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- Do not scale. Use figured dimensions only.
- All dimensions to be verified on site.
- Drawing is for planning purposes only, not for construction.
- All levels are indicative and relate to OS Datum unless noted.
- Drawing Status: Planning.

SWALE PROVIDING INFILTRATION AND DETENTION HIGH LEVEL FLOW CONTROL RESTRICTING FLOW PRIOR TO DISCHARGE TO PROPOSED SOAKAWAY. PLEASE REFER TO APPENDIX FOR CALCULATIONS AND DETAILS.

DESIGN TO ALIGN WITH THE GREATER DUBLIN STRATEGIC DRAINAGE STUDY (GSDSDS) – ENVIRONMENTAL MANAGEMENT POLICY AND THE KILDARE COUNTY DEVELOPMENT PLAN SUSTAINABLE DRAINAGE SYSTEMS (SUDS) GUIDANCE

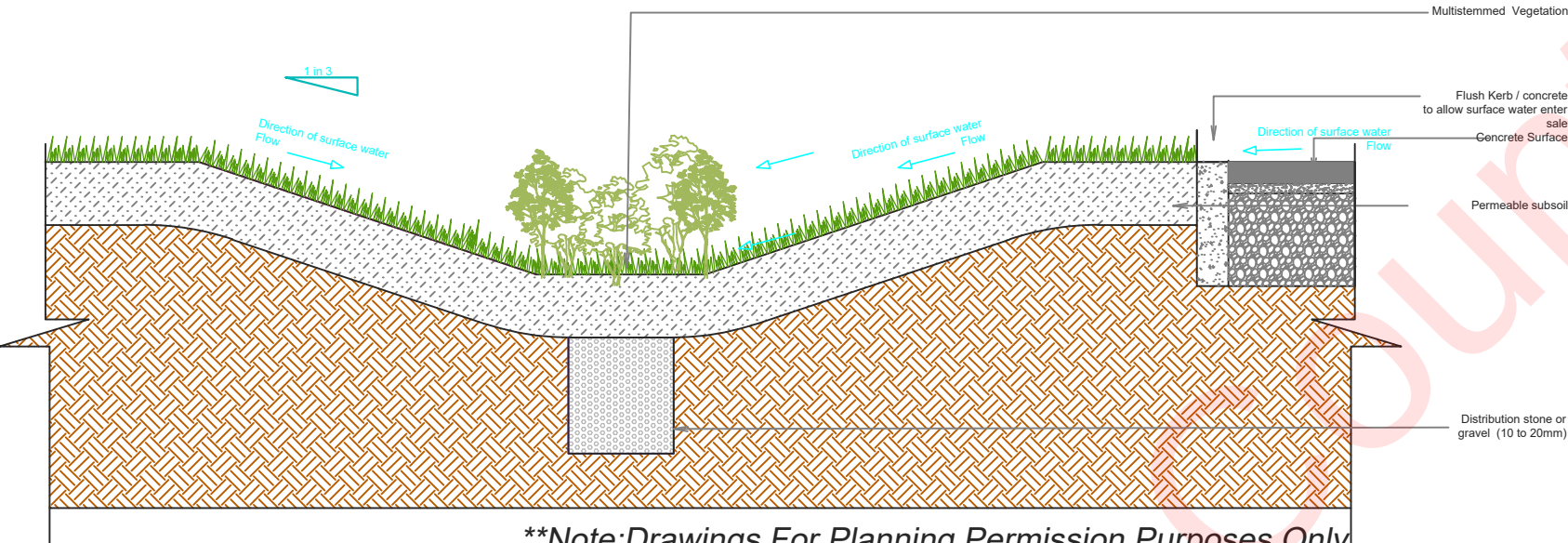
THE REQUIRED VOLUME OF ATTENUATION STORAGE IS 25.2 M³ FOR DESIGN BASED ON 1:100 YEAR RETURN + 30% CLIMATE CHANGE FACTOR.

HIGH LEVEL FLOW CONTROL OUTLET FROM SWALE / FILTER STRIP TO SECONDARY DISCHARGE - SOAKAWAY.

PROPOSED SOAKAWAY: 5m x 9m X 1.5m DEEP 30% VOIDS DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH BRE DIGEST 365 FOR 1:100 YEAR + 30% CLIMATE CHANGE.

CATERING FOR HIGH LEVEL OVER FLOW FROM SWALE ASSUMED 100% CN RUNOFF FROM IMPERMEABLE SURFACE

INFILTRATION CALCULATED FROM TO BRE DIGEST 365 TEST. PLEASE REFER TO APPENDIX A FOR CALCULATIONS REFER TO SECTION DWG J437-PLN-04 FOR TYPICAL DETAILS



****Note: Drawings For Planning Permission Purposes Only**

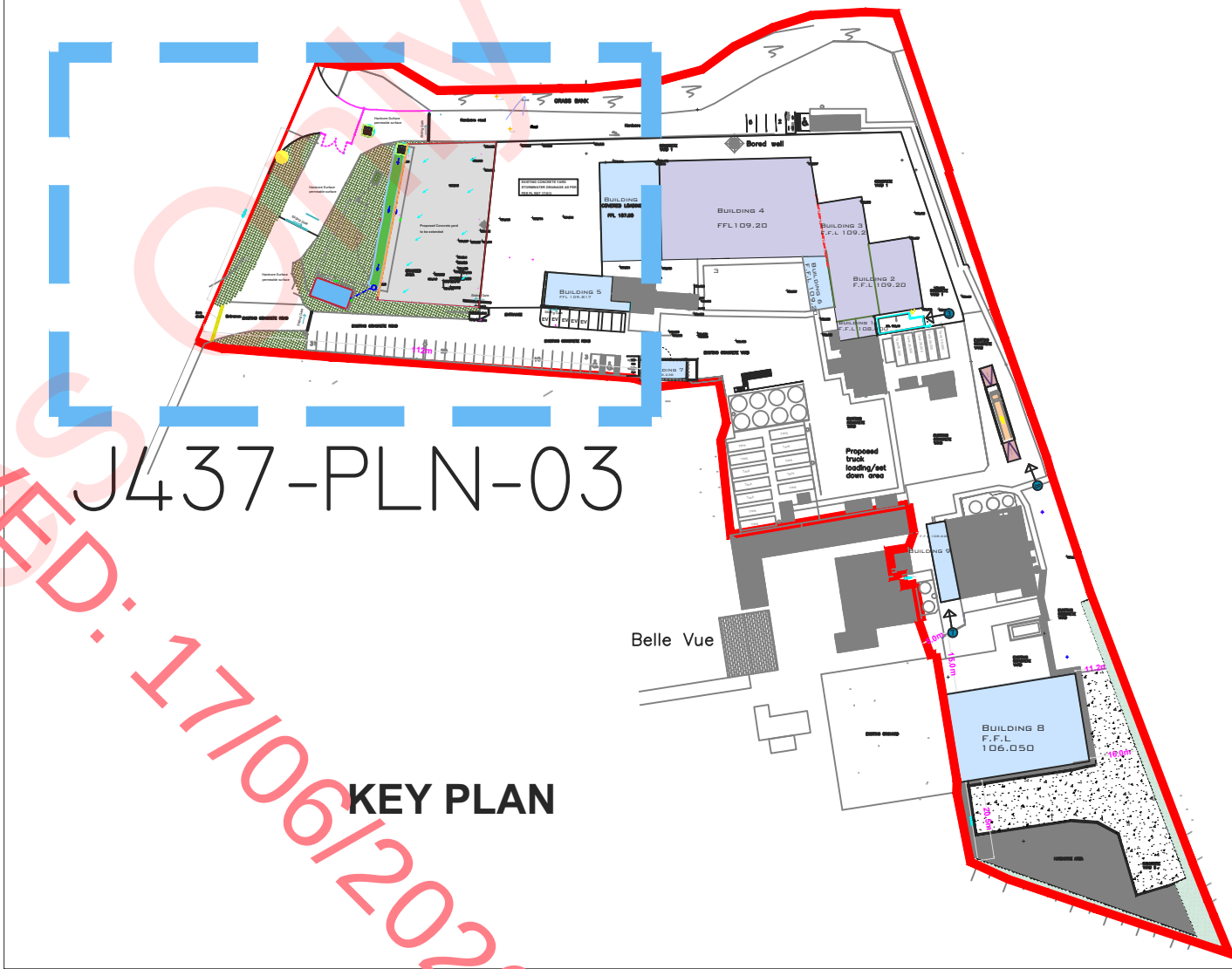
Section through proposed SWALES to GREATER DUBLIN STRATEGIC DRAINAGE STUDY - ENVIRONMENTAL MANAGEMENT POLICY

Swales channels shall be lined with grass, which to convey run-off to infiltration and in the process trap pollutants and reduce runoff velocity. Pollutant removal achieved by the filtering channel vegetation, sub-soil matrix, and/or infiltration into the underlying soils.

Specification:

- Channel to be trapezoidal cross section with relatively flat side slopes (less than 3:1) to maximise contact with the vegetation thus enhance treatment. It should be 150 mm to 200 mm in depth.
- width of the base should not to exceed 3m to prevent the formation of small channels or gullies.
- Slopes should be 1-3%, if longitudinal slope > 4%, incorporate check-dams to reduce effective slope, run-off velocities and consequent potential for erosion.
- Swale to be wider than deep, minimising any safety risks.
- The depth of flow not should not exceed 0.1m.
- Flow Velocity shall not be less than 0.3m/s
- Design to empty within 24 hours of a storm.
- underdrain, gravel layer encasing a longitudinal perforated pipe, beneath the soil layer to assist infiltration.
- Hydraulic Design to avoid flooding for 1:100 + 30% year storm.

Section Through Swales 1:25



DRAWING LEGEND

- +54.97m FINISHED CONCRETE LEVEL
- 51.472 EXISTING SPOT LEVELS
- FFL 80.00 FINISHED FLOOR LEVEL
- IMPERMEABLE CONCRETE SURFACE
- PERMEABLE OPEN SPACE
- DIRECTION OF SURFACE WATER RUNOFF
- WATER FLOW ROUTE
- SWALE
- Flow Control
- Flush Kerb
- PROPOSED SOAKPIT

SURFACE WATER / SUDS NOTES (KILDARE CO. CO.)

- SURFACE WATER DRAINAGE STRATEGY DESIGNED IN ACCORDANCE WITH THE PRINCIPLES OF SUDS AND THE GREATER DUBLIN STRATEGIC DRAINAGE STUDY (GSDSDS).
- DEVELOPMENT DESIGNED FOR THE 1:100 YEAR RAINFALL EVENT INCLUDING A 30% ALLOWANCE FOR CLIMATE CHANGE.
- RUNOFF MANAGED VIA A SUDS MANAGEMENT TRAIN, INCORPORATING PERMEABLE PAVING, SWALES AND BIORETENTION/TREE PITS.
- SWALES PROVIDE PRIMARY ATTENUATION, CONVEYANCE AND INFILTRATION, WITH SHALLOW OVERLAND FLOW PATHS MAINTAINED.
- PERMEABLE PAVING AREAS PROVIDE SOURCE CONTROL STORAGE AND INFILTRATION VIA UNDERLYING GRANULAR SUB-BASE.
- DUE TO THE PERMEABLE NATURE OF THE UNDERLYING SOILS (CONFIRMED BY BRE DIGEST 365 TESTING), SURFACE WATER IS PRIMARILY MANAGED BY ON-SITE INFILTRATION.
- A CONSERVATIVE DESIGN INFILTRATION RATE HAS BEEN ADOPTED FOR MODELLING PURPOSES.
- NO DIRECT DISCHARGE TO PUBLIC SURFACE WATER INFRASTRUCTURE IS PROPOSED; RUNOFF IS RETAINED AND TREATED ON SITE.
- OVERFLOW FROM SUDS FEATURES IS DIRECTED TO SECONDARY INFILTRATION AREAS, WHICH ACT AS EXCEEDANCE MEASURES ONLY.
- ALL INFILTRATION FEATURES SHALL BE CONSTRUCTED WITH UNLINED BASES AND SIDES TO ALLOW FREE DRAINAGE TO GROUND.
- EROSION PROTECTION MEASURES (E.G. STONE SPLASH PADS) SHALL BE PROVIDED AT ALL INLET AND OUTLET LOCATIONS.

REV	Description	Date
01	RFI	15/04/2026

PETER BOLGER CONSULTING LTD CONSULTING ENGINEERS Newton House, Bachelors Walk, Bogendstown, Co. Carlow. Phone: (059) 9158005 Email: info@pbcconsulting.ie	
PROJECT: - REVISIONS TO AS GRANTED PL 17/813 & 23/836 AT NATURES OILS/GOLDSTAR	
DRAWING: - SUDS SITE LAYOUT PLAN	
SITE ADDRESS: - GRANGEFORD CASTLEDERMOT, CO KILDARE	DRAWING NO: - J437-PLN-03
DATE: - JANUARY 2026	DESIGNED: - P. B
CLIENT: - NATURES OILS GOLDSTAR OILS BOLTON BIOFUELS	DRAWN BY: - P. B
SCALE: - 1:500 - A1	CHECKED: - P. B