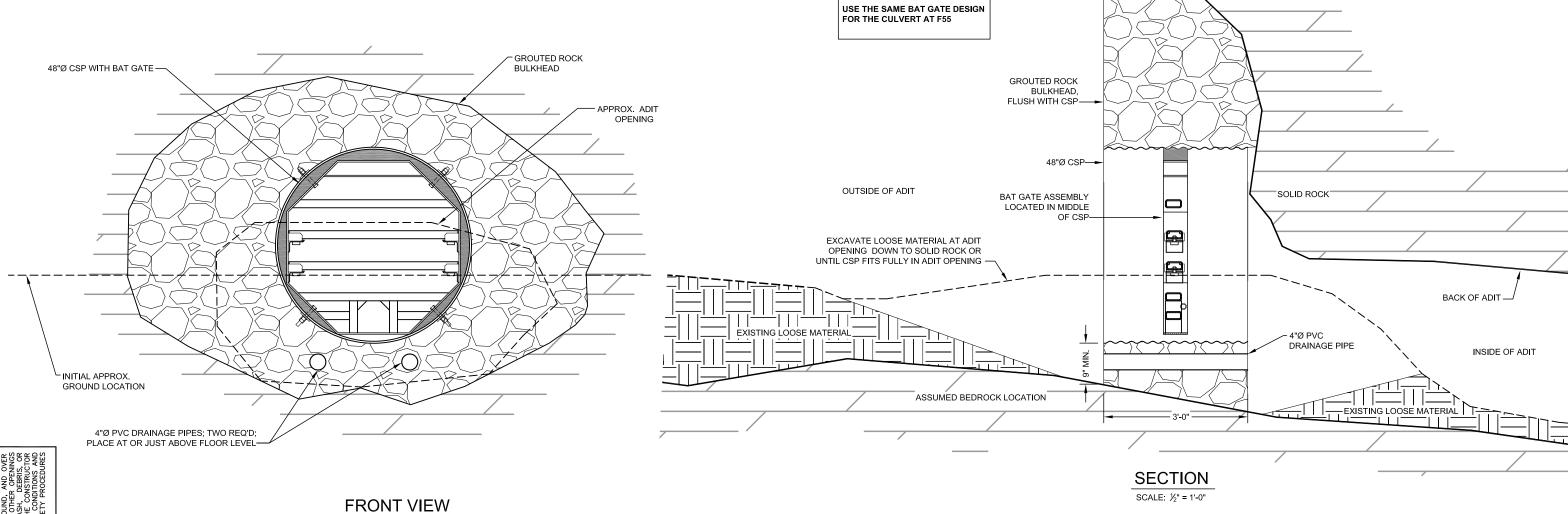




VIEW FROM INNER ADIT LOOKING OUT

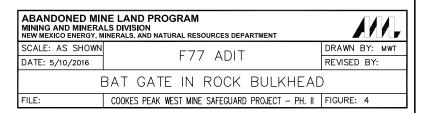


INNER ADIT TO BE MUCKED OPEN

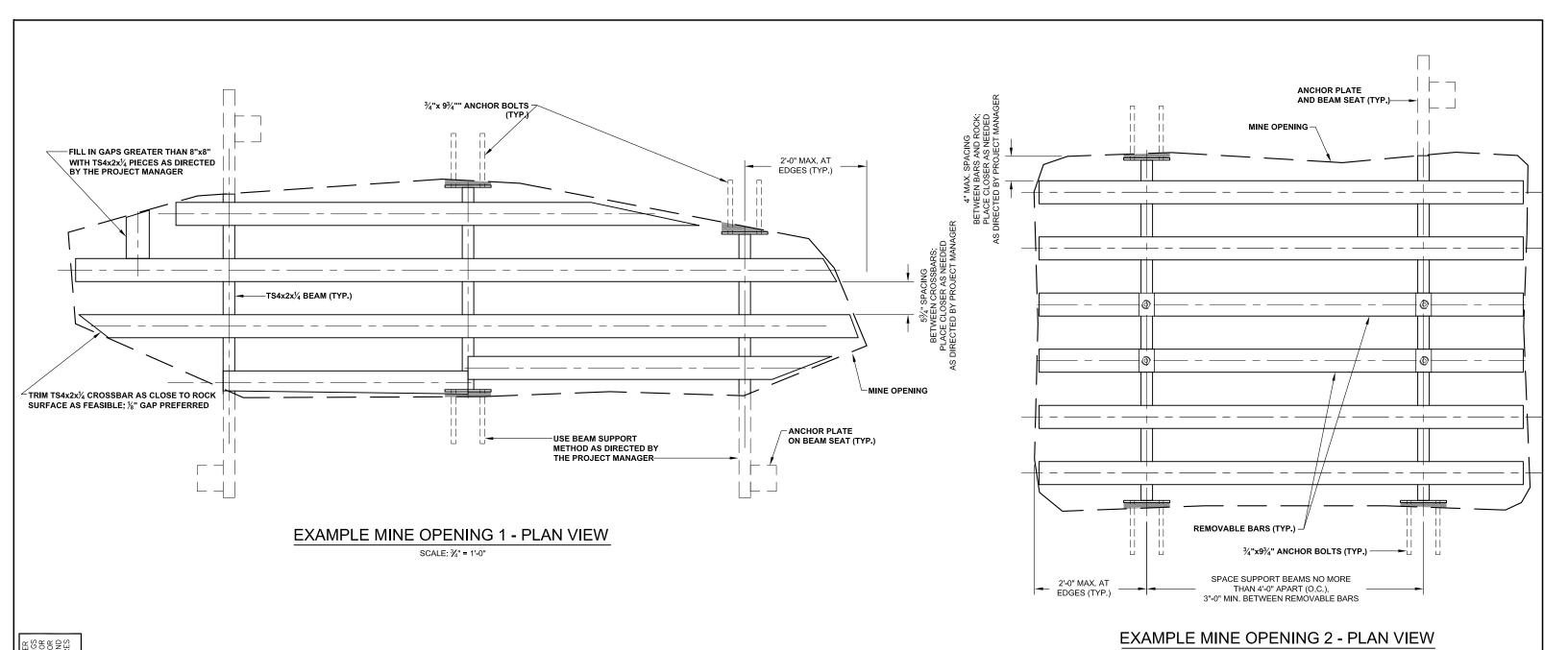


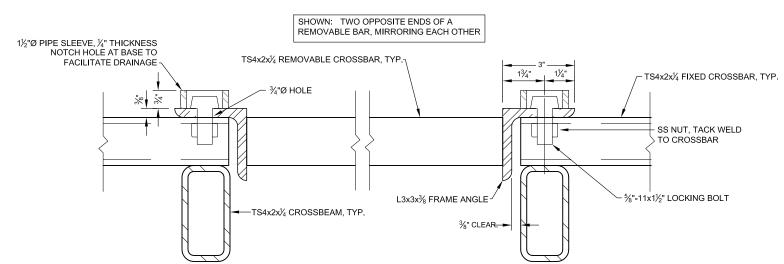
GENERAL NOTES:

- 1. THE SHAPE AND DIMENSIONS SHOWN FOR THE EXISTING ADIT OPENING ARE APPROXIMATE. FIELD VERIFY ALL DIMENSIONS BEFORE FABRICATION.
- 2. STEEL PLATES AND SHAPES SHALL BE WEATHERING STEEL. WELD ALL JOINTS. CONSTRUCT THE BAT GATE TO ELIMINATE SURFACES ON WHICH MOISTURE OR DEBRIS CAN BE TRAPPED. ALL TUBULAR MEMBERS SHALL BE HERMETICALLY SEALED TO PREVENT THE INCURSION OF MOISTURE, EXCEPT AS OTHERWISE NOTED. ROUND OR CHAMFER ALL EXPOSED SHARP CORNERS AND EDGES.
- 3. DOUBLE-NUT ALL BOLTS. NUTS AND BOLTS SHALL BE STAINLESS STEEL
- 4. LOCATE GROUTED ROCK BULKHEAD AT INNER ADIT ENTRANCE AS DIRECTED BY THE PROJECT MANAGER AND PRESERVE THE EXISTING TREE AS FEASIBLE. MUCK OUT THE INNER ADIT BY MOVING TWO CUBIC YARDS OF MATERIAL OUTWARDS AND PLACE TO THE SIDE AND OUT OF THE WAY AS DIRECTED BY THE PROJECT MANAGER.
- 5. WATER FLOWING INTO THE ADIT FACILITATES BAT HABITAT. MAINTAIN CURRENT FLOW PATTERNS AS FEASIBLE.
- 6 ROCK FOR THE BULKHEAD SHALL BE SOUND, DURABLE NATIVE ROCK THAT GIVES A RINGING SOUND WHEN STRUCK WITH A HAMMER.
- 7. PROPORTION AND MIX CONCRETE FOR THE BULKHEAD TO PRODUCE A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI AT 28 DAYS. CEMENT SHALL CONFORM TO ASTM C150 TYPE II, AND AGGREGATE TO ASTM C33, WITH A MAXIMUM SIZE OF AGGREGATE OF ¾-INCH. PACKAGED CONCRETE MIX MEETING ASTM C378 MAY BE USED..
- 8. STAIN VISIBLE PORTIONS OF CSP (INSIDE AND OUTSIDE) WITH NATINA GALVANIZED METAL COLORANT (PROVIDED BY THE PROJECT MANAGER) FOR CAMOUFLAGE.
- 9. PLACE A SURVEY MARKER, PROVIDED BY THE PROJECT MANAGER, INTO THE ROCK BULKHEAD BEFORE CONCRETE CURES.



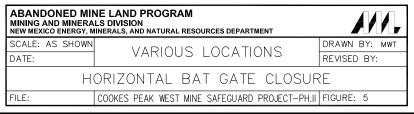
CAUTION — THIS PROJECT REQUIRES CONSTRUCTION WORK IN, AROUND, AND OVER HAZARDOUS AND UNPROTICCIED MINE SHAFTS. STOPES, ADDITS, AND OTHER OPENINGS WHICH MAY BE OPEN TO THE SURFACE OR HIDDEN FROM VIEW BY TRASH, DEBRIS, OR THIN AND UNSTABLE LAYERS OF SURFACE MATERIALS OR ROCK. THE CONSTRUCTOR SHALL BE RESPONSIBLE FOR THOROUGHLY INVESTIGATING THE SITE CONDITIONS AND SCHEDULING EQUIPMENT, EQUIPMENT OPERATIONS, PERSONNEL AND SAFETY PROCEDURES TO PREVENT ACCIDENTS AND INJURIES.





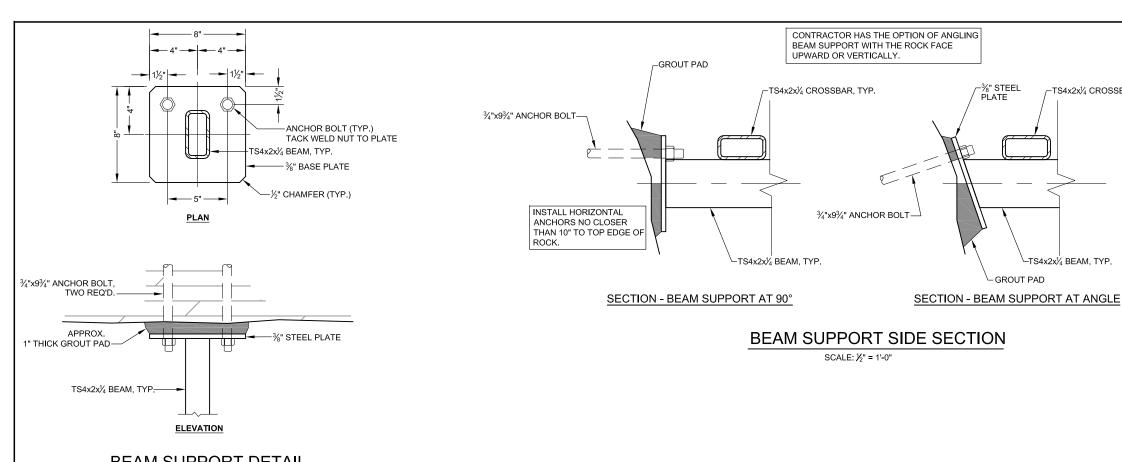
GENERAL NOTES:

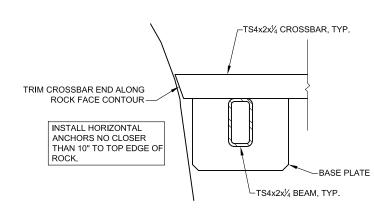
- 1. THIS DRAWING SHOWS TWO EXAMPLE MINE OPENINGS AND THE CORRESPONDING LAYOUTS OF THE STEEL CLOSURE. THE DRAWING SHALL BE USED AS A GUIDE FOR FIELD LAYOUT. DETERMINE THE ACTUAL LAYOUTS AND DIMENSIONS OF THE CLOSURES IN THE FIELD PRIOR TO FABRICATION.
- 2. INSTALL HORIZONTAL BAT GATES AS CLOSE TO THE TOP OF THE SHAFT OPENINGS AS POSSIBLE, WHERE THE ROCK AT THE GATE LOCATIONS IS FULLY COMPETENT AND THE ANCHORS ARE PLACED AT LEAST 10" BELOW THE TOP OF THE ROCK.
- 3. REMOVE LOOSE ROCK AT CLOSURES PRIOR TO FABRICATION AND FIELD ERECTION OF THE CLOSURES. MINIMIZE THE AMOUNT OF ROCK AND OTHER DEBRIS THAT FALL INTO THE MINE OPENINGS DURING CONSTRUCTION. PULL LOOSE MATERIAL UP AND AWAY FROM THE MINE AREA.
- 4. USE BEAM SUPPORTS OR BEAM SEATS, AT CONTRACTOR'S DISCRETION AND APPROVAL FROM THE PROJECT MANAGER, TO FASTEN BEAM ENDS TO COMPETENT ROCK.
- 5. UNLESS OTHERWISE ACCEPTED BY THE PROJECT ENGINEER, PLACE TS BEAMS ACROSS THE SPAN (WIDTH) OF THE SHAFT OPENING.
- 6. INSTALL SURVEY MARKER (SUPPLIED BY AML PROGRAM) INTO CONCRETE OR ADJACENT COMPETENT ROCK AS DIRECTED BY THE PROJECT MANAGER.



SECTION - REMOVABLE BAR

SCALE: 3" = 1'-0"





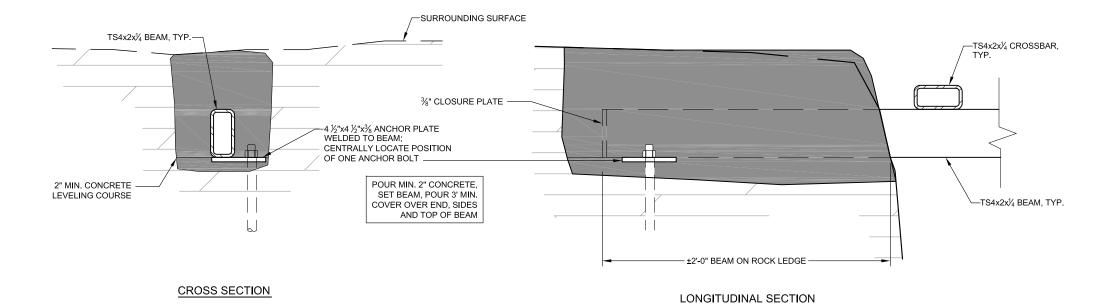
BEAM-CROSSBAR SECTION VIEW

SCALE: 3/4" = 1'-0"

BEAM SUPPORT DETAIL

SCALE: 11/5" = 1'-0"

THIS PROJECT REQUIRES CONSTRUCTION WORK IN, AROUND, AND OVER IS AND UNPROTECTED MINE SHAFTS, STOPES, ADITS, AND OTHER OPENINGS Y BE OPEN TO THE SURFACE OF HIDDEN FROM VIEW BY TRASH, DEBRIS, OR NISTABLE LAYERS OF SURFACE MHIDEN FROM VIEW BY TRASH, DEBRIS OR RESPONSIBLE FOR THOROUGHLY INVESTIGATING THE SITE CONDITIONS AND 6 EQUIPMENT, EQUIPMENT OF PREPATIONS, PERSONNEL AND SAFETY PROCEDURES AT ACCIDENTS AND INJIIMENT.



BEAM SEAT DETAILS

SCALE: 1/2" = 1'-0"

GENERAL NOTES:

-TS4x2x1/4 CROSSBAR, TYP.

-TS4x2x1/4 BEAM, TYP.

- 1. POSITION CLOSURE AT THE TOP OF THE SHAFT AT A STABLE LOCATION AS DIRECTED BY THE PROJECT MANAGER. IF THERE IS POTENTIAL FOR ROCK ACCUMULATION FROM ABOVE, STRUCTURE SHOULD BE ANGLED DOWNHILL IF POSSIBLE TO ALLOW THE ROCKS TO SLIDE OFF.
- 2. MINIMIZE THE AMOUNT OF ROCK AND OTHER DEBRIS THAT FALL INTO THE MINE OPENINGS DURING CONSTRUCTION. PULL LOOSE MATERIAL UP AND AWAY FROM
- 3. USE BEAM SUPPORTS OR BEAM SEATS, AT CONTRACTOR'S OPTION WITH CONCURRENCE FROM THE PROJECT MANAGER, TO FASTEN BEAM ENDS TO COMPETENT ROCK.
- 4. STEEL SHAPES, PLATES AND BARS SHALL BE WEATHER OR STAINLESS STEEL.
- 5. PUT 3/4" CHAMFER ON ANY CONCRETE EDGES.
- 7. ANCHOR BOLTS SHALL BE ZINC-PLATED HILTI HIT ADHESIVE ANCHORS OR APPROVED EQUIVALENT. FOLLOW MANUFACTURER'S RECOMMENDATIONS REGARDING INSTALLATION.
- 8. DO NOT FILL BEAMS WITH CONCRETE OR GROUT.
- 9. INSTALL SURVEY MARKER (SUPPLIED BY AML PROGRAM) INTO ADJACENT COMPETENT ROCK AS DIRECTED BY THE PROJECT MANAGER.

ABANDONED MINE LAND PROGRAM MINING AND MINERALS DIVISION NEW MEXICO ENERGY, MINERALS, AND NATURAL RESOURCES DEPARTMENT			
SCALE: AS SHOW	VARIOUS LOCATIONS	DRAWN BY: MWT	
DATE:	7 VARIOUS LOCATIONS	REVISED BY:	
HORIZONTAL BAT GATE CLOSURE DETAILS			
FILE:	COOKES PEAK WEST MINE SAFEGUARD PROJECT-PH.II	FIGURE: 6	

HORIZONTAL BAT GATE LOCATIONS

		HORIZORIAL DAT GATE		
FEATURE NUMBER	APPROX. MINE OPENING (FT)	APPROX. TS4x2x⅓ NEEDED (LINEAR FEET)	APPROX. NO. OF SUPPORT BEAM ENDS	NO. OF REMOVABLE BARS
9	9' x 9'	120	4	1
15	8' x 5'	60	4	1
15.01	6' x 6'	60	4	1
56	11' x 10'	160	6	1
68	5' x 5'	40	4	1
71	8' x 4½'	60	4	1
73	9' x 6'	75	4	1
75	18' x 4½'	130	8	1
77.01	2' x 3'	12	2	
77.02	2' x 3'	12	2	
78	3' x 4'	20	4	1
79	8' x 5'	60	4	1
86	1' x 2'	7	2	1
88	8' x 7'	86	4	1
97	7' x 4'	43	4	1
100	8' x 6'	68	4	1
102	15' x 4'	91	8	1
104	6' x 5'	46	4	1
115	4' x 2½'	20	4	1
116	5' x 5'	40	4	1
127	5' x 4'	33	4	
129	8' x 5'	60	4	1
130	6' x 4'	38	4	1
137	5' x 4'	33	4	
145	7' x 5'	52	4	1
146	8' x 5'	60	4	1
147	8' x 5'	60	4	1
150	4' x 3'	20	2	1
276	8' x 5'	58	4	1
281	7' x 6'	62	4	1
	TOTAL	1,686	122	26

ANCHOR INSTALLATION NOTES:

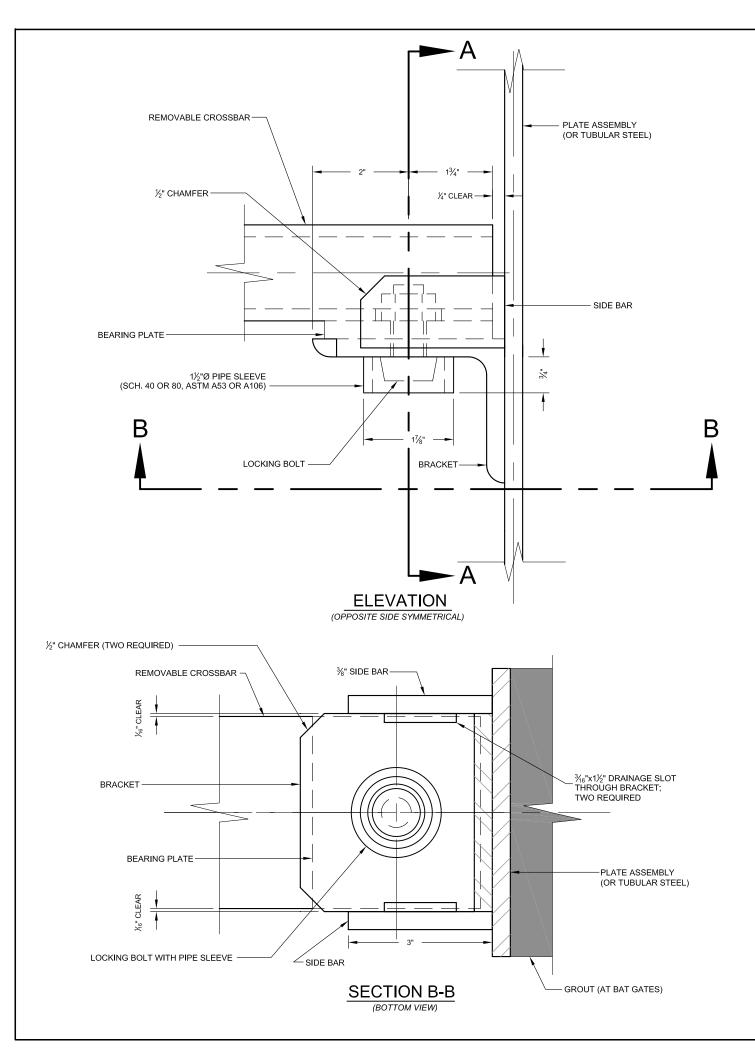
- 1. SUPPORT BEAMS FOR HORIZONTAL BAT GATES SHALL BE ATTACHED TO THE SURROUNDING ROCK USING HILTI HIT-HY 200 ADHESIVE ANCHORING SYSTEM OR AN APPROVED EQUIVALENT.
- 2. HILTI HIT-HY 200 ADHESIVE IS AVAILABLE IN TWO OPTIONS, HILTI HIT-HY 200-A, AND HILTI HIT-HY 200-R. BOTH OPTIONS UTILIZE THE SAME TECHNICAL DATA. HILTI HIT-HY 200-A WILL HAVE SHORTER WORKING TIMES AND CURING TIMES THAN HILTI HIT-HY 200-R. THE PACKAGING FOR EACH IS DIFFERENT WHICH HELPS THE USER DISTINGUISH BETWEEN THE TWO ADHESIVES.
- 3. INJECTABLE ADHESIVE SHALL BE USED FOR INSTALLATION OF THREADED RODS (REBAR) (INSERTS) INTO EXISTING CONCRETE. ADHESIVE SHALL BE FURNISHED IN CONTAINERS WHICH KEEP COMPONENT A AND COMPONENT B SEPARATE. CONTAINERS SHALL BE DESIGNED TO ACCEPT STATIC MIXING NOZZLE WHICH THOROUGHLY BLENDS COMPONENT A AND COMPONENT B AND ALLOWS INJECTION OF THE MIXED ADHESIVE DIRECTLY INTO THE DRILLED HOLE.
- 4. ONLY INJECTION TOOLS AND STATIC MIXING NOZZLES SUPPLIED BY THE MANUFACTURER MAY BE USED. INJECTION ADHESIVE SHALL BE FORMULATED TO INCLUDE THE RESIN AND HARDENER TO PROVIDE OPTIMAL CURING SPEED, HIGH STRENGTH AND STIFFNESS. INJECTION ADHESIVE ANCHOR SYSTEM SHALL BE HILTI HIT-HY 200 INSTALLED USING HILTI SAFE SET TECHNOLOGY. HIT-HY 200 SYSTEM SHALL BE SUPPLIED BY HILTI.
- 5. THE ANCHORS SHALL BE HILTI HIT-Z-R ANCHORS RODS ¾" DIAMETER X 9¾" LENGTH. DRILL HOLE LENGTH SHALL BE A 8½" IN LENGTH AND THE DIAMETER SHALL BE 7/8".
- 6. WHEN USING HILTI HIT-Z-R ANCHOR RODS, DRILLING DUST DOES NOT NEED TO BE REMOVED FOR OPTIMUM CAPACITY WHEN BASE MATERIAL TEMPERATURES ARE GREATER THAN 41° F (5° C) AND A HAMMER DRILL WITH A CARBIDE TIPPED DRILL BIT IS USED. HOWEVER, THE HOLE SHALL BE CLEANED IF ANY OTHER TYPE OF DRILLING METHOD IS USED.
- 7. THE BOLT SHALL BE TORQUED TO 110 FT-LB.
- 8. INSTALLATION OF EACH BOLT SHALL UTILIZE TWO WASHERS AND AT LEAST ONE NUT. TAKE MEASURES TO MAKE ALL NUTS UNREMOVABLE SUCH AS DESTROYING THE THREADS OR TACK WELDING.

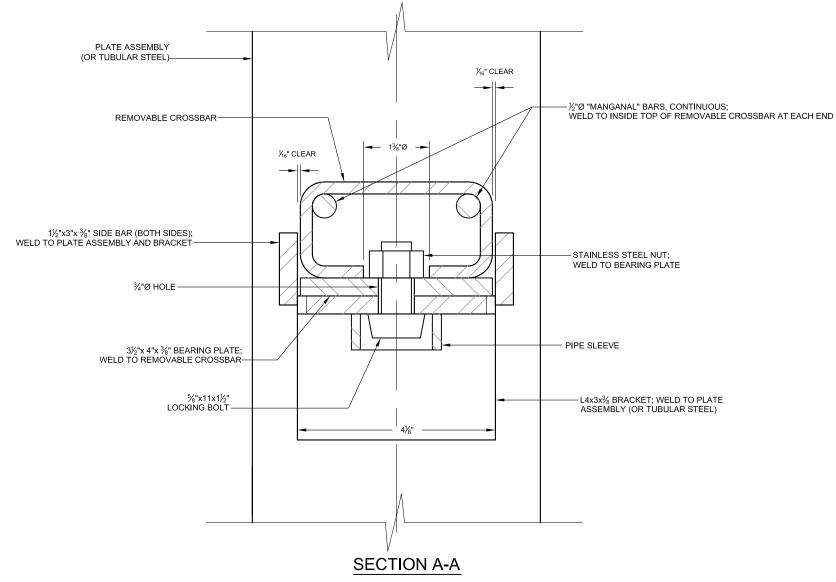


EXAMPLE PHOTO

(GAGE MINE SAFEGUARD PROJECT)

MINING AND MINERA	NE LAND PROGRAM ILS DIVISION IINERALS, AND NATURAL RESOURCES DEPARTMENT	
SCALE: AS SHOWN	VARIOUS LOCATIONS	DRAWN BY: MW
DATE:	VARIOUS LOCATIONS	REVISED BY:
HORIZONTAL BAT GATE CLOSURE		
FILE:	COOKES PEAK WEST MINE SAFEGUARD PROJECT-PH.II	FIGURE: 7

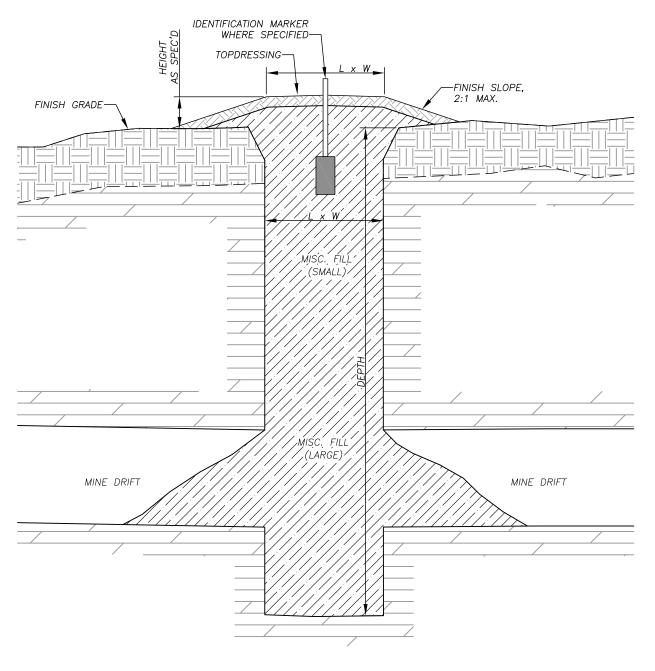


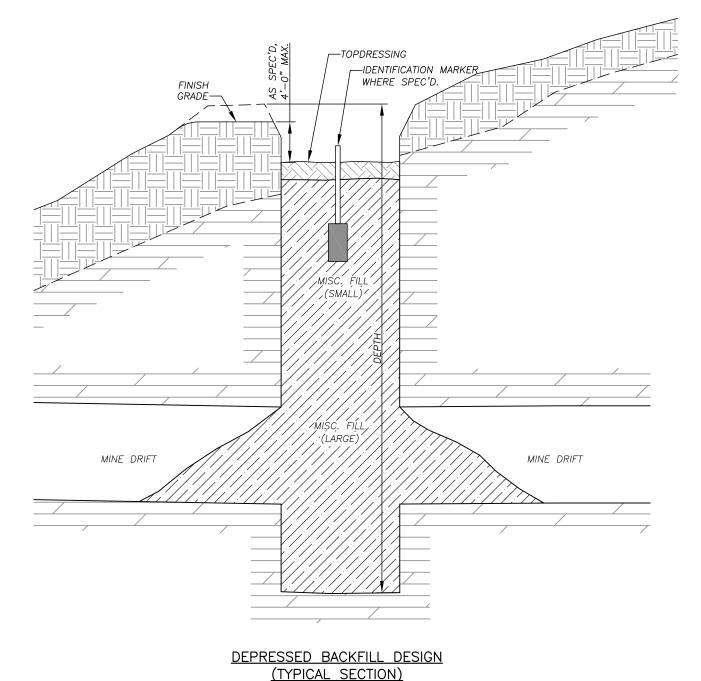


GENERAL NOTES:

- 1. STEEL PLATES AND SHAPES SHALL BE WEATHERING STEEL. WELD ALL JOINTS, EXCEPT AS OTHERWISE INDICATED. CONSTRUCT THE LOCK TO ELIMINATE SURFACES ON WHICH MOISTURE OR DEBRIS CAN BE TRAPPED. JOINTS SHALL BE TIGHT SO THAT MOISTURE CANNOT ENTER BETWEEN THE PLIES OF MATERIAL. ROUND OR CHAMFER ALL EXPOSED SHARP CORNERS AND EDGES.
- 2. "MANGANAL" BARS SHALL BE HIGH MANGANESE STEEL WITH 12% TO 14% MANGANESE. EACH BAR SHALL EXTEND THE FULL LENGTH OF EACH REMOVABLE CROSSBAR.
- 3. ALONG THE BOTTOM OF EACH REMOVABLE CROSSBAR, DRILL $\frac{1}{2}$ " DIAMETER HOLES AT 1'-0" O.C.
- 4. THE CONTRACTOR SHALL PROVIDE THE NUTS (%"Ø 11 UNC CLASS 2A THREAD). THE PROJECT MANAGER WILL SUPPLY THE LOCKING BOLTS.
- $5.\,$ COAT THE THREADS OF THE LOCKING BOLTS WITH LPS1 LUBRICANT AND INSTALL FIRMLY WITH $50\,$ TO $75\,$ POUNDS OF TORQUE.

ABANDONED MINE LAND PROGRAM MINING AND MINERALS DIVISION NEW MEXICO ENERGY, MINERALS, AND NATURAL RESOURCES DEPARTMENT		
SCALE: 6"=1'-0"	VARIOUS LOCATIONS	DRAWN BY: JAK
DATE:	VARIOUS LUCATIONS	REVISED BY: MWT
REMOVABLE CROSSBAR LOCK DETAIL		
FILE:	COOKES PEAK WEST MINE SAFEGUARD PROJECT-PH. II	FIGURE: 8





MOUNDED BACKFILL DESIGN (TYPICAL SECTION)

GENERAL NOTES:

- 1. THE FILL AT AND ABOVE DRIFT LEVELS SHALL CONSIST OF THE COARSEST MATERIAL AVAILABLE. SMALLER MATERIAL MAY BE USED ELSEWHERE. SEE THE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
- 2. AS PRACTICABLE, SHAPE THE REMAINING MINE WASTE MATERIAL TO RESEMBLE AN UNDISTURBED MINE WASTE PILE.
- 3. THE LENGTH AND WIDTH OF THE TOP OF THE MOUND SHALL BE EQUAL TO OR GREATER THAN THE INTERNAL SHAFT LENGTH AND WIDTH RESPECTIVELY.

ABANDONED MINE LAND PROGRAM MINING AND MINERALS DIVISION NEW MEXICO ENERGY, MINERALS, AND NATURAL RESOURCES DEPARTMENT			
SCALE: NOT TO SCALE	VARIOUS LOCATIONS	DRAWN BY: JAK	
DATE:	VARIOUS LOCATIONS	REVISED BY:	
FILE:	COOKES PEAK WEST MINE SAFEGUARD PROJECT-PH II	FIGURE: 9	