



HYDROBRAKE FLOW CONTROL DEVICE RESTRICTING FLOW FROM SITE TO GREENFIELD RUN OFF RATES AS NOTED WITHIN THE TABLE BELOW.

RETURN PERIOD	DISCHARGE RATE
1:1 YEAR	6.8 L/S
1:30 YEAR	13.9 L/S
1:100 YEAR	16.8 L/S

STOCK PROOF FENCE TO BE PROVIDED AROUND PERIMETER OF BASIN WITHIN THE 300mm WIDE BERM

PROPOSED 1.0m DEEP BASIN PROVIDING APPROX 500m<sup>3</sup> OF STORAGE, ACCOMODATING THE 1:100 YEAR RETURN PERIOD + 30% CLIMATE CHANGE

300mm WIDE FLAT BERM AT 89.25m AOD

STOCK PROOF FENCE TO BE PROVIDED AROUND PERIMETER OF BASIN WITHIN THE 300mm WIDE BERM

300mm DEEP CONVEYANCE SWALE

GATED ACCESS TO FIELD TO BE RETAINED

STOCK PROOF FENCE

GATED ACCESS TO FIELD TO BE RETAINED

400mm DEEP SWALE WITH FILTERDRAIN BELOW.

LEGEND	
	PROPOSED SITE BOUNDARY
	PROPOSED SURFACE WATER CHAMBER AND PIPE RUN
	PROPOSED FOUL WATER CHAMBER AND PIPE RUN TO REMAIN PRIVATE
	EXISTING FOUL SEWER
	PROPOSED PERFORATED SURFACE WATER PIPE.
	PROPOSED ACO CHANNEL DRAINAGE.
	PROPOSED RAIN GARDENS
	PROPOSED BASINS & SWALES
	PROPOSED WATER BUTT

- GENERAL**
- G1 DO NOT SCALE FROM THIS DRAWING.
  - G2 ALL LEVELS IN METRES UNLESS NOTED OTHERWISE ON DRAWING.
  - G3 THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT ENGINEERS AND ARCHITECTS DRAWINGS AND RELEVANT SPECIFICATION CLAUSES.
  - G4 PLEASE REFER TO ARCHITECTS DRAWINGS FOR FINAL BUILDING LOCATION.
  - G6 ALL PROPOSED LEVELS ARE TO BE CONFIRMED BY THE ARCHITECT.
  - G7 FINAL LOCATIONS AND DETAILS OF SOIL VENT PIPES, STUB STACKS, RAINWATER DOWN PIPES, GULLIES ETC. TO BE CONFIRMED BY REFERENCE TO ARCHITECT DRAWINGS.
  - G8 ALL THRESHOLD DRAIN DETAILS TO BE TO ARCHITECT DETAILS.
- DRAINAGE**
- D1 ALL DRAINAGE COMPONENTS ARE TO COMPLY WITH CURRENT BRITISH STANDARDS.
  - D2 DRAIN PIPE THROUGH WALLS OR BENEATH FOUNDATIONS (SPREAD ONLY) TO HAVE REINFORCED CONCRETE BRIDGE LINTELS OVER AND PIPE SURROUNDED IN FLEXIBLE MATERIAL (50mm).
  - D3 ALL PIPES INTO CHAMBERS TO SOFFIT TO SOFFIT U.N.O.
  - D4 AT ALL OUTFALL POINTS TO AN EXISTING NETWORK, THE POSITION AND INVERT LEVEL OF EXISTING DRAINS MUST BE CONFIRMED WELL IN ADVANCE OF THE PROGRAMMED DATE FOR INSTALLING ANY OF THE UPSTREAM DRAINAGE, OR ORDERING OF ANY MATERIALS IN ORDER TO ALLOW TIME FOR ANY NECESSARY REVISIONS TO THE HYDRAULIC DESIGN.
  - D5 ALL GRAVITY UPVC PIPEWORK TO BE TO BS 4660 OR BS 5481 WHERE RELEVANT UNLESS NOTED OTHERWISE.
  - D6 ALL NON ADOPTABLE DOMESTIC FOUL AND SURFACE WATER PIPE RUNS SHALL CONSIST OF 100mm DIA. PIPES LAID AT NO FLATTER THAN 1 IN 80 FALLS U.N.O.
  - D7 A SEWER OR LATERAL DRAIN WITH A NOMINAL INTERNAL DIAMETRE OF 100mm, OR A LATERAL DRAIN SERVING TEN OR LESS PROPERTIES IS LAID TO A GRADIENT NOT FLATTER THAN 1:80, WHERE THERE IS AT LEAST ONE WC CONNECTED AND 1:40 IF THERE IS NO WC CONNECTED.
  - D8 THERMOPLASTIC PIPES, JOINTS & FITTINGS FOR GRAVITY SEWERS SHALL COMPLY WITH THE RELEVANT PROVISIONS OF BS EN 1401-1, BS EN 1852 & BS EN 12956-1.
  - D9 THERMOPLASTIC STRUCTURED WALL SEWER PIPE: THERMOPLASTIC STRUCTURED WALL SEWER PIPE SHALL COMPLY WITH THE RELEVANT PROVISIONS OF BS EN 13476-1 & WS 4-25-01 AND BS EN 13476-2 OR BS EN 13476-3. PIPES SHALL BE BS KITEMARKED OR HAVE EQUIVALENT THIRD PART CERTIFICATION. PIPES LESS THAN OR EQUAL TO 500mm IN DIAMETRE SHALL HAVE NOMINAL SHORT-TERM RING STIFFNESS NOT LESS THAN 8kN/m<sup>2</sup> (SN8) OR BE SUBJECT TO A QUALITY SYSTEM FOR STORAGE & EMBEDMENT.  
Nom. SHORT TERM RING STIFFNESS OF 2kN/m<sup>2</sup> (SN2) IS ACCEPTABLE FOR PIPES GREATER THAN Ø 500mm, SUBJECT TO SUPPORTING STRUCTURAL DESIGN LOAD CALCULATIONS BEING PROVIDED.  
TRANSPORTATION, HANDLING, STORAGE AND LAYING SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.  
WHERE A FITTING IS INSTALLED ON A SEWER LENGTH, IT SHALL HAVE THE SAME INTERNAL BORE AS THE SEWER. Max. LENGTH OF PIPE FOR LAYING IS 3.0m OR Ø x 10, WHICHEVER IS THE GREATER, UNLESS WELDED JOINTS ARE USED.
  - D10 OPTIMUM TRENCH WIDTH = PIPE + 300mm. CONTRACTOR TO ENSURE TRENCH WALLS ARE SUITABLY PROPPED.
  - D11 BACKFILLING TO PIPE TRENCHES BENEATH ROADS, CAR PARKING AND STRUCTURES TO BE M.O.T. TYPE 1 GRANULAR MATERIAL UP TO FORMATION LEVEL FROM THE TOP OF THE SPECIFIED PIPE SURROUND (WELL COMPACTED IN 150mm LAYERS).
  - D12 BACKFILLING TO PIPE TRENCHES BENEATH LANDSCAPED AREAS TO BE SELECTED EXCAVATED MATERIAL FREE FROM LARGE STONES GREATER THAN 75mm, LUMPS OF CLAY OVER 100mm, ANY TIMBER, FROZEN MATERIAL OR VEGETATION MATTER UP TO FORMATION / GROUND LEVEL FROM THE TOP OF THE SPECIFIED PIPE SURROUND (WELL COMPACTED IN 150mm LAYERS).
  - D13 GRANULAR MATERIAL NOMINAL SIZE 10mm SINGLE SIZED OR 14mm TO 5mm GRADED.
  - D14 BACKFILL MUST NOT BE LACED ON CONCRETE BEDDING OR SURROUND UNTIL THE CONCRETE COMPRESSIVE STRENGTH HAS REACHED 15N/mm<sup>2</sup>.
  - D15 BRICKS OR BLOCKS MUST NOT BE PLACED IN THE BEDDING MORTAR FOR SETTING THE PIPES TO LEVEL.
  - D16 ROCKER PIPES TO BE PROVIDED AT TYPE 2 CONCRETE CHAMBERS AND AT TRANSITION FROM CONCRETE SURROUND (TYPE 2) TO GRANULAR SURROUND (TYPE 5) ALL ROCKER PIPE LENGTHS TO BE 600mm.
  - D17 MAX DISTANCE FROM FACE OF CONCRETE SURROUND TO FIRST FLEXIBLE JOINT TO BE 150mm.
  - D18 MANHOLE COVERS AND FRAMES: MANHOLE COVERS AND FRAMES SHALL COMPLY WITH THE RELEVANT PROVISIONS OF THE BS EN 124 M BS 7903 AND HIGHWAYS AGENCY GUIDANCE DOCUMENT HA 10409. THEY SHALL BE OF NON ROCKING DESIGN WHICH DOES NOT RELAY TO THE CUSHION INSERTS.  
MANHOLE COVER ON FOUL ONLY SEWERS SHALL BE OF LOW LEAKAGE TYPES IN ORDER TO PREVENT EXCESSIVE SURFACE WATER INGRESS  
AS A MINIMUM, CLASS D400 SHALL BE USED IN CARRIAGEWAYS OR ROADS (INCLUDING PEDESTRIAN STREETS), HARD SHOULDERS AND PARKING AREAS USED BY ALL TYPES OF VEHICLES.
- ADOPTION**
- A1 CONNECTION TO THE PUBLIC SEWER: SUBJECT TO A SECTION 104 ADOPTION AGREEMENT BEING COMPLETE, A SECTION 106 APPLICATION TO CONNECT MUST BE MADE TO DCWW. THE DEVELOPER SHALL GIVE 21 DAYS NOTICE PRIOR TO CONNECTION, THE WORKS MAY ONLY BE UNDERTAKEN BY AN SSIP HEALTH & SAFETY APPROVED CONTRACTOR.
  - A2 CONSTRUCTION OF SEWER TO BE IN ACCORDANCE WITH WELSH MINISTERS STANDARDS AND SFA 7TH EDITION.
  - A3 THE DEVELOPER MUST SELF-VET AND CERTIFY THAT THE DESIGN CRITERIA, MATERIAL STANDARDS AND WORKMANSHIP SPECIFICATIONS FOR THE PROPOSED ADOPTABLE LATERAL DRAIN ARE IN ACCORDANCE WITH THOSE SET OUT IN 'SEWERS FOR ADOPTION' 7TH EDITION, THE WELSH MINISTERS STANDARDS AND THE REQUIREMENTS OF DCWW AS THE STATUTORY SEWERAGE UNDERTAKER.

REV	DATE	DESCRIPTION	BY	CHK	APP
P04	27.11.2023	BREAK INTRODUCED IN SWALE TO ALLOW ACCESS TO BE RETAINED	KB	BT	KB
P03	23.11.2023	STOCK PROOF FENCE ADDED TO SITE OF SWALE	KB	BT	KB
P02	22.11.2023	FURTHER DETAILS ADDED TO BASIN.	KB	BT	KB
P01	29.09.2023	FIRST ISSUE	KB	BT	KB

DRAWING STATUS:		<b>PRELIMINARY</b>	
CLIENT:		DU CONSTRUCTION	
ARCHITECT:		SAER ARCHITECTS	
PROJECT:		GWEL Y LLAN, LLANDEGFAN	
TITLE:		PROPOSED OFF-SITE SURFACE WATER DRAINAGE LAYOUT	
STATUS:	PROJECT No:	012	REV: P04
S2	292		
SCALE @ A1:	DESIGNED:	DRAWN:	CHECKED:
1:250	BT	KB	BT
	APPROVED:	DATE:	
	BT	SEPTEMBER 2023	

