

LEGEND

- SERVICE AREA
- PUSHBACK 2 - PHASE 4
LOWEST LEVEL OF MINING = 45
- PUSHBACK 2 - PHASE 3
LOWEST LEVEL OF MINING = 105
- PUSHBACK 2 - PHASE 2
LOWEST LEVEL OF MINING = 150
- PUSHBACK 2 - PHASE 1
LOWEST LEVEL OF MINING = 225
- PUSHBACK 1 - PHASE 2
LOWEST LEVEL OF MINING = 150
- PUSHBACK 1 - PHASE 1
LOWEST LEVEL OF MINING = 197
- PIT BOUNDARY
- SURFACE PERMIT BOUNDARY
- UNDERGROUND PERMIT
- HAUL TRUCK ROUTE
- PROPERTY BOUNDARY
- GLORY HOLE

H356515-00000-220-272-0009-0001	PUSHBACK 2 - PHASE 4
H356515-00000-220-272-0008-0001	PUSHBACK 2 - PHASE 3
H356515-00000-220-272-0007-0001	PUSHBACK 2 - PHASE 2
H356515-00000-220-272-0006-0001	PUSHBACK 2 - PHASE 1
H356515-00000-220-272-0005-0001	PUSHBACK 1 - PHASE 2
H356515-00000-220-272-0004-0001	PUSHBACK 1 - PHASE 1
H356515-00000-220-272-0001-0001	PLANT BLOCK PLAN
DRAWING No.	DRAWING TITLE
REFERENCE DRAWINGS	

LEAD ENG. - NAME	NAME
SIGNATURE	SIGNATURE
DATE	DATE
PROJ. MGR. - NAME	REGISTRATION NUMBER
SIGNATURE	REGISTRATION DATE
DATE	ORIGINAL DATE
APPROVED BY CLIENT	REG. PROFESSIONAL

A CLIENT APPROVAL		MB	SH	2018/11/05
No.	DESCRIPTION	BY	CHK'D	DATE
REVISIONS				

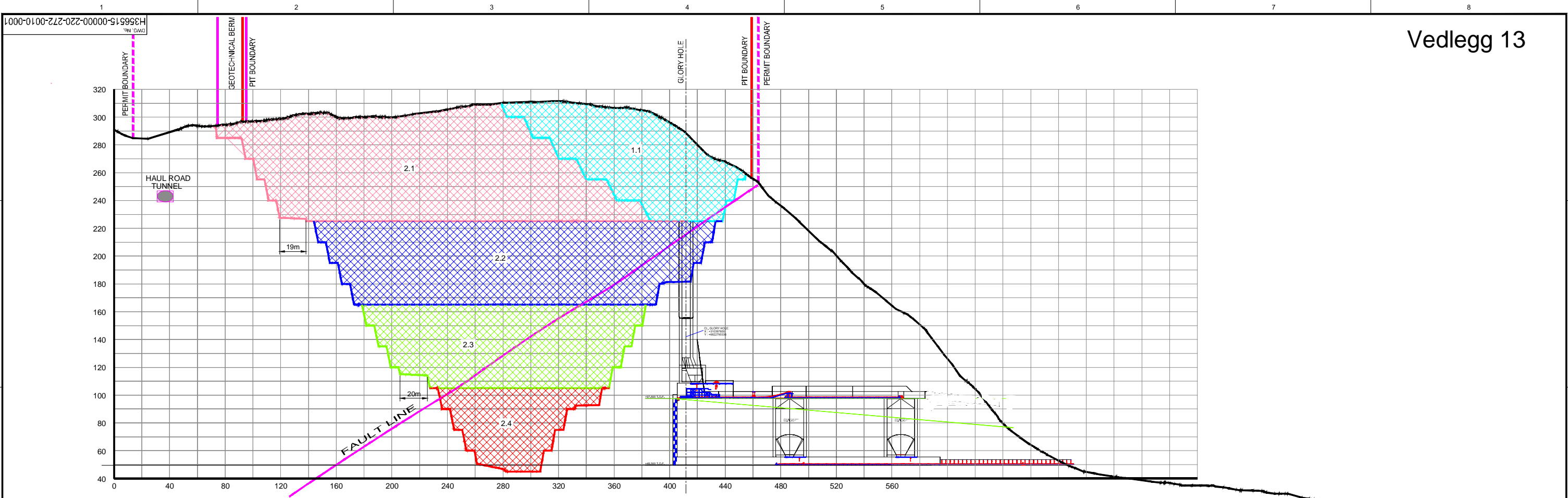
HATCH

DRAFTSPERSON	M.P. BRONDANI	NR	2018/11/05
DESIGNER	M.P. BRONDANI	NR	2018/11/05
CHECKER			
DESIGN COORD.			
RESP. ENG.			
LEAD DISC. ENG.			
ENG. MANAGER			
PROJ. MANAGER			

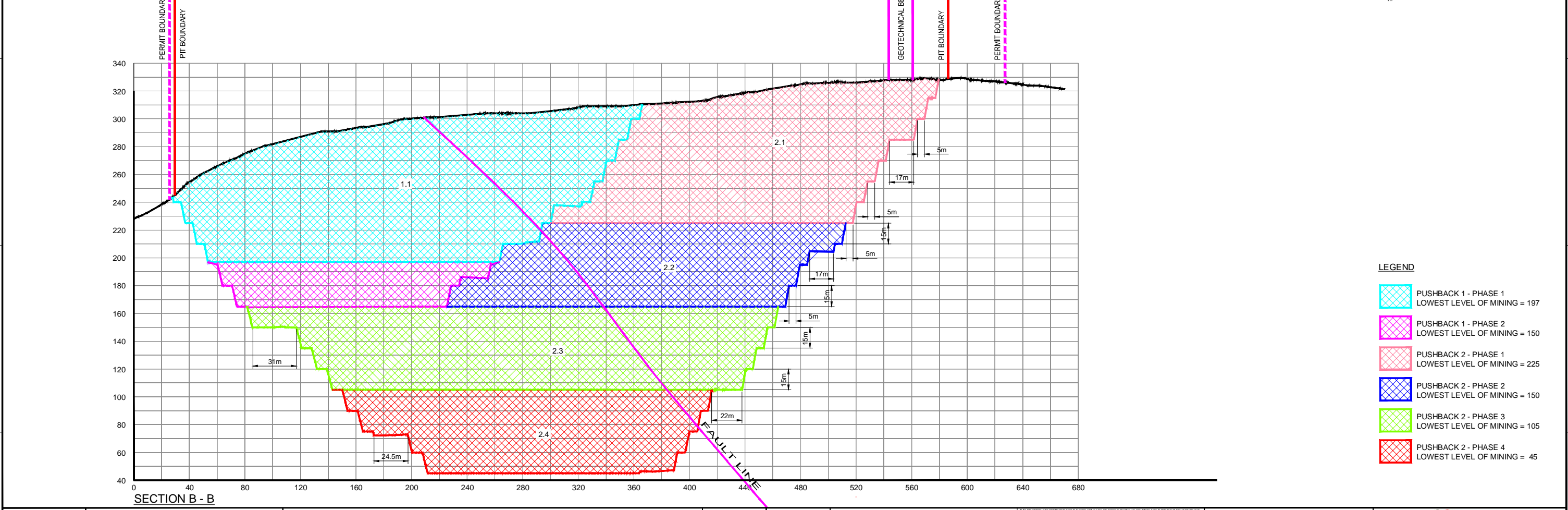
ENGEBØ RUTILE & GARNET FEASIBILITY STUDY

MINING SEQUENCE PLAN PUSHBACK 2 - PHASE 4 LAYOUT

SCALE: 1:1,000
DWG. No. H356515-00000-220-272-0009-0001
REV. A



SECTION A - A



SECTION B - B

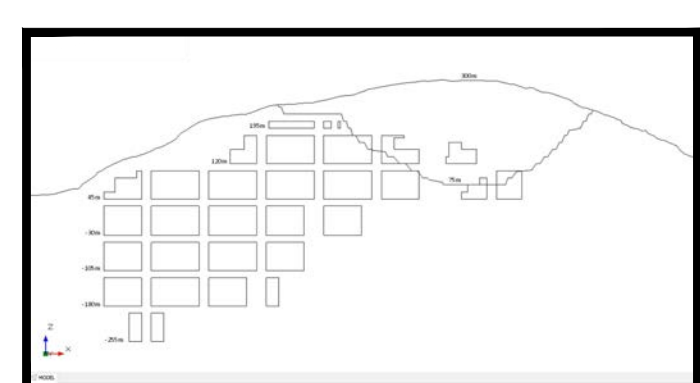
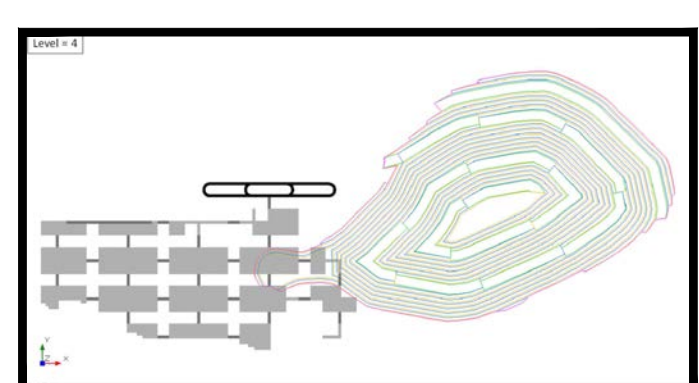
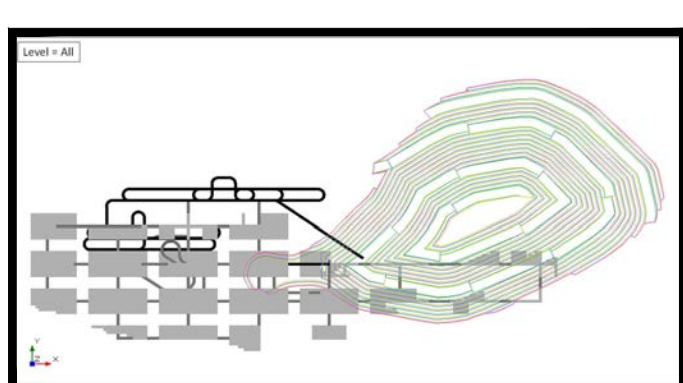
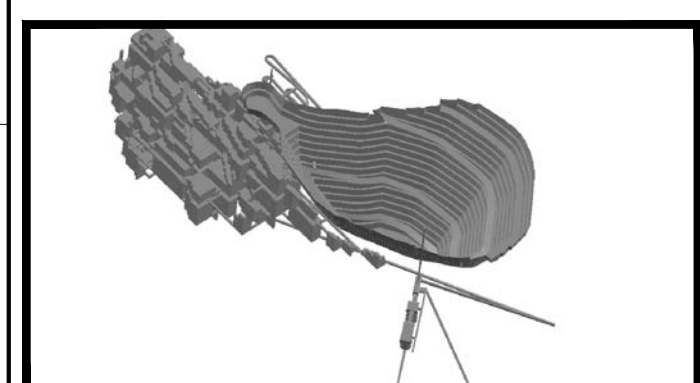
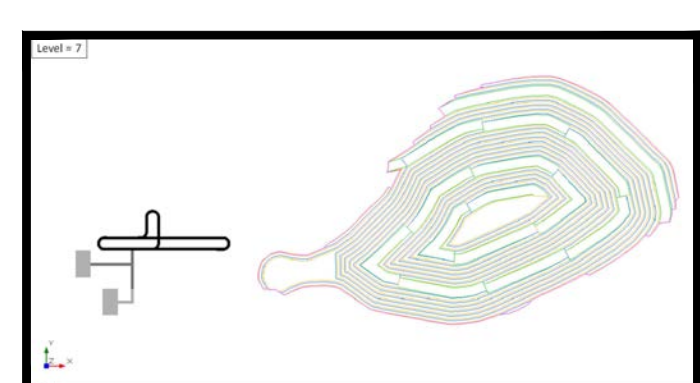
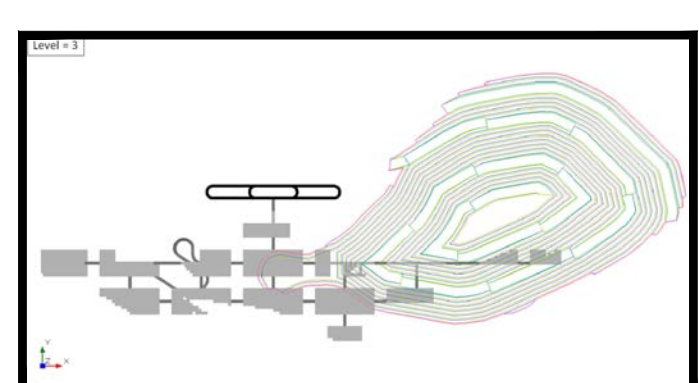
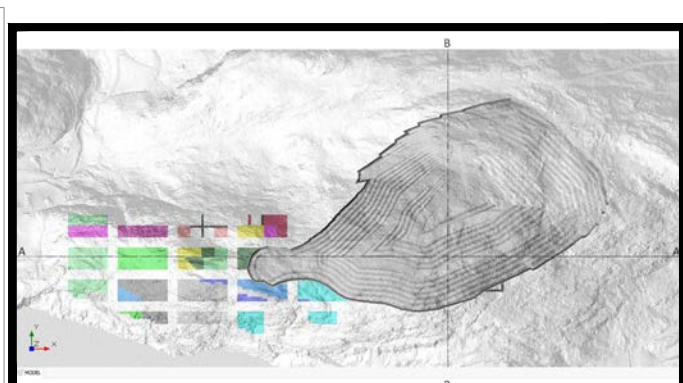
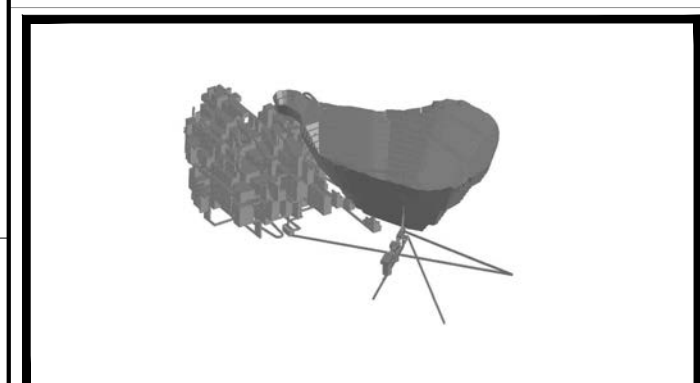
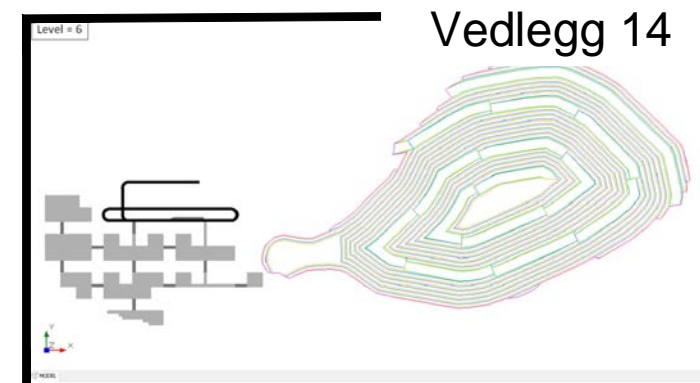
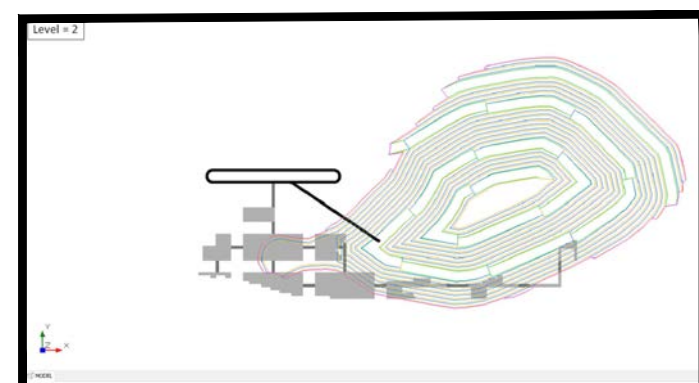
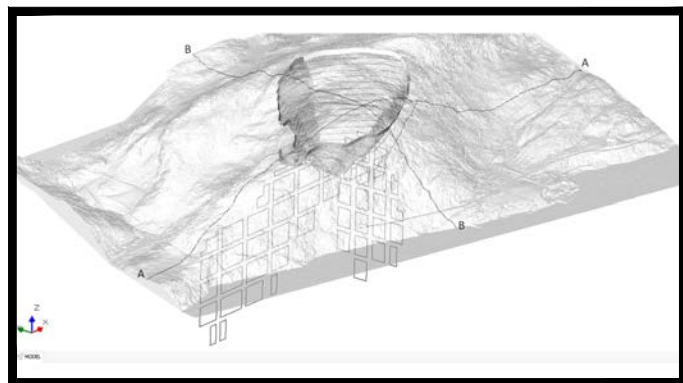
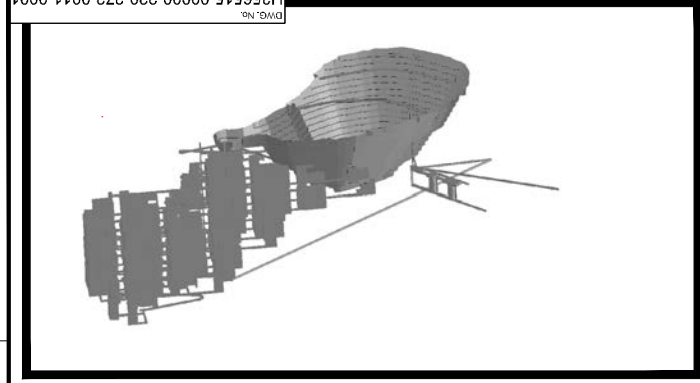
LEGEND

	PUSHBACK 1 - PHASE 1 LOWEST LEVEL OF MINING = 197
	PUSHBACK 1 - PHASE 2 LOWEST LEVEL OF MINING = 150
	PUSHBACK 2 - PHASE 1 LOWEST LEVEL OF MINING = 225
	PUSHBACK 2 - PHASE 2 LOWEST LEVEL OF MINING = 150
	PUSHBACK 2 - PHASE 3 LOWEST LEVEL OF MINING = 105
	PUSHBACK 2 - PHASE 4 LOWEST LEVEL OF MINING = 45

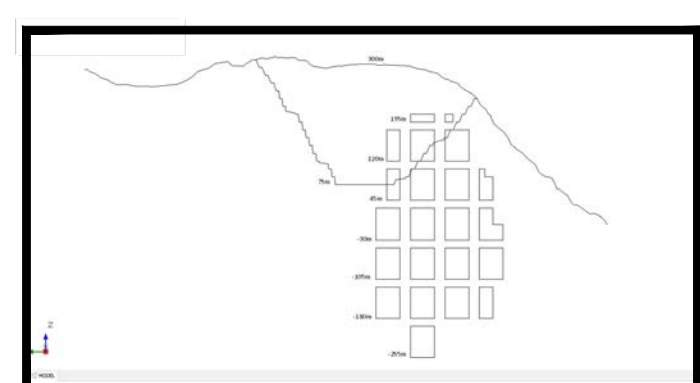
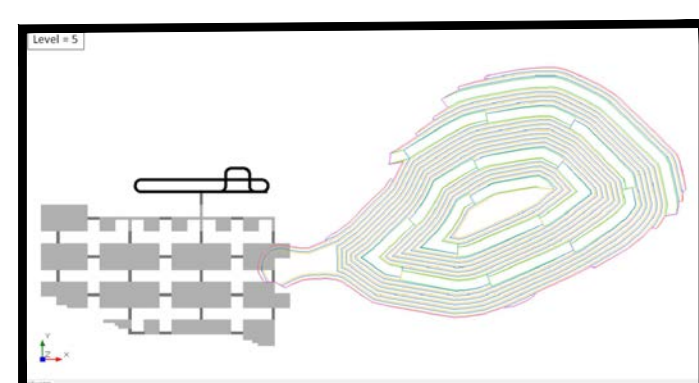
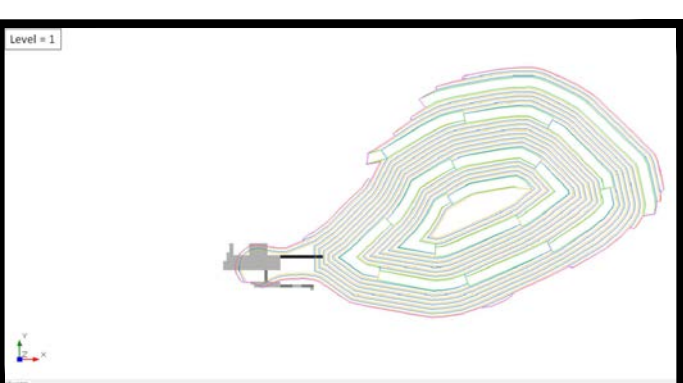
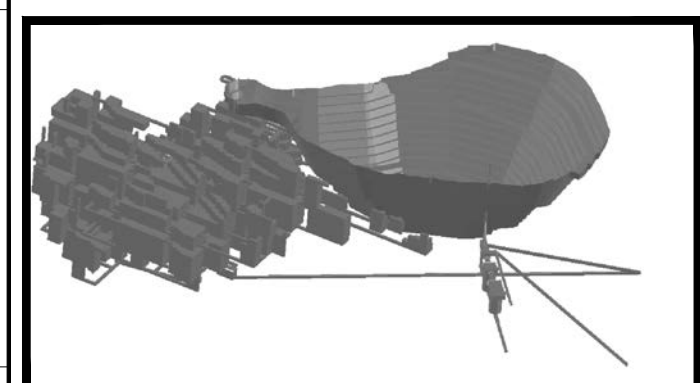
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Hatch No. H356515-00000-220-272-0011-0001

Vedlegg 14



SECTIONAL VIEW LOOKING TO THE NORTH



SECTIONAL VIEW LOOKING TO THE EAST

DRAWING No.	DRAWING TITLE
H356515-00000-220-272-0009-0001	PUSHBACK 2 - PHASE 4
H356515-00000-220-272-0008-0001	PUSHBACK 2 - PHASE 3
H356515-00000-220-272-0007-0001	PUSHBACK 2 - PHASE 2
H356515-00000-220-272-0006-0001	PUSHBACK 2 - PHASE 1
H356515-00000-220-272-0005-0001	PUSHBACK 1 - PHASE 2
H356515-00000-220-272-0004-0001	PUSHBACK 1 - PHASE 1
H356515-00000-220-272-0001-0001	PLANT BLOCK PLAN

LEAD ENG. - NAME	NAME
SIGNATURE	SIGNATURE
DATE	DATE
PROJ. MGR. - NAME	REGISTRATION NUMBER
SIGNATURE	REGISTRATION NUMBER
DATE	DATE
APPROVED BY CLIENT	REG. PROFESSIONAL

REVISIONS	DESCRIPTION	BY	CHK'D	DATE
No.	DESCRIPTION	BY	CHK'D	DATE

CLIENT REVIEW	ROLE	NAME	SIGNATURE	DATE
MB	SH	2019/01/11		

DRAWING APPROVAL STATUS	Client Review
Client Review	Client Review

HATCH

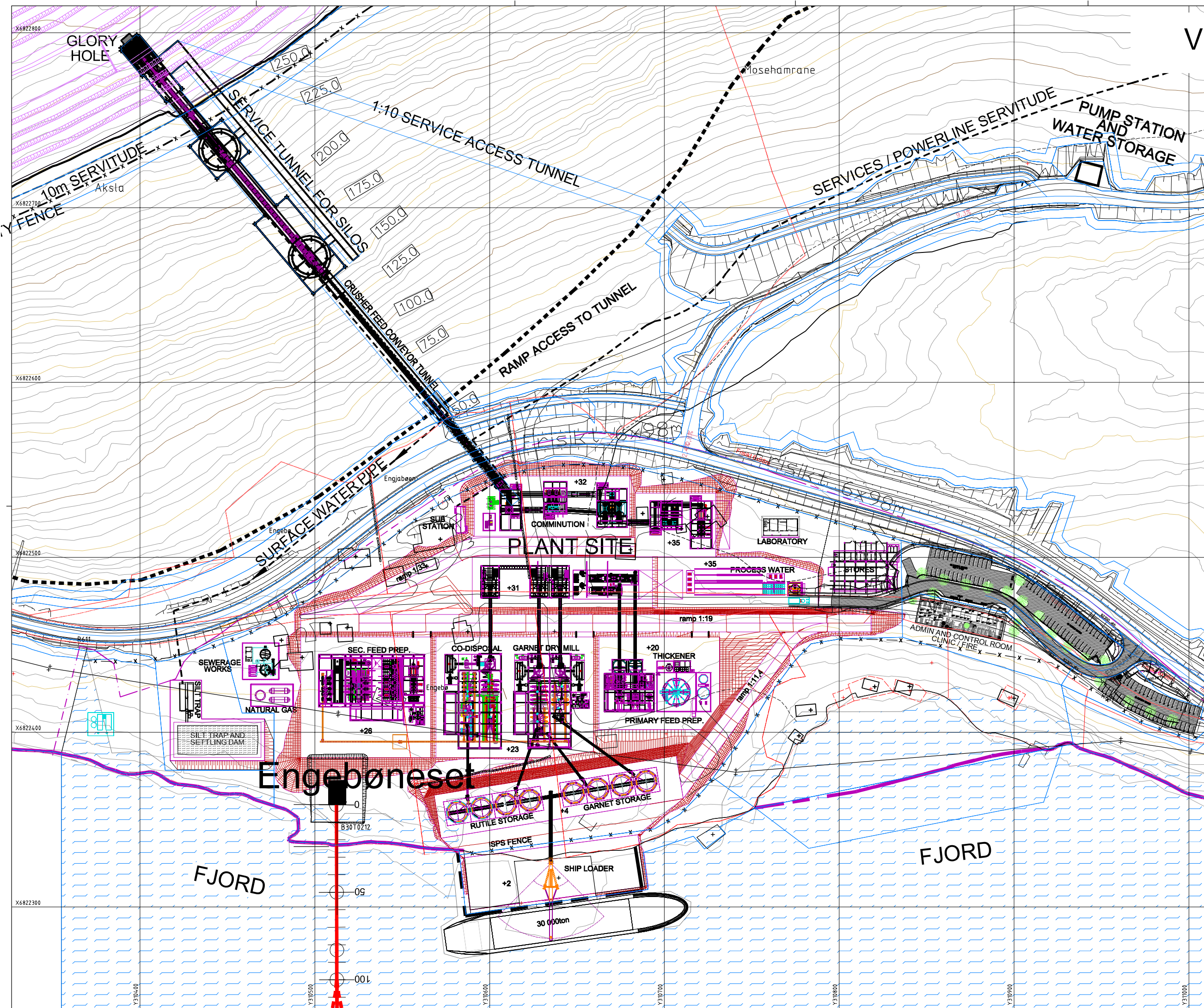
NORDIC mining

ENGEbø RUTILE & GARNET FEASIBILITY STUDY

MINING SEQUENCE PLAN UNDERGROUND MINING PHASES SECTIONS AND ELEVATIONS

SCALE: 1:1,000
DWG. No. H356515-00000-220-272-0011-0001

SHEET SIZE: A0



O-01	Tegning opprettet	22.01.19	GG KE
Rev.	Tittel:	Rev.dato:	Tegn. form:

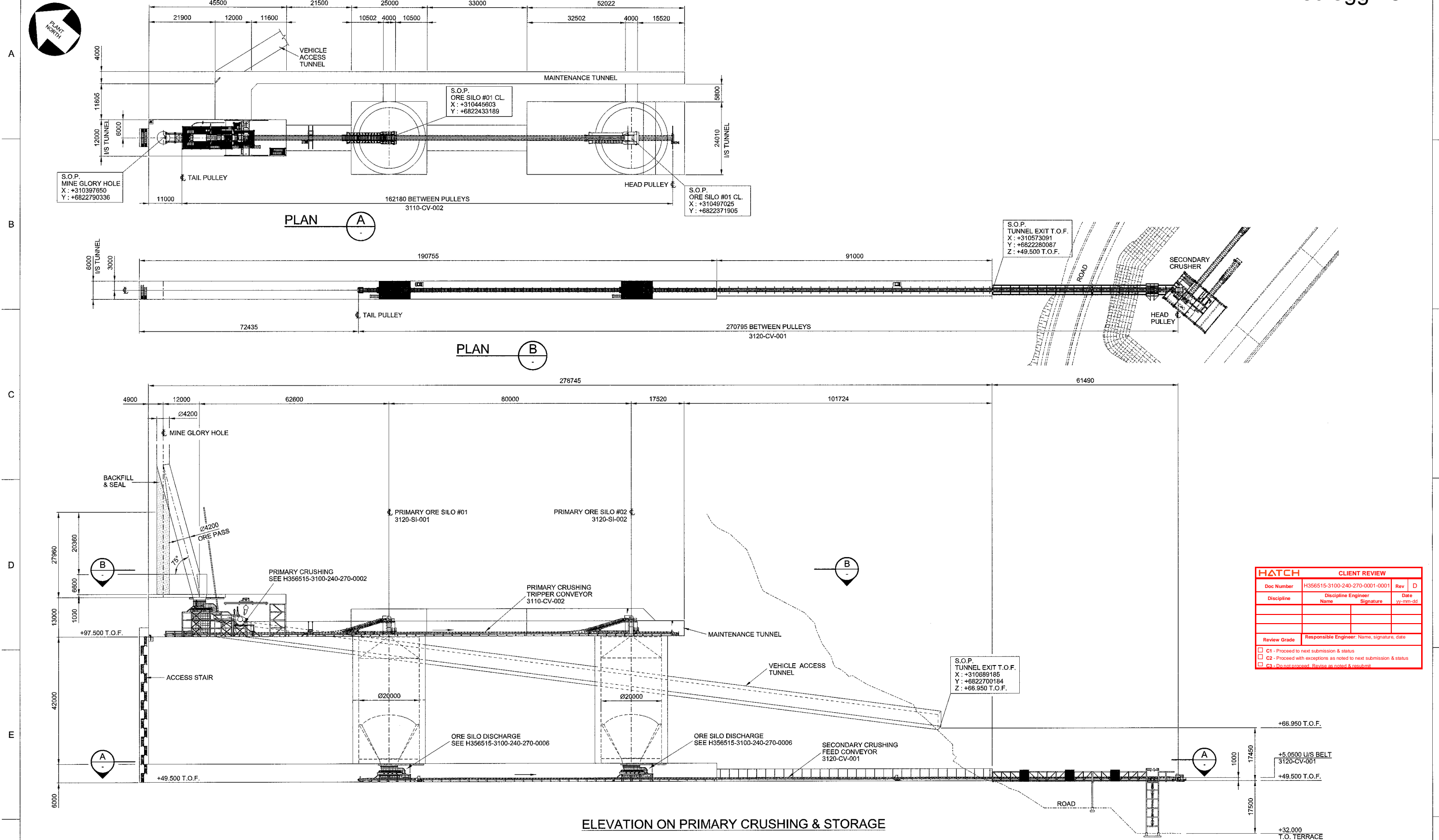
Driftsplan

Prosjekt:
Engebø
Oppdragsnavn:
Nordic Rutile

Prosessområde
Utsnitt fra Hatch

Oppdragsleder:	Koordinatystem:	Målestokk:
601608-01	UTM32 N2000	1:1000 A1
Tegn. nr.:		Rev.:
X	101	O-01
Fag:	Type:	Etg. / Lepent:

H356515-3100-240-270-0001-0001
DWG. No. GMD



HATCH		CLIENT REVIEW	
Doc Number	H356515-3100-240-270-0001-0001	Rev	D
Discipline	Discipline Engineer Name	Signature	Date yy-mm-dd
Review Grade	Responsible Engineer: Name, signature, date		
<input type="checkbox"/> C1	Proceed to next submission & status		
<input type="checkbox"/> C2	Proceed with exceptions as noted to next submission & status		
<input type="checkbox"/> C3	Do not proceed. Revise as noted & resubmit		

ELEVATION ON PRIMARY CRUSHING & STORAGE

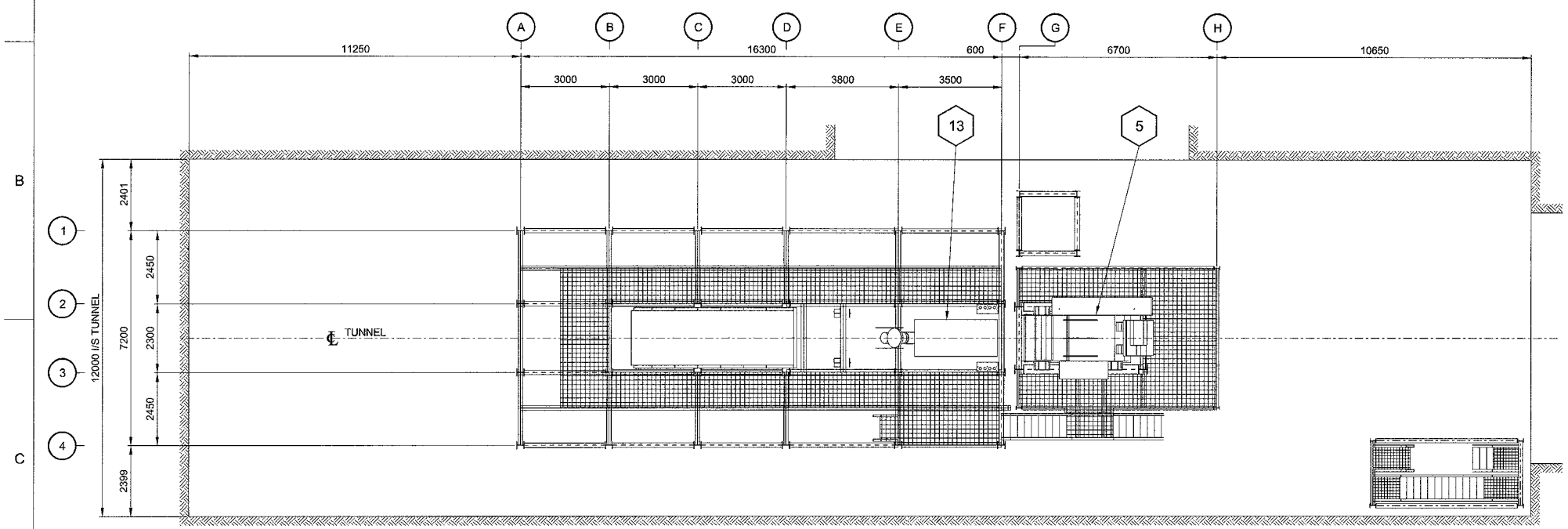
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<p>LEAD ENG. - NAME</p> <p>SIGNATURE</p> <p>DATE</p>	<p>NAME</p> <p>SIGNATURE</p>	<p>DRAFTSPERSON</p> <p>DESIGNER</p> <p>CHECKER</p> <p>DESIGN COORD.</p> <p>RESP. ENG.</p>	<p>NR</p> <p>NR</p>	<p>ENGEØ RUTILE & GARNET FEASIBILITY STUDY</p> <p>PRIMARY CRUSHING & STORAGE LAYOUT PLAN & ELEVATION</p>			
<p>PROJ. MGR. - NAME</p> <p>SIGNATURE</p> <p>DATE</p>	<p>REGISTRATION NUMBER</p> <p>REVISION DATE</p> <p>ORIGINAL DATE</p>	<p>D</p> <p>C</p> <p>B</p> <p>A</p>	<p>09.01.2019</p> <p>14.11.2018</p> <p>12.11.2018</p> <p>11.10.2018</p>	<p>LEAD DISC. ENG.</p> <p>ENG. MANAGER</p> <p>PROJ. MANAGER</p>	<p>10/01/19</p> <p>10/01/19</p>	<p>SCALE</p> <p>DWG. No.</p> <p>H356515-3100-240-270-0001-0001</p>	
<p>REFERENCE DRAWINGS</p>	<p>APPROVED BY CLIENT</p> <p>REG. PROFESSIONAL</p>	<p>REVISIONS</p>	<p>DRAWING APPROVAL STATUS:</p> <p>Started</p>	<p>OR AS NOTED</p>	<p>REV</p> <p>D</p>	<p>SHEET SIZE: A1</p>	

\$USERNAMES \$DATES \$FILES

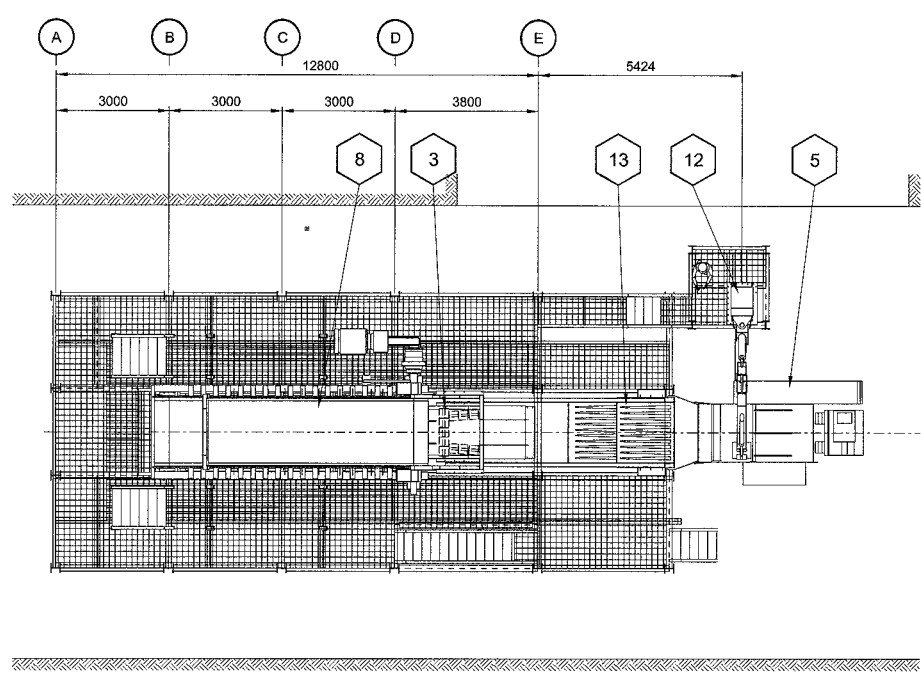


ITEM No.	TAG_NO	AREA	DESCRIPTION
3	3110-CH-003	3110	FEEDER DISCHARGE CHUTE
5	3110-CR-001	3110	PRIMARY CRUSHER
7	3110-CV-002	3110	PRIMARY CRUSHING TRIPPER CONVEYOR
8	3110-FE-001	3110	APRON FEEDER
11	3110-PP-001	3110	SEEPAGE WATER PUMP
12	3110-RB-001	3110	ROCK BREAKER
13	3110-SC-001	3110	PRIMARY GRIZZLY

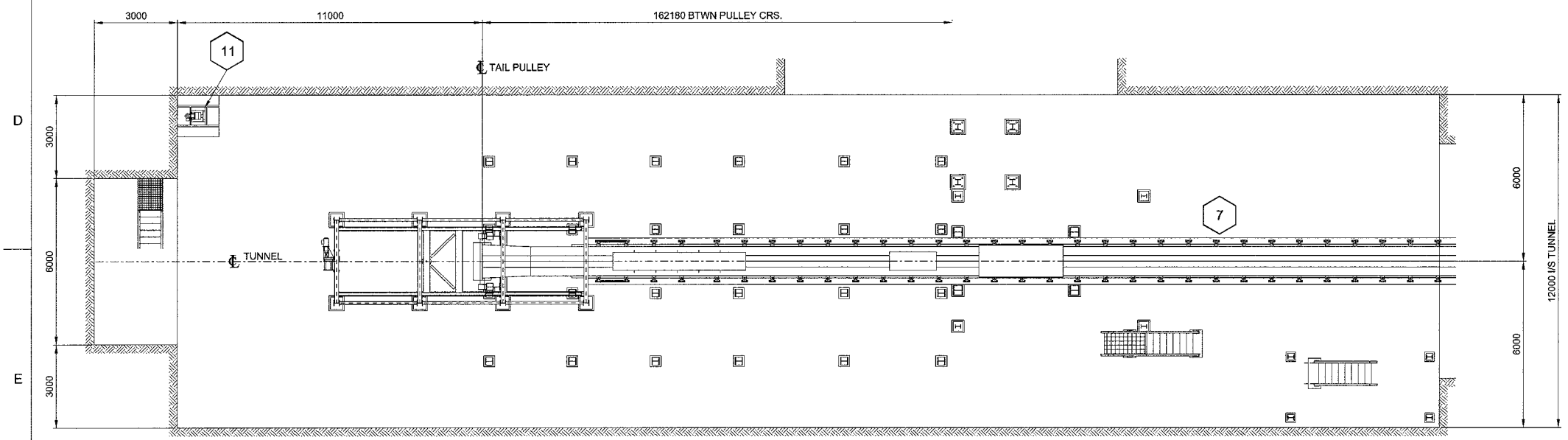
Vedlegg 17



PLAN ON GRIZZLY & PRIMARY CRUSHER
@ 102.285 T.O.S. LEVEL



PLAN ON APRON FEEDER
@ 104.685 T.O.S. LEVEL



PLAN ON TRIPPER CONVEYOR
@ +97.500 T.O.F. LEVEL

HATCH		CLIENT REVIEW	
Doc Number	H356515-3100-240-270-0002-0001	Rev	C
Discipline	Discipline Engineer Name	Signature	Date yy-mm-dd
Review Grade	Responsible Engineer: Name, signature, date		
<input type="checkbox"/>	C1 - Proceed to next submission & status		
<input type="checkbox"/>	C2 - Proceed with exceptions as noted to next submission & status		
<input type="checkbox"/>	C3 - Do not proceed. Revise as noted & resubmit		

DRAWING No.	DRAWING TITLE	DATE	APPROVED BY CLIENT	REG. PROFESSIONAL
H356515-3100-240-270-0004	ORE PASS & PRIMARY CRUSHER - SECTIONS			
H356515-3100-240-270-0003	ORE PASS & PRIMARY CRUSHER - ELEVATION			
H356515-3100-240-270-0001	PRIMARY CRUSHING & STORAGE - LAYOUT			

LEAD ENG. - NAME	NAME	SIGNATURE	DATE
PROJ. MGR. - NAME	REGISTRATION NUMBER	SIGNATURE	DATE

No.	DESCRIPTION	BY	CHK'D	DATE
C	ISSUED FOR CLIENT REVIEW	K.G.		09.01.2019
B	ISSUED FOR INTERNAL REVIEW	K.G.		12.11.2018
A	ISSUED FOR INFORMATION	K.G.		11.10.2018

ROLE	NAME	SIGNATURE	DATE
DRAFTSPERSON			
DESIGNER			
CHECKER	K.G.		10/01/2019
DESIGN COORD.			
RESP. ENG.			
LEAD DISC. ENG.	Fs		10/01/2019
ENG. MANAGER	G. Itam		
PROJ. MANAGER			

HATCH

NORDIC MINING

ENGEØ RUTILE & GARNET FEASIBILITY STUDY

ORE PASS AND PRIMARY CRUSHER GENERAL ARRANGEMENT PLANS

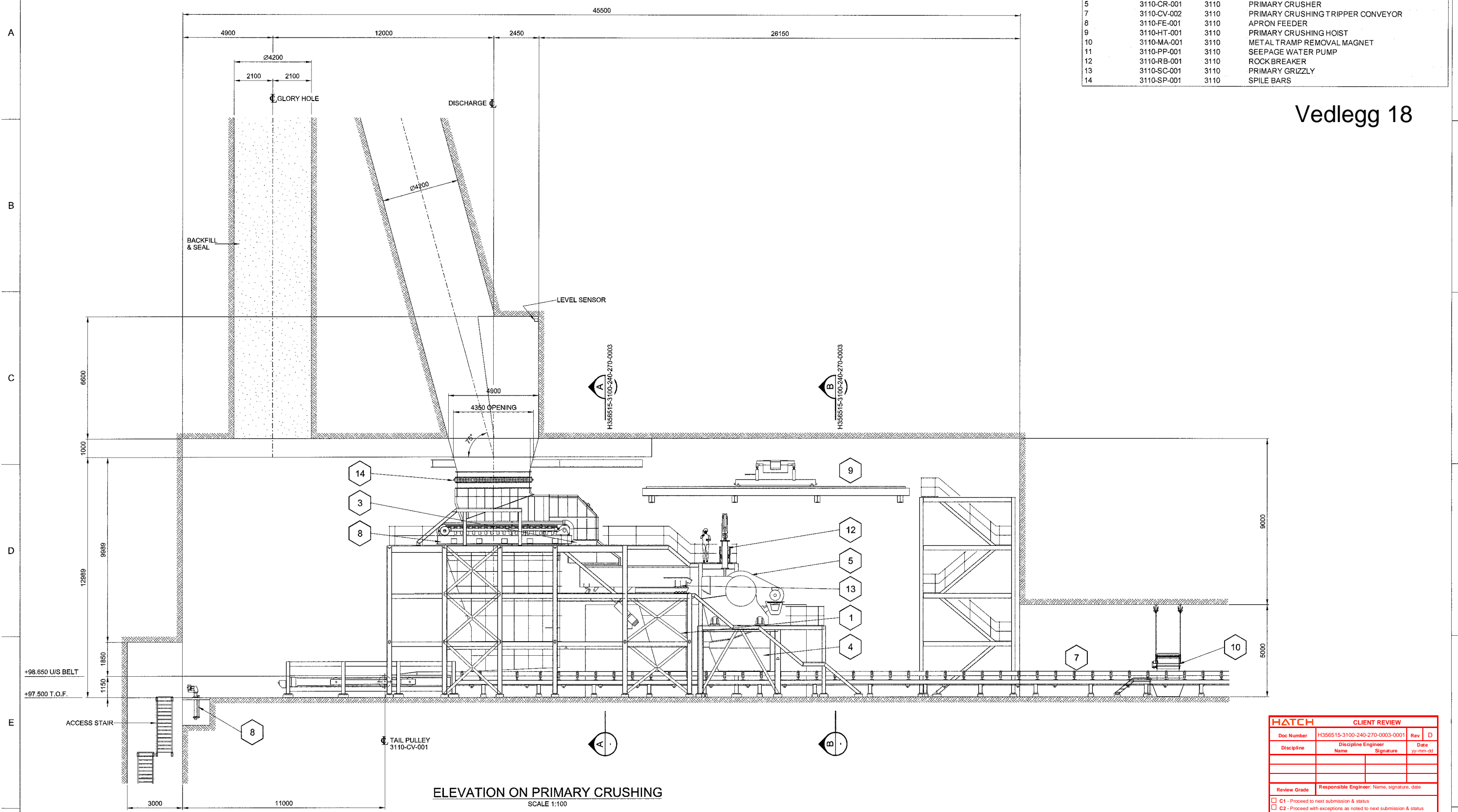
SCALE: DWG. No. H356515-3100-240-270-0002-0001 REV C

DRAWING APPROVAL STATUS: Started

SHEET SIZE: A1

ITEM No.	TAG_NO	AREA	DESCRIPTION
1	3110-CH-001	3110	GRIZZLY O/S CHUTE
3	3110-CH-003	3110	FEEDER DISCHARGE CHUTE
4	3110-CH-004	3110	CRUSHER DISCHARGE CHUTE
5	3110-CR-001	3110	PRIMARY CRUSHER
7	3110-CV-002	3110	PRIMARY CRUSHING TRIPPER CONVEYOR
8	3110-FE-001	3110	APRON FEEDER
9	3110-HT-001	3110	PRIMARY CRUSHING HOIST
10	3110-MA-001	3110	METAL TRAMP REMOVAL MAGNET
11	3110-PP-001	3110	SEEPAGE WATER PUMP
12	3110-RB-001	3110	ROCK BREAKER
13	3110-SC-001	3110	PRIMARY GRIZZLY
14	3110-SP-001	3110	SPILE BARS

Vedlegg 18



ELEVATION ON PRIMARY CRUSHING
SCALE 1:100

HATCH		CLIENT REVIEW	
Doc Number	H356515-3100-240-270-0003-0001	Rev	D
Discipline	Discipline Engineer Name	Signature	Date yy-mm-dd
Review Grade	Responsible Engineer: Name, signature, date		
<input type="checkbox"/>	C1 - Proceed to next submission & status		
<input type="checkbox"/>	C2 - Proceed with exceptions as noted to next submission & status		
<input type="checkbox"/>	C3 - Do not proceed. Revise as noted & resubmit		

LEAD ENG. - NAME	NAME	SIGNATURE	DATE
PROJ. MGR. - NAME	REGISTRATION NUMBER	SIGNATURE	DATE
DRAWING No.	DRAWING TITLE	DATE	ORIGINAL DATE
REFERENCE DRAWINGS	APPROVED BY CLIENT	REG. PROFESSIONAL	

No.	DESCRIPTION	BY	CHK'D	DATE
D	ISSUED FOR CLIENT REVIEW	K.G.		09.01.2019
C	ISSUED FOR INTERNAL REVIEW	K.G.		14.11.2018
B	RE-ISSUED FOR INFORMATION	K.G.		12.11.2018
A	ISSUED FOR INFORMATION	K.G.		11.10.2018

HATCH		NR	NR
DRAFTSPERSON	DESIGNER	CHECKER	DESIGN COORD.
RESP. ENG.	LEAD DISC. ENG.	ENG. MANAGER	PROJ. MANAGER
NAME	SIGNATURE	DATE	

ENGEBØ RUTILE & GARNET FEASIBILITY STUDY

ORE PASS AND PRIMARY CRUSHER GENERAL ARRANGEMENT ELEVATION AND SECTIONS

SCALE 1:100 OR AS NOTED

DWG. No. H356515-3100-240-270-0003-0001

REV D

DRAWING APPROVAL STATUS: Started