

APPENDIX VI-A

REDUCED SIZE SET OF PERMIT DRAWINGS



DELAWARE RECYCLABLE PRODUCTS, INC.

246 Marsh Lane
New Castle, Delaware 19720

Prepared for

PERMIT MODIFICATION APPLICATION

APPENDIX VI-A – REDUCED SIZE SET OF PERMIT DRAWINGS

for

VERTICAL EXPANSION DRPI Industrial Landfill New Castle, Delaware

Prepared by

Geosyntec 
consultants

10211 Wincopin Circle, 4th Floor
Columbia, Maryland 21044

Geosyntec Project No.: ME1571

July 2018

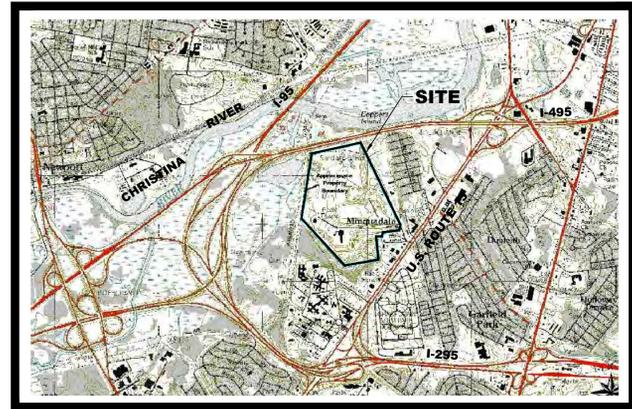
REDUCED SIZE SET OF PERMIT DRAWINGS

The drawing set presented herein has been prepared by Geosyntec Consultants Inc. (Geosyntec) for the Application for Vertical Expansion and is dated July 2018. Specific drawings prepared by Golder Associates, Inc. (Golder) dated April 2015 as part of the Solid Waste Facility Permit SW-05/01 permit renewal have been included (Drawings 26, 27, and 27A). No changes or modifications have been made to these specific drawings.

VERTICAL EXPANSION DESIGN MODIFICATION APPLICATION

DRPI INDUSTRIAL WASTE LANDFILL NEW CASTLE, DELAWARE

JULY 2018



LOCATION MAP

APPROXIMATE SCALE: 1" = 2000'

LIST OF DRAWINGS

DRAWING NO.	DESCRIPTION
1	COVER SHEET
2	LEGENDS, SYMBOLS, AND NOTES
3	EXISTING SITE CONDITIONS PLAN
4	SITE DEVELOPMENT PLAN
5	ENVIRONMENTAL MONITORING PLAN
6	CELL 1-3 OVERLAY LINER PLAN
7	LINER DETAILS
8	LEACHATE MANAGEMENT AND GROUNDWATER CONTROL SYSTEM PLAN
9	LEACHATE MANAGEMENT SYSTEM PROFILES
10	LEACHATE MANAGEMENT SYSTEM DETAILS
11	LEACHATE MANAGEMENT SYSTEM SUMP DETAILS
12	LEACHATE MANAGEMENT SYSTEM CONTROL DETAILS
13	FINAL COVER SYSTEM AND STORMWATER MANAGEMENT SYSTEM PLAN
14	FINAL COVER SYSTEM DETAILS I
15	FINAL COVER SYSTEM DETAILS II
16	FINAL COVER SYSTEM DETAILS III
17	FINAL COVER SYSTEM DETAILS IV
18	(NOT USED)
19	CHANNEL PROFILES I
20	CHANNEL PROFILES II
21	WASTE FILLING SEQUENCE
22	LANDFILL CROSS SECTIONS I
23	LANDFILL CROSS SECTIONS II
24	LANDFILL GAS MANAGEMENT SYSTEM - EXISTING SYSTEM
25	LANDFILL GAS MANAGEMENT SYSTEM - FINAL CONDITION
26	LANDFILL GAS MANAGEMENT SYSTEM DETAILS I
27	LANDFILL GAS MANAGEMENT SYSTEM DETAILS II
27A	LANDFILL GAS MANAGEMENT SYSTEM DETAILS III
L1	LEACHATE RETROFIT SCHEMATICS
L2	LEACHATE MANAGEMENT AND GROUNDWATER CONTROL SYSTEM DETAILS
L3	LEACHATE RISER PLAN PROFILE I
L4	LEACHATE RISER PLAN PROFILE II
L5	LEACHATE RISER PLAN PROFILE III
L6	LEACHATE RISER PLAN PROFILE IV
L7	LEACHATE RISER PLAN PROFILE V

PREPARED FOR:



WASTE MANAGEMENT

DELAWARE RECYCLABLE PRODUCTS, INC.
246 MARSH LANE
NEW CASTLE, DELAWARE 19720
(302) 655-1360

PREPARED BY:



10211 WINCOPIN CIRCLE, 4TH FLOOR
COLUMBIA, MARYLAND 21044
PHONE: (410) 381-4333

REV	DATE	DESCRIPTION	DRN	APP
Geosyntec consultants WM WASTE MANAGEMENT <small>10221 WINCOPIN CIRCLE, 4TH FLOOR COLUMBIA, MARYLAND 21044 USA PHONE: 410.381.4333</small> <small>246 MARSH LANE NEW CASTLE, DELAWARE 19720 PHONE: 302.655.1360</small>				
TITLE: COVER SHEET				
PROJECT: VERTICAL EXPANSION DESIGN MODIFICATION APPLICATION				
SITE: DRPI INDUSTRIAL WASTE LANDFILL NEW CASTLE, DELAWARE				
<small>THIS DRAWING MAY NOT BE ISSUED FOR PROJECT TENDER OR CONSTRUCTION, UNLESS SEALED.</small> <small>7/19/2018</small> <small>DATE</small>		<small>DESIGN BY: KSS</small> <small>DATE: JULY 2018</small> <small>DRAWN BY: MF/TJ/BF</small> <small>PROJECT NO.: ME1571</small> <small>CHECKED BY: KSS</small> <small>FILE: 1571-001</small> <small>REVIEWED BY: CHP</small> <small>DRAWING NO.:</small> <small>APPROVED BY: CHP</small> 1 OF 28		

PERMIT DRAWING

LINE LEGEND

	PROPERTY BOUNDARY (NOTE 2)
	PROPERTY BOUNDARY (NOTE 3)
	SUBCELL BOUNDARY
	WATER LINE, STREAM
	TREES, BRUSH
	DRAINAGE CHANNEL
	FINAL COVER TERRACE
	FENCE
	GEOMEMBRANE
	GEOCOMPOSITE
	GEOTEXTILE
	DRAINAGE SWALE
	LIMIT OF PROPOSED VERTICAL EXPANSION
	EXISTING LEACHATE FORCEMAIN
	EXISTING LANDFILL GAS HEADER/LATERAL PIPE
	PROPOSED LANDFILL GAS HEADER PIPE
	GAS COLLECTION TRENCH TYPE I
	GAS COLLECTION TRENCH TYPE II
	PROPOSED LATERAL PIPE

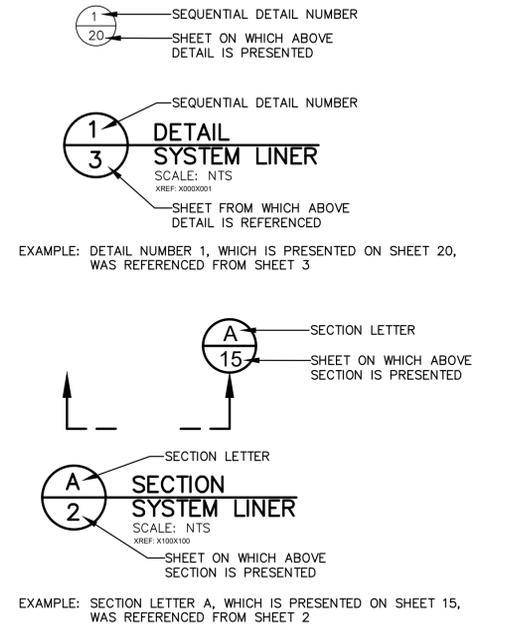
HATCH LEGEND

EXISTING		PROPOSED
	VEGETATIVE SUPPORT SOIL	
	PROTECTIVE SOIL	
	LOW-PERMEABILITY SOIL	
	STRUCTURAL FILL	
	GRANULAR SOIL	
	SUBGRADE / EXISTING GROUND	
	WASTE / DEBRIS	
	RIPRAP/STONE	
	ACCESS ROAD	

SYMBOLS LEGEND

	NORTH ARROW
	CULVERT
	ELEVATION POINT
	GRASS
	GRASS
	GROUNDWATER FLOW DIRECTION
	BENCHMARK
	UTILITY POLE
	SLOPE AND DIRECTION
	SLOPE INDICATOR
	WATERLINE
	EXISTING BUILDING
	DOWNCHUTE
	GROUNDWATER MONITORING WELL (FROM AERIAL SURVEY)
	GROUNDWATER MONITORING WELL (FROM BLAZOSKY, INC.)
	GAS PROBE (FROM VANDEMARK & LYNCH, INC. AND AERIAL SURVEY)
	PIEZOMETER (FROM BLAZOSKY, INC.)
	EXISTING LANDFILL GAS EXTRACTION WELL
	EXISTING LANDFILL GAS VALVE
	EXISTING LANDFILL GAS REDUCER
	LANDFILL GAS COLLECTION WELL
	VERTICAL LANDFILL GAS CONDUIT

DETAIL AND SECTION IDENTIFICATION LEGEND



CONTOUR LEGEND

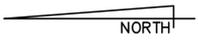
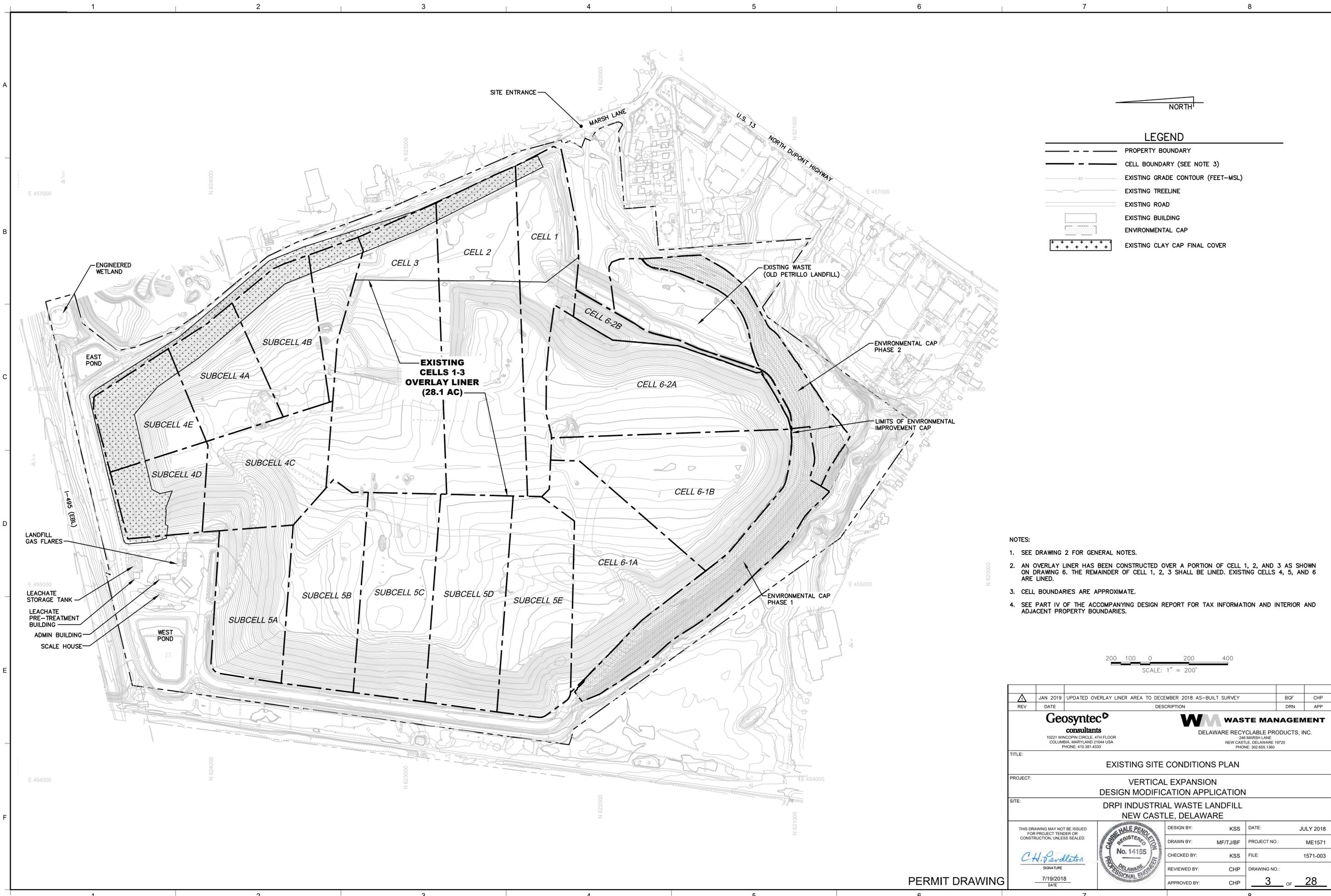
	580	EXISTING GROUND ELEVATION (FEET-MSL)
	580	BASE GRADE OR FINAL GRADE ELEVATION (FEET-MSL)
	60	EXISTING GRADE CONTOUR (FEET-MSL)
	60	PROPOSED FINAL GRADE CONTOUR (FEET-MSL)
	60	FUTURE FINAL GRADE CONTOUR (FEET-MSL)
	10	GROUNDWATER CONTOUR (C.I. = 5')

GENERAL NOTES:

- EXISTING CONDITIONS (WITH THE EXCEPTION OF LANDFILL GAS FEATURES) ARE FROM A 14 DECEMBER 2017 PHOTOGRAMMETRIC SURVEY BY AERIAL SURVEY CORPORATION OF DULLES, VIRGINIA. EXISTING LANDFILL GAS FEATURES ARE FROM AN ELECTRONIC FILE OF THE DRAWING ENTITLED "GAS EXTRACTION SYSTEM AND MONITORING PLAN AS OF DECEMBER 2011, DELAWARE RECYCLABLE PRODUCTS, INC.," BY VANDEMARK AND LYNCH, INC., DATED 7 FEBRUARY 2012.
- DRPI PROPERTY LINE WAS OBTAINED FROM VANDEMARK AND LYNCH, INC.
- PROPERTY LINES FOR ADJACENT PROPERTIES WERE OBTAINED FROM VANDEMARK AND LYNCH, INC., BUT ARE FROM FILES WHICH MAY NOT BE UP TO DATE. THEREFORE, THESE PROPERTY LINES SHOULD BE CONSIDERED APPROXIMATE.
- GRID IS BASED ON DELAWARE STATE PLANE COORDINATE SYSTEM (NAD 1927).
- ELEVATIONS ARE IN FEET ABOVE SEA LEVEL DATUM ("SEA LEVEL DATUM" REFERS TO THE NORTH GEODETIC VERTICAL DATUM OF 1929 [NGVD 29]).
- DETAILS ARE SHOWN TO SCALE AS NOTED EXCEPT FOR THE GEOSYNTHETICS, WHICH ARE SHOWN AT AN EXAGGERATED SCALE FOR CLARITY.

REV	DATE	DESCRIPTION	DRN	APP
<p>TITLE: LEGENDS, SYMBOLS, AND NOTES</p>				
<p>PROJECT: VERTICAL EXPANSION DESIGN MODIFICATION APPLICATION</p>				
<p>SITE: DRPI INDUSTRIAL WASTE LANDFILL NEW CASTLE, DELAWARE</p>				
<p>THIS DRAWING MAY NOT BE ISSUED FOR PROJECT TENDER OR CONSTRUCTION, UNLESS SEALED.</p>		<p>DESIGN BY: KSS DATE: JULY 2018</p> <p>DRAWN BY: MF/TJ/BF PROJECT NO.: ME1571</p> <p>CHECKED BY: KSS FILE: 1571-002</p> <p>REVIEWED BY: CHP DRAWING NO.: _____</p> <p>APPROVED BY: CHP <u>2</u> OF <u>28</u></p>		
<p>Signature: <i>C.H. Pendleton</i></p> <p>7/19/2018 DATE</p>		<p>Professional Engineer Seal: C.H. Pendleton, No. 14185, Delaware</p>		

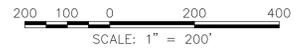
PERMIT DRAWING



LEGEND

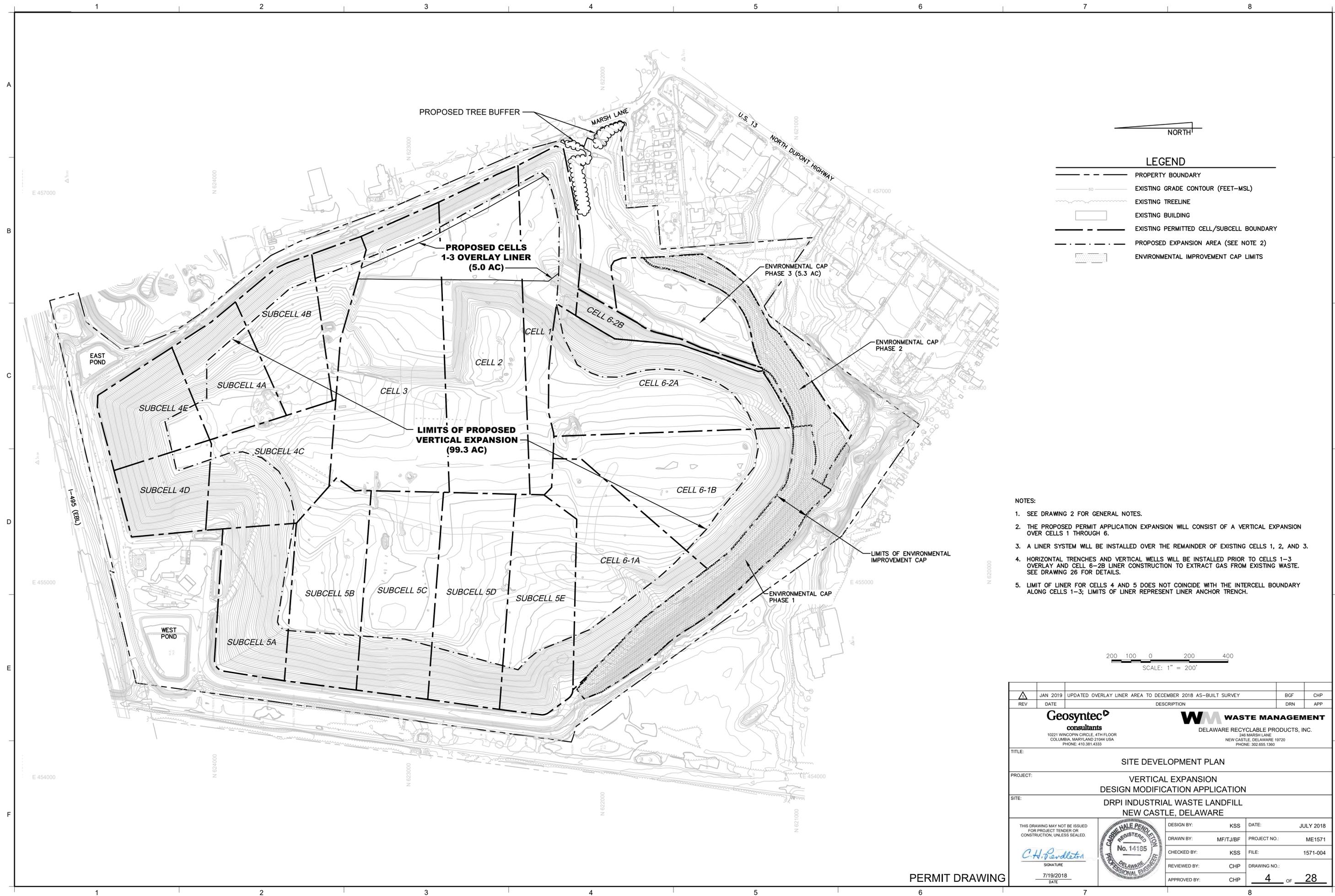
	PROPERTY BOUNDARY
	CELL BOUNDARY (SEE NOTE 3)
	EXISTING GRADE CONTOUR (FEET-MSL)
	EXISTING TREELINE
	EXISTING ROAD
	EXISTING BUILDING
	ENVIRONMENTAL CAP
	EXISTING CLAY CAP FINAL COVER

- NOTES:**
- SEE DRAWING 2 FOR GENERAL NOTES.
 - AN OVERLAY LINER HAS BEEN CONSTRUCTED OVER A PORTION OF CELL 1, 2, AND 3 AS SHOWN ON DRAWING 6. THE REMAINDER OF CELL 1, 2, 3 SHALL BE LINED. EXISTING CELLS 4, 5, AND 6 ARE LINED.
 - CELL BOUNDARIES ARE APPROXIMATE.
 - SEE PART IV OF THE ACCOMPANYING DESIGN REPORT FOR TAX INFORMATION AND INTERIOR AND ADJACENT PROPERTY BOUNDARIES.



△	JAN 2019	UPDATED OVERLAY LINER AREA TO DECEMBER 2018 AS-BUILT SURVEY	BGF	CHP
REV	DATE	DESCRIPTION	DRN	APP
<small>10221 WINDOORN CIRCLE, 4TH FLOOR COLUMBIA, MARYLAND 21044 USA PHONE: 410.381.4333</small>		<small>240 MARSH LANE NEW CASTLE, DELAWARE 19720 PHONE: 302.655.1360</small>		
TITLE: EXISTING SITE CONDITIONS PLAN				
PROJECT: VERTICAL EXPANSION DESIGN MODIFICATION APPLICATION				
SITE: DRPI INDUSTRIAL WASTE LANDFILL NEW CASTLE, DELAWARE				
<small>THIS DRAWING MAY NOT BE ISSUED FOR PROJECT TENDER OR CONSTRUCTION, UNLESS SEALED.</small> SIGNATURE 7/19/2018 DATE		DESIGN BY: KSS DATE: JULY 2018 DRAWN BY: MF/TJ/BF PROJECT NO.: ME1571 CHECKED BY: KSS FILE: 1571-003 REVIEWED BY: CHP DRAWING NO.: APPROVED BY: CHP <u>3</u> OF <u>28</u>		

PERMIT DRAWING

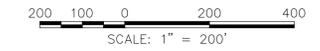


LEGEND

- PROPERTY BOUNDARY
- EXISTING GRADE CONTOUR (FEET-MSL)
- EXISTING TREELINE
- EXISTING BUILDING
- EXISTING PERMITTED CELL/SUBCELL BOUNDARY
- PROPOSED EXPANSION AREA (SEE NOTE 2)
- ENVIRONMENTAL IMPROVEMENT CAP LIMITS

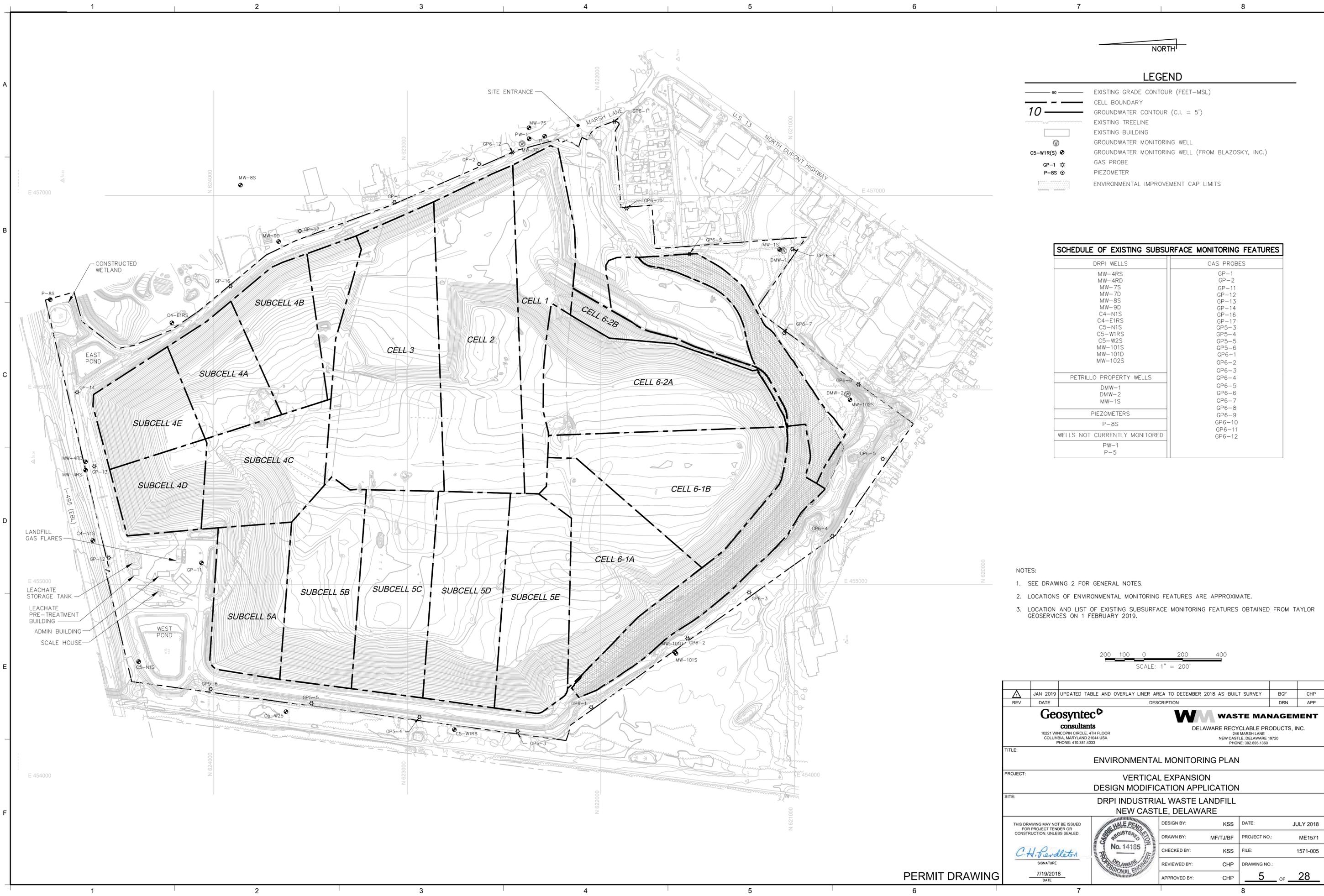
NOTES:

1. SEE DRAWING 2 FOR GENERAL NOTES.
2. THE PROPOSED PERMIT APPLICATION EXPANSION WILL CONSIST OF A VERTICAL EXPANSION OVER CELLS 1 THROUGH 6.
3. A LINER SYSTEM WILL BE INSTALLED OVER THE REMAINDER OF EXISTING CELLS 1, 2, AND 3.
4. HORIZONTAL TRENCHES AND VERTICAL WELLS WILL BE INSTALLED PRIOR TO CELLS 1-3 OVERLAY AND CELL 6-2B LINER CONSTRUCTION TO EXTRACT GAS FROM EXISTING WASTE. SEE DRAWING 26 FOR DETAILS.
5. LIMIT OF LINER FOR CELLS 4 AND 5 DOES NOT COINCIDE WITH THE INTERCELL BOUNDARY ALONG CELLS 1-3; LIMITS OF LINER REPRESENT LINER ANCHOR TRENCH.



△	JAN 2019	UPDATED OVERLAY LINER AREA TO DECEMBER 2018 AS-BUILT SURVEY	BGF	CHP
REV	DATE	DESCRIPTION	DRN	APP
<small>10221 WINDORP CIRCLE, 4TH FLOOR COLUMBIA, MARYLAND 21044 USA PHONE: 410.381.4333</small>		<small>240 MARSH LANE NEW CASTLE, DELAWARE 19720 PHONE: 302.655.1360</small>		
TITLE: SITE DEVELOPMENT PLAN				
PROJECT: VERTICAL EXPANSION DESIGN MODIFICATION APPLICATION				
SITE: DRPI INDUSTRIAL WASTE LANDFILL NEW CASTLE, DELAWARE				
<small>THIS DRAWING MAY NOT BE ISSUED FOR PROJECT TENDER OR CONSTRUCTION, UNLESS SEALED.</small> <small>7/19/2018</small> <small>DATE</small>		<small>DESIGN BY: KSS</small> <small>DATE: JULY 2018</small> <small>DRAWN BY: MF/TJ/BF</small> <small>PROJECT NO.: ME1571</small> <small>CHECKED BY: KSS</small> <small>FILE: 1571-004</small> <small>REVIEWED BY: CHP</small> <small>DRAWING NO.:</small> <small>APPROVED BY: CHP</small> 4 OF 28		

PERMIT DRAWING



LEGEND

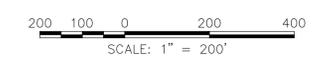
- 60 EXISTING GRADE CONTOUR (FEET-MSL)
- CELL BOUNDARY
- GROUNDWATER CONTOUR (C.I. = 5')
- EXISTING TREELINE
- EXISTING BUILDING
- GROUNDWATER MONITORING WELL
- GROUNDWATER MONITORING WELL (FROM BLAZOSKY, INC.)
- GAS PROBE
- PIEZOMETER
- ENVIRONMENTAL IMPROVEMENT CAP LIMITS

SCHEDULE OF EXISTING SUBSURFACE MONITORING FEATURES

DRPI WELLS	GAS PROBES
MW-4RS	GP-1
MW-4RD	GP-2
MW-7S	GP-11
MW-7D	GP-12
MW-8S	GP-13
MW-9D	GP-14
C4-N1S	GP-16
C4-E1RS	GP-17
C5-N1S	GP5-3
C5-W1RS	GP5-4
C5-W2S	GP5-5
MW-101S	GP5-6
MW-101D	GP6-1
MW-102S	GP6-2
	GP6-3
	GP6-4
	GP6-5
	GP6-6
	GP6-7
	GP6-8
	GP6-9
	GP6-10
	GP6-11
	GP6-12
PETRILLO PROPERTY WELLS	
DMW-1	
DMW-2	
MW-1S	
PIEZOMETERS	
P-8S	
WELLS NOT CURRENTLY MONITORED	
PW-1	
P-5	

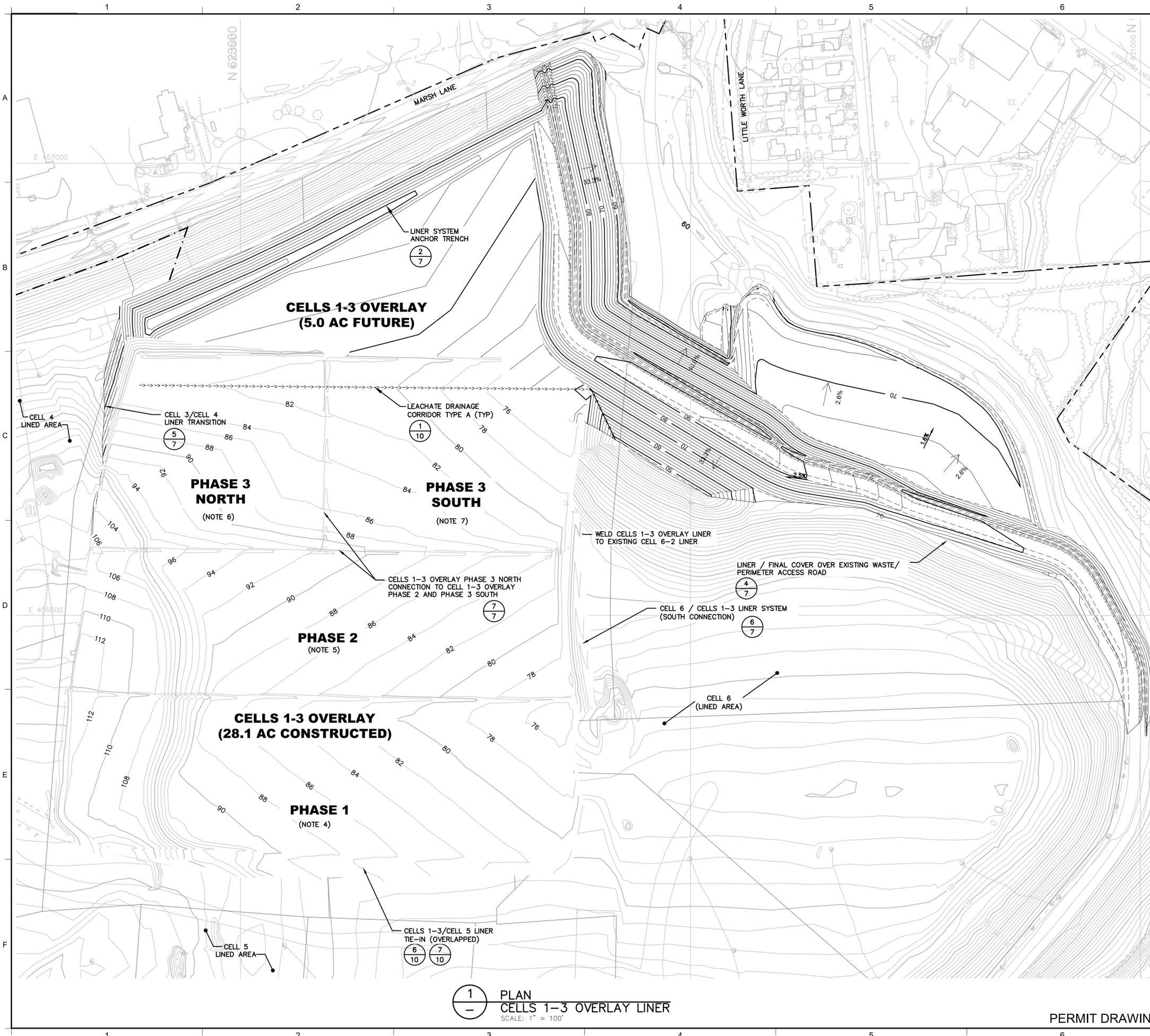
NOTES:

- SEE DRAWING 2 FOR GENERAL NOTES.
- LOCATIONS OF ENVIRONMENTAL MONITORING FEATURES ARE APPROXIMATE.
- LOCATION AND LIST OF EXISTING SUBSURFACE MONITORING FEATURES OBTAINED FROM TAYLOR GEOSERVICES ON 1 FEBRUARY 2019.



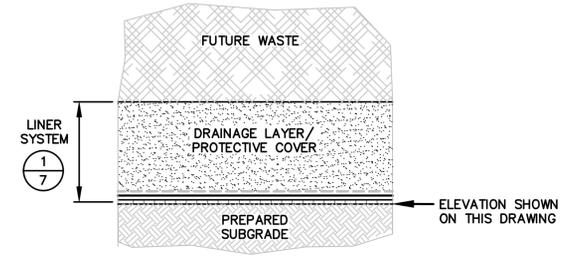
△	JAN 2019	UPDATED TABLE AND OVERLAY LINER AREA TO DECEMBER 2018 AS-BUILT SURVEY	BGF	CHP
REV	DATE	DESCRIPTION	DRN	APP
<small>10221 WINDOORN CIRCLE, 4TH FLOOR COLUMBIA, MARYLAND 21044 USA PHONE: 410.381.4333</small>		<small>240 MARSH LANE NEW CASTLE, DELAWARE 19720 PHONE: 302.655.1360</small>		
TITLE: ENVIRONMENTAL MONITORING PLAN				
PROJECT: VERTICAL EXPANSION DESIGN MODIFICATION APPLICATION				
SITE: DRPI INDUSTRIAL WASTE LANDFILL NEW CASTLE, DELAWARE				
<small>THIS DRAWING MAY NOT BE ISSUED FOR PROJECT TENDER OR CONSTRUCTION, UNLESS SEALED.</small> SIGNATURE 7/19/2018 DATE		DESIGN BY: KSS DATE: JULY 2018 DRAWN BY: MF/TJ/BF PROJECT NO.: ME1571 CHECKED BY: KSS FILE: 1571-005 REVIEWED BY: CHP DRAWING NO.: APPROVED BY: CHP <u>5</u> OF <u>28</u>		

PERMIT DRAWING



LEGEND

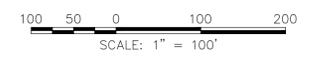
- PROPERTY BOUNDARY
- EXISTING GRADE CONTOUR (FEET-MSL)
- DESIGN LINER GRADE CONTOUR (FEET-MSL)
- LEACHATE DRAINAGE CORRIDOR
- LIMIT OF EXISTING GEOMEMBRANE LINER
- CELL BOUNDARY
- EXISTING TREELINE
- DRAINAGE CHANNEL
- ACCESS ROAD
- EXISTING BUILDING
- CELLS 1-3 LINER EDGE (SEE NOTE 3)
- EXISTING PERMITTED CELL/SUBCELL BOUNDARY



DETAIL GRADING REFERENCE KEY
NOT TO SCALE

NOTES:

1. SEE DRAWING 2 FOR GENERAL NOTES.
2. LINER OVER EXISTING WASTE (I.E., CELLS 1-3 OVERLAY AND PORTIONS OF PROPOSED CELL 6 SHALL BE INSTALLED OVER PREPARED SUBGRADE 2 FEET THICK MINIMUM).
3. BASE GRADES ALONG THE CELLS 1-3 NORTH AND WEST BOUNDARIES HAVE BEEN MODIFIED TO TAKE INTO CONSIDERATION THE AS-BUILT INFORMATION OF THE EXISTING ANCHOR TRENCH LINES FOR CELLS 4 AND 5. LIMIT OF LINER ANCHOR TRENCH WAS PROVIDED BY VANDEMARC & LYNCH, INC. AND IS BASED ON SURVEYS CONDUCTED IN 1996 AND 1997.
4. THE AS-BUILT CONTOUR DATA FOR CELLS 1-3 OVERLAY PHASE 1 ARE FROM CAD FILE, "151-171-RD04 - PROTECTIVE COVER", DATED SEPTEMBER 2017, BY CEC, INC.
5. THE AS-BUILT CONTOUR DATA FOR CELLS 1-3 OVERLAY PHASE 2 ARE FROM CAD FILE, "171-277-RD04 - PROTECTIVE COVER", DATED SEPTEMBER 2017, BY CEC, INC.
6. THE AS-BUILT CONTOUR DATA FOR CELLS 1-3 OVERLAY PHASE 3 NORTH ARE FROM CAD FILE, "181-184-RD04N - PROTECTIVE COVER", DATED NOVEMBER 2018, BY CEC, INC.
7. THE AS-BUILT CONTOUR DATA FOR CELLS 1-3 OVERLAY PHASE 3 SOUTH ARE FROM CAD FILE, "181-184-RD04 - PROTECTIVE COVER", DATED AUGUST 2018, BY CEC, INC.



△	MARCH 2019	UPDATED WITH CELLS 1-3 OVERLAY LINER AS-BUILTS	TSJ	CHP
REV	DATE	DESCRIPTION	DRN	APP
<small>10221 WINDOPAW CIRCLE, 4TH FLOOR COLUMBIA, MARYLAND 21044 USA PHONE: 410.381.4333</small>		<small>246 MARSH LANE NEW CASTLE, DELAWARE 19720 PHONE: 302.655.1360</small>		
TITLE: CELLS 1-3 OVERLAY LINER PLAN				
PROJECT: VERTICAL EXPANSION DESIGN MODIFICATION APPLICATION				
SITE: DRPI INDUSTRIAL WASTE LANDFILL NEW CASTLE, DELAWARE				
<small>THIS DRAWING MAY NOT BE ISSUED FOR PROJECT TENDER OR CONSTRUCTION, UNLESS SEALED.</small>				DESIGN BY: KSS DATE: JULY 2018 DRAWN BY: MF/TJ/BF PROJECT NO.: ME1571 CHECKED BY: KSS FILE: 1571-006 REVIEWED BY: CHP DRAWING NO.: APPROVED BY: CHP 6 OF 28
		DATE: 7/19/2018		

1 PLAN
CELLS 1-3 OVERLAY LINER
SCALE: 1" = 100'

PERMIT DRAWING