Table 7-25
CULVERT DESIGN SPECIFICATIONS

Culvert Number	Design Discharge (cfs)	Diameter (ft)	Length (ft)	Normal Depth	Velocity (ft/sec)
C-1	0.81	1.0	30	0.45	2.38
C-1a	0.81	2.0	40	0.45	2.38
C-2	0.98	1.5	35	0.35	2.80
C-3	3.70	(2) 1.5	30	0.59	2.90
C-4	0.36	2.0	60	0.26	1.81
C-5	9.68	2.0	70	1.35	3.59
C-6	0.80	1.5	30	0.38	2.20
C-7	10.56	2.0	30	1.43	4.40
C-8	0.77	1.5	30	0.38	2.20
C-9	1.44	1.5	50	0.51	2.70
C-10	11.97	2.0	70	1.60	4.44
C-11	-	-	-	-	-
C-12	5.11	1.5	40	1.11	3.64
C-13	5.11	1.5	180	1.17	4.73
~~C-13A~~	~~5.11~~	~~1.5~~	~~50~~	~~1.11~~	~~3.64~~
C-13B	5.11	1.50	60	1.11	3.64
C-14**	-	-	-	-	-
C-15	20.50	2.0	20	2.87*	7.60*
C-16	1.34	2.0	30	0.45	2.10
C-17	0.36	2.0	40	0.26	1.81
C-18	0.80	1.0	40	0.46	2.20
C-19	0.22	1.0	20	0.28	1.19
C-20	0.22	1.0	20	0.28	1.19
C-21	1.11	2.0	60	0.34	2.05
C-22	13.88	2.0	100	2.10****	11.49
C-23	0.15	1.0	30	0.20	1.50
C-24	1.44	1.5	30	0.51	2.70
C-25	1.11	1.5	20	0.40	2.05
C-26	1.44	1.5	30	0.51	2.70

* Head Water Depth = 3.50 ft.

** Removed 12/18/91 - Replaced with open spillway

*** Erosion to be minimized by the use of 9" med. diam. rip-rap at the culvert outlet.

**** Head Water Depth - 3.50 ft.

Note: Culvert C-11 has been removed and replaced with extended 24" culvert C-21.
Culvert C-13A will be replaced with extended culvert C-13.

09/02/04

Circular Channel Analysis & Design
Solved with Manning's Equation

Open Channel - Uniform flow

Worksheet Name: SAVAGE COAL TERMINAL

Comment: CULVERT C-13 (EXTENDED)

Solve For Full Flow Diameter

Given Input Data:

Slope.....	0.0300 ft/ft
Manning's n.....	0.024
Discharge.....	5.11 cfs

Computed Results:

Full Flow Diameter.....	1.17 ft
Full Flow Depth.....	1.17 ft
Velocity.....	4.73 fps
Flow Area.....	1.08 sf
Critical Depth....	0.93 ft
Critical Slope....	0.0320 ft/ft
Percent Full.....	100.00 %
Full Capacity.....	5.11 cfs
QMAX @.94D.....	5.50 cfs
Froude Number.....	FULL

REGISTERED PROFESSIONAL ENGINEER
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No. 154168
9/2/04
STATE OF UTAH

Open Channel Flow Module, Version 3.43 (c) 1991
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