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December 24, 2025

Arkansas Department of Energy & Environment
Division of Environmental Quality, Office of Land Resources
5301 Northshore Drive
North Little Rock, AR 72118-5317

Attn: Mr. Richard Bennett, PE, Permit Engineer
P: (501) 682-0861
E: richard.bennett@arkansas.gov

Re: Response to Notice of Deficiency regarding CQA Certification Report
for the Garland County Cedar Glades Class 4 Landfill, Hot Springs, Arkansas
Permit No. 0300-S4; AFIN: 26-00405
Ref ID: 0300-S4_2024 Phase 3, Cell 1 CQA Certification Report_20251213.pdf
Terracon Project No. 35247264

Dear Mr. Bennett:

Thank you for your review and comments on the referenced CQA Certification Report. On behalf of the Garland County Cedar Glades Class 4 Landfill (GCCG), Terracon Consultants, Inc. (Terracon) is submitting a response to the Notice of Deficiency emailed on December 23, 2025 regarding the CQA Certification Report dated December 12, 2025. Your comments are presented first **in bold** print, followed by the response from GCCG.

DEQ Comment: **1.a.1.i. Layout of prepared areas in relation to permitted boundaries: The site boundary is not shown on any map. Please revise the CQA certification report to provide this information.**

Response: Revised and additional figures that illustrate the permitted boundary and property boundary have been added to the certification report. Figure 1A in **Attachment A** shows the property boundary, landfill waste boundary and the Phase 3, Cell 1 boundary. Figure 1B (both with and without the background aerial image) in **Attachment A** shows the property boundary, landfill waste boundary, 100’ buffer zone boundary and the Phase 3, Cell 1 boundary in relation to the completed and future cell areas.

DEQ Comment: **1.a.1.ii. Item 1(b) Property boundaries and/or corners: Similar to the item above, the boundaries of the site and all the future cells are not shown. Please revise the CQA certification report to provide this information.**

Response: Figure 1B (both with and without the background aerial image) in **Attachment A** shows the property boundary, landfill waste boundary, 100’ buffer zone boundary and the Phase 3, Cell 1 boundary in relation to the completed and future cell areas.

DEQ Comment: **1.a.1.iii. Item 1(c) Monitoring wells and piezometers (if scale permits): These items are not depicted on the figures, please add these items or clarify that scale does not permit them to appear on the figures. Please revise the CQA certification report to provide this information.**

Response: Please see PZ-1, 2 and 3 in Figure 2 in **Attachment A**.

DEQ Comment: **1.a.1.iv. Item 1(g) A key map showing the location of the construction related to the permitted design, along with an identification of areas previously constructed and areas yet to be constructed: The key map does not show the future cells to be constructed. Please revise the CQA certification report to provide this information.**

Response: Please see Figure 1B in **Attachment A**.

DEQ Comment: **1.b.2.i. Item 2(a) Prepared Subgrade plan: There are two sets of contour lines in Drawing 1 (one for the as-built subgrade and one for the as-built compacted clay liner). The legend uses the same lines style for two different items. Please provide a revised drawing to correct this issue.**

Response: Please see the revised Drawing 1 in **Attachment A**.

DEQ Comment: **1.b.2.ii. Item 2(d) Any other features deemed significant: Please note any locations within the cell that competent shale or bedrock was encountered; and if competent shale or bedrock was encountered, specify the thickness of the subgrade in those areas.**

Response: No competent shale or bedrock was encountered in the Phase 3, Cell 1 construction area. Nearly the entire area required fill to subgrade as indicated in the Construction Drawings in **Attachment B**. Additionally, subgrade soil thicknesses for the upper lift of completed subgrade soils were randomly checked to be a minimum of 10 inches of depth (see subgrade testing locations in the certification report Appendix C-3.

DEQ Comment: **1.c. Soil Testing: Please explain the number of samples collected in pre-construction, pre-construction testing, field testing, and performance testing or provide the area (in square feet) of the bottom liner.**

Response: The compacted clay liner component of the cell consisted of approximately 204,418 square feet in area. The 18-inch clay liner is approximately 11,357 cubic yards of material. A minimum of one pre-construction sample and three construction samples were required for this quantity of liner material. More than two pre-construction samples were taken while qualifying borrow areas for the contractor and five construction samples were taken during the liner work. The final CL-C5 sample reported in the CQA certification report serves as a construction sample for the concurrent west area closure for the site. Field moisture and density testing was performed at a rate of more than 21 locations per compacted lift and at

least six Shelby tube specimens were extracted per completed lift, including those taken from the test pad area.

DEQ Comment: **1.d. As required by 8 CAR Pt. 60 Sections 626 & 431, the facility will need at least an extra 6-inches between the bedrock and the top of their liner. Please revise the report to indicate how this was done.**

Response: The 18-inch compacted clay liner was placed over the subgrade soil layer that was demonstrated to be more than six inches thick throughout the area and no competent shale bedrock was encountered during the construction. See also response to Comment 3. below.

DEQ Comment: **2.a. The report states, "The construction of the final cover system was conducted in accordance with the following documents:". Please revise this to state this report is for the bottom liner.**

Response: **Attachment C** includes a revised replacement page with the requested correction.

DEQ Comment: **2.b. The report cites the "Construction Drawings for the Phase 3 - Cell 1 & Partial Closure" which DEQ staff is unable to confirm was received. Please resubmit that document or provide DEQ information which allows us to locate it.**

Response: Construction drawings are attached to this response in **Attachment B**.

DEQ Comment: **3. Appendix A Record Drawings & Figures: Based on Figure 2, it appears the bottom liner is 5 feet lower than the approved bottom surface elevations. Special Condition #1 of the permit states "Changes to or deviations from the construction/layout of the facility, as indicated on the approved set of plans that were submitted as a part of the permit application, are not authorized unless approved by the Department." Note 3 on Drawing P-03 in Doc ID 11112 states that "grades may be adjusted higher or lower in elevation depending on the depth of the usable weather shale soil horizon." Please explain why this deviation was taken and state when DEQ approved the change to the bottom liner design.**

Response: The bottom liner system constructed during the Phase 3, Cell 1 project is generally substantially above the permitted bottom surface elevations and only approaches the permitted elevations at the tie-in with the previously constructed phases (Phases 1 and 2). Figure A in **Attachment A** illustrates the as-built top of compacted clay liner versus the permitted top of clay liner grades. Bottom grades were raised in response to an iterative process with the DEQ of piezometer installations and measurements of seasonal high groundwater over a 12-month period. In accordance with those interchanges with the Division, the elevations within Phase 3, Cell 1 were adjusted to maintain the required vertical separation distance above groundwater. (See Piezometer Installation Report and document ID numbers 85209 and 85237)

DEQ Comment: **4.a. The CQA plan states ASTM 2487 will be used for classifying the soil. It appears the method used to classify the soil was omitted from the construction certification report. Please confirm which method was used and revise the report accordingly.**

Response: Soil classification was completed using the Unified Soil Classification System (USCS) corresponding to ASTM D2487. Both classification and soil descriptions are in accordance with the specification. A revised excerpt is included in **Attachment C**.

DEQ Comment: **4.b. The CQA plan states method ASTM 1140 will be utilized to measure the "percent passing a No. 200 sieve", yet it appears two methods were utilized, ASTM 6913 and ASTM 422. Please explain why these methods were used in place of ASTM 1140.**

Response: Method ASTM D1140 was used to measure the percent passing a No. 200 sieve for all the bulk samples. These are reported on the flex wall permeability sheets for each sample. For example, CL-PC1 on PDF page 71 of 148 of the submitted certification report reports percent fines of 72.1 percent in accordance with ASTM D1140 Wash 200. Specification ASTM D6913 references the use of method D 1140 to obtain the -200 sieve portion in section 11.4.3 Washing Specimen.

DEQ Comment: **4.c. The CQA plan calls for moisture content to be measured utilizing test method ASTM 854, yet it appears two methods were utilized, ASTM 2216 and 1557. Please explain why these methods were used in place of ASTM 854.**

Response: Part of method ASTM D854 was used for the determination of moisture content for the project. However, that method requires the use of specification ASTM D2216 under procedure. ASTM D854, Section 9.2.1 states – Determine the water content of a portion of the sample in accordance with Test Method D2216. Method ASTM D1557 is for the determination of Modified Proctor compaction in the laboratory and was not used for the certification of the project.

DEQ Comment: **5. Appendix C-2 Construction Testing: The CQA plan specifies that ASTM 1140 will be used to measure the "percent passing a No. 200 sieve"; however, it appears that ASTM 6913 was used instead. Please explain the reason for using ASTM 6913.**

Response: Method ASTM D1140 was used to measure the percent passing a No. 200 sieve for all the bulk samples. These are reported on the flex wall permeability sheets for each sample. For example, CL-C1 on PDF page 87 of 148 of the submitted certification report reports percent fines of 97.4 percent in accordance with ASTM D1140 Wash 200.

DEQ Comment: **6. Appendix C-3 Field Moisture/Density Testing: The CQA plan states In-Place Field Density/Moisture testing will utilize method ASTM 2922, yet the ASTM 698 was utilized, please justify using ASTM 698 in place of ASTM2922.**

Response: Method ASTM D698 was used for the determination of Standard Proctor Compaction in the laboratory. That test is entitled "Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft3 (600 kN-m/m3))." Method ASTM D2922 entitled "Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth)" was used for the in-place field density/moisture testing per the density forms in Appendix C-3 of the certification report. The laboratory Standard Proctor compaction tests done under ASTM D698 were used to compare to field densities done under ASTM D2922 to determine if the field soils were emplaced adequately.

A revised certification report that contains the materials presented in this NOD response is available for download in accordance with the NOD Response submittal email. The revised report only differs from the original submittal (Dec. 13 submittal) by the addition of the materials contained within this response.

If you have any questions or comments or desire any additional information, please do not hesitate to contact us at owen.carpenter@terracon.com or call 501-847-9292, or contact John Rogers of Crafton Tull 501-767-2366.

Sincerely,
Terracon Consultants, Inc.

F. Owen Carpenter, P.E., P.G.
Senior Engineer

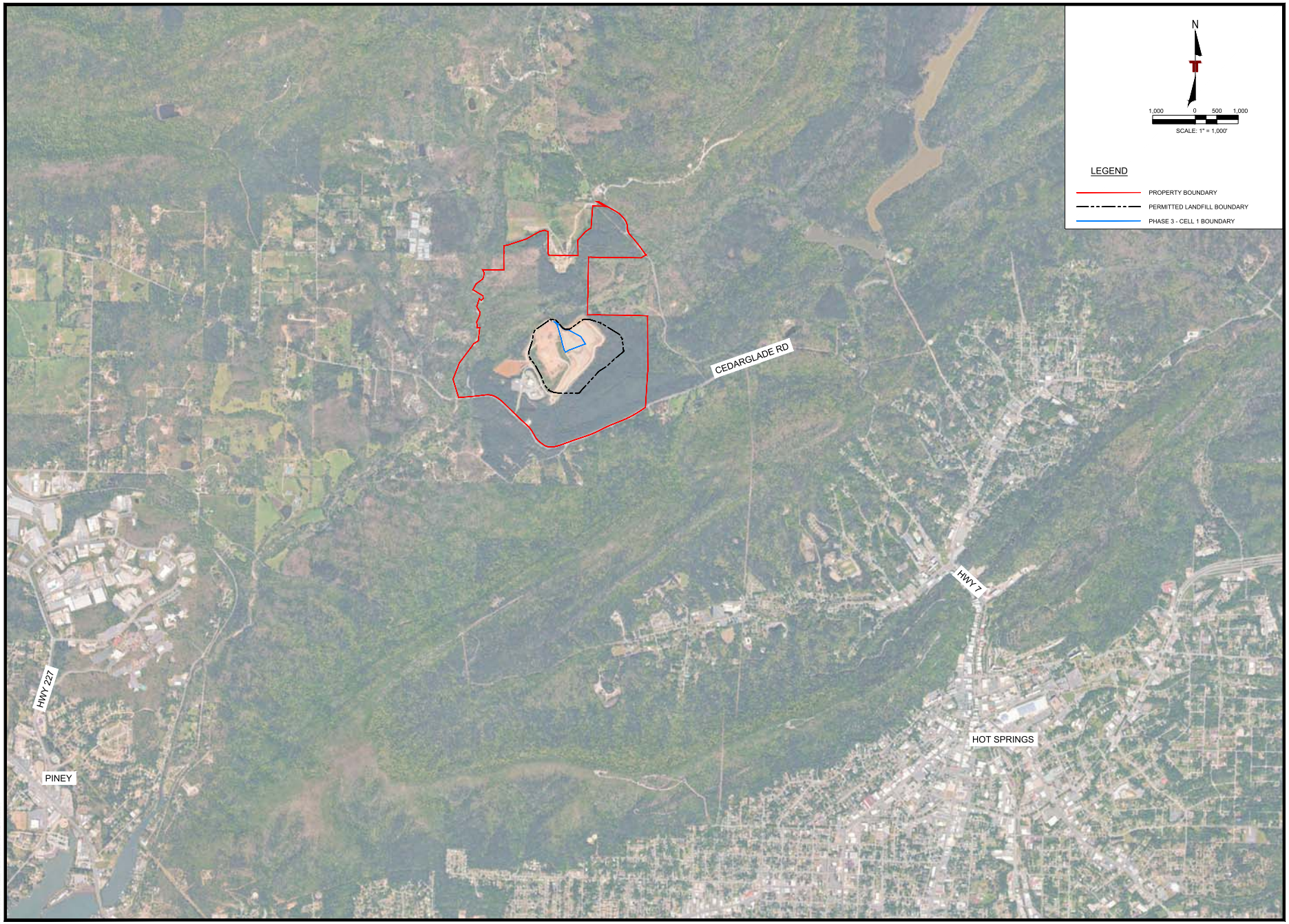
for Dave C. McCormick, P.E.
Manager / APR

Attachments: Attachment A – Additional Figures and Drawing 1
Attachment B - Phase 3, Cell 1 Construction Drawings
Attachment C - Certification Report Replacement Pages

Copy: Darryl Mahoney, Garland County Judge
John Rogers, Crafton Tull
DEQ – Banic, Hurt, Krou

Attachment A

Additional Figures Showing
Property Boundary, Landfill Boundary and
Constructed Cell Boundary



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STATE OF ARKANSAS
BRENT ROGERS
LICENSED PROFESSIONAL ENGINEER
No. 11260

PHASE 3 - CELL 1 CONSTRUCTION

1040 CEDAR GLADES ROAD
HOT SPRINGS, ARKANSAS

Key Plan

SITE LOCATION MAP

No.	Description	Date
1	NOD Response	12.24.2025

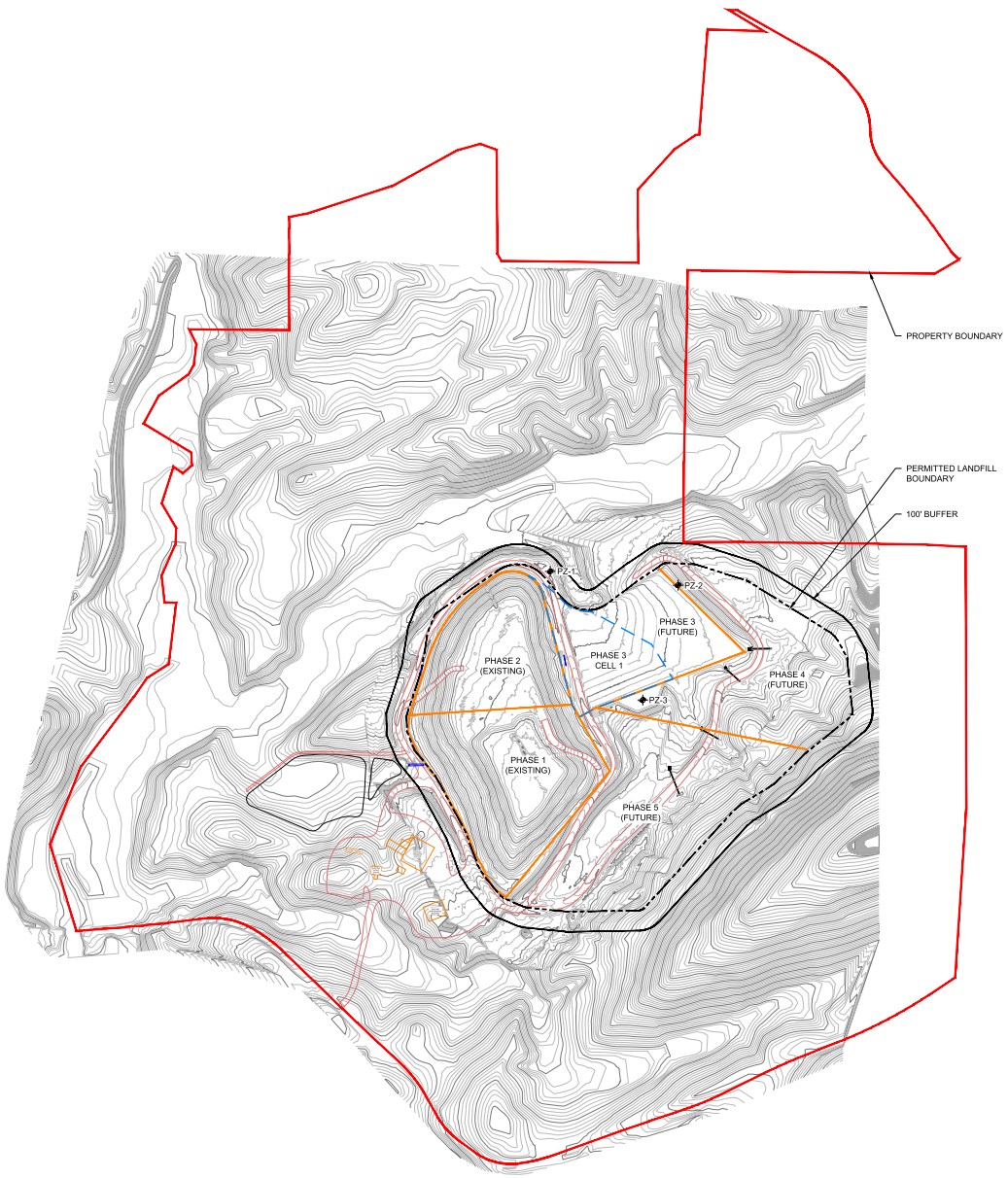
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PROJECT NO: 35247264
ISSUE DATE: DECEMBER 2025
CONTACT: J. ROGERS
QC by:
QC Date:

CERTIFICATE OF AUTHORIZATION
B & F ENGINEERING, INC.
No. 110
ARKANSAS

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FIGURE 1



N

300 0 150 300

SCALE: 1" = 300'

LEGEND

- PROPERTY BOUNDARY
- PERMITTED LANDFILL BOUNDARY
- PERMITTED LANDFILL BOUNDARY (100' BUFFER)
- 520 EXISTING TOPOGRAPHY (2' CONTOURS)
- EXISTING ROADS / PARKING
- PHASE BOUNDARY
- PHASE 3 - CELL 1 BOUNDARY
- EXISTING PIEZOMETERS

GENERAL NOTES:

1. EXISTING TOPOGRAPHY PROVIDED BY CRAFTON TULL USING DRONE SURVEY ON AUGUST 30, 2024 AND JANUARY 2, 2025.

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Jason Rogers (AR)

PHASE 3 - CELL 1 CONSTRUCTION

1040 CEDAR GLADES ROAD
HOT SPRINGS, ARKANSAS

Key Plan

EXISTING CONDITIONS

No.	Description	Date
1	NOD Response	12.24.2025

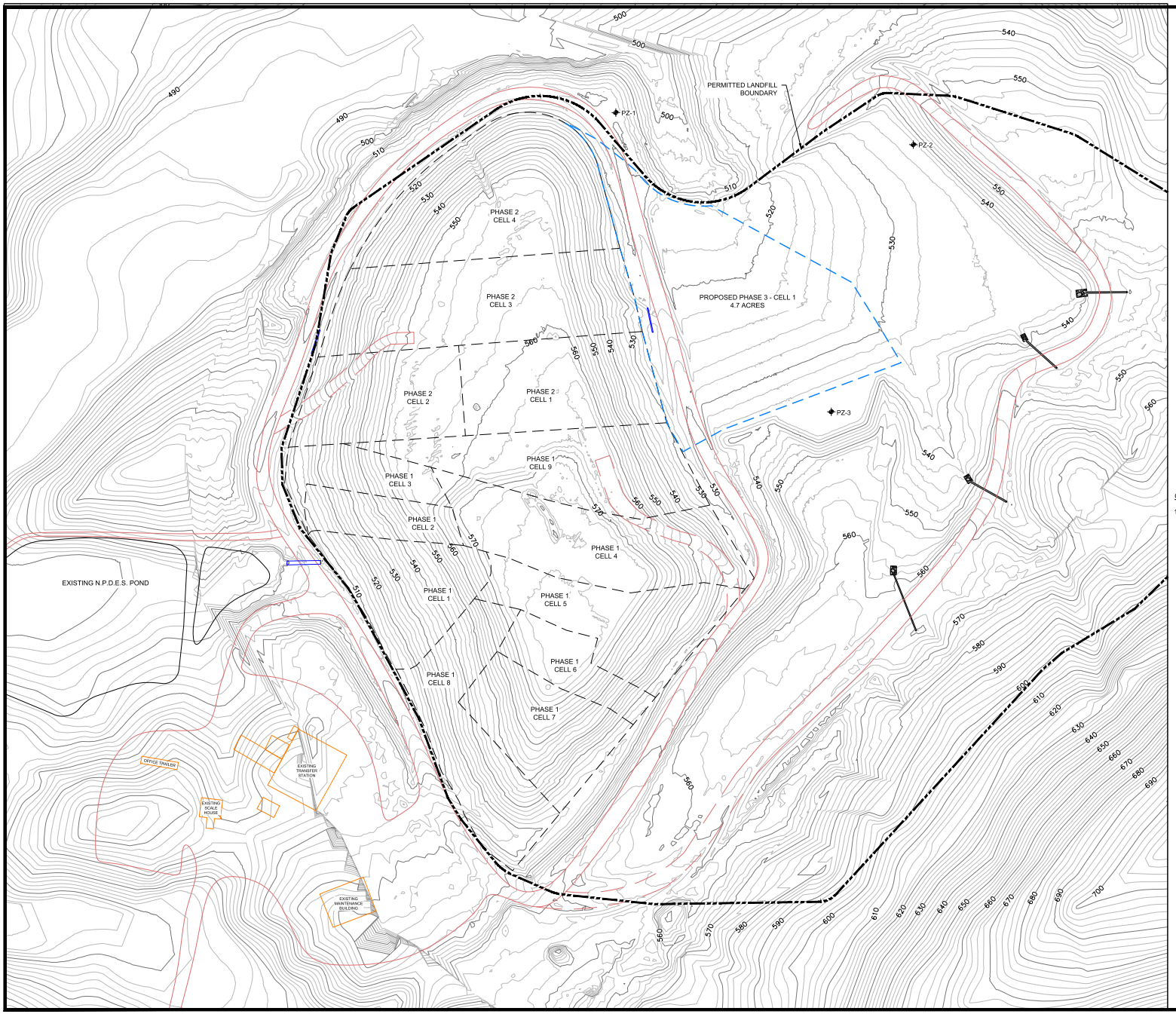
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FIGURE 2A



N

100 0 50 100

SCALE: 1" = 100'

LEGEND

- 520 — EXISTING TOPOGRAPHY (2' CONTOURS)
- EXISTING ROADS / PARKING
- PERMITTED LANDFILL BOUNDARY
- PHASE BOUNDARY
- PHASE 3 - CELL 1 BOUNDARY
- EXISTING PIEZOMETERS

GENERAL NOTES:

1. EXISTING TOPOGRAPHY PROVIDED BY CRAFTON TULL USING DRONE SURVEY ON AUGUST 30, 2024 AND JANUARY 2, 2025.

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PHASE 3 - CELL 1 CONSTRUCTION

1040 CEDAR GLADES ROAD
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Key Plan

EXISTING CONDITIONS (CONTINUED)

No.	Description	Date
1	NOD Response	12.24.2025

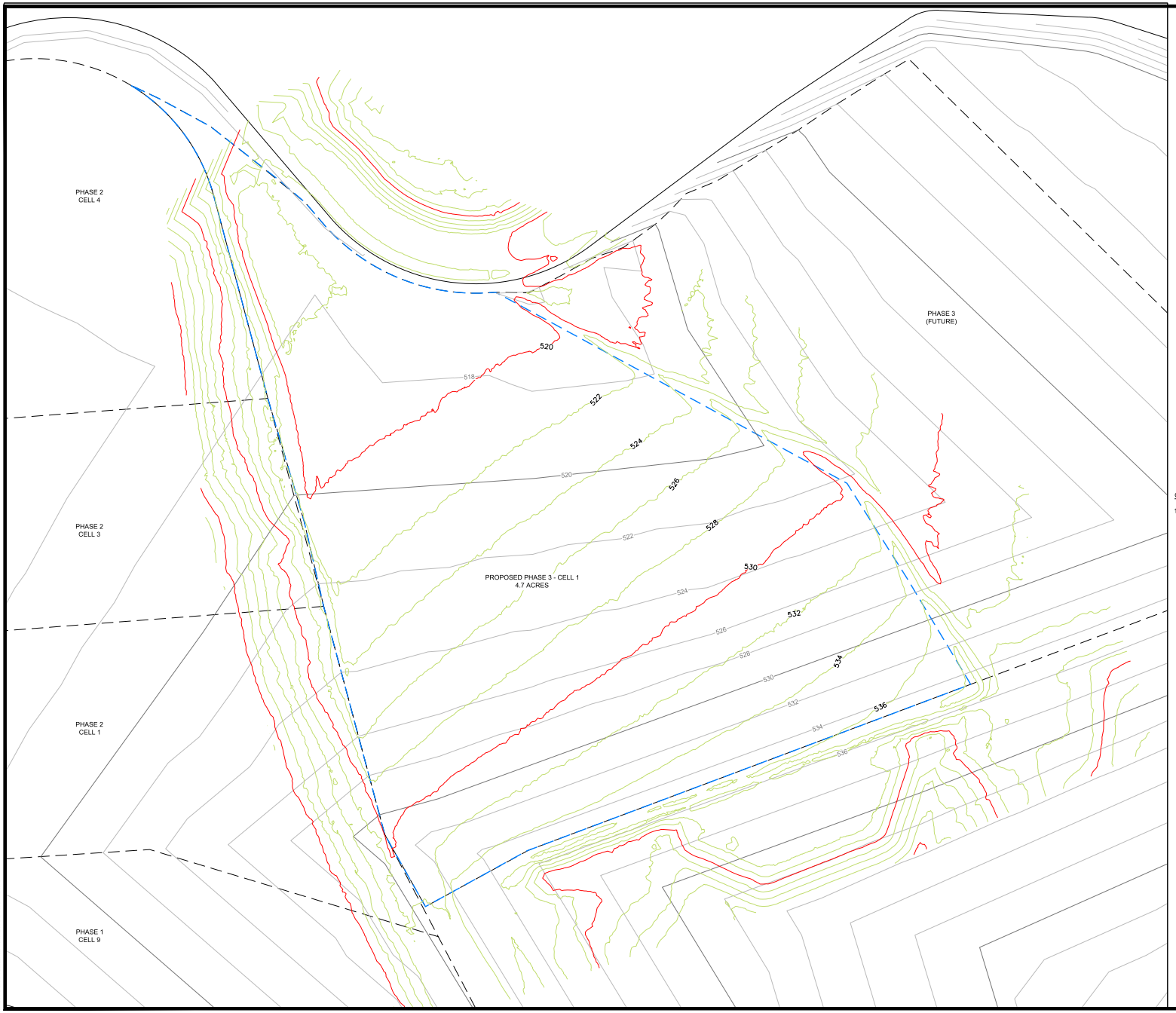
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FIGURE 2B



N

40 0 20 40

SCALE: 1" = 40'

LEGEND

- PERMITTED BOTTOM LINER (2' CONTOURS)
- TOP OF CLAY BOTTOM LINER AS-BUILT (11.12.25)
- PERMITTED LANDFILL BOUNDARY
- PHASE BOUNDARY
- PHASE 3 - CELL 1 BOUNDARY

GENERAL NOTES:

1. EXISTING TOPOGRAPHY PROVIDED BY CRAFTON TULL USING DRONE SURVEY ON AUGUST 30, 2024 AND JANUARY 2, 2025.

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Key Plan

EXISTING CONDITIONS

No.	Description	Date
1	NOD Response	12.24.2025

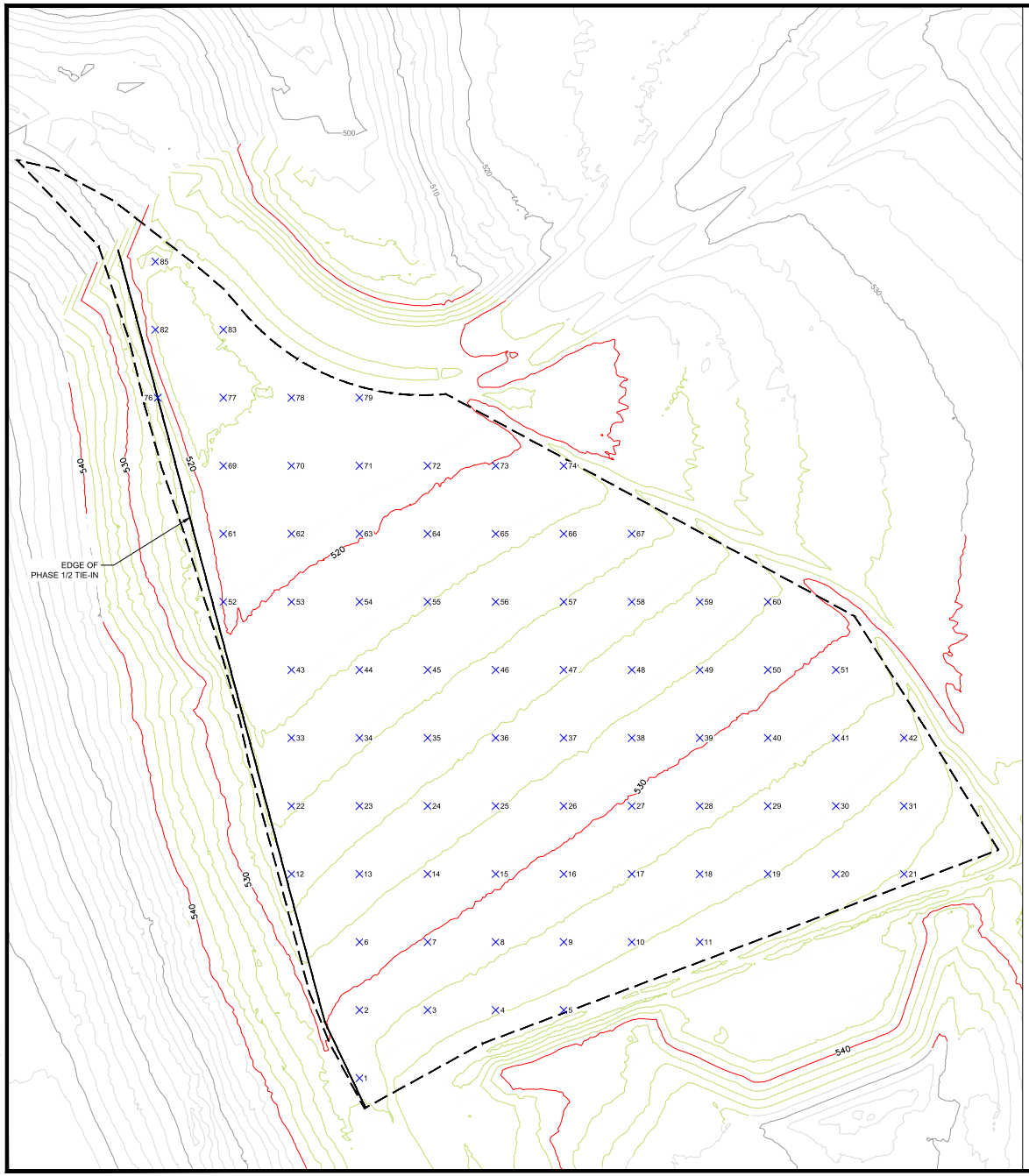
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FIGURE A



N

40' 0 20' 40'

SCALE: 1" = 40'

LEGEND

- 530 — AS-BUILT SUBGRADE (2' CONTOURS)
- 530 — AS-BUILT COMPACTED CLAY LINER (2' CONTOURS)
- CELL 1 BOUNDARY
- ×1 CONSTRUCTION POINTS

CCL 50-ft Grid

POINT#	NORTHING	EASTING	AS-BUILT SG	AS-BUILT CCL	DIFFERENCE	DESCRIPTION
1	1992857.527	985204.4177	529.32	531.42	2.1	GRID
2	1992907.527	985204.4177	529.05	530.73	1.7	GRID
3	1992907.527	985254.4177	530.69	532.43	1.7	GRID
4	1992907.527	985304.4177	532.09	533.78	1.7	GRID
5	1992907.527	985354.4177	533.24	535.13	1.9	GRID
6	1992957.527	985204.4177	527.00	528.72	1.7	GRID
7	1992957.527	985254.4177	528.54	530.23	1.7	GRID
8	1992957.527	985304.4177	529.91	531.51	1.6	GRID
9	1992957.527	985354.4177	531.11	532.60	1.5	GRID
10	1992957.527	985404.4177	532.29	533.74	1.5	GRID
11	1992957.527	985454.4177	533.19	534.75	1.6	GRID
12	1993007.527	985154.4177	523.37	525.11	1.7	GRID
13	1993007.527	985204.4177	525.16	526.87	1.7	GRID
14	1993007.527	985254.4177	526.60	528.30	1.7	GRID
15	1993007.527	985304.4177	527.98	529.48	1.5	GRID
16	1993007.527	985354.4177	529.29	530.76	1.5	GRID
17	1993007.527	985404.4177	530.51	531.99	1.5	GRID
18	1993007.527	985454.4177	531.51	533.04	1.5	GRID
19	1993007.527	985504.4177	532.43	533.96	1.5	GRID
20	1993007.527	985554.4177	533.33	534.94	1.6	GRID
21	1993007.527	985604.4177	534.54	536.14	1.6	GRID
22	1993057.527	985154.4177	522.01	523.83	1.8	GRID
23	1993057.527	985204.4177	523.58	525.21	1.6	GRID
24	1993057.527	985254.4177	524.88	526.53	1.7	GRID
25	1993057.527	985304.4177	526.29	527.82	1.5	GRID
26	1993057.527	985354.4177	527.55	529.09	1.5	GRID
27	1993057.527	985404.4177	528.77	530.23	1.5	GRID
28	1993057.527	985454.4177	529.85	531.41	1.6	GRID
29	1993057.527	985504.4177	531.01	532.49	1.5	GRID
30	1993057.527	985554.4177	532.01	533.48	1.5	GRID
31	1993057.527	985604.4177	533.24	534.75	1.5	GRID
33	1993107.527	985154.4177	520.80	522.48	1.7	GRID
34	1993107.527	985204.4177	522.12	523.70	1.6	GRID
35	1993107.527	985254.4177	523.25	524.86	1.6	GRID
36	1993107.527	985304.4177	524.61	526.24	1.6	GRID
37	1993107.527	985354.4177	525.86	527.45	1.6	GRID
38	1993107.527	985404.4177	527.05	528.65	1.6	GRID
39	1993107.527	985454.4177	528.20	529.75	1.6	GRID
40	1993107.527	985504.4177	529.46	530.96	1.5	GRID
41	1993107.527	985554.4177	530.65	532.20	1.6	GRID
42	1993107.527	985604.4177	531.78	533.28	1.5	GRID
43	1993157.527	985154.4177	519.65	521.26	1.6	GRID
44	1993157.527	985204.4177	520.77	522.28	1.5	GRID
45	1993157.527	985254.4177	521.80	523.34	1.5	GRID
46	1993157.527	985304.4177	523.00	524.48	1.5	GRID
47	1993157.527	985354.4177	524.16	525.79	1.6	GRID
48	1993157.527	985404.4177	525.33	526.94	1.6	GRID
49	1993157.527	985454.4177	526.65	528.13	1.5	GRID
50	1993157.527	985504.4177	527.85	529.48	1.6	GRID
51	1993157.527	985554.4177	529.11	530.89	1.8	GRID
52	1993207.527	985104.4177	519.86	519.72	-0.1	PHASE 1/2 TIE-IN
53	1993207.527	985154.4177	518.69	520.30	1.6	GRID
54	1993207.527	985204.4177	519.51	521.01	1.5	GRID
55	1993207.527	985254.4177	520.41	521.91	1.5	GRID
56	1993207.527	985304.4177	521.43	522.93	1.5	GRID
57	1993207.527	985354.4177	522.50	523.99	1.5	GRID
58	1993207.527	985404.4177	523.68	525.20	1.5	GRID
59	1993207.527	985454.4177	524.96	526.60	1.6	GRID
60	1993207.527	985504.4177	526.51	527.96	1.5	GRID
61	1993257.527	985104.4177	517.21	518.89	1.7	GRID
62	1993257.527	985154.4177	517.83	519.42	1.6	GRID
63	1993257.527	985204.4177	518.41	519.89	1.5	GRID
64	1993257.527	985254.4177	519.11	520.62	1.5	GRID
65	1993257.527	985304.4177	519.92	521.52	1.6	GRID
66	1993257.527	985354.4177	520.86	522.36	1.5	GRID
67	1993257.527	985404.4177	521.85	523.35	1.5	GRID
69	1993307.527	985104.4177	516.54	518.19	1.7	GRID
70	1993307.527	985154.4177	517.21	518.73	1.5	GRID
71	1993307.527	985204.4177	517.62	519.16	1.5	GRID
72	1993307.527	985254.4177	518.06	519.69	1.6	GRID
73	1993307.527	985304.4177	518.65	520.11	1.5	GRID
74	1993307.527	985354.4177	519.11	521.10	2.0	GRID
76	1993357.527	985156.0662	523.49	523.36	-0.1	PHASE 1/2 TIE-IN
77	1993357.527	985104.4177	516.18	517.77	1.6	GRID
78	1993357.527	985154.4177	516.63	518.19	1.6	GRID
79	1993357.527	985204.4177	517.07	518.55	1.5	GRID
82	1993407.527	985054.4177	517.76	518.65	0.9	PHASE 1/2 TIE-IN
83	1993407.527	985104.4177	516.59	518.15	1.6	GRID
85	1993457.527	985054.4177	517.08	519.05	2.0	GRID

928 AIRPORT ROAD
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PHASE 3 - CELL 1
CONSTRUCTION

1040 CEDAR GLADES ROAD
HOT SPRINGS, ARKANSAS

Key Plan

PHASE 3 CELL 1
CLAY LINER
VERIFICATION

No.	Description	Date
1	NOD Response	12.04.2025

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PROJECT NO: 35247264
ISSUE DATE: NOVEMBER 2025
CONTACT: J. ROGERS
QC by:
QC Date:

CERTIFICATE OF AUTHORIZATION
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DRAWING 1

Attachment B

Phase 3, Cell 1 Construction Drawings

CONSTRUCTION DRAWINGS FOR THE

PHASE 3 - CELL 1 & PARTIAL CLOSURE
GARLAND COUNTY CEDAR GLADES CLASS 4 LANDFILL
HOT SPRINGS, ARKANSAS

AUGUST 2025
PROJECT NO. 009-006-35247264

PROFESSIONAL ENGINEER'S CERTIFICATION

"I CERTIFY TO THE BEST OF MY PROFESSIONAL JUDGMENT THAT THIS DRAWING SET PROPERLY ADHERES TO ESTABLISHED, SOUND ENGINEERING PRACTICES. THIS CERTIFICATION IS CONTINGENT ON THE FACT THAT ALL INFORMATION SUPPLIED TO THE SIGNATORY AUTHORITY, UP TO THE DATE OF THIS CERTIFICATION, IS UNQUESTIONABLY ACCURATE AND WAS PROVIDED IN GOOD FAITH."

PREPARED FOR



VICINITY MAP
N.T.S.

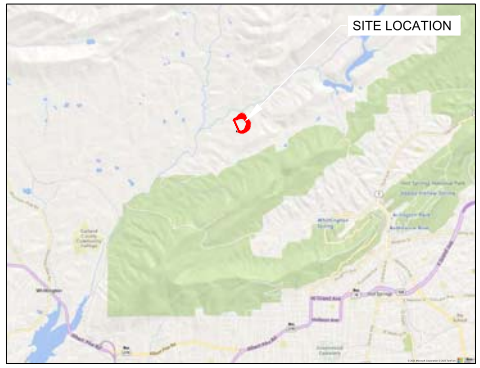
811 Know what's below. Call before you dig.

GARLAND COUNTY, AR
501 OUACHITA AVE.
HOT SPRINGS, AR 71901

&

Crafton Tull
EST. 1963
60 YEARS

928 AIRPORT RD.
HOT SPRINGS, AR 71913-4618
PH: 501-767-2366



SITE LOCATION MAP
SCALE: N.T.S.

PREPARED BY

Terracon
Consulting Engineers and Scientists

25809 I-30 SOUTH — BRYANT, AR 72022
PH. (501) 847-9292 — FAX. (501) 847-9210



N

100 0 50 100

SCALE: 1" = 100'

LEGEND

- PROPERTY LINE
- LANDFILL BOUNDARY
- PHASE BOUNDARY
- PROPOSED CONSTRUCTION AREAS
- EXSTING SITE ROADS
- EXISTING BUILDINGS

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STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 11260
JOHN W. ROGERS

PHASE 3 - CELL 1 CONSTRUCTION

1040 CEDAR GLADES ROAD
HOT SPRINGS, ARKANSAS

Key Plan

SITE OVERVIEW

No.	Description	Date
0	ISSUED FOR CONSTRUCTION	8/5/2025

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ISSUE DATE: AUGUST 2025
CONTACT: J. ROGERS
QC by:
QC Date:

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No. 110
ARKANSAS

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DRAWING 2

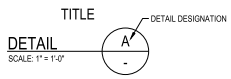
INDEX OF DRAWINGS

DRAWING NO.	TITLE
1.	COVER SHEET
2.	SITE OVERVIEW
3.	INDEX SHEET
4.	PROPOSED IMPROVEMENTS
5.	SUBGRADE GRADING PLAN
6.	CLAY LINER GRADING PLAN
7.	PROTECTIVE COVER GRADING PLAN
8.	CROSS SECTIONS
9.	STORMWATER CONTROL PLAN
10.	CONSTRUCTION POINTS 1
11.	CONSTRUCTION POINTS 2
12.	DETAILS 1
13.	DETAILS 2
14.	DETAILS 3

TYPICAL ABBREVIATIONS

ADEQ	ARKANSAS DEPARTMENT OF ENVIRONMENTAL QUALITY
CCL	COMPACTED CLAY LINER
CB	CATCH BASIN
DIA	DIAMETER
DWG	DRAWING
ELEV	ELEVATION
EXIST	EXISTING
FT	FEET
HDPE	HIGH DENSITY POLYETHYLENE
HORZ	HORIZONTAL
ID	INSIDE DIAMETER
IN	INCHES
INV	INVERT
MAX	MAXIMUM
MH	MANHOLE
MIN	MINIMUM
MSL	MEAN SEA LEVEL
NOM	NOMINAL
NSPS	NEW SOURCE PERFORMANCE STANDARDS
NTS	NOT TO SCALE
OD	OUTSIDE DIAMETER
PL	PROPERTY LINE
SDR	STANDARD DIMENSION RATIO
TYP	TYPICAL
VERT	VERTICAL
NPDES	NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

SECTION/DETAIL KEY



DETAIL KEY



SECTION KEY



CONTACT INFORMATION

OWNER:
GARLAND COUNTY SOLID WASTE DEPARTMENT
ATTENTION: HONORABLE DARRYL MAHONEY, GARLAND COUNTY JUDGE
501 OUACHITA AVENUE
HOT SPRINGS, AR 71901
PHONE: (501) 622-3600

ENGINEER:
TERRACON CONSULTANTS, INC.
ATTENTION: OWEN CARPENTER, P.E., P.G. - SR. PROJECT ENGINEER
25809 I-30 SOUTH
BRYANT, ARKANSAS 72022
PHONE: (501) 847-9292
FAX: (501) 847-9210

REGULATORY AUTHORITY:
ARKANSAS DEPARTMENT OF ENVIRONMENTAL QUALITY
SOLID WASTE MANAGEMENT DIVISION
ATTENTION: SOLID WASTE MANAGEMENT DIVISION CHIEF
5301 NORTHSHORE DRIVE
NORTH LITTLE ROCK, AR 72118-5317
PHONE: (501) 682-0600
FAX: (501) 682-0611

GENERAL NOTES

1. EXISTING CONTOURS SHOWN ON THESE PLANS ARE BASED ON AERIAL SURVEY PROVIDED BY CRAFTON TULL DATED AUGUST 30, 2024 AND JANUARY 2, 2025. BASED ON NAD83 SOUTH ARKANSAS HORIZONTAL DATUM AND NAVD88 VERTICAL DATUM. CARE SHOULD BE TAKEN WHEN INTERPRETING CONTOURS TO VERIFY THE AREAS AND THE TRANSITIONS BETWEEN THEM.
2. SLOPES AND GRADES ARE IN UNITS OF FT(H):FT(V), UNLESS OTHERWISE NOTED.
3. THE EROSION CONTROL FACILITIES REQUIRED BY THESE PLANS AND SPECIFICATIONS ARE CONSIDERED MINIMUM AND MAY BE IMPROVED AT THE DISCRETION OF THE OWNER TO CONSIDER CURRENT SITE DRAINAGE AND GENERAL CONDITIONS.
4. THESE DRAWINGS WERE PREPARED IN ACCORDANCE WITH APPLICABLE STATE (ADEQ) AND FEDERAL (EPA) SOLID WASTE REGULATIONS. THESE REGULATIONS INCLUDE ARKANSAS REGULATION 22 (ADEQ, 1995) AND 40 CFR 258 (EPA SUB-TITLE D, 1991).
5. CONTRACTOR SHALL PROTECT EXISTING LANDFILL INFRASTRUCTURE. DAMAGE TO THE PIEZOMETER NETWORK OR ANY INFRASTRUCTURE BY THE CONTRACTOR WILL BE REPAIRED AT CONTRACTOR EXPENSE.
6. BELOW GRADE UTILITY ALIGNMENTS SHOWN ARE APPROXIMATE AND LOCATED BASED ON INFORMATION PROVIDED BY OWNER. THERE MAY BE UTILITIES NOT SHOW, CONTRACTOR SHALL LOCATE, VERIFY, AND PROTECT IN PLACE BELOW GRADE UTILITIES PRIOR TO EXCAVATION. DAMAGE TO BELOW GRADE UTILITIES WILL BE REPAIRED AT CONTRACTOR EXPENSE.

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JOHN W. ROGERS
LICENSED PROFESSIONAL ENGINEER
No. 11260

PHASE 3 - CELL 1
CONSTRUCTION
1040 CEDAR GLADES ROAD
HOT SPRINGS, ARKANSAS

Key Plan

INDEX SHEET

No.	Description	Date
0	ISSUED FOR CONSTRUCTION	8/5/2025

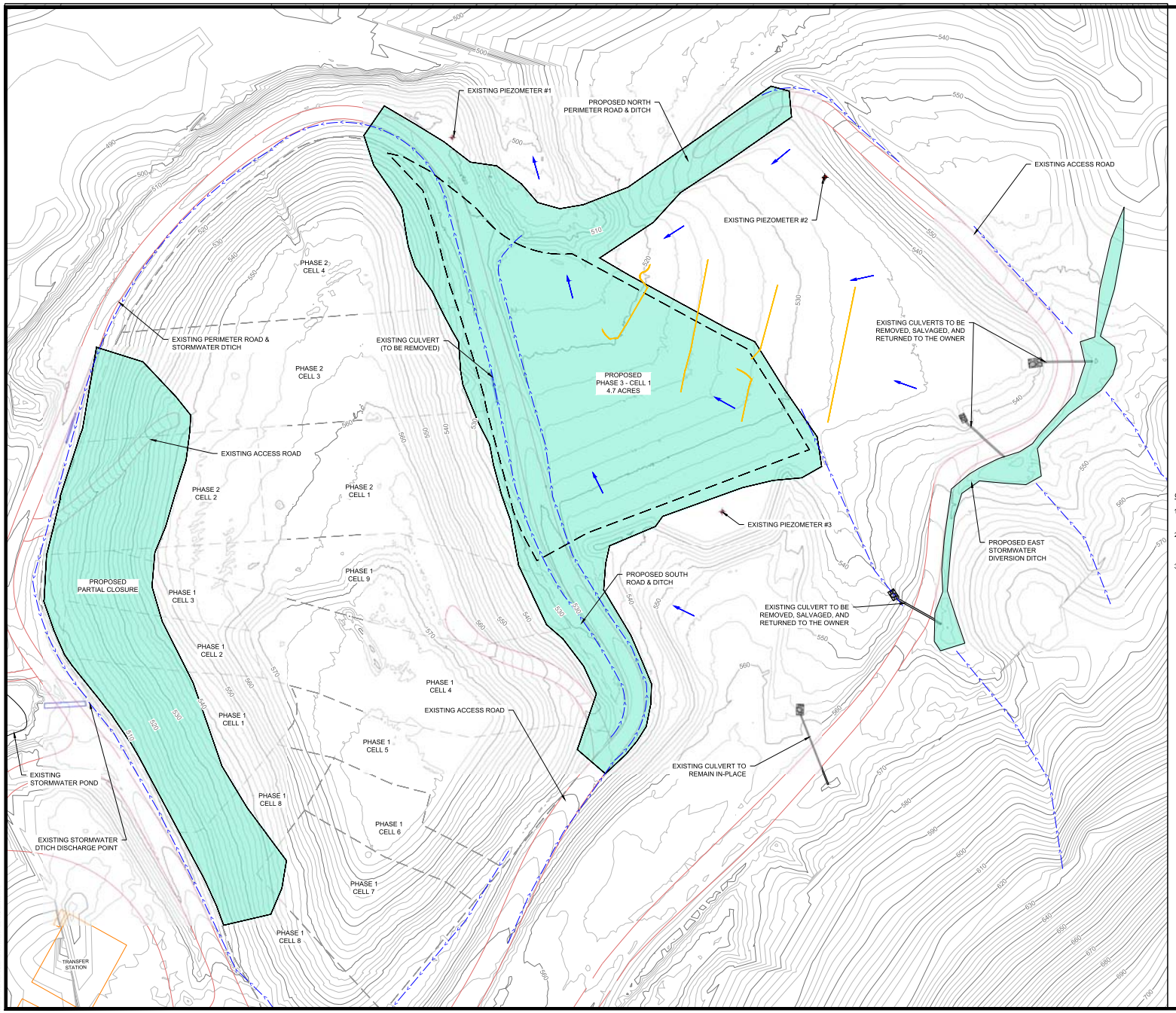
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CONTACT: J. ROGERS
QC by:
QC Date:

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DRAWING 3



N

80 0 40 80

SCALE: 1" = 80'

LEGEND

- EXISTING TOPOGRAPHY (2' CONTOURS)
- EXISTING ACCESS ROADS
- PHASE 3 - CELL 1 BOUNDARY
- PHASE BOUNDARY
- PROPOSED CONSTRUCTION AREAS
- EXISTING STORMWATER FLOW DIRECTION
- EXISTING STORMWATER DITCH / SWALE
- EXISTING CULVERTS (4 TOTAL)
- EXISTING STRAW WATTLES

GENERAL NOTES:

1. EXISTING TOPOGRAPHY PROVIDED BY CRAFTON TULL USING DRONE SURVEY ON AUGUST 30, 2024 AND JANUARY 2, 2025.
2. CONTRACTOR SHALL PROTECT EXISTING PIEZOMETERS. DAMAGE TO THE PIEZOMETERS BY THE CONTRACTOR WILL BE REPAIRED AT CONTRACTOR EXPENSE.
3. THREE OF FOUR EXISTING CORRUGATED PLASTIC CULVERTS SHALL BE CAREFULLY REMOVED, SLAVAGED, AND RETURNED TO THE OWNER. CONTRACTOR SHALL PROTECT THE EXISTING CULVERTS FROM DAMAGE DURING REMOVAL.

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PHASE 3 - CELL 1 CONSTRUCTION

1040 CEDAR GLADES ROAD
HOT SPRINGS, ARKANSAS

Key Plan

PROPOSED IMPROVEMENTS

No.	Description	Date
0	ISSUED FOR CONSTRUCTION	8/5/2025

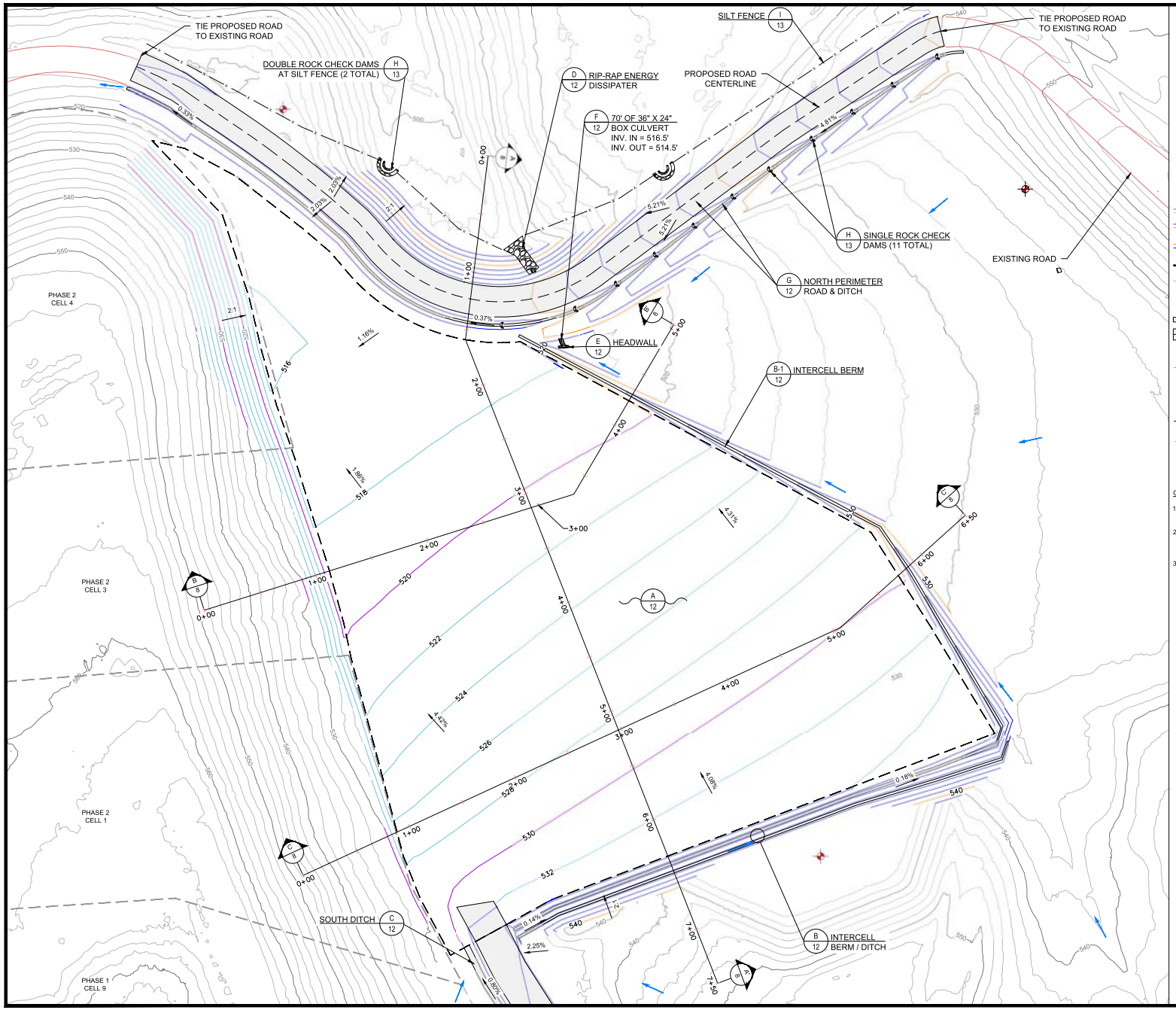
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QC Date:

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DRAWING 4



N

40' 0 20' 40'

SCALE: 1" = 40'

LEGEND

- EXISTING TOPOGRAPHY (2' CONTOURS)
- PROPOSED SUBGRADE (2' CONTOURS) A 12
- PROPOSED PERIMETER CONTOURS (2' CONTOURS)
- CELL 1 BOUNDARY
- PHASE BOUNDARY
- EXISTING PIEZOMETERS (TO REMAIN IN PLACE AND UNDAMAGED)
- INTERCELL BERM / DITCH B-1 & B-2 12
- PERIMETER ROAD G 12
- STORMWATER FLOW DIRECTION
- EXISTING ACCESS ROADS
- DOUBLE ROCK CHECK DAM AT SILT FENCE STORMWATER OUTLETS H 13
- SINGLE ROCK CHEK DAM H 13
- SILT FENCE I 13
- PROPOSED 70 L.F. OF 24" X 36" BOX CULVERT F 12

GENERAL NOTES:

1. EXISTING TOPOGRAPHY PROVIDED BY CRAFTON TULL USING DRONE SURVEY ON AUGUST 30, 2024 AND JANUARY 2, 2025.
2. CONTRACTOR SHALL PROTECT EXISTING PIEZOMETERS. DAMAGE TO THE PIEZOMETERS BY THE CONTRACTOR WILL BE REPAIRED AT CONTRACTOR EXPENSE.
3. THREE OF FOUR EXISTING CORRUGATED PLASTIC CULVERTS SHALL BE CAREFULLY REMOVED, SLAVAGED, AND RETURNED TO THE OWNER. CONTRACTOR SHALL PROTECT THE EXISTING CULVERTS FROM DAMAGE DURING REMOVAL.

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JOHN W. ROGERS

PHASE 3 - CELL 1 CONSTRUCTION

1040 CEDAR GLADES ROAD
HOT SPRINGS, ARKANSAS

Key Plan

SUBGRADE GRADING PLAN

No.	Description	Date
0	ISSUED FOR CONSTRUCTION	8/5/2025

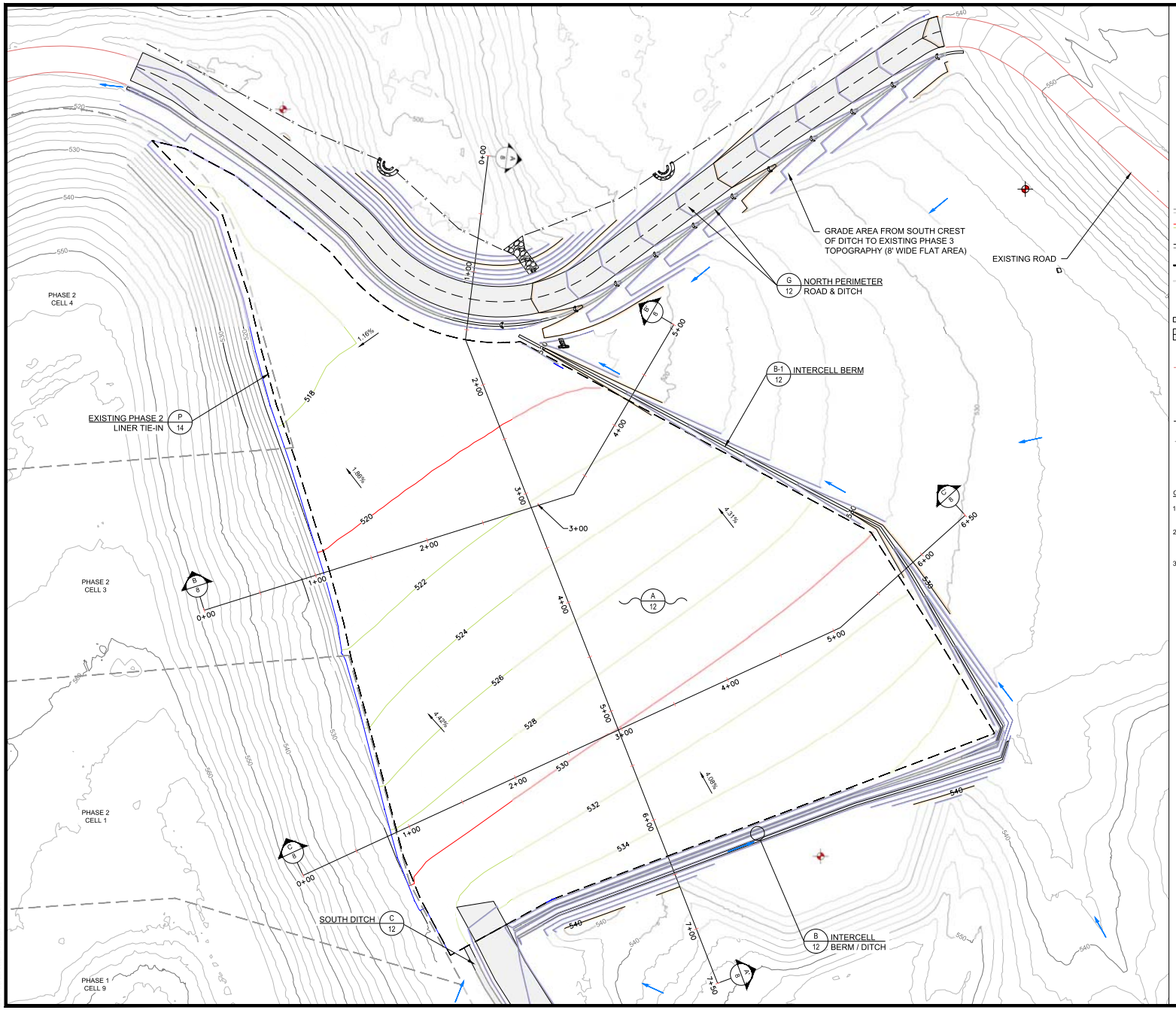
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QC by:
QC Date:

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DRAWING 5



N

40' 0 20' 40'

SCALE: 1" = 40'

LEGEND

- EXISTING TOPOGRAPHY (2' CONTOURS)
- PROPOSED CLAY LINER (2' CONTOURS) A 12
- PROPOSED PERIMETER CONTOURS (2' CONTOURS)
- CELL 1 BOUNDARY
- PHASE BOUNDARY
- EXISTING PIEZOMETERS (TO REMAIN IN PLACE AND UNDAMAGED)
- INTERCELL BERM / DITCH B-1 & 2 12
- PERIMETER ROAD G 12
- STORMWATER FLOW DIRECTION
- EXISTING ACCESS ROADS
- DOUBLE ROCK CHECK DAM AT SILT FENCE STORMWATER OUTLETS H 13
- SINGLE ROCK CHEK DAM H 13
- SILT FENCE I 13
- PROPOSED 70 L.F. OF 24" X 36" BOX CULVERT F 12

GENERAL NOTES:

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LICENSED PROFESSIONAL ENGINEER
No. 11260
JOHN W. ROGERS

PHASE 3 - CELL 1 CONSTRUCTION

1040 CEDAR GLADES ROAD
HOT SPRINGS, ARKANSAS

Key Plan

CLAY LINER GRADING PLAN

No.	Description	Date
0	ISSUED FOR CONSTRUCTION	8/5/2025

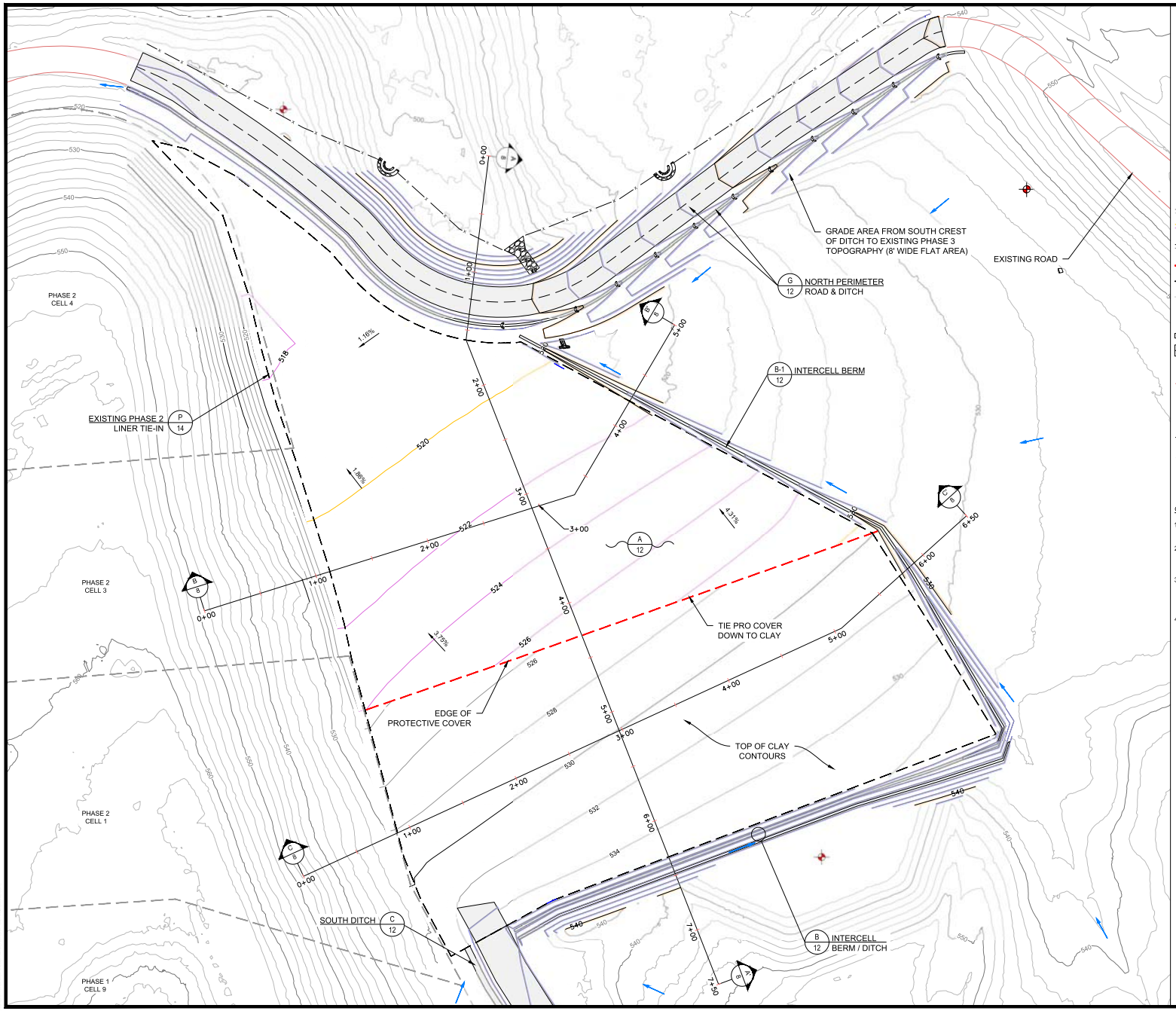
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DRAWING 6



N

40' 0 20' 40'

SCALE: 1" = 40'

LEGEND

- EXISTING TOPOGRAPHY (2' CONTOURS)
- PROPOSED PRO COVER (2' CONTOURS)
- PROPOSED PERIMETER CONTOURS (2' CONTOURS) (A/12)
- EDGE OF PROTECTIVE COVER
- CELL 1 BOUNDARY
- PHASE BOUNDARY
- EXISTING PIEZOMETERS (TO REMAIN IN PLACE AND UNDAMAGED)
- INERCELL BERM / DITCH (B/B-1/12)
- PERIMETER ROAD (G/12)
- STORMWATER FLOW DIRECTION
- EXISTING ACCESS ROADS
- DOUBLE ROCK CHECK DAM AT SILT FENCE STORMWATER OUTLETS (H/13)
- SINGLE ROCK CHEK DAM (H/13)
- SILT FENCE (I/13)
- PROPOSED 70 L.F. OF 24" X 36" BOX CULVERT (F/12)

GENERAL NOTES:

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4. PROTECTIVE COVER SHALL ONLY BE INSTALLED IN THE NORTH HALF OF PHASE 3 CELL 1. THE SOUTH HALF OF PHASE 3 CELL SHALL BE FILLED SOON AFTER CONSTRUCTION AND WILL NOT REQUIRE PROTECTIVE COVER.

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No. 11260
JOHN W. ROGERS

PHASE 3 - CELL 1 CONSTRUCTION

1040 CEDAR GLADES ROAD
HOT SPRINGS, ARKANSAS

Key Plan

PROTECTIVE COVER GRADING PLAN

No.	Description	Date
0	ISSUED FOR CONSTRUCTION	8/5/2025

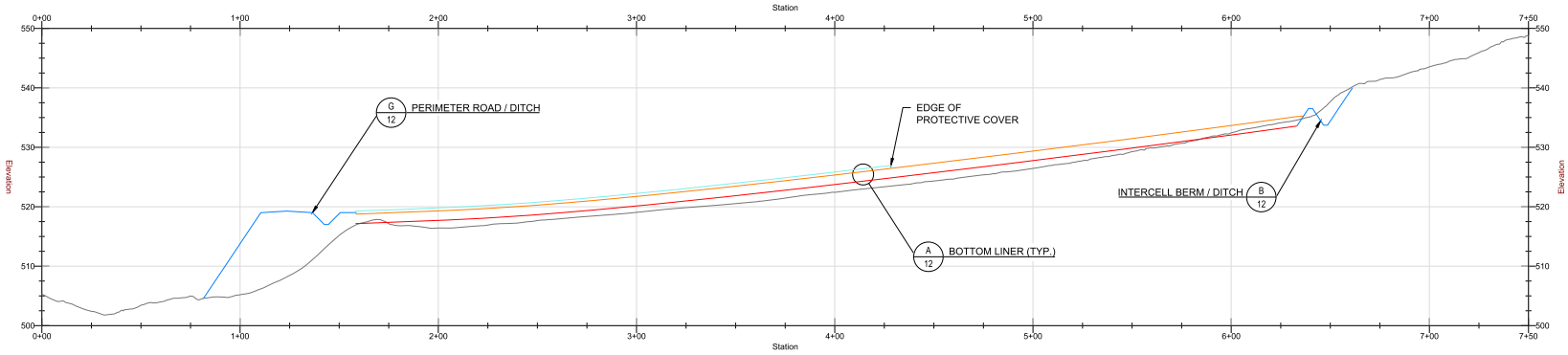
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QC Date:

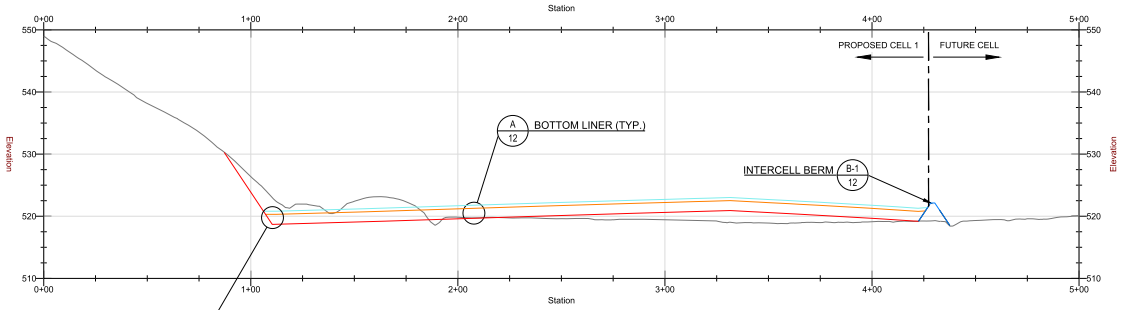
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DRAWING 7



ALIGNMENT A-A'



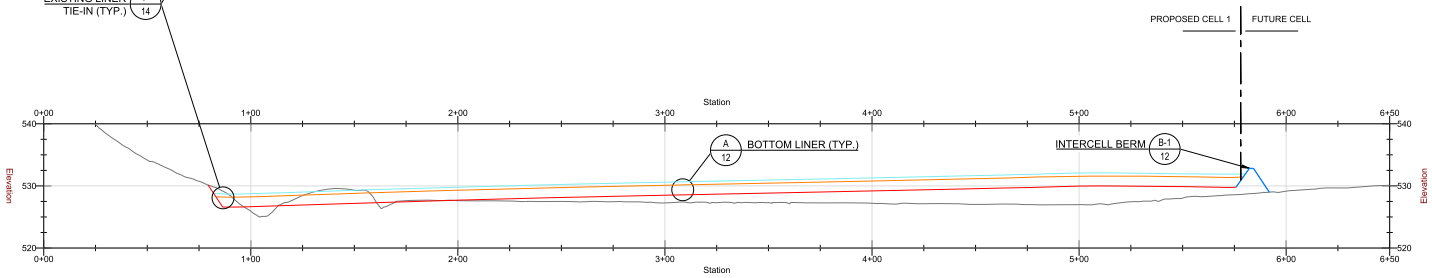
ALIGNMENT B-B"

LEGEND:

- EXISTING TOPO
- CELL 1 SUBGRADE
- CELL 1 CLAY
- CELL 1 PROTECTIVE COVER
- PERIMETER ROAD / DITCHES / BERM

PROFILE SCALES:

HORIZONTAL: 1" = 30'
VERTICAL: 1" = 10'
VERTICAL EXAGGERATION: x3



ALIGNMENT C-C'

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JOHN W. ROGERS

PHASE 3 - CELL 1
CONSTRUCTION

1040 CEDAR GLADES ROAD
HOT SPRINGS, ARKANSAS

Key Plan

CROSS SECTIONS

No.	Description	Date
0	ISSUED FOR CONSTRUCTION	8/5/2025

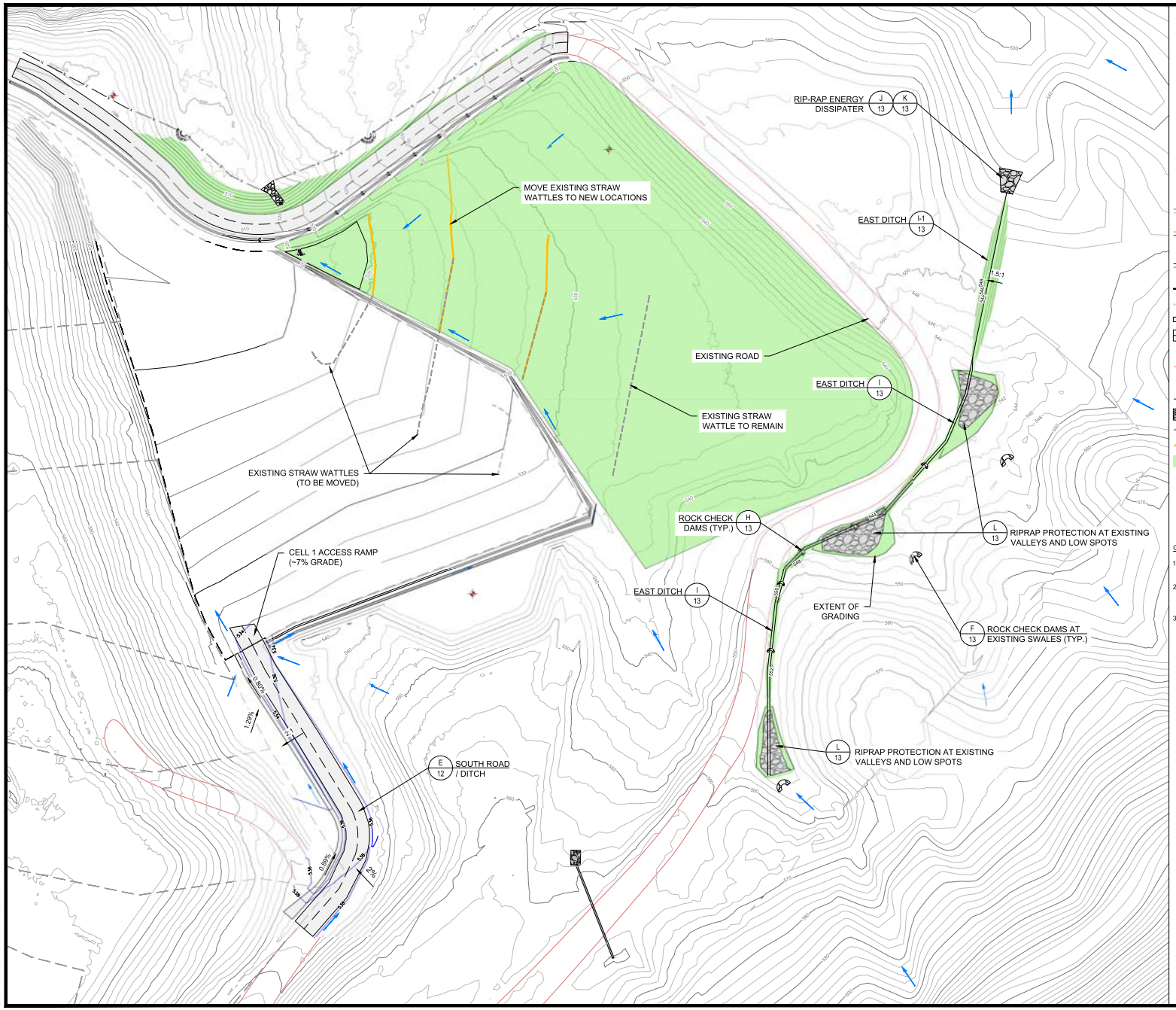
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DRAWING 8



N

60' 0 30' 60'

SCALE: 1" = 60'

LEGEND

- EXISTING TOPOGRAPHY (2' CONTOURS)
- PROPOSED EAST DITCH / SOUTH ROAD & DITCH (2' CONTOURS)
- PROPOSED CELL 1 / PERIMETER ROAD & DITCH CONTOURS (2' CONTOURS)
- CELL 1 BOUNDARY
- PHASE BOUNDARY
- PERIMETER BERM / DITCH
- PERIMETER ROAD
- STORMWATER FLOW DIRECTION
- EXISTING ACCESS ROADS
- ROCK CHEK DAM H 13
- SILT FENCE I 13
- RIP-RAP
- EXISTING STRAW WATTLES
- NEW LOCATION FOR STRAW WATTLES
- HYDROSEED AREAS

GENERAL NOTES:

1. EXISTING TOPOGRAPHY PROVIDED BY CRAFTON TULL USING DRONE SURVEY ON AUGUST 30, 2024 AND JANUARY 2, 2025.
2. CONTRACTOR SHALL PROTECT EXISTING PIEZOMETERS. DAMAGE TO THE PIEZOMETERS BY THE CONTRACTOR WILL BE REPAIRED AT CONTRACTOR EXPENSE.
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No. 11260
JOHN W. ROGERS

PHASE 3 - CELL 1 CONSTRUCTION

1040 CEDAR GLADES ROAD
HOT SPRINGS, ARKANSAS

Key Plan

STORMWATER CONTROL PLAN

No.	Description	Date
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CONTACT: J. ROGERS
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QC Date:

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DRAWING 9

Attachment C

Certification Report Replacement Pages

1.0 Introduction

Garland County, Arkansas owns and operates the Garland County Cedar Glades Class 4 Landfill located in Garland County, Arkansas near the city of Hot Springs. The Landfill address is 1040 Cedar Glades Rd, Hot Springs, Arkansas. **FIGURE 1** in **APPENDIX A** illustrates the geographic location of the facility. The landfill consists of approximately 61 acres separated into five phases with a sixth phase completed to the permitted final grades over the top of the first five phases.

This construction quality assurance (CQA) report summarizes testing and documentation activities performed by Terracon Consultants, Inc. (Terracon) to certify the construction of the bottom liner system and related work associated with the 4.7-acre first cell within the Northeast expansion area (Phase 3). The document summarizes the subgrade, clay liner, and other related components of the bottom liner system. Quality control testing and certification associated with the construction are also provided.

This document, in conjunction with the project record drawings, is intended to satisfy the requirements of Arkansas Rule 2, Section 22.428/22.624 and Permit No. 0300-S4.

1.1 General

The construction of the bottom liner system was conducted in accordance with the following documents:

- *"Rule Number 22, Solid Waste Management Rules" (8 CAR Part 60)*, Arkansas Pollution Control and Ecology Commission, March 2007.
- *"Project Manual: Phase 3 – Cell 1 & Partial Closure"*, Garland County Class 4 Landfill Phase 3 – Cell 1 & Partial Closure, Terracon Consultants, Inc., March 2025.
- *"Construction Drawings for the Phase 3 – Cell 1 & Partial Closure",* Garland County Cedar Glades Class 4 Landfill, Terracon Consultants, Inc., March 2025.

1.2 Site Description

The Landfill is separated into five area phases of cells separating the permitted footprint into areas of varying size arranged in a clockwise construction sequence with multiple phases of cell construction. The Phase 3, Cell 1 construction is the first part of the eastward expansion from existing Cell 2. Phase 3, Cell 1 is approximately 4.7 acres. The facility, Garland County Class 4 Landfill (Permit No. 0300-S4) was originally permitted in 2001. **FIGURE 2** illustrates

3.2 Construction Procedures

The compacted clay barrier layer was installed on top of the prepared subgrade, to the lines and grades shown on the plans and specifications. Haul trucks were utilized to transport clay barrier soils from the on-site borrow area to the construction area. After transport, the earthwork contractor used a bulldozer to spread the clay material into approximately 8-inch to 10-inch loose lifts across the site. After placement, a sheepsfoot compactor was used to compact the thickness of each layer down to approximately 6 inches and to achieve the required density, moisture and permeability in the soils. A water truck moisture conditioned the soil, as necessary, to aid in compaction and meet permeability requirements. After the compacted clay liner was completed, the surveyor recorded the final thickness as summarized in **APPENDIX A**.

3.3 Pre-Construction Testing of Clay Liner Materials

Field and Laboratory testing of the clay liner system was completed as specified in the project specifications, the facility CQA plan, and in accordance with the requirements of Arkansas Rule No. 22.

Before construction began, 4 soil samples were obtained from the clay stockpiles at a minimum frequency of one test per 20,000 cubic yards of soil placed. **APPENDIX C-1** contains the results of the clay liner materials pre-construction testing. The results indicate the materials meet or exceed the minimum project standards.

3.4 Construction Testing of CCL Materials

During the construction of the CCL, four (4) additional clay samples were obtained for laboratory testing to verify the consistency of the materials during construction. The results of the construction laboratory testing are included in **APPENDIX C-2**. Table 2 summarizes the results obtained from laboratory testing of the clay liner material. Based upon the results of the construction testing performed, the CCL material samples comply with project specifications.

Field moisture and density tests in accordance with ASTM D2487 were performed at a minimum rate of one test for every 10,000 square feet per compacted lift of newly emplaced clay liner. **FIGURE 7** and **FIGURE 8** illustrate the locations of the field moisture and density tests for each compacted lift of new clay liner. **APPENDIX C-3** includes the field logs for the moisture and density testing performed in association with the Phase 3, Cell 1 construction. Based upon the results of the moisture and density tests performed by Terracon, the 18-inch-thick CCL complies with the project specifications.