2.0 THE PROPOSED ACTION AND ALTENATIVES

2.1 PROPOSED ACTION

2.1.1 Introduction

The Huxtable rock quarry is proposed in the SW¼ of Section 33 in Township 32 North, Range 72 West on the northeastern flank of Sheep Mountain. Access to the quarry site would involve upgrading approximately 1.2 miles of existing, flat-bladed access road and the reconstruction of approximately 0.8 miles of existing two-track trail traversing the W½ of Sections 28 and 33 in Township 32 North, Range 72 West. Surface disturbance associated with the Proposed Action would include 10 acres associated with the actual quarry site and 11 acres associated with access road construction including 4.4 acres associated with the reconstruction of the 0.8 miles of two-track trail and 6.6 acres associated with the upgrading of the 1.2 miles of existing access road (refer to Figure 2.1). The proposed quarry is located on private surface overlying federal mineral estate administered by Casper Field Office (CFO), BLM.

The Huxtable Quarry Project Area (HQPA) is located approximately 6 miles southwest of Douglas in south-central Converse County, Wyoming. From the intersection of the old Yellowstone Highway (Wyoming State Highway 96) and the Cold Springs Road (Wyoming State Highway 91), legal access to the project area is south approximately 4.2 miles along the Cold Springs Road to the juncture with a privately owned ranch road, continuing generally south approximately 2 miles to the proposed project area.

Preliminary evaluations indicate that the proposed quarry site contains various types of industrial non-metallic minerals including construction aggregate rock (limestone and quartzite) and decorative fieldstone (moss rock). The construction aggregates would be used for road base construction, concrete, asphalt and rip-rap for drainage control structures. The decorative fieldstone is rock covered with moss, algae, fungi, or lichen and would be used for landscaping purposes. Total surface disturbance at the quarry site would be limited to 10 acres or less. Due to the varying demand for the mined products and the varying depths of mineral deposit, it is difficult to determine the annual quantity of rock that would be mined. However, based on current demand, it is anticipated that the annual quantity of rock quarried would typically range from 80,000 cubic yards (yd^3) to 200,000 yd^3 (approximately 112,000 to 280,000 tons) per year. Mining operations could last up to 15 years.

2.1.2 General Quarry Operations

An entrance identification sign would be posted and maintained at the main entrance into the proposed HQPA. The sign would contain the name, address, and telephone number of the operator, the name of the local authorized agent, and the WDEQ/LQD permit number of the operation. Mining operations would be conducted in a manner intended to prevent or minimize endangerment to the public safety and human and animal life.

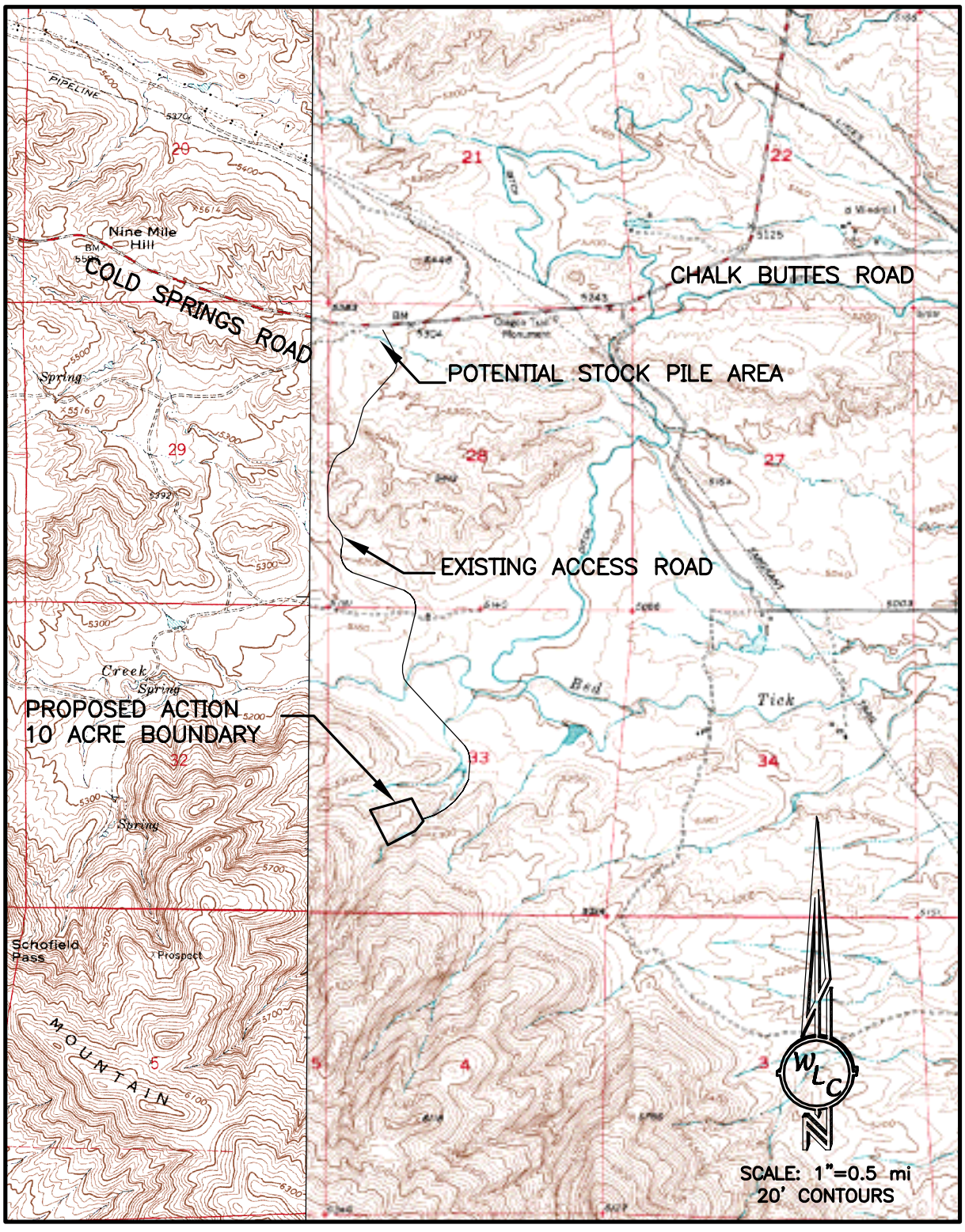

Figure 2.1 Map of the Proposed Project Area

Fencing would be installed in selected areas as needed to control or limit access to the quarry site to unauthorized personnel.

The typical hours of operation at the proposed Huxtable quarry would be Monday through Saturday from sunrise to sunset. Material demand may require operations in excess of these times for limited time periods.

Speed limits would be established in the quarry area and on the access road to promote safe conditions for the public and decrease potential encounters with grazing animals and wildlife. At the present time, it is anticipated that the maximum speed on the access road would be limited to 30 mi per hour due to the conditions in the area. All employees and contract haulers would be advised of the speed limit.

2.1.3 Access (Haul) Road Improvement

Prior to the commencement of mining operations, improvements to the privately owned access road would be initiated. The location of the access road is presented in Figure 2.2. These improvements would be required to facilitate equipment access to the proposed quarry area and to facilitate transportation of the quarried material off-site to market.

The access (haul) road would be designed and constructed to meet the standards of the anticipated traffic flow and all-weather requirements. Construction would include ditching, draining, graveling, crowning, and capping the roadbed as necessary to provide a well constructed and safe roadway. Prior to the commencement of construction, a *Road Construction Plan and Profile* would be prepared by a licensed professional engineer and submitted for BLM review and approval. Improvement/upgrading of the existing access road would reduce several sharp curves, minimize blind spots, widen narrow segments of the road, and provide a road suitable for its intended use. A total disturbed right-of-way (ROW) width of approximately 45 feet would be expected in conjunction with road construction/reconstruction activities.

The BLM would review *the Road Construction Plan and Profile* to ensure that the road conforms to appropriate engineering designs and specifications, including the placement of additional traffic control signs (e.g., speed, stop, truck traffic, and other signs). In addition, the WYDOT would ensure that road modifications at the intersection of the access road and Wyoming State Highway 91 conform to appropriate engineering designs and specifications. Improvements to the 1.2 miles of existing access road would result in approximately 6.6 acres of new (additional) surface disturbance. Reconstruction of the 0.8 miles of existing two-track trail would result in approximately 4.4 acres of new (additional) surface disturbance. Those areas not required for the active roadway (approximately 15 feet total) would be reclaimed and revegetated upon conclusion of road construction activities. Reclamation of these unneeded areas along either side of the active roadway would result in life of project (LOP) surface disturbance equal to approximately 7.4 acres attributable to the access (haul) road.

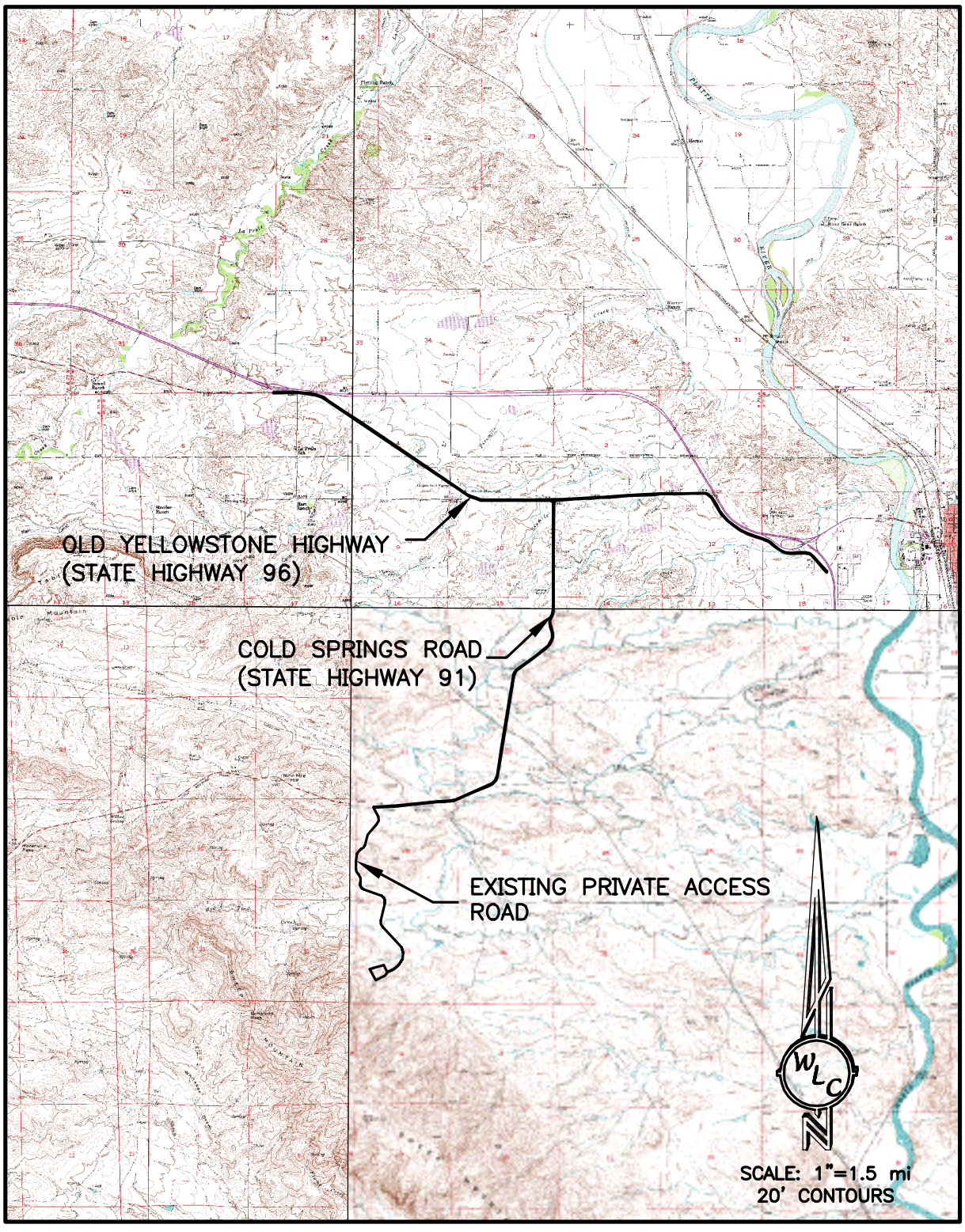

Figure 2.2 Location of Project Related Roads

2.1.4 Proposed Mining Operations

Mining activities would include the collection and removal of select surface rock for use in landscape applications, followed by topsoil salvage, drilling, blasting and excavation of mineral (rock) material. The mineral material would be processed on-site using portable crushers and screening units to segregate the product into its usable components. The final products would be loaded onto trucks and transported to various job locations or to off-site storage facilities. No permanent facilities (e.g., buildings, power lines, etc.) would be constructed at the quarry site. Temporary deployment of equipment, such as crushers and screening units, would be on an as-needed basis to facilitate rock processing prior to removal off-site.

Standard construction equipment would be used in the quarry operations. This equipment could include drill rigs, pickups, bulldozers, motor graders, crushers, screening units, water trucks, fuel trucks, front-end loaders, excavators and semi-trucks. The following standard mining practices and procedures would be employed at the proposed Huxtable quarry.

2.1.4.1 Topsoil Salvage and Storage

Topsoil in the HQPA is limited due to the very nature of the quarry site, which consists of exposed rock material. All available topsoil that can be accessed with standard surface mining equipment would be salvaged and stockpiled for permanent reclamation efforts. Equipment including (but not limited to) bulldozers, scrapers, and/or front-end loaders would be employed in topsoil salvage efforts. All available suitable plant growth material would also be salvaged and stockpiled separately for use in future reclamation.

Topsoil and subsoil salvage operations would comply with WDEQ/LQD rules regulations (WDEQ/LQD 2000).

All soil material that will be temporarily stockpiled for ten (10) months or longer would be signed and stabilized with vegetation. These soil stockpiles will be seeded with annual ryegrass (*Lolium multiflorum*) at a rate of ten pounds per acre.

2.1.4.2 Mineral Material Excavation

After all available topsoil has been salvaged from the mining area, the project proponent intends to excavate the rock with heavy equipment including (but not limited to) bulldozers, scrapers and/or front-end loaders. The excavated rock would be hauled by truck or front-end loader to on-site stockpiles or to a portable on-site crushing unit. Additional stockpiles of crushed mineral materials may be located at the intersection of Wyoming Highway 91 (Cold Springs Road) and the proposed quarry access (haul) road for winter use (NW¼NW¼ of Section 28, T32N, R72W). Prior to use of this area for stockpiling purposes, all available topsoil would be stripped from the stockpile area and the resulting topsoil stockpile would be reseeded as indicated above.

Blasting may be required in certain areas of the proposed quarry in order to fracture (break up) the rock for ease of handling. Small, portable drilling rigs would be used to drill holes into the rock in order to facilitate the placement of explosives. A typical mine drilling/blasting pattern is presented in Figure 2.3.

Upon completion of drilling operations, a procedure known as string blasting would be utilized to break the rock into manageable sizes for processing. String blasting is a mining technique which uses small, consecutive, time delayed blasts to fracture the rock and allow for the excavation of a desired amount of rock while minimizing the amount of fly rock. For a typical quarry with 15 foot hole spacing, the initial movement at the free face may occur in 10 to 12 milliseconds, but the burden only moves about 0.5 feet in 10 milliseconds. With one or two rows of holes the primary direction of rock movement is horizontal. As more rows are added the amount of possible fly rock is increased with every row added as shown in Figure 2.4 (duPont 1977). Many different types of explosive charges can be used for limestone quarries. The typical explosive charge range for limestone is 0.4 to 1.00 lb of explosive per yard of rock (Merritt et al. 2004).

Licensed personnel trained in the use of explosives would perform blasting operations within the quarry once or twice per year as needed. All blasters would be certified in the State of Wyoming, and all blasting operations would be performed in compliance with federal and state regulations. No explosives would be permanently stored within the quarry site. Any explosives temporarily stored in the area would comply with federal, state and local regulations. Blasting operations would be conducted in accordance with WDEQ/LQD and the use, handling and temporary storage of explosives would comply with the Bureau of Alcohol, Tobacco, and Firearms (BATF) rules and regulations pertaining thereto. The blasted rock would be hauled by truck or front-end loader to on-site stockpiles or to a portable on-site crushing unit.

In general, the following blasting procedures would be utilized in conjunction with the use of explosives in the proposed Huxtable quarry:

- The blaster in charge would ensure that personnel and equipment are a safe distance from the area prior to blasting. Guards would be posted at the entrance to the quarry area and north of the project area along the access road. These guards would prevent entry to the blast area. Immediately following all blasts, guards would be notified by radio that the blast area is clear and the quarry area is safe to re-enter.

- Audible warnings would be sounded prior to blasting.

- Blasting warning signs would be posted as required, with notices of 5 minutes, 1 minute, and all clear.

- Non-electric initiation systems would be used.

- Explosives would consist of primers and ammonium nitrate/fuel oil.

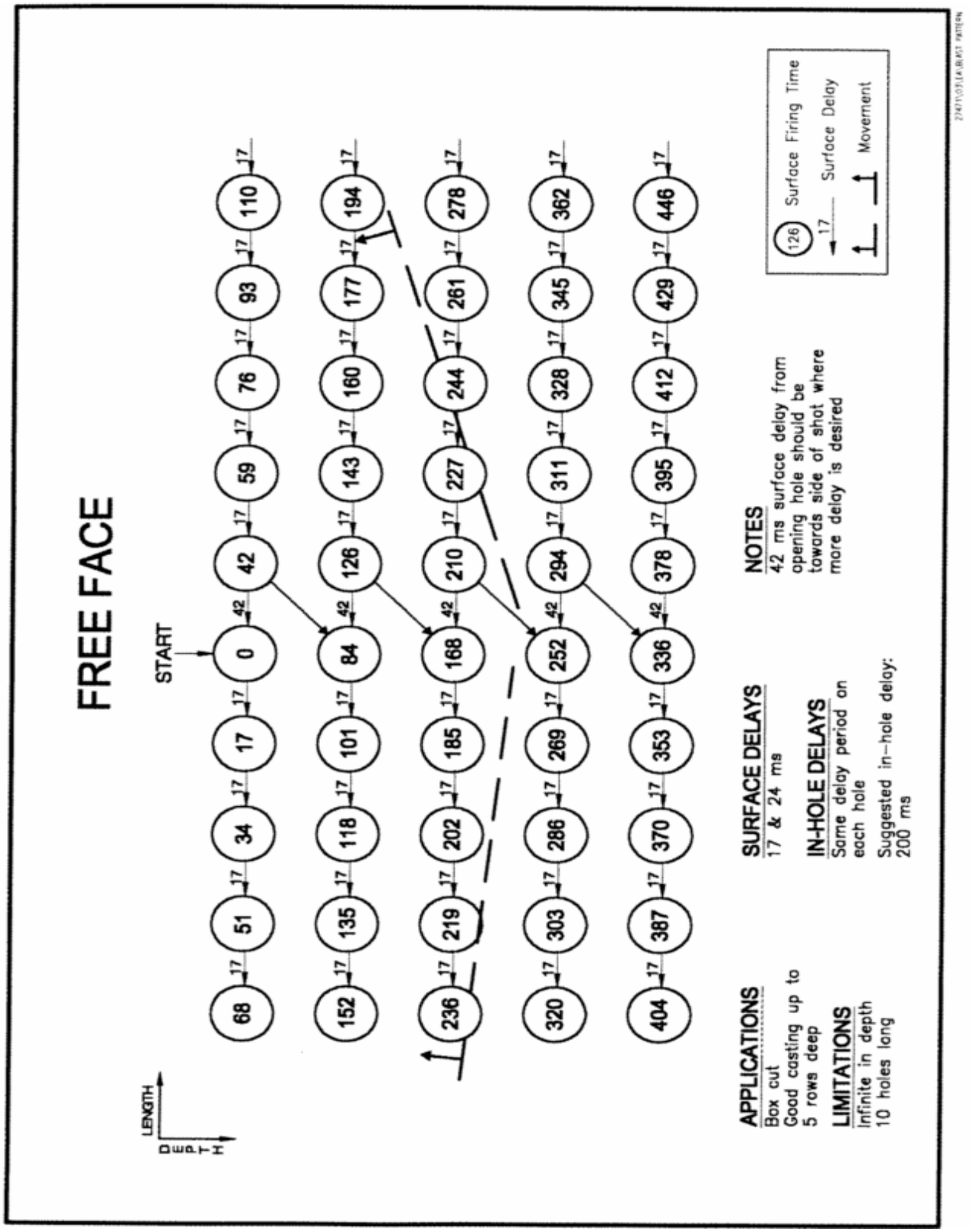

Figure 2.3 Typical Drilling/Blasting Pattern

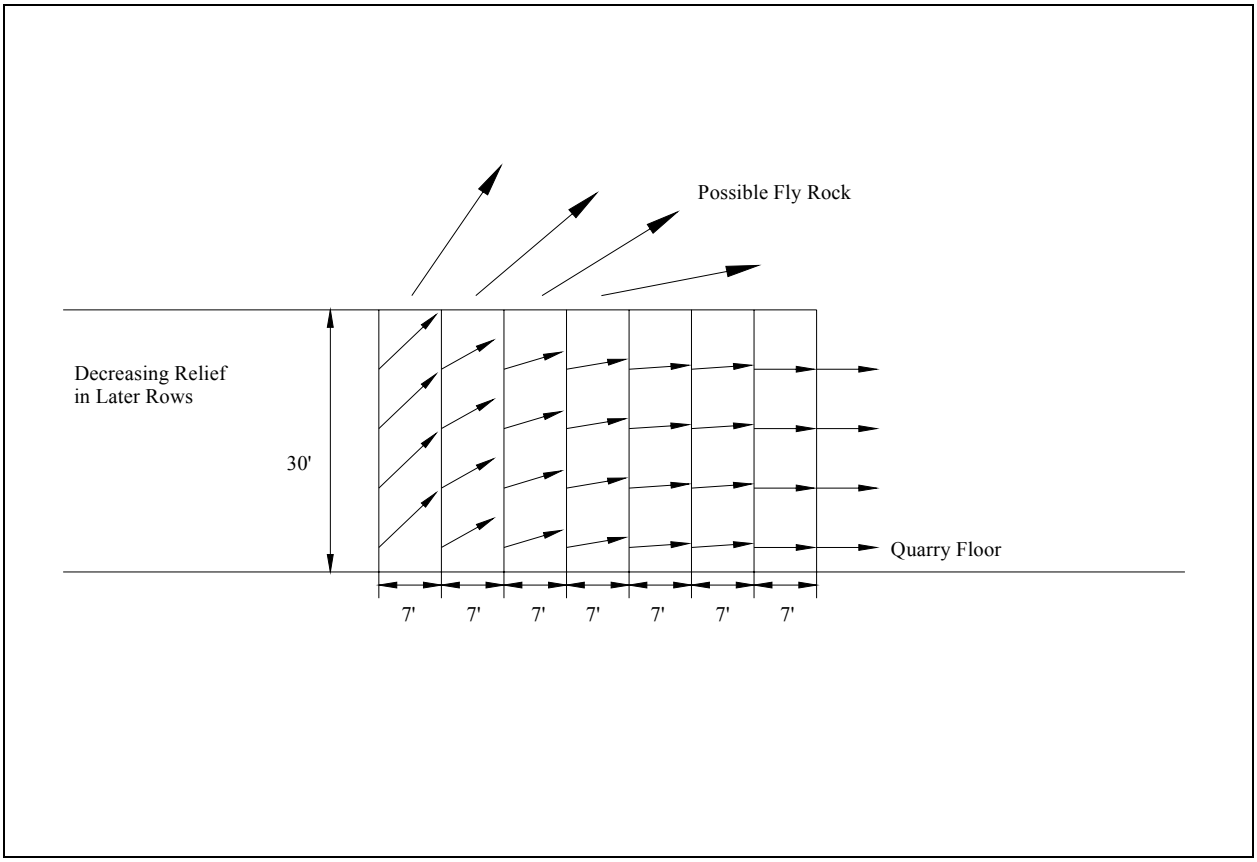

Figure 2.4 Effects of String Blasting

- All explosives and detonators would be handled in accordance with the manufacturer's instructions.

- Timing of blasts would be by non-electric delays.

- All blasts would be designed to minimize fly-rock. Hole direction and spacing, delay sequence, and explosive weight per delay would all be considered. When necessary, overburden or earth cover would be utilized as required to prevent unacceptable fly-rock.

- All blasts would be conducted only during daylight hours between sunrise and sunset except under emergency conditions.

- After a blast, the blaster would perform an inspection to determine whether all charges have detonated before any persons are allowed to return to the area. Misfires would be handled in accordance with the requirements of the applicable portions of federal, state, and local safety codes for blasting.

- A blasting notice would be published annually in the Douglas newspaper.

2.1.4.3 Mineral Material Processing and Loading

At the commencement of mining, a suitable area within the proposed project area (within or directly adjacent to the proposed quarry) would be stripped of topsoil so that the site can be used for processing and stockpiling the quarried product. As mining continues and additional area becomes available, the process area would be moved into previously mined areas within the actual quarry. These sites would be graded to provide a suitable working surface for processing-related activities. Leveling could include plating with reject material to maintain a level working surface and to minimize erosion. The locations of the proposed stockpiles and the location of the crusher can be seen in Figure 2.5.

After mining operations progress, the excavated rock would be hauled either by truck or front-end loader to a material stockpile or to a portable on-site crushing unit. Crushing would be conducted to process the rock to meet material size requirements. The crushed material would be processed through a screening unit to separate the various sizes of rock. Separate stockpiles would be established for each usable rock size. As process rock is needed, a front-end loader would be used to load trucks from the appropriate stockpiles for transport off-site.

Material washing during processing activities at the site is not anticipated. Approximately 4,200 gallons of water per day (GWPD) would be used to control fugitive dust from crushing equipment and the quarry access/haul roads. The proposed water source would be the Huxtable #2 water well located in the NW¼NW¼ of Section 33, Township 32 North, Range 72 West. The subject water well is owned and operated by the project proponent under an existing ground water appropriation for stock watering purposes issued by the office of the Wyoming State Engineer (permit number P80219W).

2.1.4.4 Reject Materials

Some unmarketable mineral material would be produced as the quarried rock is crushed and sorted. These reject materials typically would be composed of fine-grained to pebbly materials that would not meet contract specifications. These reject materials would be used to surface both the access (haul) road and work areas as needed to provide for all-weather accessibility while minimizing the potential for erosion. Reject materials not required for surfacing of the access (haul) road and work areas within the quarry would be stockpiled for future use in reclamation operations.

2.1.4.5 Projected Mineral Material Production

As indicated in Section 2.1.1, the estimated annual production of quarried mineral materials would be expected to range somewhere between 112,000 to 280,000 tons per year (TPY) based entirely upon demand and availability. Fluctuations in annual demand would dictate the actual amount of mineral materials to be mined and sold in any given year.

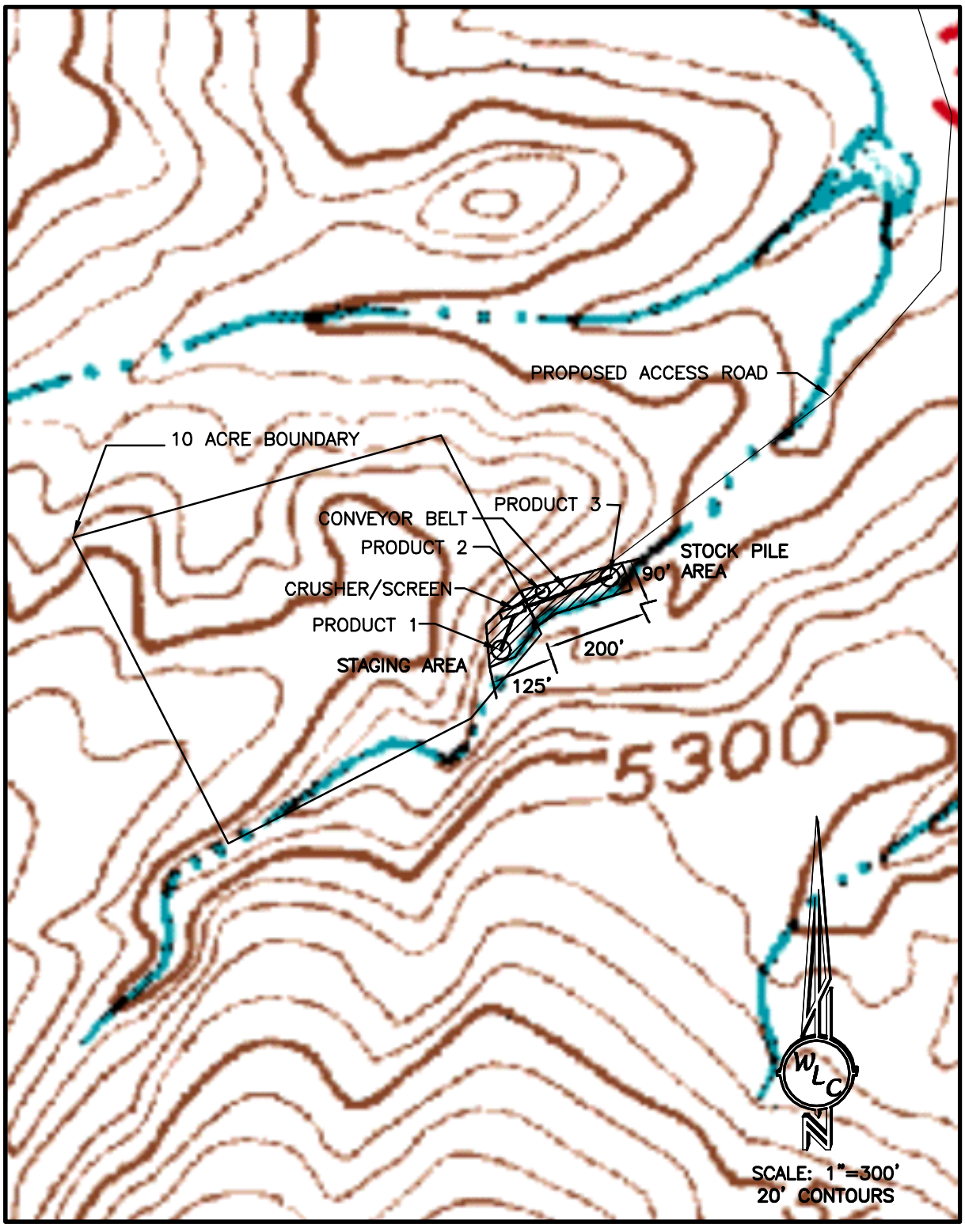

Figure 2.5 Material Stockpiles and Crusher Locations

As coring has not been conducted within the quarry area, estimates of mineral deposits are based solely upon a surface inspection of the proposed quarry area. In this regard, volumetric estimates of the quantity of mineral materials available in the 10-acre quarry site would suggest that approximately 1.2 million tons of rock could be quarried by the proposed mining operation from the 10-acre quarry site.

Mining operations conducted at a rate of approximately 80,000 yd^3 (112,000 tons) of mineral material per year would result in a quarry life of approximately 15 years. As the demand for mined mineral materials increases, mining activities would accelerate and the life of the quarry would be diminished incrementally. Mining operations conducted at the rate of 200,000 yd^3 (280,000 tons) per year would reduce the life of the quarry to approximately 52 months (4.28 years).

2.1.4.6 Transportation of Salable Mineral Materials

The crushed product would be loaded into highway haul (tractor-trailer) trucks and weighed for transportation off-site. Typically, each tractor-trailer would have a total capacity of approximately 35 tons and would be made up of a tractor unit, an articulated belly-dump trailer with an average load capacity of 20 tons, and a detachable rear-dump trailer (pup) with an average load capacity of 15 tons.

Product loading would be controlled to prevent overfilling and to ensure that material does not fall out of the trailers during transportation. Once the product has been loaded, each truck would exit the quarry area, turn north onto the access (haul) road and exit the project area onto Wyoming State Highway 91. All trucks would be properly licensed, permitted, and maintained, and all truck drivers would be properly trained and licensed by WDOT for the specific vehicle each driver would be operating.

Product transportation requirements would depend solely upon product sales. Table 2.1 provides information concerning the projected amount of truck traffic necessary to move varying annual quantities of the mined mineral material to market, with these estimates based upon a 12-hour work day, working six days a week (excluding holidays), and hauling 35 tons of mineral material per load. The trucking estimates provided in Table 2.1 reflect hauling activity during the 169 days per year of projected quarry operation, as well as year-round hauling operations from the proposed stockpile to be located directly adjacent to Wyoming Highway 91 (see Figure 2.1). Hauling from the off-site stockpile would allow product sales for an additional 138 days per year, depending upon product demand and weather conditions. As with the 169 day period of operations, the additional 138 days would not include Sundays or holidays.

The actual number of truck trips/day would depend upon a number of variable factors including product sales, number and type of trucks available, duration of the work season, project where the materials are required, and the distance to/from the final product destination. As indicated above, utilization of the off-site stockpile would facilitate material sales during the remaining 5.5 month period between November 15 and April 30 in any given year, thereby decreasing the required number of trips per day to move the total amount of mineral materials projected to be mined on an annual basis.

Table 2.1 Projected Transportation Needs for Product Sales [1]

Quarry Production in Tons per Year	Tons Moved per Day [2]		Number of Trucks [3]			
			169 Days/Year		307 Days/Year	
	169 Days	307 Days	Per Day	Per Hour	Per Day	Per Hour
112,000	662.72	364.82	19	1.58	11	0.92
154,000	911.24	501.63	27	2.25	15	1.25
196,000	1,159.76	638.44	34	2.83	19	1.58
238,000	1,408.28	775.24	41	3.42	23	1.92
280,000	1,656.81	912.05	48	4.00	27	2.25

1 Quarry production projected in 42,000 ton increments from the estimated minimum of 112,000 tons per year.

2 Calculated based upon an average load factor of 35 tons per truck.

3 The number of trucks per day has been rounded up to the next whole number.

2.1.4.7 Dust Abatement

As indicated in Section 2.1.4.3, approximately 4,200 GWPD would be used to control fugitive dust from crushing equipment and the quarry access/haul roads would be used daily.

Reject limestone materials used for surfacing of the access (haul) road would be combined with bentonite, a naturally occurring sodium montmorillonite clay, at a rate equal to approximately eight percent (by weight) of the reject (aggregate) surfacing material. Studies conducted at Iowa State University indicate that bentonite has several benefits over the most commonly used dust control products, calcium chloride and lignin sulfonate, which are only effective so long as they remain on the road surface. Blading of the road surface to correct potholes and/or wash boarding minimizes the effects of these two chemical products. The effectiveness of bentonite is not reduced by grading or other maintenance activities as the bentonite adheres to the pieces of aggregate material through an electrical bonding process. As a result, bentonite's bonding properties survive alternating wet and dry years, as well as the freeze-thaw cycle in northern climates. One application of bentonite reduces dust by 60 to 70 percent in the fist year, 50 to 60 percent in the second year, and 30 to 40 percent the third year. These results compare very favorably to the normal three-month total period of effectiveness for calcium chloride. Moreover, bentonite is an environmentally friendly dust control product in that it is a naturally occurring mineral containing no salt and poses no danger to the environment (U.S. Roads 2005). The application of bentonite to the limestone aggregate used for surfacing of the access road, combined with routine maintenance and watering as needed should reduce fugitive dust from the road for extended periods of time as indicated above.

2.1.4.8 Erosion Control

Storm water runoff from the quarry site would be controlled using best management practices (BMPs) and alternative sediment control measures as describe below. Common techniques that may be employed would include (but would not be limited to) the use of sediment fences or matting, the use of rip-rap or other erosion resistant material, and the use of existing sediment ponds (as described below) - as well as the prompt seeding of topsoil and subsoil stockpiles (WDEQ/LQD 1994). Surface disturbing activities within the proposed HQPA would comply with applicable provisions of the *Clean Water Act.* In this regard, the project proponent would prepare a Storm Water Pollution Prevention Plan (SWPPP) in accordance with WDEQ/WQD rules and regulations which outlines those measures to be used to control off-site erosion and sedimentation.

Erosion control measures established during the mining process would remain in place until the plant growth on reclaimed areas is adequate to provide stabilization in the area. Reclamation areas would be monitored, and erosion control measures would be supplemented if conditions warrant.

There are two existing stock-water ponds directly down stream (400 and 700 feet respectively) from the proposed quarry site that would be used for sediment containment. These two ponds would act as stilling basins for surface water runoff originating from the quarry site and would effectively trap any entrained sediments thereby preventing these sediments from reaching Bed Tick Creek.

2.1.4.9 HQPA Reclamation Practices and Procedures

The post-mine land use would continue to be livestock grazing and wildlife habitat to the extent possible. However, the landowner has plans to develop ranching structures and/or a homestead and the access (haul) road would remain for continued ranching operations.

Reclamation of the HQPA would comply with WDEQ/LQD reclamation standards (WDEQ/LQD 2000) for small mining operations and would include the following practices and procedures. Reclamation would commence as soon as practical after initial disturbance. However, some disturbed areas within the active quarry area may not be available for reclamation due to access needs and continued mining activities in the area. Once these areas are no longer needed for mine-related activities, they would be reclaimed as indicated below.
Newly reclaimed areas within the quarry may be fenced to exclude livestock and facilitate seedling establishment.

Access (Haul) Road Reclamation. As discussed above, the access (haul) road will remain post-mine for continued use by the project proponent. Reclamation activities will be performed subsequent to road construction/reconstruction and would consists of replacing stripped topsoil on the outslope areas of the access road and reseeding as indicated below. Approximately 15 feet of the total disturbed ROW would be reclaimed subsequent to road construction or reconstruction activities.

Quarry Backfilling and Recontouring. The objective of backfilling and recontouring would be to blend the disturbed area(s) within the HQPA with the surrounding undisturbed topography to the extent practicable. These reclamation activities would reduce the visual impact of the disturbed areas and promote the restoration of the overall project area to pre-mine uses. No ponds or impoundments would be constructed in the reclaimed landscape.

Due to the general lack of sufficient backfill material for use during reclamation, remnant high walls would be a component of the post-mine topography. Current projections indicate that these remnant high walls could be up to 100 ft high. Stabilization of the high walls and blending with the surrounding terrain would be accomplished using a variety of techniques:

- High walls less than 40 feet in height would typically be left in place, with rubble or reject material placed at the base of the high wall to promote stability and break-up the visual contrast.

- High walls exceeding 40 feet in height would be terraced or benched to ensure stability with blasting and/or grading employed as necessary to install these features in those high walls exceeding 40 feet in overall height. Installation of terraces or benches at regular intervals on high walls exceeding 40 feet in height would promote high wall stability, increase topographic diversity, enhance wildlife habitat, and assist in blending the remnant high walls with the surrounding terrain. Remnant high walls } 40 feet in height would comply with WDEQ/LQD rules and regulations pertaining thereto.

Reclamation of the quarried area will be accomplished as indicated above to the extent practical or possible. Revegetation of the rock quarry itself will be difficult and it is expected that the exposed rock in the quarry high walls would not be reclaimed to pre-disturbance levels of vegetative production and/or diversity.

Stockpiled unmarketable material would be spread on the more level areas within the disturbance area or at the base of the high walls. This material may also be selectively placed in mounds in the disturbed area to create a diverse topography. Clean fill material consisting of uncontaminated natural soil may also be imported from off-site sources to aid in the reclamation process. All backfilling and recontouring operations would comply with applicable WDEQ/LQD regulations.

Soil Placement and Seedbed Preparation. As previously stated, a shortage of suitable plant growth material may exist for reclamation of the mined areas. Salvaged topsoil and acceptable subsoil and/or overburden would be selectively placed in the area to encourage diversity of plant communities, to promote successful reclamation, and to blend with the surrounding topography. Areas where standard farming techniques may be safely employed would be prepared for seeding by scarifying as needed to break up any compacted surfaces. The soil would then be disked as needed to promote an adequate seedbed.

Reseeding. Upon conclusion of recontouring and subsequent seedbed preparation, all disturbed areas suitable for plant growth would be seeded using the seed mixture recommended in Table 2.1, below. Where feasible, seed would be drilled on the contour with a seed drill equipped with a depth regulator in order to ensure even depths of planting. Seed would be planted between

one-quarter (1/4) to one-half (1/2) inches deep except as noted in Table 2.2. For those areas too steep or rocky to permit drilling, seed would be broadcast (either by hand or mechanically) using double the recommended seeding rate contained in Table 2.2. Where the seed is broadcast, some method of seed incorporation would be used (i.e., raking, dragging with a chain, harrow or equivalent procedure) to ensure that the seed is worked into the soil material.

Hydro-seeding may be used as an alternative to drilling or broadcasting the seed.

Mulching. Mulch will be used to facilitate reclamation (reseeding) success and to control erosion on reclaimed (recontoured) areas within the HQPA. Two methods of mulching may be used during reclamation activities as follows:

- Certified weed-free straw may be blown onto the area at the rate of 3 tons per acre and crimped in place; or

- A standing stubble mulch consisting of oats, barley, wheat, millet, or similar nursery crop may also be used. Planting rates of the standing mulch would be 20 to 30 pounds per acre.

Soil Amendments. Livestock manure would be added to the topsoil to improve plant growth in areas designated as grazing land. Reclamation of high wall area would not involve the use of a manure soil amendment.

Control of Invasive Non-Native Species. Designated or prohibited weed species on lands within the HQPA would be controlled through implementation of the following procedures.

- Land disturbance would be kept to a minimum during the mining process.

- All disturbed surfaces including topsoil and subsoil stockpiles would be seeded as soon as possible following the initial disturbance as indicated above to limit the potential for invasion by non-native weed species.

- Chemical herbicides may be used to control invasive non-native species within the HQPA. The local weed and pest agency would be contacted, and the problem would be addressed in compliance with appropriate federal, state and local regulations pertaining to the application of chemical herbicides.

Monitoring and Maintenance. The reclaimed areas would be monitored on an annual basis by the project proponent, BLM and WDEQ/LQD to assess the adequacy of the continuing reclamation effort. Erosional features would be monitored and the appropriate corrective action instituted as warranted with additional erosion control features employed as needed. Measures to control infestations of invasive non-native species would remain in place during all phases of the mining and reclamation process.

Table 2.2 Proposed Seed Mixture

Common Name	Cultivars	Scientific Name	Pounds PLS/Acre [1]
Bluebunch wheatgrass	Goldar	*Pseudoroegneria spicata spicata*	3.0
Sandberg bluegrass	Common	*Poa sandbergii*	1.0
Needle-and-thread grass	Common	*Stipa comata*	1.0
Indian ricegrass	Nezpar	*Oryzopis hymenoides*	2.0
Sheep fescue	Durar	*Festuca ovina*	2.0
Alfalfa	Falcata	*Vicia villosa*	2.0
Winterfat [2]	Open Range	*Eurotia lanata*	1.0
Common serviceberry	Common	*Amelanchier alnifolia*	0.5
Common snowberry	Common	*Symphoricarpos albus*	0.5

1 Pounds of Pure Live Seed (PLS) per Acre

2 Winter fat should be hand broadcast or dribbled over the disturbed area – DO NOT DRILL

2.1.5 Fuel Storage, Waste Generation and Disposal

Fuel Storage. At this time, there are no plans for long-term fuel storage within overall project area. Mobile fuel trucks would be used to service and fuel the heavy equipment operating in the HQPA. Should fuel storage become necessary at some point in the future, the storage area would be constructed and operated in accordance with all applicable state and federal rules and regulations pertaining to the on-site storage thereof.

Fuel tanks would not be stored at the proposed quarry site. Any fuel storage tanks required for quarrying operations will be located at or near the proposed off-site stockpile area adjacent to Wyoming Highway 91 (see Figure 2.1). Fuel storage would be in full accordance with MSHA and OSHA standards and regulations including (but not limited to) the installation of impervious berms around all storage tanks and lining these bermed storage areas with an impervious liner to prevent the percolation of hydrocarbons into the ground water aquifer.

Waste Generation and Disposal. Portable, self-contained chemical toilets would be provided for human waste disposal. The toilet holding tanks will be pumped on an as-needed basis and the contents thereof disposed of in a WDEQ-approved sewage disposal facility. Solid wastes including garbage will be collected in a self contained, portable dumpster or trash cage on site. The accumulated trash will be hauled off-site to a WDEQ approved sanitary landfill as-needed. Solid wastes (trash, garbage, scrap, etc.) would not be imported to or disposed of in the HQPA.

Spills of petroleum products may occur during mining operations due to periodic equipment maintenance and/or accidents. Soils contaminated with petroleum products (e.g., oil, grease, fuel spills, etc.) would be cleaned up and disposed of in accordance with WDEQ rules and

regulations. Contaminated soils would be disposed of in an approved off-site facility capable of accepting such waste.

Acid-forming or toxic materials are not expected to be encountered during quarry operations and exposure of the underlying rock substrate would not facilitate the formation of potentially toxic or hazardous compounds or effluent.

2.2 ALTERNATIVE A: 40 ACRE QUARRY

2.2.1 Description of the Proposed Mining Area

The potential exists to enlarge the proposed Huxtable quarry from 10-acres to 40-acres overall. As with the Proposed Action, Alternative A would be located in portions of the SW¼ of Section 33, Township 32 North, Range 72 West, along the northeastern flank of Sheep Mountain and would expand the proposed quarry to approximately 40 acres in size (refer to Figure 2.6). Under Alternative A, the disturbance would be identical to the Proposed Action plus an additional 30 acres at the actual quarry site. The type of material to be mined and the estimated annual production would be identical to that presented under the Proposed Action.

Volumetric estimates of the quantity of mineral materials available in the 40-acre quarry site would suggest that approximately 5.7 million tons of rock could be quarried by the proposed mining operation from the 40-acre quarry site. As discussed in Section 2.1.4.5, mining operations conducted at a rate of approximately 80,000 yd^3 (112,000 tons) of mineral material per year would result in a quarry life of approximately 71 years. However, as the demand for mined mineral materials increases, mining activities would accelerate and the life of the quarry would be diminished incrementally. Mining operations conducted at the rate of 200,000 yd^3 (280,000 tons) per year would reduce the life of the quarry to approximately 20 years. For the purposes of this analysis, we will assume that the projected life of the quarry would be 30 years, which would allow for reasonable fluctuations in mining activity based upon demand, yet would still allow for the mineral resources therein to be exhausted by the end of the 30-yaer period.

2.2.2 Description of Mining Operations

Mining operations for Alternative A would be identical to those presented under the Proposed Action.

2.2.3 Description of Reclamation Operations

Reclamation operations for Alternative A would be identical to those presented under the Proposed Action.

2.3 THE NO ACTION ALTERNATIVE

Under the No Action Alternative, mining operations within the project area would not be authorized or approved. No surface disturbance would occur, and no impacts to the existing physical or biological environment would take place. However, a continuing demand for industrial non-metallic minerals would eventually necessitate alternative quarry locations in the Douglas area.

The analysis of a No Action Alternative provides a benchmark, enabling decision-makers to compare the magnitude of environmental effects of each action alternative. Under the No Action Alternative, the BLM would deny the request to sell industrial non-metallic minerals located on federal mineral estate within the HQPA, while allowing existing land uses on the private surface estate to continue.

2.4 ALTERNATIVES CONSIDERED BUT NOT ANALYZED IN DETAIL

2.4.1 40-Acre Quarry Located on Private Surface/Mineral Estate

As shown in Figure 2.7, the 10 acre quarry project was initially proposed in the NW¼ of Section 28, Township 32 North, Range 72 West on private surface and minerals. The rock quality at this location was deemed to be inadequate for most construction applications. This alternative quarry site would have been readily visible from Wyoming Highway 91 (Cold Springs Road) and would have dramatically altered the existing landscape, causing a potentially high impact to scenic values in the area. As a result, this alternative was not considered for further analysis.

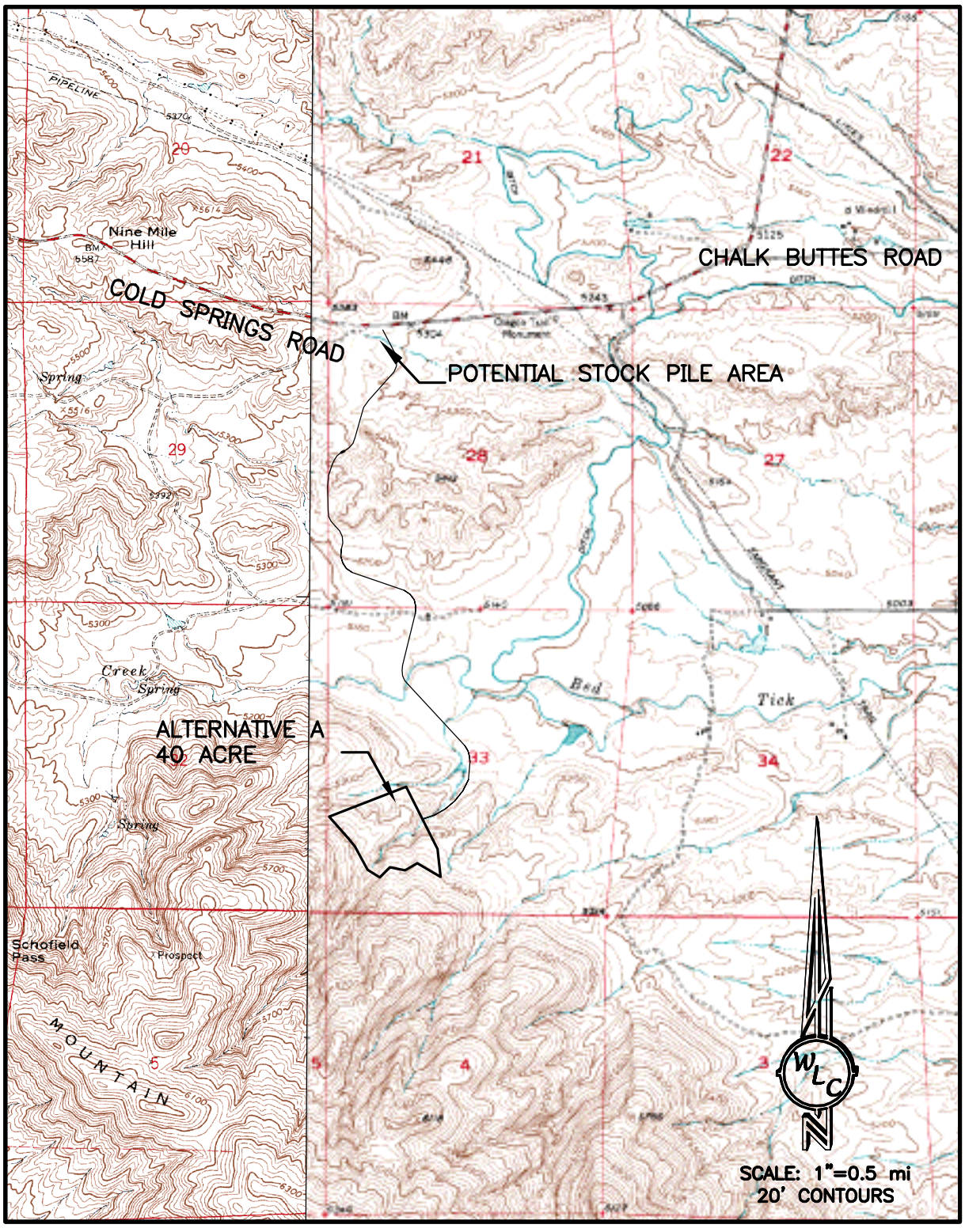

Figure 2.6 Alternative A: Proposed 40 Acre Quarry Site

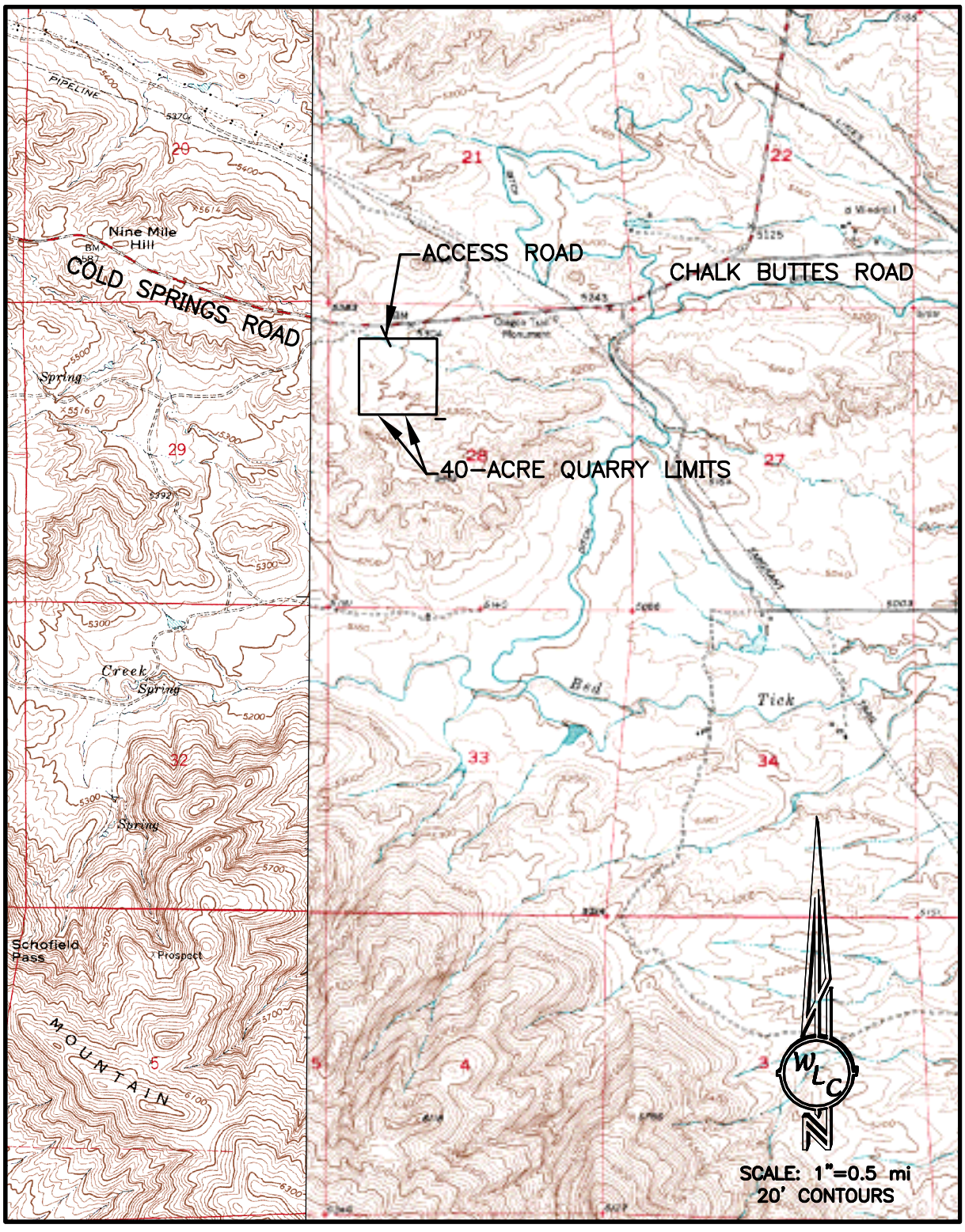

Figure 2.7 Alternative Quarry Site Not Analyzed in Detail