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AFIN: 03-00051

PMT#: 0249-S4

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Taylor, Dianna

From: McWilliams, Clark
Sent: Wednesday, December 09, 2015 10:23 AM
To: Taylor, Dianna
Subject: NABORS: Rev 100% Design and Estimate

DT-
AFIN: 03-000051
Permit: 0249-S1-R2
0249-S4

D:\PROJFILE\NABORS\CLOSURE\ABA Response Package\007 Revised 100_Project Manual - Closure of Inactive NABORS Landfills.pdf
D:\PROJFILE\NABORS\CLOSURE\ABA Response Package\Closure of Inactive NABORS Landfills Plan Set - 11.20.15.pdf
D:\PROJFILE\NABORS\CLOSURE\AA_Copy of Low High Engineer's Estimate 12.3.15.xlsx

Thanks,
Clark McWilliams P.E. 501-682-0510
ADEQ – Solid Waste Management Division
12/9/15

CLOSURE OF INACTIVE NABORS LANDFILLS

NABORS LANDFILL

1320 LANDFILL ROAD
MOUNTAIN HOME, AR 72653

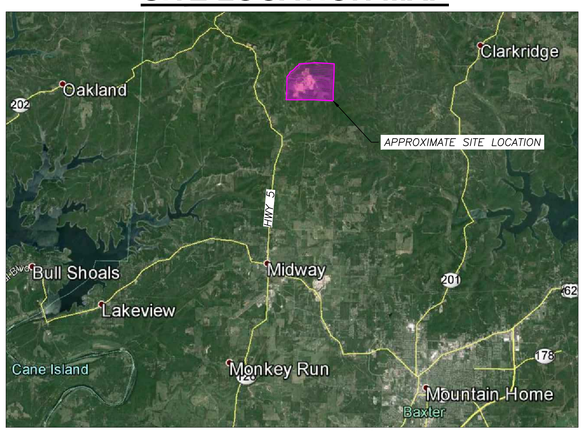
Solid Waste Permit No. 0249-S4 and 0249-S1-R2

ABA Contract No. 4600033394

November 2015

DRAWING INDEX	
Sheet Number	**Sheet Title**
T-100	Coversheet
C-100	Existing Conditions
C-101	Demolition Sheet
C-102	Borrow Area Information
C-200	Sedimentation Pond Grading Plan
C-300	Class 4 Waste Relocation Plan
C-301	Area 1-2 Waste Relocation Plan
C-302	Area 1-3 Waste Relocation Plan
C-400	GCCS Layout
C-401	GCCS Construction Points
C-402	GCCS Point Table
C-403	Well Schedule
C-404	Flare Pad Layout
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C-406	GCCS Details 2
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C-408	GCCS Details 4
C-500	Leachate Forcemain Layout
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C-502	North Leachate Forcemain Layout
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C-504	Tank Farm Foundation Details
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C-605	Area 1-3 Construction Points
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C-612	Final Cover Details 1
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C-614	Facility Improvement Details
C-700	Facility Improvements Overview

SITE LOCATION MAP



*AERIAL IMAGERY RETRIEVED FROM GOOGLE EARTH.

FOR BIDDING PURPOSES ONLY
NOT FOR CONSTRUCTION

PREPARED FOR

ADEQ

ARKANSAS
Department of Environmental Quality

5301 NORTHSHORE DRIVE
NORTH LITTLE ROCK, AR 72118

PREPARED BY

SCS AQUATERRA

7311 WEST 130th STREET, SUITE 100
OVERLAND PARK, KANSAS 66213-3117
(913) 681-0030 FAX (913) 681-0012
PROJECT NO. 27214218.01

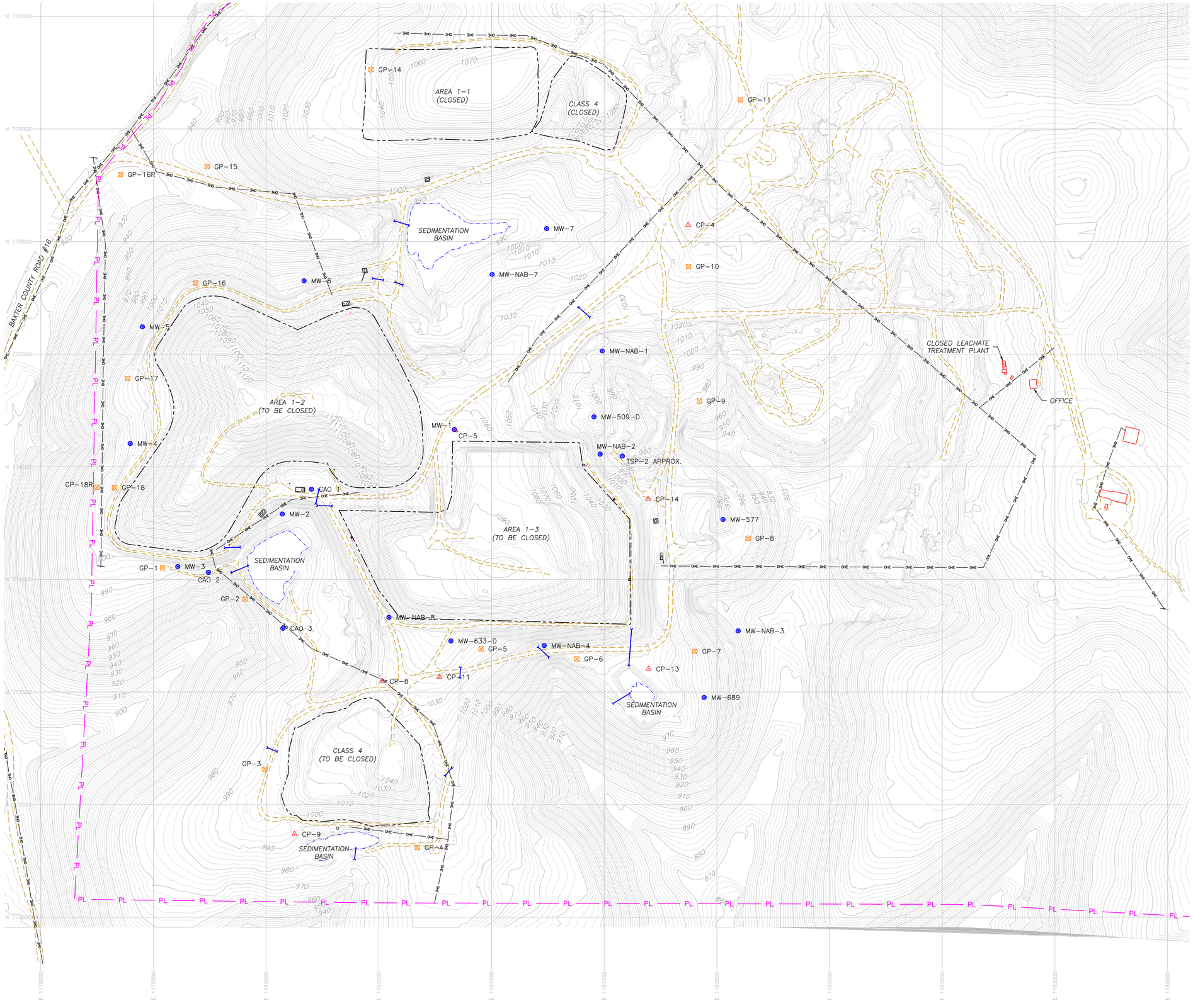
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No.8123
FLOYD E. COTTER
11/20/15

STERNS CONRAD & SCHMIDT CONSULTING ENGINEERS
CERTIFICATE OF AUTHORIZATION
No. 921
ARKANSAS

T-100

\\VAN-FS01\Clients\ADEQ\Projects\27214218.01 - Closure Contract - 2014\Task 2 - Design and Procurement\005 Design Submittal\DWG\T-100 - Coversheet.dwg November 20, 2015 9:33:15 am (372)

\\KAN-FS01\Clients\ADEQ\Projects\27214218.01 - Closure Contract - 2014\Task 2 - Design and Procurement\100% Design Submittal\DWG\C-100 - Site Layout.dwg Nov 20, 2015 - 9:35am Layout Name: Existing Conditions By: 37264mb



LEGEND:

- *EXISTING 2' MINOR CONTOUR*
- *EXISTING 10' MAJOR CONTOUR*
- *PROPERTY BOUNDARY (APPROX.)*
- *EXISTING ROAD*
- *EXISTING OVERHEAD ELECTRIC*
- *DISPOSAL BOUNDARY (APPROXIMATE)*
- *EXISTING BODY OF WATER*
- *EXISTING DRAINAGE PIPE/CULVERT*
- MW-2 *EXISTING MONITORING WELL*
- GP-16 *EXISTING GAS PROBE*
- CP-5 *EXISTING CONTROL POINT*

NOTES:

1. *EXISTING TOPOGRAPHY BASED ON AERIAL SURVEY PERFORMED BY M.J. HARDEN ASSOCIATES, INC ON AUGUST 17, 2010. UPDATES TO THE TOPOGRAPHY AND SITE FEATURES FOR AREA 1-2, AREA 1-3, AND SOUTH CLASS 4 DISPOSAL UNITS SURVEYED BY CONSOLIDATED LAND SERVICES, INC BETWEEN DECEMBER 2014 AND JANUARY 2015.*
2. *SURVEY DATA BASED ON THE NAD83 ARKANSAS STATE PLANE NORTH COORDINATE SYSTEM.*
3. *MAJOR CLOSURE ACTIVITIES INCLUDE WASTE RELOCATION, LEACHATE FORCEMAIN INSTALLATION, CENTRALIZED TANK FARM CONSTRUCTION, GAS COLLECTION AND CONTROL SYSTEM INSTALLATION, AND FINAL COVER CONSTRUCTION (CLASS 1 AND CLASS 4).*

CONTROL POINT TABLE

CONTROL POINT	NORTHING	EASTING	ELEVATION
CP-4	775573.55	1181872.79	1054.93
CP-13	773602.54	1181696.27	989.88
CP-5	774661.90	1180839.84	1065.34
CP-11	773566.76	1180768.45	1039.02
CP-14	774356.75	1181694.30	996.14
CP-8	773547.99	1180514.06	1030.49
CP-9	772868.59	1180125.34	991.71

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No.8123 FLOYD E. COTTER
11/20/15

STERNS CONRAD & SCHMIDT CONSULTING ENGINEERS No. 921 ARKANSAS
CERTIFICATE OF AUTHORIZATION

FOR BIDDING PURPOSES ONLY
NOT FOR CONSTRUCTION

200 0 200 400
SCALE FEET

REV.	DATE	DESCRIPTION	CK. BY
2	11/2015	100% SUBMITTAL TO DBA	FEC
1	7/2015	75% SUBMITTAL	FEC
0	5/2015	50% SUBMITTAL	FEC

SHEET TITLE
EXISTING CONDITIONS

PROJECT TITLE
CLOSURE OF INACTIVE NABORS LANDFILLS

CLIENT
ADEQ
ARKANSAS
Department of Environmental Quality

SCS AQUATERRA
7311 W. 130th St, Ste. 100
Overland Park, Kansas 66213
PH. (913) 681-0030 FAX. (913) 681-0012

PROJ. NO. 27214218.01
DSN. BY: DMB | DWN. BY: DMB | CHK. BY: FEC | Q/A RVW BY: DMB | PROJ. MGR. FEC

CADD FILE:
C-100 - SITE LAYOUT.DWG

DATE:
11/20/15

DRAWING NO.
C-100

LEGEND:

- EXISTING 2' MINOR CONTOUR
- EXISTING 10' MAJOR CONTOUR
- PROPERTY BOUNDARY (APPROX.)
- EXISTING ROAD
- EXISTING OVERHEAD ELECTRIC
- DISPOSAL BOUNDARY (APPROXIMATE)
- EXISTING BODY OF WATER
- EXISTING DRAINAGE PIPE/CULVERT
- EXISTING MONITORING WELL
- EXISTING GAS PROBE
- EXISTING CONTROL POINT

NOTES:

1. *EXISTING TOPOGRAPHY BASED ON AERIAL SURVEY PERFORMED BY M.J. HARDEN ASSOCIATES, INC ON AUGUST 17, 2010. UPDATES TO THE TOPOGRAPHY AND SITE FEATURES FOR AREA 1–2, AREA 1–3, AND SOUTH CLASS 4 DISPOSAL UNITS SURVEYED BY CONSOLIDATED LAND SERVICES, INC BETWEEN DECEMBER 2014 AND JANUARY 2015.*
2. *SURVEY DATA BASED ON THE NAD83 ARKANSAS STATE PLANE NORTH COORDINATE SYSTEM.*
3. *DEMOLITION OF EXISTING STRUCTURES TO BE PERFORMED TO FACILITATE CLOSURE CONSTRUCTION. DISPOSAL OF THE DEMOLITION SHALL BE PERFORMED IN ACCORDANCE WITH LOCAL, STATE, AND FEDERAL REGULATIONS.*
4. *UNUSED ROLL OFFS AND RESIDENTIAL COLLECTION CONTAINERS SHALL BE RELOCATED TO THE AREAS DEPICTED ON THIS DRAWING.*
5. *STAGING AREA(S) TO BE SELECTED BY CONTRACTOR. STAGING WILL NOT BE PERMITTED ON TOP OF THE CLOSED AREA 1–1 AND CLOSED CLASS 4 DISPOSAL UNITS.*
6. *CONSTRUCTION SEQUENCE: DEMOLITION OF EXISTING LEACHATE STORAGE TANKS TO BE PERFORMED AFTER CENTRALIZED TANK FARM AND FORCEMAIN HAS BEEN INSTALLED AND IS OPERATIONAL.*

Demolition Schedule

Item	Structures	Notes
Demo 1	2 - Leachate Storage Tanks, 1 Concrete Reinforced Secondary Containment	Demolition to be performed after proposed leachate forcemain is installed and operational.
Demo 2	1 - Leachate Storage Tank, 1 Concrete Reinforced Secondary Containment	Demolition to be performed after proposed leachate forcemain is installed and operational.
Demo 3	1 - Leachate Storage Tank, 1 Concrete Reinforced Secondary Containment	Demolition to be performed after proposed leachate forcemain is installed and operational.
Demo 4	2 - Leachate Storage Tanks, 1 Concrete Reinforced Secondary Containment	Demolition to be performed after proposed leachate forcemain is installed and operational.
Demo 5	1 - Leachate Storage Tank	Demolition to be performed after proposed leachate forcemain is installed and operational.
Demo 6	1 - Leachate Storage Tank, 2 Reinforced Concrete Pads	Demolition to be performed after proposed leachate forcemain is installed and operational.
Demo 7	1 - Leachate Storage Tank, 1 Concrete Reinforced Secondary Containment	Demolition to be performed after proposed leachate forcemain is installed and operational.
Demo 8	1 - Leachate Storage Tank, 1 Concrete Reinforced Secondary Containment	Demolition to be performed after proposed leachate forcemain is installed and operational.

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No.8123 FLOYD E. COTTER
11/20/15

STERNS CONRAD & SCHMIDT CONSULTING ENGINEERS No. 021 CERTIFICATE OF AUTHORIZATION ARKANSAS

FOR BIDDING PURPOSES ONLY
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200 0 200 400
SCALE FEET

REV.	DATE	DESCRIPTION	CK. BY
2	11/2015	100% SUBMITTAL TO DBA	FEC
1	7/2015	75% SUBMITTAL	FEC
0	5/2015	50% SUBMITTAL	FEC

SHEET TITLE
DEMOLITION SHEET

PROJECT TITLE
CLOSURE OF INACTIVE NABORS LANDFILLS

CLIENT
ADEQ
ARKANSAS
Department of Environmental Quality

SCS AQUATERRA
7311 W. 130th St, Ste. 100
Overland Park, KS 66213
PH. (913) 681-0030 FAX. (913) 681-0012

PROJ. NO.	DWN. BY:	CHK. BY:	DSN. BY:
27214218.01	DMB	FEC	DMB

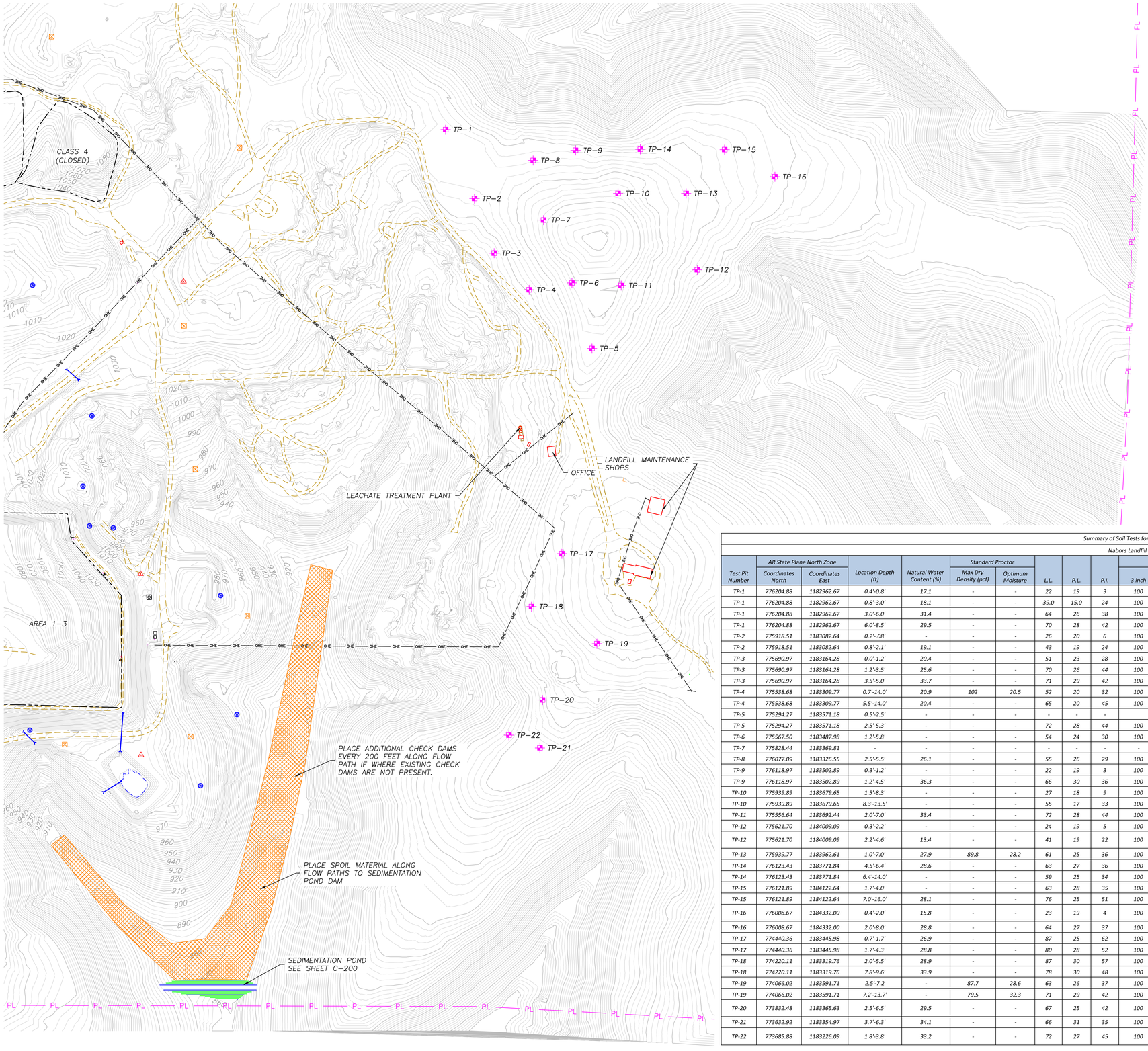
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DMB	FEC

CADD FILE:
C-101 – DEMOLITION SHEET.DWG

DATE:
11/20/15

DRAWING NO.
C-101

\\KAN-FS01\Clients\ADEQ\Projects\27214218.01 - Closure Contract - 2014\Task 2 - Design and Procurement\100% Design Submittal\DWG\C-101 - Demolition Sheet.dwg Nov 20, 2015 - 9:43am Layout Name: Demolition Sheet By: 3726dmb



LEGEND:

- EXISTING 2' MINOR CONTOUR
- 1025 EXISTING 10' MAJOR CONTOUR
- PL PROPERTY BOUNDARY (APPROX.)
- EXISTING ROAD
- OHE OHE EXISTING OVERHEAD ELECTRIC
- DISPOSAL BOUNDARY (APPROXIMATE)
- EXISTING BODY OF WATER
- EXISTING DRAINAGE PIPE/CULVERT
- EXISTING MONITORING WELL
- EXISTING GAS PROBE
- EXISTING CONTROL POINT
- TEST PIT LOCATION

NOTES:

1. EXISTING CONTOURS FROM AERIAL SURVEY DATED AUGUST 17, 2010 BY M.J. HARDEN ASSOCIATES, INC. EXISTING TOPOGRAPHY FOR THE DISPOSAL AREAS UPDATED BY CONSOLIDATED LAND SERVICES, INC. IN DECEMBER 2014.
2. GRADE BORROW AREA(S) TO DRAIN TOWARDS SEDIMENTATION POND.
3. CLASS 4 LOW PERMEABILITY SOIL LAYER TO HAVE A MAXIMUM PERMEABILITY OF 1 X 10^{-5} cm/sec.
4. CONTRACTOR MUST INSTALL SILT FENCE DOWNSTREAM OF ALL DISTURBED AREAS.

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No.8123 FLOYD E. COTTER 11/20/15

STEARNS CONRAD & SCHMIDT CONSULTING ENGINEERS CERTIFICATE OF AUTHORIZATION No. 921 ARKANSAS

FOR BIDDING PURPOSES ONLY NOT FOR CONSTRUCTION

200 0 200 400
SCALE FEET

Summary of Soil Tests for Test Pits

Nabors Landfill

Test Pit Number	AR State Plane North Zone Coordinates North	AR State Plane North Zone Coordinates East	Location Depth (ft)	Natural Water Content (%)	Standard Proctor Max Dry Density (pcf)	Standard Proctor Optimum Moisture	L.L.	P.L.	P.I.	Mechanical Analysis 3 inch	3/4 inch	3/8 inch	No. 4	No. 10	No. 40	No. 200	Classification	Description
TP-1	776204.88	1182962.67	0.4'-0.8'	17.1	-	-	22	19	3	100	97	89	78	68	63	55	ML	Light Brown Silty Clay
TP-1	776204.88	1182962.67	0.8'-3.0'	18.1	-	-	39.0	15.0	24	100	96	94	88	82	78	73	CL	Light Red Clay with Chert
TP-1	776204.88	1182962.67	3.0'-6.0'	31.4	-	-	64	26	38	100	100	97	95	93	92	90	CH	Dark Red Clay
TP-1	776204.88	1182962.67	6.0'-8.5'	29.5	-	-	70	28	42	100	84	83	81	80	79	79	CH	Dark Red Clay with Chert
TP-2	775918.51	1183082.64	0.2'-.08'	-	-	-	26	20	6	100	90	82	73	68	64	57	CL-ML	Reddish Brown Clay with Chert
TP-2	775918.51	1183082.64	0.8'-2.1'	19.1	-	-	43	19	24	100	89	82	75	69	66	62	CL	Red Clay with Chert
TP-3	775690.97	1183164.28	0.0'-1.2'	20.4	-	-	51	23	28	100	90	81	72	64	58	52	CH	Dark Red Clay with Chert
TP-3	775690.97	1183164.28	1.2'-3.5'	25.6	-	-	70	26	44	100	88	84	78	73	70	68	CH	Red Clay
TP-3	775690.97	1183164.28	3.5'-5.0'	33.7	-	-	71	29	42	100	100	99	98	97	97	94	CH	Red Clay with Chert
TP-4	775538.68	1183309.77	0.7'-14.0'	20.9	102	20.5	52	20	32	100	92	89	84	81	76	72	CH	Reddish Brown Clay with Chert
TP-4	775538.68	1183309.77	5.5'-14.0'	20.4	-	-	65	20	45	100	98	96	92	89	84	80	CH	Red Clay with Chert
TP-5	775294.27	1183571.18	0.5'-2.5'	-	-	-	-	-	-		92	79	76	53	46	39	CH	Light Brown Clay
TP-5	775294.27	1183571.18	2.5'-5.3'	-	-	-	72	28	44	100	96	85	82	81	79	74	CH	Red Clay
TP-6	775567.50	1183487.98	1.2'-5.8'	-	-	-	54	24	30	100	100	100	100	100	99	97	CH	Red Clay
TP-7	775828.44	1183369.81	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Rock at Surface
TP-8	776077.09	1183326.55	2.5'-5.5'	26.1	-	-	55	26	29	100	96	94	90	87	85	83	CH	Red Clay with Chert
TP-9	776118.97	1183502.89	0.3'-1.2'	-	-	-	22	19	3	100	93	81	71	62	57	51	CL	Light Red Clay with Chert
TP-9	776118.97	1183502.89	1.2'-4.5'	36.3	-	-	66	30	36	100	100	97	96	94	93	92	CL-ML	Light Brown Topsoil Silty
TP-10	775939.89	1183679.65	1.5'-8.3'	-	-	-	27	18	9	100	71	59	51	45	39	35	GC	Reddish Brown Clayey Gravel
TP-10	775939.89	1183679.65	8.3'-13.5'	-	-	-	55	17	33	100	91	89	87	85	84	82	CH	Red Clay with Chert
TP-11	775556.64	1183692.44	2.0'-7.0'	33.4	-	-	72	28	44	100	100	100	100	100	99	99	SC	Clayey Sand with Chert
TP-12	775621.70	1184009.09	0.3'-2.2'	-	-	-	24	19	5	100	92	79	62	49	44	39	CH	Red Clay with Chert
TP-12	775621.70	1184009.09	2.2'-4.6'	13.4	-	-	41	19	22	100	78	64	57	51	46	42	ML	Light Brown Silty Clay with Gravel
TP-13	775939.77	1183962.61	1.0'-7.0'	27.9	89.8	28.2	61	25	36	100	100	94	90	87	85	83	CH	Red Clay with Chert
TP-14	776123.43	1183771.84	4.5'-6.4'	28.6	-	-	63	27	36	100	99	91	86	83	82	80	CH	Red Clay with Chert
TP-14	776123.43	1183771.84	6.4'-14.0'	-	-	-	59	25	34	100	91	85	80	74	69	63	CH	Red Clay with Chert
TP-15	776121.89	1184122.64	1.7'-4.0'	-	-	-	63	28	35	100	100	98	97	96	94	92	CH	Red Clay
TP-15	776121.89	1184122.64	7.0'-16.0'	28.1	-	-	76	25	51	100	86	83	80	77	74	70	CH	Red Clay with Chert
TP-16	776008.67	1184332.00	0.4'-2.0'	15.8	-	-	23	19	4	100	92	82	72	60	53	48	GM	Light Brown Clay Loam with Gravel
TP-16	776008.67	1184332.00	2.0'-8.0'	28.8	-	-	64	27	37	100	98	95	92	90	89	86	CH	Red Clay with Chert
TP-17	774440.36	1183445.98	0.7'-1.7'	26.9	-	-	87	25	62	100	97	94	93	92	90	88	CH	Red Silty Clay
TP-17	774440.36	1183445.98	1.7'-4.3'	28.8	-	-	80	28	52	100	100	99	98	97	96	94	CH	Light Brown Fat Clay
TP-18	774220.11	1183319.76	2.0'-5.5'	28.9	-	-	87	30	57	100	100	100	99	97	91	89	CH	Light Brown Fat Clay
TP-18	774220.11	1183319.76	7.8'-9.6'	33.9	-	-	78	30	48	100	97	95	92	90	87	85	CH	Yellowish Clay
TP-19	774066.02	1183591.71	2.5'-7.2	-	87.7	28.6	63	26	37	100	100	100	98	97	96	95	CH	Reddish Brown Clay with Chert
TP-19	774066.02	1183591.71	7.2'-13.7'	-	79.5	32.3	71	29	42	100	100	98	96	93	91	89	CL	Reddish Brown Clayey Gravel
TP-20	773832.48	1183365.63	2.5'-6.5'	29.5	-	-	67	25	42	100	97	96	95	94	92	92	CH	Light Brown Clay with Limestone Cobbles
TP-21	773632.92	1183354.97	3.7'-6.3'	34.1	-	-	66	31	35	100	100	100	100	100	100	99	CH	Reddish Brown Clay
TP-22	773685.88	1183226.09	1.8'-3.8'	33.2	-	-	72	27	45	100	100	99	96	92	88	86	CH	Light Brown Clay with Limestone Cobbles

REV.	DATE	DESCRIPTION	CK. BY
2	11/2015	100% SUBMITTAL TO DBA	FEC
1	7/2015	75% SUBMITTAL	FEC
0	5/2015	50% SUBMITTAL	FEC

SHEET TITLE **BORROW AREA INFORMATION**

PROJECT TITLE **CLOSURE OF INACTIVE NABORS LANDFILLS**

CLIENT ADEQ ARKANSAS Department of Environmental Quality

SCS AQUATERRA
7311 W. 130th St. Ste. 100
Overland Park, Kansas 66213
PH. (913) 681-0030 FAX. (913) 681-0012

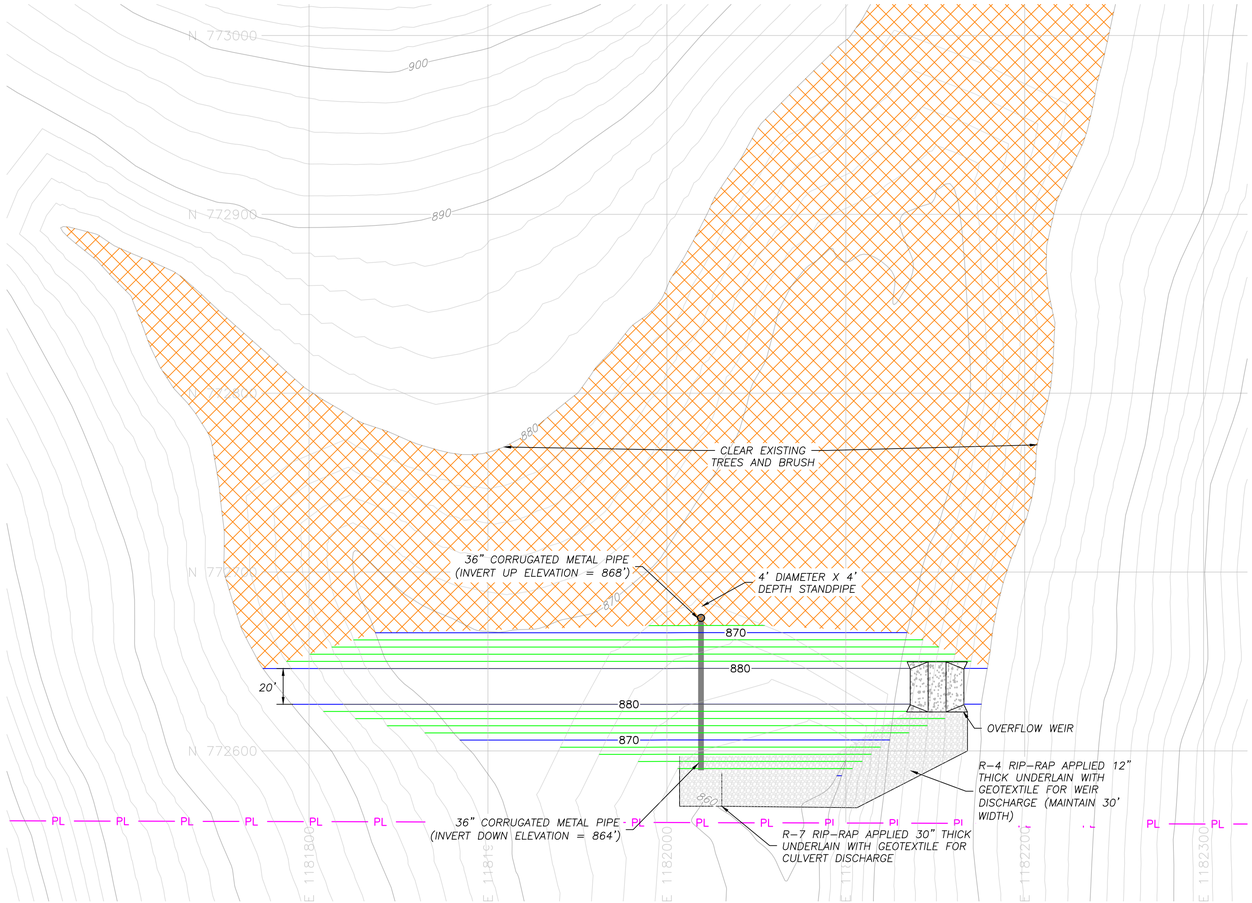
PROJ. NO.	DWN. BY:	CHK. BY:	Q/A RVW BY:	PROJ. MGR.
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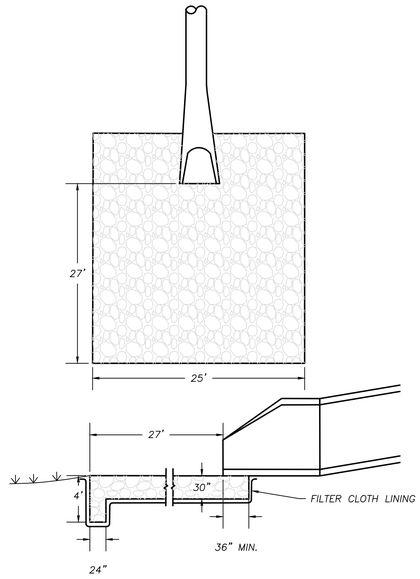
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DATE: 11/20/15

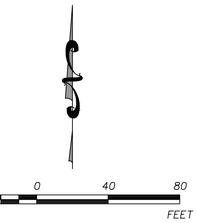
DRAWING NO. **C-102**

\\KAN-FS01\Clients\ADEQ\Projects\27214218.01 - Closure Contract - 2014\Task 2 - Design and Procurement\100% Design Submittal\DWG\C-102 - Borrow Area Information.dwg Nov 20, 2015 - 9:45am Layout Name: Borrow Area Information By: 3726dmb





A C-200 RIP-RAP OUTLET DETAIL
NOT TO SCALE



LEGEND:

- EXISTING 2' MINOR CONTOUR
- 1000 EXISTING 10' MAJOR CONTOUR
- 2' TOP OF DAM CONTOUR
- 1000 10' TOP OF DAM CONTOUR
- PL PROPERTY BOUNDARY

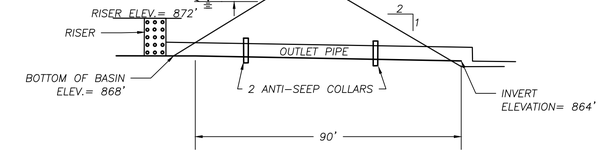
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1. EXISTING TOPOGRAPHY BASED ON AERIAL SURVEY PERFORMED BY M.J. HARDEN ASSOCIATES, INC ON AUGUST 17, 2010. UPDATES TO THE TOPOGRAPHY AND SITE FEATURES FOR AREA 1–2, AREA 1–3, AND SOUTH CLASS 4 DISPOSAL UNITS SURVEYED BY CONSOLIDATED LAND SERVICES, INC BETWEEN DECEMBER 2014 AND JANUARY 2015.
2. SURVEY DATA BASED ON THE NAD83 ARKANSAS STATE PLANE NORTH COORDINATE SYSTEM.
3. STRIP AND CLEAR EXISTING TREES AND BRUSH IN ACCORDANCE WITH THE TECHNICAL SPECIFICATIONS.
4. STOCKPILE STRIPPED VEGETATION AS DIRECTED BY THE CONSTRUCTION MANAGER.
5. SPOILS FROM MATERIAL SCREENING MAY BE USED AS RIP–RAP ON SURFACE OF SEDIMENTATION POND DAM.
6. *CONSTRUCTION SEQUENCE:* SEDIMENTATION BASIN TO BE CONSTRUCTED PRIOR TO EXCAVATION OF THE BORROW AREA.

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No.8123 FLOYD E. COTTER
11/20/15

STERNS CONRAD & SCHMIDT CONSULTING ENGINEERS CERTIFICATE OF AUTHORIZATION No. 921 ARKANSAS

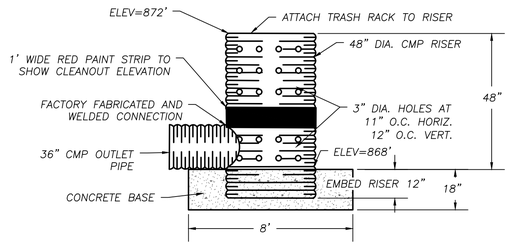
FOR BIDDING PURPOSES ONLY NOT FOR CONSTRUCTION



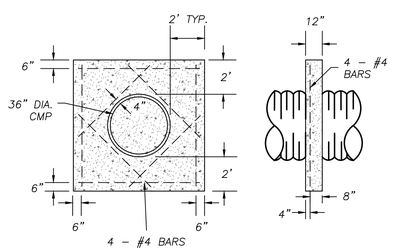
B C-200 BASIN DETAIL
NOT TO SCALE

NOTE:

1. CONSTRUCT PERFORATED RISER 2' FROM THE TOE OF SLOPE OF DAM.



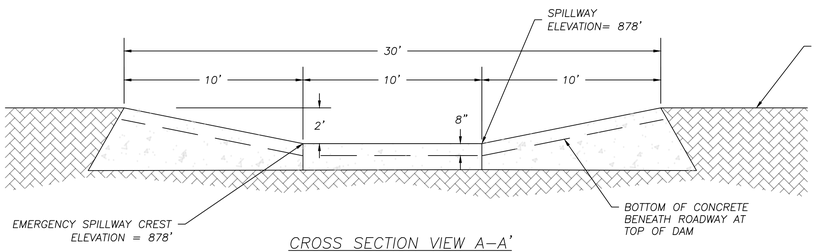
C C-200 RISER DETAIL
NOT TO SCALE



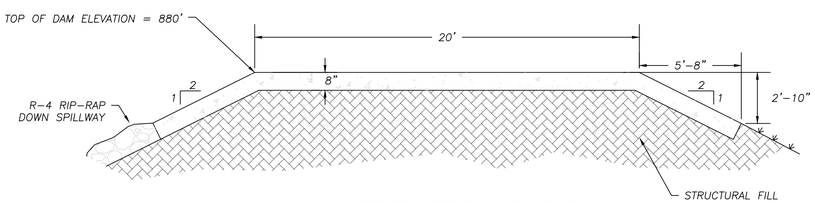
D C-200 ANTI-SEEPAGE COLLAR DETAIL
NOT TO SCALE

NOTES:

1. REINFORCED CONCRETE fc= 3,000 psi @ 28 DAYS



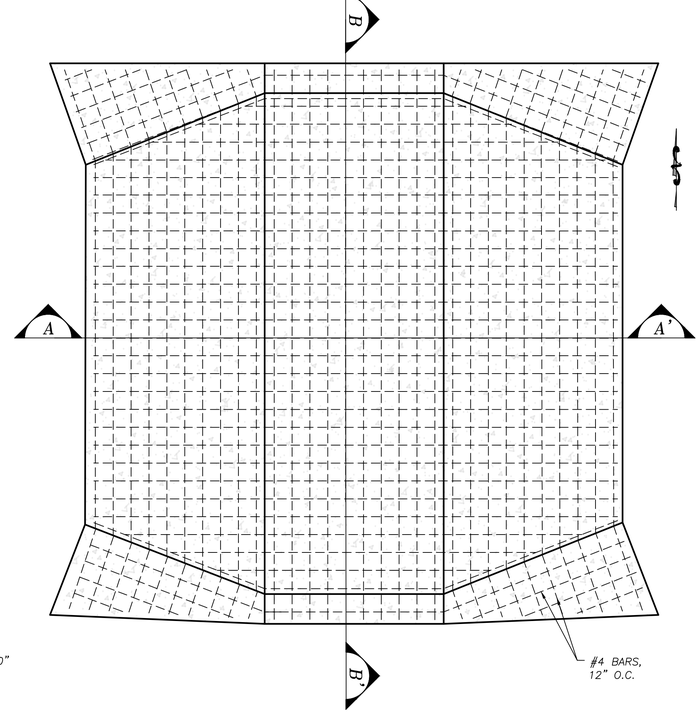
CROSS SECTION VIEW A–A'
NOT TO SCALE



CROSS SECTION VIEW B–B'
NOT TO SCALE

NOTES:

1. CONCRETE STRENGTH SHALL BE 4,500 PSI.



OVERFLOW WEIR PLAN VIEW
NOT TO SCALE

REV.	DATE	DESCRIPTION	CK. BY
2	11/2015	100% SUBMITTAL TO DBA	FEC
1	7/2015	75% SUBMITTAL	FEC
0	5/2015	50% SUBMITTAL	FEC

SHEET TITLE
SEDIMENTATION POND GRADING PLAN

PROJECT TITLE
CLOSURE OF INACTIVE NABORS LANDFILLS

ADEQ ARKANSAS Department of Environmental Quality

CLIENT

SCS AQUATERRA
7311 W. 130th St, Ste. 100
Overland Park, KS 66213-4566
PH. (913) 681-0030 FAX. (913) 681-0012

DWN. BY:	DMB	Q/A RVW BY:	DMB
CHK. BY:	FEC	PROJ. MGR	FEC
PROJ. NO.	27214218.01		
DSN. BY:	DMB		

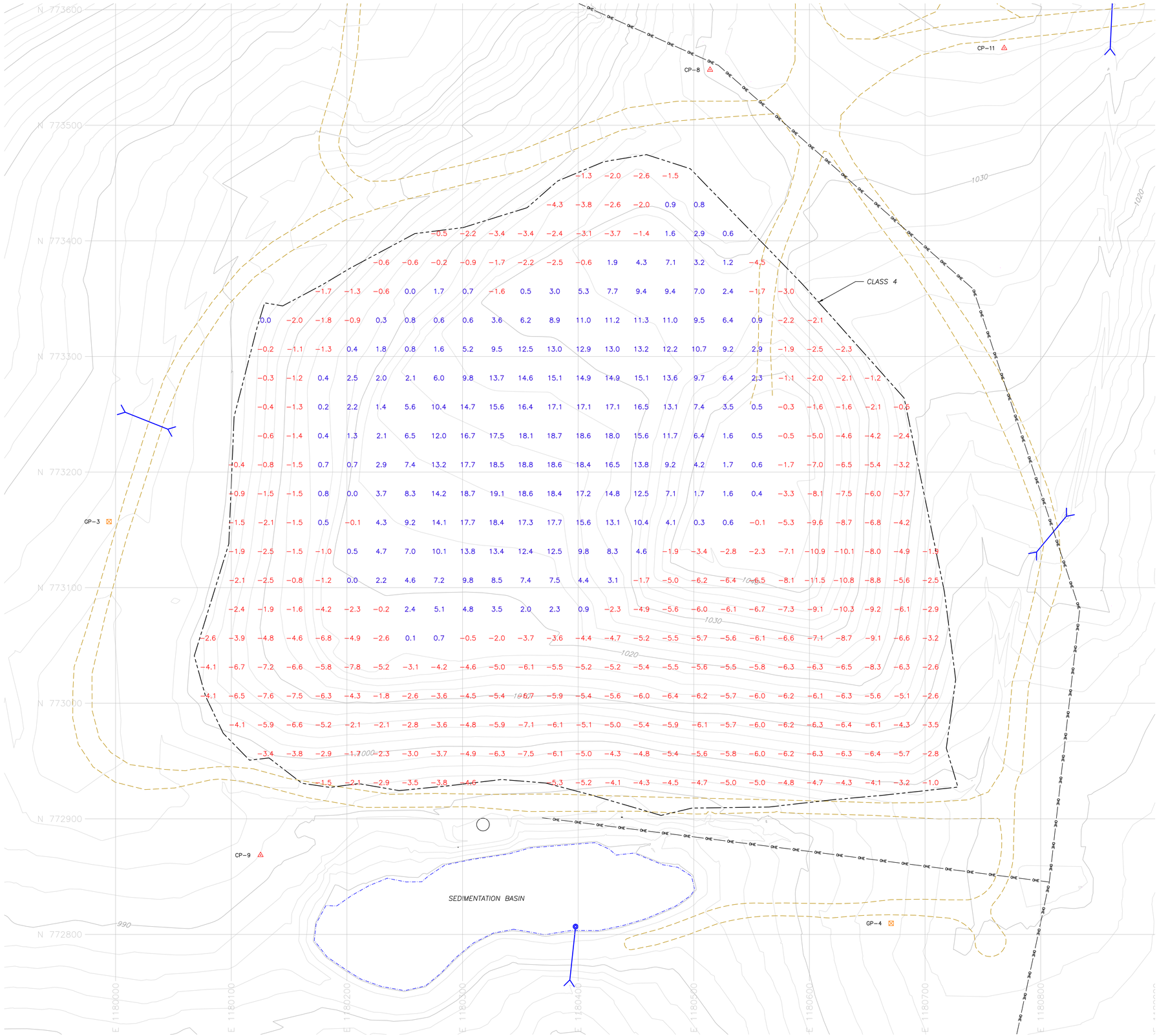
CADD FILE:
C-200 – SEDIMENTATION POND GRADING PLAN.DWG

DATE:
11/20/15

DRAWING NO.
C-200

\\KAN-FS01\Clients\ADEQ\Projects\27214218.01 - Closure Contract - 2014\Task 2 - Design and Procurement\100% Design Submittal\DWG\C-200 - Sedimentation Pond Grading Plan.dwg Nov 20, 2015 - 9:47am Layout Name: Sedimentation Pond Grading Plan By: 37264mb

\\KAN-FS01\Clients\ADEQ\Projects\272142218.01 - Closure Contract - 2014\Task 2 - Design and Procurement\100% Design Submittal\DWG\C-300 - Class 4 Waste Relocation Plan.dwg Nov 20, 2015 - 9:49am Layout Name: Class 4 Waste Relocation Plan By: 3726dmb



LEGEND:

- EXISTING 2' MINOR CONTOUR
- 1000 — EXISTING 10' MAJOR CONTOUR
- 3.2 — ESTIMATED FILL TO TOP OF INTERMEDIATE COVER ELEVATION (FEET)
- −6.2 — ESTIMATED CUT TO TOP OF INTERMEDIATE COVER ELEVATION (FEET)
- EXISTING ROAD
- OHE — EXISTING OVERHEAD ELECTRIC
- DISPOSAL BOUNDARY (APPROXIMATE)
- EXISTING BODY OF WATER
- EXISTING DRAINAGE PIPE/CULVERT
- MW-2 — EXISTING MONITORING WELL
- GP-2 — EXISTING GAS PROBE
- CP-8 — EXISTING CONTROL POINT

NOTES:

1. EXISTING TOPOGRAPHY BASED ON AERIAL SURVEY PERFORMED BY M.J. HARDEN ASSOCIATES, INC ON AUGUST 17, 2010. UPDATES TO THE TOPOGRAPHY AND SITE FEATURES FOR AREA 1−2, AREA 1−3, AND SOUTH CLASS 4 DISPOSAL UNITS SURVEYED BY CONSOLIDATED LAND SERVICES, INC BETWEEN DECEMBER 2014 AND JANUARY 2015.
2. SURVEY DATA BASED ON THE NAD83 ARKANSAS STATE PLANE NORTH COORDINATE SYSTEM.
3. FINAL COVER CONTOURS REVISED BY SCS ENGINEERS IN SEPTEMBER 2015.
4. WASTE RELOCATION TO BE PERFORMED PRIOR TO FINAL COVER INSTALLATION OF THE CLASS 4 DISPOSAL UNIT.
5. WASTE RELOCATION IN CLASS 4 SHALL CONSIST OF REGRADING THE OVERFILLED AREAS INTO THE AREAS WITH AIRSPACE REMAINING AS INDICATED BY THE CUT/FILL NUMBERS ON THIS DRAWING. CUT/FILL NUMBERS BASED ON COMPARING EXISTING ELEVATIONS TO TOP OF INTERMEDIATE COVER ELEVATIONS. APPROXIMATELY 4600 CUBIC YARDS OF AIRSPACE REMAINS AFTER REGRADING.
6. EXCESS SPOILS FROM MATERIAL SCREENING MAY BE PLACED IN CLASS 4.
7. MAINTAIN A MINIMUM 4 PERCENT SLOPE TOWARDS STORMWATER CONTROLS.

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No.8123 FLOYD F. COTTER
11/20/15

STERNS CONRAD & SCHMIDT CONSULTING ENGINEERS CERTIFICATE OF AUTHORIZATION No. 921 ARKANSAS

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40 0 40 80
SCALE FEET

REV.	DATE	DESCRIPTION	CK. BY
2	11/2015	100% SUBMITTAL TO DBA	FEC
1	7/2015	75% SUBMITTAL	FEC
0	5/2015	50% SUBMITTAL	FEC

SHEET TITLE
CLASS 4 WASTE RELOCATION PLAN

PROJECT TITLE
CLOSURE OF INACTIVE NABORS LANDFILLS

CLIENT
ADEQ ARKANSAS
Department of Environmental Quality

SCS AQUATERRA
7311 W. 130th St. Ste. 100
Overland Park, Kansas 66213
PH. (913) 681-0030 FAX. (913) 681-0012

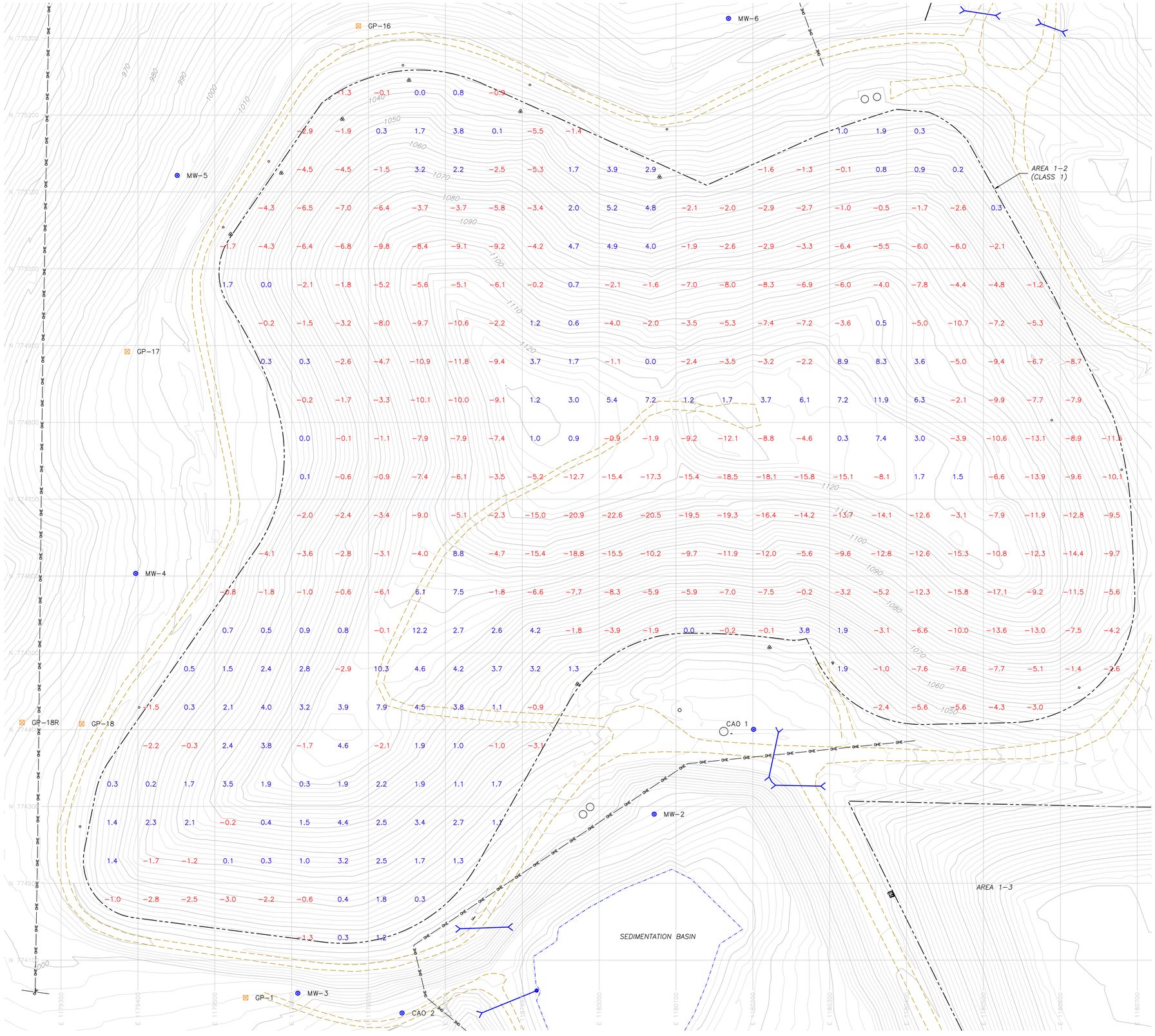
PROJ. NO. 272142218.01
DSN. BY: DMB | DWN. BY: DMB | CHK. BY: FEC | S/A RVW BY: DMB | PROJ. MGR. FEC

CADD FILE:
C-300 — CLASS 4 WASTE RELOCATION PLAN.DWG

DATE:
11/20/15

DRAWING NO.
C-300

\\KAN-FS01\Clients\ADEQ\Projects\27214218.01 - Closure Contract - 2014\Task 2 - Design and Procurement\100% Design Submittal\DWG\C-301 - Area 1-2 Waste Relocation Plan.dwg Nov 20, 2015 - 9:52am Layout Name: Area 1-2 Waste Relocation Plan By: 37264mb



LEGEND:

- EXISTING 2' MINOR CONTOUR
- 1000 — EXISTING 10' MAJOR CONTOUR
- 7.6 — ESTIMATED FILL TO TOP OF INTERMEDIATE COVER ELEVATION
- −6.7 — ESTIMATED CUT TO TOP OF INTERMEDIATE COVER ELEVATION
- EXISTING ROAD
- OHE — OHE — EXISTING OVERHEAD ELECTRIC
- DISPOSAL BOUNDARY (APPROXIMATE)
- EXISTING BODY OF WATER
- EXISTING DRAINAGE PIPE/CULVERT
- MW-2 — EXISTING MONITORING WELL
- GP-16 — EXISTING GAS PROBE
- CP-5 — EXISTING CONTROL POINT

NOTES:

1. EXISTING TOPOGRAPHY BASED ON AERIAL SURVEY PERFORMED BY M.J. HARDEN ASSOCIATES, INC ON AUGUST 17, 2010. UPDATES TO THE TOPOGRAPHY AND SITE FEATURES FOR AREA 1−2, AREA 1−3, AND SOUTH CLASS 4 DISPOSAL UNITS SURVEYED BY CONSOLIDATED LAND SERVICES, INC BETWEEN DECEMBER 2014 AND JANUARY 2015.
2. SURVEY DATA BASED ON THE NAD83 ARKANSAS STATE PLANE NORTH COORDINATE SYSTEM.
3. FINAL COVER CONTOURS REVISED BY SCS AQUATERRA IN AUGUST 2015.
4. WASTE RELOCATION TO BE PERFORMED PRIOR TO FINAL COVER INSTALLATION OF THE AREA 1−2 DISPOSAL UNIT.
5. ESTIMATED VOLUME OF WASTE TO BE RELOCATED TO AREA 1−3 IS APPROXIMATELY 147,000 CUBIC YARDS AS OF JANUARY 2015. ACTUAL VOLUME RELOCATED DURING CONSTRUCTION MAY BE DIFFERENT.
6. STRIP AND STOCKPILE EXISTING COVER SOIL WITH HIGH ORGANIC CONTENT FOR USE IN VEGETATIVE LAYER IN FINAL COVER SYSTEM.

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No.8123 FLOYD E. COTTER
11/20/15

CERTIFICATE OF AUTHORIZATION STERNS CONRAD & SCHMIDT CONSULTING ENGINEERS No. 921 ARKANSAS

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NOT FOR CONSTRUCTION

60 0 60 120
SCALE FEET

REV.	DATE	DESCRIPTION	CK. BY
2	11/2015	100% SUBMITTAL TO DBA	FEC
1	7/2015	75% SUBMITTAL	FEC
0	5/2015	50% SUBMITTAL	FEC

SHEET TITLE
AREA 1-2 WASTE RELOCATION PLAN

PROJECT TITLE
CLOSURE OF INACTIVE NABORS LANDFILLS

CLIENT
ADEQ ARKANSAS Department of Environmental Quality

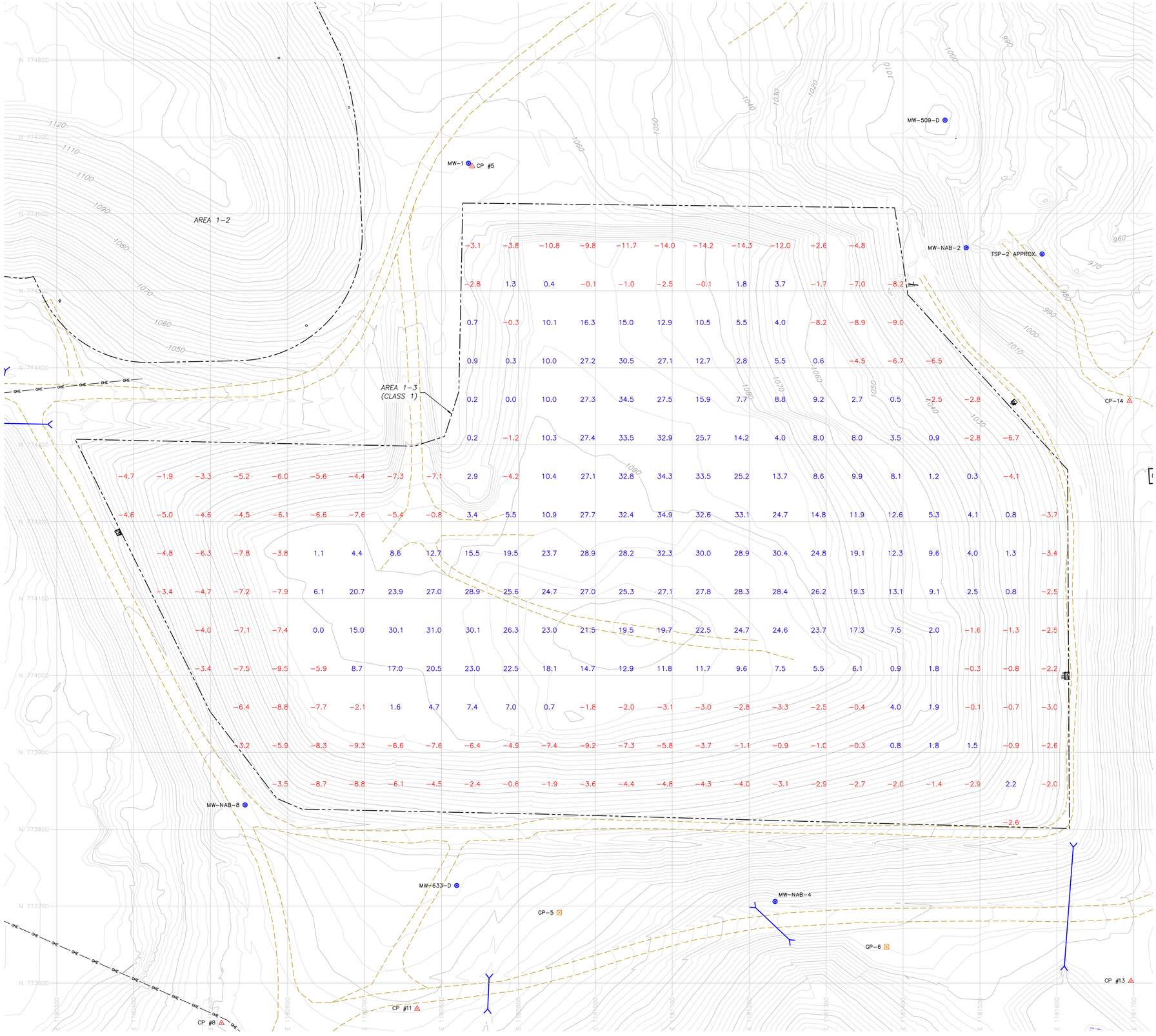
SCS AQUATERRA
7311 W. 130th St, Ste. 100
Overland Park, Kansas 66213
PH: (913) 681-0030 FAX: (913) 681-0012

PROJ. NO.	DWN. BY:	CHK. BY:	DSN. BY:	C/A RVW BY:	PROJ. MGR.
27214218.01	DMB	FEC	DMB	DMB	FEC

CADD FILE:
C−301 − AREA 1−2 WASTE RELOCATION PLAN.DWG

DATE:
11/20/15

DRAWING NO.
C-301



\\KAN-FS01\Clients\ADEQ\Projects\27214218.01 - Closure Contract - 2014\Task 2 - Design and Procurement\100% Design Submittal\DWG\C-302 - Area 1-3 Waste Relocation Plan.dwg Nov 20, 2015 - 9:55am Layout Name: Area 1-3 Waste Relocation Plan By: 37264mb

LEGEND:

- EXISTING 2' MINOR CONTOUR
- 1000 EXISTING 10' MAJOR CONTOUR
- 7.7 ESTIMATED FILL TO TOP OF INTERMEDIATE COVER ELEVATION (FEET)
- −1.2 ESTIMATED CUT TO TOP OF INTERMEDIATE COVER ELEVATION (FEET)
- EXISTING ROAD
- OHE OHE EXISTING OVERHEAD ELECTRIC
- DISPOSAL BOUNDARY (APPROXIMATE)
- EXISTING BODY OF WATER
- EXISTING DRAINAGE PIPE/CULVERT
- MW–2 EXISTING MONITORING WELL
- GP–16 EXISTING GAS PROBE
- CP–5 EXISTING CONTROL POINT

NOTES:

1. EXISTING TOPOGRAPHY BASED ON AERIAL SURVEY PERFORMED BY M.J. HARDEN ASSOCIATES, INC ON AUGUST 17, 2010. UPDATES TO THE TOPOGRAPHY AND SITE FEATURES FOR AREA 1–2, AREA 1–3, AND SOUTH CLASS 4 DISPOSAL UNITS SURVEYED BY CONSOLIDATED LAND SERVICES, INC BETWEEN DECEMBER 2014 AND JANUARY 2015.
2. SURVEY DATA BASED ON THE NAD83 ARKANSAS STATE PLANE NORTH COORDINATE SYSTEM.
3. FINAL COVER CONTOURS REVISED BY SCS AQUATERRA IN JULY 2015.
4. WASTE RELOCATION TO BE PERFORMED PRIOR TO FINAL COVER INSTALLATION OF THE AREA 1–3 DISPOSAL UNIT.
5. WASTE RELOCATION IN AREA 1–3 WILL CONSIST OF REGRADING THE OVERFILLED AREAS INTO THE AREAS WITH AIRSPACE REMAINING AS INDICATED BY THE CUT/FILL NUMBERS ON THIS DRAWING. CUT/FILL NUMBERS BASED ON COMPARING EXISTING ELEVATIONS TO TOP OF INTERMEDIATE COVER ELEVATIONS. AREA 1–3 TO ACCEPT WASTE RELOCATED FROM AREA 1–2.
6. FILL DEPTH WILL VARY BASED ON ACTUAL VOLUME/DENSITY OF RELOCATED WASTE.
7. WASTE SHOULD BE PLACED IN A MANNER TO ACHIEVE AT LEAST 4 PERCENT SLOPES TO PROMOTE POSITIVE DRAINAGE.

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No.8123 FLOYD E. COTTER
11/20/15

STERNS CONRAD & SCHMIDT CONSULTING ENGINEERS No. 921 CERTIFICATE OF AUTHORIZATION ARKANSAS

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60 0 60 120
SCALE FEET

REV.	DATE	DESCRIPTION	CK. BY
2	11/2015	100% SUBMITTAL TO DBA	FEC
1	7/2015	75% SUBMITTAL	FEC
0	5/2015	50% SUBMITTAL	FEC

SHEET TITLE
AREA 1-3 WASTE RELOCATION PLAN

PROJECT TITLE
CLOSURE OF INACTIVE NABORS LANDFILLS

CLIENT
ADEQ ARKANSAS Department of Environmental Quality

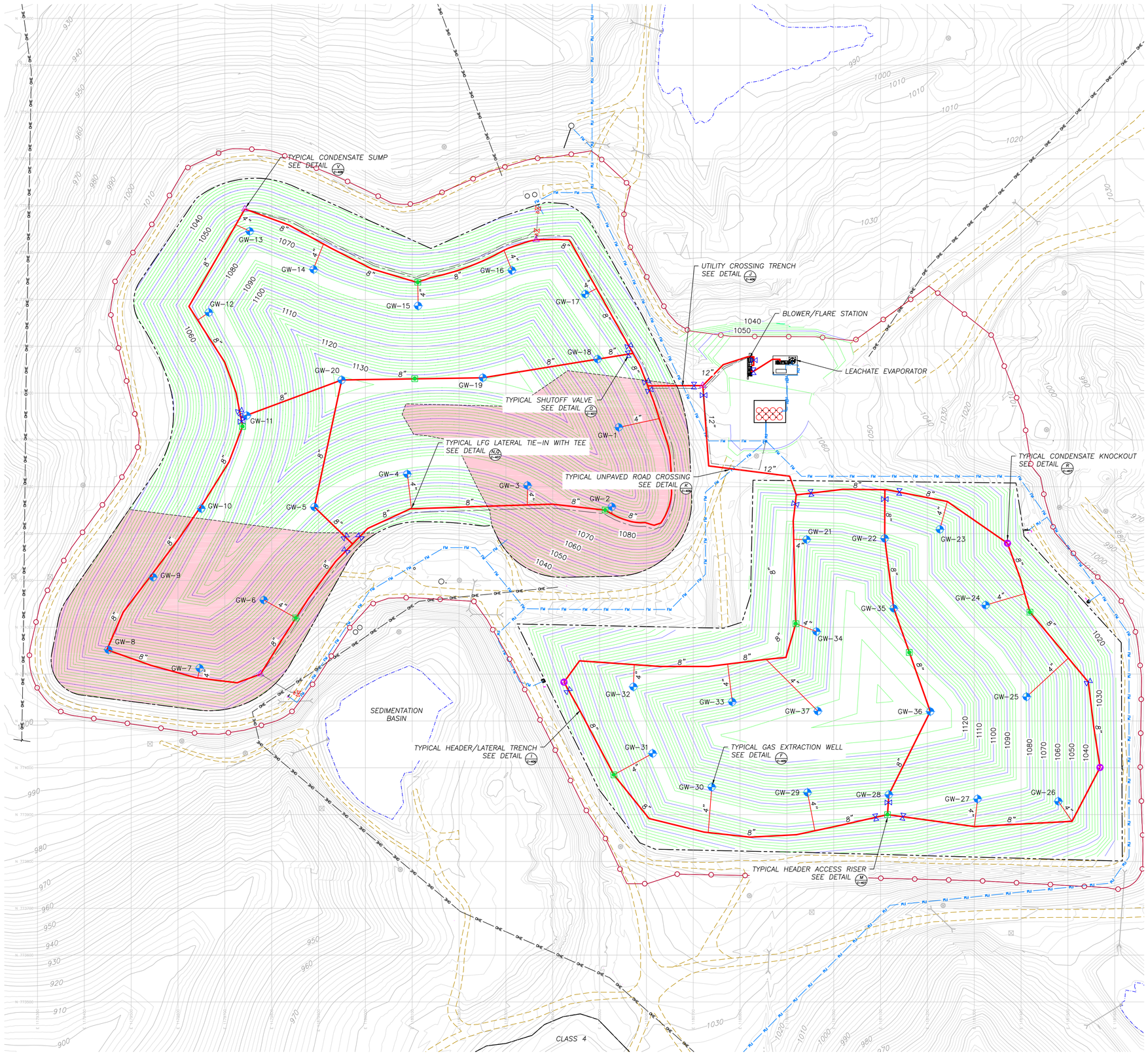
SCS AQUATERRA
7311 W. 130th St, Ste. 100
Overland Park, KS 66213
PH: (913) 681-0030 FAX: (913) 681-0012

PROJ. NO.	DWN. BY:	CHK. BY:	DSN. BY:	Q/A RVW BY:	PROJ. MGR.
27214218.01	DMB	FEC	DMB	DMB	FEC

CADD FILE:
C-302 – AREA 1-3 WASTE RELOCATION PLANDWG

DATE:
11/20/15

DRAWING NO.
C-302



LEGEND:

- EXISTING 2' MINOR CONTOUR
- EXISTING 10' MAJOR CONTOUR
- 2' TOP OF FINAL COVER CONTOUR
- 10' TOP OF FINAL COVER CONTOUR
- DISPOSAL BOUNDARY (APPROXIMATE)
- LANDFILL GAS HEADER
- LANDFILL GAS LATERAL
- 2" CONDENSATE LINE
- 2" AIR LINE
- LEACHATE FORCEMAIN
- FENCE
- EXISTING OVERHEAD ELECTRIC
- EXISTING ROAD
- EXISTING BODY OF WATER
- EXISTING UNPAVED ROAD
- ESTIMATED EXTENTS OF PIGGY-BACK LINER
- EXISTING CULVERT
- EXISTING MONITORING WELL
- EXISTING GAS PROBE
- GAS EXTRACTION WELL WITH WELL BORE SEAL
- CONDENSATE SUMP
- CONDENSATE KNOCKOUT
- SHUTOFF VALVE
- ACCESS RISER
- CHECK VALVE

NOTES:

1. AREA 1-2 CONSISTS OF PRE-SUBTITLE D AND SUBTITLE D DISPOSAL UNITS AS INDICATED ON THIS SHEET. AREA 1-3 CONSISTS OF SUBTITLE D DISPOSAL UNITS.
2. HATCHED AREA ON EAST SIDE OF AREA 1-2 INDICATES THE ESTIMATE EXTENTS OF THE PIGGY-BACK LINER SYSTEM. CONTRACTOR SHALL USE CAUTION WHEN DRILLING AND TRENCHING IN AND NEAR PIGGY-BACK LINER SYSTEM.
3. CONDENSATE SUMPS/KNOCKOUTS TO BE PLACED AT LOW POINTS IN THE HEADER LINE. A MINIMUM 3 PERCENT SLOPE SHALL BE MAINTAINED ON HEADER AND LATERAL LINES WITHIN THE LIMITS OF WASTE UNLESS OTHERWISE NOTED. A MINIMUM 1.5 PERCENT SLOPE SHALL BE MAINTAINED ON HEADER LINES OUTSIDE THE LIMITS OF WASTE.
4. CONDENSATE AND AIR SUPPLY LINE PIPING SHOWN FOR GENERAL LAYOUT PURPOSES. PIPING SHALL BE INSTALLED IN ACCORDANCE WITH THE DETAILS ON SHEET C-406, C-407, AND C-408.
5. CONDENSATE COLLECTED BY CONDENSATE KNOCKOUTS (AREA 1-3) WILL DRAIN BACK INTO THE WASTE MASS. CONDENSATE COLLECTED IN CONDENSATE SUMPS (AREA 1-2) WILL BE PUMPED INTO THE LEACHATE FORCEMAIN.
6. SEE SHEETS C-500 THROUGH C-507 FOR ADDITIONAL INFORMATION REGARDING THE LEACHATE FORCEMAIN AND CONSTRUCTION OF THE FLARE PAD.

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No.8123 FLOYD E. COTTER 11/20/15

STERNS CONRAD & SCHMIDT CONSULTING ENGINEERS CERTIFICATE OF AUTHORIZATION No. 921 ARKANSAS

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100 0 100 200
SCALE FEET

REV.	DATE	DESCRIPTION	CK. BY
2	11/2015	100% SUBMITTAL TO DBA	FEC
1	7/2015	75% SUBMITTAL	FEC
0	5/2015	50% SUBMITTAL	FEC

SHEET TITLE: **GCCS LAYOUT**

PROJECT TITLE: **CLOSURE OF INACTIVE NABORS LANDFILLS**

CLIENT: ADEQ ARKANSAS Department of Environmental Quality

SCS AQUATERRA
7311 W. 130th St. Ste. 100
Overland Park, Kansas 66213
PH. (913) 681-0030 FAX. (913) 681-0012

PROJ. NO.	DWN. BY:	O/A RVW BY:
27214218.01	DMB	DMB
DSN. BY:	CHK. BY:	PROJ. MGR.
DMB	FEC	FEC

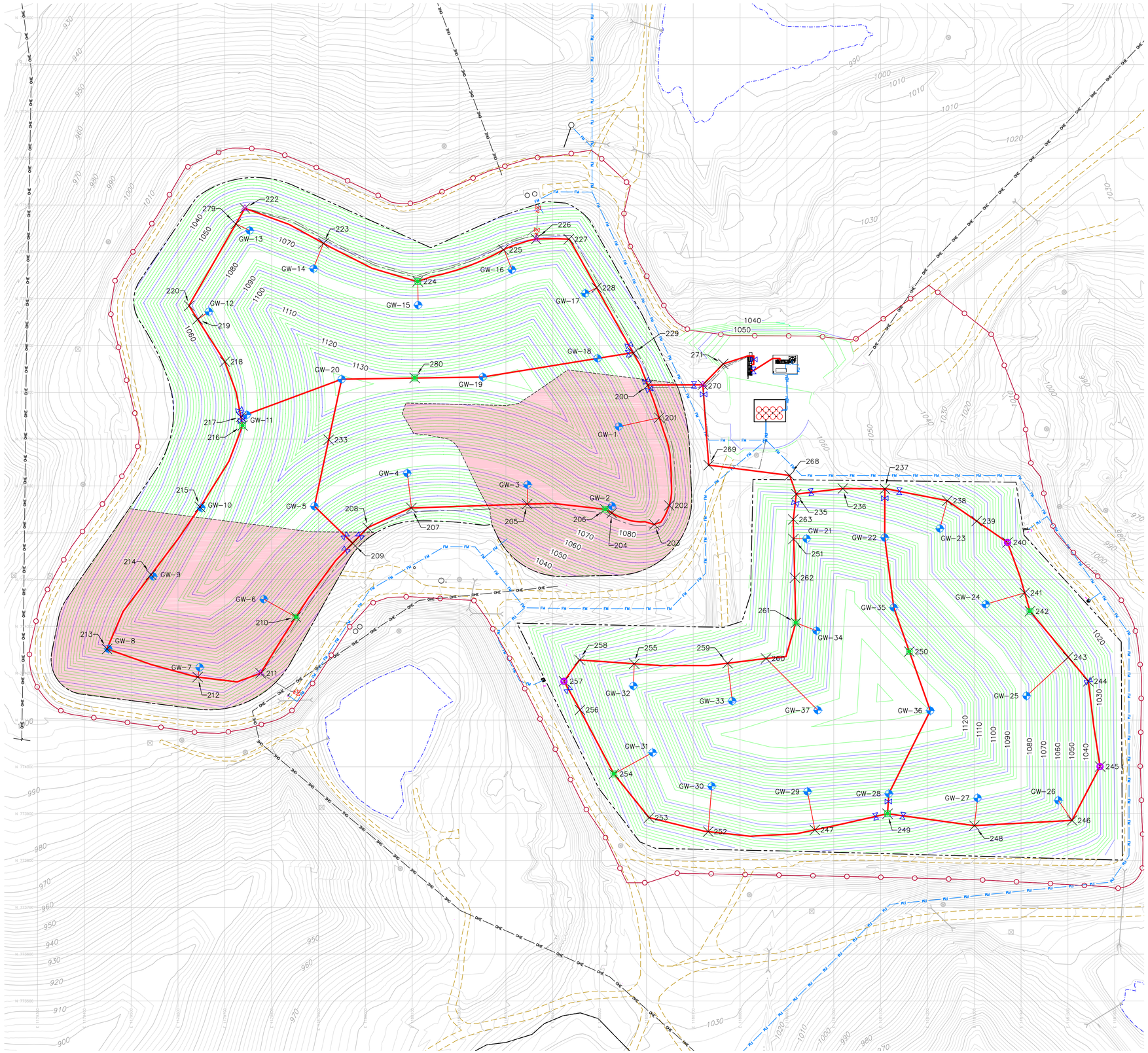
CADD FILE: C-400 - GCCS LAYOUT.DWG

DATE: 11/20/15

DRAWING NO. **C-400**

\\KAN-FS01\Clients\ADEQ\Projects\27214218.01 - Closure Contract - 2014\Task 2 - Design and Procurement\100% Design Submittal\DWG\C-400 - GCCS Layout.dwg Nov 20, 2015 - 9:58am Layout Name: GCCS Layout By: 3726dmb

\\KAN-FS01\Clients\ADEQ\Projects\27214218.01 - Closure Contract - 2014\Task 2 - Design and Procurement\100% Design Submittal\DWG\C-400 - GCCS Layout.dwg Nov 20, 2015 - 9:59am Layout Name: GCCS Construction Points By: 3726dmb



LEGEND:

- EXISTING 2' MINOR CONTOUR
- 1020 EXISTING 10' MAJOR CONTOUR
- 2' TOP OF FINAL COVER CONTOUR
- 1100 10' TOP OF FINAL COVER CONTOUR
- DISPOSAL BOUNDARY (APPROXIMATE)
- LANDFILL GAS HEADER
- LANDFILL GAS LATERAL
- 2" CONDENSATE LINE
- 2" AIR LINE
- LEACHATE FORCEMAIN
- FENCE
- OHE EXISTING OVERHEAD ELECTRIC
- EXISTING ROAD
- EXISTING BODY OF WATER
- EXISTING UNPAVED ROAD
- ESTIMATED EXTENTS OF PIGGY-BACK LINER
- EXISTING CULVERT
- EXISTING MONITORING WELL
- EXISTING GAS PROBE
- GAS EXTRACTION WELL WITH WELL BORE SEAL
- CONDENSATE SUMP
- CONDENSATE KNOCKOUT
- SHUTOFF VALVE
- ACCESS RISER
- CHECK VALVE
- 239 CONSTRUCTION POINT

NOTES:

1. AREA 1-2 CONSISTS OF PRE-SUBTITLE D AND SUBTITLE D DISPOSAL UNITS AS INDICATED ON THIS SHEET. AREA 1-3 CONSISTS OF SUBTITLE D DISPOSAL UNITS.
2. HATCHED AREA ON EAST SIDE OF AREA 1-2 INDICATES THE ESTIMATE EXTENTS OF THE PIGGY-BACK LINER SYSTEM. CONTRACTOR SHALL USE CAUTION WHEN DRILLING AND TRENCHING IN AND NEAR PIGGY-BACK LINER SYSTEM.
3. CONDENSATE SUMPS/KNOCKOUTS TO BE PLACED AT LOW POINTS IN THE HEADER LINE. A MINIMUM 3 PERCENT SLOPE SHALL BE MAINTAINED ON HEADER AND LATERAL LINES WITHIN THE LIMITS OF WASTE UNLESS OTHERWISE NOTED. A MINIMUM 1.5 PERCENT SLOPE SHALL BE MAINTAINED ON HEADER LINES OUTSIDE THE LIMITS OF WASTE.
4. CONDENSATE AND AIR SUPPLY LINE PIPING SHOWN FOR GENERAL LAYOUT PURPOSES. PIPING SHALL BE INSTALLED IN ACCORDANCE WITH THE DETAILS ON SHEET C-404
5. CONDENSATE COLLECTED BY CONDENSATE KNOCKOUTS (AREA 1-3) WILL DRAIN BACK INTO THE WASTE MASS. CONDENSATE COLLECTED IN CONDENSATE SUMPS (AREA 1-2) WILL BE PUMPED INTO THE LEACHATE FORCEMAIN.
6. SEE SHEETS C-500 THROUGH C-507 FOR ADDITIONAL INFORMATION REGARDING THE LEACHATE FORCEMAIN AND CONSTRUCTION OF THE FLARE PAD.

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No.8123 FLOYD E. CUTTER 11/20/15

STERNS CONRAD & SCHMIDT CONSULTING ENGINEERS CERTIFICATE OF AUTHORIZATION No. 921 ARKANSAS

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100 0 100 200
SCALE FEET

REV.	DATE	DESCRIPTION	CK. BY
2	11/2015	100% SUBMITTAL TO DBA	FEC
1	7/2015	75% SUBMITTAL	FEC
0	5/2015	50% SUBMITTAL	FEC

SHEET TITLE
GCCS CONSTRUCTION POINTS

PROJECT TITLE
CLOSURE OF INACTIVE NABORS LANDFILLS

CLIENT
ADEQ ARKANSAS Department of Environmental Quality

SCS AQUATERRA
7311 W. 130th St. Ste. 100
Overland Park, Kansas 66213
PH. (913) 681-0030 FAX. (913) 681-0012

PROJ. NO.	DWN. BY:	CHK. BY:	DSN. BY:	O/A RVW BY:	PROJ. MGR.
27214218.01	DMB	FEC	DMB	DMB	FEC

CADD FILE:
C-400 - GCCS LAYOUT.DWG

DATE:
11/20/15

DRAWING NO.
C-401

Point Table			
Point #	Northing	Easting	Description
1	774726.85	1180541.21	GW-1
2	774557.30	1180526.31	GW-2
3	774602.72	1180346.19	GW-3
4	774627.20	1180089.41	GW-4
5	774556.76	1179891.29	GW-5
6	774358.22	1179783.04	GW-6
7	774212.54	1179646.23	GW-7
8	774252.12	1179451.20	GW-8
9	774406.94	1179546.96	GW-9
10	774553.35	1179649.70	GW-10
11	774752.13	1179746.73	GW-11
12	774972.26	1179665.88	GW-12
13	775145.63	1179753.18	GW-13
14	775064.08	1179889.41	GW-14
15	774986.34	1180112.82	GW-15
16	775062.00	1180312.90	GW-16
17	775011.42	1180469.57	GW-17
18	774872.56	1180495.92	GW-18
19	774832.72	1180250.86	GW-19
20	774828.00	1179949.45	GW-20
21	774487.18	1180942.13	GW-21
22	774489.84	1181108.79	GW-22
23	774508.97	1181226.61	GW-23
24	774347.30	1181324.49	GW-24
25	774151.78	1181411.90	GW-25
26	773928.34	1181479.74	GW-26
27	773933.59	1181307.20	GW-27
28	773942.95	1181117.75	GW-28
29	773947.16	1180944.10	GW-29
30	773958.92	1180739.62	GW-30
31	774030.76	1180613.44	GW-31
32	774172.90	1180572.40	GW-32
33	774140.70	1180783.33	GW-33
34	774290.96	1180963.17	GW-34

Point Table			
Point #	Northing	Easting	Description
35	774340.40	1181128.21	GW-35
36	774120.27	1181206.19	GW-36
37	774121.07	1180965.98	GW-37
200	774815.22	1180603.00	TEE: AREA 1-2 HEADER TO FLARE
201	774745.77	1180627.53	TEE: AREA 1-2 HEADER WITH LATERAL
202	774558.48	1180648.66	AREA 1-2 HEADER
203	774517.96	1180616.77	AREA 1-2 HEADER
204	774542.22	1180526.03	TEE: AREA 1-2 HEADER WITH LATERAL
205	774561.28	1180345.55	TEE: AREA 1-2 HEADER WITH LATERAL
206	774550.23	1180512.01	AREA 1-2 HEADER: ACCESS RISER
207	774553.03	1180098.33	TEE: AREA 1-2 HEADER WITH LATERAL
208	774510.99	1180005.15	AREA 1-2 HEADER
209	774477.72	1179972.74	TEE: AREA 1-2 HEADER TO SECOND JUMPER
210	774319.96	1179851.72	TEE: AREA 1-2 HEADER WITH LATERAL AND ACCESS RISER
211	774199.97	1179776.31	AREA 1-2 HEADER: CONDENSATE SUMP 1
212	774191.91	1179642.05	TEE: AREA 1-2 HEADER WITH LATERAL
213	774251.85	1179448.50	TEE: AREA 1-2 HEADER WITH LATERAL
214	774410.56	1179542.50	TEE: AREA 1-2 HEADER WITH LATERAL
215	774555.21	1179646.88	TEE: AREA 1-2 HEADER WITH LATERAL
216	774728.88	1179737.77	AREA 1-2 HEADER: ACCESS RISER
217	774747.38	1179734.43	TEE: AREA 1-2 HEADER TO MAIN JUMPER
218	774865.45	1179700.17	AREA 1-2 HEADER
219	774955.96	1179641.95	TEE: AREA 1-2 HEADER WITH LATERAL
220	774984.93	1179623.93	AREA 1-2 HEADER
222	775192.94	1179742.77	AREA 1-2 HEADER: CONDENSATE SUMP 3
223	775118.32	1179910.61	TEE: AREA 1-2 HEADER WITH LATERAL
224	775036.78	1180111.93	TEE: AREA 1-2 HEADER LATERAL AND ACCESS RISER
225	775104.42	1180294.77	TEE: AREA 1-2 HEADER WITH LATERAL
226	775127.32	1180364.59	AREA 1-2 HEADER: CONDENSATE SUMP 2
227	775126.96	1180434.33	AREA 1-2 HEADER
228	775023.37	1180493.77	TEE: AREA 1-2 HEADER WITH LATERAL
229	774883.46	1180572.29	TEE: AREA 1-2 HEADER TO MAIN JUMPER
233	774698.68	1179921.72	AREA 1-2 SECOND JUMPER
235	774582.80	1180919.99	TEE: AREA 1-3 HEADER TO FLARE

Point Table			
Point #	Northing	Easting	Description
236	774594.51	1181019.49	AREA 1-3 HEADER
237	774593.79	1181109.13	TEE: AREA 1-3 HEADER TO JUMPER
238	774568.48	1181242.50	TEE: AREA 1-3 HEADER WITH LATERAL
239	774524.93	1181305.20	AREA 1-3 HEADER
240	774479.41	1181371.05	AREA 1-3 HEADER: CONDENSATE KNOCKOUT 1
241	774371.74	1181407.75	TEE: AREA 1-3 HEADER WITH LATERAL
242	774332.34	1181418.97	AREA 1-3 HEADER: ACCESS RISER
243	774234.19	1181500.33	TEE: AREA 1-3 HEADER WITH LATERAL
244	774183.01	1181543.68	AREA 1-3 HEADER
245	774000.77	1181568.74	AREA 1-3 HEADER: CONDENSATE KNOCKOUT 2
246	773885.65	1181508.82	TEE: AREA 1-3 HEADER WITH LATERAL
247	773865.49	1180959.64	TEE: AREA 1-3 HEADER WITH LATERAL
248	773874.49	1181300.37	TEE: AREA 1-3 HEADER WITH LATERAL
249	773899.97	1181114.91	TEE: AREA 1-3 HEADER TO JUMPER AND ACCESS RISER
250	774246.24	1181161.36	AREA 1-3 JUMPER: ACCESS RISER
251	774486.76	1180913.97	TEE: AREA 1-3 HEADER WITH LATERAL
252	773861.78	1180732.03	TEE: AREA 1-3 HEADER WITH LATERAL
253	773891.63	1180605.78	AREA 1-3 HEADER
254	773984.97	1180530.62	TEE: AREA 1-3 HEADER WITH LATERAL AND ACCESS RISER
255	774220.20	1180574.03	TEE: AREA 1-3 HEADER WITH LATERAL
256	774121.83	1180458.23	AREA 1-3 HEADER
257	774182.87	1180424.09	AREA 1-3 HEADER CONDENSATE KNOCKOUT 3
258	774228.32	1180457.30	AREA 1-3 HEADER
259	774221.39	1180773.47	TEE: AREA 1-3 HEADER WITH LATERAL
260	774231.56	1180855.47	TEE: AREA 1-3 HEADER WITH LATERAL
261	774307.64	1180919.10	TEE: AREA 1-3 HEADER WITH LATERAL AND ACCESS RISER
262	774404.03	1180917.02	AREA 1-3 HEADER
263	774528.51	1180913.54	AREA 1-3 HEADER
268	774622.59	1180905.81	FLARE INPUT
269	774644.51	1180733.09	FLARE INPUT
270	774816.00	1180720.47	FLARE INPUT CONDENSATE SUMP
271	774860.74	1180764.03	FLARE INPUT
279	775159.50	1179723.45	TEE: AREA 1-3 HEADER WITH LATERAL
280	774830.83	1180105.35	AREA 1-2 JUMPER: ACCESS RISER

NOTE:

1. SEE WELL SCHEDULE FOR ADDITIONAL GAS EXTRACTION WELL DRILLING INFORMATION.

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No.8123 LLOYD E. COTTER
11/20/15

STERNS CONRAD & SCHMIDT CONSULTING ENGINEERS No. 921 CERTIFICATE OF AUTHORIZATION ARKANSAS

FOR BIDDING PURPOSES ONLY
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REV.	DATE	DESCRIPTION	CK. BY
2	11/2015	100% SUBMITTAL TO DBA	FEC
1	7/2015	75% SUBMITTAL	FEC
0	5/2015	50% SUBMITTAL	FEC

SHEET TITLE
GCCS POINT TABLE

PROJECT TITLE
CLOSURE OF INACTIVE NABORS LANDFILLS

CLIENT
ADEQ
ARKANSAS
Department of Environmental Quality

SCS AQUATERRA
7311 W. 130th St, Ste. 100
Overland Park, Kansas 66213
PH: (913) 681-0030 FAX: (913) 681-0012

PROJ. NO.	27214218.01
DSN. BY:	DMB
DWN. BY:	DMB
CHK. BY:	FEC
Q/A RVW BY:	DMB
PROJ. MGR.	FEC

CADD FILE:
C-400 - GCCS LAYOUT.DWG

DATE:
11/20/15

DRAWING NO.
C-402

\\KAN-FS01\Clients\ADEQ\Projects\27214218.01 - Closure Contract - 2014\Task 2 - Design and Procurement\100% Design Submittal\DWG\C-400 - GCCS Layout.dwg Nov 20, 2015 - 9:59am Layout Name: GCCS Point Table By: 3726dmb

NABORS AREA 1-2 AND AREA 1-3 GAS WELL SCHEDULE

Vertical Extraction Well Designation	AR State Plane North Zone Coordinates North	AR State Plane North Zone Coordinates East	Estimated Final Grade Elevation (MSL)	Existing Surface Grade Elevation (MSL)	Difference In Surface Elevation (FT.)	Top Of Base Liner Grade Elevation (MSL)	Required Depth Above Base Liner System (FT.)	Available Drilling Depth (FT.)	Estimated Drilling Depth (FT.)	8" HDPE Under Ground Solid Pipe (FT.)	8" HDPE Perforated Pipe (FT.)	8" HDPE Above Ground Solid Pipe Pipe (FT.)
GW-1	774,726.85	1,180,541.21	1,098.54	1,096.54	2.00	1,059.42	15	22.0	22.0	10.0	11.0	4.0
GW-2	774,557.30	1,180,526.31	1,089.84	1,087.84	2.00	1,053.01	15	20.0	20.0	10.0	9.0	4.0
GW-3	774,602.72	1,180,346.19	1,082.07	1,080.07	2.00	1,047.89	15	17.0	17.0	10.0	6.0	4.0
GW-4	774,627.20	1,180,089.41	1,078.23	1,076.23	2.00	1,038.06	15	23.0	23.0	10.0	12.0	4.0
GW-5	774,556.76	1,179,891.29	1,082.39	1,080.39	2.00	1,021.53	15	44.0	44.0	16.0	27.0	4.0
GW-6	774,358.22	1,179,783.04	1,066.23	1,064.23	2.00	1,004.19	15	45.0	45.0	16.0	28.0	4.0
GW-7	774,212.54	1,179,646.23	1,045.16	1,043.16	2.00	995.00	15	33.0	33.0	16.0	16.0	4.0
GW-8	774,252.12	1,179,451.20	1,048.09	1,046.09	2.00	999.67	15	31.0	31.0	10.0	20.0	4.0
GW-9	774,406.94	1,179,546.96	1,065.47	1,063.47	2.00	1,006.66	15	42.0	42.0	16.0	25.0	4.0
GW-10	774,553.35	1,179,649.70	1,071.84	1,069.84	2.00	1,019.95	15	35.0	35.0	16.0	18.0	4.0
GW-11	774,752.13	1,179,746.73	1,082.01	1,080.01	2.00	1,033.76	15	31.0	31.0	10.0	20.0	4.0
GW-12	774,972.26	1,179,665.88	1,078.70	1,076.70	2.00	1,032.59	15	29.0	29.0	10.0	18.0	4.0
GW-13	775,145.63	1,179,753.18	1,070.18	1,068.18	2.00	1,029.48	15	24.0	24.0	10.0	13.0	4.0
GW-14	775,064.08	1,179,889.41	1,080.90	1,078.90	2.00	1,031.93	15	32.0	32.0	16.0	15.0	4.0
GW-15	774,986.34	1,180,112.82	1,082.70	1,080.70	2.00	1,038.41	15	27.0	27.0	16.0	10.0	4.0
GW-16	775,062.00	1,180,312.90	1,077.55	1,075.55	2.00	1,040.86	15	20.0	20.0	10.0	9.0	4.0
GW-17	775,011.42	1,180,469.57	1,074.94	1,072.94	2.00	1,039.92	15	18.0	18.0	10.0	7.0	4.0
GW-18	774,872.56	1,180,495.92	1,088.24	1,086.24	2.00	1,048.51	15	23.0	23.0	10.0	12.0	4.0
GW-19	774,832.72	1,180,250.86	1,133.77	1,131.77	2.00	1,046.00	15	71.0	71.0	16.0	54.0	4.0
GW-20	774,828.00	1,179,949.45	1,134.38	1,132.38	2.00	1,037.91	15	79.0	79.0	16.0	62.0	4.0
GW-21	774,487.18	1,180,942.13	1,096.54	1,094.54	2.00	1,059.96	10	25.0	25.0	10.0	14.0	4.0
GW-22	774,489.84	1,181,108.79	1,087.23	1,085.23	2.00	1,054.00	10	21.0	21.0	10.0	10.0	4.0
GW-23	774,508.97	1,181,226.61	1,074.00	1,072.00	2.00	1,040.05	10	22.0	22.0	10.0	11.0	4.0
GW-24	774,347.30	1,181,324.49	1,067.17	1,065.17	2.00	1,029.63	15	21.0	21.0	10.0	10.0	4.0
GW-25	774,151.78	1,181,411.90	1,081.65	1,079.65	2.00	1,020.65	15	44.0	44.0	16.0	27.0	4.0
GW-26	773,928.34	1,181,479.74	1,059.85	1,057.85	2.00	1,012.00	15	31.0	31.0	10.0	20.0	4.0
GW-27	773,933.59	1,181,307.20	1,081.72	1,079.72	2.00	1,029.18	15	36.0	36.0	16.0	19.0	4.0
GW-28	773,942.95	1,181,117.75	1,090.67	1,088.67	2.00	1,049.33	15	24.0	24.0	10.0	13.0	4.0
GW-29	773,947.16	1,180,944.10	1,097.32	1,095.32	2.00	1,057.05	15	23.0	23.0	10.0	12.0	4.0
GW-30	773,958.92	1,180,739.62	1,092.75	1,090.75	2.00	1,054.88	15	21.0	21.0	10.0	10.0	4.0
GW-31	774,030.76	1,180,613.44	1,082.51	1,080.51	2.00	1,048.80	10	22.0	22.0	10.0	11.0	4.0
GW-32	774,172.90	1,180,572.40	1,084.00	1,082.00	2.00	1,044.83	10	27.0	27.0	10.0	16.0	4.0
GW-33	774,140.70	1,180,783.33	1,108.72	1,106.72	2.00	1,055.93	15	36.0	36.0	16.0	19.0	4.0
GW-34	774,290.96	1,180,963.17	1,110.40	1,108.40	2.00	1,058.65	15	35.0	35.0	16.0	18.0	4.0
GW-35	774,340.40	1,181,128.21	1,111.35	1,109.35	2.00	1,054.42	15	40.0	40.0	16.0	23.0	4.0
GW-36	774,120.27	1,181,206.19	1,125.98	1,123.98	2.00	1,043.64	15	65.0	65.0	16.0	48.0	4.0
GW-37	774,121.07	1,180,965.98	1,124.51	1,122.51	2.00	1,058.14	15	49.0	49.0	16.0	32.0	4.0

NOTES:

1. *GAS EXTRACTION WELL COORDINATES AND SURFACE ELEVATIONS, UNLESS NOTED OTHERWISE, BASED ON THE FINAL COVER DESIGNS.*
2. *AREA 1–2 AND AREA 1–3 LINER ELEVATIONS BASED ON AS–BUILT DOCUMENTATION, WHERE AVAILABLE, PROVIDED BY OTHERS. DRILL DEPTHS DEVELOPED BASED ON COMPILED LINER ELEVATIONS.*
3. *WELL BORE SEALS TO BE INSTALLED ON ALL WELLS WITH LESS THAN 16 FEET OF SOLID UNDERGROUND PIPE.*
4. *SINCE COORDINATES AND SURFACE ELEVATIONS WILL VARY BASED ON WASTE RELOCATION ACTIVITIES, THESE VALUES WILL BE REVISED AND APPROVED BY THE DESIGN PROFESSIONAL, PRIOR TO THE COMMENCEMENT OF DRILLING.*

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No.8123 FLOYD E. COTTER
11/20/15

STERNS CONRAD & SCHMIDT CONSULTING ENGINEERS CERTIFICATE OF AUTHORIZATION No. 921 ARKANSAS

FOR BIDDING PURPOSES ONLY
NOT FOR CONSTRUCTION

REV.	DATE	DESCRIPTION	CK. BY
2	11/2015	100% SUBMITTAL TO DBA	FEC
1	7/2015	75% SUBMITTAL	FEC
0	5/2015	50% SUBMITTAL	FEC

SHEET TITLE
WELL SCHEDULE

PROJECT TITLE
CLOSURE OF INACTIVE NABORS LANDFILLS

CLIENT
ADEQ
ARKANSAS
Department of Environmental Quality

SCS AQUATERRA
7311 W. 130th St. Ste. 100
Overland Park, Kansas 66213
PH. (913) 681-0030 FAX. (913) 681-0012

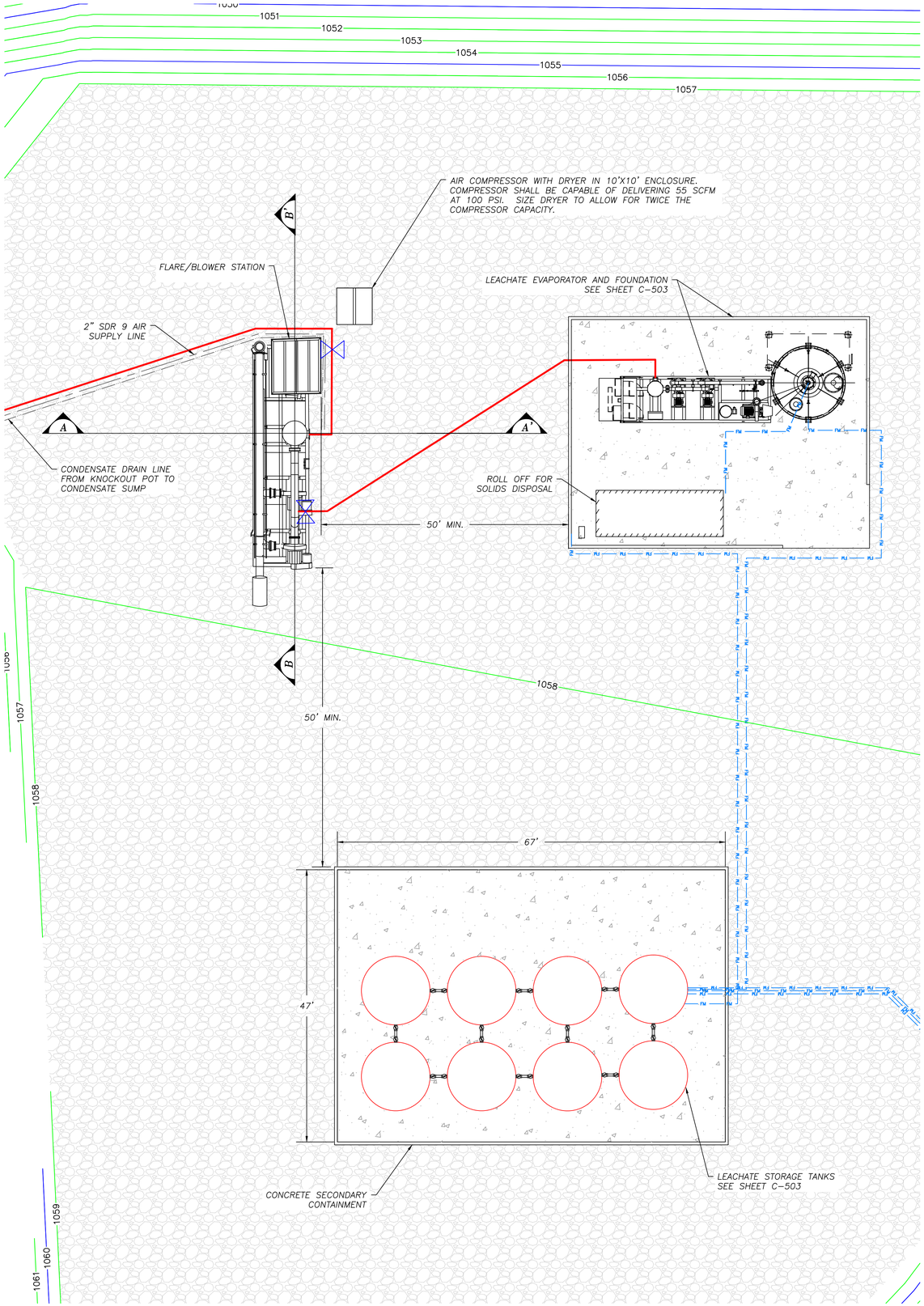
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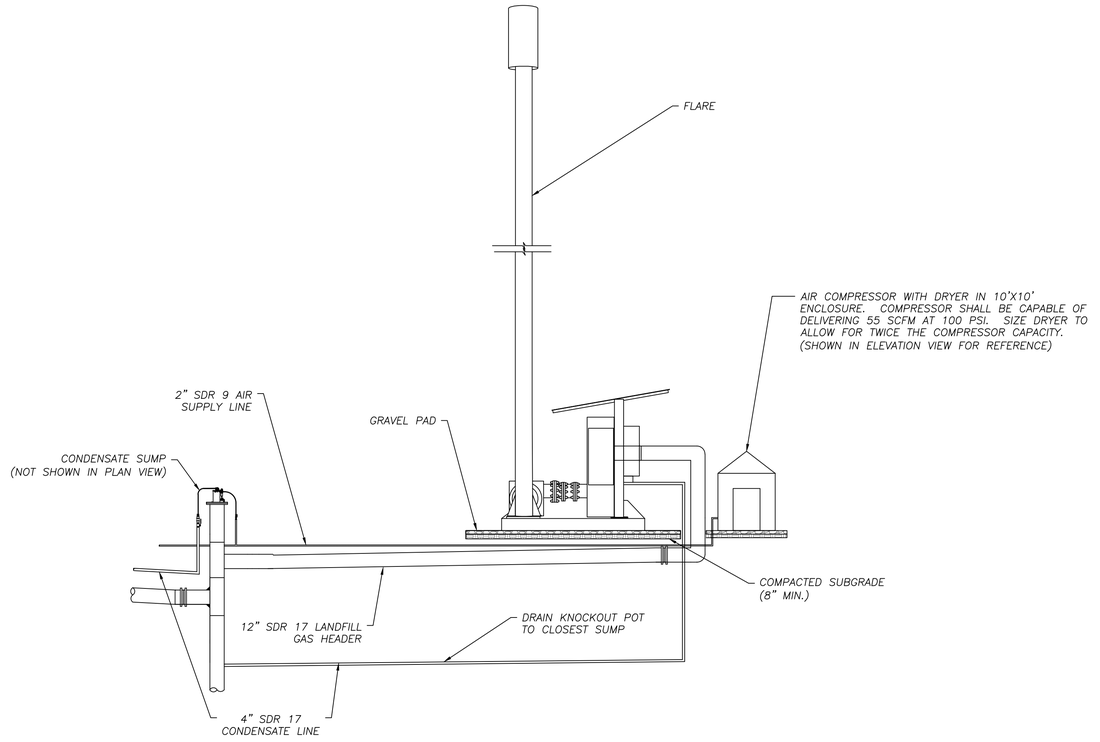
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DATE: 11/20/15

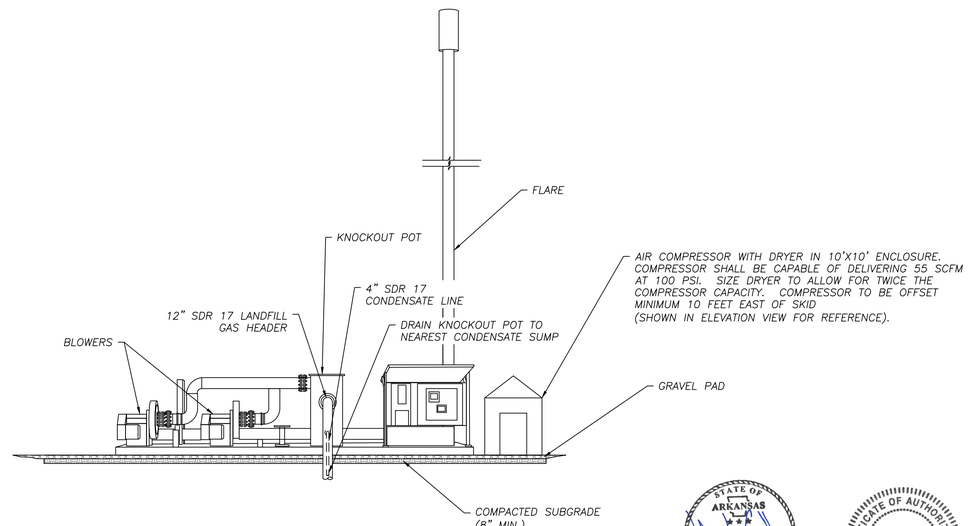
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ELEVATION VIEW A–A'
NOT TO SCALE



ELEVATION VIEW B–B'
NOT TO SCALE

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No.8123 FLOYD E. COTTER
11/20/15

CERTIFICATE OF AUTHORIZATION STERNS CONRAD & SCHMIDT CONSULTING ENGINEERS No. 921 ARKANSAS

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REV.	DATE	DESCRIPTION	CK. BY
2	11/2015	100% SUBMITTAL TO DBA	FEC
1	7/2015	75% SUBMITTAL	FEC
0	5/2015	50% SUBMITTAL	FEC

SHEET TITLE
FLARE PAD LAYOUT

PROJECT TITLE
CLOSURE OF INACTIVE NABORS LANDFILLS

CLIENT
ADEQ
ARKANSAS
Department of Environmental Quality

SCS AQUATERRA
7311 W. 130th St, Ste. 100
Overland Park, KS 66213
PH: (913) 681-0030 FAX: (913) 681-0012

PROJ. NO.	DWN. BY:	CHK. BY:	DSN. BY:
27214218.01	ZDB	FEC	ZDB

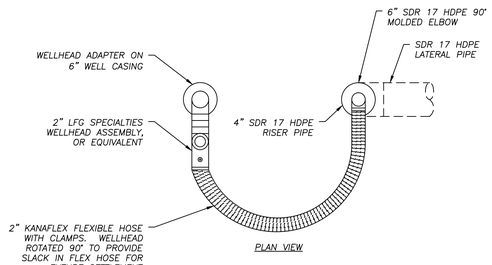
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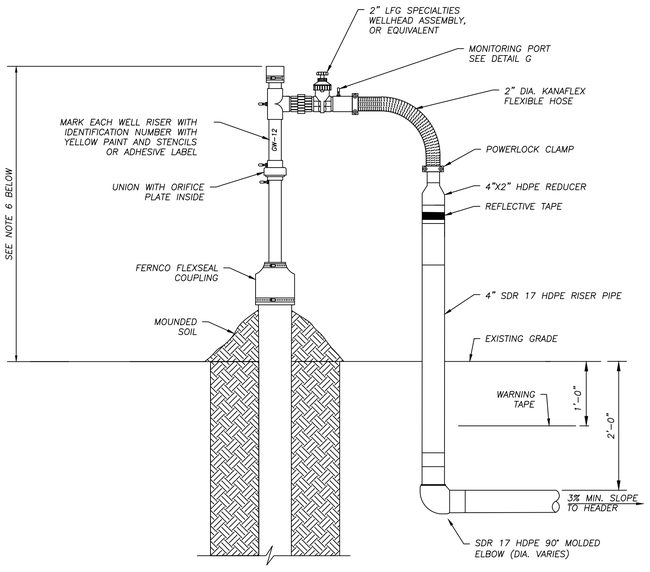
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C-404 - FLARE PAD LAYOUT.DWG

DATE:
11/20/15

DRAWING NO.
C-404

\\KAN-FS01\Clients\ADEQ\Projects\27214218.01 - Closure Contract - 2014\Task 2 - Design and Procurement\100% Design Submittal\DWG\C-404 - Flare Pad Layout.dwg Nov 20, 2015 - 10:02am Layout Name: Flare Pad Layout By: 3726dmb

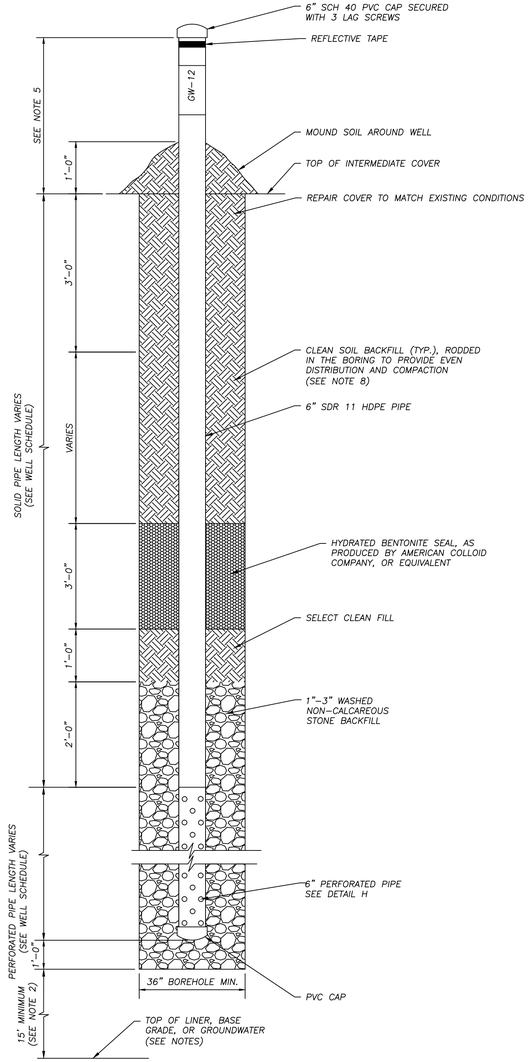




NOTES:

1. WELLHEAD ASSEMBLIES SHALL BE SUPPLIED AS PREFABRICATED AND SHOP TESTED ASSEMBLIES.
2. WELLHEAD PIPING AND FITTINGS SHALL BE SCHEDULE 80 PVC.
3. WELLHEAD ASSEMBLY UNITS SHALL BE SUITABLE FOR MEASURING LANDFILL GAS FLOW UP TO 50 CUBIC FEET PER MINUTE AND SHALL INCORPORATE BUILT-IN MEASUREMENT TUBES, IMPACT TUBING, UNIONS, FITTINGS, TEMPERATURE GAUGES OR PORTS, QUICK CONNECT PORTS, AND NUTS, BOLTS, AND GASKETS.
4. NUTS, BOLTS, AND GASKETS SHALL BE CADMIUM PLATED, GALVANIZED STEEL, STAINLESS STEEL, OR ZINC PLATE FOR ABOVEGROUND INSTALLATION AND STAINLESS STEEL FOR BELOW GROUND INSTALLATION.
5. KANAFLEX HOSE SHALL BE INSTALLED TO PROVIDE 50 PERCENT CONTRACTION, 20 PERCENT EXTENSION, AND SUFFICIENT SLACK TO ALLOW FOR PIPING EXPANSION AND CONTRACTION WITHOUT CREATION OF LOW POINTS IN THE LINE.
6. WELL TO EXTEND 4.0 FEET ABOVE FINAL COVER.

E C-405 WELLHEAD DETAIL
NOT TO SCALE



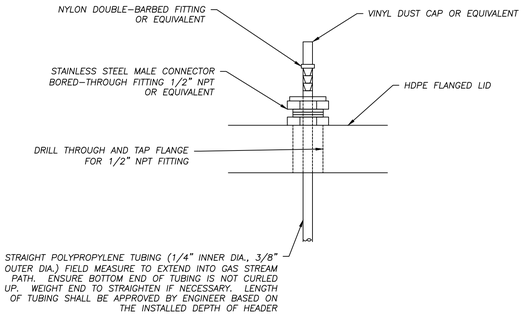
NOTES:

1. ENGINEER SHALL ADJUST WELL SCHEDULE AS NECESSARY BASED ON THE PRE-CONSTRUCTION SURVEY.
2. TOTAL DRILL DEPTHS WILL BE A MINIMUM 15' ABOVE THE TOP OF LOW PERMEABILITY LINER ELEVATIONS, UNLESS OTHERWISE NOTED IN THE WELL SCHEDULE. SEE SHEET C-403
3. THE WASHED NON-CALCEROUS STONE BACKFILL SHALL BE FREE FROM DIRT, VEGETATION, OR OTHER OBJECTIONABLE MATTER, AND FREE FROM AN EXCESS OF SOFT, THIN ELONGATED, LAMINATED OR DISINTEGRATED PIECES.
4. UNDER NO CIRCUMSTANCE SHALL THE BOREHOLE DRILLING CONTINUE BELOW THE WELL DEPTH ELEVATION IDENTIFIED IN THE WELL SCHEDULE.
5. WELL TO EXTEND 4.0 FEET ABOVE FINAL COVER.

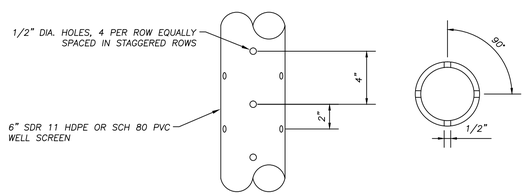
F C-400 TYPICAL GAS EXTRACTION WELL DETAIL
NOT TO SCALE

GENERAL NOTES:

1. EXCAVATED REFUSE/DRILL CUTTINGS FROM THE CONSTRUCTION AREAS SHALL BE IMMEDIATELY DISPOSED OF AT THE ACTIVE FACE OF AREA 1-3.
2. IN THE EVENT THAT A BOREHOLE MUST BE ABANDONED, THE INSTALLER SHALL PLUG AND ABANDON THE HOLE FROM THE BOTTOM TO WITHIN FIVE FEET OF THE SURFACE USING SOIL AND FROM FIVE FEET BELOW THE SURFACE TO THE SURFACE USING A CEMENT GROUT OR GRADED BENTONITE PLUGGING MATERIAL IN A MANNER APPROVED BY THE COA ENGINEER OR TECHNICIAN.
3. A SAFETY GRATE THAT PROVIDES AT LEAST 2 FEET OF OVERLAP OVER THE BOREHOLE CORNERS OR EDGES AND IS DESIGNED AND CONSTRUCTED TO HOLD AT LEAST TWICE THE WEIGHT OF THE MATERIALS AND EQUIPMENT (INCLUDING PIPING CLAMPED TO THE CENTER OF THE GRATE) PLACED ON THE GRATE WILL BE AVAILABLE AT ALL TIMES DURING DRILLING ACTIVITIES. THE GRATE SHOULD BE USED TO COVER ANY OPEN BOREHOLES WHEN PERSONS ARE WITHIN THE CONTROLLED ACCESS ZONE.
4. NO BACKFILLING OPERATIONS SHALL BE PERMITTED UNTIL THE BENTONITE HAS BEEN HYDRATED. HYDRATION FOR BENTONITE PLUG IS A MINIMUM 30 MINUTES OR AS RECOMMENDED BY THE MANUFACTURER.
5. COMBUSTIBLE LANDFILL GAS IS EXPECTED TO VENT FROM BOREHOLES AND SHALL BE MONITORED AND CONTROLLED IN SUCH A MANNER AS TO SAFELY CONSTRUCT THE WELLS, AND PREVENT WORKER EXPOSURE.
6. A WATER TRUCK WITH SUITABLE SPRAYING EQUIPMENT SHALL BE KEPT ON SITE AT ALL TIMES DURING DRILLING. DURING DRILLING INTO DRY REFUSE, WATER WILL BE PERIODICALLY SPRAYED INTO BOREHOLES JUST SUFFICIENT TO DAMPEN THE CUTTINGS.
7. PIPES AND FITTINGS SHALL BE CONSTRUCTED OF HDPE TYPE PE 4710 RESIN.
8. ALL CLEAN FILL WILL COME FROM THE ONSITE BORROW AREA AS DIRECTED BY THE CONSTRUCTION MANAGER.



G C-405 MONITORING PORT DETAIL (TYP.)
NOT TO SCALE



NOTES:

1. PERFORATIONS SPACED 90° APART HORIZONTALLY.
2. PERFORATIONS SPACED 4" APART VERTICALLY.
3. 90° AND 270° ROWS STAGGERED 2" BELOW 0° AND 180° ROWS.

H C-405 PERFORATED PIPE DETAIL
NOT TO SCALE

STERNS CONRAD & SCHMIDT CONSULTING ENGINEERS
CERTIFICATE OF AUTHORIZATION
No. 921
ARKANSAS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No.8123
FLOYD E. COTTER
11/20/15

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2	11/2015	100% SUBMITTAL TO DBA	FEC
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SHEET TITLE: GCCS DETAILS 1

PROJECT TITLE: CLOSURE OF INACTIVE NABORS LANDFILLS

CLIENT: ADEQ ARKANSAS Department of Environmental Quality

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PROJ. NO. 27214218.01 | DWN. BY: ZDB | D/A RVW BY: DMB | PROJ. MGR: FEC | DSN. BY: ZDB | CHK. BY: FEC

CADD FILE: C-405 - DETAILS.DWG

DATE: 11/20/15

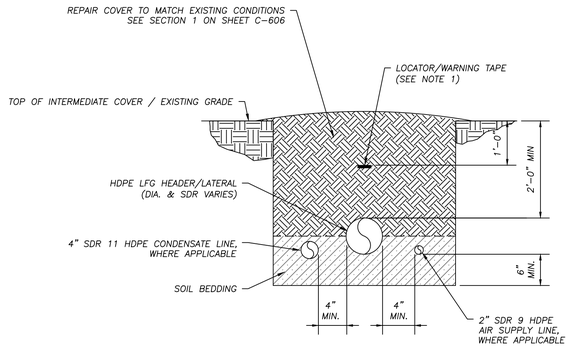
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GENERAL NOTES:

1. EXCAVATED MATERIALS FROM THE CONSTRUCTION AREA MAY BE SEGREGATED AND STOCKPILED FOR REUSE AS FILL MATERIAL AS DIRECTED BY THE CQA TECHNICIAN. UNUSED EXCAVATED FILL MATERIALS SHALL BE DISPOSED AT THE SITE UNDER THE DIRECTION OF THE OWNER OR CQA TECHNICIAN.
2. BACKFILL MATERIALS SHALL BE REASONABLY WELL-GRADED SOILS FREE OF BROKEN CONCRETE AND PAVEMENT, WOOD, ORGANIC MATERIALS, REFUSE, OR OTHER DELETERIOUS MATERIALS.
3. NO BACKFILL MATERIAL SHALL BE LARGER THAN FOUR INCHES IN SIZE.
4. THE LENGTH OF TRENCH EXCAVATION SHALL BE LIMITED TO THE INSTALLER'S CAPABILITIES TO EXCAVATE, INSTALL THE PIPE, BACKFILL, AND COMPACT THE TRENCH IN ONE WORKING DAY. NO TRENCH SHALL BE ALLOWED TO REMAIN OPEN OVERNIGHT, UNLESS OTHERWISE APPROVED BY THE CQA TECHNICIAN.
5. TRENCH EXCAVATIONS WHICH EXCEED FOUR FEET IN DEPTH SHALL COMPLY WITH THE APPLICABLE TRENCH SAFETY STANDARDS AS STATED IN THE OSHA EXCAVATION SAFETY STANDARDS 29 CFR 1926.650 SUBPART P AND LANDFILL GAS DIVISION OF THE SOLID WASTE ASSOCIATION OF NORTH AMERICA.
6. THE PIPE SHALL BE LAID IN A FLAT-BOTTOM TRENCH WHICH HAS BEEN CAREFULLY GRADED AND SHAPED WITH BEDDING IN PLACE SO THAT THE BARREL OF THE PIPE WILL HAVE BEARING FOR ITS FULL LENGTH. BLOCKING OF THE PIPE SHALL NOT BE PERMITTED.
7. FIELD SURVEY PORTS/WITNESS RISERS SHALL BE CONSTRUCTED AS DIRECTED BY THE CQA TECHNICIAN TO ALLOW GCCS PIPING TO BE SURVEYED AFTER INSTALLATION. VERTICAL 2" PVC PIPES SHALL BE INSTALLED IN TRENCHES EXTENDING FROM THE GROUND SURFACE TO THE TOP OF THE BURIED PIPING EVERY 50 FEET, AT FITTINGS, AND AT CHANGES IN PIPELINE GRADE AND ALIGNMENT. BACKFILL AROUND THE SURVEY PORTS AS DIRECTED BY THE CQA TECHNICIAN. A PVC CAP SHALL BE PLACED ON TOP OF THE SURVEY PORTS. ONCE THE SUREYING IS COMPLETE THE FIELD SURVEY PORTS/WITNESS RISERES WILL BE REMOVED AND THE HOLES BACKFILLED.
8. EXCAVATIONS SHALL BE BACKFILLED TO THE ORIGINAL GRADES UNLESS OTHERWISE SHOWN ON THE CONSTRUCTION ISSUE DRAWINGS. DEVIATIONS FROM THESE GRADES DUE TO SETTLING SHALL BE CORRECTED BY THE INSTALLER AS DIRECTED BY THE CQA TECHNICIAN.
9. BACKFILL IN PIPE TRENCHES SHALL BE PLACED IN LAYERS AND NOMINALLY COMPACTED.
10. WATER ENTERING THE EXCAVATION FROM SURFACE RUNOFF SHALL BE COLLECTED FROM THE EXCAVATION TO MAINTAIN A BOTTOM FREE FROM STANDING WATER.
11. WATER REMOVED FROM EXCAVATIONS SHALL BE MANAGED AND DISCHARGED INTO THE ONSITE LEACHATE MANAGEMENT SYSTEM AS DIRECTED BY THE OWNER OR CQA TECHNICIAN.
12. THE PREMISES SHALL BE KEPT FREE FROM ACCUMULATION OF WASTE MATERIALS OR RUBBISH CAUSED BY OPERATIONS. UPON COMPLETION OF THE CONSTRUCTION ACTIVITIES, ALL WASTE MATERIALS AND RUBBISH SHALL BE REMOVED, AS WELL AS ALL TOOLS, CONSTRUCTION EQUIPMENT, MACHINERY, AND SURPLUS MATERIALS.
13. PIPING SHALL NOT BE LAID IN WATER, AND NO PIPE SHALL BE LAID WHEN TRENCH OR WEATHER CONDITIONS ARE UNSUITABLE FOR SUCH WORK.
14. INSTALLED PIPES SHALL BE AIR PRESSURE TESTED AT A PRESSURE OF 10 PSIG. THE MAXIMUM ALLOWABLE PRESSURE LOSS SHALL BE 10 PERCENT OF THE STARTING PRESSURE OVER 1 HOUR. IN THE EVENT OF A FAILING TEST, THE PIPE AND FUSIONS SHALL BE INSPECTED FOR CRACKS, PINHOLES, OR PERFORATIONS VISUALLY OR BY UTILIZING A SOAP WATER MIXTURE.
15. PIPING SHALL BE BACKFILLED AND SECURED PRIOR TO AIR TESTING TO PREVENT DAMAGE TO ADJACENT PIPING AND EQUIPMENT IN THE EVENT OF A JOINT FAILURE. JOINTS SHALL BE BACKFILLED AFTER THE COMPLETION OF A PASSING AIR PRESSURE TEST AND APPROVAL BY THE CQA TECHNICIAN.
16. LENGTHS OF FUSED PIPING TO BE HANDLED SHALL NOT EXCEED 400 FEET.

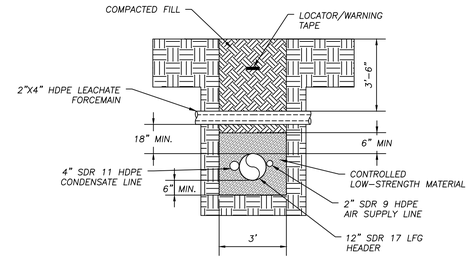


NOTES:

1. TAPE SHALL BE A METALLIC LOCATOR/WARNING TAPE IMPRINTED WITH "CAUTION GAS LINE BURIED BELOW," AS SUPPLIED BY TERRA TAPE, OR EQUIVALENT.
2. ALL HEADER AND LATERAL PIPING SHALL BE INSTALLED AT MIN. SLOPES IDENTIFIED ON PLANS UNLESS APPROVED IN ADVANCE BY ENGINEER.
3. THE NUMBER AND TYPES OF PIPES INSTALLED IN THE TRENCH MAY VARY. SEE SITE PLANS.

MINIMUM TRENCH WIDTH		
NOMINAL PIPE	MINIMUM	PARALLEL PIPE
4" - 10"	24"	4"
12" - 18"	PIPE O.D. +14"	4"

I C-400 HEADER/LATERAL TRENCH DETAIL
NOT TO SCALE

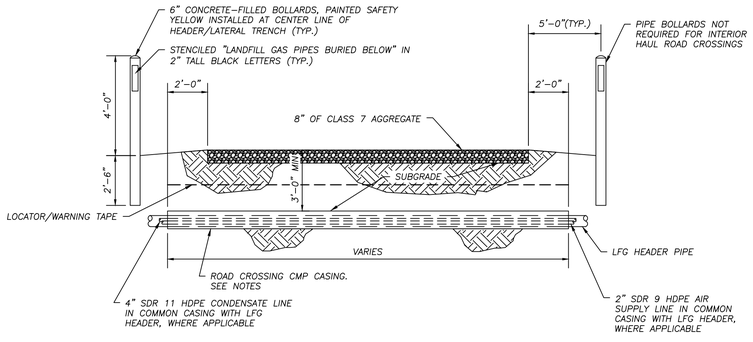


CLSM MIX DESIGN	
MATERIAL	PERCENT BY WEIGHT
CEMENT	3
BENTONITE	10
FINE AGGREGATE/SILTY SANDY SOIL	77
WATER	10

NOTES:

1. CONTROLLED LOW-STRENGTH MATERIAL (CLSM) SHALL CONSIST OF A MIXTURE OF FINE AGGREGATE/SILTY SANDY SOIL, CEMENT, BENTONITE, AND WATER WITH A DESIRED COMPRESSIVE STRENGTH OF 50-100 PSI. FINE AGGREGATE SHALL HAVE A MAXIMUM OF 30 PERCENT FINES. ALTERATIONS TO THE MIX DESIGN SHOWN SHALL BE APPROVED BY THE ENGINEER PRIOR TO CONSTRUCTION.
2. THE MIXTURE SHALL BE ALLOWED TO HARDEN TO A POINT WHERE A PERSON MAY STAND ON THE MATERIAL PRIOR TO THE ADDITION OF ADDITIONAL FILL.
3. CLSM INSTALLATION SHALL BE A MINIMUM 6 INCHES ABOVE THE PIPE AND EXTEND 10 FEET IN EITHER DIRECTION OF THE HEADER/WATER LINE INTERSECTION.
4. TRENCHING NEAR EXISTING UTILITIES SHALL BE PERFORMED IN ACCORDANCE WITH APPLICABLE OSHA REGULATIONS.

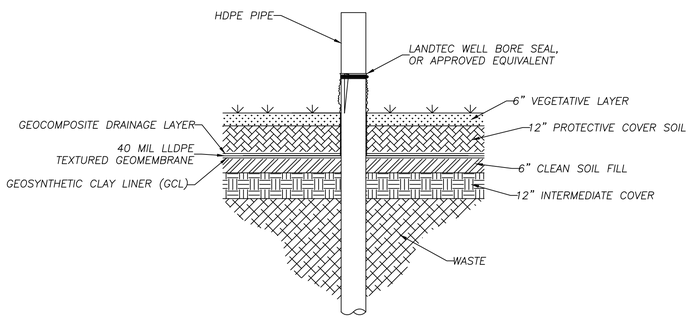
J C-400 UTILITY CROSSING TRENCH DETAIL
NOT TO SCALE



NOTES:

1. ROAD SHALL BE RESTORED TO MATCH ORIGINAL CONDITIONS.
2. CMP CASING SHALL BE A MINIMUM OF 5" GREATER THAN THE CUMULATIVE DIAMETER OF THE PIPES ENCASED.
3. SUBGRADE SHALL CONSIST OF 6" SOIL LIFTS COMPACTED TO A MINIMUM 95 PERCENT STANDARD PROCTOR A MINIMUM OF 18" DEEP AND SHALL EXTEND 2' BEYOND THE OUTSIDE EDGE OF GRAVEL.
4. HAUL ROAD CROSSINGS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THIS DETAIL BUT SHALL NOT INCLUDE THE CONCRETE BOLLARDS OR GRAVEL SURFACE.

K C-400 TYPICAL UNPAVED ROAD CROSSING DETAIL
NOT TO SCALE



NOTE:

1. WELL BORE SEALS TO BE INSTALLED ON ALL GAS WELLS THAT HAVE LESS THAN 16 FEET OF SOLID UNDERGROUND PIPE.

L C-405 WELL BORE SEAL DETAIL
NOT TO SCALE

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No.8123 FLOYD F. COTTER
11/20/15

STERNS CONRAD & SCHMIDT CONSULTING ENGINEERS No. 921 CERTIFICATE OF AUTHORIZATION ARKANSAS

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SHEET TITLE: **GCCS DETAILS 2**

PROJECT TITLE: **CLOSURE OF INACTIVE NABORS LANDFILLS**

CLIENT: ADEQ ARKANSAS Department of Environmental Quality

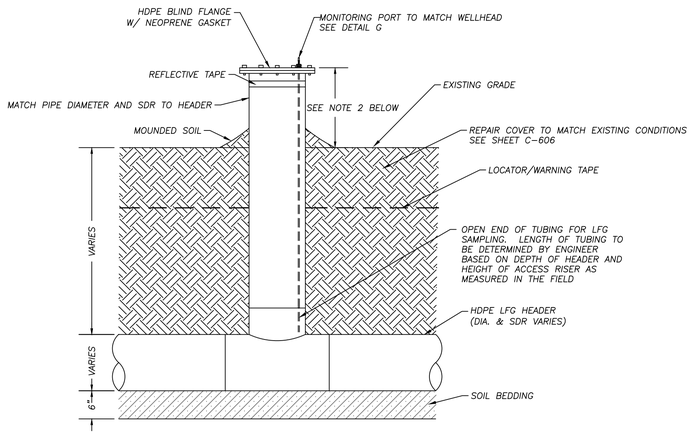
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PROJ. NO.	DWN. BY:	C/A R/W BY:
27214218.01	ZDB	DMB
DSN. BY:	CHK. BY:	PROJ. MGR:
ZDB	FEC	FEC

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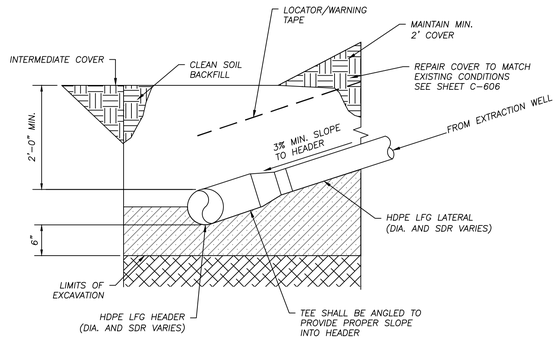
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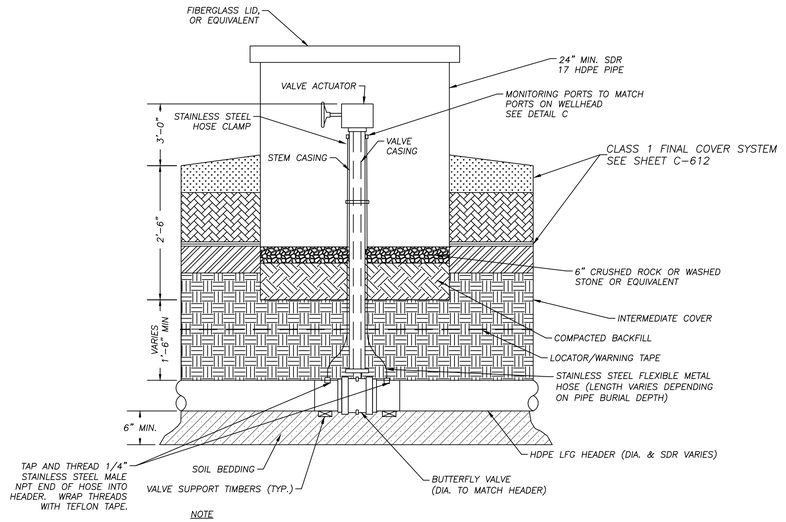
NOTES

1. HEADER ACCESS RISER TO EXTEND 2.0 FEET ABOVE FINAL COVER.

M C-400 TYPICAL HEADER ACCESS RISER DETAIL
NOT TO SCALE



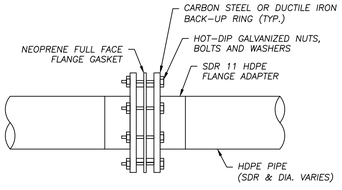
N C-400 LFG LATERAL TIE-IN WITH TEE DETAIL - SECTION VIEW
NOT TO SCALE



NOTE

1. VALVE SHALL BE BUTTERFLY BUBBLE TIGHT, WAFER DESIGN, WITH A PVC BODY, AND COMPATIBLE WITH A FLAT FACE FLANGE. VALVES 12" AND LARGER SHALL BE BUTTERFLY VALVE TYPE 812 WITH VITON SEAT AS MANUFACTURED BY ABZ VALVE, OR EQUIVALENT.

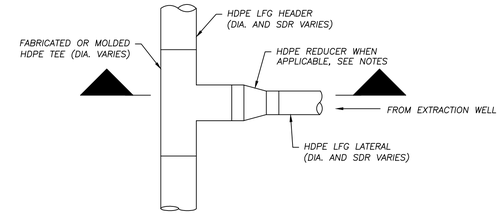
O C-400 TYPICAL SHUTOFF VALVE DETAIL
NOT TO SCALE



NOTES:

1. WHEN BUTT FUSION IS USED TO JOIN PIPES WITH DIFFERENT WALL THICKNESSES, THEY MUST HAVE THE SAME OUTSIDE DIAMETER AND THE DIFFERENCE IN MINIMUM WALL THICKNESS MUST NOT EXCEED 26 PERCENT.

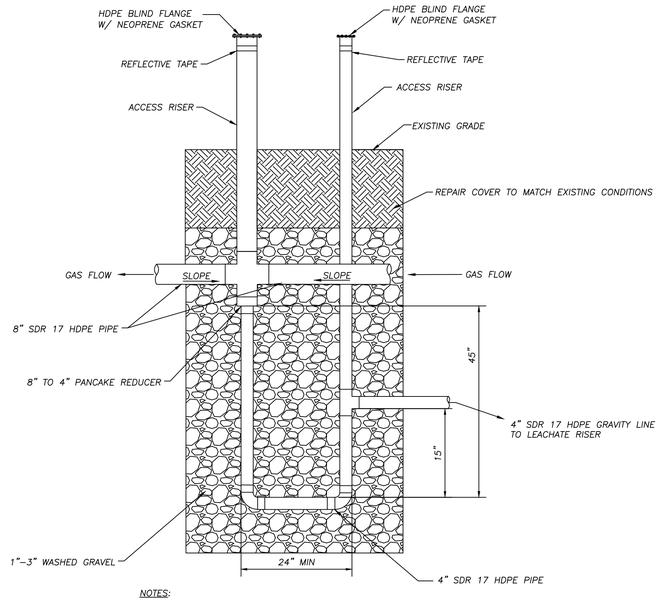
P - FLANGE CONNECTION DETAIL
NOT TO SCALE



NOTES:

1. MOLDED HDPE TEES SHALL BE INSTALLED FOR ALL LATERAL TIE-INS SMALLER THAN 12" IN DIAMETER. TEES SHALL BE ANGLED TO MAINTAIN SLOPE INTO THE HEADER AS SHOWN IN SECTION VIEW.
2. CONSECUTIVE SIZE REDUCERS SHALL BE USED TO TRANSITION FROM THE MOLDED TEE TO THE LFG LATERAL. FOR EXAMPLE, TO TRANSITION FROM A 12" TEE TO A 6" LATERAL, A 12"x10" REDUCER, 10"x8" REDUCER, AND 8"x6" REDUCER SHALL BE INSTALLED.
3. 1' MIN. OF CLEAN SOIL BEDDING SHALL BE PLACED BELOW EACH TEE. THE SOIL SHALL BE INSTALLED SO IT EXTENDS 3' MIN. IN EACH DIRECTION OF THE TEE. SOIL SHALL BE SLIGHTLY MOISTENED AND HAND-TAMPED PROVIDING SUPPORT TO ALL POINTS OF THE TEE. CLEAN, GRADED SOIL SHALL BE HAND-TAMPED ABOVE TEE (1' MIN.) BEING CAREFUL TO ELIMINATE VOIDS.

Q C-400 LFG LATERAL TIE-IN WITH TEE DETAIL - PLAN VIEW
NOT TO SCALE



NOTES:

1. CONDENSATE KNOCKOUT TO BE FILLED WITH WATER PRIOR TO START-UP.
2. THIS CONFIGURATION IS ADEQUATE FOR A MAXIMUM 30" W.C. VACUUM.

R C-400 TYPICAL CONDENSATE KNOCKOUT DETAIL
NOT TO SCALE

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No.8123 FLOYD E. COTTER
11/20/15

CERTIFICATE OF AUTHORIZATION STERNS CONRAD & SCHMIDT CONSULTING ENGINEERS No. 921 ARKANSAS

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SHEET TITLE
GCCS DETAILS 3

PROJECT TITLE
CLOSURE OF INACTIVE NABORS LANDFILLS

CLIENT
ADEQ
ARKANSAS
Department of Environmental Quality

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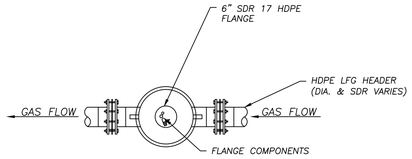
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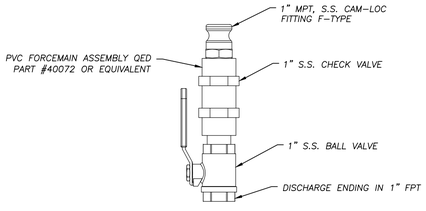
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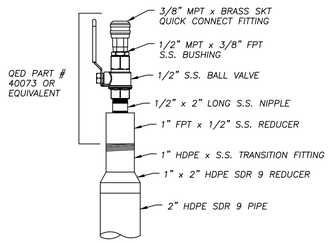
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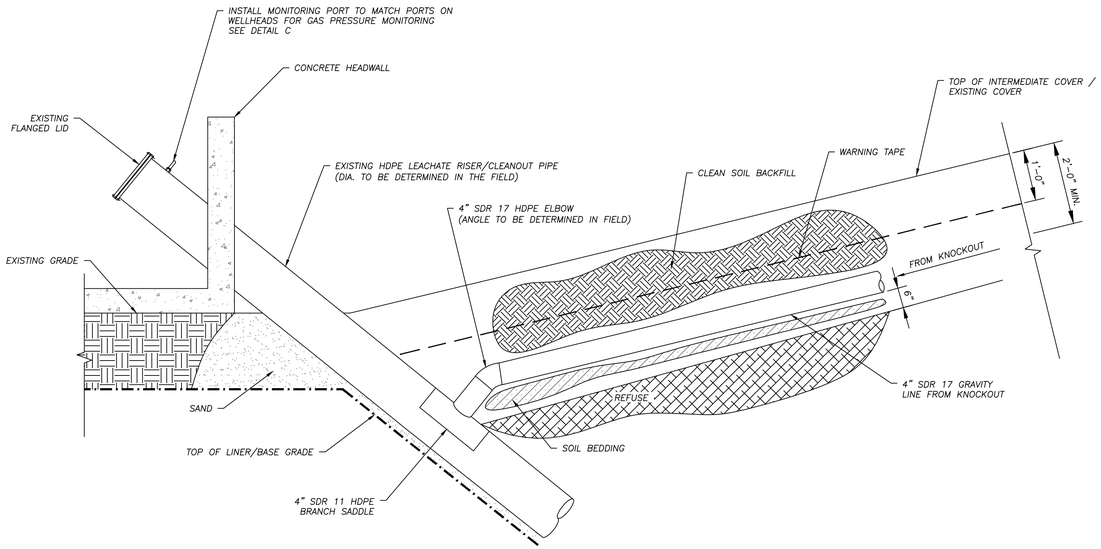
TOP VIEW



S C-408 PUMP DISCHARGE ASSEMBLY DETAIL
NOT TO SCALE



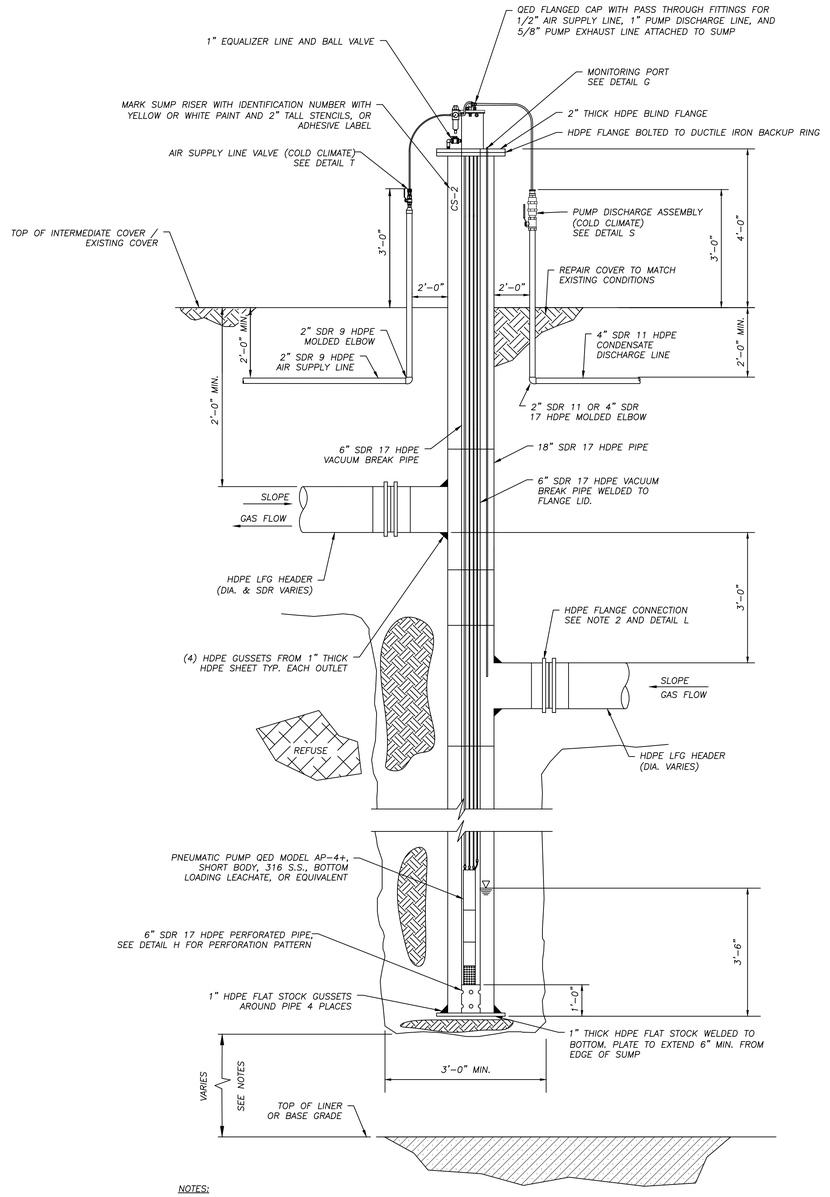
T C-408 AIR SUPPLY LINE VALVE DETAIL
NOT TO SCALE



NOTES:

1. CAREFULLY EXCAVATE AROUND THE EXISTING LEACHATE/CLEANOUT RISER PIPING. MAKE TIE-IN A MINIMUM 10 FEET FROM EXISTING CONCRETE HEADWALL.
2. VERIFY LEACHATE COLLECTION RISER CONFIGURATION AND SIZE IN FIELD.

U - TYPICAL TIE-IN TO EXISTING LEACHATE/CLEANOUT RISER DETAIL
NOT TO SCALE



NOTES:

1. 6" DIA. SDR 17 HDPE VACUUM BREAK PIPE EXTRUSION WELDED TO FLANGE LID. 1'-0" OF PIPE TO PROTRUDE THROUGH TOP OF FLANGE. EXTRUSION WELD PIPE TO BOTH SIDES OF BLIND FLANGE. CENTER OF PIPE LOCATED 2" OFF CENTER OF BLIND FLANGE.
2. THOROUGHLY COAT ENTIRE SURFACE OF BOLTS, WASHERS, NUTS AND BACKUP RINGS WITH POLYCOAT RUBBERIZED PRIMER, OR EQUIVALENT, AFTER TIGHTENING BOLTS. WRAP FLANGE IN PLASTIC WRAP PRIOR TO BACKFILLING.
3. VERIFY CONDENSATE SUMP CONFIGURATION IN FIELD. ADJUSTMENTS SHALL BE APPROVED BY ENGINEER PRIOR TO INSTALLATION.
4. ENGINEER SHALL APPROVE DEPTH BASED ON GROUND SURFACE ELEVATION PRIOR TO INSTALLATION.
5. UNDER NO CIRCUMSTANCE SHALL THE SUMP BE INSTALLED LESS THAN 10 FEET FROM THE ESTIMATED TOP OF LINER/BASE GRADE ELEVATION.

V C-400 TYPICAL CONDENSATE SUMP DETAIL
NOT TO SCALE

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No.8123 FLOYD E. COTTER 11/20/15

CERTIFICATE OF AUTHORIZATION STERNS CONRAD & SCHMIDT CONSULTING ENGINEERS No. 921 ARKANSAS

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SHEET TITLE: **GCCS DETAILS 4**

PROJECT TITLE: **CLOSURE OF INACTIVE NABORS LANDFILLS**

CLIENT: ADEQ ARKANSAS Department of Environmental Quality

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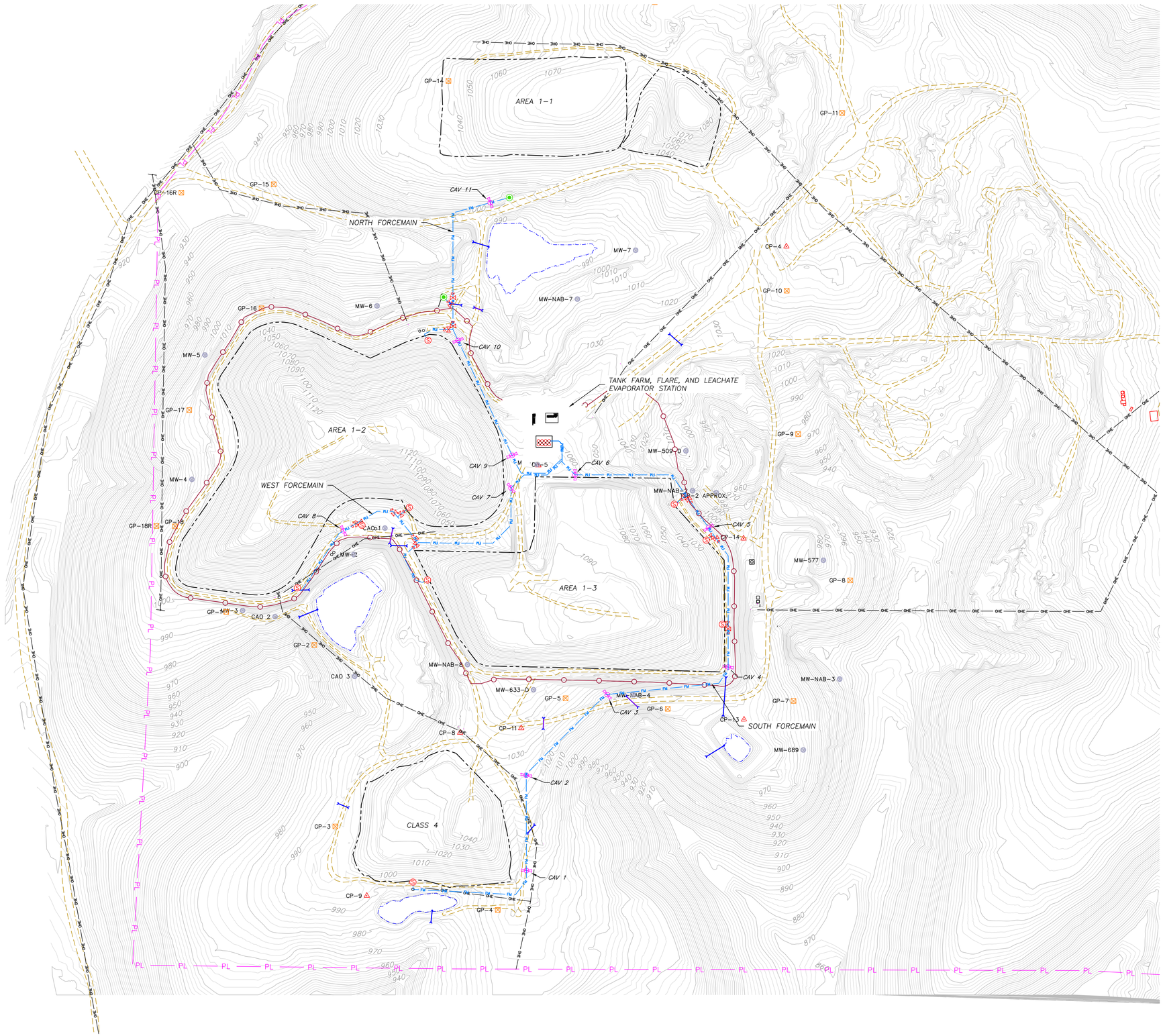
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LEGEND:

- EXISTING 5' MINOR CONTOUR
- EXISTING 25' MAJOR CONTOUR
- PROPERTY BOUNDARY (APPROX.)
- EXISTING ROAD
- EXISTING OVERHEAD ELECTRIC
- EXISTING BODY OF WATER
- LEACHATE FORCEMAIN
- FENCE
- EXISTING DRAINAGE PIPE/CULVERT
- DISPOSAL BOUNDARY (APPROXIMATE)
- EXISTING MONITORING WELL
- EXISTING GAS PROBE
- EXISTING LEACHATE STORAGE TANK AND SECONDARY CONTAINMENT
- LEACHATE SUMP/COLLECTION POINT
- LEACHATE VERTICAL SUMP STATION/COLLECTION POINT
- CHECK VALVE
- COMBINATION AIR VALVE

NOTES:

1. EXISTING TOPOGRAPHY BASED ON AERIAL SURVEY PERFORMED BY M.J. HARDEN ASSOCIATES, INC ON AUGUST 17, 2010. UPDATES TO THE TOPOGRAPHY AND SITE FEATURES FOR AREA 1–2, AREA 1–3, AND SOUTH CLASS 4 DISPOSAL UNITS SURVEYED BY CONSOLIDATED LAND SERVICES, INC BETWEEN DECEMBER 2014 AND JANUARY 2015.
2. CHECK VALVES ARE ORIENTATED WITH "CV" TO THE INFLOW SIDE OF THE VALVE.
3. SURVEY DATA BASED ON THE NAD83 ARKANSAS STATE PLANE NORTH COORDINATE SYSTEM.
4. AT EXISTING RISERS, THE 2"X4" FORCEMAIN SHALL EXTEND FROM THE RISER DOWNWARD TO BELOW THE FROST LINE (36" MINIMUM BELOW GRADE) AND THEN CONTINUE HORIZONTALLY TO "T" INTO THE FORCEMAIN LEADING TO THE TANK FARM.
5. LEACHATE COLLECTION SUMPS BASED ON EXISTING LEACHATE COLLECTION POINTS. CONNECTION TO EXISTING LEACHATE COLLECTION SUMPS WILL DIFFER BASED ON THE DISPOSAL UNIT AND SUMP.
6. ALL EXISTING LEACHATE PUMPS WILL BE REPLACED WITH NEW 1 HORSEPOWER SUMP PUMPS EXCEPT CLASS 4 SUMP PUMP WHICH WILL BE REPLACED WITH A 1.5 HORSEPOWER SUMP PUMP.
7. EACH LEACHATE SUMP PUMP REQUIRES A MINIMUM OF SINGLE PHASE 230 VOLT POWER AND 36"x24" CONTROL PANEL. ALL CONTROL PANELS MUST BE INSTALLED AT A 10' FOOT MINIMUM DISTANCE AWAY FROM THE SUMPS TO AVOID ANY POSSIBLE CONTACT WITH GAS.
8. ANY SEGMENT OF THE FORCEMAIN ABOVE THE 3' THAW LINE WILL BE HEAT TRACED AND INSULATED.
9. DUAL CONTAINMENT PORTION OF THE FORCEMAIN MUST EXTEND INTO THE SUMP IT IS DEWATERING TO ALLOW ANY POTENTIAL LEAKS TO DRAIN BACK INTO THE SUMP.
10. PERFORATED CENTRALIZERS WILL BE USED IN PRE–FABRICATED COUPLINGS AND WILL BE INSTALLED WHERE STRAIGHT DOUBLE CASED PIPE CONNECTS TO DOUBLE–CASED COUPLINGS.
11. ANY LENGTH OF FORCEMAIN UNDERNEATH THE TANK FARM, FLARE, AND EVAPORATOR STATION OR OTHER ROADWAY WHERE VEHICULAR TRAFFIC MAY OCCUR WILL BE HOUSED IN PROTECTIVE CORRUGATED METAL CASING WITH MINIMUM DIAMETER 5" GREATER THAN THE CUMULATIVE DIAMETER OF THE PIPES INSIDE OF IT AND MUST BE BURIED A MINIMUM OF 3' BELOW GRADE.

Air Valve Locations			
Point #	Description	Northing	Easting
101	CAV 1	772973.82	1180790.33
102	CAV 2	773370.56	1180789.33
103	CAV 3	773706.57	1181126.57
104	CAV 4	773821.52	1181630.18
105	CAV 5	774401.71	1181548.36
106	CAV 6	774622.36	1180992.41
107	CAV 7	774567.37	1180725.97
108	CAV 8	774389.01	1180028.57
109	CAV 9	774703.40	1180730.33
110	CAV 10	775182.20	1180505.48
111	CAV 11	775756.00	1180639.66

200 0 200 400
SCALE FEET

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No.8123 FLOYD E. COTTER
11/20/15

STERNS CONRAD & SCHMIDT CONSULTING ENGINEERS No. 921 CERTIFICATE OF AUTHORIZATION ARKANSAS

FOR BIDDING PURPOSES ONLY NOT FOR CONSTRUCTION

REV.	DATE	DESCRIPTION	CK. BY
2	11/2015	100% SUBMITTAL TO DBA	FEC
1	7/2015	75% SUBMITTAL	FEC
0	5/2015	50% SUBMITTAL	FEC

SHEET TITLE
LEACHATE FORCEMAIN LAYOUT

PROJECT TITLE
CLOSURE OF INACTIVE NABORS LANDFILLS

CLIENT
ADEQ
ARKANSAS
Department of Environmental Quality

SCS AQUATERRA
7311 W. 130th St. Ste. 100
Overland Park, Kansas 66213
PH. (913) 681-0030 FAX. (913) 681-0012

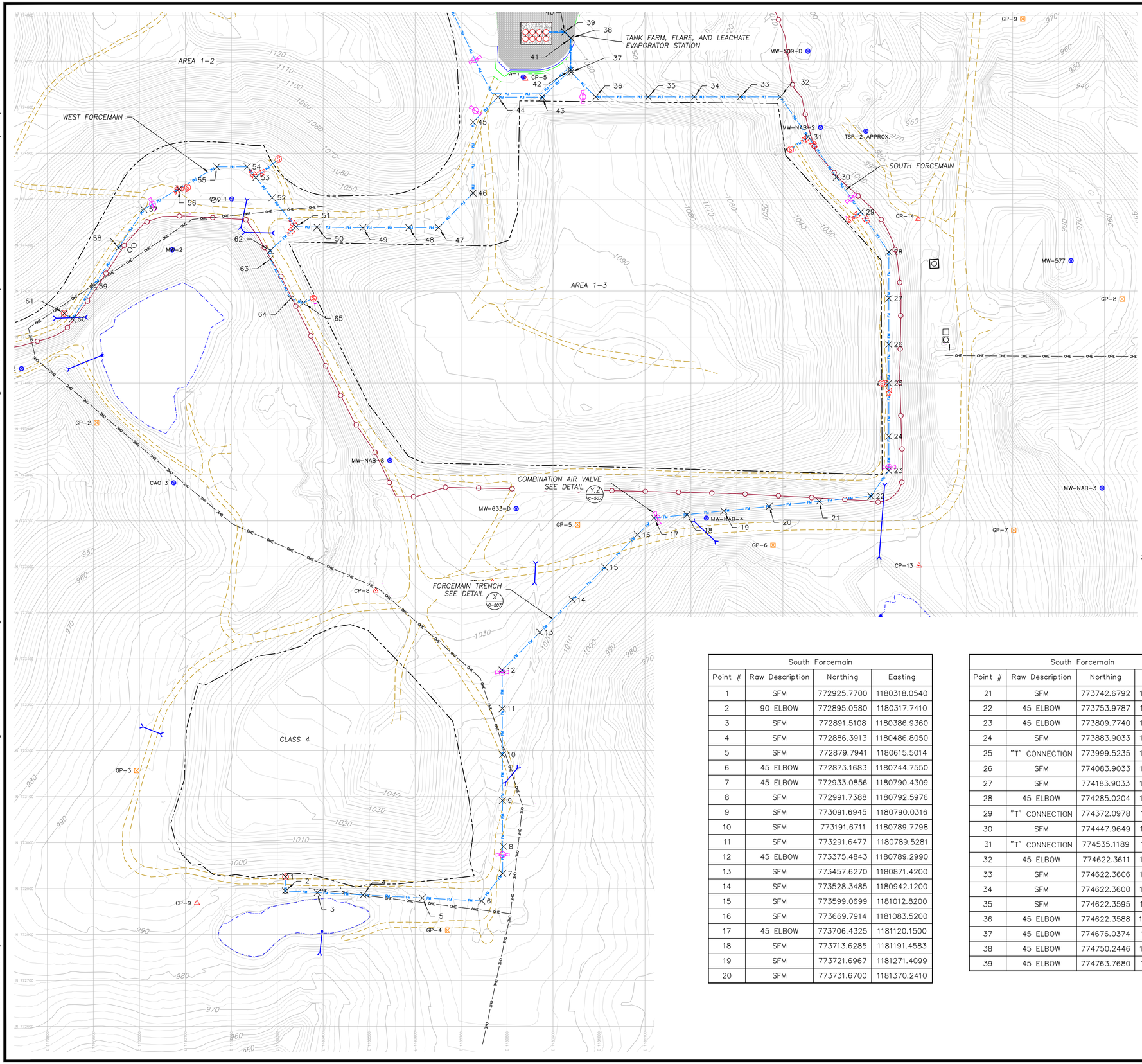
PROJ. NO.	DWN. BY:	Q/A RVW BY:	FEC
27214218.01	DRS	PROJ. MGR	FEC
DSN. BY:	CHK. BY:		DMB
DRS			

CADD FILE:
C-500 Leachate Forcemain Layout.dwg

DATE:
11/20/2015

DRAWING NO.
C-500

\\KAN-FS01\Clients\ADEQ\Projects\27214218.01 - Closure Contract - 2014\Task 2 - Design and Procurement\100% Design Submittal\DWG\C-500 Leachate Forcemain Layout.dwg Nov 20, 2015 - 10:45am Layout Name: Leachate Forcemain Layout By: 3726dmb



LEGEND:

- EXISTING 2' MINOR CONTOUR
- EXISTING 10' MAJOR CONTOUR
- EXISTING OVERHEAD ELECTRIC
- EXISTING BODY OF WATER
- EXISTING DRAINAGE PIPE/CULVERT
- LEACHATE FORCEMAIN
- FENCE
- EXISTING ROAD
- DISPOSAL BOUNDARY (APPROXIMATE)
- EXISTING MONITORING WELL
- EXISTING GAS PROBE
- EXISTING LEACHATE STORAGE TANK AND SECONDARY CONTAINMENT
- LEACHATE SUMP/COLLECTION POINT
- CHECK VALVE
- COMBINATION AIR VALVE

NOTES:

1. EXISTING TOPOGRAPHY BASED ON AERIAL SURVEY PERFORMED BY M.J. HARDEN ASSOCIATES, INC ON AUGUST 17, 2010. UPDATES TO THE TOPOGRAPHY AND SITE FEATURES FOR AREA 1–2, AREA 1–3, AND SOUTH CLASS 4 DISPOSAL UNITS SURVEYED BY CONSOLIDATED LAND SERVICES, INC BETWEEN DECEMBER 2014 AND JANUARY 2015.
2. CHECK VALVES ARE ORIENTATED WITH "CV" TO THE INFLOW SIDE OF THE VALVE.
3. SURVEY DATA BASED ON THE NAD83 ARKANSAS STATE PLANE NORTH COORDINATE SYSTEM.

100 0 100 200
SCALE FEET

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No.8133 FLOYD E. COTTER
11/20/2015

STERNS CONRAD & SCHMIDT CONSULTING ENGINEERS CERTIFICATE OF AUTHORIZATION No. 921 ARKANSAS

FOR BIDDING PURPOSES ONLY NOT FOR CONSTRUCTION

South Forcemain			
Point #	Raw Description	Northing	Easting
1	SFM	772925.7700	1180318.0540
2	90 ELBOW	772895.0580	1180317.7410
3	SFM	772891.5108	1180386.9360
4	SFM	772886.3913	1180486.8050
5	SFM	772879.7941	1180615.5014
6	45 ELBOW	772873.1683	1180744.7550
7	45 ELBOW	772933.0856	1180790.4309
8	SFM	772991.7388	1180792.5976
9	SFM	773091.6945	1180790.0316
10	SFM	773191.6711	1180789.7798
11	SFM	773291.6477	1180789.5281
12	45 ELBOW	773375.4843	1180789.2990
13	SFM	773457.6270	1180871.4200
14	SFM	773528.3485	1180942.1200
15	SFM	773599.0699	1181012.8200
16	SFM	773669.7914	1181083.5200
17	45 ELBOW	773706.4325	1181120.1500
18	SFM	773713.6285	1181191.4583
19	SFM	773721.6967	1181271.4099
20	SFM	773731.6700	1181370.2410

South Forcemain			
Point #	Raw Description	Northing	Easting
21	SFM	773742.6792	1181479.3366
22	45 ELBOW	773753.9787	1181591.3088
23	45 ELBOW	773809.7740	1181630.4846
24	SFM	773883.9033	1181630.4850
25	"T" CONNECTION	773999.5235	1181630.4850
26	SFM	774083.9033	1181630.4850
27	SFM	774183.9033	1181630.4850
28	45 ELBOW	774285.0204	1181630.4850
29	"T" CONNECTION	774372.0978	1181569.5461
30	SFM	774447.9649	1181516.4520
31	"T" CONNECTION	774535.1189	1181455.4591
32	45 ELBOW	774622.3611	1181394.4050
33	SFM	774622.3606	1181307.2650
34	SFM	774622.3600	1181207.2650
35	SFM	774622.3595	1181107.2650
36	45 ELBOW	774622.3588	1180992.7297
37	45 ELBOW	774676.0374	1180939.0511
38	45 ELBOW	774750.2446	1180939.0415
39	45 ELBOW	774763.7680	1180925.5181

West Forcemain			
Point #	Raw Description	Northing	Easting
40	45 ELBOW	774763.2423	1180925.2484
41	45 ELBOW	774750.0279	1180938.5252
42	45 ELBOW	774680.9886	1180938.5252
43	45 ELBOW	774621.7030	1180876.2789
44	45 ELBOW	774621.7030	1180780.3000
45	45 ELBOW	774567.3698	1180725.9668
46	45 ELBOW	774413.0311	1180725.9670
47	45 ELBOW	774338.0311	1180650.9670
48	WFM	774338.0311	1180586.2720
49	WFM	774338.0311	1180486.2720
50	WFM	774339.1276	1180386.2800
51	"Y" CONNECTION	774339.8295	1180340.3000
52	WFM	774403.1243	1180288.8850
53	"T" CONNECTION	774446.9200	1180253.3090
54	45 ELBOW	774470.0959	1180234.4830
55	45 ELBOW	774470.0959	1180168.3420
56	WFM	774422.5784	1180086.4380
57	45 ELBOW	774377.9528	1180009.5180
58	WFM	774294.4229	1179955.1050
59	WFM	774210.5286	1179900.6830
60	90 ELBOW	774139.3852	1179854.1100
61	WFM	774151.7233	1179836.6820
62	WFM	774288.0311	1180284.4830
63	WFM	774269.7958	1180284.4830
64	WFM	774183.4984	1180329.5090
65	WFM	774174.2709	1180356.8620

REV.	DATE	DESCRIPTION	CK. BY
2	11/2015	100% SUBMITTAL TO DBA	FEC
1	7/2015	75% SUBMITTAL	FEC
0	5/2015	50% SUBMITTAL	FEC

SHEET TITLE: **SOUTH AND WEST LEACHATE FORCEMAIN LAYOUT**

PROJECT TITLE: **CLOSURE OF INACTIVE NABORS LANDFILLS**

CLIENT: ADEQ ARKANSAS Department of Environmental Quality

SCS AQUATERRA
7311 W. 130th St. Ste. 100
Overland Park, Kansas 66213
PH. (913) 681-0030 FAX. (913) 681-0012

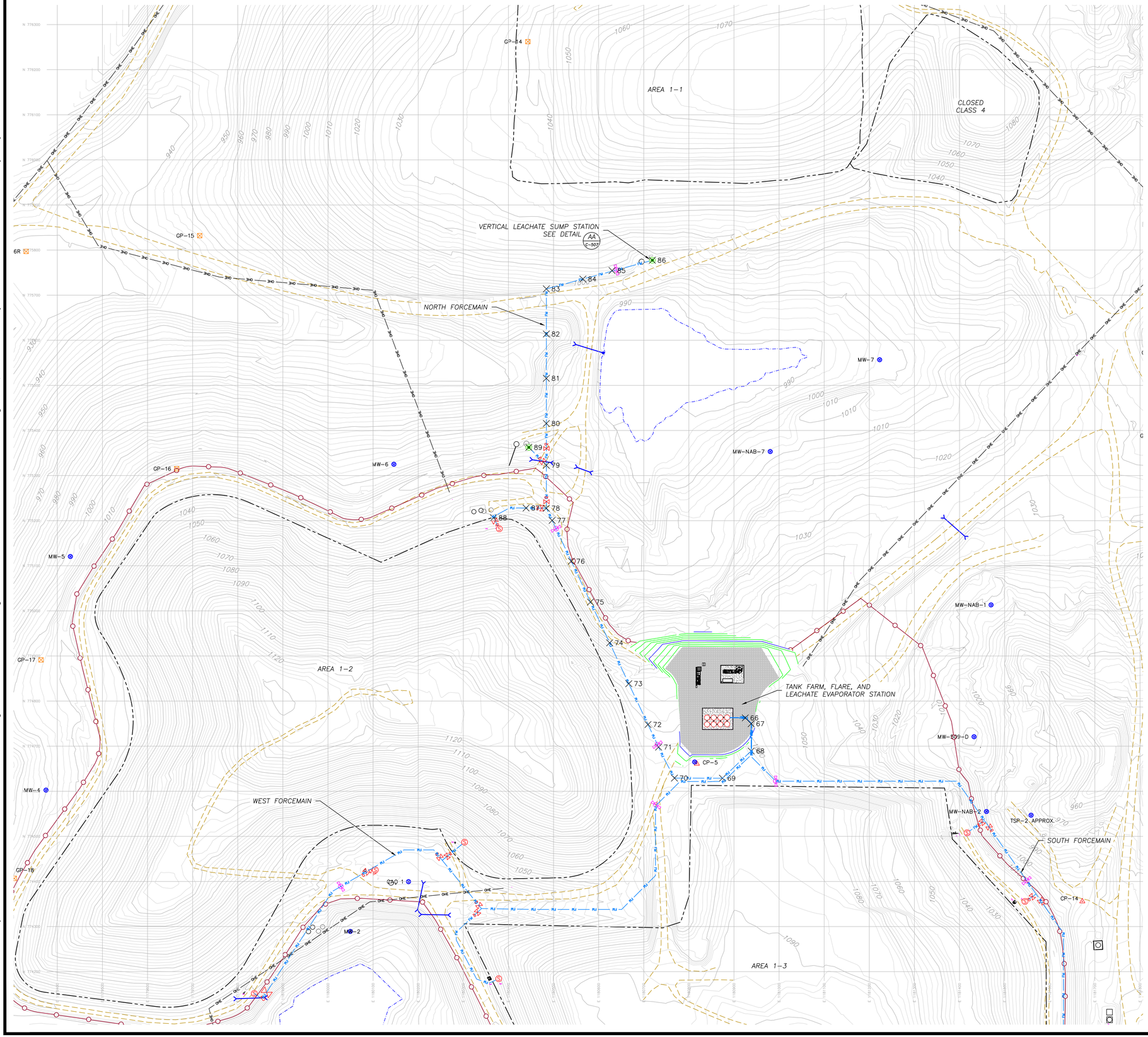
PROJ. NO.	DWN. BY:	O/A RVW BY:
27214218.01	DRS	FEC
DSN. BY:	CHK. BY:	PROJ. MGR
DRS	DMB	FEC

CADD FILE: DRAWING1.DWG

DATE: 11/20/2015

DRAWING NO. **C-501**

\\KAN-FS01\Clients\ADEQ\Projects\27214218.01 - Closure Contract - 2014\Task 2 - Design and Procurement\100% Design Submittal\DWG\C-501 South and West Forcemain Points.dwg Nov 20, 2015 - 10:48am Layout Name: South and West Forcemain Layout By: 3726dmb



LEGEND:

- *EXISTING 2' MINOR CONTOUR*
- *EXISTING 10' MAJOR CONTOUR*
- *EXISTING OVERHEAD ELECTRIC*
- *EXISTING BODY OF WATER*
- *EXISTING DRAINAGE PIPE/CULVERT*
- *LEACHATE FORCEMAIN*
- *FENCE*
- *EXISTING ROAD*
- *DISPOSAL BOUNDARY (APPROXIMATE)*
- *EXISTING MONITORING WELL*
- *EXISTING GAS PROBE*
- *EXISTING LEACHATE STORAGE TANK AND SECONDARY CONTAINMENT*
- *SIDE-SLOPE RISER LEACHATE SUMP/COLLECTION POINT*
- *LEACHATE VERTICAL SUMP STATION/COLLECTION POINT*
- *CHECK VALVE*
- *COMBINATION AIR VALVE*

NOTES:

1. *EXISTING TOPOGRAPHY BASED ON AERIAL SURVEY PERFORMED BY M.J. HARDEN ASSOCIATES, INC ON AUGUST 17, 2010. UPDATES TO THE TOPOGRAPHY AND SITE FEATURES FOR AREA 1–2, AREA 1–3, AND SOUTH CLASS 4 DISPOSAL UNITS SURVEYED BY CONSOLIDATED LAND SERVICES, INC BETWEEN DECEMBER 2014 AND JANUARY 2015.*
2. *CHECK VALVES ARE ORIENTATED WITH "CV" TO THE INFLOW SIDE OF THE VALVE.*
3. *SURVEY DATA BASED ON THE NAD83 ARKANSAS STATE PLANE NORTH COORDINATE SYSTEM.*

North Forcemain			
Point #	Northing	Easting	Description
66	774762.71	1180924.98	45 ELBOW
67	774749.75	1180938.00	45 ELBOW
68	774689.35	1180938.00	45 ELBOW
69	774628.94	1180874.34	90 ELBOW
70	774629.27	1180768.02	NFM
71	774697.91	1180732.90	45 ELBOW
72	774748.03	1180709.37	NFM
73	774838.54	1180666.86	NFM
74	774929.06	1180624.36	NFM
75	775019.58	1180581.85	NFM
76	775110.09	1180539.34	NFM
77	775200.61	1180496.84	NFM
78	775227.69	1180484.12	Y CONNECTION
79	775322.98	1180484.12	Y CONNECTION
80	775415.58	1180484.12	NFM
81	775515.66	1180484.12	NFM
82	775613.96	1180484.12	NFM
83	775713.97	1180484.12	90 ELBOW
84	775735.83	1180565.02	NFM
85	775754.58	1180629.77	NFM
86	775777.47	1180719.11	NFM
87	775228.09	1180439.16	NFM
88	775206.45	1180366.81	90 ELBOW
89	775362.60	1180445.19	NFM

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No.8113 FLOYD E. COTTER
11/20/15

STERNS CONRAD & SCHMIDT CONSULTING ENGINEERS CERTIFICATE OF AUTHORIZATION No. 921 ARKANSAS

FOR BIDDING PURPOSES ONLY
NOT FOR CONSTRUCTION

100 0 100 200
SCALE FEET

REV.	DATE	DESCRIPTION	CK. BY
2	11/2015	100% SUBMITTAL TO DBA	FEC
1	7/2015	75% SUBMITTAL	FEC
0	5/2015	50% SUBMITTAL	FEC

SHEET TITLE
NORTH LEACHATE FORCEMAIN LAYOUT

PROJECT TITLE
CLOSURE OF INACTIVE NABORS LANDFILLS

CLIENT
ADEQ
ARKANSAS
Department of Environmental Quality

SCS AQUATERRA
7311 W. 130th St. Ste. 100
Overland Park, Kansas 66213
PH. (913) 681-0030 FAX. (913) 681-0012

PROJ. NO.	DWN. BY:	CHK. BY:	DES. BY:
27214218.01	DRS	DMB	DRS

O/A R/W BY:	PROJ. MGR:
FEC	FEC

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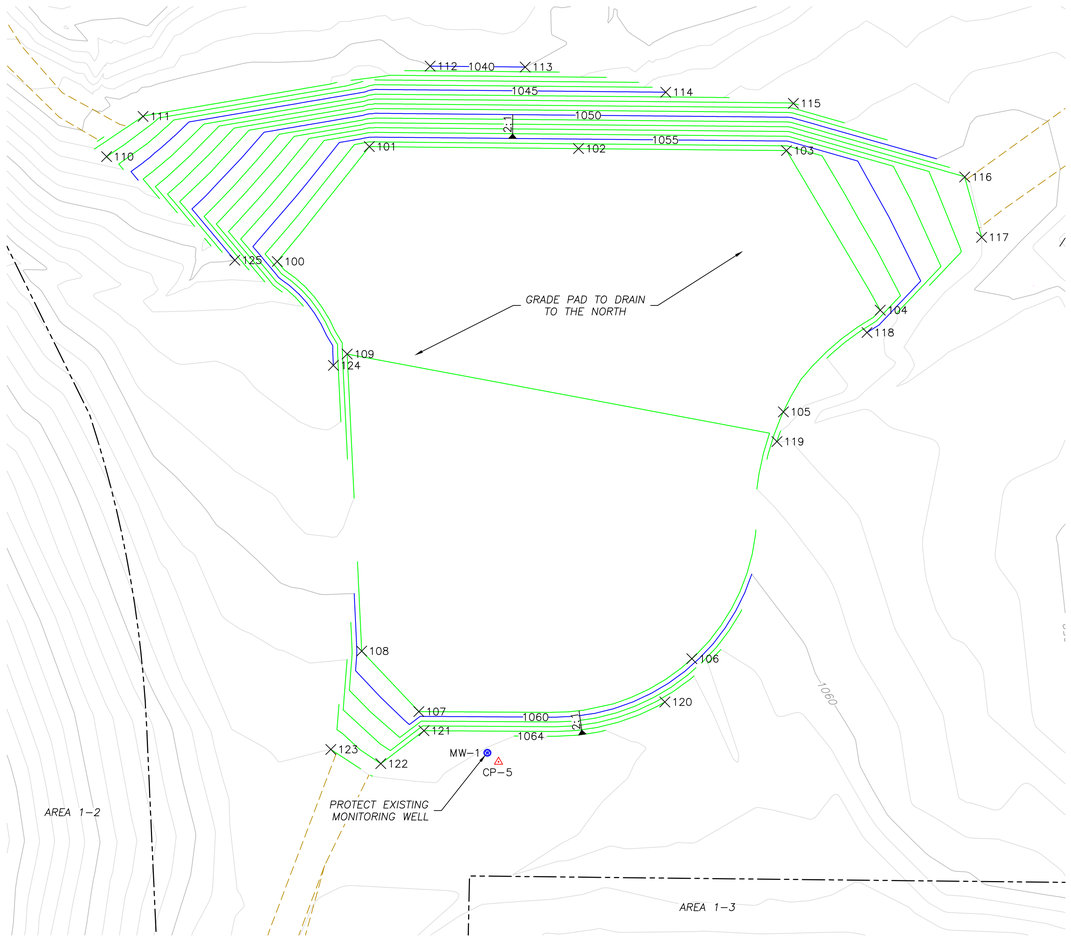
DATE: 11/20/2015

DRAWING NO.
C-502

\\KAN-FS01\Clients\ADEQ\Projects\27214218.01 - Closure Contract - 2014\Task 2 - Design and Procurement\100% Design Submittal\DWG\C-502 - North Forcemain Points.dwg Nov 20, 2015 - 10:50am Layout Name: North Leachate Forcemain Layout By: 3726dmb

\\KAN-FS01\Clients\ADEQ\Projects\27214218.01 - Closure Contract - 2014\Task 2 - Design and Procurement\100% Design Submittal\DWG\C-503 - Tank Farm, Flare, and Evaporator Station Plan.dwg Nov 20, 2015 - 10:51am Layout Name: Flare Pad Plan View By: 3726dmb

TANK FARM, FLARE, AND EVAPORATOR STATION - GRADING PLAN



Point Table				
Point #	Northing	Easting	Elevation	Description
100	774871.76	1180747.09	1057.00	TOP OF PAD
101	774919.94	1180785.70	1057.00	TOP OF PAD
102	774919.11	1180873.39	1057.00	TOP OF PAD
103	774918.28	1180960.57	1057.00	TOP OF PAD
104	774851.35	1180999.84	1057.00	TOP OF PAD
105	774808.69	1180959.24	1057.00	TOP OF PAD
106	774705.17	1180920.86	1059.00	TOP OF PAD
107	774683.00	1180806.45	1059.00	TOP OF PAD
108	774708.39	1180782.49	1059.00	TOP OF PAD
109	774832.94	1180776.40	1058.00	TOP OF PAD
110	774915.75	1180675.55	1043.00	TIE-IN POINT
111	774932.63	1180690.84	1042.00	TIE-IN POINT
112	774953.70	1180811.19	1040.00	TIE-IN POINT
113	774953.32	1180851.04	1040.00	TIE-IN POINT
114	774942.76	1180909.94	1045.00	TIE-IN POINT
115	774938.06	1180963.47	1047.00	TIE-IN POINT
116	774907.20	1181035.24	1042.00	TIE-IN POINT
117	774881.91	1181042.34	1052.00	TIE-IN POINT
118	774841.97	1180994.31	1055.00	TIE-IN POINT
119	774796.24	1180956.56	1042.00	TIE-IN POINT
120	774687.04	1180909.59	1063.00	TIE-IN POINT
121	774674.98	1180808.60	1063.00	TIE-IN POINT
122	774661.17	1180790.50	1063.00	TIE-IN POINT
123	774667.13	1180769.53	1064.00	TIE-IN POINT
124	774828.19	1180770.62	1042.00	TIE-IN POINT
125	774872.31	1180729.30	1050.00	TIE-IN POINT

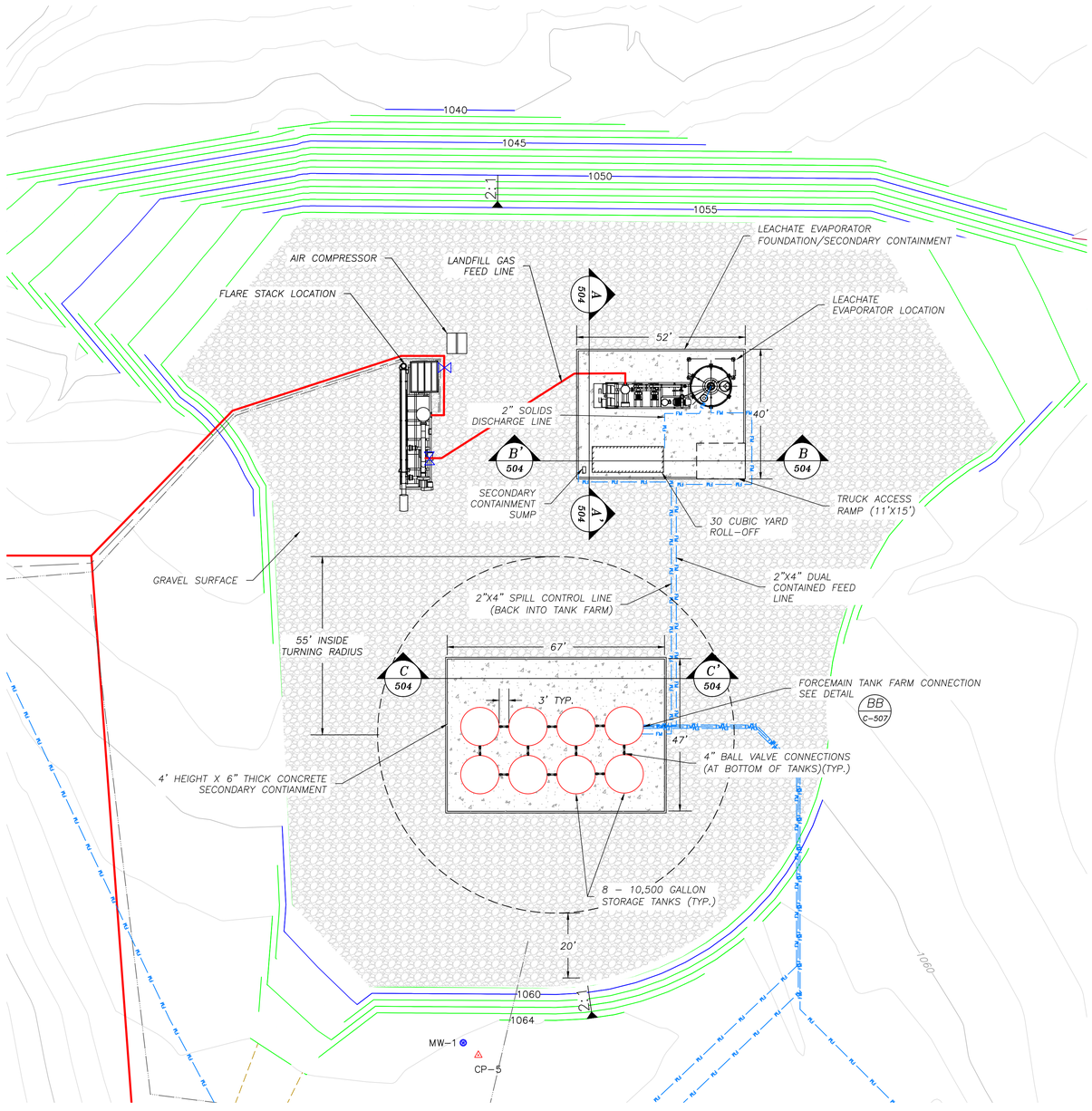
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SCALE FEET

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 8123 FLOYD E. COTTER
11/20/15

STERNS CONRAD & SCHMIDT CONSULTING ENGINEERS CERTIFICATE OF AUTHORIZATION No. 921 ARKANSAS

FOR BIDDING PURPOSES ONLY
NOT FOR CONSTRUCTION

TANK FARM, FLARE, AND EVAPORATOR STATION - LAYOUT PLAN



LEGEND:

- EXISTING 2' CONTOUR
- 1000 EXISTING 10' CONTOUR
- 1' TOP OF PAD CONTOUR
- 1000 5' TOP OF PAD CONTOUR
- EXISTING ROAD
- LANDFILL GAS HEADER
- LEACHATE FORCEMAIN
- 2" CONDENSATE LINE
- 2" AIR LINE

NOTES:

1. ANY LENGTH OF FORCEMAIN OR LANDFILL GAS PIPING UNDERNEATH THE TANK FARM, FLARE, AND EVAPORATOR STATION WILL BE HOUSED IN PROTECTIVE CORRUGATED METAL CASING WITH MINIMUM DIAMETER 5" GREATER THAN THE CUMULATIVE DIAMETER OF THE PIPES INSIDE OF IT AND MUST BE BURIED A MINIMUM OF 3' BELOW GRADE.
2. ANY LENGTH OF LEACHATE PIPING ABOVE THE 3' THAW LINE WILL BE HEAT TRACED AND INSULATED.
3. THE PUMP TO TRANSFER LEACHATE FROM THE TANK FARM TO THE EVAPORATOR TO BE PROVIDED BY THE EVAPORATOR MANUFACTURER AND WILL PUMP FROM THE NORTHEAST TANK TO THE EVAPORATOR.

20 0 20 40
SCALE FEET

REV.	DATE	DESCRIPTION	CK. BY
2	11/2015	100% SUBMITTAL TO DBA	FEC
1	7/2015	75% SUBMITTAL	FEC
0	5/2015	50% SUBMITTAL	FEC

SHEET TITLE
TANK FARM, FLARE, AND LEACHATE EVAPORATOR STATION PLAN

PROJECT TITLE
CLOSURE OF INACTIVE NABORS LANDFILLS

CLIENT
ADEQ
ARKANSAS
Department of Environmental Quality

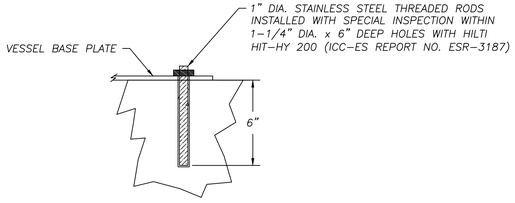
SCS AQUATERRA
7311 W. 130th St, Ste. 100
Overland Park, Kansas 66213
PH: (913) 681-0030 FAX: (913) 681-0012

PROJ. NO.	DWN. BY:	Q/A R/W BY:	
27214218.01	DRS	PROJ. MGR	FEC
DSN. BY:	CHK. BY:		
DRS	DMB		

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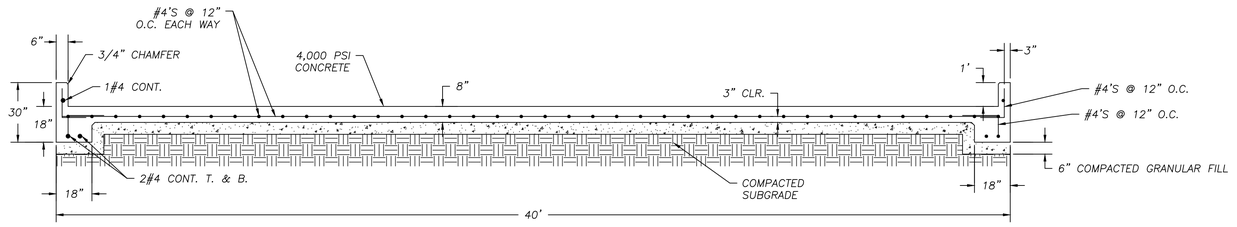
DATE: 11/20/2015

DRAWING NO.
C-503



EVAPORATOR ANCHOR BOLT DETAIL

NOT TO SCALE



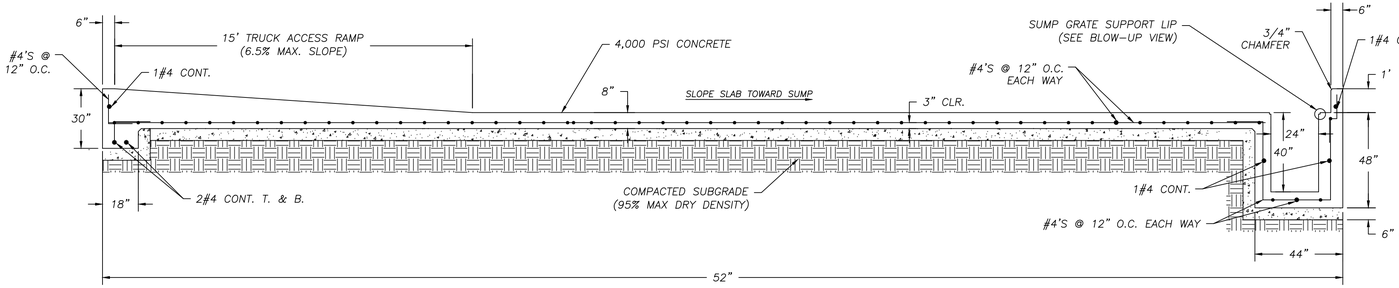
EVAPORATOR FOUNDATION SECTION A-A'

NO SCALE

NOTES:

1. THE WATER STOP SHALL BE DUMBBELL MANUFACTURED. THE WATER STOP SHALL BE INSTALLED IMMEDIATELY FOLLOWING THE SLAB POUR WHEN CONCRETE IS STILL FRESH. THE WATER STOP SHALL BE ATTACHED TO REINFORCING BARS BY WIRE. WATER STOP SHALL BE INSTALLED AT OR IN THE VACINITY OF THE WALL THICKNESS MIDPOINT. SECTIONS OF THE WATER STOP SHALL BE TIGHTLY OVERLAPPED FOR 9 INCHES. CONTRACTOR SHALL MAKE SURE THE UPPER HALF OF THE WATER STOP TO BE IN STANDING POSITION WHEN THE WALL CONCRETE IS POURED.

2. BENTONITE WATER STOP SHALL BE INSTALLED AROUND PIPES PENETRATING STRUCTURE WALLS.



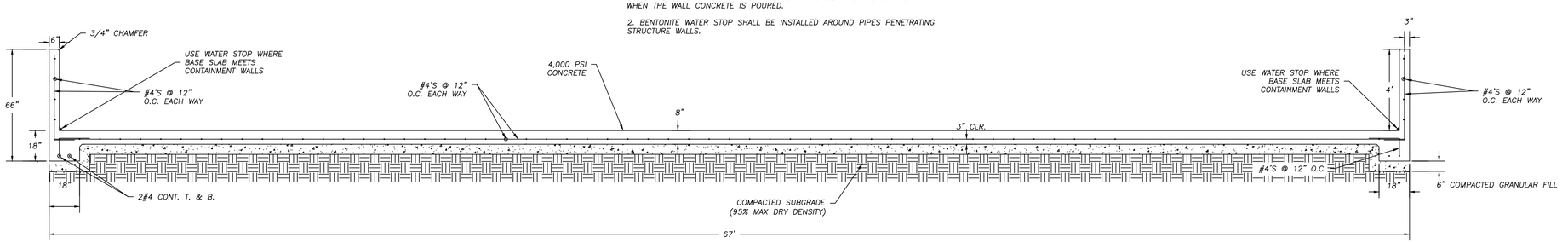
EVAPORATOR FOUNDATION SECTION B-B'

NO SCALE

NOTES:

1. THE WATER STOP SHALL BE DUMBBELL MANUFACTURED. THE WATER STOP SHALL BE INSTALLED IMMEDIATELY FOLLOWING THE SLAB POUR WHEN CONCRETE IS STILL FRESH. THE WATER STOP SHALL BE ATTACHED TO REINFORCING BARS BY WIRE. WATER STOP SHALL BE INSTALLED AT OR IN THE VACINITY OF THE WALL THICKNESS MIDPOINT. SECTIONS OF THE WATER STOP SHALL BE TIGHTLY OVERLAPPED FOR 9 INCHES. CONTRACTOR SHALL MAKE SURE THE UPPER HALF OF THE WATER STOP TO BE IN STANDING POSITION WHEN THE WALL CONCRETE IS POURED.

2. BENTONITE WATER STOP SHALL BE INSTALLED AROUND PIPES PENETRATING STRUCTURE WALLS.



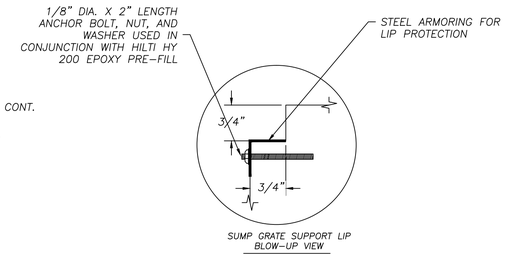
TANK FARM FOUNDATION SECTION C-C'

NO SCALE

NOTES:

1. THE WATER STOP SHALL BE DUMBBELL MANUFACTURED. THE WATER STOP SHALL BE INSTALLED IMMEDIATELY FOLLOWING THE SLAB POUR WHEN CONCRETE IS STILL FRESH. THE WATER STOP SHALL BE ATTACHED TO REINFORCING BARS BY WIRE. WATER STOP SHALL BE INSTALLED AT OR IN THE VACINITY OF THE WALL THICKNESS MIDPOINT. SECTIONS OF THE WATER STOP SHALL BE TIGHTLY OVERLAPPED FOR 9 INCHES. CONTRACTOR SHALL MAKE SURE THE UPPER HALF OF THE WATER STOP TO BE IN STANDING POSITION WHEN THE WALL CONCRETE IS POURED.

2. BENTONITE WATER STOP SHALL BE INSTALLED AROUND PIPES PENETRATING STRUCTURE WALLS.



SUMP GRATE SUPPORT LIP BLOW-UP VIEW

NOTES:

1. SUMP GRATE SUPPORT LIP ANCHOR BOLTS SHALL BE DRILLED 1" ON CENTER AND SHALL NOT INTERFERE WITH THE LOCATION OF THE DEWATERING PUMP.

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No.8123 LLOYD E. COTTER 11/20/15

CERTIFICATE OF AUTHORIZATION STERNS CONRAD & SCHMIDT CONSULTING ENGINEERS No. 921 ARKANSAS

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2	11/2015	100% SUBMITTAL TO DBA	FEC
1	7/2015	75% SUBMITTAL	FEC
0	5/2015	50% SUBMITTAL	FEC

SHEET TITLE
TANK FARM FOUNDATION DETAILS

PROJECT TITLE
CLOSURE OF INACTIVE NABORS LANDFILLS

CLIENT
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ARKANSAS
Department of Environmental Quality

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PROJ. NO.	DWN. BY:	Q/A RVW BY:
27214218.01	ZDB	FEC
DSN. BY:	CHK. BY:	PROJ. MGR:
ZDB	DMB	F.E.C.

CADD FILE:
C-504 - LEACHATE EVAPORATOR-TANK FARM FOUNDATION SECTIONS AND DETAILS.DWG

DATE:
11/20/15

DRAWING NO.
C-504

\\KAN-FS01\Clients\ADEQ\Projects\27214218.01 - Closure Contract - 2014\Task 2 - Design and Procurement\100% Design Submittal\DWG\C-504 - Leachate Evaporator-Tank Farm Foundation Sections and Details.dwg Nov 20, 2015 - 10:53am Layout Name: Tank Farm Foundation Details By: 3726dm

\\KAN-FS01\Clients\ADEQ\Projects\27214218.01 - Closure Contract - 2014\Task 2 - Design and Procurement\100% Design Submittal\DWG\C-504 - Leachate Evaporator-Tank Farm Foundation Sections and Details.dwg Nov 20, 2015 - 10:54am Layout Name: Tank Farm Foundation Notes By: 3726dmb

FOUNDATION:

1. SOIL DESIGN PRESSURE: 1,500 POUNDS PER SQUARE FOOT (psf).
2. FOOTINGS WILL EXTEND AT LEAST 36" BELOW FINISHED GRADE TO PROVIDE ADEQUATE FROST PROTECTION.
3. SOIL ENGINEER WILL VERIFY THAT CONSTRUCTION AT THE SITE IS IN ACCORDANCE WITH THE RECOMMENDATIONS AND CONCLUSIONS OF HIS REPORT.
4. FINISHED EXCAVATIONS FOR FOUNDATION WILL BE NEAT AND TRUE TO LINE WITH ALL LOOSE MATERIALS AND STANDING WATER REMOVED FROM EXCAVATION.
5. BEFORE ANY CONCRETE IS PLACED, EXCAVATIONS WILL BE CHECKED AND APPROVED BY A QUALIFIED SOILS ENGINEER TO INSURE COMPLIANCE WITH THE REQUIREMENTS.
6. ALL FILL MATERIAL IS TO BE APPROVED BY THE SOILS ENGINEER AND IS TO BE COMPACTED TO 95% OF MAXIMUM DENSITY INSPECTION IS REQUIRED DURING FILL AND COMPACTION.
7. NOTIFY THE DESIGN ENGINEER OF ANY UNUSUAL SOIL CONDITIONS THAT ARE IN VARIANCE WITH THE DATA HEREIN CITED.
8. TEMPORARY EXCAVATION SLOPES IN DRY, LOOSE DEPOSITS SHOULD BE MAINTAINED NOT STEEPER THAN 1.5 HORIZONTAL TO 1.0 VERTICAL (1.5 : 1). IN WET OF LOOSE SOILS, TEMPORARY EXCAVATION SLOPES SHOULD BE FLATTENED AS REQUIRED IN ACCORDANCE WITH OSHA REGULATIONS 29 CFR PART 1926.
9. FOLLOWING EXCAVATION TO AT LEAST 12 INCHES BELOW BOTTOM OF FOOTING, THE SUBGRADE SHOULD THEN BE COMPACTED IN ORDER TO DENSIFY ANY NATURALLY OCCURRING LOOSE ZONES OR THOSE WHICH DEVELOP DURING THE EXCAVATION PROCESS.
10. FOLLOWING COMPACTION OPERATIONS, BACKFILL AS REQUIRED, TO THE BOTTOM OF THE EQUIPMENT FOOTINGS AND MAT FOUNDATIONS WITH SELECT GRANULAR FILL MATERIAL. THIS MATERIAL SHOULD BE PLACED IN 12–INCH MAXIMUM LOOSE LIFTS AND BE COMPACTED TO A MINIMUM OF 95 PERCENT OF THE MATERIALS MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D–1557.
11. EQUIPMENT FOUNDATIONS SHOULD BE DESIGNED AND SIZED TO ADEQUATELY DAMPEN DYNAMIC FORCES AND VIBRATIONS CAUSED BY THE OPERATION OF EQUIPMENT SUPPORTED ON THE FOUNDATION. THE NATURAL FREQUENCY OF VIBRATION SHOULD DIFFER FROM THE OPERATING FREQUENCY BY AT LEAST 50 PERCENT TO AVOID RESONANCE.

REINFORCED CONCRETE:

1. CEMENT FOR CONCRETE OR GROUT WILL CONFORM TO ASTM C–150, TYPE II.
2. AGGREGATES WILL CONFORM TO ASTM C–33 FOR NORMAL WEIGHT CONCRETE AND ASTM C–330 FOR LIGHTWEIGHT CONCRETE.
3. READY MIX CONCRETE WILL BE MIXED AND DELIVERED IN ACCORDANCE WITH ASTM C–94.
4. ALL CONCRETE CONSTRUCTION WILL BE IN ACCORDANCE WITH THE LATEST AMERICAN CONCRETE INSTITUTE (ACI) CODE (ACI 318) AND DETAILING MANUAL (ACI 315) UNLESS OTHERWISE DETAILED OR NOTED IN DRAWINGS.
5. CONCRETE WILL HAVE A MINIMUM ULTIMATE STRENGTH AT 28 DAYS f'c OF 4,000 PSI, WITH A WATER CEMENT RATIO NOT EXCEEDING 0.50. SUBMIT CONCRETE MIX DESIGNS TO THE STRUCTURAL ENGINEER FOR REVIEW AND APPROVAL. CONCRETE DESIGN IS BASED ON f'c=2,500 PSI AND, THEREFORE, SPECIAL INSPECTION OF CONCRETE IS NOT REQUIRED.
6. ADMIXTURES MAY BE USED WITH APPROVAL OF THE ENGINEER. ADMIXTURES USED TO INCREASE THE WORKABILITY OF THE CONCRETE WILL NOT BE CONSIDERED TO REDUCE THE SPECIFIED MINIMUM CEMENT CONTENT.
7. PROJECTING CORNERS OF SLABS, WILL BE FORMED WITH A 3/4" CHAMFER UNLESS OTHERWISE NOTED.
8. RIGID, REINFORCED CONCRETE SPREAD FOOTINGS AND MAT FOUNDATIONS SUPPORTED UPON SELECT GRANULAR FILL CAN BE PROPORTIONED USING AN ALLOWABLE NET BEARING PRESSURE OF 1,500 POUNDS PER SQUARE FOOT (PSF). THIS BEARING PRESSURE ASSUMES THAT SPREAD FOOTINGS WILL HAVE A MINIMUM WIDTH OF 1.5 FEET. FOOTINGS DESIGNED USING THE RECOMMENDATIONS HEREIN SHOULD NOT EXPERIENCE TOTAL SETTLEMENT GREATER THAN 0.75 INCHES. DIFFERENTIAL SETTLEMENT ACROSS THE MAT FOUNDATIONS SHOULD NOT EXCEED 0.50 INCHES.
9. CONCRETE FORM TOLERANCES WILL BE WITHIN THE STANDARDS SET BY THE AMERICAN CONCRETE INSTITUTE.
10. ALL REINFORCING STEEL, ANCHOR BOLTS, DOWELS AND OTHER INSERTS WILL BE WELL SECURED IN PLACE IN THE FORMS PRIOR TO PLACING OF CONCRETE. TWO–WAY MATS OF STEEL MUST BE WIRED TOGETHER BOTH WAYS AT ALTERNATE INTERSECTIONS.
11. LOCATION OF CONSTRUCTION JOINTS NOT SPECIFICALLY INDICATED ON DRAWINGS WILL BE APPROVED BY THE ENGINEER PRIOR TO PLACING REINFORCING STEEL.
12. CONCRETE SLABS VARIATION FROM LEVEL TO BE 1/16" IN TEN FEET MAXIMUM, UNLESS OTHERWISE NOTED ON DRAWINGS.
13. PIPES MAY PASS THROUGH STRUCTURAL CONCRETE IN SLEEVES, BUT NOT BE EMBEDDED THEREIN.
14. DRYPACK WILL CONSIST OF ONE PART PORTLAND CEMENT, 4 PARTS SAND BASED ON DRY LOOSE VOLUMES AND NOT LESS THAN 1/4 PART NOR MORE THAN 1/2 PART LIME PUTTY OR HYDRATED LIME. DRYPACK WILL OBTAIN A MINIMUM ULTIMATE COMPRESSIVE STRENGTH OF 2500 PSI AT 28 DAYS. SUBMIT MIX DESIGN TO THE STRUCTURAL ENGINEER FOR REVIEW.
15. MINIMUM EMBEDMENT OF ANCHOR BOLTS (A.B.) UNLESS OTHERWISE NOTED ON THE PLANS, WILL BE 7" IN FOOTINGS. ALL BOLTS SHALL HAVE A STANDARD BOLT HEAD OR A 1–1/4" 90° BEND AT EMBEDDED END. ANCHOR BOLTS WILL BE SPACED A MINIMUM OF 12 DIAMETERS. IN LIEU OF BOLTS OR DOWELS IN CONCRETE, APPROVED CAST–IN–PLACE THREADED INSERTS MAY BE USED.
16. EXPANSION ANCHORS WILL BE HILTI KWIK BOLT TZ INSTALLED WITH SPECIAL INSPECTION IN ACCORDANCE WITH ICC/ES REPORT No. 1917, OR APPROVED EQUAL.
17. EPOXY ANCHORS WILL BE THREADED RODS INSTALLED WITH SPECIAL INSPECTION WITH HILTI HY–200 EPOXY ADHESIVE IN ACCORDANCE W/ ES REPORT No. ESR–3187, OR APPROVED EQUAL.

GENERAL:

1. THE CONTRACTOR WILL TAKE NO ADVANTAGE OF ANY ERROR OR OMISSION IN THE PLANS, ESTIMATED QUANTITIES OR SPECIFICATIONS. THE CONTRACTOR WILL CHECK AND VERIFY ALL DIMENSIONS AND CONDITIONS ON THE JOB SITE PRIOR TO COMMENCING WITH THE WORK. SPECIAL CARE WILL BE GIVEN TO SITE AND BUILDING LAYOUT THEREON. IN THE EVENT THE CONTRACTOR DISCOVERS AN ERROR, OMISSION, OR POSSIBLE DISCREPANCY BETWEEN FIELD CONDITIONS AND THE DRAWINGS, THEY WILL IMMEDIATELY NOTIFY THE ENGINEER PRIOR TO PROCEEDING WITH THE WORK.
2. NOTES AND DETAILS ON THE DRAWINGS WILL TAKE PRECEDENCE OVER THESE GENERAL NOTES.
3. ALL MATERIAL AND WORKMANSHIP WILL CONFORM TO THE REQUIREMENTS OF THE INTERNATIONAL BUILDING CODE 2012 EDITION AND THE LOCAL BUILDING OFFICIAL.
4. THE DESIGN, ADEQUACY AND SAFETY OF ERECTION, BRACING, SHORING, TEMPORARY SUPPORTS, ETC. IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND HAS NOT BEEN CONSIDERED BY THE STRUCTURAL ENGINEER.
5. NO PIPES, DUCTS, SLEEVES, CHASES, ETC. WILL BE PLACED IN SLABS, BEAMS, OR WALLS UNLESS SPECIFICALLY SHOWN OR NOTED. NOR WILL ANY STRUCTURAL MEMBER BE CUT FOR PIPES DUCTS, ETC., UNLESS OTHERWISE NOTED. CONTRACTOR WILL OBTAIN PRIOR APPROVAL FOR INSTALLATION OF ANY ADDITIONAL PIPES, DUCTS ETC., REFER TO ARCHITECTURAL AND MECHANICAL DRAWINGS FOR LOCATIONS.
6. ALL DETAIL CALLOUTS AS SHOWN ON THE DRAWINGS, SECTIONS AND ELEVATIONS WILL APPLY TO ALL SIMILAR CONDITIONS WHETHER REFERENCED OR NOT. TYPICAL DETAILS AND NOTES WILL APPLY UNLESS SHOWN OTHERWISE IN DRAWINGS.
7. DESIGN LOADS:
   WIND LOADS:
   BASIC WIND SPEED 105 MPH
   WIND IMPORTANCE I = 1.0
   WIND EXPOSURE C
   EARTHQUAKE:
   SEISMIC IMPORTANCE FACTOR I = 1.0
   Ss = 0.507 g
   S1 = 0.164 g
   SITE CLASS:
   SDs = 0.231 g
   SD = 0.077 g
   SEISMIC CATEGORY C
8. NO CHANGES WILL BE MADE TO THESE DRAWINGS WITHOUT THE EXPRESSED WRITTEN CONSENT OF THE STRUCTURAL ENGINEER.
9. WORK THESE DRAWINGS WITH CIVIL, MECHANICAL, PROCESS, GENERAL AND ELECTRICAL DRAWINGS.
10. WHERE REFERENCE IS MADE TO VARIOUS TEST STANDARDS FOR MATERIALS SUCH STANDARDS WILL BE THE LATEST EDITION, AND/OR ADDENDUM.
11. AS A CONVENIENCE TO THE CONTRACTOR, THE ENGINEER WILL REVIEW SHOP DRAWINGS AS TO THEIR GENERAL CONFORMANCE TO THE DESIGN CONCEPT. THE CONTRACTOR WILL BE RESPONSIBLE NONETHELESS FOR COMPLIANCE AND DIMENSIONS. SHOP DRAWINGS ARE REQUIRED FOR THE FOLLOWING:

    REINFORCING STEEL
    HIGH STRENGTH BOLTING
    STRUCTURAL FIELD WELDING
    EPOXY ANCHORS
12. FOR EXCAVATION IN NATIVE SOIL, SHORING WILL BE PROVIDED TO SATISFY STATE OF ARKANSAS SAFETY REQUIREMENTS.
13. ALL FILLS MUST BE COMPACTED TO AT LEAST 95% OF MAXIMUM DRY DENSITY AS DETERMINED BY THE STANDARD PROCTOR PROCEDURES OUTLINED IN ASTM D698.
14. BACKFILL MATERIAL AROUND THE FOUNDATION ELEMENTS SHOULD CONSIST OF SUITABLE ON–SITE MATERIAL OR CLEAN GRANULAR FILL FROM A BORROW SOURCE. THIS MATERIAL SHOULD BE PLACED IN 12–INCH MAXIMUM LOOSE LIFTS AND BE COMPACTED TO A MINIMUM OF 95 PERCENT OF THE MATERIALS MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D1557.

REINFORCING STEEL:

1. ALL REINFORCING STEEL UNLESS OTHERWISE NOTED IN DRAWINGS WILL CONFORM TO ASTM A–615, GRADE 60.
2. REINFORCING DETAILING, BENDING AND PLACING WILL BE IN ACCORDANCE WITH CONCRETE REINFORCING STEEL INSTITUTE "MANUAL OF STANDARD PRACTICE" LATEST EDITION.
3. REINFORCING WILL BE SPLICED ONLY AS SHOWN OR NOTED. SPLICES AT OTHER LOCATIONS MAY BE ALLOWED ONLY IF APPROVED BY THE STRUCTURAL ENGINEER.
4. PLACING OF REINFORCEMENT WILL CONFORM TO THE AMERICAN CONCRETE INSTITUTE'S BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE, LATEST EDITION.
5. DIMENSIONS FROM FACE OF CONCRETE TO STEEL (CLR.) ARE TO FACE OF BARS.
6. THE TRANSVERSE REINFORCING STEEL WILL TERMINATE ONE AND ONE–HALF INCHES FROM THE CONCRETE SURFACE.
7. BARS NOTED "CONT" AND TYPICAL WALL REINFORCING WILL HAVE A MINIMUM SPLICE EQUAL TO THE STANDARD LAP SPLICES UNLESS OTHERWISE SHOWN ON THE DRAWINGS.
8. REINFORCING BARS AND ACCESSORIES WILL NOT BE IN CONTACT WITH ANY PIPE, PIPE FLANGE OR METAL PARTS EMBEDDED IN CONCRETE. A MINIMUM CLEARANCE OF 2" WILL BE MAINTAINED BETWEEN REINFORCING STEEL AND ALL EMBEDDED METAL PARTS.
9. PROVIDE THE MINIMUM PROTECTIVE COVERING OF CONCRETE UNLESS OTHERWISE NOTED:

   BELOW GRADE OR EXPOSED TO WEATHER:
   UNIFORMED, CAST IN PLACE 3" CLEAR
   FORMED, CAST IN PLACE 2" CLEAR

LAP SCHEDULE–CLASS "B"

BAR SIZE	TOP BARS	OTHER BARS
#3	30"	23"
#4	41"	31"
#5	51"	39"
#6	61"	47"
#7	89"	68"
#8	101"	78"

BEND SCHEDULE	
BAR SIZES	D
#3 THRU #8	6d

D = DIAMETER OF REINF. BAR

NOTES:

1. CLASS "A" SPLICES ARE ALLOWED WHEN ONE HALF OF THE TOTAL BARS ARE SPLICED WITHIN THE REQUIRED LAP LENGTH OF THE BARS.
2. CLASS "A" SPLICE = CLASS "B" SPLICE / 1.3

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No.8123 FLOYD E. COTTER 11/20/15

STERNS CONRAD & SCHMIDT CONSULTING ENGINEERS CERTIFICATE OF AUTHORIZATION No. 921 ARKANSAS

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2	11/2015	100% SUBMITTAL TO DBA	FEC
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SHEET TITLE
TANK FARM FOUNDATION NOTES

PROJECT TITLE
CLOSURE OF INACTIVE NABORS LANDFILLS

CLIENT
ADEQ ARKANSAS Department of Environmental Quality

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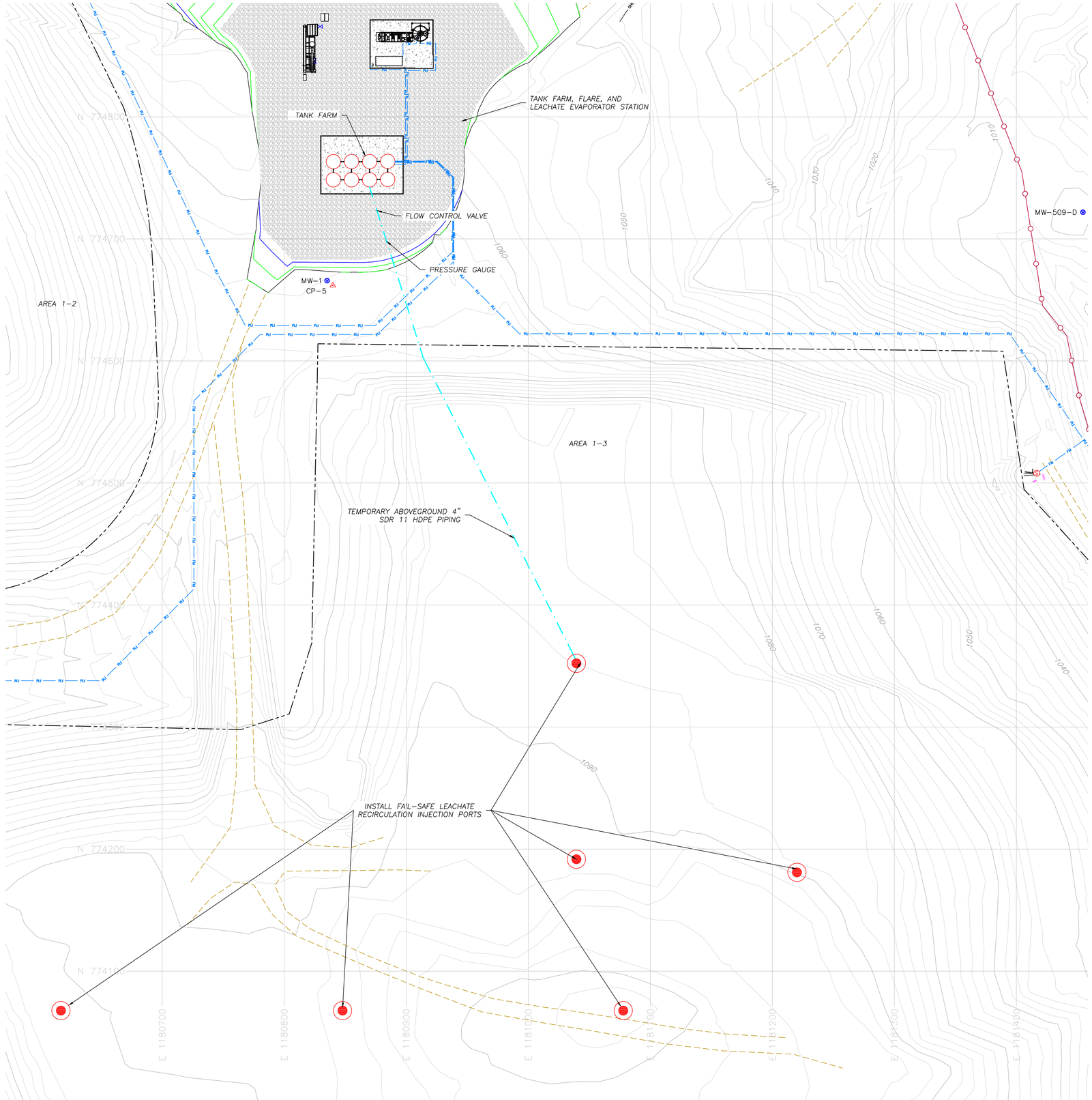
PROJ. NO. 27214218.01 | DWN. BY: ZDB | CHK. BY: DMB | QA/QA RVW BY: FEC | PROJ. MGR. FEC | DSN. BY: ZDB

CADD FILE:
C-504 – LEACHATE EVAPORATOR-TANK FARM FOUNDATION SECTIONS AND DETAILS.DWG

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C-505

\\KAN-FS01\Clients\ADEQ\Projects\27214218.01 - Closure Contract - 2014\Task 2 - Design and Procurement\100% Design Submittal\DWG\C-506 - Leachate Recirculation Plan.dwg Nov 20, 2015 - 10:55am Layout Name: Leachate Recirculation Plan By: 3726dmb

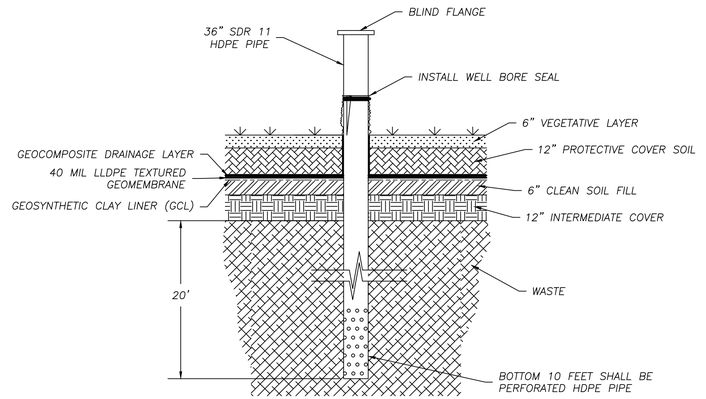


LEGEND:

- EXISTING 2' MINOR CONTOUR
- 1010 EXISTING 10' MAJOR CONTOUR
- OHE OHE EXISTING OVERHEAD ELECTRIC
- LEACHATE RECIRCULATION PIPING
- LF LF LEACHATE FORCEMAIN
- FENCE
- EXISTING ROADWAY
- DISPOSAL BOUNDARY (APPROXIMATE)

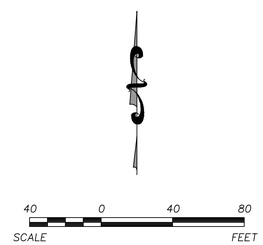
NOTES:

1. *EXISTING TOPOGRAPHY BASED ON AERIAL SURVEY PERFORMED BY M.J. HARDEN ASSOCIATES, INC ON AUGUST 17, 2010. UPDATES TO THE TOPOGRAPHY AND SITE FEATURES FOR AREA 1-2, AREA 1-3, AND SOUTH CLASS 4 DISPOSAL UNITS SURVEYED BY CONSOLIDATED LAND SERVICES, INC BETWEEN DECEMBER 2014 AND JANUARY 2015.*
2. *SURVEY DATA BASED ON THE NAD83 ARKANSAS STATE PLANE NORTH COORDINATE SYSTEM.*
3. *INSTALL LEACHATE INJECTION PORTS A MINIMUM 50 FEET FROM ALL GAS EXTRACTION WELLS.*
4. *CONTRACTOR SHALL WELD A LENGTH OF ABOVEGROUND PIPING LONG ENOUGH TO REACH THE FURTHEST INJECTION PORT PLUS 50 ADDITIONAL FEET. ABOVEGROUND PIPING SHALL BE STORED IN AN ONSITE BUILDING FOR FUTURE USE.*
5. *LEACHATE RECIRCULATION TO BE USED ON AN AS-NEEDED BASIS ONLY WHEN OPERATORS ARE ONSITE AND SUPERVISING VEHICULAR TRAFFIC.*



W C-506 TYPICAL LEACHATE INJECTION PORT DETAIL

NOT TO SCALE



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SHEET TITLE
LEACHATE RECIRCULATION PLAN

PROJECT TITLE
CLOSURE OF INACTIVE NABORS LANDFILLS

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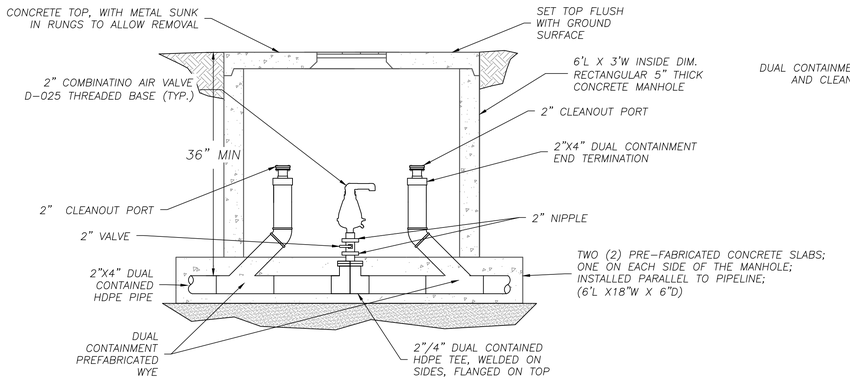
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27214218.01	DMB		FEC
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DMB	FEC		

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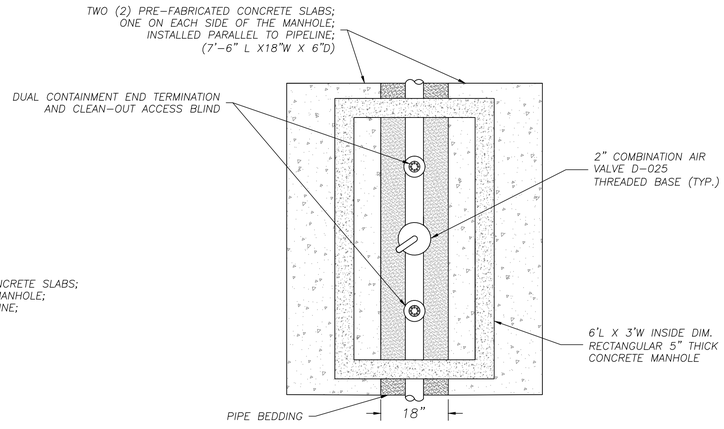
DATE: 11/20/2015

DRAWING NO.
C-506

X C-501 FORCEMAIN TRENCH DETAIL
NOT TO SCALE



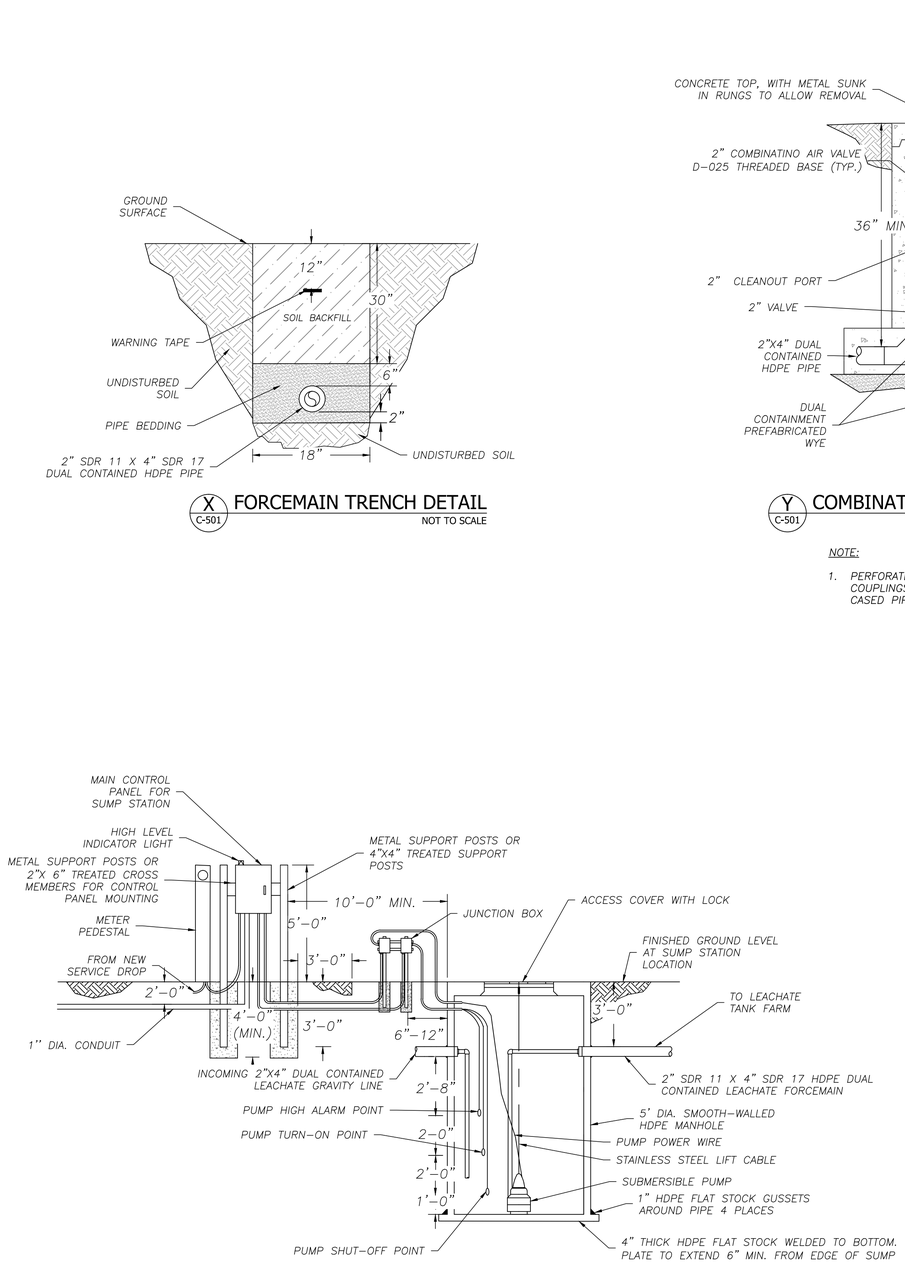
Y C-501 COMBINATION AIR VALVE - ELEVATION VIEW
NOT TO SCALE



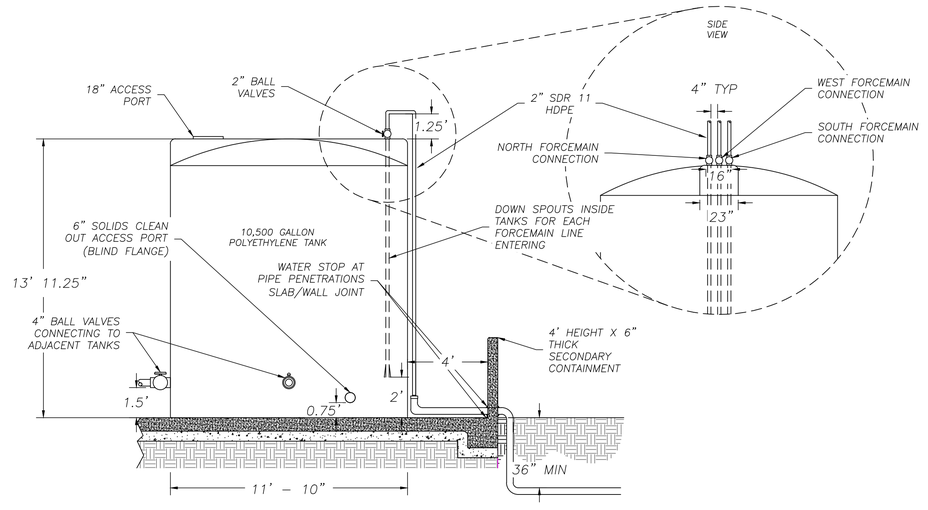
Z C-501 COMBINATION AIR VALVE - PLAN VIEW
NOT TO SCALE

NOTE:

1. *PERFORATED CENTRALIZERS WILL BE USED IN PRE-FABRICATED COUPLINGS AND WILL BE INSTALLED WHERE STRAIGHT DOUBLE CASED PIPE CONNECTS TO DOUBLE-CASED COUPLINGS.*



AA C-502 VERTICAL LEACHATE SUMP STATION DETAIL
NOT TO SCALE



BB C-503 TANK FARM CONNECTION DETAIL
NOT TO SCALE

NOTES:

1. *THE CONCRETE WALL WATER STOP SHALL BE DUMBBELL MANUFACTURED. THE WATER STOP SHALL BE INSTALLED IMMEDIATELY FOLLOWING THE SLAB POUR WHEN CONCRETE IS STILL FRESH. THE WATER STOP SHALL BE ATTACHED TO REINFORCING BARS BY WIRE. WATER STOP SHALL BE INSTALLED AT OR IN THE VACINITY OF THE WALL THICKNESS MIDPOINT. SECTIONS OF THE WATER STOP SHALL BE TIGHTLY OVERLAPPED FOR 9 INCHES. CONTRACTOR SHALL MAKE SURE THE UPPER HALF OF THE WATER STOP TO BE IN STANDING POSITION WHEN THE WALL CONCRETE IS POURED.*
2. *BENTONITE WATER STOP SHALL BE INSTALLED AROUND PIPES PENETRATING STRUCTURE WALLS.*
3. *THE 6" SOLIDS CLEAN-OUT ACCESS PORT WILL BE LOCATED ON THE TANK IN THE LOCATION THAT A TRUCK HAS EASIEST ACCESS TO. THERE WILL BE 1-6" SOLIDS CLEAN-OUT PORT ON EACH TANK IN THE TANK FARM. THE CLEAN-OUT LOCATIONS MAY VARY DEPENDING ON TANK LOCATION INSIDE THE CONTAINMENT.*
4. *ANY FORCEMAIN PIPING ABOVE THE 3' MINIMUM DEPTH WILL BE HEAT TRACED AND INSULATED.*
5. *PIPE SUPPORTS MUST BE PLACED BETWEEN THE TANKS.*



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SHEET TITLE
LEACHATE DISPOSAL SYSTEM DETAILS

PROJECT TITLE
CLOSURE OF INACTIVE NABORS LANDFILLS

CLIENT
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Department of Environmental Quality

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27214218.01	DRS	FEC	FEC
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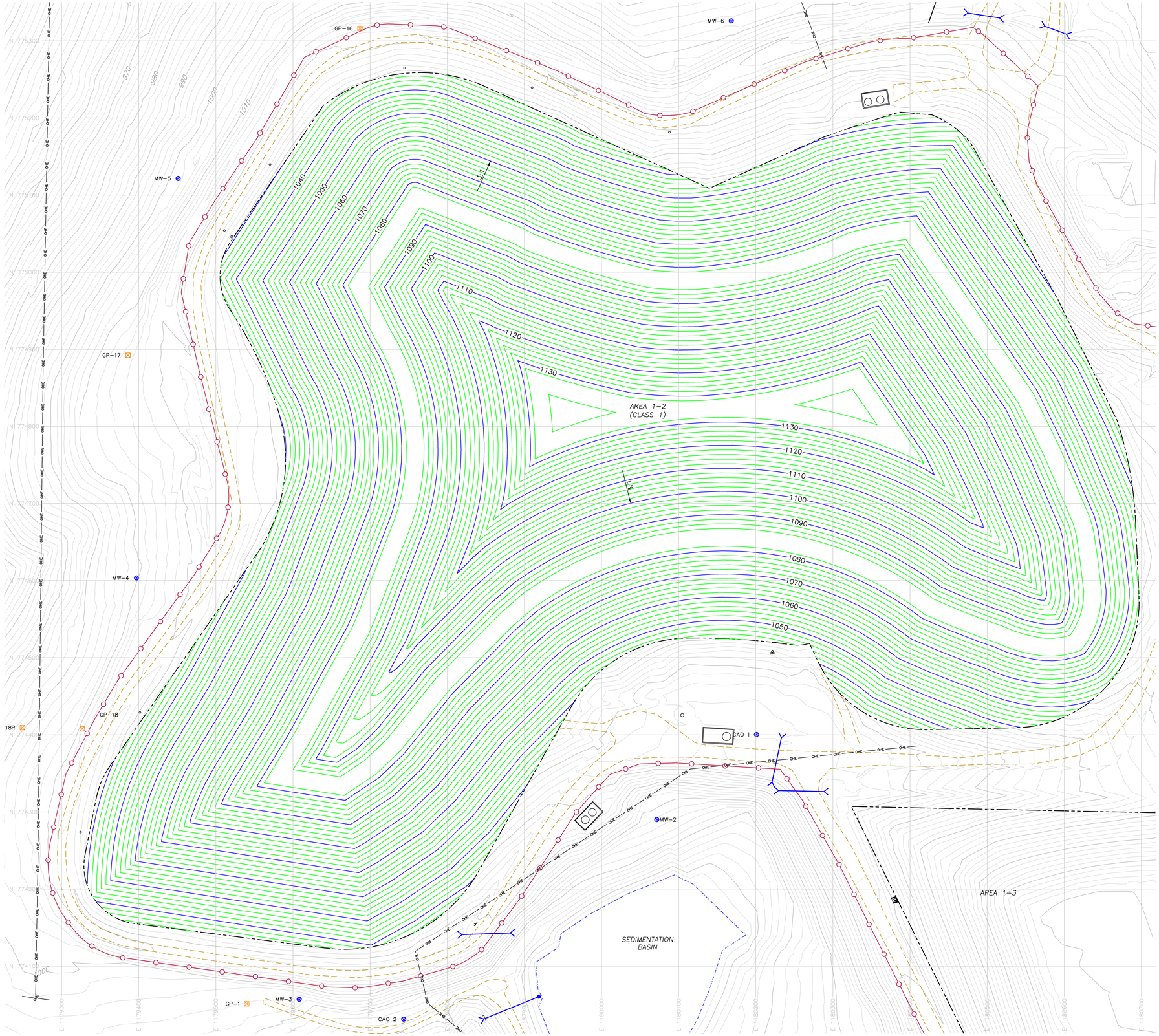
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DRAWING NO.
C-507

\\KAN-FS01\Clients\ADEQ\Projects\27214218.01 - Closure Contract - 2014\Task 2 - Design and Procurement\100% Design Submittal\DWG\C-507 - Leachate Disposal System Details.dwg Nov 20, 2015 - 10:57am Layout Name: Leachate Disposal System Details By: 3726dmb

\\KAN-FS01\Clients\ADEQ\Projects\272144218.01 - Closure Contract - 2014\Task 2 - Design and Procurement\100% Design Submittal\DWG\C-600 - Area 1-2 Final Cover Grading Plan.dwg Nov 20, 2015 - 10:58am Layout Name: Area 1-2 Final Grading Plan By: 3726dmb



LEGEND:

- EXISTING 2' MINOR CONTOUR
- 1000 EXISTING 10' MAJOR CONTOUR
- EXISTING 2' TOP OF FINAL COVER CONTOUR
- 1000 10' TOP OF FINAL COVER CONTOUR
- FENCE
- EXISTING ROAD
- OHE OHE EXISTING OVERHEAD ELECTRIC
- DISPOSAL BOUNDARY (APPROXIMATE)
- EXISTING BODY OF WATER
- EXISTING DRAINAGE PIPE/CULVERT
- MW-2 EXISTING MONITORING WELL
- GP-16 EXISTING GAS PROBE
- CP-5 EXISTING CONTROL POINT

NOTES:

1. EXISTING TOPOGRAPHY BASED ON AERIAL SURVEY PERFORMED BY M.J. HARDEN ASSOCIATES, INC ON AUGUST 17, 2010. UPDATES TO THE TOPOGRAPHY AND SITE FEATURES FOR AREA 1–2, AREA 1–3, AND SOUTH CLASS 4 DISPOSAL UNITS SURVEYED BY CONSOLIDATED LAND SERVICES, INC BETWEEN DECEMBER 2014 AND JANUARY 2015.
2. SURVEY DATA BASED ON THE NAD83 ARKANSAS STATE PLANE NORTH COORDINATE SYSTEM.
3. FINAL COVER CONTOURS REVISED BY SCS AQUTERRA IN AUGUST 2015.
4. WASTE RELOCATION TO BE PERFORMED PRIOR TO FINAL COVER INSTALLATION OF THE AREA 1–2 DISPOSAL UNIT.

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No.8123 FLOYD E. COTTER
11/20/15

STERNS CONRAD & SCHMIDT CONSULTING ENGINEERS No. 921 CERTIFICATE OF AUTHORIZATION ARKANSAS

FOR BIDDING PURPOSES ONLY
NOT FOR CONSTRUCTION

60 0 60 120
SCALE FEET

REV.	DATE	DESCRIPTION	CK. BY
2	11/2015	100% SUBMITTAL TO DBA	FEC
1	7/2015	75% SUBMITTAL	FEC
0	5/2015	50% SUBMITTAL	FEC

SHEET TITLE
AREA 1-2 FINAL GRADING PLAN

PROJECT TITLE
CLOSURE OF INACTIVE NABORS LANDFILLS

CLIENT
ADEQ
ARKANSAS
Department of Environmental Quality

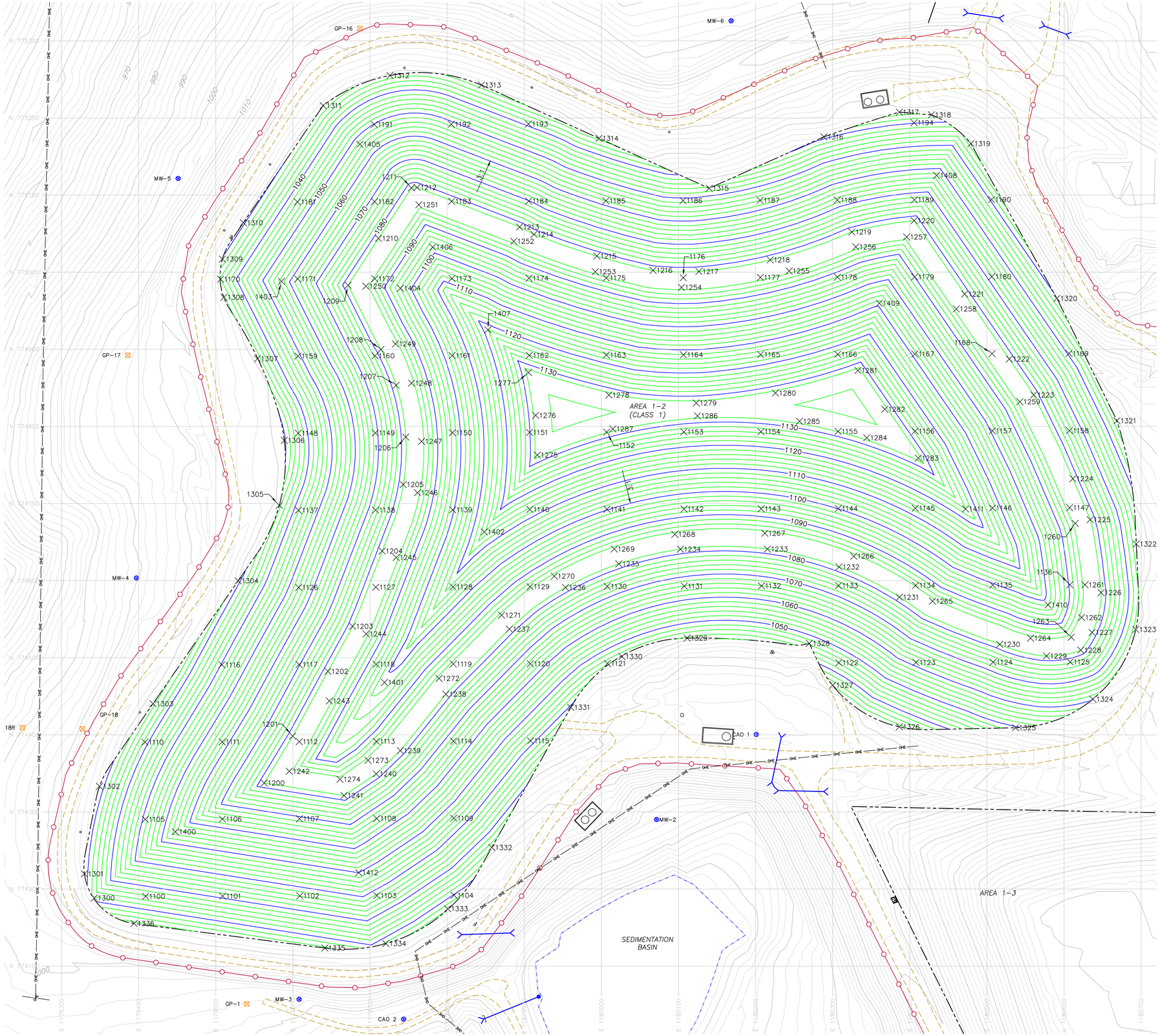
SCS AQUATERRA
7311 W. 130th St. Ste. 100
Overland Park, Kansas 66213
PH. (913) 681-0030 FAX. (913) 681-0012

PROJ. NO.	DWN. BY:	CHK. BY:	DSN. BY:	S/A RVW BY:	PROJ. MGR.
272144218.01	DMB	FEC	DMB	DMB	FEC

CADD FILE:
C-600 — AREA 1-2 FINAL COVER GRADING PLAN.DWG

DATE:
11/20/15

DRAWING NO.
C-600



LEGEND:

- EXISTING 2' MINOR CONTOUR
- 1000 EXISTING 10' MAJOR CONTOUR
- EXISTING 2' TOP OF FINAL COVER CONTOUR
- 1000 10' TOP OF FINAL COVER CONTOUR
- FENCE
- EXISTING ROAD
- OHE OHE EXISTING OVERHEAD ELECTRIC
- DISPOSAL BOUNDARY (APPROXIMATE)
- EXISTING BODY OF WATER
- EXISTING DRAINAGE PIPE/CULVERT
- MW-2 EXISTING MONITORING WELL
- GP-16 EXISTING GAS PROBE
- CP-5 EXISTING CONTROL POINT
- 1234 TOP OF FINAL COVER CONSTRUCTION POINT

NOTES:

1. EXISTING TOPOGRAPHY BASED ON AERIAL SURVEY PERFORMED BY M.J. HARDEN ASSOCIATES, INC ON AUGUST 17, 2010. UPDATES TO THE TOPOGRAPHY AND SITE FEATURES FOR AREA 1-2, AREA 1-3, AND SOUTH CLASS 4 DISPOSAL UNITS SURVEYED BY CONSOLIDATED LAND SERVICES, INC BETWEEN DECEMBER 2014 AND JANUARY 2015.
2. SURVEY DATA BASED ON THE NAD83 ARKANSAS STATE PLANE NORTH COORDINATE SYSTEM.
3. FINAL COVER CONTOURS REVISED BY SCS AQUTERRA IN AUGUST 2015.
4. WASTE RELOCATION TO BE PERFORMED PRIOR TO FINAL COVER INSTALLATION OF THE AREA 1-2 DISPOSAL UNIT.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No.8123
FLOYD E. COTTER
11/20/15

STERNS CONRAD & SCHMIDT CONSULTING ENGINEERS
No. 921
CERTIFICATE OF AUTHORIZATION
ARKANSAS

FOR BIDDING PURPOSES ONLY
NOT FOR CONSTRUCTION

60 0 60 120
SCALE FEET

REV.	DATE	DESCRIPTION	CK. BY
2	11/2015	100% SUBMITTAL TO DBA	FEC
1	7/2015	75% SUBMITTAL	FEC
0	5/2015	50% SUBMITTAL	FEC

SHEET TITLE
AREA 1-2 CONSTRUCTION POINTS

PROJECT TITLE
CLOSURE OF INACTIVE NABORS LANDFILLS

CLIENT
ADEQ
ARKANSAS
Department of Environmental Quality

SCS AQUATERRA
7311 W. 130th St. Ste. 100
Overland Park, Kansas 66213
PH. (913) 681-0030 FAX. (913) 681-0012

PROJ. NO.	DWN. BY:	DES. BY:	CHK. BY:	QA/A RVW BY:	PROJ. MGR.
27214218.01	DMB	DMB	FEC	DMB	FEC

CADD FILE:
C-600 — AREA 1-2 FINAL COVER GRADING PLAN.DWG

DATE:
11/20/15

DRAWING NO.
C-601

\\KAN-FS01\Clients\ADEQ\Projects\27214218.01 - Closure Contract - 2014\Task 2 - Design and Procurement\100% Design Submittal\DWG\C-600 - Area 1-2 Final Cover Grading Plan.dwg Nov 20, 2015 - 10:59am Layout Name: Area 1-2 Construction Points By: 3726dmb

Point Table				
Point #	Northing	Easting	Elevation	Description
1100	774190.46	1179408.96	1025.59	TOP OF FINAL COVER 100 FT GRID
1101	774190.79	1179508.96	1030.88	TOP OF FINAL COVER 100 FT GRID
1102	774191.13	1179608.96	1036.17	TOP OF FINAL COVER 100 FT GRID
1103	774191.47	1179708.96	1037.52	TOP OF FINAL COVER 100 FT GRID
1104	774191.81	1179808.96	1019.67	TOP OF FINAL COVER 100 FT GRID
1105	774290.46	1179408.62	1041.10	TOP OF FINAL COVER 100 FT GRID
1106	774290.79	1179508.62	1063.79	TOP OF FINAL COVER 100 FT GRID
1107	774291.13	1179608.62	1069.09	TOP OF FINAL COVER 100 FT GRID
1108	774291.47	1179708.62	1065.90	TOP OF FINAL COVER 100 FT GRID
1109	774291.81	1179808.62	1044.96	TOP OF FINAL COVER 100 FT GRID
1110	774390.46	1179408.29	1028.62	TOP OF FINAL COVER 100 FT GRID
1111	774390.79	1179508.29	1057.25	TOP OF FINAL COVER 100 FT GRID
1112	774391.13	1179608.29	1082.55	TOP OF FINAL COVER 100 FT GRID
1113	774391.47	1179708.28	1086.42	TOP OF FINAL COVER 100 FT GRID
1114	774391.81	1179808.28	1066.70	TOP OF FINAL COVER 100 FT GRID
1115	774392.14	1179908.28	1041.55	TOP OF FINAL COVER 100 FT GRID
1116	774490.79	1179507.95	1040.39	TOP OF FINAL COVER 100 FT GRID
1117	774491.13	1179607.95	1069.65	TOP OF FINAL COVER 100 FT GRID
1118	774491.47	1179707.95	1093.11	TOP OF FINAL COVER 100 FT GRID
1119	774491.80	1179807.95	1083.02	TOP OF FINAL COVER 100 FT GRID
1120	774492.14	1179907.95	1065.05	TOP OF FINAL COVER 100 FT GRID
1121	774492.48	1180007.95	1044.50	TOP OF FINAL COVER 100 FT GRID
1122	774493.49	1180307.94	1044.22	TOP OF FINAL COVER 100 FT GRID
1123	774493.83	1180407.94	1061.52	TOP OF FINAL COVER 100 FT GRID
1124	774494.17	1180507.94	1073.76	TOP OF FINAL COVER 100 FT GRID
1125	774494.51	1180607.94	1078.46	TOP OF FINAL COVER 100 FT GRID
1126	774591.13	1179607.61	1054.00	TOP OF FINAL COVER 100 FT GRID
1127	774591.47	1179707.61	1082.46	TOP OF FINAL COVER 100 FT GRID
1128	774591.80	1179807.61	1106.88	TOP OF FINAL COVER 100 FT GRID
1129	774592.14	1179907.61	1084.72	TOP OF FINAL COVER 100 FT GRID

Point Table				
Point #	Northing	Easting	Elevation	Description
1130	774592.48	1180007.61	1074.64	TOP OF FINAL COVER 100 FT GRID
1131	774592.82	1180107.61	1065.98	TOP OF FINAL COVER 100 FT GRID
1132	774593.15	1180207.61	1065.90	TOP OF FINAL COVER 100 FT GRID
1133	774593.49	1180307.61	1074.44	TOP OF FINAL COVER 100 FT GRID
1134	774593.83	1180407.61	1084.39	TOP OF FINAL COVER 100 FT GRID
1135	774594.17	1180507.61	1099.31	TOP OF FINAL COVER 100 FT GRID
1136	774594.51	1180607.60	1089.48	TOP OF FINAL COVER 100 FT GRID
1137	774691.13	1179607.27	1041.91	TOP OF FINAL COVER 100 FT GRID
1138	774691.47	1179707.27	1072.99	TOP OF FINAL COVER 100 FT GRID
1139	774691.80	1179807.27	1099.44	TOP OF FINAL COVER 100 FT GRID
1140	774692.14	1179907.27	1113.34	TOP OF FINAL COVER 100 FT GRID
1141	774692.48	1180007.27	1100.34	TOP OF FINAL COVER 100 FT GRID
1142	774692.82	1180107.27	1093.38	TOP OF FINAL COVER 100 FT GRID
1143	774693.15	1180207.27	1093.36	TOP OF FINAL COVER 100 FT GRID
1144	774693.49	1180307.27	1100.16	TOP OF FINAL COVER 100 FT GRID
1145	774693.83	1180407.27	1113.08	TOP OF FINAL COVER 100 FT GRID
1146	774694.17	1180507.27	1113.23	TOP OF FINAL COVER 100 FT GRID
1147	774694.50	1180607.27	1082.93	TOP OF FINAL COVER 100 FT GRID
1148	774791.13	1179606.94	1035.89	TOP OF FINAL COVER 100 FT GRID
1149	774791.47	1179706.93	1069.01	TOP OF FINAL COVER 100 FT GRID
1150	774791.80	1179806.93	1096.56	TOP OF FINAL COVER 100 FT GRID
1151	774792.14	1179906.93	1129.83	TOP OF FINAL COVER 100 FT GRID
1152	774792.48	1180006.93	1132.30	TOP OF FINAL COVER 100 FT GRID
1153	774792.82	1180106.93	1126.54	TOP OF FINAL COVER 100 FT GRID
1154	774793.15	1180206.93	1126.51	TOP OF FINAL COVER 100 FT GRID
1155	774793.49	1180306.93	1132.16	TOP OF FINAL COVER 100 FT GRID
1156	774793.83	1180406.93	1127.55	TOP OF FINAL COVER 100 FT GRID
1157	774794.17	1180506.93	1099.26	TOP OF FINAL COVER 100 FT GRID
1158	774794.50	1180606.93	1074.93	TOP OF FINAL COVER 100 FT GRID
1159	774891.13	1179606.60	1048.91	TOP OF FINAL COVER 100 FT GRID

Point Table				
Point #	Northing	Easting	Elevation	Description
1160	774891.47	1179706.60	1078.43	TOP OF FINAL COVER 100 FT GRID
1161	774891.80	1179806.60	1103.41	TOP OF FINAL COVER 100 FT GRID
1162	774892.14	1179906.60	1126.13	TOP OF FINAL COVER 100 FT GRID
1163	774892.48	1180006.60	1116.50	TOP OF FINAL COVER 100 FT GRID
1164	774892.82	1180106.59	1112.14	TOP OF FINAL COVER 100 FT GRID
1165	774893.15	1180206.59	1115.49	TOP OF FINAL COVER 100 FT GRID
1166	774893.49	1180306.59	1123.61	TOP OF FINAL COVER 100 FT GRID
1167	774893.83	1180406.59	1108.77	TOP OF FINAL COVER 100 FT GRID
1168	774894.17	1180506.59	1082.73	TOP OF FINAL COVER 100 FT GRID
1169	774894.50	1180606.59	1059.36	TOP OF FINAL COVER 100 FT GRID
1170	774990.79	1179506.26	1033.91	TOP OF FINAL COVER 100 FT GRID
1171	774991.13	1179606.26	1062.31	TOP OF FINAL COVER 100 FT GRID
1172	774991.46	1179706.26	1084.51	TOP OF FINAL COVER 100 FT GRID
1173	774991.80	1179806.26	1107.66	TOP OF FINAL COVER 100 FT GRID
1174	774992.14	1179906.26	1094.83	TOP OF FINAL COVER 100 FT GRID
1175	774992.48	1180006.26	1084.34	TOP OF FINAL COVER 100 FT GRID
1176	774992.82	1180106.26	1082.37	TOP OF FINAL COVER 100 FT GRID
1177	774993.15	1180206.26	1082.96	TOP OF FINAL COVER 100 FT GRID
1178	774993.49	1180306.26	1092.13	TOP OF FINAL COVER 100 FT GRID
1179	774993.83	1180406.26	1089.99	TOP OF FINAL COVER 100 FT GRID
1180	774994.17	1180506.25	1068.12	TOP OF FINAL COVER 100 FT GRID
1181	775091.13	1179605.92	1044.02	TOP OF FINAL COVER 100 FT GRID
1182	775091.46	1179705.92	1071.88	TOP OF FINAL COVER 100 FT GRID
1183	775091.80	1179805.92	1082.04	TOP OF FINAL COVER 100 FT GRID
1184	775092.14	1179905.92	1070.16	TOP OF FINAL COVER 100 FT GRID
1185	775092.48	1180005.92	1058.02	TOP OF FINAL COVER 100 FT GRID
1186	775092.81	1180105.92	1051.16	TOP OF FINAL COVER 100 FT GRID
1187	775093.15	1180205.92	1055.96	TOP OF FINAL COVER 100 FT GRID
1188	775093.49	1180305.92	1067.00	TOP OF FINAL COVER 100 FT GRID
1189	775093.83	1180405.92	1072.98	TOP OF FINAL COVER 100 FT GRID

Point Table				
Point #	Northing	Easting	Elevation	Description
1190	775094.16	1180505.92	1049.34	TOP OF FINAL COVER 100 FT GRID
1191	775191.46	1179705.58	1050.22	TOP OF FINAL COVER 100 FT GRID
1192	775191.80	1179805.58	1051.16	TOP OF FINAL COVER 100 FT GRID
1193	775192.14	1179905.58	1039.12	TOP OF FINAL COVER 100 FT GRID
1194	775193.83	1180405.58	1039.77	TOP OF FINAL COVER 100 FT GRID
1200	774337.56	1179562.80	1082.00	GRADE BREAK
1201	774398.39	1179599.80	1082.00	GRADE BREAK
1202	774482.31	1179645.41	1082.00	GRADE BREAK
1203	774540.69	1179677.43	1082.00	GRADE BREAK
1204	774638.36	1179715.83	1082.00	GRADE BREAK
1205	774724.60	1179743.11	1082.00	GRADE BREAK
1206	774786.21	1179746.37	1082.00	GRADE BREAK
1207	774853.31	1179733.93	1082.00	GRADE BREAK
1208	774899.70	1179714.22	1082.00	GRADE BREAK
1209	774982.91	1179671.61	1082.00	GRADE BREAK
1210	775043.84	1179711.12	1082.00	GRADE BREAK
1211	775109.28	1179753.78	1082.00	GRADE BREAK
1212	775109.82	1179760.98	1082.00	GRADE BREAK
1213	775058.56	1179894.03	1082.00	GRADE BREAK
1214	775049.06	1179912.59	1082.00	GRADE BREAK
1215	775020.89	1179994.18	1082.00	GRADE BREAK
1216	775002.32	1180067.06	1082.00	GRADE BREAK
1217	775000.88	1180126.56	1082.00	GRADE BREAK
1218	775015.94	1180219.05	1082.00	GRADE BREAK
1219	775052.14	1180324.91	1082.00	GRADE BREAK
1220	775066.81	1180405.62	1082.00	GRADE BREAK
1221	774971.58	1180471.25	1082.00	GRADE BREAK
1222	774887.36	1180529.10	1082.00	GRADE BREAK
1223	774840.78	1180560.70	1082.00	GRADE BREAK
1224	774732.13	1180611.44	1082.00	GRADE BREAK

Point Table				
Point #	Northing	Easting	Elevation	Description
1225	774679.05	1180633.94	1082.00	GRADE BREAK
1226	774584.43	1180648.12	1082.00	GRADE BREAK
1227	774532.77	1180636.48	1082.00	GRADE BREAK
1228	774509.78	1180621.70	1082.00	GRADE BREAK
1229	774502.20	1180577.33	1082.00	GRADE BREAK
1230	774517.35	1180516.59	1082.00	GRADE BREAK
1231	774578.50	1180386.71	1082.00	GRADE BREAK
1232	774617.69	1180308.28	1082.00	GRADE BREAK
1233	774640.83	1180215.33	1082.00	GRADE BREAK
1234	774640.73	1180102.59	1082.00	GRADE BREAK
1235	774621.74	1180022.67	1082.00	GRADE BREAK
1236	774591.04	1179953.57	1082.00	GRADE BREAK
1237	774537.02	1179880.80	1082.00	GRADE BREAK
1238	774452.73	1179798.41	1082.00	GRADE BREAK
1239	774379.43	1179739.40	1082.00	GRADE BREAK
1240	774349.33	1179708.05	1082.00	GRADE BREAK
1241	774321.27	1179666.36	1082.00	GRADE BREAK
1242	774352.68	1179595.40	1083.00	GRADE BREAK
1243	774443.94	1179647.26	1083.00	GRADE BREAK
1244	774530.81	1179694.96	1083.00	GRADE BREAK
1245	774629.91	1179734.01	1083.00	GRADE BREAK
1246	774713.99	1179761.69	1083.00	GRADE BREAK
1247	774780.55	1179766.83	1083.00	GRADE BREAK
1248	774856.08	1179753.94	1083.00	GRADE BREAK
1249	774907.02	1179733.04	1083.00	GRADE BREAK
1250	774981.78	1179694.55	1083.00	GRADE BREAK
1251	775087.46	1179763.43	1083.00	GRADE BREAK
1252	775040.04	1179886.47	1083.00	GRADE BREAK
1253	775000.61	1179992.31	1083.00	GRADE BREAK
1254	774980.24	1180103.93	1083.00	GRADE BREAK

Point Table				
Point #	Northing	Easting	Elevation	Description
1255	775001.57	1180243.54	1083.00	GRADE BREAK
1256	775032.80	1180330.09	1083.00	GRADE BREAK
1257	775045.71	1180395.84	1083.00	GRADE BREAK
1258	774952.32	1180460.21	1083.00	GRADE BREAK
1259	774831.93	1180542.77	1083.00	GRADE BREAK
1260	774674.16	1180614.51	1083.00	GRADE BREAK
1261	774594.51	1180627.16	1083.00	GRADE BREAK
1262	774552.08	1180622.75	1083.00	GRADE BREAK
1263	774526.53	1180609.38	1083.00	GRADE BREAK
1264	774525.34	1180556.68	1083.00	GRADE BREAK
1265	774573.28	1180429.39	1083.00	GRADE BREAK
1266	774631.62	1180327.39	1083.00	GRADE BREAK
1267	774661.37	1180212.05	1083.00	GRADE BREAK
1268	774659.93	1180095.30	1083.00	GRADE BREAK
1269	774640.95	1180016.74	1083.00	GRADE BREAK
1270	774605.71	1179938.99	1083.00	GRADE BREAK
1271	774555.09	1179870.67	1083.00	GRADE BREAK
1272	774473.14	1179789.61	1083.00	GRADE BREAK
1273	774366.89	1179697.47	1083.00	GRADE BREAK
1274	774342.34	1179661.12	1083.00	GRADE BREAK
1275	774762.81	1179917.00	1133.00	GRADE BREAK
1276	774814.19	1179914.83	1133.00	GRADE BREAK
1277	774870.04	1179905.61	1133.00	GRADE BREAK
1278	774840.69	1180009.76	1133.00	GRADE BREAK
1279	774830.34	1180123.02	1133.00	GRADE BREAK
1280	774843.20	1180225.88	1133.00	GRADE BREAK
1281	774872.55	1180332.79	1133.00	GRADE BREAK
1282	774822.22	1180367.60	1133.00	GRADE BREAK
1283	774758.83	1180411.02	1133.00	GRADE BREAK
1284	774785.26	1180344.14	1133.00	GRADE BREAK

Point Table				
Point #	Northing	Easting	Elevation	Description
1285	774806.61	1180257.00	1133.00	GRADE BREAK
1286	774813.62	1180124.71	1133.00	GRADE BREAK
1287	774796.74	1180014.94	1133.00	GRADE BREAK
1300	774188.44	1179342.50	1021.49	BOUNDARY
1301	774219.71	1179329.70	1018.60	BOUNDARY
1302	774333.16	1179349.31	1018.10	BOUNDARY
1303	774440.28	1179418.64	1023.15	BOUNDARY
1304	774599.74	1179529.05	1029.12	BOUNDARY
1305	774697.64	1179582.35	1033.38	BOUNDARY
1306	774781.82	1179588.88	1029.52	BOUNDARY
1307	774887.72	1179554.10	1032.76	BOUNDARY
1308	774967.33	1179510.48	1031.66	BOUNDARY
1309	775016.95	1179508.63	1030.35	BOUNDARY
1310	775064.00	1179535.84	1029.38	BOUNDARY
1311	775215.96	1179639.27	1029.95	BOUNDARY
1312	775254.97	1179725.86	1032.66	BOUNDARY
1313	775242.62	1179844.54	1030.69	BOUNDARY
1314	775173.46	1179997.03	1033.35	BOUNDARY
1315	775108.75	1180139.97	1046.72	BOUNDARY
1316	775175.44	1180288.68	1039.14	BOUNDARY
1317	775207.55	1180386.55	1034.65	BOUNDARY
1318	775203.99	1180428.15	1036.73	BOUNDARY
1319	775166.66	1180479.23	1042.99	BOUNDARY
1320	774965.92	1180590.78	1050.22	BOUNDARY
1321	774807.28	1180668.54	1054.61	BOUNDARY
1322	774647.49	1180693.68	1064.44	BOUNDARY
1323	774536.60	1180693.02	1064.81	BOUNDARY
1324	774446.21	1180637.39	1060.26	BOUNDARY
1325	774409.16	1180537.18	1049.48	BOUNDARY
1326	774410.31	1180386.60	1033.15	BOUNDARY

Point Table				
Point #	Northing	Easting	Elevation	Description
1327	774464.30	1180299.94	1034.45	BOUNDARY
1328	774518.63	1180269.66	1046.58	BOUNDARY
1329	774525.48	1180111.25	1043.59	BOUNDARY
1330	774501.36	1180026.78	1044.25	BOUNDARY
1331	774435.66	1179960.30	1039.41	BOUNDARY
1332	774253.83	1179857.96	1024.44	BOUNDARY
1333	774174.46	1179800.67	1016.41	BOUNDARY
1334	774129.27	1179720.64	1017.49	BOUNDARY
1335	774123.52	1179641.50	1015.60	BOUNDARY
1336	774155.31	1179394.07	1013.25	BOUNDARY
1400	774274.23	1179447.73	1055.00	MID SLOPE
1401	774467.95	1179718.75	1099.13	MID SLOPE
1402	774663.17	1179848.20	1115.42	MID SLOPE
1403	774987.96	1179585.18	1057.00	MID SLOPE
1404	774979.12	1179739.51	1096.00	MID SLOPE
1405	775165.85	1179686.87	1053.00	MID SLOPE
1406	775032.42	1179781.27	1098.00	MID SLOPE
1407	774925.21	1179852.98	1122.00	MID SLOPE
1408	775125.43	1180434.72	1063.00	MID SLOPE
1409	774959.67	1180360.44	1109.00	MID SLOPE
1410	774568.37	1180579.34	1098.00	MID SLOPE
1411	774692.90	1180472.28	1124.00	MID SLOPE
1412	774221.24	1179685.41	1050.00	MID SLOPE

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No.8123
FLOYD E. COTTER
11/20/15

CERTIFICATE OF AUTHORIZATION
STERNS CONRAD & SCHMIDT CONSULTING ENGINEERS
No. 921
ARKANSAS

FOR BIDDING PURPOSES ONLY
NOT FOR CONSTRUCTION

REV.	DATE	DESCRIPTION	CK. BY
2	11/2015	100% SUBMITTAL TO DBA	FEC
1	7/2015	75% SUBMITTAL	FEC
0	5/2015	50% SUBMITTAL	FEC

SHEET TITLE
AREA 1-2 CONSTRUCTION POINTS TABLE

PROJECT TITLE
CLOSURE OF INACTIVE NABORS LANDFILLS

CLIENT
ADEQ
ARKANSAS
Department of Environmental Quality

SCS AQUATERRA
7311 W. 130th St. Ste. 100
Overland Park, Kansas 66213
PH. (913) 681-0030 FAX. (913) 681-0012

PROJ. NO.	DWN. BY:	S/A RVW BY:
27214218.01	DMB	DMB
DSN. BY:	CHK. BY:	PROJ. MGR.
DMB	FEC	FEC

CADD FILE:
C-600 — AREA 1-2 FINAL COVER GRADING PLAN.DWG

DATE:
11/20/15

DRAWING NO.
C-602

\\KAN-FS01\Clients\ADEQ\Projects\27214218.01 - Closure Contract - 2014\Task 2 - Design and Procurement\100% Design Submittal\DWG\C-600 - Area 1-2 Final Cover Grading Plan.dwg Nov 20, 2015 - 10:59am Layout Name: Area 1-2 Construction Points Table By: 3726dmb

\\KAN-FS01\Clients\ADEQ\Projects\27214218.01 - Closure Contract - 2014\Task 2 - Design and Procurement\100% Design Submittal\DWG\C-603 - Area 1-2 Stormwater Control Plan.dwg Nov 20, 2015 - 11:01am Layout Name: Area 1-2 Stormwater Control Plan By: 37266dmb



LEGEND:

- EXISTING 2' MINOR CONTOUR
- EXISTING 10' MAJOR CONTOUR
- 2' TOP OF FINAL COVER CONTOUR
- 10' TOP OF FINAL COVER CONTOUR
- 2' EXTERIOR GRADING CONTOUR
- 10' EXTERIOR GRADING CONTOUR
- FENCE
- HDPE PIPE DOWN CHUTE
- TACK-ON TERRACE
- EXISTING ROAD
- EXISTING OVERHEAD ELECTRIC
- DISPOSAL BOUNDARY (APPROXIMATE)
- EXISTING BODY OF WATER
- IMPROVED PERIMETER ROAD
- EXISTING DRAINAGE PIPE/CULVERT
- EXISTING MONITORING WELL
- EXISTING GAS PROBE
- EXISTING CONTROL POINT

NOTES:

1. EXISTING TOPOGRAPHY BASED ON AERIAL SURVEY PERFORMED BY M.J. HARDEN ASSOCIATES, INC ON AUGUST 17, 2010. UPDATES TO THE TOPOGRAPHY AND SITE FEATURES FOR AREA 1-2, AREA 1-3, AND SOUTH CLASS 4 DISPOSAL UNITS SURVEYED BY CONSOLIDATED LAND SERVICES, INC BETWEEN DECEMBER 2014 AND JANUARY 2015.
2. SURVEY DATA BASED ON THE NAD83 ARKANSAS STATE PLANE NORTH COORDINATE SYSTEM.
3. FINAL COVER CONTOURS REVISED BY SCS AQUATERRA IN AUGUST 2015.
4. WASTE RELOCATION TO BE PERFORMED PRIOR TO FINAL COVER INSTALLATION OF THE AREA 1-2 DISPOSAL UNIT.
4. TACK-ON TERRACES TO BE INSTALLED AT A 2% SLOPE TOWARDS THE DESIGNATED HDPE DOWN CHUTE.
5. ENERGY DISSIPATERS TO BE INSTALLED AT OUTLET OF DOWN CHUTES BEFORE DISCHARGING INTO PERIMETER STORMWATER CHANNEL.
6. EXTERIOR GRADING, INCLUDING PERIMETER ROAD REHABILITATION, TO BE CONSTRUCTED IN A MANNER TO PROMOTE POSITIVE DRAINAGE TOWARDS THE APPROPRIATE STORMWATER CONTROLS.
7. TIE IN PERIMETER ROADS TO STORMWATER CHANNEL/EXISTING GRADE AT A MAXIMUM 2:1 SLOPE.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No.8123
FLOYD E. COTTER
11/20/15

STERNS CONRAD & SCHMIDT CONSULTING ENGINEERS
CERTIFICATE OF AUTHORIZATION
No. 921
ARKANSAS

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60 0 60 120
SCALE FEET

REV.	DATE	DESCRIPTION	CK. BY
2	11/2015	100% SUBMITTAL TO DBA	FEC
1	7/2015	75% SUBMITTAL	FEC
0	5/2015	50% SUBMITTAL	FEC

SHEET TITLE
AREA 1-2 STORMWATER CONTROL PLAN

PROJECT TITLE
CLOSURE OF INACTIVE NABORS LANDFILLS

CLIENT
ADEQ
ARKANSAS
Department of Environmental Quality

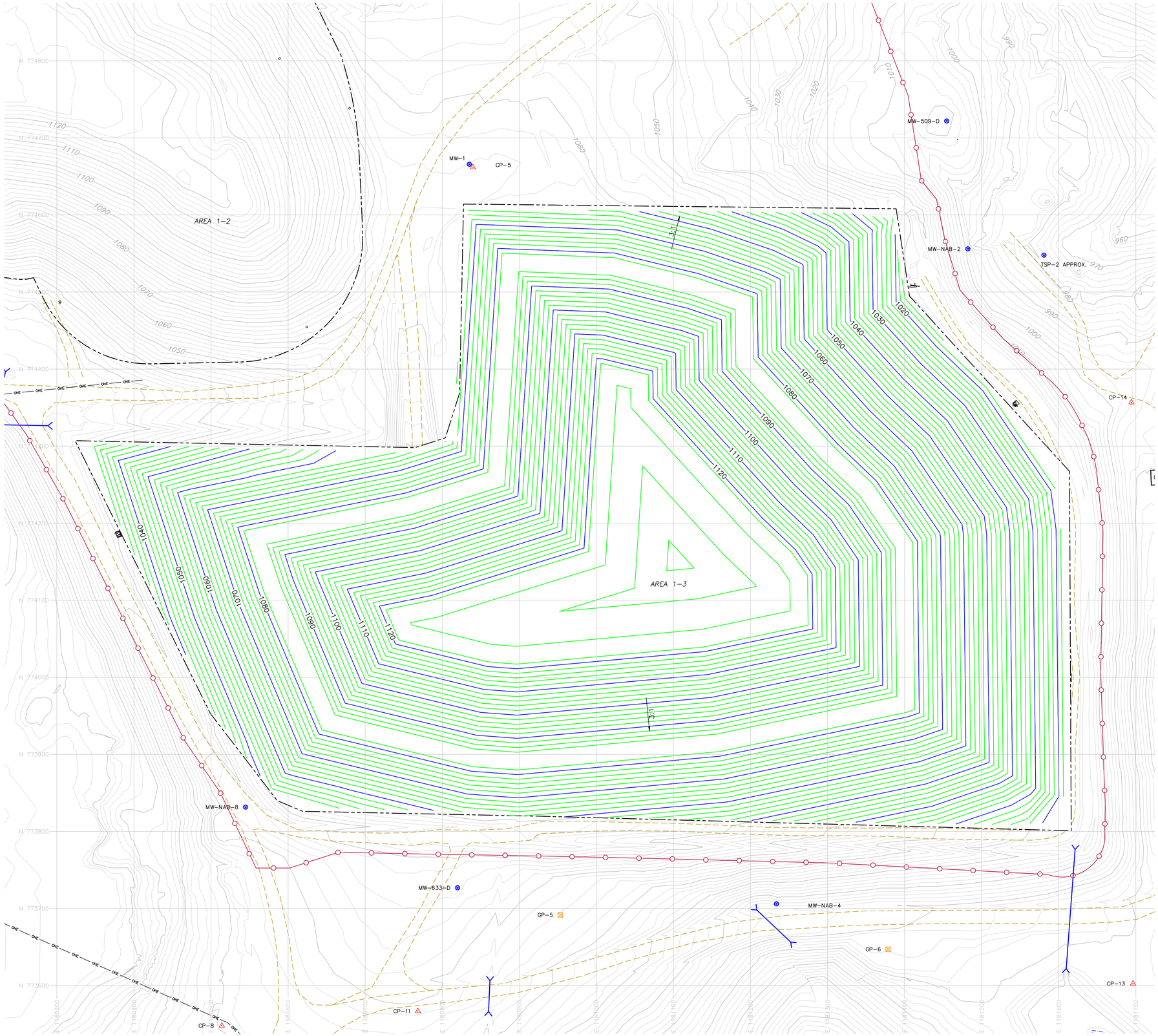
SCS AQUATERRA
7311 W. 130th St, Ste. 100
Overland Park, Kansas 66213
PH. (913) 681-0030 FAX. (913) 681-0012

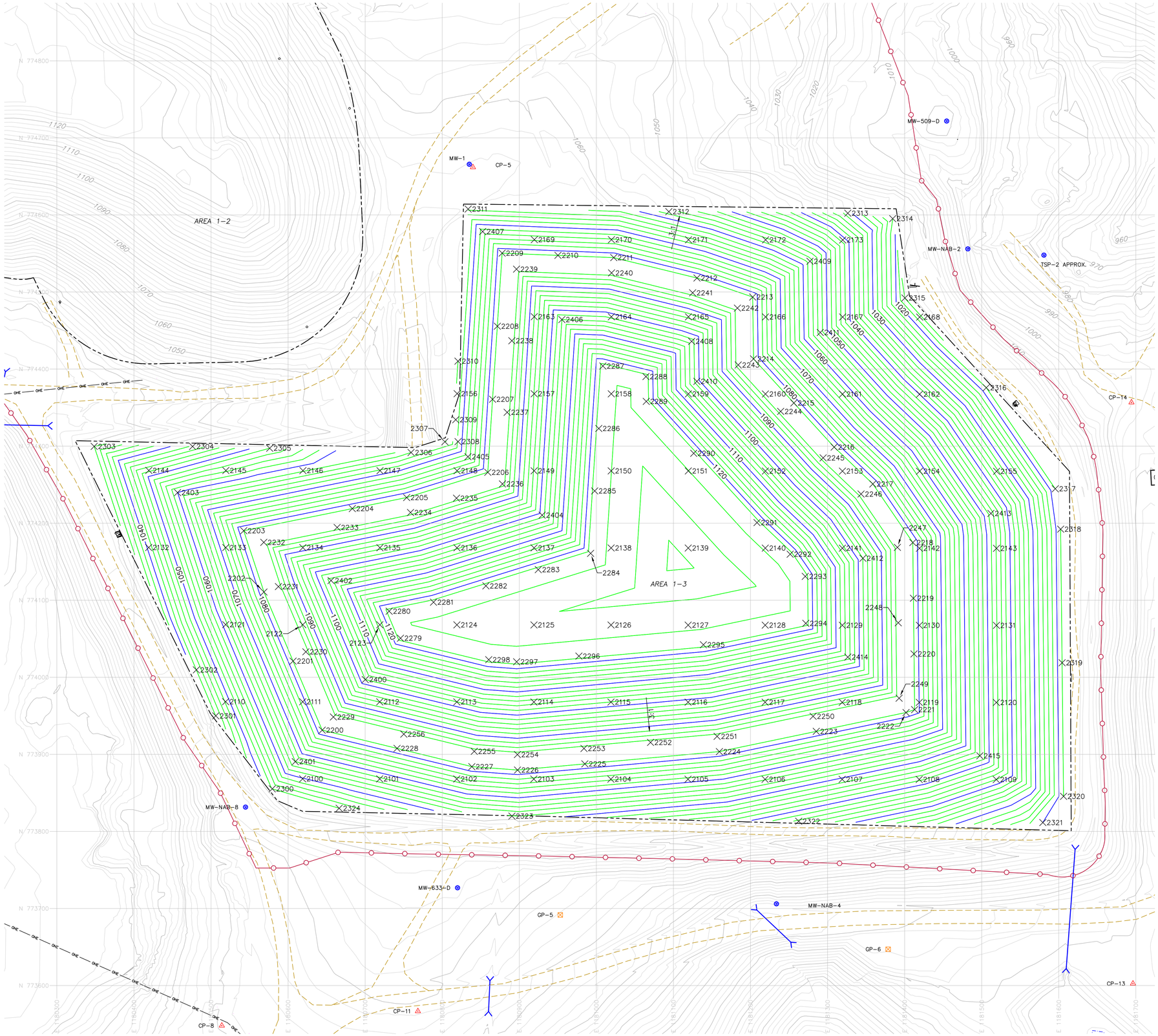
PROJ. NO. 27214218.01 | DSN. BY: DMB | DWN. BY: DMB | CHK. BY: FEC | QA/A R/M BY: DMB | PROJ. MGR: FEC

CADD FILE:
C-603 = AREA 1-2 STORMWATER CONTROL PLAN.DWG

DATE:
11/20/15

DRAWING NO.
C-603


AREA 1-2
AREA 1-3
MW-1
CP-5
MW-509-D
MW-NAB-2
TSP-2 APPROX.
CP-T4
MW-NAB-8
MW-633-D
MW-NAB-4
GP-5
GP-6
CP-11
CP-13
CP-8
OHE
N 774800
N 774700
N 774600
N 774500
N 774400
N 774300
N 774200
N 774100
N 774000
N 773900
N 773800
N 773700
N 773600
E 1184000
E 1184500
E 1185000
E 1185500
E 1186000
E 1186500
E 1187000
E 1187500
E 1188000
E 1188500
E 1189000
E 1189500
E 1190000
E 1190500
E 1191000
E 1191500
E 1192000
E 1192500
E 1193000
E 1193500
E



LEGEND:

- EXISTING 2' MINOR CONTOUR
- 1000 EXISTING 10' MAJOR CONTOUR
- 2' TOP OF FINAL COVER CONTOUR
- 1000 10' TOP OF FINAL COVER CONTOUR
- FENCE
- EXISTING ROAD
- OHE OHE EXISTING OVERHEAD ELECTRIC
- DISPOSAL BOUNDARY (APPROXIMATE)
- EXISTING BODY OF WATER
- EXISTING DRAINAGE PIPE/CULVERT
- MW–2 EXISTING MONITORING WELL
- GP–16 EXISTING GAS PROBE
- CP–5 EXISTING CONTROL POINT
- 2151 TOP OF FINAL COVER CONSTRUCTION POINT

NOTES:

1. *EXISTING TOPOGRAPHY BASED ON AERIAL SURVEY PERFORMED BY M.J. HARDEN ASSOCIATES, INC ON AUGUST 17, 2010. UPDATES TO THE TOPOGRAPHY AND SITE FEATURES FOR AREA 1–2, AREA 1–3, AND SOUTH CLASS 4 DISPOSAL UNITS SURVEYED BY CONSOLIDATED LAND SERVICES, INC BETWEEN DECEMBER 2014 AND JANUARY 2015.*
2. *SURVEY DATA BASED ON THE NAD83 ARKANSAS STATE PLANE NORTH COORDINATE SYSTEM.*
3. *FINAL COVER CONTOURS REVISED BY SCS AQUATERRA IN JULY 2015.*
4. *WASTE RELOCATION TO BE PERFORMED PRIOR TO FINAL COVER INSTALLATION OF THE AREA 1–3 DISPOSAL UNIT.*

REV.	DATE	DESCRIPTION	CK. BY
2	11/2015	100% SUBMITTAL TO DBA	FEC
1	7/2015	75% SUBMITTAL	FEC
0	5/2015	50% SUBMITTAL	FEC

SHEET TITLE
AREA 1-3 CONSTRUCTION POINTS

PROJECT TITLE
CLOSURE OF INACTIVE NABORS LANDFILLS

CLIENT
ADEQ
ARKANSAS
Department of Environmental Quality

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No.8123 FLOYD P. COTTER
11/20/15

STEVENS CONRAD & SCHMIDT CONSULTING ENGINEERS No. 921 ARKANSAS CERTIFICATE OF AUTHORIZATION

FOR BIDDING PURPOSES ONLY
NOT FOR CONSTRUCTION

60 0 60 120
SCALE FEET

SCS AQUATERRA
7311 W. 130th St. Ste. 100
Overland Park, Kansas 66213
PH. (913) 681-0030 FAX. (913) 681-0012

PROJ. NO.	DSN. BY:	DMB	DWN. BY:	DMB	CHK. BY:	FEC	O/A RVW BY:	DMB	PROJ. MGR.	FEC
27214218.01										

CADD FILE:
C-604 — AREA 1–3 FINAL COVER GRADING PLANS.DWG

DATE:
11/20/15

DRAWING NO.
C-605

\\KAN-FS01\Clients\ADEQ\Projects\27214218.01 - Closure Contract - 2014\Task 2 - Design and Procurement\100% Design Submittal\DWG\C-604 - Area 1-3 Final Cover Grading Plan.dwg Nov 20, 2015 - 11:03am Layout Name: Area 1-3 Construction Points By: 3726dmb

Point Table				
Point #	Northing	Easting	Elevation	Description
2100	773868.30	1180618.89	1059.70	TOP OF FINAL COVER 100 FT GRID
2101	773868.20	1180718.89	1067.40	TOP OF FINAL COVER 100 FT GRID
2102	773868.10	1180818.89	1075.27	TOP OF FINAL COVER 100 FT GRID
2103	773868.00	1180918.89	1077.47	TOP OF FINAL COVER 100 FT GRID
2104	773867.90	1181018.89	1074.41	TOP OF FINAL COVER 100 FT GRID
2105	773867.80	1181118.89	1071.35	TOP OF FINAL COVER 100 FT GRID
2106	773867.70	1181218.89	1066.25	TOP OF FINAL COVER 100 FT GRID
2107	773867.60	1181318.89	1059.39	TOP OF FINAL COVER 100 FT GRID
2108	773867.50	1181418.89	1052.51	TOP OF FINAL COVER 100 FT GRID
2109	773867.40	1181518.89	1042.01	TOP OF FINAL COVER 100 FT GRID
2110	773968.40	1180518.99	1048.36	TOP OF FINAL COVER 100 FT GRID
2111	773968.30	1180618.99	1079.01	TOP OF FINAL COVER 100 FT GRID
2112	773968.20	1180718.99	1094.13	TOP OF FINAL COVER 100 FT GRID
2113	773968.10	1180818.99	1102.00	TOP OF FINAL COVER 100 FT GRID
2114	773968.00	1180918.99	1105.00	TOP OF FINAL COVER 100 FT GRID
2115	773967.90	1181018.99	1101.94	TOP OF FINAL COVER 100 FT GRID
2116	773967.80	1181118.99	1098.88	TOP OF FINAL COVER 100 FT GRID
2117	773967.70	1181218.99	1093.21	TOP OF FINAL COVER 100 FT GRID
2118	773967.60	1181318.99	1086.34	TOP OF FINAL COVER 100 FT GRID
2119	773967.50	1181418.99	1079.95	TOP OF FINAL COVER 100 FT GRID
2120	773967.40	1181518.99	1046.62	TOP OF FINAL COVER 100 FT GRID
2121	774068.40	1180519.09	1061.29	TOP OF FINAL COVER 100 FT GRID
2122	774068.30	1180619.09	1086.32	TOP OF FINAL COVER 100 FT GRID
2123	774068.20	1180719.09	1117.02	TOP OF FINAL COVER 100 FT GRID
2124	774068.10	1180819.09	1124.71	TOP OF FINAL COVER 100 FT GRID

Point Table				
Point #	Northing	Easting	Elevation	Description
2125	774068.00	1180919.09	1125.28	TOP OF FINAL COVER 100 FT GRID
2126	774067.90	1181019.09	1124.82	TOP OF FINAL COVER 100 FT GRID
2127	774067.80	1181119.09	1124.36	TOP OF FINAL COVER 100 FT GRID
2128	774067.70	1181219.09	1123.42	TOP OF FINAL COVER 100 FT GRID
2129	774067.60	1181319.09	1107.22	TOP OF FINAL COVER 100 FT GRID
2130	774067.50	1181419.09	1079.56	TOP OF FINAL COVER 100 FT GRID
2131	774067.40	1181519.09	1046.22	TOP OF FINAL COVER 100 FT GRID
2132	774168.50	1180419.19	1040.71	TOP OF FINAL COVER 100 FT GRID
2133	774168.40	1180519.19	1072.35	TOP OF FINAL COVER 100 FT GRID
2134	774168.30	1180619.19	1088.61	TOP OF FINAL COVER 100 FT GRID
2135	774168.20	1180719.19	1095.29	TOP OF FINAL COVER 100 FT GRID
2136	774168.10	1180819.19	1103.55	TOP OF FINAL COVER 100 FT GRID
2137	774168.00	1180919.19	1113.48	TOP OF FINAL COVER 100 FT GRID
2138	774167.90	1181019.19	1124.31	TOP OF FINAL COVER 100 FT GRID
2139	774167.80	1181119.19	1127.41	TOP OF FINAL COVER 100 FT GRID
2140	774167.70	1181219.19	1123.83	TOP OF FINAL COVER 100 FT GRID
2141	774167.60	1181319.19	1102.87	TOP OF FINAL COVER 100 FT GRID
2142	774167.50	1181419.19	1079.16	TOP OF FINAL COVER 100 FT GRID
2143	774167.40	1181519.19	1045.83	TOP OF FINAL COVER 100 FT GRID
2144	774268.50	1180419.29	1047.47	TOP OF FINAL COVER 100 FT GRID
2145	774268.40	1180519.29	1055.58	TOP OF FINAL COVER 100 FT GRID
2146	774268.30	1180619.29	1061.70	TOP OF FINAL COVER 100 FT GRID
2147	774268.20	1180719.29	1068.30	TOP OF FINAL COVER 100 FT GRID
2148	774268.10	1180819.29	1077.39	TOP OF FINAL COVER 100 FT GRID
2149	774268.00	1180919.29	1096.30	TOP OF FINAL COVER 100 FT GRID

Point Table				
Point #	Northing	Easting	Elevation	Description
2150	774267.90	1181019.29	1123.98	TOP OF FINAL COVER 100 FT GRID
2151	774267.80	1181119.29	1124.03	TOP OF FINAL COVER 100 FT GRID
2152	774267.70	1181219.29	1105.28	TOP OF FINAL COVER 100 FT GRID
2153	774267.60	1181319.29	1082.76	TOP OF FINAL COVER 100 FT GRID
2154	774267.50	1181419.29	1062.21	TOP OF FINAL COVER 100 FT GRID
2155	774267.40	1181519.29	1034.69	TOP OF FINAL COVER 100 FT GRID
2156	774368.10	1180819.39	1066.56	TOP OF FINAL COVER 100 FT GRID
2157	774368.00	1180919.39	1094.16	TOP OF FINAL COVER 100 FT GRID
2158	774367.90	1181019.39	1123.66	TOP OF FINAL COVER 100 FT GRID
2159	774367.80	1181119.39	1107.36	TOP OF FINAL COVER 100 FT GRID
2160	774367.70	1181219.39	1082.97	TOP OF FINAL COVER 100 FT GRID
2161	774367.60	1181319.39	1063.86	TOP OF FINAL COVER 100 FT GRID
2162	774367.50	1181419.39	1039.92	TOP OF FINAL COVER 100 FT GRID
2163	774468.00	1180919.49	1092.02	TOP OF FINAL COVER 100 FT GRID
2164	774467.90	1181019.49	1101.42	TOP OF FINAL COVER 100 FT GRID
2165	774467.80	1181119.49	1093.41	TOP OF FINAL COVER 100 FT GRID
2166	774467.70	1181219.49	1076.57	TOP OF FINAL COVER 100 FT GRID
2167	774467.60	1181319.49	1043.24	TOP OF FINAL COVER 100 FT GRID
2168	774467.50	1181419.49	1016.74	TOP OF FINAL COVER 100 FT GRID
2169	774568.00	1180919.59	1075.59	TOP OF FINAL COVER 100 FT GRID
2170	774567.90	1181019.59	1074.29	TOP OF FINAL COVER 100 FT GRID
2171	774567.80	1181119.59	1066.80	TOP OF FINAL COVER 100 FT GRID
2172	774567.70	1181219.59	1056.79	TOP OF FINAL COVER 100 FT GRID
2173	774567.60	1181319.59	1041.11	TOP OF FINAL COVER 100 FT GRID
2200	773931.49	1180644.25	1082.00	TOP OF FINAL COVER GRADE BREAK

Point Table				
Point #	Northing	Easting	Elevation	Description
2201	774021.10	1180606.48	1082.00	TOP OF FINAL COVER GRADE BREAK
2202	774110.70	1180568.70	1082.00	TOP OF FINAL COVER GRADE BREAK
2203	774190.27	1180542.45	1082.00	TOP OF FINAL COVER GRADE BREAK
2204	774218.95	1180683.41	1082.00	TOP OF FINAL COVER GRADE BREAK
2205	774233.29	1180753.89	1082.00	TOP OF FINAL COVER GRADE BREAK
2206	774266.02	1180859.14	1082.00	TOP OF FINAL COVER GRADE BREAK
2207	774360.83	1180865.33	1082.00	TOP OF FINAL COVER GRADE BREAK
2208	774455.63	1180871.53	1082.00	TOP OF FINAL COVER GRADE BREAK
2209	774550.44	1180877.73	1082.00	TOP OF FINAL COVER GRADE BREAK
2210	774547.54	1180950.12	1082.00	TOP OF FINAL COVER GRADE BREAK
2211	774544.64	1181022.51	1082.00	TOP OF FINAL COVER GRADE BREAK
2212	774518.15	1181130.57	1082.00	TOP OF FINAL COVER GRADE BREAK
2213	774493.51	1181202.83	1082.00	TOP OF FINAL COVER GRADE BREAK
2214	774413.22	1181203.98	1082.00	TOP OF FINAL COVER GRADE BREAK
2215	774355.99	1181256.27	1082.00	TOP OF FINAL COVER GRADE BREAK
2216	774298.77	1181308.55	1082.00	TOP OF FINAL COVER GRADE BREAK
2217	774250.88	1181358.75	1082.00	TOP OF FINAL COVER GRADE BREAK
2218	774174.89	1181410.59	1082.00	TOP OF FINAL COVER GRADE BREAK
2219	774102.63	1181411.38	1082.00	TOP OF FINAL COVER GRADE BREAK
2220	774030.37	1181412.16	1082.00	TOP OF FINAL COVER GRADE BREAK
2221	773958.11	1181412.95	1082.00	TOP OF FINAL COVER GRADE BREAK
2222	773954.31	1181401.79	1082.00	TOP OF FINAL COVER GRADE BREAK
2223	773929.85	1181285.32	1082.00	TOP OF FINAL COVER GRADE BREAK
2224	773903.58	1181159.64	1082.00	TOP OF FINAL COVER GRADE BREAK
2225	773887.66	1180985.02	1082.00	TOP OF FINAL COVER GRADE BREAK

Point Table				
Point #	Northing	Easting	Elevation	Description
2226	773879.70	1180897.72	1082.00	TOP OF FINAL COVER GRADE BREAK
2227	773884.11	1180838.42	1082.00	TOP OF FINAL COVER GRADE BREAK
2228	773907.80	1180741.34	1082.00	TOP OF FINAL COVER GRADE BREAK
2229	773948.54	1180658.77	1083.00	TOP OF FINAL COVER GRADE BREAK
2230	774033.13	1180623.11	1083.00	TOP OF FINAL COVER GRADE BREAK
2231	774117.73	1180587.45	1083.00	TOP OF FINAL COVER GRADE BREAK
2232	774175.16	1180568.50	1083.00	TOP OF FINAL COVER GRADE BREAK
2233	774194.53	1180663.68	1083.00	TOP OF FINAL COVER GRADE BREAK
2234	774213.89	1180758.86	1083.00	TOP OF FINAL COVER GRADE BREAK
2235	774232.45	1180818.53	1083.00	TOP OF FINAL COVER GRADE BREAK
2236	774251.00	1180878.20	1083.00	TOP OF FINAL COVER GRADE BREAK
2237	774343.89	1180884.27	1083.00	TOP OF FINAL COVER GRADE BREAK
2238	774436.78	1180890.34	1083.00	TOP OF FINAL COVER GRADE BREAK
2239	774529.67	1180896.42	1083.00	TOP OF FINAL COVER GRADE BREAK
2240	774524.74	1181019.70	1083.00	TOP OF FINAL COVER GRADE BREAK
2241	774498.94	1181124.95	1083.00	TOP OF FINAL COVER GRADE BREAK
2242	774479.13	1181183.04	1083.00	TOP OF FINAL COVER GRADE BREAK
2243	774405.34	1181184.09	1083.00	TOP OF FINAL COVER GRADE BREAK
2244	774345.05	1181239.17	1083.00	TOP OF FINAL COVER GRADE BREAK
2245	774284.77	1181294.25	1083.00	TOP OF FINAL COVER GRADE BREAK
2246	774237.87	1181343.42	1083.00	TOP OF FINAL COVER GRADE BREAK
2247	774168.62	1181390.66	1083.00	TOP OF FINAL COVER GRADE BREAK
2248	774070.74	1181391.72	1083.00	TOP OF FINAL COVER GRADE BREAK
2249	773972.86	1181392.79	1083.00	TOP OF FINAL COVER GRADE BREAK
2250	773949.43	1181281.22	1083.00	TOP OF FINAL COVER GRADE BREAK

Point Table				
Point #	Northing	Easting	Elevation	Description
2251	773923.40	1181156.68	1083.00	TOP OF FINAL COVER GRADE BREAK
2252	773915.52	1181070.30	1083.00	TOP OF FINAL COVER GRADE BREAK
2253	773907.65	1180983.92	1083.00	TOP OF FINAL COVER GRADE BREAK
2254	773899.77	1180897.55	1083.00	TOP OF FINAL COVER GRADE BREAK
2255	773903.93	1180841.56	1083.00	TOP OF FINAL COVER GRADE BREAK
2256	773926.23	1180750.16	1083.00	TOP OF FINAL COVER GRADE BREAK
2279	774050.80	1180745.88	1123.00	TOP OF FINAL COVER GRADE BREAK
2280	774085.79	1180731.13	1123.00	TOP OF FINAL COVER GRADE BREAK
2281	774097.51	1180788.72	1123.00	TOP OF FINAL COVER GRADE BREAK
2282	774118.64	1180856.66	1123.00	TOP OF FINAL COVER GRADE BREAK
2283	774139.77	1180924.61	1123.00	TOP OF FINAL COVER GRADE BREAK
2284	774160.90	1180992.56	1123.00	TOP OF FINAL COVER GRADE BREAK
2285	774241.91	1180997.86	1123.00	TOP OF FINAL COVER GRADE BREAK
2286	774322.93	1181003.16	1123.00	TOP OF FINAL COVER GRADE BREAK
2287	774403.94	1181008.45	1123.00	TOP OF FINAL COVER GRADE BREAK
2288	774390.25	1181064.30	1123.00	TOP OF FINAL COVER GRADE BREAK
2289	774358.05	1181064.76	1123.00	TOP OF FINAL COVER GRADE BREAK
2290	774290.69	1181126.30	1123.00	TOP OF FINAL COVER GRADE BREAK
2291	774200.78	1181208.44	1123.00	TOP OF FINAL COVER GRADE BREAK
2292	774159.78	1181251.43	1123.00	TOP OF FINAL COVER GRADE BREAK
2293	774131.00	1181271.06	1123.00	TOP OF FINAL COVER GRADE BREAK
2294	774070.05	1181271.72	1123.00	TOP OF FINAL COVER GRADE BREAK
2295	774042.27	1181138.90	1123.00	TOP OF FINAL COVER GRADE BREAK
2296	774027.54	1180977.33	1123.00	TOP OF FINAL COVER GRADE BREAK
2297	774020.18	1180896.54	1123.00	TOP OF FINAL COVER GRADE BREAK

Point Table				
Point #	Northing	Easting	Elevation	Description
2298	774022.86	1180860.36	1123.00	TOP OF FINAL COVER GRADE BREAK
2300	773855.27	1180579.50	1052.00	BOUNDARY
2301	773949.96	1180506.23	1042.07	BOUNDARY
2302	774009.64	1180480.99	1042.00	BOUNDARY
2303	774299.66	1180348.42	1032.00	BOUNDARY
2304	774299.56	1180476.07	1042.45	BOUNDARY
2305	774297.29	1180576.22	1052.00	BOUNDARY
2306	774291.76	1180759.59	1064.00	BOUNDARY
2307	774305.64	1180803.48	1064.00	BOUNDARY
2308	774305.91	1180820.53	1068.29	BOUNDARY
2309	774334.30	1180817.59	1066.69	BOUNDARY
2310	774410.24	1180820.46	1066.00	BOUNDARY
2311	774607.67	1180833.71	1063.52	BOUNDARY
2312	774604.27	1181094.02	1057.00	BOUNDARY
2313	774602.26	1181326.24	1031.00	BOUNDARY
2314	774595.19	1181384.55	1022.00	BOUNDARY
2315	774492.31	1181400.29	1016.00	BOUNDARY
2316	774375.83	1181505.94	1018.00	BOUNDARY
2317	774244.69	1181595.40	1018.00	BOUNDARY
2318	774192.27	1181602.41	1018.00	BOUNDARY
2319	774018.91	1181604.30	1018.00	BOUNDARY
2320	773845.56	1181606.18	1018.00	BOUNDARY
2321	773811.52	1181579.28	1020.00	BOUNDARY
2322	773813.23	1181262.56	1045.50	BOUNDARY
2323	773819.92	1180890.45	1061.63	BOUNDARY

Point Table				
Point #	Northing	Easting	Elevation	Description
2324	773830.09	1180666.28	1052.00	BOUNDARY
2400	773997.11	1180700.15	1102.00	MID SLOPE
2401	773890.58	1180609.42	1066.00	MID SLOPE
2402	774125.56	1180655.76	1105.00	MID SLOPE
2403	774239.73	1180456.64	1060.00	MID SLOPE
2404	774210.46	1180929.66	1101.00	MID SLOPE
2405	774286.29	1180833.40	1073.00	MID SLOPE
2406	774464.27	1180955.28	1104.00	MID SLOPE
2407	774578.47	1180852.51	1073.00	MID SLOPE
2408	774435.99	1181123.65	1103.00	MID SLOPE
2409	774539.92	1181277.18	1057.00	MID SLOPE
2410	774384.06	1181130.39	1101.00	MID SLOPE
2411	774447.51	1181290.50	1053.00	MID SLOPE
2412	774154.51	1181345.81	1098.00	MID SLOPE
2413	774212.70	1181511.90	1047.00	MID SLOPE
2414	774026.31	1181326.20	1105.00	MID SLOPE
2415	773898.16	1181497.61	1054.00	MID SLOPE

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 8123
FLOYD E. COTTER
11/20/15

STERNS CONRAD & SCHMIDT CONSULTING ENGINEERS
CERTIFICATE OF AUTHORIZATION
No. 921
ARKANSAS

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REV.	DATE	DESCRIPTION	CK. BY
2	11/2015	100% SUBMITTAL TO DBA	FEC
1	7/2015	75% SUBMITTAL	FEC
0	5/2015	50% SUBMITTAL	FEC

SHEET TITLE
AREA 1-3 CONSTRUCTION POINT TABLE

PROJECT TITLE
CLOSURE OF INACTIVE NABORS LANDFILLS

CLIENT
ADEQ
ARKANSAS
Department of Environmental Quality

SCS AQUATERRA
7311 W. 130th St. Ste. 100
Overland Park, Kansas 66213
PH. (913) 681-0030 FAX. (913) 681-0012

PROJ. NO.	DWN. BY:	CHK. BY:	QA/QC BY:	PROJ. MGR.
27214218.01	DMB	FEC	DMB	FEC
DSN. BY: DMB				

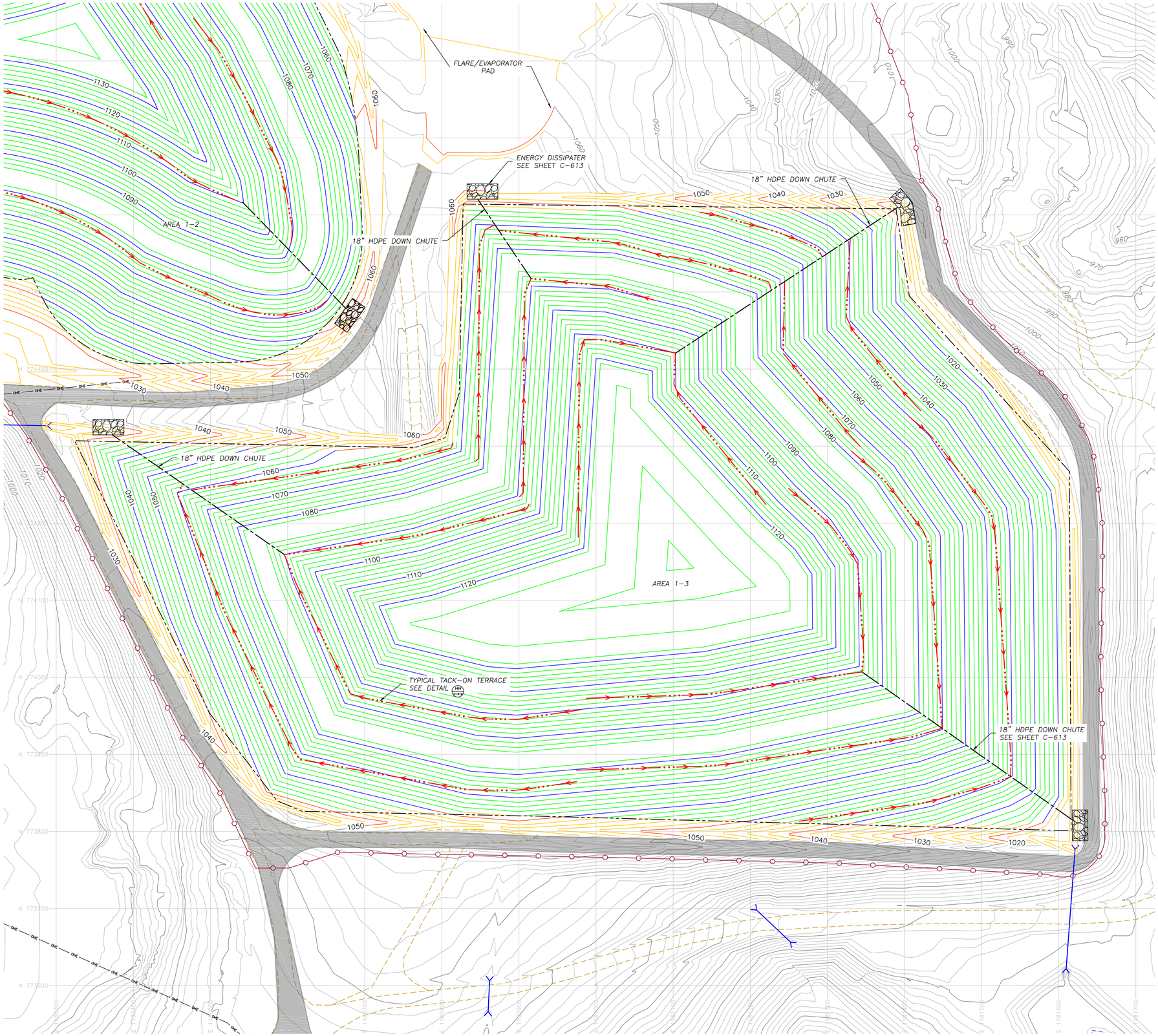
CADD FILE:
C-604 = AREA 1-3 FINAL COVER GRADING PLANS.DWG

DATE:
11/20/15

DRAWING NO.
C-606

\\KAN-FS01\Clients\ADEQ\Projects\27214218.01 - Closure Contract - 2014\Task 2 - Design and Procurement\100% Design Submittal\DWG\C-604 - Area 1-3 Final Cover Grading Plan.dwg Nov 20, 2015 - 11:03am Layout Name: Area 1-3 Construction Point Table By: 3726dmb

\\KAN-FS01\Clients\ADEQ\Projects\272142218.01 - Closure Contract - 2014\Task 2 - Design and Procurement\100% Design Submittal\DWG\C-607 - Area 1-3 Stormwater Control Plan.dwg Nov 20, 2015 - 11:06am Layout Name: Area 1-3 Stormwater Control Plan By: 3726dmb



LEGEND:

- EXISTING 2' MINOR CONTOUR
- EXISTING 10' MAJOR CONTOUR
- 2' TOP OF FINAL COVER CONTOUR
- 10' TOP OF FINAL COVER CONTOUR
- 2' EXTERIOR GRADING CONTOUR
- 10' EXTERIOR GRADING CONTOUR
- FENCE
- HDPE PIPE DOWN CHUTE
- TACK-ON TERRACE
- EXISTING ROAD
- EXISTING OVERHEAD ELECTRIC
- DISPOSAL BOUNDARY (APPROXIMATE)
- EXISTING BODY OF WATER
- IMPROVED PERIMETER ROAD
- EXISTING DRAINAGE PIPE/CULVERT
- EXISTING MONITORING WELL
- EXISTING GAS PROBE
- EXISTING CONTROL POINT

NOTES:

1. EXISTING TOPOGRAPHY BASED ON AERIAL SURVEY PERFORMED BY M.J. HARDEN ASSOCIATES, INC ON AUGUST 17, 2010. UPDATES TO THE TOPOGRAPHY AND SITE FEATURES FOR AREA 1-2, AREA 1-3, AND SOUTH CLASS 4 DISPOSAL UNITS SURVEYED BY CONSOLIDATED LAND SERVICES, INC BETWEEN DECEMBER 2014 AND JANUARY 2015.
2. SURVEY DATA BASED ON THE NAD83 ARKANSAS STATE PLANE NORTH COORDINATE SYSTEM.
3. FINAL COVER CONTOURS REVISED BY SCS AQUATERRA IN JULY 2015.
4. TACK-ON TERRACES TO BE INSTALLED AT A 2% SLOPE TOWARDS THE DESIGNATED HDPE DOWN CHUTE.
5. ENERGY DISSIPATERS TO BE INSTALLED AT OUTLET OF DOWN CHUTES BEFORE DISCHARGING INTO PERIMETER STORMWATER CHANNEL.
6. EXTERIOR GRADING, INCLUDING PERIMETER ROAD REHABILITATION, TO BE CONSTRUCTED IN A MANNER TO PROMOTE POSITIVE DRAINAGE TOWARDS THE APPROPRIATE STORMWATER CONTROLS.
7. TIE IN PERIMETER ROADS TO STORMWATER CHANNEL/EXISTING GRADE AT A MAXIMUM 2:1 SLOPE.

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No.8123 FLOYD E. COTTER
11/20/15

STERNS CONRAD & SCHMIDT CONSULTING ENGINEERS No. 921 CERTIFICATE OF AUTHORIZATION ARKANSAS

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60 0 60 120
SCALE FEET

REV.	DATE	DESCRIPTION	CK. BY
2	11/2015	100% SUBMITTAL TO DBA	FEC
1	7/2015	75% SUBMITTAL	FEC
0	5/2015	50% SUBMITTAL	FEC

SHEET TITLE
AREA 1-3 STORMWATER CONTROL PLAN

PROJECT TITLE
CLOSURE OF INACTIVE NABORS LANDFILLS

CLIENT
ADEQ
ARKANSAS
Department of Environmental Quality

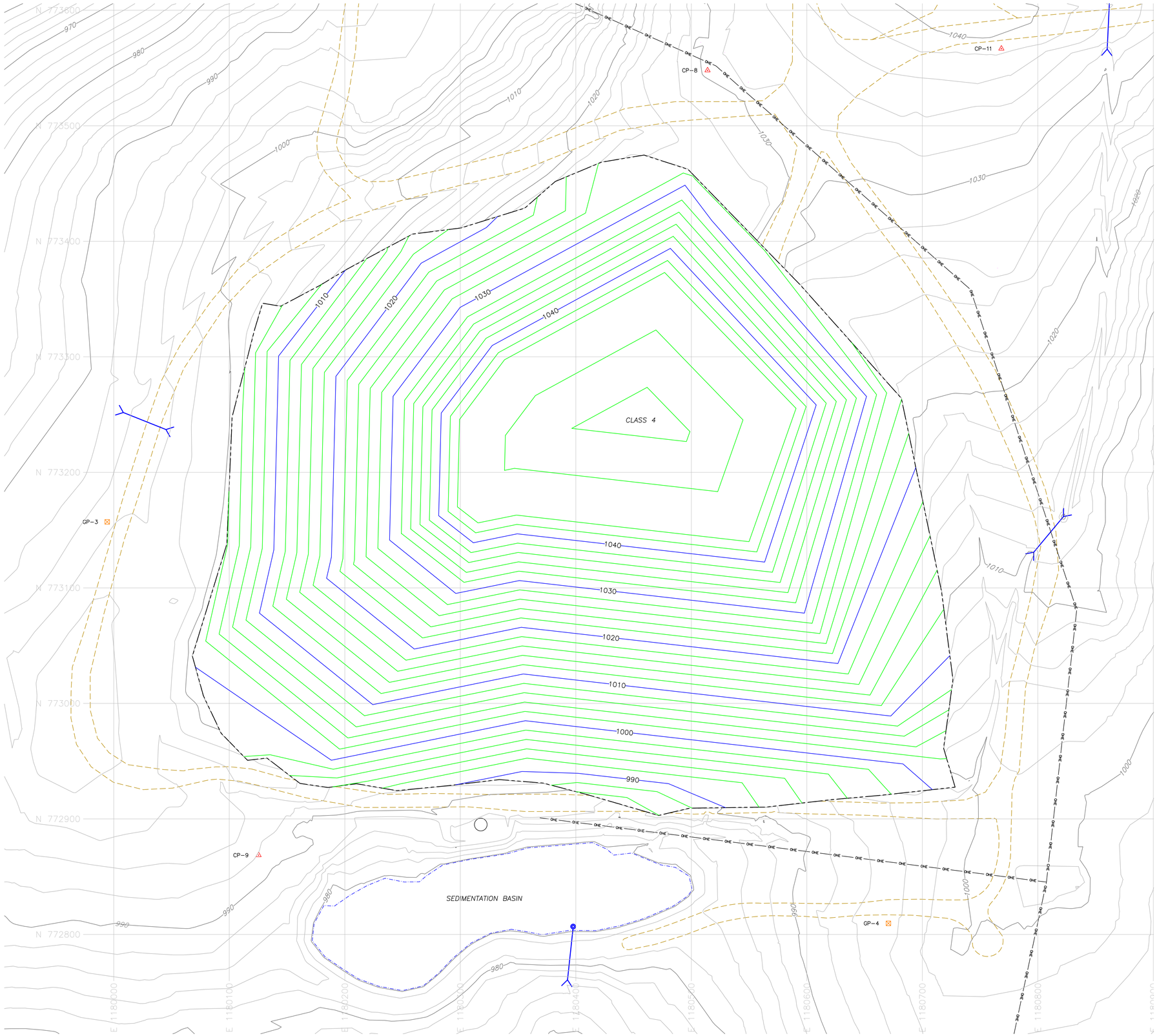
SCS AQUATERRA
7311 W. 130th St. Ste. 100
Overland Park, Kansas 66213
PH. (913) 681-0030 FAX. (913) 681-0012

PROJ. NO. 272142218.01
DSN. BY: DMB
DWN. BY: DMB
CHK. BY: FEC
O/A RVW BY: DMB
PROJ. MGR: FEC

CADD FILE:
C-607 – AREA 1-3 STORMWATER CONTROL PLAN.DWG

DATE:
11/20/15

DRAWING NO.
C-607



LEGEND:

- EXISTING 2' MINOR CONTOUR
- 1000 EXISTING 10' MAJOR CONTOUR
- 2' TOP OF FINAL COVER CONTOUR
- 1000 10' TOP OF FINAL COVER CONTOUR
- FENCE
- EXISTING ROAD
- OHE OHE EXISTING OVERHEAD ELECTRIC
- DISPOSAL BOUNDARY (APPROXIMATE)
- EXISTING BODY OF WATER
- EXISTING DRAINAGE PIPE/CULVERT
- MW-2 EXISTING MONITORING WELL
- GP-2 EXISTING GAS PROBE
- CP-8 EXISTING CONTROL POINT

NOTES:

1. EXISTING TOPOGRAPHY BASED ON AERIAL SURVEY PERFORMED BY M.J. HARDEN ASSOCIATES, INC ON AUGUST 17, 2010. UPDATES TO THE TOPOGRAPHY AND SITE FEATURES FOR AREA 1-2, AREA 1-3, AND SOUTH CLASS 4 DISPOSAL UNITS SURVEYED BY CONSOLIDATED LAND SERVICES, INC BETWEEN DECEMBER 2014 AND JANUARY 2015.
2. SURVEY DATA BASED ON THE NAD83 ARKANSAS STATE PLANE NORTH COORDINATE SYSTEM.
3. FINAL COVER CONTOURS REVISED BY SCS ENGINEERS IN AUGUST 2015.
4. WASTE RELOCATION TO BE PERFORMED PRIOR TO FINAL COVER INSTALLATION OF THE CLASS 4 DISPOSAL UNIT.

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No.8123 FLOYD E. COTTER
11/20/15

STERNS CONRAD & SCHMIDT CONSULTING ENGINEERS No. 921 CERTIFICATE OF AUTHORIZATION ARKANSAS

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40 0 40 80
SCALE FEET

REV.	DATE	DESCRIPTION	CK. BY
2	11/2015	100% SUBMITTAL TO DBA	FEC
1	7/2015	75% SUBMITTAL	FEC
0	5/2015	50% SUBMITTAL	FEC

SHEET TITLE
CLASS 4 FINAL GRADING PLAN

PROJECT TITLE
CLOSURE OF INACTIVE NABORS LANDFILLS

CLIENT
ADEQ
ARKANSAS
Department of Environmental Quality

SCS AQUATERRA
7311 W. 130th St, Ste. 100
Overland Park, Kansas 66213
PH: (913) 681-0030 FAX: (913) 681-0012

PROJ. NO.	DWN. BY:	CHK. BY:	Q/A RVW BY:	PROJ. MGR.
27214218.01	DMB	FEC	DMB	FEC

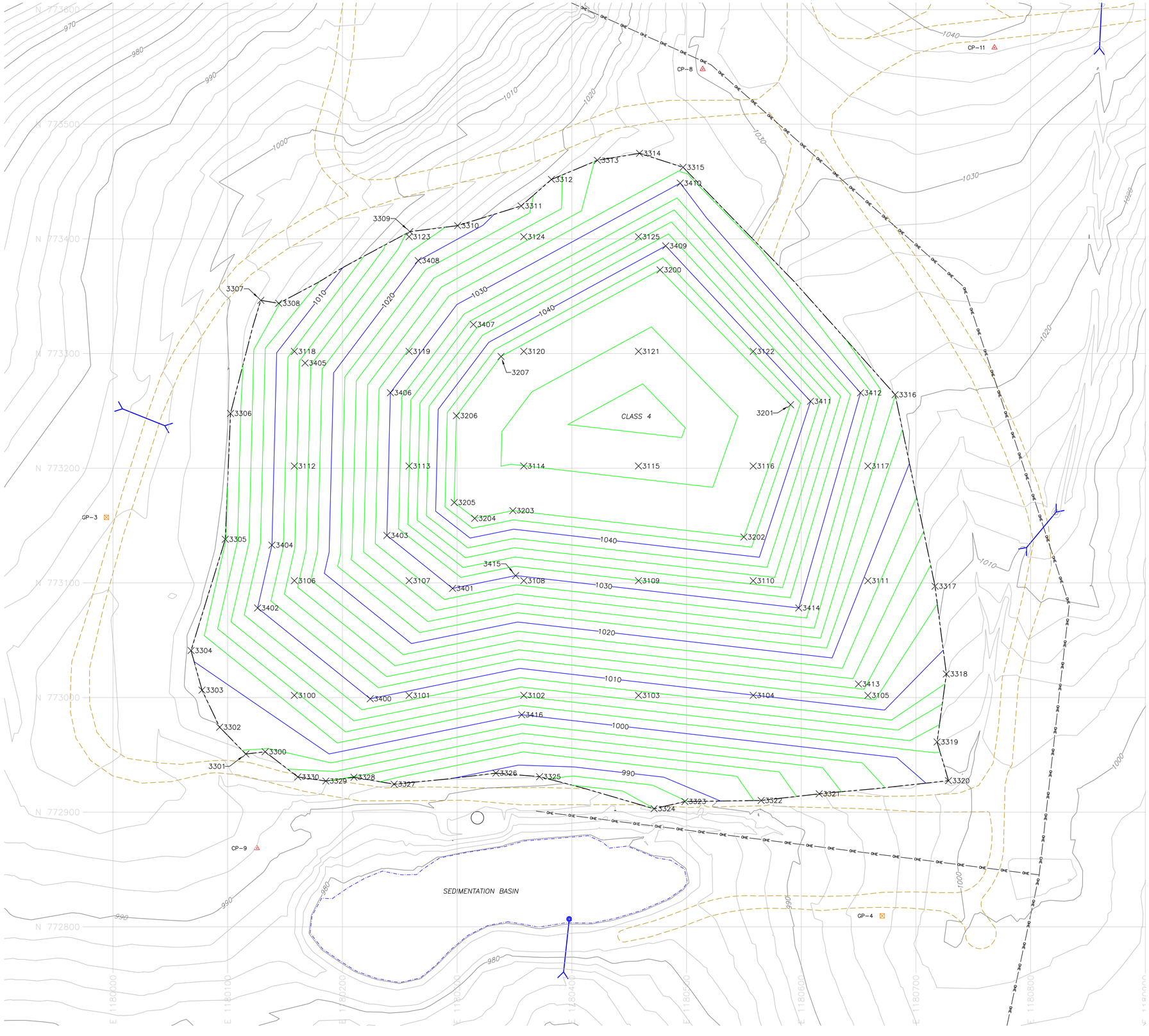
DSN. BY: DMB

CADD FILE:
C-608 - CLASS 4 FINAL GRADING PLAN.DWG

DATE:
11/20/15

DRAWING NO.
C-608

\\KAN-FS01\Clients\ADEQ\Projects\27214218.01 - Closure Contract - 2014\Task 2 - Design and Procurement\100% Design Submittal\DWG\C-608 - Class 4 Final Grading Plan.dwg Nov 20, 2015 - 11:07am Layout Name: Class 4 Final Grading Plan By: 3726dmb



LEGEND:

- EXISTING 2' MINOR CONTOUR
- 1000 EXISTING 10' MAJOR CONTOUR
- 2' TOP OF FINAL COVER CONTOUR
- 1000 10' TOP OF FINAL COVER CONTOUR
- FENCE
- EXISTING ROAD
- OHE OHE EXISTING OVERHEAD ELECTRIC
- DISPOSAL BOUNDARY (APPROXIMATE)
- EXISTING BODY OF WATER
- EXISTING DRAINAGE PIPE/CULVERT
- MW-2 EXISTING MONITORING WELL
- GP-2 EXISTING GAS PROBE
- CP-8 EXISTING CONTROL POINT
- 3121 TOP OF FINAL COVER CONSTRUCTION POINT

NOTES:

1. *EXISTING TOPOGRAPHY BASED ON AERIAL SURVEY PERFORMED BY M.J. HARDEN ASSOCIATES, INC ON AUGUST 17, 2010. UPDATES TO THE TOPOGRAPHY AND SITE FEATURES FOR AREA 1-2, AREA 1-3, AND SOUTH CLASS 4 DISPOSAL UNITS SURVEYED BY CONSOLIDATED LAND SERVICES, INC BETWEEN DECEMBER 2014 AND JANUARY 2015.*
2. *SURVEY DATA BASED ON THE NAD83 ARKANSAS STATE PLANE NORTH COORDINATE SYSTEM.*
3. *FINAL COVER CONTOURS REVISED BY SCS ENGINEERS IN AUGUST 2015.*
4. *WASTE RELOCATION TO BE PERFORMED PRIOR TO FINAL COVER INSTALLATION OF THE CLASS 4 DISPOSAL UNIT.*

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No.8123 FLOYD E. COTTER
11/20/15

STERNS CONRAD & SCHMIDT CONSULTING ENGINEERS No. 921 ARKANSAS CERTIFICATE OF AUTHORIZATION

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40 0 40 80
SCALE FEET

REV.	DATE	DESCRIPTION	CK. BY
2	11/2015	100% SUBMITTAL TO DBA	FEC
1	7/2015	75% SUBMITTAL	FEC
0	5/2015	50% SUBMITTAL	FEC

SHEET TITLE
CLASS 4 CONSTRUCTION POINTS

PROJECT TITLE
CLOSURE OF INACTIVE NABORS LANDFILLS

CLIENT
ADEQ
ARKANSAS
Department of Environmental Quality

SCS AQUATERRA
7311 W. 130th St. Ste. 100
Overland Park, Kansas 66213
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27214218.01	DMB	FEC	DMB

C/A RVW BY:	PROJ. MGR:
DMB	FEC

CADD FILE:
C-608 - CLASS 4 FINAL GRADING PLAN.DWG

DATE:
11/20/15

DRAWING NO.
C-609

\\KAN-FS01\Clients\ADEQ\Projects\27214218.01 - Closure Contract - 2014\Task 2 - Design and Procurement\100% Design Submittal\DWG\C-608 - Class 4 Final Grading Plan.dwg Nov 20, 2015 - 11:08am Layout Name: Class 4 Construction Points By: 3726dmb

\\KAN-FS01\Clients\ADEQ\Projects\27214218.01 - Closure Contract - 2014\Task 2 - Design and Procurement\100% Design Submittal\DWG\C-608 - Class 4 Final Grading Plan.dwg Nov 20, 2015 - 11:08am Layout Name: Class 4 Construction Point Table By: 3726dmb

Point Table				
Point #	Northing	Easting	Elevation	Raw Description
3202	773139.9662	1180549.9650	1044.000	TOP OF FINAL COVER GRADE BREAK
3330	772930.7377	1180161.2050	995.820	BOUNDARY
3101	773001.8650	1180258.1390	1009.033	TOP OF FINAL COVER 100 FT GRID
3205	773170.1150	1180297.5140	1044.000	TOP OF FINAL COVER GRADE BREAK
3103	773001.8650	1180458.1390	1007.090	TOP OF FINAL COVER 100 FT GRID
3207	773297.4261	1180338.2910	1044.000	TOP OF FINAL COVER GRADE BREAK
3100	773001.8650	1180158.1390	1003.465	TOP OF FINAL COVER 100 FT GRID
3102	773001.8650	1180358.1390	1004.249	TOP OF FINAL COVER 100 FT GRID
3104	773001.8650	1180558.1390	1009.930	TOP OF FINAL COVER 100 FT GRID
3105	773001.8650	1180658.1390	1012.771	TOP OF FINAL COVER 100 FT GRID
3106	773101.8650	1180158.1390	1015.198	TOP OF FINAL COVER 100 FT GRID
3107	773101.8650	1180258.1390	1026.901	TOP OF FINAL COVER 100 FT GRID
3108	773101.8650	1180358.1390	1029.087	TOP OF FINAL COVER 100 FT GRID
3300	772952.6855	1180132.6450	996.400	BOUNDARY
3109	773101.8650	1180458.1390	1031.928	TOP OF FINAL COVER 100 FT GRID
3301	772950.7434	1180115.8090	997.890	BOUNDARY
3110	773101.8650	1180558.1390	1034.769	TOP OF FINAL COVER 100 FT GRID
3302	772974.0950	1180093.0050	998.670	BOUNDARY
3111	773101.8650	1180658.1390	1019.415	TOP OF FINAL COVER 100 FT GRID
3303	773006.4535	1180077.6360	999.610	BOUNDARY
3112	773201.8650	1180158.1390	1013.577	TOP OF FINAL COVER 100 FT GRID
3304	773040.9790	1180068.0390	1000.150	BOUNDARY
3113	773201.8650	1180258.1390	1033.963	TOP OF FINAL COVER 100 FT GRID
3305	773138.0064	1180097.8980	1001.770	BOUNDARY
3114	773201.8650	1180358.1390	1045.985	TOP OF FINAL COVER 100 FT GRID
3306	773247.7668	1180102.4470	1002.330	BOUNDARY
3115	773201.8650	1180458.1390	1046.553	TOP OF FINAL COVER 100 FT GRID
3307	773346.3916	1180128.9030	1005.390	BOUNDARY

Point Table				
Point #	Northing	Easting	Elevation	Raw Description
3116	773201.8650	1180558.1390	1044.644	TOP OF FINAL COVER 100 FT GRID
3308	773343.7827	1180144.5000	1005.930	BOUNDARY
3117	773201.8650	1180658.1390	1024.790	TOP OF FINAL COVER 100 FT GRID
3309	773406.2761	1180258.7770	1016.360	BOUNDARY
3118	773301.8650	1180158.1390	1012.290	TOP OF FINAL COVER 100 FT GRID
3310	773411.5208	1180300.4940	1018.570	BOUNDARY
3119	773301.8650	1180258.1390	1028.263	TOP OF FINAL COVER 100 FT GRID
3311	773428.6934	1180355.8170	1021.060	BOUNDARY
3120	773301.8650	1180358.1390	1044.280	TOP OF FINAL COVER 100 FT GRID
3312	773451.7971	1180382.2480	1023.320	BOUNDARY
3121	773301.8650	1180458.1390	1046.672	TOP OF FINAL COVER 100 FT GRID
3313	773468.5202	1180422.2920	1026.190	BOUNDARY
3122	773301.8650	1180558.1390	1041.751	TOP OF FINAL COVER 100 FT GRID
3314	773474.6297	1180459.0640	1027.360	BOUNDARY
3123	773401.8650	1180258.1390	1016.652	TOP OF FINAL COVER 100 FT GRID
3315	773462.4085	1180496.9850	1027.800	BOUNDARY
3124	773401.8650	1180358.1390	1025.158	TOP OF FINAL COVER 100 FT GRID
3316	773264.0812	1180681.8660	1024.050	BOUNDARY
3125	773401.8650	1180458.1390	1035.409	TOP OF FINAL COVER 100 FT GRID
3317	773097.0712	1180716.6060	1012.770	BOUNDARY
3200	773372.9610	1180476.9140	1044.000	TOP OF FINAL COVER GRADE BREAK
3328	772930.4966	1180210.0610	992.370	BOUNDARY
3201	773255.4005	1180590.6920	1044.000	TOP OF FINAL COVER GRADE BREAK
3329	772927.1863	1180185.5630	994.320	BOUNDARY
3203	773162.9941	1180348.6070	1044.000	TOP OF FINAL COVER GRADE BREAK
3204	773156.2254	1180315.3260	1044.000	TOP OF FINAL COVER GRADE BREAK
3206	773245.7866	1180299.3810	1044.000	TOP OF FINAL COVER GRADE BREAK
3318	773020.5787	1180726.4860	1008.970	BOUNDARY

Point Table				
Point #	Northing	Easting	Elevation	Raw Description
3319	772961.2419	1180718.3960	1002.330	BOUNDARY
3320	772927.4725	1180728.3900	1001.100	BOUNDARY
3321	772916.0078	1180615.6330	995.000	BOUNDARY
3322	772910.2316	1180565.0290	992.440	BOUNDARY
3323	772909.3103	1180498.5970	987.860	BOUNDARY
3324	772902.9955	1180471.7460	985.980	BOUNDARY
3325	772930.9843	1180371.9250	988.640	BOUNDARY
3326	772934.0560	1180333.8140	989.150	BOUNDARY
3327	772924.4377	1180245.0560	991.800	BOUNDARY
3400	772998.9175	1180224.2440	1010.000	MID SLOPE
3401	773095.1612	1180296.0620	1030.000	MID SLOPE
3402	773078.1031	1180126.0840	1010.000	MID SLOPE
3403	773141.3640	1180238.7870	1030.000	MID SLOPE
3404	773132.9276	1180138.5490	1010.000	MID SLOPE
3405	773291.7355	1180167.4740	1015.000	MID SLOPE
3406	773265.8244	1180241.8570	1030.000	MID SLOPE
3407	773325.3110	1180314.2270	1035.000	MID SLOPE
3408	773381.0812	1180266.0980	1020.000	MID SLOPE
3409	773393.8777	1180481.8610	1040.000	MID SLOPE
3410	773448.5998	1180494.5150	1030.000	MID SLOPE
3411	773258.3564	1180608.1170	1040.000	MID SLOPE
3412	773265.7460	1180651.6790	1030.000	MID SLOPE
3413	773011.7823	1180649.8900	1015.000	MID SLOPE
3414	773078.1260	1180597.8400	1030.000	MID SLOPE
3415	773106.3478	1180351.0660	1030.000	MID SLOPE
3416	772984.9630	1180356.3360	1000.000	MID SLOPE

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 8123
FLOYD E. COTTER
11/20/15

STERNS CONRAD & SCHMIDT CONSULTING ENGINEERS
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ARKANSAS

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2	11/2015	100% SUBMITTAL TO DBA	FEC
1	7/2015	75% SUBMITTAL	FEC
0	5/2015	50% SUBMITTAL	FEC

SHEET TITLE
CLASS 4 CONSTRUCTION POINT TABLE

PROJECT TITLE
CLOSURE OF INACTIVE NABORS LANDFILLS

CLIENT
ADEQ
ARKANSAS
Department of Environmental Quality

SCS AQUATERRA
7311 W. 130th St. Ste. 100
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PH. (913) 681-0030 FAX. (913) 681-0012

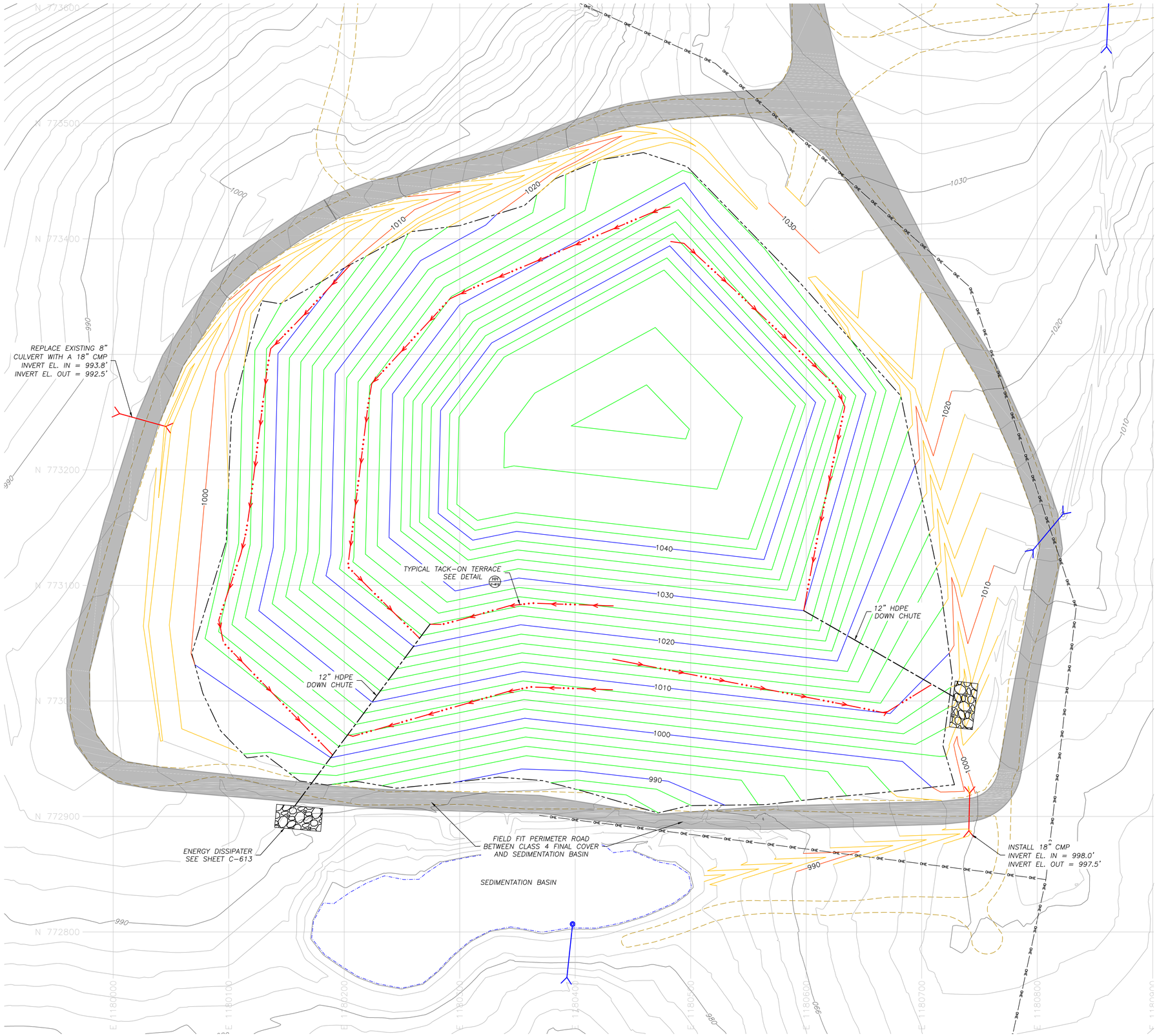
PROJ. NO. 27214218.01 | DWN. BY: DMB | CHK. BY: FEC | DSN. BY: DMB | C/A R/W BY: DMB | PROJ. MGR: FEC

CADD FILE:
C-608 – CLASS 4 FINAL GRADING PLAN.DWG

DATE:
11/20/15

DRAWING NO.
C-610

\\KAN-FS01\Clients\ADEQ\Projects\27214218.01 - Closure Contract - 2014\Task 2 - Design and Procurement\100% Design Submittal\DWG\C-611 - Class 4 SW Control Plan.dwg Nov 20, 2015 - 11:10am Layout Name: Class 4 Stormwater Control Plan By: 3726dmb



LEGEND:

- EXISTING 2' MINOR CONTOUR
- EXISTING 10' MAJOR CONTOUR
- 2' TOP OF FINAL COVER CONTOUR
- 10' TOP OF FINAL COVER CONTOUR
- 2' EXTERIOR GRADING CONTOUR
- 10' EXTERIOR GRADING CONTOUR
- FENCE
- HDPE PIPE DOWN CHUTE
- TACK-ON TERRACE
- EXISTING ROAD
- EXISTING OVERHEAD ELECTRIC
- DISPOSAL BOUNDARY (APPROXIMATE)
- EXISTING BODY OF WATER
- IMPROVED PERIMETER ROAD
- EXISTING DRAINAGE PIPE/CULVERT
- EXISTING MONITORING WELL
- EXISTING GAS PROBE
- EXISTING CONTROL POINT

NOTES:

1. EXISTING TOPOGRAPHY BASED ON AERIAL SURVEY PERFORMED BY M.J. HARDEN ASSOCIATES, INC ON AUGUST 17, 2010. UPDATES TO THE TOPOGRAPHY AND SITE FEATURES FOR AREA 1–2, AREA 1–3, AND SOUTH CLASS 4 DISPOSAL UNITS SURVEYED BY CONSOLIDATED LAND SERVICES, INC BETWEEN DECEMBER 2014 AND JANUARY 2015.
2. SURVEY DATA BASED ON THE NAD83 ARKANSAS STATE PLANE NORTH COORDINATE SYSTEM.
3. FINAL COVER CONTOURS REVISED BY SCS AQUATERRA IN AUGUST 2015.
4. TACK–ON TERRACES TO BE INSTALLED AT A 2% SLOPE TOWARDS THE DESIGNATED HDPE DOWN CHUTE.
5. ENERGY DISSIPATERS TO BE INSTALLED AT OUTLET OF DOWN CHUTES BEFORE DISCHARGING INTO PERIMETER STORMWATER CHANNEL.
6. EXTERIOR GRADING, INCLUDING PERIMETER ROAD REHABILITATION, TO BE CONSTRUCTED IN A MANNER TO PROMOTE POSITIVE DRAINAGE TOWARDS THE APPROPRIATE STORMWATER CONTROLS.
7. TIE IN PERIMETER ROADS TO STORMWATER CHANNEL/EXISTING GRADE AT A MAXIMUM 2:1 SLOPE.

REV.	DATE	DESCRIPTION	CK. BY
2	11/2015	100% SUBMITTAL TO DBA	FEC
1	7/2015	75% SUBMITTAL	FEC
0	5/2015	50% SUBMITTAL	FEC

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No.8123 FLOYD E. COTTER 11/20/15

STERNS CONRAD & SCHMIDT CONSULTING ENGINEERS CERTIFICATE OF AUTHORIZATION No. 921 ARKANSAS

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NOT FOR CONSTRUCTION

40 0 40 80
SCALE FEET

SHEET TITLE
CLASS 4 STORMWATER CONTROL PLAN

PROJECT TITLE
CLOSURE OF INACTIVE NABORS LANDFILLS

CLIENT
ADEQ
ARKANSAS
Department of Environmental Quality

SCS AQUATERRA
7311 W. 130th St, Ste. 100
Overland Park, Kansas 66213
PH: (913) 681-0030 FAX: (913) 681-0012

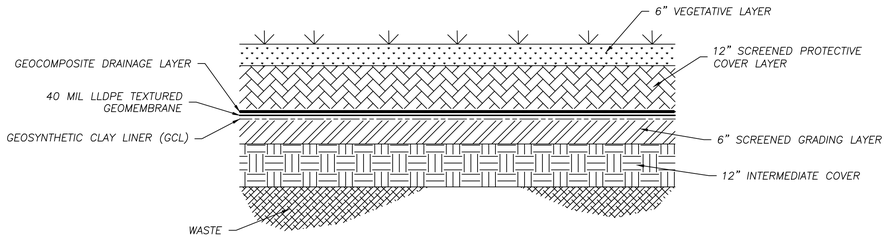
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27214218.01	DMB	FEC	DMB

Q/A REVIEW BY:	
DMB	FEC
PROJ. MGR.	

CADD FILE:
C-611 – CLASS 4 SW CONTROL PLAN.DWG

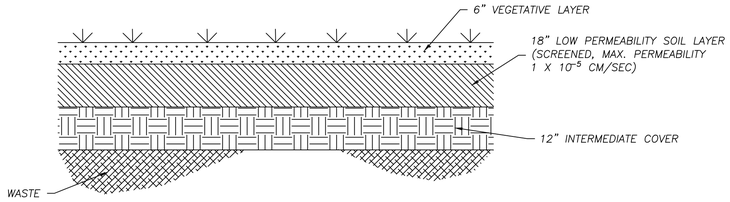
DATE:
11/20/15

DRAWING NO.
C-611



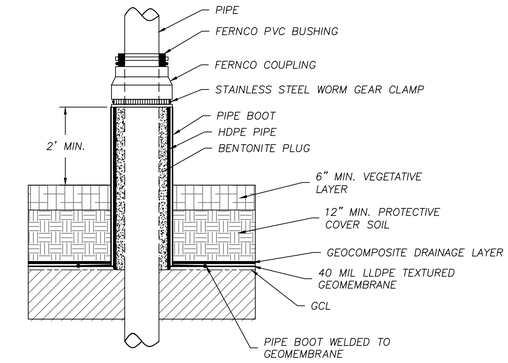
CC - CLASS 1 COMPOSITE FINAL COVER CROSS SECTION

NOT TO SCALE



DD - CLASS 4 COMPOSITE FINAL COVER CROSS SECTION

NOT TO SCALE

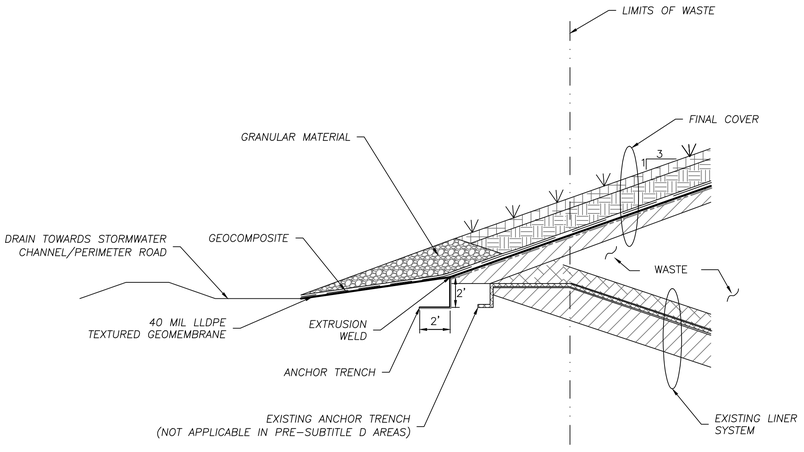


EE - TYPICAL PIPE BOOT DETAIL (CLASS 1)

NOT TO SCALE

NOTES:

1. PIPE BOOTS TO BE INSTALLED ON VERTICAL GAS EXTRACTION WELLS AND LEACHATE INJECTION PORTS.

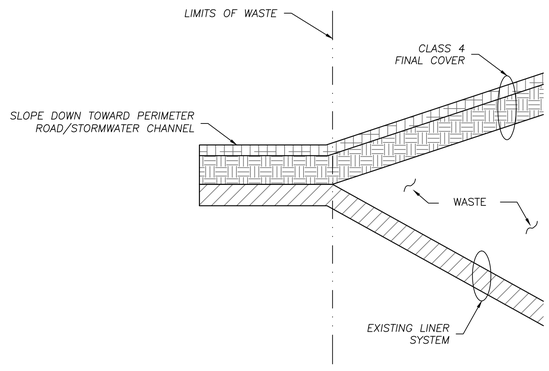


NOTES:

1. 40 MIL LLDPE TEXTURED GEOMEMBRANE AND GEOCOMPOSITE FLAP TO COVER ANCHOR TRENCH AND DRAIN INTO STORMWATER CHANNEL.
2. LENGTH OF GRANULAR MATERIAL VARIES BASED ON LOCATION OF STORMWATER CHANNEL.

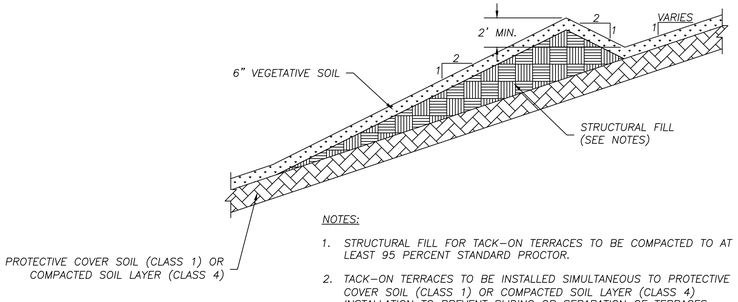
FF - TYPICAL EDGE OF WASTE (CLASS 1)

NOT TO SCALE



GG - TYPICAL EDGE OF WASTE (CLASS 4)

NOT TO SCALE



NOTES:

1. STRUCTURAL FILL FOR TACK-ON TERRACES TO BE COMPACTED TO AT LEAST 95 PERCENT STANDARD PROCTOR.
2. TACK-ON TERRACES TO BE INSTALLED SIMULTANEOUS TO PROTECTIVE COVER SOIL (CLASS 1) OR COMPACTED SOIL LAYER (CLASS 4) INSTALLATION TO PREVENT SLIDING OR SEPARATION OF TERRACES.

HH - C-603 TYPICAL TACK-ON TERRACE

NOT TO SCALE

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No.8123 FLOYD E. COTTER 11/20/15

STERNS CONRAD & SCHMIDT CONSULTING ENGINEERS No. 021 CERTIFICATE OF AUTHORIZATION ARKANSAS

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2	11/2015	100% SUBMITTAL TO DBA	FEC
1	7/2015	75% SUBMITTAL	FEC
0	5/2015	50% SUBMITTAL	FEC

SHEET TITLE: **FINAL COVER DETAILS 1**

PROJECT TITLE: **CLOSURE OF INACTIVE NABORS LANDFILLS**

CLIENT: ADEQ ARKANSAS Department of Environmental Quality

SCS AQUATERRA
7311 W. 130th St. Ste. 100
Overland Park, Kansas 66213
PH. (913) 681-0030 FAX. (913) 681-0012

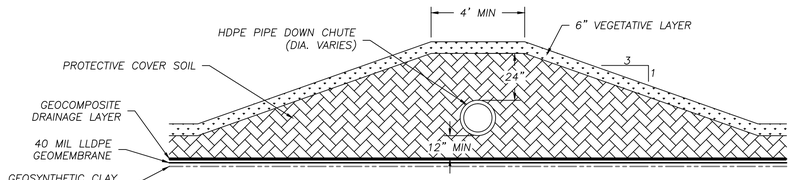
PROJ. NO.	DWN. BY:	CHK. BY:	QA/QC BY:	PROJ. MGR.
27214218.01	DMB	FEC	DMB	FEC
DSN. BY: DMB				

CADD FILE: C-612 - FINAL COVER DETAILS.DWG

DATE: 11/20/15

DRAWING NO. **C-612**

\\KAN-FS01\Clients\ADEQ\Projects\27214218.01 - Closure Contract - 2014\Task 2 - Design and Procurement\100% Design Submittal\DWG\C-612 - Final Cover Details.dwg Nov 20, 2015 - 11:11am Layout Name: Final Cover Details 1 By: 37266mb

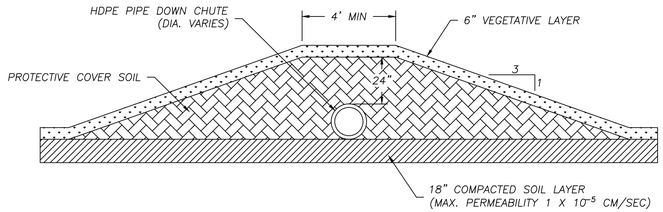


II - CLASS 1 HDPE PIPE DOWN CHUTE CROSS SECTION

NOT TO SCALE

NOTE:

1. ALL PORTIONS OF HDPE PIPE DOWN CHUTE TO BE COVERED WITH A 6" MIN. PROTECTIVE COVER SOIL AND 6" MIN. VEGETATIVE SOIL.

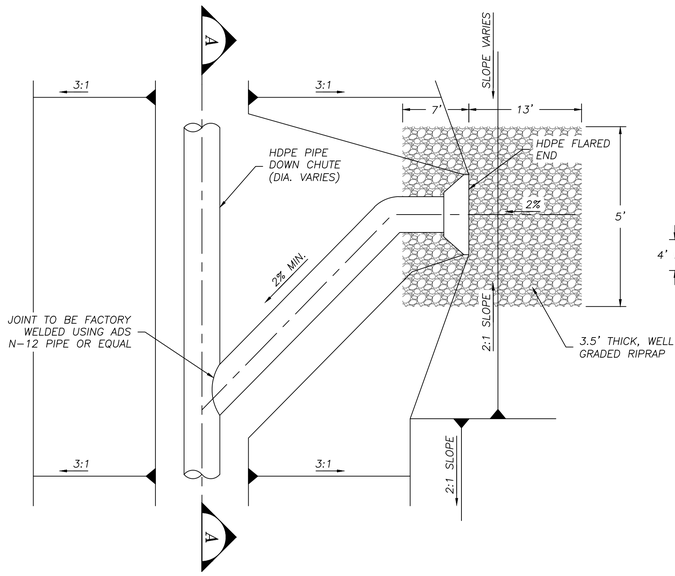


JJ - CLASS 4 HDPE PIPE DOWN CHUTE CROSS SECTION

NOT TO SCALE

NOTE:

1. ALL PORTIONS OF HDPE PIPE DOWN CHUTE TO BE COVERED WITH A 6" MIN. PROTECTIVE COVER SOIL AND 6" MIN. VEGETATIVE SOIL.

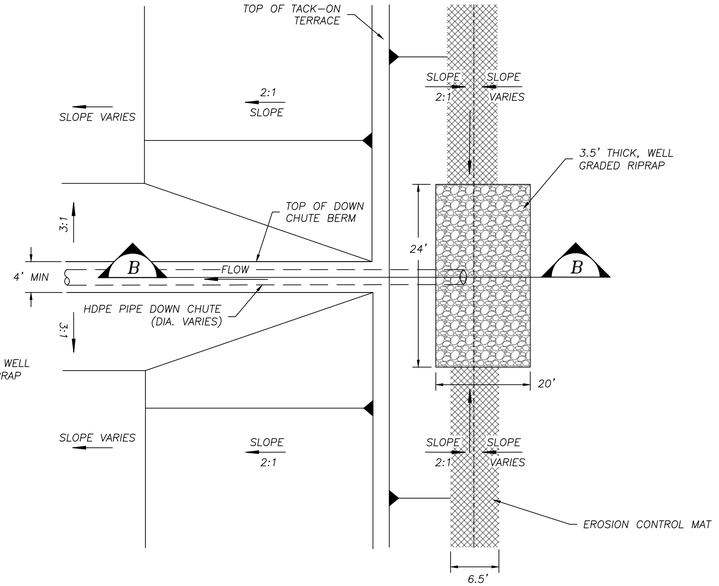


KK - TERRACE INLET - PLAN VIEW

NOT TO SCALE

NOTES:

1. ALL PORTIONS OF HDPE PIPE DOWN CHUTE TO BE COVERED WITH A 6" MIN. PROTECTIVE COVER SOIL AND 6" MIN. VEGETATIVE SOIL.

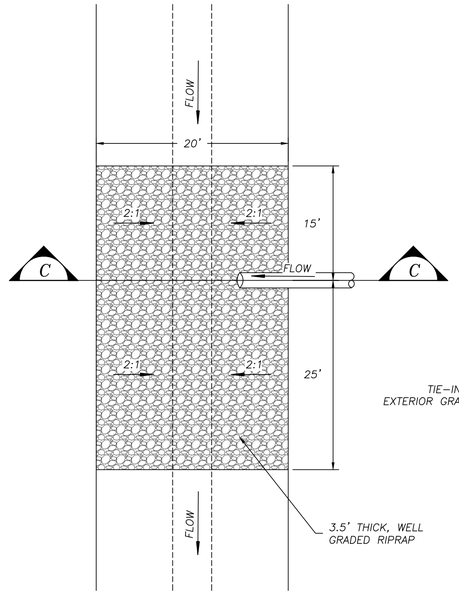


LL - DOWN CHUTE INLET - PLAN VIEW

NOT TO SCALE

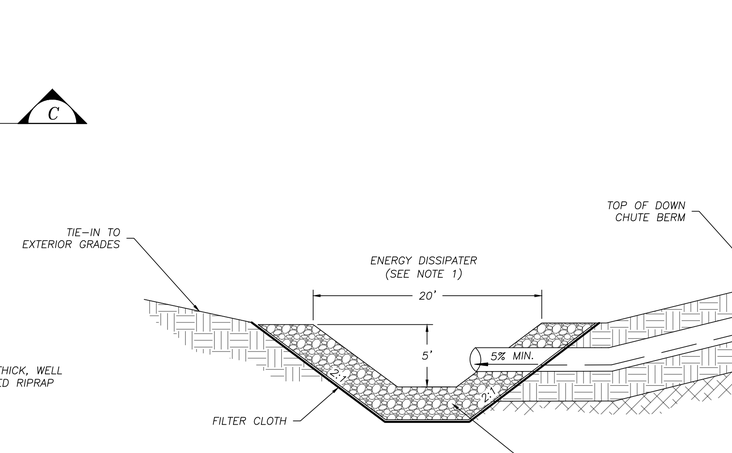
NOTES:

1. ALL PORTIONS OF HDPE PIPE DOWN CHUTE TO BE COVERED WITH A 6" MIN. PROTECTIVE COVER SOIL AND 6" MIN. VEGETATIVE SOIL.
2. EROSION MAT TO BE LANDLOK 450 EROSION CONTROL MAT OR APPROVED EQUIVALENT.



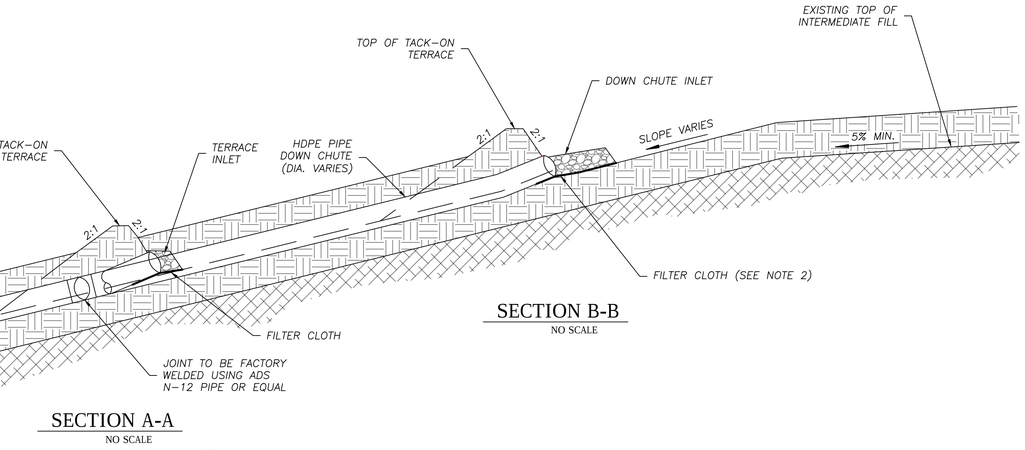
MM - ENERGY DISSIPATER

NOT TO SCALE



SECTION C-C

NO SCALE



SECTION A-A

NO SCALE

SECTION B-B

NO SCALE

NN - ELEVATION VIEW DRAINAGE PIPE FLUME (LETDOWN)

NOT TO SCALE

NOTES:

1. FIELD FIT ENERGY DISSIPATER INTO PERIMETER STORMWATER CHANNEL TO MAINTAIN POSITIVE DRAINAGE.
2. INSTALL FILTER CLOTH UNDER ALL RIPRAP. THE FILTER CLOTH UNDER THE RIPRAP SHALL BE A 602 NON-WOVEN GEOTEXTILE OF POLYPROPYLENE FIBERS WHICH ARE INTENDED TO BE AND SHALL BE SUITABLE FOR FILTRATION, SEPARATION AND DRAINAGE. GEOTEXTILE SHALL BE TG600, GEOTEX 651, OR APPROVED EQUAL.
3. PROVIDE PROTECTIVE CMP CASING FOR PIPE DOWN CHUTES INSTALLED BENEATH PERIMETER ROADS.

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No.8123 FLOYD E. COTTER
11/20/15

STERNS CONRAD & SCHMIDT CONSULTING ENGINEERS CERTIFICATE OF AUTHORIZATION No. 921 ARKANSAS

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REV.	DATE	DESCRIPTION	CK. BY
2	11/2015	100% SUBMITTAL TO DBA	FEC
1	7/2015	75% SUBMITTAL	FEC
0	5/2015	50% SUBMITTAL	FEC

SHEET TITLE: **FINAL COVER DETAILS 2**

PROJECT TITLE: **CLOSURE OF INACTIVE NABORS LANDFILLS**

CLIENT: ADEQ ARKANSAS Department of Environmental Quality

SCS AQUATERRA
7311 W. 130th St, Ste. 100
Overland Park, Kansas 66213
PH. (913) 681-0030 FAX. (913) 681-0012

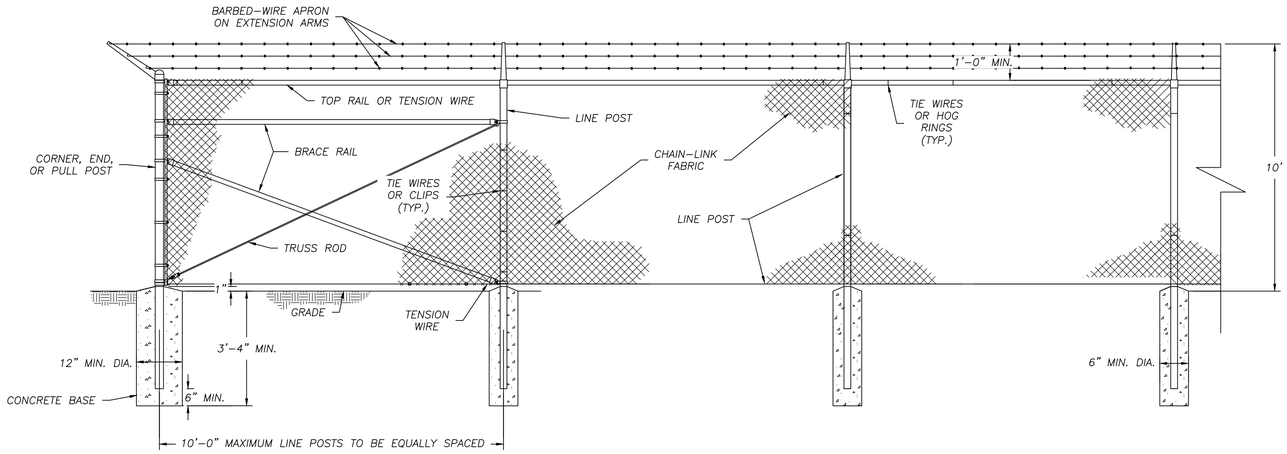
PROJ. NO. 27214218.01 | DWN. BY: DMB | CHK. BY: FEC | Q/A RVW BY: DMB | PROJ. MGR. FEC | DSN. BY: DMB

CADD FILE: C-612 - FINAL COVER DETAILS.DWG

DATE: 11/20/15

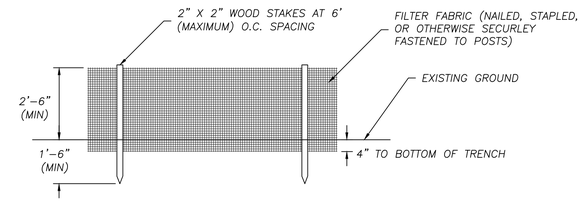
DRAWING NO. **C-613**

\\KAN-FS01\Clients\ADEQ\Projects\27214218.01 - Closure Contract - 2014\Task 2 - Design and Procurement\100% Design Submittal\DWG\C-612 - Final Cover Details.dwg Nov 20, 2015 - 11:11am Layout Name: Final Cover Details 2 By: 37266mb



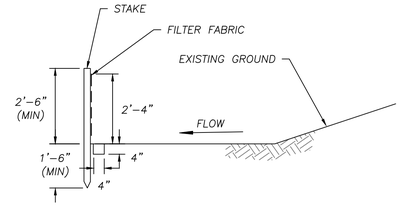
OO - TYPICAL PERIMETER FENCE DETAIL

NOT TO SCALE



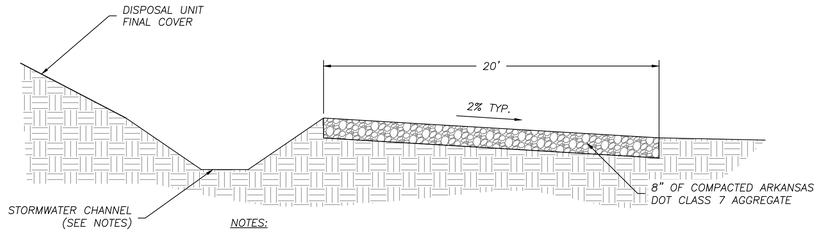
PP - TYPICAL SILT FENCE - ELEVATION VIEW

NOT TO SCALE



QQ - TYPICAL SILT FENCE - PROFILE VIEW

NOT TO SCALE

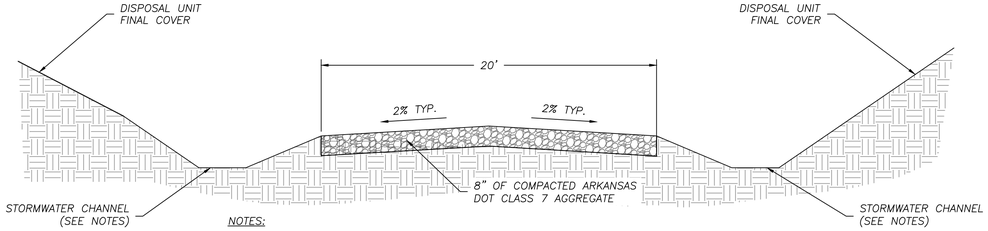


NOTES:

1. SLOPE ROADS AWAY FROM DISPOSAL UNITS.
2. STRUCTURAL FILL PLACED FOR ROAD CONSTRUCTION TO BE COMPACTED TO A MINIMUM 95 PERCENT STANDARD PROCTOR.
3. LOCATION OF STORMWATER CHANNEL RELATIVE TO PERIMETER ROAD MAY VARY DEPENDING ON SITE DRAINAGE STRUCTURES.
4. FIELD FIT PERIMETER ROADS TO PROMOTE POSITIVE DRAINAGE TOWARDS STORMWATER CHANNELS/SEDIMENTATION BASINS.
5. TIE IN EDGE OF ROAD TO STORMWATER CHANNEL/EXISTING GRADE WITH A MAXIMUM 2:1 SLOPE.

RR - TYPICAL ROAD DETAIL

NOT TO SCALE



NOTES:

1. ALTERNATE ROAD DETAIL TO BE USED FOR ROADS BETWEEN AREA 1–2 AND AREA 1–3.
2. STRUCTURAL FILL PLACED FOR ROAD CONSTRUCTION TO BE COMPACTED TO A MINIMUM 95 PERCENT STANDARD PROCTOR.
3. LOCATION OF STORMWATER CHANNEL RELATIVE TO PERIMETER ROAD MAY VARY DEPENDING ON SITE DRAINAGE STRUCTURES.
4. FIELD FIT PERIMETER ROADS TO PROMOTE POSITIVE DRAINAGE TOWARDS STORMWATER CHANNELS/SEDIMENTATION BASINS.
5. TIE IN EDGE OF ROAD TO STORMWATER CHANNEL/EXISTING GRADE WITH A MAXIMUM 2:1 SLOPE.

SS - ALTERNATE TYPICAL ROAD DETAIL

NOT TO SCALE

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No.8123 FLOYD E. COTTER
11/20/15

STERNS CONRAD & SCHMIDT CONSULTING ENGINEERS CERTIFICATE OF AUTHORIZATION No. 021 ARKANSAS

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REV.	DATE	DESCRIPTION	CK. BY
2	11/2015	100% SUBMITTAL TO DBA	FEC
1	7/2015	75% SUBMITTAL	FEC
0	5/2015	50% SUBMITTAL	FEC

SHEET TITLE
FACILITY IMPROVEMENT DETAILS

PROJECT TITLE
CLOSURE OF INACTIVE NABORS LANDFILLS

CLIENT
ADEQ
ARKANSAS
Department of Environmental Quality

SCS AQUATERRA
7311 W. 130th St. Ste. 100
Overland Park, Kansas 66213
PH. (913) 681-0030 FAX. (913) 681-0012

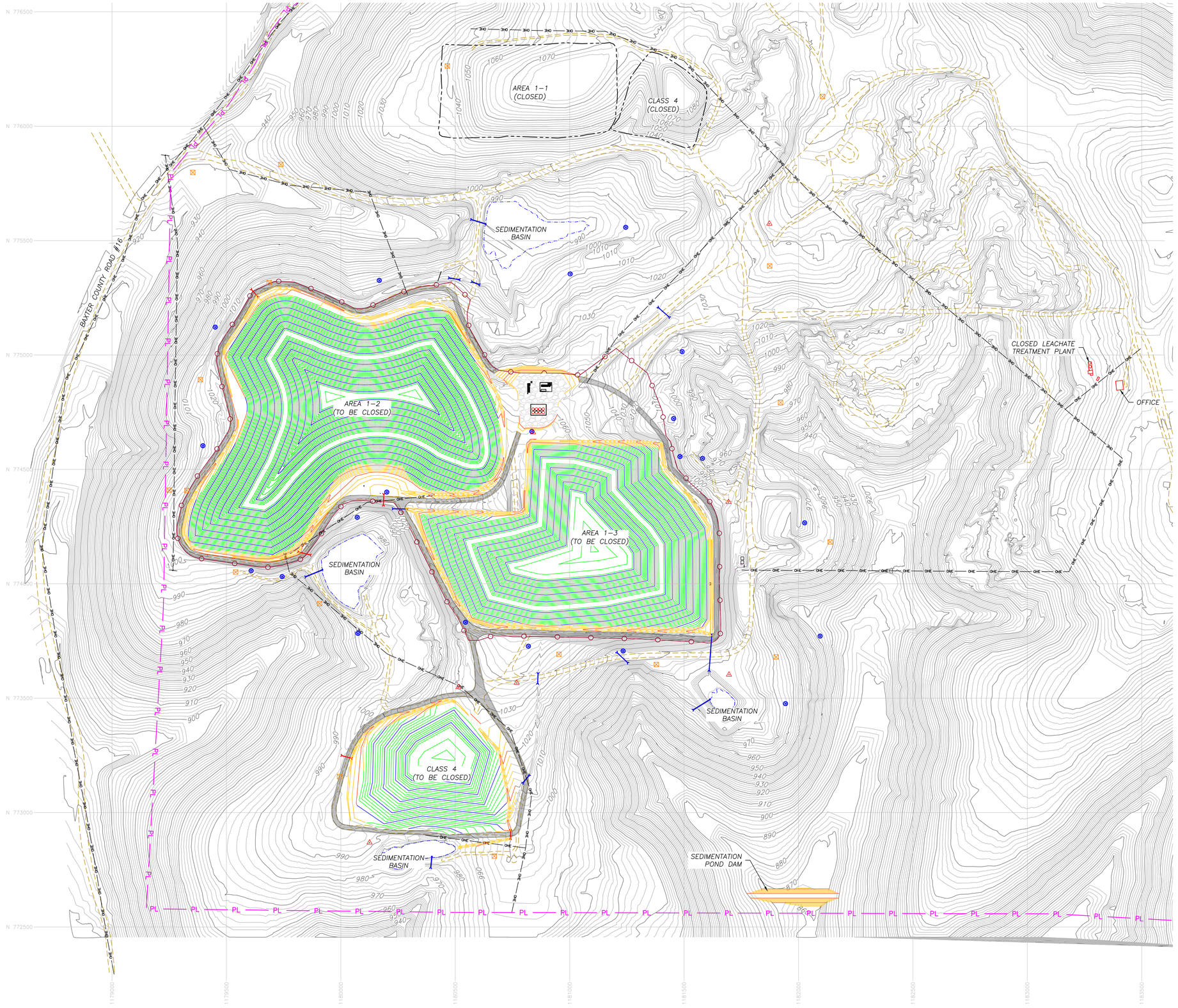
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27214218.01	DMB	DMB
DSN. BY:	CHK. BY:	PROJ. MGR.
DMB	FEC	FEC

CADD FILE:
C-612 – FINAL COVER DETAILS.DWG

DATE:
11/20/15

DRAWING NO.
C-614

\\KAN-FS01\Clients\ADEQ\Projects\27214218.01 - Closure Contract - 2014\Task 2 - Design and Procurement\100% Design Submittal\DWG\C-612 - Final Cover Details.dwg Nov 20, 2015 - 11:12am Layout Name: Facility Improvement Details By: 3726dmb



LEGEND:

- EXISTING 2' MINOR CONTOUR
- 1025 EXISTING 10' MAJOR CONTOUR
- 2' TOP OF FINAL COVER CONTOUR
- 10' TOP OF FINAL COVER CONTOUR
- 2' EXTERIOR GRADING CONTOUR
- 10' EXTERIOR GRADING CONTOUR
- FENCE
- PL PROPERTY BOUNDARY (APPROX.)
- EXISTING ROAD
- OHE OHE EXISTING OVERHEAD ELECTRIC
- DISPOSAL BOUNDARY (APPROXIMATE)
- EXISTING BODY OF WATER
- IMPROVED PERIMETER ROAD
- EXISTING DRAINAGE PIPE/CULVERT
- EXISTING MONITORING WELL
- EXISTING GAS PROBE
- EXISTING CONTROL POINT

NOTES:

1. EXISTING TOPOGRAPHY BASED ON AERIAL SURVEY PERFORMED BY M.J. HARDEN ASSOCIATES, INC ON AUGUST 17, 2010. UPDATES TO THE TOPOGRAPHY AND SITE FEATURES FOR AREA 1-2, AREA 1-3, AND SOUTH CLASS 4 DISPOSAL UNITS SURVEYED BY CONSOLIDATED LAND SERVICES, INC BETWEEN DECEMBER 2014 AND JANUARY 2015.
2. SURVEY DATA BASED ON THE NAD83 ARKANSAS STATE PLANE NORTH COORDINATE SYSTEM.
3. PERIMETER ROADS FOR THE DISPOSAL UNITS BEING CLOSED TO BE REGRADED AND FINISHED WITH AN ARKANSAS DEPARTMENT OF TRANSPORTATION AGGREGATE FOR COUNTY ROADS.
4. PROTECT EXISTING MONITORING WELLS, GAS PROBES, AND CONTROL POINTS WHILE PERFORMING CONSTRUCTION ACTIVITIES.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No.8123
FLOYD E. COTTER
11/20/15

CERTIFICATE OF AUTHORIZATION
STERNS CONRAD & SCHMIDT CONSULTING ENGINEERS
No. 921
ARKANSAS

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SCALE FEET

REV.	DATE	DESCRIPTION	CK. BY
2	11/2015	100% SUBMITTAL TO DBA	FEC
1	7/2015	75% SUBMITTAL	FEC
0	5/2015	50% SUBMITTAL	FEC

SHEET TITLE
FACILITY IMPROVEMENTS OVERVIEW

PROJECT TITLE
CLOSURE OF INACTIVE NABORS LANDFILLS

CLIENT
ADEQ
ARKANSAS
Department of Environmental Quality

SCS AQUATERRA
7311 W. 130th St, Ste. 100
Overland Park, Kansas 66213
PH. (913) 681-0030 FAX. (913) 681-0012

PROJ. NO.	DWN. BY:	Q/A R/W BY:
27214218.01	DMB	DMB
DSN. BY:	CHK. BY:	PROJ. MGR.
DMB	FEC	FEC

CADD FILE:
C-700 – FACILITY IMPROVEMENTS.DWG

DATE:
11/20/15

DRAWING NO.
C-700

\\KAN-FS01\Clients\ADEQ\Projects\27214218.01 - Closure Contract - 2014\Task 2 - Design and Procurement\100% Design Submittal\DWG\C-700 - Facility Improvements.dwg Nov 20, 2015 - 11:18am Layout Name: Facility Improvements Overview By: 3726dmb