

CLOSURE OF INACTIVE NABORS LANDFILL

NABORS LANDFILL

1320 RLH LANDFILL ROAD
MOUNTAIN HOME, AR 72653

Solid Waste Permit No. 0249-S4 and 0249-S1-R2
ABA Contract No. 4600033394
May 2015

PREPARED FOR



5301 NORTSHORE DRIVE
NORTH LITTLE ROCK, AR 72118

DRAWING INDEX

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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

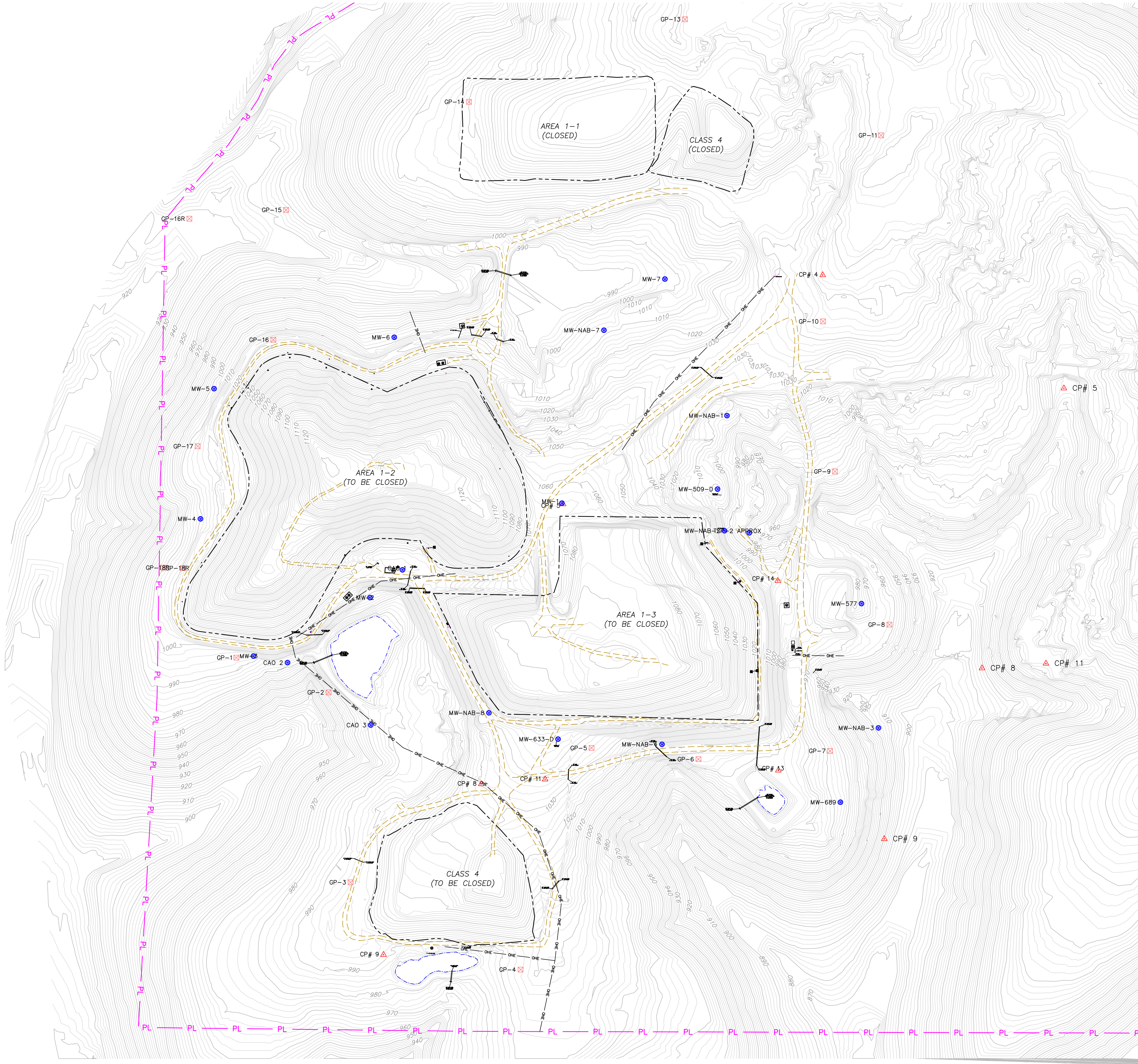
FOR BIDDING PURPOSES ONLY
NOT FOR CONSTRUCTION

50% Submittal

T-100

\\KAN-FS01\Clients\ADEQ\Projects\27214218.01 - Closure Contract - 2014\Task 2 - Design and Procurement\50% Design Submittal\DWG\Site Layout.dwg May 04, 2015 - 8:16pm Layout Name: Site Layout By: 3726dmb

50% Submittal

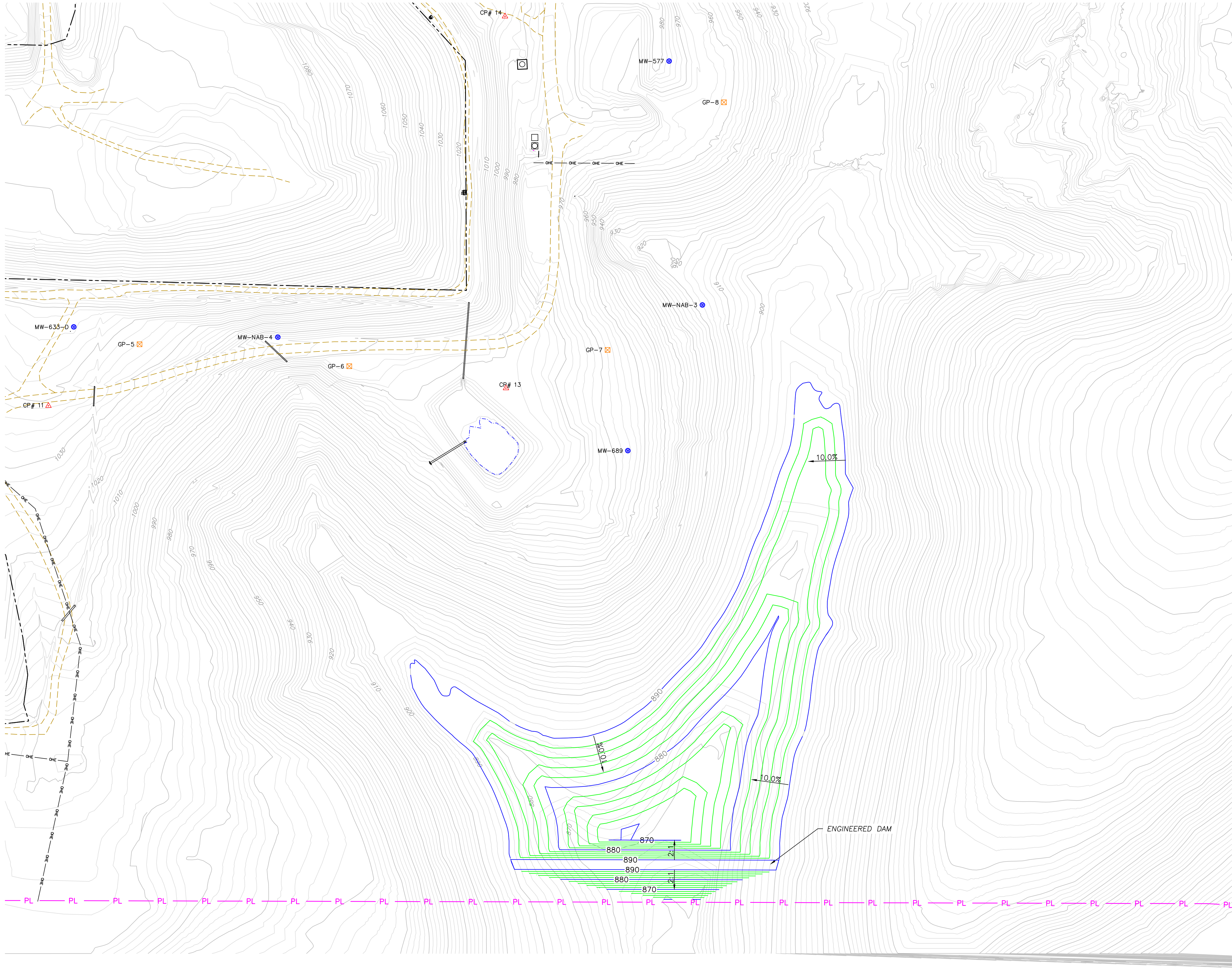


- LEGEND:**
- EXISTING 5' MINOR CONTOUR
 - EXISTING 25' MAJOR CONTOUR
 - PL PROPERTY BOUNDARY (APPROX.)
 - EXISTING ROAD
 - EXISTING OVERHEAD ELECTRIC
 - DISPOSAL BOUNDARY (APPROXIMATE)
 - EXISTING BODY OF WATER
 - MW-2 EXISTING MONITORING WELL
 - GP-16 EXISTING GAS PROBE
 - CP# 5 EXISTING CONTROL POINT

- NOTES:**
- 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.
 - SURVEY DATA BASED ON THE NAD83 ARKANSAS STATE PLANE NORTH COORDINATE SYSTEM.
 - MAJOR CLOSURE ACTIVITIES INCLUDE WASTE RELOCATION, LEACHATE FORCEMAIN INSTALLATION, CENTRALIZED TANK FARM CONSTRUCTION, GAS COLLECTION AND CONTROL SYSTEM INSTALLATION, AND FINAL COVER CONSTRUCTION.

CK BY	DESCRIPTION	REV.	DATE	SHEET TITLE		FEC
				SITE LAYOUT		
FEC	50% SUBMITTAL	0	5/2015	PROJECT TITLE		
				CLOSURE OF INACTIVE NABORS LANDFILL		
CLIENT						
SCS AQUATERRA						
7311 W. 130th St. Ste. 100						
Overland Park, Kansas 66213						
PH. (913) 681-0030 FAX. (913) 681-0012						
CADD FILE:						
SITE LAYOUT.DWG						
DATE:						
5/4/15						
DRAWING NO.						
C-100						
PROJ. NO. 14218.01						
DWN. BY: DMB						
G/A R/W BY: DMB						
TOSN. BY: DMB						
CHK. BY: FEC						
PRG. MGR. FEC						
A R K A N S A S						
Department of Environmental Quality						

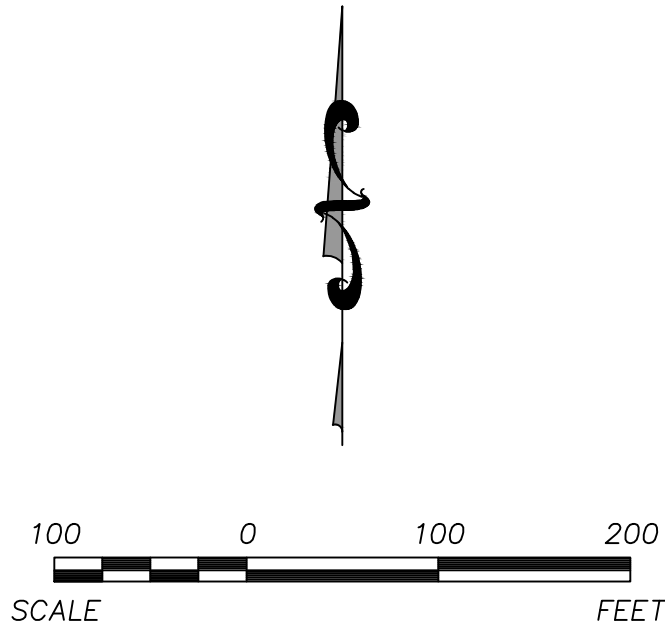
\\KAN-FS01\Clients\ADEQ\Projects\27214218.01 - Closure Contract - 2014\Task 2 - Design and Procurement\Sedimentation Pond Design\C-200 - Sedimentation Pond Grading Plan.dwg May 04, 2015 - 8:09pm Layout Name: Proposed Sedimentation Pond Grading Plan By: 3726dmb



- LEGEND:**
- EXISTING 2' MINOR CONTOUR
 - EXISTING 10' MAJOR CONTOUR
 - PROPOSED 2' TOP OF FINAL COVER CONTOUR
 - PROPOSED 10' TOP OF FINAL COVER CONTOUR
 - EXISTING ROAD
 - EXISTING OVERHEAD ELECTRIC
 - DISPOSAL BOUNDARY (APPROXIMATE)
 - EXISTING BODY OF WATER
 - EXISTING MONITORING WELL
 - EXISTING GAS PROBE
 - EXISTING CONTROL POINT

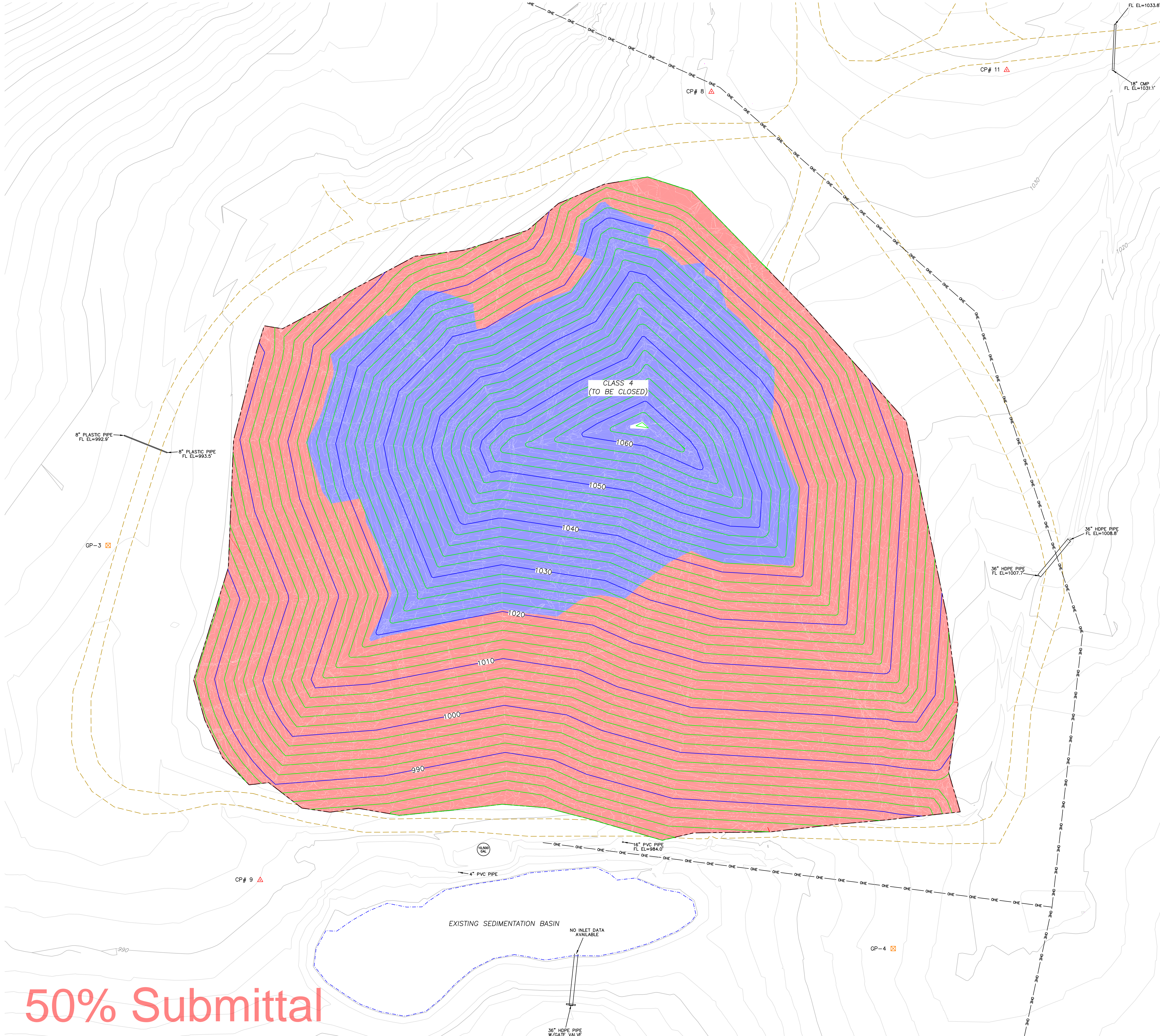
- NOTES:**
- EXISTING TOPOGRAPHY BASED ON AERIAL SURVEY PERFORMED BY M.J. HARDEN ASSOCIATES, INC ON AUGUST 17, 2010. UPDATES TO THE TOPOGRAPHY AND SITE FEATURES FOR AREA 1-2, AREA 1-3, AND SOUTH CLASS 4 DISPOSAL UNITS SURVEYED BY CONSOLIDATED LAND SERVICES, INC BETWEEN DECEMBER 2014 AND JANUARY 2015.
 - SURVEY DATA BASED ON THE NAD83 ARKANSAS STATE PLANE NORTH COORDINATE SYSTEM.
 - SEDIMENTATION BASIN TO BE CONSTRUCTED PRIOR TO EARTHWORK.

50% Submittal



CLIENT	SCS AQUATERRA 7311 W. 130th St. Ste. 100 Overland Park, Kansas 66213 PH: (913) 681-0030 FAX: (913) 681-0012		DWN. BY: DMB	CHK. BY: DMB	Q/A R/W BY: DMB	PROJ. MGR BY: DMB
	CADD FILE: C-200 - SEDIMENTATION POND GRADING PLAN.DWG		DWN. BY: DMB	CHK. BY: DMB	Q/A R/W BY: DMB	PROJ. MGR BY: DMB
	DATE: 5/4/15		DWN. BY: DMB	CHK. BY: DMB	Q/A R/W BY: DMB	PROJ. MGR BY: DMB
DRAWING NO.		C-200		50% SUBMITTAL		FEC
SHEET TITLE		PROPOSED SEDIMENTATION POND GRADING PLAN		PROJECT TITLE		CLOSURE OF INACTIVE NABORS LANDFILL
REV.		DATE		CK BY		FEC

50% Submittal



- LEGEND:**
- EXISTING 2' MINOR CONTOUR
 - EXISTING 10' MAJOR CONTOUR
 - PROPOSED 2' TOP OF INTERMEDIATE COVER CONTOUR
 - PROPOSED 10' TOP OF INTERMEDIATE COVER CONTOUR
 - EXISTING ROAD
 - EXISTING OVERHEAD ELECTRIC
 - DISPOSAL BOUNDARY (APPROXIMATE)
 - EXISTING BODY OF WATER
 - EXISTING MONITORING WELL
 - EXISTING GAS PROBE
 - EXISTING CONTROL POINT
- NOTES:**
- 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.
 - SURVEY DATA BASED ON THE NAD83 ARKANSAS STATE PLANE NORTH COORDINATE SYSTEM.
 - PROPOSED FINAL COVER CONTOURS BASED ON SHEET 1 OF 1 AS SHOWN IN ADEQ DOCUMENT #58185 PREPARED BY SCS ENGINEERS ON AUGUST 25, 2010.
 - WASTE RELOCATION TO BE PERFORMED PRIOR TO FINAL COVER INSTALLATION OF THE CLASS 4 DISPOSAL UNIT.
 - ESTIMATED VOLUME OF WASTE TO BE RELOCATED IS APPROXIMATELY 2000 CUBIC YARDS AS OF JANUARY 2015. ACTUAL VOLUME RELOCATED DURING CONSTRUCTION MAY BE DIFFERENT.

Volume Table				
Number	Min Depth (ft)	Max Depth (ft)	Approx. Volume (CY)	Color
1	-16.375	0.000	42,971	Red
2	0.000	34.000	41,050	Blue

CK BY

DESCRIPTION

REV.

DATE

SHEET TITLE

CLASS 4 WASTE RELOCATION PLAN

PROJECT TITLE

CLOSURE OF INACTIVE NABORS LANDFILL

CLIENT

SCS AQUATERRA

7311 W. 130th St. Ste. 100

Overland Park, Kansas 66213

PH. (913) 681-0030 FAX. (913) 681-0012

PROJ. NO.

27214218.01

Q/A R/W BY:

DMB

PROJ. MGR.

FEC

DWN. BY:

DMB

CHK. BY:

FEC

CADD FILE:

C-300 - CLASS 4 WASTE RELOCATION

PLAN.DWG

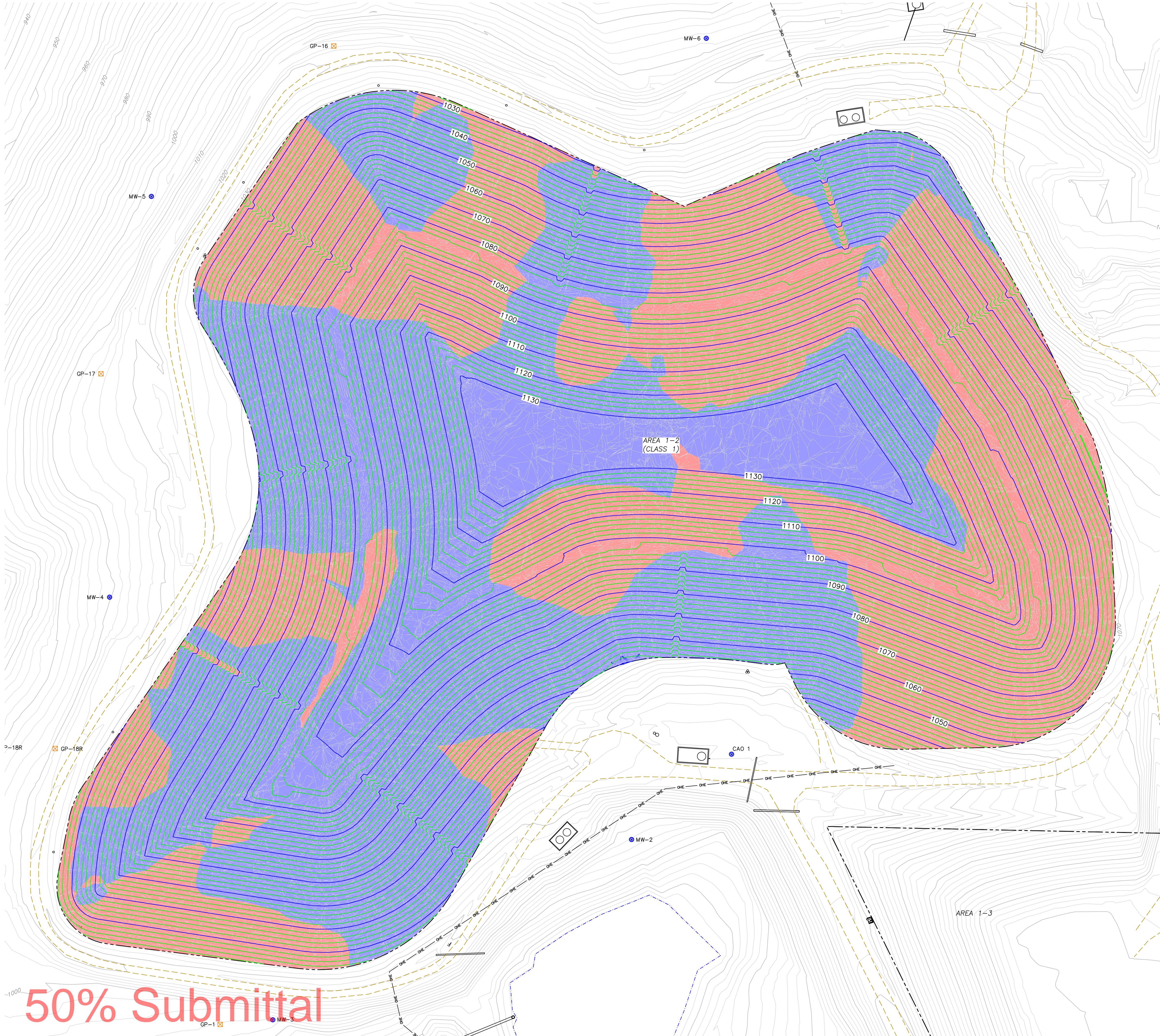
DATE:

5/4/15

DRAWING NO.

C-300

\\KAN-FS01\Clients\ADEQ\Projects\27214218.01 - Closure Contract - 2014\Task 2 - Design and Procurement\Waste Relocation\C-301 - Area 1-2 Waste Relocation Plan.dwg May 04, 2015 - 4:36pm Layout Name: Area 1-2 Waste Relocation Plan By: 3726dmb



50% Submittal

- LEGEND:**
- EXISTING 2' MINOR CONTOUR
 - EXISTING 10' MAJOR CONTOUR
 - PROPOSED 2' TOP OF INTERMEDIATE COVER CONTOUR
 - PROPOSED 10' TOP OF INTERMEDIATE COVER CONTOUR
 - EXISTING ROAD
 - EXISTING OVERHEAD ELECTRIC
 - DISPOSAL BOUNDARY (APPROXIMATE)
 - EXISTING BODY OF WATER
 - EXISTING MONITORING WELL
 - EXISTING GAS PROBE
 - EXISTING CONTROL POINT

- NOTES:**
- 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.
 - SURVEY DATA BASED ON THE NAD83 ARKANSAS STATE PLANE NORTH COORDINATE SYSTEM.
 - PROPOSED FINAL COVER CONTOURS BASED ON SHEET 5 OF 13 AS SHOWN IN ADEQ DOCUMENT #28209 PREPARED BY NORTHSTAR ENGINEERING CONSULTANT, INC. ON MAY 17, 2005.
 - WASTE RELOCATION TO BE PERFORMED PRIOR TO FINAL COVER INSTALLATION OF THE AREA 1-2 DISPOSAL UNIT.
 - ESTIMATED VOLUME OF WASTE TO BE RELOCATED IS APPROXIMATELY 19,200 CUBIC YARDS AS OF JANUARY 2015. ACTUAL VOLUME RELOCATED DURING CONSTRUCTION MAY BE DIFFERENT.

Volume Table				
Number	Min Depth (ft)	Max Depth (ft)	Approx. Volume (CY)	Color
1	-14.51	0.00	67,528	Red
2	0.00	16.29	86,702	Blue

CLIENT

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: DMB

Q/A R/W BY: DMB
PROJ. MGR. BY: FEC

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

DATE:
5/4/15

DRAWING NO.
C-301

SHEET TITLE
AREA 1-2 WASTE RELOCATION PLAN

PROJECT TITLE
CLOSURE OF INACTIVE NABORS LANDFILL

CK BY

DESCRIPTION

REV.

DATE

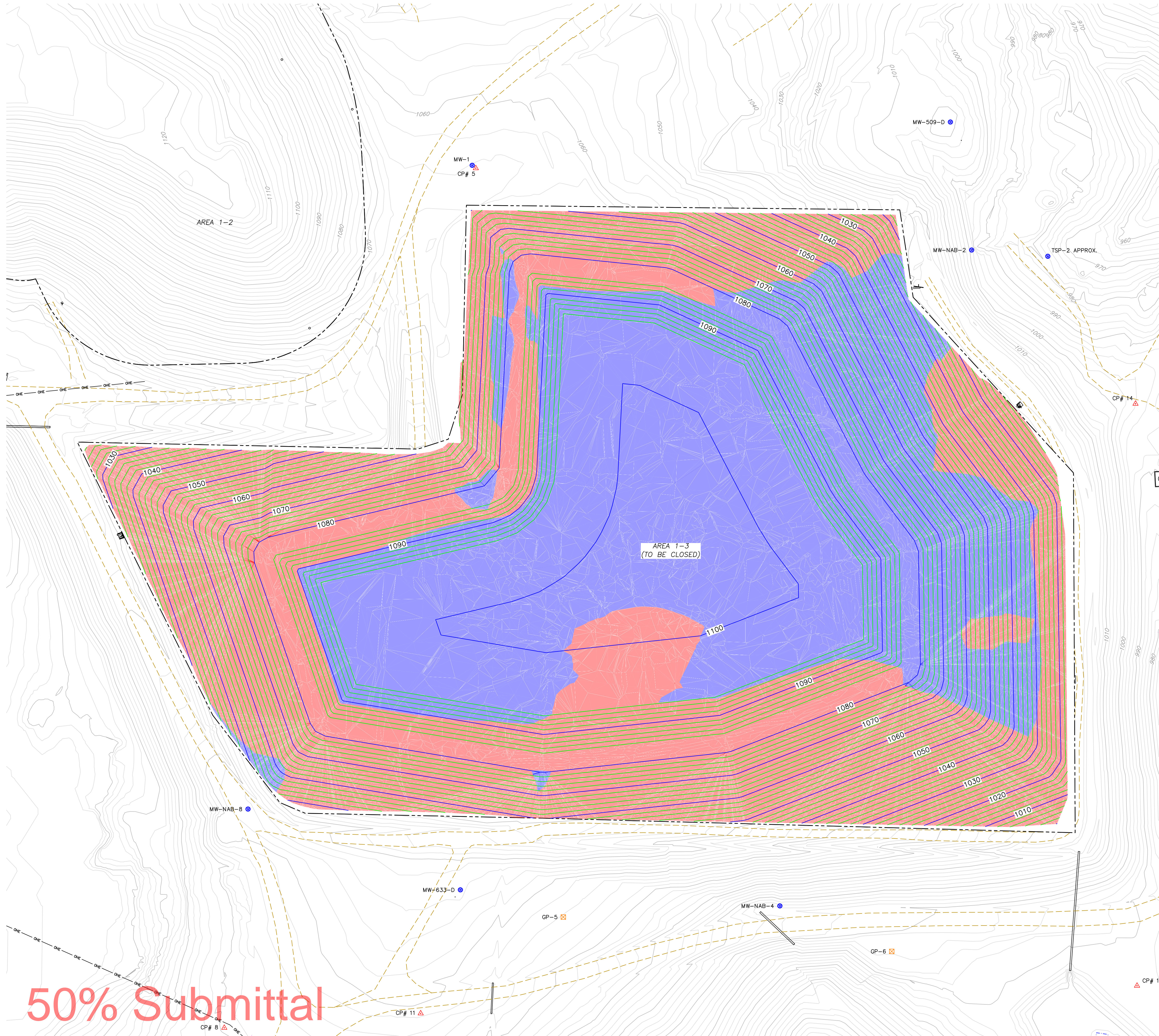
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5/2/15

50% SUBMITTAL

FEC

\\KAN-FS01\Clients\ADEQ\Projects\272142\18.01 - Closure Contract - 2014\Task 2 - Design and Procurement\Waste Relocation\C-302 - Area 1-3 Waste Relocation Plan.dwg May 04, 2015 - 4:37pm Layout Name: Area 1-3 Waste Relocation Plan By: 3726dmb



- LEGEND:**
- EXISTING 2' MINOR CONTOUR
 - EXISTING 10' MAJOR CONTOUR
 - PROPOSED 2' TOP OF INTERMEDIATE COVER CONTOUR
 - PROPOSED 10' TOP OF INTERMEDIATE COVER CONTOUR
 - EXISTING ROAD
 - EXISTING OVERHEAD ELECTRIC
 - DISPOSAL BOUNDARY (APPROXIMATE)
 - EXISTING BODY OF WATER
 - EXISTING MONITORING WELL
 - EXISTING GAS PROBE
 - EXISTING CONTROL POINT

- NOTES:**
- 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.
 - SURVEY DATA BASED ON THE NAD83 ARKANSAS STATE PLANE NORTH COORDINATE SYSTEM.
 - PROPOSED FINAL COVER CONTOURS REVISED BY SCS AQUATERRA IN APRIL 2015.
 - WASTE RELOCATION TO BE PERFORMED PRIOR TO FINAL COVER INSTALLATION OF THE AREA 1-3 DISPOSAL UNIT.
 - AREA 1-3 TO ACCEPT WASTE RELOCATED FROM AREA 1-2 AND CLASS 4.

Volume Table				
Number	Min Depth (ft)	Max Depth (ft)	Approx. Volume (CY)	Color
1	-21.44	0.00	78,582	Red
2	0.00	20.37	101,873	Blue

CK
BY

DESCRIPTION

REV.

DATE

AREA 1-3 WASTE RELOCATION PLAN

0 5/2015

50% SUBMITTAL

FEC

SHEET TITLE

AREA 1-3 WASTE RELOCATION PLAN

PROJECT TITLE

CLOSURE OF INACTIVE NABORS LANDFILL

CLIENT

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

CADD FILE:

C-302 - AREA 1-3 WASTE RELOCATION
PLAN.DWG

DATE:

5/4/15

DRAWING NO.

C-302

PROJ. NO.

27214218.01

Q/A RW BY:

DMB

PROJ. MGR BY:

FEC

DWN. BY:

DMB

CHK. BY:

FEC

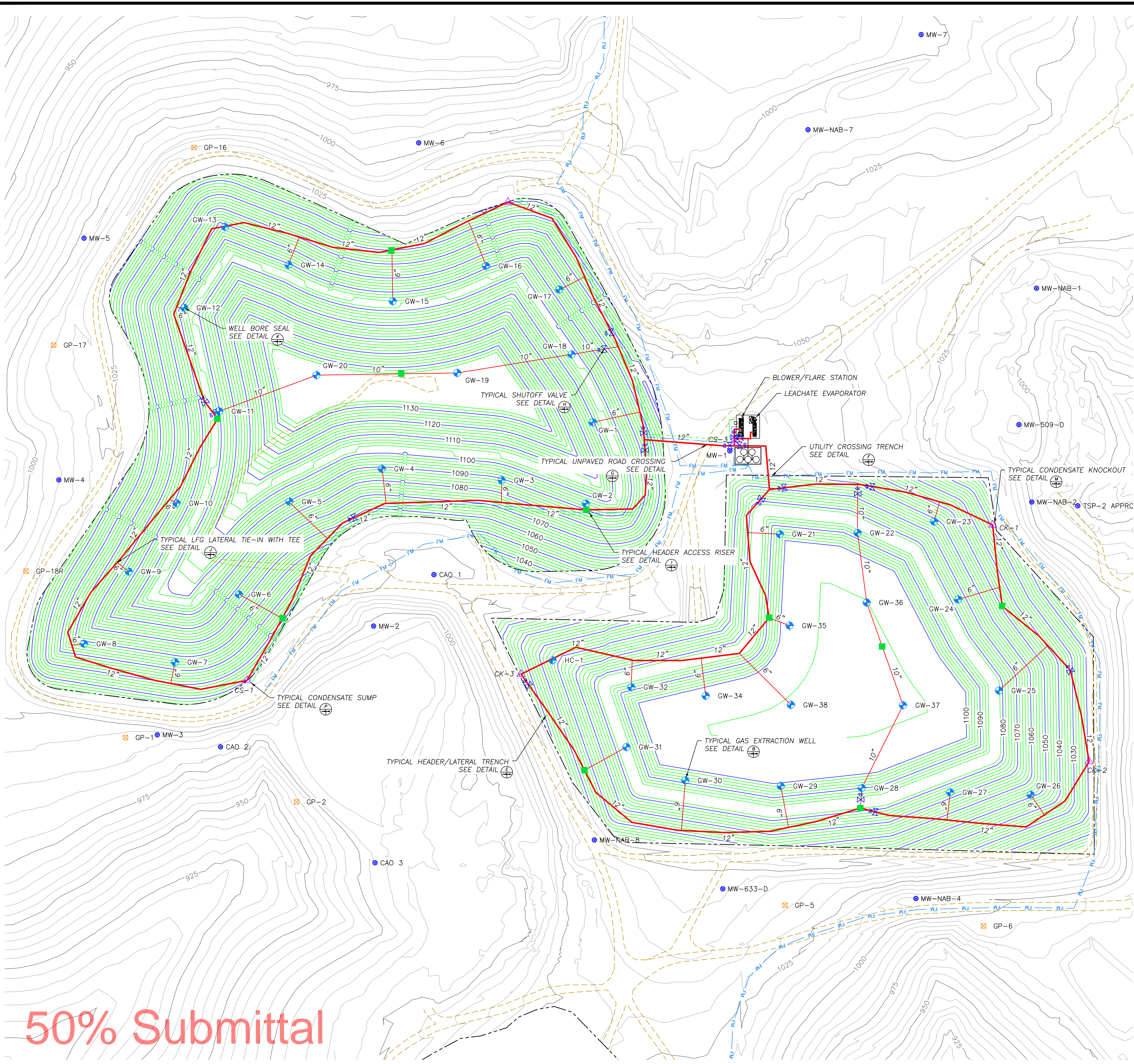
DATE:

5/4/15

SCALE

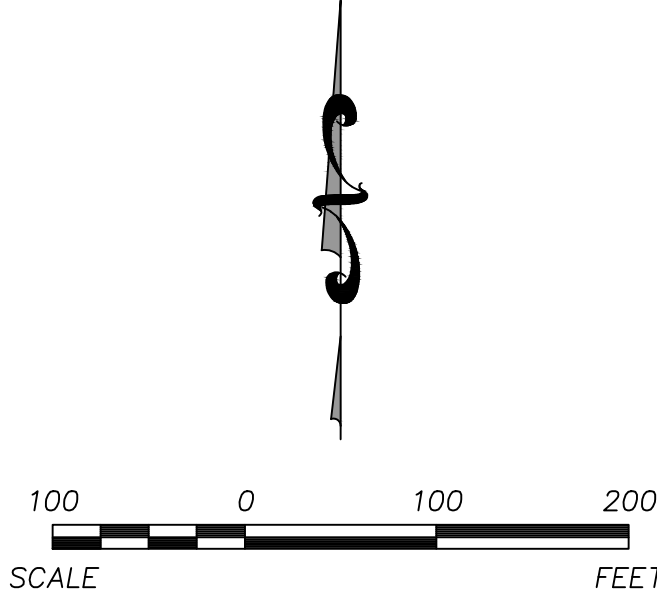
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FEET

\\KAN-FS01\Clients\ADEQ\Projects\27214218.01 - Closure Contract - 2014\Task 2 - Design and Procurement\GCCS Design\GCCS Layout.dwg May 04, 2015 - 5:13pm Layout Name: GCCS Layout By: 3726dmb



- LEGEND:
- EXISTING 5' MINOR CONTOUR
 - EXISTING 25' MAJOR CONTOUR
 - PROPOSED 2' TOP OF FINAL COVER CONTOUR
 - PROPOSED 10' TOP OF FINAL COVER CONTOUR
 - APPROXIMATE LIMITS OF CELL/DISPOSAL UNIT
 - PROPOSED LANDFILL GAS HEADER
 - PROPOSED LANDFILL GAS LATERAL
 - PROPOSED 2" CONDENSATE LINE
 - PROPOSED 2" AIR LINE
 - PROPOSED FORCEMAIN
 - EXISTING UNPAVED ROAD
 - EXISTING MONITORING WELL
 - EXISTING GAS PROBE
 - PROPOSED GAS EXTRACTION WELL WITH WELL BORE SEAL
 - PROPOSED CONDENSATE SUMP/KNOCKOUT
 - PROPOSED SHUTOFF VALVE
 - PROPOSED HEADER ACCESS RISER

- NOTES:
- CONDENSATE SUMPS 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.
 - WELL BORE SEALS TO BE INSTALLED ON ALL GAS EXTRACTION WELLS.
 - CONDENSATE AND AIR SUPPLY LINE PIPING SHOWN FOR GENERAL LAYOUT PURPOSES. PIPING SHALL BE INSTALLED IN ACCORDANCE WITH THE DETAILS ON SHEET C-204
 - CONDENSATE PRODUCED COLLECTED IN AREA 1-3 WILL DRAIN BACK INTO THE WASTE MASS AND BE HANDLED BY THE LEACHATE COLLECTION SYSTEM.
 - SEE SHEETS C-500 AND C-501 FOR ADDITIONAL INFORMATION REGARDING THE PROPOSED LEACHATE FORCEMAIN.



SHEET TITLE GAS COLLECTION AND CONTROL SYSTEM LAYOUT	CK BY	DESCRIPTION	REV.	DATE
PROJECT TITLE CLOSURE OF INACTIVE NABORS LANDFILL	0 5/2015			
	50% SUBMITTAL			
FEC				

CLIENT

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

DWN. BY: DMB

CHK. BY: DMB

Q/A R/W BY: DMB

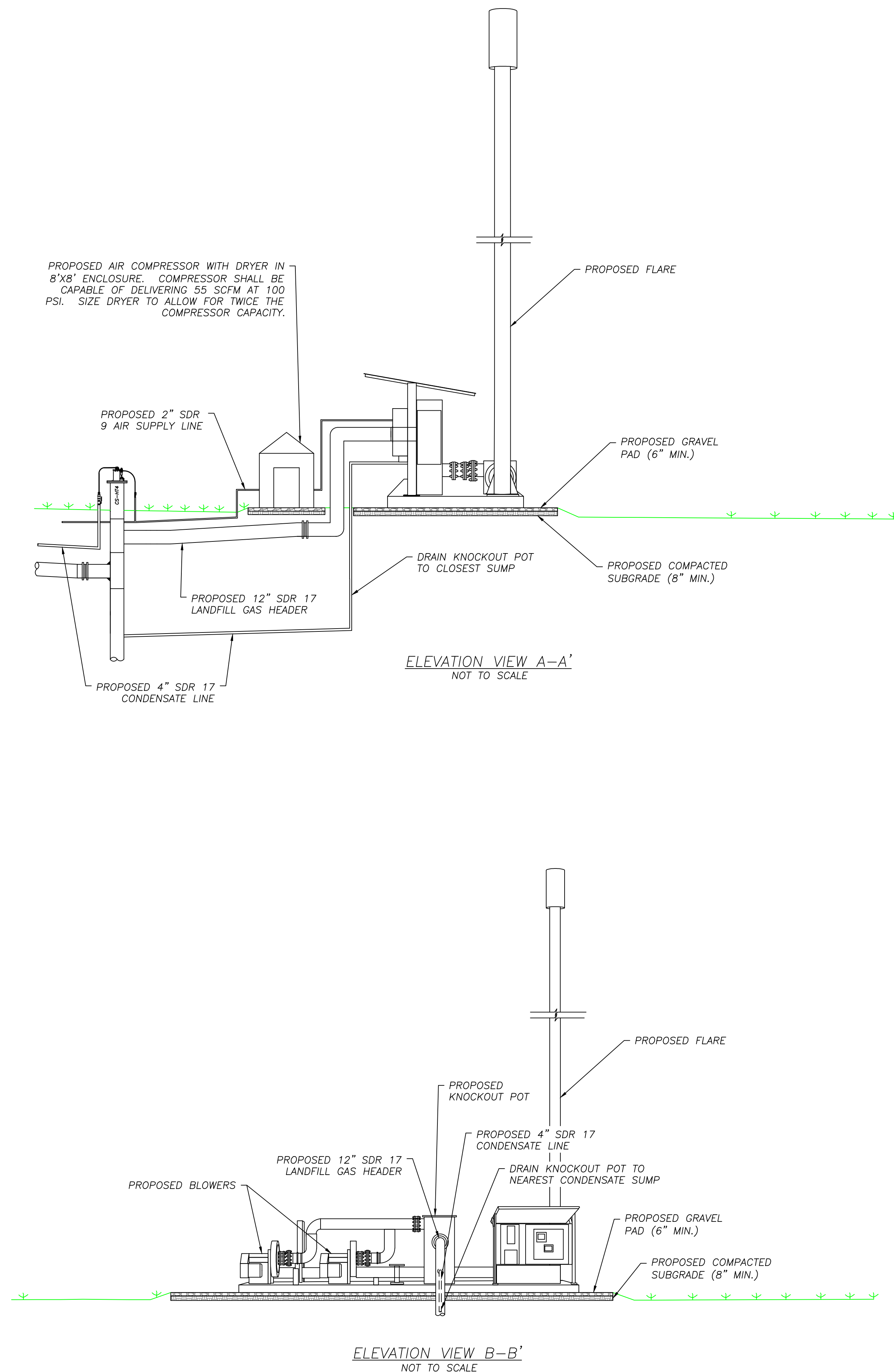
PROJ. MGR. BY: FEC

CADD FILE:
C-400 - GCCS LAYOUT.DWG

DATE:
5/4/15

DRAWING NO.
C-400

50% Submittal



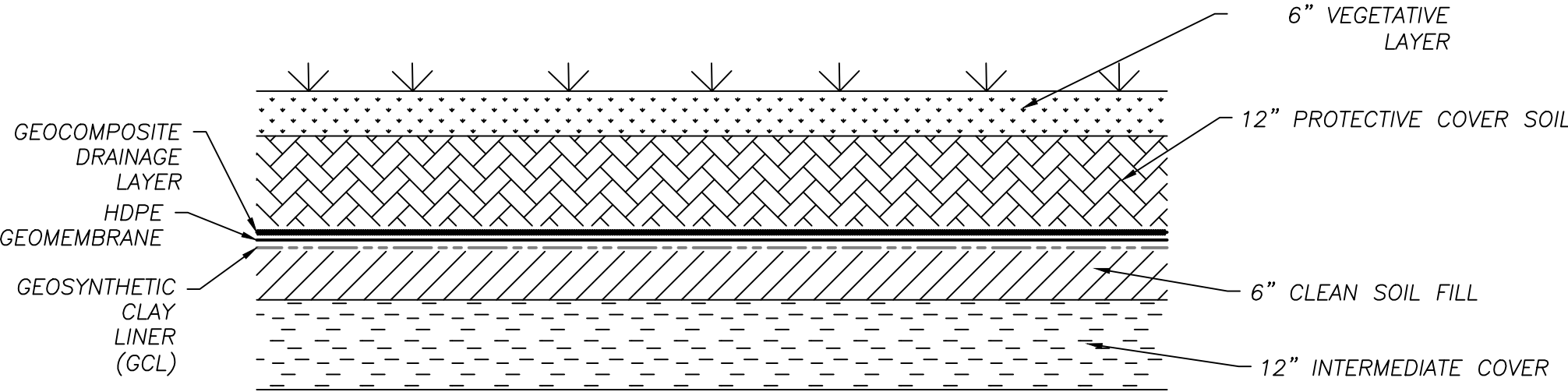
<div><div>SCS AQUATERRA</div><div>7311 W. 130th St., Ste. 100 Overland Park, Kansas 66213 PH. (913) 681-0030 FAX. (913) 681-0012</div></div>	CLIENT				<div><div>ADEQ</div><div>A R K A N S A S Department of Environmental Quality</div></div>		SHEET TITLE		PROPOSED FLARE LAYOUT		REV.	DATE	DESCRIPTION	CK. BY	
	CADD FILE: C-401 - PROPOSED FLARE LAYOUT.DWG		DATE: 5/4/15		DRAWING NO. C-401		PROJECT TITLE		CLOSURE OF INACTIVE NABORS LANDFILL		0		5/15/2015	50% SUBMITTAL	FEC
	PROJ. NO. NSK BY:		ZOB		DWN. BY: CHK. BY:		ZOB		G/A RW BY: PRG. MGR.		JMB				
	NSK BY:		FEC		CHK. BY:		FEC								

\\KAN-FS01\Clients\ADEQ\Projects\27214218.01 - Closure Contract - 2014\Task 2 - Design and Procurement\GCCS Design\C-402 - Well Schedule.dwg May 04, 2015 - 5:36pm Layout Name: Well Schedule By: 3726dmb

NABORS AREA 1-2 AND AREA 1-3 GAS WELL SCHEDULE												
Vertical Extraction Well Designation	AR State Plane		Proposed 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.)	Proposed Drilling Depth (FT.)	8" PVC Under Ground Solid Pipe (FT.)	8" CPVC Perforated Pipe (FT.)	8" PVC Above Ground Solid Pipe Pipe (FT.)
	North Zone											
	Coordinates North	Coordinates East										
GW-1	774,726.85	1,180,541.21	1,100.85	1,098.85	2.00	1,059.42	15	24.0	24.0	16.0	7.0	4.0
GW-2	774,552.98	1,180,526.45	1,094.22	1,092.22	2.00	1,052.86	15	24.0	24.0	10.0	13.0	4.0
GW-3	774,602.72	1,180,346.19	1,088.98	1,086.98	2.00	1,047.89	15	24.0	24.0	16.0	7.0	4.0
GW-4	774,627.20	1,180,089.41	1,088.74	1,086.74	2.00	1,038.06	15	34.0	34.0	16.0	17.0	4.0
GW-5	774,556.76	1,179,891.29	1,089.53	1,087.53	2.00	1,021.53	15	51.0	51.0	16.0	34.0	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	16.0	14.0	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	1,071.89	1,069.89	2.00	1,019.95	15	35.0	35.0	16.0	18.0	4.0
GW-11	774,750.49	1,179,740.78	1,089.83	1,087.83	2.00	1,033.76	15	39.0	39.0	16.0	22.0	4.0
GW-12	774,972.26	1,179,665.88	1,082.39	1,080.39	2.00	1,032.59	15	33.0	33.0	16.0	16.0	4.0
GW-13	775,145.63	1,179,753.18	1,071.79	1,069.79	2.00	1,029.48	15	25.0	25.0	16.0	8.0	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	1,086.58	1,084.58	2.00	1,038.41	15	31.0	31.0	16.0	14.0	4.0
GW-16	775,062.00	1,180,312.90	1,078.30	1,076.30	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	1,091.67	1,089.67	2.00	1,048.51	15	26.0	26.0	16.0	9.0	4.0
GW-19	774,832.72	1,180,250.86	1,135.00	1,133.00	2.00	1,046.00	15	72.0	72.0	16.0	55.0	4.0
GW-20	774,828.00	1,179,949.45	1,135.00	1,133.00	2.00	1,037.91	15	80.0	80.0	16.0	63.0	4.0
GW-21	774,487.18	1,180,942.13	1,093.90	1,091.90	2.00	1,059.96	15	17.0	17.0	10.0	6.0	4.0
GW-22	774,489.84	1,181,108.79	1,085.03	1,083.03	2.00	1,054.00	15	14.0	14.0	10.0	3.0	4.0
GW-23	774,514.00	1,181,272.84	1,066.00	1,064.00	2.00	1,032.65	15	16.0	16.0	10.0	5.0	4.0
GW-24	774,347.30	1,181,324.49	1,076.00	1,074.00	2.00	1,029.63	15	29.0	29.0	16.0	12.0	4.0
GW-25	774,151.78	1,181,411.90	1,082.02	1,080.02	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	1,046.19	1,044.19	2.00	1,012.00	15	17.0	17.0	10.0	6.0	4.0
GW-27	773,933.59	1,181,307.20	1,073.98	1,071.98	2.00	1,029.18	15	28.0	28.0	16.0	11.0	4.0
GW-28	773,942.95	1,181,117.75	1,088.24	1,086.24	2.00	1,049.33	15	22.0	22.0	10.0	11.0	4.0
GW-29	773,947.16	1,180,944.10	1,095.90	1,093.90	2.00	1,057.05	15	22.0	22.0	10.0	11.0	4.0
GW-30	773,958.92	1,180,739.62	1,089.93	1,087.93	2.00	1,054.88	15	18.0	18.0	10.0	7.0	4.0
GW-31	774,030.76	1,180,613.44	1,082.04	1,080.04	2.00	1,048.80	15	16.0	16.0	10.0	5.0	4.0
GW-32	774,159.24	1,180,623.75	1,081.93	1,079.93	2.00	1,047.98	10	22.0	22.0	10.0	11.0	4.0
HC-1	774,216.89	1,180,455.18	1,036.00	1,034.00	2.00	1,017.34	-	-	-	-	-	-
GW-34	774,140.70	1,180,783.33	1,102.00	1,100.00	2.00	1,055.93	15	29.0	29.0	16.0	12.0	4.0
GW-35	774,290.96	1,180,963.17	1,108.03	1,106.03	2.00	1,058.65	15	32.0	32.0	16.0	15.0	4.0
GW-36	774,340.40	1,181,128.21	1,120.00	1,118.00	2.00	1,054.42	15	49.0	49.0	16.0	32.0	4.0
GW-37	774,120.27	1,181,206.19	1,128.00	1,126.00	2.00	1,043.64	15	67.0	67.0	16.0	50.0	4.0
GW-38	774,121.07	1,180,965.98	1,132.00	1,130.00	2.00	1,058.14	15	57.0	57.0	16.0	40.0	4.0

NOTES:

1. GAS EXTRACTION WELL COORDINATES AND SURFACE ELEVATIONS, UNLESS NOTED OTHERWISE, BASED ON THE PROPOSED FINAL COVER DESIGNS.
2. IN BOTH AREA 1-2 AND AREA 1-3, LINER ELEVATIONS WERE VERIFIED WITH AS-BUILT DOCUMENTATION, WHERE AVAILABLE, WERE USED TO DETERMINE DRILL DEPTHS.
3. ALL WELL WILL REQUIRE WELL BORE SEALS TO BE INSTALLED.
4. COORDINATES AND SURFACE ELEVATIONS HAVE YET TO BE VERIFIED WITH A FIELD SURVEY. THESE VALUES WILL BE REVISED AND APPROVED BY THE ENGINEER, PRIOR TO THE COMMENCEMENT OF DRILLING.



FINAL COVER NOTES:

1. REPAIR FINAL COVER TO MATCH EXISTING CONDITIONS.
2. LOW PERMEABILITY COVER LAYER TO BE COMPACTED TO 90 PERCENT STANDARD PROCTOR AND BETWEEN 0% TO +2.5% OPTIMUM MOISTURE CONTENT OR WITHIN PLACEMENT ZONE. PLACEMENT ZONE TO BE PROVIDED UPON REQUEST.

50% Submittal

1 CLASS 1 COMPOSITE FINAL COVER CROSS SECTION
NOT TO SCALE

CK
BY

DESCRIPTION

REV. DATE

05/2015

50% SUBMITTAL

FEC

WELL SCHEDULE

CLOSURE OF INACTIVE NABORS LANDFILL

ADEQ

AR K A N S A S

Department of Environmental Quality

CLIENT

SCS AQUATERRA

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

PROJ. NO. 27214218.01

DSK. BY: ZDB

DWN. BY: ZDB

CHK. BY: ZDB

Q/A RW BY: DMB

PROJ. MGR: FEC

CADD FILE:

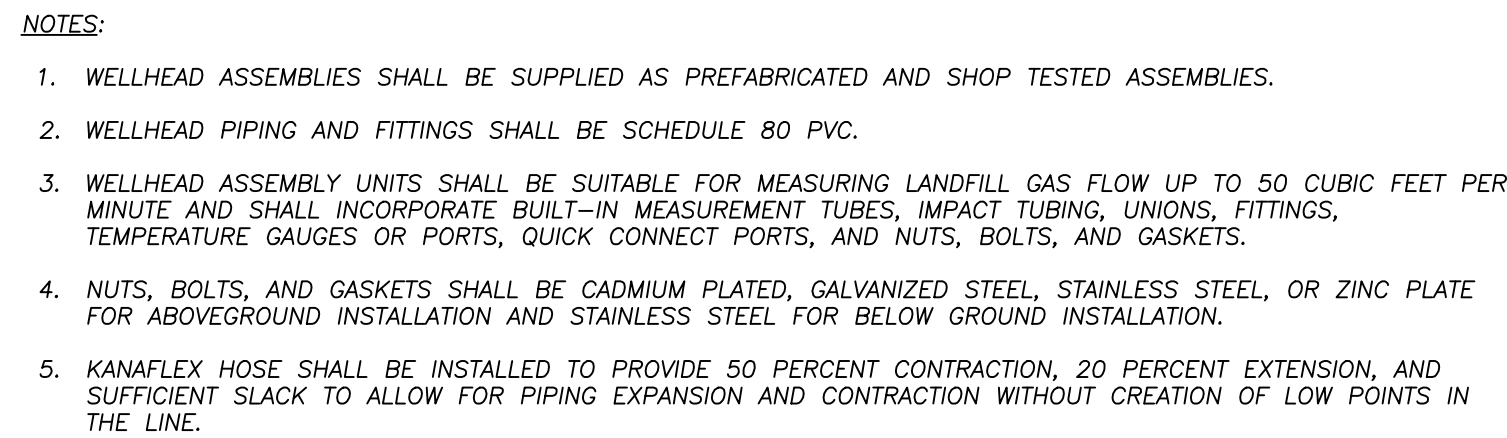
C-402 - WELL SCHEDULE.DWG

DATE:

5/4/15

DRAWING NO.

C-402



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.
3. THE WASHED NON-CALCAREOUS 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.

Diagram of a well screen. The screen is rectangular with rounded ends. It features 8 holes arranged in two staggered rows of four. The top row of holes is labeled "1/2\" DIA. HOLES, 8 PER ROW EQUALLY SPACED IN STAGGERED ROWS". The bottom row of holes is labeled "6\" SDR 11 HDPE OR SCH 80 PVC WELL SCREEN".

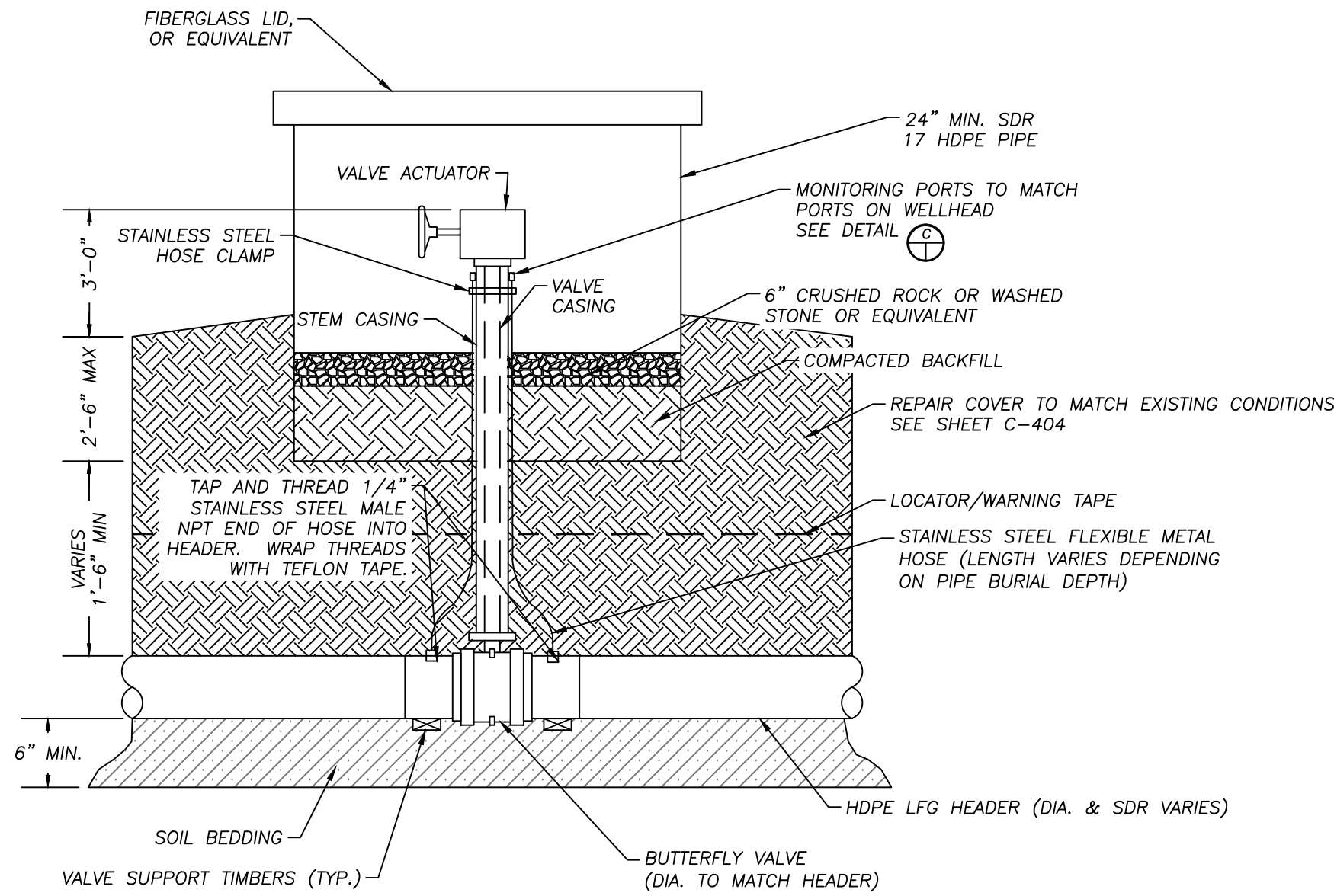
NOTES:

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

D PERFORATED PIPE DETAIL
NOT TO SCALE

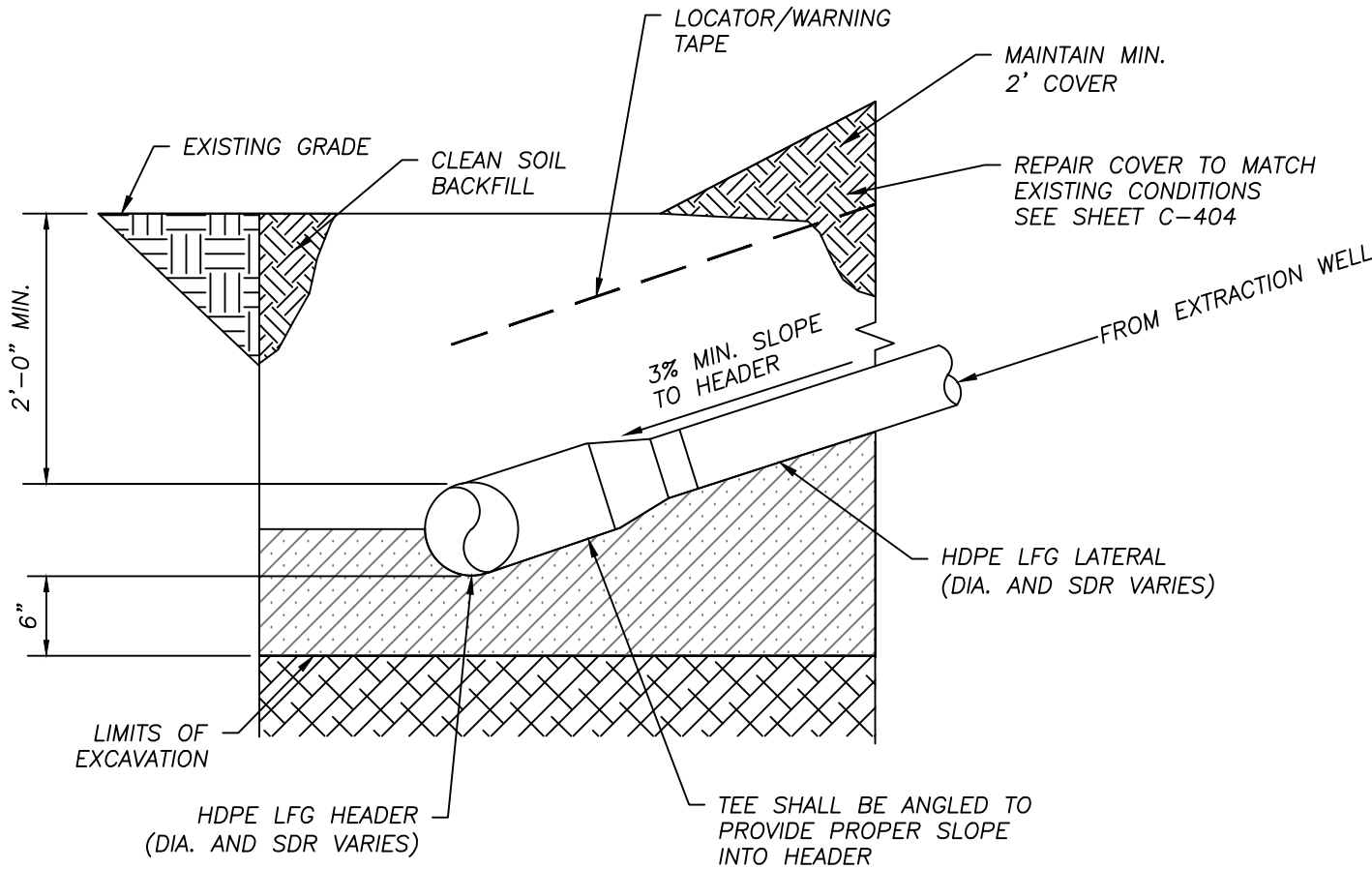
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C-404

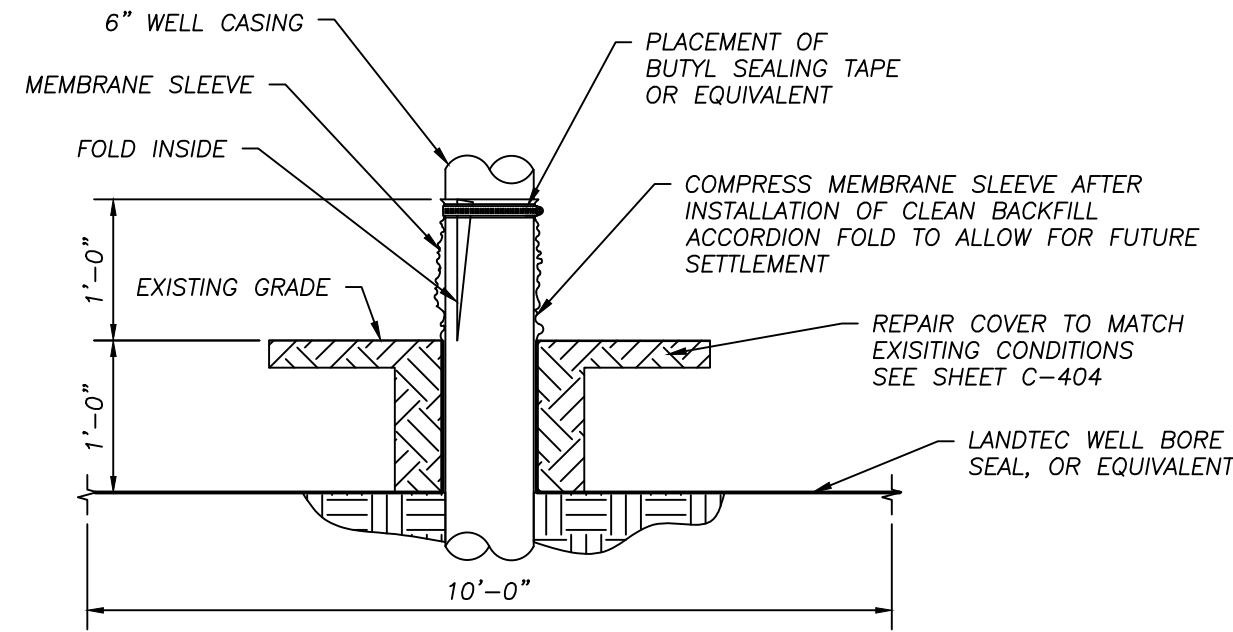


NOTE
1. VALVE SHALL BE BUTTERFLY BUBBLE TIGHT, WAFER DESIGN, WITH A PVC BODY, AND COMPATIBLE WITH A FLAT FACE FLANGE. VALVES 12" AND LARGER SHALL BE BUTTERFLY VALVE TYPE 812 WITH VITON SEAT AS MANUFACTURED BY ABZ VALVE, OR EQUIVALENT.

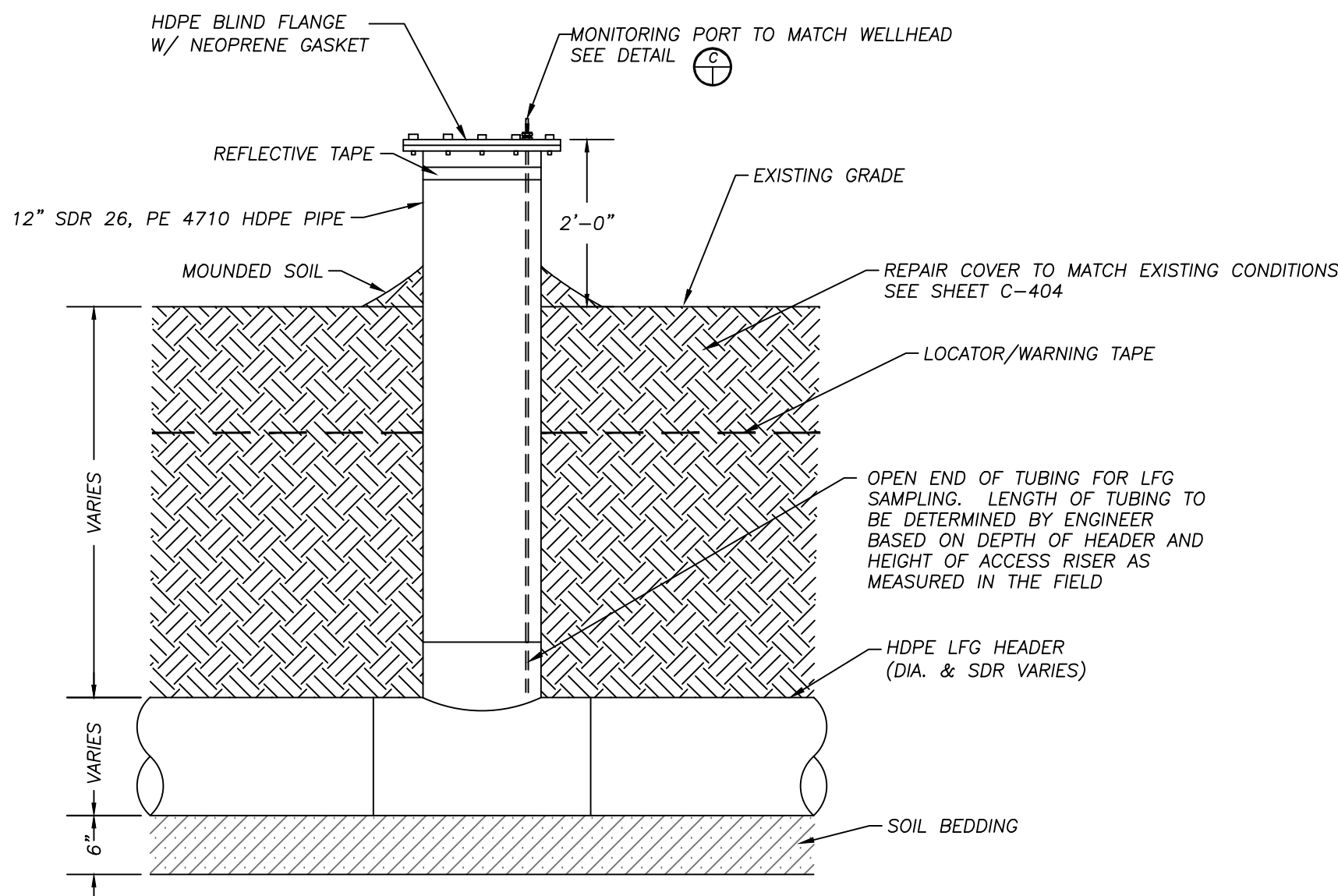
H TYPICAL SHUTOFF VALVE DETAIL
NOT TO SCALE



J LFG LATERAL TIE-IN WITH TEE DETAIL - SECTION VIEW
NOT TO SCALE

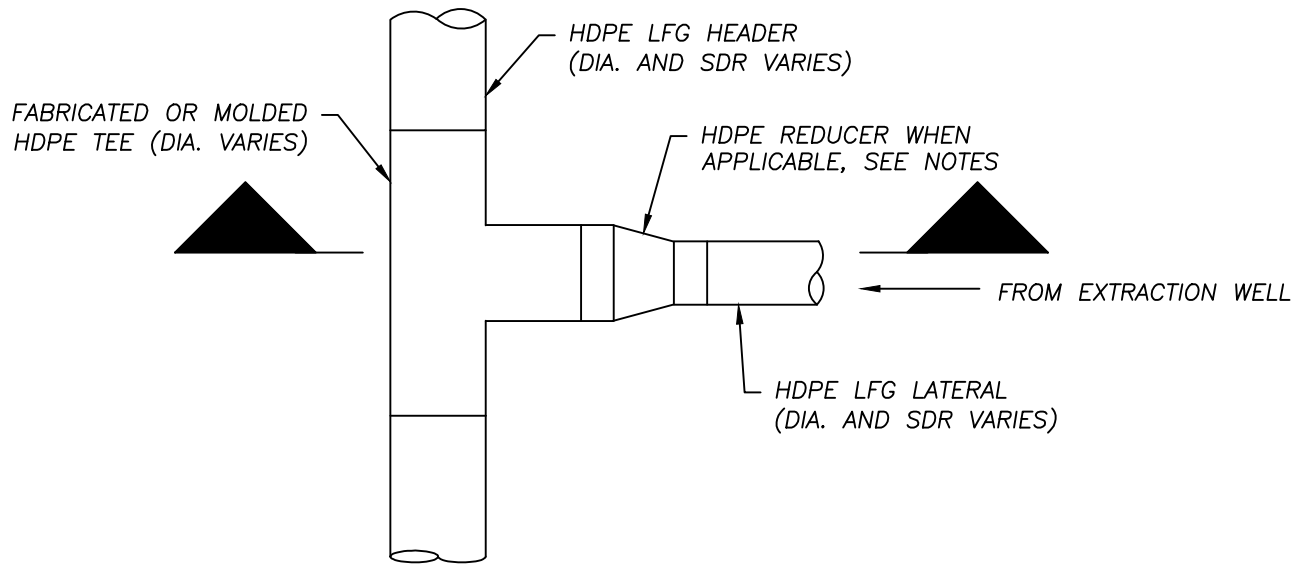


K WELL BORE SEAL DETAIL
NOT TO SCALE



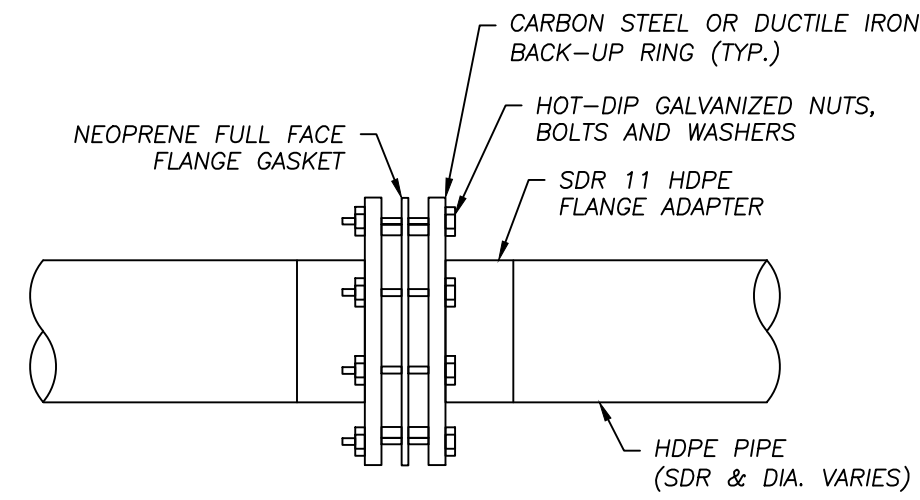
NOTES
1. FOR HEADERS LARGER THAN 12" IN DIAMETER USE REDUCER TEE FOR 12" DIAMETER RISER. FOR HEADERS 12" IN DIAMETER AND SMALLER, MATCH THE RISER DIAMETER TO THE HEADER.

I TYPICAL HEADER ACCESS RISER 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.

J LFG LATERAL TIE-IN WITH TEE DETAIL - PLAN VIEW
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.

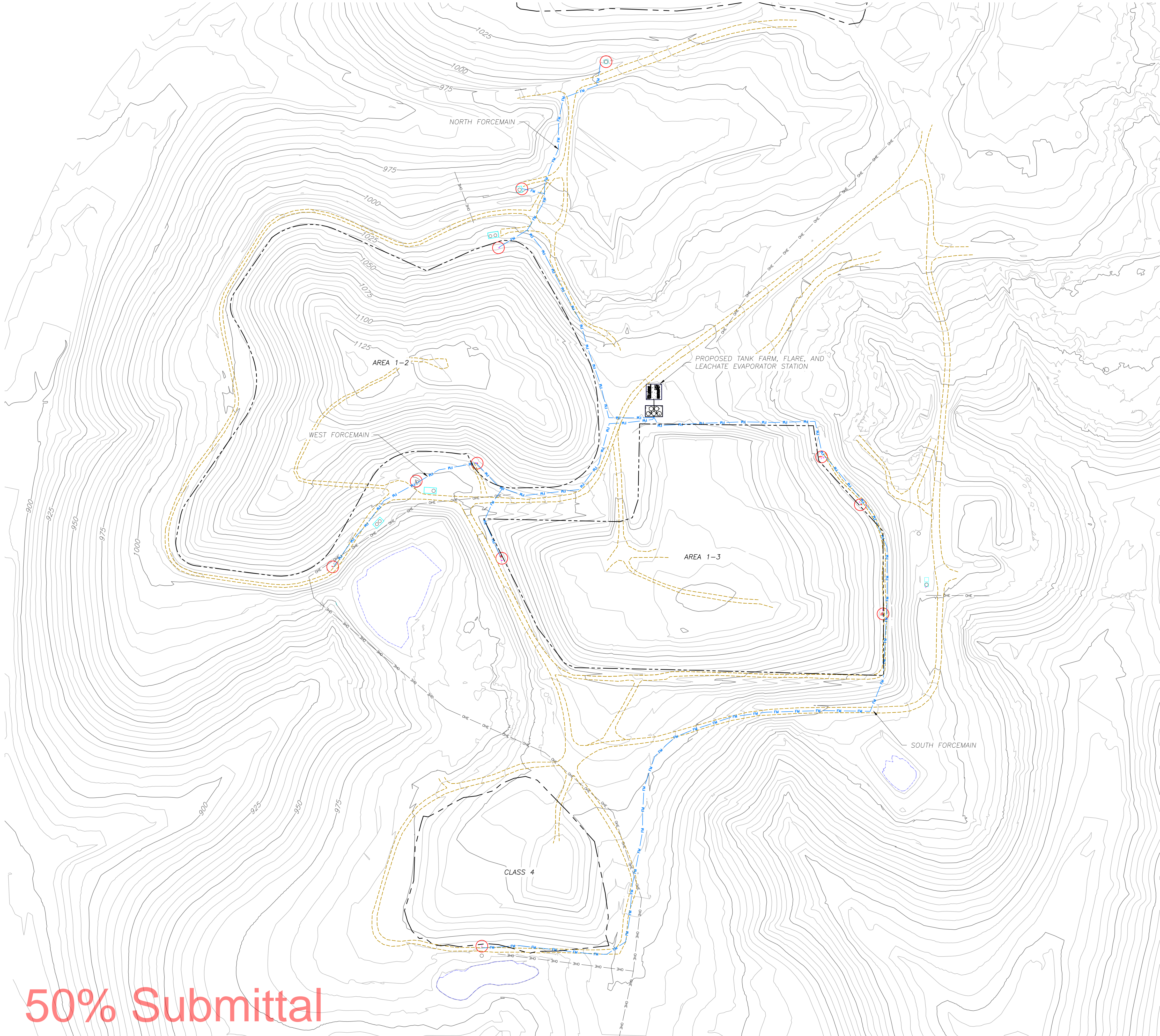
L FLANGE CONNECTION DETAIL
NOT TO SCALE

CLIENT 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: ZDB CHK. BY: ZDB Q/A R/W BY: DMB PROJ. MGR. BY: FEC	SHEET TITLE GCCS DETAILS SHEET 3 PROJECT TITLE CLOSURE OF INACTIVE NABORS LANDFILL	REV. DATE 0 5/2015	DESCRIPTION 50% SUBMITTAL	CK BY FEC	
		CADD FILE: C-403 - DETAILS.DWG			
		DATE: 5/4/15			
		DRAWING NO. C-405			

50% Submittal

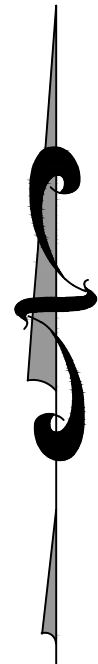
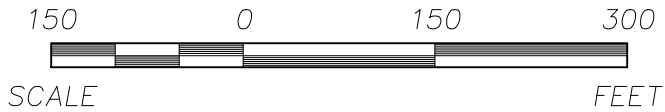
\\KAN-FS01\Clients\ADEQ\Projects\27214218.01 - Closure Contract - 2014\Task 2 - Design and Procurement\Forcemain Design\C-500 Leachate Forcemain Layout.dwg May 04, 2015 - 6:18pm Layout Name: Leachate Forcemain Layout By: 3726dmb

50% Submittal



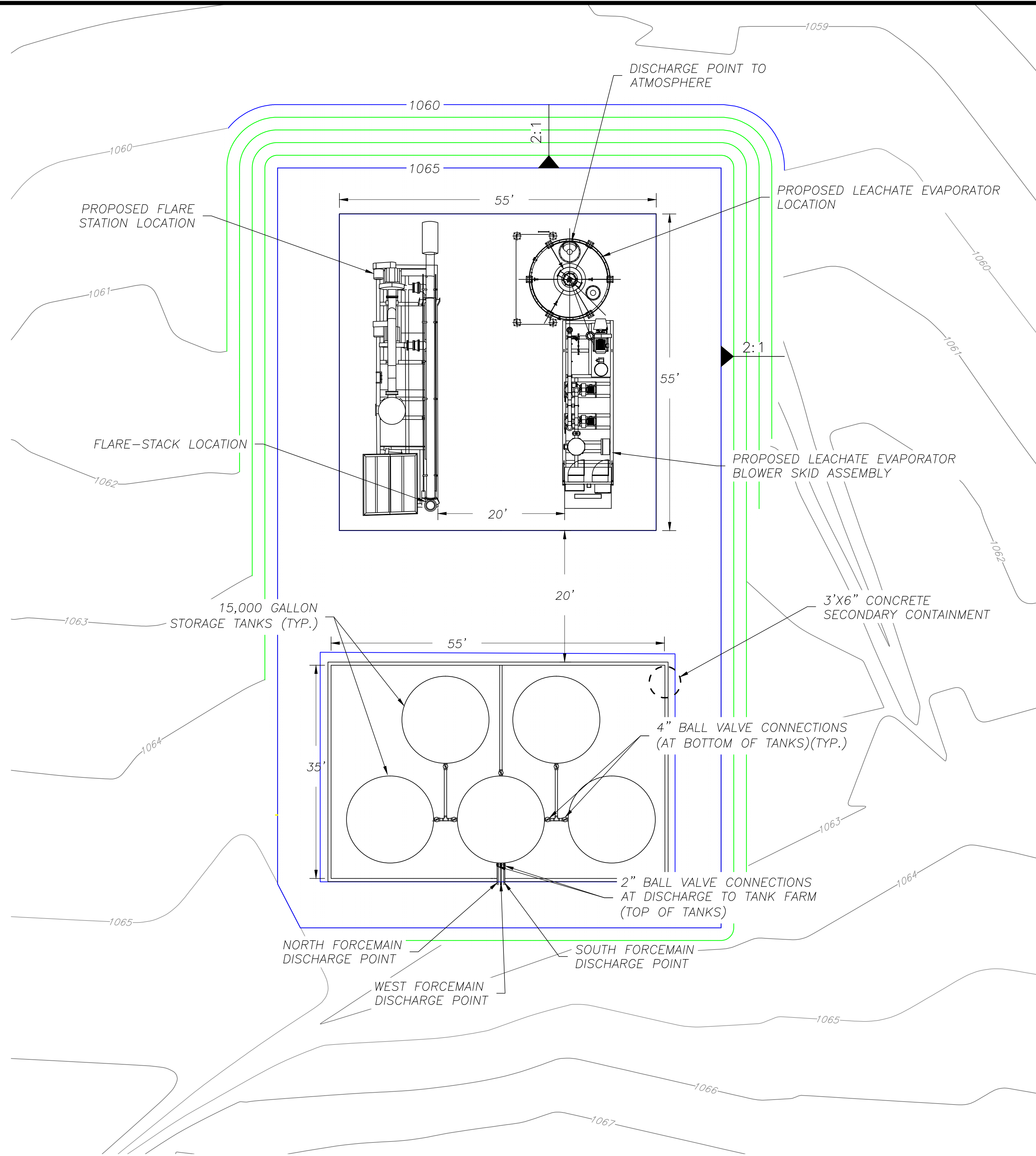
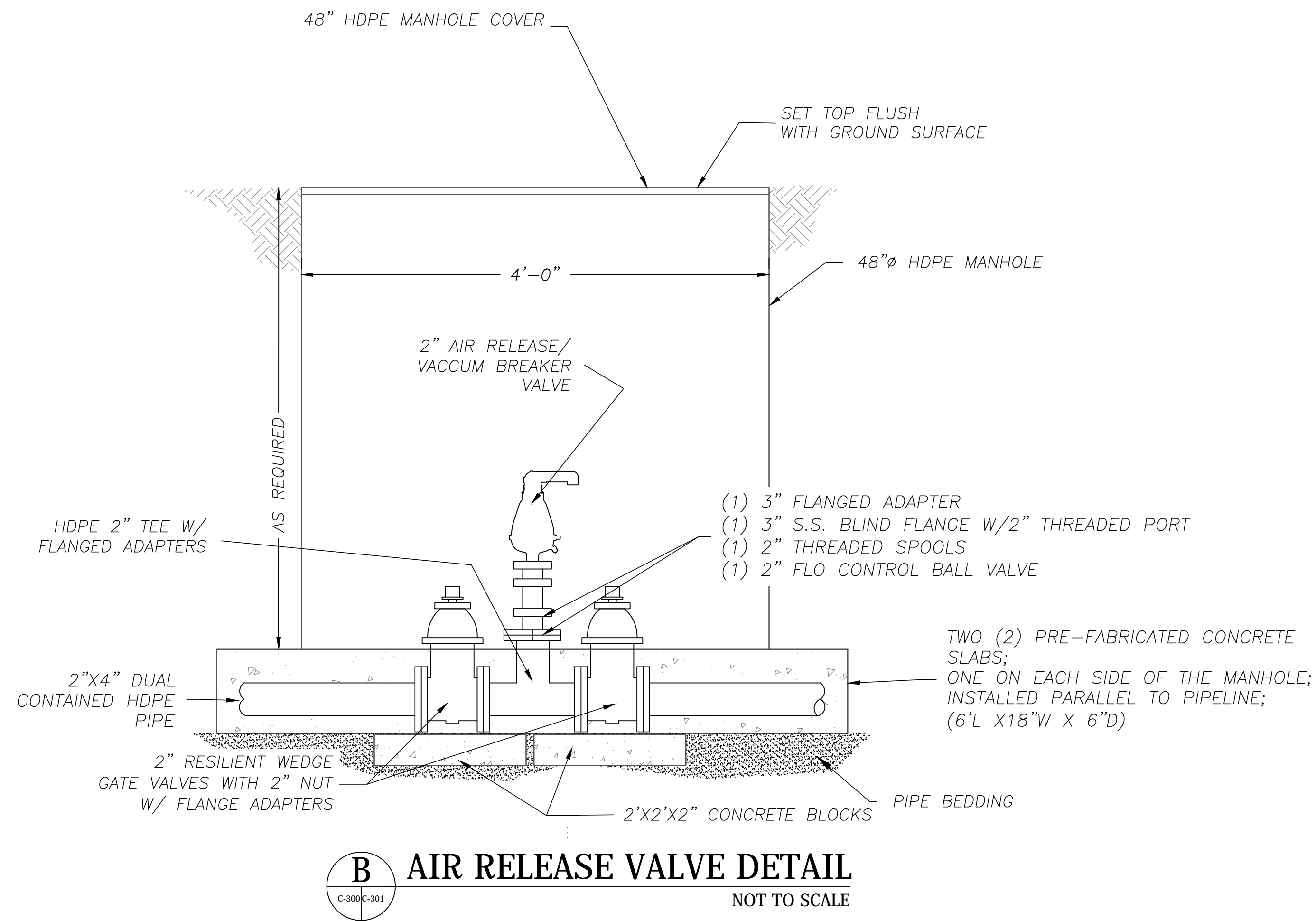
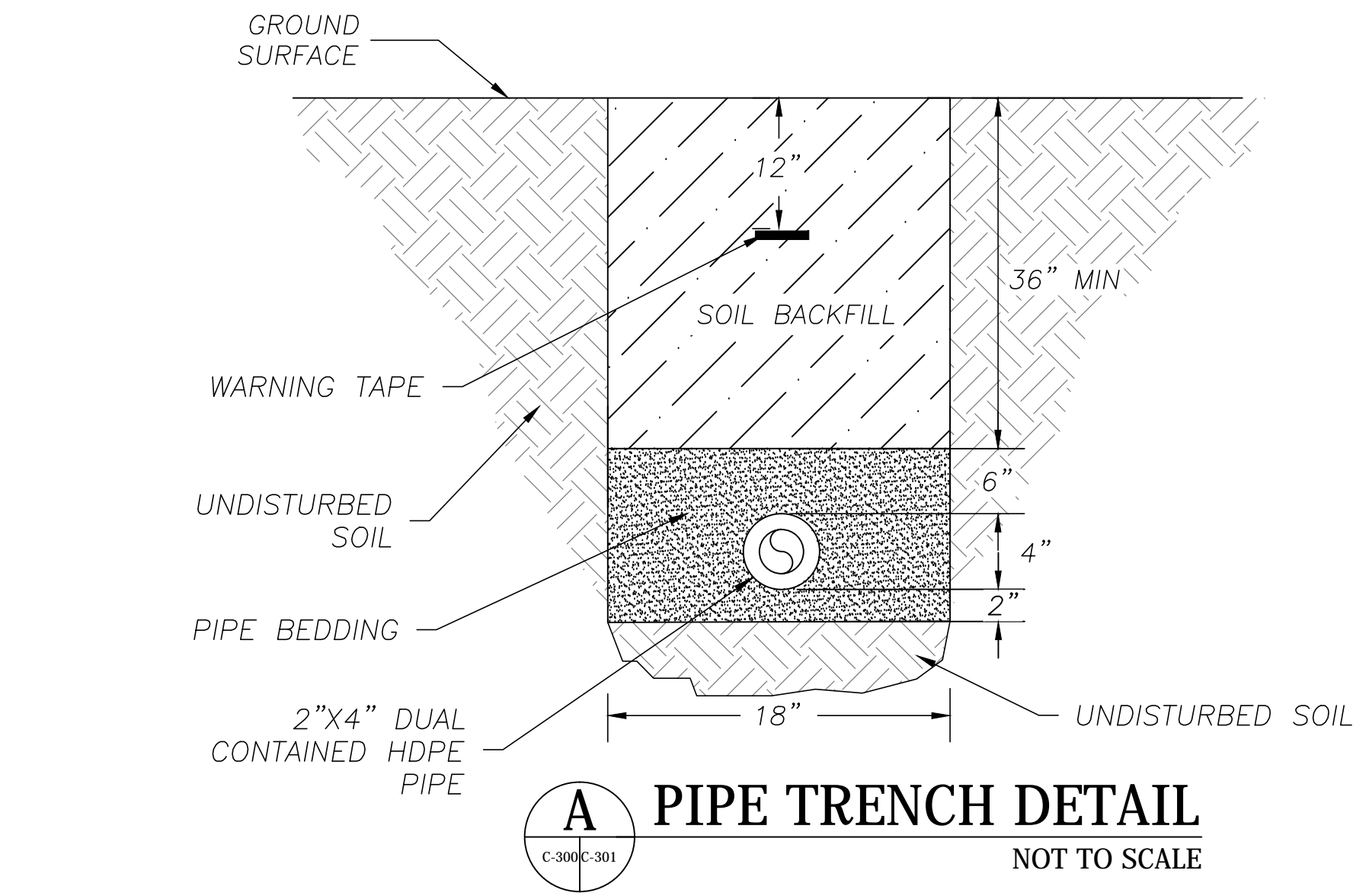
- LEGEND:
- EXISTING 5' MINOR CONTOUR
 - EXISTING 25' MAJOR CONTOUR
 - EXISTING OVERHEAD ELECTRIC
 - EXISTING BODY OF WATER
 - PROPOSED FORCEMAIN
 - EXISTING ROADWAY
 - PROPERTY BOUNDARY
 - EXISTING SECONDARY CONTAINMENT STRUCTURE
 - EXISTING LEACHATE STORAGE TANK
 - PROPOSED LEACHATE SUMP/COLLECTION AREA

- NOTES:
- 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.
 - SURVEY DATA BASED ON THE NAD83 ARKANSAS STATE PLANE NORTH COORDINATE SYSTEM.



CLIENT	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 DRS	CHK. BY DRS	Q/A R/W BY DMB	PROJ. MGR DMB	FEC
	ADEQ AR K A N S A S Department of Environmental Quality		CADD FILE: DRAWING.DWG		DATE: 5/4/2015		DRAWING NO. C-500	
	SHEET TITLE LEACHATE FORCEMAIN LAYOUT		PROJECT TITLE CLOSURE OF INACTIVE NABORS LANDFILL		REV.	DATE	DESCRIPTION	CK BY
				0	5/2015	50% SUBMITTAL	FEC	

\\KAN-FS01\Clients\ADEQ\Projects\27214218.01 - Closure Contract - 2014\Task 2 - Design and Procurement\Forcemain Design\C-501 - Leachate Forcemain Details.dwg May 04, 2015 - 6:42pm Layout Name: Leachate Forcemain Details By: 3726dmb

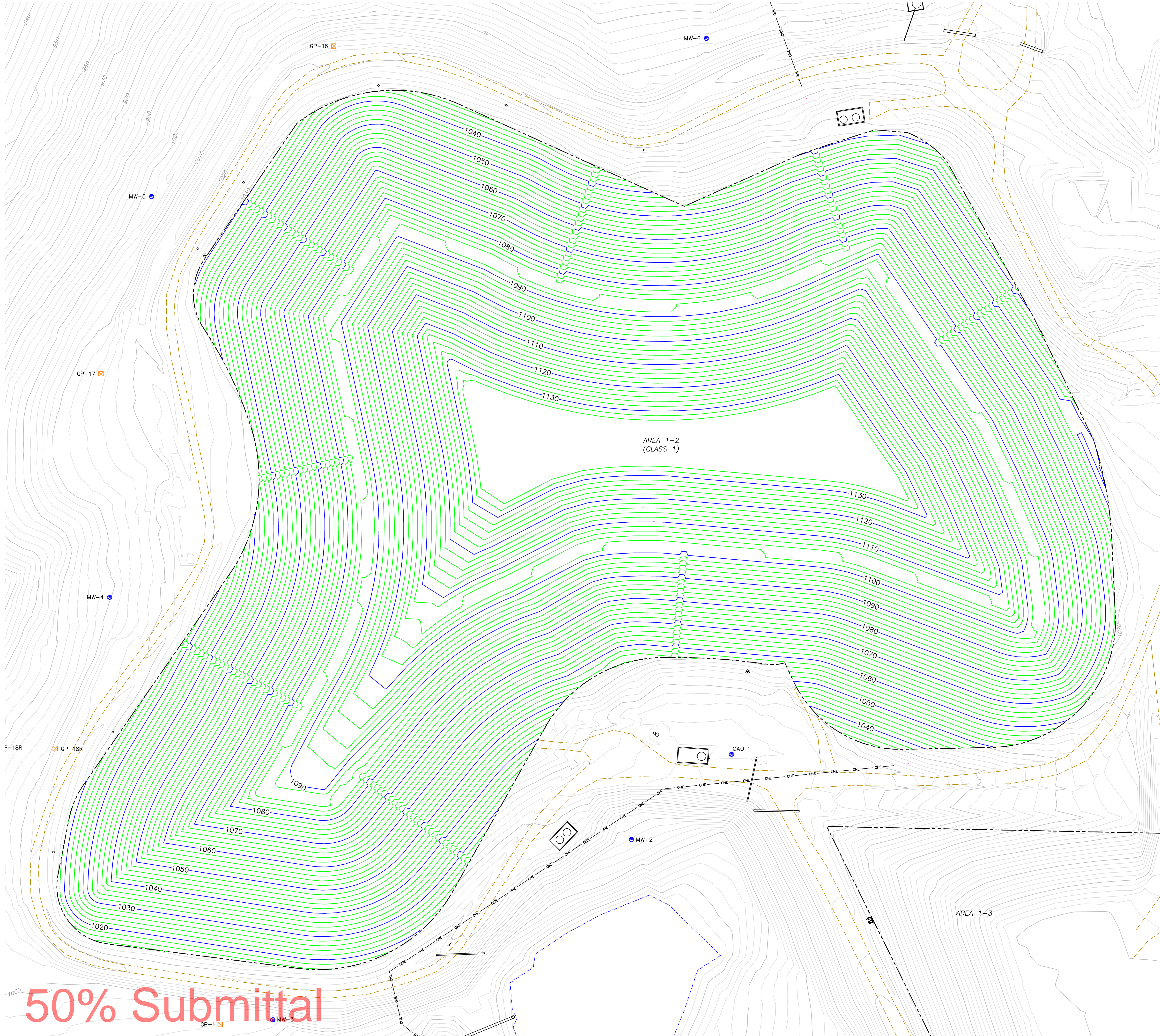


50% Submittal



CLIENT		SCS AQUATERRA 7311 W. 130th St. Ste. 100 Overland Park, Kansas 66213 PH. (913) 881-0030 FAX. (913) 881-0012		Q/A R/W BY: DMB		PROJ. MGR: DMB		FEC	
				DWN. BY: DRS		CHK. BY: DMB		FEC	
CADD FILE: DRAWING.DWG		DATE: 5/4/2015		DRAWING NO. C-501		SHEET TITLE LEACHATE FORCEMAIN DETAILS			
						PROJECT TITLE CLOSURE OF INACTIVE NABORS LANDFILL			
						REV. DATE DESCRIPTION CK BY			
						0 5/2015 50% SUBMITTAL FEC			

\\KAN-FS01\Clients\ADEQ\Projects\27214218.01 - Closure Contract - 2014\Task 2 - Design and Procurement\Final Cover Design\Area 1-2 C-600 - Area 1-2 Final Cover Grading Plan.dwg May 04, 2015 - 8:20pm Layout Name: Area 1-2 Final Grading Plan By: 3726dmb

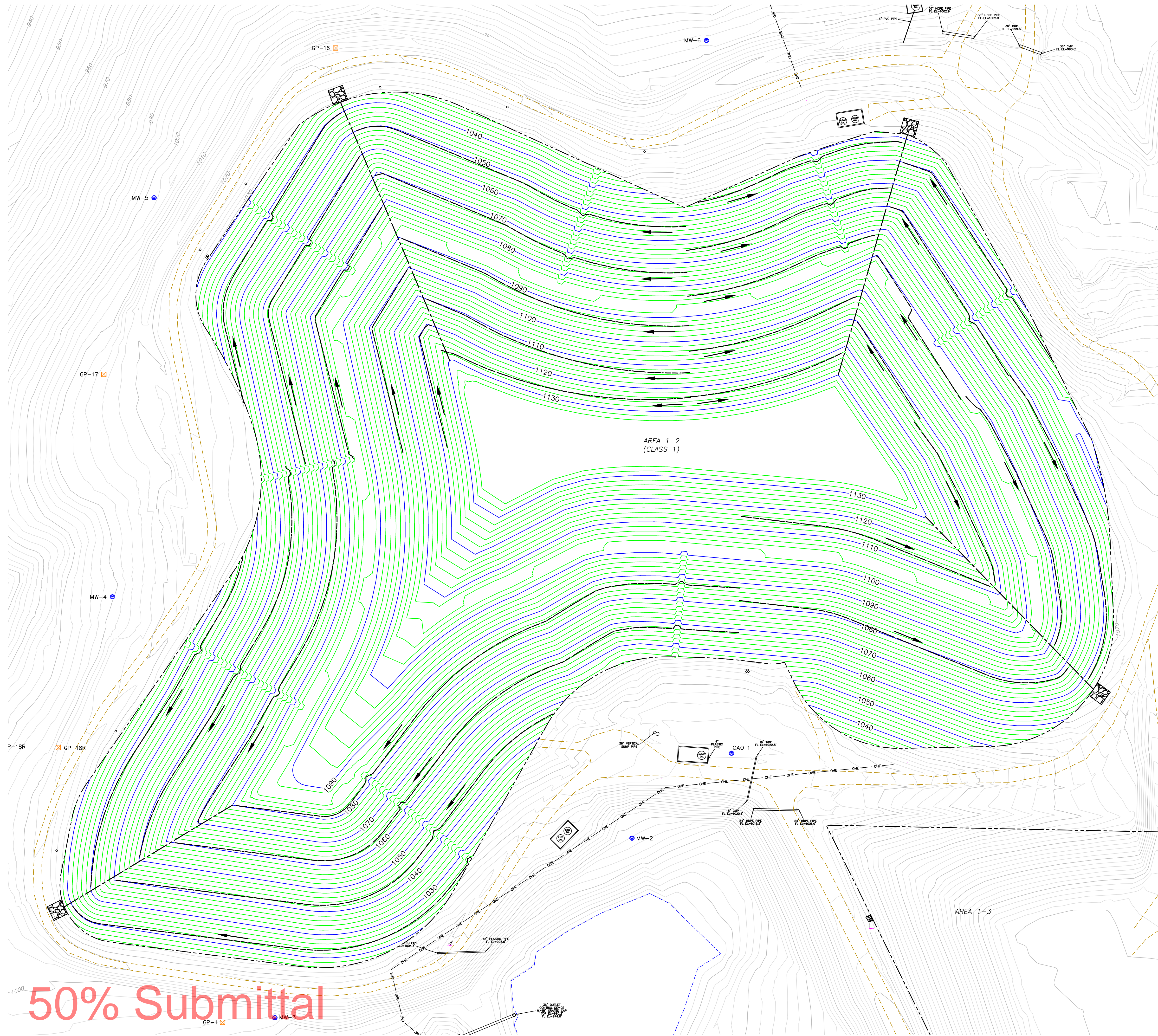


50% Submittal

- LEGEND:**
- EXISTING 2' MINOR CONTOUR
 - EXISTING 10' MAJOR CONTOUR
 - PROPOSED 2' TOP OF FINAL COVER CONTOUR
 - PROPOSED 10' TOP OF FINAL COVER CONTOUR
 - EXISTING ROAD
 - EXISTING OVERHEAD ELECTRIC
 - DISPOSAL BOUNDARY (APPROXIMATE)
 - EXISTING BODY OF WATER
 - MW-2
 - GP-16
 - CP# 5
 - EXISTING MONITORING WELL
 - EXISTING GAS PROBE
 - EXISTING CONTROL POINT

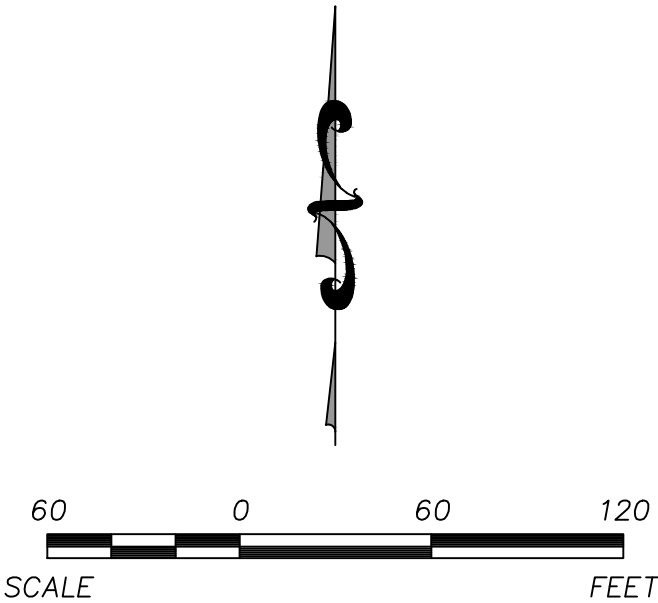
- NOTES:**
- EXISTING TOPOGRAPHY BASED ON AERIAL SURVEY PERFORMED BY M.J. HARDEN ASSOCIATES, INC ON AUGUST 17, 2010. UPDATES TO THE TOPOGRAPHY AND SITE FEATURES FOR AREA 1-2, AREA 1-3, AND SOUTH CLASS 4 DISPOSAL UNITS SURVEYED BY CONSOLIDATED LAND SERVICES, INC. BETWEEN DECEMBER 2014 AND JANUARY 2015.
 - SURVEY DATA BASED ON THE NAD83 ARKANSAS STATE PLANE NORTH COORDINATE SYSTEM.
 - PROPOSED FINAL COVER CONTOURS BASED ON SHEET 5 OF 13 AS SHOWN IN ADEQ DOCUMENT #28209 PREPARED BY NORTHSTAR ENGINEERING CONSULTANT, INC. ON MAY 17, 2005.
 - WASTE RELOCATION TO BE PERFORMED PRIOR TO FINAL COVER INSTALLATION OF THE AREA 1-2 DISPOSAL UNIT.

CLIENT	SCS AQUATERRA 7311 W. 130th St. Ste. 100 Overland Park, Kansas 66213 PH. (913) 681-0030 FAX. (913) 681-0012	CADD FILE: C-600 - AREA 1-2 FINAL COVER GRADING PLAN.DWG	DATE: 5/4/15	DRAWING NO. C-600	REV.	DATE	DESCRIPTION	CK BY
PROJECT TITLE AREA 1-2 FINAL GRADING PLAN CLOSURE OF INACTIVE NABORS LANDFILL					0	5/2015	50% SUBMITTAL	FEC



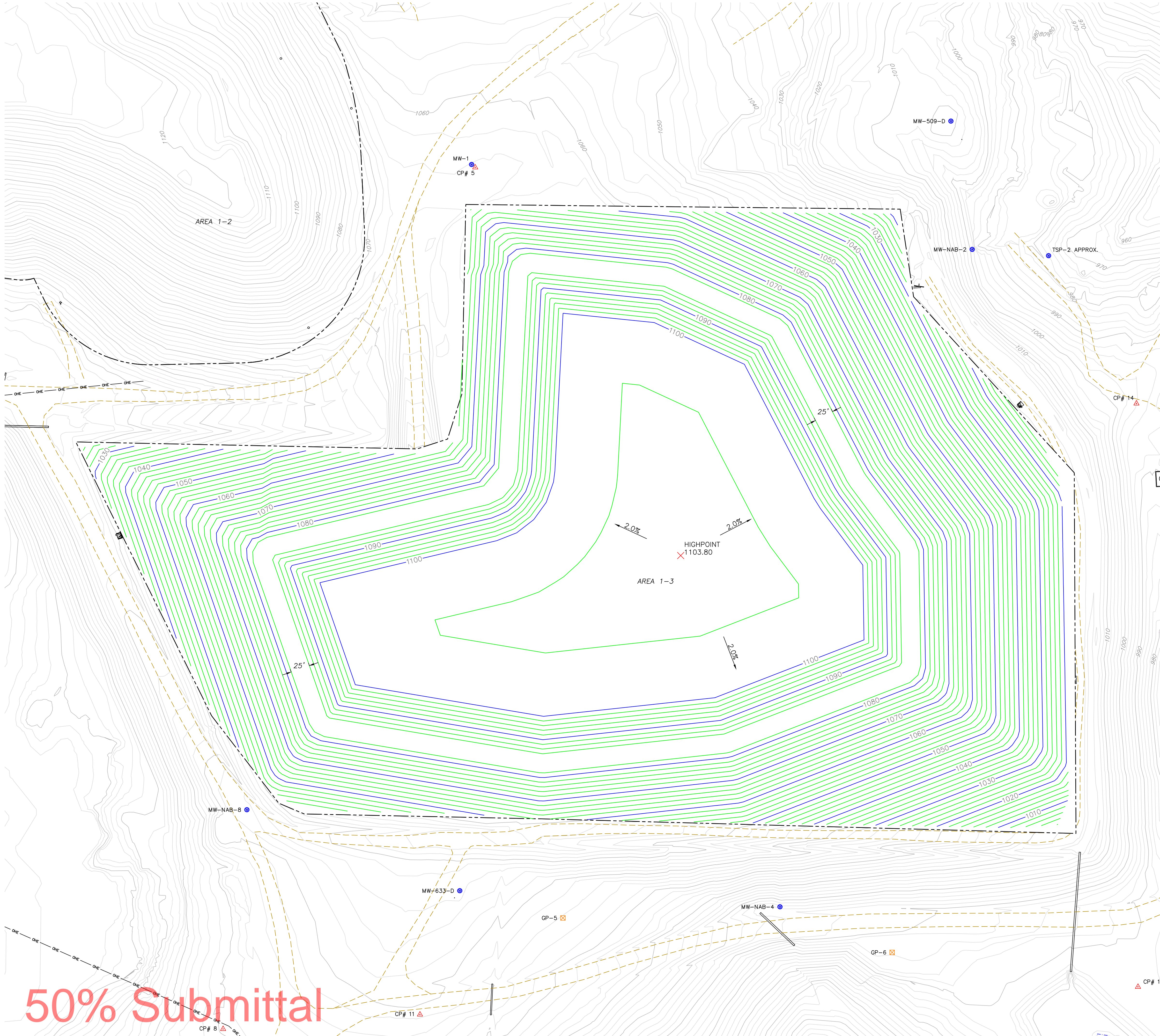
- LEGEND:**
- EXISTING 2' MINOR CONTOUR
 - EXISTING 10' MAJOR CONTOUR
 - PROPOSED 2' TOP OF FINAL COVER CONTOUR
 - PROPOSED 10' TOP OF FINAL COVER CONTOUR
 - PROPOSED HDPE CORRUGATED PIPE DOWN CHUTE
 - PROPOSED TACK-ON TERRACE
 - EXISTING ROAD
 - EXISTING OVERHEAD ELECTRIC
 - DISPOSAL BOUNDARY (APPROXIMATE)
 - EXISTING BODY OF WATER
 - EXISTING MONITORING WELL
 - EXISTING GAS PROBE
 - EXISTING CONTROL POINT

- NOTES:**
- 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.
 - SURVEY DATA BASED ON THE NAD83 ARKANSAS STATE PLANE NORTH COORDINATE SYSTEM.
 - PROPOSED FINAL COVER CONTOURS BASED ON SHEET 5 OF 13 AS SHOWN IN ADEQ DOCUMENT #28209 PREPARED BY NORTHSTAR ENGINEERING CONSULTANT, INC. ON MAY 17, 2005.
 - WASTE RELOCATION TO BE PERFORMED PRIOR TO FINAL COVER INSTALLATION OF THE AREA 1-2 DISPOSAL UNIT.
 - TACK-ON TERRACES TO BE INSTALLED AT A 1% SLOPE TOWARDS THE DESIGNATED CORRUGATED HDPE DOWN CHUTE.
 - ENERGY DISSIPATERS TO BE INSTALLED AT OUTLET OF DOWN CHUTES BEFORE DISCHARGING INTO PERIMETER STORMWATER CHANNEL.



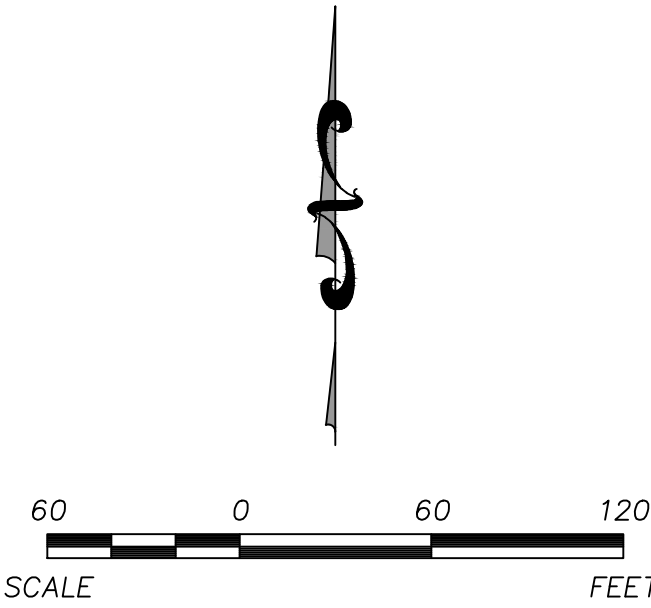
CLIENT		ADEQ		SHEET TITLE		CK BY	
SCS AQUATERRA		A R K A N S A S		AREA 1-2 STORMWATER CONTROL PLAN		DESCRIPTION	
7311 W. 130th St. Ste. 100		Department of Environmental Quality		CLOSURE OF INACTIVE NABORS LANDFILL		REV. DATE	
Overland Park, Kansas 66213							
PH. (913) 681-0030 FAX. (913) 681-0012							
CADD FILE:		PROJ. NO. 14-0000		PROJ. TITLE		FEC	
DATE: 5/4/15		DWN. BY: DMB				0 5/2015	
DRAWING NO. C-601		CHK. BY: FEC				50% SUBMITTAL	
		DSGN. BY: DMB					

\\KAN-FS01\Clients\ADEQ\Projects\27214218.01 - Closure Contract - 2014\Task 2 - Design and Procurement\Final Cover Design\Area 1-3 C-602 - Area 1-3 Final Cover Grading Plan.dwg May 04, 2015 - 8:23pm Layout Name: Area 1-3 Final Grading Plan By: 3726dmb



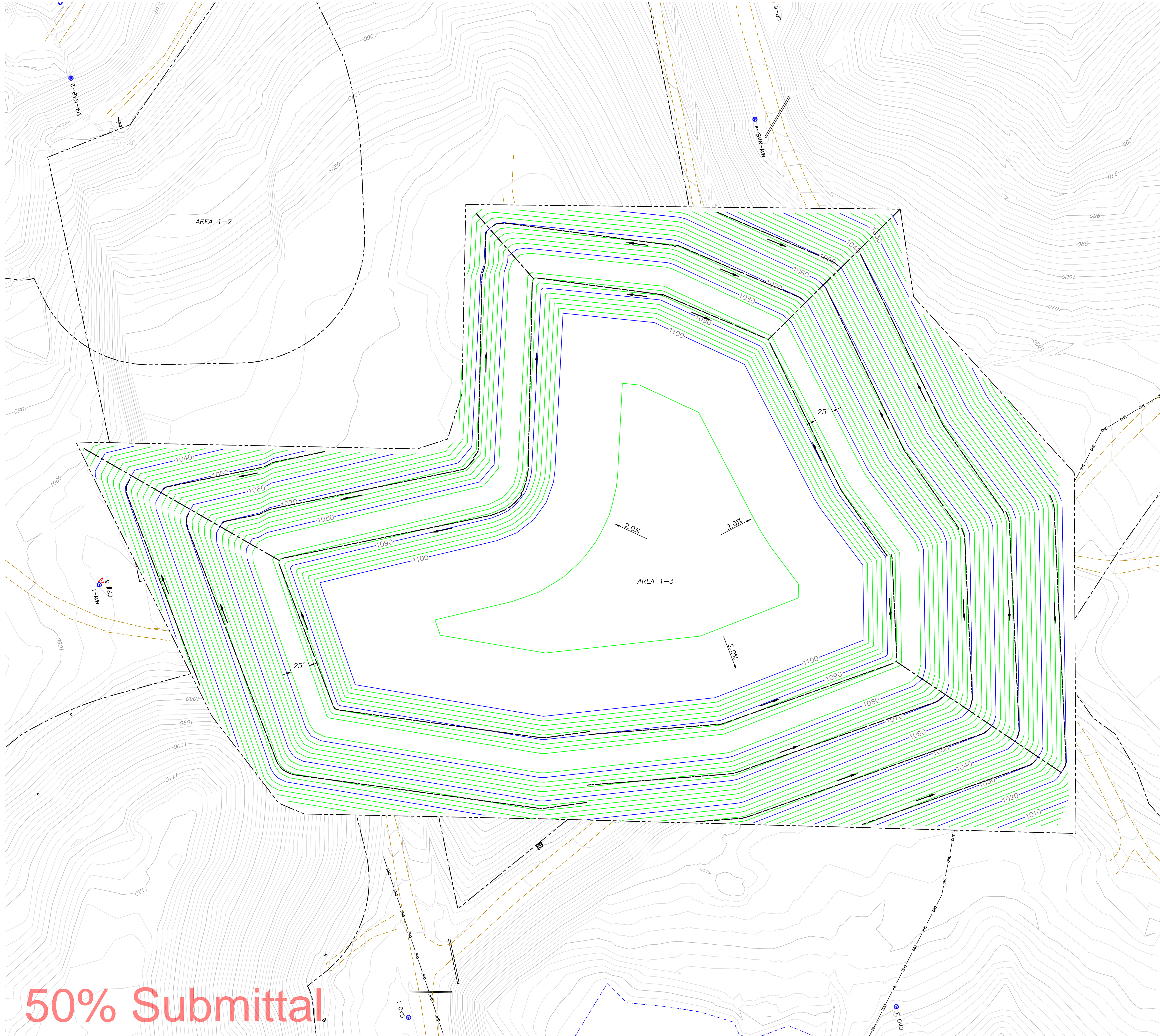
- LEGEND:**
- EXISTING 2' MINOR CONTOUR
 - EXISTING 10' MAJOR CONTOUR
 - PROPOSED 2' TOP OF FINAL COVER CONTOUR
 - PROPOSED 10' TOP OF FINAL COVER CONTOUR
 - EXISTING ROAD
 - EXISTING OVERHEAD ELECTRIC
 - DISPOSAL BOUNDARY (APPROXIMATE)
 - EXISTING BODY OF WATER
 - EXISTING MONITORING WELL
 - EXISTING GAS PROBE
 - EXISTING CONTROL POINT

- NOTES:**
- 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.
 - SURVEY DATA BASED ON THE NAD83 ARKANSAS STATE PLANE NORTH COORDINATE SYSTEM.
 - PROPOSED FINAL COVER CONTOURS REVISED BY SCS AQUATERRA IN APRIL 2015.
 - WASTE RELOCATION TO BE PERFORMED PRIOR TO FINAL COVER INSTALLATION OF THE AREA 1-3 DISPOSAL UNIT.



50% Submittal

CLIENT	SCS AQUATERRA 7311 W. 130th St. Ste. 100 Overland Park, Kansas 66213 PH. (913) 681-0030 FAX. (913) 681-0012		CADD FILE: C-602 - AREA 1-3 FINAL COVER GRADING PLAN.DWG		DATE: 5/4/15	DRAWING NO. C-602
	DWN. BY: DMB CHK. BY: DMB	Q/A RW BY: DMB PROJ. MGR BY: FEC	DATE: 5/4/15	DRAWING NO. C-602		
SHEET TITLE AREA 1-3 FINAL GRADING PLAN		PROJECT TITLE CLOSURE OF INACTIVE NABORS LANDFILL		REV. DATE		
CK. BY		DESCRIPTION		REV. DATE		
0		5/2015		50% SUBMITTAL		
FEC		FEC		FEC		



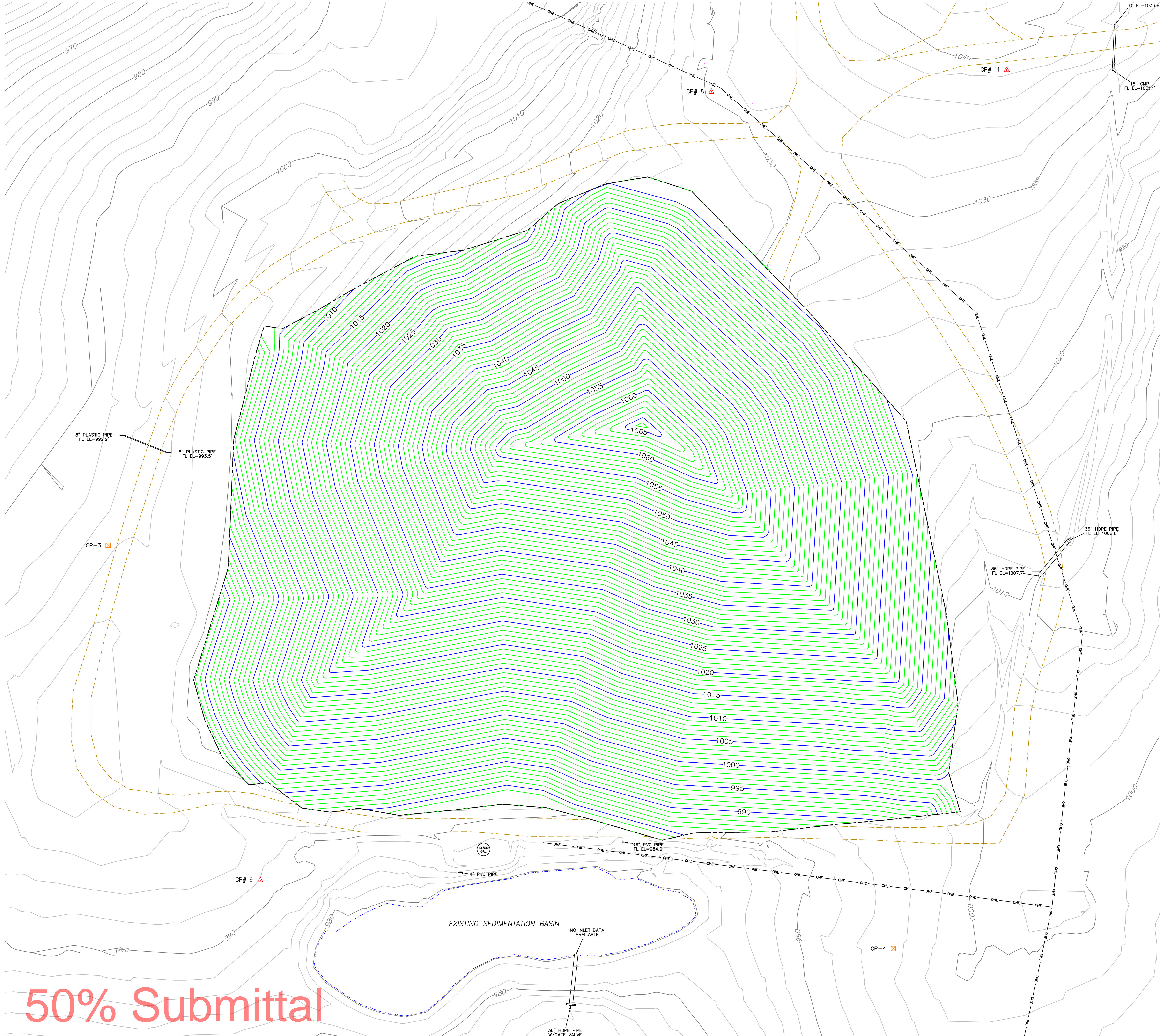
- LEGEND:**
- EXISTING 2' MINOR CONTOUR
 - EXISTING 10' MAJOR CONTOUR
 - PROPOSED 2' TOP OF FINAL COVER CONTOUR
 - PROPOSED 10' TOP OF FINAL COVER CONTOUR
 - PROPOSED HDPE CORRUGATED PIPE DOWN CHUTE
 - PROPOSED TACK-ON TERRACE
 - EXISTING ROAD
 - EXISTING OVERHEAD ELECTRIC
 - DISPOSAL BOUNDARY (APPROXIMATE)
 - EXISTING BODY OF WATER
 - EXISTING MONITORING WELL
 - EXISTING GAS PROBE
 - EXISTING CONTROL POINT

- NOTES:**
- 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.
 - SURVEY DATA BASED ON THE NAD83 ARKANSAS STATE PLANE NORTH COORDINATE SYSTEM.
 - PROPOSED FINAL COVER CONTOURS REVISED BY SCS AQUATERRA IN APRIL 2015.
 - TACK-ON TERRACES TO BE INSTALLED AT A 1% SLOPE TOWARDS THE DESIGNATED CORRUGATED HDPE DOWN CHUTE.
 - ENERGY DISSIPATERS TO BE INSTALLED AT OUTLET OF DOWN CHUTES BEFORE DISCHARGING INTO PERIMETER STORMWATER CHANNEL.

CLIENT		SCS AQUATERRA		CADD FILE:		C-603 - AREA 1-3 STORMWATER CONTROL PLAN.DWG	
7311 W. 130th St. Ste. 100 Overland Park, Kansas 66213 PH. (913) 881-0030 FAX. (913) 881-0012		PROJ. NO. 4218.01		DWN. BY: DMB		O/A R/W BY: WVB	
		DSK. BY: DMB		CHK. BY: FFC		PRCT. MGR: FFC	
DATE: 5/4/15							
DRAWING NO. C-603							

SHEET TITLE		REV.		DATE		DESCRIPTION		CK BY	
AREA 1-3 STORMWATER CONTROL PLAN									
PROJECT TITLE									
CLOSURE OF INACTIVE NABORS LANDFILL									
		0		5/2015		50% SUBMITTAL		FEC	

\\KAN-FS01\Clients\ADEQ\Projects\27214218.01 - Closure Contract - 2014\Task 2 - Design and Procurement\Final Cover Design\Class 4 CC-604 - Class 4 Final Grading Plan.dwg May 04, 2015 - 8:27pm Layout Name: Class 4 Final Grading Plan By: 3726dmb



50% Submittal

LEGEND:

- EXISTING 2' MINOR CONTOUR
- EXISTING 10' MAJOR CONTOUR
- PROPOSED 1' TOP OF FINAL COVER CONTOUR
- PROPOSED 5' TOP OF FINAL COVER CONTOUR
- EXISTING ROAD
- EXISTING OVERHEAD ELECTRIC
- DISPOSAL BOUNDARY (APPROXIMATE)
- EXISTING BODY OF WATER
- EXISTING MONITORING WELL
- EXISTING GAS PROBE
- EXISTING CONTROL POINT

NOTES:

- 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.
- SURVEY DATA BASED ON THE NAD83 ARKANSAS STATE PLANE NORTH COORDINATE SYSTEM.
- PROPOSED FINAL COVER CONTOURS BASED ON SHEET 1 OF 1 AS SHOWN IN ADEQ DOCUMENT #58185 PREPARED BY SCS ENGINEERS ON AUGUST 25, 2010.
- WASTE RELOCATION TO BE PERFORMED PRIOR TO FINAL COVER INSTALLATION OF THE CLASS 4 DISPOSAL UNIT.

CLIENT

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: DMB
PRG. MOD. BY: DMB
FEC. BY: DMB

CADD FILE:
C-604 - CLASS 4 FINAL GRADING PLAN.DWG

DATE:
5/4/15

DRAWING NO.
C-604

CS AQUATERRA

AR K A N S A S
Department of Environmental Quality

ADEQ

SHEET TITLE
CLASS 4 FINAL GRADING PLAN

PROJECT TITLE
CLOSURE OF INACTIVE NABORS LANDFILL

REV. DATE

CK. BY

DESCRIPTION

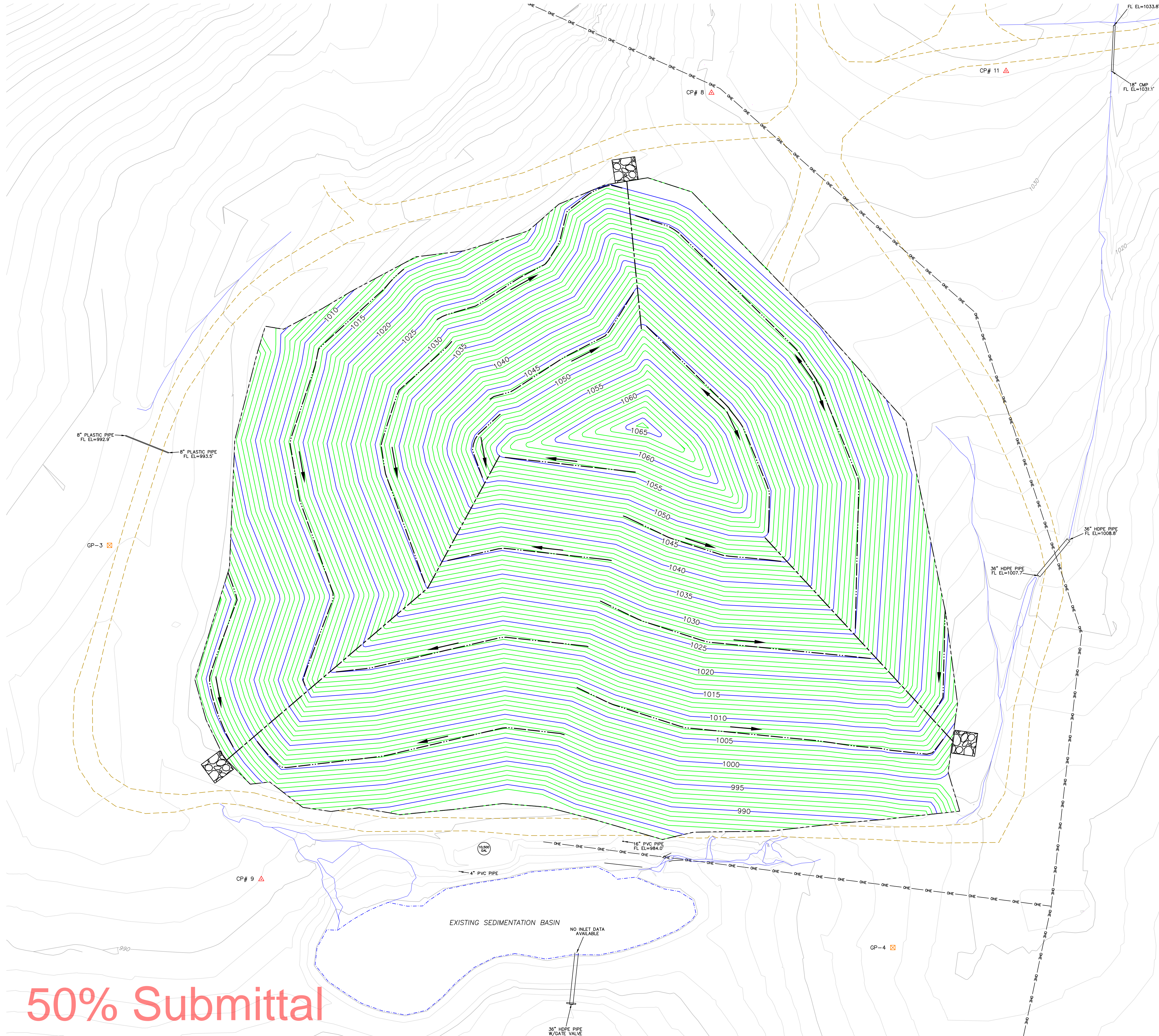
0 5/2015

50% SUBMITTAL

FEC

\\KAN-FS01\Clients\ADEQ\Projects\27214218.01 - Closure Contract - 2014\Task 2 - Design and Procurement\Final Cover Design\Class 4 CC-605 - Class 4 SW Control Plan.dwg May 04, 2015 - 8:28pm Layout Name: Class 4 Stormwater Control Plan By: 3726dmb

50% Submittal



LEGEND:

- EXISTING 2' MINOR CONTOUR
- EXISTING 10' MAJOR CONTOUR
- PROPOSED 1' TOP OF FINAL COVER CONTOUR
- PROPOSED 5' TOP OF FINAL COVER CONTOUR
- PROPOSED HDPE CORRUGATED PIPE DOWN CHUTE
- PROPOSED TACK-ON TERRACE
- EXISTING ROAD
- EXISTING OVERHEAD ELECTRIC
- DISPOSAL BOUNDARY (APPROXIMATE)
- EXISTING BODY OF WATER
- EXISTING MONITORING WELL
- EXISTING GAS PROBE
- EXISTING CONTROL POINT

NOTES:

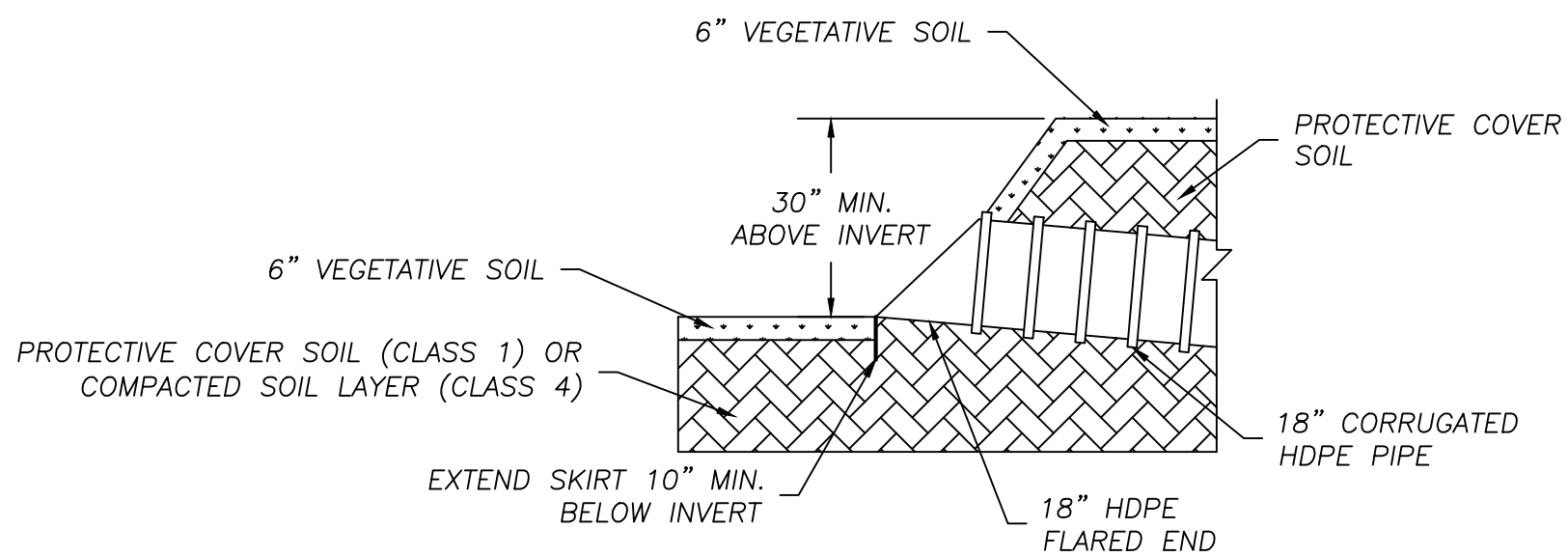
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- SURVEY DATA BASED ON THE NAD83 ARKANSAS STATE PLANE NORTH COORDINATE SYSTEM.
- PROPOSED FINAL COVER CONTOURS BASED ON SHEET 1 OF 1 AS SHOWN IN ADEQ DOCUMENT #58185 PREPARED BY SCS ENGINEERS ON AUGUST 25, 2010.
- TACK-ON TERRACES TO BE INSTALLED AT A 1% SLOPE TOWARDS THE DESIGNATED CORRUGATED HDPE DOWN CHUTE.
- ENERGY DISSIPATERS TO BE INSTALLED AT OUTLET OF DOWN CHUTES BEFORE DISCHARGING INTO PERIMETER STORMWATER CHANNEL.



CLIENT	SCS AQUATERRA		CADD FILE:		DATE:		DRAWING NO.	
	7311 W. 130th St. Ste. 100 Overland Park, Kansas 66213 PH. (913) 681-0030 FAX. (913) 681-0012		C-605 - CLASS 4 SW CONTROL PLAN.DWG		5/4/15		C-605	
SHEET TITLE	CLASS 4 STORMWATER CONTROL PLAN		REV.		DATE		DESCRIPTION	
	PROJECT TITLE		0		5/2015		50% SUBMITTAL	
PROJECT TITLE		CLOSURE OF INACTIVE NABORS LANDFILL		FEC		FEC		

A cross-sectional diagram of a landfill cell. From top to bottom, the layers are: a 6" vegetative layer (indicated by downward arrows), an 18" compacted soil layer (stippled pattern, labeled with a maximum permeability of 1×10^{-5} cm/sec), a 12" intermediate cover (woven mesh pattern), and waste (cross-hatched pattern). Arrows point from the text labels to their respective layers.

 **TACK-ON TERRACE**
NOT TO SCALE



HDPE PIPE INLET
NOT TO SCALE

A detailed cross-section diagram illustrating the installation of a pipe through a road structure. The diagram shows a vertical pipe passing through a road base, which is composed of several layers: a 6" min. vegetative layer, a 12" min. protective cover soil, a geocomposite drainage layer, an HDPE geomembrane, and a GCL. The pipe is secured with a stainless steel worm gear clamp and a bentonite plug. The pipe is surrounded by a pipe boot and HDPE pipe. The pipe is connected to a FERNCO PVC bushing and a FERNCO coupling. The pipe is also connected to a pipe boot welded to the geomembrane. The diagram includes labels for the following components:

- PIPE
- FERNCO PVC BUSHING
- FERNCO COUPLING
- STAINLESS STEEL WORM GEAR CLAMP
- PIPE BOOT
- HDPE PIPE
- BENTONITE PLUG
- 6" MIN. VEGETATIVE LAYER
- 12" MIN. PROTECTIVE COVER SOIL
- GEOCOMPOSITE DRAINAGE LAYER
- HDPE GEOMEMBRANE
- GCL
- PIPE BOOT WELDED TO GEOMEMBRANE
- 2' MIN.

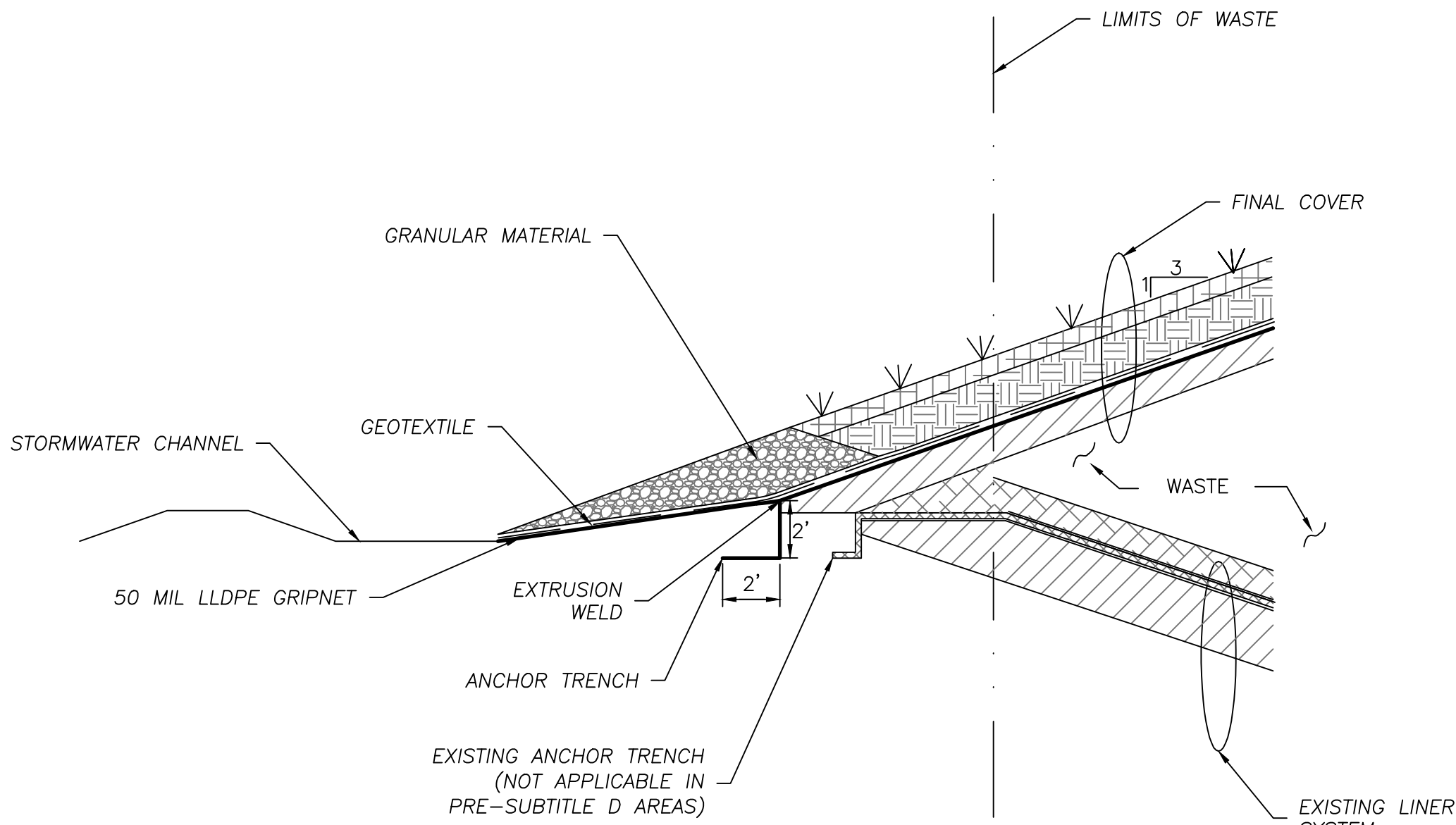
NOTES:

1. TO BE INSTALLED ON ALL EXISTING & PROPOSED PIPE PENETRATIONS WITHIN THE PERMITTED LIMITS OF WASTE/GEOMEMBRANE

2. 10 MIL LLDPE SUPER GRIPNET FLAP TO COVER ANCHOR TRENCH AND DRAIN INTO STORMWATER CHANNEL.

3. LENGTH OF GRANULAR MATERIAL VARIES BASED ON LOCATION OF STORMWATER CHANNEL.

 **CORRUGATED HDPE DOWN CHUTE DETAIL**
NOT TO SCALE



 TYPICAL EDGE OF WASTE (CLASS 1)

NOT TO SCALE

TYPICAL EDGE OF WASTE TOE DRAIN (CLASS 1)
NOT TO SCALE

50% Submittal

[illegible]