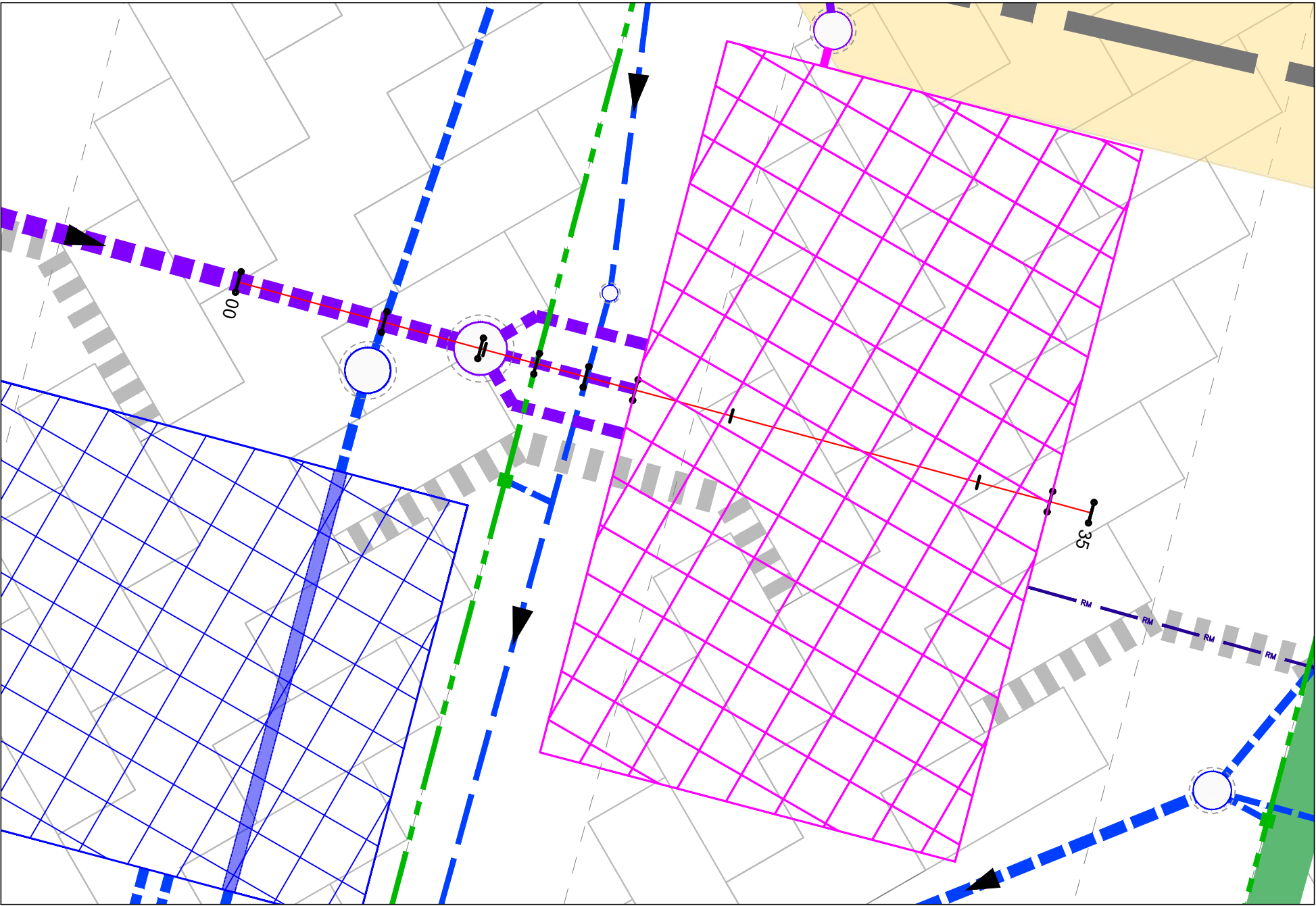

Appendix E

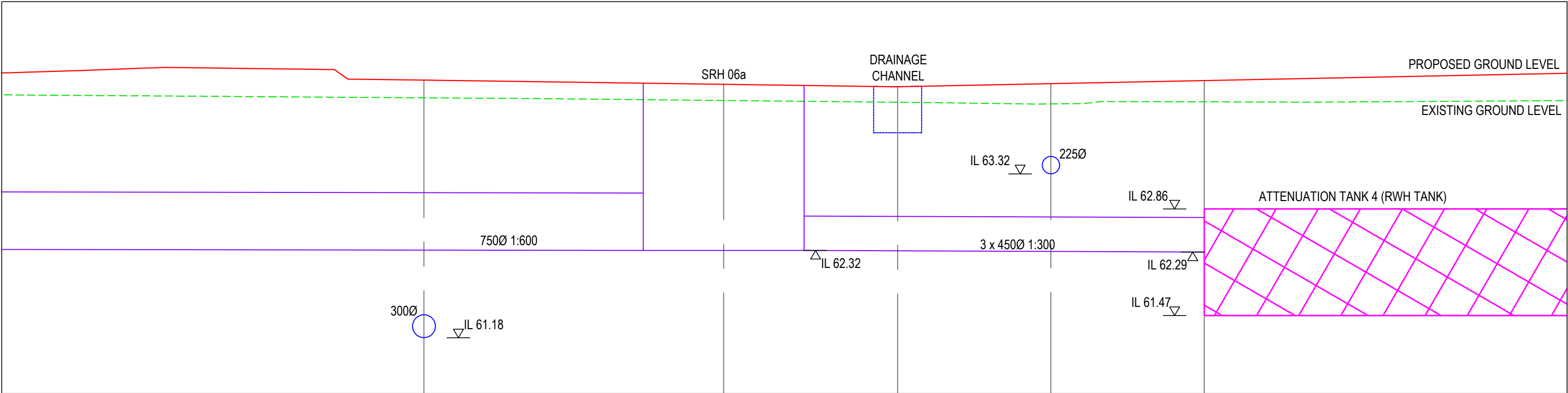
Section Through Tank Connections

Attenuation Tank Details

Rainwater Harvesting Tank Information



SECTION LOCATION
SCALE 1:200



SECTION THROUGH CONNECTION
SCALE 1:50

GENERAL NOTES:

- THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECTS AND ENGINEERS DRAWINGS AND SPECIFICATIONS.
- DO NOT SCALE THIS DRAWING. ANY AMBIGUITIES, OMISSIONS AND ERRORS ON DRAWINGS SHALL BE BROUGHT TO THE ENGINEERS ATTENTION IMMEDIATELY. ALL DIMENSIONS MUST BE CHECKED / VERIFIED ON SITE.
- ALL DIMENSIONS ARE IN METRES UNLESS NOTED OTHERWISE.
- FOR GENERAL NOTES REFER TO DRAWING.

P01	ISSUED FOR PLANNING CONDITION DISCHARGE	31.01.24	ATL	ATL
Rev:	Description:	Date:	By:	Chkd:



Merchant Exchange, 17-19 Whitworth Street West, Manchester, M1 5WG
0161 236 2394
manchester@curtins.com
www.curtins.com

Civils & Structures • Transport Planning • Environmental • Infrastructure • Geotechnical • Conservation & Heritage • Principal Designer
Birmingham • Bristol • Cambridge • Cardiff • Douglas • Dublin • Edinburgh • Glasgow • Kendal • Leeds • Liverpool • London • Manchester • Nottingham

Status:

INFORMATION

Project:

HAMMERSTONE ROAD

Drg Title:

ATTENUATION TANK
SECTION THROUGH CONNECTION

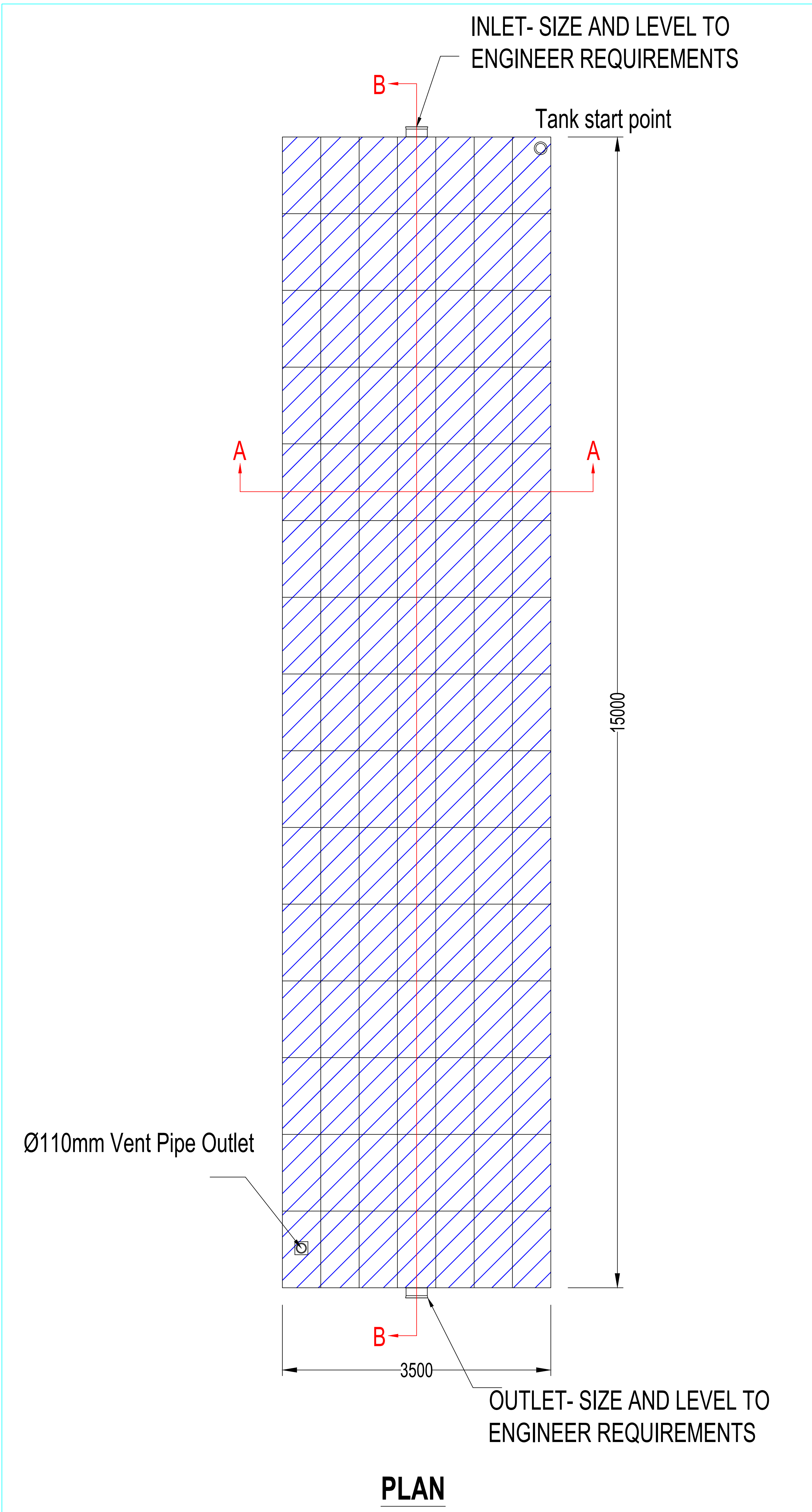
Project No:	Size:	Date:	Drawn By:	Designed By:	Checked By:
068065	A2	31/01/25	ATL	ATL	ATL
Scale:	AS SHOWN				

Project No: Originator: Volume: Level: Type: Role: Category / Number: Rev:

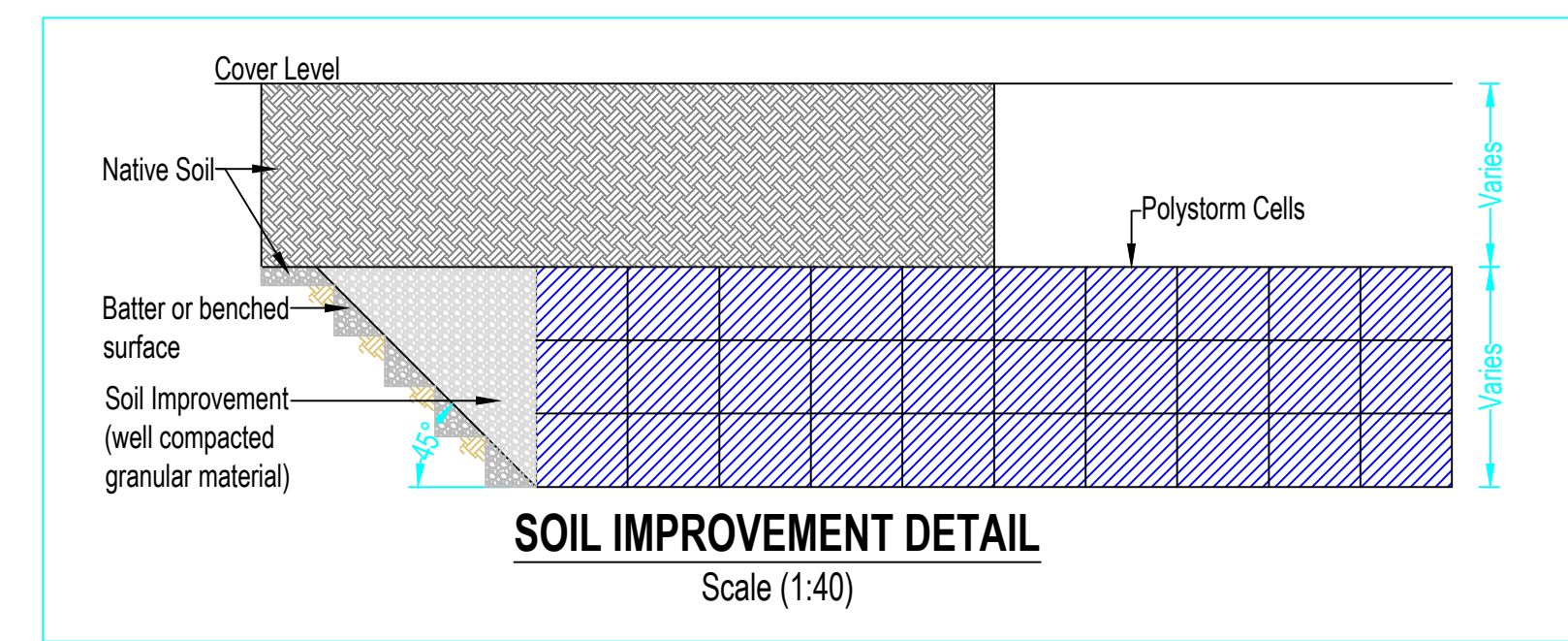
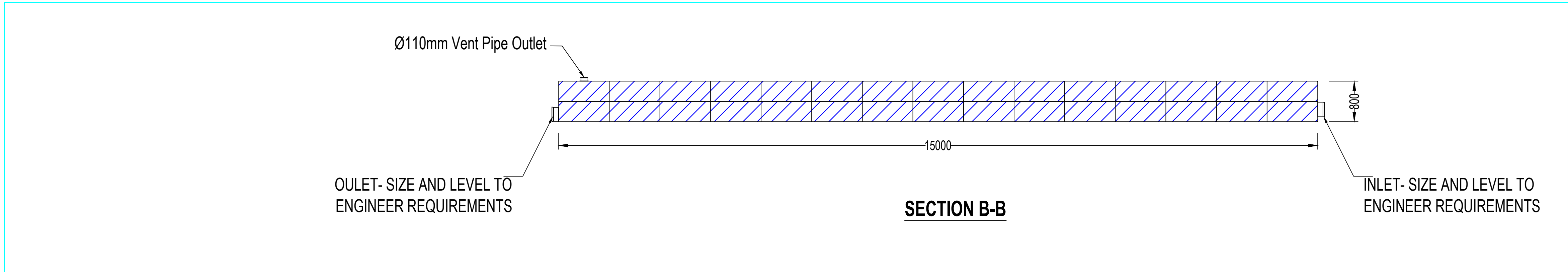
HRD - CUR - XX - 00 - DR - C - 92540 - P01

\\ma-fs-1\Projects\068001 - 068000\068065 - Hammerstone Road Depot\QMS 4 Production\4B Models & Drawings\Civil-CAD\0921

SCALE: 1:30



SCALE 1:50



NOTES - PE STUB PIPE ADAPTERS	
Ø160mm SDR26 PE - Ø150mm Polysewer	PIPE ADAPTOR PS689
Ø250mm SDR26 PE - Ø225mm Polysewer	PS1089
Ø315mm SDR41 PE - Ø300mm Polysewer	PS1289
Ø450mm SDR17 PE - Ø400mm Ridgesewer	see note below*
Ø500mm SDR17 PE - Ø450mm Ridgesewer	see note below*
Ø560mm SDR17 PE - Ø500mm Ridgesewer	see note below*
Ø630mm SDR33 PE - Ø600mm Ridgesewer	see note below*

* - For this transition, Flexseals are required, please refer to their website

* - For this transition, Flexseals are required, please refer to their website

LIFTING POINTS - UNSUITABLE FOR LIFT

1. Fabricated chamber supplied to site without direct means of lifting incorporated. The lift supervisor must assess and plan the lift, in the circumstances of the lift, and provide slings and / or other controls as deemed necessary to ensure a safe lift.

POLYSTORM NOTES

1. This drawing needs to be read in conjunction with all relevant Architects, Engineers and specialist drawings.
2. Stormwater Attenuation / Infiltration system shall be Polypropylene (PP) Polyesterm: pre-formed geogridded system, with minimum 94% volumetric void ratio. This shall be installed using recommended proprietary design, ensuring rigidity and minimise deformation.
3. Multi-layered Polypropylene tank configurations shall be fixed with proprietary shear connectors between each vertical layer to maintain rigidity and minimise lateral displacement.
4. Geogrids shall be used to ensure the system is able to maintain structural characteristics, which are illustrative and should be selected by a suitably qualified Engineer, or similar.
5. For Field conditions, bacilli should be placed and compacted layers no greater than 300mm and for trafficked areas, bacilli should be placed and compacted in layers no greater than 150mm.
6. The installer shall ensure that all expected temporary construction transient loads have been considered as part of the structural design, and a minimum of 300mm bacilli should be placed prior to installation.
7. Polypropylene tanks should be installed in accordance with Polypropylene manufacturers recommendations (refer to technical guidance for further information).

COVER SLAB THICKNESS

1. Where cover slabs are applicable, the slab thickness (shown in red) has been assumed and therefore needs to be confirmed by others.

STANDARD TOLERANCES

ALL DIMENSIONS IN MILLIMETRES, UNLESS OTHERWISE STATED.

Benching Slope Angles	1:10 to 1:30 (1.9° - 5.7°) +/- 1.5°
-----------------------	--

All Dimensions +50mm / -30mm
STANDARD SPIGOTS IN ACCORDANCE WITH SPEC. ES23

Team Leader inspection points identified by: 1 2 3

JOINTING KEY RS Ring seal joint

Socket

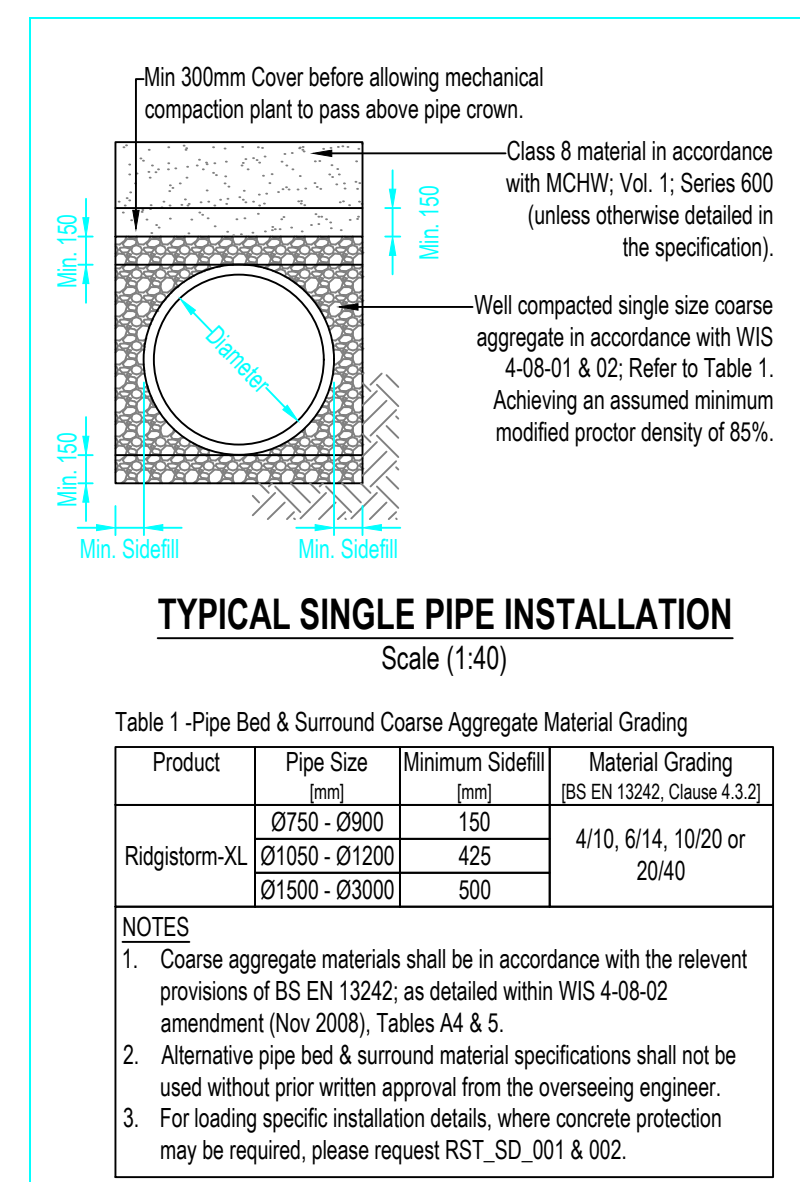
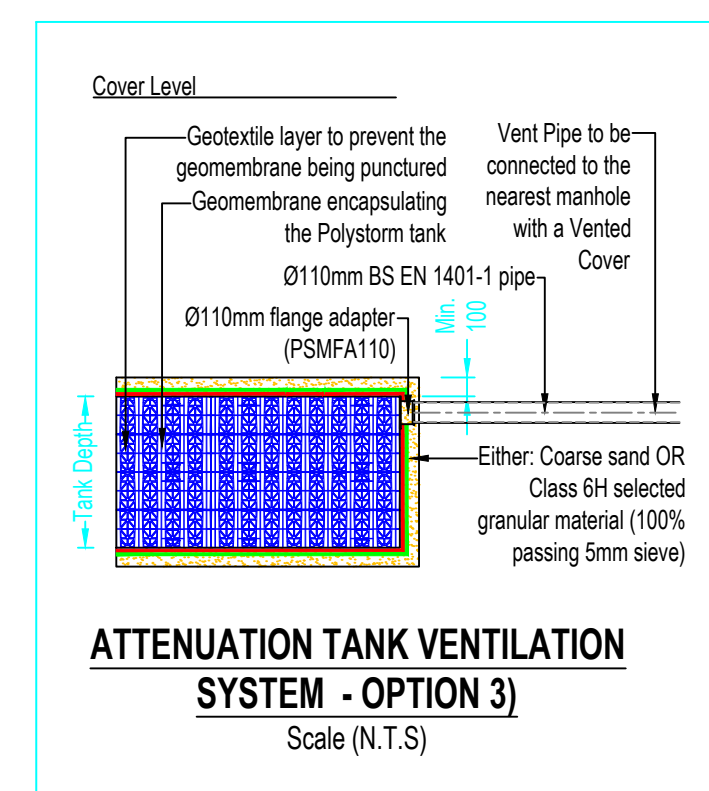
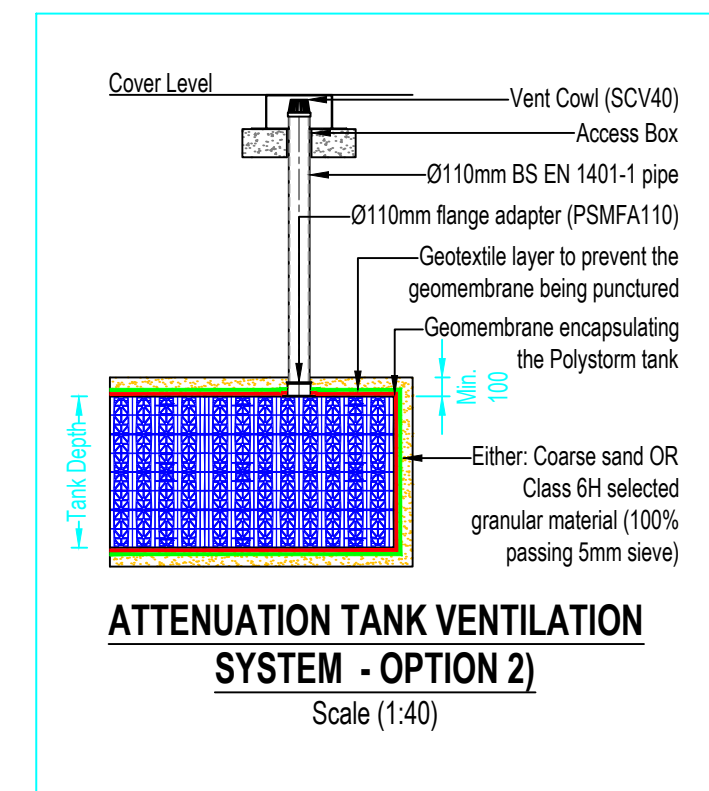
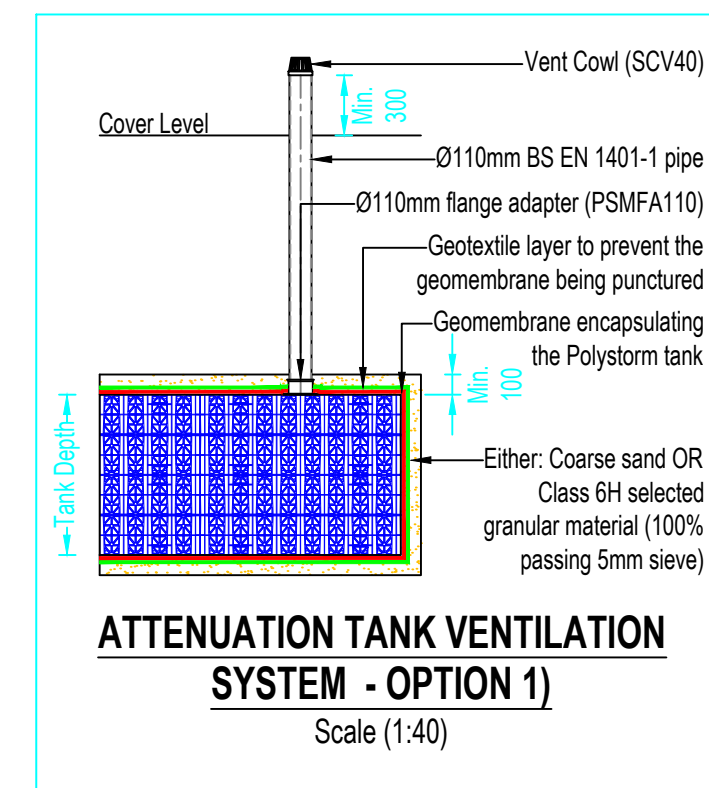
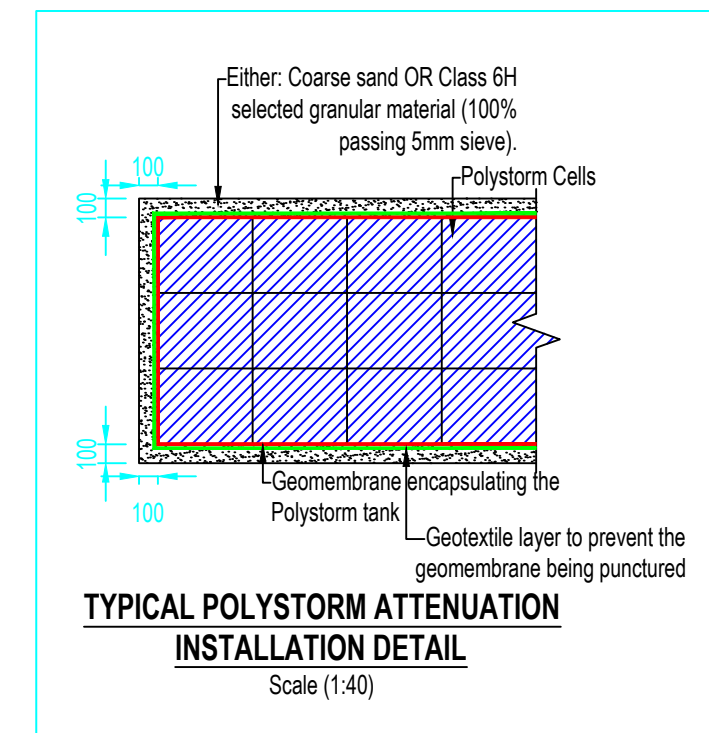
Internal extrusion

→ Spigot EF Electro-fusion joint

- ## GENERAL NOTES
1. This drawing details Polytype Civilis proposed offering, reflecting an interpretation of the information provided.
 2. Polytype products Rodagstom XL chambers are complete pre-formed units.
 3. Polytype products to be installed in accordance with Polytype Civilis recommendations (refer to Polytype technical guidance for further information), giving due consideration to the requirements of the organisation who will take ultimate ownership of the installation.
 4. Site conditions may require that the proposed installation requirements. The contractor must verify that the proposed installation meets the relevant acceptance, giving due consideration to the requirements of all relevant approving and adopting authorities, before construction activities commence.
 5. Advice on any system requirements specific to the proposed Rodagstom XL system should be sought from Polytype Civilis.
 6. All PE sub-connections require adoptions (to be supplied by Contractor / Developer).

DRAWING NOTES

1. Drawings should not be scaled, refer to figured dimensions only.
2. All dimensions in millimetres, unless otherwise stated.
3. All dimensions are nominal and may vary within manufacturing and construction tolerances.
4. All site temporary and enabling works by others.
5. This drawing is intended for guidance only. Confirmation of the information contained within this document should be sought from the consulting engineers before final design or construction activities commence.



R1 14/01/2025 TANK SHAPE/SIZE REVISED BY CUSTOMER



KEYTEC INSTALLATION SERVICES
ROYLE HOUSE
COWM TOP BUSINESS PARK
COWM TOP LANE
OL11 2PU
TEL: 01706 374416
EMAIL: TECHNICAL@KEYTEC.CO.UK

PROJECT

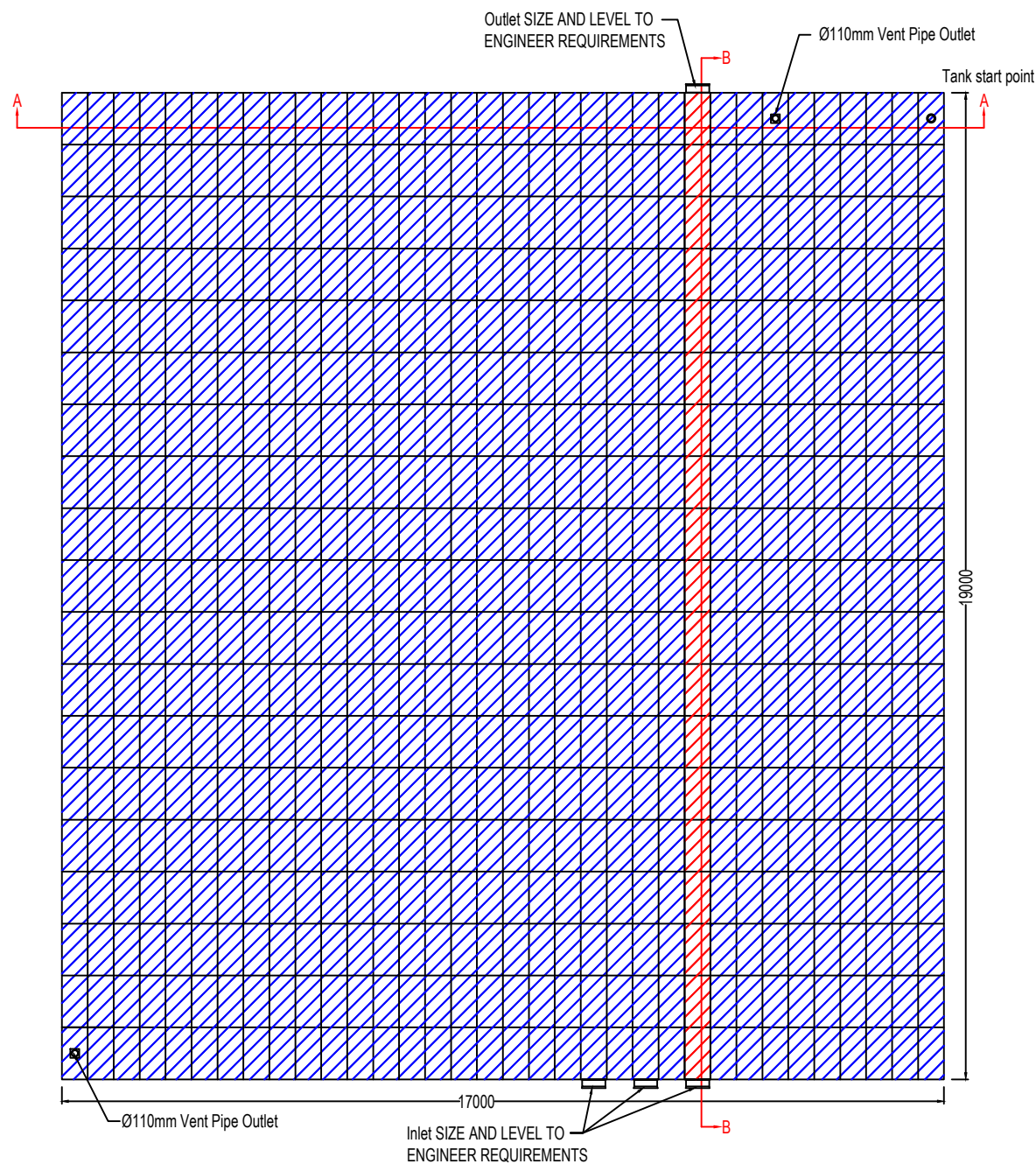
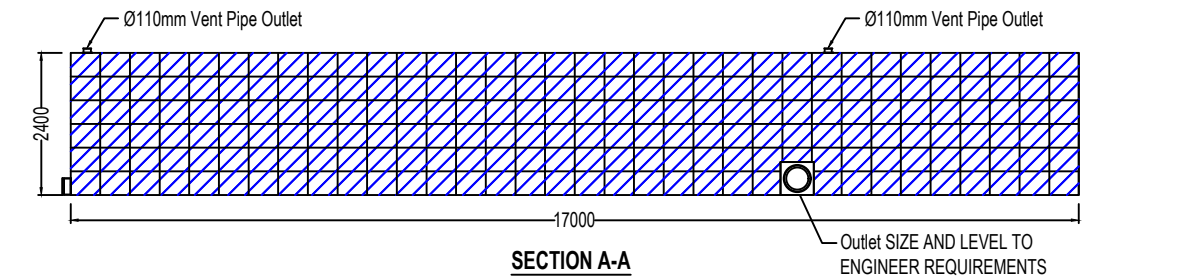
HAMMERSTONE ROAD
ATTENUATION TANK

TITLE	
-------	--

DETAILS OF ATTENUATION/STORAGE TANK DETAILS USING POLYSTORM PAM1A UNITS

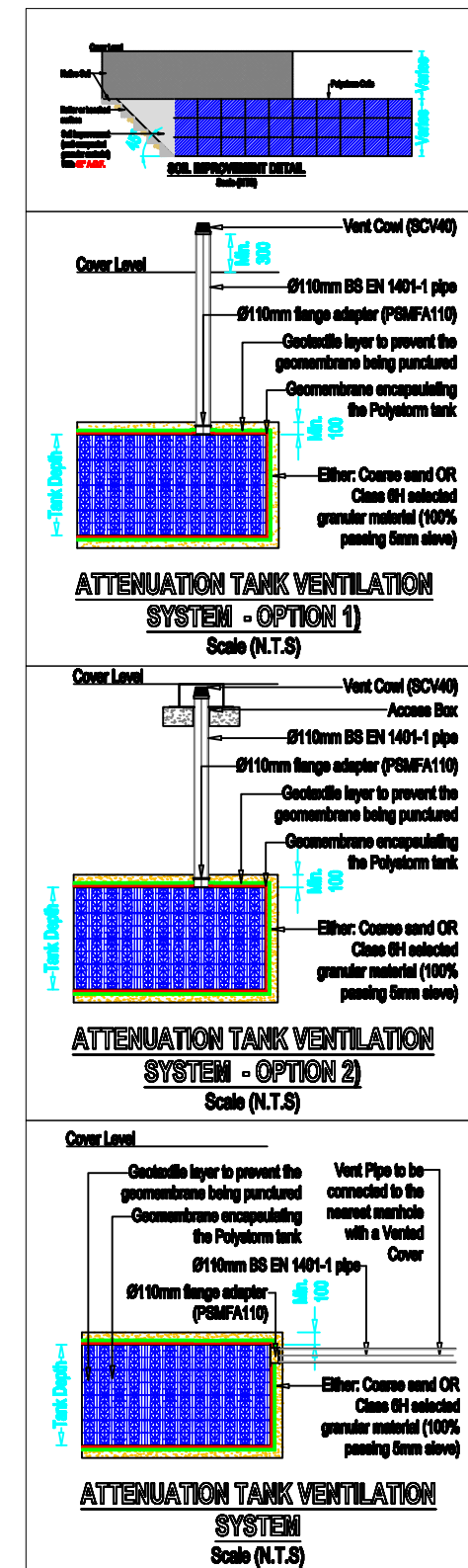
Scale	Drawn	Checked
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AS SHOWN	FA	KD
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PROPOSED POLYSTORM STRUCTURE	
Plan Area	323m ²
Tank Volume	775.2m ³
Storage	736.44m ³
Polystorm-R Units	3857 (PSM1A)
Polystorm-Inspect Units	19 (PSM4)

LEGEND:	
	Polystorm-R Units (PSM1A)
	Polystorm-Inspect Units (PSM4)



- NOTES:-**
- THIS DRAWING DETAILS A PROPOSED POLYSTORM CIVILS & GREEN URBANISATION PRODUCT GENERAL ARRANGEMENT, REFLECTING OUR INTERPRETATION OF THE INFORMATION PROVIDED.
 - POLYSTORM CIVILS & GREEN URBANISATION (PCGU) PRODUCTS SHALL BE INSTALLED IN ACCORDANCE WITH PCGU RECOMMENDATIONS (REFER TO PCGU TECHNICAL GUIDANCE FOR FURTHER INFORMATION), GIVING DUE CONSIDERATION TO THE SITE SPECIFIC CONDITIONS AND REQUIREMENTS, IN ADDITION TO ANY REQUIREMENTS MANDATED BY THE RELEVANT APPROVING AND ULTIMATE OWNER ORGANISATIONS).
 - DO NOT SCALE, REFER TO FIGURED DIMENSIONS ONLY.
 - ALL DIMENSIONS IN MILLIMETRES, UNLESS OTHERWISE STATED.
 - ALL DIMENSIONS ARE NOMINAL AND MAY VARY WITHIN MANUFACTURING OR CONSTRUCTION TOLERANCES.
 - ALL SITE TEMPORARY AND ENABLING WORKS BY OTHERS.
 - THIS DRAWING IS INTENDED FOR GUIDANCE ONLY. CONFIRMATION OF THE INFORMATION CONTAINED WITHIN THIS DOCUMENT SHOULD BE SOUGHT FROM THE OVERSEEING ENGINEER(S) PRIOR TO THE COMMENCEMENT OF FINAL DESIGN OR CONSTRUCTION ACTIVITIES.
 - PLEASE REFER TO POLYSTORM & POLYSTORM LITE TECHNICAL GUIDE.
 - THE PROPOSED POLYSTORM STRUCTURE GENERAL ARRANGEMENT HAS BEEN BASED ON PROVIDING THE MINIMUM STRUCTURE VOLUME STATED ONLY. NO STRUCTURAL OR HYDRAULIC ASSESSMENT HAS BEEN MADE OF THE SUITABILITY OF THE PROPOSED POLYSTORM STRUCTURE FOR THE PROPOSED APPLICATION, NOR HOW IT WILL INTEGRATES INTO THE PROPOSED DRAINAGE SYSTEM.
 - ALL MEMBRANE JOINTS TO BE WELDED RATHER THAN GLUED.

R1 06/09/24 INLET PIPE CONNECTION LOCATION HAS CHANGED TO SUIT.

Notes :- All the Dimensions by Millimeters

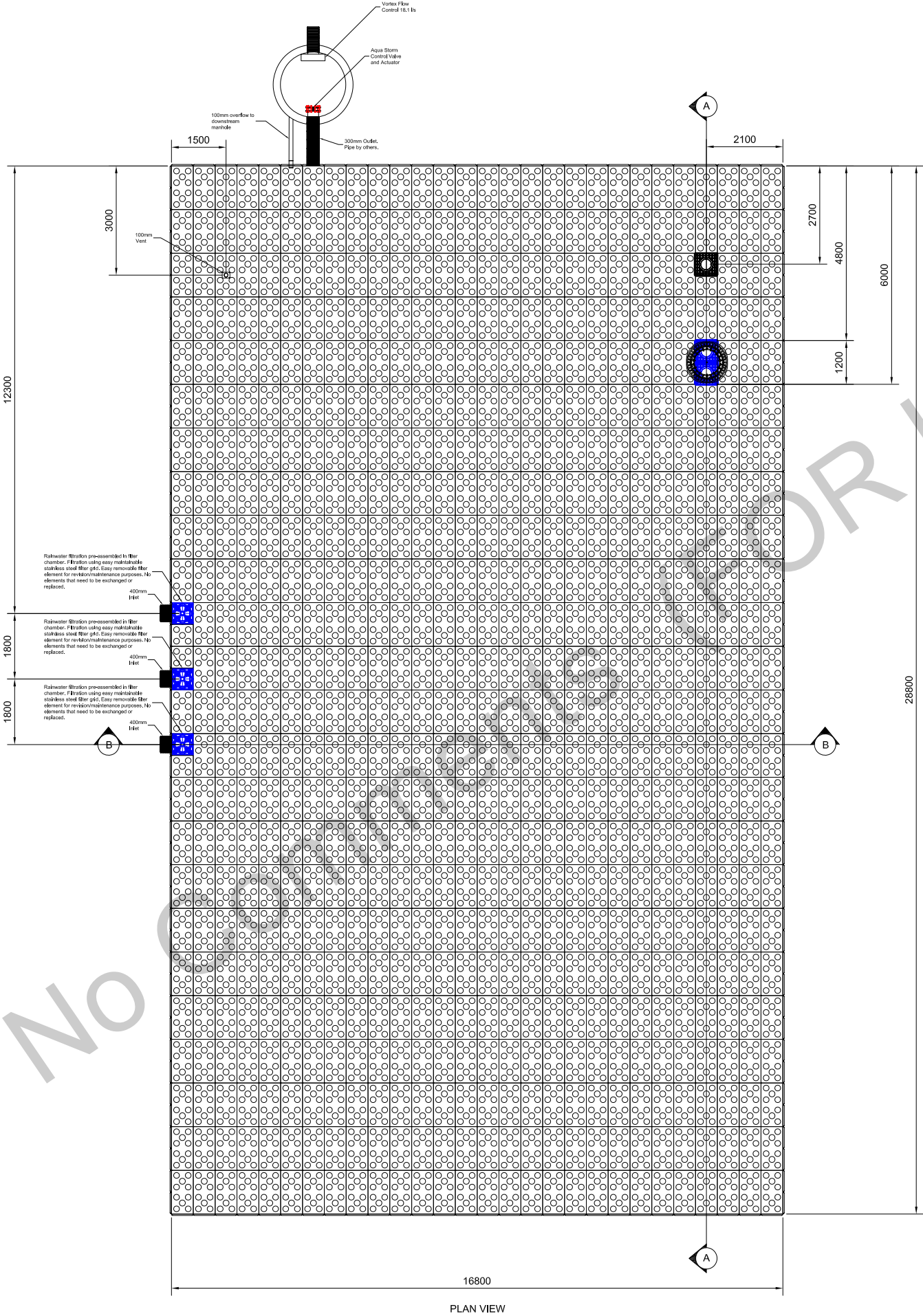
KEYTEC
INSTALLATION SERVICES

KEYTEC INSTALLATION SERVICES
ROYLE HOUSE
COWM TOP BUSINESS PARK
COWM TOP LANE
OL11 2PU
TEL: 01706 374416
EMAIL: TECHNICAL@KEYTEC.CO.UK

PROJECT
HAMMERSTONE ROAD DEPOT
ATTENUATION TANK

TITLE
DETAILS OF ATTENUATION/STORAGE
TANK DETAILS USING POLYSTORM
PSM1A UNITS.

Scale N.T.S.	Drawn AY	Checked KD
Date 14/06/2024	Drawing No. PSM - 6.0	Revision R1



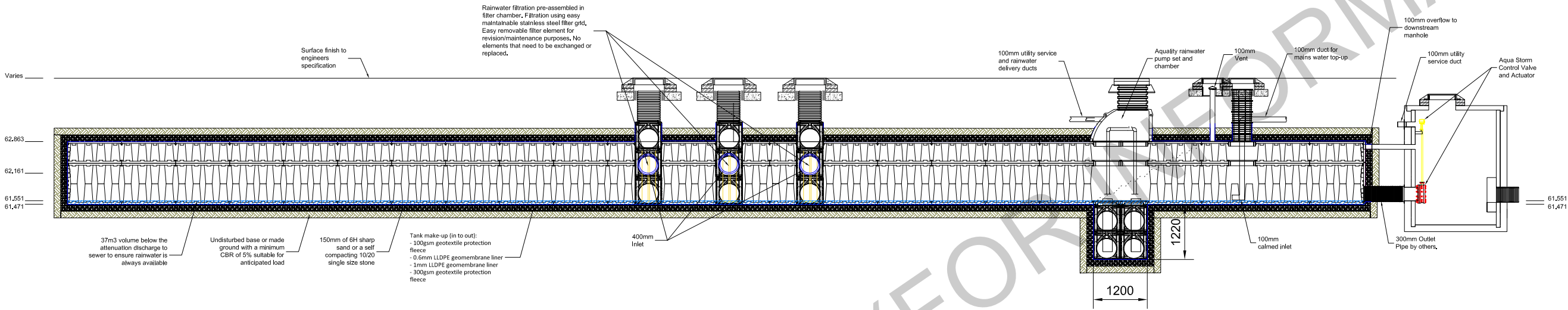
PLAN VIEW

THIS DRAWING IS THE PROPERTY OF AQUALITY TRADING & CONSULTING LTD AND IS NOT TO BE COPIED IN PART OR WHOLE OR SHARED WITH THIRD PARTIES WITHOUT OUR WRITTEN PERMISSION.

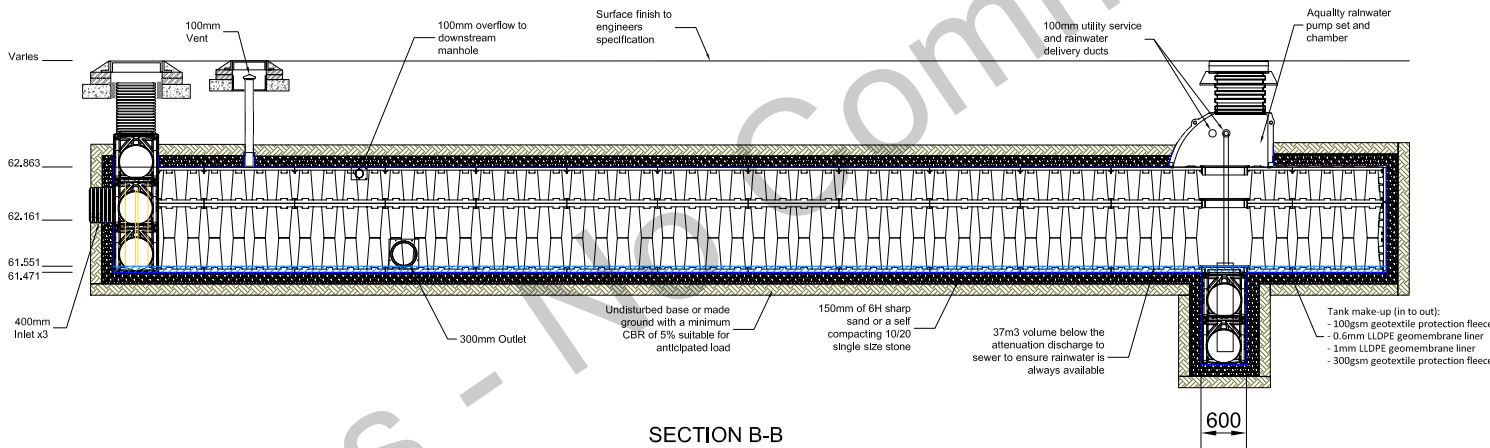
Project: Manchester - Hammerstone Road	
Title: Plantroom Layout Tank Layout	
System: Geocellular Tank made from Aquality Storage Block SD 28.8m x 16.8m x 1.392m	
Project-No: HRD-ABE-ZZ-ZZ-DR-M-5031	
Project state: S2	Date: 23/11/2023
Scale: NTS @A3	Revision: P03
Drawn by: AR	Checked by: CF



Aquality Trading & Consulting Ltd
6 Wadsworth Road
London UB6 7JJ
www.aqua-lity.co.uk
Tel.: +44 (0)20 8991 3725



SECTION A-A

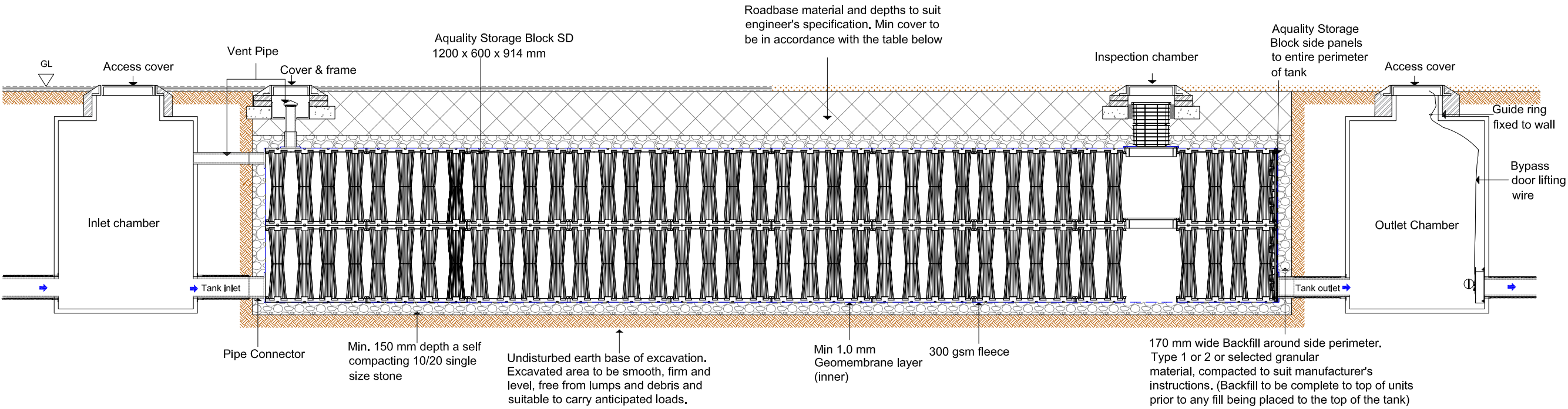


SECTION B-B

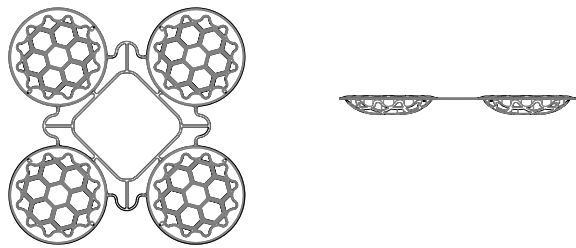
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Title: Tank Layout	
System: Geocellular Tank made from Aquacity Storage Block SD 28.8m x 16.8m x 1.392m	
Project-No: HRD-ABE-ZZ-ZZ-DR-M-5032	
Project state: S2	Date: 23/11/2023
Scale: NTS @A3	Revision: P03
Drawn by: AR	Checked by: CF



Aquacity Trading & Consulting Ltd
6 Wadsworth Road
London UB6 7JJ
www.aquacity.co.uk
Tel.: +44 (0)20 8991 3725



Note:
Top cover shown below to be installed on top layer of Aquality Modules only.



Minimum cover depths (1) over the top of Aquality Geocellular	
Location	Minimum cover depth (m) (4)
Non-Trafficked areas i.e. Landscaping	0.5
Car parks, vehicle up to 2500kg gross mass	0.6
Car parks, occasional vehicle greater than 2500kg (3) gross mass	Please contact Aquality
Occasional HGV traffic up to 44000kg GVW (HA loading)	Please consult with Aquality

- (1) Assumes 27 degree load distribution through fill material and overlaying surface asphalt or block paving
- (2) Minimum cover depth to avoid accidental damage from gardening/landscaping work
- (3) Occasional Trafficking by refuse collection or similar vehicles (typically one per week)
- (4) Please check minimum frost cover depths for geographical location

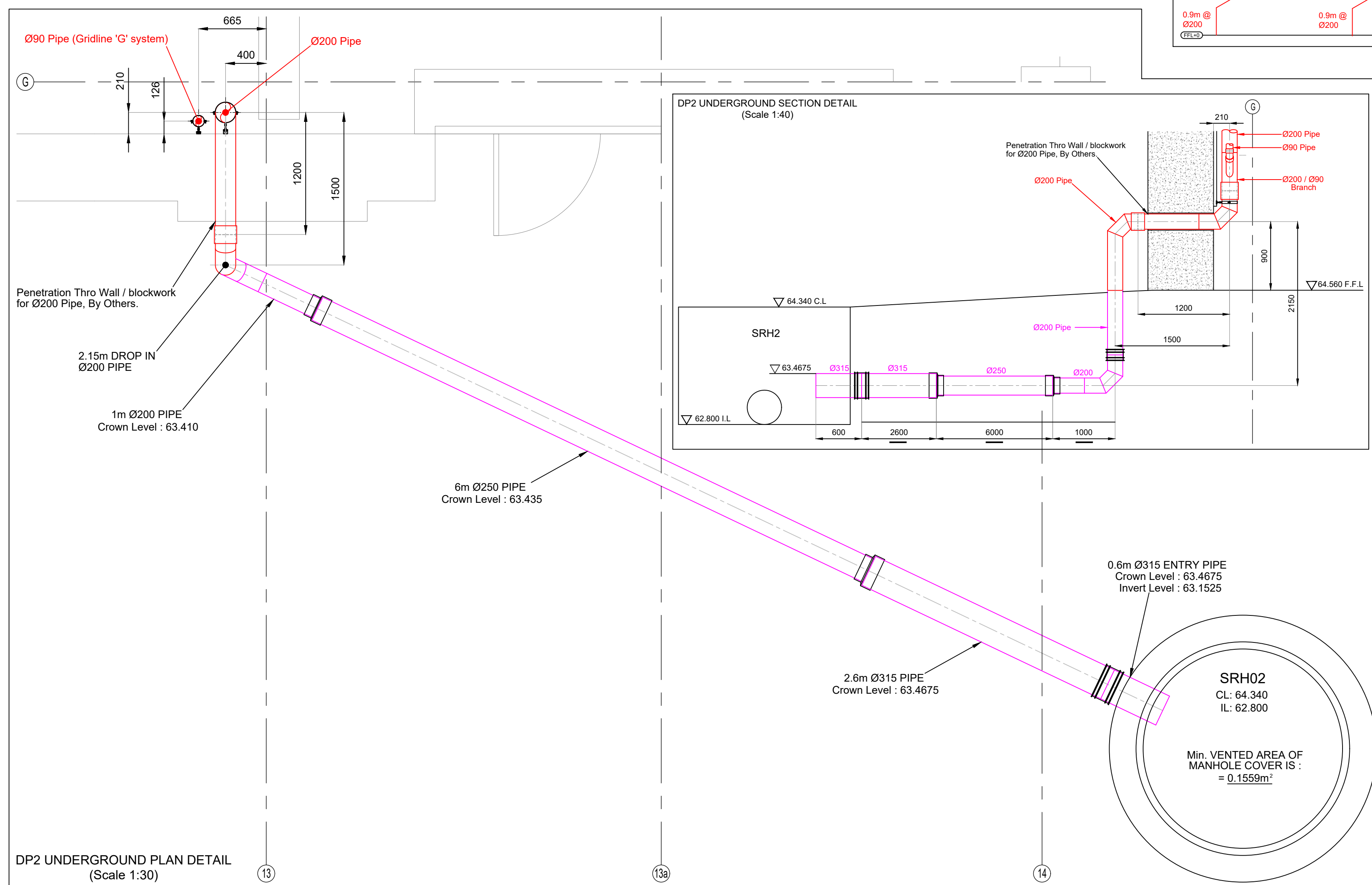
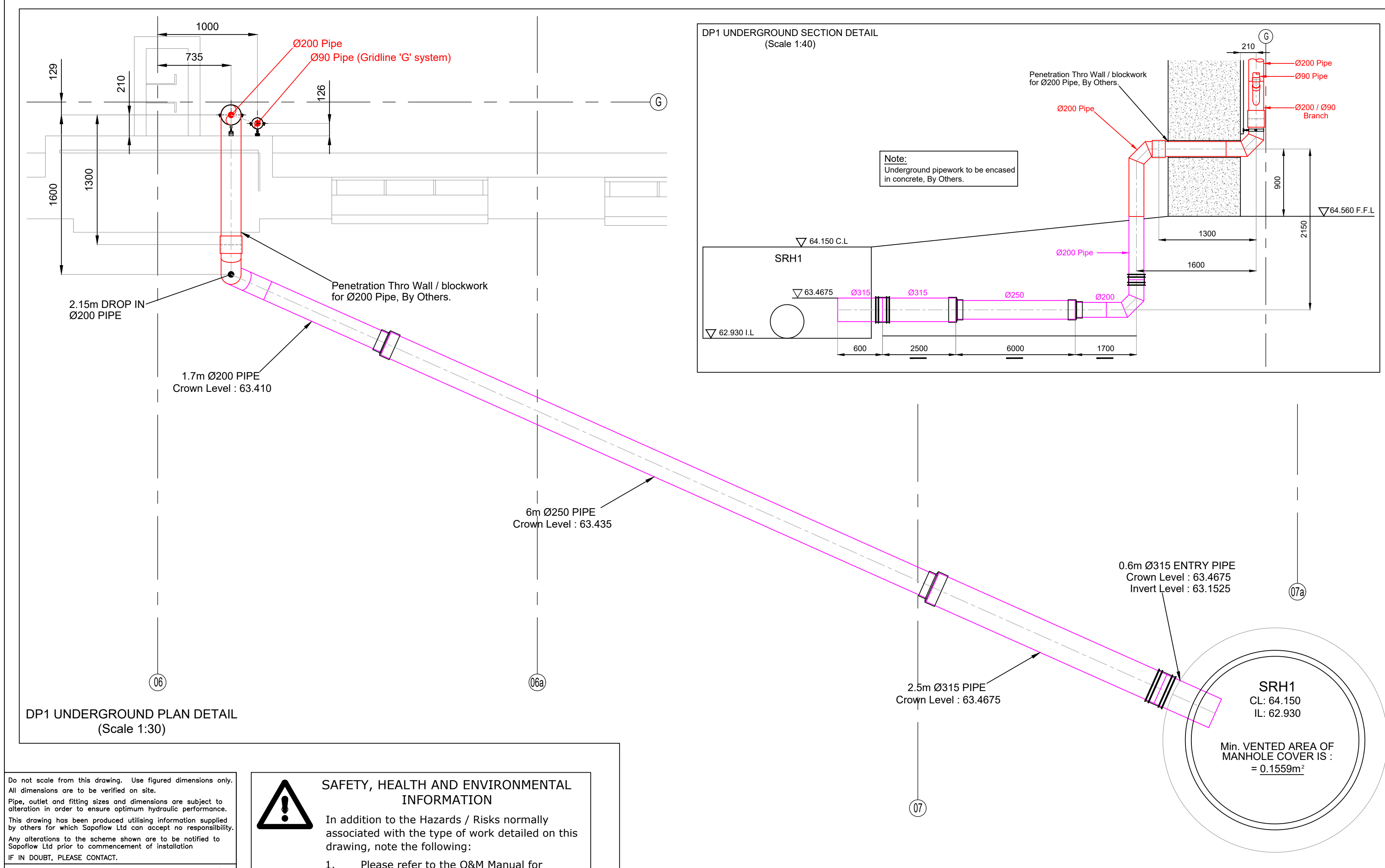
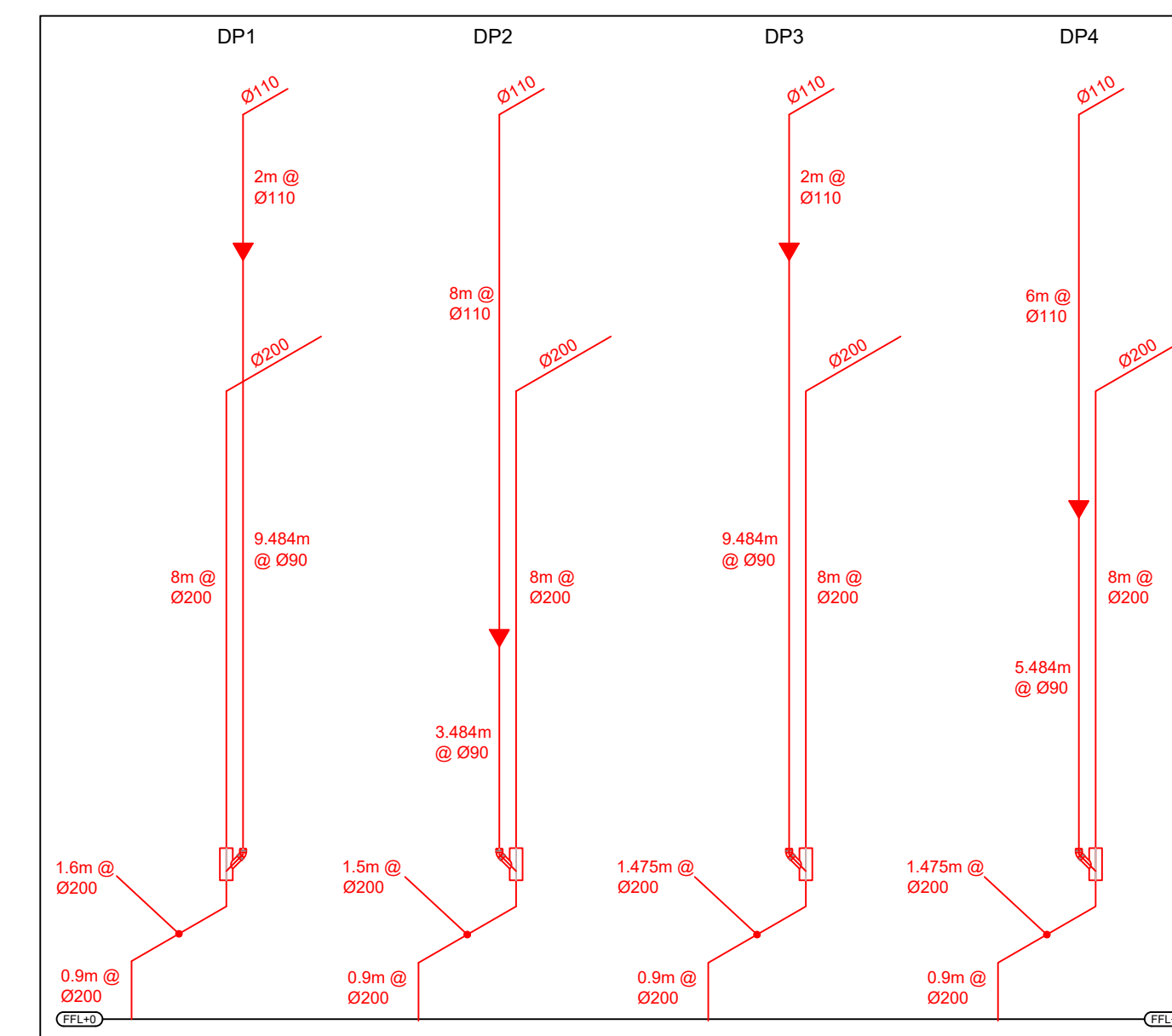
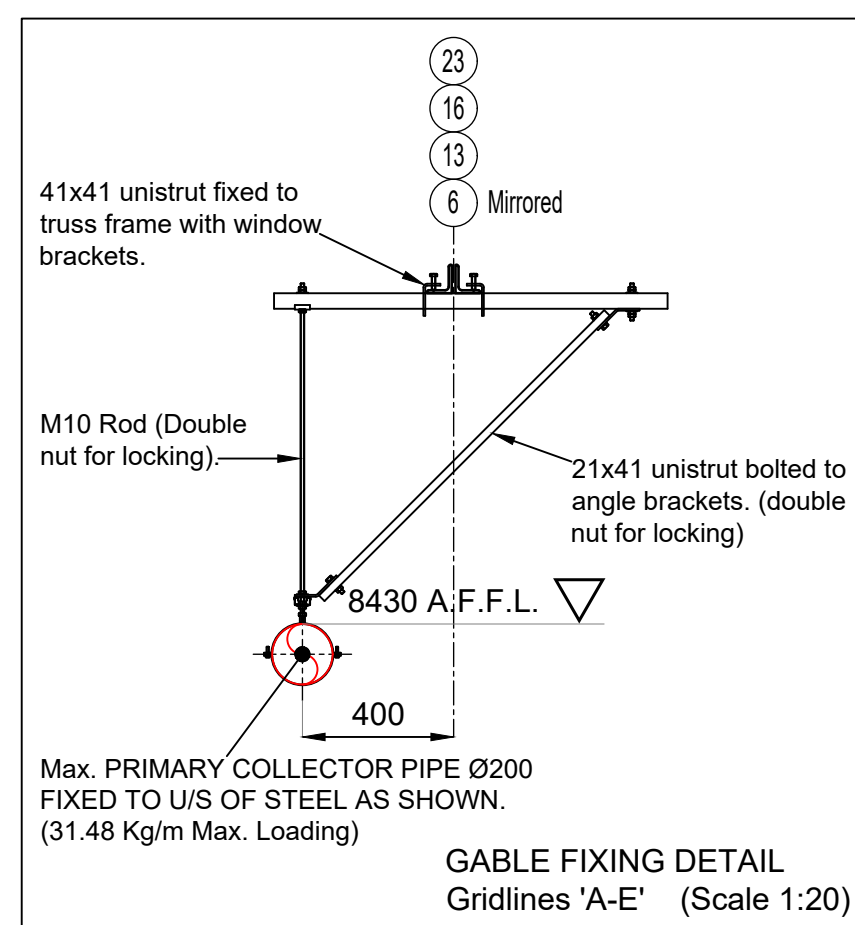
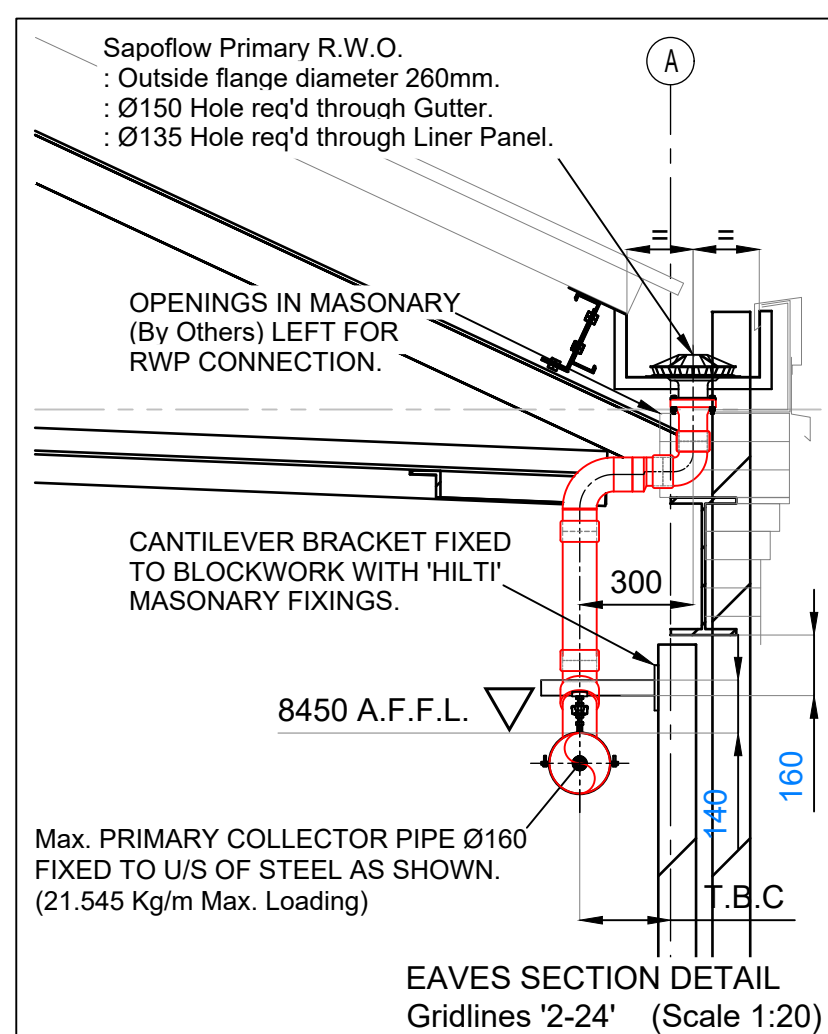
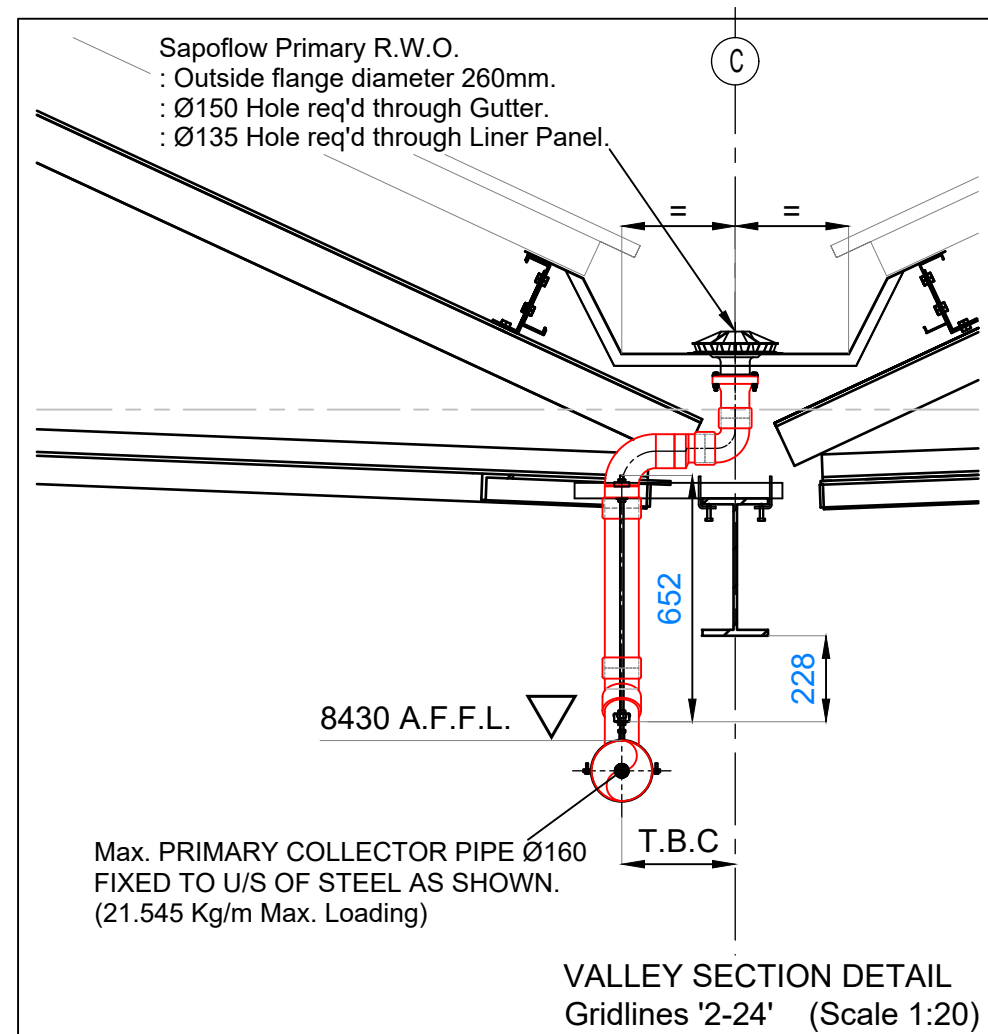
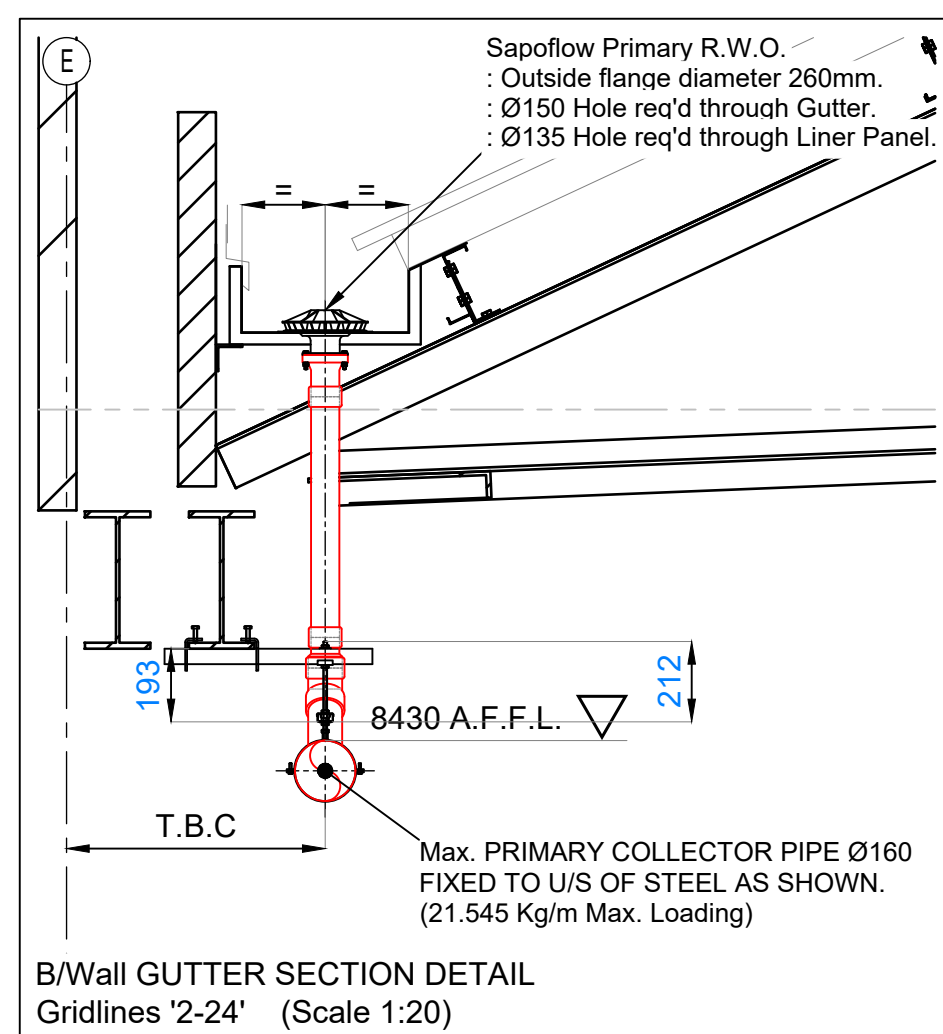
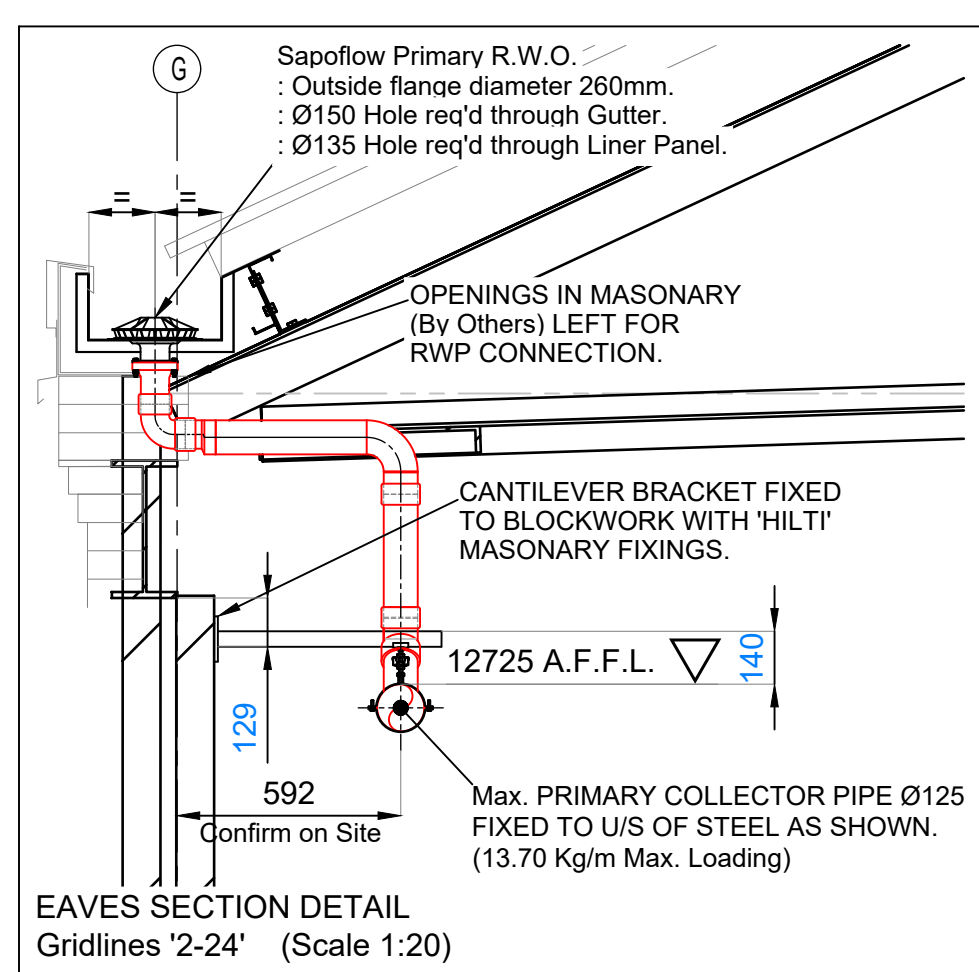
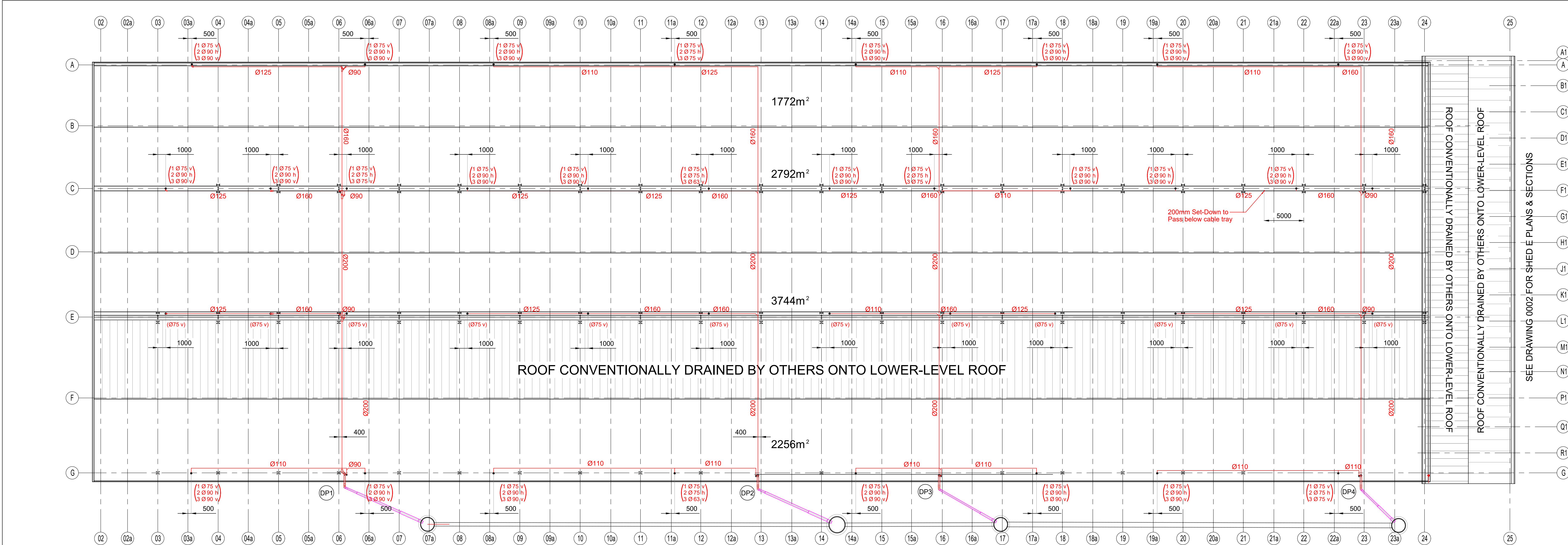
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Title: Aquality Storage Block SD attenuation	
System: Aquality Storage Block SD attenuation (on-line)	
Project-No: HRD-ABE-ZZ-ZZ-DR-M-5033	
Project state: S2	Date: 22/09/2023
Scale: NTS @A3	Revision: P01
Drawn by: AR	Checked by: CF



Aquality Trading & Consulting Ltd
6 Wadsworth Road
London UB6 7JJ
www.aquality.co.uk
Tel.: +44 (0)20 8991 3725

Appendix F

- Sapoflow Details (Siphonic Drainage)
- Vented Manhole Details

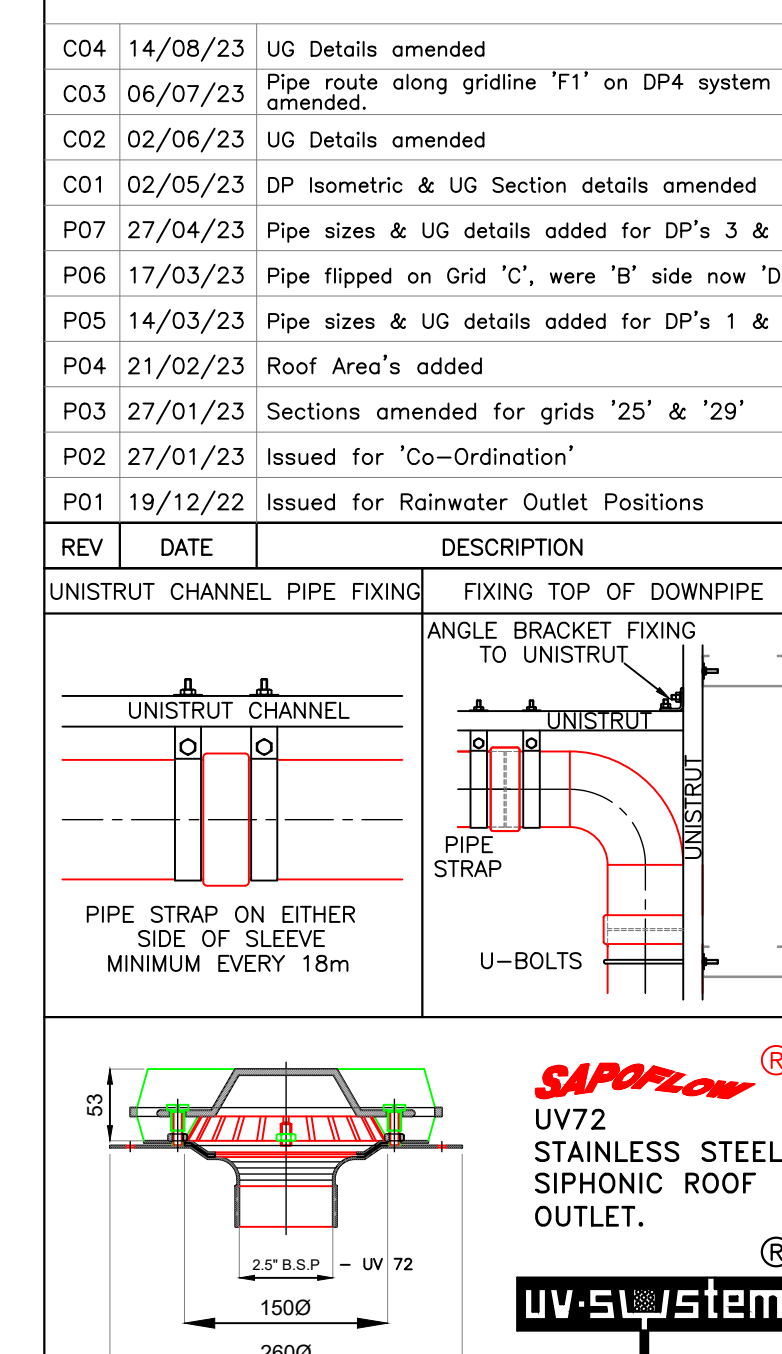


BRACKET SPACINGS & LOADINGS FOR H.D.P.E. PIPE SUPPORTED FROM MAIN STRUCTURE: e.g. Roof Purlin					
PIPE DIAMETER (mm)	BRACKET SPACING (mm)	LOADING PER BRACKET (kg)	PIPE DIAMETER (mm)	BRACKET SPACING (mm)	LOADING PER BRACKET (kg)
Ø50	2000	6.76 Kg	Ø125	2000	27.40 Kg
Ø63	2000	9.07 Kg	Ø160	2000	43.09 Kg
Ø75	2000	11.68 Kg	Ø200	2000	62.96 Kg
Ø90	2000	15.58 Kg	Ø250	1500	73.71 Kg
Ø110	2000	21.87 Kg	Ø315	1500	120.0 Kg

BRACKET SPACINGS & LOADINGS FOR H.D.P.E. PIPE SUPPORTED FROM UNISTRUT CHANNEL:					
PIPE DIAMETER (mm)	BRACKET SPACING (mm)	LOADING PER BRACKET (kg)	PIPE DIAMETER (mm)	BRACKET SPACING (mm)	LOADING PER BRACKET (kg)
Ø50	1000	3.38 Kg	Ø125	1500	20.55 Kg
Ø63	1000	4.54 Kg	Ø160	2000	43.09 Kg
Ø75	1000	5.84 Kg	Ø200	2000	62.96 Kg
Ø90	1500	11.69 Kg	Ø250	2000	98.28 Kg
Ø110	1500	16.40 Kg	Ø315	2000	160.0 Kg

DOWNPIPE NUMBER	DIMENSION DATA	DISCHARGE FLOW (l/s)	DISCHARGE VELOCITY (m/s)
212	mm/hr Primary Systems.		
DP1	See Isometric	155.53	2.34
DP2	See Isometric	155.53	2.34
DP3	See Isometric	155.53	2.34
DP4	See Isometric	155.53	2.34
DP5	See Isometric	77.73	2.90

REV	DATE	DESCRIPTION
C04	14/06/23	UG Details amended
C03	06/07/23	UG route along gridline 'F1' on DP4 system amended.
C02	02/06/23	UG Details amended
C01	02/05/23	DP Isometric & UG Section details amended
P07	27/04/23	Pipe sizes & UG details added for DP's 3 & 4
P06	17/03/23	Pipe sizes & UG details added for DP's 1 & 2
P05	14/03/23	Pipe sizes & UG details added for DP's 1 & 2
P04	21/02/23	Roof Area's added
P03	27/01/23	Sections amended for grids '25' & '29'
P02	27/01/23	Issued for 'Co-Ordination'
P01	19/12/22	Issued for Rainwater Outlet Positions



MIN GUTTER SOLE 300mm / HOLE Ø150mm

SAPOFLOW
Siphonic Roof Drainage Systems.

SAPOFLOW LIMITED - Telephone 01226 297200
FALL BANK INDUSTRIAL ESTATE - Fax 01226 294038
DOODWORTH - BARNESLEY - E-mail info@sapoflow.com
SOUTH YORKSHIRE - S75 3LS - Website www.sapoflow.com

PROJECT: **ANCHORAGE 2**
HAMMERSTONE ROAD
SALFORD QUAYS

SIPHONIC ROOF DRAINAGE PLAN			
DESIGN	W. Beaumont	DRAWN	W.B./AutoCAD
SCALE	1:200 @ A0	DATE	16/12/22
PROJECT NO.	21397	DRAWING NO.	HRD-SAP-01-RL-DR-X-0001
REV	C04	REV	C04

KEY REFERENCE :-

- SapoFlow Primary System R.W.O.
- SapoFlow Primary System Pipe Route.
- ⊗ SapoFlow Primary Down Pipe.
- SapoFlow Primary Underground Pipe Route.

Construction

Do not scale from this drawing. Use figured dimensions only. All dimensions are to be verified on site.

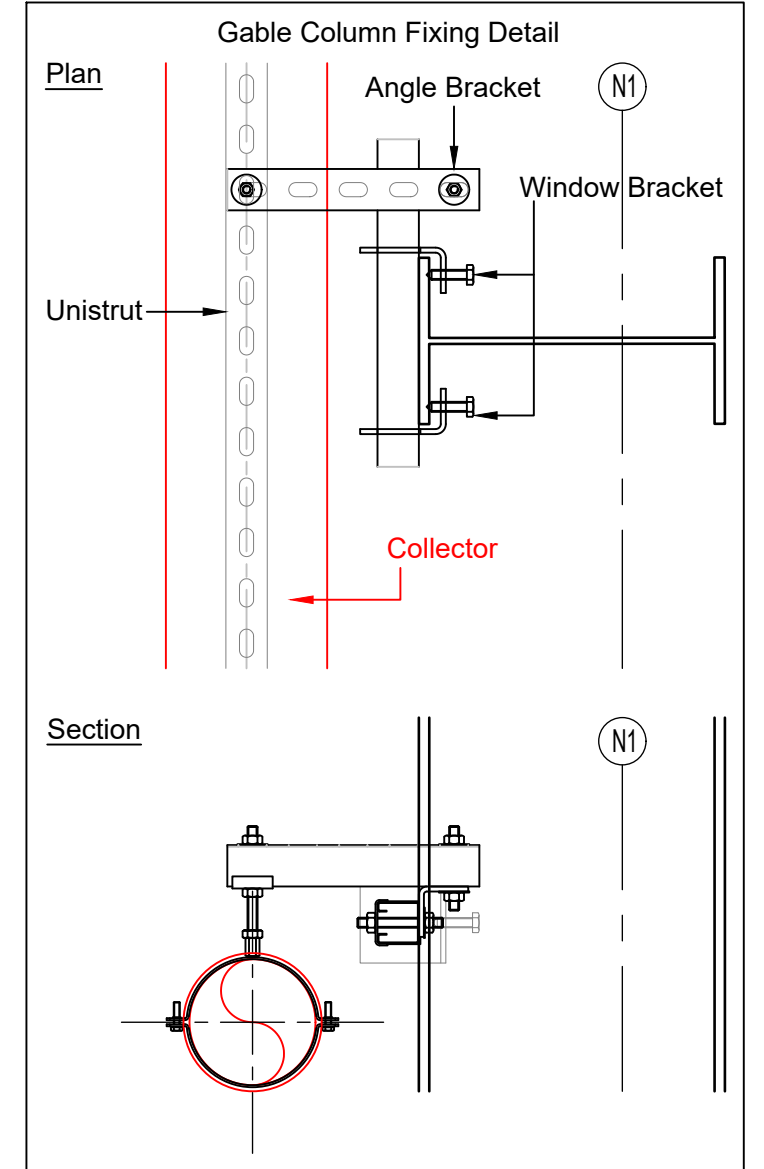
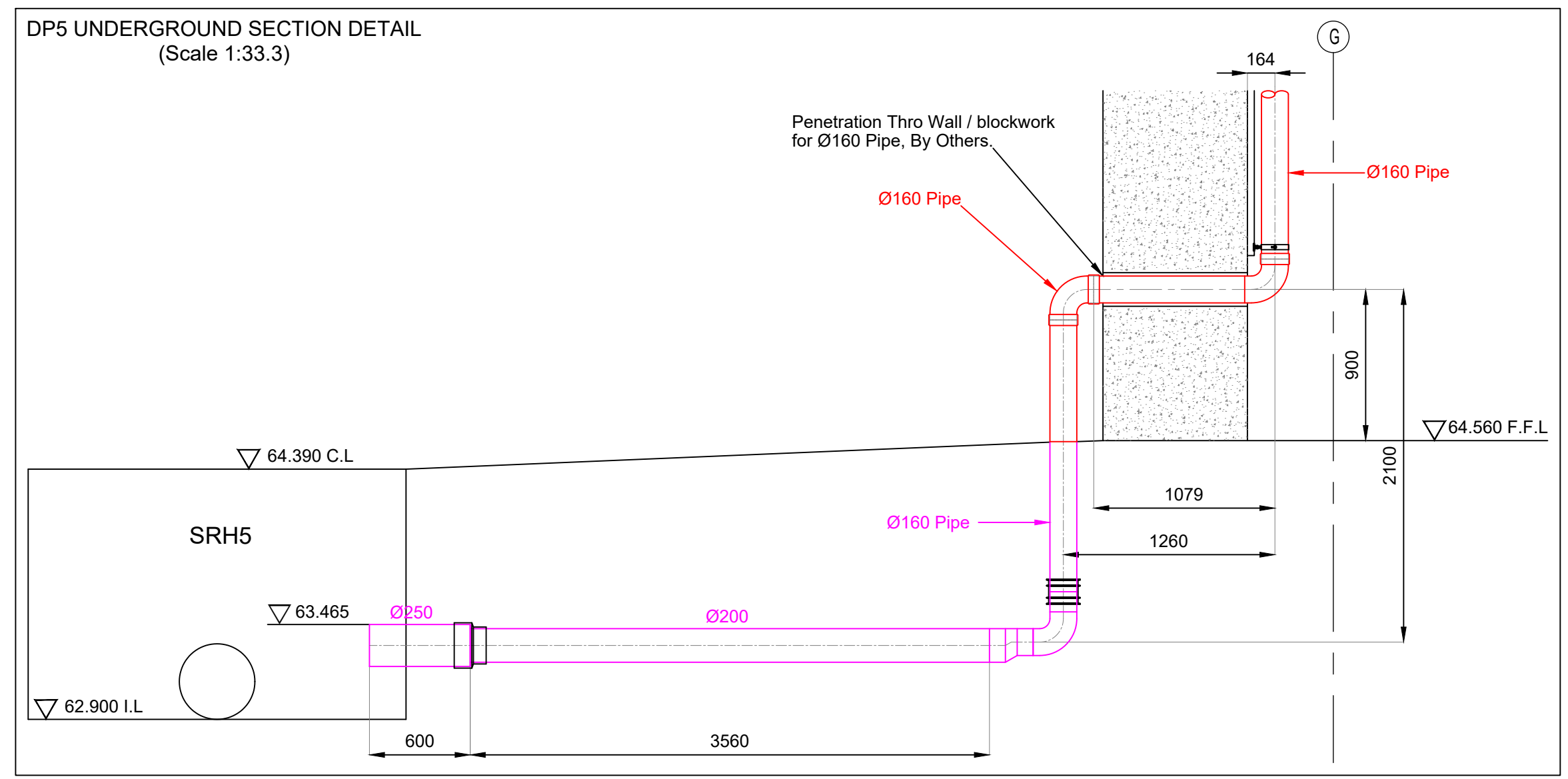
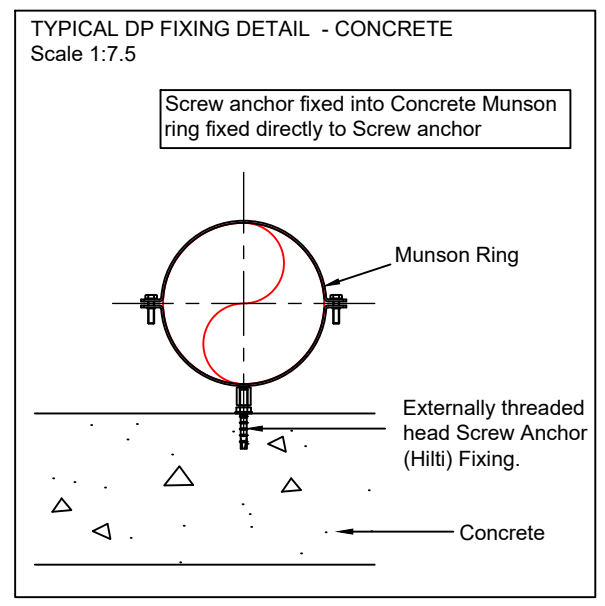
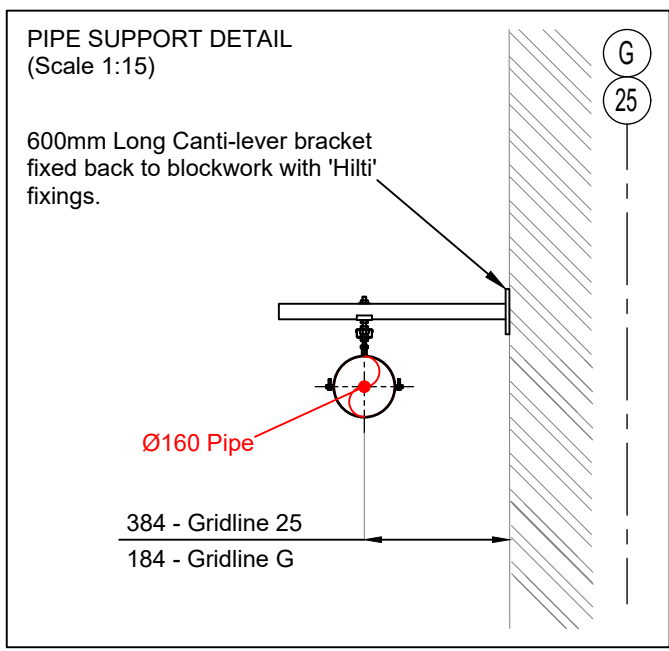
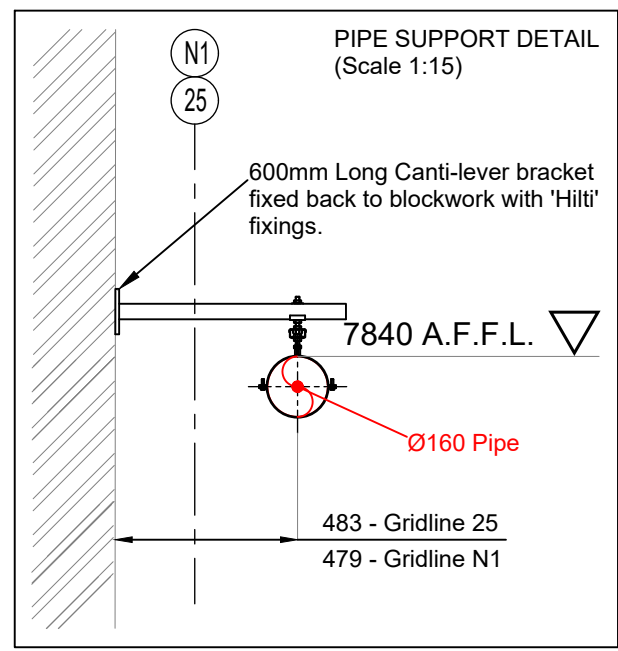
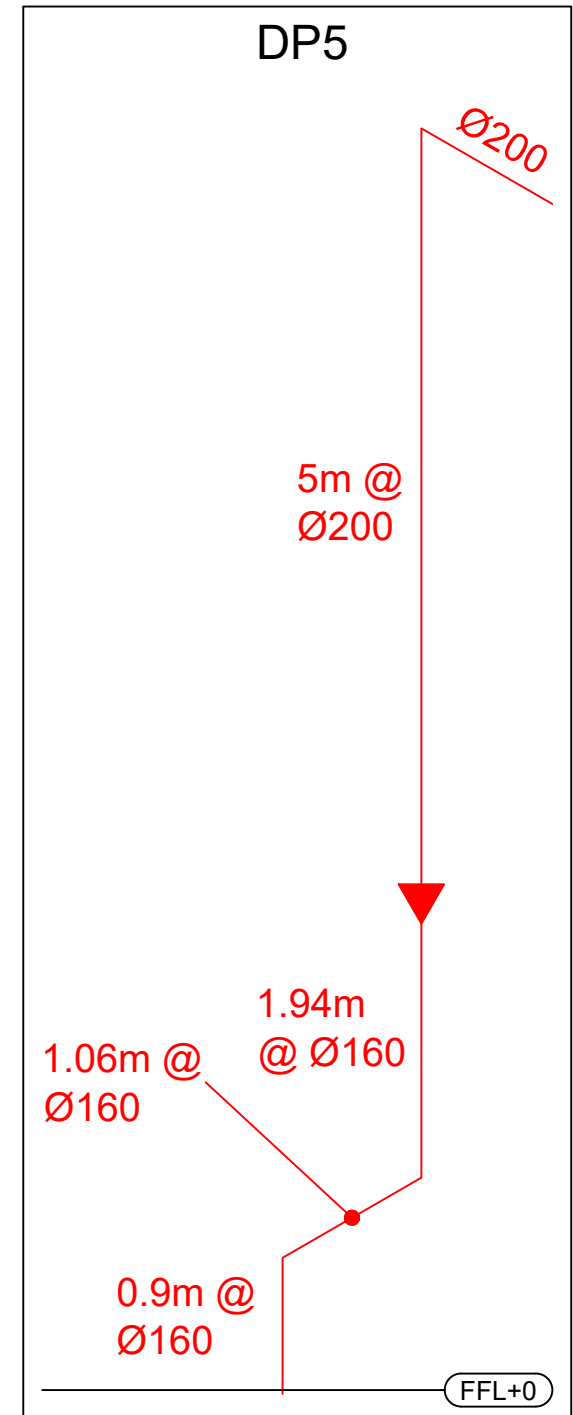
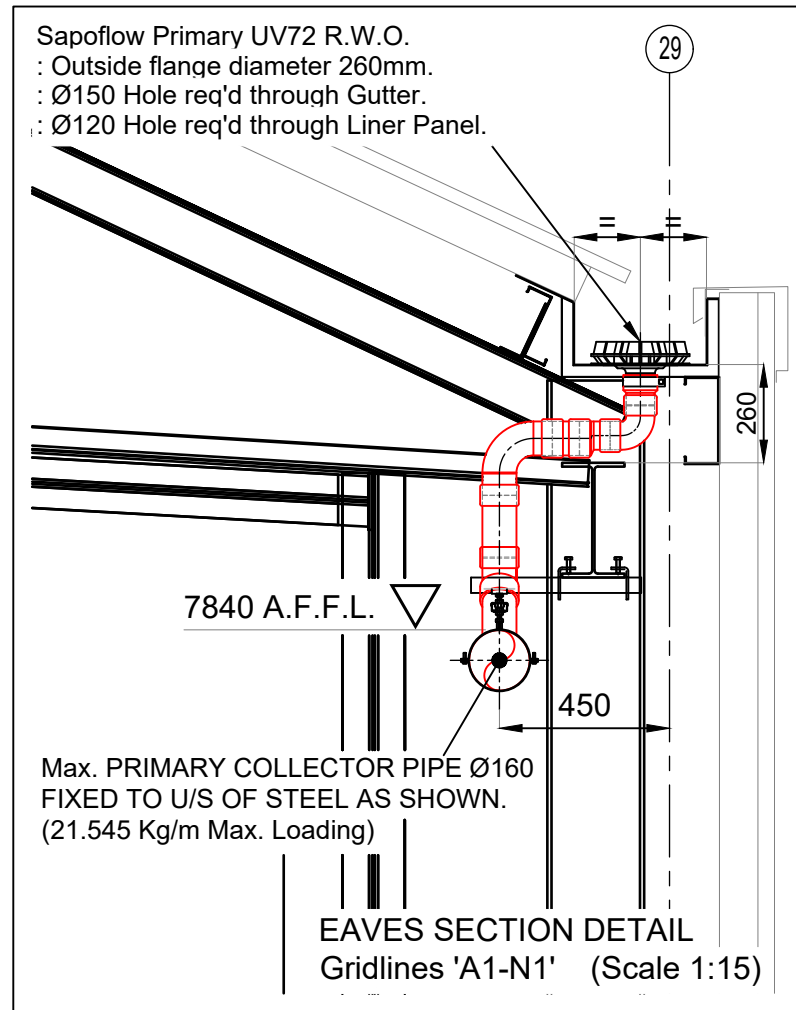
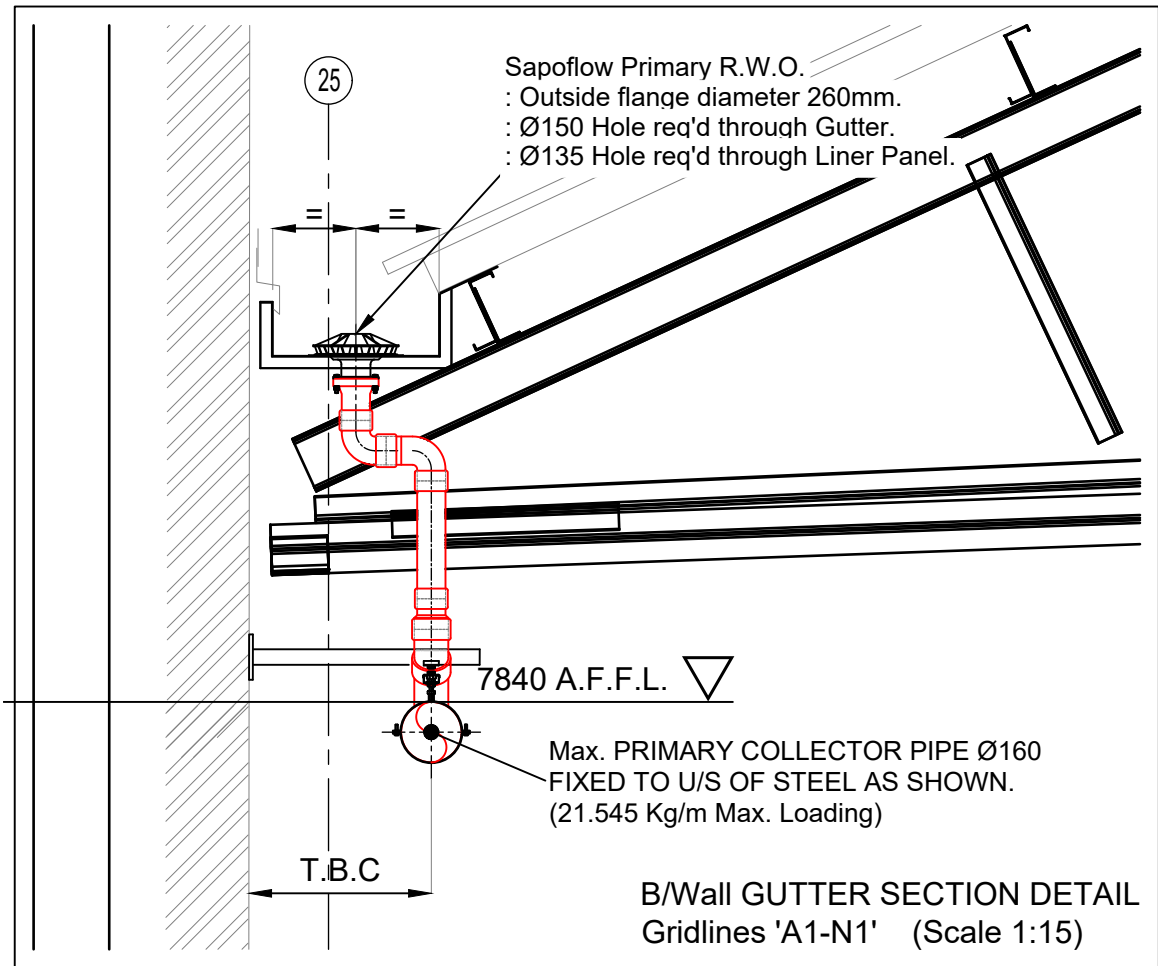
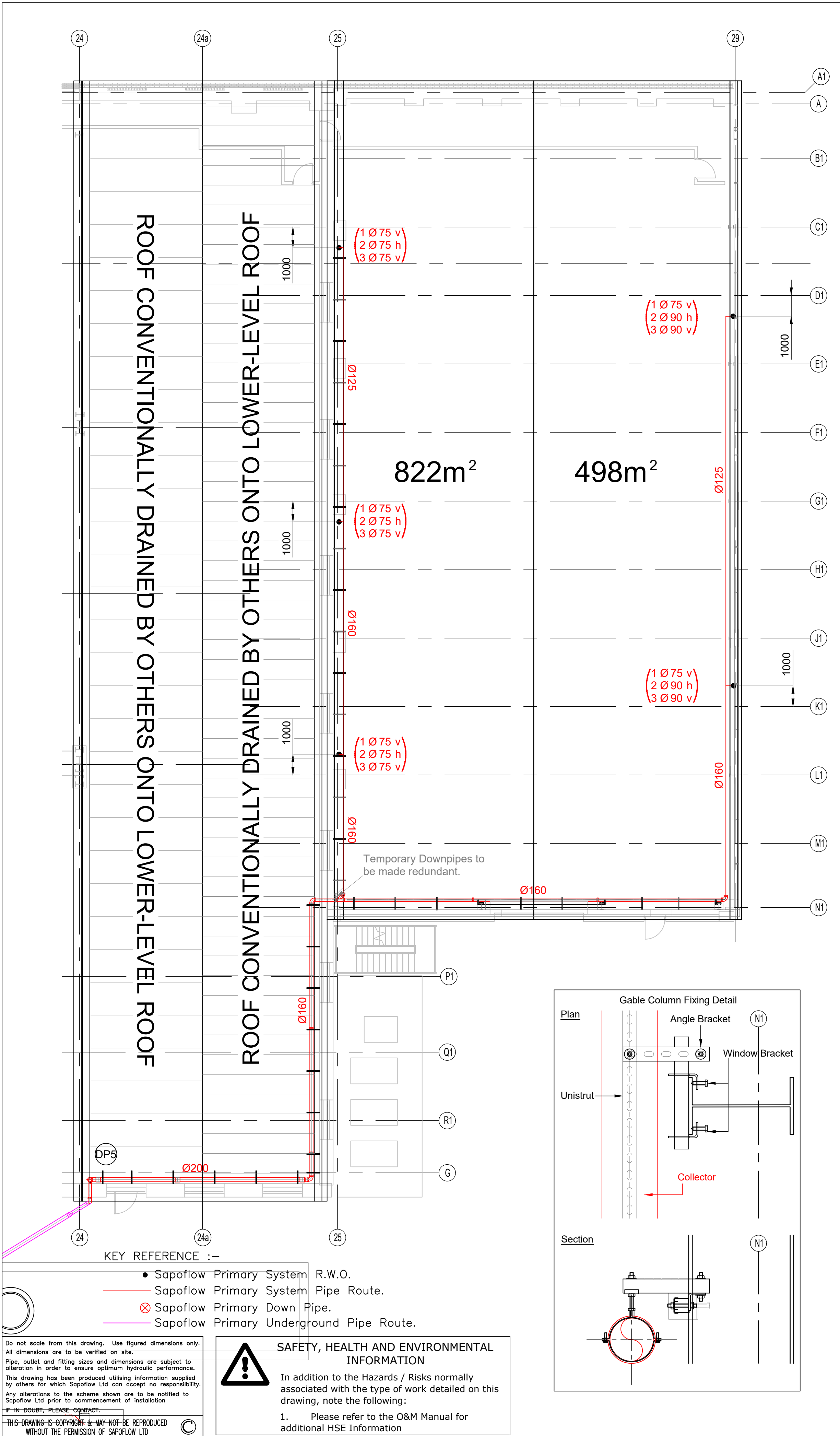
Pipe, outlet and fitting sizes and dimensions are subject to alteration in order to ensure optimum hydraulic performance. This drawing has been produced offering information supplied by others for which SapoFlow Ltd can accept no responsibility. Any alteration to the system shown on this drawing is to be notified to SapoFlow Ltd prior to commencement of installation. If in doubt, PLEASE CONSULT.

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SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION

In addition to the Hazards / Risks normally associated with the type of work detailed on this drawing, note the following:

- Please refer to the O&M Manual for additional HSE Information



BRACKET SPACINGS & LOADINGS FOR H.D.P.E. PIPE SUPPORTED FROM MAIN STRUCTURE: e.g. Roof Purlin					
PIPE DIAMETER (mm)	BRACKET SPACINGS (mm)	LOADING PER BRACKET (Kg)	PIPE DIAMETER (mm)	BRACKET SPACINGS (mm)	LOADING PER BRACKET (Kg)
Ø50	2000	6.76	Ø125	2000	27.40
Ø63	2000	9.07	Ø160	2000	43.09
Ø75	2000	11.68	Ø200	2000	62.96
Ø90	2000	15.58	Ø250	1500	73.71
Ø110	2000	21.87	Ø315	1500	120.0

BRACKET SPACINGS & LOADINGS FOR H.D.P.E. PIPE SUPPORTED FROM UNISTRUT CHANNEL:
NOTE: 41x21 UNISTRUT FOR PIPES UP TO AND INCLUDING Ø160, 41x41 UNISTRUT Ø200 & ABOVE.

PIPE DIAMETER (mm)	BRACKET SPACINGS (mm)	LOADING PER BRACKET (Kg)	PIPE DIAMETER (mm)	BRACKET SPACINGS (mm)	LOADING PER BRACKET (Kg)
Ø50	1000	3.38	Ø125	1500	20.55
Ø63	1000	4.54	Ø160	2000	43.09
Ø75	1000	5.84	Ø200	2000	62.96
Ø90	1500	11.69	Ø250	2000	98.28
Ø110	1500	16.40	Ø315	2000	160.0

RAINFALL INTENSITY 212 mm/hr
#90 DENOTES PIPE DIAMETER. (#63) DENOTES TAIL PIPE DIAMETER.

DOWNPIPE NUMBER. DIMENSION DATA. DISCHARGE FLOW (l/s). DISCHARGE VELOCITY (m/s).

212 mm/hr Primary Systems.

DP5	See Isometric	77.73	2.90
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C05 05/09/23 UG Details amended
C04 14/08/23 UG Details amended
C03 02/06/23 Pipe route extended + UG Details added
C02 21/02/23 Roof Area's added
C01 03/02/23 Issued for Construction

REV	DATE	DESCRIPTION
UNISTRUT CHANNEL PIPE FIXING		FIXING TOP OF DOWNPIPE
UNISTRUT CHANNEL		ANGLE BRACKET FIXING TO UNISTRUT
PIPE STRAP ON EITHER SIDE OF SLEEVE MINIMUM EVERY 18m		PIPE STRAP
		U-BOLTS

SAPOFLOW
UV72 STAINLESS STEEL SIPHONIC ROOF OUTLET.
uv-system

MIN GUTTER SOLE 300mm / HOLE Ø150mm

SAPOFLOW
Siphonic Roof Drainage Systems.

SAPOFLOW LIMITED, FALL BANK INDUSTRIAL ESTATE, DODD WORTH, BARNESLEY, SOUTH YORKSHIRE, S75 3LS. Telephone 01226 297200, Fax 01226 204038, E-mail info@sapoflow.com, Website www.sapoflow.com

PROJECT: **ANCHORAGE 2**
HAMMERSTONE ROAD
SALFORD QUAYS

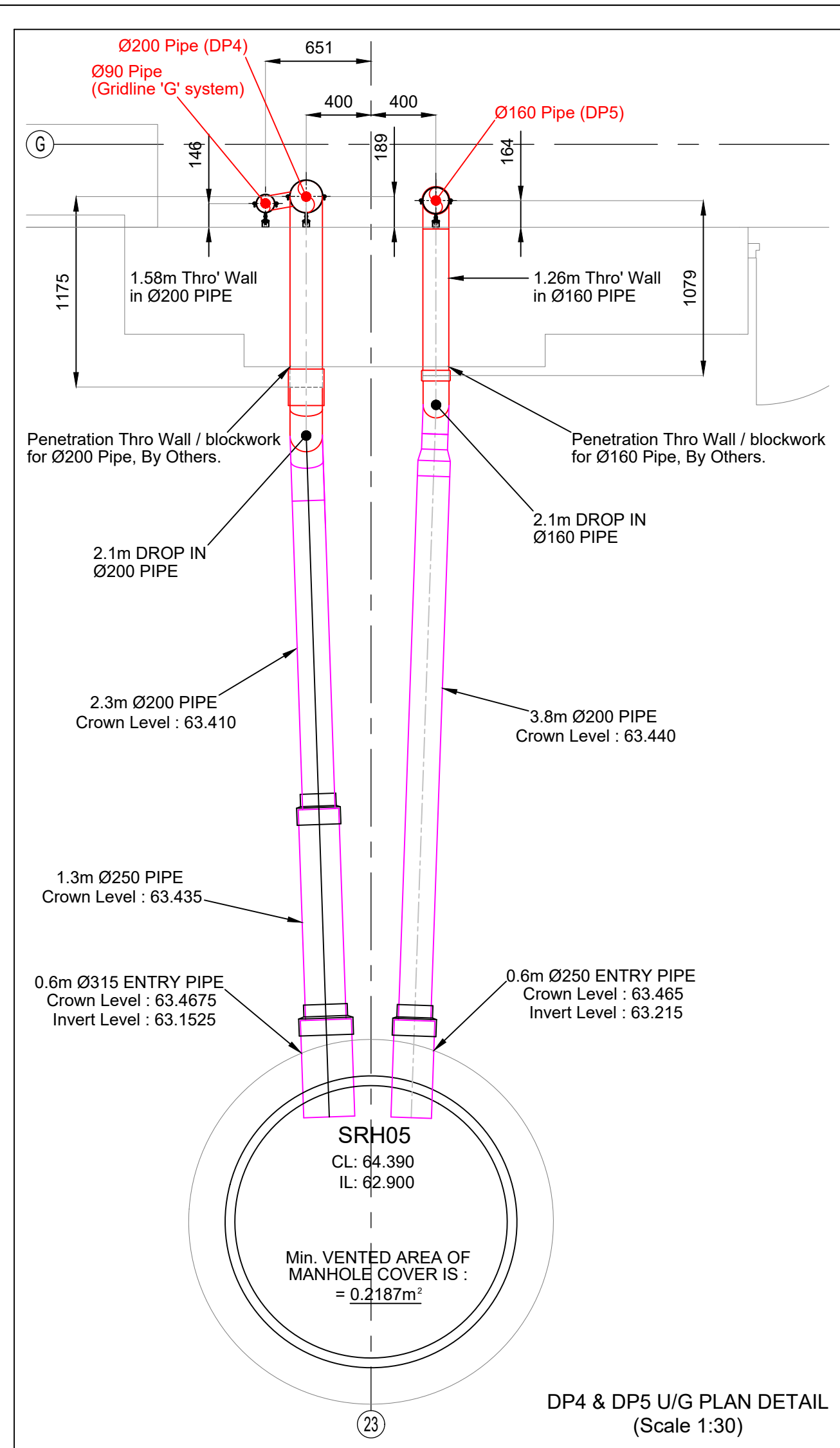
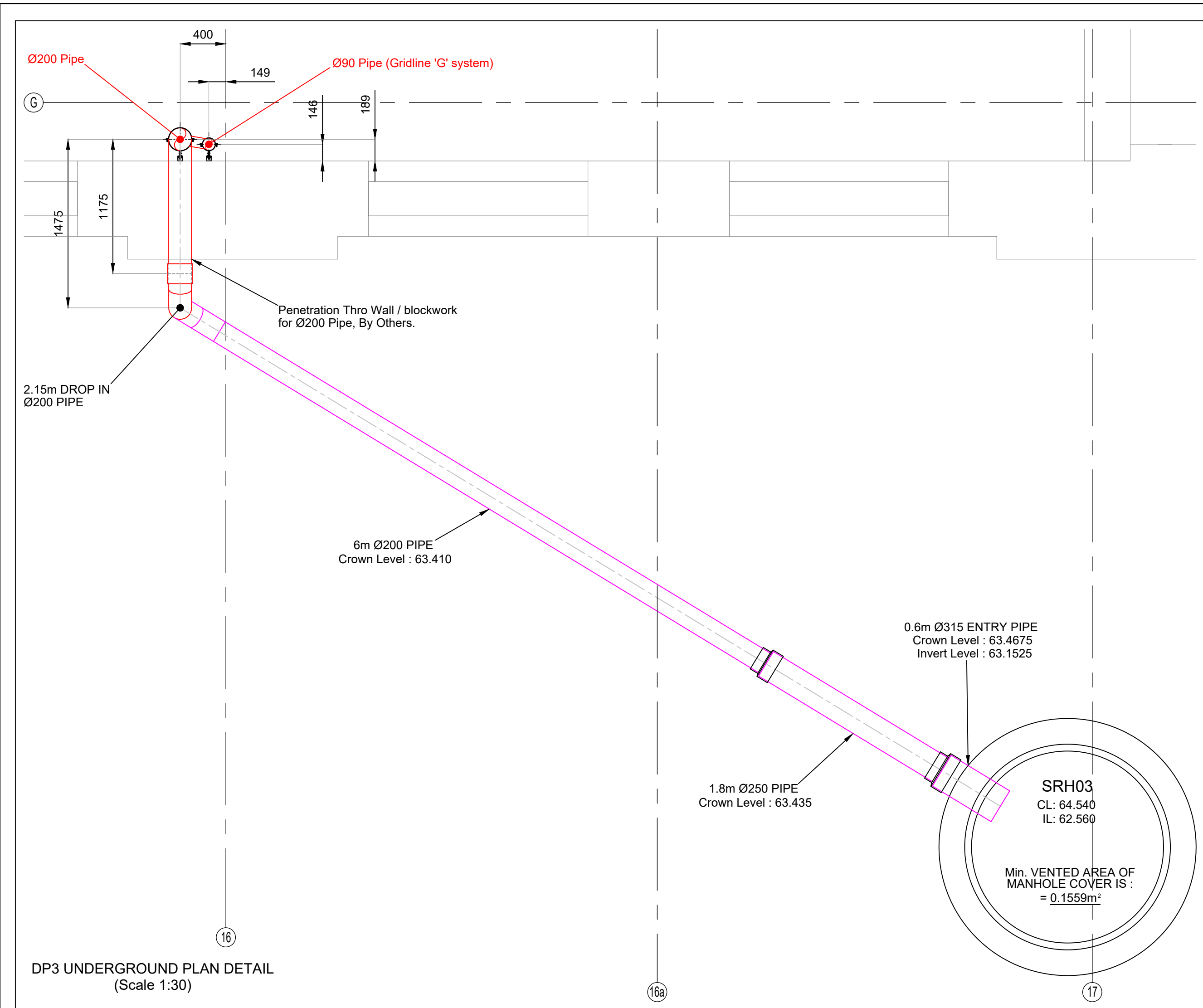
TITLE: SHED E
SIPHONIC ROOF DRAINAGE PLAN

DESIGN	DRAWN	Checked
W. Beaumont	W.B/AutoCAD.	T.G

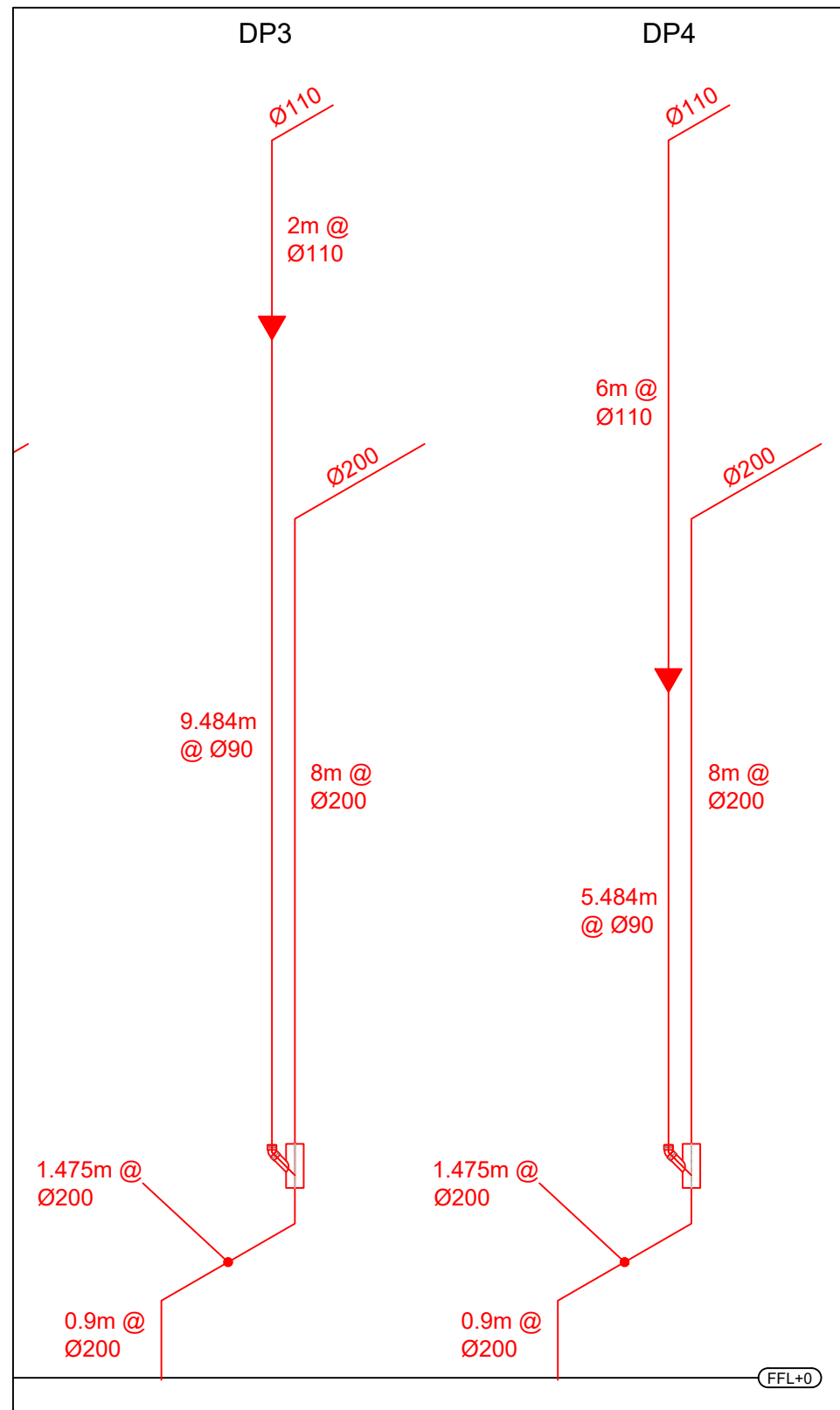
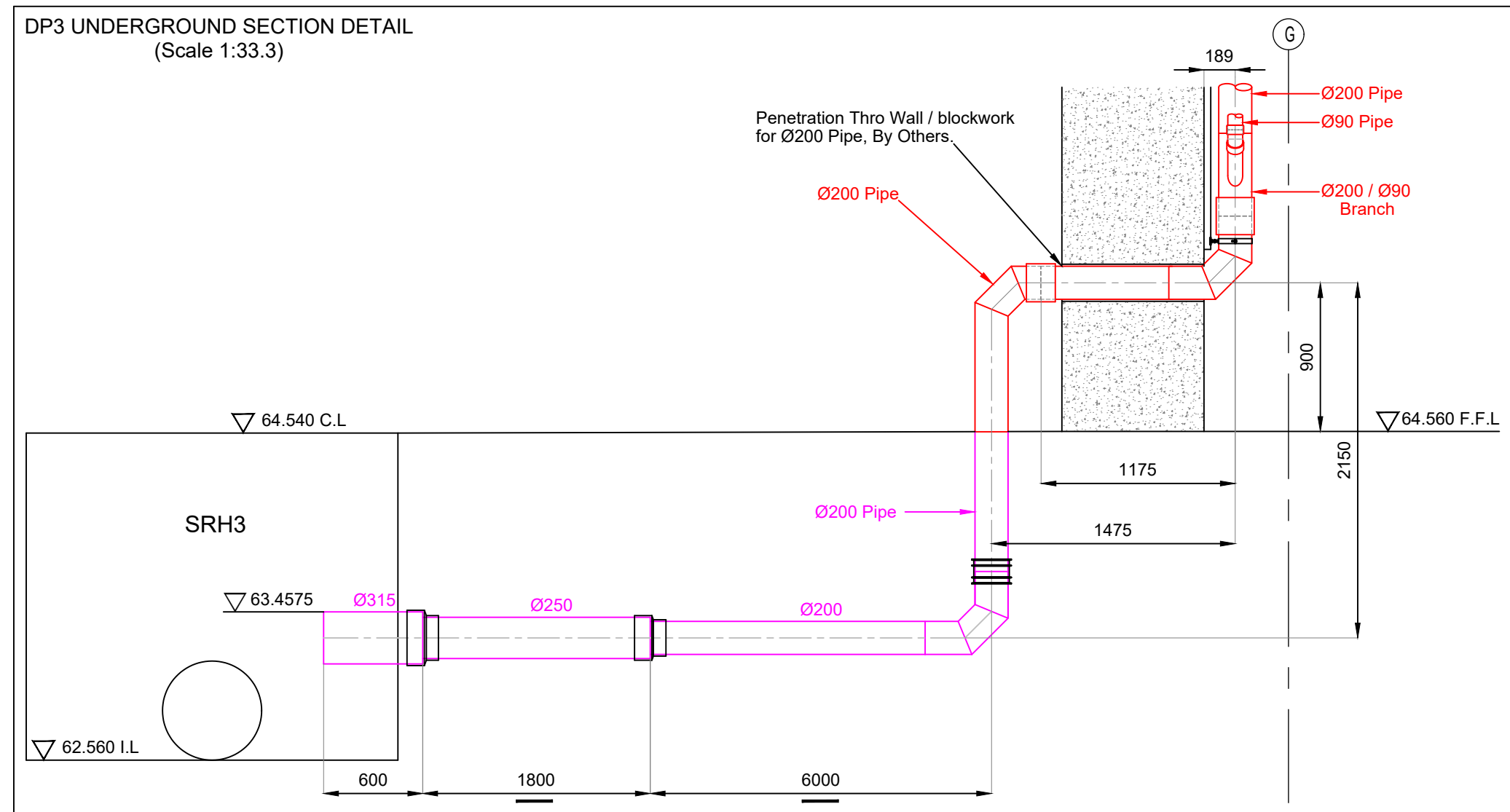
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PROJECT No.	DRAWING No.	REV
21397	HRD-SAP-01-RL-DR-X-0002	C05

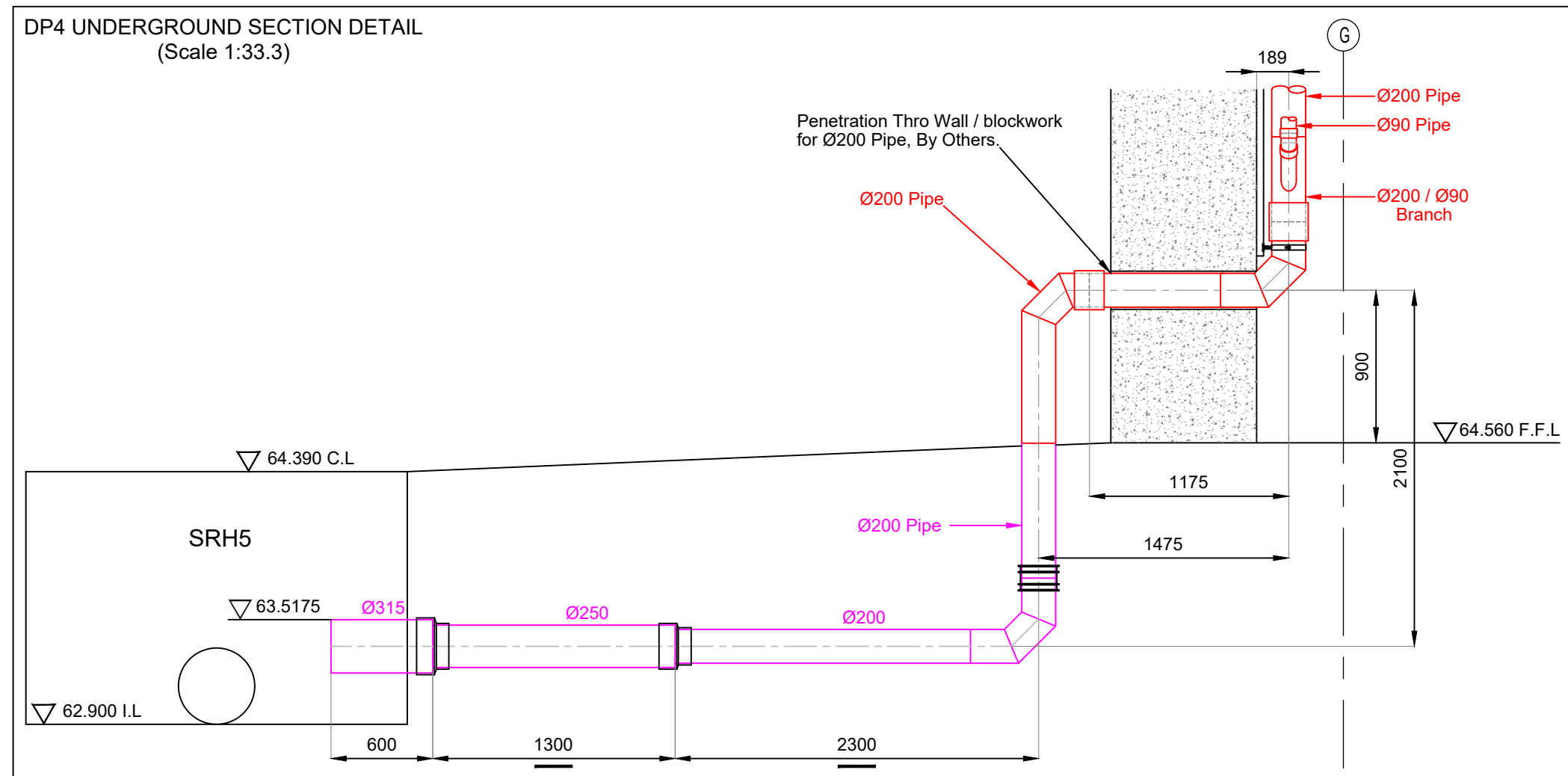
UK Representative of UN-System Registered in England No. 2717962 Document Ref: SAP-0002(1)



DP3 UNDERGROUND SECTION DETAIL
(Scale 1:33.3)



DP4 UNDERGROUND SECTION DETAIL
(Scale 1:33.3)



Construction

KEY REFERENCE :-

- Sapoflow Primary System R.W.O.
- Sapoflow Primary System Pipe Route.
- Sapoflow Primary Down Pipe.
- Sapoflow Primary Underground Pipe Route.

BRACKET SPACINGS & LOADINGS FOR H.D.P.E. PIPE SUPPORTED FROM MAIN STRUCTURE: e.g. Roof Purlin					
PIPE DIAMETER (mm)	BRACKET SPACINGS (mm)	LOADING PER BRACKET	PIPE DIAMETER (mm)	BRACKET SPACINGS (mm)	LOADING PER BRACKET
ø50	2000	6.76 Kg	ø125	2000	27.40 Kg
ø63	2000	9.07 Kg	ø160	2000	43.09 Kg
ø75	2000	11.68 Kg	ø200	2000	62.96 Kg
ø90	2000	15.58 Kg	ø250	1500	73.71 Kg
ø110	2000	21.87 Kg	ø315	1500	120.0 Kg

BRACKET SPACINGS & LOADINGS FOR H.D.P.E. PIPE SUPPORTED FROM UNISTRUT CHANNEL:
NOTE: 41x21 UNISTRUT FOR PIPES UP TO AND INCLUDING Ø160, 41x41 UNISTRUT Ø200 & ABOVE.

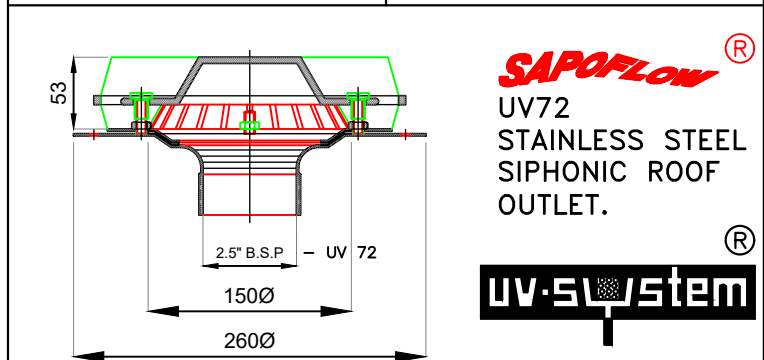
PIPE DIAMETER (mm)	BRACKET SPACINGS (mm)	LOADING PER BRACKET	PIPE DIAMETER (mm)	BRACKET SPACINGS (mm)	LOADING PER BRACKET
ø50	1000	3.38 Kg	ø125	1500	20.55 Kg
ø63	1000	4.54 Kg	ø160	2000	43.09 Kg
ø75	1000	5.84 Kg	ø200	2000	62.96 Kg
ø90	1500	11.69 Kg	ø250	2000	98.28 Kg
ø110	1500	16.40 Kg	ø315	2000	160.0 Kg

RAINFALL INTENSITY	212 mm/hr	DISCHARGE FLOW (l/s)	DISCHARGE VELOCITY (m/s)
DOWNPIPE NUMBER.	DIMENSION DATA		

212 mm/hr Primary Systems.			
DP3	See Isometric	155.53	2.34
DP4	See Isometric	155.53	2.34

C05	05/09/23	UG Details amended
C04	14/08/23	UG Details amended
C03	10/07/23	Status amended on portal
C02	02/06/23	UG Details amended
C01	02/05/23	DP Isometric & UG Section details amended
P01	03/02/23	Issued for Comment/Approval

REV	DATE	DESCRIPTION
UNISTRUT CHANNEL PIPE FIXING		
FIXING TOP OF DOWNPIPE		
ANGLE BRACKET FIXING TO UNISTRUT		
PIPE STRAP ON EITHER SIDE OF SLEEVE MINIMUM EVERY 18m		
U-BOLTS		



MIN GUTTER SOLE 300mm / HOLE ø150mm

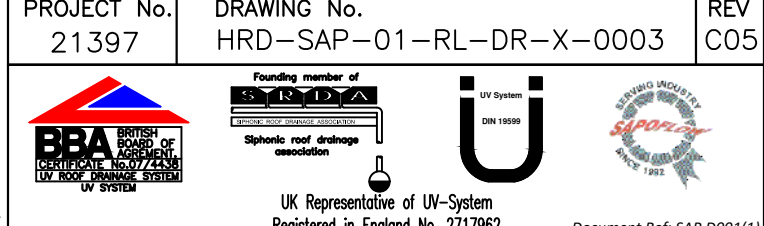
SAPOFLOW
Siphonic Roof Drainage Systems.

SAPOFLOW LIMITED , Telephone 01226 297200
FALL BANK INDUSTRIAL ESTATE , Fax 01226 204038
DODWORTH , BARNSLEY info@sapoflow.com
SOUTH YORKSHIRE , S75 3LS Website www.sapoflow.com

PROJECT
ANCHORAGE 2
HAMMERSTONE ROAD
SALFORD QUAYS

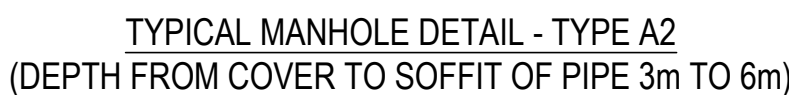
TITLE
SIPHONIC UNDERGROUND DRAINAGE DETAILS

DESIGN	W. Beaumont	DRAWN	W.B /AutoCAD.	Checked	T.G
SCALE	1:30	DATE	27/04/23		
PROJECT No.	21397	DRAWING No.	HRD-SAP-01-RL-DR-X-0003	REV	C05



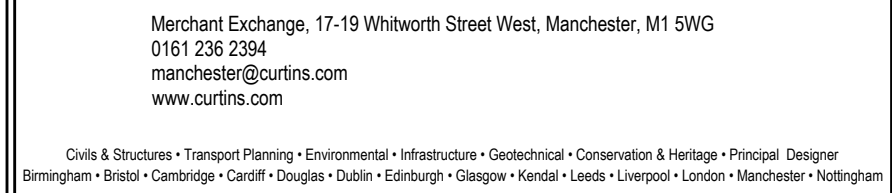
Do not scale from this drawing. Use figured dimensions only.
All dimensions are to be verified on site.
Pipe, outlet and fitting sizes and dimensions are subject to alteration in order to ensure optimum hydraulic performance.
This drawing has been produced utilising information supplied by others for which Sapoflow Ltd can accept no responsibility.
Any alterations to the scheme shown are to be notified to Sapoflow Ltd prior to commencement of installation
IF IN DOUBT, PLEASE CONTACT:
THIS DRAWING IS COPYRIGHT & MAY NOT BE REPRODUCED WITHOUT THE PERMISSION OF SAPOFLOW LTD

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION
In addition to the Hazards / Risks normally associated with the type of work detailed on this drawing, note the following:
1. Please refer to the O&M Manual for additional HSE Information



1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECTS AND ENGINEERS DRAWINGS AND SPECIFICATIONS.
2. DO NOT SCALE THIS DRAWING. ANY AMBIGUITIES, OMISSIONS AND ERRORS ON DRAWINGS SHALL BE BROUGHT TO THE ENGINEERS ATTENTION IMMEDIATELY. ALL DIMENSIONS MUST BE CHECKED / VERIFIED ON SITE.
3. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.
4. FOR GENERAL NOTES REFER TO DRAWING.

C02	STAGE 5 ISSUE	24.09.24	JC	ATL
P05	VENTED COVER DETAIL ADDED	29.04.24	JC	ATL
P04	UPDATED FOR NEW TENDER	02.02.24	ATL	MW
C01	CONSTRUCTION ISSUE	23.09.22	ATL	MW
P03	STAGE 4 ISSUE	09/04/21	MW	MW
P02	STAGE 3 ISSUE	18/11/20	MW	MW
P01	STAGE 3 ISSUE	29/11/19	MW	CG
Rev:	Description:	Date:	By:	Chkd:



Status:

STAGE 5

Project: **HAMMERSTONE ROAD PEROT**

HAMMERSTONE ROAD DEPOT

Drg Title: DRAINAGE DETAILS

DRAINAGE DETAILS
SHEET 1

Project No:	Size:	Date:	Drawn By:	Designed By:	Checked By:
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068065	A1	29/01/19	MW	MW	CG
	Scale: 1:NTS				

Project Code:	Originator:	Zone:	Level:	Type:	Discipline:	Category / Number:	Rev:
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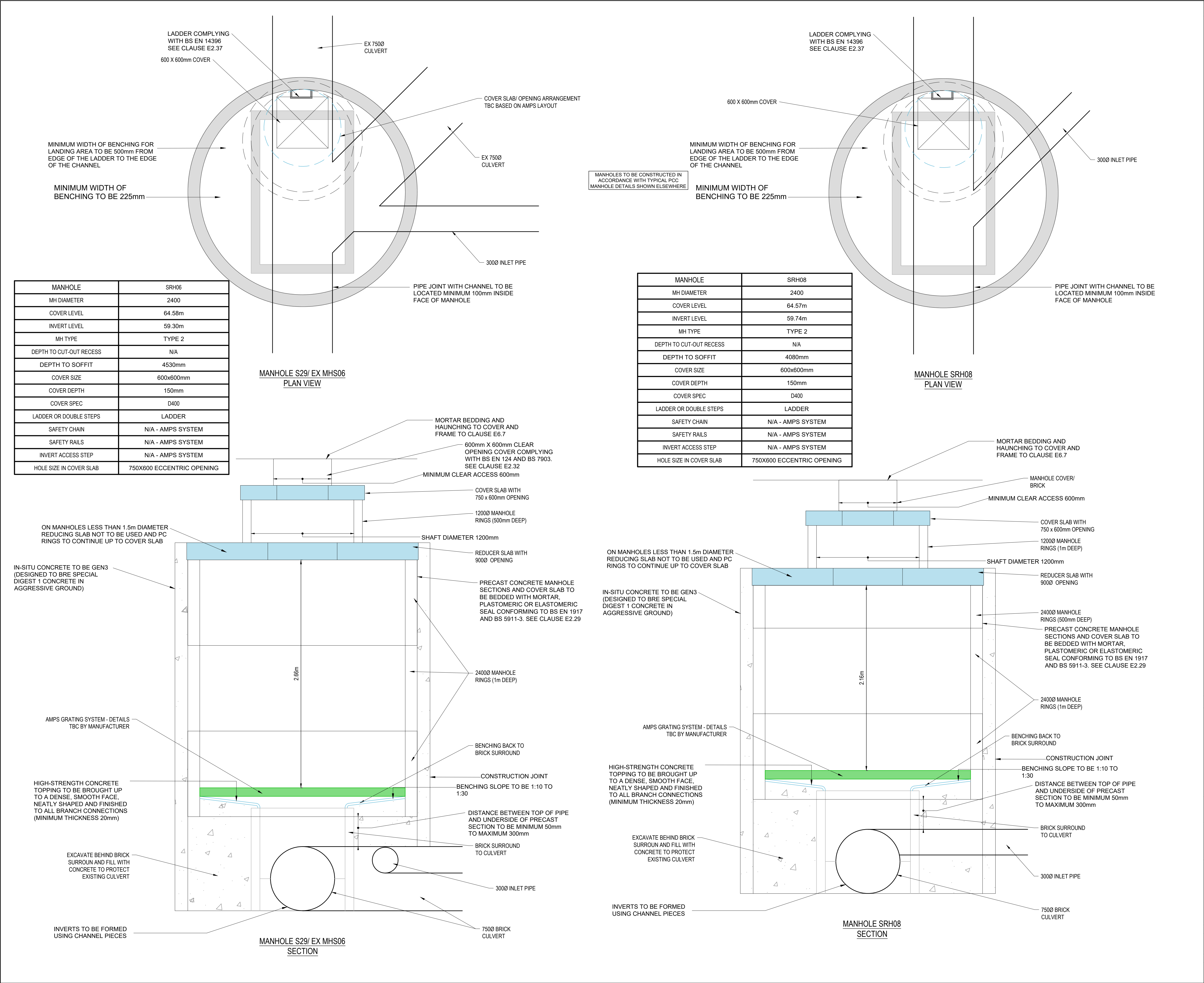
HRD - CUR - XX - ZZ - DR - C - 92520 -C02

Appendix G

Connection Manhole Details

Connection Manhole Method Statement

Connection Manhole Risk Assessment



GENERAL NOTES:

1. DO NOT SCALE THIS DRAWING. ANY AMBIGUITIES, OMISSIONS AND ERRORS ON DRAWINGS SHALL BE BROUGHT TO THE ENGINEERS ATTENTION IMMEDIATELY. ALL DIMENSIONS SHALL BE CHECKED / VERIFIED ON SITE.

2. DESIGN BASED ON TOPOGRAPHICAL SURVEY AND CCTV SURVEY INFORMATION AVAILABLE AT THE TIME OF DESIGN.

3. ALL DIMENSIONS ARE IN METRES AND LEVELS IN METRES ABOVE ORDINANCE DATUM UNLESS OTHERWISE NOTED.

P03

ANNOTATION ADDED

29.04.24

JC

ATL

P02

UPDATED FOR NEW TENDER

02.02.24

ATL

MW

P01

ISSUED FOR INFORMATION

23.11.23

KS

ATL

Rev:

Description:

Date:

By:

Chkd:

C

curtins

Merchant Exchange, 17-19 Whitworth Street West, Manchester, M1 5WG

0161 235 2394

manchester@curtins.com

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Status:

STAGE 5

Project:

HAMMERSTONE ROAD DEPOT

Orig Title:

DRAINAGE DETAILS
SHEET 8
CONNECTIONS TO CULVERT

Project No:

Size:

Date:

Drawn By:

Designed By:

Checked By:

068065

A1

27/11/23

KS

KS

ATL

Scale:

1:20

Project Code:

Originator:

Zone:

Level:

Type:

Discipline:

Category / Number:

Rev:

HRD

- CUR

- XX

- ZZ

- DR

- C

- 92-528

- P03

Visio-6-11Project068065 - Hammerstone Road DepotDIMS 4 ProductionB Models & Drawings_Col-CGA0102



S22	METHOD STATEMENT
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CONTRACT:	Hammerstone Road	CONTRACT NO:	232	DATE:	30.10.23.
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METHOD STATEMENT No.	014	REV.	B
TITLE	Deep Drainage	LOCATION	Higher Carpark
START DATE	30.10.23.	DURATION	36 weeks

ACCEPTANCE

1. All operatives to wear appropriate PPE for task ahead.
2. If unsure of any aspect of the works, cease works and seek advice from your supervisor, if systems of work change, then RAMS to be updated in accordance with the change.
3. All operatives to have read, understood and signed the method statement.

DESCRIPTION AND METHODOLOGY OF WORKS

Prior to Works

1. Operatives' inductions will be booked in on the M-Site System by the Adana Manager the previous day.
2. Operatives will complete the online pre-enrolment prior to arriving on site.
3. Morgan Sindall site induction will be attended for Adana personnel before any works commence.
4. Working hours will be 7.30 until 17.00.
5. Barriers will be in place outside to segregate the works area.
6. Permit to Excavate will be in place for any excavation works.
7. Area will be CAT scanned and any services exposed by hand.
8. Daily Risk Assessments / Briefings will be carried out by the manager/ supervisor at the start of each day.
9. PPE will be Boots, Vest, Hardhat, Gloves and Glasses as standard.
10. Every Three weeks, our Safety Officer will carry out an on- site safety report.

Access, Deliveries and Storage

11. Access to Site will be via the Morgan Sindall traffic route through the MCC car park.
12. All deliveries will be co-ordinated with Morgan Sindall and the MCC Gate Man at the morning briefing.
13. We will form a compound / Lay down area as per agreed Location Plan
14. Material storage area will be segregated with Barriers.
15. Deliveries will be always supervised by a competent Banks man (entering, unloading and leaving).
16. All deliveries where people must enter the back of the wagon must have edge protection set up. No operatives are to climb onto the back of a delivery wagon without edge protection.
17. Some materials or items will be off loaded with a Hiab before offloading can commence, a copy of the drivers Hiab certificate, will be available in his cab.
18. Where deliveries are to be offloaded with the excavator, lifting plan will be read and understood by all involved.
19. When loading materials into excavations, operatives must remain out of the excavation, until the materials are within 500mm of the bottom of the excavation.
20. Work and Storage areas will be thoroughly tidied as required and at the end of each shift.

Site Contacts:

Site Manager: Neil Kirton neil.kirton@adanaconstruction.com

General Rules

- 1) Permit to dig obtained and cat scan of area to be carried out prior to breaking ground by Trained operatives.
- 2) If excavations are deemed to be at risk of containing asbestos, a Watching Brief will be present (trained in asbestos awareness) to comply with the Asbestos Management Plan.
- 3) Any known services to be exposed by hand or with Vac Ex, no excavation within 500mm of known or identified services.
- 4) Excavation inspections carried out daily prior to commencing.
- 5) Safe start briefing to be carried out daily.
- 6) Excavations will be segregated with double clipped Herras fencing with warning signs.
- 7) No operatives are to be below materials being lifted or lowered by the excavator.
- 8) Stop blocks must be used where wheeled plant or vehicles are within 2m of the trench.
- 9) Excavations will only be entered by a fixed or proprietary access.
- 10) Any entering of excavations will be carried out to the rescue plan below.
- 11) All trench shoring including the construction of proprietary systems will be used by operatives familiar with Groundforce Systems.
- 12) Trench boxes and manhole boxes will be constructed to design in a designated and segregated area and the carried to work face by excavator as required.
- 13) Confined spaces will only be entered by trained operatives with full Gas Detection and emergency escape kit.
- 14) All safety apparatus will be calibrated, with certificates stored in the Adana files.
- 15) Where Edge protection cannot be used, any operative working at the side of the excavation must be wearing a harness, connected to a solid fixing capable of holding or weighing a minimum of 250KG.
- 16) This Method statement will be read in conjunction with the Excavator Lifting plan for the excavator carrying out the works.

Live Services: The areas we are working could well have very shallow existing services.

- 1) Service drawings will be reviewed by Supervisor, Engineer and site team prior to commencing works in each area.
- 2) The services will be marked by the site engineer but, this is only a guidance and may not be the true location.
- 3) The CAT scan and generator will be used to further determine the location of the known service.
- 4) Any street light columns or other utility pits nearby will be opened and investigated to determine other services which may not be on the drawings.
- 5) All services known or, picked up in further surveying, will be marked on the ground.
- 6) We will then expose any services within our excavations by hand by operatives wearing fireproof overalls and with insulated tools.
- 7) Overhead services will be pointed out to all workers involved along with a tool box talk. will
- 8) Where hardstanding's are above and, we cannot excavate by hand, we will break the surface by mechanical means but a minimum of 500mm from the location, either side of the line of location.
- 9) We will remove the hard standings and excavate further down to form two pits either side of the service.
- 10) Hand dig will then continue sideways from inside the pit, until the service is exposed.
- 11) Once exposed, the Adana Manager and Morgan Sindall Manager will be invited to inspect.
- 12) At this point works will be held until the Managers advise further.

Removal of Hard Standings (Some of our excavations will require the removal of existing tarmac and concrete)

1. Permit to excavate must always be in place even when only cutting and removing surfaces.
2. Area must always be segregated with barriers or herras with signage in place.
3. When cutting, full dust suppression must be in place either vaccumn or water.
4. Dust must be reviewed constantly during works.
5. Anybody working directly at the point of works must wear dust masks and goggles.
6. During cutting, breaking and peckering, a mandatory hearing protection zone will be set up.
7. In this zone, ear defenders must be worn by everybody.

Addendum 1 Minimal Traces of Asbestos found to be in the ground.

1. Manager / Engineer to advise on areas where asbestos traces are thought to be present.
2. Traces are within the ground so are not Airbourne however, testing of the air will be carried out during works as a check.
3. Operatives in direct contact with the material will wear paper suits, / wet suits, wellies, and half face masks.
4. At the end of works including prior to breaks and entering the welfare area, the PPE will be cleaned down using the jetwash at the container.
5. A watching brief, with asbestos awareness training will be in attendance with excavation works to look out for any visible amounts of asbestos.
6. If any visible amounts are found, works will be stopped until they can be removed safely by a specialist contractor.
7. No cross contamination of muck into the welfare or office area.
8. Operatives will then remove the PPE and store at the designated area provided at the container.
9. Operatives to take extra care cleaning hands and face prior to eating or leaving site.
10. When returning to the works, the operatives will put their PPE on again.
11. Any damaged PPE or PPE that cannot be cleaned to be replaced before returning to site.
12. Muck being transported will be loaded onto the dumper via the excavator. If the excavated material is dry, we will dampen down with the jetwash.
13. Dumper will only be half filled when transporting hazardous muck to further avoid spillage.
14. Muck storage areas will be fenced off and covered over with visqueen at the end of each shift or during rain.
15. At the end of each shift, all plant will be decontaminated with the jet wash.
16. Work Area will be dampened down and cleaned at the end of each shift or as required.

Sequence of Drainage Works

1. We will excavate and break onto the existing manhole outfall connection for the given run.
2. When breaking manholes, the channel will be protected with timber boarding to prevent rubble entering the lines.
3. Access to manholes will be by a Confined Space Trained operative with full Manhole Escape Kit.
4. Trench box or manhole box will be installed at location.
5. Edge protection and access system will be in place as soon as the box is installed.
6. The existing manhole will either be broken out to allow for new or, a hole formed with breaker / core drill for us to connect our pipe into.

Manholes:

7. Manhole base will be formed with Semi Dry concrete.
8. Channels will be formed as required and then benched.
9. Stubs and rockers will be extended to the edges of the manhole bases so that drain run pipes can be installed to them afterwards.
10. Once the base is cured, the manhole rings and biscuit will be lifted into place with the excavator.

11. The rings will be surrounded with concrete and backfilled in stages to allow the manhole box to be lifted and eventually removed as backfill progresses.

Addendum 2 Manhole EX02 is on an existing culvert and classed as a confined space.

1. Confined space Permit obtained from Morgan Sindall
2. Davit Arm system must be in place with operative connected with Lanyard and Harness
3. Gas monitor in place hung from the edge of the box.
4. Top man in position always watching operative in confined space.
5. If operative requires escape due to gas, he will use the breathing apparatus and then exit the space via the ladder.
6. If the operative collapses for any reason topman will simply use the davit arm to lift and pull him over the edge of the box to safety.

Addendum 3 Ladder to Connection Manhole (Confined Space).

1. Confined space Permit obtained from Morgan Sindall
2. Manhole Escape system must be in place with operative connected with Lanyard and Harness
3. Gas monitor in place hung from the edge of the box.
4. Top man in position always watching operative in confined space.
5. If operative requires escape due to gas, he will use the breathing apparatus and then exit the space via the ladder.
6. If the operative collapses for any reason topman will simply use the winch to lift and pull him to safety
7. A 5m ladder will be lowered into the manhole and tied to a solid point outside of the manhole.
8. Operative will take a grinder and grind existing rungs and remove from the manhole. Full dust PPE suppression and vacuum suppression to be in place.
9. After each rung is cut; we will assess for any dust within the manhole
10. Next, the new ladder will be lowered and set in place.
11. Holes will be drilled with the small portable drill and then fixings set in place using resin.
12. Once set, the operative will remove the temporary ladder and make the area safe.

Drain Runs:

12. Pipe laser will be set up by the engineer in the manhole.
13. We will use two trench boxes at a time on drain runs with the previous box being removed and placed in front of the last box as pipes are excavated for, installed and, backfilled.
14. Bedding will be tipped to the bottom of the trench by the excavator and levelled out by the operative.
15. Operative must never stand below the bucket of the excavator.
16. Pipes will be lifted in with accessories as per the lift plan.
17. Pipe will be slinged by a slinger and lowered into the excavator by the excavator.
18. The operative must remain away from the lowered pipe until it is maximum 500mm from bottom at which point, the operative can guide and push the pipe into position.
19. Level of the pipe will be checked to the pipe laser.
20. Trench will be backfilled to level in compacted layers as the boxes are removed in sequence as per design.

Sheet Piles and Tank Excavation:

21. For larger excavations such as tanks, sheet piles will be used for shoring.
22. Sheets and frames will be installed to the approved temporary works design.
23. Line of the sheets will be CAT scanned and any services exposed.
24. Design will then be reviewed if any services clash.
25. The lines of the sheets will be proof excavated to full level.
26. Any obstructions will be broken out and removed.
27. Excavation will be backfilled with granular material and then the trench progressed until the full lines have been proven.
28. We will use an excavator with vibrating pile hammer to drive the piles to full depth.
29. The piles will be lifted by the excavator with lifting attachment.

30. The bottom of the pile will be positioned by slinger banksman, either online or, slotted into previous pile.
31. Exactor will then connect hammer to the pile and drive the pile down.
32. Once piles are installed to 3 sides, edge protection will be installed to the tops.
33. We will then excavate from the Shape outwards keeping a ramp behind.
34. We will excavate to underside of frame as given by the engineer with laser level.
35. Frame will be installed on this level, pumped out and hung from the sheets.
36. Excavation will then continue outwards from the far end.
37. Final side of the piles will then be installed, and final leg of the frame attached.
38. Frame will be pumped out and Morgan Sindall asked to inspect
39. Remaining excavation will be completed from above.
40. If required, a smaller excavator may be lifted in and out of the excavation to trip up or level bedding.
41. **The excavation will be handed to the tank contractor so that they can install.**
42. Once the tank is commissioned and Adana given the go-ahead, we will backfill the tank.
43. A layer of pipe bedding will be placed and levelled over the top of the tank for as far as the excavator can reach from above.
44. Below, operatives will level the pipe bedding by hand.
45. This will be repeated with a layer of stone, at which point (if approved by the engineer, a smaller excavator will be lowered onto the material.
46. The stone will continue to be loaded into the excavation until spread to the depth ready for compaction.
47. Sheets will be removed as backfilling progresses and plant of a suitable weight (Rollers and Excavators not exceeding 5 Tonne, will be used to level and compact the backfill.
48. The 4 corners of the tank will be marked and segregated to prevent it from being crushed by heavy plant or vehicles.

EMERGENCY PROCEDURE

- Operatives working in trenches will be attached by Harness and Lanyard to the davit arm system if, there are no obstructions above his working area such as services and struts.
- If there are obstructions above, then the operative can disconnect as long as a second operative (also wearing a harness) is present to connect him if required.
- If an operative is required to be removed from the trench due to illness or an incident, then the following procedure will be implemented: If the operative can be made safe and secure in the trench until the emergency services can attend then the operative will remain in the trench. Should the operative be required to be removed from the trench immediately then the operative will be lifted with the aid of the davit arm and then moved to a position of safety by a number of operatives at the top of the excavation.
- If this cannot be done with the davit arm, then the harness will be attached to the lifting point on the excavator and under the direction of the top man the excavator will be used to carefully lift the operative from the trench. Should the emergency services be in attendance then the operative will be placed on a stretcher and the excavator used to lift the stretcher from the trench. All lifting equipment will have a 6-month dated test certificate.

Working with Mobile Plant and remaining in the Safety Zones:

- Movement of plant on site, outside of segregated work zones, to be controlled by trained and competent banksman
- Planned and known Plant movements to be made aware to operatives at daily safe start and any specific pedestrian exclusion zones identified and communicated. Appropriate on site exclusion zones to be implemented around operational machines/excavators at all times and managed and maintained by plant banksman and supervisor
- Plant to be operated by trained and competent operatives
- Loose fitting jackets shall be taken off by the machine operator and hung safely to the rear of the cab but so as not to obscure visibility or interfere with any machine controls BEFORE the machine or plant engine is switched on.

- Keys must never be left in the ignition when not seated in plant.
- Loose fitting clothing must not be worn by machine operators when in the cab. If large coats are worn these should be 'bomber style jackets.' The sleeves and midriff should be elasticated or tight fitting, and the jacket should remain zipped up to prevent potential interference with controls.
- There must be no banksman or other personnel within the slewing or operational area of the machine when the operator is first accessing his cab and starting the machine/positioning himself.
- Machine banksmen and other working personnel must always remain at a safe distance (out of the slew reach of the machine) from operating plant and it must be ensured that their movements are clearly known to the operator.
- If anyone requires entering the working area, they must signal the plant operator beforehand and confirm acknowledgement by the driver. If there is anyone in the working area of the plant the excavator must be stopped, and the dead man's handle engaged.
- If anyone is required to work near to the excavator, a position of safety must be established prior to operations commencing. Positive confirmation that the operative is in this location must be established before any plant movements are undertaken.
- Always turn off the engine and remove the keys from the cab before leaving the machine.
- Plant to have warning beacons and horns in good working order and pre use checks recorded

Plant

1. The excavator will contain a plant file with copies of certificates for the excavator, roller and dumper
2. Each day inspections will be carried out, by the excavator driver for each of this plant and the check sheet filled in and signed. The sheets will be kept in the plant file until the end of the week, and then handed to the Adana Site Manager.
3. A copy of the permit to excavate will be kept in the plant file, in the excavator cab at all times.
4. A fuel bowser will be used to store fuel, a spill kit must be kept on the side of the bowser and a drip tray must be beneath the hose while any refuelling of plant takes place.
5. COSHH Cage will be sat on a plant nappy.
6. Fuel storage to be locked at all times.
7. The COSHH sheet for diesel and petrol will be read and understood before any refuelling takes place.
8. Any smaller plant for mixing, cutting, breaking and drilling will be fully certified with copies kept in the site stores.
9. Only competent operatives will use each item of plant.
10. The HAVs trigger time for any items of plant must be adhered to and, any operative using plant must record their personnel trigger times on the HAVs Record Sheet

LIST OF MATERIALS TO BE USED

6F2, MOT Type 1, Drainage Materials, Ducting Materials, Concrete, COSHH Materials as below

COSHH Register

Assessment Number	Product	Use
001	Gas Oil	Fuelling large plant
002	Ready Mix Concrete	Slabs, Surrounds, Foundations
003	Unleaded Petrol	Fuelling small plant
004	2 Stroke	Fuelling small plant
005	Pipe Grease	Lubricating Pipes and ducts
006	Cement / Mortar	Brickwork / Ironworks / General Mixing

LIST OF ANY SUBCONTRACTORS TO BE USED	<i>Method Statement approved</i>		<i>Method Statement attached</i>	
	YES	NO	YES	NO

EQUIPMENT TO BE USED	YES	NO	EQUIPMENT TO BE USED	YES	NO
LIFTING		✓	NON MECHANICAL HAND TOOLS	✓	
MECHANICAL HOIST		✓	MECHANICAL TOOLS	✓	
MEWP		✓	EXCAVATION SHORING	✓	
LADDER		✓	TASK LIGHTING		✓
HOIST		✓	CAT	✓	
TEST EQUIPMENT		✓	VENTILATION / EXTRACTION EQUIPMENT		✓
TASK LIGHTING		✓	LIFTING ACCESSORIES		✓
SCAFFOLDING		✓	MECHANICAL PLANT (<i>State Below</i>) Excavator, Dumper, Roller	✓	
MOBILE SCAFFOLDS		✓			

RISK ASSESSMENTS					
HAZARD IDENTIFICATION	YES	NO	HAZARD IDENTIFICATION	YES	NO
SLIPS AND TRIPS	✓		COSHH	✓	
MANUAL HANDLING	✓		NOISE	✓	
HAND TOOLS	✓		WORK AT HEIGHT	✓	
EXCAVATIONS	✓		DUST/FUMES	✓	
MACHINERY/LIFTING EQUIPMENT		✓	LIGHTING		✓
FIRE	✓		3 RD PARTY CONTRACTOR	✓	
FALL OF MATERIAL	✓		ENVIROMENTAL	✓	
ELECTRICAL		✓	HEATING		✓
WHO MIGHT BE HARMED					
	YES	NO		YES	NO
OWN PERSONNEL	✓		OFFICE STAFF/VISITORS	✓	
OTHER CONTRACTORS	✓		MEMBERS OF THE PUBLIC		✓
PROPOSED CONTROL MEASURES TO REDUCE RISKS					
1) <i>Risk Assessments</i> 2) <i>Toolbox talks</i> 3) <i>Site inductions</i> 4) <i>Workers to be competent and hold an up to date CSCS card</i> 5) <i>Mandatory site PPE to be worn at all times:</i>					

PPE REQUIRED					
	YES	NO		YES	NO
SAFETY HELMET	✓		EYE PROTECTION (LEP)	✓	
PROTECTIVE FOOTWEAR	✓		EYE PROTECTION (IMPACT RESISTANT)	✓	
HIGH VISIBILITY CLOTHING	✓		FACE RESPIRATOR		✓
GLOVES	✓		BODY HARNESS		✓
HEARING PROTECTION	✓		OTHER (state)	Asbestos PPE, Suits and half face mask	

PERMITS REQUIRED					
	YES	NO		YES	NO
HOTWORKS	✓		RISER SHAFTS		✓
CRANE / HIAB CHECK LIST		✓	LOAD		✓
EXCAVATION	✓				
CONFINED SPACE ENTRY	✓		OTHER (state)		

TRAINING CERTIFICATES REQUIRED (Adana Matrix Available)					
	YES	NO		YES	NO
CSCS CARDS	✓		MEWP (IPAF 1a,1b,3a,3b,PAV)		✓
SCAFFOLD		✓	MOBILE TOWER ACCESS (Pasma)		✓
TELEHANDLER		✓	VEHICLE MARSHALL	✓	
DUMPER	✓		ABRASIVE WHEELS	✓	
ROLLER	✓		HIAB		✓
EXCAVATOR	✓		STREET WORKS		✓
CONFINED SPACES	✓		SLINGER/SIGNALLER	✓	
CARTRIDGE OPERATED TOOLS	✓		OTHER (state)	Asbestos awareness	

EMERGENCY ARRANGEMENTS	
FIRST AID MEASURES REQUIRED	RESCUE/SECURITY MEASURES REQUIRED
NAME OF FIRST AIDER ON SITE: Neil Kirton Morgan Sindall	Call 999 for emergency services contact the local accident and emergency: Manchester Royal Infirmary Tel: 0161 276 1234 Oxford Road Manchester

		Greater Manchester M13 9WL	
RESCUE		SPILLAGE/ENVIROMENTAL CONTROL REQUIREMENTS (✓)	
BY WHOM	EMEGENCY SERVICES ADANA PERSONNEL PRINCIPAL CONTRACTOR	PLANT NAPPIES	✓
		SPILL KITS	✓
HOW	EG: VIA THE SITE MAIN ENTRANCE	DRIP TRAYS/NAPPIES AT REFUELING AREAS	✓
		BUNDED FUEL BOWSERS	✓
		BUNDED COSHH CAGES	✓

AMMENDMENT TO CURRENT SYSTEMS						
DATE	YES/NO				AMMENDMENTS	M.S REV
	TRAFFIC ROUTES	EMERGENCY ARRANGEME NTS	EXISTING SYSTEMS OF WORK	OTHER		
27.11.23.			✓		Asbestos Addendum	Rev A
27.11.23.		✓			Manhole EX06 Confined space	Rev A
07.05.24.		✓	✓		Ladder to Connection Manhole	Rev B

NAME	SIGNED	DATE
Neil Kirton		07.05.24.

INFORMATION CONTROL			
METHOD STATEMENT WRITTEN BY:	Neil Kirton, Site Manager, Adana Construction		
METHOD STATEMENT CHECKED BY:	Keir Hardie, Contracts Manager		
METHOD STATEMENT REVIEW DATE		REVISION No	

Risk Assessment

Risk Assessment reference:	014 rev B		Activity:	Deep Drainage		
Work Area / Location:	Site Wide					
Name of assessor:	Neil Kirton			Worker Participant:		Hesham Kahlil
Date Assessed	07.05.2024			Review Date		09.11.2024.
Likelihood of Hazardous Event:	1 = Very unlikely	2 = Unlikely	3 = Likely		4 = Very likely	5 = Almost certain
Severity of Consequence:	1 = Minor delay	2 = Minor injury / ill health	3 = Up to 7 day injury / ill health loss		4 = Over 7 day injury / ill health loss	5 = Fatality
Likelihood x Severity = Risk Factor			Risk Rating			
1 – 8 Low	9-15 Medium	16-25 High	1 – 8 = Low		Review at least every 2 years	
			9 – 15 = Medium		Additional controls as reasonably practicable. Review regularly	
			16 – 25 = High		Activity Not Permitted Additional control measures Required	

HAZARD	HAZARDOUS EVENT		Level of Risk Before control measures				RISK CONTROLS (What action is necessary?)	Level of Risk With control measures			
	Who might be harmed?	How might they be harmed? (Most likely outcome NOT worst possible case)	Likelihood (1-5)	Severity of Consequence (1-5)	Risk Factor	Risk Rating (L, M, H)		Likelihood (1-5)	Severity of Consequence (1-5)	Risk Factor	Residual Risk Rating
Mobile Plant and Vehicles	Operatives, Public	Collision, crushing	3	4	12	M	Plant and Vehicles to be always banked –Daily plant checks and maintenance recorded. Exclusion zones in place around mobile plant Segregation between walkways and plant routes, Only trained and competent operatives to operate mobile pant. Site speed limits adhered to	1	4	4	L
Excavations	Operatives	Falling into excavation. Collapse of excavation	4	4	16	H	Excavations to be fenced off using crowd barriers or Herras Daily excavation inspections. Strictly no entering an excavation unless the sides are stepped with adequate access and egress (steps or tied ladder)	2	4	8	L
Falls on level	Operatives	Tripping over material or uneven ground	4	3	12	M	Housekeeping and leveling off of work area Bandings to be placed directly in skips Operatives to use site walkways, Any openings in the slab must be barriered off at all times or covered with ply	2	3	6	L
Dust	Operatives, Public	Breathing dust	4	3	12	M	Dust suppression with any cutting / hoover with circ saws and grinders, Cutting Tent / Zone set up Dampening down of dry stone if required. Face fit tested operatives and FFP3 masks used.	1	1	1	L
Environmental fuel spillage	Operatives, Public	Spillages	3	4	12	M	Drip trays, nappies and spill kits with all plant and bowsers, refueling method statement.	2	1	2	L

Risk Assessment

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Enviro Concrete	Public	Concrete contamination	3	3	9	M	Concrete wash out skip used. Visqueen to prevent spillages, Tidiness following pours	2	1	2	L
HAVs	Operatives	Damage to nerves / white finger	3	3	9	M	HAVs awareness and monitoring and control sheets completed daily	1	3	3	L
Manual Handling	Operatives	Strain Injury	4	3	12	M	Excavator to lift all concrete items Manual handling training All operatives fit and well and to report and injuries prior to works	1	2	2	L
COSHH materials	Operatives	Concrete (irritant) Fuel (Fire/ environment)	3	3	9	M	Operatives to read and understand the COSHH for each substance used Wearing of correct PPE COSHH storage cage for fuel	1	2	2	L
Fall of Materials	Operatives	Materials falling into excavation hitting operatives	3	4	12	M	Materials stored away from excavation Operatives to stay out of excavation until excavator has lowered materials below shoulder height	1	2	2	L
Noise	Operatives	Hearing Damage	4	4	16	H	Ear defenders to be worn when working close to pecker on excavator. Ear defenders worn as PPE when using Petrol / mechanical tools Ear defenders worn while driving piles	1	1	1	L
Hot Works	Operatives, Public	Fire / Burns	2	3	6	L	Cutting mesh to be done in secluded area away from flammable materials Hot works permit system	1	1	1	L
Buried Services	Operatives	Cable Strike Electrocution Gas / Explosion	4	5	15	H	Use of VAC Excavation around suspected services Permit to Excavate System in Place, CAT scan area prior to excavation, Trial Holes, method statement for exposing buried services No mechanical excavation within 500mm of known or detected services.	1	5	5	L
Hygiene	E,O	Disease and Contamination	3	4	12	M	Maximum use to be made of all waste disposable facilities. All work areas to be cleared on completion of work daily. All welfare facilities to be kept in a clean and tidy condition. Appropriate PPE to be used at all times (long gloves all skin covered). Personnel hygiene Wash hands at all times before eating, drinking or smoking Hot water to be available at all times Extra care with live drains	1	2	2	L

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Traces of Asbestos within the ground	Operatives	Cross contamination	3	4	12	M	Operatives in direct contact with the material will wear paper suits, / wet suits, wellies, and half face masks. At the end of works including prior to breaks and entering the welfare area, the PPE will be cleaned down using the jetwash at the container. No cross contamination of muck into the welfare or office area. Operatives will then remove the PPE and store at the designated area provided at the container. Operatives to take extra care cleaning hands and face prior to eating or leaving site. Any damaged PPE or PPE that cannot be cleaned to be replaced before returning to site. Muck being transported will be loaded onto the dumper via the excavator. If the excavated material is dry, we will dampen down with the jetwash. Dumper will only be half filled when transporting hazardous muck to further avoid spillage. Muck storage areas will be fenced off and covered over with visqueen at the end of each shift or during rain. At the end of each shift, all plant will be decontaminated with the jet wash. Work Area will be dampened down and cleaned at the end of each shift or as required.	2	4	8	L
Traces of Asbestos within the ground	Operatives	Breathing in Asbestos	2	5	10	M	Air testing to be carried out by Main Contractor A watching brief, with asbestos awareness training will be in attendance with excavation works to look out for any visible amounts of asbestos. If any visible amounts are found, works will be stopped until they can be removed safely by a specialist contractor Muck being transported will be loaded onto the dumper via the excavator. If the excavated material is dry, we will dampen down with the jetwash Muck storage areas will be fenced off and covered over with visqueen at the end of each shift or during rain. At the end of each shift, all plant will be decontaminated with the jet wash. Work Area will be dampened down and cleaned at the end of each shift or as required.	1	5	5	L
Lifting / Fall of material	Operatives	Crushing	3	5	15	M	Trained Slingers on lifting operations Lifting plan and SWL adhered too Certified Lifting accessories (6 monthly) Weekly lifting accessory inspections	1	5	5	L

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Wind / Materials	All	Materials Blowing	2	4	8	L	All Sheeting and Voidform to be weighted down with Herras Blocks or paving as laid	1	4	4	L
Joinery Works and Tools	Operatives	Injuries using tools	3	3	9	M	Operatives deemed to be competent and familiar with their tools	2	3	6	L
Collapse Of Excavations and existing Structures	Site Operatives Plant Operators	Fatality Major Injury	5	5	25	H	- Ground conditions to be assessed before works commence - Temporary works drawings to be carried out and approved for any trench box, sheet piling works. - Do not park or travel plant close to edge of excavation, barriers and stop blocks installed at minimum 1m from edge of excavation - Stockpiled materials to be kept away from excavations so it does not create a surcharge. Any live surcharges from adjacent structures or vehicle routes to be taken into account in the design. - Structural engineers to provide loading for any existing structures/vehicle routes so it can be allowed for in design - Excavations to be visually checked at the start of each day and logged weekly. - Pumps to be available to prevent water from destabilizing any temporary works structure or sides of excavations, if heavy rain occurs the area is to be monitored regularly. - Excavations to be installed so batter is at safe angle of repose, nominally 45 degrees, or steps incorporated into the sides, size of step dependent on ground type, where it is loose ground generally choose battered scenario.	1	5	5	L
Access and Egress	Site Operatives Other Site users	Minor Injury	3	4	12	M	- Safe access installed into all excavations - Primary method of access is to install universal excavation steps with handrails, ensuring steps are secured and wont slip/move. - Steps can be formed into the sides of the excavation were universal steps are not practical to install, ensure steps are firm and free of loose materials, use concrete blinding if ground is loose. - Handrail to be installed to the formed steps - Access into cofferdams in excavation stage to be via safe ladder access platforms and a tied ladder, were access is tight a secure ladder can be used with a gated access. - Trench boxes to use safe ladder access platforms incorporated into trench box system. - Lighting to be provided where required to all access and egress areas.	1	4	4	L

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Confined space entry works	Operatives entering confined spaces	fatality	4	5	20	H	- Fully trained, certified and competent persons to carry out confined space works in accordance with their training. - If works are high risk, then operatives to have additional High Risk confined spaces training. A separate RA to be completed for these works. - Top man to be present at all times with confined space works. - Confined space permit obtained before works commence. - Air monitoring to be undertaken using a calibrated/certified 4 in 1 gas detectors, confined space should be left for 10 minutes to ventilate before starting gas monitoring. - Gas monitors should always be or near the operative working in the confined space. - A calibrate/certified 10-minute escape kit to be used and kept down in the confined space with operative. - Any works entering manholes should be done via a tripod, winch and harness, all apparatus to be calibrated and certified and used in accordance with manufacturers guidance. Area should be barriered off and manhole lid opening should have temporary protection when lid is removed and operatives are not working. - Good access will be in place provided, (see access and egress) - Ensure plant engines are not kept running when close to tops of excavations to prevent Co2 from entering excavations. - When breaking into live sewers, Confined space procedures to be adhered to. - Were possible eliminate the need to enter confined space, look for alternative methods, when building manholes these could have benching installed with only the 1st ring installed on no biscuit to assist with ventilation and more working space. Also consider removing biscuit or rings when requiring to enter manhole after it is built where practicable. - No smoking or use of any other sources of ignition to be used within a confined space. - For any cutting, dust must be monitored as per RAMs with full suppression used	1	5	5	L

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Adverse Weather	Operatives working in excavations Plant operators	Major injury	3	4	12	M	- Pumps to be set up to prevent water from destabilizing the temporary works structure and sides of the excavations, if heavy rain occurs then monitory to be done regularly to check stability. Also monitor water levels in trench and if pumps cannot cope then operatives are to cease works - If a continued dry period of weather occurs the temporary works and excavations to be monitored for signs of ground dehydration. - If conditions are windy ensure all loose materials are secure	2	4	8	L
Unauthorized entry into excavations Falls from height	Other site users Public	Major injury	2	4	8	M	- Excavations to be barriered of with warning signage erected - Deep excavations to have Heras fencing erected and clipped together or scaffold handrail installed around the work area. - Trench boxes to have handrails installed to the top of the box or the box is to be left 1m above ground level - Sheet piles to be left 1m above ground level where possible or handrail system fitted to the top of the sheet piles.	2	4	8	M
Collapse of persons Rescue plan	Operatives within excavation	Fatality Major injury	2	4	8	M	- When working in trench boxes, sheet piled areas trenches operative in the trench to wear a harness with a fixed length lanyard/inertia reel connected to the top of the shoring system, the lanyard is to be long enough for the operative to work but incase of an emergency or collapse due to asphyxiation an excavator can connect to the operative's lanyard without the need to enter the excavation. If practicable The davit arm system could also be used which connects to the operative fixed lanyard to winch the persons out. If the operative suffers a fall or break and it is safe to enter the excavation, then the top man to call for assistance, IP to be made comfortable and can then be brought out using the machine or davit to the harness or rescue stretcher using the crane excavator. - Ensure clear route for emergency services - Shallower trenches will have steps into excavations for emergency services to access and reach IP. - Operatives working in manholes to have a rescue tripod, winch and harness with top man in attendance at all times.	1	4	4	L

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Working Inside manholes	Confined space operatives Other site operatives	Major Injury Asphyxiation	3	5	15	M	- Where possible bench manholes and any other associated works when the first ring is only installed with no biscuit which ensures better access, ventilation and working space. - Operatives to never be directly under materials which are being lowered into manhole, if chamber is large enough ensure they are stood to one side, good communication with top man. - Ensure materials that are lowered into manhole are adequately secured. - Always ensure when manhole lids are removed that they are temporarily covered or lid replaced when operatives are not in work area. - Ensure sufficient lighting to carry out the works	1	5	5	L
Leptospirosis Ground contamination	Site operatives	Flu like symptoms	3	4	12	M	- Ensure good welfare facilities available with clean hot water. - Barrier creams available - Operatives to ensure good hygiene and wash before eating, drinking, smoking and leaving site - Ensure PPE is provided and there are enough replacements for changing dirty items - Where Practicable disinfectant areas before works commence - If a cut or abrasion occurs, remove PPE and wash immediately, tend to cut/abrasion and replace PPE. - Keep any open sores out of the water or wear Impervious PPE. - If Flu like symptoms occur, seek medical attention, if leptospirosis is contracted then inform your employer.	1	4	4	L