

PHASE 2 DISTRIBUTION WAREHOUSE EXTENSION

MCCARTHY DISTRIBUTION, ABBEY ROAD, WREXHAM INDUSTRIAL ESTATE LL13 9XU

PROPOSED DOCK LEVELLERS

DRAINAGE IMPLICATIONS - ADDENDUM

1.0 Introduction

On 24th January 2018 the Phase 1 development was granted planning permission for an industrial warehouse (use class B1, B2 & B8) with associated service yard, and car parking (planning permission ref P/2017/1013) These Phase 1 works involved the erection of a 2,892m² distribution warehouse and associated transportation and drainage infrastructure.

Phase 2 works involving an extension to the existing industrial warehouse (use Class B1, B2 and B8) together with associated service yard was granted planning permission on 11th October 2019 (planning permission ref P/2019/0593). Phase 2 allowed for an additional warehouse floor area of 846m² plus an associated extension to the service yard. SAB application accompanied the Phase 2 planning application and provided detail of the surface water management. SAB approval (SAB_FUL_2019_0801) for Phase 2 was received on 3rd October 2019.

Planning permission was granted in January 2021 for variations to the approved plans associated with planning permission ref P/2019/0593 (planning permission reference P/2020/0773). This included amongst other things the creation of three no. dock levellers at the northern end of the west elevation. The potential drainage effects of the introduction of three Dock Levellers was reviewed in a commentary report reference '3631-CAU-XX-XX-RP-0350 Phase 2 Extension: Dock Levellers' and is appended to this Report for reference.

It is now proposed to introduce a fourth dock leveller to the proposed Phase 2 extension. This Addendum Report seeks to revise the content of the appended report with respect to the implication that four dock levellers may have upon surface water management at the developed site.

2.0 Phase 2 Layout – Introduction of Dock Levellers

The initial Phase 2 layout allowed for the extension of the service yard with a corresponding extension of the existing canopy. The ground levels of the extended service yard followed drainage principles established by the Phase 1 scheme and allowed for surface water to flow to drainage infrastructure that ultimately discharged to an existing buried attenuation tank.

The Phase 2 layout was later amended (planning permission reference P/2020/0773) to include three Dock Levellers at the northern end of the proposed extension. The length of overhead canopy was consequentially reduced. The initial Phase 2 layout proposal is presented on drawing number 1704-C4C-B2-00-DR-A(20)150.S2-P01.

A subsequent revision to this layout included a fourth dock leveller alongside the three that formed the initial revision. The inclusion of a fourth dock leveller required an even smaller canopy extension. The current proposal is presented on drawing number 5678-CAU-XX-XX-DR-T-1803-).

3.0 Phase 2 Drainage – General Arrangement

The Phase 1 development was reliant on a buried attenuation tank that discharged surface water to a private sewer via a pump. Surface water from the service yard, car park, and from roof and canopy areas, was marshalled to outfall to the tank.

The surface water drainage of the initial Phase 2 layout relied upon an extension of drainage management provided by the Phase 1 layout. To supplement pollution mitigation the western edge of the Phase 2 service yard employed a 2m wide edge-collection filter strip that ultimately discharged to the attenuation tank. A dropped kerb along the filter strip provided a pathway for exceedance flow.

The inclusion of dock levellers created a portion of impermeable area that was topographically low and not able to drain by gravity to the existing attenuation tank. It would therefore be necessary to remove the surface water volume received at the foot of the dock levellers by pump. Surface water from a sump within the dock leveller area would be raised to discharge to the edge-collection filter drain for subsequent onwards conveyance to the existing attenuation tank and pump arrangement.

Surface water from the extended canopy area would be able to connect to existing above-ground rainwater goods.

4.0 Phase 2 Drainage – Implication on Drainage Management

The introduction of an additional dock leveller and the reduction in canopy extension should not affect the net impermeable area that contributes to surface water flow. The net impermeable area of the Phase 2 development, with and without dock levellers, is identical. Consequently, the receiving drainage infrastructure installed in Phase 1, and which formed the basis of the SAB Approval for Phase 2, is considered suitable for the current proposed layout comprising four dock levellers.

The larger area of topographically lower surfaces may require a larger sump size and pump arrangement to cater for received flows. The dock leveller pump is to discharge remotely to the edge-collection filter strip and thus preserve the level of pollution mitigation.

A reduction in the size of the proposed extended canopy will result in a decrease in surface water volume via existing rainwater goods to the existing attenuation tank.

5.0 Summary

The SAB approval for the initial Phase 2 development allowed for the management of an impermeable surface area of 0.89ha. The proposed introduction of dock levellers does not change the contributing surface area. Consequently, there is expected to be no significant change in surface water management from that contained within the SAB Approval of October 2019.

The dock leveller area will need to be drained by a dedicated pump facility. Pumped flow from this facility will need to discharge to the edge collection filter drain.

It is considered that the inclusion of dock levellers within the Phase 2 development will not detrimentally affect the surface water management that formed the received SAB approval.

APPENDIX A

Drainage Implications of Proposed Dock Levellers Ref 3631-CAU-XX-XX-RP-0350

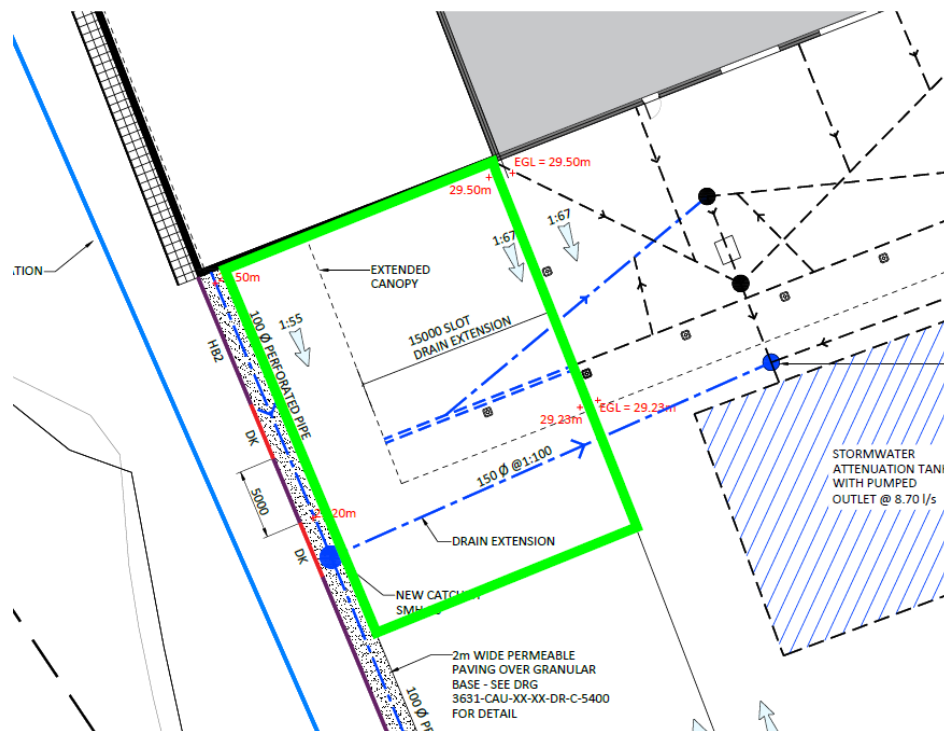
MCCARTHY HAULAGE LTD.

2 ELM POINT, ABBEY ROAD NORTH, WREXHAM INDUSTRIAL ESTATE, WREXHAM, LL13 9UE

PROPOSED DOCK LEVELLERS – DRAINAGE IMPLICATIONS

1.0 Introduction

- 1.0.1 On 24th January 2018 Wrexham County Borough Council granted planning permission for the 'Erection of Industrial Warehouse (Use Class B1, B2 & B8) With Associated Service Yard and Car Parking (Ref P/2017/1013). These Phase 1 works involved the erection of a 2,892m² distribution warehouse and associated transportation and drainage infrastructure.
- 1.0.2 An 'Extension to Existing Industrial Warehouse (Use Class B1, B2 And B8) together with Associated Service Yard' (Ref P/2019/0593) was approved by Wrexham County Borough Council on 11th October 2019 (Phase 2 works). The Phase 2 works allowed for additional warehouse floor area of 846m² plus an associated extension to the loading bay.
- 1.0.3 SAB application accompanied the Phase 2 planning application. The surface water strategy allowed for minor changes in ground levels to allow for edge-collection of runoff before connection to drainage installed as part of Phase 1.
- 1.0.4 This report has been prepared in support of a proposal to form three dock leveller ramps within the approved service yard extension, in the general location indicated by the green box below (outside of the canopy).



- 1.0.5 This short report provides commentary on the effect that the proposed dock levellers may have on surface water drainage.

2.0 Phase 1 Drainage

- 2.0.1 The Phase 2 Extension site, and the wider site boundary, are wholly within Flood Zone A and therefore have the lowest level of flood risk. A flood risk assessment has been prepared for the Phase 1 development by Muir Associates Ltd in February 2018.
- 2.0.2 Surface water drainage for Phase 1 allowed for a subterranean attenuation tank that received runoff from impermeable surfaces within the redline boundary. The attenuation tank was emptied via a pump to outfall at a private surface water sewer some 100m remote.

3.0 Phase 2 Drainage – SAB Approval

- 3.0.1 SAB approval SAB_FUL_2019_0801 for the Phase 2 development was received on 3rd October 2019.
- 3.0.2 The surface water strategy allowed for a minor change in ground levels to provide edge-collection of run off before connection to the drainage installed as part of Phase 1. This allowed for topographic tie-in to the existing Phase 1 loading bays whilst allowing collection and pollution remediation via filter drainage. A drop-kerb arrangement provided a pathway for exceedance flow.
- 3.0.3 For site operational considerations the Phase 2 Extension ties in with ground levels established by the Phase 1 site. The tie-in levels are internally (floor level) and externally (concrete surfaces of loading bay, turning area, and access). The scope to present an alternative set of finished ground levels throughout the Phase 2 Extension works is limited.
- 3.0.4 Phase 1 drainage is reliant on oil separators and silt traps as the physical barriers against pollution prevention. Because of the required ground levels, the proposed Phase 2 Extension will need to follow a similar pollution prevention regime. Nevertheless, subtle changes on concrete slab area at the north end of the site does provide scope for an alternative system. The incorporation of a broad line of permeable paving over an aggregate sub-base provides opportunity for interception, sedimentation and treatment of captured pollutants within the surface water.
- 3.0.5 The predicted pollution hazard index (CIRIA C753 Table 26.2 for a medium hazard level) is equal or less than pollution mitigation index (CIRIA C753 Table 26.3) for the proposed line of permeable paving.
- 3.0.6 Surface water from roof areas does not require treatment and will pass direct to subterranean storage (provided in Phase 1) and on to surface water sewer via the existing pumping system (again as provided in Phase 1).

- 3.0.7 The proposed surface water drainage is represented on drawing number 3631-CAU-XX-XX-DR-C-5100.S2-P02 and provided at Appendix A.
- 3.0.8 The SAB application made reference to this form of surface water disposal as compliance with Level 4 of the drainage hierarchy. This was accepted by the SAB as water re-use, ground infiltration, and discharge to a watercourse could not be achieved at the site.
- 3.0.9 No part of the proposed surface water drainage system for Phase 2 is to be offered for adoption. Maintenance of the drainage system will be the responsibility of the site owner and operator.

4.0 Phase 2 Drainage – Drainage Implication of Dock Levellers

- 4.0.1 The three proposed Dock Levellers will require a loading bay level 1.2m lower than the Warehouse finished floor level (FFL). Each loading bay will be accessed by vehicles reversing down a shallow ramp to facilitate the loading/unloading of goods from the warehouse. The proposed dock levellers will not have any form of covering and will be exposed to precipitation. The general arrangement of the Proposed Ground Floor is shown on drawing number 17049-C4C-B2-00-DR-A-(20)150.S-P01 and appended at Appendix B.
- 4.0.2 Surface water will flow down the shallow ramps to pond against the rear of the dock levellers' apron. It is anticipated that the level at the lowest part of the dock levellers will be lower than the attenuation tank. There is not likely to be a gravity outfall for surface water collected in the dock leveller apron.
- 4.0.3 An alternative to a gravity outfall from the apron is to pump surface water out to a point of adequacy. A low-level sump can be installed, below the apron surface level, which would house appropriately-sized pumping equipment. Surface water from the apron area would then be raised to discharge to the edge-collection filter drain for subsequent conveyance to the existing attenuation tank and pump arrangement.
- 4.0.4 The creation of the three dock leveller apron should not increase the net area of impermeable surface. There should therefore be no increase in the quantity of surface water experienced at the site.
- 4.0.5 Discharge from a pump sump onto the filter drain should provide a level of pollution mitigation that would have been experienced by the surface water runoff from the previous drainage arrangement of the Phase 2 loading bay arrangement.
- 4.0.6 The sump pump arrangement will constitute a variation to the drainage approved by the SAB in October 2019. It is recommended that the SAB is informed of this variation to ensure that a resubmission of revised drainage is not required.

5.0 Summary of Drainage Implication of Dock Levellers

- 5.0.1 The installation of three dock levellers will result in the exclusion of a volume of surface water that cannot drain by gravity to site drainage. It will be necessary to remove the

volume by pump, and to discharge flow to the proposed filter drainage agreed as part of SAB permission.

- 5.0.2 The overall quantity of surface water experienced at the site should not be affected by the inclusion of the dock levellers.
- 5.0.3 It is recommended that the revised drainage of the dock levellers is presented to the SAB for comment.

Photographs of Existing Site



1 – General elevation of site from Abbey Road.



2 – Site of proposed Phase 2 Extension.



3 – Site of proposed Phase 2 Extension.



4 – Existing slot drain beneath the canopy area of Phase 1.

Appendix A

The proposed surface water drainage

(drawing number 3631-CAU-XX-XX-DR-C-5100.S2-P0)

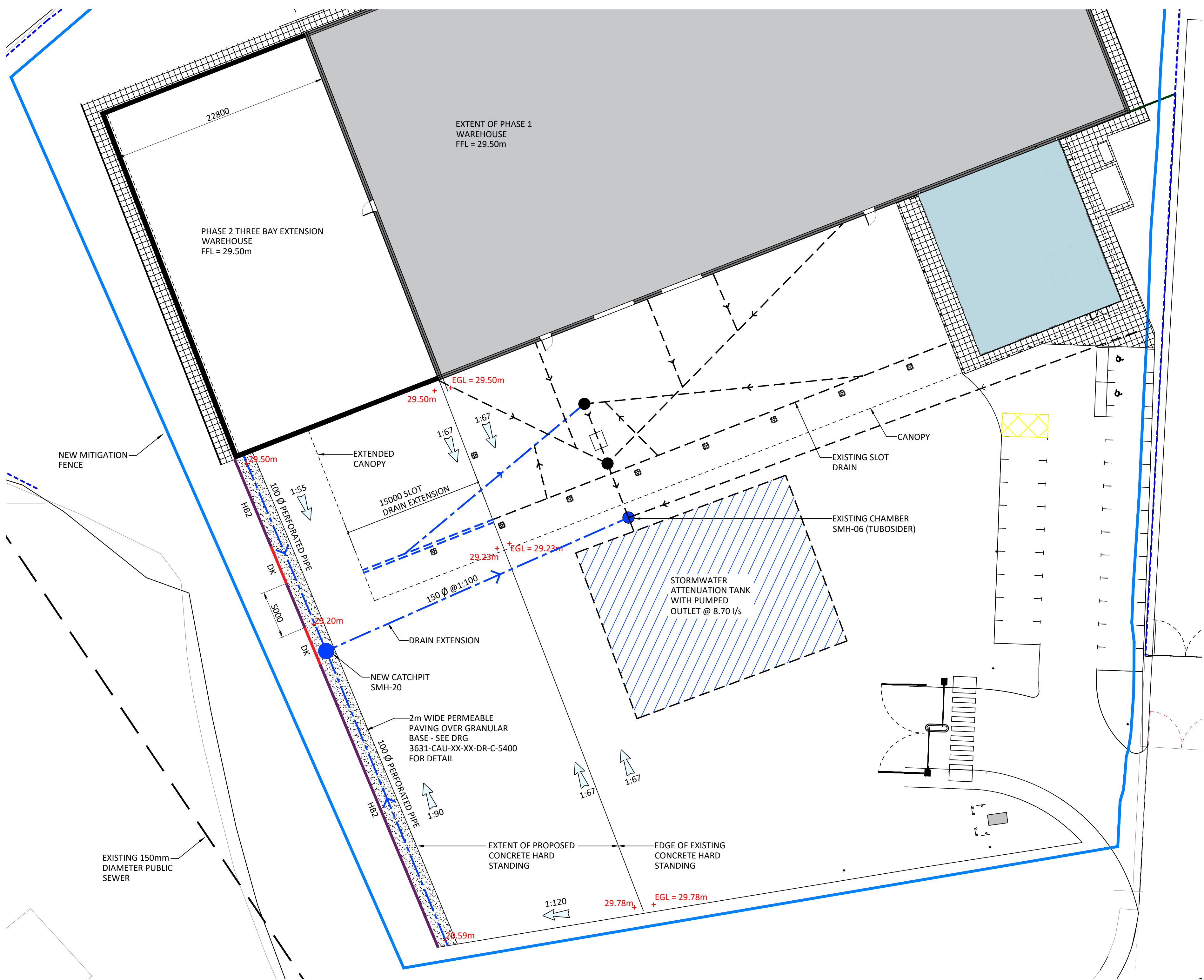
NOTE

1. DO NOT SCALE FROM THIS DRAWING, WORK FROM FIGURED DIMENSIONS ONLY. ALL DIMENSIONS ARE IN MILLIMETRES AND ALL LEVELS ARE IN METRES ABOVE ORDNANCE DATUM U.N.O.
2. NO DEVIATION FROM THE DETAILS SHOWN ON THIS DRAWING WILL BE ALLOWED WITHOUT THE PRIOR PERMISSION IN WRITING.
3. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECTS, ENGINEERS AND SPECIALIST DRAWINGS AND SPECIFICATIONS.
4. THE SPECIFICATION IN ALL RESPECTS SHALL BE IN ACCORDANCE WITH THE CURRENT WREXHAM CBC SPECIFICATION AND CONSTRUCTION PUBLICATION IN FORCE IN THE COUNTY AT THE TIME OF CONSTRUCTION.

LEGEND

- HB2 HB2 KERB
- DK DROP KERB
- +XX.XX PROPOSED LEVELS
- XX:XX SLOPE LEVEL
- EXISTING DRAINAGE (AS SHOWN ON MUIR ASSOCIATES Ltd DRAWING DMS 620-200, REV P4)
- PROPOSED DRAINAGE

P02	SAB APPLICATION	DA	LLM	SBB	16.07.19
P01	ISSUED FOR INFORMATION	DA	LLM	SBB	14.05.19
REV	MODIFICATIONS	BY	RE	AP	DATE
PURPOSE OF ISSUE FOR INFORMATION				STATUS S2	
CLIENT: M+L INVESTMENT PARTNERSHIPS LTD					
PROJECT: ABBEY ROAD, WREXHAM					
TITLE: SAB APPLICATION					
DRAWN BY DA		REVIEWED BY LLM		AUTHORISED BY SBB	
				SCALE @ A2 1:250	
DATE 14.05.2019		JOB REF: 3631		REVISION P02	
DRAWING NUMBER 3631-CAU-XX-XX-DR-C-5100					
Caulmert engineering environmental planning					



Appendix B

Proposed Ground Floor

(Drawing number 17049-C4C-B2-00-DR-A-(20)150.S-P04)



Org no. 17049-C4C-B2-00-DR-A-(20)150	Rev P04
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