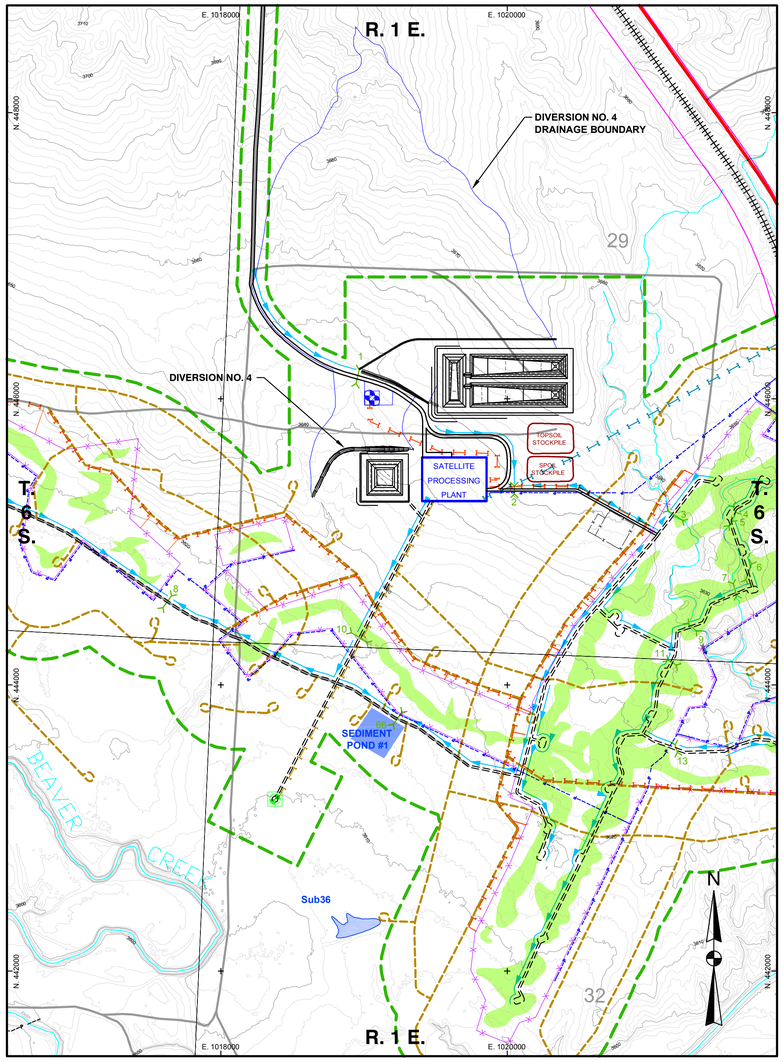
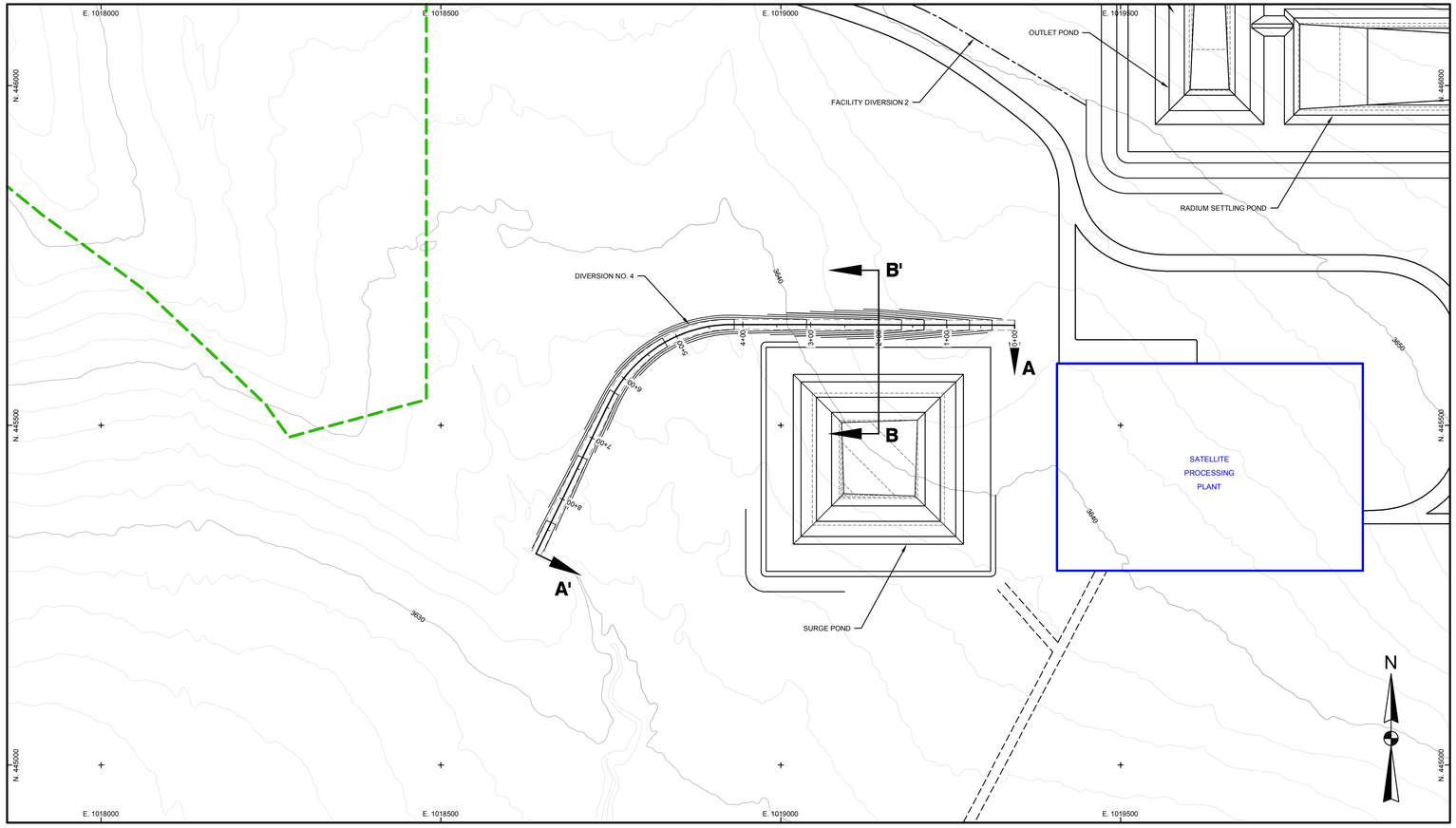


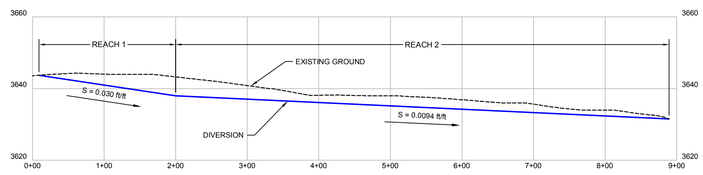
DRAINAGE AREA

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



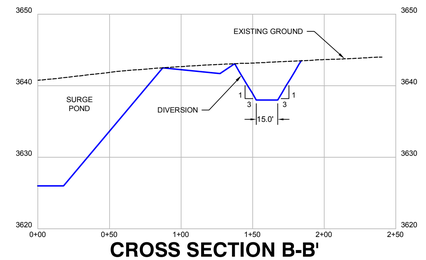
SITE PLAN

SCALE: 1" = 100'



SECTION A-A' DIVERSION PROFILE

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



CROSS SECTION B-B'

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

DIVERSION CROSS SECTIONS

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

REACH 1

2-yr, 6-hr			100-yr, 24-hr		
Q = 36.7 cfs	A = 7.59 ft^2		Q = 164.4 cfs	A = 20.25 ft^2	
n = 0.030	WP = 17.93 ft		n = 0.030	WP = 21.99 ft	
S = 0.030 ft/ft	R = 0.42 ft		S = 0.030 ft/ft	R = 0.92 ft	
b = 15 ft	V = 4.84 fps		b = 15 ft	V = 8.12 fps	
	Yn = 0.46 ft			Yn = 1.11 ft	

REACH 2

2-yr, 6-hr			100-yr, 24-hr		
Q = 36.7 cfs	A = 11.03 ft^2		Q = 164.4 cfs	A = 30.04 ft^2	
n = 0.030	WP = 19.11 ft		n = 0.030	WP = 24.69 ft	
S = 0.0094 ft/ft	R = 0.58 ft		S = 0.0094 ft/ft	R = 1.22 ft	
b = 15 ft	V = 3.33 fps		b = 15 ft	V = 5.47 fps	
	Yn = 0.65 ft			Yn = 1.53 ft	

LEGEND

- PROPOSED AFFECTED AREA BOUNDARY
- COUNTY ROAD
- EXISTING ROAD
- PROPOSED PRIMARY ACCESS ROAD
- PROPOSED SECONDARY ACCESS ROAD
- MAIN PIPELINE
- MADISON WELL PIPELINE
- APPROXIMATE RAILROAD RIGHT-OF-WAY
- PLANT-TO-PLANT PIPELINE
- PROPOSED LIGHT USE ROAD
- PROPOSED OVERHEAD POWER
- PROPOSED WELL FIELD FENCE
- PERENNIAL STREAM CHANNEL
- EPHEMERAL STREAM CHANNEL
- PROPOSED ROAD DITCH
- RAILROAD
- ORE BODY
- DDW WELL
- MADISON WELL
- STAGING AREA
- 3 PROPOSED CULVERT
- EXISTING IMPOUNDMENT TO BE MONITORED

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)
DDW4-1	0.115	79	21.76	1.45	36.7	3.1	4.8	164.4	18.9

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

SIGNATURE OF PREPARER

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

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_DDW\DDW_DIV4_EXHIBIT.dwg
COORDS NAD 27, South Dakota State Plane South (feet)

POWERTECH (USA) INC.

Plate 5.3-17a

Diversion No. 4
Deep Disposal Well Option

Dewey-Burdock Project

K:\Powertech\11270\DWGS\DIV-4_DDW\DDW_DIV4_EXHIBIT.dwg 3/29/2013 1:29:52 PM rawen