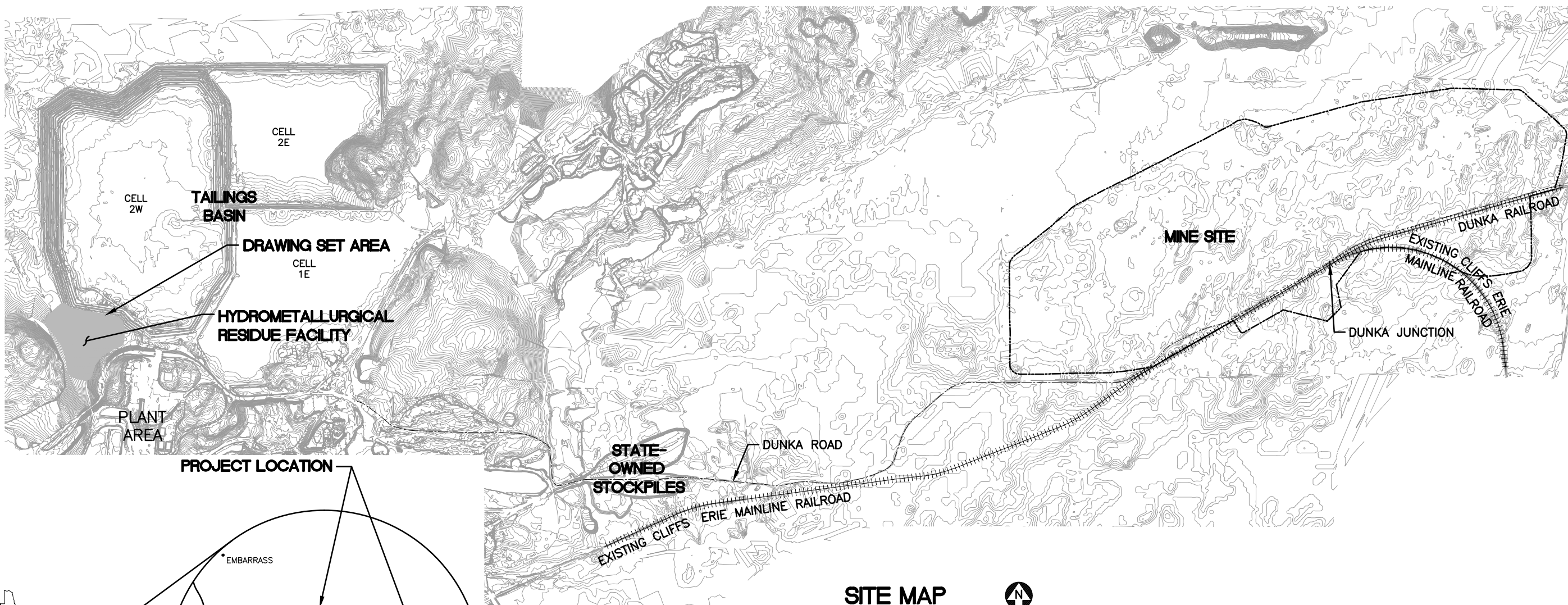


## **Appendix 7**

### **Hydrometallurgical Residue Facility Permit Application Support Drawings**

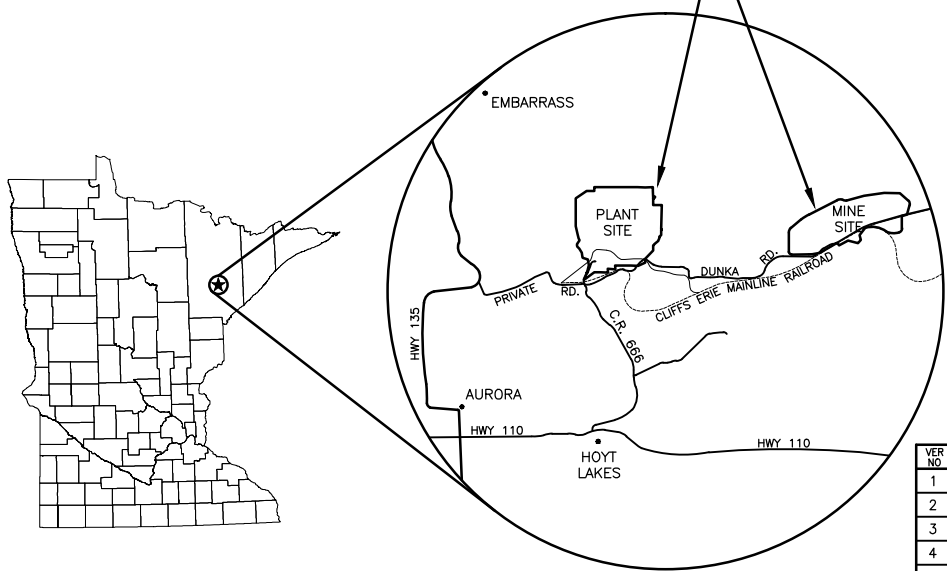
POLY MET MINING, INC. NORTHMET PROJECT  
PERMIT APPLICATION SUPPORT DRAWINGS  
HYDROMETALLURGICAL RESIDUE FACILITY  
HOYT LAKES, MINNESOTA



SITE MAP



0 2000 4000  
SCALE IN FEET



LOCATION MAP  
NOT TO SCALE



VICINITY MAP  
NOT TO SCALE

VER. NO.	DATE	DESCRIPTION	ISSUE STATUS		
			ISSUED	VERSION	DATE
1	10/14/11	RESIDUE MANAGEMENT PLAN - VERSION 1 - ATTACHMENT A	ISSUED		
2	06/29/12	RESIDUE MANAGEMENT PLAN - VERSION 1 - RESPONSE TO COMMENTS			
3	12/14/12	RESIDUE MANAGEMENT PLAN - VERSION 2 - ATTACHMENT A	FOR PERMITTING	5	5/15/17
4	05/19/15	ISSUED FOR INCLUSION IN PERMIT APPLICATIONS			
5	05/15/17	PERMIT APPLICATION UPDATES	FOR CONSTRUCTION		
			NOT APPROVED FOR CONSTRUCTION		

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PRINTED NAME THOMAS J. RADUE  
SIGNATURE Thomas J. Radue  
DATE 5/15/17 LICENSE# 20951

DRAWN: CAD  
CHECKED: TJR  
BARR PROJECT NO.: 23/69-0C29  
SCALE: AS SHOWN

PLANT DRAWING NUMBER:  
**HYDROMETALLURGICAL RESIDUE FACILITY  
LOCATION MAP AND SITE MAP**

**POLYMET MINING**  
POLY MET MINING, INC.  
NORTHMET PROJECT  
HOYT LAKES, MINNESOTA

**BARR**  
BARR ENGINEERING CO.  
4300 MARKETPOINTE DRIVE  
SUITE 200  
MINNEAPOLIS, MN.  
Ph: 1-800-632-2277

DWG. NO. **HRF-001**  
REV **A**



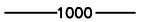

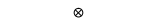
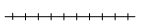




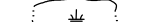
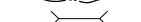
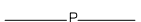
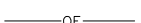


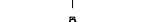




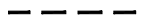
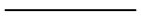







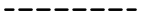


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INCHES

1

2

GENERAL LEGEND

	EXISTING CONTOUR – MAJOR
	EXISTING CONTOUR – MINOR
	PROPOSED CONTOUR – MAJOR
	PROPOSED CONTOUR – MINOR
	EXISTING POWER POLE
	EXISTING RAILROAD
	EXISTING ROAD
	EXISTING TRAIL
	EXISTING STRUCTURES
	TREE LINE
	WETLAND BOUNDARY
	EXISTING CULVERT
	EXISTING PIPELINE
	OVERHEAD ELECTRIC
	DISCHARGE POINT
	DEWATERING OUTLET POINT
	RETURN PUMP PAD
	DEWATERING PUMP
	SURFACE DRAINAGE
	DRAINAGE COLLECTION STRUCTURE AND PIPE
	DRAINAGE AREA BOUNDARY
	PROPOSED DAMS
	PROPOSED DEWATERING PIPE
	PROPOSED DISCHARGE PIPELINE
	PROPOSED RETURN PIPELINE
	PROPOSED CULVERT (NON–MINE WATER)
	PROPOSED SEEPAGE COLLECTION DRAIN
	PROPOSED STORMWATER DRAIN
	PROPOSED MANHOLE
	PROPOSED WICK DRAIN LATERAL PIPE
	PROPOSED RIP RAP
	FILL SLOPE
	CUT SLOPE

ABBREVIATIONS

APPROX.	–	APPROXIMATE
CMP	–	CORRUGATED METAL PIPE
CPEP	–	CORRUGATED POLYETHYLENE PIPE
CY	–	CUBIC YARD
DR	–	DIMENSION RATIO
DWG	–	DRAWING
EL.	–	ELEVATION
F	–	DIAMETER
FTB	–	FLOTATION TAILINGS BASIN
GCL	–	GEOSYNTHETIC CLAY LINER
HDPE	–	HIGH DENSITY POLYETHYLENE
HRF	–	HYDROMETALLURGICAL RESIDUE FACILITY
LDPE	–	LOW DENSITY POLYETHYLENE
LF	–	LINEAR FEET
LTVSMC	–	LTV STEEL MINING COMPANY
MCY	–	MILLION CUBIC YARDS
mil	–	ONE THOUSANDTH OF AN INCH
MIN	–	MINIMUM
MSL	–	MEAN SEA LEVEL
NTS	–	NOT TO SCALE
SCH.	–	SCHEDULE
SDR	–	STANDARD DIMENSION RATIO
TYP.	–	TYPICAL

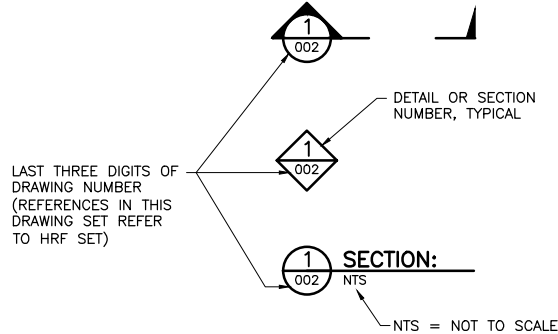
SHEET INDEX

SHEET NO. TITLE

GENERAL DRAWINGS


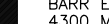
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HRF–002	LEGEND AND SHEET INDEX
HRF–003	EXISTING CONDITIONS
HRF–004	RESIDUE FACILITY LAYOUT – MINE YEAR 20
HRF–005	EMERGENCY BASIN EXCAVATIONS AND REMOVALS
HRF–006	SUBGRADE IMPROVEMENT AND SEEPAGE COLLECTION DRAIN LAYOUT
HRF–007	EMERGENCY BASIN PRELOAD
HRF–008	PHASE 1 LAYOUT
HRF–009	PHASE 2 LAYOUT
HRF–010	PHASE 3 LAYOUT
HRF–011	CROSS SECTIONS
HRF–012	CROSS SECTIONS
HRF–013	SUMP AND SIDE WALL RISER PLAN LAYOUT
HRF–014	SUMP AND SIDE WALL RISER SECTIONS
HRF–015	SUMP AND PUMP DETAILS
HRF–016	TYPICAL SECTIONS AND DETAILS
HRF–017	PIPING PLAN AND PROFILE
HRF–018	PIPING DETAILS
HRF–019	RETURN WATER PUMP RAFT
HRF–020	CLOSURE PREPARATION PLAN
HRF–021	TEMPORARY COVER AND FINAL COVER GRADING
HRF–022	FINAL CLOSURE GRADING AND DRAINAGE
HRF–023	CLOSURE SECTIONS AND DETAILS
HRF–024	GEOTECHNICAL INSTRUMENTATION DETAILS

DRAWING NUMBERING



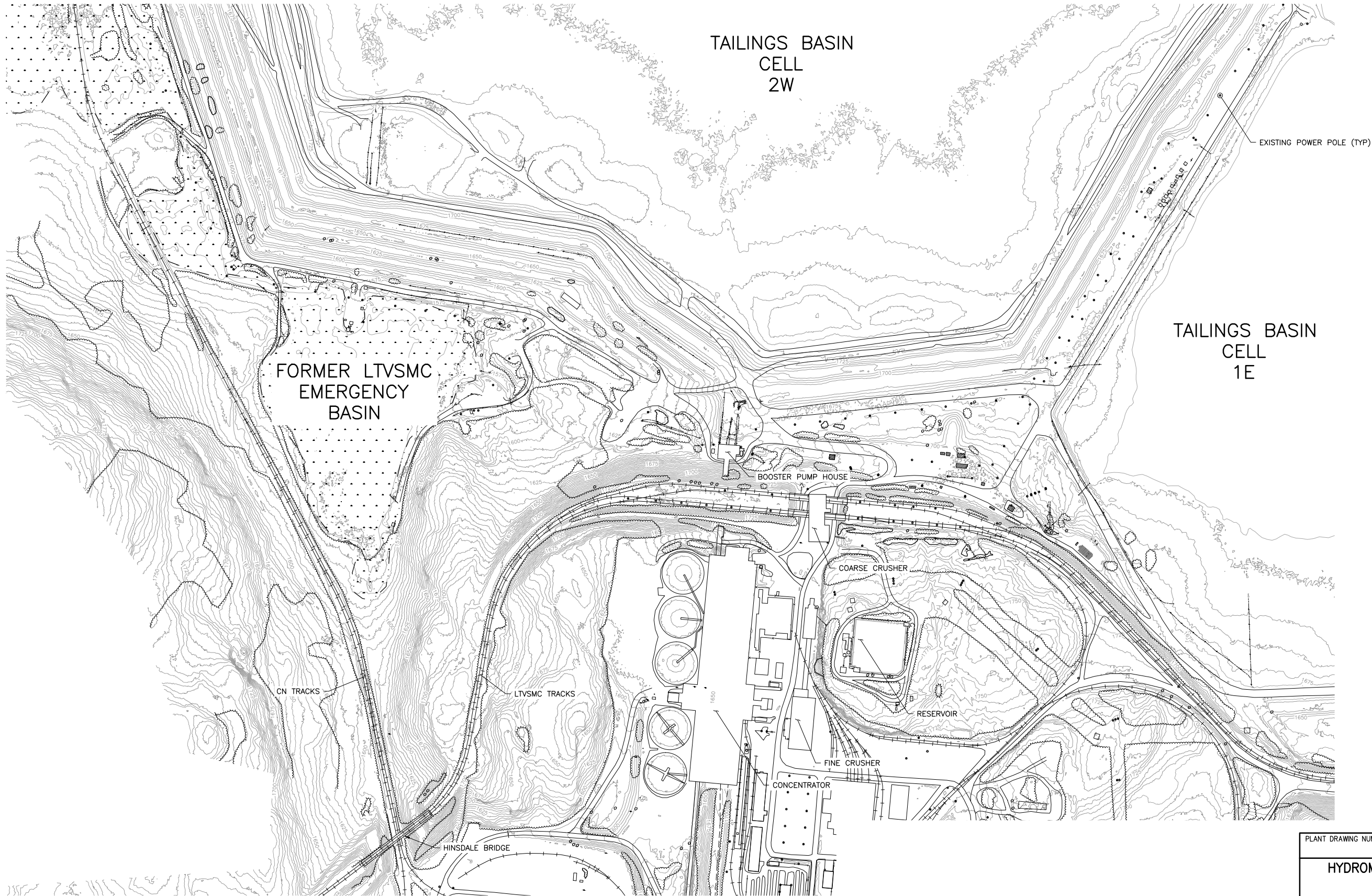
NOTES

- COORDINATE SYSTEM IS MINNESOTA STATE PLANE NORTH ZONE, NAD83.
- ELEVATIONS ARE MEAN SEA LEVEL (MSL), NAVD88.
- EXISTING TOPOGRAPHIC INFORMATION SHOWN ON THE DRAWINGS WAS PREPARED BY AEROMETRIC, INC. FROM LIDAR DATA COLLECTED ON MARCH 17, 2010.

VER NO	DATE	DESCRIPTION	ISSUE STATUS			I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.  PRINTED NAME <u>THOMAS J. RADUE</u> SIGNATURE <u>Thomas J. Radue</u> DATE <u>5/15/17</u> LICENSE# <u>20951</u>	DRAWN:  CAD	POLY MET MINING, INC. NORTHMET PROJECT HOYT LAKES, MINNESOTA			
1	10/14/11	RESIDUE MANAGEMENT PLAN – VERSION 1 – ATTACHMENT A	ISSUED	VERSION	DATE			CHECKED:  TJR			BARR ENGINEERING CO. 4300 MARKETPOINTE DRIVE SUITE 200 MINNEAPOLIS, MN. Ph: 1–800–632–2277
2	06/29/12	RESIDUE MANAGEMENT PLAN – VERSION 1 – RESPONSE TO COMMENTS	FOR PERMITTING	5	5/15/17						
3	12/14/12	RESIDUE MANAGEMENT PLAN – VERSION 2 – ATTACHMENT A	FOR CONSTRUCTION			SCALE:  AS SHOWN	DWG. NO.  HRF–002	REV  A			
4	05/19/15	ISSUED FOR INCLUSION IN PERMIT APPLICATIONS									
5	05/15/17	PERMIT APPLICATION UPDATES	NOT APPROVED FOR CONSTRUCTION.								

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1 PLAN: EXISTING CONDITIONS  
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SCALE IN FEET





VER NO	DATE	DESCRIPTION	ISSUE STATUS		
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2	06/29/12	RESIDUE MANAGEMENT PLAN – VERSION 1 – RESPONSE TO COMMENTS			
3	12/14/12	RESIDUE MANAGEMENT PLAN – VERSION 2 – ATTACHMENT A			
4	05/19/15	ISSUED FOR INCLUSION IN PERMIT APPLICATIONS	FOR PERMITTING	5	5/15/17
5	05/15/17	PERMIT APPLICATION UPDATES			
			FOR CONSTRUCTION		
			NOT APPROVED FOR CONSTRUCTION.		

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SIGNATURE Thomas J. Radue  
DATE 5/15/17 LICENSE# 20951

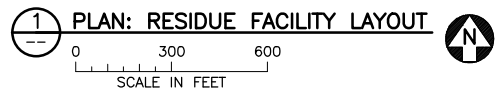
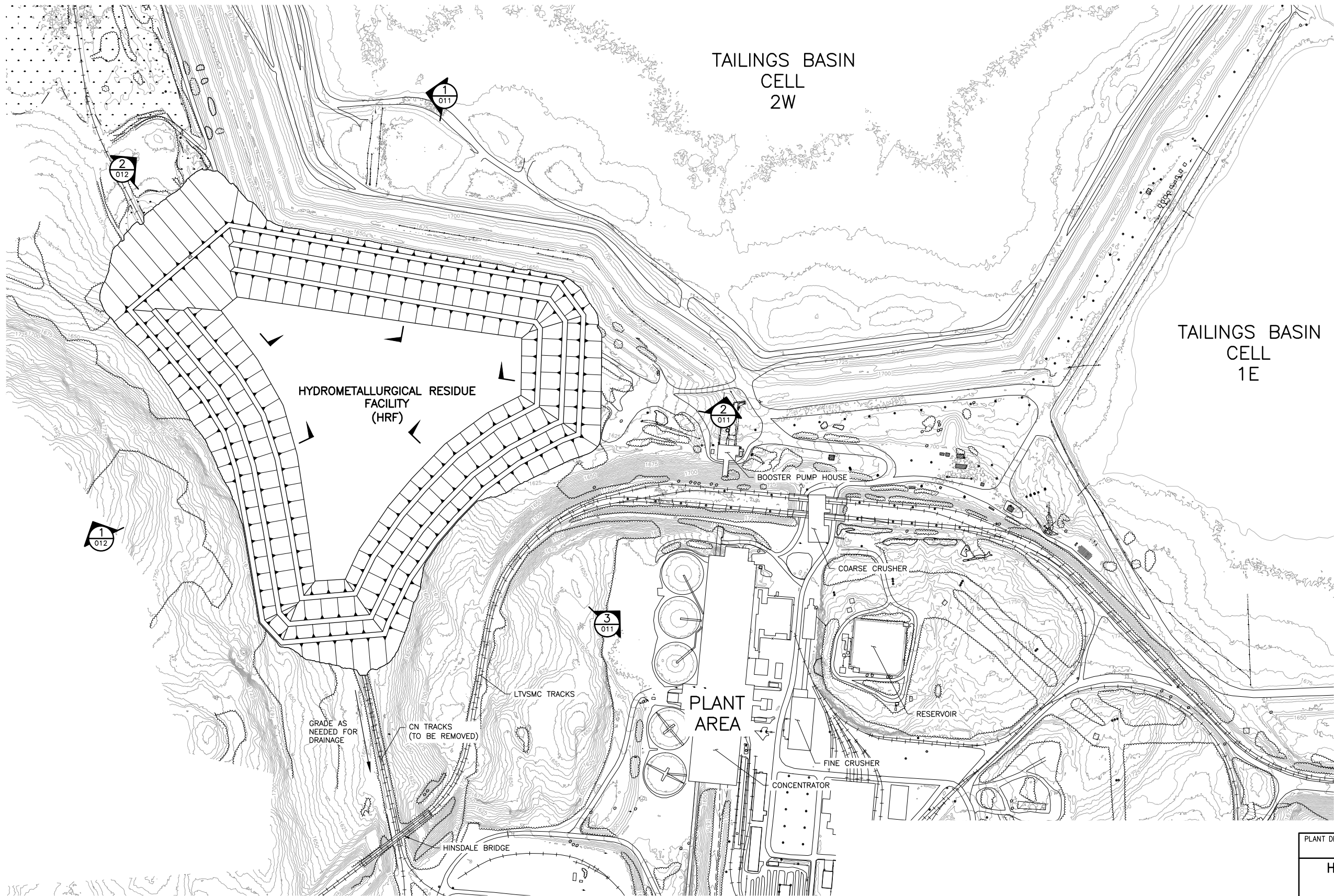
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BARR PROJECT NO.: 23/69-0C29  
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	POLY MET MINING, INC. NORTHMET PROJECT HOYT LAKES, MINNESOTA
	BARR ENGINEERING CO. 4300 MARKETPOINTE DRIVE SUITE 200 MINNEAPOLIS, MN. Ph: 1-800-632-2277
DWG. NO. HRF-003	REV A



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2





VER NO	DATE	DESCRIPTION	ISSUE STATUS		
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2	06/29/12	RESIDUE MANAGEMENT PLAN - VERSION 1 - RESPONSE TO COMMENTS			
3	12/14/12	RESIDUE MANAGEMENT PLAN - VERSION 2 - ATTACHMENT A			
4	05/19/15	ISSUED FOR INCLUSION IN PERMIT APPLICATIONS	FOR PERMITTING	5	5/15/17
5	05/15/17	PERMIT APPLICATION UPDATES			
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SIGNATURE Thomas J. Radue  
DATE 5/15/17 LICENSE# 20951

DRAWN: CAD  
CHECKED: TJR  
BARR PROJECT NO.: 23/69-0C29  
SCALE: AS SHOWN

PLANT DRAWING NUMBER:	
HYDROMETALLURGICAL RESIDUE FACILITY RESIDUE FACILITY LAYOUT MINE YEAR 20	
	POLY MET MINING, INC. NORTHMET PROJECT HOYT LAKES, MINNESOTA
	BARR ENGINEERING CO. 4300 MARKETPOINTE DRIVE SUITE 200 MINNEAPOLIS, MN. Ph: 1-800-632-2277
DWG. NO. HRF-004	REV A



**NOTES:**  
1. APPROXIMATE SOIL AND ROCK REMOVAL VOLUME = 329,000 CY

**1 PLAN: EMERGENCY BASIN REMOVALS**  
0 200 400  
SCALE IN FEET



VER NO	DATE	DESCRIPTION	ISSUE STATUS		
			ISSUED	VERSION	DATE
1	10/14/11	RESIDUE MANAGEMENT PLAN – VERSION 1 – ATTACHMENT A	FOR PERMITTING	5	5/15/17
2	06/29/12	RESIDUE MANAGEMENT PLAN – VERSION 1 – RESPONSE TO COMMENTS			
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5	05/15/17	PERMIT APPLICATION UPDATES			
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SIGNATURE *Thomas J. Radue*  
DATE 5/15/17 LICENSE# 20951


DRAWN: CAD  
CHECKED: TJR  
BARR PROJECT NO.: 23/69-0C29  
SCALE: AS SHOWN

PLANT DRAWING NUMBER:

HYDROMETALLURGICAL RESIDUE FACILITY  
EMERGENCY BASIN EXCAVATIONS  
AND REMOVALS

**POLYMET MINING**

**POLY MET MINING, INC.**  
NORTHMET PROJECT  
HOYT LAKES, MINNESOTA

**BARR**

BARR ENGINEERING CO.  
4300 MARKETPOINTE DRIVE  
SUITE 200  
MINNEAPOLIS, MN.  
Ph: 1-800-632-2277

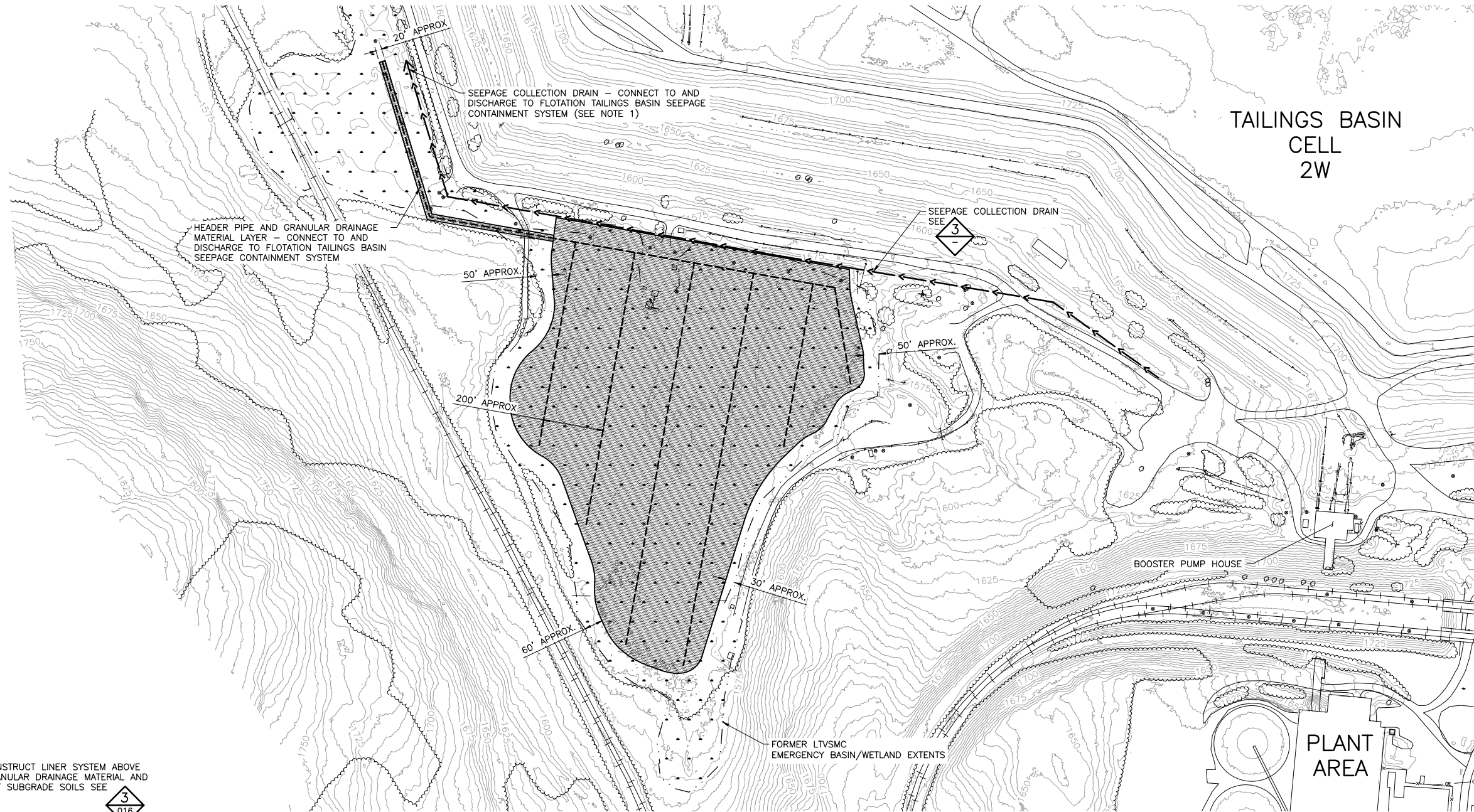
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REV **A**



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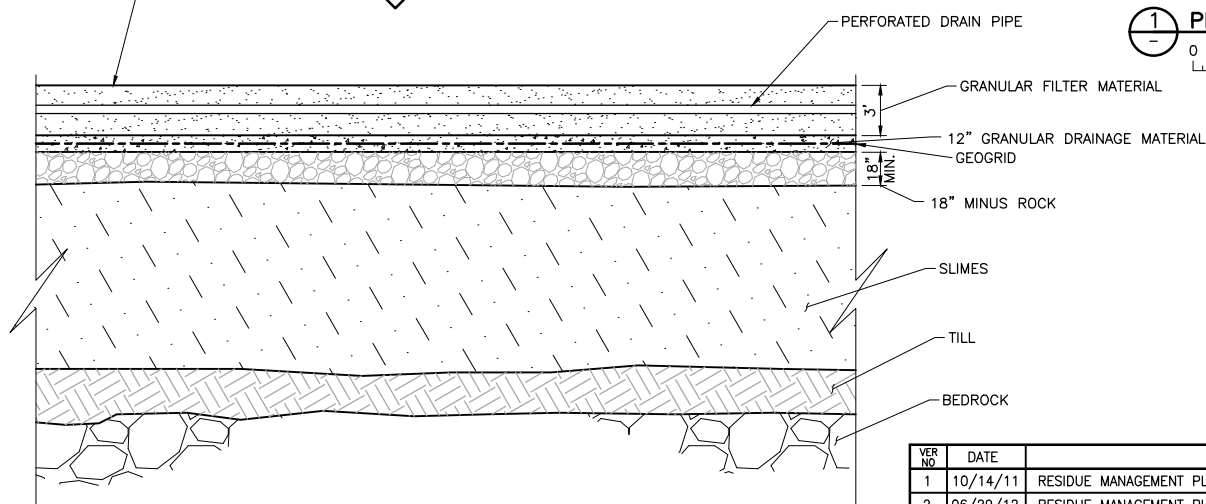


1 PLAN: SEEPAGE COLLECTION LAYOUT

0 200 400  
SCALE IN FEET

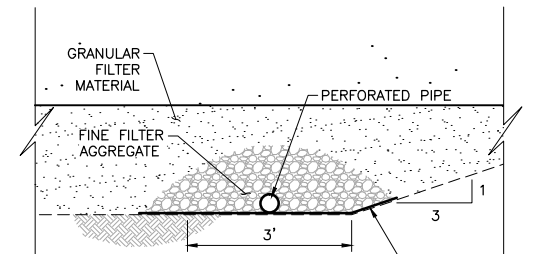


CONSTRUCT LINER SYSTEM ABOVE GRANULAR DRAINAGE MATERIAL AND HRF SUBGRADE SOILS SEE 3 016



2 DETAIL: DRAIN INSTALLATION

NTS



NOTE:

PERFORM MINIMAL TO NO EXCAVATION OF EXISTING SOILS AT TOE OF SLOPE.

3 DETAIL: SEEPAGE COLLECTION DRAIN

NTS

NOTES:

1. SEE FLOTATION TAILINGS BASIN SEEPAGE CONTAINMENT SYSTEM DRAWINGS FOR CONTAINMENT SYSTEM LOCATION AND DESIGN.

PLANT DRAWING NUMBER:

HYDROMETALLURGICAL RESIDUE FACILITY  
SUBGRADE IMPROVEMENT AND SEEPAGE  
COLLECTION DRAIN LAYOUT



POLY MET MINING, INC.  
NORTHMET PROJECT  
HOYT LAKES, MINNESOTA



BARR ENGINEERING CO.  
4300 MARKETPOINTE DRIVE  
SUITE 200  
MINNEAPOLIS, MN.  
Ph: 1-800-632-2277

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PRINTED NAME THOMAS J. RADUE  
SIGNATURE *Thomas J. Radue*  
DATE 5/15/17 LICENSE# 20951

DRAWN: CAD

CHECKED: TJR

BARR PROJECT NO.: 23/69-0C29

SCALE: AS SHOWN

DWG. NO.

HRF-006

REV  
A

VER NO	DATE	DESCRIPTION	ISSUE STATUS		
			ISSUED	VERSION	DATE
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2	06/29/12	RESIDUE MANAGEMENT PLAN - VERSION 1 - RESPONSE TO COMMENTS			
3	12/14/12	RESIDUE MANAGEMENT PLAN - VERSION 2 - ATTACHMENT A			
4	05/19/15	ISSUED FOR INCLUSION IN PERMIT APPLICATIONS	FOR PERMITTING	5	5/15/17
5	05/15/17	PERMIT APPLICATION UPDATES	FOR CONSTRUCTION		
			NOT APPROVED FOR CONSTRUCTION.		

CADD USER: Cristian A. Diaz FILE: K:\DESIGN\23690C29.10\PERMIT\_NMT-01-CS-007.DWG PLOT SCALE: 1:2 PLOT DATE: 5/15/2017 6:37 PM

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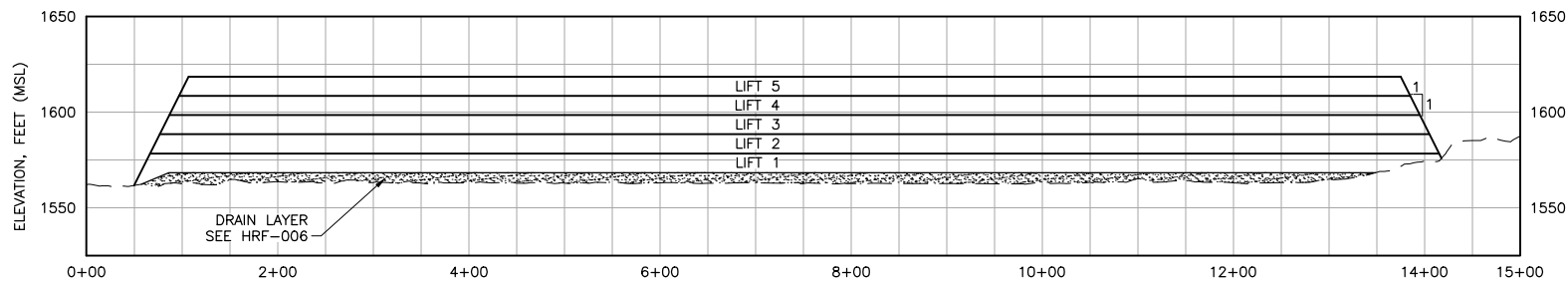
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INCHES



1 PLAN: PRELOAD LAYOUT

0 200 400  
SCALE IN FEET



2 SECTION: PRELOAD LIFTS



0 100 200  
HORIZONTAL SCALE IN FEET

VER NO	DATE	DESCRIPTION	ISSUE STATUS		
1	10/14/11	RESIDUE MANAGEMENT PLAN – VERSION 1 – ATTACHMENT A	ISSUED	VERSION	DATE
2	06/29/12	RESIDUE MANAGEMENT PLAN – VERSION 1 – RESPONSE TO COMMENTS	FOR PERMITTING	5	5/15/17
3	12/14/12	RESIDUE MANAGEMENT PLAN – VERSION 2 – ATTACHMENT A			
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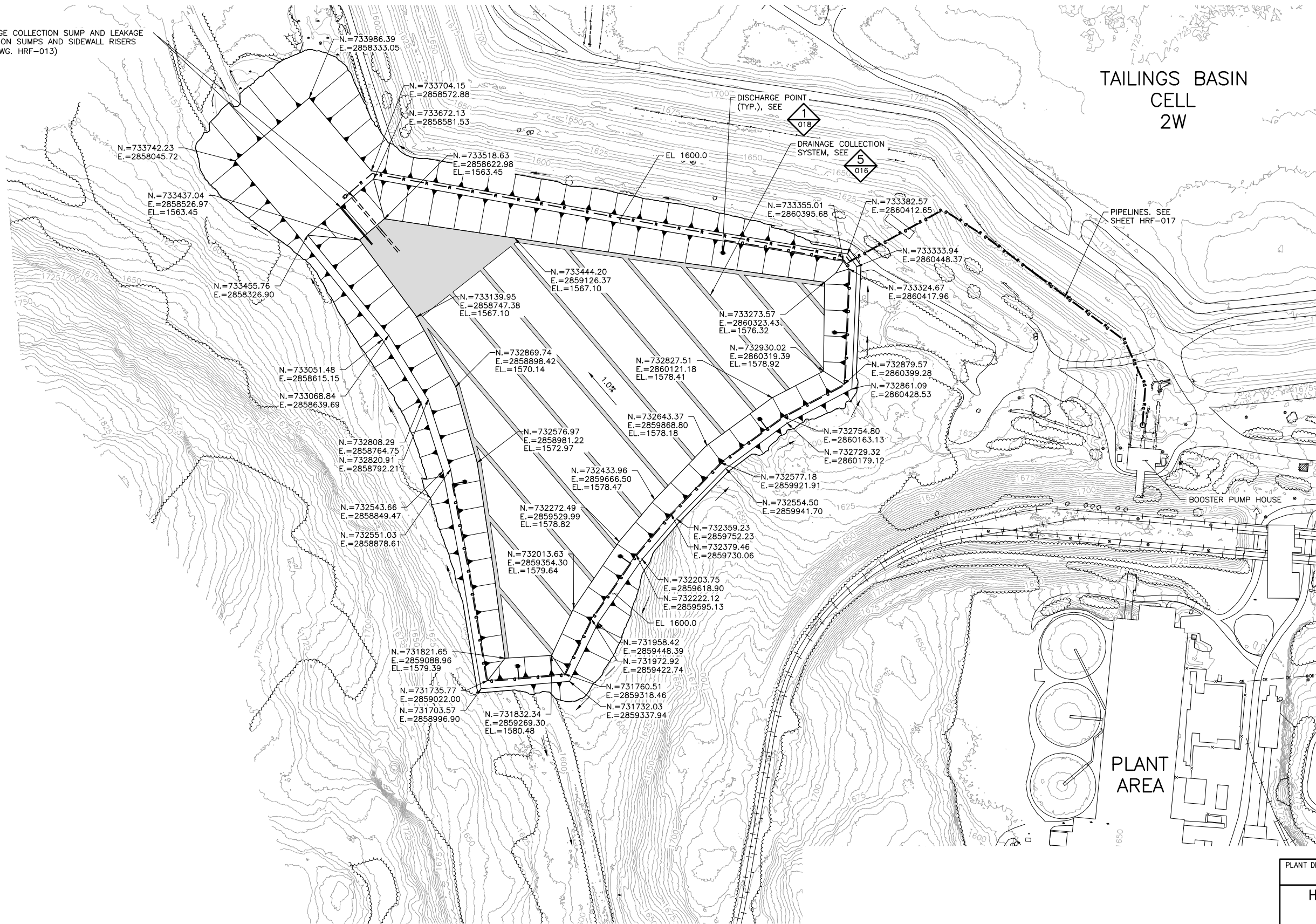
PRINTED NAME THOMAS J. RADUE  
SIGNATURE *Thomas J. Radue*  
DATE 5/15/17 LICENSE# 20951

DRAWN: CAD  
CHECKED: TJR  
BARR PROJECT NO.: 23/69-0C29  
SCALE: AS SHOWN

PLANT DRAWING NUMBER:	
HYDROMETALLURGICAL RESIDUE FACILITY EMERGENCY BASIN PRELOAD	
	POLY MET MINING, INC. NORTHMET PROJECT HOYT LAKES, MINNESOTA
	BARR ENGINEERING CO. 4300 MARKETPOINTE DRIVE SUITE 200 MINNEAPOLIS, MN. Ph: 1-800-632-2277
DWG. NO. HRF-007	REV A

DRAINAGE COLLECTION SUMP AND LEAKAGE  
DETECTION SUMPS AND SIDEWALL RISERS  
(SEE DWG. HRF-013)

## TAILINGS BASIN CELL 2W



### NOTES:

1. UPPER LINER SURFACE SHOWN.
2. DRAINAGE COLLECTION GEOCOMPOSITE SHOWN (SHADED AREA).
3. PLACE HRF LINER OVER BASE AND INTERIOR SLOPES OF CELL. SEE DWG. HRF-016.

1 PLAN: LIFT 1 LAYOUT  
0 200 400  
SCALE IN FEET



VER NO.	DATE	DESCRIPTION	ISSUE STATUS		
			ISSUED	VERSION	DATE
1	10/14/11	RESIDUE MANAGEMENT PLAN - VERSION 1 - ATTACHMENT A			
2	06/29/12	RESIDUE MANAGEMENT PLAN - VERSION 1 - RESPONSE TO COMMENTS			
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5	05/15/17	PERMIT APPLICATION UPDATES			
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UNDER THE LAWS OF THE STATE OF  
MINNESOTA.

PRINTED NAME THOMAS J. RADUE  
SIGNATURE *Thomas J. Radue*  
DATE 5/15/17 LICENSE# 20951

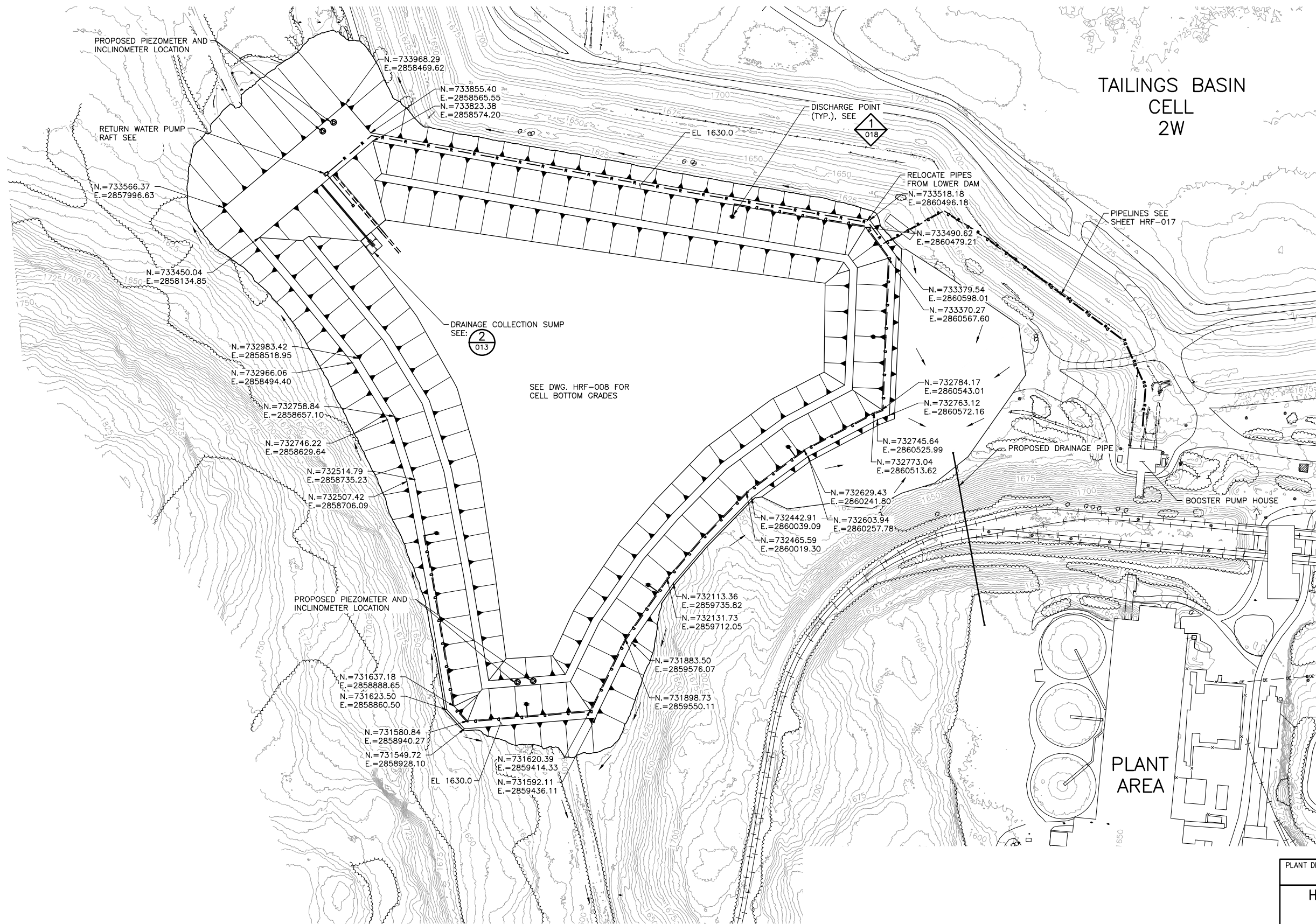
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BARR PROJECT NO.: 23/69-0C29  
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PLANT DRAWING NUMBER:	
HYDROMETALLURGICAL RESIDUE FACILITY LIFT 1 LAYOUT	
	POLY MET MINING, INC. NORTHMET PROJECT HOYT LAKES, MINNESOTA
	BARR ENGINEERING CO. 4300 MARKETPOINTE DRIVE SUITE 200 MINNEAPOLIS, MN. Ph: 1-800-632-2277
DWG. NO. HRF-008	REV A



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2  
1  
INCHES



NOTES:

1. LIFT 2 CONSTRUCTION YEAR TO BE BASED ON HRF CAPACITY CONSUMPTION RATE.
2. UPPER LINER SURFACE SHOWN.
3. FOR LEAKAGE DETECTION SUMP SEE
4. PLACE HRF LINER OVER BASE AND INTERIOR SLOPES OF CELL. SEE DWG. HRF-016.

1 PLAN: LIFT 2 LAYOUT  
0 200 400  
SCALE IN FEET





VER NO	DATE	DESCRIPTION	ISSUE STATUS		
			ISSUED	VERSION	DATE
1	10/14/11	RESIDUE MANAGEMENT PLAN - VERSION 1 - ATTACHMENT A			
2	06/29/12	RESIDUE MANAGEMENT PLAN - VERSION 1 - RESPONSE TO COMMENTS			
3	12/14/12	RESIDUE MANAGEMENT PLAN - VERSION 2 - ATTACHMENT A			
4	05/19/15	ISSUED FOR INCLUSION IN PERMIT APPLICATIONS	FOR PERMITTING	5	5/15/17
5	05/15/17	PERMIT APPLICATION UPDATES			
			FOR CONSTRUCTION		
			NOT APPROVED FOR CONSTRUCTION.		

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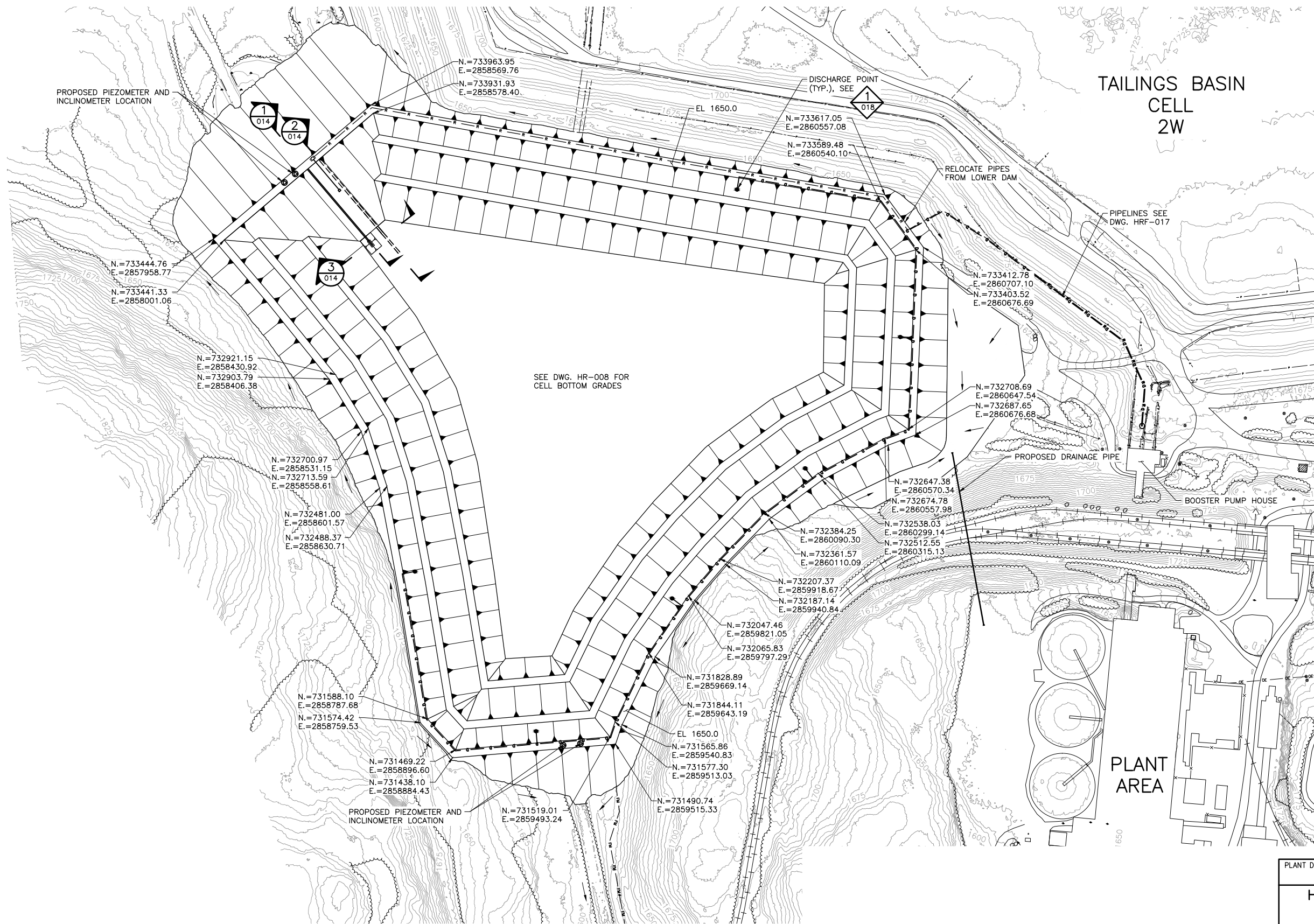
PRINTED NAME THOMAS J. RADUE  
SIGNATURE *Thomas J. Radue*  
DATE 5/15/17 LICENSE# 20951

DRAWN: CAD  
CHECKED: TJR  
BARR PROJECT NO.: 23/69-0C29  
SCALE: AS SHOWN

PLANT DRAWING NUMBER:	
HYDROMETALLURGICAL RESIDUE FACILITY LIFT 2 LAYOUT	
	POLY MET MINING, INC. NORTHMET PROJECT HOYT LAKES, MINNESOTA
	BARR ENGINEERING CO. 4300 MARKETPOINTE DRIVE SUITE 200 MINNEAPOLIS, MN. Ph: 1-800-632-2277
DWG. NO. HRF-009	REV A

CADD USER: Cristian A. Diaz FILE: K:\DESIGN\23690C29.10\PERMIT\_NMT-01-CS-010.DWG PLOT SCALE: 1:2 PLOT DATE: 5/15/2017 6:45 PM

INCHES  
1  
2



**NOTES:**

1. LIFT 3 CONSTRUCTION YEAR TO BE BASED ON HRF CAPACITY CONSUMPTION RATE.
2. UPPER LINER SURFACE SHOWN.
3. PLACE HRF LINER OVER BASE AND INTERIOR SLOPES OF CELL. SEE DWG. HRF-016.

1 PLAN: LIFT 3 LAYOUT  
0 200 400  
SCALE IN FEET





VER NO	DATE	DESCRIPTION	ISSUE STATUS		
			ISSUED	VERSION	DATE
1	10/14/11	RESIDUE MANAGEMENT PLAN - VERSION 1 - ATTACHMENT A	ISSUED		
2	06/29/12	RESIDUE MANAGEMENT PLAN - VERSION 1 - RESPONSE TO COMMENTS			
3	12/14/12	RESIDUE MANAGEMENT PLAN - VERSION 2 - ATTACHMENT A			
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5	05/15/17	PERMIT APPLICATION UPDATES			
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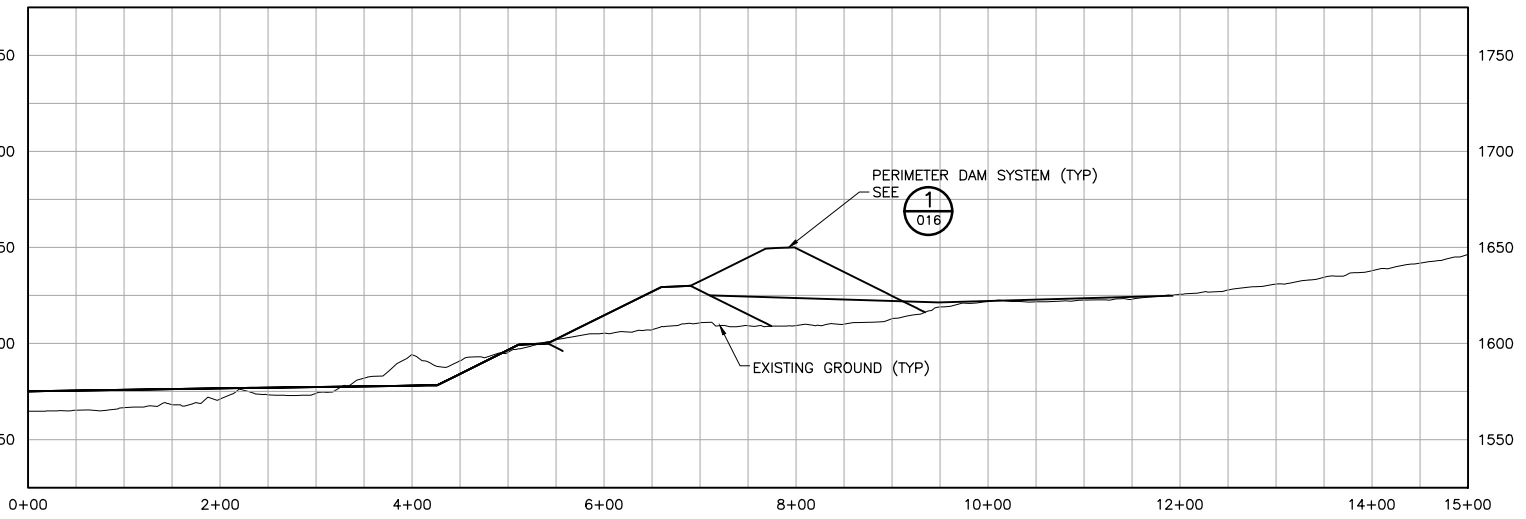
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CHECKED: TJR  
BARR PROJECT NO.: 23/69-0C29  
SCALE: AS SHOWN

PLANT DRAWING NUMBER:	
HYDROMETALLURGICAL RESIDUE FACILITY LIFT 3 LAYOUT	
	POLY MET MINING, INC. NORTHMET PROJECT HOYT LAKES, MINNESOTA
	BARR ENGINEERING CO. 4300 MARKETPOINTE DRIVE SUITE 200 MINNEAPOLIS, MN. Ph: 1-800-632-2277
DWG. NO. HRF-010	REV A

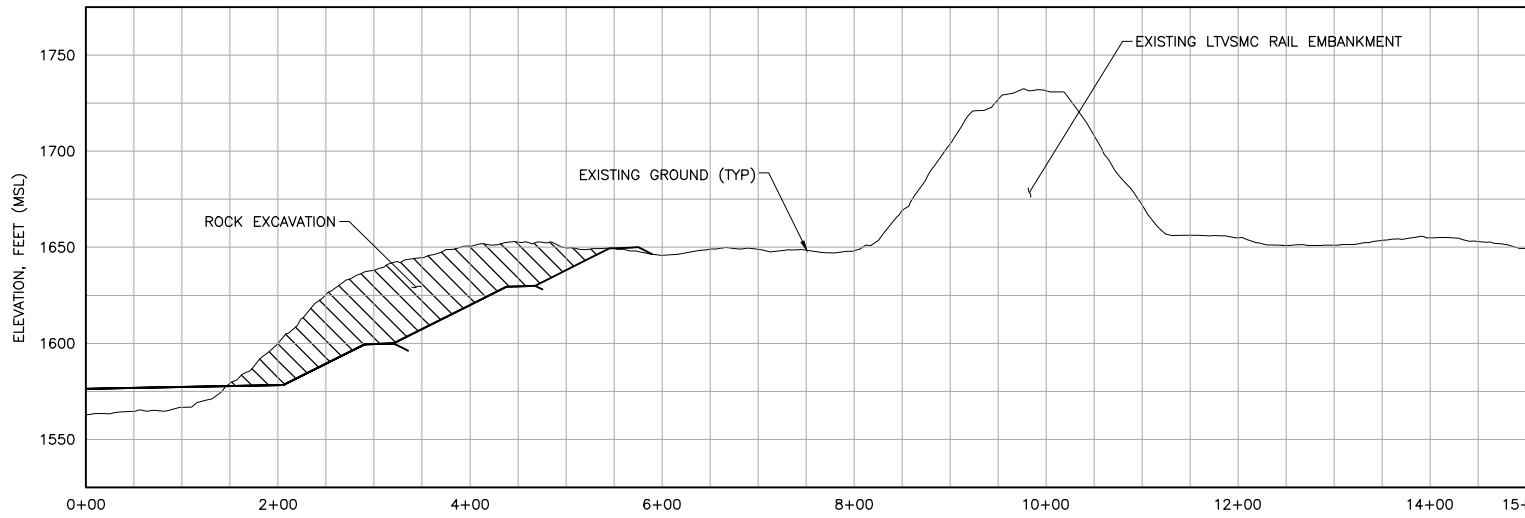
CADD USER: Cristian A. Diaz FILE: K:\DESIGN\2369029.10\PERMIT\_NMT-01-CS-011.DWG PLOT SCALE: 1:2 PLOT DATE: 5/15/2017 6:47 PM



1 SECTION: HRF NORTH DAM  
0 100 200  
HORIZONTAL SCALE IN FEET


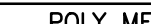


2 SECTION: HRF EAST DAM  
0 100 200  
HORIZONTAL SCALE IN FEET



3 SECTION: HRF SOUTH EAST DAM  
0 100 200  
HORIZONTAL SCALE IN FEET

NOTES:  
1. SEE DWG. HRF-004 FOR SECTION LOCATIONS.

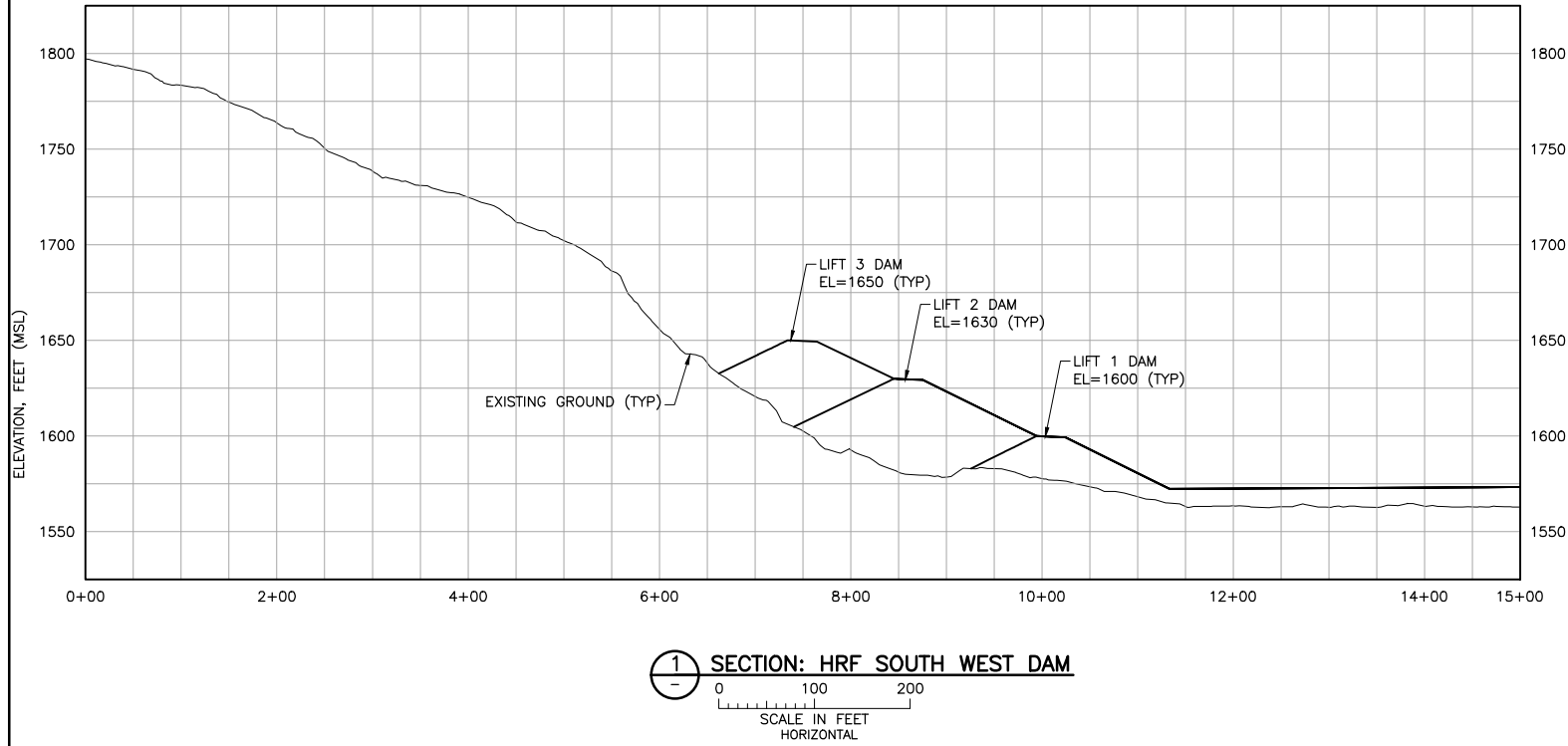
VER NO		DATE	DESCRIPTION	ISSUE STATUS			<div>I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.</div> <div>PRINTED NAME <u>THOMAS J. RADUE</u></div> <div>SIGNATURE <u>Thomas J. Radue</u></div> <div>DATE <u>5/15/17</u> LICENSE# <u>20951</u></div>	<div><div><div><div>POLYMET MINING</div></div><div><div>POLY MET MINING, INC.</div><div>NORTHMET PROJECT</div><div>HOYT LAKES, MINNESOTA</div></div><div><div><div>BARR</div></div><div><div>BARR ENGINEERING CO.</div><div>4300 MARKETPOINTE DRIVE</div><div>SUITE 200</div><div>MINNEAPOLIS, MN.</div><div>Ph: 1-800-632-2277</div></div></div></div></div>			REV					
1	10/14/11		RESIDUE MANAGEMENT PLAN – VERSION 1 – ATTACHMENT A	ISSUED	VERSION	DATE					DRAWN:	CAD	DWG. NO.	HRF-011	REV	
2	06/29/12		RESIDUE MANAGEMENT PLAN – VERSION 1 – RESPONSE TO COMMENTS	FOR PERMITTING	5	5/15/17					CHECKED:	TJR	BARR PROJECT NO.: 23/69–0C29	SCALE:	AS SHOWN	A
3	12/14/12		RESIDUE MANAGEMENT PLAN – VERSION 2 – ATTACHMENT A													
4	05/19/15		ISSUED FOR INCLUSION IN PERMIT APPLICATIONS	FOR CONSTRUCTION												
5	05/15/17		PERMIT APPLICATION UPDATES													
				NOT APPROVED FOR CONSTRUCTION.												

CADD USER: Cristian A. Diaz FILE: K:\DESIGN\23690229.10\PERMIT\_NMT-01-CS-012.DWG PLOT SCALE: 1:2 PLOT DATE: 5/15/2017 6:48 PM

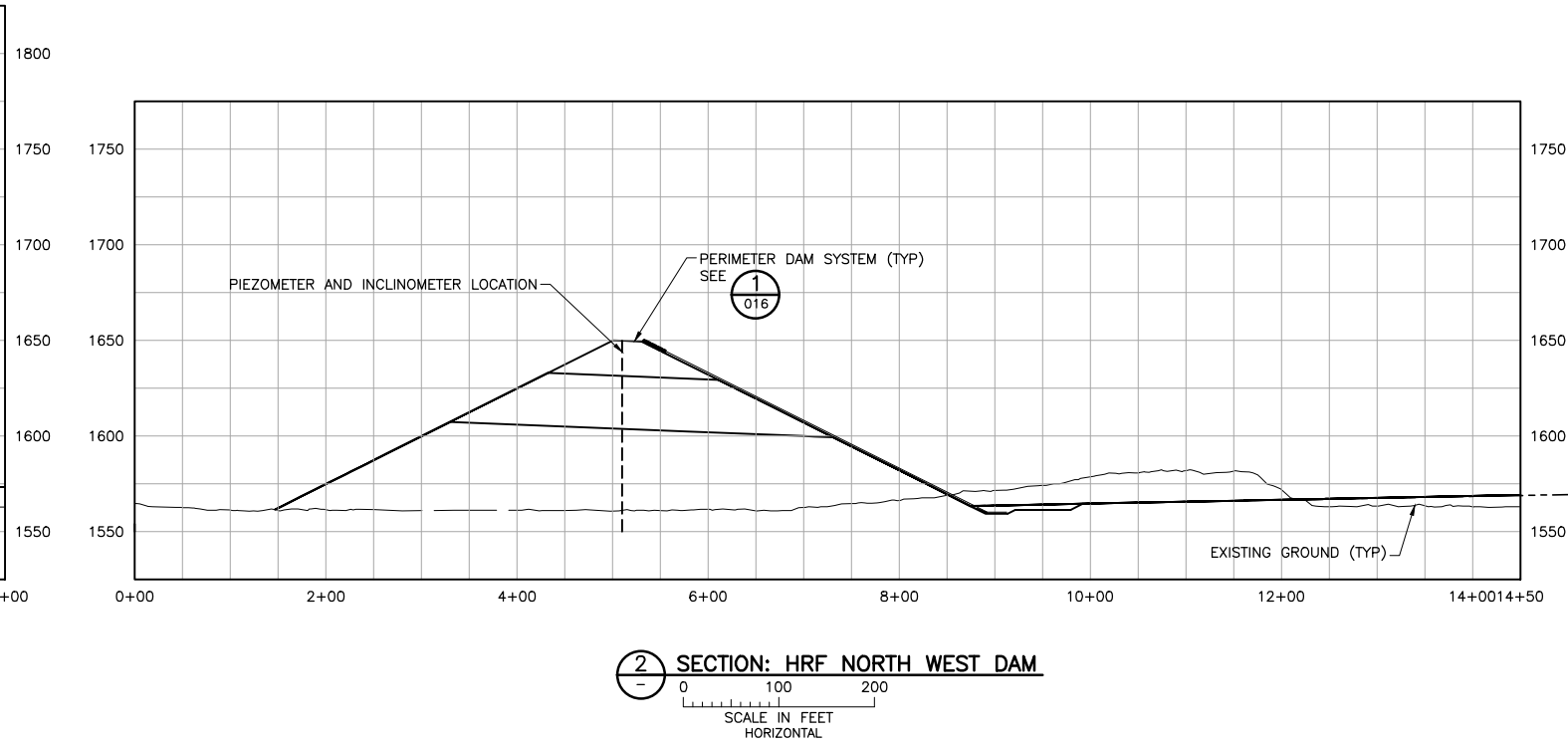
INCHES

1

2



1 SECTION: HRF SOUTH WEST DAM



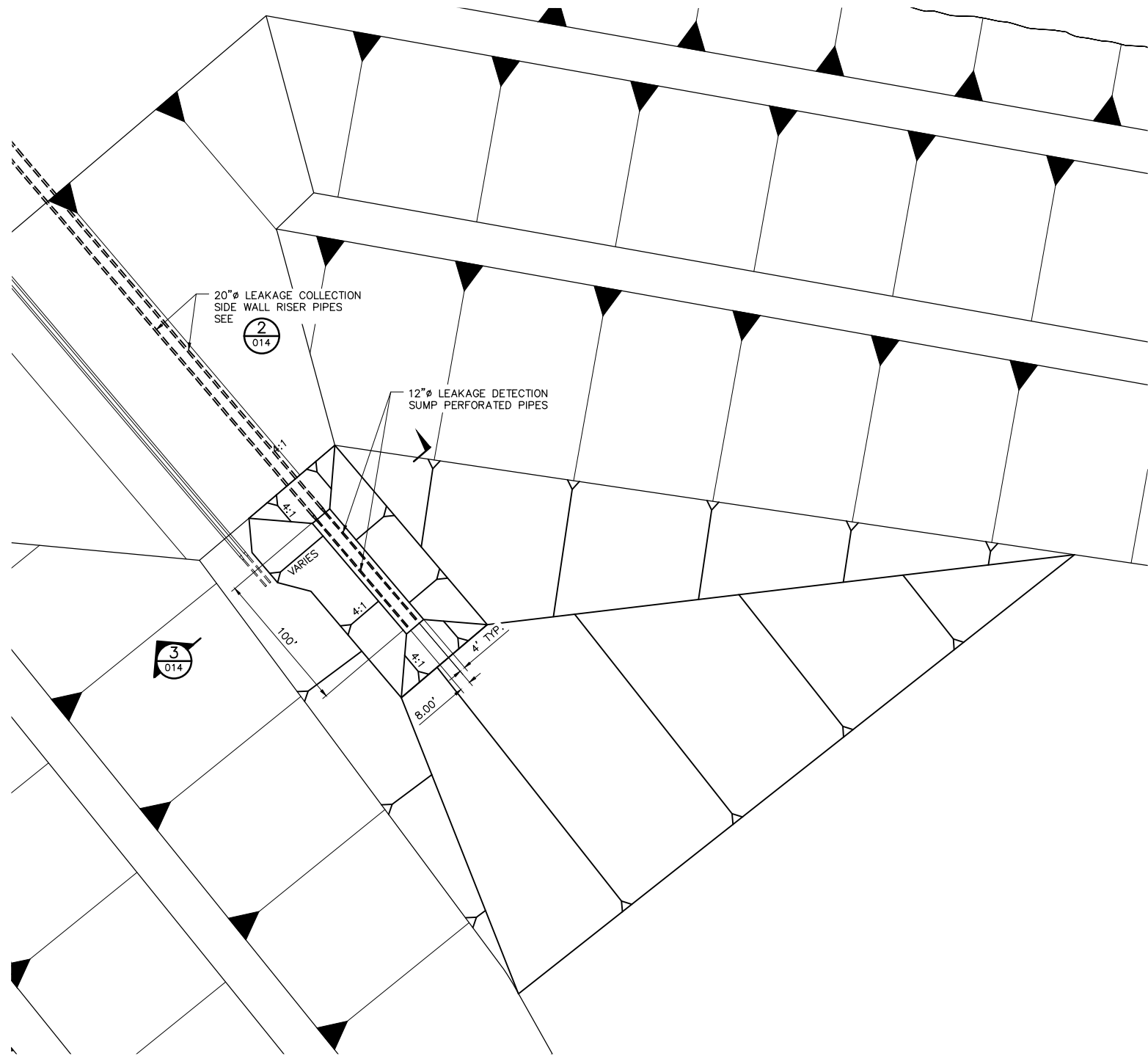
2 SECTION: HRF NORTH WEST DAM

- NOTES:
1. SEE DWG. HRF-004 FOR SECTION LOCATIONS.

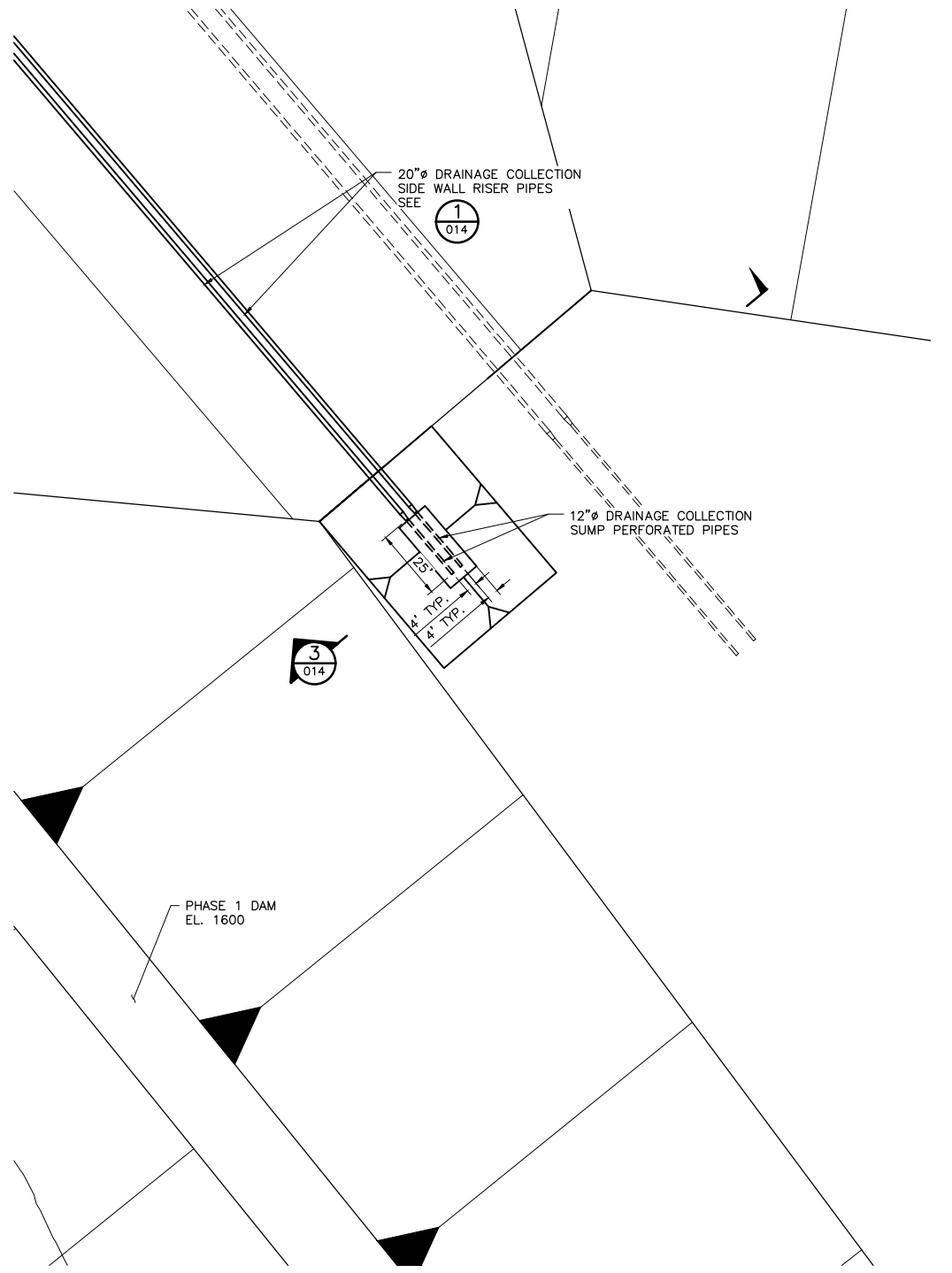
VER NO		DATE	DESCRIPTION	ISSUE STATUS			<div>I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.</div> <div>PRINTED NAME <u>THOMAS J. RADUE</u></div> <div>SIGNATURE <u>Thomas J. Radue</u></div> <div>DATE <u>5/15/17</u> LICENSE# <u>20951</u></div>	<div><div><div>POLYMET</div><div>MINING</div></div><div><div>BARR</div><div>ENGINEERING CO.</div><div>4300 MARKETPOINTE DRIVE</div><div>SUITE 200</div><div>MINNEAPOLIS, MN.</div><div>Ph: 1-800-632-2277</div></div></div>		<div>DWG. NO.</div> <div>HRF-012</div> <div>REV</div> <div>A</div>	
DRAWN:		CAD									
CHECKED:		TJR									
BARR PROJECT NO.:		23/69-0C29									
SCALE:		AS SHOWN									
DATE		5/15/17									
FOR PERMITTING		5									
FOR CONSTRUCTION											
NOT APPROVED FOR CONSTRUCTION.											

CADD USER: Cristian A. Diaz FILE: K:\DESIGN\23690029.10\PERMIT\_NMT-01-CS-013.DWG PLOT SCALE: 1:2 PLOT DATE: 5/15/2017 6:50 PM

INCHES  
1  
2



1 PLAN: LEAKAGE DETECTION SUMP AND SIDEWALL RISER



2 PLAN: DRAINAGE COLLECTION SUMP AND SIDEWALL RISER

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DATE 5/15/17 LICENSE# 20951

DRAWN: CAD  
CHECKED: TJR  
BARR PROJECT NO.: 23/69-OC29  
SCALE: AS SHOWN


PLANT DRAWING NUMBER:

HYDROMETALLURGICAL RESIDUE FACILITY  
SUMP AND SIDEWALL RISER PLAN LAYOUT



POLYMET  
MINING

POLY MET MINING, INC.  
NORTHMET PROJECT  
HOYT LAKES, MINNESOTA



BARR

BARR ENGINEERING CO.  
4300 MARKETPOINTE DRIVE  
SUITE 200  
MINNEAPOLIS, MN.  
Ph: 1-800-632-2277

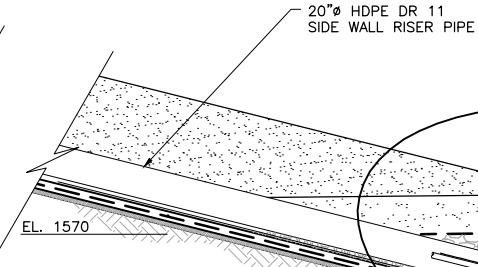
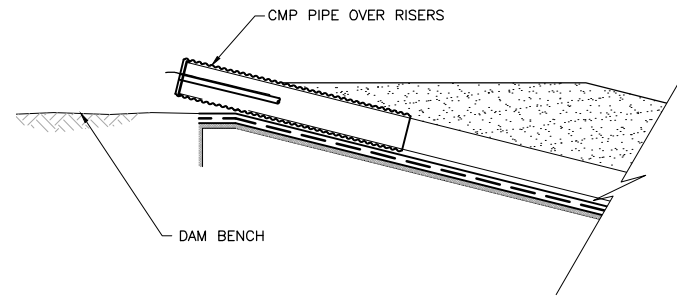
DWG. NO. HRF-013

REV A



CADD USER: Cristian A. Diaz FILE: K:\DESIGN\23690C29.10\PERMIT\_MNT-01-CS-014.DWG PLOT SCALE: 1:2 PLOT DATE: 5/15/2017 6:51 PM

2  
1  
INCHES



DRAINAGE COLLECTION SYSTEM SEE 5 016

12"Ø HDPE DR 11 PERFORATED SUMP PIPE

GRANULAR DRAINAGE MATERIAL  
2' FINE FILTER AGGREGATE COVER OVER GEOCOMPOSITE DRAINAGE NET

GEOCOMPOSITE

80 mil LDPE OR APPROVED ALTERNATE GEOMEMBRANE

GEOSYNTHETIC CLAY LINER

60 mil LDPE OR APPROVED ALTERNATE GEOMEMBRANE

PLACE GEOTEXTILE AT AREAS THAT GRANULAR DRAINAGE MATERIAL IS IN CONTACT WITH GEOMEMBRANE

12"Ø HDPE CAP

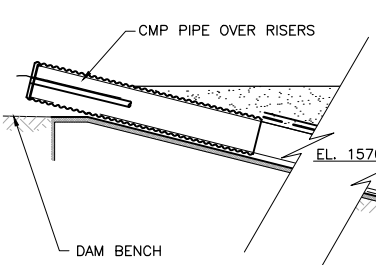
LINER SUBGRADE

4:1 SLOPE

SEE: 1 015

1 SECTION: DRAINAGE COLLECTION SUMP AND SIDE WALL RISER PIPE

0 5 10  
SCALE IN FEET



20"Ø HDPE DR 11 SIDE WALL RISER PIPE

EL. 1570

EL. 1562

12"Ø HDPE DR 11 PERFORATED SUMP PIPE

GRANULAR DRAINAGE MATERIAL

2' FINE FILTER AGGREGATE COVER OVER GEOCOMPOSITE DRAINAGE NET

GEOCOMPOSITE

80 mil LDPE OR APPROVED ALTERNATE GEOMEMBRANE

GEOSYNTHETIC CLAY LINER

60 mil LDPE OR APPROVED ALTERNATE GEOMEMBRANE

LINER SUBGRADE

4:1 SLOPE

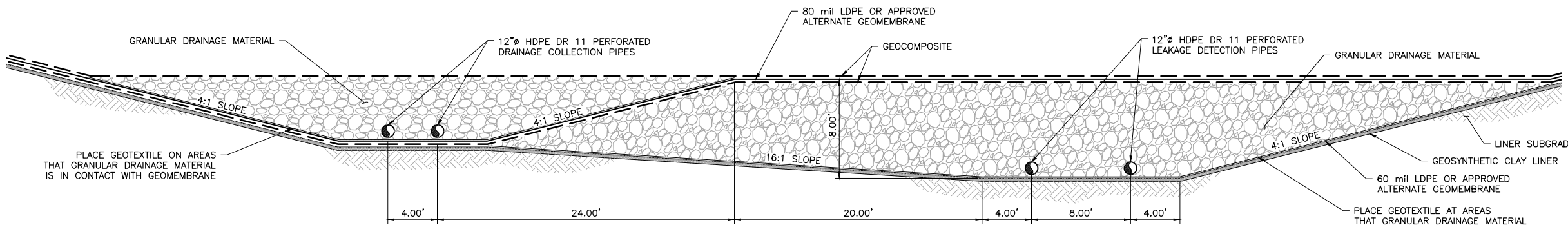
12"Ø HDPE CAP

PLACE GEOTEXTILE AT AREAS THAT GRANULAR DRAINAGE MATERIAL IS IN CONTACT WITH GEOMEMBRANE

2 SECTION: LEAKAGE DETECTION SUMP AND SIDE WALL RISER PIPE

0 5 10  
SCALE IN FEET

SEE: 2 015



3 SECTION: DRAINAGE COLLECTION AND LEAKAGE DETECTION PIPES AND SUMPS

0 5 10  
SCALE IN FEET

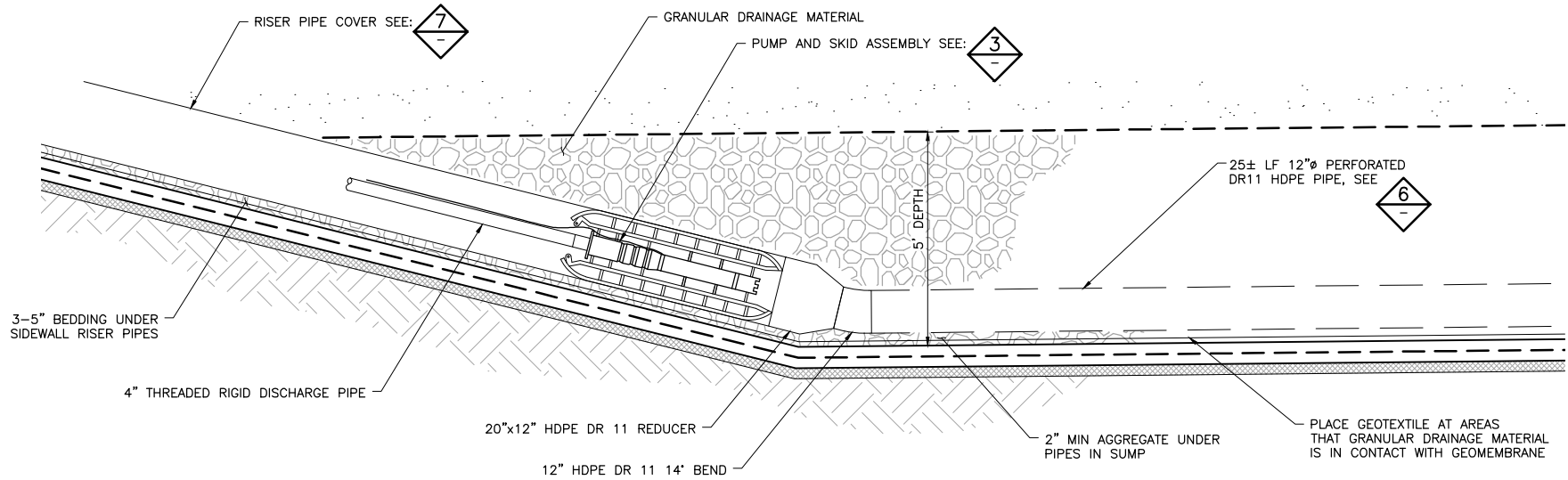
NOTES:

- SEE DWG. HRF-010 FOR SECTION LOCATIONS.
- DIFFERENCE IN GRANULAR DRAINAGE MATERIAL PATTERN SHOWN FOR VISUAL CLARITY PURPOSES ONLY. BOTH LEAKAGE DETECTION AND DRAINAGE COLLECTION AGGREGATES ARE THE SAME.
- GEOMEMBRANE TYPE AND GEOCOMPOSITE TYPE REQUIRES APPROVAL BY DESIGN ENGINEER.
- LINER SEPARATION NOT SHOWN TO SCALE FOR CLARITY.

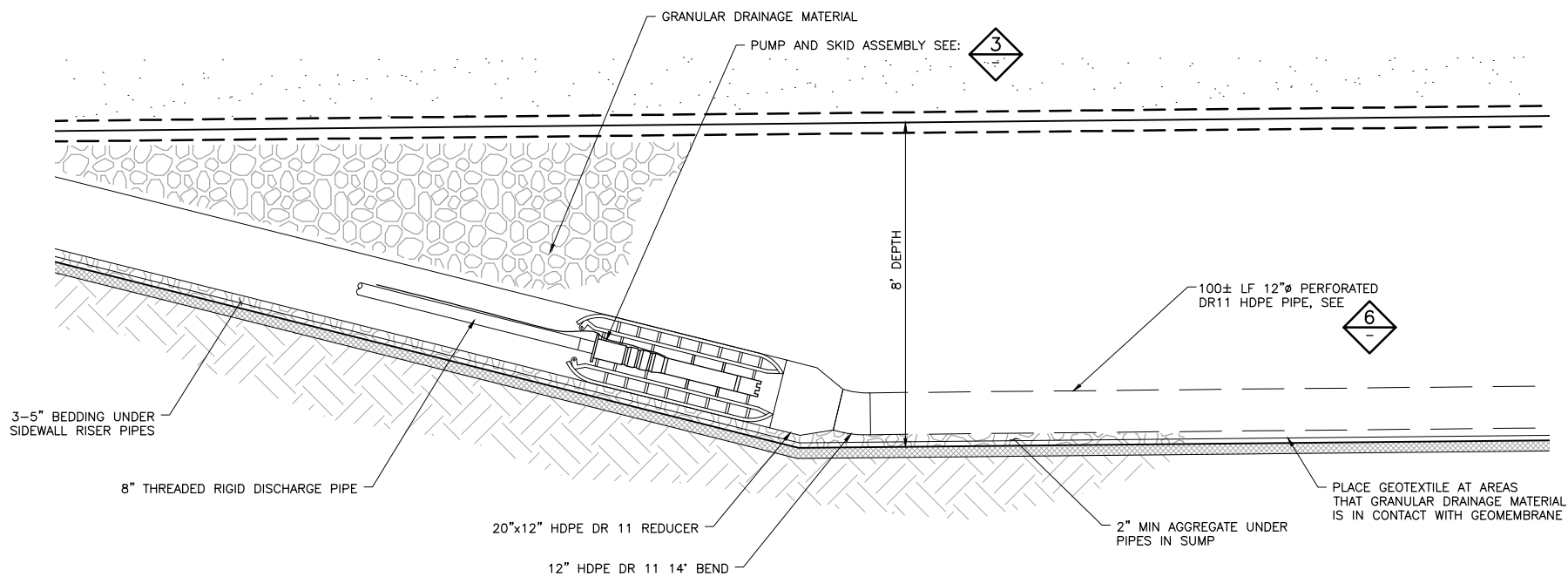
PLANT DRAWING NUMBER:	
HYDROMETALLURGICAL RESIDUE FACILITY SUMP AND SIDEWALL RISER SECTIONS	
	POLY MET MINING, INC. NORTHMET PROJECT HOYT LAKES, MINNESOTA
	BARR ENGINEERING CO. 4300 MARKETPOINTE DRIVE SUITE 200 MINNEAPOLIS, MN. Ph: 1-800-632-2277
DRAWN: CAD	REV A
CHECKED: TJR	
BARR PROJECT NO.: 23/69-0C29	
SCALE: AS SHOWN	DWG. NO. HRF-014

VER NO	DATE	DESCRIPTION	ISSUE STATUS		
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2	06/29/12	RESIDUE MANAGEMENT PLAN – VERSION 1 – RESPONSE TO COMMENTS	FOR PERMITTING	5	5/15/17
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4	05/19/15	ISSUED FOR INCLUSION IN PERMIT APPLICATIONS	FOR CONSTRUCTION		
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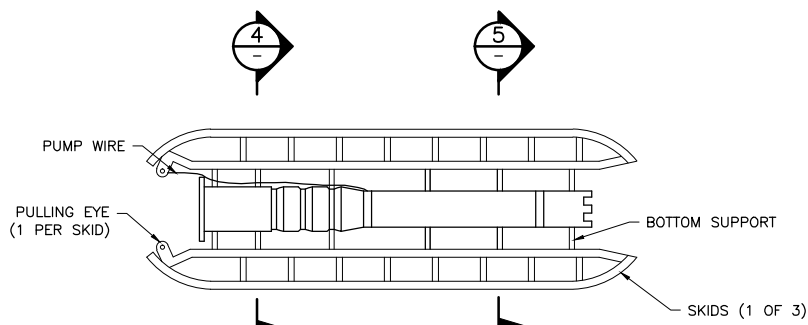
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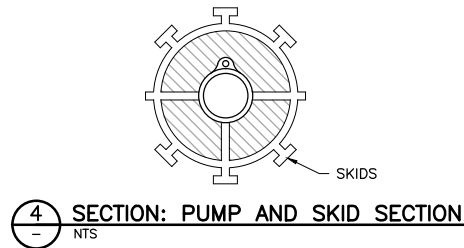
1  
015  
DETAIL: DRAINAGE COLLECTION SUMP  
NTS



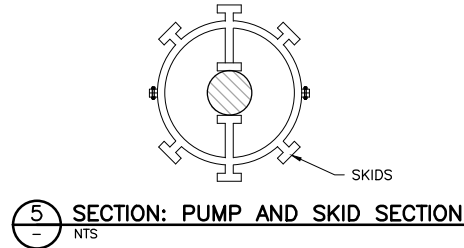
2  
015  
DETAIL: LEAKAGE DETECTION SUMP  
NTS



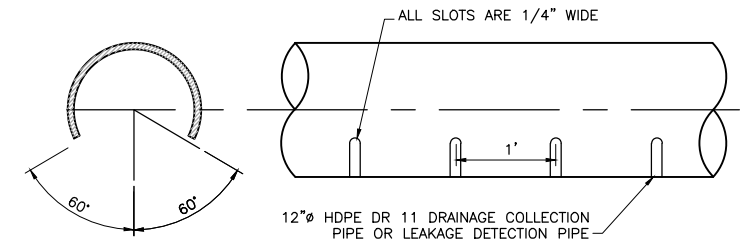
3  
NTS  
DETAIL: PUMP AND SKID ASSEMBLY



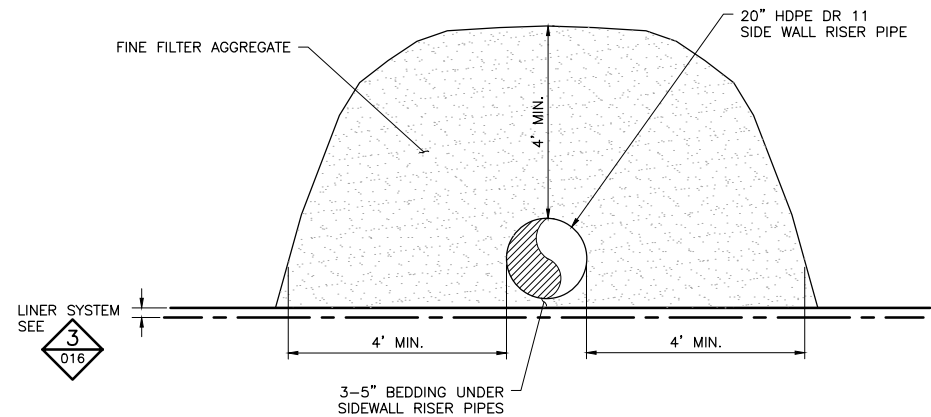
4  
NTS  
SECTION: PUMP AND SKID SECTION



5  
NTS  
SECTION: PUMP AND SKID SECTION



6  
NTS  
DETAIL: DRAINAGE COLLECTION AND LEAKAGE DETECTION PIPE PERFORATION



7  
NTS  
DETAIL: RISER PIPE COVER

VER NO	DATE	DESCRIPTION	ISSUE STATUS		
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SIGNATURE Thomas J. Radue  
DATE 5/15/17 LICENSE# 20951

DRAWN: CAD  
CHECKED: TJR  
BARR PROJECT NO.: 23/69-0C29  
SCALE: AS SHOWN

PLANT DRAWING NUMBER:  
**HYDROMETALLURGICAL RESIDUE FACILITY  
SUMP AND PUMP DETAILS**

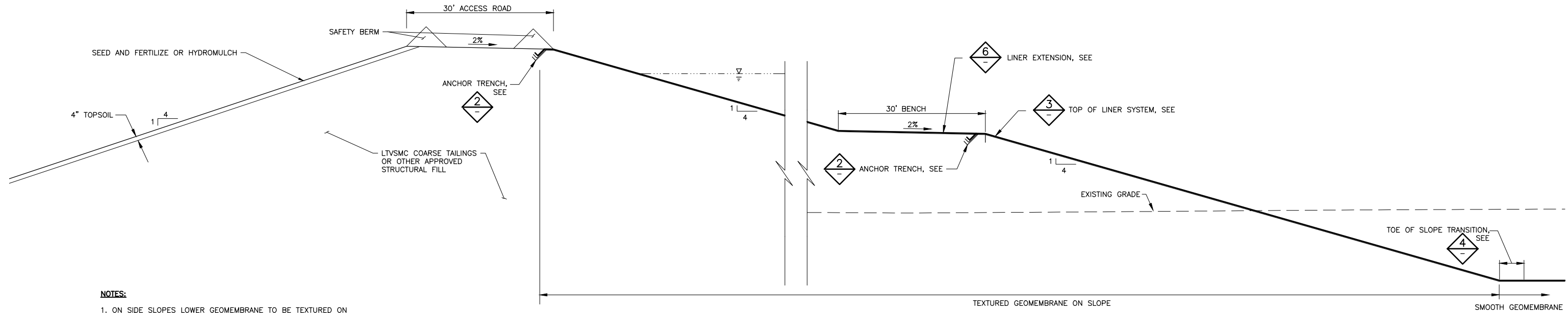
**POLYMET MINING**  
**POLY MET MINING, INC.**  
**NORTHMET PROJECT**  
**HOYT LAKES, MINNESOTA**

**BARR**  
BARR ENGINEERING CO.  
4300 MARKETPOINTE DRIVE  
SUITE 200  
MINNEAPOLIS, MN.  
Ph: 1-800-632-2277

DWG. NO. **HRF-015**  
REV **A**

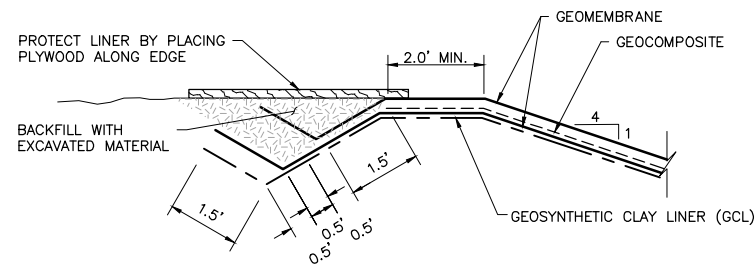
CADD USER: Cristian A. Diaz FILE: K:\DESIGN\23690029.10\PERMIT\_NMT-01-CS-016.DWG PLOT SCALE: 1:2 PLOT DATE: 5/15/2017 6:54 PM

2  
1  
INCHES

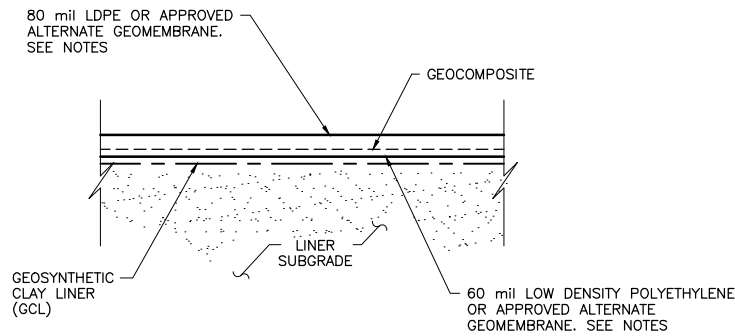


NOTES:

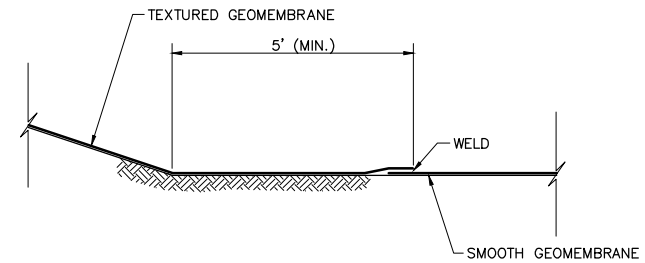
1. ON SIDE SLOPES LOWER GEOMEMBRANE TO BE TEXTURED ON BOTH SIDES, UPPER GEOMEMBRANE TO BE TEXTURED ON BOTTOM SIDE ONLY.
2. GEOMEMBRANE TYPE AND THICKNESS IS PRELIMINARY. TYPE AND THICKNESS MUST BE APPROVED BY DESIGN ENGINEER.



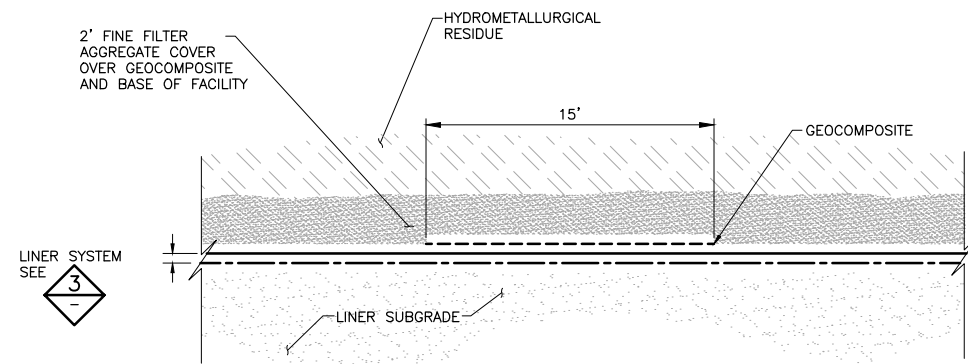
2  
DETAIL: "V" ANCHOR TRENCH GCL/GEOMEMBRANE BARRIER LAYER  
NTS



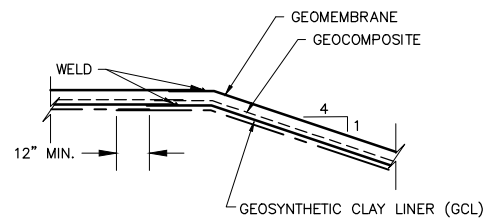
3  
DETAIL: LINER SYSTEM  
NTS



4  
DETAIL: TOE OF SLOPE GEOMEMBRANE - TYPE TRANSITION  
NTS



5  
DETAIL: DRAINAGE COLLECTION SYSTEM  
0 5 10  
SCALE IN FEET



6  
DETAIL: LINER SYSTEM EXTENSION  
NTS

VER NO	DATE	DESCRIPTION	ISSUE STATUS		
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SIGNATURE *Thomas J. Radue*  
DATE 5/15/17 LICENSE# 20951

DRAWN: CAD  
CHECKED: TJR  
BARR PROJECT NO.: 23/69-0C29  
SCALE: AS SHOWN

PLANT DRAWING NUMBER:	
HYDROMETALLURGICAL RESIDUE FACILITY TYPICAL SECTIONS AND DETAILS	
	POLY MET MINING, INC. NORTHMET PROJECT HOYT LAKES, MINNESOTA
	BARR ENGINEERING CO. 4300 MARKETPOINTE DRIVE SUITE 200 MINNEAPOLIS, MN. Ph: 1-800-632-2277
DWG. NO. HRF-016	REV A

CADD USER: Cristian A. Diaz FILE: K:\DESIGN\23690C29.10\PERMIT\_NMT-01-CS-017.DWG PLOT SCALE: 1:2 PLOT DATE: 5/15/2017 6:56 PM

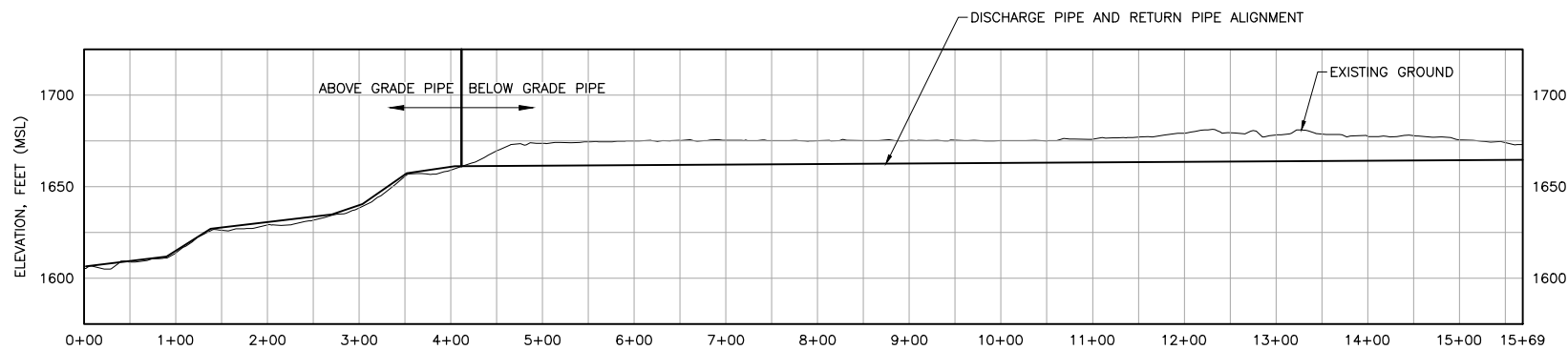
2

1

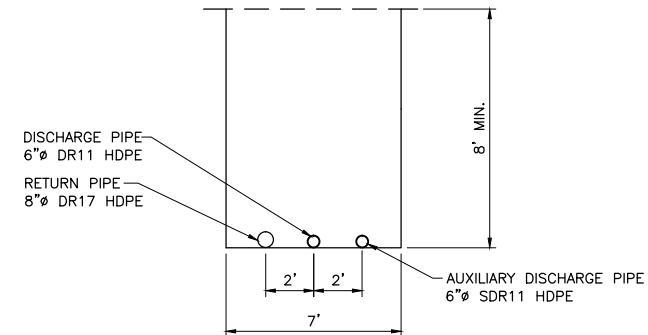
INCHES



1 PLAN: PIPING LAYOUT



2 PROFILE: PIPING LAYOUT



3 SECTION: PIPE TRENCH (TYP.)

NOTES:

1. PIPE CLEAN-OUT AND PIG LAUNCHING AND RECEIVING ACCESS TO BE PROVIDED IN ABOVE-GRADE PORTIONS OF PIPE.
2. PIPING LAYOUT (PLAN AND PROFILE) IS PRELIMINARY.
3. PIPE SIZES ARE PRELIMINARY.

PLANT DRAWING NUMBER:

HYDROMETALLURGICAL RESIDUE FACILITY  
PIPING  
PLAN AND PROFILE



POLY MET MINING, INC.  
NORTHMET PROJECT  
HOYT LAKES, MINNESOTA



BARR ENGINEERING CO.  
4300 MARKETPOINTE DRIVE  
SUITE 200  
MINNEAPOLIS, MN.  
Ph: 1-800-632-2277

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5	05/15/17	PERMIT APPLICATION UPDATES			
			NOT APPROVED FOR CONSTRUCTION.		

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PRINTED NAME THOMAS J. RADUE  
SIGNATURE *Thomas J. Radue*  
DATE 5/15/17 LICENSE# 20951

DRAWN: CAD

CHECKED: TJR

BARR PROJECT NO.: 23/69-OC29  
SCALE: AS SHOWN

DWG. NO. HRF-017

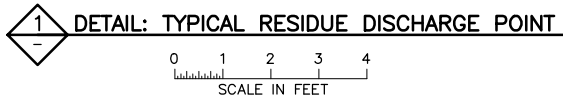
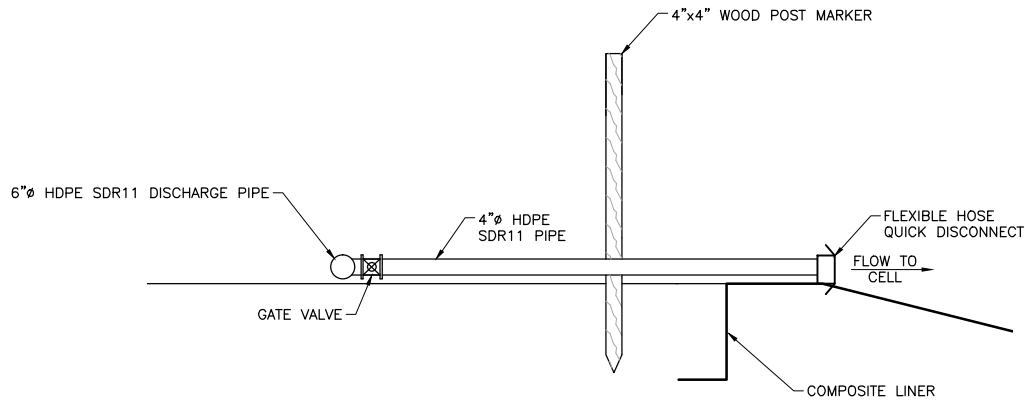
REV A

CADD USER: Cristian A. Diaz FILE: K:\DESIGN\23690029.10\PERMIT\_NMT-01-CS-018.DWG PLOT SCALE: 1:2 PLOT DATE: 5/15/2017 6:58 PM

2

1

INCHES




**NOTES:**  
1. PIPE SIZES ARE PRELIMINARY.


VER NO		DATE	DESCRIPTION	ISSUE STATUS			DRAWN: CAD		CHECKED: TJR		BARR PROJECT NO.: 23/69-0C29		SCALE: AS SHOWN		DWG. NO. HRF-018		REV A	
1	10/14/11		RESIDUE MANAGEMENT PLAN - VERSION 1 - ATTACHMENT A	ISSUED	VERSION	DATE	I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.		PRINTED NAME THOMAS J. RADUE SIGNATURE <i>Thomas J. Radue</i> DATE 5/15/17 LICENSE# 20951		BARR ENGINEERING CO. 4300 MARKETPOINTE DRIVE SUITE 200 MINNEAPOLIS, MN. Ph: 1-800-632-2277							
2	06/29/12		RESIDUE MANAGEMENT PLAN - VERSION 1 - RESPONSE TO COMMENTS	FOR PERMITTING	5	5/15/17												
3	12/14/12		RESIDUE MANAGEMENT PLAN - VERSION 2 - ATTACHMENT A															
4	05/19/15		ISSUED FOR INCLUSION IN PERMIT APPLICATIONS															
5	05/15/17		PERMIT APPLICATION UPDATES	FOR CONSTRUCTION														
				NOT APPROVED FOR CONSTRUCTION.														

PLANT DRAWING NUMBER:

HYDROMETALLURGICAL RESIDUE FACILITY  
PIPING DETAILS



POLYMET  
MINING



BARR

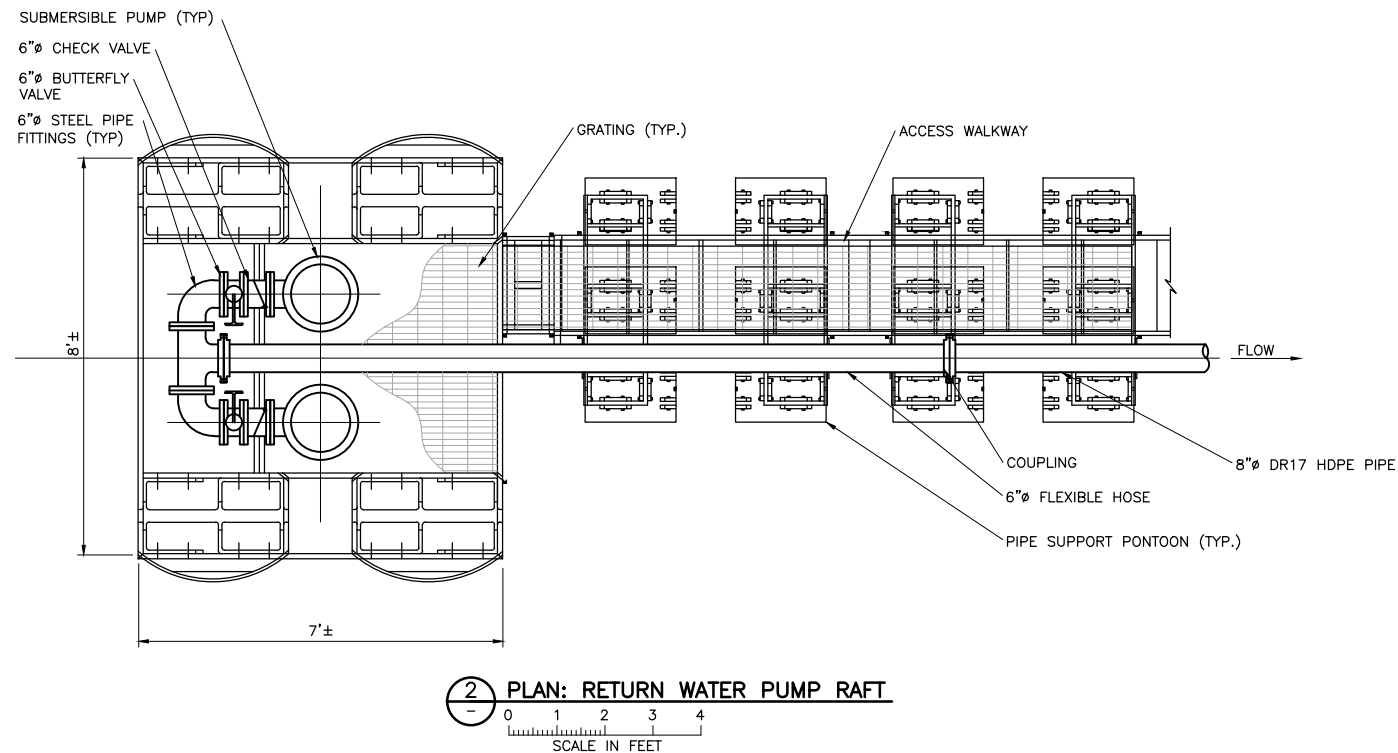
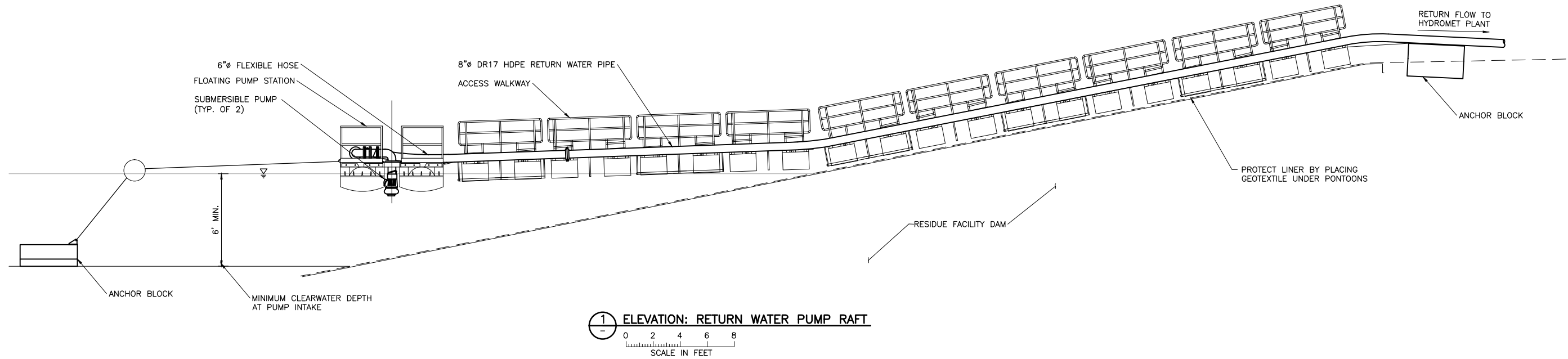
POLY MET MINING, INC.  
NORTHMET PROJECT  
HOYT LAKES, MINNESOTA

BARR ENGINEERING CO.  
4300 MARKETPOINTE DRIVE  
SUITE 200  
MINNEAPOLIS, MN.  
Ph: 1-800-632-2277



CADD USER: Cristian A. Diaz FILE: K:\DESIGN\23690029.10\PERMIT\_NMT-01-CS-019.DWG PLOT SCALE: 1:2 PLOT DATE: 5/15/2017 6:59 PM

2  
1  
INCHES



VER NO	DATE	DESCRIPTION	ISSUE STATUS		
			ISSUED	VERSION	DATE
1	10/14/11	RESIDUE MANAGEMENT PLAN - VERSION 1 - ATTACHMENT A	ISSUED		
2	06/29/12	RESIDUE MANAGEMENT PLAN - VERSION 1 - RESPONSE TO COMMENTS			
3	12/14/12	RESIDUE MANAGEMENT PLAN - VERSION 2 - ATTACHMENT A			
4	05/19/15	ISSUED FOR INCLUSION IN PERMIT APPLICATIONS	FOR PERMITTING	5	5/15/17
5	05/15/17	PERMIT APPLICATION UPDATES			
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SIGNATURE *Thomas J. Radue*  
DATE 5/15/17 LICENSE# 20951

DRAWN: CAD

CHECKED: TJR

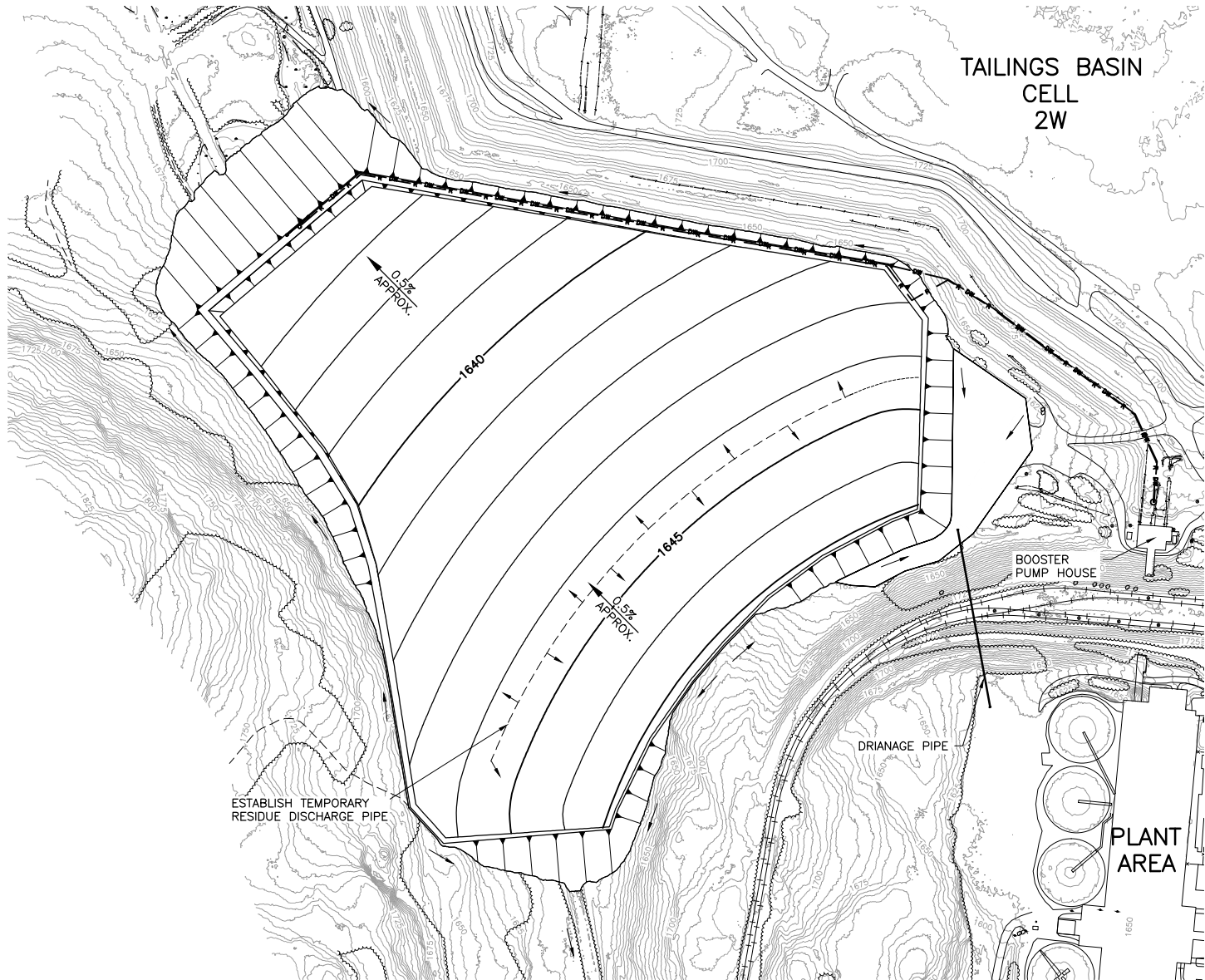
BARR PROJECT NO.: 23/69-0C29

SCALE: AS SHOWN

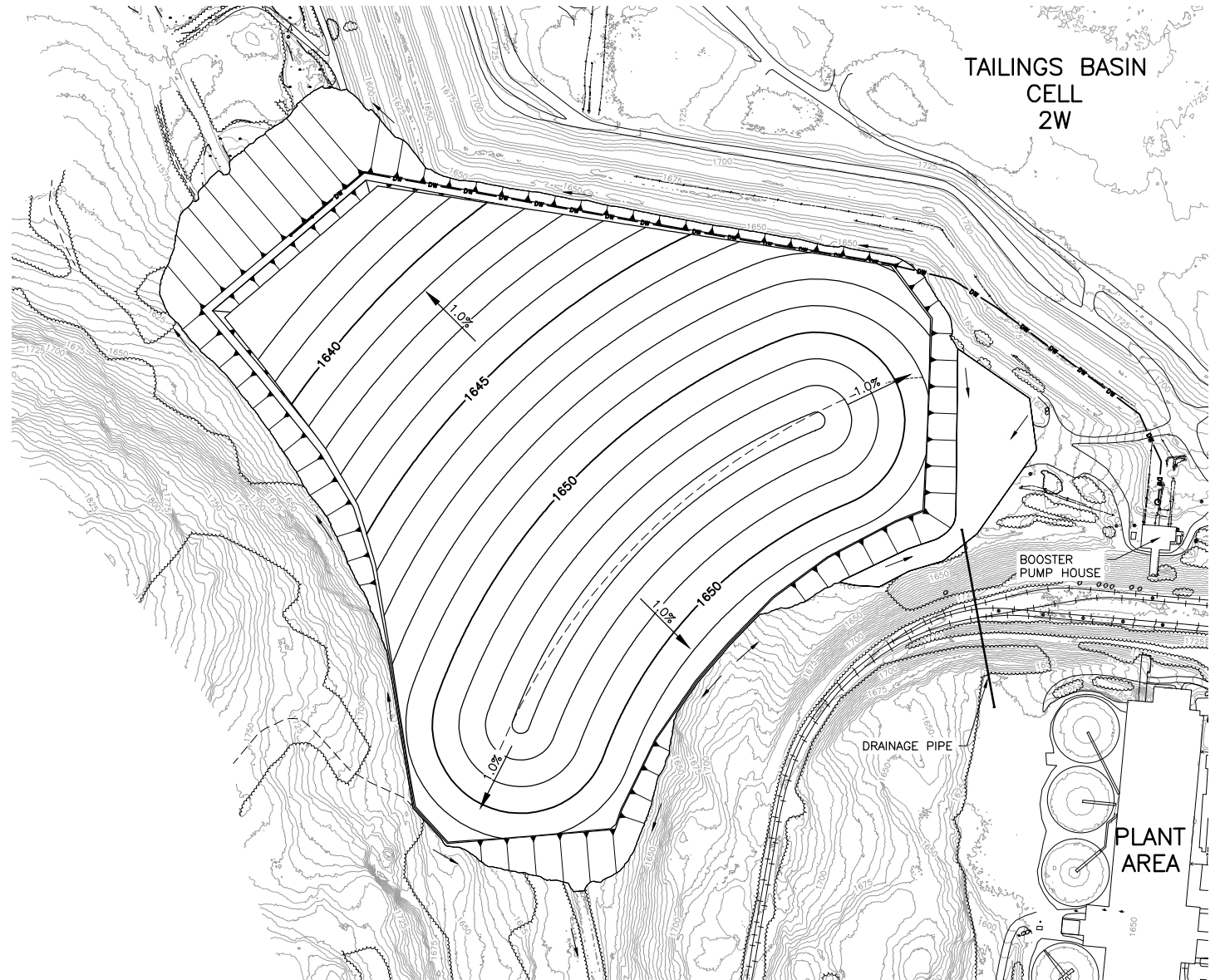
PLANT DRAWING NUMBER:	
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	POLY MET MINING, INC. NORTHMET PROJECT HOYT LAKES, MINNESOTA
	BARR ENGINEERING CO. 4300 MARKETPOINTE DRIVE SUITE 200 MINNEAPOLIS, MN. Ph: 1-800-632-2277
DWG. NO. HRF-019	REV A

CADD USER: Cristian A. Diaz FILE: K:\DESIGN\23690C29.10\PERMIT\_NMT-01-CS-020.DWG PLOT SCALE: 1:2 PLOT DATE: 5/15/2017 7:02 PM

INCHES  
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2



1 PLAN: START OF MINE YEAR 20 RESIDUE GRADES  
0 300 600  
SCALE IN FEET

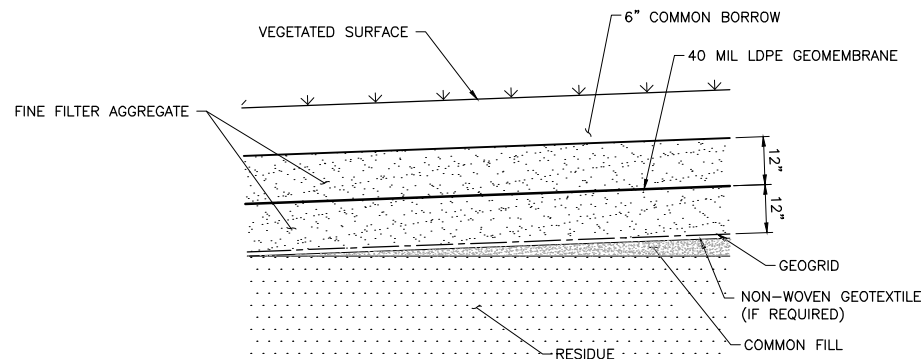


3 PLAN: END OF MINE YEAR 20 RESIDUE AND TEMPORARY COVER GRADES  
0 300 600  
SCALE IN FEET



NOTES:

1. PRIOR TO FINAL CLOSURE PLACE TEMPORARY COVER OVER NEWLY GRADED RESIDUE.
2. ALLOW FOR RESIDUE MATERIAL TO SETTLE PRIOR TO PLACEMENT OF FINAL COVER.
3. COMMON FILL AS NEEDED TO ACHIEVE SLOPES THAT FACILITATE SURFACE WATER RUNOFF.



2 DETAIL: TEMPORARY COVER SYSTEM  
NTS

VER NO	DATE	DESCRIPTION	ISSUE STATUS		
1	10/14/11	RESIDUE MANAGEMENT PLAN – VERSION 1 – ATTACHMENT A	ISSUED	VERSION	DATE
2	06/29/12	RESIDUE MANAGEMENT PLAN – VERSION 1 – RESPONSE TO COMMENTS	FOR PERMITTING	5	5/15/17
3	12/14/12	RESIDUE MANAGEMENT PLAN – VERSION 2 – ATTACHMENT A			
4	05/19/15	ISSUED FOR INCLUSION IN PERMIT APPLICATIONS			
5	05/15/17	PERMIT APPLICATION UPDATES	FOR CONSTRUCTION		
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SIGNATURE *Thomas J. Radue*  
DATE 5/15/17 LICENSE# 20951

DRAWN: CAD  
CHECKED: TJR  
BARR PROJECT NO.: 23/69-0C29  
SCALE: AS SHOWN

PLANT DRAWING NUMBER:

HYDROMETALLURGICAL RESIDUE FACILITY CLOSURE PREPARATION PLAN

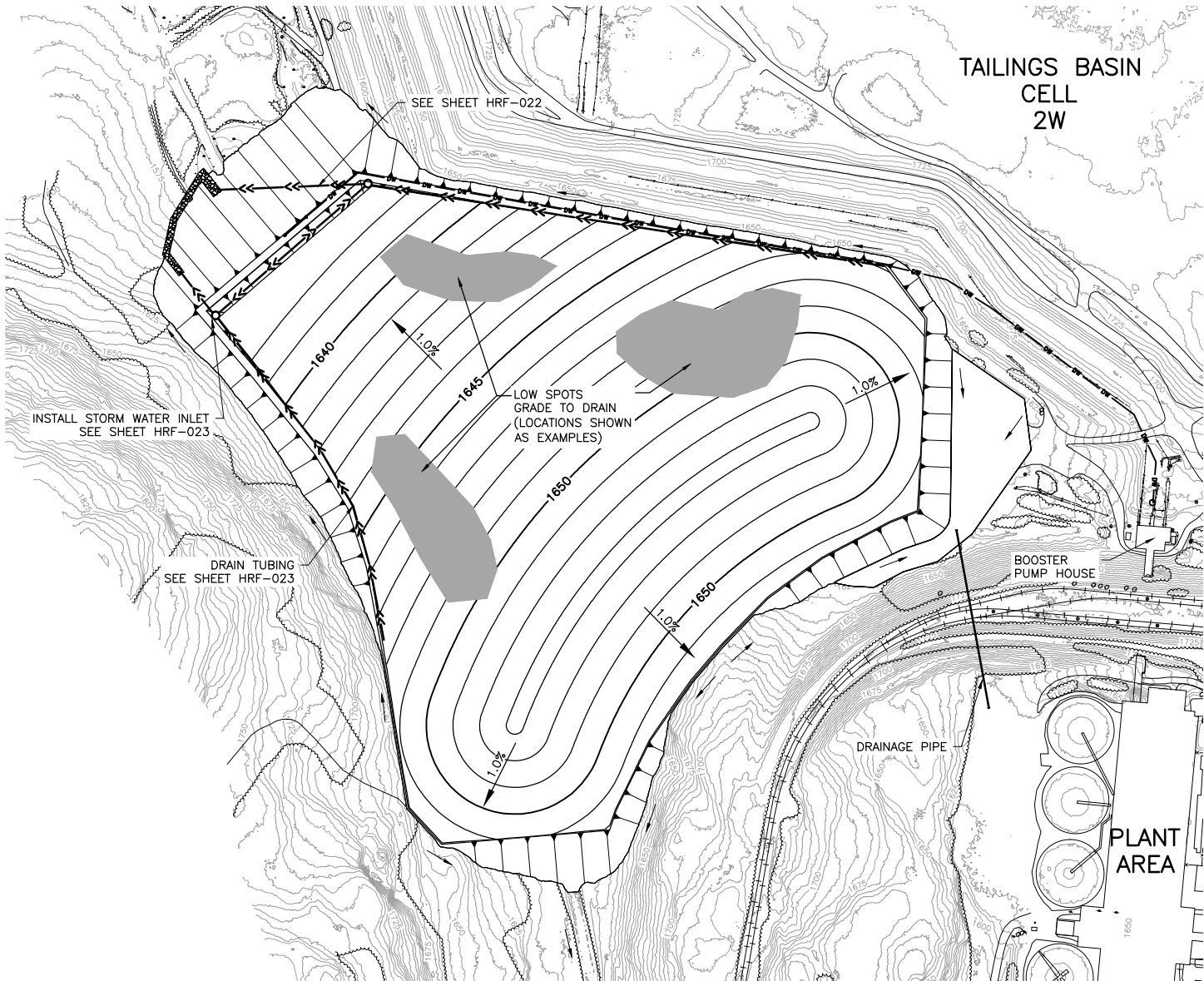
**POLYMET MINING**  
POLY MET MINING, INC.  
NORTHMET PROJECT  
HOYT LAKES, MINNESOTA

**BARR**  
BARR ENGINEERING CO.  
4300 MARKETPOINTE DRIVE  
SUITE 200  
MINNEAPOLIS, MN.  
Ph: 1-800-632-2277

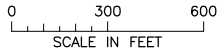
DWG. NO. HRF-020  
REV A

CADD USER: Cristian A. Diaz FILE: K:\DESIGN\23690C29.10\PERMIT\_NMT-01-CS-021.DWG PLOT SCALE: 1:2 PLOT DATE: 5/15/2017 7:05 PM

INCHES  
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2

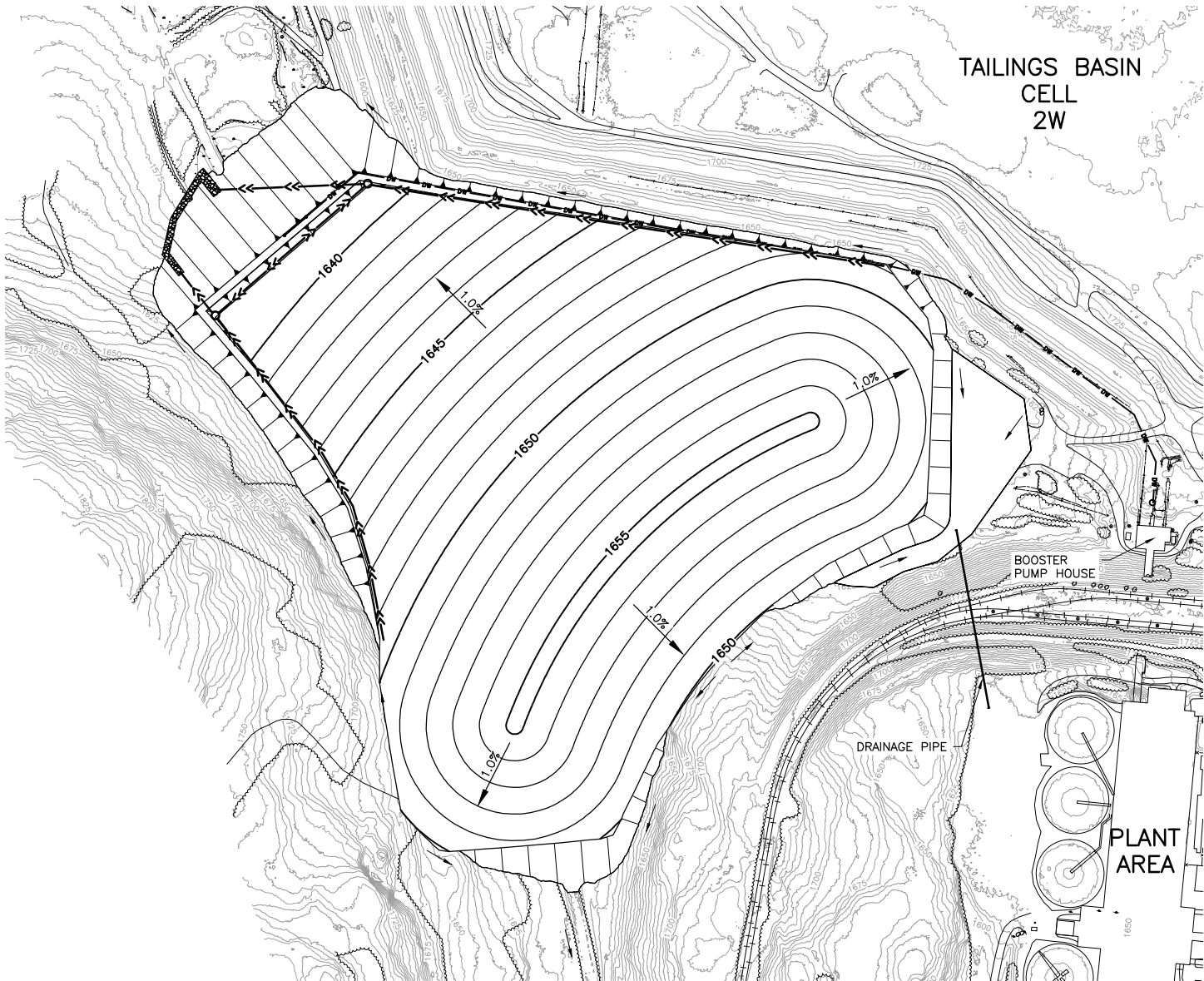


**3 PLAN: TEMPORARY COVER REGRAIDING**

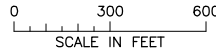


**NOTES:**

1. PRIOR TO FINAL CLOSURE GRADE ANY LOW SPOTS CREATED DURING SETTLEMENT ALLOTMENT TIME.
2. INSTALL DRAIN TUBING AND SURFACE WATER INLETS.



**4 PLAN: FINAL COVER GRADES**





VER NO	DATE	DESCRIPTION	ISSUE STATUS		
1	10/14/11	RESIDUE MANAGEMENT PLAN – VERSION 1 – ATTACHMENT A	ISSUED	VERSION	DATE
2	06/29/12	RESIDUE MANAGEMENT PLAN – VERSION 1 – RESPONSE TO COMMENTS	FOR PERMITTING	5	5/15/17
3	12/14/12	RESIDUE MANAGEMENT PLAN – VERSION 2 – ATTACHMENT A			
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SIGNATURE Thomas J. Radue  
DATE 5/15/17 LICENSE# 20951

DRAWN: CAD  
CHECKED: TJR  
BARR PROJECT NO.: 23/69-0C29  
SCALE: AS SHOWN

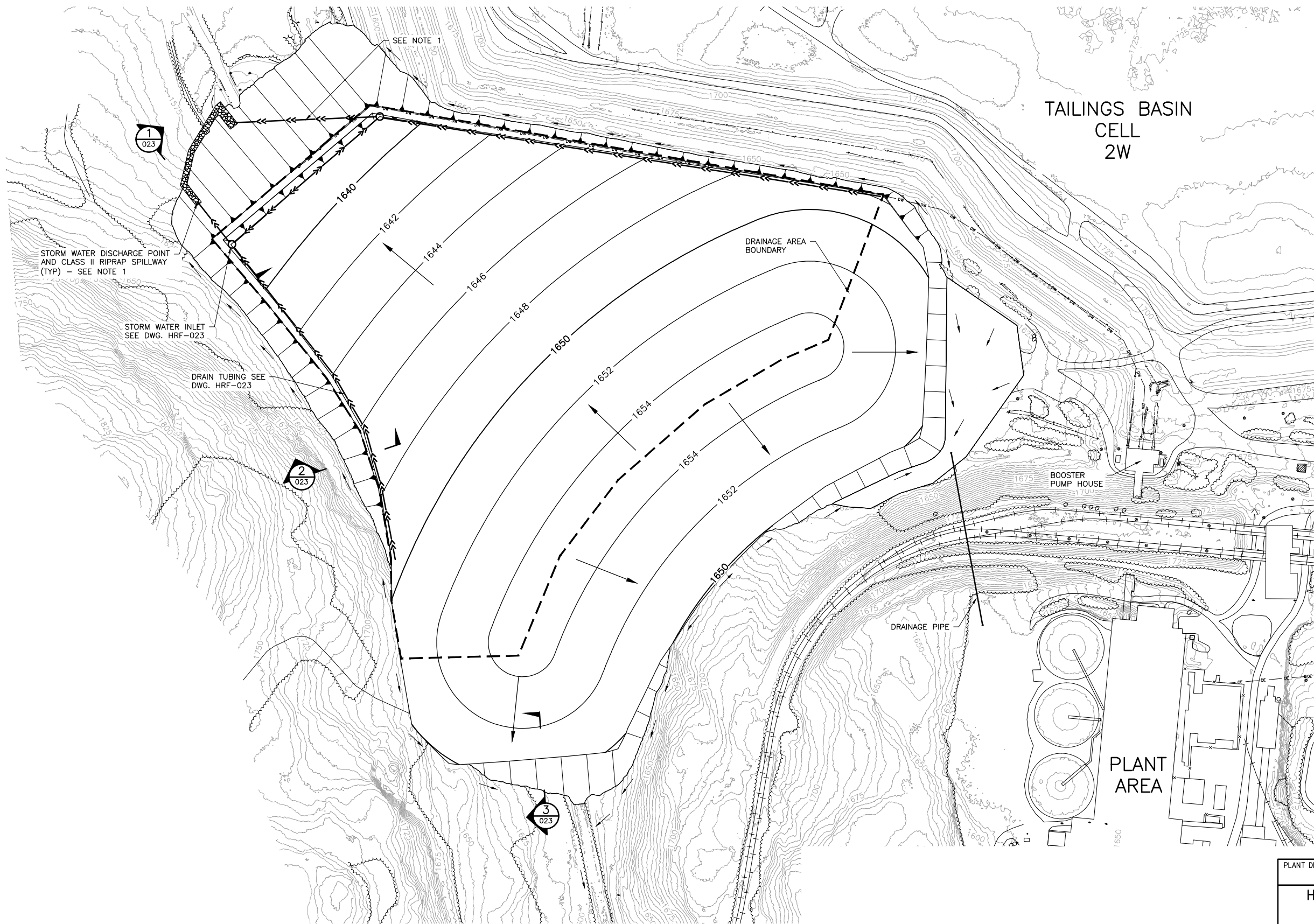
PLANT DRAWING NUMBER:	
HYDROMETALLURGICAL RESIDUE FACILITY TEMPORARY COVER AND FINAL COVER GRADING	
	POLY MET MINING, INC. NORTHMET PROJECT HOYT LAKES, MINNESOTA
	BARR ENGINEERING CO. 4300 MARKETPOINTE DRIVE SUITE 200 MINNEAPOLIS, MN. Ph: 1-800-632-2277
DWG. NO. <b>HRF-021</b>	REV <b>A</b>

CADD USER: Cristian A. Diaz FILE: K:\DESIGN\23690C29.10\PERMIT\_NMT-01-CS-022.DWG PLOT SCALE: 1:2 PLOT DATE: 5/15/2017 7:07 PM

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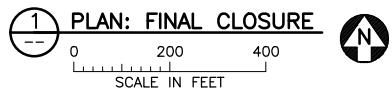
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INCHES



NOTES:

1. FIELD-ALIGN SURFACE WATER DISCHARGE PIPES TO DISCHARGE CLEAN SURFACE RUNOFF TO LOCATION OUTSIDE OF GROUNDWATER CONTAINMENT SYSTEM. SEE FTB SEEPAGE CAPTURE AND STREAM AUGMENTATION SYSTEMS DRAWINGS.
2. EMERGENCY OVERFLOW NOT SHOWN. SEE HRF-023
3. FIELD-FIT TOE-OF-SLOPE DRAINAGE SWALE TO DRAIN STORMWATER RUNOFF AND TO PREVENT PONDING AT TOE OF SLOPE.



VER NO.	DATE	DESCRIPTION	ISSUE STATUS		
			ISSUED	VERSION	DATE
1	10/14/11	RESIDUE MANAGEMENT PLAN - VERSION 1 - ATTACHMENT A			
2	06/29/12	RESIDUE MANAGEMENT PLAN - VERSION 1 - RESPONSE TO COMMENTS			
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CHECKED: TJR

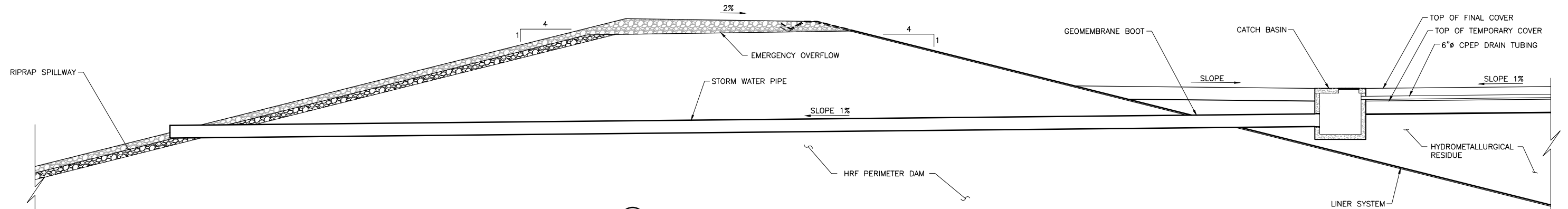
BARR PROJECT NO.: 23/69-0C29

SCALE: AS SHOWN

PLANT DRAWING NUMBER:	
HYDROMETALLURGICAL RESIDUE FACILITY FINAL CLOSURE GRADING AND DRAINAGE	
POLYMET MINING POLY MET MINING, INC. NORTHMET PROJECT HOYT LAKES, MINNESOTA	
BARR ENGINEERING CO. 4300 MARKETPOINTE DRIVE SUITE 200 MINNEAPOLIS, MN. Ph: 1-800-632-2277	
DWG. NO. HRF-022	REV A

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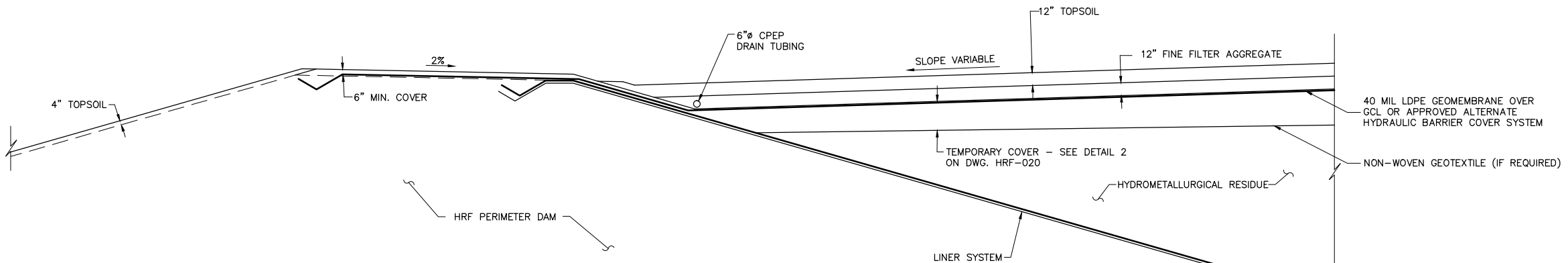
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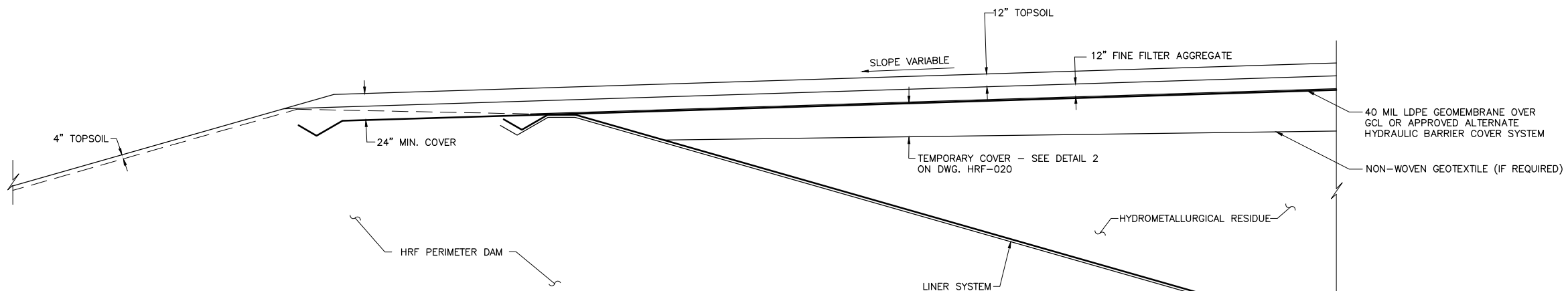
1 SECTION: STORM WATER INLET  
NTS

**NOTES:**


1. TEMPORARY COVER MATERIALS NOT SHOWN ON THIS DRAWING. SEE DETAIL 3 ON DWG. HRF-020.



2 SECTION: FINAL COVER  
NTS



3 SECTION: FINAL COVER OVER DAM  
NTS

PLANT DRAWING NUMBER:	
HYDROMETALLURGICAL RESIDUE FACILITY CLOSURE SECTIONS AND DETAILS	
<div><div></div><div><div>POLY MET MINING, INC.</div><div>NORTHMET PROJECT</div><div>HOYT LAKES, MINNESOTA</div></div></div>	
DRAWN: CAD	BARR ENGINEERING CO. 4300 MARKETPOINTE DRIVE SUITE 200 MINNEAPOLIS, MN. Ph: 1-800-632-2277
CHECKED: TJR	
BARR PROJECT NO.: 23/69-0C29	
SCALE: AS SHOWN	DWG. NO. HRF-023
	REV A

VER NO	DATE	DESCRIPTION	ISSUE STATUS		
1	10/14/11	RESIDUE MANAGEMENT PLAN – VERSION 1 – ATTACHMENT A	ISSUED	VERSION	DATE
2	06/29/12	RESIDUE MANAGEMENT PLAN – VERSION 1 – RESPONSE TO COMMENTS	FOR PERMITTING	5	5/15/17
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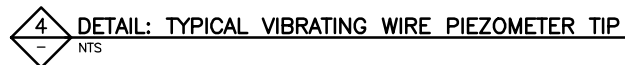
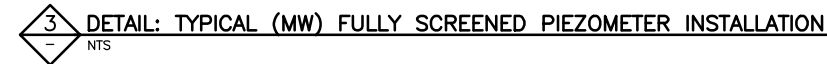
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CHECKED: TJR

BARR PROJECT NO.: 23/69-0C29

SCALE: AS SHOWN





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1	10/14/11	FLOTATION TAILINGS MANAGEMENT PLAN – VERSION 1 – ATTACHMENT	ISSUED	VERSION	DATE		DRAWN: CAD	<div>DWG. NO. <b>HRF-024</b></div>	REV <b>A</b>	
2	06/29/12	FLOTATION TAILINGS MANAGEMENT PLAN – VERSION 2 – ATTACHMENT	FOR PERMITTING	5	5/15/17					CHECKED: TJR
3	12/14/12	FLOTATION TAILINGS MANAGEMENT PLAN – VERSION 3 – ATTACHMENT								
4	05/19/15	ISSUED FOR INCLUSION IN PERMIT APPLICATIONS	FOR CONSTRUCTION				BARR PROJECT NO.: 23/69-0C29	SCALE: AS SHOWN		
5	05/15/17	PERMIT APPLICATION UPDATES								
			NOT APPROVED FOR CONSTRUCTION.							