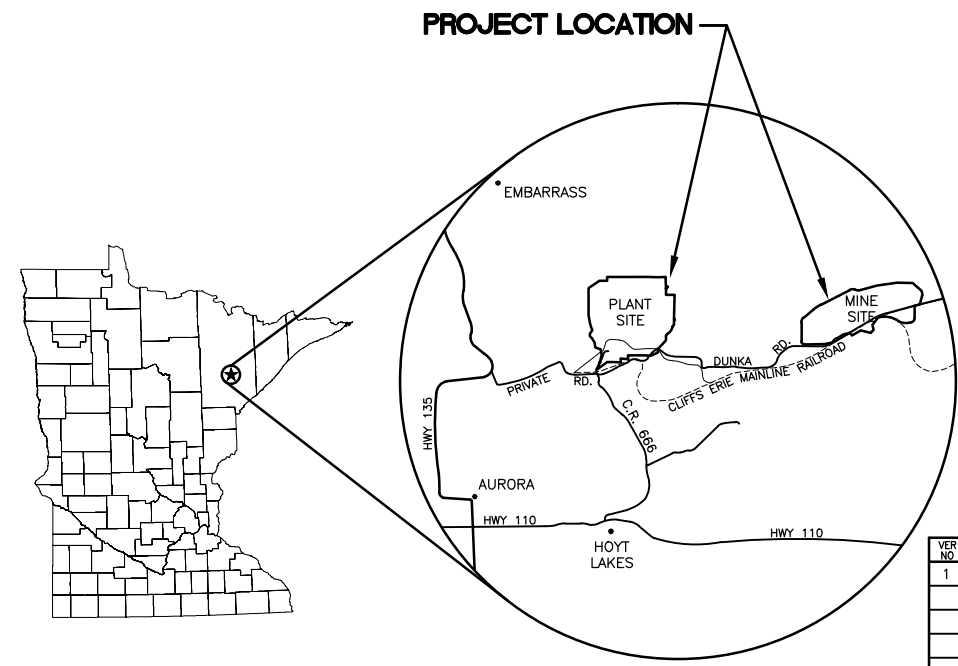
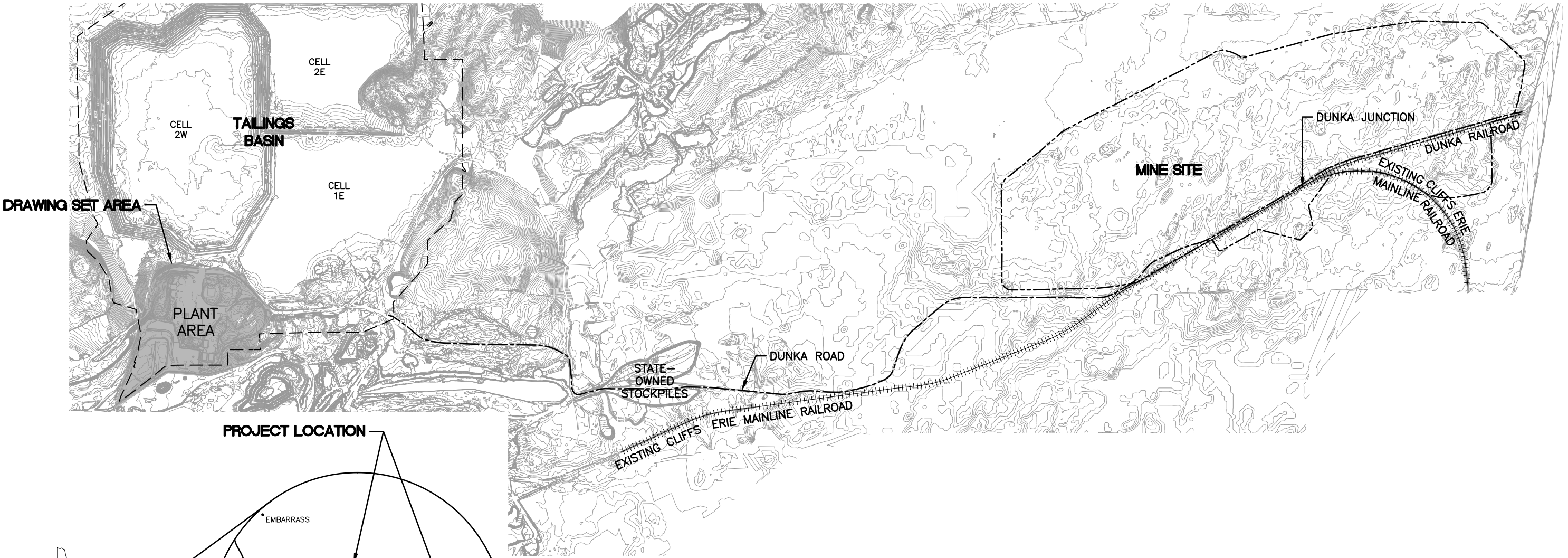


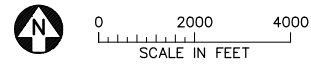
## **Appendix 9**

### **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			
			FOR PERMITTING	1	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

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

PLANT DRAWING NUMBER:

SEWAGE TREATMENT SYSTEM  
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. SWGT-001

REV A

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

INCHES

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CADD USER: Veronica Waurms FILE: K:\DESIGN\23690C29.10\PERMIT\_NMP-56-TS-002.DWG PLOT SCALE: 1:2 PLOT DATE: 6/6/2017 2:21 PM

INCHES

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2

—1000—

EXISTING CONTOUR — MAJOR

————

EXISTING CONTOUR — MINOR

—>—

EXISTING SANITARY SEWER

—FM—

EXISTING SANITARY SEWER FORCEMAIN

|||||

EXISTING DRAIN FIELD

+ + + + +

EXISTING RAILROAD

=====

EXISTING ROAD

▭

EXISTING STRUCTURES

—OE—OE—

EXISTING OVERHEAD ELECTRIC

—P—

EXISTING PIPELINE

—X—

EXISTING FENCE

> <

EXISTING CULVERT

•

EXISTING MANHOLE

•

EXISTING LIFT STATION

▣

EXISTING SEPTIC TANK

—FM—

PROPOSED SANITARY SEWER FORCEMAIN

▭

PROPOSED STRUCTURES

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PROJECT AREA BOUNDARY

NOTES

1. COORDINATE SYSTEM IS MINNESOTA STATE PLANE NORTH ZONE, NAD83.
2. ELEVATIONS ARE BASED ON MEAN SEA LEVEL (MSL), NAVD88.
3. EXISTING TOPOGRAPHIC INFORMATION SHOWN ON THE DRAWINGS WAS PREPARED BY AEROMETRIC, INC. FROM LIDAR DATA COLLECTED ON MARCH 17, 2010.
4. PIPE, STRUCTURE AND STABILIZATION POND DIMENSIONS ARE PRELIMINARY. FINAL DIMENSIONS SHALL BE DETERMINED DURING FINAL DESIGN.

ABBREVIATIONS

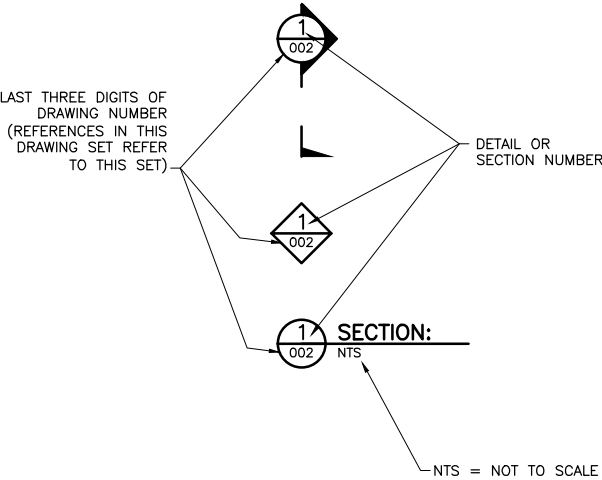
- CI — CAST IRON
- DIP — DUCTILE IRON PIPE
- FTB — FLOTATION TAILINGS BASIN
- GPD — GALLONS PER DAY
- GPM — GALLONS PER MINUTE
- INV — INVERT
- LB — POUND
- LF — LINEAR FEET
- MH — MANHOLE
- MIN — MINIMUM
- PHWWF — PEAK HOURLY WET WEATHER FLOW
- PIWWF — PEAK INSTANTANEOUS WET WEATHER FLOW
- PT — POINT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

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


DRAWING NUMBERING




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1	6/07/17	PERMIT APPLICATION UPDATES	ISSUED	VERSION	DATE		
			FOR PERMITTING	1	6/07/17		
			FOR CONSTRUCTION			PRINTED NAME JON M. MINNE	CHECKED: JMM3
			NOT APPROVED FOR CONSTRUCTION.			SIGNATURE <i>[Signature]</i>	BARR PROJECT NO.: 23/69-0C29
						DATE 6/07/17 LICENSE# 25080	SCALE: AS SHOWN
							DWG. NO. SWGT-002

PLANT DRAWING NUMBER:

SEWAGE TREATMENT SYSTEM  
LEGEND AND SHEET INDEX



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

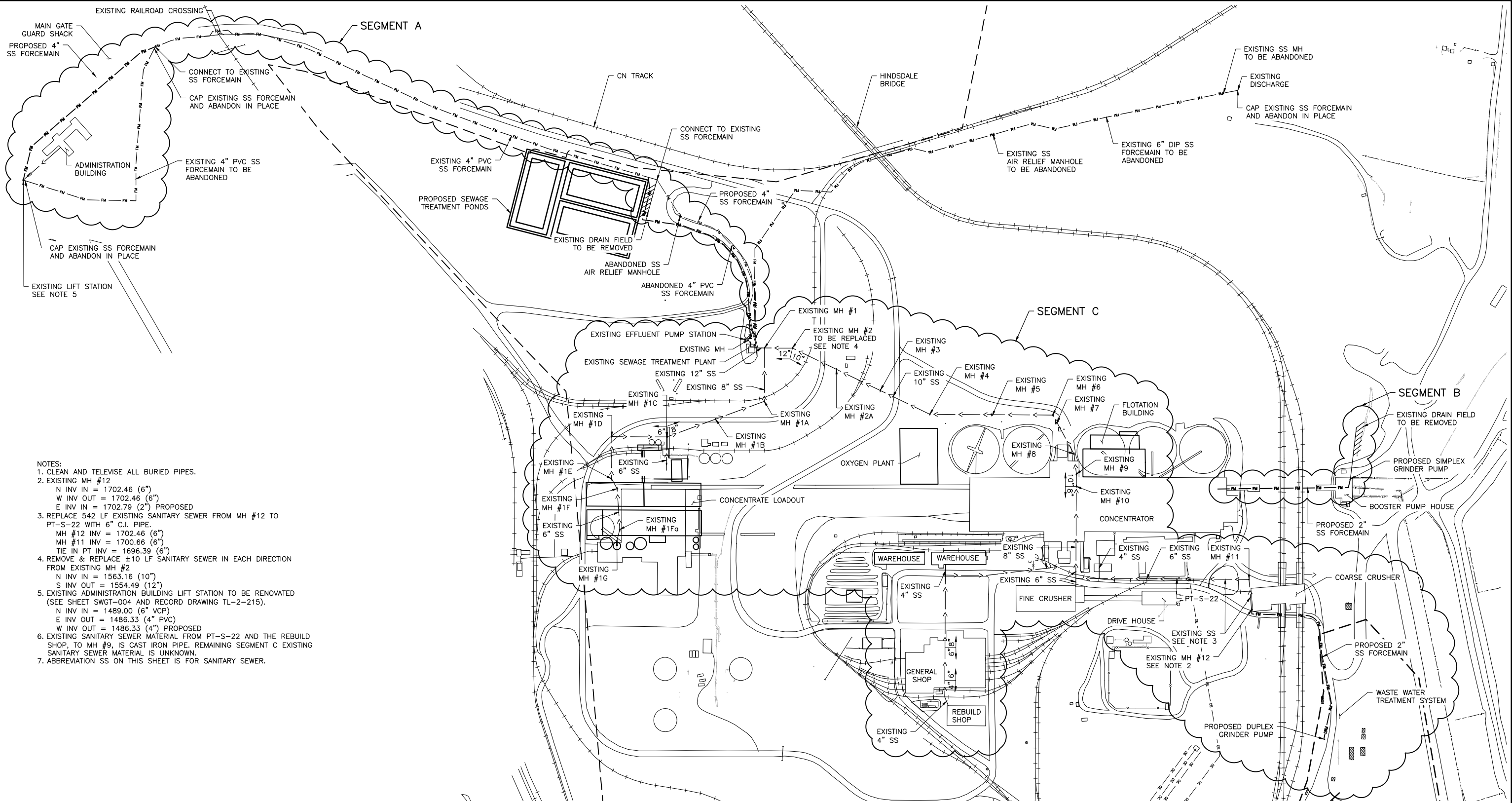


BARR ENGINEERING CO.  
4300 MARKETPOINTE DRIVE  
SUITE 200  
MINNEAPOLIS, MN.  
Ph: 1-800-632-2277

REV  
A

CADD USER: Veronica Wourms 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 TELEVIEW 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.

PLAN

0 250 500  
SCALE IN FEET



PLANT DRAWING NUMBER:

SEWAGE TREATMENT SYSTEM  
OVERALL SITE PLAN




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



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

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		

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

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

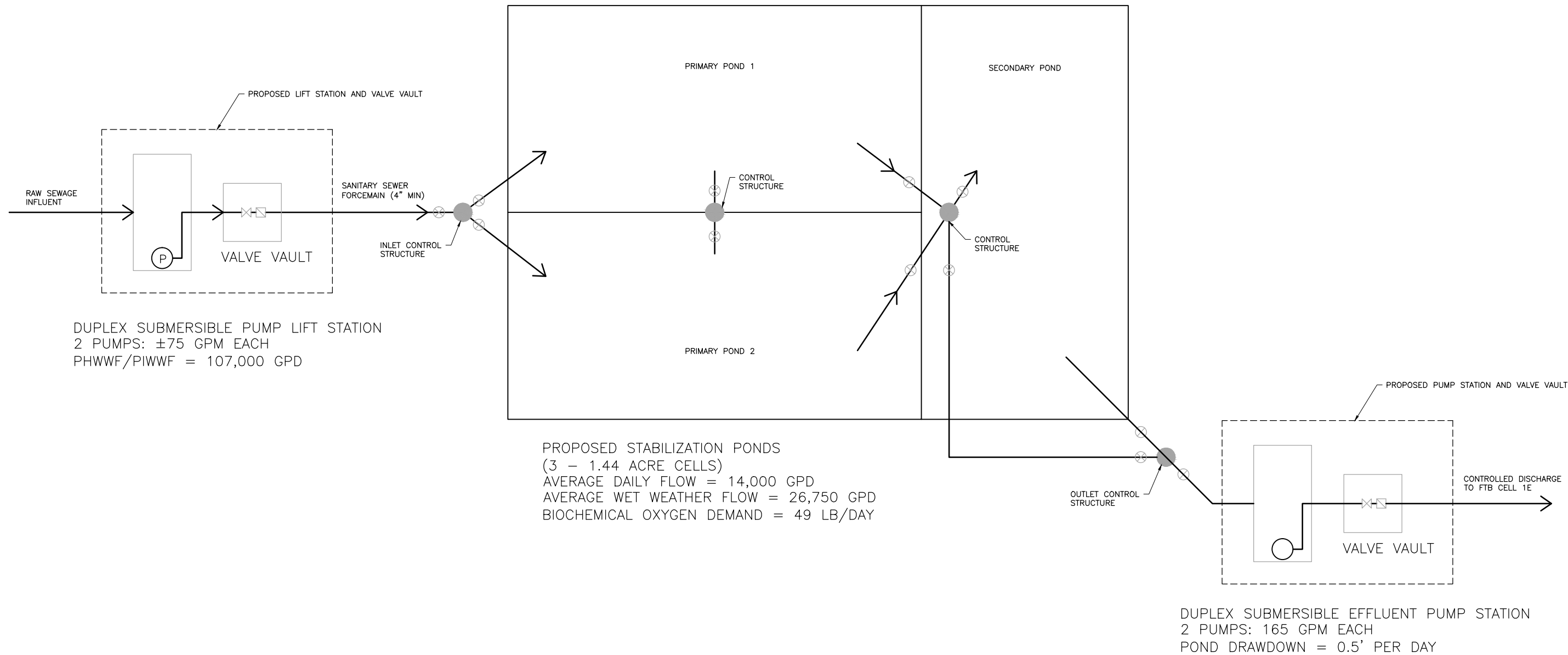
DWG. NO.

SWGT-003

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INCHES  
1  
2

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
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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	
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. SWGT-004	REV B