April 4, 2025

Sweet Projects
Union Park
Hayes
UB34QQ

RE: Land at Bulls Bridge Industrial Estate North Hyde Gardens Hayes – SuDS Verification Information

To Whom It May Concern,

HDR have been requested to draft a verification statement of the current design strategy and collate relevant SuDS details, as-built information, and certifications of manufacturers.

The following design information can be verified by HDR as compliant with the original planning application and documentation. This information was part of the design package provided to the contractor.

Block 2

- HDR-0472-SWS-BG-DR-C-520210 Rev P18
- HDR-0472-SWS-BG-DR-C-520211 Rev P16
- HDR-0472-SWS-BG-DR-C-520212 Rev P10
- HDR-0472-SWS-BG-DR-C-520213 Rev P13
- HDR-0472-SWS-BG-DR-C-520215 Rev P01
- HDR-0472-SWS-BG-DR-C-520501 Rev P02
- HDR-0472-SWS-BG-DR-C-520502 Rev P02
- HDR-0472-SWS-BG-DR-C-520503 Rev P04
- HDR-0472-SWS-BG-DR-C-520504 Rev P03
- HDR-0472-SWS-BG-DR-C-520505 Rev P02
- HDR-0472-SWS-BG-SCH-C-520010 Rev P17
- HDR-0472-SWS-BG-SCH-C-520020 Rev P17

The above information has been appended to this letter.

The following information was provided by Sweet Projects as additional supporting information.

HDR Consulting Limited. Company Reg No: 26943273. Incorporated in: England & Wales.
Registered address: 240 Blackfriars Road, London, SE1 8NW, United Kingdom
+44 (0) 20 7429 3333

- TOU-0472-UP2-BG-TS-X-0038_Rain Water Harvesting Tanks
- TOU-0472-UP2-BG-TS-X-0039_ Kingspan Klargester NSFP006 Full Retention Separator
- TOU-0472-UP2-BG-TS-X-0040_ Kingspan Klargester Class II Forecourt Separator

The above information has been appended to this letter.

Yours faithfully,
HDR Consulting Limited

Ulrich Groenewald *MIET CEng*
Associate Director

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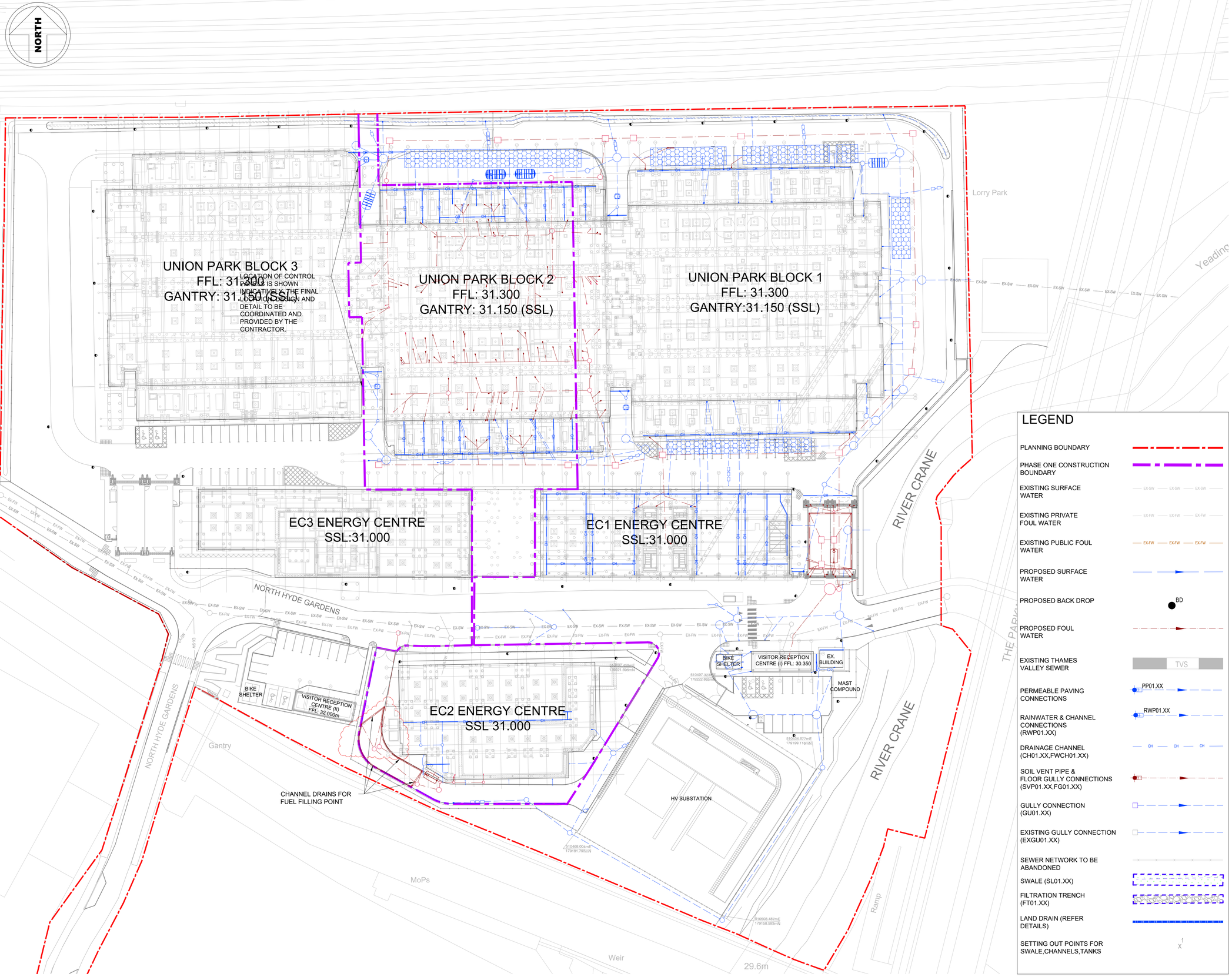

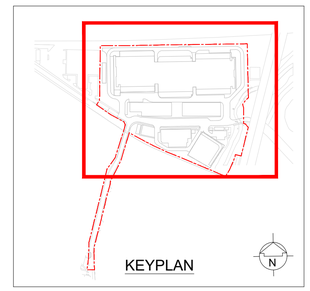

LEGEND

- PLANNING BOUNDARY
- PHASE ONE CONSTRUCTION BOUNDARY
- EXISTING SURFACE WATER (EX-SW)
- EXISTING PRIVATE FOUL WATER (EX-FW)
- EXISTING PUBLIC FOUL WATER (EX-FW)
- PROPOSED SURFACE WATER
- PROPOSED BACK DROP (BD)
- PROPOSED FOUL WATER
- EXISTING THAMES VALLEY SEWER (TVS)
- PERMEABLE PAVING CONNECTIONS (PP01.XX)
- RAINWATER & CHANNEL CONNECTIONS (RWP01.XX)
- DRAINAGE CHANNEL (CH01.XX,FWCH01.XX)
- SOIL VENT PIPE & FLOOR GULLY CONNECTIONS (SVP01.XX,FG01.XX)
- GULLY CONNECTION (GU01.XX)
- EXISTING GULLY CONNECTION (EXGU01.XX)
- SEWER NETWORK TO BE ABANDONED
- SWALE (SL01.XX)
- FILTRATION TRENCH (FT01.XX)
- LAND DRAIN (REFER DETAILS)
- SETTING OUT POINTS FOR SWALE,CHANNELS,TANKS (1 X)

Rev	Description	Date
P18	STAGE 4 ISSUE	08/11/24
P17	STAGE 4 ISSUE	23/07/24
P16	STAGE 4 ISSUE	27/03/24
P15	STAGE 4 ISSUE	19/03/24
P14	STAGE 4 ISSUE	15/03/24
P13	STAGE 4 ISSUE	05/03/24
P12	STAGE 4 ISSUE	20/12/23
P11	STAGE 4 ISSUE	25/08/23
P10	STAGE 4 ISSUE	28/07/23
P09	STAGE 4 ISSUE	14/07/23
P08	STAGE 4 ISSUE	04/05/23
P07	STAGE 4 ISSUE	24/02/23
P06	STAGE 4 ISSUE	15/02/23
P05	STAGE 3 ISSUE	16/12/22
P04	STAGE 3 ISSUE	11/11/22
P03	EARLY WORKS ISSUE	28/10/22
P02	EARLY WORKS ISSUE	07/10/22
P01	EARLY WORKS ISSUE	30/09/22

Drawing Status: FOR APPROVAL — Suitability: S4

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UNITED KINGDOM
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e: info@hdrinc.com
w: www.hdrinc.com

Client: SWEET PROJECTS

Architect: NWA

Project: UNION PARK

Title: BLOCK 2
BELOW FINISHED GROUND LEVEL
FOUL AND SURFACE DRAINAGE
SITE LAYOUT

HDR Project Number: 10274713			
Cad File Name: HDR-0472-SWS-BG-DR-C-520210			
Drawn: DE/AC	Chkd/Appd: JJ/UG	Date: 08/11/24	Scale @ A1: 1:500
Drawing Number: HDR-0472-SWS-BG-DR-C-520210			Revision: P18

File: \\LHRPI-FS011\DATA\REGIONAL WORKS DRIVE\PURLEY\17000\PUR17155 SWEET GROUP UNION STG 4+\6.0 CAD BIM\6.2 WIP\6.2.2 CAD\5 CIVIL\DRAWINGS\BLOCK 2\HDR-0472-SWS-BG-DR-C-520210.DWG User: Jensen, Jason Sheet: Layout1 Plot Date: 08/11/2024 10:44:25

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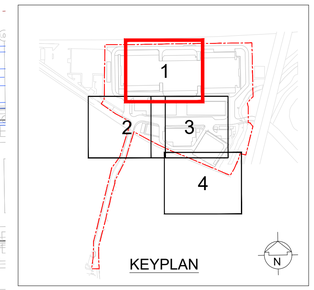
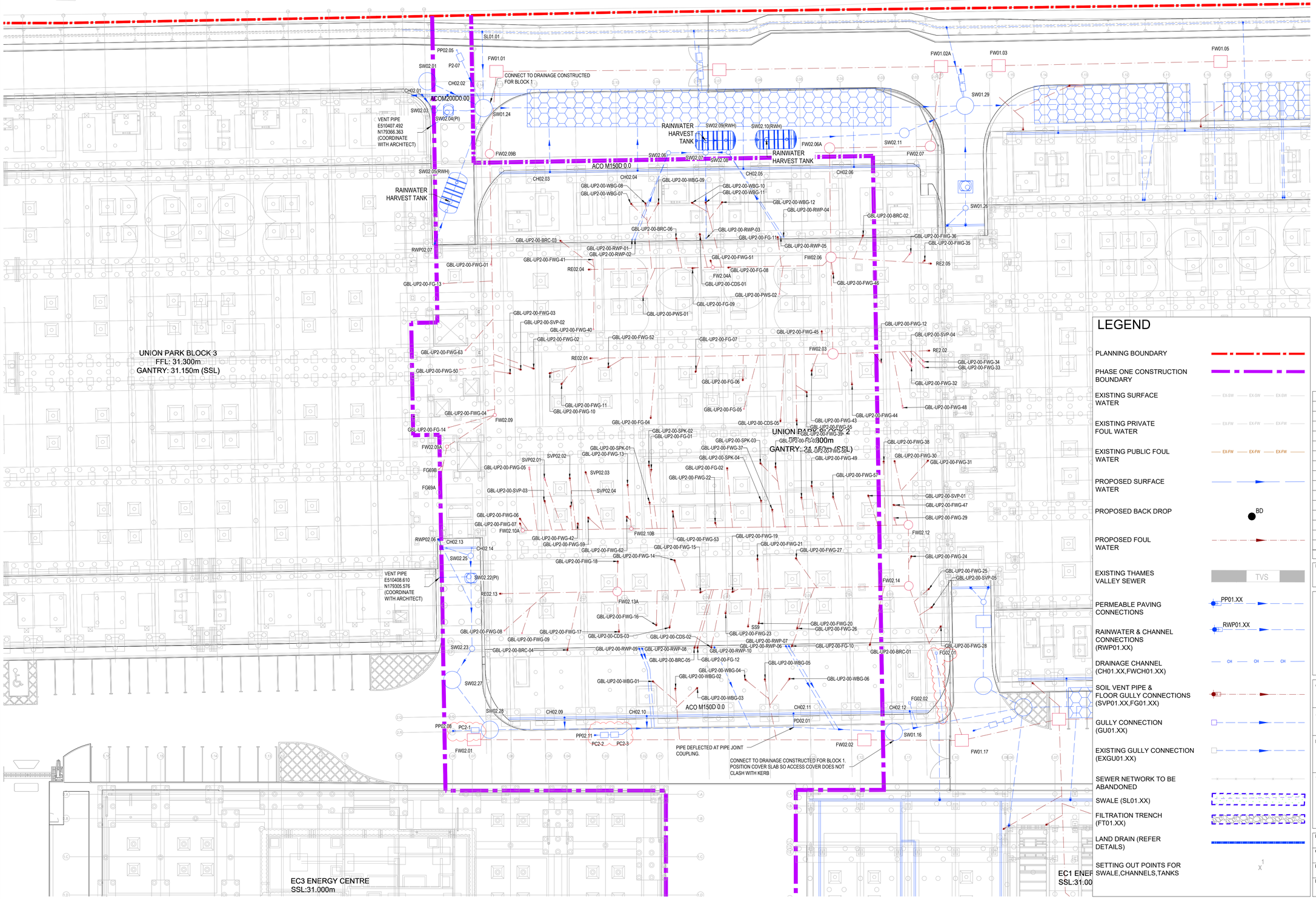


KEYPLAN



LEGEND

- PLANNING BOUNDARY
- PHASE ONE CONSTRUCTION BOUNDARY
- EXISTING SURFACE WATER (EX-SW)
- EXISTING PRIVATE FOUL WATER (EX-FW)
- EXISTING PUBLIC FOUL WATER (EX-FW)
- PROPOSED SURFACE WATER
- PROPOSED BACK DROP (BD)
- PROPOSED FOUL WATER
- EXISTING THAMES VALLEY SEWER (TVS)
- PERMEABLE PAVING CONNECTIONS (PP01.XX)
- RAINWATER & CHANNEL CONNECTIONS (RWP01.XX)
- DRAINAGE CHANNEL (CH01.XX,FWCH01.XX) (CH)
- SOIL VENT PIPE & FLOOR GULLY CONNECTIONS (SVP01.XX,FG01.XX)
- GULLY CONNECTION (GU01.XX)
- EXISTING GULLY CONNECTION (EXGU01.XX)
- SEWER NETWORK TO BE ABANDONED
- SWALE (SL01.XX)
- FILTRATION TRENCH (FT01.XX)
- LAND DRAIN (REFER DETAILS)
- SETTING OUT POINTS FOR SWALE,CHANNELS,TANKS (X1)

Rev	Description	Date
P16	STAGE 4 ISSUE	27/03/24
P15	STAGE 4 ISSUE	19/03/24
P14	STAGE 4 ISSUE	15/03/24
P13	STAGE 4 ISSUE	05/03/24
P12	STAGE 4 ISSUE	24/01/24
P11	STAGE 4 ISSUE	25/10/23
P10	STAGE 4 ISSUE	25/08/23
P09	STAGE 4 ISSUE	14/07/23
P08	STAGE 4 ISSUE	04/05/23
P07	STAGE 4 ISSUE	24/02/23
P06	STAGE 4 ISSUE	15/02/23
P05	STAGE 3 ISSUE	16/12/22
P04	STAGE 3 ISSUE	11/11/22
P03	EARLY WORKS ISSUE	28/10/22
P02	EARLY WORKS ISSUE	07/10/22
P01	EARLY WORKS ISSUE	30/09/22

Drawing Status: FOR APPROVAL — Suitability: S4

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Client: SWEET PROJECTS

Architect: NWA

Project: UNION PARK

Title: BLOCK 2
BELOW FINISHED GROUND LEVEL
FOUL AND SURFACE DRAINAGE
LAYOUT SHEET 1 OF 4

HDR Project Number: 10274713			
Cad File Name: HDR-0472-SWS-BG-DR-C-520211			
Drawn: RJJ	Chkd/Appd: JJ/UG	Date: 27/03/24	Scale @ A1: 1:200
Drawing Number: HDR-0472-SWS-BG-DR-C-520211			Revision: P16

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4. REFER TO GENERAL NOTES DRAWING HDR-0472-SWS-XX-TN-C-000025

EC3 ENERGY CENTRE
SSL:31.000

NORTH HYDE GARDENS

BIKE SHELTER

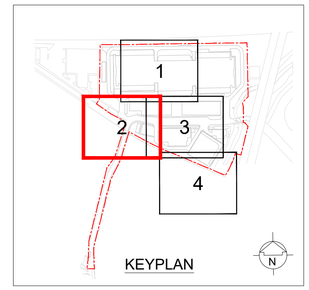
VISITOR RECEPTION CENTRE (II) FFL: 32.000m

Gantry

NORTH HYDE GARDENS

EC2 EN
S

SW TO DISCHARGE TO PERMEABLE COURSE GRADE AGGREGATE LAYER OF POROUS PAVING



LEGEND

- PLANNING BOUNDARY
- PHASE ONE CONSTRUCTION BOUNDARY
- EXISTING SURFACE WATER (EX-SW)
- EXISTING PRIVATE FOUL WATER (EX-FW)
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- LAND DRAIN (REFER DETAILS)
- SETTING OUT POINTS FOR SWALE,CHANNELS,TANKS (1 X)

Rev	Description	Date
P10	STAGE 4 ISSUE	08/11/24
P09	STAGE 4 ISSUE	14/06/24
P08	STAGE 4 ISSUE	27/03/24
P07	STAGE 4 ISSUE	05/03/24
P06	STAGE 4 ISSUE	20/12/23
P05	STAGE 4 ISSUE	25/10/23
P04	STAGE 4 ISSUE	04/05/23
P03	STAGE 4 ISSUE	24/02/23
P02	STAGE 4 ISSUE	15/02/23
P01	STAGE 3 ISSUE	16/12/22

Drawing Status: FOR APPROVAL — Suitability: S4

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Client: SWEET PROJECTS

Architect: NWA

Project: UNION PARK

Title: BLOCK 2
BELOW FINISHED GROUND LEVEL
FOUL AND SURFACE DRAINAGE
LAYOUT, SHEET 2 OF 4

HDR Project Number: 10274713			
Cad File Name: HDR-0472-SWS-BG-DR-C-520212			
Drawn: RJJ	Chkd/Appd: JJ/UG	Date: 08/11/24	Scale @ A1: 1:200
Drawing Number: HDR-0472-SWS-BG-DR-C-520212			Revision: P10

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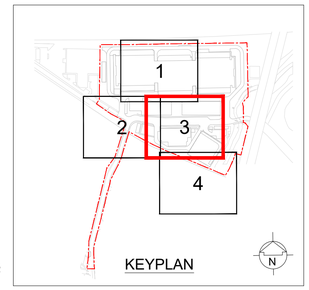

KEYPLAN

EC1 ENERGY CENTRE
SSL:31.000

EC2 ENERGY CENTRE
SSL 31.000

HV SUBSTATION

BIKE SHELTER

VISITOR RECEPTI
CENTRE (I) FFL: 30

M150D 0.0 ACO CHANNEL

CONNECT TO DRAINAGE CONSTRUCTED FOR BLOCK 1.
POSITION COVER SLAB SO ACCESS COVER DOES NOT CLASH WITH KERB

REFER DRAWING HDR-0472-SWS-BG-DR-C-520515 FOR CHANNEL DETAIL

VENT PIPE
E510428.881
N179198.322
COORDINATE WITH ARCHITECT

SW TO DISCHARGE TO PERMEABLE COURSE GRADE AGGREGATE LAYER OF POROUS PAVING

LEGEND

- PLANNING BOUNDARY
- PHASE ONE CONSTRUCTION BOUNDARY
- EXISTING SURFACE WATER
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- EXISTING PUBLIC FOUL WATER
- PROPOSED SURFACE WATER
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- SWALE (SL01.XX)
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- LAND DRAIN (REFER DETAILS)
- SETTING OUT POINTS FOR SWALE,CHANNELS,TANKS

Rev	Description	Date
P13	STAGE 4 ISSUE	08/11/24
P12	STAGE 4 ISSUE	23/07/24
P11	STAGE 4 ISSUE	14/06/24
P10	STAGE 4 ISSUE	27/03/24
P09	STAGE 4 ISSUE	15/03/24
P08	STAGE 4 ISSUE	05/03/24
P07	STAGE 4 ISSUE	20/12/23
P06	STAGE 4 ISSUE	25/10/23
P05	STAGE 4 ISSUE	28/07/23
P04	STAGE 4 ISSUE	04/05/23
P03	STAGE 4 ISSUE	24/02/23
P02	STAGE 4 ISSUE	15/02/23
P01	STAGE 3 ISSUE	16/12/22

Drawing Status: FOR APPROVAL
Suitability: S4

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e: info@hdrinc.com
w: www.hdrinc.com

Client: SWEET PROJECTS
Architect: NWA
Project: UNION PARK
Title: BLOCK 2
BELOW FINISHED GROUND LEVEL
FOUL AND SURFACE DRAINAGE
LAYOUT, SHEET 3 OF 4

HDR Project Number: 10274713
Cad File Name: HDR-0472-SWS-BG-DR-C-520213

Drawn:	Chkd/Appd:	Date:	Scale @ A1:
DE/AC	JJ/UG	08/11/24	1:200

Drawing Number: HDR-0472-SWS-BG-DR-C-520213
Revision: P13

File: \\UKRPH-FS01\DATA\REGIONAL WORKS DRVE\PURLEY\17000\PUR17155 SWEET GROUP UNION STG 4+\6.0 CAD BIM\6.2 WIP\6.2.2 CAD\5 CIVIL\DRAWINGS\BLOCK 2\HDR-0472-SWS-BG-DR-C-520213.DWG User: Jensen, Jason Sheet: A1 Plot Date: 08/11/2024 11:02:35

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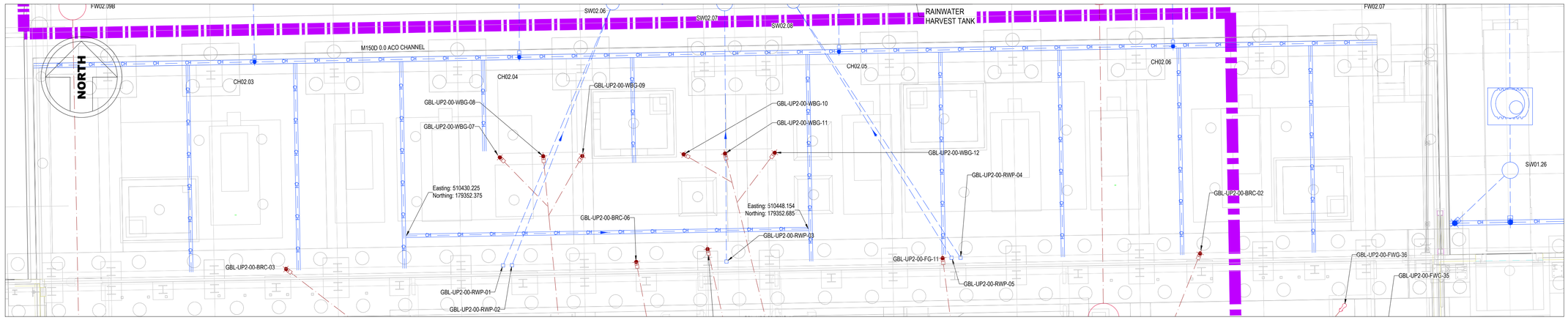
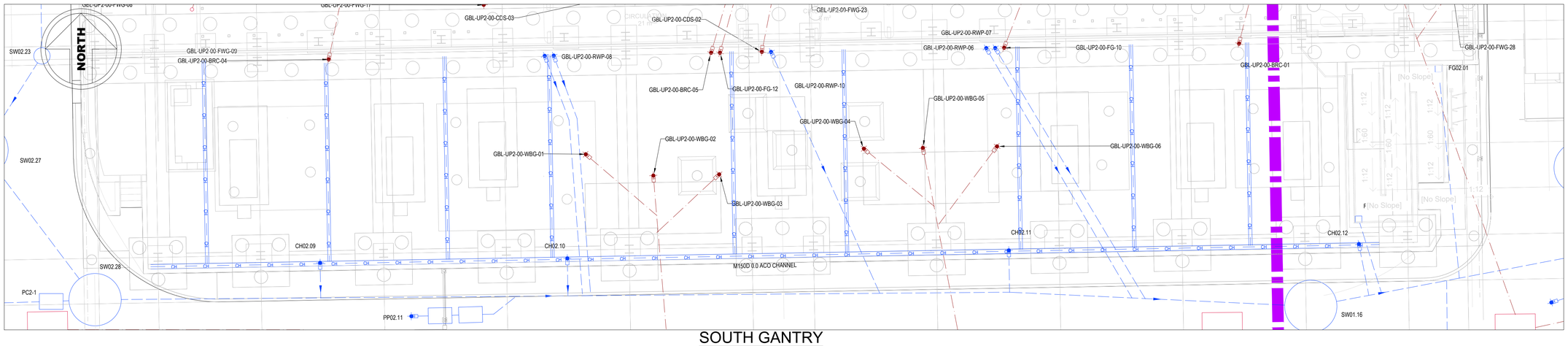


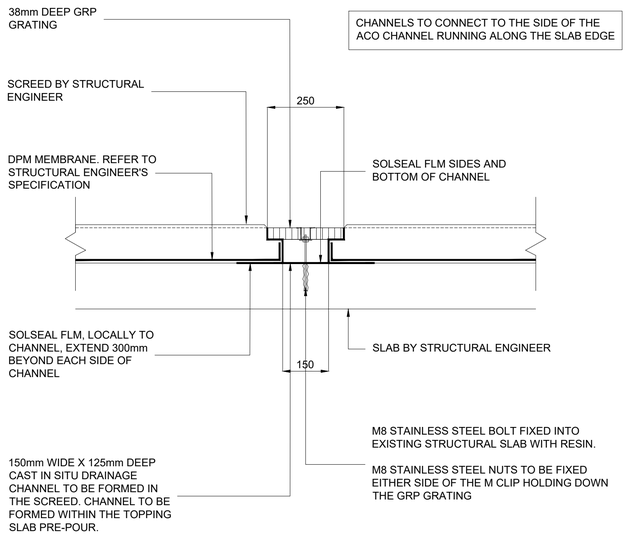
NORTH GANTRY

SCALE 1:100



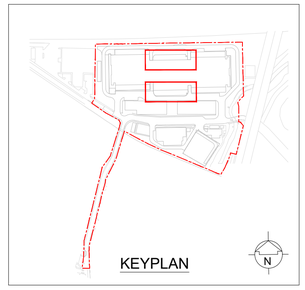
SOUTH GANTRY

SCALE 1:100



DRAINAGE CHANNEL SECTION

SCALE 1:10



LEGEND

- PLANNING BOUNDARY
- PHASE ONE CONSTRUCTION BOUNDARY
- EXISTING SURFACE WATER (EX-SW)
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- RAINWATER & CHANNEL CONNECTIONS (RWP01.XX)
- DRAINAGE CHANNEL (CH01.XX,FWCH01.XX)
- SOIL VENT PIPE & FLOOR GULLY CONNECTIONS (SVP01.XX,FG01.XX)
- GULLY CONNECTION (GU01.XX)

Rev	Description	Date
P01	STAGE 4 ISSUE	14/05/24

Drawing Status: FOR APPROVAL — Suitability: S4

4TH FLOOR
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Client: SWEET PROJECTS

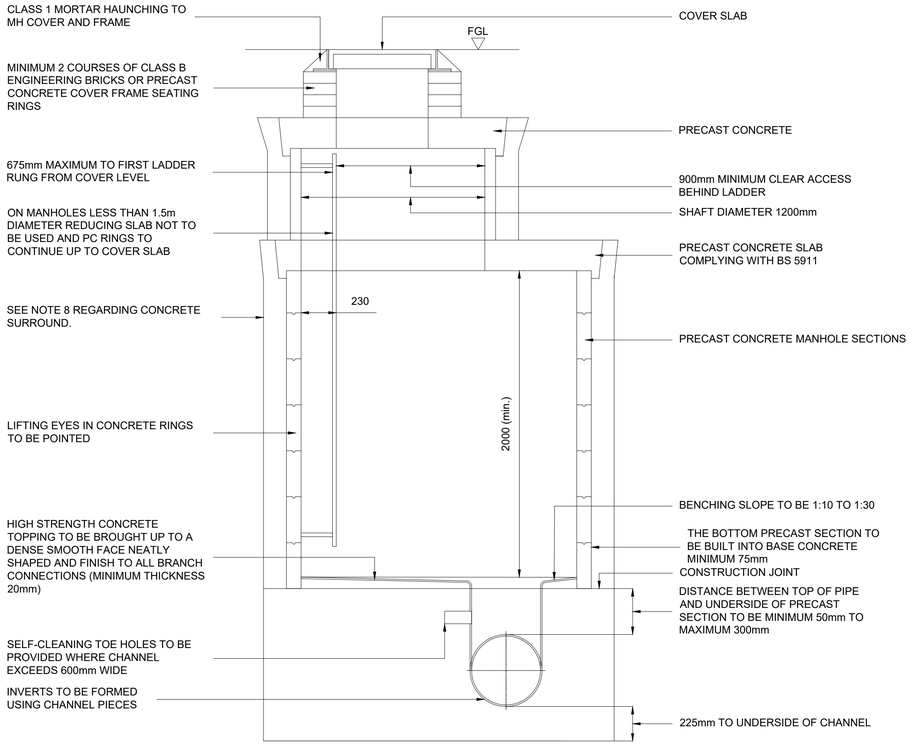
Architect: NWA

Project: UNION PARK

Title: BLOCK 2
BELOW FINISHED GROUND LEVEL
GANTRY DRAINAGE LAYOUT

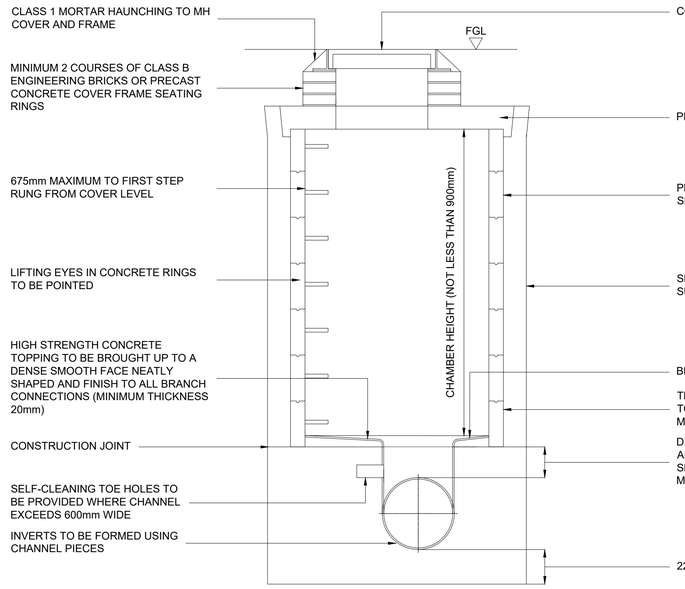
HDR Project Number:	Cad File Name:		
10274713	HDR-0472-SWS-BG-DR-C-520215		
Drawn: AC	Chkd/Appd: JJ/UG	Date: 14/05/24	Scale @ A1: 1:100
Drawing Number: HDR-0472-SWS-BG-DR-C-520215			Revision: P01

File: \\LHRPI-FS01\DATA\REGIONAL WORKS DRIVE\PURLEY\17000\PUR17155 SWEETT GROUP UNION STG 4+\6.0 CAD BIM\6.2 WIP\6.2.2 CAD\5 CIVIL\DRAWINGS\BLOCK 2\HDR-0472-SWS-BG-DR-C-520215.DWG User: Jensen, Joson Sheet: Layout1 Plot Date: 14/05/2024 09:34:40



DEPTH FROM COVER LEVEL TO SOFFIT OF PIPES 3m TO 6m WITH LADDER AND REDUCING SLAB
RIGID MATERIAL CONSTRUCTION WITHOUT CONCRETE SURROUND

TYPICAL MANHOLE DETAIL - TYPE A1



DEPTH FROM COVER LEVEL TO SOFFIT OF PIPE 1.5m TO 3m
RIGID MATERIAL CONSTRUCTION WITHOUT CONCRETE SURROUND

TYPICAL MANHOLE DETAIL - TYPE B

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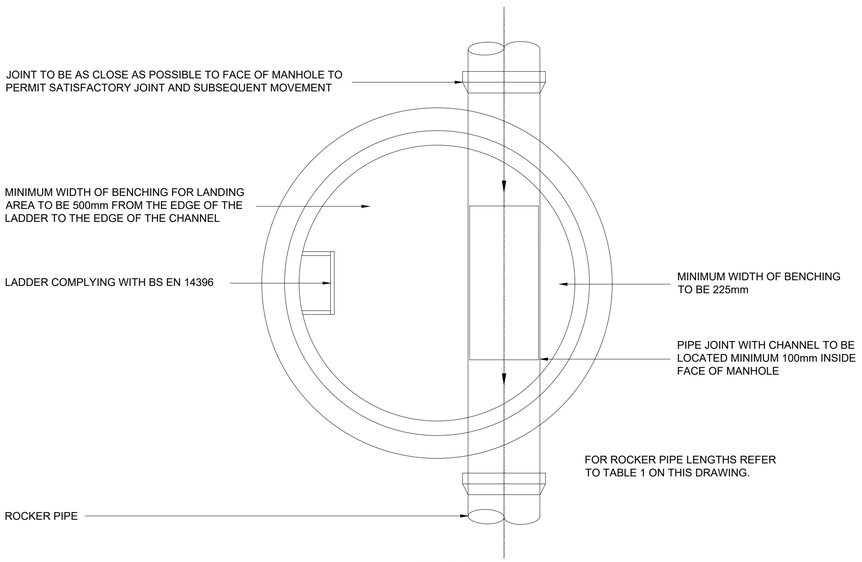
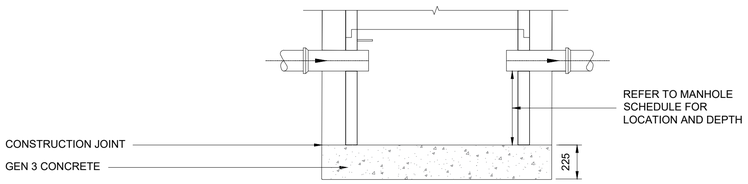


PLAN



SUMP MANHOLE DETAIL

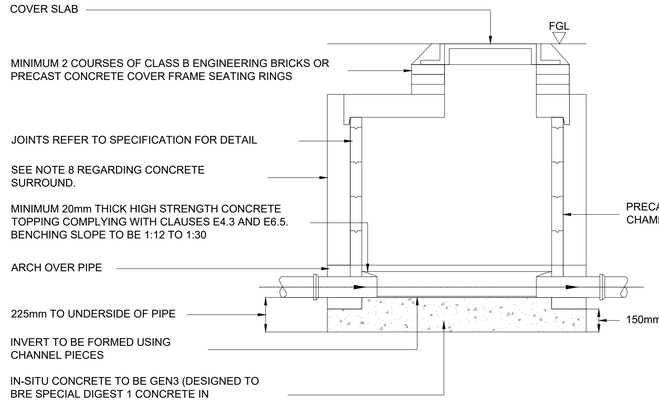
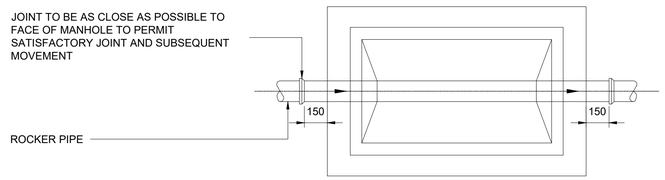


TABLE 1. ROCKER PIPE LENGTHS

PIPE DIA. (mm)	EFFECTIVE LENGTH (m)
150 - 600	0.60
601 - 750	1.00
>750	1.25

(RIGID MATERIAL DETAIL)

RECTANGULAR PRECAST MANHOLE - TYPE 3



WHERE CHAMBERS ARE POSITIONED ON 90° CORNERS, ALWAYS USE THE MAIN CHANNEL BY FITTING 45° BEND ON INLET AND OUTLET

PLAN

Rev	Description	Date
P02	STAGE 4 ISSUE	15/02/23
P01	STAGE 3 ISSUE	16/12/22

Drawing Status: FOR APPROVAL
Suitability: S4

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Client: SWEET PROJECTS
Architect: NWA
Project: UNION PARK
Title: BLOCK 2
BELOW FINISHED GROUND LEVEL
DRAINAGE TYPICAL DETAILS
SHEET 1 OF 5

HDR Project Number: 10274713
Cad File Name: HDR-0472-SWS-BG-DR-C-520501

Drawn:	Chkd/Appd:	Date:	Scale @ A1:
RJ/HA	JJ/UG	15/02/23	AS SHOWN

Drawing Number: HDR-0472-SWS-BG-DR-C-520501
Revision: P02

File: S:\REGIONAL WORKS DRIVE\PURLEY\17000\PUR17155 SWEETT GROUP UNION STG 4+\6.0 CAD BIM\6.2 WIP\6.2.2 CAD\5 CIVIL\DRAWINGS\BLOCK 2\HDR-0472-SWS-BG-DR-C-520501.DWG User: Ahmadi, Hasibullah Sheet: Layout1 Plot Date: 16/02/2023 09:10:54

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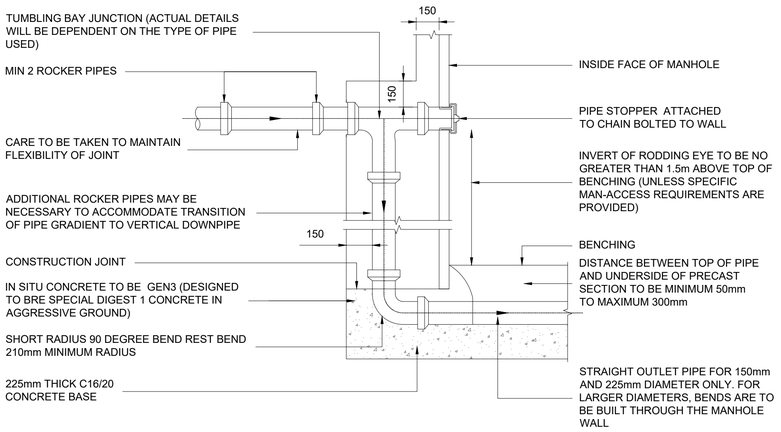
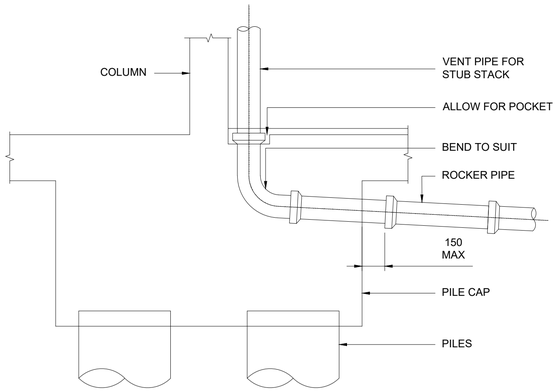
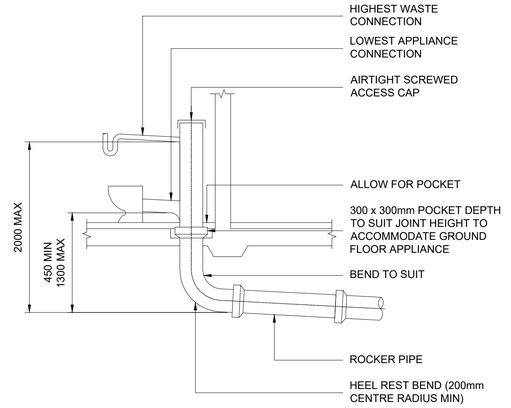


TYPICAL VERTICAL BACKDROP DETAIL

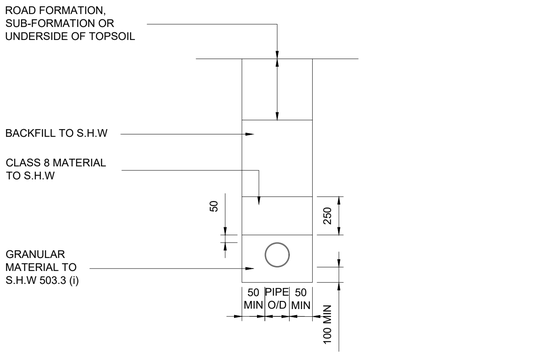


PIPES CROSSING THROUGH PILE CAP



PIPE TO BE LAID IN GROUND OR SUPPORTED AT EACH JOINT IF LAID ABOVE GROUND.

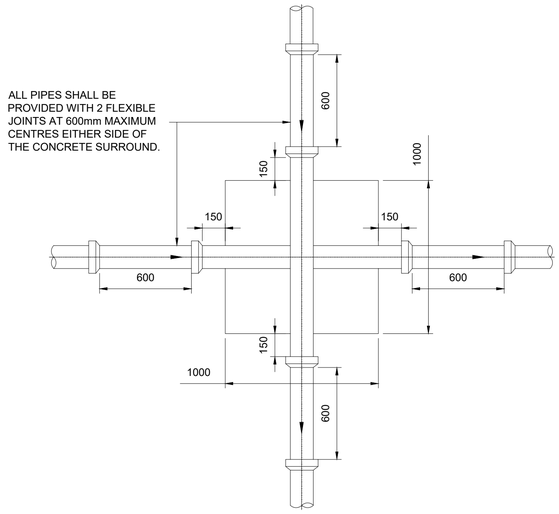
INTERNAL STACK CONNECTIONS



BEDDING BENEATH AND AT THE SIDES OF THE PIPE TO BE WELL COMPACTED. THE FIRST 300mm OF FILL ABOVE THE CROWN OF THE PIPE IS TO BE LIGHTLY TAMPED BY HAND. MECHANICAL COMPACTION MAY BE USED ONLY ABOVE THIS LEVEL. GEOTEXTILES MAY BE USED WHERE DIRECTED OR APPROVED BY THE ENGINEER TO CONTAIN BEDDING MATERIAL IN CERTAIN SOILS E.G. RUNNING SAND IN VERY WET CONDITIONS, WHERE DIRECTED OR APPROVED BY THE ENGINEER A TEMPORARY LAND DRAIN MAY BE LAID WITHIN THE GRANULAR BED.

GRANULAR BEDDING FOR FLEXIBLE PIPES

CLASS S BEDDING



PLAN

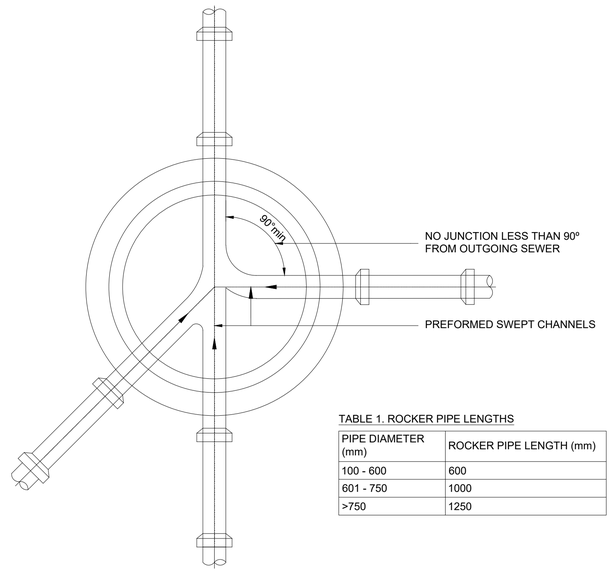


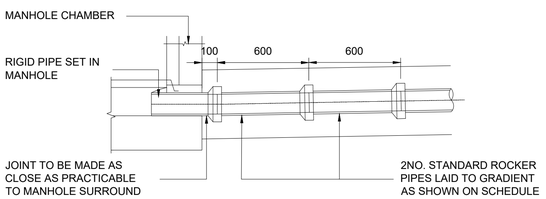
TABLE 1. ROCKER PIPE LENGTHS

PIPE DIAMETER (mm)	ROCKER PIPE LENGTH (mm)
100 - 600	600
601 - 750	1000
>750	1250

PIPES CONNECTIONS TO MANHOLES MUST HAVE A FLEXIBLE JOINT AS CLOSE AS FEASIBLE FROM THE EXTERNAL FACE OF THE STRUCTURE.

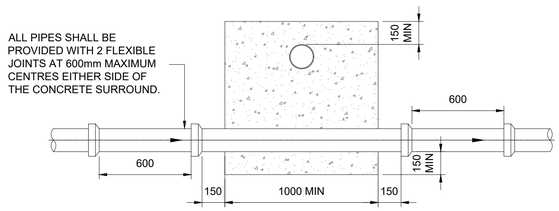
PIPE JUNCTIONS ARRANGEMENT

(NTS)



SUITABLE FOR PIPE SIZES UP TO 600mm INTERNAL DIAMETER

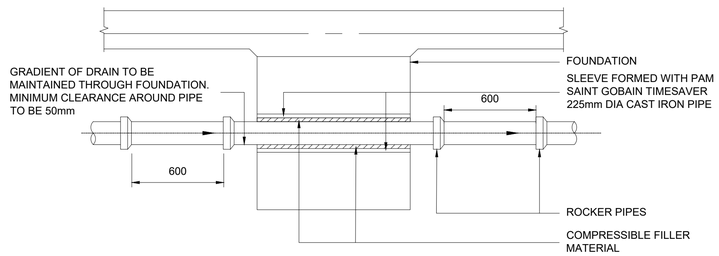
TYPICAL DOUBLE ROCKER PIPE DETAIL



SECTION

CONCRETE SURROUND SHALL BE PROVIDED WHERE THE DISTANCE BETWEEN THE SOFFIT OF THE LOWER DRAIN AND THE BARREL OF THE HIGHEST DRAIN IS LESS THAN 300mm.

PIPE TO PIPE CROSSOVER



DRAIN SLEEVE/DUCT TO BE LOCATED WHOLLY WITHIN THE MIDDLE THIRD OF THE FOUNDATION DEPTH. THE ENGINEER (HDR) IS TO BE ADVISED IF THIS IS NOT POSSIBLE. IN NORMAL SOIL CONDITIONS THE SLEEVE/DUCT IS TO GIVE A 50mm CLEARANCE ALL ROUND THE OUTSIDE OF THE DRAIN PIPE (THIS MAY BE ACHIEVED BY LIGHTLY PACKING THE SPACE WITH COMPRESSIBLE FILLER MATERIAL).

DRAINS THROUGH FOUNDATIONS

Rev	Description	Date
P02	STAGE 4 ISSUE	15/02/23
P01	STAGE 3 ISSUE	16/12/22

Drawing Status: FOR APPROVAL
Suitability: S4

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Client: SWEET PROJECTS

Architect: NWA

Project: UNION PARK

Title: BLOCK 2
BELOW FINISHED GROUND LEVEL
DRAINAGE TYPICAL DETAILS
SHEET 2 OF 5

HDR Project Number: 10274713
Cad File Name: HDR-0472-SWS-BG-DR-C-520502

Drawn:	Chkd/Appd:	Date:	Scale @ A1:
RJ/HA	JJ/UG	15/02/23	1:20

Drawing Number: HDR-0472-SWS-BG-DR-C-520502
Revision: P02

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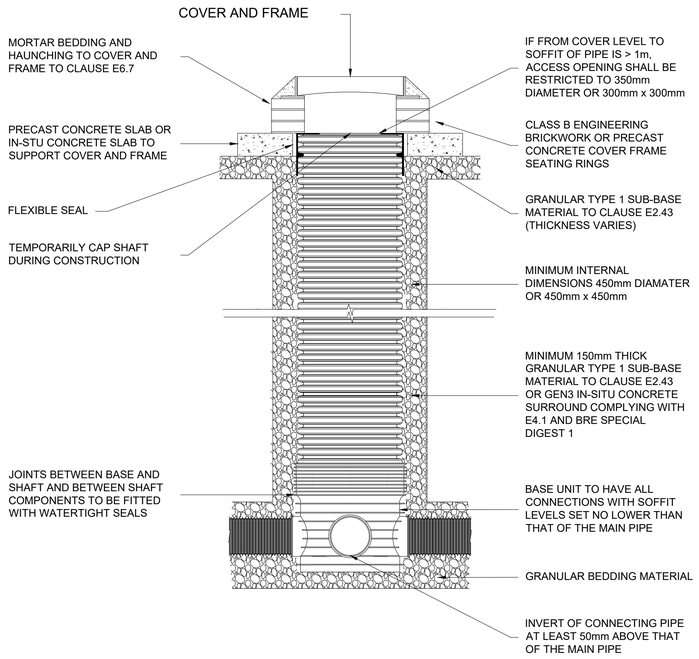
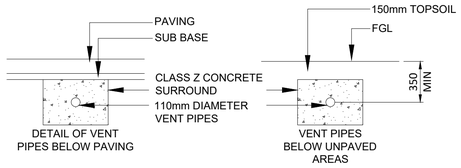


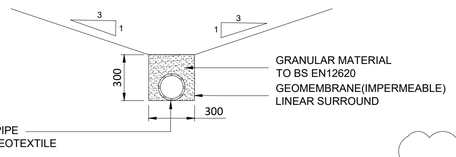
TYPICAL INSPECTION CHAMBER DETAIL - TYPE E

DEPTH FROM COVER LEVEL TO SOFFIT OF PIPE UP TO 3m FLEXIBLE MATERIAL CONSTRUCTION FOR USE IN AREAS SUBJECT TO VEHICLE LOADING



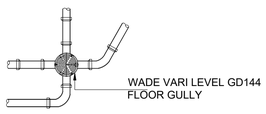
INTERCEPTOR VENT PIPES

(NTS)



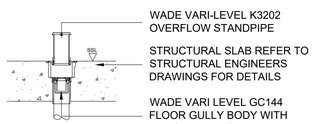
TYPICAL SWALE SECTION

(NTS)



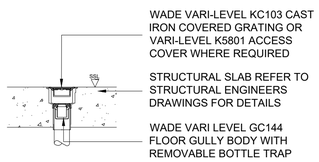
INTERNAL FG-06 FLOOR GULLY PLAN VIEW

CONNECTIONS SHOWN INDICATIVELY AND WILL NEED TO BE SET OUT AND COORDINATED WITH MEP ENGINEER



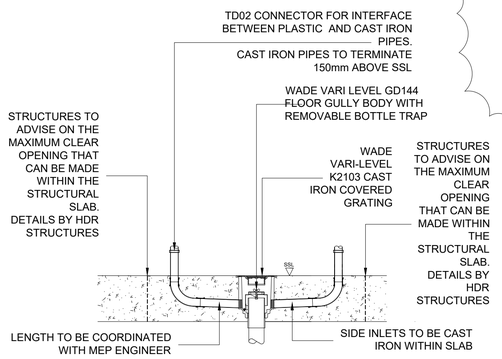
INTERNAL STANDPIPE GULLY

(NTS)



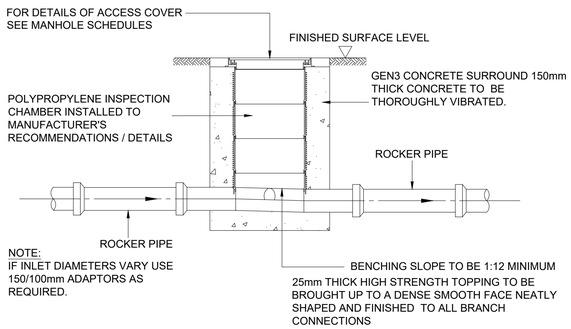
INTERNAL FIRE WATER / FLOOR GULLY

(NTS)

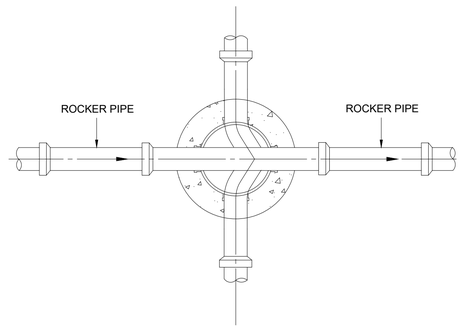


INTERNAL FG-06 FLOOR GULLY - SECTION

(NTS)



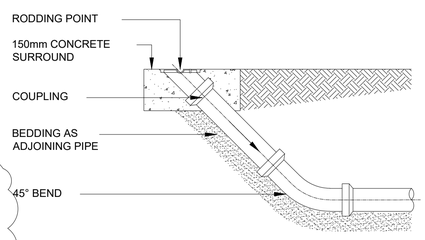
SECTION



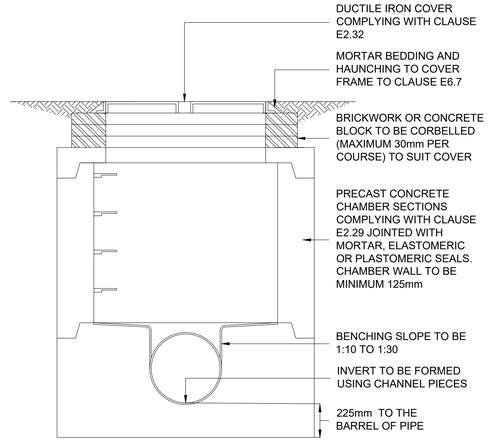
PLAN

POLYPROPYLENE INSPECTION CHAMBER

DEPTH FROM COVER LEVEL TO SOFFIT OF PIPE UP TO 1.2m



RODDING EYE



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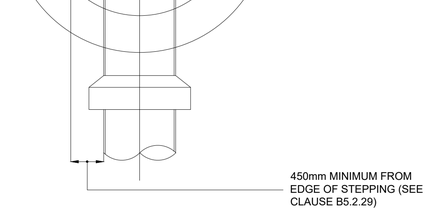
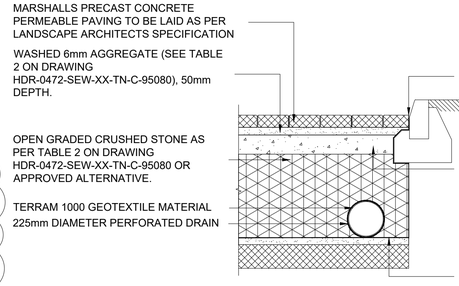


TYPICAL MANHOLE DETAIL - TYPE C

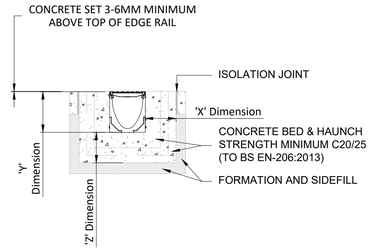
(SCALE 1:20)



LAND DRAIN DETAIL

(NTS)

FOR DETAILED TYPICAL SECTION THROUGH LINED POROUS ROAD PLEASE REFER TO HIGHWAYS CONSTRUCTION DETAILS DRAWING NUMBER HDR-0472-SEW-GL-DR-C-920504



ACO MULTIDRAIN M200D 0.0 IN CONCRETE PAVEMENT

(NTS)

FOR FURTHER DETAILS PLEASE REFER TO THE MANUFACTURER DRAWINGS AND INFORMATION AVAILABLE ON THEIR WEBSITE.

LOAD CLASS		D400
MINIMUM DIMENSIONS (mm)	X	200
	Y	FULL CHANNEL HEIGHT (LESS Y2 WHERE APPLICABLE)
	Z	200

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Rev	Description	Date
P04	STAGE 4 ISSUE	16/02/24
P03	STAGE 4 ISSUE	24/02/23
P02	STAGE 4 ISSUE	15/02/23
P01	STAGE 3 ISSUE	16/12/22

Drawing Status: FOR APPROVAL
Suitability: S4

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Client: SWEET PROJECTS

Architect: NWA

Project: UNION PARK

Title: BLOCK 2
BELOW FINISHED GROUND LEVEL
DRAINAGE TYPICAL DETAILS
SHEET 3 OF 5

HDR Project Number: 10274713

Cad File Name: HDR-0472-SWS-BG-DR-C-520503

Drawn:	Chkd/Appd:	Date:	Scale @ A1:
AC	JJ/UG	16/02/24	AS SHOWN

Drawing Number: HDR-0472-SWS-BG-DR-C-520503
Revision: P04

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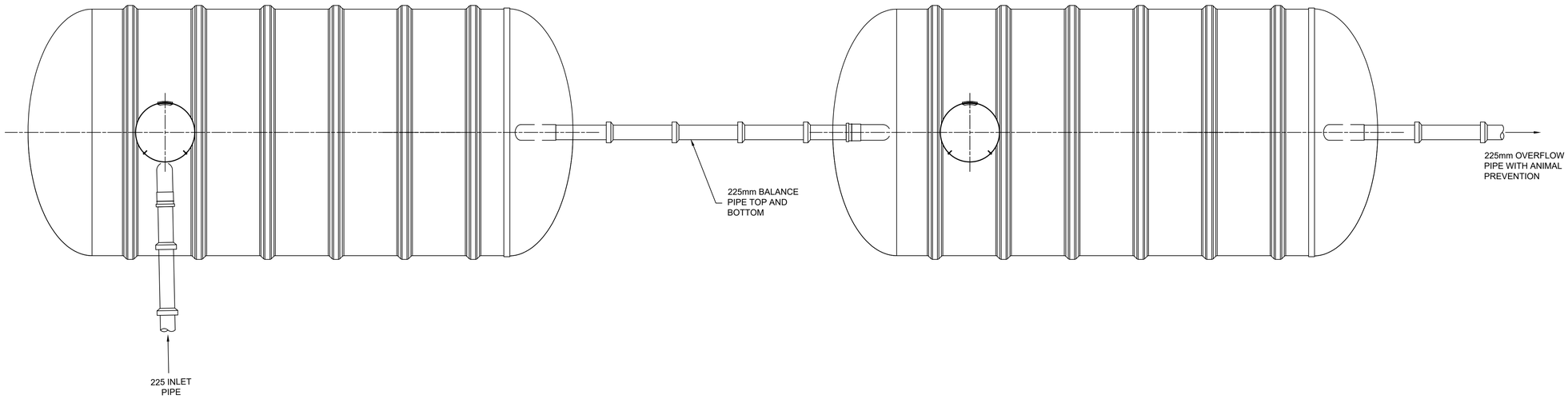
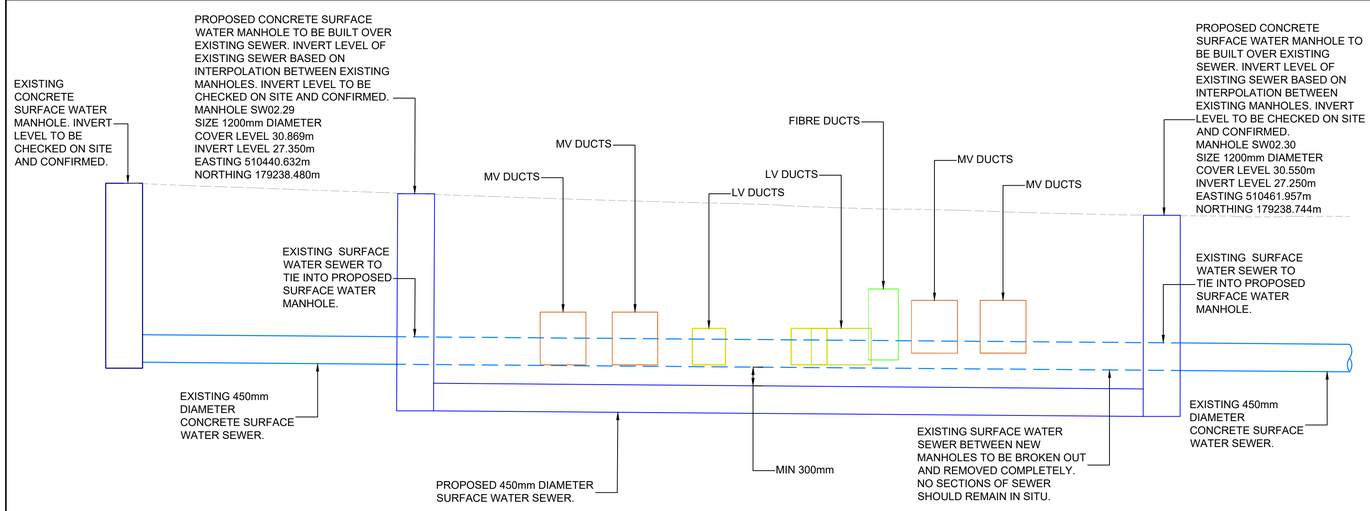
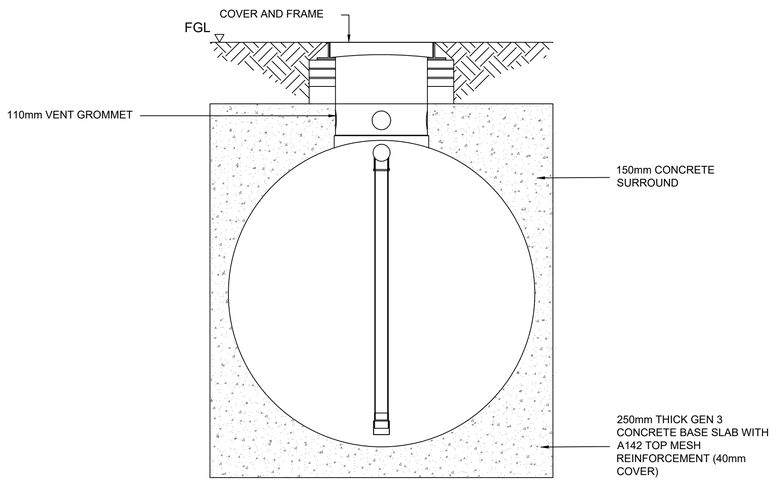




PROPOSED SURFACE WATER INVERTED SIPHON LONG SECTION

SCALE 1:100



END ELEVATION

(NTS)

TWIN RAINWATER HARVESTING TANK NOMINAL CAPACITY 25000 LITRES EACH

(NTS)

Rev	Description	Date
P03	STAGE 4 ISSUE	03/07/24
P02	STAGE 4 ISSUE	15/02/23
P01	STAGE 3 ISSUE	16/12/22

Drawing Status: FOR APPROVAL — Suitability: S4

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Client: SWEET PROJECTS

Architect: NWA

Project: UNION PARK

Title: BLOCK 2
BELOW FINISHED GROUND LEVEL
DRAINAGE TYPICAL DETAILS
SHEET 4 OF 5

HDR Project Number: 10274713

Cad File Name: HDR-0472-SWS-BG-DR-C-520504

Drawn:	Chkd/Appd:	Date:	Scale @ A1:
AC	JJ/UG	03/07/2024	AS SHOWN

Drawing Number: HDR-0472-SWS-BG-DR-C-520504 — Revision: P03

File: \\JHRPI-FS01\DATA\REGIONAL WORKS DRIVE\PURLEY\17000\PUR17155 SWEETT GROUP UNION STG 4+\6.0 CAD BIM\6.2 WIP\6.2.2 CAD\5 CIVIL\DRAWINGS\BLOCK 2\HDR-0472-SWS-BG-DR-C-520504.DWG User: Cimarelli, Alice Sheet: Layout1 Plot Date: 03/07/2024 15:40:12

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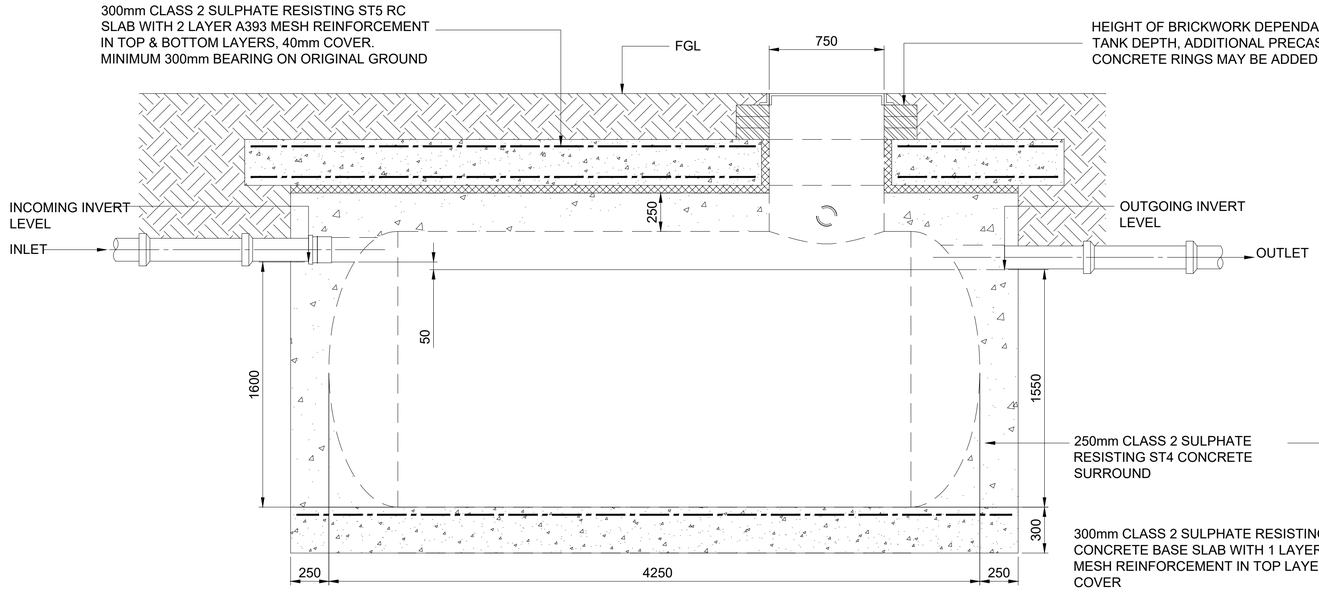
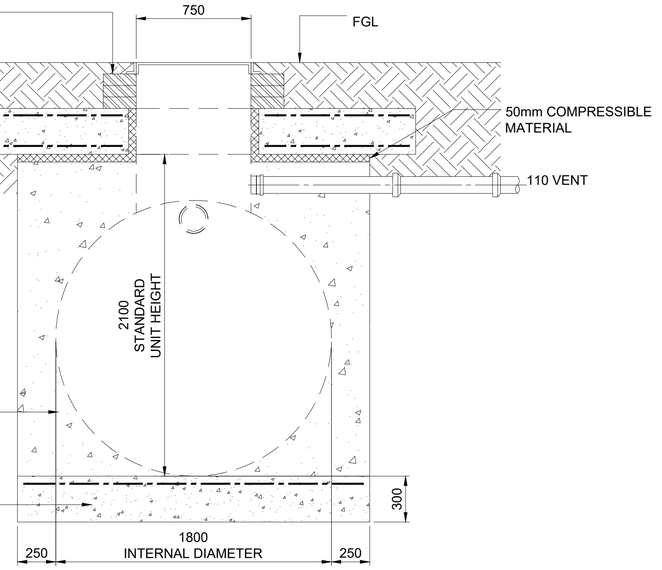
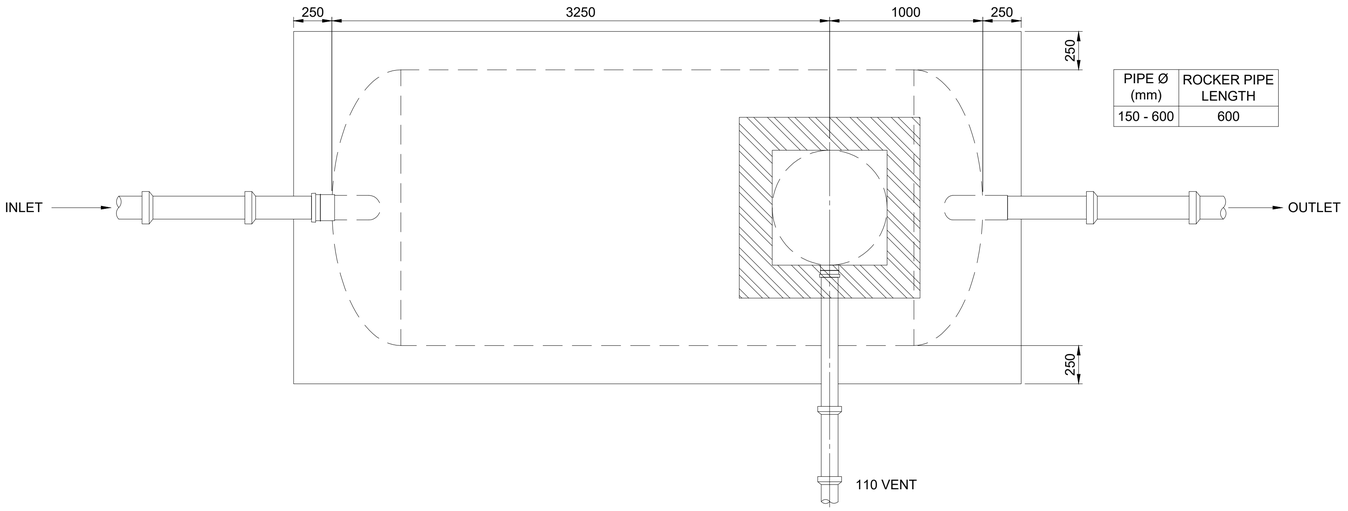
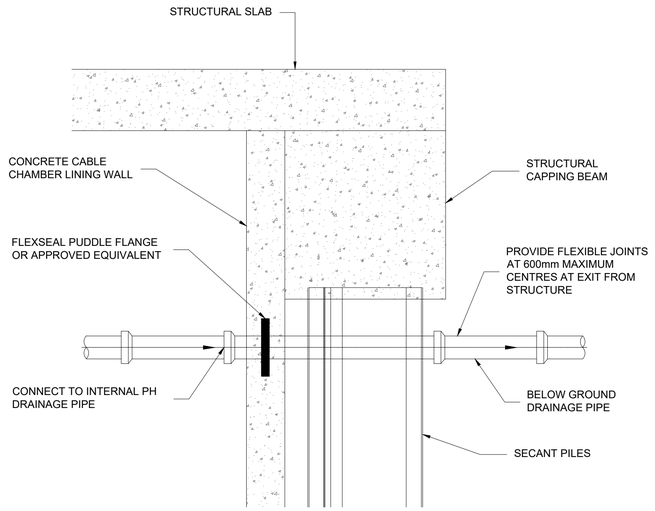






FORECOURT SEPARATOR

(NTS)



PUDDLE FLANGE

(NTS)

Rev	Description	Date
P02	STAGE 4 ISSUE	15/09/23
P01	STAGE 4 ISSUE	15/02/23

Drawing Status: FOR APPROVAL — Suitability: S4

4TH FLOOR
KNOLLYS HOUSE
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Client: SWEET PROJECTS

Architect: NWA

Project: UNION PARK

Title: BLOCK 2
BELOW FINISHED GROUND LEVEL
DRAINAGE TYPICAL DETAILS
SHEET 5 OF 5

HDR Project Number: 10274713			
Cad File Name: HDR-0472-SWS-BG-DR-C-520505			
Drawn: RJ/HA	Chkd/Appd: JJ/UG	Date: 15/09/23	Scale @ A1: AS SHOWN
Drawing Number: HDR-0472-SWS-BG-DR-C-520505			Revision: P02

File: \\LHRPI-FS01\DATA\REGIONAL WORKS DRIVE\PURLEY\17000\PUR17155 SWEET GROUP UNION STG 4+\6.0 CAD BIM\6.2 WIP\6.2.2 CAD\5 CIVIL\DRAWINGS\BLOCK 2\HDR-0472-SWS-BG-DR-C-520505.DWG User: Jensen, Jason Sheet: Layout1 Plot Date: 15/09/2023 16:38:52

SURFACE WATER MANHOLE AND PIPE SCHEDULE

REF NO.	APPROXIMATE COVER LEVEL (m)	INVERT LEVEL (m)	PIPE INVERT LEVELS (m)	DEPTH (m)	EASTING	NORTHING	INTERNAL CHAMBER SIZE (mm)	COVER LOADING TO BS EN 124	RECESSED	LOCKED	SEALED	VENTED	ACCESS COVER OPENING (mm)	DOWNSTREAM PIPE DIAMETER (mm)	DOWNSTREAM PIPE GRADIENT	REMARKS
SW02.01	30.772	27.696	Out = 27.696	3.08	510406.955	179372.360	1800	D400	YES	YES	YES	NO	600x600	600	1:210	TYPE A1
SW02.03	30.910	29.983	In = 30.038 from CH02.02 In = 29.988 from CH02.01 Out = 29.988	0.93	510407.897	179368.439	600	D400	NO	YES	YES	NO	600x600	150	1:150	PPIC
SW02.04(PI)	30.884	30.421	In = 29.975 from SW02.03 Out = 29.875	0.46	510409.907	179368.467	0	D400	YES	YES	YES	NO	600x600	150	1:150	PETROL INTERCEPTOR
SW02.05(RWH)	31.186	30.040	In = 30.140 from RWP02.07 Out = 30.040	1.15	510409.981	179356.163	0	D400	NO	YES	YES	NO	600x600	150	1:14	RWH
SW02.06	30.990	28.758	In = 28.808 from GBL-UP2-00-RWP-02 In = 28.808 from GBL-UP2-00-RWP-01 Out = 28.758	2.23	510439.430	179362.732	450	D400	NO	YES	YES	NO	450x450	150	1:56	TYPE E
SW02.07	30.980	28.644	In = 28.719 from GBL-UP2-00-RWP-03 In = 28.744 from SW02.08 In = 28.669 from SW02.06 Out = 28.644	2.34	510444.418	179362.768	600	D400	NO	YES	YES	NO	600x600	225	1:51	TYPE E
SW02.08	30.973	28.764	In = 28.814 from GBL-UP2-00-RWP-05 In = 28.814 from GBL-UP2-00-RWP-04 Out = 28.764	2.21	510447.484	179362.797	450	D400	NO	YES	YES	NO	450x450	150	1:150	TYPE E
SW02.09(RWH)	30.960	30.316	In = 28.612 from SW02.07 Out = 28.580 Out = 28.541	0.64	510444.436	179364.376	0	D400	NO	YES	YES	NO	600x600	225 225	1:500 1:121	RWH
SW02.10(RWH)	30.941	30.331	In = 28.473 from SW02.09(RWH) Out = 28.376	0.61	510452.639	179364.496	0	D400	NO	YES	YES	NO	600x600	225	1:24	RWH
SW02.11	30.925	27.615	In = 27.615 from SW02.10(RWH) Out = 27.615	3.31	510471.186	179365.406	1200	D400	NO	YES	YES	NO	600x600	225	1:149	TYPE A1
SW02.12	31.000	30.095	In = 30.095 from CH02.15 Out = 30.095	0.90	510424.907	179205.900	600	D400	YES	YES	YES	NO	600x600	225	1:40	PPIC
SW02.13	31.173	30.114	In = 29.946 from CH02.16 In = 29.946 from SW02.12 Out = 29.946	1.06	510430.877	179206.003	600	D400	YES	YES	YES	NO	600x600	225	1:30	PPIC
SW02.17	30.417	28.673	In = 29.426 from PP02.07 Out = 28.670 Out = 28.671	1.74	510506.981	179244.921	600	D400	YES	YES	YES	NO	600x600	225 150	1:8 1:100	TYPE E
SW02.22(PI)	30.105	28.859	In = 28.859 from SW02.25 Out = 28.859	0.36	510412.813	179305.517	0	D400	YES	YES	YES	NO	600x600	150	1:40	PETROL INTERCEPTOR
SW02.23	30.284	28.620	In = 28.620 from SW02.22(PI) Out = 28.620	1.66	510412.977	179295.983	600	D400	NO	YES	YES	NO	600x600	150	1:21	TYPE E
SW02.24	30.381	29.101	In = 29.101 from PC2-6 Out = 29.101	1.28	510454.199	179190.724	1200	D400	YES	YES	YES	NO	750x750	225	1:94	TYPE C
SW02.25	30.092	28.933	In = 28.933 from CH02.14 In = 29.561 from CH02.13 Out = 28.933	1.16	510412.771	179308.494	600	D400	YES	YES	YES	NO	600x600	150	1:40	PPIC
SW02.26	30.362	29.270	In = 29.270 from In = 29.327 from PC-01 Out = 29.270	1.09	510478.336	179203.775	1350	D400	YES	YES	YES	NO	1200x750	225	1:77	TYPE B
SW02.27	30.404	27.742	In = 28.388 from SW02.23 Out = 27.742	2.66	510410.296	179291.774	1800	D400	YES	YES	YES	NO	600x600	600	1:600	TYPE B
SW02.28	30.622	27.728	In = 27.728 from SW02.27 In = 28.138 from PC2-1 Out = 27.728	2.89	510415.353	179285.083	1800	D400	YES	YES	YES	NO	600x600	600	1:450	TYPE B
SW02.29	30.851	27.350	Out = 27.350	3.50	510440.632	179238.480	1200	D400	NO	YES	YES	NO	600x600	450	1:213	TYPE A
SW02.30	30.535	27.250	In = 27.250 from SW02.29 In = 29.869 from GU01.21 In = 29.869 from	3.29	510461.957	179238.744	1200	D400	NO	YES	YES	NO	600x600			TYPE A

SURFACE WATER RWP, GULLY & CHANNEL CONNECTION SCHEDULE

REFERENCE	COVER LEVEL (m)	PIPE INVERT LEVELS (m)	DOWNSTREAM PIPE DIAMETER (mm)	DOWNSTREAM PIPE GRADIENT	EASTING	NORTHING	SPECIAL REQUIREMENTS
CH02.01	30.854	Out = 30.006	150	1:149	510406.230	179370.545	SETTING OUT TBC BY OTHERS
CH02.02	30.826	Out = 30.107	150	1:40	510409.676	179370.541	SETTING OUT TBC BY OTHERS
CH02.03	31.275	Out = 28.943	150	1:150	510423.465	179360.126	SETTING OUT TBC BY OTHERS
CH02.04	31.275	Out = 28.963	150	1:150	510435.264	179360.333	SETTING OUT TBC BY OTHERS
CH02.05	31.275	Out = 28.960	150	1:150	510449.516	179360.579	SETTING OUT TBC BY OTHERS
CH02.06	31.275	Out = 28.987	150	1:150	510464.408	179360.816	SETTING OUT TBC BY OTHERS
CH02.09	31.275	Out = 27.962	150	1:80	510425.430	179286.736	SETTING OUT TBC BY OTHERS
CH02.10	31.275	Out = 27.934	150	1:80	510436.496	179286.937	SETTING OUT TBC BY OTHERS
CH02.11	31.275	Out = 29.760	150	1:80	510456.260	179287.294	SETTING OUT TBC BY OTHERS
CH02.12	31.275	Out = 27.850	150	1:80	510471.930	179287.578	SETTING OUT TBC BY OTHERS
CH02.13	30.088	Out = 29.609	150	1:71	510409.523	179309.533	SETTING OUT TBC BY OTHERS
CH02.14	30.088	Out = 28.961	150	1:40	510412.932	179309.583	SETTING OUT TBC BY OTHERS
CH02.15	31.100	Out = 30.171	225	1:84	510424.906	179212.295	SETTING OUT TBC BY OTHERS
CH02.16	31.100	Out = 30.159	225	1:30	510430.874	179212.398	SETTING OUT TBC BY OTHERS
CH02.17	31.150	Out = 30.584	150	1:52	510426.767	179200.561	SETTING OUT TBC BY OTHERS
FG02.01	30.670	Out = 28.251	150	1:40	510475.497	179295.407	SETTING OUT TBC BY OTHERS
FG02.02	30.951	Out = 28.063	150	1:100	510471.914	179288.679	SETTING OUT TBC BY OTHERS
PP02.05	30.665	Out = 30.007	150	1:40	510410.911	179376.553	SETTING OUT TBC BY OTHERS
PP02.06	30.303	Out = 29.092	150	1:40	510471.279	179188.167	SETTING OUT TBC BY OTHERS
PP02.08	30.600	Out = 28.262	150	1:40	510410.401	179284.922	SETTING OUT TBC BY OTHERS
PP02.10	30.334	Out = 29.543	225	1:46	510433.925	179189.925	SETTING OUT TBC BY OTHERS
PP02.11	30.783	Out = 28.096	150	1:40	510429.512	179284.346	SETTING OUT TBC BY OTHERS

SURFACE WATER RWP, GULLY & CHANNEL CONNECTION SCHEDULE

REFERENCE	COVER LEVEL (m)	PIPE INVERT LEVELS (m)	DOWNSTREAM PIPE DIAMETER (mm)	DOWNSTREAM PIPE GRADIENT	SPECIAL REQUIREMENTS
GBL-UP2-00-RWP-01	31.300	Out = 28.900	150	1:138	SETTING OUT TBC BY OTHERS
GBL-UP2-00-RWP-02	31.300	Out = 28.898	150	1:139	SETTING OUT TBC BY OTHERS
GBL-UP2-00-RWP-03	31.300	Out = 28.869	150	1:77	SETTING OUT TBC BY OTHERS
GBL-UP2-00-RWP-04	31.300	Out = 28.902	150	1:155	SETTING OUT TBC BY OTHERS
GBL-UP2-00-RWP-05	31.300	Out = 28.901	150	1:154	SETTING OUT TBC BY OTHERS
GBL-UP2-00-RWP-06	31.295	Out = 28.390	150	1:41	SETTING OUT TBC BY OTHERS
GBL-UP2-00-RWP-07	31.295	Out = 28.396	150	1:41	SETTING OUT TBC BY OTHERS
GBL-UP2-00-RWP-08	31.296	Out = 28.109	150	1:40	SETTING OUT TBC BY OTHERS
GBL-UP2-00-RWP-09	31.296	Out = 28.110	150	1:40	SETTING OUT TBC BY OTHERS
GBL-UP2-00-RWP-10	31.295	Out = 28.550	150	1:27	SETTING OUT TBC BY OTHERS
RWP02.06	30.513	Out = 29.499	150	1:40	SETTING OUT TBC BY OTHERS
RWP02.07	31.439	Out = 30.150	150	1:632	SETTING OUT TBC BY OTHERS
RWP02.13	31.800	Out = 29.806	150	1:89	SETTING OUT TBC BY OTHERS
RWP02.15	31.115	Out = 29.674	150	1:40	SETTING OUT TBC BY OTHERS
RWP02.16	31.000	Out = 30.200	150	1:2	SETTING OUT TBC BY OTHERS
RWP02.17	30.957	Out = 29.615	150	1:40	SETTING OUT TBC BY OTHERS
RWP02.18	30.992	Out = 29.603	150	1:40	SETTING OUT TBC BY OTHERS
RWP02.19	31.050	Out = 29.721	150	1:40	SETTING OUT TBC BY OTHERS
RWP02.20	31.148	Out = 29.450	150	1:40	SETTING OUT TBC BY OTHERS
RWP02.21	31.000				SETTING OUT TBC BY OTHERS

NOTE: SETTING OUT BASED ON GBL BUILDERS WORK DRAWING ISSUE P05 ISSUED ON 13/4/23

PERMACEPTOR SETTING OUT SCHEDULE

REFERENCE	COVER LEVEL (m)	PIPE INVERT LEVELS (m)	DOWNSTREAM PIPE DIAMETER (mm)	EASTING (m)	NORTHING (m)	SPECIAL REQUIREMENTS
PC2-1	28.422	In = 28.187 Out = 28.187	150	510413.394	179285.006	SETTING OUT TBC BY OTHERS
PC2-2	28.280	In = 28.063 Out = 28.064	150	510430.800	179284.371	SETTING OUT TBC BY OTHERS
PC2-3	28.248	In = 28.030 Out = 28.030	150	510432.166	179284.413	SETTING OUT TBC BY OTHERS
PC2-4	29.673	In = 29.428 Out = 29.428	225	510439.222	179190.134	SETTING OUT TBC BY OTHERS
PC2-5	29.643	In = 29.398 Out = 29.398	225	510440.596	179190.188	SETTING OUT TBC BY OTHERS
PC2-6	29.613	In = 29.368 Out = 29.368	225	510441.969	179190.242	SETTING OUT TBC BY OTHERS
PC2-7	30.189	In = 29.981 Out = 29.985	150	510411.361	179375.578	SETTING OUT TBC BY OTHERS

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NOTES:

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2. DO NOT SCALE OFF THIS DRAWING. ALWAYS WORK TO NOTED DIMENSION.
3. ALL DIMENSIONS MUST BE VERIFIED ON SITE BEFORE COMPLETING SHOP DRAWINGS OR SETTING OUT OF THE WORKS.
4. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER DISCIPLINE'S DRAWINGS, REPORTS AND SPECIFICATIONS.
5. REFER TO GENERAL NOTES DRAWING HDR-0472-SWS-XX-TN-C-000025

Rev	Description	Date
P17	STAGE 4 ISSUE	23/07/24
P16	STAGE 4 ISSUE	14/06/24
P15	STAGE 4 ISSUE	14/05/24
P14	STAGE 4 ISSUE	27/03/24
P13	STAGE 4 ISSUE	22/03/24
P12	STAGE 4 ISSUE	19/03/24
P11	STAGE 4 ISSUE	15/03/24
P10	STAGE 4 ISSUE	12/12/23
P09	STAGE 4 ISSUE	25/10/23
P08	STAGE 4 ISSUE	04/08/23
P07	STAGE 4 ISSUE	28/07/23
P06	STAGE 4 ISSUE	14/07/23
P05	STAGE 4 ISSUE	04/05/23
P04	STAGE 4 ISSUE	24/02/23
P03	STAGE 4 ISSUE	15/02/23
P02	STAGE 3 ISSUE	16/12/22
P01	EARLY WORKS ISSUE	04/11/22

Drawing Status: FOR APPROVAL

Suitability: S4

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Client: SWEET PROJECTS

Architect: NWA

Project: UNION PARK

Title: BLOCK 2
BELOW FINISHED GROUND LEVEL
SURFACE WATER MANHOLE AND
PIPELINE SCHEDULE

HDR Project Number: 10274713

Cad File Name: HDR-0472-SWS-BG-SCH-C-520010

Drawn:	Chkd/Appd:	Date:	Scale @ A1:
RJJ	JJ/UG	23/07/24	N/A

Drawing Number: HDR-0472-SWS-BG-SCH-C-520010

Revision: P17

File: \\UHPI-FS01\DATA\REGIONAL WORKS DRIVE\PURLEY\17000\PUR17155 SWEETT GROUP UNION STG 4+\6.0 CAD BIM\6.2 WIP\6.2.2 CAD\5 CIVIL\DRAWINGS\BLOCK 2\HDR-0472-SWS-BG-SCH-C-520010.DWG User: Jensen, Jason Sheet: - Plot Date: 23/07/2024 11:26:32

FOUL WATER SVP, GULLY & CHANNEL CONNECTION SCHEDULE

REFERENCE	COVER LEVEL (m)	PIPE INVERT LEVELS (m)	DOWNSTREAM PIPE DIAMETER (mm)	DOWNSTREAM PIPE GRADIENT	SPECIAL REQUIREMENTS
FG69A	31.300	Out = 30.600	150	1:40	
FG69B	31.300	Out = 30.551	150	1:40	
GBL-UP2-00-BRC-01	31.300	Out = 28.887	150	1:40	
GBL-UP2-00-BRC-02	31.300	Out = 30.325	150	1:40	
GBL-UP2-00-BRC-03	31.295	Out = 30.188	150	1:40	
GBL-UP2-00-BRC-04	31.300	Out = 30.490	150	1:40	
GBL-UP2-00-BRC-06	31.300	Out = 29.850	150	1:40	
GBL-UP2-00-CDS-01	31.289	Out = 29.779	150	1:37	
GBL-UP2-00-CDS-02	31.295	Out = 29.556	150	1:28	
GBL-UP2-00-CDS-03	31.300	Out = 29.637	150	1:25	
GBL-UP2-00-CDS-05	30.900	Out = 29.927	150	1:40	
GBL-UP2-00-FG-01	30.900	Out = 30.327	150	1:40	
GBL-UP2-00-FG-02	30.900	Out = 30.087	150	1:40	
GBL-UP2-00-FG-03	30.900	Out = 29.918	150	1:40	
GBL-UP2-00-FG-04	30.900	Out = 30.343	150	1:40	
GBL-UP2-00-FG-05	30.900	Out = 29.978	150	1:40	
GBL-UP2-00-FG-06	30.900	Out = 29.925	150	1:39	
GBL-UP2-00-FG-07	30.900	Out = 30.041	150	1:40	
GBL-UP2-00-FG-08	30.900	Out = 29.258	150	1:34	
GBL-UP2-00-FG-09	30.900	Out = 29.708	150	1:38	
GBL-UP2-00-FG-10	31.300	Out = 29.759	150	1:10	
GBL-UP2-00-FG-11	31.295	Out = 29.190	150	1:40	
GBL-UP2-00-FG-12	31.300	Out = 29.592	150	1:28	
GBL-UP2-00-FG-13	31.300	Out = 30.179	150	1:40	
GBL-UP2-00-FG-14	31.300	Out = 30.520	150	1:40	
GBL-UP2-00-FWG-01	31.300	Out = 29.985	150	1:40	
GBL-UP2-00-FWG-02	31.300	Out = 30.316	150	1:40	
GBL-UP2-00-FWG-03	31.300	Out = 30.266	150	1:40	
GBL-UP2-00-FWG-04	31.300	Out = 30.312	150	1:41	
GBL-UP2-00-FWG-05	31.300	Out = 30.761	150	1:40	
GBL-UP2-00-FWG-06	31.300	Out = 30.625	150	1:40	
GBL-UP2-00-FWG-07	31.300	Out = 30.620	150	1:40	
GBL-UP2-00-FWG-08	31.300	Out = 30.600	150	1:38	
GBL-UP2-00-FWG-09	31.300	Out = 30.568	150	1:40	
GBL-UP2-00-FWG-10	31.300	Out = 30.475	150	1:46	
GBL-UP2-00-FWG-11	31.300	Out = 30.473	150	1:40	
GBL-UP2-00-FWG-12	31.300	Out = 30.449	150	1:40	
GBL-UP2-00-FWG-13	31.300	Out = 30.427	150	1:40	
GBL-UP2-00-FWG-14	31.300	Out = 29.591	150	1:24	
GBL-UP2-00-FWG-15	31.300	Out = 29.435	150	1:8	
GBL-UP2-00-FWG-16	31.300	Out = 29.691	150	1:26	
GBL-UP2-00-FWG-17	31.300	Out = 29.794	150	1:44	
GBL-UP2-00-FWG-18	31.300	Out = 29.761	150	1:39	
GBL-UP2-00-FWG-19	31.300	Out = 29.327	150	1:7	
GBL-UP2-00-FWG-20	31.300	Out = 29.339	150	1:22	
GBL-UP2-00-FWG-21	31.300	Out = 29.338	150	1:21	
GBL-UP2-00-FWG-22	31.300	Out = 29.958	150	1:40	
GBL-UP2-00-FWG-23	31.300	Out = 29.421	150	1:19	
GBL-UP2-00-FWG-24	31.300	Out = 28.697	150	1:40	
GBL-UP2-00-FWG-25	31.300	Out = 28.489	150	1:40	
GBL-UP2-00-FWG-26	31.300	Out = 29.219	150	1:23	
GBL-UP2-00-FWG-27	31.300	Out = 29.163	150	1:21	
GBL-UP2-00-FWG-28	31.300	Out = 28.039	150	1:40	
GBL-UP2-00-FWG-29	31.300	Out = 29.366	150	1:40	
GBL-UP2-00-FWG-30	31.300	Out = 29.019	150	1:40	
GBL-UP2-00-FWG-31	31.300	Out = 29.052	150	1:40	
GBL-UP2-00-FWG-32	31.300	Out = 30.561	150	1:40	
GBL-UP2-00-FWG-33	31.300	Out = 30.495	150	1:40	
GBL-UP2-00-FWG-34	31.300	Out = 30.593	150	1:40	
GBL-UP2-00-FWG-35	31.300	Out = 30.481	150	1:40	
GBL-UP2-00-FWG-36	31.300	Out = 30.444	150	1:40	
GBL-UP2-00-FWG-37	31.300	Out = 29.810	150	1:40	
GBL-UP2-00-FWG-38	31.300	Out = 29.594	150	1:40	
GBL-UP2-00-FWG-39	31.300	Out = 29.888	150	1:40	
GBL-UP2-00-FWG-40	31.300	Out = 30.239	150	1:40	
GBL-UP2-00-FWG-41	31.300	Out = 30.069	150	1:40	
GBL-UP2-00-FWG-42	31.300	Out = 30.426	150	1:40	
GBL-UP2-00-FWG-43	31.300	Out = 29.650	150	1:40	
GBL-UP2-00-FWG-44	31.300	Out = 30.437	150	1:40	
GBL-UP2-00-FWG-45	31.300	Out = 29.351	150	1:76	
GBL-UP2-00-FWG-46	31.300	Out = 28.984	150	1:40	
GBL-UP2-00-FWG-47	31.300	Out = 28.897	150	1:40	
GBL-UP2-00-FWG-48	31.300	Out = 30.667	150	1:40	
GBL-UP2-00-FWG-49	31.300	Out = 29.738	150	1:40	
GBL-UP2-00-FWG-50	31.300	Out = 30.312	150	1:40	
GBL-UP2-00-FWG-51	31.300	Out = 29.671	150	1:29	
GBL-UP2-00-FWG-52	31.300	Out = 30.305	150	1:40	
GBL-UP2-00-FWG-53	31.300	Out = 30.135	150	1:40	
GBL-UP2-00-FWG-55	31.300	Out = 29.811	150	1:40	
GBL-UP2-00-FWG-56	31.300	Out = 29.745	150	1:40	
GBL-UP2-00-FWG-57	31.300	Out = 29.625	150	1:40	
GBL-UP2-00-FWG-59	31.300	Out = 30.390	150	1:40	
GBL-UP2-00-FWG-62	31.300	Out = 30.324	150	1:40	
GBL-UP2-00-FWG-63	31.300	Out = 30.237	150	1:40	
GBL-UP2-00-PWS-01	30.900	Out = 29.927	150	1:43	
GBL-UP2-00-PWS-02	30.900	Out = 29.188	150	1:40	
GBL-UP2-00-SPK-01	30.900	Out = 30.246	150	1:40	STAND PIPE

NOTE: SETTING OUT BASED ON GBL BUILDERS WORK DRAWING ISSUE P05 ISSUED ON 19/01/24

FOUL WATER SVP, GULLY & CHANNEL CONNECTION SCHEDULE

REFERENCE	COVER LEVEL (m)	PIPE INVERT LEVELS (m)	DOWNSTREAM PIPE DIAMETER (mm)	DOWNSTREAM PIPE GRADIENT	SPECIAL REQUIREMENTS
GBL-UP2-00-SPK-02	30.900	Out = 30.341	150	1:40	STAND PIPE
GBL-UP2-00-SPK-03	30.900	Out = 29.953	150	1:40	STAND PIPE
GBL-UP2-00-SPK-04	30.900	Out = 29.878	150	1:40	STAND PIPE
GBL-UP2-00-SVP-01	31.300	Out = 29.508	150	1:40	
GBL-UP2-00-SVP-02	31.300	Out = 30.285	150	1:40	
GBL-UP2-00-SVP-03	31.300	Out = 30.597	150	1:40	
GBL-UP2-00-SVP-04	31.300	Out = 30.559	150	1:40	
GBL-UP2-00-SVP-05	31.300	Out = 28.324	150	1:40	
GBL-UP2-00-WBG-01	31.248	Out = 27.452	150	1:40	
GBL-UP2-00-WBG-02	31.238	Out = 27.395	150	1:40	
GBL-UP2-00-WBG-03	31.238	Out = 27.446	150	1:40	
GBL-UP2-00-WBG-04	31.249	Out = 27.376	150	1:40	
GBL-UP2-00-WBG-05	31.249	Out = 27.343	150	1:40	
GBL-UP2-00-WBG-06	31.249	Out = 27.357	150	1:40	
GBL-UP2-00-WBG-07	31.245	Out = 30.089	150	1:36	
GBL-UP2-00-WBG-08	31.245	Out = 30.072	150	1:40	
GBL-UP2-00-WBG-09	31.245	Out = 30.087	150	1:37	
GBL-UP2-00-WBG-10	31.245	Out = 29.542	150	1:38	
GBL-UP2-00-WBG-11	31.245	Out = 29.509	150	1:41	
GBL-UP2-00-WBG-12	31.245	Out = 29.520	150	1:42	
SS9	31.300	Out = 29.388	150	1:23	
SVP02.01	31.300	Out = 30.644	150	1:40	
SVP02.02	31.300	Out = 30.590	150	1:40	
SVP02.03	31.300	Out = 30.523	150	1:40	
SVP02.04	31.300	Out = 30.505	150	1:40	

NOTE: SETTING OUT BASED ON GBL BUILDERS WORK DRAWING ISSUE P05 ISSUED ON 19/01/24

FOUL WATER SVP, GULLY & CHANNEL CONNECTION SCHEDULE

REFERENCE	COVER LEVEL (m)	PIPE INVERT LEVELS (m)	DOWNSTREAM PIPE DIAMETER (mm)	DOWNSTREAM PIPE GRADIENT	SPECIAL REQUIREMENTS
FGE1	31.300	Out = 29.467	150	1:38	
FWCH02.01	30.889	Out = 30.080 In = 30.503 Out = 30.499	150 300	1:60 1:70	
FWCH02.02	30.916	Out = 30.121	150	1:71	
FWCH02.03	30.569	Out = 30.020	150	1:12	
FWCH02.04	30.560	In = 29.500			
SSE1	31.300	Out = 29.451	150	1:38	
SVP5	29.986	Out = 29.675	150	1:40	

NOTE: SETTING OUT BASED ON GBL BUILDERS WORK DRAWING ISSUE P08 ISSUED ON 13/6/23

FOUL WATER MANHOLE AND PIPE SCHEDULE

REF NO.	APPROXIMATE COVER LEVEL (m)	INVERT LEVEL (m)	PIPE INVERT LEVELS (m)	DEPTH (m)	INTERNAL CHAMBER SIZE (mm)	COVER LOADING TO BS EN 124	RECESSED	LOCKED	SEALED	VENTED	ACCESS COVER OPENING (mm)	DOWNSTREAM PIPE DIAMETER (mm)	DOWNSTREAM PIPE GRADIENT	REMARKS
FW02.03	31.300	29.539	In = 29.539 from RE02.01 In = 30.271 from RE02.02 Out = 29.539	1.76	1200	C250	NO	YES	YES	NO	600x600	150	1:25	TYPE B
FW2.04A	31.300	29.308	In = 29.638 from GBL-UP2-00-FWG-51 In = 29.645 from RE02.04 Out = 29.308	1.99	450	C250	NO	YES	YES	NO	450x450	150	1:42	TYPE E
FW02.06	31.300	28.921	In = 30.161 from RE02.05 In = 29.027 FROM FW02.03 In = 28.929 from GBL-UP2-00-FWG-46 In = 28.921 FROM FW02.04A Out = 28.921	2.38	1200	C250	NO	YES	YES	NO	600x600	150	1:40	TYPE B
FW02.06A	30.938	28.553	In = 28.553 FROM FW02.06 Out = 28.553	2.39	1200	C250	NO	YES	YES	NO	600x600	150	1:39	TYPE B
FW02.07	30.797	28.207	In = 28.207 from FW02.06A Out = 28.207	2.59	1200	C250	NO	YES	YES	NO	600x600	150	1:40	TYPE B
FW02.09	31.300	30.308	In = 30.358 from GBL-UP2-00-FG-14 In = 30.308 from FW02.09A Out = 30.308	0.99	450	C250	NO	YES	YES	NO	450x450	150	1:61	PPIC
FW02.09A	31.300	30.467	In = 30.467 from FG69A Out = 30.467	0.83	450	C250	NO	YES	YES	NO	450x450	150	1:49	PPIC
FW02.09B	31.104	29.734	In = 29.734 from Out = 29.734	1.37	1200	C250	NO	YES	YES	NO	600x600	150	1:40	TYPE B
FW02.10A	31.300	30.596	In = 30.595 from GBL-UP2-00-FWG-07 Out = 30.595	0.70	450	C250	NO	YES	YES	NO	450x450	150	1:40	PPIC
FW02.10B	31.300	30.229	In = 30.279 from GBL-UP2-00-FWG-13 In = 30.229 from FW02.10A Out = 30.229	1.07	450	C250	NO	YES	YES	NO	450x450	150	1:40	PPIC
FW02.12	31.300	28.799	In = 29.299 from FW02.10B In = 28.799 from GBL-UP2-00-FWG-30 Out = 28.799	2.50	1200	C250	NO	YES	YES	NO	600x600	150	1:40	TYPE B
FW02.13A	31.300	29.656	In = 30.133 from RE02.13 In = 29.656 from GBL-UP2-00-FWG-18 In = 29.671 from GBL-UP2-00-FWG-17 Out = 29.656	1.64	1200	C250	NO	YES	YES	NO	600x600	150	1:37	TYPE B
FW02.14	31.300	28.594	In = 28.594 from FW02.13A In = 28.594 from FW02.12 Out = 28.594	2.71	1200	C250	NO	YES	YES	NO	600x600	150	1:13	TYPE B
RE02.01	31.300	30.356	Out = 30.356	0.94	150	C250	NO	YES	YES	NO	600x600	150	1:40	RODDING EYE
RE2.02	31.300	30.595	Out = 30.595	0.70	150	C250	NO	YES	YES	NO	600x600	150	1:40	RODDING EYE
RE02.04	31.300	30.055	Out = 30.055	1.24	150	C250	NO	YES	YES	NO	600x600	150	1:41	RODDING EYE
RE2.05	31.300	30.498	Out = 30.498	0.80	150	C250	NO	YES	YES	NO	600x600	150	1:40	RODDING EYE
RE02.13	31.300	30.557	Out = 30.557	0.74	150	C250	NO	YES	YES	NO	600x600	150	1:40	RODDING EYE

FOUL WATER MANHOLE AND PIPE SCHEDULE

REF NO.	APPROXIMATE COVER LEVEL (m)	INVERT LEVEL (m)	PIPE INVERT LEVELS (m)	DEPTH (m)	EASTING	NORTHING	INTERNAL CHAMBER SIZE (mm)	COVER LOADING TO BS EN 124	RECESSED	LOCKED	SEALED	VENTED	ACCESS COVER OPENING (mm)	DOWNSTREAM PIPE DIAMETER (mm)	DOWNSTREAM PIPE GRADIENT	REMARKS
FW02.20	30.841	29.492	In = 29.951 from FWCH02.02 In = 29.951 from FWCH02.01 Out = 29.951	1.35	510411.991	179204.843	1200	D400	YES	YES	YES	NO	750x750	150	1:60	TYPE B
FW02.21	30.530	29.261	In = 29.694 from FW02.20 In = 29.694 from FWCH02.03 Out = 29.694 Out = 29.694	1.27	510423.909	179195.078	1200	D400	YES	YES	YES	NO	750x750	150 150	1:9 1:43	TYPE B
FW02.22	30.467	29.550	In = 29.550 from FW02.21 Out = 29.550	0.92	510429.921	179193.478	1200	D400	YES	YES	YES	NO	750x750	150	1:9	TYPE B
FW02.23	30.750	29.761	In = 29.617 from SVP5 Out = 29.617	0.99	510442.286	179195.609	450	D400	YES	YES	YES	NO	450x450	150	1:40	PPIC
FW02.24	30.766	29.557	In = 29.411 from FGE1 In = 29.411 from SSE1 In = 29.411 from FW02.23 Out = 29.411	1.21	510434.043	179195.605	450	D400	NO	YES	YES	NO	450x450	150	1:40	PPIC
FW02.25	30.473	29.316	In = 29.316 from FW02.24 In = 29.316 from FW02.22 Out = 29.316	1.16	510430.249	179195.605	450	D400	YES	YES	YES	NO	450x450	150	1:80	PPIC
FW02.26	30.842	29.065	In = 29.065 from Out = 29.065	1.78	510413.375	179205.495	1050	D400	YES	YES	YES	NO	600x600	150	1:100	TYPE B
FW02.27	31.292	28.754	In = 28.745 from FW02.26	2.54	510418.674	179237.072	1050	D400	YES	YES	YES	NO	600x600			TYPE B
PI02.01	30.499	28.911		1.59	510427.085	179197.618	0	D400	YES	YES	YES	NO	600x600			FORECOURT SEPARATOR

FOUL WATER MANHOLE AND PIPE SCHEDULE

REF NO.	APPROXIMATE COVER LEVEL (m)	INVERT LEVEL (m)	DEPTH (m)	PIPE INVERT LEVELS (m)	EASTING	NORTHING	INTERNAL CHAMBER SIZE (mm)	COVER LOADING TO BS EN 124	RECESSED	LOCKED	SEALED	VENTED	ACCESS COVER OPENING (mm)	DOWNSTREAM PIPE DIAMETER (mm)	DOWNSTREAM PIPE GRADIENT	REMARKS
FW01.02A	30.665	27.694	2.97	In = 27.694 from FW01.02 Out = 27.694	510476.144	179374.358	1200	D400	YES	YES	YES	NO	600x600	150	1:163	TYPE B
FW02.01	30.633	27.408	3.22	Out = 27.408	510413.233	179283.748	1200	D400	YES	YES	YES	NO	600x600	150	1:150	TYPE A1
FW02.02	30.703	27.057	3.65	In = 27.057 from FW02.01 Out = 27.057	510465.815	179283.713	1200	D400	YES	YES	YES	NO	600x600	150	1:150	TYPE A1

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Rev	Description	Date
P17	STAGE 4 ISSUE	08/11/24
P16	STAGE 4 ISSUE	05/03/24
P15	STAGE 4 ISSUE	24/01/24
P14	STAGE 4 ISSUE	20/12/23
P13	STAGE 4 ISSUE	12/12/23
P12	STAGE 4 ISSUE	25/08/23
P11	STAGE 4 ISSUE	04/08/23
P10	STAGE 4 ISSUE	28/07/23
P09	STAGE 4 ISSUE	14/07/23
P08	STAGE 4 ISSUE	03/05/23
P07	STAGE 4 ISSUE	24/02/23
P06	STAGE 4 ISSUE	15/02/23
P05	STAGE 3 ISSUE	16/12/22
P04	STAGE 3 ISSUE	11/11/22
P03	EARLY WORKS ISSUE	04/11/22
P02	EARLY WORKS ISSUE	07/10/22
P01	EARLY WORKS ISSUE	30/09/22

Drawing Status: FOR APPROVAL — Suitability: S4

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Client: SWEET PROJECTS

Architect: NWA

Project: UNION PARK

Title: BLOCK 2
BELOW FINISHED GROUND LEVEL
FOUL WATER MANHOLE AND PIPELINE SCHEDULE

HDR Project Number: 10274713

Cad File Name: HDR-0472-SWS-BG-SCH-C-520020

Drawn:	Chkd/Appd:	Date:	Scale @ A1:
DE/AC	JJ/UG	08/11/24	N/A

Drawing Number: HDR-0472-SWS-BG-SCH-C-520020 — Revision: P17

File: \\UHRPI-FS01\DATA\REGIONAL WORKS DRIVE\PURLEY\17000\PUR17155 SWEETT GROUP UNION STG 4+\6.0 CAD BIM\6.2 WIP\6.2.2 CAD\5 CIVIL\DRAWINGS\BLOCK 2\HDR-0472-SWS-BG-SCH-C-520020.DWG User: Jensen, Jason Sheet: Layout1 Plot Date: 08/11/2024 10:39:26

Technical Submittal Form

Please use this form as a 'front sheet' for all technical submittals. Ensure you include as much information as possible to receive a status. Where you provide an attachment, please reference the technical submittal ref. in the 'Subject/Title' field. and refer to the attachment in the 'Description' field.

Form Title Ref.:
TOU-0472-UP2-BG-TS-X-0038

Subject / Title:
UP2 Rain Water Harvesting Tanks 2No

Description (example: product name; location; specification details; supplier; etc.):
2No 25000litre Rain water harvesting tanks for UP2 north from Edincare. Spec R18 310 Pump Info On next Tech Sub

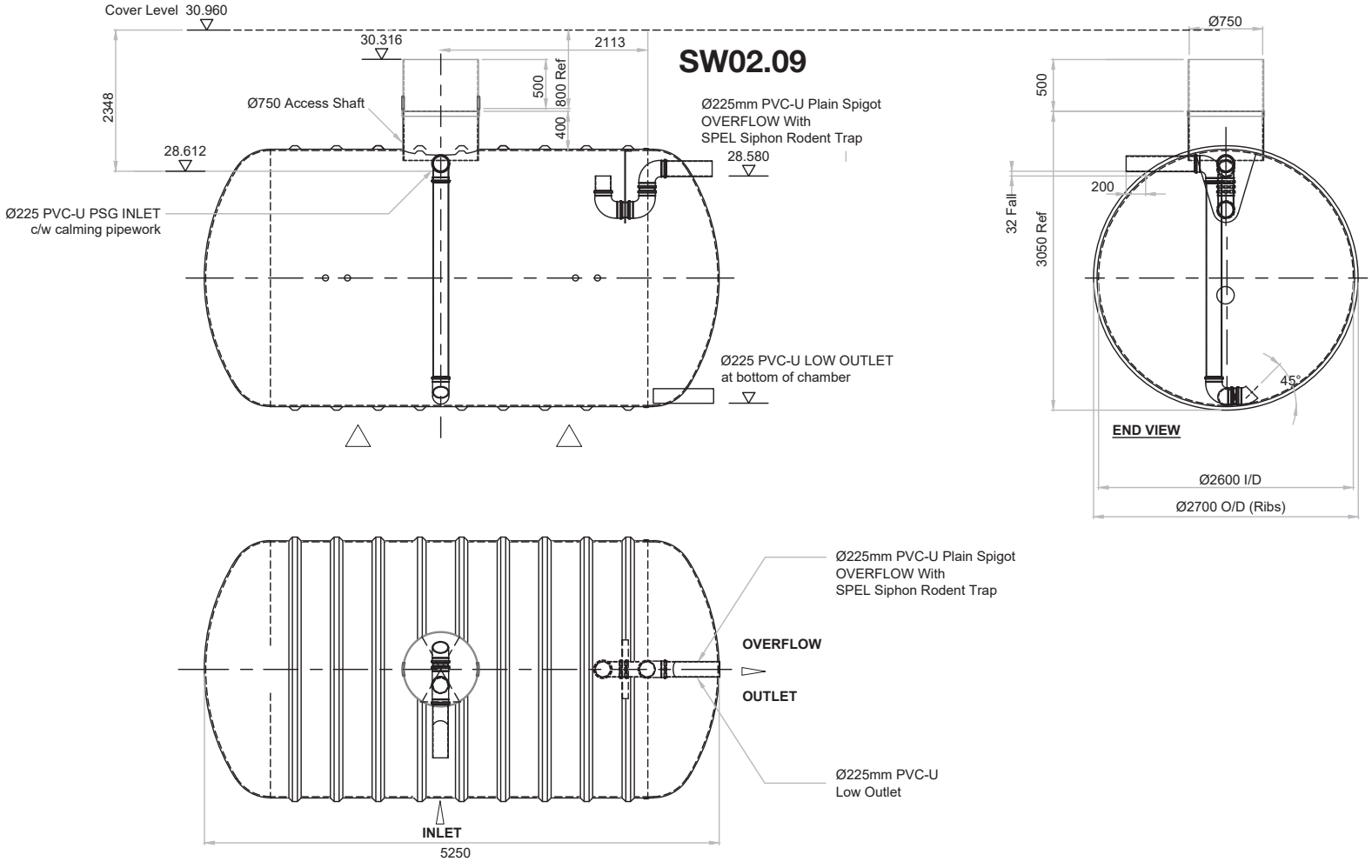
Is the proposal specification compliant?
Yes

Is the proposal an alternative to specification?
No

Details of reason for deviation from specification / alternative to specification:

WaterGuard Commercial (25,000 litres)

SW02.09



CUSTOMER APPROVAL	
Date	
Approved by (print)	
Signed	

PROJECT ADDRESS	PROJECT UNION (SW02.09)				
CLIENT	TOUREEN CONTRACTORS				
PRODUCT NAME	WATERGUARD COMMERCIAL 25,000 LITRES				
CHAMBER WEIGHT	TBC	TOLERANCE	+/-3%	DRAWN BY	DM
CAPACITY (LITRES)	25,000	DATE	01/09/23	SCALE	NTS

DIMENSIONS ARE SUBJECT TO DIMENSIONAL TOLERANCES.
If critical, check physically prior to installation.

WATER TABLE & BURIAL DEPTH
The customer must check chamber specification is compatible with ground water table level (in winter) and burial depth. Contact Edincare if in doubt.

PLEASE NOTE THAT THIS DOCUMENT MUST BE READ INCONJUNCTION WITH THE INSTALLATION & OPERATING GUIDELINES.
DRAWING NOT TO SCALE.

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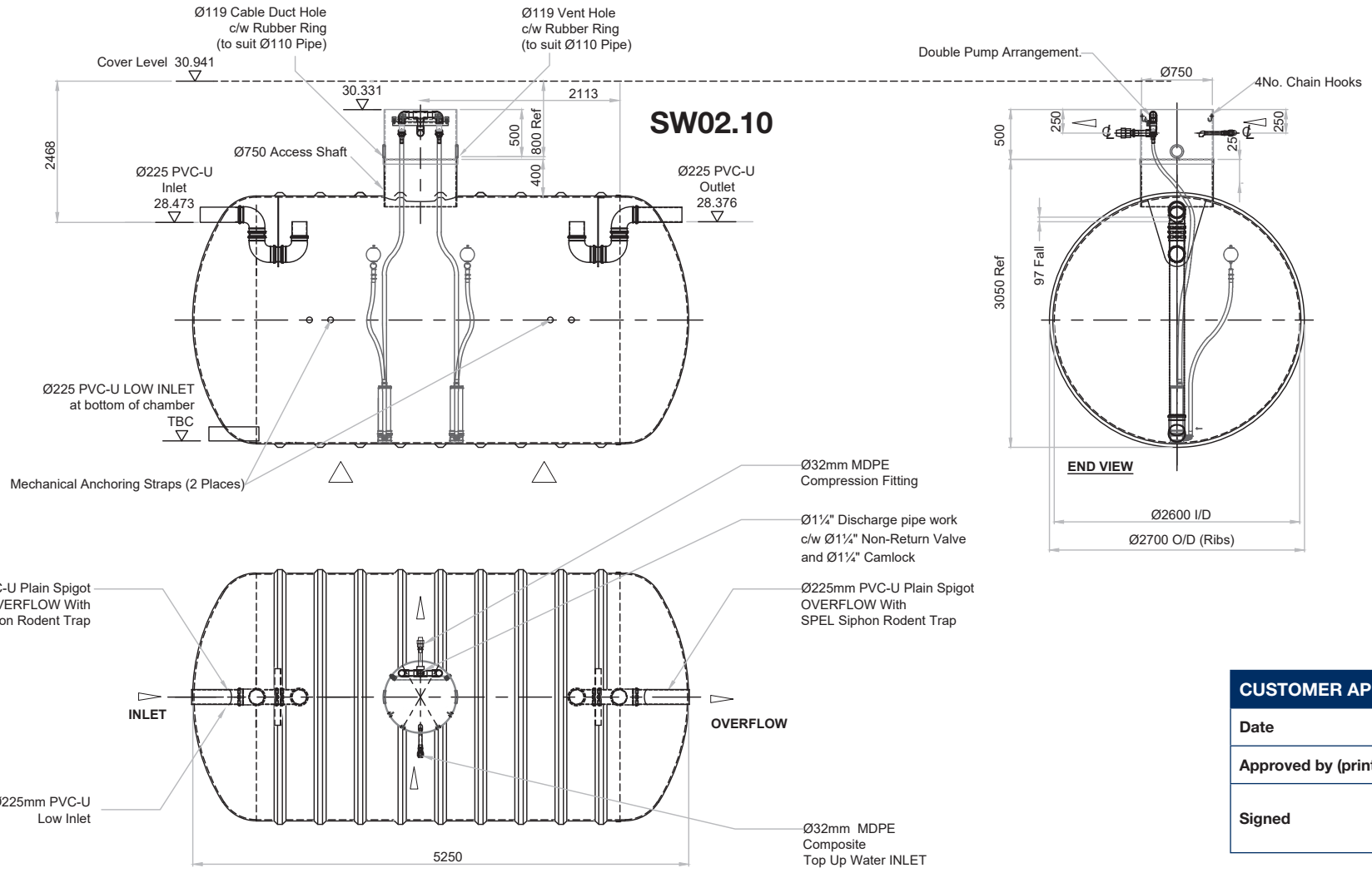
WaterGuard Commercial (25,000 litres)

SW02.10



CUSTOMER APPROVAL	
Date	
Approved by (print)	
Signed	

PROJECT ADDRESS	PROJECT UNION (SW02.10)				
CLIENT	TOUREEN CONTRACTORS				
PRODUCT NAME	WATERGUARD COMMERCIAL 25,000 LITRES				
CHAMBER WEIGHT	TBC	TOLERANCE	+/-3%	DRAWN BY	DM
CAPACITY (LITRES)	25,000	DATE	01/09/23	SCALE	NTS

DIMENSIONS ARE SUBJECT TO DIMENSIONAL TOLERANCES.
If critical, check physically prior to installation.

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Technical Submittal Form

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Form Title Ref.:
TOU-0472-UP2-BG-TS-X-0039

Subject / Title:
Petrol Interceptors

Description (example: product name; location; specification details; supplier; etc.):
Klargester NSFP006, UP2 West, R12 421 with Darcy Separator Monitor Type 14300 - AS supplied in Phase 1

Is the proposal specification compliant?
Yes

Is the proposal an alternative to specification?
No

Details of reason for deviation from specification / alternative to specification:

MAINS KLARGESTER SEPARATOR ALARM

INSTALLATION & OPERATIONS MANUAL

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- Flashing Beacon Wiring 9

Accessories 10

14300 Klargester Separator Alarm

Installation, Operation & Maintenance

Name and Address of Manufacturer	Darcy Products Limited Brook House Larkfield Trading Estate New Hythe Lane, Larkfield Kent ME20 6GN
European Directive	94/9/EC
Equipment Name and Type	Separator Monitor Type 14300
Certificate Number	Baseefa 08ATEX0110/2 IECEx BAS 11.0095
Specific Marking of Explosion Protection	[Ex ia] IIC (-20°C ≤ Ta ≤ +50°C)
ATEX Directive Marking	Ex II (1) G
Notified Body	Baseefa 1180 Buxton UK
CE Mark with Notified Body Number	CE_{1180}
Harmonised Standards Used	EN 60079-0:2009 EN 60079-11:2012
Serial Number and Year of Manufacture	Displayed underneath the control unit
On behalf of the above named company, I declare that, on the date the equipment accompanied by this declaration is placed on the market, the equipment conforms with all technical and regulatory requirements of the above listed directives.  P.G. Bowden - Director	

IMPORTANT

Note: In all cases good, standard electrical practice should be followed, and the installation must conform to the appropriate local code of practice – e.g. BS EN 60079-25 in the UK. In essence, the installation must be such that the intrinsic safety is not compromised by: - exposure to risk of mechanical damage, unauthorised modification or interference, exposure to moisture, dust and foreign bodies, excessive heat, invasion of intrinsically safe circuit by other electrical equipment or circuitry. (See Note in installation section)

General Description

The standard system is supplied complete with an intrinsically safe control unit together with a high oil probe. The control unit is capable of monitoring up to 3 probe units, displaying their current status via a 2 x 16 display. The output relay enables this status to be signalled to a remote location or activate a beacon if required.

General Operation

The Control Unit monitors the condition of the connected probe units by checking their condition every 30 minutes[1], their current status is displayed on the display located on the front of the unit. If an alarm condition is detected, a warning message is displayed followed by notification of the alarm condition detected, e.g. ***HAZARD ALERT* High Oil Alarm**, the output relay becomes de-energised and the internal buzzer is audible.

The unit then gives the option, via the display, to accept/acknowledge the alarm. On doing so, the output relay energises, the buzzer is muted and the display instructs the user to take the appropriate action, e.g. empty the separator. After the separator has been emptied and refilled with water, the control unit re-scans the probe sensors attached and presuming no alarm condition is detected, **'All Correct'** will be displayed. If the push button is pressed before the separator has been emptied, or it has been emptied but not refilled with water, then the control simply scans the probe sensor(s) and reverts to the alarm condition. Please note the output relay is *de-energised* on detection of any alarm condition or mains failure.

Changing Factory Settings

Alarm Type

The factory setting is STD (standard), this is where the output relay de-energises upon fault detection and energises upon acceptance of the fault.

Alarm Type EXT (Extended) allows the relay to remain de-energised until all alarm conditions become normal.

To enter the "Set Up" mode, firstly remove power from the unit. Whilst holding down the Push Switch, power up the unit keeping the Push Switch depressed, after about 10 seconds the screen will display "Set Up", at this point release the Push Switch.

The display will now show Alarm Type: with a flashing cursor over STD, to change this function to EXT, press the Push Switch once.

[1] The unit is factory set to 30 minutes, but in extreme conditions, this can be manually changed from 2 to 60 minutes at one minute intervals. (see Changing Factory Settings)

Check Interval

Whilst still in the Set Up mode, power down and then power up the unit, the flashing cursor will now be next to Check Intvl: - by pressing the Push Switch, the time can be altered in increments of 1 minute between 2 and 60.
To exit the Set Up mode at any time, hold the Push Switch whilst powering down and then power up again before releasing the Switch, this will return to the main screen sequence.

Testing the Probe Sensors

The probe interrogation function can be activated at any time by simply pressing the push switch.

Installation

This product has been designed and certified as being intrinsically safe. It is of paramount importance, that the unit should not be modified in any way and the installation be carried out by an approved installer, in accordance with the Environment Agency guidelines (PPG3). Any deviation from this could invalidate the certification warranty and render the unit unsafe for its intended use.

Control Unit

Refer to Table 4 on page 7 for required cable specifications.

The control unit must be positioned in a non-hazardous area. For all wiring details, refer to Figure 1, Table 5 and Table 6 on page 9.

Probes (High Oil & High Liquid Level Probes)

The high oil probe is to be installed in the separator tank such that the float housing is below the static liquid level. If a high liquid probe is required, this needs to be installed such that the float switch housing is located above the static liquid level. Both probe cables can be secured inside the neck of the separator using a probe cord guide.

Please note the distance above or below the static liquid level will be determined by the type, style and/or size of separator, this information can be obtained from the separator manufacturer. However, as a general *rule of thumb*, the high liquid level probe should be placed 300mm above the static liquid level and the high oil probe 150mm below.
Due to the varying neck lengths (turrets) that occur within each separator, each normal probe unit is fitted with 5 metres of cable.

Silt Probe

The probe is suspended in the separator to a pre determined depth and the cable can be secured to the neck of the separator using a probe cord guide.

Cable Distribution Box

It is advisable to connect the probe cables to a cable distribution box which should be fixed near to the top of the separator neck. The probe cable can then be terminated with a waterproof plug (provided with the distribution box). The plug is then connected to the bulkhead socket (provided with the distribution box). A cable must then be laid to connect the distribution box and the control unit. The type of connection cable required will be dependent on the environment it is used in, the route taken and maximum allowable cable capacitance and inductance (see cable parameters in Table 4 on page 7).
After making the connections in the distribution box, it is advisable to spray the terminals with a conformal coating lacquer to prevent moisture ingress before finally sealing them with waterproof putty.

Connection to Control Unit

The Probe cable should be fed through the appropriate gland in the bottom right hand side of the control unit and connected to the terminals as instructed. The mains cable, and if used, any beacon or sounder cable, must be fed through the appropriate gland on the bottom left hand side of the control unit and connected to the terminals as instructed.

IMPORTANT NOTE: Under NO circumstances must the control unit casing be drilled to allow cable entry in any area(s) other than those already provided, as this would infringe the certification and therefore safety of the product.

Using a Junction Box

An intrinsically safe junction box should be used where incoming cable sizes have to be reduced to gain entry through the cable glands in the base of the control unit.

IMPORTANT NOTE: Under NO circumstances must mains and probe cable joints be made within the same junction box other than a junction box that is approved Intrinsically safe for such purpose, as this would infringe the certification and therefore safety of the installed system.

Maintenance and Repair

Due to the harsh environments which the probes can be subjected to, it is advised that they are inspected and cleaned with a damp cloth at regular intervals. The control unit does not contain user serviceable parts.

Technical Information

Electrical

Supply Voltage		230V ±10% 50Hz
Input Current	Normal condition	41mA
	Alarm condition	40mA
Fusing	Primary (FS2)	T 315mA H 250V
	Secondary (FS3)	50mA (Baseefa approved)
Max probe cable length		200m (less if values in Table 4 would be exceeded)
Relay Output		Volt-free SPCO contact 3A
Panel rating		IP65
Panel dimensions		180mm x 180mm x 60mm

Table 1 – Electrical Specifications

Apparatus Supply and I/O Parameters

U_m	253Vrms

Table 2 – Mains Supply and Relay Contact Terminals (TB2 & TB3)

U_o	12.6V
I_o	87mA
P_o	273mW
C_i	0
L_i	0

Table 3 – Hazardous Area Terminals (TB1)

Group	Capacitance (µF)	Inductance (mH)	OR	L/R Ratio (µH/Ω)
IIC	1.15	4.6		74
IIB	7.4	18.7		298
IIA	27	37.5		596

Table 4 – TB1 Load Parameters

Probe Cables

The total capacitance and inductance of the cable used between the control unit and the probe must not exceed that shown in Table 4.

Mechanical

Protection and/or screening of the cable should also be taken into account. The maximum length of cable between probe and control unit must not exceed 200 metres or less if the values in Table 4 would be exceeded.

Probe Enable Jumper Links

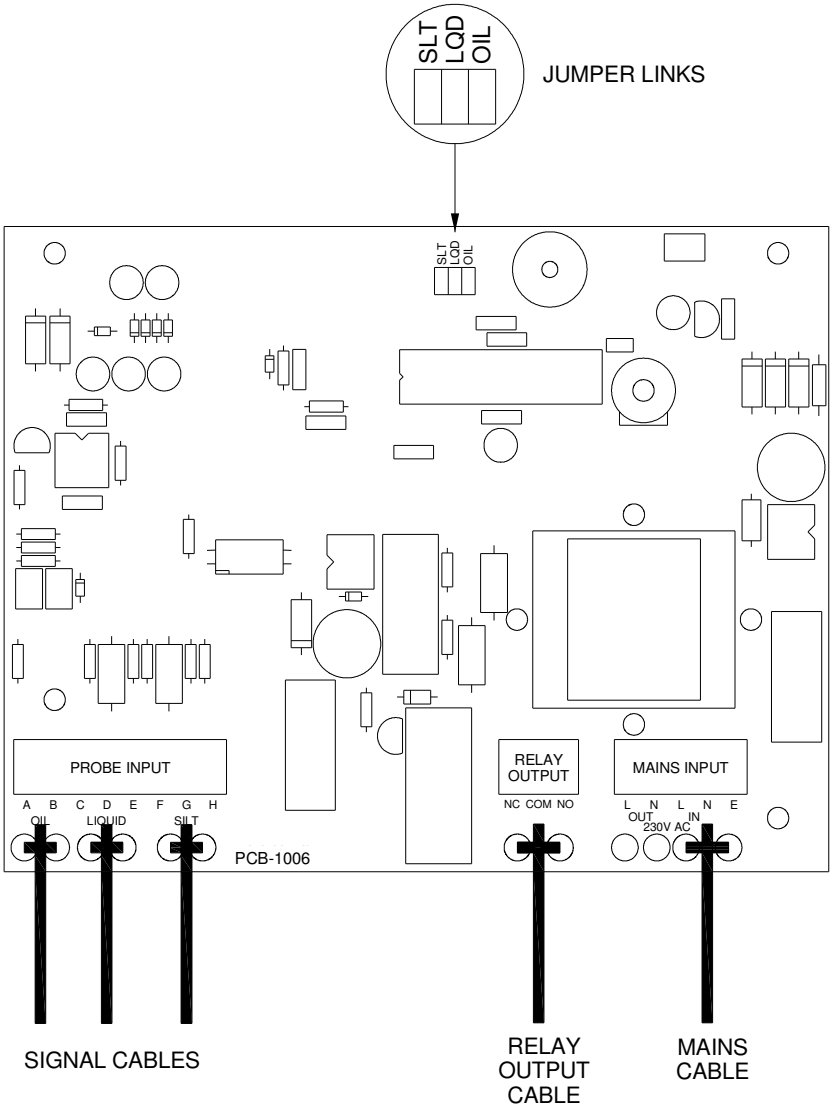


Figure 1 - Probe enable jumper links

To operate a probe, REMOVE appropriate jumper link

Probe Type	Remove Link
High Oil	OIL
High Liquid	LQD
Silt	SLT

Table 5 – Probe enable jumper links

Probe Cable Terminals

Probe Type	A	B	C	D	E	F	G	H
High Oil	BROWN	BLUE						
High Liquid			-	RED	BLUE			
Liquid (Optical)			BROWN	GREEN/ YELLOW	BLUE			
Silt						BROWN	GREEN/ YELLOW	BLUE

Table 6 - Probes cable wiring connection details

Flashing Beacon Wiring

The relay output terminals, TB2, may be used to operate a 230V flashing beacon when an alarm occurs. The beacon should be wired according to Table 7 and Table 8. Any commoning of live and neutral connections must be done externally to the unit's enclosure.

TB2 Terminal	Connect To
NO	No Connection
COM	TB3 Mains live
NC	Beacon Live Terminal

Table 7 – wiring from relay output to beacon

TB3 Mains Terminal	Connect To
L out	TB2 COM Terminal
N out	Beacon Neutral Terminal
E	Mains earth

Table 8 – wiring to beacon from relay output

Accessories

	Part No.
High Oil Probe	14201
High Level Probe	14210
Silt Probe	14220
230 VAC Flashing Amber Beacon (Includes mounting bracket and glands)	14012
230 VAC Flashing Amber Beacon & Siren (Includes mounting bracket and glands)	14100
Probe Cord Guide	14103
Signal Distribution Box	14039
Intrinsically Safe Junction Box (Power & Probe)	14006

SEPARATORS

A RANGE OF FUEL/OIL SEPARATORS
FOR PEACE OF MIND

Kingspan

Klargester

60 YEARS OF
Expertise &
1955–2015 Innovation

Separators

A RANGE OF FUEL/OIL SEPARATORS FOR PEACE OF MIND

Surface water drains normally discharge to a watercourse or indirectly into underground waters (groundwater) via a soakaway. Contamination of surface water by oil, chemicals or suspended solids can cause these discharges to have a serious impact on the receiving water.

The Environment Regulators, Environment Agency, England and Wales, SEPA, Scottish Environmental Protection Agency in Scotland and Department of Environment & Heritage in Northern Ireland, have published guidance on surface water disposal, which offers a range of means of dealing with pollution both at source and at the point of discharge from site (so called 'end of pipe' treatment). These techniques are known as 'Sustainable Drainage Systems' (SuDS).

Where run-off is draining from relatively low risk areas such as car-parks and non-operational areas, a source control approach, such as permeable surfaces or infiltration trenches, may offer a suitable means of treatment, removing the need for a separator.

Oil separators are installed on surface water drainage systems to protect receiving waters from pollution by oil, which may be present due to minor leaks from vehicles and plant, from accidental spillage.

Effluent from industrial processes and vehicle washing should normally be discharged to the foul sewer (subject to the approval of the sewerage undertaker) for further treatment at a municipal treatment works.

SEPARATOR STANDARDS AND TYPES

A British (and European) standard (EN 858-1 and 858-2) for the design and use of prefabricated oil separators has been adopted. New prefabricated separators should comply with the standard.

SEPARATOR CLASSES

The standard refers to two 'classes' of separator, based on performance under standard test conditions.

CLASS I

Designed to achieve a concentration of less than 5mg/l of oil under standard test conditions, should be used when the separator is required to remove very small oil droplets.

CLASS II

Designed to achieve a concentration of less than 100mg/l oil under standard test conditions and are suitable for dealing with discharges where a lower quality requirement applies (for example where the effluent passes to foul sewer).

Both classes can be produced as full retention separators. The oil concentration limits of 5 mg/l and 100 mg/l are only applicable under standard test conditions. It should not be expected that separators will comply with these limits when operating under field conditions.

FULL RETENTION SEPARATORS

Full retention separators treat the full flow that can be delivered by the drainage system, which is normally equivalent to the flow generated by a rainfall intensity of 65mm/hr.

On large sites, some short term flooding may be an acceptable means of limiting the flow rate and hence the size of full retention systems.

Get in touch for a **FREE** professional site visit and a representative will contact you within 5 working days to arrange a visit.
helpingyou@klargester.com
to make the right decision
or call **028 302 66799**

BYPASS SEPARATORS

Bypass separators fully treat all flows generated by rainfall rates of up to 6.5mm/hr. This covers over 99% of all rainfall events. Flows above this rate are allowed to bypass the separator. These separators are used when it is considered an acceptable risk not to provide full treatment for high flows, for example where the risk of a large spillage and heavy rainfall occurring at the same time is small.

FORECOURT SEPARATORS

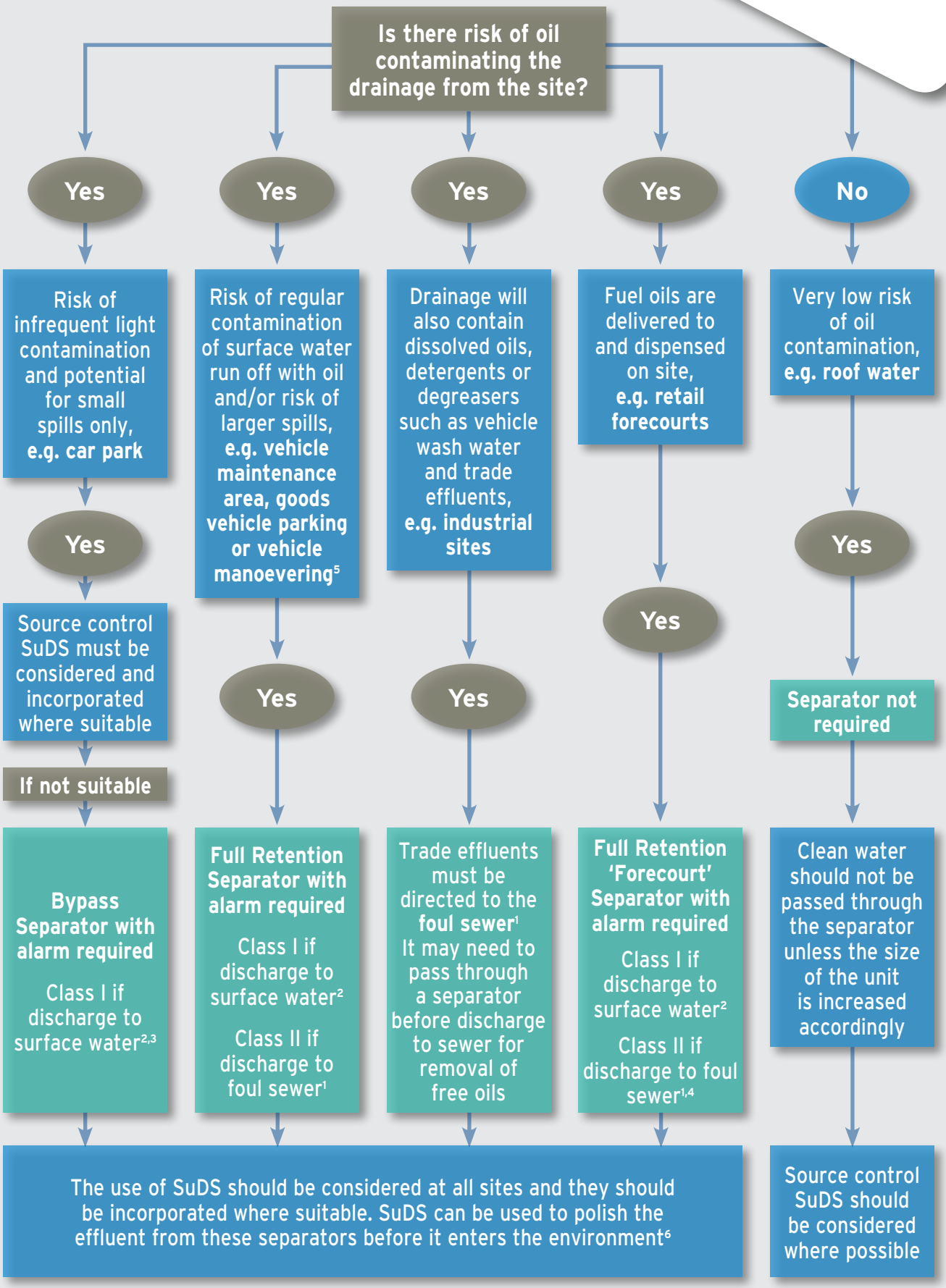
Forecourt separators are full retention separators specified to retain on site the maximum spillage likely to occur on a petrol filling station. They are required for both safety and environmental reasons and will treat spillages occurring during vehicle refuelling and road tanker delivery. The size of the separator is increased in order to retain the possible loss of the contents of one compartment of a road tanker, which may be up to 7,600 litres.

SELECTING THE RIGHT SEPARATOR

The chart on the following page gives guidance to aid selection of the appropriate type of fuel/oil separator for use in surface water drainage systems which discharge into rivers and soakaways.

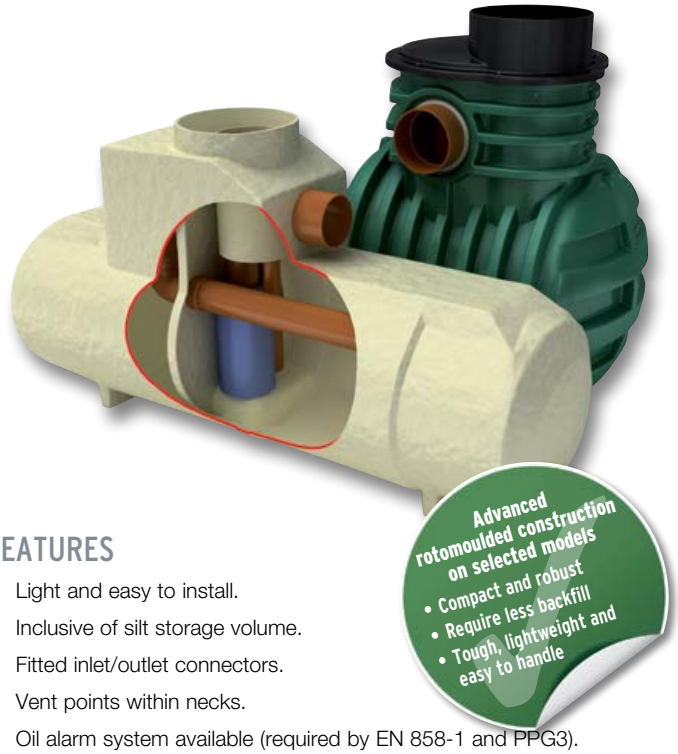
For further detailed information, please consult the Environment Agency Pollution Prevention Guideline 03 (PPG 3) 'Use and design of oil separators in surface water drainage systems' available from their website.

Kingspan Klargester has a specialist team who provide technical assistance in selecting the appropriate separator for your application.



1 You must seek prior permission from your local sewer provider before you decide which separator to install and before you make any discharge.
2 You must seek prior permission from the relevant environmental body before you decide which separator to install.
3 In this case, if it is considered that there is a low risk of pollution a source control SuDS scheme may be appropriate.
4 In certain circumstances, the sewer provider may require a Class 1 separator for discharges to sewer to prevent explosive atmospheres from being generated.
5 Drainage from higher risk areas such as vehicle maintenance yards and goods vehicle parking areas should be connected to foul sewer in preference to surface water.
6 In certain circumstances, a separator may be one of the devices used in the SuDS scheme. Ask us for advice.

Bypass NSB RANGE



APPLICATION

Bypass separators are used when it is considered an acceptable risk not to provide full treatment, for very high flows, and are used, for example, where the risk of a large spillage and heavy rainfall occurring at the same time is small, e.g.

- Surface car parks.
- Roadways.
- Lightly contaminated commercial areas.

PERFORMANCE

Klargester were one of the first UK manufacturers to have separators tested to EN 858-1. Klargester have now added the NSB bypass range to their portfolio of certified and tested models. The NSB number denotes the maximum flow at which the separator treats liquids. The British Standards Institute (BSI) tested the required range of Kingspan Klargester Bypass separators and certified their performance in relation to their flow and process performance assessing the effluent qualities to the requirements of EN 858-1. Klargester bypass separator designs follow the parameters determined during the testing of the required range of bypass separators.

Each bypass separator design includes the necessary volume requirements for:

- Oil separation capacity.
- Oil storage volume.
- Silt storage capacity.
- Coalescer.

The unit is designed to treat 10% of peak flow. The calculated drainage areas served by each separator are indicated according to the formula given by PPG3 NSB = 0.0018A(m2). Flows generated by higher rainfall rates will pass through part of the separator and bypass the main separation chamber.

Class I separators are designed to achieve a concentration of 5mg/litre of oil under standard test conditions.

FEATURES

- Light and easy to install.
- Inclusive of silt storage volume.
- Fitted inlet/outlet connectors.
- Vent points within necks.
- Oil alarm system available (required by EN 858-1 and PPG3).
- Extension access shafts for deep inverts.
- Maintenance from ground level.
- GRP or rotomoulded construction (subject to model).

To specify a nominal size bypass separator, the following information is needed:-

- The calculated flow rate for the drainage area served. Our designs are based on the assumption that any interconnecting pipework fitted elsewhere on site does not impede flow into or out of the separator and that the flow is not pumped.
- The drain invert inlet depth.
- Pipework type, size and orientation.

SIZES AND SPECIFICATIONS

UNIT NOMINAL SIZE	FLOW (l/s)	PEAK FLOW RATE (l/s)	DRAINAGE AREA (m²)	STORAGE CAPACITY (litres) SILT	OIL	UNIT LENGTH (mm)	UNIT DIA. (mm)	ACCESS SHAFT DIA. (mm)	BASE TO INLET INVERT (mm)	BASE TO OUTLET INVERT	STANDARD FALL ACROSS (mm)	MIN. INLET INVERT (mm)	STANDARD PIPEWORK DIA.
NSBP003	3	30	1670	300	45	1700	1350	600	1420	1320	100	500	160
NSBP004	4.5	45	2500	450	60	1700	1350	600	1420	1320	100	500	160
NSBP006	6	60	3335	600	90	1700	1350	600	1420	1320	100	500	160
NSBE010	10	100	5560	1000	150	2069	1220	750	1450	1350	100	700	315
NSBE015	15	150	8335	1500	225	2947	1220	750	1450	1350	100	700	315
NSBE020	20	200	11111	2000	300	3893	1220	750	1450	1350	100	700	375
NSBE025	25	250	13890	2500	375	3575	1420	750	1680	1580	100	700	375
NSBE030	30	300	16670	3000	450	4265	1420	750	1680	1580	100	700	450
NSBE040	40	400	22222	4000	600	3230	1920	600	2185	2035	150	1000	500
NSBE050	50	500	27778	5000	750	3960	1920	600	2185	2035	150	1000	600
NSBE075	75	750	41667	7500	1125	5841	1920	600	2235	2035	200	950	675
NSBE100	100	1000	55556	10000	1500	7661	1920	600	2235	2035	200	950	750
NSBE125	125	1250	69444	12500	1875	9548	1920	600	2235	2035	200	950	750

Rotomoulded chamber construction GRP chamber construction * Some units have more than one access shaft – diameter of largest shown.

Full Retention NSF RANGE

APPLICATION

Full retention separators are used in high risk spillage areas such as:

- Fuel distribution depots.
- Vehicle workshops.
- Scrap Yards

PERFORMANCE

Kingspan Klargester were the first UK manufacturer to have the required range (3-30 l/sec) certified to EN 858-1 in the UK. The NSF number denotes the flow at which the separator operates.

The British Standards Institute (BSI) have witnessed the performance tests of the required range of separators and have certified their performance, in relation to their flow and process performance to ensure that they met the effluent quality requirements of EN 858-1. Larger separator designs have been determined using the formulas extrapolated from the test range.

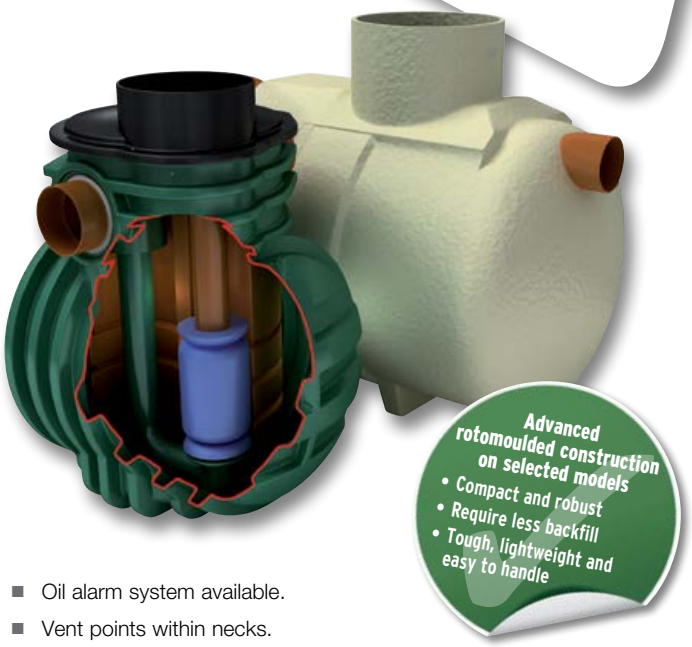
Each full retention separator design includes the necessary volume requirements for:

- Oil separation capacity.
- Silt storage capacity.
- Automatic closure device.
- Oil storage volume.
- Coalescer (Class I units only).

Klargester full retention separators treat the whole of the specified flow.

FEATURES

- Light and easy to install.
- Class I and Class II designs.
- 3-30 l/sec range independently tested and performance sampled, certified by the BSI.
- Inclusive of silt storage volume.
- Fitted inlet/outlet connectors.



- Oil alarm system available.
- Vent points within necks.
- Extension access shafts for deep inverts.
- Maintenance from ground level.
- GRP or rotomoulded construction (subject to model).

To specify a nominal size full retention separator, the following information is needed:-

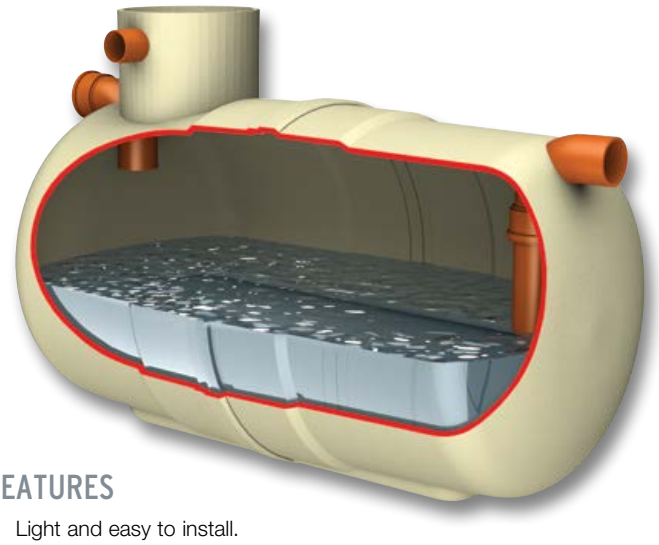
- The calculated flow rate for the drainage area served. Our designs are based on the assumption that any interconnecting pipework fitted elsewhere on site does not impede flow into or out of the separator and that the influent is not pumped.
- The required discharge standard. This will decide whether a Class I or Class II unit is required.
- The drain invert inlet depth.
- Pipework type, size and orientation.

SIZES AND SPECIFICATIONS

UNIT NOMINAL SIZE	FLOW (l/s)	DRAINAGE AREA (m^2) PPG-3 (0.018)	STORAGE CAPACITY (litres) SILT	OIL	UNIT LENGTH (mm)	UNIT DIA. (mm)	BASE TO INLET INVERT (mm)	BASE TO OUTLET INVERT	MIN. INLET INLET (mm)	STANDARD PIPEWORK DIA. (mm)
NSFP003	3	170	300	30	1700	1350	1420	1345	500	160
NSFP006	6	335	600	60	1700	1350	1420	1345	500	160
NSFA010	10	555	1000	100	2610	1225	1050	1000	500	200
NSFA015	15	835	1500	150	3910	1225	1050	1000	500	200
NSFA020	20	1115	2000	200	3200	2010	1810	1760	1000	315
NSFA030	30	1670	3000	300	3915	2010	1810	1760	1000	315
NSFA040	40	2225	4000	400	4640	2010	1810	1760	1000	315
NSFA050	50	2780	5000	500	5425	2010	1810	1760	1000	315
NSFA065	65	3610	6500	650	6850	2010	1810	1760	1000	315
NSFA080	80	4445	8000	800	5744	2820	2500	2450	1000	300
NSFA100	100	5560	10000	1000	6200	2820	2500	2450	1000	400
NSFA125	125	6945	12500	1250	7365	2820	2500	2450	1000	450
NSFA150	150	8335	15000	1500	8675	2820	2550	2450	1000	525
NSFA175	175	9725	17500	1750	9975	2820	2550	2450	1000	525
NSFA200	200	11110	20000	2000	11280	2820	2550	2450	1000	600

Rotomoulded chamber construction GRP chamber construction

Washdown & Silt



APPLICATION

This unit can be used in areas such as car wash and other cleaning facilities that discharge directly into a foul drain, which feeds to a municipal treatment facility.

If emulsifiers are present the discharge must not be allowed to enter an NS Class I or Class II unit.

- Car wash.
- Tool hire depots.
- Truck cleansing.
- Construction compounds cleansing points.

PERFORMANCE

Such wash down facilities must not be allowed to discharge directly into surface water but must be directed to a foul connection leading to a municipal treatment works as they utilise emulsifiers, soaps and detergents, which can dissolve and disperse the oils.

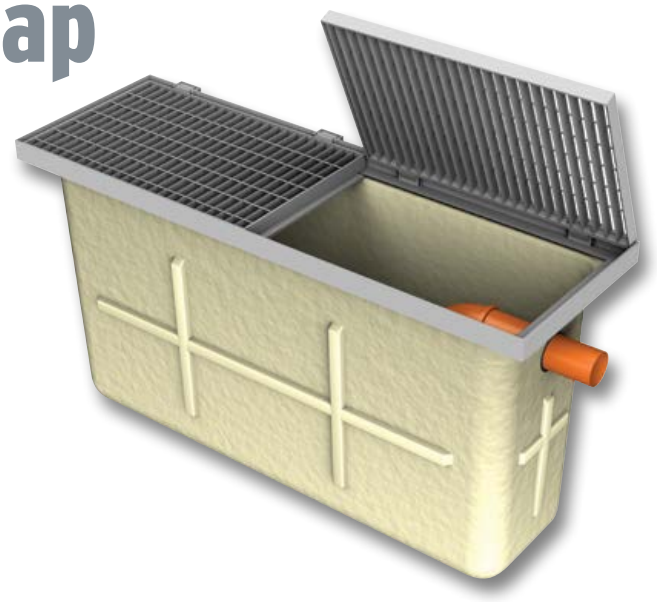
FEATURES

- Light and easy to install.
- Inclusive of silt storage volume.
- Fitted inlet/outlet connectors.
- Vent points within necks.
- Extension access shafts for deep inverts.
- Maintenance from ground level.

SIZES AND SPECIFICATIONS

REF.	TOTAL CAPACITY (litres)	MAX. REC. SILT	MAX. FLOW RATE (l/s)	LENGTH (mm)	DIAMETER (mm)	ACCESS SHAFT DIA. (mm)	BASE TO INLET INVERT (mm)	BASE TO OUTLET INVERT (mm)	STANDARD FALL ACROSS UNIT (mm)	MIN. INLET INVERT (mm)	STANDARD PIPEWORK DIA. (mm)	APPROX EMPTY (kg)
W1/010	1000	500	3	1123	1225	460	1150	1100	50	500	160	60
W1/020	2000	1000	5	2074	1225	460	1150	1100	50	500	160	120
W1/030	3000	1500	8	2952	1225	460	1150	1100	50	500	160	150
W1/040	4000	2000	11	3898	1225	460	1150	1100	50	500	160	180
W1/060	6000	3000	16	4530	1440	600	1360	1310	50	500	160	320
W1/080	8000	4000	22	3200	2020	600	2005	1955	50	500	160	585
W1/100	10000	5000	27	3915	2020	600	2005	1955	50	500	160	680
W1/120	12000	6000	33	4640	2020	600	2005	1955	50	500	160	770
W1/150	15000	7500	41	5435	2075	600	1940	1890	50	500	160	965
W1/190	19000	9500	52	6865	2075	600	1940	1890	50	500	160	1200

Car Wash Silt Trap



APPLICATION

Car Wash silt trap is designed for use before a separator in car wash applications to ensure effective silt removal.

FEATURES

- FACTA Class B covers.
- Light and easy to install.
- Maintenance from ground level.

Forecourt

APPLICATION

The forecourt separator is designed for installation in petrol filling station forecourts and similar applications. The function of the separator is to intercept hydrocarbon pollutants such as petroleum and oil and prevent their entry to the drainage system, thus protecting the environment against hydrocarbon contaminated surface water run-off and gross spillage.

PERFORMANCE

Operation ensures that the flow cannot exit the unit without first passing through the coalescer assembly.

In normal operation, the forecourt separator has sufficient capacity to provide storage for separated pollutants within the main chamber, but is also able to contain up to 7,600 litres of pollutant arising from the spillage of a fuel delivery tanker compartment on the petrol forecourt. The separator has been designed to ensure that oil cannot exit the separator in the event of a major spillage, subsequently the separator should be emptied immediately.

FEATURES

- Light and easy to install.
- Inclusive of silt storage volume.
- Fitted inlet/outlet connectors.
- Vent points within necks.
- Extension access shafts for deep inverts.
- Maintenance from ground level.
- Class I and Class II design.
- Oil storage volume.
- Coalescer (Class I unit only).
- Automatic closure device.
- Oil alarm system available.

INSTALLATION

The unit should be installed on a suitable concrete base slab and surrounded with concrete or pea gravel backfill. See sales drawing for installation.

If the separator is to be installed within a trafficked area, then a suitable cover slab must be designed to ensure that loads are not transmitted to the unit.

The separator should be installed and vented in accordance with Health and Safety Guidance Note HS(G)41 for filling stations, subject to Local Authority requirements.

SIZES AND SPECIFICATIONS

ENVIROCEPTOR CLASS	TOTAL CAP. (litres)	DRAINAGE AREA (m^2)	MAX. FLOW RATE (l/s)	LENGTH (mm)	DIAMETER (mm)	ACCESS SHAFT DIA. (mm)	BASE TO INLET INVERT (mm)	BASE TO OUTLET INVERT (mm)	STD. FALL ACROSS UNIT (mm)	MIN. INLET INVERT (mm)	STD. PIPEWORK (mm)	EMPTY WEIGHT (kg)
I	10000	555	10	3963	1920	600	2110	2060	50	400	160	500
II	10000	555	10	3963	1920	600	2110	2060	50	400	160	500
I	10000	1110	20	3963	1920	600	2110	2060	50	400	200	500
II	10000	1110	20	3963	1920	600	2110	2060	50	400	200	500

Alarm Systems

British European Standard EN 858-1 and Environment Agency Pollution Prevention Guideline PPG3 requires that all separators are to be fitted with an oil level alarm system and that it should be installed and calibrated by a suitably qualified technician so that it will respond to an alarm condition when the separator requires emptying.

- Easily fitted to existing tanks.
- Excellent operational range.
- Visual and audible alarm.
- Additional telemetry option.

PROFESSIONAL INSTALLERS

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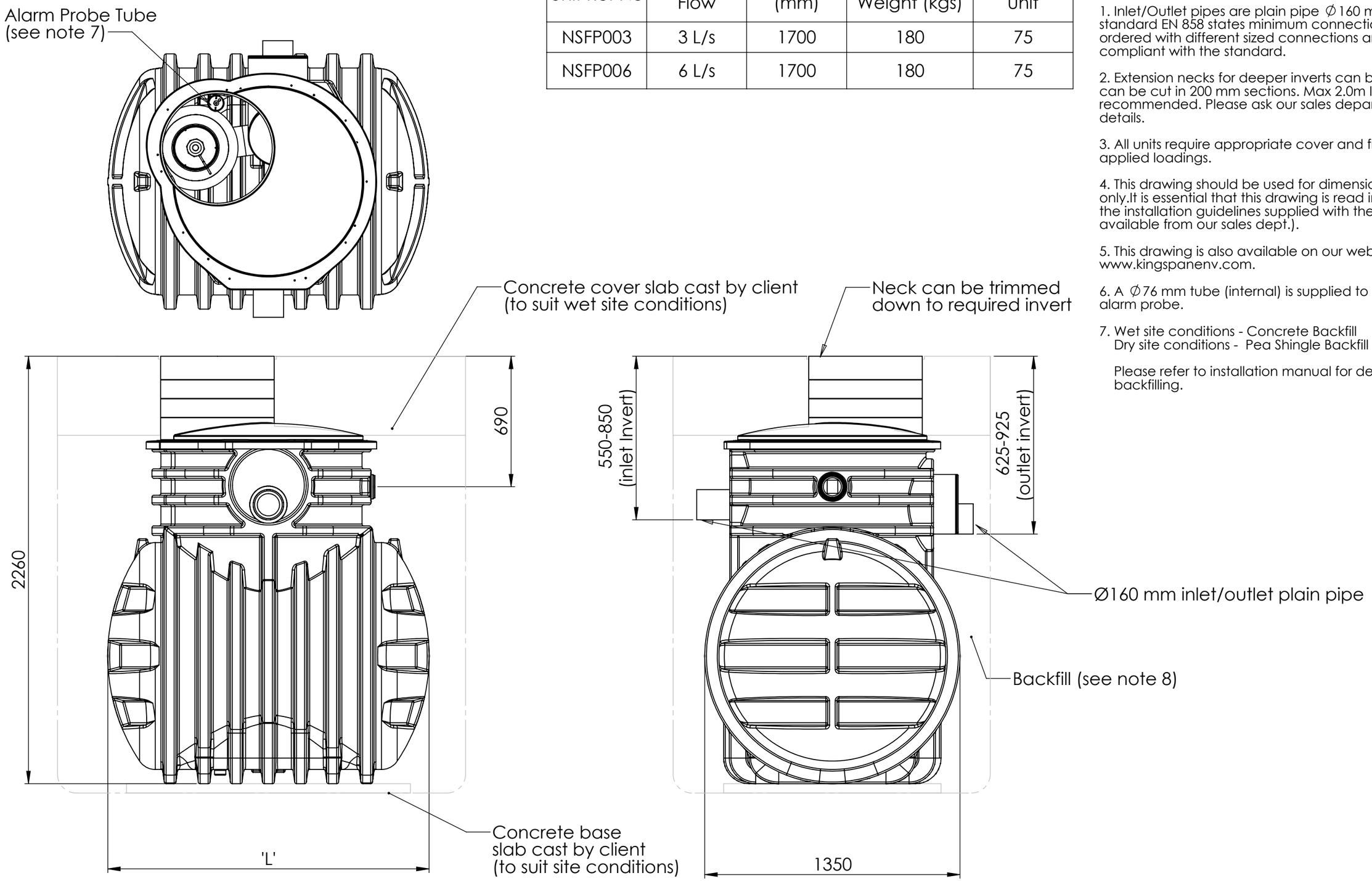
In keeping with Company policy of continuing research and development and in order to offer our clients the most advanced products, Kingspan Environmental reserves the right to alter specifications and drawings without prior notice.

Issue No. 21: September 2015

Unit Ref No	Nominal Flow	Dim L (mm)	Approx Empty Weight (kgs)	Fall across unit
NSFP003	3 L/s	1700	180	75
NSFP006	6 L/s	1700	180	75



Notes:-

1. Inlet/Outlet pipes are plain pipe ∅160 mm PVCu. The standard EN 858 states minimum connection sizes, units ordered with different sized connections are not fully compliant with the standard.

2. Extension necks for deeper inverts can be provided. These can be cut in 200 mm sections. Max 2.0m Invert recommended. Please ask our sales department for further details.

3. All units require appropriate cover and frame to suit applied loadings.

4. This drawing should be used for dimensional information only.It is essential that this drawing is read in conjunction with the installation guidelines supplied with the unit.(Copies are available from our sales dept.).

5. This drawing is also available on our website www.kingspanenv.com.

6. A ∅76 mm tube (internal) is supplied to house an oil alarm probe.

7. Wet site conditions - Concrete Backfill
   Dry site conditions - Pea Shingle Backfill

   Please refer to installation manual for details of correct backfilling.

Please check with Kingspan Environmental that this drawing is the latest issue				
Issue	Date	Drawn by	Approved by	Description
04	15/12/10	S.Gill		CC934
03	24/02/10	S. Gill		CC794
02	23/09/09	S.Gill		Drawing Description Changed/Table Corrected
01	19/03/09	S.Gill		Initial Release

All dimensions in mm

Scale: Not to scale

Y:\engineering\Drawing Data\02 - Sales Drawings\DS\DS - 09\DS0992 NSFP003-NSFP006 Full retention Seperators Sales Drawing

Material : n/a	Tolerance : n/a
Finish : n/a	Thickness : n/a
Weight : Kgs n/a	Surface Area : n/a

Drawing : NSFP 003-006 Sales Drawing

Drg No - DSO992

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Kingspan Environmental

Technical Submittal Form

Please use this form as a 'front sheet' for all technical submittals. Ensure you include as much information as possible to receive a status. Where you provide an attachment, please reference the technical submittal ref. in the 'Subject/Title' field. and refer to the attachment in the 'Description' field.

Form Title Ref.:
TOU-0472-UP2-BG-TS-X-0040

Subject / Title:
Forecourt Separator

Description (example: product name; location; specification details; supplier; etc.):
Klargester 10000litre Class II Forecourt Separator, EC2 South West, R12 411 with oil probe and alarm. As supplied to Phase 1.

Is the proposal specification compliant?
Yes

Is the proposal an alternative to specification?
No

Details of reason for deviation from specification / alternative to specification:

MAINS KLARGESTER SEPARATOR ALARM

INSTALLATION & OPERATIONS MANUAL

Contents

IMPORTANT 3

General Description 4

General Operation 4

Changing Factory Settings 4

- Alarm Type 4
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14300 Klargester Separator Alarm

Installation, Operation & Maintenance

Name and Address of Manufacturer	Darcy Products Limited Brook House Larkfield Trading Estate New Hythe Lane, Larkfield Kent ME20 6GN
European Directive	94/9/EC
Equipment Name and Type	Separator Monitor Type 14300
Certificate Number	Baseefa 08ATEX0110/2 IECEx BAS 11.0095
Specific Marking of Explosion Protection	[Ex ia] IIC (-20°C ≤ Ta ≤ +50°C)
ATEX Directive Marking	Ex II (1) G
Notified Body	Baseefa 1180 Buxton UK
CE Mark with Notified Body Number	CE_{1180}
Harmonised Standards Used	EN 60079-0:2009 EN 60079-11:2012
Serial Number and Year of Manufacture	Displayed underneath the control unit
On behalf of the above named company, I declare that, on the date the equipment accompanied by this declaration is placed on the market, the equipment conforms with all technical and regulatory requirements of the above listed directives.  P.G. Bowden - Director	

IMPORTANT

Note: In all cases good, standard electrical practice should be followed, and the installation must conform to the appropriate local code of practice – e.g. BS EN 60079-25 in the UK. In essence, the installation must be such that the intrinsic safety is not compromised by: - exposure to risk of mechanical damage, unauthorised modification or interference, exposure to moisture, dust and foreign bodies, excessive heat, invasion of intrinsically safe circuit by other electrical equipment or circuitry. (See Note in installation section)

General Description

The standard system is supplied complete with an intrinsically safe control unit together with a high oil probe. The control unit is capable of monitoring up to 3 probe units, displaying their current status via a 2 x 16 display. The output relay enables this status to be signalled to a remote location or activate a beacon if required.

General Operation

The Control Unit monitors the condition of the connected probe units by checking their condition every 30 minutes[1], their current status is displayed on the display located on the front of the unit. If an alarm condition is detected, a warning message is displayed followed by notification of the alarm condition detected, e.g. ***HAZARD ALERT* High Oil Alarm**, the output relay becomes de-energised and the internal buzzer is audible.

The unit then gives the option, via the display, to accept/acknowledge the alarm. On doing so, the output relay energises, the buzzer is muted and the display instructs the user to take the appropriate action, e.g. empty the separator. After the separator has been emptied and refilled with water, the control unit re-scans the probe sensors attached and presuming no alarm condition is detected, **'All Correct'** will be displayed. If the push button is pressed before the separator has been emptied, or it has been emptied but not refilled with water, then the control simply scans the probe sensor(s) and reverts to the alarm condition. Please note the output relay is *de-energised* on detection of any alarm condition or mains failure.

Changing Factory Settings

Alarm Type

The factory setting is STD (standard), this is where the output relay de-energises upon fault detection and energises upon acceptance of the fault.

Alarm Type EXT (Extended) allows the relay to remain de-energised until all alarm conditions become normal.

To enter the "Set Up" mode, firstly remove power from the unit. Whilst holding down the Push Switch, power up the unit keeping the Push Switch depressed, after about 10 seconds the screen will display "Set Up", at this point release the Push Switch.

The display will now show Alarm Type: with a flashing cursor over STD, to change this function to EXT, press the Push Switch once.

[1] The unit is factory set to 30 minutes, but in extreme conditions, this can be manually changed from 2 to 60 minutes at one minute intervals. (see Changing Factory Settings)

Check Interval

Whilst still in the Set Up mode, power down and then power up the unit, the flashing cursor will now be next to Check Intvl: - by pressing the Push Switch, the time can be altered in increments of 1 minute between 2 and 60.
To exit the Set Up mode at any time, hold the Push Switch whilst powering down and then power up again before releasing the Switch, this will return to the main screen sequence.

Testing the Probe Sensors

The probe interrogation function can be activated at any time by simply pressing the push switch.

Installation

This product has been designed and certified as being intrinsically safe. It is of paramount importance, that the unit should not be modified in any way and the installation be carried out by an approved installer, in accordance with the Environment Agency guidelines (PPG3). Any deviation from this could invalidate the certification warranty and render the unit unsafe for its intended use.

Control Unit

Refer to Table 4 on page 7 for required cable specifications.

The control unit must be positioned in a non-hazardous area. For all wiring details, refer to Figure 1, Table 5 and Table 6 on page 9.

Probes (High Oil & High Liquid Level Probes)

The high oil probe is to be installed in the separator tank such that the float housing is below the static liquid level. If a high liquid probe is required, this needs to be installed such that the float switch housing is located above the static liquid level. Both probe cables can be secured inside the neck of the separator using a probe cord guide.

Please note the distance above or below the static liquid level will be determined by the type, style and/or size of separator, this information can be obtained from the separator manufacturer. However, as a general *rule of thumb*, the high liquid level probe should be placed 300mm above the static liquid level and the high oil probe 150mm below.
Due to the varying neck lengths (turrets) that occur within each separator, each normal probe unit is fitted with 5 metres of cable.

Silt Probe

The probe is suspended in the separator to a pre determined depth and the cable can be secured to the neck of the separator using a probe cord guide.

Cable Distribution Box

It is advisable to connect the probe cables to a cable distribution box which should be fixed near to the top of the separator neck. The probe cable can then be terminated with a waterproof plug (provided with the distribution box). The plug is then connected to the bulkhead socket (provided with the distribution box). A cable must then be laid to connect the distribution box and the control unit. The type of connection cable required will be dependent on the environment it is used in, the route taken and maximum allowable cable capacitance and inductance (see cable parameters in Table 4 on page 7).
After making the connections in the distribution box, it is advisable to spray the terminals with a conformal coating lacquer to prevent moisture ingress before finally sealing them with waterproof putty.

Connection to Control Unit

The Probe cable should be fed through the appropriate gland in the bottom right hand side of the control unit and connected to the terminals as instructed. The mains cable, and if used, any beacon or sounder cable, must be fed through the appropriate gland on the bottom left hand side of the control unit and connected to the terminals as instructed.

IMPORTANT NOTE: Under NO circumstances must the control unit casing be drilled to allow cable entry in any area(s) other than those already provided, as this would infringe the certification and therefore safety of the product.

Using a Junction Box

An intrinsically safe junction box should be used where incoming cable sizes have to be reduced to gain entry through the cable glands in the base of the control unit.

IMPORTANT NOTE: Under NO circumstances must mains and probe cable joints be made within the same junction box other than a junction box that is approved Intrinsically safe for such purpose, as this would infringe the certification and therefore safety of the installed system.

Maintenance and Repair

Due to the harsh environments which the probes can be subjected to, it is advised that they are inspected and cleaned with a damp cloth at regular intervals. The control unit does not contain user serviceable parts.

Technical Information

Electrical

Supply Voltage		230V ±10% 50Hz
Input Current	Normal condition	41mA
	Alarm condition	40mA
Fusing	Primary (FS2)	T 315mA H 250V
	Secondary (FS3)	50mA (Baseefa approved)
Max probe cable length		200m (less if values in Table 4 would be exceeded)
Relay Output		Volt-free SPCO contact 3A
Panel rating		IP65
Panel dimensions		180mm x 180mm x 60mm

Table 1 – Electrical Specifications

Apparatus Supply and I/O Parameters

U_m	253Vrms

Table 2 – Mains Supply and Relay Contact Terminals (TB2 & TB3)

U_o	12.6V
I_o	87mA
P_o	273mW
C_i	0
L_i	0

Table 3 – Hazardous Area Terminals (TB1)

Group	Capacitance (µF)	Inductance (mH)	OR	L/R Ratio (µH/Ω)
IIC	1.15	4.6		74
IIB	7.4	18.7		298
IIA	27	37.5		596

Table 4 – TB1 Load Parameters

Probe Cables

The total capacitance and inductance of the cable used between the control unit and the probe must not exceed that shown in Table 4.

Mechanical

Protection and/or screening of the cable should also be taken into account. The maximum length of cable between probe and control unit must not exceed 200 metres or less if the values in Table 4 would be exceeded.

Probe Enable Jumper Links

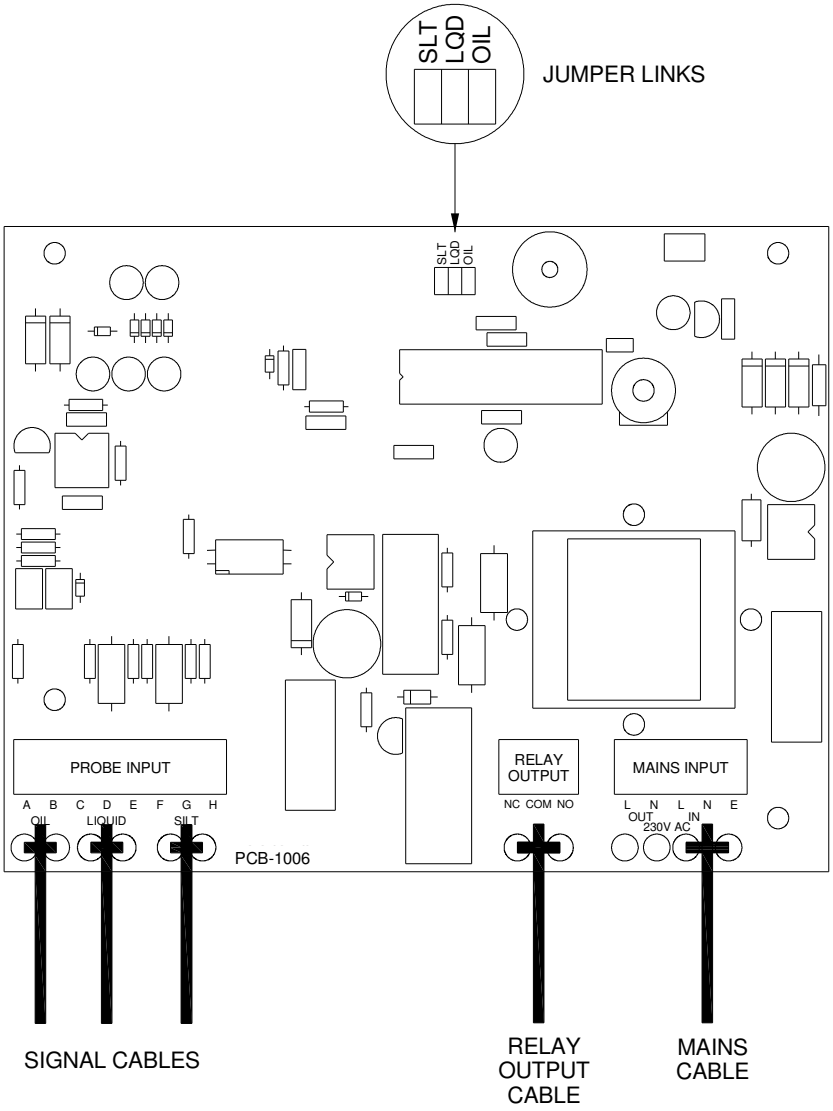


Figure 1 - Probe enable jumper links

To operate a probe, REMOVE appropriate jumper link

Probe Type	Remove Link
High Oil	OIL
High Liquid	LQD
Silt	SLT

Table 5 – Probe enable jumper links

Probe Cable Terminals

Probe Type	A	B	C	D	E	F	G	H
High Oil	BROWN	BLUE						
High Liquid			-	RED	BLUE			
Liquid (Optical)			BROWN	GREEN/ YELLOW	BLUE			
Silt						BROWN	GREEN/ YELLOW	BLUE

Table 6 - Probes cable wiring connection details

Flashing Beacon Wiring

The relay output terminals, TB2, may be used to operate a 230V flashing beacon when an alarm occurs. The beacon should be wired according to Table 7 and Table 8. Any commoning of live and neutral connections must be done externally to the unit's enclosure.

TB2 Terminal	Connect To
NO	No Connection
COM	TB3 Mains live
NC	Beacon Live Terminal

Table 7 – wiring from relay output to beacon

TB3 Mains Terminal	Connect To
L out	TB2 COM Terminal
N out	Beacon Neutral Terminal
E	Mains earth

Table 8 – wiring to beacon from relay output

Accessories

	Part No.
High Oil Probe	14201
High Level Probe	14210
Silt Probe	14220
230 VAC Flashing Amber Beacon (Includes mounting bracket and glands)	14012
230 VAC Flashing Amber Beacon & Siren (Includes mounting bracket and glands)	14100
Probe Cord Guide	14103
Signal Distribution Box	14039
Intrinsically Safe Junction Box (Power & Probe)	14006

Forecourt

APPLICATION

The forecourt separator is designed for installation in petrol filling station forecourts and similar applications. The function of the separator is to intercept hydrocarbon pollutants such as petroleum and oil and prevent their entry to the drainage system, thus protecting the environment against hydrocarbon contaminated surface water run-off and gross spillage.

PERFORMANCE

Operation ensures that the flow cannot exit the unit without first passing through the coalescer assembly.

In normal operation, the forecourt separator has sufficient capacity to provide storage for separated pollutants within the main chamber, but is also able to contain up to 7,600 litres of pollutant arising from the spillage of a fuel delivery tanker compartment on the petrol forecourt. The separator has been designed to ensure that oil cannot exit the separator in the event of a major spillage, subsequently the separator should be emptied immediately.

FEATURES

- Light and easy to install.
- Inclusive of silt storage volume.
- Fitted inlet/outlet connectors.
- Vent points within necks.
- Extension access shafts for deep inverts.
- Maintenance from ground level.
- Class I and Class II design.
- Oil storage volume.
- Coalescer (Class I unit only).
- Automatic closure device.
- Oil alarm system available.

INSTALLATION

The unit should be installed on a suitable concrete base slab and surrounded with concrete or pea gravel backfill. See sales drawing for installation.

If the separator is to be installed within a trafficked area, then a suitable cover slab must be designed to ensure that loads are not transmitted to the unit.

The separator should be installed and vented in accordance with Health and Safety Guidance Note HS(G)41 for filling stations, subject to Local Authority requirements.

SIZES AND SPECIFICATIONS

ENVIROCEPTOR CLASS	TOTAL CAP. (litres)	DRAINAGE AREA (m^2)	MAX. FLOW RATE (l/s)	LENGTH (mm)	DIAMETER (mm)	ACCESS SHAFT DIA. (mm)	BASE TO INLET INVERT (mm)	BASE TO OUTLET INVERT (mm)	STD. FALL ACROSS UNIT (mm)	MIN. INLET INVERT (mm)	STD. PIPEWORK (mm)	EMPTY WEIGHT (kg)
I	10000	555	10	3963	1920	600	2110	2060	50	400	160	500
II	10000	555	10	3963	1920	600	2110	2060	50	400	160	500
I	10000	1110	20	3963	1920	600	2110	2060	50	400	200	500
II	10000	1110	20	3963	1920	600	2110	2060	50	400	200	500

Alarm Systems

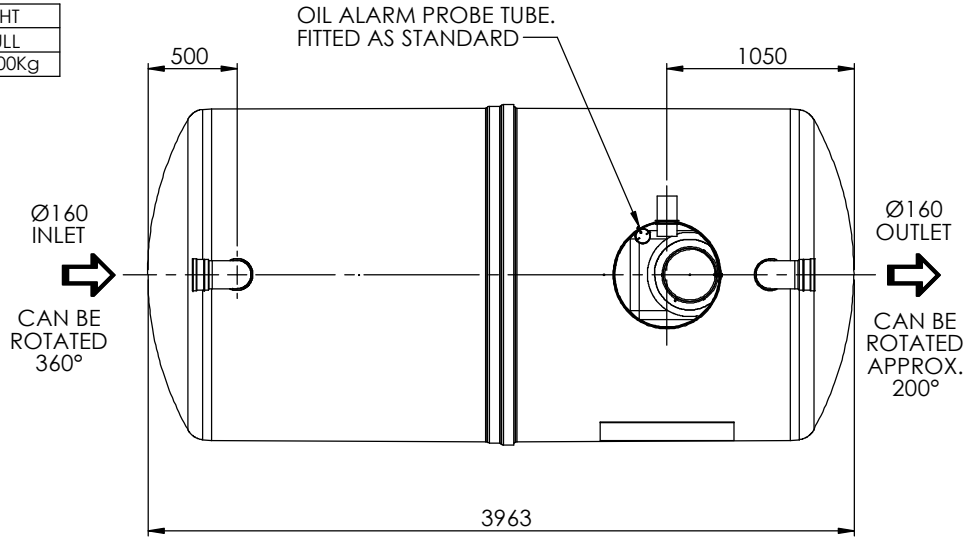
British European Standard EN 858-1 and Environment Agency Pollution Prevention Guideline PPG3 requires that all separators are to be fitted with an oil level alarm system and that it should be installed and calibrated by a suitably qualified technician so that it will respond to an alarm condition when the separator requires emptying.

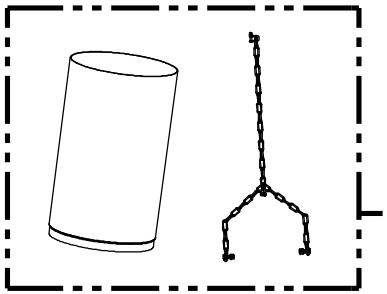
- Easily fitted to existing tanks.
- Excellent operational range.
- Visual and audible alarm.
- Additional telemetry option.

CONCRETE BACKFILL

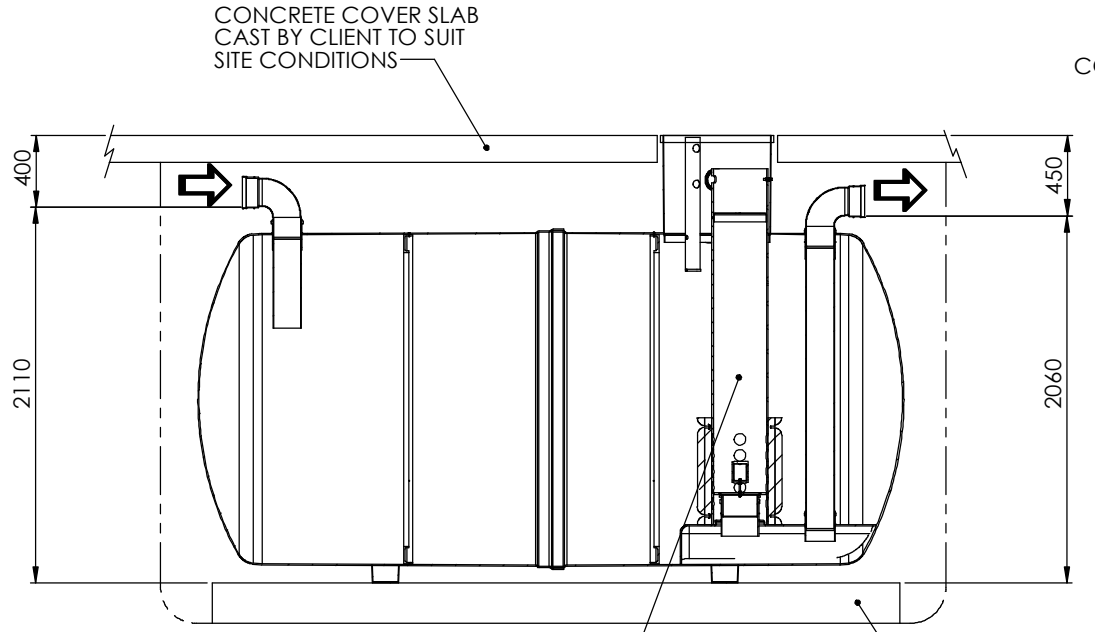
APPROX. WEIGHT	
EMPTY	FULL
500 Kg	10,500Kg

NOTE:- THE DESIGN OF THIS UNIT IS BASED ON AN NS10 FULL RETENTION UNIT

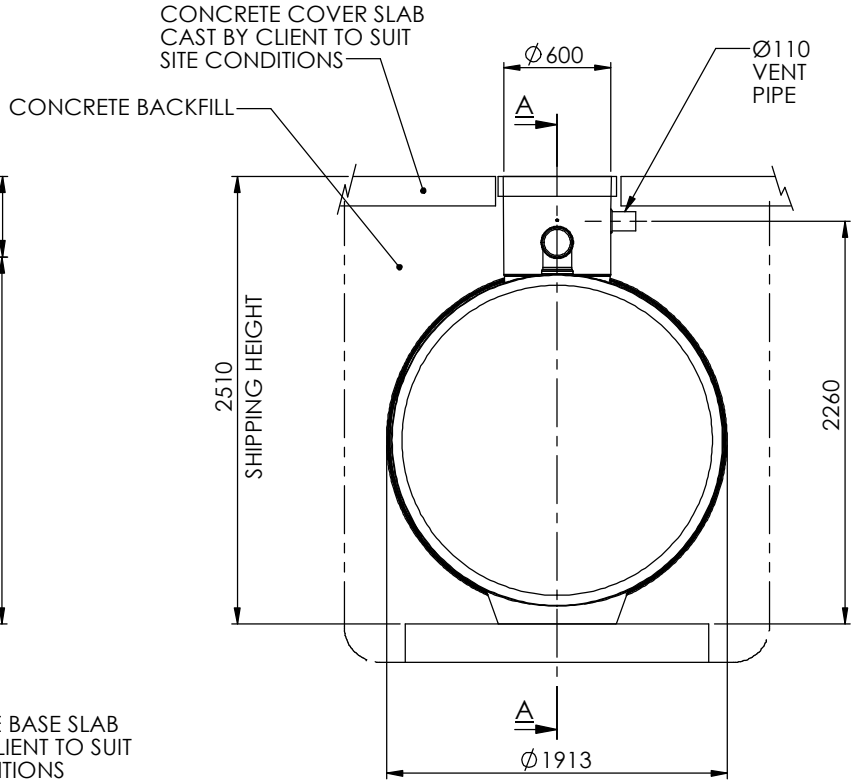




EXTENSION COMPONENTS
SUPPLIED IF REQUIRED
FOR ON SITE FITTING
SEE ARTICLE STRUCTURE



SECTION A-A



Please Check with Environmental Treatment Systems Limited For The Latest Issue Of This Drawing

Issue	Date	Drawn by	Approved by	Description
03	19.02.18	T.Kelly		CC1405 - Coalescer Extension Chains were Pipes
02	29.02.16	T.Kelly		CC1297 - Full Weight Corrected (Both Sheets)

Material : Spray Laminate	Tolerance (unless stated) : ±0.5mm
Finish : n/a	Thickness : 3mm
Weight : 11.35 Kg Min	Surface Area : EXT 2.23 m²
Modelled By :	

Drawing : DS1248

Enviroceptor Forecourt Separator (NS10)

All Dimensions In mm | Scale: Do Not Scale | Third Angle Projection

R:\Drawing Data\02 - Sales Drawings\DS\DS - 12\DS1248

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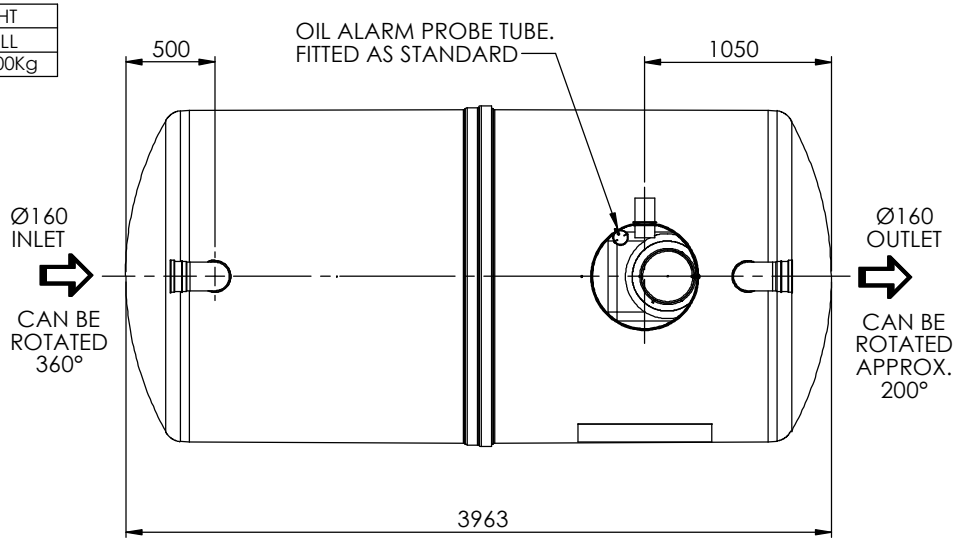
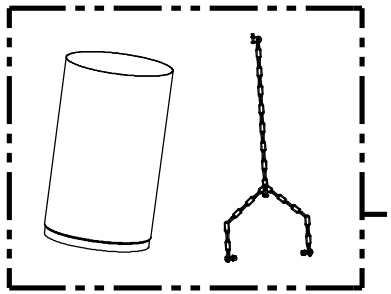
Kingspan Environmental

PEASHINGLE BACKFILL

APPROX. WEIGHT	
EMPTY	FULL
500 Kg	10,500Kg

NOTE:- THE DESIGN OF THIS UNIT IS BASED ON AN NS10 FULL RETENTION UNIT





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SUPPLIED IF REQUIRED
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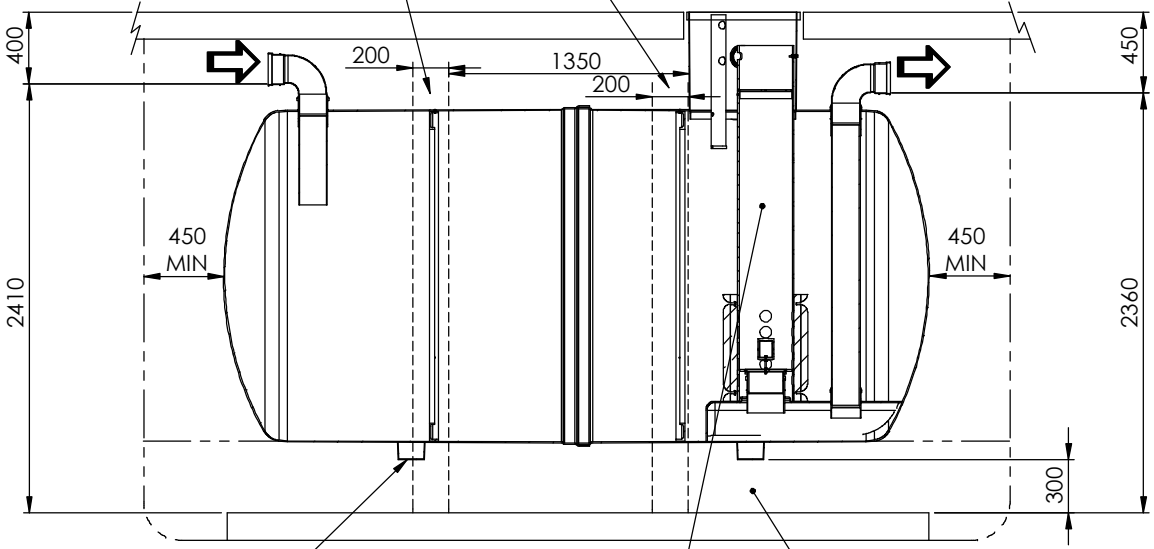

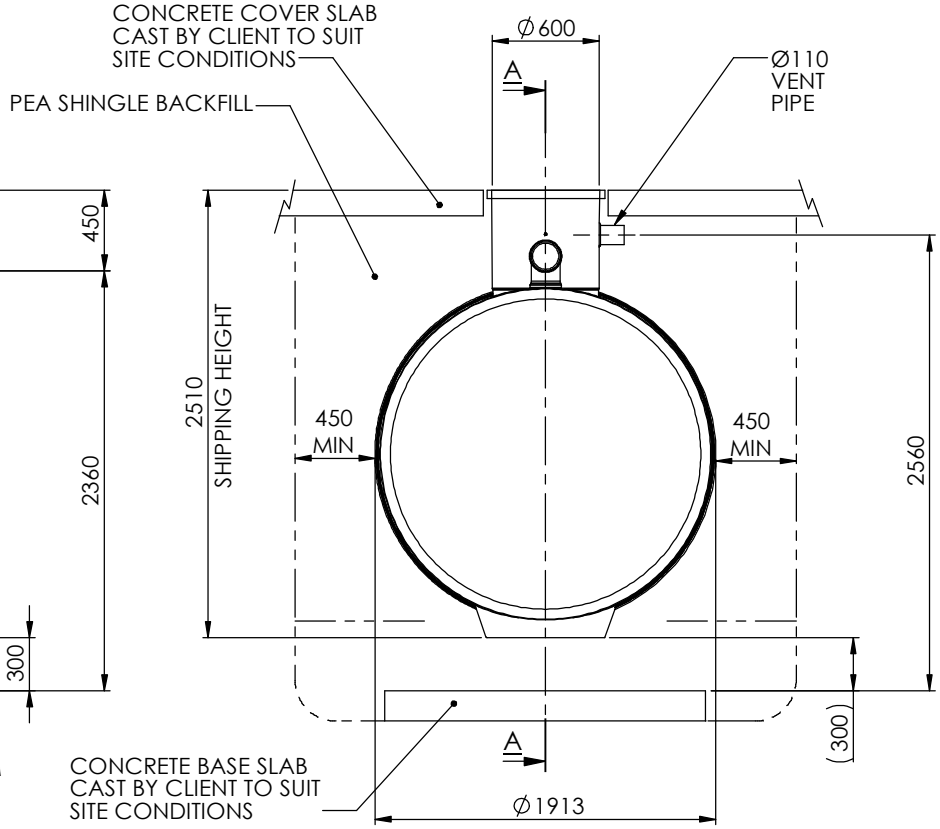

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Drawing : DS1248

Enviroceptor Forecourt Separator (NS10)

All Dimensions In mm | Scale: Do Not Scale | Third Angle Projection

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