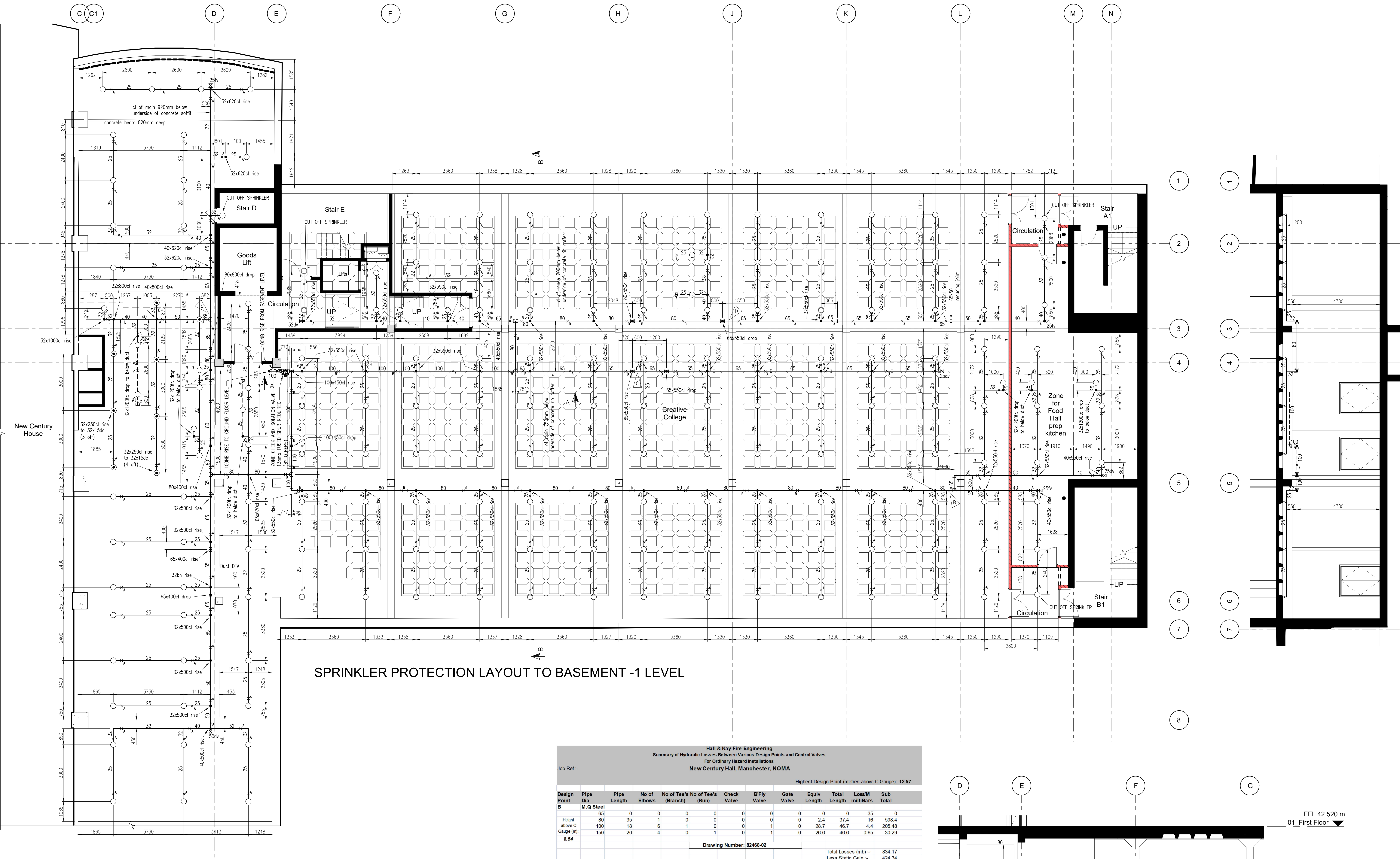
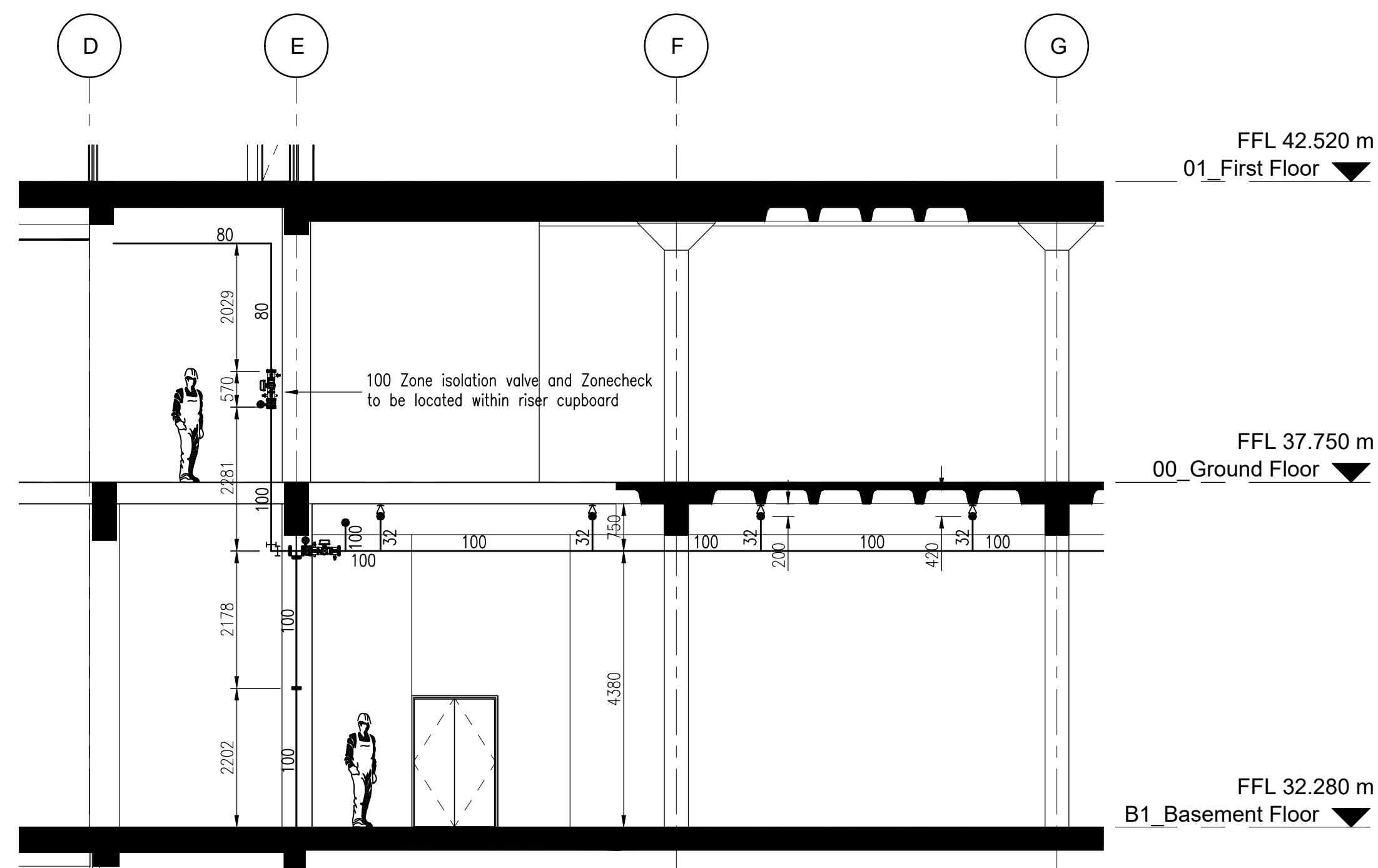




SPRINKLER PROTECTION LAYOUT TO BASEMENT -1 LEVEL

Hall & Kay Fire Engineering Summary of Hydraulic Losses between Various Design Points and Control Valves For Ordinary Hazard Installations New Century Hall, Manchester, NOMA													
Highest Design Point (metres above C Gauge): 12.87													
Design Point	Pipe Dia	Pipe Length	No of Elbows	No of Tee's (Branch)	No of Tee's (Run)	Check Valve	B'Fly Valve	Gate Valve	Equiv Length	Total Length	LossM	Sub Total	
B													
M.Q. Steel													
Height	65	0	0	0	0	0	0	0	0	0	35	0	
above C	80	35	1	0	0	0	0	0	2.4	37.4	16	598.4	
Gauge (m)	100	18	6	1	0	0	1	0	28.7	46.7	4.4	225.48	
	150	20	4	0	1	0	1	0	26.6	46.6	0.65	30.29	
Drawing Number: 82468-02											Total Losses (mb) =	834.17	
											Less Static Gain -	424.34	
											Nett Loss =	409.83 milliBars	
C													
M.Q. Steel													
Height	65	6.7	2	0	0	0	0	0	3.8	10.5	35	367.5	
above C	80	0	0	0	0	0	0	0	0	0	0	16	
Gauge (m)	100	22.6	3	1	0	0	1	0	19.7	42.3	4.4	186.12	
	150	20	4	0	1	0	1	0	26.6	46.6	0.65	30.29	
Drawing Number: 82468-02											Total Losses (mb) =	583.91	
											Less Static Gain -	424.34	
											Nett Loss =	159.57 milliBars	
D													
M.Q. Steel													
Height	65	0	1	0	0	0	0	0	1.9	1.9	35	66.5	
above C	80	14	2	2	0	0	0	0	14.4	28.4	16	454.4	
Gauge (m)	100	22.6	3	1	0	0	1	0	19.7	42.3	4.4	186.12	
	150	20	4	0	1	0	1	0	26.6	46.6	0.65	30.29	
Drawing Number: 82468-02											Total Losses (mb) =	737.31	
											Less Static Gain -	424.34	
											Nett Loss =	312.97 milliBars	
E													
M.Q. Steel													
Height	65	1.6	1	0	0	0	0	0	1.9	3.5	35	122.5	
above C	80	5	3	2	0	0	0	0	16.8	21.8	16	348.8	
Gauge (m)	100	17	6	1	0	0	1	0	28.7	45.7	4.4	201.08	
	150	20	4	0	1	0	1	0	26.6	46.6	0.65	30.29	
Drawing Number: 82468-02											Total Losses (mb) =	702.67	
											Less Static Gain -	424.34	
											Nett Loss =	278.33 milliBars	



SECTION A-A

SCHEDULE OF SPRINKLERS

INST N°	ZONE	LOCATION	CONVY	SPRINKLER	TEMP	DESIGN	QTY
N°				HEAD MODEL, RATING & K-FACTOR	°C	SPACING	
1	ROOF LEVEL	MP	YES	VERNO MODEL 41 VERNO 5000 150N BRASS	68	12	179
2	BELOW OUTDOOR	MP	YES	VERNO MODEL 41 VERNO 5000 150N BRASS	68	12	16

ALL SPRINKLERS ABOVE LISTED ARE QUICK RESPONSE TYPE

SPECIFICATION STANDARD: LPC Rules for Automatic Sprinkler Installations 2015
Incorporating BS EN 12845

DESIGN CRITERIA	
ANNEX D & F ENHANCEMENTS	YES
ANY OTHER APPLICABLE ANNEXES	A-F
HAZARD CLASS	ORDINARY
DISCHARGE DENSITY	5.0/min/m²
AREA OF OPERATION	AMAD 216m²
HEIGHT OF C GAUGE	1.5m
HIGHEST HEAD ABOVE C GAUGE	13m
INSULATION TYPE	YES
SYSTEM VOLUME - (DRY / ALTERNATE ONLY)	N/A
PH or PRECALCULATED	PRE-CALC

PIPEWORK PAINT FINISH	
REDUCER	NO
POWDER COATED WHITE - RAL 9010	NO
POWDER COATED RED - RAL 3000	YES
OTHER SPECIFY	OTHER (IF APPLICABLE)

PIPEWORK SPECIFICATION UNLESS OTHERWISE STATED:

1. ALL PIPE WORK TO BE EN-10255 MEDIUM WEIGHT UP TO 150NB
2. PIPEWORK ABOVE 150NB TO SCHEDULE 20 ANSI B16.5
3. ALL SCREWED FITTINGS TO BE BLACK MALLEABLE IRON TO BS 143
4. ALL WELDED FITTINGS TO BE EN 10255

Clear space to be maintained below the deflector of roof and ceiling sprinklers of at least 0.5m for ordinary hazard systems and 1.0m for high hazard.

Maximum Storage Heights:	
Storage Category	Maximum Storage Height in m
Category I	Fire Storage or Stock Storage
Category II	Storage Configurations for High Hazard
Category III	Storage Configurations for High Hazard
Category IV	Storage Configurations for High Hazard

WEIGHT LOADINGS FOR MEDIUM WEIGHT PIPE WORK & FITTINGS MAXIMUM SPACING BETWEEN BRACKET LOCATIONS (see 17.2 - BS EN 12845)

NOMINAL SIZE	OUTSIDE DIAMETER	WEIGHT (METRE x 100)	WEIGHT (METRE x 100)	BRACKET LOCATIONS
20mm	33.7mm	2.5	3.1	4m Maximum
25mm	42.4mm	3.1	3.7	4m Maximum
32mm	48.3mm	3.7	4.2	4m Maximum
40mm	54.0mm	4.2	4.8	4m Maximum
50mm	63.5mm	5.0	5.5	4m (for 1000psi) - see Note 1)
63mm	76.2mm	5.8	6.3	4m (for 1000psi) - see Note 1)
75mm	89.1mm	6.6	7.1	4m (for 1000psi) - see Note 1)
100mm	114.3mm	8.5	9.0	4m (for 1000psi) - see Note 1)
125mm	154.9mm	10.2	10.7	4m (for 1000psi) - see Note 1)
150mm	168.3mm	11.2	11.7	4m (for 1000psi) - see Note 1)
200mm	219.1mm	14.2	14.7	4m (for 1000psi) - see Note 1)

Note 1: Pipe supports on pipe work greater than 200mm can be at 6m maximum spacing, providing this is acceptable to the relevant authority.

TABLE 40 - Design parameters for pipe supports

NOMINAL PIPE DIAMETER	MINIMUM LOAD CAPACITY at 20°C	MINIMUM CROSS SECTION	MINIMUM LENGTH OF ANCHOR BOLT
mm	N	mm²	mm
25 x 4 x 50	200	50 (M6)	50
32 x 4 x 50	300	52 (M6)	50
40 x 4 x 50	300	78 (M7)	50
50 x 4 x 50	300	128 (M8)	50

Note 1: When the material is heated to 200°C the load bearing capacity should not decrease more than 25%.

Note 2: The maximum load capacity of the material should be increased as far as the minimum cross section is concerned.

Note 3: The length of anchor bolts depends on the type used and the quality and type of material into which they are to be fixed. The values given are for concrete.

Note 4: It must not be presumed that the maximum load capacity for the connection of any member into which it is connected with the proposed holes for which it is prepared or otherwise without the express consent of the relevant authority.

ALL SPRINKLER HEADS TO BE FITTED BY PERPENDICULAR TO ROOF / CEILING.

ALL SPRINKLER HEADS MUST BE FITTED TO THE INSTALLATION.

SPRINKLER HEADS, MODELS AND CONTROLS MUST NOT BE PAINTED.

HALL & KAY FIRE ENGINEERING HAS BEEN ADVISED THAT THE RANGE CAUSED BY PROCT. CLIENTS SHOULD HAVE ADEQUATE PROTECTIONS AGAINST THE RISK OF THE PROCEEDING ABOVE AND BELOW CONTROLS.

ALL BUILDINGWORK HOLES THROUGH WALLS, FLOORS, BLENDING FIRE STOPPING, TRUST BLOCKS, TRENCHES, CHIMNEYS, ETC. MUST BE MADE GOOD.

LEGEND

○	SPRINKLER HEAD UPRIGHT
●	SPRINKLER HEAD PENDENT
⊙	SPRINKLER HEAD FALSE CEILING / ON DROP PIPE
⊕	SPRINKLER HEAD WITH FLEXIBLE ARM & DROP TO FALSE CEILING
⊗	SPRINKLER HEAD ON RISE PIPE
⊙	SPRINKLER HEAD SIDEWALL
⊙	SPRINKLER HEAD HIGH TEMPERATURE
⊙	CHANGE OF ELEVATION IN PIPEWORK
⊙	CENTRE LINE ELEVATION OF PIPEWORK BELOW FINISH FLOOR LEVEL
⊙	CENTRE LINE ELEVATION OF PIPEWORK ABOVE FINISH FLOOR LEVEL / DATUM
⊙	DESIGN POINT
⊙	POSITION AND TYPE OF PIPE SUPPORT
⊙	POSITION OF MECHANICAL COUPLING
⊙	DRAIN / FLUSHING / TEST VALVE WITH BRASS PLUG
⊙	FLUSHING CONNECTION

WORTH POINT: SITE ADDRESS

New Century Hall,
Hayes Street,
Manchester,
M60 4ES

DRAWING REVISIONS

REV	REVISION DESCRIPTION	DRAWN	APPROVED	DATE
0	ISSUED FOR APPROVAL			19.03.21
P1	PRELIMINARY ISSUE FOR DISCUSSION	RAM	CC	26.02.21
P	PRELIMINARY ISSUE FOR DISCUSSION	RAM	CC	26.02.21

REFERENCE DRAWINGS:

INFORMATION TAKEN FROM SITE SURVEY

ALSO DRAWINGS:
NCHA-BRA-22-00-DR-A-2200 CDS
M2108-201-P1

H&K
Hall & Kay Fire Services Limited

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Stirling Park Cragg Lane Woodgate Valley Birmingham, B32 8PU Tel: 0121 421 3311 Email: birmingham@hkfire.co.uk	Cotton Business Park Wythe Avenue Cotton Manchester, M27 8PF Tel: 0161 872 7316 Email: manchester@hkfire.co.uk	Silwood Park Ascot Berkshire, SL5 7PW Tel: 01344 203 800 Email: ascot@hkfire.co.uk

CLIENT: RUSSELLS CONSTRUCTION

PROJECT: NCH MANCHESTER

DRAWING TITLE: EXTENSION TO SPRINKLER SYSTEM TO BASEMENT LEVEL -1

DRAWN: R.A. MANNIX

DATE: 24.02.2021

ISSUE STATUS: APPROVAL

APPROVED BY: C CAMPBELL

SCALE: 1:75

SHEET: A0

CONTRACT No: 82468A

DRAWING No: 82462-02

REVISION: 0

TO BE READ IN CONJUNCTION WITH
DRAWING NUMBERS 82468-01 AND 82463-03