NOT FOR CONSTRUCTION

SCHEDULE OF SURFACE WATER CHAMBERS *COVER LEVELS TO BE CONFIRMED ON SITE PRIOR TO CONSTRUCTION					
NAME	TYPE	DIAMETER (m)	COVER LEVEL (m)	INVERT LEVEL (m)	DEPTH (m)
SWC-01	CP	0.600	109.775	109.039	0.736
SWC-02	CP	0.600	109.775	108.878	0.897
SWC-03	CP	0.600	109.800	109.033	0.767
SWC-04	CP	0.600	109.775	108.717	1.058
SWC-05	CP	0.600	109.775	108.989	0.786
SWC-06	CP	0.600	109.775	108.841	0.934
SWC-07	CP	0.600	109.775	108.672	1.103
SWC-08	CP	0.600	109.775	108.500	1.275
SWC-09	FC	0.600	109.750	108.409	1.341
SWC-10	CP	0.600	109.800	108.282	1.518
SWC-11	IC	0.450	109.650	109.081	0.569
SWC-12	IC	0.450	109.650	108.893	0.757
SWC-13	CP	0.600	109.500	108.771	0.729
SWC-14	IC	0.450	109.600	108.913	0.687
SWC-15	CP	0.600	109.550	108.705	0.845
SWC-16	CP	0.600	109.725	108.777	0.948
SWC-17	CP	0.600	109.700	108.654	1.046
SWC-18	IC	0.600	109.725	108.571	1.154
SWC-19	FC	0.600	109.725	108.521	1.204
SWC-20	IC	0.450	109.850	108.888	0.962
SWC-21	CP	0.600	109.725	108.329	1.396
SWC-22	CP	0.600	109.800	108.439	1.361
SWC-23	FC	0.600	109.800	108.194	1.606
SWC-24	IC	0.450	109.725	108.076	1.649
SWC-25	IC	0.450	109.750	107.731	2.019
SWC-26	CP	0.600	109.650	107.549	2.101

PREDEVELOPMENT SURFACE WATER RUNOFF RATES						
QBAR Rural (l/s)	QBAR Urban (l/s)	Q 1 years (l/s)	Q 30 years (l/s)	Q 100 years (l/s)	Considered Area for the hydraulic assessment (ha)	Pre-Development Impermeable Area (ha)
2.3	4.0	3.400	7.9	10.0	0.932	0.289

PROPOSED SURFACE WATER RUNOFF RATES			
Q 1 years (l/s)	Q 30 years (l/s)	Q 30 years + 40% Climate change (l/s)	Q 100 years + 40% Climate change (l/s)
1.5	2.4	2.9	3.4

NORTH
Indicative

Surface Water Underground Attenuation Tank from Polystorm (1m long x 0.5m wide x 0.40m deep) or similar approved product to be at least 30.0mx16.5mx0.8m deep with 95% void ratio to provide minimum 376.20m³ of net storage to avoid any flooding for 1:100 storm event +40% Climate Change.
CL: Varies and min. 109.800m is considered
Top of tank:109.057m
IL of tank:108.257m
Supplier of tank to provide structural and floatation calculations and contractor to follow their recommendations regarding storing, handling and installation.
Attenuation tank to be wrapped with welded impermeable membrane.

Permeable Pavement up to 05 (in infodrainage).
Assumed 150mm pavement buildup (both block paving and grasscrete) with 550mm deep suitable granular subbase storage with at least 30% void ratio.
CL:109.775m (modelled in Infodrainage) assumed that pavement will slope away from buildings. TBC in detailed design stage.
IL:109.075m.
App. 2487m² total surface area with a total net storage of 410.36m³.

No existing routes for services were provided to the drainage designer. If any unavoidable routes are encountered on site by the contractor the drainage engineer will need to be advised as soon as possible.

Permeable Pavement 06 to 09.
Assumed 150mm pavement buildup (both block paving and grasscrete) with 470mm deep suitable granular subbase storage with at least 30% void ratio.
CL:varies (modelled in Infodrainage) assumed that pavement will slope away from buildings. TBC in detailed design stage.
App. 941m² total surface area with a total net storage of 132.68m³.

SWC-09 Intermediary orifice flow control chamber with Ø50mm orifice.

SWC-19 Intermediary orifice flow control chamber with Ø45mm orifice.

SWC-23 Orifice Flow control chamber to restrict flow to 3.4l/s using a Ø43mm orifice.
Restrict flow rate is to match the urban greenfield runoff rate for 1:1 storm event as per Essex LLFA requirements.

Existing ditch to be maintained. Architect and contractor to review the site layout and ensure the existing ditch is not affected.

New headwall to be built on existing ditch with non-return valve. IL:107.483m TBC on site.

CH4 FFL-109.900m TBC
CH3 FFL-109.900m TBC
Reception FFL-109.900m TBC
CH1 FFL -109.900m TBC
CH2 FFL-109.900m TBC
SBG-3 FFL-109.900m TBC
SBG-2 FFL-109.900m TBC
SBG-1 FFL-109.800m TBC

SCHEDULE OF SURFACE WATER PIPES			
START AND END STRUCTURE	DIAMETER (m)	LENGTH (m)	GRADIENT
SWC-01 to SWC-02	0.150	22.505	1:140
SWC-02 to SWC-04	0.150	22.505	1:140
SWC-03 to SWC-04	0.150	12.911	1:41
SWC-04 to SWC-08	0.150	30.354	1:140
SWC-05 to SWC-06	0.150	20.708	1:140
SWC-06 to SWC-07	0.150	23.642	1:140
SWC-07 to SWC-08	0.150	23.942	1:140
SWC-08 to SWC-09	0.150	12.751	1:140
SWC-09 to SWC-10	0.150	16.430	1:130
SWC-10 to Att. Tank	0.150	2.000	1:80
SWC-11 to SWC-12	0.150	20.586	1:110
SWC-12 to SWC-13	0.150	15.933	1:130
SWC-13 to SWC-15	0.150	9.245	1:140
SWC-14 to SWC-15	0.150	24.952	1:120
SWC-15 to SWC-18	0.150	18.719	1:140
SWC-16 to SWC-17	0.150	13.508	1:110
SWC-17 to SWC-18	0.150	10.000	1:120
SWC-18 to SWC-19	0.150	7.000	1:140
SWC-19 to SWC-21	0.150	26.884	1:140
SWC-20 to SWC-21	0.150	16.947	1:30
SWC-21 to Attenuation	0.150	10.031	1:140
SWC-22 to Attenuation	0.150	2.000	1:11
Attenuation to SWC-23	0.150	2.500	1:40
SWC-23 to SWC-24	0.150	15.288	1:130
SWC-24 to SWC-25	0.150	44.751	1:130
SWC-25 to SWC-26	0.150	23.551	1:130
SWC-26 to SW Headwall	0.150	2.034	1:130

NOTES:

1. DRAWING WILL NEED TO BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT DRAWINGS FROM ARCHITECT, LANDSCAPE ARCHITECT, STRUCTURAL ENGINEER AND M&E.
2. ROOT PROTECTION AREAS CURRENTLY NOT PROVIDED. IF THAT INFORMATION IS MADE AVAILABLE DESIGN WILL NEED TO BE CHECKED.
3. EXISTING AND PROPOSED LEVELS ARE BASED ON TOPOGRAPHICAL SURVEY AND WILL NEED TO BE CONFIRMED.
4. FINISHED FLOOR LEVELS TO BE CONFIRMED BY ARCHITECT DURING SUBSEQUENT DESIGN STAGES.
5. THE RESTRICTED FLOW RATE OF 3.4l/s IS BASED ON URBAN GREENFIELD RUNOFF RATE FOR 1:1 YEARS STORM EVENT.
6. CATCH-PITS TO HAVE 300mm SUMP FROM VALUE SHOWN IN TABLE.
7. CONTRACTOR IS RESPONSIBLE FOR COORDINATION THIS DRAINAGE DESIGN WITH OTHER UTILITIES AND CHECK FOR CLASHES. ANY UNAVOIDABLE CLASHES TO BE REPORTED TO DRAINAGE DESIGN ENGINEER.
8. ALL SURFACE WATER PIPES TO BE Ø150mm LAID AT A GRADIENT BETWEEN 1:10 AND 1:100 UNLESS OTHERWISE NOTED.
9. ALL FOUL WATER PIPES TO BE Ø100mm LAID AT A GRADIENT BETWEEN 1:10 AND 1:40 UNLESS OTHERWISE NOTED.
10. COVERS FOR CHAMBERS TO BE B125 IN GARDEN AREAS AND C250 IN ACCESS DRIVE. IN ROAD OR WHERE EMERGENCY VEHICLES ARE TO ACCESS THE AREA D400 COVERS TO BE USED.
11. NO FOUNDATION DESIGN WAS PRESENTED TO DRAINAGE CIVIL DESIGN ENGINEER. ONCE THIS IS MADE AVAILABLE DESIGN WILL NEED TO BE REVIEWED.
12. CURRENTLY SVP ARE SHOWN INDICATIVE AND ARCHITECT/M&E WILL NEED TO CONFIRM/SUPPLY THEM IN DETAILED DESIGN STAGE.

DRAWING TO BE PRINTED IN COLOUR.

KEY:

- Proposed Surface Water Pipes.
- Proposed Perforated Surface Water Pipes.
- Proposed Foul Water Pipes.
- Proposed Treated Effluent Pipes.
- Channel drain position shown indicative. Threshold drains to be detailed by architect.
- Proposed Site Boundary.
- Proposed RWP.
- Proposed SW inspection/catchpit chamber.
- Proposed SW headwall to be built on existing ditch with no return valve.
- Proposed assumed SVP location. TBC by others in subsequent design stages.
- Proposed FW inspection chamber.
- Proposed sample chamber for treated effluent. Details TBC by supplier.
- Proposed Biodisc unit to treat the foul water before discharging into the ditch. Details to be confirmed once amount of people using the site are known. Size TBC.
- Proposed treated effluent headwall to be built on the existing ditch with no return valve. To be built at least 10m away from the proposed building.
- Proposed Permeable Pavement 01 as per Landscape Architect specification. (Both grasscrete and block paving to have at least 550mm deep suitable subbase for drainage from granular material with at least 30% voids.
- Proposed Permeable Pavement 02 as per Landscape Architect specification. (Both grasscrete and block paving to have at least 470mm deep suitable subbase for drainage from granular material with at least 30% voids.
- Proposed geocellular underground attenuation tank to be Polystorm Xtra or similar approved product. Supplier to provide structural calcs and guidance.

REV	DATE	DRAWN	DESCRIPTION	CHECK	APPR.
C	14-09-23	M.H	Site Layout updated.	SL	SL
B	10-09-23	M.H	Detention basin removed. Attenuation tank moved and storage increased.	SL	SL
A	01-06-23	M.H	For Information.	SL	SL

PROJECT:
C2998 - The Rise, Broxted CM6 2BJ

TITLE:
Proposed Surface Water Drainage Strategy and Suds Layout.

CLIENT:
The Rise Ltd

Nimbus ENGINEERING CONSULTANTS
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CHECKED BY:	DATE:	APPROVED BY:	DATE:
S.L	01-06-23	S.L	01-06-23
DRN BY: M.H	SCALE: 1:250	DRAWING NUMBER: C2998-01	REV: C
DATE: 01-06-23	SIZE: A1		