

NEW MEXICO ABANDONED MINE LAND PROGRAM

COUNTY ROAD A-25 SUBSIDENCE MITIGATION PROJECT

EMNRD-MMD-2025-04

COLFAX COUNTY, NEW MEXICO

FEBRUARY 2025



Image Cite: ESRI World Street Map, Publication: 2022

1 NEW MEXICO STATE MAP
SCALE: 1" = 70 MILES



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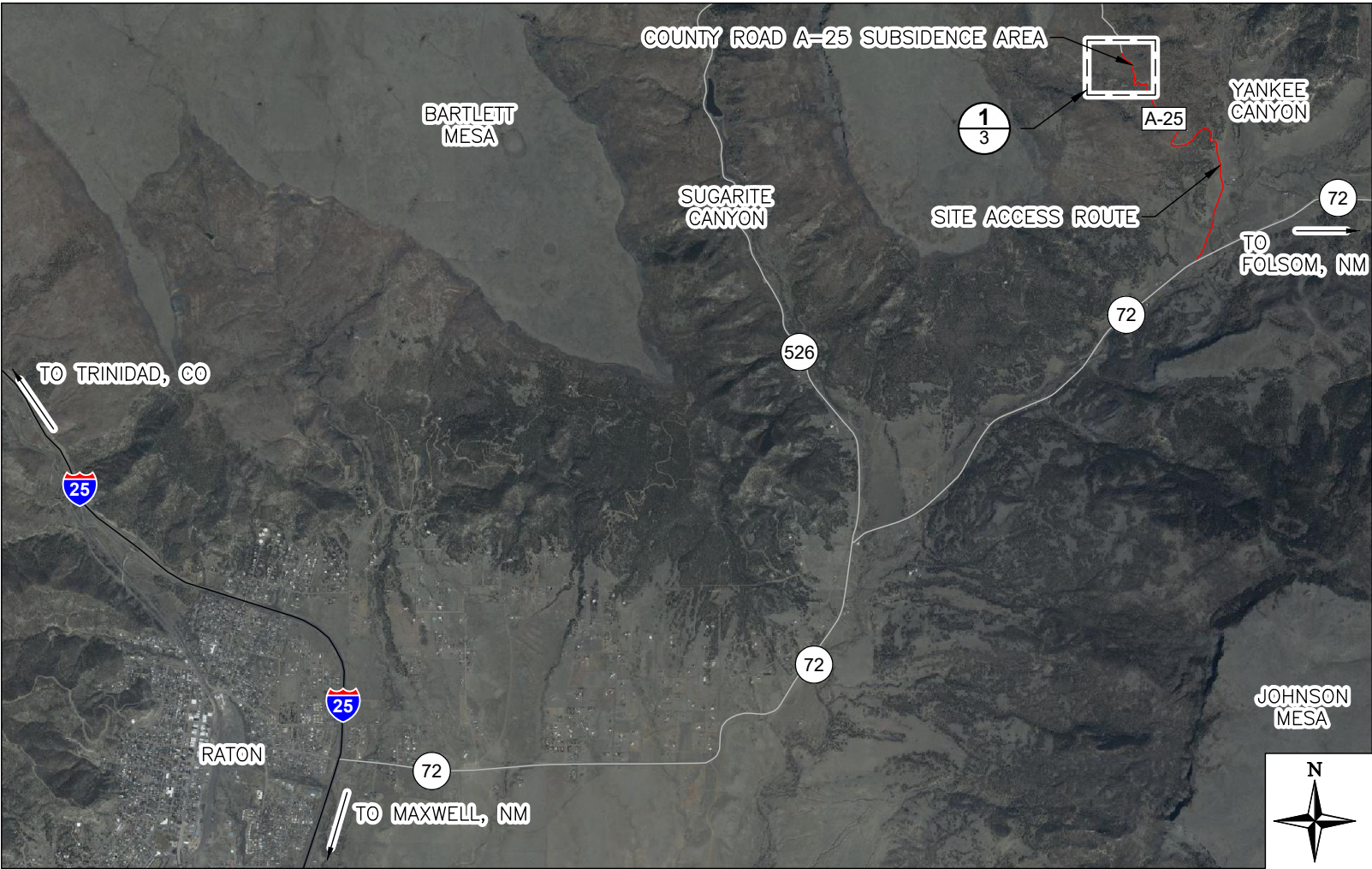


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2 SITE LOCATION AND ACCESS MAP
SCALE: 1" = 5000'




CERTIFICATE OF ENGINEER

STATE OF NEW MEXICO)
COUNTY OF COLFAX) SS:

I, CAMERON J. TWING HEREBY STATE TO THE BEST OF MY KNOWLEDGE AND UNDERSTANDING THAT THIS DESIGN AND ACCOMPANYING DRAWINGS HAVE BEEN PREPARED BY ME OR UNDER MY DIRECT SUPERVISION IN ACCORDANCE WITH STANDARD AND GENERALLY ACCEPTED ENGINEERING PRACTICES AND PROCEDURES IN EFFECT AT THE TIME.



Cameron J. Twing
2-28-25

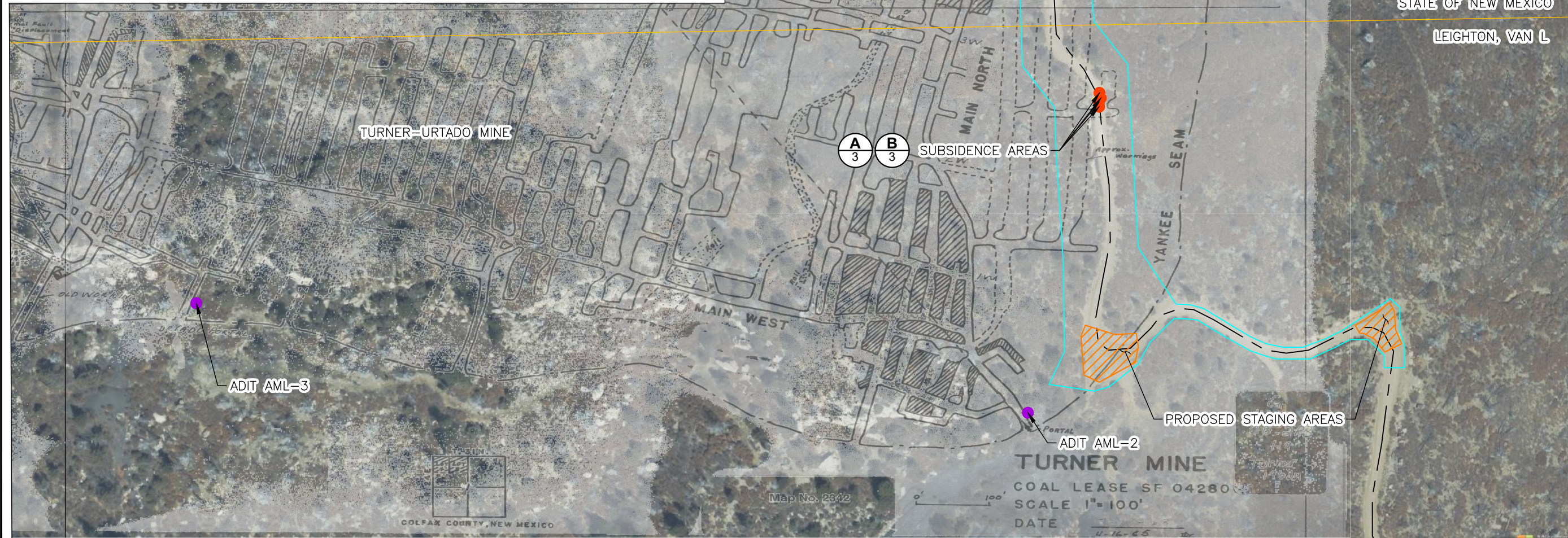
PROJECT SITE LOCATION AND ACCESS MAP		COUNTY ROAD A-25 SUBSIDENCE MITIGATION PROJECT, EMNRD-MMD-2025-04 NEW MEXICO ABANDONED MINE LAND PROGRAM COLFAX COUNTY, NEW MEXICO		TITLE		REV: 1					
 Trihydro CONSULTING 1252 Commerce Drive Laramie, Wyoming 82070 www.trihydro.com (P) 307/745,7474 (F) 307/745,7729		DRAWN BY: BB		CHECKED BY: CT		DATE: 01/17/2025		SCALE: AS SHOWN		FILE: 01A-YANKEE_SITE/VICINITY	
		2		02/19/2025		REISSUE FOR CONSTRUCTION		MR		CT	
		1		01/17/2025		REISSUE FOR CLIENT REVIEW		BB		CT	
		0		02/27/2023		ISSUE FOR CONSTRUCTION		JD		TH	
		REV.		DATE		DESCRIPTION		BY		CHKD	
								REVISIONS			



A COUNTY ROAD A-25 SUBSIDENCE FEATURE-1-1
SCALE: NONE



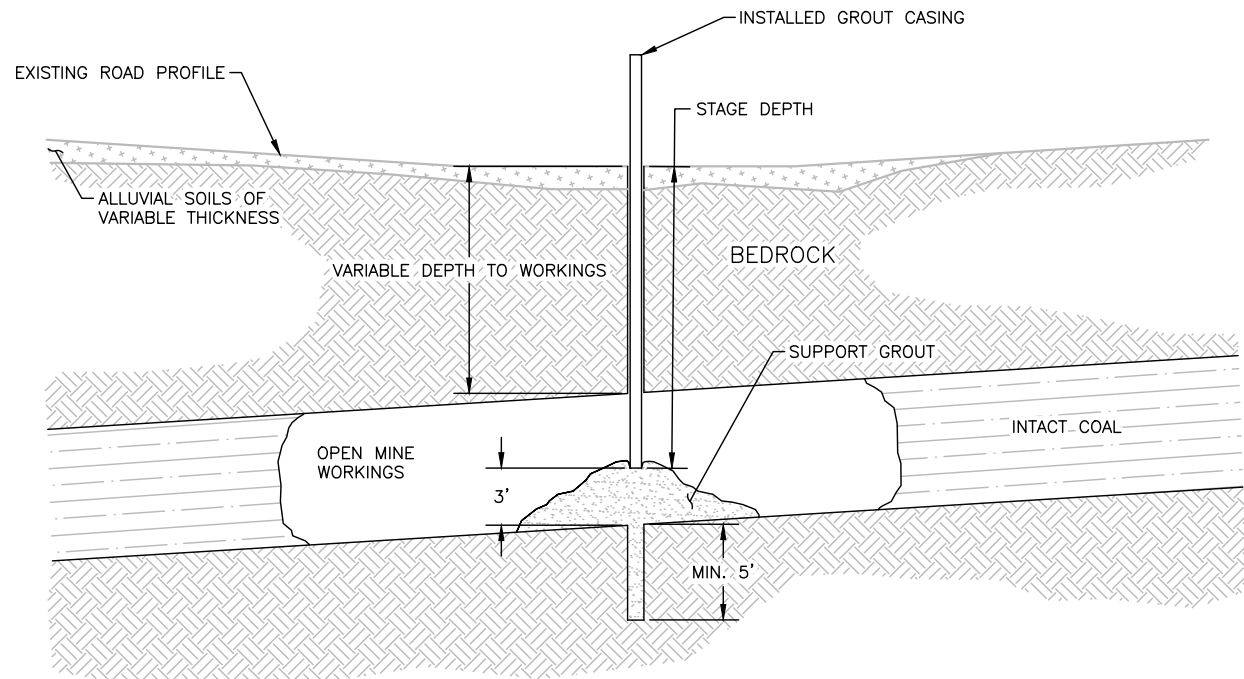
B COUNTY ROAD A-25 SUBSIDENCE FEATURE-2
SCALE: NONE



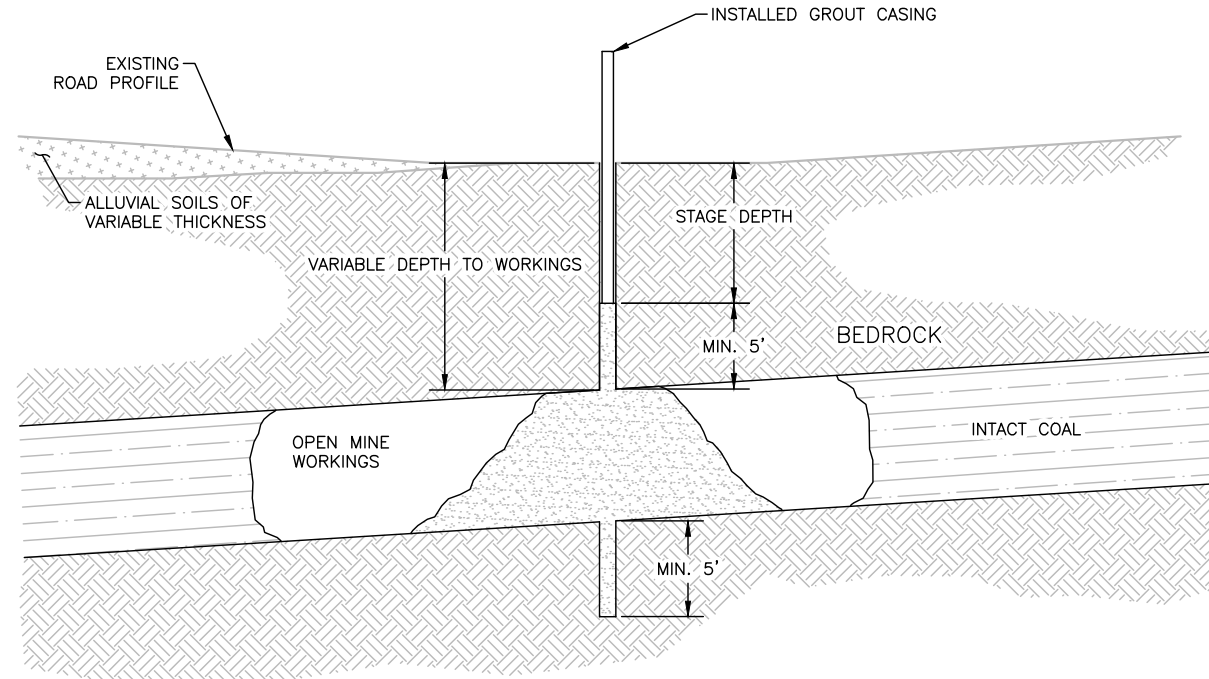
1 EXISTING SITE AREA - PLAN VIEW
SCALE: 1" = 150'



SHEET 3 3 OF 6 REV: 1	<div>EXISTING SITE AREA MAP</div> <div>COUNTY ROAD A-25 SUBSIDENCE MITIGATION PROJECT, EMNRD-MMD-2025-04 NEW MEXICO ABANDONED MINE LAND PROGRAM COLFAX COUNTY, NEW MEXICO</div>	<div>Tribhydro CORPORATION</div> <div>1252 Commerce Drive Laramie, Wyoming 82070 www.tribhydro.com</div> <div>(P) 307/745.7474 (F) 307/745.7729</div>	DRAWN BY: BB							
			CHECKED BY: CT							
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			SCALE: 1" = 150'							
			FILE: 01A-YANKEE_EXISTINGSITE							
			REV.	DATE	DESCRIPTION	BY	CHK'D			
					REVISIONS					



1 INITIAL GROUTING STAGE
SCALE: NONE

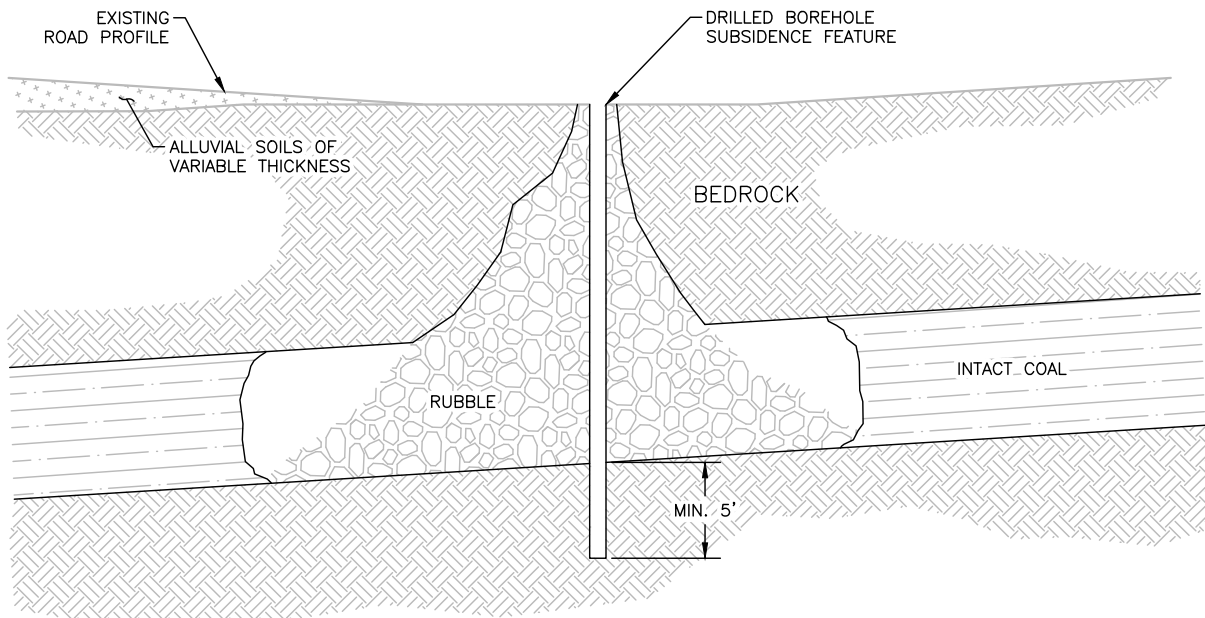


2 FINAL GROUTING STAGE
SCALE: NONE

NOTES:

1. GROUT SHALL BE INJECTED AT A STAGE DEPTH UNTIL A REFUSAL CRITERIA HAS BEEN MET. IF THE MAXIMUM PRESSURE FOR THE DEPTH OF INJECTION IS MET OR IF 20 CY OF SUPPORT GROUT HAS BEEN INJECTED AT THAT STAGE DEPTH, THE GROUT STAGE IS CONSIDERED COMPLETE. WHEN A GROUT STAGE IS CONSIDERED COMPLETE, THE CASING IS LIFTED 3 FEET, AND THE NEXT GROUT STAGE BEGINS. THE FIRST GROUT STAGE BEGINS WITH THE CASING SET 3 FEET OVER THE MINE FLOOR.
2. IF THE HOLE ENCOUNTERS AN OPEN VOID SPACE WITH NO RUBBLE, THE GROUT STAGES WILL START FROM 3 FEET ABOVE THE MINE FLOOR, LIFTING 3 FEET WITH EACH COMPLETED GROUT STAGE, UNTIL A GROUT STAGE IS COMPLETED 5 FEET OR MORE OVER THE TOP OF THE VOID SPACE. WHEN A GROUT STAGE IS COMPLETED 5 FEET OR MORE OVER THE VOID SPACE, THE HOLE IS CONSIDERED COMPLETE. WHEN THE HOLE IS CONSIDERED COMPLETE PUMPING FOR THAT HOLE STOPS, AND THE CASING IS REMOVED. THE COMPLETED HOLE CAN THEN BE BACKFILLED AND RECEIVE A SURFACE RESTORATION.
3. IF THE HOLE ENCOUNTERS RUBBLE THAT DOES NOT REACH THE SURFACE, THE GROUT STAGES WILL START FROM 3 FEET ABOVE THE MINE FLOOR, LIFTING 3 FEET WITH EACH COMPLETED GROUT STAGE, UNTIL A GROUT STAGE IS COMPLETED 5 FEET OR MORE OVER THE TOP OF THE RUBBLE ZONE. WHEN A GROUT STAGE IS COMPLETED 5 FEET OR MORE OVER THE RUBBLE ZONE, THE HOLE IS CONSIDERED COMPLETE.
4. IF THE HOLE ENCOUNTERS AN OPEN VOID SPACE WITH RUBBLE EITHER BELOW OR ABOVE IT, THE SAME PROCEDURE CAN BE FOLLOWED. WHEN A GROUT STAGE IS COMPLETED 5 FEET OR MORE OVER THE TOP OF THE VOID SPACE OR RUBBLE ZONE, WHICHEVER IS HIGHER, THE HOLE IS CONSIDERED COMPLETE.
5. IF THE HOLE ENCOUNTERS RUBBLE THAT REACHES THE SURFACE, AS WITH THE SUBSIDENCE FEATURES, THE GROUT STAGES WILL START FROM 3 FEET ABOVE THE MINE FLOOR, LIFTING 3 FEET WITH EACH COMPLETED GROUT STAGE, UNTIL A GROUT STAGE IS COMPLETED WITHIN 5 FEET OF THE SURFACE. WHEN A GROUT STAGE IS COMPLETED WITHIN 5 FEET OF THE SURFACE, THE HOLE IS CONSIDERED COMPLETE.
6. IF AT ANY TIME MEASURABLE SURFACE GROUND HEAVE IS OBSERVED (I.E., DISPLACEMENT OF GROUND SURFACE OF GREATER THAN $\frac{1}{8}$ INCH DURING A GROUT STAGE OR A MAXIMUM CUMULATIVE HEAVE OF 1 INCH), THE HOLE IS CONSIDERED COMPLETE AND NO MORE SUPPORT GROUT IS REQUIRED FOR THE HOLE. IF AT ANY TIME GROUT IS RETURNED UP THE ANNULUS, THE HOLE IS CONSIDERED COMPLETE AND NO MORE SUPPORT GROUT IS REQUIRED FOR THE HOLE. BASED ON THE GROUTING CONDITIONS PRESENT, THE ENGINEER MAY CONSIDER A HOLE COMPLETE WITHOUT OBSERVING ONE OF THE LAID-OUT REFUSAL OR COMPLETION CRITERIA.
7. IF THE CONTRACTOR IS UNABLE TO COMPLETE GROUTING FOR A HOLE BEFORE THAT HOLE IS CONSIDERED COMPLETE, THE HOLE WILL BE OFFSET BY 5 TO 10 FEET AS DIRECTED BY THE ENGINEER AND RE-DRILLED. THE INCOMPLETE HOLE CAN THEN BE BACKFILLED AND RECEIVE A SURFACE RESTORATION.
8. THE GROUT MIXTURE PROPORTIONS SHALL ACHIEVE A PUMPABLE MIX WITH NOT LESS THAN 3 INCH AND NOT MORE THAN 6 INCH SLUMP WITH A 0 PERCENT BLEED, AND A STIFFENING TIME OF GREATER THAN 4 HOURS. THE REQUESTED SLUMP SHALL BE DETERMINED BY THE ENGINEER FOR EACH INDIVIDUAL GROUT BORE HOLE BASED ON THE DOWN HOLE CONDITIONS. OPEN VOID SPACE SHALL USE A LOWER SLUMP, DOWN TO 3 INCH, AND RUBBLE SHALL USE A HIGHER SLUMP, UP TO 6 INCH.
9. THE CONTRACTOR SHALL SUPPLY ALL EQUIPMENT REQUIRED TO OPERATE A GROUTING SYSTEM CAPABLE OF SUPPLYING THE SPECIFIED GROUT AT VARIABLE PRESSURES, MEASURED AT THE PUMP, UP TO 400 PSI (2758 KPA) AND AT RATES OF 0.5 TO 9 CUBIC FEET (0 TO 0.25 CUBIC METERS) PER MINUTE, AS REQUIRED TO SUIT THE APPLICATION. THE CONTRACTOR SHALL SUPPLY AND IMPLEMENT GROUND SURFACE MOVEMENT MONITORING EQUIPMENT WHENEVER GROUTING IS TAKING PLACE.
10. TO BACKFILL THE HOLES THE CONTRACTOR SHALL USE GRAVITY FED GROUT TO FILL THE HOLES UP TO 18 INCHES BELOW THE SURFACE OR TO 4 INCHES BELOW BEDROCK, WHICHEVER IS SHALLOWER. THE CONTRACTOR SHALL BACKFILL THE REMAINING DISTANCE TO THE SURFACE WITH IMPORTED ROAD BASE MATERIAL.

PUMPING PRESSURE REFUSAL CRITERIA	
STAGE DEPTH (FEET)	MAXIMUM PRESSURE AT THE WELLHEAD (PSI)
45 OR GREATER	400
BETWEEN 45 AND 35	275
35 OR LESS	250



3 SUBSIDENCE FEATURE BOREHOLE
SCALE: NONE

SHEET 6 6 OF 6	GROUT PILLAR TYPICAL CONSTRUCTION DETAIL COUNTY ROAD A-25 SUBSIDENCE MITIGATION PROJECT, EMNRD-MMD-2025-04 NEW MEXICO ABANDONED MINE LAND PROGRAM COLFAX COUNTY, NEW MEXICO	 Trihydro <small>CONSULTANTS</small> 1252 Commerce Drive Laramie, Wyoming 82070 www.trihydro.com (P) 307/745.7474 (F) 307/745.7729	DRAWN BY: BB					
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