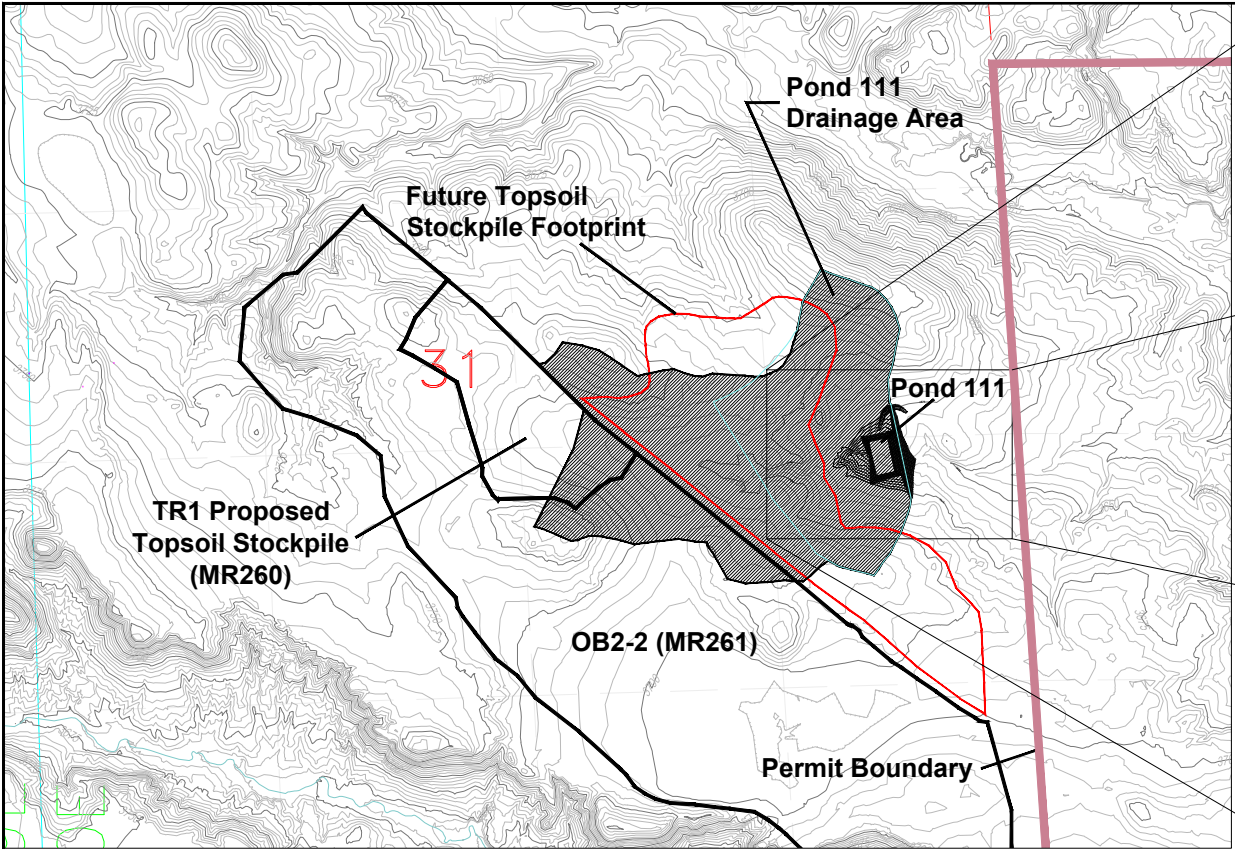
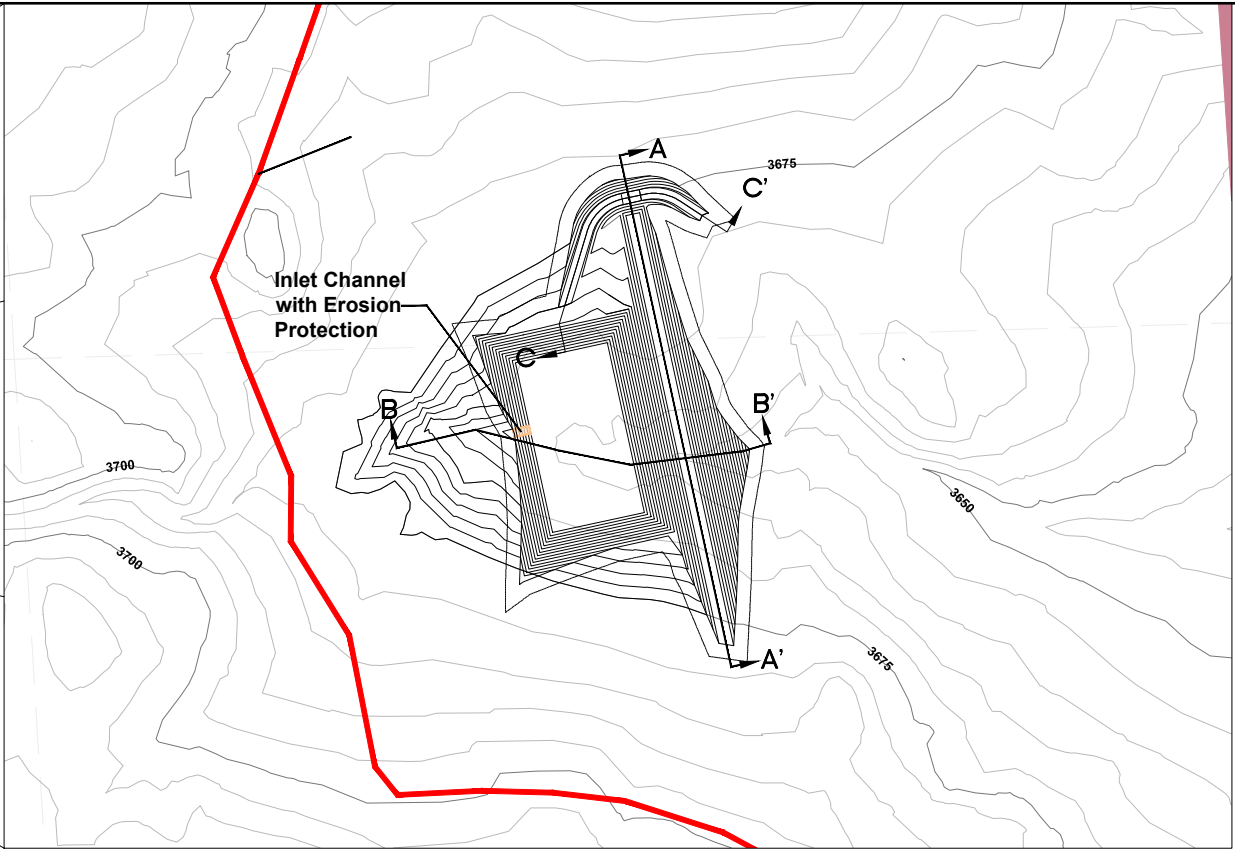




LOCATION MAP

SCALE: 1" = 1,000', C.I. = 5'
POND IS LOCATED IN NESE SECTION 31, T8S, R40E.



PLAN MAP

SCALE: 1" = 200', POND C.I. = 1', OUTER C.I. = 5'

ELEVATION	AREA (ACRES)	AVERAGE AREA (ACRES)	INCREMENTAL CAPACITY (ACRE-Feet)	CUMULATIVE CAPACITY (ACRE-Feet)	USE
3659	0.425			0	INACTIVE CAPACITY VOLUME = 0.98 AC-FT sediment storage
3660	0.465	0.44	0.44	0.44	
3661	0.507			0.93	
3661.1	0.511	0.51	0.05	0.98	
3662	0.550	0.53	0.48	1.46	ACTIVE CAPACITY VOLUME = 8.44 AC-FT 10-YEAR, 24-HOUR RUNOFF VOLUME = 4.17 AC-FT
3663	0.595	0.57	0.57	2.03	
		0.62	0.62		
3664	0.642			2.65	
		0.67	0.67		
3665	0.692			3.32	
		0.73	0.73		
3666	0.758			4.04	
		0.80	0.80		
3667	0.847			4.84	
		0.91	0.91		
3668	0.969			5.75	
		1.04	1.04		
3669	1.117			6.79	
		1.21	1.21		
3670	1.302			8.00	
		1.41	1.41		
3671	1.526			9.42	
HIGH WATER LINE = 3671.00 FT, TOTAL CAPACITY = 9.42					

POND 111 DRAINAGE AREA DATA

TOTAL DRAINAGE AREA = 47.49 acres
LONGEST WATERCOURSE = 2166 ft
AVERAGE LAND SLOPE = 7.80%
CURVE NUMBER = 87 (Disturbed Mine Land)
SOILS = Hydrologic Soils Group C
TIME OF CONCENTRATION = 0.16 Hours

RUNOFF ESTIMATE TO POND 111

RAINFALL DISTRIBUTION = SCS TYPE II
PRECIPITATION (10YR-24HR) = 2.19 in
PEAK Q (10YR-24HR) = 16.71
VOLUME (10YR-24HR) = 4.17
DESIGN METHOD = SCS RUNOFF CURVE NUMBER
METHOD AND SCS TRIANGULAR
HYDROGRAPH METHOD
(TRIHYDRO)

POND 111 DESIGN CAPACITY

SEDIMENT CAPACITY (0.02 ac-ft per acre) = 0.94 ac-ft
10YR-24HR RUNOFF VOLUME = 4.17 ac-ft
SURPLUS VOLUME = 4.31 ac-ft
TOTAL DESIGN CAPACITY = 9.42 ac-ft

SPILLWAY CONTROL
SECTION HYDRAULICS

Q = CLH^{3/2}
Q₂₅₋₂₄ = 87.29 cfs
C = 2.75
L = 12 ft
H = 1.82 ft
V = 3.99 ft/s

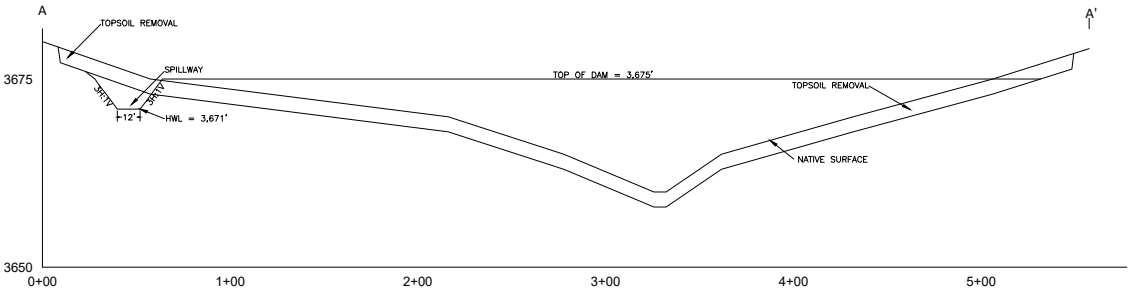
SPILLWAY TRANSPORT
SECTION HYDRAULICS

$Q_{25-24} = \frac{1.487}{n} AR^{2/3} S^{1/2}$
Q₂₅₋₂₄ = 87.29 cfs
n = 0.03
S = 0.0139 ft/ft
Z = 3H:1V
b = 12 ft
A = 16.4 ft²
WP = 18.8 ft
R = 0.87 ft
V = 5.33 ft/s
Y_n = 1.08 ft

CHANNEL TYPE = TRAPEZOIDAL, EQUAL SIDE SLOPES
BOTTOM WIDTH = 12 ft
SIDE SLOPES = 3H:1V
MAXIMUM SLOPE = 33% (POND FACE SLOPE)
10YR-24HR PEAK FLOW = 64.79 cfs
CHANNEL LINING = N.A.G. C350 EROSION CONTROL BLANKET (PERMANENT) WITH VEGETATION

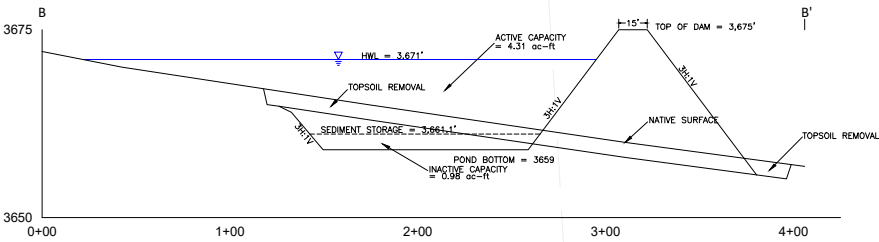
RETARDANCE CLASS = C
VEGETATION TYPE = BUNCH TYPE
VEGETATION DENSITY = FAIR (50-75%)
SOIL TYPE = SILT LOAM
VELOCITY = 9.76 ft/s
NORMAL DEPTH = 0.43 ft
MANNING'S N = 0.044
PERMISSABLE SHEAR STRESS = 12.0 lbs/ft²
CALCULATED SHEAR STRESS = 8.96 lbs/ft²

INLET CHANNEL 1 HYDRAULICS



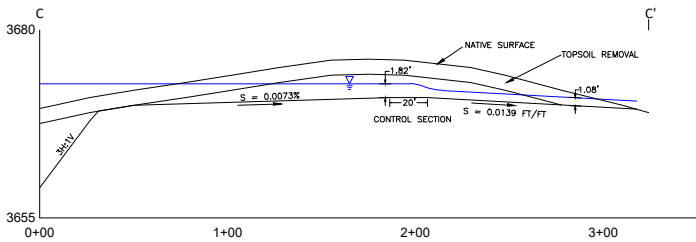
PROFILE A-A'

SCALE: H: 1" = 100'
V: 1" = 50'



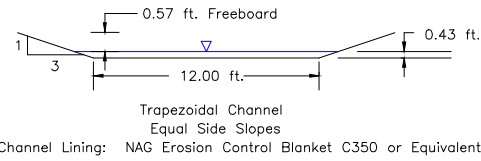
PROFILE B-B'

SCALE: H: 1" = 100'
V: 1" = 50'



PROFILE C-C'

SCALE: H: 1" = 100'
V: 1" = 50'

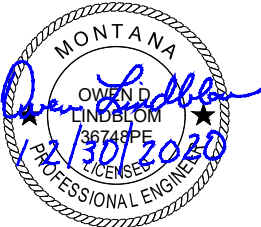


INLET CHANNEL AND
EROSION PROTECTION

NOT TO SCALE

CERTIFICATE OF ENGINEER

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



OWEN LINDBLOM, P.E. No. 36748PE



SPRING CREEK MINE
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PHONE: (406) 757-2581

DATE	REVISION
BY	

Sediment Control
Pond 111 Design

DESIGN	ODL	DRAWN	ODL	DATE	12/30/2020	SHEET	1	OF	1
SCALE	As Shown	CONTOUR INTERVAL	As Shown	FILE NUMBER	Pond_111.dwg				