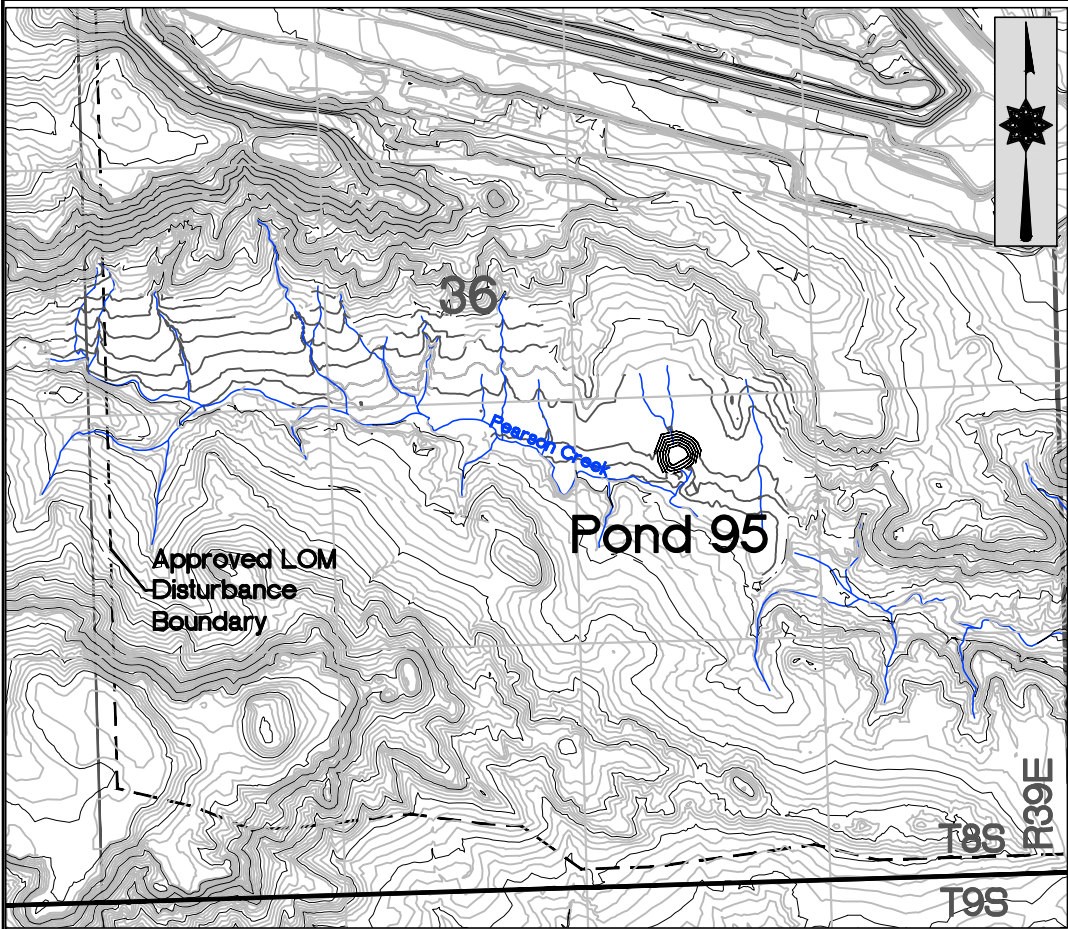
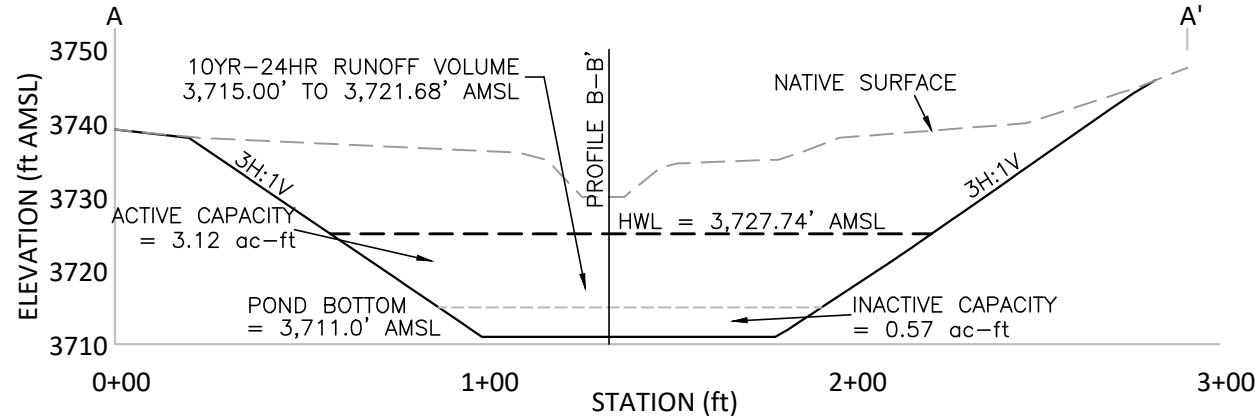




LOCATION MAP

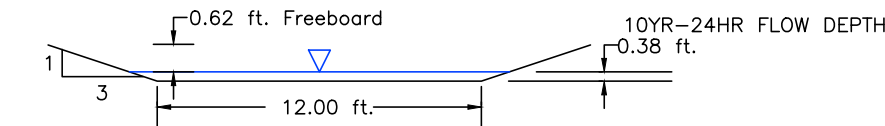
SCALE: 1" = 1,000', C.I. = 5'

POND IS LOCATED PRIMARILY IN NWSE OF SECTION 36, T8S, R39E.



POND PROFILE A-A'

SCALE: H: 1" = 50', V: 1" = 25'

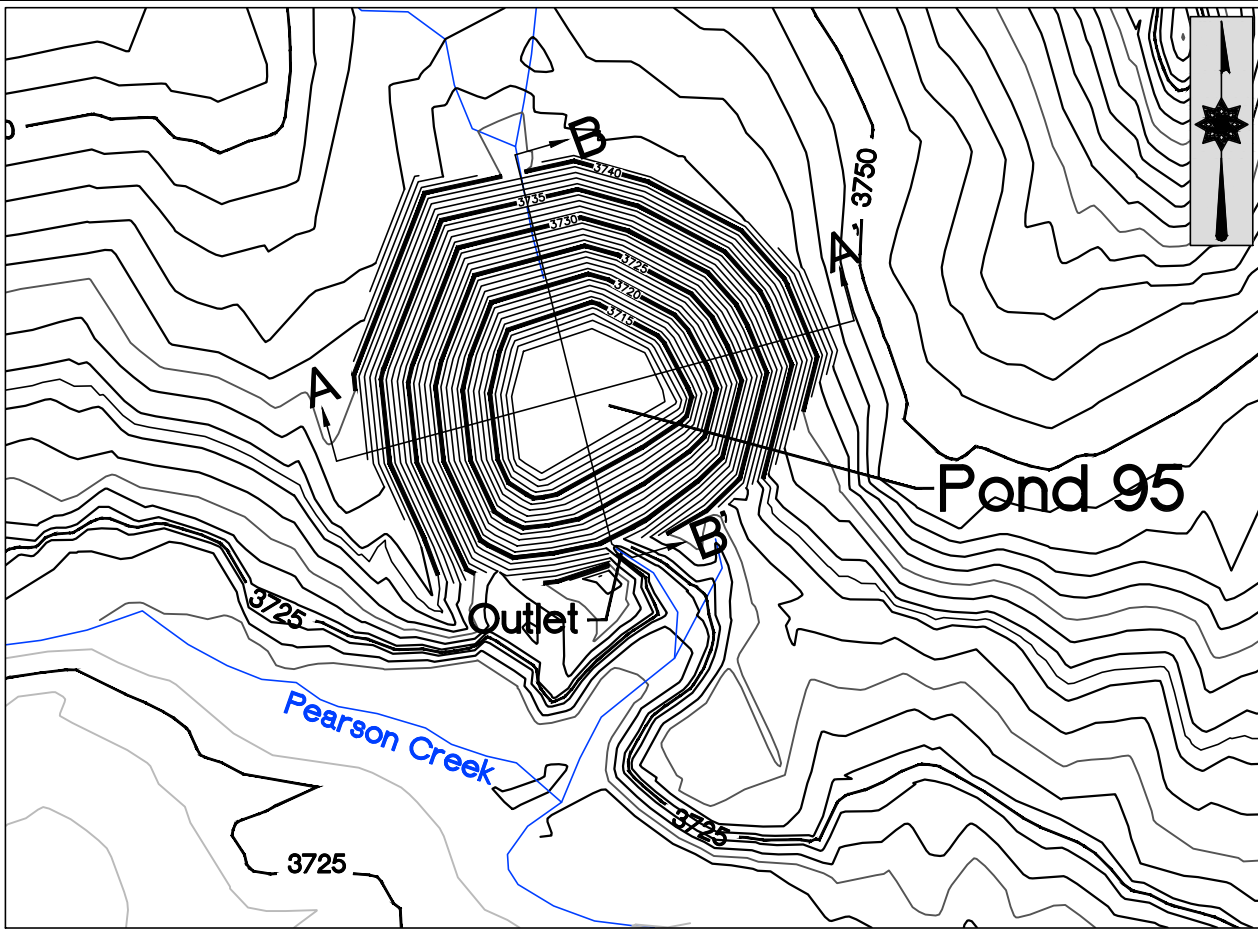


Trapezoidal Channel
Equal Side Slopes

Channel Lining: NAG Erosion Control Blanket P300 or Equivalent

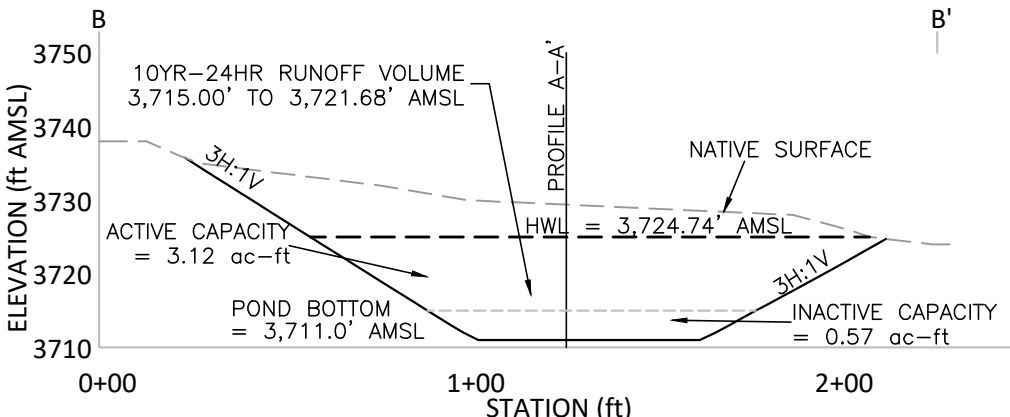
INLET CHANNEL AND EROSION PROTECTION

SCALE: AS SHOWN



PLAN MAP

SCALE: 1" = 100', POND C.I. = 1', OUTER C.I. = 5'



POND PROFILE B-B'

SCALE: H: 1" = 50', V: 1" = 25'

INLET CHANNEL HYDRAULICS

CHANNEL TYPE = TRAPEZOIDAL, EQUAL SIDE SLOPES
BOTTOM WIDTH = 12 ft
SIDE SLOPES = 3H:1V
MAXIMUM SLOPE = 33% (POND FACE SLOPE)
10YR-24HR PEAK FLOW = 37.3 cfs
CHANNEL LINING = N.A.G. P300 EROSION CONTROL BLANKET (PERMANENT) WITH VEGETATION

RETARDANCE CLASS = C
VEGETATION TYPE = BUNCH TYPE
VEGETATION DENSITY = FAIR (50-75%)
SOIL TYPE = SILT LOAM
VELOCITY = 7.6 ft/s
NORMAL DEPTH = 0.38 ft
MANNING'S N = 0.056
PERMISSIBLE SHEAR STRESS = 8 lbs/ft²
CALCULATED SHEAR STRESS = 7.76 lbs/ft²

AREA-ELEVATION-CAPACITY TABLE				
ELEVATION (FT AMSL)	AREA (ACRES)	INCREMENTAL CAPACITY (ACRE-FEET)	CUMULATIVE CAPACITY (ACRE-FEET)	USE
3,711.00	0.10		0.00	
		0.11		
3,712.00	0.12		0.11	INACTIVE CAPACITY VOLUME = 0.57 AC-FT.
		0.13		
3,713.00	0.14		0.24	
		0.15		sediment storage
3,714.00	0.16		0.39	
		0.17		
3,715.00	0.19		0.57	
		0.20		ACTIVE CAPACITY VOLUME = 3.12 AC-FT.
3,716.00	0.21		0.76	
		0.22		
3,717.00	0.24		0.99	10-YEAR / 24-HOUR RUNOFF VOLUME = 2.4 AC-FT.
		0.25		
3,718.00	0.26		1.24	
		0.28		
3,719.00	0.29		1.51	
		0.30		
3,720.00	0.32		1.82	
		0.33		
3,721.00	0.35		2.15	
		0.37		
3,722.00	0.38		2.52	
		0.40		
3,723.00	0.41		2.91	
		0.43		
3,724.00	0.45		3.34	
		0.34		
3,724.74	0.48		3.69	
HIGH WATER LINE = 3,725.00 FT. AMSL, TOTAL CAPACITY = 3.69 AC-FT.				

POND 95 DRAINAGE AREA DATA

TOTAL DRAINAGE AREA = 27.2 acres
LONGEST WATERCOURSE = 1,800 ft
AVERAGE LAND SLOPE = 15.75%
CURVE NUMBER = 87 (Disturbed Mine Land)
SOILS = Hydrologic Soils Group C
TIME OF CONCENTRATION = 0.168 Hours

RUNOFF ESTIMATE TO POND 95

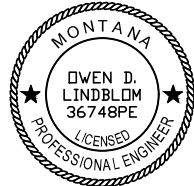
RAINFALL DISTRIBUTION = SCS TYPE II
PRECIPITATION (10YR-24HR) = 2.19 in
PEAK Q (10YR-24HR) = 37.3 cfs
VOLUME (10YR-24HR) = 2.4 ac-ft
DESIGN METHOD = SCS RUNOFF CURVE NUMBER METHOD AND SCS GRAPHICAL PEAK DISCHARGE METHOD (NRCS TR-55 METHOD)

POND 95 DESIGN CAPACITY

SEDIMENT CAPACITY (0.02 ac-ft per acre) = 0.56 ac-ft
10YR-24HR RUNOFF VOLUME = 2.4 ac-ft
TOTAL DESIGN (MINIMUM) CAPACITY = 3.0 ac-ft

CERTIFICATE OF ENGINEER

I, Owen Lindblom, hereby certify that this map and drawing was prepared by myself or under my direct supervision and that they correctly represent the facilities and conditions described in the accompanying application.



OWEN D. LINDBLOM, P.E. No. 36748PE

CLOUD PEAK ENERGY		SPRING CREEK MINE P.O. BOX 67, DECKER, MT 59025 PHONE: (406) 757-2581	
DATE 4/30/20	REVISION As-Built Conditions	Sediment Control Pond 95 Design As-Built	
DESIGN EMD	DRAWN EMD		
SCALE As Shown	CONTOUR INTERVAL As Shown	DATE 11/17	SHEET 1 OF 1
FILE NUMBER AppKb_Pond 95_MR255_20200430.dwg			