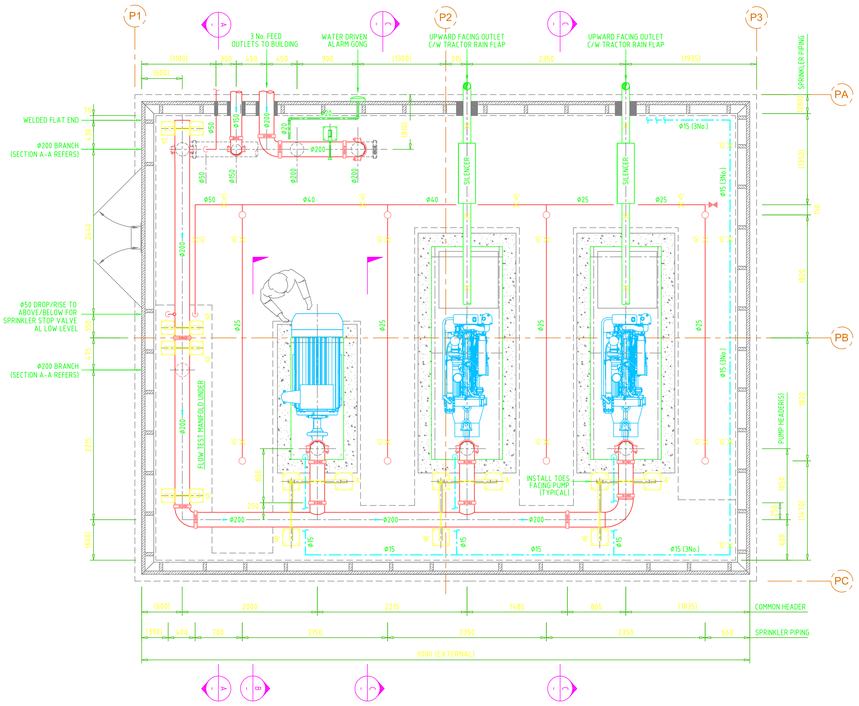
Project

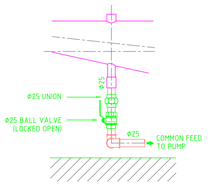
Tom White Waste, Coventry.

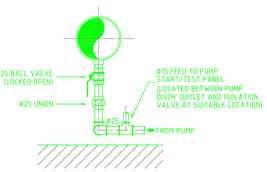
Drawing Title

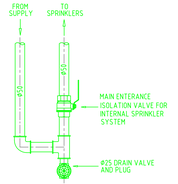
Fire Fighting Systems
Fire Pump House Interconnection Piping
General Arrangement Drawing

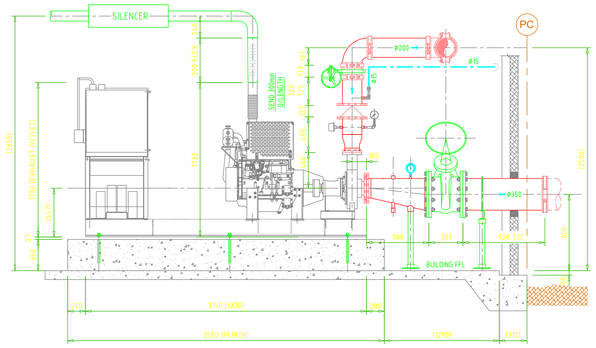
Orig Date	Scale	Drawing No	Rev	Drawn	Chk'd
19.01.17	1:50	1598-DRG-003	D	S.MILL	AY

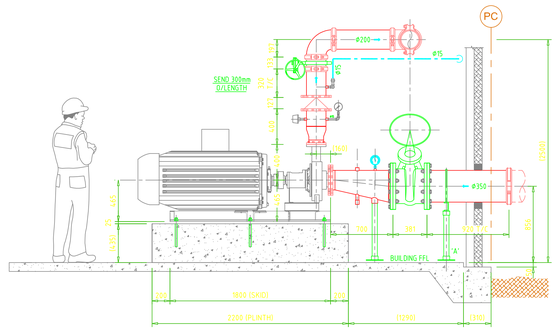


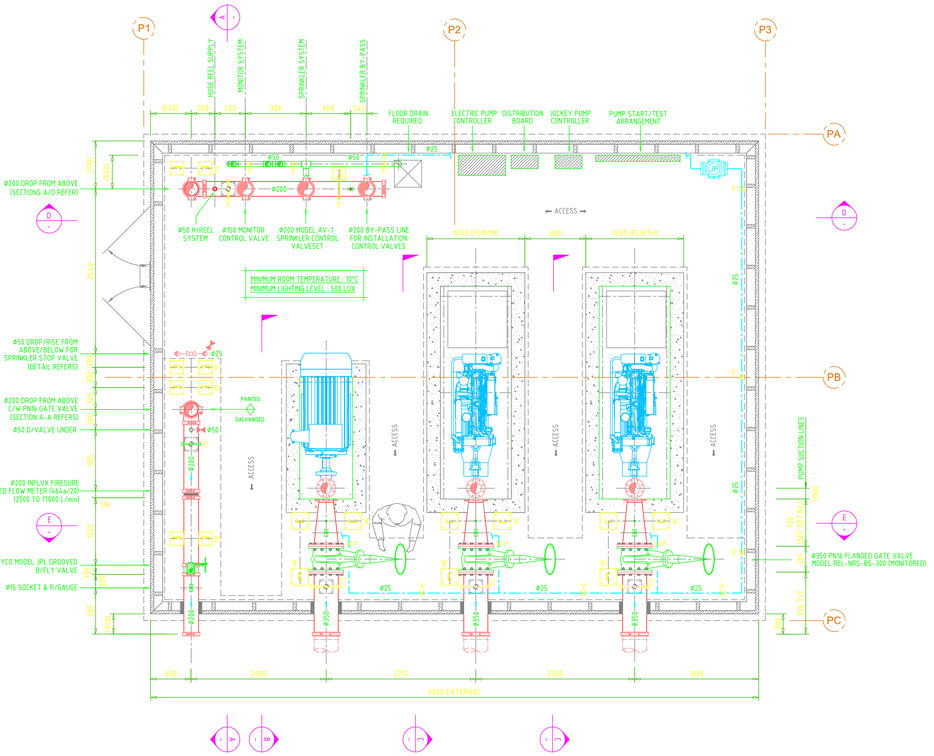


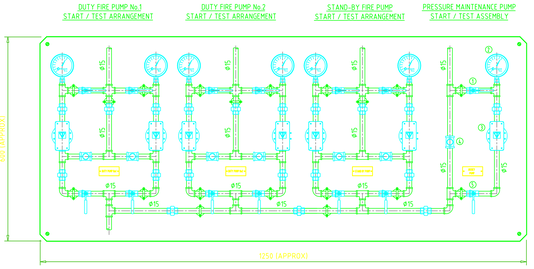


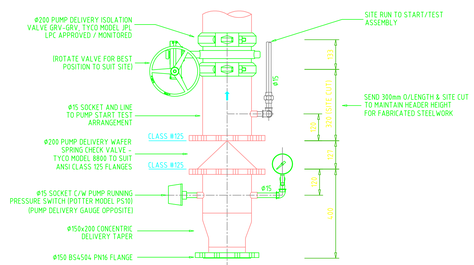












PLAN VIEW PUMP HOUSE ABOVE OPERATING LEVEL

(SCALE 1:33.3)

Fire Protection Equipment

SPRINKLERS	LPC APPROVED (SEE SCHEDULE)
BUTTERFLY VALVES	TYCO MODEL JPL - MONITORED - LPC APPROVED
GATE VALVES	RELIABLE MODEL REL-NRS-BS-300 - MONITORED
MAIN PUMP CHECK VALVES	TYCO WAFER MODEL 8800 (FM APPROVED) FOR ANSI #125 FLANGES
FIRE PUMP	ARMSTRONG DIESEL/ELECTRIC 1/2 CAPACITY PUMP 8x6x13 LPC
PUMP DRIVERS	JU6H-LP54 DIESEL ENGINE / IP55 TEFV 160 KW
FIRE WATER TANK	FRANKLIN HODGE LPS1276 Ref:037c/06e. 12.99m DIA 1184m3 (INC SUMP)
FLOW SWITCHES	POTTER ROAMER MODEL PS10
PUMP INITIATION BOARD	SEP EN 12845 MODEL PTEN-J3P (JOCKEY & 3 PUMPS)

Sprinkler Schedule

INSTALLATION NUMBER	N-A
AREA / SIZE	FIRE FIGHTING PUMP HOUSE
INSTALLATION	WET PIPE
CONSTRUCTION:	NON FIRE-PROOF
NUMBER OF SPRINKLERS:	8 No.
K-FACTOR / MINIMUM PRESSURE	K-80 / 0.5 barG
TEMPERATURE RATING:	141°c
SIZE:	15mm
MODEL/TYPE:	STANDARD RESPONSE, UPRIGHT (SSU), BRASS

Sprinkler Design Parameters

DESIGN STANDARDS / CODES	LPC RULES INCORPORATING BS EN 12845
HAZARD CLASSIFICATION	HIGH HAZARD
AREA OF OPERATION	FIRE PUMP ROOM
MAXIMUM SPRINKER SPACING	9m2

SCRAP DETAIL OF PRESSURE MAINTENANCE PUMP SUCTION CONNECTION (3 PLACES)

(SCALE 1:10)

SCRAP DETAIL OF PRESSURE MAINTENANCE PUMP COMMON DELIVERY CONNECTION

(SCALE 1:10)

PUMPHOUSE INTERNAL SPRINKLER ISOLATION VALVE DETAIL

SECTION C-C ON DIESEL UNITS

(1:25)

SECTION B-B ON ELECTRIC UNIT

(1:25)

Standard Specification

ABOVEGROUND TUBE Ø15 TO Ø150NB	BS EN 10255 MEDIUM SERIES (REPLACES BS 1387)
ABOVEGROUND TUBE Ø200NB AND ABOVE	BS EN 10217-1 (REPLACES BS 3601)
FINISH	PAINTED ONE COAT PRIMER
COLOUR BANDING	N/A
BUTT WELD FITTINGS	BS EN 10253-1:1999, CARBON STEEL
WELD FLANGES	BS4504, PN16, STEEL (UNLESS NOTED OTHERWISE)
WELD SOCKETS	BS EN 10241:2000
GROOVED MECHANICAL JOINTS	LPC APPROVED, PAINTED
GROOVED MECHANICAL FITTINGS	LPC APPROVED, PAINTED
THREADED FITTINGS	MALLEABLE IRON TO BS EN 10242:1995 (BS 143)
THREADED JOINTS	BS 21:1985 BSP THREADS EXCEPT WHERE EXPRESSLY IDENTIFIED AS NPT
FLANGE JOINTS	BS4504 PN16 (U.N.O) GASKETS SHALL BE EPDM RUBBER
FLANGE BOLTS	BS4190:2001 ISO METRIC HEX HEAD BOLTS (PLATED)
THREAD SEALANT (WATER SYSTEMS)	COTTON AND BOSS WHITE FOR FITTING THREADS, PTFE FOR SPRINKLERS.
THREAD SEALANT (AIR SYSTEMS)	LOCTITE 577 MEDIUM STRENGTH PIPE SEALANT
PIPE SUPPORT COMPONENTS	BRIGHT ZINC PLATED, FABRICATIONS PAINTED WHERE SHOWN
WELDING	SHALL COMPLY WITH BS2640 OR BS2971 CLASS II
NDT	10% MPI
APPROVALS	WELDERS APPROVED TO EN 287-1
FABRICATION DELIVERY	PLASTIC ENDS REQUIRED, DELIVERED BUNDLED/PACKED IN LINE WITH ARGUS P/O.

General Notes

1) SPRINKLER DEFLECTORS MUST BE INSTALLED PARALLEL TO CEILING OR ROOF.

2) SPRINKLER HEADS MUST BE INSTALLED USING PTFE TAPE ONLY, AND THREADED PIPE JOINTS MUST HAVE A WATER COUNCIL APPROVED JOINTING COMPOUND. (E.G. WATER HAWK OR EQUIVALENT).

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ABBREVIATIONS

No. : NUMBER
LVL : LEVEL
C/W : COMPLETE WITH
T.B.C : TO BE CONFIRMED
Ø NB : DIAMETER (NOMINAL BORE)
AFFL : ABOVE FLOOR LEVEL
T.O.P : TOP OF PIPE
B.O.P : BOTTOM OF PIPE
C/W : COMPLETE WITH
T/C : TO CUT (ON SITE)
A/F : ACROSS FLATS
EA : BRITISH STD EQUAL ANGLE
PFC : PARALLEL FACE CHANNEL
ASSY : ASSEMBLY
N.T.S : NOT TO SCALE
O/D : OUTSIDE DIAMETER
ECC : SPECIFICALLY ECCENTRIC

NON-FUNCTIONAL DIMENSIONS SHOWN IN BRACKETS

SYMBOL LEGEND

⟆——⟅	SYSTEM PIPEWORK
⊞	PIPE UNION
⋈	DRAIN VALVE C/W PLUG
⟟	GROOVED COUPLING
×A	BRACKET OF NOTED TYPE
⫯	PIPE RISE/DROP
▽ +4150	(+) LEVEL ABOVE FFL (-) LEVEL BELOW SOFFIT

Clients Reference Drawings

12573CV-04-05 - SITE SURVEY PLAN

Argus Reference Drawings

1598-DRG-001	FIRE PUMPHOUSE ENCLOSURE GENERAL ELEVATIONS
1598-DRG-002	CIVIL WORK GUIDE DRAWING
1598-DRG-003	FIRE PUMP HOUSE INTERCONNECTION PIPING G.A
1598-DRG-004	FIRE PUMPHOUSE G.A
1598-DRG-005	SECTIONS AND DETAILS
1598-DRG-006	FIRE WATER TANK G.A
1598-DRG-017	FEED MAINS PIPING G.A

PLAN VIEW PUMP HOUSE AT OPERATING LEVEL

(SCALE 1:33.3)

ITEM	DESCRIPTION
1	PUMP PRESSURE SWITCH ISOLATION VALVE
2	PUMP PRESSURE GAUGE
3	PUMP PRESSURE SWITCH
4	PUMP NON RETURN VALVE
5	PUMP PRESSURE SWITCH TEST VALVE

DETAIL OF EN 12845 COMBINED PUMP INITIATION BOARD

DETAIL OF FIREPUMP DELIVERY HEADER

(SCALE 1:10)

DETAIL OF FLAT TOP SUCTION TAPER

(SCALE 1:10)

EXPLODED VIEW OF AV-1 -300 SPRINKLER WET ALARM VALVE

ISSUED FOR CONSTRUCTION

THIS DRAWING TO BE READ IN CONJUNCTION WITH INTERCONNECTION PIPING LAYOUT

Rev	Date	Description	Drawn	Chk'd
A	20.04.17	ISSUED FOR CONSTRUCTION	S.MILL	A.Y
0	09.02.17	ORIGINAL ISSUE	S.MILL	A.Y

Argus fire

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West Midlands, DY8 1PA, United Kingdom

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Facsimile : +44 (0) 1384 393955 website : www.argusfire.co.uk

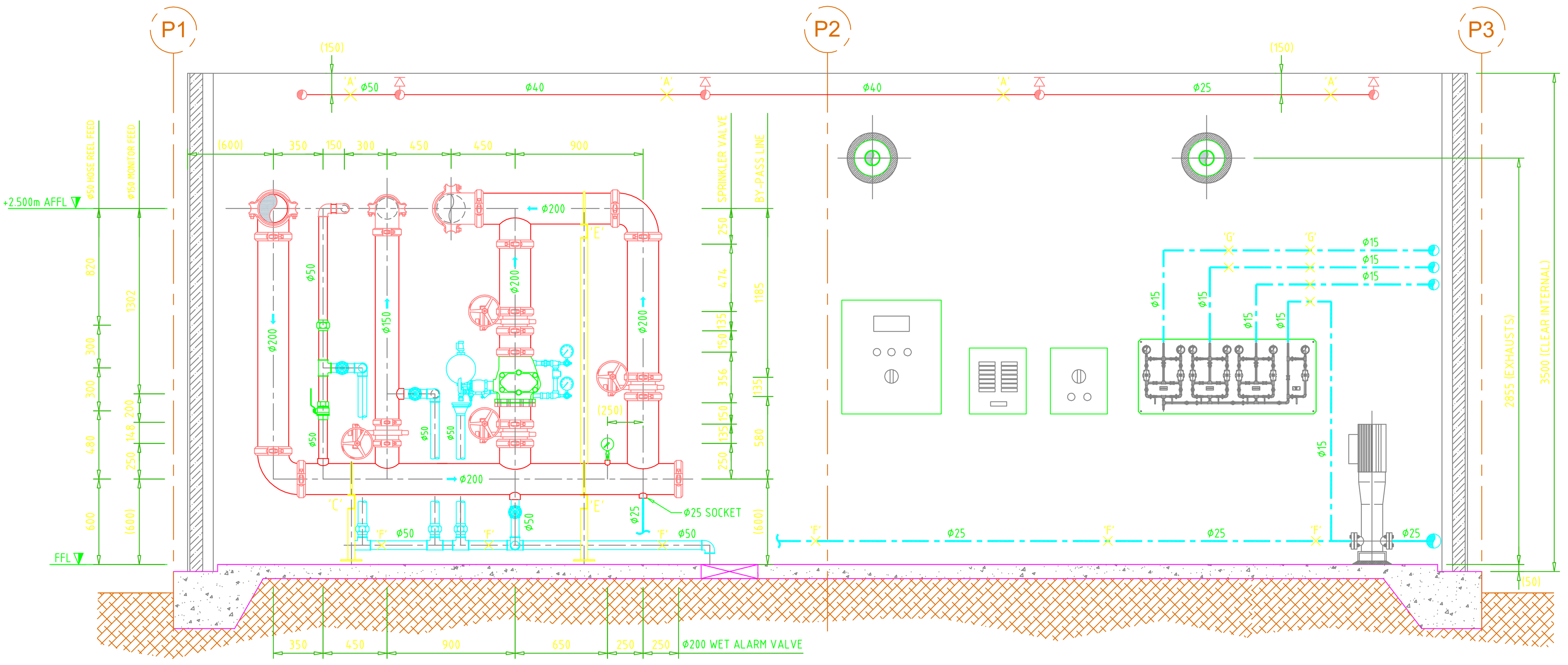
Assessed to OHSAS 18001 LPCB ref. no. 011-HS
LPS 1014 Certificated Fire Detection and Alarm System Firm Certificate No. CFA-148
LPS 1048-1 Approved Sprinkler Contractor Certificate No. ASC-005
Assessed to ISO 9001 LPCB ref. no. 011

Client
Tom White Waste

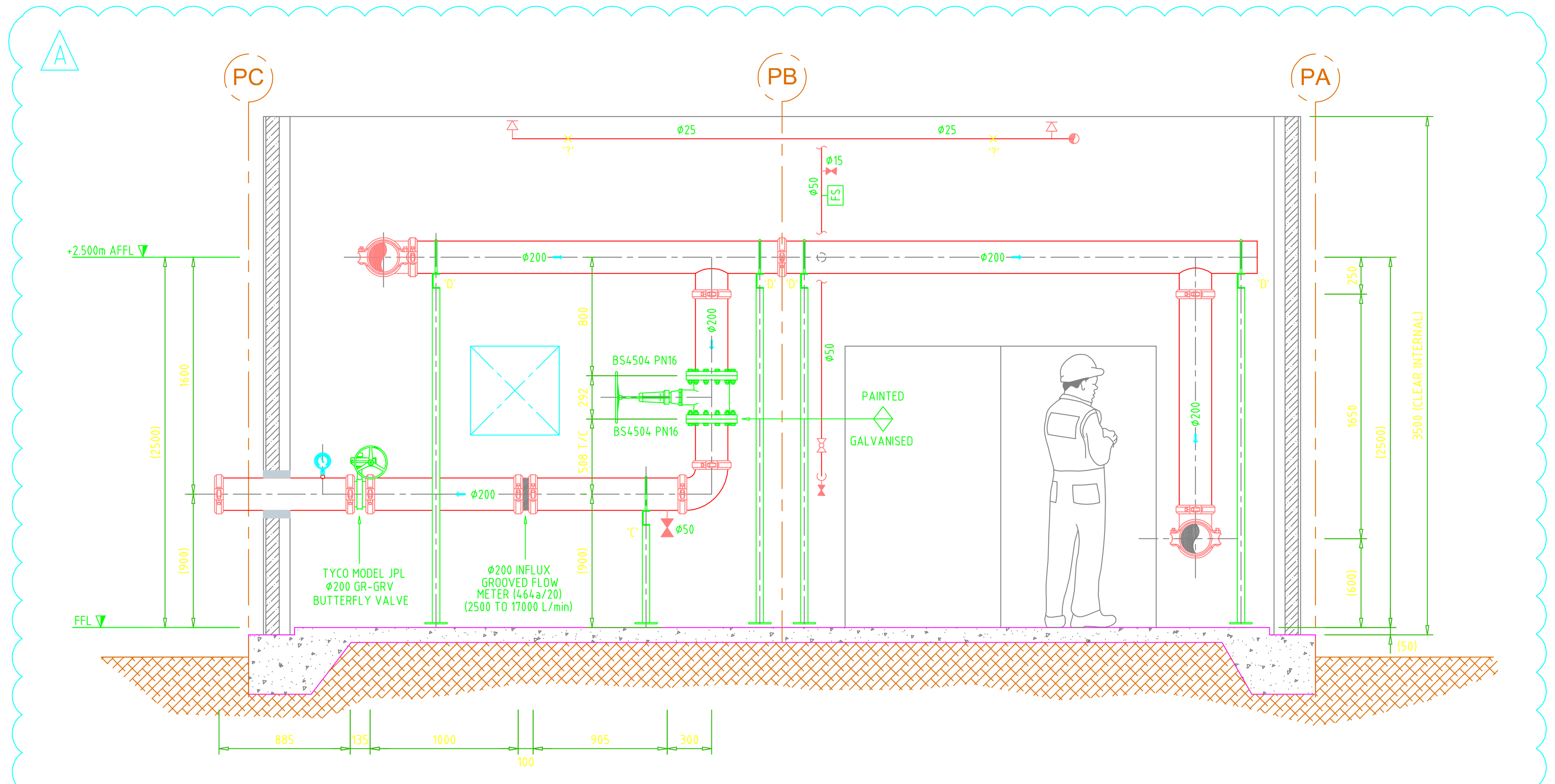
Project
Tom White Waste, Coventry.

Drawing Title
Fire Fighting Systems
Fire Pump House Piping
General Arrangement Drawing

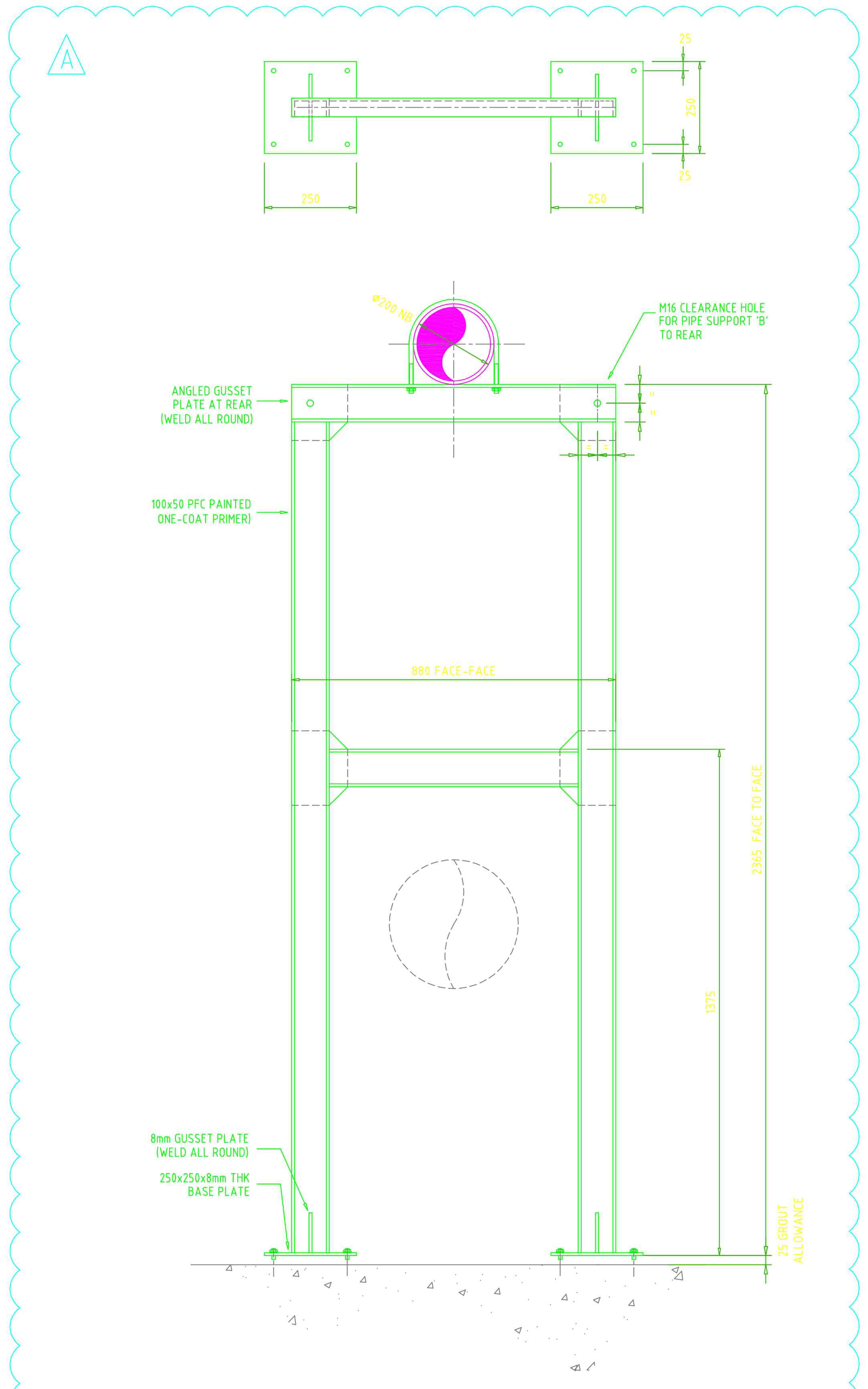
Orig Date	Scale	Drawing No	Rev	Drawn	Chk'd
9.02.17	1:33.3	1598-DRG-004	A	S.MILL	A.Y



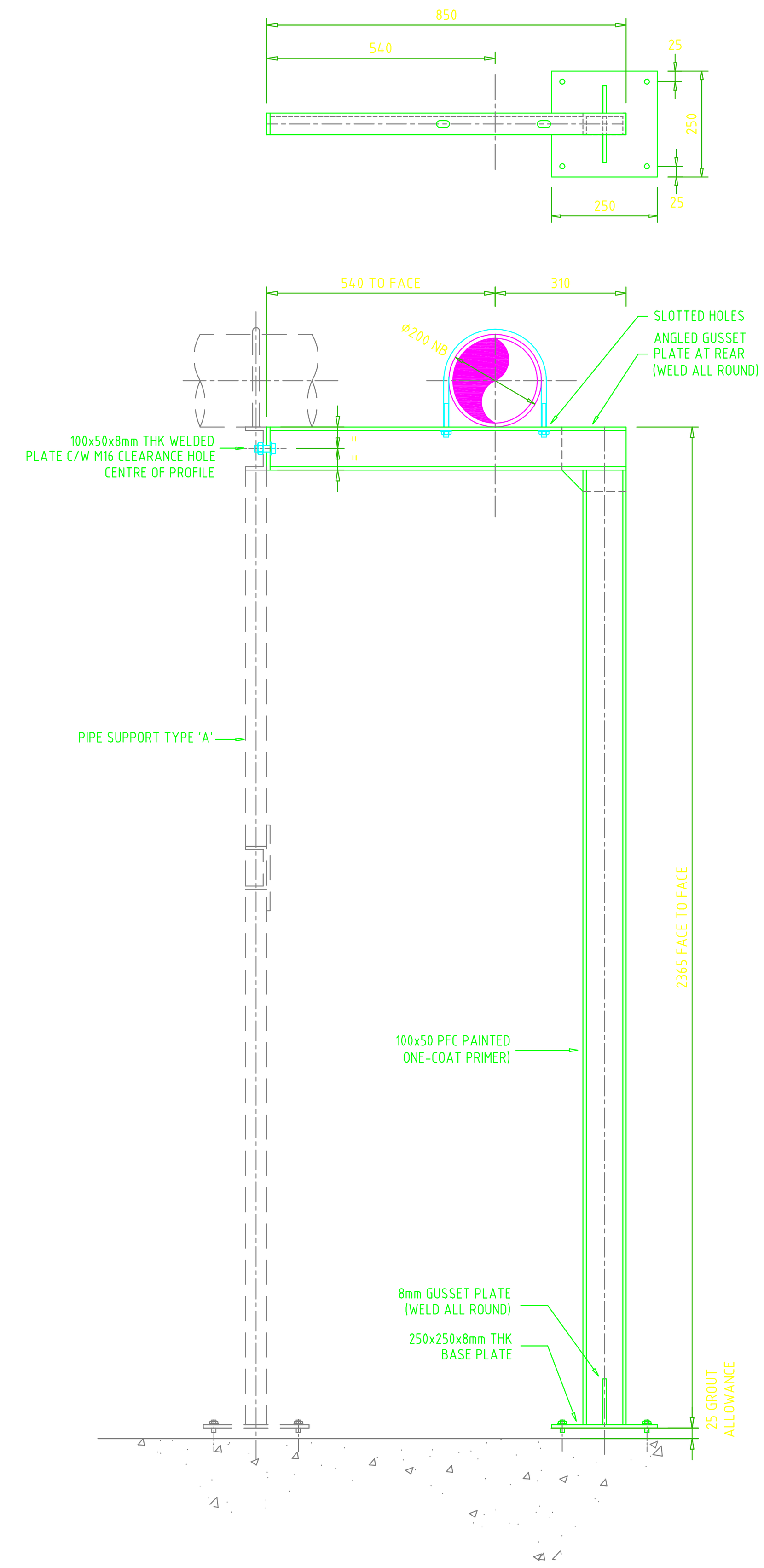
SECTION D–D
(1:25)



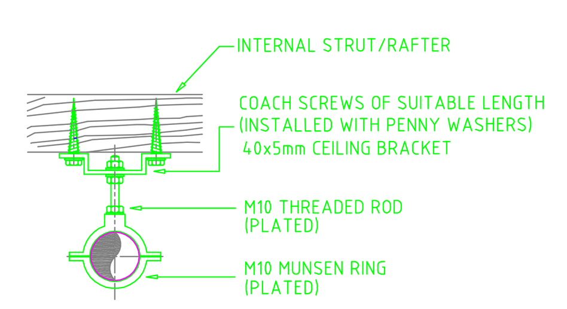
SECTION A–A
(1:25)



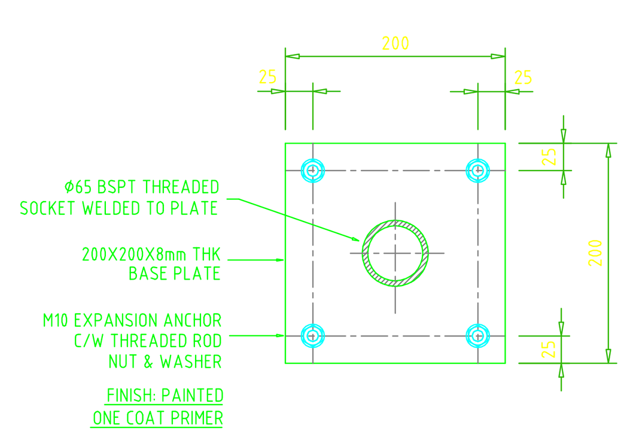
PUMP DELIVERY HEADER PIPING SUPPORT TYPE 'A'
(PAINTED ONE COAT PRIMER)



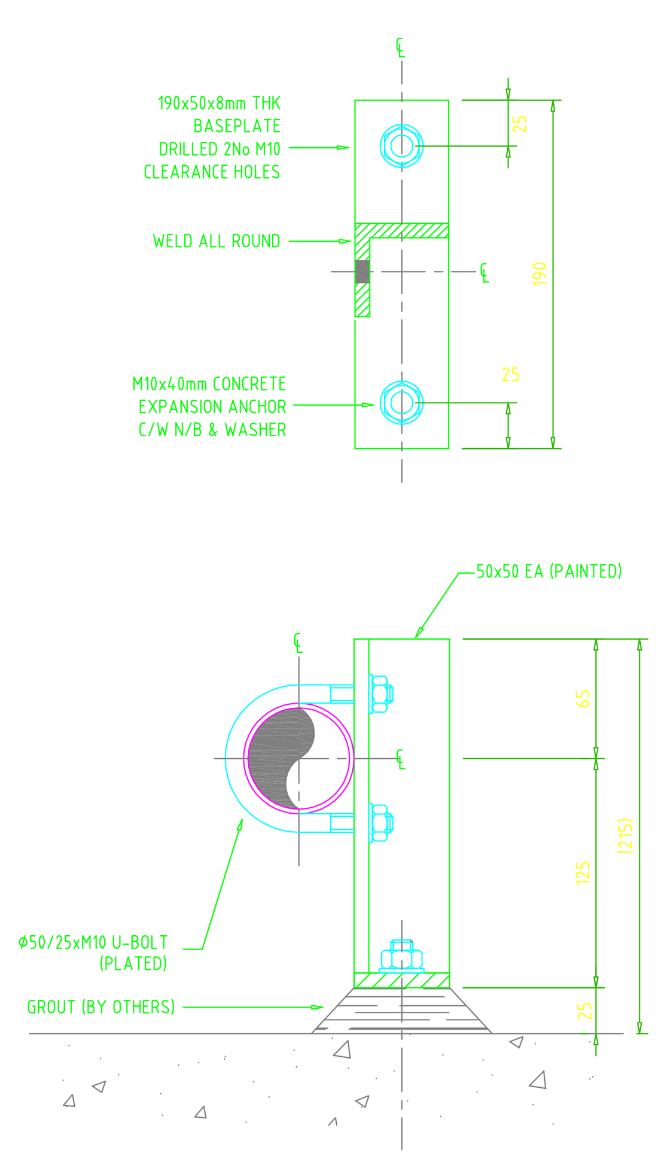
COMMON HEADER PIPING SUPPORT TYPE 'B'
(TOES FORWARD)



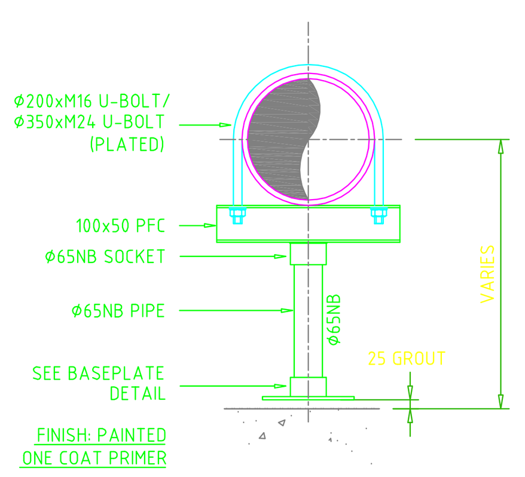
PIPE SUPPORT TYPE 'G'
FOR WALL/CEILING MOUNTED PIPING



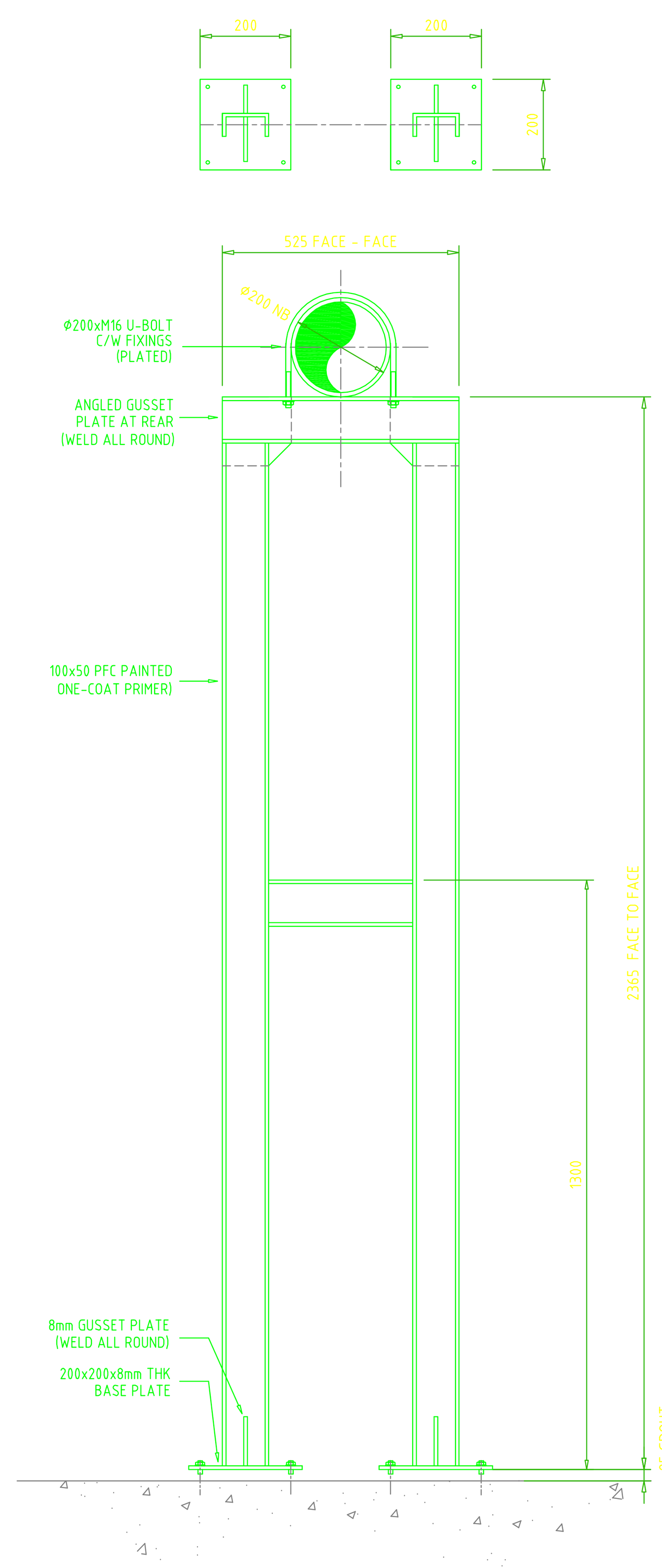
TYPICAL BASE PLATE DETAIL
FOR STANDPIPE BRACKETS



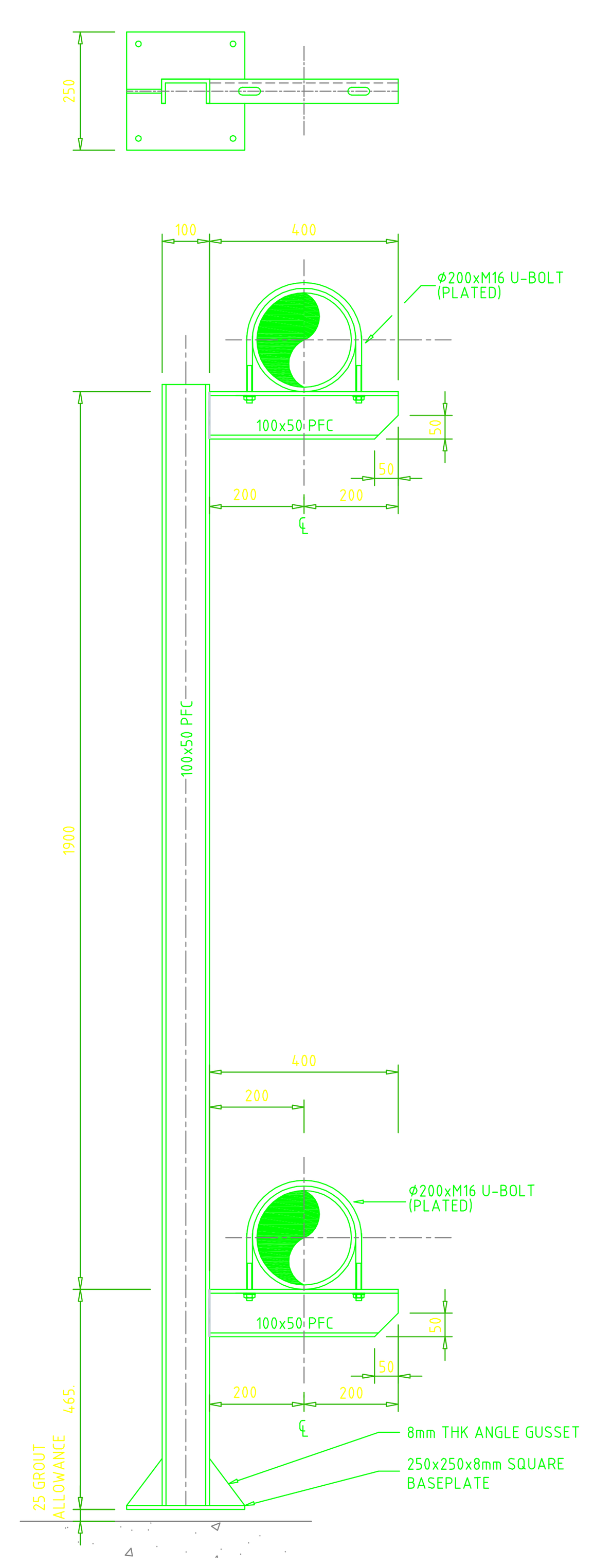
BRACKET TYPE 'F'
FOR USE ON LOW LEVEL SMALL BORE PIPING



STANDPIPE SUPPORT TYPE 'C'
(SCALE – 1:15)



PIPING SUPPORT TYPE 'D'
(PAINTED ONE COAT PRIMER)



PIPING SUPPORT TYPE 'E'
(PAINTED ONE COAT PRIMER)

Standard Specification

ABOVEGROUND TUBE ∅15 TO ∅150NB	BS EN 10255 MEDIUM SERIES (REPLACES BS 1387)
ABOVEGROUND TUBE ∅200NB AND ABOVE	BS EN 10217-1 (REPLACES BS 3601)
FINISH	PAINTED ONE COAT PRIMER
COLOUR BANDING	N/A
BUTT WELD FITTINGS	BS EN 10253-1:1999, CARBON STEEL
WELD FLANGES	BS4504, PN16, STEEL (UNLESS NOTED OTHERWISE)
WELD SOCKETS	BS EN 10241:2000
GROOVED MECHANICAL JOINTS	LPC APPROVED, PAINTED
GROOVED MECHANICAL FITTINGS	LPC APPROVED, PAINTED
THREADED FITTINGS	MALLEABLE IRON TO BS EN 10242:1995 (BS 143)
THREADED JOINTS	BS 21:1985 BSP THREADS EXCEPT WHERE EXPRESSLY IDENTIFIED AS NPT
FLANGE JOINTS	BS4504 PN16 (U.N.O) GASKETS SHALL BE EPDM RUBBER
FLANGE BOLTS	BS4190:2001 ISO METRIC HEX HEAD BOLTS (PLATED)
THREAD SEALANT (WATER SYSTEMS)	COTTON AND BOSS WHITE FOR FITTING THREADS, PTFE FOR SPRINKLERS.
THREAD SEALANT (AIR SYSTEMS)	LOCTITE 577 MEDIUM STRENGTH PIPE SEALANT
PIPE SUPPORT COMPONENTS	BRIGHT ZINC PLATED, FABRICATIONS PAINTED WHERE SHOWN
WELDING	SHALL COMPLY WITH BS2640 OR BS2971 CLASS II
NDT	10% MPI
APPROVALS	WELDERS APPROVED TO EN 287-1
FABRICATION DELIVERY	PLASTIC ENDS REQUIRED, DELIVERED BUNDLED/PACKED IN LINE WITH ARGUS P/O.

General Notes

1) SPRINKLER DEFLECTORS MUST BE INSTALLED PARALLEL TO CEILING OR ROOF.

2) SPRINKLER HEADS MUST BE INSTALLED USING PTFE TAPE ONLY, AND THREADED PIPE JOINTS MUST HAVE A WATER COUNCIL APPROVED JOINTING COMPOUND. (E.G. WATER HAWK OR EQUIVALENT).

3) SPRINKLER HEADS MUST BE A MINIMUM DISTANCE OF 150MM FROM PIPE SUPPORTS.

4) ALL PIPEWORK MUST BE INSTALLED WITH THE FOLLOWING MINIMUM SLOPES FOR DRAINAGE: RANGE PIPES – 4MM PER 1 METRE RUN – DISTRIBUTION PIPES – 2MM PER 1 METRE RUN.

5) ALL LEVELS SHOWN ARE TO PIPE CENTRE LINES, UNLESS WHERE NOTED OTHERWISE.

6) SPRINKLER HEADS, MULTIPLE CONTROLS AND NOZZLES MUST NOT BE PAINTED.

7) ARGUS FIRE PROTECTION CO. LTD DOES NOT ACCEPT ANY RESPONSIBILITY FOR DAMAGE TO ANY PART OF THE INSTALLATION DUE TO FROST. CLIENTS MUST TAKE ADEQUATE PRECAUTIONS TO PREVENT DAMAGE TO OR ADEQUATELY MAINTAIN ANY TRACE HEAT AND /OR LAGGING PROVIDED TO PROTECT WATER FILLED PIPING.

8) A CLEAR SPACE OF 1.0M MUST BE MAINTAINED BELOW THE SPRINKLER DEFLECTOR AT ALL TIMES FOR HIGH HAZARD SYSTEMS AND 0.5M FOR LIGHT & ORDINARY HAZARD. ANY OTHER HIGH LEVEL SERVICES INSTALLED HIGHER, MUST BE COORDINATED WITH SPRINKLER POSITIONS.

ABBREVIATIONS

No. : NUMBER
LVL : LEVEL
C/W : COMPLETE WITH
T.B.C : TO BE CONFIRMED
∅ NB : DIAMETER (NOMINAL BORE)
AFFL : ABOVE FLOOR LEVEL
T.O.P : TOP OF PIPE
B.O.P : BOTTOM OF PIPE
C/W : COMPLETE WITH
T/C : TO CUT (ON SITE)
A/F : ACROSS FLATS
EA : BRITISH STD EQUAL ANGLE
PFC : PARALLEL FACE CHANNEL
ASSY : ASSEMBLY
N.T.S : NOT TO SCALE
O/D : OUTSIDE DIAMETER
ECC : SPECIFICALLY ECCENTRIC

NON-FUNCTIONAL DIMENSIONS SHOWN IN BRACKETS

SYMBOL LEGEND

- SYSTEM PIPEWORK
- PIPE UNION
- DRAIN VALVE C/W PLUG
- GROOVED COUPLING
- BRACKET OF NOTED TYPE
- PIPE RISE/DROP
- (+) LEVEL ABOVE FFL (–) LEVEL BELOW SOFFIT

Clients Reference Drawings

12573CV-04-05 – SITE SURVEY PLAN

Argus Reference Drawings

1598-DRG-001	FIRE PUMPHOUSE ENCLOSURE GENERAL ELEVATIONS
1598-DRG-002	CIVIL WORK GUIDE DRAWING
1598-DRG-003	FIRE PUMP HOUSE INTERCONNECTION PIPING G.A
1598-DRG-004	FIRE PUMPHOUSE G.A
1598-DRG-005	SECTIONS AND DETAILS
1598-DRG-006	FIRE WATER TANK G.A
1598-DRG-017	FEED MAINS PIPING G.A

ISSUED FOR CONSTRUCTION

THIS DRAWING TO BE READ IN CONJUNCTION WITH INTERCONNECTION PIPING LAYOUT

Rev	Date	Description	Drawn	Chk'd
A	20.04.17	MINOR AMENDMENTS – ISSUED FOR CONSTRUCTION	S.MILL	A.Y
0	09.02.17	ORIGINAL ISSUE	S.MILL	A.Y

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Facsimile : +44 (0) 1384 393955 website : www.argusfire.co.uk

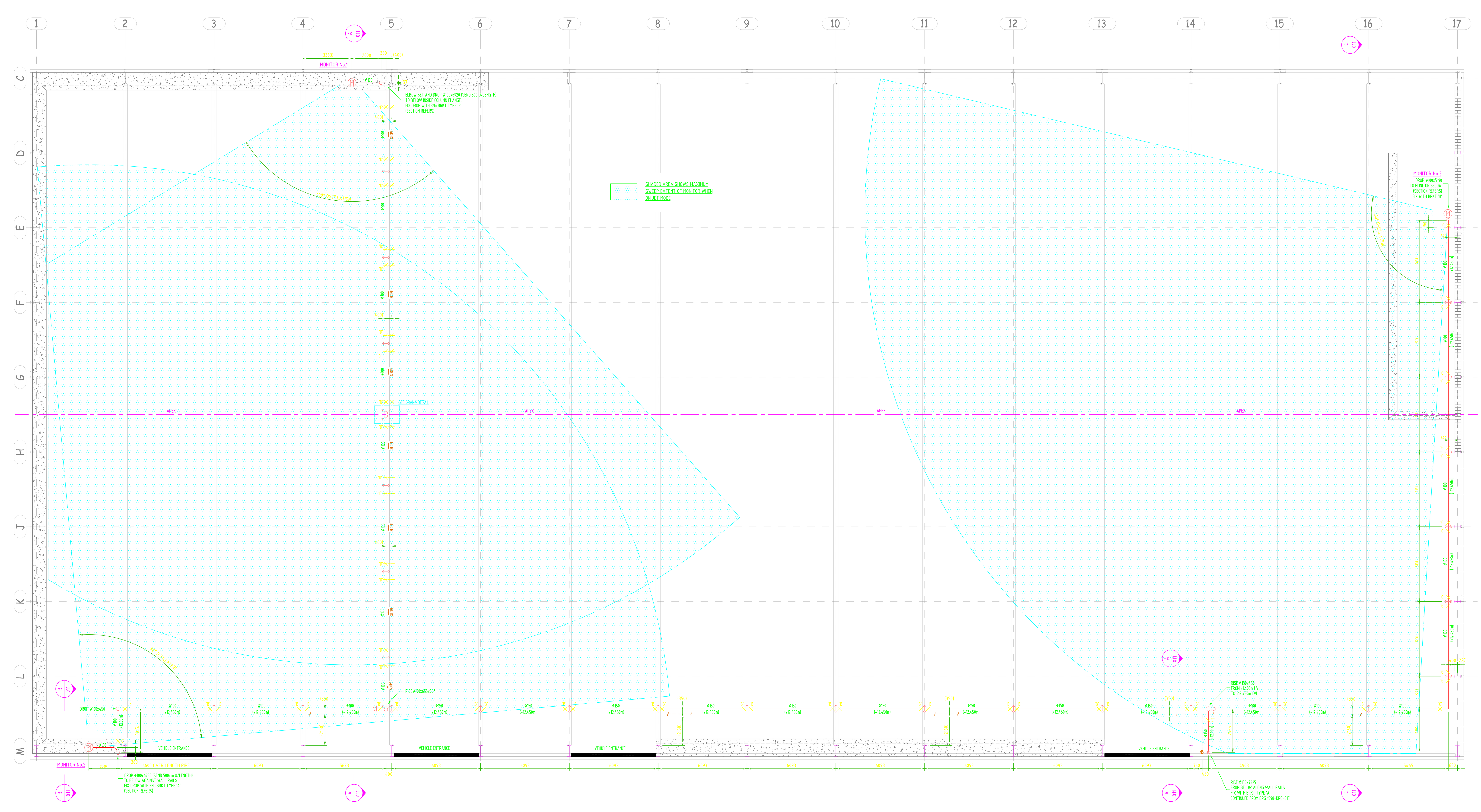
Assessed to OHSAS 18001 LPCB ref. no. 011-HS
LPS 1014 Certificated Fire Detection and Alarm System Firm Certificate No. CFA-148
LPS 1048-1 Approved Sprinkler Contractor Certificate No. ASC-005
Assessed to ISO 9001 LPCB ref. no. 011

Client
Tom White Waste

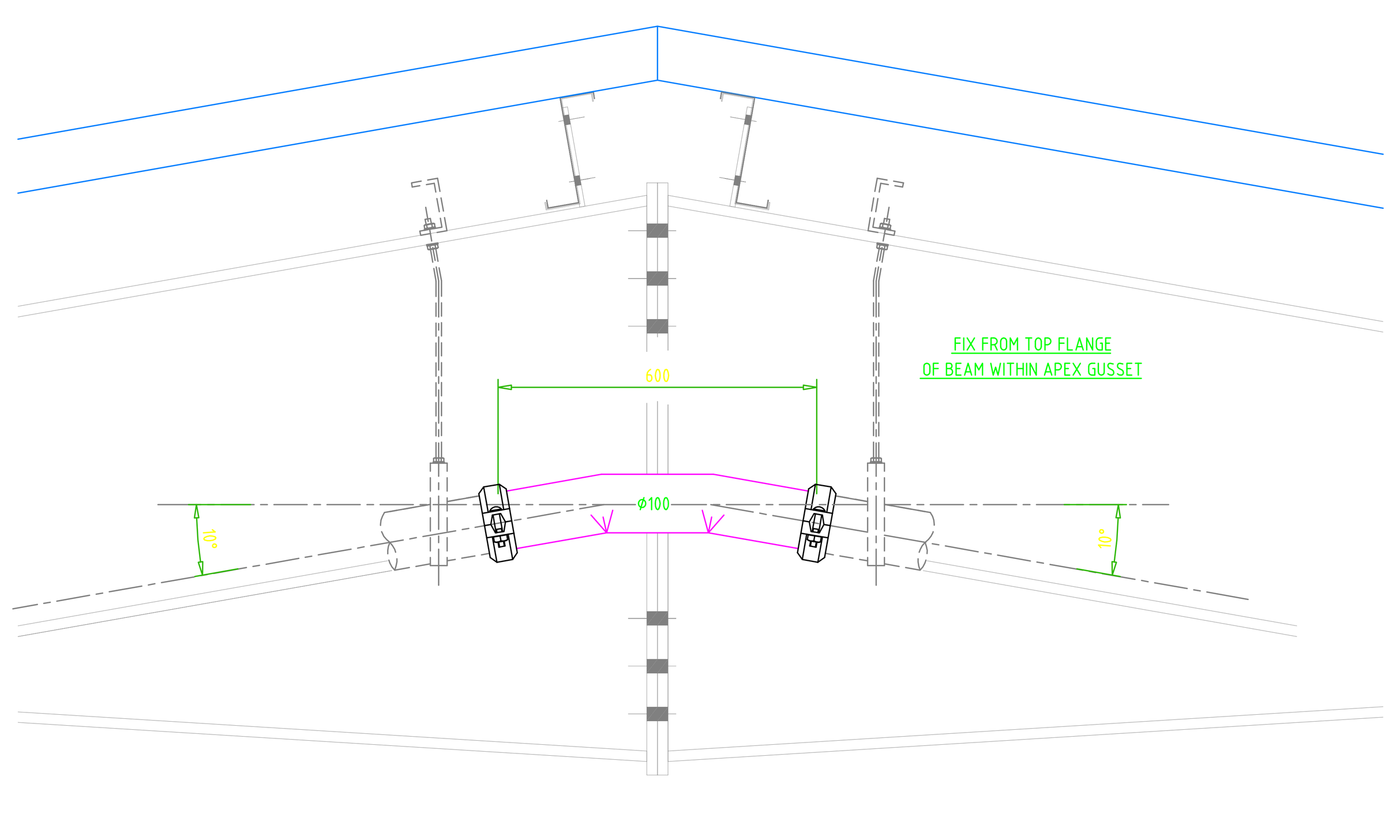
Project
Tom White Waste, Coventry.

Drawing Title
Fire Fighting Systems
Fire Pump House Piping
General Arrangement Drawing

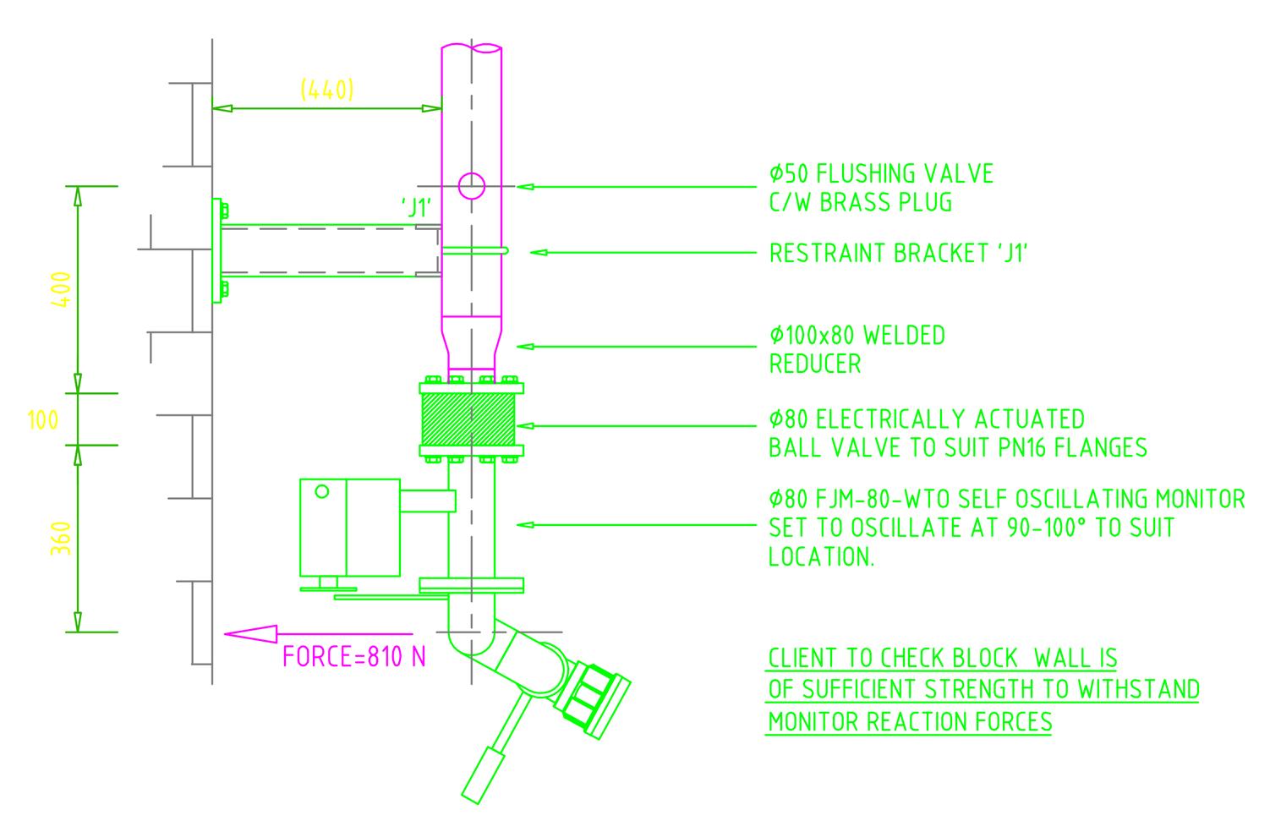
Orig Date	Scale	Drawing No	Rev	Drawn	Chk'd
9.2.17	1:33.3	1598-DRG-005	A	S.MILL	A.Y



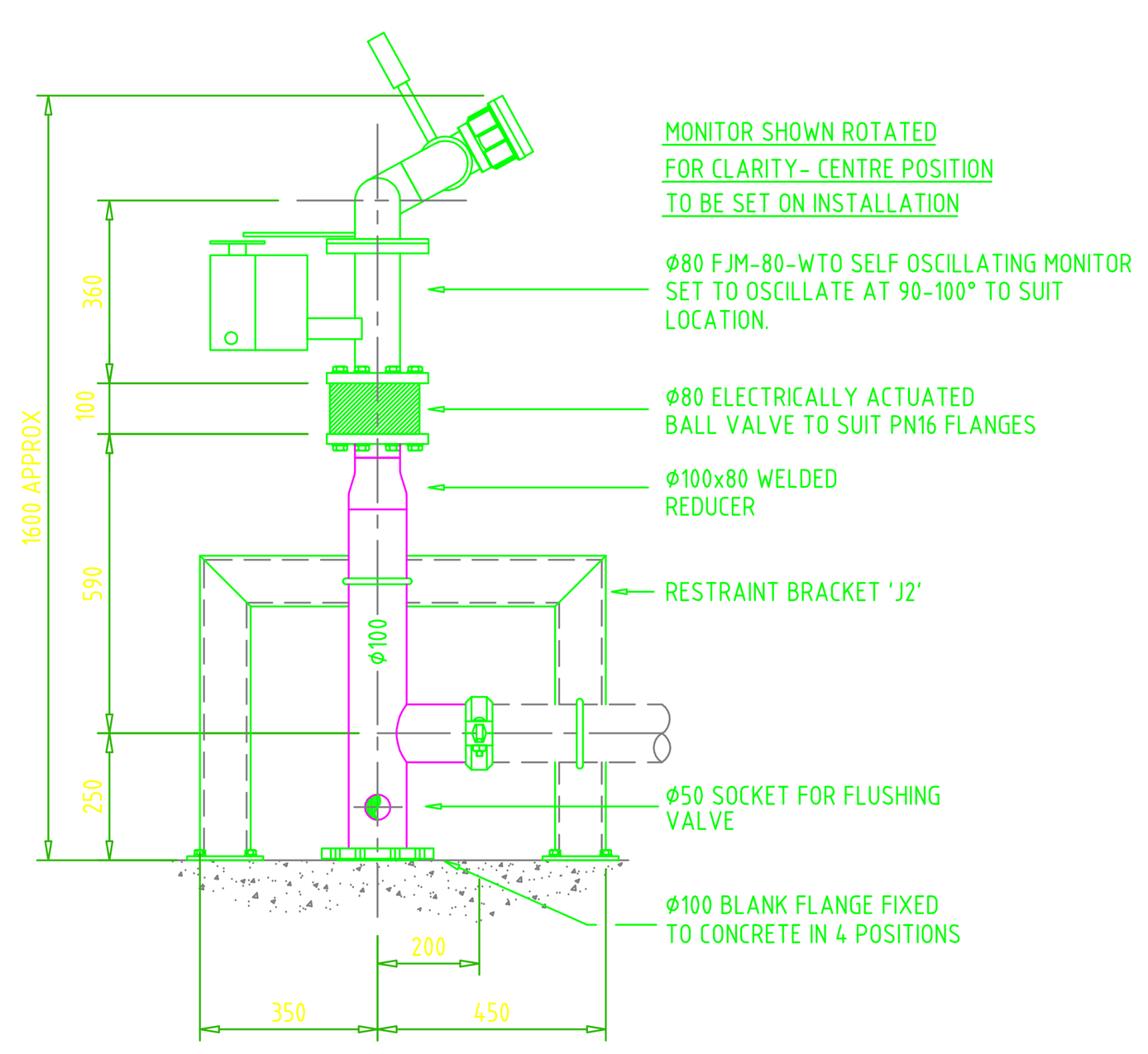
PLAN VIEW OF PROCESS BUILDING WATER MONITOR SYSTEM
(SCALE 1:100)



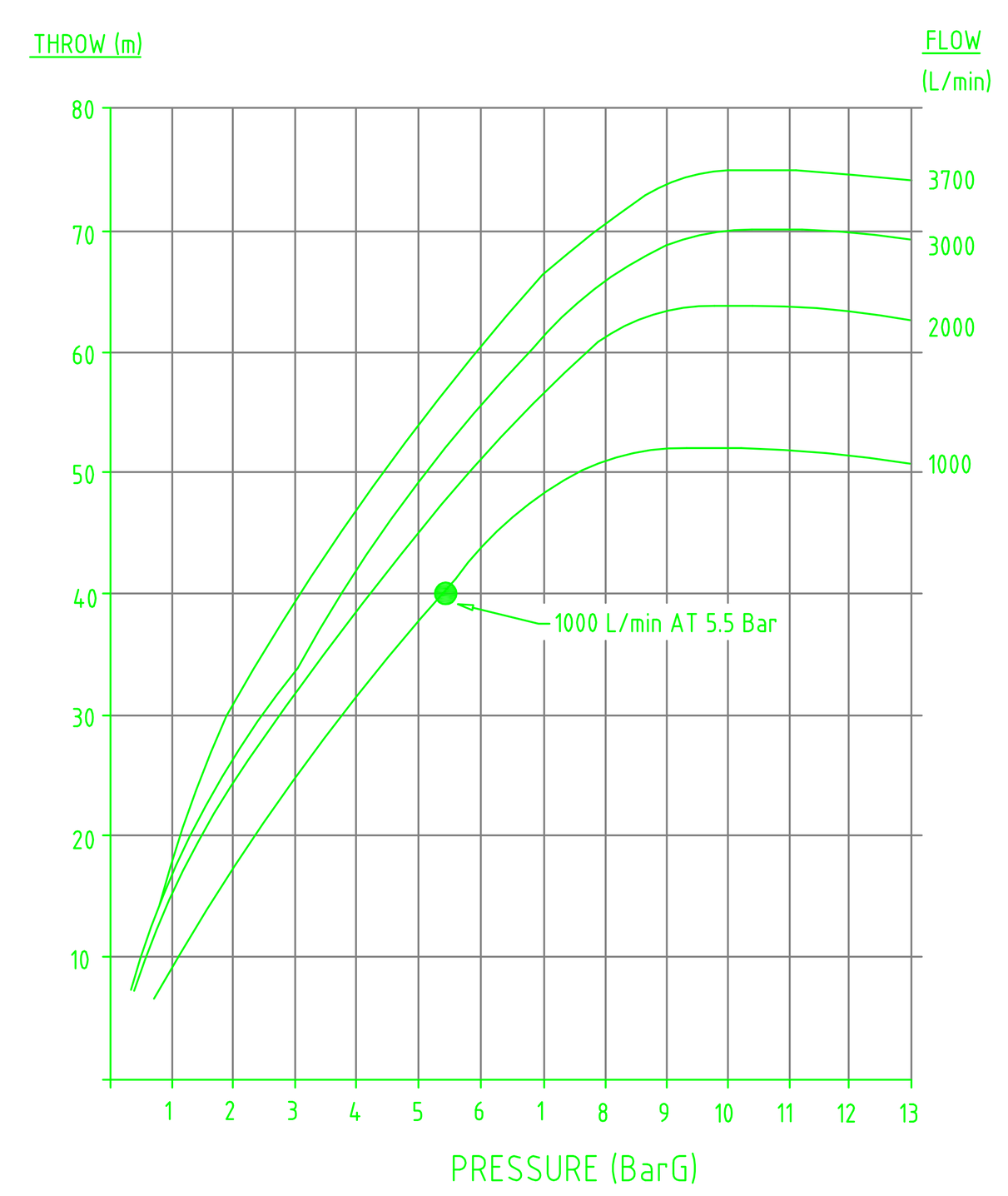
APEX CRANK DETAIL
(NOT TO SCALE)



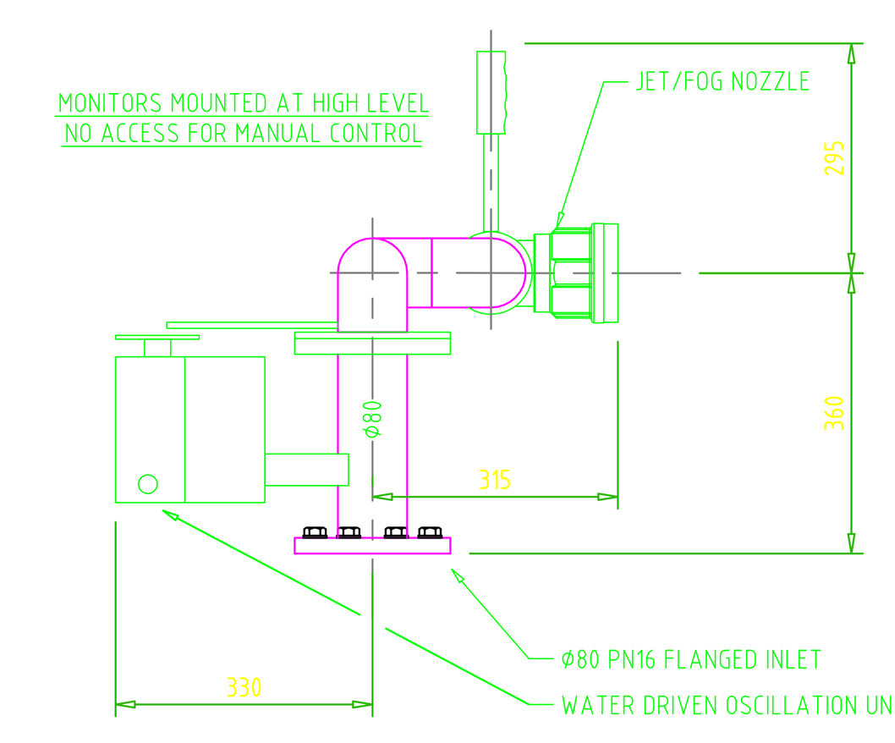
DETAIL OF BLOCK WALL MOUNTED MONITOR No.3
(NOT TO SCALE)



DETAIL OF PUSH WALL MOUNTED MONITORS No 1 & 2
(NOT TO SCALE)



FJM-80 WTO MONITOR PERFORMANCE



MODEL FJM-80 WTO SELF-OSCILLATING MONITOR
SET TO DISCHARGE 1000 L/min AT 5.5 Bar

Standard Specification

ABOVEGROUND TUBE ø15 TO ø150NB	BS EN 10255 MEDIUM SERIES (REPLACES BS 1387)
ABOVEGROUND TUBE ø200NB AND ABOVE	BS EN 10216-2 (REPLACES BS 3601)
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COLOUR BANDING	N/A
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WELD FLANGES	BS4504, PN16, STEEL (UNLESS NOTED OTHERWISE)
WELD SOCKETS	BS EN 10241:2000
GROOVED MECHANICAL JOINTS	LPC APPROVED, PAINTED / GALVANISED
GROOVED MECHANICAL FITTINGS	LPC APPROVED, PAINTED / GALVANISED
THREADED FITTINGS	MALLEABLE IRON TO BS EN 10242:1995 (BS 143)
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PIPE SUPPORT COMPONENTS	BRIGHT ZINC PLATED, FABRICATIONS GALVANISED / PAINTED AS SHOWN
WELDING	SHALL COMPLY WITH BS2640 OR BS2971 CLASS II
NDT	10% MPI
APPROVALS	WELDERS APPROVED TO EN 287-1
FABRICATION DELIVERY	PLASTIC ENDS REQUIRED, DELIVERED BUNDLED/PACKED IN LINE WITH ARGUS P/O.

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NON-FUNCTIONAL DIMENSIONS SHOWN IN BRACKETS

SYMBOL LEGEND

SYSTEM PIPEWORK
PIPE UNION
DRAIN VALVE C/W PLUG
GROOVED COUPLING
A BRACKET OF NOTED TYPE
PIPE RISE/DROP
+4150 (+) LEVEL ABOVE FFL
(-) LEVEL BELOW SOFFIT

Clients Reference Drawings

JCL FRAMEWORK DRAWINGS RECEIVED 18-01-2017

Argus Reference Drawings

1598-DRG-010	MONITOR SYSTEM PIPING G.A
1598-DRG-011	MONITOR SYSTEM SECTIONS
1598-DRG-012	MONITOR SYSTEM BRACKETS
1598-CAL-001	MONITOR SYSTEM HYDRAULIC CALCULATION

ISSUED FOR CONSTRUCTION

THIS DRAWING TO BE READ IN CONJUNCTION WITH SECTION DRAWINGS

Rev	Date	Description	Drawn	Chk'd
B	03.04.17	ISSUED FOR CONSTRUCTION	S.MILL	A.Y
A	16.02.17	REVISED TO SUIT MAINS ROUTE AMENDMENTS	S.MILL	A.Y
0	03.02.17	ORIGINAL ISSUE	S.MILL	A.Y

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Facsimile : +44 (0) 1384 393955 website : www.argusfire.co.uk

Assessed to OHSAS 18001 LPCB ref. no. 011-HS
LPS 1014 Certificated Fire Detection and Alarm System Firm Certificate No. CFA-148
LPS 1048-1 Approved Sprinkler Contractor Certificate No. ASC-005
Assessed to ISO 9001 LPCB ref. no. 011

Client
Tom White Waste

Project
Tom White Waste, Coventry.

Drawing Title
Fire Fighting Systems
Process Building Water Monitor System
General Arrangement Drawing

Orig Date	Scale	Drawing No	Rev	Drawn	Chk'd
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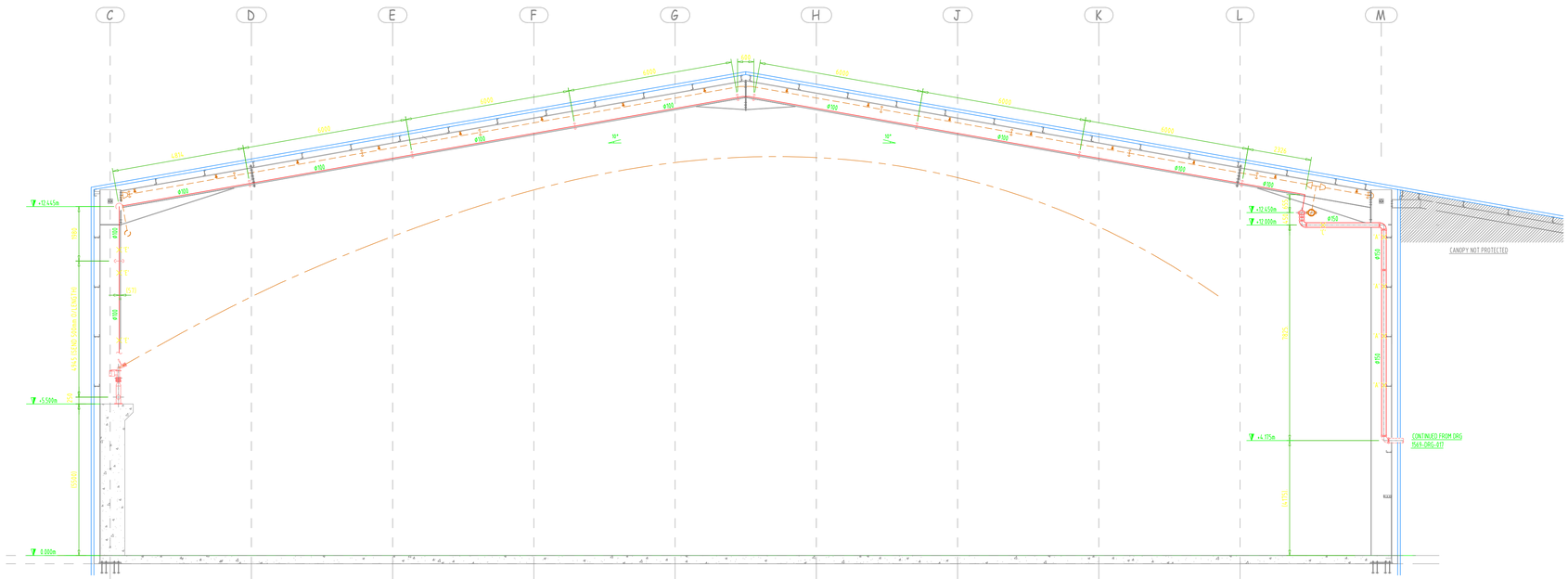
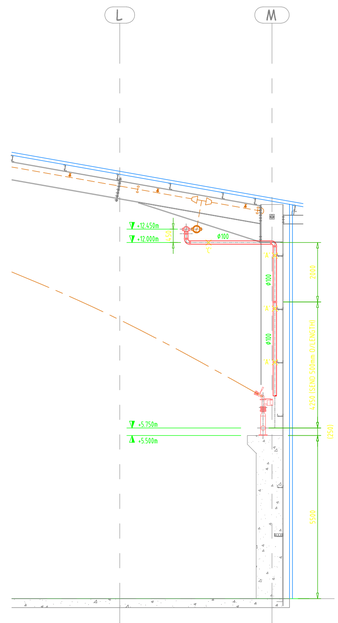
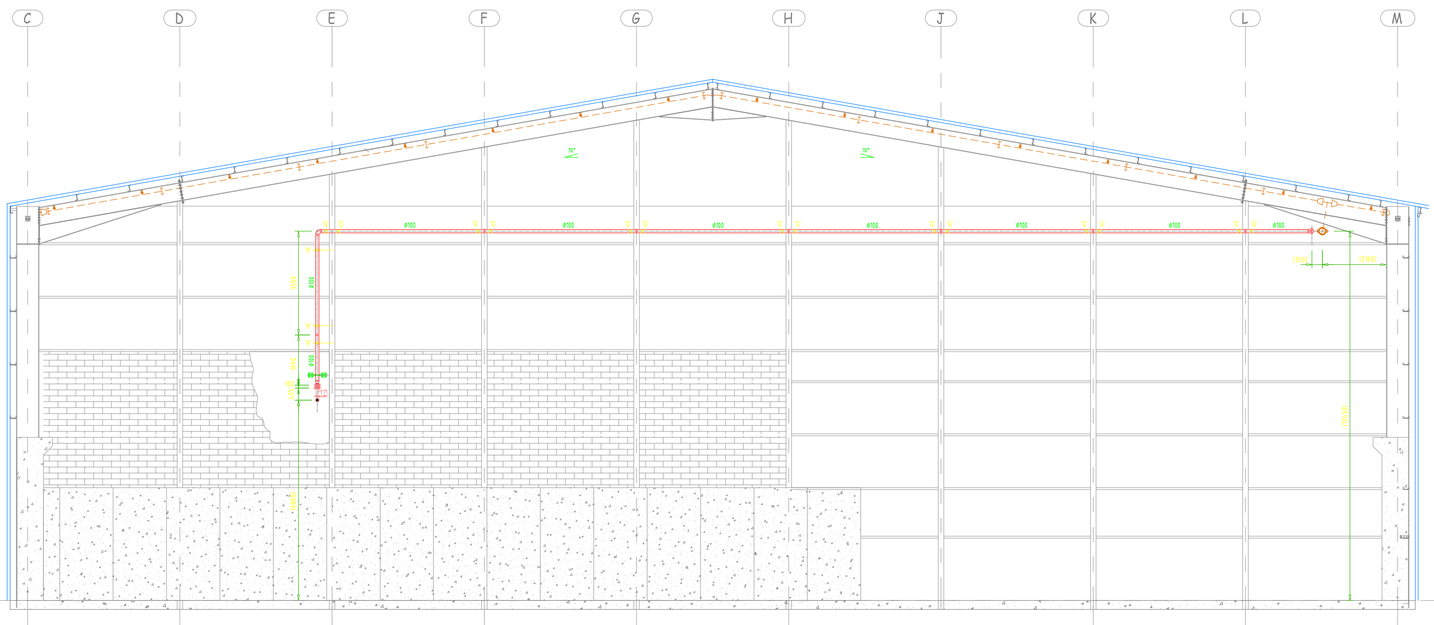


A 010 SECTION A-A (SCALE 1:75)



B 010 SECTION B-B (SCALE 1:75)



C 010 SECTION C-C (SCALE 1:75)

Standard Specification

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NDT	10% MPI
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General Notes

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NON-FUNCTIONAL DIMENSIONS SHOWN IN BRACKETS

SYMBOL LEGEND

⟝—⟞	SYSTEM PIPEWORK
⊞	PIPE UNION
⋈	DRAIN VALVE C/W PLUG
↕	GROOVED COUPLING
×A	BRACKET OF NOTED TYPE
⫯	PIPE RISE/DROP
▽ +4150	(+) LEVEL ABOVE FFL (-) LEVEL BELOW SOFFIT

Clients Reference Drawings

JCL FRAMEWORK DRAWINGS RECEIVED 18-01-2017

Argus Reference Drawings

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1598-DRG-011	MONITOR SYSTEM SECTIONS
1598-DRG-012	MONITOR SYSTEM BRACKETS
1598-CAL-001	MONITOR SYSTEM HYDRAULIC CALCULATION

ISSUED FOR CONSTRUCTION

Rev	Date	Description	Drawn	Chk'd
B	03.04.17	ISSUED FOR CONSTRUCTION	S.MILL	A.Y
A	16.02.17	REVISED TO SUIT NEW MAINS ROUTES AND PUMP LAYOUT	S.MILL	A.Y
0	03.02.17	ORIGINAL ISSUE	S.MILL	A.Y

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LPCB Assessed to OHSAS 18001 LPCB ref. no. 011-HS
LPCB UKAS PRODUCT CERTIFICATION 0007 LPS 1014 Certificated Fire Detection and Alarm System Firm Certificate No. CFA-148
LPCB UKAS PRODUCT CERTIFICATION 0007 LPS 1048-1 Approved Sprinkler Contractor Certificate No. ASC-005
LPCB UKAS MANAGEMENT SYSTEMS 0007 Assessed to ISO 9001 LPCB ref. no. 011

Client

Tom White Waste

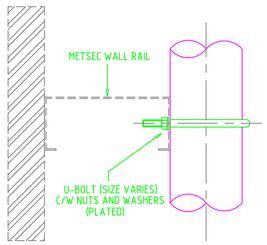
Project

Tom White Waste, Coventry.

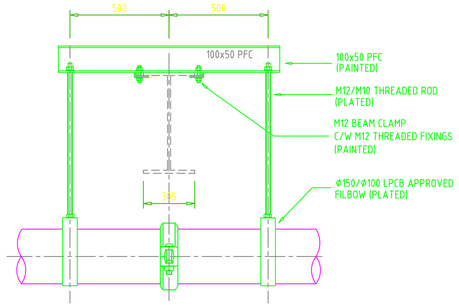
Drawing Title

Fire Fighting Systems
Process Building Water Monitor System
Sections And Details

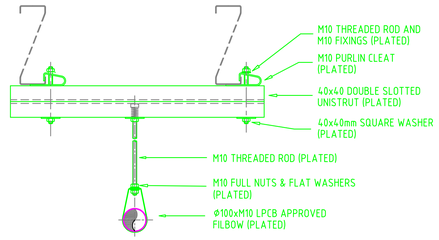
Orig Date	Scale	Drawing No	Rev	Drawn	Chk'd
03.02.17	1:75	1598-DRG-011	B	S.MILL	P.E



BRACKET TYPE 'A'
(NOT TO SCALE)



PIPING SUPPORT TYPE 'B'
(NOT TO SCALE)



PIPING SUPPORT TYPE 'C'
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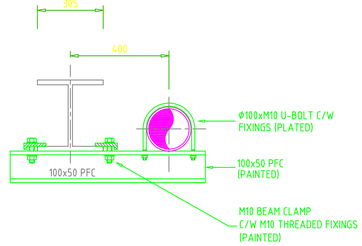

PIPING SUPPORT TYPE 'D'
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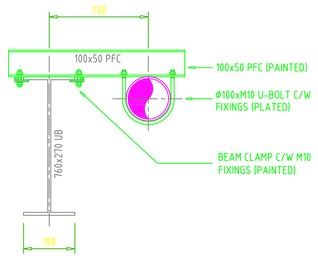

PIPING SUPPORT TYPE 'E'
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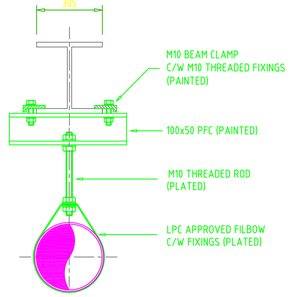

PIPING SUPPORT TYPE 'F'
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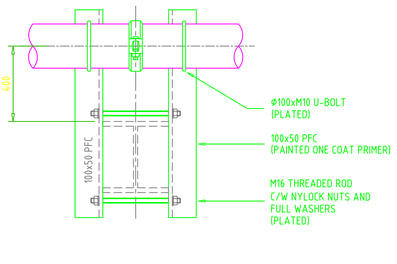
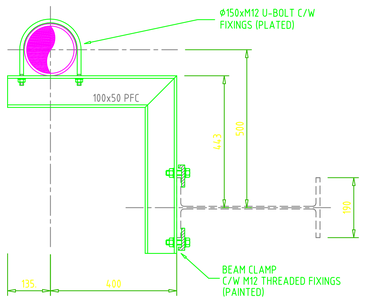
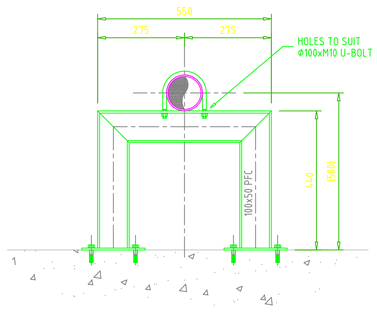
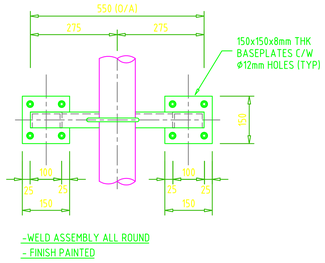


PIPING SUPPORT TYPE 'G'
(NOT TO SCALE)

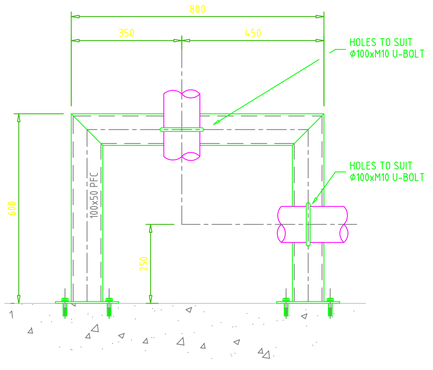


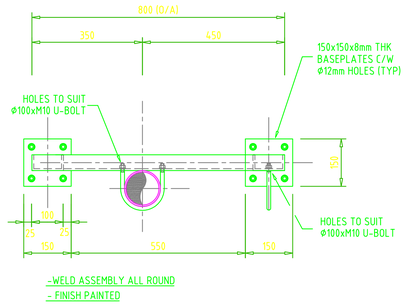
PIPING SUPPORT TYPE 'H'
(NOT TO SCALE)





MONITOR WALL SUPPORT TYPE 'J1'
(MONITOR 3)





MONITOR WALL SUPPORT TYPE 'J2'
(MONITORS 1 AND 2)

ISSUED FOR CONSTRUCTION

General Notes

1) SPRINKLER DEFLECTORS MUST BE INSTALLED PARALLEL TO CEILING OR ROOF.

2) SPRINKLER HEADS MUST BE INSTALLED USING PTFE TAPE ONLY, AND THREADED PIPE JOINTS MUST HAVE A WATER COUNCIL APPROVED JOINTING COMPOUND. (E.G. WATER HAWK OR EQUIVALENT).

3) SPRINKLER HEADS MUST BE A MINIMUM DISTANCE OF 150MM FROM PIPE SUPPORTS.

4) ALL PIPEWORK MUST BE INSTALLED WITH THE FOLLOWING MINIMUM SLOPES FOR DRAINAGE: RANGE PIPES - 4MM PER 1 METRE RUN - DISTRIBUTION PIPES - 2MM PER 1 METRE RUN.

5) ALL LEVELS SHOWN ARE TO PIPE CENTRE LINES, UNLESS WHERE NOTED OTHERWISE.

6) SPRINKLER HEADS, MULTIPLE CONTROLS AND NOZZLES MUST NOT BE PAINTED.

7) ARGUS FIRE PROTECTION CO. LTD DOES NOT ACCEPT ANY RESPONSIBILITY FOR DAMAGE TO ANY PART OF THE INSTALLATION DUE TO FROST. CLIENTS MUST TAKE ADEQUATE PRECAUTIONS TO PREVENT DAMAGE TO OR ADEQUATELY MAINTAIN ANY TRACE HEAT AND /OR LAGGING PROVIDED TO PROTECT WATER FILLED PIPING.

8) A CLEAR SPACE OF 1.0M MUST BE MAINTAINED BELOW THE SPRINKLER DEFLECTOR AT ALL TIMES FOR HIGH HAZARD SYSTEMS AND 0.5M FOR LIGHT & ORDINARY HAZARD. ANY OTHER HIGH LEVEL SERVICES INSTALLED HIGHER, MUST BE COORDINATED WITH SPRINKLER POSITIONS.

Clients Reference Drawings

JCL FRAMEWORK DRAWINGS RECEIVED 18-01-2017

Argus Reference Drawings

1598-DRG-010	MONITOR SYSTEM PIPING G A
1598-DRG-011	MONITOR SYSTEM SECTIONS
1598-DRG-012	MONITOR SYSTEM BRACKETS
1598-CAL-001	MONITOR SYSTEM HYDRAULIC CALCULATION

Rev	Date	Description	Drawn	Chk'd
B	03.04.17	ISSUED FOR CONSTRUCTION	S.MILL	A.Y
A	16.02.17	GENERAL REVISIONS	S.MILL	A.Y
0	03.02.17	ORIGINAL ISSUE	S.MILL	A.Y

Argus fire
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Facsimile : +44 (0) 1384 393955 website : www.argusfire.co.uk

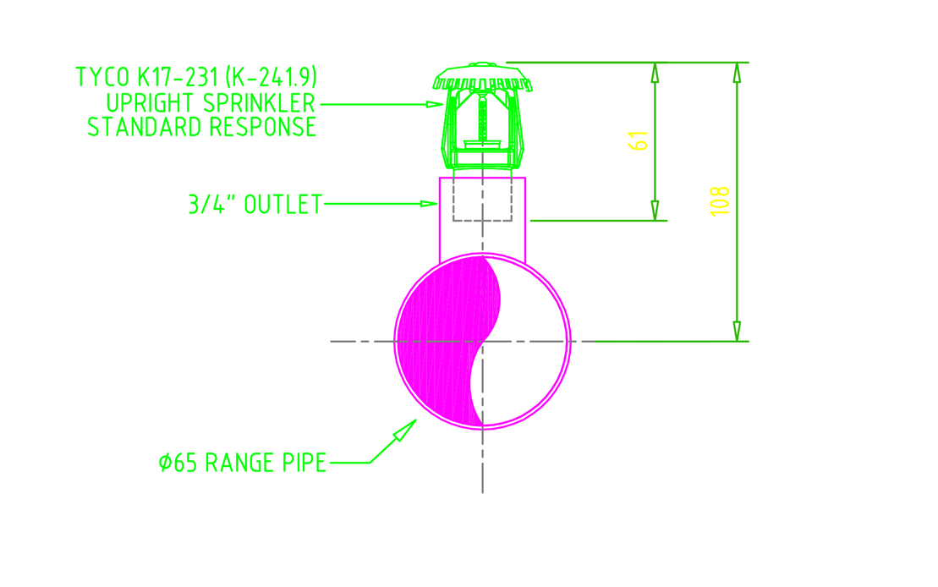
Client
Tom White Waste

Project
Tom White Waste, Coventry.

Drawing Title
Fire Fighting Systems
Process Building Water Monitor System
Pipe Support Details

Orig Date	Scale	Drawing No	Rev	Drawn	Chk'd
03.02.17	N.T.S	1598-DRG-012	B	S.MILL	P.E

PLAN VIEW OF SPRINKLER PROTECTION TO MAIN ROOF
(REFER TO SECTIONS FOR DIMENSIONS OF SLOPING RANGES)



INTERMEDIATE RANGE HEAD DETAIL
(N.T.S)

POINT LOADINGS PER HANGER

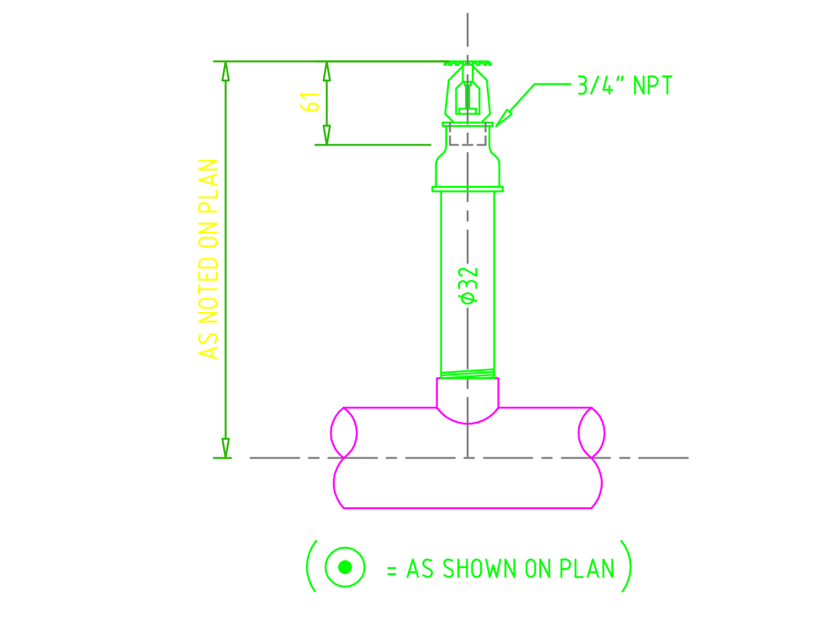
PIPE SIZE	POINT LOADING KG	WEIGHT OF PIPE &WATER PER M	MAX SUPPORT SPACING/PIPE
Ø20mm	8 KG	1.96 KG/m	4.0m
Ø25mm	13 KG	3.04 KG/m	4.0m
Ø32mm	17 KG	4.18 KG/m	4.0m
Ø40mm	21 KG	5.02 KG/m	4.0m
Ø50mm	30 KG	7.37 KG/m	4.0m
Ø65mm	63 KG	10.35 KG/m	6.0m
Ø80mm	83 KG	13.77 KG/m	6.0m
Ø100mm	127 KG	21.11 KG/m	6.0m
Ø150mm	233 KG	38.77 KG/m	6.0m
Ø200mm	400 KG	66.49 KG/m	6.0m

SPRINKLER DESIGN PARAMETERS

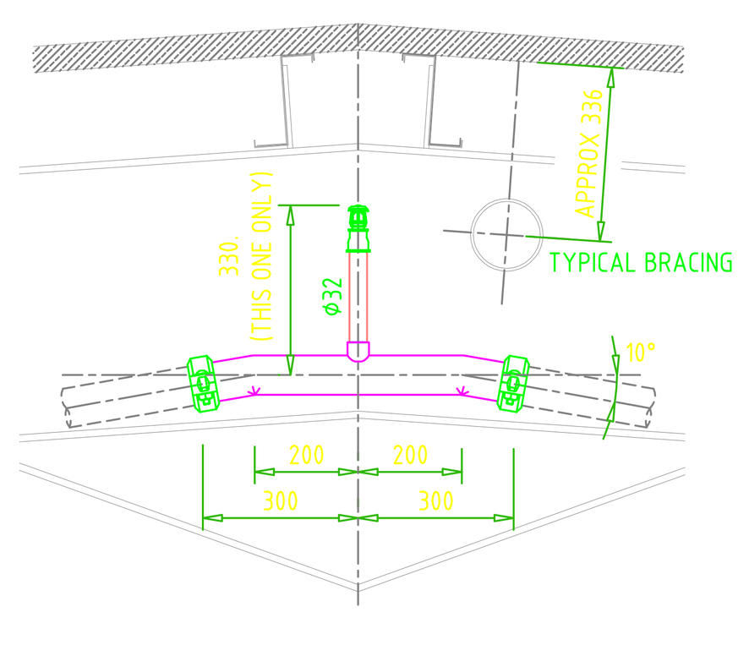
DESIGN STANDARDS / CODES	LPC RULES FOR AUTOMATIC SPRINKLER INSTALLATIONS (2015) INCORPORATING BS EN 12845
TYPE OF SYSTEM	WET PIPE SPRINKLER SYSTEM
HAZARD CLASSIFICATION	HIGH HAZARD STORAGE ROOF ONLY, CATEGORY 3, ST1
AREA OF OPERATION	300 m^2
DISCHARGE DENSITY	$31mm/min/m^2$
HYDRANT ALLOWANCE	NIL
MINIMUM SPRINKLER PRESSURE	1.33 Bar
HIGHEST SPRINKLER HEAD	17.14m

SPRINKLER SCHEDULE (FOR THIS DRAWING)

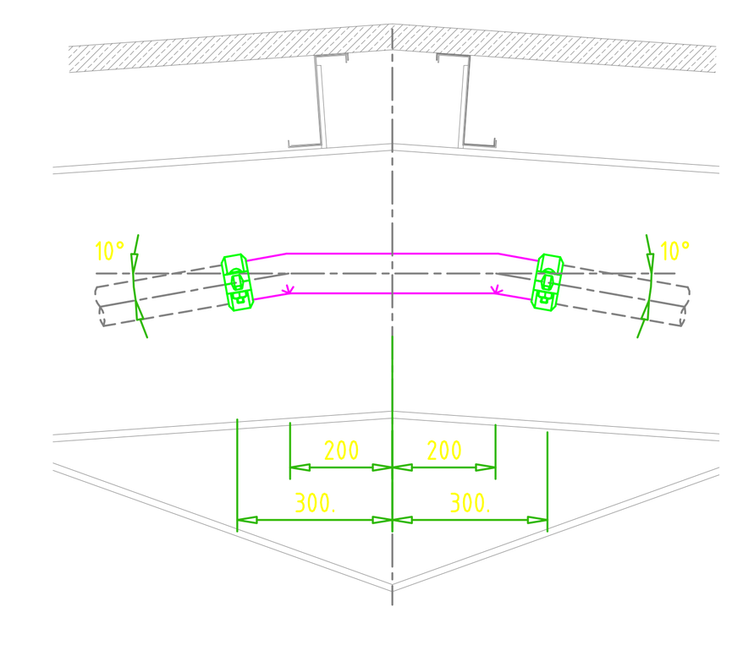
INSTALLATION NUMBER	1
AREA / SIZE	PROCESS BUILDING ROOF AREA
INSTALLATION	WET PIPE SPRINKLER
AREA DESCRIPTION	MAIN ROOF PROTECTION
CONSTRUCTION:	PORTAL FRAME CONSTRUCTION - CLAD
NUMBER OF SPRINKLERS:	522
TEMPERATURE RATING:	68°C - STANDARD RESPONSE UPRIGHT
THREAD SIZE:	3/4" NPT
MODEL/TYPE:	TYCO MODEL K17-231 (K=241.9) SIN:TY7151
APPROVALS:	UL LISTED / FM APPROVED



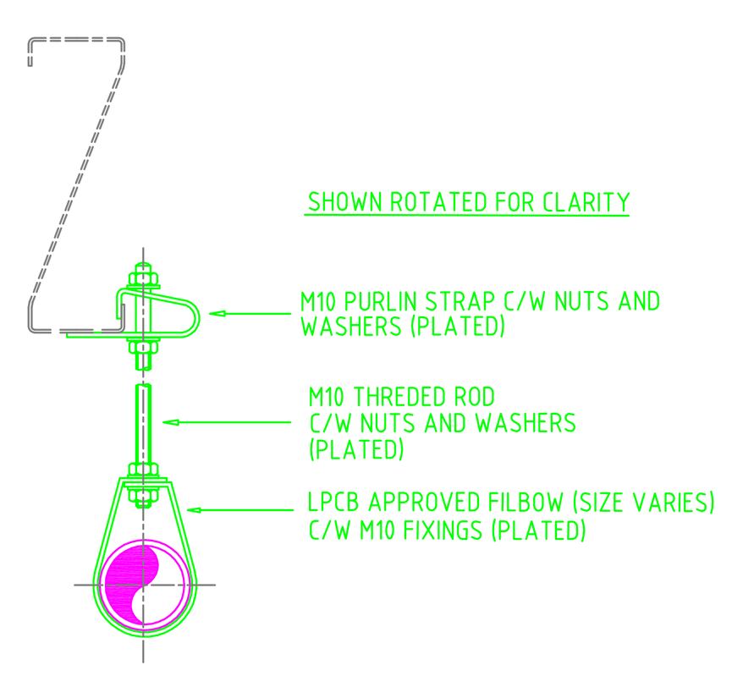
FIRST FIX "SPRIG" ARRANGEMENT
USED IN END BAYS WITH BRACINGS



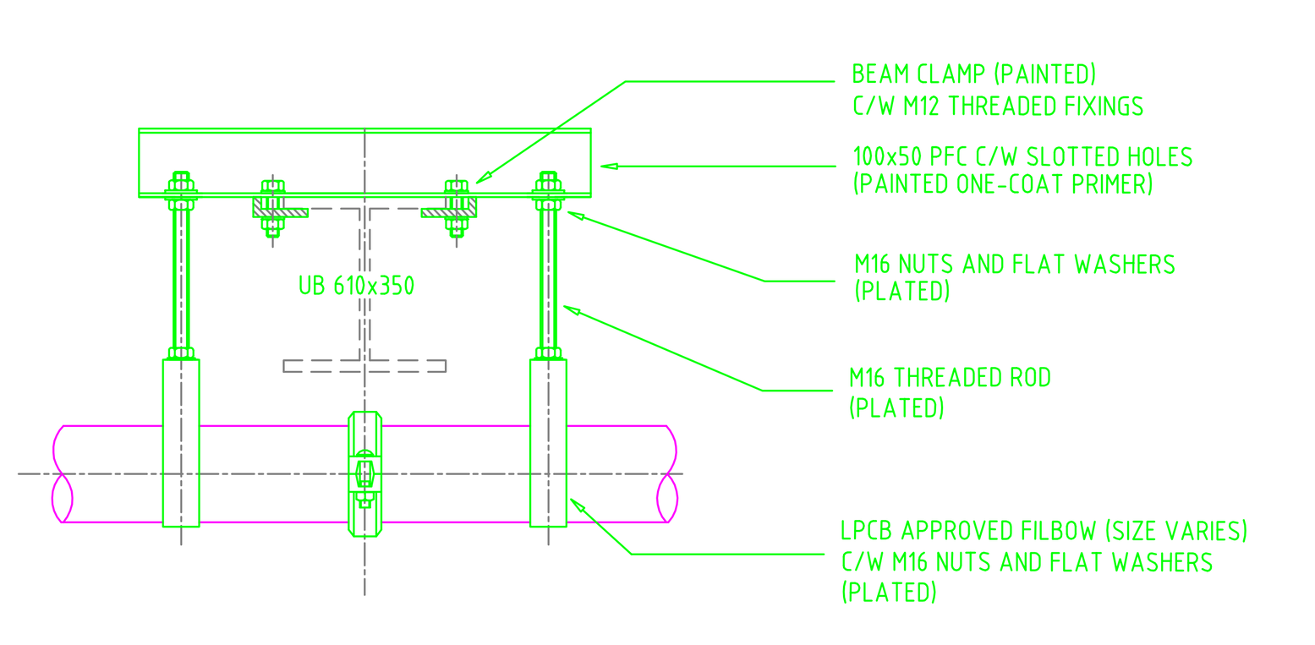
APEX CRANK DETAIL WITH SPRIG
(2 PLACES)



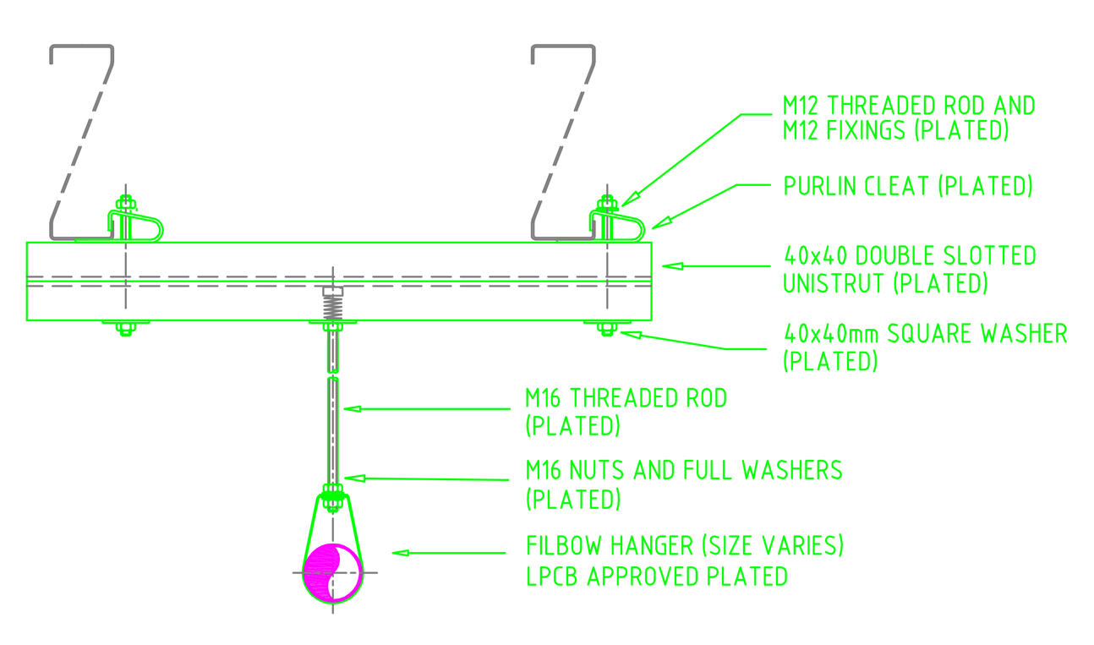
TYPICAL APEX CRANK DETAIL
(NOT TO SCALE)



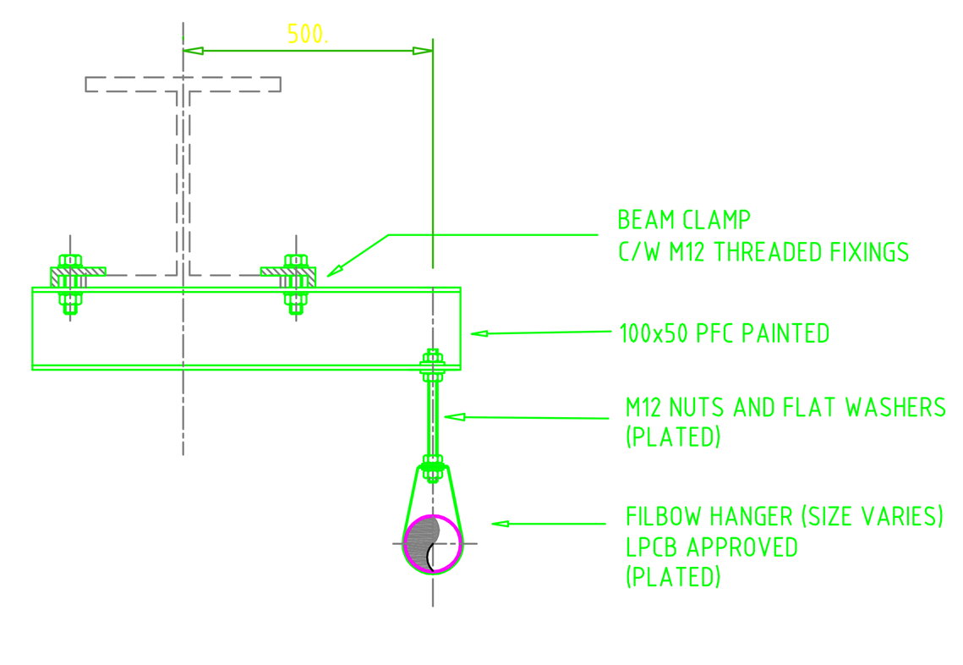
PIPE SUPPORT TYPE 'A'
(NOT TO SCALE)



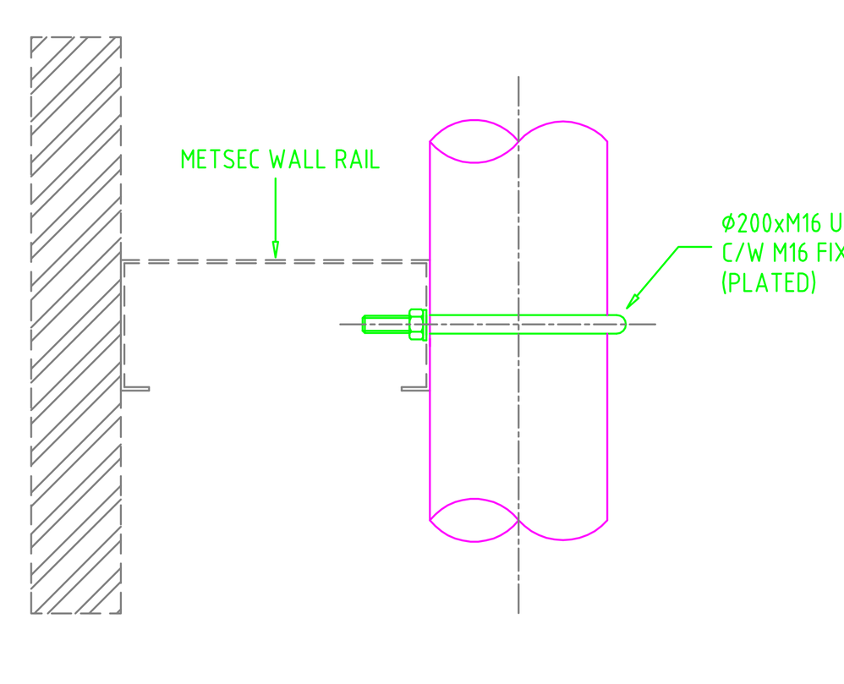
PIPE SUPPORT TYPE 'B'
(NOT TO SCALE)



PIPE SUPPORT TYPE 'C'
(NOT TO SCALE)



BRACKET TYPE 'D'
(NOT TO SCALE)



BRACKET TYPE 'E'
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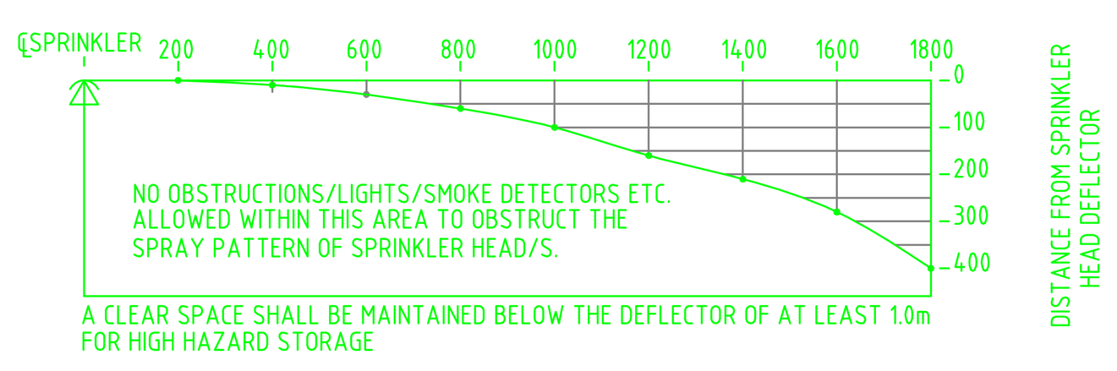

SPRINKLER HEAD LEGEND

○	UPRIGHT SPRINKLER HEAD
⊘	PENDANT SPRINKLER HEAD
⊙	SPRINKLER HEAD ON RISER

FIRE PROTECTION EQUIPMENT COMPONENTS

SPRINKLERS	TYCO MODEL K17-231 UPRIGHT SPRINKLER - STANDARD RESPONSE
NOZZLES	N/A
INSTALLATION CONTROL VALVES	TYCO MODEL AV1-300 WET ALARM VALVE CE TRIM - LPCB APPROVED
ISOLATION VALVES	TYCO MODEL JPL WAFER BUTTERFLY VALVE (MONITORED)
STRAINER	N/A
FLOW SWITCHES	N/A
PRESSURE SWITCHES	POTTER MODEL PS-10, LPCB APPROVED
FIRE PUMP	ARMSTRONG 8x6x13 JU6H-LP54 DIESEL ENGINE DRIVEN (HALF CAPACITY)
FIREWATER TANK	FRANKLIN HODGE LPS1276 REF 037c/06e, 12.99m DIA, 1148m3

Standard Specification

ABOVEGROUND TUBE Ø15 TO Ø150NB	BS EN 10255 MEDIUM SERIES (REPLACES BS 1387)
ABOVEGROUND TUBE Ø200NB AND ABOVE	BS EN 10216-2 (REPLACES BS 3601)
FINISH	PAINTED ONE-COAT PRIMER
COLOUR BANDING	N/A
BUTT WELD FITTINGS	BS EN 10253-1:1999, CARBON STEEL
WELD FLANGES	BS4504, PN16, STEEL (UNLESS NOTED OTHERWISE)
WELD SOCKETS	BS EN 10241:2000
GROOVED MECHANICAL JOINTS	LPC APPROVED, PAINTED
GROOVED MECHANICAL FITTINGS	LPC APPROVED, PAINTED
THREADED FITTINGS	MALLEABLE IRON TO BS EN 10242:1995 (BS 143)
THREADED JOINTS	BS 21:1985 BSP THREADS EXCEPT WHERE EXPRESSLY IDENTIFIED AS NPT
FLANGE JOINTS	BS4504 PN16 (U.N.O) GASKETS SHALL BE EPDM RUBBER
FLANGE BOLTS	BS4190:2001 ISO METRIC HEX HEAD BOLTS (PLATED)
THREAD SEALANT (WATER SYSTEMS)	COTTON AND BOSS WHITE FOR FITTING THREADS, PTFE FOR SPRINKLERS.
THREAD SEALANT (AIR SYSTEMS)	LOCTITE 577 MEDIUM STRENGTH PIPE SEALANT
PIPE SUPPORT COMPONENTS	BRIGHT ZINC PLATED, FABRICATIONS PAINTED ONE COAT PRIMER
WELDING	SHALL COMPLY WITH BS2640 OR BS2971 CLASS II
NDT	10% MPI
APPROVALS	WELDERS APPROVED TO EN 287-1
FABRICATION DELIVERY	PLASTIC ENDS REQUIRED, DELIVERED BUNDLED/PACKED IN LINE WITH ARGUS P/O.

General Notes

1) SPRINKLER DEFLECTORS MUST BE INSTALLED PARALLEL TO CEILING OR ROOF.

2) SPRINKLER HEADS MUST BE INSTALLED USING PTFE TAPE ONLY, AND THREADED PIPE JOINTS MUST HAVE A WATER COUNCIL APPROVED JOINTING COMPOUND. (E.G. WATER HAWK OR EQUIVALENT).

3) SPRINKLER HEADS MUST BE A MINIMUM DISTANCE OF 150MM FROM PIPE SUPPORTS.

4) ALL PIPEWORK MUST BE INSTALLED WITH THE FOLLOWING MINIMUM SLOPES FOR DRAINAGE: RANGE PIPES - 4MM PER 1 METRE RUN - DISTRIBUTION PIPES - 2MM PER 1 METRE RUN.

5) ALL LEVELS SHOWN ARE TO PIPE CENTRE LINES, UNLESS WHERE NOTED OTHERWISE.

6) SPRINKLER HEADS, MULTIPLE CONTROLS AND NOZZLES MUST NOT BE PAINTED.

7) ARGUS FIRE PROTECTION CO. LTD DOES NOT ACCEPT ANY RESPONSIBILITY FOR DAMAGE TO ANY PART OF THE INSTALLATION DUE TO FROST. CLIENTS MUST TAKE ADEQUATE PRECAUTIONS TO PREVENT DAMAGE TO OR ADEQUATELY MAINTAIN ANY TRACE HEAT AND /OR LAGGING PROVIDED TO PROTECT WATER FILLED PIPING.

8) A CLEAR SPACE OF 1.0M MUST BE MAINTAINED BELOW THE SPRINKLER DEFLECTOR AT ALL TIMES FOR HIGH HAZARD SYSTEMS AND 0.5M FOR LIGHT & ORDINARY HAZARD. ANY OTHER HIGH LEVEL SERVICES INSTALLED HIGHER, MUST BE COORDINATED WITH SPRINKLER POSITIONS.

ABBREVIATIONS

No. : NUMBER
LVL : LEVEL
C/W : COMPLETE WITH
T.B.C : TO BE CONFIRMED
Ø NB : DIAMETER (NOMINAL BORE)
AFFL : ABOVE FLOOR LEVEL
T.O.P : TOP OF PIPE
B.O.P : BOTTOM OF PIPE
C/W : COMPLETE WITH
T/C : TO CUT (ON SITE)
A/F : ACROSS FLATS
EA : BRITISH STD EQUAL ANGLE
PFC : PARALLEL FACE CHANNEL
ASSY : ASSEMBLY
N.T.S : NOT TO SCALE
O/D : OUTSIDE DIAMETER
ECC : SPECIFICALLY ECCENTRIC

NON-FUNCTIONAL DIMENSIONS SHOWN IN BRACKETS

SYMBOL LEGEND

(pipe symbol)	SYSTEM PIPEWORK
(union symbol)	PIPE UNION
(valve symbol)	DRAIN VALVE C/W PLUG
(coupling symbol)	GROOVED COUPLING
× A	BRACKET OF NOTED TYPE
(rise/drop symbol)	PIPE RISE/DROP
▽ +4150	(+) LEVEL ABOVE FFL (-) LEVEL BELOW SOFFIT

Clients Reference Drawings

8070-G (3) MAIN BUILDING ROOF PLAN
8070-G (6) MAIN BUILDING SECTIONS
8070-G (4) MAIN BUILDING ELEVATIONS

Argus Reference Drawings

1598-DRG-015	ROOF LEVEL SPRINKLER SYSTEM - G.A
1598-DRG-016	ROOF LEVEL SPRINKLER SYSTEM - SECTIONS
1598-DRG-017	EXTERNAL FEED MAINS - G.A
1598-CAL-002	MOST REMOTE HYDRAULIC CALCULATION

ISSUED FOR CONSTRUCTION

REFER TO DRAWING 1598-DRG-016 FOR SECTIONS

THIS DRAWING TO BE READ IN CONJUNCTION WITH ALL SECTION AND DETAIL DRAWINGS

Rev	Date	Description	Drawn	Chk'd
B	13.06.17	REVISED TO SUIT SITE SCAFFOLDING	S.MILL	A.Y
A	03.04.17	ISSUED FOR CONSTRUCTION	S.MILL	A.Y
0	03.02.17	ORIGINAL ISSUE	S.MILL	A.Y

Argus fire
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Telephone : +44 (0) 1384 376256 e-mail : info@argusfire.co.uk
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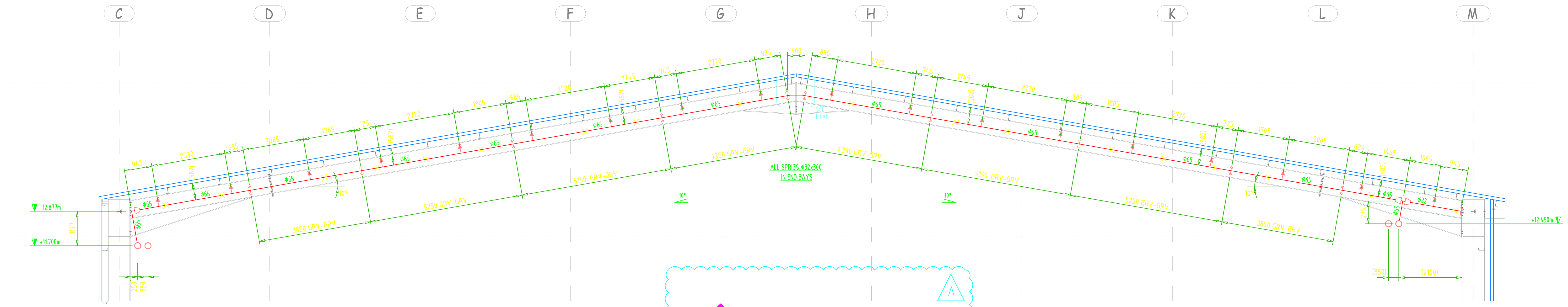
Assessed to OHSAS 18001 LPCB ref. no. 011-HS
LPS 1014 Certificated Fire Detection and Alarm System Firm Certificate No. CFA-148
LPS 1048-1 Approved Sprinkler Contractor Certificate No. ASC-005
Assessed to ISO 9001 LPCB ref. no. 011

Client
Tom White Waste

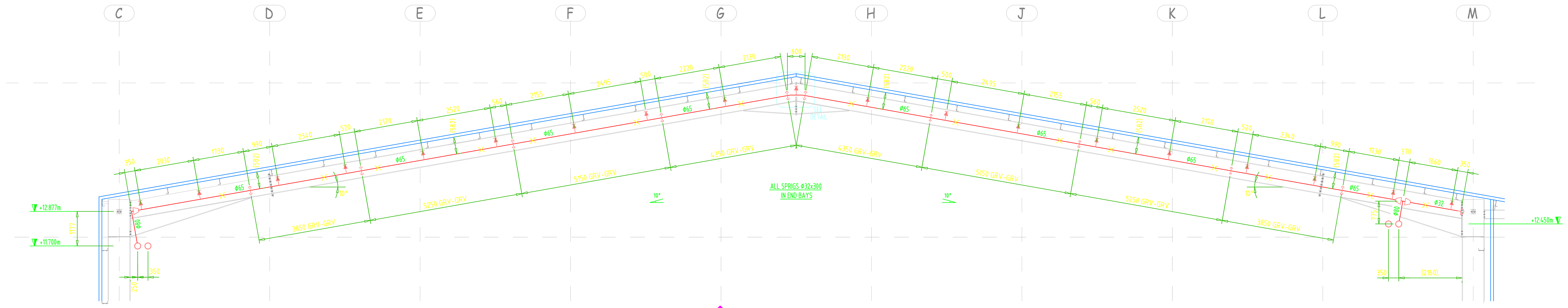
Project
Tom White Waste, Coventry.

Drawing Title
Fire Fighting Systems
Process Building Roof Sprinkler System
Piping General Arrangement

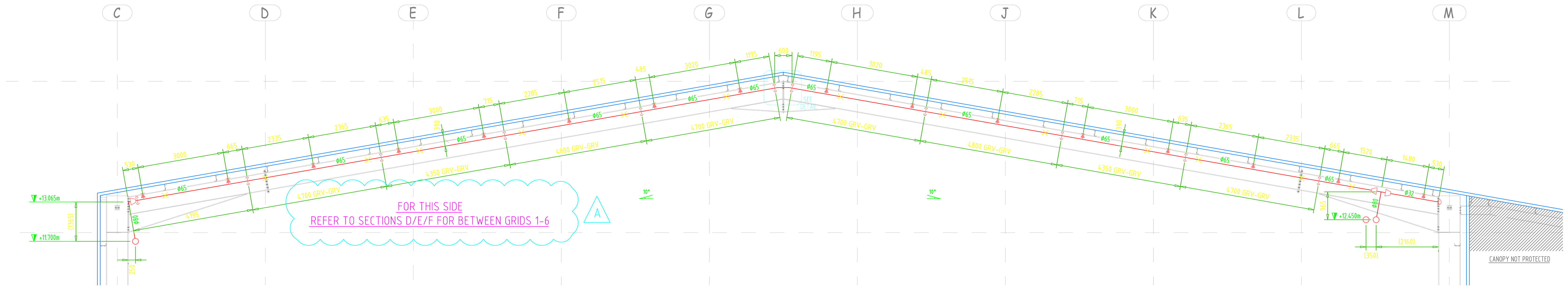
Orig Date	Scale	Drawing No	Rev	Drawn	Chk'd
03.02.17	1:100	1598-DRG-015	B	S.MILL	P.E



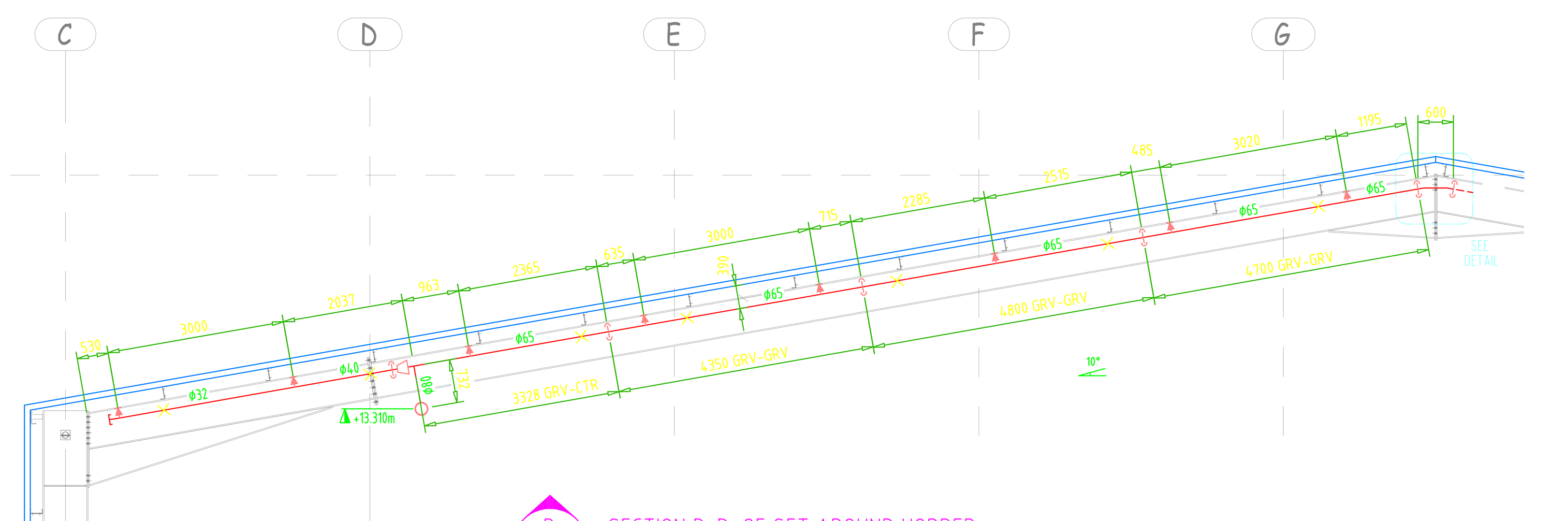
SECTION A-A - END RANGE GRIDLINE 17
(SCALE 1:75)



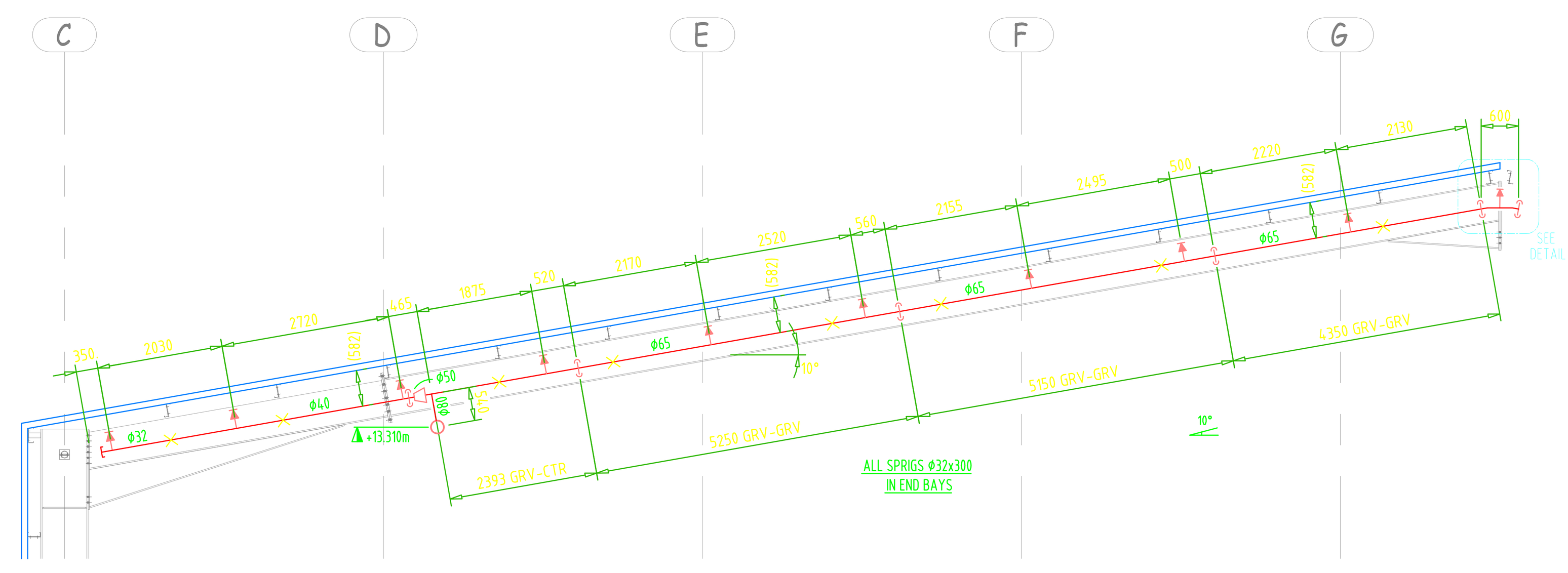
SECTION B-B - INNER END RANGE (GRID 16)
(SCALE 1:75)



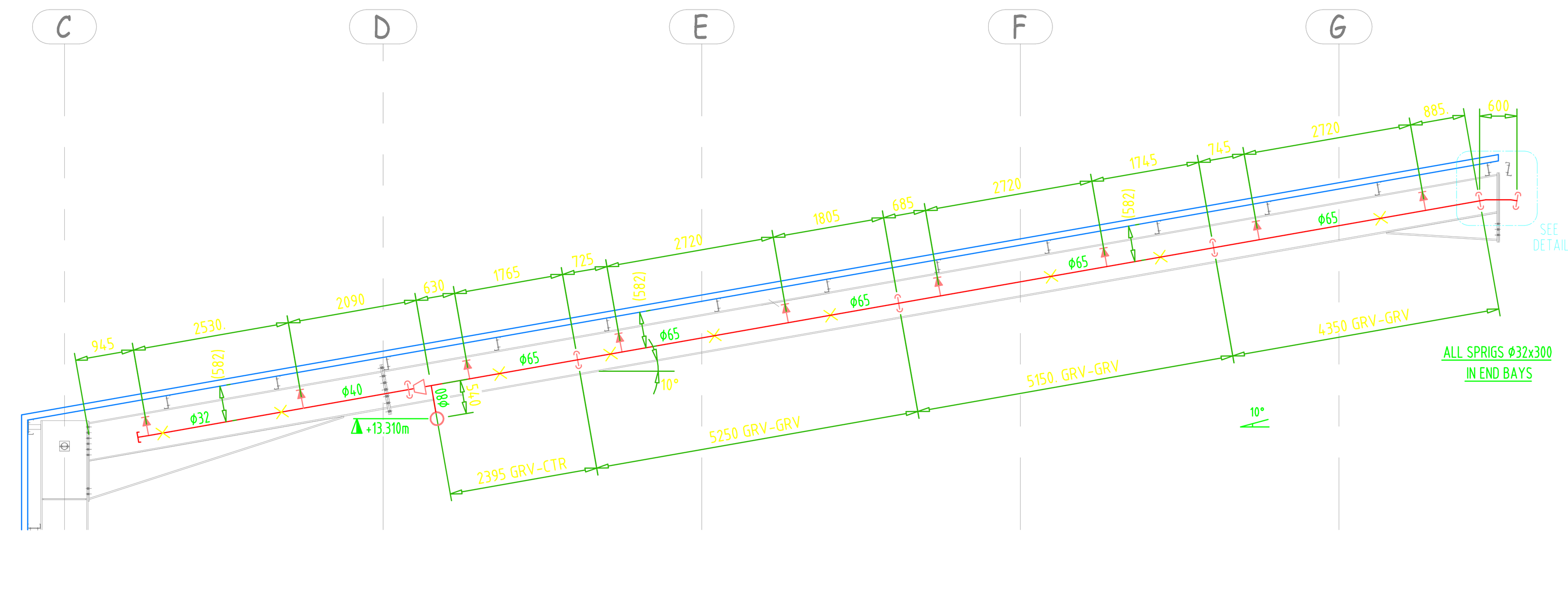
SECTION C-C OF INTERMEDIATE RANGES
(SCALE 1:75)



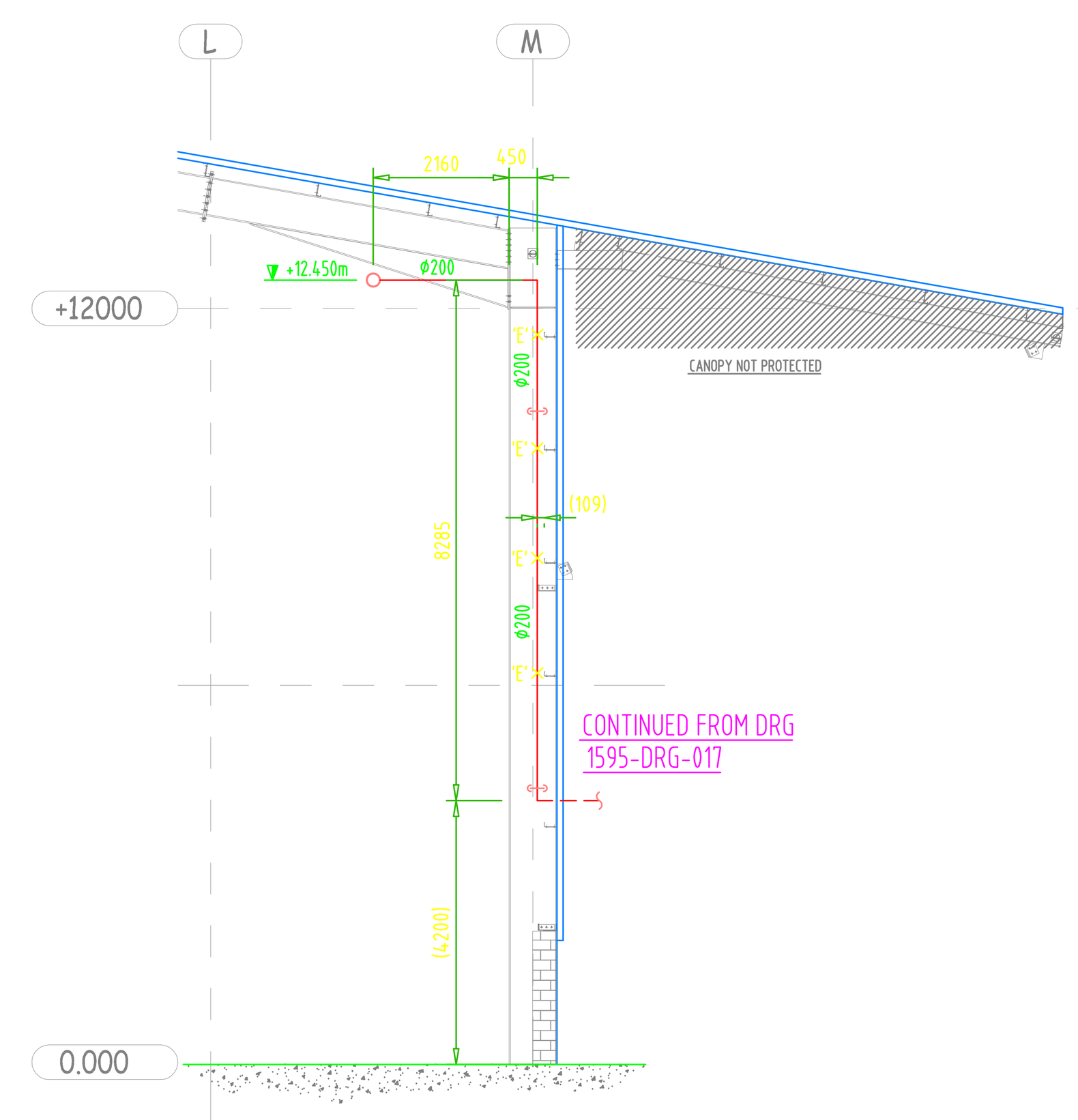
SECTION D-D OF SET AROUND HOPPER
(SCALE 1:75)



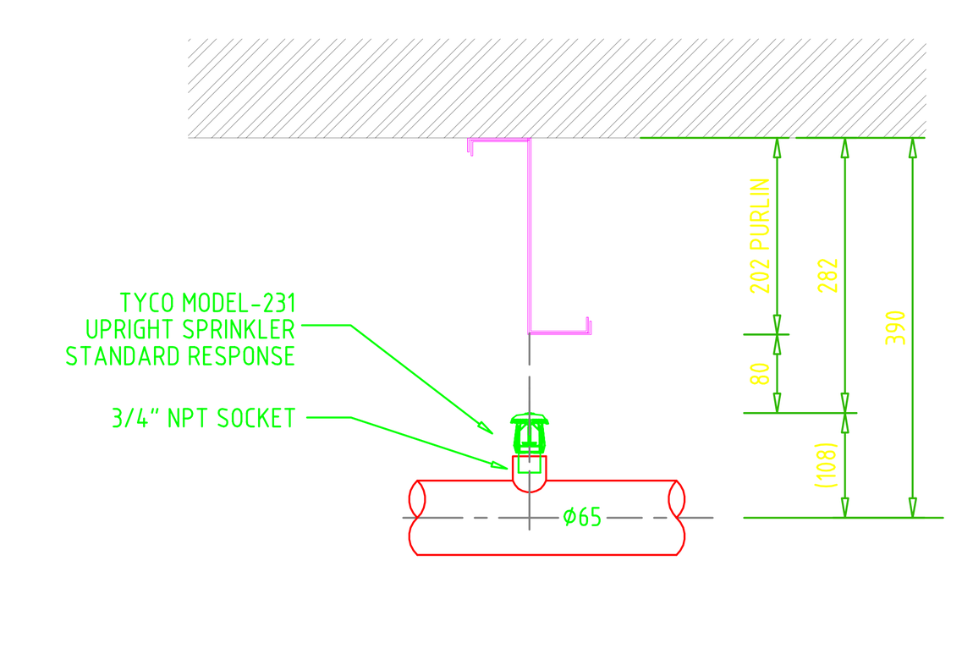
SECTION E-E : INNER END RANGE ABOVE HOPPER
(SCALE 1:75)



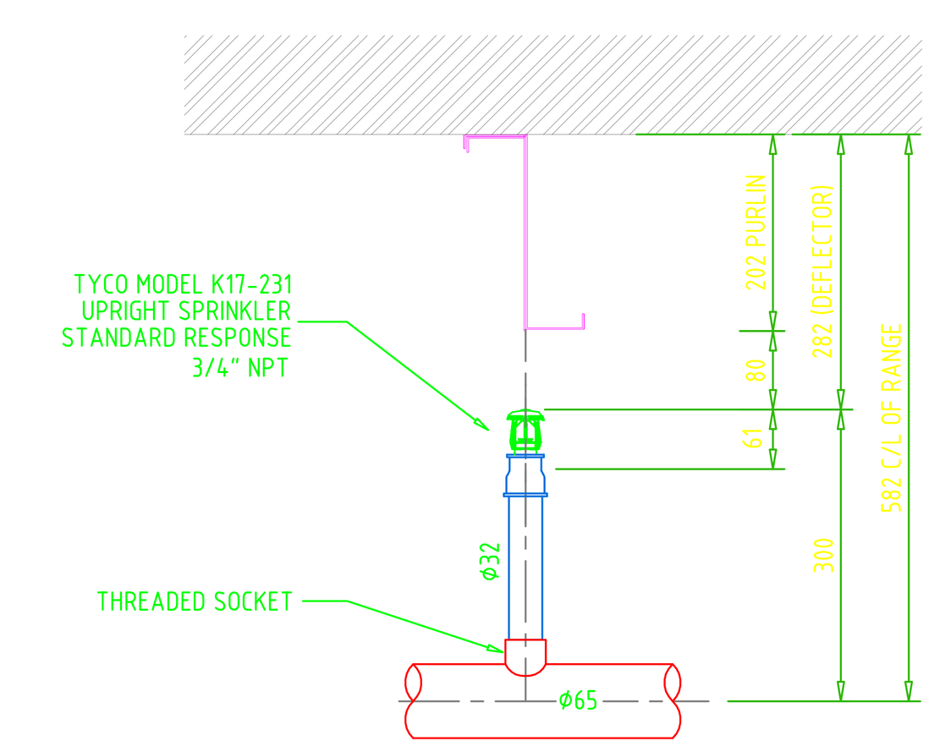
SECTION F-F END RANGE GRIDLINE 1
(SCALE 1:75)



SECTION H-H FEED MAINS
(SCALE 1:100)



SPRINKLER DEFLECTOR POSITION RELATIVE TO
ROOF STRUCTURE IN MIDDLE BAYS
(N.T.S)



SPRINKLER DEFLECTOR POSITION RELATIVE TO
ROOF STRUCTURE IN END BAYS
(N.T.S)

Standard Specification

ABOVEGROUND TUBE Ø15 TO Ø150NB	BS EN 10255 MEDIUM SERIES (REPLACES BS 1387)
ABOVEGROUND TUBE Ø200NB AND ABOVE	BS EN 10216-2 (REPLACES BS 3601)
FINISH	PAINTED ONE-COAT PRIMER
COLOUR BANDING	N/A
BUTT WELD FITTINGS	BS EN 10253-1:1999, CARBON STEEL
WELD FLANGES	BS4504, PN16, STEEL (UNLESS NOTED OTHERWISE)
WELD SOCKETS	BS EN 10241:2000
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FLANGE BOLTS	BS4190:2001 ISO METRIC HEX HEAD BOLTS (PLATED)
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THREAD SEALANT (AIR SYSTEMS)	LOCTITE 577 MEDIUM STRENGTH PIPE SEALANT
PIPE SUPPORT COMPONENTS	BRIGHT ZINC PLATED, FABRICATIONS PAINTED ONE COAT PRIMER
WELDING	SHALL COMPLY WITH BS2640 OR BS2971 CLASS II
NDT	10% MPI
APPROVALS	WELDERS APPROVED TO EN 287-1
FABRICATION DELIVERY	PLASTIC ENDS REQUIRED, DELIVERED BUNDLED/PACKED IN LINE WITH ARGUS P/O.

General Notes

1) SPRINKLER DEFLECTORS MUST BE INSTALLED PARALLEL TO CEILING OR ROOF.

2) SPRINKLER HEADS MUST BE INSTALLED USING PTFE TAPE ONLY, AND THREADED PIPE JOINTS MUST HAVE A WATER COUNCIL APPROVED JOINTING COMPOUND. (E.G. WATER HAWK OR EQUIVALENT).

3) SPRINKLER HEADS MUST BE A MINIMUM DISTANCE OF 150MM FROM PIPE SUPPORTS.

4) ALL PIPEWORK MUST BE INSTALLED WITH THE FOLLOWING MINIMUM SLOPES FOR DRAINAGE: RANGE PIPES - 4MM PER 1 METRE RUN - DISTRIBUTION PIPES - 2MM PER 1 METRE RUN.

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ABBREVIATIONS

No. : NUMBER
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C/W : COMPLETE WITH
T.B.C : TO BE CONFIRMED
Ø NB : DIAMETER (NOMINAL BORE)
AFFL : ABOVE FLOOR LEVEL
T.O.P :TOP OF PIPE
B.O.P : BOTTOM OF PIPE
C/W : COMPLETE WITH
T/C : TO CUT (ON SITE)
A/F : ACROSS FLATS
EA : BRITISH STD EQUAL ANGLE
PFC : PARALLEL FACE CHANNEL
ASSY : ASSEMBLY
N.T.S : NOT TO SCALE
O/D : OUTSIDE DIAMETER
ECC : SPECIFICALLY ECCENTRIC

NON-FUNCTIONAL DIMENSIONS SHOWN IN BRACKETS

SYMBOL LEGEND

SYSTEM PIPEWORK
PIPE UNION
DRAIN VALVE C/W PLUG
GROOVED COUPLING
BRACKET OF NOTED TYPE
PIPE RISE/DROP
(+) LEVEL ABOVE FFL
(-) LEVEL BELOW SOFFIT

Clients Reference Drawings

8070-G (3) MAIN BUILDING ROOF PLAN
8070-G (6) MAIN BUILDING SECTIONS
8070-G (4) MAIN BUILDING ELEVATIONS

Argus Reference Drawings

1598-DRG-015	ROOF LEVEL SPRINKLER SYSTEM - G.A
1598-DRG-016	ROOF LEVEL SPRINKLER SYSTEM - SECTIONS
1598-DRG-017	EXTERNAL FEED MAINS - G.A
1598-CAL-002	MOST REMOTE HYDRAULIC CALCULATION

ISSUED FOR CONSTRUCTION

REFER TO DRAWING 1345-DRG-015 FOR PIPING PLAN

THIS DRAWING TO BE READ IN CONJUNCTION WITH ALL SECTION AND DETAIL DRAWINGS

Rev	Date	Description	Drawn	Chk'd
B	13.06.17	SECTIONS ADDED INLINE WITH MODIFICATIONS TO PLAN	S.MILL	A.Y
A	03.04.17	DETAIL ADDED - ISSUED FOR CONSTRUCTION	S.MILL	A.Y
0	03.02.17	ORIGINAL ISSUE	S.MILL	A.Y

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Assessed to OHSAS 18001 LPCB ref. no. 011-HS
LPS 1014 Certificated Fire Detection and Alarm System Firm Certificate No. CFA-148
LPS 1048-1 Approved Sprinkler Contractor Certificate No. ASC-005
Assessed to ISO 9001 LPCB ref. no. 011

Client

Tom White Waste

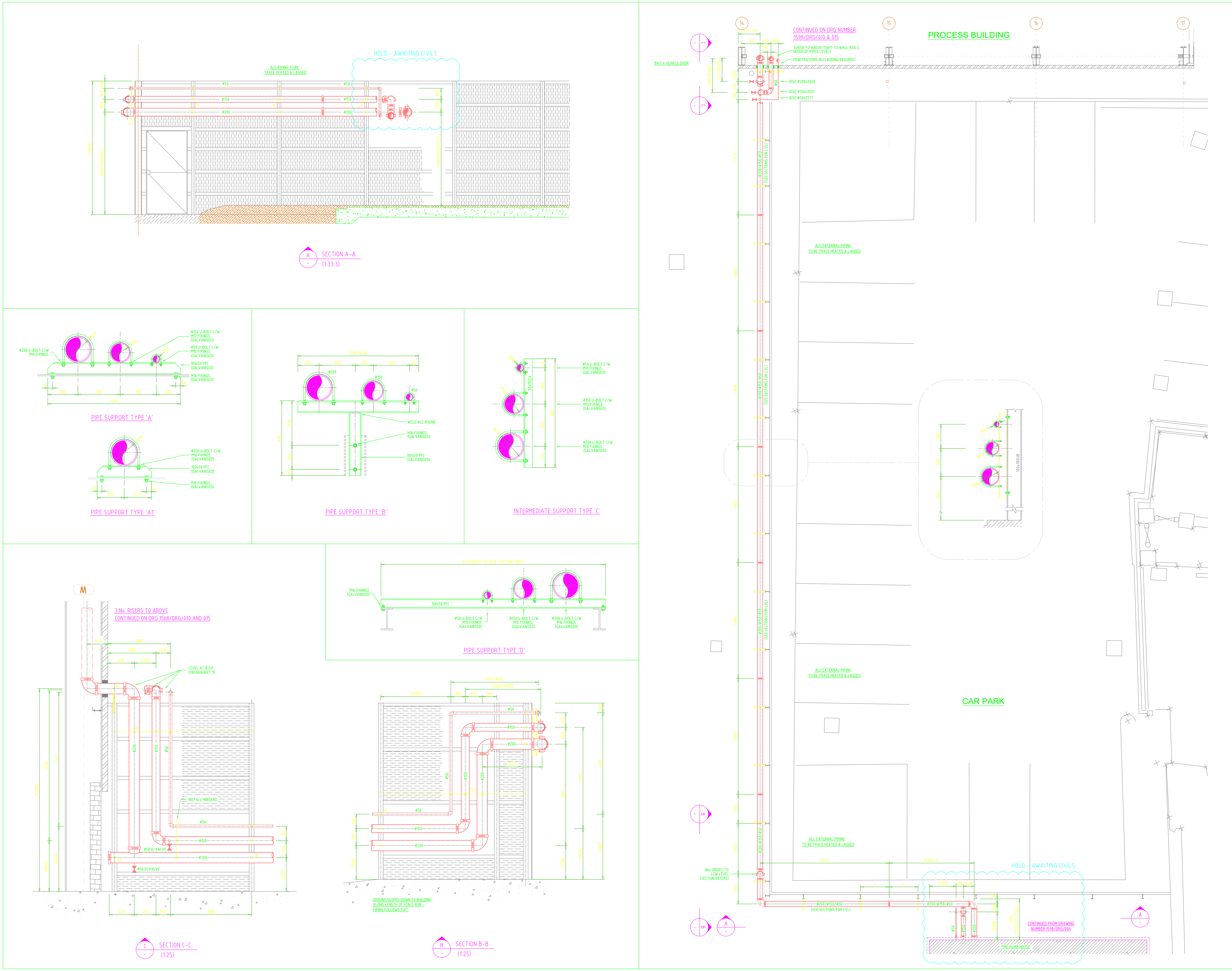
Project

Tom White Waste, Coventry.

Drawing Title

Fire Fighting Systems
Process Building Roof Sprinkler System
Sections

Orig Date	Scale	Drawing No	Rev	Drawn	Chk'd
03.02.17	1:75	1598-DRG-016	B	S.MILL	P.E



Standard Specification

ABOVEGROUND TUBE Ø15 TO Ø150NB	BS EN 10255 MEDIUM SERIES (REPLACES BS 1387)
ABOVEGROUND TUBE Ø200NB AND ABOVE	BS EN 10217-1 (REPLACES BS 3601)
FINISH	PAINTED ONE COAT PRIMER
COLOUR BANDING	N/A
BUTT WELD FITTINGS	BS EN 10253-1:1999, CARBON STEEL
WELD FLANGES	BS4504, PN16, STEEL (UNLESS NOTED OTHERWISE)
WELD SOCKETS	BS EN 10241:2000
GROOVED MECHANICAL JOINTS	LPC APPROVED, PAINTED
GROOVED MECHANICAL FITTINGS	LPC APPROVED, PAINTED
THREADED FITTINGS	MALLEABLE IRON TO BS EN 10242:1995 (BS 143)
THREADED JOINTS	BS 21:1985 BSP THREADS EXCEPT WHERE EXPRESSLY IDENTIFIED AS NPT
FLANGE JOINTS	BS4504 PN16 (U.N.O) GASKETS SHALL BE EPDM RUBBER
FLANGE BOLTS	BS4190:2001 ISO METRIC HEX HEAD BOLTS (PLATED)
THREAD SEALANT (WATER SYSTEMS)	COTTON AND BOSS WHITE FOR FITTING THREADS, PTFE FOR SPRINKLERS.
THREAD SEALANT (AIR SYSTEMS)	LOCTITE 577 MEDIUM STRENGTH PIPE SEALANT
PIPE SUPPORT COMPONENTS	GALVANISED
WELDING	SHALL COMPLY WITH BS2640 OR BS2971 CLASS II
NDT	10% MPI
APPROVALS	WELDERS APPROVED TO EN 287-1
FABRICATION DELIVERY	PLASTIC ENDS REQUIRED, DELIVERED BUNDLED/PACKED IN LINE WITH ARGUS P/O.

General Notes

1) SPRINKLER DEFLECTORS MUST BE INSTALLED PARALLEL TO CEILING OR ROOF.

2) SPRINKLER HEADS MUST BE INSTALLED USING PTFE TAPE ONLY, AND THREADED PIPE JOINTS MUST HAVE A WATER COUNCIL APPROVED JOINTING COMPOUND. (E.G. WATER HAWK OR EQUIVALENT).

3) SPRINKLER HEADS MUST BE A MINIMUM DISTANCE OF 150MM FROM PIPE SUPPORTS.

4) ALL PIPEWORK MUST BE INSTALLED WITH THE FOLLOWING MINIMUM SLOPES FOR DRAINAGE: RANGE PIPES - 4MM PER 1 METRE RUN - DISTRIBUTION PIPES - 2MM PER 1 METRE RUN.

5) ALL LEVELS SHOWN ARE TO PIPE CENTRE LINES, UNLESS WHERE NOTED OTHERWISE.

6) SPRINKLER HEADS, MULTIPLE CONTROLS AND NOZZLES MUST NOT BE PAINTED.

7) ARGUS FIRE PROTECTION CO. LTD DOES NOT ACCEPT ANY RESPONSIBILITY FOR DAMAGE TO ANY PART OF THE INSTALLATION DUE TO FROST. CLIENTS MUST TAKE ADEQUATE PRECAUTIONS TO PREVENT DAMAGE TO OR ADEQUATELY MAINTAIN ANY TRACE HEAT AND /OR LAGGING PROVIDED TO PROTECT WATER FILLED PIPING.

8) A CLEAR SPACE OF 1.0M MUST BE MAINTAINED BELOW THE SPRINKLER DEFLECTOR AT ALL TIMES FOR HIGH HAZARD SYSTEMS AND 0.5M FOR LIGHT & ORDINARY HAZARD. ANY OTHER HIGH LEVEL SERVICES INSTALLED HIGHER, MUST BE COORDINATED WITH SPRINKLER POSITIONS.

ABBREVIATIONS

No. : NUMBER
LVL : LEVEL
C/W : COMPLETE WITH
T.B.C : TO BE CONFIRMED
Ø NB : DIAMETER (NOMINAL BORE)
AFFL : ABOVE FLOOR LEVEL
T.O.P : TOP OF PIPE
B.O.P : BOTTOM OF PIPE
C/W : COMPLETE WITH
T/C : TO CUT (ON SITE)
A/F : ACROSS FLATS
EA : BRITISH STD EQUAL ANGLE
PFC : PARALLEL FACE CHANNEL
ASSY : ASSEMBLY
N.T.S : NOT TO SCALE
O/D : OUTSIDE DIAMETER
ECC : SPECIFICALLY ECCENTRIC

NON-FUNCTIONAL DIMENSIONS SHOWN IN BRACKETS

SYMBOL LEGEND

SYSTEM PIPEWORK
PIPE UNION
DRAIN VALVE C/W PLUG
GROOVED COUPLING
BRACKET OF NOTED TYPE
PIPE RISE/DROP
+4150 (+) LEVEL ABOVE FFL
(-) LEVEL BELOW SOFFIT

Clients Reference Drawings

12573CV-04-05 - SITE SURVEY PLAN

Argus Reference Drawings

1598-DRG-015	PROCESS BUILDING ROOF LEVEL SPRINKLER SYSTEM - G.A
1598-DRG-004	FIRE PUMP HOUSE GENERAL ARRANGEMENT DRAWING
1598-DRG-010	PROCESS BUILDING MONITOR SYSTEM - G.A

ISSUED FOR CONSTRUCTION

ALL PIPING ON THIS DRAWING TO BE PROVIDED WITH TRACE HEATING AND LAGGING

DESIGN SUBJECT TO VERIFICATION OF FENCE LOADING (BY OTHERS)

CLIENT SHOULD CONSIDER ARMCO STYLE BARRIERS WHERE PIPING SUSCEPTIBLE TO VEHICLE DAMAGE

Rev	Date	Description	Drawn	Chk'd
B	03.04.17	ISSUED FOR CONSTRUCTION - AREA ON HOLD AWAITING CIVIL ARRANGEMENTS	S.MILL	A.Y
A	10.02.2017	REVISED INLINE WITH CLIENT COMMENTS	S.MILL	A.Y
0	03.02.2017	ORIGINAL ISSUE	S.MILL	A.Y

Argus fire

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LPS 1048-1 Approved Sprinkler Contractor Certificate No. ASC-005
Assessed to ISO 9001 LPCB ref. no. 011

Client

Tom White Waste

Project

Tom White Waste, Coventry.

Drawing Title

Fire Fighting Systems
External Feed Mains
Piping General Arrangement Drawing

Orig Date	Scale	Drawing No	Rev	Drawn	Chk'd
03.02.17	1:50	1598-DRG-017	B	S.MILL	P.E

PICKING AREA CONVEYOR SPRINKLER DESIGN PARAMETERS

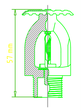
DESIGN STANDARDS / CODES	LPC RULES FOR AUTOMATIC SPRINKLER INSTALLATIONS (2015) INCORPORATING BS EN 12845
TYPE OF SYSTEM	WET PIPE SPRINKLER SYSTEM
HAZARD CLASSIFICATION	HIGH HAZARD PROCESS – CONVEYOR PROTECTION ONLY
AREA OF OPERATION	TOP OF CONVEYORS WITHIN PICKING AREA
DISCHARGE DENSITY	10mm/min/m²
HYDRANT ALLOWANCE	NIL
MINIMUM SPRINKLER PRESSURE	0.5 Bar
HIGHEST SPRINKLER HEAD	+7.275m

SPRINKLER HEAD LEGEND

○	UPRIGHT SPRINKLER HEAD
⊘	PENDANT SPRINKLER HEAD
⊙	SPRINKLER HEAD ON RISER
⧊	MV SPRAY NOZZLE

PICKING AREA CONVEYOR SPRINKLER SCHEDULE

INSTALLATION NUMBER	1
AREA / SIZE	PICKING AREA (OVER TWO CONVEYORS)
INSTALLATION	WET PIPE SPRINKLER SYSTEM
AREA DESCRIPTION	CONVEYOR PROTECTION ONLY -HIGH HAZARD
CONSTRUCTION	N/A
NUMBER OF SPRINKLERS:	8 OFF
TEMPERATURE RATING:	68°C - CONVENTIONAL, STANDARD RESPONSE
THREAD SIZE:	3/4" NPT
MODEL/TYPE:	TYCO MODEL TY-B (K=115) Ar1 575931155
APPROVALS:	LPC APPROVED



POINT LOADINGS PER HANGER

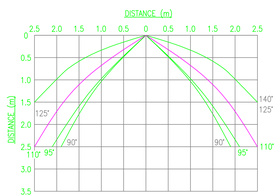
PIPE SIZE	POINT LOADING KG	WEIGHT OF PIPE &WATER PER M	MAX SUPPORT SPACING/PIPE
Ø20mm	8 KG	1.96 KG/m	4.0m
Ø25mm	13 KG	3.04 KG/m	4.0m
Ø32mm	17 KG	4.18 KG/m	4.0m
Ø40mm	21 KG	5.02 KG/m	4.0m
Ø50mm	30 KG	7.37 KG/m	4.0m
Ø65mm	63 KG	10.35 KG/m	6.0m
Ø80mm	83 KG	13.77 KG/m	6.0m
Ø100mm	127 KG	21.11 KG/m	6.0m
Ø150mm	233 KG	38.77 KG/m	6.0m
Ø200mm	400 KG	66.49 KG/m	6.0m

END BAY DELUGE SYSTEM DESIGN PARAMETERS

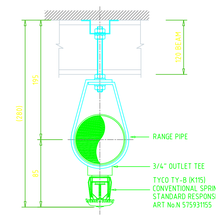
DESIGN STANDARDS / CODES	LPC RULES FOR AUTOMATIC SPRINKLER INSTALLATIONS (2015) INCORPORATING BS EN 12845
TYPE OF SYSTEM	TAIL-END MV SPRAY NOZZLE DELUGE SYSTEM VIA SOLENOID VALVE
HAZARD CLASSIFICATION	HIGH HAZARD
AREA OF OPERATION	PICKING AREA END BAY
DISCHARGE DENSITY	10mm/min/m² OVER BAY AREA
AREA OF OPERATION	ENTIRE BAY AREA 41m²
MINIMUM NOZZLE PRESSURE	1.4 BarG
MINIMUM FLOW	44.0 L/min

END BAY MEDIUM VELOCITY NOZZLE SCHEDULE

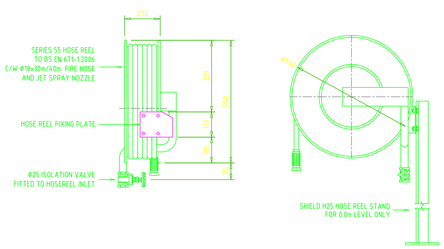
SYMBOL	ISO K-FACTOR	TYPE/ REFERENCE	QUANTITY
⧊	K=34.0 (METRIC)	TYCO MODEL MV21 (K-34) Ø15NB THREADED, BRONZE, 110° SPRAY ANGLE PART No: AE0083995 LPCB APPROVED	12



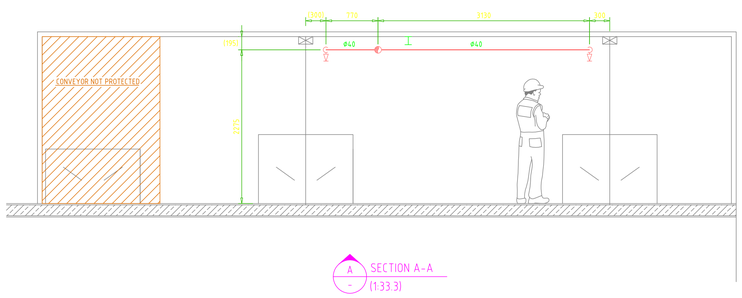
MV SPRAY NOZZLE VERTICAL DISCHARGE PATTERN
(NOT TO SCALE)



PICKING CONVEYOR SPRINKLER HEAD DETAIL
(NOT TO SCALE)



TYPICAL HOSE REEL UNIT DETAIL
(CONVEYOR PLATFORM LEVEL : Ø19x30m HOSE)
(LOADING BAY FLOOR AREA : Ø19x45m HOSE)



A SECTION A-A
(1:33.3)

FEED CONVEYOR OPEN SPRINKLER HEAD SCHEDULE

AREA REFERENCE	FEED CONVEYOR
INSTALLATION	N/A
NUMBER OF SPRINKLERS:	3 OFF
TEMPERATURE RATING:	N/A
THREAD SIZE:	3/4" NPT
MODEL/TYPE:	TYCO MODEL TY-B (K=115) Ar1 575931155
APPROVALS:	LPC APPROVED

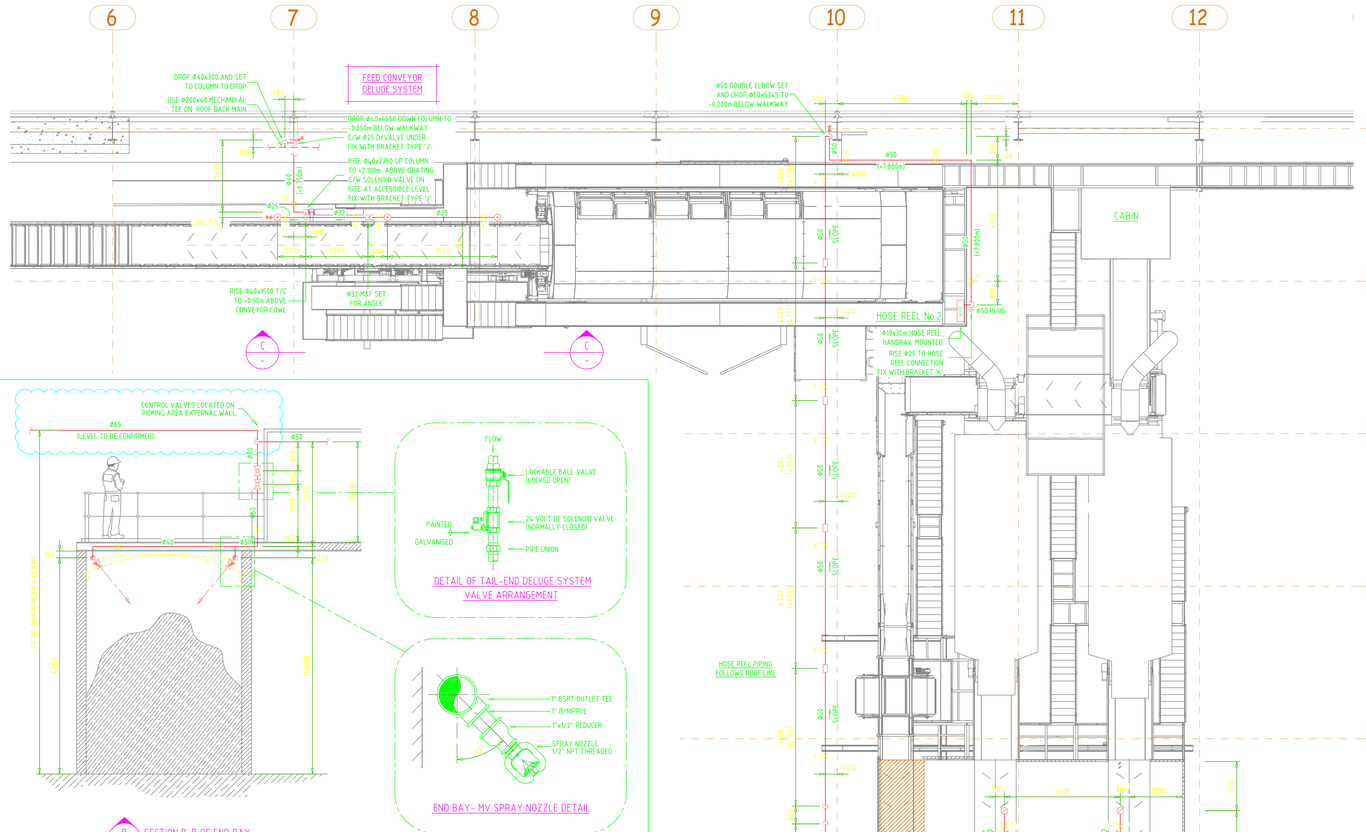
FEED CONVEYOR DELUGE SYSTEM DESIGN PARAMETERS

DESIGN STANDARDS / CODES	LPC RULES FOR AUTOMATIC SPRINKLER INSTALLATIONS (2015) INCORPORATING BS EN 12845
TYPE OF SYSTEM	TAIL-END OPEN SPRINKLER DELUGE SYSTEM
HAZARD CLASSIFICATION	HIGH HAZARD PROCESS
AREA OF OPERATION	THREE HEADS ONLY TO TOP END OF CONVEYOR
DISCHARGE DENSITY	10mm/min/m² OVER LINEAR CONVEYOR AREA
AREA OF OPERATION	19m²
MINIMUM NOZZLE PRESSURE	0.5 BarG
MINIMUM FLOW	3 x (115 x SQRT 0.5) = 244 L/min

FIRE PROTECTION EQUIPMENT COMPONENTS

INST. CONTROL VALVES	TYCO MODEL AV1-300 WET ALARM VALVE CE TRIM - LPCB APPROVED
ISOLATION VALVES	TYCO MODEL JPL WAFER BUTTERFLY VALVE (MONITORED)
STRAINER	N/A
FLOW SWITCHES	N/A
PRESSURE SWITCHES	POTTER MODEL PS-10, LPCB APPROVED
FIRE PUMP	ARMSTRONG 8x6x13 3UAM-LPS4 DIESEL ENGINE DRIVEN (HALF CAPACITY)
FIREWATER TANK	FRANKLIN HODGE LPS1276 REF: 037c/06e, 12.99m DIA, 114.8m3

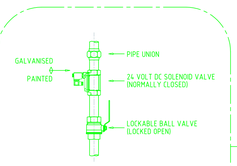
A CLEAR SPACE SHALL BE MAINTAINED BELOW THE DEFLECTOR OF AT LEAST 1.0m
FOR HIGH HAZARD STORAGE



PLAN VIEW OF ADDITIONAL PLANT PROTECTION TO PICKING AREA, END HOPPER AND HOSE REELS
(SCALE 1:75)

PLAN VIEW OF DELUGE PROTECTION TO END BAY
(SCALE 1:50)

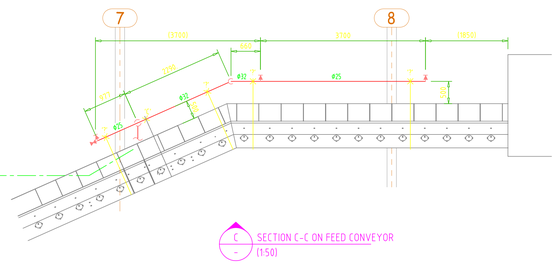
B SECTION B-B OF END BAY
(1:50)



DETAIL OF FEED CONVEYOR SYSTEM
VALVE ARRANGEMENT

DETAIL OF TAIL-END DELUGE SYSTEM
VALVE ARRANGEMENT

END BAY- MV SPRAY NOZZLE DETAIL



C SECTION C-C ON FEED CONVEYOR
(1:50)

Standard Specification

ABOVEGROUND TUBE Ø5.72 TO Ø108MM	BS EN 10255 MEDIUM SERIES (REPLACES BS 1387)
ABOVEGROUND TUBE Ø133MM AND ABOVE	BS EN 10216-1 (REPLACES BS 3601)
FINISH	PAINTED ONE COAT PRIMER / DELUGE PIPING GALVANISED
COLOUR ENDING	RED
BUTT WELD FITTINGS	BS EN 10253-3:1999, CARBON STEEL
WELD FLANGES	BS4504, PN16, STEEL (UNLESS NOTED OTHERWISE)
WELD GUSSETS	BS EN 1011-2:2001
GROOVED MECHANICAL JOINTS	LPC APPROVED, PAINTED / GALVANISED
GROOVED MECHANICAL FITTINGS	LPC APPROVED, PAINTED / GALVANISED
THREADED FITTINGS	MALLEABLE IRON TO BS EN 10242:1995 BS 143
THREADED JOINTS	BS 21:1985 BSP THREADS EXCEPT WHERE EXPRESSLY IDENTIFIED AS NPT
FLANGE JOINTS	BS4504, PN16 (RUBO GASKETS SHALL BE EPDM RUBBER
FLANGE BOLTS	BS4190:2001 ISO METRIC HEX HEAD BOLTS (PLATED)
THREAD SEALANT (WATER SYSTEMS)	COTTON AND BOSS WHITE FOR FITTING THREADS, PTFE FOR SPRINKLERS
THREAD SEALANT (AIR SYSTEMS)	LOCTITE 577 (HENKEL) STRONG EXPIRE SEALANT
PIPE SUPPORT COMPONENTS	BRIGHT ZINC PLATED, FABRICATIONS GALVANIZED / PAINTED AS SHOWN
WELDING	ALL WELDING TO BE CARRIED OUT BY WELDERS APPROVED TO BS EN ISO 9606-1:2013
NUT	SOLID
APPROVALS	WELDERS APPROVED TO EN ISO 9606-1:2013
FABRICATION DELIVERY	PLASTIC ENDS REQUIRED, DELIVERED BUNDLED/STACKED IN LINE WITH ARGUS PVD

General Notes

1) SPRINKLER DEFLECTORS MUST BE INSTALLED PARALLEL TO CEILING OR ROOF.

2) SPRINKLER HEADS MUST BE INSTALLED USING PTFE TAPE ONLY, AND THREADED PIPE JOINTS MUST HAVE A WATER CHOKE APPROVED JOINTING COMPOUND. (E.G. WATER HAWK OR EQUIVALENT)

3) SPRINKLER HEADS MUST BE A MINIMUM DISTANCE OF 150MM FROM PIPE SUPPORTS.

4) ALL PIPEWORK MUST BE INSTALLED WITH THE FOLLOWING MINIMUM SLOPES FOR DRAINAGE: RANGE PIPES - 4MM PER 1 METRE RUN - DISTRIBUTION PIPES - 2MM PER 1 METRE RUN.

5) ALL LEVELS SHOWN ARE TO PIPE CENTRE LINES, UNLESS WHERE NOTED OTHERWISE.

6) SPRINKLER HEADS, MULTIPLE CONTROLS AND NOZZLES MUST NOT BE PAINTED.

7) ARGUS FIRE PROTECTION CO. LTD DOES NOT ACCEPT ANY RESPONSIBILITY FOR DAMAGE TO ANY PART OF THE INSTALLATION DUE TO FROST. CLIENTS MUST TAKE ADEQUATE PRECAUTIONS TO PREVENT DAMAGE TO, OR ADEQUATELY MAINTAIN ANY FROST HEAT AND /OR LAGGING PROVIDED TO PROTECT WATER FILLED PIPING.

8) A CLEAR SPACE OF 1.0M MUST BE MAINTAINED BELOW THE SPRINKLER DEFLECTOR AT ALL TIMES FOR HIGH HAZARD SYSTEMS AND 0.5M FOR LIGHT & ORDINARY HAZARD. ANY OTHER HIGH LEVEL SERVICES INSTALLED HIGHER, MUST BE COORDINATED WITH SPRINKLER POSITIONS.

ABBREVIATIONS

No. : NUMBER
LVL : LEVEL
C/W : COMPLETE WITH
T.B.C. : TO BE CONFIRMED
Ø NB : DIAMETER (NOMINAL BORE)
AFFL : ABOVE FLOOR LEVEL
T.O.P. : TOP OF PIPE
B.O.P. : BOTTOM OF PIPE
C/W : COMPLETE WITH
T/C : TO CUT ON SITE)
A/F : ACROSS FLATS
EA. : BRITISH STD EQUAL ANGLE
PFC : PARALLEL FACE CHANNEL
ASSY : ASSEMBLY
N.T.S. : NOT TO SCALE
O/D : OUTSIDE DIAMETER
ECC : SPECIFICALLY ECCENTRIC

NON-FUNCTIONAL DIMENSIONS SHOWN IN BRACKETS

SYMBOL LEGEND

	SYSTEM PIPEWORK
	PIPE UNION
	DRAIN VALVE C/W PLUG
	GROOVED COUPLING
A	BRACKET OF NOTED TYPE
	PIPE RISE/DROP
(+xxx)	(+) LEVEL ABOVE FFL (-) LEVEL BELOW SOFFIT

Clients Reference Drawings

3278S-TWW "INSTALLED PLANT" REV -

Argus Reference Drawings

1598-DRG-020	ADDITIONAL PLANT PROTECTION – G.A.
1598-DRG-021	ADDITIONAL PLANT PROTECTION – PIPING SUPPORT DETAILS
1598-DRG-015	SPRINKLER PROTECTION TO MAIN ROOF
1598-DRG-016	MONITOR SYSTEM FEED PIPING
1598-DRG-017	EXTERNAL MAINS FEED PIPING
1598-CAL-008	PICKING AREA SPRINKLERS HYDRAULIC CALCULATION
1598-CAL-009	END HOPPER DELUGE SYSTEM HYDRAULIC CALCULATION
1598-CAL-010	FEED CONVEYOR OPEN SPRINKLER DELUGE SYSTEM HYDRAULIC CALCULATION

FEED CONVEYOR PROTECTED AT ONE END ONLY
IN ACCORDANCE WITH CLIENTS REQUIREMENTS

HOSE REELS SITED IN ACCORDANCE WITH
CLIENTS REQUIREMENTS

SPRINKLER PROTECTION TO PICKING COVERS
CONVEYORS ONLY IN ACCORDANCE
WITH CLIENTS REQUIRMENTS

ISSUED FOR CONSTRUCTION

Rev	Date	Description	Drawn	Chk'd
A	03.04.2017	HOSE REEL FEED REVISED - ISSUED FOR CONSTRUCTION	S.MILL	A.Y
0	17.03.2017	ORIGINAL ISSUE	S.MILL	A.Y

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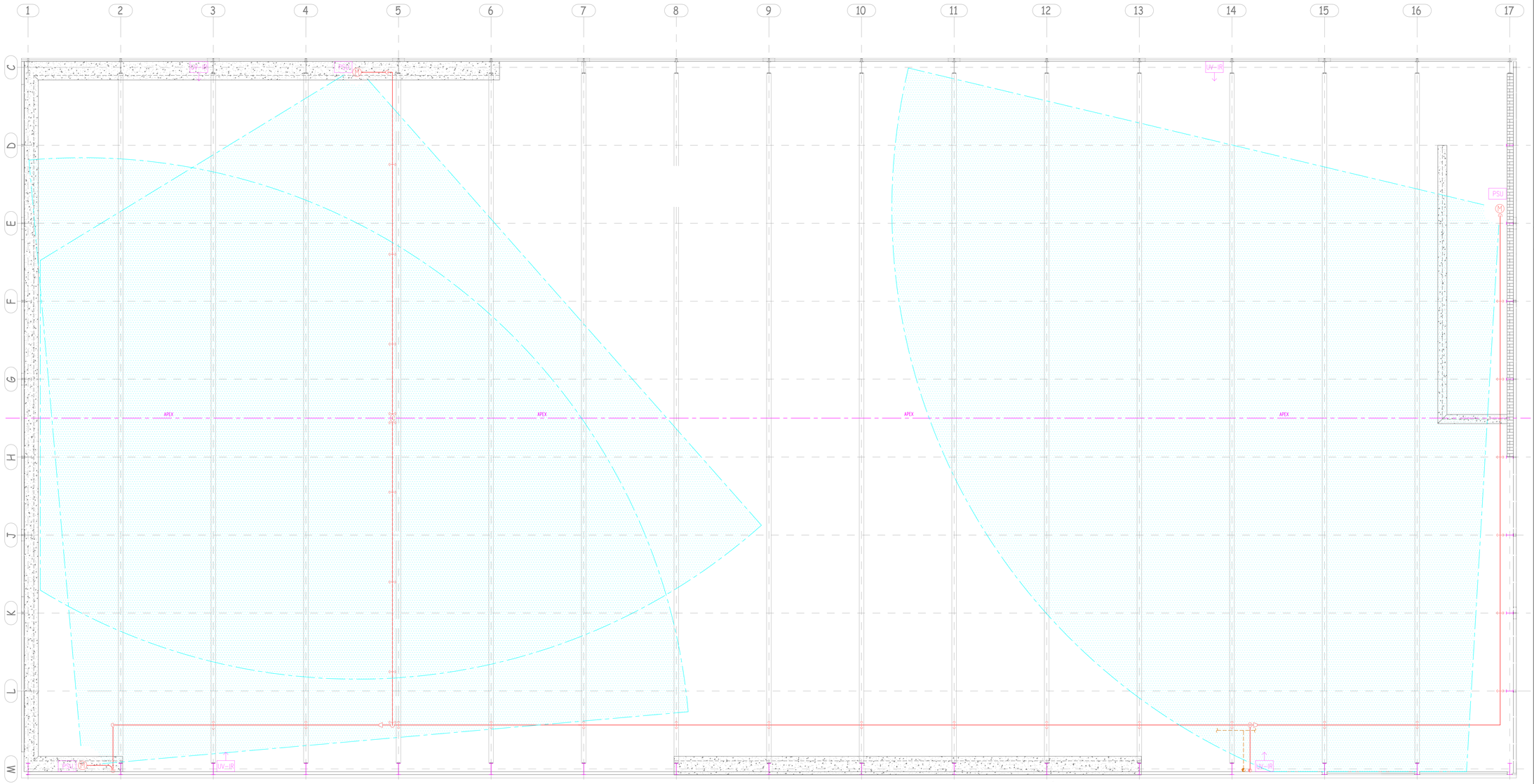
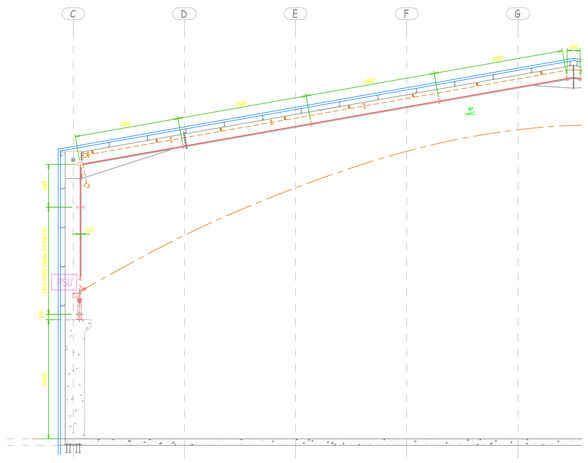
Client
Tom White Waste

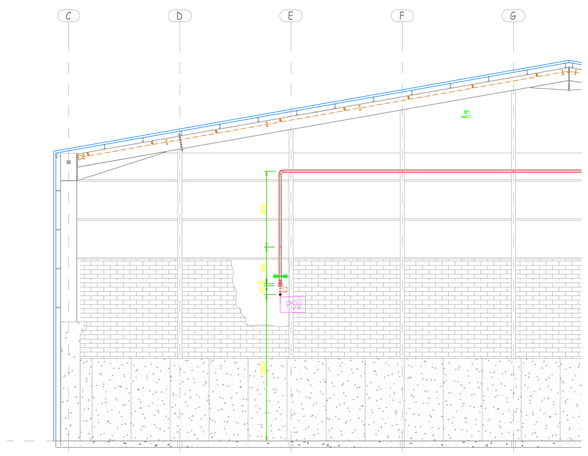
Project
Tom White Waste, Coventry.

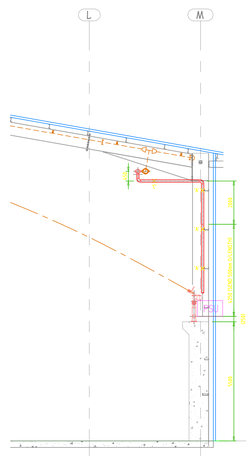
Drawing Title
Fire Fighting Systems
Additional Plant Protection
General Arrangement Drawing

Orig Date	Scale	Drawing No	Rev	Drawn	Chk'd
17.03.2017	1:75	1598-DRG-020	A	S.MILL	P.E









General Notes :

1. Unless otherwise stated all cables to be:-
   a) Enhanced fire resisting, LPCB approved
   b) 2 core
   c) 1.5mm² copper conductor
   d) Red colour for all circuits
2. All cables to be installed in:-
   a) Mini trunking; colour red; for drops to manual alarm call points
   b) Mini trunking; colour white; for all other applications
   c) Heavy duty galvanized tray to be used for other applications
   d) Spacing of cable fixings shall be in accordance with latest edition of I.E.E wiring regulations (BS 7671)
3. Routing of cables / containment to be site co-ordinated.
4. Power supplies to control panel shall be (240VAC, 1PH, 50Hz) labelled 'Fire Alarm System, Do Not Switch Off' at distribution board and terminated at double pole fuse spur unit (unswitched) cable to be enhanced, 400mm², white to be used.
5. Sounders shall be mounted at approx F.F.L. +2.5M +35M
6. Manual call points shall be mounted at F.F.L. +1.2M
7. Fire alarm system to conform to BS5839 Part 1:2013, Category L5.
8. All devices to be mounted on steel columns

Legends

Sym	Description
DIP	Fire alarm panel
PSU	Power Supply
UV-IR	UV-IR APOLLO XP95 DETECTOR

Rev.	Date.	Description.	Drawn.	Chk'd.
0	15.05.17	Issued for Information	PB	CS

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Client

Tom White Waste

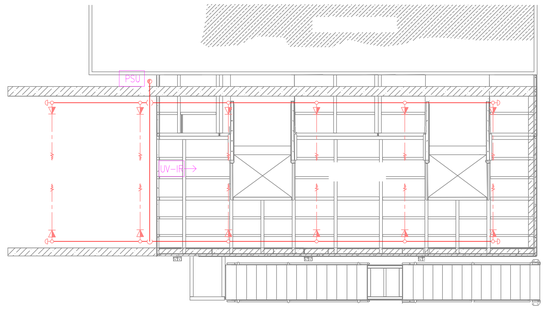
Project

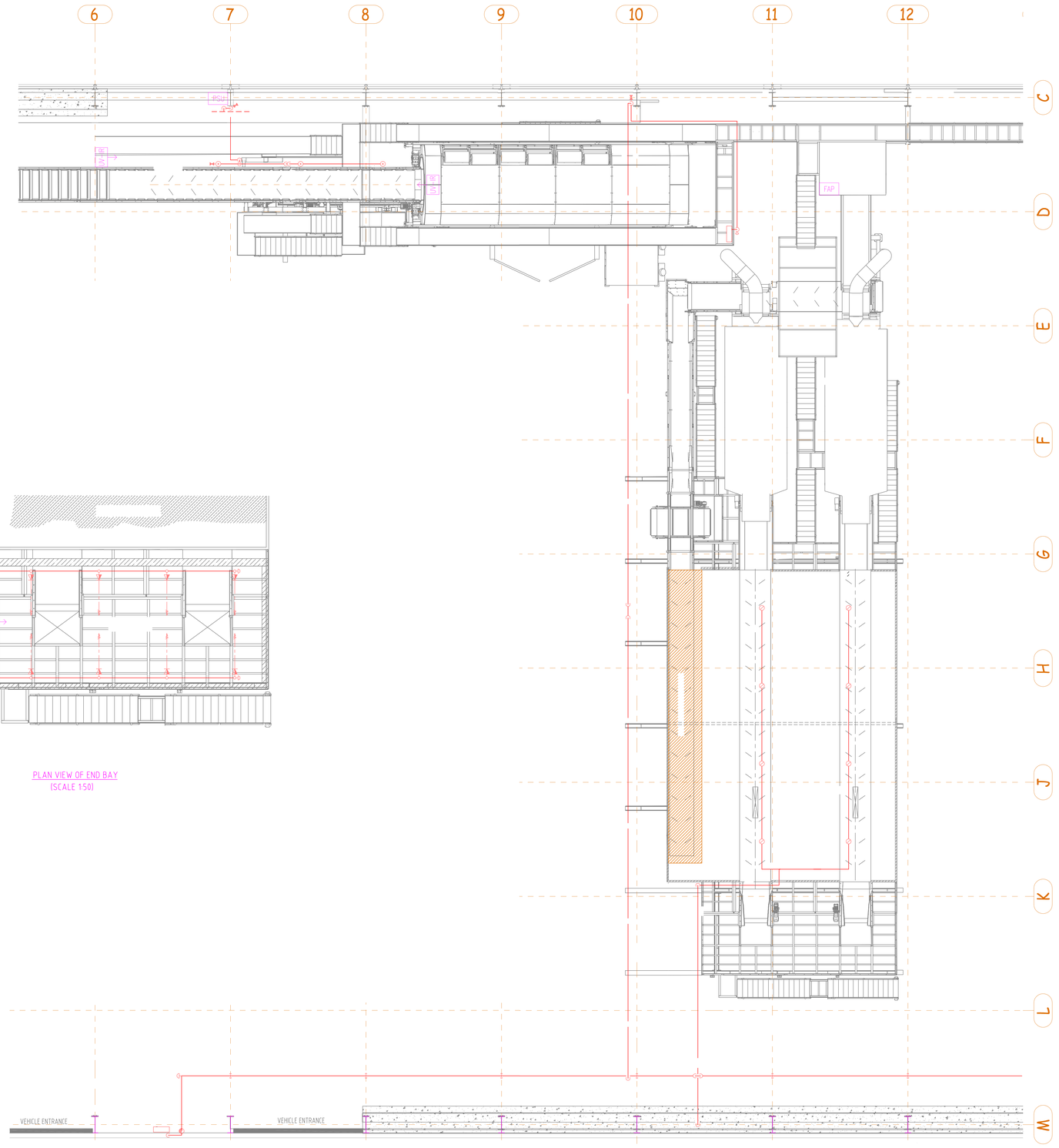
Tom White Waste

Drawing Title

Fire Fighting Systems
Process Building Water Monitor System
Power Supply & UVIR Locations

Date.	Scale.	Drawing No.	Rev.	Drawn.	Chk'd.
15.05.17	1:100 @ A0	1598-DRG-030	0	PB	CS





PLAN VIEW OF END BAY
(SCALE 1:50)

PLAN VIEW ADDITIONAL PLANT PROTECTION
(SCALE 1:75)

General Notes :

1. Unless otherwise stated all cables to be:-
   a) Enhanced fire resisting, LPCB approved
   b) 2 core
   c) 1.5mm² copper conductor
   d) Red colour for all circuits
2. All cables to be installed in:-
   a) Mini trunking; colour red; for drops to manual alarm call points
   b) Mini trunking; colour white; for all other applications
   c) Heavy duty galvanized tray to be used for other applications
   d) Spacing of cable fixings shall be in accordance with latest edition of I.E.E wiring regulations (BS 7671)
3. Routing of cables / containment to be site co-ordinated.
4. Power supplies to control panel shall be (240VAC, 1PH, 50Hz) labelled 'Fire Alarm System, Do Not Switch Off ' at distribution board and terminated at double pole fuse spur unit (unswitched) cable to be enhanced, 400mm², white to be used.
5. Sounders shall be mounted at approx F.F.L. +2.5M +35M
6. Manual call points shall be mounted at F.F.L. +1.2M
7. Fire alarm system to conform to BS5839 Part 1:2013, Category L5.
8. All devices to be mounted on steel columns

Legends

Sym	Description
FAP	Fire alarm panel
PSU	Power Supply
↑ UV–IR	UV-IR APOLLO XP95 DETECTOR

Rev.	Date.	Description.	Drawn.	Chk'd.
0	15.05.17	Issued for Information	PB	CS

Argus fire

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Occupational Health & Safety Management System Assessed to OHSAS 18001:1999 Certificate No. 011-HS
LPS 1014 Certificated Fire Detection and Alarm System Firm Certificate No. CFA-148
LPS 1048-1 Approved Sprinkler Contractor Certificate No. ASC-005
Quality Management System Assessed to BS EN ISO 9001:2000 Certificate No. 011
INVESTOR IN PEOPLE

Client

Tom White Waste

Project

Tom White Waste

Drawing Title

Fire Fighting Systems
Additional Plant Protection
Power Supply & UVIR Locations

Date.	Scale.	Drawing No.	Rev.	Drawn.	Chk'd.
15.05.17	1:75 @ A0	1598-DRG-031	0	PB	CS