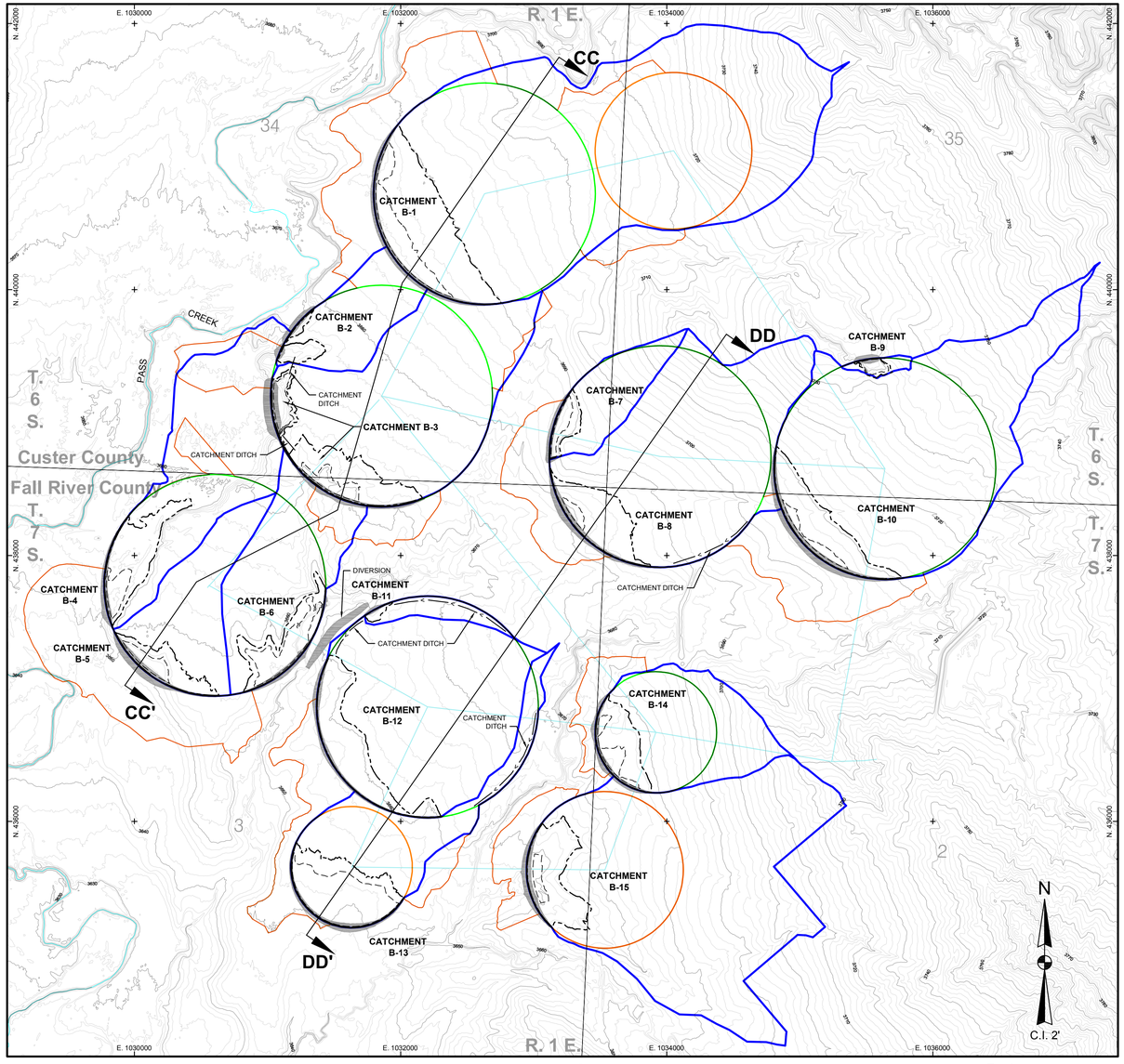
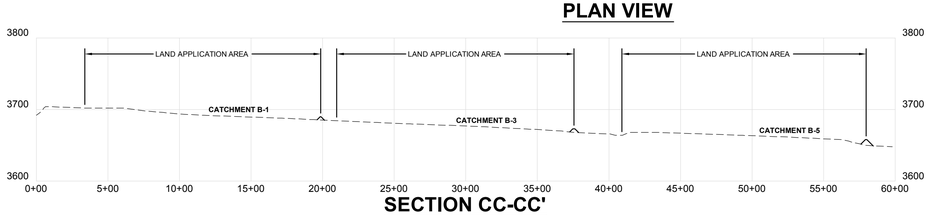
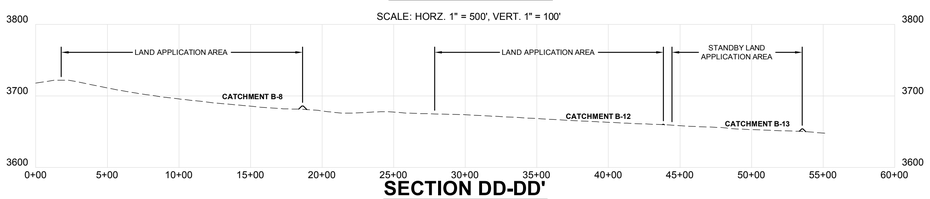


PLAN VIEW



SECTION CC-CC'

SCALE: HORZ. 1" = 500', VERT. 1" = 100'



SECTION DD-DD'

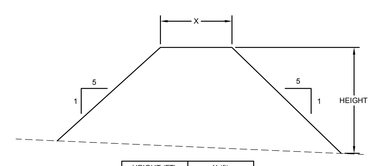
SCALE: HORZ. 1" = 500', VERT. 1" = 100'

Feet: 0, 250, 500, 1,000, 1,500, 2,000

Meters: 0, 125, 250, 500

LEGEND

- PRIMARY LAND APPLICATION AREA
- STANDBY LAND APPLICATION AREA
- DRAINAGE BOUNDARY
- PIPELINE
- GENERAL CATCHMENT BOUNDARY
- NORMAL OPERATING LEVEL (RUNOFF /SNOWMELT ONLY)
- MAXIMUM WATER LEVEL
- CATCHMENT BERM FOOTPRINT



HEIGHT (FT)	X (ft)
≤6	5
6-8	8
8-10	10
>10	15

TYPICAL CATCHMENT BERM SECTION

NTS

CATCHMENT B-1 AREA CAPACITY TABLE

ELEVATION (ft)	AREA (ac)	AVG. AREA (ac)	CAPACITY (ac-ft) INCR.	CAPACITY (ac-ft) ACCUM.	
3686.0	0.46			0.00	INACTIVE CAPACITY 1.82 ac-ft
		1.13	0.57		
3686.5	1.80			0.57	
		2.49	1.25		
3687.0	3.17			1.82	
		3.91	1.96		
3687.5	4.65			3.78	
		5.40	2.70		
3688.0	6.15			6.48	
		7.12	3.56		
3688.5	8.09			10.04	100yr FREEBOARD 24.20 ac-ft
		8.93	4.47		
3689.0	9.78			14.51	
		10.64	5.32		
3689.5	11.50			19.83	
		12.37	6.19		
3690.0	13.24			26.02	

CATCHMENT B-2 AREA CAPACITY TABLE

ELEVATION (ft)	AREA (ac)	AVG. AREA (ac)	CAPACITY (ac-ft) INCR.	CAPACITY (ac-ft) ACCUM.	
3670.5	0.01			0.00	INACTIVE CAPACITY 0.00 ac-ft
		0.03	0.02		
3671.0	0.04			0.02	
		0.06	0.03		
3671.5	0.08			0.05	
		0.11	0.06		
3672.0	0.14			0.11	
		0.18	0.09		
3672.5	0.21			0.20	
		0.25	0.13		
3673.0	0.29			0.33	
		0.38	0.19		
3673.5	0.47			0.52	100yr FREEBOARD 2.11 ac-ft
		0.48	0.24		
3674.0	0.48			0.76	
		0.66	0.33		
3674.5	0.83			1.09	
		0.92	0.46		
3675.0	1.01			1.55	
		1.11	0.56		
3675.5	1.21			2.11	

CATCHMENT B-3 AREA CAPACITY TABLE

ELEVATION (ft)	AREA (ac)	AVG. AREA (ac)	CAPACITY (ac-ft) INCR.	CAPACITY (ac-ft) ACCUM.	
3664.0	0.16			0.00	
		0.20	0.10		
3664.5	0.23			0.10	
		0.25	0.13		
3665.0	0.27			0.23	
		0.30	0.15		
3665.5	0.32			0.38	
		0.35	0.18		
3666.0	0.37			0.56	
		0.41	0.21		
3666.5	0.44			0.77	
		0.47	0.24		
3667.0	0.49			1.01	
		0.52	0.26		
3667.5	0.55			1.27	
		0.58	0.29		
3668.0	0.61			1.56	
		0.64	0.32		
3668.5	0.67			1.88	
		0.72	0.36		
3669.0	0.76			2.24	
		0.85	0.43		
3669.5	0.94			2.67	
		1.19	0.60		
3670.0	1.44			3.27	
		1.72	0.86		
3670.5	1.99			4.13	INACTIVE CAPACITY 4.13 ac-ft
		2.27	1.14		
3671.0	2.54			5.27	
		2.87	1.44		
3671.5	3.20			6.71	
		3.66	1.83		
3672.0	4.12			8.54	100yr FREEBOARD 10.03 ac-ft
		4.91	2.46		
3672.5	5.70			11.00	
		6.32	3.16		
3673.0	6.93			14.16	

CATCHMENT B-4 AREA CAPACITY TABLE

ELEVATION (ft)	AREA (ac)	AVG. AREA (ac)	CAPACITY (ac-ft) INCR.	CAPACITY (ac-ft) ACCUM.	
3653.5	0.01			0.00	
		0.11	0.06		
3654.0	0.20			0.06	
		0.32	0.16		
3654.5	0.44			0.22	INACTIVE CAPACITY 0.50 ac-ft
		0.55	0.28		
3655.0	0.65			0.50	
		0.80	0.40		
3655.5	0.94			0.90	
		1.28	0.64		
3656.0	1.61			1.54	
		2.25	1.13		
3656.5	2.88			2.67	100yr FREEBOARD 7.64 ac-ft
		3.21	1.61		
3657.0	3.54			4.28	
		3.90	1.95		
3657.5	4.25			6.23	
		4.62	2.31		
3658.0	4.99			8.54	

CATCHMENT B-5 AREA CAPACITY TABLE

ELEVATION (ft)	AREA (ac)	AVG. AREA (ac)	CAPACITY (ac-ft) INCR.	CAPACITY (ac-ft) ACCUM.	
3652.0	0.05			0.00	
		0.11	0.06		
3652.5	0.16			0.06	
		0.22	0.11		
3653.0	0.28			0.17	
		0.35	0.18		
3653.5	0.41			0.35	
		0.49	0.25		
3654.0	0.56			0.60	
		0.63	0.32		
3654.5	0.69			0.92	
		0.77	0.39		
3655.0	0.84			1.31	
		0.92	0.46		
3655.5	0.99			1.77	
		1.08	0.54		
3656.0	1.16			2.31	
		1.29	0.65		
3656.5	1.41			2.96	
		1.56	0.78		
3657.0	1.70			3.74	
		1.91	0.95		
3657.5	2.11			4.69	
		2.25	1.13		
3658.0	2.39			5.82	

CATCHMENT B-6 AREA CAPACITY TABLE

ELEVATION (ft)	AREA (ac)	AVG. AREA (ac)	CAPACITY (ac-ft) INCR.	CAPACITY (ac-ft) ACCUM.	
3652.5	0.02			0.00	
		0.03	0.02		
3653.0	0.04			0.02	
		0.05	0.03		
3653.5	0.05			0.05	
		0.10	0.05		
3654.0	0.14			0.10	
		0.41	0.21		
3654.5	0.68			0.31	
		0.89	0.45		
3655.0	1.10			0.76	
		1.33	0.67		
3655.5	1.55			1.43	
		1.96	0.98		
3656.0	2.36			2.41	INACTIVE CAPACITY 2.41 ac-ft
		2.63	1.32		
3656.5	2.89			3.73	
		3.11	1.56		
3657.0	3.33			5.29	100yr FREEBOARD 6.73 ac-ft
		3.58	1.79		
3657.5	3.82			7.08	
		4.11	2.06		
3658.0	4.39			9.14	

CATCHMENT B-7 AREA CAPACITY TABLE

ELEVATION (ft)	AREA (ac)	AVG. AREA (ac)	CAPACITY (ac-ft) INCR.	CAPACITY (ac-ft) ACCUM.	
3687.5	0.03			0.00	
		0.13	0.07		
3688.0	0.22			0.07	
		0.33	0.17		
3688.5	0.43			0.24	
		0.55	0.28		
3689.0	0.66			0.52	INACTIVE CAPACITY 0.52 ac-ft
		0.78	0.39		
3689.5	0.90			0.91	
		1.03	0.52		100yr FREEBOARD 1.57 ac-ft
3690.0	1.15			1.43	
		1.31	0.66		
3690.5	1.46			2.09	

CATCHMENT B-8 AREA CAPACITY TABLE

ELEVATION (ft)	AREA (ac)	AVG. AREA (ac)	CAPACITY (ac-ft) INCR.	CAPACITY (ac-ft) ACCUM.	
3679.5	0.00			0.00	
		0.04	0.02		
3680.0	0.08			0.02	INACTIVE CAPACITY 0.24 ac-ft
		0.14	0.07		
3680.5	0.20			0.09	
		0.29	0.15		
3681.0	0.37			0.24	
		0.49	0.25		
3681.5	0.60			0.49	
		0.76	0.38		
3682.0	0.92			0.87	
		1.11	0.56		
3682.5	1.29			1.43	
		1.48	0.74		
3683.0	1.66			2.17	
		1.88	0.94		
3683.5	2.09			3.11	
		2.39	1.20		
3684.0	2.68			4.31	
		2.97	1.49		
3684.5	3.26			5.80	100yr FREEBOARD 11.68 ac-ft
		3.52	1.76		
3685.0	3.77			7.56	
		4.04	2.02		
3685.5	4.31			9.58	
		4.63	2.32		
3686.0	4.94			11.90	

CATCHMENT B-9 AREA CAPACITY TABLE

ELEVATION (ft)	AREA (ac)	AVG. AREA (ac)	CAPACITY (ac-ft) INCR.	CAPACITY (ac-ft) ACCUM.	
3726.5	0.01			0.00	
		0.02	0.01		
3727.0	0.03			0.01	
		0.05	0.03		
3727.5	0.06			0.04	
		0.08	0.04		
3728.0	0.10			0.08	
		0.12	0.06		
3728.5	0.13			0.14	
		0.15	0.08		
3729.0	0.16			0.22	INACTIVE CAPACITY 0.74 ac-ft
		0.18	0.09		
3729.5	0.20			0.31	
		0.22	0.11		
3730.0	0.23			0.42	
		0.27	0.14		
3730.5	0.31			0.56	
		0.35	0.18		
3731.0	0.38			0.74	
		0.43	0.22		
3731.5	0.47			0.96	
		0.52	0.26		100yr FREEBOARD 0.48 ac-ft
3732.0	0.56			1.22	

CATCHMENT B-10 AREA CAPACITY TABLE

ELEVATION (ft)	AREA (ac)	AVG. AREA (ac)	CAPACITY (ac-ft) INCR.	CAPACITY (ac-ft) ACCUM.	
3705.0	0.08			0.00	
		0.20	0.10		
3705.5	0.31			0.10	INACTIVE CAPACITY 0.35 ac-ft
		0.50	0.25		
3706.0	0.69			0.35	
		0.92	0.46		
3706.5	1.15			0.81	
		1.38	0.69		
3707.0	1.60			1.50	
		1.86	0.93		
3707.5	2.11			2.43	
		2.38	1.19		
3708.0	2.64			3.62	
		2.97	1.49		
3708.5	3.30			5.11	
		3.61	1.81		100yr FREEBOARD 14.63 ac-ft
3709.0	3.92			6.92	
		4.25	2.13		
3709.5	4.57			9.05	
		4.92	2.46		
3710.0	5.27			11.51	
		5.69	2.85		
3710.5	6.10			14.36	
		6.18	0.62		
3710.6	6.26			14.98	

CATCHMENT B-11 AREA CAPACITY TABLE

ELEVATION (ft)	AREA (ac)	AVG. AREA (ac)	CAPACITY (ac-ft) INCR.	CAPACITY (ac-ft) ACCUM.	
3661.5	0.00			0.00	INACTIVE CAPACITY 0.00 ac-ft
		0.02	0.01		
3662.0	0.03			0.01	
		0.05	0.03		
3662.5	0.06			0.04	
		0.09	0.05		100yr FREEBOARD 0.27 ac-ft
3663.0	0.11			0.09	
		0.14	0.07		
3663.5	0.16			0.16	
		0.21	0.11		
3664.0	0.25			0.27	

CATCHMENT B-12 AREA CAPACITY TABLE

ELEVATION (ft)	AREA (ac)	AVG. AREA (ac)	CAPACITY (ac-ft) INCR.	CAPACITY (ac-ft) ACCUM.	
3656.5	0.04			0.00	INACTIVE CAPACITY 0.00 ac-ft
		0.10	0.05		
3657.0	0.16			0.05	
		0.10	0.05		
3657.5	0.04			0.10	
		0.02	0.01		
3658.0	0.00			0.11	
		0.74	0.37		
3658.5	1.47			0.48	
		1.91	0.95		100yr FREEBOARD 7.66 ac-ft
3659.0	2.35			1.43	
		2.87	1.44		
3659.5	3.38			2.87	
		3.93	1.97		
3660.0	4.47			4.84	
		5.63	2.82		
3660.5	6.78			7.66	

CATCHMENT B-13 AREA CAPACITY TABLE

ELEVATION (ft)	AREA (ac)	AVG. AREA (ac)	CAPACITY (ac-ft) INCR.	CAPACITY (ac-ft) ACCUM.	
3648.5	0.00			0.00	
		0.04	0.02		
3649.0	0.08			0.02	
		0.17	0.09		
3649.5	0.25			0.11	
		0.40	0.20		
3650.0	0.54			0.31	
		0.74	0.37		
3650.5	0.94			0.68	INACTIVE CAPACITY 7.72 ac-ft
		1.21	0.61		
3651.0	1.47			1.29	
		1.80	0.90		
3651.5	2.13			2.19	
		2.57	1.29		
3652.0	3.00			3.48	
		3.66	1.83		
3652.5	4.32			5.31	
		4.82	2.41		
3653.0	5.31			7.72	
		5.79	2.90		
3653.5	6.27			10.62	100yr FREEBOARD 6.31 ac-ft
		6.82	3.41		
3654.0	7.36			14.03	

CATCHMENT B-14 AREA CAPACITY TABLE

ELEVATION (ft)	AREA (ac)	AVG. AREA (ac)	CAPACITY (ac-ft) INCR.	CAPACITY (ac-ft) ACCUM.	
3674.0	0.05			0.00	
		0.08	0.04		
3674.5	0.11			0.04	
		0.19	0.10		
3675.0	0.26			0.14	INACTIVE CAPACITY 0.56 ac-ft
		0.28	0.14		
3675.5	0.29			0.28	
		0.59	0.30		
3676.0	0.89			0.58	
		1.23	0.62		
3676.5	1.56			1.20	
		1.79	0.90		
3677.0	2.02			2.10	
		2.26	1.13		100yr FREEBOARD 5.81 ac-ft
3677.5	2.49			3.23	
		2.80	1.40		
3678.0	3.10			4.63	
		3.52	1.76		
3678.5	3.93			6.39	

CATCHMENT B-15 AREA CAPACITY TABLE

ELEVATION (ft)	AREA (ac)	AVG. AREA (ac)	CAPACITY (ac-ft) INCR.	CAPACITY (ac-ft) ACCUM.	
3655.5	0.50			0.00	INACTIVE CAPACITY 0.00 ac-ft
		0.53	0.27		
3656.0	0.55			0.27	
		0.58	0.29		
3656.5	0.61			0.56	
		0.64	0.32		
3657.0	0.67			0.88	
		0.70	0.35		
3657.5	0.73			1.23	
		0.76	0.38		
3658.0	0.79			1.61	
		0.83	0.42		
3658.5	0.86			2.03	
		0.89	0.45		
3659.0	0.92			2.48	
		0.96	0.48		
3659.5	0.99			2.96	
		1.03	0.52		
3660.0	1.06			3.48	
		1.16	0.58		
3660.5	1.26			4.06	
		1.39	0.70		
3661.0	1.52			4.76	
		1.71	0.86		
3661.5	1.89			5.62	
		2.12	1.06		
3662.0	2.34			6.68	
		2.63	1.32		
3662.5	2.92			8.00	
		3.19	1.60		
3663.0	3.45			9.60	
		3.74	1.87		
3663.5	4.02			11.47	
		4.36	2.18		
3664.0	4.70			13.65	
		5.06	2.53		
3664.5	5.41			16.18	

NOTES:

1. INACTIVE CAPACITY IS THE AVAILABLE STORAGE CAPACITY FOR EACH CATCHMENT AREA ALLOWING ADEQUATE FREEBOARD CAPACITY FOR THE 100-YEAR, 24-HOUR STORM RUNOFF.
2. THE GENERAL CATCHMENT BOUNDARY THAT IS SHOWN IS THE SAME AS SHOWN ON FIGURES IN THE GDP APPLICATION. THE ACTUAL BOUNDARY WILL VARY DEPENDING UPON THE FINAL DESIGN OF THE CATCHMENT AREAS. THE CONCEPTUAL CATCHMENT AREA DESIGN SHOWN ON THIS PLATE IS WITHIN THE GENERAL CATCHMENT BOUNDARY.

Burdock Land Application Catchment Summary

Catchment Designation	Drainage Area (acres)	Drainage Area (mi^2)	2-Year Runoff Volume (acre-ft)	100-Year Runoff Volume (acre-ft)	Catchment Area (acres)	Catchment Capacity (acre-ft)	Catchment Height (ft)	2-Year Depth (ft)
B-1	107.88	0.17	4.47	23.85	13.24	26.02	5.1	2.0
B-2	12.24	0.02	0.53	2.81	1.21	2.11	7.6	3.0
B-3	45.91	0.07	1.84	9.82	6.93	14.16	11.0	4.5
B-4	33.24	0.05	1.32	7.01	4.99	8.54	8.0	2.5
B-5	17.38	0.03	0.79	4.21	2.39	5.82	8.9	2.5
B-6	24.15	0.04	1.05	5.61	4.39	9.14	5.1	3.0
B-7	9.58	0.01	0.28	1.45	1.46	2.09	5.5	1.5
B-8	48.08	0.08	2.27	11.60	4.94	11.90	8.6	4.0
B-9	1.16	0.00	0.19	0.46	0.56	1.22	6.0	2.5
B-10	64.09	0.10	2.84	14.50	6.26	14.98	8.3	3.0
B-11	3.15	0.00	0.51	1.26	0.25	0.27	4.0	2.5
B-12	44.24	0.07	1.45	8.85	6.78	7.66	6.0	2.5
B-13	23.15	0.04	1.14	5.80	7.36	14.03	6.2	2.5
B-14	22.41	0.04	1.14	5.80	3.93	6.39	6.5	2.5
B-15	70.46	0.11	3.12	15.95	5.41	16.18	8.6	4.5
		Total:	**22.94**	**118.98**	**70.10**	**140.51**		

Notes:

1. Overflow from Catchment B-2 will be routed to Catchment B-3.
2. Overflow from Catchment B-11 will be routed to Catchment B-12.
3. Overflow from Catchment B-12 will be routed to Catchment B-13.

This plate is provided to fulfill the requirements of ARSD 74:29:02:04, ARSD 74:29:05:14 (4) and SDCL 45-6B-6(8).

CONSULTANT: WWC ENGINEERING

REVISIONS

#	DRAWN	CHECKED	APPROVED	DATE

REF

CHECK SCALES: If this bar does not measure 1 inch this map is not at its original scale

36" x 42"

SIGNATURE OF PREPARER: Dale E. Brown

PLOT DATE: 29 March 2013 | DATE: 28 March 2013

DRAWN: Dave C. Johnson | PDF FILE

PREPARER: Dale E. Brown | CAD FILE: K:\Powertech\11270\DWGS\CATCHMENT_PONDS.dwg

POWERTECH (USA) INC.

Plate 5.4-2

Conceptual Catchment Area Design
Burdock Land Application Area

Dewey-Burdock Project

COORD: NAD 27, South Dakota State Plane South (feet)