

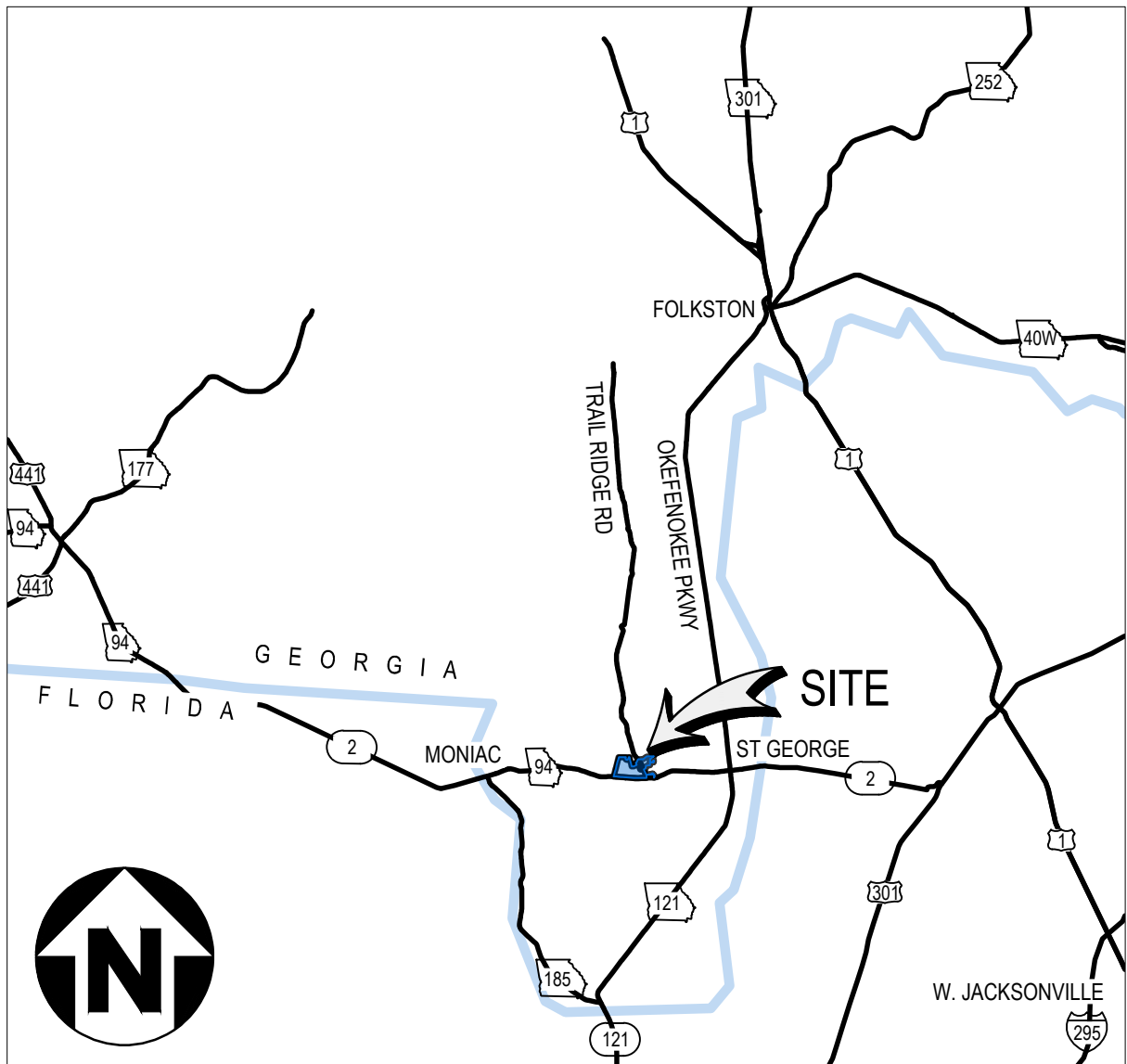
# SAUNDERS DEMONSTRATION MINE

PREPARED FOR:

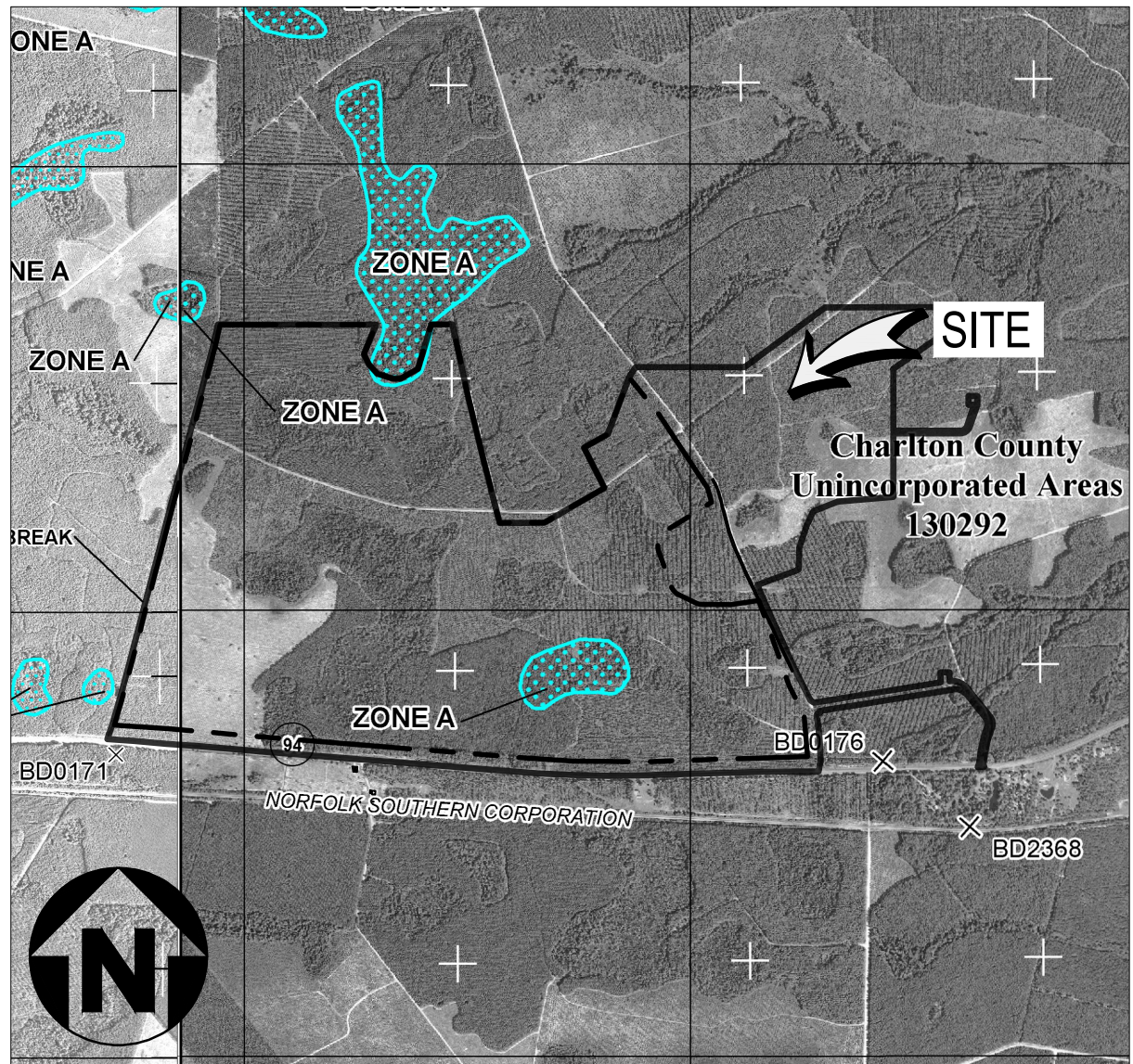
TWIN PINES MINERALS, LLC  
2100 SOUTHBRIDGE PARKWAY SUITE 540  
BIRMINGHAM, ALABAMA 32091




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



⑩ LOCATION MAP  
N.T.S.



⑩ F.I.R.M. PANEL  
1" = 2000'



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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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	11MAY22	ISSUED FOR PERMITTING																			

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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	DES 07FEB22	BY DDMMYY 07FEB22
SCALE AS SHOWN	DRN 07FEB22	CHK 07FEB22
	APP 07FEB22	



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

SUBJECT  
COVER SHEET



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

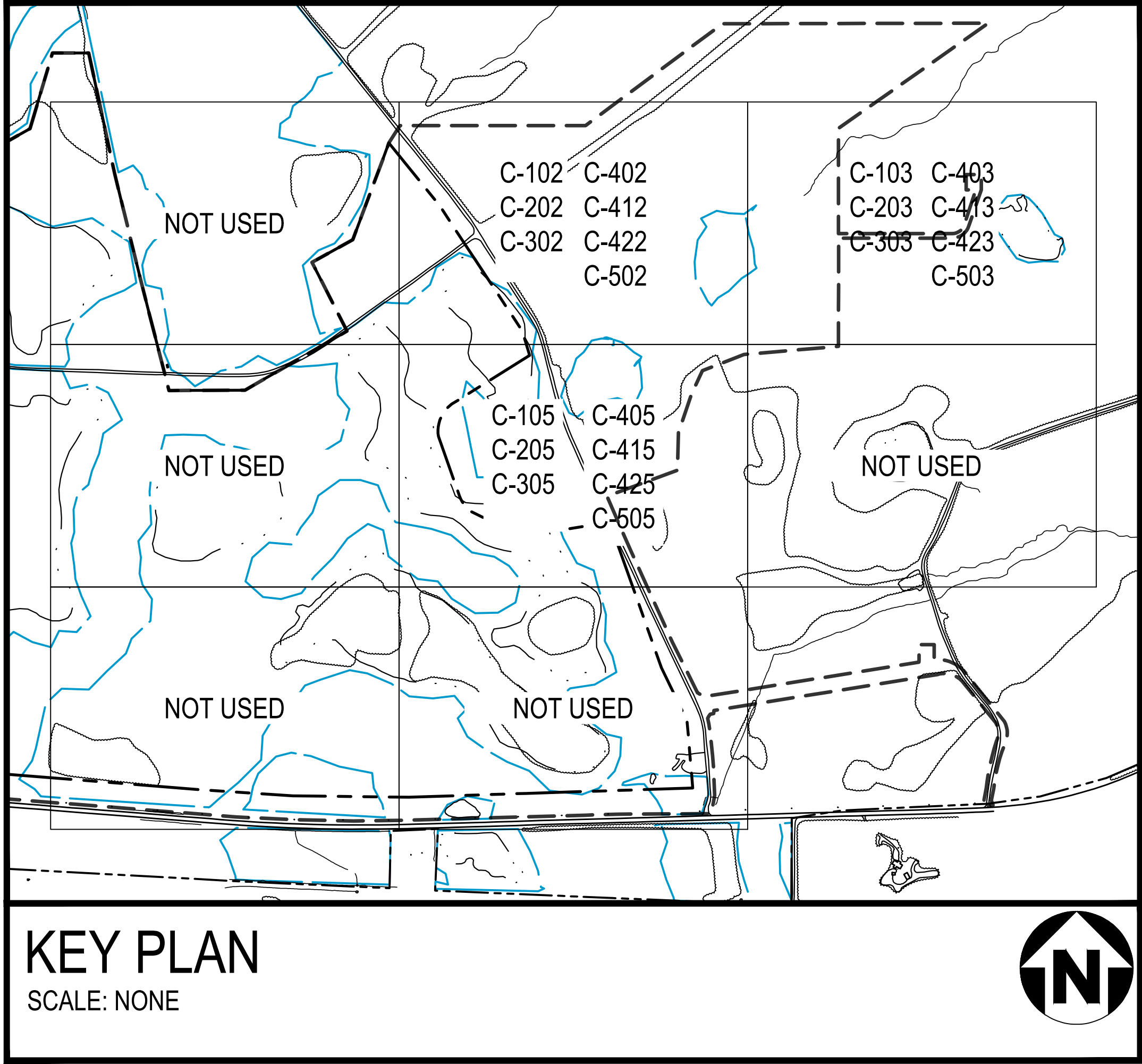
AREA  
ECA2221

CERTIFICATE OF AUTHORIZATION

CLIENT DWG NO.

DRAWING NO.  
C-001

REV  
0



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
	C-431	EROSION SEDIMENTATION AND POLLUTION CONTROL NOTES SHEET 1
	C-432	EROSION SEDIMENTATION AND POLLUTION CONTROL NOTES SHEET 2
	C-433	EROSION SEDIMENTATION AND POLLUTION CONTROL NOTES SHEET 3
	C-439	EROSION SEDIMENTATION AND POLLUTION CONTROL CHECKLIST
	C-441	EROSION SEDIMENTATION AND POLLUTION CONTROL DETAILS SHEET 1
	C-442	EROSION SEDIMENTATION AND POLLUTION CONTROL DETAILS SHEET 2

SHEET NUMBER	DRAWING NUMBER	SHEET TITLE
	C-500	OVERALL UTILITY PLAN
	C-502	UTILITY PLAN SHEET 2
	C-503	UTILITY PLAN SHEET 3
	C-505	UTILITY PLAN SHEET 5
	C-511	UTILITY DETAILS SHEET 1
	C-512	UTILITY DETAILS SHEET 2
	C-513	UTILITY DETAILS SHEET 3
	C-514	UTILITY DETAILS SHEET 4
	C-515	UTILITY DETAILS SHEET 5
	C-521	PUMP STATION PLAN AND SECTION
	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
	C-606	PERIMETER ROAD PLAN AND PROFILE SHEET 6
	C-611	PUMP HOUSE ROAD PLAN AND PROFILE SHEET 1
	C-612	PUMP HOUSE ROAD PLAN AND PROFILE SHEET 2
	C-621	STORM DRAIN PLAN AND PROFILE
	C-631	SITE CROSS SECTIONS SHEET 1
	C-632	SITE CROSS SECTIONS SHEET 2
	C-633	SITE CROSS SECTIONS SHEET 3
	C-701	LINER DETAILS
	C-711	SITE DETAILS 1
	C-712	SITE DETAILS 2
	C-713	SITE DETAILS 3
	C-714	SITE DETAILS 4
	C-801	POND CLOSURE PLAN

The image shows the official logo of the Georgia Soil and Water Conservation Commission (GSWCC). The logo features a stylized black and white graphic of a plow and a water drop on the left, followed by the acronym "GSWCC" in large, bold, black letters. To the right of the acronym, the full name "GEORGIA SOIL AND WATER CONSERVATION COMMISSION" is written in a smaller, black, sans-serif font. Below the logo, the name "Philip W Marcum" is printed in a large, black, serif font, underlined. Underneath the name, the text "Level II Certified Design Professional" is printed in a large, black, serif font. At the bottom of the image, the certification details are listed: "CERTIFICATION NUMBER" followed by "0000010833" and "ISSUED: 01/31/2022" followed by "EXPIRES: 01/31/2025".

**GSWCC** GEORGIA SOIL AND WATER  
CONSERVATION COMMISSION

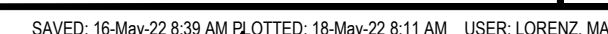
Philip W Marcum

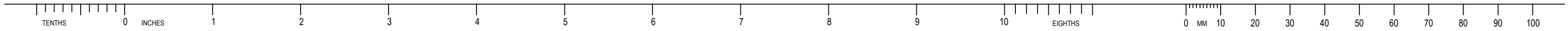
Level II Certified Design Professional

CERTIFICATION NUMBER 0000010833

ISSUED: 01/31/2022 EXPIRES: 01/31/2025

[illegible]





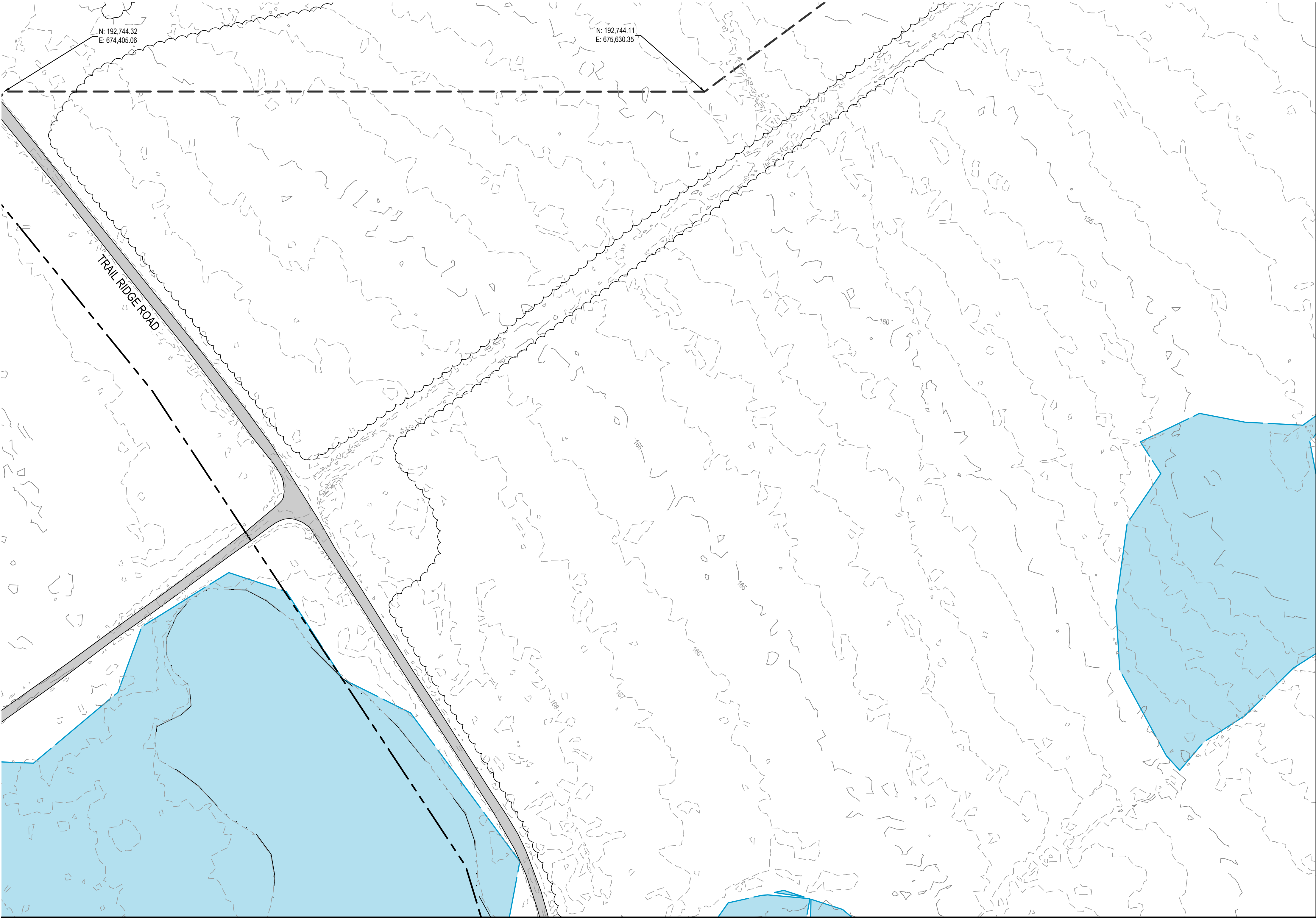
E

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MATCHLINE - SEE SHEET C-105

MATCHLINE - SEE SHEET C-103

LEGEND

MINE BOUNDARY

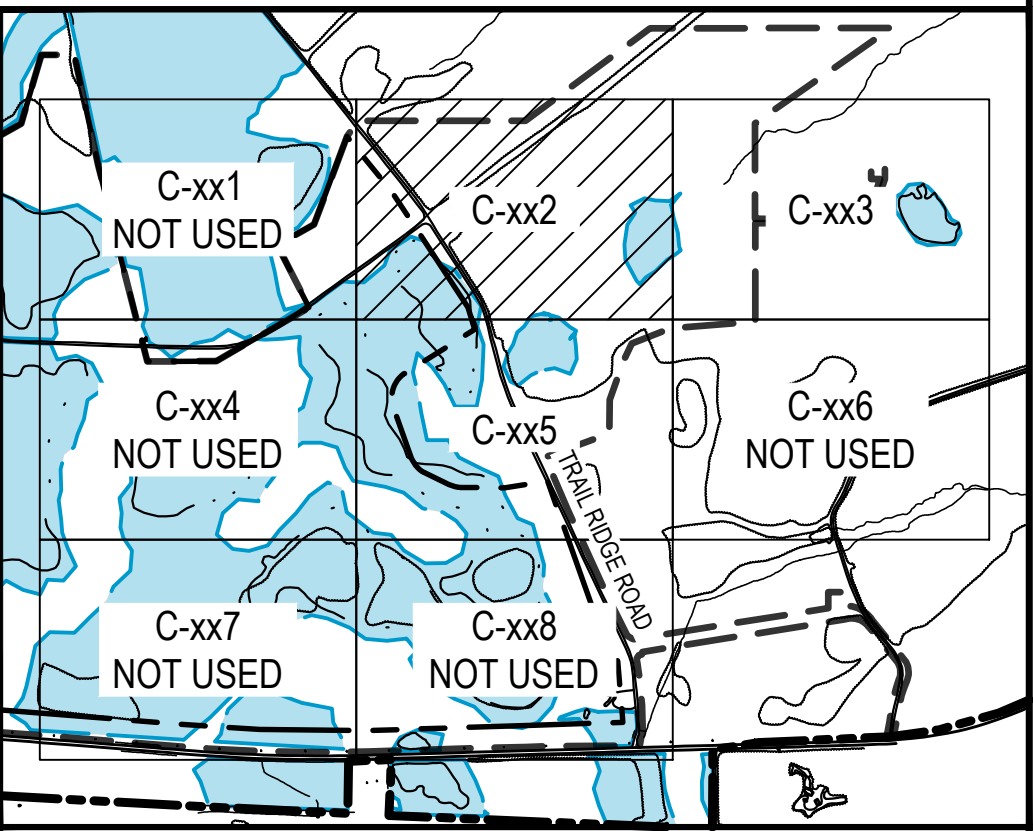
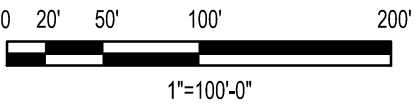
PERMIT BOUNDARY

EXISTING INDEX CONTOUR

EXISTING INTERMEDIATE CONTOUR

NON-JURISDICTIONAL WETLANDS

TREE LINE



KEY PLAN  
SCALE: NONE



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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
0	11MAY22	ISSUED FOR PERMITTING																			

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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	DDMMYY	
		DES		07FEB22	
SCALE  AS SHOWN		DRN		07FEB22	
		CHK		07FEB22	
		APP		07FEB22	

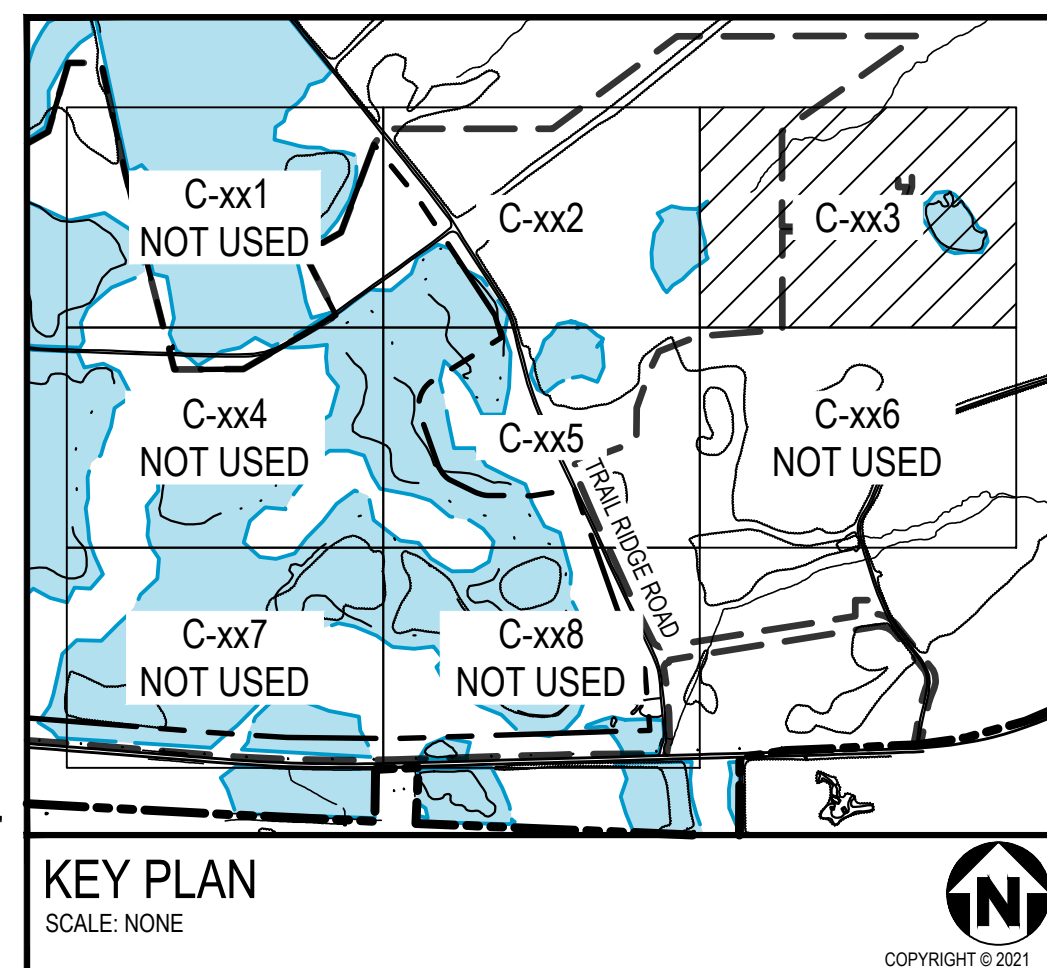
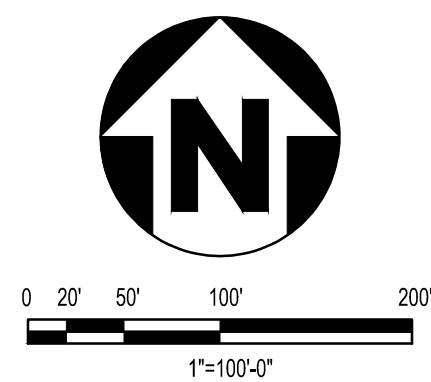
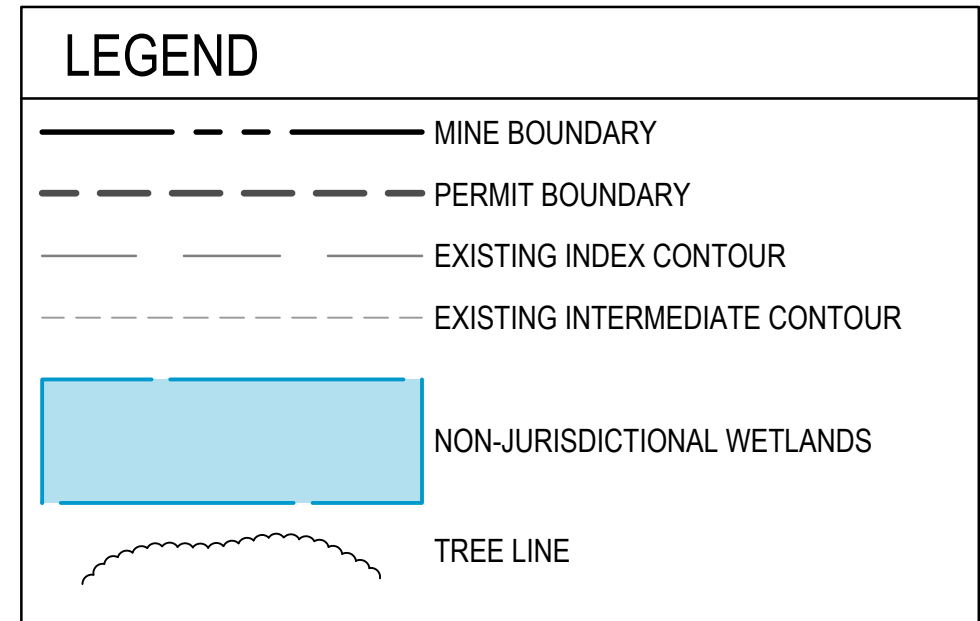
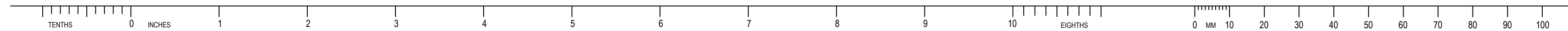


TWIN PINES MINERALS LLC  
SAUNDERS DEMONSTRATION MINE  
MINE ID 2073  
WATER MANAGEMENT PONDS

SUBJECT  
EXISTING CONDITIONS PLAN SHEET 2

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

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

[illegible]

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STAMP/SEAL



APPROVED FOR \_\_\_\_\_

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

PROJECT PHASE	
---------------	--

11

PERMITTING

	07FEB22
--	---------

07FEB22

AS SHOWN

CHK	
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07FEB22	
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TWIN PINES MINERALS LLC  
SAUNDERS DEMONSTRATION MINE  
MINE ID 2073  
WATER MANAGEMENT PONDS

T

EXISTING CONDITIONS PLAN SHEET 3

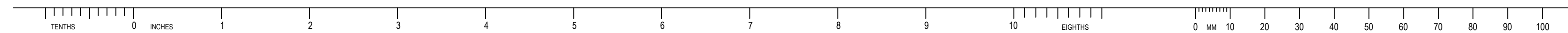
AREA	CERTIFICATE OF AUTHORIZATION ECA2221
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CLIENT DWG NO.

DRAWING NO.  
C-103

REV 0	CAD FILE:
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SAVED: 16-May-22 8:39 AM PLOTTED: 18-May-22 8:11 AM USER: LORENZ, MAX



MATCHLINE - SEE SHEET C-102

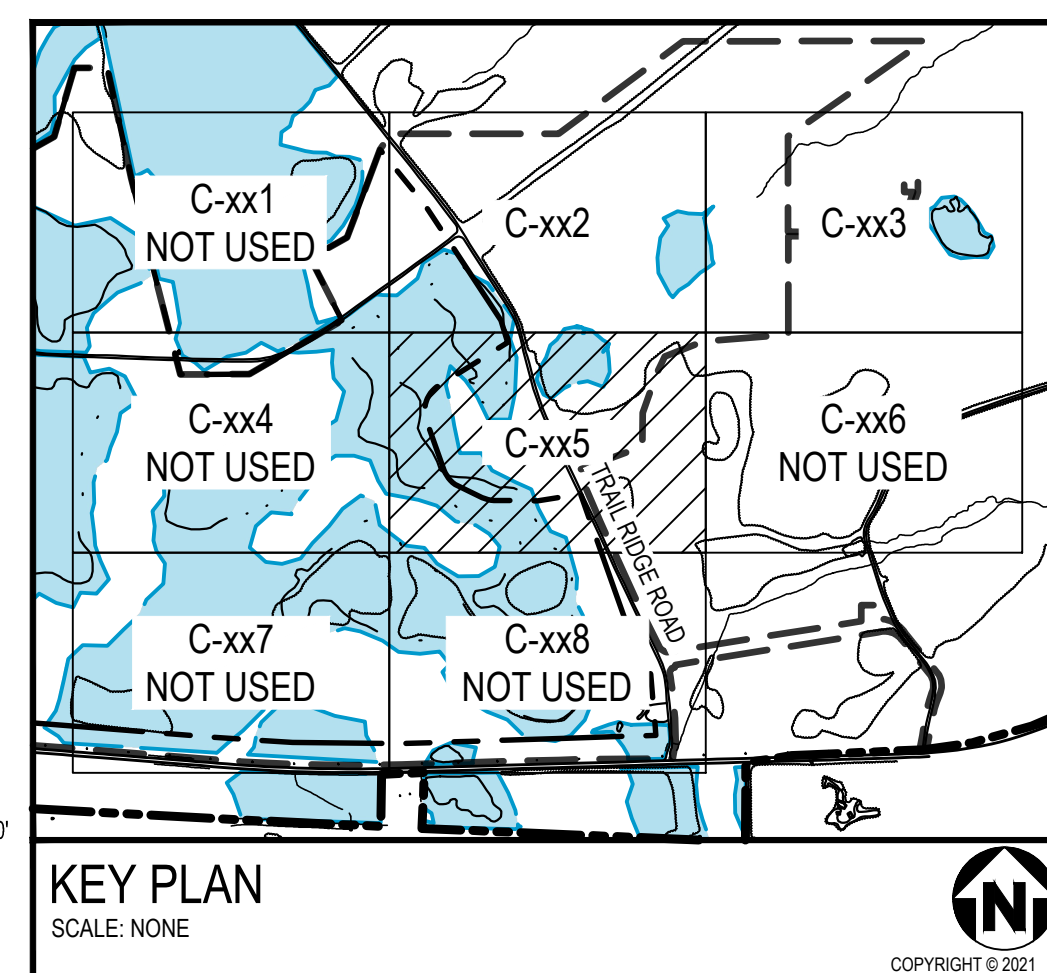
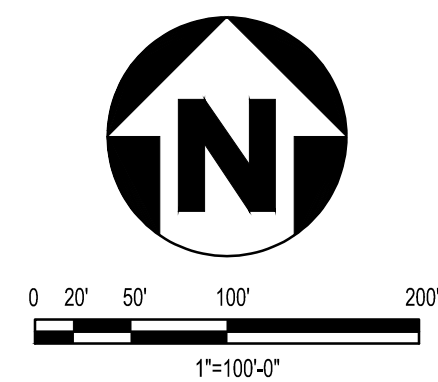
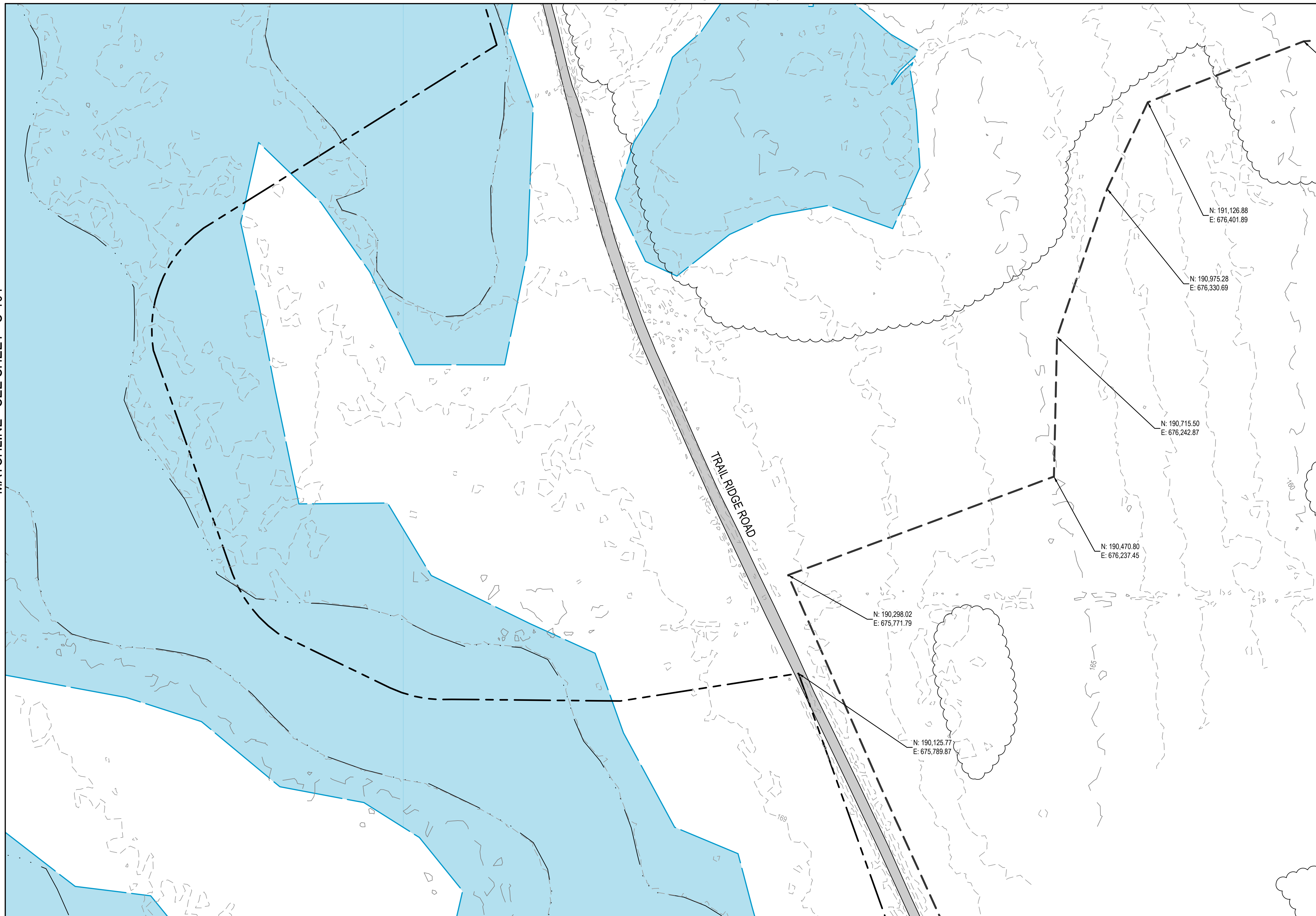
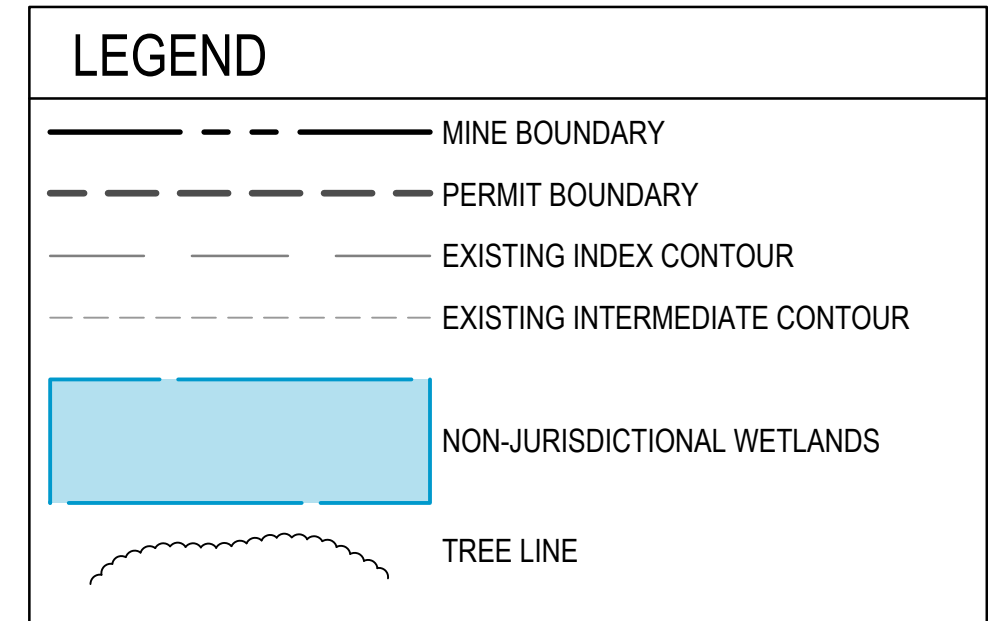
MATCHLINE - SEE SHEET C-104

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[illegible]

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STAMP/SEAL

APPROVED FOR

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

[illegible]

PROJECT NO.		BY	DDMMM'
-------------	--	----	--------

7382224061	DES	07FEB22
	DRN	07FEB22

AS SHOWN	CHK	07FEB22
	ADD	07FEB22

		BY	DDMMM'
--	--	----	--------

DES	07FEB22
DRN	07FEB22

CHK		07FEB22
APP		07FEB22



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

EXISTING CONDITIONS PLAN SHEET 5

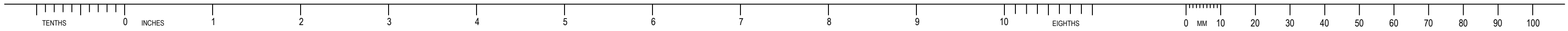
AREA	CERTIFICATE OF AUTHORIZATION
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CLIENT DWG NO. \_\_\_\_\_

DRAWING NO. C 105	R
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SAVED: 16-May-22 8:39 AM PLOTTED: 18-May-22 8:12 AM USER: LORENZ, MAX





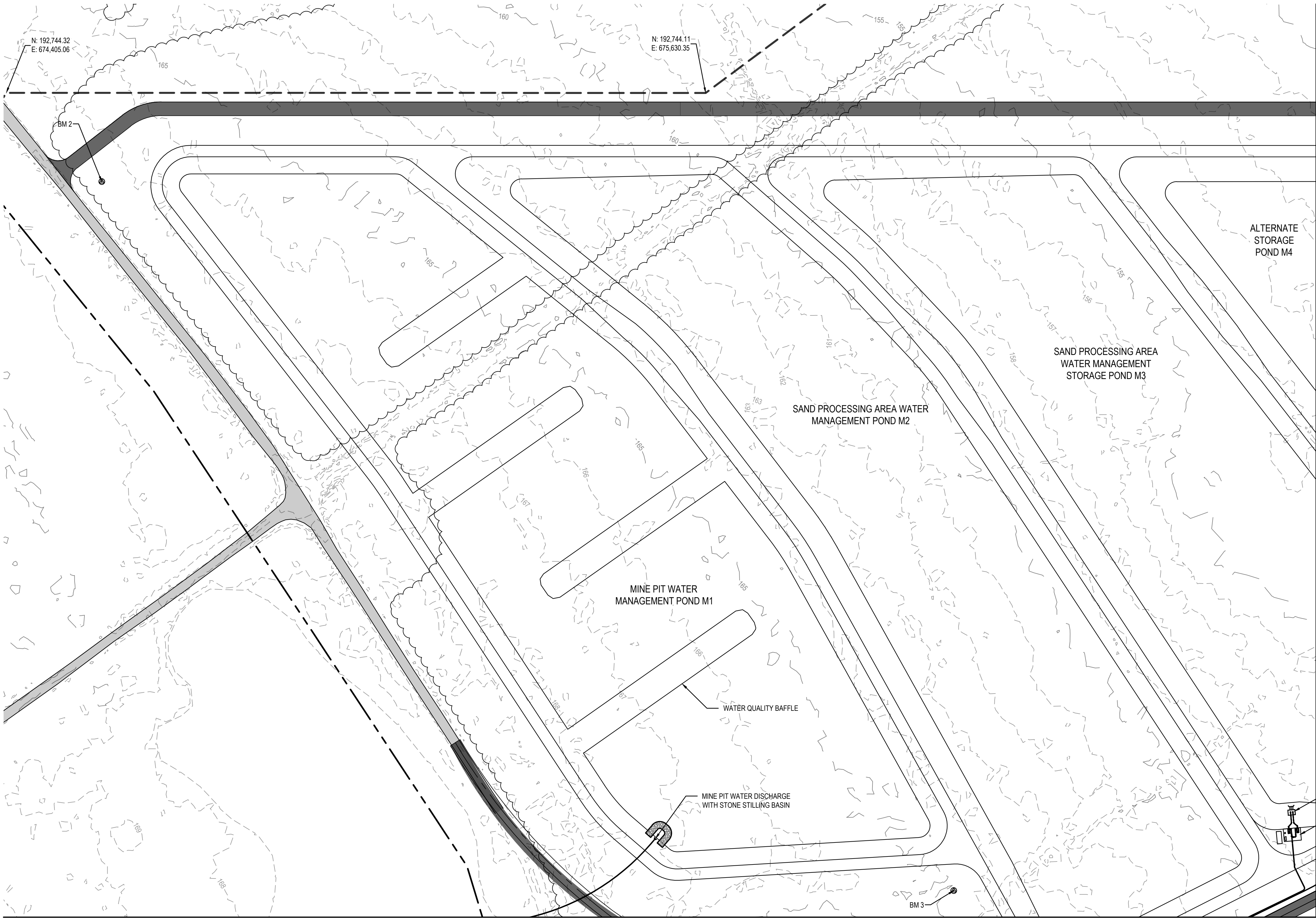
E

D

C

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A



LEGEND

MINE BOUNDARY

PERMIT BOUNDARY

EXISTING INDEX CONTOUR

EXISTING INTERMEDIATE CONTOUR

EXISTING UNPAVED ROADWAY

PROPOSED UNPAVED ROADWAY

BM 1

SITE BENCHMARK

MATCHLINE - SEE SHEET C-203

MATCHLINE - SEE SHEET C-205

INTAKE STRUCTURE

PUMP STATION - SEE  
DETAIL OF PUMP STATION  
ON DRAWING C-521

0 20' 50' 100' 200'

1"=100'-0"

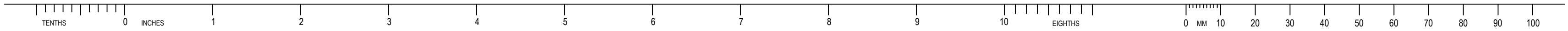
KEY PLAN

SCALE: NONE

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MATCHLINE - SEE SHEET C-202

LEGEND

MINE BOUNDARY

PERMIT BOUNDARY

EXISTING INDEX CONTOUR

EXISTING INTERMEDIATE CONTOUR

EXISTING UNPAVED ROADWAY

PROPOSED UNPAVED ROADWAY

BM 1

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.

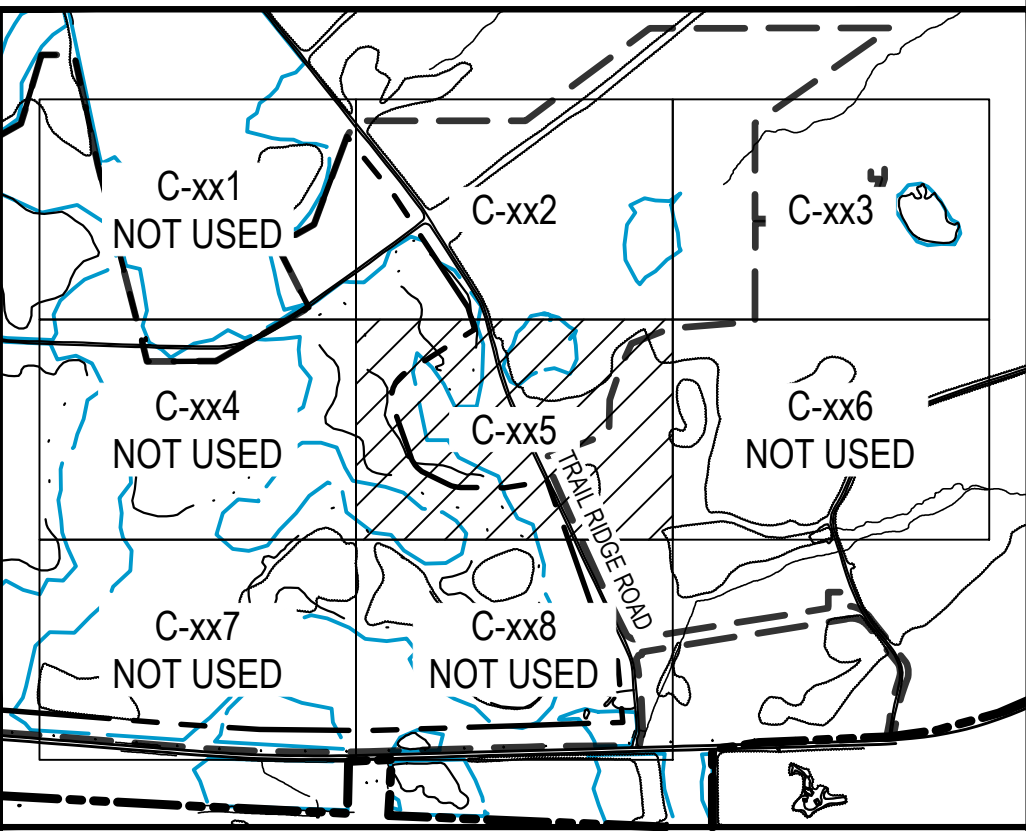
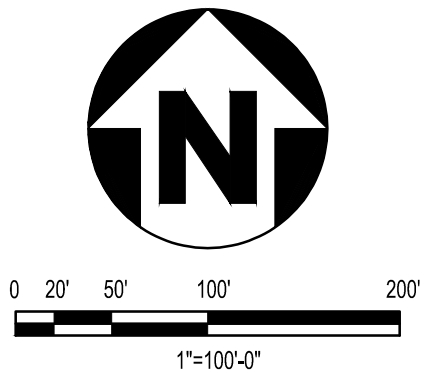
PROCESS WATER TANKS

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	REF	NUMBER	TITLE
0	11MAY22	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	DDMMYY 07FEB22
SCALE AS SHOWN		CHK DRN	07FEB22
		APP	07FEB22

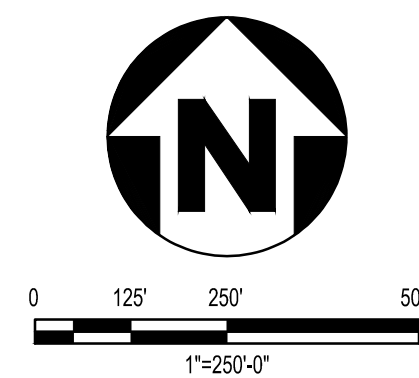
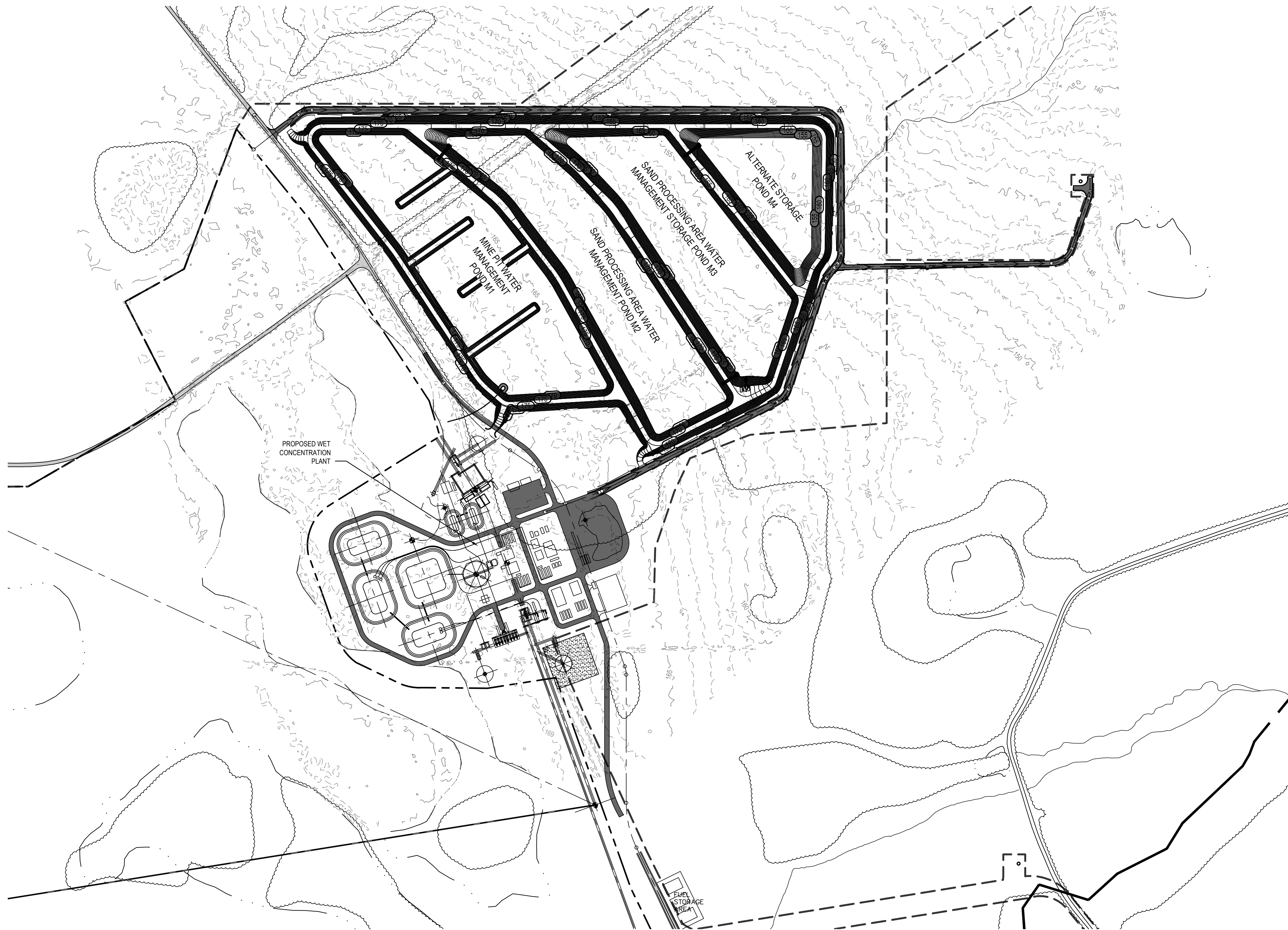
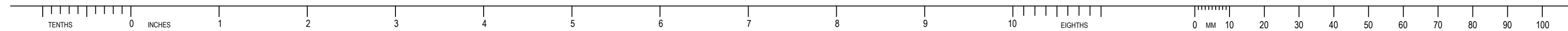


TWIN PINES MINERALS LLC  
SAUNDERS DEMONSTRATION MINE  
MINE ID 2073  
WATER MANAGEMENT PONDS

SUBJECT  
SITE PLAN SHEET 5

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 0




# LEGEND

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


[illegible]


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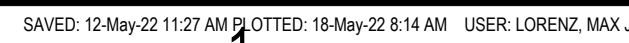
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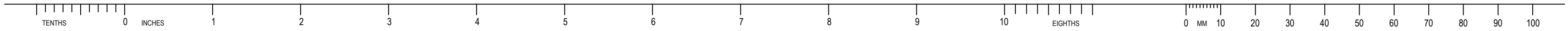


APPROVED FOR _____			
M. FOWLER CLIENT PROJECT MGR		P. MARCUM TECHNICAL MGR	
		M. ABDALLA PROJECT MGR	
PROJECT PHASE			
PERMITTING			
PROJECT NO.			BY
7382224061		DES	07FEB22
SCALE  AS SHOWN		DRN	07FEB22
		CHK	07FEB22
		APP	07FEB22

	<p>TWIN PINES MINERALS LLC SAUNDERS DEMONSTRATION MINE MINE ID 2073 WATER MANAGEMENT PONDS</p>
<p>SUBJECT</p>	<p>OVERALL GRADING AND DRAINAGE PLAN</p>

	
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





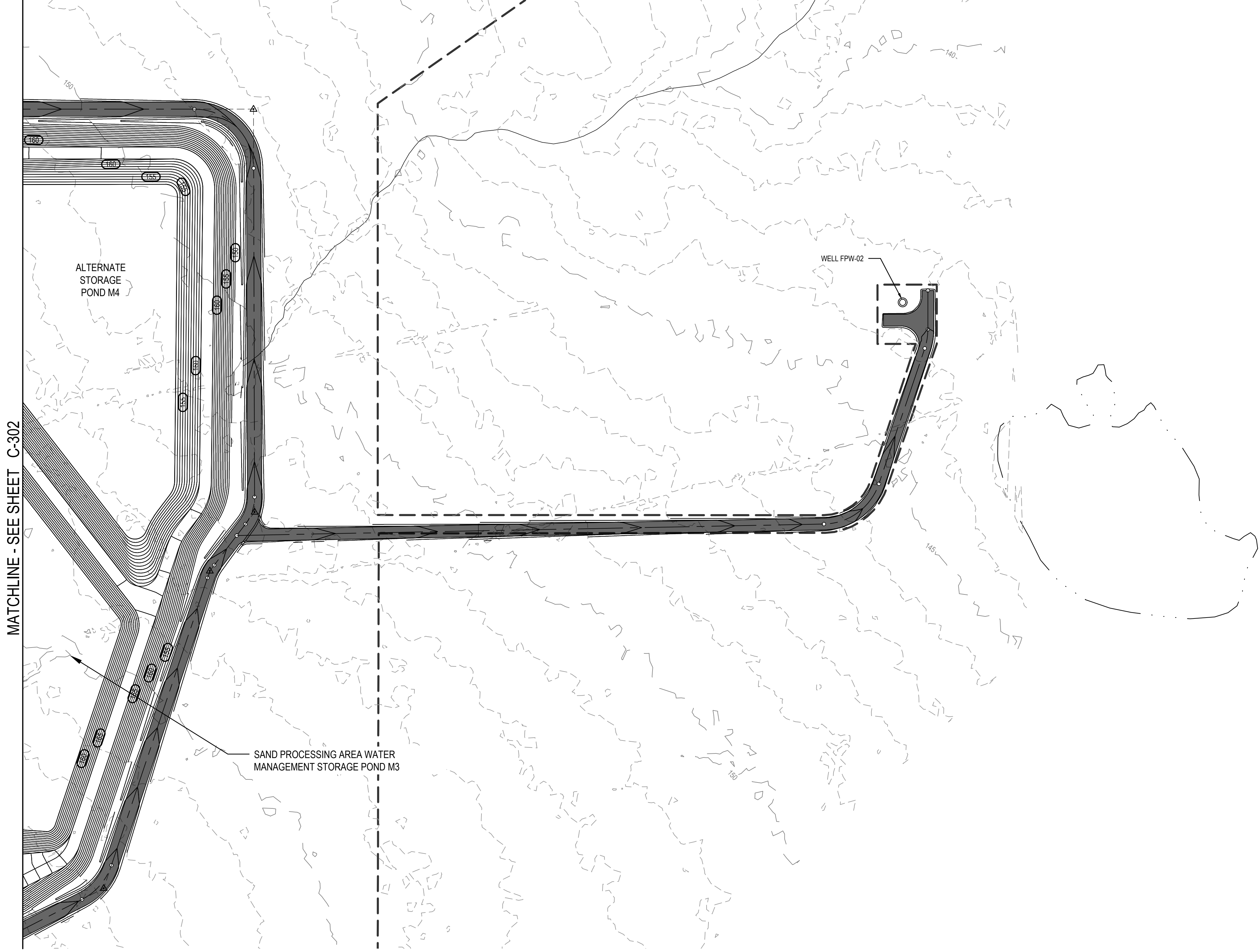
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MATCHLINE - SEE SHEET C-302

LEGEND

MINE BOUNDARY

PERMIT BOUNDARY

EXISTING INDEX CONTOUR

EXISTING INTERMEDIATE CONTOUR

STORM DRAIN PIPES

C2-C1

STORM PIPE NAME

OCS C2

STORM STRUCTURE NAME

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	REV	DDMMYY	REVISION / ISSUE DESCRIPTION	DRN	CHK	APP	APP	APP	APP	REF	NUMBER	TITLE
0	11MAY22	ISSUED FOR PERMITTING																			

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STAMP/SEAL

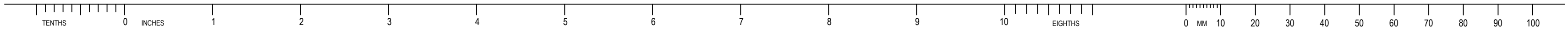
APPROVED FOR _____		
M. FOWLER CLIENT PROJECT MGR	P. MARCUM TECHNICAL MGR	M. ABDALLA PROJECT MGR
PROJECT PHASE PERMITTING		
PROJECT NO. 7382224061	DES 07FEB22	BY DDMMYY 07FEB22
SCALE AS SHOWN	DRN 07FEB22	CHK 07FEB22
	APP 07FEB22	

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

SUBJECT  
GRADING AND DRAINAGE PLAN SHEET 3

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

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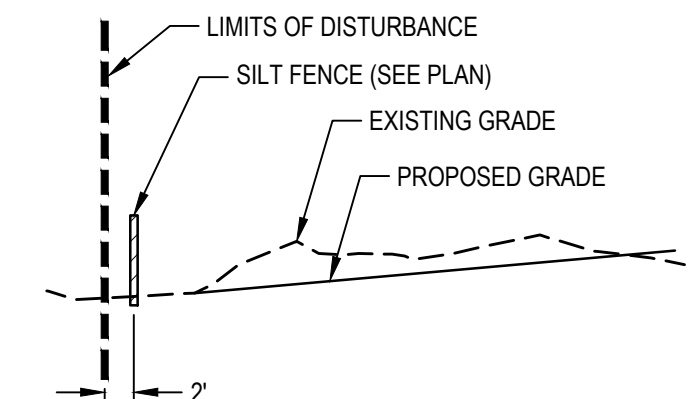
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LEGEND

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

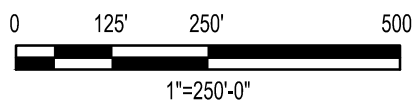
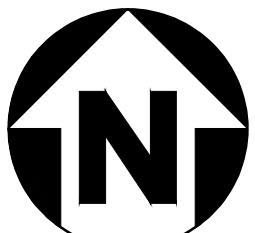
CODE	PRACTICE	MAP SYMBOL	DESCRIPTION
Co	CONSTRUCTION EXIT		A CRUSHED STONE PAD LOCATED AT THE CONSTRUCTION SITE EXIT TO PROVIDE A PLACE FOR REMOVING MUD FROM TIRES THEREBY PROTECTING PUBLIC STREETS.
Ds1	DISTURBED AREA STABILIZATION (MULCHING ONLY)	Ds1	ESTABLISHING TEMPORARY PROTECTION FOR DISTURBED AREAS WHERE SEEDINGS MAY NOT HAVE A SUITABLE GROWING SEASON TO PRODUCE AN EROSION RETARDING COVER.
Ds2	DISTURBED AREA STABILIZATION (WITH TEMPORARY SEEDING)	Ds2	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



TYPICAL LIMITS OF DISTURBANCE SECTION (N.T.S.)

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



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



Know what's below.  
Call before you dig.



Philip W Marcum  
Level II Certified Design Professional

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

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TWIN PINES MINERALS LLC  
SAUNDERS DEMONSTRATION MINE  
SUITE 121  
BIRMINGHAM, AL 35242  
(205) 980-6402

wood.

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

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

SAVED: 05-May-22 12:45 PM PLOTTED: 18-May-22 8:15 AM USER: LORENZ, MAX J

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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

SCALE

AS SHOWN

BY

DDMMYY

DES

07FEB22

CHK

07FEB22

APP

07FEB22

SUBJECT

OVERALL INITIAL EROSION SEDIMENTATION  
AND POLLUTION CONTROL PLAN

REV	DDMMYY	REVISION / ISSUE DESCRIPTION	DRN	CHK	APP	APP	APP	APP	APP	0	11MAY22	ISSUED FOR PERMITTING	MJL	MMA	PWM	REF	NUMBER	TITLE
REV	DDMMYY	REVISION / ISSUE DESCRIPTION	DRN	CHK	APP	APP	APP	APP	APP	REF	NUMBER	REFERENCES						

8

7

6

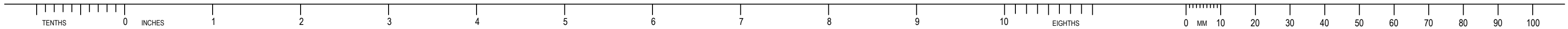
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4

3

2

1



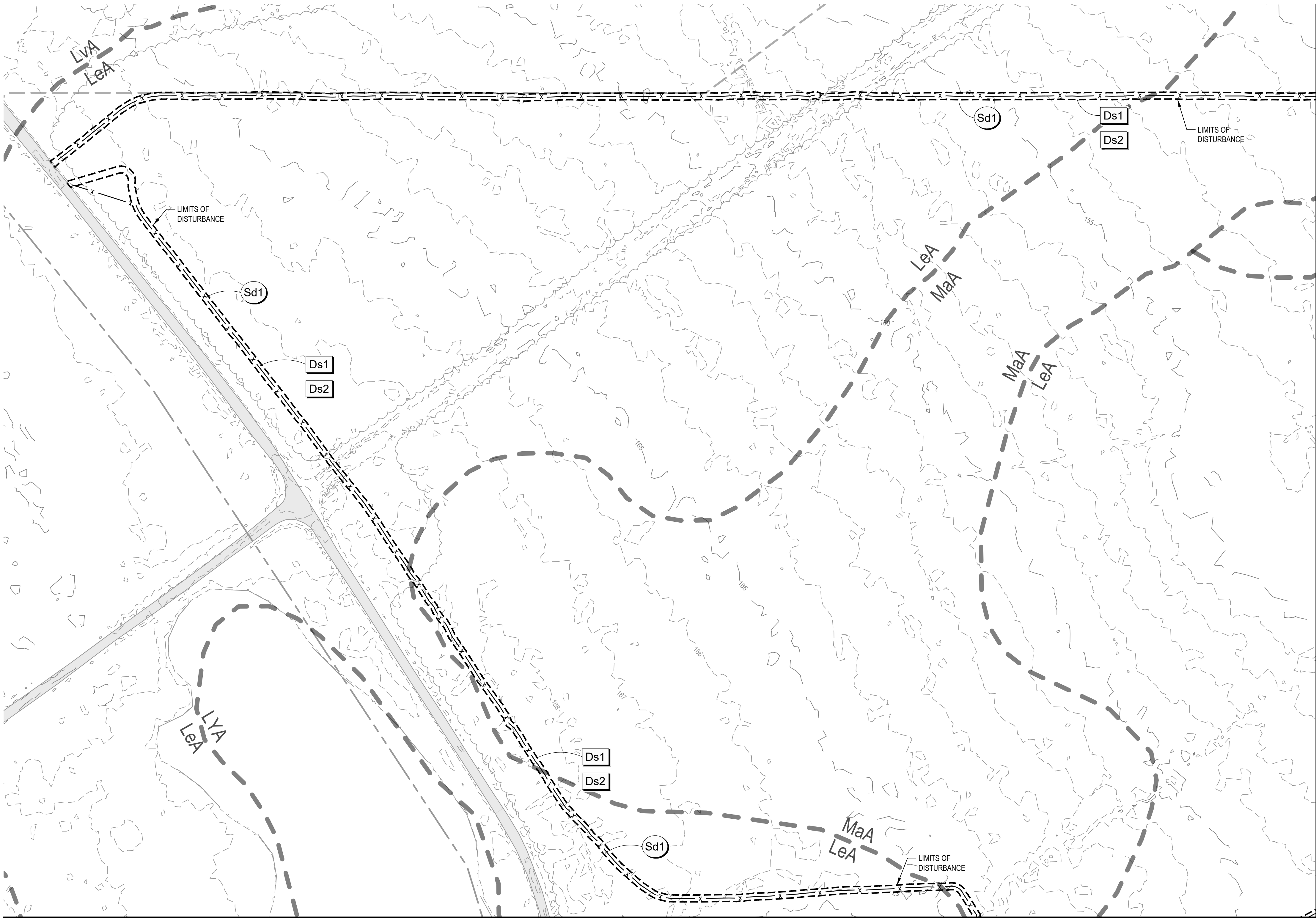
E

D

C

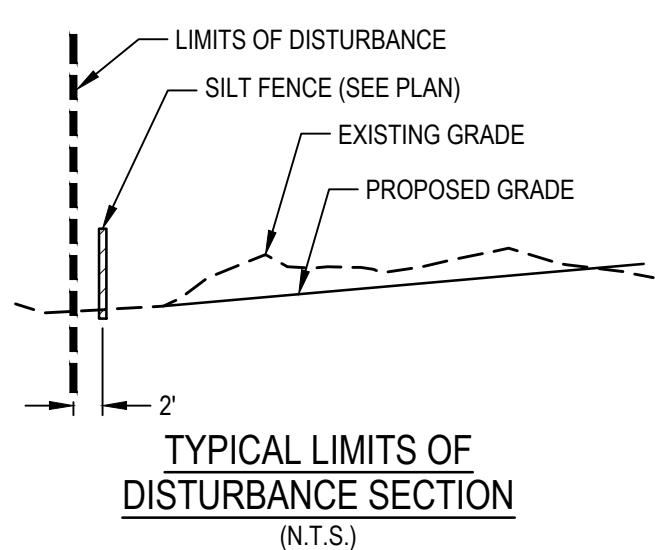
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A



MATCHLINE - SEE SHEET C-405

MATCHLINE - SEE SHEET C-403



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

CODE	PRACTICE	MAP SYMBOL	DESCRIPTION
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MARK FOWLER: (205) 403-5287

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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

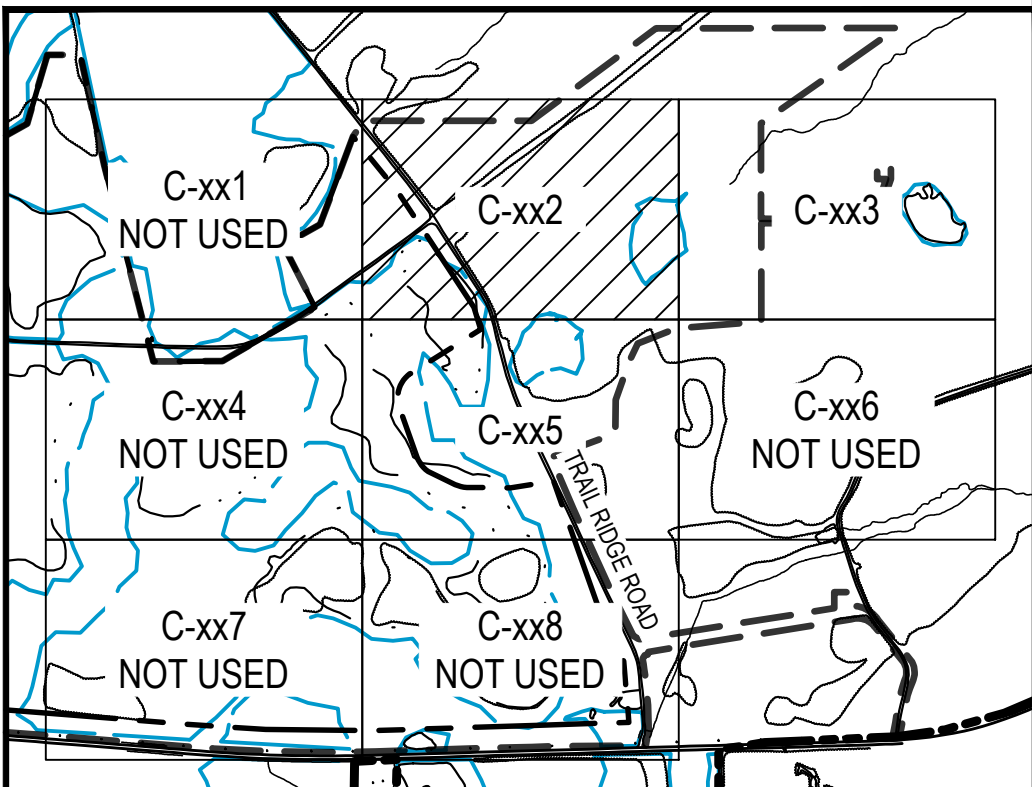
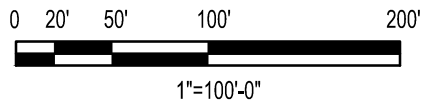


Know what's below.  
Call before you dig.

**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



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	11MAY22	ISSUED FOR PERMITTING																			

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STAMP/SEAL

**GEORGIA**  
REGISTERED PROFESSIONAL ENGINEER  
PHILIP W. MARCUM

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

AREA  
ECA2221

CERTIFICATE OF AUTHORIZATION

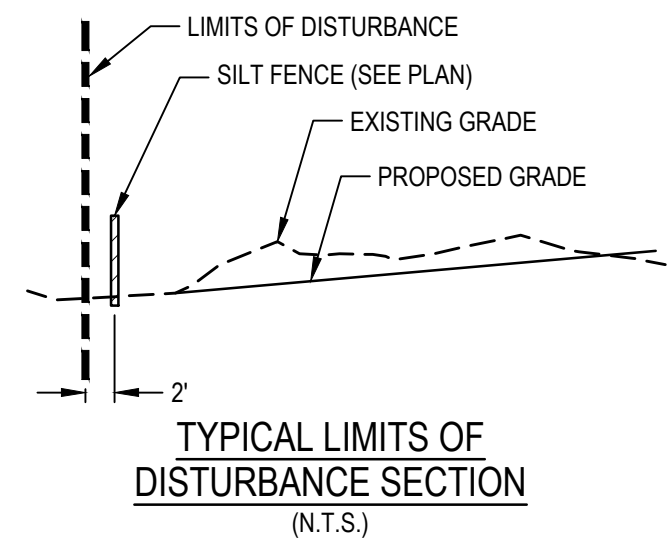
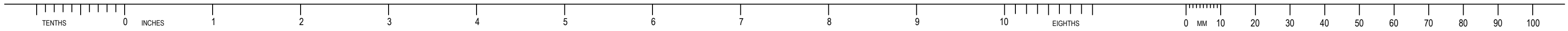
CLIENT DWG NO.

DRAWING NO.  
C-402

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

SAVED: 05-May-22 12:45 PM PLOTTED: 18-May-22 8:15 AM USER: LORENZ, MAX J



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

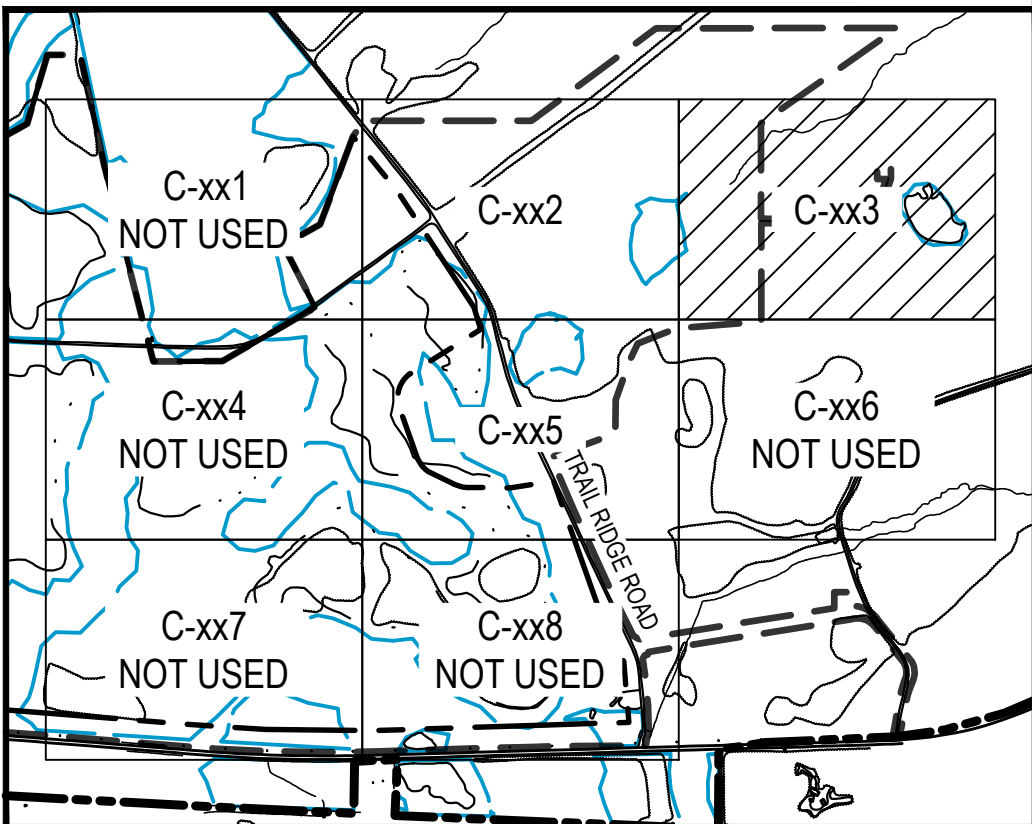
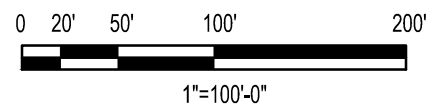
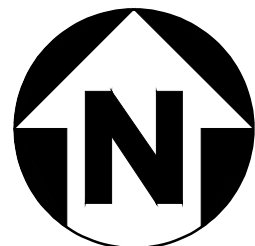
24 HOUR CONTACT PERSON:  
MARK FOWLER: (205) 403-5287

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



Know what's below.  
Call before you dig.

	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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TWIN PINES MINERALS LLC  
SAUNDERS DEMONSTRATION MINE  
SUITE 121  
BIRMINGHAM, AL 35242  
(205) 980-6402

wood.

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

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

SAVED: 05-May-22 12:45 PM PLOTTED: 18-May-22 8:15 AM USER: LORENZ, MAX J

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APPROVED FOR \_\_\_\_\_

M. FOWLER  
CLIENT PROJECT MGR

P. MARCUM  
TECHNICAL MGR

M. ABDALLA  
PROJECT MGR

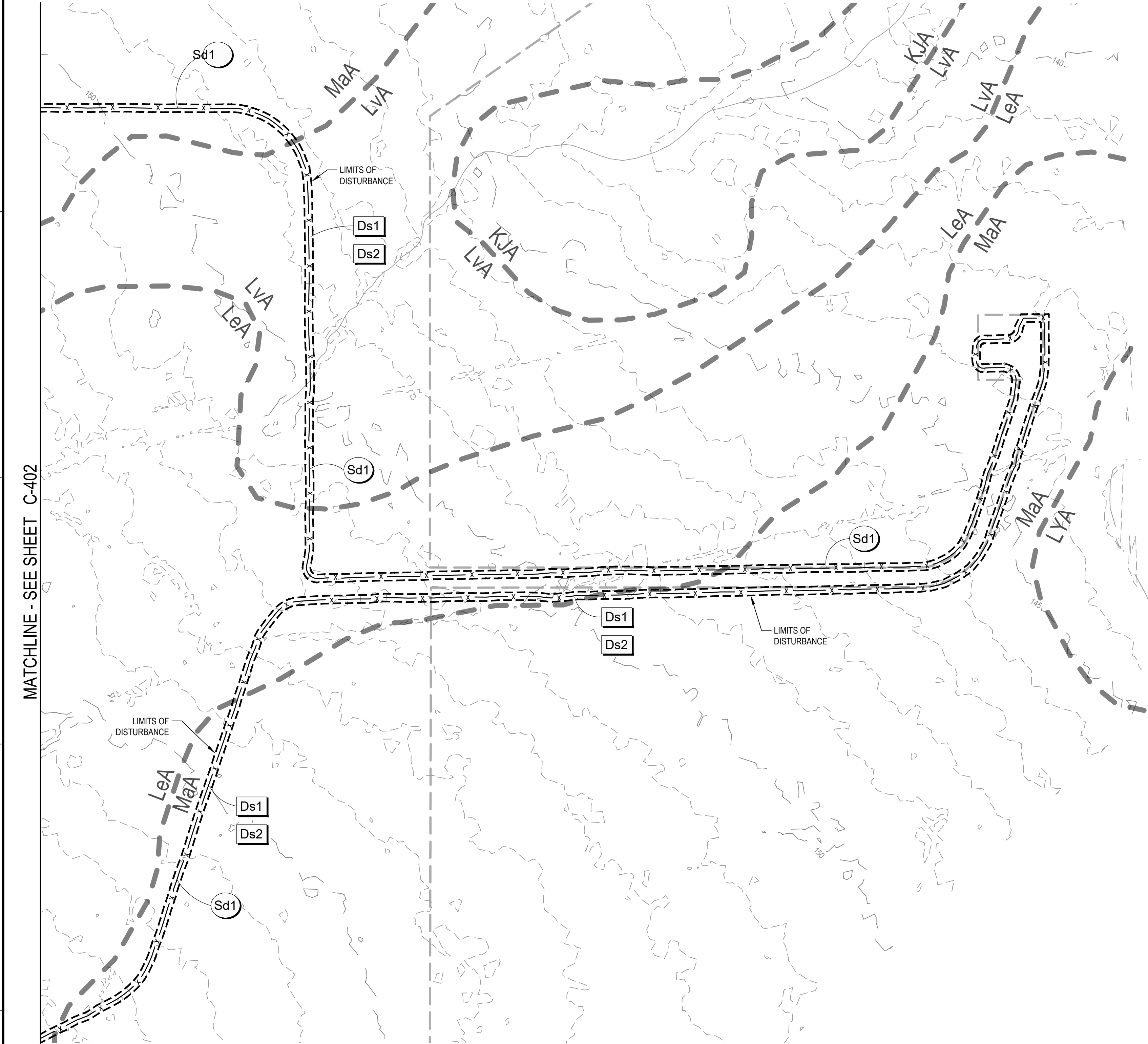
PROJECT PHASE

PERMITTING

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

SUBJECT

INITIAL EROSION SEDIMENTATION AND  
POLLUTION CONTROL PLAN SHEET 3



MATCHLINE - SEE SHEET C-402

A

NSD 0.2/2024

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
0	11MAY22	ISSUED FOR PERMITTING																		

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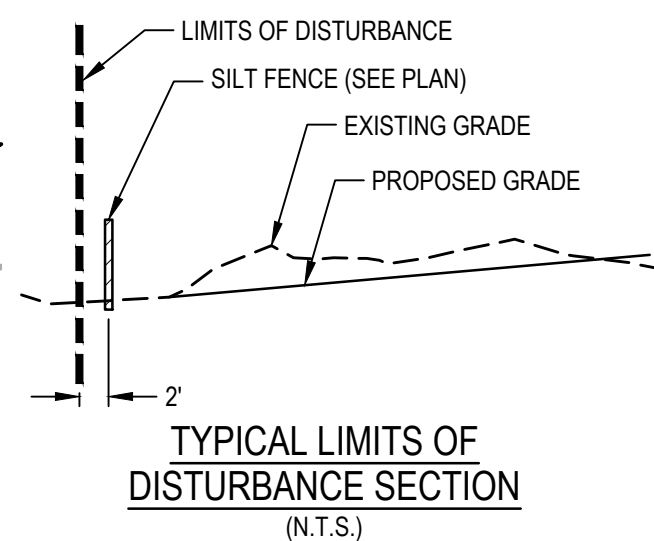
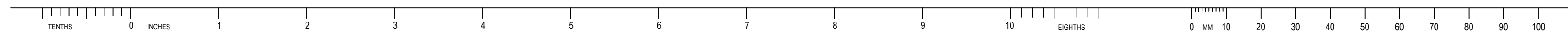
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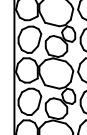







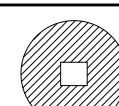
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## LEGEND

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

CODE	PRACTICE	MAP SYMBOL	DESCRIPTION
	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.
	DISTURBED AREA STABILIZATION (MULCHING ONLY)		ESTABLISHING TEMPORARY PROTECTION FOR DISTURBED AREAS WHERE SEEDINGS MAY NOT HAVE A SUITABLE GROWING SEASON TO PROVIDE AN EROSION RETARDING COVER.
	DISTURBED AREA STABILIZATION (WITH TEMPORARY SEEDING)		ESTABLISHING A TEMPORARY VEGETATIVE COVER WITH FAST GROWING SEEDINGS ON DISTURBED AREAS.
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TOTAL LIMITS OF DISTURBANCE = 3.03 ACRES

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

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

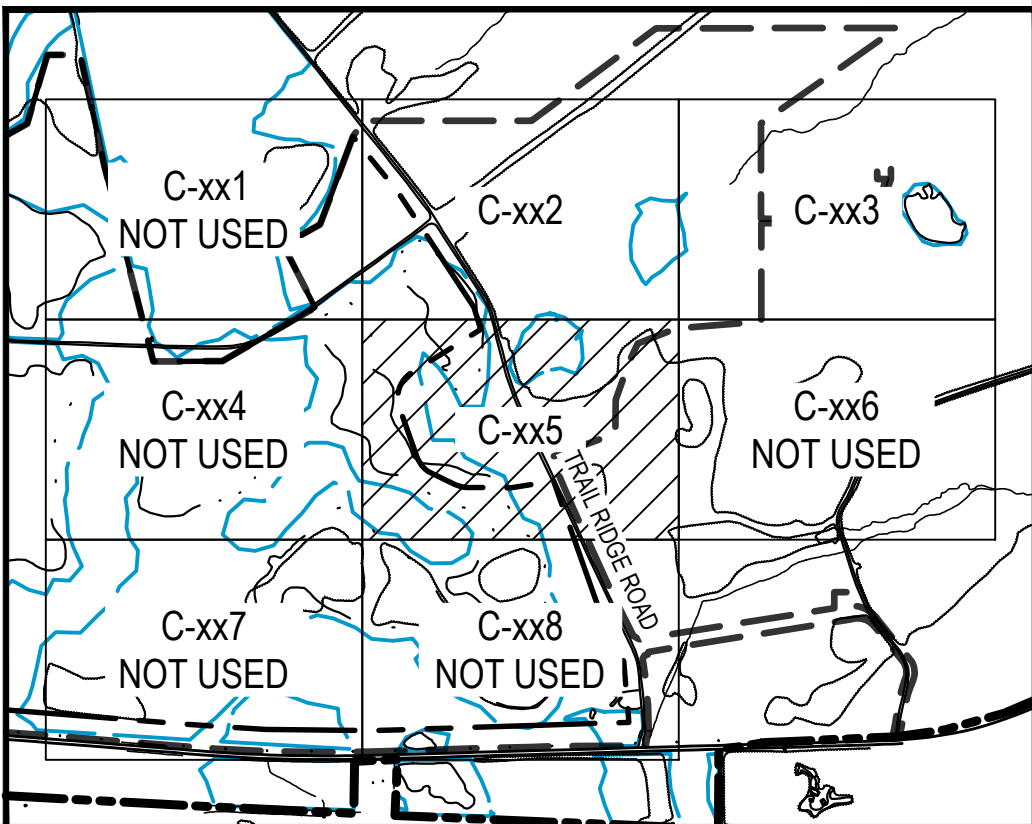
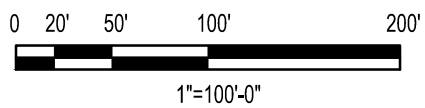
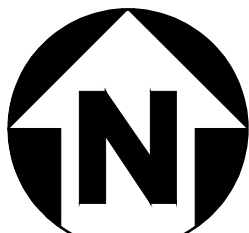


**Know what's below.  
Call before you dig.**



Philip W Marcum  
Level II Certified Design Professional

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



# KEY PLAN

SCALE: NONE



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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
-------------	--	----	--------

7562224001	DRN	07FEB22
SCALE		

AS SHOWN	CHR	07 FEB22
	APP	07 FEB22

3

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

SUBJECT

INITIAL EROSION SEDIMENTATION AND  
POLLUTION CONTROL PLAN SHEET 5

AREA

CERTIFICATE OF AUTHORIZATION  
ECA2221

CLIENT DWG NO.

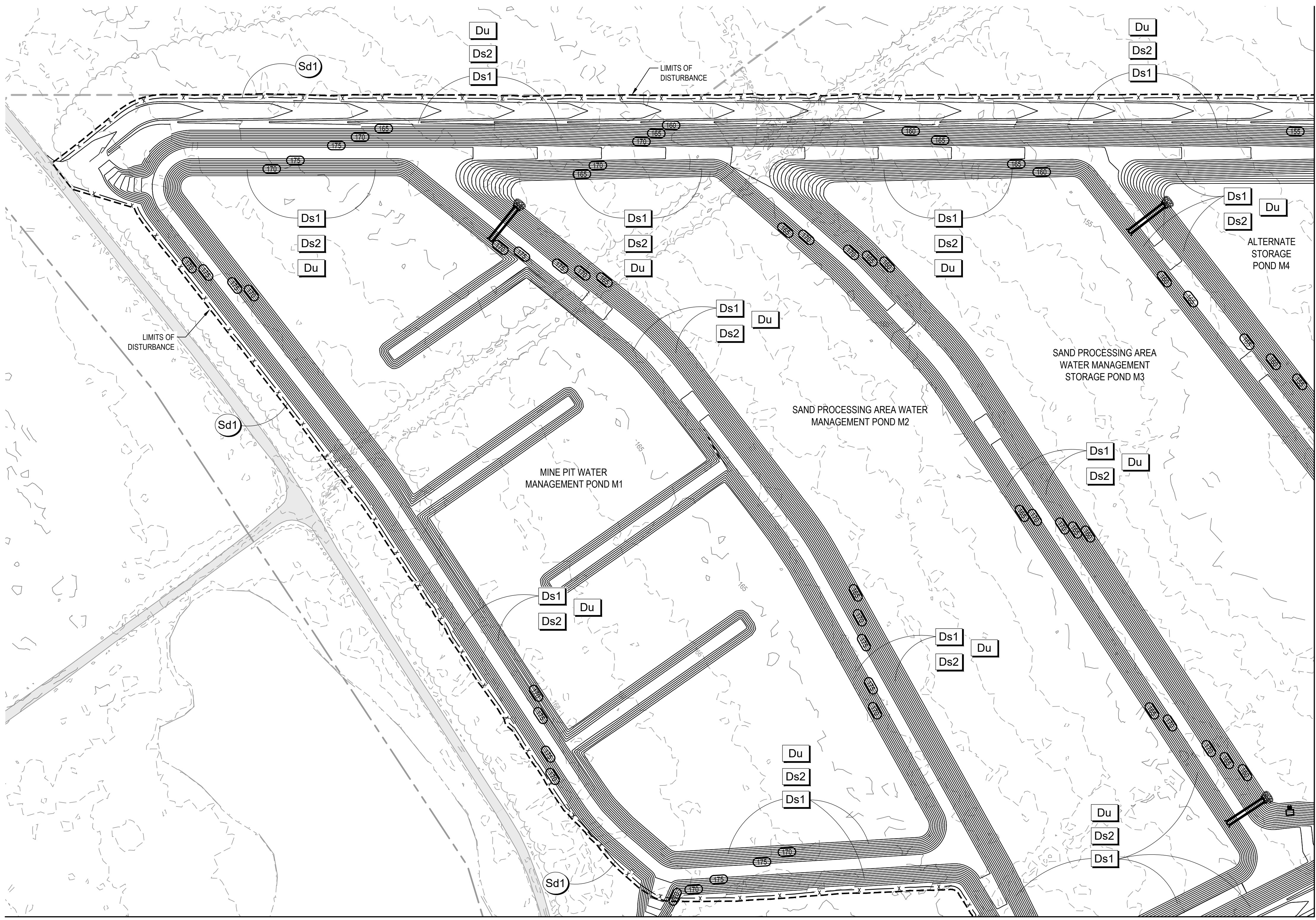
DRAWING NO.  
C-405

0	EV	W/CAD/CIV/C-400 INITIAL EROSION CONTROL PLAN DWG
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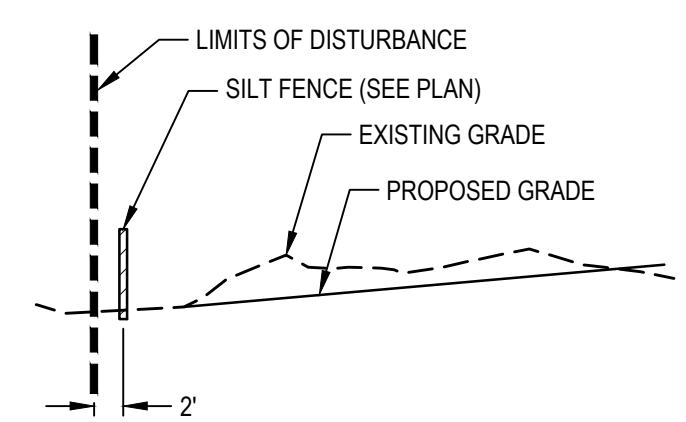
E  
D  
C  
B  
A



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

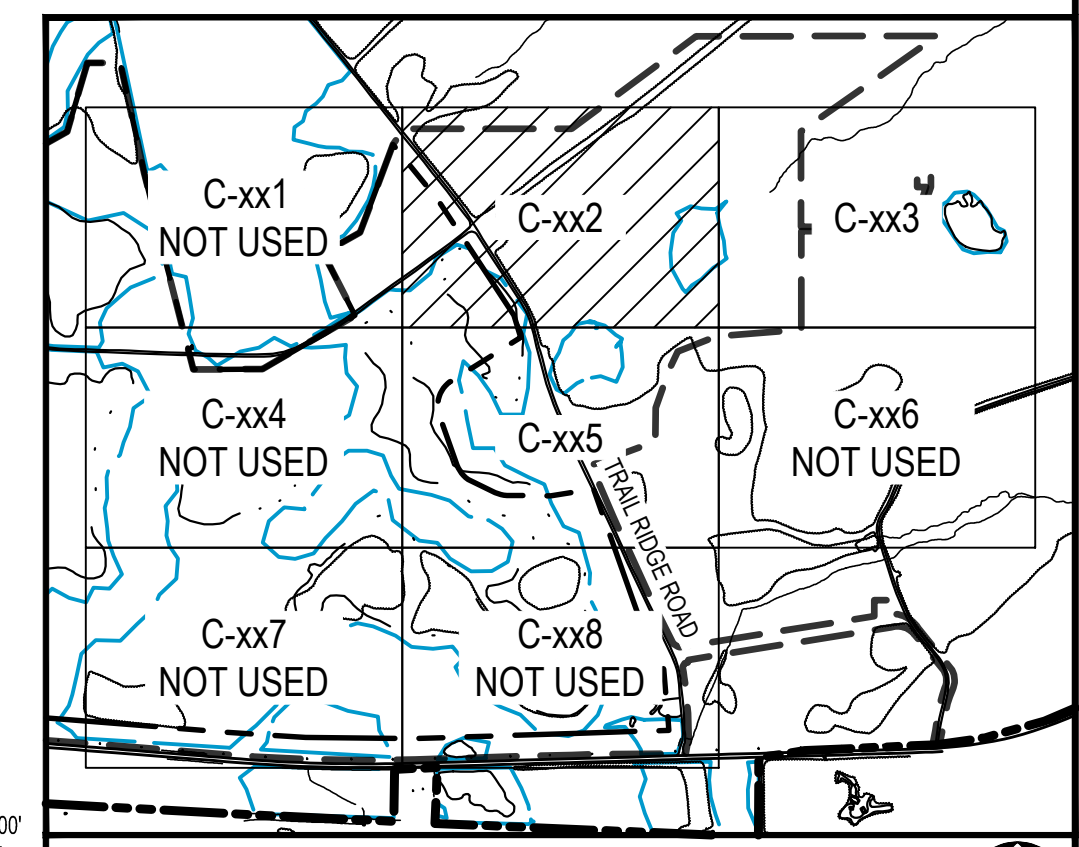
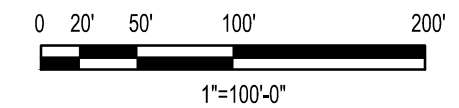


TYPICAL LIMITS OF DISTURBANCE SECTION (N.T.S.)

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

**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



KEY PLAN  
SCALE: NONE

MATCHLINE - SEE SHEET C-415

MATCHLINE - SEE SHEET C-413

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	11MAY22	ISSUED FOR PERMITTING																			

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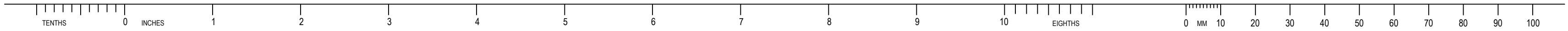
STAMP/SEAL

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

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

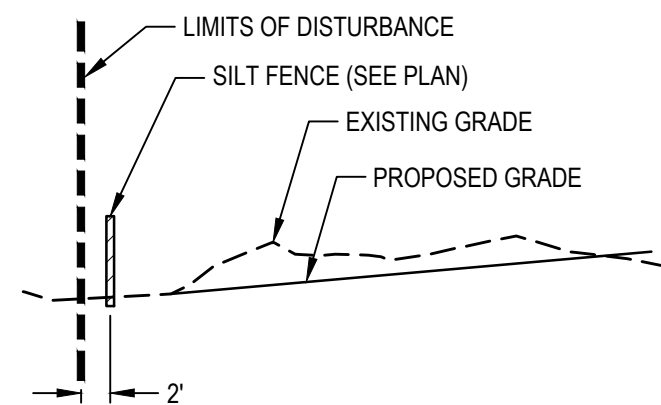
AREA		CERTIFICATE OF AUTHORIZATION
		ECA2221
CLIENT DWG NO.		
DRAWING NO.		
C-412		
REV		
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LEGEND			
	MINE BOUNDARY		
	PERMIT BOUNDARY		
	EXISTING INDEX CONTOUR		
	EXISTING INTERMEDIATE CONTOUR		
	LIMITS OF DISTURBANCE		
	SILT FENCE		
	PROPOSED INDEX CONTOUR		
	PROPOSED INTERMEDIATE CONTOUR		

CODE	PRACTICE	MAP SYMBOL	DESCRIPTION
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TYPICAL LIMITS OF DISTURBANCE SECTION (N.T.S.)

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MARK FOWLER: (205) 403-5287

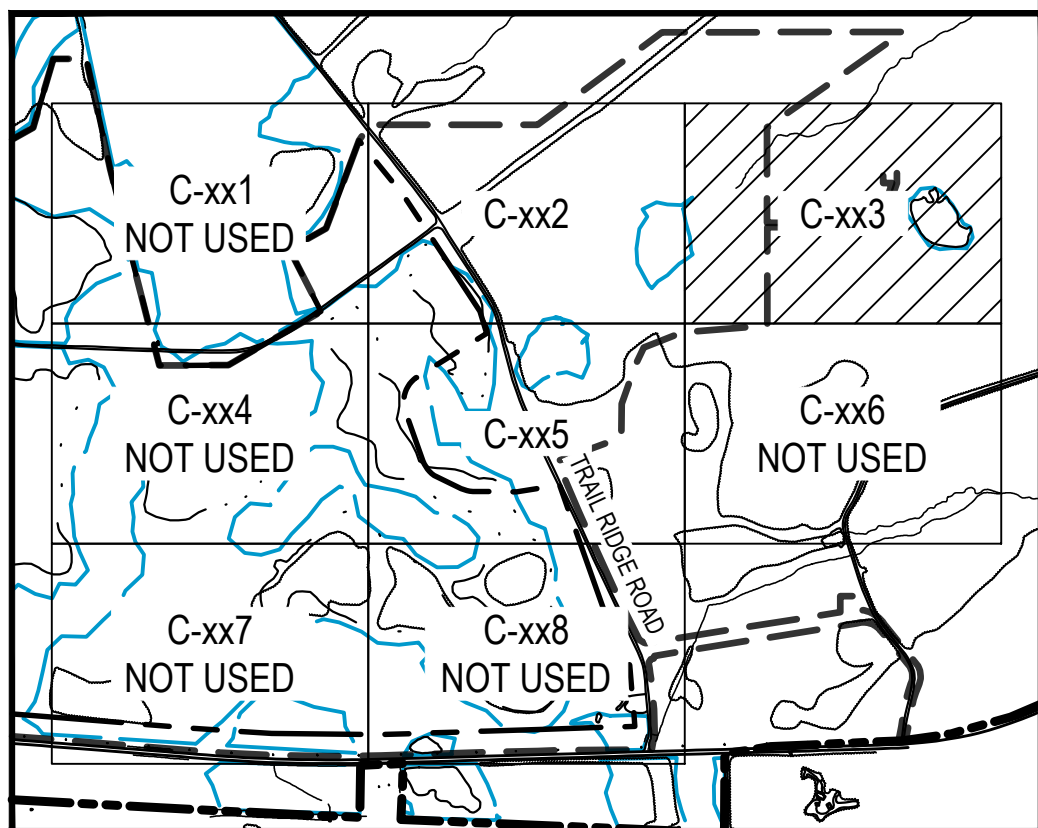
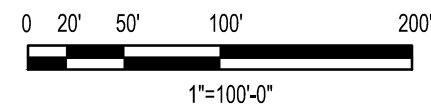


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Philip W Marcum  
Level II Certified Design Professional

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



KEY PLAN  
SCALE: NONE



E

D

C

B

A

MATCHLINE - SEE SHEET C-412

ALTERNATE  
STORAGE  
POND M4

SAND PROCESSING AREA WATER  
MANAGEMENT STORAGE POND M3

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	DES 07FEB22	DDMMYY 07FEB22
SCALE AS SHOWN	CHK 07FEB22	APP 07FEB22

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

INTERMEDIATE EROSION SEDIMENTATION AND  
POLLUTION CONTROL PLAN SHEET 3

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

AREA CERTIFICATE OF AUTHORIZATION  
ECA2221

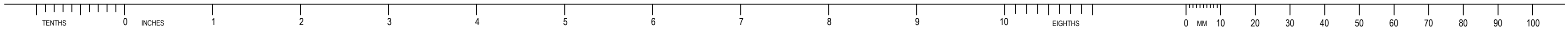
CLIENT DWG NO.

DRAWING NO.  
C-413

REV  
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SAVED: 11-May-22 2:24 PM PLOTTED: 18-May-22 8:17 AM USER: LORENZ, MAX.



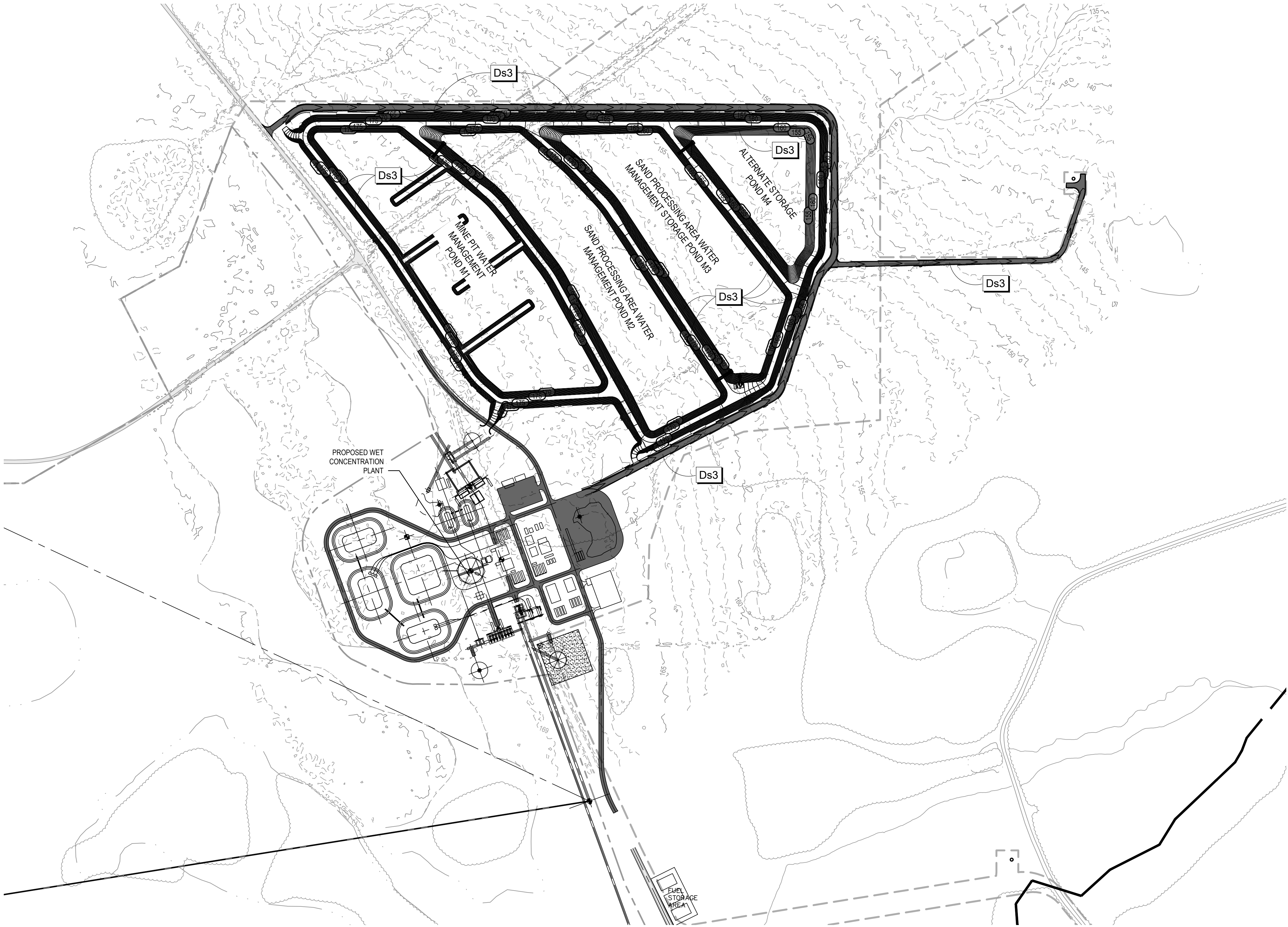
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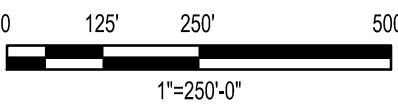


LEGEND	
	MINE BOUNDARY
	PERMIT BOUNDARY
	EXISTING INDEX CONTOUR
	EXISTING INTERMEDIATE CONTOUR
	PROPOSED INDEX CONTOUR
	PROPOSED INTERMEDIATE CONTOUR
	STORM DRAIN PIPES
	15'x20' STONE SPLASH PAD

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



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
0	11MAY22	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	DES 07FEB22	BY 07FEB22
SCALE AS SHOWN	DRN 07FEB22	CHK 07FEB22
	APP 07FEB22	

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

SUBJECT  
OVERALL FINAL EROSION SEDIMENTATION AND POLLUTION CONTROL PLAN

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

AREA CERTIFICATE OF AUTHORIZATION  
ECA2221

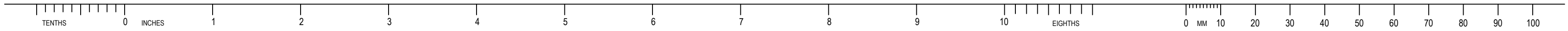
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ANSI Z39-18 2004

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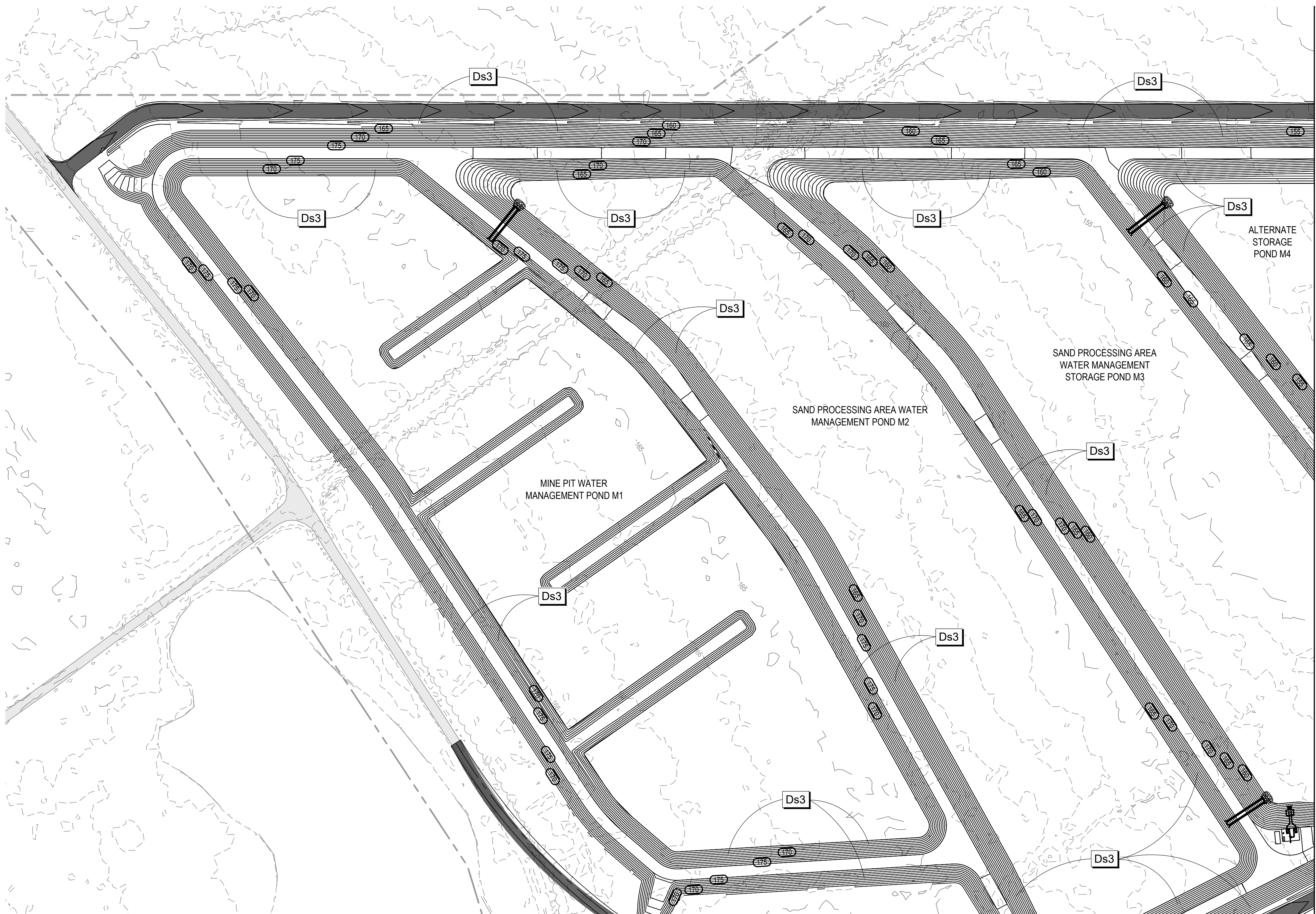
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MATCHLINE - SEE SHEET C-425

MATCHLINE - SEE SHEET C-423

LEGEND

MINE BOUNDARY

PERMIT BOUNDARY

EXISTING INDEX CONTOUR

EXISTING INTERMEDIATE CONTOUR

PROPOSED INDEX CONTOUR

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STORM DRAIN PIPES

15'x20' STONE SPLASH PAD

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GEORGIA811

Utilities Protection Center, Inc.

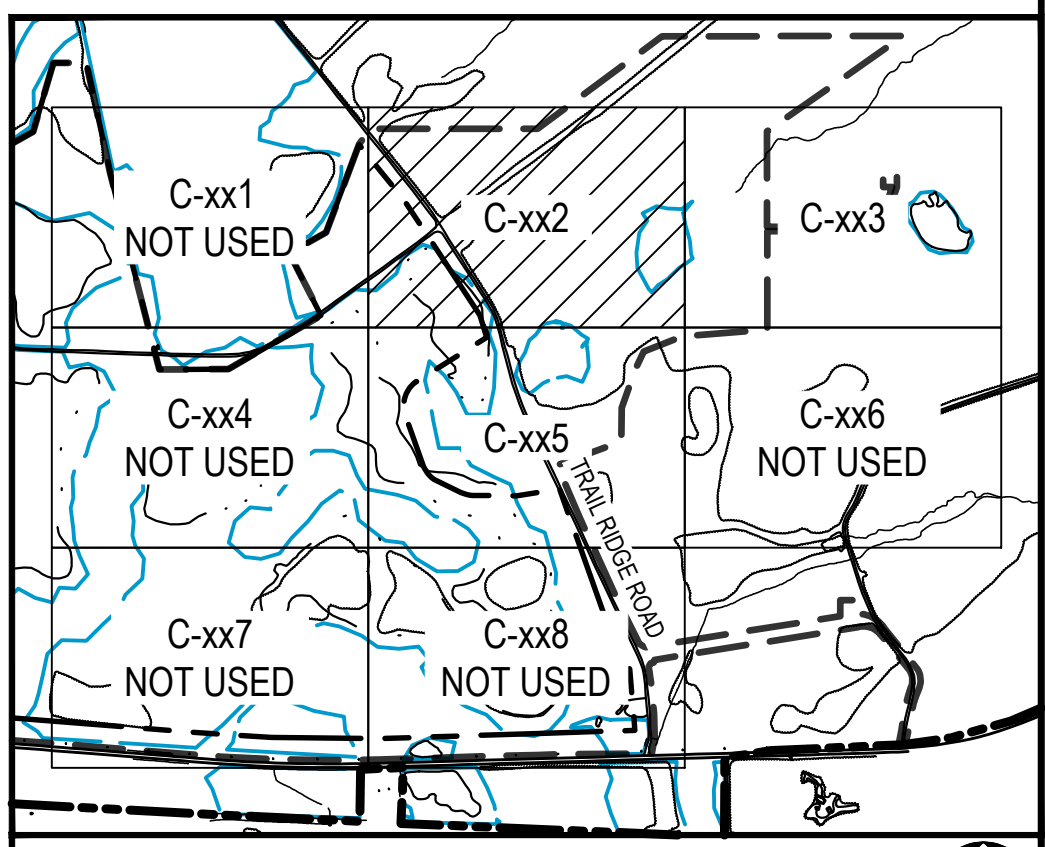
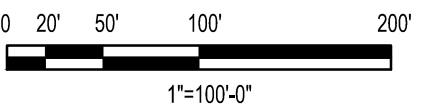
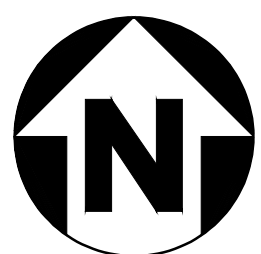
Know what's below.  
Call before you dig.

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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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

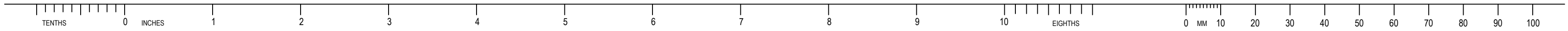
AREA  
ECA2221

CERTIFICATE OF AUTHORIZATION

CLIENT DWG NO.

DRAWING NO.  
C-422

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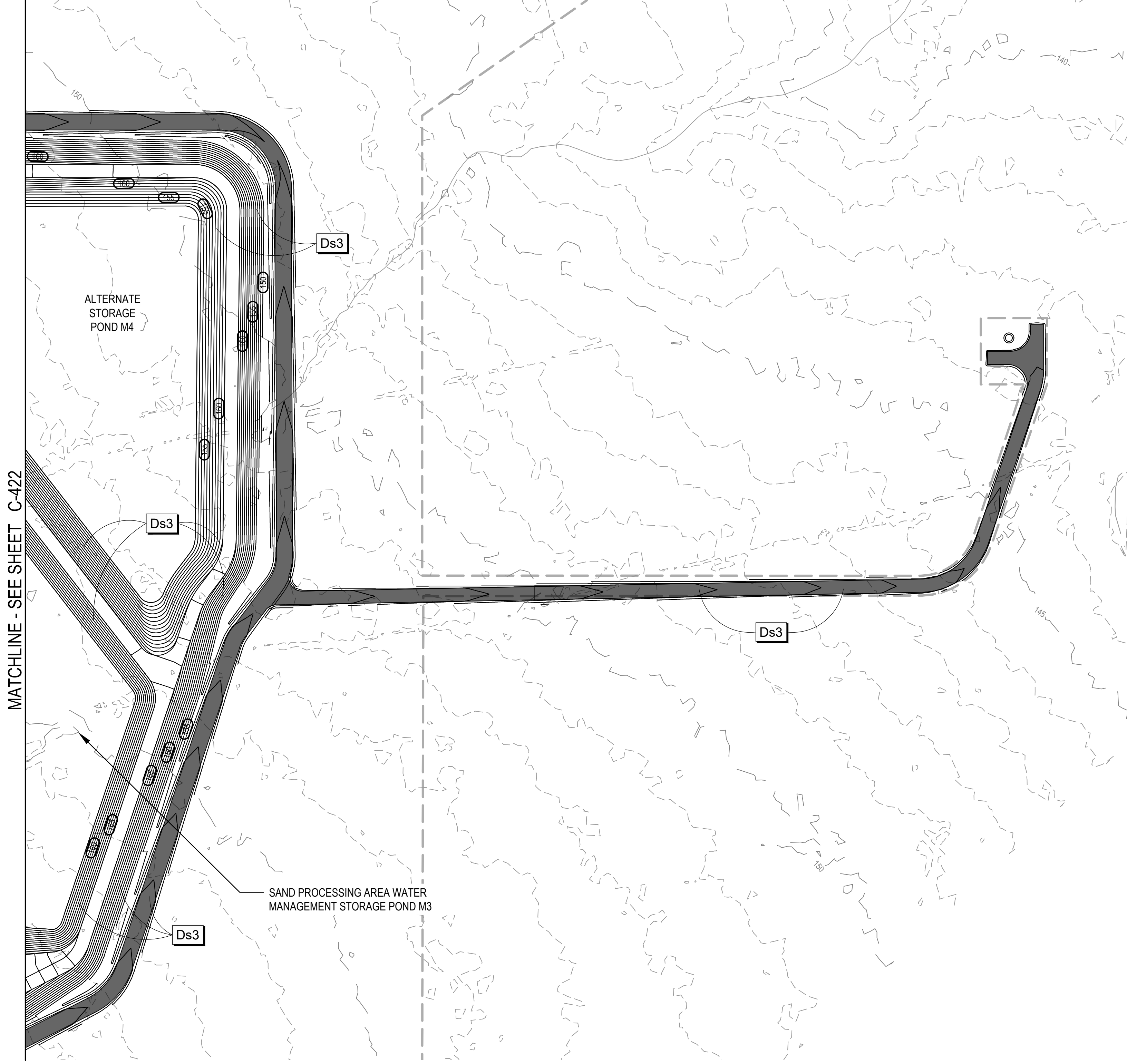
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MATCHLINE - SEE SHEET C-422

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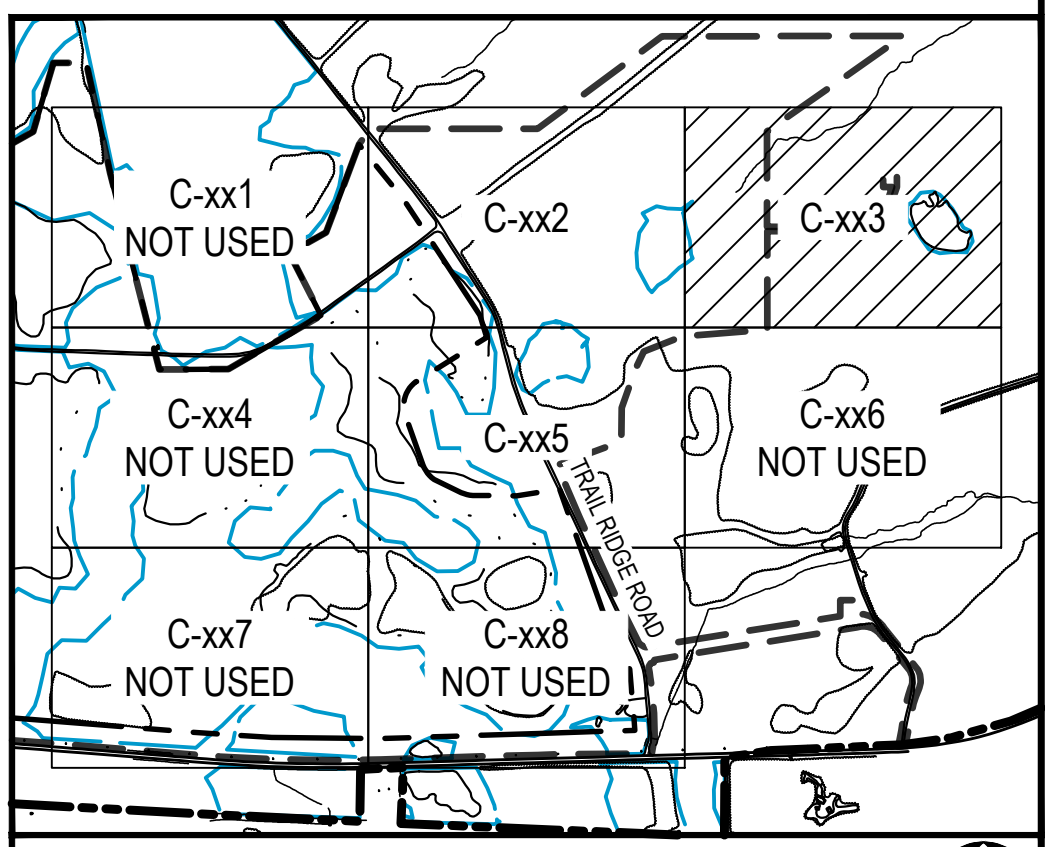
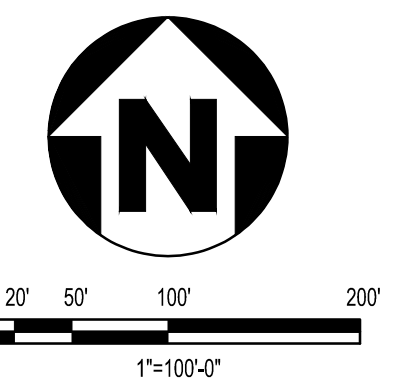
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GEORGIA SOIL AND WATER  
CONSERVATION COMMISSION

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



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

FINAL EROSION SEDIMENTATION AND  
POLLUTION CONTROL PLAN SHEET 3



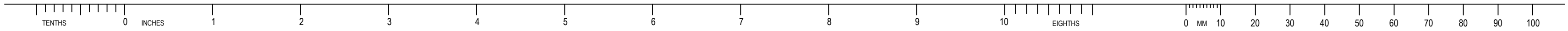
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CERTIFICATE OF AUTHORIZATION  
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CLIENT DWG NO.

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MATCHLINE - SEE SHEET C-422

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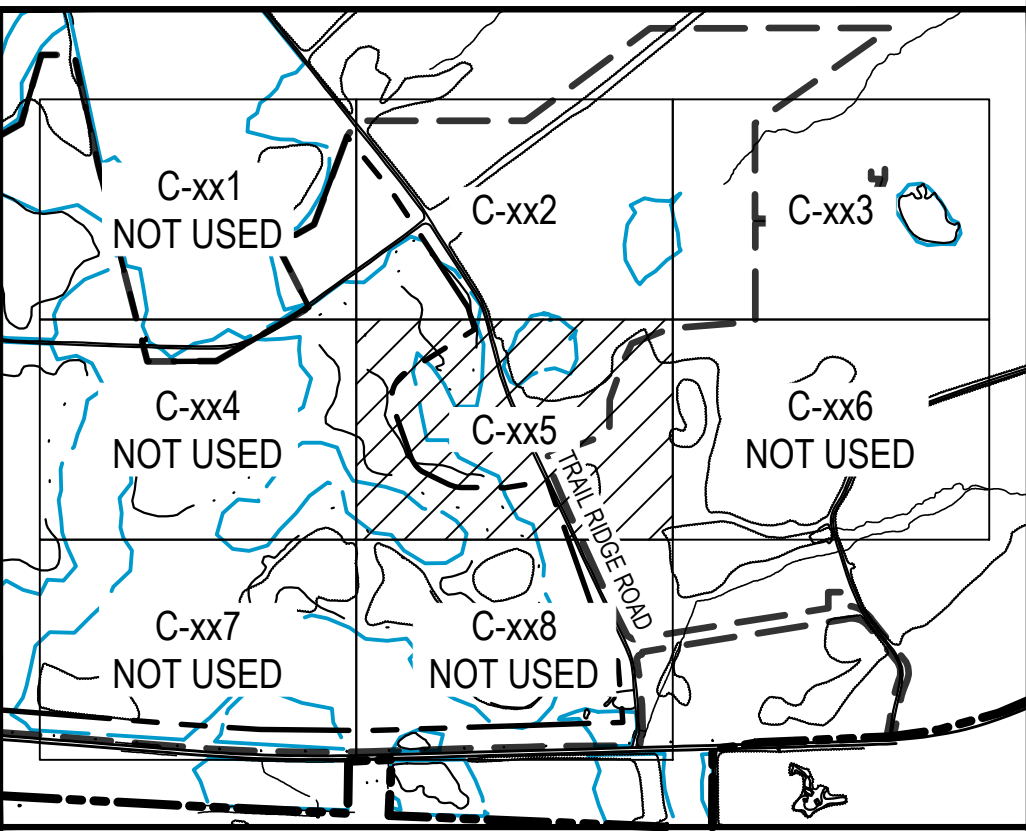
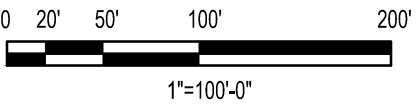


24 HOUR CONTACT PERSON:  
MARK FOWLER: (205) 403-5287

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



TWIN PINES MINERALS LLC  
SAUNDERS DEMONSTRATION MINE  
SUITE 121  
BIRMINGHAM, AL 35242  
(205) 980-6402

SUBJECT

FINAL EROSION SEDIMENTATION AND  
POLLUTION CONTROL PLAN SHEET 5

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

CERTIFICATE OF AUTHORIZATION  
ECA2221

CLIENT DWG NO.

DRAWING NO.  
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SEDIMENT SHALL NOT BE WASHED INTO THE INLET. IT SHALL BE REMOVED FROM THE SEDIMENT TRAP. DISPOSED OF AND STABILIZED SO THAT IT WILL NOT RE-ENTER THE INLET.

WHEN THE CONTRIBUTING DRAINAGE AREA HAS BEEN PERMANENTLY STABILIZED, ALL MATERIALS AND ANY SEDIMENT SHALL BE REMOVED AND EITHER SALVAGED OR DISPOSED OF PROPERLY. THIS DISTURBED AREA SHALL BE BROUGHT TO PROPER GRADE THEN SMOOTHED AND COMPACTED. APPROPRIATELY STABILIZE ALL DISTURBED AREAS AROUND THE INLET.

REPAIR ALL DAMAGES CAUSED TO TEMPORARY SEDIMENT BASINS BY SOIL EROSION OR CONSTRUCTION EQUIPMENT AT OR BEFORE THE END OF EACH WORKING DAY. SEDIMENT SHALL BE REMOVED FROM THE BASIN WHEN IT REACHES THE SPECIFIED DISTANCE BELOW THE TOP OF THE RISER. SEDIMENT SHALL NOT ENTER ADJACENT STREAMS OR DRAINAGE WAYS DURING SEDIMENT REMOVAL OR DISPOSAL. THE SEDIMENT SHALL NOT BE DEPOSITED DOWNSTREAM FROM THE EMBANKMENT, ADJACENT TO A STREAM OR FLOODPLAIN.

INSPECT RIPRAP OUTLET STRUCTURES AFTER HEAVY RAINS TO SEE IF ANY EROSION AROUND OR BELOW THE RIPRAP HAS TAKEN PLACE OR IF STONES HAVE BEEN DISLODGED. IMMEDIATELY MAKE ALL NEEDED REPAIRS TO PREVENT FURTHER DAMAGE.

ROUGHENED AREAS SHALL BE SEEDED AND MULCHED AS SOON AS POSSIBLE TO OBTAIN OPTIMUM SEED GERMINATION AND SEEDING GROWTH.

MULCH OR TEMPORARY SEEDING SHALL BE APPLIED TO ALL EXPOSED AREAS WITHIN 14 DAYS OF DISTURBANCE. MULCH CAN BE USED AS A SINGULAR EROSION CONTROL DEVICE FOR UP TO 6 MONTHS, BUT IT SHALL BE APPLIED AT THE APPROPRIATE DEPTH DEPENDING ON THE MATERIAL USED, ANCHORED AND HAVE A CONTINUOUS 90% COVER OR GREATER OF THE SOIL SURFACE. MAINTENANCE SHALL BE REQUIRED TO MAINTAIN APPROPRIATE DEPTH AND 90% COVER. TEMPORARY VEGETATION MAY BE EMPLOYED INSTEAD OF MULCH IF THE AREA WILL REMAIN UNDISTURBED FOR LESS THAN 6 MONTHS. IF AN AREA WILL REMAIN UNDISTURBED FOR GREATER THAN 6 MONTHS, PERMANENT VEGETATION TECHNIQUES SHALL BE EMPLOYED.

PERMANENT VEGETATION SHALL BE APPLIED IMMEDIATELY TO ROUGH GRADED AREAS THAT WILL BE UNDISTURBED FOR LONGER THAN 6 MONTHS. THIS PRACTICE, OR SODDING, SHALL BE APPLIED IMMEDIATELY TO ALL AREAS AT FINAL GRADE. FINAL STABILIZATION MEANS THAT ALL SOIL DISTURBING ACTIVITIES AT THE SITE HAVE BEEN COMPLETED AND THAT, FOR UNPAVED AREAS AND AREAS NOT COVERED BY PERMANENT STRUCTURES, AT LEAST 70% OF THE SOIL SURFACE IS UNIFORMLY COVERED IN PERMANENT VEGETATION OR EQUIVALENT PERMANENT STABILIZATION MEASURES (SUCH AS THE USE OF RIPRAP, GABIONS, PERMANENT MULCHES AND GEOTEXTILES) HAVE BEEN EMPLOYED. PERMANENT VEGETATION SHALL CONSIST OF: PLANTED TREES, SHRUBS, PERENNIAL VINES; A CROP OF PERENNIAL VEGETATION APPROPRIATE FOR THE FINAL STABILIZATION APPLIES TO EACH PHASE OF CONSTRUCTION UNTIL THIS STANDARD IS SATISFIED AND PERMANENT CONTROL MEASURES AND FACILITIES ARE OPERATIONAL. INTERIM STABILIZATION MEASURES AND TEMPORARY EROSION AND SEDIMENTATION CONTROL MEASURES SHALL NOT BE REMOVED.

CRITICAL WORK ZONE EROSION CONTROL NOTES:

SHADED AREAS SHOWN ON GRADING PHASE EROSION CONTROL PLAN REPRESENT CRITICAL WORK ZONES. AT THE END OF EACH WORK DAY, ALL TEMPORARY SLOPES 3(H):1(V) OR STEEPER AND HIGHER THAN 5-FEET SHALL RECEIVE SURFACE ROUGHENING WHEN INCLEMENT WEATHER IS FORECAST FOR THE PERIOD BEFORE WORK WILL RESUME. ADDITIONALLY, ALL FILL SLOPES SHALL RECEIVE A DIVERSION DIKE AND TEMPORARY DOWN DRAINS ALONG THE TOP OF THE SLOPE PREVENTING DRAINAGE SPILLING OVER THE EDGE AND DOWN THE FACE OF THE SLOPE. THE TEMPORARY DOWN DRAINS SHALL BE CONSTRUCTED WITH PERFORATED STAND PIPES AT THE TOP OF THE SLOPE AND RECONSTRUCTED EACH DAY AS THE SLOPE INCREASES IN HEIGHT.

ZONING

THIS SITE IS ZONED: INDUSTRIAL

SURVEY INFORMATION

BOUNDARY INFORMATION BASED ON A SURVEY PERFORMED BY

DAVID TURNER  
SOUTHERN RESOURCES MAPPING CORPORATION  
2808-4 MCFARLAND BOULEVARD  
NORTHPORT, AL 35476  
205-333-9900

TOPOGRAPHIC INFORMATION BASED ON A LIDAR SURVEY PERFORMED BY

DAVID TURNER  
SOUTHERN RESOURCES MAPPING CORPORATION  
2808-4 MCFARLAND BOULEVARD  
NORTHPORT, AL 35476  
205-333-9900

NGS MONUMENT: BD0176  
VERTICAL DATUM: NAVD88  
HORIZONTAL DATUM: NAD83(CORS96)  
ELEV 164.67

FLOOD INSURANCE RATE MAP NUMBER 13049C0475D, COMMUNITY NUMBER 130292, PANEL 0475, DATED JULY 7, 2014, SHOWS THE SITE AND THE SURROUNDING AREA NOT IN A FLOOD ZONE (NO BASE FLOOD ELEVATION DETERMINED).

SOIL TYPES

THE NCRS SOIL TYPES ARE: KJa, L6a, LoA, Lva, LYA And MaA

SOIL DISTURBING ACTIVITIES INCLUDE:

- INSTALLING A STABILIZED CONSTRUCTION EXIT, PERIMETER AND OTHER EROSION AND SEDIMENT CONTROLS
- CLEARING AND GRUBBING
- EXCAVATION OF THE FOUNDATION
- GRADING AND EXCAVATION FOR UTILITIES
- PREPARATION FOR FINAL PLANTING AND SEEDING
- COMPLETION OF ON-SITE STABILIZATION

SEQUENCE OF MAJOR ACTIVITIES

SEE CONSTRUCTION SCHEDULE.

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

NAME OF RECEIVING WATERS

(ENTER RECEIVING WATER NAME CHECK IF THE STREAM IS LOCATED ONE MILE OF A IMPAIRED STREAM SEGMENT IF YES, ADD ADDITIONAL BMP'S)

EROSION AND SEDIMENT CONTROLS

ALL PERIMETER SILT FENCES AND CONSTRUCTION EXITS SHALL BE IN PLACE PRIOR TO ANY LAND DISTURBING ACTIVITIES.

EXISTING VEGETATION SHALL BE LEFT IN PLACE UNTIL SUCH TIME THAT LAND DISTURBING ACTIVITIES ARE TO TAKE PLACE UPON THAT PORTION OF THE SITE. WHEN CONSTRUCTION ACTIVITIES HAVE CEASED IN AN AREA, THAT AREA SHALL BE STABILIZED WITHIN 14 DAYS. IF THE AREA IS NOT YET TO FINAL GRADE, IT SHALL BE MULCHED. IF THE AREA IS TO FINAL GRADE AND WILL EVENTUALLY CONTAIN SITE IMPROVEMENTS SUCH AS THE STRUCTURES OR SIDEWALKS, IT SHALL BE TEMPORARY SEEDED. AREAS BROUGHT TO FINAL GRADE THAT WILL REMAIN PVIOUS ARE TO BE PERMANENTLY SEEDED. ALLOWABLE EXCEPTIONS FROM THE NPDES GENERAL PERMIT, GAR 050000, ARE NOTED BELOW.

WHERE THE INITIATION OF STABILIZATION MEASURES BY THE 14TH DAY AFTER CONSTRUCTION ACTIVITY TEMPORARILY OR PERMANENTLY CEASE IS PRECLUDED BY SNOW COVER OR OTHER ADVERSE WEATHER CONDITIONS, STABILIZATION MEASURES SHALL BE INITIATED AS SOON AS PRACTICABLE.

WHERE CONSTRUCTION ACTIVITY WILL RESUME ON A PORTION OF THE SITE WITHIN 21 DAYS FROM WHEN ACTIVITIES CEASED, (E.G. THE TOTAL TIME PERIOD THAT CONSTRUCTION ACTIVITY IS TEMPORARILY CEASED IS LESS THAN 21 DAYS) THEN STABILIZATION MEASURES DO NOT HAVE TO BE INITIATED ON THAT PORTION OF THE SITE BY THE 14TH DAY AFTER CONSTRUCTION ACTIVITY TEMPORARILY CEASED.

REFER TO THE CONSTRUCTION SCHEDULE FOR THE LAND DISTURBANCE CONSTRUCTION SCHEDULE AND TEMPORARY AND PERMANENT GRASSING SCHEDULES.

OTHER CONTROLS

NO WASTE SHALL BE DISPOSED OF INTO STORMWATER INLETS OR WATERS OF THE STATE

WASTE MATERIALS

ALL WASTE MATERIALS SHALL BE COLLECTED AND STORED IN A SECURELY LIDDED METAL DUMPSTER. THE DUMPSTER SHALL MEET ALL SOLID WASTE MANAGEMENT REGULATIONS. ALL TRASH AND CONSTRUCTION DEBRIS FROM THE SITE SHALL BE DEPOSITED IN THE DUMPSTER. THE DUMPSTER SHALL BE EMPTIED A MINIMUM OF ONCE PER WEEK, OR MORE OFTEN IF NECESSARY, AND TRASH SHALL BE HAULED AS REQUIRED BY LOCAL REGULATIONS. NO CONSTRUCTION WASTE SHALL BE BURIED ON-SITE.

ALL PERSONNEL SHALL BE INSTRUCTED ON PROPER PROCEDURES FOR WASTE DISPOSAL. A NOTICE STATING THESE PRACTICES SHALL BE POSTED AT THE JOB SITE AND THE CONTRACTOR IS RESPONSIBLE FOR SEEING THAT THESE PROCEDURES ARE FOLLOWED.

HAZARDOUS WASTES

ALL HAZARDOUS WASTE MATERIALS SHALL BE DISPOSED OF IN THE MANNER SPECIFIED BY LOCAL, STATE AND/OR FEDERAL REGULATIONS AND BY THE MANUFACTURER OF SUCH PRODUCTS. THE JOB SITE SUPERINTENDENT, WHO WILL ALSO BE RESPONSIBLE FOR SEEING THAT THESE PRACTICES ARE FOLLOWED, SHALL INSTRUCT SITE PERSONNEL IN THESE PRACTICES. MATERIAL SAFETY DATA SHEETS (MSDS) FOR EACH SUBSTANCE WITH HAZARDOUS PROPERTIES THAT IS USED ON THE JOB SITE SHALL BE OBTAINED AND USED FOR THE PROPER MANAGEMENT OF POTENTIAL WASTES THAT MAY RESULT FROM THESE PRODUCTS. AN MSDS SHALL BE POSTED IN THE IMMEDIATE AREA WHERE SUCH PRODUCT IS STORED AND/OR USED AND ANOTHER COPY OF EACH MSDS SHALL BE MAINTAINED IN THE ESPC PLAN FILE AT THE JOB SITE CONSTRUCTION TRAILER OFFICE. EACH EMPLOYEE WHO MUST HANDLE A SUBSTANCE WITH HAZARDOUS PROPERTIES SHALL BE INSTRUCTED ON THE USE OF MSDS SHEETS AND THE SPECIFIC INFORMATION IN THE APPLICABLE MSDS FOR THE PRODUCT HE/SHE IS USING, PARTICULARLY REGARDING SPILL CONTROL TECHNIQUES.

THE CONTRACTOR SHALL IMPLEMENT THE SPILL PREVENTION CONTROL AND COUNTERMEASURES (SPCC) PLAN FOUND WITHIN THIS ESPC PLAN AND SHALL TRAIN ALL PERSONNEL IN THE PROPER CLEANUP AND HANDLING OF SPILLED MATERIALS. NO SPILLED HAZARDOUS MATERIALS OR HAZARDOUS WASTES SHALL BE ALLOWED TO COME IN CONTACT WITH STORMWATER DISCHARGES. IF SUCH CONTACT OCCURS, THE STORMWATER DISCHARGE SHALL BE CONTAINED ON-SITE UNTIL APPROPRIATE MEASURES IN COMPLIANCE WITH STATE AND FEDERAL REGULATIONS ARE TAKEN TO DISPOSE OF SUCH CONTAMINATED STORMWATER. IT SHALL BE THE RESPONSIBILITY OF THE JOB SITE SUPERINTENDENT TO PROPERLY TRAIN ALL PERSONNEL IN THE USE OF THE SPCC PLAN.

SANITARY WASTES

A MINIMUM OF ONE PORTABLE SANITARY UNIT SHALL BE PROVIDED FOR EVERY TEN (10) WORKERS ON THE SITE. ALL SANITARY WASTE SHALL BE COLLECTED FROM THE PORTABLE UNITS A MINIMUM OF ONE TIME PER WEEK BY A LICENSED PORTABLE FACILITY PROVIDER IN COMPLETE COMPLIANCE WITH LOCAL AND STATE REGULATIONS.

ALL SANITARY WASTE UNITS SHALL BE LOCATED IN AN AREA WHERE THE LIKELIHOOD OF THE UNIT CONTRIBUTING TO STORMWATER DISCHARGE IS NEGLIGIBLE. ADDITIONAL CONTAINMENT BMP'S MUST BE IMPLEMENTED, SUCH AS GRAVEL BAGS OR SPECIALLY DESIGNED PLASTIC SKID CONTAINERS AROUND THE BASE, TO PREVENT WASTES FROM CONTRIBUTING TO STORMWATER DISCHARGES. THE LOCATION OF SANITARY WASTE UNITS MUST BE IDENTIFIED ON THE EROSION CONTROL PLAN GRADING PHASE, SHEET C-415 BY THE CONTRACTOR ONCE THE LOCATIONS HAVE BEEN DETERMINED.

OFF-SITE VEHICLE TRACKING

A STABILIZED CONSTRUCTION EXIT HAS BEEN PROVIDED TO HELP REDUCE VEHICLE TRACKING OF SEDIMENT. SEE SURFACE MINE LAND USE PLAN FOR CONSTRUCTION EXIT LOCATION AND DETAILS. THE PAVED STREET ADJACENT TO THE SITE EXIT SHALL BE INSPECTED DAILY FOR TRACKING OF MUO, DIRT OR ROCK. DUMP TRUCKS HAULING MATERIAL FROM THE CONSTRUCTION SITE SHALL HAVE LOADS COVERED WITH A TARPULIN.

INVENTORY FOR POLLUTION PREVENTION PLAN

THE FOLLOWING MATERIALS ARE EXPECTED ON-SITE DURING CONSTRUCTION: CONCRETE PRODUCTS, ASPHALT, PETROLEUM BASED FUELS AND LUBRICANTS FOR EQUIPMENT, TAR, METAL BUILDING MATERIALS, LUMBER, SHEET ROCK, FLOOR COVERINGS, ELECTRICAL WIRE AND FIXTURES, PAINTS/STAINS/FINISHING TREATMENTS, PAINTS, PAINT SOLVENTS, ADDITIVES FOR SOIL STABILIZATION, CLEANING SOLVENTS, PESTICIDES, FERTILIZERS, HERBICIDES, CRUSHED STONE, PLASTIC AND METAL PIPES.

SPILL PREVENTION

PRACTICES SUCH AS GOOD HOUSEKEEPING, PROPER HANDLING OF HAZARDOUS PRODUCTS AND PROPER SPILL CONTROL PRACTICES SHALL BE FOLLOWED TO REDUCE THE RISK OF SPILLS AND THE RISK OF SPILLS FROM DISCHARGING INTO STORMWATER RUNOFF.

GOOD HOUSEKEEPING

QUANTITIES OF PRODUCTS STORED ON-SITE SHALL BE LIMITED TO THE AMOUNT NEEDED FOR THE JOB.

- PRODUCTS AND MATERIALS SHALL BE STORED IN A NEAT, ORDERLY MANNER IN APPROPRIATE CONTAINERS PROTECTED FROM RAINFALL WHERE POSSIBLE.
- PRODUCTS SHALL BE KEPT IN THEIR ORIGINAL CONTAINERS WITH MANUFACTURER LABELS LEGIBLE AND VISIBLE.
- PRODUCT MIXING, DISPOSAL, AND DISPOSAL OF PRODUCT CONTAINERS SHALL BE ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS.
- THE CONTRACTOR SHALL INSPECT SUCH MATERIALS TO ENSURE PROPER USE, STORAGE AND DISPOSAL.

PRODUCT SPECIFIC PRACTICES

CONCRETE TRUCK WASHING - BERMED CONTAINMENT AREAS SHALL BE ESTABLISHED FOR CONCRETE TRUCKS TO WASH DOWN TOOLS, CONCRETE MIXER CHUTES, HOPPERS AND THE REAR OF THE VEHICLES. WASHOUT OF THE DRUM AT THE CONSTRUCTION SITE IS PROHIBITED.

FERTILIZER/HERBICIDES - IF USED, THESE PRODUCTS SHALL BE APPLIED AT RATES THAT DO NOT EXCEED THE MANUFACTURER'S SPECIFICATIONS OR ABOVE THE GUIDELINES SET FORTH IN THE CROP ESTABLISHMENT OR IN THE GSWCC MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA. ANY STORAGE OF THESE MATERIALS SHALL BE UNDER ROOF IN SEALED CONTAINERS.

PAINTS/FINISHES/SOLVENTS - IF USED, ALL PRODUCTS SHALL BE STORED IN TIGHTLY SEALED ORIGINAL CONTAINERS WHEN NOT IN USE. EXCESS PRODUCT SHALL NOT BE DISCHARGED TO THE STORMWATER COLLECTION SYSTEM. EXCESS PRODUCT, MATERIALS USED WITH THESE PRODUCTS AND PRODUCT CONTAINERS SHALL BE DISPOSED OF ACCORDING TO MANUFACTURER'S SPECIFICATIONS AND RECOMMENDATIONS.

BUILDING MATERIALS - NO BUILDING OR CONSTRUCTION MATERIALS SHALL BE BURIED OR DISPOSED OF ON-SITE. ALL SUCH MATERIAL SHALL BE DISPOSED OF USING PROPER WASTE DISPOSAL PROCEDURES.

SPILL PREVENTION, CONTROL AND COUNTER MEASURES PLAN

THE CONTRACTOR SHALL NOTIFY THE LICENSED PROFESSIONAL WHO PREPARED THIS PLAN IF MORE THAN 1320 GALLONS OF PETROLEUM PRODUCTS ARE STORED ON-SITE (THIS INCLUDES FLUIDS WITHIN EQUIPMENT) IN VOLUMES OF 55 GALLONS OR GREATER. IF THIS CONDITION EXISTS, THE CONTRACTOR WILL NEED A SPILL PREVENTION, CONTROL AND COUNTERMEASURE (SPCC) PLAN PREPARED BY A LICENSED PROFESSIONAL ENGINEER (PE) OF THE STATE.

- PETROLEUM BASED PRODUCTS - CONTAINERS FOR PRODUCTS SUCH AS FUELS, LUBRICANTS AND TARS SHALL BE INSPECTED DAILY FOR LEAKS AND SPILLS. THIS INCLUDES ON-SITE VEHICLE AND MACHINERY DAILY INSPECTIONS AND REGULAR PREVENTATIVE MAINTENANCE OF SUCH EQUIPMENT. EQUIPMENT MAINTENANCE AREAS SHALL BE LOCATED AWAY FROM STATE WATER, NATURAL DRAINS AND STORMWATER DRAINAGE INLETS. IN ADDITION, TEMPORARY FUELING TANKS SHALL HAVE A SECONDARY CONTAINMENT LINER TO PREVENT/MINIMIZE SITE CONTAMINATION.
- DISCHARGE OF OILS, FUELS AND DISPOSAL AS REQUIRED BY LOCAL AND STATE REGULATIONS.
- LOCAL, STATE, AND MANUFACTURER'S RECOMMENDED METHODS FOR SPILL CLEANUP SHALL BE CLEARLY POSTED AND PROCEDURES SHALL BE MADE AVAILABLE TO SITE PERSONNEL.
- MATERIAL AND EQUIPMENT NECESSARY FOR SPILL CLEANUP SHALL BE KEPT IN THE MATERIAL STORAGE AREAS. TYPICAL MATERIALS AND EQUIPMENT INCLUDES, BUT IS NOT LIMITED TO, BROOMS, DUSTPANS, MOPS, RAGS, GLOVES, GOGGLES, CAT LITTER, SAND, SAWDUST, AND PROPERLY LABELED PLASTIC AND METAL WASTE CONTAINERS.
- SPILL PREVENTION PRACTICES AND PROCEDURES SHALL BE REVIEWED AFTER A SPILL AND ADJUSTED AS NECESSARY TO PREVENT FUTURE SPILLS.
- ALL SPILLS SHALL BE CLEANED UP IMMEDIATELY UPON DISCOVERY. ALL SPILLS SHALL BE REPORTED AS REQUIRED BY LOCAL, STATE AND FEDERAL REGULATIONS.
- FOR SPILLS THAT IMPACT SURFACE WATER (LEAVE A SHEEN ON SURFACE), THE NATIONAL RESPONSE CENTER (NRC) SHALL BE CONTACTED WITHIN 24-HOURS AT 1-800-424-8802.
- FOR SPILLS OF AN UNKNOWN AMOUNT, THE NATIONAL RESPONSE CENTER (NRC) SHALL BE CONTACTED WITHIN 24-HOURS AT 1-800-424-8802.
- FOR SPILLS GREATER THAN 25 GALLONS AND NO SURFACE WATER IMPACTS, THE GEORGIA EPD SHALL BE CONTACTED WITHIN 24-HOURS.
- FOR SPILLS LESS THAN 25 GALLONS AND NO SURFACE WATER IMPACTS, THE SPILL SHALL BE CLEANED UP AND LOCAL AGENCIES SHALL BE CONTACTED AS REQUIRED.


INSPECTIONS

PRIMARY PERMITTEE.

- EACH DAY WHEN ANY TYPE OF CONSTRUCTION ACTIVITY HAS TAKEN PLACE AT A PRIMARY PERMITTEE'S SITE, CERTIFIED PERSONNEL PROVIDED BY THE PRIMARY PERMITTEE SHALL INSPECT: (A) ALL AREAS AT THE PRIMARY PERMITTEE'S SITE WHERE PETROLEUM PRODUCTS ARE STORED, USED, OR HANDLED FOR SPILLS AND LEAKS FROM VEHICLES AND EQUIPMENT AND (B) ALL LOCATIONS AT THE PRIMARY PERMITTEE'S SITE WHERE VEHICLES ENTER OR EXIT THE SITE FOR EVIDENCE OF OFF-SITE SEDIMENT TRACKING. THESE INSPECTIONS MUST BE CONDUCTED UNTIL A NOTICE OF TERMINATION IS SUBMITTED.
- MEASURE RAINFALL ONCE EVERY 24 HOURS EXCEPT ANY NON-WORKING SATURDAY, NON-WORKING SUNDAY AND NON-WORKING FEDERAL HOLIDAY. UNTIL A NOTICE OF TERMINATION IS SUBMITTED, MEASUREMENT OF RAINFALL MAY BE SUSPENDED IF ALL AREAS OF THE SITE HAVE UNDERGONE FINAL STABILIZATION OR ESTABLISHED A CROP OF ANNUAL VEGETATION AND A SEEDING OF TARGET PERENNIALS APPROPRIATE FOR THE REGION. THE PERMITTEE MUST COMPLY WITH PART IV.D.4.a(4). THESE INSPECTIONS MUST BE CONDUCTED UNTIL A NOTICE OF TERMINATION IS SUBMITTED.
- CERTIFIED PERSONNEL (PROVIDED BY THE PRIMARY PERMITTEE) SHALL INSPECT THE FOLLOWING AT LEAST ONCE EVERY FOURTEEN (14) CALENDAR DAYS AND WITHIN 24 HOURS OF THE END OF A STORM THAT IS 0.5 INCHES RAINFALL OR GREATER (UNLESS SUCH STORM ENDS AFTER 5:00 PM ON ANY FRIDAY OR ON ANY NON-WORKING SATURDAY, NON-WORKING SUNDAY OR ANY NON-WORKING FEDERAL HOLIDAY, IN WHICH CASE THE INSPECTION SHALL BE COMPLETED BY THE END OF THE NEXT BUSINESS DAY AND/OR WORKING DAY, WHICHEVER OCCURS FIRST): (A) DISTURBED AREAS OF THE PRIMARY PERMITTEE'S CONSTRUCTION SITE; (B) AREAS USED BY THE PRIMARY PERMITTEE FOR STORAGE OF MATERIALS THAT ARE EXPOSED TO PRECIPITATION; AND (C) STRUCTURAL CONTROL MEASURES. EROSION AND SEDIMENT CONTROL MEASURES IDENTIFIED IN THE PLAN APPLICABLE TO THE PRIMARY PERMITTEE'S SITE SHALL BE OBSERVED TO ENSURE THAT THEY ARE OPERATING CORRECTLY. WHERE DISCHARGE LOCATIONS OR POINTS ARE ACCESSIBLE, THEY SHALL BE INSPECTED TO ASCERTAIN WHETHER EROSION CONTROL MEASURES ARE EFFECTIVE IN PREVENTING SIGNIFICANT IMPACTS TO RECEIVING WATER(S). FOR AREAS OF A SITE THAT HAVE UNDERGONE FINAL STABILIZATION OR ESTABLISHED A CROP OF ANNUAL VEGETATION AND A SEEDING OF TARGET PERENNIALS APPROPRIATE FOR THE REGION, THE PERMITTEE MUST COMPLY WITH PART IV.D.4.a(4). THESE INSPECTIONS MUST BE CONDUCTED UNTIL A NOTICE OF TERMINATION IS SUBMITTED.
- CERTIFIED PERSONAL (PROVIDED BY THE PRIMARY PERMITTEE) SHALL INSPECT AT LEAST ONCE PER MONTH DURING THE TERM OF THIS PERMIT (I.E. UNTIL A NOTICE OF TERMINATION IS SUBMITTED TO EPD) THE AREAS OF THE SITE THAT HAVE UNDERGONE FINAL STABILIZATION OR ESTABLISHED A CROP OF ANNUAL VEGETATION AND A SEEDING OF TARGET PERENNIALS APPROPRIATE FOR THE REGION. THESE AREAS SHALL BE INSPECTED FOR EVIDENCE OF, OR THE POTENTIAL FOR, POLLUTANTS ENTERING THE DRAINAGE SYSTEM AND THE RECEIVING WATER(S). EROSION AND SEDIMENT CONTROL MEASURES IDENTIFIED IN THE PLAN SHALL BE OBSERVED TO ENSURE THAT THEY ARE OPERATING CORRECTLY. WHERE DISCHARGE LOCATIONS OR POINTS ARE ACCESSIBLE, THEY SHALL BE INSPECTED TO ASCERTAIN WHETHER EROSION CONTROL MEASURES ARE EFFECTIVE IN PREVENTING SIGNIFICANT IMPACTS TO RECEIVING WATER(S).
- BASED ON THE RESULTS OF EACH INSPECTION, THE SITE DESCRIPTION AND THE POLLUTION PREVENTION AND CONTROL MEASURES IDENTIFIED IN THE EROSION, SEDIMENTATION AND POLLUTION CONTROL PLAN, THE PLAN SHALL BE REVISED AS APPROPRIATE NOT LATER THAN SEVEN (7) CALENDAR DAYS FOLLOWING EACH INSPECTION. IMPLEMENTATION OF SUCH CHANGES SHALL BE MADE AS SOON AS PRACTICAL BUT IN NO CASE LATER THAN SEVEN (7) CALENDAR DAYS FOLLOWING EACH INSPECTION.
- A REPORT OF EACH INSPECTION THAT INCLUDES THE NAME(S) OF CERTIFIED PERSONNEL MAKING EACH INSPECTION, THE DATE(S) OF EACH INSPECTION, CONSTRUCTION PHASE (I.E., INITIAL, INTERMEDIATE OR FINAL), MAJOR OBSERVATIONS RELATING TO THE IMPLEMENTATION OF THE EROSION, SEDIMENTATION AND POLLUTION CONTROL PLAN, AND ACTIONS TAKEN IN ACCORDANCE WITH PART IV.D.4.a.(5). OF THE PERMIT SHALL BE MADE AND RETAINED AT THE SITE OR BE READILY AVAILABLE AT A DESIGNATED ALTERNATE LOCATION UNTIL THE ENTIRE SITE OR THAT PORTION OF A CONSTRUCTION PROJECT THAT HAS BEEN PHASED HAS UNDERGONE FINAL STABILIZATION AND A NOTICE OF TERMINATION IS SUBMITTED TO EPD. SUCH REPORTS SHALL BE READILY AVAILABLE BY END OF THE SECOND BUSINESS DAY AND/OR WORKING DAY AND SHALL IDENTIFY ANY INCIDENTS OF BEST MANAGEMENT PRACTICES THAT HAVE NOT BEEN PROPERLY INSTALLED AND/OR MAINTAINED AS DESCRIBED IN THE PLAN. WHERE THE REPORT DOES NOT IDENTIFY ANY INCIDENTS, THE INSPECTION REPORT SHALL CONTAIN A STATEMENT THAT THE BEST MANAGEMENT PRACTICES ARE IN COMPLIANCE WITH THE EROSION, SEDIMENTATION AND POLLUTION CONTROL PLAN. THE REPORT SHALL BE SIGNED IN ACCORDANCE WITH PART V.G.2 OF THIS PERMIT.

SECONDARY PERMITTEE. (SEE LIST OF PERMITTEES)

- EACH DAY WHEN ANY TYPE OF CONSTRUCTION ACTIVITY HAS TAKEN PLACE AT A SECONDARY PERMITTEE'S SITE, CERTIFIED PERSONNEL PROVIDED BY THE SECONDARY PERMITTEE SHALL INSPECT: (A) ALL AREAS USED BY THE SECONDARY PERMITTEE WHERE PETROLEUM PRODUCTS ARE STORED, USED, OR HANDLED FOR SPILLS AND LEAKS FROM VEHICLES AND EQUIPMENT; AND (B) ALL LOCATIONS AT THE SECONDARY PERMITTEE SITE WHERE THAT PERMITTEE'S VEHICLES ENTER OR EXIT THE SITE FOR EVIDENCE OF OFF-SITE SEDIMENT TRACKING. THESE INSPECTIONS MUST BE CONDUCTED UNTIL A NOTICE OF TERMINATION IS SUBMITTED. THIS PARAGRAPH IS NOT APPLICABLE TO UTILITY COMPANIES AND UTILITY CONTRACTORS IF THEY ARE SECONDARY PERMITTEES.
- CERTIFIED PERSONNEL (PROVIDED BY THE SECONDARY PERMITTEE) SHALL INSPECT AT LEAST ONCE EVERY SEVEN (7) CALENDAR DAYS AND WITHIN 24 HOURS OF THE END OF A STORM THAT IS 0.5 INCHES OR GREATER THE FOLLOWING: (A) DISTURBED AREAS OF THE SECONDARY PERMITTEE'S CONSTRUCTION SITE THAT HAS NOT UNDERGONE FINAL STABILIZATION; (B) AREAS USED BY THE SECONDARY PERMITTEE FOR STORAGE OF MATERIALS THAT ARE EXPOSED TO PRECIPITATION THAT HAVE NOT UNDERGONE FINAL STABILIZATION; AND (C) STRUCTURAL CONTROL MEASURES. EROSION AND SEDIMENT CONTROL MEASURES IDENTIFIED IN THE PLAN APPLICABLE TO THE SECONDARY PERMITTEE'S SITE SHALL BE OBSERVED TO ENSURE THAT THEY ARE OPERATING CORRECTLY. WHERE DISCHARGE LOCATIONS OR POINTS ARE ACCESSIBLE, THEY SHALL BE INSPECTED TO ASCERTAIN WHETHER EROSION CONTROL MEASURES ARE EFFECTIVE IN PREVENTING SIGNIFICANT IMPACTS TO RECEIVING WATER(S). FOR AREAS OF A SITE THAT HAVE UNDERGONE FINAL STABILIZATION, THE PERMITTEE MUST COMPLY WITH PART IV.D.3.a.(3). THESE INSPECTIONS MUST BE CONDUCTED UNTIL A NOTICE OF TERMINATION IS SUBMITTED. THIS PARAGRAPH IS NOT APPLICABLE TO UTILITY COMPANIES AND UTILITY CONTRACTORS IF THEY ARE SECONDARY PERMITTEES PERFORMING ONLY SERVICE LINE INSTALLATIONS.
- CERTIFIED PERSONNEL (PROVIDED BY THE SECONDARY PERMITTEE) SHALL INSPECT AT LEAST ONCE PER MONTH DURING THE TERM OF THIS PERMIT (I.E. UNTIL A NOTICE OF TERMINATION IS RECEIVED BY EPD) THE AREAS OF THEIR SITES THAT HAVE UNDERGONE FINAL STABILIZATION. THESE AREAS SHALL BE INSPECTED FOR EVIDENCE OF, OR THE POTENTIAL FOR, POLLUTANTS ENTERING THE DRAINAGE SYSTEM AND THE RECEIVING WATER(S). EROSION AND SEDIMENT CONTROL MEASURES IDENTIFIED IN THE PLAN SHALL BE OBSERVED TO ENSURE THAT THEY ARE OPERATING CORRECTLY. WHERE DISCHARGE LOCATIONS OR POINTS ARE ACCESSIBLE, THEY SHALL BE INSPECTED TO ASCERTAIN WHETHER EROSION CONTROL MEASURES ARE EFFECTIVE IN PREVENTING SIGNIFICANT IMPACTS TO RECEIVING WATER(S). THIS PARAGRAPH IS NOT APPLICABLE TO UTILITY COMPANIES AND UTILITY CONTRACTORS IF THEY ARE SECONDARY PERMITTEES.



GEORGIA SOIL AND WATER  
CONSERVATION COMMISSION




Philip W Marcum

Level II Certified Design Professional

CERTIFICATION NUMBER 0000010833

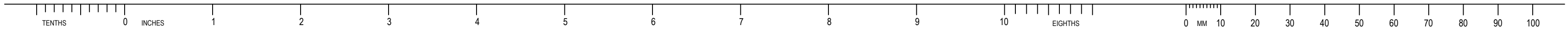
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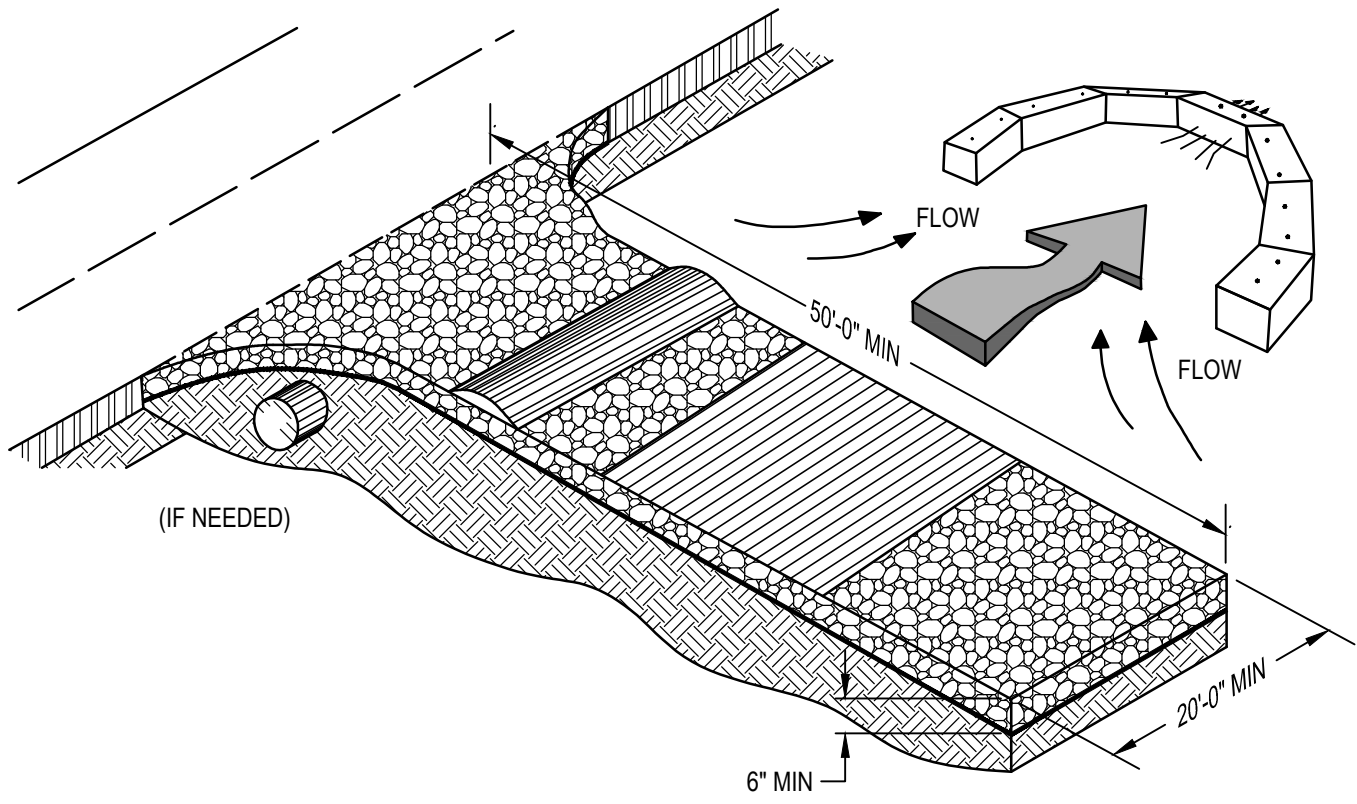
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STAMP/SEAL 												PROJECT PHASE PERMITTING			SUBJECT EROSION SEDIMENTATION AND POLLUTION CONTROL NOTES SHEET 2		AREA ECA2221															
PROJECT NO. 7382224061												BY DES 07FEB22		CERTIFICATE OF AUTHORIZATION																		
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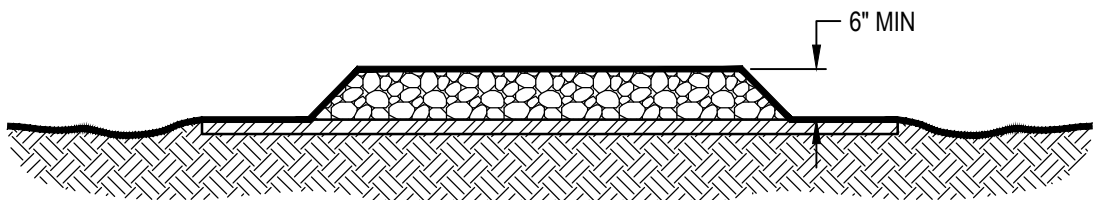




E



EXIT DIAGRAM



ENTRANCE ELEVATION

NOTES:

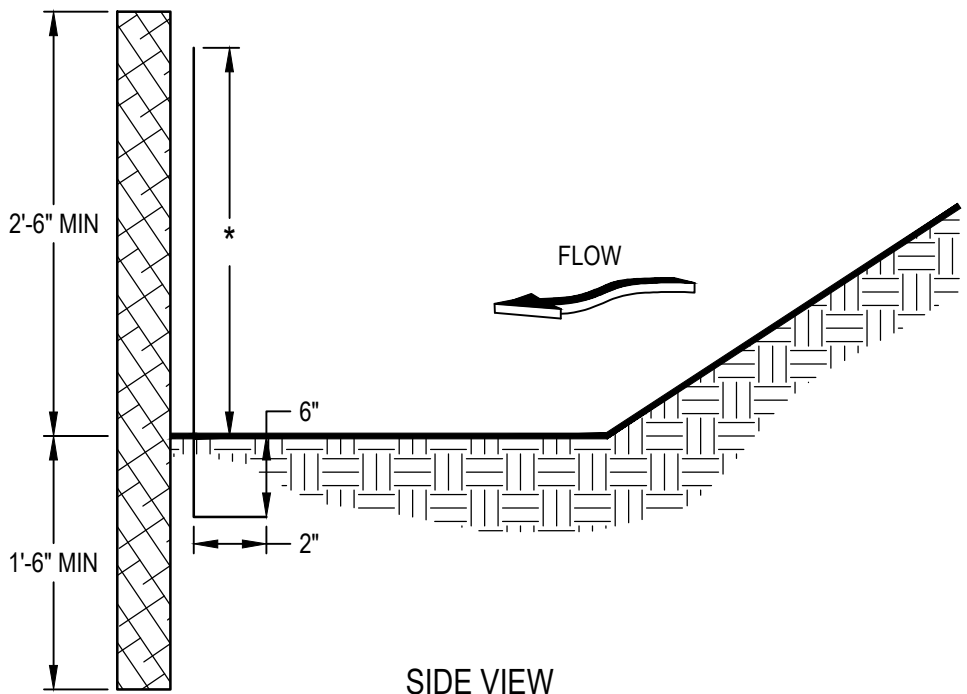
1. AVOID LOCATING ON STEEP SLOPES OR AT CURVES ON PUBLIC ROADS.
2. REMOVE ALL VEGETATION AND OTHER UNSUITABLE MATERIAL FROM THE FOUNDATION AREA, GRADE, AND CROWN FOR POSITIVE DRAINAGE.
3. AGGREGATE SIZE SHALL BE IN ACCORDANCE WITH NATIONAL STONE ASSOCIATION R-2 (1-1/2" TO 3-1/2" STONE).
4. GRAVEL PAD 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

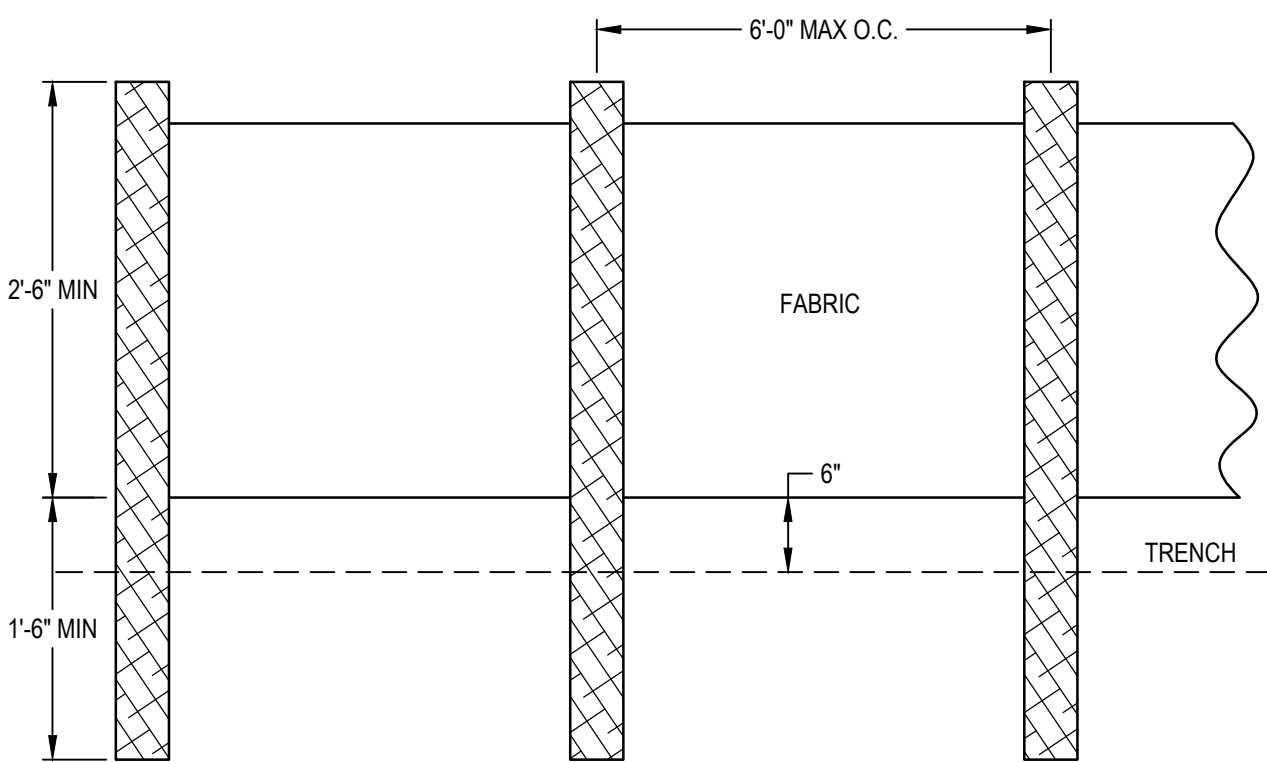
MULCHING APPLICATION REQUIREMENTS

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)



SIDE VIEW



FRONT VIEW

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

TABLE 1  
PLANT, PLANTING RATE AND PLANTING DATE FOR TEMPORARY COVER OR COMPANION CROPS<sup>1</sup>

SPECIES	BROADCAST RATES (PLS) <sup>2,4</sup>		RESOURCE AREA <sup>3</sup>	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 INOCULENT 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.
IN 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.
IN 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 <u>NOT</u> 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. <u>NOT</u> 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.
IN 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.
IN MIXTURE	1/2 BU (30 LBS)	0.7 LBS	P													
			C													

- <sup>1</sup> TEMPORARY COVER CROPS ARE VERY COMPETITIVE AND WILL CROWD OUT PERENNIALS IF SEEDED TOO HEAVILY.
- <sup>2</sup> REDUCE SEEDING RATES BY 50% WHEN DRILLED.
- <sup>3</sup> 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.
- <sup>4</sup> 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

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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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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

**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

EROSION SEDIMENTATION AND POLLUTION CONTROL DETAILS SHEET 1

AREA ECA2221	CERTIFICATE OF AUTHORIZATION
CLIENT DWG NO.	
DRAWING NO. C-441	REV 0

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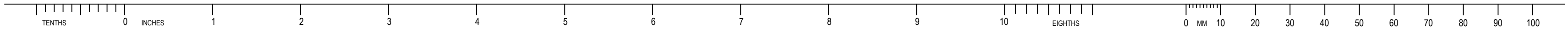


TABLE 1  
PLANT, PLANTING RATE AND PLANTING DATE FOR PERMANENT COVER OR COMPANION CROPS<sup>1</sup>

SPECIES	BROADCAST RATES (PLS) <sup>1,2</sup>		RESOURCE AREA <sup>3</sup>	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													166,000 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	10 LBS 6 LBS	0.2 LBS	P													1,787,000 SEED PER POUND. QUICK COVER. LOW GROWING AND SOD FORMING. FULL SUN. GOOD FOR ATHLETIC FIELDS.	
ALONE		C															
WITH OTHER PERENNIALS		0.7 LBS															
BERMUDA, COMMON																	
UNHULLED SEED	10 LBS 6 LBS	0.2 LBS 0.1 LBS	P													PLANT WITH WINTER ANNUALS PLANT WITH TALL FESCUE	
WITH TEMPORARY COVER			C														
WITH OTHER PERENNIALS																	
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	
			C														
TIFT 78			C														SOUTHERN COASTAL PLAIN ONLY
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 P													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.	
FESCUE, TALL																	
ALONE	50 LBS 30 LBS	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		0.7 LBS	P														

<sup>1</sup> REDUCE SEEDING RATES BY 50% WHEN DRILLED.  
<sup>2</sup> PLS IS AN ABBREVIATION FOR PURE LIVE SEED.  
<sup>3</sup> 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.

- 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.

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

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 6-12-12 10-10-10	1500	50-100 1/2/ 30
	SECOND MAINTENANCE		1000 400	
COOL SEASON GRASSES AND LEGUMES	FIRST	6-12-12 0-10-10 0-10-10	1500	0-50 1/ --
	SECOND MAINTENANCE		1000 400	
GROUND COVERS	FIRST	10-10-10 10-10-10 10-10-10	1300 3/ 1300	-- -- --
	SECOND MAINTENANCE		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 10-10-10	1500	50-100 2/6/ 50-100 2/ 30
	SECOND MAINTENANCE		800 400	
WARM SEASON GRASSES AND LEGUMES	FIRST	6-12-12 0-10-10 0-10-10	1500	50 6/
	SECOND MAINTENANCE		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.

Ds3 DISTURBED AREA STABILIZATION (WITH PERMANENT VEGETATION)

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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

SCALE  
AS SHOWN

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

SUBJECT  
EROSION SEDIMENTATION AND POLLUTION CONTROL DETAILS SHEET 2

STAMP/SEAL

AREA  
ECA2221

CERTIFICATE OF AUTHORIZATION

CLIENT DWG NO.

DRAWING NO.  
C-442

REV  
0

8

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WOOD

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

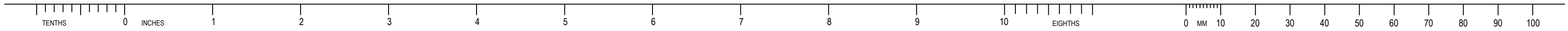
GEORGIA SOIL AND WATER  
CONSERVATION COMMISSION

Philip W Marcum  
Level II Certified Design Professional

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

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DOTTED: 18-May-22 8:19 AM  
USER: LORENZ, MAX J



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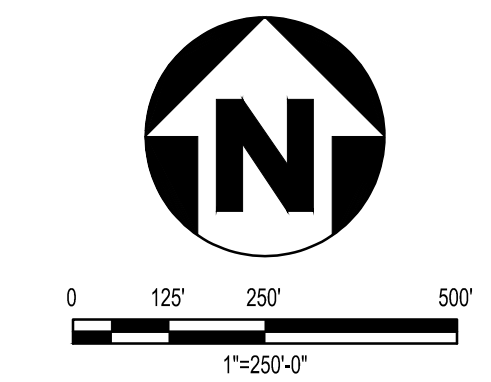
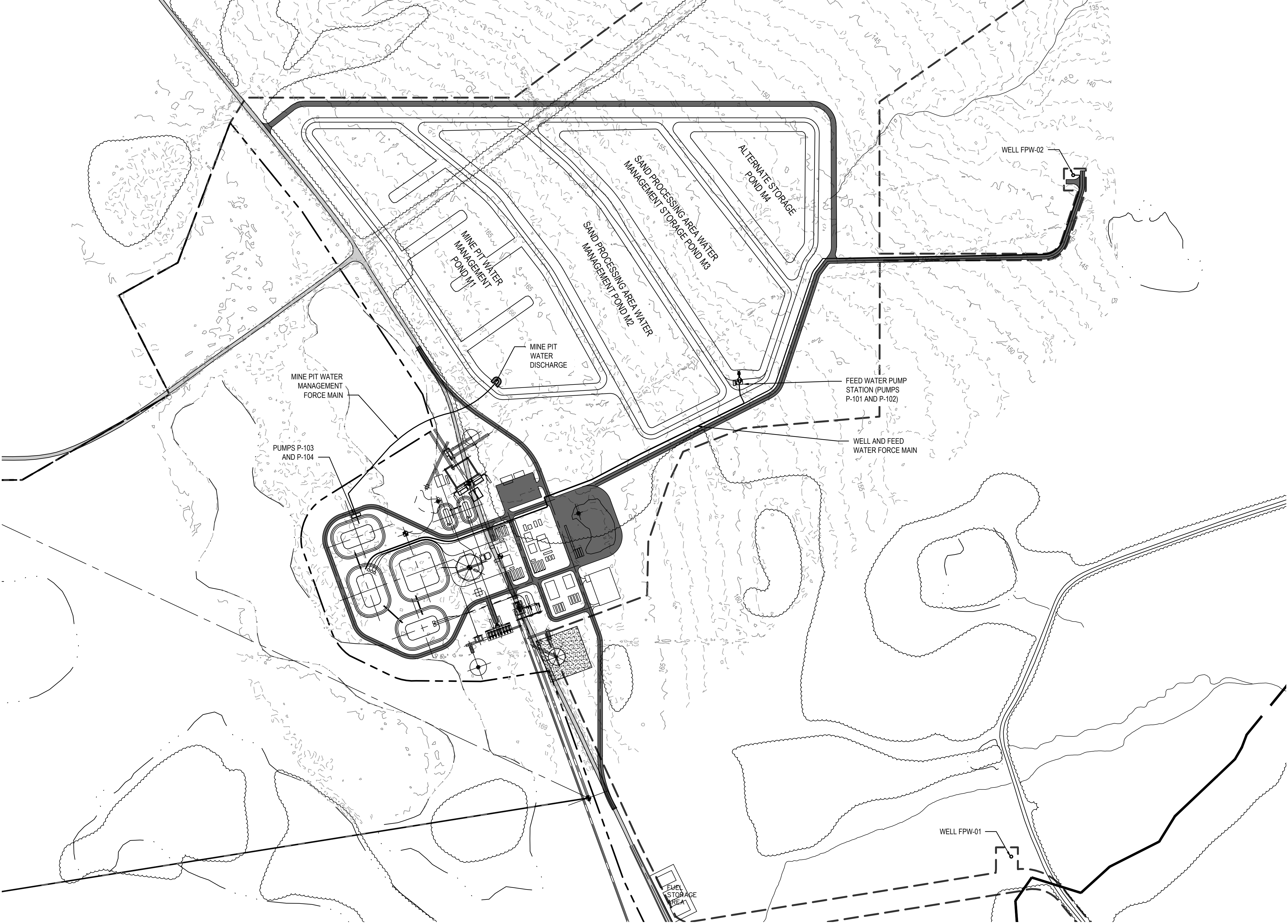
LEGEND

MINE BOUNDARY

PERMIT BOUNDARY

EXISTING INDEX CONTOUR

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

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

AREA  
ECA2221

CERTIFICATE OF AUTHORIZATION

CLIENT DWG NO.

OVERALL UTILITY PLAN

DRAWING NO.  
C-500

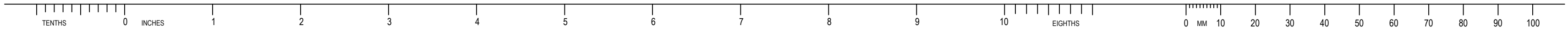
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AREA ECA2221		CERTIFICATE OF AUTHORIZATION	
CLIENT DWG NO.			
DRAWING NO. C-500		REV 0	

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NSD 0.2/2024

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MATCHLINE - SEE SHEET C-501

MATCHLINE - SEE SHEET C-503

MATCHLINE - SEE SHEET C-505

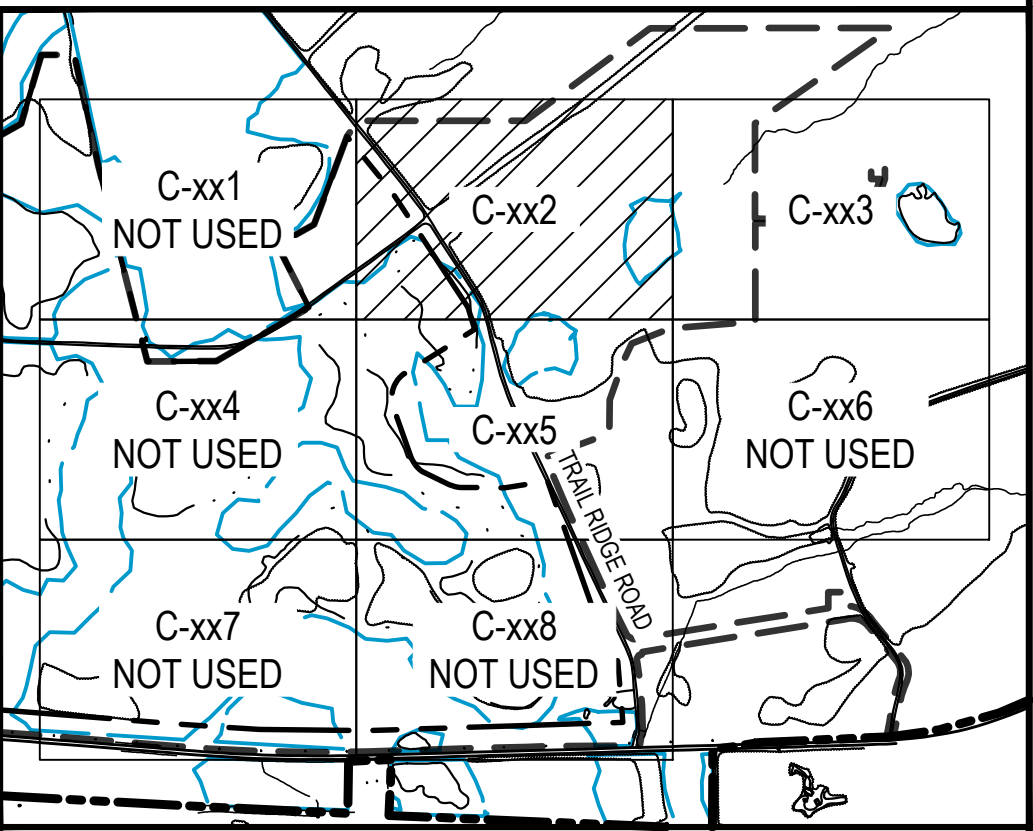
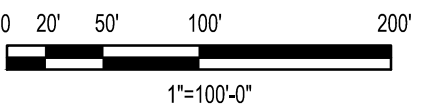
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KEY PLAN  
SCALE: NONE



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



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

SUBJECT

UTILITY PLAN SHEET 2

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

AREA  
CERTIFICATE OF AUTHORIZATION  
ECA2221

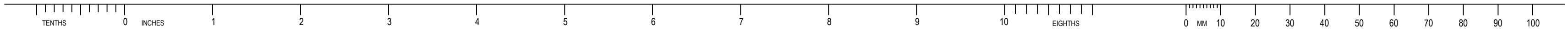
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DRAWING NO.  
C-502

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MATCHLINE - SEE SHEET C-502

LEGEND

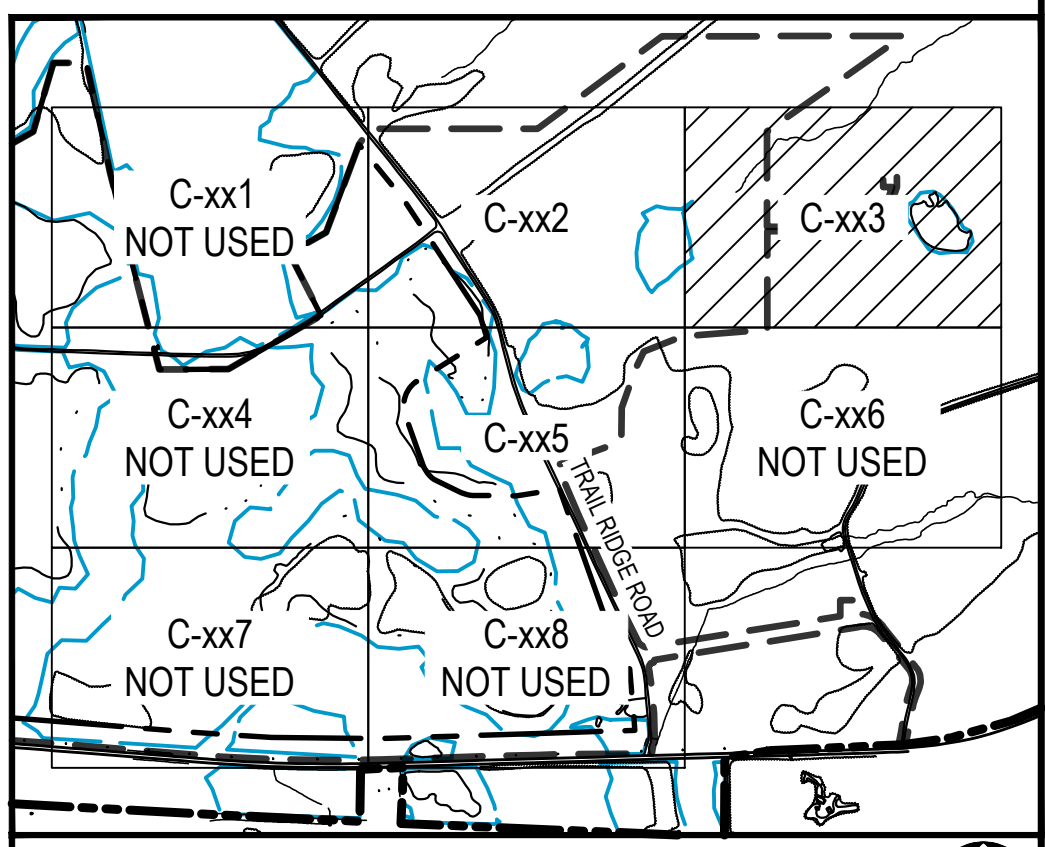
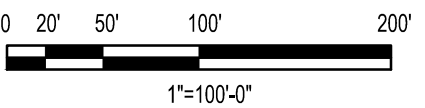
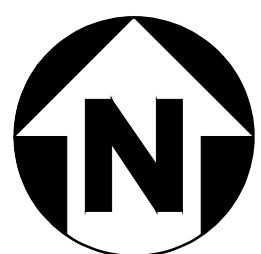
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- PERMIT BOUNDARY
- EXISTING INDEX CONTOUR
- EXISTING INTERMEDIATE CONTOUR

ALTERNATE STORAGE POND M4

WELL FPW-02

MAKEUP WATER PIPE

SAND PROCESSING AREA WATER MANAGEMENT STORAGE POND M3



KEY PLAN  
SCALE: NONE



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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

DES  
07FEB22

SCALE  
AS SHOWN

DRN  
07FEB22

APP  
07FEB22



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

CERTIFICATE OF AUTHORIZATION  
ECA2221

CLIENT DWG NO.

DRAWING NO.  
C-503

UTILITY PLAN SHEET 3

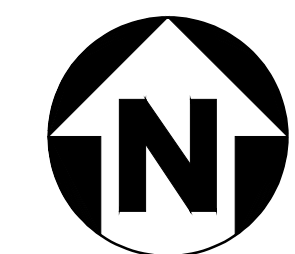
wood.  
4000 MEADOW LAKE DRIVE  
SUITE 121  
BIRMINGHAM, AL 35242  
(205) 980-6402

AREA

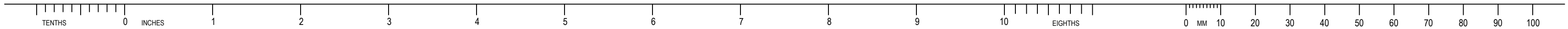
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MATCHLINE - SEE SHEET C-504



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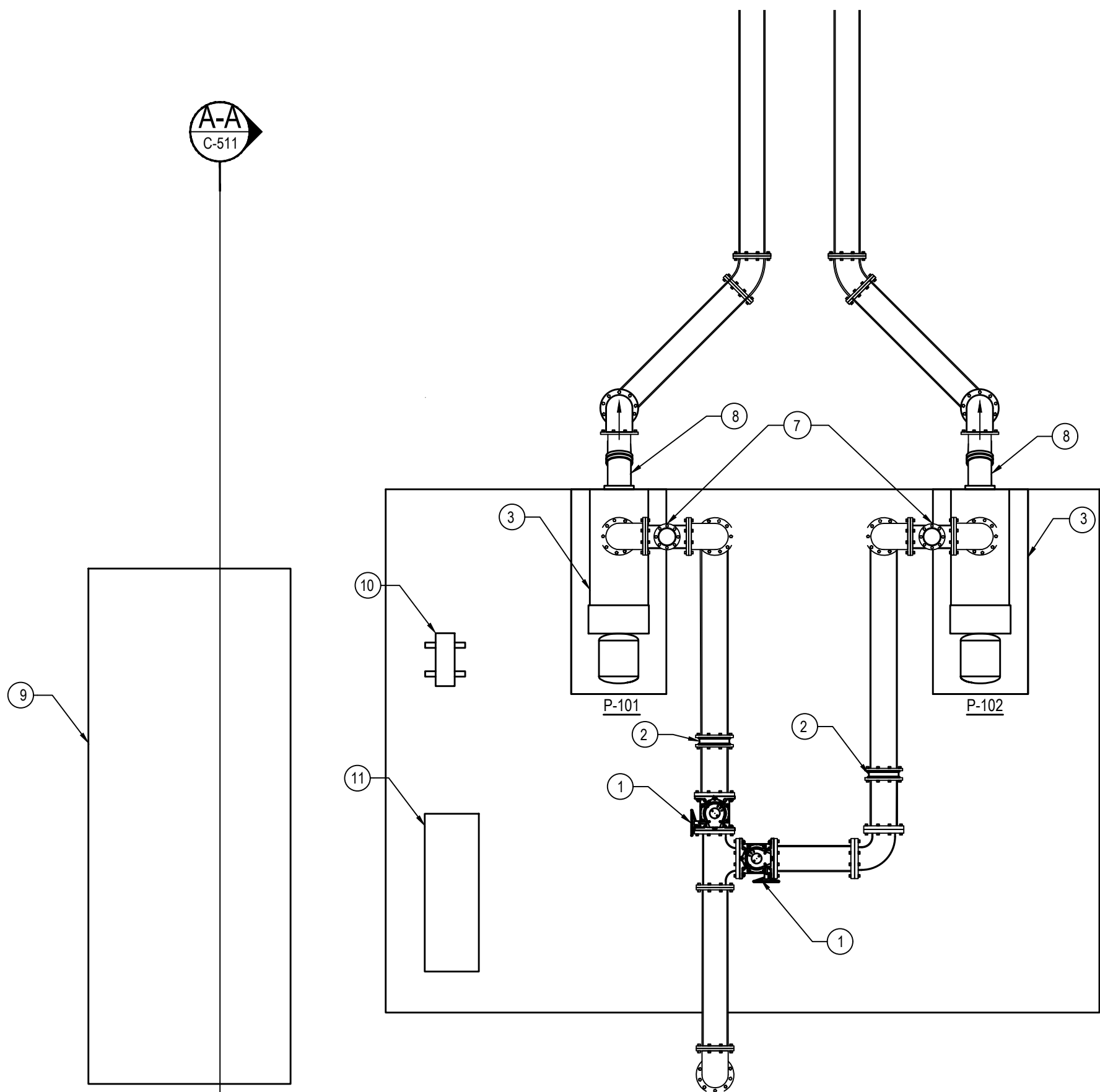
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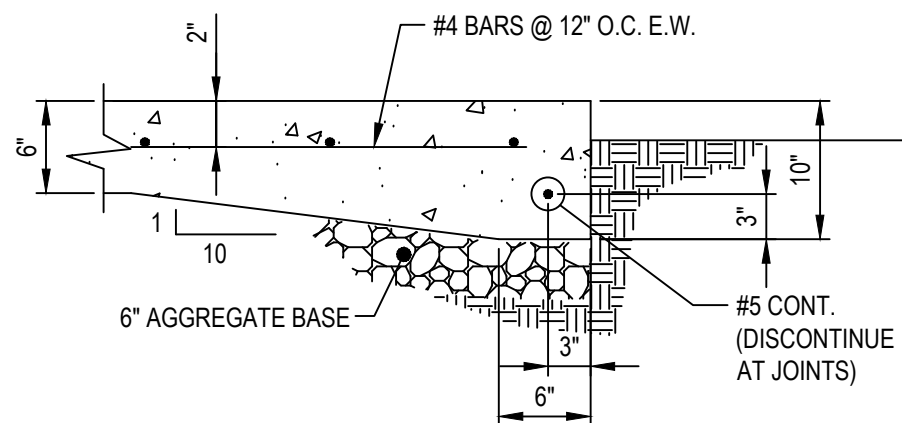
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A-A  
C-511



**C8** PUMP MANIFOLD DETAIL  
C-511 SCALE: N.T.S.



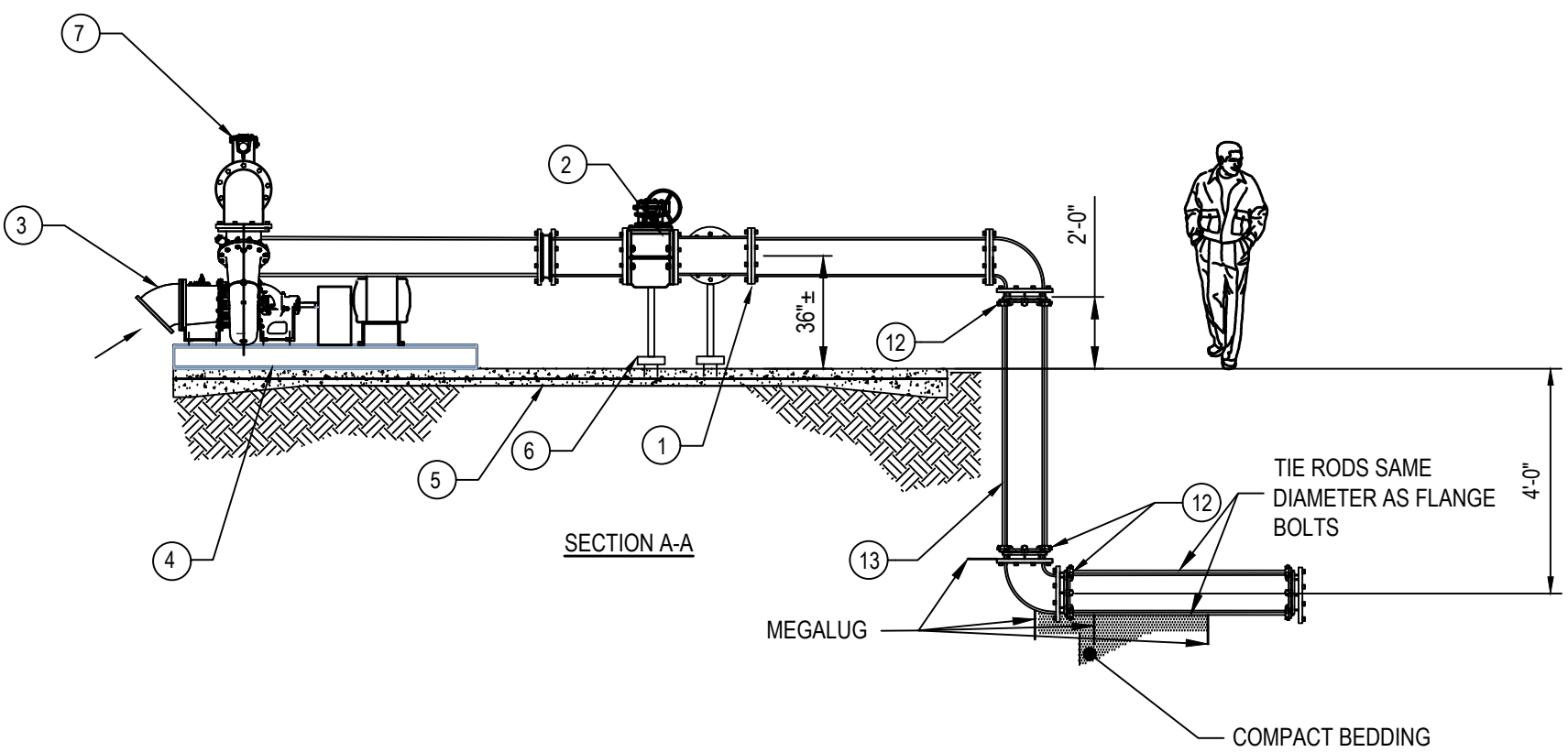
**A8** CONCRETE THICKEND EDGE  
C-511 SCALE: N.T.S.

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



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

- PROVIDE WITH SKID
- OWNER TO PROVIDE WITH VFD
- PUMP TO BE CONTROLLED BY ACOUSTIC LEVEL, SEE DRAWINGS

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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

SCALE

AS SHOWN

BY

DDMMYY

DES

07FEB22

CHK

07FEB22

APP

07FEB22



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

UTILITY DETAILS SHEET 1

**wood.**

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

AREA CERTIFICATE OF AUTHORIZATION

ECA2221

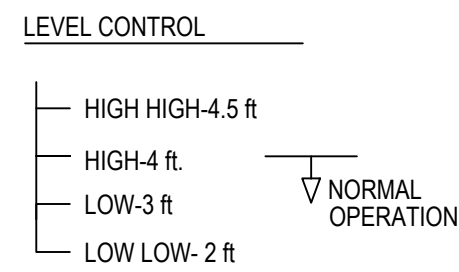
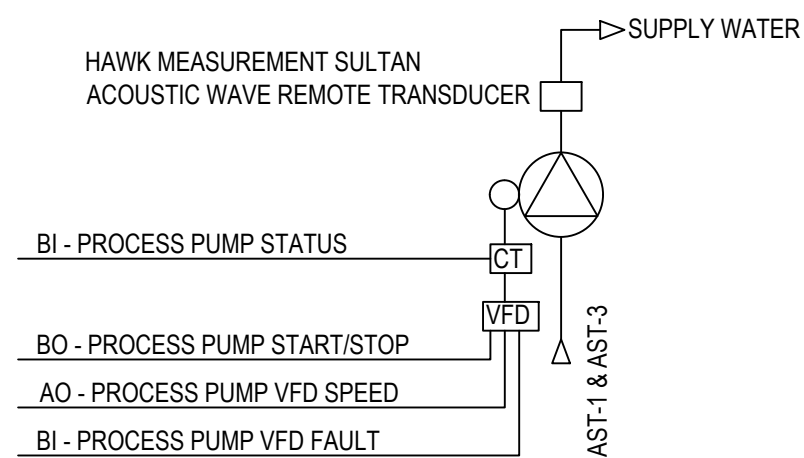
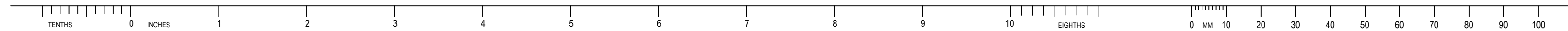
CLIENT DWG NO.

DRAWING NO.

C-511

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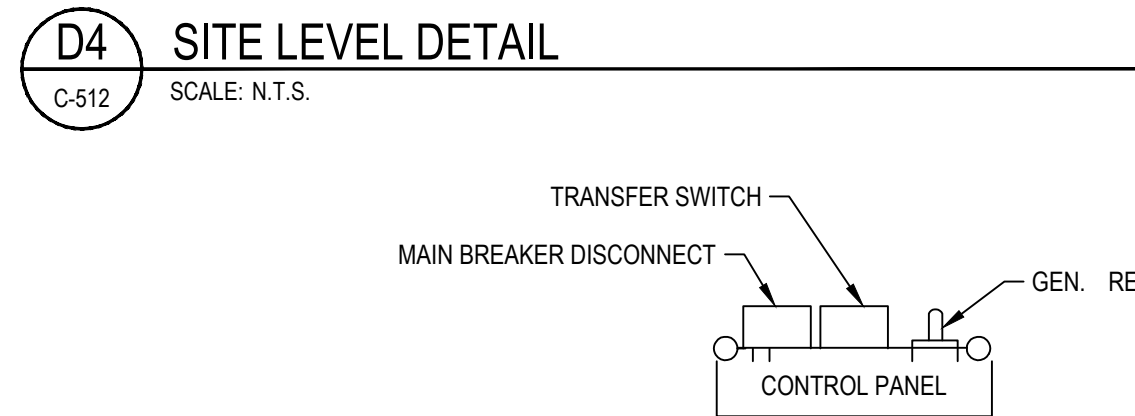
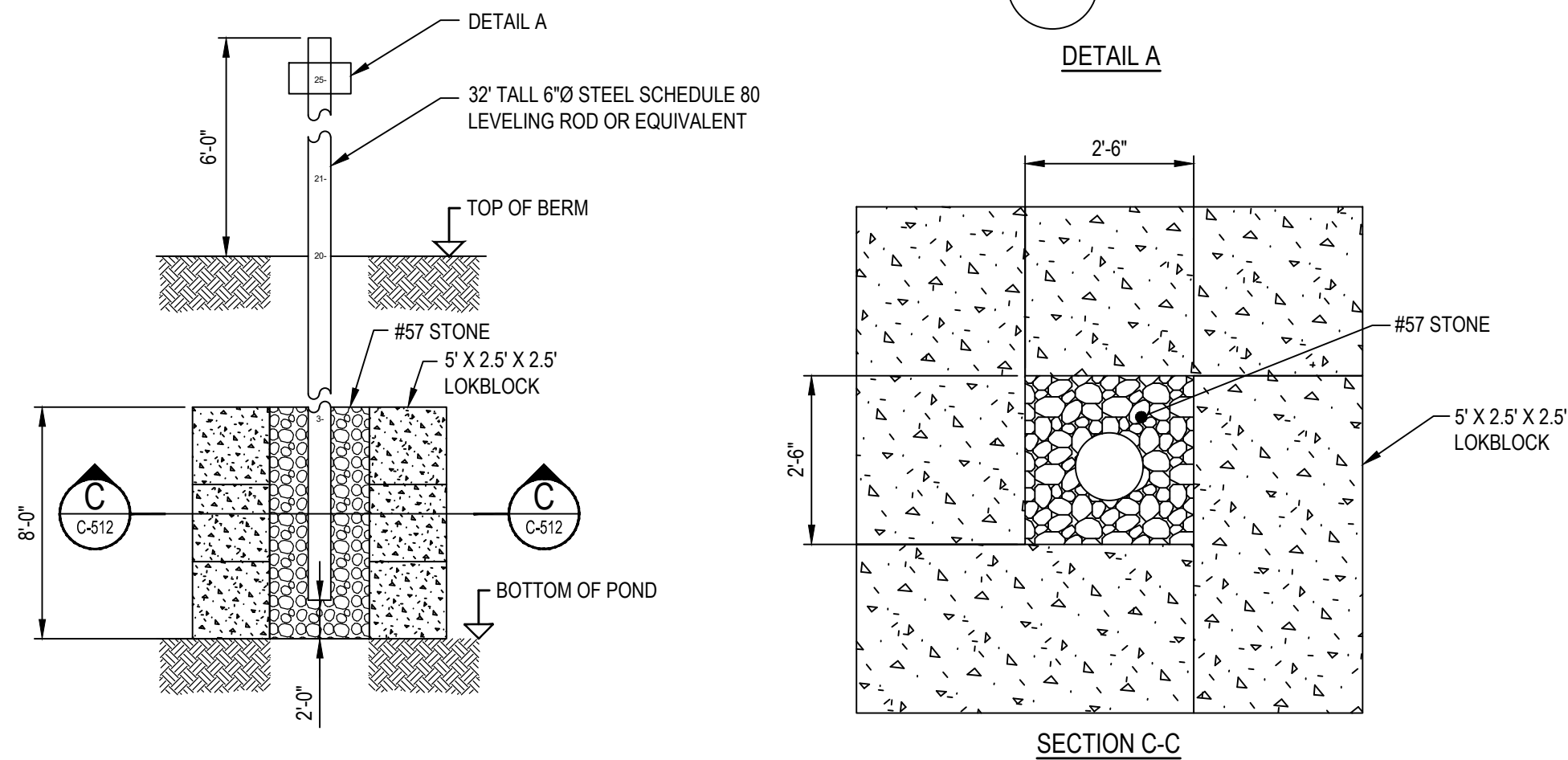
NOTES:

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



**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.

[illegible]

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STAMP/SEAL

APPROVED FOR \_\_\_\_\_

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

PROJECT PHASE

PROJECT NO.		BY	DDMMYY
7382224061	DES		07FEB22

SCALE	DRN	07FEB22
AS SHOWN	CHK	07FEB22
	APP	07FEB22



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

Y	SUBJECT
	UTILITY DETAILS SHEET 2



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

AREA	CERTIFICATE OF AUTHORIZATION ECA2221
------	---

CLIENT DWG NO.


DRAWING NO.  
C-512

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Can file: [www.canichimati.com/saving](http://www.canichimati.com/saving)

SAVED: 12-May-22 1:26 PM PLOTTED: 18-May-22 8:21 AM USER: LORENZ, MAX.



	
4000 MEADOW LAKE DRIVE SUITE 121 BIRMINGHAM, AL 35242 (205) 980-6402	
AREA	CERTIFICATE OF AUTHORIZATION ECA2221
CLIENT DWG NO.	
DRAWING NO. C-513	REV 0



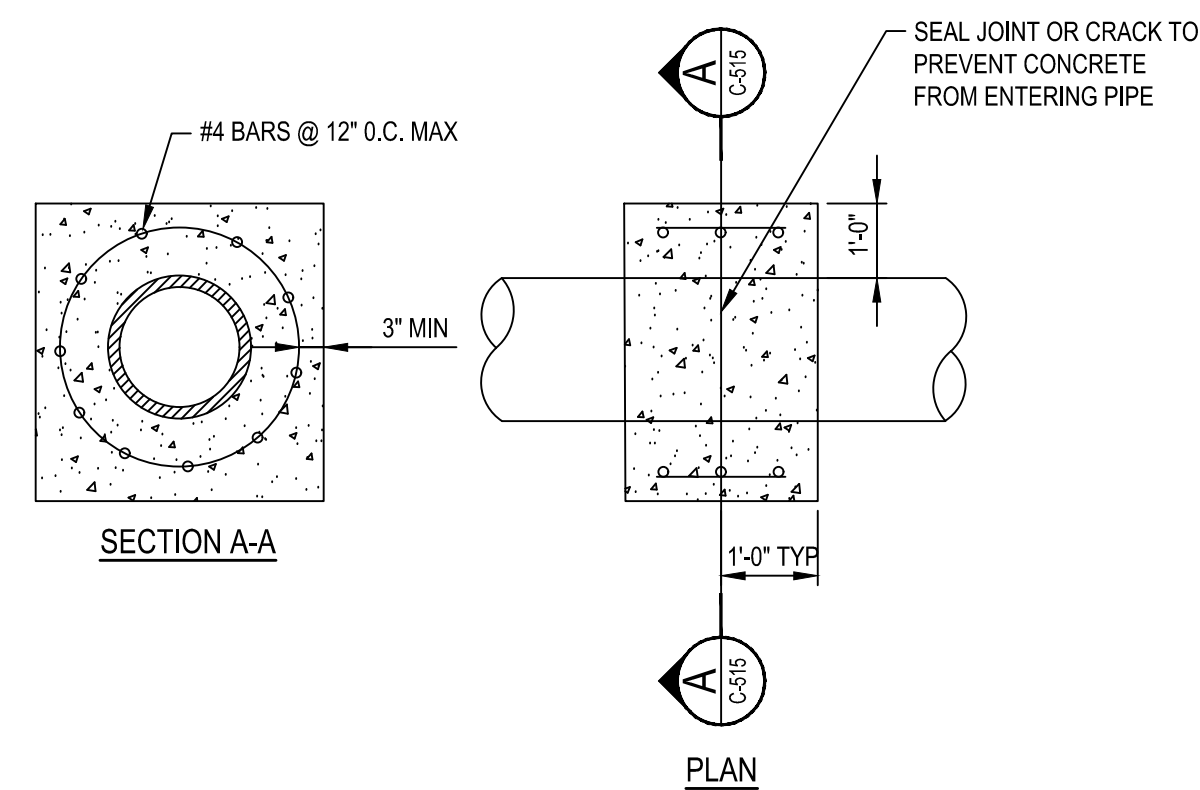
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D

NOTE: ALL EXPOSED STEEL SHALL BE  
HOT DIPPED GALVANIZED.

**C8** PIPE SUPPORT  
C-515 SCALE: N.T.S.

# D4 UTILITY CROSSING DETAIL



**A8 CONCRETE COLLAR**  
C-515 SCALE: N.T.S.

[illegible]

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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
	CHK		07FEB22
SCALE	APP		07FEB22
AS SHOWN			



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

UTILITY DETAILS 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-515	REV 0

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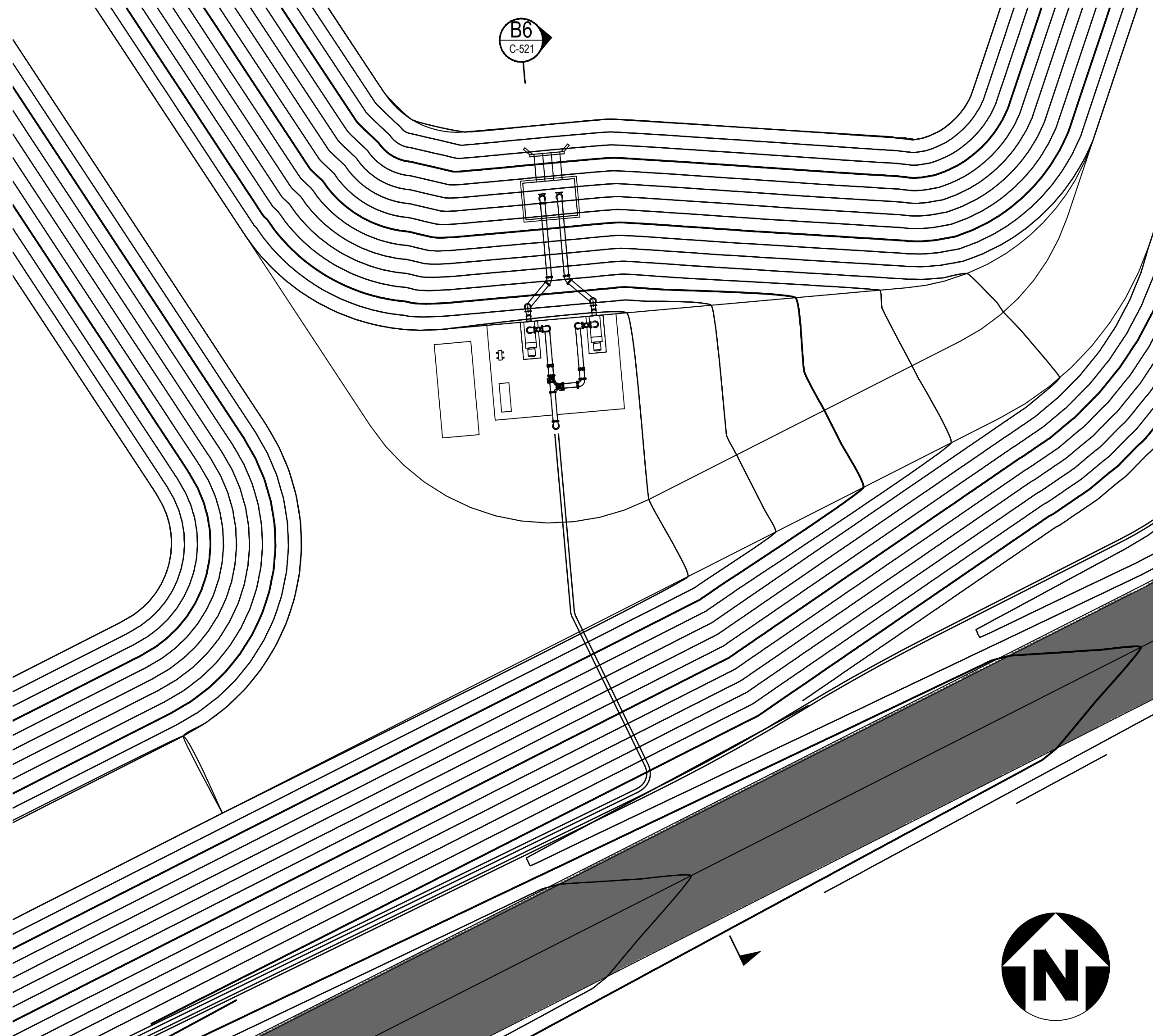
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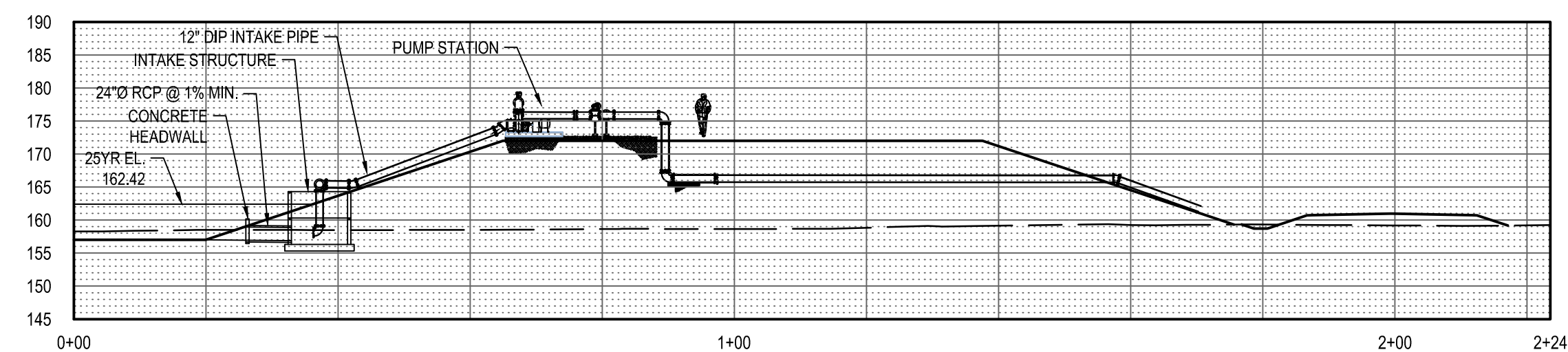
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0 5' 10' 20' 40'

1"=20'-0"



0 5' 10' 20' 40'

1"=20'-0"

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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
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SCALE		DRN	07FEB22
AS SHOWN		CHK	07FEB22
		APP	07FEB22

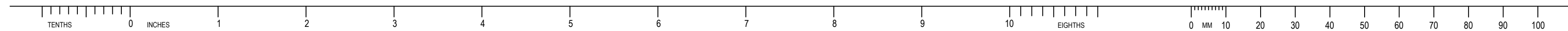


TWIN PINES MINERALS LLC  
SAUNDERS DEMONSTRATION MINE  
MINE ID 2073  
WATER MANAGEMENT PONDS



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

AREA	CERTIFICATE OF AUTHORIZATION ECA2221	
CLIENT DWG NO.		
DRAWING NO. C-521		REVISION

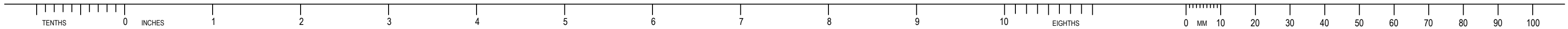
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THIS SHEET  
FOR  
INFORMATION  
ONLY

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
SCALE			
AS SHOWN	APP		07FEB22

PRC

<p style="text-align: right;">COPY FROM 10/20/17</p> <p style="text-align: center;"><b>wood.</b></p> <p style="text-align: center;">4000 MEADOW LAKE DRIVE SUITE 121 BIRMINGHAM, AL 35242 (205) 980-6402</p>	
AREA	CERTIFICATE OF AUTHORIZATION ECA2221
CLIENT DWG NO.	
DRAWING NO. C-571	REV 0



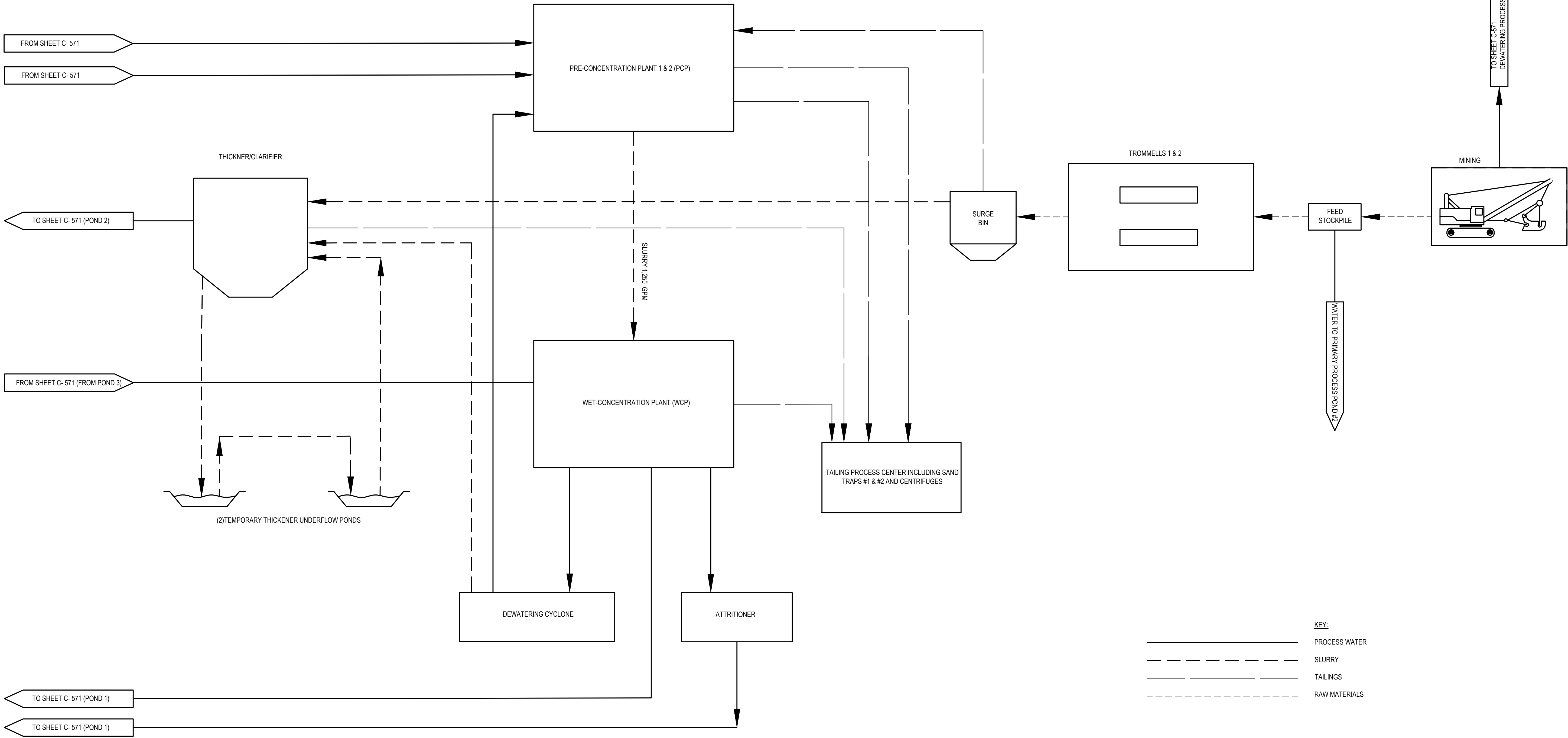
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WATER PROCESS FLOW DIAGRAM (2 OF 2)

REV	DDMMYY	REVISION / ISSUE DESCRIPTION	DRN	CHK	APP	APP	APP	APP	APP	0	11MAY22	ISSUED FOR PERMITTING	MJL	MMA	PWM			REF	NUMBER	TITLE
REV	DDMMYY	REVISION / ISSUE DESCRIPTION	DRN	CHK	APP	APP	APP	APP	APP	REF	NUMBER	REFERENCES								

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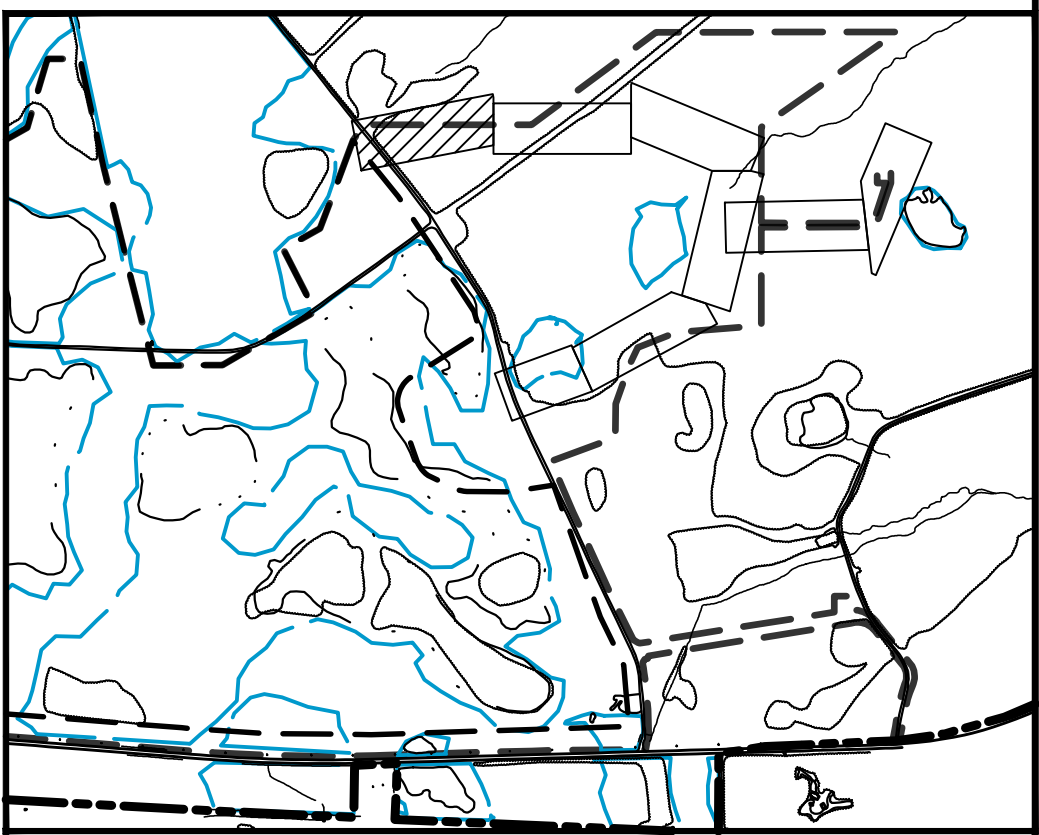
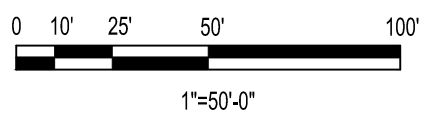
THIS SHEET FOR INFORMATION ONLY

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


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

SUBJECT  
PROCESS FLOW DIAGRAM SHEET 2

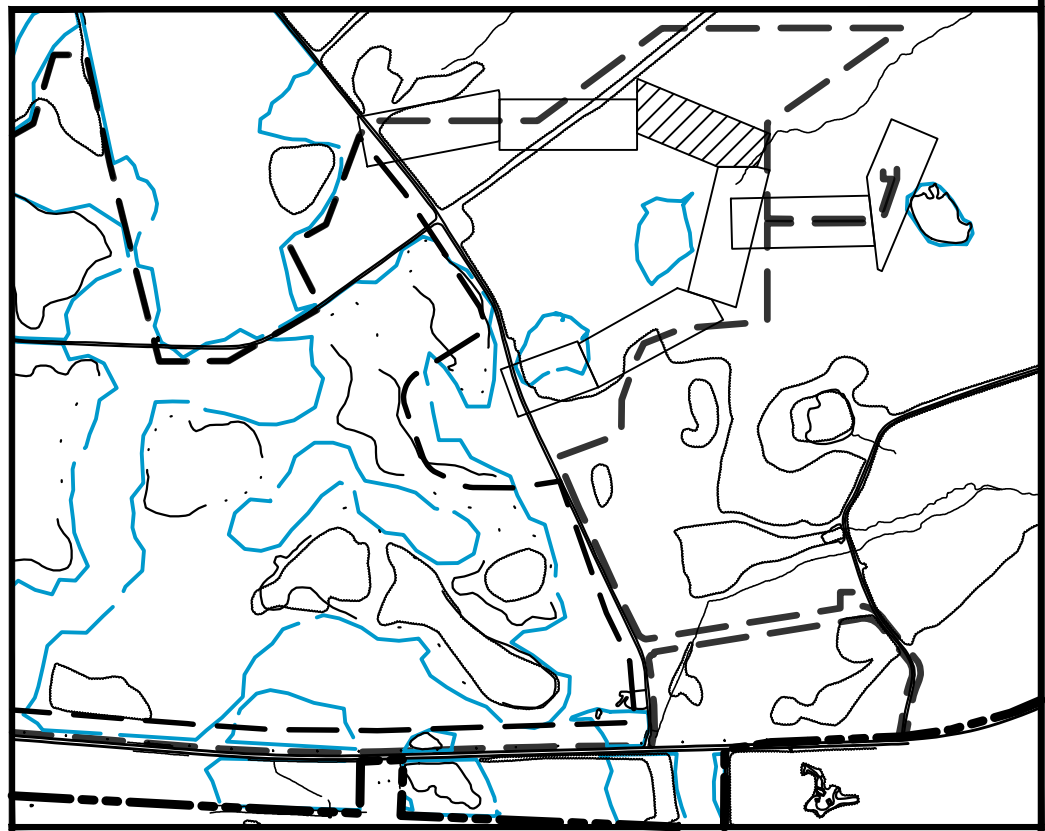
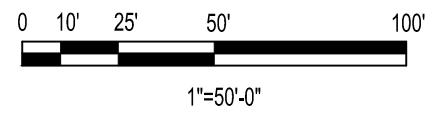
4000 MEADOW LAKE DRIVE SUITE 121 BIRMINGHAM, AL 35242 (205) 980-6402	
AREA	CERTIFICATE OF AUTHORIZATION ECA2221
CLIENT DWG NO.	
DRAWING NO. C-572	REV 0




RIGHT © 2021

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





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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-603	REV 0

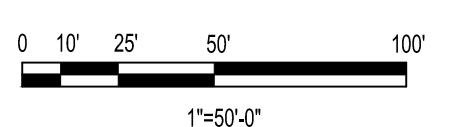
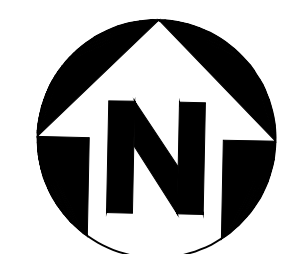
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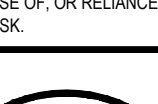







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A circular professional engineer seal for the State of Georgia. The outer ring contains the text "GEORGIA" at the top and "PHILIP W. MARCUM" at the bottom, separated by two stars. The inner circle contains the text "REGISTERED PROFESSIONAL ENGINEER" around the perimeter. In the center, the license number "00030488" and the date "07/2002" are printed. A blue ink signature is written across the seal.




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

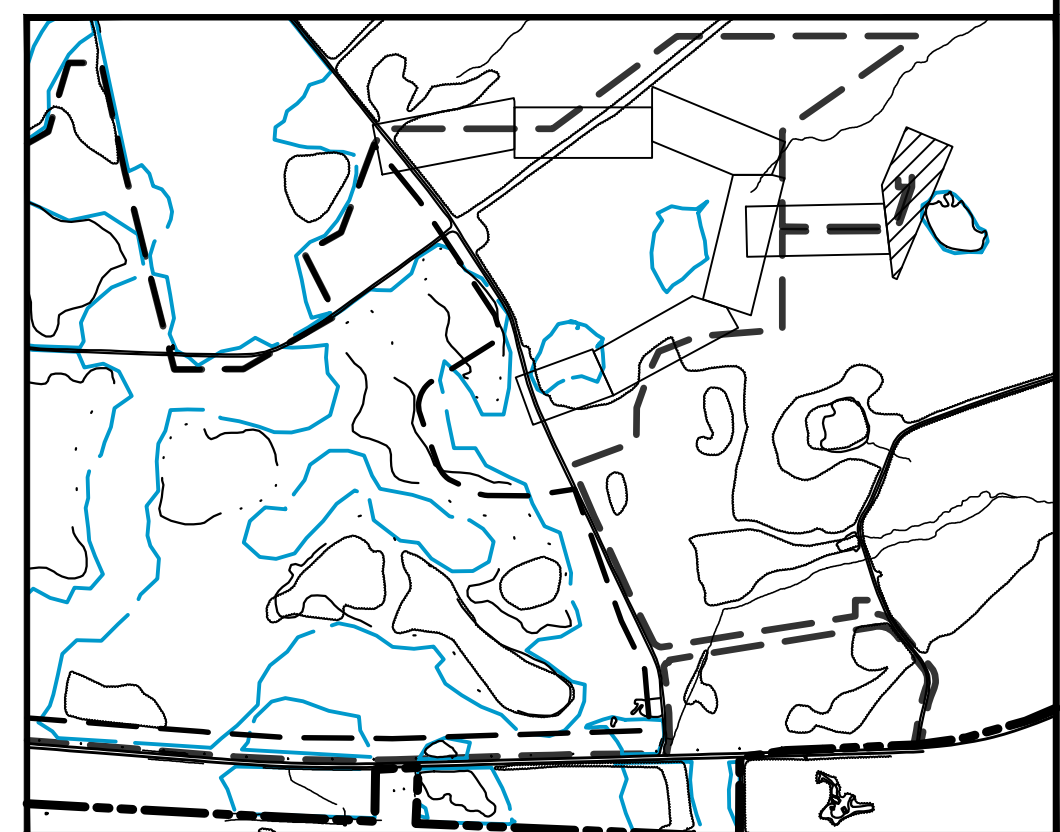
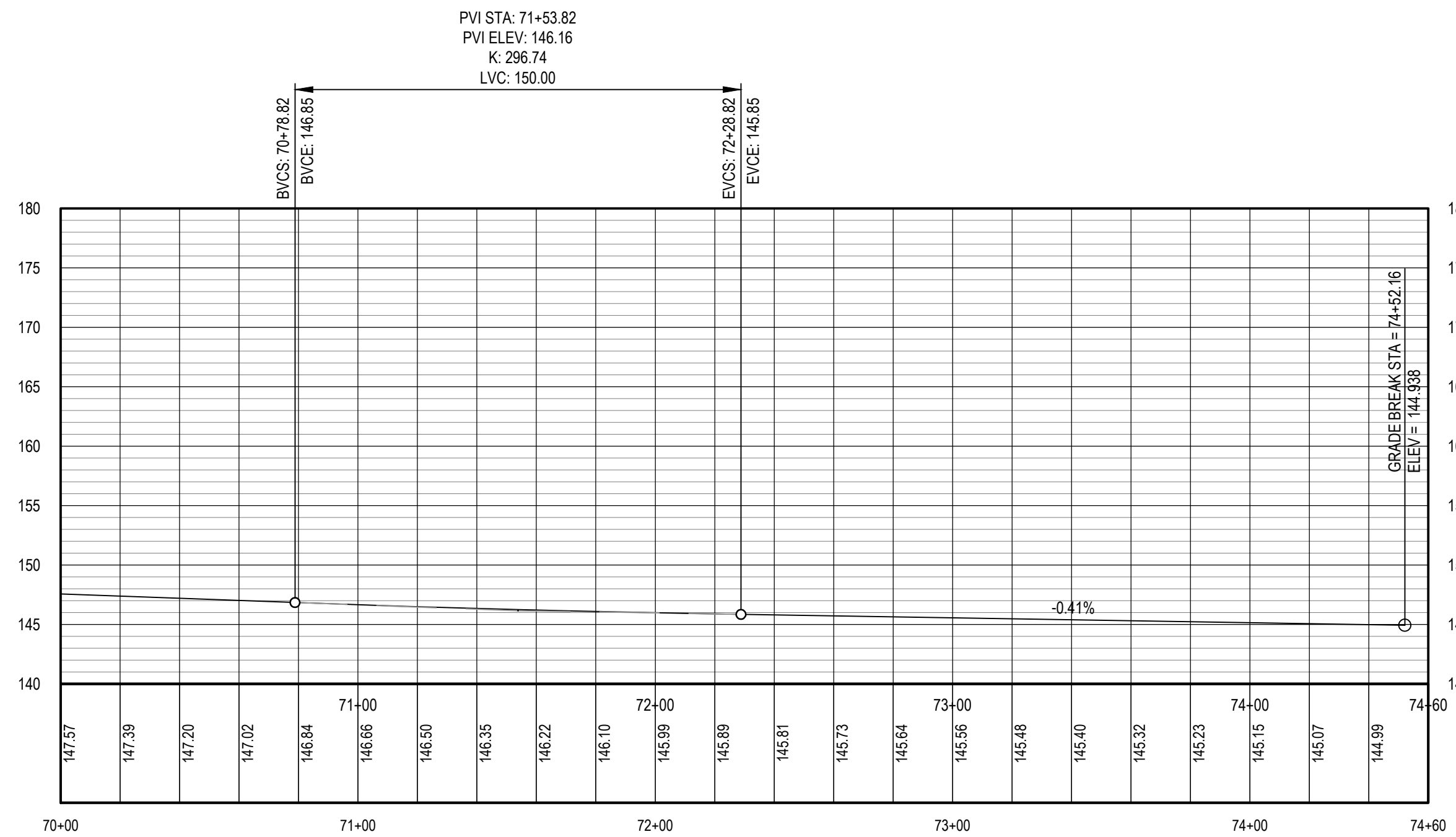
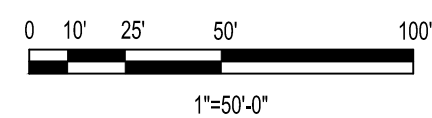
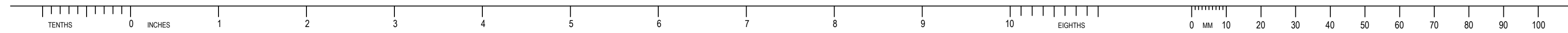
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SUBJECT

PUMP HOUSE ROAD PLAN AND PROFILE SHEET

1

	
4000 MEADOW LAKE DRIVE SUITE 121 BIRMINGHAM, AL 35242 (205) 980-6402	
AREA	CERTIFICATE OF AUTHORIZATION ECA2221
CLIENT DWG NO.	
DRAWING NO. C-611	REV 0



**KEY PLAN**  
SCALE: NONE



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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. 700000100

DES		

DDMMYY
07FEB22

SCALE

AS SHOWN

DRN	
CHK	
...	

07FEB22
07FEB22
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**

CLIENT DWG NO.

DRAWING NO.  
C-612

SAVED: 05-May-22 7:20 AM PLOTTED: 18-May-22 8:26 AM USER: LORENZ, MAX J

[illegible]

ANSI D-22X34

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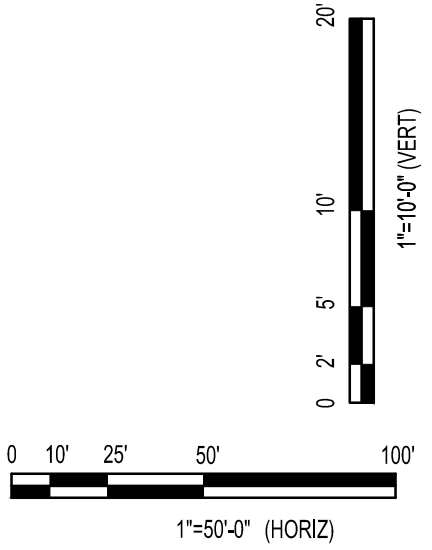
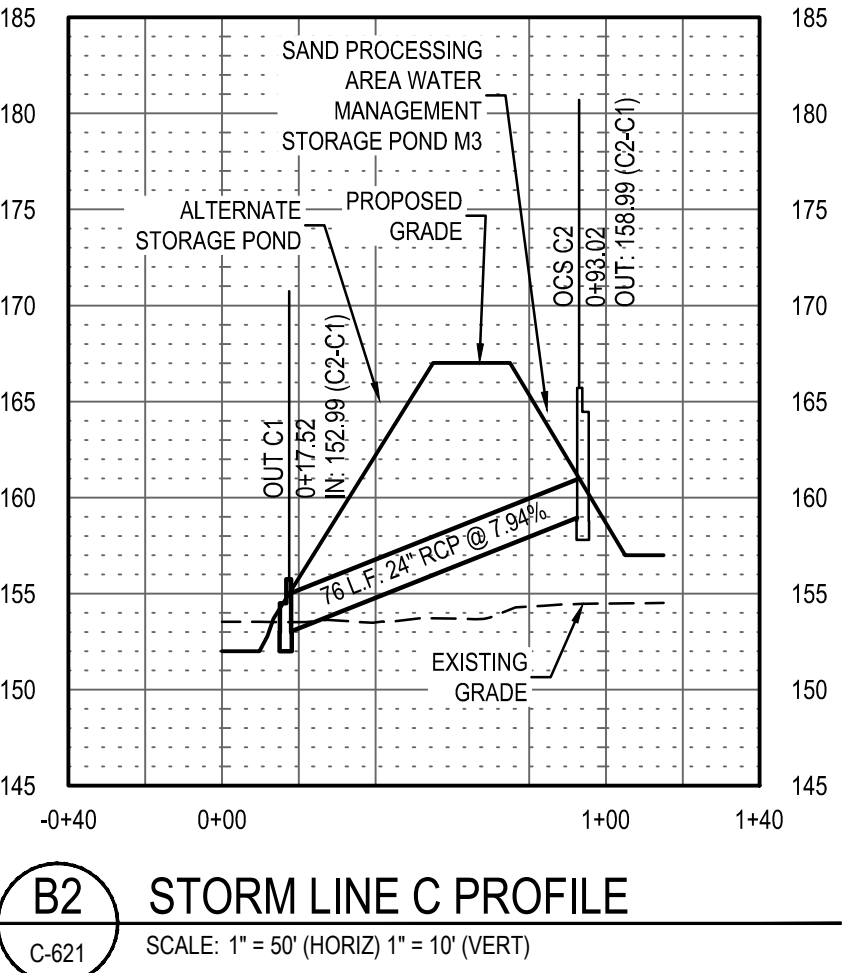
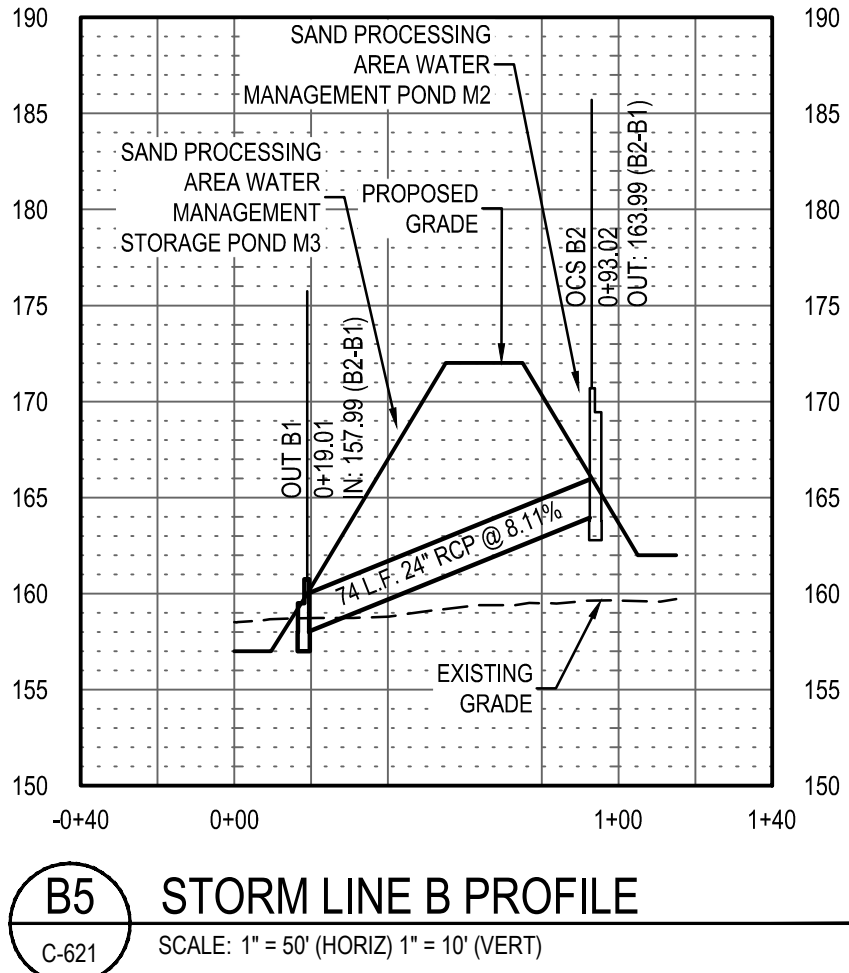
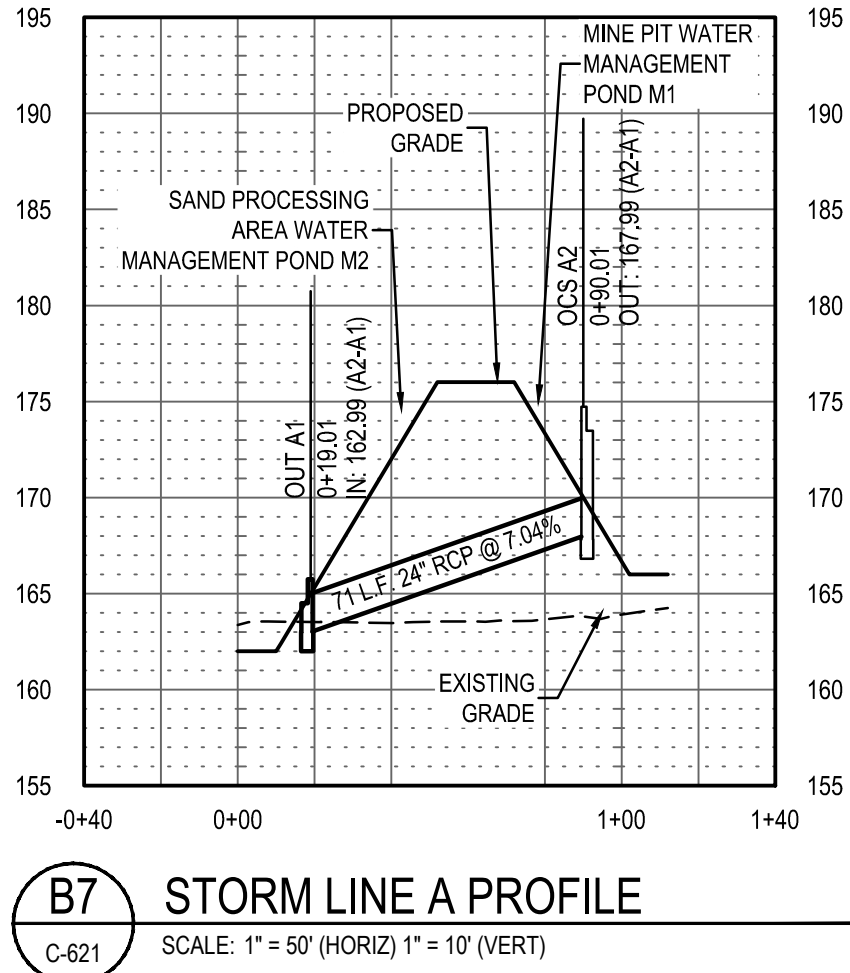
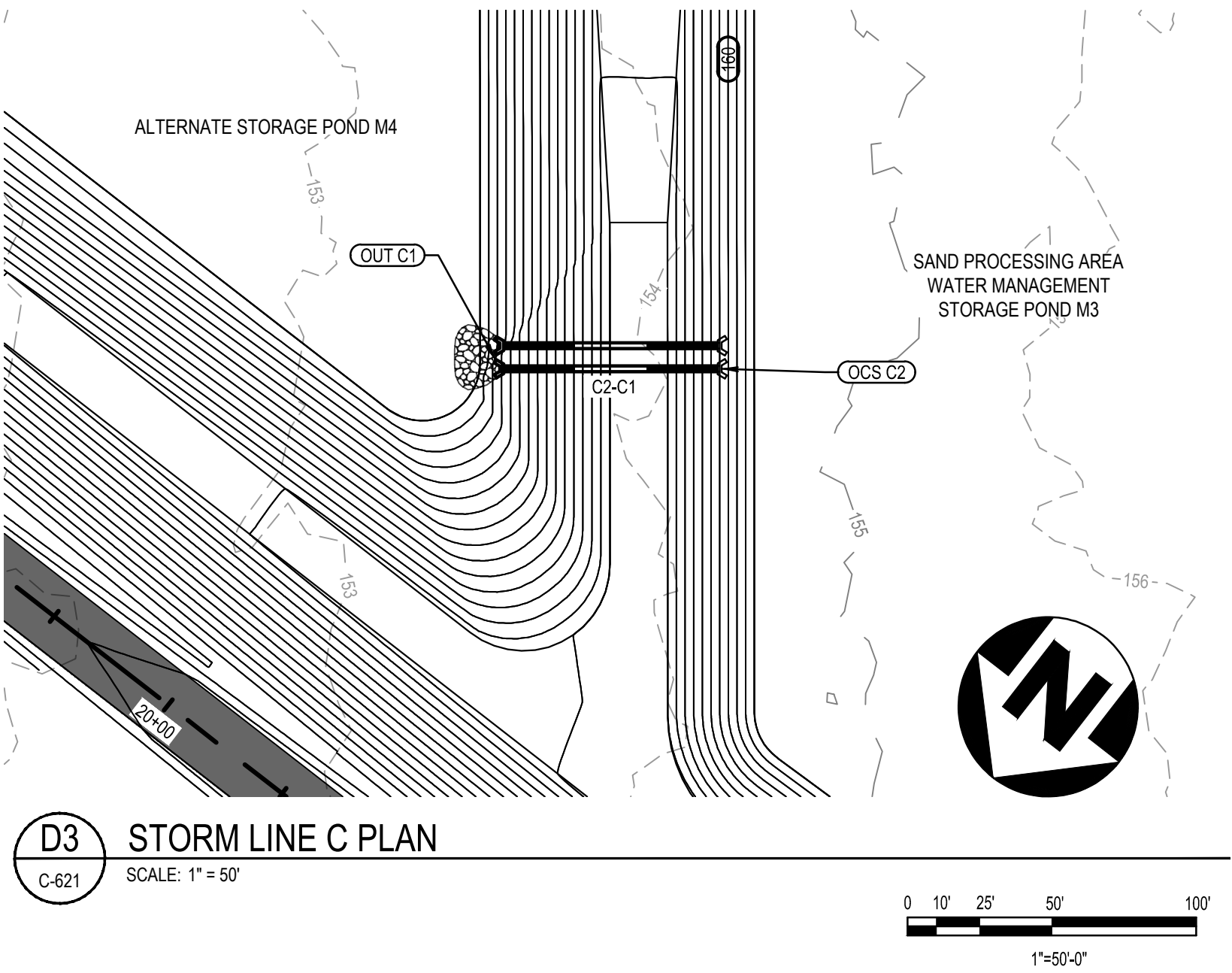
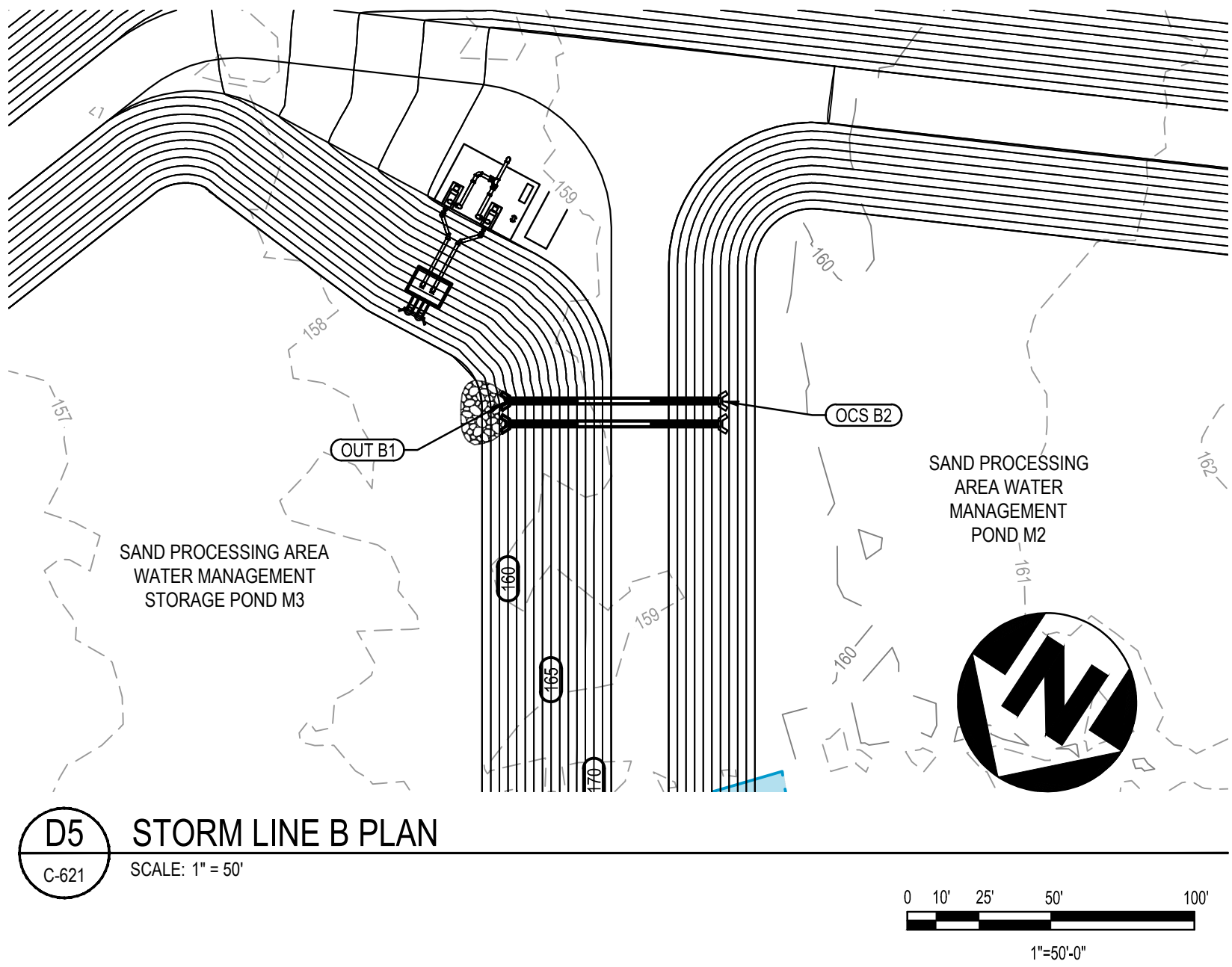
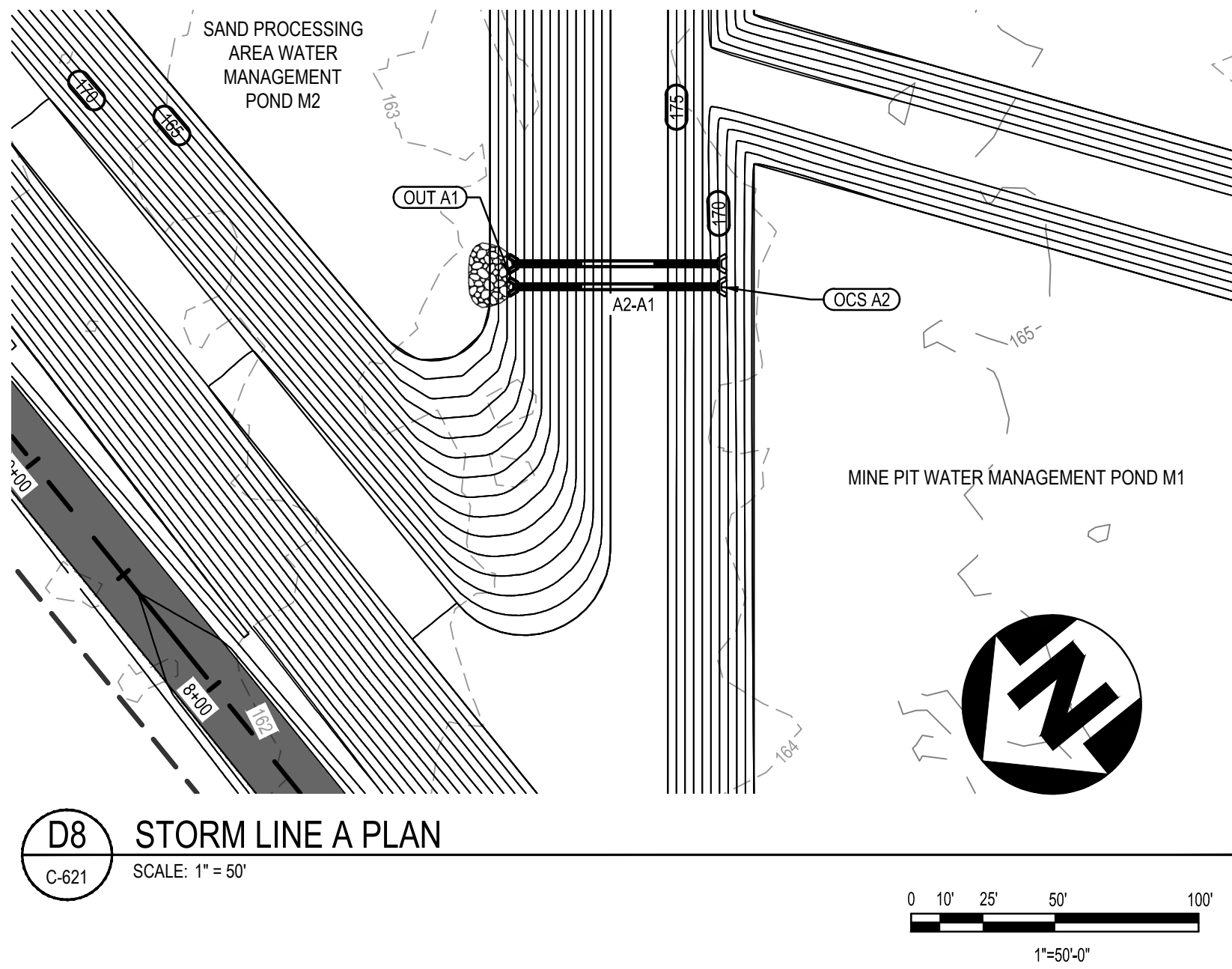
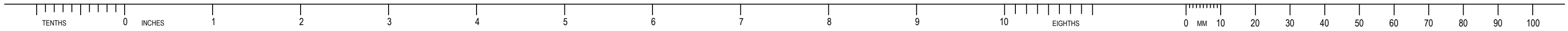
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STAMP/SEAL

REGISTERED PROFESSIONAL ENGINEER  
PHILIP W. MARCUM

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

STORM DRAIN PLAN AND PROFILE

wood.

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

CERTIFICATE OF AUTHORIZATION  
ECA2221

CLIENT DWG NO.

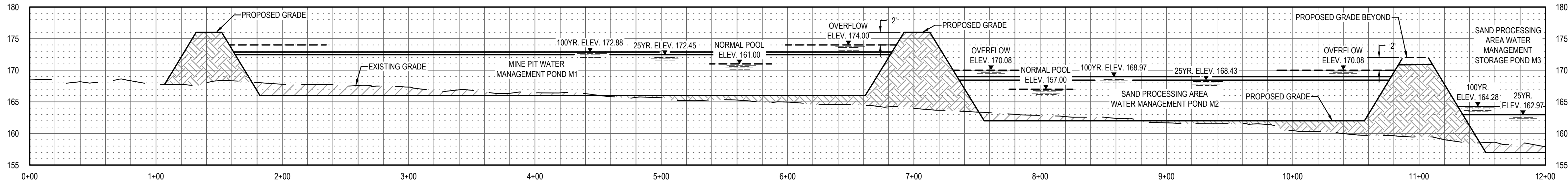
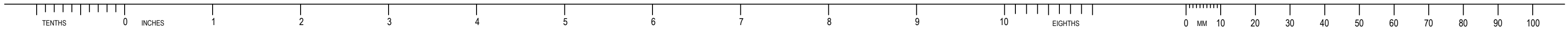
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C-621

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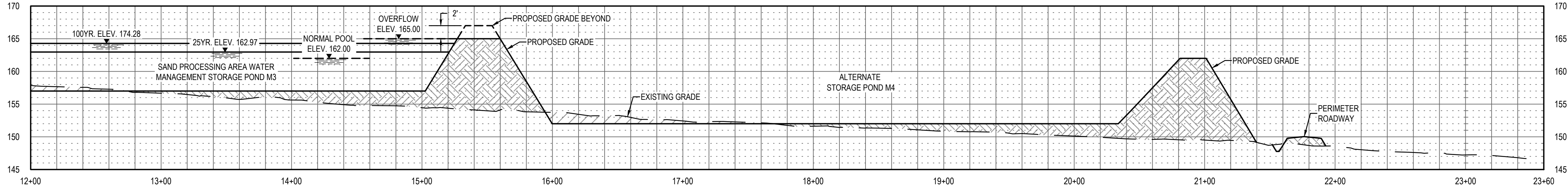
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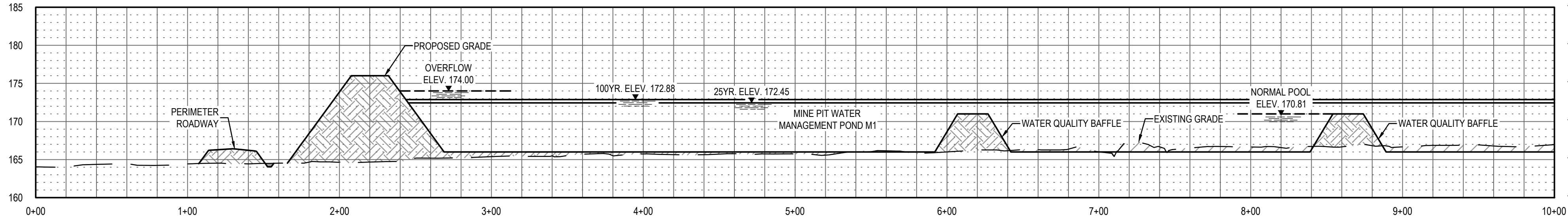
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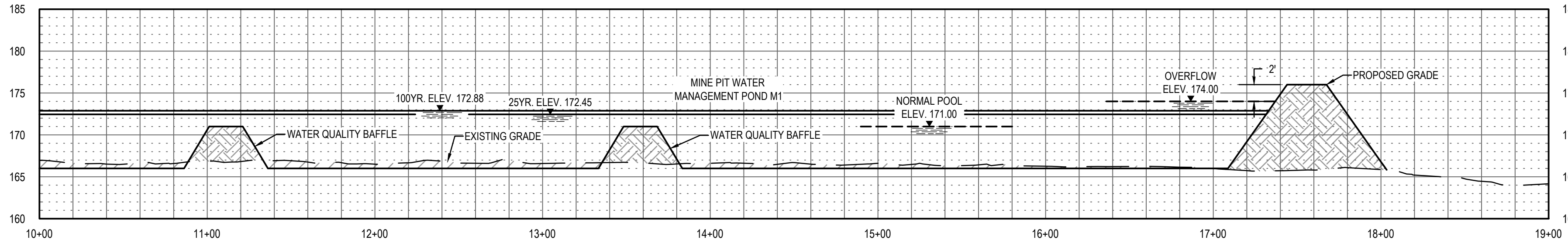
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C-631 SCALE: 1" = 50' (HORIZ) 1" = 10' (VERT)



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
0	11MAY22	ISSUED FOR PERMITTING																				

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STAMP/SEAL

REGISTERED PROFESSIONAL ENGINEER  
PHILIP W. MARCUM  
STATE OF GEORGIA  
15063-0008  
15063-0008

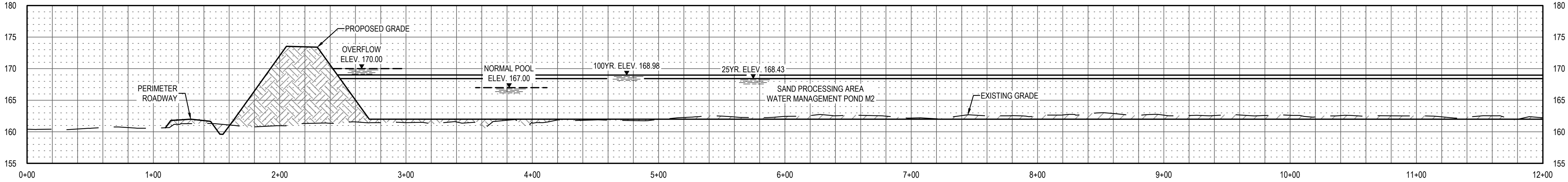
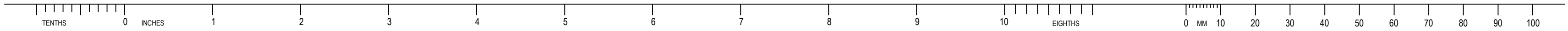
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PROJECT PHASE PERMITTING		
PROJECT NO. 7382224061	BY DES 07FEB22 DRN 07FEB22 CHK 07FEB22 APP 07FEB22	DDMMYY
SCALE AS SHOWN		

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

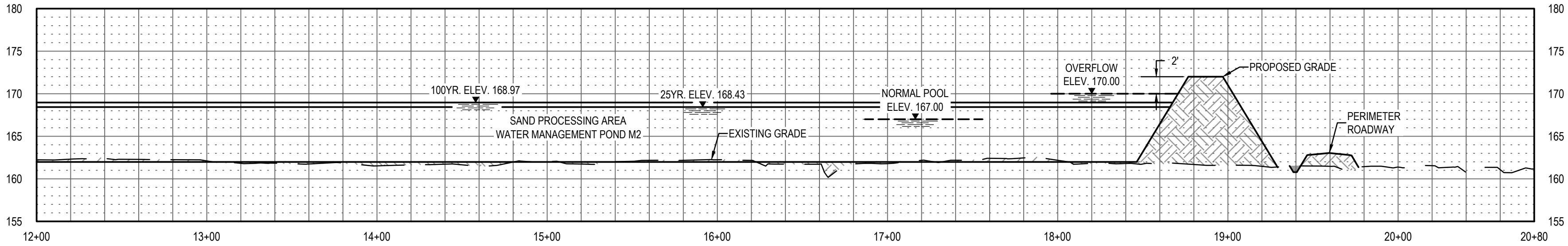
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4000 MEADOW LAKE DRIVE  
SUITE 121  
BIRMINGHAM, AL 35242  
(205) 980-6402

SITE CROSS SECTIONS SHEET 1

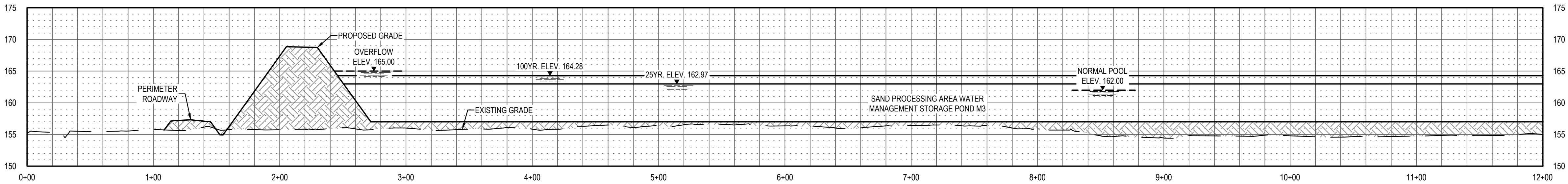
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AREA	CERTIFICATE OF AUTHORIZATION ECA2221
CLIENT DWG NO.	
DRAWING NO. C-631	REV 0



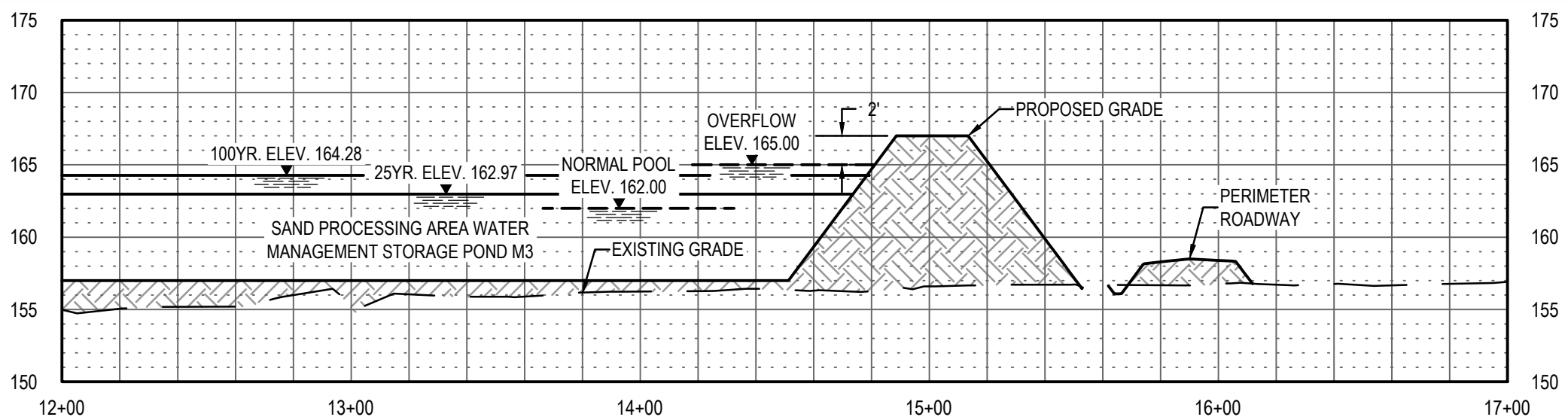
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C-632 SCALE: 1" = 50' (HORIZ) 1" = 10' (VERT)



**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)

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	11MAY22	ISSUED FOR PERMITTING																			

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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	DDMMYY 07FEB22
SCALE AS SHOWN	DRN	07FEB22
	CHK	07FEB22
	APP	07FEB22



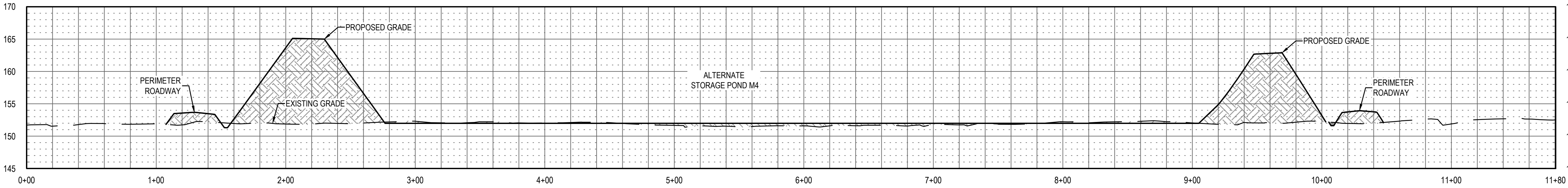
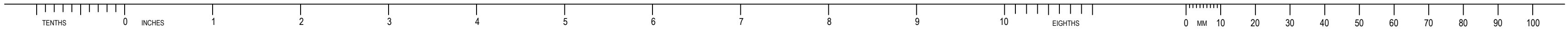
TWIN PINES MINERALS LLC  
SAUNDERS DEMONSTRATION MINE  
MINE ID 2073  
WATER MANAGEMENT PONDS

SUBJECT

SITE CROSS SECTIONS SHEET 2

<b>wood.</b> 4000 MEADOW LAKE DRIVE SUITE 121 BIRMINGHAM, AL 35242 (205) 980-6402	
AREA ECA2221	CERTIFICATE OF AUTHORIZATION
CLIENT DWG NO.	
DRAWING NO. C-632	REV 0

SAVED: 12-May-22 5:28 PM | PLOTTED: 18-May-22 8:29 AM | USER: LORENZ, MAX J



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

E

D

C

B


A

REV	DDMMYY	REVISION / ISSUE DESCRIPTION	DRN	CHK	APP	APP	APP	APP	APP	0	11MAY22	ISSUED FOR PERMITTING	MJL	MMA	PWM			REF	NUMBER	TITLE
REV	DDMMYY	REVISION / ISSUE DESCRIPTION	DRN	CHK	APP	APP	APP	APP	APP				DRN	CHK	APP	APP	APP	APP	REFERENCES	

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STAMP/SEAL

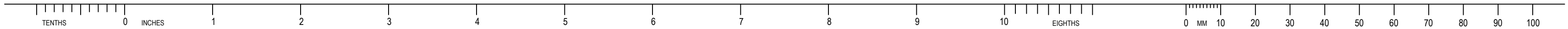
APPROVED FOR _____		
M. FOWLER CLIENT PROJECT MGR	P. MARCUM TECHNICAL MGR	M. ABDALLA PROJECT MGR
PROJECT PHASE PERMITTING		
PROJECT NO. 7382224061	DES 07FEB22	BY 07FEB22
SCALE AS SHOWN	CHK 07FEB22	APP 07FEB22



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

SUBJECT  
SITE CROSS SECTIONS SHEET 3

AREA ECA2221		CERTIFICATE OF AUTHORIZATION	
CLIENT DWG NO.			
DRAWING NO. C-633		REV 0	



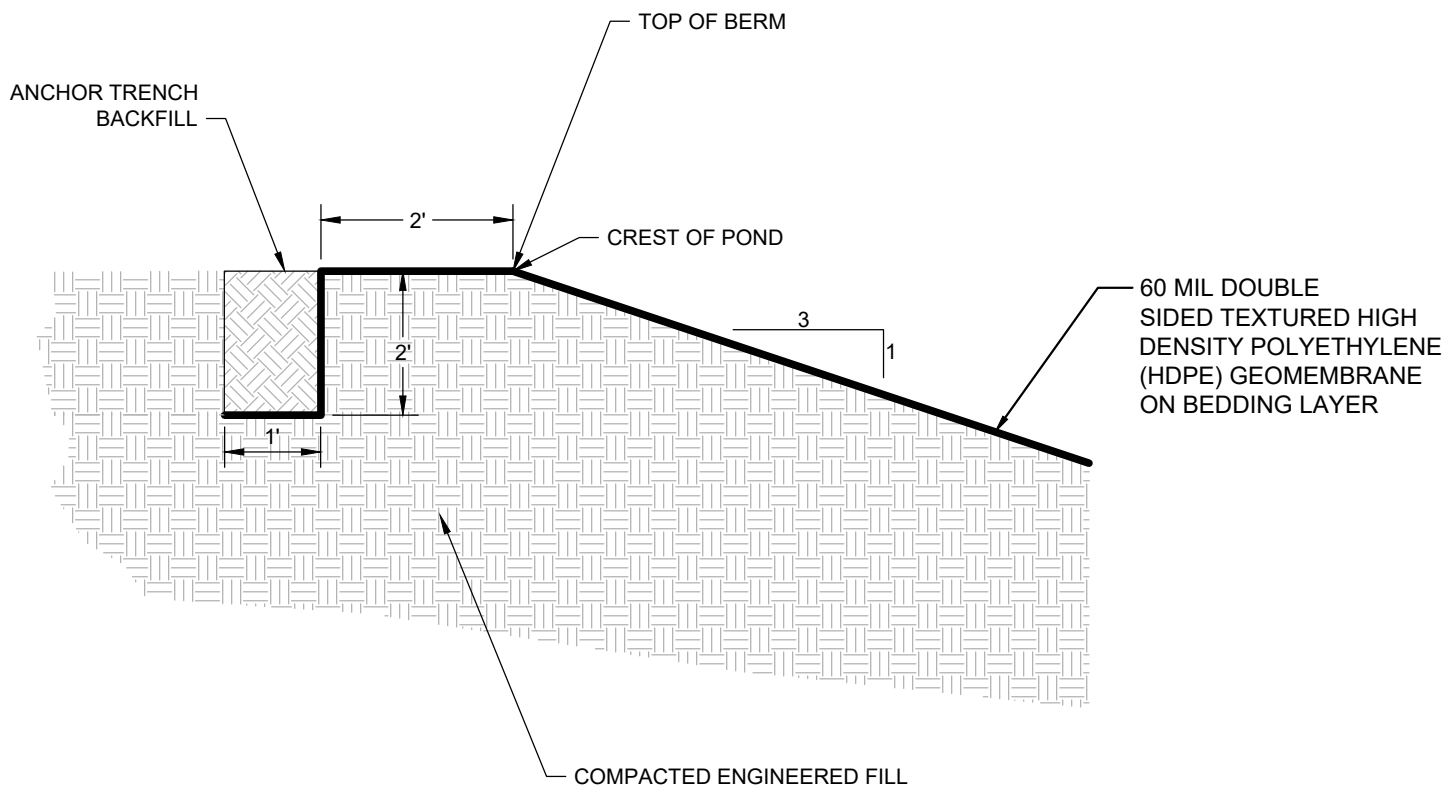
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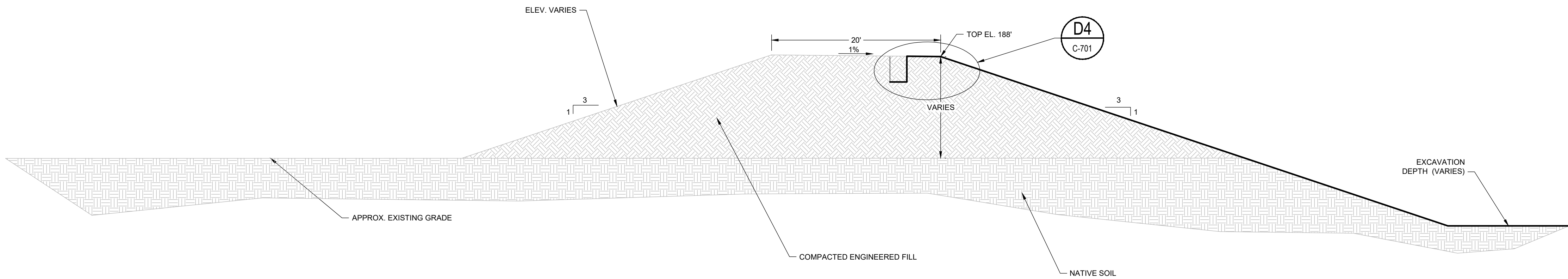
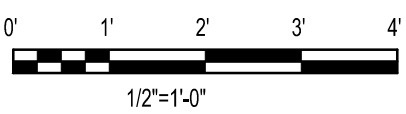
C

B

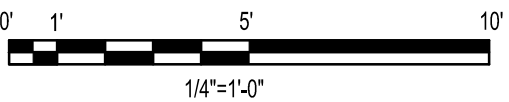
A



**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"



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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
0	11MAY22	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.	BY	DDMMYY
7382224061	DES	07FEB22
SCALE	DRN	07FEB22
	CHK	07FEB22
	APP	07FEB22



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

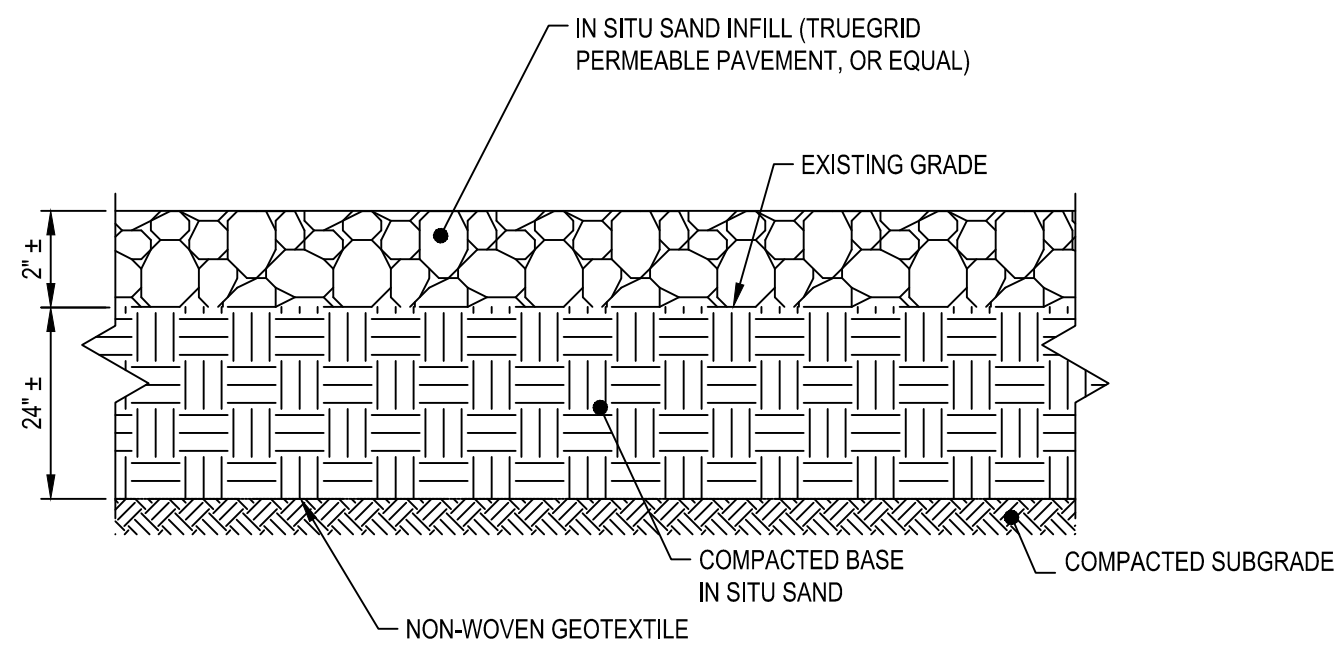
**wood.**

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

AREA	CERTIFICATE OF AUTHORIZATION ECA2221	
CLIENT DWG NO.		
DRAWING NO. C-701		REV 0

SAVED: 06-May-22 1:25 PM COTTED: 18-May-22 8:29 AM USER: LORENZ, MAX J

CAD FILE: W:\2020\07\01\DETAILS\SHEET.DWG



1" SMOOTH CROWN

6" DIAMETER STEEL PIPE FILLED WITH CONCRETE AND PAINTED YELLOW

3'-0"

1'-0"

2'-0"

1'-0"

2'-6" MIN DIA

FINISH GRADE

SET POST IN 4000 PSI CONCRETE

Diagram illustrating the cross-section of a roof assembly. The assembly consists of a sloped base (hatched area) supporting a flat roof structure. The roof structure includes a 1/4" PER FT insulation layer and a 3/16" PER FT insulation layer. The total width of the assembly is 20'-0", with 10'-0" segments on either side of the central 20'-0" section. The base is labeled 3/16" PER FT.

**A8** PLANT ROAD SECTION  
SCALE: N.T.S.

[illegible]

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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
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

Y	SUBJECT
---	---------

## SITE DETAILS 1

AREA

## CERTIFICATE OF AUTHORIZATION

CLIENT DWG NO.

DRAWING NO.  
C-711

REV  
0

**wood.**

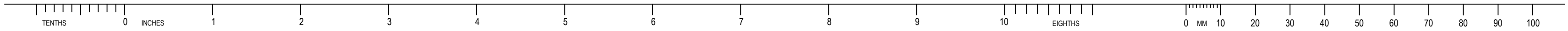
4000 MEADOW LAKE DRIVE  
SUITE 121  
BIRMINGHAM, AL 35242  
(205) 980-6402

SAVED: 12-May-22 1:26 PM PLOTTED: 18-May-22 8:29 AM USER: LORENZ, MAX.

SAVED: 12-May-22 1:26 PM PLOTTED: 18-May-22 8:30 AM USER: LORENZ, MAX.







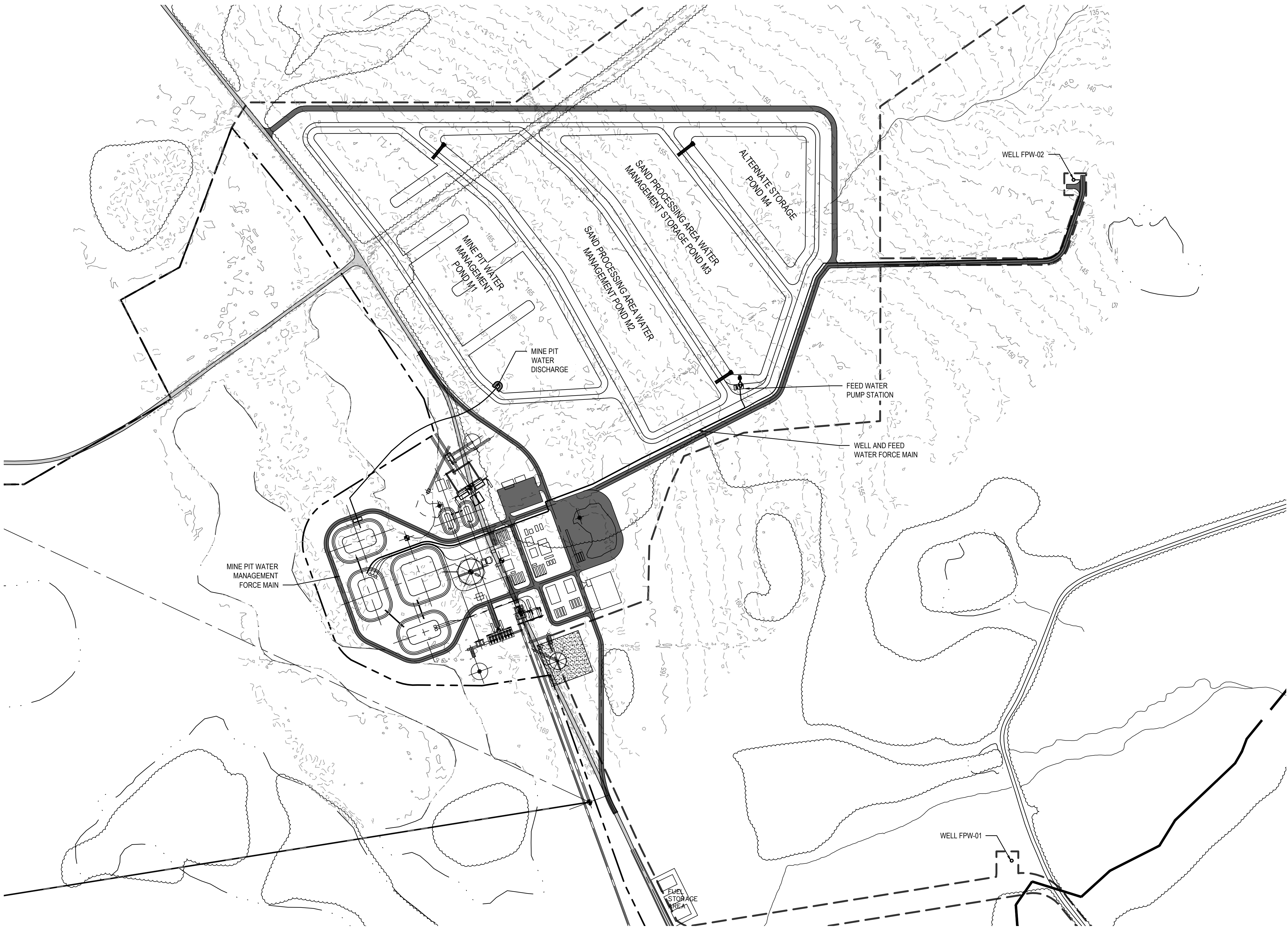
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LEGEND

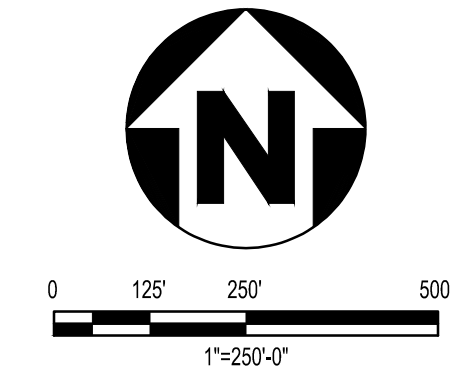
MINE BOUNDARY

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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STAMP/SEAL

REGISTERED PROFESSIONAL ENGINEER  
PHILIP W. MARCUM  
18-MAY-2022

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




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

CERTIFICATE OF AUTHORIZATION  
ECA2221

CLIENT DWG NO.

DRAWING NO.  
C-801

REV  
0



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

CERTIFICATE OF AUTHORIZATION  
ECA2221

CLIENT DWG NO.

DRAWING NO.  
C-801

REV  
0

SAVED: 17-May-22 11:34 AM | COTED: 18-May-22 8:31 AM | USER: LORENZ, MAX J

ANSI D 2204

CAD FILE: W:\2020\2073\2073-POND CLOSURE PLAN.DWG