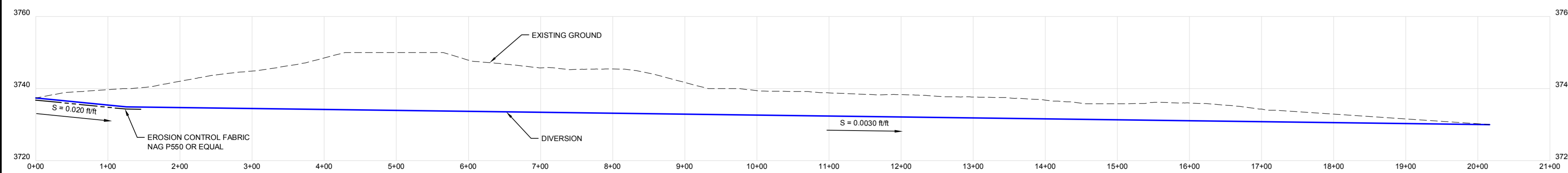
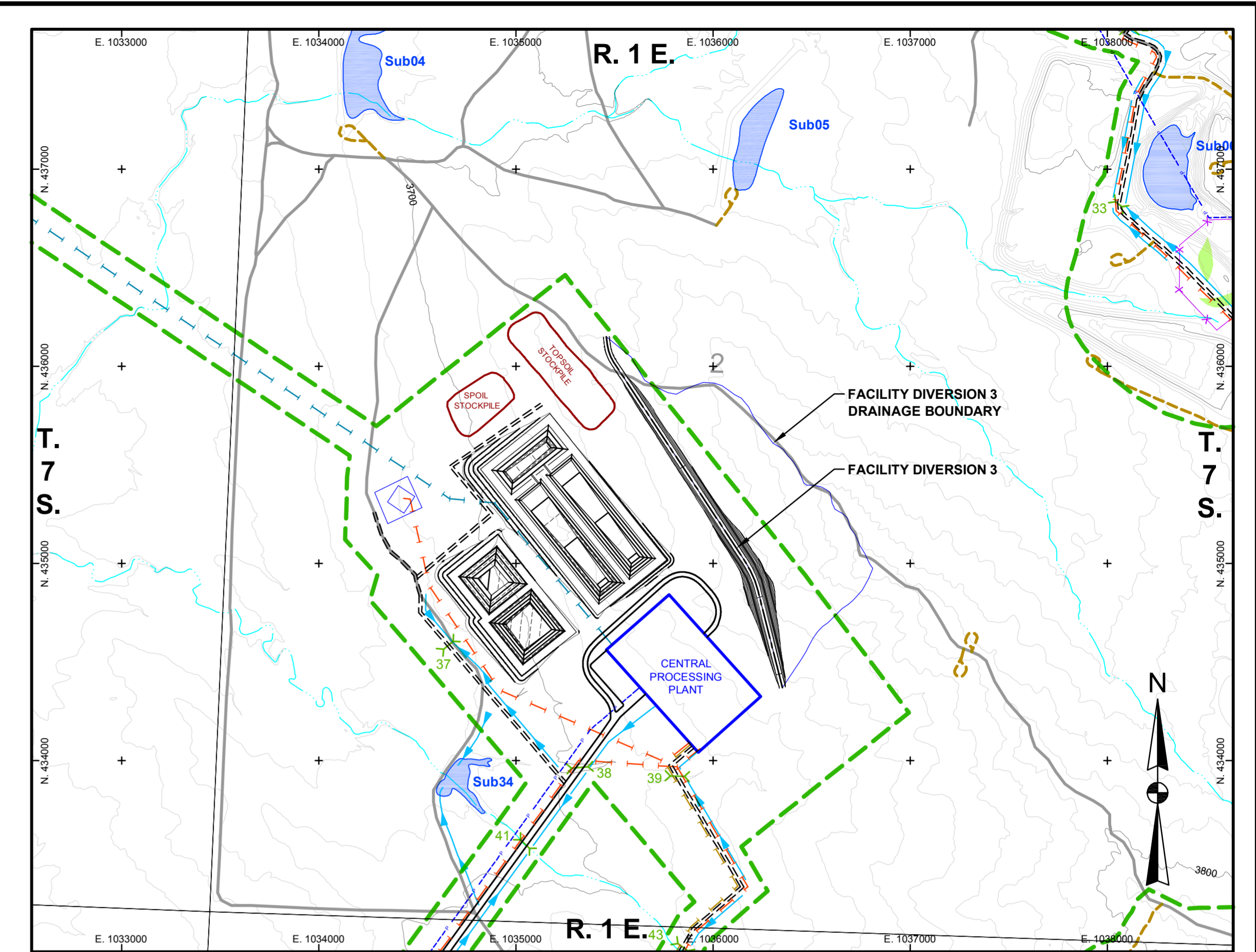


SITE PLAN
SCALE: 1" = 100'
C.I. = VARIES



FACILITY DIVERSION 3 PROFILE A-A'
SCALE: HORZ. 1" = 100', VERT. 1" = 20'



DRAINAGE AREA
SCALE: 1" = 500'
C.I. = 10'

HYDROLOGIC DESIGN STORM CALCULATIONS

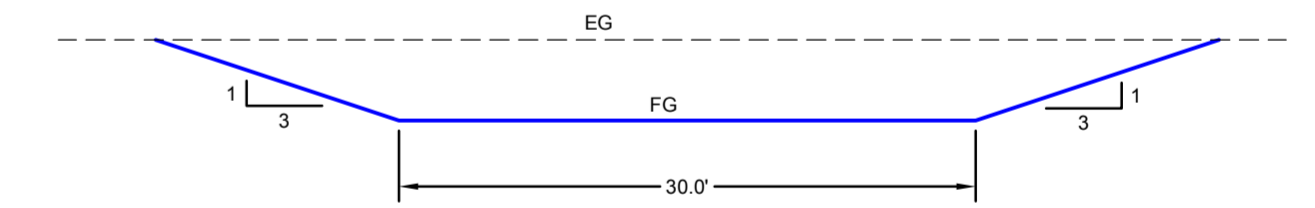
DIVERSION NO.	DRAINAGE BASIN PARAMETERS			6-HR, PMP STORM		
	DRAINAGE AREA (sq-mi)	CURVE NO. (CN)	WATERSHED LAG TIME (min)	6-HR, PMP PRECIP. (in)	PEAK INFLOW (cfs)	RUNOFF VOLUME (ac-ft)
FD 3	0.032	84	18.41	22.1	436.5	34.1

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

FACILITY DIVERSION 3 CROSS SECTION

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

(STA. 0+00 TO 1+25)		(STA. 1+25 TO END)	
Q = 436.50 cfs	A = 51.94 ft ²	Q = 436.50 cfs	A = 97.83 ft ²
n = 0.030	WP = 39.52 ft	n = 0.030	WP = 46.38 ft
S = 0.020 ft/ft	R = 1.31 ft	S = 0.0030 ft/ft	R = 2.11 ft
b = 30 ft	V = 8.40 fps	b = 30 ft	V = 4.46 fps
Yn = 1.50 ft		Yn = 2.59 ft	



TYPICAL FACILITY DIVERSION 3 CROSS SECTION
SCALE: 1" = 10'

LEGEND

- PROPOSED AFFECTED AREA BOUNDARY
- EXISTING ROAD
- PROPOSED PRIMARY ACCESS ROAD
- PROPOSED SECONDARY ACCESS ROAD
- PROPOSED LIGHT USE ROAD
- EPHEMERAL STREAM CHANNEL
- PROPOSED ROAD DITCH
- MAIN PIPELINE
- MADISON WELL PIPELINE
- PLANT-TO-PLANT PIPELINE
- PROPOSED OVERHEAD POWER
- EXISTING BLACK HILLS ELECTRIC
- PROPOSED WELL FIELD FENCE
- PROPOSED CULVERT
- ORE BODY
- EXISTING IMPONDMENT TO BE MONITORED

	REVISIONS # DRAWN CHECKED APPROVED DATE		 Plate 5.3-13 CPP Facility Diversion Deep Disposal Well Option
	SIGNATURE OF PREPARER <i>Dale E. Brown</i>		
CHECK SCALES <small>If this bar does not measure 1 inch this map is not at its original scale.</small>	PLOT DATE 3 December 2012 DRAWN DAVE C. JOHNSON PREPARER DALE E. BROWN	DATE 3 December 2012 PDF FILE DIV_DDW_FACILITY_CPP.PDF CAD FILE K:\Powertech\11270\DWGS\DIV_DDW_FACILITY.dwg	Dewey-Burdock Project COORDS NAD 27, South Dakota State Plane South (feet)

This plate is provided to fulfill the requirements of ARSD 74-29-07.09 (6).