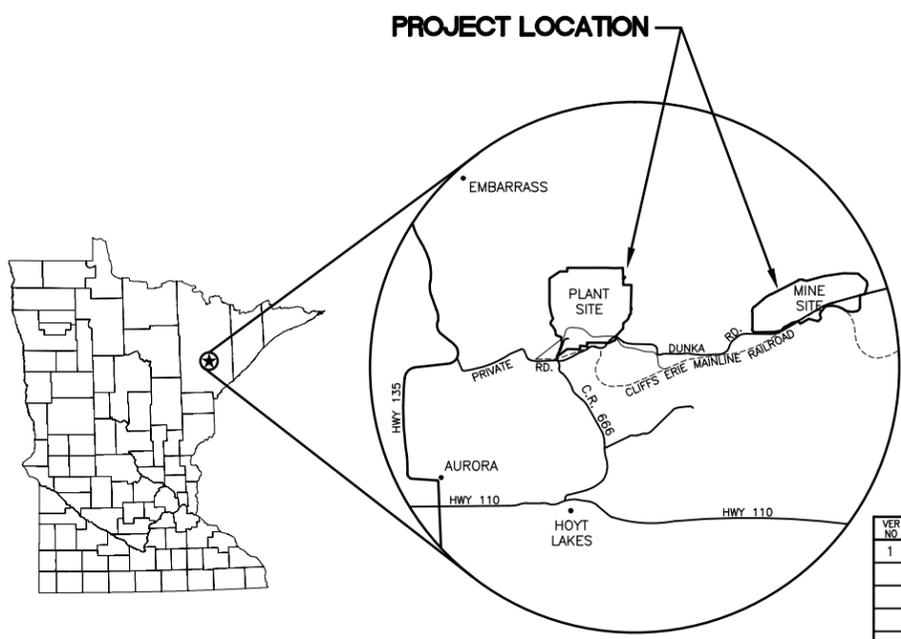
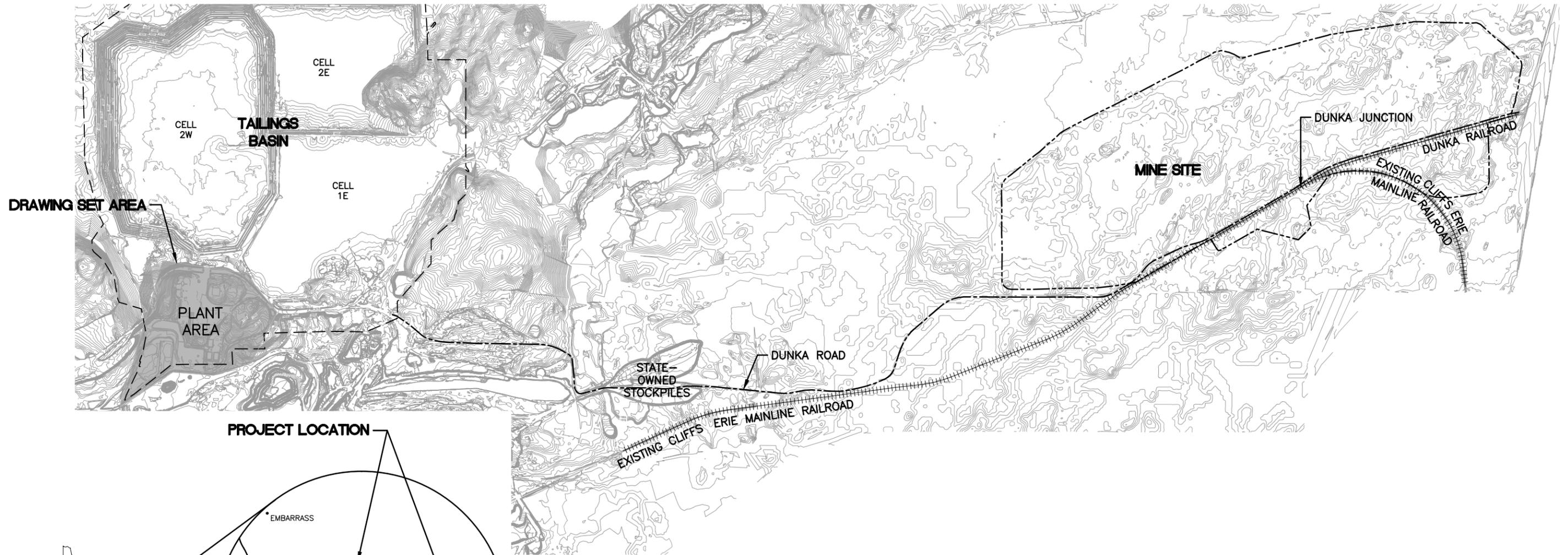


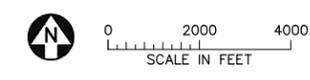
Appendix 9

Sewage Treatment System Permit Application Support Drawings

POLY MET MINING, INC. NORTHMET PROJECT PERMIT APPLICATION SUPPORT DRAWINGS SEWAGE TREATMENT SYSTEM HOYT LAKES, MINNESOTA



SITE MAP



VER NO	DATE	DESCRIPTION	ISSUE STATUS		
			ISSUED	VERSION	DATE
1	6/07/17	PERMIT APPLICATION UPDATES	ISSUED	1	6/07/17
			FOR PERMITTING		
			FOR CONSTRUCTION		
			NOT APPROVED FOR CONSTRUCTION.		

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 JON M. MINNE
SIGNATURE *[Signature]*
DATE 6/07/17 LICENSE# 25080

DRAWN: KKB
CHECKED: JMM3
BARR PROJECT NO.: 23/69-0C29
SCALE: AS SHOWN

PLANT DRAWING NUMBER:	
SEWAGE TREATMENT SYSTEM LOCATION MAP AND SITE MAP	
	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. SWG-001	REV A

CADD USER: Veronica Mourms FILE: K:\DESIGN\23690C29\10\PERMIT_NMP-56-TS-001.DWG PLOT SCALE: 1:2 PLOT DATE: 6/6/2017 12:56 PM

INCHES
1
2

LOCATION MAP
NOT TO SCALE

VICINITY MAP
NOT TO SCALE

CADD USER: Veronica Wourms FILE: K:\DESIGN\33690C29.10\PERMIT_NMP-56-TS-002.DWG PLOT SCALE: 1:2 PLOT DATE: 6/16/2017 2:21 PM

GENERAL LEGEND

<u>EXISTING</u>		<u>PROPOSED</u>	
—1000—	EXISTING CONTOUR — MAJOR	—FM—	PROPOSED SANITARY SEWER FORCEMAIN
———	EXISTING CONTOUR — MINOR	□	PROPOSED STRUCTURES
—>—	EXISTING SANITARY SEWER	----	PROJECT AREA BOUNDARY
—FM—	EXISTING SANITARY SEWER FORCEMAIN		
////	EXISTING DRAIN FIELD		
+++++	EXISTING RAILROAD		
====	EXISTING ROAD		
□	EXISTING STRUCTURES		
-α-α-	EXISTING OVERHEAD ELECTRIC		
—P—	EXISTING PIPELINE		
—X—	EXISTING FENCE		
)}{	EXISTING CULVERT		
•	EXISTING MANHOLE		
•	EXISTING LIFT STATION		
□	EXISTING SEPTIC TANK		

SHEET INDEX

SHEET NO. TITLE

GENERAL DRAWINGS

SWGT-001	LOCATION MAP AND SITE MAP
SWGT-002	LEGEND AND SHEET INDEX
SWGT-003	OVERALL SITE PLAN
SWGT-004	STABILIZATION PONDS OPTION PROCESS FLOW DIAGRAM

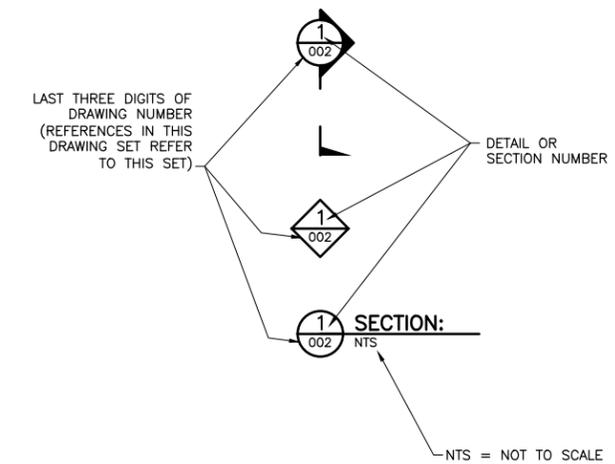
NOTES

- COORDINATE SYSTEM IS MINNESOTA STATE PLANE NORTH ZONE, NAD83.
- ELEVATIONS ARE BASED ON 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.
- PIPE, STRUCTURE AND STABILIZATION POND DIMENSIONS ARE PRELIMINARY. FINAL DIMENSIONS SHALL BE DETERMINED DURING FINAL DESIGN.

ABBREVIATIONS

CI	—	CAST IRON
DIP	—	DUCTILE IRON PIPE
FTB	—	FLOTATION TAILINGS BASIN
GPD	—	GALLONS PER DAY
GPM	—	GALLONS PER MINUTE
INV	—	INVERT
LB	—	POUND
LF	—	LINEAR FEET
MH	—	MANHOLE
MIN	—	MINIMUM
PHWWF	—	PEAK HOURLY WET WEATHER FLOW
PIWWF	—	PEAK INSTANTANEOUS WET WEATHER FLOW
PT	—	POINT
PVC	—	POLYVINYL CHLORIDE
SS	—	SANITARY SEWER
SWGT	—	SEWAGE TREATMENT
VCP	—	VITRIFIED CLAY PIPE

DRAWING NUMBERING



2
1
INCHES

VER NO	DATE	DESCRIPTION	ISSUE STATUS		
			ISSUED	VERSION	DATE
1	6/07/17	PERMIT APPLICATION UPDATES	ISSUED	1	6/07/17
			FOR PERMITTING		
			FOR CONSTRUCTION		
			NOT APPROVED FOR CONSTRUCTION.		

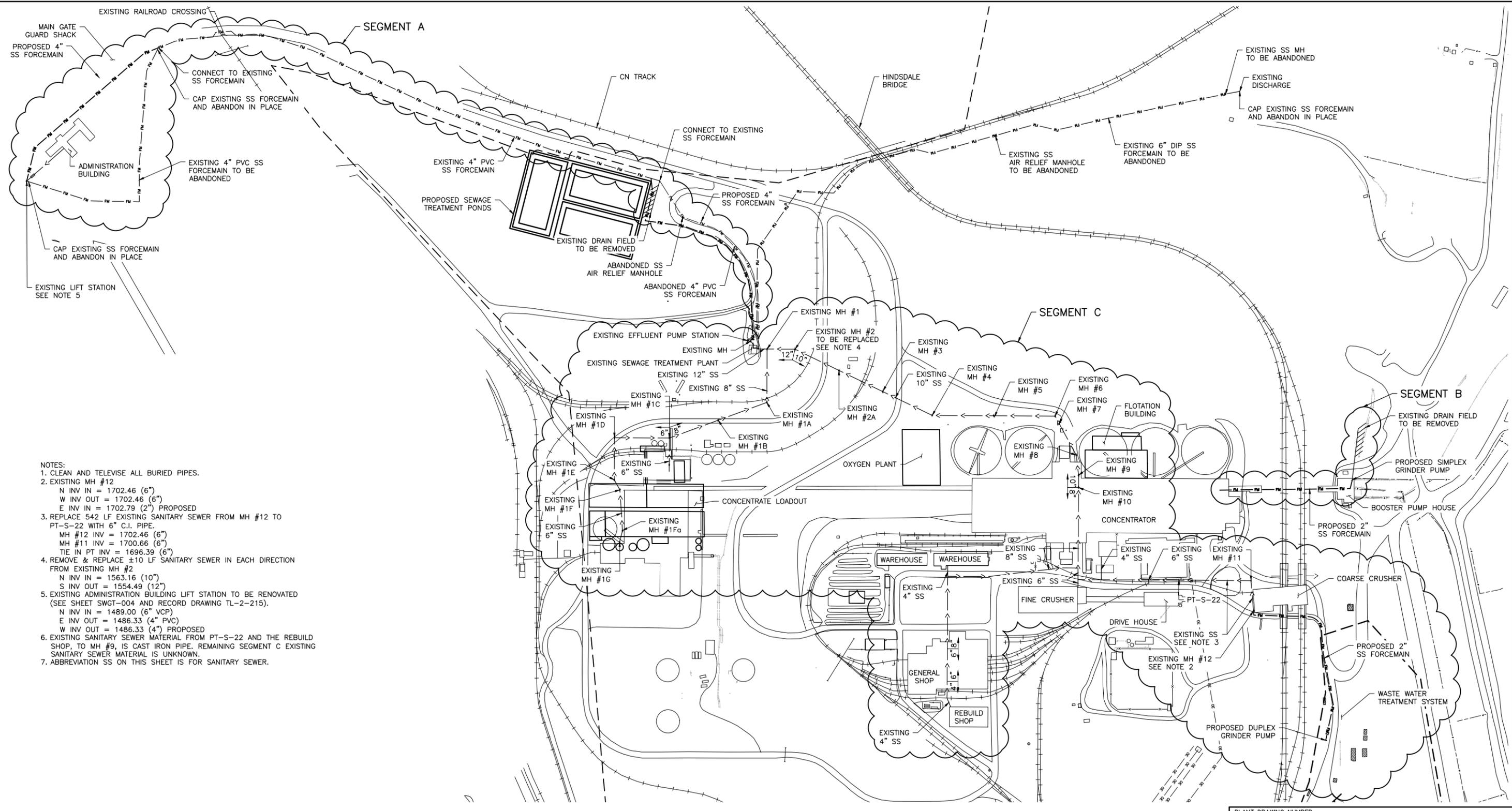
I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINTED NAME JON M. MINNE
SIGNATURE *[Signature]*
DATE 6/07/17 LICENSE# 25080

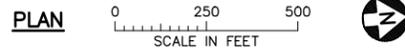
PLANT DRAWING NUMBER:	
SEWAGE TREATMENT SYSTEM LEGEND AND SHEET INDEX	
	POLY MET MINING, INC. NORTHMET PROJECT HOYT LAKES, MINNESOTA
	BARR ENGINEERING CO. 4300 MARKETPOINTE DRIVE SUITE 200 MINNEAPOLIS, MN. Ph: 1-800-632-2277
DRAWN: KKB CHECKED: JMM3 BARR PROJECT NO.: 23/69-0C29 SCALE: AS SHOWN	DWG. NO. SWGT-002 REV A

CADD USER: Veronica Mourms FILE: K:\DESIGN\23690C29\10\PERMIT_NMP_56-CU-001.DWG PLOT SCALE: 1:2 PLOT DATE: 6/6/2017 3:27 PM

INCHES
1
2



- NOTES:
- CLEAN AND TELEWISE ALL BURIED PIPES.
 - EXISTING MH #12
N INV IN = 1702.46 (6")
W INV OUT = 1702.46 (6")
E INV IN = 1702.79 (2") PROPOSED
 - REPLACE 542 LF EXISTING SANITARY SEWER FROM MH #12 TO PT-S-22 WITH 6" C.I. PIPE.
MH #12 INV = 1702.46 (6")
MH #11 INV = 1700.66 (6")
TIE IN PT INV = 1696.39 (6")
 - REMOVE & REPLACE ±10 LF SANITARY SEWER IN EACH DIRECTION FROM EXISTING MH #2
N INV IN = 1563.16 (10")
S INV OUT = 1554.49 (12")
 - EXISTING ADMINISTRATION BUILDING LIFT STATION TO BE RENOVATED (SEE SHEET SWGT-004 AND RECORD DRAWING TL-2-215).
N INV IN = 1489.00 (6" VCP)
E INV OUT = 1486.33 (4" PVC)
W INV OUT = 1486.33 (4") PROPOSED
 - EXISTING SANITARY SEWER MATERIAL FROM PT-S-22 AND THE REBUILD SHOP, TO MH #9, IS CAST IRON PIPE. REMAINING SEGMENT C EXISTING SANITARY SEWER MATERIAL IS UNKNOWN.
 - ABBREVIATION SS ON THIS SHEET IS FOR SANITARY SEWER.



PLANT DRAWING NUMBER:

**SEWAGE TREATMENT SYSTEM
OVERALL SITE PLAN**

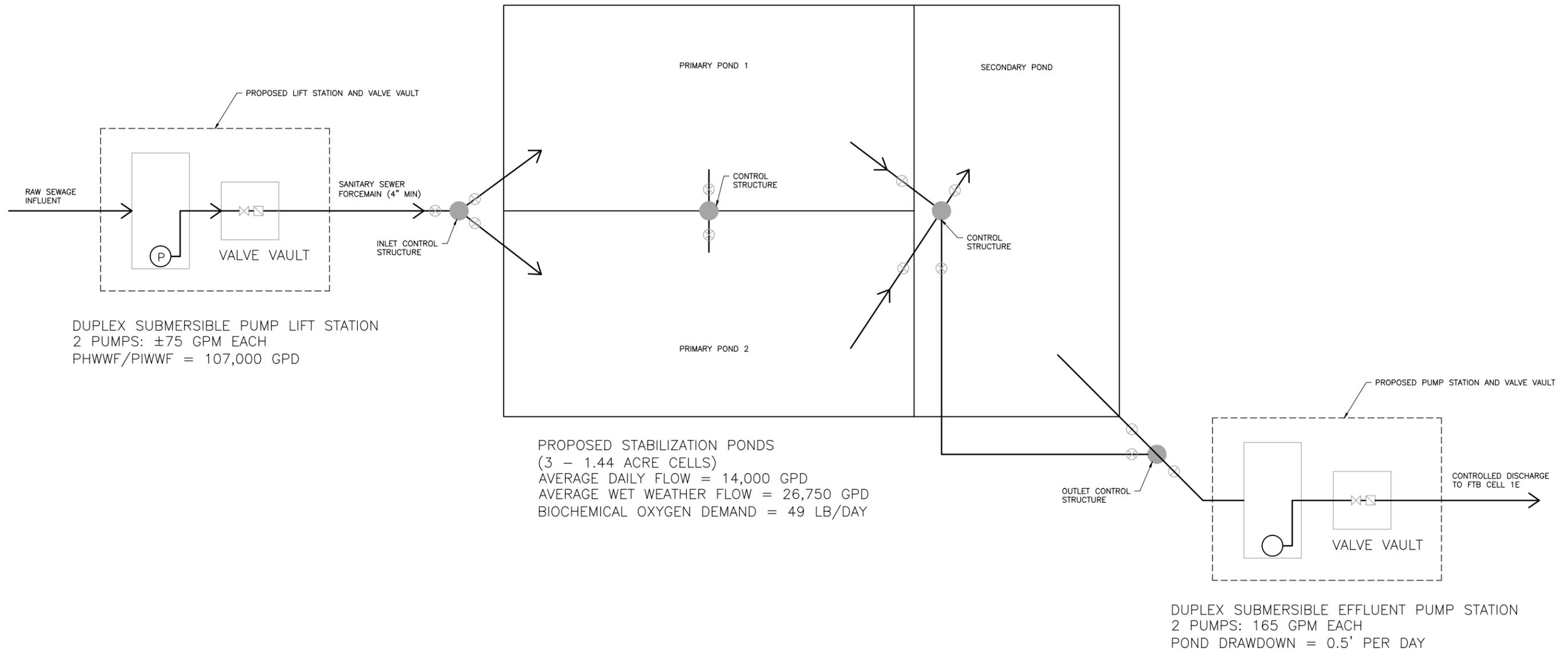
	POLY MET MINING, INC. NORTHMET PROJECT HOYT LAKES, MINNESOTA	
DRAWN: VJS CHECKED: JMM3 BARR PROJECT NO.: 23/69-0C29 SCALE: AS SHOWN	BARR ENGINEERING CO. 4300 MARKETPOINTE DRIVE SUITE 200 MINNEAPOLIS, MN. Ph: 1-800-632-2277	
DWG. NO. SWGT-003	REV B	

VER NO	DATE	DESCRIPTION	ISSUE STATUS		
			ISSUED	VERSION	DATE
1	6/23/15	ISSUED FOR INCLUSION IN PERMIT APPLICATIONS	ISSUED		
2	6/07/17	PERMIT APPLICATION UPDATES	FOR PERMITTING	2	6/07/17
			FOR CONSTRUCTION		
			NOT APPROVED FOR CONSTRUCTION		

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 JON M. MINNE
 SIGNATURE
 DATE 6/07/17 LICENSE# 25080

CADD USER: Veronica Mourms FILE: K:\DESIGN\23690C29\10\PERMIT_NMP-56-MF-007.DWG PLOT SCALE: 1:2 PLOT DATE: 6/6/2017 2:47 PM



INCHES

VER NO	DATE	DESCRIPTION	ISSUE STATUS		
1	6/23/15	ISSUED FOR INCLUSION IN PERMIT APPLICATIONS	ISSUED	VERSION	DATE
2	6/07/17	PERMIT APPLICATION UPDATES	FOR PERMITTING	2	6/07/17
			FOR CONSTRUCTION		
			NOT APPROVED FOR CONSTRUCTION		

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 JON M. MINNE
 SIGNATURE *[Signature]*
 DATE 6/07/17 LICENSE# 25080

DRAWN: KRM
 CHECKED: JMM3
 BARR PROJECT NO.: 23/69-0C29
 SCALE: AS SHOWN

PLANT DRAWING NUMBER:

**SEWAGE TREATMENT SYSTEM
 STABILIZATION PONDS OPTION
 PROCESS FLOW DIAGRAM**

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. **SWG-004** REV **B**