

BAESA F-35 AV MRO&U Facilities

Drainage Assessment

13-Sep-2022
Commercial-in-Confidence

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Drainage Assessment

Client: DesignInc Sydney

ABN: 87 003 008 820

Prepared by

AECOM Australia Pty Ltd

17 Warabrook Boulevard, Warabrook NSW 2304, PO Box 73, Hunter Region MC NSW 2310, Australia

T +61 2 4911 4900 F +61 2 4911 4999 www.aecom.com

ABN 20 093 846 925

In association with

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1.0 Background

In February 2015, BAE Systems Australia (BAESA) was assigned by the Commonwealth of Australia (CoA) as the F-35 Air Vehicle Maintenance, Repair, Overhaul & Upgrade (AV MRO&U) provider for the Southern Pacific Region. These services will be conducted at the existing BAESA Williamstown site (the Site) where BAESA currently undertake Deeper Maintenance (DM) services for the Lead-In-Fighter (LIF) AV on behalf of the CoA.

As part of the Preliminary Design Report (PDR) an investigation was undertaken to determine the impacts and upgrades required to the drainage network as part of the schedule 1 scope of works.

2.0 Investigation

The proposed scope for the South Hangar capability is noted throughout the body of this PDR and summarised into work elements in Table 1 below.

Table 1 Schedule 1 scope of works

ID	Work Element	Description
A	South Hangar Works (Hangar Fit-Out)	The remaining fit-out to the existing South Hangar to provide a total of six (6) x GMx bays Additional four (4) x GMx bays and associated equipment within the hangar as two (2) x bays have been previously completed and operationalised in Q1 2021.
B	Upgrades to the existing support facilities and office accommodation to support the South Hangar operations	<ul style="list-style-type: none"> • New canopy to the southern end of the South Hangar to provide a covered area for GSE Maintenance work; • Refurbishment of selected South Hangar Support facilities inclusive of workshops avionics, general office areas and services; • Refurbishment of the Zone 4 office area and Administration building; and • Refurbishments to the existing GSE storage shed to accommodate battery storage.
C	Upgrade of existing site infrastructure associated with the South Hangar	<ul style="list-style-type: none"> • Upgrades to electrical infrastructure to meet the increased demand and provision for future facility expansion; • New HV substation to the western end of the existing GSE storage shed; and • New free-standing LV switch room under the new southern canopy.

Of the listed works in Table 1 only the “new canopy to the southern end of the South Hangar to provide a covered area for GSE Maintenance work” and the new HV substation could potentially change the current drainage regime on site. All other listed works in Table 1 are within existing building footprints and do not impact on the current site drainage regime.

The site, including the site of the south hanger canopy extension and the HV switch room currently drain to Lake Cochran to the north of the BASEA lease area

Rates of runoff and the associated runoff quality have already been accounted for in the existing drainage infrastructure on the site. No additional lead in drainage work is warranted and runoff from the proposed rooves can be collected by conventional eave gutters and discharged to the underground drainage system via pipes.

Existing drainage on the site comprises an underground system of pipes draining surface pits. There is a main drainage line flowing in a west to east direction adjacent to the southern wall of the proposed South Hangar lean-to extension. This is to be confirmed once survey has been received. Refer to Figure 1.

Drainage is to be designed and constructed in accordance with AS 3500.3: 2018

2.1 New canopy Southern Hanger

The new canopy to the southern end of the South Hanger is to be built over existing hardstand area. As such there is no change in the impervious area between the current facility and the proposed facility. Thus, there is no change (either flow rate or volume) to the existing stormwater regime in the area.

Drainage design for the schedule 1 scope of works will consist of connecting the new canopy down pipes into the existing stormwater network.

Given the limited information it is proposed that a new pit will be required to be constructed over the existing main drainage line located to the east of the proposed building. Roof water is to be discharged via a new manifold to be located at the southern side of the building and discharged to the new pit. The manifold will be located above the existing drainage line. Refer attachment 1.

2.2 HV Switch room

The new HV switch room is to be built on an existing hardstand area. As such there is no change in the impervious area between the current facility and the proposed facility. Thus, there is no change (either flow rate or volume) to the existing stormwater regime in the area.

It is proposed to discharge the HV switch room roof water via a single pipe connection to the existing pit located on the east side of the Existing Warehouse building in the southwest corner of the site. Refer attachment 1.

Confirmation from survey will need to be sought to ensure that any existing flow paths are maintained or redirected with the addition of the HV switch room.

2.3 Fuelling

The Statement of Business Needs for F-35 Depot Capability (Schedule 1) states that defueling will occur on the hardstand in front of the hanger. De-fuelling activities are expected to follow current site procedures and protocols and have emergency spill provisions in place to stop fuel entering the drainage network.

The need for permanent emergency fuel spill provisions such as a storage tank and treatment facility should be assessed during detailed design. Should emergency spill infrastructure be required for the scheduled 1 scope of works these should be undertaken in accordance with accepted industry practice ie: NFPA 415.

2.4 Erosion and sediment control plan

Given all the works are to be undertaken on hardstand areas and there is no works that will disturb natural ground there is a low to zero risk of sediment laden water being created. Works around existing stormwater pits should follow standard construction procedures to stop any foreign material entering the stormwater network.

During construction provision of sediment fences will be required to capture sediment laden water from stockpiles and disturbed areas. Sandbags should be provided to inlet pits as required to prevent sediments from entering the drainage network. Refer to Figure 1.

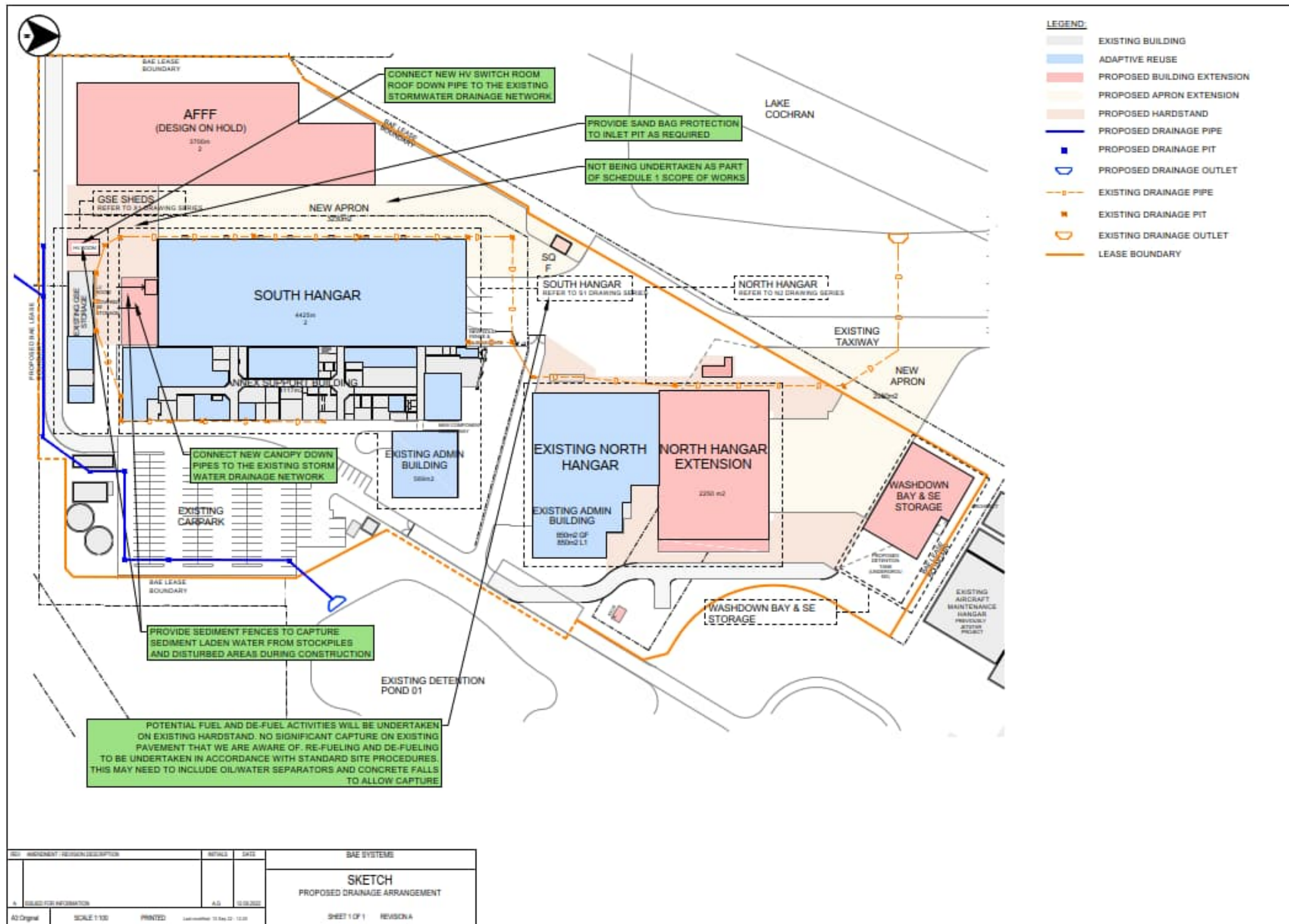


Figure 1 Sketch – Proposed Drainage Arrangement

3.0 Summary

Based on the information provided to date for the schedule 1 scope of works there is no proposed impact to the drainage regime in the area. Connection of the new roof areas will be made to the existing drainage network. These roof areas will not change the drainage regime (either flow rate or volume) and do not require any further drainage works to be undertaken.

During construction provision of sediment fences will be required to capture sediment laden water from stockpiles and disturbed areas. Sandbags should be provided to inlet pits as required to prevent sediments from entering the drainage network.