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May 28, 2008 File Name: DYE-M (3.6)

Phyllis Beaulieu Manager of Licensing Nunavut Water Board P.O. Box 119 Gjoa Haven, NU X0B 1J0

Dear Phyllis:

## Re: Water Use License 1BR-DYE0409

UMA Engineering Ltd. is submitting the following proposed modifications as per Section H.1 of the existing license. The notification of modifications is being submitted on behalf of Defence Construction Canada and the Department of National Defence.

The following modifications are being proposed as part of the clean up of the DYE-M, Cape Dyer DEW Line site.

- 1.) The camp will increase in size to a maximum of 165 people. Although the number of people at the camp will significantly increase, based on the water usage to date, the currently licensed quantity of water at DYE-M will be sufficient and there is no need at this time to apply for an increase in water usage. In addition, the two cells of the camp sewage lagoon are being expanded to support the increase in camp size. A figure indicating the limits of the expansion was provided by the contractor and is attached for reference.
- 2.) Nine additional buildings at the Lower Site are to be demolished, including the air terminal building, four warehouses, two atwell dormitories, the heated vehicle storage building and the garage. However, the demolition of module train C and the walkway from module train B to module train C identified for demolition in the original submission will be cancelled and the buildings will remain.

The demolition work will include excavation and disposal/treatment of contaminated soils below and near the additional facilities to be excavated and the on-site transport, handling, classification, consolidation and containerization of approximately 400 full or partially full barrels of liquid waste stored within the heated vehicle storage building.

The cancellation of the demolition of module train C and the walkway has an estimated volume of 462 m<sup>3</sup> of non-hazardous debris and 610 m<sup>3</sup> of PAP debris which will result in a corresponding reduction in the airspace requirement for the Upper Site Non-Hazardous Waste Landfill for the on-site disposal of non-hazardous debris and requirement for barge and intermediate containers for the off-site shipment of PAP debris. The demolition of the additional buildings at the lower site has an estimated debris volume of 2446 m<sup>3</sup> of non-hazardous debris and 947 m<sup>3</sup> of PAP debris resulting in a corresponding increased requirement for additional airspace within the Lower Site Non-Hazardous Waste Landfill for the on-site disposal of non-hazardous debris and for additional barge and intermediate containers for the off-site shipment of PAP debris.

Redesign of the Lower Site Non-Hazardous Waste Landfill for additional airspace capacity will be deferred until a significant portion of the landfill/buried debris excavation has been completed at the Lower Site

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area. The Lower Site NHWLF airspace requirement is largely dependent on the actual quantities of non-hazardous wastes generated by landfill excavation versus the airspace design volume of the facility. Therefore, the redesign for expansion of the facility is being deferred until a later date.

The requirement for additional barge and intermediate containers will be partially offset by the cancellation of the demolition of module train C and the walkway. The requirement for additional barge and intermediate containers to address the remaining volume requirement will be deferred until additional demolition activity has been completed. Historically, the DLCU clean up of sites completed to date have had unused barge and intermediate containers remaining at project completion.

3.) On July 9, 2007 a Government of Nunavut Spill report was filed by DCC relating to the release of approximately 52,000 litres of hydrocarbon impacted water from Tank W22G at the DYE-M site. The release of hydrocarbon impacted water and diesel fuel was discharged within the bermed containment and flowed over into the surrounding area, impacting an estimated area of 2,200 m<sup>2</sup>.

A subsurface investigation was subsequently carried out by the Owner to determine the extent of soil impacts resulting from the release. Results from the investigation identified significant petroleum hydrocarbon concentrations in the soil surrounding the containment and adjacent areas. The primary delineated contaminated soil limits requiring remedial excavation, as determined by the 2007 investigation results, are presented in the attached Figure 1.

The excavation of hydrocarbon impacted soils will be completed as early as possible in the 2008 construction season in order to facilitate complete excavation of hydrocarbon impacted soil and minimize further migration of hydrocarbon impacts to the surrounding area. Following contaminated soil excavation and confirmatory sampling, granular fill will be placed from any remaining containment berm into base of excavation. The excavation will be backfilled with Type 3 granular fill, compacted and graded to promote positive drainage and prevent ponding within the excavation area. Any and all free product encountered during contaminated soil excavation will be collected in accordance with hazardous materials collection practises. All water will be tested from within the excavations prior to discharge and will conform to the wastewater discharge criteria.

We trust the information provided is sufficient to meet the requirements of Section H.1 of the water use license. Please feel free to contact the undersigned if you have any questions or comments.

Sincerely,

**UMA Engineering Ltd.** 

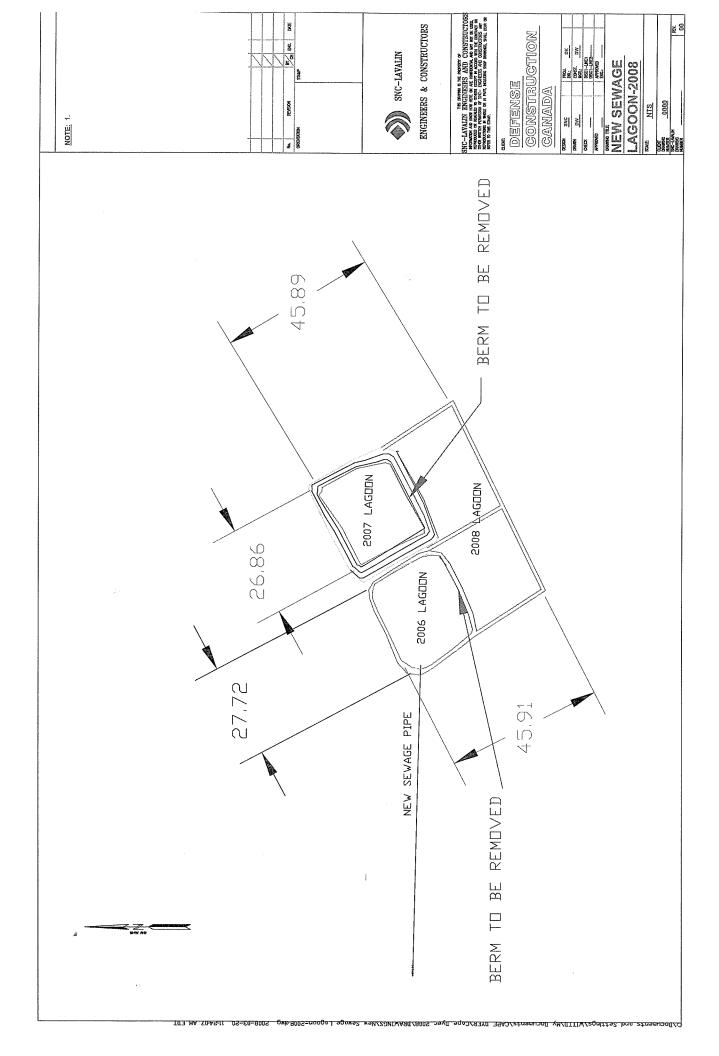
Eva Schulz, P. Ag.
Environmental Scientist

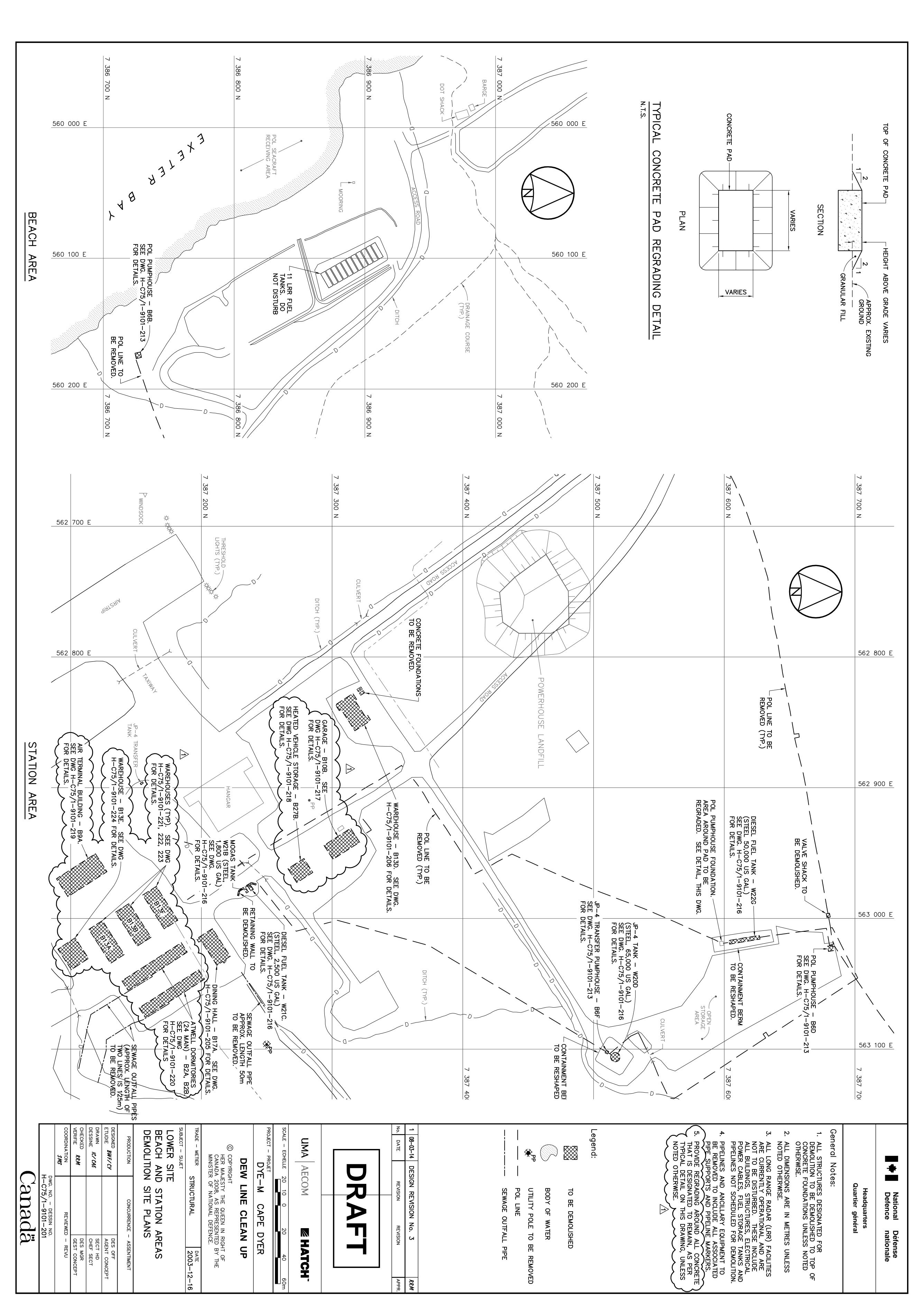
Eva.Schulz@uma.aecom.com

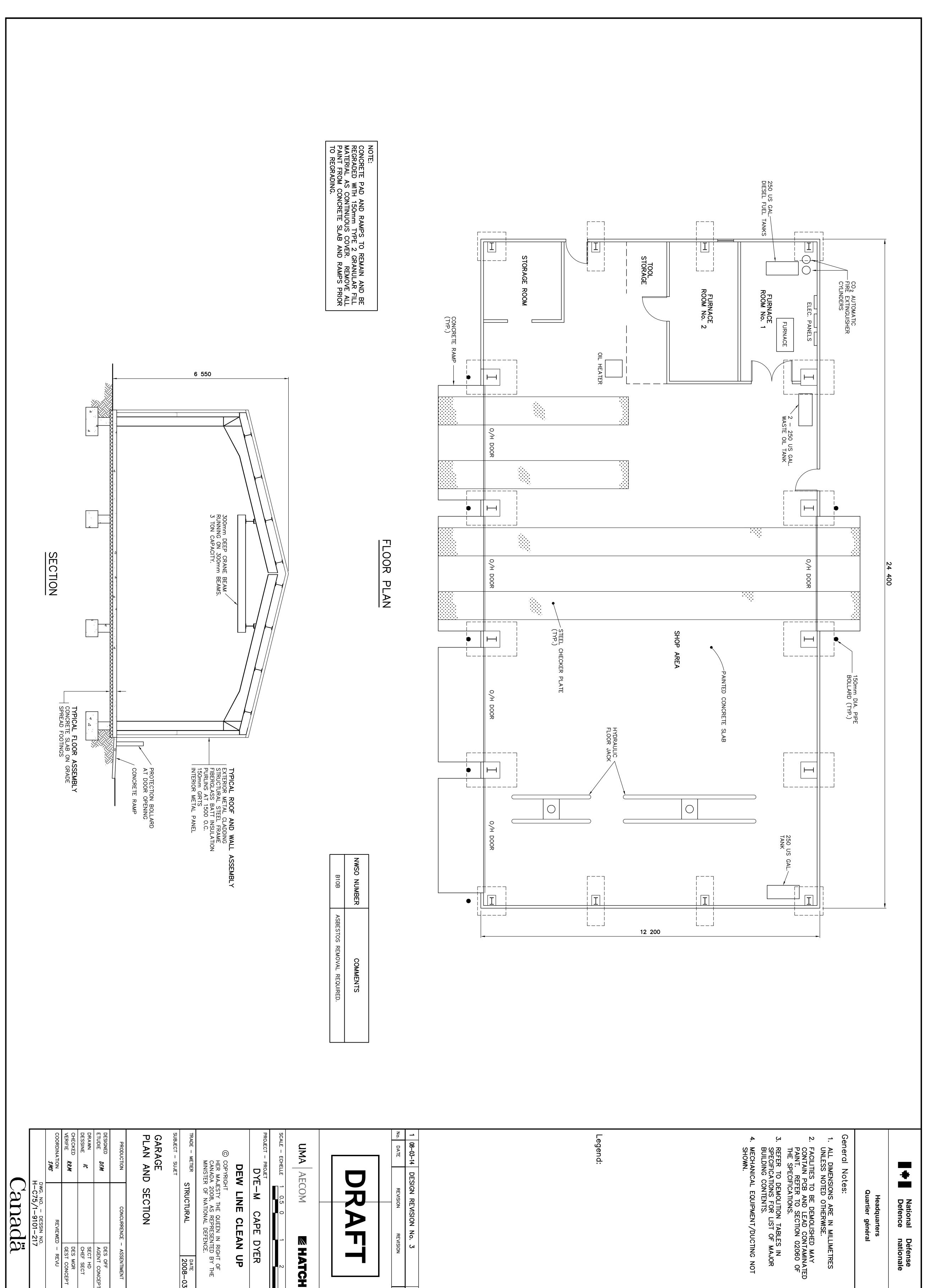
**EMS** 

Encl. Sewage Lagoon Figure; Demolition Drawings; W22G Figures

cc: Douglas Craig, DCC







Headquarters Quartier général

National Defence

Défense nationale

DWG. NO. - DESSIN NO. H-C75/1-9101-217

DES OFF
AGENT CONCEPT
SECT HD
CHEF SECT
DES MGR
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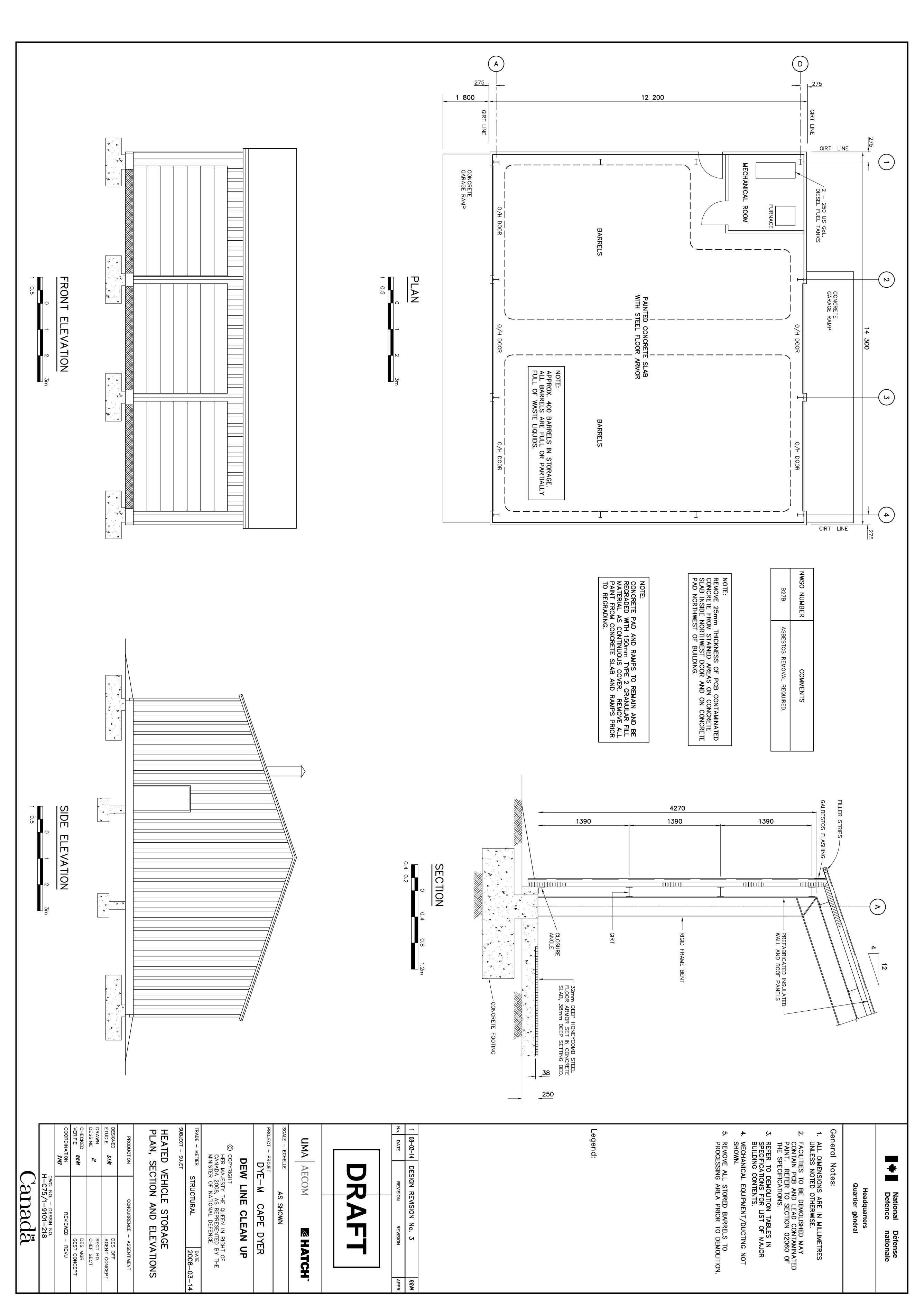
DATE 2008-03-14

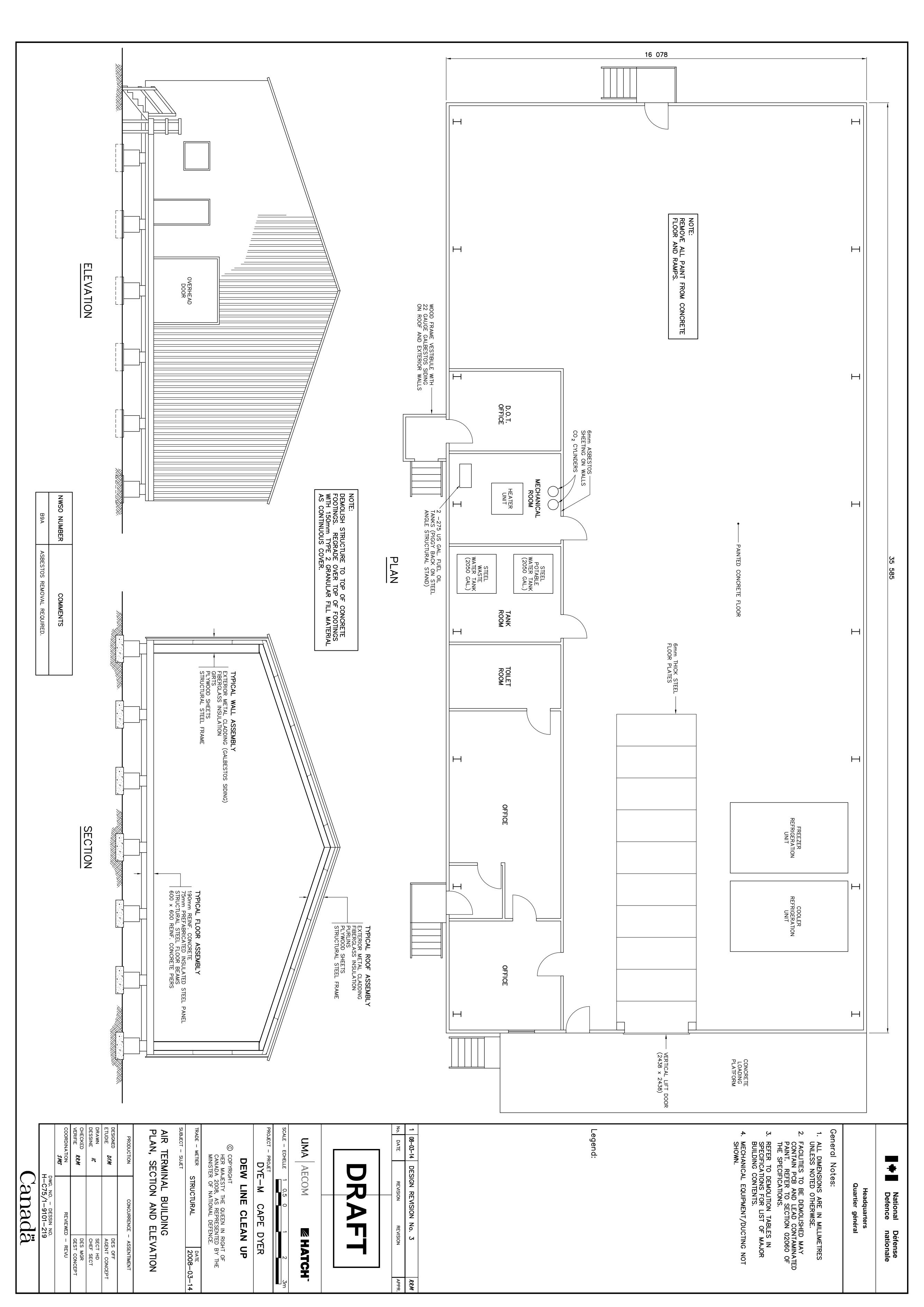
CAPE DYER

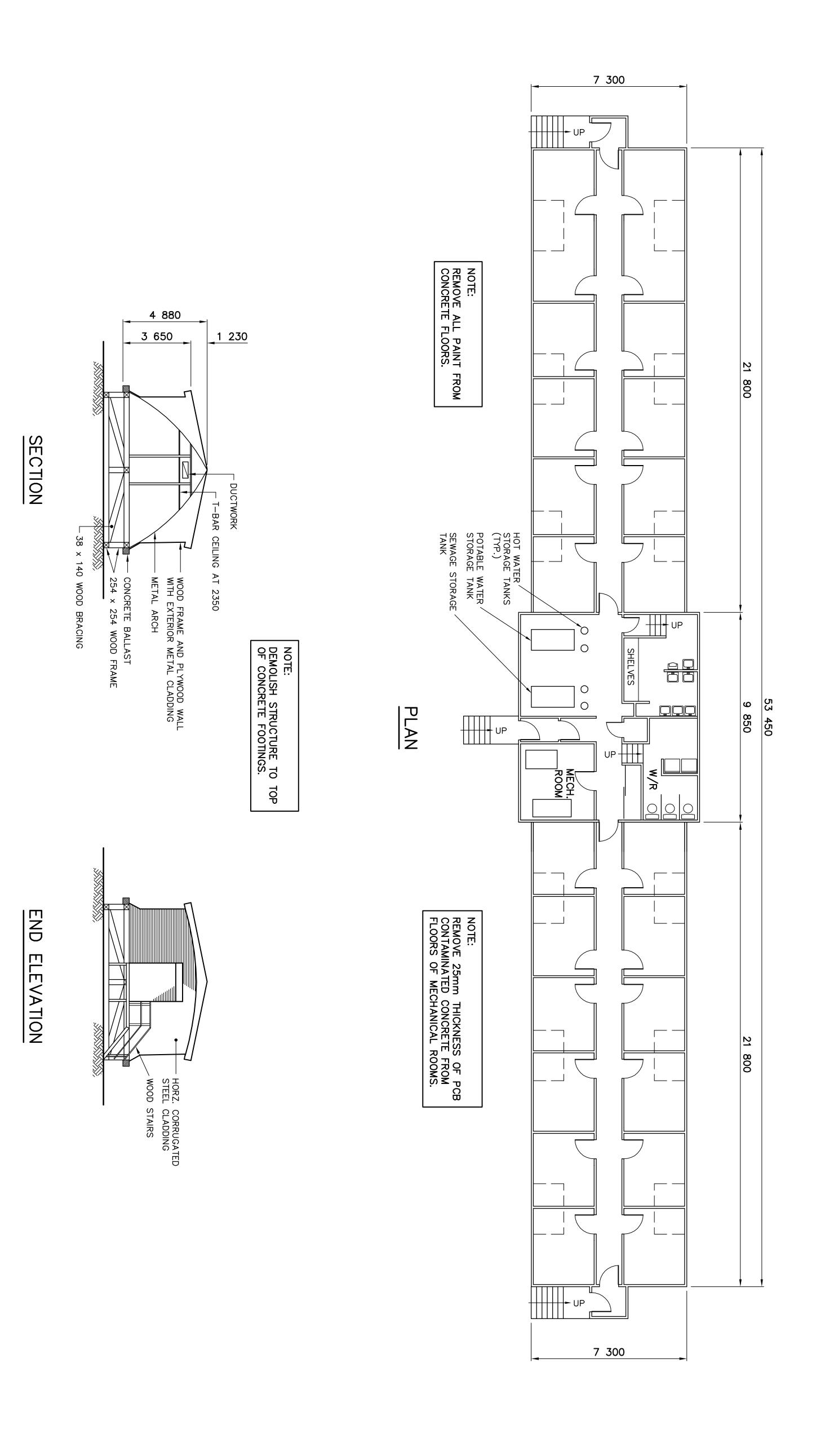
**HATCH** 

RRM APPR.

**SECTION** 







Legend:

08-03-14 DATE

DESIGN REVISION No. 3

REVISION REVISION

RRM APPR.

UMA AECOM

M HATCH

DYE-M

CAPE DYER

DEW LINE CLEAN UP

COORDINATION SMS

DWG. NO. - DESSIN NO. H-C75/1-9101-220

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RRM

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DES OFF
AGENT CONCEPT
SECT HD
CHEF SECT
DES MGR
GEST CONCEPT
O - REVU

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ATWELL DORMITORY PLAN, SECTION AND

**ELEVATION** 

JBJECT — SUJET

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DATE 2008-03-14

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CANADA 2008, AS REPRESENTED BY THE

MINISTER OF NATIONAL DEFENCE.

Headquarters Quartier général

National Defence

Défense nationale

General Notes:

ALL DIMENSIONS ARE IN MILLIMETRES
 UNLESS NOTED OTHERWISE.
 FACILITIES TO BE DEMOLISHED MAY
 CONTAIN PCB AND LEAD CONTAMINATED
 PAINT. REFER TO SECTION 02060 OF
 THE SPECIFICATIONS.

NWSO NUMBER

COMMENTS

B2A

B2B

CONCRETE FOOTINGS/POSTS.

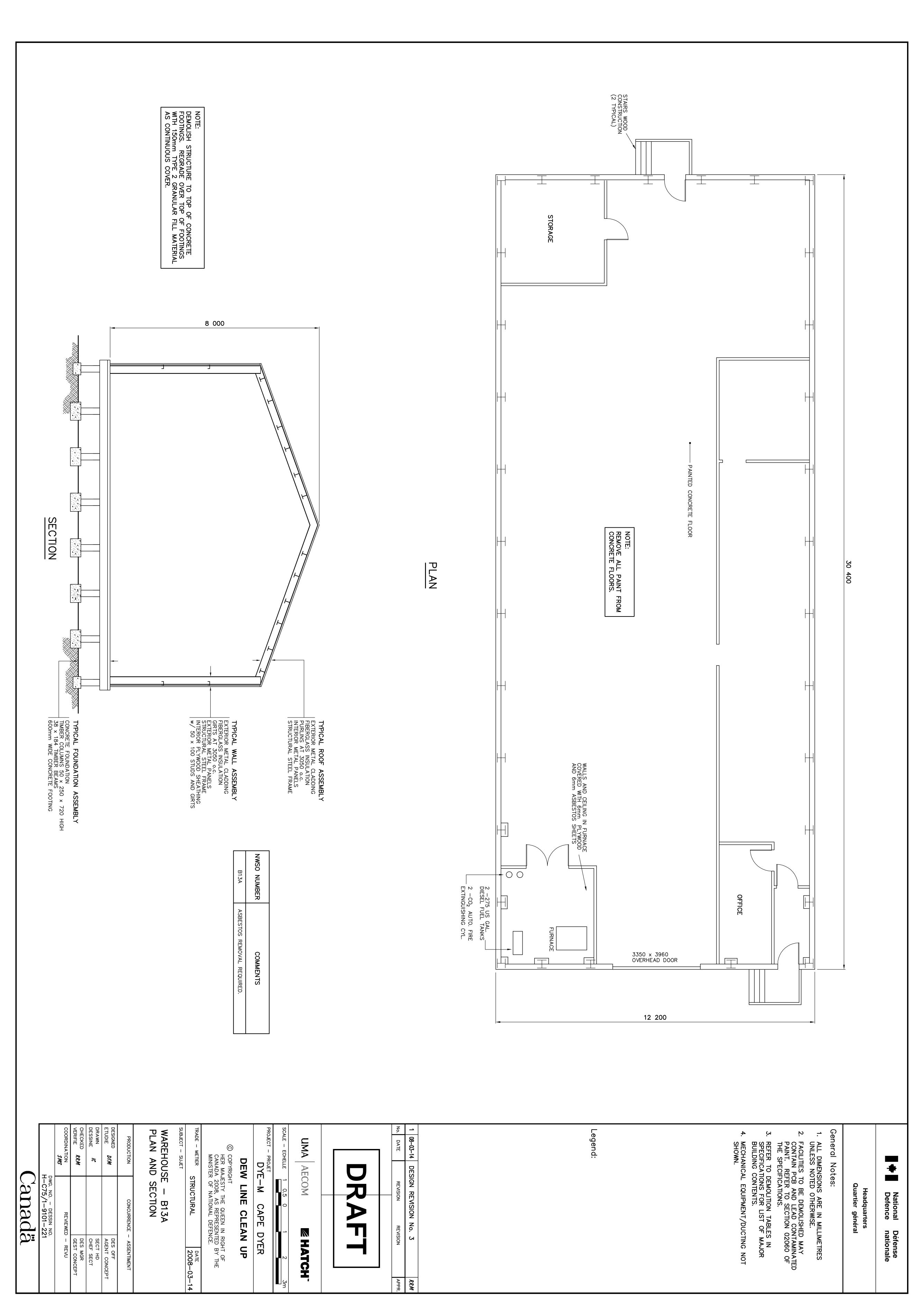
METAL ARCH. BUILDING WITH EXTERIOR WALLS AND PITCHED ROOF ADDED.

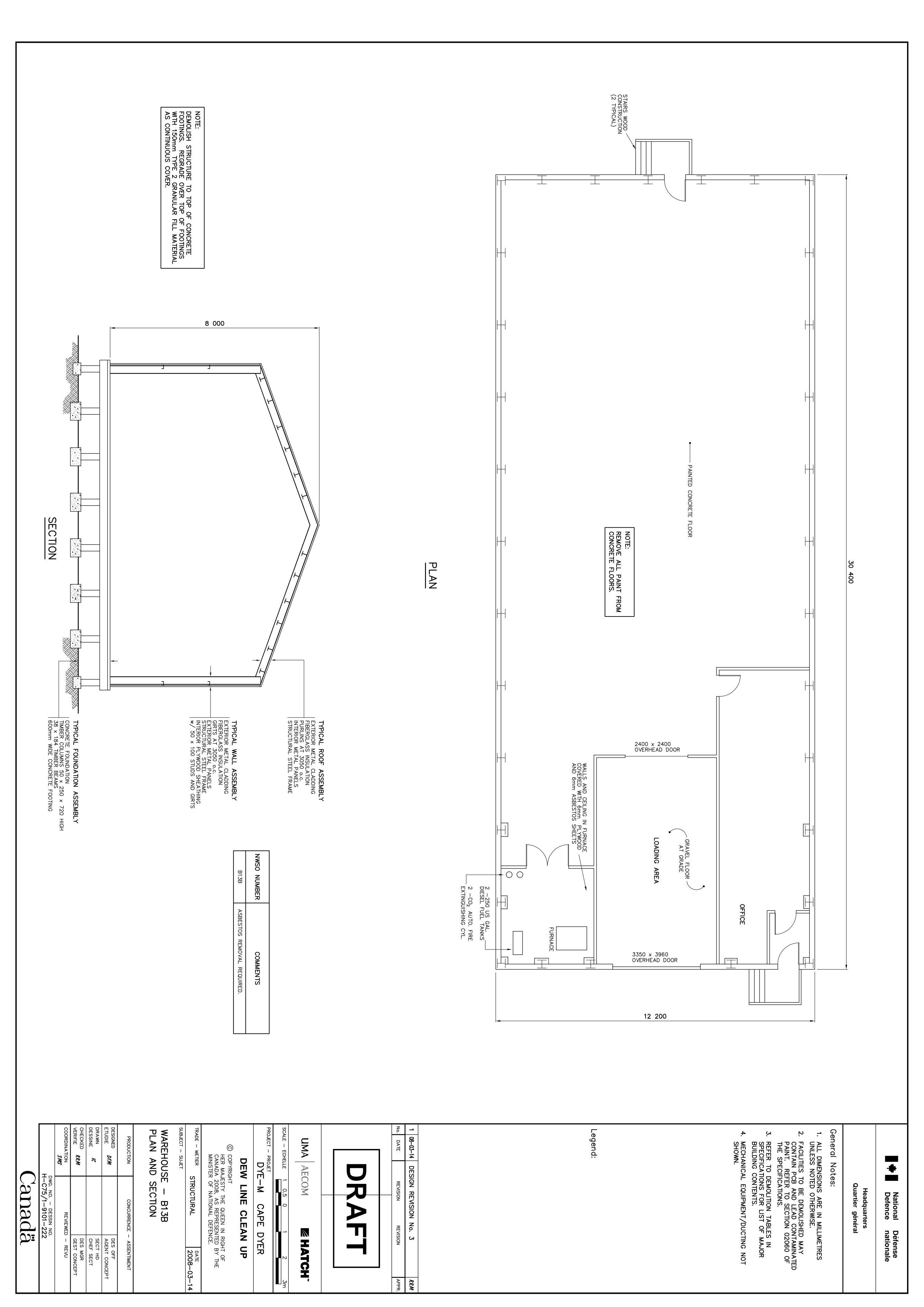
ASBESTOS REMOVAL REQUIRED.

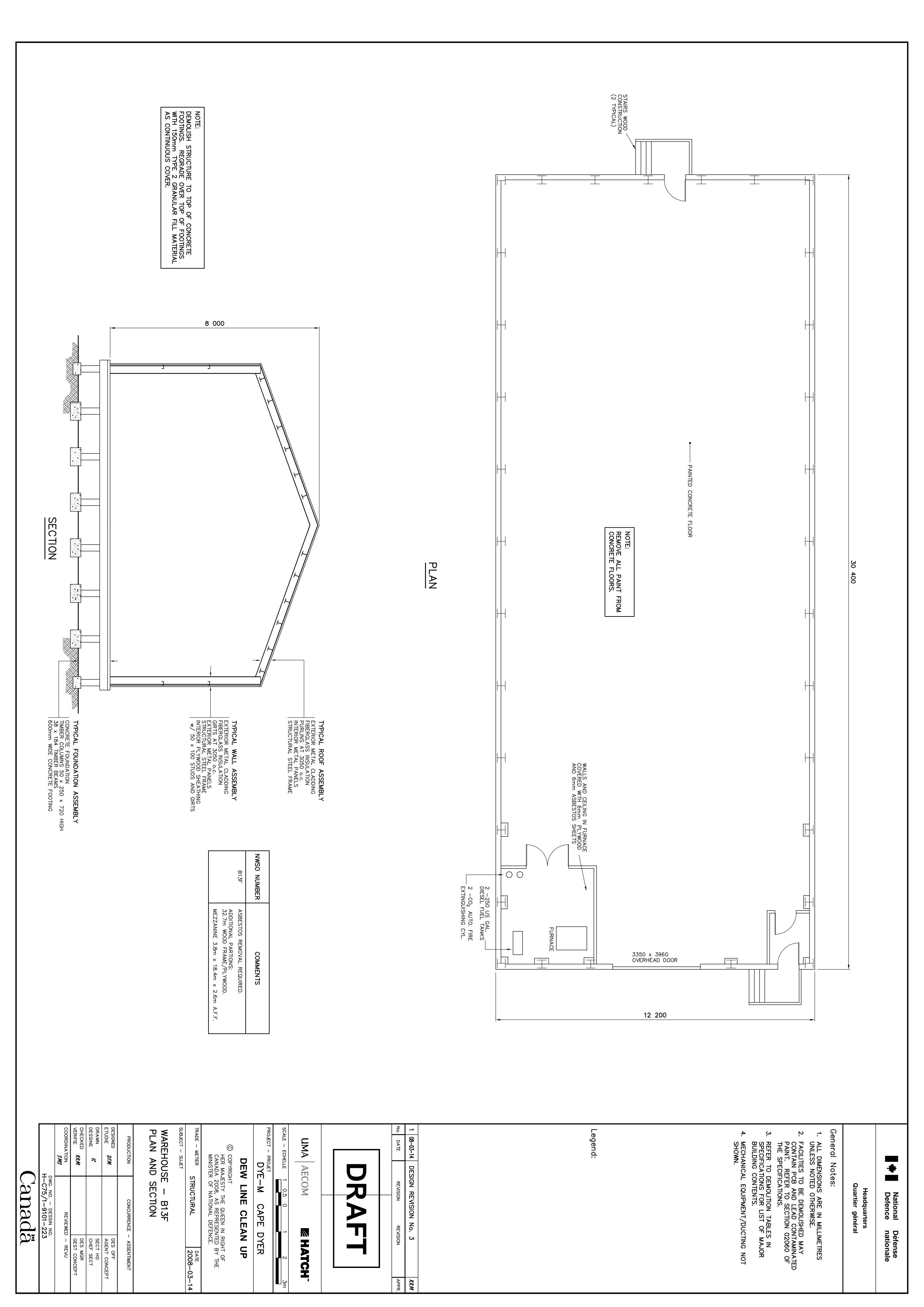
PCB CONTAMINATED CONCRETE IN MECHANICAL ROOMS.

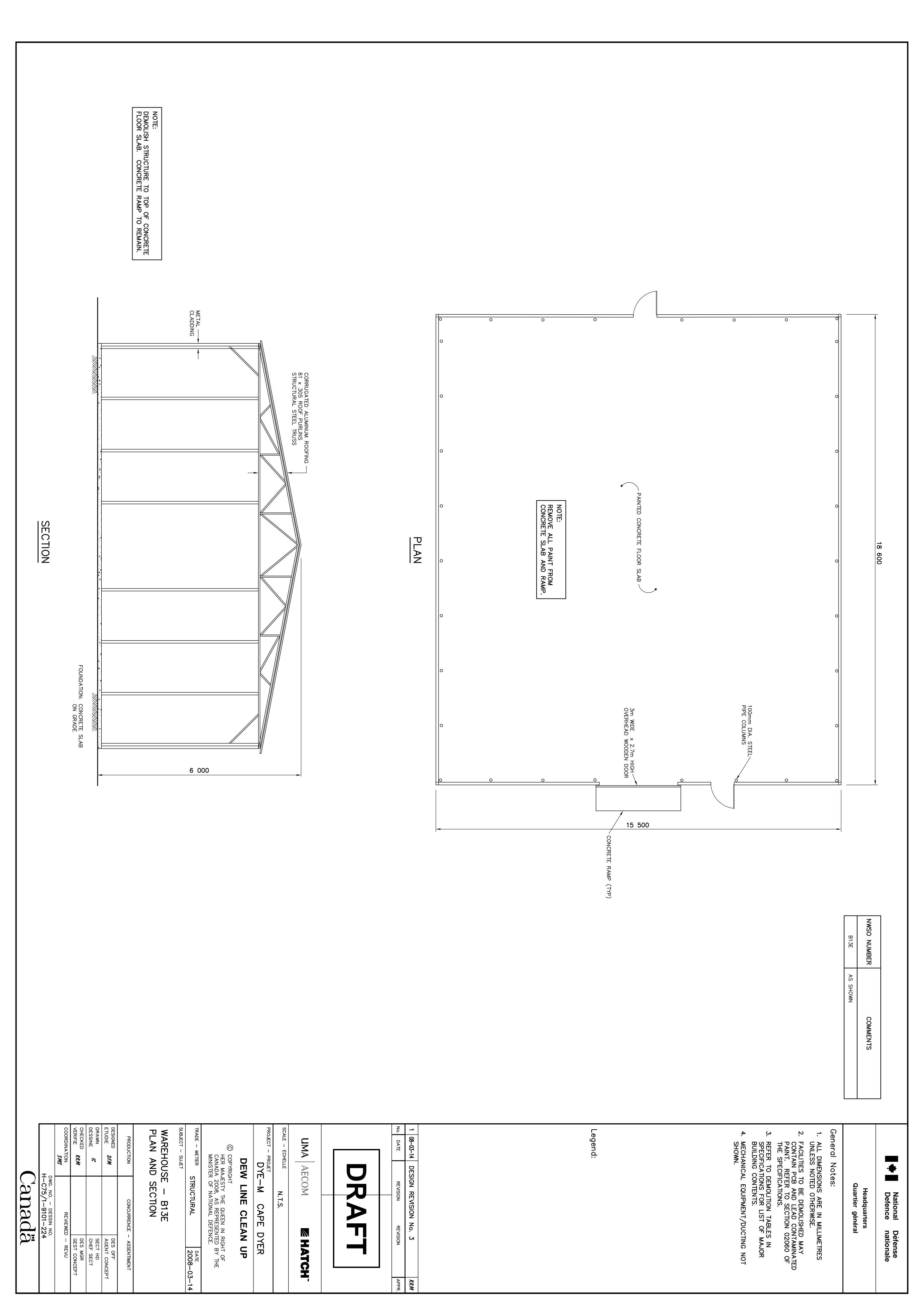
MECHANICAL EQUIPMENT/DUCTING NOT SHOWN.

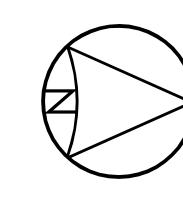
REFER TO DEMOLITION TABLES IN SPECIFICATIONS FOR LIST OF MAJOR BUILDING CONTENTS.

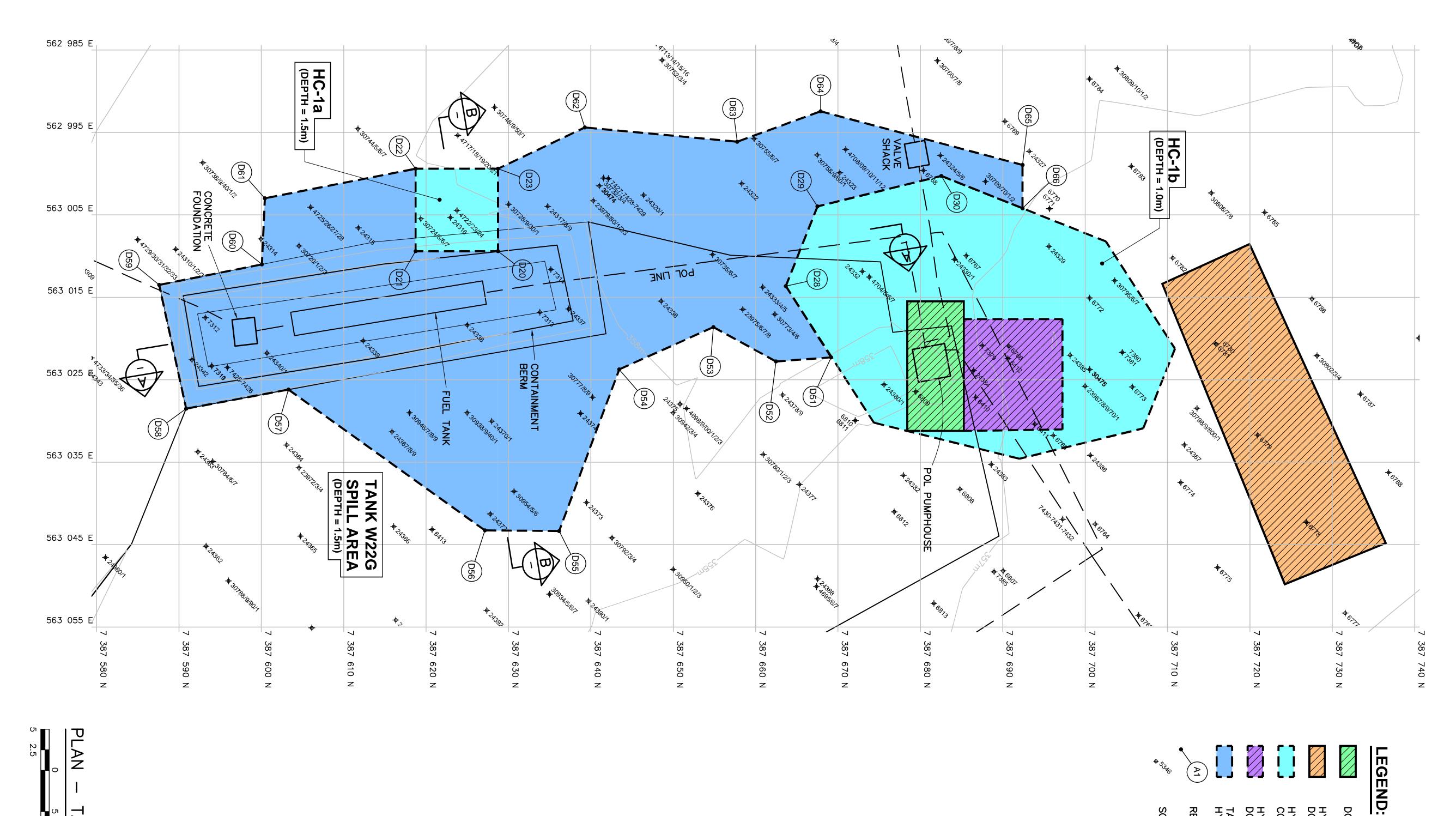












358.0

CONTAMINATED AREA HC-1b

APPROXIMATE LIMIT OF PRIMARY HYDROCARBON SOIL EXCAVATION W22G SPILL AREA

1.5m PERPENDICULAR TO EXISTING GROUND

1.5m PERPENDICULAR TO EXISTING GROUND

364.0 362.0 360.0 358.0 356.0

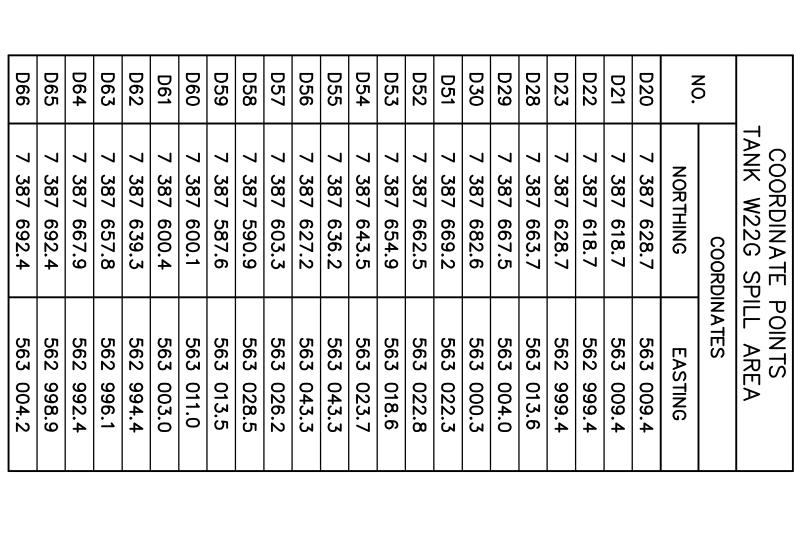
- 354.0

**SECTION** 

360.0

APPROXIMATE EXISTING GROUND

EXTENT OF CONTAMINATED AREA AS SHOWN ON PLAN



HYDROCARBON - TYPE B / DCC TIER I CONTAMINATED

HYDROCARBON - TYPE CONTAMINATED SOILS

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HYDROCARBON - TYPE A , DCC TIER I CONTAMINATED

TIER I

CONTAMINATED

SOILS

TANK W22G SPILL HYDROCARBON —

. AREA TYPE B

CONTAMINATED SOILS

REFERENCE POINT

(NOT

TANK W22G SPILL AREA		AREA NAME	CO
2425	TANK SP	APPROX. AREA OF CONTAMINATION (m²)	CONTAMINATED SOIL EXCAVATIONS
1.5	SPILL	DEPTH OF EXCAVATION (m)	EXCAVATIONS

APPROX. VOLUME OF EXCAVATION (m³)

CAPE D	DYE-M (
CLEAN	DEW LINE C
e	■ · ■ Derence
<u> </u>	National
コンキュ	

TANK W22G ( SPILL AREA REMEDIATION AN AND CROSS SECTIONS March 28, 2008

Figure 1.0

TANK

W22G

AREA

358.0

360.0

EXTENT OF CONTAMINATED AREA AS SHOWN ON PLAN

APPROXIMATE EXISTING GROUND

356.0

CONTAMINATED AREA HC-1b

1.5m PERPENDICULAR TO EXISTING GROUND

APPROXIMATE LIMIT OF PRIMARY HYDROCARBON SOIL EXCAVATION W22G SPILL AREA

358.0

360.0

356.0

**SECTION** 

