CHAPTER 2.0

PROPOSED ACTION AND ALTERNATIVES

The purpose of this chapter is to identify and describe the alternatives associated with the proposed Three Rivers Stone Quarry Expansion Project (Proposed Project). Under the National Environmental Policy Act (NEPA), agencies must:

> "rigorously explore and objectively evaluate all reasonable alternatives and for alternatives which are eliminated from detailed study, briefly discuss the reasons for their having been eliminated [(40 Code of Federal Regulations (CFR) 1502.14(a))]."

The Environmental Impact Statement (EIS) shall examine all reasonable alternatives to the proposal (40 CFR 1502.14). In determining the scope of alternatives to be considered, the emphasis is on what is "reasonable" rather than whether an applicant likes or is itself capable of carrying out a particular alternative. Reasonable alternatives include those that are technically and economically practical, are feasible, and use common sense, rather than simply being desirable from the standpoint of an applicant or an interested party (Council of Environmental Quality [CEQ] 46 FR 18026 [March 23, 1981] as amended).

In this document the words quarry or quarry site are used to describe the physical boundary of the Three Rivers Stone Quarry. The words mine or mining activities are used to describe any and all actions used to remove the locatable mineral from the quarry. The words Proposed Project or Proposed Project Area are used to define the quarry or quarry site and all of the mining activities and actions associated with it.

2.1 HISTORICAL AND CURRENT OPERATIONS

The Bureau of Land Management (BLM) case file shows interest in the building stone from the site dating from May 1966 (USDI-BLM 2003c). Rock was intermittently mined at the site through 1990, when increased mining activity caused the surface disturbance to increase from less than 5 acres to approximately 16 acres by May 1992. The Challis Field Office approved a Plan of Operations for the quarry on December 8, 1992 (USDI-BLM 1992). The operations increased in size to approximately 50 acres by August 2002, with the development and expansion of two pits. The quarry is now one of the largest single flagstone quarries in the United States with products sold in 33 cities (Challis Messenger 2003).

By 2000, the BLM determined that the operations were substantially outside the terms and conditions of the approved Plan of Operations. As a consequence, the financial guarantee held by the BLM was determined insufficient to reclaim the site. The Idaho Department of Lands also expressed concerned about the inadequacy of the bond. L&W Stone was informed

on a mine tour September 12, 2000 and by a letter dated February 21, 2001 that the approved Plan of Operations was inadequate for the level of activity that had occurred and for the expansion that was anticipated by L&W Stone.

Currently, the quarry has approximately 92 acres of surface disturbance (primarily the administrative area, Pit 1, Pit 2, waste rock storage areas and access roads). This area of disturbance represents the cumulative result of mining at the site over the last 30 years by L&W Stone and previous operators (Figure 2.1-1).

The existing administration staging area covers approximately 5 acres. This area serves as the general administrative area for the mining operation and consists of an office trailer, a storage trailer for general supplies, a staging area for crated flagstone, a truck loading area, and an employee parking area. In addition, the staging area has two used oil storage tanks (250 and 1,000 gallon) and one 500-gallon diesel fuel tank. All fuel and oil storage tanks are sited within containment areas consisting of unlined earthen berms. An approximately 0.2-acre stormwater detention basin is located on the northeast side of the staging area.

Pit 1 is approximately 20 acres in size and is where the majority of historic and current mining activity and production occurs. Pit 1 is located approximately 1,500 feet to the southwest of the administration staging area. The pit is a slot cut with highwalls on both the east and west sides, a developing highwall on the south end, and no highwall (is open) at the north end. At present, the pit is approximately 2,000 feet long and 115 feet deep. The highest point on the rim of Pit 1 is at an elevation of 5,920 feet and the current pit floor elevation is approximately 5,805 feet above mean sea level (amsl). The top of Pit 1 is approximately 700 feet wide (east to west) and the floor of the pit is approximately 250 feet wide by 1,300 feet long (north to south).

Pit 2 is approximately 16.8 acres in size and is located approximately 2,000 feet south of the administration staging area. At present, Pit 2 is approximately 1,000 feet long and 400 feet wide. Pit 2 contains mineable flagstone at the surface and therefore does not have a highwall associated with the pit.

Located between Pit 1 and Pit 2 is a fuel and lubricants storage area. This area contains a 3,000 gallon diesel fuel tank, a 250 gallon gasoline tank, a 250 gallon used oil storage tank and miscellaneous bulk lubricants storage. Again, all fuel and oil storage tanks are sited within unlined bermed containment areas.

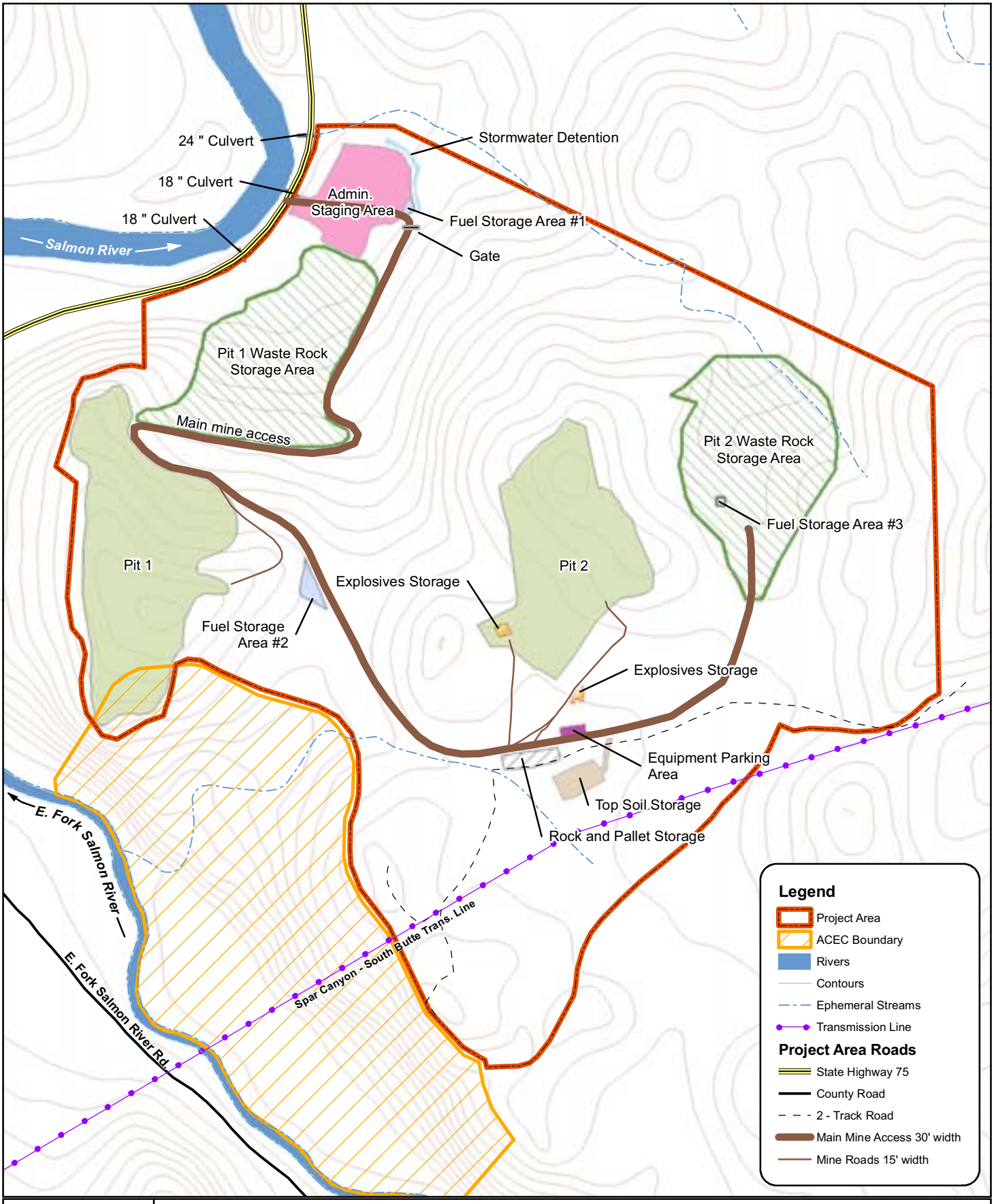

Figure 2.1-1. Alternative A, Existing Conditions

0 250 500 1,000 1,500 2,000 Feet

1:8,200

Three Rivers Stone Quarry
L & W Stone

Located north of Pit 1 is a waste rock storage area. Until 2004 waste rock from Pit 1 was deposited at this location on the slope north of Pit 1 and above the administration and staging area. Currently this waste rock storage area covers approximately 15.8 acres. Waste rock from Pit 2 was originally deposited along the southwest edge of Pit 2. In 2005, a new waste rock storage was developed to the east of Pit 2. Currently all waste rock from both Pit 1 and Pit 2 is now deposited in the new waste rock storage area. This new waste rock storage area is currently 16.4 acres in size. A 500 gallon diesel fuel tank is sited within the Pit 2 waste rock storage area.

Located at the south and southwest edge of Pit 2 are two explosive storage areas totaling approximately 1.2 acres in size. The explosives storage area to the southwest contains the ammonium nitrate. The storage area to the south contains separate facilities for storage of the explosives, such as blasting caps, detonator cords, primers, and dynamite.

Located south of Pit 2 is an equipment parking area. This area is used to park mine equipment when not in use or while awaiting repair. The equipment parking area is approximately 0.2 acres in size.

Directly south of the equipment parking area are two storage areas. Pallets loaded with flagstone awaiting transfer to the administrative and staging area are stored temporarily on a 0.5-acre area. Directly adjacent to the pallet and rock storage area is an area used to store topsoil that would be used for reclamation. The topsoil storage area is approximately 0.9 acres in size.

There are approximately 1.9 miles of quarry roads that have disturbed approximately 5.8 acres. The main access road extends from the administration and staging area up to the northeast side of Pit 1 (Figure 2.1-1). The access road to Pit 2 extends to the south from the main access road, passes through a small saddle, and then curves to the east. The main quarry access road is approximately 30 feet in width. Other mine roads are approximately 15 feet in width. There are several old quarry roads that have been recontoured and reseeded with BLM-approved native seed mixes that are still visible within the area of operations.

Additional areas of surface disturbance within the Proposed Project Area include approximately 9 acres consisting of “two-track” roads and reclaimed mining roads that are no longer needed for quarry operations. The Spar Canyon-South Butte 230 kilovolt (kV) Transmission Line crosses the southern portion of the Proposed Project Area. An unimproved, gated “two-track road parallels the transmission line and provides access to portions of the applicants mining claims as well as access to Spar Canyon located to the east

of the Proposed Project Area. Other "two-track" roads exist on the site that provides limited access to areas south of Pit 2.

L&W Stone gets water for dust suppression from a permanent water right associated with an L&W Stone-owned property approximately 1 mile north of the administration area on State Highway 75 (SH-75). Water is obtained from a screened diversion on the Salmon River under Idaho Department of Water Resources (IDWR) water right 72-7247. In addition to water use on this privately-owned property, this property is used as an off-site office and for equipment storage associated with current operations of the Three Rivers Stone Quarry.

2.2 PROPOSED ACTION AND ALTERNATIVES TO THE PROPOSED ACTION

This Draft EIS considers four alternatives:

Alternative A:	The No Action Alternative
Alternative B:	Continuation of the Interim Mining Plan
Alternative C:	Preferred Alternative from the 2004 EA
Alternative D:	Proposed Action and BLM Preferred Alternative

These alternatives have been developed in accordance with CEQ regulations to provide decision-makers and the public with a clear basis for choice (40 CFR 1502.14). A detailed description of these alternatives is provided below. Whichever alternative is selected, L&W Stone would submit a Plan of Operations to the BLM as required by 43 CFR 3809 that is consistent with the alternative and contains engineered diagrams and details of the proposed operations. This Plan of Operations would become part of the Record of Decision.

2.2.1 Alternatives Considered and Eliminated from Detailed Study

Applicant's 1992 Plan of Operations

A November 1992 Plan of Operations, which proposed a maximum of 16.3 acres of surface disturbance for the quarry was analyzed (EA #ID-040-3-4) and approved by the Challis Field Office on December 8, 1992. The 1992 Plan of Operations included an administration area and three separate pits. By August 2002 the operations had increased well beyond the approved 16.3 acres to over 50 acres in size. Implementation of the 1992 Plan of Operations is no longer feasible because the 16.3 acres proposed in the 1992 plan has been enveloped by the expanded operations. For this reason, this alterative is not carried forward or analyzed in detail in this EIS.

Applicant's Proposed Action from the 2004 EA

This alternative was developed by The Applicant as the Proposed Action in 2002 for analysis in the Environmental Assessment (EA) that was completed in 2004 (USDI-BLM 2004). This alternative was not selected as the Preferred Alternative in the 2004 EA because it did not include standard Best Management Practices (BMPs) and mitigating measures. For these reasons, this alternative is not carried forward or analyzed in detail in this EIS.

Complete Backfill of Pit 1

BLM's 43 CFR 3809 Regulations do not require that pits or quarries be backfilled as part of the Plan of Operations approval. The Regulations do require that reclamation be completed so as to prevent unnecessary or undue degradation of the public lands.

An analysis conducted by the BLM in 2005 indicated that it would cost over $6 million to move the waste rock that existed at that time from the Pit 1 waste rock storage area back into Pit 1. For these reasons, the total Pit 1 backfill alternative is not carried forward or analyzed in detail in this EIS.

Mining Deeper in Pit 1

A 40-foot thick flagstone unit exists beneath the flagstone unit that is currently being mined in Pit 1. It is possible that this unit could become economic to mine sometime in the future. However, mining the underlying unit would require extending Pit 1 further south into the East Fork Salmon River Bench Area of Critical Environmental Concern/Research Natural Area (ACEC/RNA) as well as to the north to the edge of SH-75. The footwall of Pit 1 would also be lowered substantially, making more of the operation visible from SH-75. The floor of Pit 1 would also be much closer to the surface water elevation of the East Fork Salmon and Salmon rivers. Because of the potential impacts associated with this alternative, the alternative is not carried forward or analyzed in detail in this EIS.

2.3 ALTERNATIVE A (NO ACTION)

Background: As required by NEPA, this Draft EIS includes Alternative A, a No Action Alternative, that serves as a baseline against which the action alternatives can be compared and is presented to provide the best possible reference condition against which to compare the Proposed Action and other alternatives. This baseline also discloses the effects of not authorizing expansion of and continuation of mining at the quarry.

Alternative A would result in the cessation of mining activities and the implementation of reclamation measures as outlined below.

2.3.1 Reclamation

The main objectives of the reclamation would be the following:

- Stabilize and protect surficial soils (minimize wind and water erosion);
- Protect public health by eliminating hazards;
- Protect surface and ground water resources;
- Meet post-mining land uses;
- Minimize view-shed issues (visual impacts);
- Remove operational structures and equipment and regrade, add topsoil, and reseed waste rock piles;
- Reclaim and revegetate operational roads and other disturbed areas;
- Establish a weed management program; and
- Color the Pit 1 footwall, highwall, and waste rock storage area to meet BLM VRM Class II Objectives.

All reclamation activities would be completed by L&W Stone within 2 years of cessation of mining operations.

All roads associated with the operations, except the power-line access road, would be ripped, recontoured to blend with the natural slope, and revegetated. The power-line access road, which includes a portion of the main mine access road beginning at SH-75, would be reclaimed to a single-lane road for future public access, and gates would be removed. The gravel covering the surface of the administrative-staging area would be removed to the extent necessary to create a plantable seedbed and placed in the Pit 2 waste rock storage area. The area would then be ripped and seeded.

Pit 1 and Pit 2 would be left in their final mining configurations. Pits would not be back filled. However, pit floors would be sloped to allow drainage from the pits and any berms for retaining water would be removed. Drainage would be directed toward natural drainages. All trenches, ditches, sediment traps, silt fences, and other sediment control structures, except those left as necessary for successful reclamation would be removed. Subsequent removal of sediment retention structures would occur as reclaimed areas are deemed stable by the BLM. The reclamation would not cause any surface disturbance, including rock fall, outside of the operation perimeter.

Reclamation of all areas disturbed by mining activities, with the exception of the pit walls, would occur during and following completion of specific mining operations. These areas would be reclaimed using soil stockpiled during operations and planted with BLM-approved

seeds or container-grown species. The seed mix would represent a desired plant community appropriate for each ecological site description in the Proposed Project Area. The species mix would include, but not be limited to bluebunch wheatgrass (*Pseudoroegneria spicata*), Wyoming big sagebrush (*Artemisia tridentata sp. Wyomingensis*), Indian ricegrass (*Achnatherum hymenoides*), and bottlebrush squirreltail (*Sitanion hystrix*). Seed application procedures would follow established agency protocols and the best knowledge regarding reclamation of rocky mine sites. Vegetative reclamation would be considered successful when total vegetative cover of desired species reaches 15 to 25 percent foliar cover for 2 successive years on reclaimed areas.

If grazing occurs in the Split Hoof Allotment, and if revegetation efforts are hampered by cattle grazing, cattle would be restricted from the revegetated areas until vegetation is sufficiently established. If these restrictions are outside of the terms and conditions of the current grazing permit, modifications to the permit would be made.

Erosion control measures to reduce the potential for fines to enter fish bearing streams would include graveling selected roads and parking areas (equipment staging area) adjacent to SH-75, and runoff containment and control. Dust abatement and other activities along roads within the Proposed Project Area would be conducted consistent with requirements resulting from the consultation between the BLM and USFWS for road maintenance (USDI-FWS 2003).

The Applicant would be responsible for ensuring that invasive, non-native plant species associated with mining and exploration activities are not allowed to establish or spread at the quarry. The Project Site would be surveyed each spring by the Applicant for a period of 2 years following cessation of mining. The Applicant would employ a licensed herbicide applicator when herbicides are used to eradicate new weed infestations and treat Federal lands where weeds have spread from the quarry operations. Additional weed control could be completed using hand removal, or appropriate biological control. Weed treatments would be conducted consistent with the Challis BLM Field Office and the Custer County Noxious Weed Control Programs.

The Pit 1 waste rock storage area (waste dump) would be graded to match the contours of the adjacent naturally occurring talus slope (Figure 2.3-1). Straight lines on the waste rock storage area would be reduced to the extent possible. The talus slope and the waste rock storage area would be blended together to prevent distinct changes in rock form or color.

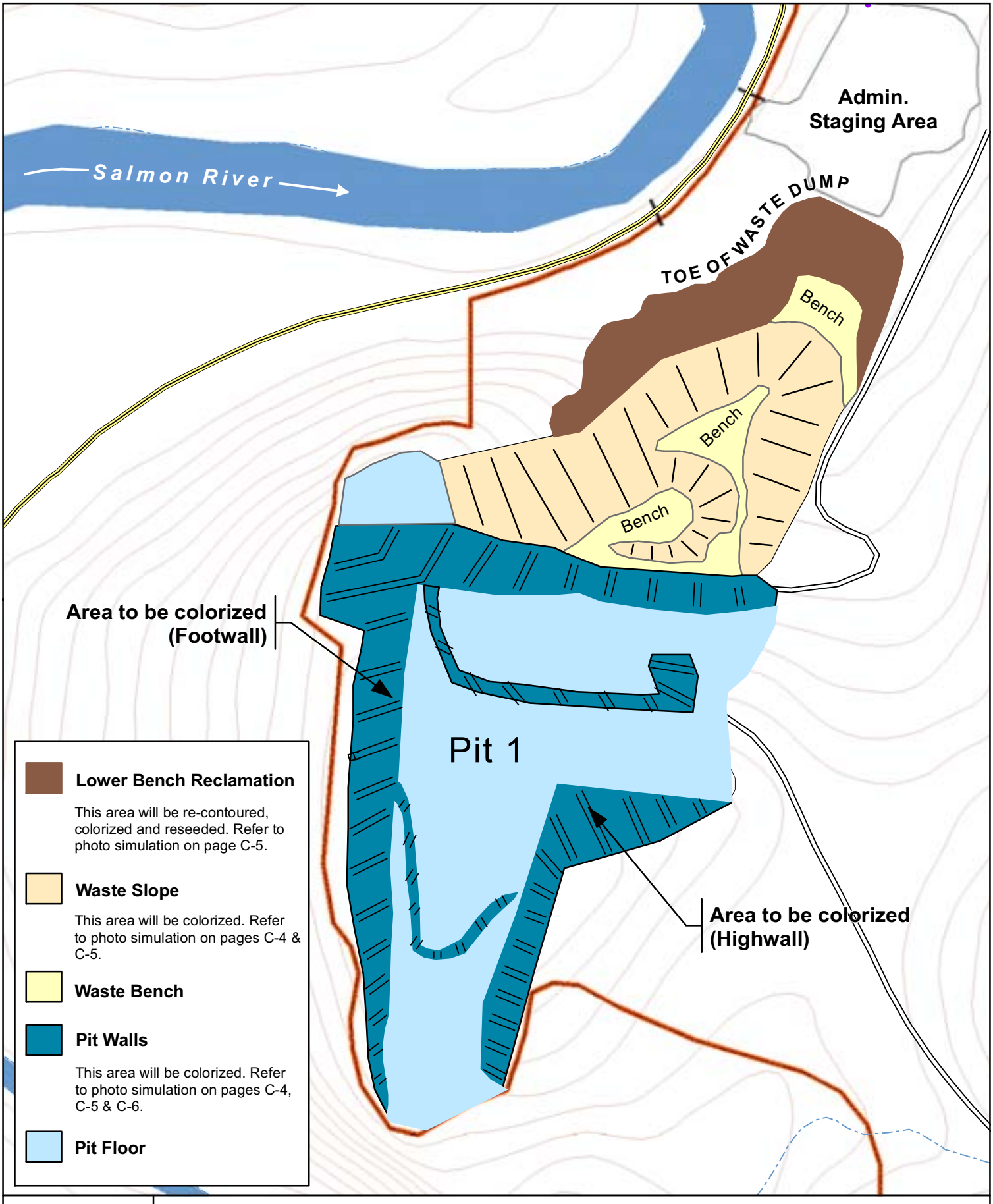

Figure 2.3-1. Reclamation Measures

0 125 250 500 750 1,000 Feet

1:4,177

Three Rivers Stone Quarry
L & W Stone

Waste rock would be allowed to be removed from a designated area of the Pit 1 waste rock storage area and used as rip rap following completion of reclamation activities. For a complete description of the community pit, see Section 2.4.12.

The portion of the Pit 1 footwall, highwall, and waste rock storage area visible from SH-75 and along the Salmon River corridor would be colored to help meet Visual Resource Management (VRM) Class II objectives (as required under the Interim Mining Plan; Figure 2.3-1). An exception would be for that portion of the waste rock storage area that would be designated as a community pit. As mining progresses downward in Pit 1 and more of the footwall becomes visible, no more than 50 feet of footwall height would remain uncolored. Coloration testing would be completed to meet the BLM VRM objectives, and the colors would be formulated to replicate the natural colors of the surrounding environment.

Waste rock deposited at the Pit 2 waste rock storage area would be constructed into 20-foot lifts. The face of the lifts would be contoured to a three-to-one slope, covered with the stockpiled topsoil and reseeded with a BLM-approved seed mixture (Appendix B).

2.4 PROPOSED PROJECT FEATURES COMMON TO ALL ACTION ALTERNATIVES (ALTERNATIVES B – D)

Mining operations would continue under Alternatives B, C and D at different levels of disturbance. However, these alternatives share many of the same project features; the common features are described below.

2.4.1 Administration and Staging Area

The administrative area and staging area for the mining operation would be approximately 5 acres in size. The area would consist of the administrative office (trailer), general supplies storage, and staging area for crated flagstone prior to shipping. All personnel or visitors entering the mine site would be required to check in at this location.

2.4.2 Transmission Line

A transmission line would be constructed into the administrative area to provide power to the office trailer. The transmission line would be constructed and operated by the Salmon River Electric Cooperative. The transmission line would be a single phase 14.4 kV line that would originate at the existing Salmon River Electric Cooperative Up River Line located approximately 0.5 miles north of the administrative and staging area. The line would consist of seven poles with an approximately 350-foot span between each pole. There would be two transmission lines on each pole. One line would be located at the top of the pole on an insulator. The second line would be located approximately 4 feet below the top of the pole on

an insulator placed on the side of the pole. There would be no cross bars on the poles. The transmission line would run parallel to the east side of SH-75 for approximately 2,450 feet.

2.4.3. Fuel and Lubricant Storage

The Applicant would store various fuels and lubricants to support the mobile mining equipment used for mining activities. Fuels and lubricants would be stored at three separate locations to facilitate efficient fueling and maintenance of equipment. The fuel and lubricant storage areas would comply with the applicable regulations as described in 30 CFR 56.4101, 40 CFR Part 112, and IDL BMPs.

Fuel storage area #1 would be located in the administrative area. It would contain one 500-gallon diesel tank, a 250-gallon used oil tote and a 1,000-gallon tank for used oil.

Fuel storage area #2 would be located at the same location of the existing fuel storage area between Pit 1 and Pit 2. It would contain the following:

- One 3,000-gallon diesel fuel tank;
- One 250-gallon gasoline tote;
- One 250-gallon tote of motor oil;
- One 250-gallon tote of hydraulic oil;
- One 250-gallon antifreeze tote;
- Two 55-gallon rock drill oil drums, and
- One 250-gallon engine oil tote.

Fuel storage area #3 would be located in the Pit 2 waste rock area and would contain one 500-gallon diesel fuel tank

All fuel and lubricants would be stored within bermed containment areas lined with 10-millimeter plastic. The size of each containment area for fuel storage would vary depending on the volume of material stored at each location. The size of each containment area would be calculated according to the following formula:

> *Maximum volume of storage capacity + 10% + the 2 inches of potential precipitation from a 10-year, 24-hour storm event.*

2.4.4 Explosives Storage Areas

The proposed operations would include a storage silo for up to 40,000 pounds of ammonium nitrate delivered in bulk. The silo would be constructed in the administrative area on a

concrete pad and foundation for better containment and effective material handling. The silo would be painted with BLM-approved colors to blend into the landscape. Ammonium nitrate is an oxidizer, in contrast to ammonium nitrate fuel oil (ANFO), which is a blasting agent. The ammonium nitrate would be transported from the silo to the blasting area by a bulk handling truck, in which the fuel oil would be mixed with the ammonium nitrate to produce ANFO.

Storage and usage of explosives would comply with Mine Safety and Health Administration (MSHA) regulations. The maximum quantity of ANFO that would be mixed and stored on site at one time is 15,000 pounds. Approximately 7,500 pounds of ammonium nitrate would be delivered twice per month, depending on actual production requirements. The ammonium nitrate would be bagged and in a pellet form.

Two explosives magazines would be used to store explosives per 30 CFR 56.6000 through 56.6201. The magazine on the west side of Pit 2 would contain ANFO. The magazine on the south side of Pit 2 would consist of two separate facilities for storage of the explosives. One would contain the blasting caps, detonator cords, and primers. The other would contain the dynamite. The magazines would be constructed and situated per 29 CFR 1910.109, i.e., highly secure, bullet-resistant, weather-resistant, fire-resistant, and sufficiently ventilated facilities surrounded by berms, with a 25-foot area cleared of flammable materials, and with the ground sloped away from the magazines. The magazines would be located in an area isolated from the view of any public roads or houses and painted with a BLM-approved color to minimize visual impacts. Warning signs would be located such that a bullet through the signs would not strike the magazines. The explosive magazines would be separated so that an explosion from either of the magazines would be unlikely to detonate the other or create a hazard to employees in the mine area (30 CFR 56.6131). In addition, the magazine locations would meet or exceed the setback requirements from public roads, mine haul roads, and magazine-to-magazine spacing. The magazines would be located so that downed power lines would not contact the magazines.

2.4.5 Drilling and Blasting

Rock would be loosened by drilling and blasting. Development rock (termed waste rock) is overburden, interburden, and lower grade flagstone (typically weakly-altered sedimentary rock) associated with the mining operation, which would not meet mine material specifications and must be removed to allow access to the defined zones of economic flagstone rock (ore).

Blast holes would be drilled with either a 4-inch diameter drill or a 6.75-inch diameter drill. The typical blasting pattern for flagstone would be 4-inch diameter drill holes approximately 12 feet deep on 10-foot centers. The typical blasting pattern for waste rock would be 6.75-inch diameter drill holes approximately 25 feet deep on 16-foot centers. There would be approximately 50 holes per pattern when blasting flagstone and 100 to 150 holes per pattern when blasting waste rock. Approximately 12 pounds of explosives would be used in each flagstone blast hole, and approximately 27 pounds of explosives would be used in each waste rock blast hole.

Blasts to remove overburden material typically use a powder factor of approximately 0.5 pounds per cubic yard. Typical powder factors for surface blasting range from 0.25 to 2.50 pounds per cubic yard depending on rock breakage difficulty.

If ground water is intercepted during drilling or blasting, all mining activity in the pit where water was encountered would be stopped. No dewatering would occur and mining operations for the given area would cease for the life of the project.

Only authorized personnel would be allowed in the vicinity of the blasting area. Employees and visitors would not be allowed to bring cigarettes, lighters, matches, or other highly flammable objects to the vicinity of the blasting area. Blasting would occur irregularly throughout the period of mining operation, with a maximum of two blasts on a given day. Blasting would occur approximately 4 times per week or could include several days of blasting followed by several days with no blasting. Number and schedule of monthly blasts would depend on production requirements and would vary depending upon alternative. The following steps would be taken before blasting:

1. The blasting area would be secured by barricades, and warning signs would be posted.
2. The blasting area would be inspected immediately prior to detonation.
3. The blasting area and a surrounding safety zone would be cleared of people prior to detonation.
4. A warning signal would be broadcast throughout the quarry area.
5. The blasting shot would be inspected.
6. When the blasting vicinity is clear of personnel and the shot has passed inspection criteria, detonation would occur.
7. After an inspection of the post-blast area, an “all clear” signal would be broadcast throughout the quarry area.
8. If a misfire occurs, the drill hole would be flagged. Once mining activities proceed to the location of the misfire, an excavator would carefully expose the

drill hole. If explosives are found, they would be "washed" from the hole and qualified personnel would attempt to find the detonation cord and/or primer. These would then be placed back into the magazine or detonated in place.

During the initial development of Pit 1 there were a few incidents of highwall instability above SH-75 as a result of blasting. This resulted in the movement of blocks in cliff faces to the north and west of the pit that required blasting to stabilize the highwall. Now that mining is occurring deeper in Pit 1, well below the top of the highwall, this is no longer occurring.

The project operations would continue to comply with all MSHA regulations (30 CFR Part 56) and all Bureau of Alcohol, Tobacco, Firearms, and Explosives regulations (27 CFR Part 55) concerning explosives storage, handling, and detonation.

2.4.6 Rock Handling

Waste rock would be removed after blasting by loaders and haul trucks, exposing the flagstone. The flagstone then would be removed from the ground by hand or with the assistance of a hydraulic excavator. Some flagstone would be further split by hand, and all flagstone would be placed by hand on pallets. The pallets would be loaded onto flatbed trucks and transported from the splitting areas to the administrative area. The pallets would be shipped from the quarry by highway-licensed, semi-trucks. The location of flagstone splitting activities would vary based on worker safety, available space, and efficiency; and would typically, but not always, occur in the pits or waste rock storage areas. Heated tents would be provided on site to allow a portion of the employees that split flagstone by hand to work through the winter.

The only manufacturing activities or chemical processing that would occur at the quarry site is the manufacturing of ANFO for blasting purposes. The Applicant has a flagstone processing, storage and shipping facility located in Idaho Falls where approximately 30 percent of the flagstone leaving the quarry would be sent. A portion of the material sent to this facility would be processed in a rock tumbler and then shipped to retail facilities across the western United States.

Supplies and flagstone would be stored in the administrative area. A semi-circular, gravel-covered, load-out driveway would be constructed in the administrative area to minimize mud and dirt tracked on the highway from semi-trucks leaving the area. Semi-trucks would enter the circular driveway where a forklift would load them. Trucks waiting to be loaded would be staged in the administrative area where ample parking is available.

2.4.7 Pit 1 and Pit 2 Waste Rock Storage Areas

Under all action alternatives, no additional waste rock material would be deposited into the Pit 1 waste rock storage area. A portion of the Pit 1 waste rock would be made available as a mineral material by sale or free-use permits in the form of a community pit (see Section 2.4.12). The Pit 1 waste rock storage area would be reclaimed as described under Alternative A (see Section 2.3.1).

The Pit 2 waste rock storage area is located in the upper portion of an ephemeral drainage above the administration area and to the east of Pit 2. The area has slopes that are approximately 10 percent in grade. The Pit 2 waste rock storage area would continue to accept waste rock material from Pit 1 and Pit 2. Topsoil would be stripped from the waste rock storage area and stockpiled nearby for use in reclamation. Reclamation at the Pit 2 waste rock storage area is and would continue to occur concurrently with mining activities at the quarry. Waste rock would be deposited and constructed into 20-foot lifts. The face of the lifts would be contoured to a three-to-one slope, covered with the stockpiled topsoil and reseeded with a BLM-approved seed mixture (Appendix B).

2.4.8 Topsoil Salvage and Storage

The proposed topsoil stockpile site would be on a flat area above the drainage to East Fork Salmon River. The topsoil stockpile would be graded and seeded to minimize erosion and soil loss by wind and water if not used within 6 weeks for reclamation. The proposed topsoil storage site would be approximately 0.9 acres in size and would be large enough to hold all stockpiled topsoil removed from the Pit 2 waste rock storage area and all other areas where topsoil is removed. Topsoil would be used in reclamation activities occurring as mining progresses (concurrent reclamation).

2.4.9 Quarry Access Roads

The main access road extends from the administration-staging area up a slope to the east side of Pit 1. The access road to Pit 2 would extend from the east side of Pit 1 around the southern edge of a low-lying knob and across a relatively flat area to Pit 2. The main access roads would be generally 30 feet in width with an outside berm constructed to at least mid-axle height of the largest self-propelled mobile equipment which usually travels the access road. Secondary quarry roads would generally be 15 feet in width.

2.4.10 Equipment and Vehicle Maintenance

The equipment used at the project site would be typical of surface mining operations and would include drill rigs, hydraulic excavators, front-end loaders, 30-ton and 40-ton haul

trucks, dump trucks, water trucks, flat-bed trucks, bulldozers, service trucks, a grader, fork lifts, light trucks, and personnel transport vehicles. Each piece of equipment would be fitted with its required safety devices, and all equipment would be operated in compliance with all MSHA regulations concerning equipment operator safety, and the safety of other workers. Equipment speeds for the proposed operations would be consistent with the driving conditions and the type of equipment (30 CFR 56.9101).

The heavy equipment used primarily in the pits would be maintained and stored in the pits where it would not be visible from outside the project site. The more mobile equipment would be used and stored anywhere within the perimeter of the operations. Mine vehicles would be properly maintained at all times to minimize leaks of motor oils, hydraulic fluids, and fuels. The equipment would be serviced (oil changes, lubrication, minor repairs) by an equipment maintenance company.

The maintenance of equipment that is authorized for highway travel would be performed off-site at an appropriate facility. Equipment that is not highway-authorized would be serviced on the project site. Equipment would be fueled or maintained at one of the three fuel storage areas. Equipment that is immobilized due to break down during operation would be repaired at the location of break down. A Spill Prevention, Containment and Countermeasure Plan would be prepared for the Proposed Project and would contain information regarding training, equipment inspection and maintenance, and refueling for mine equipment, with an emphasis on preventing spills. The equipment maintenance company would be required to dispose of all oils, lubricants, and antifreezes offsite in accordance with State and Federal environmental requirements.

2.4.11 Public Access

Due to liability and safety concerns, the general public would not be allowed access to the quarry without first coordinating with personnel, and then, access would be restricted and only allowed if accompanied by a quarry employee. Gates are installed along the only public access route through the Proposed Project area. The gates are located at the entrance to the project site from SH-75 and on the existing power-line road to the south of the quarry. The south gate would remain locked at all times. The gate at SH-75 would be locked during periods of non-operation. Signs with a contact name and phone numbers for the Applicant and the BLM would be posted on all gates.

2.4.12 Mineral Material Disposal

The BLM may dispose of mineral materials by sale or free-use permits from areas designated as a community pit (43 CFR 3603). These pits are for noncommercial or small-scale

collection. Mineral materials are some of the most basic natural resources, such as sand, gravel, dirt, and rock used in every day building and other construction uses. Adequate local supplies of these basic resources are vital to the economic life of any community. BLM policy is to make these materials available to the public and local governmental agencies whenever possible and wherever environmentally acceptable. BLM sells mineral materials to the public at fair market value, but provides them free to states, counties, or other government entities for public projects. Also, a limited amount may be provided free to non-profit organizations under a free-use permit.

Regulations which guide the BLM mineral materials program are found in 43 CFR 3600. Regulations governing sale contracts and free-use permits for mineral materials are contained in 43 CFR 3602 and 43 CFR 3604, respectively.

Under all action alternatives waste rock would be allowed to be removed from a designated area of the Pit 1 waste rock storage area. During the ongoing operation of the quarry, due to public safety considerations, only government entities or their representatives would be allowed access to the waste rock material. Following completion of quarry activities and during implementation of reclamation, a plan would be developed that would allow continued access to the waste rock by government entities and additionally allow access by the general public for obtaining rip rap and other construction material.

The amount of waste rock that would be removed as a mineral material from the Pit 1 waste rock storage area is estimated to be as much as 20,000 cubic yards per year. The volume of waste rock removed would be dependent upon the local need for the material and the distance to other sources of similar material from building or construction sites. The BLM would designate a portion of the waste rock storage area as a Community Pit under its 43 CFR 3600 Regulations. Due to the large quantities of waste rock currently on site it is likely that only a small portion of the total volume would be removed for mineral material uses in the next 40 years.

2.4.13 Sanitation

Sanitation facilities would consist of portable toilets for all personnel. The toilets would be distributed at the project site according to location of work being performed. The toilets would be provided and serviced by a licensed contractor.

2.4.14 Best Management Practices

All action alternatives would be implemented in accordance with State of Idaho Best Management Practices for Mining (Appendix B). The BMPs in Appendix B are designed to

guide mining activities and to minimize potential environmental and public safety impacts. These include, but are not limited to dust abatement, erosion control, revegetation, hazardous materials, and noxious weed management.

2.4.15 Chemical Spill Prevention, Control and Countermeasures Plan

A Chemical Spill Prevention, Control, and Countermeasures Plan is currently in place and would continue to be implemented under all action alternatives. The plan has been prepared in compliance with guidelines established in 40 CFR Part 112 (oil pollution prevention requirements of the United States (US) Environmental Protection Agency (EPA) and Idaho Mining BMPs) (Idaho Department of Lands 1992). In Idaho, a spill is defined as any discharge of hazardous material, oil, or petroleum product into or adjacent to water that might have potentially harmful effects. The only chemicals that would be stored on site are petroleum products used in the fueling, lubrication and general maintenance of vehicles and equipment.

Valves on tanks would be designed so that any flow from the valve would be contained within the containment area. Tanks would be equipped with flexible hoses for draining the contents. The gravity-fed hosing would be assembled and maintained in a manner to minimize the potential for punctures and leaks. The hosing and associated fittings would be capable of the pressures and stresses of carrying the flammable liquid and material would be compatible with the contained liquid. All tanks would be labeled as to their contents. All tanks would be vented to prevent development of excessive pressure or vacuum. Both the tank and the vents would be isolated from ignition sources. Above-ground storage tanks would be securely mounted on firm foundations. Storage tanks for flammable or combustible liquids would be built to withstand the pressures and stresses of holding the liquid. The tank composition would be compatible with the liquid that is stored. Tanks would be maintained and handled in a manner that would minimize the potential for punctures and leaks.

All tanks with petroleum products would be stored above ground, allowing easy, rapid and thorough inspections. The tanks would be inspected by L&W Stone personnel weekly for any signs of weakness or deterioration. The tank inspection also would include checking for dents, drip marks, discoloration of tanks, puddles containing spilled or leaked material, corrosion, cracks, and localized dead vegetation or soil stains. The tank foundation and containment area would be inspected weekly for cracks, discoloration, puddles containing spilled or leaked material, settling, gaps between the tank and foundation, and damage caused by vegetation roots. Spill cleanup kits would be stored in the general vicinity of the chemical storage facilities. Mine personnel would be trained to report all spills, regardless of size or

quantity, immediately to one of the site managers. The following information about the spill would be reported:

- The name of the substance that spilled or leaked,
- An estimate of the quantity that spilled or leaked,
- The time and duration of the release,
- Where the release was deposited,
- Why the release occurred, and
- Any immediate health and safety, or environmental threats or issues.

Spills that must be reported immediately to State and Federal agencies (including the BLM Challis Field Office) include the following:

- Spills of any petroleum hydrocarbon substance that exceeds 25 gallons,
- Spills that cannot be totally cleaned up within 24 hours, and
- Spills of any substance that reach a surface water body.

Trained mine personnel would respond immediately to contain the spill; with the first step, as in any emergency situation, being to ensure that personal safety is not threatened. The spill response procedures would be included in the Chemical Spill Prevention, Control, and Countermeasures Plan.

2.5 ALTERNATIVE B

Alternative B was developed as a result of the lawsuit brought by the Western Watershed Project. This alternative would be a continuation of the Interim Mining Plan that was developed by L&W Stone and approved by District Judge Winmill to enable mining activities at the Three Rivers Stone Quarry during the preparation of this EIS. The purpose of Alternative B is to allow the continuation of mining activities while minimizing the overall footprint of the quarry; no exploration activity would be allowed. All descriptions or aspects of mining listed above in Section 2.4, Proposed Project Features Common to all Action Alternatives, would be included in Alternative B. The proposed operations would consist of an administrative area on the valley floor and two open-pit (surface) mines on the adjacent ridge: Pit 1 and Pit 2 (Figure 2.5-1). In addition, development would include a waste rock storage area, haul roads, interceptor trenches, sediment traps, roll berms, roll ditches, explosives magazines, portable trailers, storage tanks, and a variety of transport vehicles and heavy equipment that would be used for mining activities. Proposed operational features of the quarry under Alternative B are summarized in Table 2.5-1 and described in the following sections.

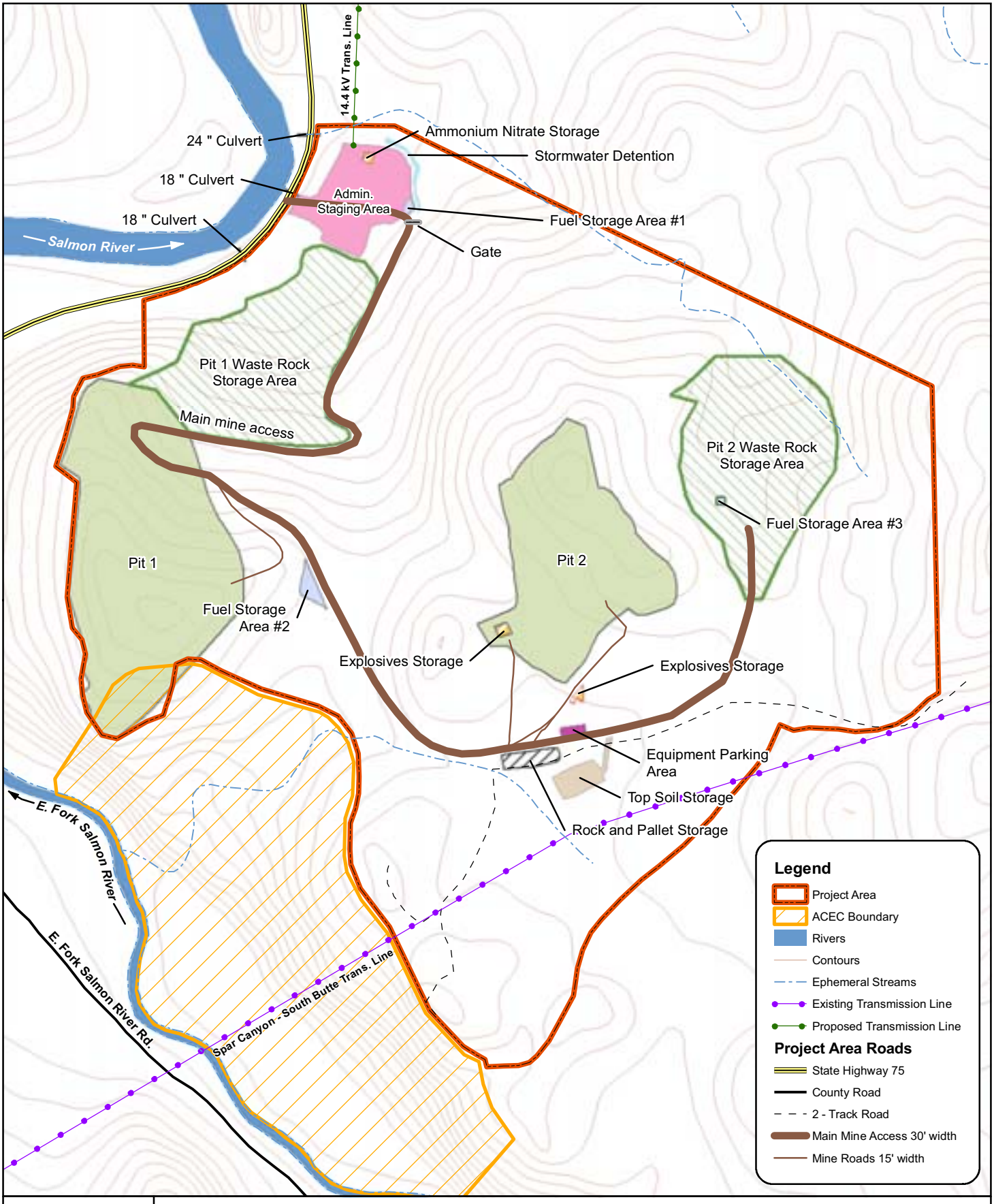

Figure 2.5-1. Alternative B

0 250 500 1,000 1,500 2,000 Feet

1:8,200

Three Rivers Stone Quarry
L & W Stone

Table 2.5-1. Alternative B Operational Features.

Period of Operation	3-5 years
Work Force	Year-round employees39* Seasonal employees 36*
Acres of surface disturbance	
Existing	92
Proposed New	8
Exploration	None
Total	100
Material removed per year (waste rock and flagstone)	100,000 tons**
Number of blasts per month	Overburden 10** Flagstone 6**
Truck loads of flagstone leaving the quarry per year	800 to 1,200 trucks**
Water source	Off-site surface
Water use	10 acre-feet per year (55,000 gallons, maximum daily use)

* The number of employees would be reduced to less than 50 once Pit 1 was mined out.

** Once Pit 1 is mined out the amount of material removed, the number of blasts needed to remove overburden, and the number of trucks trips needed to transport material would be substantially reduced.

2.5.1 Pits

Under Alternative B, mining would continue in Pit 1. According to the Interim Mining Plan, the highwall would be laid back at a maximum rate of 30 feet per year to expose additional flagstone deposits. This would result in Pit 1 being mined out in 3 to 5 years as the flagstone deposit becomes inaccessible. Mining activities in Pit 2 would be limited to mining 15 feet in depth and expanding the pit 15 feet to the southwest each year (Figure 2.5-1).

2.5.2 Mining Sequence

Under Alternative B, mining would continue concurrently in Pit 1 and Pit 2. Waste rock from both pits would be deposited at the Pit 2 waste rock storage area. Under Alternative B it is anticipated that Pit 1 would be mined out well in advance of Pit 2. Therefore, once mining activities at Pit 1 have been completed, waste rock from Pit 2 would no longer be deposited at the Pit 2 waste rock storage area, but would be diverted to Pit 1 and used as backfill. Mining would continue at Pit 2 until the flagstone deposits there were mined out in 3 to 5 years. Following the completion of mining in Pit 2, all remaining reclamation activities would be completed.

2.5.3 Work Schedule, Personnel and Mine Production

Based on the restrictions on expansion of Pit 1 that are imposed by the Interim Mining Plan, the Applicant estimates that mineable flagstone resources exist to support a mine life of 5 years under Alternative B. Under Alternative B mine production would occur in Pit 1 for 3 to 5 years and in Pit 2 for up to 5 years. Because of the reduced area of operation, mining activities would likely occur for 10 to 12 hours per day, 5 days per week. However, production would vary with market demand, mine logistics, quality of flagstone, and weather conditions.

Approximately 75 employees would be required at the peak of mine production. Approximately 39 year-round employees would be needed including truck drivers, heavy equipment operators (bulldozers, loaders, track hoes, drillers), explosive technicians, vehicle maintenance technicians, general maintenance staff, and rock splitters and handlers. A total of about 36 seasonal workers would be needed on a daily basis. These workers would consist primarily of rock splitters (the workers in the pits who actually split the flagstone into saleable pieces) who typically would work from April through December of each year.

2.5.4 Traffic

Workers would travel to the Three Rivers Stone Quarry site in personal vehicles. Many workers would carpool to the site, and this number would vary by season. For the purposes of analysis it is assumed that the carpool rate would be two individuals in each vehicle. The majority of workers, approximately 37 personal vehicles per day, would travel from Challis and back each day along SH-75 to the quarry.

The delivery of the quarried flagstone from the quarry to wholesale and retail markets would occur by commercial trucks hauling on county, state, and Federal roads and highways. Under Alternative B, approximately 800 to 1,200 truck trips per year would be required to transport the flagstone from the quarry to market. Trucks leaving the quarry would take one of two routes. Approximately 100 to 150 trucks (12%) per year would travel south on SH-75 passing through the towns of Stanley and Ketchum (Figure 2.5-2). The majority of trucks, approximately 700 to 1,050 (88%) per year, would travel north on SH-75 to the town of Challis and then travel south on US-93 to the town of Arco. From Arco, two routes would then be used. Approximately 200 to 300 trucks (30%) would travel east on US-20 to the Applicants processing, shipping and storage facility in Idaho Falls, and another 500 to 750 trucks (70%) would travel southwest on US-20/26/93. From these locations the trucks would further disperse to market locations throughout the western United States.

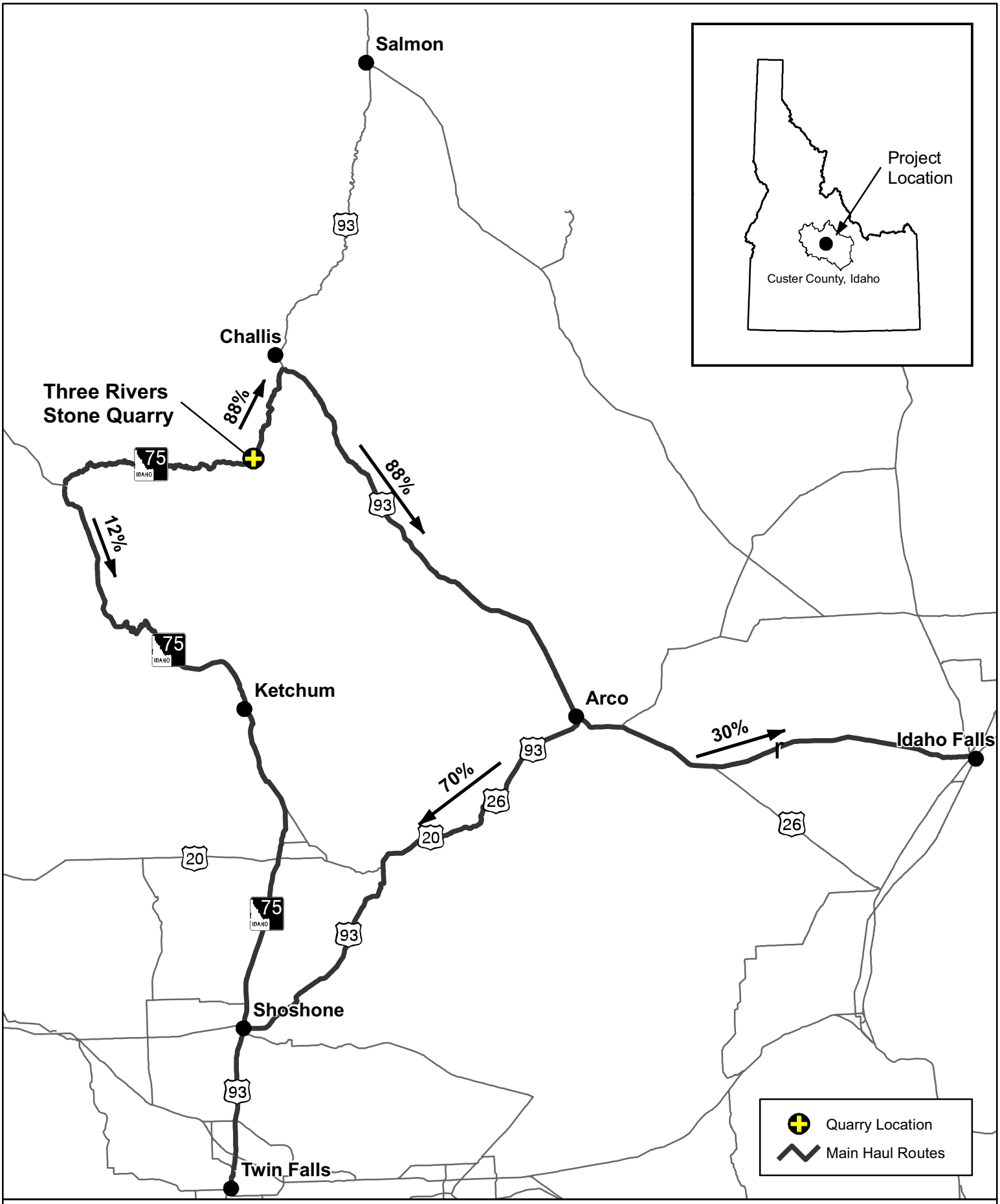

Figure 2.5-2. Truck Transportation of Rock

0 5 10 20 30 40 Miles

Three Rivers Stone Quarry
L & W Stone

2.5.5 Water Consumption

Water would be obtained from the existing screened diversion on the Salmon River located approximately 1 mile north of the administrative area under a permanent water use permit from the IDWR associated with property owned by L&W Stone. To comply with the IDWR water use permit, the pipe used to obtain water from the Salmon River would be screened with mesh size of 3/32 of an inch. In addition, water would only be drawn from the river between April and November of each year. Water would be drawn from river into an approximately 0.50-acre holding pond so that it would be available for use at the quarry throughout the spring and summer months.

It is estimated that approximately 10 acre-feet per year of water would be needed each year of operation, with maximum daily use estimated at 55,000 gallons. Nearly all of the water would be used for dust suppression on mine roads, pits and other areas of surface disturbance. Some additional water would be used for reclamation activities including compaction and irrigation of planted areas. A 3,500 gallon water truck fitted with front and rear spray booms would be used for dust suppression activities.

2.5.6 Sediment and Erosion Control and Stormwater Management

Under Alternative B, runoff from the project site flows either to an ephemeral drainage of the East Fork Salmon River or passes under SH-75 to the Salmon River through three corrugated metal pipe culverts (18 inches to 24 inches in diameter). Straw bales would continue to be placed upgradient of the culverts to trap sediment. The existing stormwater detention trench (interceptor trench) would border the northeast perimeter of the administrative area and end in a sediment trap (shallow pit) located just north of the administrative area (Figure 2.5-1). State of Idaho Mining BMPs would be used in an effort to minimize potential sediment delivery to the East Fork and Salmon rivers (IDAPA 20.03.02.140; IDL 1992; Appendix B).

2.5.7 Reclamation

Reclamation under Alternative B would be the same as described under Alternative A.

2.6 ALTERNATIVE C

Alternative C is the BLM Preferred Alternative from the 2004 EA. All descriptions or aspects listed above in Section 2.4, Proposed Project Features Common to all Action Alternatives, would be included in Alternative C. This alternative is similar to Alternative B in that mining would continue in Pit 1 and Pit 2 (Figure 2.6-1). However, the proposed operations would increase the amount of surface disturbance and could take place for up to

30 years. The expansion would occur by increasing the mine production in Pit 1. The east highwall of Pit 1 would be laid back up to 90 feet per year to expose more of the flagstone deposit that continues down into the bedrock below it. A portion of the existing Pit 1 waste rock storage area covers mineable flagstone. Therefore, a portion of this material would be moved to the Pit 2 waste rock storage area to allow the flagstone to be mined. It is estimated that 6 million tons would be moved from the Pit 1 waste rock storage area to the Pit 2 waste rock storage area.

Existing mining activities would continue at Pit 2. Alternative C also includes exploration of an approximately 31-acre area for additional flagstone deposits (Figure 2.6-1). Proposed operational features of the quarry under Alternative C are summarized in Table 2.6-1 and described in the following sections.

Table 2.6-1. Alternative C Operational Features.

Period of Operation	30 years
Work Force at the mine site	Year round employees 61 Seasonal employees 39
Acres of surface disturbance	
Existing	92
Proposed New	49
Exploration	31
Total	172
Material removed per year (waste rock and flagstone)	240,000 tons
Number of blasts per month	Overburden 10 Flagstone 6
Truck loads of flagstone leaving the quarry per year	1,200 to 1,500 trucks
Water source	On site well
Water use	87,000 gallons, maximum daily use

2.6.1 Pits

Two pits are proposed to be expanded under Alternative C (Figure 2.6-1). The proposed final configuration of Pit 1 would be approximately 2,000 feet long, 900 feet wide (at the widest point), and 500 feet deep (measured from the highest point) with a pit floor elevation of 5,425 feet amsl. The southern end of Pit 1 would remain intact as a visual barrier from the East Fork Salmon River.