

Appendix 5 Mine Site Stormwater Permit Application Support Drawings

Errata Sheet

Poly Met Mining, Inc. NorthMet Project

Permit Application Support Drawings: Mine Site Stormwater

July 2016 (version 2)

Engineering design is currently in progress. The table below lists changes that have been identified to-date and have not yet been incorporated in the attached permit application support drawings within this set. Final design will incorporate these changes along with additional site-specific information (e.g., supplementary geotechnical data); therefore, additional adjustments may be made during final design that will be incorporated into the final design drawing set.

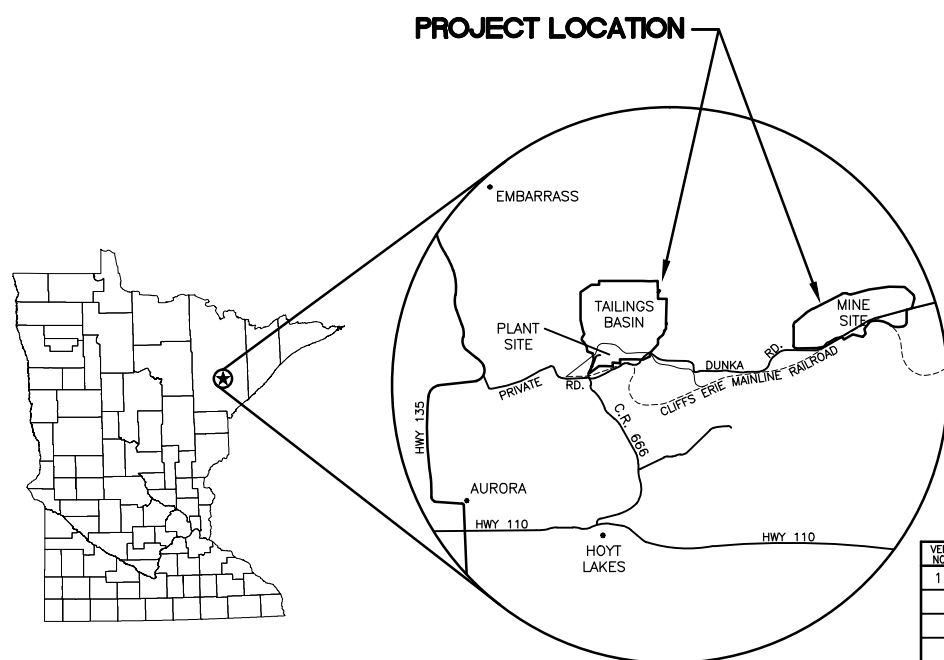
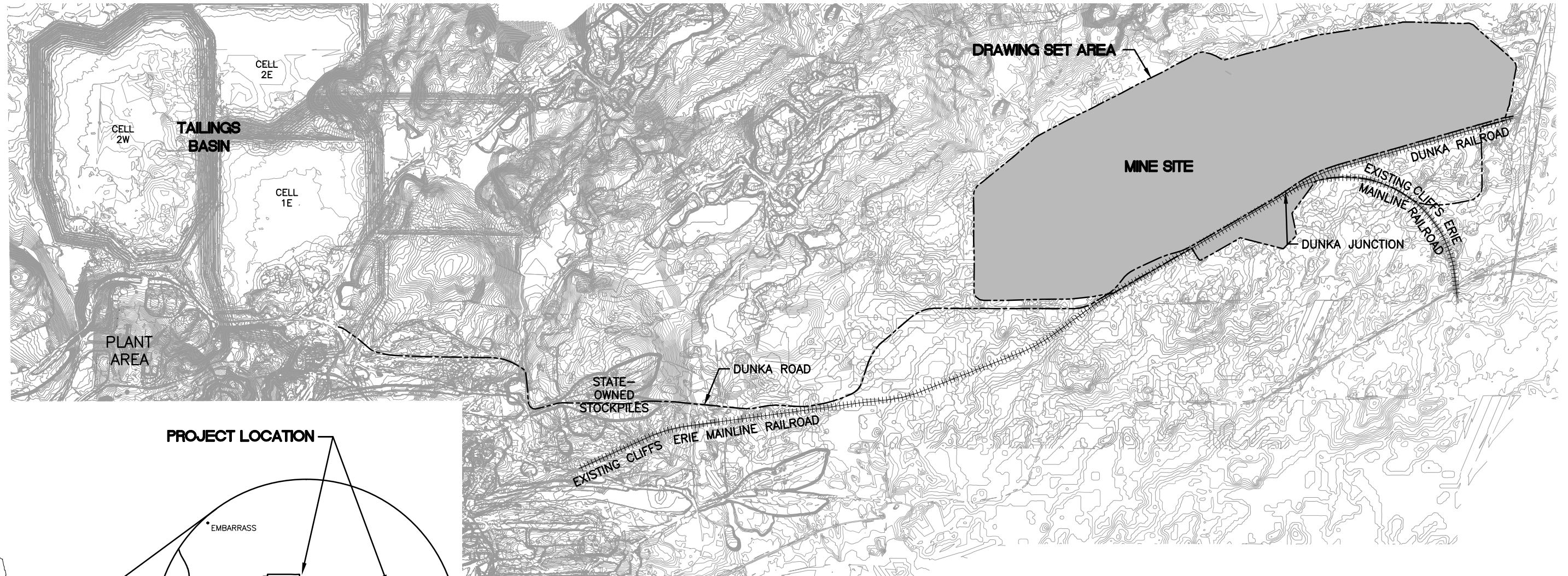
| Drawing Sheet(s) | Change |
|--|---|
| Global change to all sheets, as needed | The terminology "mine drainage" as noted in these drawings will be changed to "mine water". |
| SW-003, SW-004, SW-005, SW-006, SW-031 | Temporary sedimentation basins or stormwater infiltration basins may be added to meet construction stormwater requirements. There is currently an infiltration basin shown on the Waste Water Treatment Facility drawings between the Ore Surge Pile and the Rail Transfer Hopper that is not shown on this Mine Site Stormwater drawing set. These construction stormwater features require additional site-specific data and will be evaluated in final design. |

POLY MET MINING, INC. NORTHMET PROJECT

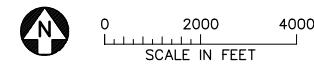
PERMIT APPLICATION SUPPORT DRAWINGS

MINE SITE STORMWATER

HOYT LAKES, MINNESOTA



SITE MAP



PLANT DRAWING NUMBER:

**MINE SITE STORMWATER
LOCATION MAP AND SITE MAP**



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

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BARR PROJECT NO.: 23/69-0C29

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BARR ENGINEERING COMPANY
4700 WEST 77TH STREET
MINNEAPOLIS, MN.
Ph: 1-800-632-2277

DWG. NO.

SW-001

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PRINTED NAME: PAUL T. SWENSON
SIGNATURE: *[Signature]*
DATE: 5/26/15 LICENSE# 20533

CADD USER: Terr J. Toms FILE: K:\DESIGN\23690C29\10\PERMIT_NMM-00-15-003.DWG PLOT SCALE: 1:2 PLOT DATE: 5/29/2015 4:04 PM

INCHES
2
1

LOCATION MAP
NOT TO SCALE



VICINITY MAP
NOT TO SCALE

GENERAL LEGEND

| EXISTING | | PROPOSED | |
|----------|--------------------------------|----------|---------------------------|
| —1000— | EXISTING CONTOUR - MAJOR | —1000— | PROPOSED CONTOUR - MAJOR |
| ⊗ | EXISTING POWER POLE | — | PROPOSED CONTOUR - MINOR |
| +++++ | EXISTING RAILROAD | == | PROPOSED ACCESS ROADS |
| ----- | WATER EDGE/CREEK CENTER LINE | ←← | PROPOSED STORMWATER DRAIN |
| == | EXISTING ROAD | → | SURFACE DRAINAGE |
| —R/W— | RIGHT OF WAY | | |
| --- | PROPERTY LINE | | |
| --- | MINE SITE BOUNDARY | | |
| □ | EXISTING STRUCTURES | | |
| ⊕ | WETLAND BOUNDARY | | |
| —OE— | EXISTING OVERHEAD ELECTRIC | | |
| —UE— | EXISTING UNDERGROUND ELECTRIC | | |
| — | EXISTING CULVERT | | |
| == | PROPOSED MINE DRAINAGE CULVERT | | |

SHEET INDEX

SHEET NO. TITLE

GENERAL DRAWINGS

| | |
|--------|--|
| SW-001 | STORMWATER LOCATION MAP AND SITE MAP |
| SW-002 | STORMWATER LEGEND AND SHEET INDEX |
| SW-003 | STORMWATER SITE DRAINAGE PLAN MINE YEAR 1 |
| SW-004 | STORMWATER SITE DRAINAGE PLAN MINE YEAR 11 |
| SW-005 | STORMWATER SITE DRAINAGE PLAN MINE YEAR 20 |
| SW-006 | STORMWATER SHEET LOCATION MAP |
| SW-007 | STORMWATER TYPICAL DIKES AND DITCHES CROSS SECTIONS |
| SW-008 | STORMWATER SEDIMENTATION POND A GRADING PLAN AND DETAILS |
| SW-009 | STORMWATER SEDIMENTATION POND B GRADING PLAN AND DETAILS |
| SW-010 | STORMWATER SEDIMENTATION POND C--EAST GRADING PLAN AND DETAILS |
| SW-011 | STORMWATER SEDIMENTATION POND C--WEST GRADING PLAN AND DETAILS |
| SW-012 | STORMWATER SEDIMENTATION POND D GRADING PLAN AND DETAILS |
| SW-013 | STORMWATER NORTH DIKE AND DITCH PLAN AND PROFILE STATION 10+00N - 38+50N |
| SW-014 | STORMWATER NORTH DIKE AND DITCH PLAN AND PROFILE STATION 38+50N - 66+50N |
| SW-015 | STORMWATER NORTH DIKE AND DITCH PLAN AND PROFILE STATION 66+50N - 94+00N |
| SW-016 | STORMWATER NORTH DIKE AND DITCH PLAN AND PROFILE STATION 94+00N - 122+00N |
| SW-017 | STORMWATER NORTH DIKE AND DITCH PLAN AND PROFILE STATION 122+00N - 144+00N |
| SW-018 | STORMWATER NORTH DIKE AND DITCH PLAN AND PROFILE STATION 146+00N - 162+00N |
| SW-019 | STORMWATER NORTH DIKE AND DITCH PLAN AND PROFILE STATION 162+00N - 183+00N |
| SW-020 | STORMWATER SOUTH DIKE AND DITCH PLAN AND PROFILE STATION 10+00S - 22+95S |
| SW-021 | STORMWATER DITCH B PLAN AND PROFILE STATION 0+00B - 17+50B |
| SW-022 | STORMWATER DITCH B PLAN AND PROFILE STATION 17+50B - 35+00B |
| SW-023 | STORMWATER DITCH C(E) PLAN AND PROFILE STATION 0+00C(E) - 19+64C(E) |
| SW-024 | STORMWATER DITCH C(W) PLAN AND PROFILE STATION 0+00C(W) - 18+00C(W) |
| SW-025 | STORMWATER DITCH C(W) PLAN AND PROFILE STATION 18+00C(W) - 34+50C(W) |
| SW-026 | STORMWATER DITCH C(W) PLAN AND PROFILE STATION 35+00C(W) - 55+00C(W) |
| SW-027 | STORMWATER DITCH C(W) PLAN AND PROFILE STATION 55+00C(W) - 75+00C(W) |
| SW-028 | STORMWATER DITCH C(W) PLAN AND PROFILE STATION 75+00C(W) - 94+60C(W) |
| SW-029 | STORMWATER DITCH C(W) PLAN AND PROFILE STATION 95+00C(W) - 124+35C(W) |
| SW-030 | STORMWATER DITCH D PLAN AND PROFILE STATION 0+00D - 27+00D |
| SW-031 | STORMWATER DIKES, DITCHES, AND PONDS CLOSURE PLAN |

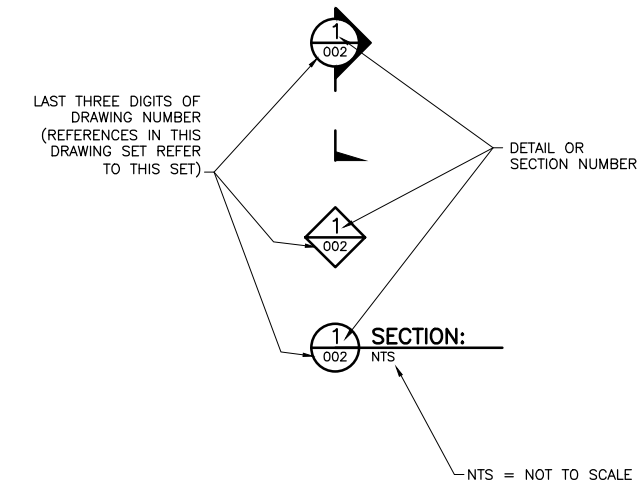
NOTES

- 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.
- CULVERT DIMENSIONS ARE PRELIMINARY. FINAL DIMENSIONS SHALL BE DETERMINED DURING FINAL DESIGN.
- THE BEDROCK PROFILES SHOWN ON THESE DRAWINGS REPRESENT THE BEST AVAILABLE INFORMATION FOR PLANNING PURPOSES. THE BEDROCK SURFACE FROM WHICH THE PROFILES ARE EXTRACTED IS A THREE-DIMENSIONAL, MODELED SURFACE THAT RESULTED FROM DEDUCTING THE DEPTH TO BEDROCK IDENTIFIED ON LOGS OF BORINGS CONDUCTED AT THE MINE SITE FROM THE LIDAR TOPOGRAPHIC GROUND SURFACE MODEL. THE RESULTING DATA WAS THEN MODELED IN GIS SOFTWARE TO DEVELOP A THREE-DIMENSIONAL BEDROCK SURFACE. THE PROFILES SHOW SIGNIFICANT DETAIL IN LOCAL ELEVATIONS, WHICH MAY OR MAY NOT ACTUALLY EXIST. THE BEDROCK SURFACE PROFILES SHOULD BE TAKEN AS REPRESENTATIVE, BUT NOT NECESSARILY PRECISE.

ABBREVIATIONS

| | | |
|------------------------|---|--|
| CATEGORY 1 STOCKPILE | - | CATEGORY 1 WASTE ROCK STOCKPILE |
| CATEGORY 2/3 STOCKPILE | - | CATEGORY 2/3 WASTE ROCK STOCKPILE |
| CL | - | CENTERLINE |
| CPS | - | CENTRAL PUMPING STATION |
| D50 | - | THE MEDIAN PARTICLE DIAMETER OF A PARTICLESIZE DISTRIBUTION; THE SIZE AT WHICH 50% OF THE PARTICLES IN THE MATERIAL PARTICLE SIZE DISTRIBUTION CURVE ARE SMALLER |
| EL | - | ELEVATION |
| INV | - | INVERT |
| I, I, III, IV, V | - | ROMAN NUMERALS FOR RIPRAP CLASSIFICATION |
| kV | - | KILOVOLT |
| LF | - | LINEAR FEET |
| MP | - | MINNESOTA POWER |
| NWL | - | NORMAL WATER LEVEL |
| RCP | - | REINFORCED CONCRETE PIPE |
| O.C. | - | ON CENTER |
| OSLA | - | OVERBURDEN STORAGE AND LAYDOWN AREA |
| PVI | - | POINT OF VERTICAL |
| SWPPP | - | STORMWATER POLLUTION PREVENTION PLAN |
| TWP | - | TREATED WATER PIPELINE |
| WWTF | - | WASTE WATER TREATMENT FACILITY |
| (E) | - | EAST |
| (W) | - | WEST |

DRAWING NUMBERING



PLANT DRAWING NUMBER:

**MINE SITE STORMWATER
LEGEND AND SHEET INDEX**



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



BARR ENGINEERING COMPANY
4700 WEST 77TH STREET
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Ph: 1-800-632-2277

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SIGNATURE *[Signature]*
DATE 5/26/15 LICENSE# 20533

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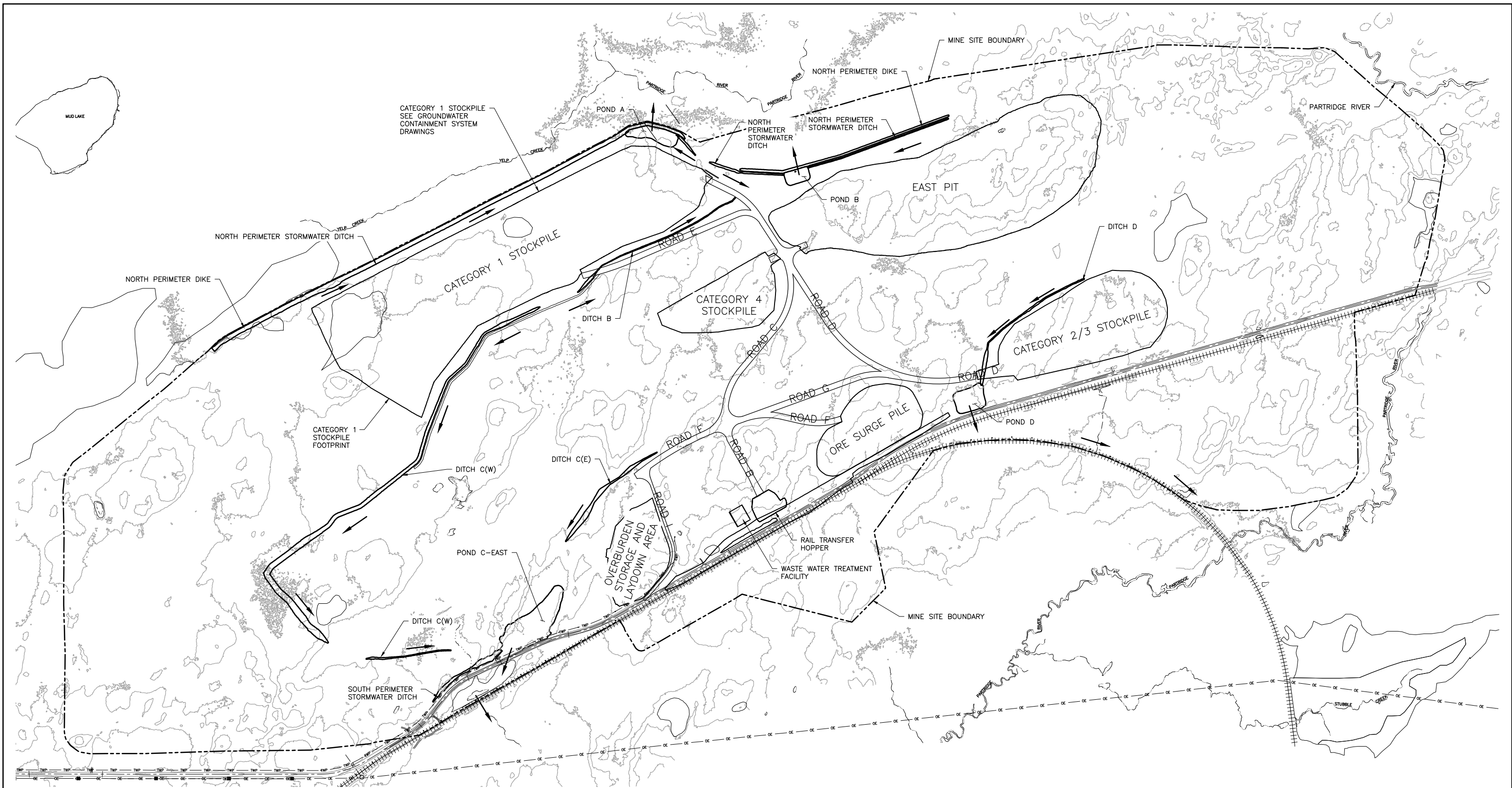
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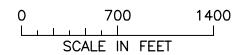
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1 PLAN: STORMWATER SITE DRAINAGE MINE YEAR 1



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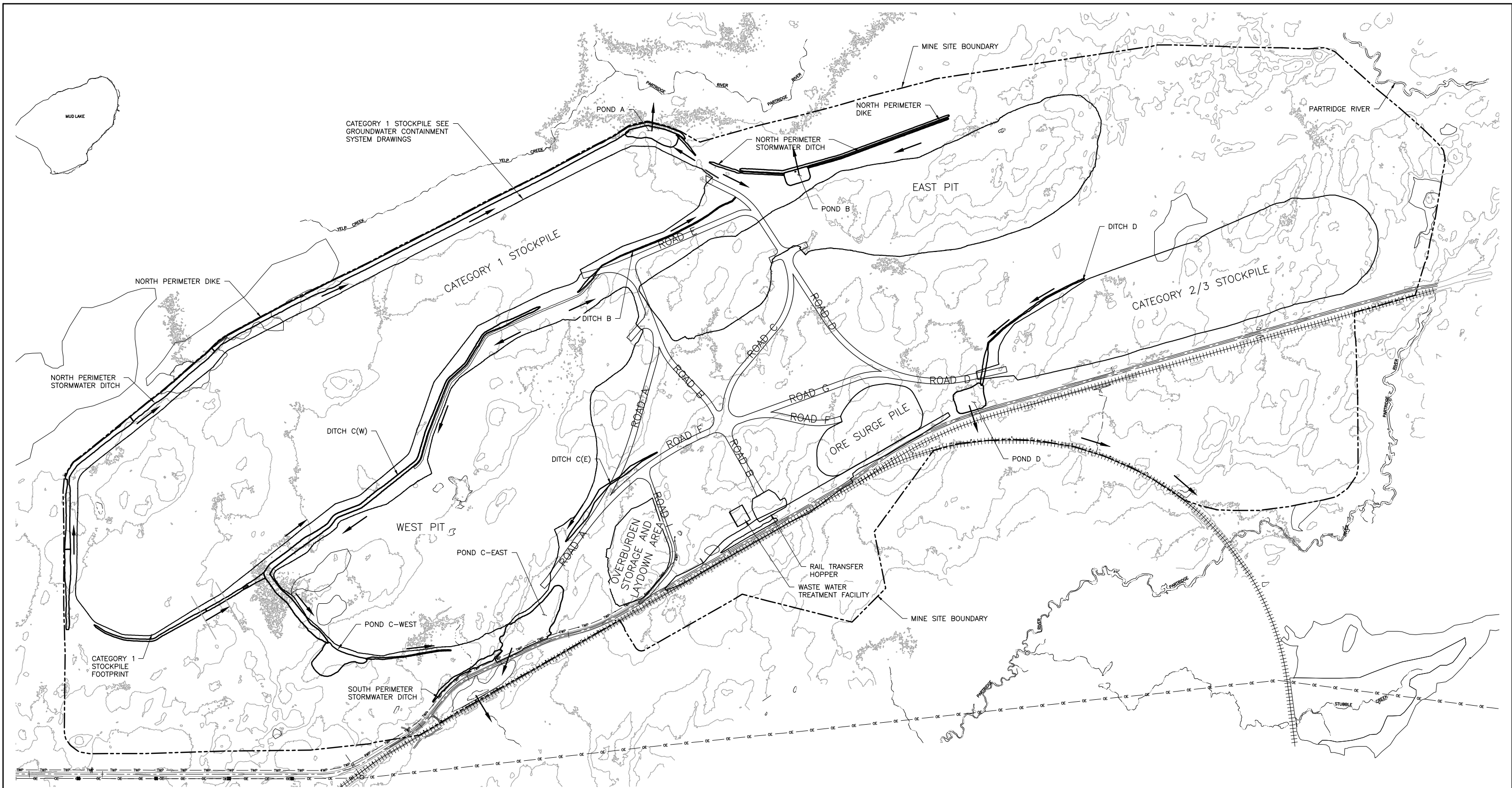
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SCALE: AS SHOWN

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| PLANT DRAWING NUMBER: | |
| MINE SITE STORMWATER SITE DRAINAGE PLAN MINE YEAR 1 | |
| POLY MET MINING, INC. NORTHMET PROJECT HOYT LAKES, MINNESOTA | |
| | BARR ENGINEERING COMPANY 4700 WEST 77TH STREET MINNEAPOLIS, MN. Ph: 1-800-632-2277 |
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1 PLAN: STORMWATER SITE DRAINAGE MINE YEAR 11

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SCALE IN FEET

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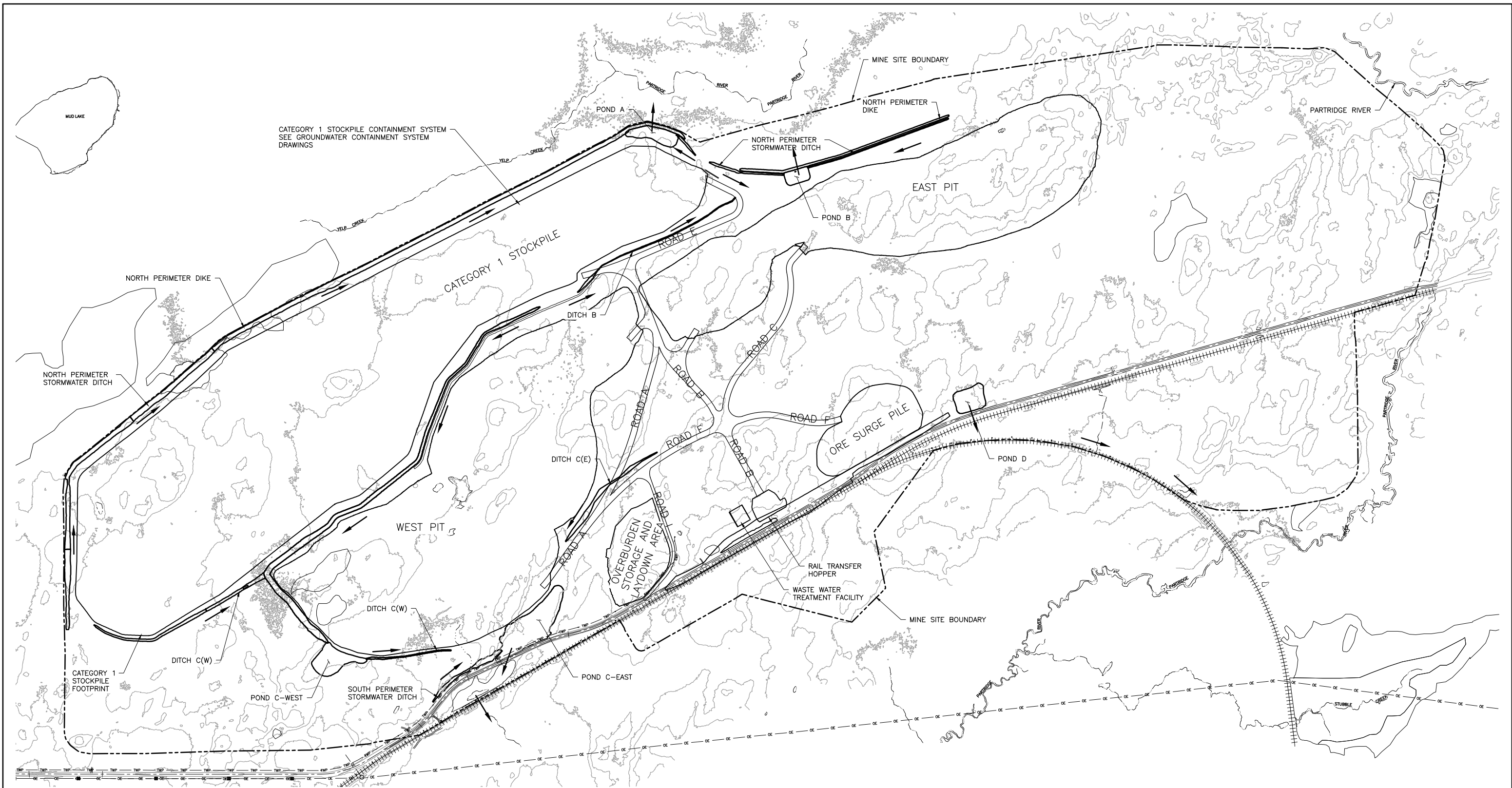
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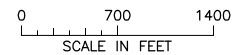
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| MINE SITE STORMWATER SITE DRAINAGE PLAN MINE YEAR 11 | |
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1 PLAN: STORMWATER SITE DRAINAGE MINE YEAR 20



INCHES

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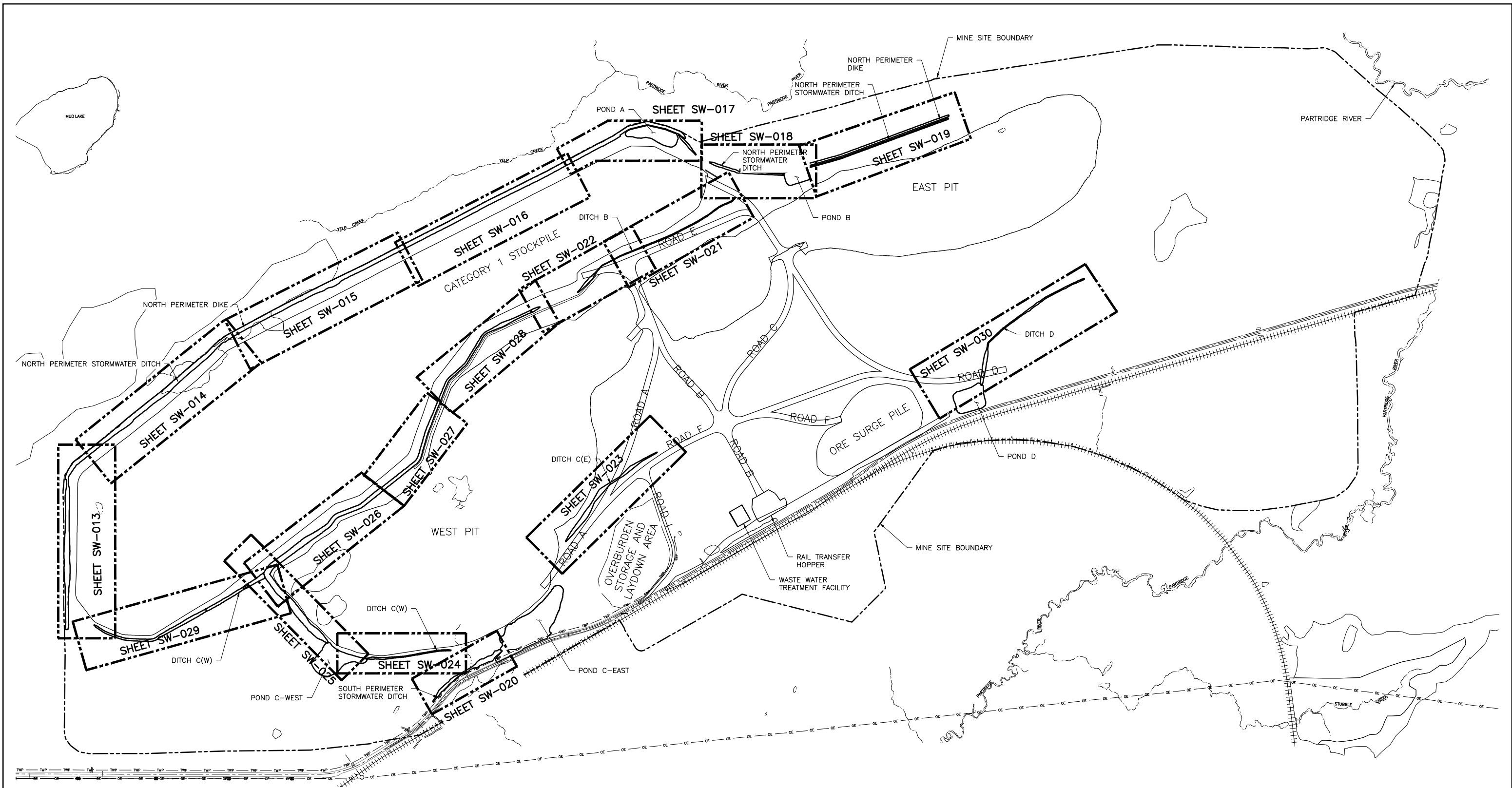
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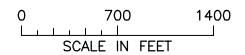
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| POLY MET MINING, INC. NORTHMET PROJECT HOYT LAKES, MINNESOTA | |
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1 PLAN: STORMWATER SHEET LOCATION MAP



INCHES

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PLANT DRAWING NUMBER:

MINE SITE STORMWATER SHEET LOCATION MAP

POLYMET MINING

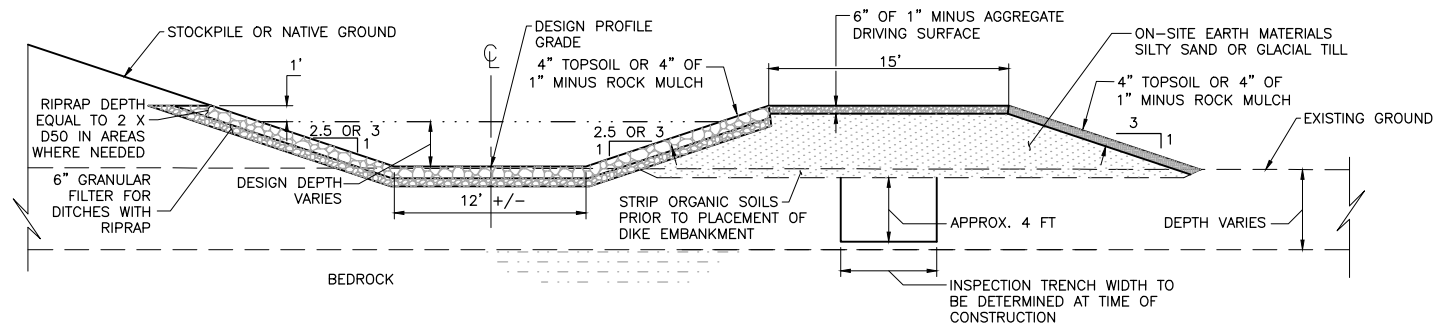
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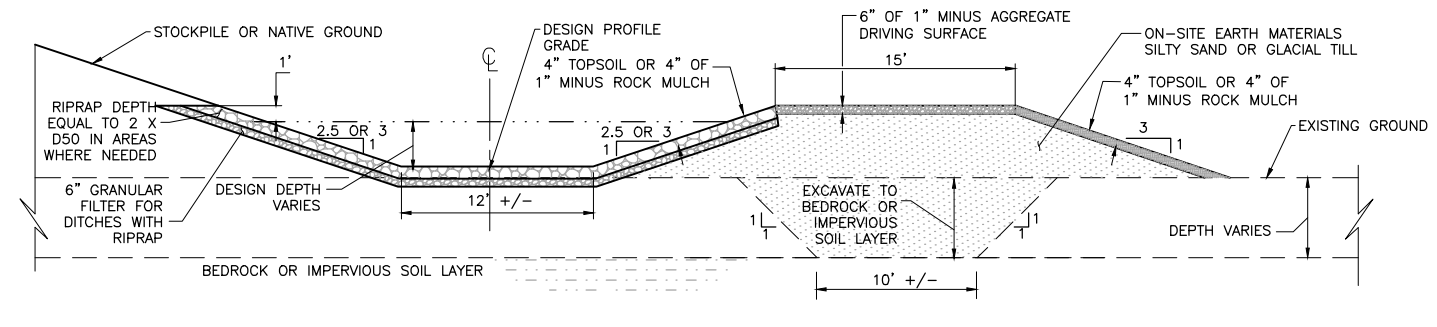
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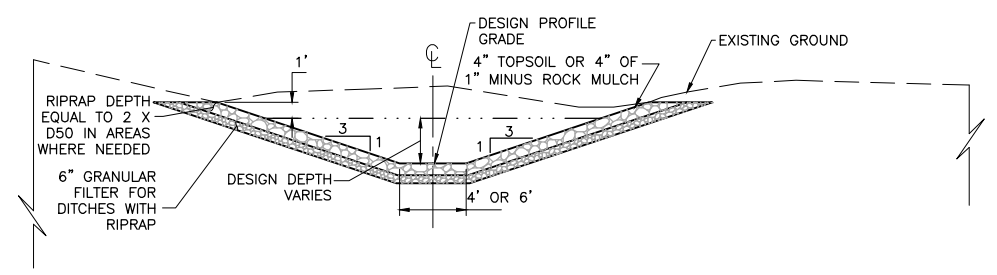
1 SECTION: TYPICAL PERIMETER DIKE AND DITCH WITHOUT SEEPAGE CUTOFF TRENCH

0 6 12
SCALE IN FEET



2 SECTION: TYPICAL PERIMETER DIKE AND DITCH WITH SEEPAGE CUTOFF TRENCH

0 6 12
SCALE IN FEET



3 SECTION: TYPICAL INTERIOR DITCH

0 6 12
SCALE IN FEET

NOTES

1. DITCHES NOT REQUIRING RIPRAP WILL BE CONSTRUCTED WITH NATIVE SOILS AND EITHER 4" TOPSOIL OR 4" OF 1" MINUS ROCK MULCH TO DESIGN PROFILE GRADE.
2. RESTORE ALL DISTURBED AREAS NOT STABILIZED WITH RIPRAP IN ACCORDANCE WITH THE SWPPP.
3. DESIGN DEPTH ESTABLISHED IN FINAL DESIGN OR IN FIELD. TOP OF DIKE TO FLOWLINE OF DITCH SHALL PROVIDE 1 FOOT OF FREEBOARD FROM DESIGN DEPTH.
4. INSPECTION TRENCH TO BE CONSTRUCTED ALONG ENTIRE LENGTH OF PERIMETER DIKES WHERE NON-ORGANIC MATERIALS ARE PRESENT.
5. PERIMETER DITCH AND DIKE ALONG THE NORTH SIDE OF THE CATEGORY 1 STOCKPILE (STATION 10+00 TO 143+53) SHALL HAVE 2.5H:1V SIDE SLOPES. ALL OTHER DITCHES AND DIKES SHALL HAVE SIDE SLOPES OF 3H:1V.

| | |
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| PLANT DRAWING NUMBER: | |
| MINE SITE STORMWATER TYPICAL DIKES AND DITCHES CROSS SECTIONS | |
| POLY MET MINING, INC. NORTHMET PROJECT HOYT LAKES, MINNESOTA | |
| | |
| DRAWN: KKB/ATS | BARR ENGINEERING COMPANY 4700 WEST 77TH STREET MINNEAPOLIS, MN. Ph: 1-800-632-2277 |
| CHECKED: ATS | BARR PROJECT NO.: 23/69-0C29 |
| SCALE: AS SHOWN | DWG. NO. SW-007 |
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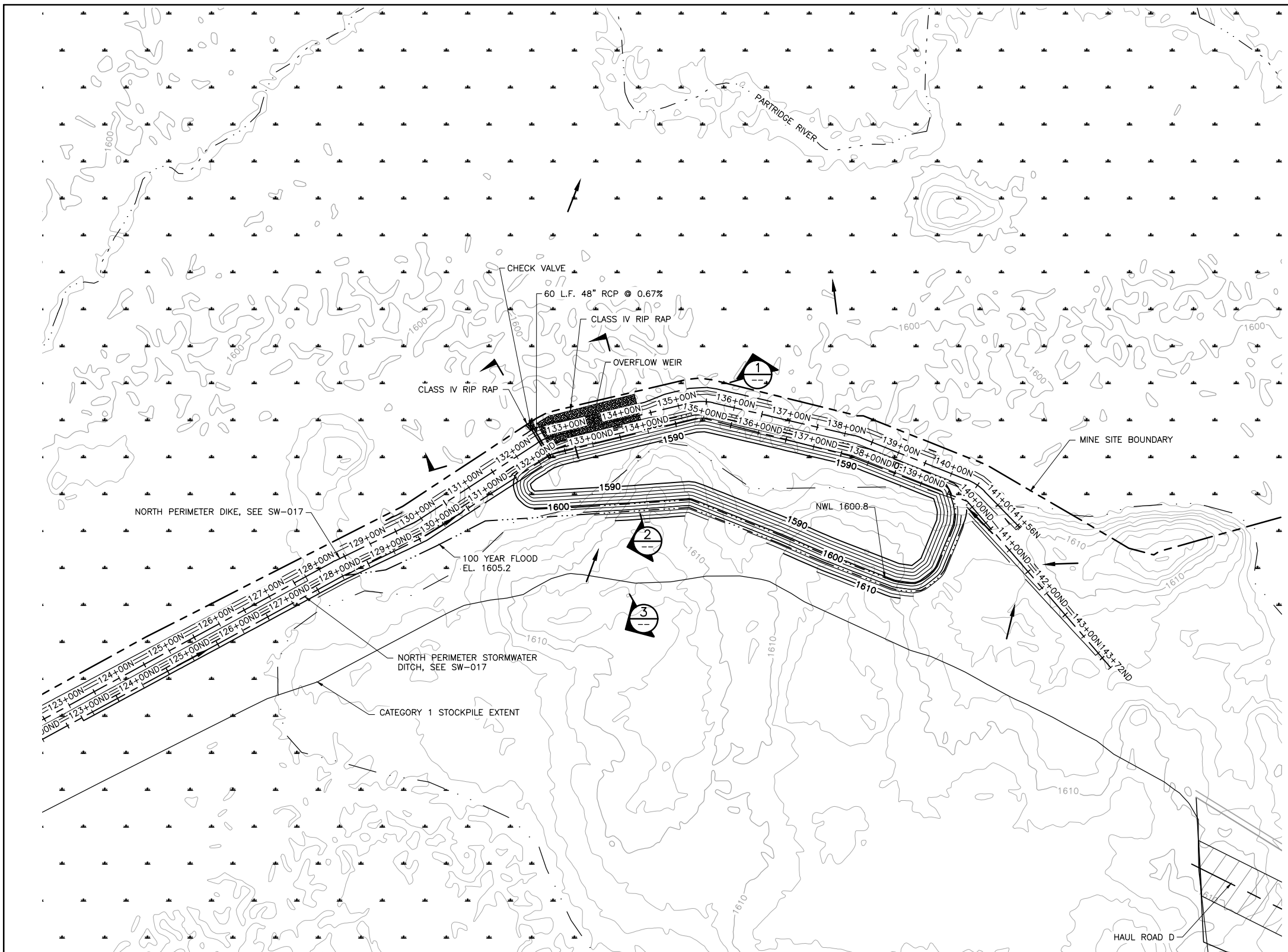
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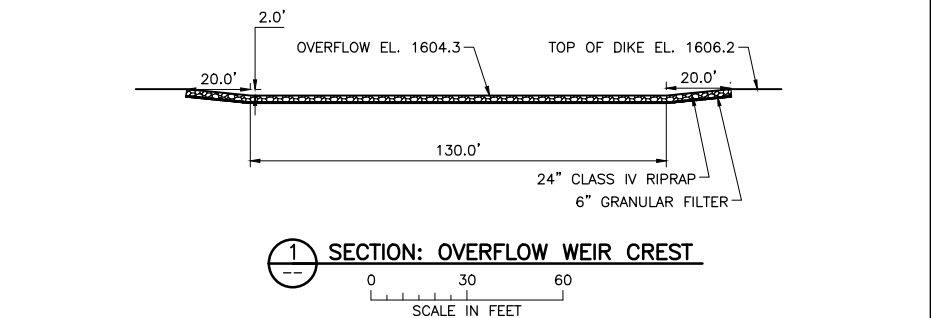
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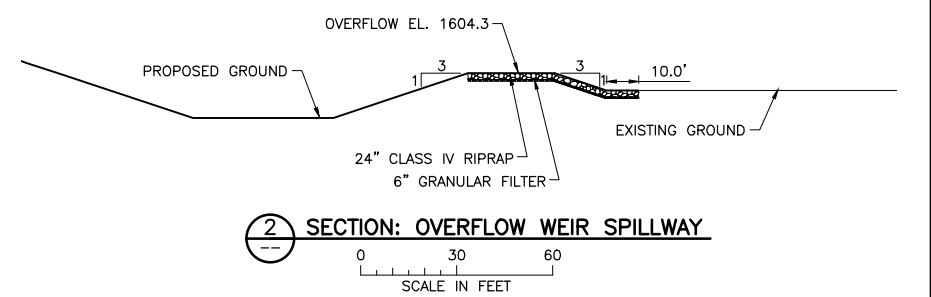
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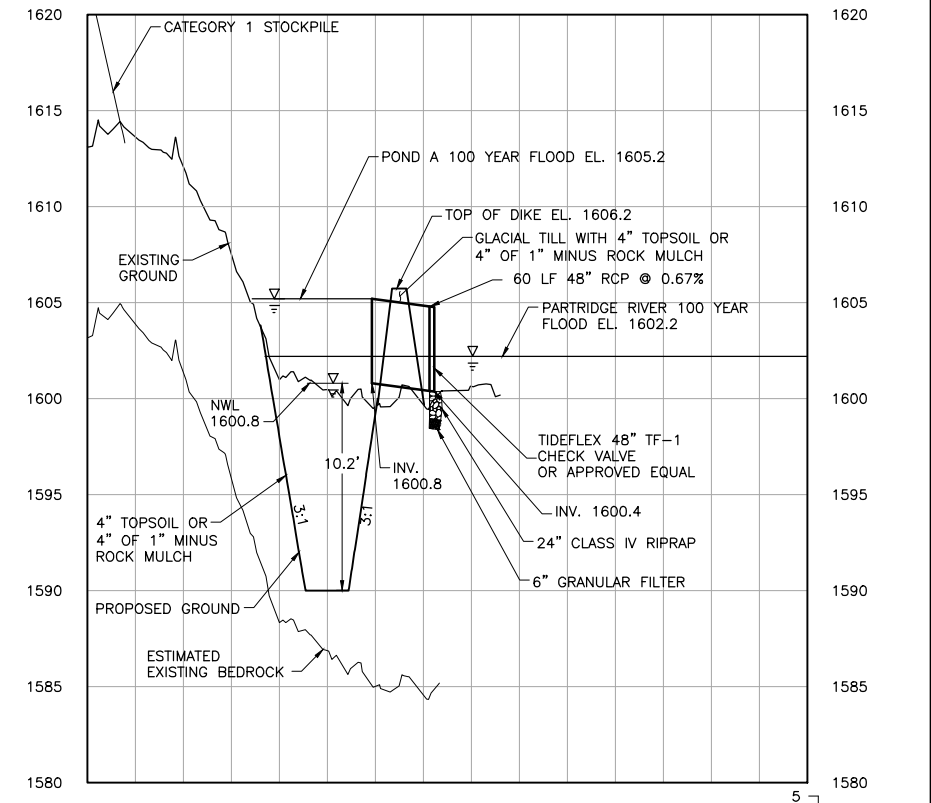
1 PLAN: STORMWATER SEDIMENTATION POND A
 SCALE IN FEET



1 SECTION: OVERFLOW WEIR CREST
 SCALE IN FEET



2 SECTION: OVERFLOW WEIR SPILLWAY
 SCALE IN FEET



3 SECTION: SEDIMENTATION POND A TYPICAL CROSS SECTION
 SCALE IN FEET

NOTES
 1. ALL DISTURBED AREAS WILL BE RESTORED IN ACCORDANCE WITH THE SWPPP.

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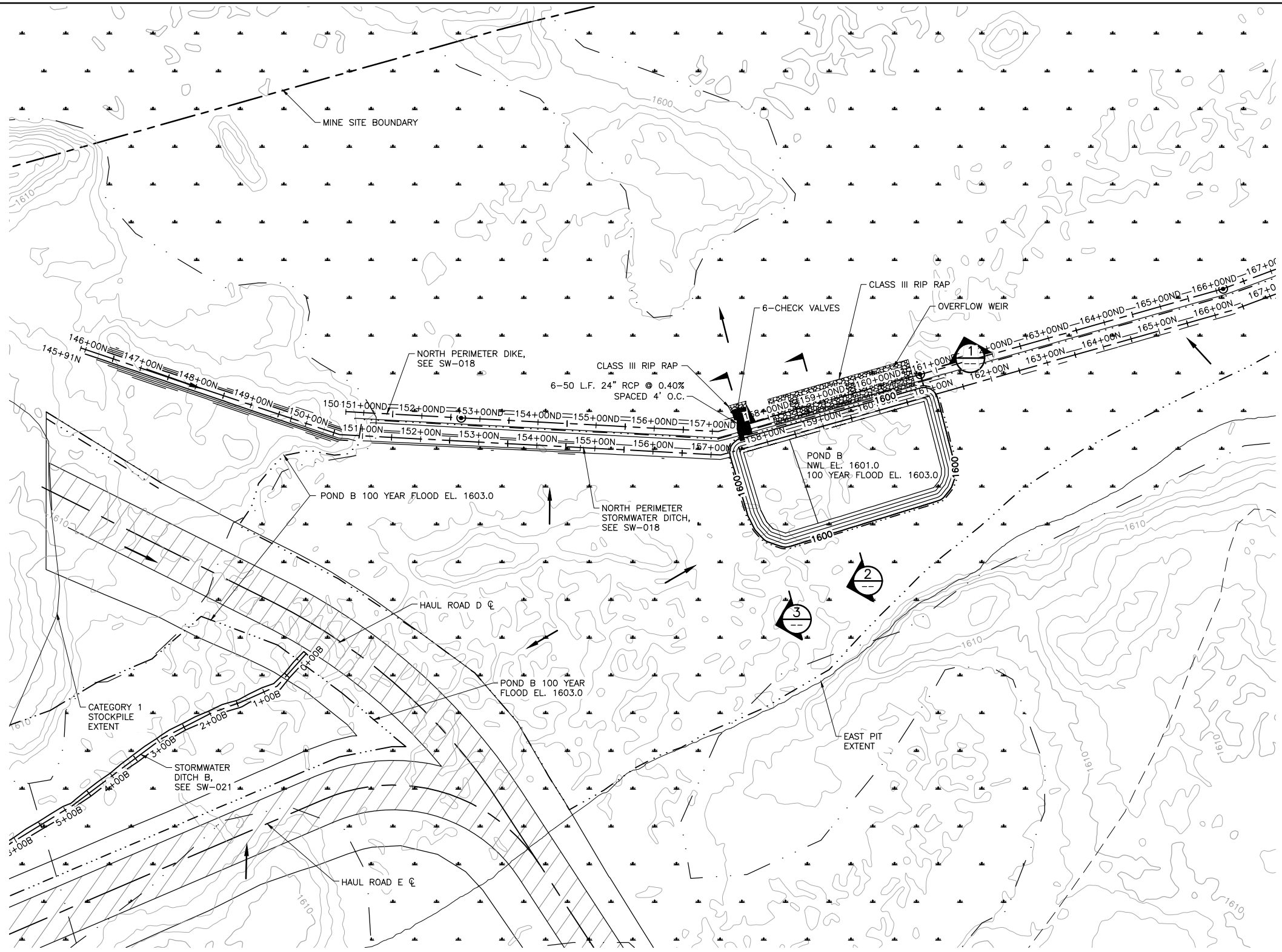
PLANT DRAWING NUMBER:
MINE SITE STORMWATER SEDIMENTATION POND A GRADING PLAN AND DETAILS

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

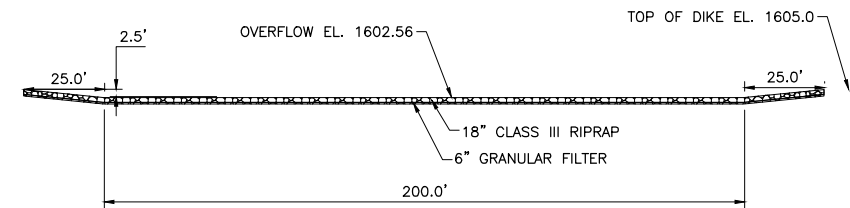
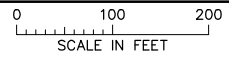
 BARR ENGINEERING COMPANY
 4700 WEST 77TH STREET
 MINNEAPOLIS, MN.
 Ph: 1-800-632-2277
 DWG. NO. **SW-008**
 REV

INCHES

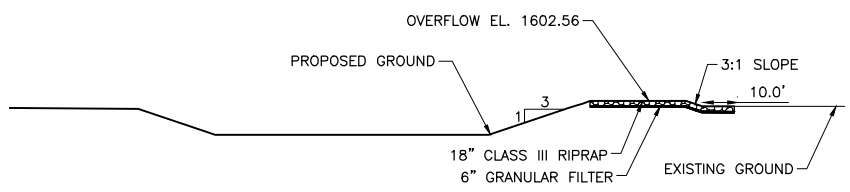
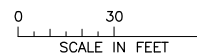
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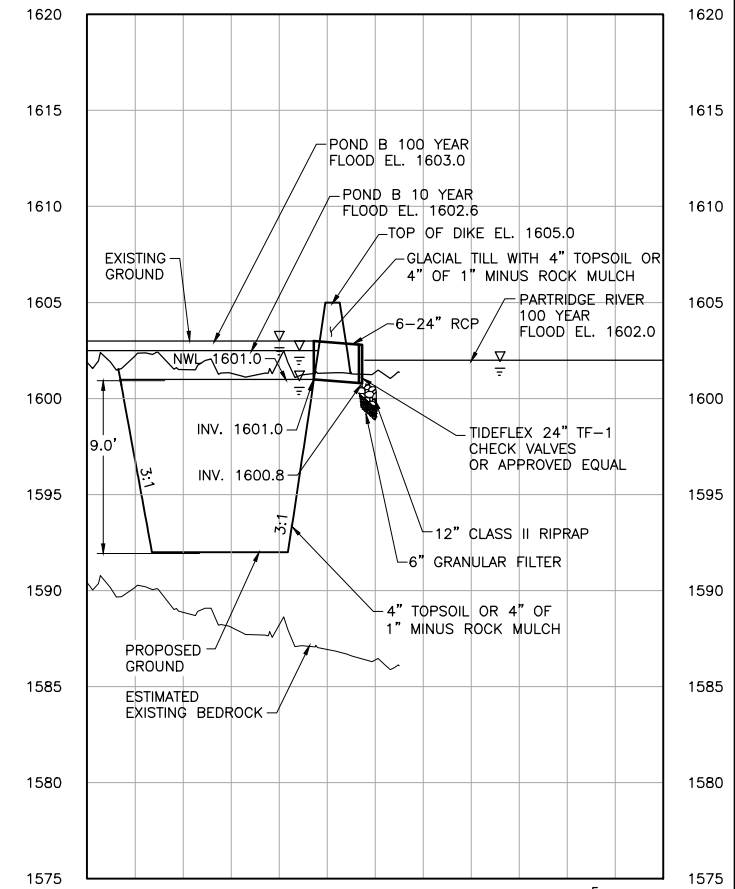
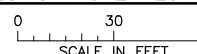
1 PLAN: STORMWATER SEDIMENTATION POND B



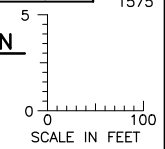
1 SECTION: OVERFLOW WEIR CREST



2 SECTION: OVERFLOW WEIR SPILLWAY



3 SECTION: SEDIMENTATION POND B TYPICAL CROSS SECTION



NOTES

- ALL DISTURBED AREAS WILL BE RESTORED IN ACCORDANCE WITH THE SWPPP.

| VER NO | DATE | DESCRIPTION | ISSUE STATUS | | |
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| 1 | 5/26/15 | ISSUED FOR INCLUSION IN PERMIT APPLICATION | ISSUED | VERSION | DATE |
| | | | FOR PERMITTING | 1 | 5/26/15 |
| | | | FOR CONSTRUCTION | | |
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PRINTED NAME PAUL T. SWENSON
SIGNATURE
DATE 5/26/15 LICENSE# 20533

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

PLANT DRAWING NUMBER:

MINE SITE STORMWATER SEDIMENTATION POND B GRADING PLAN AND DETAILS

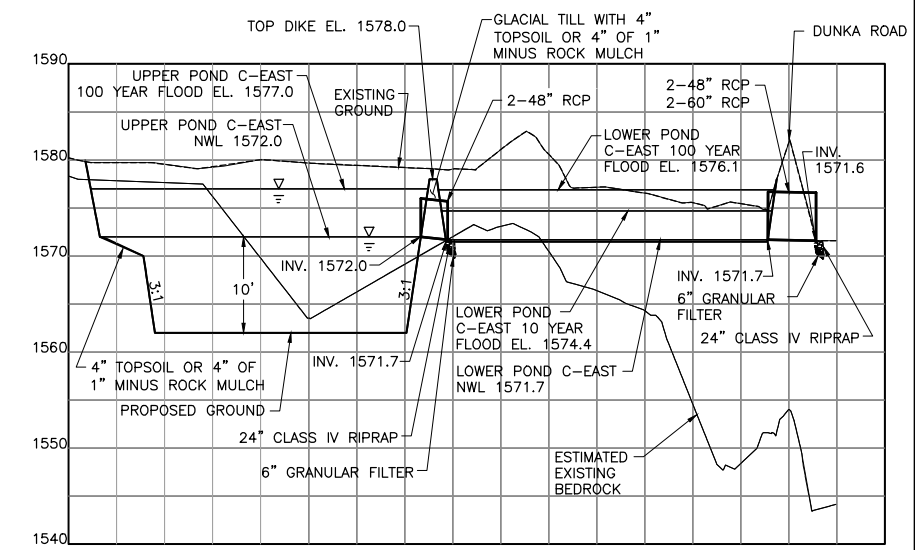
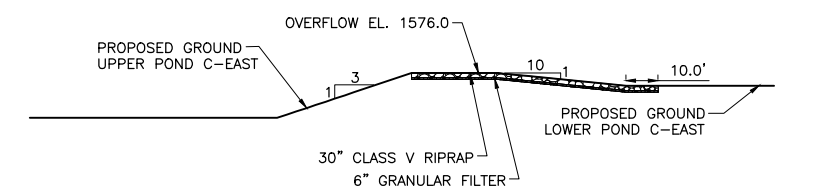
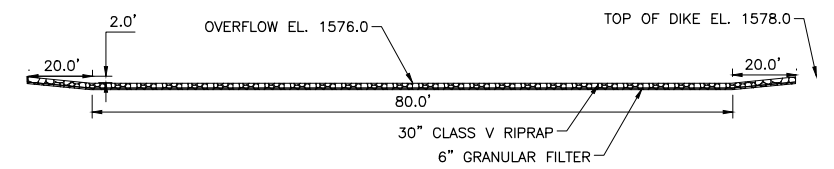
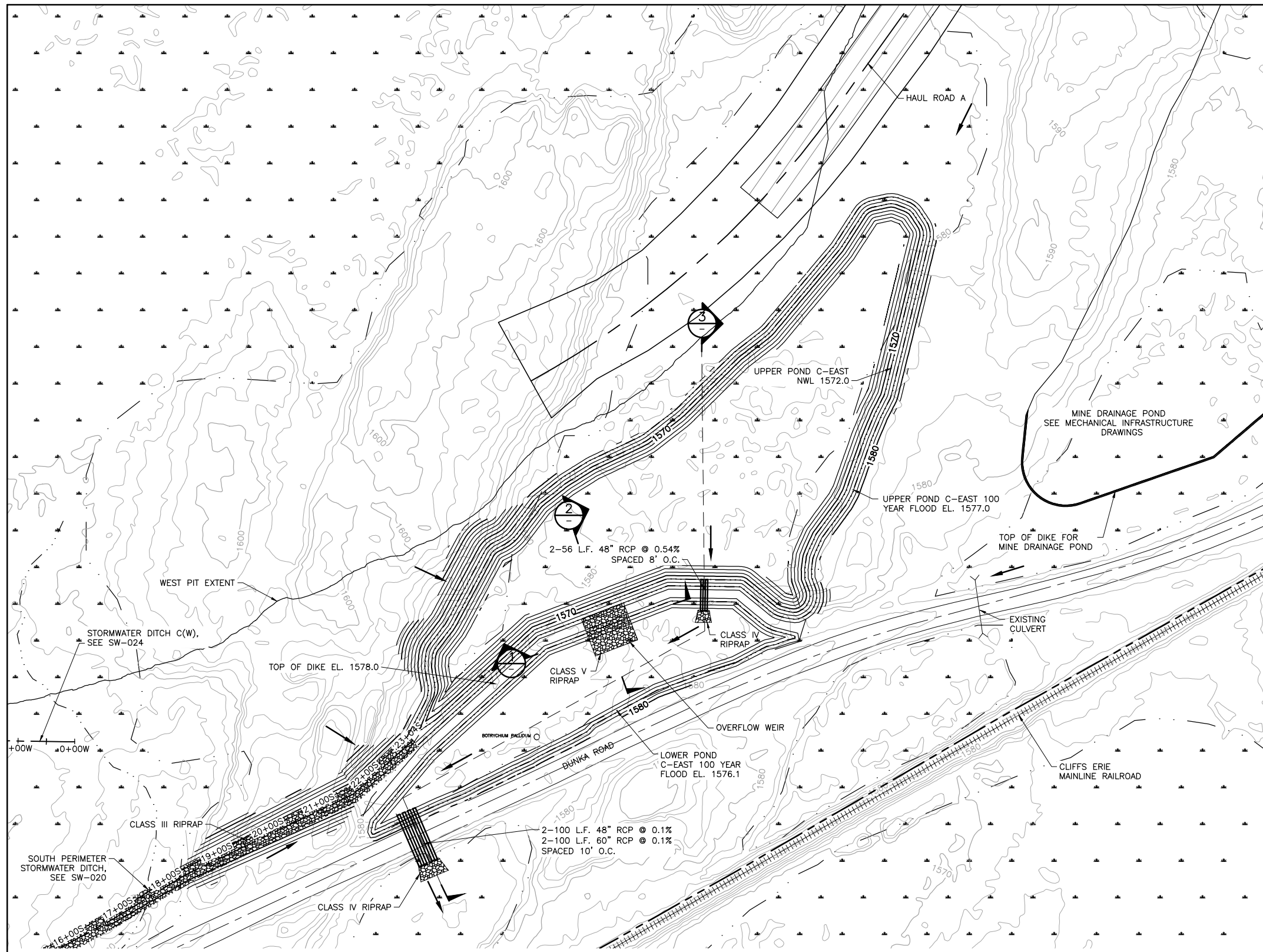
POLYMET MINING NORTHMET PROJECT HOYT LAKES, MINNESOTA

BARR ENGINEERING COMPANY
4700 WEST 77TH STREET
MINNEAPOLIS, MN.
Ph: 1-800-632-2277

DWG. NO. **SW-009**

INCHES 1 2

CADD USER: Terril J. Tombs FILE: K:\DESIGN\23690C29\10\PERMIT_MNM-05-05-152.DWG PLOT SCALE: 1:2 PLOT DATE: 5/29/2015 2:37 PM



1 PLAN: STORMWATER SEDIMENTATION POND C-EAST

Scale: 0 100 200 FEET

NOTES

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PRINTED NAME: PAUL T. SWENSON
SIGNATURE: [Signature]
DATE: 5/26/15 LICENSE# 20533

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

PLANT DRAWING NUMBER:

MINE SITE STORMWATER SEDIMENTATION POND C-EAST GRADING PLAN AND DETAILS

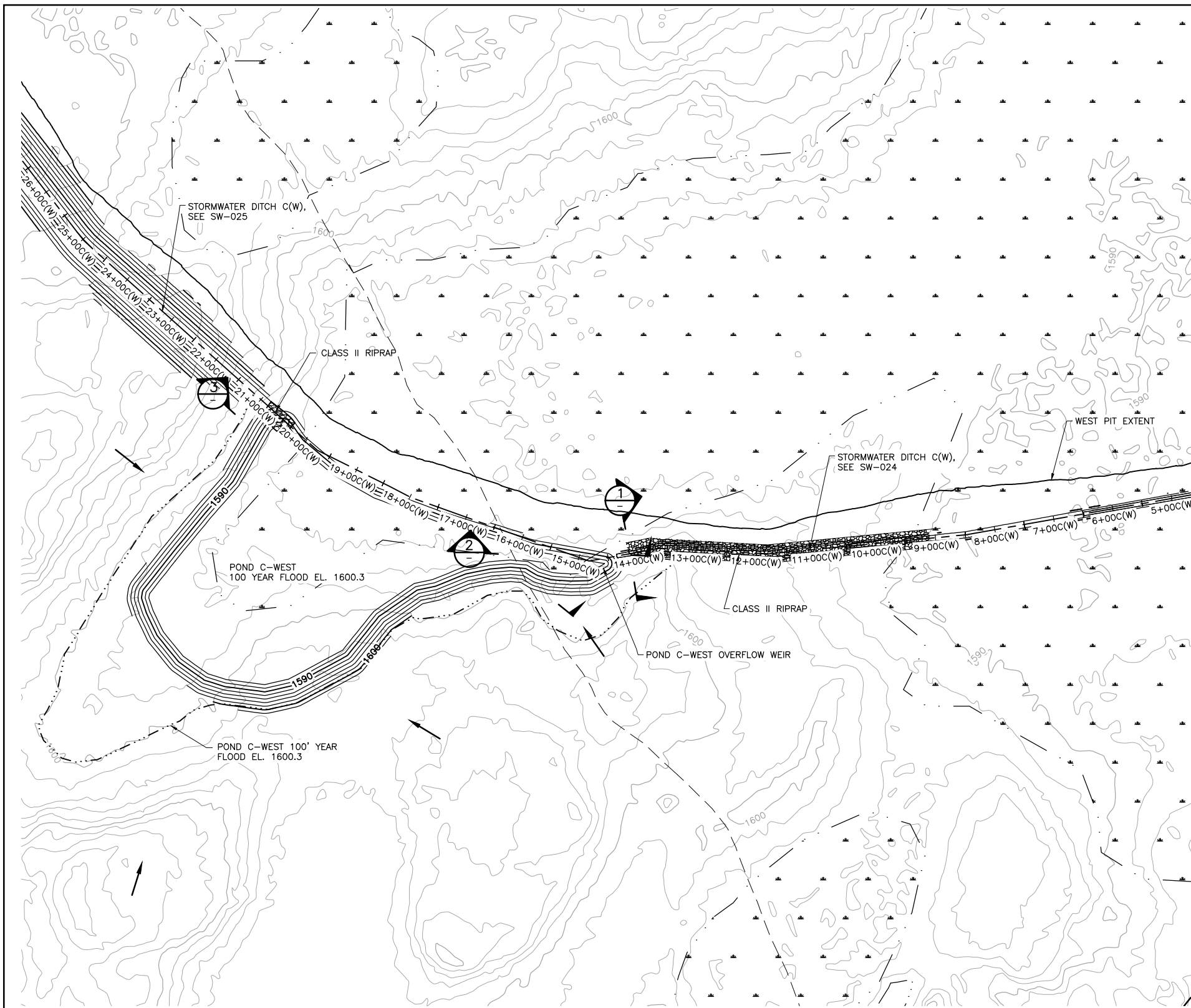
POLYMET MINING
POLYMET MINING, INC.
NORTHMET PROJECT
HOYT LAKES, MINNESOTA

BARR ENGINEERING COMPANY
4700 WEST 77TH STREET
MINNEAPOLIS, MN.
Ph: 1-800-632-2277

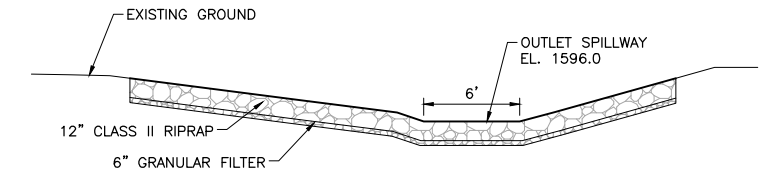
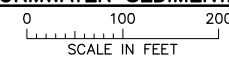
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INCHES

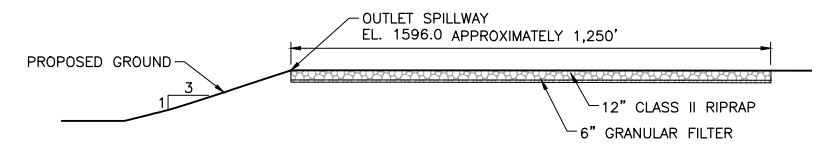
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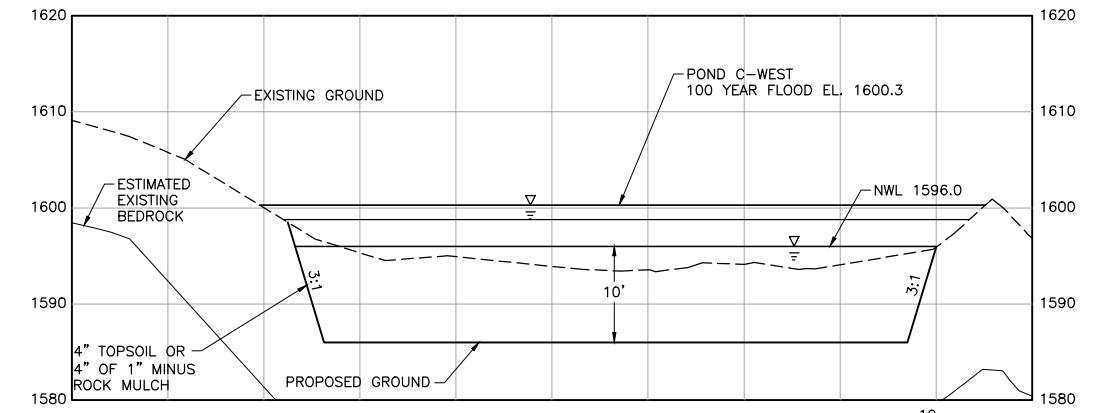
1 PLAN: STORMWATER SEDIMENTATION POND C-WEST



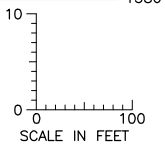
1 SECTION: OVERFLOW WEIR CREST
N.T.S.



2 SECTION: OVERFLOW WEIR SPILLWAY
N.T.S.



3 SECTION: SEDIMENTATION POND C-WEST TYPICAL CROSS SECTION



NOTES

1. ALL DISTURBED AREAS WILL BE RESTORED IN ACCORDANCE WITH THE SWPPP.

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PRINTED NAME PAUL T. SWENSON
SIGNATURE *[Signature]*
DATE 5/26/15 LICENSE# 20533

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

PLANT DRAWING NUMBER:

MINE SITE STORMWATER SEDIMENTATION POND C-WEST GRADING PLAN AND DETAILS

POLYMET MINING
POLYMET MINING, INC.
NORTHMET PROJECT
HOYT LAKES, MINNESOTA

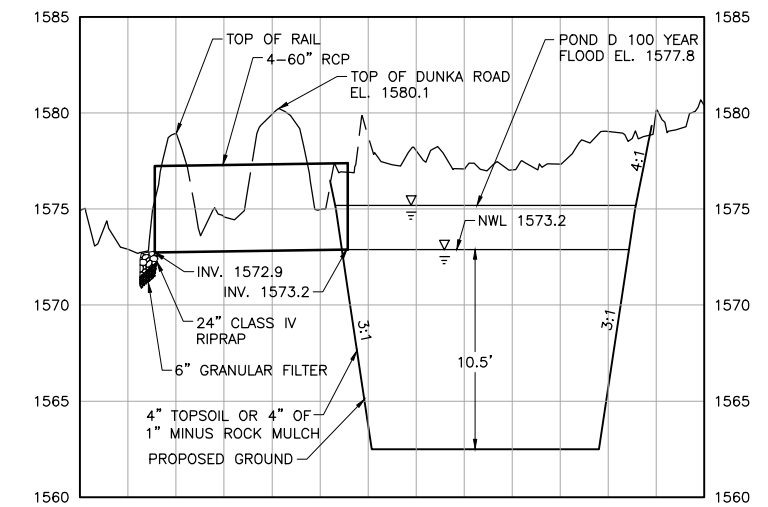
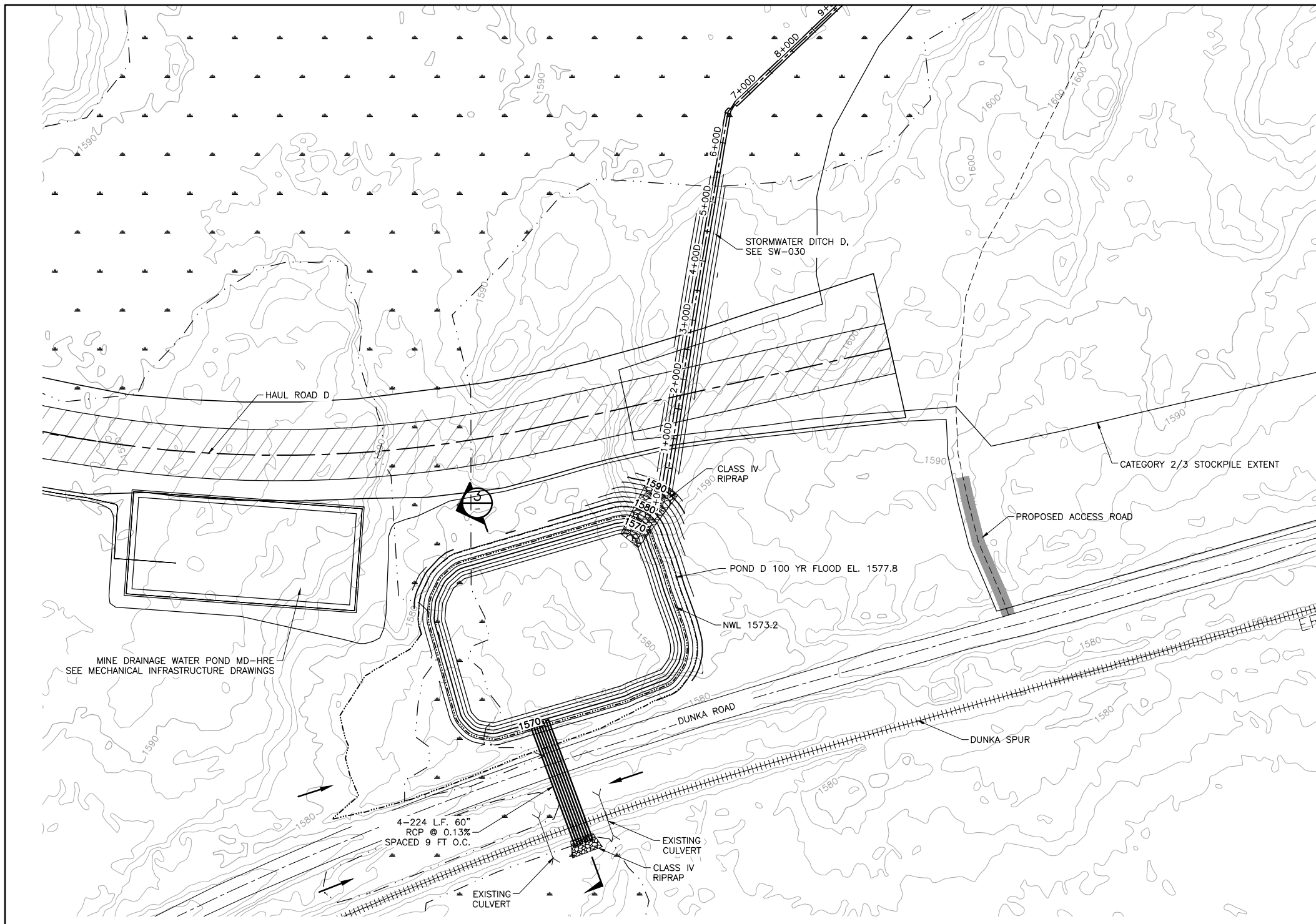
BARR ENGINEERING COMPANY
4700 WEST 77TH STREET
MINNEAPOLIS, MN.
Ph: 1-800-632-2277

DWG. NO. **SW-011**

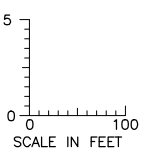
REV

INCHES

CADD USER: Terr J. Toms FILE: K:\DESIGN\23690C29.10\PERMIT_NMM-05-CS-154.DWG PLOT SCALE: 1:2 PLOT DATE: 5/29/2015 3:57 PM



SECTION: SEDIMENTATION POND D TYPICAL CROSS SECTION



PLAN: STORMWATER SEDIMENTATION POND D

SCALE IN FEET

NOTES

- ALL DISTURBED AREAS WILL BE RESTORED IN ACCORDANCE WITH THE SWPPP.

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PRINTED NAME PAUL T. SWENSON
SIGNATURE *[Signature]*
DATE 5/26/15 LICENSE# 20533

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

PLANT DRAWING NUMBER:

MINE SITE STORMWATER SEDIMENTATION POND D GRADING PLAN AND DETAILS

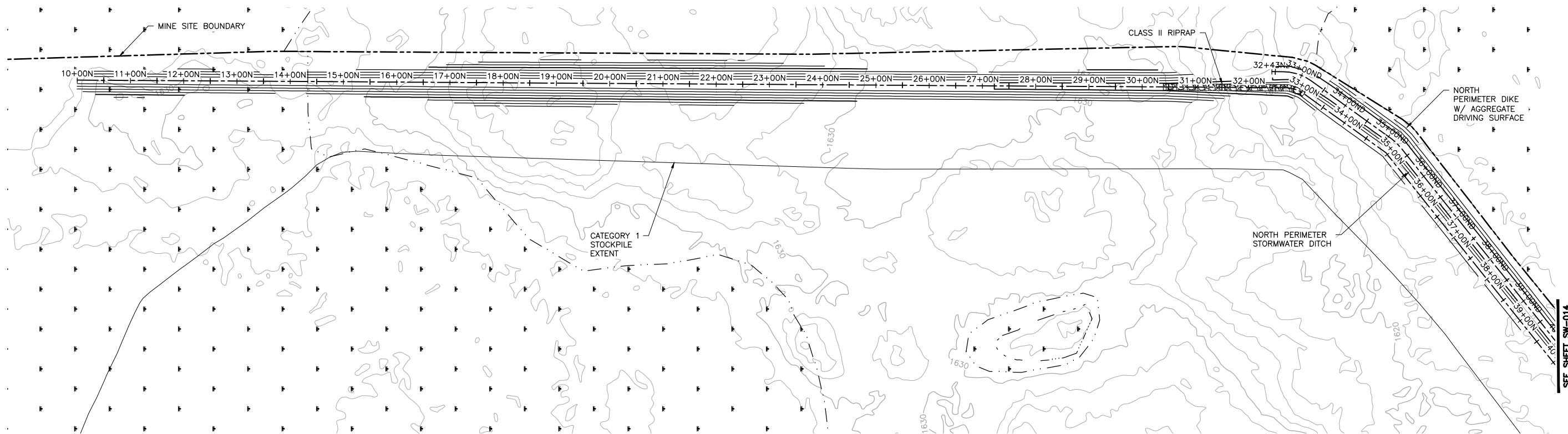
POLYMET MINING POLY MET MINING, INC. NORTHMET PROJECT HOYT LAKES, MINNESOTA

BARR BARR ENGINEERING COMPANY 4700 WEST 77TH STREET MINNEAPOLIS, MN. Ph: 1-800-632-2277

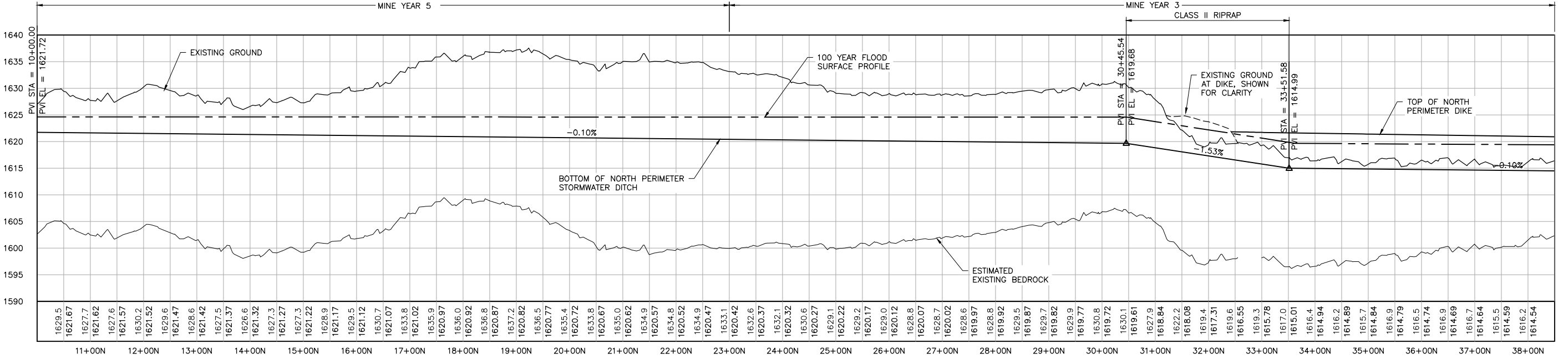
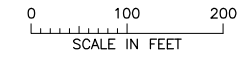
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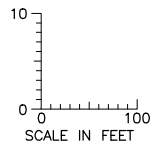
INCHES



1 PLAN: NORTH PERIMETER STORMWATER DITCH & DIKE STA. 10+00N-38+50N



2 PROFILE: NORTH PERIMETER STORMWATER DITCH & DIKE STA. 10+00N-38+50N



NOTES:

1. ALL STATIONS SHOWN ON PROFILE ARE BASED ON DITCH CENTERLINE STATIONS.
2. EXISTING GROUND PROFILE REPRESENTS GRADE AT DITCH CENTERLINE.

| VER NO | DATE | DESCRIPTION | ISSUE STATUS | | |
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PRINTED NAME PAUL T. SWENSON
SIGNATURE *[Signature]*
DATE 5/26/15 LICENSE# 20533

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

PLANT DRAWING NUMBER:

MINE SITE STORMWATER NORTH DIKE AND DITCH PLAN AND PROFILE STATION 10+00N - 38+50N

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

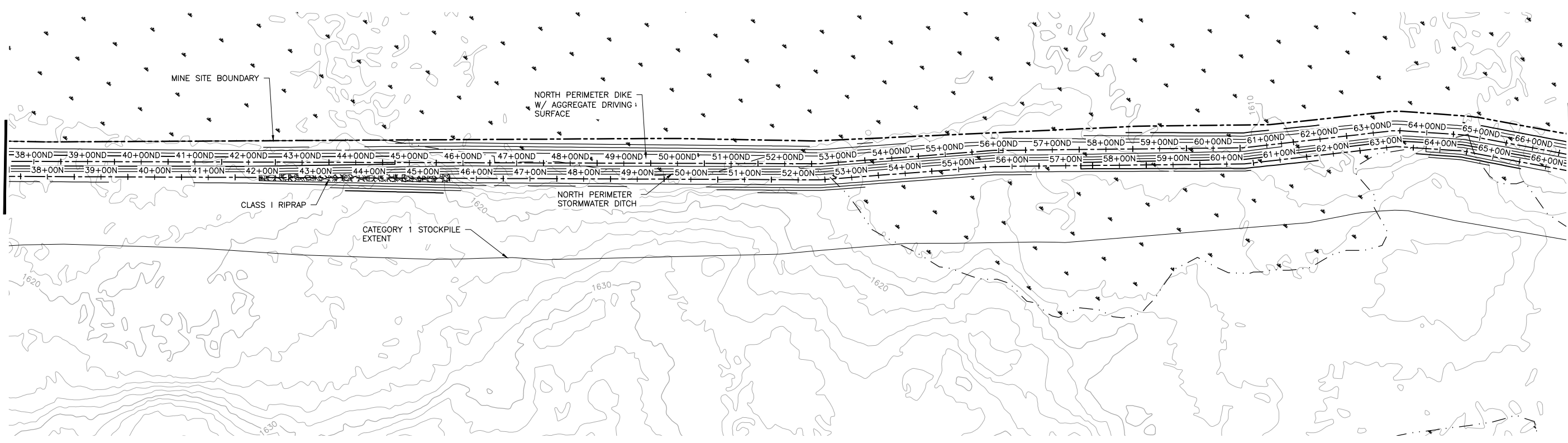
BARR
BARR ENGINEERING COMPANY
4700 WEST 77TH STREET
MINNEAPOLIS, MN.
Ph: 1-800-632-2277

DWG. NO. SW-013
REV

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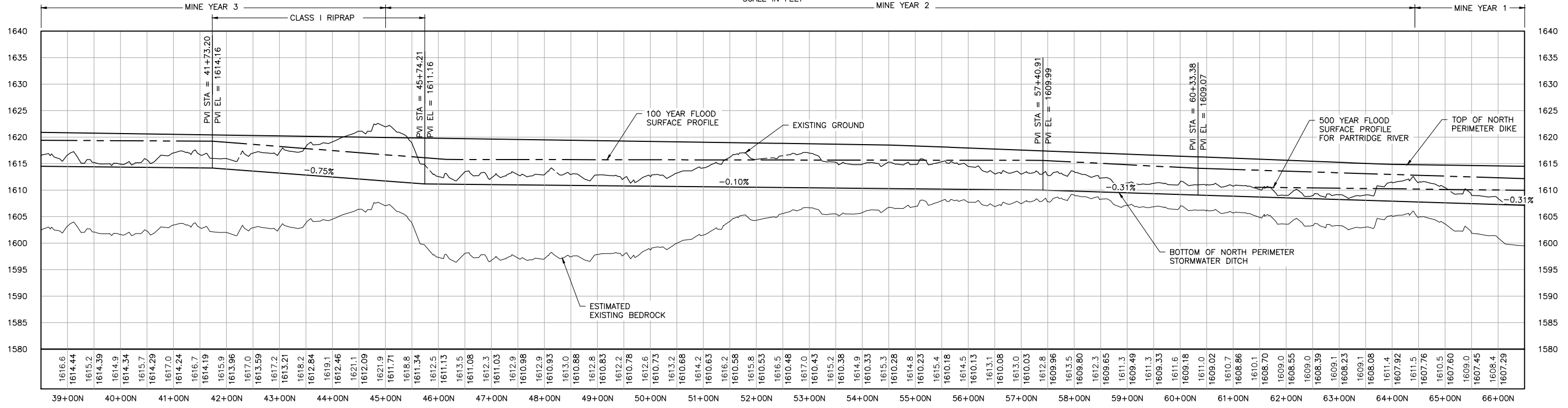
SEE SHEET SW-013

SEE SHEET SW-015



1 PLAN: NORTH PERIMETER STORMWATER DITCH & DIKE STA. 38+50N-66+50N

0 100 200
SCALE IN FEET



2 PROFILE: NORTH PERIMETER STORMWATER DITCH & DIKE STA. 38+50N-66+50N

0 100
SCALE IN FEET

NOTES:

1. ALL STATIONS SHOWN ON PROFILE ARE BASED ON DITCH CENTERLINE STATIONS.
2. EXISTING GROUND PROFILE REPRESENTS GRADE AT DITCH CENTERLINE.

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SIGNATURE *[Signature]*
DATE 5/26/15 LICENSE# 20533

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

PLANT DRAWING NUMBER:

MINE SITE STORMWATER
NORTH DIKE AND DITCH PLAN AND PROFILE
STATION 38+50N - 66+50N

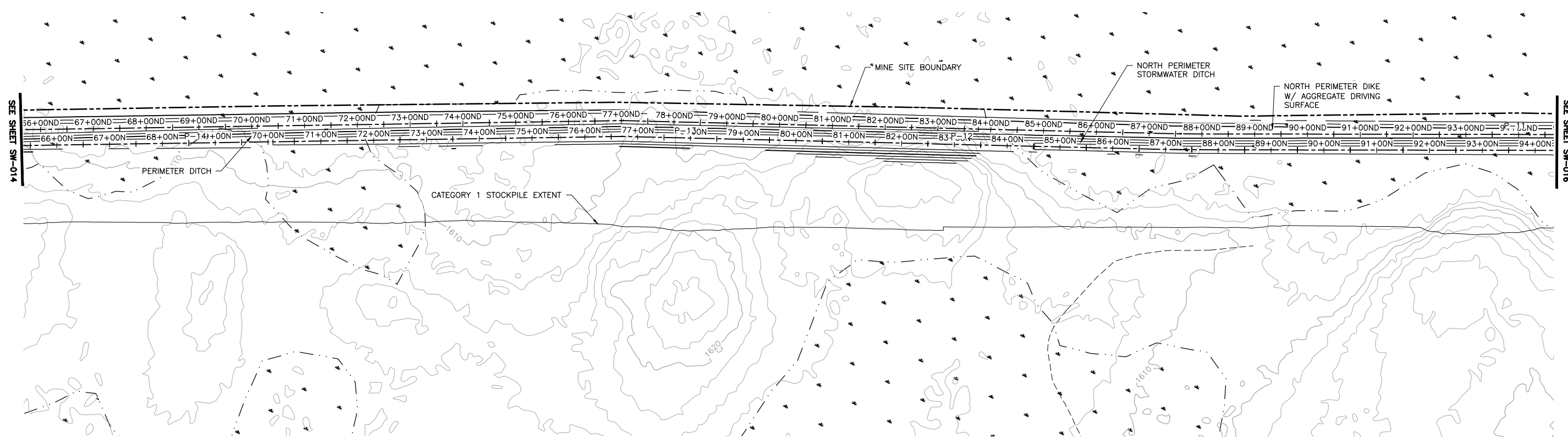
POLYMET MINING
POLY MET MINING, INC.
NORTHMET PROJECT
HOYT LAKES, MINNESOTA

BARR
BARR ENGINEERING COMPANY
4700 WEST 77TH STREET
MINNEAPOLIS, MN.
Ph: 1-800-632-2277

DWG. NO. SW-014
REV

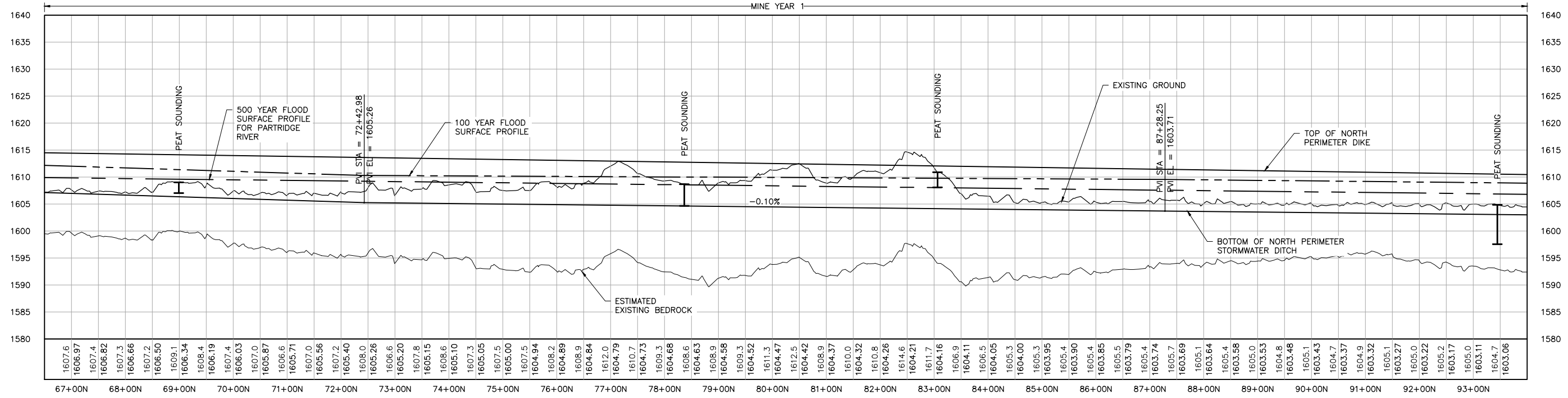
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INCHES



1 PLAN: NORTH PERIMETER STORMWATER DITCH & DIKE STA. 66+50N-94+00N

0 100 200
SCALE IN FEET



2 PROFILE: NORTH PERIMETER STORMWATER DITCH & DIKE STA. 66+50N-94+00N

10
0 100
SCALE IN FEET

- NOTES:
1. ALL STATIONS SHOWN ON PROFILE ARE BASED ON DITCH CENTERLINE STATIONS.
 2. EXISTING GROUND PROFILE REPRESENTS GRADE AT DITCH CENTERLINE.

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SIGNATURE *[Signature]*
DATE 5/26/15 LICENSE# 20533

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

PLANT DRAWING NUMBER:

MINE SITE STORMWATER
NORTH DIKE AND DITCH PLAN AND PROFILE
STATION 66+50N - 94+00N

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

BARR
BARR ENGINEERING COMPANY
4700 WEST 77TH STREET
MINNEAPOLIS, MN.
Ph: 1-800-632-2277

DWG. NO. SW-015

REV

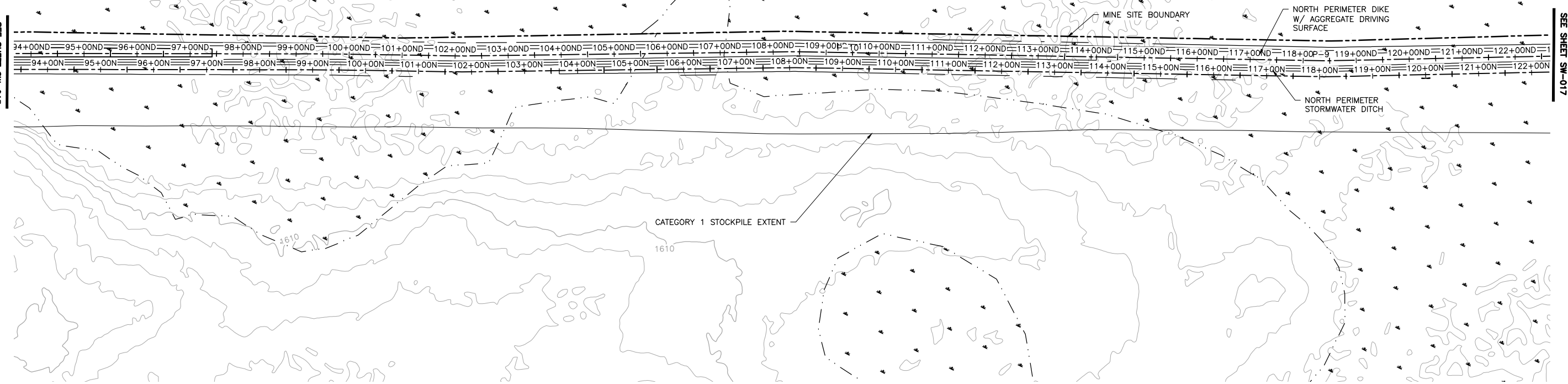
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2
1
INCHES

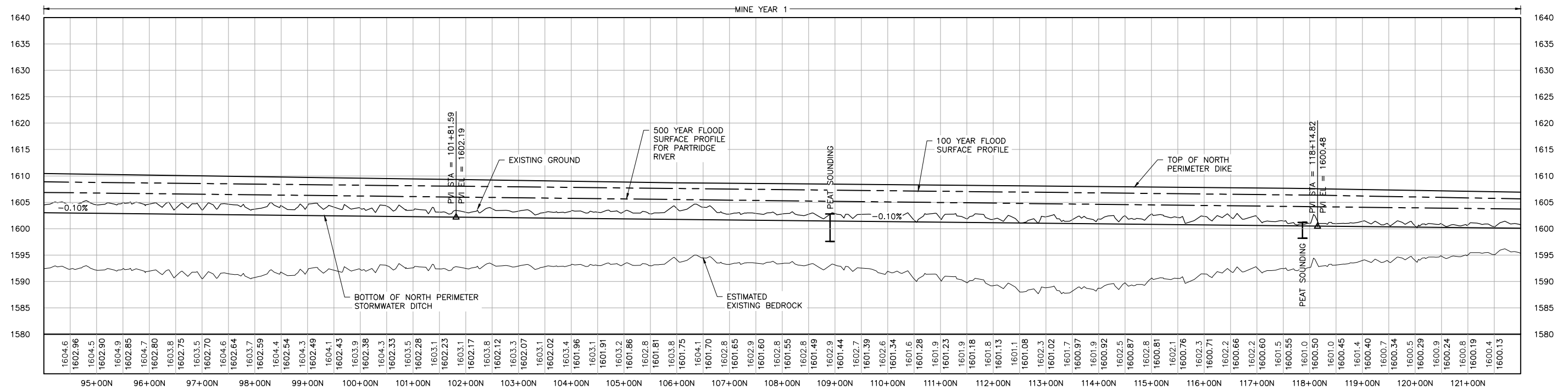
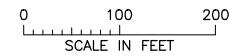
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SEE SHEET SW-015

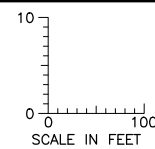
SEE SHEET SW-017



1 PLAN: NORTH PERIMETER STORMWATER DITCH & DIKE STA. 94+00N-122+00N



2 PROFILE: NORTH PERIMETER STORMWATER DITCH & DIKE STA. 94+00N-122+00N



NOTES:

1. ALL STATIONS SHOWN ON PROFILE ARE BASED ON DITCH CENTERLINE STATIONS.
2. EXISTING GROUND PROFILE REPRESENTS GRADE AT DITCH CENTERLINE.

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PRINTED NAME: PAUL T. SWENSON
 SIGNATURE: *[Signature]*
 DATE: 5/26/15 LICENSE# 20533

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

PLANT DRAWING NUMBER:

MINE SITE STORMWATER
 NORTH DIKE AND DITCH PLAN AND PROFILE
 STATION 94+00N - 122+00N

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

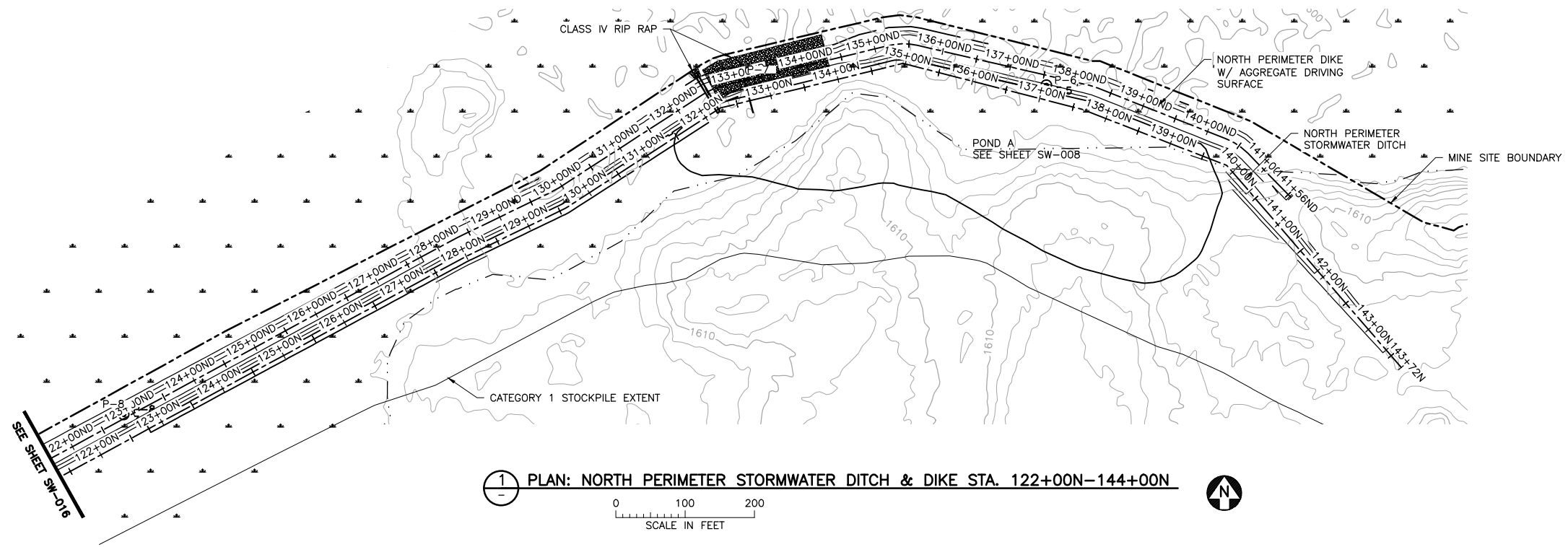
BARR
 BARR ENGINEERING COMPANY
 4700 WEST 77TH STREET
 MINNEAPOLIS, MN.
 Ph: 1-800-632-2277

DWG. NO. SW-016
 REV

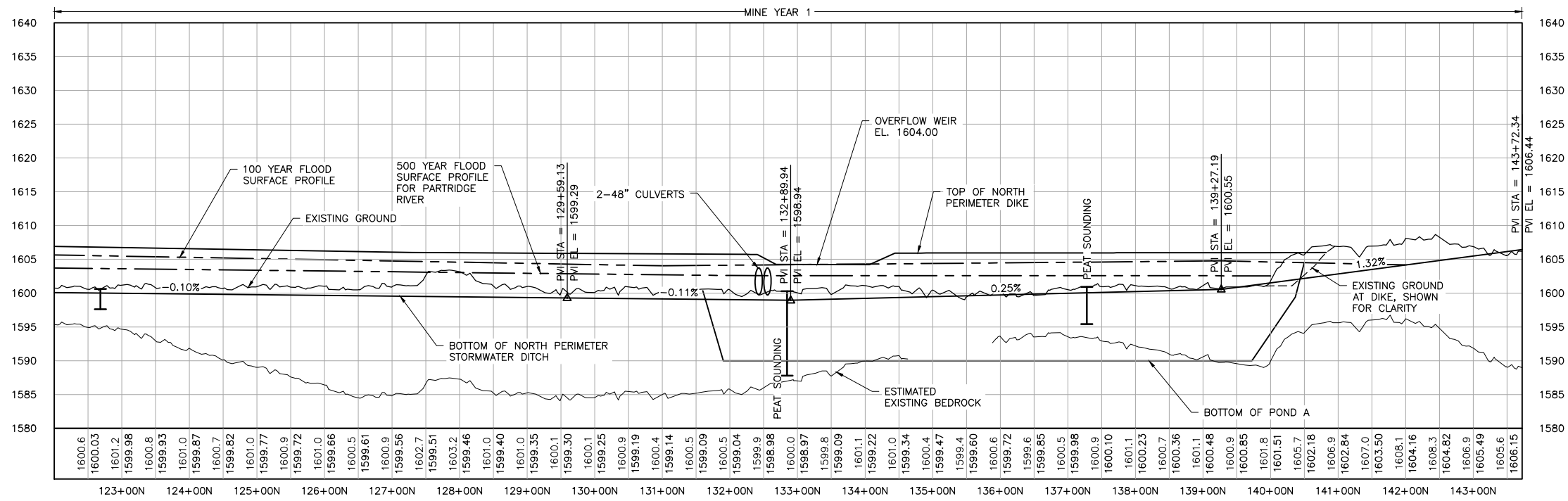
2
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INCHES

CADD USER: Terr J. Toms FILE: K:\DESIGN\2369029.10\PERMIT_NMM-05-CS-104.DWG PLOT SCALE: 1:2 PLOT DATE: 5/29/2015 1:56 PM

2
1
INCHES



1 PLAN: NORTH PERIMETER STORMWATER DITCH & DIKE STA. 122+00N-144+00N



2 PROFILE: NORTH PERIMETER STORMWATER DITCH & DIKE STA. 122+00N-144+00N

NOTES:

1. ALL STATIONS SHOWN ON PROFILE ARE BASED ON DITCH CENTERLINE STATIONS.
2. EXISTING GROUND PROFILE REPRESENTS GRADE AT DITCH CENTERLINE.
3. BOTTOM OF DITCH PROFILE LINE SHOWN TO PRESENT HYDRAULIC GRADE REQUIREMENTS, RESULTING "FILL" AREAS SHALL BE LEFT AS IS. DO NOT PLACE FILL TO RAISE GROUND TO DITCH PROFILE LINE.

| VER NO | DATE | DESCRIPTION | ISSUE STATUS | | |
|--------|---------|--|--------------------------------|---------|---------|
| | | | ISSUED | VERSION | DATE |
| 1 | 5/26/15 | ISSUED FOR INCLUSION IN PERMIT APPLICATION | ISSUED | 1 | 5/26/15 |
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SIGNATURE *[Signature]*
DATE 5/26/15 LICENSE# 20533

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

PLANT DRAWING NUMBER:

MINE SITE STORMWATER
NORTH DIKE AND DITCH PLAN AND PROFILE
STATION 122+00N - 144+00N

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

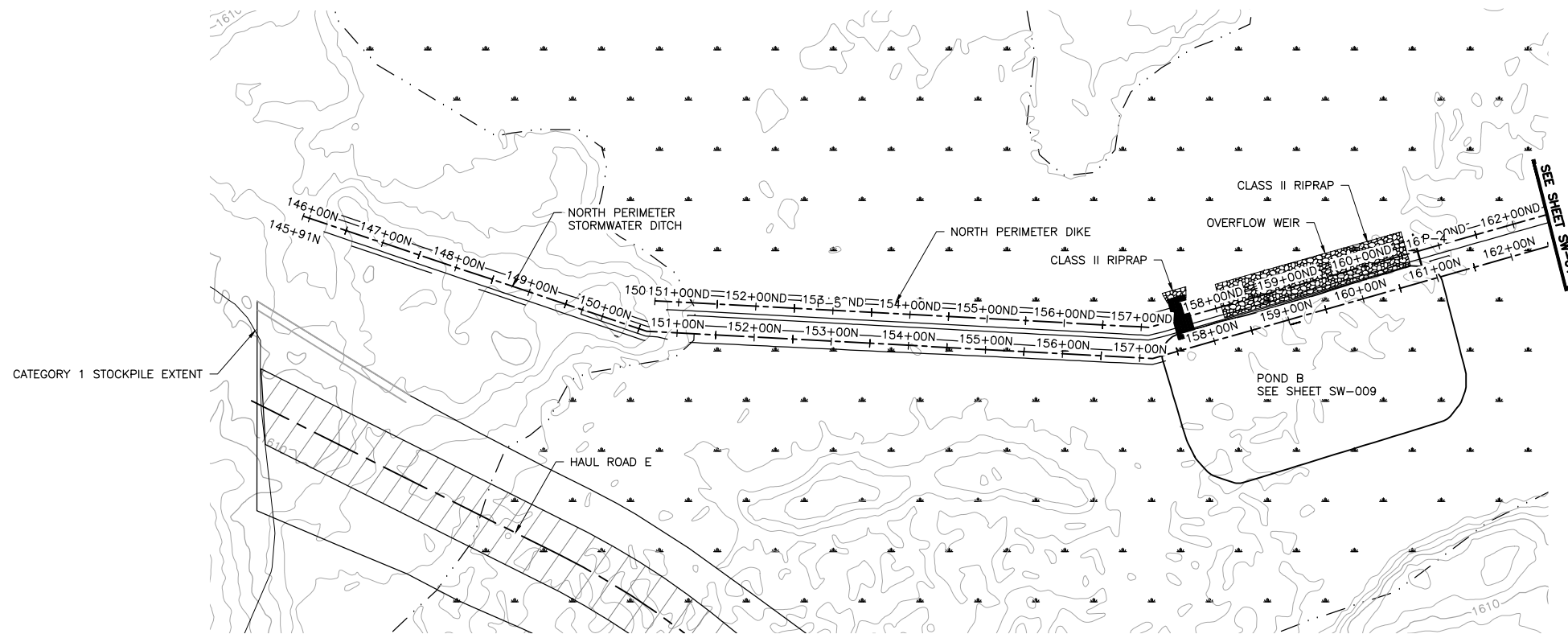
BARR
BARR ENGINEERING COMPANY
4700 WEST 77TH STREET
MINNEAPOLIS, MN.
Ph: 1-800-632-2277

DWG. NO. SW-017

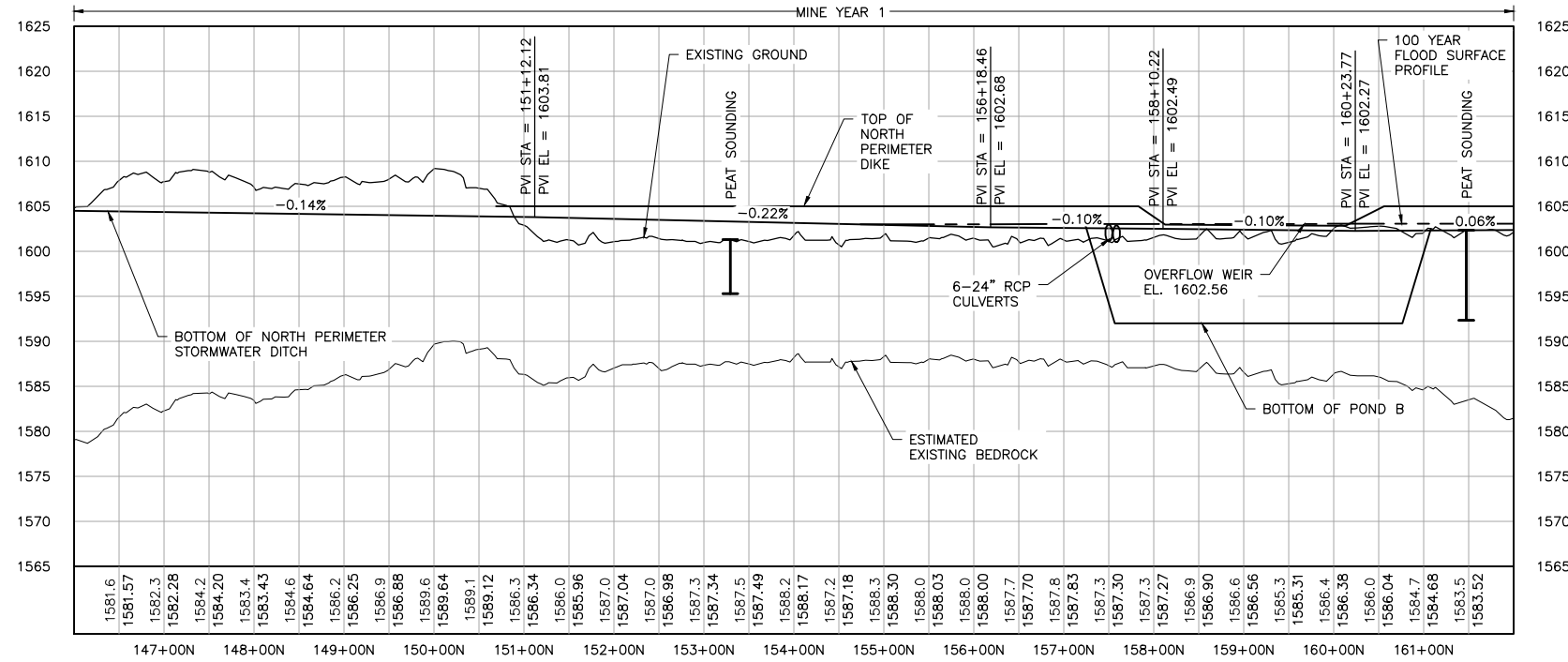
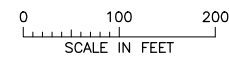
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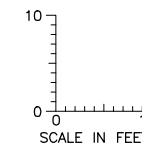
2
1
INCHES



1 PLAN: NORTH PERIMETER STORMWATER DITCH & DIKE STA. 146+00N-162+00N



2 PROFILE: NORTH PERIMETER STORMWATER DITCH & DIKE STA. 146+00N-162+00N



NOTES:

1. ALL STATIONS SHOWN ON PROFILE ARE BASED ON DITCH CENTERLINE STATIONS.
2. EXISTING GROUND PROFILE REPRESENTS GRADE AT DITCH CENTERLINE.
3. BOTTOM OF DITCH PROFILE LINE SHOWN TO PRESENT HYDRAULIC GRADE REQUIREMENTS, RESULTING "FILL" AREAS SHALL BE LEFT AS IS. DO NOT PLACE FILL TO RAISE GROUND TO DITCH PROFILE LINE.

| VER NO | DATE | DESCRIPTION | ISSUE STATUS | | |
|--------|---------|--|--------------------------------|---------|---------|
| | | | ISSUED | VERSION | DATE |
| 1 | 5/26/15 | ISSUED FOR INCLUSION IN PERMIT APPLICATION | ISSUED | 1 | 5/26/15 |
| | | | 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 PAUL T. SWENSON
SIGNATURE *[Signature]*
DATE 5/26/15 LICENSE# 20533

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

PLANT DRAWING NUMBER:

MINE SITE STORMWATER
NORTH DIKE AND DITCH PLAN AND PROFILE
STATION 146+00N - 162+00N

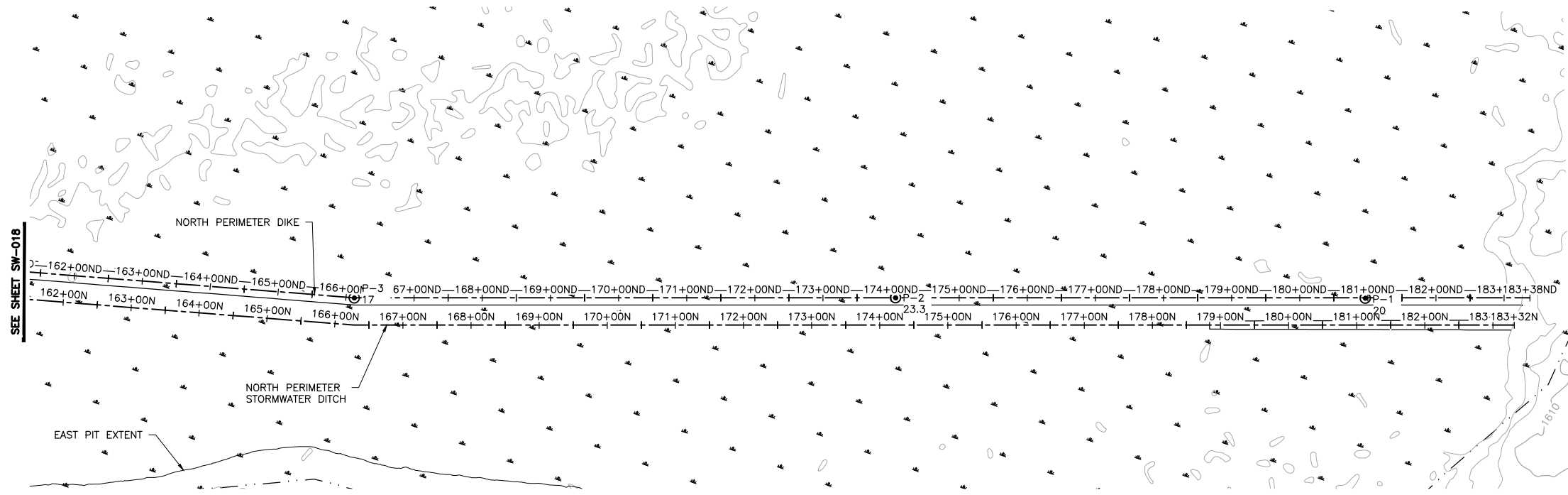
POLYMET MINING
POLY MET MINING, INC.
NORTHMET PROJECT
HOYT LAKES, MINNESOTA

BARR ENGINEERING COMPANY
4700 WEST 77TH STREET
MINNEAPOLIS, MN.
Ph: 1-800-632-2277

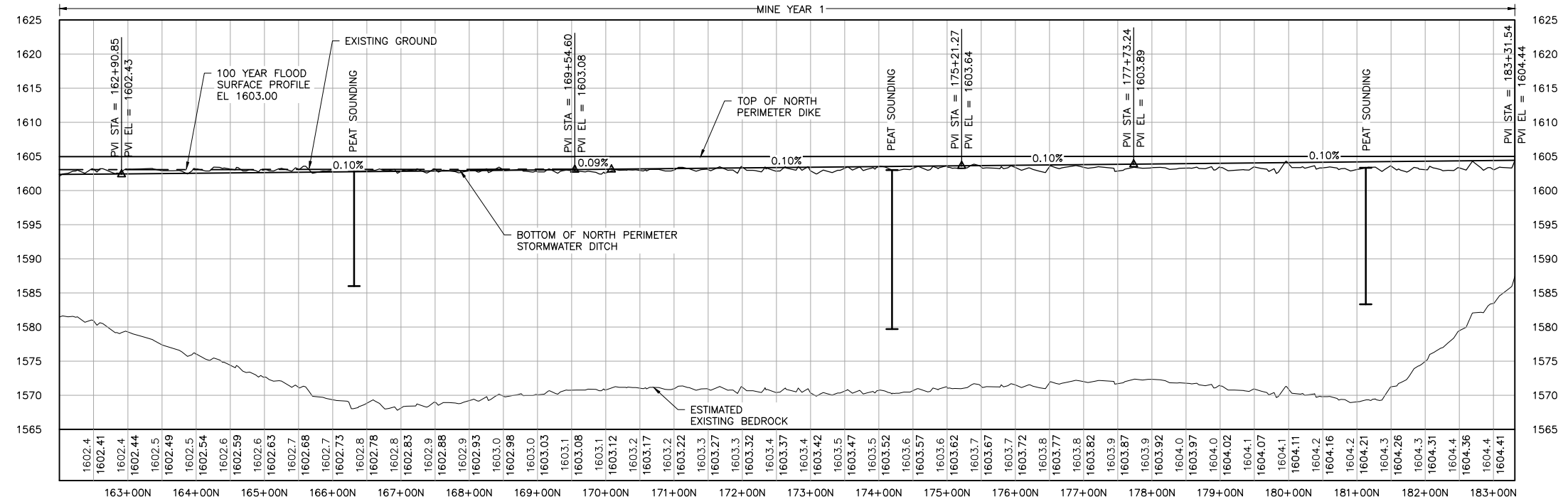
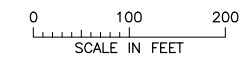
DWG. NO. SW-018
REV

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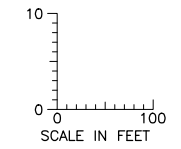
2
1
INCHES



1 PLAN: NORTH PERIMETER STORMWATER DITCH & DIKE STA. 162+00N-183+00N



2 PROFILE: NORTH PERIMETER STORMWATER DITCH & DIKE STA. 162+00N-183+00N



NOTES:

1. ALL STATIONS SHOWN ON PROFILE ARE BASED ON DITCH CENTERLINE STATIONS.
2. EXISTING GROUND PROFILE REPRESENTS GRADE AT DITCH CENTERLINE.
3. BOTTOM OF DITCH PROFILE LINE SHOWN TO PRESENT HYDRAULIC GRADE REQUIREMENTS, RESULTING "FILL" AREAS SHALL BE LEFT AS IS. DO NOT PLACE FILL TO RAISE GROUND TO DITCH PROFILE LINE.

| VER NO | DATE | DESCRIPTION | ISSUE STATUS | | |
|--------|---------|--|--------------------------------|---------|---------|
| 1 | 5/26/15 | ISSUED FOR INCLUSION IN PAERMIT APPLICATIONS | ISSUED | VERSION | DATE |
| | | | FOR PERMITTING | 1 | 5/26/15 |
| | | | FOR CONSTRUCTION | | |
| | | | NOT APPROVED FOR CONSTRUCTION. | | |

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PRINTED NAME PAUL T. SWENSON
SIGNATURE *[Signature]*
DATE 5/26/15 LICENSE# 20533

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

PLANT DRAWING NUMBER:

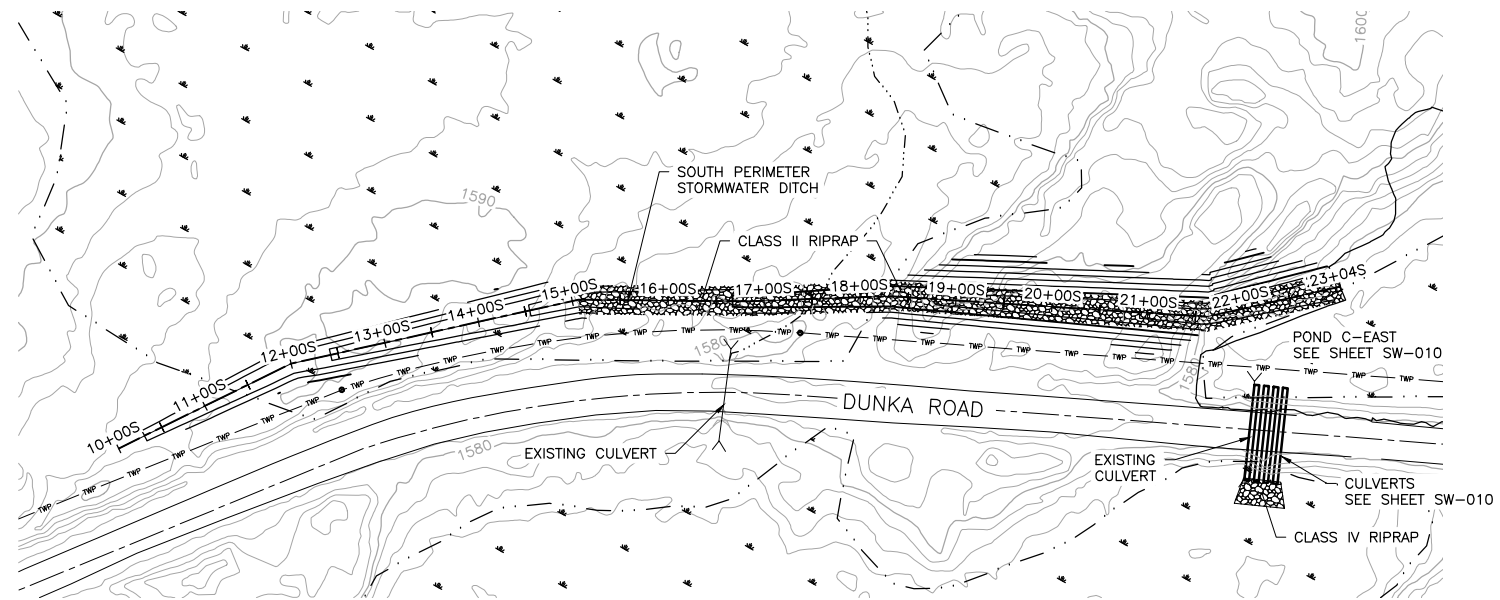
MINE SITE STORMWATER
NORTH DIKE AND DITCH PLAN AND PROFILE
STATION 162+00N - 183+00N

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

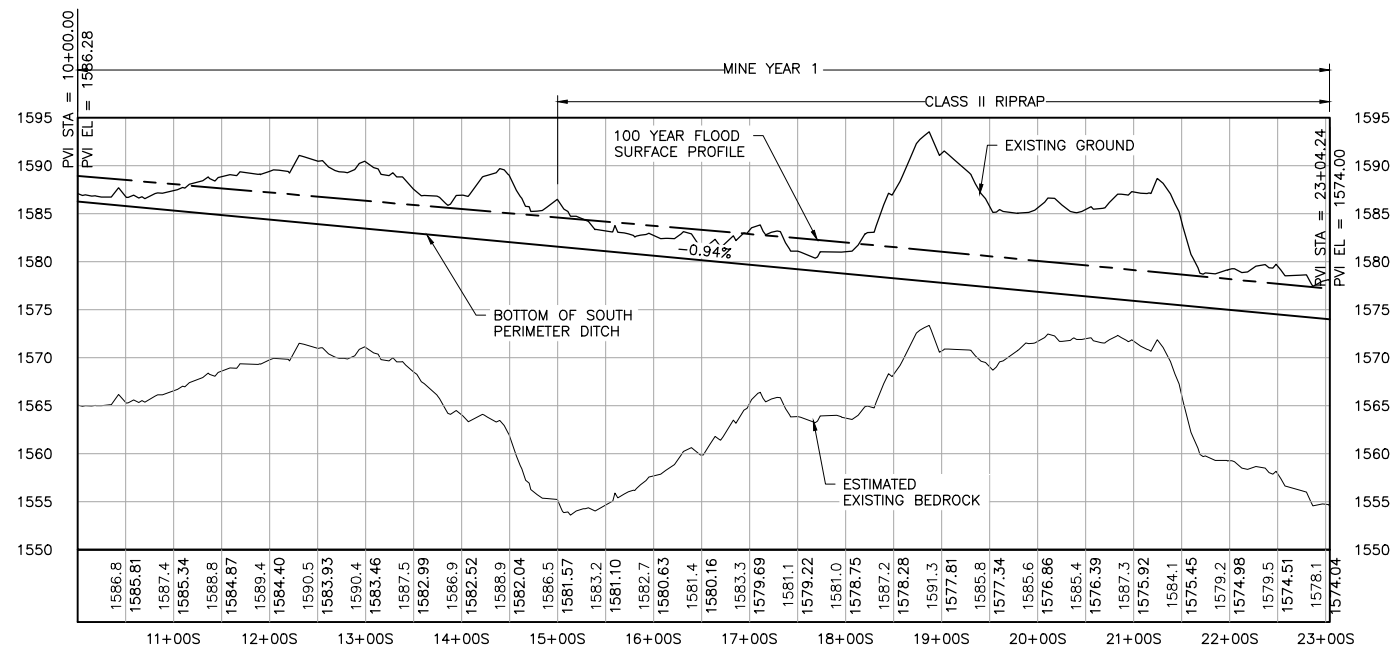
BARR ENGINEERING COMPANY
4700 WEST 77TH STREET
MINNEAPOLIS, MN.
Ph: 1-800-632-2277

DWG. NO. SW-019

REV



1 PLAN: SOUTH PERIMETER DITCH STA. 10+00S-22+95S



2 PROFILE: SOUTH PERIMETER DITCH STA. 10+00S-22+95S

NOTES:

1. ALL STATIONS SHOWN ON PROFILE ARE BASED ON DITCH CENTERLINE STATIONS.
2. EXISTING GROUND PROFILE REPRESENTS GRADE AT DITCH CENTERLINE.

| VER NO | DATE | DESCRIPTION | ISSUE STATUS | | |
|--------|---------|---|--------------------------------|---------|---------|
| | | | ISSUED | VERSION | DATE |
| 1 | 5/26/15 | ISSUED FOR INCLUSION IN PERMIT APPLICATIONS | ISSUED | 1 | 5/26/15 |
| | | | FOR PERMITTING | | |
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PRINTED NAME PAUL T. SWENSON
 SIGNATURE *[Signature]*
 DATE 5/26/15 LICENSE# 20533

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

PLANT DRAWING NUMBER:

MINE SITE STORMWATER SOUTH DIKE AND DITCH PLAN AND PROFILE STATION 10+00S - 22+95S

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

BARR
 BARR ENGINEERING COMPANY
 4700 WEST 77TH STREET
 MINNEAPOLIS, MN.
 Ph: 1-800-632-2277

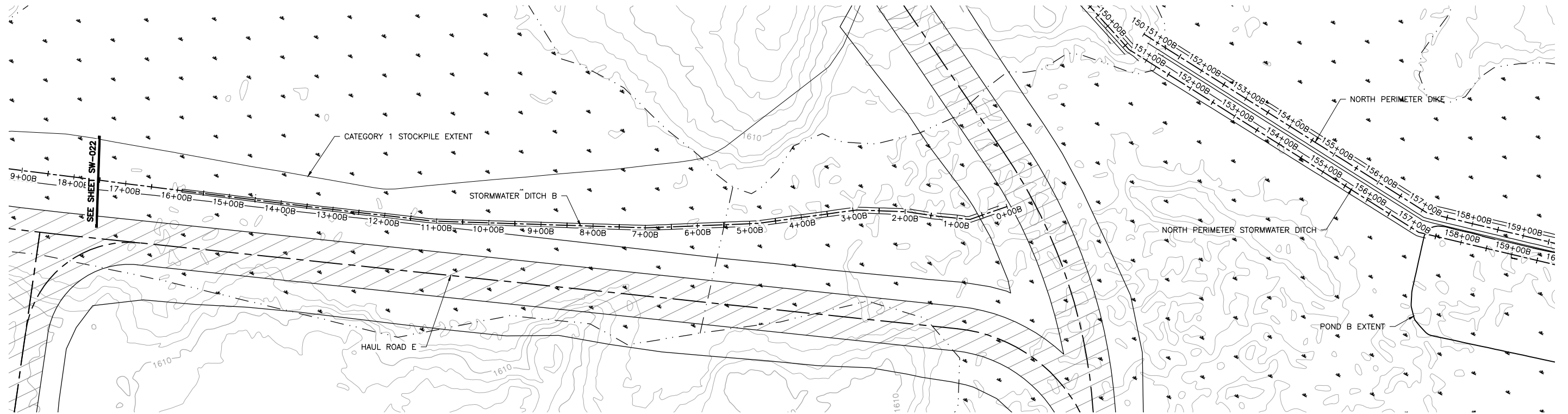
DWG. NO. SW-020

REV

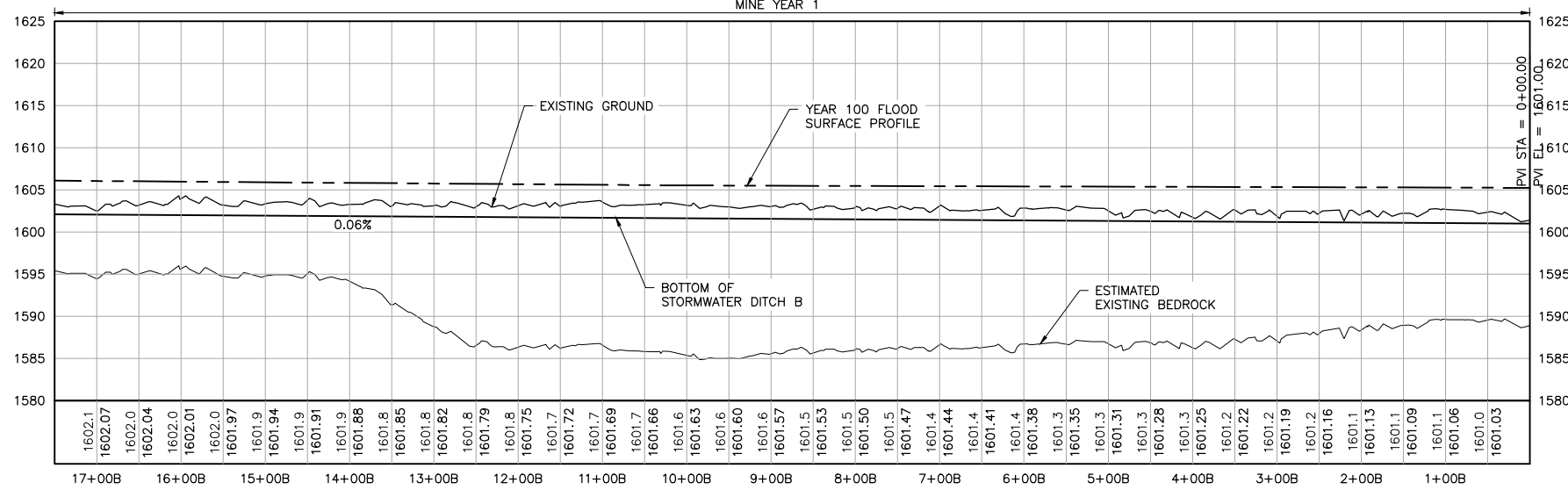
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INCHES

CADD USER: Terr J. Toms FILE: K:\DESIGN\23690C29\10\PERMIT_NMM-05-CS-108.DWG PLOT SCALE: 1:2 PLOT DATE: 5/28/2015 9:56 PM



1 PLAN: STORMWATER DITCH B STA. 0+00B-17+50B



2 PROFILE: STORMWATER DITCH B STA. 0+00B-17+50B

NOTES:

1. ALL STATIONS SHOWN ON PROFILE ARE BASED ON DITCH CENTERLINE STATIONS.
2. EXISTING GROUND PROFILE REPRESENTS GRADE AT DITCH CENTERLINE.

| VER NO | DATE | DESCRIPTION | ISSUE STATUS | | |
|--------|---------|---|--------------------------------|---------|---------|
| | | | ISSUED | VERSION | DATE |
| 1 | 5/26/15 | ISSUED FOR INCLUSION IN PERMIT APPLICATIONS | ISSUED | | |
| | | | FOR PERMITTING | 1 | 5/26/15 |
| | | | FOR CONSTRUCTION | | |
| | | | NOT APPROVED FOR CONSTRUCTION. | | |

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PRINTED NAME PAUL T. SWENSON
SIGNATURE *[Signature]*
DATE 5/26/15 LICENSE# 20533

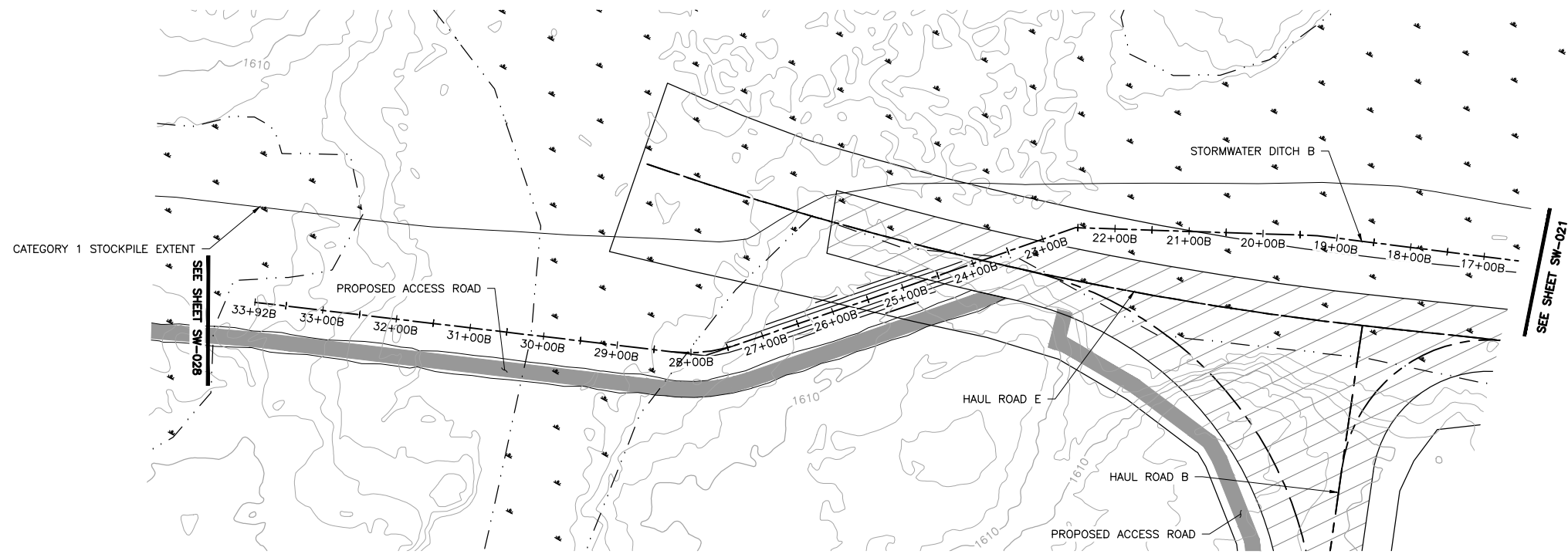
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CHECKED: ATS
BARR PROJECT NO.: 23/69-0C29
SCALE: AS SHOWN

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|--|---|
| PLANT DRAWING NUMBER: | |
| MINE SITE STORMWATER DITCH B PLAN AND PROFILE STATION 0+00B - 17+50B | |
| | POLY MET MINING, INC. NORTHMET PROJECT HOYT LAKES, MINNESOTA |
| | BARR ENGINEERING COMPANY 4700 WEST 77TH STREET MINNEAPOLIS, MN. Ph: 1-800-632-2277 |
| DWG. NO. SW-021 | REV |

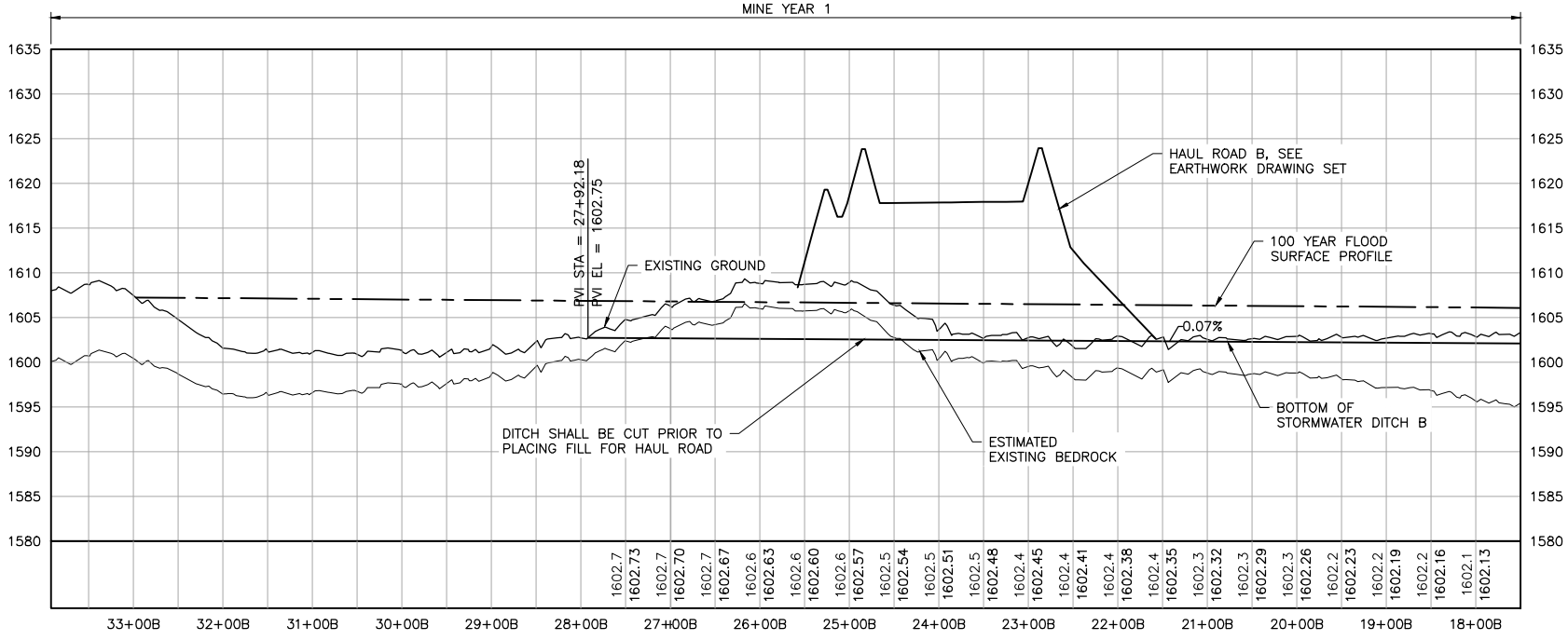
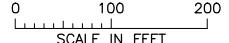
INCHES

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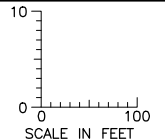
2
1
INCHES



1 PLAN: STORMWATER DITCH B STA. 17+50B-33+92B



2 PROFILE: STORMWATER DITCH B STA. 17+50B-33+92B



NOTES:

1. ALL STATIONS SHOWN ON PROFILE ARE BASED ON DITCH CENTERLINE STATIONS.
2. EXISTING GROUND PROFILE REPRESENTS GRADE AT DITCH CENTERLINE.
3. BOTTOM OF DITCH PROFILE LINE SHOWN TO PRESENT HYDRAULIC GRADE REQUIREMENTS, RESULTING "FILL" AREAS SHALL BE LEFT AS IS. DO NOT PLACE FILL TO RAISE GROUND TO DITCH PROFILE LINE.

| VER NO | DATE | DESCRIPTION | ISSUE STATUS | | |
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| 1 | 5/26/15 | ISSUED FOR INCLUSION IN PERMIT APPLICATIONS | ISSUED | VERSION | DATE |
| | | | FOR PERMITTING | 1 | 5/26/15 |
| | | | FOR CONSTRUCTION | | |
| | | | NOT APPROVED FOR CONSTRUCTION. | | |

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PRINTED NAME PAUL T. SWENSON
SIGNATURE *[Signature]*
DATE 5/26/15 LICENSE# 20533

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

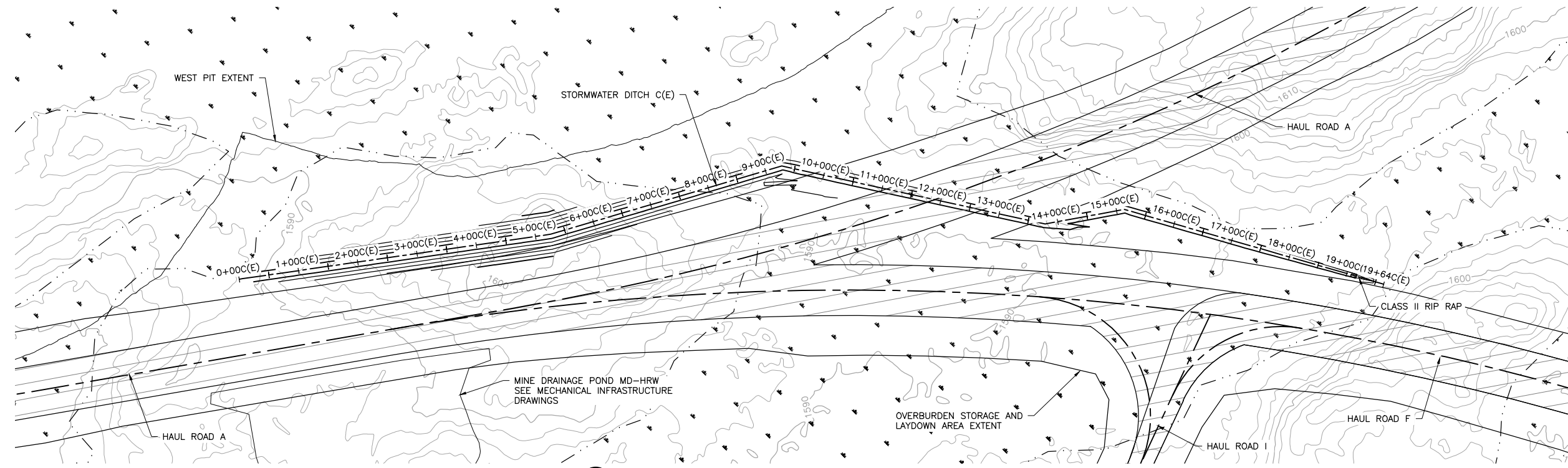
PLANT DRAWING NUMBER:

MINE SITE STORMWATER
DITCH B PLAN AND PROFILE
STATION 17+50B - 33+92B

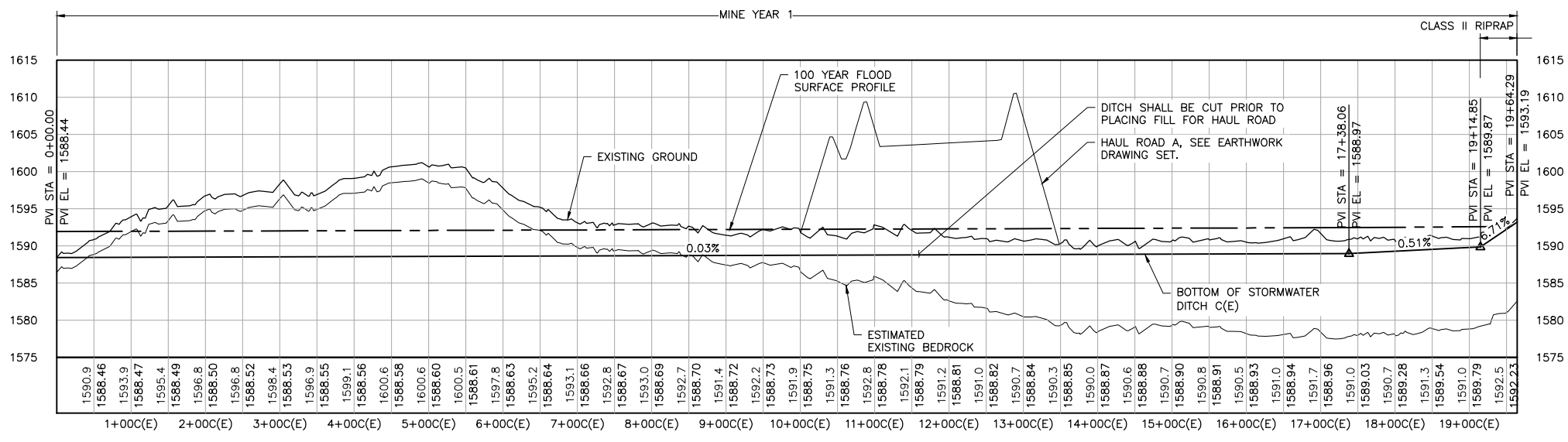
POLYMET MINING
POLY MET MINING, INC.
NORTHMET PROJECT
HOYT LAKES, MINNESOTA

BARR ENGINEERING COMPANY
4700 WEST 77TH STREET
MINNEAPOLIS, MN.
Ph: 1-800-632-2277

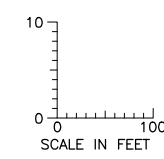
DWG. NO. SW-022
REV



1 PLAN: STORMWATER DITCH C(E) STA. 0+00C(E)-19+64C(E)



2 PROFILE: STORMWATER DITCH C(E) STA. 0+00C(E)-19+64C(E)



PLANT DRAWING NUMBER:

MINE SITE STORMWATER DITCH C(E) PLAN AND PROFILE STATION 0+00C(E) - 19+64C(E)

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

BARR
 BARR ENGINEERING COMPANY
 4700 WEST 77TH STREET
 MINNEAPOLIS, MN.
 Ph: 1-800-632-2277

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

DWG. NO. **SW-023**

REV

NOTES:

- ALL STATIONS SHOWN ON PROFILE ARE BASED ON DITCH CENTERLINE STATIONS.
- EXISTING GROUND PROFILE REPRESENTS GRADE AT DITCH CENTERLINE.

| VER NO | DATE | DESCRIPTION | ISSUE STATUS | | |
|--------|---------|--|--------------------------------|---------|---------|
| | | | ISSUED | VERSION | DATE |
| 1 | 5/26/15 | ISSUED FOR INCLUSION IN PERMIT APPLICATION | ISSUED | | |
| | | | FOR PERMITTING | 1 | 5/26/15 |
| | | | FOR CONSTRUCTION | | |
| | | | NOT APPROVED FOR CONSTRUCTION. | | |

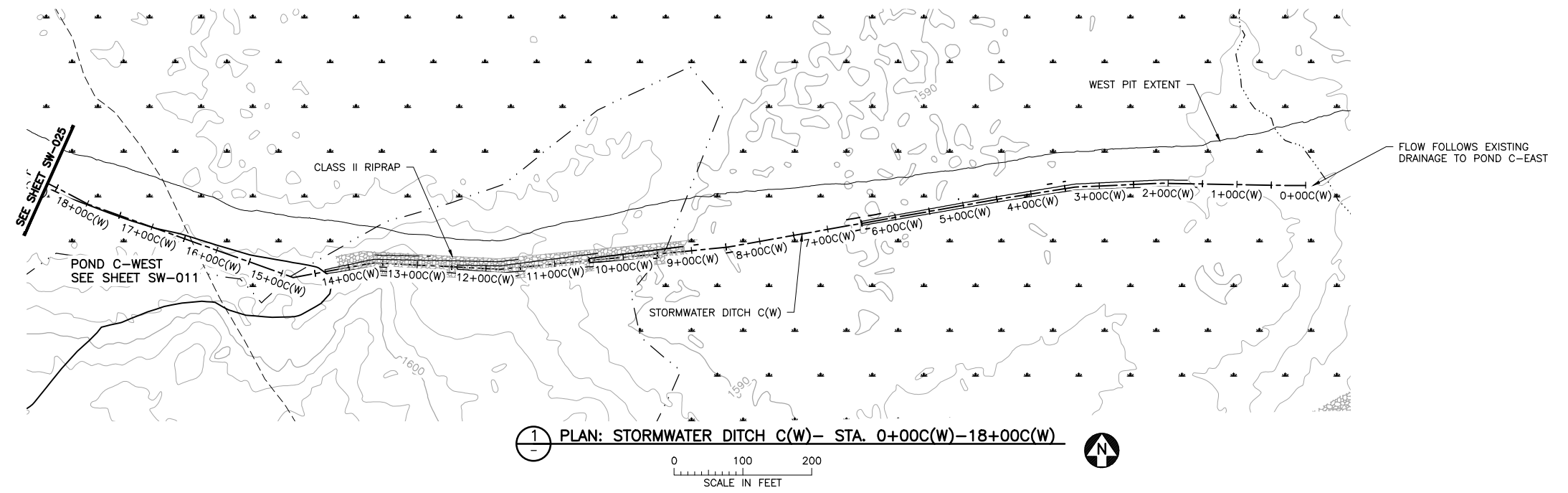
I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINTED NAME PAUL T. SWENSON
 SIGNATURE *[Signature]*
 DATE 5/26/15 LICENSE# 20533

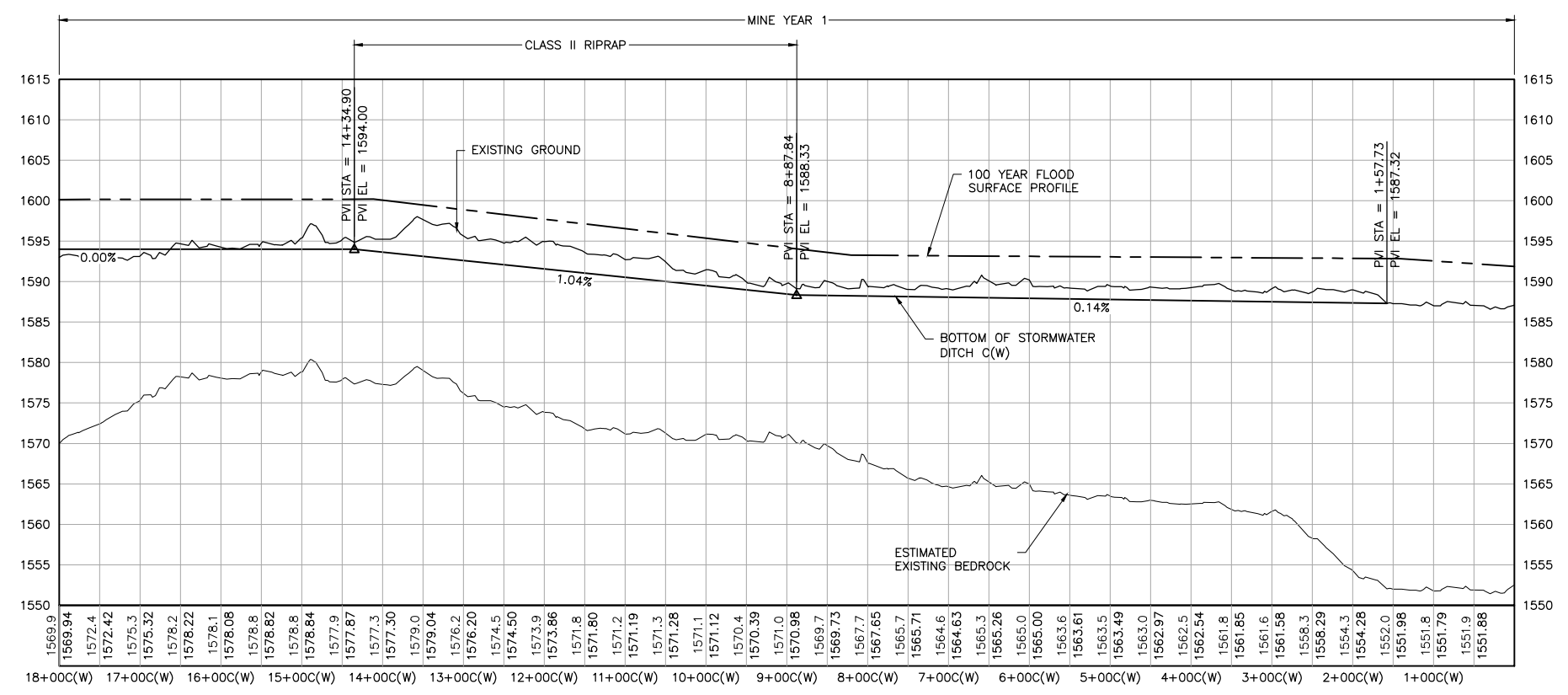
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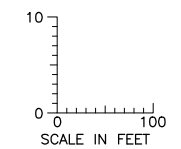
2
1
INCHES



1 PLAN: STORMWATER DITCH C(W)- STA. 0+00C(W)-18+00C(W)



2 PROFILE: STORMWATER DITCH C(W)- STA. 0+00C(W)-18+00C(W)



PLANT DRAWING NUMBER:

MINE SITE STORMWATER DITCH C(W) PLAN AND PROFILE STATION 0+00C(W) - 18+00C(W)

POLYMET MINING

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

BARR ENGINEERING COMPANY 4700 WEST 77TH STREET MINNEAPOLIS, MN. Ph: 1-800-632-2277

BARR

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

DWG. NO. SW-024

REV

NOTES:

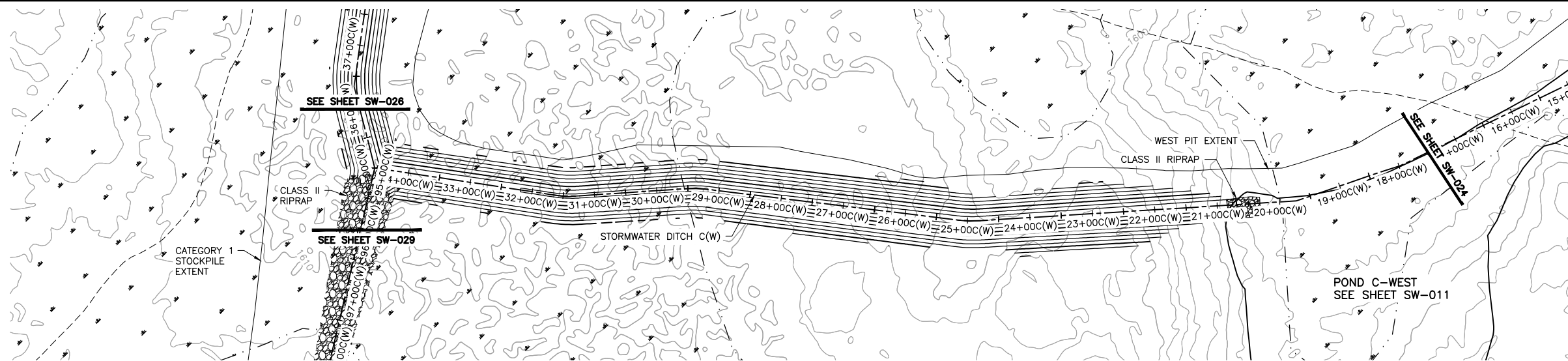
1. ALL STATIONS SHOWN ON PROFILE ARE BASED ON DITCH CENTERLINE STATIONS.
2. EXISTING GROUND PROFILE REPRESENTS GRADE AT DITCH CENTERLINE.
3. BOTTOM OF DITCH PROFILE LINE SHOWN TO PRESENT HYDRAULIC GRADE REQUIREMENTS, RESULTING "FILL" AREAS SHALL BE LEFT AS IS. DO NOT PLACE FILL TO RAISE GROUND TO DITCH PROFILE LINE.

| VER NO | DATE | DESCRIPTION | ISSUE STATUS | | |
|--------|---------|---|--------------------------------|---------|---------|
| | | | ISSUED | VERSION | DATE |
| 1 | 5/26/15 | ISSUED FOR INCLUSION FOR PERMIT SUBMITTAL | ISSUED | | |
| | | | FOR PERMITTING | 1 | 5/26/15 |
| | | | FOR CONSTRUCTION | | |
| | | | NOT APPROVED FOR CONSTRUCTION. | | |

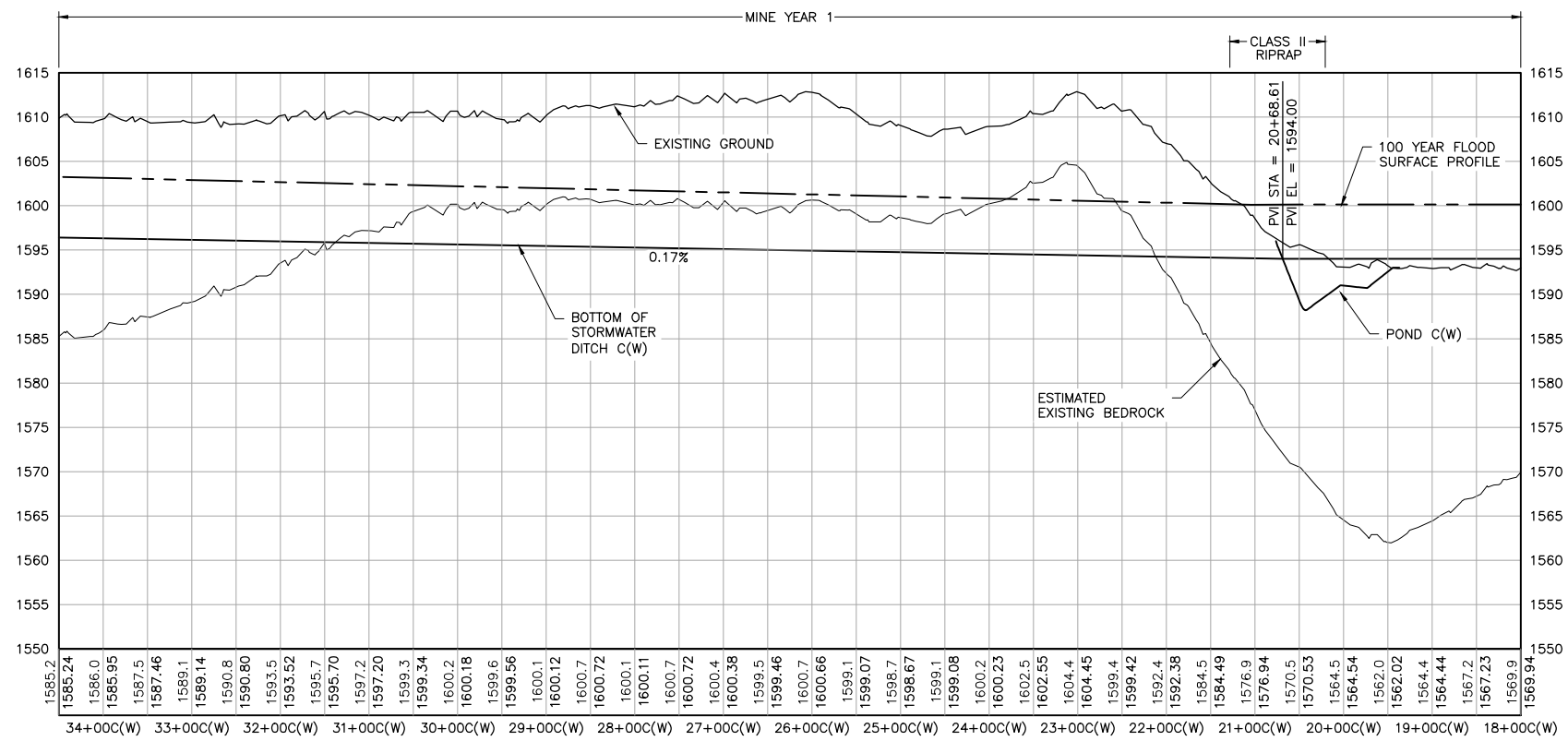
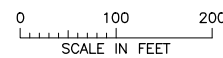
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PRINTED NAME PAUL T. SWENSON
SIGNATURE *[Signature]*
DATE 5/26/15 LICENSE# 20533

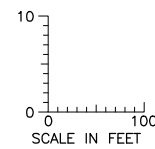
CADD USER: Terr J. Toms FILE: K:\DESIGN\23690C29\10\PERMIT_NMM-05-CS-113.DWG PLOT SCALE: 1:2 PLOT DATE: 5/29/2015 11:20 AM



1 PLAN: STORMWATER DITCH C(W) - STA. 18+00C(W)-34+50C(W)



2 PROFILE: STORMWATER DITCH C(W) - STA. 18+00C(W)-34+50C(W)



NOTES:

1. ALL STATIONS SHOWN ON PROFILE ARE BASED ON DITCH CENTERLINE STATIONS.
2. EXISTING GROUND PROFILE REPRESENTS GRADE AT DITCH CENTERLINE.
3. BOTTOM OF DITCH PROFILE LINE SHOWN TO PRESENT HYDRAULIC GRADE REQUIREMENTS, RESULTING "FILL" AREAS SHALL BE LEFT AS IS. DO NOT PLACE FILL TO RAISE GROUND TO DITCH PROFILE LINE.

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| | | | FOR PERMITTING | | |
| | | | FOR CONSTRUCTION | | |
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PRINTED NAME PAUL T. SWENSON
SIGNATURE *[Signature]*
DATE 5/26/15 LICENSE # 20533

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

PLANT DRAWING NUMBER:

MINE SITE STORMWATER DITCH C(W) PLAN AND PROFILE
STATION 18+00C(W) - 34+50C(W)

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

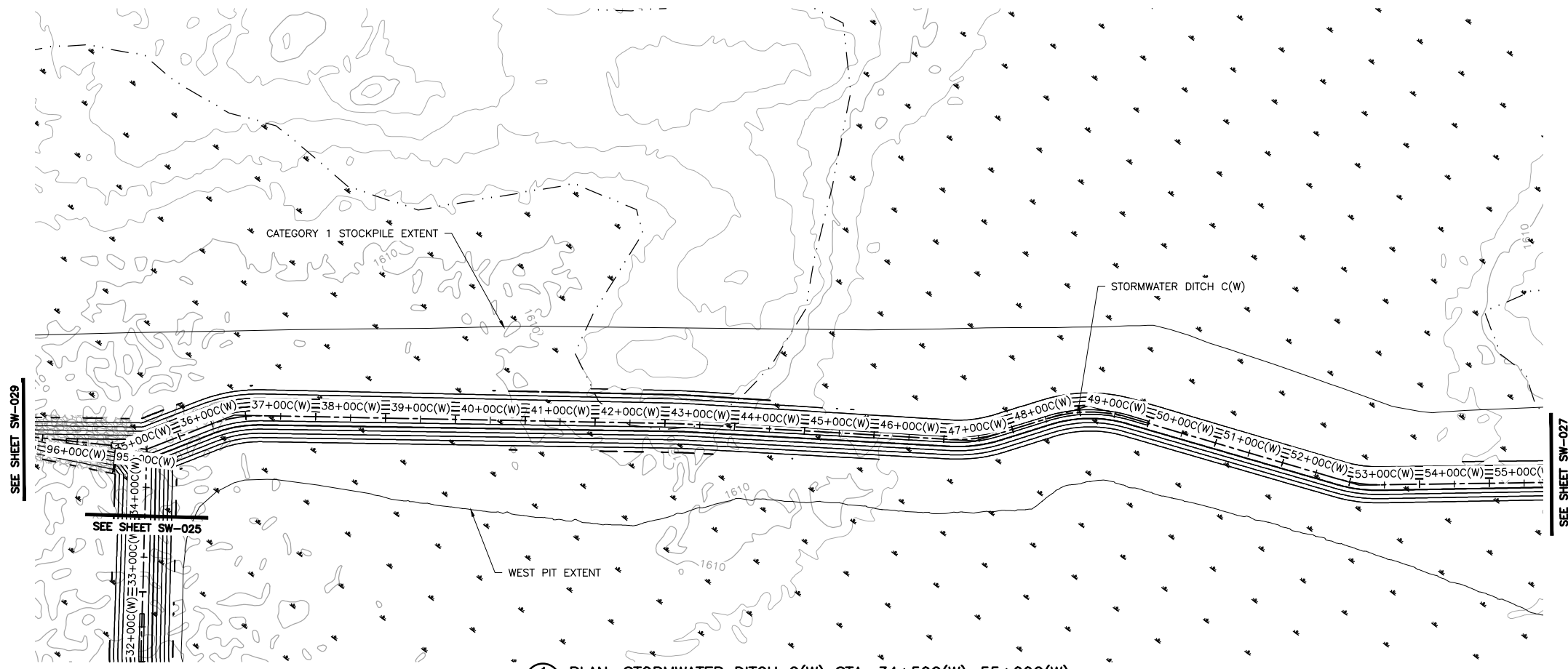
BARR ENGINEERING COMPANY
4700 WEST 77TH STREET
MINNEAPOLIS, MN.
Ph: 1-800-632-2277

DWG. NO. SW-025
REV

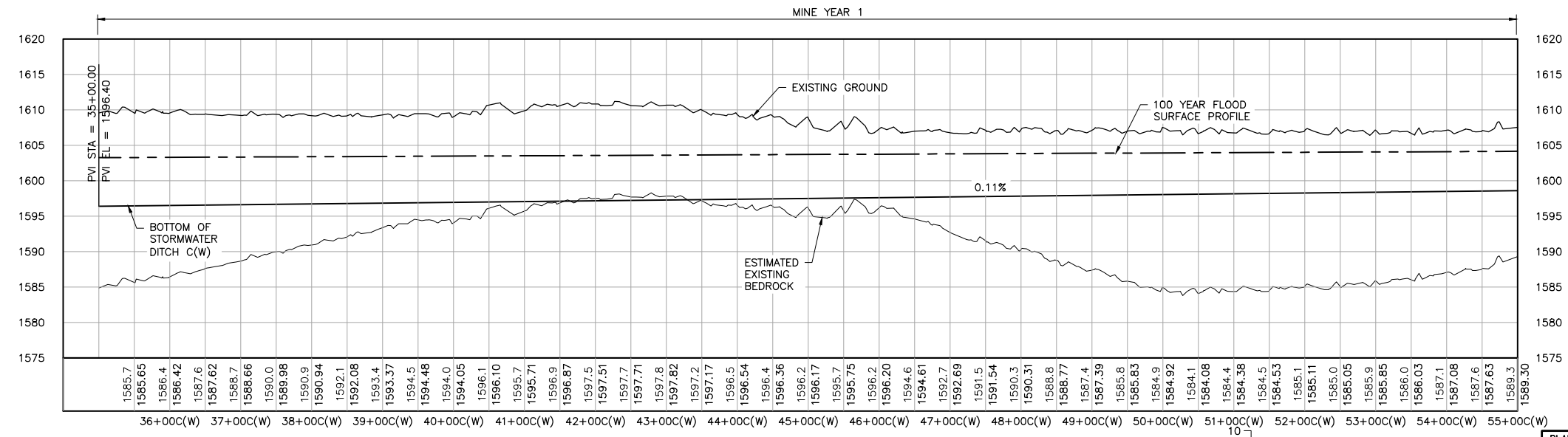
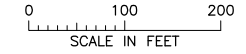
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INCHES

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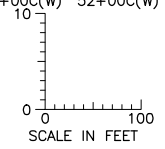
2
1
INCHES



1 PLAN: STORMWATER DITCH C(W) STA. 34+50C(W)-55+00C(W)



2 PROFILE: STORMWATER DITCH C(W) STA. 34+50C(W)-55+00C(W)



PLANT DRAWING NUMBER:

MINE SITE STORMWATER
DITCH C(W) PLAN AND PROFILE
STATION 34+50C(W) - 55+00C(W)

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

BARR
BARR ENGINEERING COMPANY
4700 WEST 77TH STREET
MINNEAPOLIS, MN.
Ph: 1-800-632-2277

DWG. NO. SW-026
REV

NOTES:

1. ALL STATIONS SHOWN ON PROFILE ARE BASED ON DITCH CENTERLINE STATIONS.
2. EXISTING GROUND PROFILE REPRESENTS GRADE AT DITCH CENTERLINE.

| VER NO | DATE | DESCRIPTION | ISSUE STATUS | | |
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| | | | ISSUED | VERSION | DATE |
| 1 | 5/26/15 | ISSUED FOR INCLUSION IN PERMIT APPLICATION | ISSUED | 1 | 5/26/15 |
| | | | FOR PERMITTING | | |
| | | | FOR CONSTRUCTION | | |
| | | | NOT APPROVED FOR CONSTRUCTION. | | |

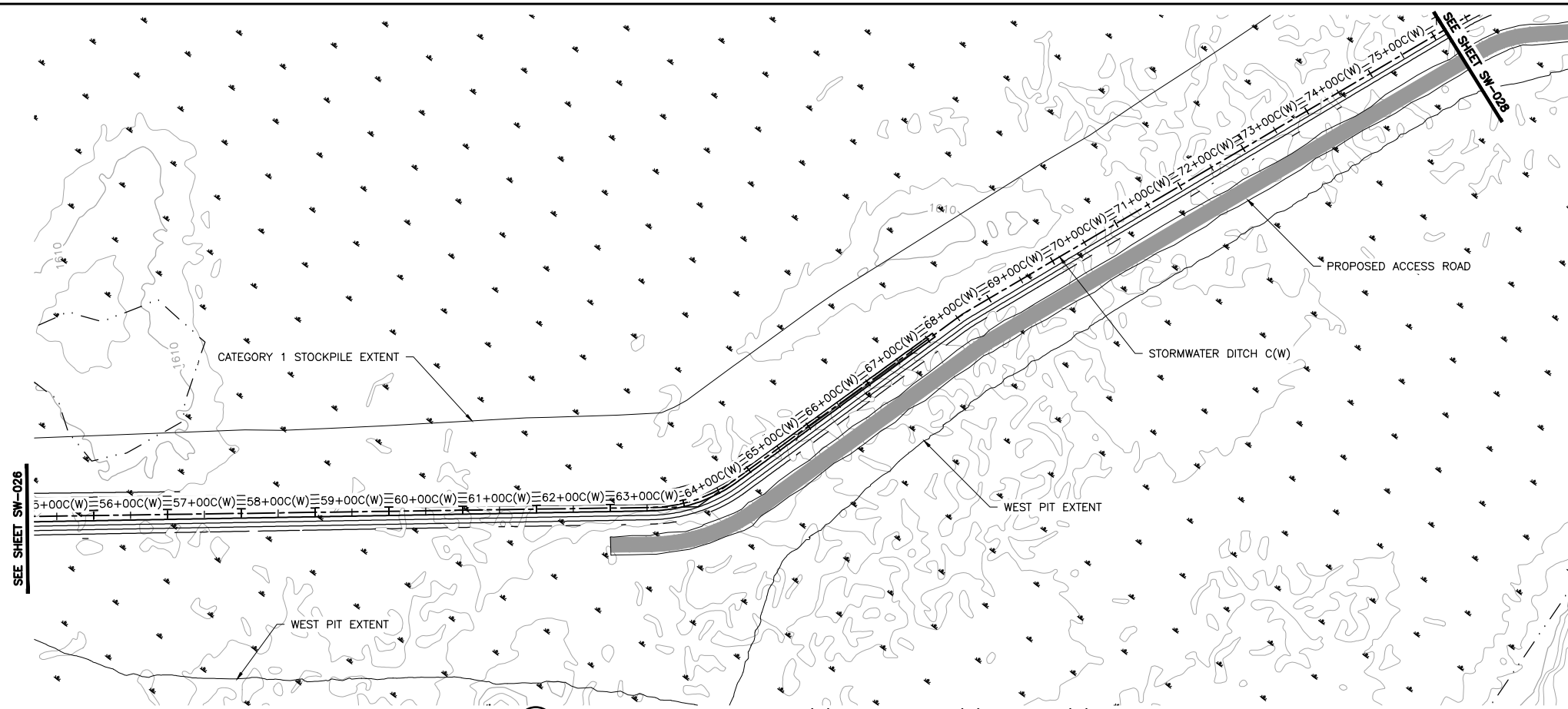
I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINTED NAME PAUL T. SWENSON
SIGNATURE *[Signature]*
DATE 5/26/15 LICENSE# 20533

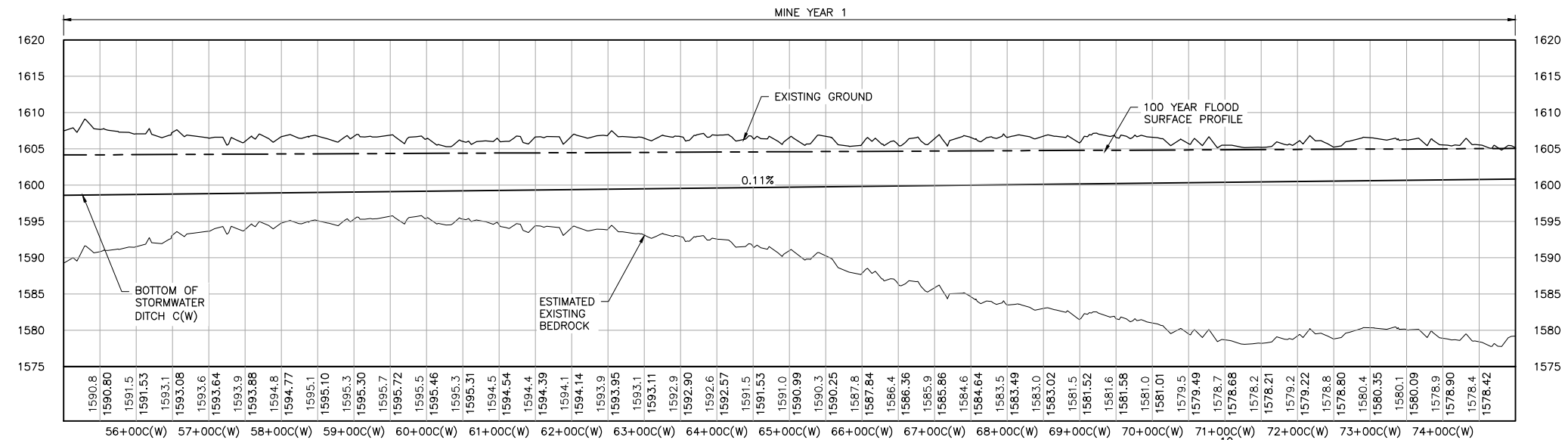
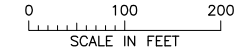
DRAWN: KKB/ATS
CHECKED: ATS
BARR PROJECT NO.: 23/69-0C29
SCALE: AS SHOWN

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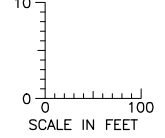
2
1
INCHES



1 PLAN: STORMWATER DITCH C(W) STA. 55+00C(W)-75+00C(W)



2 PROFILE: STORMWATER DITCH C(W) STA. 55+00C(W)-75+00C(W)



NOTES:

1. ALL STATIONS SHOWN ON PROFILE ARE BASED ON DITCH CENTERLINE STATIONS.
2. EXISTING GROUND PROFILE REPRESENTS GRADE AT DITCH CENTERLINE.

| VER NO | DATE | DESCRIPTION | ISSUE STATUS | | |
|--------|---------|--|--------------------------------|---------|---------|
| | | | ISSUED | VERSION | DATE |
| 1 | 5/26/15 | ISSUED FOR INCLUSION IN PERMIT APPLICATION | ISSUED | 1 | 5/26/15 |
| | | | 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 PAUL T. SWENSON
SIGNATURE *[Signature]*
DATE 5/26/15 LICENSE# 20533

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

PLANT DRAWING NUMBER:

MINE SITE STORMWATER DITCH C(W) PLAN AND PROFILE STATION 55+00C(W) - 75+00C(W)

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

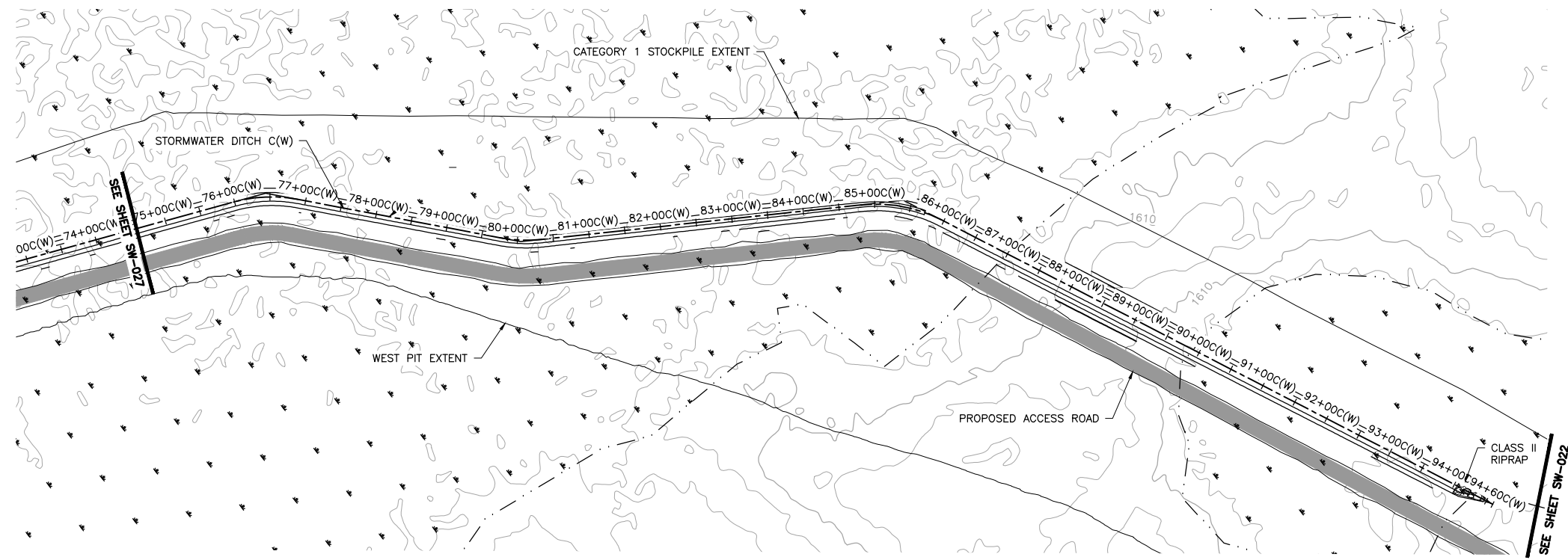
BARR ENGINEERING COMPANY
4700 WEST 77TH STREET
MINNEAPOLIS, MN.
Ph: 1-800-632-2277

DWG. NO. SW-027

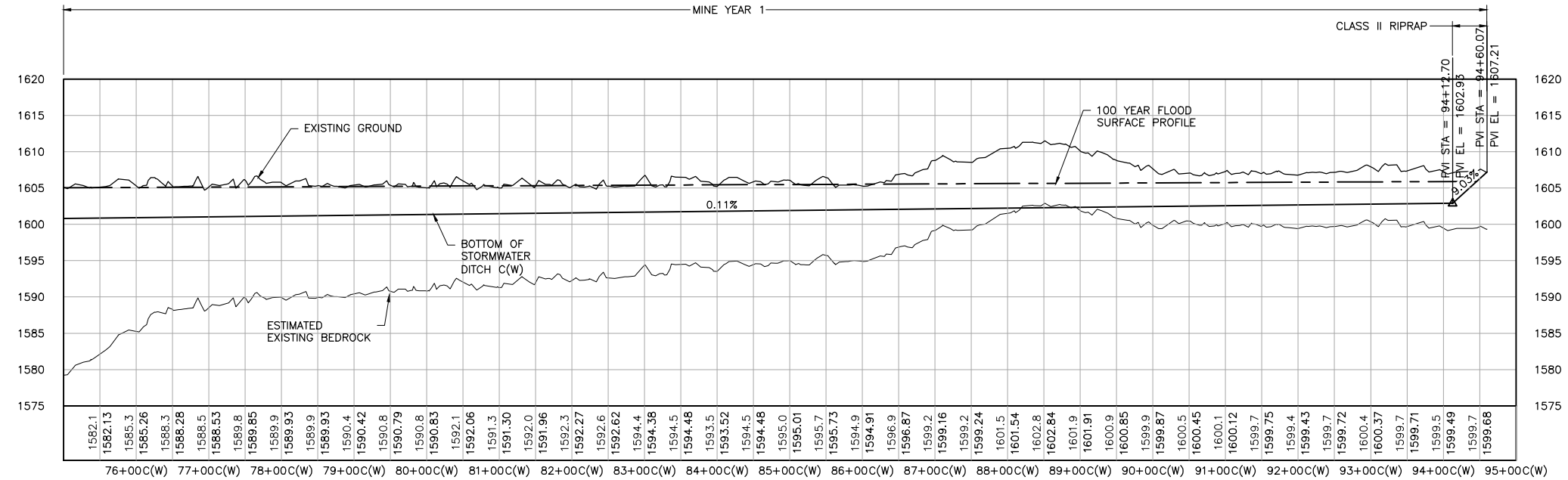
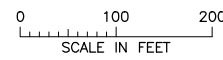
REV

CADD USER: Terr J. Toms FILE: K:\DESIGN\23690C29.10\PERMIT_NMM-05-CS-116.DWG PLOT SCALE: 1:2 PLOT DATE: 5/29/2015 3:13 PM

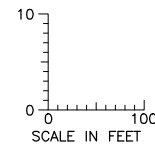
INCHES



1 PLAN: STORMWATER DITCH C(W) STA. 75+00C(W)-94+60C(W)



2 PROFILE: STORMWATER DITCH C(W) STA. 75+00C(W)-94+60C(W)



PLANT DRAWING NUMBER:

MINE SITE STORMWATER
DITCH C(W) PLAN AND PROFILE
STATION 75+00C(W) - 94+60C(W)

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

BARR ENGINEERING COMPANY
4700 WEST 77TH STREET
MINNEAPOLIS, MN.
Ph: 1-800-632-2277

DWG. NO. SW-028

NOTES:

1. ALL STATIONS SHOWN ON PROFILE ARE BASED ON DITCH CENTERLINE STATIONS.
2. EXISTING GROUND PROFILE REPRESENTS GRADE AT DITCH CENTERLINE.

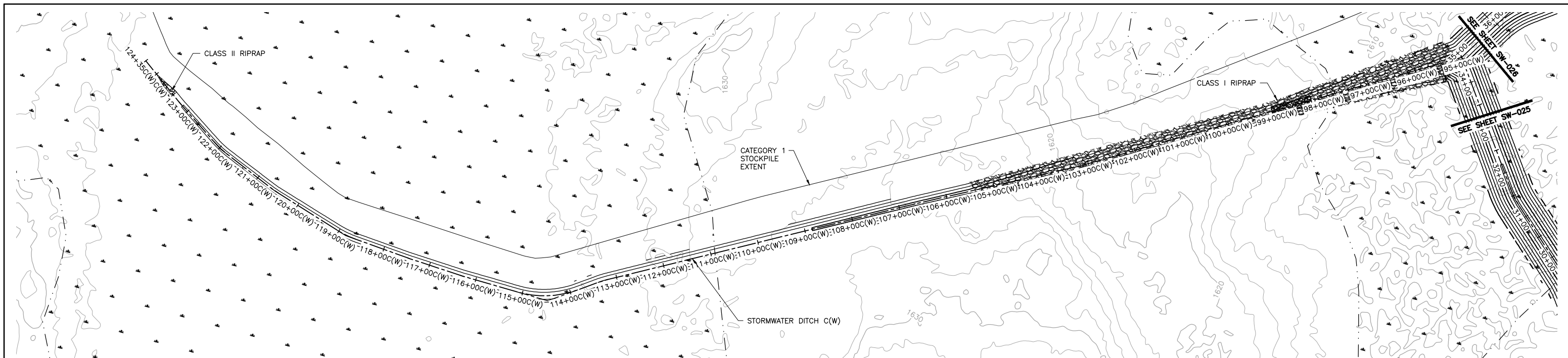
| VER NO | DATE | DESCRIPTION | ISSUE STATUS | | |
|--------|---------|--|--------------------------------|---------|---------|
| | | | ISSUED | VERSION | DATE |
| 1 | 5/26/15 | ISSUED FOR INCLUSION IN PERMIT APPLICATION | ISSUED | 1 | 5/26/15 |
| | | | FOR PERMITTING | | |
| | | | FOR CONSTRUCTION | | |
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PRINTED NAME PAUL T. SWENSON
SIGNATURE *[Signature]*
DATE 5/26/15 LICENSE # 20533

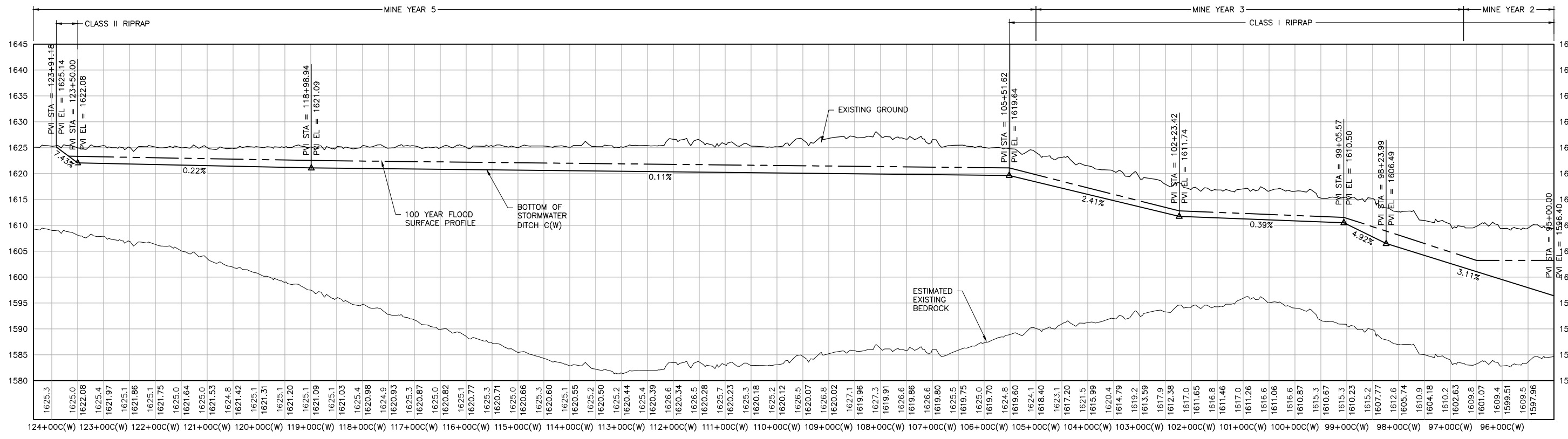
DRAWN: KKB/ATS
CHECKED: ATS
BARR PROJECT NO.: 23/69-0C29
SCALE: AS SHOWN

REV



1 PLAN: STORMWATER DITCH C(W) STA. 95+00C(W)-124+35C(W)

0 100 200
SCALE IN FEET



2 PROFILE: STORMWATER DITCH STA. 95+00C(W)-124+35C(W)

0 100
SCALE IN FEET

- NOTES:
- ALL STATIONS SHOWN ON PROFILE ARE BASED ON DITCH CENTERLINE STATIONS.
 - EXISTING GROUND PROFILE REPRESENTS GRADE AT DITCH CENTERLINE.

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| 1 | 5/26/15 | ISSUED FOR INCLUSION IN PERMIT APPLICATION | ISSUED | VERSION | DATE |
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PRINTED NAME PAUL T. SWENSON
SIGNATURE *[Signature]*
DATE 5/26/15 LICENSE# 20533

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

PLANT DRAWING NUMBER:

MINE SITE STORMWATER DITCH C(W) PLAN AND PROFILE STATION 95+00C(W) - 124+35C(W)

POLYMET MINING

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

BARR ENGINEERING COMPANY
4700 WEST 77TH STREET
MINNEAPOLIS, MN.
Ph: 1-800-632-2277

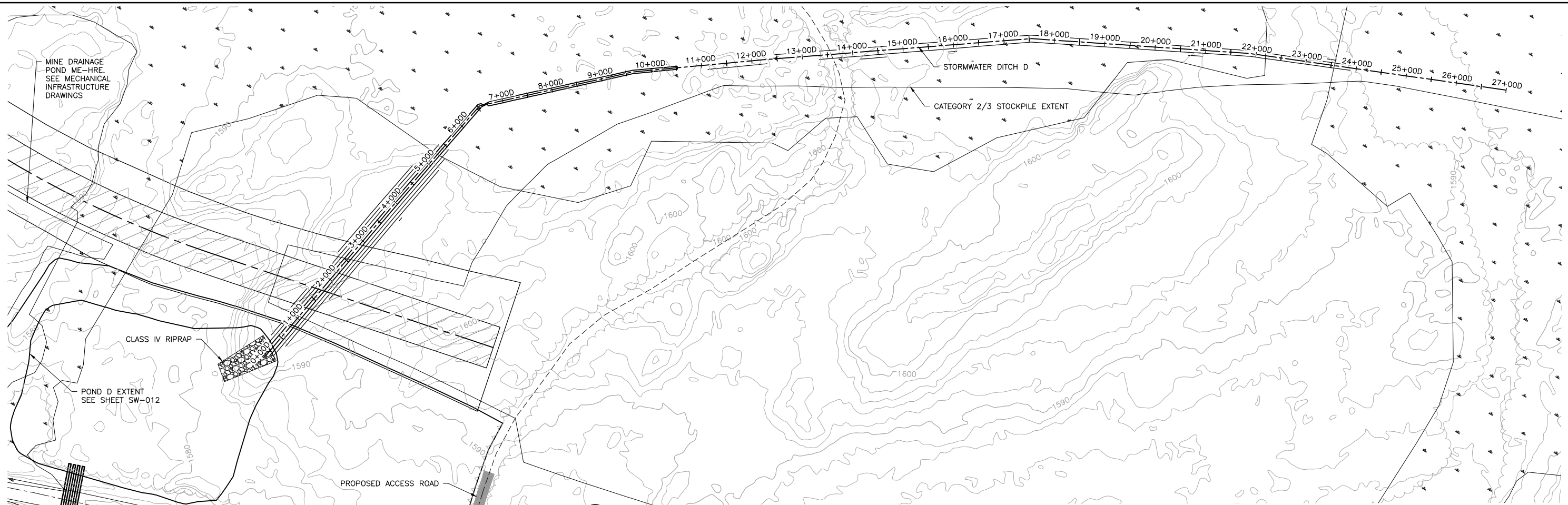
DWG. NO. SW-029

REV

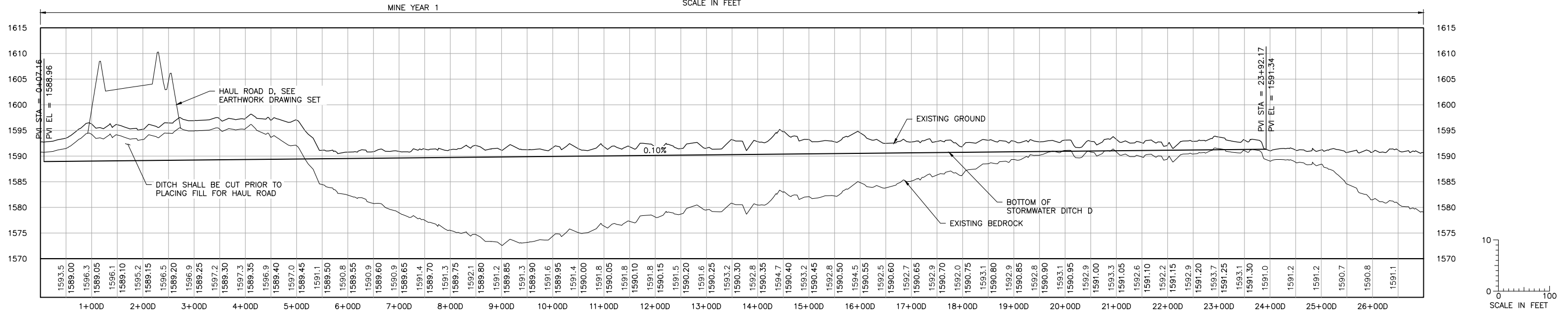
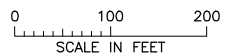
CADD USER: Terr J. Toms FILE: K:\DESIGN\23690C29\10\PERMIT_NMM-05-CS-114.DWG PLOT SCALE: 1:2 PLOT DATE: 5/29/2015 3:16 PM

2
1
INCHES

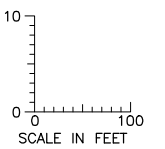
CADD USER: Terr J. Toms FILE: K:\DESIGN\23690C29\10\PERMIT_NMM-05-CS-116.DWG PLOT SCALE: 1:2 PLOT DATE: 5/29/2015 4:00 PM



1 PLAN: STORMWATER DITCH D STA. 0+000-27+000



2 PROFILE: STORMWATER DITCH D STA. 0+000-27+000



NOTES:

1. ALL STATIONS SHOWN ON PROFILE ARE BASED ON DITCH CENTERLINE STATIONS.
2. EXISTING GROUND PROFILE REPRESENTS GRADE AT DITCH CENTERLINE.

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PRINTED NAME PAUL T. SWENSON
SIGNATURE *[Signature]*
DATE 5/26/15 LICENSE# 20533

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

PLANT DRAWING NUMBER:

MINE SITE STORMWATER DITCH D PLAN AND PROFILE STATION 0+000 - 27+000

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

BARR
BARR ENGINEERING COMPANY
4700 WEST 77TH STREET
MINNEAPOLIS, MN.
Ph: 1-800-632-2277

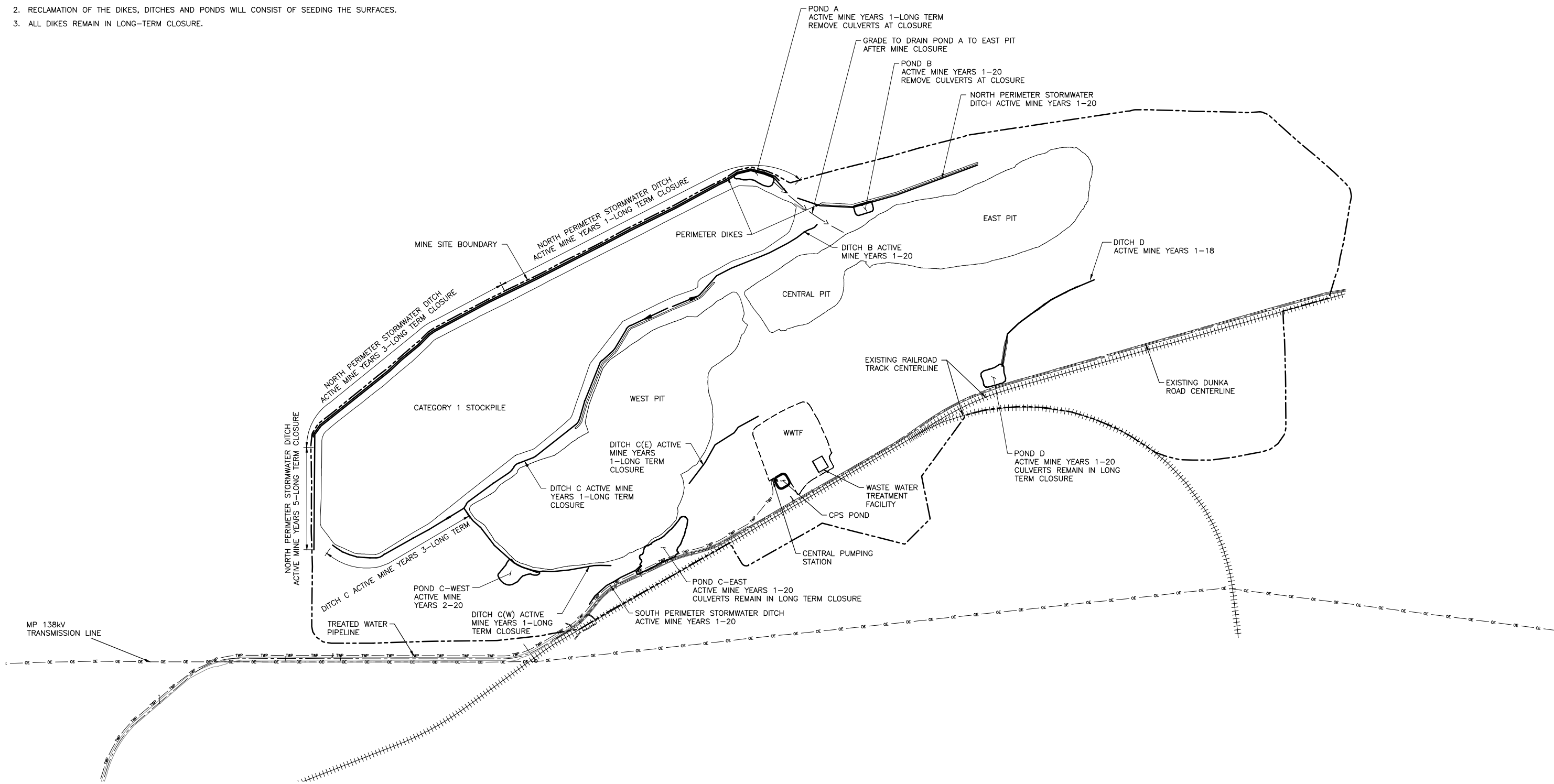
DWG. NO. **SW-030**

REV

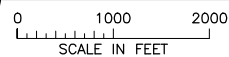
2
1
INCHES

NOTES:

1. ALL FEATURES SHOWN WILL REMAIN IN LONG-TERM CLOSURE UNLESS OTHERWISE NOTED.
2. RECLAMATION OF THE DIKES, DITCHES AND PONDS WILL CONSIST OF SEEDING THE SURFACES.
3. ALL DIKES REMAIN IN LONG-TERM CLOSURE.



1 PLAN: STORMWATER DIKES, DITCHES, AND PONDS RECLAMATION PLAN



| VER NO | DATE | DESCRIPTION | ISSUE STATUS | | |
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 SIGNATURE: *[Signature]*
 DATE: 5/26/15 LICENSE# 20533

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

PLANT DRAWING NUMBER:

MINE SITE STORMWATER DIKES, DITCHES, AND PONDS RECLAMATION PLAN

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

BARR ENGINEERING COMPANY
 4700 WEST 77TH STREET
 MINNEAPOLIS, MN.
 Ph: 1-800-632-2277

DWG. NO. **SW-031**

REV

CADD USER: Terr J. Toms FILE: K:\DESIGN\23690C29\10\PERMIT_NMG-04-CS-FIGURE 1.DWG PLOT SCALE: 1:2 PLOT DATE: 5/29/2015 11:43 AM