Outlook

[EXTERNAL] Re: American Environmental Landfill - Tier III Permit Modification - May 13, 2025 NOD

From Lytle, Trevar <TLytle@scsengineers.com>
Date Tue 10/21/2025 10:57 AM
To Jeff Biddick <Jeff.Biddick@deq.ok.gov>
Cc Wade Miller <wade@aelok.com>; Cotter, Floyd <FCotter@scsengineers.com>

I have sent the Permit Drawing set, which includes the revised Drawing #3, through a Newforma data transfer. All other sheets remain unchanged and retain their original seal and date.

If you have any questions or need additional information, please let me know.

Thank you.

Trevar Lytle, P.E.
Licensed in OK and TX
Project Manager
SCS Engineers
1809 Commons Circle, Suite B
Yukon, OK 73099
C: 580-889-0037
O: 405-246-1577
www.scsengineers.com

From: Jeff Biddick <Jeff.Biddick@deq.ok.gov>
Sent: Monday, October 20, 2025 12:38 PM
To: Lytle, Trevar <TLytle@scsengineers.com>
Cc: Wade Miller <wade@aelok.com>; Cotter, Floyd <FCotter@scsengineers.com>
Subject: Re: American Environmental Landfill - Tier III Permit Modification - May 13, 2025 NOD

Trevar, while working on the draft permit modification, I noticed some strange labeling of elevations on revised Drawing 3. It looks like some of the existing surface contour labels are formatted in a way that they are indistinguishable from the groundwater elevation labels. Could you correct this to make the distinction clearer?

Thank you,

Jeff Biddick | Professional Engineer
Land Protection | Department of Environmental Quality
Office: 405.702.5141
Oklahoma.gov | deq.ok.gov

SCS ENGINEERS

Transmittal

Oklahoma City, OK

PROJECT:	AEL,203 Acre Expansion Engineering, OK 27220345.00	DATE:	10/21/2025
SUBJECT:	AEL Tier III Permit Drawings - Revised Drawing #3	TRANSMITTAL ID:	00011
PURPOSE:	For Record	VIA:	Info Exchange

FROM

NAME	COMPANY	EMAIL	PHONE
Trevar Lytle Oklahoma City, OK	SCS Engineers	TLytle@scsengineers.com	+1-405-246-1577

TO

NAME	COMPANY	EMAIL	PHONE
jeff.biddick@deq.ok.gov		jeff.biddick@deq.ok.gov	

REMARKS:

Jeff,

Please find the attached Permit Drawing set, which includes the revised Drawing #3. All other sheets remain unchanged and retain their original seal and date.

If you have any questions or need additional information, please let me know.

Thank you.

DESCRIPTION OF CONTENTS

QTY	DATED	TITLE	NOTES
1	10/21/2025	27220345.00 - Permit Drawings - Revised August 2025 - v1.0.pdf	

COPIES:

wade@aelok.com
Floyd Cotter (SCS Engineers)

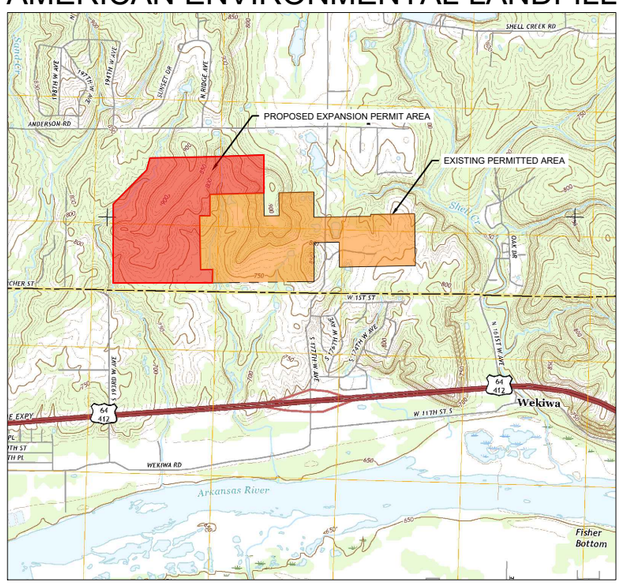
AMERICAN ENVIRONMENTAL LANDFILL
WEST EXPANSION PERMITTING

ODEQ Permit No. 3510007

December 2023

Revised August 2025

PREPARED FOR
AMERICAN ENVIRONMENTAL LANDFILL



207 N. 177TH W. AVENUE
SAND SPRINGS, OKLAHOMA

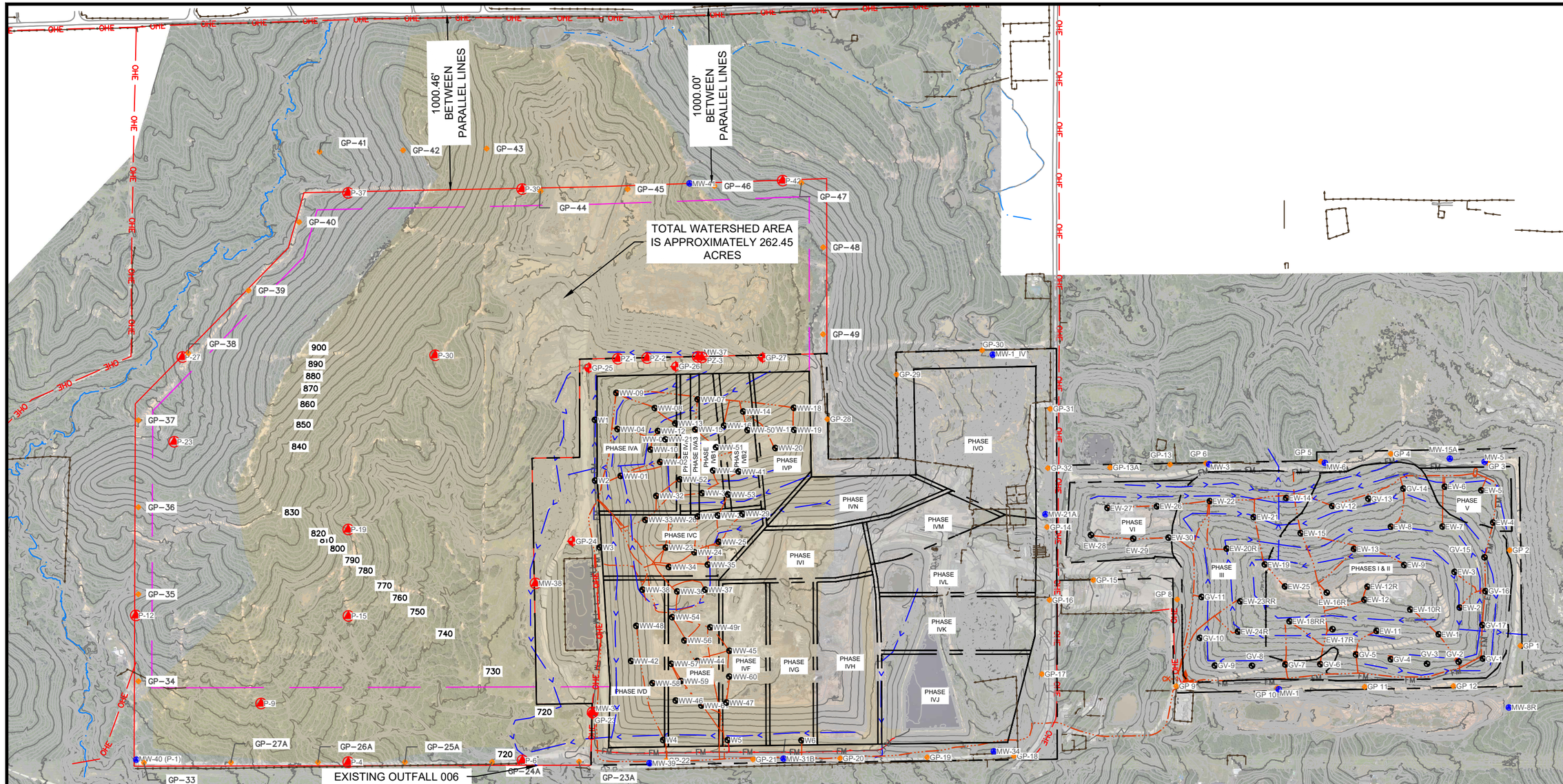
SHEET LIST TABLE	
Sheet Number	Sheet Title
0	Cover
1	Existing Contour Map
2	Site Layout
3	Seasonal High Water Level
4	Top of Subgrade Grading Plan
5	Top of Clay Grading Plan
6	Top of Final Cover Grading Plan
7	Cross Section Locator Map
8	Fill Cross Section A-A'
9	Fill Cross Section B-B'
10	Fill Cross Section C-C'
11	Fill Cross Section D-D'
12	Watershed Plan
13	Details
14	Details
15	Details
16	Details
17	Details
18	Details

PREPARED BY

SCS ENGINEERS
8575 W. 110 Street, Suite 100
Overland Park, KS 66210
PH (913) 681-0030 FAX (913) 681-0012
Project No. 27220345.00

FOR PERMITTING PURPOSES ONLY

C:\USERS\48107\ALDESKTOP\AELNOD\2025 PERMIT DRAWINGS PACKAGE\COVERSHEET.DWG



LEGEND:

- EXISTING 2' MINOR CONTOUR
- 1570 — EXISTING 10' MAJOR CONTOUR
- EXISTING FENCE
- OHE — EXISTING OVERHEAD ELECTRIC
- UGE — EXISTING UNDERGROUND ELECTRIC
- EXISTING UNPAVED ROAD
- EXISTING PAVED ROAD
- EXISTING BODY OF WATER
- SOLID WASTE PHASE BOUNDARY
- SOLID WASTE PERMIT BOUNDARY
- FM — LEACHATE FORCEMAIN
- LANDFILL GAS COLLECTION SYSTEM PIPING
- EXTRACTION WELL
- EXISTING/PROPOSED GAS PROBE
- EXISTING/PROPOSED MONITORING WELL
- MONITORING WELL/PIEZOMETER ABANDONMENT
- GAS PROBE ABANDONMENT
- PROPOSED EXPANSION AREA PERMIT BOUNDARY
- PROPOSED LIMITS OF WASTE
- EXISTING STREAM
- SURFACE DRAINAGE
- EXISTING WATERSHED

NOTES:

1. AERIAL TOPOGRAPHY PERFORMED BY AERIAL OKLAHOMA, LLC ON JULY 9, 2025.
2. PROPOSED GAS PROBES AND MONITORING WELLS ARE DEPICTED WITHIN THE EXPANSION AREA

N

600 0 600 1200

SCALE FEET

REGISTERED PROFESSIONAL ENGINEER FLOYD E. COTTER 17783 OKLAHOMA 8/18/25

REV.	DATE	DESCRIPTION	CK. BY
1	8.25	REVISED CELL 7 CONTOURS	TWL
0	5.24	SUBMITTAL TO ODEQ	FEC

SHEET TITLE: EXISTING CONTOURS

PROJECT TITLE: AEL LATERAL EXPANSION PERMITTING

CLIENT: AMERICAN ENVIRONMENTAL LANDFILL, INC.
AMERICAN ENVIRONMENTAL LANDFILL
SAND SPRINGS, OK

SCS ENGINEERS
8575 W. 110 STREET, SUITE 100
OVERLAND PARK, KS 66210
PH. (913) 681-0030 FAX: (913) 681-0012

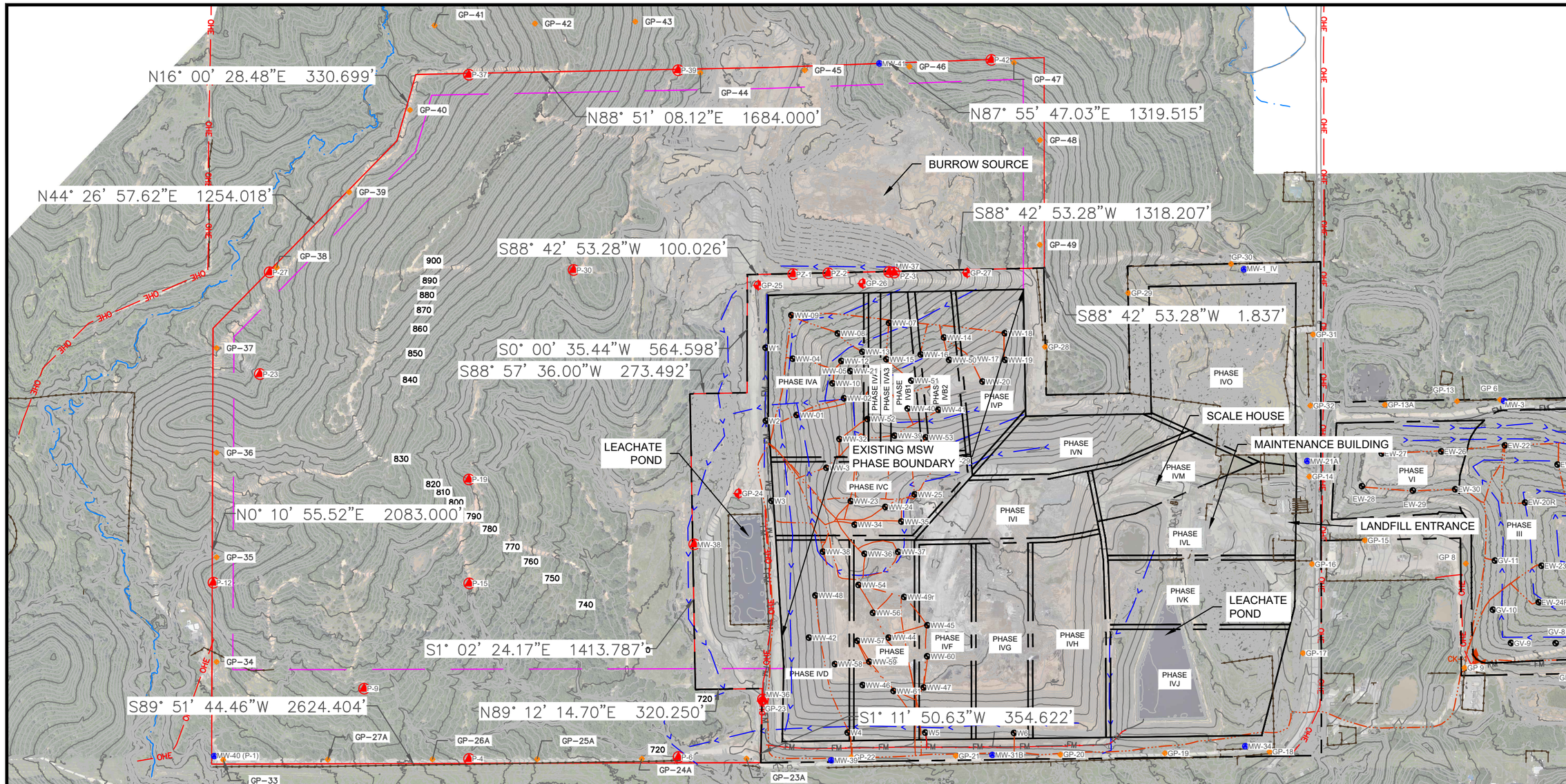
PROJ. NO. 27220345.00 | DSN. BY: TWL | DWN. BY: TWL | CHK. BY: FEC | Q/A RVW BY: FEC | PROJ. MGR. TWL

CADD FILE: SITE LAYOUT.DWG

DATE: 8/14/25

SCALE: 1"=600'

DRAWING NO. 1 of 18



LEGEND:

- EXISTING 2' MINOR CONTOUR
- 1570 EXISTING 10' MAJOR CONTOUR
- EXISTING FENCE
- OHE OHE EXISTING OVERHEAD ELECTRIC
- UGE UGE EXISTING UNDERGROUND ELECTRIC
- EXISTING UNPAVED ROAD
- EXISTING PAVED ROAD
- EXISTING BODY OF WATER
- SOLID WASTE PHASE BOUNDARY
- SOLID WASTE PERMIT BOUNDARY
- FM FM LEACHATE FORCEMAIN
- LANDFILL GAS COLLECTION SYSTEM PIPING
- EXTRACTION WELL
- EXISTING/PROPOSED GAS PROBE
- EXISTING/PROPOSED MONITORING WELL
- MONITORING WELL/PIEZOMETER ABANDONMENT
- GAS PROBE ABANDONMENT
- PROPOSED EXPANSION AREA PERMIT BOUNDARY
- PROPOSED LIMITS OF WASTE
- EXISTING STREAM
- SURFACE DRAINAGE

NOTES:

1. AERIAL TOPOGRAPHY PERFORMED BY AERIAL OKLAHOMA, LLC ON JULY 9, 2025.
2. PROPOSED GAS PROBES AND MONITORING WELLS ARE DEPICTED WITHIN THE EXPANSION AREA

N

500 0 500 1000

SCALE FEET

REGISTERED PROFESSIONAL ENGINEER
FLOYD E. COTTER
14483
OKLAHOMA
8/18/25

REV.	DATE	DESCRIPTION	CK. BY
1	8.25	REVISED CELL 7 CONTOURS	TWL
0	5.24	SUBMITTAL TO ODEQ	FEC

SHEET TITLE: SITE LAYOUT

PROJECT TITLE: AEL LATERAL EXPANSION PERMITTING

CLIENT: AMERICAN ENVIRONMENTAL LANDFILL, INC.
AMERICAN ENVIRONMENTAL LANDFILL
SAND SPRINGS, OK

SCS ENGINEERS
8575 W. 110 STREET, SUITE 100
OVERLAND PARK, KS 66210
PH. (913) 681-0030 FAX. (913) 681-0012

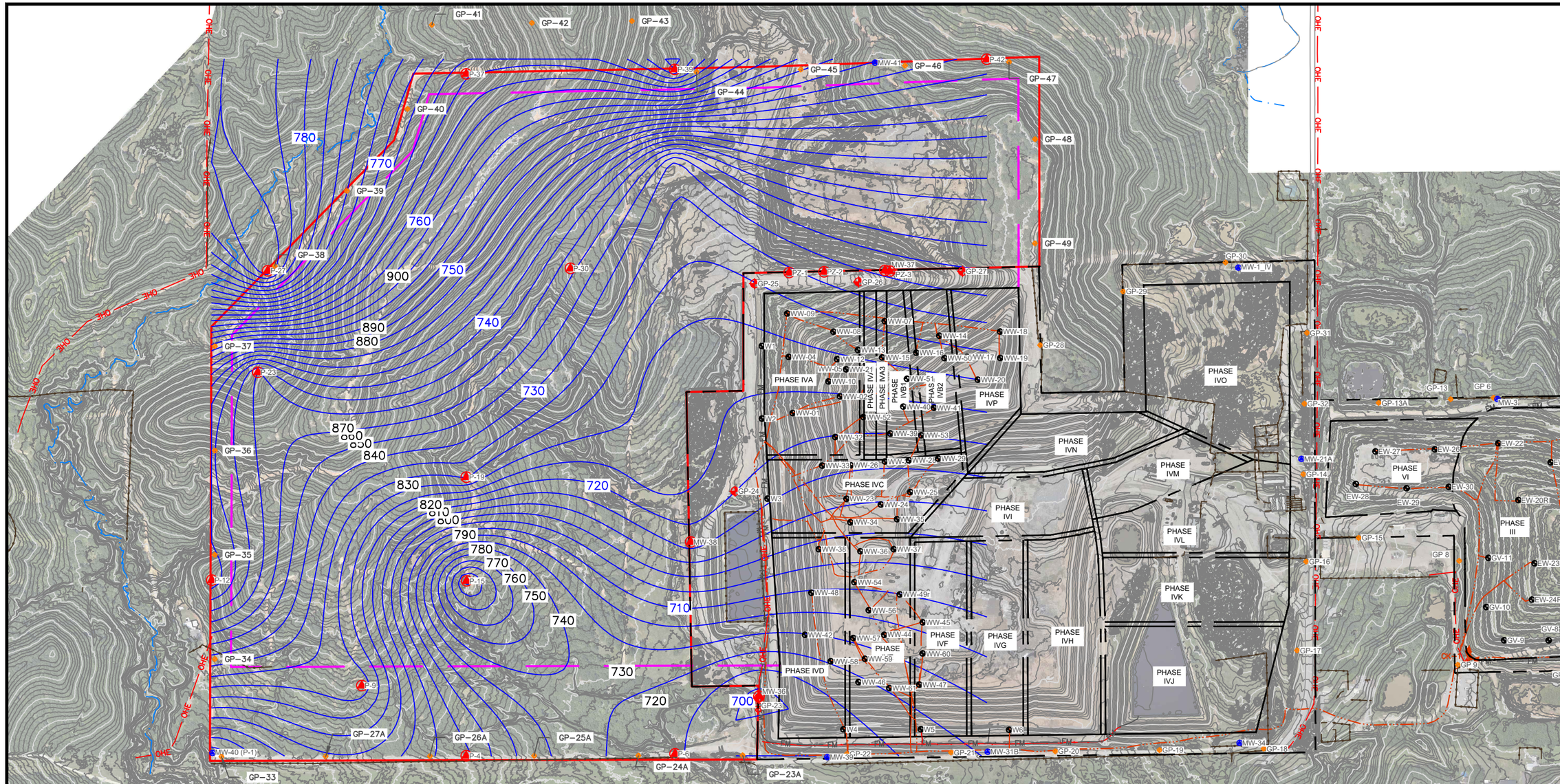
PROJ. NO. 27220345.00 | DSN. BY: TWL | DWN. BY: TWL | CHK. BY: FEC | Q/A RVW BY: FEC | PROJ. MGR. TWL

CADD FILE: SITE LAYOUT.DWG

DATE: 8/14/25

SCALE: 1"=500'

DRAWING NO. 2 of 18



LEGEND:

- EXISTING 2' MINOR CONTOUR
- 820 EXISTING 10' MAJOR CONTOUR
- EXISTING FENCE
- OHE — OHE EXISTING OVERHEAD ELECTRIC
- UGE — UGE EXISTING UNDERGROUND ELECTRIC
- EXISTING UNPAVED ROAD
- EXISTING PAVED ROAD
- EXISTING BODY OF WATER
- SOLID WASTE PHASE BOUNDARY
- SOLID WASTE PERMIT BOUNDARY
- FM — FM LEACHATE FORCEMAIN
- LANDFILL GAS COLLECTION SYSTEM PIPING
- EXTRACTION WELL
- GAS PROBE
- MONITORING WELL
- MONITORING WELL ABANDONMENT
- GAS PROBE ABANDONMENT
- PROPOSED EXPANSION AREA PERMIT BOUNDARY
- PROPOSED LIMITS OF WASTE
- EXISTING STREAM
- 730 2' GROUNDWATER CONTOUR

NOTES:

1. AERIAL TOPOGRAPHY PERFORMED BY AERIAL DATA SERVICES, LLC ON JULY 9, 2025.
2. PROPOSED GAS PROBES AND MONITORING WELLS ARE DEPICTED WITHIN THE EXPANSION AREA

N

REGISTERED PROFESSIONAL ENGINEER
FLOYD E. COTTER
17783
OKLAHOMA
10-21-25

SCALE 500 1000 FEET

REV.	DATE	DESCRIPTION	CK. BY
2	10.25	REVISED CONTOUR LABEL STYLE	TWL
1	8.25	REVISED CELL 7 CONTOURS	TWL
0	5.24	SUBMITTAL TO ODEQ	FEC

SHEET TITLE
SEASONAL HIGH WATER LEVEL

PROJECT TITLE
AEL LATERAL EXPANSION PERMITTING

CLIENT
AMERICAN ENVIRONMENTAL LANDFILL, INC.
AMERICAN ENVIRONMENTAL LANDFILL
SAND SPRINGS, OK

SCS ENGINEERS
8575 W. 110 STREET, SUITE 100
OVERLAND PARK, KS 66210
PH. (913) 681-0030 FAX. (913) 681-0012

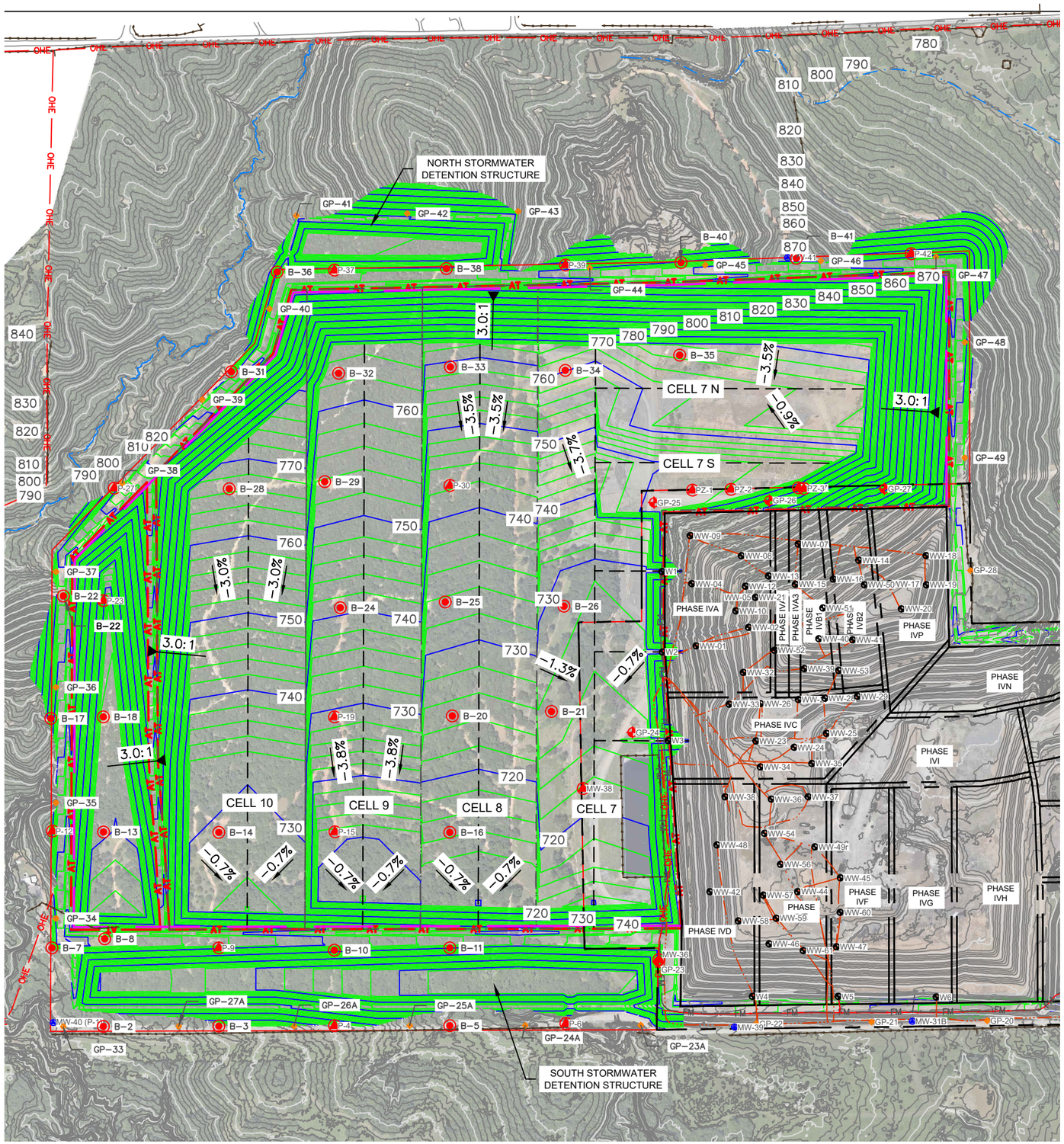
PROJ. NO. 27220345.00 | DSN. BY: TWL | DWN. BY: TWL | CHK. BY: FEC | Q/A RVW BY: FEC | PROJ. MGR. TWL

CADD FILE: PIEZOMETRIC SURFACE MAP.DWG

DATE: 10/20/25

SCALE: 1"=500'

DRAWING NO. 3 of 18



LEGEND:

- EXISTING 2' MINOR CONTOUR
- EXISTING 10' MAJOR CONTOUR
- EXISTING FENCE
- EXISTING OVERHEAD ELECTRIC
- EXISTING UNDERGROUND ELECTRIC
- EXISTING UNPAVED ROAD
- EXISTING PAVED ROAD
- EXISTING STREAM/WATER BODY
- SOLID WASTE PHASE BOUNDARY
- SOLID WASTE PERMIT BOUNDARY
- LEACHATE FORCEMAIN
- LANDFILL GAS COLLECTION SYSTEM PIPING
- EXTRACTION WELL
- GAS PROBE
- MONITORING WELL
- MONITORING WELL ABANDONMENT
- GAS PROBE ABANDONMENT
- PROPOSED EXPANSION AREA PERMIT BOUNDARY
- PROPOSED LIMITS OF WASTE
- PROPOSED CELL BOUNDARY
- PROPOSED LEACHATE COLLECTION TRENCH
- PROPOSED MINOR CONTOURS
- PROPOSED MAJOR CONTOURS
- PROPOSED ANCHOR TRENCH
- BORE HOLE LOCATION

NOTES:

1. AERIAL TOPOGRAPHY PERFORMED BY AERIAL DATA SERVICES, LLC ON JULY 9, 2025.
2. PROPOSED GAS PROBES AND MONITORING WELLS ARE DEPICTED WITHIN THE EXPANSION AREA.
3. MAXIMUM AND MINIMUM SLOPES ARE SHOWN FOR EACH PROPOSED CELL.

N

500 0 500 1000

SCALE FEET

REGISTERED PROFESSIONAL ENGINEER
FLOYD E. COTTER
14783
OKLAHOMA
8/18/25

REV.	DATE	DESCRIPTION	CK. BY
1	8.25	REVISED CELL 7 CONTOURS	TWL
0	5.24	SUBMITTAL TO ODEQ	FEC

SHEET TITLE
TOP OF SUBGRADE GRADING PLAN

PROJECT TITLE
AEL LATERAL EXPANSION PERMITTING

CLIENT
AMERICAN ENVIRONMENTAL LANDFILL, INC.
AMERICAN ENVIRONMENTAL LANDFILL
SAND SPRINGS, OK

SCS ENGINEERS
8575 W. 110 STREET, SUITE 100
OVERLAND PARK, KS 66210
PH. (913) 681-0030 FAX. (913) 681-0012

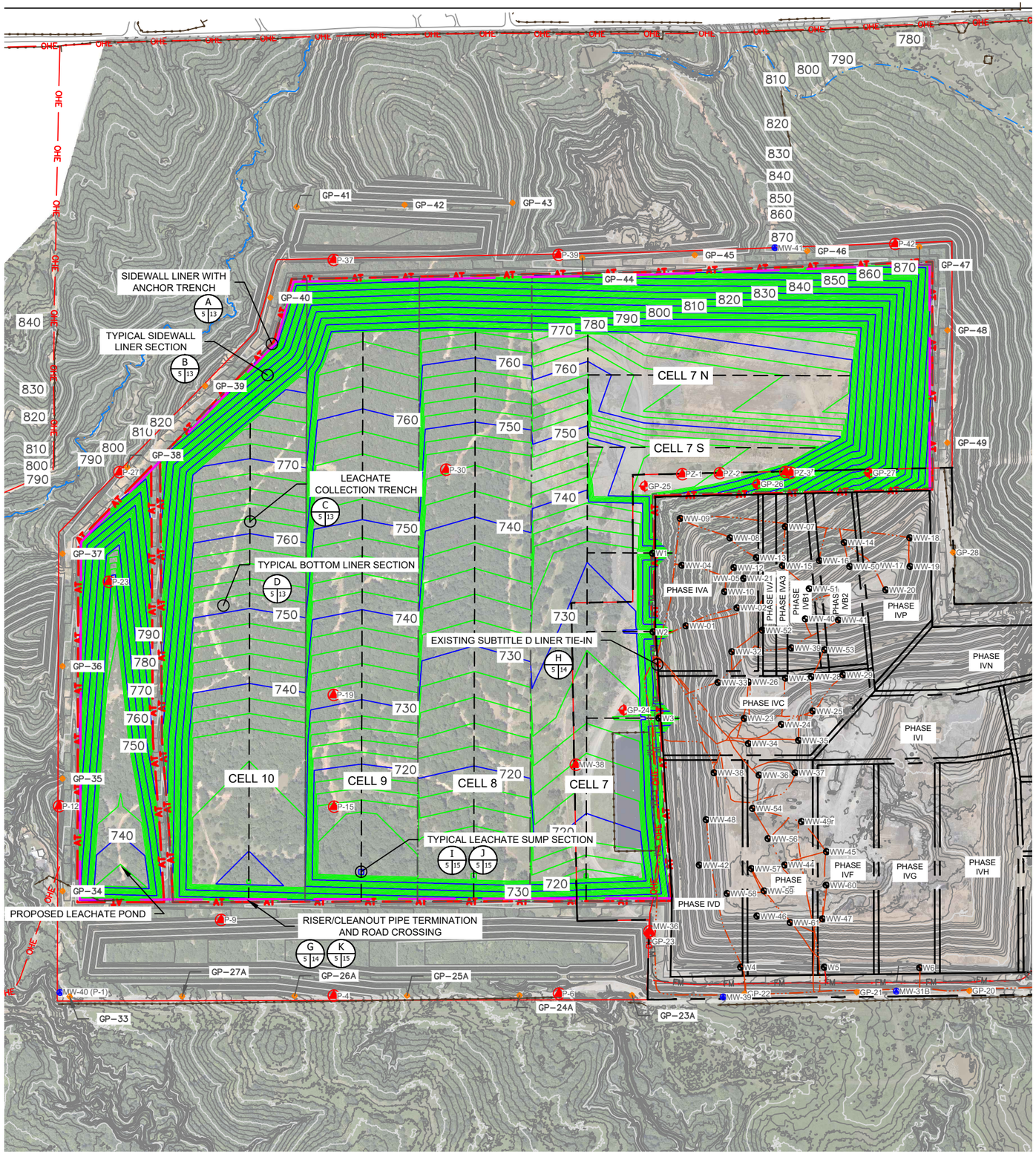
PROJ. NO. 27220345.00 | DSN. BY: TWL | DWN. BY: TWL | CHK. BY: FEC | Q/A RVW BY: FEC | PROJ. MGR. TWL

CADD FILE: TOP OF GRADING PLANLDWG

DATE: 8/14/25

SCALE: 1"=500'

DRAWING NO. **4** of **18**



LEGEND:

- EXISTING 2' MINOR CONTOUR
- EXISTING 10' MAJOR CONTOUR
- EXISTING FENCE
- EXISTING OVERHEAD ELECTRIC
- EXISTING UNDERGROUND ELECTRIC
- EXISTING UNPAVED ROAD
- EXISTING PAVED ROAD
- EXISTING STREAM/WATER BODY
- SOLID WASTE PHASE BOUNDARY
- SOLID WASTE PERMIT BOUNDARY
- LEACHATE FORCEMAIN
- LANDFILL GAS COLLECTION SYSTEM PIPING
- EXTRACTION WELL
- GAS PROBE
- MONITORING WELL
- MONITORING WELL ABANDONMENT
- GAS PROBE ABANDONMENT
- PROPOSED EXPANSION AREA PERMIT BOUNDARY
- PROPOSED LIMITS OF WASTE
- PROPOSED CELL BOUNDARY
- PROPOSED LEACHATE COLLECTION TRENCH
- PROPOSED MINOR CONTOURS
- PROPOSED MAJOR CONTOURS
- PROPOSED ANCHOR TRENCH

NOTES:

1. AERIAL TOPOGRAPHY PERFORMED BY AERIAL DATA SERVICES, LLC ON JULY 9, 2025.
2. PROPOSED GAS PROBES AND MONITORING WELLS ARE DEPICTED WITHIN THE EXPANSION AREA.
3. EXTERIOR GRADING IS SHOWN AS EXISTING CONTOURS WHERE EXCAVATION/FILL WILL OCCUR.

N

500 0 500 1000

SCALE FEET

REGISTERED PROFESSIONAL ENGINEER FLOYD E. COTTER 14783 OKLAHOMA 8/18/25

REV.	DATE	DESCRIPTION	CK. BY
1	8.25	REVISED CELL 7 CONTOURS	TWL
0	5.24	SUBMITTAL TO ODEQ	FEC

SHEET TITLE
TOP OF CLAY GRADING PLAN

PROJECT TITLE
AEL LATERAL EXPANSION PERMITTING

CLIENT
AMERICAN ENVIRONMENTAL LANDFILL, INC.
AMERICAN ENVIRONMENTAL LANDFILL
SAND SPRINGS, OK

SCS ENGINEERS
8575 W. 110 STREET, SUITE 100
OVERLAND PARK, KS 66210
PH. (913) 681-0030 FAX. (913) 681-0012

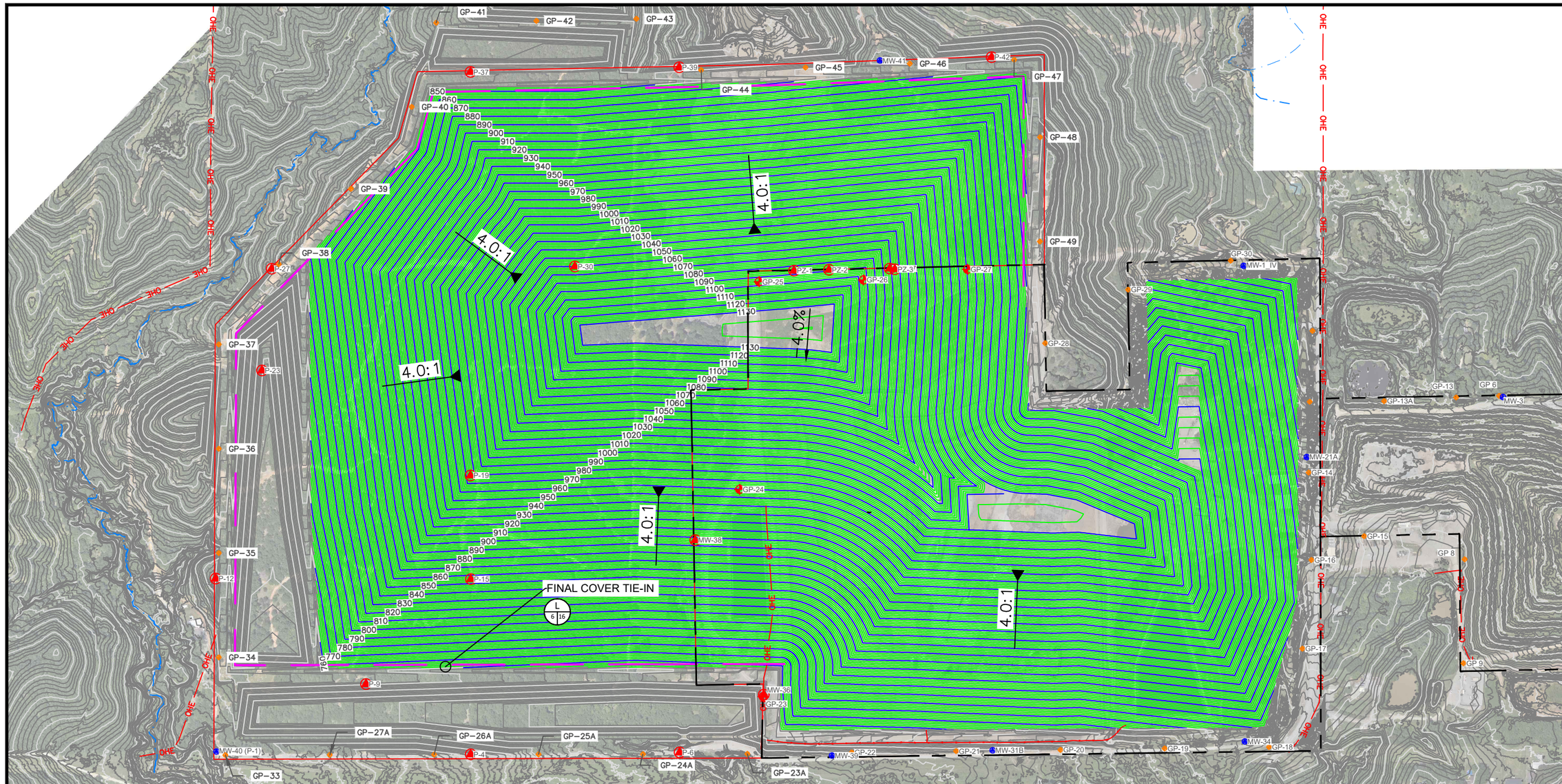
PROJ. NO. 27220345.00
DSN. BY: TWL
DWN. BY: TWL
CHK. BY: FEC
Q/A RVW BY: FEC
PROJ. MGR: TWL

CADD FILE: TOP OF GRADING PLANLDWG

DATE: 8/14/25

SCALE: 1"=500'

DRAWING NO. 5 of 18



LEGEND:

- EXISTING 2' MINOR CONTOUR
- 1570 EXISTING 10' MAJOR CONTOUR
- SOLID WASTE PERMIT BOUNDARY
- OHE OHE EXISTING OVERHEAD ELECTRIC
- UGE UGE EXISTING UNDERGROUND ELECTRIC
- GAS PROBE
- MONITORING WELL
- MONITORING WELL ABANDONMENT
- GAS PROBE ABANDONMENT
- PROPOSED EXPANSION AREA PERMIT BOUNDARY
- PROPOSED LIMITS OF WASTE
- PROPOSED MINOR CONTOURS
- PROPOSED MAJOR CONTOURS

NOTES:

1. AERIAL TOPOGRAPHY PERFORMED BY AERIAL DATA SERVICES, LLC ON JULY 9, 2025.
2. PROPOSED GAS PROBES AND MONITORING WELLS ARE DEPICTED WITHIN THE EXPANSION AREA.
3. EXTERIOR GRADING IS SHOWN AS EXISTING CONTOURS.

N

500 0 500 1000

SCALE FEET

REGISTERED PROFESSIONAL ENGINEER
FLOYD E. COTTER
14183
OKLAHOMA
8/18/25

REV.	DATE	DESCRIPTION	CK. BY
△			
△			
△			
△			
1	8.25	REVISED CELL 7 CONTOURS	TWL
0	5.24	SUBMITTAL TO ODEQ	FEC

SHEET TITLE
TOP OF FINAL COVER GRADING PLAN

PROJECT TITLE
AEL LATERAL EXPANSION PERMITTING

CLIENT
AMERICAN ENVIRONMENTAL LANDFILL, INC.
AMERICAN ENVIRONMENTAL LANDFILL
SAND SPRINGS, OK

SCS ENGINEERS
8575 W. 110 STREET, SUITE 100
OVERLAND PARK, KS 66210
PH. (913) 681-0030 FAX. (913) 681-0012

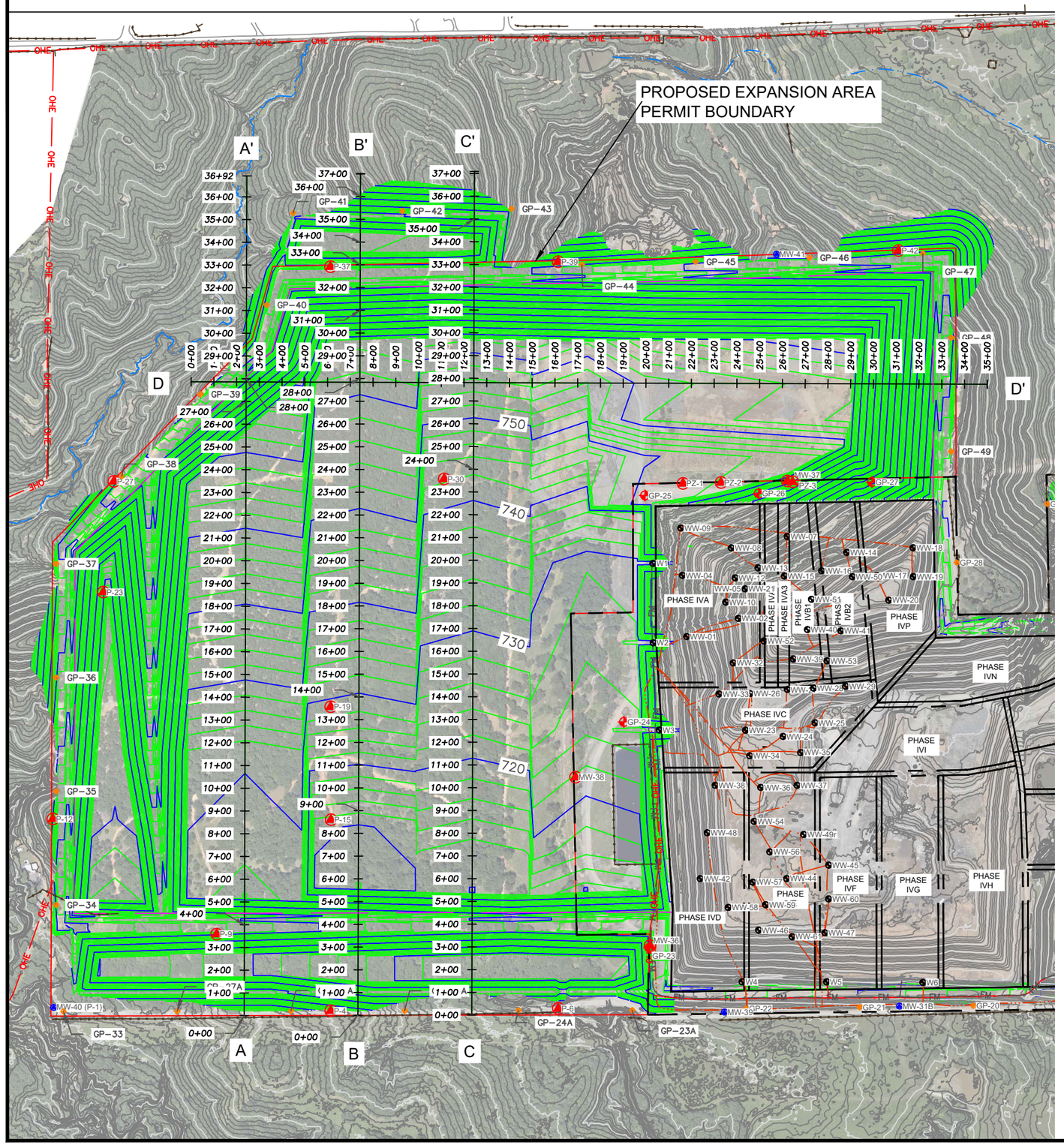
PROJ. NO. 27220345.00
DSN. BY: TWL
DWN. BY: TWL
CHK. BY: FEC
Q/A RVW BY: FEC
PROJ. MGR. TWL

CADD FILE: FINAL COVER LAYOUT.DWG

DATE: 8/14/25

SCALE: 1"=500'

DRAWING NO.
6 of 18



LEGEND:

- EXISTING 2' MINOR CONTOUR
- EXISTING 10' MAJOR CONTOUR
- EXISTING FENCE
- EXISTING OVERHEAD ELECTRIC
- EXISTING UNDERGROUND ELECTRIC
- EXISTING UNPAVED ROAD
- EXISTING PAVED ROAD
- EXISTING STREAM/WATER BODY
- SOLID WASTE PHASE BOUNDARY
- SOLID WASTE PERMIT BOUNDARY
- LEACHATE FORCEMAIN
- LANDFILL GAS COLLECTION SYSTEM PIPING
- EXTRACTION WELL
- GAS PROBE
- MONITORING WELL
- MONITORING WELL ABANDONMENT
- GAS PROBE ABANDONMENT
- PROPOSED EXPANSION AREA PERMIT BOUNDARY
- PROPOSED LIMITS OF WASTE
- TOP OF SUBGRADE MINOR CONTOURS
- TOP OF SUBGRADE MAJOR CONTOURS

NOTES:

1. AERIAL TOPOGRAPHY PERFORMED BY AERIAL DATA SERVICES, LLC ON JULY 9, 2025.
2. PROPOSED GAS PROBES AND MONITORING WELLS ARE DEPICTED WITHIN THE EXPANSION AREA.

N

500 0 500 1000

SCALE FEET

REGISTERED PROFESSIONAL ENGINEER
FLOYD E. COTTER
14783
OKLAHOMA
8/18/25

REV.	DATE	DESCRIPTION	CK. BY
1	8.25	REVISED CELL 7 CONTOURS	TWL
0	5.24	SUBMITTAL TO ODEQ	FEC

SHEET TITLE
CROSS SECTION LOCATOR MAP

PROJECT TITLE
AEL LATERAL EXPANSION PERMITTING

CLIENT
AMERICAN ENVIRONMENTAL LANDFILL, INC.
AMERICAN ENVIRONMENTAL LANDFILL
SAND SPRINGS, OK

SCS ENGINEERS
8575 W. 110 STREET, SUITE 100
OVERLAND PARK, KS 66210
PH. (913) 681-0030 FAX. (913) 681-0012

PROJ. NO. 27220345.00
DSN. BY: TWL
DWN. BY: TWL
CHK. BY: FEC
Q/A RVW BY: FEC
PROJ. MGR. TWL

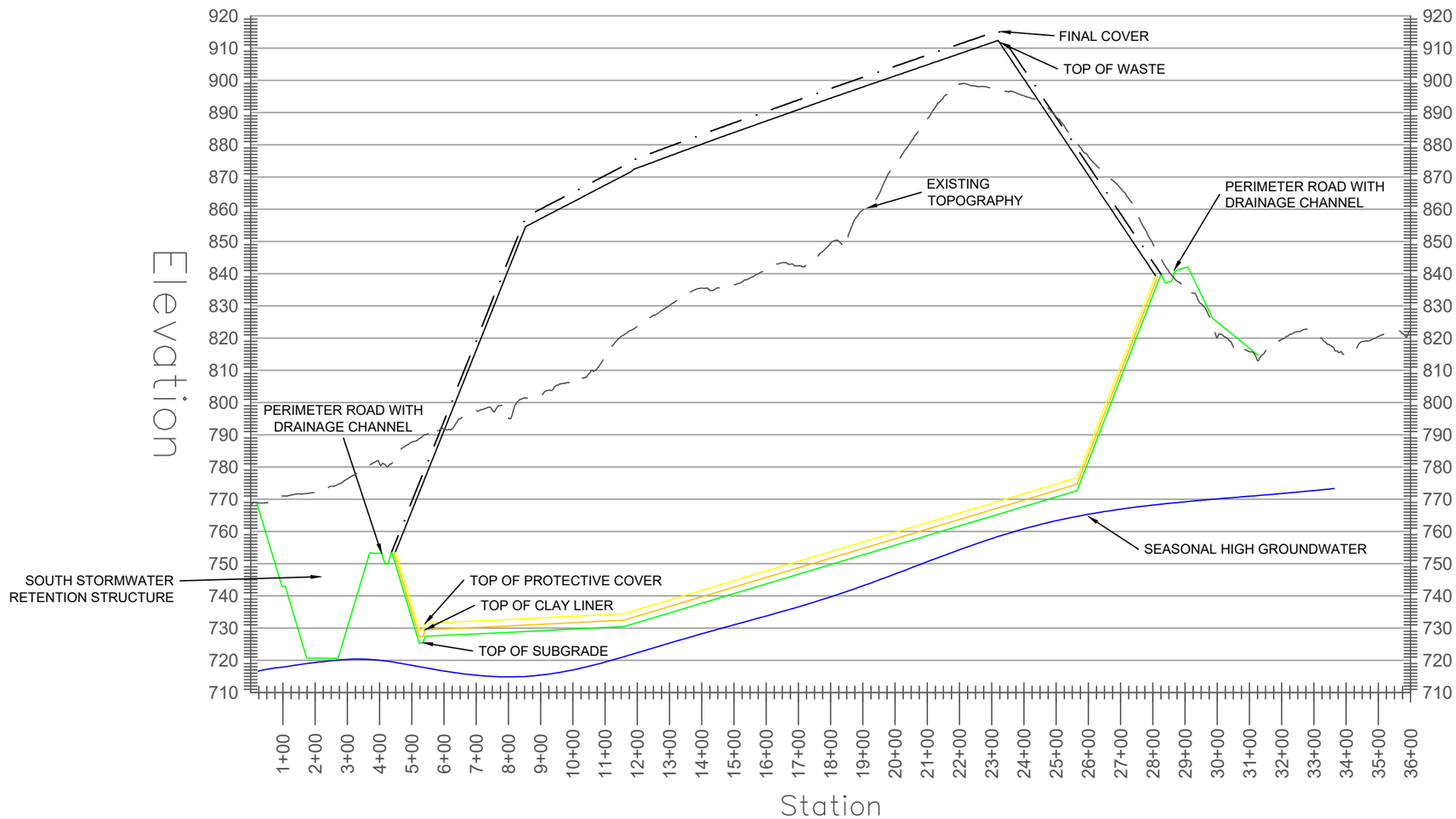
CADD FILE: CROSS SECTIONS.DWG

DATE: 8/18/25

SCALE: 1"=500'

DRAWING NO. 7 of 18

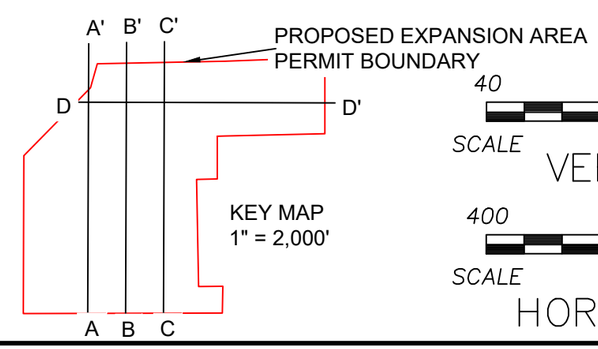
A — A'

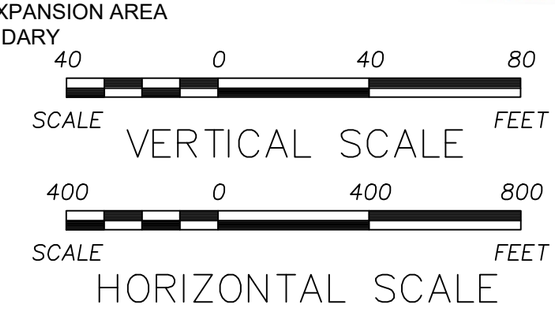


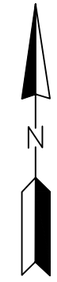
LEGEND:

- EXISTING TOPOGRAPHY
- TOP OF SEASONAL HIGH GROUNDWATER
- TOP OF SUBGRADE
- TOP OF CLAY LINER
- TOP OF PROTECTIVE COVER
- TOP OF WASTE
- TOP OF FINAL COVER

NOTES:
1. AERIAL TOPOGRAPHY PERFORMED BY AERIAL DATA SERVICES, LLC ON JULY 9, 2025.







REGISTERED PROFESSIONAL ENGINEER
FLOYD E. COTTER
14783
OKLAHOMA
8/18/25

REV.	DATE	DESCRIPTION	CK. BY
1	8.25	REVISED CELL 7 CONTOURS	TWL
0	5.24	SUBMITTAL TO ODEQ	FEC

SHEET TITLE
FILL CROSS SECTION A-A'

PROJECT TITLE
AEL LATERAL EXPANSION PERMITTING

CLIENT
AMERICAN ENVIRONMENTAL LANDFILL, INC.
AMERICAN ENVIRONMENTAL LANDFILL
SAND SPRINGS, OK

SCS ENGINEERS
8575 W. 110 STREET, SUITE 100
OVERLAND PARK, KS 66210
PH. (913) 681-0030 FAX. (913) 681-0012

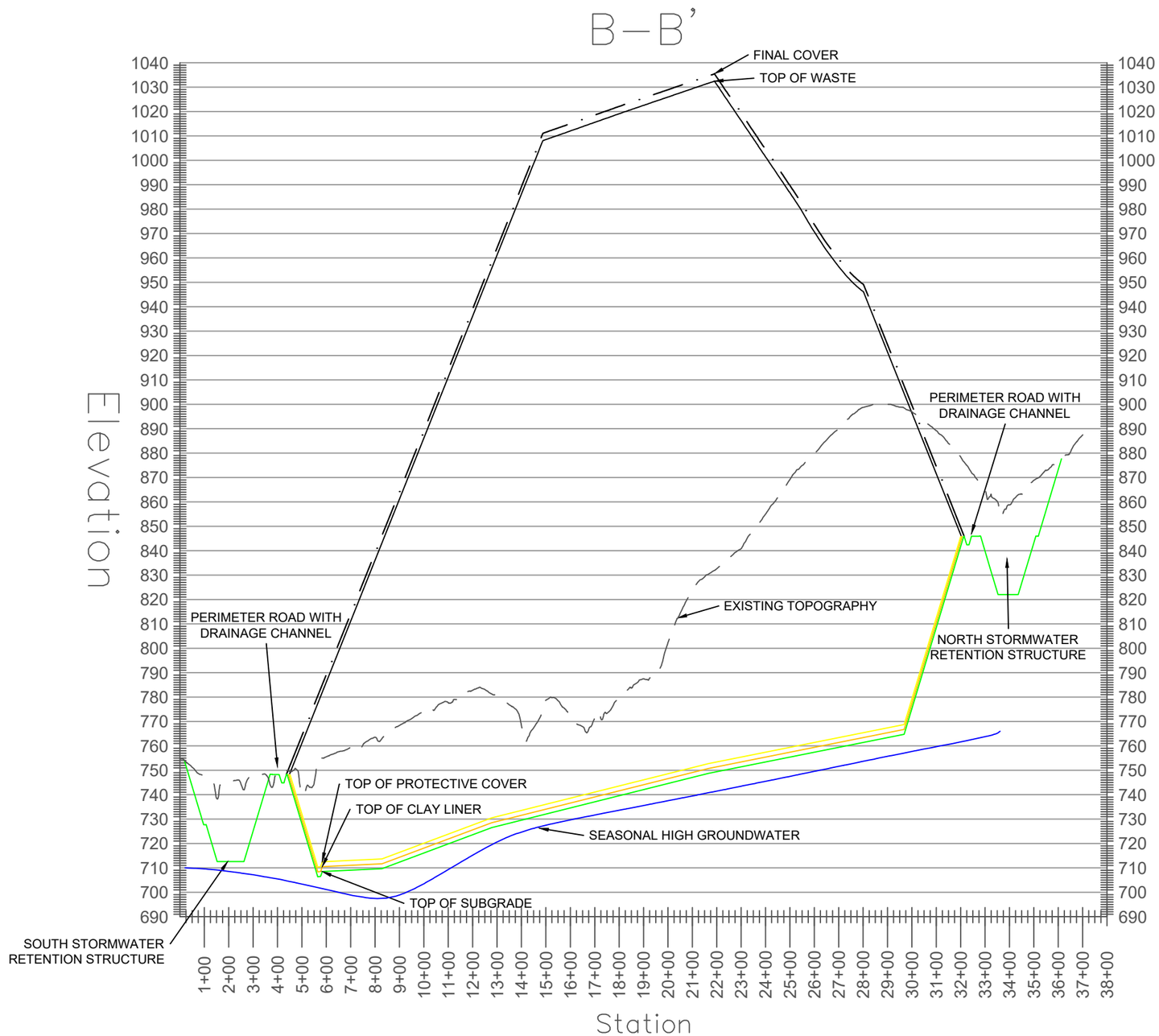
PROJ. NO. 27220345.00 | DSN. BY: TWL | DWN. BY: TWL | CHK. BY: FEC | Q/A RVW BY: FEC | PROJ. MGR. TWL

CADD FILE: CROSS SECTIONS.DWG

DATE: 8/18/25

SCALE: VARIES

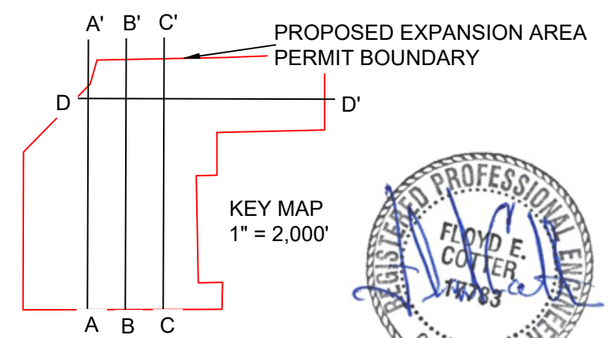
DRAWING NO.
8 of **18**



LEGEND:

- EXISTING TOPOGRAPHY
- TOP OF SEASONAL HIGH GROUNDWATER
- TOP OF SUBGRADE
- TOP OF CLAY LINER
- TOP OF PROTECTIVE COVER
- TOP OF WASTE
- TOP OF FINAL COVER

NOTES:
1. AERIAL TOPOGRAPHY PERFORMED BY AERIAL DATA SERVICES, LLC ON JULY 9, 2025.



REGISTERED PROFESSIONAL ENGINEER
FLOYD E. COTTER
14783
OKLAHOMA
8/18/25

50 0 50 100
SCALE FEET
VERTICAL SCALE

500 0 500 1000
SCALE FEET
HORIZONTAL SCALE

N

REV.	DATE	DESCRIPTION	CK. BY
1	8.25	REVISED CELL 7 CONTOURS	TWL
0	5.24	SUBMITTAL TO ODEQ	FEC

SHEET TITLE
FILL CROSS SECTION B-B'

PROJECT TITLE
AEL LATERAL EXPANSION PERMITTING

CLIENT
AMERICAN ENVIRONMENTAL LANDFILL, INC.
AMERICAN ENVIRONMENTAL LANDFILL
SAND SPRINGS, OK

SCS ENGINEERS
8575 W. 110 STREET, SUITE 100
OVERLAND PARK, KS 66210
PH. (913) 681-0030 FAX. (913) 681-0012

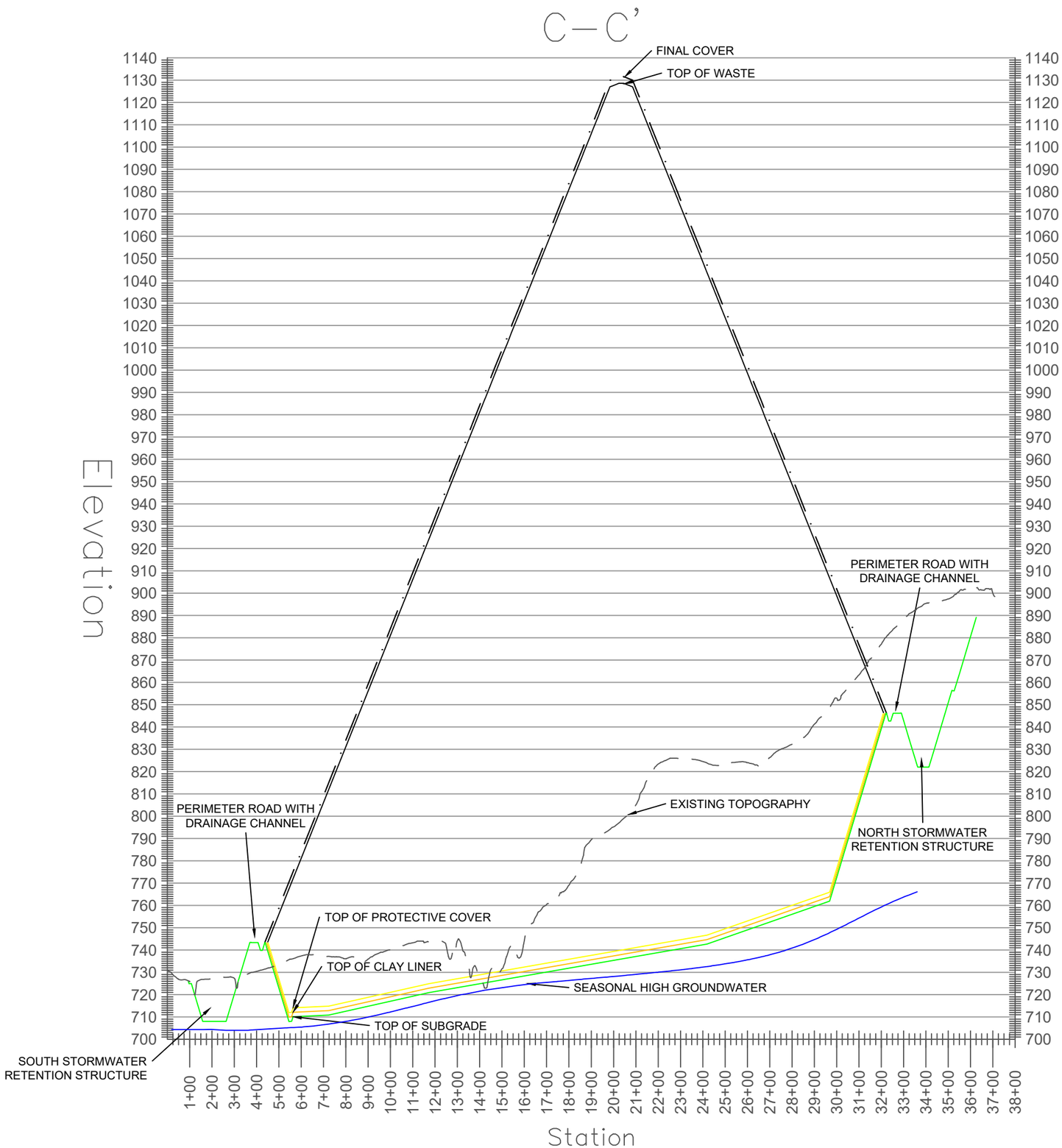
PROJ. NO. 27220345.00 | DWN. BY: TWL | Q/A RVW BY: FEC
DSN. BY: TWL | CHK. BY: FEC | PROJ. MGR. TWL

CADD FILE: CROSS SECTIONS.DWG

DATE: 8/18/25

SCALE: VARIES

DRAWING NO.
9 of 18



LEGEND:

- EXISTING TOPOGRAPHY
- TOP OF SEASONAL HIGH GROUNDWATER
- TOP OF SUBGRADE
- TOP OF CLAY LINER
- TOP OF PROTECTIVE COVER
- TOP OF WASTE
- TOP OF FINAL COVER

NOTES:
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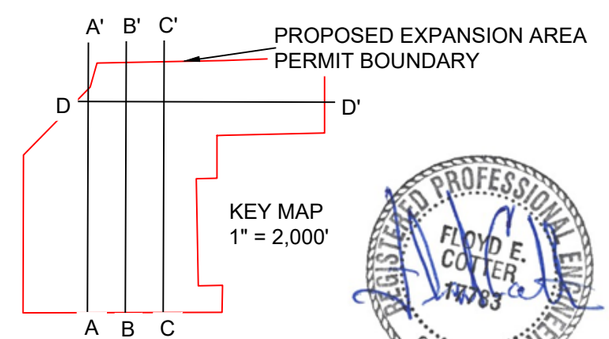
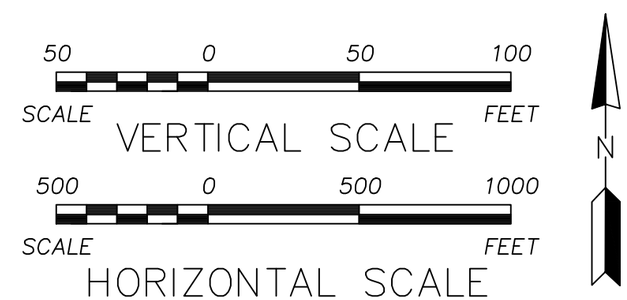


KEY MAP
1" = 2,000'

REGISTERED PROFESSIONAL ENGINEER
FLOYD E. COTTER
14763
OKLAHOMA
8/18/25



REV.	DATE	DESCRIPTION	CK. BY
1	8.25	REVISED CELL 7 CONTOURS	TWL
0	5.24	SUBMITTAL TO ODEQ	FEC

SHEET TITLE
FILL CROSS SECTION C-C'

PROJECT TITLE
AEL LATERAL EXPANSION PERMITTING

CLIENT
AMERICAN ENVIRONMENTAL LANDFILL, INC.
AMERICAN ENVIRONMENTAL LANDFILL
SAND SPRINGS, OK

SCS ENGINEERS
8575 W. 110 STREET, SUITE 100
OVERLAND PARK, KS 66210
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PROJ. NO. 27220345.00
DSN. BY: TWL
DWN. BY: TWL
CHK. BY: FEC
Q/A RVW BY: FEC
PROJ. MGR. TWL

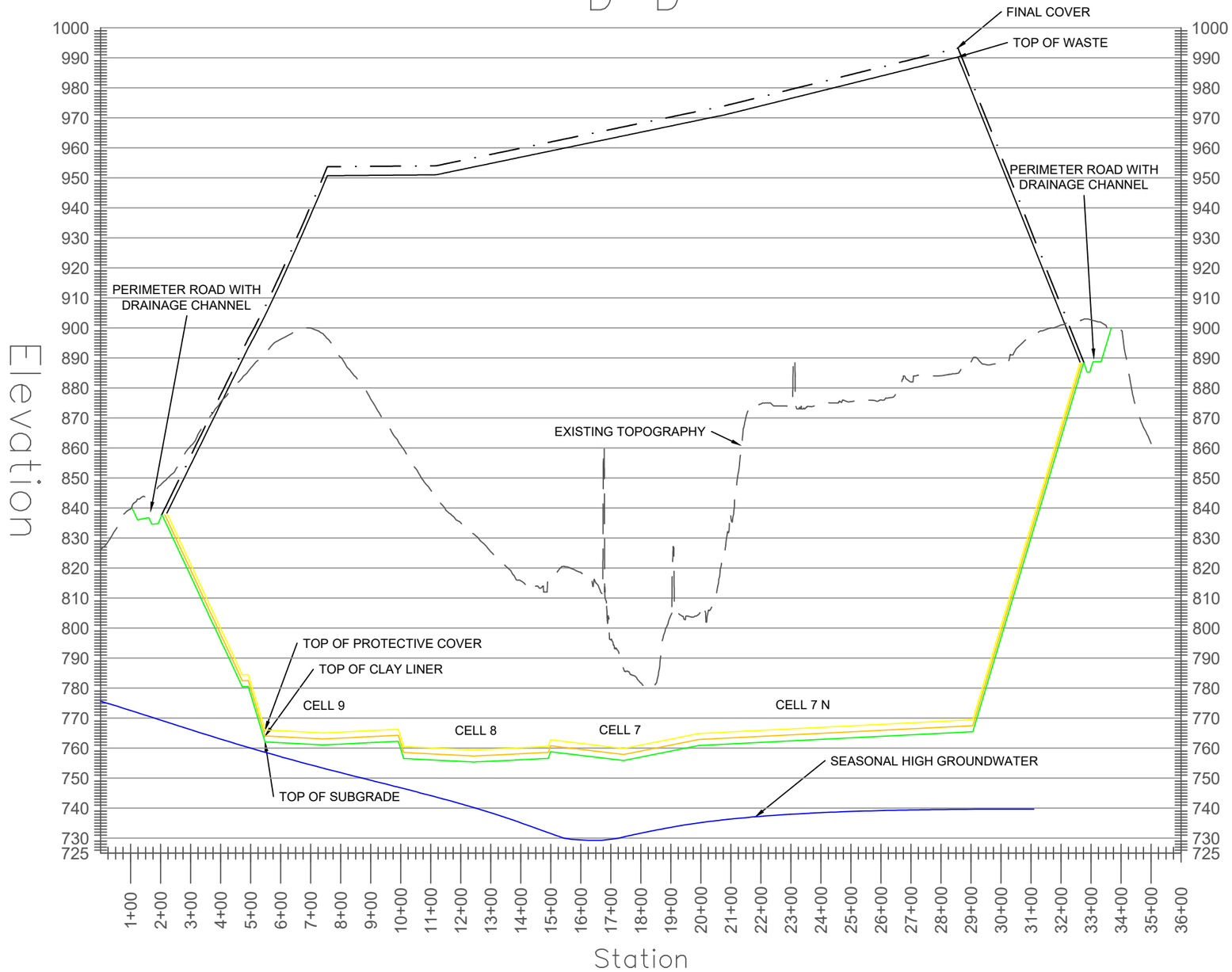
CADD FILE: CROSS SECTIONS.DWG

DATE: 8/18/25

SCALE: VARIES

DRAWING NO.
10 of 18

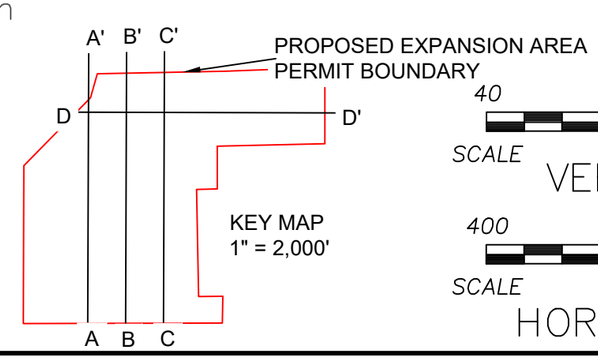
D–D'

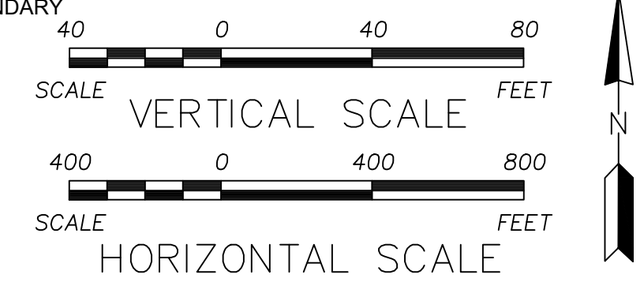


LEGEND:

- EXISTING TOPOGRAPHY
- TOP OF SEASONAL HIGH GROUNDWATER
- TOP OF SUBGRADE
- TOP OF CLAY LINER
- TOP OF PROTECTIVE COVER
- TOP OF WASTE
- TOP OF FINAL COVER

NOTES:
1. AERIAL TOPOGRAPHY PERFORMED BY AERIAL DATA SERVICES, LLC ON JULY 9, 2025.





REGISTERED PROFESSIONAL ENGINEER
FLOYD E. COTTER
14783
OKLAHOMA
8/18/25

REV.	DATE	DESCRIPTION	CK. BY
1	8.25	REVISED CELL 7 CONTOURS	TWL
0	5.24	SUBMITTAL TO ODEQ	FEC

SHEET TITLE
FILL CROSS SECTION D-D'

PROJECT TITLE
AEL LATERAL EXPANSION PERMITTING

CLIENT
AMERICAN ENVIRONMENTAL LANDFILL, INC.
AMERICAN ENVIRONMENTAL LANDFILL
SAND SPRINGS, OK

SCS ENGINEERS
8575 W. 110 STREET, SUITE 100
OVERLAND PARK, KS 66210
PH. (913) 681-0030 FAX. (913) 681-0012

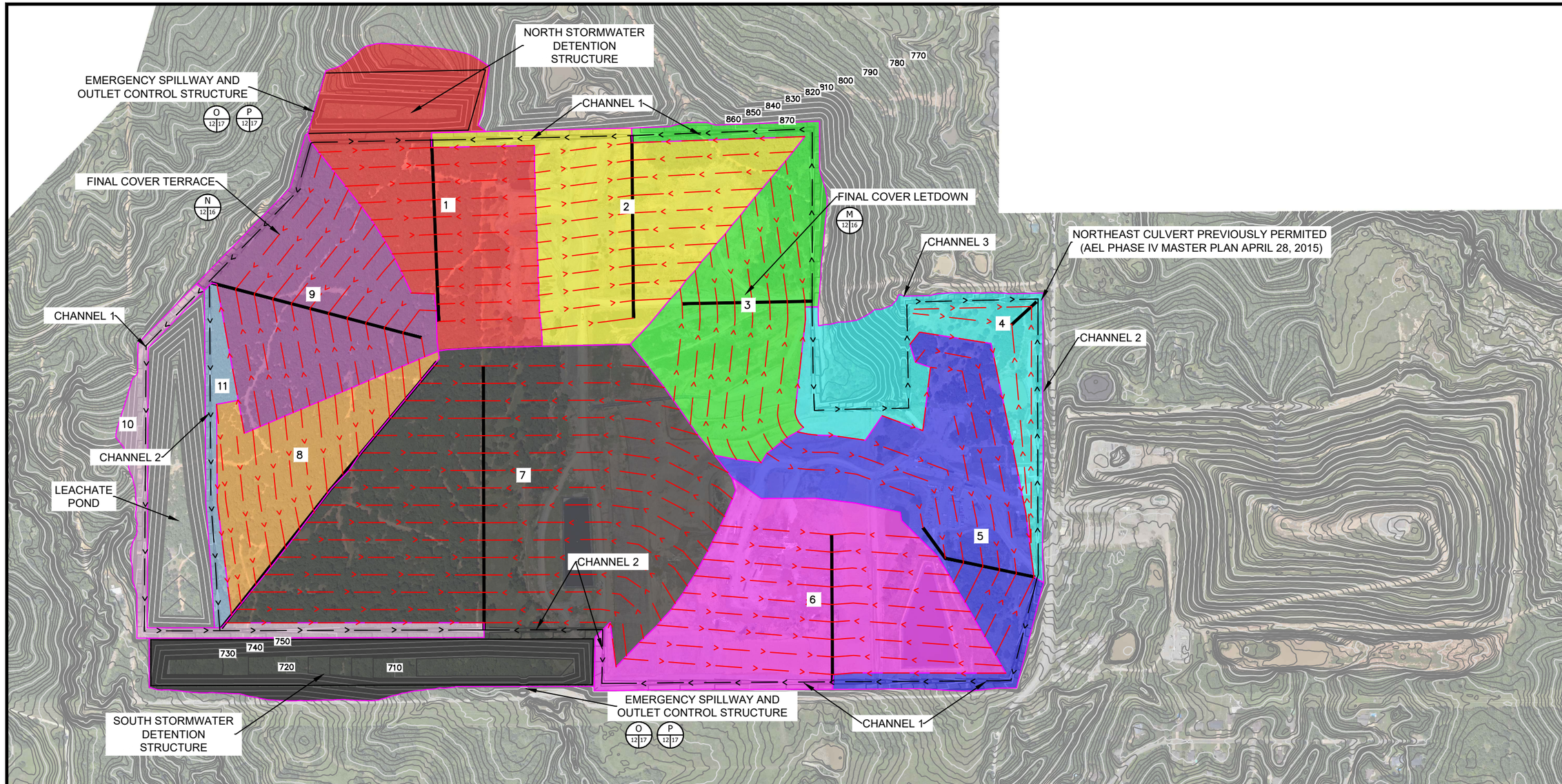
PROJ. NO. 27220345.00
DSN. BY: TWL
DWN. BY: TWL
CHK. BY: FEC
Q/A RVW BY: FEC
PROJ. MGR. TWL

CADD FILE: CROSS SECTIONS.DWG

DATE: 8/18/25

SCALE: VARIES

DRAWING NO.
11 of 18



LEGEND:

- EXISTING 2' MINOR CONTOUR
- 1570 EXISTING 10' MAJOR CONTOUR
- PROPOSED STORMWATER TERRACE
- PROPOSED STORMWATER LETDOWN
- PROPOSED WATERSHED BOUNDARY
- PERIMETER CHANNEL

WATERSHED DATA

COLOR	BASIN NUMBER	DRAINAGE AREA (AC)	DRAINAGE CHANNEL	OUTFALL/STRUCTURE
	1	35.60	CHANNEL 1	NORTH STORMWATER DETENTION STRUCTURE
	2	29.95		
	3	28.29		
	4	20.42	CHANNEL 2/3	NORTHEAST CULVERT
	5	31.82	CHANNEL 1	SOUTH STORMWATER DETENTION STRUCTURE
	6	39.24	CHANNEL 1/2	
	7	95.41		
	8	16.33	CHANNEL 1	
	9	28.21		
	10	7.71		
	11	4.27	CHANNEL 2	

NOTE:

1. AERIAL TOPOGRAPHY PERFORMED BY AERIAL DATA SERVICES, LLC ON JULY 9, 2025.
2. WATERSHED 4 REMAINS UNCHANGED FROM THE AEL PHASE IV MASTER PLAN PREVIOUSLY APPROVED BY THE ODEQ ON APRIL 28, 2015.

N

600 0 600 1200

SCALE FEET

REGISTERED PROFESSIONAL ENGINEER FLOYD E. COTTER 14783 OKLAHOMA 8/18/25

REV.	DATE	DESCRIPTION	CK. BY
1	8.25	REVISED CELL 7 CONTOURS	TWL
0	5.24	SUBMITTAL TO ODEQ	FEC

SHEET TITLE: WATERSHED PLAN

PROJECT TITLE: AEL LATERAL EXPANSION PERMITTING

CLIENT: AMERICAN ENVIRONMENTAL LANDFILL, INC.
AMERICAN ENVIRONMENTAL LANDFILL
SAND SPRINGS, OK

SCS ENGINEERS
8575 W. 110 STREET, SUITE 100
OVERLAND PARK, KS 66210
PH. (913) 681-0030 FAX. (913) 681-0012

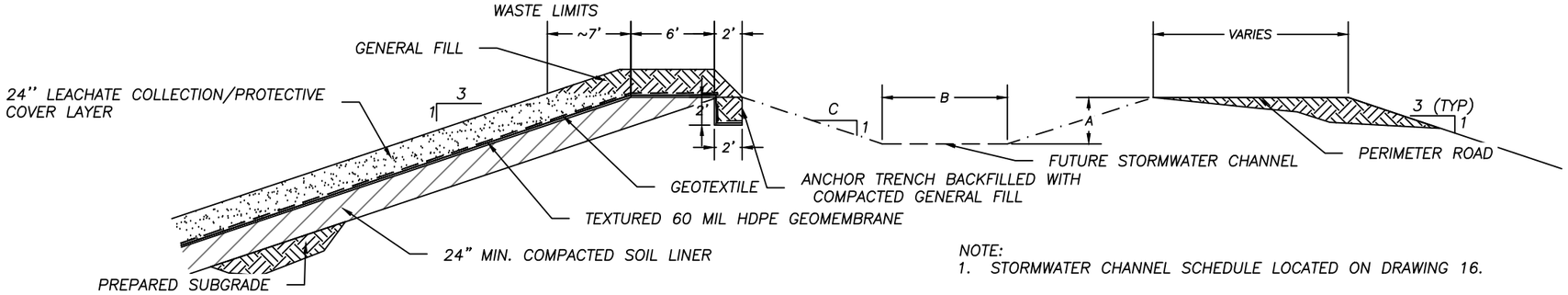
PROJ. NO. 27220345.00 | DSN. BY: TWL | DWN. BY: TWL | CHK. BY: FEC | Q/A RVW BY: FEC | PROJ. MGR. TWL

CADD FILE: WATERSHED.DWG

DATE: 8/14/25

SCALE: 1"=600'

DRAWING NO. 12 of 18

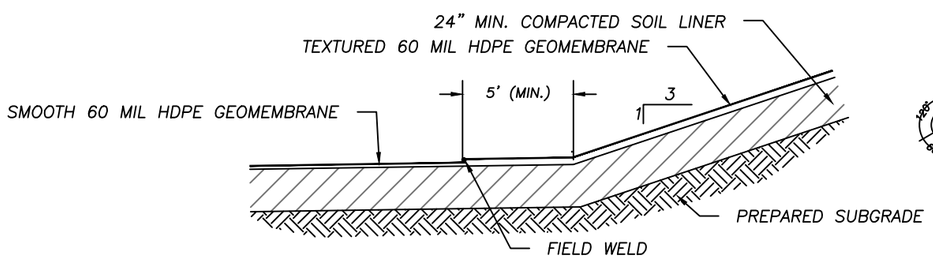


NOTE:
1. STORMWATER CHANNEL SCHEDULE LOCATED ON DRAWING 16.

A SIDEWALL LINER WITH ANCHOR TRENCH

5 | 13

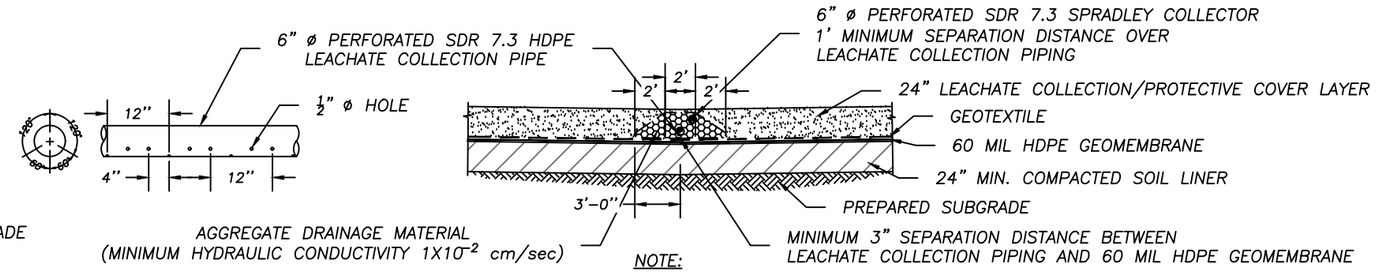
Scale: NTS



B TYPICAL SIDEWALL LINER SECTION

5 | 13

Scale: NTS



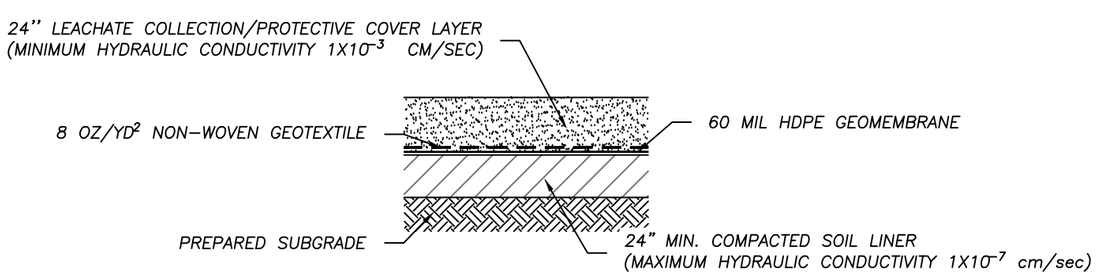
NOTE:

1. THE GRANULAR DRAINAGE MATERIAL SHALL BE OF A SIZE THAT NOT MORE THAN 10% WILL PASS ½" SIEVE.

C LEACHATE COLLECTION TRENCH

5 | 13

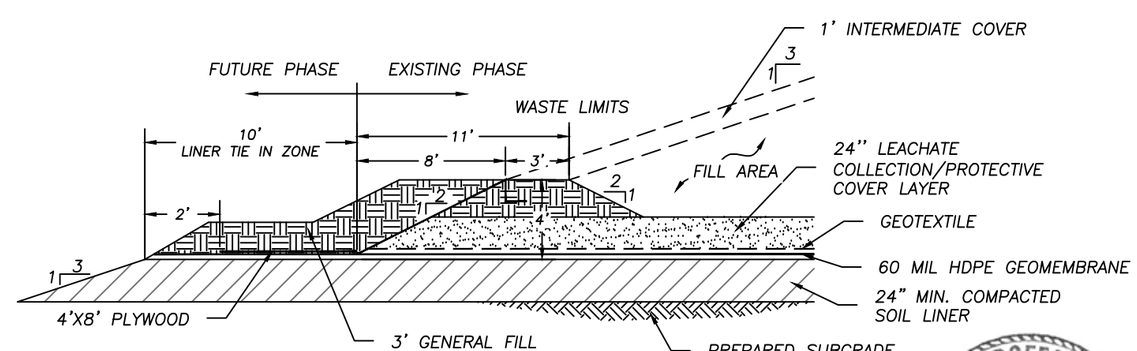
Scale: NTS



D TYPICAL BOTTOM LINER SECTION

5 | 13

Scale: NTS



E FUTURE LINER TIE-IN/ TERMINATION BERM

- | -

Scale: NTS

REGISTERED PROFESSIONAL ENGINEER
FLOYD E. COTTER
14783
OKLAHOMA
8/18/25

REV.	DATE	DESCRIPTION	CK. BY
△	-	-	-
△	-	-	-
△	-	-	-
△	-	-	-
1	8.25	REVISED CELL 7 COUNTOURS	TWL
0	5.24	SUBMITTAL TO ODEQ	FEC

SHEET TITLE: **DETAILS**

PROJECT TITLE: **AEL LATERAL EXPANSION PERMITTING**

CLIENT: **AMERICAN ENVIRONMENTAL LANDFILL, INC**
AMERICAN ENVIRONMENTAL LANDFILL
SAND SPRINGS, OKLAHOMA

SCS ENGINEERS
8575 W. 110 STREET, SUITE 100
OVERLAND PARK, KS 66210
PH. (913) 681-0030 FAX. (913) 681-0012

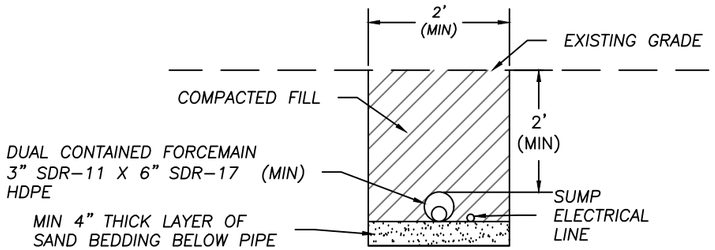
PROJ. NO. 27220345.00 | DSN. BY: TWL | Q/A RVW BY: FEC
DSN. BY: TWL | CHK. BY: FEC | PROJ. MGR: TWL

CADD FILE: DETAILS.DWG

DATE: 8/14/25

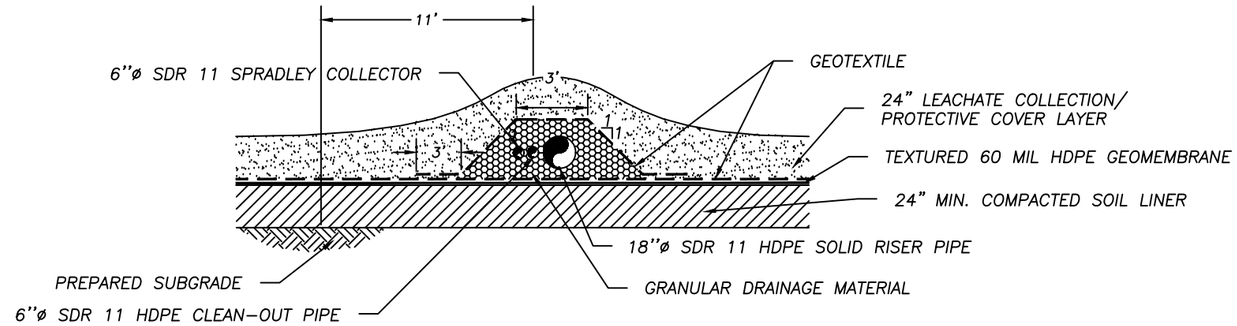
DRAWING NO.

13 of **18**



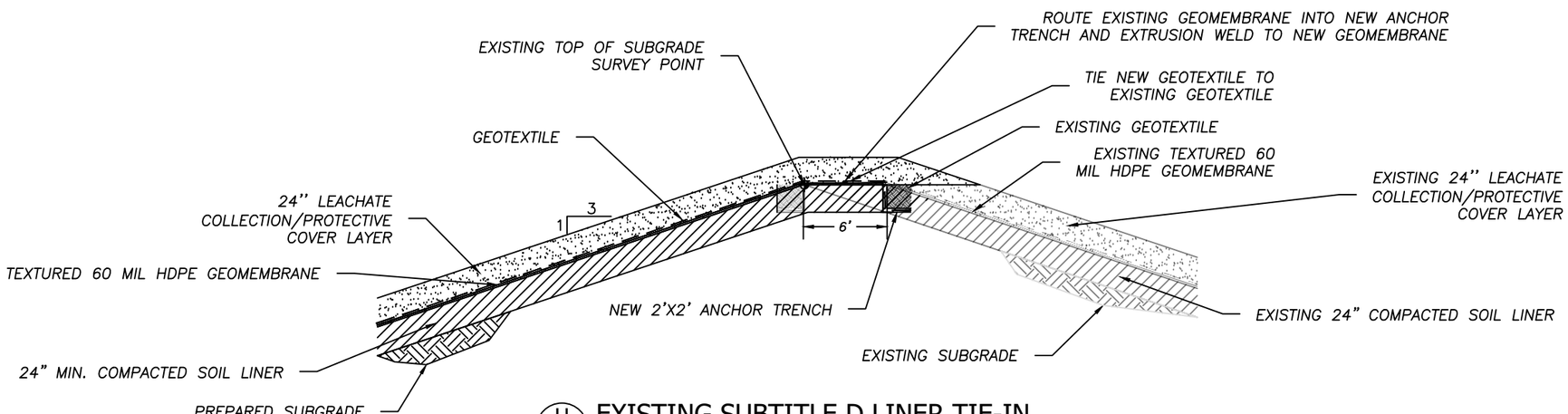
F - - LCS FORCEMAIN TRENCH

Scale: NTS



G 5 14 RISER/CLEANOUT PIPE SIDEWALL SECTION

Scale: NTS



H 5 14 EXISTING SUBTITLE D LINER TIE-IN

Scale: NTS

REGISTERED PROFESSIONAL ENGINEER
FLOYD E. COTTER
14783
OKLAHOMA
8/18/25

REV.	DATE	DESCRIPTION	CK. BY
△	-	-	-
△	-	-	-
△	-	-	-
△	-	-	-
1	8.25	REVISED CELL 7 COUNTOURS	TWL
0	5.24	SUBMITTAL TO ODEQ	FEC

SHEET TITLE **DETAILS**

PROJECT TITLE **AEL LATERAL EXPANSION PERMITTING**

CLIENT
AMERICAN ENVIRONMENTAL LANDFILL, INC
AMERICAN ENVIRONMENTAL LANDFILL
SAND SPRINGS, OKLAHOMA

SCS ENGINEERS
8575 W. 110 STREET, SUITE 100
OVERLAND PARK, KS 66210
PH. (913) 681-0030 FAX. (913) 681-0012

PROJ. NO. 27220345.00 | DSN. BY: TWL | Q/A RVW BY: FEC
DSN. BY: TWL | CHK. BY: FEC | PROJ. MGR: TWL

CADD FILE: DETAILS.DWG

DATE: 8/14/25

DRAWING NO.
14 of **18**

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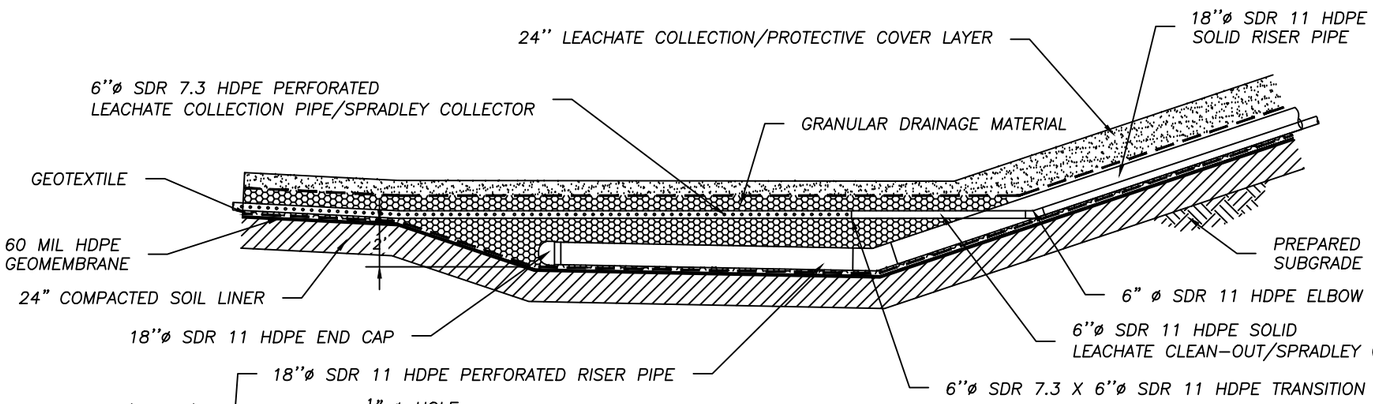
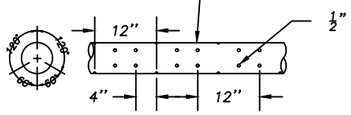
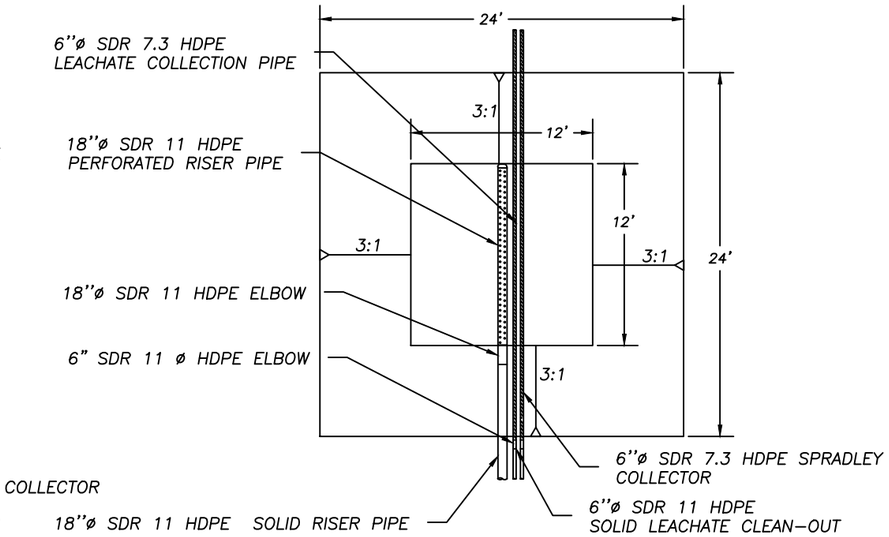




I TYPICAL LEACHATE SUMP SECTION

5 | 15

Scale: NTS



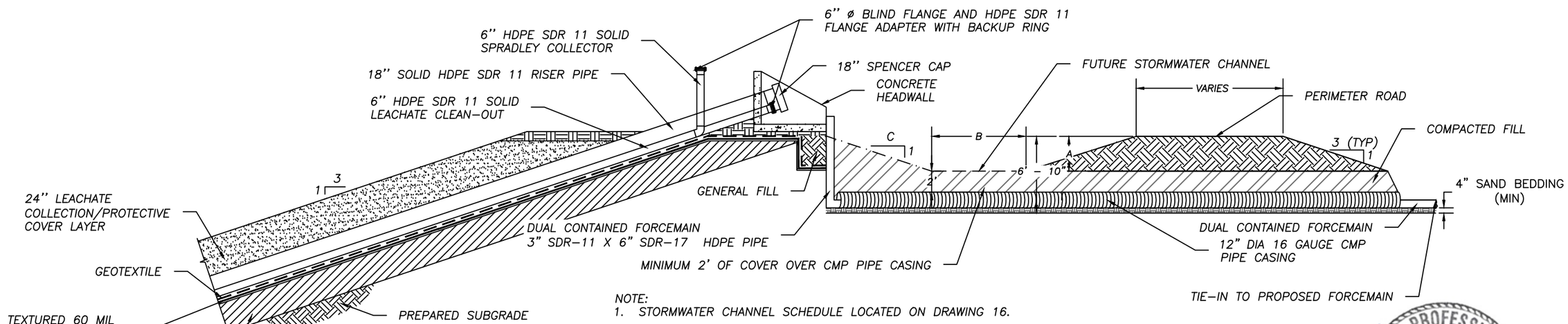
J TYPICAL LEACHATE SUMP SECTION

5 | 15

Scale: NTS

NOTE:

1. THE GRANULAR DRAINAGE MATERIAL SHALL BE OF A SIZE THAT NOT MORE THAN 10% WILL PASS ½" SIEVE.



NOTE:

1. STORMWATER CHANNEL SCHEDULE LOCATED ON DRAWING 16.

K LEACHATE RISER/CLEANOUT ROAD CROSSING

5 | 15

Scale: NTS

REGISTERED PROFESSIONAL ENGINEER
FLOYD E. COTTER
14783
OKLAHOMA
8/18/25

REV.	DATE	DESCRIPTION	CK. BY
	-	-	-
	-	-	-
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	-	-	-
1	8.25	REVISED CELL 7 COUNTOURS	TWL
0	5.24	SUBMITTAL TO ODEQ	FEC

SHEET TITLE: DETAILS

PROJECT TITLE: AEL LATERAL EXPANSION PERMITTING

CLIENT: AMERICAN ENVIRONMENTAL LANDFILL, INC
AMERICAN ENVIRONMENTAL LANDFILL
SAND SPRINGS, OKLAHOMA

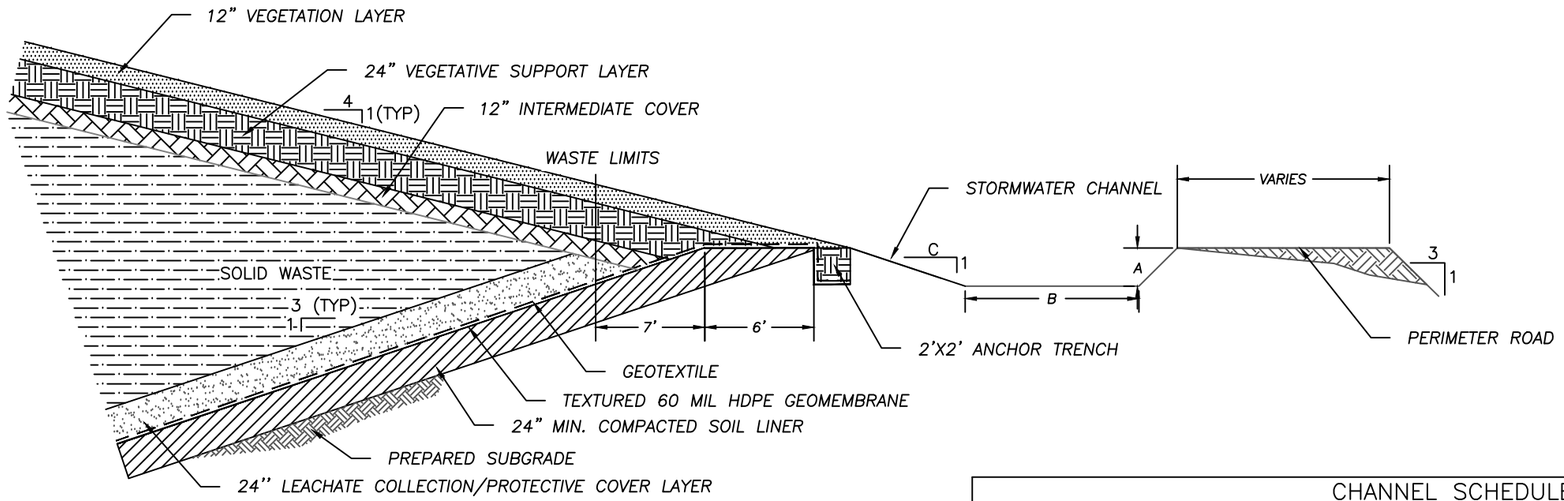
SCS ENGINEERS
8575 W. 110 STREET, SUITE 100
OVERLAND PARK, KS 66210
PH. (913) 681-0030 FAX. (913) 681-0012

PROJ. NO. 27220345.00 | DSN. BY: TWL | DWN. BY: TWL | CHK. BY: FEC | Q/A RVW BY: FEC | PROJ. MGR. TWL

CADD FILE: DETAILS.DWG

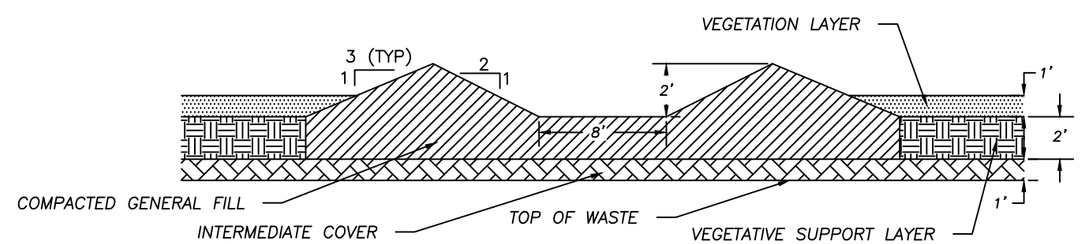
DATE: 8/14/25

DRAWING NO. 15 of 18

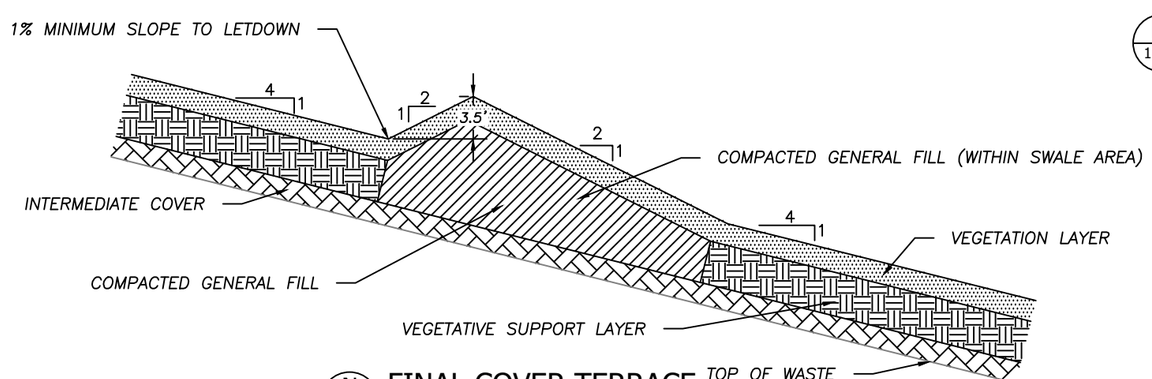


L 6|16 FINAL COVER TIE-IN
Scale: NTS

CHANNEL SCHEDULE				
	A (FT)	B (FT)	C	LINING MATERIAL
TERRACE	3.50	0.00	4;2	GRASS
LETDOWN	2.00	8.00	2	HDPE
CHANNEL 1	3.50	9.00	3	RIP RAP (24" THICK D_{50} = 12")
CHANNEL 2	3.00	0.00	3	GRASS
CHANNEL 3	3.00	10.00	3	GRASS



M 12|16 FINAL COVER LETDOWN
Scale: NTS



N 12|16 FINAL COVER TERRACE
Scale: NTS

REGISTERED PROFESSIONAL ENGINEER
FLOYD E. COTTER
14783
OKLAHOMA
8/18/25

REV.	DATE	DESCRIPTION	CK. BY
△	-	-	-
△	-	-	-
△	-	-	-
△	-	-	-
1	8.25	REVISED CELL 7 COUNTOURS	TWL
0	5.24	SUBMITTAL TO ODEQ	FEC

SHEET TITLE
DETAILS

PROJECT TITLE
AEL LATERAL EXPANSION PERMITTING

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8575 W. 110 STREET, SUITE 100
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PH. (913) 681-0030 FAX. (913) 681-0012

PROJ. NO. 27220345.00
DSN. BY: TWL
DWN. BY: TWL
CHK. BY: FEC
Q/A RVW BY: FEC
PROJ. MGR. TWL

CADD FILE: DETAILS.DWG

DATE: 8/14/25

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16 of 18

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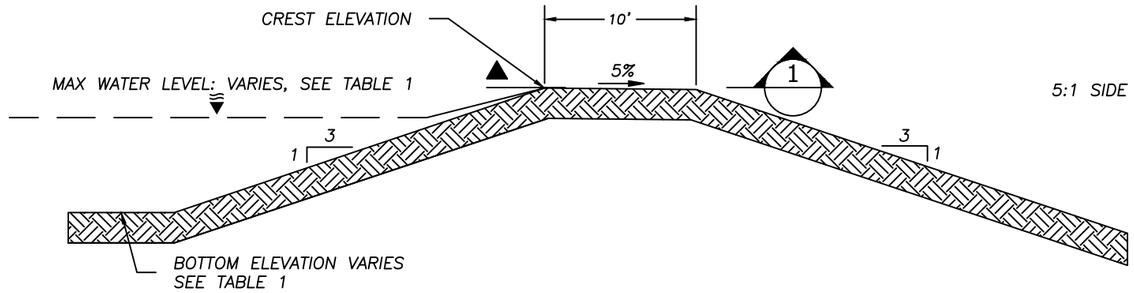
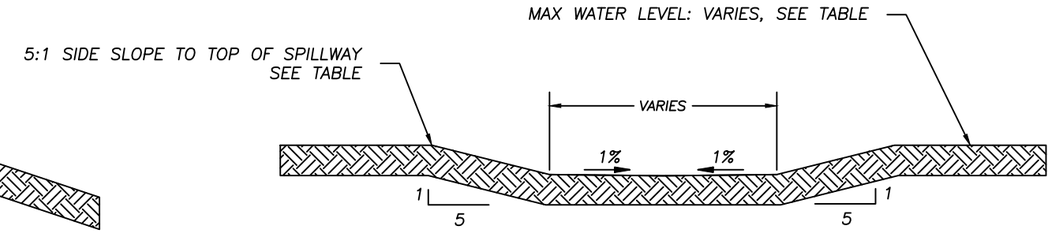


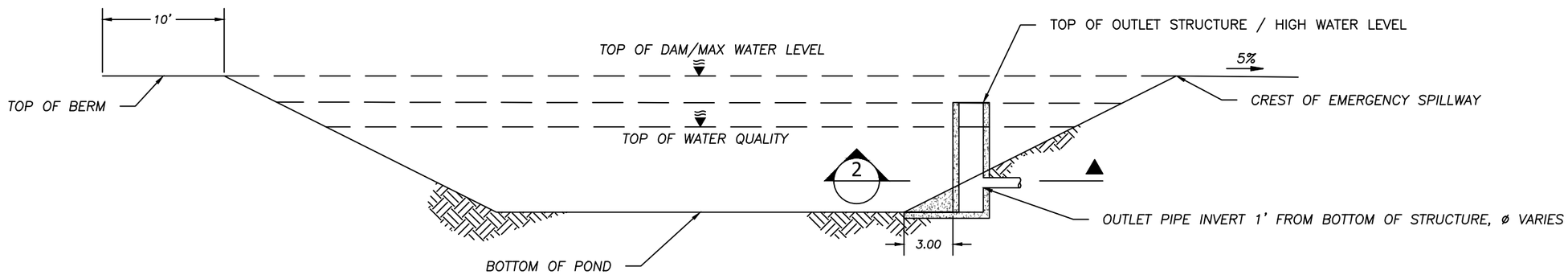
O 12|17 STORMWATER DETENTION STRUCTURE EMERGENCY SPILLWAY

Scale: NTS



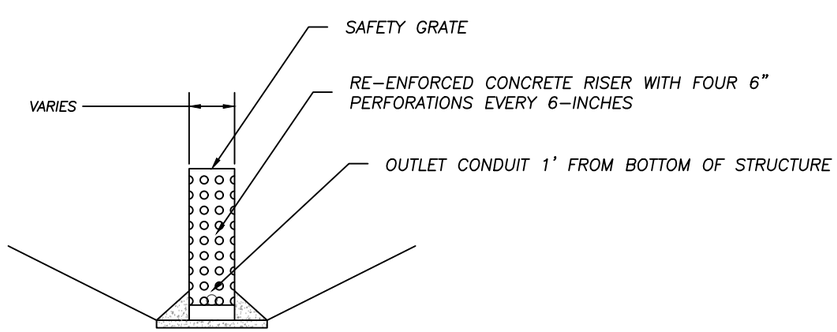
1 SECTION VIEW

STORMWATER QUALITY STRUCTURE						
STORMWATER DETENTION STRUCTURE	BOTTOM OF POND ELEVATION (FT)	MAX WATER LEVEL (FT)	DEPTH OF WATER AT MWL (FT)	TOP OF SPILLWAY (FT)	WIDTH OF SPILLWAY (FT)	FREEBOARD (FT)
NORTH STRUCTURE	822.00	840.00	18.00	837.00	5.00	1.00
SOUTH STRUCTURE	708.00	725.00	17.00	722.00	30.00	1.00



P 12|17 STORMWATER DETENTION STRUCTURE AND OUTLET CONTROL STRUCTURES

PLAN VIEW



2 SECTION VIEW

OUTLET SCHEDULE						
STORMWATER DETENTION STRUCTURE	TOP OF OUTLET STRUCTURE ELEVATION (FT)	TOP OF WATER QUALITY ELEVATION (FT)	OUTLET PIPE INVERT ELEVATION (FT)	OUTLET PIPE LENGTH (FT)	OUTLET PIPE SLOPE %	DIAMETER (IN)
NORTH STRUCTURE	835.00	833.00	823.00	100.00	1.70	24
SOUTH STRUCTURE	720.00	720.00	709.00	180.00	1.00	48

REV.	DATE	DESCRIPTION	CK. BY
1	8.25	REVISED CELL 7 COUNTOURS	TWL
0	5.24	SUBMITTAL TO ODEQ	FEC

SHEET TITLE: DETAILS

PROJECT TITLE: AEL LATERAL EXPANSION PERMITTING

CLIENT: AMERICAN ENVIRONMENTAL LANDFILL, INC
AMERICAN ENVIRONMENTAL LANDFILL
SAND SPRINGS, OKLAHOMA

SCS ENGINEERS
8575 W. 110 STREET, SUITE 100
OVERLAND PARK, KS 66210
PH. (913) 681-0030 FAX. (913) 681-0012

PROJ. NO. 27220345.00 | DSN. BY: TWL | DWN. BY: TWL | CHK. BY: FEC | Q/A RVW BY: FEC | PROJ. MGR: TWL

CADD FILE: DETAILS.DWG

DATE: 8/14/25

DRAWING NO. 17 of 18

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SURFACE SEAL: CONCRETE OR CEMENT GROUT PLACED ABOVE THE ANNULAR SEAL FROM A DEPTH OF 2–FT TO GROUND SURFACE.

ANNULAR SEAL: BENTONITE CHIPS, CEMENT/BENTONITE GROUT, OR BENTONITE GROUT (SEE NOTE 1) PLACED FROM FILTER PACK SEAL TO WITHIN 2–FT OF GROUND SURFACE

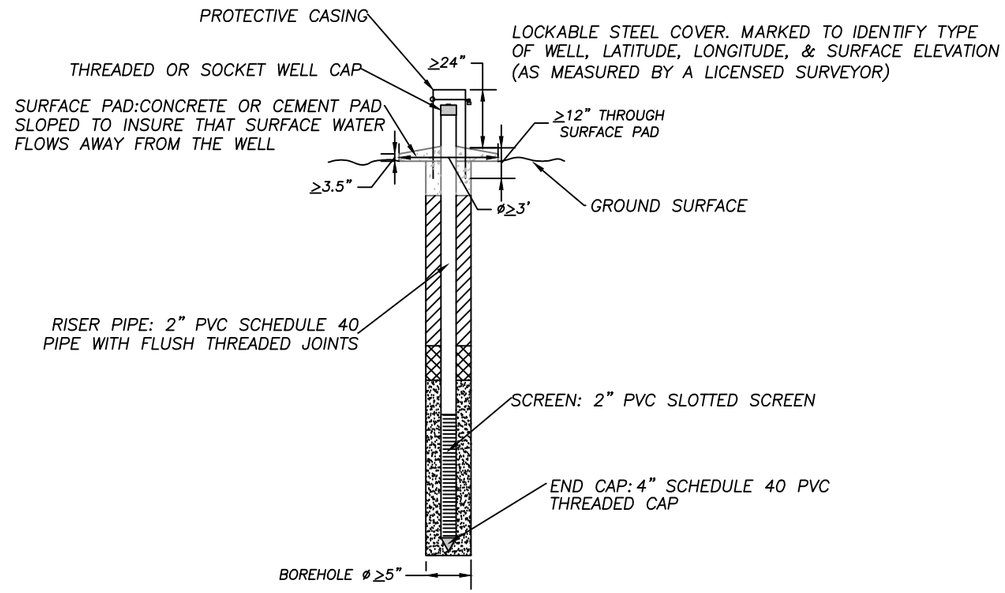
FILTER PACK SEAL: AT LEAST 2–FT OF HYDRATED BENTONITE (0.25"–0.75" IN SIZE) PLACED ABOVE FILTER PACK.

FILTER PACK: SILICA SAND; PLACED FROM BOTTOM OF BOREHOLE TO 2–FT ABOVE THE TOP OF SCREEN.

NOTES:

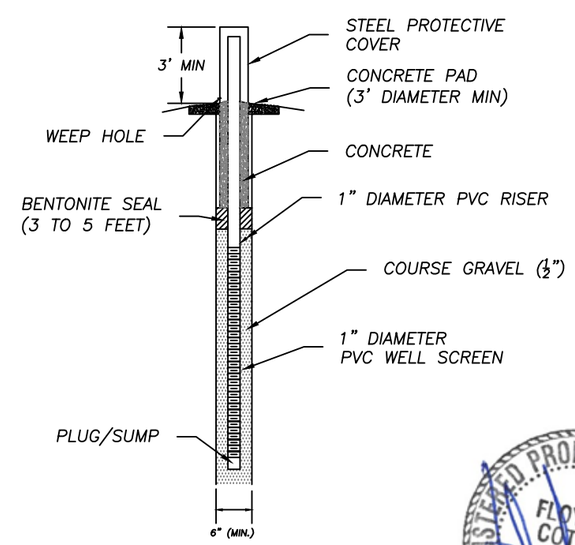
1. ANNULAR SEAL: CEMENT GROUT MIX RATIO OF 94–LBS CEMENT TO A MAXIMUM OF 6–GAL WATER IS USED, AND MIXED TO THE CONSISTENCY RECOMMENDED BY THE CEMENT MANUFACTURER. MAXIMUM OF TWENTY PERCENT (20%) BENTONITE BY DRY WEIGHT MAY BE ADDED TO THE CEMENT GROUT TO FORM THE CEMENT/BENTONITE GROUT MIXTURE. THE BENTONITE IS PREHYDRATED TO THE MANUFACTURER'S RECOMMENDED CONSISTENCY. THE BENTONITE GROUT HAS AT LEAST TWENTY PERCENT (20%) BENTONITE BY DRY WEIGHT, AND IS MIXED ACCORDING TO THE MANUFACTURER'S RECOMMENDED CONSISTENCY.

2. WHEN THE PLACEMENT OF GROUT WILL EXCEED 20–FT, THE GROUT IS PLACED THROUGH A TREMIE PIPE AND FILLED OR PUMPED FROM THE BOTTOM UPWARD.



Q GROUNDWATER MONITORING WELL

Scale: NTS



R GAS MONITORING PROBE

Scale: NTS

REGISTERED PROFESSIONAL ENGINEER FLOYD E. COTTER 17783 OKLAHOMA

8/18/25

REV.	DATE	DESCRIPTION	CK. BY
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1	8.25	REVISED CELL 7 COUNTOURS	TWL
0	5.24	SUBMITTAL TO ODEQ	FEC

SHEET TITLE **DETAILS**

PROJECT TITLE **AEL LATERAL EXPANSION PERMITTING**

CLIENT **AMERICAN ENVIRONMENTAL LANDFILL, INC**
AMERICAN ENVIRONMENTAL LANDFILL
SAND SPRINGS, OKLAHOMA

SCS ENGINEERS
8575 W. 110 STREET, SUITE 100
OVERLAND PARK, KS 66210
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DRAWING NO. **18** of **18**

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