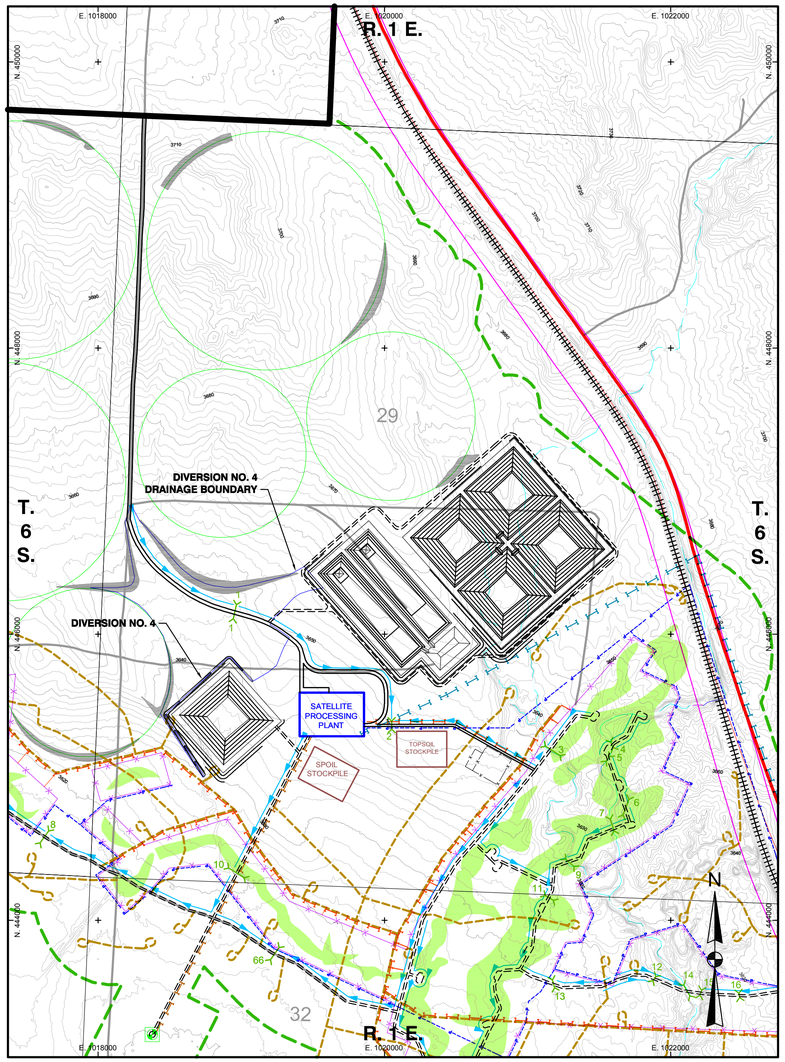
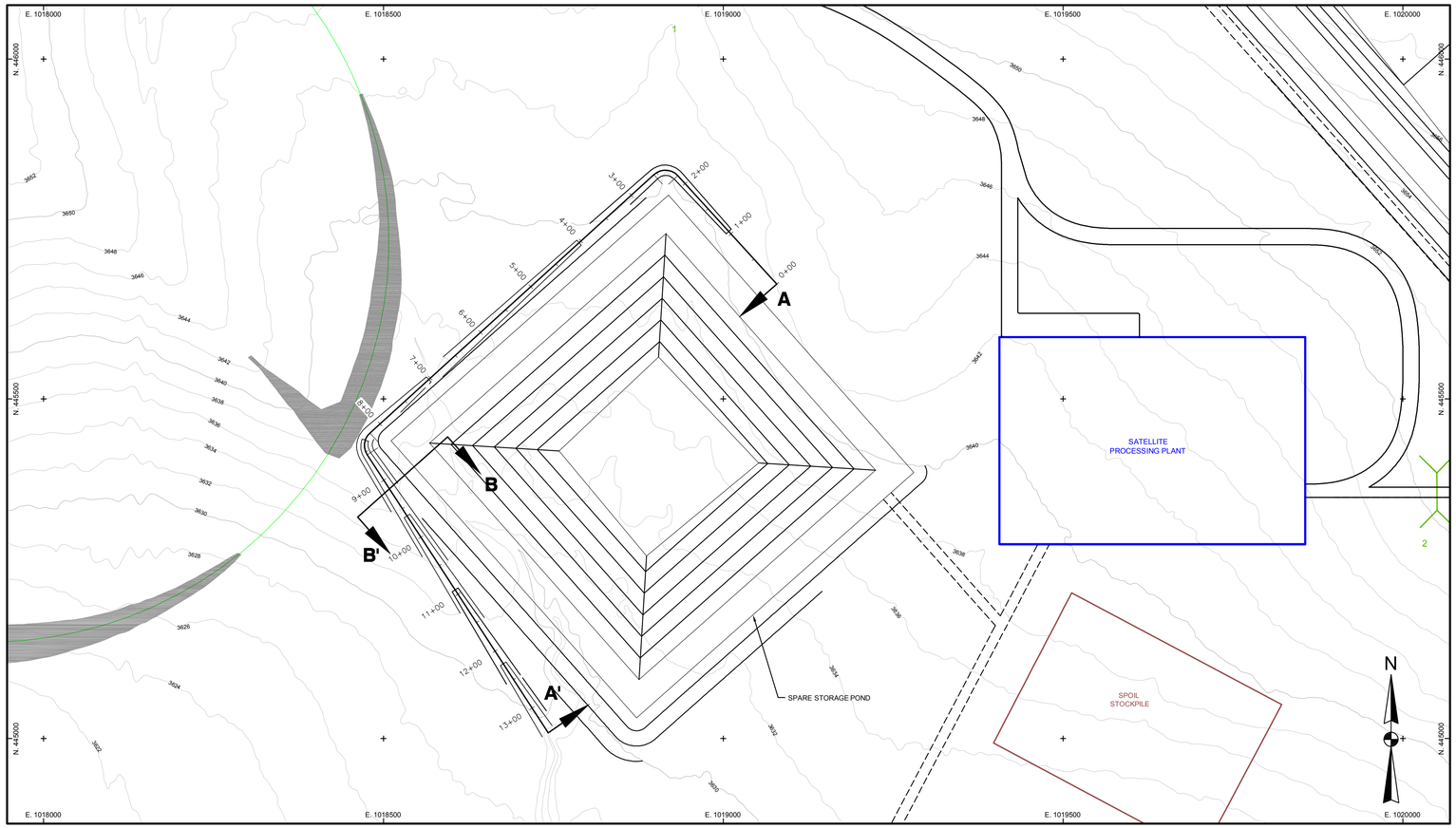


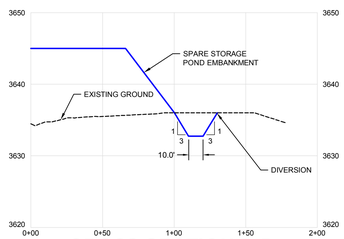
DRAINAGE AREA

SCALE: 1" = 500'
C. I. = 2'



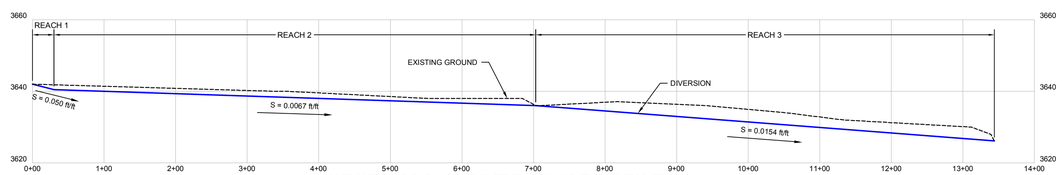
SITE PLAN

SCALE: 1" = 100'
C. I. = VARIES



CROSS SECTION B-B'

SCALE: HORZ. 1" = 50', VERT. 1" = 10'



SECTION A-A' DIVERSION PROFILE

SCALE: HORZ. 1" = 100', VERT. 1" = 20'

DIVERSION CROSS SECTIONS

$$Q = \frac{1.49}{n} A R^{2/3} S^{1/2}$$

REACH 1

2-yr, 6-hr		100-yr, 24-hr	
Q = 4.4 cfs	A = 1.49 ft^2	Q = 36.1 cfs	A = 5.69 ft^2
n = 0.030	WP = 10.91 ft	n = 0.030	WP = 13.13 ft
S = 0.050 ft/ft	R = 0.14 ft	S = 0.050 ft/ft	R = 0.43 ft
b = 10 ft	V = 2.94 fps	b = 10 ft	V = 6.34 fps
	Yn = 0.14 ft		Yn = 0.50 ft

REACH 2

2-yr, 6-hr		100-yr, 24-hr	
Q = 4.4 cfs	A = 2.80 ft^2	Q = 36.1 cfs	A = 11.13 ft^2
n = 0.030	WP = 11.65 ft	n = 0.030	WP = 15.57 ft
S = 0.0067 ft/ft	R = 0.24 ft	S = 0.0067 ft/ft	R = 0.71 ft
b = 10 ft	V = 1.57 fps	b = 10 ft	V = 3.24 fps
	Yn = 0.26 ft		Yn = 0.88 ft

REACH 3

2-yr, 6-hr		100-yr, 24-hr	
Q = 4.4 cfs	A = 2.16 ft^2	Q = 36.1 cfs	A = 8.41 ft^2
n = 0.030	WP = 11.29 ft	n = 0.030	WP = 14.40 ft
S = 0.0154 ft/ft	R = 0.19 ft	S = 0.0154 ft/ft	R = 0.58 ft
b = 10 ft	V = 2.04 fps	b = 10 ft	V = 4.29 fps
	Yn = 0.20 ft		Yn = 0.70 ft

LEGEND

- PERMIT BOUNDARY
- PROPOSED AFFECTED AREA BOUNDARY
- COUNTY ROAD
- EXISTING ROAD
- PROPOSED PRIMARY ACCESS ROAD
- PROPOSED SECONDARY ACCESS ROAD
- MAIN PIPELINE
- MADISON WELL PIPELINE
- PLANT-TO-PLANT PIPELINE
- PROPOSED LIGHT USE ROAD
- PROPOSED OVERHEAD POWER
- PROPOSED WELL FIELD FENCE
- EPHEMERAL STREAM CHANNEL
- PROPOSED ROAD DITCH
- RAILROAD
- APPROXIMATE RAILROAD RIGHT-OF-WAY
- CENTER PIVOT
- CATCHMENT BERM
- ORE BODY
- MADISON WELL
- STAGING AREA
- 3 PROPOSED CULVERT

HYDROLOGIC DESIGN STORM CALCULATIONS

SWS NO.	DRAINAGE BASIN PARAMETERS			2-YR, 6-HR STORM			100-YR, 24-HR STORM		
	DRAINAGE AREA (sq-mi)	CURVE NO. (CN)	WATERSHED LAG TIME (Min)	2-YR, 6-HR PRECIP. (in)	PEAK INFLOW (cfs)	RUNOFF VOLUME (ac-ft)	100-YR, 24-HR PRECIP. (in)	PEAK INFLOW (cfs)	RUNOFF VOLUME (ac-ft)
LA4-1	0.027	79	19.77	1.45	4.4	0.4	4.8	36.1	3.8

NOTE: RUNOFF VOLUMES AND PEAK INFLOWS WERE COMPUTED BY THE HEC-HMS COMPUTER PROGRAM USING THE SCS TYPE II RAINFALL DISTRIBUTION.

This plate is provided to fulfill the requirements of ARSD 74:29:07:09 (7).

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

SIGNATURE OF PREPARER: Dale E. Brown

PLOT DATE 29 March 2013 | DATE 29 March 2013

DRAWN RODNEY VENTLING | PDF FILE

PREPARER DALE E. BROWN | CAD FILE K:\Powertech\11270\DWGS\DIV-4_LA\DIV_4_EXHIBIT.dwg | COORDS NAD 27, South Dakota State Plane South (feet)

POWERTECH (USA) INC.

Plate 5.3-17b

Diversion No. 4
Land Application Option

Dewey-Burdock Project

K:\Powertech\11270\DWGS\DIV-4_LA\DIV_4_EXHIBIT.dwg 3/29/2013 1:28:23 PM raven