

June 19, 2007

EBA File: 1200173.001

Sherwood Mining Corporation  
Suite 860 – 625 Howe Street  
Vancouver, BC, V6C 2T6

**Attention:** Mr. William Dunn, P. Eng.  
General Manager, Minto Mine

**Subject: Ice-Rich Overburden Dump Containment Berm Inspection Report  
Minto Mine Site, Minto, Yukon**

## 1.0 INTRODUCTION

This letter provides a summary of the inspection services completed by EBA Engineering Consultants Ltd. (EBA) during the construction of the Ice-Rich Overburden Dump (IROD) containment berm (Berm).

The purpose of the inspections was to record observations made, ensure that the design of the Berm was adhered to, and that any changes in the design were recorded.

Included with this summary are the “as-built” drawings and selected photos (taken by EBA) showing the Berm in various stages of construction.

## 2.0 SITE INSPECTIONS

Various EBA personnel were on site during the construction of the Berm as the construction period was very sporadic from the start of the foundation footprint excavation in mid-August 2006 to the completion of the rockfill placement in early-May 2007. EBA was not always available on-site during the periods of Berm construction but completed as many site inspections as possible. EBA site inspections were often completed in conjunction with other EBA site work (i.e. mill concrete testing) throughout the winter months.

## 2.1 SURVEYING

Surveying and layout for Berm construction was completed by the on-site surveying company, Yukon Engineering Services Ltd. (YES). YES also supplied EBA with cross-sections and an as-built base plan for Figure 1 (attached).

## 2.2 FOUNDATION PREPARATION

Prior to any rockfill placement, Pelly Construction Ltd. (Pelly) excavated (stripped) the unsuitable foundation materials, surface organics and the inorganic residual soils, in order to expose the weathered bedrock surface. Pelly used a CAT D11 dozer to strip and stockpile the material along the downstream toe of the proposed IROD Berm footprint (Photos 1 and 2). The final excavated surface was inspected by an EBA representative on Oct 22, 2006 and at that time there were only a few windrows of residual soils that had to be removed.

## 2.3 ROCKFILL PLACEMENT

Pelly used two dozers, a CAT D9 and CAT D10, to spread the fill material and used CAT 777, CAT 773, and CAT 769 rock trucks to haul selected waste rock material from the open pit to the Berm. The waste rock gradation varied from fine to coarse-grained material and was spread in lift thicknesses ranging from 0.6 m to 1.5 m within the Berm's foundation footprint. The coarser (less than 1.0 m diameter) clean waste rock was placed along the downstream half of the Berm while the finer grained material was placed along the upstream half of the Berm. During EBA's random site visits throughout the winter it was noticed that the material being sourced from the open pit was too coarse to warrant compaction testing, and yet the residuum stripped from the footprint, originally proposed as filter material on the Berm's upstream face, was not required due to the observed fine grained nature of the construction material. Pelly did proof roll the surface of each placed lift with loaded CAT 777, CAT 773 and CAT 769 rock trucks. The Berm was constructed to the final design elevation 891.5 m (asl) with an average crest width of 8.5 m. The upstream and downstream slopes were constructed to 1.5H:1V and 2.0H:1V, respectively.

A final inspection was completed by Mr. Chad Cowan, P.Eng. (EBA) on May 10, 2007 and it was noted that the materials that were used to construct the upper portions of the Berm were consistent with the materials that were used to construct the lower portions of the Berm. It was also noted that the finished grade of the Berm's downstream slope was rough with large boulders spread sporadically throughout. Correspondence between EBA and Minto Explorations Ltd. (Minto) on-site personnel confirmed that this surface would be cleaned up during the placement of ice-poor overburden from the open pit, used for reclamation purposes, over the downstream slope.

As shown on the attached as-built Figure 1 and cross-sections the majority of the Berm has been constructed to design. As noticed on the STA 0+025 and STA 0+050 cross-sections the rockfill placement along the Berm's downstream and crest was under built and still requires some (0.5 m to 1.5 m in thickness) rockfill material to bring it to final grade. Along the Berm's entire upstream slope the rockfill placement was over built and constructed to the design limits intended for the residuum filter. The placement of this additional material was not noticeable until YES completed the as-built survey and supplied the as-built cross-sections. The contractor placed the rockfill material along the fill stakes that were placed by YES.

## 2.4 MATERIAL VOLUMES

The following Table 2.4 lists the actual material volumes compared to the estimated design volumes required for construction of the Berm.

TABLE 2.4: ACTUAL AND ORIGINAL DESIGN MATERIAL VOLUMES FOR BERM CONSTRUCTION			
Material	Application	Est. Design Volume (m <sup>3</sup> )	Actual Volume (m <sup>3</sup> )
Overburden Material	Stripping/Sub-Cut	50,000 (65,400 yd <sup>3</sup> )	105,000
Run of Mine Waste Rock	Rockfill	200,000 (261,600 yd <sup>3</sup> )	327,200*
Residuum	Inner Filter	12,500 (16,400 yd <sup>3</sup> )	Not required

\* Note: The rockfill volume also includes the additional rockfill material that was placed for the residuum filter.

The actual excavation and fill volumes are greater than the estimated design volumes because there were areas within the foundation footprint that had to be excavated to a greater depth. The weathered bedrock surface was deeper than the estimated depth of 2.4 m (8 feet) from original ground.

## 2.5 LONG TERM MONITORING INSTRUMENTATION

As stated in Section 7.0 of EBA's "Geotechnical Design – Ice-Rich Overburden Dump" report dated January 2006, long term monitoring instrumentation consisting of settlement pins should be installed at 30 m (~100 foot) intervals as shown on Figure 1 along the downstream side of the Berm crest (at locations where they will not be destroyed by traffic). The pins can consist of pieces of steel rod placed in the rockfill. Upon installation they should be surveyed for both horizontal and vertical alignment.

The settlement pins should be surveyed semi-annually, once in the spring and once in the fall.

## 2.6 ANNUAL INSPECTIONS

According to the site water licence and as previously recommended by EBA an annual site inspection should be conducted by the Geotechnical Engineer to document the performance of the Berm. Annual inspections should include the following recommended minimum monitoring program.

- Observation of the Berm's upstream and downstream slopes for any signs of distress;
- Observation of Berm's crest for any signs of settlement, transverse or longitudinal cracking; and
- Observation of the Berm's toe for any signs of fine sediments being transported through the Berm.

### 3.0 SUMMARY AND CONDITIONS

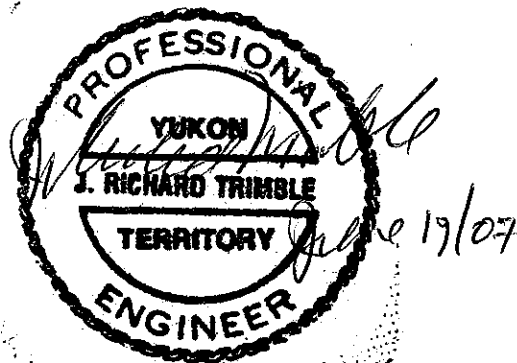
In summary, the construction of the IROD Berm was completed in general accordance with EBA's construction drawings, "Geotechnical Design - Ice-Rich Overburden Dump" report, and "Construction/Operation Plan and CQA Manual - Ice-Rich Overburden Dump" report dated May 2006. Selected photographs taken during construction of IROD Berm are attached, and more are available in EBA's files. Additional information regarding the use of this report is presented in the attached EBA Geotechnical Report - General Conditions, which form a part of this report.

We trust that you find this report satisfactory for your purposes. If you have any questions or require additional information, please contact the undersigned.

Respectively submitted,  
EBA Engineering Consultants Ltd.



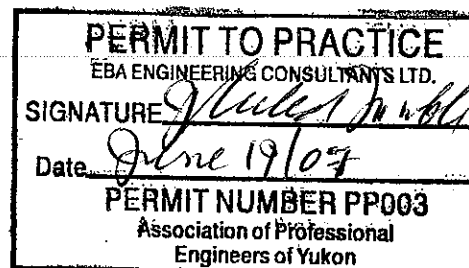
Chadwyck P. Cowan, P.Eng.  
Project Engineer  
Direct Line: 867.668.2071 x29  
ccowan@eba.ca



J. Richard Trimble, M.Sc. (Eng.), P.Eng.  
Project Director, Yukon Region  
Direct Line: 867.668.2071 x22  
rtrimble@eba.ca

#### Attachments:

EBA Geotechnical Report - General Conditions  
1200173 Figure Fig 1 AB  
YES Cross-Sections  
Site Construction Photographs

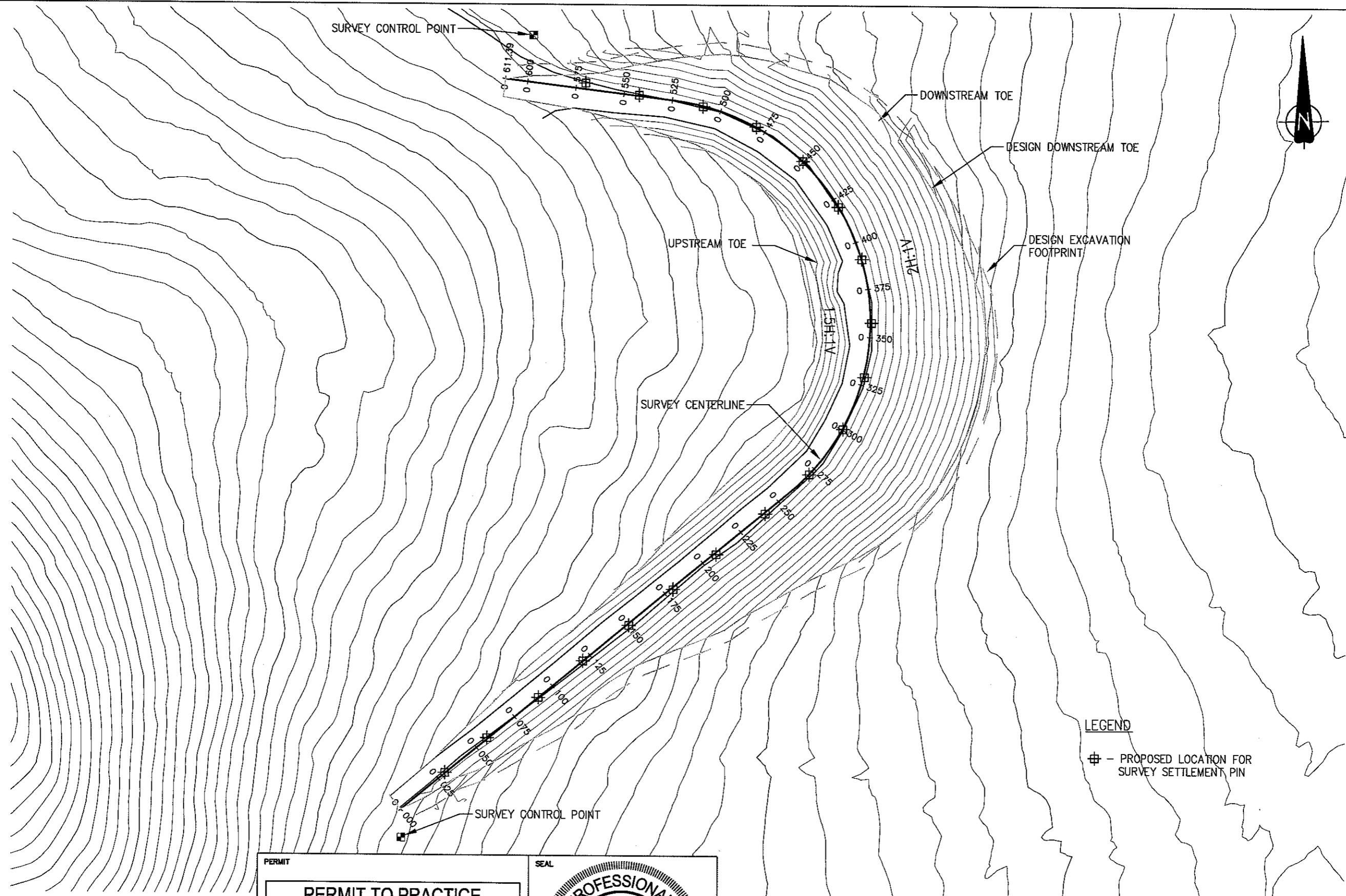




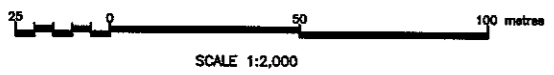
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# FIGURES





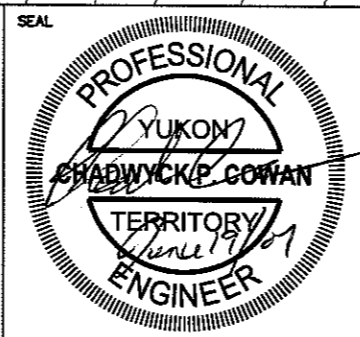
**LEGEND**  
 # - PROPOSED LOCATION FOR SURVEY SETTLEMENT PIN



**AS-BUILT**

NOTE: DRAWING HAS BEEN ADAPTED FROM ORIGINAL PROVIDED BY YUKON ENGINEERING SERVICES

PERMIT  
**PERMIT TO PRACTICE**  
 EBA ENGINEERING CONSULTANTS LTD.  
 SIGNATURE *Shadwyck Cowan*  
 Date *June 19/07*  
**PERMIT NUMBER PP003**  
 Association of Professional Engineers of Yukon



EBA Engineering Consultants Ltd.

DWN. CPC/USB    CHKD. JRT

EBA JOB NO. 1200173.001

CLIENT  
 Minto Exploration Ltd.

FILE: 1200173 Fig 1 AB.dwg

PROJECT  
 2006 CONSTRUCTION - MINTO PROJECT  
 MINTO MINE, YUKON

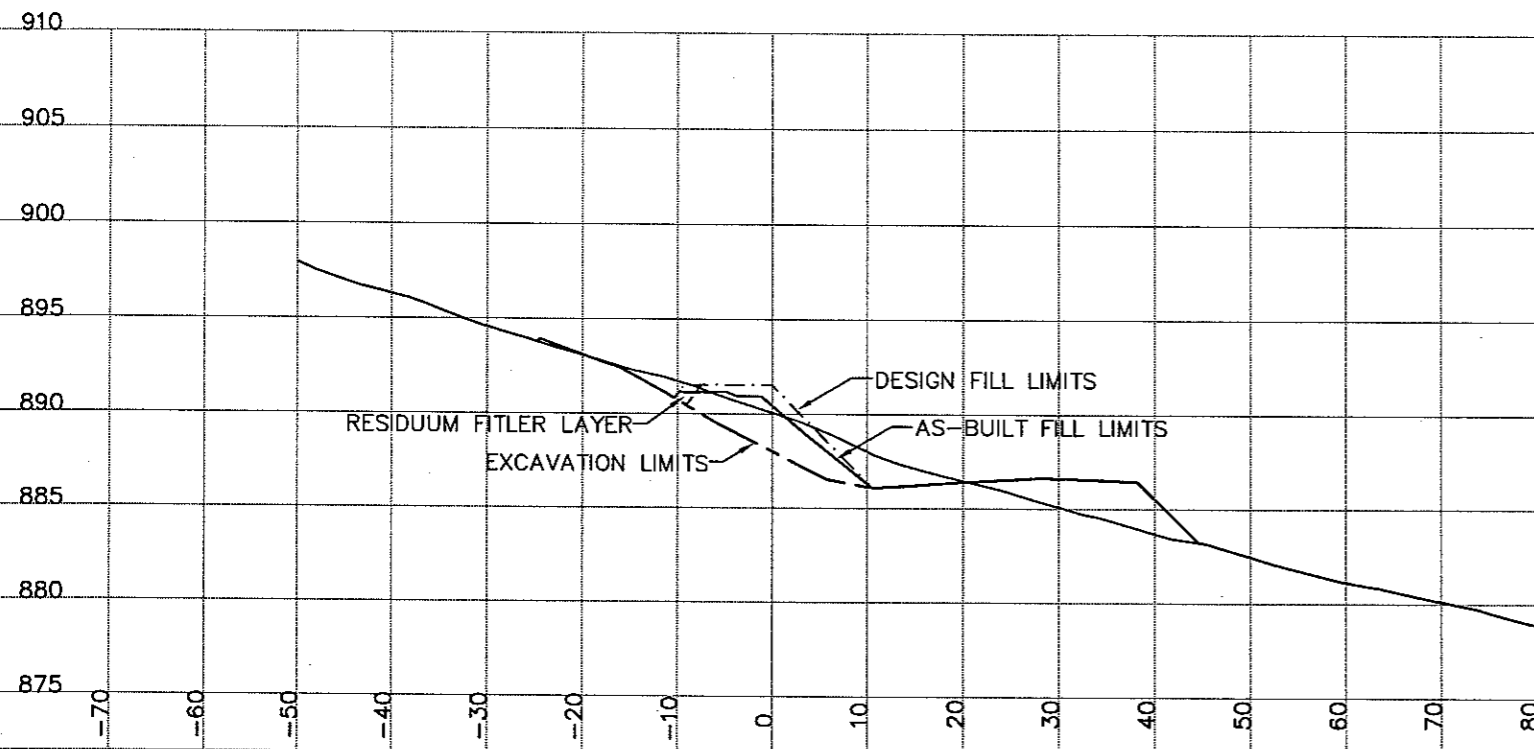
TITLE  
 AS-BUILT PLAN  
 IROD CONTAINMENT BERM

REVISION NO.:  
 DATE: June 2007

Figure 1

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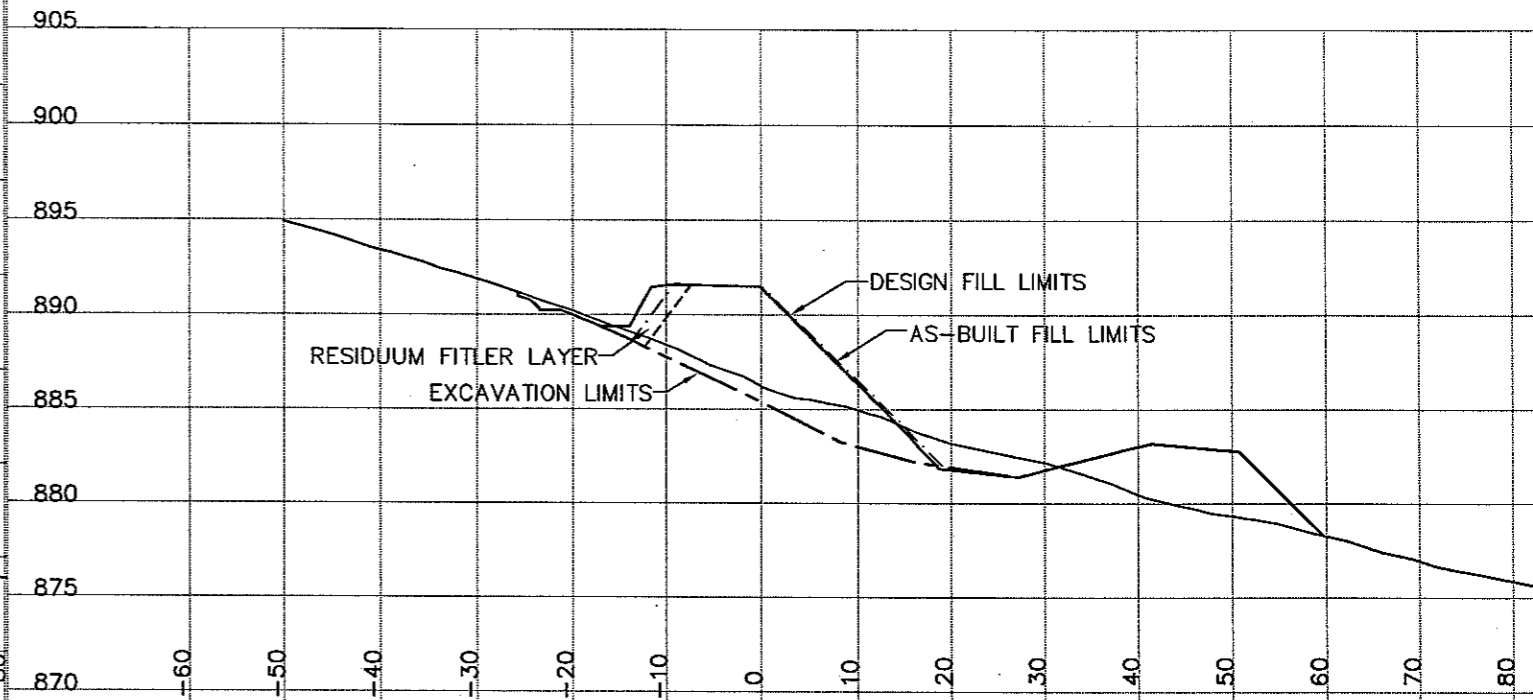
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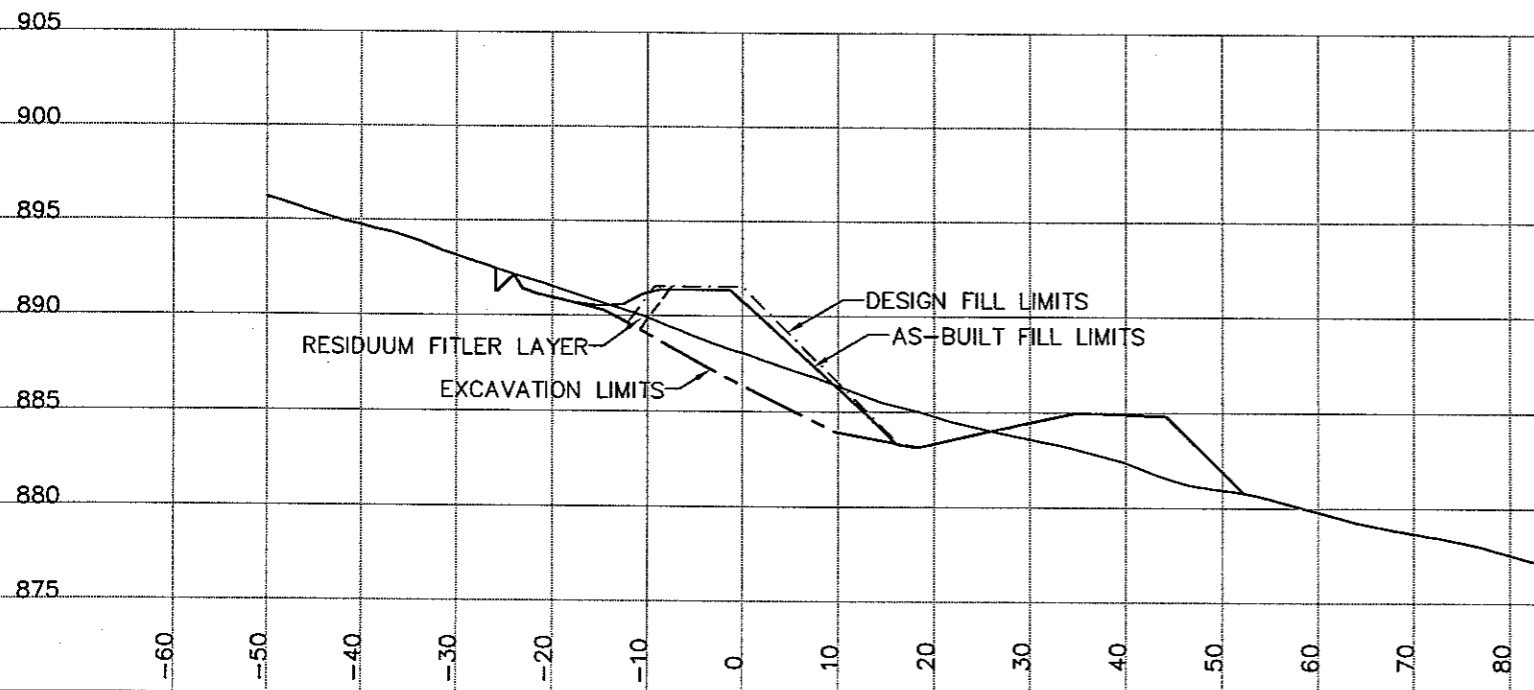
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IROD CONTAINMENT BERM  
MINTO EXPLORATIONS LTD.  
YUKON ENGINEERING SERVICES MAY 7/07

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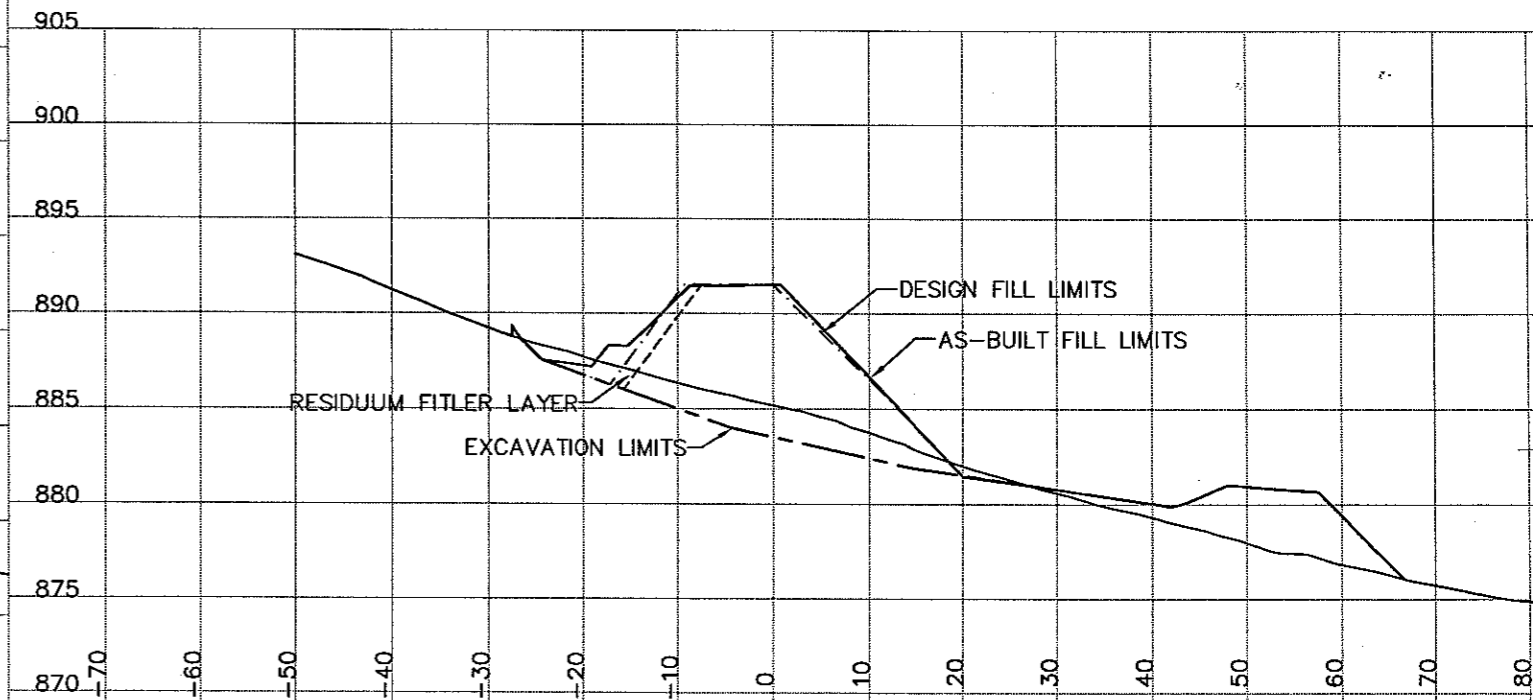
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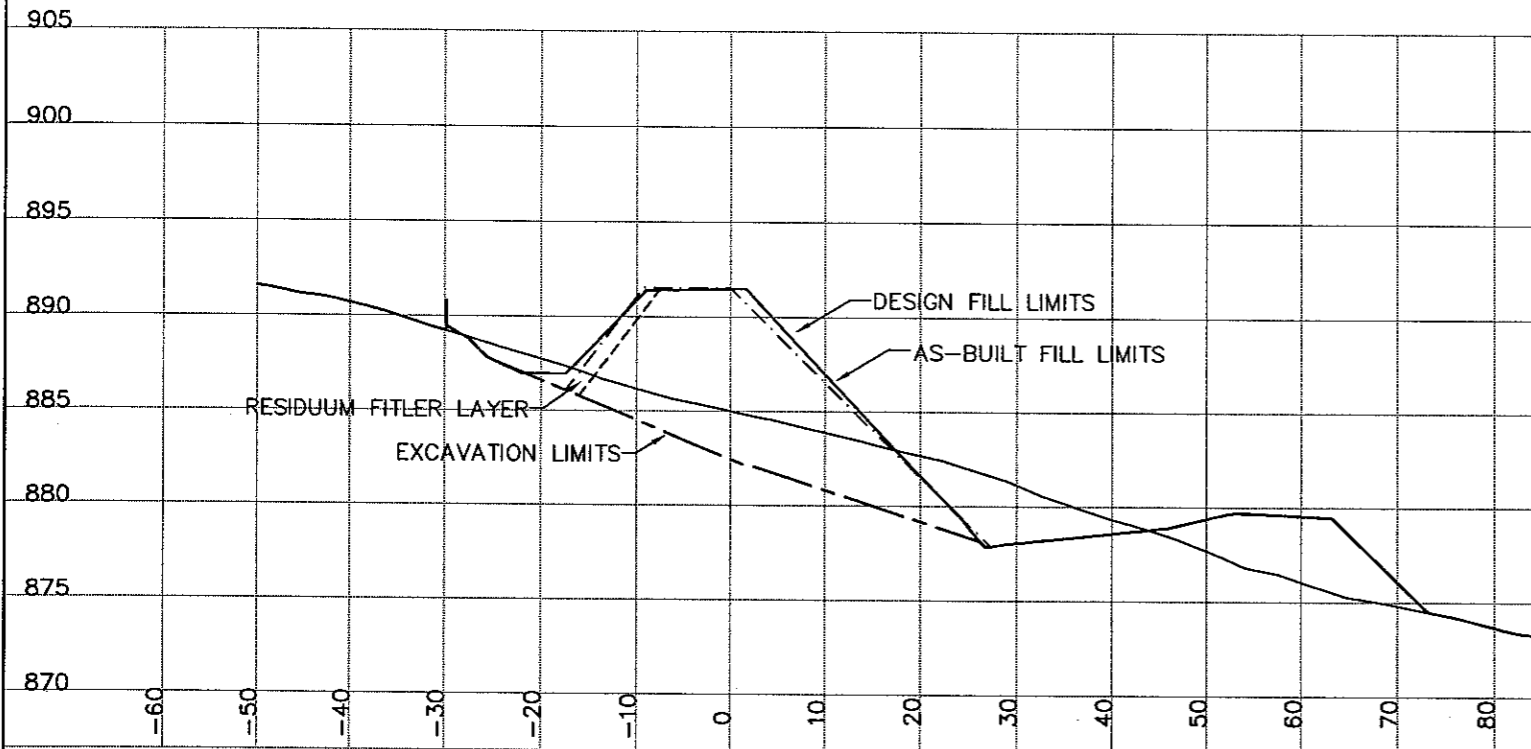
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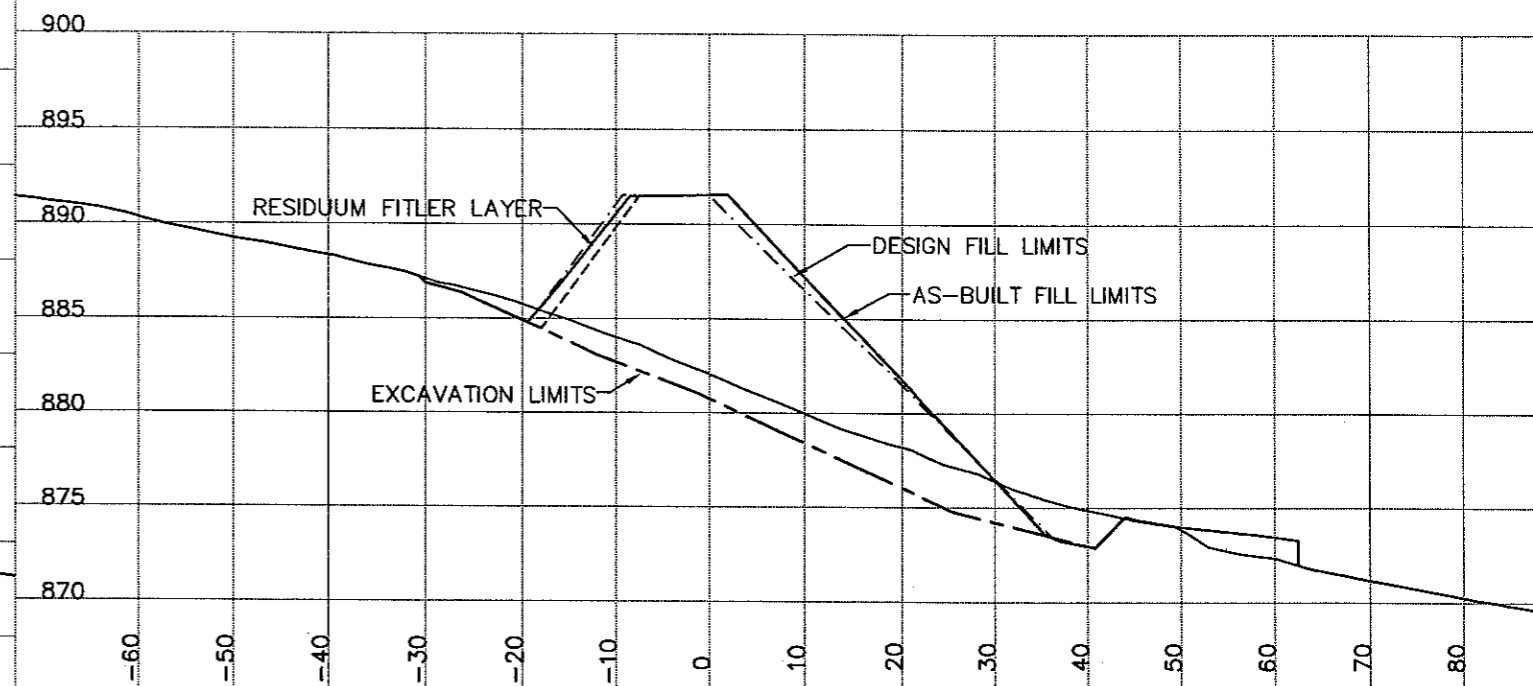
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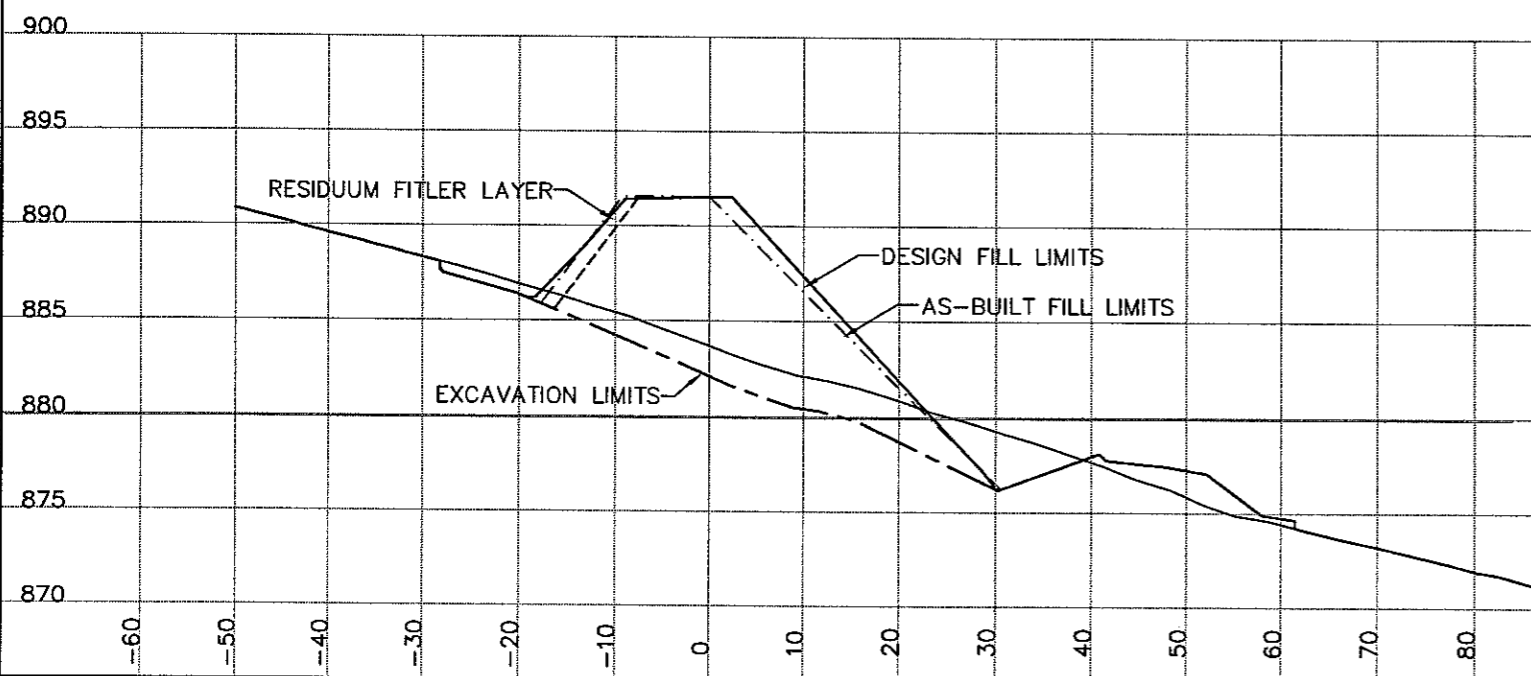
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**YES** ASBUILT CROSS SECTIONS  
IROD CONTAINMENT BERM  
MINTO EXPLORATIONS LTD.  
MAY 7/07  
YOUR ENGINEERING SERVICES

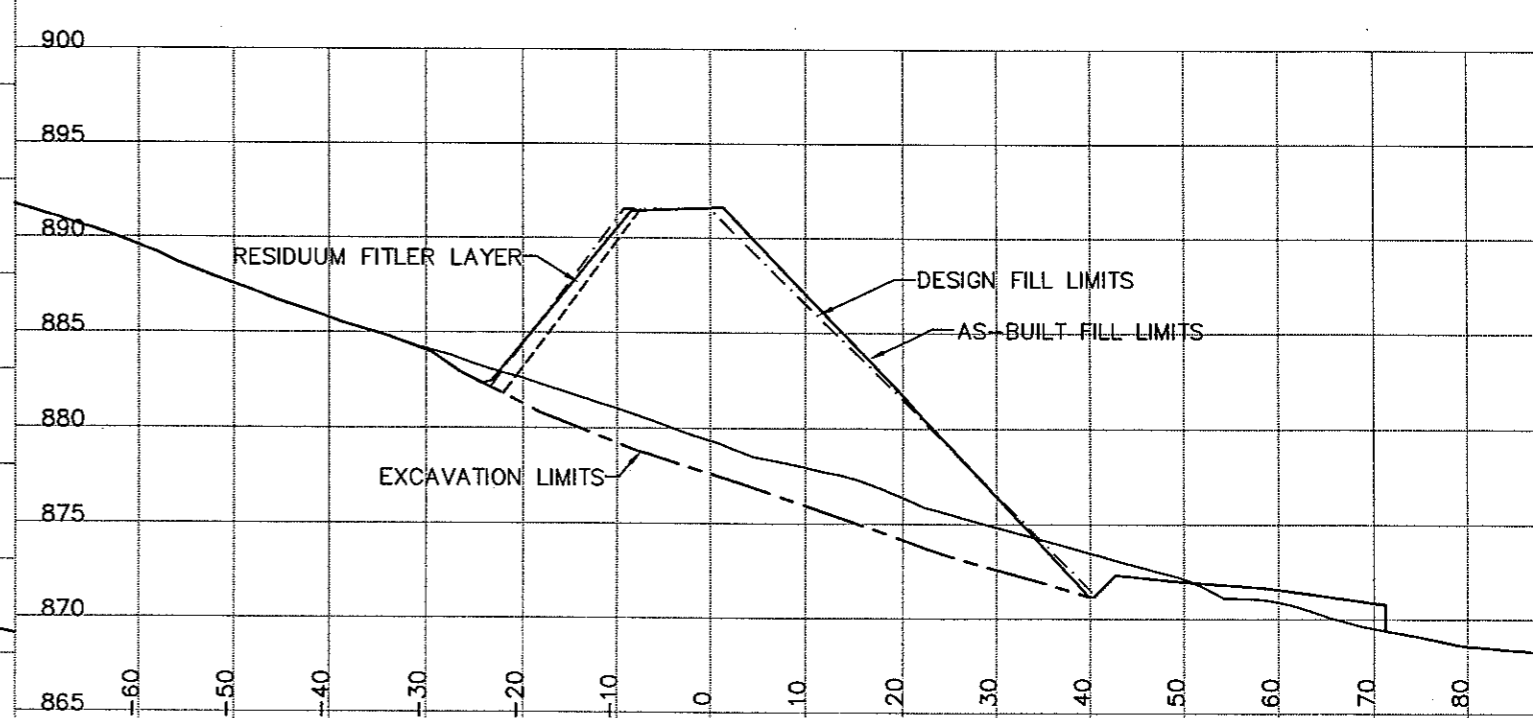
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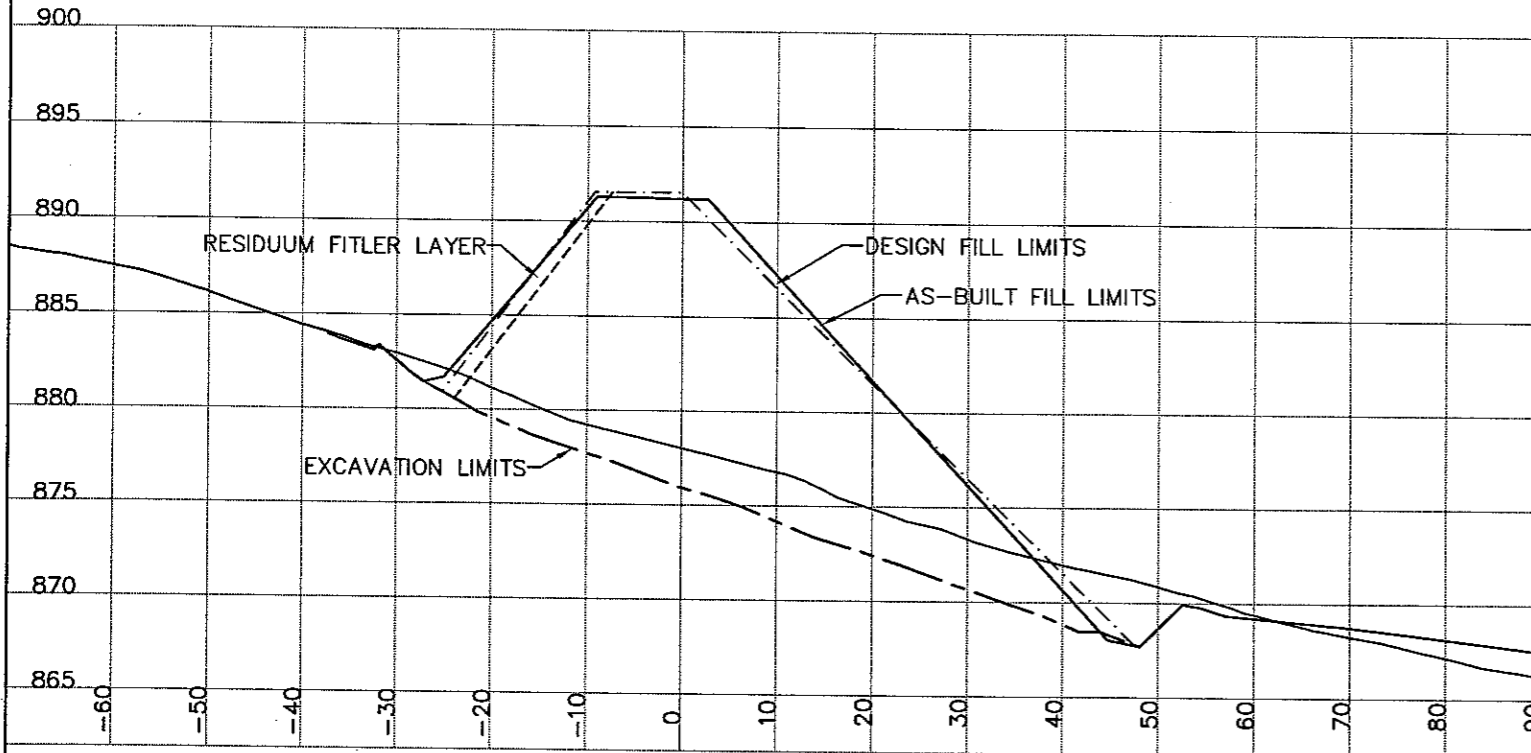
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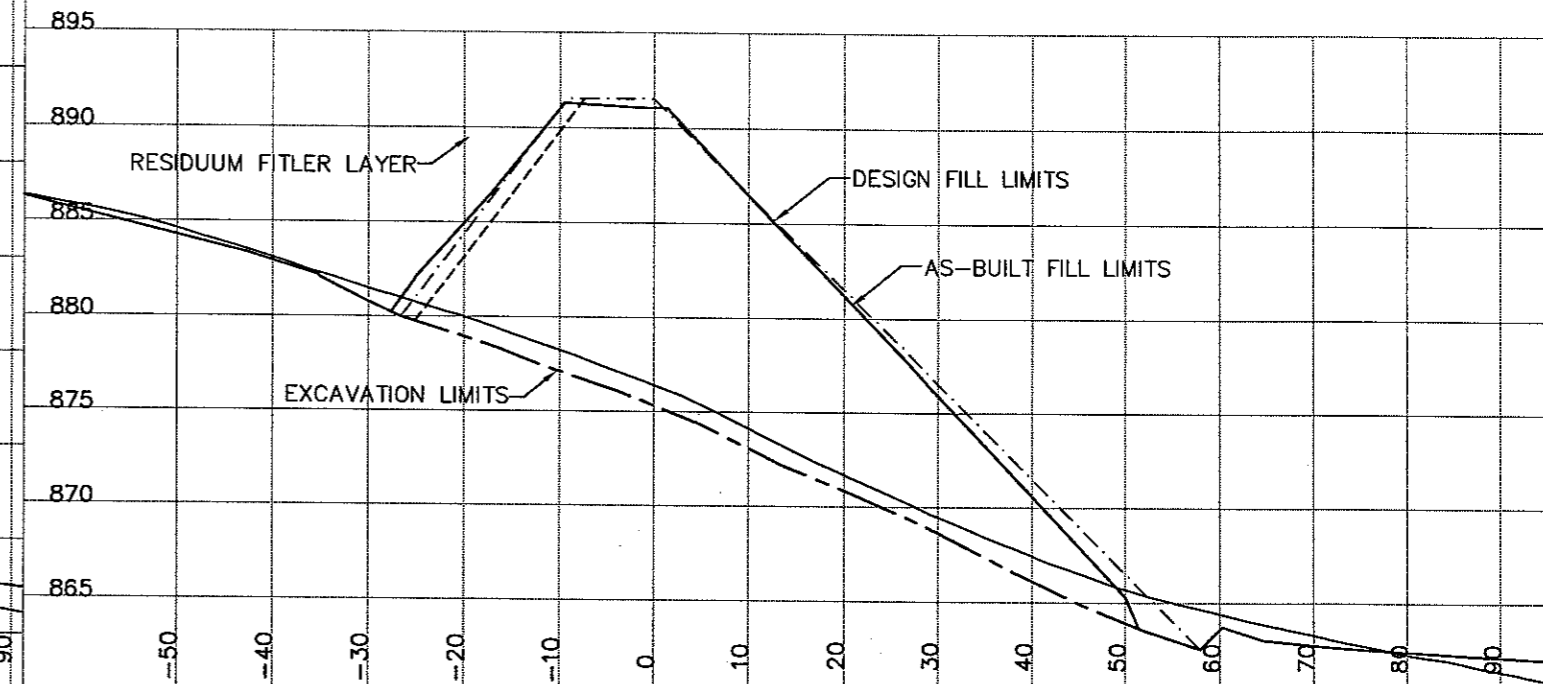
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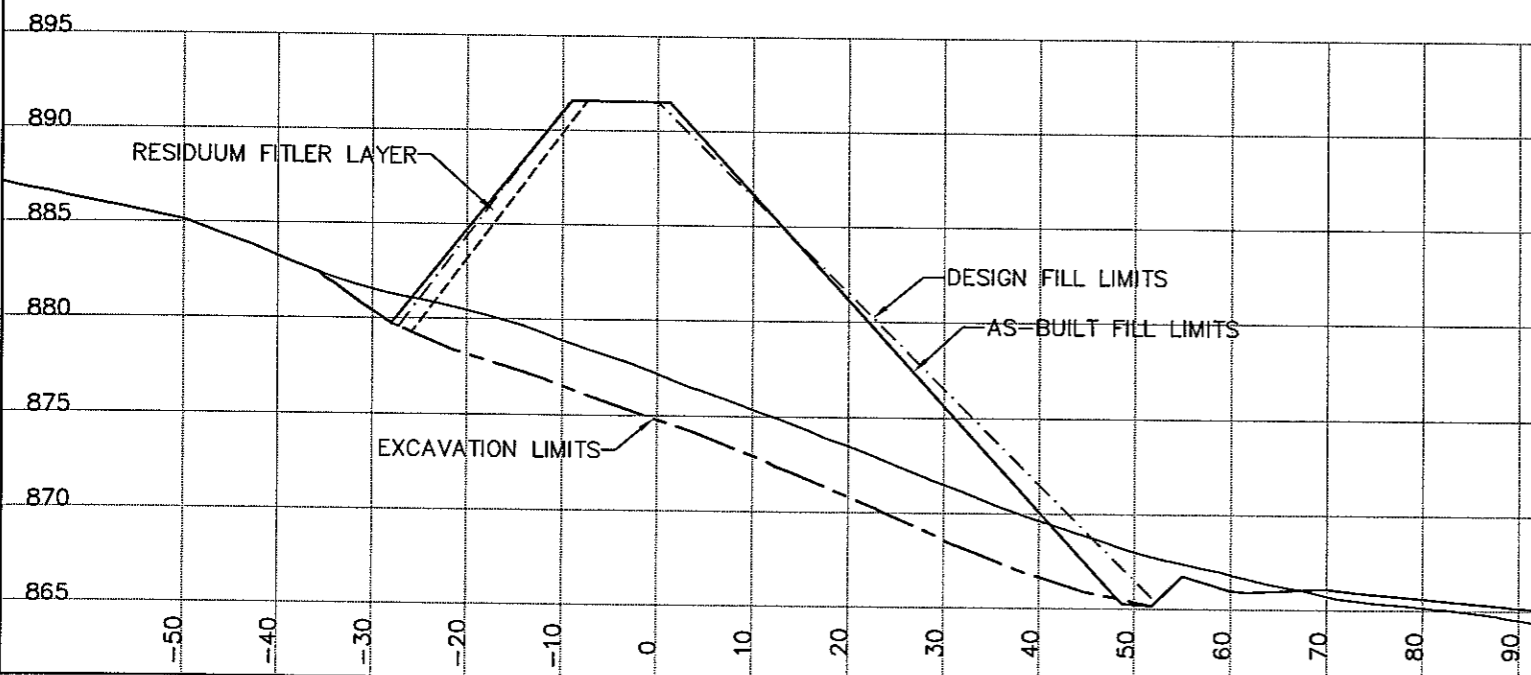
**YES** ASBUILT CROSS SECTIONS  
IROD CONTAINMENT BERM  
MINTO EXPLORATIONS LTD.  
MAY 7/07

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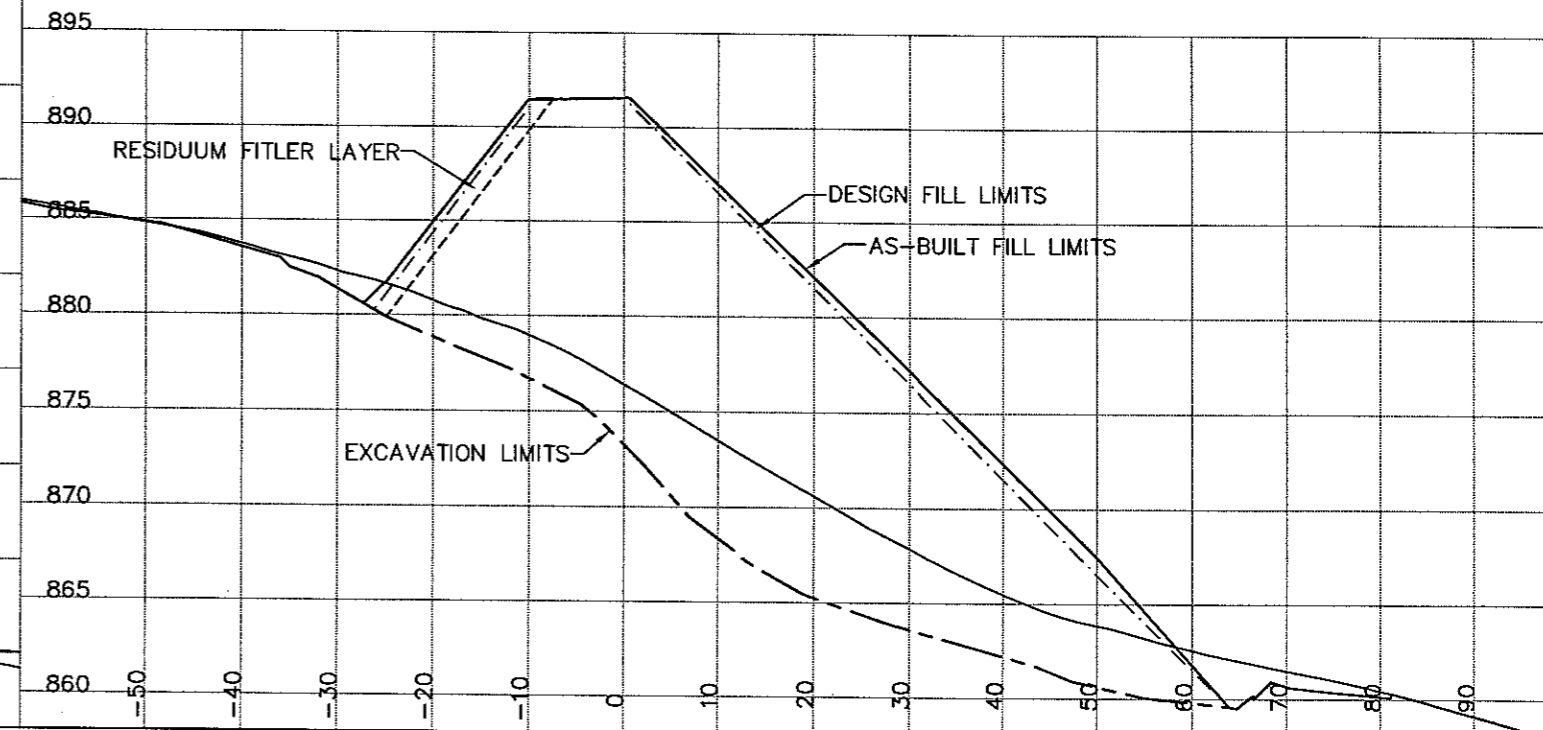
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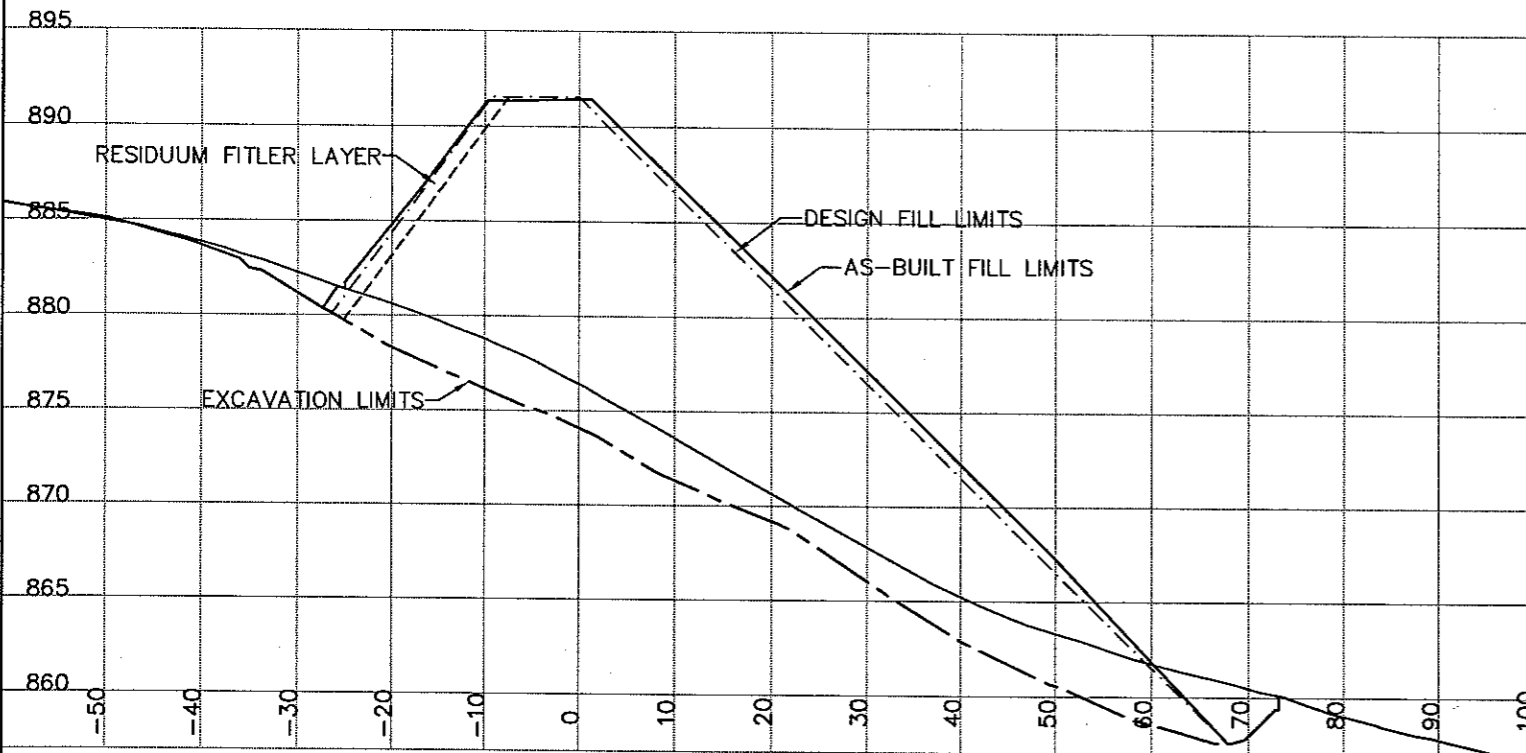
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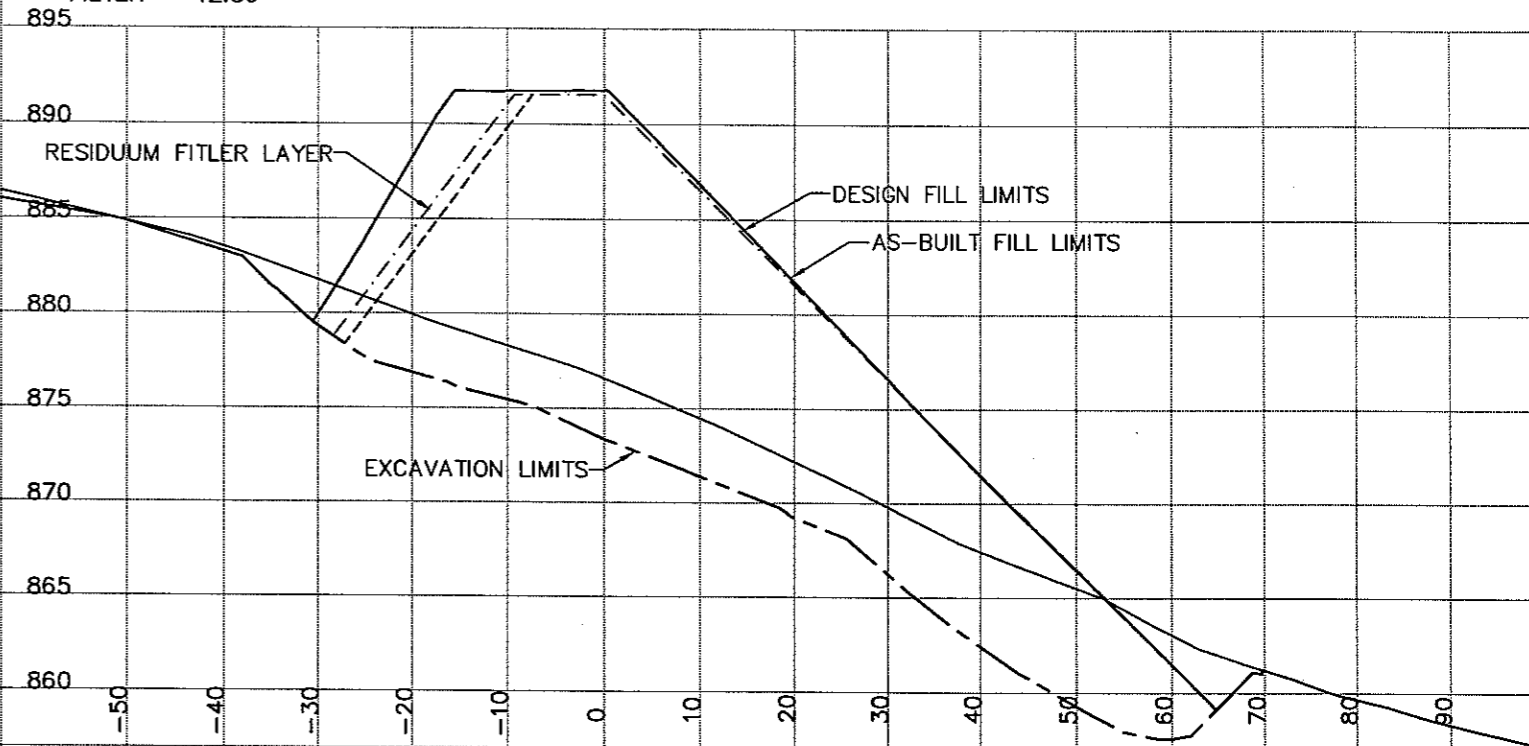
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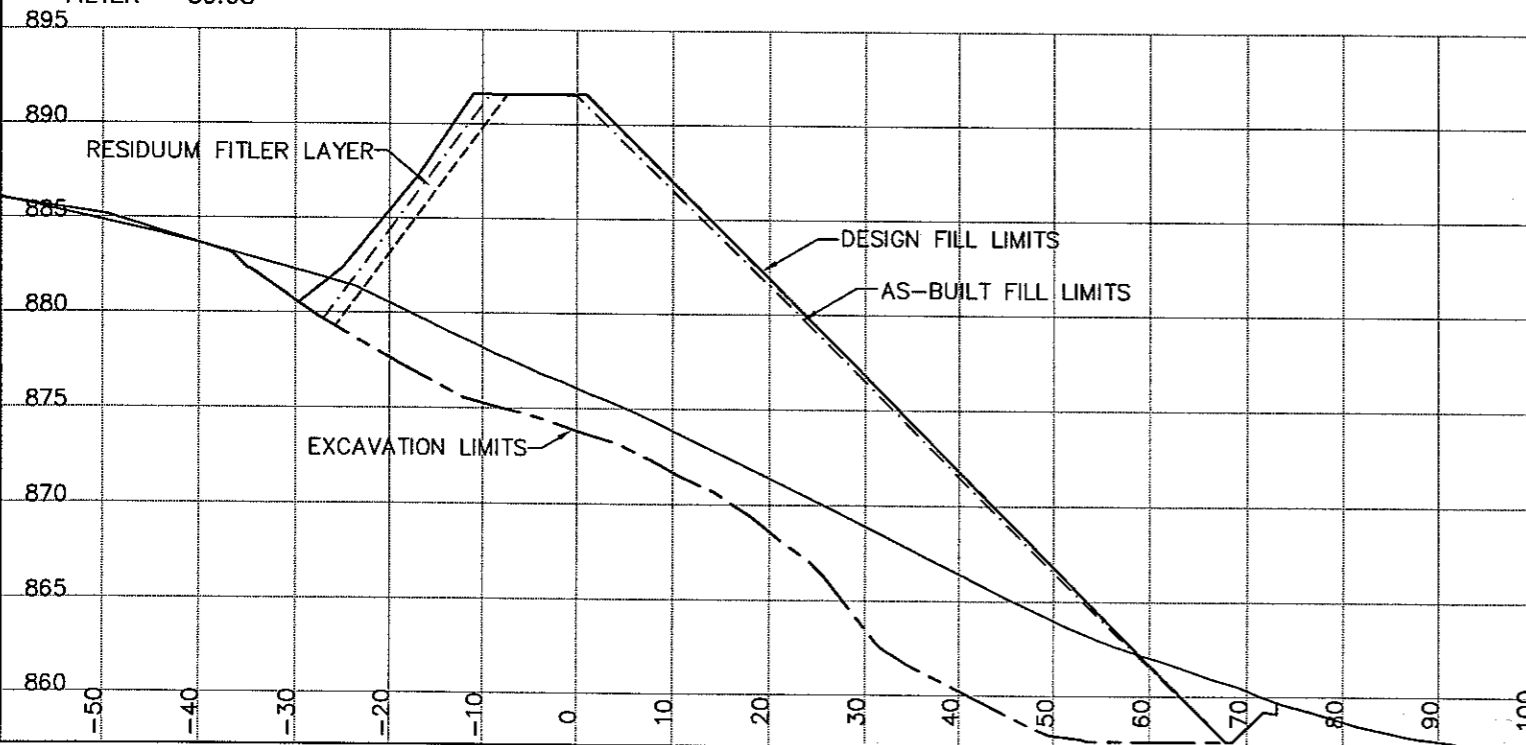
**YES** ASBUILT CROSS SECTIONS  
IROD CONTAINMENT BERM  
MINTO EXPLORATIONS LTD.  
MAY 7/07  
YUKON ENGINEERING SERVICES

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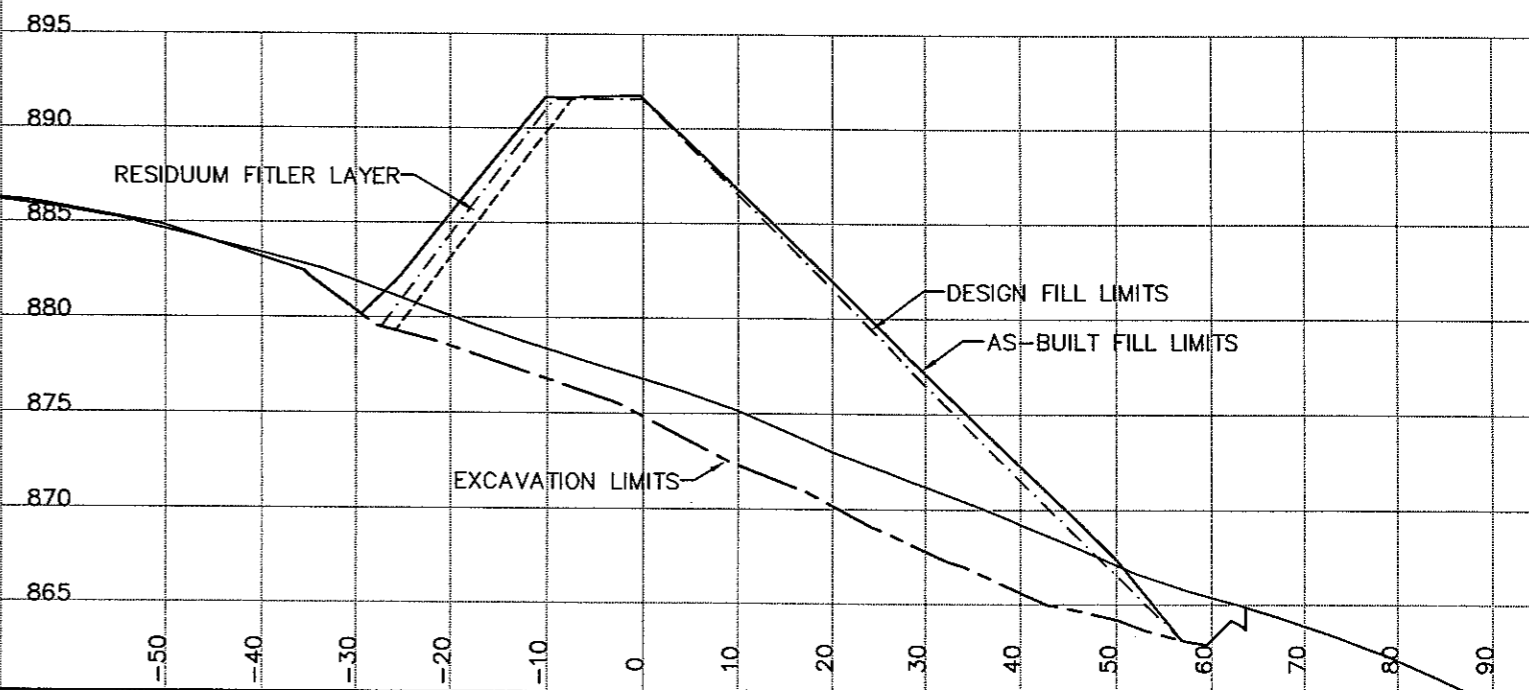
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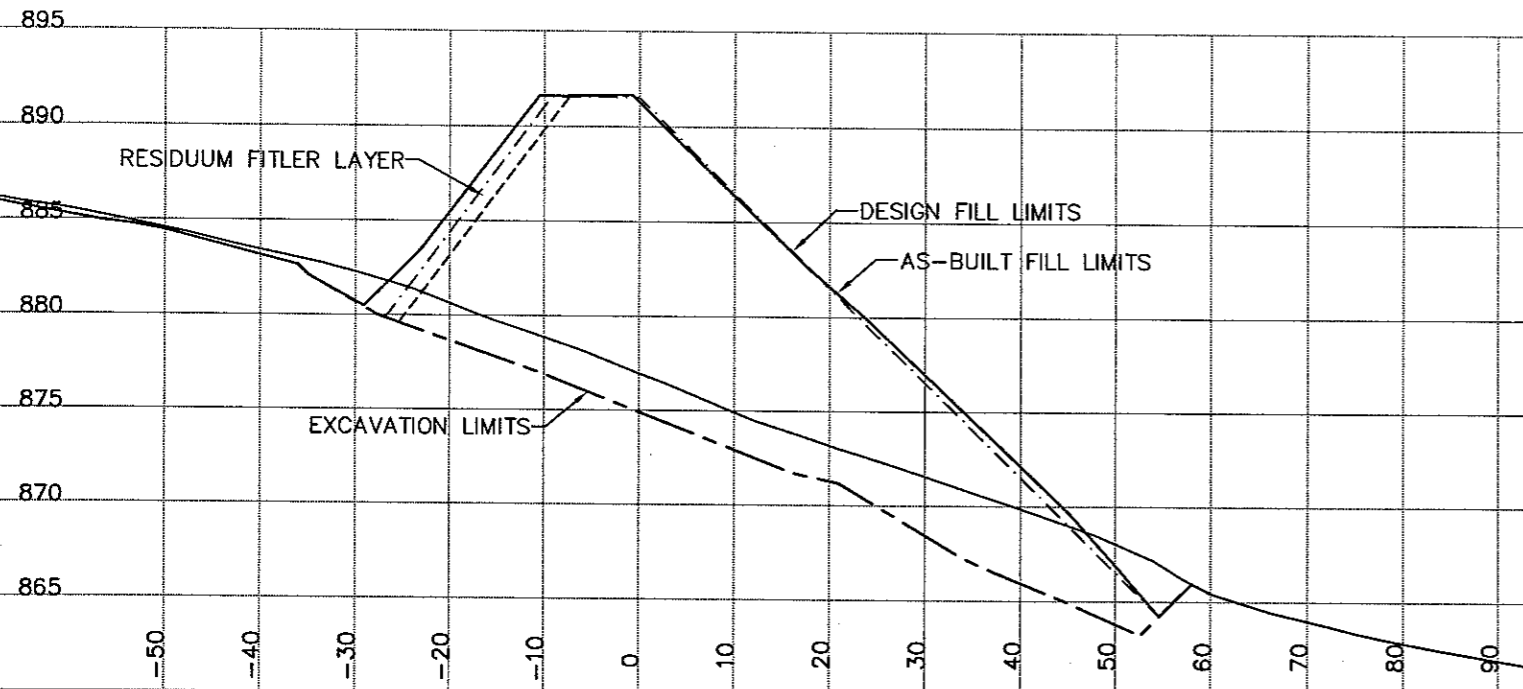
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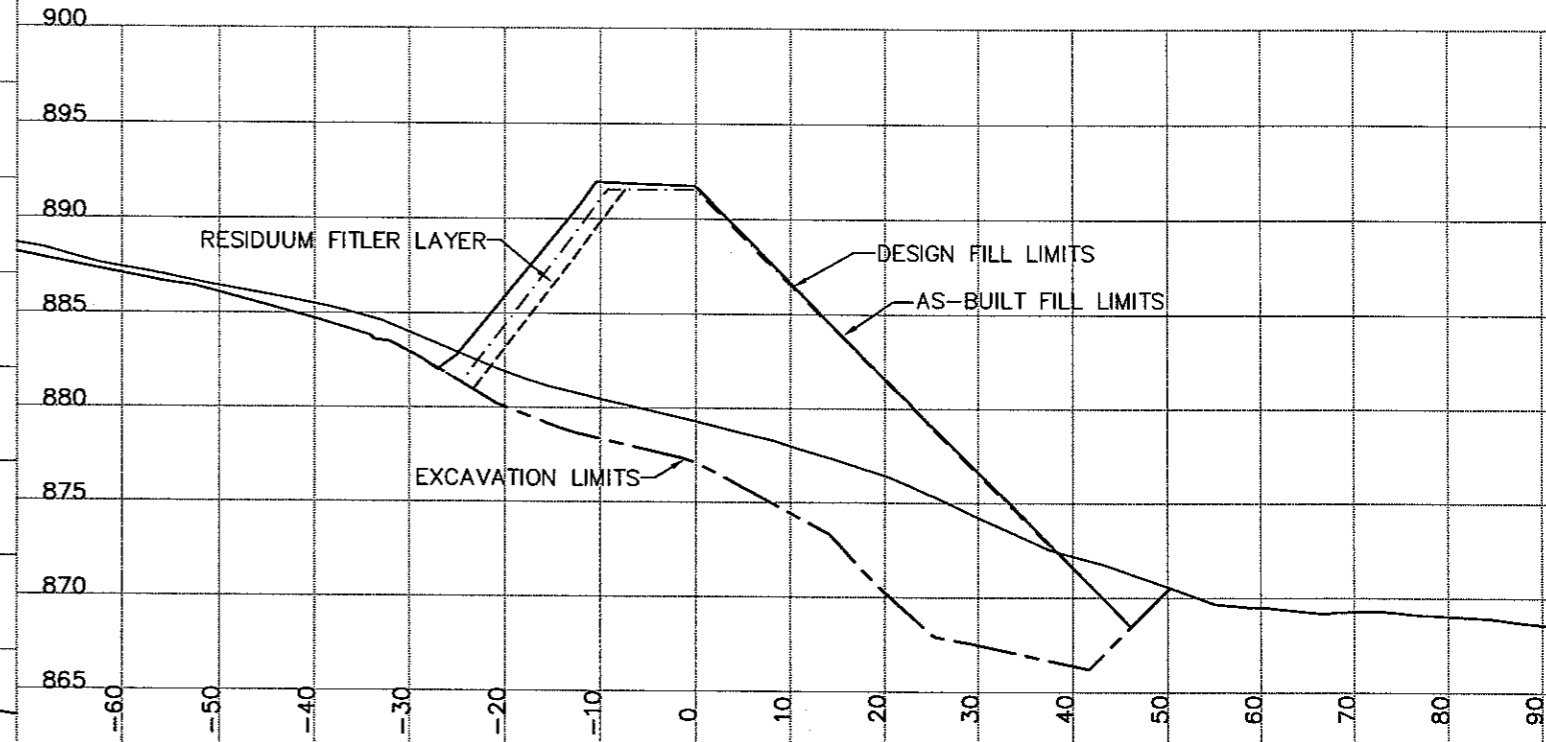
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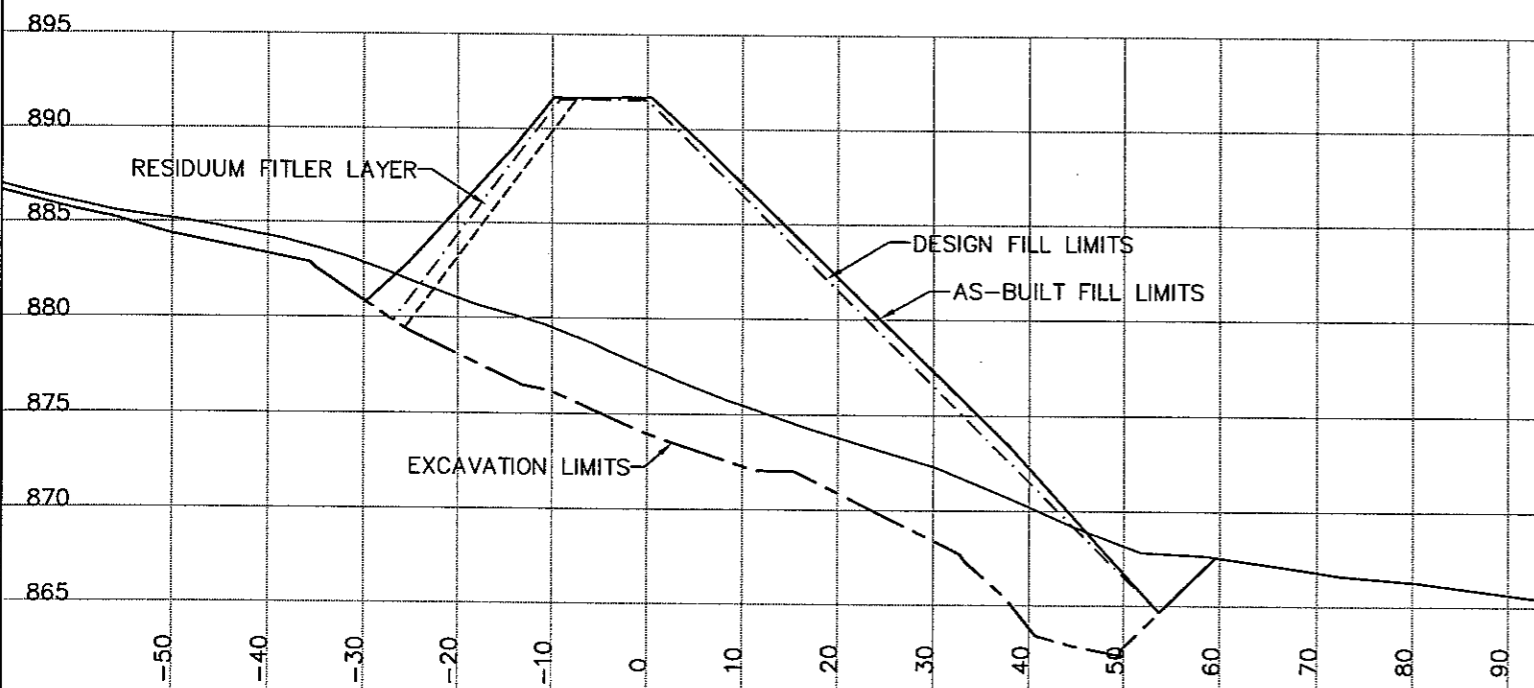
**YES** ASBUILT CROSS SECTIONS  
MINTO EXPLORATIONS LTD.  
MAY 7/07

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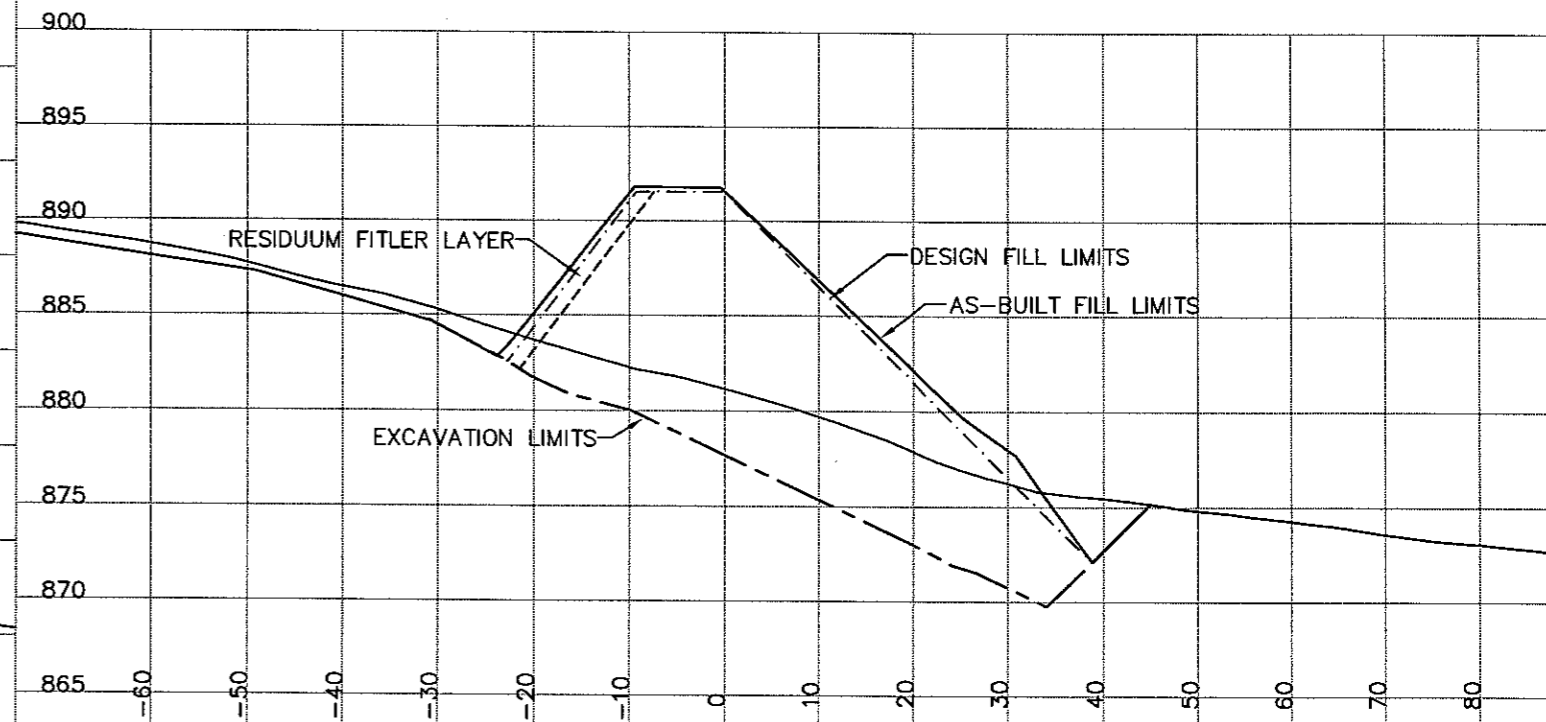
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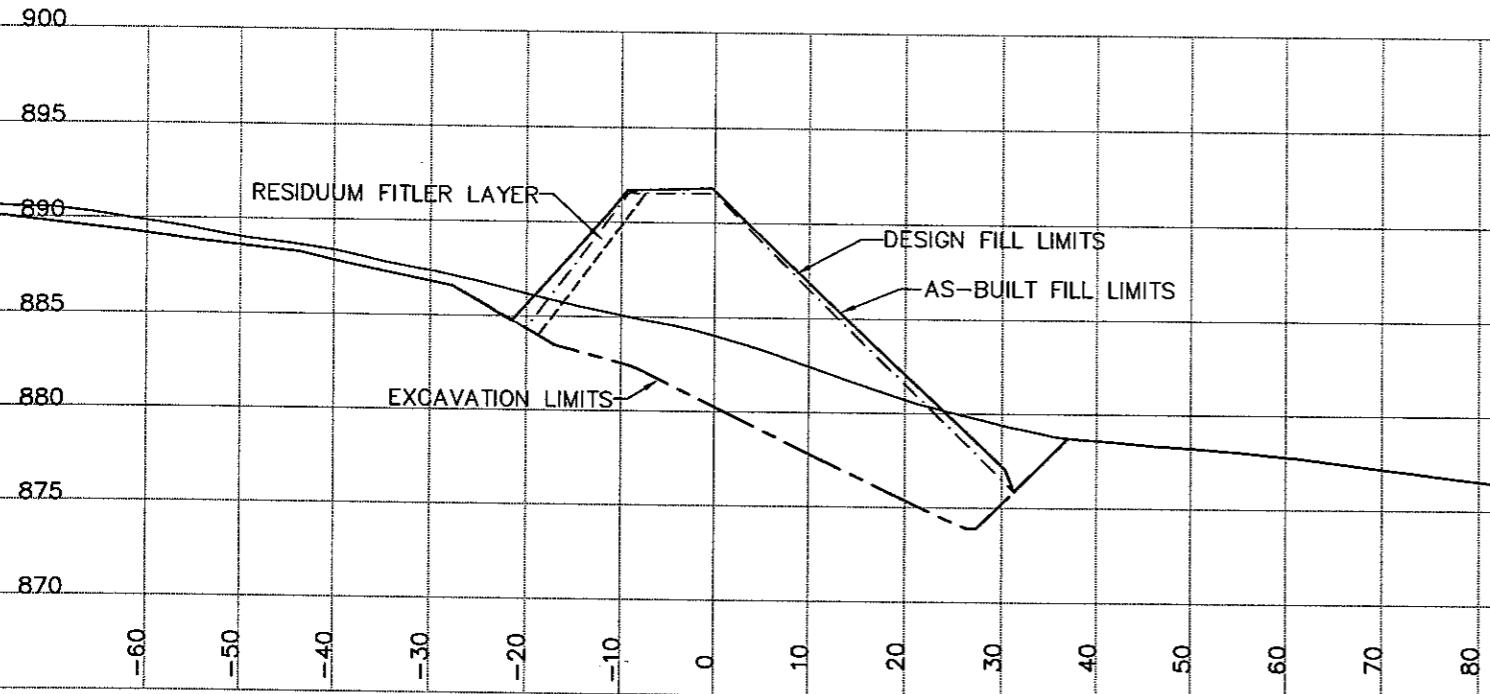
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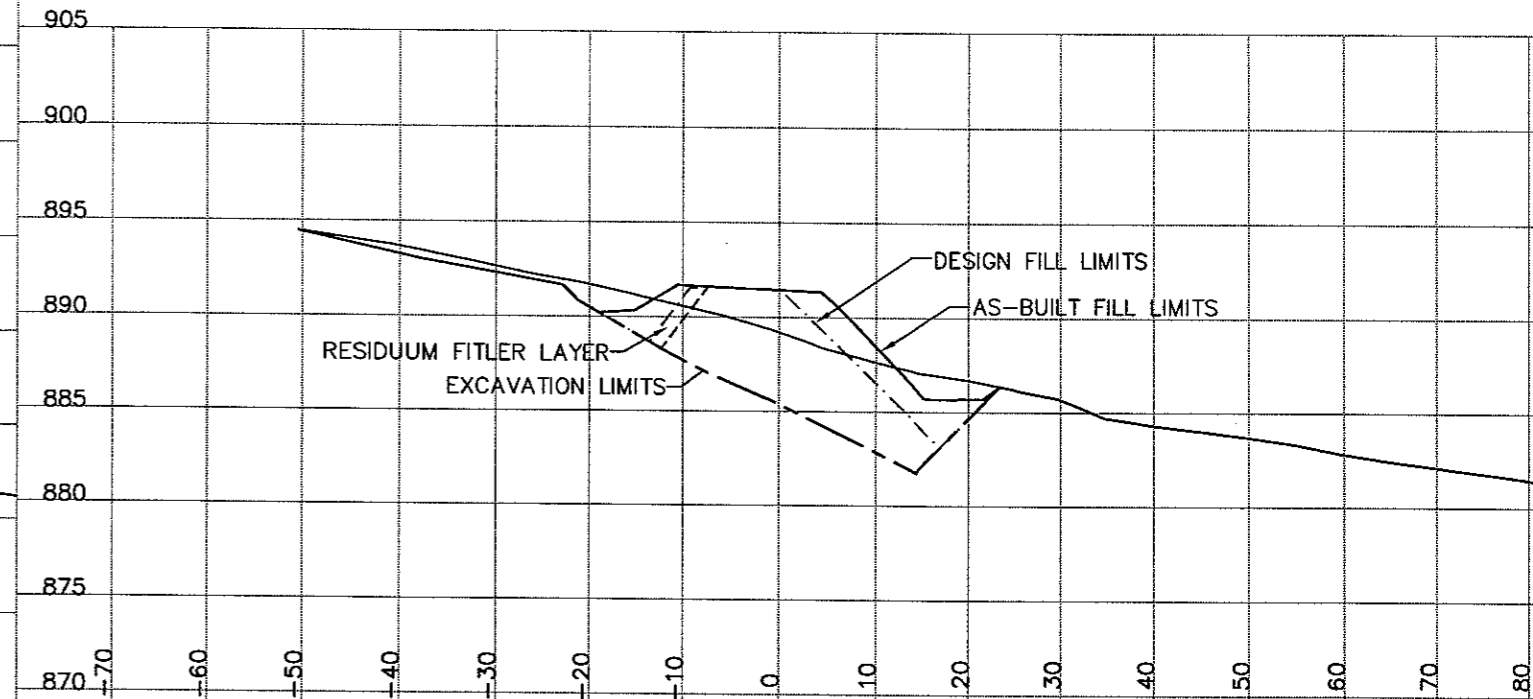
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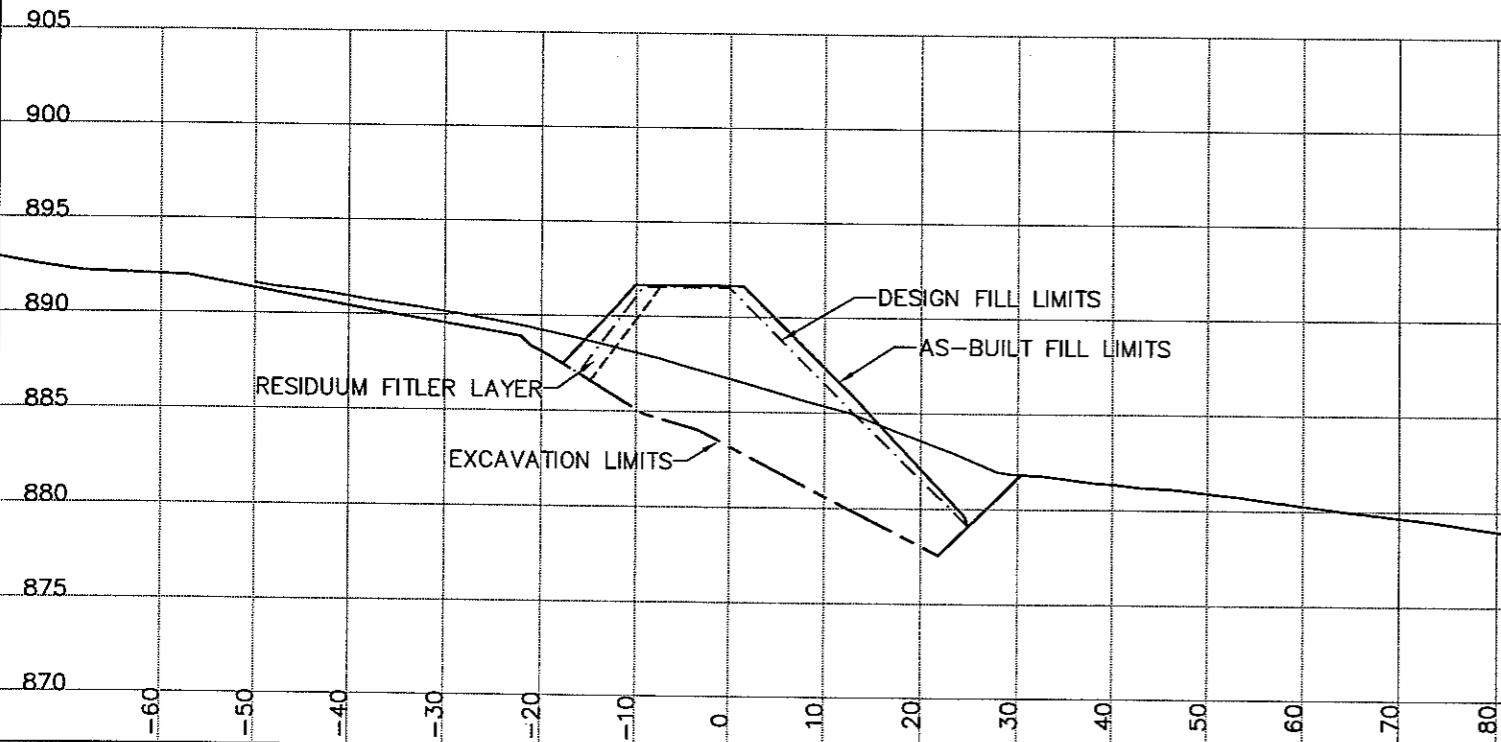
**YES** ASBUILT CROSS SECTIONS  
IROD CONTAINMENT BERM  
MINTO EXPLORATIONS LTD.  
MAY 7/07  
YORK ENGINEERING SERVICES

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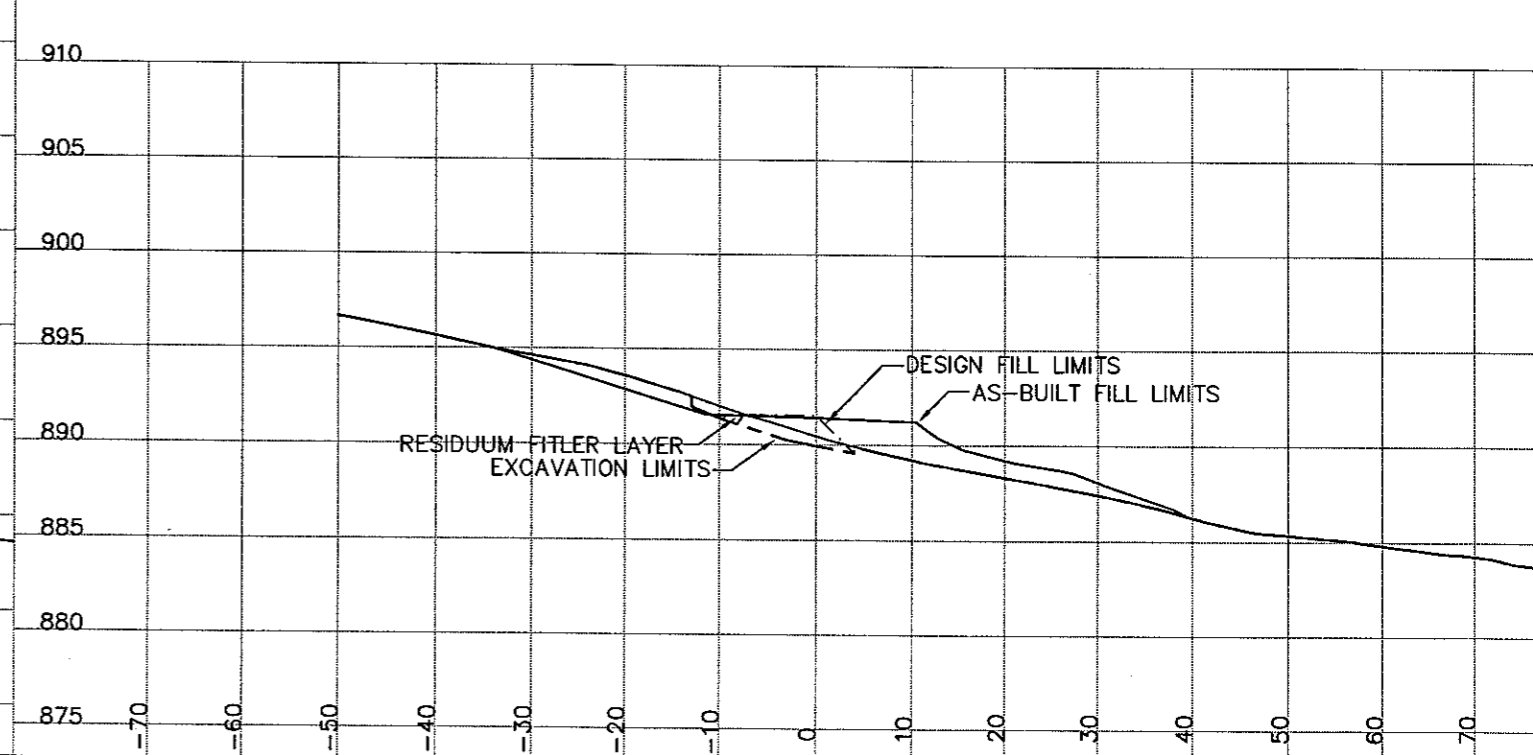
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# PHOTOGRAPHS



**Photo 1**

IROD foundation preparation - removal of residuum overburden with dozer.



**Photo 2**

IROD foundation preparation - stripped residuum stockpiled at toe of foundation footprint.



**Photo 3**

Rockfill placement - along toe of Berm's downstream slope.



**Photo 4**

Rockfill placement - northern portion of Berm.



**Photo 5**

Rockfill placement - coarse material along the Berm's downstream slope.



**Photo 6**

Rockfill placement - fill lifts placed across entire surface prior to next lift.



**Photo 7**

Rockfill placement - placing fill in central location.



**Photo 8**

Rockfill placement - placing fill in central location.



**Photo 9**

Rockfill placement - excavator cleaning up downstream slope of Berm.



**Photo 10**

Rockfill placement - dozer spreading fill across entire grade.



**Photo 11**

Rockfill placement - large accumulations of snow were removed prior to placement of next fill lift.



**Photo 12**

Rockfill placement – rock size varied from gravel size particles to boulders 750 mm in diameter.





**Photo 13**

Rockfill placement – dozer spreading



**Photo 14**

Rockfill placement – lower access ramp was filled in.



**Photo 15**

Rockfill placement – final grade, looking NE at upstream slope.



**Photo 16**

Rockfill placement – final grade, looking W at upstream slope.



**Photo 17**

Rockfill placement – looking N at downstream slope along the thickest portion of the fill



**Photo 18**

Rockfill placement – looking W at downstream slope of Berm