

SAUNDERS DEMONSTRATION MINE

PREPARED FOR:

TWIN PINES MINERALS, LLC

2100 SOUTHBRIDGE PARKWAY SUITE 540

BIRMINGHAM, ALABAMA 32091



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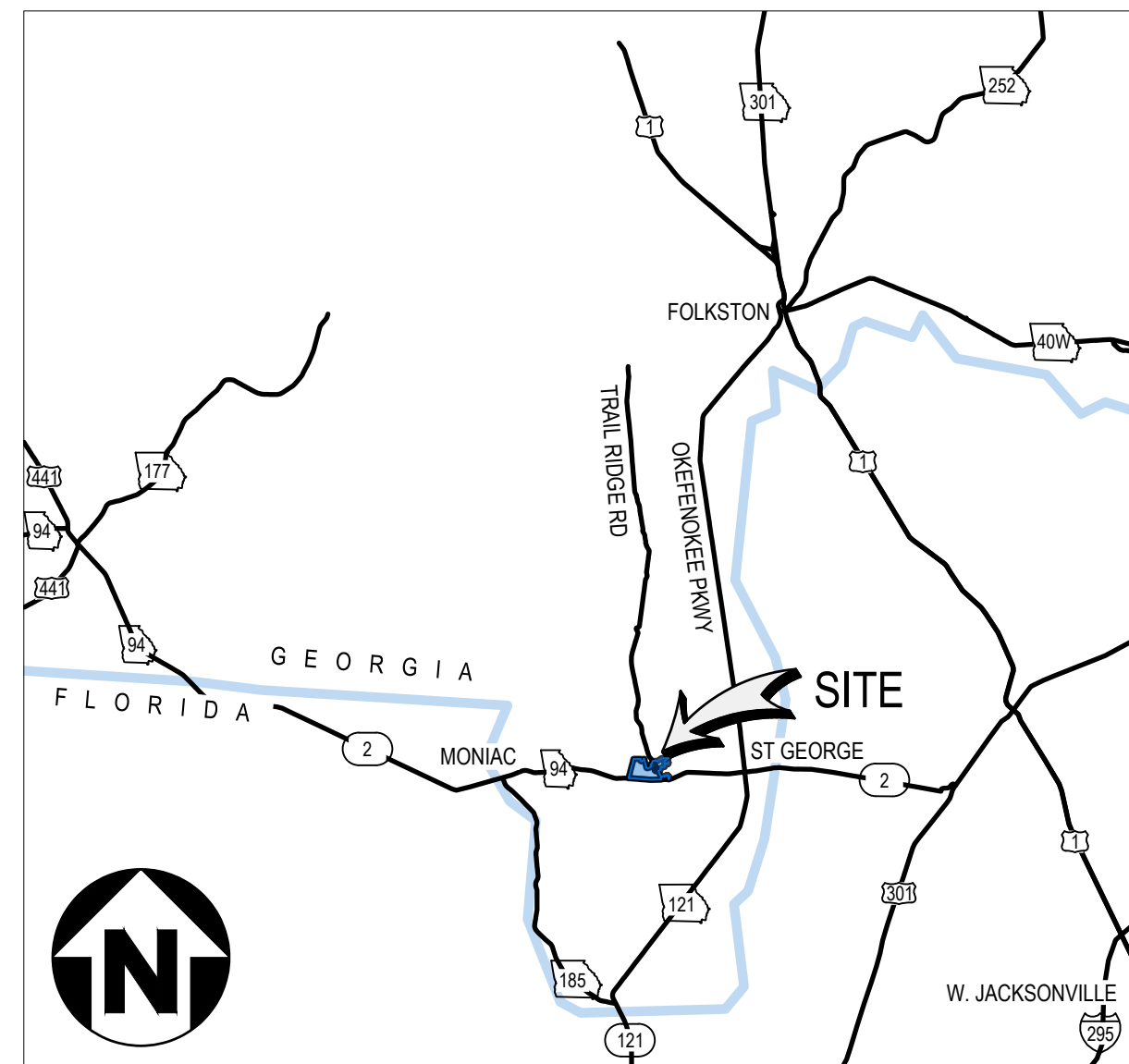
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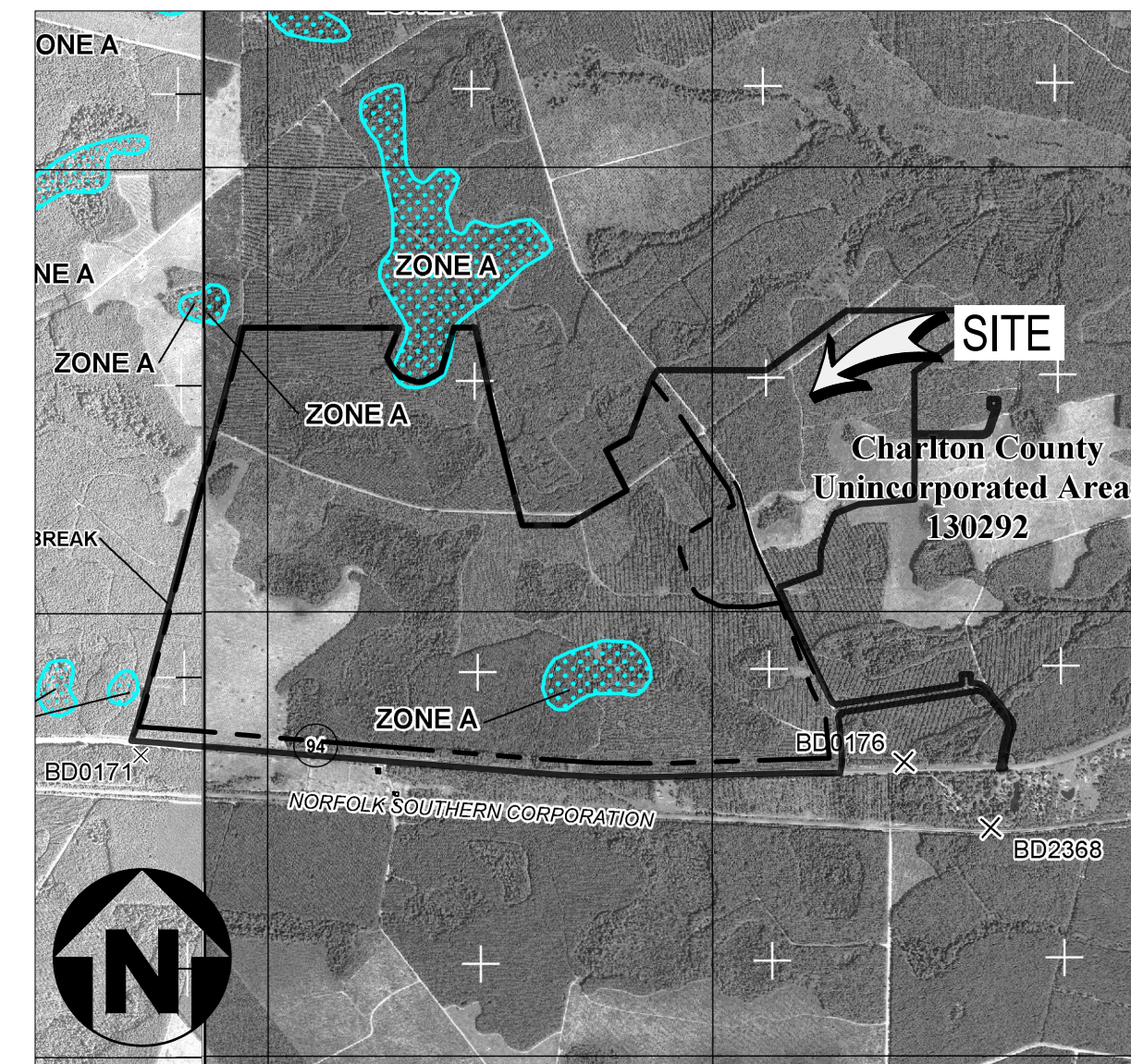
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⑩ VICINITY MAP - STATE OF GEORGIA
N.T.S.



⑪ LOCATION MAP
N.T.S.



⑫ F.I.R.M. PANEL
1" = 200'



Philip W Marcum
Level II Certified Design Professional

CERTIFICATION NUMBER 0000010833
ISSUED: 01/31/2022 EXPIRES: 01/31/2025

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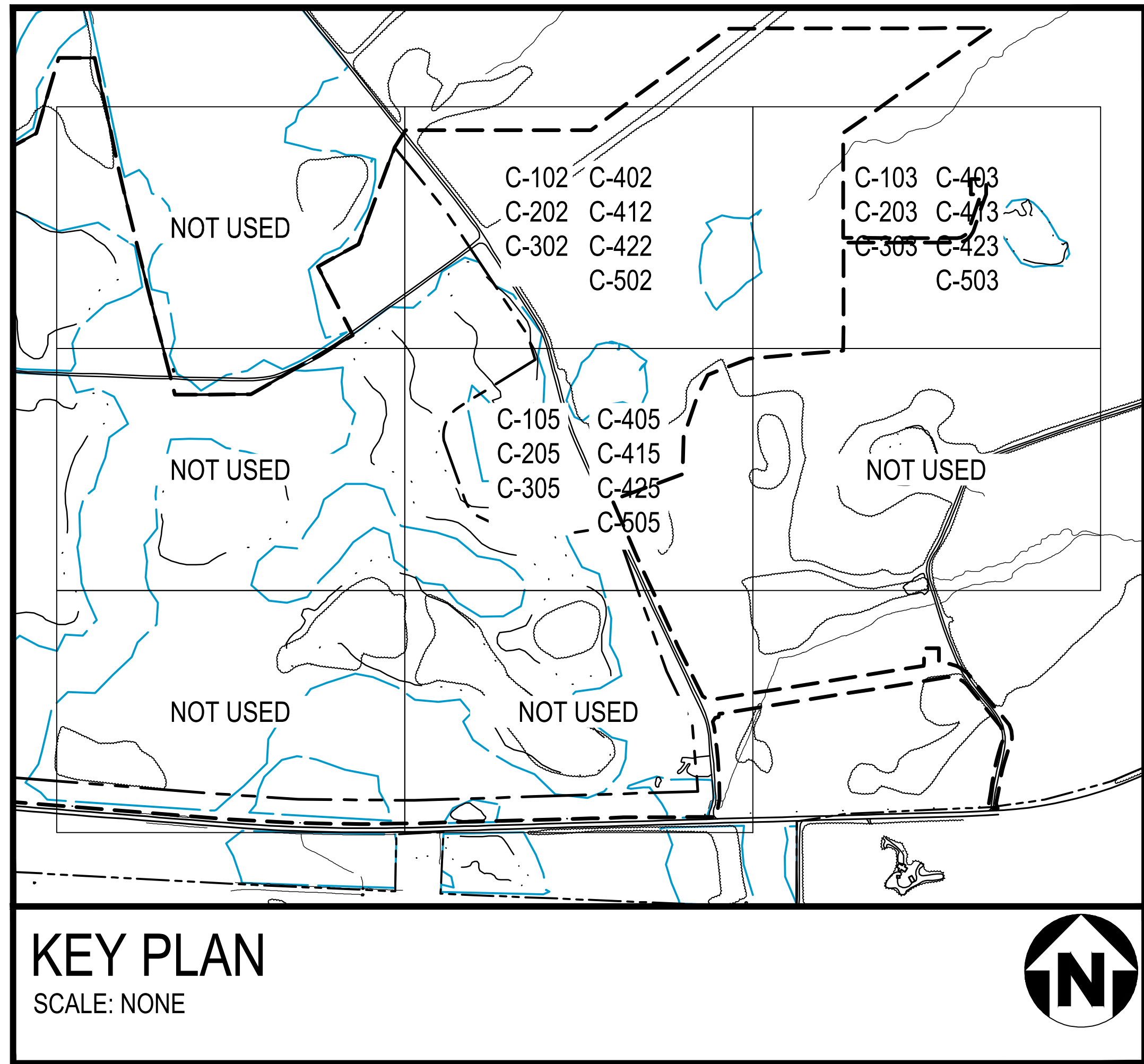
APPROVED FOR _____	
M. FOWLER CLIENT PROJECT MGR	P. MARCUM TECHNICAL MGR
M. ABDALLA PROJECT MGR	
PROJECT PHASE PERMITTING	
PROJECT NO. 7382224061	BY DES 07FEB22 DRN 07FEB22 CHK 07FEB22 APP 07FEB22
SCALE AS SHOWN	SUBJECT COVER SHEET

TWIN PINES MINERALS LLC
SAUNDERS DEMONSTRATION MINE
MINE ID 2073
WATER MANAGEMENT PONDS

4000 MEADOW LAKE DRIVE
SUITE 121
BIRMINGHAM, AL 35242
(205) 980-6402

AREA	CERTIFICATE OF AUTHORIZATION ECA2221
CLIENT DWG NO.	
DRAWING NO. C-001	REV 0

REV	DDMMYY	REVISION / ISSUE DESCRIPTION	DRN	CHK	APP	APP	APP	APP	APP	REF	NUMBER	TITLE
0	8NOV2022	ISSUED FOR PERMITTING	M.J.L.	M.M.A.	P.W.M.							



DRAWING INDEX		
SHEET NUMBER	DRAWING NUMBER	SHEET TITLE
	C-001	COVER SHEET
	C-002	DRAWING INDEX
	C-100	OVERALL EXISTING CONDITIONS PLAN
	C-102	EXISTING CONDITIONS PLAN SHEET 2
	C-103	EXISTING CONDITIONS PLAN SHEET 3
	C-105	EXISTING CONDITIONS PLAN SHEET 5
	C-200	OVERALL SITE PLAN
	C-202	SITE PLAN SHEET 2
	C-203	SITE PLAN SHEET 3
	C-205	SITE PLAN SHEET 5
	C-300	OVERALL GRADING AND DRAINAGE PLAN
	C-302	GRADING AND DRAINAGE PLAN SHEET 2
	C-303	GRADING AND DRAINAGE PLAN SHEET 3
	C-305	GRADING AND DRAINAGE PLAN SHEET 5
	C-400	OVERALL INITIAL EROSION SEDIMENTATION AND POLLUTION CONTROL PLAN
	C-402	INITIAL EROSION SEDIMENTATION AND POLLUTION CONTROL PLAN SHEET 2
	C-403	INITIAL EROSION SEDIMENTATION AND POLLUTION CONTROL PLAN SHEET 3
	C-405	INITIAL EROSION SEDIMENTATION AND POLLUTION CONTROL PLAN SHEET 5
	C-410	OVERALL INTERMEDIATE EROSION SEDIMENTATION AND POLLUTION CONTROL PLAN
	C-412	INTERMEDIATE EROSION SEDIMENTATION AND POLLUTION CONTROL PLAN SHEET 2
	C-413	INTERMEDIATE EROSION SEDIMENTATION AND POLLUTION CONTROL PLAN SHEET 3
	C-415	INTERMEDIATE EROSION SEDIMENTATION AND POLLUTION CONTROL PLAN SHEET 5
	C-420	OVERALL FINAL EROSION SEDIMENTATION AND POLLUTION CONTROL PLAN
	C-422	FINAL EROSION SEDIMENTATION AND POLLUTION CONTROL PLAN SHEET 2
	C-423	FINAL EROSION SEDIMENTATION AND POLLUTION CONTROL PLAN SHEET 3
	C-425	FINAL EROSION SEDIMENTATION AND POLLUTION CONTROL PLAN SHEET 5
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	C-442	EROSION SEDIMENTATION AND POLLUTION CONTROL DETAILS SHEET 2
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DRAWING INDEX		
SHEET NUMBER	DRAWING NUMBER	SHEET TITLE
	C-535A	UPDATED EVAPORATOR PLAN SHEET 5
	C-571	PROCESS FLOW DIAGRAM SHEET 1
	C-572	PROCESS FLOW DIAGRAM SHEET 2
	C-601	PERIMETER ROAD PLAN AND PROFILE SHEET 1
	C-602	PERIMETER ROAD PLAN AND PROFILE SHEET 2
	C-603	PERIMETER ROAD PLAN AND PROFILE SHEET 3
	C-604	PERIMETER ROAD PLAN AND PROFILE SHEET 4
	C-605	PERIMETER ROAD PLAN AND PROFILE SHEET 5
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	C-633	SITE CROSS SECTIONS SHEET 3
	C-701	LINER DETAILS
	C-711	SITE DETAILS 1
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	C-713	SITE DETAILS 3
	C-714	SITE DETAILS 4
	C-801	POND CLOSURE PLAN
	FIG 1	OVERALL GRADING AND WETLANDS EXHIBIT

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PERMITTING		
PROJECT NO.	BY	DDMMYY
738224061	DES LKR	07FEB22
SCALE	DRN	MJM
	CHK	PWM
	APP	DWD
AS SHOWN		07FEB22

TWIN PINES MINERALS LLC
SAUNDERS DEMONSTRATION MINE
MINE ID 2073
WATER MANAGEMENT PONDS

wood
4000 MEADOW LAKE DRIVE
SUITE 121
BIRMINGHAM, AL 35242
(205) 980-6402

CERTIFICATE OF AUTHORIZATION
ECA2221

CLIENT DWG NO.

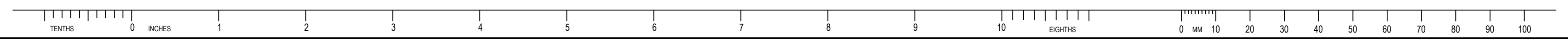
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C-002

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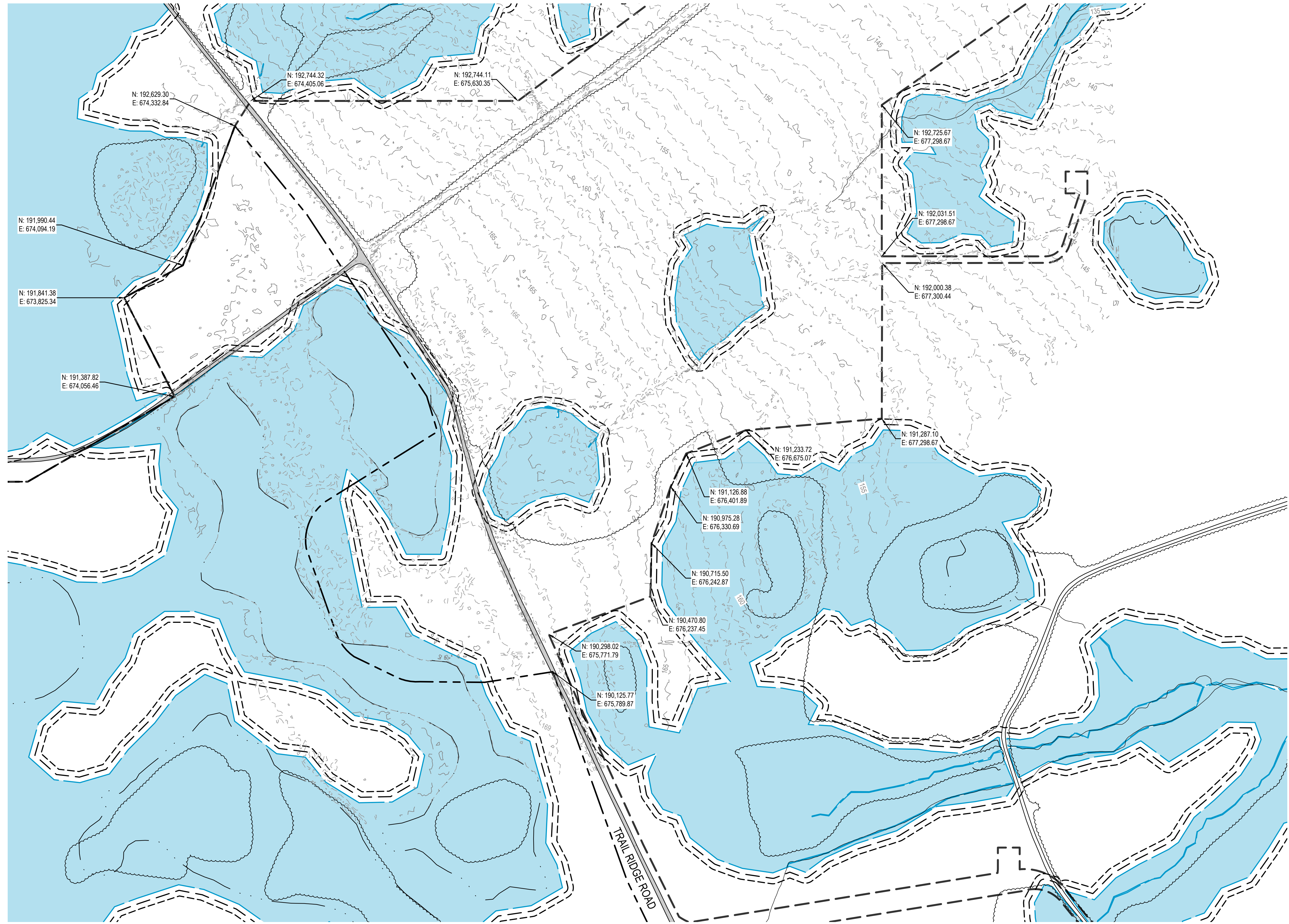
GSWCC GEORGIA SOIL AND WATER CONSERVATION COMMISSION

Philip W Marcum
Level II Certified Design Professional

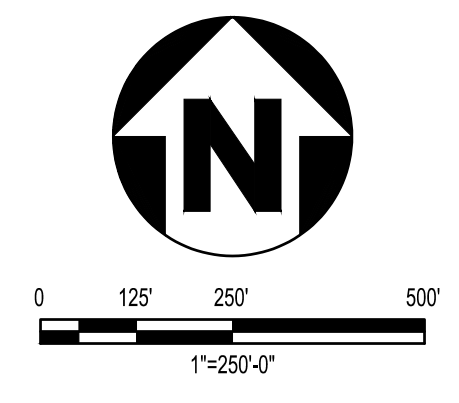
CERTIFICATION NUMBER 0000010833
ISSUED: 01/31/2022 EXPIRES: 01/31/2025



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LEGEND	
	MINE BOUNDARY
	PERMIT BOUNDARY
	EXISTING INDEX CONTOUR
	EXISTING INTERMEDIATE CONTOUR
	NON-JURISDICTIONAL WETLANDS
	TREE LINE



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AS SHOWN		

TWIN PINES MINERALS LLC
SAUNDERS DEMONSTRATION MINE
MINE ID 2073
WATER MANAGEMENT PONDS

AREA
CERTIFICATE OF AUTHORIZATION
ECA2221

CLIENT DWG NO.

DRAWING NO.
C-100

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SUBJECT
OVERALL EXISTING CONDITIONS PLAN

4000 MEADOW LAKE DRIVE
SUITE 121
BIRMINGHAM, AL 35242
(205) 980-6402

AREA
CERTIFICATE OF AUTHORIZATION
ECA2221

CLIENT DWG NO.

DRAWING NO.
C-100

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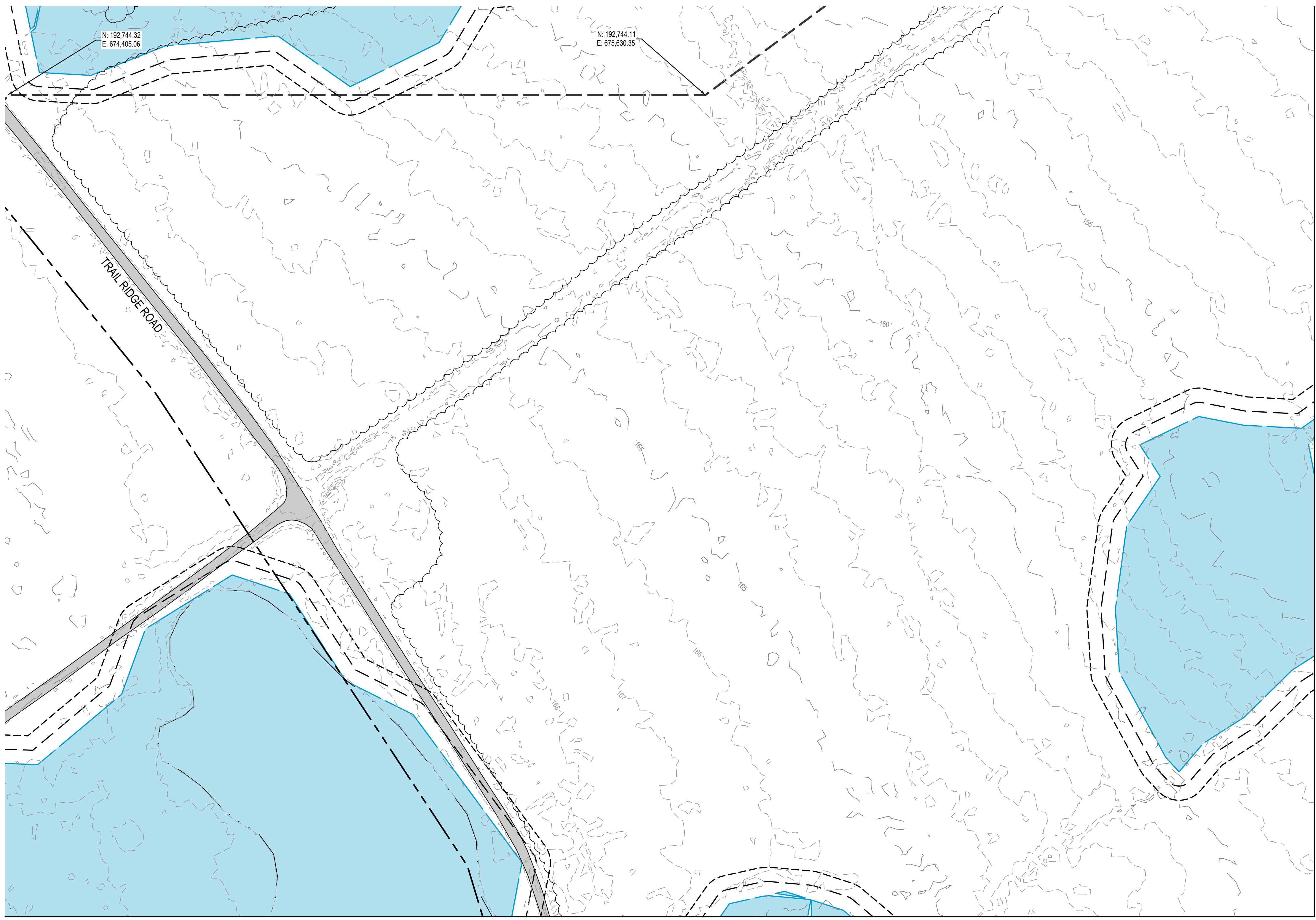
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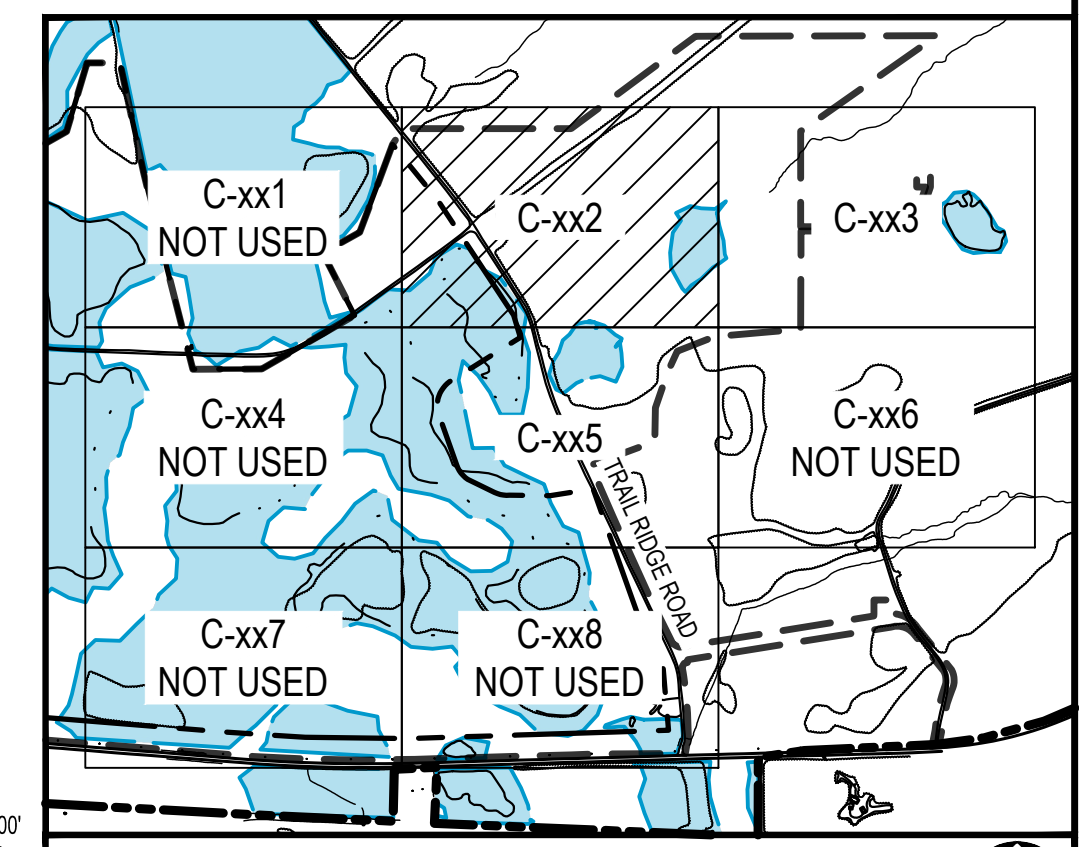
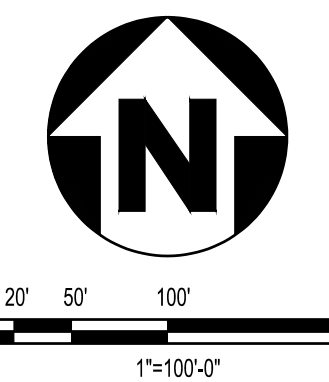
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LEGEND	
	MINE BOUNDARY
	PERMIT BOUNDARY
	EXISTING INDEX CONTOUR
	EXISTING INTERMEDIATE CONTOUR
	NON-JURISDICTIONAL WETLANDS
	TREE LINE

MATCHLINE - SEE SHEET C-103

MATCHLINE - SEE SHEET C-105



KEY PLAN
SCALE: NONE

REV	DDMMYY	REVISION / ISSUE DESCRIPTION	DRN	CHK	APP	APP	APP	APP	APP	REV	DDMMYY	REVISION / ISSUE DESCRIPTION	DRN	CHK	APP	APP	APP	APP	REF	NUMBER	TITLE
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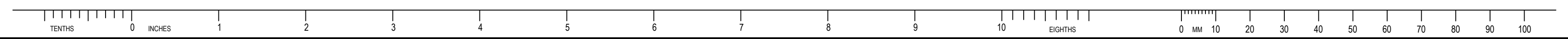
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PROJECT NO.	BY	DDMMYY
7382224061	DES	07FEB22
SCALE	DRN	07FEB22
	CHK	07FEB22
	APP	07FEB22
AS SHOWN		

TWIN PINES MINERALS LLC
SAUNDERS DEMONSTRATION MINE
MINE ID 2073
WATER MANAGEMENT PONDS

AREA		CERTIFICATE OF AUTHORIZATION ECA2221
CLIENT DWG NO.		
DRAWING NO.		REV
C-102		0

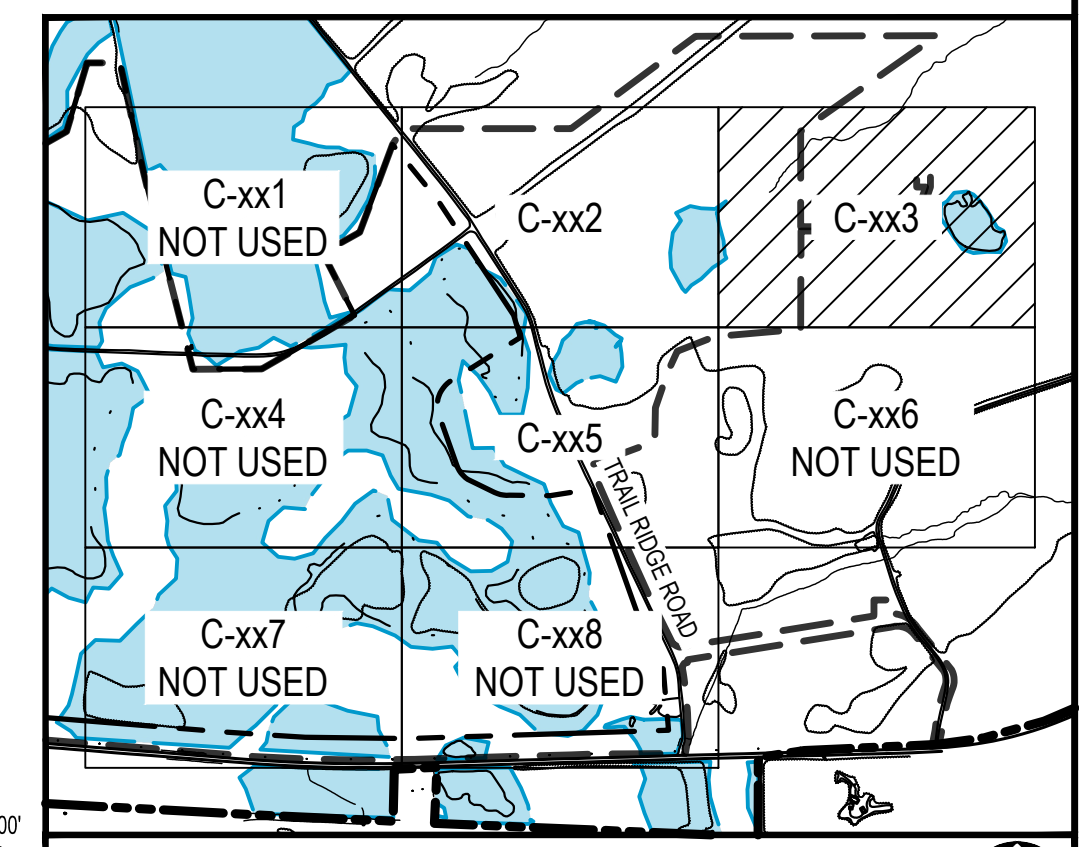
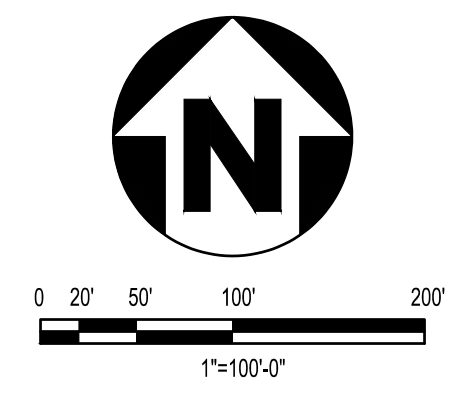
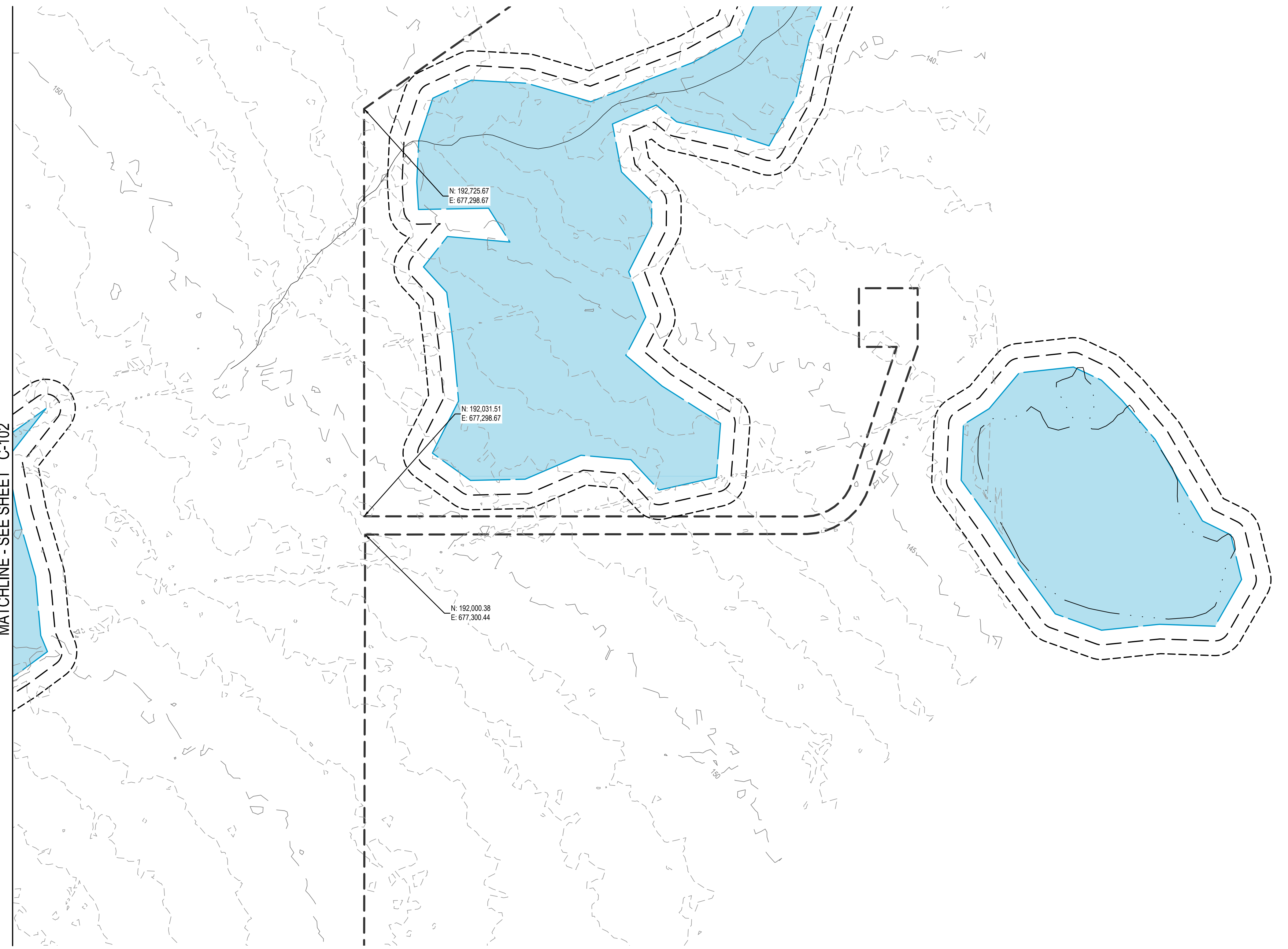


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MATCHLINE - SEE SHEET C-102

LEGEND

- MINE BOUNDARY
- PERMIT BOUNDARY
- EXISTING INDEX CONTOUR
- EXISTING INTERMEDIATE CONTOUR
- NON-JURISDICTIONAL WETLANDS
- TREE LINE



KEY PLAN
SCALE: NONE

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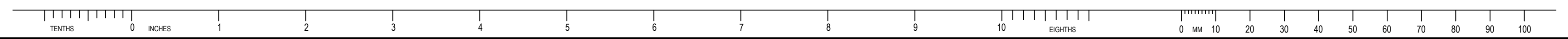
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SCALE AS SHOWN	CHK 07FEB22	APP 07FEB22

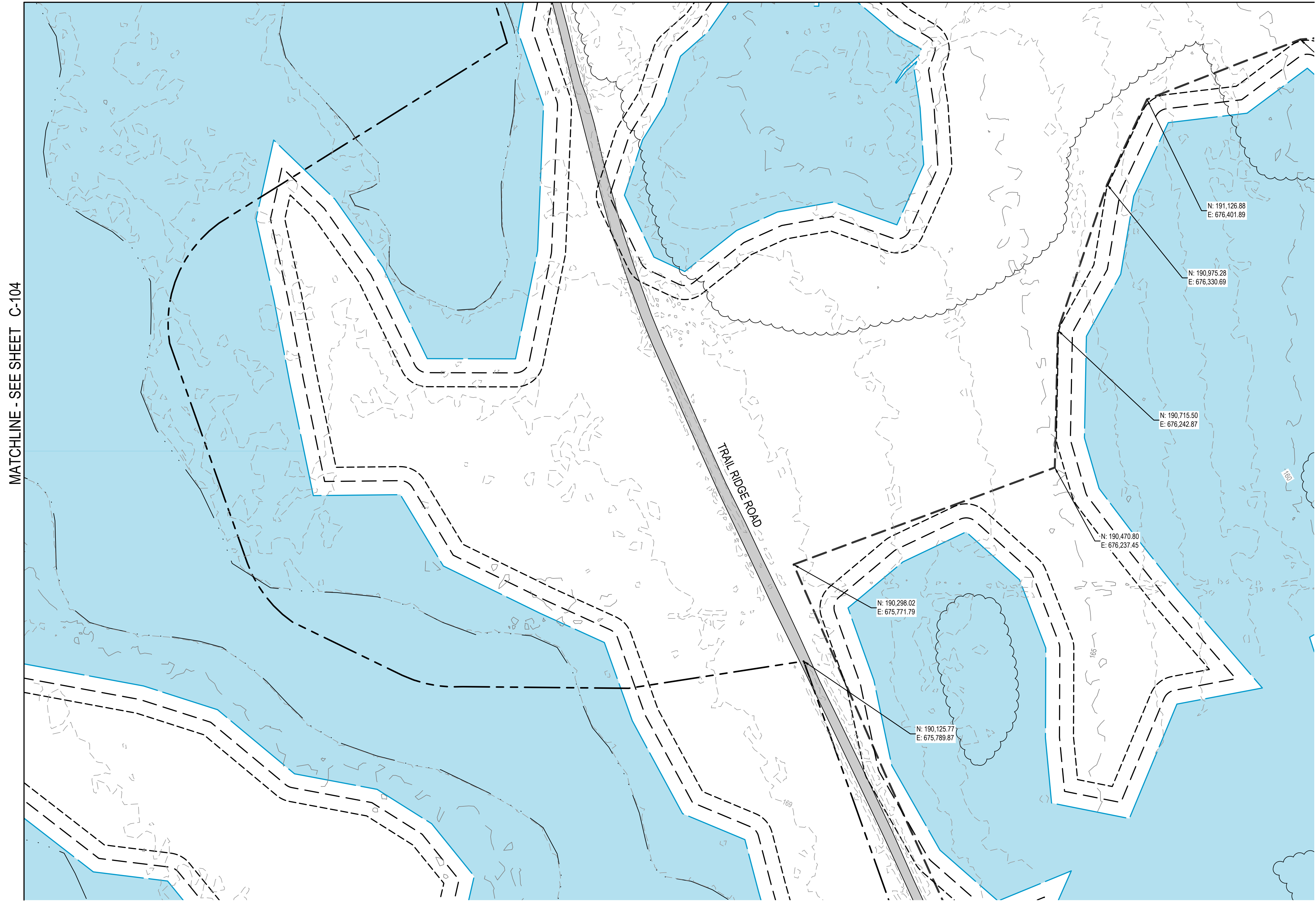
TWIN PINES MINERALS LLC
SAUNDERS DEMONSTRATION MINE
MINE ID 2073
WATER MANAGEMENT PONDS

wood.
4000 MEADOW LAKE DRIVE
SUITE 121
BIRMINGHAM, AL 35242
(205) 980-6402

AREA	CERTIFICATE OF AUTHORIZATION ECA2221
CLIENT DWG NO.	
DRAWING NO. C-103	REV 0



MATCHLINE - SEE SHEET C-102



LEGEND	
	MINE BOUNDARY
	PERMIT BOUNDARY
	EXISTING INDEX CONTOUR
	EXISTING INTERMEDIATE CONTOUR
	NON-JURISDICTIONAL WETLANDS
	TREE LINE

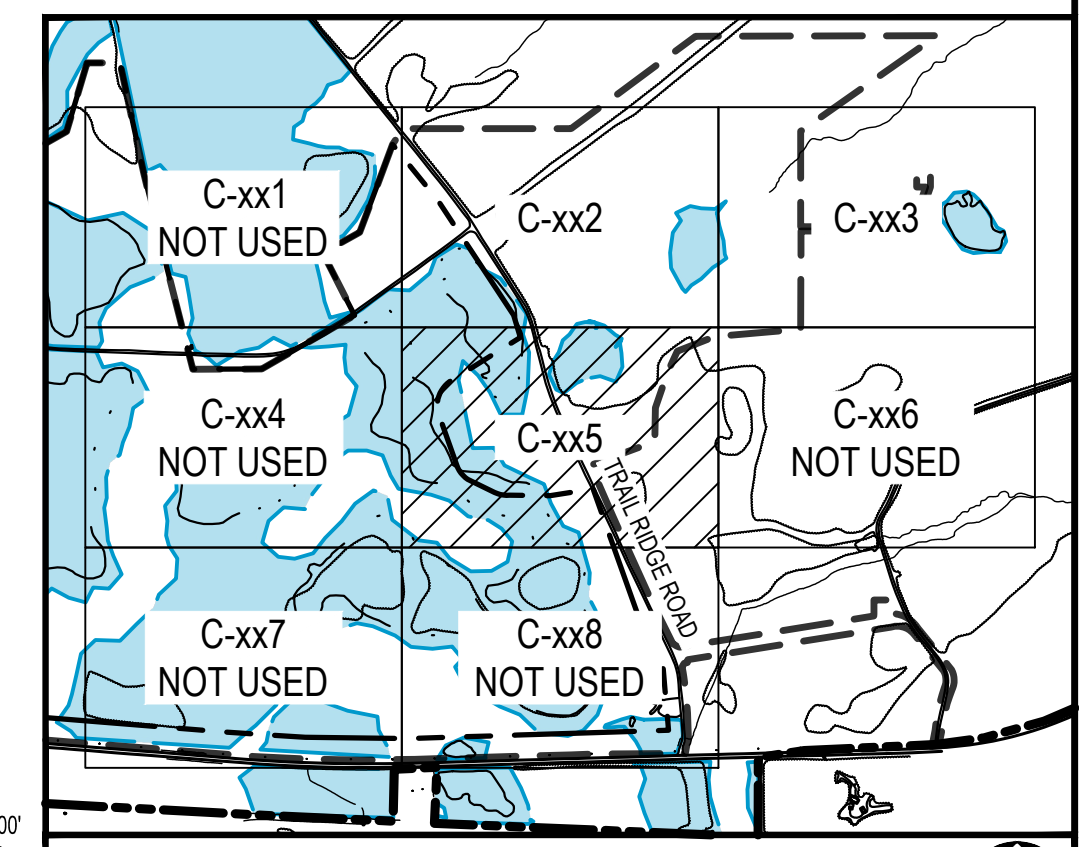
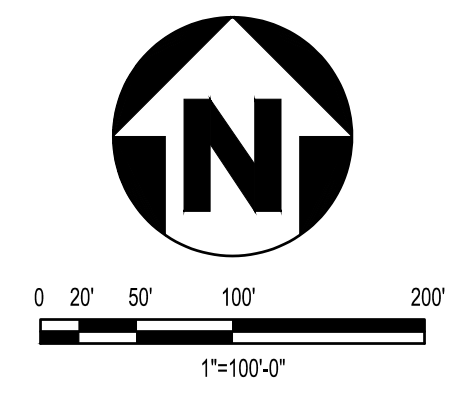
MATCHLINE - SEE SHEET C-104

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KEY PLAN
SCALE: NONE

REV	DDMMYY	REVISION / ISSUE DESCRIPTION	DRN	CHK	APP	APP	APP	APP	APP	REV	DDMMYY	REVISION / ISSUE DESCRIPTION	DRN	CHK	APP	APP	APP	APP	REF	NUMBER	TITLE
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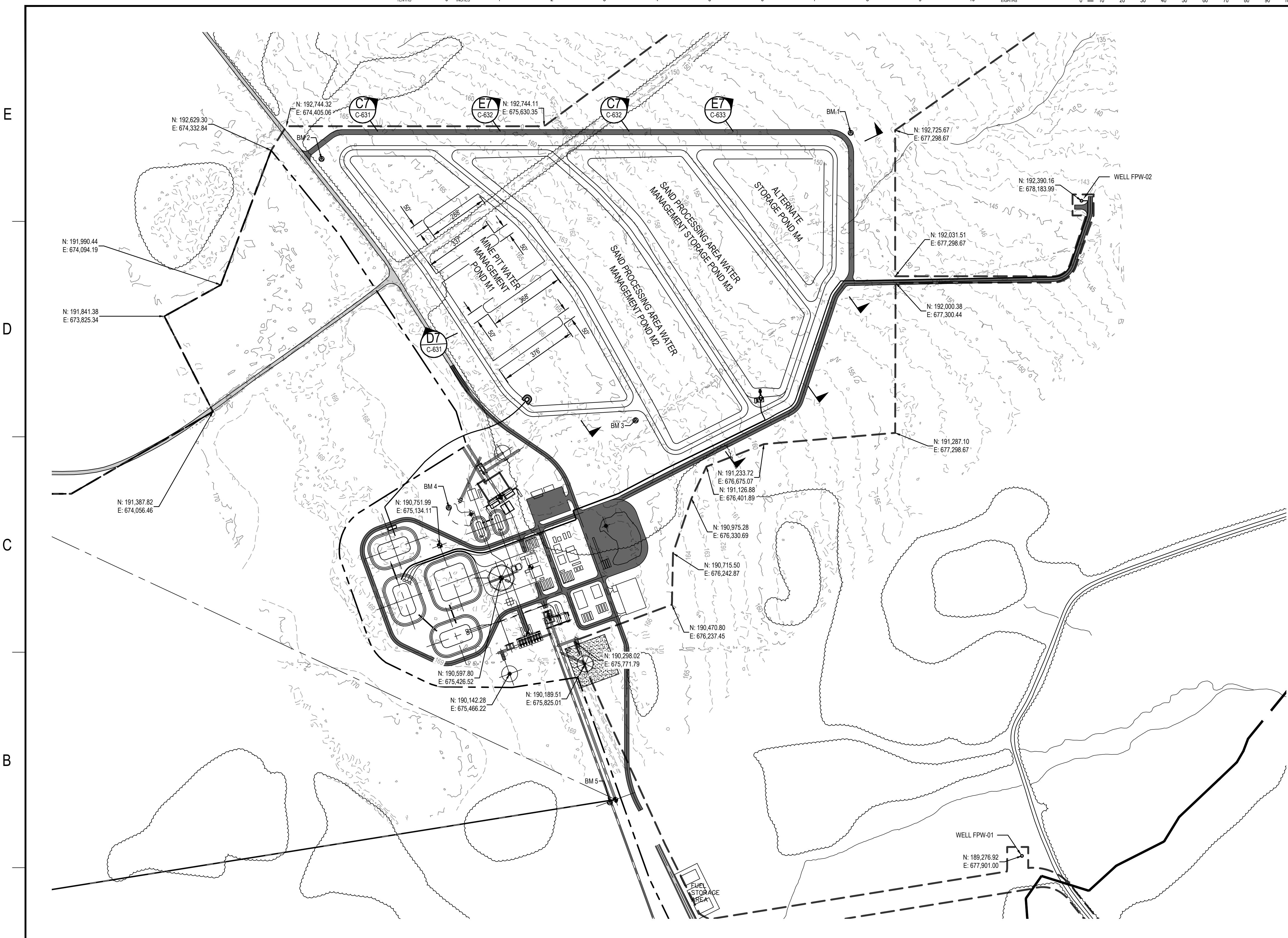
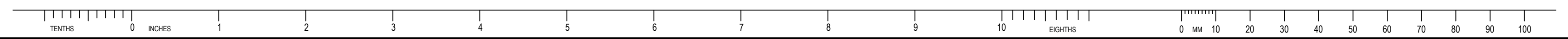
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SCALE AS SHOWN		

TWIN PINES MINERALS LLC
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MINE ID 2073
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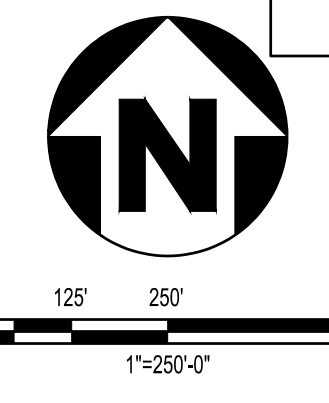
 4000 MEADOW LAKE DRIVE SUITE 121 BIRMINGHAM, AL 35242 (205) 980-6402	
AREA	CERTIFICATE OF AUTHORIZATION ECA2221
CLIENT DWG NO.	
DRAWING NO. C-105	REV 0



LEGEND	
	MINE BOUNDARY
	PERMIT BOUNDARY
	EXISTING INDEX CONTOUR
	EXISTING INTERMEDIATE CONTOUR
	EXISTING UNPAVED ROADWAY
	PROPOSED UNPAVED ROADWAY
	SITE BENCHMARK

TABLE OF POND VOLUMES			
WATER MANAGEMENT PONDS			
POND NAME	TOTAL VOLUME	MAX. WORKING VOLUME	POND AREA
MINE PIT WATER MANAGEMENT POND M1	51,153,368 GAL.	38,356,811 GAL.	17.1 Ac.
SAND PROCESSING AREA WATER MANAGEMENT POND M2	41,256,921 GAL.	32,160,837 GAL.	14.1 Ac.
SAND PROCESSING AREA WATER MANAGEMENT STORAGE POND M3	37,084,466 GAL.	28,670,896 GAL.	12.6 Ac.
ALTERNATE STORAGE POND M4	17,246,725 GAL.	12,697,470 GAL.	6.0 Ac.
PROCESS WATER PONDS			
PROCESS WATER POND P1	1,500,000 GAL.	1,300,000 GAL.	0.8 Ac.
PROCESS WATER POND P2	800,000 GAL.	700,000 GAL.	0.5 Ac.
PROCESS WATER POND P3	800,000 GAL.	700,000 GAL.	0.5 Ac.
PROCESS WATER POND P4	800,000 GAL.	700,000 GAL.	0.5 Ac.
THICKENER UNDERFLOW POND A	197,400 GAL.	108,380 GAL.	0.1 Ac.
THICKENER UNDERFLOW POND B	197,400 GAL.	108,380 GAL.	0.1 Ac.

SITE BENCHMARK LOCATIONS		
BENCHMARK	NORTHING	EASTING
BM 1	192,712.63	677,087.22
BM 2	192,588.82	674,572.34
BM 3	191,346.58	676,065.15
BM 4	190,932.19	675,177.20
BM 5	189,531.77	675,942.26



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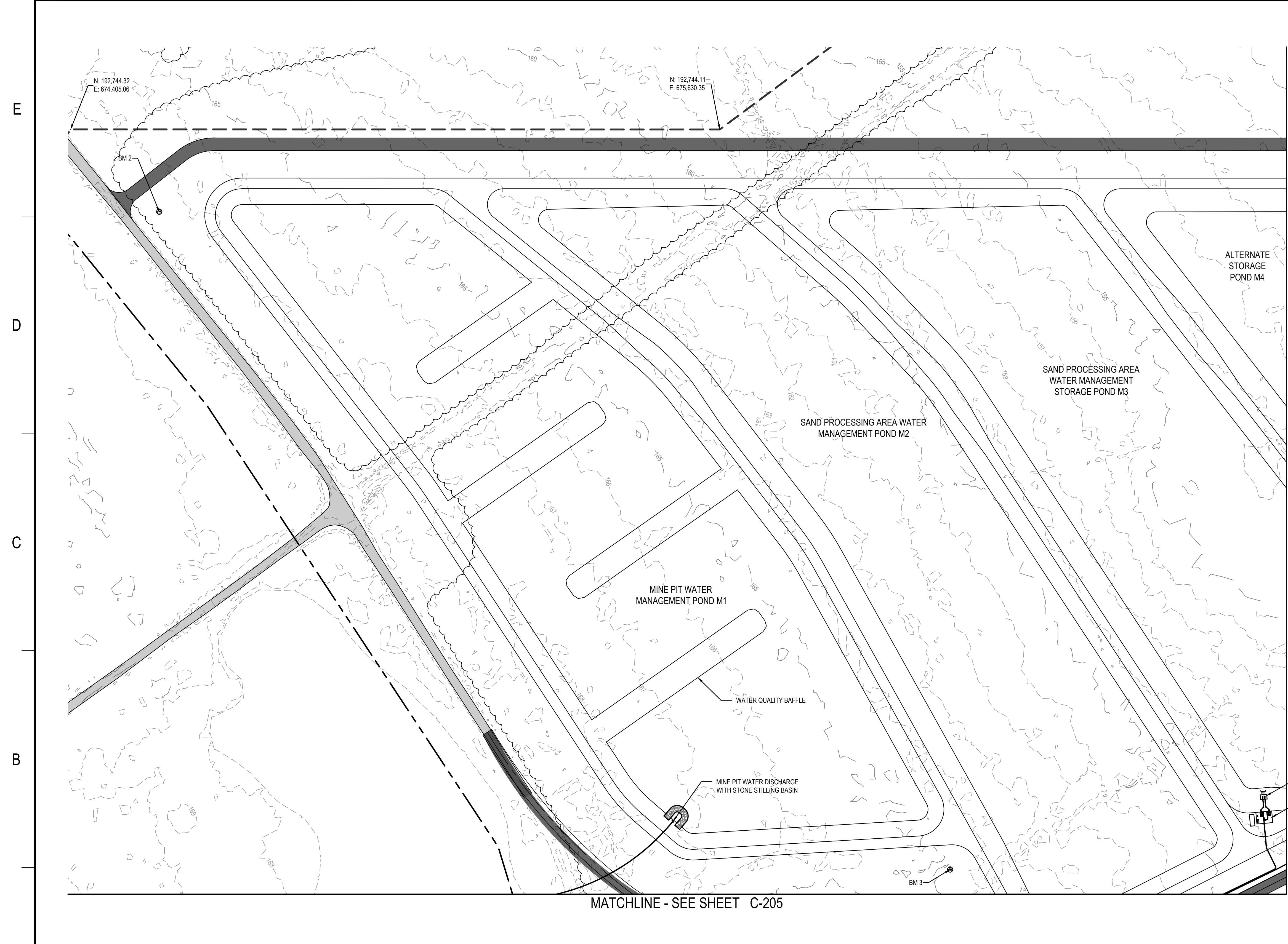
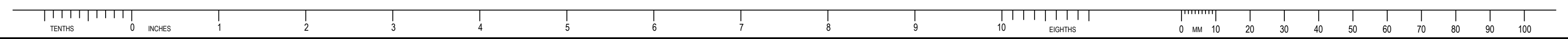
CERTIFICATE OF AUTHORIZATION
ECA2221

CLIENT DWG NO.

DRAWING NO.
C-200

OVERALL SITE PLAN

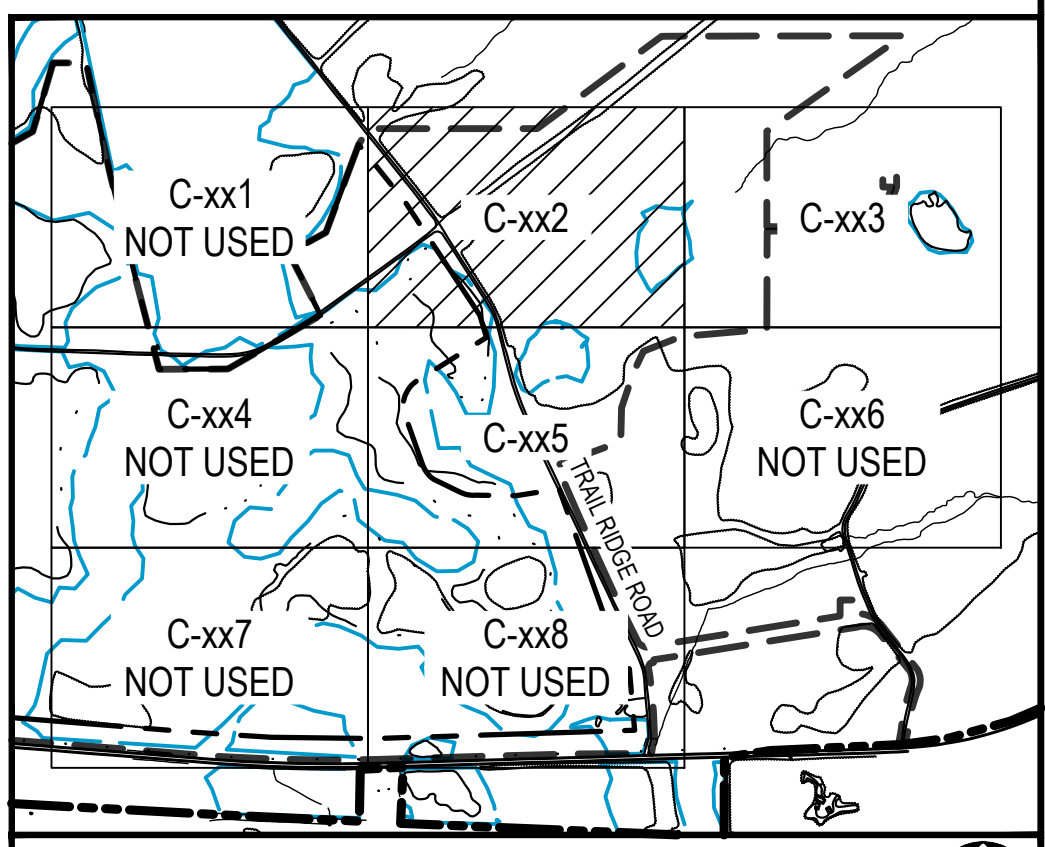
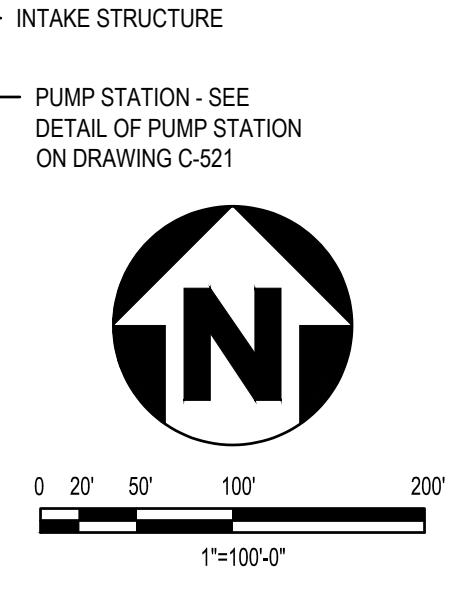
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LEGEND	
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	EXISTING INTERMEDIATE CONTOUR
	EXISTING UNPAVED ROADWAY
	PROPOSED UNPAVED ROADWAY
	SITE BENCHMARK

MATCHLINE - SEE SHEET C-203

MATCHLINE - SEE SHEET C-205



KEY PLAN
SCALE: NONE

REV	DDMMYY	REVISION / ISSUE DESCRIPTION	DRN	CHK	APP	APP	APP	APP	APP	REV	DDMMYY	REVISION / ISSUE DESCRIPTION	DRN	CHK	APP	APP	APP	APP	REF	NUMBER	TITLE
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STAMP/SEAL

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M. FOWLER CLIENT PROJECT MGR	P. MARCUM TECHNICAL MGR	M. ABDALLA PROJECT MGR
PROJECT PHASE		
PERMITTING		
PROJECT NO.	BY	DDMMYY
7382224061	DES	07FEB22
	DRN	07FEB22
SCALE	CHK	07FEB22
AS SHOWN	APP	07FEB22

TWIN PINES MINERALS LLC
SAUNDERS DEMONSTRATION MINE
MINE ID 2073
WATER MANAGEMENT PONDS

wood.
4000 MEADOW LAKE DRIVE
SUITE 121
BIRMINGHAM, AL 35242
(205) 980-6402

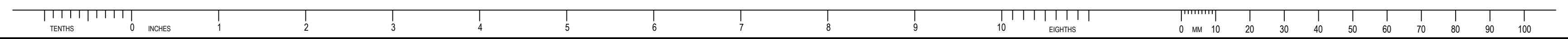
AREA: CERTIFICATE OF AUTHORIZATION
ECA2221

CLIENT DWG NO.

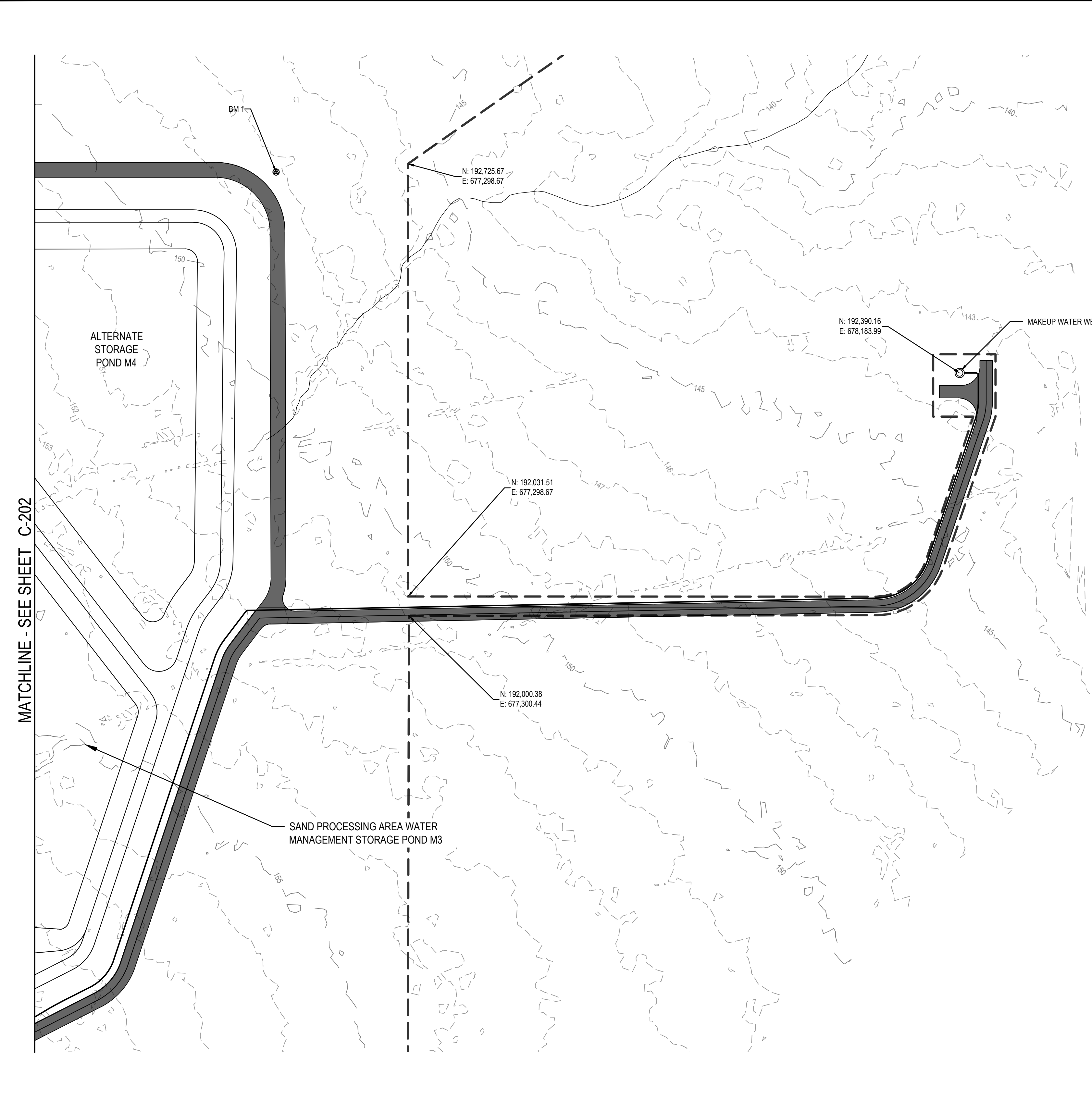
DRAWING NO.
C-202

REV
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TWIN PINES MINERALS LLC SAUNDERS DEMONSTRATION MINE MINE ID 2073 WATER MANAGEMENT PONDS	
AREA	CERTIFICATE OF AUTHORIZATION ECA2221
CLIENT DWG NO.	
DRAWING NO.	REV
C-202	0

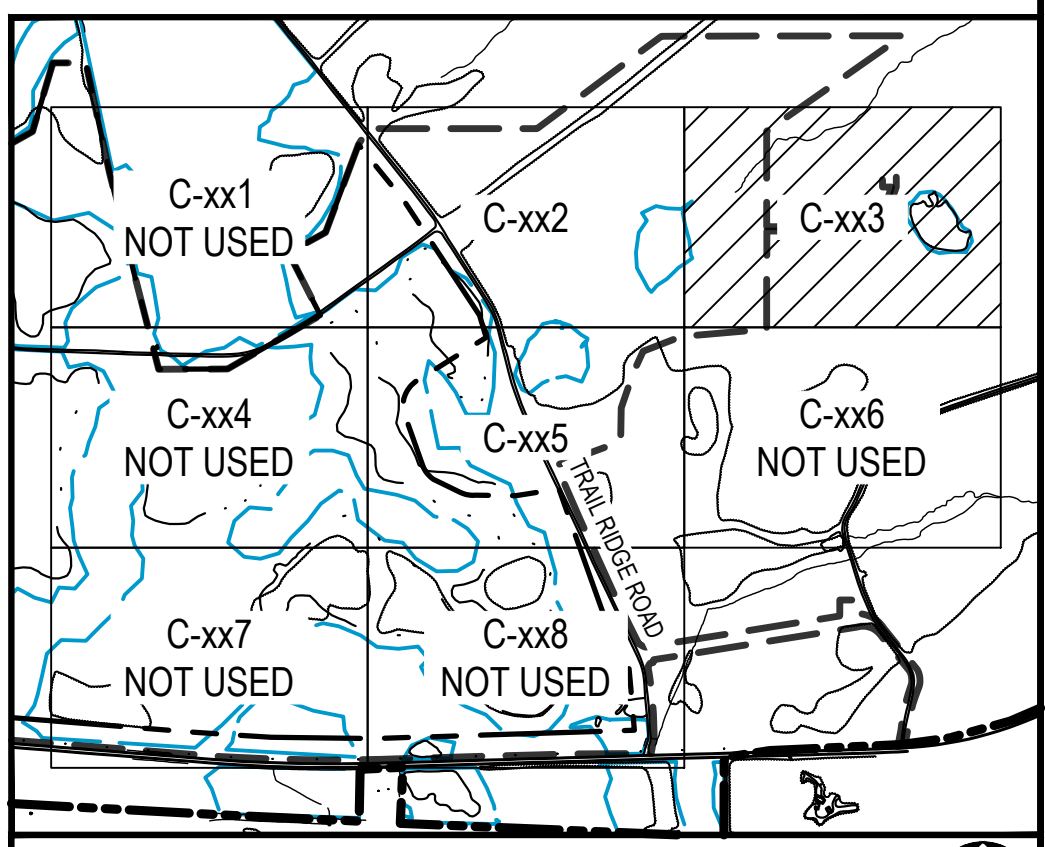
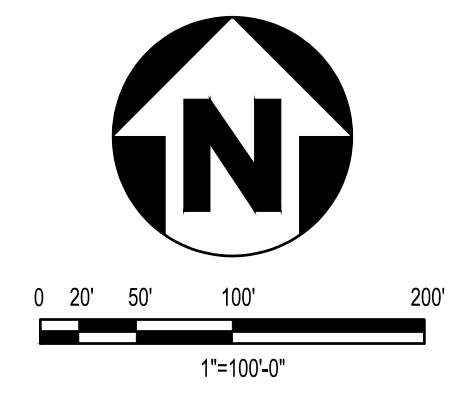


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LEGEND	
	MINE BOUNDARY
	PERMIT BOUNDARY
	EXISTING INDEX CONTOUR
	EXISTING INTERMEDIATE CONTOUR
	EXISTING UNPAVED ROADWAY
	PROPOSED UNPAVED ROADWAY
	SITE BENCHMARK

MATCHLINE - SEE SHEET C-202



KEY PLAN
SCALE: NONE

REV	DDMMYY	REVISION / ISSUE DESCRIPTION	DRN	CHK	APP	APP	APP	APP	APP	APP	REV	DDMMYY	REVISION / ISSUE DESCRIPTION	DRN	CHK	APP	APP	APP	APP	APP	REF	NUMBER	TITLE
0	8NOV2022	ISSUED FOR PERMITTING																					

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APPROVED FOR _____		
M. FOWLER CLIENT PROJECT MGR	P. MARCUM TECHNICAL MGR	M. ABDALLA PROJECT MGR
PROJECT PHASE PERMITTING		
PROJECT NO. 7382224061	BY DES 07FEB22	DDMMYY 07FEB22
SCALE AS SHOWN	CHK 07FEB22	APP 07FEB22

TWIN PINES MINERALS LLC
SAUNDERS DEMONSTRATION MINE
MINE ID 2073
WATER MANAGEMENT PONDS

wood.
4000 MEADOW LAKE DRIVE
SUITE 121
BIRMINGHAM, AL 35242
(205) 980-6402

AREA: CERTIFICATE OF AUTHORIZATION
ECA2221

CLIENT DWG NO. _____

DRAWING NO. **C-203**

SUBJECT: **SITE PLAN SHEET 3**

AREA	CERTIFICATE OF AUTHORIZATION ECA2221
CLIENT DWG NO.	_____
DRAWING NO.	C-203
REV	0



MATCHLINE - SEE SHEET C-202

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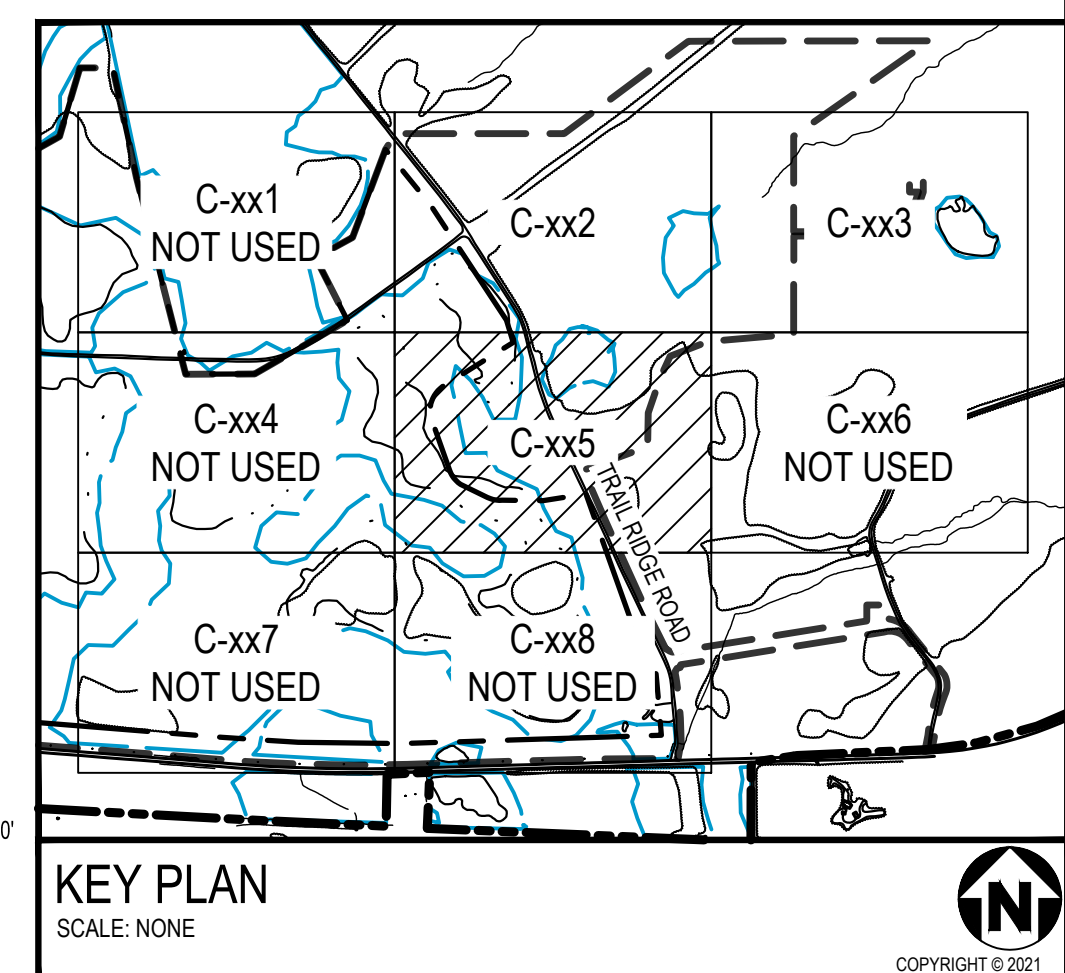
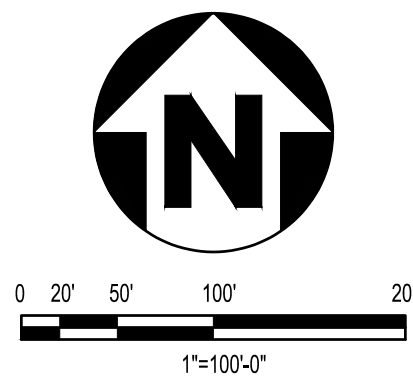
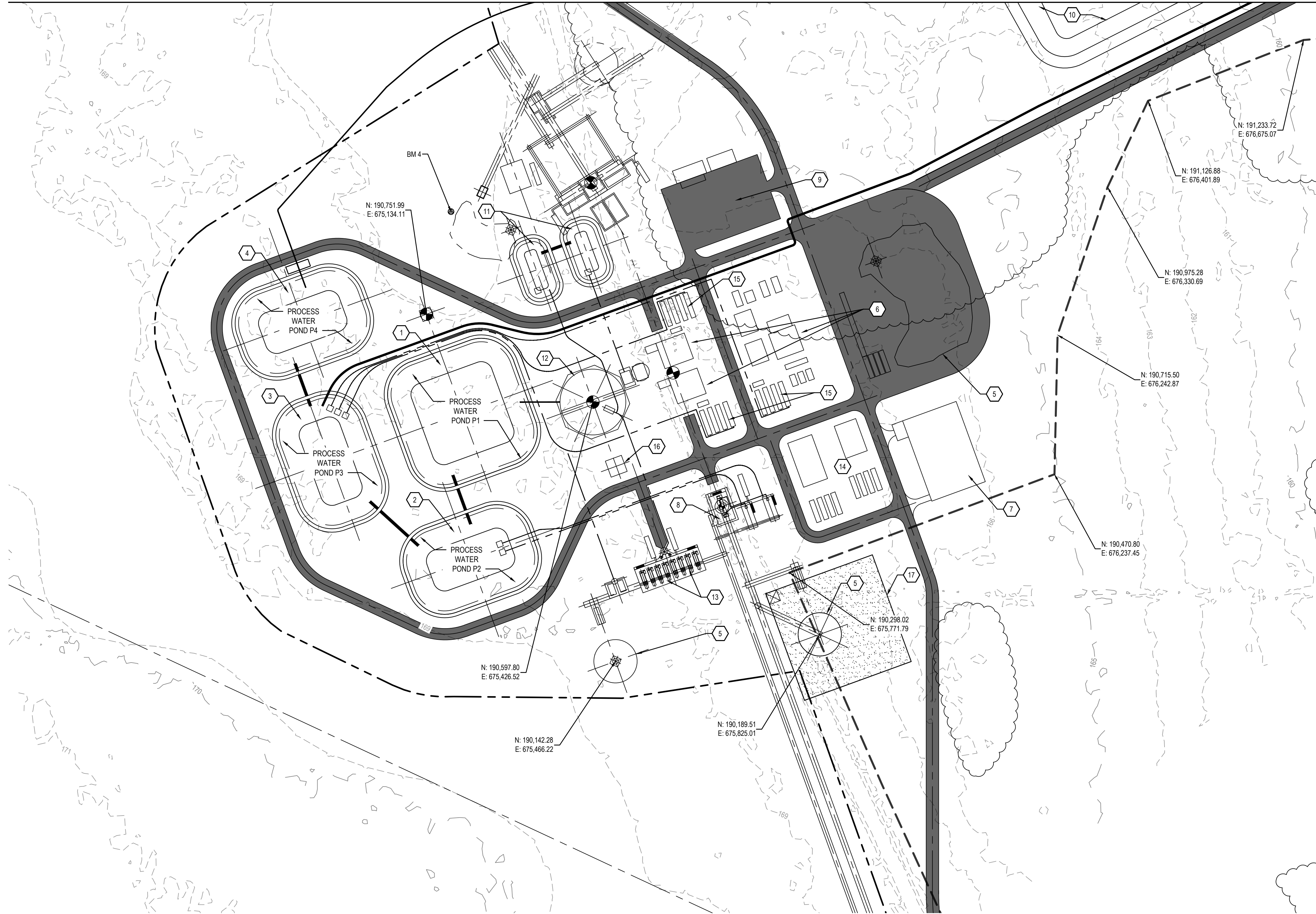
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LEGEND	
	MINE BOUNDARY
	PERMIT BOUNDARY
	EXISTING INDEX CONTOUR
	EXISTING INTERMEDIATE CONTOUR
	EXISTING UNPAVED ROADWAY
	PROPOSED UNPAVED ROADWAY
	SITE BENCHMARK

KEYNOTES	
1.	PRIMARY PROCESS WATER POND (PROCESS WATER POND 1)
2.	SECONDARY PROCESS WATER POND (PROCESS WATER POND 2)
3.	SECONDARY PROCESS WATER POND (PROCESS WATER POND 3)
4.	PRIMARY OVERFLOW POND (PROCESS WATER POND 4)
5.	STOCKPILE
6.	PCP/WCP PLANT
7.	SUBSTATION
8.	COVERED FACILITY
9.	PARKING AND OFFICES
10.	SAND PROCESSING AREA WATER MANAGEMENT POND M2
11.	TEMPORARY THICKENER UNDERFLOW PONDS (A & B)
12.	THICKENER
13.	CENTRIFUGES
14.	MAINTENANCE YARD
15.	PROCESS WATER TANKS
16.	FLOCCULATION BUILDING
17.	CONTAINMENT AREA



KEY PLAN
SCALE: NONE

REV	DDMMYY	REVISION / ISSUE DESCRIPTION	DRN	CHK	APP	APP	APP	APP	APP	REV	DDMMYY	REVISION / ISSUE DESCRIPTION	DRN	CHK	APP	APP	APP	APP	APP	REF	NUMBER	TITLE
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STAMP/SEAL

APPROVED FOR		
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PROJECT PHASE PERMITTING		
PROJECT NO. 7382224061	BY DES 07FEB22	DDMMYY 07FEB22
SCALE AS SHOWN	CHK DRN 07FEB22	APP 07FEB22

TWIN PINES MINERALS LLC
SAUNDERS DEMONSTRATION MINE
MINE ID 2073
WATER MANAGEMENT PONDS

wood.
4000 MEADOW LAKE DRIVE
SUITE 121
BIRMINGHAM, AL 35242
(205) 980-6402

AREA
CERTIFICATE OF AUTHORIZATION
ECA2221

CLIENT DWG NO.

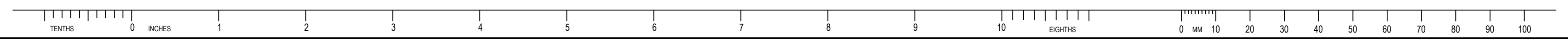
DRAWING NO.
C-205

REV
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PROJECT NO.	BY	DDMMYY	SUBJECT
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AS SHOWN	CHK	07FEB22	
	APP	07FEB22	

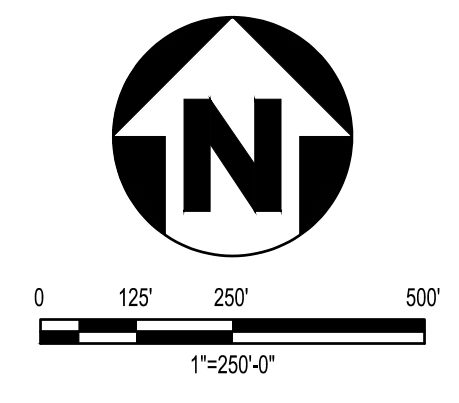
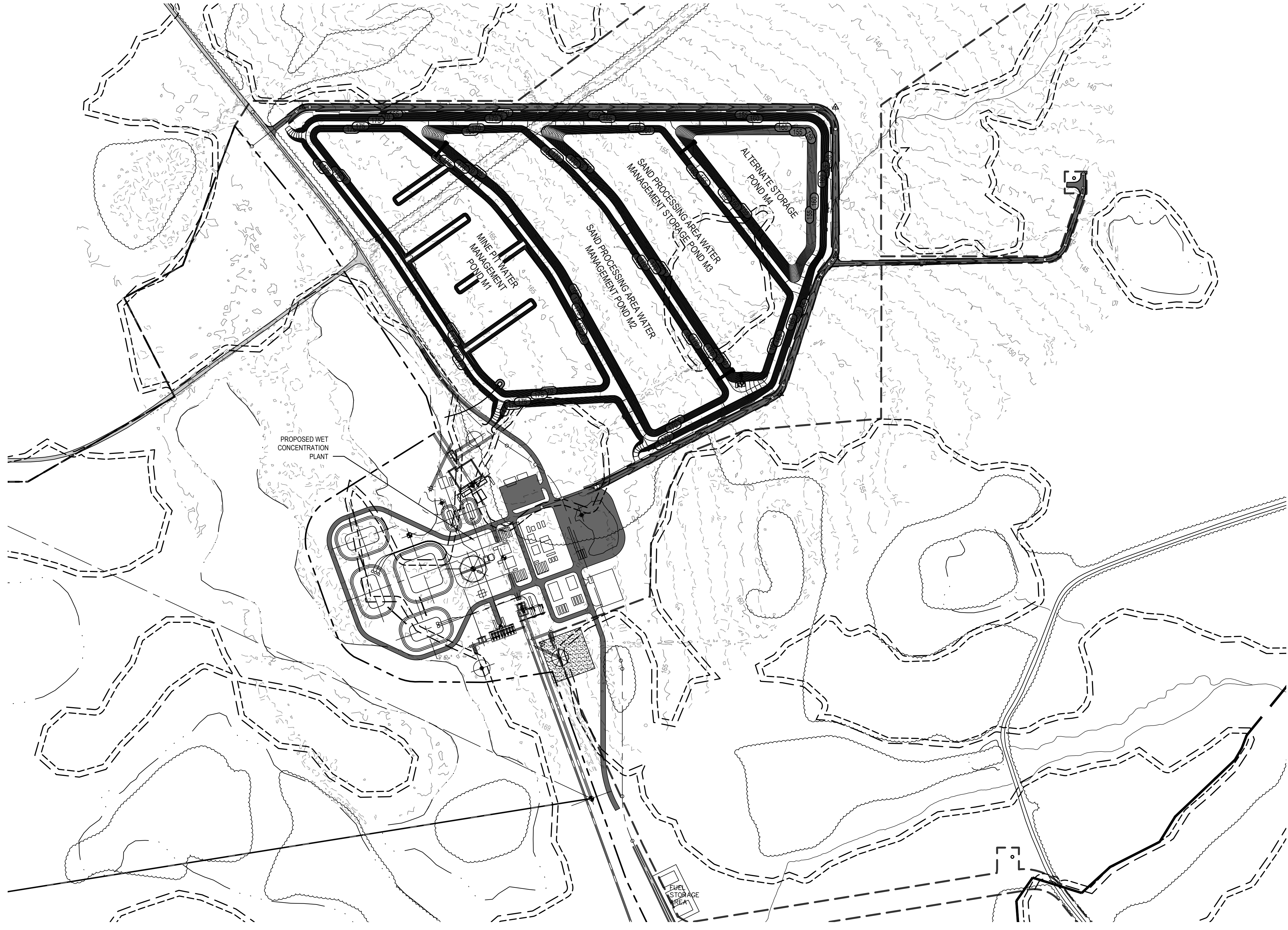
ANSI D 2024

CAD FILE: W:\AD\2024\2024 SITE PLAN.DWG



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LEGEND	
	MINE BOUNDARY
	PERMIT BOUNDARY
	EXISTING INDEX CONTOUR
	EXISTING INTERMEDIATE CONTOUR



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REV	DDMMYY	REVISION / ISSUE DESCRIPTION	DRN	CHK	APP	APP	APP	APP	APP	REV	DDMMYY	REVISION / ISSUE DESCRIPTION	DRN	CHK	APP	APP	APP	APP	REF	NUMBER	TITLE
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STAMP/SEAL

APPROVED FOR		
M. FOWLER CLIENT PROJECT MGR	P. MARCUM TECHNICAL MGR	M. ABDALLA PROJECT MGR
PROJECT PHASE		
PERMITTING		
PROJECT NO.	BY	DDMMYY
7382224061	DES	07FEB22
SCALE	DRN	07FEB22
	CHK	07FEB22
	APP	07FEB22
AS SHOWN		

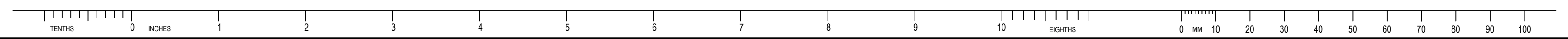
TWIN PINES MINERALS LLC
SAUNDERS DEMONSTRATION MINE
MINE ID 2073
WATER MANAGEMENT PONDS

SUBJECT
OVERALL GRADING AND DRAINAGE PLAN

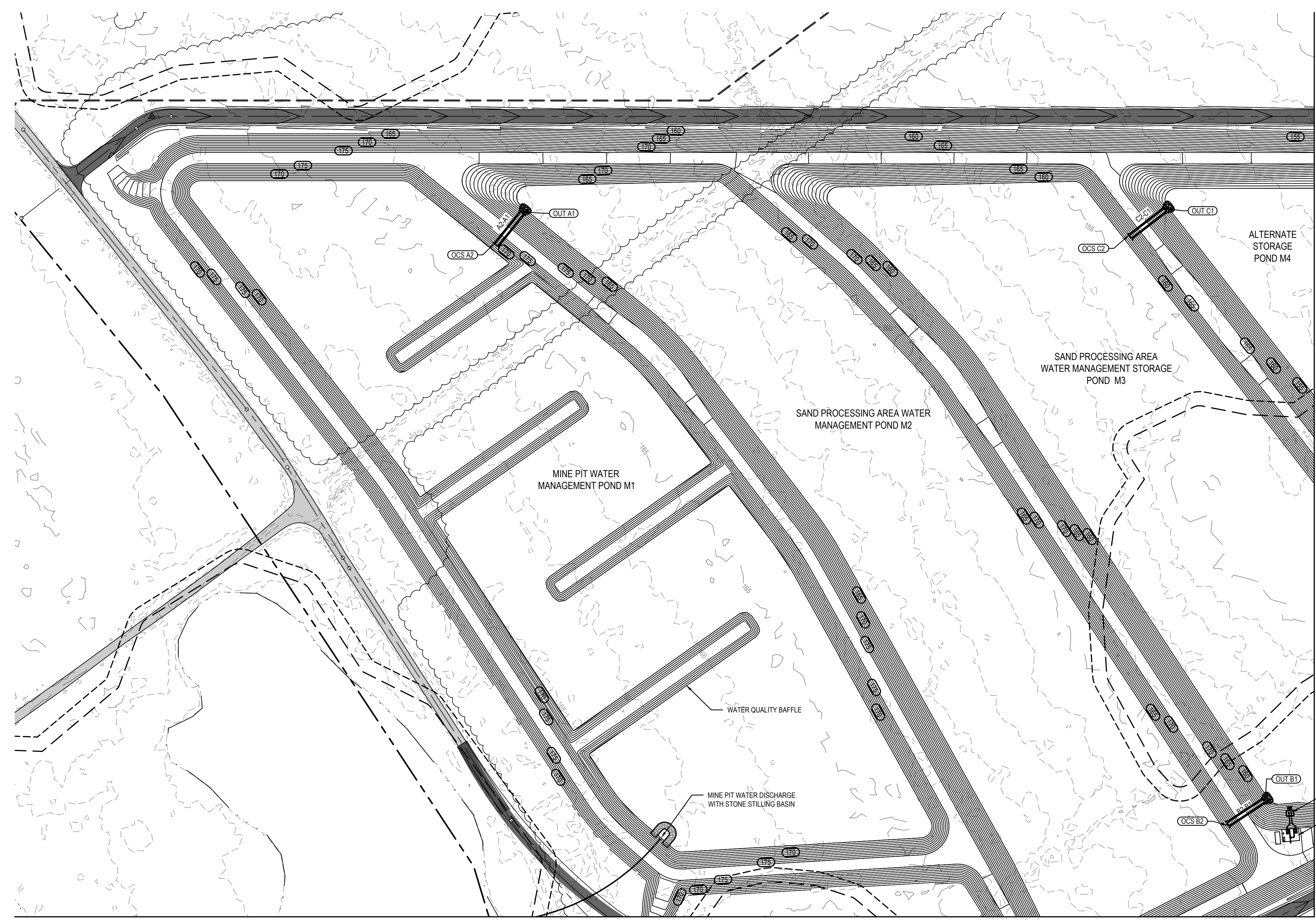
 4000 MEADOW LAKE DRIVE SUITE 121 BIRMINGHAM, AL 35242 (205) 980-6402	
AREA	CERTIFICATE OF AUTHORIZATION ECA2221
CLIENT DWG NO.	
DRAWING NO. C-300	REV 0

ANSI Z39-18

CAD FILE: W:\AD\020300 GRADING PLAN.DWG



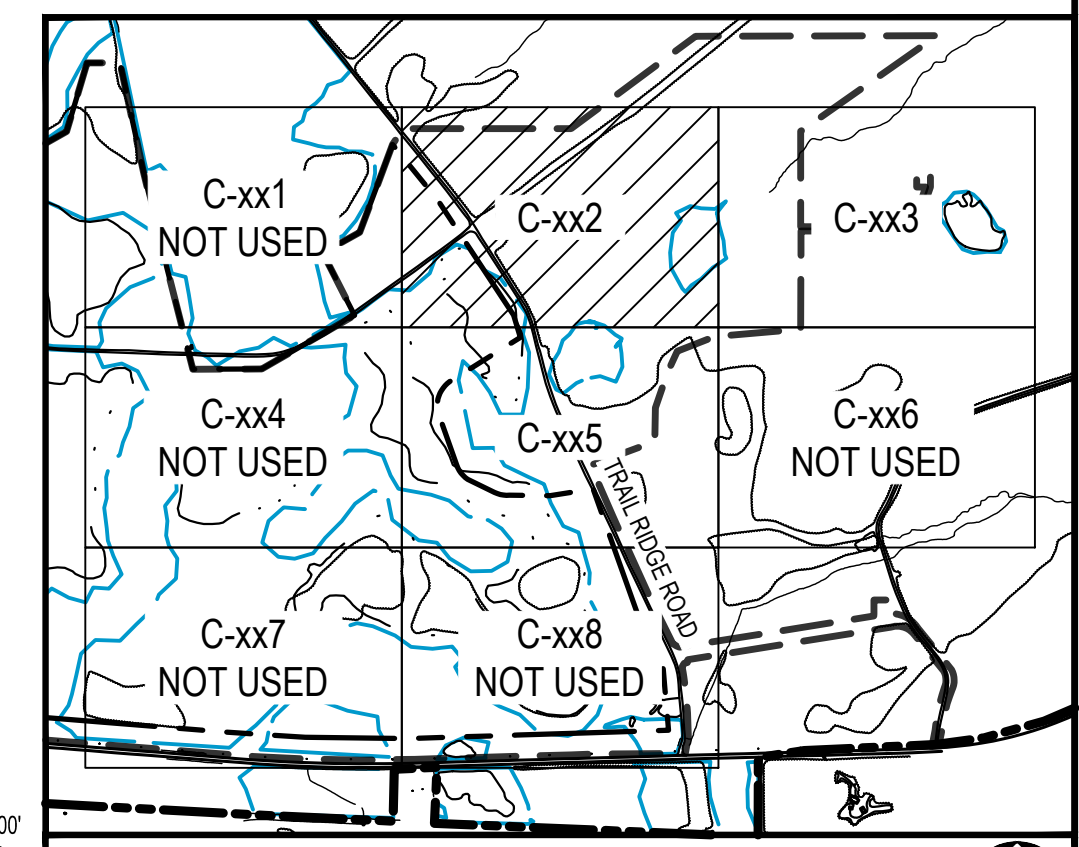
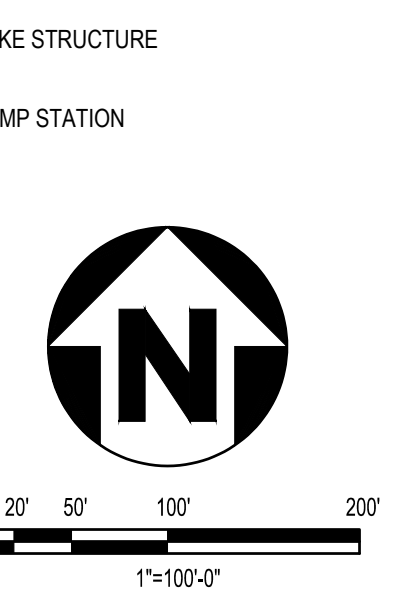
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LEGEND	
	MINE BOUNDARY
	PERMIT BOUNDARY
	EXISTING INDEX CONTOUR
	EXISTING INTERMEDIATE CONTOUR
	STORM DRAIN PIPES
	STORM PIPE NAME
	STORM STRUCTURE NAME
	15'x20' STONE SPLASH PAD

MATCHLINE - SEE SHEET C-303

MATCHLINE - SEE SHEET C-305



KEY PLAN
SCALE: NONE

REV	DDMMYY	REVISION / ISSUE DESCRIPTION	DRN	CHK	APP	APP	APP	APP	APP	REV	DDMMYY	REVISION / ISSUE DESCRIPTION	DRN	CHK	APP	APP	APP	APP	REF	NUMBER	TITLE
0	8NOV2022	ISSUED FOR PERMITTING																			

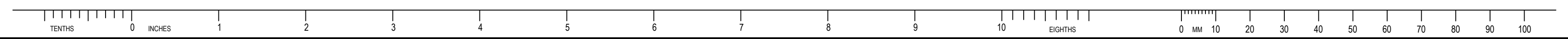
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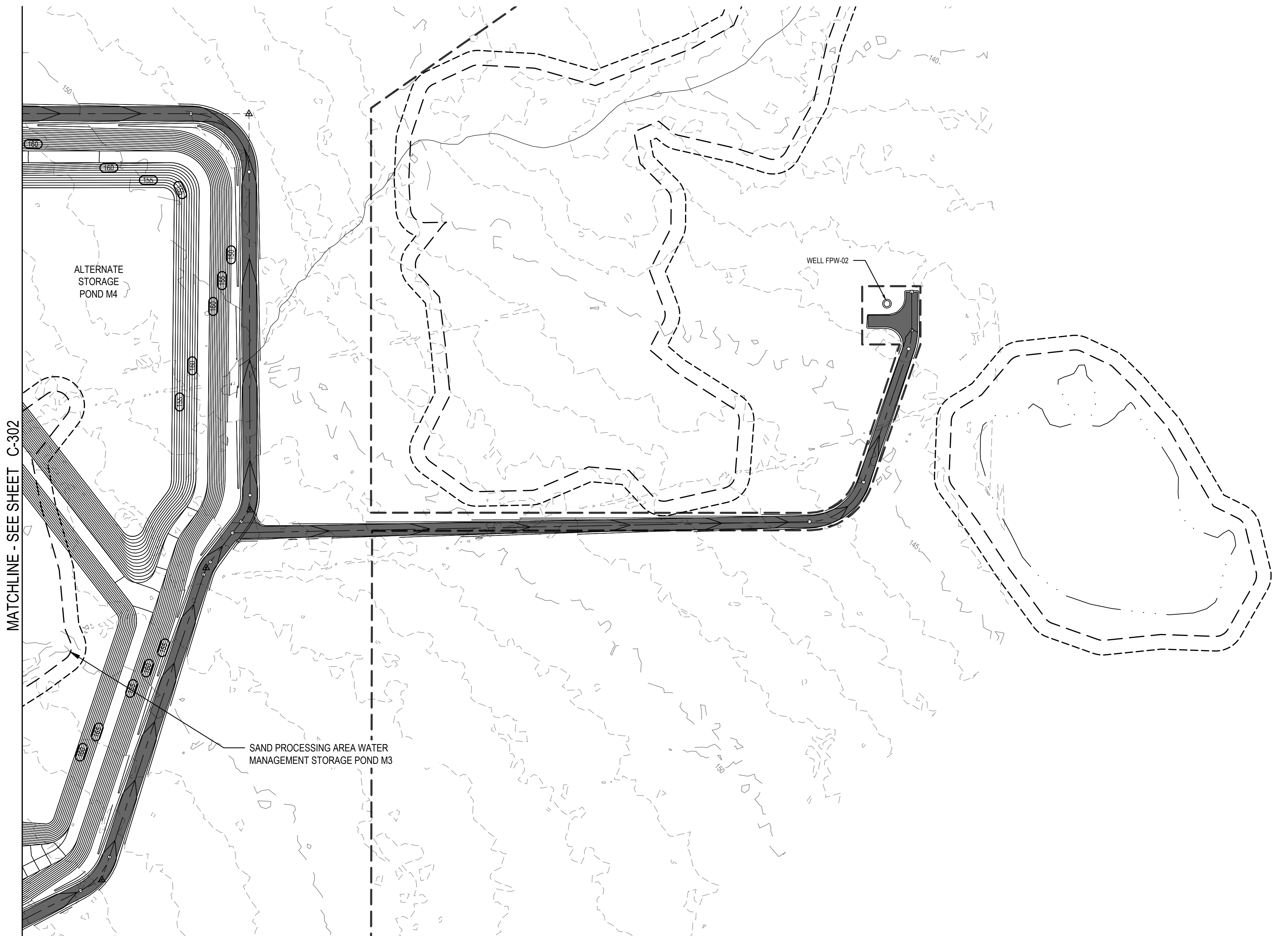
APPROVED FOR		
M. FOWLER CLIENT PROJECT MGR	P. MARCUM TECHNICAL MGR	M. ABDALLA PROJECT MGR
PROJECT PHASE		
PERMITTING		
PROJECT NO.	BY	DDMMYY
7382224061	DES	07FEB22
	DRN	07FEB22
SCALE	CHK	07FEB22
AS SHOWN	APP	07FEB22

TWIN PINES MINERALS LLC
SAUNDERS DEMONSTRATION MINE
MINE ID 2073
WATER MANAGEMENT PONDS

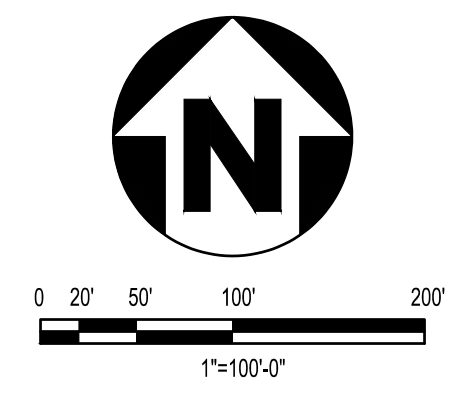
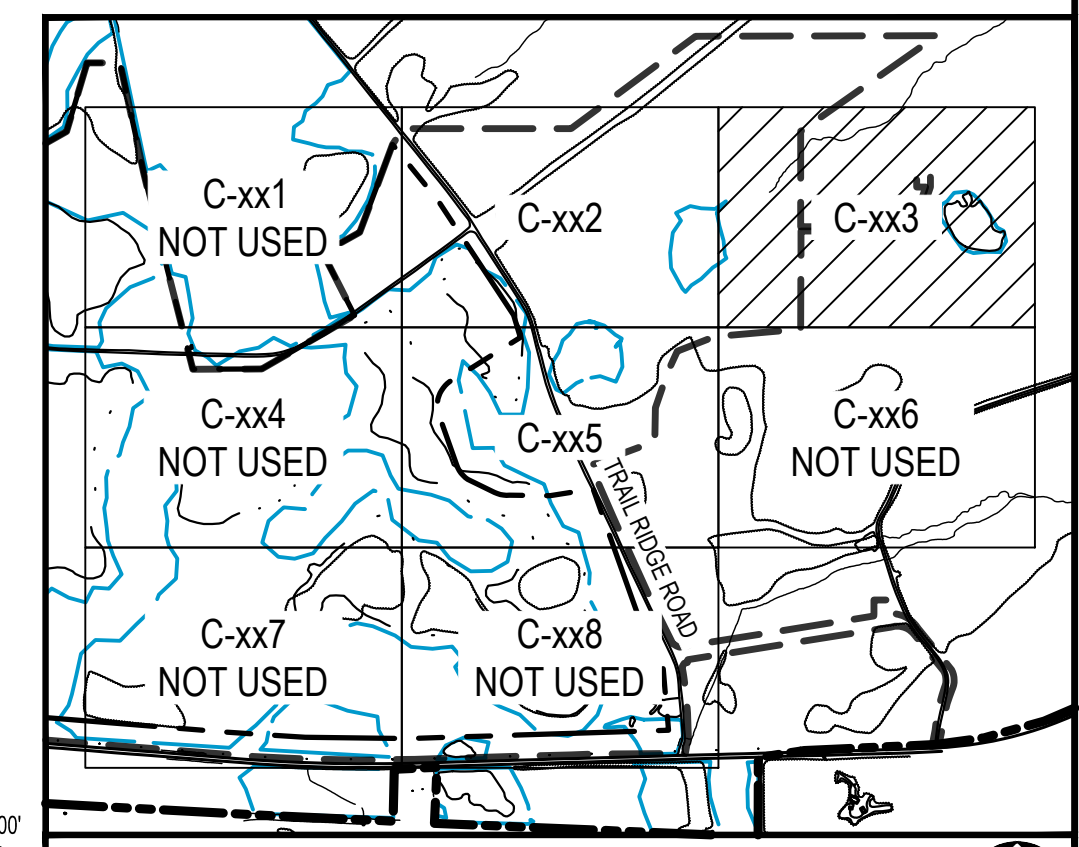
AREA		CERTIFICATE OF AUTHORIZATION ECA2221
CLIENT DWG NO.		
DRAWING NO.	REV	
C-302	0	



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LEGEND	
	MINE BOUNDARY
	PERMIT BOUNDARY
	EXISTING INDEX CONTOUR
	EXISTING INTERMEDIATE CONTOUR
	STORM DRAIN PIPES
	STORM PIPE NAME
	STORM STRUCTURE NAME



REV	DDMMYY	REVISION / ISSUE DESCRIPTION	DRN	CHK	APP	APP	APP	APP	APP	REF	NUMBER	TITLE
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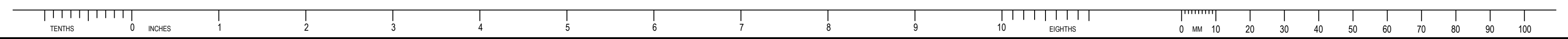
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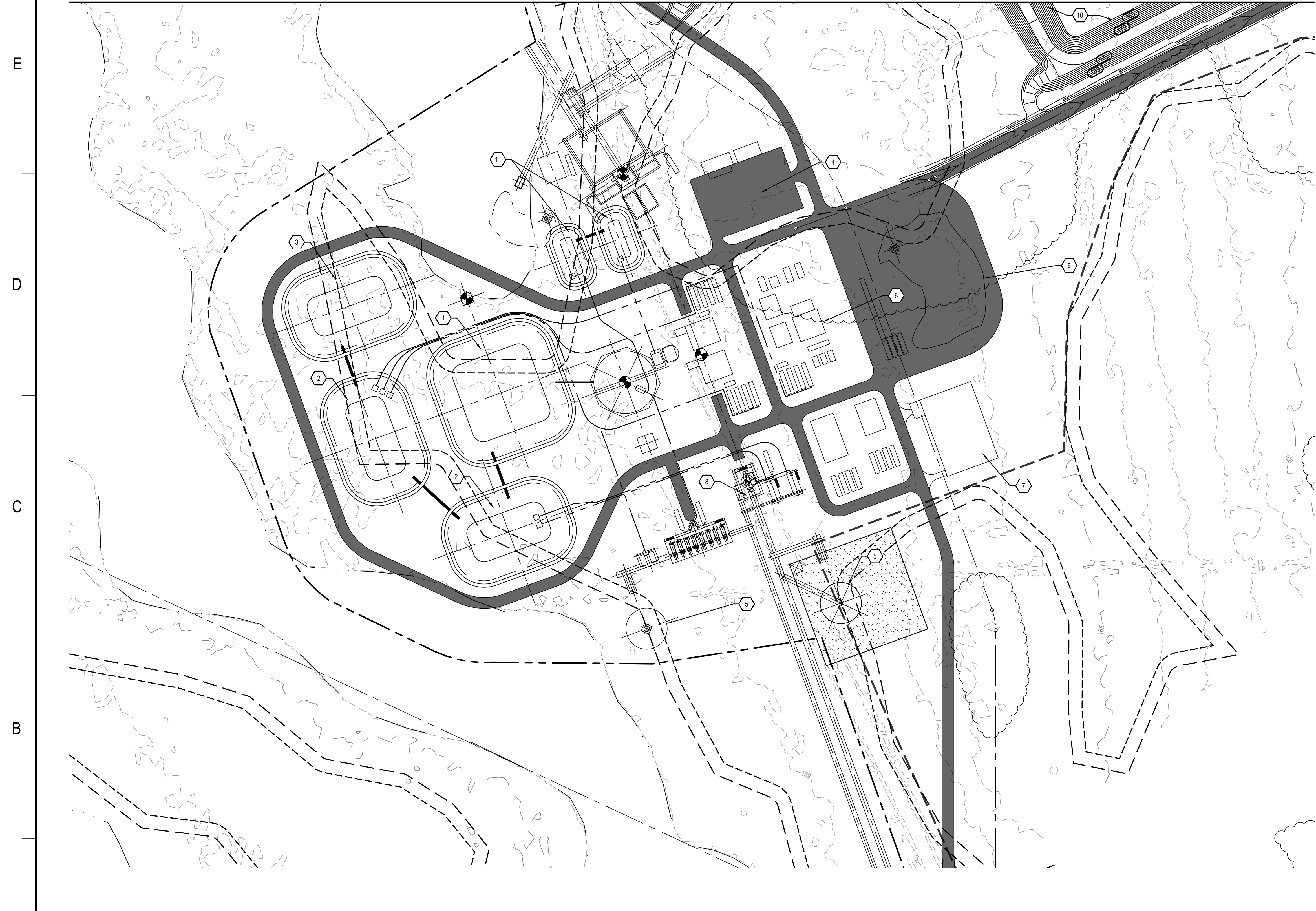
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M. FOWLER CLIENT PROJECT MGR	P. MARCUM TECHNICAL MGR	M. ABDALLA PROJECT MGR
PROJECT PHASE PERMITTING		
PROJECT NO. 7382224061	BY DES 07FEB22	DDMMYY CHK 07FEB22
SCALE AS SHOWN	APP 07FEB22	

TWIN PINES MINERALS LLC
SAUNDERS DEMONSTRATION MINE
MINE ID 2073
WATER MANAGEMENT PONDS

AREA CERTIFICATE OF AUTHORIZATION ECA2221	
CLIENT DWG NO.	
DRAWING NO. C-303	REV 0

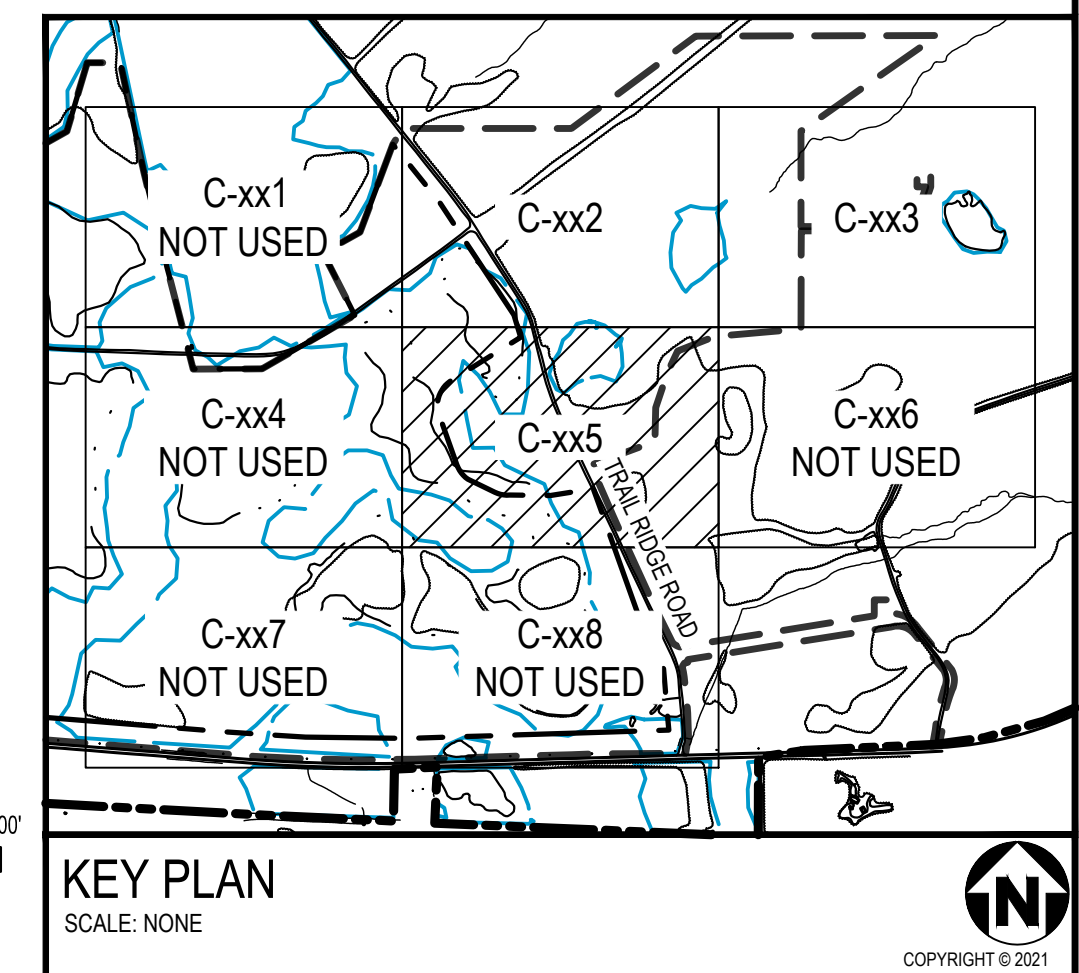
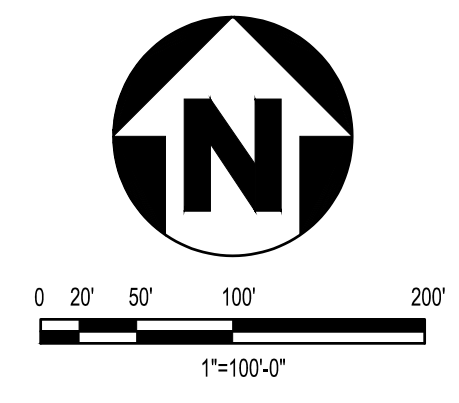


MATCHLINE - SEE SHEET C-302



LEGEND	
	MINE BOUNDARY
	PERMIT BOUNDARY
	EXISTING INDEX CONTOUR
	EXISTING INTERMEDIATE CONTOUR
	STORM DRAIN PIPES
	STORM PIPE NAME
	STORM STRUCTURE NAME

KEYNOTES	
1.	PRIMARY PROCESS WATER POND P1
2.	SECONDARY PROCESS WATER PONDS P2 & P3
3.	PRIMARY OVERFLOW POND P4
4.	PARKING AND OFFICES
5.	STOCKPILE
6.	PCP/WCP PLANT
7.	SUBSTATION
8.	COVERED FACILITY
9.	EXCAVATION STOCKPILE
10.	SAND PROCESSING AREA WATER MANAGEMENT POND M2
11.	THICKENER UNDERFLOW PONDS A & B



REV	DDMMYY	REVISION / ISSUE DESCRIPTION	DRN	CHK	APP	APP	APP	APP	APP	REV	DDMMYY	REVISION / ISSUE DESCRIPTION	DRN	CHK	APP	APP	APP	APP	APP	REF	NUMBER	TITLE
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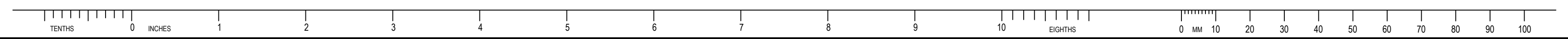
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STAMP/SEAL

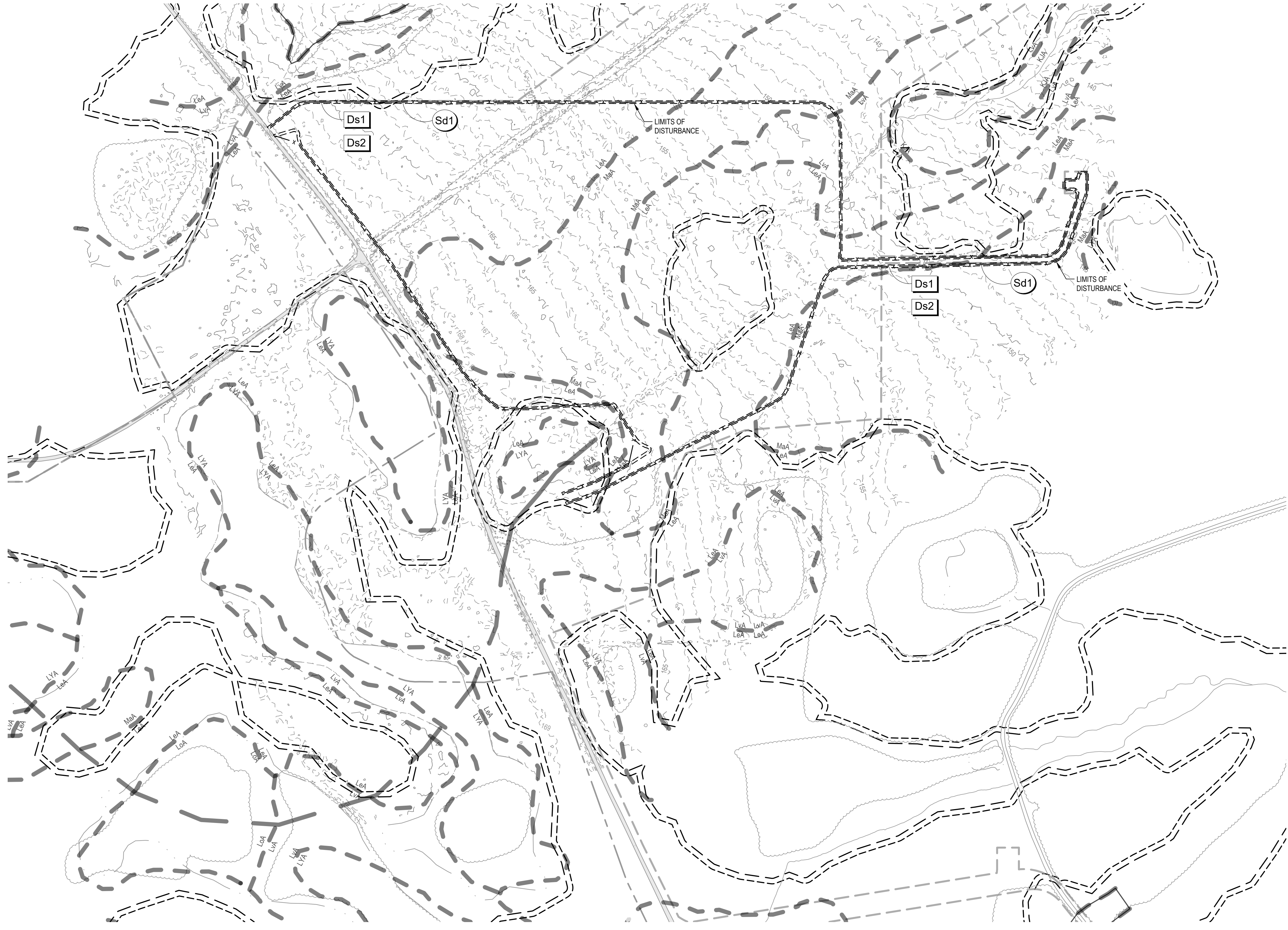
APPROVED FOR			
M. FOWLER	P. MARCUM	M. ABDALLA	
CLIENT PROJECT MGR	TECHNICAL MGR	PROJECT MGR	
PROJECT PHASE			
PERMITTING			
PROJECT NO.		BY	DDMMYY
7382224061		DES	07FEB22
		DRN	07FEB22
		CHK	07FEB22
		APP	07FEB22
SCALE			
AS SHOWN			

TWIN PINES MINERALS LLC
SAUNDERS DEMONSTRATION MINE
MINE ID 2073
WATER MANAGEMENT PONDS

AREA		CERTIFICATE OF AUTHORIZATION ECA2221	
CLIENT DWG NO.			
DRAWING NO. C-305		REV 0	



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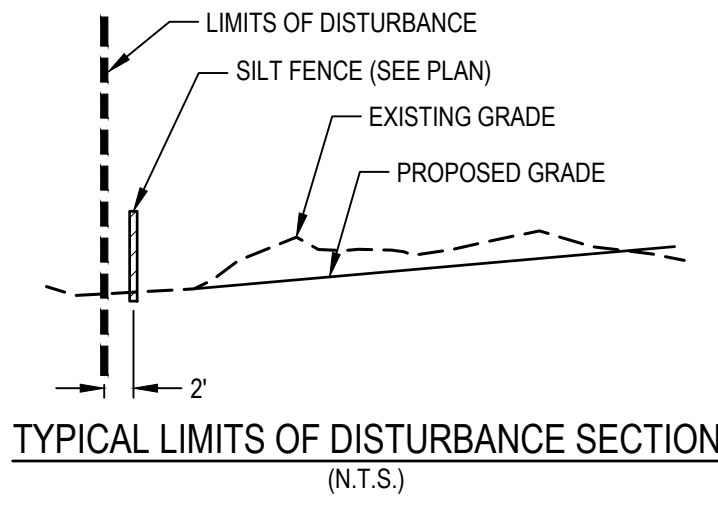


LEGEND	
	MINE BOUNDARY
	PERMIT BOUNDARY
	EXISTING INDEX CONTOUR
	EXISTING INTERMEDIATE CONTOUR
	LIMITS OF DISTURBANCE
	SILT FENCE

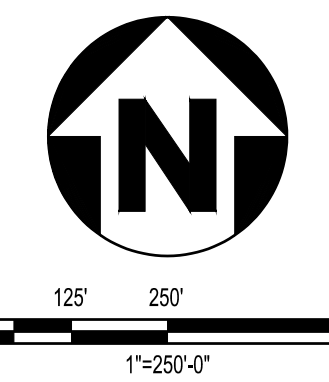
CODE	PRACTICE	MAP SYMBOL	DESCRIPTION
Co	CONSTRUCTION EXIT		A CRUSHED STONE PAD LOCATED AT THE CONSTRUCTION SITE EXIT TO PROVIDE A PLACE FOR REMOVING MUD FROM TIRES THEREBY PROTECTING PUBLIC STREETS.
Ds1	DISTURBED AREA STABILIZATION (MULCHING ONLY)		ESTABLISHING TEMPORARY PROTECTION FOR DISTURBED AREAS WHERE SEEDINGS MAY NOT HAVE A SUITABLE GROWING SEASON TO PRODUCE AN EROSION RETARDING COVER.
Ds2	DISTURBED AREA STABILIZATION (WITH TEMPORARY SEEDING)		ESTABLISHING A TEMPORARY VEGETATIVE COVER WITH FAST GROWING SEEDINGS ON DISTURBED AREAS.
Sd1	SEDIMENT BARRIER		A BARRIER TO PREVENT SEDIMENT FROM LEAVING THE CONSTRUCTION SITE. IT MAY BE SANDBAGS, BALES OF STRAW OR HAY, BRUSH, LOGS AND POLES, GRAVEL, OR A SEDIMENT FENCE. THE BARRIERS ARE USUALLY TEMPORARY.
Sd2	SEDIMENT TRAP TEMPORARY		AN IMPOUNDING AREA CREATED BY EXCAVATING AROUND A STORM DRAIN DROP INLET. THE EXCAVATED AREA WILL BE FILLED AND STABILIZED ON COMPLETION OF CONSTRUCTION ACTIVITIES.

TOTAL LIMITS OF DISTURBANCE = 3.03 ACRES

SOILS LEGEND	
MAP UNIT SYMBOL	MAP UNIT NAME
KJA	KINSTON AND JOHNSTON SOILS, 0 TO 2 PERCENT SLOPES, FREQUENTLY FLOODED
LeA	LEON FINE SAND, FREQUENTLY, 0 TO 2 PERCENT SLOPES
LoA	LEON FINE SAND, FREQUENTLY PONDED, 0 TO 2 PERCENT SLOPES
LvA	LYNN HAVEN FINE SAND, 0 TO 2 PERCENT SLOPES
LvA	LYNN HAVEN, ALLANTON AND KINGSFERRY SOILS, PONDED, 0 TO 1 PERCENT SLOPES
MaA	MANDARIN FINE SAND, 0 TO 2 PERCENT SLOPES



24 HOUR CONTACT PERSON:
MARK FOWLER: (205) 403-5287



Know what's Below.
Call before you dig.



Philip W Marcum
Level II Certified Design Professional
CERTIFICATION NUMBER 0000010833
ISSUED: 01/31/2022 EXPIRES: 01/31/2025

REV	DDMMYY	REVISION / ISSUE DESCRIPTION	DRN	CHK	APP	APP	APP	APP	APP	REV	DDMMYY	REVISION / ISSUE DESCRIPTION	DRN	CHK	APP	APP	APP	APP	REF	NUMBER	TITLE
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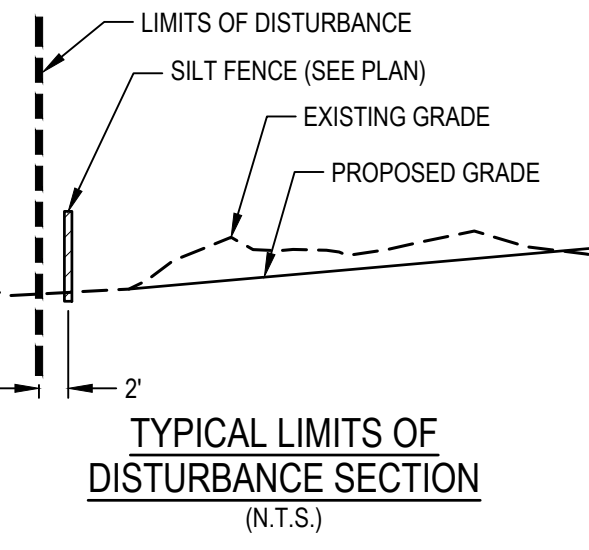
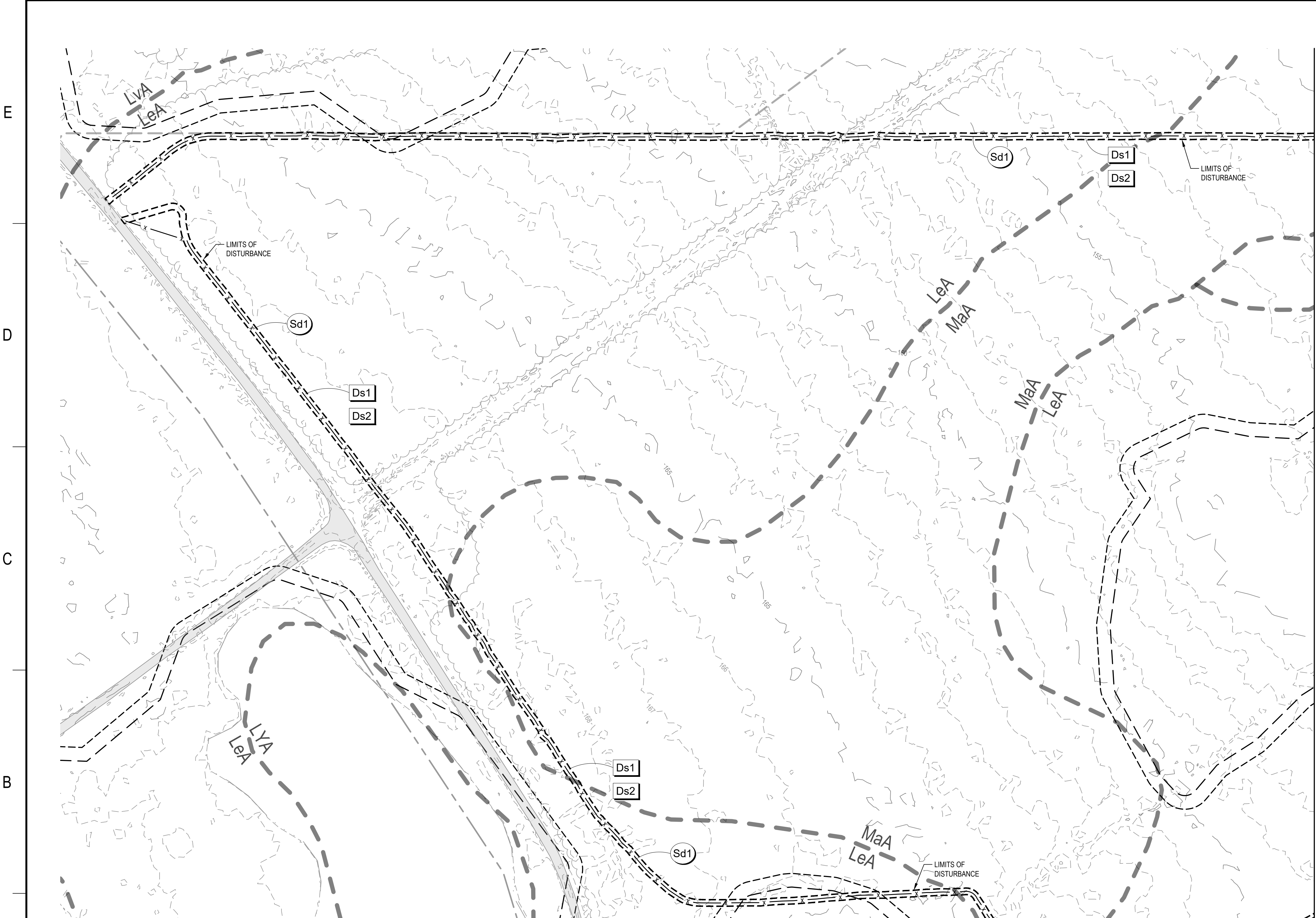
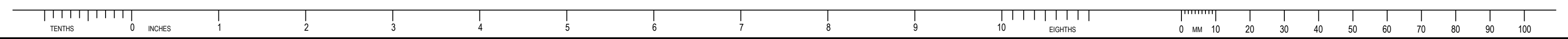
STAMP/SEAL

APPROVED FOR		
M. FOWLER CLIENT PROJECT MGR	P. MARCUM TECHNICAL MGR	M. ABDALLA PROJECT MGR
PROJECT PHASE		
PERMITTING		
PROJECT NO.	BY	DDMMYY
7382224061	DES	07FEB22
	DRN	07FEB22
SCALE	CHK	07FEB22
AS SHOWN	APP	07FEB22

TWIN PINES MINERALS LLC
SAUNDERS DEMONSTRATION MINE
MINE ID 2073
WATER MANAGEMENT PONDS

AREA		CERTIFICATE OF AUTHORIZATION
		ECA2221
CLIENT DWG NO.		
DRAWING NO.	REV	
C-400	0	

ANSI Z39-18



LEGEND	
---	MINE BOUNDARY
---	PERMIT BOUNDARY
---	EXISTING INDEX CONTOUR
---	EXISTING INTERMEDIATE CONTOUR
---	LIMITS OF DISTURBANCE
x x	SILT FENCE

CODE	PRACTICE	MAP SYMBOL	DESCRIPTION
Co	CONSTRUCTION EXIT		A CRUSHED STONE PAD LOCATED AT THE CONSTRUCTION SITE EXIT TO PROVIDE A PLACE FOR REMOVING MUD FROM TIRES THEREBY PROTECTING PUBLIC STREETS.
Ds1	DISTURBED AREA STABILIZATION (MULCHING ONLY)		ESTABLISHING TEMPORARY PROTECTION FOR DISTURBED AREAS WHERE SEEDINGS MAY NOT HAVE A SUITABLE GROWING SEASON TO PRODUCE AN EROSION RETARDING COVER.
Ds2	DISTURBED AREA STABILIZATION (WITH TEMPORARY SEEDING)		ESTABLISHING A TEMPORARY VEGETATIVE COVER WITH FAST GROWING SEEDINGS ON DISTURBED AREAS.
Sd1	SEDIMENT BARRIER		A BARRIER TO PREVENT SEDIMENT FROM LEAVING THE CONSTRUCTION SITE. IT MAY BE SANDBAGS, BALES OF STRAW OR HAY, BRUSH, LOGS AND POLES, GRAVEL, OR A SEDIMENT FENCE. THE BARRIERS ARE USUALLY TEMPORARY.
Sd2	SEDIMENT TRAP TEMPORARY		AN IMPOUNDING AREA CREATED BY EXCAVATING AROUND A STORM DRAIN DROP INLET. THE EXCAVATED AREA WILL BE FILLED AND STABILIZED ON COMPLETION OF CONSTRUCTION ACTIVITIES.

24 HOUR CONTACT PERSON:
MARK FOWLER: (205) 403-5287

TOTAL LIMITS OF DISTURBANCE = 3.03 ACRES

SOILS LEGEND	
MAP UNIT SYMBOL	MAP UNIT NAME
KJA	KINSTON AND JOHNSTON SOILS, 0 TO 2 PERCENT SLOPES, FREQUENTLY FLOODED
LeA	LEON FINE SAND, FREQUENTLY, 0 TO 2 PERCENT SLOPES
LoA	LEON FINE SAND, FREQUENTLY PONDED, 0 TO 2 PERCENT SLOPES
LvA	LYNN HAVEN FINE SAND, 0 TO 2 PERCENT SLOPES
LYA	LYNN HAVEN, ALLANTON AND KINGSFERRY SOILS, PONDED, 0 TO 1 PERCENT SLOPES
MaA	MANDARIN FINE SAND, 0 TO 2 PERCENT SLOPES



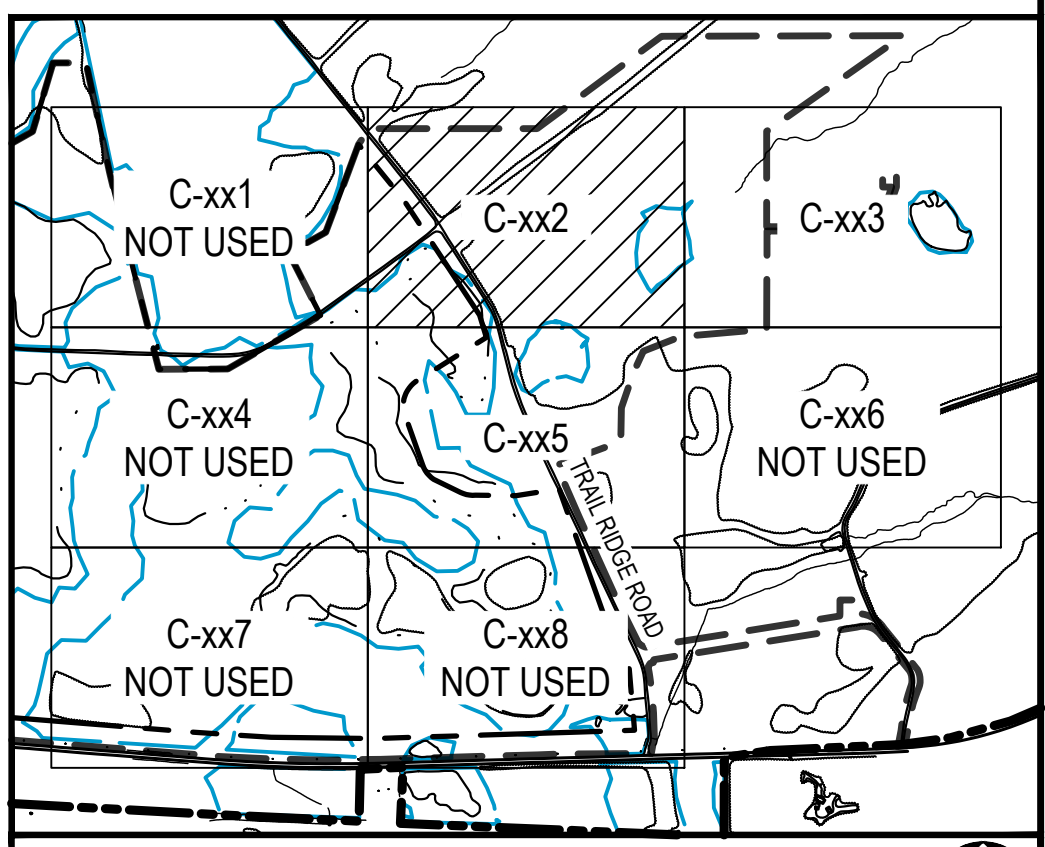
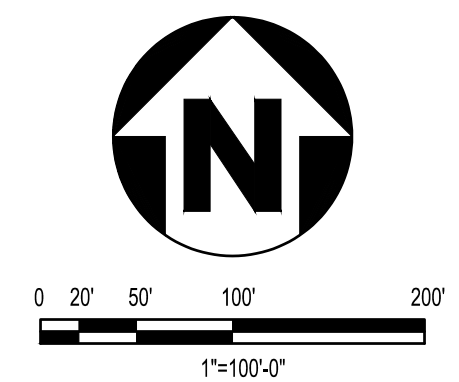
GSWCC GEORGIA SOIL AND WATER CONSERVATION COMMISSION

Philip W Marcum
Level II Certified Design Professional

CERTIFICATION NUMBER: 0000010833
ISSUED: 01/31/2022 EXPIRES: 01/31/2025

MATCHLINE - SEE SHEET C-403

MATCHLINE - SEE SHEET C-405



KEY PLAN
SCALE: NONE

REV	DDMMYY	REVISION / ISSUE DESCRIPTION	DRN	CHK	APP	APP	APP	APP	APP	REF	NUMBER	TITLE
0	8NOV2022	ISSUED FOR PERMITTING										

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STAMP/SEAL

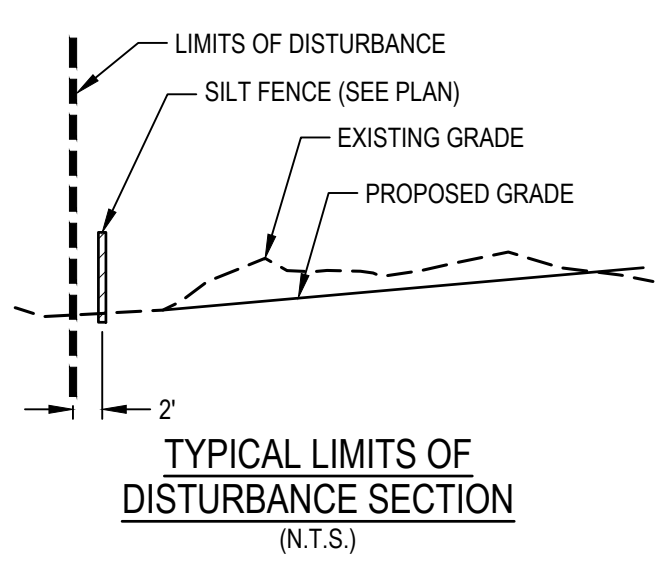
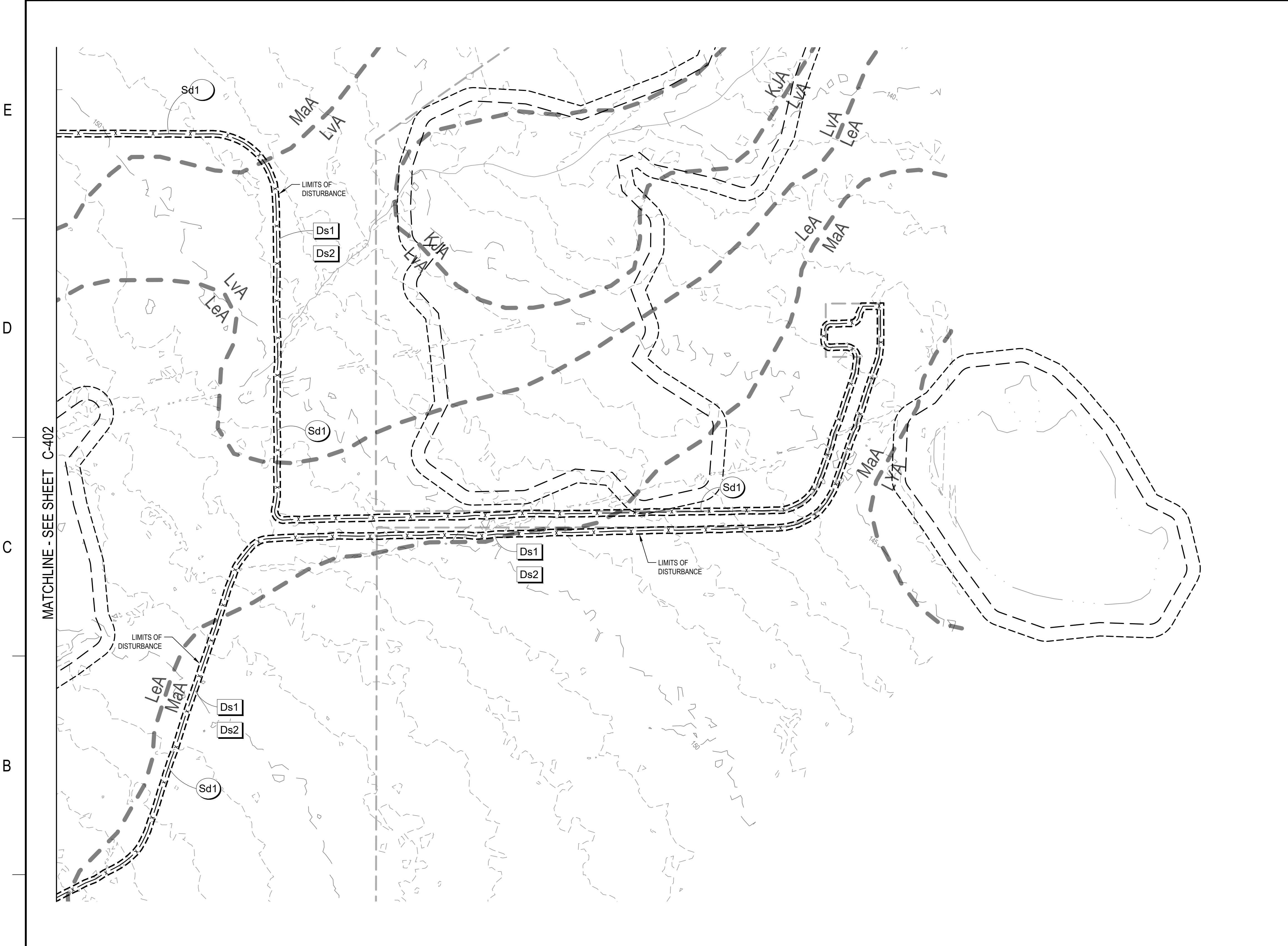
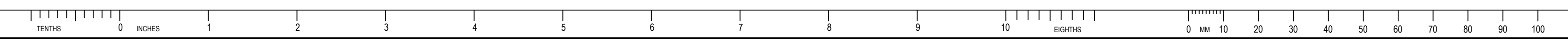
APPROVED FOR			
M. FOWLER	P. MARCUM	M. ABDALLA	
CLIENT PROJECT MGR	TECHNICAL MGR	PROJECT MGR	
PROJECT PHASE			
PERMITTING			
PROJECT NO.		BY	DDMMYY
7382224061		DES	07FEB22
		DRN	07FEB22
SCALE		CHK	DDMMYY
AS SHOWN		CHK	07FEB22
		APP	07FEB22

wood.

TWIN PINES MINERALS LLC
SAUNDERS DEMONSTRATION MINE
MINE ID 2073
WATER MANAGEMENT PONDS

4000 MEADOW LAKE DRIVE
SUITE 121
BIRMINGHAM, AL 35242
(205) 980-6402

AREA	CERTIFICATE OF AUTHORIZATION
	ECA2221
CLIENT DWG NO.	
DRAWING NO.	REV
C-402	0



LEGEND	
---	MINE BOUNDARY
---	PERMIT BOUNDARY
---	EXISTING INDEX CONTOUR
---	EXISTING INTERMEDIATE CONTOUR
---	LIMITS OF DISTURBANCE
-x-x-	SILT FENCE

CODE	PRACTICE	MAP SYMBOL	DESCRIPTION
Co	CONSTRUCTION EXIT		A CRUSHED STONE PAD LOCATED AT THE CONSTRUCTION SITE EXIT TO PROVIDE A PLACE FOR REMOVING MUD FROM TIRES THEREBY PROTECTING PUBLIC STREETS.
Ds1	DISTURBED AREA STABILIZATION (MULCHING ONLY)		ESTABLISHING TEMPORARY PROTECTION FOR DISTURBED AREAS WHERE SEEDINGS MAY NOT HAVE A SUITABLE GROWING SEASON TO PRODUCE AN EROSION RETARDING COVER.
Ds2	DISTURBED AREA STABILIZATION (WITH TEMPORARY SEEDING)		ESTABLISHING A TEMPORARY VEGETATIVE COVER WITH FAST GROWING SEEDINGS ON DISTURBED AREAS.
Sd1	SEDIMENT BARRIER		A BARRIER TO PREVENT SEDIMENT FROM LEAVING THE CONSTRUCTION SITE. IT MAY BE SANDBAGS, BALES OF STRAW OR HAY, BRUSH, LOGS AND POLES, GRAVEL, OR A SEDIMENT FENCE. THE BARRIERS ARE USUALLY TEMPORARY.
Sd2	SEDIMENT TRAP TEMPORARY		AN IMPOUNDING AREA CREATED BY EXCAVATING AROUND A STORM DRAIN DROP INLET. THE EXCAVATED AREA WILL BE FILLED AND STABILIZED ON COMPLETION OF CONSTRUCTION ACTIVITIES.

24 HOUR CONTACT PERSON:
MARK FOWLER: (205) 403-5287

TOTAL LIMITS OF DISTURBANCE = 3.03 ACRES

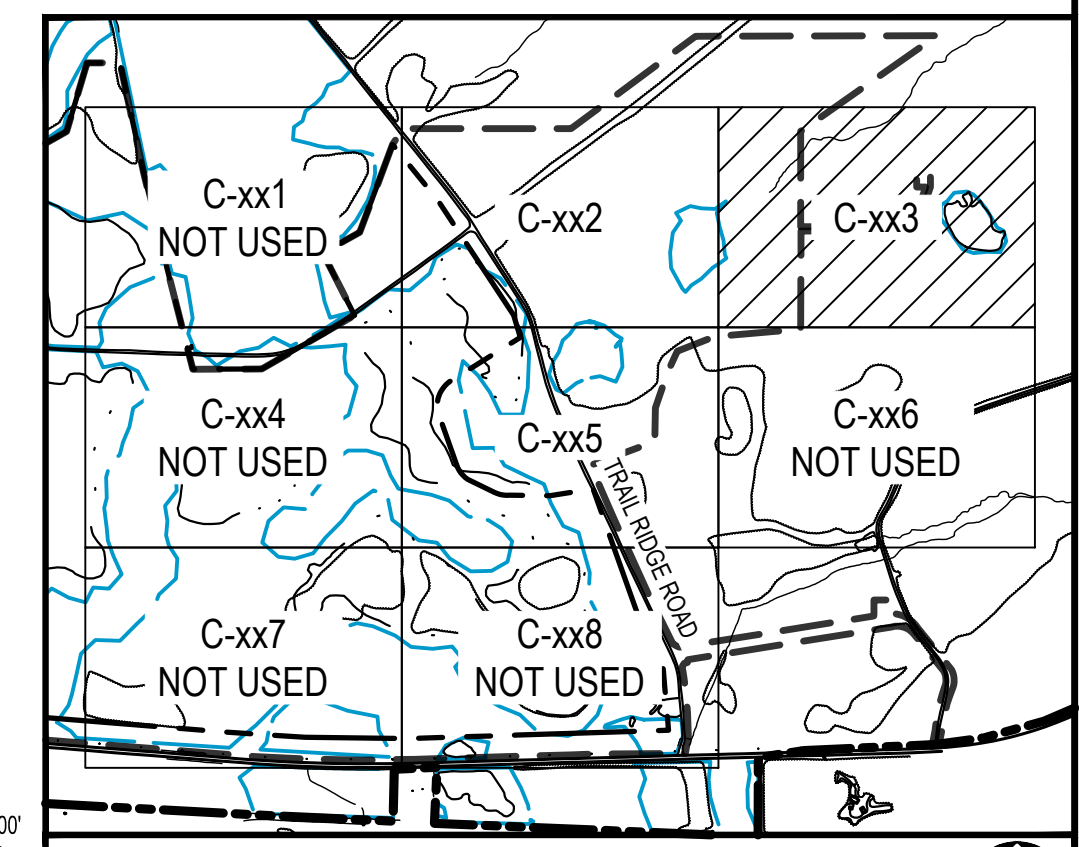
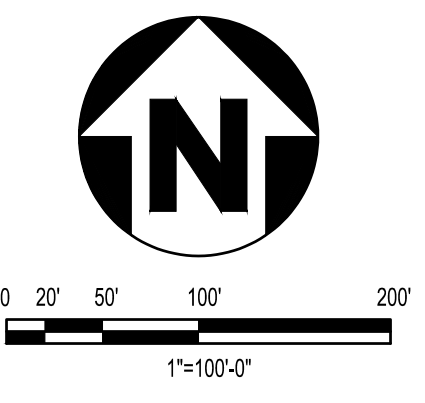
SOILS LEGEND	
MAP UNIT SYMBOL	MAP UNIT NAME
KJA	KINSTON AND JOHNSTON SOILS, 0 TO 2 PERCENT SLOPES, FREQUENTLY FLOODED
LeA	LEON FINE SAND, FREQUENTLY, 0 TO 2 PERCENT SLOPES
LoA	LEON FINE SAND, FREQUENTLY PONDED, 0 TO 2 PERCENT SLOPES
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LYA	LYNN HAVEN, ALLANTON AND KINGSFERRY SOILS, PONDED, 0 TO 1 PERCENT SLOPES
MaA	MANDARIN FINE SAND, 0 TO 2 PERCENT SLOPES



GSWCC GEORGIA SOIL AND WATER CONSERVATION COMMISSION

Philip W Marcum
Level II Certified Design Professional

CERTIFICATION NUMBER: 0000010833
ISSUED: 01/31/2022 EXPIRES: 01/31/2025



KEY PLAN
SCALE: NONE

REV	DDMMYY	REVISION / ISSUE DESCRIPTION	DRN	CHK	APP	APP	APP	APP	APP	REV	DDMMYY	REVISION / ISSUE DESCRIPTION	DRN	CHK	APP	APP	APP	APP	REF	NUMBER	TITLE
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STAMP/SEAL

APPROVED FOR		
M. FOWLER CLIENT PROJECT MGR	P. MARCUM TECHNICAL MGR	M. ABDALLA PROJECT MGR
PROJECT PHASE: PERMITTING		
PROJECT NO. 7382224061	BY DES 07FEB22	DDMMYY 07FEB22
SCALE AS SHOWN	CHK 07FEB22	APP 07FEB22

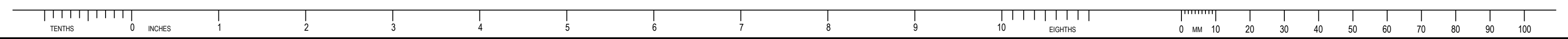
wood.
4000 MEADOW LAKE DRIVE
SUITE 121
BIRMINGHAM, AL 35242
(205) 980-6402

TWIN PINES MINERALS LLC
SAUNDERS DEMONSTRATION MINE
MINE ID 2073
WATER MANAGEMENT PONDS

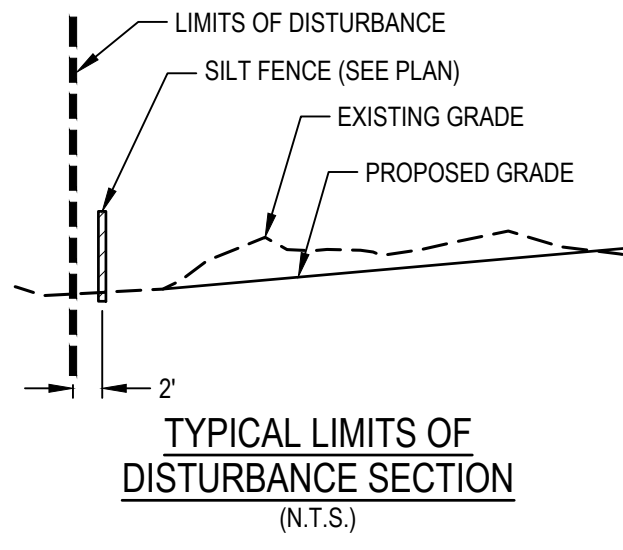
SUBJECT
INITIAL EROSION SEDIMENTATION AND
POLLUTION CONTROL PLAN SHEET 3

AREA	CERTIFICATE OF AUTHORIZATION ECA2221
CLIENT DWG NO.	
DRAWING NO. C-403	REV 0

ANSI Z39-18



MATCHLINE - SEE SHEET C-402



LEGEND	
	MINE BOUNDARY
	PERMIT BOUNDARY
	EXISTING INDEX CONTOUR
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	LIMITS OF DISTURBANCE
	SILT FENCE

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TOTAL LIMITS OF DISTURBANCE = 3.03 ACRES

24 HOUR CONTACT PERSON:
MARK FOWLER: (205) 403-5287

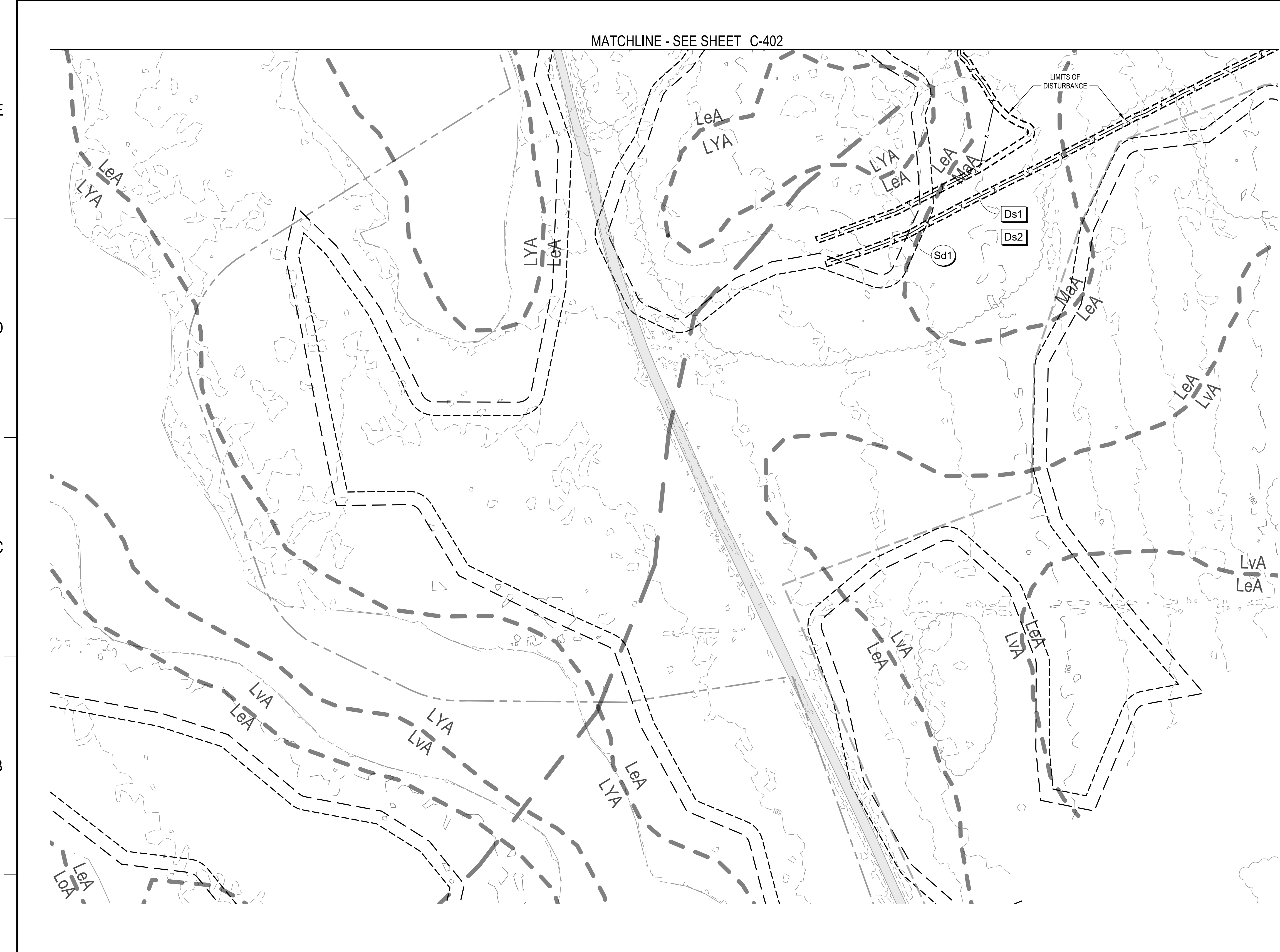
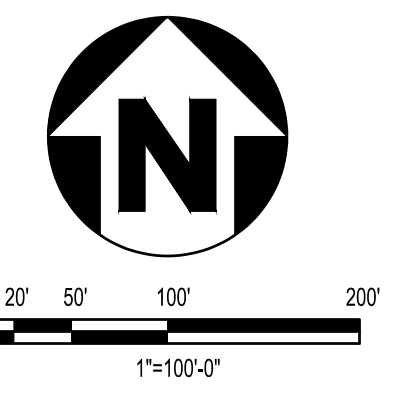
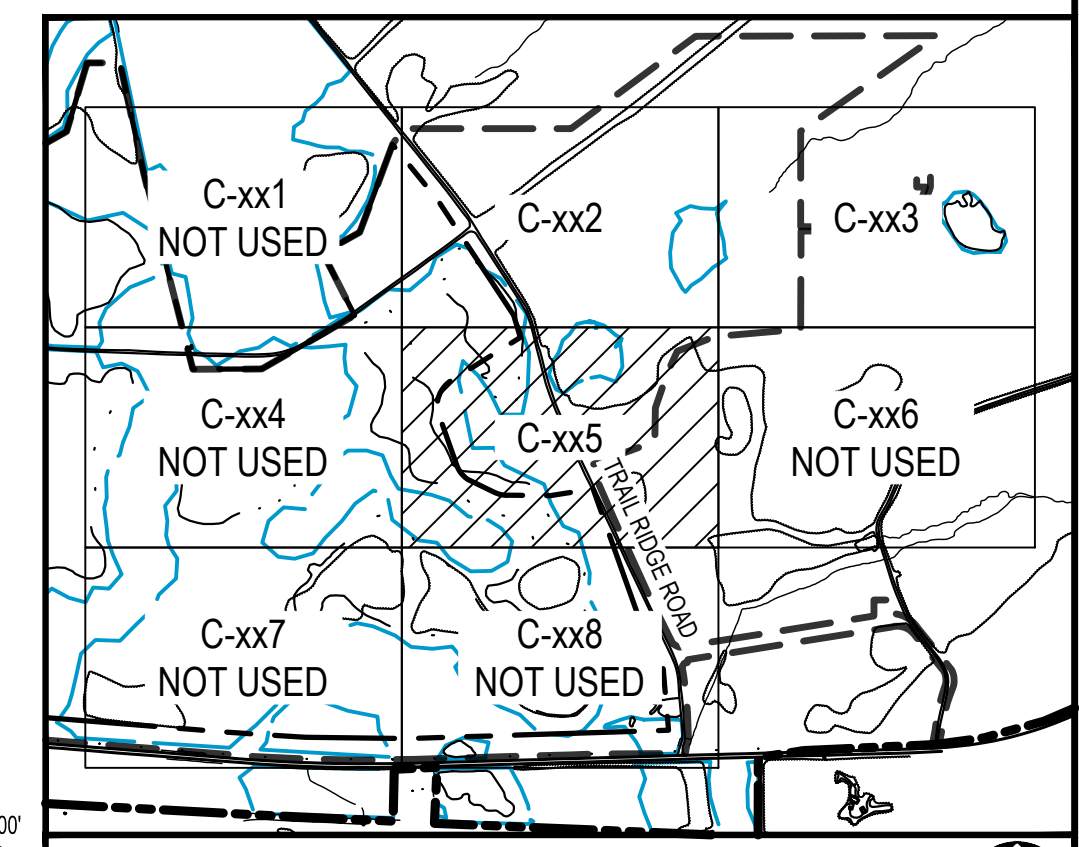
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MAP UNIT SYMBOL	MAP UNIT NAME
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LoA	LEON FINE SAND, FREQUENTLY PONDED, 0 TO 2 PERCENT SLOPES
LvA	LYNN HAVEN FINE SAND, 0 TO 2 PERCENT SLOPES
LYA	LYNN HAVEN, ALLANTON AND KINGSFERRY SOILS, PONDED, 0 TO 1 PERCENT SLOPES
MaA	MANDARIN FINE SAND, 0 TO 2 PERCENT SLOPES



GSWCC GEORGIA SOIL AND WATER CONSERVATION COMMISSION

Philip W Marcum
Level II Certified Design Professional

CERTIFICATION NUMBER: 0000010833
ISSUED: 01/31/2022 EXPIRES: 01/31/2025



REV	DDMMYY	REVISION / ISSUE DESCRIPTION	DRN	CHK	APP	APP	APP	APP	APP	REV	DDMMYY	REVISION / ISSUE DESCRIPTION	DRN	CHK	APP	APP	APP	APP	REF	NUMBER	TITLE
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STAMP/SEAL

APPROVED FOR		
M. FOWLER CLIENT PROJECT MGR	P. MARCUM TECHNICAL MGR	M. ABDALLA PROJECT MGR
PROJECT PHASE		
PERMITTING		
PROJECT NO.	BY	DDMMYY
7382224061	DES	07FEB22
	DRN	07FEB22
	CHK	07FEB22
SCALE	APP	07FEB22
AS SHOWN		

TWIN PINES MINERALS LLC
SAUNDERS DEMONSTRATION MINE
MINE ID 2073
WATER MANAGEMENT PONDS

AREA: CERTIFICATE OF AUTHORIZATION
ECA2221

CLIENT DWG NO.

DRAWING NO.
C-405

REV
0

wood

4000 MEADOW LAKE DRIVE
SUITE 121
BIRMINGHAM, AL 35242
(205) 980-6402

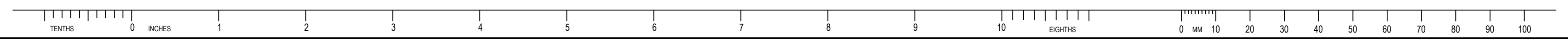
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ECA2221

CLIENT DWG NO.

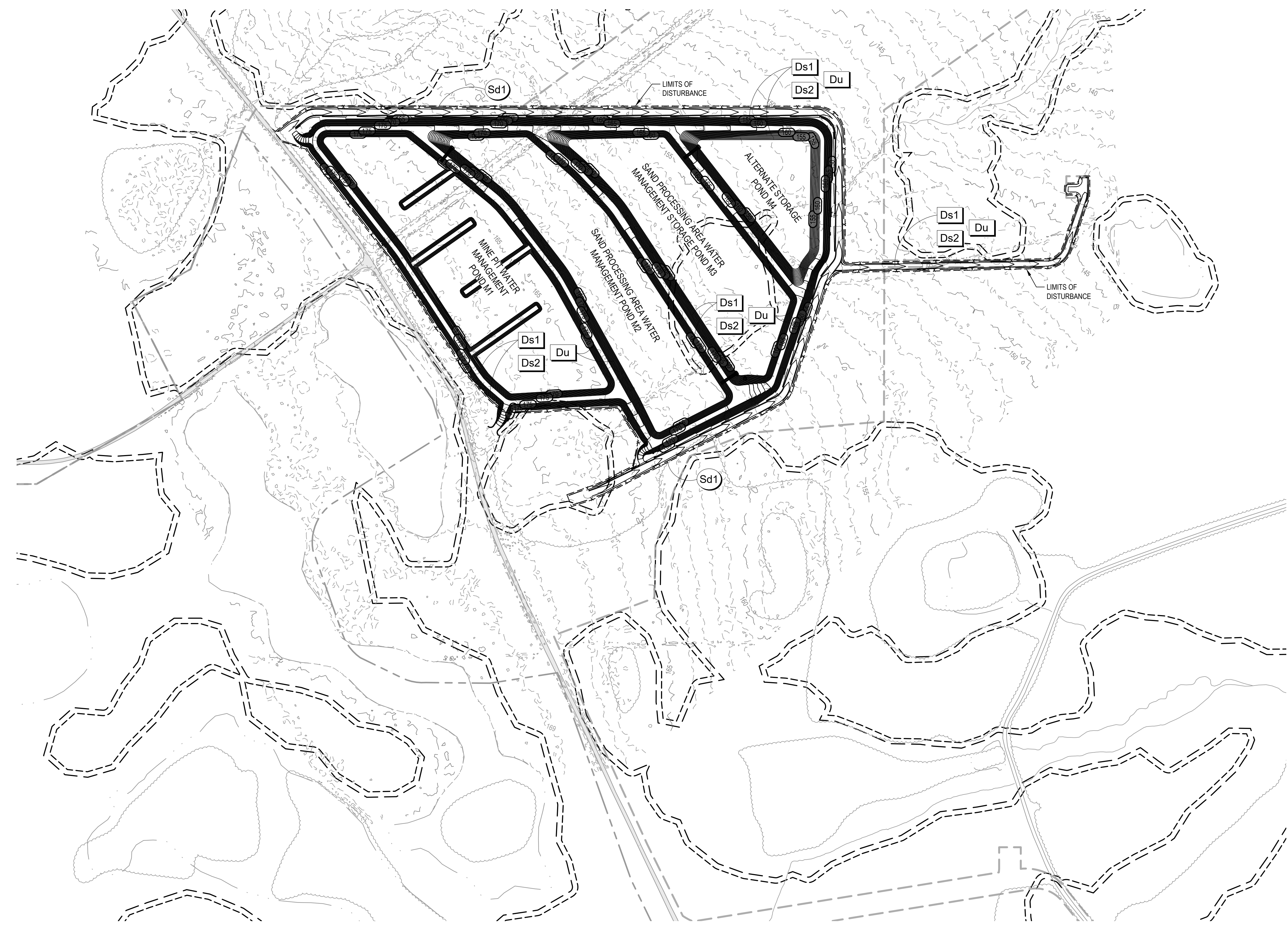
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C-405

REV
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ANSI Z39-18



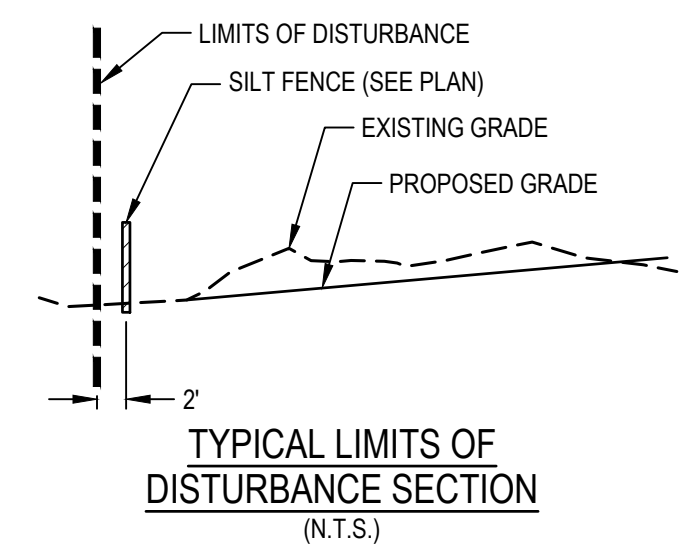
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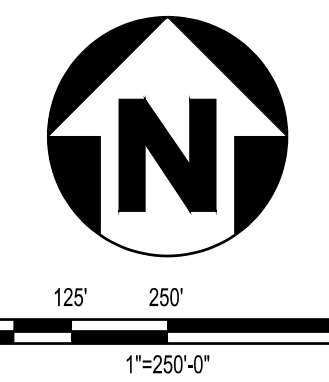
LEGEND	
	MINE BOUNDARY
	PERMIT BOUNDARY
	EXISTING INDEX CONTOUR
	EXISTING INTERMEDIATE CONTOUR
	LIMITS OF DISTURBANCE
	SILT FENCE
	PROPOSED INDEX CONTOUR
	PROPOSED INTERMEDIATE CONTOUR
	STORM DRAIN PIPES
	15'x20' STONE SPLASH PAD

CODE	PRACTICE	MAP SYMBOL	DESCRIPTION
Co	CONSTRUCTION EXIT		A CRUSHED STONE PAD LOCATED AT THE CONSTRUCTION SITE EXIT TO PROVIDE A PLACE FOR REMOVING MUD FROM TIRES THEREBY PROTECTING PUBLIC STREETS.
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Ds2	DISTURBED AREA STABILIZATION (WITH TEMPORARY SEEDING)		ESTABLISHING A TEMPORARY VEGETATIVE COVER WITH FAST GROWING SEEDINGS ON DISTURBED AREAS.
Du	DUST CONTROL ON DISTURBED AREAS		CONTROLLING SURFACE AND AIR MOVEMENT OF DUST ON CONSTRUCTION SITES, ROADWAYS AND SIMILAR SITES.
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TOTAL LIMITS OF DISTURBANCE = 70.19 ACRES



24 HOUR CONTACT PERSON:
MARK FOWLER: (205) 403-5287



GSWCC GEORGIA SOIL AND WATER CONSERVATION COMMISSION

Philip W Marcum
Level II Certified Design Professional

CERTIFICATION NUMBER 0000010833
ISSUED: 01/31/2022 EXPIRES: 01/31/2025

REV	DDMMYY	REVISION / ISSUE DESCRIPTION	DRN	CHK	APP	APP	APP	APP	APP	REV	DDMMYY	REVISION / ISSUE DESCRIPTION	DRN	CHK	APP	APP	APP	APP	REF	NUMBER	TITLE
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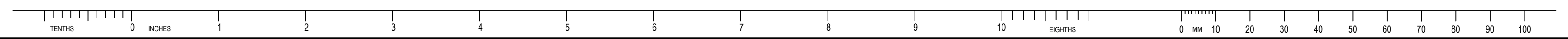
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APPROVED FOR		
M. FOWLER CLIENT PROJECT MGR	P. MARCUM TECHNICAL MGR	M. ABDALLA PROJECT MGR
PROJECT PHASE		
PERMITTING		
PROJECT NO.	BY	DDMMYY
7382224061	DES	07FEB22
SCALE	DRN	07FEB22
	CHK	07FEB22
	APP	07FEB22
AS SHOWN		

TWIN PINES MINERALS LLC
SAUNDERS DEMONSTRATION MINE
MINE ID 2073
WATER MANAGEMENT PONDS

OVERALL INTERMEDIATE EROSION
SEDIMENTATION AND POLLUTION CONTROL
PLAN

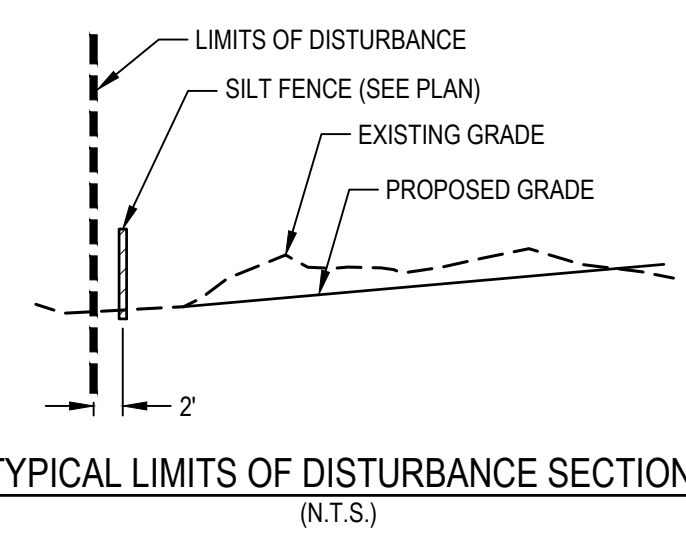
AREA		CERTIFICATE OF AUTHORIZATION	
		ECA2221	
CLIENT DWG NO.			
DRAWING NO.		REV	
C-410		0	



LEGEND	
	MINE BOUNDARY
	PERMIT BOUNDARY
	EXISTING INDEX CONTOUR
	EXISTING INTERMEDIATE CONTOUR
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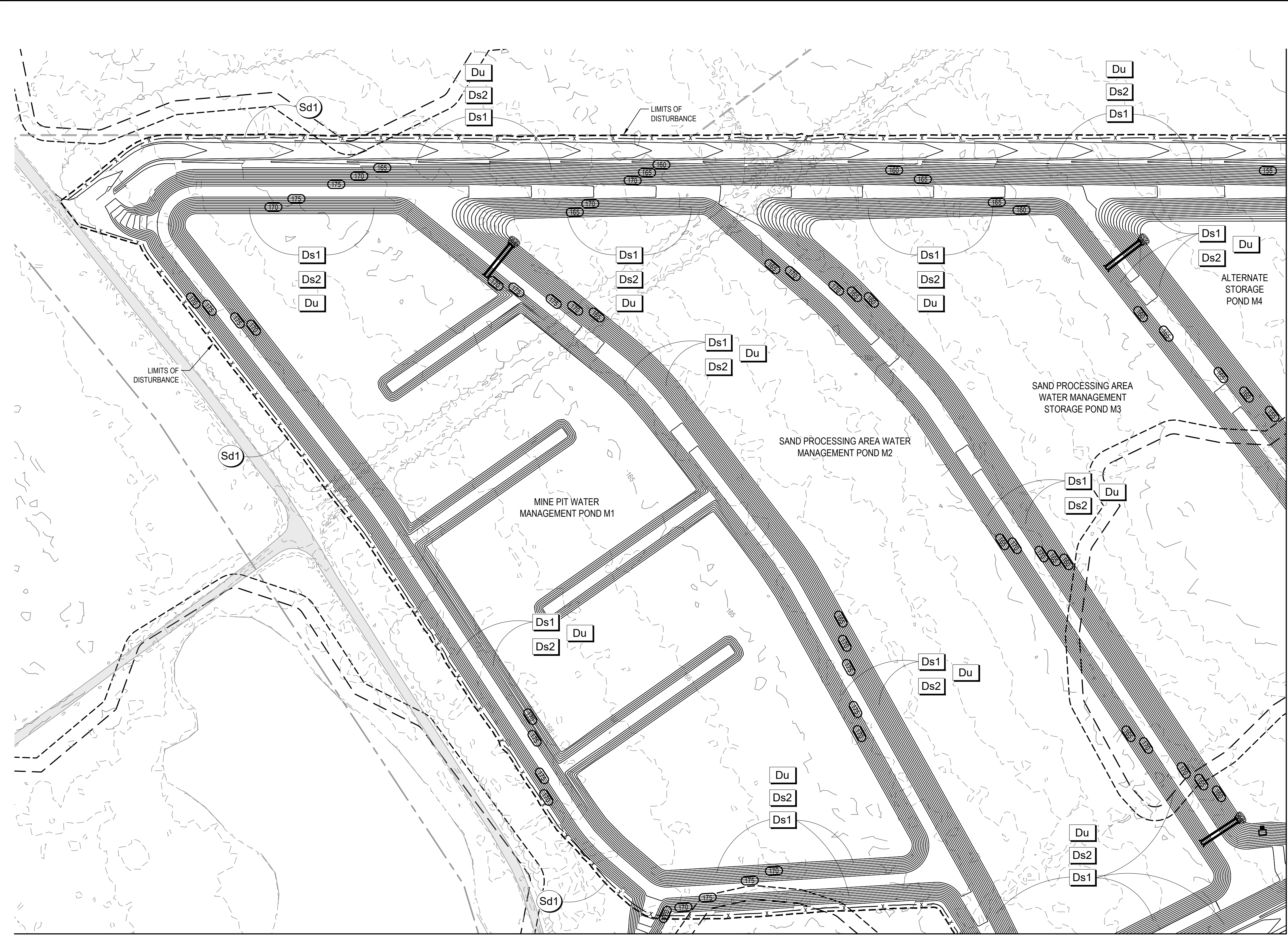
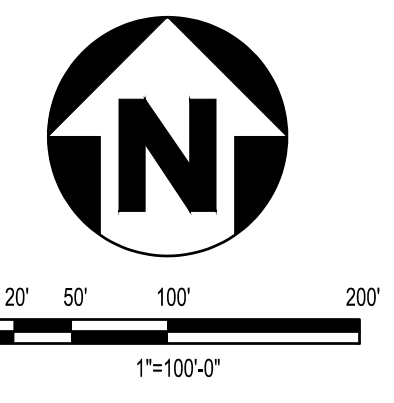
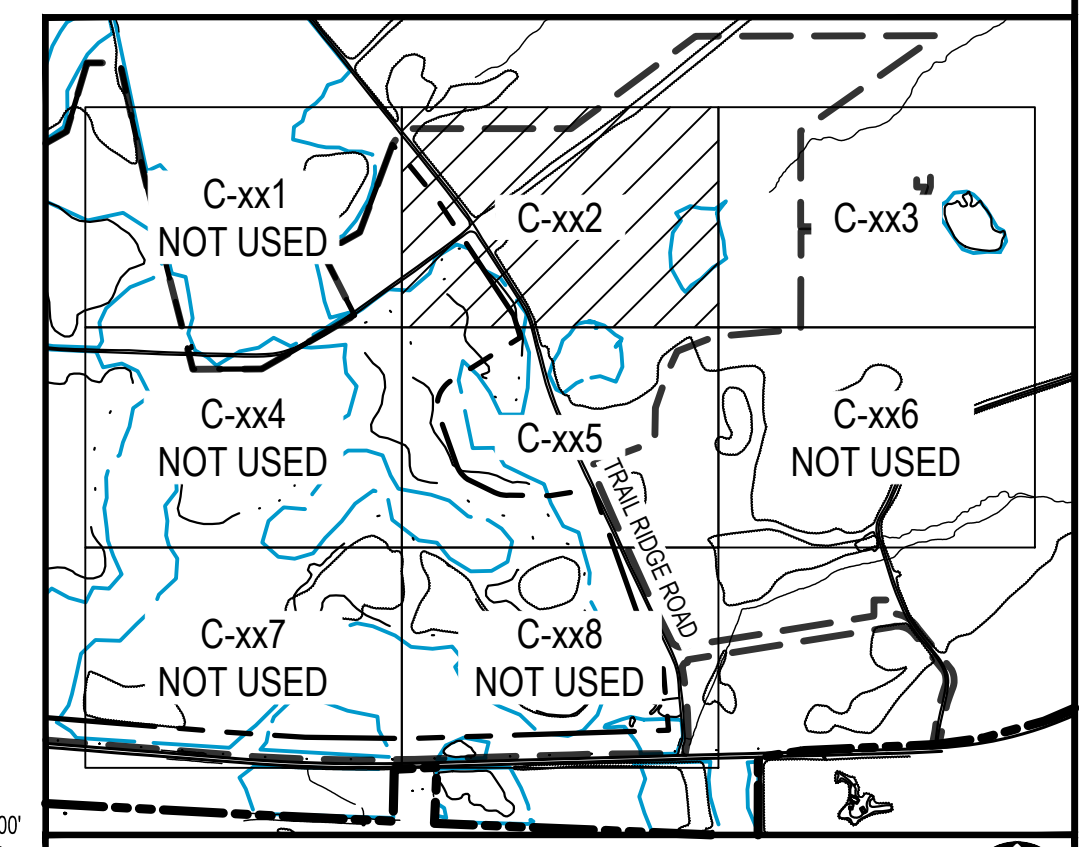
Know what's below. Call before you dig.

GSWCC GEORGIA SOIL AND WATER CONSERVATION COMMISSION

Philip W Marcum
Level II Certified Design Professional

CERTIFICATION NUMBER: 0000010833
ISSUED: 01/31/2022 EXPIRES: 01/31/2025

24 HOUR CONTACT PERSON:
MARK FOWLER: (205) 403-5287



MATCHLINE - SEE SHEET C-415

MATCHLINE - SEE SHEET C-413

E

D

C

B

A

REV	DDMMYY	REVISION / ISSUE DESCRIPTION	DRN	CHK	APP	APP	APP	APP	APP	REF	NUMBER	TITLE
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PROJECT PHASE: PERMITTING		
PROJECT NO. 7382224061	BY DES 07FEB22	DDMMYY 07FEB22
SCALE AS SHOWN	CHK 07FEB22	APP 07FEB22

wood

TWIN PINES MINERALS LLC
SAUNDERS DEMONSTRATION MINE
MINE ID 2073
WATER MANAGEMENT PONDS

AREA: CERTIFICATE OF AUTHORIZATION ECA2221
CLIENT DWG NO.

DRAWING NO. C-412

REV 0

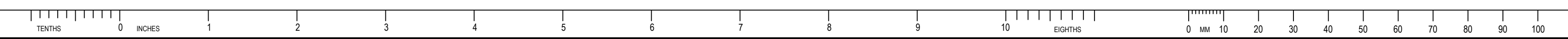
wood

4000 MEADOW LAKE DRIVE
SUITE 121
BIRMINGHAM, AL 35242
(205) 980-6402

AREA: CERTIFICATE OF AUTHORIZATION ECA2221
CLIENT DWG NO.

DRAWING NO. C-412

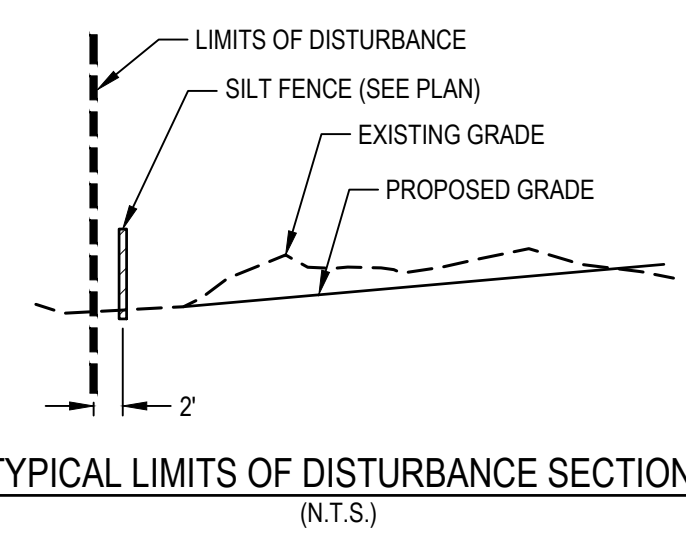
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LEGEND	
	MINE BOUNDARY
	PERMIT BOUNDARY
	EXISTING INDEX CONTOUR
	EXISTING INTERMEDIATE CONTOUR
	LIMITS OF DISTURBANCE
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	PROPOSED INDEX CONTOUR
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CODE	PRACTICE	MAP SYMBOL	DESCRIPTION
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GEORGIA811
Utilities Protection Center, Inc.

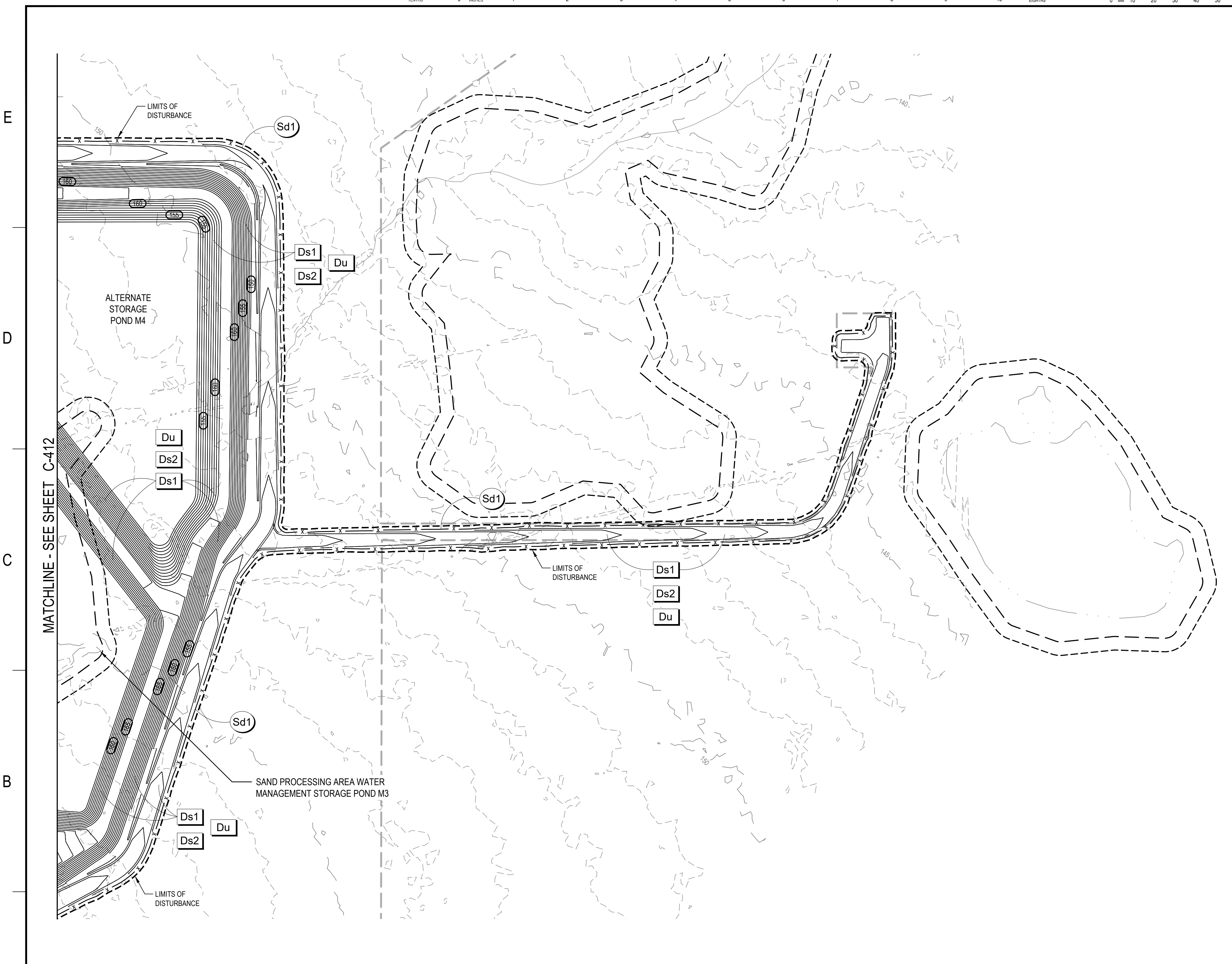
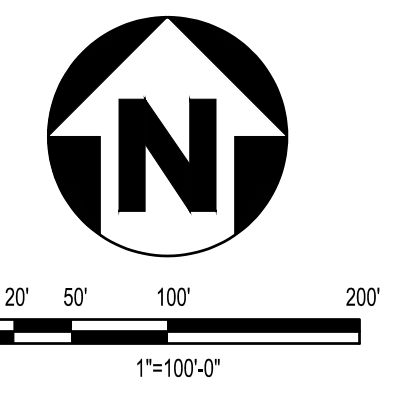
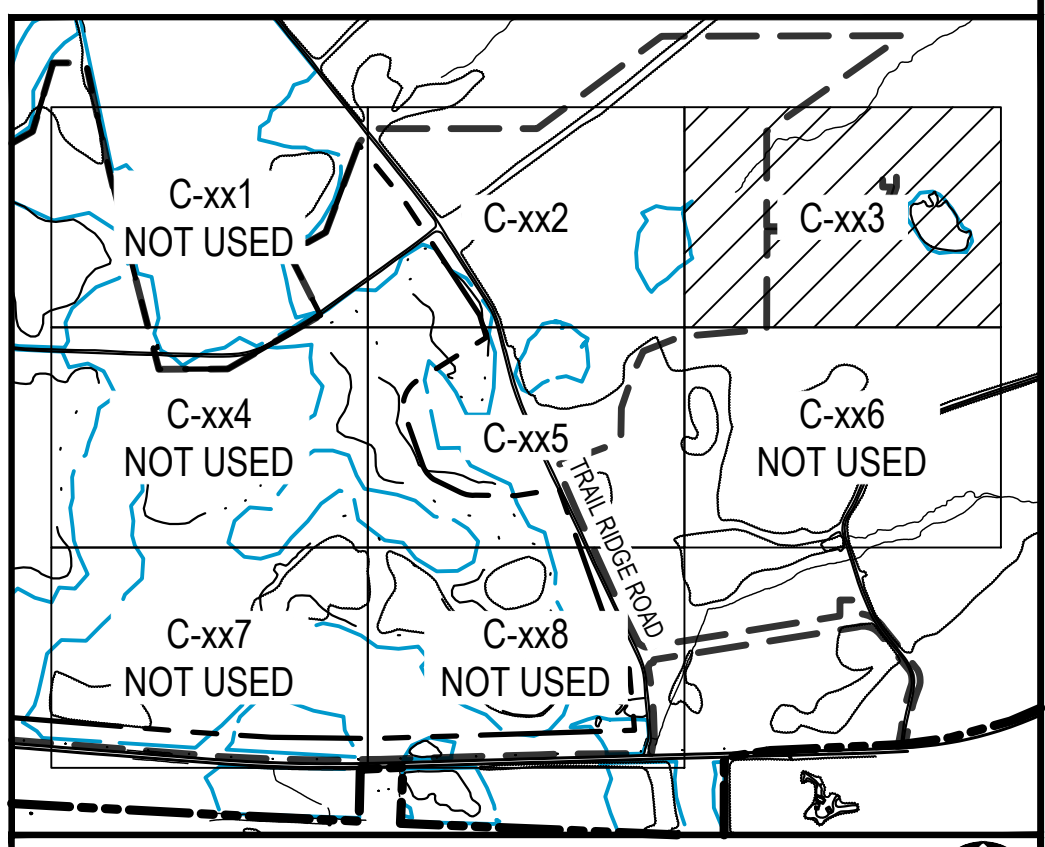
Know what's below.
Call before you dig.

GSWCC GEORGIA SOIL AND WATER CONSERVATION COMMISSION

Philip W Marcum
Level II Certified Design Professional

CERTIFICATION NUMBER: 0000010833
ISSUED: 01/31/2022 EXPIRES: 01/31/2025

24 HOUR CONTACT PERSON:
MARK FOWLER: (205) 403-5287



REV	DDMMYY	REVISION / ISSUE DESCRIPTION	DRN	CHK	APP	APP	APP	APP	APP	REV	DDMMYY	REVISION / ISSUE DESCRIPTION	DRN	CHK	APP	APP	APP	APP	REF	NUMBER	TITLE
0	8NOV2022	ISSUED FOR PERMITTING																			

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APPROVED FOR		
M. FOWLER CLIENT PROJECT MGR	P. MARCUM TECHNICAL MGR	M. ABDALLA PROJECT MGR
PROJECT PHASE: PERMITTING		
PROJECT NO. 7382224061	BY DES 07FEB22 DRN 07FEB22 CHK 07FEB22 APP 07FEB22	DDMMYY
SCALE: AS SHOWN		

wood

TWIN PINES MINERALS LLC
SAUNDERS DEMONSTRATION MINE
MINE ID 2073
WATER MANAGEMENT PONDS

4000 MEADOW LAKE DRIVE
SUITE 121
BIRMINGHAM, AL 35242
(205) 980-6402

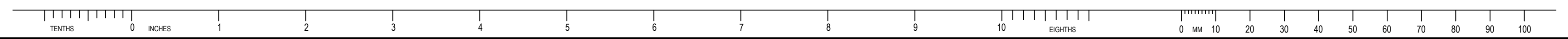
AREA: CERTIFICATE OF AUTHORIZATION ECA2221

CLIENT DWG NO.

DRAWING NO. C-413

REV 0

AREA	CERTIFICATE OF AUTHORIZATION
ECA2221	
CLIENT DWG NO.	
DRAWING NO.	C-413
REV	0



MATCHLINE - SEE SHEET C-412

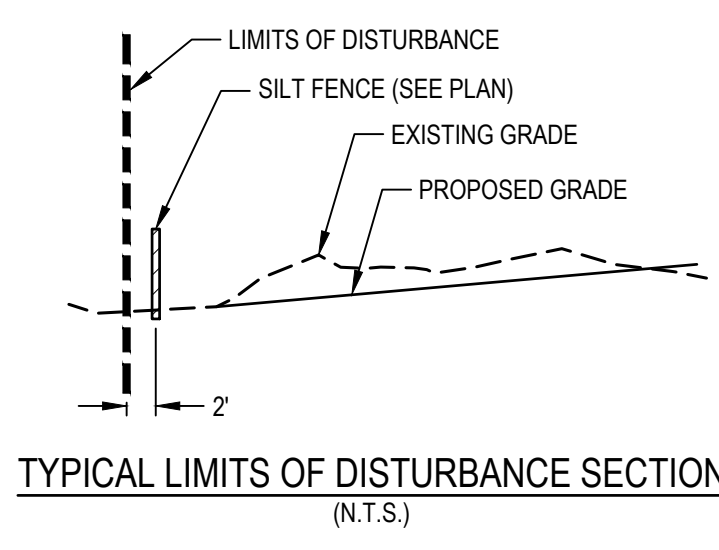
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LEGEND	
	MINE BOUNDARY
	PERMIT BOUNDARY
	EXISTING INDEX CONTOUR
	EXISTING INTERMEDIATE CONTOUR
	LIMITS OF DISTURBANCE
	SILT FENCE
	PROPOSED INDEX CONTOUR
	PROPOSED INTERMEDIATE CONTOUR

CODE	PRACTICE	MAP SYMBOL	DESCRIPTION
Co	CONSTRUCTION EXIT		A CRUSHED STONE PAD LOCATED AT THE CONSTRUCTION SITE EXIT TO PROVIDE A PLACE FOR REMOVING MUD FROM TIRES THEREBY PROTECTING PUBLIC STREETS.
Ds1	DISTURBED AREA STABILIZATION (MULCHING ONLY)		ESTABLISHING TEMPORARY PROTECTION FOR DISTURBED AREAS WHERE SEEDINGS MAY NOT HAVE A SUITABLE GROWING SEASON TO PRODUCE AN EROSION RETARDING COVER.
Ds2	DISTURBED AREA STABILIZATION (WITH TEMPORARY SEEDING)		ESTABLISHING A TEMPORARY VEGETATIVE COVER WITH FAST GROWING SEEDINGS ON DISTURBED AREAS.
Du	DUST CONTROL ON DISTURBED AREAS		CONTROLLING SURFACE AND AIR MOVEMENT OF DUST ON CONSTRUCTION SITES, ROADWAYS AND SIMILAR SITES.
Sd1	SEDIMENT BARRIER		A BARRIER TO PREVENT SEDIMENT FROM LEAVING THE CONSTRUCTION SITE. IT MAY BE SANDBAGS, BALES OF STRAW OR HAY, BRUSH, LOGS AND POLES, GRAVEL, OR A SEDIMENT FENCE. THE BARRIERS ARE USUALLY TEMPORARY.

TOTAL LIMITS OF DISTURBANCE = 70.19 ACRES



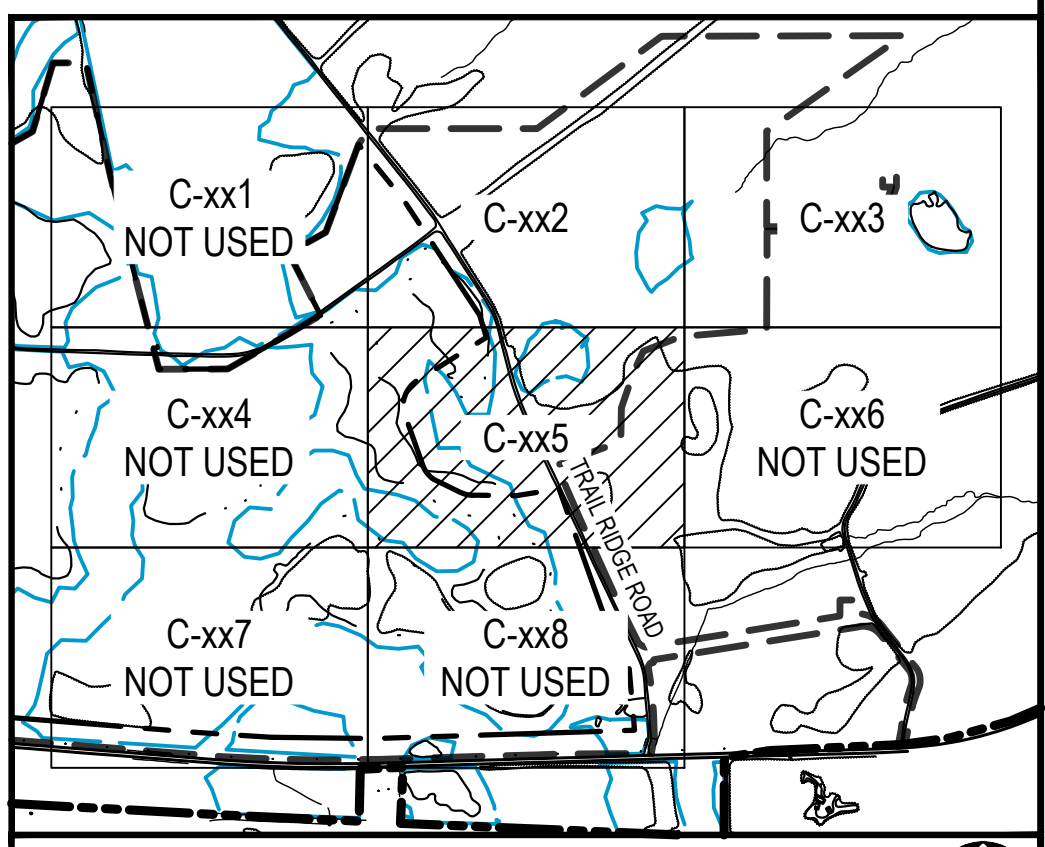
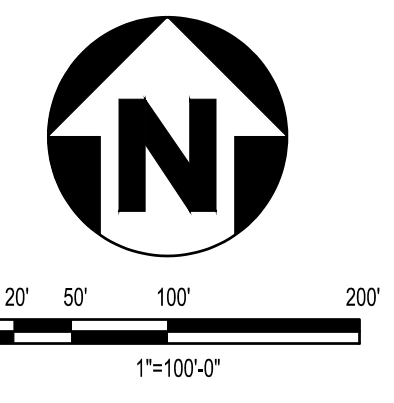
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GSWCC GEORGIA SOIL AND WATER CONSERVATION COMMISSION

Philip W Marcum
Level II Certified Design Professional

CERTIFICATION NUMBER: 0000010833
ISSUED: 01/31/2022 EXPIRES: 01/31/2025

24 HOUR CONTACT PERSON:
MARK FOWLER: (205) 403-5287



KEY PLAN
SCALE: NONE

REV	DDMMYY	REVISION / ISSUE DESCRIPTION	DRN	CHK	APP	APP	APP	APP	APP	REV	DDMMYY	REVISION / ISSUE DESCRIPTION	DRN	CHK	APP	APP	APP	APP	REF	NUMBER	TITLE
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PROJECT PHASE: PERMITTING		
PROJECT NO. 7382224061	BY DES 07FEB22 DRN 07FEB22 CHK 07FEB22 APP 07FEB22	DDMMYY 07FEB22
SCALE AS SHOWN	SUBJECT INTERMEDIATE EROSION SEDIMENTATION AND POLLUTION CONTROL PLAN SHEET 5	

TWIN PINES MINERALS LLC
SAUNDERS DEMONSTRATION MINE
MINE ID 2073
WATER MANAGEMENT PONDS

wood.
4000 MEADOW LAKE DRIVE
SUITE 121
BIRMINGHAM, AL 35242
(205) 980-6402

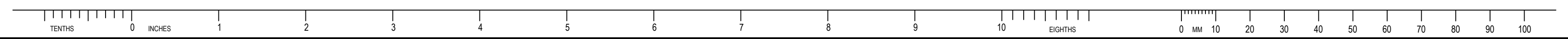
CERTIFICATE OF AUTHORIZATION
ECA2221

CLIENT DWG NO.

DRAWING NO.
C-415

REV
0

ANSI Z39-18



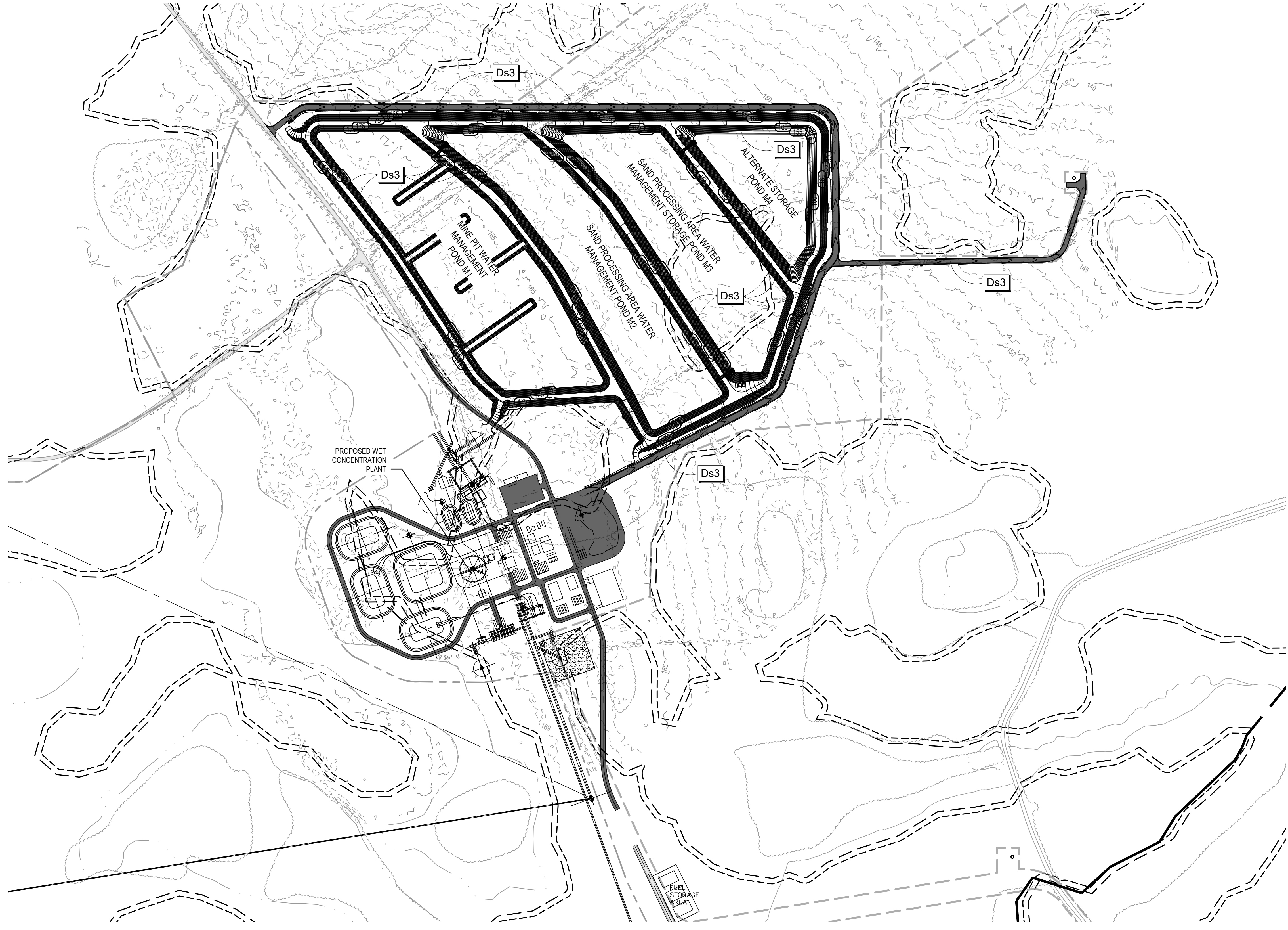
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LEGEND	
	MINE BOUNDARY
	PERMIT BOUNDARY
	EXISTING INDEX CONTOUR
	EXISTING INTERMEDIATE CONTOUR
	PROPOSED INDEX CONTOUR
	PROPOSED INTERMEDIATE CONTOUR
	STORM DRAIN PIPES
	15'x20' STONE SPLASH PAD

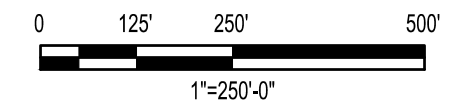
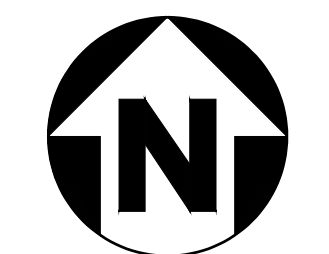
CODE	PRACTICE	MAP SYMBOL	DESCRIPTION
Ds3	DISTURBED AREA STABILIZATION (WITH PERMANENT VEGETATION)	Ds3	ESTABLISHING PERMANENT VEGETATIVE COVER SUCH AS TREES, SHRUBS, VINES, GRASSES, SOD OR LEGUMES ON DISTURBED AREAS.



24 HOUR CONTACT PERSON:
MARK FOWLER: (205) 403-5287

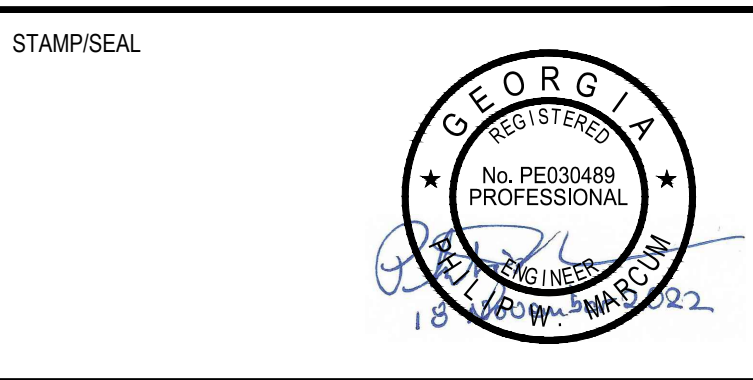


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PROJECT PHASE		
PERMITTING		
PROJECT NO.	BY	DDMMYY
7382224061	DES	07FEB22
SCALE	DRN	07FEB22
	CHK	07FEB22
	APP	07FEB22
AS SHOWN		

TWIN PINES MINERALS LLC
SAUNDERS DEMONSTRATION MINE
MINE ID 2073
WATER MANAGEMENT PONDS

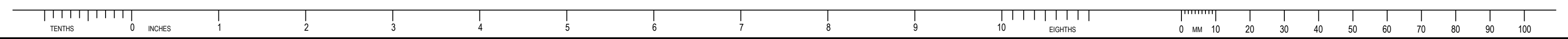
wood
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SUITE 121
BIRMINGHAM, AL 35242
(205) 980-6402

AREA	CERTIFICATE OF AUTHORIZATION ECA2221
CLIENT DWG NO.	
DRAWING NO. C-420	REV 0

ANSI D 20284

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CAD FILE: W:\AD\0409\FINAL EROSION CONTROL PLAN.DWG



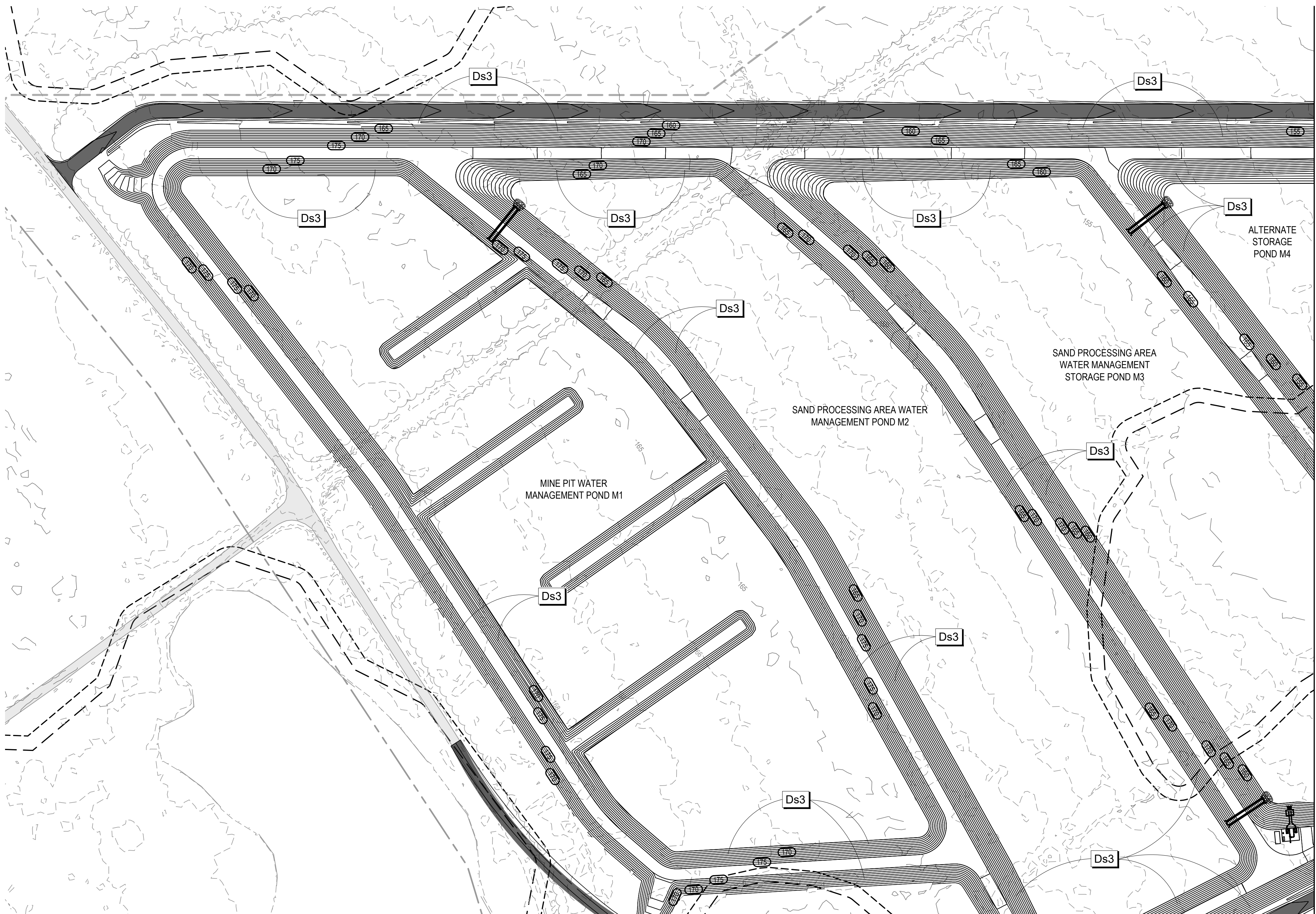
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LEGEND	
	MINE BOUNDARY
	PERMIT BOUNDARY
	EXISTING INDEX CONTOUR
	EXISTING INTERMEDIATE CONTOUR
	PROPOSED INDEX CONTOUR
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	15'x20' STONE SPLASH PAD

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MATCHLINE - SEE SHEET C-423

MATCHLINE - SEE SHEET C-425

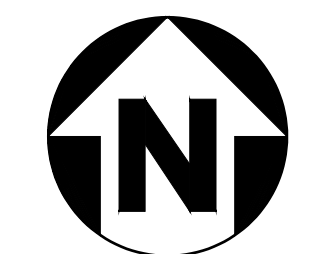


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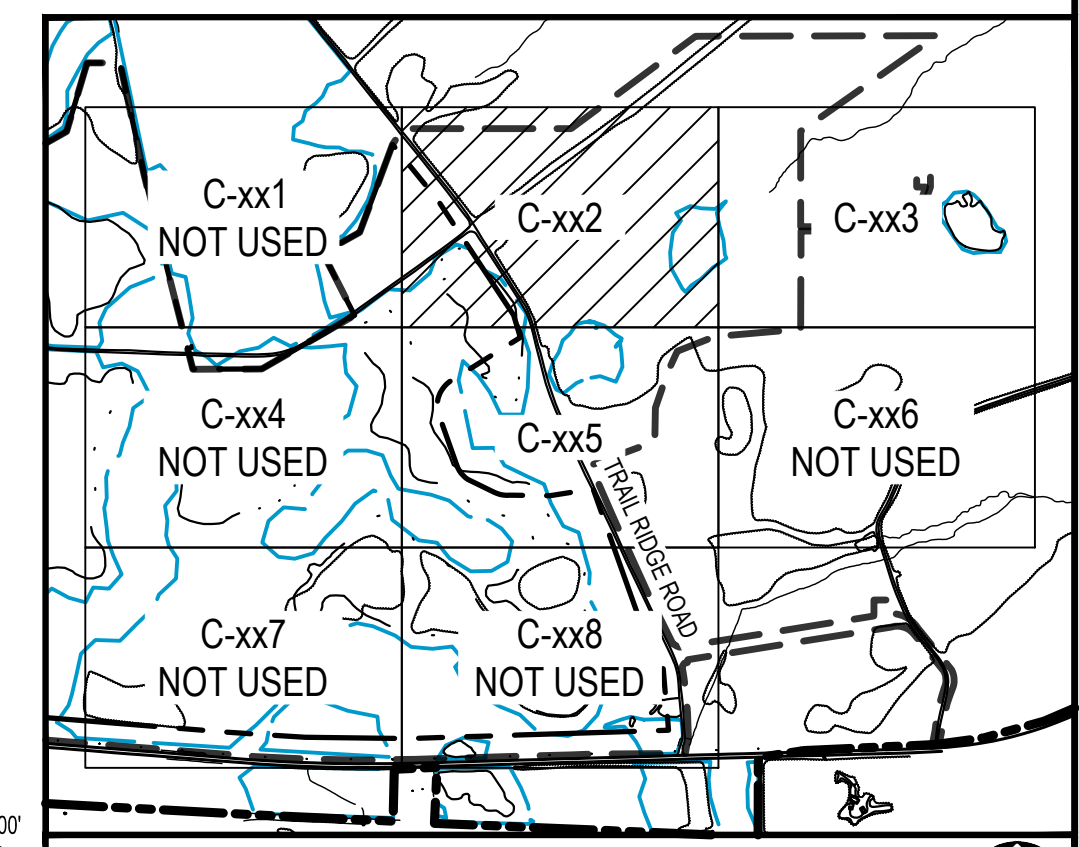
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Philip W Marcum
Level II Certified Design Professional
CERTIFICATION NUMBER 0000010833
ISSUED: 01/31/2022 EXPIRES: 01/31/2025



0 20' 50' 100' 200'
1"=100'-0"



KEY PLAN
SCALE: NONE



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REV	DDMMYY	REVISION / ISSUE DESCRIPTION	DRN	CHK	APP	APP	APP	APP	APP	APP	REF	NUMBER	TITLE
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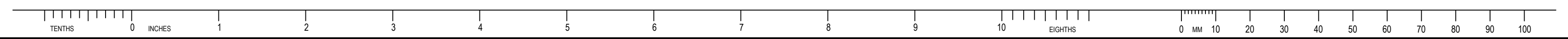
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PROJECT PHASE		
PERMITTING		
PROJECT NO.	BY	DDMMYY
7382224061	DES	07FEB22
SCALE	DRN	07FEB22
	CHK	07FEB22
	APP	07FEB22
AS SHOWN		

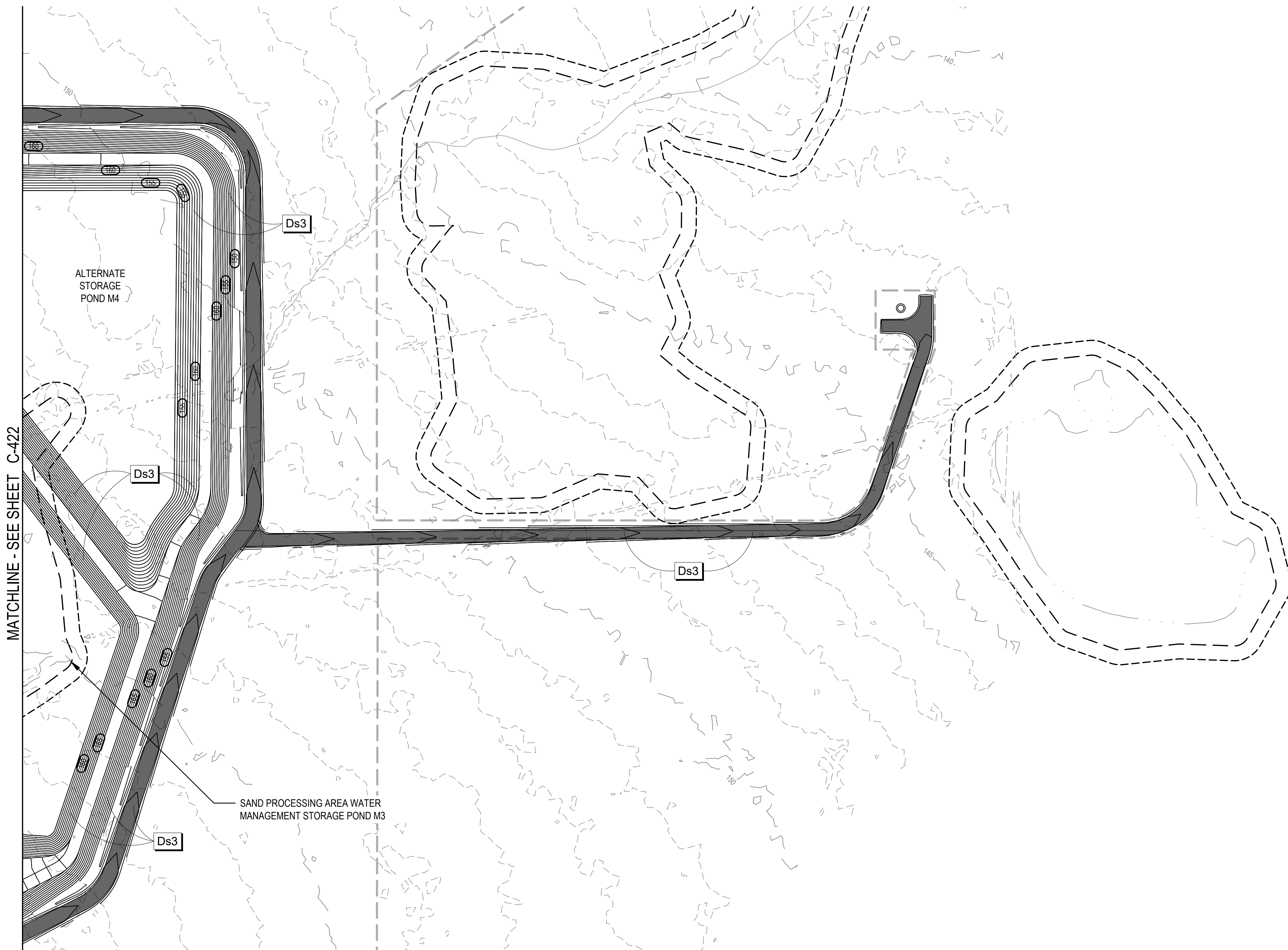
TWIN PINES MINERALS LLC
SAUNDERS DEMONSTRATION MINE
MINE ID 2073
WATER MANAGEMENT PONDS

SUBJECT
FINAL EROSION SEDIMENTATION AND POLLUTION CONTROL PLAN SHEET 2

AREA		CERTIFICATE OF AUTHORIZATION ECA2221
CLIENT DWG NO.		
DRAWING NO.	REV	
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LEGEND	
	MINE BOUNDARY
	PERMIT BOUNDARY
	EXISTING INDEX CONTOUR
	EXISTING INTERMEDIATE CONTOUR
	PROPOSED INDEX CONTOUR
	PROPOSED INTERMEDIATE CONTOUR

CODE	PRACTICE	MAP SYMBOL	DESCRIPTION
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MATCHLINE - SEE SHEET C-422



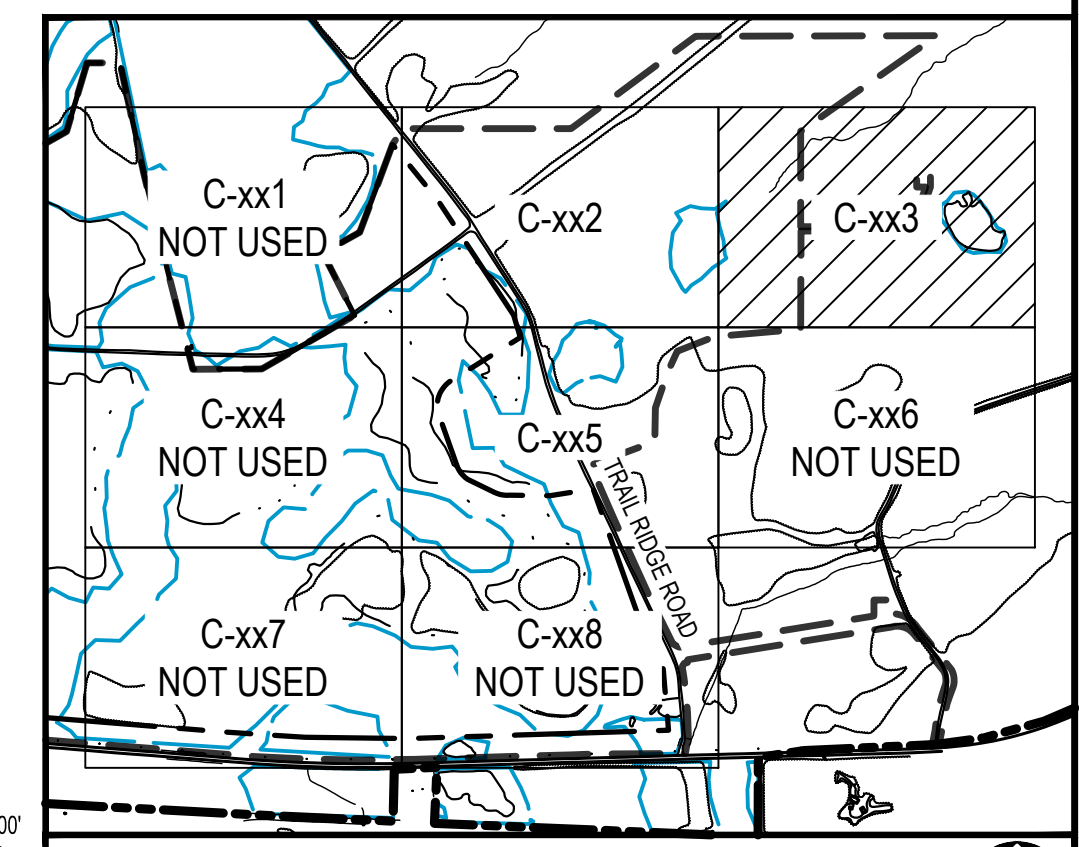
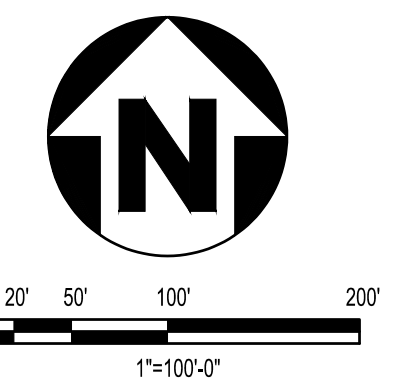
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24 HOUR CONTACT PERSON:
MARK FOWLER: (205) 403-5287

GSWCC GEORGIA SOIL AND WATER CONSERVATION COMMISSION

Philip W Marcum
Level II Certified Design Professional

CERTIFICATION NUMBER 0000010833
ISSUED: 01/31/2022 EXPIRES: 01/31/2025



KEY PLAN
SCALE: NONE

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0	8NOV2022	ISSUED FOR PERMITTING											

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M. FOWLER CLIENT PROJECT MGR	P. MARCUM TECHNICAL MGR	M. ABDALLA PROJECT MGR
PROJECT PHASE: PERMITTING		
PROJECT NO. 7382224061	BY DES 07FEB22 DRN 07FEB22 CHK 07FEB22 APP 07FEB22	DDMMYY 07FEB22
SCALE: AS SHOWN		

wood

TWIN PINES MINERALS LLC
SAUNDERS DEMONSTRATION MINE
MINE ID 2073
WATER MANAGEMENT PONDS

CERTIFICATE OF AUTHORIZATION
ECA2221

CLIENT DWG NO. _____

DRAWING NO.
C.423

REV 0

wood

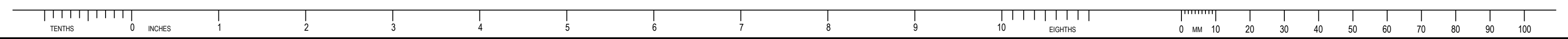
4000 MEADOW LAKE DRIVE
SUITE 121
BIRMINGHAM, AL 35242
(205) 980-6402

CERTIFICATE OF AUTHORIZATION
ECA2221

CLIENT DWG NO. _____

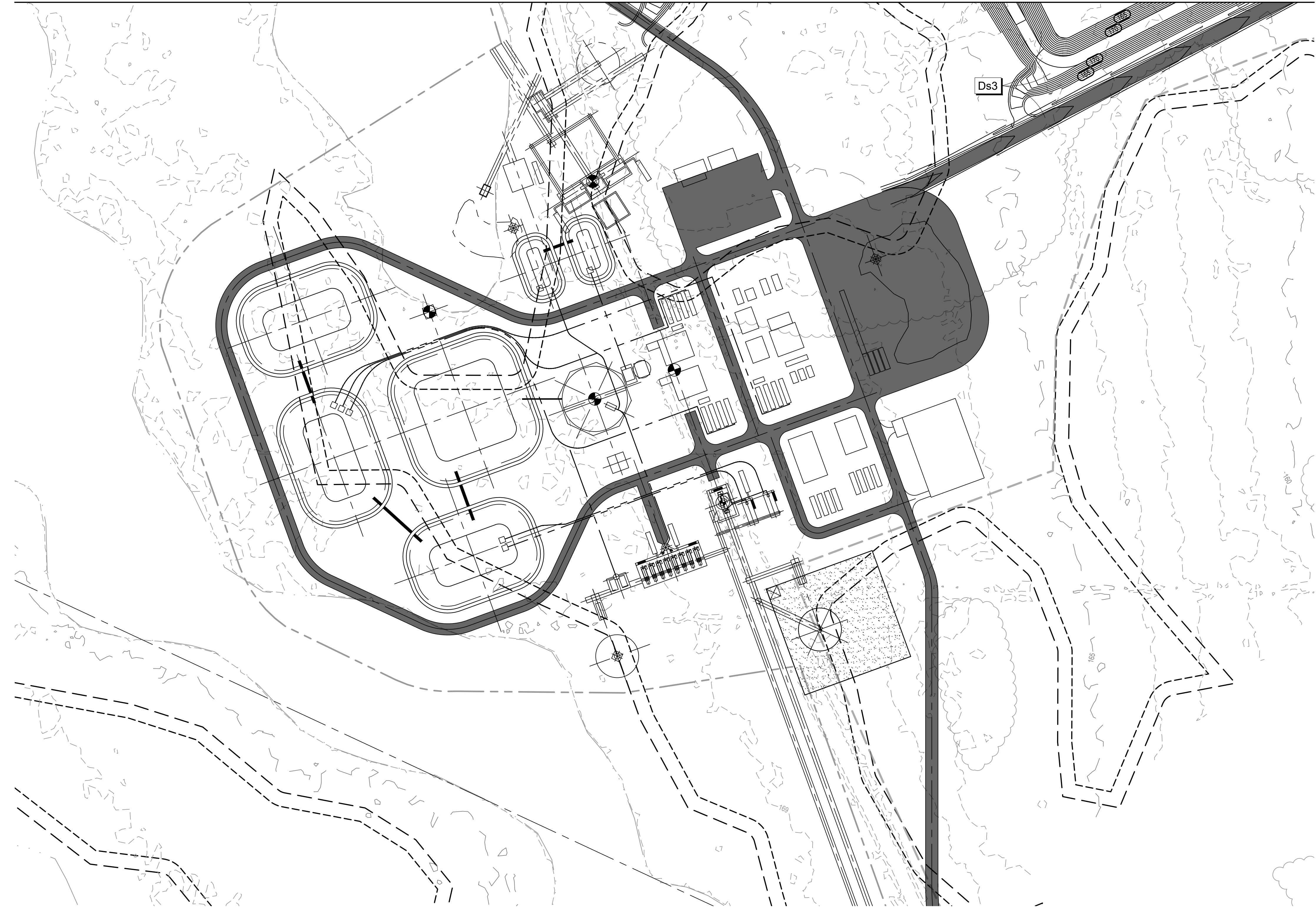
DRAWING NO.
C.423

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MATCHLINE - SEE SHEET C-422

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LEGEND	
	MINE BOUNDARY
	PERMIT BOUNDARY
	EXISTING INDEX CONTOUR
	EXISTING INTERMEDIATE CONTOUR
	PROPOSED INDEX CONTOUR
	PROPOSED INTERMEDIATE CONTOUR

CODE	PRACTICE	MAP SYMBOL	DESCRIPTION
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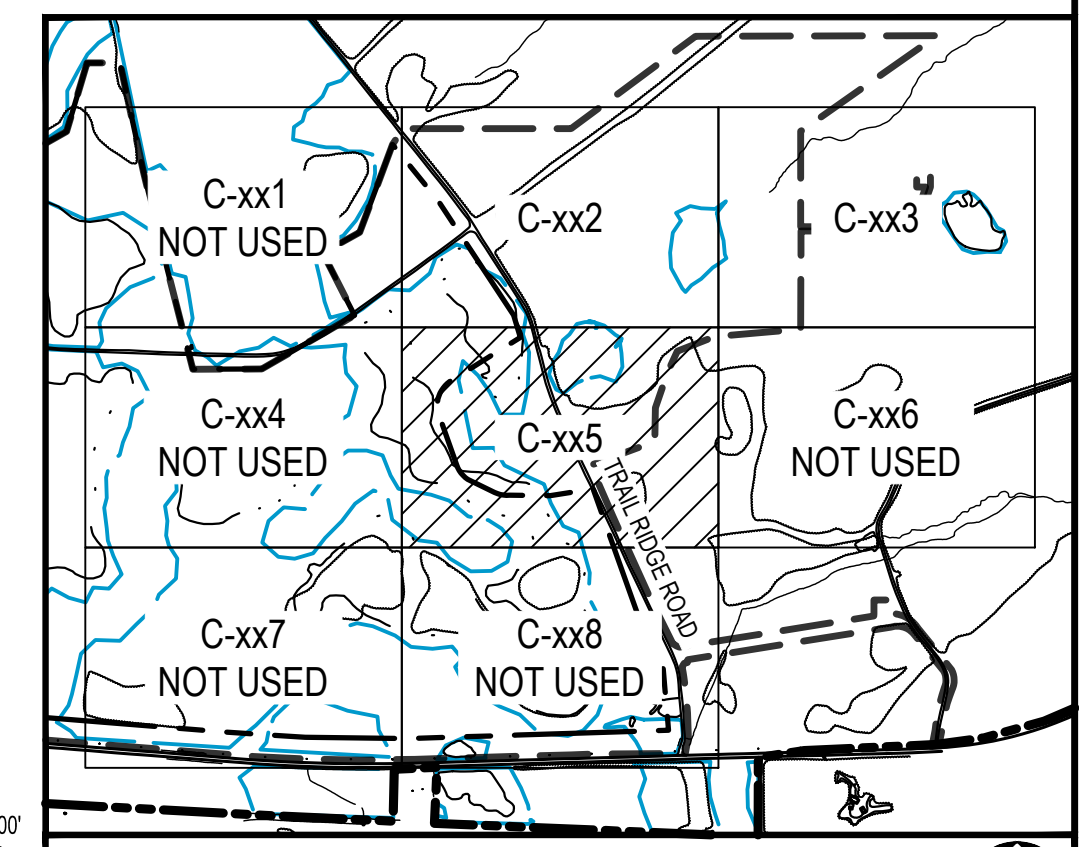
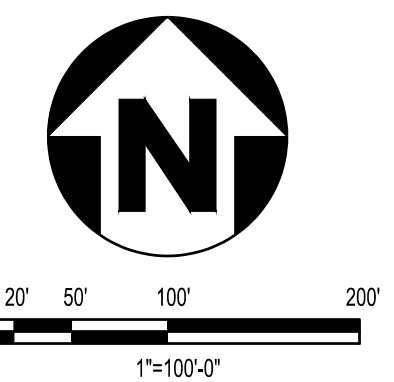
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KEY PLAN
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PROJECT PHASE PERMITTING		
PROJECT NO. 7382224061	BY DES 07FEB22	DDMMYY DRN 07FEB22
SCALE AS SHOWN	CHK 07FEB22	APP 07FEB22

wood.

TWIN PINES MINERALS LLC
SAUNDERS DEMONSTRATION MINE
MINE ID 2073
WATER MANAGEMENT PONDS

SUBJECT
FINAL EROSION SEDIMENTATION AND POLLUTION CONTROL PLAN SHEET 5

4000 MEADOW LAKE DRIVE
SUITE 121
BIRMINGHAM, AL 35242
(205) 980-6402

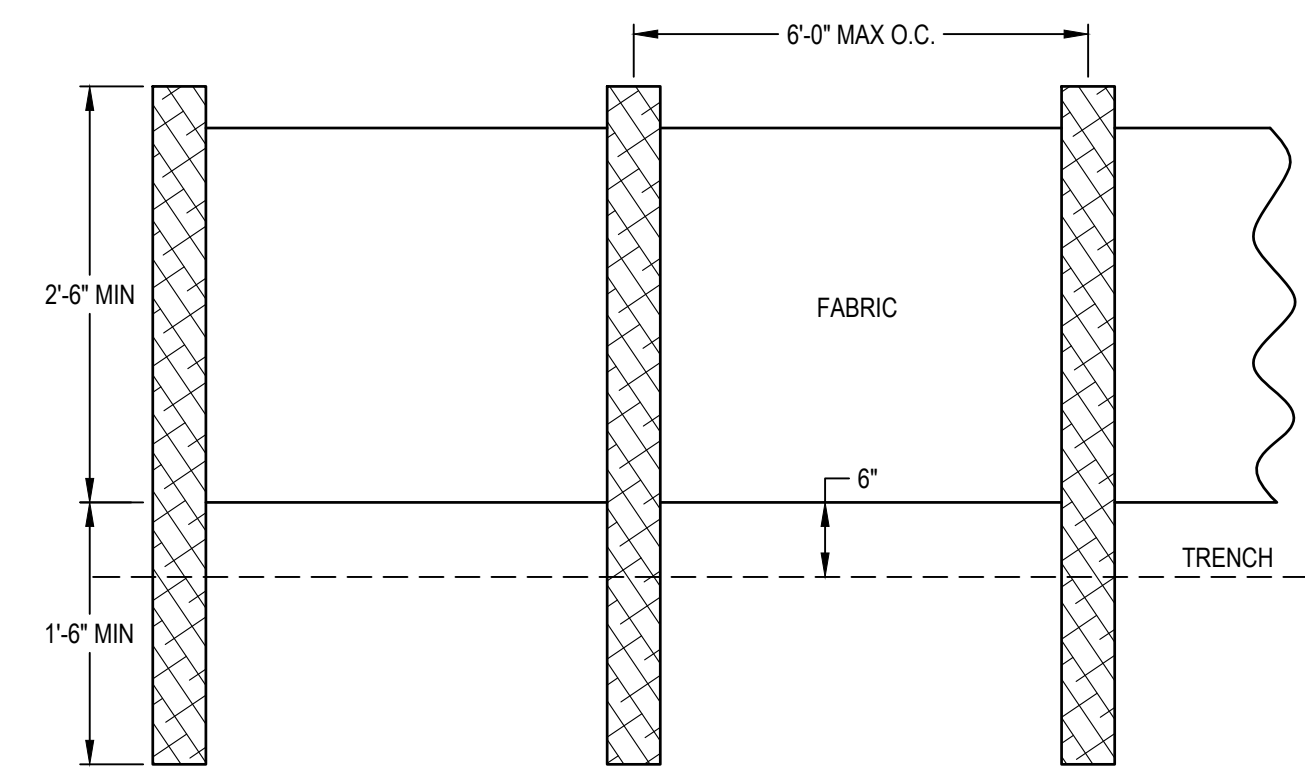
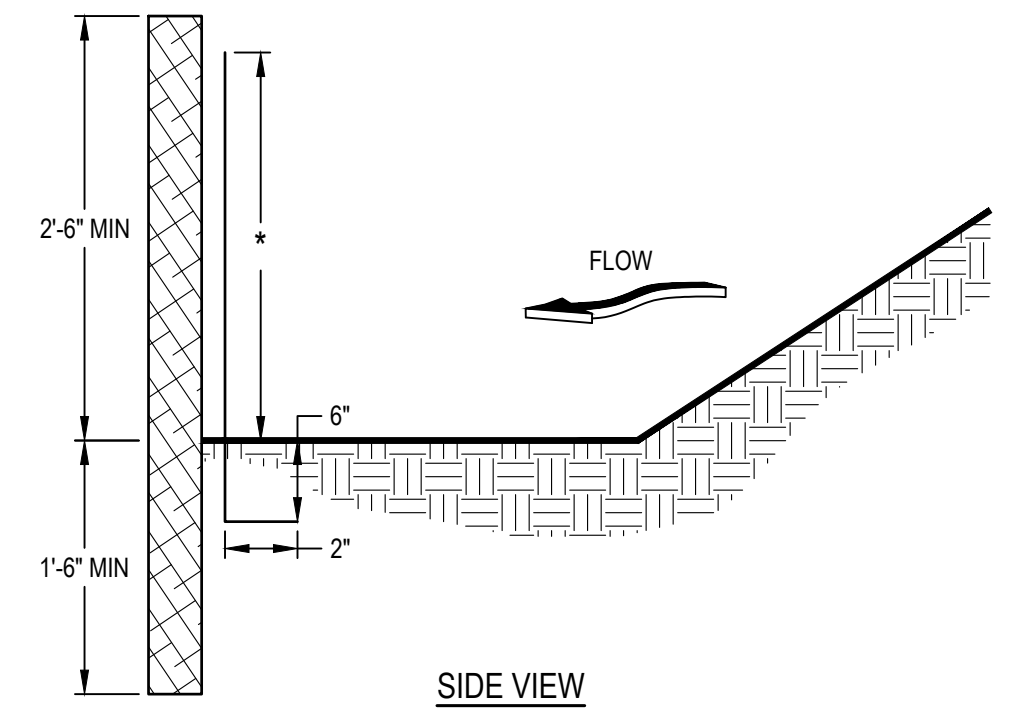
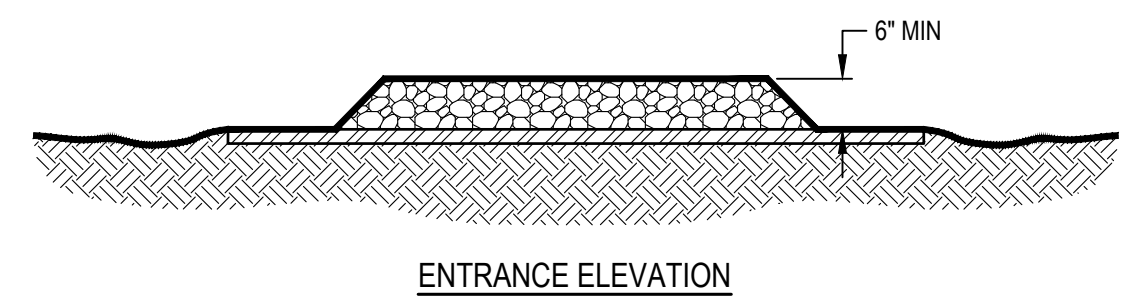
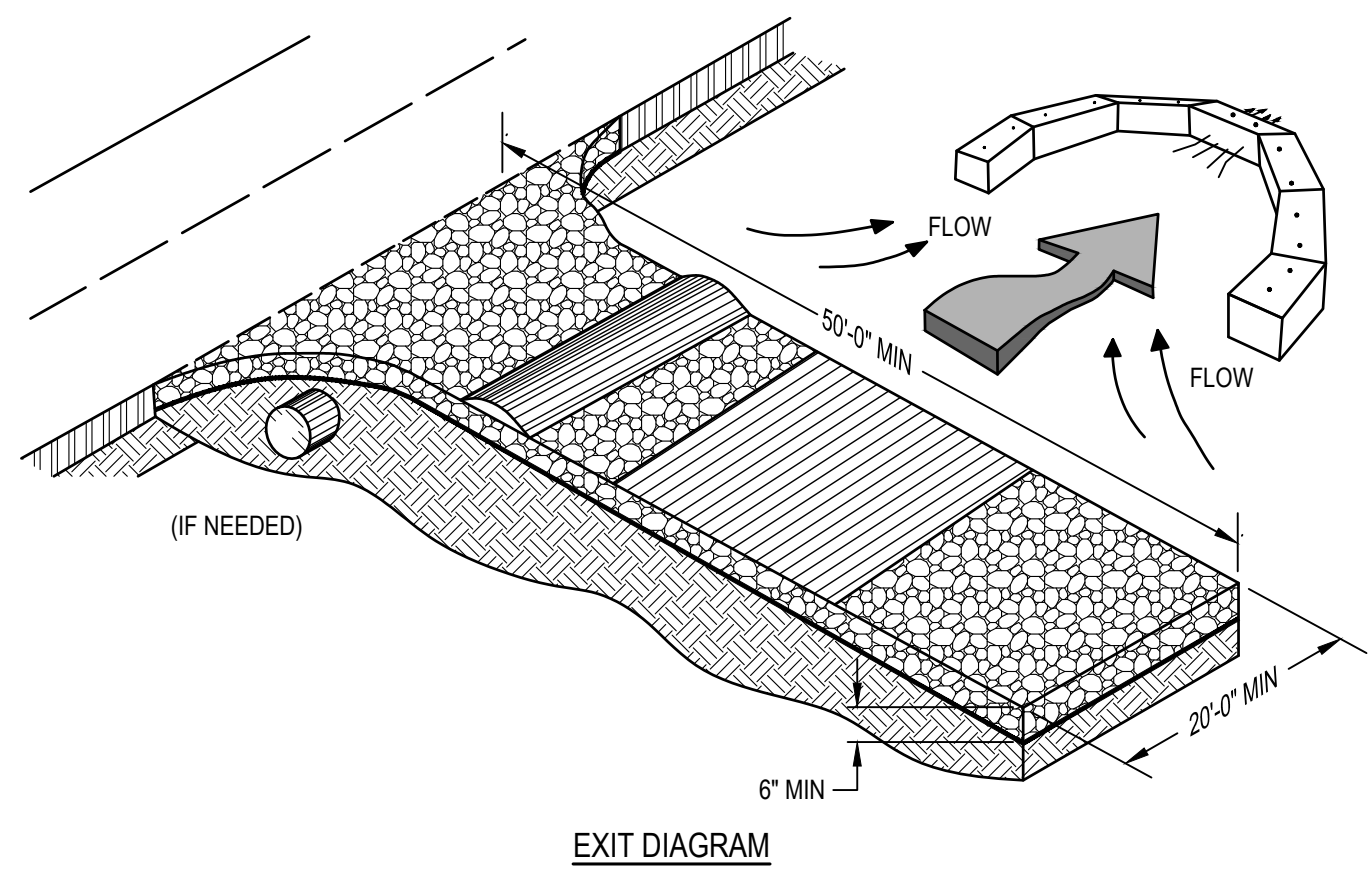
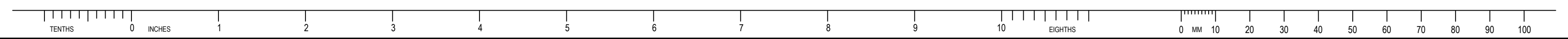
AREA
CERTIFICATE OF AUTHORIZATION
ECA2221

CLIENT DWG NO.

DRAWING NO.
C.425

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ANSI Z39-18



- NOTES:**
1. AVOID LOCATING ON STEEP SLOPES OR AT CURVES ON PUBLIC ROADS.
 2. REMOVE ALL VEGETATION AND OTHER UNSUITABLE MATERIAL FROM THE FOUNDATION AREA, GRADE, AND CROWN FOR POSITIVE DRAINAGE.
 3. AGGREGATE SIZE SHALL BE IN ACCORDANCE WITH NATIONAL STONE ASSOCIATION R-2 (1-1/2" TO 3-1/2" STONE).
 4. GRAVEL PAD SHALL HAVE A MINIMUM THICKNESS OF 6".
 5. PAD WIDTH SHALL BE EQUAL FULL WIDTH AT ALL POINTS OF VEHICULAR EGRESS, BUT NO LESS THAN 20'-0".
 6. A DIVERSION RIDGE SHOULD BE CONSTRUCTED WHEN GRADE TOWARD PAVED AREA IS GREATER THAN 2%.
 7. INSTALL PIPE UNDER THE ENTRANCE IF NEEDED TO MAINTAIN DRAINAGE DITCHES.
 8. WHEN WASHING IS REQUIRED, IT SHOULD BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE THAT DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN (DIVERT ALL SURFACE RUNOFF AND DRAINAGE FROM THE ENTRANCE TO A SEDIMENT CONTROL DEVICE).
 9. WASHRACKS AND/OR TIRE WASHERS MAY BE REQUIRED DEPENDING ON SCALE AND CIRCUMSTANCE. IF NECESSARY, WASHRACK DESIGN MAY CONSIST OF ANY MATERIAL SUITABLE FOR TRUCK TRAFFIC THAT WILL REMOVE MUD AND DIRT.
 10. MAINTAIN AREA IN A WAY THAT PREVENTS TRACKING AND/OR FLOW OF MUD ONTO PUBLIC RIGHTS-OF-WAYS. THIS MAY REQUIRE TOP DRESSING, REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT.

Co CRUSHED STONE CONSTRUCTION EXIT

- NOTES:**
1. USE STEEL OR WOOD POSTS OR AS SPECIFIED BY THE EROSION, SEDIMENTATION, AND POLLUTION CONTROL PLAN.
 2. HEIGHT (") IS TO BE SHOWN ON THE EROSION, SEDIMENTATION, AND POLLUTION CONTROL PLAN.

Sd1 SILT FENCE - TYPE A

MULCHING APPLICATION REQUIREMENTS

MATERIAL	INSTALLATION
STRAW OR HAY	2' TO 4" DEPTH
GEOTEXTILES, JUTE MATTING, NETTING, ETC.	SEE MANUFACTURER'S RECOMMENDATIONS

Ds1 DISTURBED AREA STABILIZATION (WITH MULCH ONLY)

TABLE 1
PLANT, PLANTING RATE AND PLANTING DATE FOR TEMPORARY COVER OR COMPANION CROPS¹

SPECIES	BROADCAST RATES (PLS) ^{2,4}		RESOURCE AREA ³	PLANTING DATES BY RESOURCE AREA												REMARKS				
	RATES PER ACRE	PLS RATES PER 1,000 SQ. FT.		SOLID LINE INDICATE OPTIMUM DATES, DOTTED LINES INDICATE PERMISSIBLE BUT MARGINAL DATES																
						J	F	M	A	M	J	J	A	S	O	N	D			
BARLEY																				
ALONE	3 BU (144 LBS)	3.3 LBS	M-L															14,000 SEED PER POUND. WINTER HARDY. USE ON PRODUCTIVE SOILS.		
MIXTURE	1/2 BU (24 LBS)	0.6 LBS	P																	
			C																	
LESPEDeza, ANNUAL (SCARIFIED)																				
ALONE	40 LBS	0.9 LB	M-L															200,000 SEED PER POUND. MAY VOLUNTEER FOR SEVERAL YEARS. USE INOCULANT EL.		
MIXTURE	10 LBS	0.2 LB	P																	
			C																	
LOVEGRASS, WEEPING																				
ALONE	4 LBS	0.1 LBS	M-L															1,500,000 SEED PER POUND. MAY LAST FOR SEVERAL YEARS.		
MIXTURE	2 LBS	0.05 LBS	P																	
			C																	
MILLET, BROWNTOP																				
ALONE	40 LBS	0.9 LBS	M-L															137,000 SEED PER POUND. QUICK DENSE COVER. WILL PROVIDE EXCESSIVE COMPETITION IN MIXTURES IF SEEDED AT HIGH RATE.		
MIXTURE	10 LBS	0.02 LBS	P																	
			C																	
MILLET, PEARL																				
ALONE	50 LBS	1.1 LBS	M-L															88,000 SEED PER POUND. QUICK DENSE COVER. MAY REACH 5 FEET IN HEIGHT. NOT RECOMMENDED FOR MIXTURES.		
			P																	
			C																	
OATS																				
ALONE	4 BU (128 LBS)	2.9 LBS	M-L															13,000 SEED PER POUND. USE ON PRODUCTIVE SOILS. NOT AS A WINTER HARDY AS RYE OR BARLEY.		
MIXTURE	1 BU (32 LBS)	0.7 LBS	P																	
			C																	
RYE																				
ALONE	3 BU (168 LBS)	3.9 LBS	M-L															18,000 SEED PER POUND. QUICK COVER. DROUGHT TOLERANT AND WINTER HARDY.		
MIXTURE	1/2 BU (28 LBS)	0.6 LBS	P																	
			C																	
RYEGRASS, ANNUAL																				
ALONE	40 LBS	0.9 LBS	M-L															227,000 SEED PER POUND. DENSE COVER. VERY COMPETITIVE AND IS NOT TO BE USED IN MIXTURES.		
			P																	
			C																	
SUDANGRASS																				
ALONE	60 LBS	1.4 LBS	M-L															55,000 SEED PER POUND. GOOD ON DROUGHTY SITES. NOT RECOMMENDED FOR MIXTURES.		
			P																	
			C																	
TRITICALE																				
ALONE	3 BU (144 LBS)	3.3 LBS	C															USE ON LOWER PART OF SOUTHERN COASTAL PLAIN AND ATLANTIC COASTAL FLATWOODS ONLY.		
MIXTURE	1/2 BU (24 LBS)	0.6 LBS																		
WHEAT																				
ALONE	3 BU (180 LBS)	4.1 LBS	M-L															15,000 SEED PER POUND. WINTER HARDY.		
MIXTURE	1/2 BU (30 LBS)	0.7 LBS	P																	
			C																	

1. TEMPORARY COVER CROPS ARE VERY COMPETITIVE AND WILL CROWD OUT PERENNIALS IF SEEDED TOO HEAVILY.
2. REDUCE SEEDING RATES BY 50% WHEN DRILLED.
3. M-L REPRESENTS THE MOUNTAIN; BLUE RIDGE; AND RIDGES AND VALLEYS MLRAs. P REPRESENTS THE SOUTHERN PIEDMONT MLRA. C REPRESENTS SOUTHERN COASTAL PLAIN; SAND HILLS; BLACK LANDS; AND ATLANTIC COAST FLATWOODS MLRAs.
4. PLS IS AN ABBREVIATION FOR PURE LIVE SEED.

- GENERAL NOTES:**
1. UNUSUAL SITE CONDITIONS MAY REQUIRE HEAVIER SEEDING RATES.
 2. SEEDING DATES MAY NEED TO BE ALTERED TO FIT TEMPERATURE VARIATIONS AND LOCAL CONDITIONS.
 3. RE-SEED AREAS WHERE AN ADEQUATE STAND OF TEMPORARY VEGETATION FAILS TO EMERGE OR WHERE A POOR STAND EXISTS.

Ds2 DISTURBED AREA STABILIZATION (WITH TEMPORARY SEEDING)

GSWCC GEORGIA SOIL AND WATER CONSERVATION COMMISSION

Philip W Marcum
Level II Certified Design Professional

CERTIFICATION NUMBER 0000010833
ISSUED: 01/31/2022 EXPIRES: 01/31/2025

REV	DDMMYY	REVISION / ISSUE DESCRIPTION	DRN	CHK	APP	APP	APP	APP	APP	APP	REF	NUMBER	TITLE
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M. FOWLER CLIENT PROJECT MGR P. MARCUM TECHNICAL MGR M. ABDALLA PROJECT MGR

PROJECT PHASE PERMITTING

PROJECT NO. 738224061

SCALE AS SHOWN

BY DES 07FEB22 DRN 07FEB22 CHK 07FEB22 APP 07FEB22

SUBJECT EROSION SEDIMENTATION AND POLLUTION CONTROL DETAILS SHEET 1

STAMP/SEAL

GEORGIA REGISTERED PROFESSIONAL No. PE030489 18 NOV 2022

TWIN PINES MINERALS LLC
SAUNDERS DEMONSTRATION MINE
MINE ID 2073
WATER MANAGEMENT PONDS

AREA CERTIFICATE OF AUTHORIZATION ECA2221

CLIENT DWG NO.

DRAWING NO. C-441

REV 0

wood.

4000 MEADOW LAKE DRIVE
SUITE 121
BIRMINGHAM, AL 35242
(205) 980-6402

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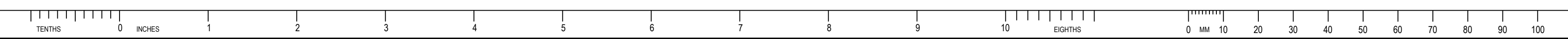


TABLE 1
PLANT, PLANTING RATE AND PLANTING DATE FOR PERMANENT COVER OR COMPANION CROPS¹

SPECIES	BROADCAST RATES (PLS) ^{1,2}		RESOURCE AREA ³	PLANTING DATES BY RESOURCE AREA												REMARKS
	RATES PER ACRE	PLS RATES PER 1,000 SQ. FT.		SOLID LINE INDICATE OPTIMUM DATES, DOTTED LINES INDICATE PERMISSIBLE BUT MARGINAL DATES												
				J	F	M	A	M	J	J	A	S	O	N	D	
BAHIA, PENSACOLA																
ALONE OR WITH TEMPORARY COVER	60 LBS	1.4 LBS	P												166,00 SEED PER POUND. LOW GROWING. SOD FORMING. SLOW TO ESTABLISH. PLANT WITH A COMPANION CROP. WILL SPREAD INTO BERMUDA PASTURES AND LAWNS. MIX WITH SERICEA LESPEDEZA OR WEEPING LOVEGRASS.	
WITH OTHER PERENNIALS	30 LBS	0.7 LBS	C													
BAHIA, WILMINGTON																
ALONE OR WITH TEMPORARY COVER	60 LBS	1.4 LBS	M-L												SAME AS ABOVE	
WITH OTHER PERENNIALS	30 LBS	0.7 LBS	P													
BERMUDA, COMMON																
HULLED SEED ALONE	10 LBS 6	0.2 LBS	P												1,787,000 SEED PER POUND. QUICK COVER. LOW GROWING AND SOD FORMING. FULL SUN. GOOD FOR ATHLETIC FIELDS.	
WITH OTHER PERENNIALS	LBS	0.7 LBS	C													
BERMUDA, COMMON																
UNHULLED SEED WITH TEMPORARY COVER	10 LBS 6	0.2 LBS 0.1	P												PLANT WITH WINTER ANNUALS PLANT WITH TALL FESCUE	
WITH OTHER PERENNIALS	LBS	LBS	C													
BERMUDA SPRIGS																
COASTAL, COMMON, MIDLAND, OR TIFT 44	40 CU. FT. 0.9 CU. FT. OR SOD PLUGS 3'x3'		M-L												A CUBIC FOOT CONTAINS APPROXIMATELY 650 SPRIGS. A BUSHEL CONTAINS 1.25 CU. FT. OR APPROXIMATELY 800 SPRIGS.	
COASTAL, COMMON OR TIFT 44			P													SAME AS ABOVE
TIFT 78			C													
CENTIPEDE																
BLOCK SOD ONLY			P												DROUGHT TOLERANT. FULL SUN OR PARTIAL SHADE. EFFECTIVE ADJACENT TO CONCRETE AND IN CONCENTRATED FLOW AREAS. IRRIGATION IS NEEDED UNTIL FULLY ESTABLISHED. DO NOT PLANT NEAR PASTURES. WINTER HARDY AS FAR NORTH AS ATHENS AND ATLANTA.	
			C													
CROWN VETCH																
WITH WINTER ANNUALS OR COOL SEASON GRASSES	15 LBS	0.3 LBS	M-L												100,000 SEED PER POUND. DENSE GROWTH. DROUGHT TOLERANT AND FIRE RESISTANT. ATTRACTIVE ROSE, PINK AND WHITE BLOSSOMS SPRING TO LATE FALL. MIX WITH 30 POUNDS OF TALL FESCUE OR 15 POUNDS OF RYE. INOCULATE SEED WITH M INOCULANT. USE FROM NORTH ATLANTA AND NORTHWARD.	
			P													
FESCUE, TALL																
ALONE	50 LBS 30	1.1 LBS	M-L												227,000 SEED PER POUND. USE ALONE ONLY ON BETTER SITES. MIX WITH PERENNIAL LESPEDEZA OR CROWN VETCH. APPLY TOP DRESSING IN SPRING FOLLOWING FALL PLANTINGS. NOT FOR HEAVY USE AREAS OR ATHLETIC FIELDS.	
WITH OTHER PERENNIALS	LBS	0.7 LBS	P													

¹ REDUCE SEEDING RATES BY 50% WHEN DRILLED.
² PLS IS AN ABBREVIATION FOR PURE LIVE SEED.
³ M-L REPRESENTS THE MOUNTAIN; BLUE RIDGE; AND RIDGES AND VALLEYS MLRAs.
P REPRESENTS THE SOUTHERN PIEDMONT MLRA.
C REPRESENTS SOUTHERN COASTAL PLAIN; SAND HILLS; BLACK LANDS; AND ATLANTIC COAST FLATWOODS MLRAs.

TABLE 2

SUGGESTED SEEDBED DEPTHS	
SLOPE	SEEDBED DEPTH
3:1 OR FLATTER	1" TO 4" DEPTH
2:1 TO 3:1	4" DEPTH
2:1 OR STEEPER	DEPRESSIONS EVERY 6" TO 8" HAND-DUG, IF NECESSARY

- GENERAL NOTES:**
- UNUSUAL SITE CONDITIONS MAY REQUIRE HEAVIER SEEDING RATES.
 - SEEDING DATES MAY NEED TO BE ALTERED TO FIT TEMPERATURE VARIATIONS AND LOCAL CONDITIONS.
 - RE-SEED AREAS WHERE AN ADEQUATE STAND OF TEMPORARY VEGETATION FAILS TO EMERGE OR WHERE A POOR STAND EXISTS.

SPECIES	BROADCAST RATES (PLS) ^{1,2}		RESOURCE AREA ³	PLANTING DATES BY RESOURCE AREA												REMARKS
	RATES PER ACRE	PLS RATES PER 1,000 SQ. FT.		SOLID LINE INDICATE OPTIMUM DATES, DOTTED LINES INDICATE PERMISSIBLE BUT MARGINAL DATES												
				J	F	M	A	M	J	J	A	S	O	N	D	
LESPEDEZA SERICEA																
SCARIFIED	60 LBS	1.4 LBS	M-L												350,000 SEED PER POUND. WIDELY ADAPTED. LOW MAINTENANCE. MIX WITH WEEPING LOVEGRASS, COMMON BERMUDA, BAHIA OR TALL FESCUE. TAKES 2 TO 3 YEARS TO BECOME FULLY ESTABLISHED. EXCELLENT ON ROAD BANKS. INOCULATE SEED WITH EL INOCULANT.	
UNSCARIFIED	75 LBS	1.7 LBS	M-L													MIX WITH TALL FESCUE OR WINTER ANNUALS.
SEED-BEARING HAY	3 TONS	1338 LBS	M-L													CUT WHEN SEED MIXTURE IS MATURE, BUT BEFORE IT SHATTERS. ADD TALL FESCUE OR WINTER ANNUALS.
LESPEDEZA AMBRO VIRGATA OR APPALOW																
SCARIFIED	60 LBS	1.4 LBS	M-L												300,000 SEED PER POUND. HEIGHT OF GROWTH IS 18 TO 24 INCHES. ADVANTAGEOUS IN URBAN AREAS. SPREADING-TYPE GROWTH. NEW GROWTH HAS BRONZE COLORATION. MIX WITH WEEPING LOVEGRASS, COMMON BERMUDA, BAHIA, TALL FESCUE OR WINTER ANNUALS. DO NOT MIX WITH SERICEA LESPEDEZA. SLOW TO DEVELOP SOLID STANDS. INOCULATE SEED WITH EL INOCULANT.	
UNSCARIFIED	75 LBS	1.7 LBS	M-L													
			C													
LESPEDEZA, SHRUB																
PLANTS		3'x3'	M-L												PROVIDE WILDLIFE FOOD AND COVER.	
LOVEGRASS, WEEPING																
ALONE	4 LBS	0.1 LBS	M-L												1,500,000 SEED PER POUND. QUICK COVER. DROUGHT TOLERANT. GROWS WELL WITH SERICEA LESPEDEZA ON ROAD BANKS.	
WITH OTHER PERENNIALS	2 LBS	0.05 LBS	C													
MAIDENCANE																
SPRIGS	2'x3' SPACING	ALL													FOR VERY WET SITES. MAY CLOG CHANNELS. DIG SPRIGS FROM LOCAL SOURCES. USE ALONG RIVER BANKS AND SHORELINES.	
PANICGRASS, ATLANTIC COASTAL																
	20 LBS	0.5 LBS	P												GROWS WELL ON COASTAL SAND DUNES, BORROW AREAS AND GRAVEL PITS. PROVIDES WINTER COVER FOR WILDLIFE. MIX WITH SERICEA LESPEDEZA EXCEPT ON SAND DUNES.	
REED CANARY GRASS																
ALONE	50 LBS 30	1.1 LBS	M-L												GROWS SIMILAR TO TALL FESCUE.	
WITH OTHER PERENNIALS	LBS	0.7 LBS	P													
SUNFLOWER, 'AZTEC' MAXIMILLIAN																
	10 LBS	0.2 LBS	M-L												227,000 SEED PER POUND. MIX WITH WEEPING LOVEGRASS OR OTHER LOW GROWING GRASSES OR LEGUMES.	

TABLE 3
FERTILIZER REQUIREMENTS FOR PERMANENT VEGETATION

TYPES OF SPECIES	PLANTING YEAR	ANALYSIS OR EQUIVALENT (N-P-K)	RATE (LBS./ACRE)	N TOP DRESSING RATE (LBS./ACRE)
COOL SEASON GRASSES	FIRST	6-12-12	1500	50-100 1/2/
	SECOND MAINTENANCE	6-12-12 10-10-10	1000 400	30
COOL SEASON GRASSES AND LEGUMES	FIRST	6-12-12 0-10-10	1500	0-50 1/
	SECOND MAINTENANCE	6-12-12 0-10-10	1000 400	--
GROUND COVERS	FIRST	10-10-10 10-10-10	1300 3/ 1300	--
	SECOND MAINTENANCE	10-10-10	3/ 1100	--
PINE SEEDINGS	FIRST	20-10-5	ONE21-GRAM PELLET PER SEEDING PLACED IN THE CLOSING HOLE	--
SHRUB LESPEDEZA	FIRST MAINTENANCE	10-10-10 10-10-10	700 700 4/	--
TEMPORARY COVER CROPS SEEDED ALONE	FIRST	10-10-10	500	30 5/
WARM SEASON GRASSES	FIRST	6-12-12 6-12-12	1500	50-100 2/6/
	SECOND MAINTENANCE	10-10-10	800 400	50-100 2/ 30
WARM SEASON GRASSES AND LEGUMES	FIRST	6-12-12 0-10-10	1500	50 6/
	SECOND MAINTENANCE	10-10-10	1000 400	

- LIME**
- AGRICULTURAL LIME IS REQUIRED AT THE RATE OF 2 TONS PER ACRE.
 - AGRICULTURAL LIME SHALL BE WITHIN THE SPECIFICATIONS OF THE GEORGIA DEPARTMENT OF AGRICULTURE.
 - LIME SPREAD BY CONVENTIONAL EQUIPMENT SHALL BE "GROUND LIMESTONE". GROUND LIMESTONE IS CALCITIC OR DOLOMITIC LIMESTONE GROUND SO THAT 90% OF THE MATERIAL WILL PASS THROUGH A 10-MESH SIEVE, NOT LESS THAN 50% WILL PASS THROUGH A 50-MESH SIEVE AND NOT LESS THAN 25% WILL PASS THROUGH A 100-MESH SIEVE.
 - AGRICULTURAL LIME SPREAD BY HYDRAULIC SEEDING EQUIPMENT SHALL BE "FINELY GROUND LIMESTONE". FINELY GROUND LIMESTONE IS CALCITIC OR DOLOMITIC LIMESTONE GROUND SO THAT 98% OF THE MATERIAL WILL PASS THROUGH A 20-MESH SIEVE AND NOT LESS THAN 70% WILL PASS THROUGH A 100-MESH SIEVE.
- 1/ APPLY IN SPRING FOLLOWING SEEDING.
2/ APPLY IN SPLIT APPLICATIONS WHEN HIGH RATES ARE USED.
3/ APPLY IN 3 SPLIT APPLICATIONS.
4/ APPLY WHEN PLANTS ARE PRUNED.
5/ APPLY TO GRASS SPECIES ONLY.
6/ APPLY WHEN PLANTS GROW TO A HEIGHT OF 2 TO 4 INCHES.

GSWCC GEORGIA SOIL AND WATER CONSERVATION COMMISSION

Philip W Marcum
Level II Certified Design Professional

CERTIFICATION NUMBER 0000010833
ISSUED: 01/31/2022 EXPIRES: 01/31/2025

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Ds3 DISTURBED AREA STABILIZATION (WITH PERMANENT VEGETATION)

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P. MARCUM TECHNICAL MGR
M. ABDALLA PROJECT MGR

PROJECT PHASE PERMITTING

PROJECT NO. 738224061

SCALE AS SHOWN

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GEORGIA REGISTERED PROFESSIONAL ENGINEER
No. PE030489
18 NOV 2022

TWIN PINES MINERALS LLC
SAUNDERS DEMONSTRATION MINE
MINE ID 2073
WATER MANAGEMENT PONDS

wood
4000 MEADOW LAKE DRIVE
SUITE 121
BIRMINGHAM, AL 35242
(205) 980-6402

AREA CERTIFICATE OF AUTHORIZATION ECA2221

CLIENT DWG NO.

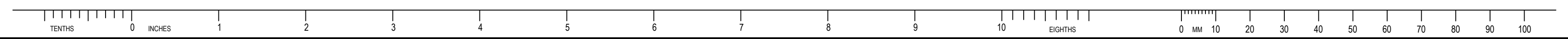
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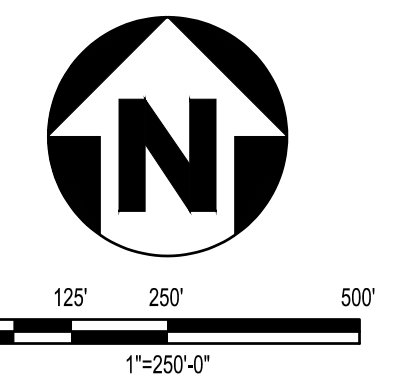
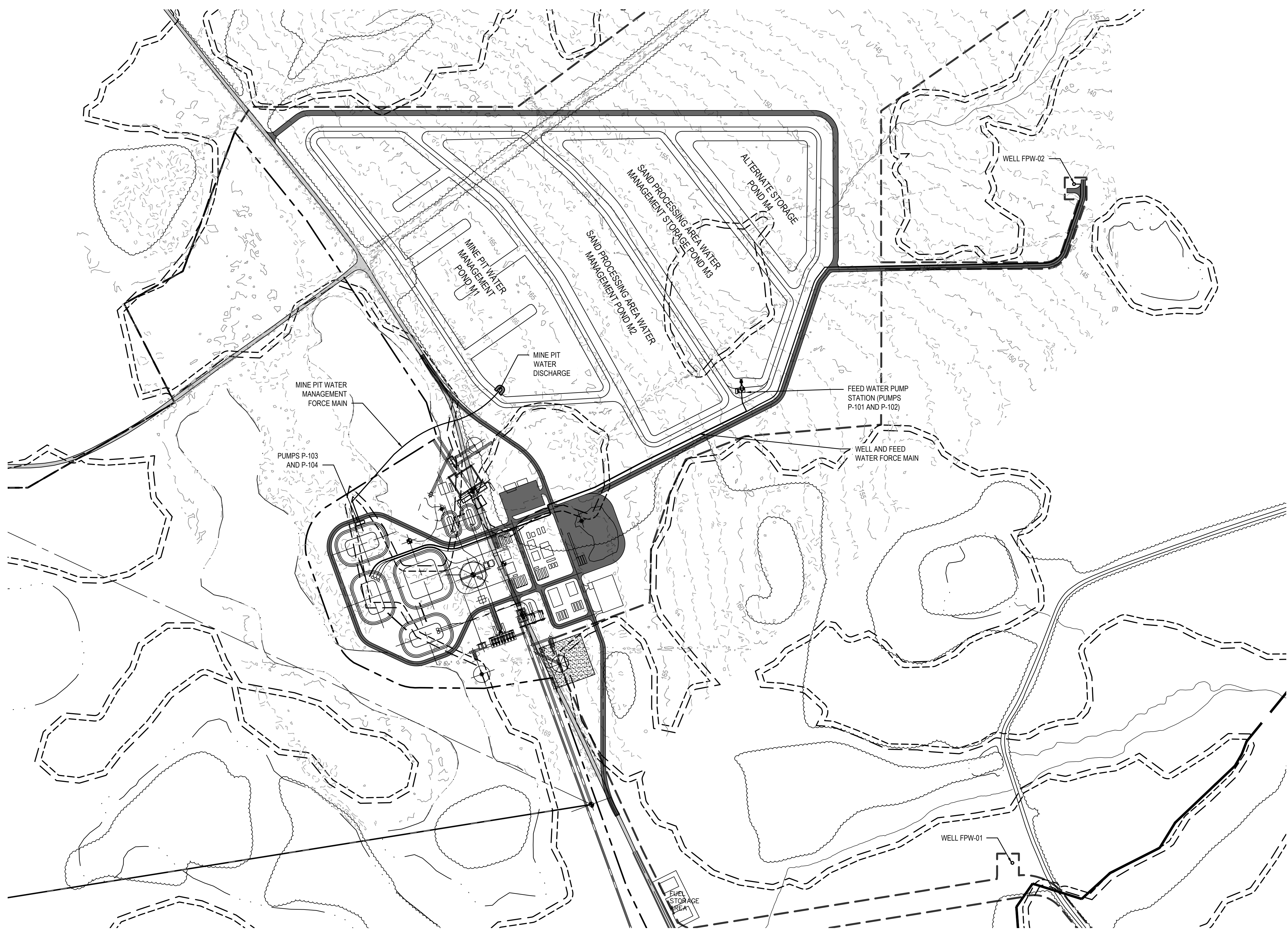
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PERMITTING		
PROJECT NO.	BY	DDMMYY
7382224061	DES	07FEB22
SCALE	DRN	07FEB22
	CHK	07FEB22
	APP	07FEB22
AS SHOWN		

TWIN PINES MINERALS LLC
SAUNDERS DEMONSTRATION MINE
MINE ID 2073
WATER MANAGEMENT PONDS

AREA
CERTIFICATE OF AUTHORIZATION
ECA2221

CLIENT DWG NO.

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C-500

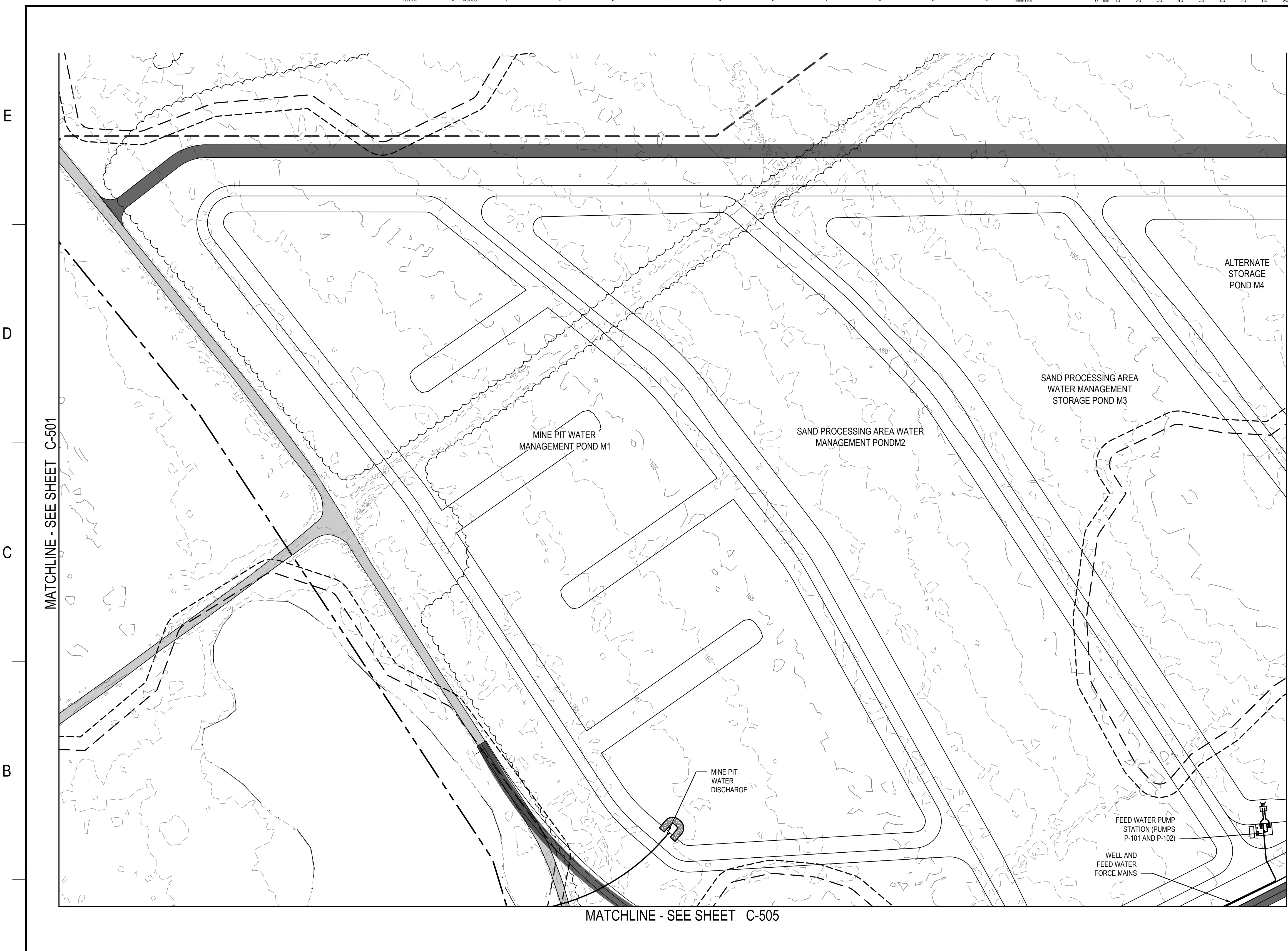
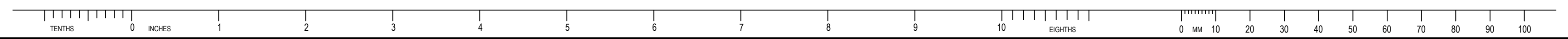
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 4000 MEADOW LAKE DRIVE SUITE 121 BIRMINGHAM, AL 35242 (205) 980-6402	
AREA	CERTIFICATE OF AUTHORIZATION ECA2221
CLIENT DWG NO.	
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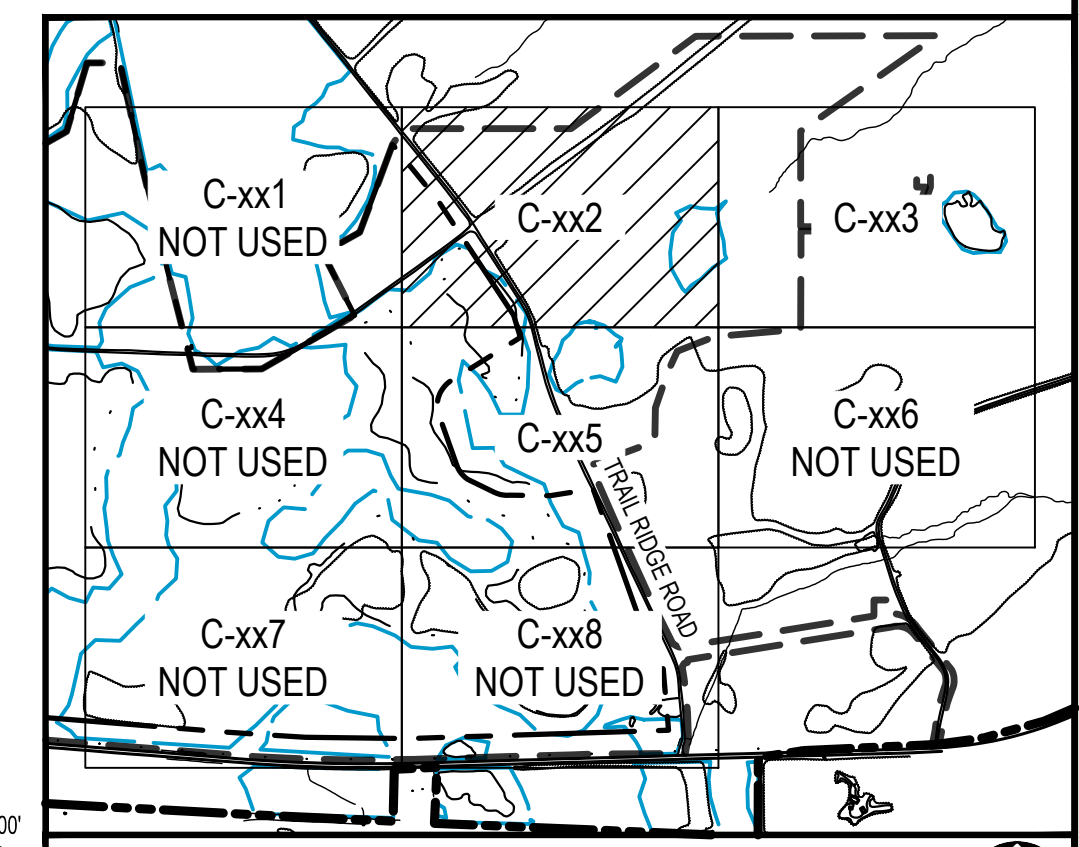
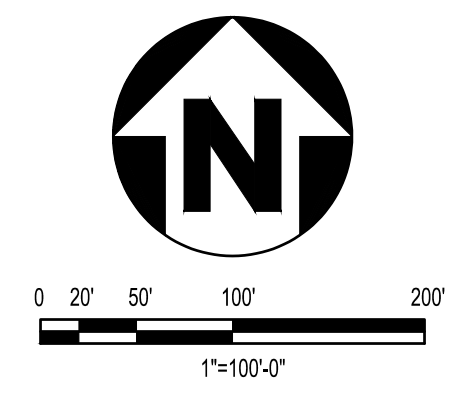
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CLIENT PROJECT MGR	TECHNICAL MGR	PROJECT MGR	
PROJECT PHASE			
PERMITTING			
PROJECT NO.		BY	DDMMYY
7382224061		DES	07FEB22
		DRN	07FEB22
		CHK	07FEB22
		APP	07FEB22
SCALE			
AS SHOWN			

TWIN PINES MINERALS LLC
SAUNDERS DEMONSTRATION MINE
MINE ID 2073
WATER MANAGEMENT PONDS

AREA CERTIFICATE OF AUTHORIZATION
ECA2221

CLIENT DWG NO.

DRAWING NO.
C-502

UTILITY PLAN SHEET 2

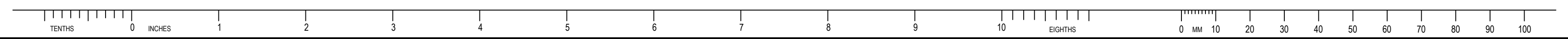
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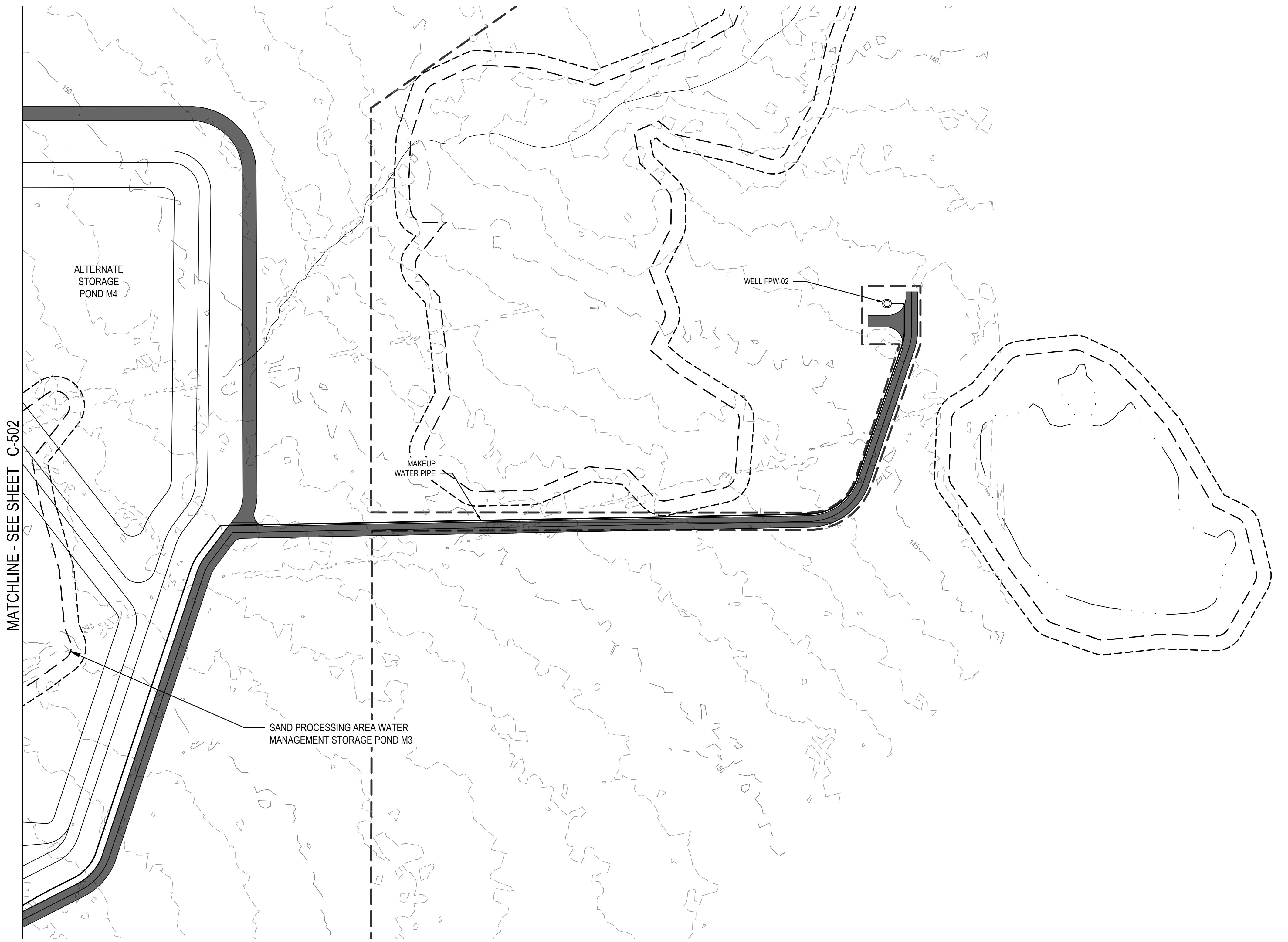
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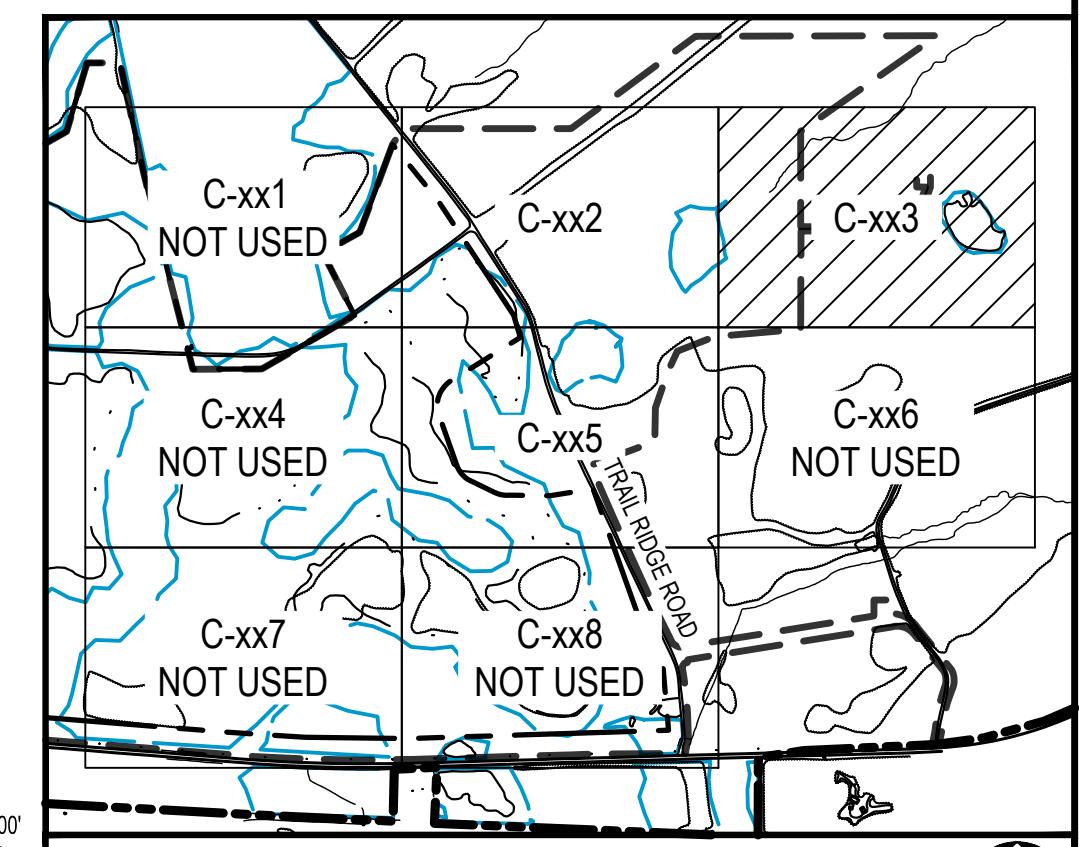
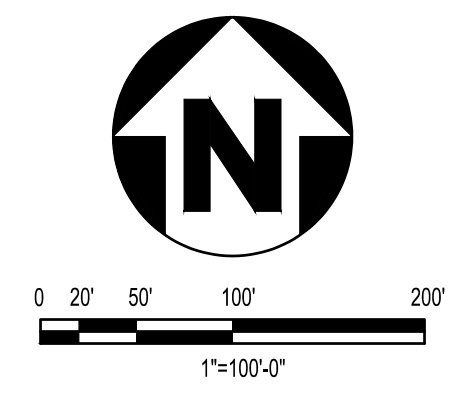
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PROJECT PHASE		
PERMITTING		
PROJECT NO.	BY	DDMMYY
7382224061	DES	07FEB22
SCALE	DRN	07FEB22
	CHK	07FEB22
	APP	07FEB22
AS SHOWN		

TWIN PINES MINERALS LLC
SAUNDERS DEMONSTRATION MINE
MINE ID 2073
WATER MANAGEMENT PONDS

AREA
CERTIFICATE OF AUTHORIZATION
ECA2221

CLIENT DWG NO.

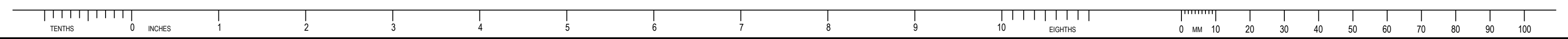
DRAWING NO.
C-503

UTILITY PLAN SHEET 3

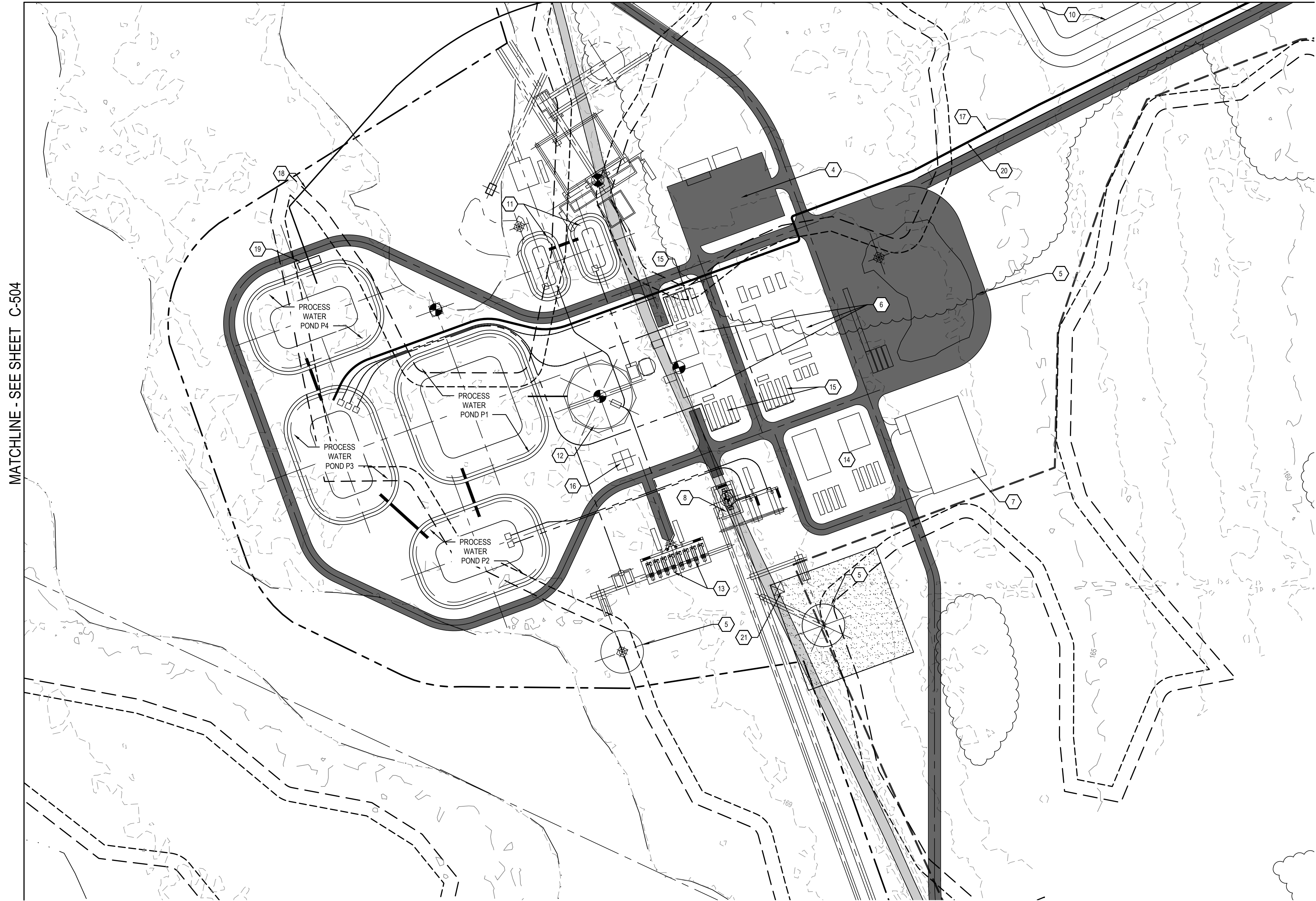
4000 MEADOW LAKE DRIVE SUITE 121 BIRMINGHAM, AL 35242 (205) 980-6402	
AREA	CERTIFICATE OF AUTHORIZATION
ECA2221	
CLIENT DWG NO.	
DRAWING NO.	REV
C-503	0

ANSI D 2024

CAD FILE: W:\AD\2022\UTILITY PLAN SHEET 3.DWG



MATCHLINE - SEE SHEET C-502



LEGEND

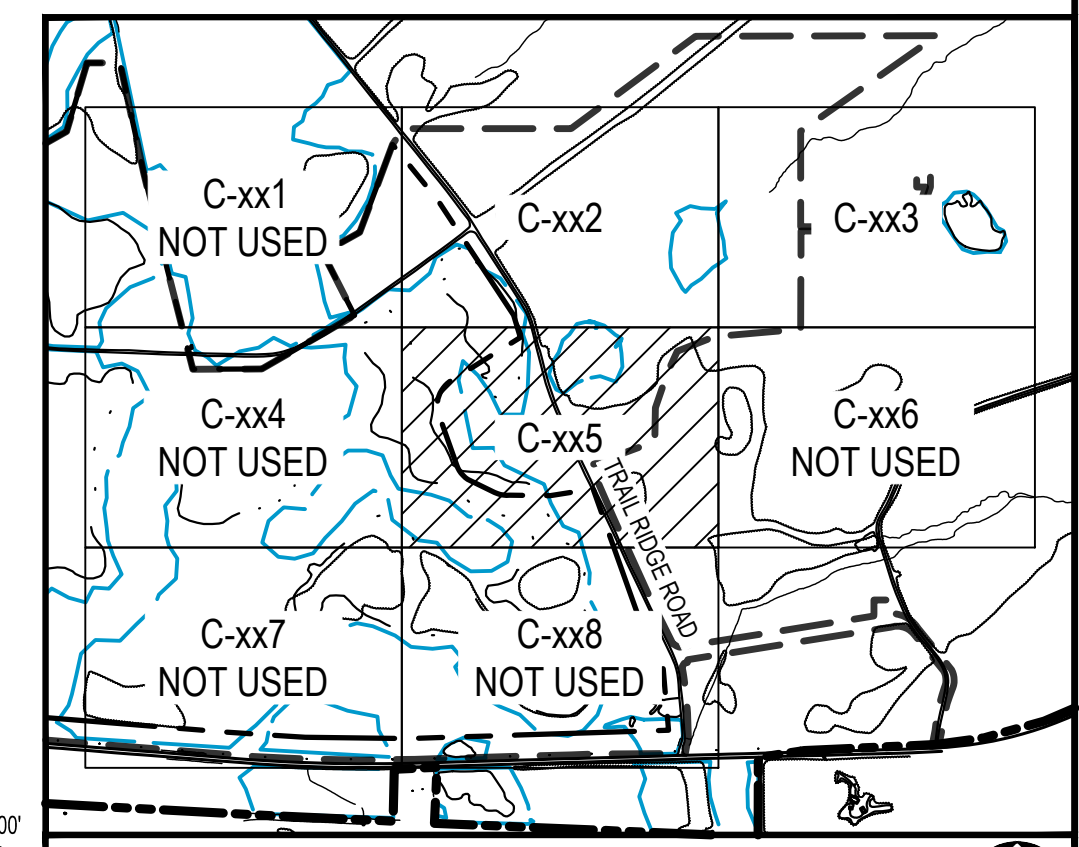
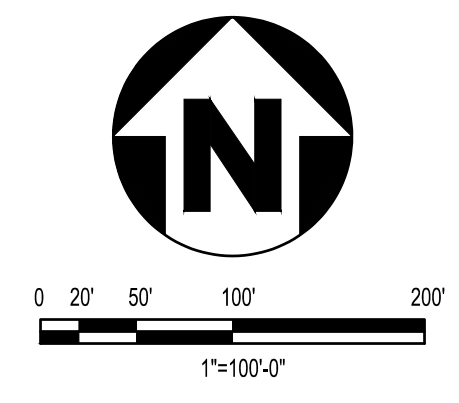
- MINE BOUNDARY
- - - PERMIT BOUNDARY
- EXISTING INDEX CONTOUR
- - - EXISTING INTERMEDIATE CONTOUR

KEYNOTES #

1. NOT USED
2. NOT USED
3. NOT USED
4. PARKING AND OFFICES
5. STOCKPILE
6. PCP/WCP PLANT
7. SUBSTATION
8. COVERED FACILITY
9. NOT USED
10. SAND PROCESSING AREA WATER MANAGEMENT POND
11. TEMPORARY THICKENER UNDERFLOW PONDS
12. THICKENER
13. CENTRIFUGES
14. MAINTENANCE YARD
15. PROCESS WATER TANKS
16. FLOC. BUILDING
17. FEED WATER FORCE MAIN
18. MINE PIT WATER MANAGEMENT FORCE MAIN
19. PUMPS P-103 AND P-104
20. MAKEUP WATER WELL PIPE
21. CONTAINMENT AREA SUMP

MATCHLINE - SEE SHEET C-504

E
D
C
B
A



KEY PLAN
SCALE: NONE

REV	DDMMYY	REVISION / ISSUE DESCRIPTION	DRN	CHK	APP	APP	APP	APP	APP	REV	DDMMYY	REVISION / ISSUE DESCRIPTION	DRN	CHK	APP	APP	APP	APP	REF	NUMBER	TITLE
0	8NOV2022	ISSUED FOR PERMITTING																			

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STAMP/SEAL

APPROVED FOR

M. FOWLER CLIENT PROJECT MGR	P. MARCUM TECHNICAL MGR	M. ABDALLA PROJECT MGR
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PROJECT PHASE: PERMITTING

PROJECT NO. 7382224061	BY DES 07FEB22	DDMMYY 07FEB22
SCALE AS SHOWN	CHK DRN 07FEB22	APP 07FEB22

TWIN PINES MINERALS LLC
SAUNDERS DEMONSTRATION MINE
MINE ID 2073
WATER MANAGEMENT PONDS

wood.
4000 MEADOW LAKE DRIVE
SUITE 121
BIRMINGHAM, AL 35242
(205) 980-6402

CERTIFICATE OF AUTHORIZATION
ECA2221

CLIENT DWG NO.

DRAWING NO.
C-505

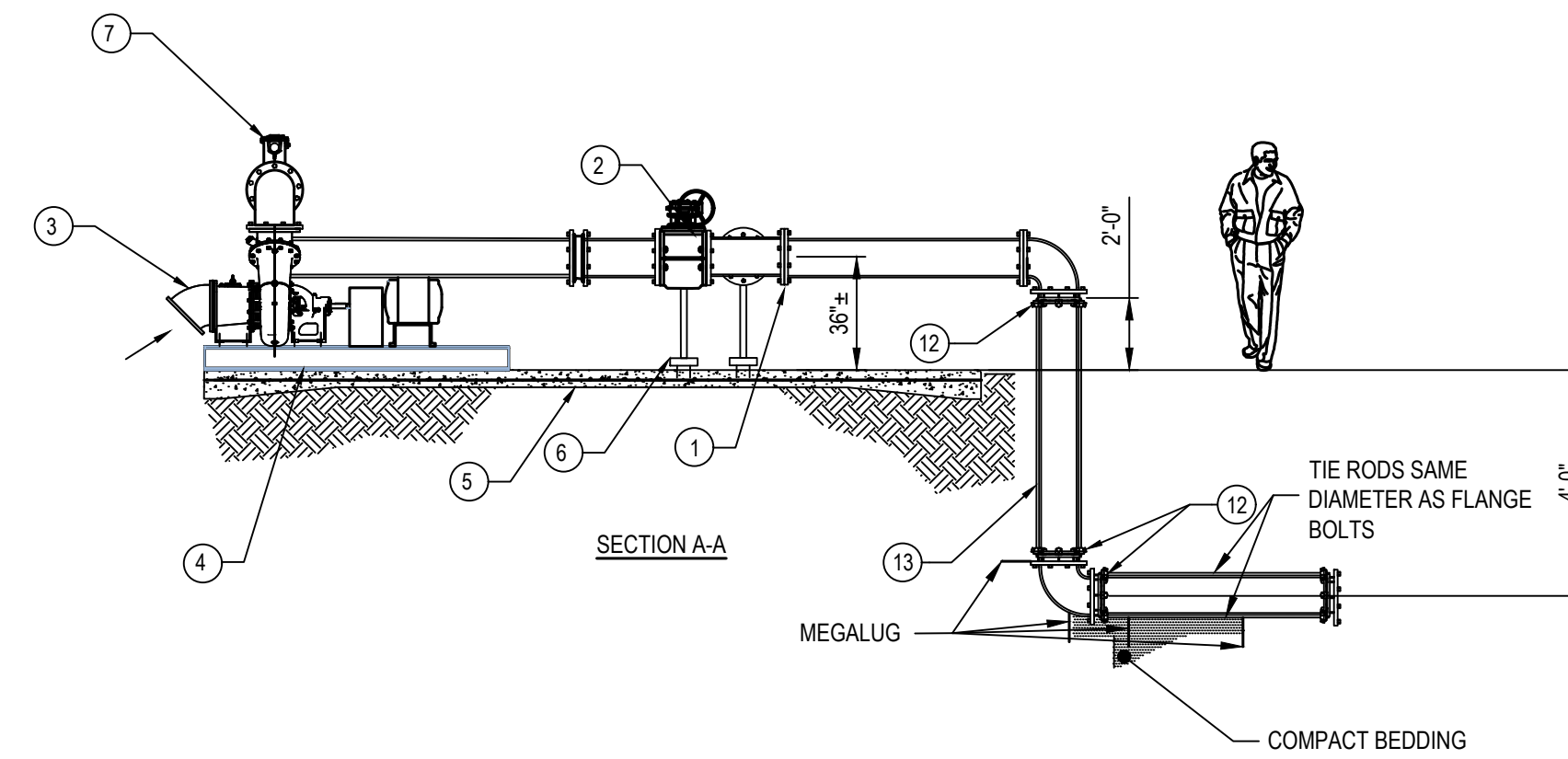
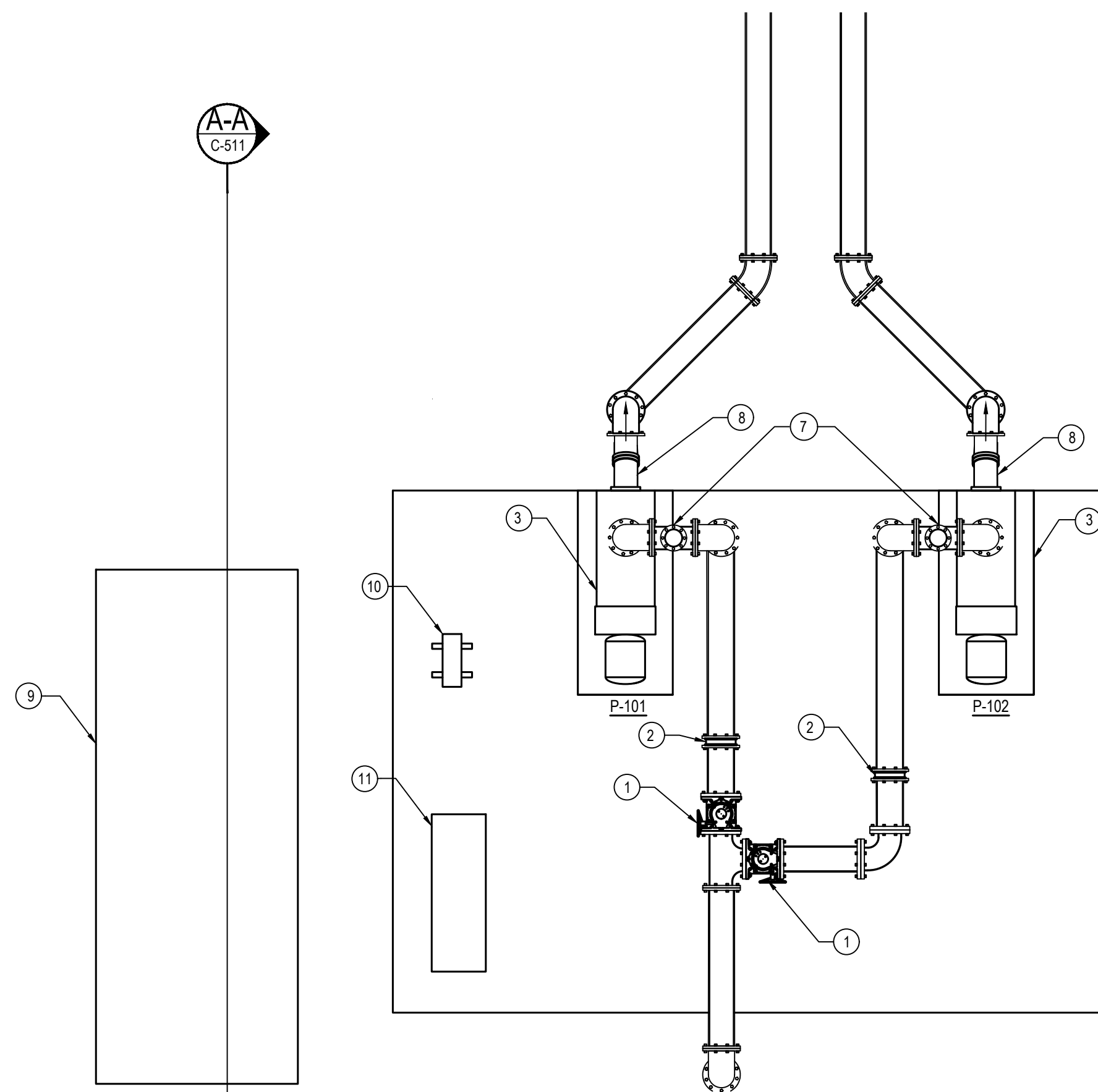
UTILITY PLAN SHEET 5

AREA	CERTIFICATE OF AUTHORIZATION ECA2221
CLIENT DWG NO.	
DRAWING NO. C-505	REV 0

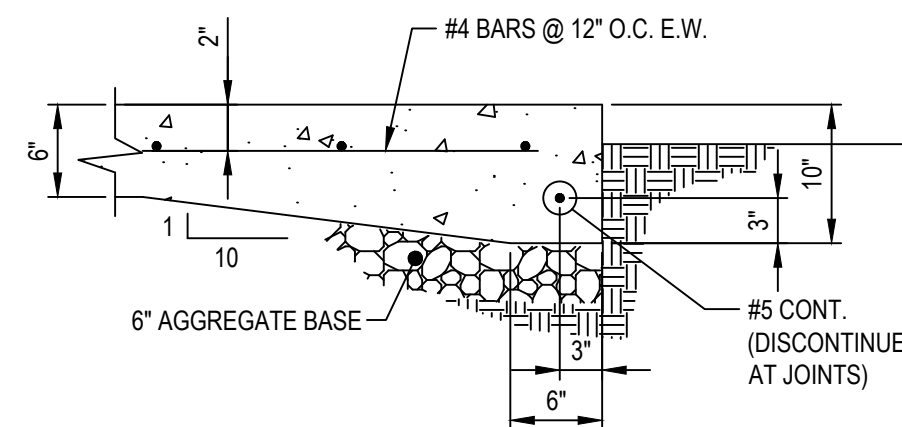
ANSI 8.29:2024

- GENERAL NOTES:**
- PIPE SHOWN TO BE 12" DUCTILE IRON CLASS 150
 - ALL ELECTRICAL ITEMS TO BE COMPLETED BY OTHERS
 - CONTRACTOR TO DIRECT VACUUM AIR RELEASE AWAY FROM ALL ELECTRICAL EQUIPMENT

- KEY NOTES**
- 12" CRISPIN SERIES 800 PLUG VALVES
 - 12" PRATT LUG CHECK VALVE
 - GORMAN RUPP MODEL 112A20-B
 - PUMP SKID
 - CONCRETE PAD
 - CONCRETE TIE ROD BASE
 - 4" VACUUM AIR RELEASE VALVE
 - 45 DEGREE ELBOW
 - DESIGNATED BACK UP GENERATOR AREA
 - VFD IN WEATHER ENCLOSURE MOUNTED ON UNISTRUT
 - ELECTRICAL PANEL (DONE BY OTHERS)
 - 12" 90 DEGREE DIP BEND
 - HDPE



C8 PUMP MANIFOLD DETAIL
SCALE: N.T.S.



A8 CONCRETE THICKEND EDGE
SCALE: N.T.S.

PUMP SCHEDULE

TAG	AREA SERVING	TYPE	FLOW (GPM)	HEAD (FT. WC)	MOTOR SIZE (HP)	MOTOR RATED SPEED (RPM)	PUMP INLET (IN)	PUMP OUTLET (IN)	ELECTRICAL			BASIS OF DESIGN		DESCRIPTION	NOTES
									VOLTS	PH	HZ	MANUFACTURER	MODEL		
P-101	POND MANAGEMENT TRANSFER	BASE MOUNTED SELF PRIMING	2500	45	100	1150	12	12	460	3	60	GORMAN RUPP	112A-B	TO PROCESS PONDS FROM STORMWATER PONDS	1,2,3
P-102	POND MANAGEMENT TRANSFER	BASE MOUNTED SELF PRIMING	2500	45	100	1150	12	12	460	3	60	GORMAN RUPP	112A-B	TO PROCESS PONDS FROM STORMWATER PONDS	1,2,3
P-103	PROCESS POND	BASE MOUNTED SELF PRIMING	2500	25	100	1150	12	12	460	3	60	GORMAN RUPP	112D-B	FROM PROCESS PONDS TO STORMWATER PONDS	1,2,3
P-104	PROCESS POND	BASE MOUNTED SELF PRIMING	2500	25	100	1150	12	12	460	3	60	GORMAN RUPP	112D-B	FROM PROCESS PONDS TO STORMWATER PONDS	1,2,3

1. PROVIDE WITH SKID
2. OWNER TO PROVIDE WITH VFD
3. PUMP TO BE CONTROLLED BY ACOUSTIC LEVEL, SEE DRAWINGS

8	7	6	5	4	3	2	1
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APPROVED FOR _____

M. FOWLER CLIENT PROJECT MGR P. MARCUM TECHNICAL MGR M. ABDALLA PROJECT MGR

TWIN PINES MINERALS LLC
SAUNDERS DEMONSTRATION MINE
MINE ID 2073
WATER MANAGEMENT PONDS

PROJECT NO. 7382224061

SCALE AS SHOWN

PROJECT PHASE	BY	DATE
PERMITTING	DES	07FEB22
	DRN	07FEB22
	CHK	07FEB22
	APP	07FEB22

SUBJECT
UTILITY DETAILS SHEET 1

AREA CERTIFICATE OF AUTHORIZATION ECA2221

CLIENT DWG NO.

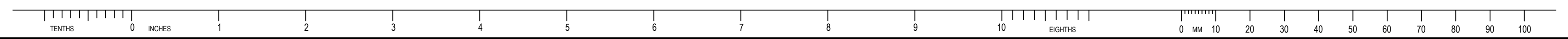
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REV 0

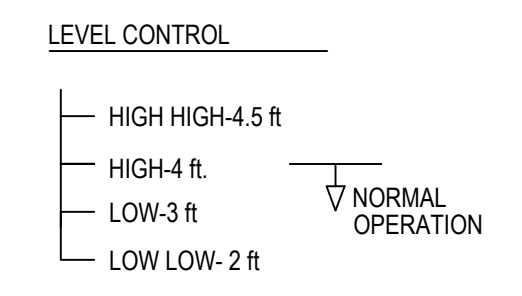
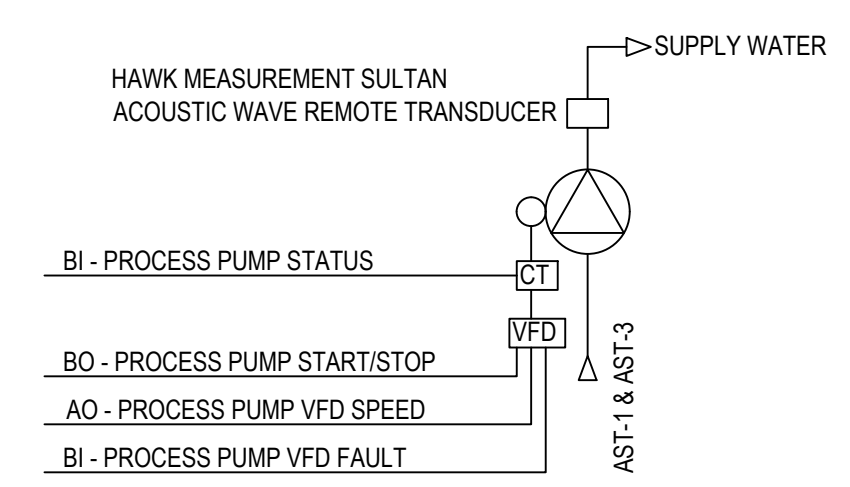
4000 MEADOW LAKE DRIVE
SUITE 121
BIRMINGHAM, AL 35242
(205) 980-6402

wood.

SAVED: 09-Nov-22 11:33 AM PLOTJED: 18-Nov-22 2:49 PM USER: NICHOLSON, PETER

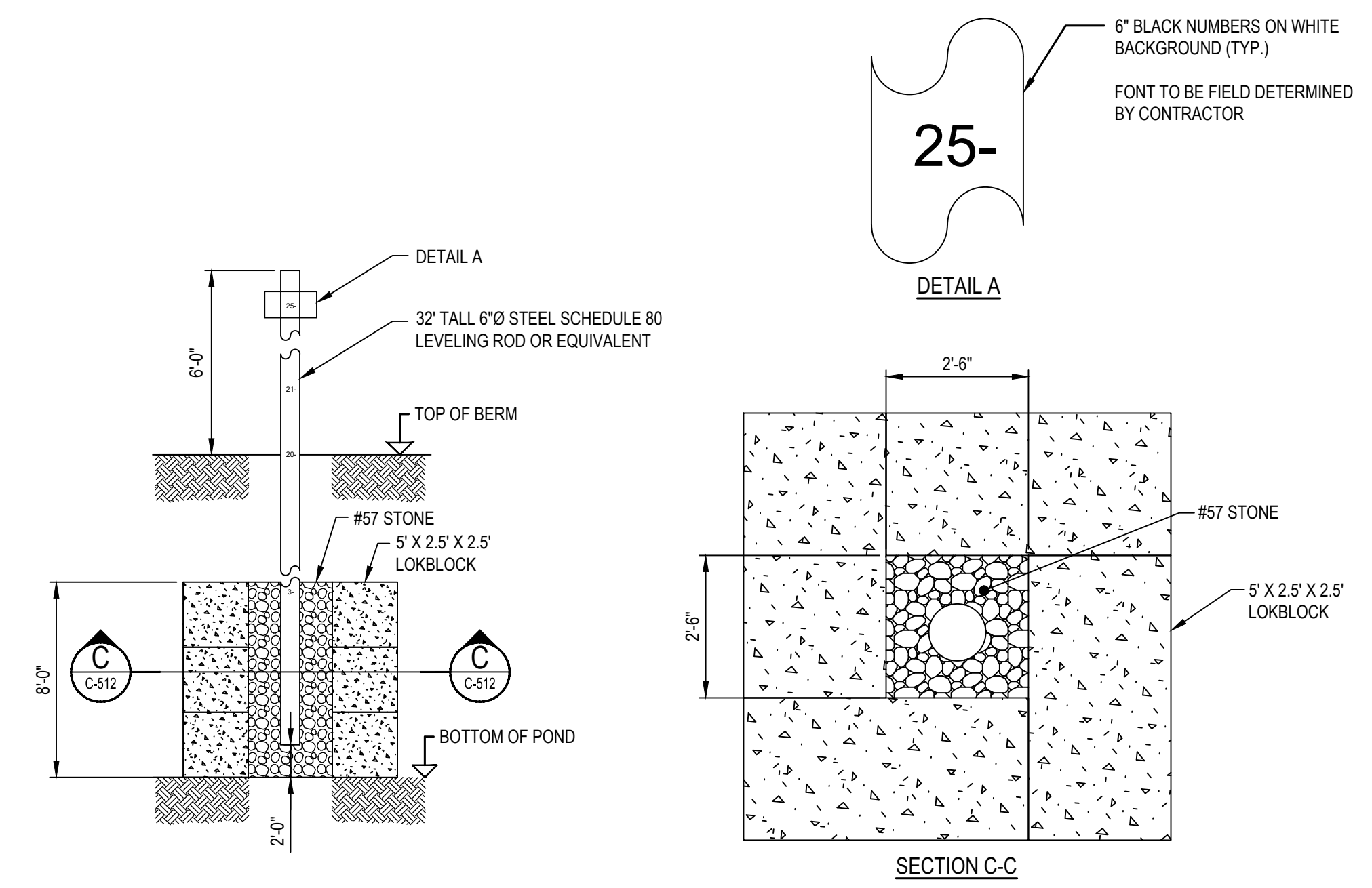


E
D
C
B
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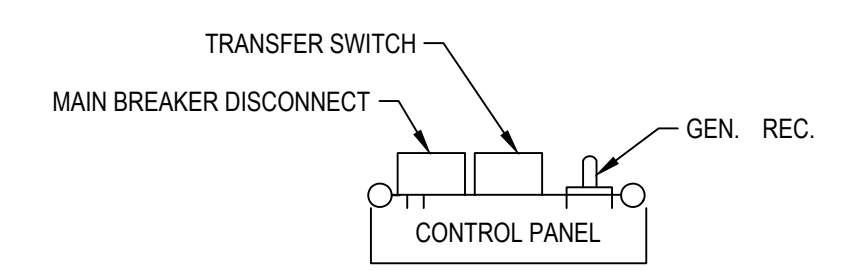


NOTES:
 LOW LOW LEVEL - ALARMS SOUND AND ALL PUMPS ARE OFF
 LOW LEVEL - P-101 PUMP PUMP TURNS OFF
 HIGH LEVEL - P-102 PUMP TURNS ON
 HIGH HIGH LEVEL - ALARMS SOUND AND BOTH PUMPS ARE ON

C8 ACOUSTIC LEVEL CONTROL
 C-512 SCALE: N.T.S.



D4 SITE LEVEL DETAIL
 C-512 SCALE: N.T.S.



CONTROL PANEL INFORMATION PLATES
 NOTE: THE CONTRACTOR SHALL INCLUDE A SCHEMATIC FOR THE CONTROL PANEL COMPONENTS LAMINATED ON BOTH SIDES PLACED IN A POCKET ATTACHED TO THE INSIDE OF THE PANEL DOOR. THE ABOVE PUMP AND MOTOR INFORMATION PLATE SHALL BE PERMANENTLY AFFIXED TO THE INSIDE OF THE PANEL DOOR.

ALUMINUM PLATE WITH PUMP INFORMATION STAMPED IN PLATE TO BE ATTACHED TO INSIDE OF CONTROL PANEL DOOR IN PLAIN VIEW.

PUMP H.P.	_____
CAPACITY GPM	_____
TOTAL DYNAMIC HEAD	_____
OPERATING RPM	_____
IMPELLER NO.	_____
VOLTS	_____
AMPS	_____
PHASE	_____
MANUFACTURER	_____
MODEL NO.	_____
STN #1 _____ SIN #2 _____	

ALUMINUM PLATE WITH PUMP INFORMATION STAMPED IN PLATE TO BE ATTACHED TO INSIDE OF CONTROL PANEL DOOR IN PLAIN VIEW

CONTROL PANEL INFORMATION PLATES

NOTE: THE CONTRACTOR SHALL INCLUDE A SCHEMATIC FOR THE CONTROL PANEL COMPONENTS LAMINATED ON BOTH SIDES PLACED IN A POCKET ATTACHED TO THE INSIDE OF THE PANEL DOOR. THE ABOVE PUMP AND MOTOR INFORMATION PLATE SHALL BE PERMANENTLY AFFIXED TO THE INSIDE OF THE PANEL DOOR.

A4 PUMP CONTROL PANEL
 C-512 SCALE: N.T.S.

0	8NOV2022	ISSUED FOR PERMITTING	MJL	MMA	PWM
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M. ABDALLA PROJECT MGR	
PROJECT PHASE: PERMITTING	
PROJECT NO. 7382224061	BY: DDMMYY DES: 07FEB22 DRN: 07FEB22 CHK: 07FEB22 APP: 07FEB22
SCALE: AS SHOWN	SUBJECT: UTILITY DETAILS SHEET 2

TWIN PINES MINERALS LLC
 SAUNDERS DEMONSTRATION MINE
 MINE ID 2073
 WATER MANAGEMENT PONDS

AREA: CERTIFICATE OF AUTHORIZATION
 ECA2221

CLIENT DWG NO. _____

DRAWING NO. C-512

REV 0

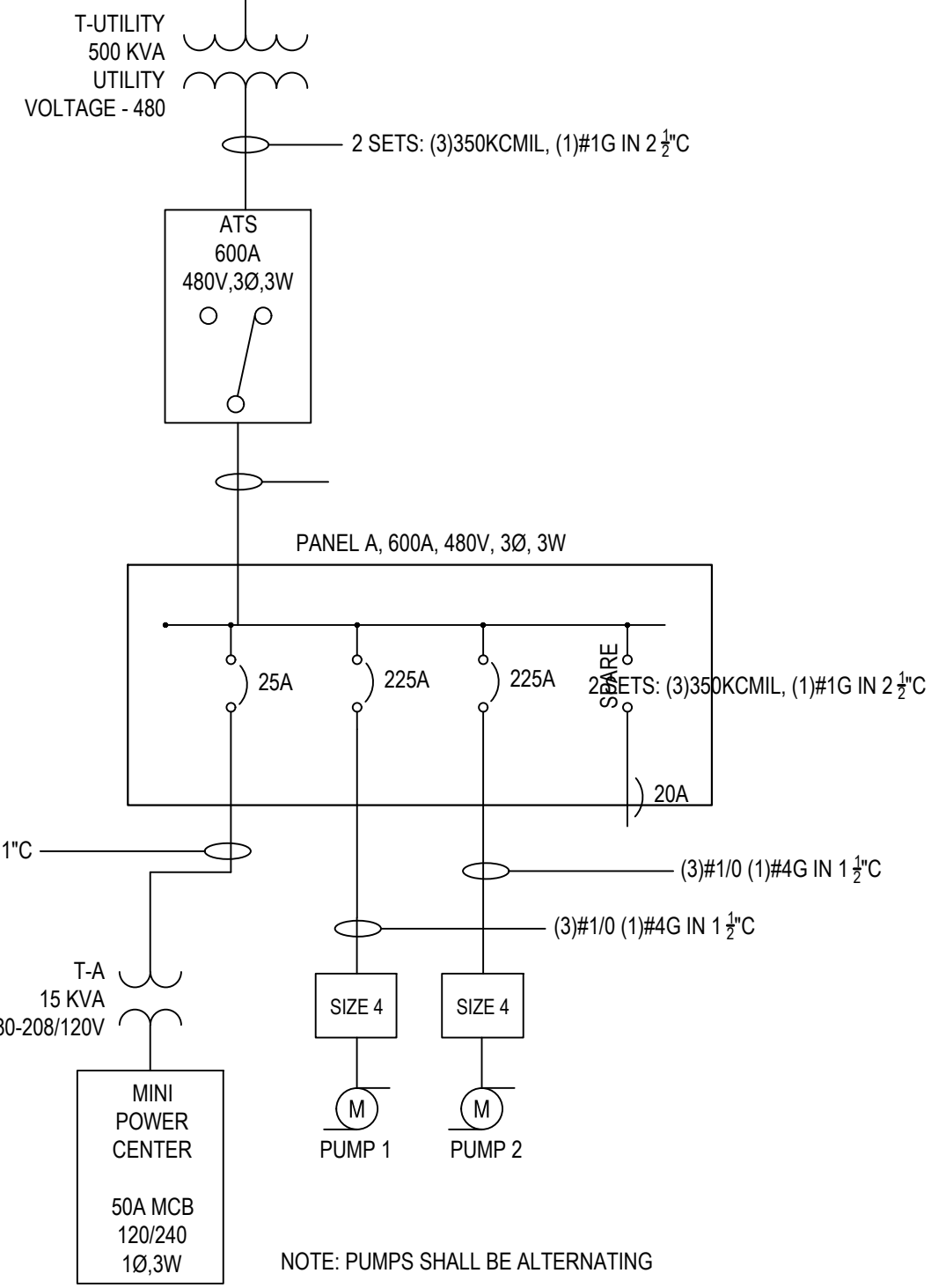
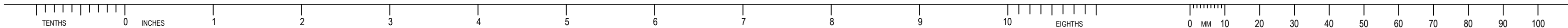
wood
 4000 MEADOW LAKE DRIVE
 SUITE 121
 BIRMINGHAM, AL 35242
 (205) 980-6402

AREA: CERTIFICATE OF AUTHORIZATION
 ECA2221

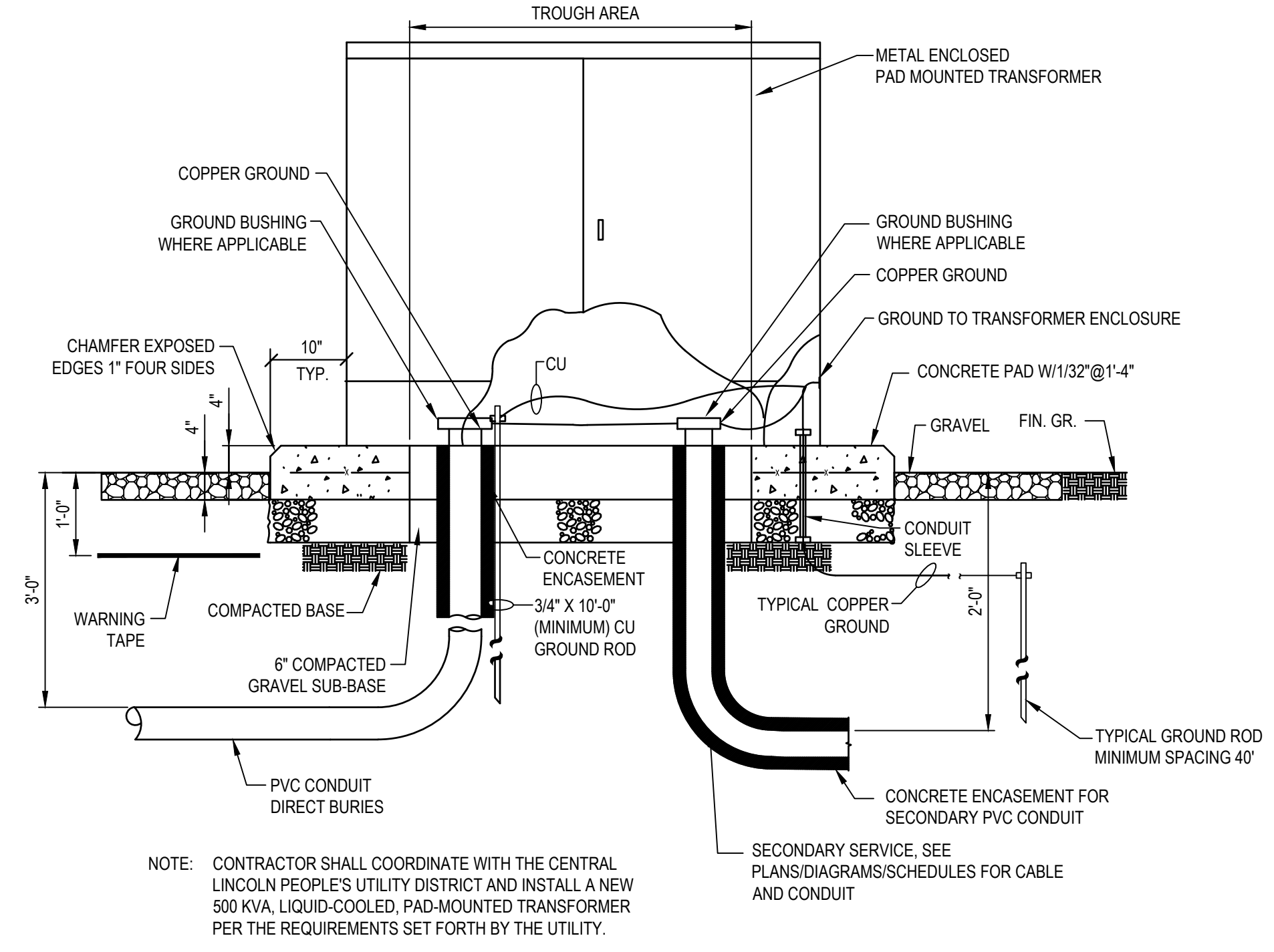
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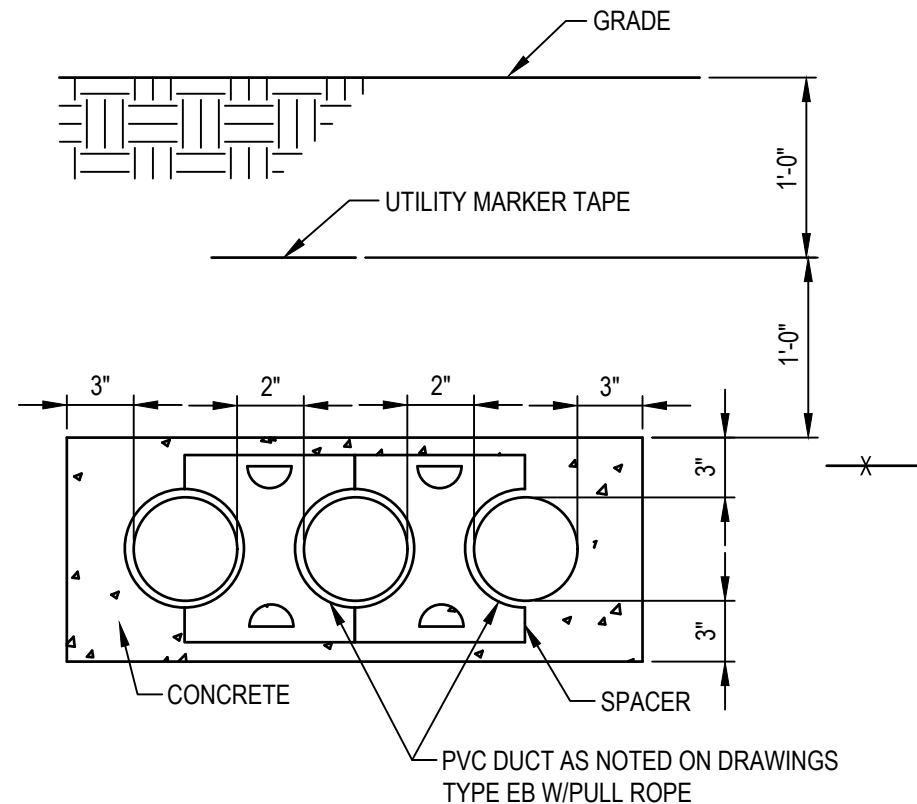
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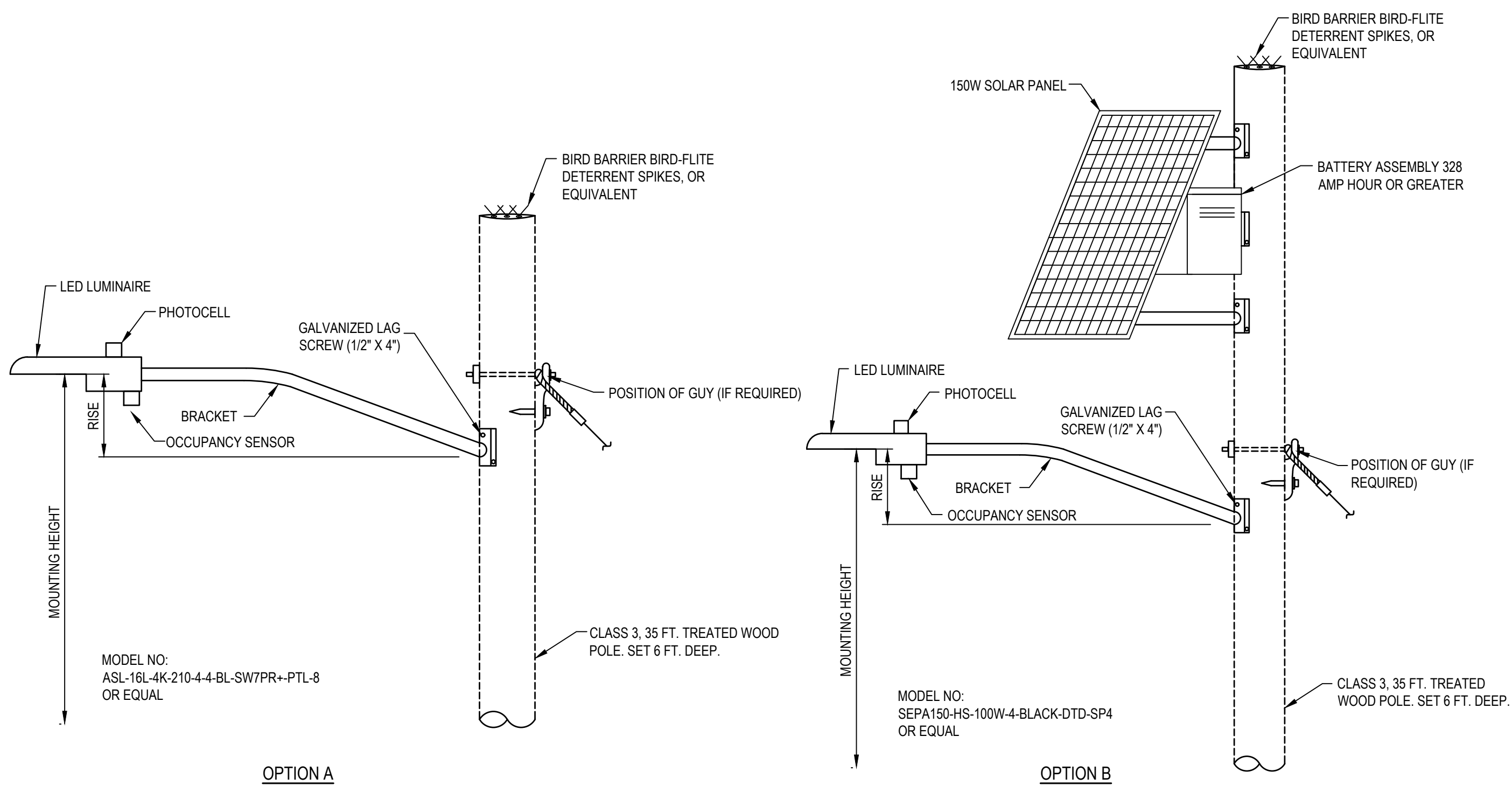
D8 ONE LINE DIAGRAM
SCALE: N.T.S.



D4 PAD-MOUNTED TRANSFORMER DETAIL
SCALE: N.T.S.



A8 DUCTBANK DETAILS
SCALE: N.T.S.



A4 POLE-MOUNTED LIGHT FIXTURE DETAILS
SCALE: N.T.S.

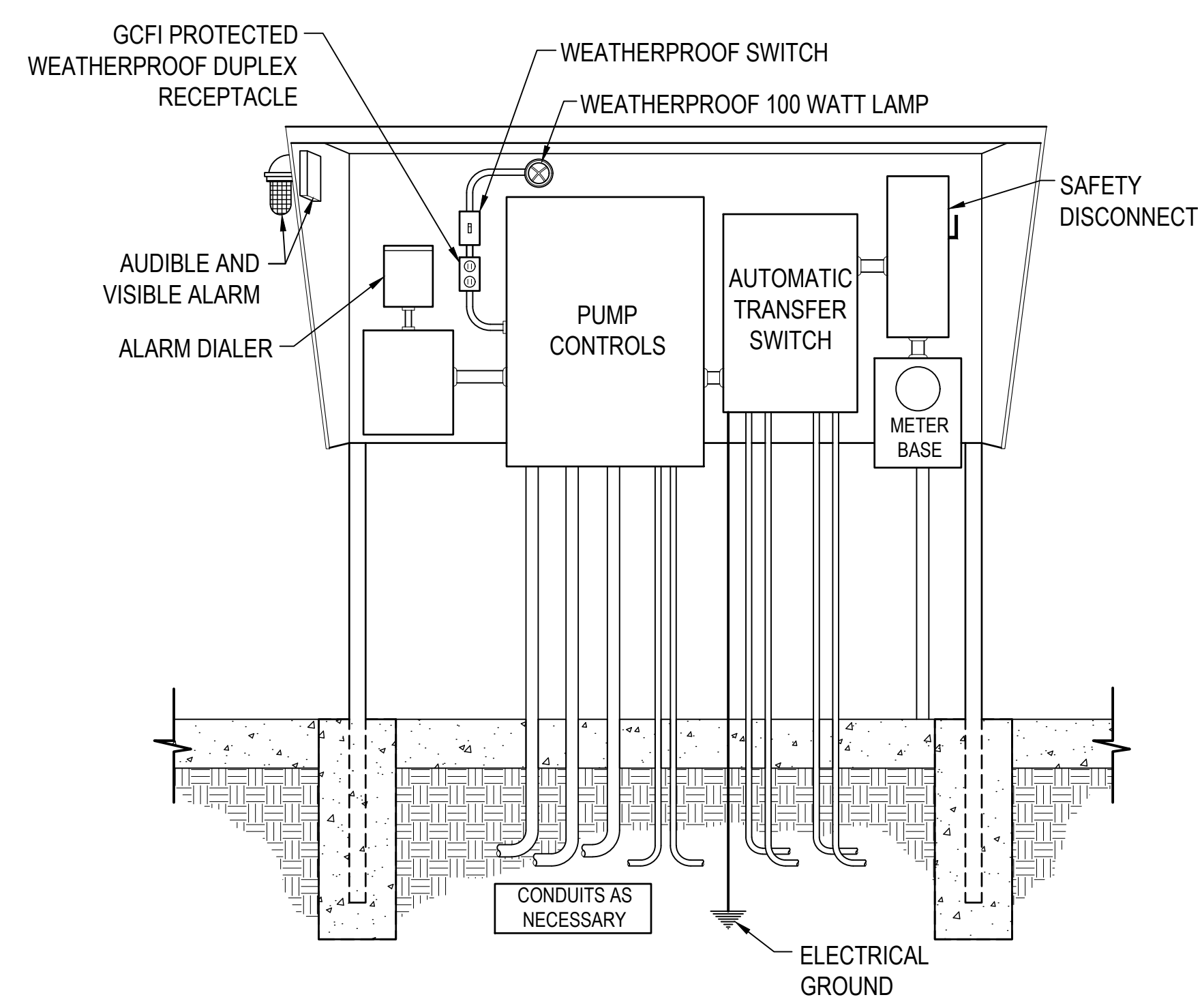
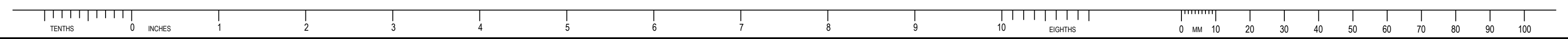
Grid area with coordinate markers and a revision table at the bottom showing dates and descriptions of changes.

Professional engineer's stamp for M. Marcum, State of Georgia, No. PE030489.

Approval and project information section including names of project managers, project phase, number, and scale.

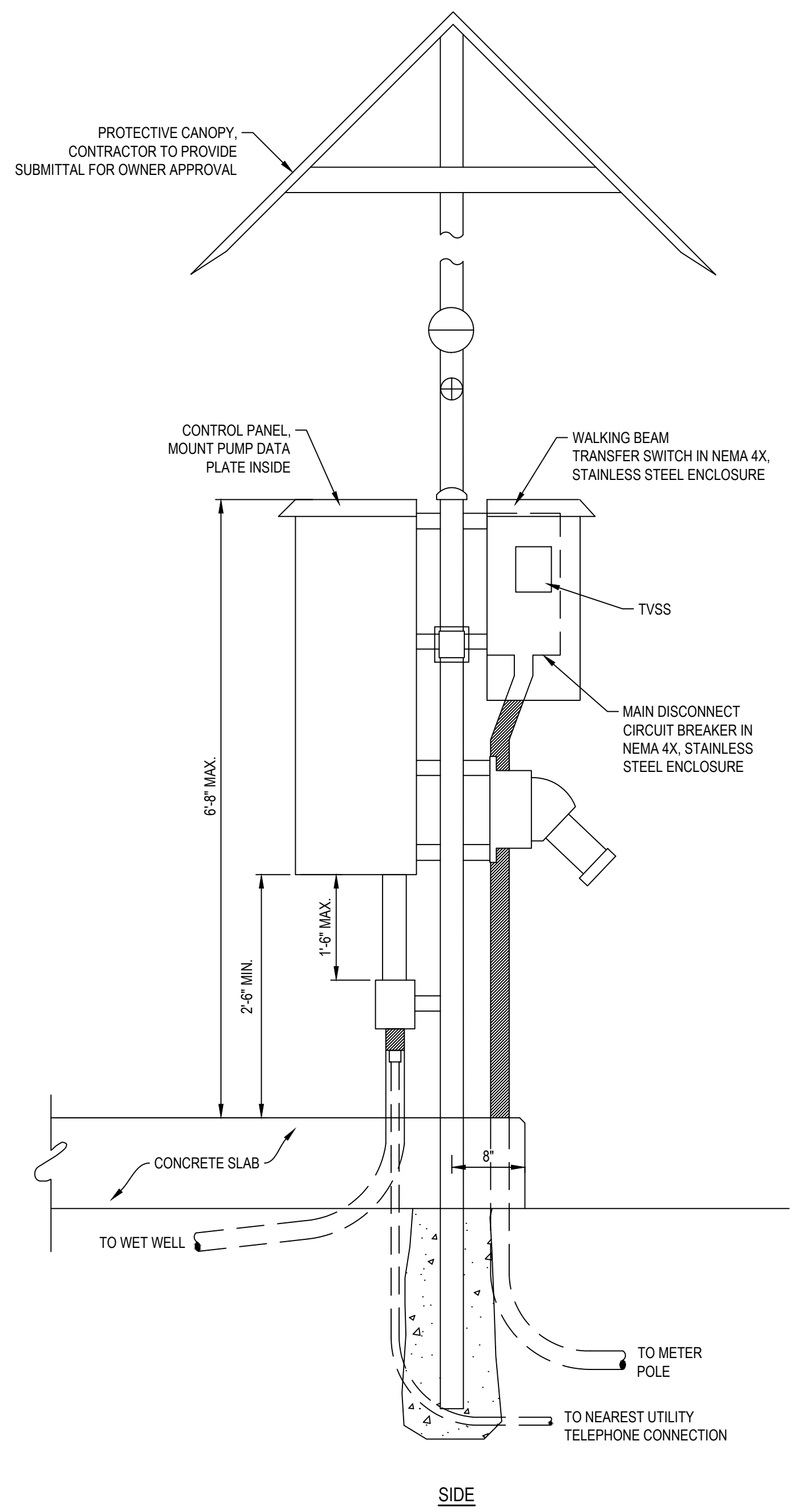
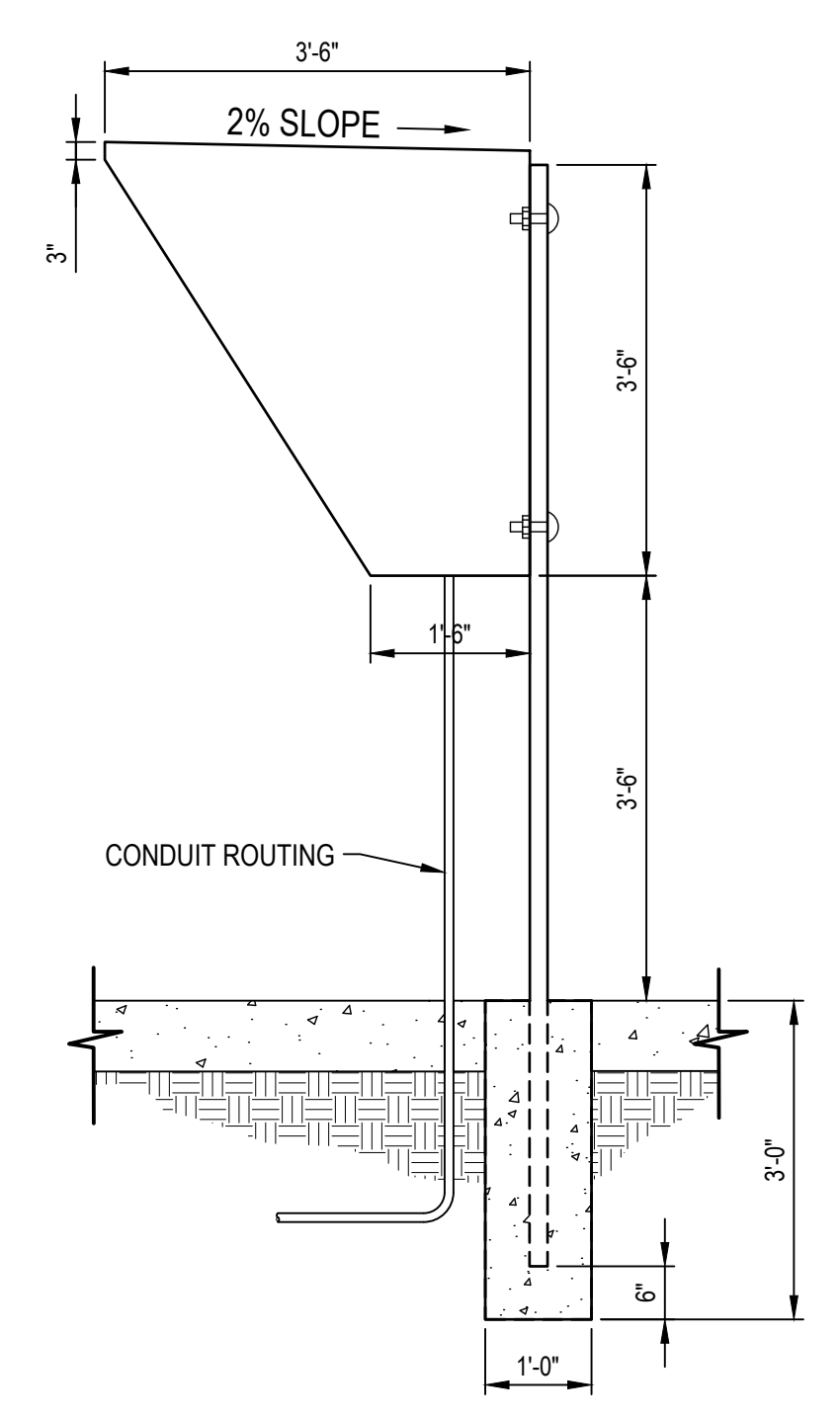
Client information for Twin Pines Minerals LLC, Saunders Demonstration Mine, and water management ponds.

Wood logo and contact information, drawing title 'UTILITY DETAILS SHEET 3', and drawing number C-513.



NOTE: ALL ELECTRICAL SYSTEMS SHALL MEET OR EXCEED **NEC** REQUIREMENTS.

B4 CONTROL PANEL RISER DIAGRAM
C-514 SCALE: N.T.S.



B4 CONTROL PANEL RISER DIAGRAM
C-514 SCALE: N.T.S.

8	7	6	5	4	3	2	1
	0	8NOV2022	ISSUED FOR PERMITTING	MJL	MMA	PWM	

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PROJECT PHASE PERMITTING		
PROJECT NO. 7382224061	BY DES 07FEB22	DDMMYY 07FEB22
SCALE AS SHOWN	CHK 07FEB22	07FEB22
	APP 07FEB22	07FEB22

TWIN PINES MINERALS LLC
SAUNDERS DEMONSTRATION MINE
MINE ID 2073
WATER MANAGEMENT PONDS

AREA
CERTIFICATE OF AUTHORIZATION
ECA2221

CLIENT DWG NO.

DRAWING NO.
C-514

REV
0

UTILITY DETAILS SHEET 4

wood

4000 MEADOW LAKE DRIVE
SUITE 121
BIRMINGHAM, AL 35242
(205) 980-6402

AREA
CERTIFICATE OF AUTHORIZATION
ECA2221

CLIENT DWG NO.

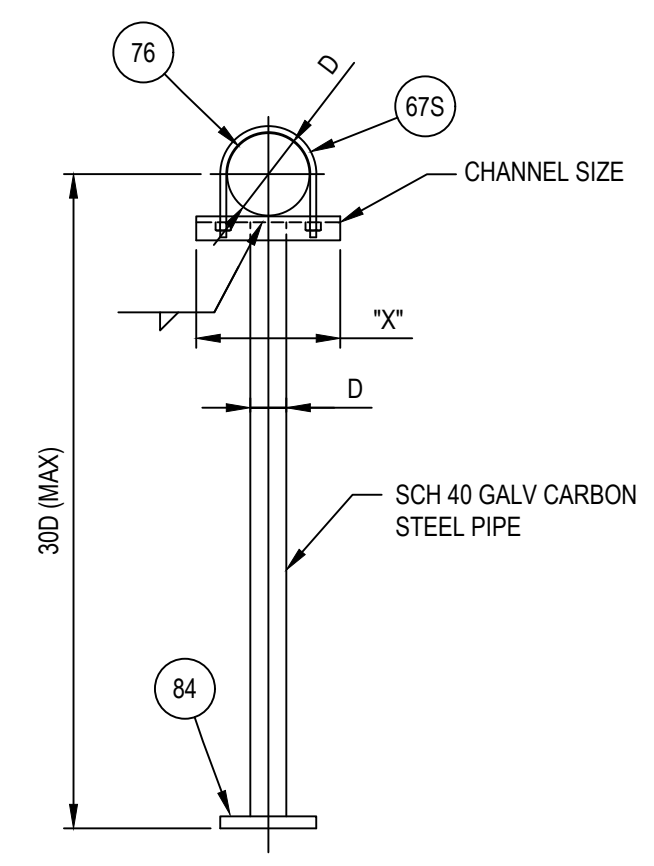
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C-514

REV
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ANSI D 22024

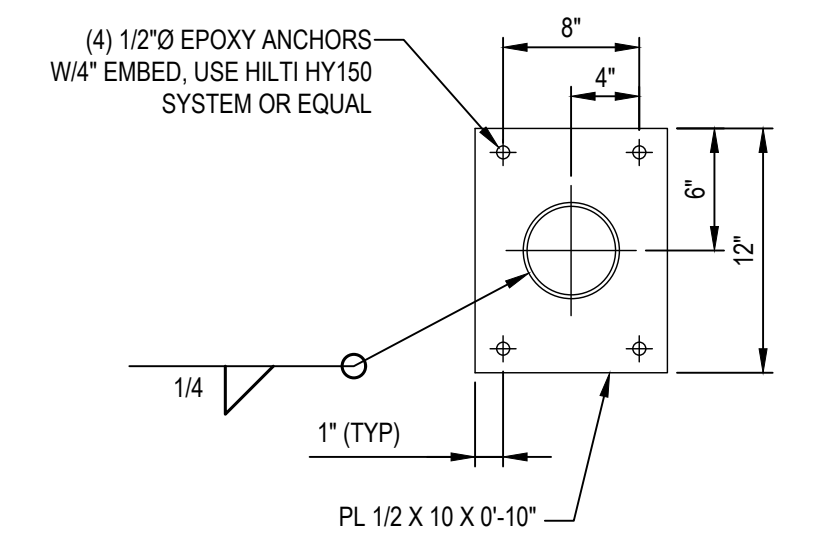
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PARTS LIST

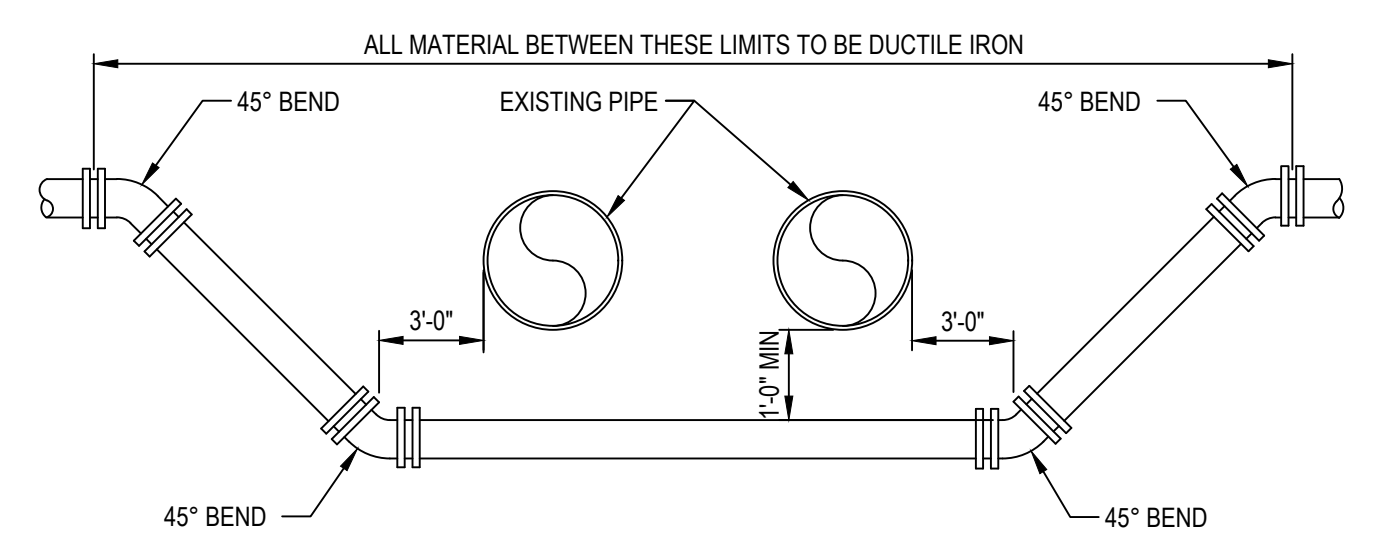
NO.	DESCRIPTION
67S	316 SS U-BOLT
76	360° PIPE SADDLE (CENTERED ON U-BOLT)
84	CARBON STEEL BASE PLATE

PIPE SIZE "D"	"X"	CHANNEL SIZE	D
3" & 4"	12"	3X6	2"
6" & 8"	16"	4X7.25	3"
10" & 12"	20"	6X10.5	4"
14" & 16"	24"	8X11.5	6"
18" & 20"	28"	10X20	8"

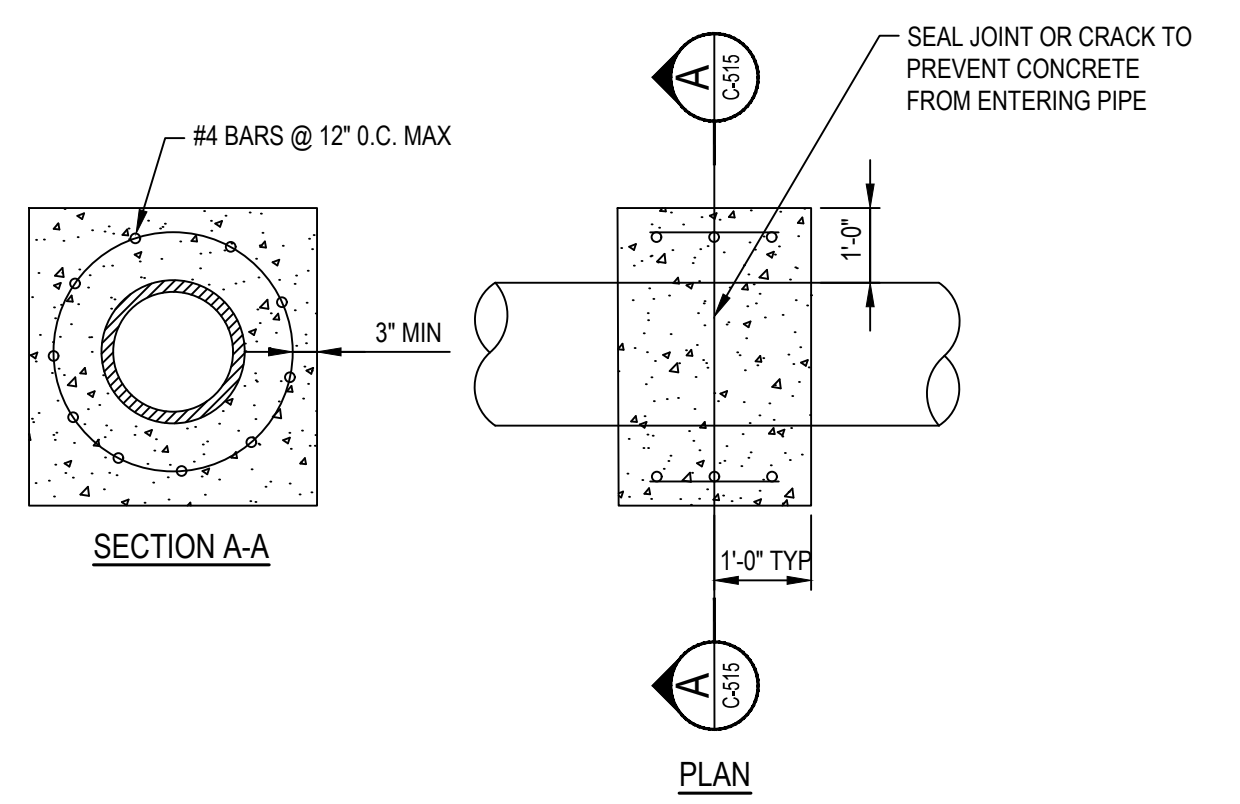


NOTE: ALL EXPOSED STEEL SHALL BE HOT DIPPED GALVANIZED.

C8 PIPE SUPPORT
SCALE: N.T.S.



D4 UTILITY CROSSING DETAIL
SCALE: N.T.S.



A8 CONCRETE COLLAR
SCALE: N.T.S.

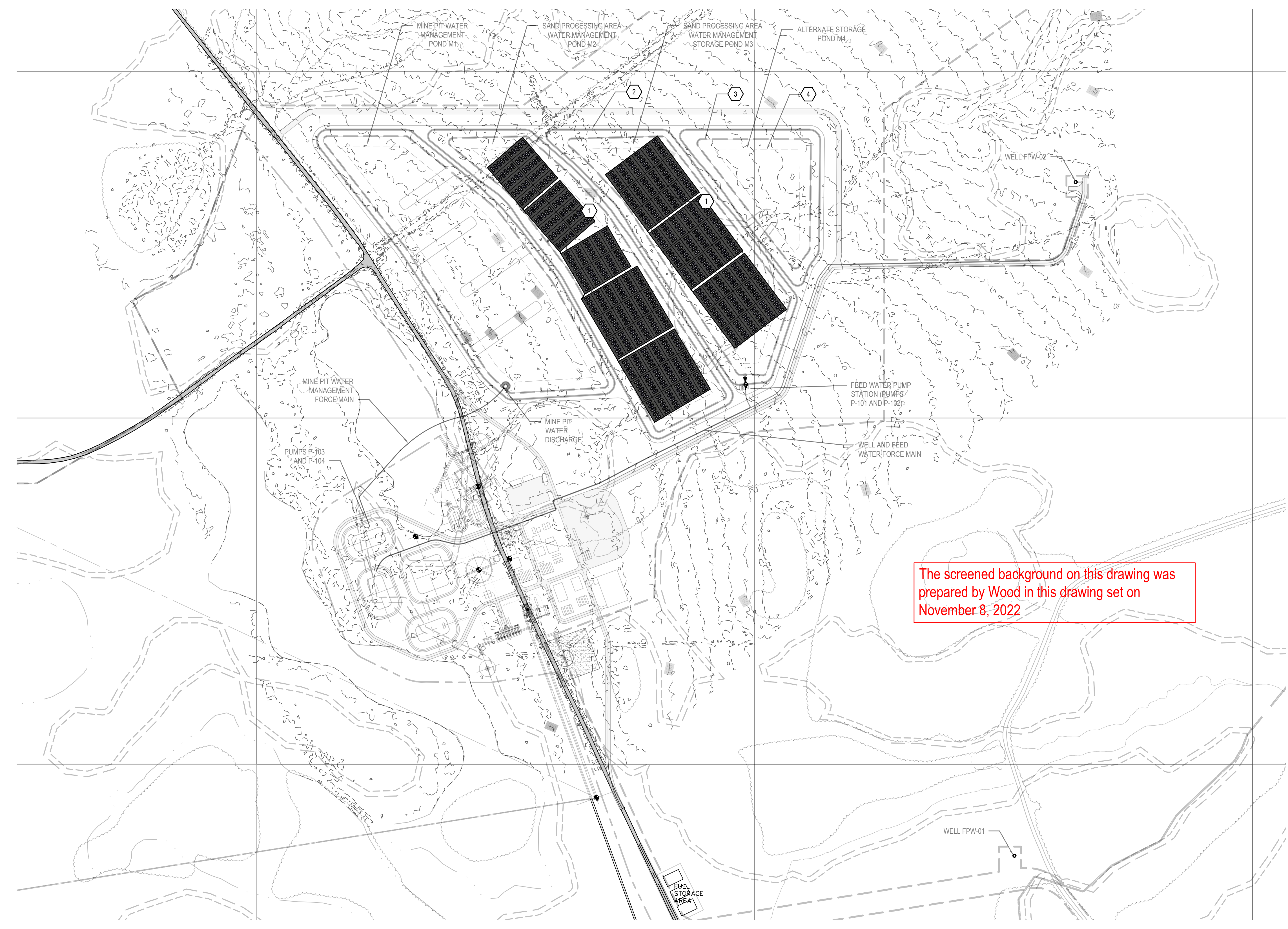
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STAMP/SEAL																																																																																									
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DRAWING NO. C-515					REV 0																																																																																				

 4000 MEADOW LAKE DRIVE SUITE 121 BIRMINGHAM, AL 35242 (205) 980-6402	
TWIN PINES MINERALS LLC SAUNDERS DEMONSTRATION MINE MINE ID 2073 WATER MANAGEMENT PONDS	
UTILITY DETAILS SHEET 5	
AREA: CERTIFICATE OF AUTHORIZATION ECA2221	
CLIENT DWG NO.	
DRAWING NO. C-515	
REV 0	

SAVED: 09-Nov-22 11:33 AM PLOTTED: 18-Nov-22 2:50 PM USER: NICHOLSON, PETER



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The screened background on this drawing was prepared by Wood in this drawing set on November 8, 2022

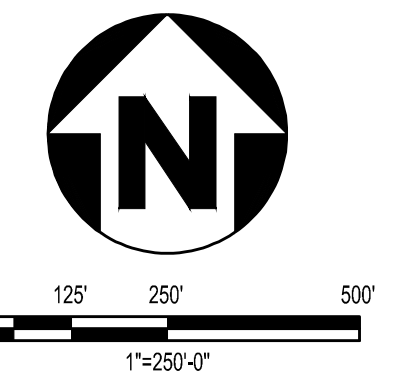
LEGEND

- EVAPORATOR LOCATIONS
- WATER MANAGEMENT PONDS TO NORMAL POOL
- SHORELINE BUFFER (50 FEET)
- WATER MANAGEMENT POND OUTLINES TO HIGH WATER

KEYNOTES

1. EVAPORATOR UNIT(S)
ECOVAP 120 GEN2 SERIES MODULAR UNITS. QUANTITY 3 OF 2X5 UNITS AND 5 OF 3X6 UNITS. EVAPORATORS WILL BE INSTALLED ON CONCRETE FOUNDATIONS, AND WILL BE CONFIGURED TO EVAPORATE 1.4 MGD. THE LOCATIONS SHOWN IN THE PONDS ARE CONCEPTUAL AND ARE SUBJECT TO REVISION DURING THE DESIGN PHASE.
2. WATER MANAGEMENT POND - HIGH WATER
3. WATER MANAGEMENT POND - NORMAL POOL
4. SHORELINE BUFFER (50 FEET)

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REV	DDMMYY	REVISION / ISSUE DESCRIPTION	DRN	CHK	APP	APP	APP	APP	APP	REV	DDMMYY	REVISION / ISSUE DESCRIPTION	DRN	CHK	APP	APP	APP	APP	REF	NUMBER	TITLE
2	29SEP2023	UPDATED EVAPORATOR SYSTEM		NEH	GG	RJB															
1	20DEC2022	UPDATED EVAPORATOR DATA		MJL	MMA	PWM															
0	8NOV2022	ISSUED FOR PERMITTING		MJL	MMA	PWM															

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STAMP/SEAL

APPROVED FOR		
CLIENT PROJECT MGR	TECHNICAL MGR	PROJECT MGR
PROJECT PHASE		
PERMITTING		
PROJECT NO.	BY	DDMMYY
7382224061	DES	07FEB22
	DRN	07FEB22
SCALE	CHK	07FEB22
AS SHOWN	APP	07FEB22

TWIN PINES MINERALS LLC
SAUNDERS DEMONSTRATION MINE
MINE ID 2073
WATER MANAGEMENT PONDS

2211 NORFOLK ST., SUITE 1000
HOUSTON, TEXAS 77098
713.522.6300

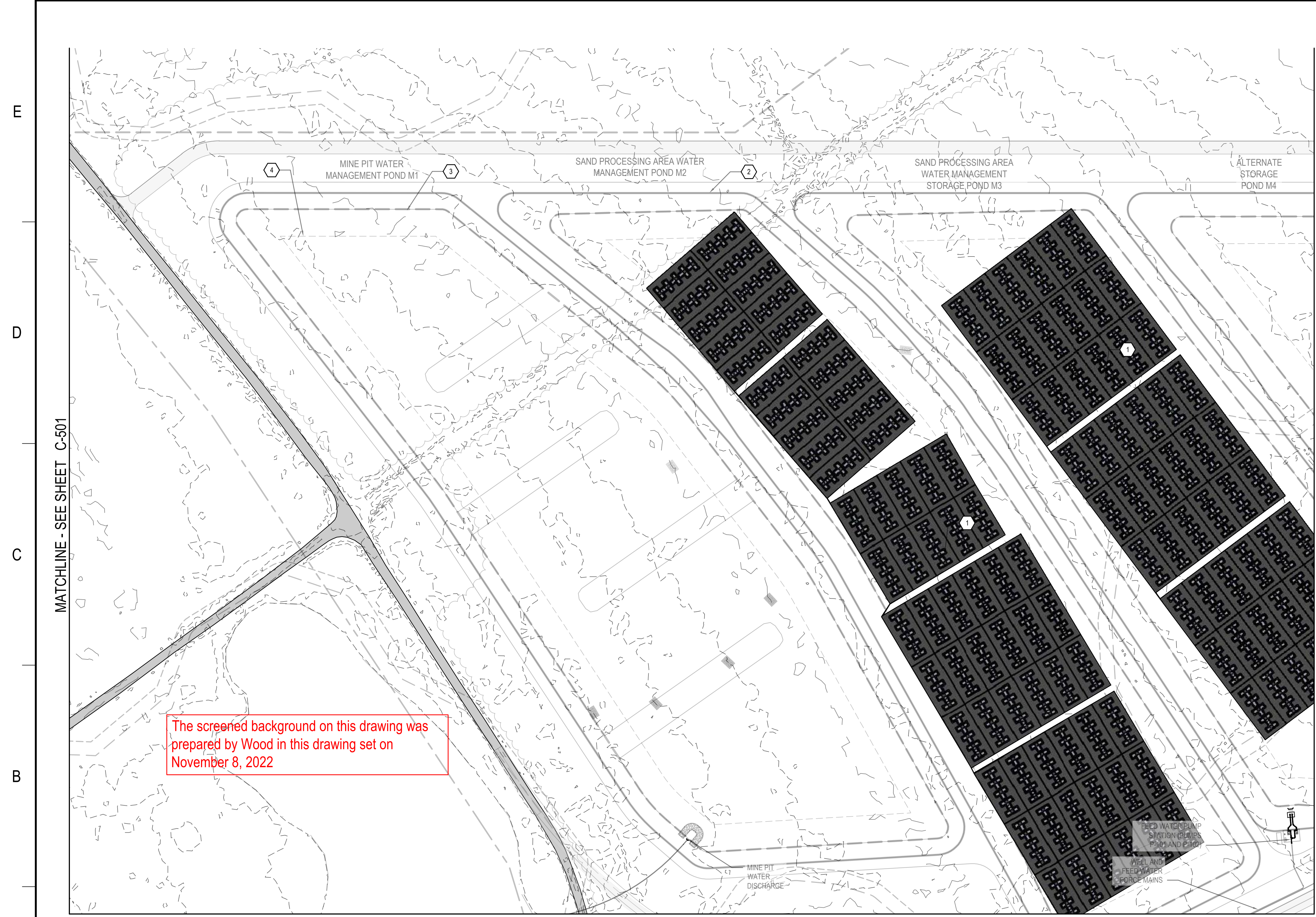
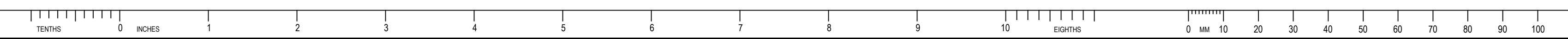
AREA: ECA2221
CERTIFICATE OF AUTHORIZATION

CLIENT DWG NO.

DRAWING NO. C-530A

REV 2

GSI ENVIRONMENTAL	
AREA	CERTIFICATE OF AUTHORIZATION
ECA2221	
CLIENT DWG NO.	
DRAWING NO. C-530A	
REV	2



LEGEND

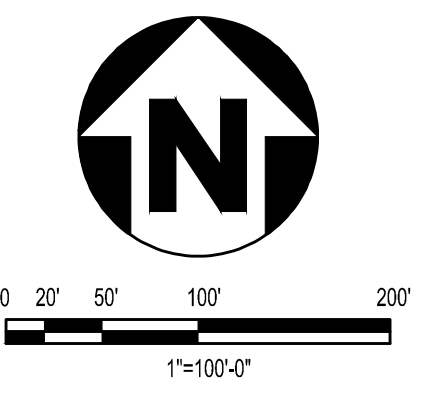
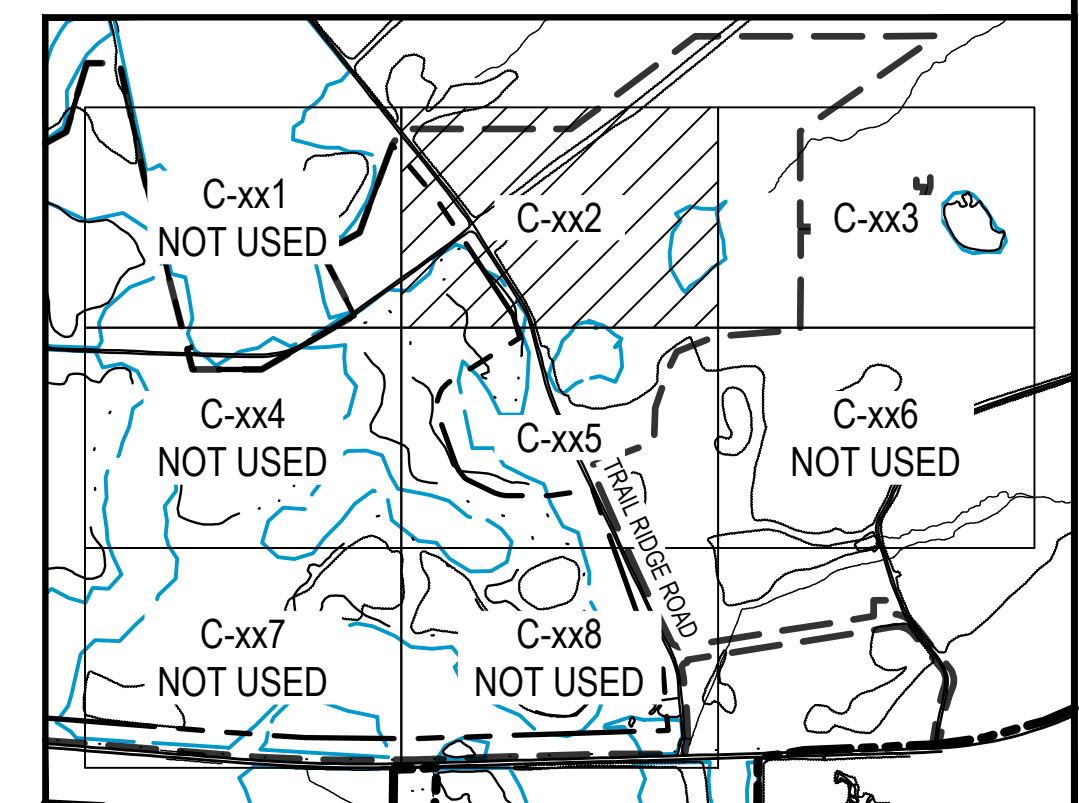
- EVAPORATOR LOCATIONS
- WATER MANAGEMENT PONDS TO NORMAL POOL
- SHORELINE BUFFER (50 FEET)
- WATER MANAGEMENT POND OUTLINES TO HIGH WATER

KEYNOTES

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REV	DDMMYY	REVISION / ISSUE DESCRIPTION	DRN	CHK	APP	APP	APP	APP	REV	DDMMYY	REVISION / ISSUE DESCRIPTION	DRN	CHK	APP	APP	APP	APP	REF	NUMBER	TITLE
2	29SEP2023	UPDATED EVAPORATOR SYSTEM		NEH	GG	RJB														
1	20DEC2022	UPDATED EVAPORATOR DATA		MJL	MMA	PWM														
0	8NOV2022	ISSUED FOR PERMITTING		MJL	MMA	PWM														

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STAMP/SEAL

APPROVED FOR		
CLIENT PROJECT MGR	TECHNICAL MGR	PROJECT MGR
PROJECT PHASE		
PERMITTING		
PROJECT NO.	BY	DDMMYY
7382224061	DES	07FEB22
SCALE	DRN	07FEB22
	CHK	07FEB22
	APP	07FEB22
AS SHOWN		

TWIN PINES MINERALS LLC
SAUNDERS DEMONSTRATION MINE
MINE ID 2073
WATER MANAGEMENT PONDS

PROJECT NO. 7382224061

SCALE AS SHOWN

BY DES 07FEB22

DRN 07FEB22

CHK 07FEB22

APP 07FEB22

SUBJECT
UPDATED EVAPORATOR PLAN SHEET 2

GSI ENVIRONMENTAL

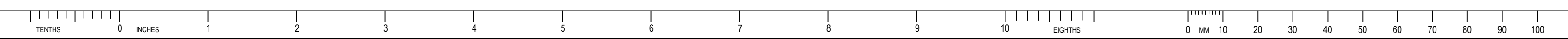
2211 NORFOLK ST., SUITE 1000
HOUSTON, TEXAS 77098
713.522.6300

AREA CERTIFICATE OF AUTHORIZATION
ECA2221

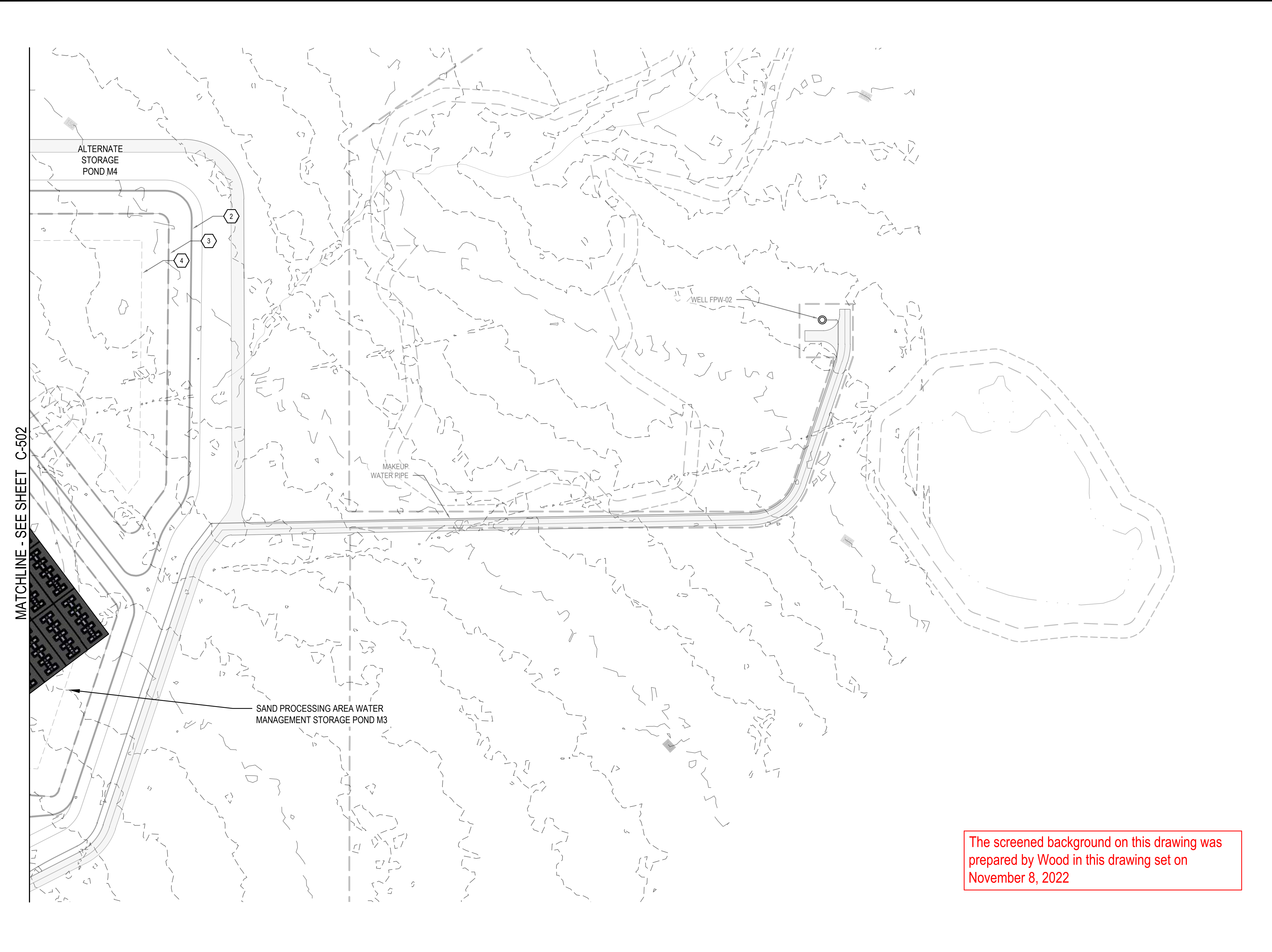
CLIENT DWG NO.

DRAWING NO.
C-532A

REV 2



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LEGEND

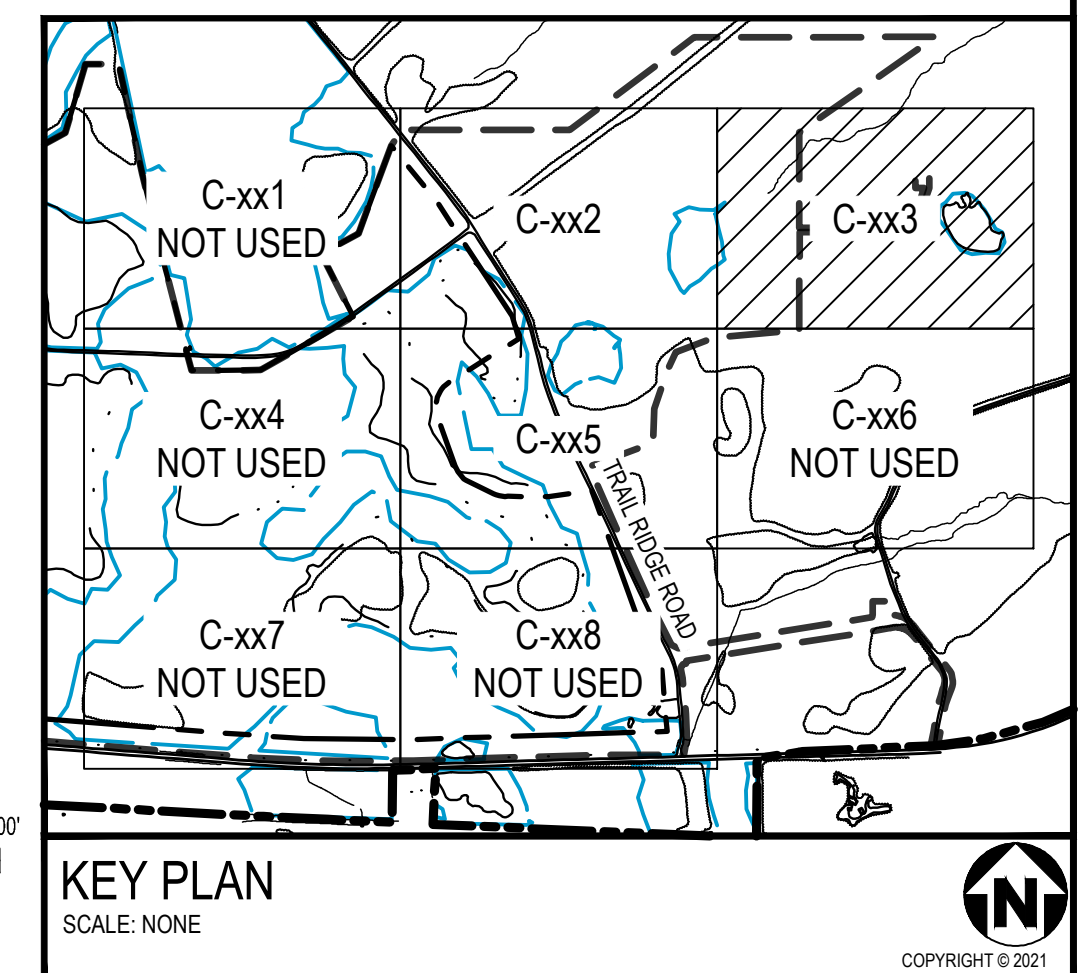
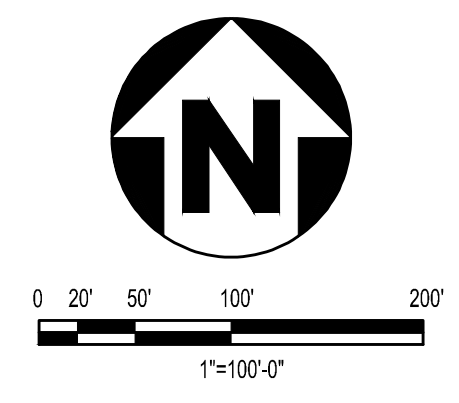
- EVAPORATOR LOCATIONS
- WATER MANAGEMENT PONDS TO NORMAL POOL
- SHORELINE BUFFER (50 FEET)
- WATER MANAGEMENT POND OUTLINES TO HIGH WATER

KEYNOTES

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REV	DDMMYY	REVISION / ISSUE DESCRIPTION	DRN	CHK	APP	APP	APP	APP	APP	REV	DDMMYY	REVISION / ISSUE DESCRIPTION	DRN	CHK	APP	APP	APP	APP	REF	NUMBER	TITLE
2	29SEP2023	UPDATED EVAPORATOR SYSTEM		NEH	GG	RJB															
1	20DEC2022	UPDATED EVAPORATOR DATA		MJL	MMA	PWM															
0	08NOV2022	ISSUED FOR PERMITTING		MJL	MMA	PWM															

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STAMP/SEAL

APPROVED FOR _____		
CLIENT PROJECT MGR	TECHNICAL MGR	PROJECT MGR
PROJECT PHASE		
PERMITTING		
PROJECT NO.	BY	DDMMYY
7382224061	DES	07FEB22
SCALE	DRN	07FEB22
	CHK	07FEB22
	APP	07FEB22
AS SHOWN		

TWIN PINES MINERALS LLC
SAUNDERS DEMONSTRATION MINE
MINE ID 2073
WATER MANAGEMENT PONDS

PROJECT NO. 7382224061

BY DES 07FEB22

DRN 07FEB22

CHK 07FEB22

APP 07FEB22

AS SHOWN

SUBJECT
UPDATED EVAPORATOR PLAN SHEET 3

2211 NORFOLK ST., SUITE 1000
HOUSTON, TEXAS 77098
713.522.6300

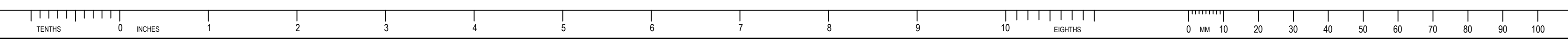
AREA CERTIFICATE OF AUTHORIZATION
ECA2221

CLIENT DWG NO.

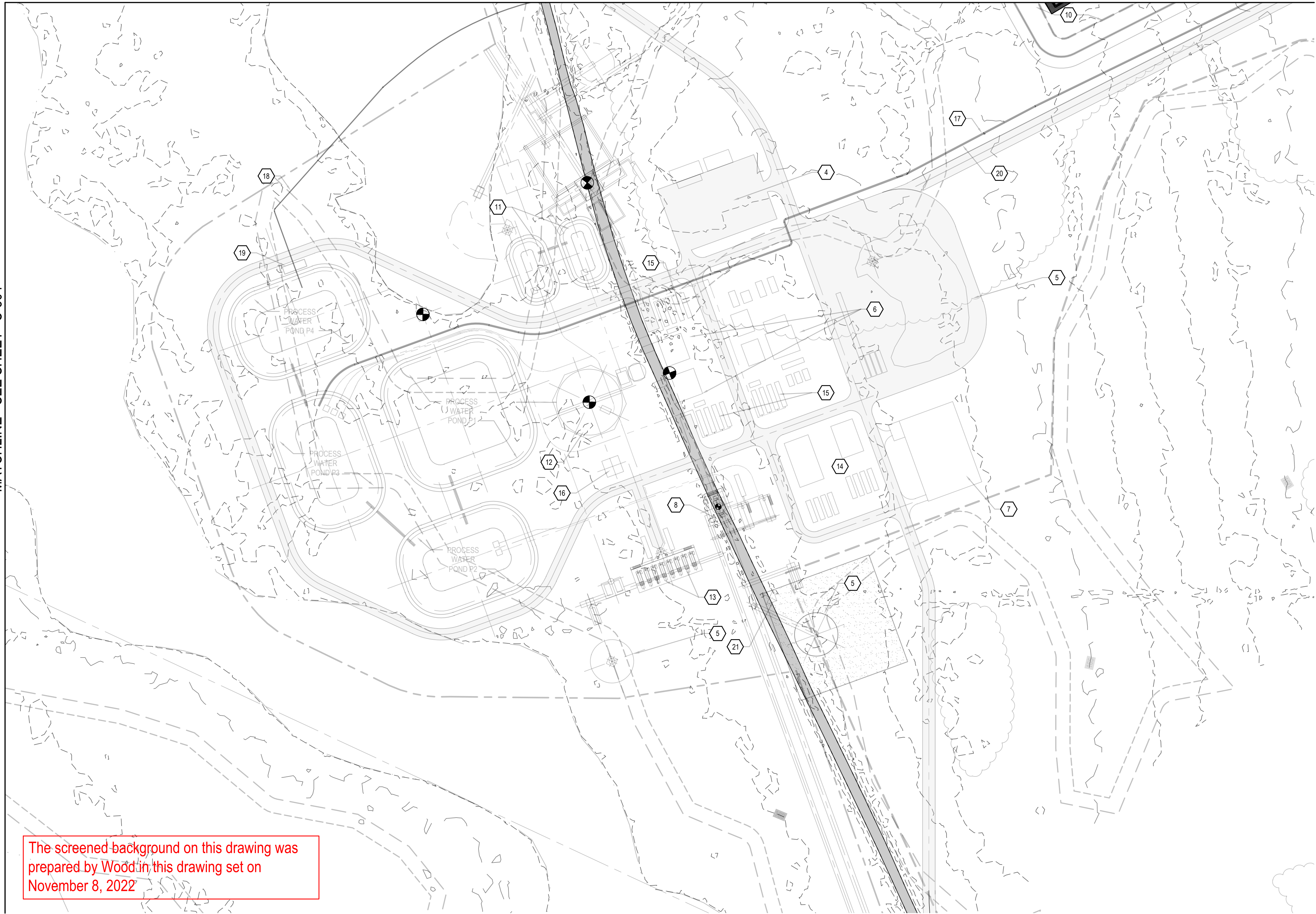
DRAWING NO.
C-533A

REV 2

ANSI D 2024



MATCHLINE - SEE SHEET C-502



LEGEND

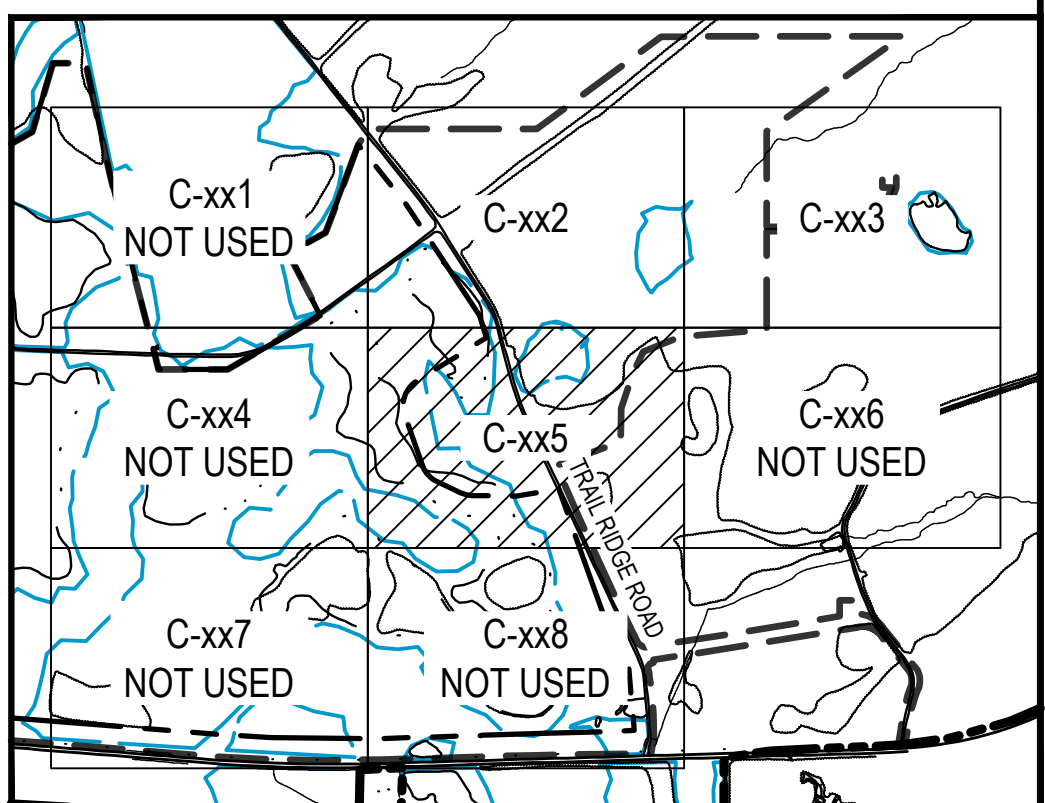
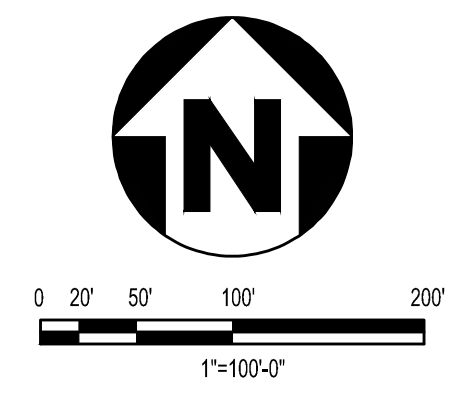
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[Dashed line]	PERMIT BOUNDARY
[Solid line]	EXISTING INDEX CONTOUR
[Dashed line]	EXISTING INTERMEDIATE CONTOUR

KEYNOTES #

- NOT USED
- NOT USED
- NOT USED
- PARKING AND OFFICES
- STOCKPILE
- PCP/WCP PLANT
- SUBSTATION
- COVERED FACILITY
- NOT USED
- SAND PROCESSING AREA WATER MANAGEMENT POND
- TEMPORARY THICKENER UNDERFLOW PONDS
- THICKENER
- CENTRIFUGES
- MAINTENANCE YARD
- PROCESS WATER TANKS
- FLOC. BUILDING
- FEED WATER FORCE MAIN
- MINE PIT WATER MANAGEMENT FORCE MAIN
- PUMPS P-103 AND P-104
- MAKEUP WATER WELL PIPE
- CONTAINMENT AREA SUMP

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KEY PLAN
SCALE: NONE

REV	DDMMYY	REVISION / ISSUE DESCRIPTION	DRN	CHK	APP	APP	APP	APP	APP	REV	DDMMYY	REVISION / ISSUE DESCRIPTION	DRN	CHK	APP	APP	APP	APP	APP	REF	NUMBER	TITLE
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0	08NOV2022	ISSUED FOR PERMITTING	MJL	MMA	PWM																	

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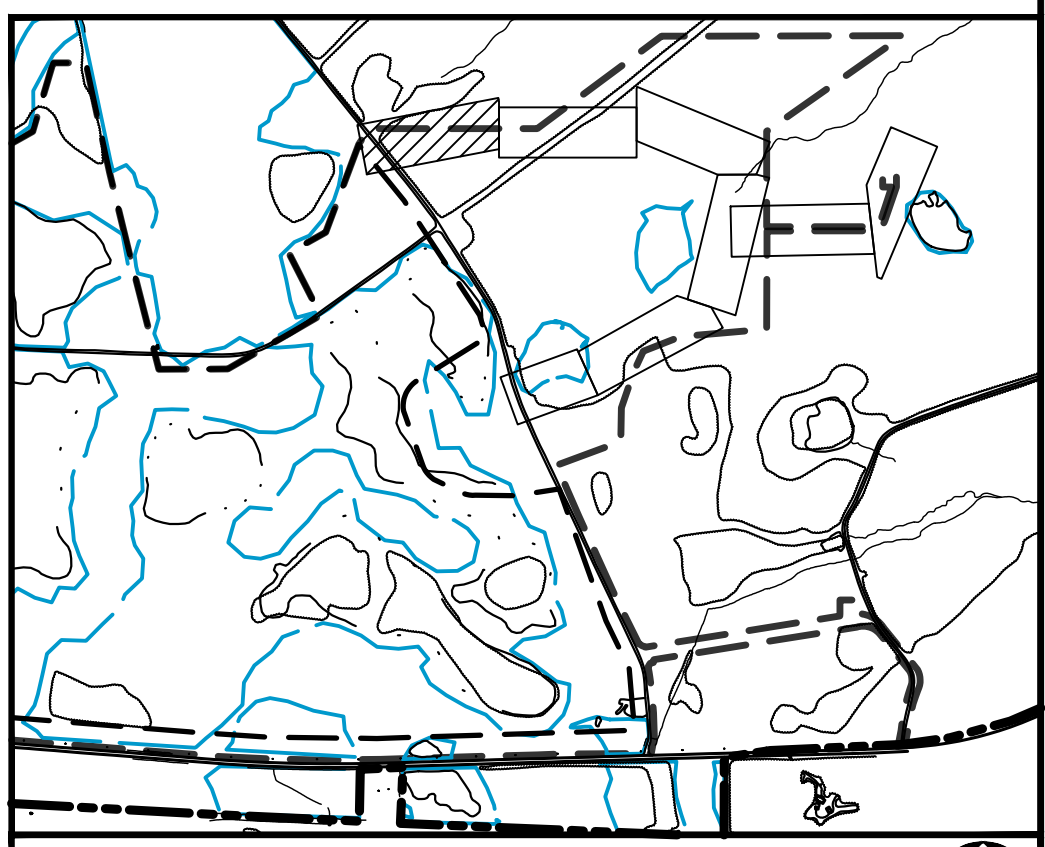
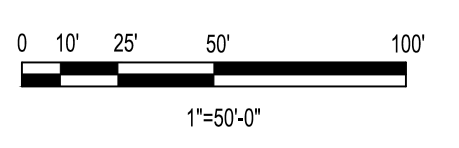
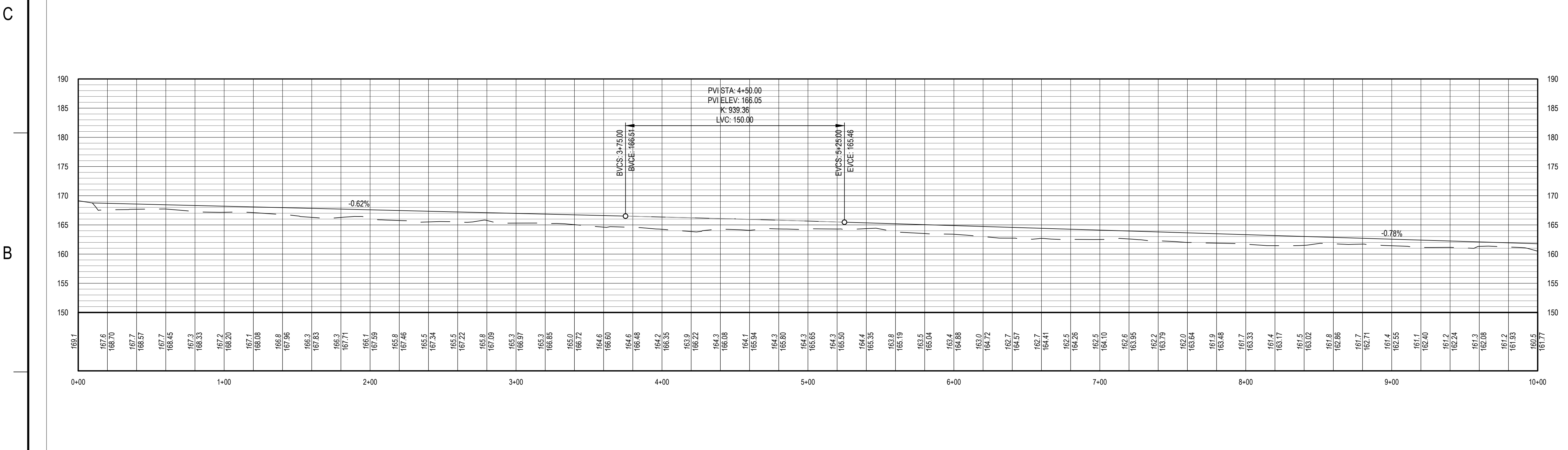
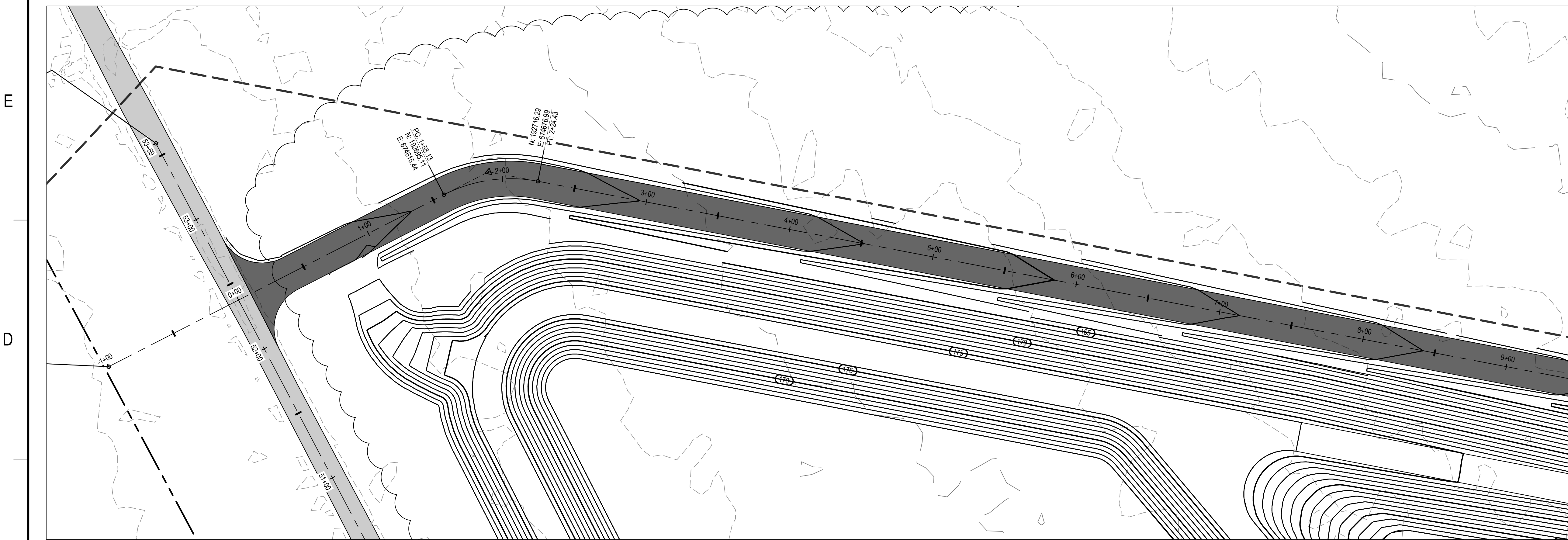
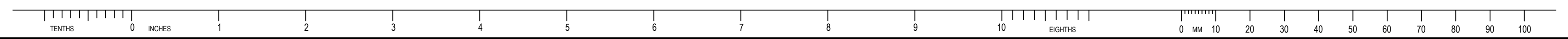
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APPROVED FOR _____		
CLIENT PROJECT MGR	TECHNICAL MGR	PROJECT MGR
PROJECT PHASE: PERMITTING		
PROJECT NO. 7382224061	BY DES	DDMMYY 07FEB22
SCALE AS SHOWN	DRN	07FEB22
	CHK	07FEB22
	APP	07FEB22

TWIN PINES MINERALS LLC
SAUNDERS DEMONSTRATION MINE
MINE ID 2073
WATER MANAGEMENT PONDS

2211 NORFOLK ST., SUITE 1000
HOUSTON, TEXAS 77098
713.522.6300

AREA	CERTIFICATE OF AUTHORIZATION
	ECA2221
CLIENT DWG NO.	
DRAWING NO. C-535A	REV 1



KEY PLAN SCALE: NONE

REVISIONS	
NO.	DATE AND DESCRIPTION
0	8 NOV 2022 ISSUED FOR PERMITTING MJL MMA PWM

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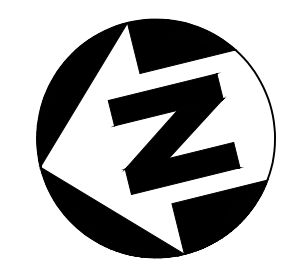
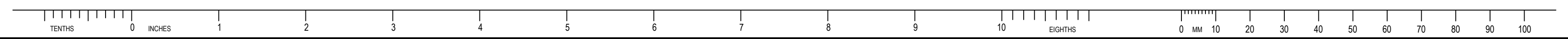
STAMP/SEAL

 18 NOV 2022

APPROVED FOR		
M. FOWLER CLIENT PROJECT MGR	P. MARCUM TECHNICAL MGR	M. ABDALLA PROJECT MGR
PROJECT PHASE: PERMITTING		
PROJECT NO. 7382224061	BY DES 07FEB22 CHK 07FEB22 APP 07FEB22	DDMMYY 07FEB22
SCALE: AS SHOWN	SUBJECT PERIMETER ROAD PLAN AND PROFILE SHEET 1	

TWIN PINES MINERALS LLC
SAUNDERS DEMONSTRATION MINE
MINE ID 2073
WATER MANAGEMENT PONDS

 4000 MEADOW LAKE DRIVE SUITE 121 BIRMINGHAM, AL 35242 (205) 980-6402	
AREA	CERTIFICATE OF AUTHORIZATION ECA2221
CLIENT DWG NO.	
DRAWING NO.	REV
C-601	0



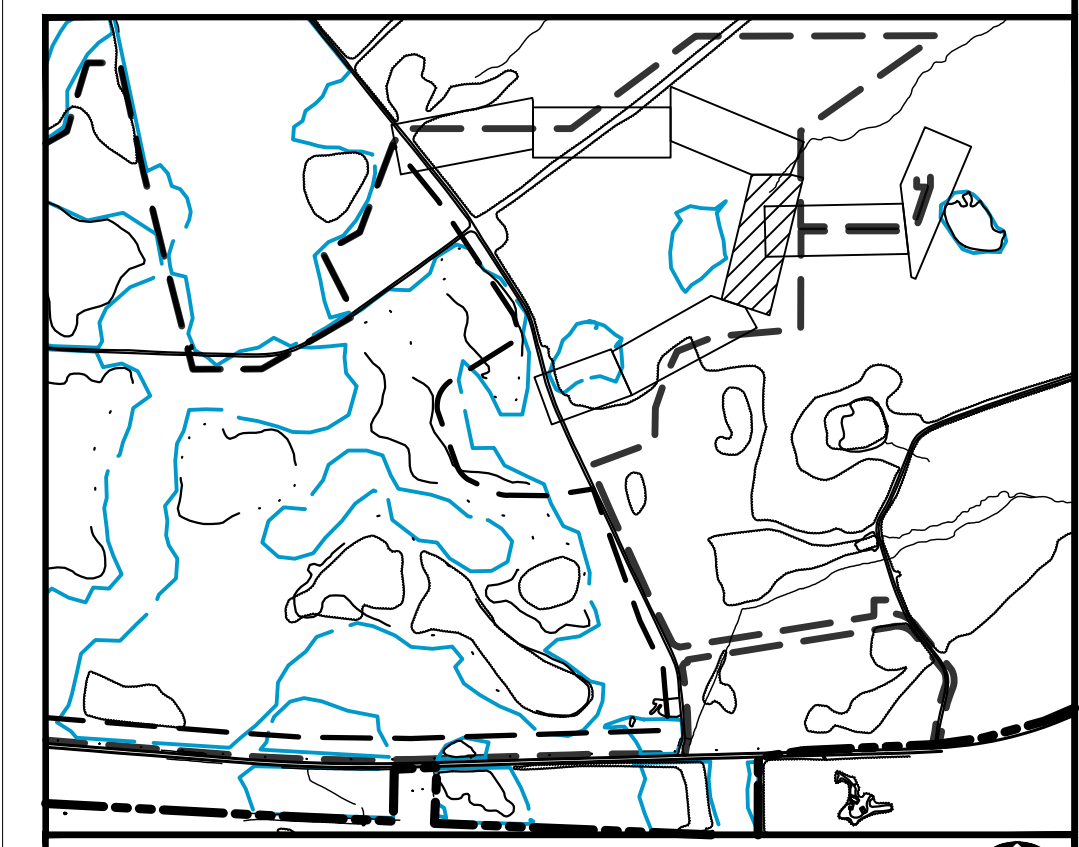
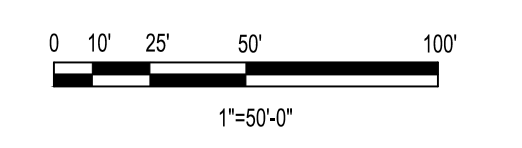
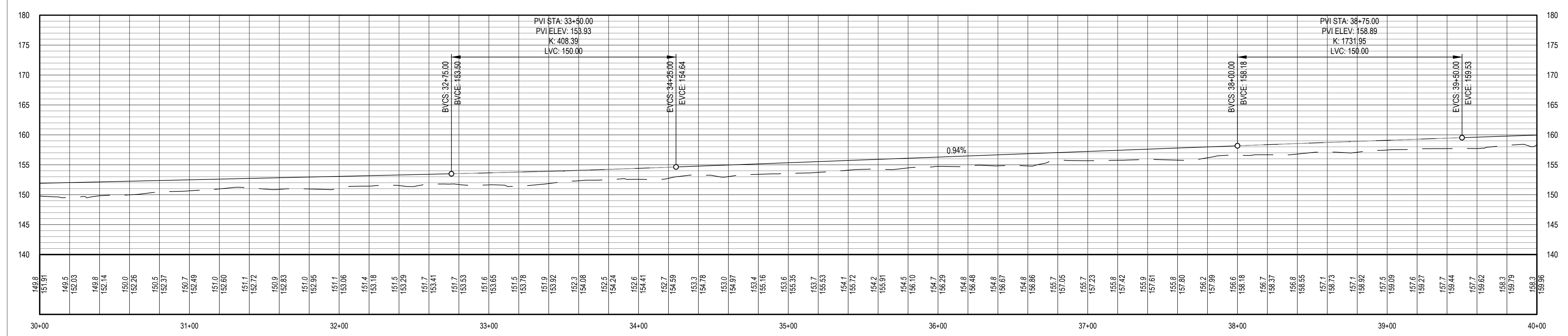
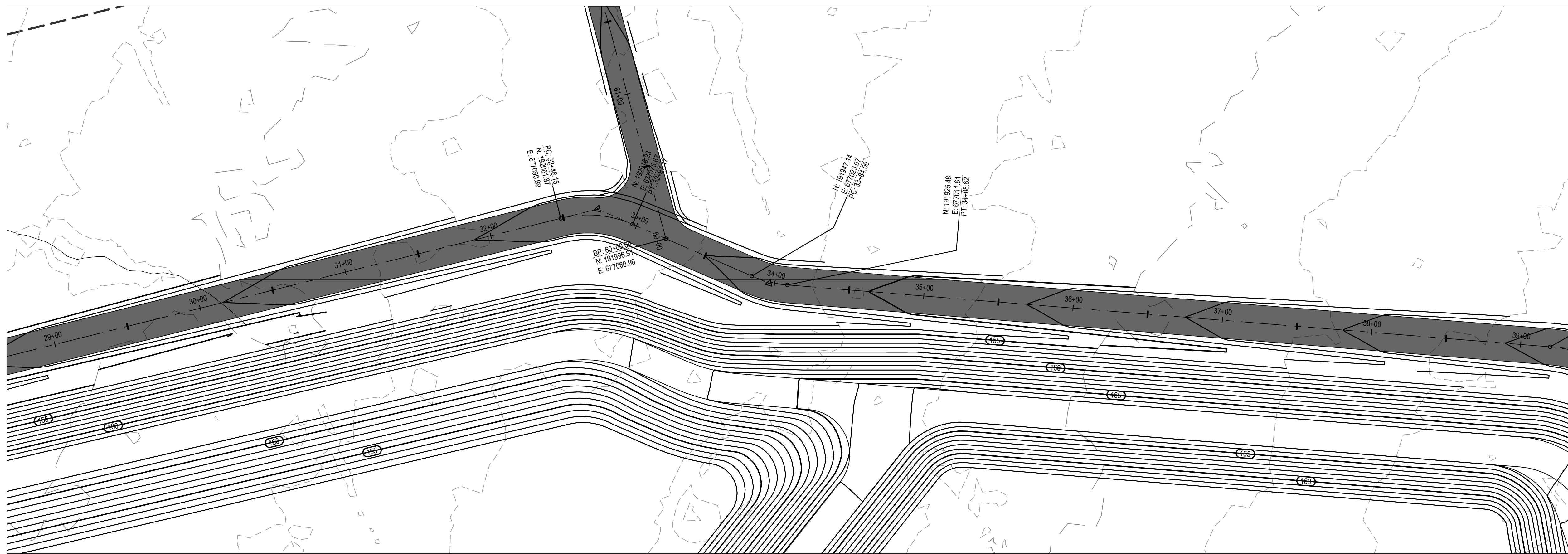
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0	8 NOV 2022	ISSUED FOR PERMITTING	MJM	MMA	PWM
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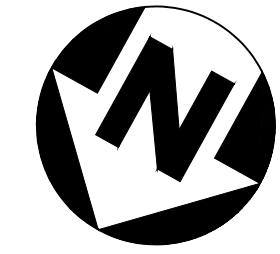
APPROVED FOR			
M. FOWLER	P. MARCUM	M. ABDALLA	
CLIENT PROJECT MGR	TECHNICAL MGR	PROJECT MGR	
PROJECT PHASE			
PERMITTING			
PROJECT NO.	BY	DDMMYY	SUBJECT
7382224061	DES	07FEB22	PERIMETER ROAD PLAN AND PROFILE SHEET 4
SCALE	DRN	07FEB22	
	CHK	07FEB22	
	APP	07FEB22	
AS SHOWN			



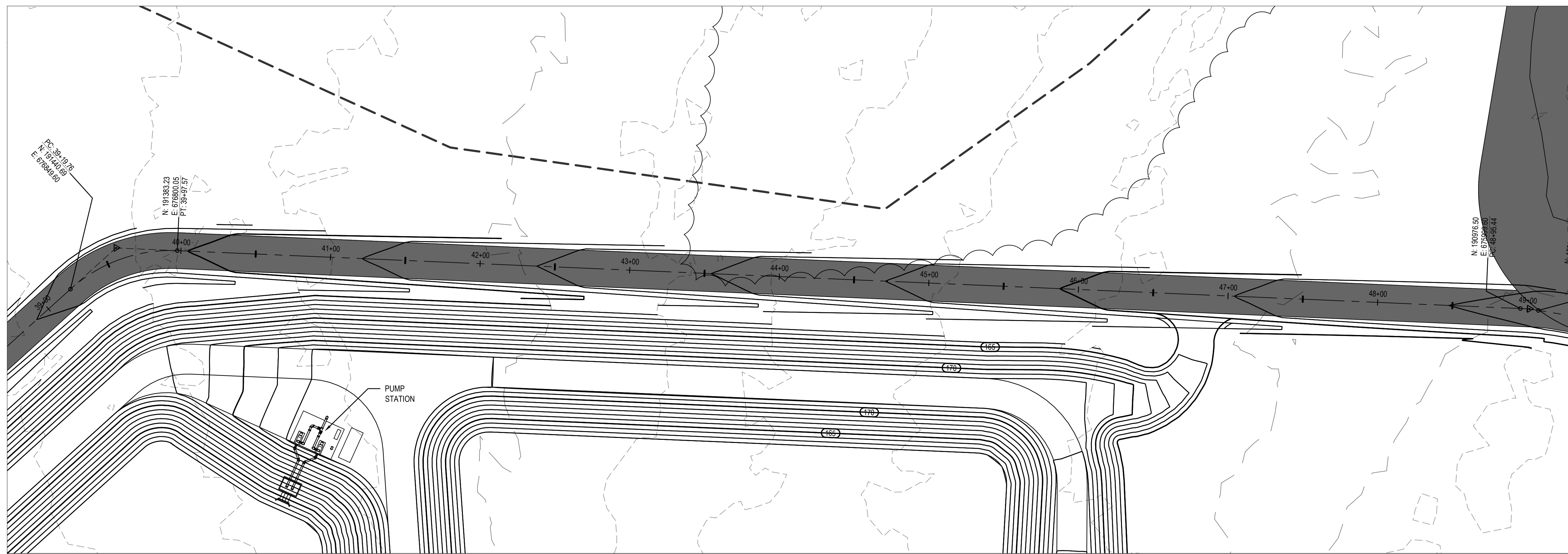
TWIN PINES MINERALS LLC
SAUNDERS DEMONSTRATION MINE
MINE ID 2073
WATER MANAGEMENT PONDS

wood.
4000 MEADOW LAKE DRIVE
SUITE 121
BIRMINGHAM, AL 35242
(205) 980-6402

AREA	CERTIFICATE OF AUTHORIZATION
ECA2221	
CLIENT DWG NO.	
DRAWING NO.	REV
C-604	0

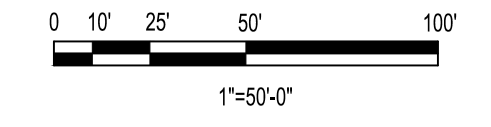
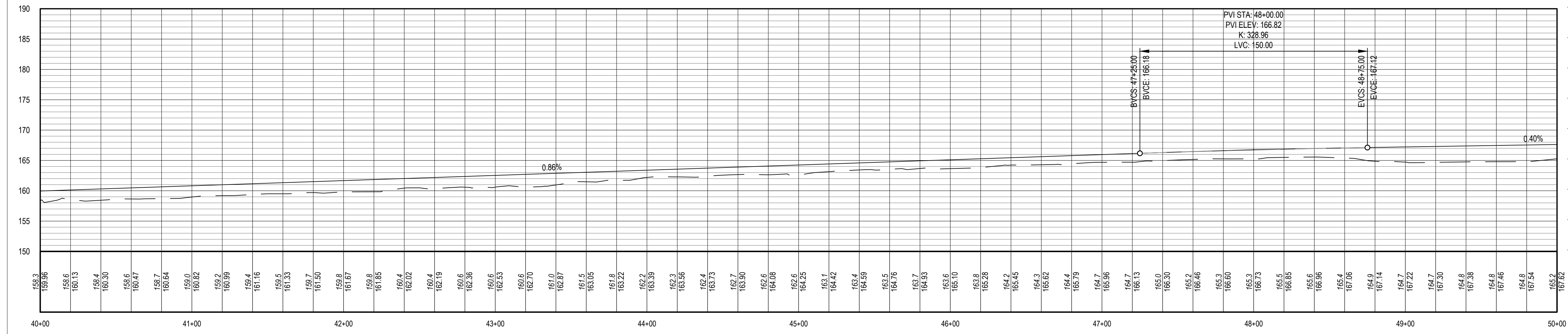


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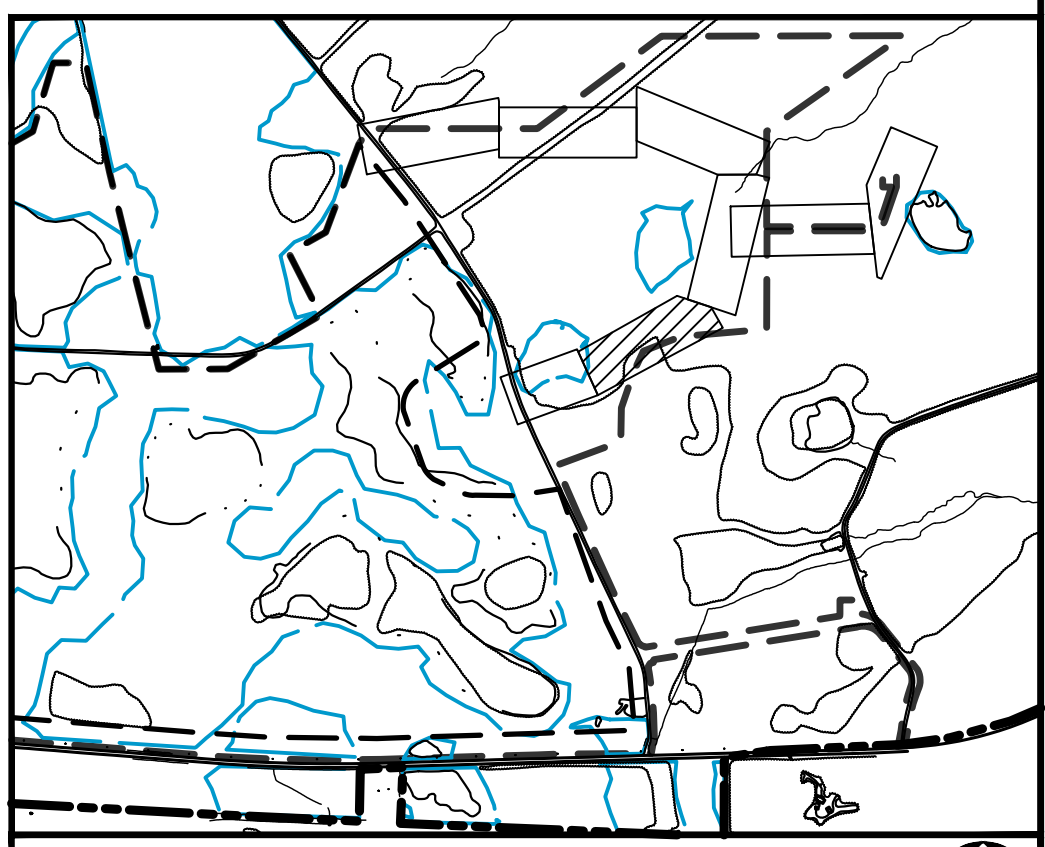


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1"=50'-0"



KEY PLAN
SCALE: NONE

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40+00	40+20	40+40	40+60	40+80	41+00	41+20	41+40	41+60	41+80	42+00	42+20	42+40	42+60	42+80	43+00	43+20	43+40	43+60	43+80	44+00	44+20	44+40	44+60	44+80	45+00	45+20	45+40	45+60	45+80	46+00	46+20	46+40	46+60	46+80	47+00	47+20	47+40	47+60	47+80	48+00	48+20	48+40	48+60	48+80	49+00	49+20	49+40	49+60	49+80	50+00													

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APPROVED FOR		
M. FOWLER CLIENT PROJECT MGR	P. MARCUM TECHNICAL MGR	M. ABDALLA PROJECT MGR
PROJECT PHASE		
PERMITTING		
PROJECT NO.	BY	DDMMYY
7382224061	DES	07FEB22
SCALE	DRN	07FEB22
	CHK	07FEB22
	APP	07FEB22
AS SHOWN		

TWIN PINES MINERALS LLC
SAUNDERS DEMONSTRATION MINE
MINE ID 2073
WATER MANAGEMENT PONDS

wood.
4000 MEADOW LAKE DRIVE
SUITE 121
BIRMINGHAM, AL 35242
(205) 980-6402

AREA	CERTIFICATE OF AUTHORIZATION ECA2221
CLIENT DWG NO.	
DRAWING NO.	C-605
REV	0

ANSI D 2024



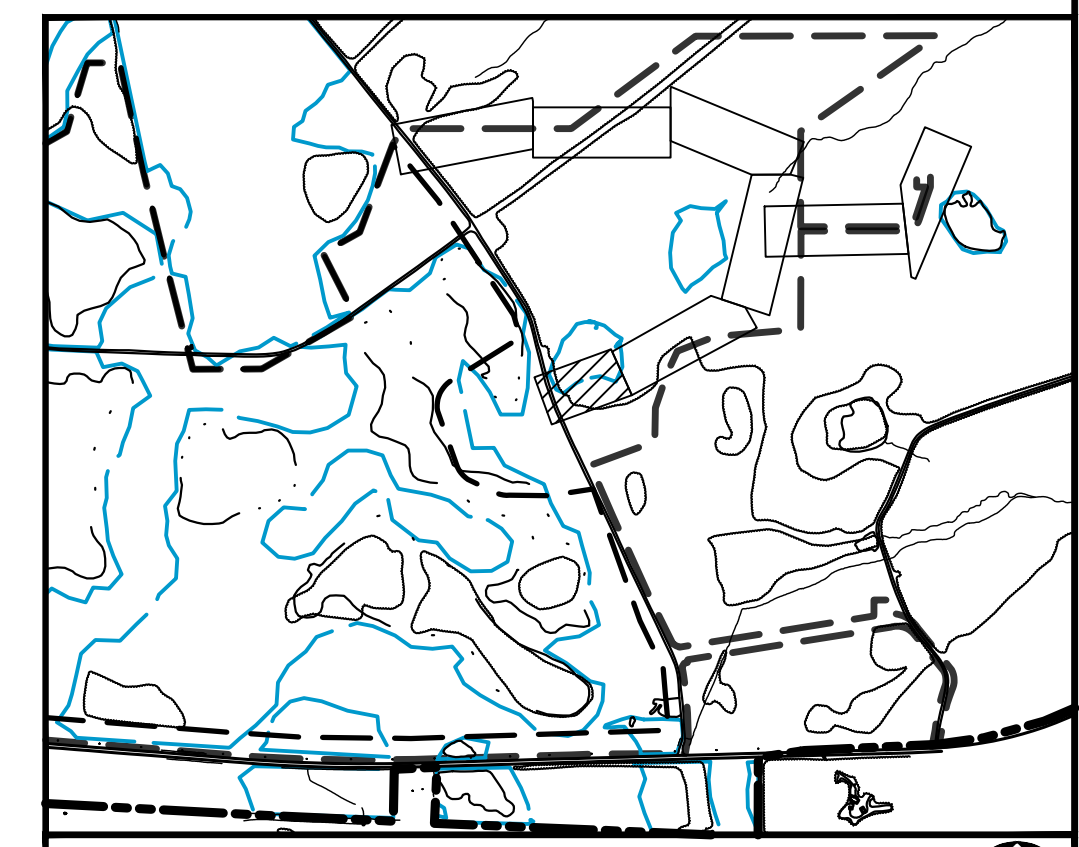
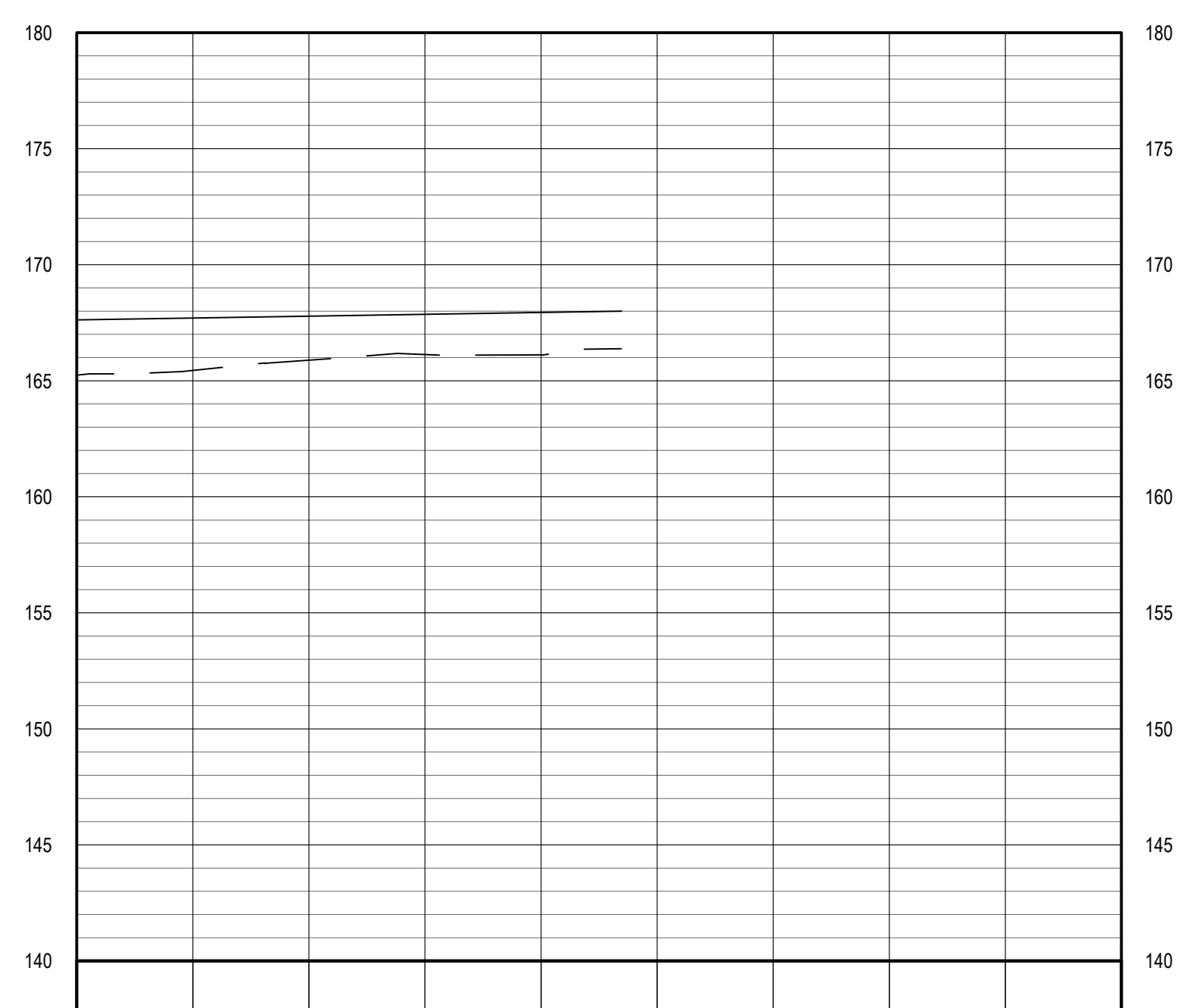
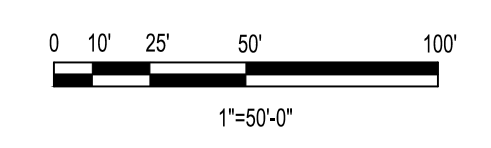
E

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KEY PLAN
SCALE: NONE



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M. FOWLER CLIENT PROJECT MGR
P. MARCUM TECHNICAL MGR
M. ABDALLA PROJECT MGR

PROJECT PHASE PERMITTING

PROJECT NO.	BY	DDMMYY	SUBJECT
7382224061	DES	07FEB22	PERIMETER ROAD PLAN AND PROFILE SHEET 6
	DRN	07FEB22	
	CHK	07FEB22	
	APP	07FEB22	

SCALE AS SHOWN



TWIN PINES MINERALS LLC
SAUNDERS DEMONSTRATION MINE
MINE ID 2073
WATER MANAGEMENT PONDS

wood.
4000 MEADOW LAKE DRIVE
SUITE 121
BIRMINGHAM, AL 35242
(205) 980-6402

AREA	CERTIFICATE OF AUTHORIZATION ECA2221
CLIENT DWG NO.	
DRAWING NO. C-606	REV 0

SAVED: 10-Jun-22 11:13 AM PLOTTED: 18-Nov-22 2:53 PM USER: NICHOLSON, PETER

C:\P\WOOD\PERMETER ROAD PLAN PROFILE.DWG

ANSI D 2024

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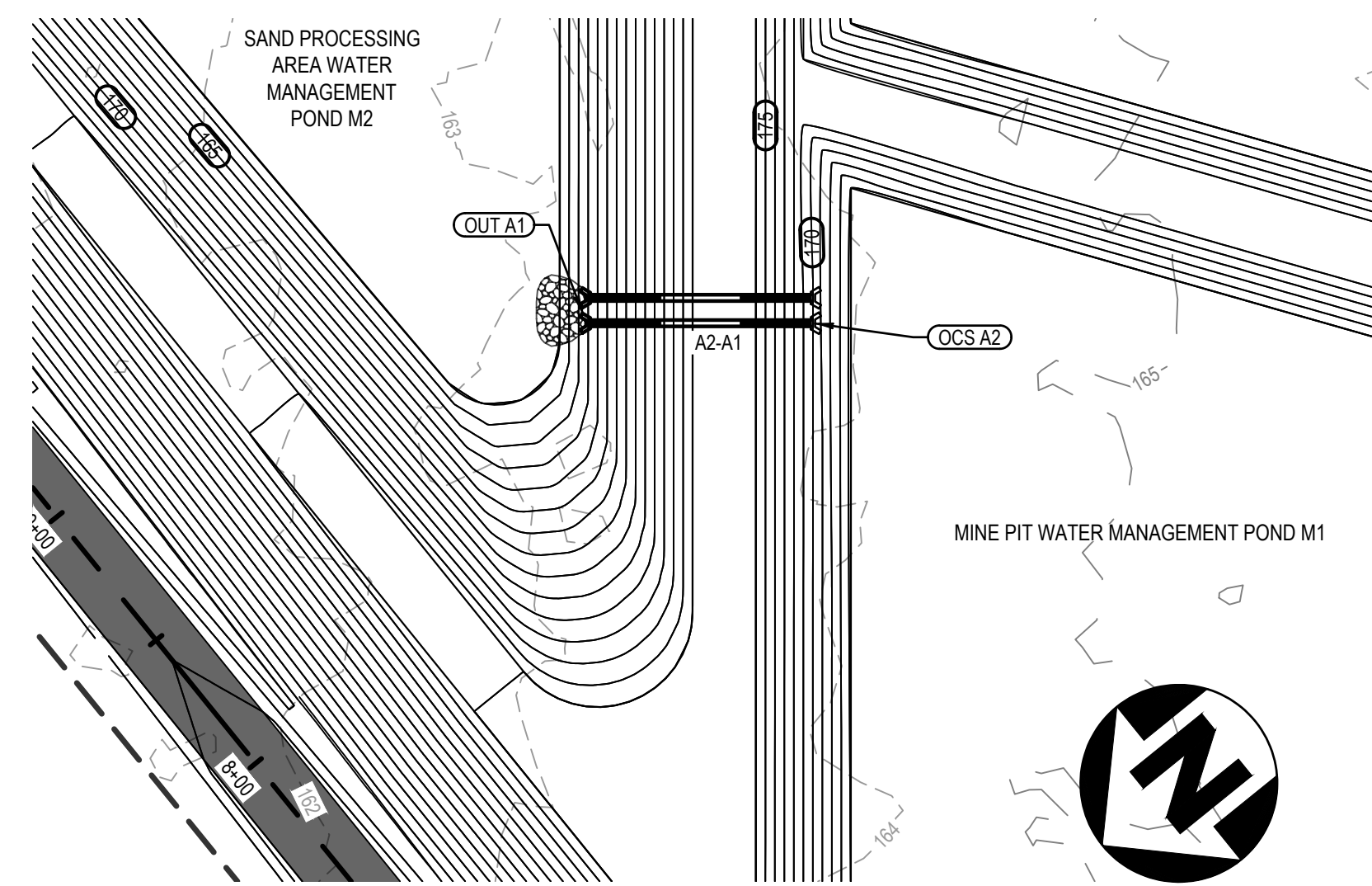
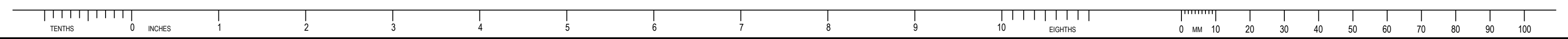
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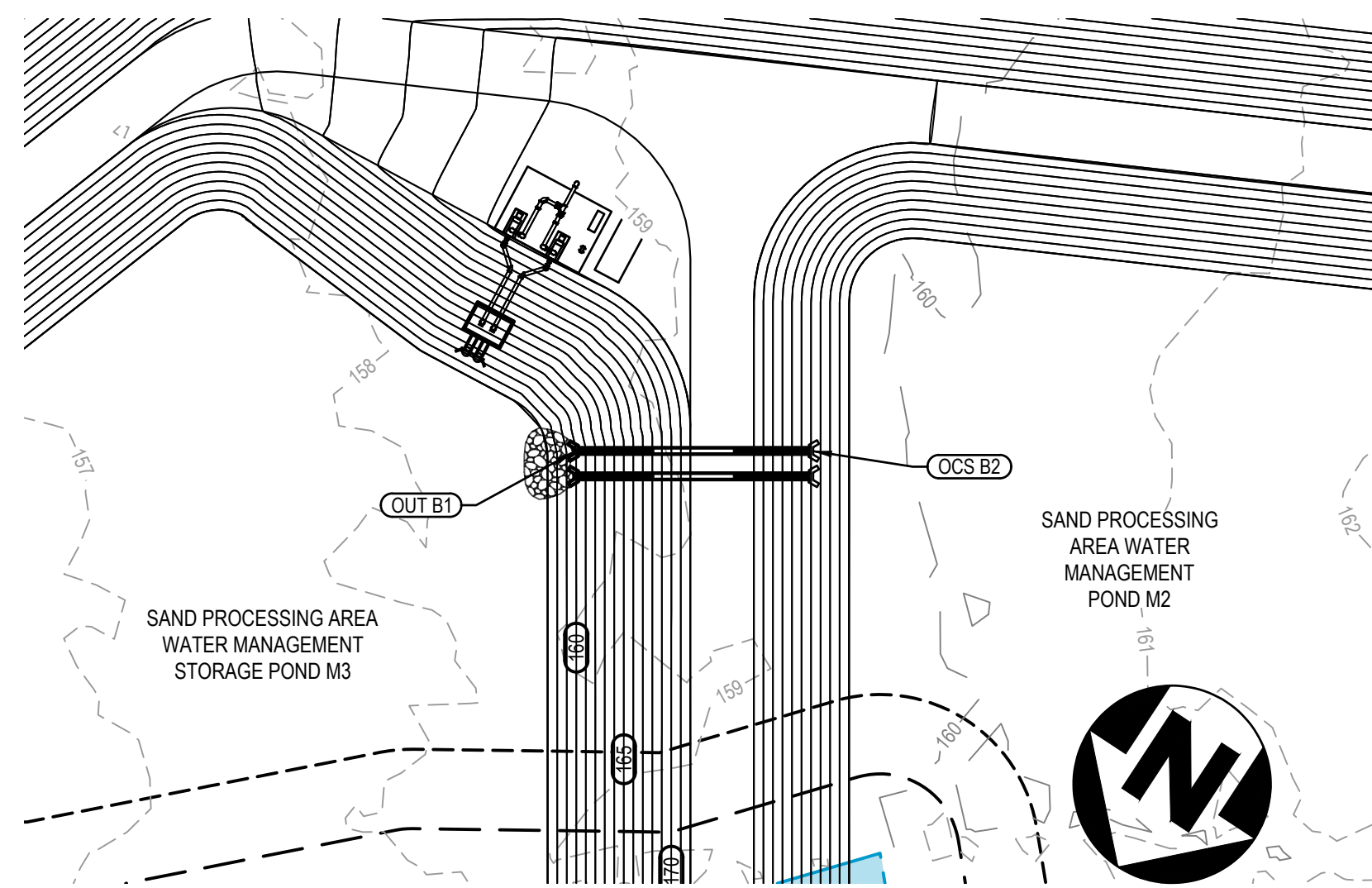
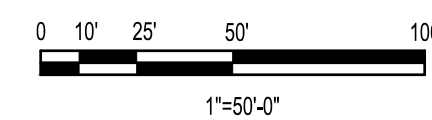
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0 8NOV2022 ISSUED FOR PERMITTING

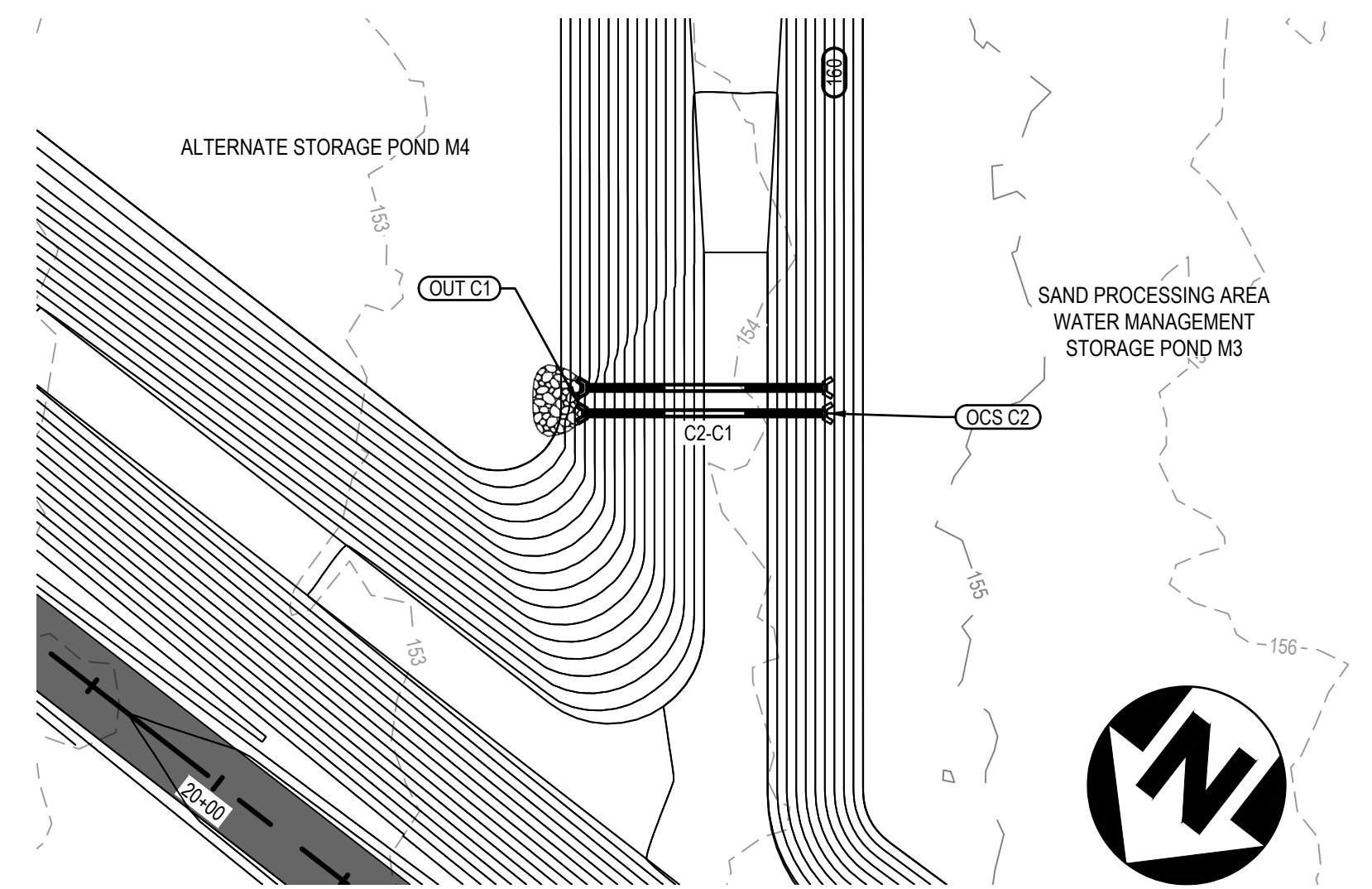
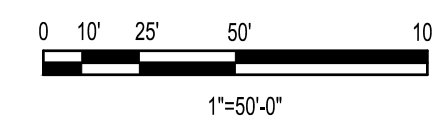
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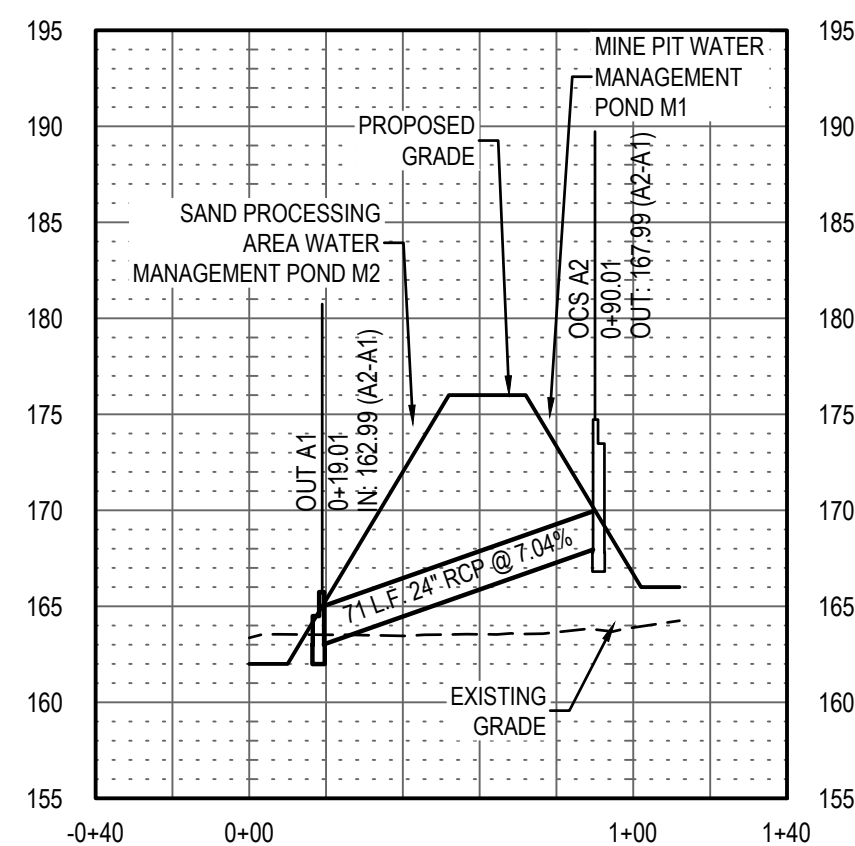
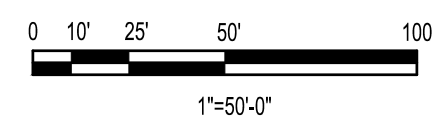
D8 STORM LINE A PLAN
C-621 SCALE: 1" = 50'



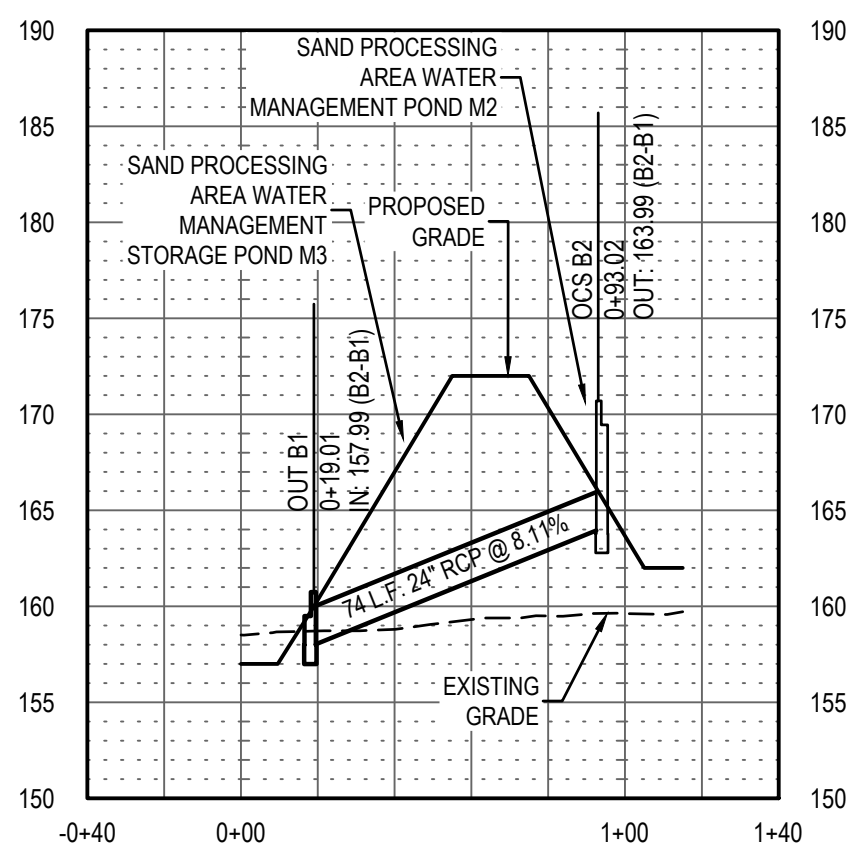
D5 STORM LINE B PLAN
C-621 SCALE: 1" = 50'



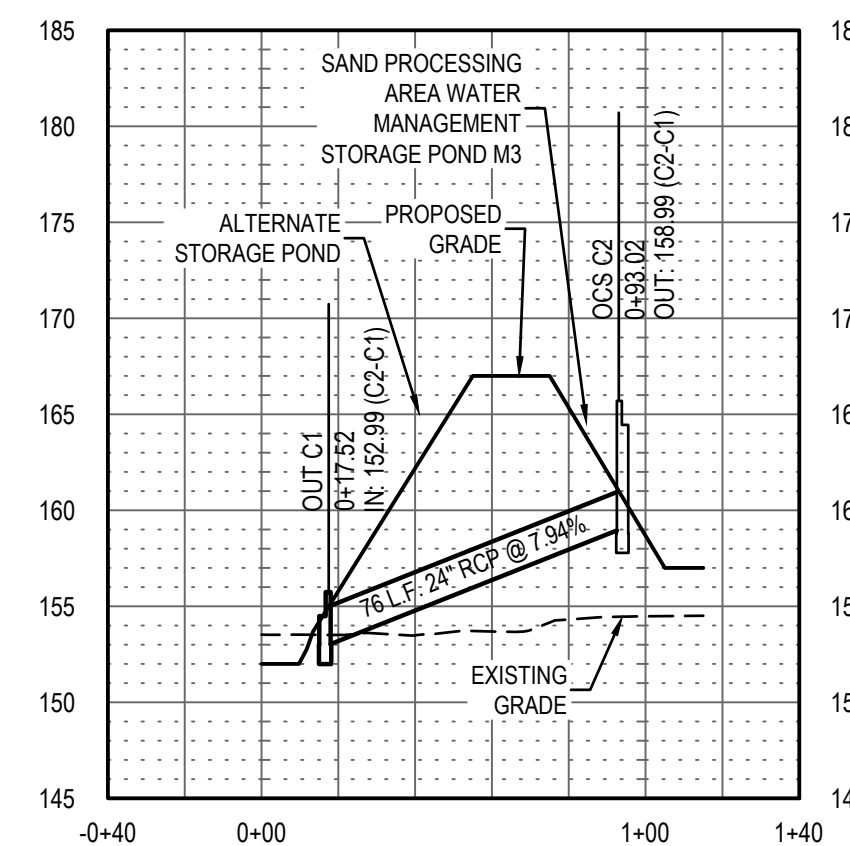
D3 STORM LINE C PLAN
C-621 SCALE: 1" = 50'



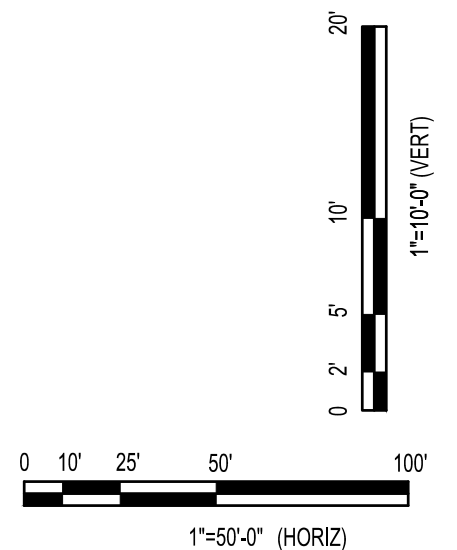
B7 STORM LINE A PROFILE
C-621 SCALE: 1" = 50' (HORIZ) 1" = 10' (VERT)



B5 STORM LINE B PROFILE
C-621 SCALE: 1" = 50' (HORIZ) 1" = 10' (VERT)



B2 STORM LINE C PROFILE
C-621 SCALE: 1" = 50' (HORIZ) 1" = 10' (VERT)



REV	DDMMYY	REVISION / ISSUE DESCRIPTION	DRN	CHK	APP	APP	APP	APP	APP	REV	DDMMYY	REVISION / ISSUE DESCRIPTION	DRN	CHK	APP	APP	APP	APP	REF	NUMBER	TITLE
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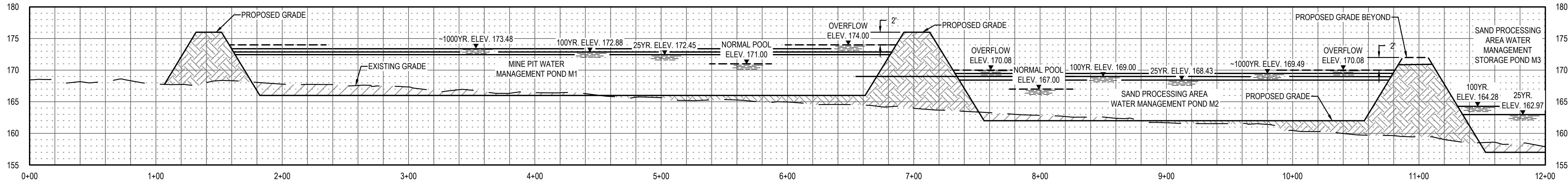
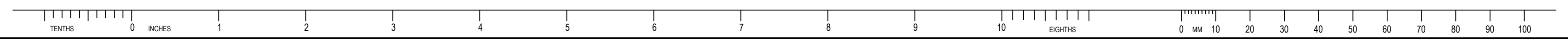
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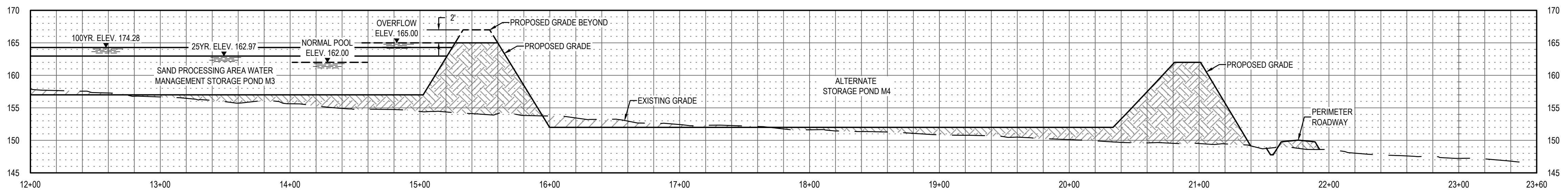
APPROVED FOR		M. FOWLER CLIENT PROJECT MGR	P. MARCUM TECHNICAL MGR	M. ABDALLA PROJECT MGR
PROJECT PHASE		PERMITTING		
PROJECT NO.	BY	DDMMYY	SUBJECT	
7382224061	DES	07FEB22	STORM DRAIN PLAN AND PROFILE	
SCALE	DRN	07FEB22		
	APP	07FEB22		
AS SHOWN				

TWIN PINES MINERALS LLC
SAUNDERS DEMONSTRATION MINE
MINE ID 2073
WATER MANAGEMENT PONDS

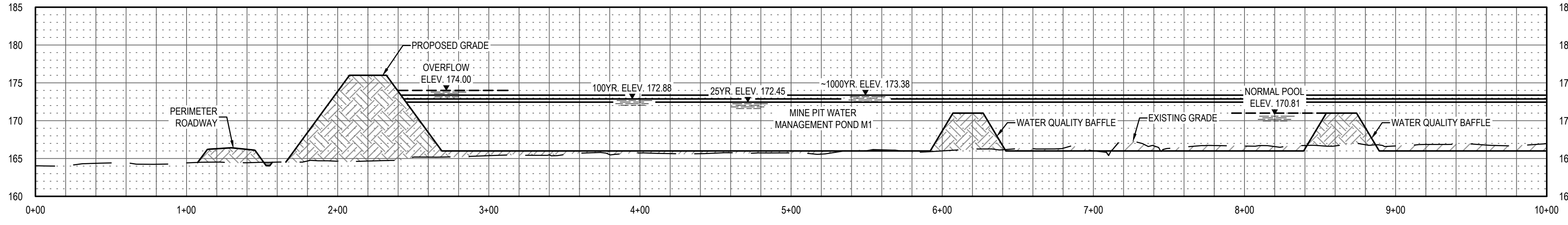
wood. 4000 MEADOW LAKE DRIVE SUITE 121 BIRMINGHAM, AL 35242 (205) 980-6402	
AREA	CERTIFICATE OF AUTHORIZATION ECA2221
CLIENT DWG NO.	
DRAWING NO. C-621	REV 0



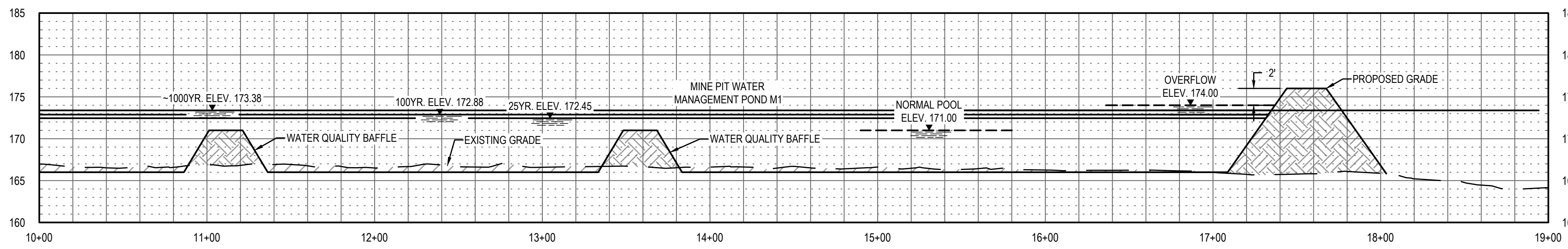
E7 SECTION THROUGH PONDS - STA. 0+00 TO STA 12+00
 C-631 SCALE: 1" = 50' (HORIZ) 1" = 10' (VERT)



D7 SECTION THROUGH PONDS - STA. 12+00 TO STA 23+60
 C-631 SCALE: 1" = 50' (HORIZ) 1" = 10' (VERT)



C7 MINE PIT WATER MANAGEMENT POND M1 SECTION - STA. 0+00 TO STA 10+00
 C-631 SCALE: 1" = 50' (HORIZ) 1" = 10' (VERT)



B7 MINE PIT WATER MANAGEMENT POND M1 SECTION - STA. 10+00 TO STA 19+00
 C-631 SCALE: 1" = 50' (HORIZ) 1" = 10' (VERT)

REV	DDMMYY	REVISION / ISSUE DESCRIPTION	DRN	CHK	APP	APP	APP	APP	APP	REV	DDMMYY	REVISION / ISSUE DESCRIPTION	DRN	CHK	APP	APP	APP	APP	APP	REF	NUMBER	TITLE
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M. FOWLER CLIENT PROJECT MGR P. MARCUM TECHNICAL MGR M. ABDALLA PROJECT MGR

PROJECT PHASE PERMITTING

PROJECT NO. 7382224061

SCALE AS SHOWN

BY DES 07FEB22 DRN 07FEB22 CHK 07FEB22 APP 07FEB22

STAMP/SEAL

TWIN PINES MINERALS LLC
 SAUNDERS DEMONSTRATION MINE
 MINE ID 2073
 WATER MANAGEMENT PONDS

AREA CERTIFICATE OF AUTHORIZATION
 ECA2221

CLIENT DWG NO.

DRAWING NO. C-631

REV 0

wood.
 4000 MEADOW LAKE DRIVE
 SUITE 121
 BIRMINGHAM, AL 35242
 (205) 980-6402

SITE CROSS SECTIONS SHEET 1

APPROVED FOR _____

M. FOWLER CLIENT PROJECT MGR P. MARCUM TECHNICAL MGR M. ABDALLA PROJECT MGR

PROJECT PHASE PERMITTING

PROJECT NO. 7382224061

SCALE AS SHOWN

BY DES 07FEB22 DRN 07FEB22 CHK 07FEB22 APP 07FEB22

STAMP/SEAL

TWIN PINES MINERALS LLC
 SAUNDERS DEMONSTRATION MINE
 MINE ID 2073
 WATER MANAGEMENT PONDS

AREA CERTIFICATE OF AUTHORIZATION
 ECA2221

CLIENT DWG NO.

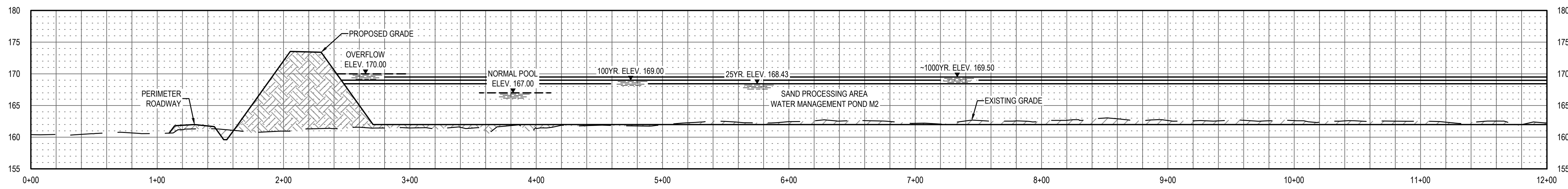
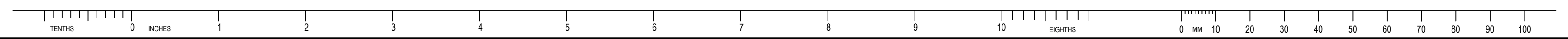
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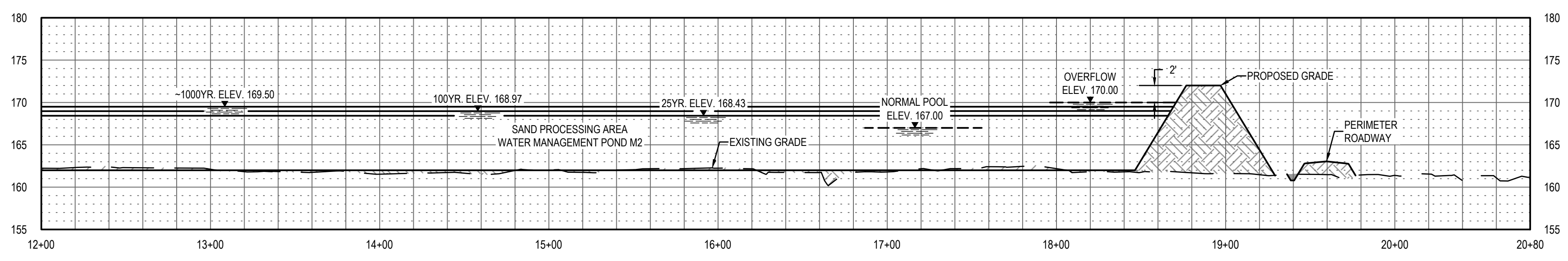
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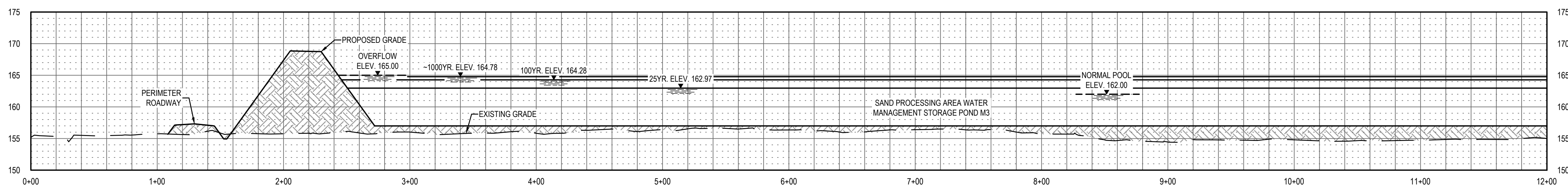
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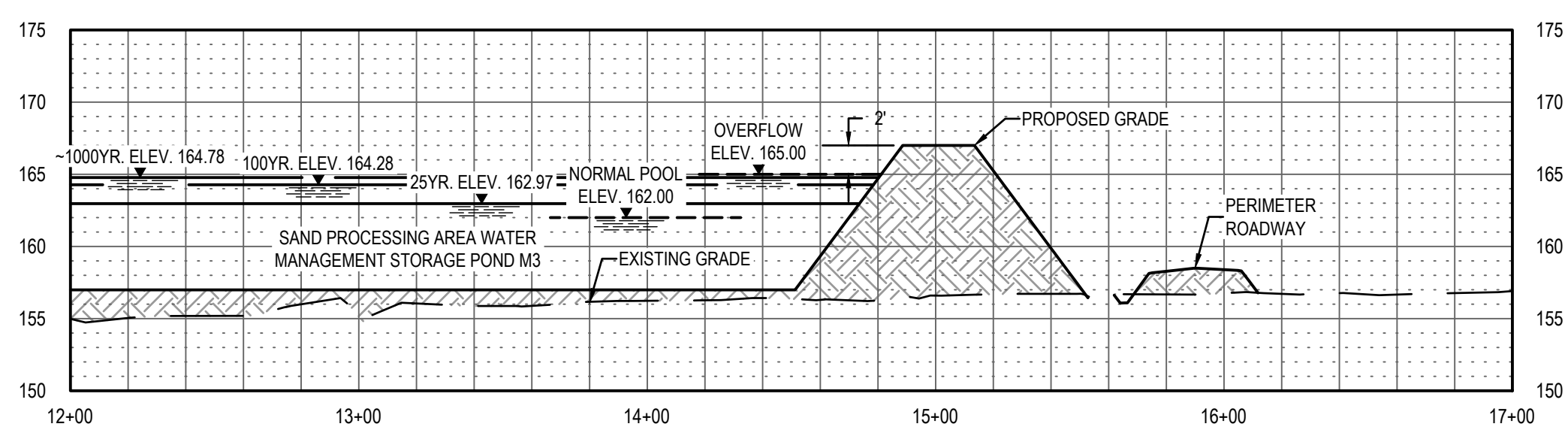
E7 SAND PROCESSING AREA WATER MANAGEMENT POND M2 SECTION - STA. 0+00 TO STA 12+00
 C-632 SCALE: 1" = 50' (HORIZ) 1" = 10' (VERT)



D7 SAND PROCESSING AREA WATER MANAGEMENT POND M2 SECTION - STA. 12+00 TO 20+80
 C-632 SCALE: 1" = 50' (HORIZ) 1" = 10' (VERT)



C7 SAND PROCESSING AREA WATER MANAGEMENT STORAGE POND M3 SECTION STA. 0+00 TO STA 12+00
 C-632 SCALE: 1" = 50' (HORIZ) 1" = 10' (VERT)



B7 SAND PROCESSING AREA WATER MANAGEMENT STORAGE POND M3 SECTION STA. 12+00 TO STA 17+00
 C-632 SCALE: 1" = 50' (HORIZ) 1" = 10' (VERT)

E

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REV	DDMMYY	REVISION / ISSUE DESCRIPTION	DRN	CHK	APP	APP	APP	APP	APP	REF	NUMBER	TITLE
0	8NOV2022	ISSUED FOR PERMITTING										

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APPROVED FOR		
M. FOWLER CLIENT PROJECT MGR	P. MARCUM TECHNICAL MGR	M. ABDALLA PROJECT MGR
PROJECT PHASE PERMITTING		
PROJECT NO. 7382224061	BY DES 07FEB22	DDMMYY DRN 07FEB22
SCALE AS SHOWN	CHK 07FEB22	APP 07FEB22

wood
 4000 MEADOW LAKE DRIVE
 SUITE 121
 BIRMINGHAM, AL 35242
 (205) 980-6402

TWIN PINES MINERALS LLC
 SAUNDERS DEMONSTRATION MINE
 MINE ID 2073
 WATER MANAGEMENT PONDS

CERTIFICATE OF AUTHORIZATION
 ECA2221

CLIENT DWG NO.

DRAWING NO.
C-632

REV
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SITE CROSS SECTIONS SHEET 2

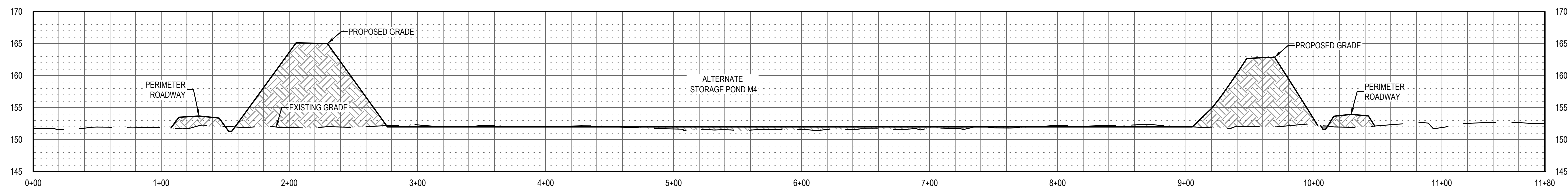
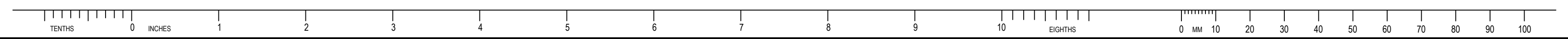
AREA	CERTIFICATE OF AUTHORIZATION ECA2221
CLIENT DWG NO.	
DRAWING NO.	C-632
REV	0

ANSI D 2024

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CAD FILE: W:\AD\06\03 SITE CROSS SECTIONS SHEET.DWG

SAVED: 09-Nov-22 8:22 AM PLOTTED: 18-Nov-22 2:55 PM USER: NICHOLSON, PETER



E7 ALTERNATE STORAGE POND M4 SECTION
C-633 SCALE: 1" = 50' (HORIZ) 1" = 10' (VERT)

E

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C

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A

REV	DDMMYY	REVISION / ISSUE DESCRIPTION	DRN	CHK	APP	APP	APP	APP	APP	REV	DDMMYY	REVISION / ISSUE DESCRIPTION	DRN	CHK	APP	APP	APP	APP	REF	NUMBER	TITLE
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APPROVED FOR _____		
M. FOWLER CLIENT PROJECT MGR	P. MARCUM TECHNICAL MGR	M. ABDALLA PROJECT MGR
PROJECT PHASE PERMITTING		
PROJECT NO. 7382224061	BY DES 07FEB22	DDMMYY 07FEB22
SCALE AS SHOWN	CHK 07FEB22	
	APP 07FEB22	

 TWIN PINES MINERALS LLC
 SAUNDERS DEMONSTRATION MINE
 MINE ID 2073
 WATER MANAGEMENT PONDS

AREA: CERTIFICATE OF AUTHORIZATION
 ECA2221

CLIENT DWG NO.

DRAWING NO.
C-633

REV
 0

wood.
 4000 MEADOW LAKE DRIVE
 SUITE 121
 BIRMINGHAM, AL 35242
 (205) 980-6402

SITE CROSS SECTIONS SHEET 3

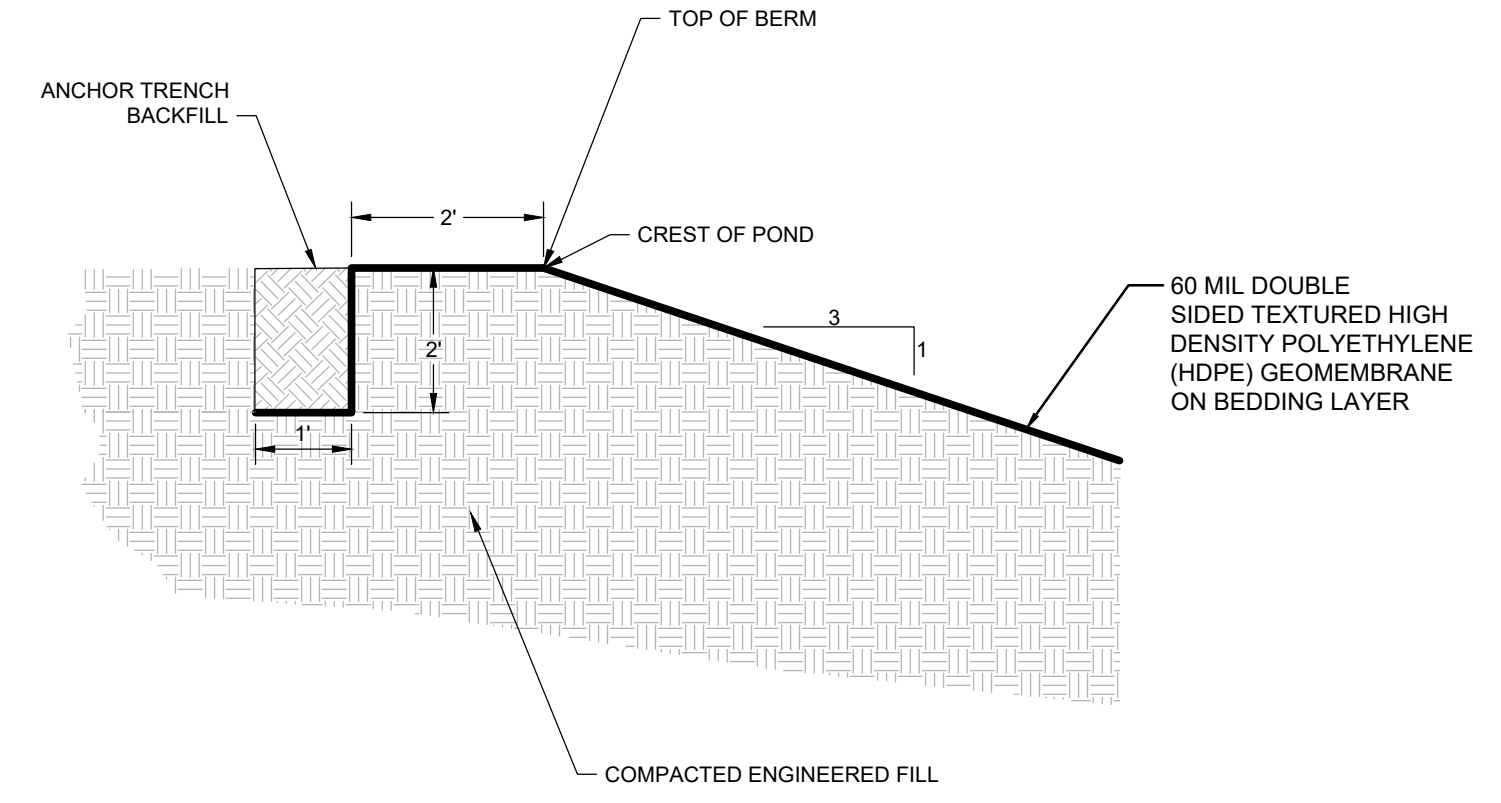
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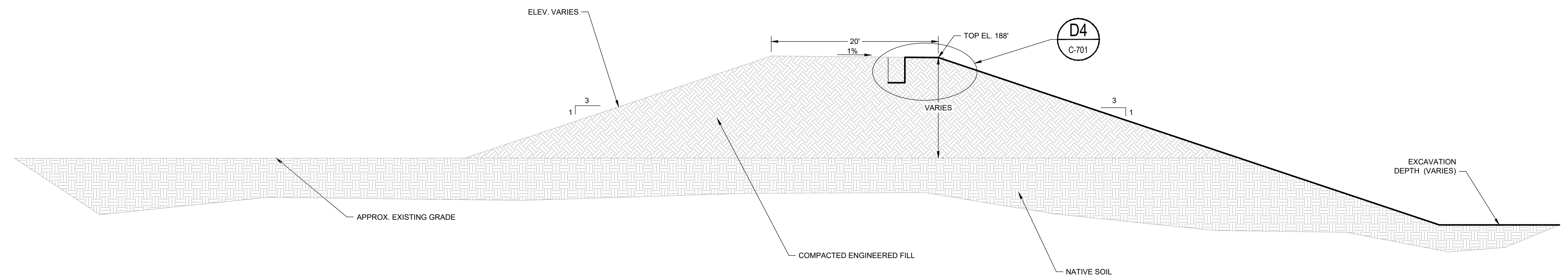
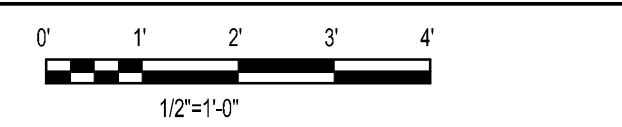
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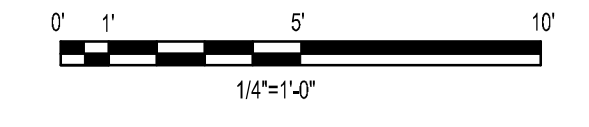
NOTE:
 INSPECTION OF THE LINERS SHOULD BE MADE CONCURRENTLY WITH THE REMOVAL OF THE SETTLED SEDIMENTS. AFTER SEDIMENTS ARE REMOVED BY VACUUM OR OTHER NON-DESTRUCTIBLE TECHNIQUE, THE LINERS SHOULD BE THOROUGHLY INSPECTED. WHERE IDENTIFIED, REPAIR TORN OR DAMAGED GEOTEXTILE. REMOVE CLOGGED AREAS OF GEOTEXTILE. PERFORM REPAIRS BY PLACING A PATCH OF THE SAME TYPE OF GEOTEXTILE OVER THE DAMAGED AREA. EXTEND THE PATCH A MINIMUM OF 12 INCHES BEYOND THE EDGE OF THE DAMAGED AREA. CONTINUOUSLY FASTEN PATCHES USING APPROVED METHODS BY THE MANUFACTURER.



D4 LINER AT TOP OF BERM
 C-701 SCALE: 1/2" = 1'-0"



B7 TYPICAL WATER MANAGEMENT POND BERM
 C-701 SCALE: 1/4" = 1'-0"



REV	DDMMYY	REVISION / ISSUE DESCRIPTION	DRN	CHK	APP	APP	APP	APP	APP	REV	DDMMYY	REVISION / ISSUE DESCRIPTION	DRN	CHK	APP	APP	APP	APP	REF	NUMBER	TITLE	REFERENCES
0	8NOV2022	ISSUED FOR PERMITTING																				

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APPROVED FOR _____		
M. FOWLER CLIENT PROJECT MGR	P. MARCUM TECHNICAL MGR	M. ABDALLA PROJECT MGR
PROJECT PHASE #####		
PROJECT NO. #####	BY DES	DDMMYY 07FEB22
SCALE AS SHOWN	DRN	07FEB22
	CHK	07FEB22
	APP	07FEB22

 MINE ID 2073
 WATER MANAGEMENT PONDS

SUBJECT
 LINER DETAILS

wood.
 4000 MEADOW LAKE DRIVE
 SUITE 121
 BIRMINGHAM, AL 35242
 (205) 980-6402

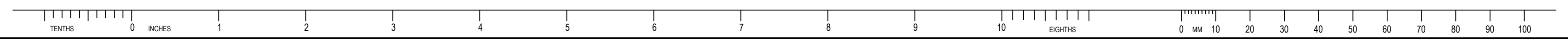
AREA
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 ECA2221

CLIENT DWG NO.
 C-701

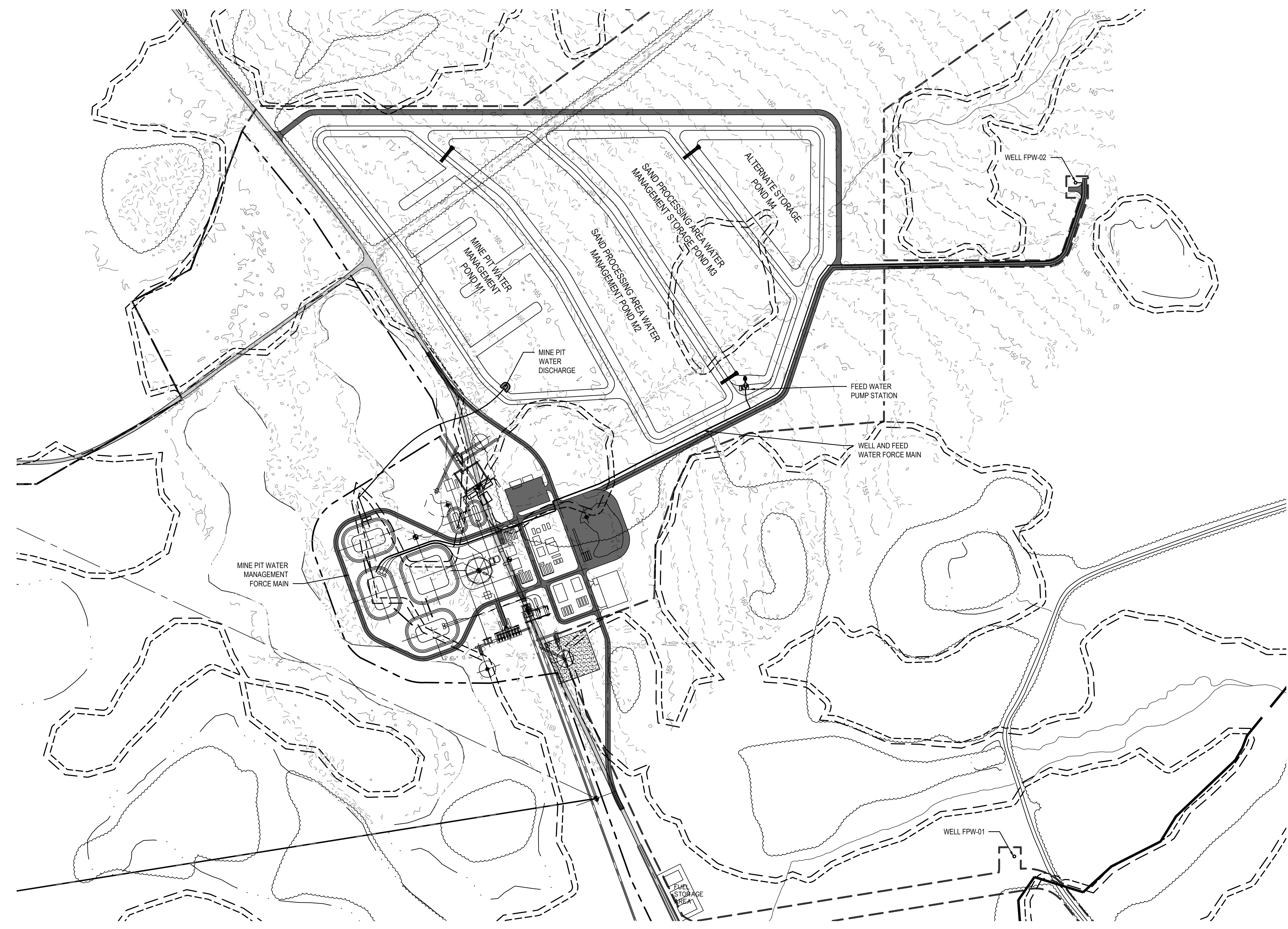
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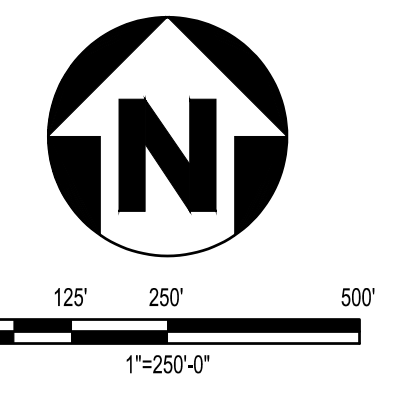
E
D
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LEGEND	
	MINE BOUNDARY
	PERMIT BOUNDARY
	EXISTING INDEX CONTOUR
	EXISTING INTERMEDIATE CONTOUR

SAUNDERS DEMONSTRATION MINE CLOSURE PLAN
REFER TO WATER USE MANAGEMENT PLAN FOR THE DETAILED CLOSURE PROCEDURES.

- PHASE 1 - MINE PIT WATER MANAGEMENT POND
- OPEN SLUICE GATES
 - DRAIN MINE PIT WATER MANAGEMENT POND
 - CLOSE SLUICE GATES
 - DECOMMISSION POND
- REMOVE LINER SYSTEM
 - REMOVE SLUICE GATES, HEADWALL AND CULVERT
 - REMOVE BERM
 - RESTORE AREA TO PRE-CONSTRUCTION CONDITIONS
- PHASE 2 - SAND PROCESSING AREA WATER MANAGEMENT POND (1)
- OPEN SLUICE GATES
 - DRAIN SAND PROCESSING AREA WATER MANAGEMENT POND (1)
 - CLOSE SLUICE GATES
 - DECOMMISSION POND
- REMOVE LINER SYSTEM
 - REMOVE SLUICE GATES, HEADWALL AND CULVERT
 - REMOVE BERM
 - RESTORE AREA TO PRE-CONSTRUCTION CONDITIONS
- PHASE 3 - ALTERNATE STORAGE POND
- PUMP ANY STANDING WATER INTO SAND PROCESSING AREA WATER MANAGEMENT POND (2)
 - DECOMMISSION POND
- REMOVE LINER SYSTEM
 - REMOVE BERM
 - RESTORE AREA TO PRE-CONSTRUCTION CONDITIONS
- PHASE 4 - SAND PROCESSING AREA WATER MANAGEMENT POND (2)
- OPEN SLUICE GATES
 - DRAIN SAND PROCESSING AREA WATER MANAGEMENT POND (2)
 - CLOSE SLUICE GATES
 - DECOMMISSION POND
- REMOVE LINER SYSTEM
 - REMOVE SLUICE GATES, HEADWALL AND CULVERT
 - REMOVE BERM
 - RESTORE AREA TO PRE-CONSTRUCTION CONDITIONS



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REV	DDMMYY	REVISION / ISSUE DESCRIPTION	DRN	CHK	APP	APP	APP	APP	APP	REV	DDMMYY	REVISION / ISSUE DESCRIPTION	DRN	CHK	APP	APP	APP	APP	REF	NUMBER	TITLE	
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PROJECT PHASE		
PERMITTING		
PROJECT NO.	BY	DDMMYY
7382224061	DES	07FEB22
SCALE	DRN	07FEB22
	CHK	07FEB22
	APP	07FEB22
AS SHOWN		

TWIN PINES MINERALS LLC
SAUNDERS DEMONSTRATION MINE
MINE ID 2073
WATER MANAGEMENT PONDS

AREA CERTIFICATE OF AUTHORIZATION
ECA2221

CLIENT DWG NO.

DRAWING NO.
C-801

REV
0

wood

4000 MEADOW LAKE DRIVE
SUITE 121
BIRMINGHAM, AL 35242
(205) 980-6402

AREA CERTIFICATE OF AUTHORIZATION
ECA2221

CLIENT DWG NO.

DRAWING NO.
C-801

REV
0

ANSI D 2024

CAD FILE: W:\AD\02\070 POND CLOSURE PLAN.DWG