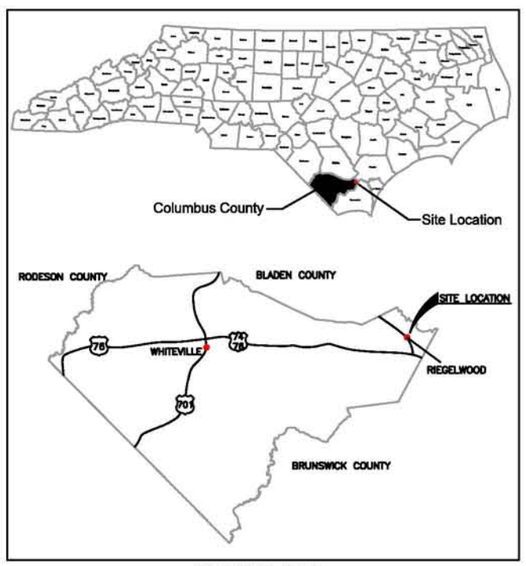
INTERNATIONAL PAPER

RIEGELWOOD, NORTH CAROLINA
INDUSTRIAL LANDFILL CELL 2
LINER SYSTEM DRAWINGS
PERMIT ISSUE
JULY 2009



VICINITY MAP
NOT TO SCALE

SHEET NO.	DRAWING NO.	DRAWING TITLE
1	1	TITLE/COVER SHEET
2	E1	SITE PLAN
3	E2	EXISTING CONDITIONS
4	E3	UNDERDRAIN LAYOUT AND PIPING
5	E4	BASE GRADES GRADING PLAN
6	E5	PROTECTIVE COVER GRADING PLAN
7	E6	LEACHATE MANAGEMENT PLAN
8	E7	FINAL COVER GRADING PLAN
9	E8	OPERATIONAL PLAN
10	G1	CROSS SECTIONS
11	G2	UNDERDRAIN DETAILS
12	G3	LINER AND PERIMETER BERM DETAILS
13	G4	LEACHATE MANAGEMENT DETAILS
14	G5	LEACHATE MANAGEMENT DETAILS
15	G6	FINAL COVER DETAILS
16	G7	DRAINAGE CHANNEL DETAILS
17	G8	SPILLWAY DETAILS
18	G9	EROSION & SEDIMENT CONTROL DETAILS
19	G10	UNDERDRAIN & LEACHATE FORCEMAIN DETAILS
20	G11	SUBGRADE CONTROL POINTS
21	G12	PROTECTIVE COVER CONTROL POINTS

FOR PERMIT PURPOSES NOT FOR CONSTRUCTION

REFERENCE DRAWINGS

DRAWING NO.	TITLE

NOTES:

NORTH CAROLINA PROFESSIONAL SEAL 26500 ENGINEER CONAN D. FITZGERALD

Certification:
This project was conducted under my direct and responsible charge.

Conan D. Fitzgerald, PE — URS Corporation–NC
PE Registration No. 26500
Date 7/7/2009

NO.	DATE	REVISIONS	DWN	CKD	APPD

DRAWN BY LG	DATE 4/2009	CHECKED BY RL	DATE 4/23/2009
DESIGNED BY LG	DATE 4/2009	APPROVED BY	DATE

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RIEGELWOOD, NORTH CAROLINA

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TECHNICAL - ENVIRONMENTAL
LINER SYSTEM DRAWINGS
RIEGELWOOD MILL LANDFILL CELL 2
TITLE/COVER SHEET
SHEET 1 OF 21

DR. BY: LG	SCALE: AS SHOWN	JOB #: 38806746	
ENG. BY: LG	DATE:	DATE:	DRAWING NO. 1
PREV. DWG. #: N/A			REV. 0
EDMS DOCUMENT			
IP CAD#: 000-0000.DWG			

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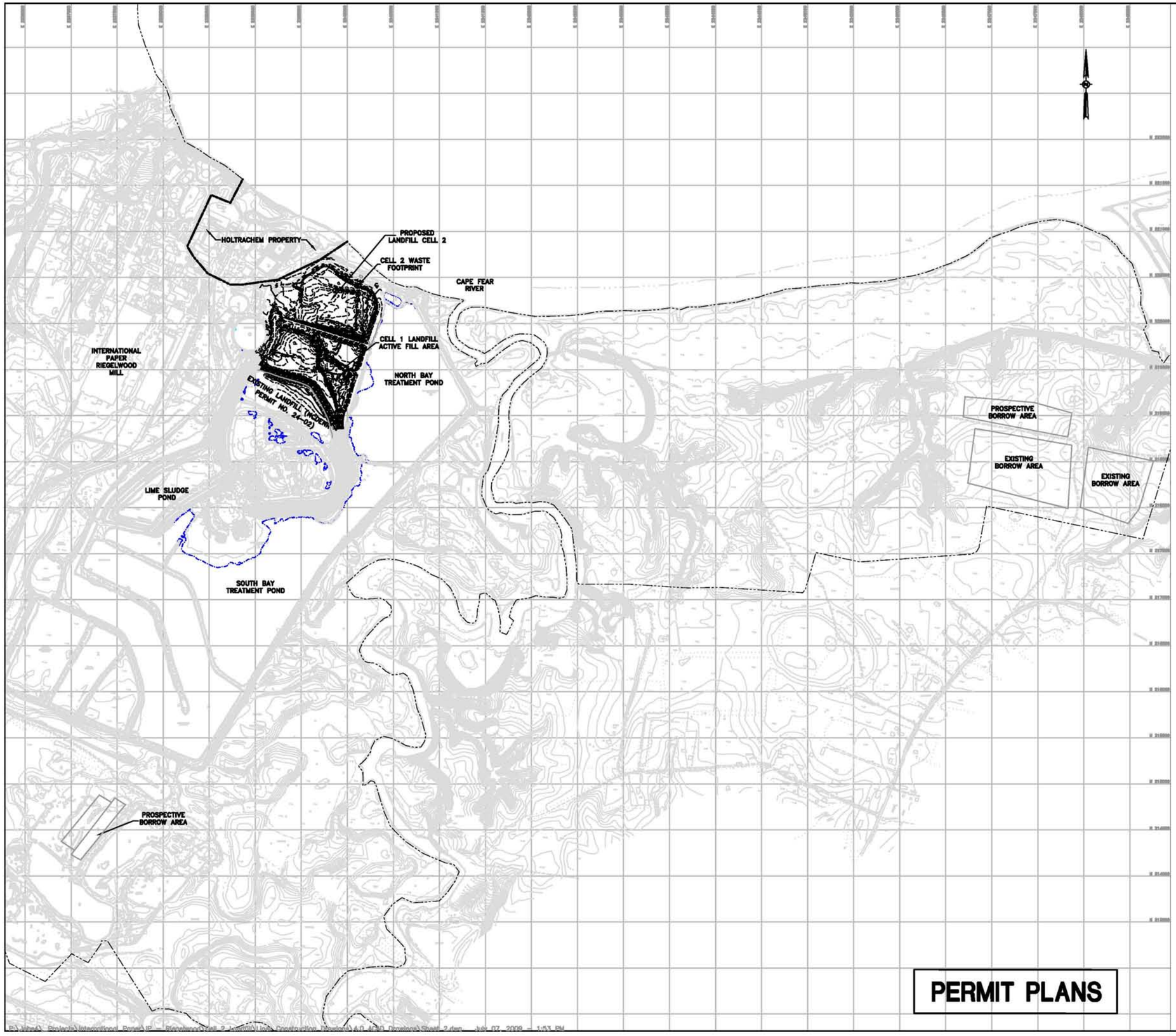

LEGEND

- SPOT ELEVATION
- 50 — EXISTING 10' CONTOUR FOR CELL 1 & 2
- EXISTING 2' CONTOUR FOR CELL 1 & 2
- PROPERTY LINE
- CELL 2 WASTE FOOTPRINT
- EXISTING FORCEMAIN
- STREAM OR POND
- WATER
- FENCE LINE
- TREE LINE
- UTILITY POLE
- AERIAL SURVEY MONUMENT

REFERENCES

1. THIS MAP COMPILED BY PHOTOGRAMMETRIC METHODS FROM AERIAL PHOTOGRAPHY DATED 3/14/01 BY AIR SURVEY CORPORATION, 45180 BUSINESS COURT, DULLES, VIRGINIA 20166-6706 AS APPROVED BY INTERNATIONAL PAPER COMPANY.
2. COORDINATE SYSTEM IS NORTH CAROLINA STATE PLANE GRID, 1983, US FEET.
3. ELEVATIONS ARE IN FEET AND REFERENCED TO MEAN SEA LEVEL (MSL) NATIONAL GEODETIC VERTICAL DATUM (NGVD).
4. PLANT ELEVATION DATUM 0.00 FEET IS REPORTED BY McKIM & CREED (REFERENCE DAVID B. GOLDSTONE, JR., REGISTERED SURVEYOR, WHITEVILLE, NC) TO BE EL. -3.76 NGVD; THUS, EL. 43.76 PLANT DATUM = EL. 40.00 NGVD.
5. TOPOGRAPHY OF AS-BUILT SUBGRADE ELEVATIONS OF CELL 1 BASED ON DRAWING ENTITLED INTERNATIONAL PAPER COMPANY, RIEGELWOOD PAPER MILL, SHEET 1 OF 5, BY BRUNSWICK SURVEYING, INC., DATED 2003.
6. TOPOGRAPHY OF CELL 2 AND ACTIVE FILLING AREA OF CELL 1 ARE BASED ON MARCH 2, 2009 TOPOGRAPHIC SURVEY BY URS CORPORATION.

500 0 250 500
SCALE IN FEET

REFERENCE DRAWINGS	
DRAWING NO.	TITLE

NOTES:

NORTH CAROLINA PROFESSIONAL SEAL 26500 ENGINEER CONAN D. FITZGERALD

Certification:
This project was conducted under my direct and responsible charge.

Conan D. Fitzgerald, PE URS Corporation-NC	26500 PE Registration No.	7/7/2009 Date

NO.	DATE	REVISIONS	DWN	CKD	APPD

DRAWN BY T.S.H.	4/2009 DATE DATE	CHECKED BY R.L.	4/23/2009 DATE DATE
DESIGNED BY L.G.	4/2009 DATE DATE	APPROVED BY	DATE DATE

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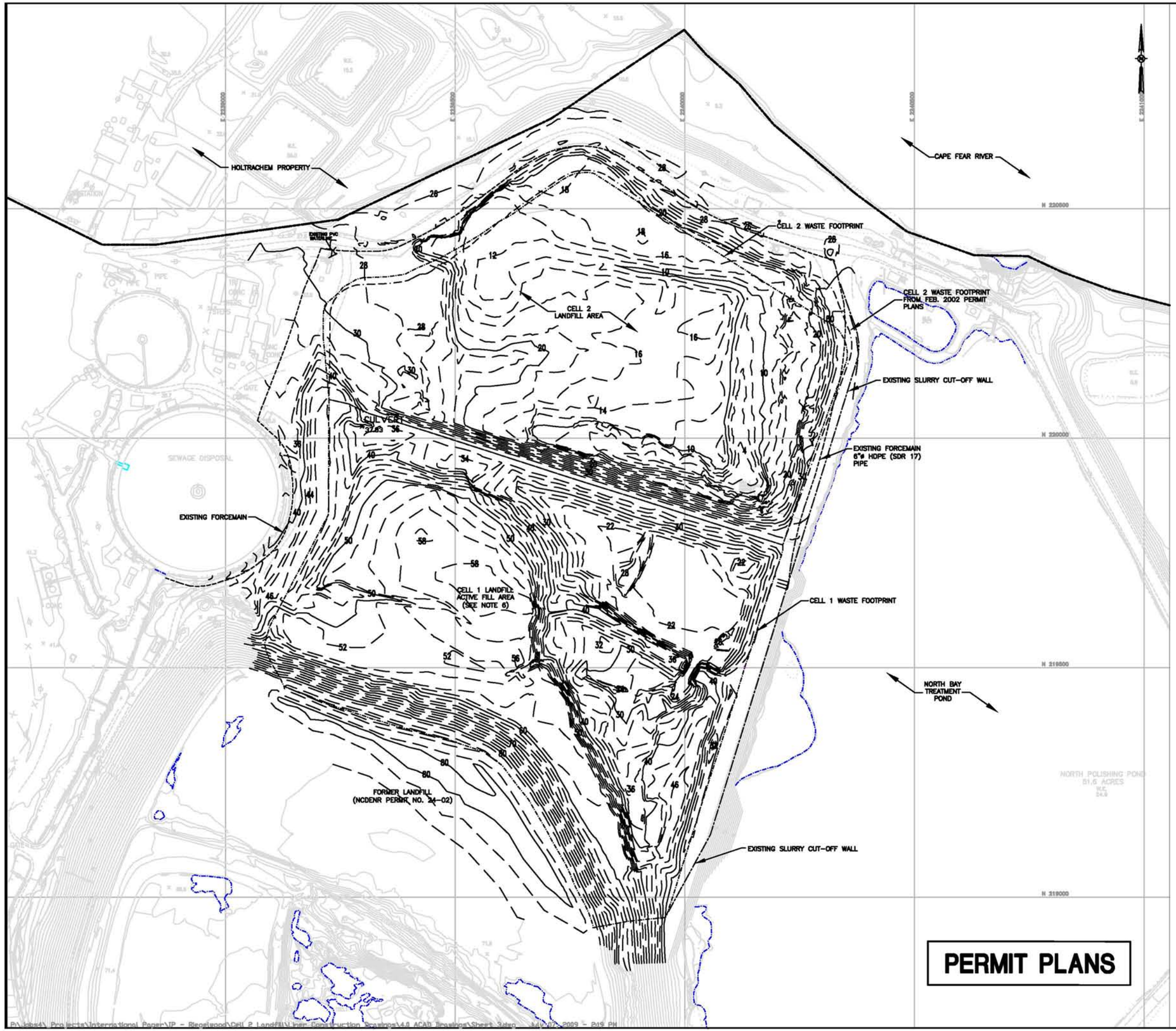
TECHNICAL – ENVIRONMENTAL

LINER SYSTEM DRAWINGS
RIEGELWOOD MILL LANDFILL CELL 2
SITE PLAN
SHEET 2 OF 21

DR. BY: TSH	SCALE: AS SHOWN	JOB #: 31828746	
ENG. BY: LG	DATE: DATE:	DRAWING NO. E1	REV. 0
PREV. DWG. #: N/A			
EDMS DOCUMENT			
IP CAD#: 000-0000.DWG			



PERMIT PLANS

LEGEND

- SPOT ELEVATION
- EXISTING 10' CONTOUR
- EXISTING 2' CONTOUR
- PROPERTY LINE
- CELL 1 & 2 WASTE FOOTPRINT 2009 PERMIT PLANS
- CELL 2 WASTE FOOTPRINT FEB 2002 PERMIT PLANS
- EXISTING FORCEMAIN
- EXISTING SLURRY CUT-OFF WALL
- STREAM OR POND
- WATER
- FENCE LINE
- TREE LINE
- UTILITY POLE
- AERIAL SURVEY MONUMENT

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7. SLURRY WALL ALIGNMENT SURVEYED BY BRUNSWICK SURVEYING, INC. 1027 SABBATH HOME ROAD, S.W., SUPPLY, N.C. 28462.

100 0 50 100
SCALE IN FEET

REFERENCE DRAWINGS	
DRAWING NO.	TITLE

NOTES:

Certification:
This project was conducted under my direct and responsible charge.

NORTH CAROLINA PROFESSIONAL SEAL 26500 ENGINEER CONAN D. FITZGERALD

Conan D. Fitzgerald, PE URS Corporation-NC	26500 PE Registration No.	7/7/2009 Date

NO.	DATE	REVISIONS	DWN	CKD	APPD

DRAWN BY L.G.	4/2009 DATE	CHECKED BY R.L.	4/23/2009 DATE
DESIGNED BY L.G.	4/2009 DATE	APPROVED BY	DATE

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TECHNICAL - ENVIRONMENTAL

LINER SYSTEM DRAWINGS
RIEGELWOOD MILL LANDFILL CELL 2
EXISTING CONDITIONS
SHEET 3 OF 21

DR. BY: L.G.	SCALE AS SHOWN	JOB # 38826746	
ENG. BY: L.G.	DATE DATE	DRAWING NO.	REV.
PREV. DWG. # N/A		E2	0
EDMS DOCUMENT			
IP CADD# 000-0000.DWG			

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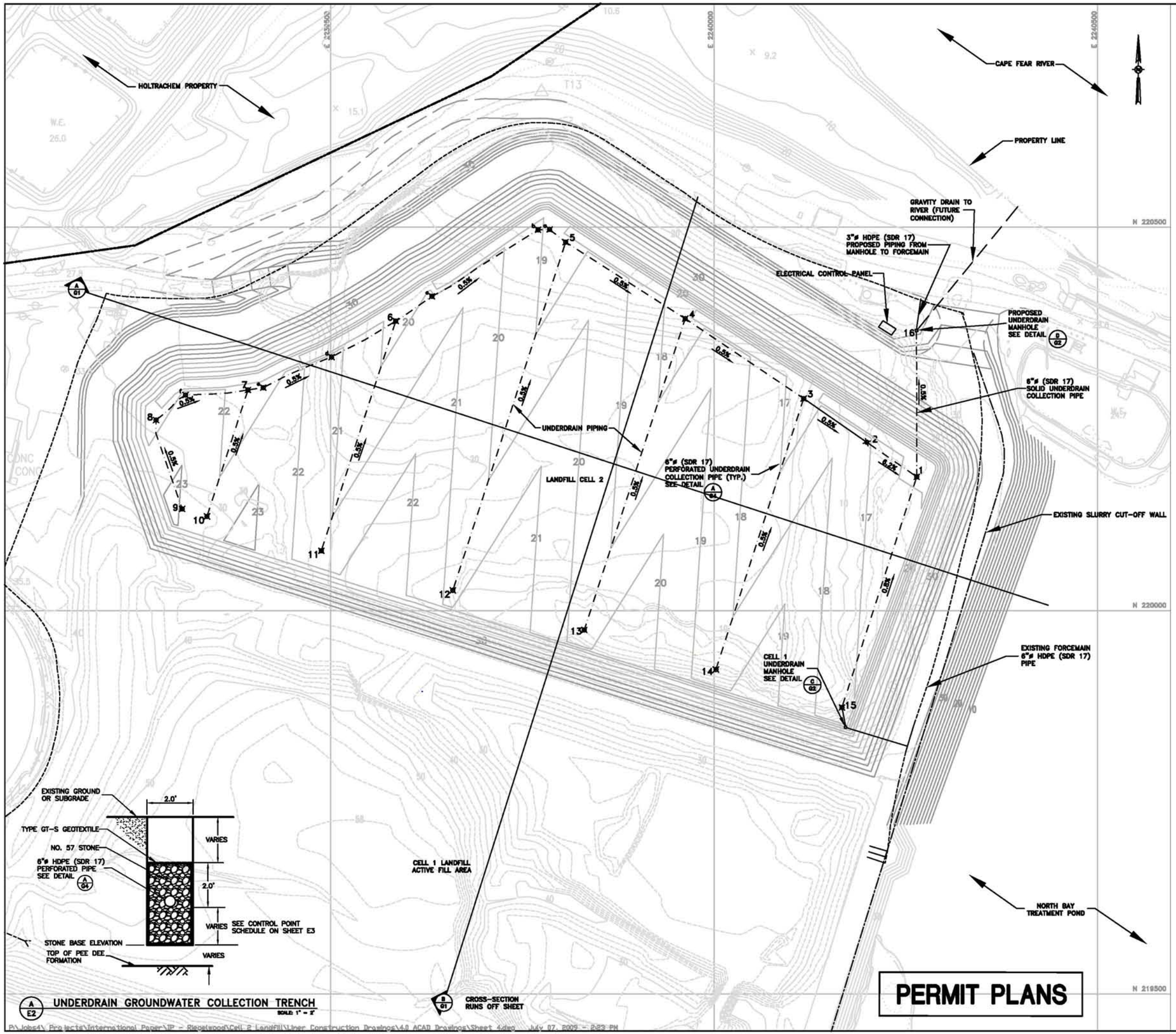

A/E2 UNDERDRAIN GROUNDWATER COLLECTION TRENCH
SCALE: 1" = 2'

PERMIT PLANS

60 0 30 60
SCALE IN FEET

UNDERDRAIN CONTROL POINTS

NODE ID	NORTHING	EASTING	PIPE INVERT	STONE BASE ELEV
1	220174.50	2240264.11	6.50	6.50
2	220219.62	2240198.96	11.40	10.00
3	220276.62	2240116.76	11.90	10.00
4	220380.78	2239962.32	12.83	10.00
5	220480.60	2239806.50	13.76	10.00
6	220377.68	2239585.04	15.07	15.07
7	220287.77	2239392.35	16.14	16.14
8	220248.49	2239272.61	16.80	16.80
9	220132.62	2239306.58	17.41	17.41
10	220122.87	2239338.97	17.01	17.01
11	220078.00	2239488.01	16.64	16.64
12	220026.39	2239659.45	16.15	16.15
13	219974.79	2239830.79	14.96	14.96
14	219923.16	2240002.34	13.76	13.76
15	219873.70	2240166.62	8.90	8.90
16	220363.74	2240263.91	5.50	5.50

NOTES:

LEGEND

- SPOT ELEVATION
- EXISTING 10' CONTOUR
- EXISTING 2' CONTOUR
- PROPOSED SUBGRADE CONTOUR
- PROPOSED SUBGRADE CONTOUR ACHIEVABLE AS PART OF SUBGRADE RESTORATION
- PROPERTY LINE
- UNDERDRAIN COLLECTION PIPE
- EXISTING SLURRY CUT-OFF WALL
- EXISTING FORCEMAIN
- STREAM OR POND
- WATER
- FENCE LINE
- TREE LINE
- UTILITY POLE
- AERIAL SURVEY MONUMENT
- 1 PIPE INVERT ELEVATION CONTROL POINT

REFERENCES

1. THIS MAP COMPILED BY PHOTOGRAMMETRIC METHODS FROM AERIAL PHOTOGRAPHY DATED 3/14/01 BY AIR SURVEY CORPORATION, 45180 BUSINESS COURT, DULLES, VIRGINIA 20166-6706 AS APPROVED BY INTERNATIONAL PAPER COMPANY.
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7. SLURRY WALL ALIGNMENT SURVEYED BY BRUNSWICK SURVEYING, INC. 1027 SABBATH HOME ROAD, S.W., SUPPLY, N.C. 28462.

REFERENCE DRAWINGS

DRAWING NO.	TITLE

NORTH CAROLINA PROFESSIONAL SEAL 26500 ENGINEER CONAN D. FITZGERALD

Certification:
This project was conducted under my direct and responsible charge.

Conan D. Fitzgerald, PE — URS Corporation-NC
28500 — PE Registration No.
7/7/2009 — Date

NO.	DATE	REVISIONS	DWN	CKD	APPD

DRAWN BY L.G. 4/2009 DATE DATE
CHECKED BY R.L. 4/23/2009 DATE DATE
DESIGNED BY L.G. 4/2009 DATE DATE
APPROVED BY DATE DATE

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TECHNICAL - ENVIRONMENTAL
LINER SYSTEM DRAWINGS
RIEGELWOOD MILL LANDFILL CELL 2
UNDERDRAIN LAYOUT AND PIPING
SHEET 4 OF 21

DR. BY: LG | SCALE: AS SHOWN | JOB #: 31826746
ENG. BY: L.G. | DATE: | DATE:
PREV. DWG. #: N/A
EDMS DOCUMENT
IP CAD#: 000-0000.DWG
DRAWING NO. E3 | REV. 0

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HOLTRACHEM PROPERTY

CAPE FEAR RIVER

SILT FENCE SEE DETAIL A/G9

R=115 (TYP.)

R=80 (TYP.)

PROPOSED ACCESS ROAD SEE DETAIL B/G2

PROPERTY LINE

PROPOSED ACCESS RAMP SEE DETAIL B/G2

A/G1

ANCHOR TRENCH

R=80 (TYP.)

0.5% (TYP.)

PROPOSED ACCESS RAMP SEE DETAIL B/G2

R=41 (TYP.)

R=45 (TYP.)

C/G1

SUBGRADE CONTROL POINTS SEE SHEET 20

R=76 (TYP.)

R=134.5 (TYP.)

PROPOSED LANDFILL CELL 2

LEACHATE COLLECTION SUMP SEE DETAIL A/G5

2% (TYP.)

ANCHOR TRENCH

EXISTING FORCEMAIN 6"ø HDPE (SDR 17) PIPE

CELL 2 BERM

D/G3

EXISTING CELL 1 UNDERDRAIN MANHOLE

CELL 1 SECONDARY LINER LIMIT

CELL 1 PRIMARY LINER LIMIT

CELL 1 ANCHOR TRENCH

INTERIOR BERM

F/G3

CELL 1 LANDFILL ACTIVE FILL AREA

NORTH BAY TREATMENT POND

CROSS SECTION RUNS OFF SHEET

B/G1

BENEFICAL REUSE MATERIAL/ CONDITIONED PRIMARY SLUDGE

PROTECTIVE COVER

60 MIL TEXTURED HDPE GEOMEMBRAINE

GEONET COMPOSITE

GEOSYNTHETIC CLAY LINER (GCL)

1.0'

1.0'

SUBGRADE (THIS PLAN)

E 2235500

E 2240000

E 2240500

N 220500

N 220000

N 219500

PERMIT PLANS

NOTES:

1. SEE SHEET 20 FOR SUBGRADE CONTROL POINTS.

LEGEND

- SPOT ELEVATION
- EXISTING 10' CONTOUR
- EXISTING 2' CONTOUR
- PROPOSED SUBGRADE CONTOUR
- PROPOSED SUBGRADE CONTOUR ACHIEVABLE AS PART OF SUBGRADE RESTORATION
- PROPERTY LINE
- ANCHOR TRENCH
- EXISTING FORCEMAIN
- PROPOSED ACCESS ROAD
- STREAM OR POND
- WATER
- FENCE LINE
- TREE LINE
- UTILITY POLE
- AERIAL SURVEY MONUMENT
- 68 SUBGRADE CONSTRUCTION CONTROL POINTS SEE NOTE 1
- SILT FENCE

REFERENCES

1. THIS MAP COMPILED BY PHOTOGRAMMETRIC METHODS FROM AERIAL PHOTOGRAPHY DATED 3/14/01 BY AIR SURVEY CORPORATION, 45180 BUSINESS COURT, DULLES, VIRGINIA 20166-6706 AS APPROVED BY INTERNATIONAL PAPER COMPANY.
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6. TOPOGRAPHY OF CELL 2 AND ACTIVE FILLING AREA OF CELL 1 ARE BASED ON MARCH 2, 2009 TOPOGRAPHIC SURVEY BY URS CORPORATION.

60 0 30 60

SCALE IN FEET

REFERENCE DRAWINGS	
DRAWING NO.	TITLE

Certification:
This project was conducted under my direct and responsible charge.

NORTH CAROLINA PROFESSIONAL SEAL 26500 ENGINEER CONAN D. FITZGERALD

Conan D. Fitzgerald, PE URS Corporation-NC	26500 PE Registration No.	7/7/2009 Date

NO.	DATE	REVISIONS	DWN	CKD	APPD

DRAWN BY L.G.	4/2009 DATE DATE	CHECKED BY R.L.	4/23/2009 DATE DATE
DESIGNED BY L.G.	4/2009 DATE DATE	APPROVED BY	DATE DATE

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TECHNICAL - ENVIRONMENTAL

LINER SYSTEM DRAWINGS
RIEGELWOOD MILL LANDFILL CELL 2
SUBGRADE GRADING PLAN
SHEET 5 OF 21

DR. BY: LG	SCALE: AS SHOWN	JOB #: 31885746	
ENG. BY: LG	DATE: DATE	DRAWING NO.	REV.
PREV. DWG. #: N/A		E4	0
EDMS DOCUMENT			
IP CAD#: 000-0000LDWG			

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HOLTRACHEM PROPERTY

CAPE FEAR RIVER

PROPERTY LINE

PROPOSED ACCESS ROAD SEE DETAIL B/G2

PROPOSED ACCESS RAMP SEE DETAIL B/G2

R=124.3 (TYP.)

R=83.8 (TYP.)

ANCHOR TRENCH SEE DETAIL E/G3

R=14.7 (TYP.)

PROPOSED ACCESS RAMP SEE DETAIL B/G2

PROTECTIVE COVER CONTROL POINTS SEE SHEET 21

R=73 (TYP.)

LEACHATE COLLECTION SUMP SEE DETAIL A/G5 D/G5

ANCHOR TRENCH SEE DETAIL E/G3

EXISTING FORCEMAIN 6"ø HDPE (SDR 17) PIPE

CELL 2 BERM

EXISTING CELL 1 UNDERDRAIN MANHOLE

PROPOSED LANDFILL CELL 2

0.5% (TYP.)

2% (TYP.)

INTERIOR BERM

CELL 1 LANDFILL ACTIVE FILL AREA

NORTH BAY TREATMENT POND

CROSS SECTION RUNS OFF SHEET

BENEFICAL REUSE MATERIAL/ CONDITIONED PRIMARY SLUDGE

PROTECTIVE COVER

60 MIL TEXTURED HDPE GEOMEMBRAINE

GEONET COMPOSITE

GEOSYNTHETIC CLAY LINER (GCL)

PROTECTIVE COVER (THIS PLAN)

1.0'

1.0'

E 2235500 E 2240000 E 2240500

N 220500 N 220000 N 219500

PERMIT PLANS

NOTES:

1. SEE SHEET 21 FOR PROTECTIVE COVER CONTROL POINTS.

LEGEND

- SPOT ELEVATION
- EXISTING 10' CONTOUR
- EXISTING 2' CONTOUR
- PROPOSED TOP OF PROTECTIVE COVER CONTOUR
- CREST OF PROTECTIVE COVER ELEVATION 37.0
- PROPERTY LINE
- ANCHOR TRENCH
- EXISTING FORCEMAIN
- PROPOSED ACCESS ROAD
- STREAM OR POND
- WATER
- FENCE LINE
- TREE LINE
- UTILITY POLE
- AERIAL SURVEY MONUMENT
- ⊗ 68 PROTECTIVE COVER CONSTRUCTION CONTROL POINTS SEE NOTE 1

REFERENCES

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60 0 30 60
SCALE IN FEET

REFERENCE DRAWINGS

DRAWING NO.	TITLE

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Certification:
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URS Corporation-NC

26500 PE Registration No.

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TECHNICAL - ENVIRONMENTAL

LINER SYSTEM DRAWINGS
RIEGELWOOD MILL LANDFILL CELL 2
PROTECTIVE COVER GRADING PLAN
SHEET 6 OF 21

DR. BY: LG	SCALE: AS SHOWN	JOB #: 31805746
ENG. BY: LG	DATE: DATE	DRAWING NO. E5
PREV. DWG. #: N/A		REV. 0
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IP CAD#: 000-0000.DWG		

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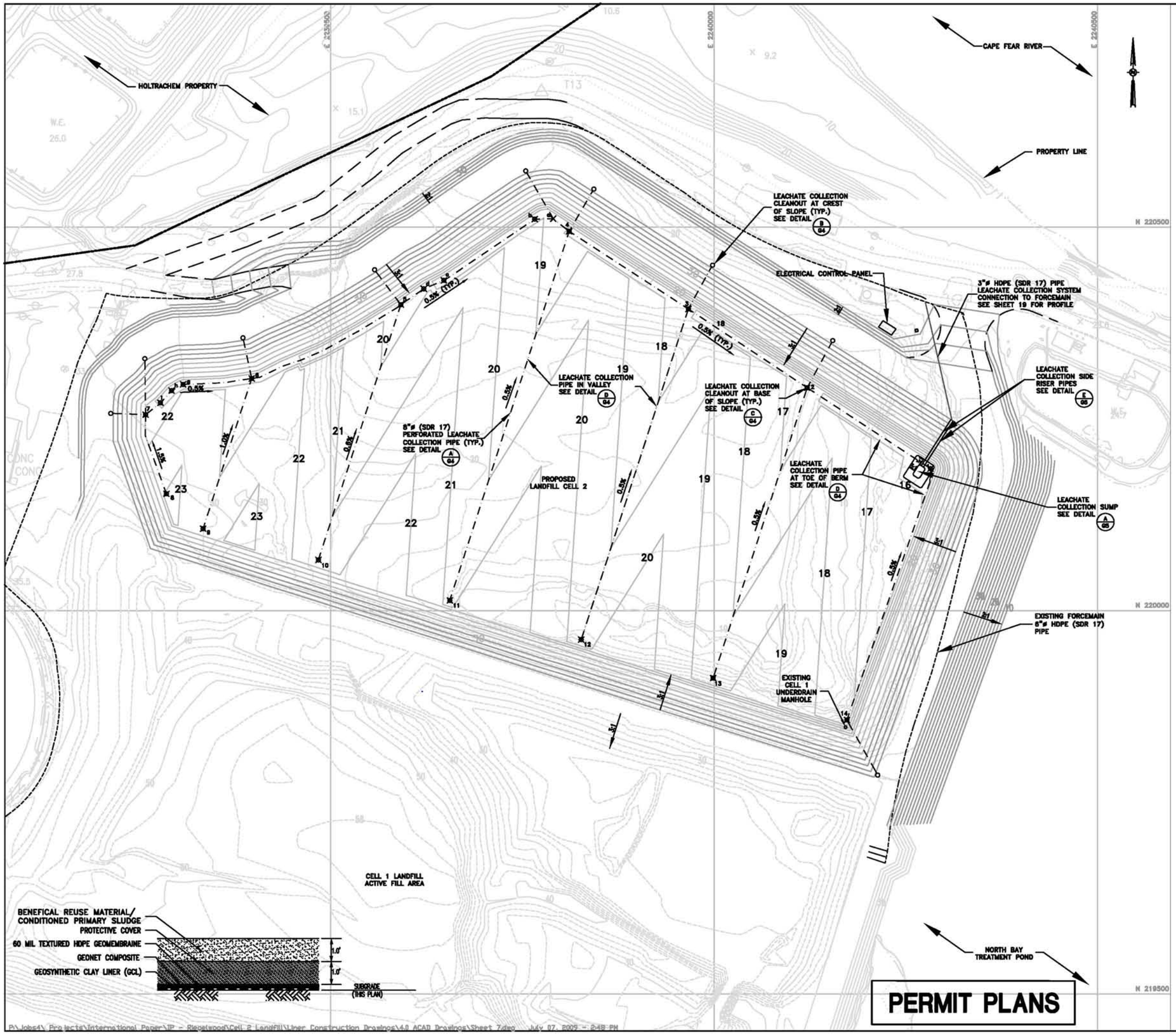

LEACHATE CONTROL POINTS			
NODE ID	NORTHING	EASTING	PIPE INVERT
1	220185.19	2240282.19	15.50
2	220290.67	2240121.31	16.47
3	220393.41	2239966.42	17.40
4	220494.67	2239811.06	18.33
5	220399.11	2239591.60	19.62
6	220302.70	2239397.20	20.71
7	220255.51	2239258.96	21.48
8	220152.31	2239286.09	23.10
9	220106.89	2239333.91	22.70
10	220066.09	2239484.19	21.70
11	220013.31	2239655.50	20.86
12	219962.21	2239826.74	19.67
13	219912.07	2239998.75	18.46
14	219857.39	2240173.07	17.21

NOTES:

LEGEND

- SPOT ELEVATION
- EXISTING 10' CONTOUR
- EXISTING 2' CONTOUR
- PROPOSED SUBGRADE CONTOUR
- PROPOSED SUBGRADE CONTOUR ACHIEVABLE AS PART OF SUBGRADE RESTORATION
- PROPERTY LINE
- ANCHOR TRENCH
- EXISTING FORCEMAIN
- PROPOSED ACCESS ROAD
- STREAM OR POND
- WATER
- FENCE LINE
- TREE LINE
- UTILITY POLE
- AERIAL SURVEY MONUMENT
- CLEANOUT

REFERENCES

1. THIS MAP COMPILED BY PHOTOGRAMMETRIC METHODS FROM AERIAL PHOTOGRAPHY DATED 3/14/01 BY AIR SURVEY CORPORATION, 45180 BUSINESS COURT, DULLES, VIRGINIA 20166-6706 AS APPROVED BY INTERNATIONAL PAPER COMPANY.
2. COORDINATE SYSTEM IS NORTH CAROLINA STATE PLANE GRID, 1983, US FEET.
3. ELEVATIONS ARE IN FEET AND REFERENCED TO MEAN SEA LEVEL (MSL) NATIONAL GEODETIC VERTICAL DATUM (NGVD).
4. PLANT ELEVATION DATUM 0.00 FEET IS REPORTED BY McKIM & CREED (REFERENCE DAVID B. GOLDSTONE, JR., REGISTERED SURVEYOR, WHITEVILLE, NC) TO BE EL. -3.76 NGVD; THUS, EL. 43.76 PLANT DATUM = EL. 40.00 NGVD.
5. TOPOGRAPHY OF AS-BUILT SUBGRADE ELEVATIONS OF CELL 1 BASED ON DRAWING ENTITLED INTERNATIONAL PAPER COMPANY, RIEGELWOOD PAPER MILL, SHEET 1 OF 5, BY BRUNSWICK SURVEYING, INC., DATED 2003.
6. TOPOGRAPHY SURVEY OF CELL 2 AND ACTIVE FILLING AREA OF CELL 1 ARE BASED ON MARCH 2, 2009 TOPOGRAPHIC SURVEY BY URS CORPORATION.

60 0 30 60
SCALE IN FEET

REFERENCE DRAWINGS

DRAWING NO.	TITLE

Certification:
This project was conducted under my direct and responsible charge.

NORTH CAROLINA PROFESSIONAL SEAL 26500 ENGINEER CONAN D. FITZGERALD

Conan D. Fitzgerald, PE URS Corporation-NC	26500 PE Registration No.	7/7/2009 Date

NO.	DATE	REVISIONS	DWN	CKD	APPD

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TECHNICAL - ENVIRONMENTAL
LINER SYSTEM DRAWINGS
RIEGELWOOD MILL LANDFILL CELL 2
LEACHATE MANAGEMENT PLAN
SHEET 7 OF 21

DR. BY: L.G.	SCALE: AS SHOWN	JOB #: 38826746	
ENG. BY: L.G.	DATE: DATE:	DRAWING NO.	REV.
PREV. DWG. #: N/A		E6	0
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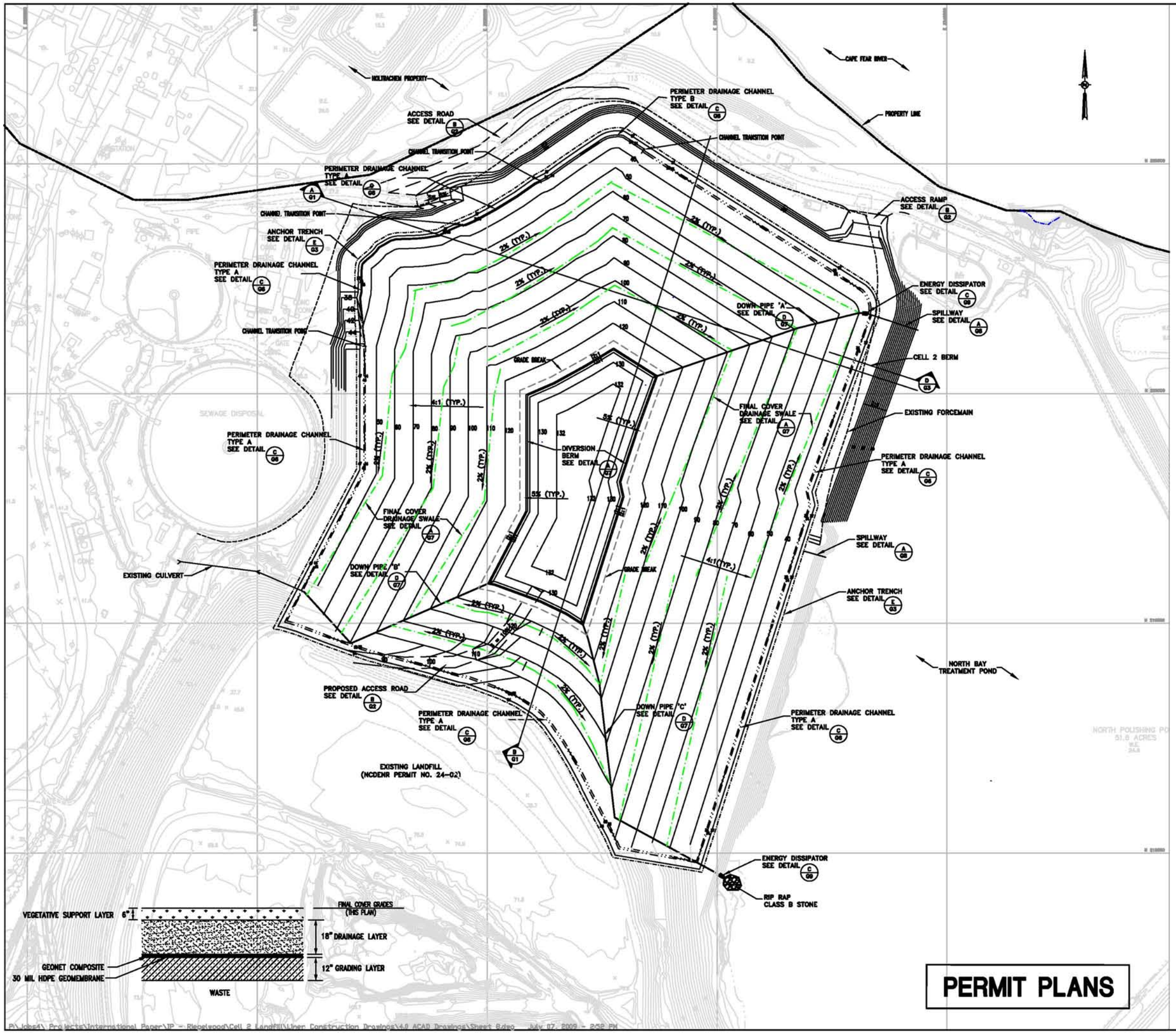

PERMIT PLANS

100 0 50 100
SCALE IN FEET

LEGEND

- SPOT ELEVATION
- EXISTING 10' CONTOUR
- EXISTING 2' CONTOUR
- PROPOSED TOP OF FINAL COVER CONTOUR
- PROPERTY LINE
- ANCHOR TRENCH
- EXISTING FORCEMAIN
- PERIMETER DRAINAGE CHANNEL
- INTERMEDIATE DRAINAGE SWALE
- DOWN PIPE
- ACCESS ROAD
- FENCE LINE
- TREE LINE
- UTILITY POLE
- AERIAL SURVEY MONUMENT

REFERENCES

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6. TOPOGRAPHY SURVEY OF CELL 2 AND ACTIVE FILLING AREA OF CELL 1 ARE BASED MARCH 2, 2009 TOPOGRAPHIC SURVEY BY URS CORPORATION.

REFERENCE DRAWINGS	
DRAWING NO.	TITLE

NOTES:

NORTH CAROLINA PROFESSIONAL SEAL 26500 ENGINEER CONAN D. FITZGERALD

Certification:
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Conan D. Fitzgerald, PE — URS Corporation-NC
28500 — PE Registration No.
7/7/2009 — Date

NO.	DATE	REVISIONS	DWN	CKD	APPD

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LINER SYSTEM DRAWINGS
RIEGELWOOD MILL LANDFILL CELL 2
FINAL COVER GRADING PLAN
SHEET 8 OF 21

DR. BY: LG	SCALE: AS SHOWN	JOB #: 31826746	
ENG. BY: L.G.	DATE: DATE:	DRAWING NO.	REV.
PREV. DWG. #: N/A		E7	0
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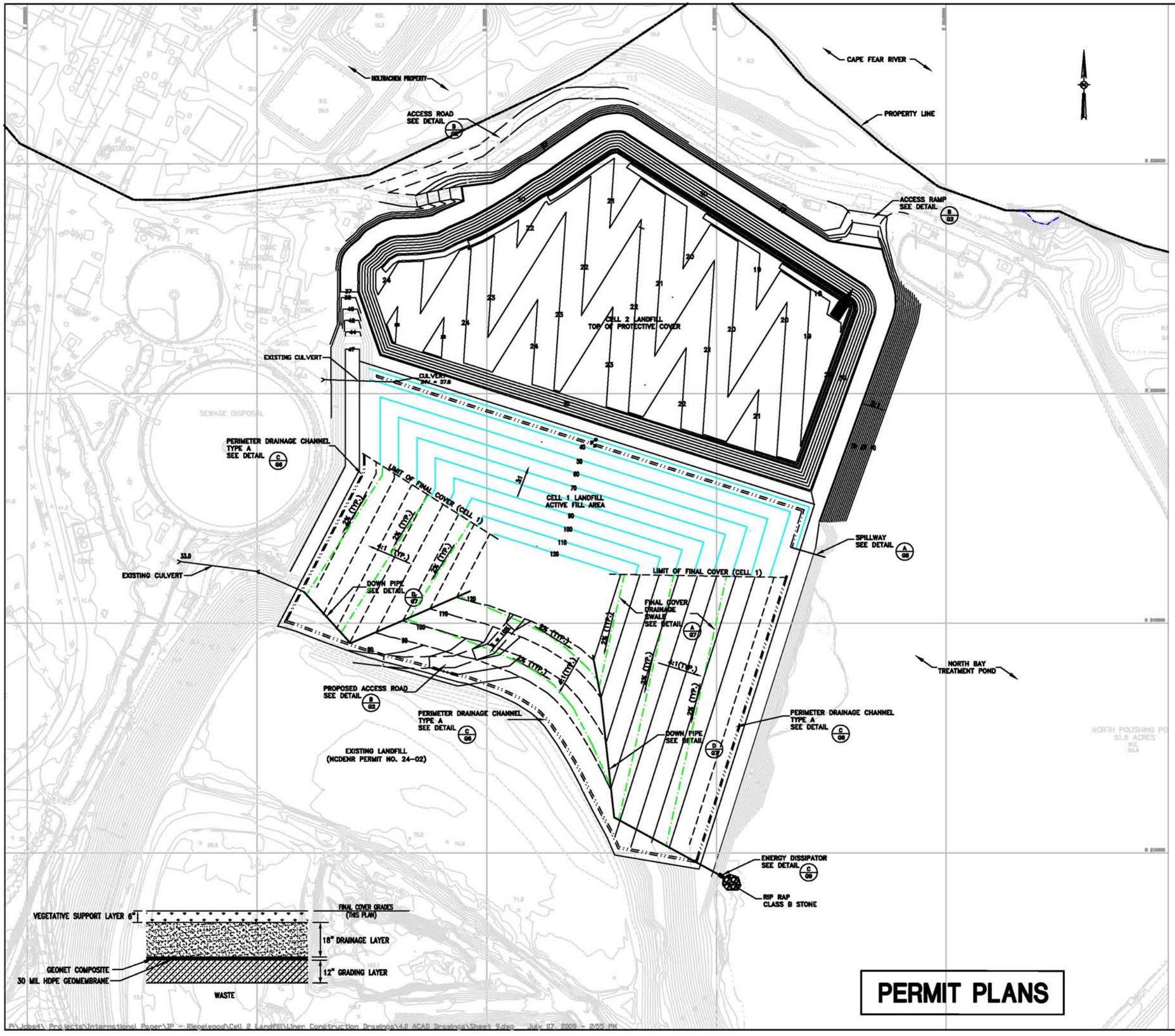

PERMIT PLANS

LEGEND

- SPOT ELEVATION
- EXISTING 10' CONTOUR
- EXISTING 2' CONTOUR
- TOP OF PROTECTIVE COVER CONTOUR
- TOP OF FINAL COVER CONTOUR
- TOP OF WASTE CONTOUR
- EXISTING FORCEMAIN
- PERIMETER DRAINAGE CHANNEL
- INTERMEDIATE DRAINAGE SWALE
- DOWN PIPE
- PROPERTY LINE
- ACCESS ROAD
- FENCE LINE
- TREE LINE
- UTILITY POLE
- AERIAL SURVEY MONUMENT

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100 0 50 100
SCALE IN FEET

REFERENCE DRAWINGS	
DRAWING NO.	TITLE

NOTES:

Certification:
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NORTH CAROLINA PROFESSIONAL SEAL 26500 ENGINEER CONAN D. FITZGERALD

Conan D. Fitzgerald, PE URS Corporation-NC	26500 PE Registration No.	7/7/2009 Date

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LINER SYSTEN DRAWINGS
RIEGELWOOD MILL LANDFILL CELL 2
OPERATIONAL PLAN
SHEET 9 OF 21

DR. BY: LG	SCALE: AS SHOWN	JOB #: 31826746	
ENG. BY: L.G.	DATE: DATE:	DRAWING NO. E8	REV. 0
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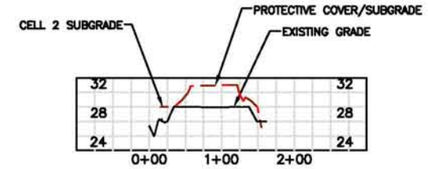
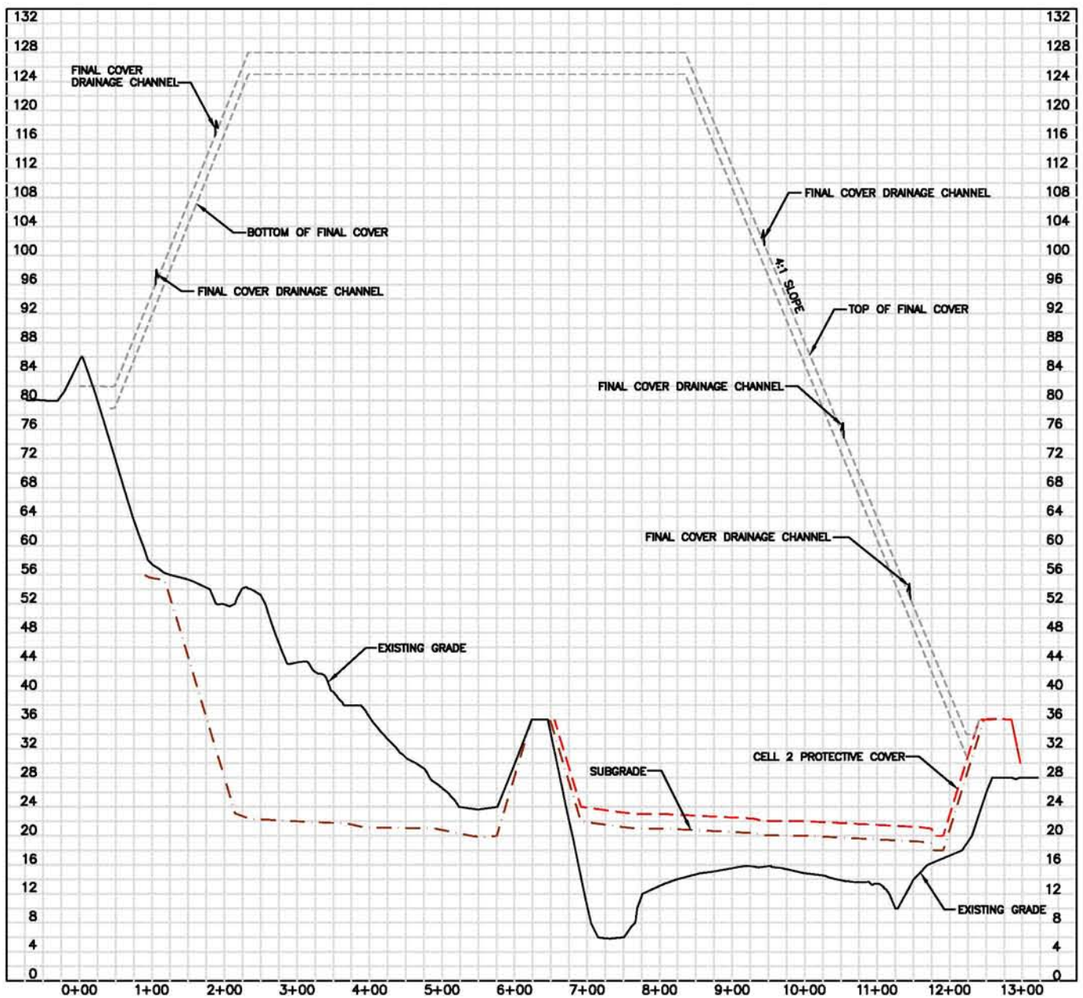
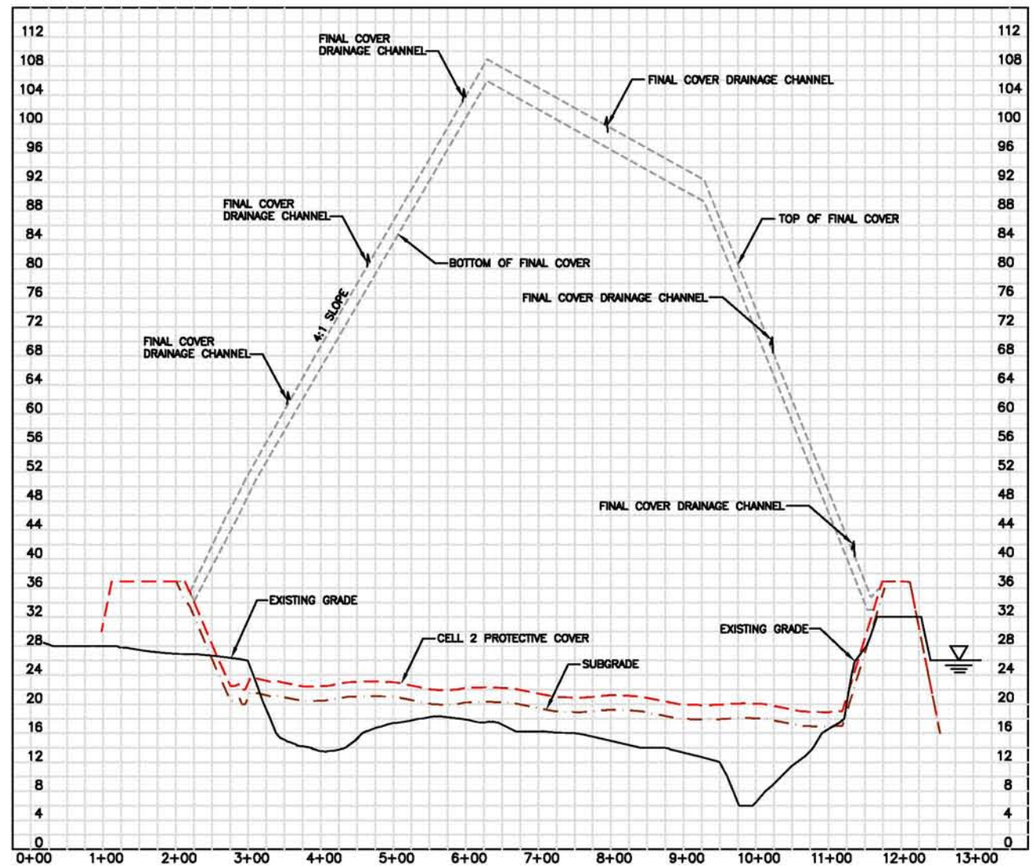


C – Access Road PROFILE

B – Cell 1–2 S–N PROFILE



A – Cell 2 W–E PROFILE



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REFERENCE DRAWINGS	
DRAWING NO.	TITLE

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Conan D. Fitzgerald, PE URS Corporation–NC	26500 PE Registration No.	7/7/2009 Date

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LINER SYSTEM DRAWINGS
RIEGELWOOD MILL LANDFILL CELL 2
CROSS SECTIONS
SHEET 10 OF 21

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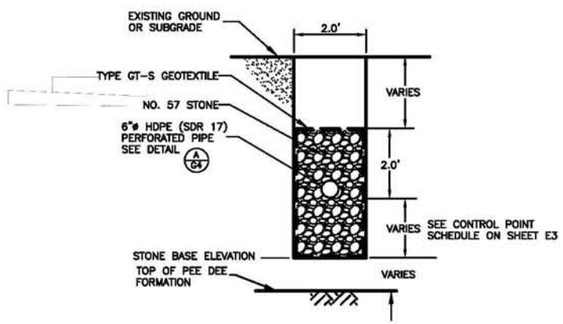
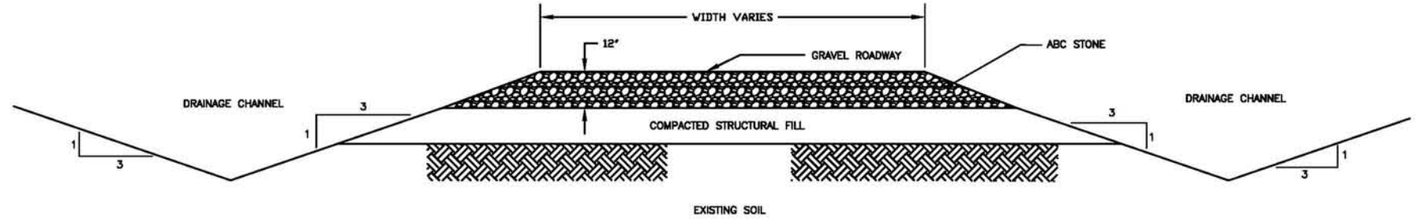
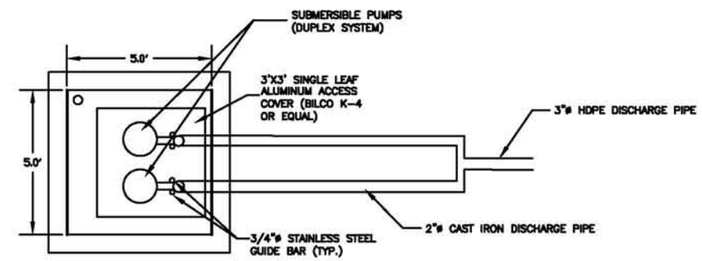


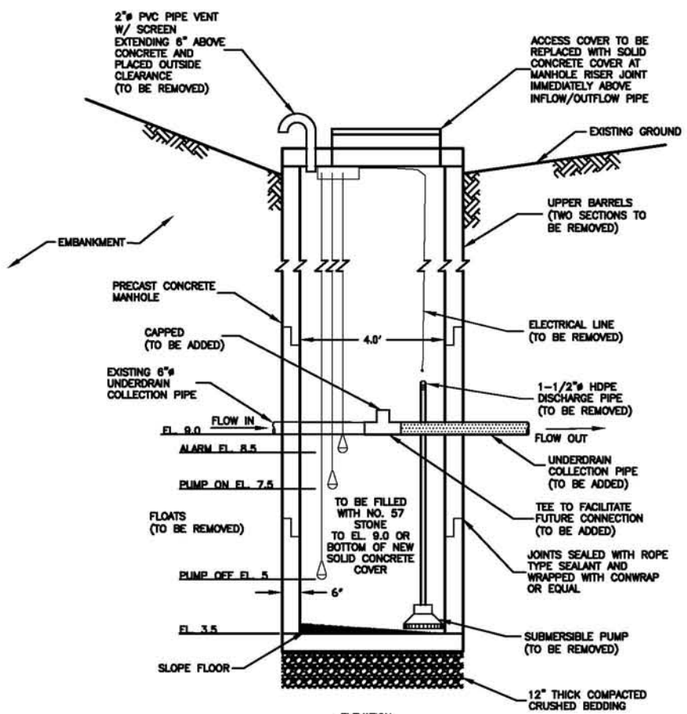
A/G2 UNDERDRAIN GROUNDWATER COLLECTION TRENCH
SCALE: 1" = 2'



B/G2 ACCESS ROAD
NOT TO SCALE



PLAN VIEW

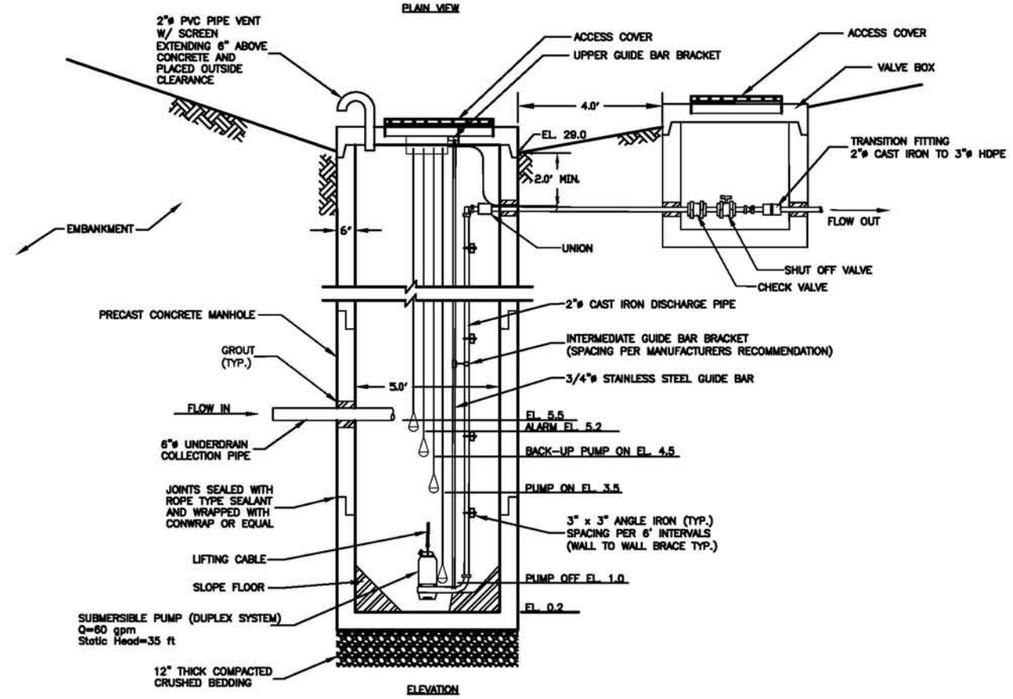


ELEVATION

C/G2 CELL 1 UNDERDRAIN MANHOLE TO BE DECOMMISSIONED
SCALE: 1" = 2'

NOTES:

1. MANHOLE TO BE DECOMMISSIONED AND PUMP, DISCHARGE PIPE, FLOATS AND ELECTRICAL LINE TO BE REMOVED AFTER UNDERDRAIN COLLECTION PIPE IS EXTENDED BENEATH CELL 2 AND CONNECTED TO NEW CELL 2 UNDERDRAIN MANHOLE.



ELEVATION

D/G2 PROPOSED CELL 2 UNDERDRAIN MANHOLE
NOT TO SCALE

PERMIT PLANS

REFERENCE DRAWINGS

DRAWING NO.	TITLE

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Conan D. Fitzgerald, PE URS Corporation-NC	26500 PE Registration No.	7/7/2009 Date

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TECHNICAL - ENVIRONMENTAL
LINER SYSTEM DRAWINGS
RIEGELWOOD MILL LANDFILL CELL 2
UNDERDRAIN DETAILS
SHEET 11 OF 21

DR. BY: L.G.	SCALED AS SHOWN	JOB #: 31886746	
ENG. BY: L.G.	DATED DATED	DRAWING NO. G2	REV. 0
PREV. DWG. #: N/A			
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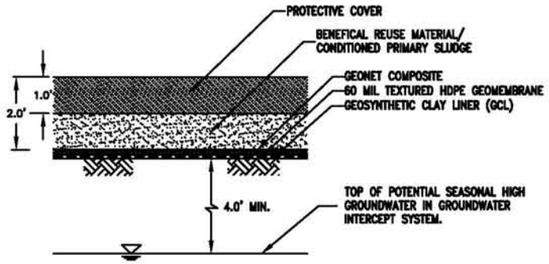
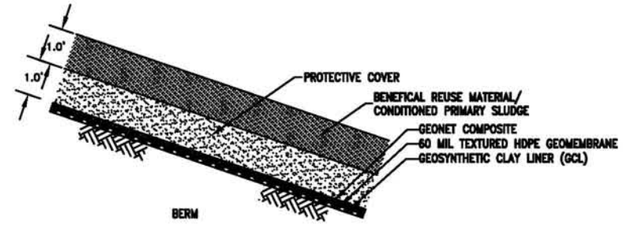
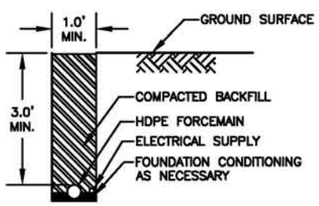


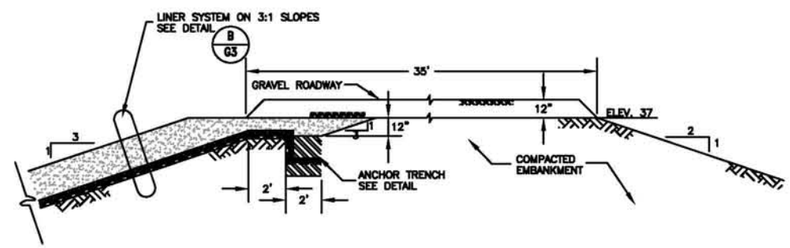
A / G3 BASE LINER SYSTEM DETAIL
SCALE: 1"=2'



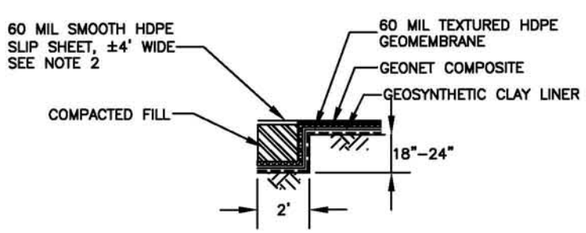
B / G3 TYPICAL LINER SYSTEM ON 3:1 SLOPES
SCALE: 1"=2'



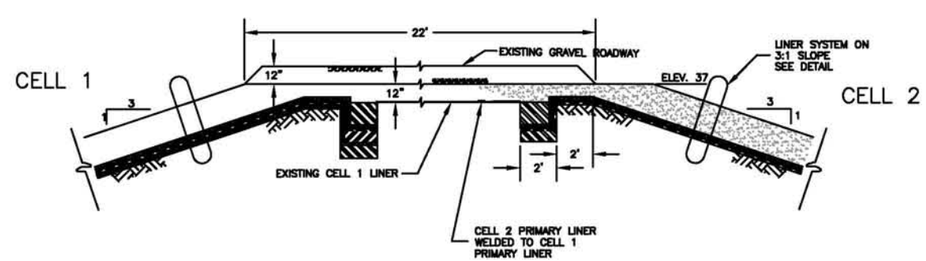
C / G3 UTILITY TRENCH
NOT TO SCALE



D / G3 CELL 2 BERM DETAIL
SCALE: 1"=4'



E / G3 ANCHOR TRENCH
NOT TO SCALE



F / G3 INTERIOR BERM DETAIL
SCALE: 1"=4'

NOTES:

1. THE THICKNESS OF THE GEOSYNTHETICS IS EXAGGERATED FOR CLARITY.
2. PLACE HDPE SLIP SHEET ON THE NORTH, EAST AND WEST BERM ONLY.

PERMIT PLANS

REFERENCE DRAWINGS

DRAWING NO.	TITLE

Certification:
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NORTH CAROLINA PROFESSIONAL SEAL 26500 ENGINEER CONAN D. FITZGERALD

Conan D. Fitzgerald, PE URS Corporation–NC	26500 PE Registration No.	7/7/2009 Date

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RIEGELWOOD MILL LANDFILL CELL 2
LINER AND PERIMETER BERM DETAILS
SHEET 12 OF 21

DR. BY: LG	SCALE: AS SHOWN	JOB #: 31828746	
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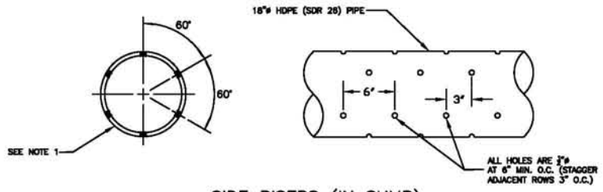
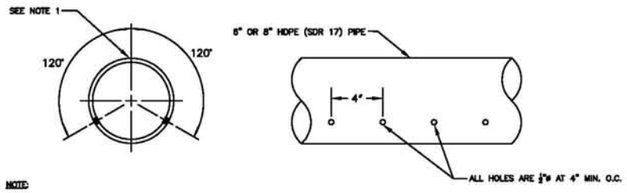
IP CAD#: 000–0000.DWG			



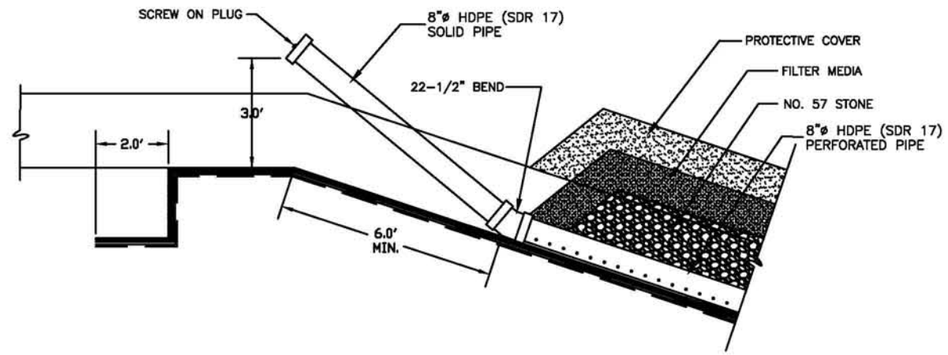
SIDE RISERS (IN SUMP)



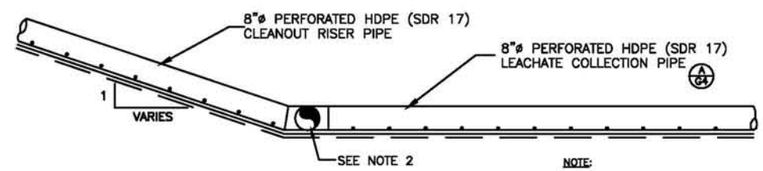
NOTE:
1. ORIENT PIPE AS SHOWN.

UNDERDRAIN AND LEACHATE COLLECTION PIPING

(A / G4) HDPE PIPE PERFORATIONS DETAIL
NOT TO SCALE

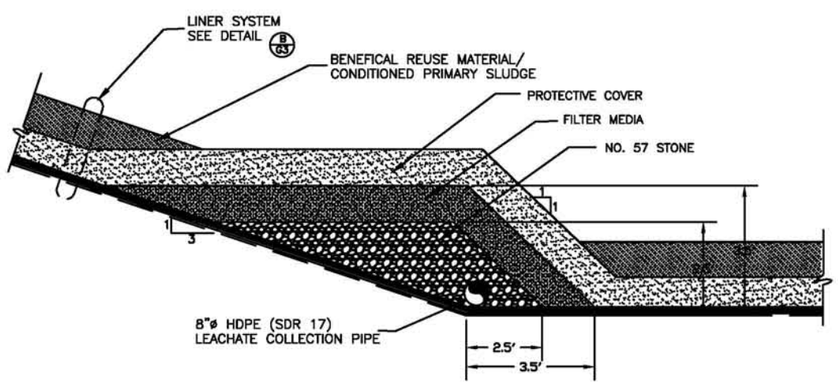


(B / G4) LEACHATE COLLECTION PIPE CLEANOUT AT CREST OF SLOPE DETAIL
NOT TO SCALE

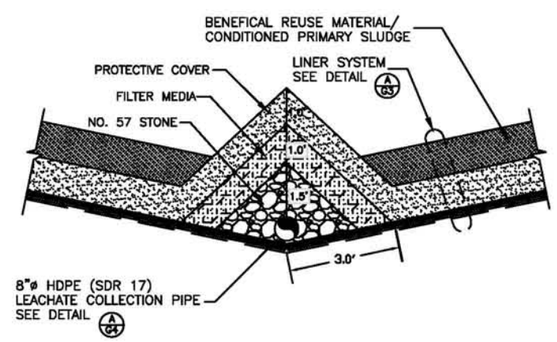


NOTE:
1. SOME LAYERS AND GRAVEL COLUMN (WHERE APPLICABLE) NOT SHOWN FOR CLARITY.
2. CONNECT TO CROSSING LEACHATE PIPING USING A CROSS FITTING.
3. FOR GRAVEL COLUMN, SEE DETAIL (D / G4)

(C / G4) LEACHATE COLLECTION PIPE CLEANOUT AT BASE OF SLOPE DETAIL
NOT TO SCALE



TYPE 1 – ALONG TOE



TYPE 2 – IN VALLEY

(D / G4) GRAVEL COLUMN CROSS SECTION DETAIL
SCALE: 1"=2'

PERMIT PLANS

REFERENCE DRAWINGS

DRAWING NO.	TITLE

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NORTH CAROLINA PROFESSIONAL SEAL 26500 ENGINEER CONAN D. FITZGERALD

Conan D. Fitzgerald, PE URS Corporation–NC	26500 PE Registration No.	7/7/2009 Date

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TECHNICAL – ENVIRONMENTAL
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RIEGELWOOD MILL LANDFILL CELL 2
LEACHATE MANAGEMENT DETAILS
SHEET 13 OF 21

DR. BY: LG	SCALE: AS SHOWN	JOB #: 31826746	
ENG. BY: LG	DATE: DATE:	DRAWING NO.	REV.
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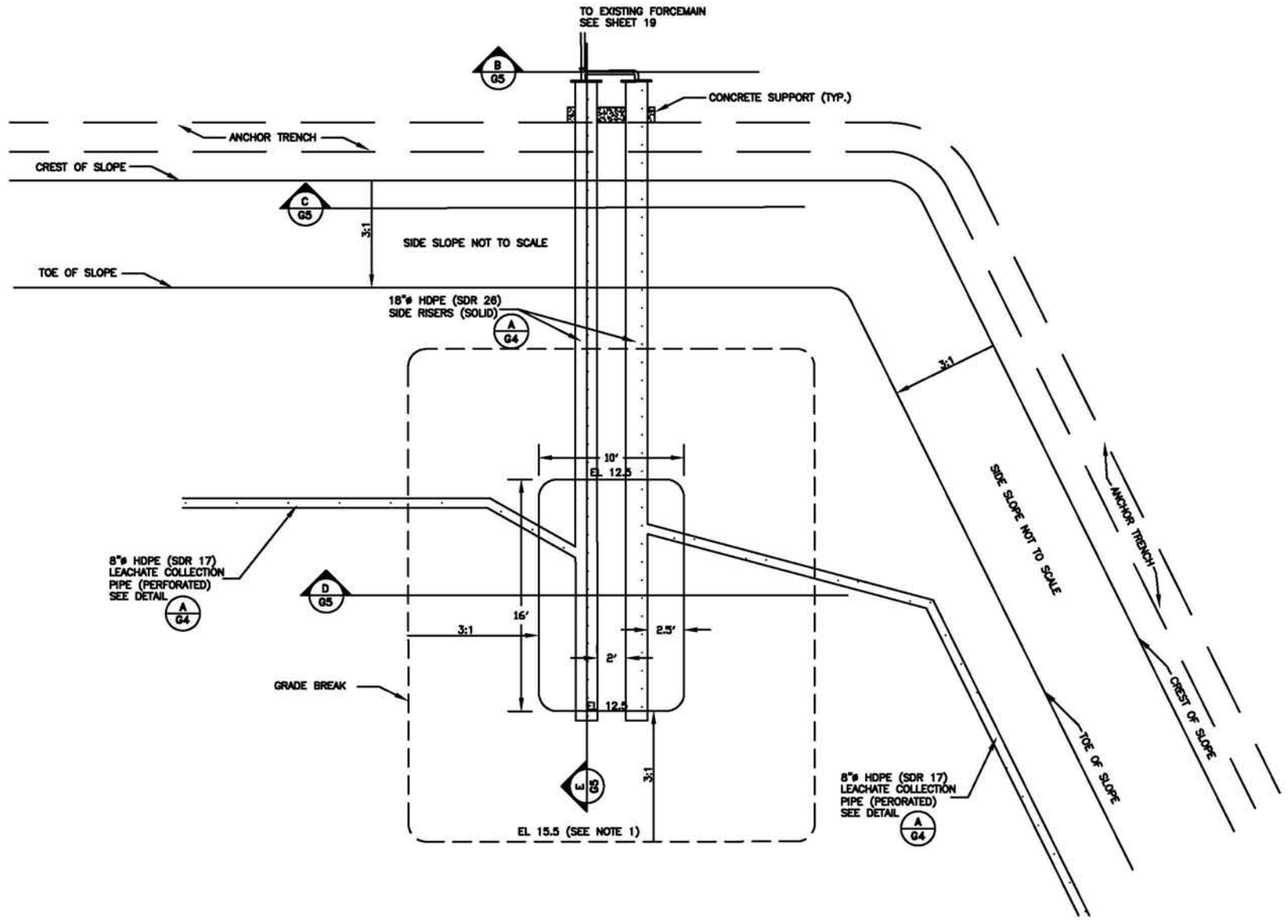
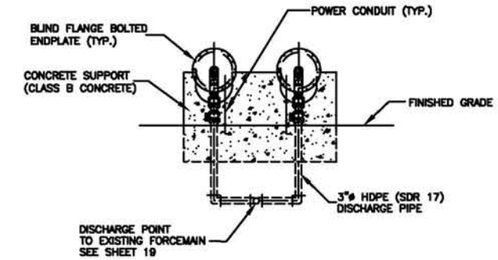


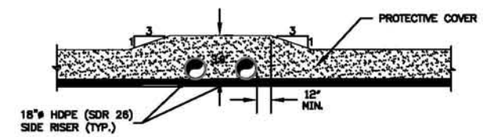
A G5 LEACHATE SUMP – PLAN VIEW – DETAIL
SCALE: 1" = 5'

NOTES:

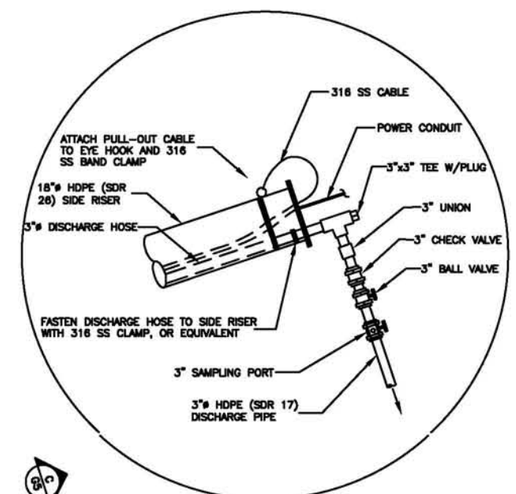
1. ELEVATIONS SHOWN REPRESENT TOP OF SUBGRADE

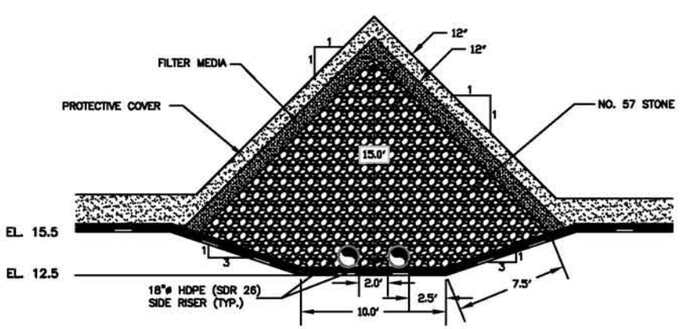


B G5 SIDE RISER FRONT VIEW
NOT TO SCALE

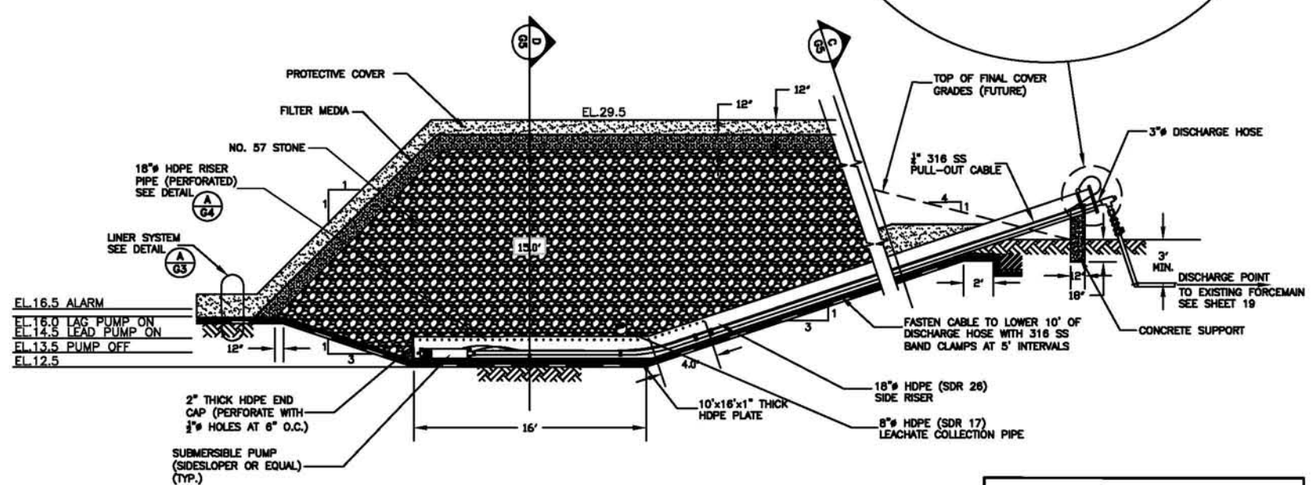


C G5 LEACHATE SUMP – TYPICAL CROSS SECTION OF SIDE RISER PIPES ON SLOPE DETAIL
SCALE: 1" = 5'





D G5 LEACHATE SUMP – TYPICAL CROSS SECTION DETAIL
SCALE: 1" = 5'



E G5 LEACHATE SUMP – SECTION THROUGH LEACHATE COLLECTION SIDE RISER DETAIL
SCALE: 1" = 5'

PERMIT PLANS

REFERENCE DRAWINGS	
DRAWING NO.	TITLE

Certification:
This project was conducted under my direct and responsible charge.

NORTH CAROLINA PROFESSIONAL SEAL 26500 ENGINEER CONAN D. FITZGERALD

Conan D. Fitzgerald, PE — PE Registration No. 26500 — Date 7/7/2009
URS Corporation–NC

NO.	DATE	REVISIONS	DWN	CKD	APPD

DRAWN BY L.G.	DATE 4/2009	CHECKED BY R.L.	DATE 4/23/2009
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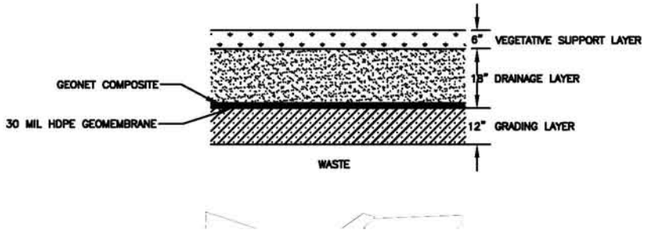
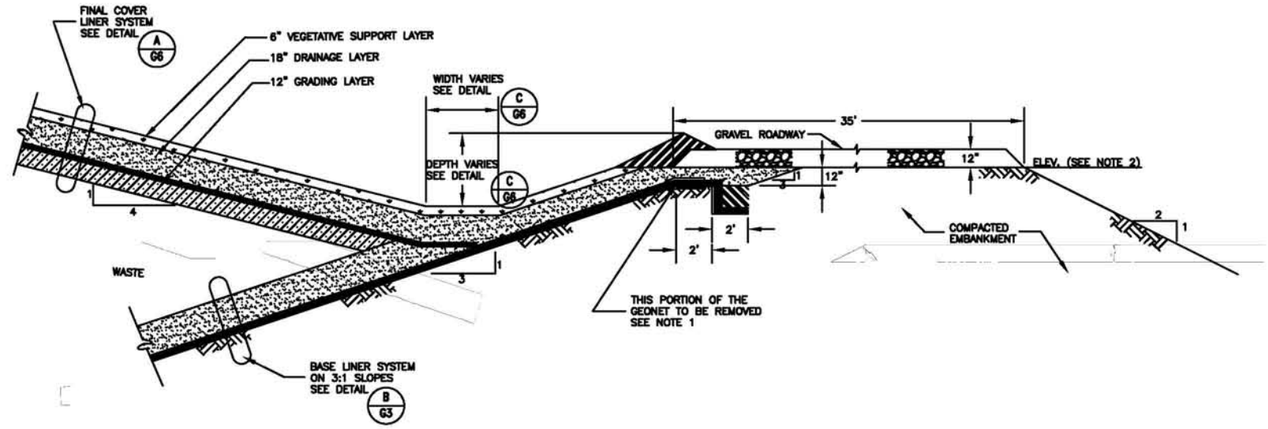
TECHNICAL – ENVIRONMENTAL
LINER SYSTEM DRAWINGS
RIEGELWOOD MILL LANDFILL CELL 2
LEACHATE MANAGEMENT DETAILS
SHEET 14 OF 21

DR. BY: LG	SCALE: AS SHOWN	JOB #: 31805746	
ENG. BY: L.G.	DATE:	DRAWING NO. G5	REV. 0
PREV. DWG. #: N/A			
EDMS DOCUMENT			
IP CAD#: 000-0000.DWG			



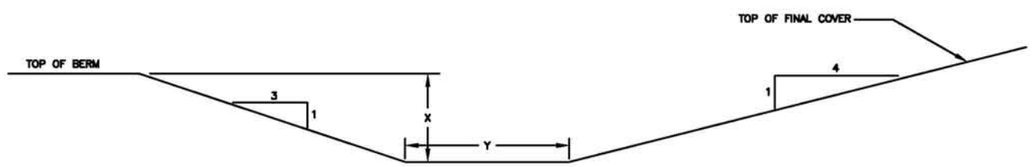
A/G6 FINAL COVER LINER SYSTEM
SCALE: 1"=2'



B/G6 CELL 2 BERM DETAIL
SCALE: 1"=4'

NOTES:

1. TOP GEONET FROM THE BASE LINER SYSTEM WILL BE REMOVED TO ENABLE THE FINAL COVER GEOMEMBRANE TO BE CONTINOUSLY WELDED TO THE BASE LINER SYSTEM PRIMARY GEOMEMBRANE.
2. TOP OF CELL 1 WEST BERM SUBGRADE IS ELEVATION 47.0 AND SOUTH BERM SUBGRADE IS 84.0. TOP OF CELL 1 NORTH AND EAST BERM SUBGRADE IS ELEVATION 37.0. TOP OF CELL 2 BERM SUBGRADE IS AT ELEVATION 37.0.
3. THIS DETAIL REFLECTS SINGLE LINER IN CELL 2.



DRAINAGE CHANNEL SCHEDULE		
CHANNEL TYPE	X	Y
A	2	2
B	3	3

C/G6 PERIMETER DRAINAGE CHANNEL
NOT TO SCALE

PERMIT PLANS

REFERENCE DRAWINGS	
DRAWING NO.	TITLE

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NORTH CAROLINA PROFESSIONAL SEAL 26500 ENGINEER CONAN D. FITZGERALD

Conan D. Fitzgerald, PE URS Corporation-NC	26500 PE Registration No.	7/7/2009 Date

NO.	DATE	REVISIONS	DWN	CKD	APPD

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TECHNICAL – ENVIRONMENTAL
LINER SYSTEM DRAWINGS
RIEGELWOOD MILL LANDFILL CELL 2
FINAL COVER DETAILS
SHEET 15 OF 21

DR. BY: LG	SCALE: AS SHOWN	JOB #: 31828746	
ENG. BY: L.G.	DATE: DATE:	DRAWING NO.	REV.
PREV. DWG. #: N/A		G6	0
EDMS DOCUMENT			
IP CAD#: 000-0000.DWG			

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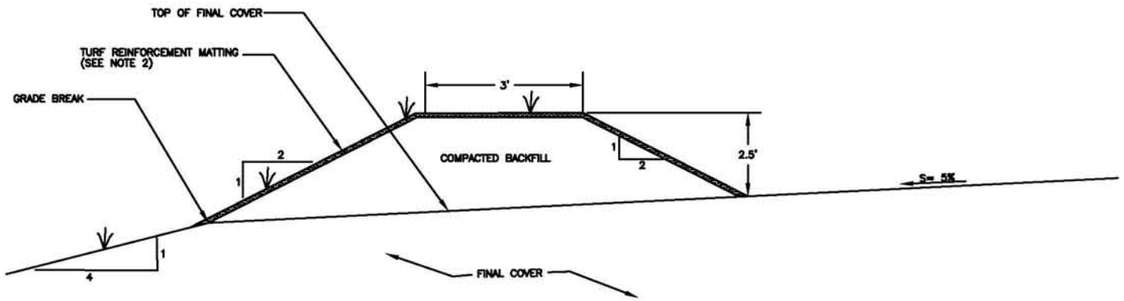
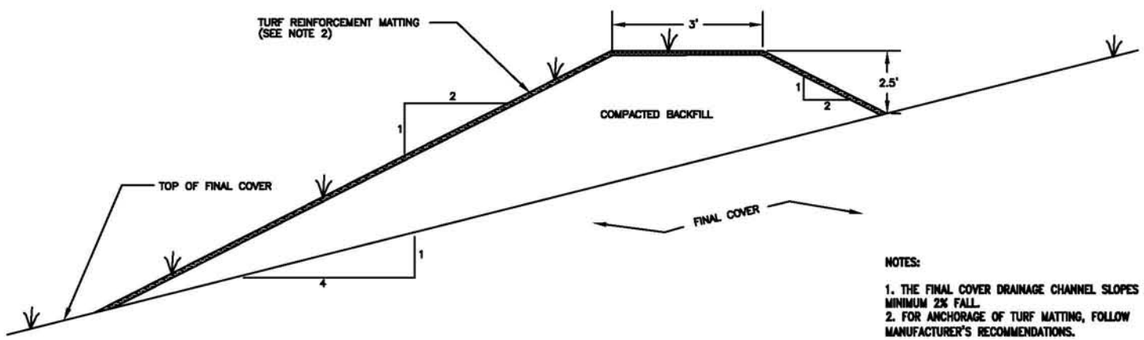


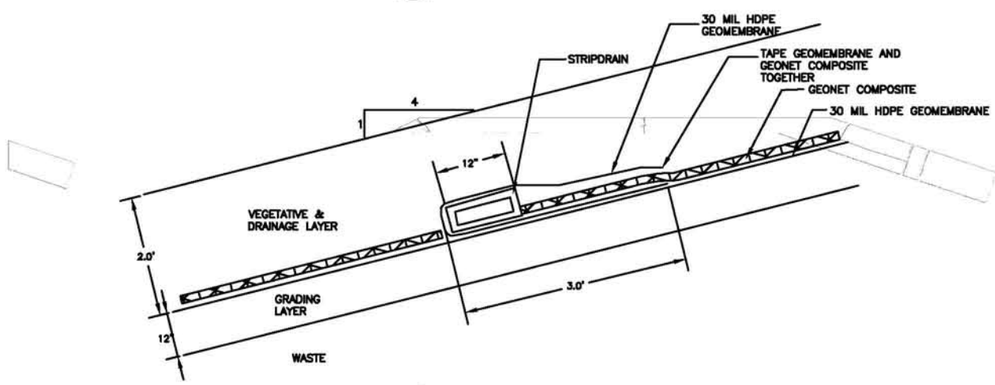
A / G7 DIVERSION BERM
NOT TO SCALE



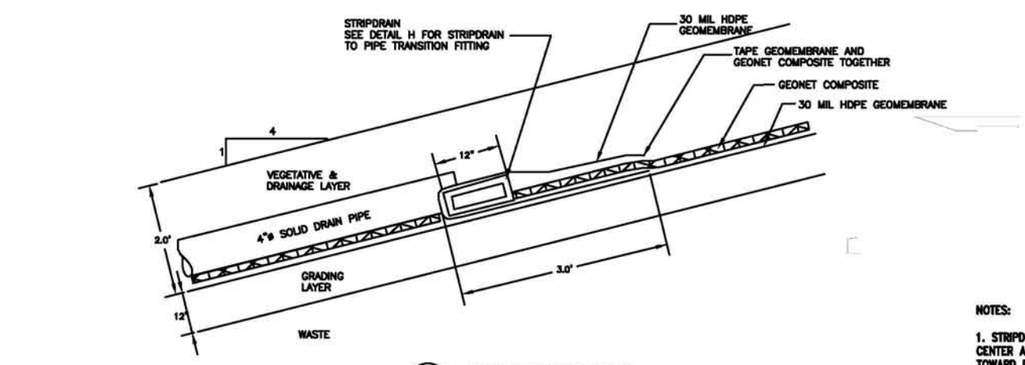
NOTES:

1. THE FINAL COVER DRAINAGE CHANNEL SLOPES AT MINIMUM 2% FALL.
2. FOR ANCHORAGE OF TURF MATTING, FOLLOW MANUFACTURER'S RECOMMENDATIONS.

C / G7 FINAL COVER DRAINAGE SWALE
NOT TO SCALE



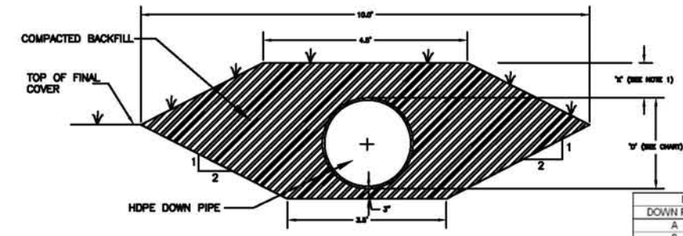
E / G7 STRIPDRAIN W/O DRAIN PIPE
NOT TO SCALE



G / G7 STRIPDRAIN W/ DRAIN PIPE
NOT TO SCALE

NOTES:

1. STRIPDRAINS ARE PLACED EVERY 100 FEET ON CENTER ALONG SIDE SLOPES. SLOPE STRIPDRAINS TOWARD DRAIN PIPES AT 5% MIN. SLOPE.
2. SOLID DRAIN PIPES TO BE SPACED HORIZONTALLY EVERY 200 FEET ON CENTER. OUTLET SOLID DRAIN PIPES INTO TOE DRAIN AT BASE OF SLOPE.

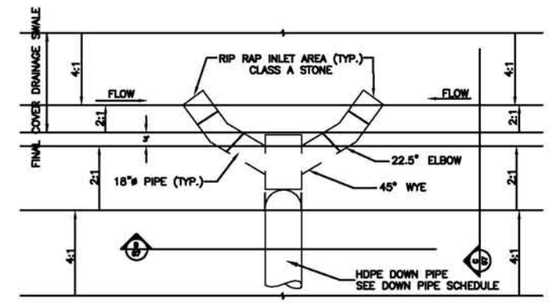


DOWN PIPE SCHEDULE		
DOWN PIPE	D (IN)	X (IN)
A	30	12
B	30	12
C	24	12

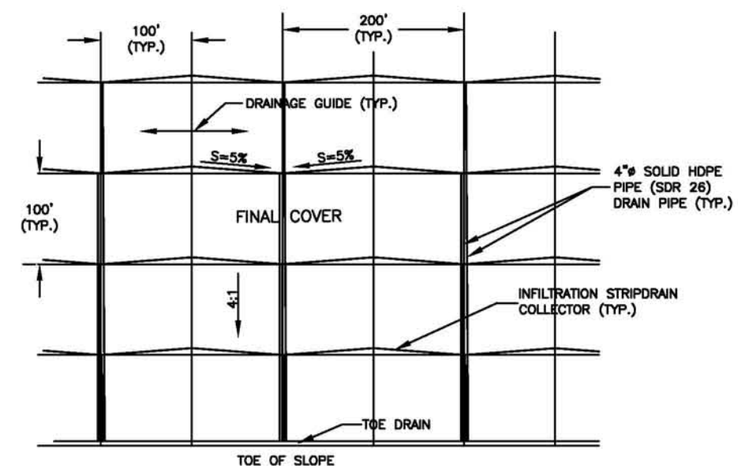
B / G7 DOWN PIPE ON SLOPE
NOT TO SCALE

NOTES:

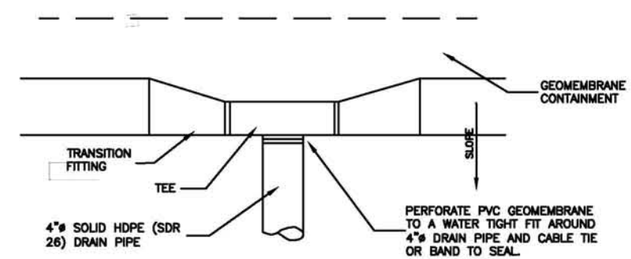
1. VARY TO PROVIDE 12" MINIMUM OF PIPE COVER.



D / G7 DOWN PIPE
NOT TO SCALE



F / G6 INFILTRATION STRIPDRAIN COLLECTOR LAYOUT
NOT TO SCALE



H / G7 STRIPDRAIN TO TRANSITION FITTING
NOT TO SCALE

REFERENCE DRAWINGS	
DRAWING NO.	TITLE

PERMIT PLANS

NORTH CAROLINA PROFESSIONAL SEAL 26500 ENGINEER CONAN D. FITZGERALD

Certification:
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Conan D. Fitzgerald, PE — URS Corporation–NC
26500 — PE Registration No.
7/7/2009 — Date

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LINER SYSTEM DRAWINGS
RIEGELWOOD MILL LANDFILL CELL 2
DRAINAGE CHANNEL DETAILS
SHEET 16 OF 21

DR. BY: LG	SCALE: AS SHOWN	JOB #: 31828746	
ENG. BY: L.G.	DATE: DATE:	DRAWING NO. G7	REV. 0
PREV. DWG. #: N/A			
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IP CAD#: 000–0000.DWG			

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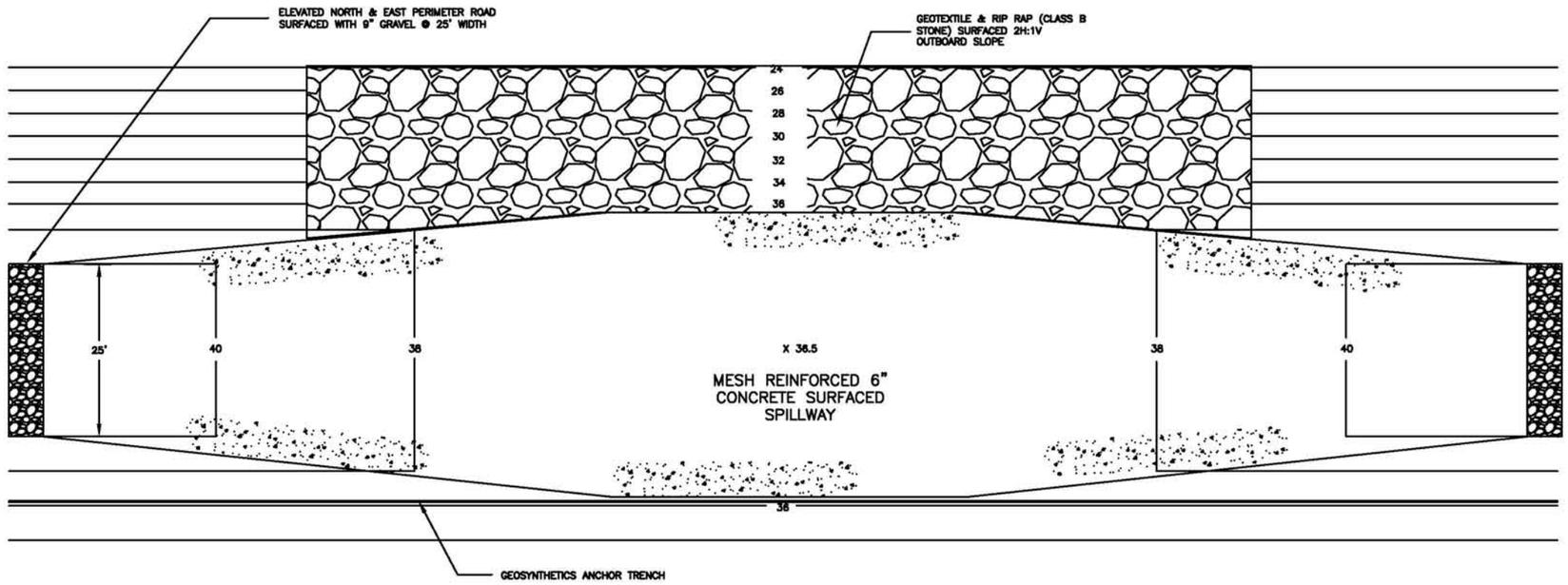
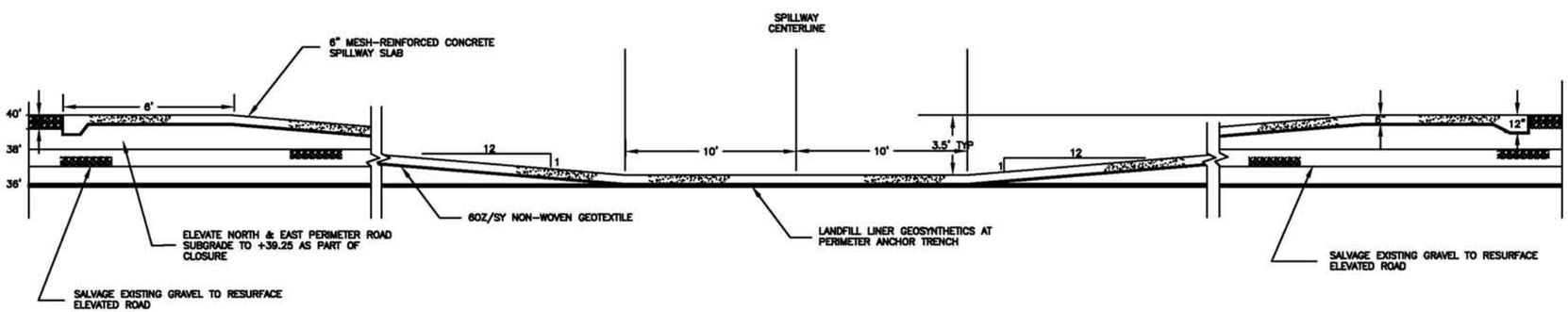


A / G8 CONCRETE SURFACED SPILLWAY – PLAN VIEW
NOT TO SCALE



B / G8 CONCRETE SURFACED SPILLWAY – PROFILE VIEW
NOT TO SCALE

NOTES:

1. DIKE ELEVATIONS SHOWN FOR NORTH & EAST SIDES OF THE LANDFILL (SUBGRADE OF 37.0). THE WEST DIKE SUBGRADE IS 47.0 THEREFORE ADD 10' FOR THE WEST DIKE ELEVATIONS.

PERMIT PLANS

REFERENCE DRAWINGS

DRAWING NO.	TITLE

NORTH CAROLINA PROFESSIONAL SEAL 26500 ENGINEER CONAN D. FITZGERALD

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RIEGELWOOD MILL LANDFILL CELL 2
SPILLWAY DETAILS
SHEET 17 OF 21

DR. BY: R.L.	SCALE: AS SHOWN	JOB #: 31828746
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PREV. DWG. #: N/A		
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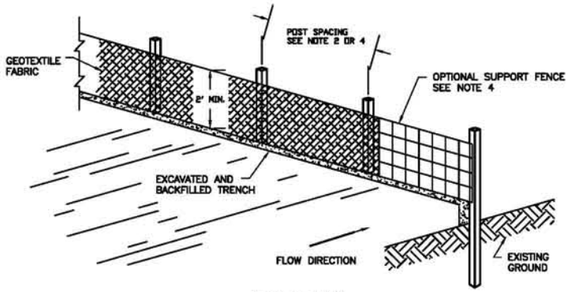
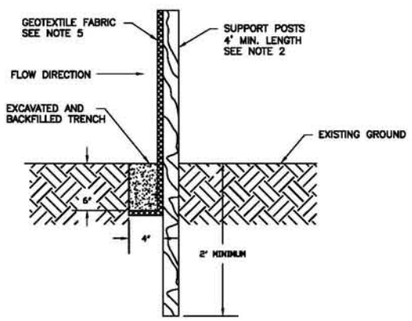


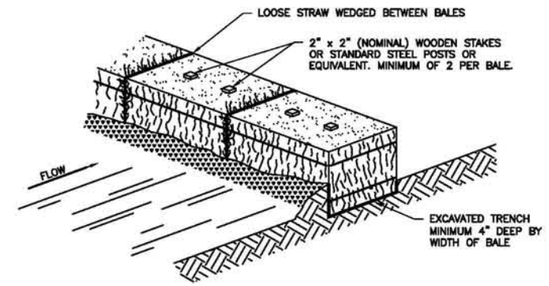
ISOMETRIC VIEW



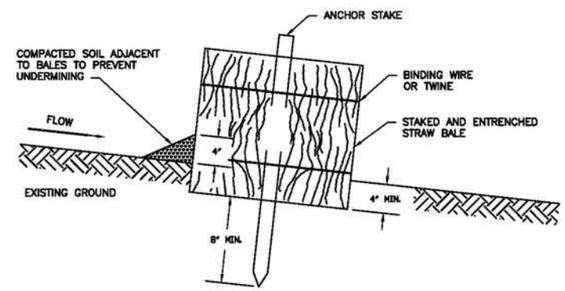
TYPICAL SECTION

SEE SHEET 5 OF 21 FOR LOCATION

A G9 SILT FENCE
NOT TO SCALE



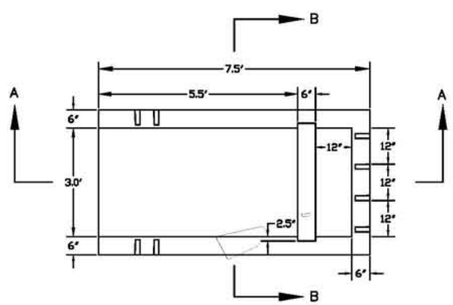
ISOMETRIC VIEW



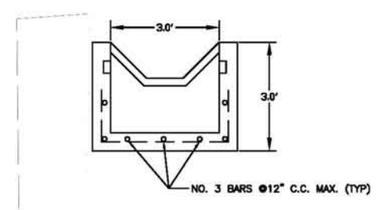
TYPICAL SECTION

NOTES:
1. TURN THE ENDS OF THE STRAW BALE SEDIMENT TRAP UPSLOPE 1 TO 2 FEET IN ELEVATION TO PREVENT FLANKING.
2. THE STRAW BALES SHALL BE BUTTED TOGETHER AS TIGHTLY AS POSSIBLE.
3. THE FIRST ANCHOR STAKE SHALL BE DRIVEN TOWARD THE PREVIOUSLY ANCHORED BALE TO HELP CREATE A TIGHT FIT.

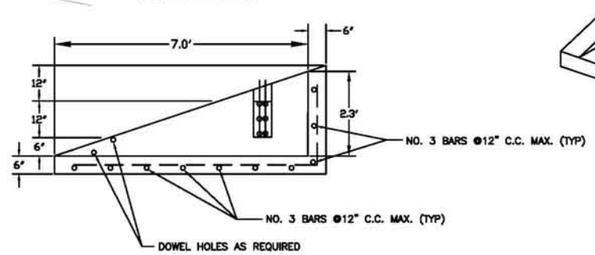
B G9 STRAW BALE SEDIMENT TRAP
NOT TO SCALE



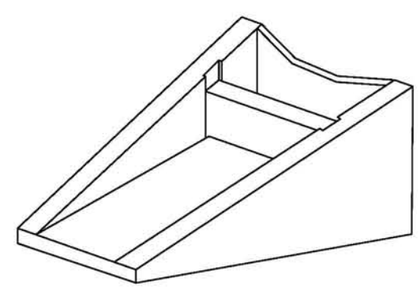
PLAN VIEW



SECTION B–B



SECTION A–A



ISOMETRIC VIEW

C G9 PRECAST ENERGY DISSIPATOR
NOT TO SCALE

NOTES:
1. CONCRETE STRENGTH 4000 PSI MINIMUM.
2. REINFORCING STEEL SHALL CONFORM TO ASTM A-615, GRADE 40.
3. DIMENSIONS SHOWN FOR CONCRETE THICKNESS ARE MINIMUMS, ACTUAL MEASUREMENTS MAY VARY WITH MANUFACTURER'S TOLERANCES.
4. RIP RAP (CLASS B STONE) WILL BE PLACED AROUND THE ENERGY DISSIPATOR.

PERMIT PLANS

REFERENCE DRAWINGS

DRAWING NO.	TITLE

Certification:
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NORTH CAROLINA PROFESSIONAL SEAL 26500 ENGINEER CONAN D. FITZGERALD

Conan D. Fitzgerald, PE — PE Registration No. 26500 — Date 7/7/2009
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TECHNICAL – ENVIRONMENTAL
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RIEGELWOOD MILL LANDFILL CELL 2
EROSION & SEDIMENT CONTROL DETAILS
SHEET 18 OF 21

DR. BY: LG	SCALE: AS SHOWN	JOB #: 31826746	
ENG. BY: L.G.	DATE: DATE:	DRAWING NO. G9	REV. 0
PREV. DWG. #: N/A			
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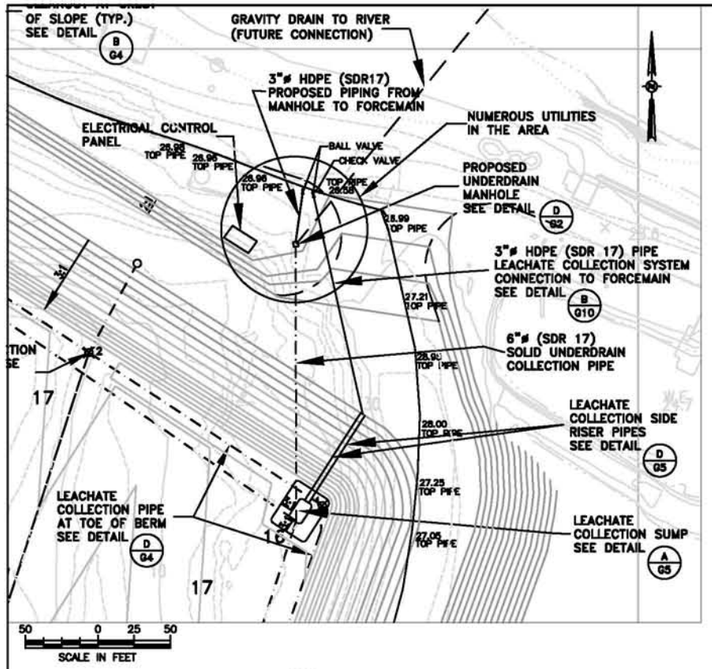
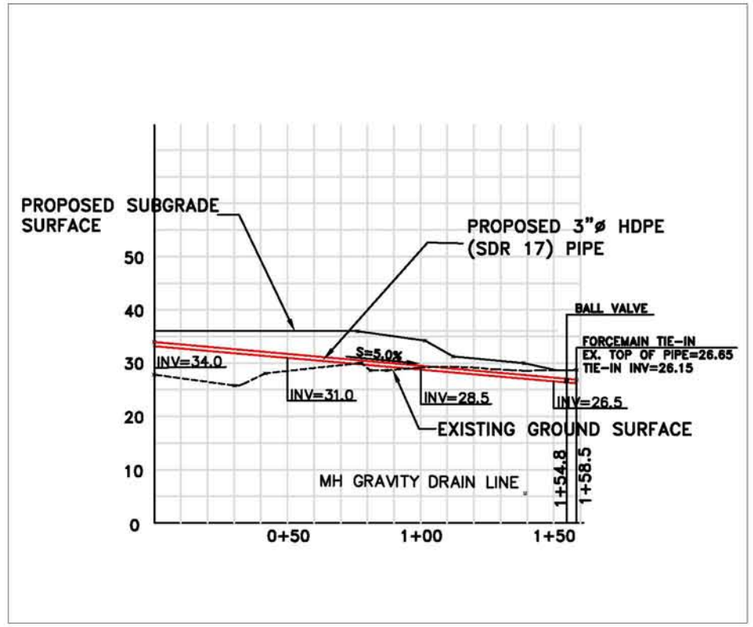
IP CAD#: 000-0000.DWG			



A/G10 SITE PLAN
SCALE: 1" = 50'



B/G10 CELL 2 LEACHATE COLLECTION SYSTEM FORCEMAIN
SCALE: 1" = 2'

PERMIT PLANS

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DRAWING NO.	TITLE

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Conan D. Fitzgerald, PE
URS Corporation-NC

28500
PE Registration No.

7/7/2009
Date

NORTH CAROLINA PROFESSIONAL SEAL 26500 ENGINEER CONAN D. FITZGERALD

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LINER SYSTEM DRAWINGS
RIEGELWOOD MILL LANDFILL CELL 2
UNDERDRAIN & LEACHATE FORCEMAIN DETAILS
SHEET 19 OF 21

DR. BY: LG	SCALE: AS SHOWN	JOB #: 31806746	
ENG. BY: L.G.	DATE: DATE:	DRAWING NO.	REV.
PREV. DWG. #: N/A		G10	0
EDMS DOCUMENT			
IP CAD#: 000-0000.DWG			

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LOCATION	E - COORDINATE	N - COORDINATE	ELEVATION
1	2240258.5758	220177.2979	12.5
2	2240267.2581	220190.7373	12.5
3	2240275.7167	220185.2766	12.5
4	2240267.0970	220171.8364	12.5
5	2240264.6023	220203.1959	15.5
6	2240288.1060	220187.9596	15.5
7	2240269.7993	220159.3655	15.5
8	2240246.1137	220174.6449	15.5
9	2240285.6918	220192.6156	16.0
10	2240288.6841	220183.7501	16.0
11	2240269.9537	220132.5116	16.0
12	2240271.2959	220153.4455	16.0
13	2240240.7680	220172.5561	16.0
14	2240247.2255	220200.4194	16.0
15	2240136.0947	220273.3357	16.0
16	2240142.5384	220283.4590	16.0
17	2240094.4497	220304.9924	17.0
18	2239970.4594	220381.9142	17.0
19	2239976.9539	220392.0898	17.0
20	2239936.0612	220407.0645	18.0
21	2239804.4664	220492.1422	18.0
22	2239812.0583	220501.4245	18.0
23	2239777.9180	220512.2363	19.0
24	2239783.6968	220523.6453	19.0
25	2239772.0388	220521.3788	19.0
26	2239648.9148	220438.3571	19.0
27	2239632.1678	220429.2037	19.0
28	2239638.4907	220418.9731	19.0
29	2239626.6878	220415.9088	20.0
30	2239621.6089	220427.0091	20.0
31	2239583.6226	220400.2588	20.0
32	2239569.2643	220377.4242	20.0
33	2239535.7775	220371.0277	20.0
34	2239487.7587	220344.6044	20.0
35	2239458.7330	220332.0178	20.0
36	2239463.4863	220320.9993	20.0
37	2239406.0159	220310.0850	21.0
38	2239363.1728	220303.5402	21.0
39	2239306.9266	220301.0241	21.0
40	2239288.6849	220291.4456	21.0
41	2239271.5167	220273.1922	21.0
42	2239279.9789	220263.9590	21.0
43	2239259.2626	220267.2596	22.0
44	2239258.6000	220228.2486	22.0
45	2239263.2215	220214.9228	22.0
46	2239306.3643	220189.6174	23.0
47	2239282.2650	220150.8563	23.0
48	2239295.5386	220112.5828	23.0
49	2239301.1764	220110.7843	23.0
50	2239360.9050	220091.3996	23.0

LOCATION	E - COORDINATE	N - COORDINATE	ELEVATION
51	2239407.0690	220165.8284	23.0
52	2239401.3519	220078.6607	23.0
53	2239449.6025	220066.8840	22.0
54	2239512.3085	220046.6396	22.0
55	2239598.5283	220019.7557	22.0
56	2239646.2891	220008.0425	21.0
57	2239658.9115	220003.9927	21.0
58	2239760.1116	219971.4583	21.0
59	2239808.1598	219959.4626	20.0
60	2239840.4358	219949.4453	20.0
61	2239922.2823	219923.7795	20.0
62	2239970.2494	219911.6873	19.0
63	2240021.5219	219895.3209	19.0
64	2240083.2625	219875.8428	19.0
65	2240131.2007	219863.5997	18.0
66	2240182.6703	219885.0033	17.0
67	2240173.2709	219850.5524	18.0
68	2240348.2158	220169.4390	36.0
69	2240345.6560	220206.7474	36.0
70	2240325.6326	220238.3311	36.0
71	2239927.3432	220491.0805	36.0
72	2239802.4269	220572.0028	36.0
73	2239772.8945	220573.8388	36.0
74	2239744.6645	220564.9477	36.0
75	2239621.6026	220481.3152	36.0
76	2239596.4619	220468.0079	36.0
77	2239557.2638	220440.4043	36.0
78	2239511.6822	220412.5561	36.0
79	2239466.5935	220387.7451	36.0
80	2239391.7726	220353.3700	36.0
81	2239353.4399	220347.8713	36.0
82	2239300.2637	220345.8053	36.0
83	2239285.2542	220341.5374	36.0
84	2239259.3407	220326.4363	36.0
85	2239243.6623	220308.5361	36.0
86	2239220.5043	220287.7112	36.0
87	2239218.1239	220280.6357	36.0
88	2239216.5594	220221.2895	36.0
89	2239265.1984	220081.0419	36.0
90	2239682.0203	219948.8276	36.0
91	2240208.6036	219782.6774	36.0
92	2240249.8380	220330.3071	36.0
93	2240294.4923	220363.1556	32.8
94	2240266.2928	220410.8104	29.8
95	2240417.2433	220389.0204	28.8
96	2240367.8679	220381.7475	30.4
97	2240355.5717	220333.3778	34.5
98	2240362.5827	220312.1381	36.0
99	2240379.8572	220253.4689	36.0
100	2240384.9367	220241.4703	36.0

LOCATION	E - COORDINATE	N - COORDINATE	ELEVATION
101	2240391.0276	220204.6019	36.0
102	2240386.8478	220167.4866	36.0
103	2240226.4077	219723.0260	36.0
104	2239819.1408	220605.2607	36.0
105	2239772.1303	220611.0966	36.0
106	2239726.7984	220597.3561	36.0
107	2239602.4010	220512.9993	36.0
108	2239576.8863	220499.4940	36.0
109	2239536.7541	220471.2325	36.0
110	2239511.0037	220459.7482	36.0
111	2239445.1200	220451.4048	36.0
112	2239448.3761	220420.1738	36.0
113	2239379.7440	220388.9087	36.0
114	2239353.0417	220384.9727	36.0
115	2239294.7772	220382.6232	36.0
116	2239269.1086	220375.1091	36.0
117	2239237.3770	220356.3613	36.0
118	2239218.4906	220335.7877	36.0
119	2239198.3573	220318.5361	36.0
120	2239185.8981	220301.4077	36.0
121	2239180.9189	220280.8208	36.0
122	2239179.5238	220261.4188	36.0
123	2239183.3181	220208.9662	38.0
124	2239214.4827	220208.9662	38.0
125	2239178.7772	220148.8129	36.0
126	2239192.1849	220108.5891	46.0
127	2239223.8900	220108.5945	46.0
128	2239348.9751	220406.5311	28.0
129	2239345.3079	220431.3837	28.0
130	2239285.4780	220437.3536	26.1
131	2239233.7136	220445.8242	26.1
132	2239382.9756	220498.3268	26.3
133	2239391.9462	220474.9820	26.3
134	2239492.4667	220516.7466	26.5
135	2239481.1547	220539.1186	26.5
136	2239580.6738	220618.3057	26.8
137	2239593.9451	220597.1147	26.8
138	2239656.9535	220634.5017	27.0
139	2239671.5269	220639.9100	27.1
140	2239701.5896	220642.5749	27.2
141	2239646.2157	220657.1828	27.0
142	2239665.9758	220664.5159	27.1
143	2239700.8301	220667.6056	27.2
144	2239782.8449	220667.0492	27.4
145	2239807.8949	220662.9454	27.5
146	2239783.9430	220641.8770	27.4
147	2239829.6553	220628.3558	27.5
148	2240234.3868	220354.2680	30.0
149	2240280.6405	220339.9510	34.0

PERMIT PLANS

REFERENCE DRAWINGS

DRAWING NO.	TITLE

NOTES:

NORTH CAROLINA PROFESSIONAL SEAL 26500 ENGINEER CONAN D. FITZGERALD

Certification:
This project was conducted under my direct and responsible charge.

Conan D. Fitzgerald, PE — PE Registration No. 26500 — Date 7/7/2009
URS Corporation-NC

NO.	DATE	REVISIONS	DWN	CKD	APPD

DRAWN BY L.G.	4/2009 DATE	CHECKED BY R.L.	4/23/2009 DATE
DESIGNED BY L.G.	4/2009 DATE	APPROVED BY	DATE

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HILL, NORTH CAROLINA 27560

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RIEGELWOOD, NORTH CAROLINA

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TECHNICAL - ENVIRONMENTAL
LINER SYSTEM DRAWINGS
RIEGELWOOD MILL LANDFILL CELL 2
SUBGRADE CONTROL POINTS
SHEET 20 OF 21

DR. BY: LG	SCALE: AS SHOWN	JOB #: 31806746	
ENG. BY: LG	DATE:	DATE:	DRAWING NO. G11 — REV. 0
PREV. DWG. #: N/A			
EDMS DOCUMENT			
IP CAD#: 000-0000.DWG			

P:\Jobs4\ Projects\International Paper\IP - Riegelwood\Cell 2 Landfill\Liner Construction Drawings\40 ACAD Drawings\Sheet 20.dwg July 07, 2009 - 4:10 PM

LOCATION	E - COORDINATE	N - COORDINATE	ELEVATION
1	2240345.2870	220170.2195	37.0
2	2240342.7368	220205.9430	37.0
3	2240323.4834	220236.1419	37.0
4	2239925.4080	220488.7577	37.0
5	2239799.3320	220570.4332	37.0
6	2239779.0941	220571.8225	37.0
7	2239759.1151	220568.3093	37.0
8	2239752.9449	220565.7867	37.0
9	2239714.0026	220541.1329	37.0
10	2239623.1439	220478.7368	37.0
11	2239598.0336	220465.4455	37.0
12	2239558.9112	220437.8952	37.0
13	2239513.1881	220409.9606	37.0
14	2239467.9163	220385.0488	37.0
15	2239416.6307	220362.8095	37.0
16	2239392.7221	220350.4843	37.0
17	2239357.9837	220345.2495	37.0
18	2239300.7085	220342.8200	37.0
19	2239286.5633	220338.8154	37.0
20	2239261.0933	220323.9925	37.0
21	2239253.9798	220315.1690	37.0
22	2239245.7032	220306.3265	37.0
23	2239233.8303	220296.8611	37.0
24	2239227.0112	220290.5527	37.0
25	2239221.1327	220280.0386	37.0
26	2239220.2631	220272.6017	37.0
27	2239219.5496	220260.6567	37.0
28	2239219.5601	220221.7929	37.0
29	2239267.5821	220083.3243	37.0
30	2239695.7483	219947.7738	37.0
31	2240206.4243	219786.4907	37.0
32	2240215.5201	219755.2658	37.0
33	2240224.1307	219722.6086	37.0
34	2240384.9135	220168.0183	37.0
35	2240388.7032	220187.2924	37.0
36	2240389.5617	220194.8424	37.0
37	2240388.5576	220216.7663	37.0
38	2240383.0371	220240.8272	37.0
39	2240378.0056	220252.7125	37.0
40	2240368.3997	220285.3145	37.0
41	2240363.7154	220299.1567	37.0

LOCATION	E - COORDINATE	N - COORDINATE	ELEVATION
42	2240270.0915	220313.5632	37.0
43	2240242.5954	220332.5220	37.0
44	2239818.2373	220603.4629	37.0
45	2239807.1451	220607.5943	37.0
46	2239775.1053	220609.4212	37.0
47	2239743.6656	220602.9843	37.0
48	2239727.9452	220595.7151	37.0
49	2239717.3534	220589.5850	37.0
50	2239682.3741	220565.9247	37.0
51	2239603.6200	220511.3975	37.0
52	2239578.1255	220497.9029	37.0
53	2239537.9379	220469.6024	37.0
54	2239511.7357	220457.9166	37.0
55	2239456.6408	220451.1742	37.0
56	2239460.6142	220422.7910	37.0
57	2239380.6944	220387.0361	37.0
58	2239351.2391	220382.8109	37.0
59	2239295.0738	220380.6330	37.0
60	2239269.9813	220373.2945	37.0
61	2239238.5642	220354.7437	37.0
62	2239219.8513	220334.3147	37.0
63	2239199.7900	220317.1370	37.0
64	2239186.6523	220298.5655	37.0
65	2239183.6979	220286.9243	37.0
66	2239182.3853	220275.7799	37.0
67	2239181.5251	220261.3807	37.0
68	2239181.5601	220221.6594	37.0
69	2239192.7160	220133.9662	44.0
70	2239223.1828	220069.4608	47.0
71	2240269.9905	220133.0858	18.0
72	2240271.2958	220153.4455	18.0
73	2240240.7679	220172.5557	18.0
74	2240247.2255	220200.4194	18.0
75	2240267.9678	220203.8697	18.0
76	2240287.1341	220191.1510	18.0
77	2240261.5698	220175.4146	28.0
78	2240264.0882	220173.7842	28.0
79	2240267.0767	220159.9368	18.0
80	2240247.7695	220172.4362	18.0
81	2240292.6262	220223.7459	28.0
82	2240295.1593	220222.1384	28.0

PERMIT PLANS

REFERENCE DRAWINGS

DRAWING NO.	TITLE

NOTES:

NORTH CAROLINA PROFESSIONAL SEAL 26500 ENGINEER CONAN D. FITZGERALD

Certification:
This project was conducted under my direct and responsible charge.

Conan D. Fitzgerald, PE
URS Corporation-NC

26500 PE Registration No.

7/7/2009 Date

NO.	DATE	REVISIONS	DWN	CKD	APP'D

DRAWN BY L.G.	4/2009 DATE DATE	CHECKED BY R.L.	4/23/2009 DATE DATE
DESIGNED BY L.G.	4/2009 DATE DATE	APPROVED BY	DATE DATE

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RALEIGH, NORTH CAROLINA 27560

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RIEGELWOOD, NORTH CAROLINA

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TECHNICAL - ENVIRONMENTAL

LINER SYSTEM DRAWINGS
RIEGELWOOD MILL LANDFILL CELL 2
PROTECTIVE COVER CONTROL POINTS
SHEET 21 OF 21

DR. BY: LG	SCALE: AS SHOWN	JOB #: 31806746	
ENG. BY: LG	DATE: DATE:	DRAWING NO. G12	REV. 0
PREV. DWG. #: N/A			
EIMS DOCUMENT			
IP CAD#: 000-0000.DWG			

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