

MAR 01 2021


ENERGYSOLUTIONS

DRC-2021-003475

February 26, 2021

CD-2021-030

Mr. Ty Howard
Director
Utah Division of Waste Management and Radiation Control
195 North 1950 West
Salt Lake City, Utah 84114-4880


Re: Radioactive Material License UT 2300478 -
Groundwater Quality Discharge Permit UGW450005; **Revised Amendment and
Modification Request to Reduce Capacity and Disposal Footprint**

Dear Mr. Howard:

In a letter dated October 19, 2020 (CD-2020-157) *EnergySolutions* requested the Director of the Division of Waste Management and Radiation Control amend Radioactive Material License UT 2300478 to authorize a reduced by-product disposal capacity and waste footprint. In response to concerns raised by Division staff during subsequent 2021 meetings regarding the waste setback between the 11e.(2) embankment and a proposed Federal Cell Facility (under separate license consideration), *EnergySolutions* hereby submits revised Engineering Drawings to replace those in Appendix M of its October 19, 2020 License Amendment request. These drawings reflect an increased setback between the 11e.(2) embankment and any future embankment constructed to the west. No other information in the October 19, 2020 License Amendment request require replacement. Similarly, the replacement Engineering Drawings do not affect *EnergySolutions*' October 19, 2020 request to modify Table 3 of Groundwater Quality Discharge Permit UGW450005 to reflect the corner coordinates for the reduced disposal footprint.

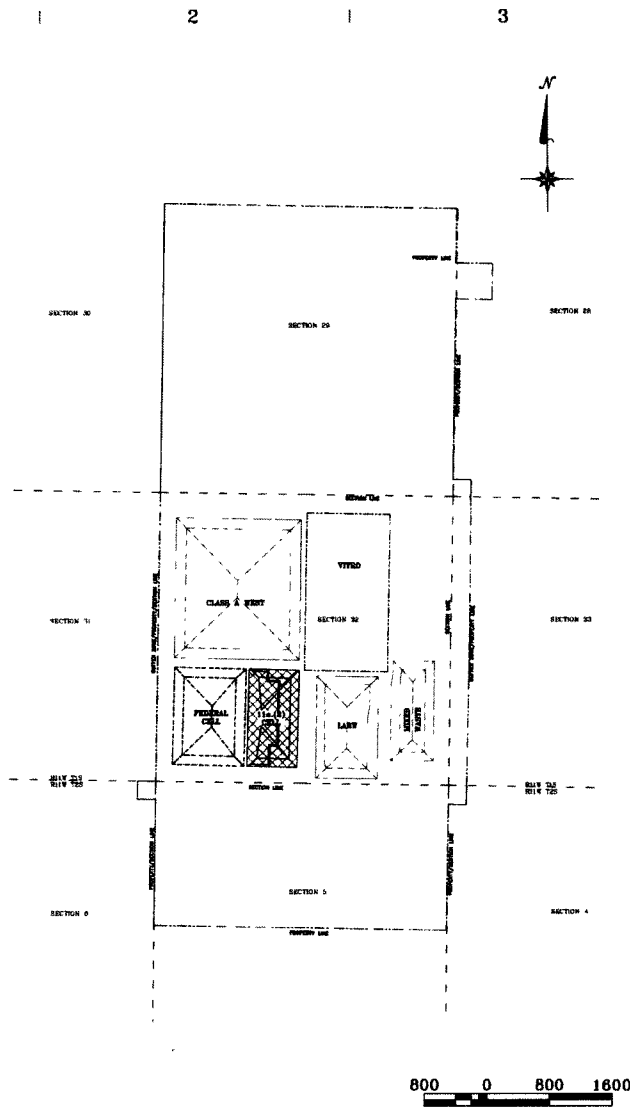
Please contact me at (801) 649-2000 if you have any questions regarding this revised License Amendment request.

Sincerely,

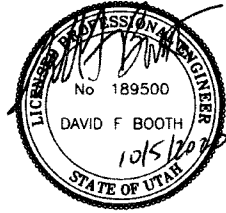
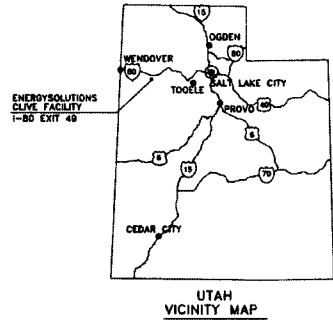

Vern C. Rogers
Feb 26 2021 9:08 AM
cosign

Vern C. Rogers
Director of Regulatory Affairs

enclosures



11e.(2) DISPOSAL CELL	
DWG. NO.	DESCRIPTION
20001-G01	PROJECT TITLE SHEET
20001-C01	REVISED CELL GENERAL PLAN
20001-C02	CELL CROSS SECTIONS, 1 OF 2
20001-C03	REVISED CELL FEATURES AND CONTROLS
20001-C04	CELL CROSS SECTIONS, 2 OF 2
20001-C05	CELL CONSTRUCTION DETAILS, 1 OF 2
20001-C06	CELL CONSTRUCTION DETAILS, 2 OF 2
20001-U01	DISPOSAL CELL BUFFER ZONE
20001-U02	DISPOSAL CELL WASTE LIMITS-LATITUDES & LONGITUDES



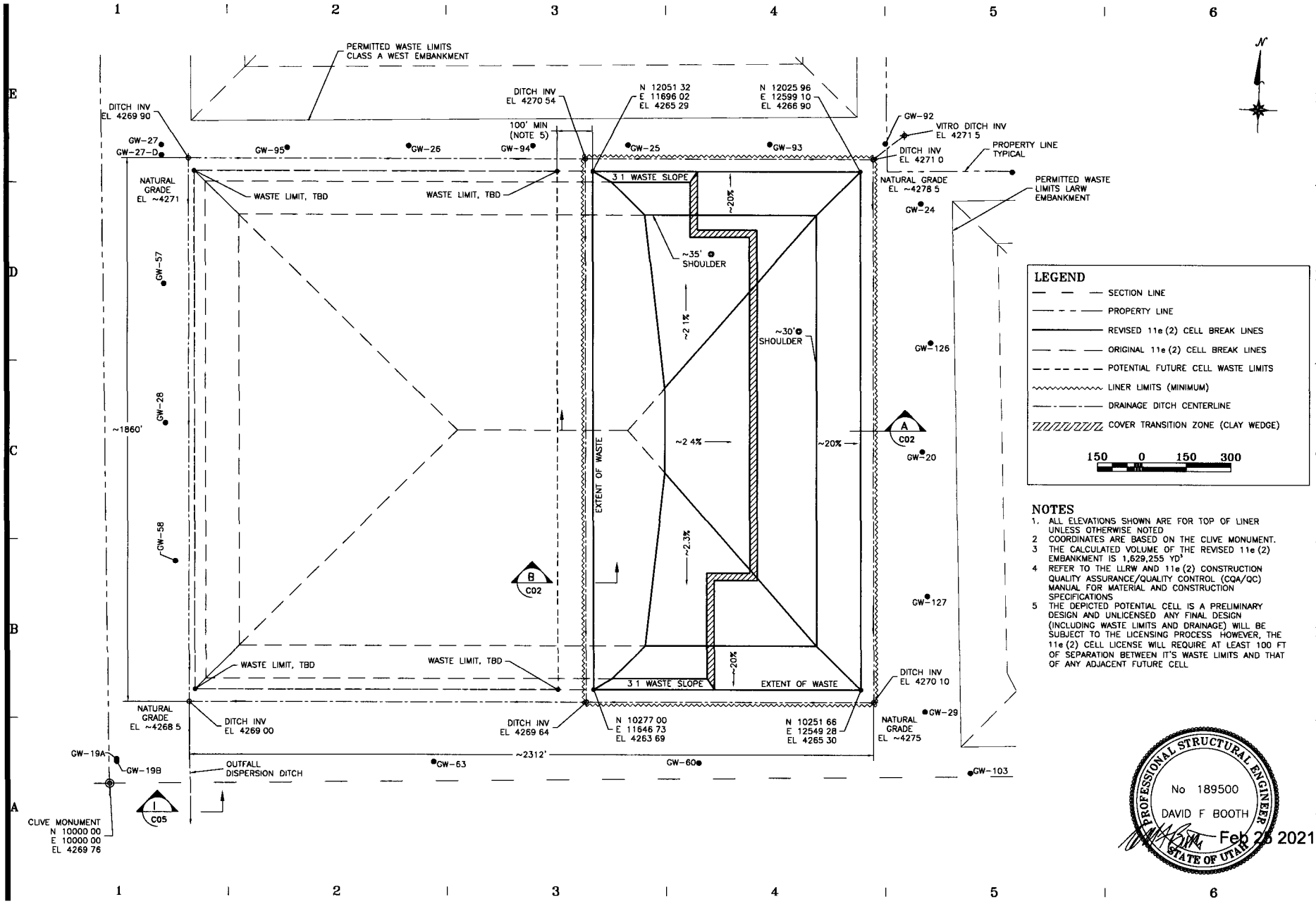
10/23/20 09:10 FOR LICENSE AMENDMENT
 DATE BY DESCRIPTION OF CHANGE

ENERGYSOLUTIONS
 CLIVE FACILITY
 11e.(2) DISPOSAL CELL
 PROJECT TITLE SHEET
 CLIVE, UTAH

**FINAL
DRAWING**

D. BOOTH
T. ORTON
D. BOOTH
AS NOTED 09/23/20

20001
G01



LEGEND

- SECTION LINE
- - - - - PROPERTY LINE
- REVISED 11e (2) CELL BREAK LINES
- - - - - ORIGINAL 11e (2) CELL BREAK LINES
- - - - - POTENTIAL FUTURE CELL WASTE LIMITS
- ~~~~~ LINER LIMITS (MINIMUM)
- - - - - DRAINAGE DITCH CENTERLINE
- ||||| COVER TRANSITION ZONE (CLAY WEDGE)

150 0 150 300

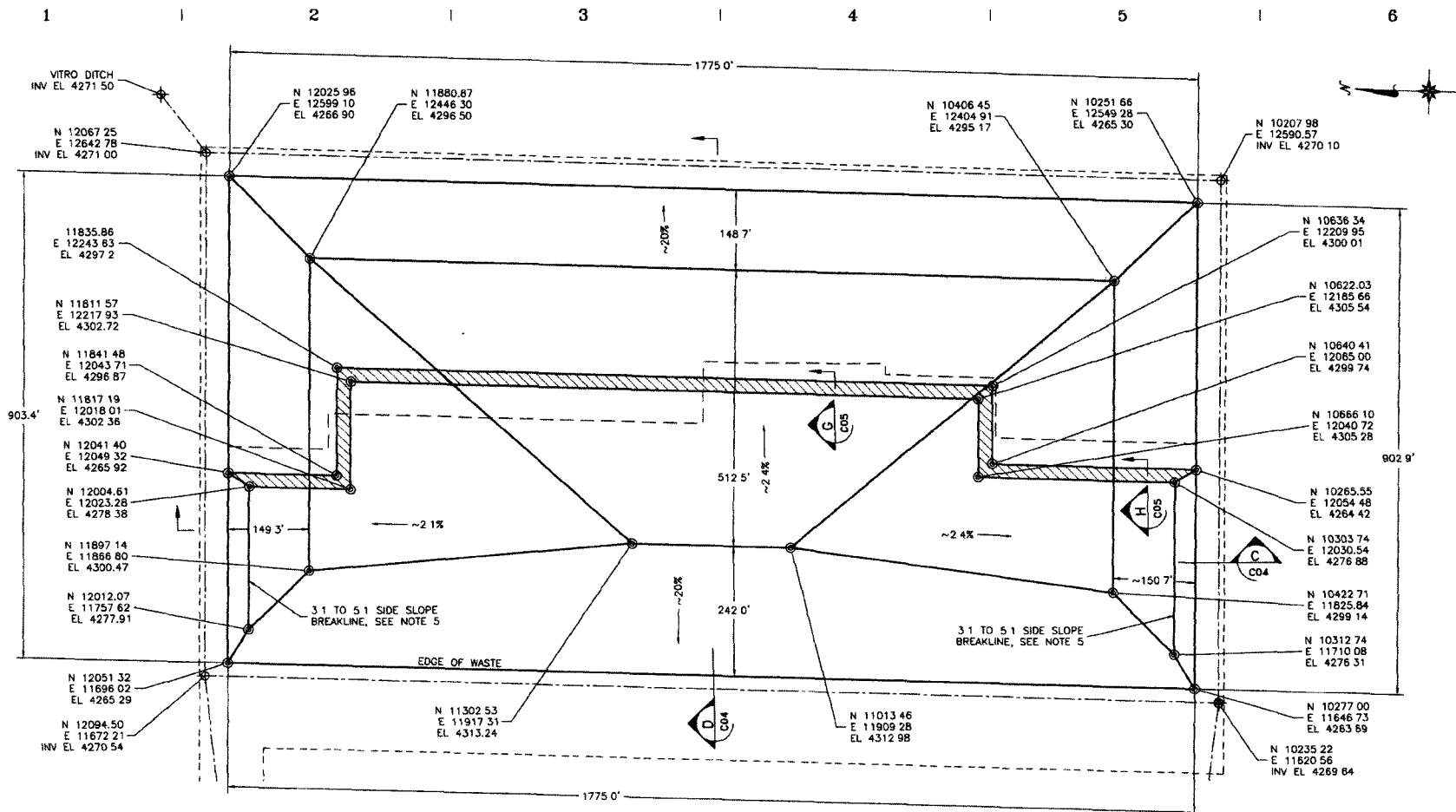
- NOTES**
1. ALL ELEVATIONS SHOWN ARE FOR TOP OF LINER UNLESS OTHERWISE NOTED
 2. COORDINATES ARE BASED ON THE CLIVE MONUMENT.
 3. THE CALCULATED VOLUME OF THE REVISED 11e (2) EMBANKMENT IS 1,629,255 YD³
 4. REFER TO THE LLRW AND 11e (2) CONSTRUCTION QUALITY ASSURANCE/QUALITY CONTROL (CQA/QC) MANUAL FOR MATERIAL AND CONSTRUCTION SPECIFICATIONS
 5. THE DEPICTED POTENTIAL CELL IS A PRELIMINARY DESIGN AND UNLICENSED ANY FINAL DESIGN (INCLUDING WASTE LIMITS AND DRAINAGE) WILL BE SUBJECT TO THE LICENSING PROCESS HOWEVER, THE 11e (2) CELL LICENSE WILL REQUIRE AT LEAST 100 FT OF SEPARATION BETWEEN IT'S WASTE LIMITS AND THAT OF ANY ADJACENT FUTURE CELL

2/25/21 1078 FOR LICENSE AMENDMENT - REVISED AREA BETWEEN CELLS
 1/10/19/2005 FOR LICENSE AMENDMENT
 DATE BY DESCRIPTION OF CHANGE

ENERGYSOLUTIONS
 CLIVE FACILITY
 11e (2) DISPOSAL CELL
 REVISED CELL GENERAL PLAN
 CLIVE, UTAH

FINAL DRAWING

A	D BOOTH
B	T ORTON
C	D BOOTH
D	AS NOTED 09/04/20
E	20001 C01

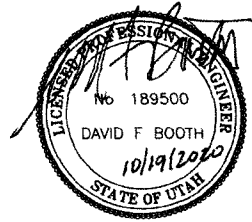


LEGEND

- REVISED ECELL BREAK LINES
- - - COMPLETED LINER LIMITS (AS-BUILT)
- - - DRAINAGE DITCH CENTERLINE
- ||||| COVER TRANSITION ZONE, CLAY WEDGE (AS-BUILT, REFER TO NOTE 6)
- - - WASTE FOOTPRINT WITH FINAL COVER (AS-BUILT)

100 0 100 200

- NOTES**
- 1 ALL ELEVATIONS SHOWN ARE FOR TOP OF WASTE UNLESS OTHERWISE NOTED.
 - 2 COORDINATES ARE BASED ON THE CLIVE MONUMENT
 - 3 THE CALCULATED VOLUME OF THE REVISED 11e(2) EMBANKMENT IS 1,629,255 YD³
 - 4 REFER TO THE LLRW AND 11e(2) CONSTRUCTION QUALITY ASSURANCE/QUALITY CONTROL (CQA/QC) MANUAL FOR MATERIAL AND CONSTRUCTION SPECIFICATIONS
 - 5 THE COVER DESIGN CHANGE REDUCED THE RADON BARRIER THICKNESS BY 5 FT WHILE MAINTAINING THE ORIGINAL TOP OF COVER LIMITS. THE 5 FEET OF RADON BARRIER IS "REPLACED" WITH WASTE AND TEMPORARY COVER. TO MAINTAIN THE ORIGINAL WASTE FOOTPRINT, WASTE ALONG THE BOTTOM OF NORTH AND SOUTH SIDE SLOPES IS PLACED AT A 3:1 SLOPE UNTIL IT INTERCEPTS THE BOTTOM OF RADON BARRIER SURFACE THAT INTERCEPT OCCURS AT ROUGHLY 37.5 FT IN FROM THE TOE OF WASTE.
 - 6 THE CLAY WEDGE AND THE RADON BARRIER THE EAST OF THE CLAY WEDGE HAVE BEEN CONSTRUCTED



10/19/2020 FOR LICENSE AMENDMENT
 DATE BY DESCRIPTION OF CHANGE

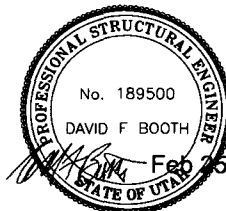
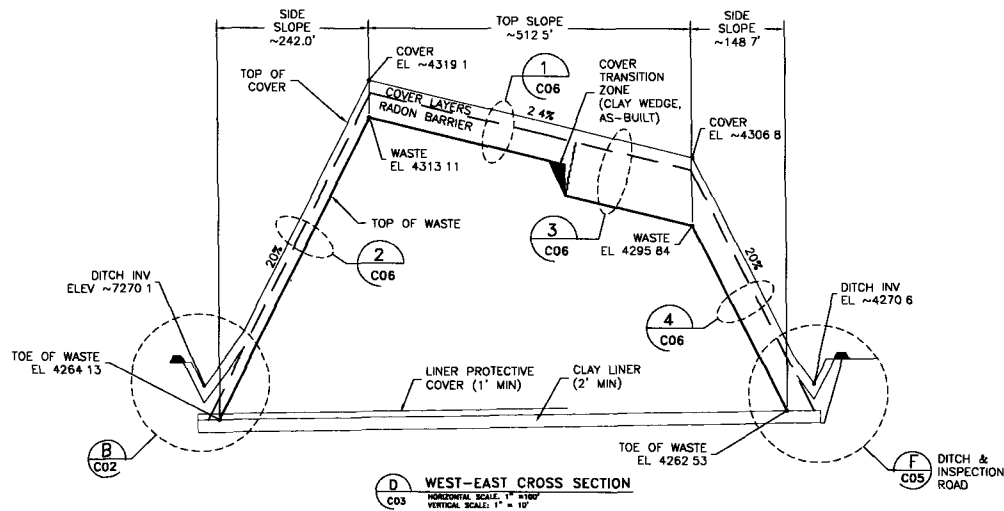
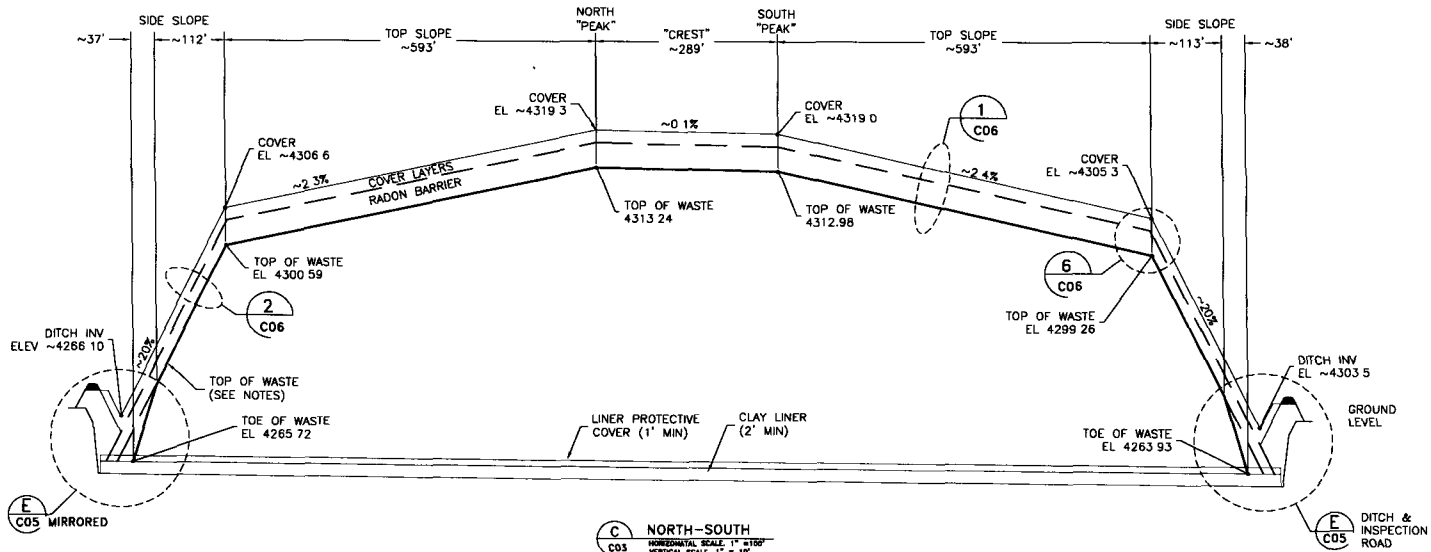
ENERGYSOLUTIONS
 CLIVE FACILITY
 11e(2) DISPOSAL CELL
 REVISED CELL FEATURES AND CONTROLS
 CLIVE, UTAH

FINAL DRAWING

A	D
B	E
C	F
D	G
E	H
F	I
G	J
H	K
I	L
J	M
K	N
L	O
M	P
N	Q
O	R
P	S
Q	T
R	U
S	V
T	W
U	X
V	Y
W	Z

AS NOTED 10/09/04/20/21

20001
C03



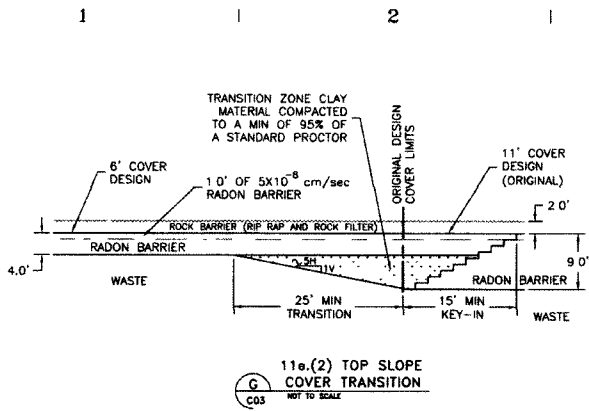
DATE	DESCRIPTION OF CHANGE
10/25/20	FOR LICENSE AMENDMENT
11/25/21	FOR LICENSE AMENDMENT - REVISED CROSS SECTION D

ENERGYSOLUTIONS
 CLIVE FACILITY
 11e (2) DISPOSAL CELL
 CELL CROSS SECTIONS, 2 OF 2
 CLIVE, UTAH

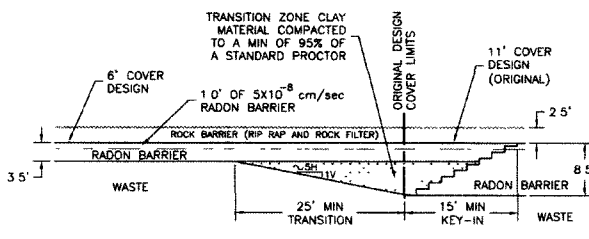
FINAL DRAWING

A	D. BOOTH
T	T. ORTON
D	D. BOOTH
AS NOTED	8/10/20

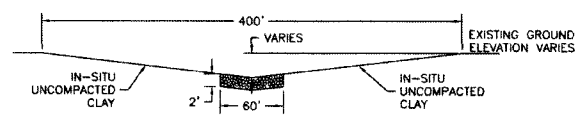
14004
C04



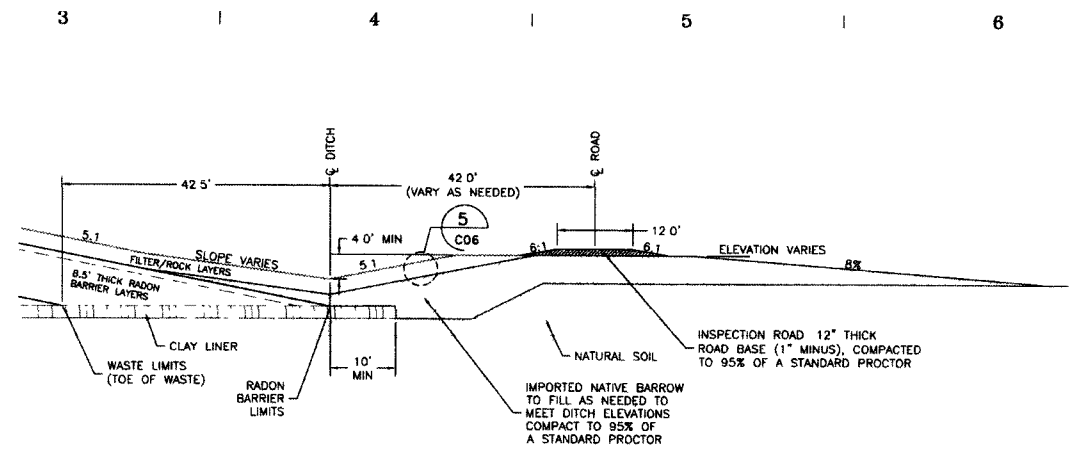
11e.(2) TOP SLOPE COVER TRANSITION
G C03 NOT TO SCALE



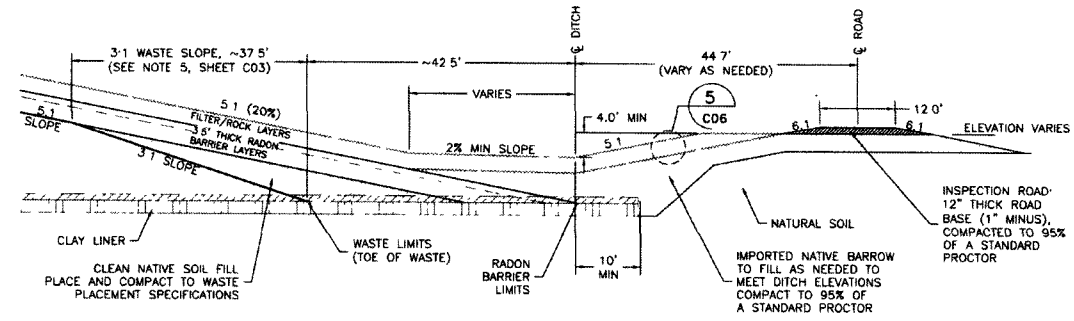
11e.(2) SIDE SLOPE COVER TRANSITION
H C03 NOT TO SCALE



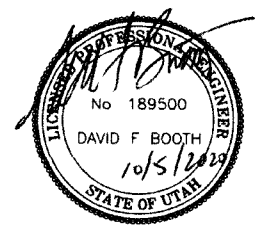
DISPERSION DITCH CROSS SECTION
I C01 HORIZONTAL SCALE 1" = 10' VERTICAL SCALE 1" = 20'



ORIGINAL DITCH CROSS SECTION
F C04 10 0 10 20



DITCH CROSS SECTION
E C04 10 0 10 20



10/5/2023 ORDER FOR LICENSE AMENDMENT
 DATE BY DESCRIPTION OF CHANGE

ENERGYSOLUTIONS
 CLINE FACILITY
 11e.(2) DISPOSAL CELL
 CELL CONSTRUCTION DETAILS, 1 OF 2
 CLIVE, UTAH

FINAL DRAWING

A	D. BOOTH
	T. ORTON
	D. BOOTH
NTS	09/22/20

20001
 C05

1 | | 2 | | 3 | | 4 | | 5 | | 6

11e.(2) CELL COVER DESIGNS

ROCK
12" THICK TOP ROCK
12" THICK FILTER ZONE
12" OF 5 X 10⁻⁸ CM/SEC RADON BARRIER

CLAY
3' OF 1 X 10⁻⁸ CM/SEC RADON BARRIER

1 11e.(2) TOP SLOPES
C04

ROCK
12" THICK TOP ROCK
12" THICK FILTER ZONE
12" OF 5 X 10⁻⁸ CM/SEC RADON BARRIER

CLAY
6" OF 1 X 10⁻⁸ CM/SEC RADON BARRIER

3 11e.(2) TOP SLOPES
C04 ORIGINAL DESIGN

ROCK
18" THICK SIDE ROCK
12" THICK FILTER ZONE
NATURAL GROUND OR IMPORTED NATIVE BARROW MATERIAL

5 PERIMETER DITCH
C05 OUTSIDE SLOPE ONLY

ROCK
18" THICK SIDE ROCK
12" THICK FILTER ZONE
12" OF 5 X 10⁻⁸ CM/SEC RADON BARRIER

CLAY
2.5' OF 1 X 10⁻⁸ CM/SEC RADON BARRIER

2 11e.(2) SIDE SLOPES
C04

ROCK
18" THICK SIDE ROCK
12" THICK FILTER ZONE
12" OF 5 X 10⁻⁸ CM/SEC RADON BARRIER

CLAY
7.5' OF 1 X 10⁻⁸ CM/SEC RADON BARRIER

4 11e.(2) SIDE SLOPES
C04 ORIGINAL DESIGN

ROCK
12" THICK TOP ROCK
12" THICK FILTER ZONE
12" OF 5 X 10⁻⁸ CM/SEC RADON BARRIER

ROCK
18" THICK SIDE ROCK
12" THICK FILTER ZONE
12" OF 5 X 10⁻⁸ CM/SEC RADON BARRIER

CLAY
3' OF 1 X 10⁻⁸ CM/SEC RADON BARRIER

CLAY
2.5' OF 1 X 10⁻⁸ CM/SEC RADON BARRIER

6 TOP SLOPE/SIDE SLOPE BREAKOVER
C05

GRADATIONS - ASTM C-136


TOP ROCK
D₁₀₀ 2-1/2 TO 4-1/2 INCHES
D₅₀ 1-1/8 TO 3 INCHES
D₁₅ 3/4 TO 1-1/2 INCHES

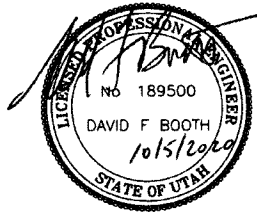
SIDE ROCK
D₁₀₀ 12 TO 16 INCHES
D₆₀ 8 TO 12 INCHES
D₅₀ 4-1/2 TO 8 INCHES
D₁₅ 2 TO 4 INCHES

FILTER ZONE
D₁₀₀ = 15 TO 30 INCHES
D₆₀ = 10 TO 25 INCHES
D₅₀ = 0.75 TO 2.0 INCHES
D₁₅ = 0.3125 TO 0.625 INCHES
D₁₀ >= #10 SIEVE (2.0 mm)
D >= #200 SIEVE (0.074 mm)

REFER TO THE LLRW AND 11e.(2) CONSTRUCTION QUALITY ASSURANCE/QUALITY CONTROL (CQA/QC) MANUAL FOR MATERIAL AND CONSTRUCTION SPECIFICATIONS

1 | | 2 | | 3 | | 4 | | 5 | | 6

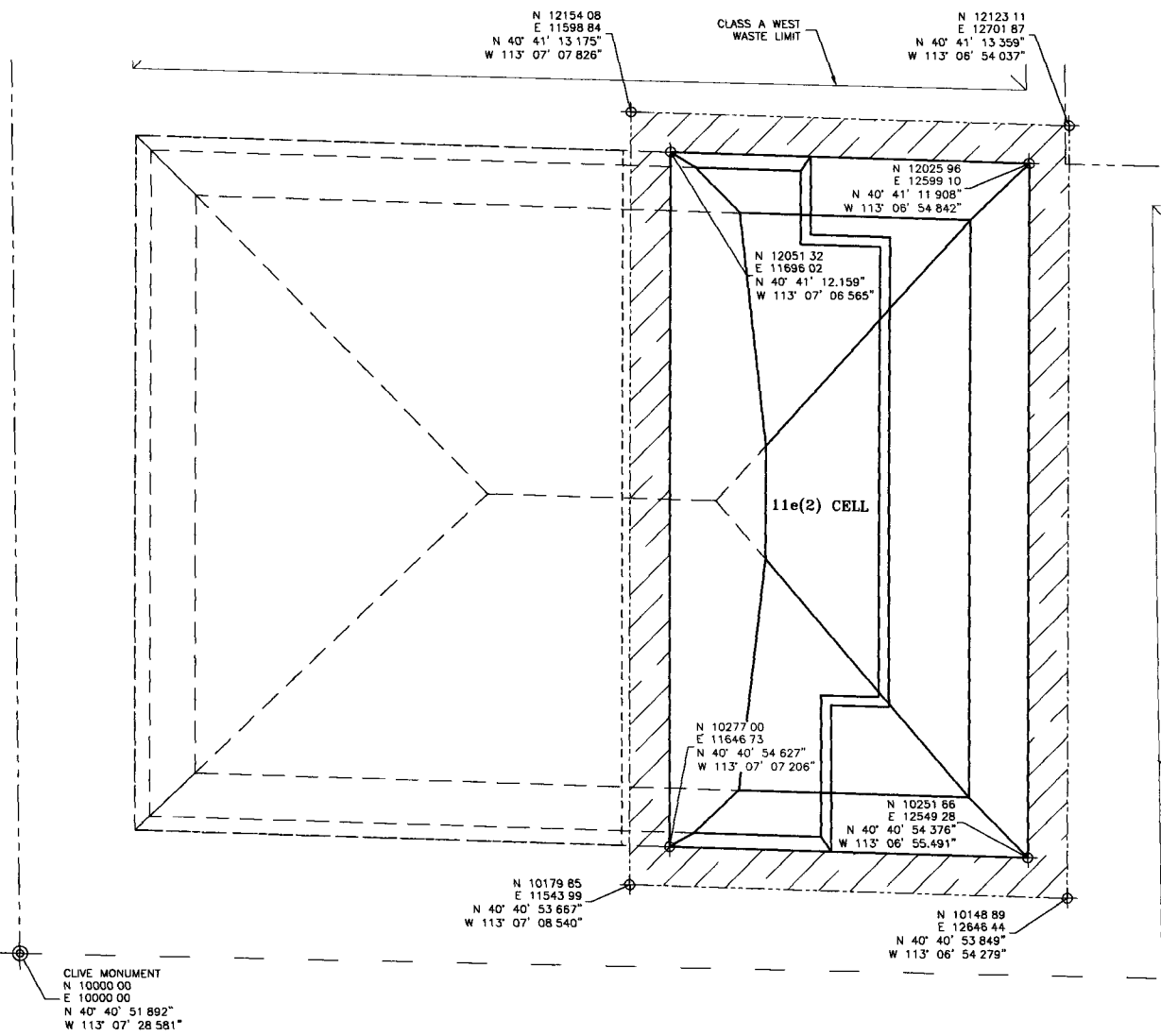
E		E	
D		D	
C		C	
B		B	
A		A	
			
		CLIVE FACILITY 11e.(2) DISPOSAL CELL CELL CONSTRUCTION DETAILS, 2 OF 2 CLIVE, UTAH	
		FINAL DRAWING	
		A. D. BOOTH T. ORTON D. BOOTH NTS 09/22/20	
		20001 C06	



DATE BY DESCRIPTION OF CHANGE

1 | | 2 | | 3 | | 4 | | 5 | | 6

E
D
C
B
A



LEGEND

- BUFFER ZONE LIMITS
- - - SECTION LINE
- — — PROPERTY LINE
- - - ORIGINAL 11e(2) CELL BREAK LINES
- — — REVISED 11e(2) CELL BREAK LINES
- - - POTENTIAL FUTURE CELL WASTE LIMITS

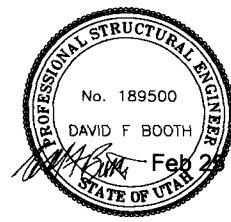
11e(2) CELL BUFFER ZONE

500 0 500 1000

NO.	DATE	DESCRIPTION OF CHANGE
1	2/25/21	FOR LICENSE AMENDMENT-REVISED BUFFER ZONE WEST LIMITS
2	10/20/20	FOR LICENSE AMENDMENT

ENERGYSOLUTIONS

CLIVE FACILITY
11e(2) DISPOSAL CELL
DISPOSAL CELL BUFFER ZONE
CLIVE, UTAH

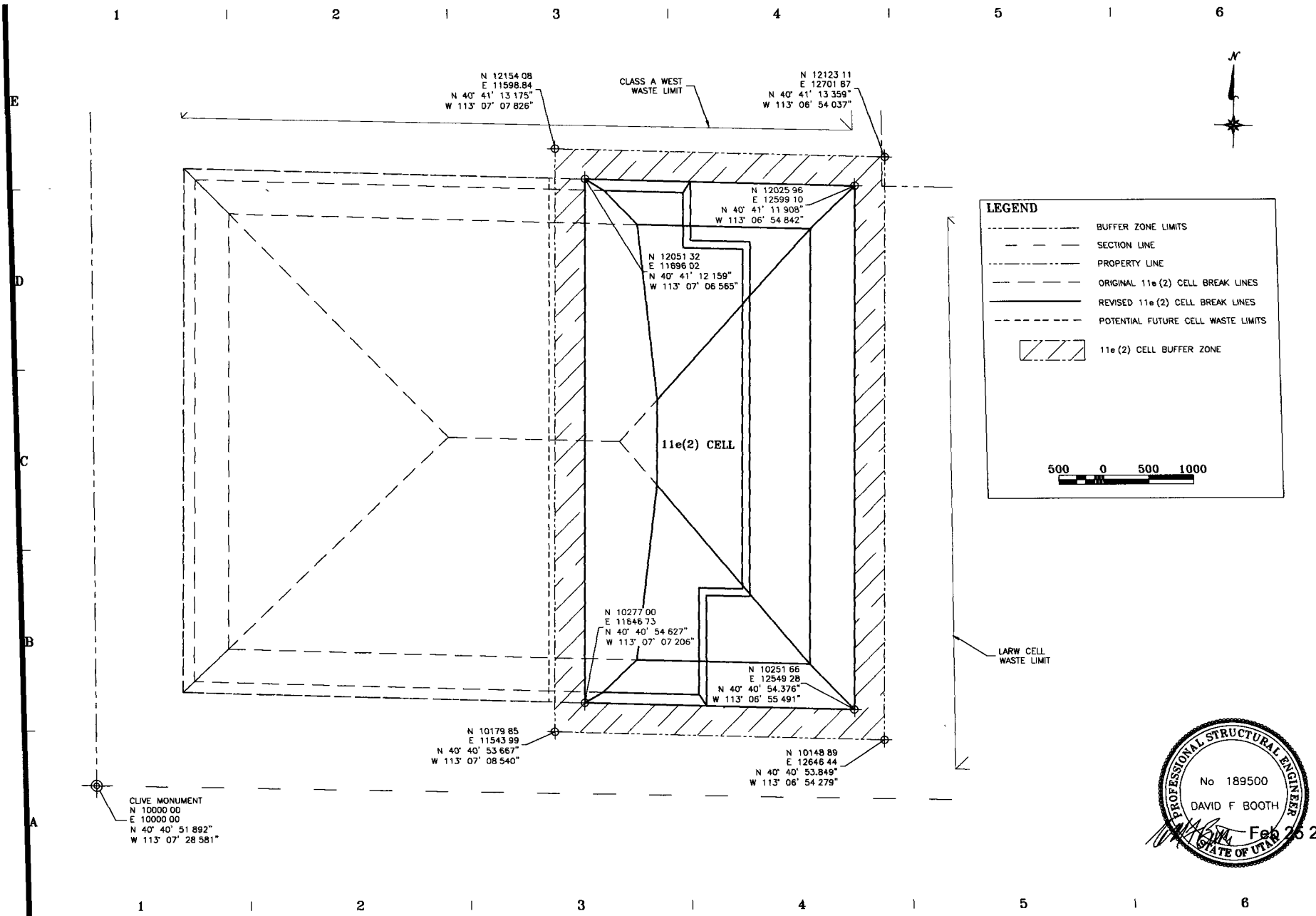


**FINAL
DRAWING**

DESIGNED BY	D. BOOTH
CHECKED BY	T. ORTON
DRAWN BY	D. BOOTH
DATE	AS NOTED 09/23/20

20001
U01

1 | | 2 | | 3 | | 4 | | 5 | | 6



ENERGYSOLUTIONS
 CLIVE FACILITY
 11e(2) DISPOSAL CELL
 DISPOSAL CELL BUFFER ZONE
 CLIVE, UTAH

FINAL DRAWING

AS NOTED 09/23/20

20001 U01

DATE BY DESCRIPTION OF CHANGE
 2/25/21 DFB FOR LICENSE AMENDMENT-REVISED BUFFER ZONE WEST LIMITS
 10/05/20 DFB FOR LICENSE AMENDMENT

Feb 26 2021



Peter Martinez <pmartinez@utah.gov>

Fwd: Revised Amendment and Modification Request to Reduce Capacity and Disposal Footprint (CD-2021-030)

1 message

LLRW DWMRC <llrw@utah.gov>
To: Peter Martinez <pmartinez@utah.gov>

Mon, Mar 1, 2021 at 7:53 AM

drc

----- Forwarded message -----

From: **Vern C. Rogers** <vcrogers@energysolutions.com>
Date: Fri, Feb 26, 2021 at 9:10 AM
Subject: Revised Amendment and Modification Request to Reduce Capacity and Disposal Footprint (CD-2021-030)
To: Llrw@utah.gov <Llrw@utah.gov>
Cc: Kristina M. Garcia <kmgarcia@energysolutions.com>, Treesa Parker <tparker@energysolutions.com>, Steve D. Gurr <sdgurr@energysolutions.com>

Mr. Howard

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Please contact me at (801) 649-2000 if you have any questions regarding this revised License Amendment request.

Vern C. Rogers | **ENERGYSOLUTIONS**

299 South Main Street, Suite 1700

Salt Lake City, UT 84111

PHONE: 801.649.2000

DIRECT: 801.649.2253

MOBILE: 801.557.9840

FACSIMILE 801.880.2879

EMAIL vcrogers@energysolutions.com

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 **02262021 - reduced footprint amendment transmittal.pdf**
6164K