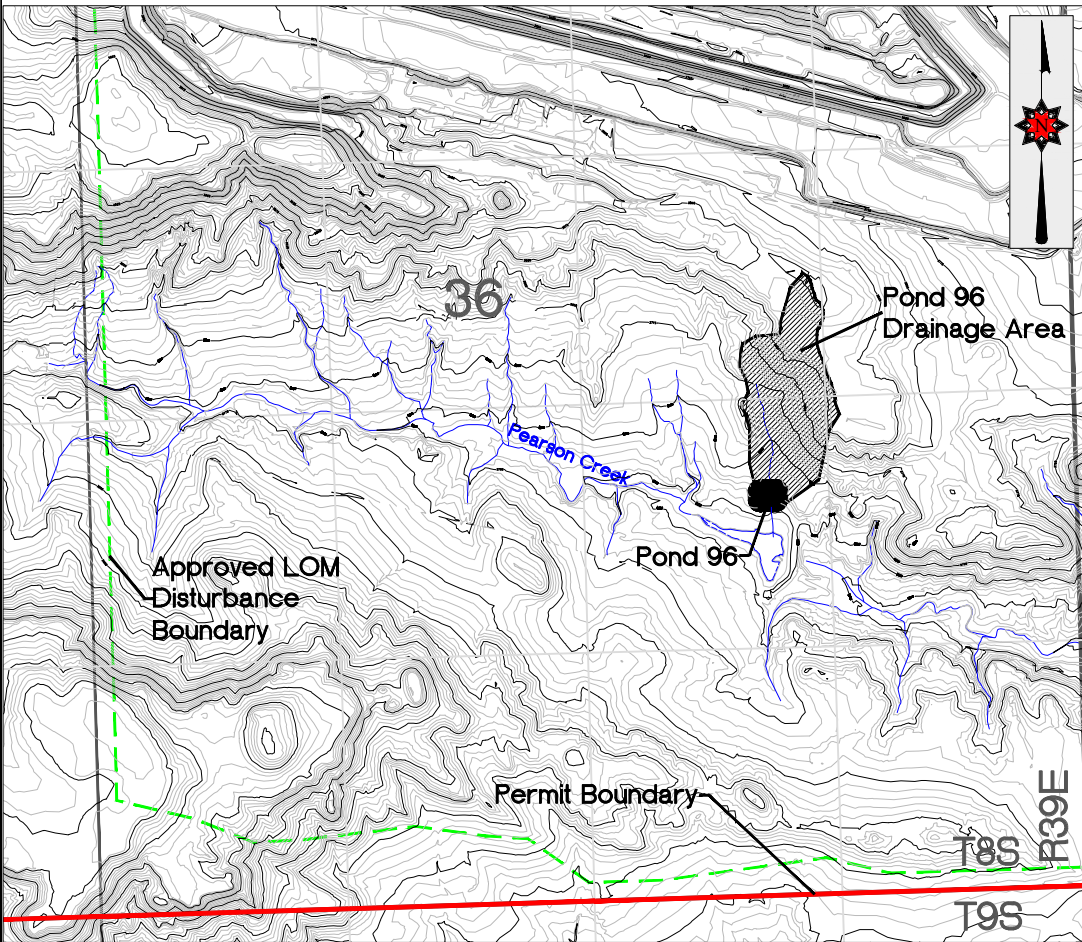
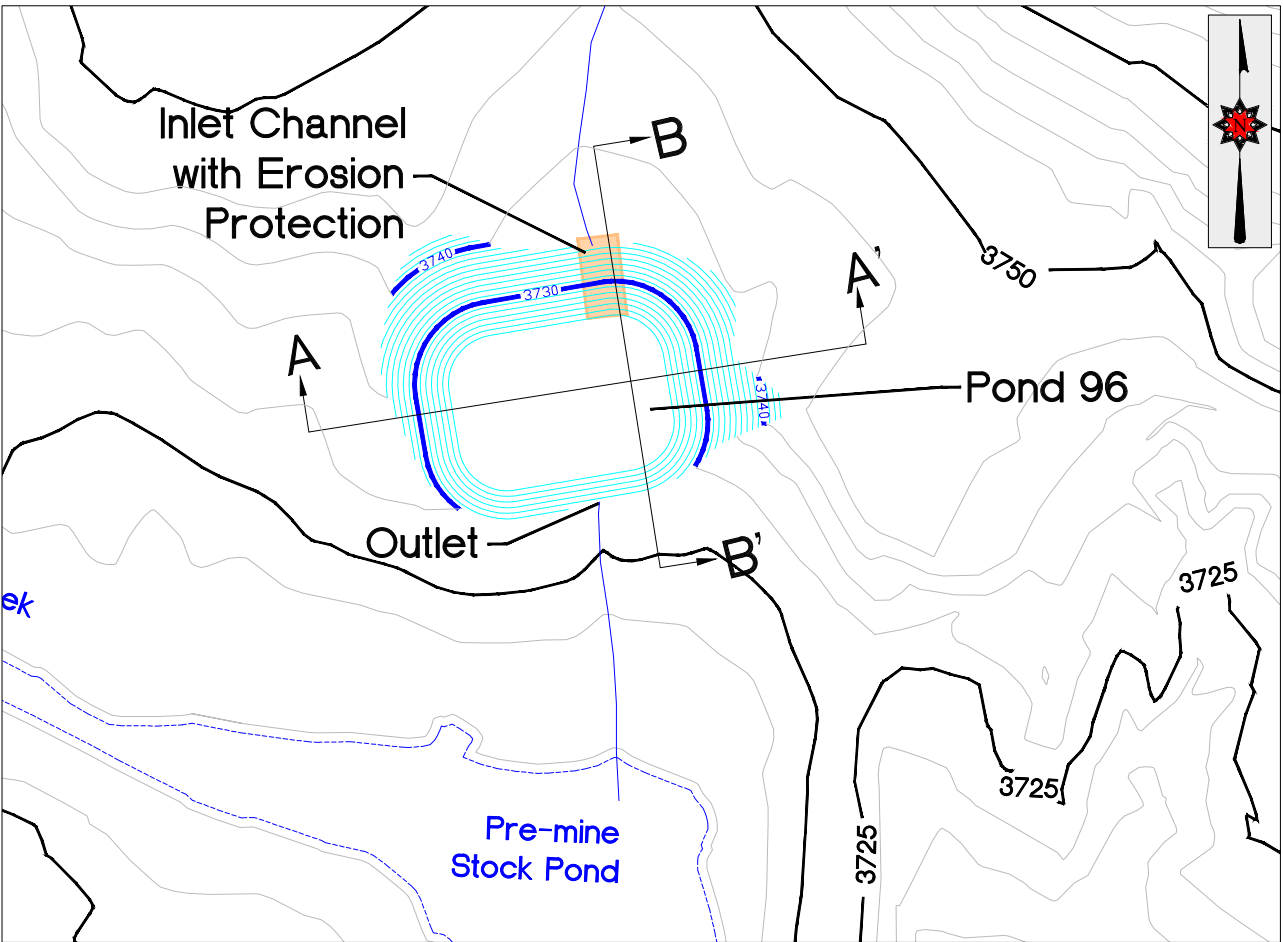




LOCATION MAP

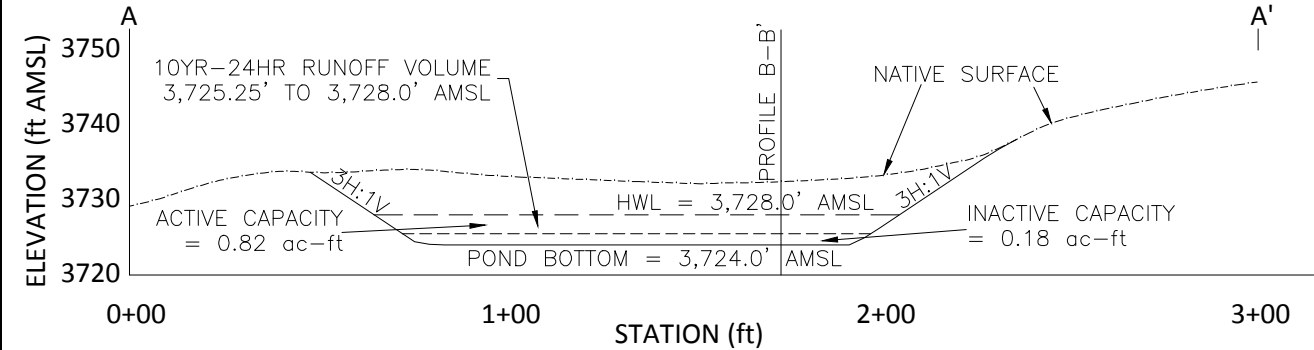
SCALE: 1" = 1,000', C.I. = 5'

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



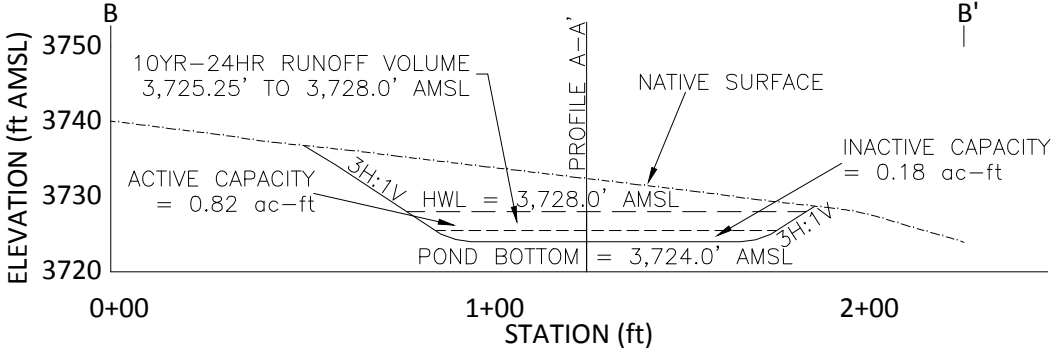
PLAN MAP

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



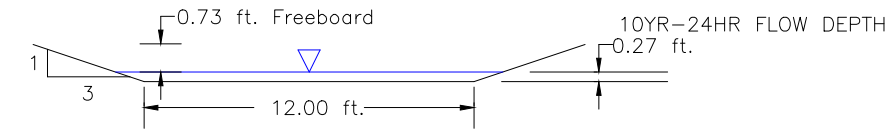
POND PROFILE A-A'

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



POND PROFILE B-B'

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



INLET CHANNEL AND EROSION PROTECTION

SCALE: AS SHOWN

INLET CHANNEL HYDRAULICS

|                     |   |                                                                 |                          |   |                          |
|---------------------|---|-----------------------------------------------------------------|--------------------------|---|--------------------------|
| CHANNEL TYPE        | = | TRAPEZOIDAL, EQUAL SIDE SLOPES                                  | RETARDANCE CLASS         | = | C                        |
| BOTTOM WIDTH        | = | 12 ft                                                           | VEGETATION TYPE          | = | BUNCH TYPE               |
| SIDE SLOPES         | = | 3H:1V                                                           | VEGETATION DENSITY       | = | FAIR (50-75%)            |
| MAXIMUM SLOPE       | = | 33% (POND FACE SLOPE)                                           | SOIL TYPE                | = | SILT LOAM                |
| 10YR-24HR PEAK FLOW | = | 14.1 cfs                                                        | VELOCITY                 | = | 4.1 ft/s                 |
| CHANNEL LINING      | = | N.A.G. P300 EROSION CONTROL BLANKET (PERMANENT) WITH VEGETATION | NORMAL DEPTH             | = | 0.27 ft                  |
|                     |   |                                                                 | MANNING'S N              | = | 0.082                    |
|                     |   |                                                                 | PERMISSIBLE SHEAR STRESS | = | 8 lbs/ft <sup>2</sup>    |
|                     |   |                                                                 | CALCULATED SHEAR STRESS  | = | 5.49 lbs/ft <sup>2</sup> |

AREA-ELEVATION-CAPACITY TABLE

| ELEVATION (FT AMSL) | AREA (ACRES) | INCREMENTAL CAPACITY (ACRE-FEET) | CUMULATIVE CAPACITY (ACRE-FEET) | USE                                          |
|---------------------|--------------|----------------------------------|---------------------------------|----------------------------------------------|
| 3,724.00            | 0.0          |                                  | 0.0                             | INACTIVE CAPACITY VOLUME = 0.18 AC-FT.       |
| 3,725.00            | 0.2          | 0.1                              | 0.1                             | sediment storage                             |
| 3,725.25            | 0.2          | 0.1                              | 0.2                             |                                              |
| 3,726.00            | 0.3          | 0.2                              | 0.4                             | ACTIVE CAPACITY VOLUME = 0.82 AC-FT.         |
| 3,727.00            | 0.3          | 0.3                              | 0.7                             | 10-YEAR / 24-HOUR RUNOFF VOLUME = 0.8 AC-FT. |
| 3,728.00            | 0.3          | 0.3                              | 1.0                             |                                              |

HIGH WATER LINE = 3,728.0 FT. AMSL, TOTAL CAPACITY = 1.0 AC-FT.

POND 96 DRAINAGE AREA DATA

|                       |   |                          |
|-----------------------|---|--------------------------|
| TOTAL DRAINAGE AREA   | = | 9.1 acres                |
| LONGEST WATERCOURSE   | = | 1,350 ft                 |
| AVERAGE LAND SLOPE    | = | 18.81%                   |
| CURVE NUMBER          | = | 87 (Disturbed Mine Land) |
| SOILS                 | = | Hydrologic Soils Group C |
| TIME OF CONCENTRATION | = | 0.122 Hours              |

RUNOFF ESTIMATE TO POND 96

|                           |   |                                                                                            |
|---------------------------|---|--------------------------------------------------------------------------------------------|
| RAINFALL DISTRIBUTION     | = | SCS TYPE II                                                                                |
| PRECIPITATION (10YR-24HR) | = | 2.19 in                                                                                    |
| PEAK Q (10YR-24HR)        | = | 14.1 cfs                                                                                   |
| VOLUME (10YR-24HR)        | = | 0.8 ac-ft                                                                                  |
| DESIGN METHOD             | = | SCS RUNOFF CURVE NUMBER METHOD AND SCS GRAPHICAL PEAK DISCHARGE METHOD (NRCS TR-55 METHOD) |

POND 96 DESIGN CAPACITY

|                                         |   |            |
|-----------------------------------------|---|------------|
| SEDIMENT CAPACITY (0.02 ac-ft per acre) | = | 0.18 ac-ft |
| 10YR-24HR RUNOFF VOLUME                 | = | 0.8 ac-ft  |
| TOTAL DESIGN (MINIMUM) CAPACITY         | = | 0.98 ac-ft |

CERTIFICATE OF ENGINEER

I, Eric M. Detmer, 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.



ERIC M. DETMER, P.E. No. 11396

|                          |                   |                                                                                    |          |
|--------------------------|-------------------|------------------------------------------------------------------------------------|----------|
| <b>CLOUD PEAK ENERGY</b> |                   | <b>SPRING CREEK MINE</b><br>P.O. BOX 67, DECKER, MT 59025<br>PHONE: (406) 757-2581 |          |
| DATE                     | REVISION          | <b>Sediment Control<br/>Pond 96 Design</b>                                         |          |
| BY                       |                   |                                                                                    |          |
|                          |                   |                                                                                    |          |
|                          |                   |                                                                                    |          |
| DESIGN                   | EMD               | DRAWN                                                                              | EMD      |
| SCALE                    | As Shown          | CONTOUR INTERVAL                                                                   | As Shown |
| DATE                     | 11/17             | SHEET                                                                              | 1 OF 1   |
| FILE NUMBER              | MR236\Pond 96.dwg |                                                                                    |          |