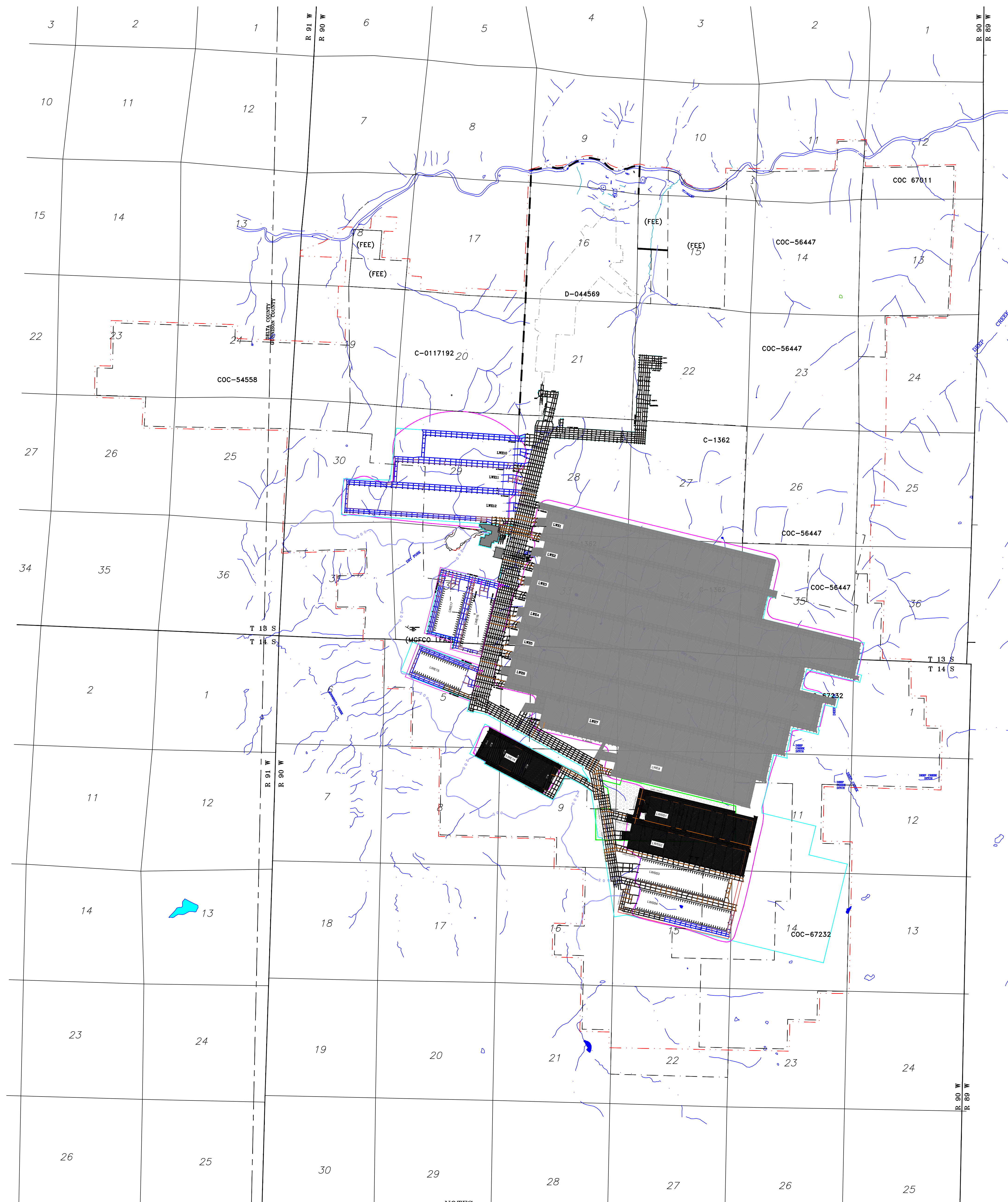




LEGEND

- |                                                                                    |                                                                                                                                              |
|------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|
|  | <i>Permit Area Boundary</i>                                                                                                                  |
|  | <i>Coal Lease Boundary (Federal Lease C-1362 Excludes 24.8 Acres Under Minnesota Reservoir a.k.a. Independent Reservoir or Monument Dam)</i> |
|  | <i>Approximate limit of the maximum predicted 19° E-seam angle of draw.<sup>1</sup></i>                                                      |
|  | <i>Maximum Projected Areal Extent of Potential Mineable E-seam.<sup>2</sup></i>                                                              |
|  | <i>Projected E Seam mining</i>                                                                                                               |

-  - Development Mined Areas  
 - PROJECTED POTENTIAL MINING AREA 2021-2025  
 - AREA OF IN-MINE EXPLORATION  
 - MINED AREAS

NOTES:

- Notes:
  - Gateroad entries for longwall panels LWE1 through LWE8 were generally developed from west to east and then longwall mined from east to west. These longwall panels were mined in order from north to south within the coal lease areas shown.
  - The proposed western longwall panels LWE9 through LWE12 will likely be the last E Seam panels mined due to the locations along the main entries.
  - The projected panel layout and timing were based on the best available exploration data, professional judgement, and markets at the time this map was prepared. Pillar and panel dimensions may be adjusted within the Projected Potential Mining Area and permit boundary if warranted by actual mining conditions, including coal thickness, coal quality, and geotechnical conditions to fulfill federal coal lease maximum economic recovery requirements.

1. See Exhibit 60E. The actual E-seam angle-of-draw has been conservatively calculated as 16.3°. (See Appendix B of the Spring 2010 Subsidence Report.) The angle of draw is measured using the greatest vertical distance between the top of the E-seam at the nearest edge of each longwall panel and the ground surface elevation equal to the point of no discernable subsidence.
2. Also referred to as the "Projected Potential Mining Area." Although not anticipated (based on available data, as above), should mining be extended in this area and beyond the projected E-seam mining shown, the associated projected impacts of subsidence have been evaluated in Exhibits 55B & 60E.

THIS DRAWING WAS PREPARED UNDER  
MY SUPERVISION AND REPRESENTS  
INFORMATION THAT IS ACCURATE TO  
THE BEST OF MY KNOWLEDGE



**ARCH**  
WEST FLK

5174 Highway 133  
Somerset, CO 81434  
Operated by Mountain Coal Company, L.L.C.  
A subsidiary of Arch Resources, Inc.

Map 51  
E-SEAM PROJECTED OPERATIONS



| DRAWN    |            |
|----------|------------|
| DATE     | BY         |
| 12/31/17 | TR-143 JAW |
| REVISED  |            |
| DATE     | BY         |
| 1-19-18  | TR-144 GBC |
| 3-19-18  | PR-15 GBC  |
| 6-20-18  | PR-15 EDL  |
| 2-1-21   | TR-149 GBC |
| 3-18-22  | TR-150 NP  |

COORDINATE  
SYSTEM  
NAD 27

FILE NO.  
Path: MAP 51- TR-151.DWG  
\\MCCPSP920\WORKGROUPS\MCC-ENGINEERING\ENVIRONMENTAL