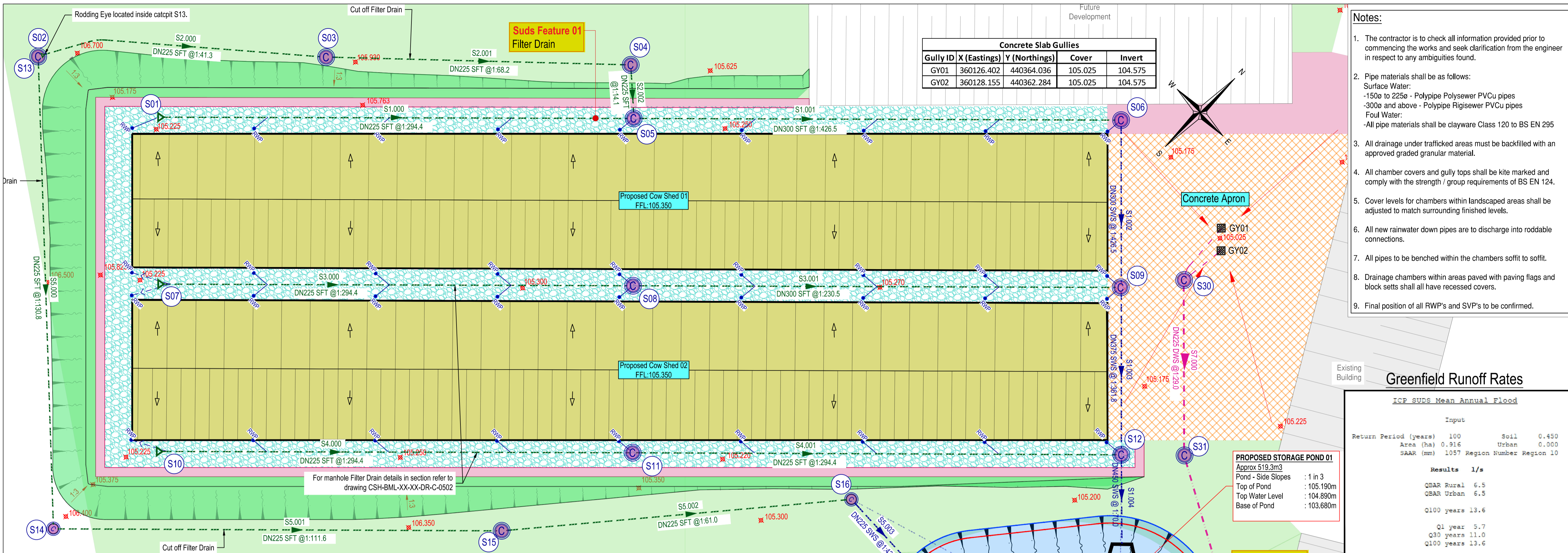


Appendix D

Drainage Strategy Drawings



- Notes:**
- The contractor is to check all information provided prior to commencing the works and seek clarification from the engineer in respect to any ambiguities found.
 - Pipe materials shall be as follows:
Surface Water:
-150e to 225e - Polytype Polysewer PVCu pipes
-300e and above - Polytype Rigidsewer PVCu pipes
Foul Water:
-All pipe materials shall be clayware Class 120 to BS EN 295
 - All drainage under trafficked areas must be backfilled with an approved graded granular material.
 - All chamber covers and gully tops shall be kite marked and comply with the strength / group requirements of BS EN 124.
 - Cover levels for chambers within landscaped areas shall be adjusted to match surrounding finished levels.
 - All new rainwater down pipes are to discharge into roddable connections.
 - All pipes to be benched within the chambers soffit.
 - Drainage chambers within areas paved with paving flags and block sets shall all have recessed covers.
 - Final position of all RWP's and SVP's to be confirmed.

Safety, Health & Environmental Information:
In addition to the hazards and risks normally associated with the types of work detailed on this drawing, please note the significant hazards identified by symbols below, and described below:

⚠️ INDICATES A RESIDUAL RISK AS A WARNING
ⓘ INDICATES A RESIDUAL RISK FOR INFORMATION

Construction/Maintenance/Cleaning/Demolition
Refer to Drawing:

- General Notes:**
- Do not scale from this drawing.
 - All dimensions are in millimetres (mm), all levels in metres (m) unless noted otherwise.
 - Discrepancies or omissions are to be reported to the Engineer prior to work commencing.
 - Materials and workmanship are to comply in all respects with current British Standard Specifications, Codes of Practice, and Building Regulations Approved Documents.
 - The copyright of this drawing is vested in the Engineer and must not be copied or reproduced without written consent.
 - The Contractor is to check and verify all building and site dimensions, levels and sewer invert levels at connection points before work commences.
 - This drawing is to be read in conjunction with all relevant specifications and drawings issued by the Engineer, Architect and other Specialists.

Greenfield Runoff Rates

Input	Results	1/s
Return Period (years) 100	QBAR Rural	6.5
Area (ha) 0.916	QBAR Urban	6.5
SAAR (mm) 1057 Region Number Region 10	Q100 years	13.6
	Q1 year	5.7
	Q30 years	11.0
	Q100 years	13.6

Drainage Key:

DNXXX SWS @ 1:XXX	Proposed Stormwater Sewer
DNXXX SFT @ 1:XXX	Proposed Filter Drain
DNXXX DWS @ 1:XXX	Proposed Dirty Water Sewer
⊙	Proposed Stormwater Manhole
⊙	Proposed Rigidstorm Separate Catchpit
⊙	Proposed Stormwater Hydro-brake
—>—>—	DN150 Gully / RWP Connector
RWP	Proposed Rain Water Pipe
—>—>—	Proposed Rodding Eye
FFLXXX	Proposed Finish Floor Level
P	Proposed Pumping Station. Refer to drawing CSH-BML-XX-XX-DR-C-0503 for details.
DNXXX COMB	Proposed Rising Main
DNXXX DWS	Proposed Inspection Chamber with Grilled Cover. For details refer to drawing CSH-BML-XX-XX-DR-C-0503
XX.XXX	Design Levels

Rev	By / Chkd	Date	Description
P06	IW/AM	28/02/2024	Drainage details updated
P05	DH/AM	05/02/2024	Additional Drainage Information added
P04	DH/AM	26/01/2024	Additional Drainage Information added
P03	DH/AM	10/08/23	Additional Drainage Information added
P02	DH/AM	21/07/23	Preliminary Issue
P01	RA/GM	05/04/23	For Discussion

PRELIMINARY DRAWING
This drawing is not to be used for construction

Client: **FI REAL ESTATE MANAGEMENT**

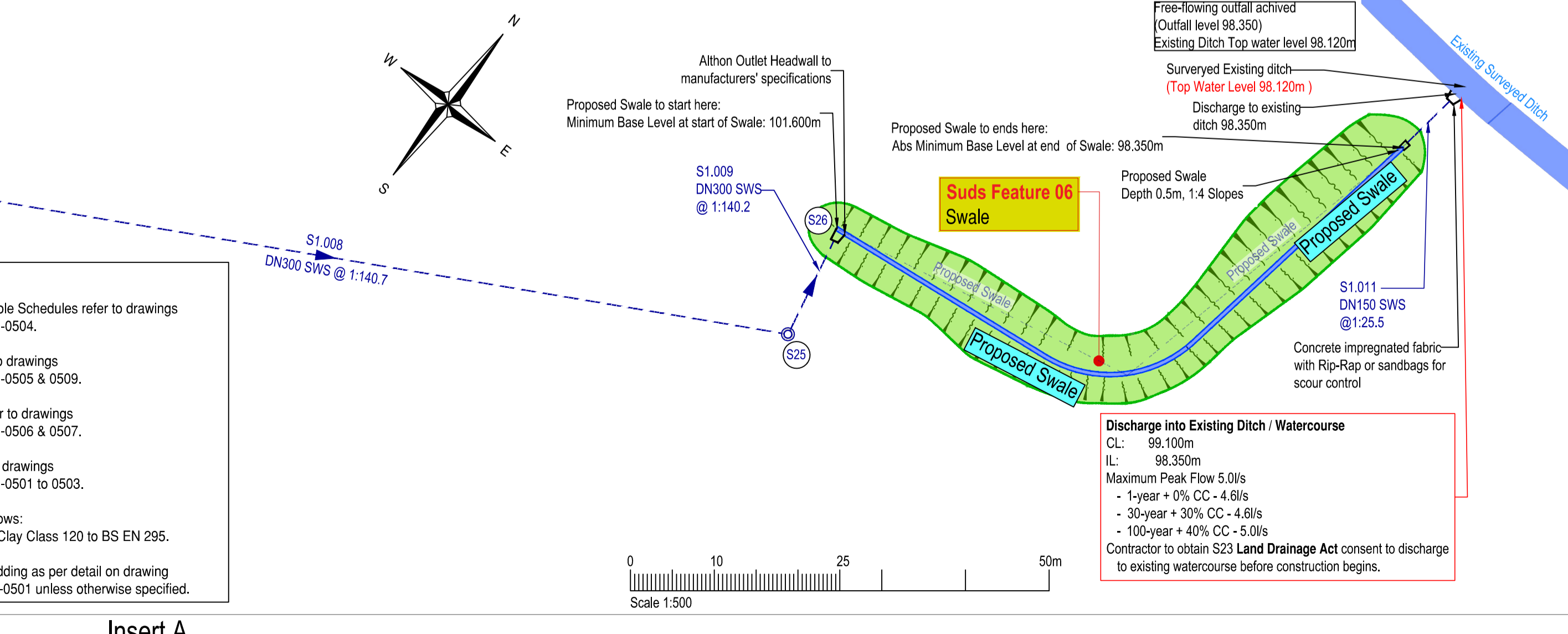
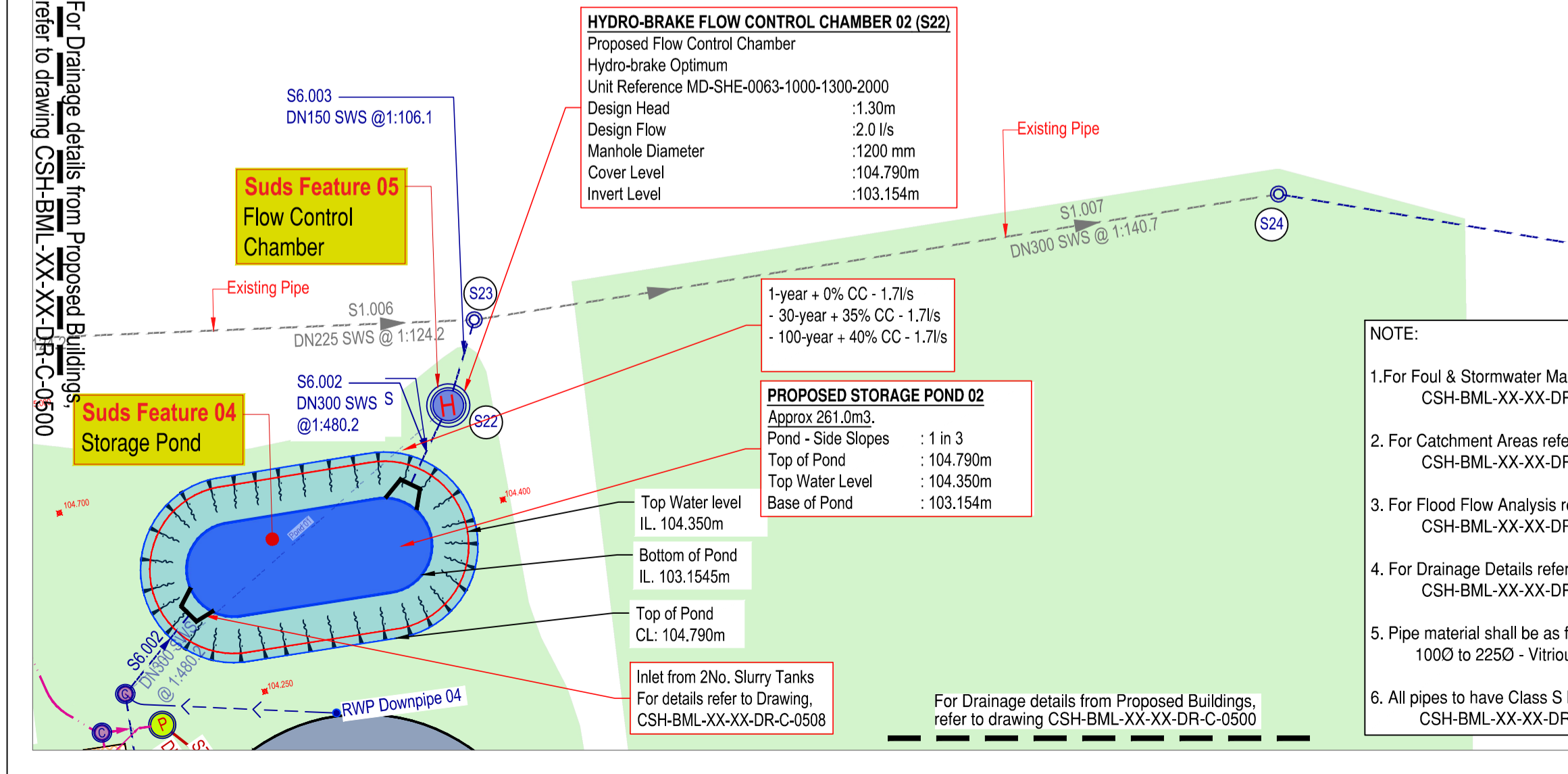
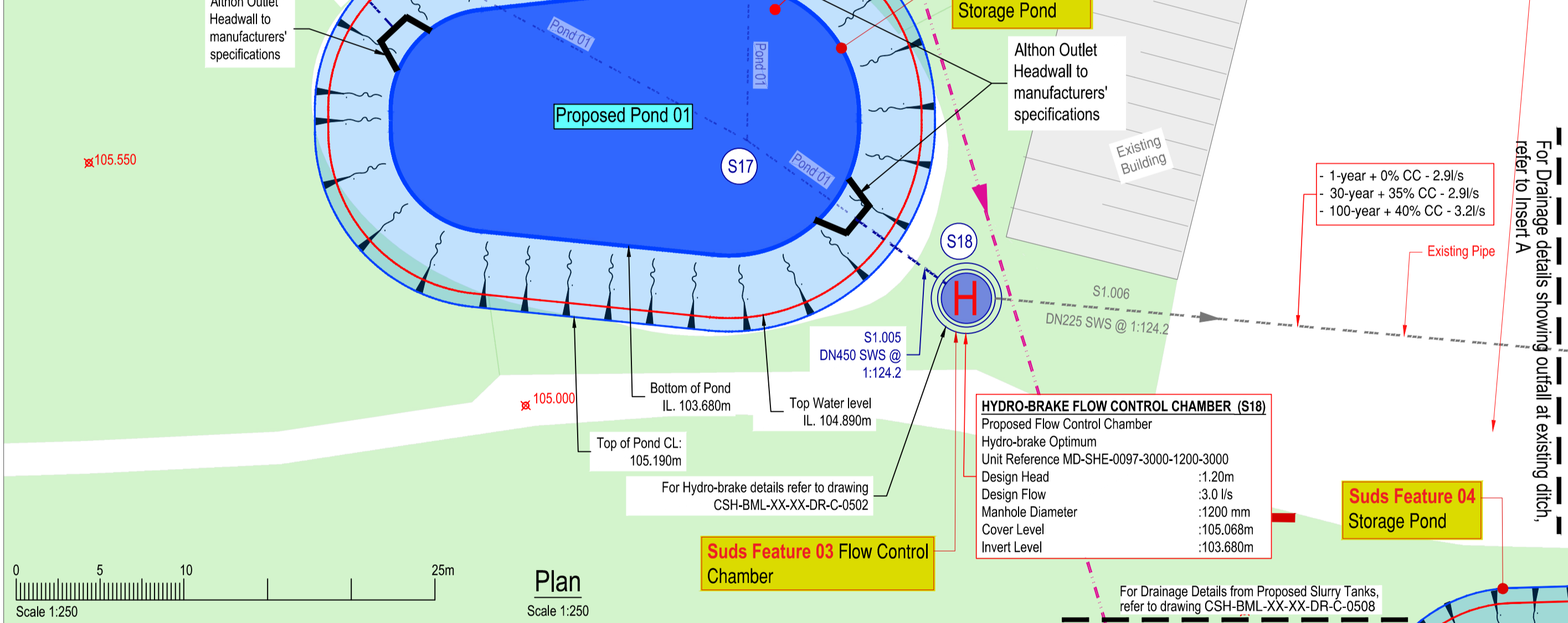
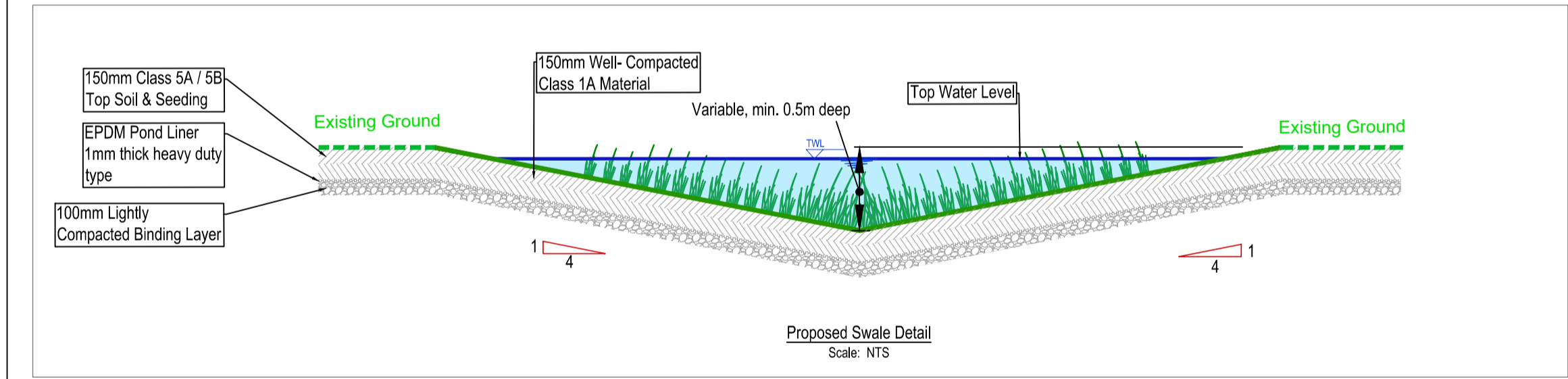
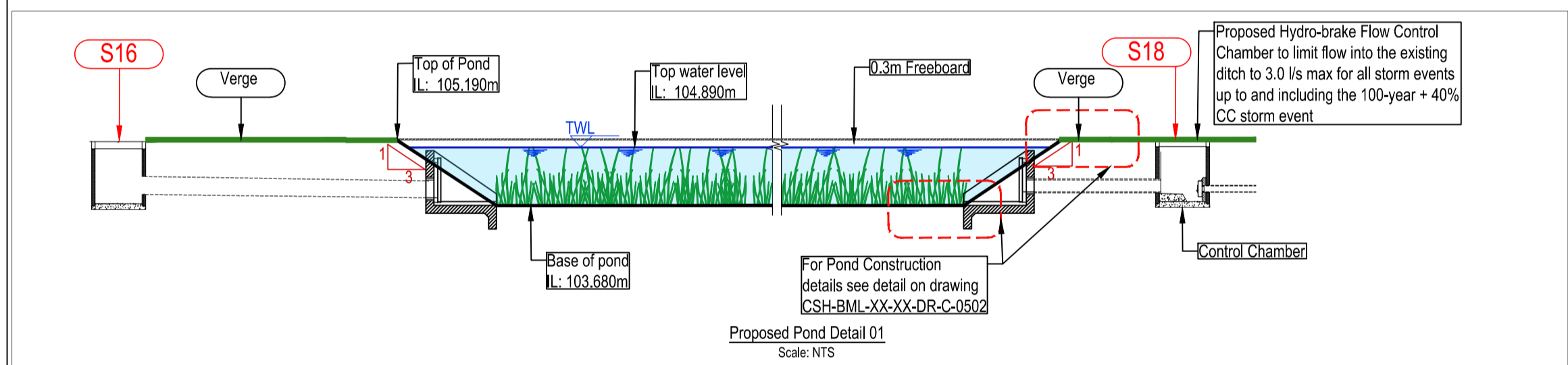
BarnsleyMarshall Limited
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Web: www.barnsleymarshall.co.uk

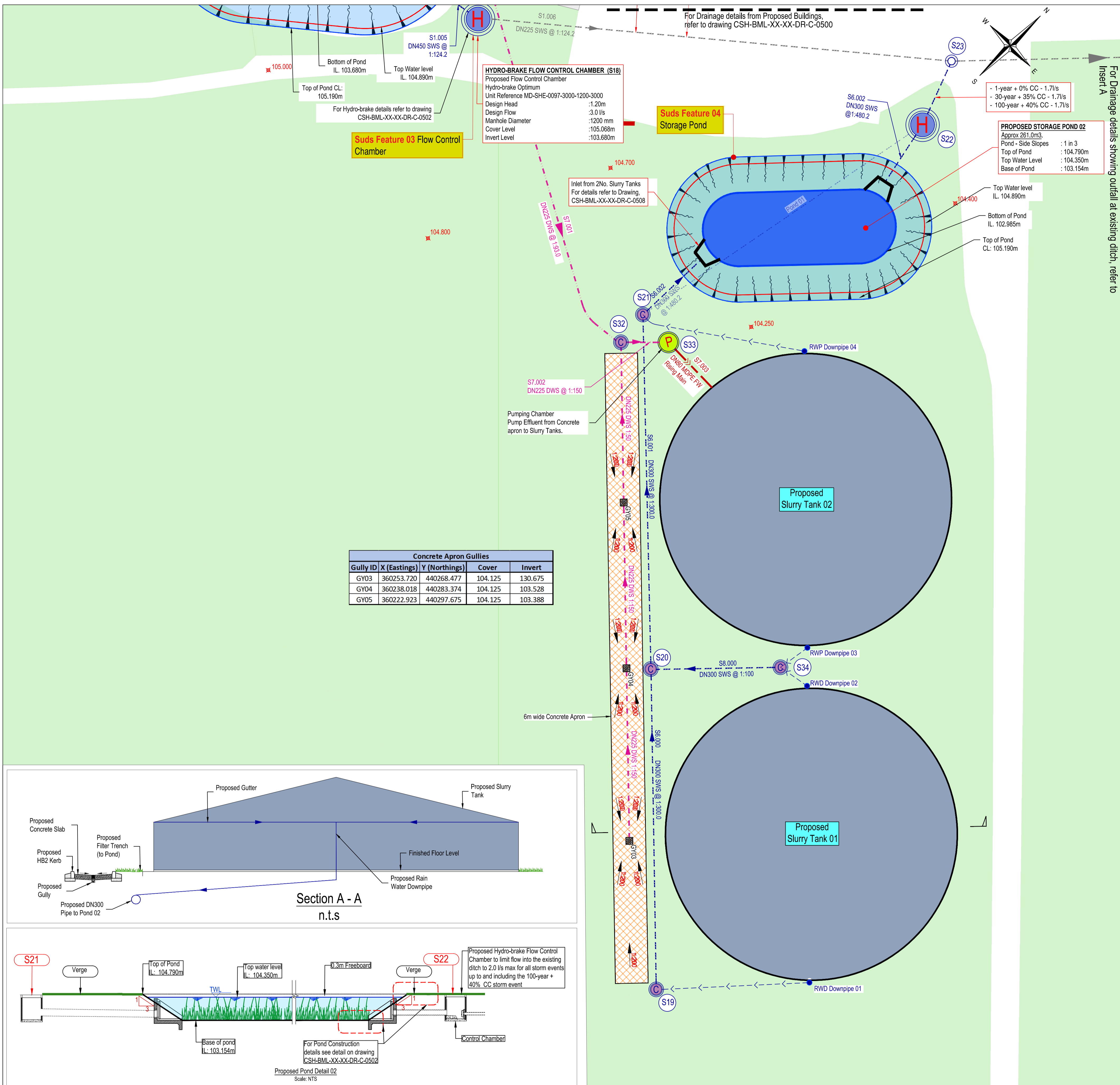
Project: **Cow Shed
Elmridge Lane, Preston,
PR3 2NY**

Drawing: **Proposed Surface Water
Drainage Plan Layout 01
Main Site**

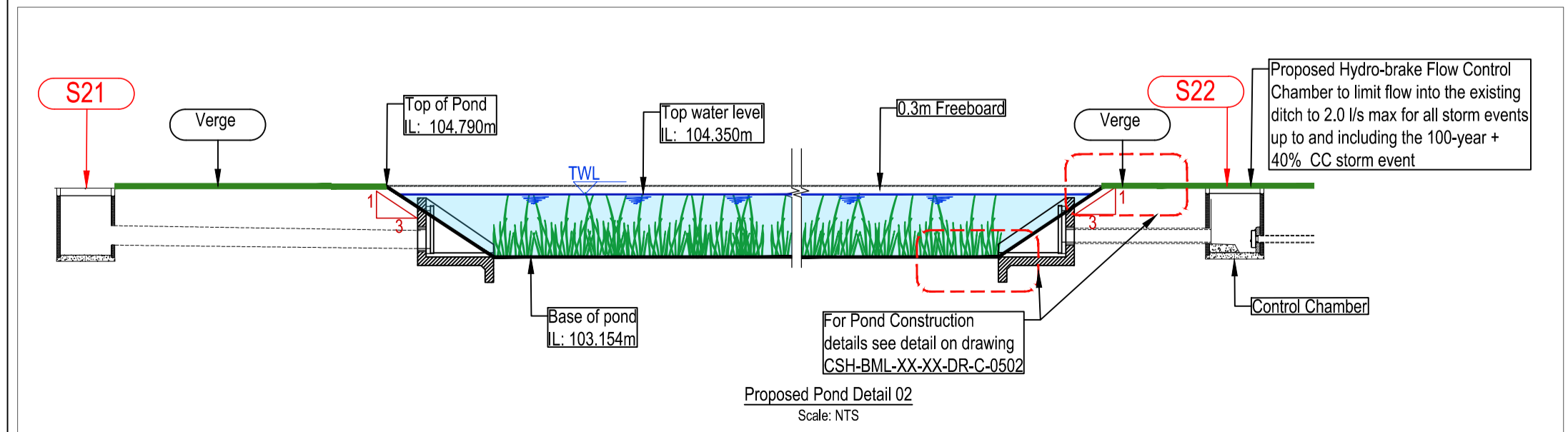
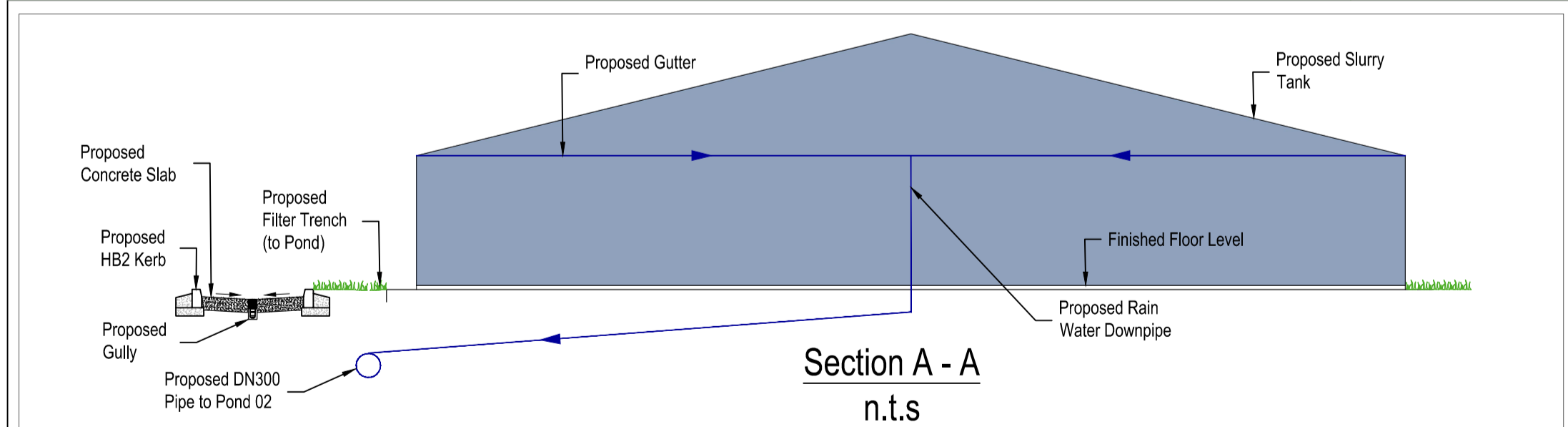
By/Chkd	DH/AM	Date	05/04/2023
CSH-BML-XX-XX-DR-C-0500		Revision	P06
BML Job No. 1000-05		Status	-
Drawing Scale at A1:	DH/AM		
CAD Filename:			



Insert A
Scale 1:500



Concrete Apron Gullies				
Gully ID	X (Eastings)	Y (Northings)	Cover	Invert
GY03	360253.720	440268.477	104.125	130.675
GY04	360238.018	440283.374	104.125	103.528
GY05	360222.923	440297.675	104.125	103.388



- Notes:**
- The contractor is to check all information provided prior to commencing the works and seek clarification from the engineer in respect to any ambiguities found.
 - Pipe materials shall be as follows:
Surface Water:
- 150 to 2250 - Polypropylene PVCu pipes
- 3000 and above - Polypropylene Rigid PVCu pipes
Foul Water:
- All pipe materials shall be clayware Class 120 to BS EN 295
 - All drainage under trafficked areas must be backfilled with an approved graded granular material.
 - All chamber covers and gully tops shall be kite marked and comply with the strength / group requirements of BS EN 124.
 - Cover levels for chambers within landscaped areas shall be adjusted to match surrounding finished levels.
 - All new rainwater down pipes are to discharge into roddable connections.
 - All pipes to be benched within the chambers soffit to soffit.
 - Drainage chambers within areas paved with paving flags and block setts shall all have recessed covers.
 - Final position of all RWP's and SVP's to be confirmed.

Safety, Health & Environmental Information:
In addition to the hazards and risks normally associated with the types of work detailed on this drawing, please note the significant hazards identified by symbols below.

⚠ INDICATES A RESIDUAL RISK AS A WARNING

ℹ INDICATES A RESIDUAL RISK FOR INFORMATION

and described below:

Construction/Maintenance/Cleaning/Demolition
Refer to Drawing:

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 - This drawing is to be read in conjunction with all relevant specifications and drawings issued by the Engineer, Architect and other Specialists.

Drainage Key:

DNXXX SWS @ 1:XXX	Proposed Stormwater Sewer
DNXXX SFT @ 1:XXX	Proposed Filter Drain
DNXXX DWS @ 1:XXX	Proposed Dirty Water Sewer
○ SXX	Proposed Stormwater Manhole
⊙ SXX	Proposed Ridgiform Separate Catchpit
⊕ SXX	Proposed Stormwater Hydro-brake
--->---	DN150 Gully / RWP Connector
RWP	Proposed Rain Water Pipe
⋈	Proposed Rodding Eye
FFL:XXXX	Proposed Finish Floor Level
Ⓜ	Proposed Pumping Station. Refer to drawing CSH-BML-XX-XX-DR-C-0503 for details.
DNXXX COMB	Proposed Rising Main
DNXXX DWS GYXX	Proposed Inspection Chamber with Grilled Cover. For details Refer to drawing CSH-BML-XX-XX-DR-C-0503
XX.XXX	Design Levels

Greenfield Runoff Rates

ICP SUDS Mean Annual Flood

Input		
Return Period (years)	100	Soil 0.450
Area (ha)	0.916	Urban 0.000
SAAR (mm)	1057	Region Number Region 10
Results l/s		
QBAR Rural	6.5	
QBAR Urban	6.5	
Q100 years	13.6	
Q1 year	5.7	
Q30 years	11.0	
Q100 years	13.6	

Rev	By / Chkd	Date	Description
P04	IW/AM	28/02/2024	Drainage details updated
P03	DH/AM	06/02/2024	Drainage Details updated
P02	DH/AM	26/01/2024	Drainage Details updated
P01	DH/AM	15/08/2023	Preliminary Issue

PRELIMINARY DRAWING
This drawing is not to be used for construction

Client

BarnsleyMarshall Limited
1 Birch Court
Blackpole East
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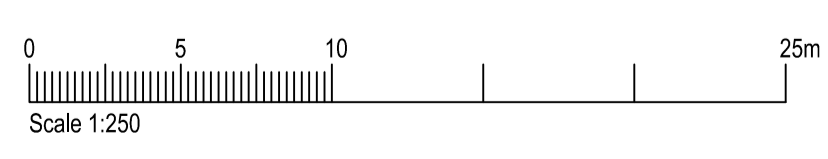
Project

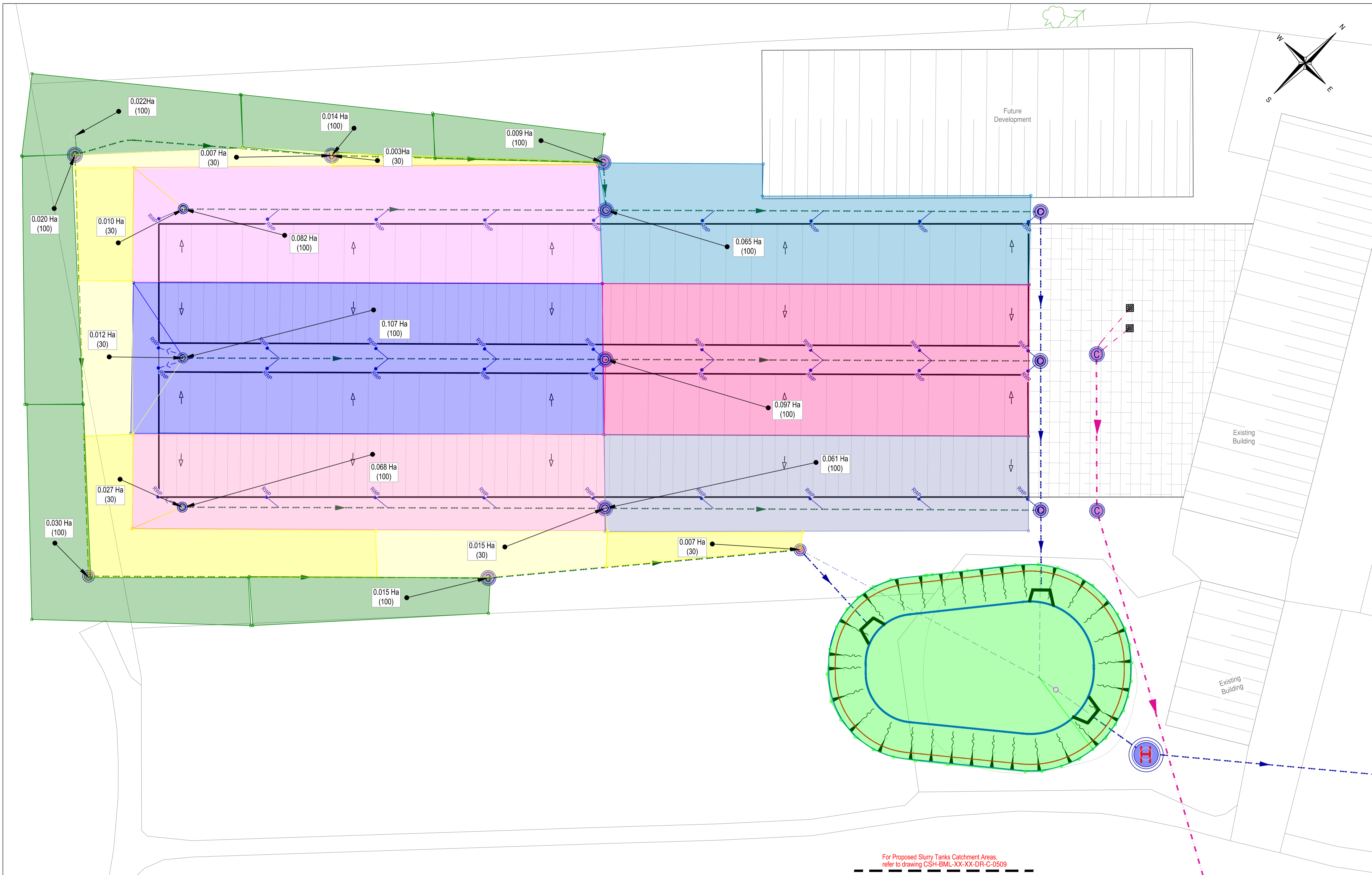
Cow Shed
Elmridge Lane, Preston,
PR3 2NY

Drawing

**Proposed Surface Water
Drainage Plan Layout 02
Slurry Tanks**

By/Chkd	DH/AM	Date	05/04/2023
Drawing No.	CSH-BML-XX-XX-DR-C-0508		Revision P04
BML Job No.	1000-05		Status -
Drawing Scale at A1:	As Shown		
CAD Filename:	Y:\Projects\100-05 Cow Shed\Drawings - Working\DWG\CSH-BML-XX-XX-DR-C-0508-0001.rvt - Drawing File Layout		





Safety, Health & Environmental Information:
 In addition to the hazards and risks normally associated with the types of work detailed on this drawing, please note the significant hazards identified by symbols below.

INDICATES A RESIDUAL RISK AS A WARNING

INDICATES A RESIDUAL RISK FOR INFORMATION and described below:

Construction/Maintenance/Cleaning/Demolition
 Refer to Drawing:

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 - This drawing is to be read in conjunction with all relevant specifications and drawings issued by the Engineer, Architect and other Specialists.

Drainage Key:

DNXXX SWS @ 1:XXX.X	Proposed Stormwater Sewer
DNXXX SFT @ 1:XXX	Proposed Filter Drain
DNXXX DWS @ 1:XXX	Proposed Dirty Water Sewer
	Proposed Stormwater Manhole
	Proposed Ridgiform Separate Catchpit
	Proposed Stormwater Hydro-brake
	DN150 Gully / RWP Connector
RWP	Proposed Rain Water Pipe
	Proposed Rodding Eye
FFLXXX	Proposed Finish Floor Level
	Proposed Pumping Station. Refer to drawing CSH-BML-XX-XX-DR-C-0503 for details.
DNXXX COMB	Proposed Rising Main
DNXXX DWS @ GYXX	Proposed Inspection Chamber with Grilled Cover. For details Refer to drawing CSH-BML-XX-XX-DR-C-0503

Rev	By / Chk'd	Date	Description
P04	IW/AM	0/02/2024	Drainage Plan Layout Updated
P03	IW/AM	26/01/24	Details Updated
P02	DH/AM	16/08/23	Details Updated
P01	KD/AM	20/07/23	Preliminary Issue

PRELIMINARY DRAWING
 This drawing is not to be used for construction

Client:

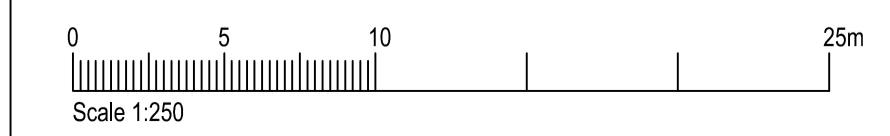
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 Email: design@barnsleymarshall.co.uk
 Web: www.barnsleymarshall.co.uk

Project: **Cow Shed**
 Elmridge Lane, Preston,
 PR3 2NY

Drawing: **Catchment Areas**
 1 of 2

By/Chk'd	RA/GM	Date	05/04/2023
Drawing No.	CSH-BML-XX-XX-DR-C-0505		Revision
BML Job No.	1000-05		Status
Drawing Scale at A1:	1:250		
CAD Filename:	Y:\projects\100-05-Cow-Shed\BarnsleyMarshall-Design\CSH-BML-XX-XX-DR-C-0505-050-P04 - Catchment Area.dwg		



- NOTE:**
- For Foul & Stormwater Manhole Schedules refer to drawings CSH-BML-XX-XX-DR-C-0504.
 - For Flood Flow Analysis refer to drawings CSH-BML-XX-XX-DR-C-0506& 0507.
 - For Drainage Details refer to drawings CSH-BML-XX-XX-DR-C-0501 to 0503.
 - For Drainage Plan Layout refer to drawings CSH-BML-XX-XX-DR-C-0500 to 0508.
 - Pipe material shall be as follows:
 1000 to 2250 - Vitrious Clay Class 120 to BS EN 295.
 - All pipes to have Class S bedding as per detail on drawing CSH-BML-XX-XX-DR-C-0501 unless otherwise specified.

Key:

0.005 Ha (100)	1st Row - Gross Area in Ha
	2nd Row - (PIMP)

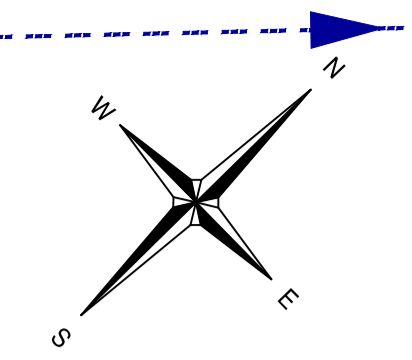
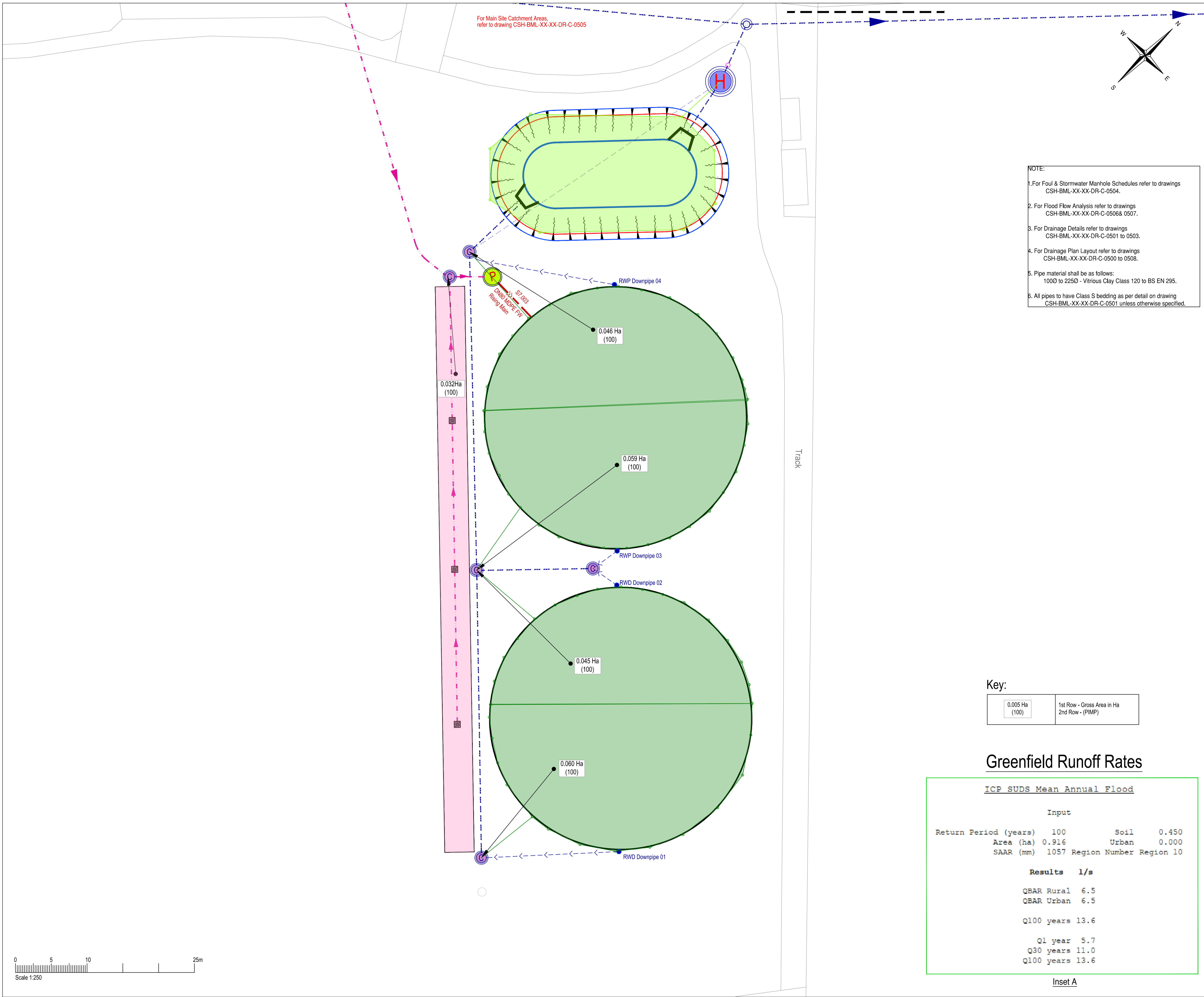
For Proposed Slurry Tanks Catchment Areas refer to drawing CSH-BML-XX-XX-DR-C-0509

Greenfield Runoff Rates

ICP SUDS Mean Annual Flood

Input			
Return Period (years)	100	Soil	0.450
Area (ha)	0.916	Urban	0.000
SAAR (mm)	1057	Region Number	Region 10
Results l/s			
QBAR Rural	6.5		
QBAR Urban	6.5		
Q100 years	13.6		
Q1 year	5.7		
Q30 years	11.0		
Q100 years	13.6		

Inset A



- NOTE:**
- For Foul & Stormwater Manhole Schedules refer to drawings CSH-BML-XX-XX-DR-C-0504.
 - For Flood Flow Analysis refer to drawings CSH-BML-XX-XX-DR-C-0506& 0507.
 - For Drainage Details refer to drawings CSH-BML-XX-XX-DR-C-0501 to 0503.
 - For Drainage Plan Layout refer to drawings CSH-BML-XX-XX-DR-C-0500 to 0508.
 - Pipe material shall be as follows:
1000 to 2250 - Vitrious Clay Class 120 to BS EN 295.
 - All pipes to have Class S bedding as per detail on drawing CSH-BML-XX-XX-DR-C-0501 unless otherwise specified.

Safety, Health & Environmental Information:
In addition to the hazards and risks normally associated with the types of work detailed on this drawing, please note the significant hazards identified by symbols below.

INDICATES A RESIDUAL RISK AS A WARNING

INDICATES A RESIDUAL RISK FOR INFORMATION and described below:

Construction/Maintenance/Cleaning/Demolition
Refer to Drawing:

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 - This drawing is to be read in conjunction with all relevant specifications and drawings issued by the Engineer, Architect and other Specialists.

Drainage Key:

DNXXX SWS @ 1:XXX	Proposed Stormwater Sewer
DNXXX SFT @ 1:XXX	Proposed Filter Drain
DNXXX DWS @ 1:XXX	Proposed Dirty Water Sewer
S O X	Proposed Stormwater Manhole
C S O X	Proposed Ridgiform Separate Catchpit
H S O X	Proposed Stormwater Hydro-brake
- - - - -	DN150 Gully / RWP Connector
RWP	Proposed Rain Water Pipe
- - - - -	Proposed Rodding Eye
FFL XXXX	Proposed Finish Floor Level
P	Proposed Pumping Station. Refer to drawing CSH-BML-XX-XX-DR-C-0503 for details.
DNXXX COMB	Proposed Rising Main
DNXXX DWS	Proposed Inspection Chamber with Grilled Cover. For details Refer to drawing CSH-BML-XX-XX-DR-C-0503

Rev	By / Chk'd	Date	Description
P03	IW/AM	0/2/2024	Drainage Plan Layout Updated
P02	IW/AM	26/01/24	Detailed Updated
P01	DH/AM	16/08/23	Preliminary Issue

PRELIMINARY DRAWING
This drawing is not to be used for construction

Client

BarnsleyMarshall Limited
1 Birch Court
Blackpole East
Worcester
WR3 6SG

Tel: 01905 330560
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Web: www.barnsleymarshall.co.uk

Project
Cow Shed
Elmridge Lane, Preston,
PR3 2NY

Drawing
Catchment Areas
2 of 2

By/Chk'd	RA/GM	Date	05/04/2023
Drawing No.	CSH-BML-XX-XX-DR-C-0509	Revision	P03
BML Job No.	1000-05	Status	-
Drawing Scale at A1:	1:250		
CAD Filename:			

Key:

0.005 Ha (100)	1st Row - Gross Area in Ha
0.005 Ha (100)	2nd Row - (PIMP)

Greenfield Runoff Rates

ICP SUDS Mean Annual Flood			
Input			
Return Period (years)	100	Soil	0.450
Area (ha)	0.916	Urban	0.000
SAAR (mm)	1057	Region Number	Region 10
Results l/s			
QBAR Rural	6.5		
QBAR Urban	6.5		
Q100 years	13.6		
Q1 year	5.7		
Q30 years	11.0		
Q100 years	13.6		

Inset A

