

Arizona Mine Reclamation L.L.C.



Level 1

Vertical (shaft), Horizontal (adit)

Level 1 protection is classified as a high risk environment with a high potential for vandalism and wildlife loss if not protected. Level 1 protection is an open air structure that provides no return or open access without the use of heavy equipment and cutting torches. If access is needed at some point in time a Level 1 closure would require contractor assistance for access and to reclose as concrete and steel replacement will be necessary. Level 1 closures are primarily designed for air shaft vents that cannot be permanently sealed but require a structure to significantly impact any attempt at re-entry. This closure can be used as needed in both shaft and adit form for the preservation of wildlife not having a need for re-entry by biologists or the Arizona Game and Fish Department.

Construction will consist of minimum 1 inch diameter solid Manganal® steel bar set into reinforced concrete footing, or collar with a minimum concrete density of 1 foot thickness in all directions from center line of Manganal® steel bars.

- Footing will consist of concrete reinforcement and minimum 2 feet in depth footer with 1 foot thickness for concrete pad to range in design spec. to meet the minimum 2 feet of concrete encasement from centerline of Manganal® steel bars.
- Collar will consist of minimum 2 feet thick reinforced concrete with minimum 1 inch diameter solid Manganal® steel bars set into concrete collar. Exception to minimum 2 feet thickness will be when collar is placed as a solid pre-made concrete pipe and is placed into an adit that will have a minimum of 1 feet of fill per 2 linear feet of pipe placed above installed concrete pipe (collar) sloped to pipe end or concrete wall retained at opening.
- Square steel tube 3/8 inch in thickness may be placed around Manganal® steel bars to facilitate a leveler design or strength as needed.
- All welds if needed are permanent and placed inside reinforced concrete encasement structure to prevent access and provide additional strength.
- A "Jail bar" design made with minimum 1" dia. Manganal® steel bars free floating inside a concrete anchored 3/8" in thickness round steel pipe is premier design choice.
- **Level1HA-M** represents minimal restrictions due to concrete is set back even with adit walls.
 - See Accompanying **Level 1V, Level1HA, Level1C, Level1HA-M** Drafts •