

Memo



PURPOSE: Gardom Pond Decommissioning Design Brief **AMENDMENT**

FROM: Ben Martin, P.Eng
Senior Project Engineer, Facilities Management & Engineering Services

DATE: March 4, 2019 **FILE:** 16-1856

SUBJECT: **Gardom Pond Dam Decommissioning/Naturalization Design Brief – Breach at Original Stream Channel**

Further to the January 23, 2018 design brief outlining a breach scenario at the existing spillway location, please accept this amended brief outlining a breach scenario at the original stream channel. Due to issues regarding land encumbrances the previously proposed design to breach at the existing spillway has been abandoned. The CRD has developed this dam decommissioning concept in consultation with the following stakeholders:

- a. The six water license holders held on Gardom Pond dam
- b. The Ministry of Forests, Lands, Natural Resource Operations & Rural Development (FLNRO) regional Dam Safety Officer, John Baldwin
- c. The Ministry of Transportation and Infrastructure (MoTi) South Island Operations Manager, Ryan Evanoff
- d. Land Owners at 6606 Harbour Hill Drive, [REDACTED]

The decommission work is planned to eliminate the storage of water that requires a water license under the BC Water Sustainability Act (WSA) for a dam. The current dam naturalization/decommission proposal provides for the original stream outlet channel to be reinstated (see attached project drawings).

The decommissioning effort will involve modifications to the existing dam embankment, extending across 6606 Harbour Hill Drive (Owned by [REDACTED] and fortifying the existing stream outlet channel extending to the tie-in point into the MoTi owned Harbour Hill Drive Road right-of-way (RROW).

The channel is to pass a 200-year period future design flow of 0.215 m³/s. The pond will be effectively lowered to the original invert of the stream bed El. 84 m. The current pond surface elevation fluctuates seasonally between approximately El. 85-86 m. The dam crest is at El. 87 m.

The proposed outlet channel would be cut into the existing dam embankment with a 900 mm culvert (inlet invert 84 m, outlet invert 83.9 m) with the downstream channel extending approximately 160 meters to the Harbour Hill Drive RROW (El. 42 m). At the tie-in point a 0.9 m sump, lined with riprap, will be instated. The stream outlet channel would be riprapped with 150 mm nominal riprap over a geotextile filter cloth and measure 3 m wide by 0.45 m deep.

Harbour Hill Drive was constructed by MoTi after the construction of the Gardom Pond dam and the roadway construction design considered the existing surface run-off and spillway flow from

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Gardom Pond and the area catchment. MoTi acknowledges and accepts the CRD proposal to limit the extent of construction to the entrance point to the Harbour Hill Drive RROW with regard to the proposed decommissioning work. CRD's obligation will be to ensure the outlet flow is suitably discharged into the RROW.

However, due to anticipated future flow intensities greater than the 200-year period due to climate change, modifications will be undertaken further downstream. Accordingly, as part of the decommissioning work, a 600 mm culvert will be installed within the RROW at the junction of Harbour Hill Drive and Razor Point Road. In addition, drainage improvements will be undertaken at 6618 Razor Point Road which will include replacing two 400 mm culverts with 600 mm culverts and fortifying the existing outlet channel.

The existing dam embankment will be lowered by 0.35 m and remain in place and continue to serve as an access road to 6604 and 6602 Harbour Hill Drive. The existing low level outlet pipe extending through the dam embankment will be sealed with concrete. The existing 6" dry hydrant located on Gardom Lane directly to the west of the dam embankment will remain operational. An updated environmental impact assessment of the lowering of the water level in Gardom Pond is underway.

Regards,

A handwritten signature in blue ink, appearing to read "BM".

Ben Martin, P.Eng.
Senior Project Engineer
Facilities Management & Engineering Services

Attachment(s): Dam Decommissioning Drawings

CC: Joshua Frederick, Manager, Facilities Management & Engineering Services
Steve May, Senior Manager, Facilities Management & Engineering Services

CAPITAL REGIONAL DISTRICT

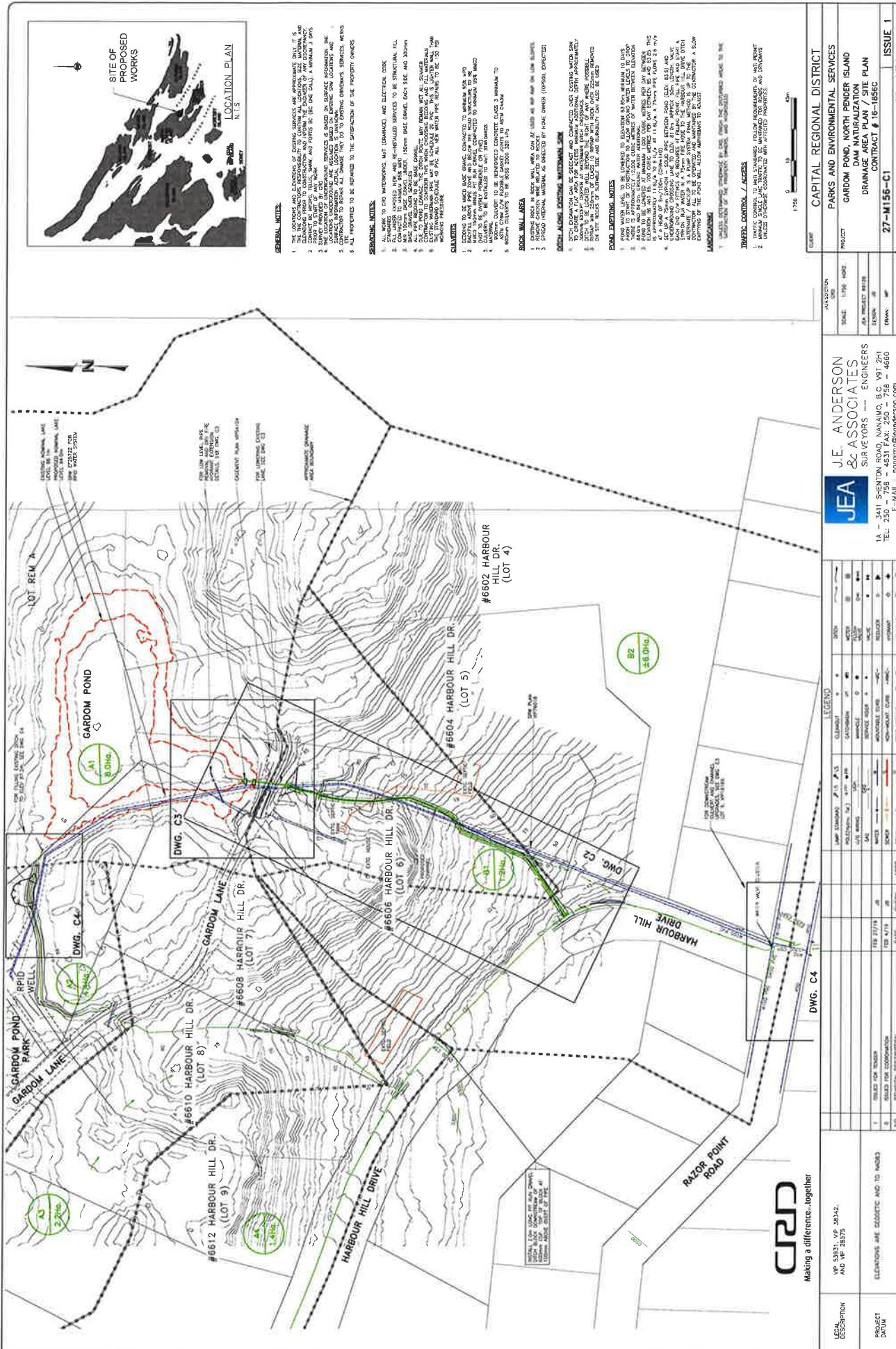
GARDOM POND, NORTH PENDER ISLAND
DAM NATURALIZATION

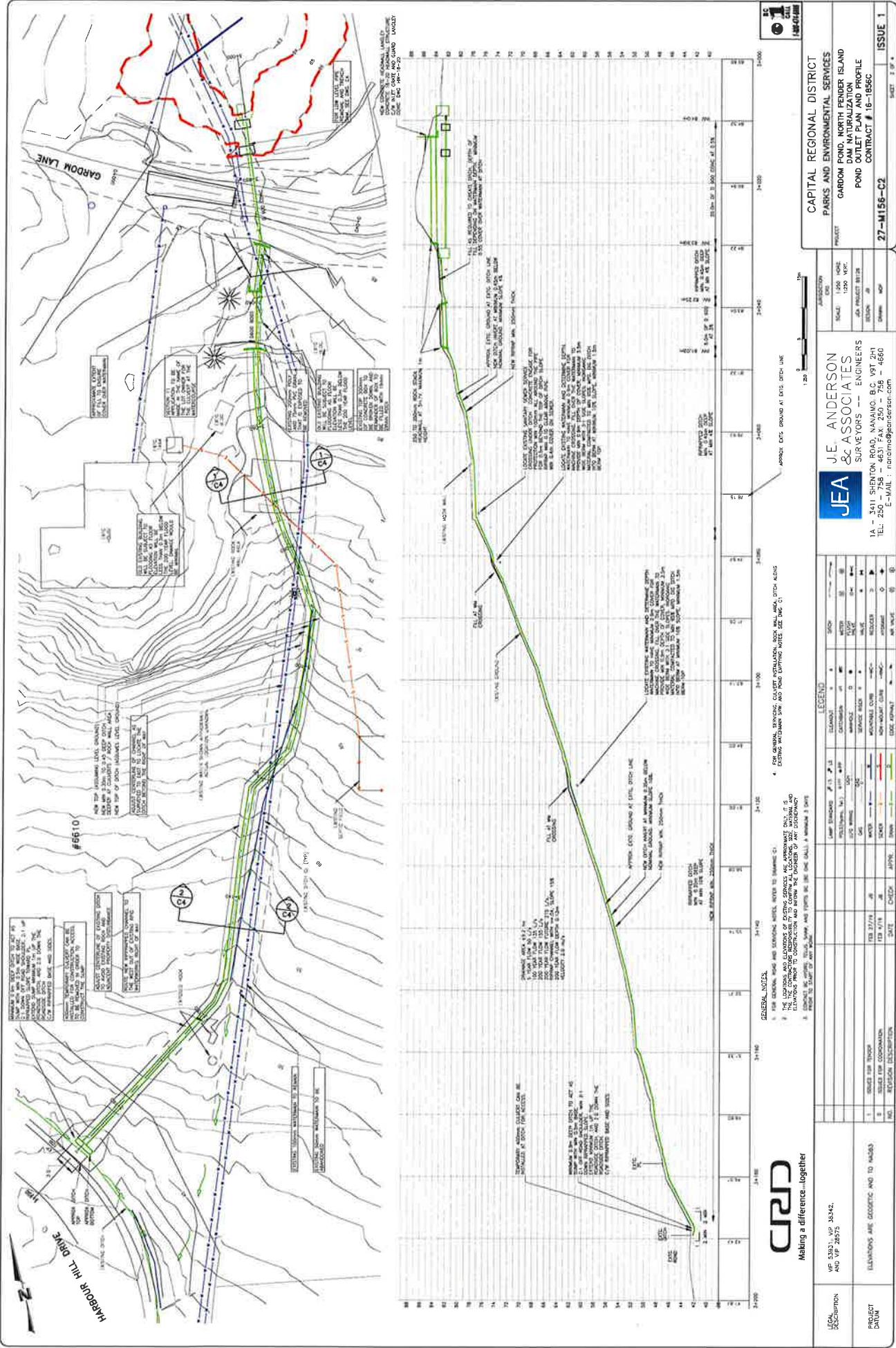
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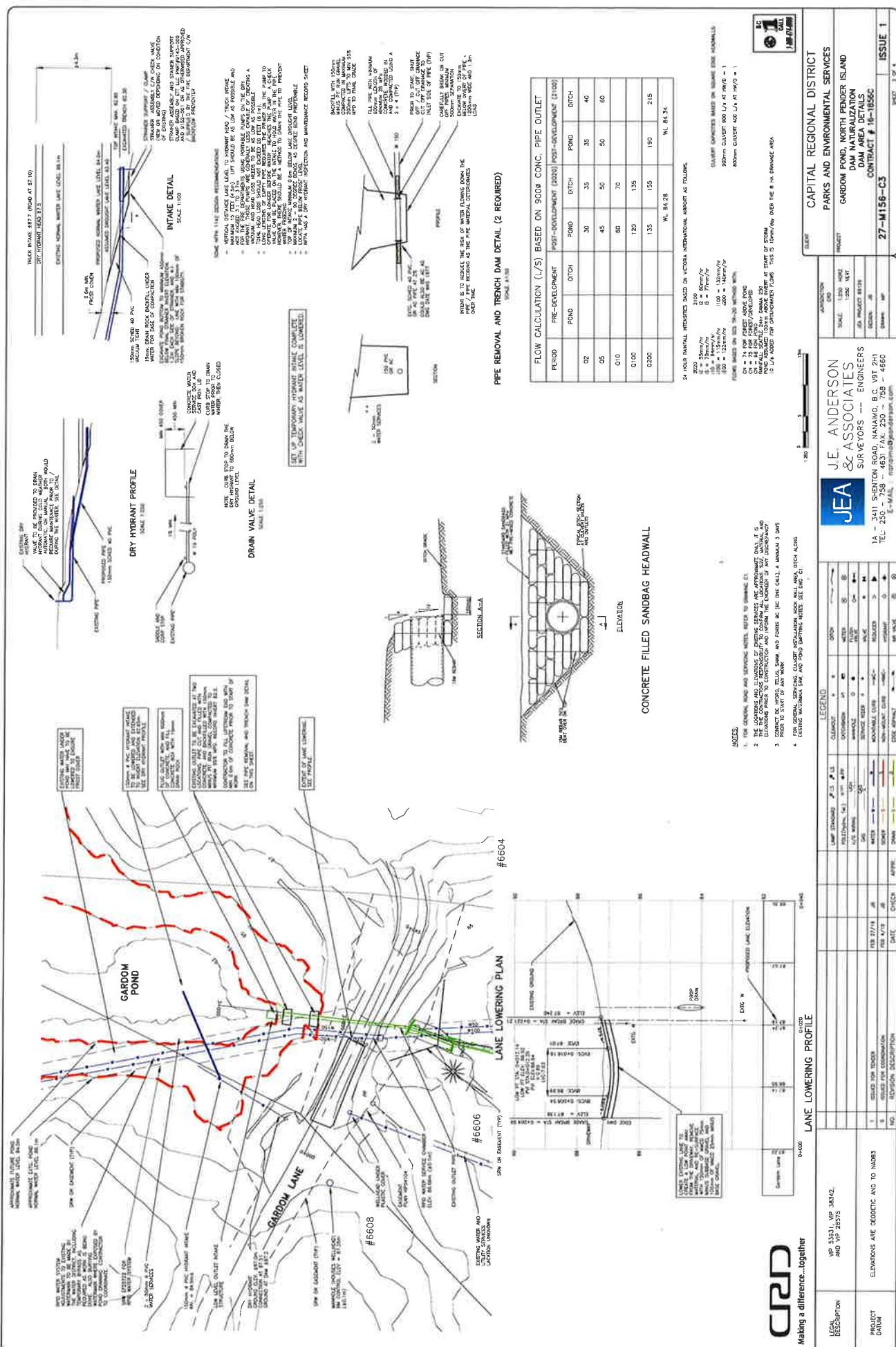
LIST OF DRAWINGS	
DWG. No.	TITLE
27-M156-C1	DRAINAGE AREA PLAN / SITE PLAN
27-M156-C2	POND OUTLET PLAN AND PROFILE
27-M156-C3	DAM AREA DETAILS
27-M156-C4	DOWNSHIFT WORKS / DETAILS / SILT CONTROL

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