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Mine Operations and Reclamation Plan

La Jara Mesa Project

Cibola County, New Mexico

Prepared for
State of New Mexico
Energy, Mining, and Natural Resources Department
Mining and Minerals Division
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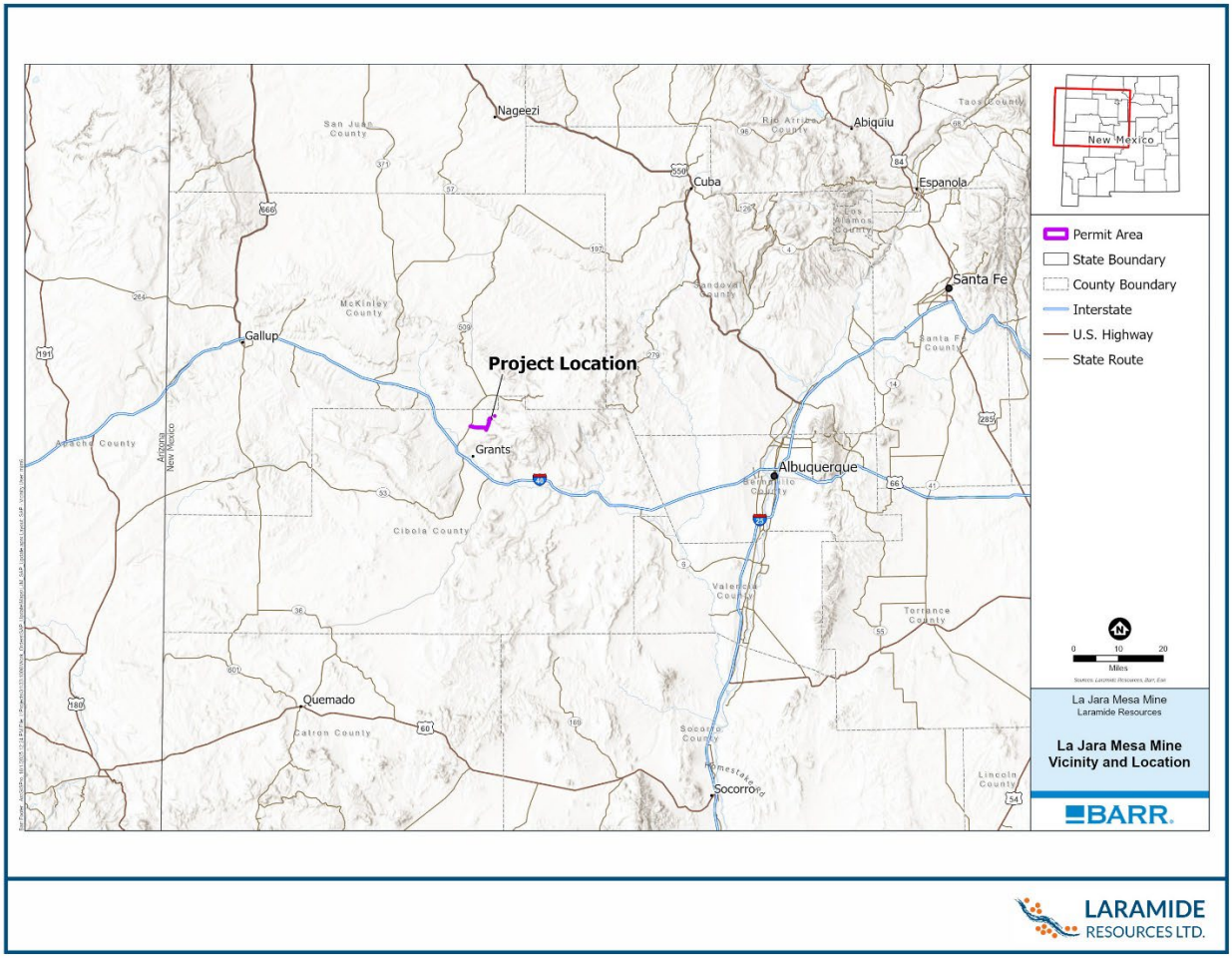
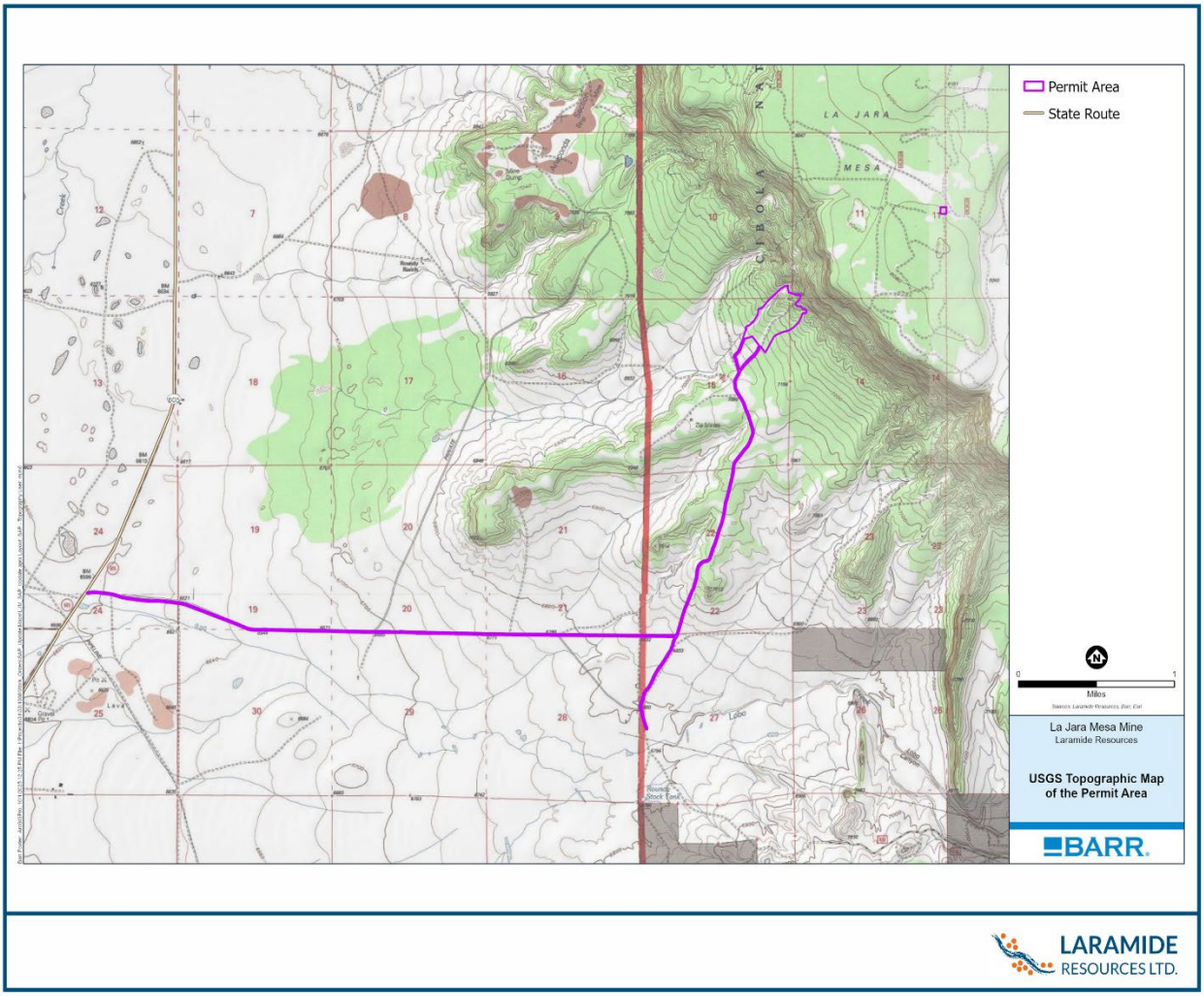
1 Introduction

This Mine Operations Plan was prepared to support the permitting and approval of a proposed underground uranium mine located in the Cibola National Forest (CNF) in Cibola County, New Mexico. It is in accordance with the New Mexico Administrative Code (NMAC) 19.10.6.602 D.(15) regulations for new non-coal mining operations and provides a detailed description of the proposed mining operations plan for the Laramide Resources (USA) Inc. proposed underground uranium mine in Cibola County, New Mexico (Map 1-1 and Map 1-2).

The Plan is organized in conformance with the regulatory requirements outlined in NMAC Section 19.10.6.602 D.(15) and 19.10.6.603. This Plan is also prepared to meet the United States Forest Service (USFS) requirements for submittal of a Plan of Operations (POO) for operation of a mine on Forest Service lands. This proposed Mine Operations Plan addresses the NMAC requirements of 19.10.6.602 D.(15)(a) through (e) and 19.10.6.603 A through H. The Plan provides the specifics of the site's design and addresses the USFS requirements 36 CFR 228.4, Plan of Operations.



Map 1-1 Vicinity and Location of the Proposed Permit Area



Map 1-2 Topography of the Proposed Permit Area

2 Overview of Mining Operations

The La Jara Mesa Project is a proposed underground uranium mine that would access shallowly dipping, tabular uranium deposits beneath La Jara Mesa via dual inclines originating at a portal site at the base of La Jara Mesa on its southwestern edge. The dual inclines would each be approximately 5,000 feet long, and the unmineralized “development rock” excavated would be used to build a waste rock stockpile at the portal site. An escape raise, which would provide ventilation and an emergency escape route from the underground mine workings, would be located on the surface of La Jara Mesa, generally atop the uranium deposits (see Figure 2-1).

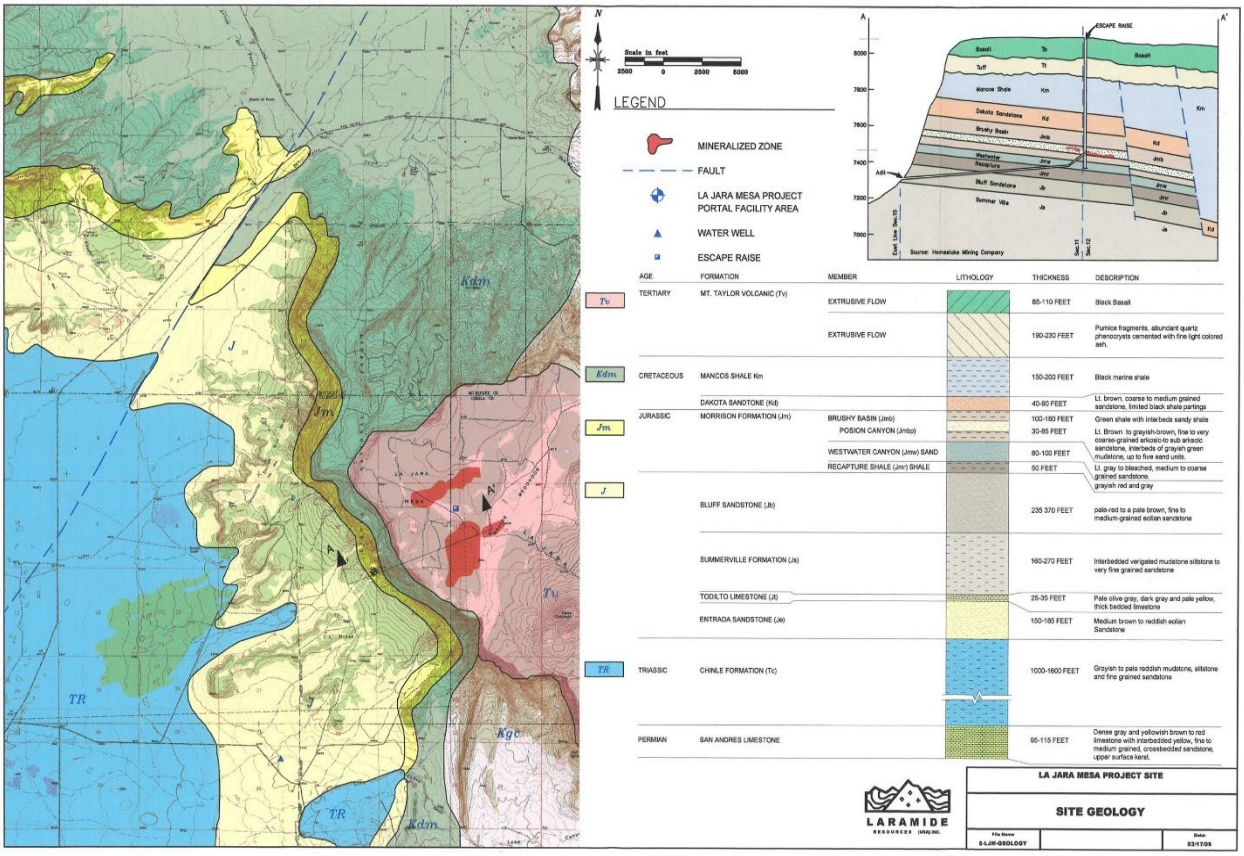


Figure 2-1 Subsurface Geology of the Proposed Permit Area

Surface facilities at the portal site, to be constructed on the unmineralized development waste rock stockpile, consist of shops, offices, and other facilities described herein. Site layout figures (Figure 2-22 and Figure 2-3) are provided to show placement of the surface features. No milling of uranium ore is proposed onsite. Mined ore would be transported to a third-party mill for processing. The surface facilities are located on USFS Cibola National Forest (CNF)–managed lands and are accessed by Forest Service roads (Portal Site Surface Facilities) and by unimproved Forest Service roads (Escape Raise). An existing private road would be upgraded for access to New Mexico Highway 605 (NM 605).

Laramide proposes a two-step progression of mining activities for the project:

- Phase 1—Underground Development Activities
- Phase 2—Underground Mine Production

2.1 Phase I—Underground Development Activities

Phase I of the proposed underground development program (NMAC Section 19.10.6.602 D (15) (a) (ii)), is the initial step to prepare for future mine production and to characterize the mineralized zones in the following areas:

- Geologic data: nature, grade, and continuity of mineralized structures
- Metallurgical data: information on the optimal beneficiation methods by metallurgical studies and off-site testing of bulk samples
- Mining methods evaluation: information on rock characteristics and extraction techniques for use in a mine design and feasibility study

Information gained during development work about geology, metallurgy, and mining would be used to refine Laramide's understanding of the deposit's characteristics and evaluate operational parameters, finalize subsurface design, and develop operational and feasibility plans for a commercially viable underground mining project.

If the results of the development work and associated economic evaluations indicate that commercial mining is not feasible at the location, Laramide would stop the development work and reclaim disturbed areas pursuant to the Reclamation Plan.

Proposed mine development and mining technique details are described in the following sections. The underground development stage is anticipated to generate waste rock. Estimated volumes of waste rock are presented in Table 2-1.

2.1.1 Portal Face-Up and Excavation

The "face-up" for the portal and the incline access driven to the uranium-mineralized zone would be in a non-radioactive sandstone rock layer. The initial portal openings on the surface would be established using conventional drill-and-blast methods, advanced in short rounds, and applicable to ground conditions. The rock will be supported as determined appropriate, with any combination of rock bolts, wire mesh, and/or shotcrete.

Typical drill-and-blast operations involve the use of a drill jumbo (an underground drilling machine) to drill a series of small-diameter, horizontal holes around the perimeter of the planned portal opening, spaced 12 to 18 inches apart, to create a smooth perimeter after blasting. The areas inside the portal perimeter will be drilled with the drill jumbo to a pattern suitable for breaking rock and minimizing damage to the perimeter of the incline outline. The perimeter holes would be loaded and blasted with a small-diameter explosive to minimize over-break outside the planned portal perimeter. Diesel-powered, rubber-tired, underground loaders would be used to remove broken rock.

Table 2-1 Development Stage Waste Rock Volumes

Feature	Dimensions	Volume (ft^3)	Volume (yd^3)
Inclines[1]	2 x (5,000' x 12' x 15')	1,800,000	66,700
Crosscuts (between inclines)[2]	10 x (75' x 12' x 15')	135,000	5,000
Muck Bays (along inclines)[3]	20 x (30' x 12' x 15')	108,000	4,000
Development Laterals and Production Area Access[4]	12,000' x 12' x 15'	2,160,000	80,000
Drill Hole Stations[5]	100 x (30' x 12' x 15')	540,000	20,000
Escape Raise[6]	700' x (3.14 x (4' x 4')	35,200	1,300
Sub-total		**4,778,200**	**177,000** [7]
Added Volume at Swell Factor @ 20%		955,640	35,400
Sub-total		**5,733,840**	**212,400** [8]
Over-Break Contingency @ 25%[9]		1,433,500	53,100
Total		**7,167,340**	**265,500** [10]

Notes:

1) Each incline is estimated to be 5,000 feet in length. Two inclines are planned.

2) Cross cuts are planned for every 500 feet along the incline. Estimated distance between inclines is 75 feet.

3) Muck bays are used to temporarily store waste rock underground before the material is removed to the surface. Assume muck bays at every 500 feet along each incline, and each muck bay will be about 30 feet long.

4) Laterals from the main inclines will be used to access drill stations and uranium mineralized zones. These laterals are planned to be located beneath the uranium mineralized zones.

5) Assume 100 drill stations at various locations along the development laterals. These are also used as temporary muck stations. Drill stations will be about 30 feet long.

6) Raise is estimated to be approximately 700 feet in depth and about 8 feet in diameter.

7) This volume is known as "bank cubic yards," which means in-place volume before it is blasted and removed from the underground mine. A 20% swell or bulking factor is assumed for the rock material.

8) Once blasted and removed, volume is referred to as "loose cubic yards."

9) Overbreak is common in underground operations. Additionally, a general contingency is warranted to account for the current level of detail. Assume 25% to account for these factors.

10) Assume 270,000 yd^3 to report to the surface waste rock stockpile.

During the initial portal excavation work, when there is a potential for flyrock on the surface, precautions applicable to surface blasting operations would be followed. Once below ground, subsurface blasting procedures would apply.

Two portals would be established to allow parallel inclines into the uranium-mineralized zones. Mine Safety and Health Administration (MSHA) mandates ventilation requirements in underground uranium operations, which cannot be accomplished with a single incline. Likewise, MSHA requires that underground operations have secondary escapeways. Maintaining parallel inclines into the mineralized zone would provide for proper ventilation and a secondary escape.

2.1.2 Incline Excavation

Incline excavation would be based on known geologic conditions and the expected rock mechanics behavior of rock types into which the inclines are driven. They would provide access to the mineralized zones for workers, equipment, and supplies. They would also provide ventilation (Figure 2-2).

The following standard underground methods would be used to advance the inclines:

- Drilling
- Blasting
- Mucking (removal of the rock) and haulage
- Ground support

A drill jumbo would be used to drill a pattern of blast holes on the incline face. The cross-sectional size of the inclines will be approximately 12 feet wide by 15 feet high. Drill holes in the incline would be 8 feet to 12 feet deep. Each 8- to 12-foot advance is known to miners as a “round.” Once the face has been drilled, the holes would be loaded with explosives and blasted. Safety dictates that blasting be conducted when a round is loaded with explosives and the area is secured. Various types of explosives may be used, with charges being detonated by either fused or non-electric initiation. Explosive handling and storage are discussed under Section 2.4.8. At intervals of approximately every 500 feet, crosscuts would be driven between the two inclines to provide ventilation and escape route redundancy in the event of a problem in one of the inclines. The crosscuts would be driven perpendicularly between the two inclines and separated by approximately 50 to 75 feet.

Underground front-end loaders would deliver broken rock to specially designed underground trucks for delivery to the surface, where it would be used for the construction of the surface pad. The bucket capacity of loaders would be approximately 6 cubic yards, while the underground trucks would hold approximately 15 to 20 tons of rock material each.

Any mechanical support necessary for rock stability will be installed prior to initiating the next round of drilling activities. Ground control or support will involve a variety of techniques, including rock bolting, steel sets, and/or shotcrete.

2.1.3 Escape Raise

To provide additional underground safety (i.e., both ventilation and secondary escape), Laramide proposes to install an escape raise on the north side of the “Dena Rich” mineralized zone. Details of that construction are provided in Figure 2-4. The escape raise design is vertical, approximately 700 feet in length (from the underground workings to the surface) with a diameter of approximately 8 feet. It would be constructed using a raise boring machine. A small diameter drill hole would be drilled from the surface to the selected area underground and then “pulled” back to the surface, allowing underground rock to fall into the underground workings. From there, it would be removed, hauled to the portal, and placed in the surface waste rock stockpile.

Installation of the escape raise is expected to generate a small volume of waste rock, estimated at 5,200 bank cubic yards. This volume compares to the two inclines where over 70,000 bank cubic yards would be excavated. Laramide expects sufficient room in the surface waste rock stockpile to accommodate rock

excavated from the escape raise. The dimensions of the surface area to be used for escape raise facilities will be approximately 50 by 100 feet, or approximately 0.1 acre.

A diesel generator with associated fuel storage would be located at the escape raise. It would be housed in a 10-by-20-foot wooden shed, maintained to remain in good working condition, and used during testing and to power the escape hoist in the event of an emergency and power loss (Figure 2-2 and Figure 2-3). The shed would be painted to blend with the surrounding forest as approved by CNF.

Access to the escape raise collar site would be via the existing Forest Road 544. No modifications are proposed for this road. However, during inclement weather, a plow may be needed to gain access to the escape raise. Testing of the generator would be conducted in accordance with MSHA standards. During these periodic safety inspection visits, when snow conditions prevent access by pick-up truck, Laramide may use ATVs or snowmobiles to access the site, as approved by CNF.

During an emergency, phone service from the surface escape raise site to the underground working area at the bottom of the raise can be powered by battery or by the generator. Laramide does not propose installing overhead or buried electric and telephone line service to the escape raise facilities.

2.1.4 Ground Support Methods

Ground control and support for underground openings may include rock bolting, steel sets, and/or shotcrete. Based on empirical data from existing geology and surface drilling, Laramide believes that conditions should range from fair to good. The site-specific conditions would dictate the ground control strategy best suited to provide stability and maximum employee safety.

2.1.5 Underground Support Services

One objective of underground development work is to collect information about uranium mineralization at the site. This is done using gamma probes that are inserted into long-hole drill holes. Underground drilling would be conducted from drill stations in laterals beneath the expected mineralized zones. Approximately 75 to 100 individual underground drill holes are expected. These would be drilled at various angles to lengths ranging from 250 to 500 feet. None would reach the ground surface. Two drill rigs are proposed for underground long hole drilling, each supplied with compressed air, fresh or recycled water, a drain line, and electricity. Water is expected to be required for lubrication. Any used oils, residue, or waste from drilling would be disposed of in a permitted off-site facility.

Underground drilling would be conducted in two 10-hour daily shifts on a 10-day on, 4-day off schedule. Drilling would begin shortly after reaching the first drill station and occur throughout the life of the mine. A drilling contractor would be retained to provide equipment and personnel.

Selected cuttings are expected to be removed for geologic logging and laboratory studies. This would include mineralized zone petrography, metallurgical studies, environmental testing, and assaying.

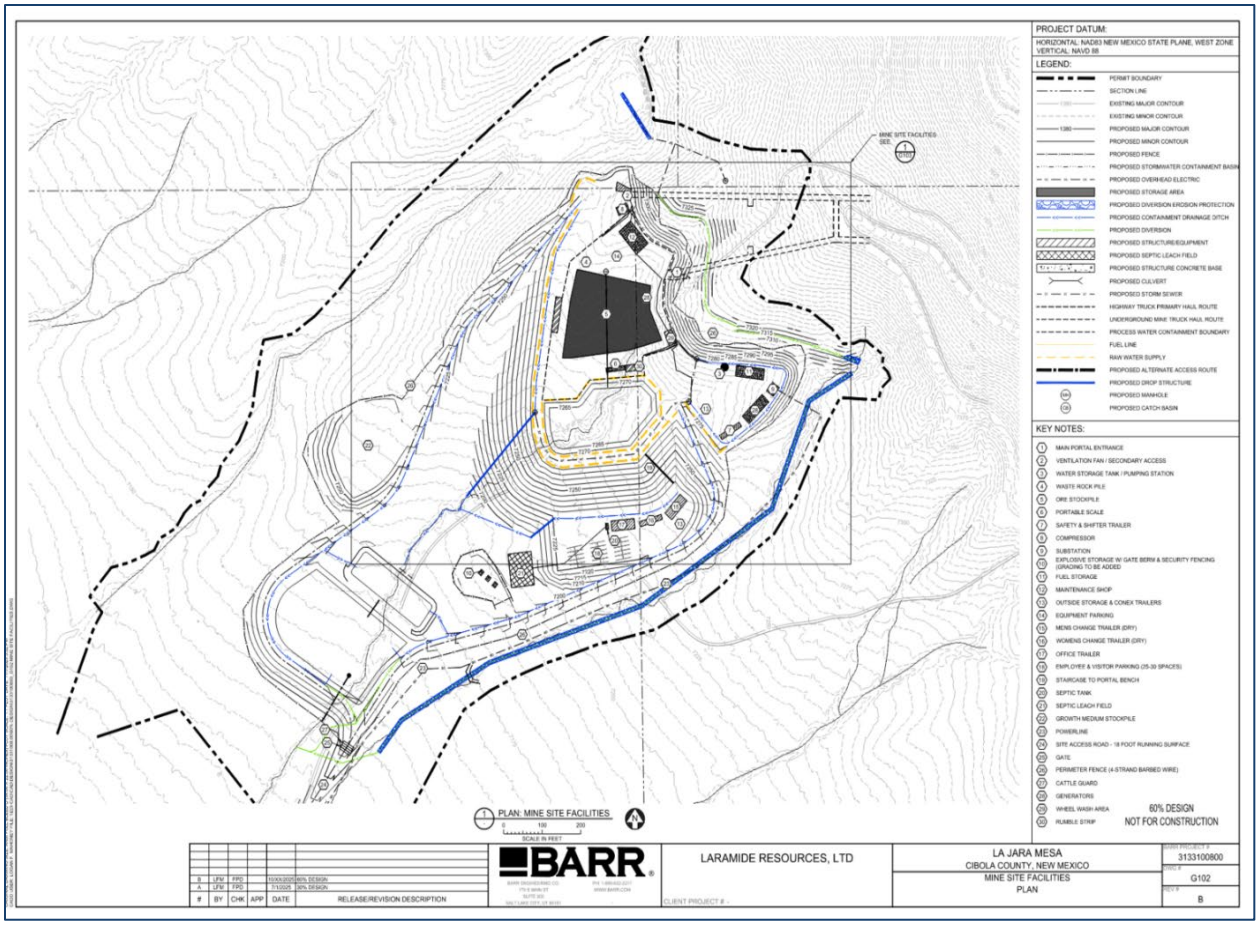


Figure 2-2 Sixty Percent Design Layout—Overall

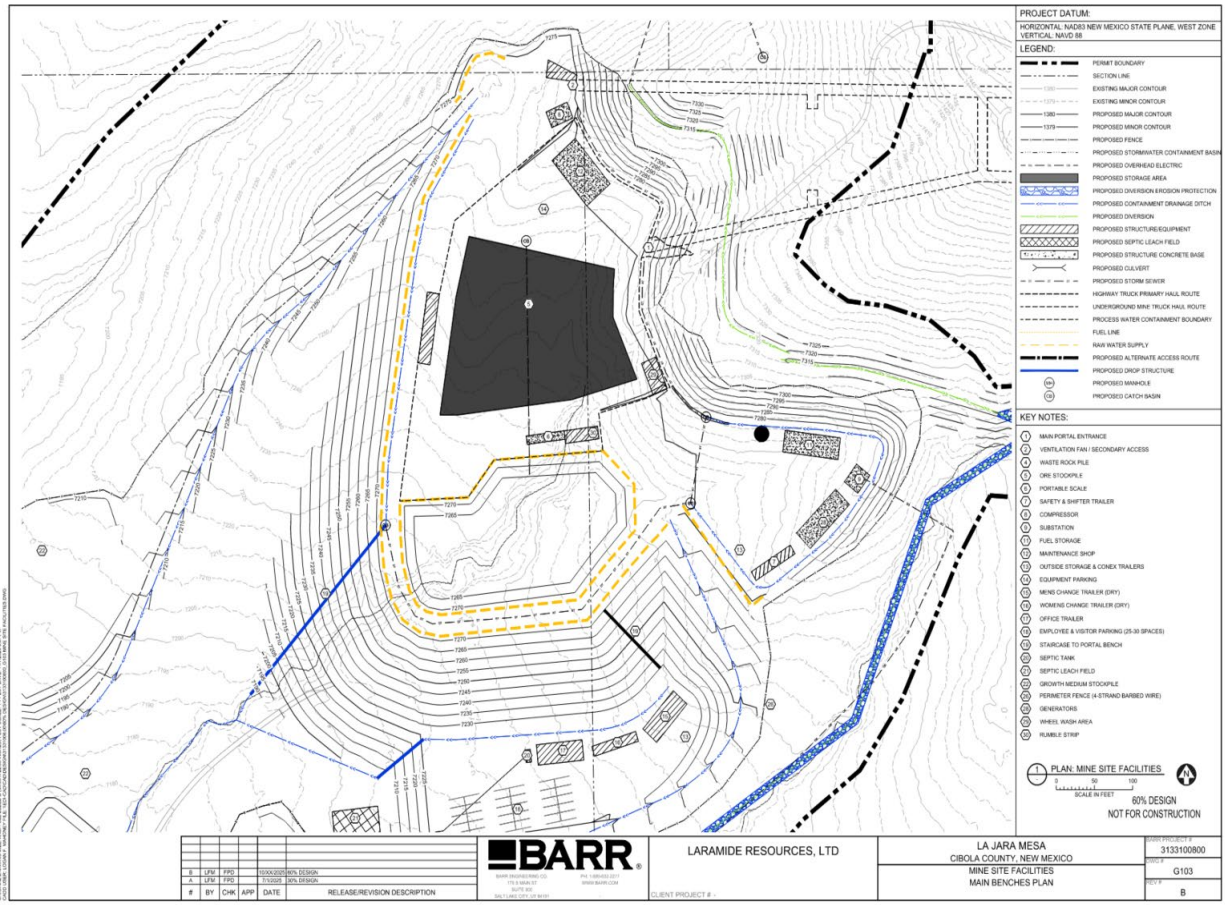


Figure 2-3 Sixty Percent Design Layout—Main Bench

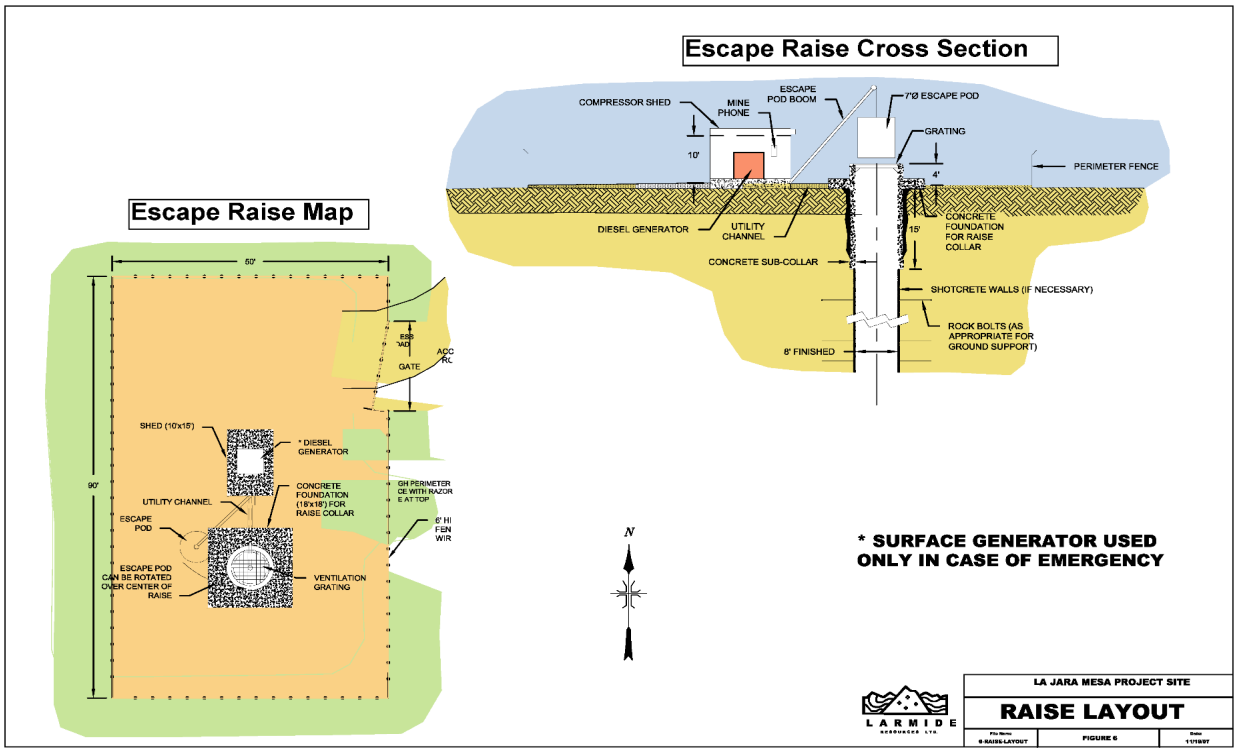


Figure 2-4 Escape Raise Map and Cross-Section

2.1.6 Bulk Sampling

Bulk samples of mineralized uranium would be collected from crosscuts and lateral cuts for testing and study. This may include analysis of mining methods for future mining work. Analyses would include surveying, geologic mapping, chip sampling, and geotechnical studies.

Bulk samples for metallurgical and milling tests would be collected and transported to the surface. It is estimated that as much as 40,000 to 50,000 tons of uranium-mineralized material may be removed for testing. Relatively large sample sizes are required to gain an accurate portrayal of processing at an existing mill. Bulk samples would be temporarily stored on the surface of a compacted clay liner on the waste rock dump prior to transport to the mill for testing. Haulage of material to off-site testing facilities would be conducted periodically to eliminate the need for a large stockpile.

2.1.7 Workforce Requirements

The workforce projections for both underground development work (Phase 1) and full production during mine operations (Phase 2) are listed in Table 2-2. A rotating crew schedule would be implemented. This schedule accommodates two crews per day, each with a 10-hour shift, 7 days a week. The day shift is expected to run from approximately 7:00 a.m. to 5:00 p.m., while the swing shift will cover the hours from 5:00 p.m. to 3:00 a.m. Preventive maintenance mechanics are expected to work a 10-hour shift that spans the 4-hour period of downtime not covered by a rotating crew.

Table 2-2 Workforce Requirements

Type of Worker	Phase 1—Underground Development			Phase 2—Underground Mine Production		
	Day Shift	Rotating Crews (per shift/total)	Total Workers	Day Shift	Rotating Crews (per shift/total)	Total Workers
Management						
General Manager	1	-	1	1	-	1
Technical						
Mine Engineer	1	-	1	1	-	1
Jr. Engineer	-	-	-	1	-	1
Surveyor	1	-	1	1	-	1
Engineer Technician	-	-	-	1	-	1
Environmental Engineer	1	-	1	1	-	1
Environmental Technician	-	-	-	1	-	1
Chief Geologist	1	-	1	1	-	1
Jr. Geologists	-	-	-	1	1/4	4
Office						
Accountant	-	-	-	1	-	1
Payroll Clerk	1	-	1	1	-	1
Clerical	1	-	1	2	-	2
Warehouse Worker	1	-	1	1	1/4	4
Supervision						
Mine Manager	-	-	-	1	-	1
Shift Supervisor	1	1/4	4	1	1/4	4
Maintenance Superintendent	1	-	1	1	-	1
Electrical Superintendent	-	-	-	1	-	1
Safety Manager	1	-	1	1	-	1
Hourly						
Jumbo Drill Operators/Miners	1	1/4	4	2	2/4	8
Loader Operators/Miners	1	1/4	4	2	2/4	8
Contract Truck Drivers	3	3/4	12	6	6/4	24
General Miners	-	-	-	2	2/4	8
Shift Mechanic	1	1/4	4	2	2/4	8
Electrician	1	1/4	4	1	1/4	4
PM Mechanics	2	2/4	8	2	2/4	8
Surface Equipment Operators	1	1/4	4	2	2/4	8
Longhole Underground Drillers						

Type of Worker	Phase 1—Underground Development			Phase 2—Underground Mine Production		
	Day Shift	Rotating Crews (per shift/total)	Total Workers	Day Shift	Rotating Crews (per shift/total)	Total Workers
Drillers	2	-	2	2	-	2
Driller Helpers	2	-	2	2	-	2
Total Personnel						
Total	**25**	**11/4**	**58**	**42**	**22/4**	**108**
Note: There will be four rotating crews to allow for two shifts per day, 7 days per week operation.						

2.1.8 Equipment

The primary pieces of mobile equipment expected to be used on the project are provided in Table 2-3. This equipment list may be modified during the project depending on site-specific conditions and needs.

Table 2-3 Mobile Equipment List

Underground	Surface
Loader—6 cubic yards	Backhoe
Trucks—15–20 ton capacity	Dozer*
Drill Jumbos	Motor Grader*
Grader	Forklift
Personnel Tractor	Front End Loader (7–8 cubic yards)
Rock Bolter	Water Truck*
Jackleg Drills (hand-held pneumatic drill)	Supply Truck (flatbed Truck)
Longhole Drills	Light Vehicles (pickups)
Portable Substations	*These vehicles will be contracted and used on an as-needed basis
Forklift	
Flatbed Truck	
Lube Truck	
Powder Truck	

2.2 Phase 2—Underground Mine Production

In accordance with NMAC Section 19.10.6.602 D(15)(a)(ii), underground production for the La Jara Mesa mine would involve an underground room and pillar mining method. Targeted ore production is expected to average approximately 500 tons per day. Actual ore production will vary depending on the grade and geometry of the deposit. The average height of the mined volumes may reach approximately 10 feet.

Mining methods that follow the sequence of “drill, blast, muck, and support would be implemented. Ore would be transported to the surface in trucks and placed on the clay-lined pad. Mined-out areas would be backfilled with waste rock (uneconomic) material to minimize the amount of waste rock hauled to the surface.

Throughout the production process, development drifts would be constructed beneath the ore zones with ramps driven upwards from these drifts to access the ore zones. This allows for the systematic extraction of ore in a logical sequence, backfill of these mined-out areas with waste rock, and sealing of the mined-out areas from the main flow of ventilation, which provides targeted ventilation to active areas.

2.3 Project Schedule and Disturbance

Laramide would initiate construction of the surface facilities as soon as feasible after receiving the necessary permits and approvals. The proposed progression of surface development is provided below and depicted in Figure 2-5 through Figure 2-8.

2.3.1 Surface Development Phase 1

- Implement stormwater management controls for construction:
    - Install silt fences, fiber rolls, or sediment basins at the perimeter of the disturbed area and along the access road to capture sediment before it leaves the site
    - Implement stabilized entrances at access points to reduce sediment tracking off-site
    - Construct temporary ditches or berms to divert clean runoff around the disturbed area and access road, minimizing contact with exposed soils
- Recover growth-medium material from development areas and build a growth-medium stockpile
- Construct a pad at 7275 feet (msl) of cut material and waste rock at the portal site of the inclines
- Planned disturbance of 7.3 acres
- Begin and proceed with driving the inclines towards the ore bodies
- Begin the upgrade of the access road from highway 605 to the site entrance (12-foot [minimum] to 18-foot [maximum running] surface [Table 2-4])

Table 2-4 Maximum Disturbance Quantities for Portal Access Road

Component	Width (ft)	Max Disturbed Width (ft)	Disturbed Area (acres)
Road Surface	12–18	18	12.44
Shoulder (each side)	4	8	2.76
Drainage (each side)	8	16	5.53
Total Road Width	24–30	60	20.73

-
    - The access road will begin upgrades during the first stage of mine development. It will provide primary mine access from Highway 605 to the La Jara Mesa mine site, following the planned centerline shown on the plan and profile sheets from station 0+00 to approximately 304+83 (approximately 5.8 miles). Final design of this access road will provide sufficient capacity to convey planned mine traffic from the mine portal to the existing public right-of-way at Highway 605. The upgrade will remain within the planned

property limits along the route and will accommodate all drainage and floodplain considerations identified during the final hydraulic and hydrology modeling. Intermediate access road plan and profile is detailed in design sheets C400 to C408 (Appendix A)

- Culvert sizes, inverts, and locations are preliminary and shall be finalized upon completion of detailed hydrologic modeling, hydraulic capacity checks, and roadside drainage design.
- Roadway vertical profile and side-slope grading at watercourse crossings are preliminary; final grades are subject to adjustment following detailed backwater analysis and floodplain delineation.
- During road construction, erosion and sediment controls will be installed concurrently with earthwork to limit off-site sedimentation until final surfacing and reclamation of disturbed margins are completed.
    - Install silt fences or sediment basins at road cut and fill slopes, especially where runoff can collect or flow off-site.
    - Conduct inspections weekly and after any significant storm event to ensure controls are functioning and sediment is removed as needed.

2.3.2 Surface Development Phase 2

- Extend 7,275 feet of waste rock stockpile to the south using development waste rock
- Planned disturbance of 9.3 acres (2.0 acres additional from Phase 1)
- Continue to build growth medium stockpile
- Expand best management practice (BMP) installation to encompass all new disturbances

2.3.3 Surface Development Phase 3

- Construct a lower pad at 7,225 feet elevation, to the southeast of the main 7,275-foot pad
- Planned total disturbance of 12.1 acres (additional 2.8 acres from Phase 2)
- Build a second on site access road (12- to 18-feet-wide running surface) on the east side of the facilities
- Expand BMP installation to encompass all new disturbances—this will accommodate runoff from the entire developed site at this phase

2.3.4 Surface Development Phase 4

- Continue to build the 7,275-foot portal pad with development waste rock (waste rock dump reaches 266,740 cubic yards)
- Planned total disturbance of 19 acres (additional 6.9 acres from Phase 3)
- Continue to salvage and develop growth medium (growth medium stockpile reaches 54,690 cubic yards)

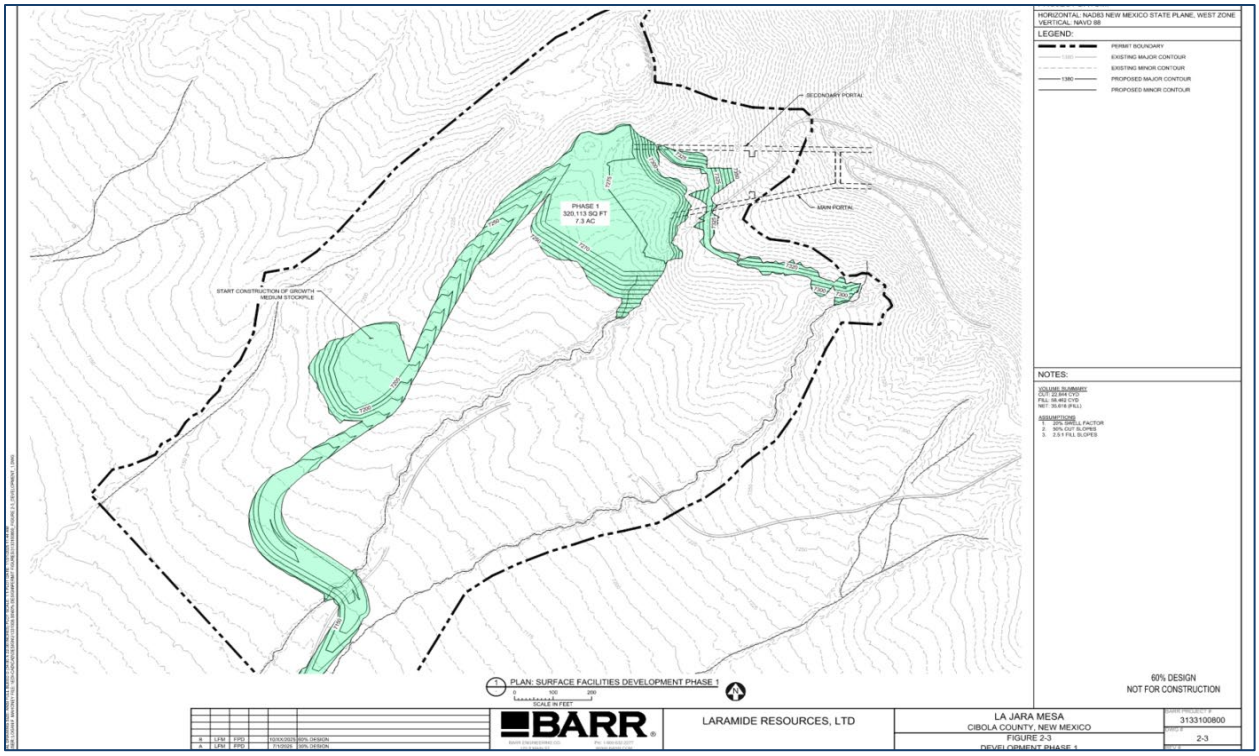


Figure 2-5 Preliminary Site Development Plan, Phase 1

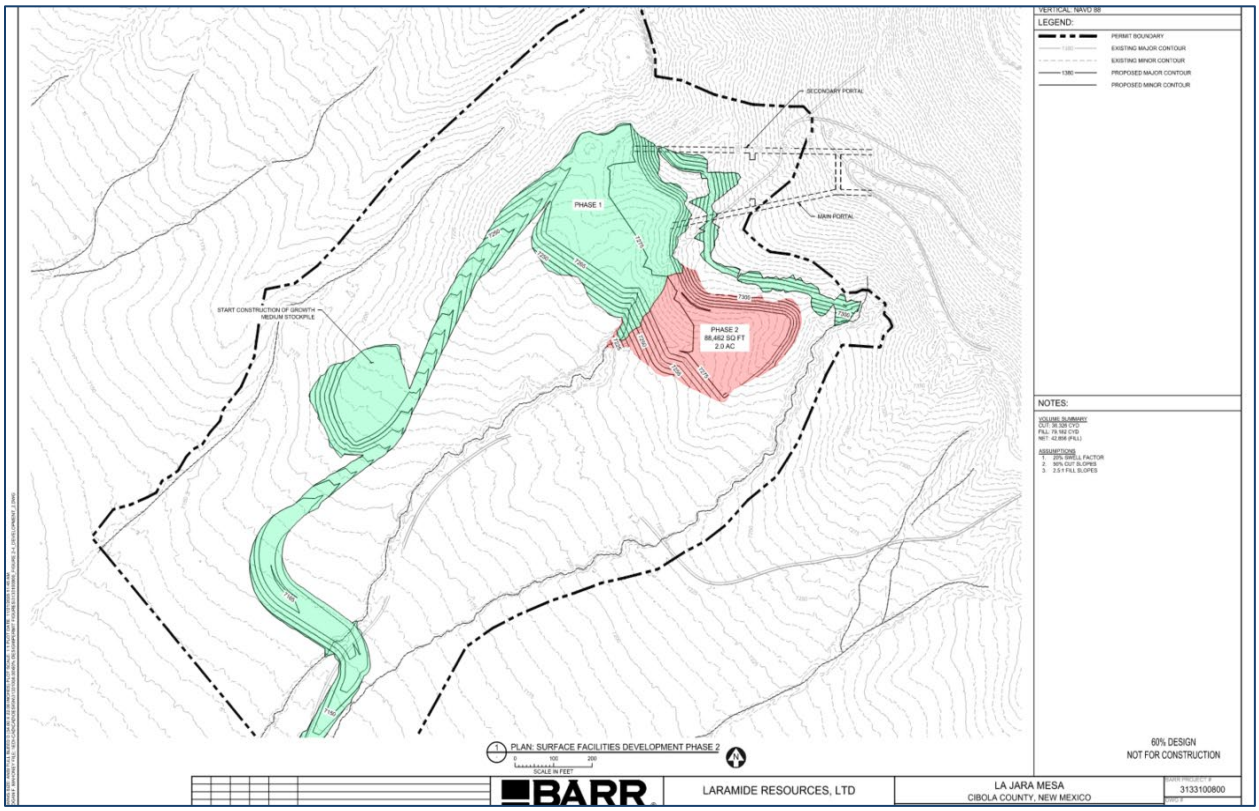


Figure 2-6 Preliminary Site Development Plan, Phase 2

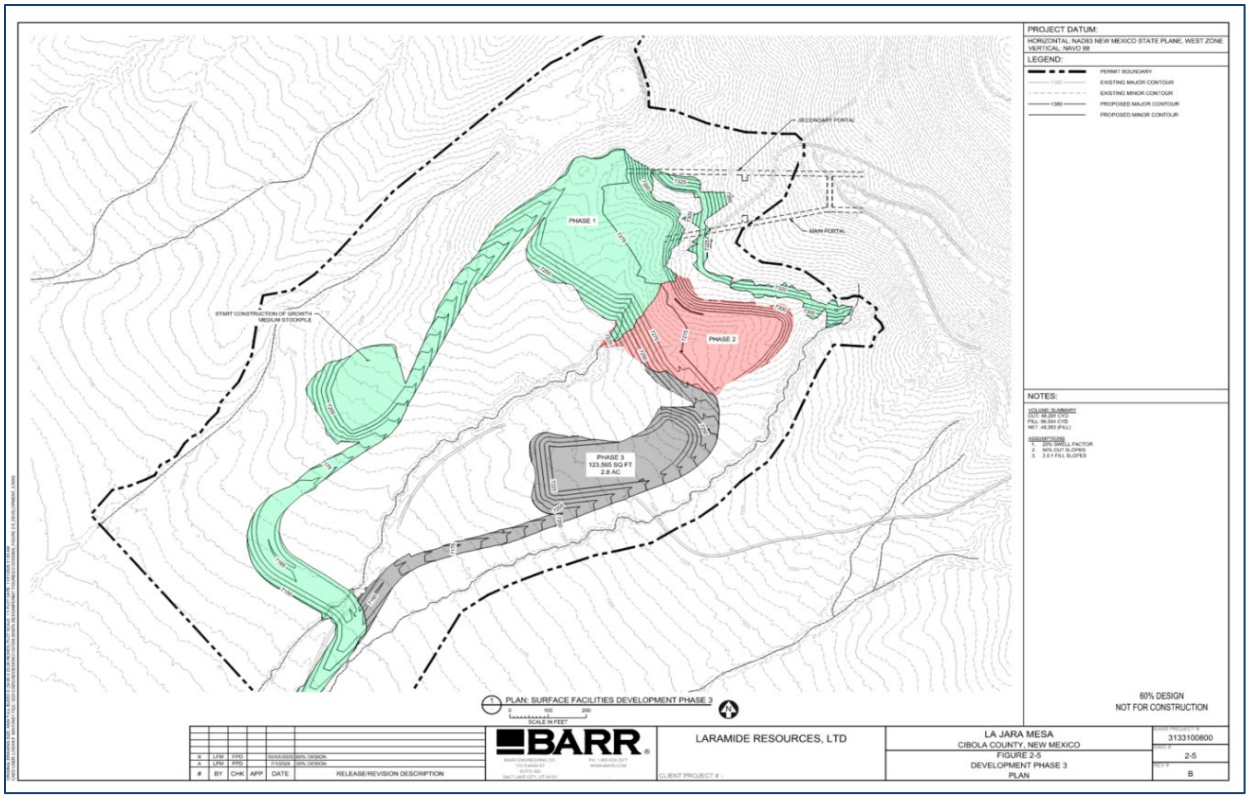


Figure 2-7 Preliminary Site Development Plan, Phase 3

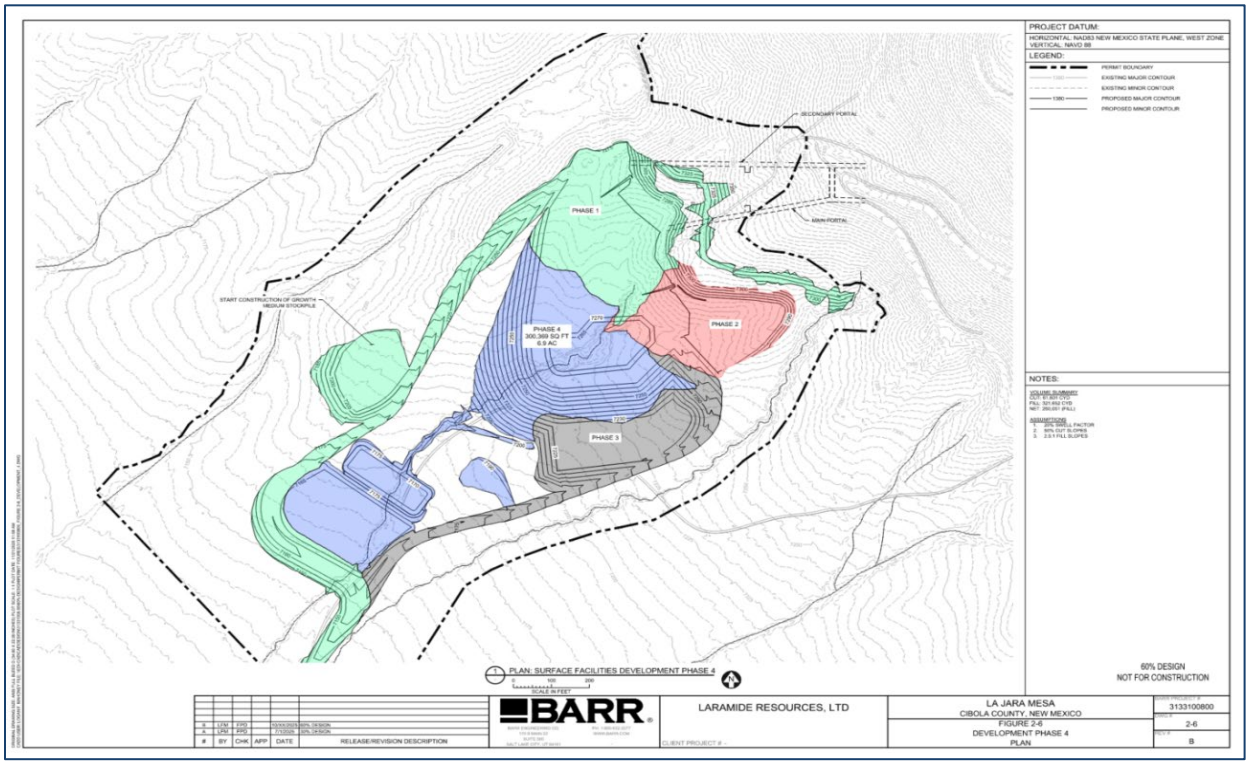


Figure 2-8 Preliminary Site Development Plan, Phase 4

The surface area disturbances expected for specific facilities are provided in Table 2-5.

Table 2-5 Surface Area of Disturbance

Facility	Area (acres)
Portal Area (ventilation fan and compressor)[1,2]	0.8
Safety/Shifter Trailer with Parking	0.4
Shop Facility with Laydown Storage	3.1
Fuel Storage Area	0.4
Office and Dry Trailers with Parking	2.7
Waste Rock Dump[3]	7.9
Explosives Storage Area	0.5
Sewage Treatment (septic tank with leach field)	0.12
Stormwater Control Structures (diversion ditch and basin)	4.1
Growth Medium Material Stockpile	1
Escape Raise Surface Area[4]	0.1
Mine Access Road	20.7
Total (Mine area only)	**21.1**
Total (Mine and access road)	**41.8**
Notes:	
1) The portal area will be accessed by approximately 5.7 miles of existing roads (3.7 miles on private property, 2 miles on Forest Road 450, and 0.5 miles on an unnumbered forest road).	
2) Electric services will be brought to the portal area via a 2.5-mile powerline that will parallel the site access road.	
3) The pad created by waste rock will be used to store the mineralized material ("ore") prior to off-site shipment.	
4) The escape raise surface area will be accessed by Forest Road 544. Laramide does not plan any upgrades to this road.	
5) Mine access road design is ongoing. The maximum disturbance area for new development is listed. The disturbance area includes a 5.7-mile access road with an 18-foot-wide running surface, a 2-foot-wide shoulder, and a 4-foot-wide drainage corridor on either side. Extended x2 to account for pre-design uncertainties.	

Overall activities at the site may extend for 20 years. This would include underground development work of up to 2 years, followed by mine operations for an additional 6 to 18 years, depending on the reserves delineated during development work and the actual mining rates achieved during operations. Development of the mine access road would occur concurrently with the first phase of surface facility development. Upon permanent end of mining operations, the portals and escape raise would be closed and sealed, and the entire site surface reclaimed. Reclamation activities, such as regrading and reseeding, are expected to require approximately 3 months to complete (further reclamation details are provided in Section 2.8).

Over the life of the project, surface disturbance would be limited to the extent necessary to construct surface development of the mine, improve access and haul roads, construct the escape raise, and make improvements to bring water and power to the site, within the 96-acre permit area.

2.4 Mine Facilities

As required by NMAC Section 19.10.6.602 D (15)(c)(i-xiii) regulations, this section describes and provides information on the proposed support services and infrastructure that the La Jara Mesa Project will require. Surface facilities are shown in Figure 2-2.

2.4.1 Leach Pads, Heaps, Ore Dumps, and Stockpile

No uranium processing is proposed at the mine site. No leach pads or heaps would be needed.

Mineralized uranium material (bulk samples) removed during underground development work would be stockpiled on a flattened, clay-lined surface next to the portal, then loaded onto highway trucks for transport to off-site mills. The stockpile would have the capacity to store 10,000 to 15,000 tons of uranium mineralized material with maneuvering and loading room for a front-end loader and transport trucks. As the operation transitions into mining, the stockpile area will be expanded to accommodate a storage capacity of 20,000 to 25,000 tons (17,000 cubic yards) of ore material. Trucks hauling ore would be weighed upon entry to the site and after being loaded. A truck scale will be located adjacent to the ore pile and the contact water pond.

2.4.2 Impoundments and Stormwater Control

Laramide proposes to install and maintain stormwater controls and ponds for the La Jara Mesa Project (Appendix A). These would include diversion ditches, culverts, and stormwater collection basins. Diversions would be constructed to divert potential run-on stormwater from the surrounding landscape upgradient of the mine. Runoff from the disturbed surface facilities area and the waste rock stockpile would be directed toward a 4.9-acre-feet, 2-stage contact stormwater basin at the downgradient end of the mine property. The upper portion of this pond (1.5 acre-feet) would be lined to maximize water retention for operational use, and the lower portion of the pond (3.4 acre-feet) would be sized to manage large storm events and control downstream release. Water in the upper pond would be used for operations and dust control in non-mining areas. Water in the lower pond would be allowed to evaporate, percolate into the ground, or be used in site dust control (Figure 2-2 or C-102 in the design set). To appropriately design and size these controls, precipitation records and models were evaluated using a hydrologic model.

Due to the incomplete local precipitation record, synthetic precipitation events were developed using frequency analysis of historical data and NOAA Atlas 14 estimates to define total storm depths for selected return periods and durations. These depths were then converted into design hyetographs using standard temporal storm distributions. The synthetic storms were applied in an event-based hydrologic model of the La Jara Mesa watershed, which incorporates topography, soils, and land cover to simulate runoff generation and routing. The resulting model outputs provide synthetic flow hydrographs and associated flow volumes at key locations within the watershed for the specified design events, which are used in the mine operations planning and design.

Following the conservative event-based assessment, the project team developed a 1-year precipitation versus evaporation hydrologic and hydraulic (H&H) model to further refine pond performance and storage requirements for the ore stockpile scenario. This model assumed access to a long-term (greater than 30-year) climatic record of precipitation and evaporation. Using this record, the analysis simulated a range of conditions, including selected wet-winter and wet-monsoon combinations, as well as average and low-

evaporation years. The intent was to evaluate the frequency and severity of potential no-discharge or near-capacity conditions under realistic climate variability and synthetic event sequences.

2.4.2.1 Contact Water (Process) Pond

All contact water generated on the main operations bench would be contained in the lined contact water process pond. An underdrain will be installed below the ore storage area to convey runoff in a closed pipe leading to the adjacent process water pond. In accordance with requirements in NMAC 19.10.60.603 C(4)(*a&b*) and 19.10.6.603 C (6), to control stormwater drainage in the ore stockpile area, Laramide would "incise" the clay or high-density polyethylene (HDPE) lined ore stockpile area into the waste rock dump stockpile. This will allow the area to "drain into itself" with an outlet where stormwater will be routed to the clay-lined process water pond area (still on top of the waste rock stockpile). Given the activity associated with the waste rock and ore stockpiles (placement and removal of materials with heavy equipment), the use of a synthetic liner (i.e., HDPE) could result in ripping or tearing of the liner, impairing its purpose.

This contact water pond on the upper bench has been designed to accommodate the contact water runoff generated in the ore stockpile catchment under conservative, multi-day design storms, specifically a 7.5-inch, 100-year, 45-day event and an 8.1-inch, 200-year, 45-day event. The pond design originally considered a nominal operating depth of 4 feet, and the plan area was sufficient to fully contain runoff from the ore stockpile area for a 10-inch design storm while maintaining appropriate freeboard. The final design grading of the process pond allows for a maximum storage capacity of 140,558 cubic feet (3.23 acre-feet) with the nominal freeboard of 2 feet. This is more than sufficient to contain the expected generated runoff volume of 88,766 cubic feet (1.8 acre-feet). Additional pond sizing calculations are provided in Appendix B.

Evaporation was explicitly incorporated into the design basis by applying seasonal pan evaporation rates over the pond surface area during the non-monsoon period (approximately September through May) and combining this with a continuous process water withdrawal of about 10 gallons per minute for underground operations. Using this approach, the annual precipitation and evaporation water balance demonstrates that the process pond can store up to 1 year of stormwater inflows from the ore stockpile under the conservative storm sequence assumptions and be drawn down by operational reuse prior to the onset of the subsequent monsoon season. Runoff into this process pond will only be allowed to evaporate or will be returned underground for use in operations and dust control.

2.4.2.2 Two-Stage Stormwater Contact Pond

The US Environmental Protection Agency (USEPA) is the permitting authority for National Pollutant Discharge Elimination System (NPDES) Stormwater Pollution Prevention Plans (SWPPP) in New Mexico until state primacy and state-mandated permitting is implemented in 2027. The current regulations governing a SWPPP at the La Jara Mesa Project site are found at 40 CFR 122.26 (b) (14) (i) – (xi), under Multi-Sector General Permit (MSGP–2000).

The MSGP stormwater pond was sized similarly to the process pond, considering successive monsoon and wet seasons. This pond has a total design capacity of 209,000 cubic feet (4.8 acre-feet) and will be used for both dust control and additional percolation from the unlined portion to discharge expected volumes from successive storms. The two-stage configuration allows operational water storage to be maintained in the upper, lined portion, while providing maximum storm containment in the lower, unlined portion.

The spillway pipe from this pond is sized to pass the 25-year, 24-hour storm flow. The design condition for this discharge assumes that the stormwater pond has already reached capacity from the 100-year, 24-hour storm and will discharge the 25-year storm under controlled release.

Barr Engineering Co. (Barr) prepared a draft SWPPP in accordance with the EPA requirements for stormwater control design parameters and best management practices for the La Jara Mesa Mine.

It is expected that the basic design storm event frequency parameters for the various components would be as follows:

- Stormwater Ponds Volume: 100-year/24-hour (2.66 inches of precipitation)
- Emergency Spillway Peak Flow: 100-year/24-hour
- Internal Ditches Peak Flow: 25-year/6-hour (1.76 inches of precipitation)
- Diversion Ditches Peak Flow: 100-year/6-hour (2.24 inches of precipitation)
- Culverts Peak Flow: 100-year/24-hour or 10-year/24-hour (1.8 inches of precipitation) with a 24-inch-diameter culvert as a minimum size
- Construction Sediment Basins Volume: 2-year/24-hour storm, or 3,600 cubic feet for per acre of drainage

Stormwater control measures used to achieve the effluent limits would be maintained in effective operating condition. This would be achieved by performing routine inspections and preventive maintenance of stormwater drainage systems, source controls, treatment systems, and plant equipment and systems that could fail, resulting in discharges of pollutants via stormwater.

When control measures need routine maintenance, efforts to correct the problem are initiated immediately. If stormwater control fails, reasonable measures would be implemented immediately to prevent or minimize the discharge of pollutants until repairs are complete. This includes cleaning up any contaminated surfaces to prevent the material from being discharged during subsequent storm events. Final repairs/replacement of stormwater controls will be completed in accordance with the best management practices outlined within the SWPPP.

2.4.3 Disposal Systems

Laramide plans to dispose of sewage and solid waste throughout the life of the mine.

2.4.3.1 Sewage Disposal

Sewage waste will be disposed of via a septic tank and leach field system. The waste disposal system would be connected to the project facility trailers or buildings.

Cibola County requires a permit to install a septic system. Laramide will hire a New Mexico-licensed

engineer to conduct percolation tests at the site and prepare a septic system design that meets county and state permit standards.

During initial construction and underground development work, sanitary waste would be collected in a system of portable chemical toilets, periodically cleaned and emptied, and transported off-site for disposal by a contractor.

2.4.3.2 Solid Waste Disposal

Trash and garbage would be contained on-site in bins and hauled off-site for disposal at an approved landfill. Any petroleum waste products would be stored in approved containers on-site, separate from other waste, and transported off-site for recycling or disposal at an approved facility.

2.4.4 Pits

No surface mine pits are proposed.

2.4.5 Tailings Disposal Facilities

No uranium processing would occur at the La Jara Mesa Project site as part of planned development and mining activities. As such, there will be no tailings disposal facilities at the La Jara Mesa Project.

2.4.6 Mills

Ore mined from the underground workings at the La Jara Mesa Project site would be transported to an off-site mill for processing.

2.4.7 Water Use and Management

Water use and management will be important for the project. Because no groundwater is expected to be encountered during underground development and operations, Laramide would obtain water for the following:

- Underground Operations
- Change Facility (Dry), Shop and Office Facilities
- Surface Dust Control

Water for the project would be purchased. Multiple sources may be identified to provide a sufficient supply. Storage tanks may be used to store and collect water. They would be sized appropriately depending on the selected source. Stored water may be used for road dust control, while the other tanks would store water for underground drilling and dust suppression, sinks, showers, and lavatories in the surface facilities. Anticipated water needs are detailed in Table 2-6.

Table 2-6 Projected Water Use Estimates

Activity/Facility	Estimated Use[1] Development Activities (gal/min)	Estimated Use*[1] Mine Production Operations (gal/min)
Underground Operation (development and drilling)	5.2	10.2
Surface Facilities—Dry and Office Trailers (sinks, showers, and lavatory facilities)	2.3	7.3
Surface Dust Control (seasonal basis)	15.4	15.4
Access Road Dust Control (seasonal basis)	12	23
Contingency (approximately 10%)	3.4	5.5
Total	**38.3**	**61.4**
Notes:		
1) Usage projections are best estimates using available knowledge. Operational experience will result in usage modification and optimization.		
2) Underground usage mainly for dust control, removal of drill cuttings, and cooling the drill bits.		
3) A use rate of 100 gallons of water per person per day; it is assumed that 25 employees will be at the project site daily during development. During operations, it is assumed that up to 100 people could be at the project site daily.		
4) Assume a 3,000-gallon capacity water truck, applying full water load each hour for 5–8 hours per day during dry periods of the year.		
5) Access road dust suppression is calculated as 0.06 gallons/ft^2/day during dry periods. A binder, MgCl, or other approved material would be applied annually to minimize maintenance and reduce water use for dust control.		

Underground operations and drilling would require water for dust control, removal of drill cuttings, and cooling of drill bits. Water would also be necessary for showers and sanitary use in the change facility (dry). A small amount of water would be needed for the office and shop facilities.

A standard filtration system, such as a “Greensand Filter,” would be installed at the site. Water may not be acceptable for drinking purposes, although it is expected to be suitable for showers and washing. In this case, “Do Not Drink the Water” signs would be posted at the temporary dry facilities, and bottled drinking water would be provided.

During drier seasons of the year, water may be used to control surface dust, primarily on access and haul roads. Laramide may also use a water solution with magnesium chloride (MgCl) or synthetic dust control palliatives to suppress dust from access and haul roads (with approval from CNF and the state). Application rates for dust control palliatives vary, but generally, in dryer climates such as on La Jara Mesa, two to three applications may be made per year. Such applications are made from a water truck that sprays the roadways.

Water would be used to suppress wind-blown dust from mineralized run-of-mine ore temporarily placed on the pad adjacent to the portal to await loading for transport, as necessary. Given seasonal variations and day-to-day fluctuations at the various La Jara Mesa facilities, a 10 percent contingency has been used.

2.4.8 Storage Areas for Equipment, Vehicles, and Chemicals

2.4.8.1 Employee and Visitor Parking

During development work, parking may be provided for 20 to 25 vehicles expected to transport workers to the site. As the project transitions from development to mining operations, additional parking may be added; however, workers may be transported to the site in buses to reduce dust associated with multiple vehicles. Parking would be adjacent to the administration and shifter offices.

2.4.8.2 Maintenance Shop with Equipment Parking and Storage Area

As underground and surface equipment would likely require periodic maintenance, a shop structure is planned on-site. This may be a prefabricated structure placed on a concrete pad. Sufficient space surrounding the structure would be left for equipment parking and supply storage.

2.4.8.3 Fuel Storage

If applicable, Laramide proposes the use of above-ground tanks for storing gasoline, diesel fuel, and propane. The liquid fuel storage tanks will be double-walled or placed in lined containment. The estimated volumes of gasoline, diesel fuel, and propane to be stored at the La Jara Mesa Project will be as follows:

- Gasoline—500 gallons
- Diesel Fuel—10,000 to 20,000 gallons
- Propane—2,000 to 3,000 gallons

Diesel fuel would be delivered periodically, as mobile underground mining and surface support equipment are expected to use diesel fuel. Diesel storage tanks would be situated on a synthetically lined (40–60 mil HDPE) floor surrounded by a compacted soil containment berm designed to contain 110% of the volume of the largest tank. Piping would extend from tanks to an adjacent fueling station.

A small diesel storage tank (50–100 gallons) would be located at the Escape Raise to provide fuel for the generator powering the emergency hoist. Appropriate spill containment, similar to that provided for surface portal diesel storage tanks, would be provided for this small storage tank at the escape raise site.

A gasoline storage tank at the portal site would have full containment similar to the diesel storage tanks. Gasoline is expected to power certain mobile (primarily non-highway licensed) vehicles used solely at the operation site. Company and contractor pickup and delivery vehicles would be fueled off-site at commercial locations. Gasoline use would be limited to on-site equipment, unless emergency use for company or contractor vehicles was required.

Propane would be used to provide heat and hot water for the site's facilities, including change-house trailers.

The gasoline, diesel fuel, and propane tanks at the portal site would be located near the maintenance shop. Laramide expects to contract with local or regional suppliers to deliver the required fuel.

2.4.8.4 Explosives Storage

Explosives would be used in the underground mining process. Surface explosives magazines would be

located at a separate, remote, and fenced (locked) site away from the main surface facility, but within the permit area boundary. Explosive magazines would be sized and designed to meet the requirements of Title 27 CFR 181, Subpart J, Storage of Explosives. Explosives used underground will be managed and used in accordance with MSHA regulations by trained and certified personnel. MSHA regulates underground explosives storage, transport, and use in 30 CFR, Part 57, Safety and Health Standards—Underground Metal and Nonmetal Mines, Subpart E, Explosives. Explosives would be transported to the site by contractors approved by the U.S. Department of Transportation in vehicles clearly marked to identify them as containing explosives.

2.4.8.5 Materials and Supplies

During mine operations, Laramide expects to use a variety of operational materials, chiefly consisting of fuel and explosives. These and other items, along with estimated consumption rates, handling, and quantities, are provided in Table 2-7.

Table 2-7 Materials and Supplies

Material/Supply	Approximate Daily Use	Approximate Monthly Use	Delivered Form	Maximum Amount Stored	Storage method
Diesel Fuel	500–1,000 gallons	15–25,000 gallons	Liquid	10–20,000 gallons	Tanks
Gasoline	20–30 gallons	600 gallons	Liquid	500 gallons	Tanks
Propane	100-200 gallons	3–5,000 gallons	Gas	2–3,000 gallons	Tanks
Oil/Lubricants	20–50 gallons	500–1,500 gallons	Liquid	1,000 gallons	Sealed Drums
Antifreeze	2–5 gallons (variable)	50–100 gallons	Liquid	100 gallons	Individual Containers
Solvents	2–5 gallons (variable)	50–100 gallons	Liquid	100 gallons	Individual Containers
Explosives (Emulsion Product)	500 pounds	15,000 pounds	Solid	15,000 pounds	Locked Magazines
Explosives (Blasting Detonators)	100–150	3,000–4,500	Solid	5,000 each	Locked Magazines

- Diesel Fuel—Tanker trucks would deliver diesel fuel to the site, where it would be transferred to aboveground storage tanks in secondary containment. Most mobile underground and surface equipment would be powered by diesel fuel.
- Gasoline—Tanker trucks would deliver gasoline to the site, where it would be transferred to aboveground storage tanks in secondary containment. Certain mobile equipment would use gasoline.
- Propane—Propane would be delivered directly by a vendor and stored in certified tanks near the surface facilities. Propane will be used to heat water for use in the showers at the change facilities (dry).

- Oils/Lubricants—Oils and lubricants would be required for equipment maintenance. These products would be delivered by a vendor and stored in approved containers within or directly adjacent to the temporary maintenance shop facility and within the contact/process water pond containment area. All used petroleum products and solvents would be collected in approved containers and transported off-site for disposal by qualified vendors.

- Antifreeze—Antifreeze (50/50 premix) would be required for use in the equipment. It would be delivered by a vendor in approved containers stored within or directly adjacent to the temporary maintenance shop facility. Used antifreeze would be collected in approved containers, transported off-site, and disposed of by a qualified vendor.

- Solvents—Various types of solvents needed for parts cleaning in the maintenance shop would be delivered by vendors and stored in approved safety cabinets and storage containers within or directly adjacent to the shop. Laramide would also maintain appropriate spill management plans and notification protocols, and keep spill kits (with sorbent pads) and granular absorbents on site in the event of a solvent spill.

- Explosives—Explosives would be delivered to the site by vendors and stored in secure and approved magazines. Laramide expects to use bagged ANFO (ammonium nitrate and fuel oil) or an emulsion product, along with detonating cord, cast primers, and blasting caps). Transportation, handling, storage, and use of explosives are regulated by the U.S. Department of Transportation, the U.S. Treasury Department's Bureau of Alcohol, Tobacco, and Firearms, and MSHA.

No chemicals subject to SARA (Superfund Amendments and Reauthorization Act) Title III in amounts greater than 10,000 pounds would be used at the La Jara Mesa Project site. No use of hazardous substances, as defined in 40 CFR 355, above threshold planning quantities is proposed.

The project is expected to meet conditions for a "conditionally exempt small quantity generator for hazardous wastes," which is defined as any project generating less than 220 pounds of hazardous wastes per month. The project is expected to generate, on average, less than 100 pounds per month of hazardous waste (used oil, solvents, antifreeze, etc.). These substances would be transported and disposed of by certified vendors. Laramide would maintain Safety Data Sheets (SDSs) for chemicals stored on site.

2.4.9 Topsoil Handling

To meet the requirements in NMAC Sections 19.10.6.602D(15)(c)(xi) and 19.10.6.603 E, growth medium would be removed and stockpiled near areas to be affected by the surface facilities for use and access during reclamation and site closure. Laramide proposes to salvage enough growth medium to replace an average of 12 inches of growth medium over graded areas after the operation is closed. If there is not sufficient volume available to meet this goal, Laramide would attempt to improve the quality of the subsoil by adding mulch and organic matter. Available growth medium materials would be stabilized using BMPs (such as seeding, mulch, organic matter, etc.).

Salvaged growth medium material would be stockpiled either in windrows adjacent to the area where it was removed or placed in growth medium stockpiles. Bulldozers, front-end loaders, and/or scrapers will be used to remove the growth medium material. Stockpiled growth medium, including grubbed woody vegetation, would be protected from wind and water erosion and configured to promote temporary revegetation. Although natural revegetation is expected to occur given the existing seed source in the

material, the stockpiles would be seeded during the first normal planting season following their development.

It may not be prudent to salvage growth medium due to safety and operational constraints in areas with steep slopes or where diversion ditches, fence lines, power pole structures, and other facilities are located. Removal of growth medium from steep areas is not expected due to the limited proposed disturbance, safety considerations, and the general lack of available growth medium.

The depths for growth medium (near-surface and subsurface soil) salvage in the project area range from 0 to 12 inches. Where there are isolated pockets of thicker growth medium material within the area proposed for portal and escape raise facilities, such material would be salvaged to ensure an adequate source of growth medium material for reclamation. For reclamation purposes, it is assumed that there are 12 inches of growth material available for salvage and replacement on the final regraded areas.

Following its replacement, growth medium samples would be analyzed for pH, nitrogen, phosphorus, and potassium to determine fertility and nutrient status, as needed. For present planning purposes, it is assumed that an inorganic fertilizer (12% nitrogen, 15% phosphorus, 14% potassium) would be applied to the reapplied growth medium material. A fertilizer rate of approximately 200 pounds per acre is expected. This application rate may be revised, as appropriate, based on growth medium nutrient sampling and future recommendations from a qualified soil scientist and/or soils laboratory.

2.4.10 Waste Rock Dumps

In development activities and mining operations, waste rock refers to non-mineralized and “valueless” rock that must be removed to gain access to mineralized material. Waste rock is distinct from the uranium mineralized material. During development work, waste rock would be transported to the surface for use in constructing the portal facility pad area. This pad would be used for surface facilities and for temporary storage of bulk samples removed as part of the underground development program. Laramide sized the waste rock stockpile to contain approximately 270,000 cubic yards of material. All rock material and structures built with this material would be managed in accordance with NMAC Section 19.10.6.603 D (1-4).

During mining, certain amounts of waste rock generated during production may be placed or backfilled directly into mined-out areas. With this direct backfilling opportunity, Laramide would limit the amount of waste rock hauled to the surface from the underground workings, reducing transportation time and expense. Due to swell or “bulking” of underground rock when broken by blasting, it would not be possible to completely backfill waste rock into the underground workings. Laramide does not propose to backfill waste rock in the main underground inclines for closure.

New discoveries and market changes can result in the future re-entry of an adit. Backfilling of primary access into a resource zone would be undesirable. At permanent closure, the portals would be sealed, and the area reclaimed.

Following permanent closure, Laramide would regrade the surface waste rock dump to establish 3H:1V final slopes and drainage. The final graded surface facility pad would blend into the surrounding natural land. See Section 2.8, Reclamation Plan, for additional information on planned site closure and reclamation work.

2.4.11 Other Facilities and Structures

2.4.11.1 Site Access

The development of the mine would involve both new road construction and upgrades to existing unimproved roads. All roads would be designed and constructed to meet applicable USFS standards and NMAC 19.10.6.603 C (9) requirements.

No new road construction or upgrades are proposed for Forest Road 544 to access the escape raise collar site. Occasionally, plowing may be needed to allow access for testing. However, no need to construct improvements has been identified.

Currently, access to the surface portal is via Forest Service Road 450. Future access would be from NM 605 via an existing unimproved private surface road, where a gate and signage will restrict public access to the site. This road is about 3.7 miles across property owned by Homestake and Elkins Ranch. It once provided access to the F-33 Mine. The road is currently not maintained but is still used as a two-track by ranchers and others. It would be widened, graded, and possibly surfaced for use as a haul road.

Laramide also proposes to upgrade approximately 2 miles of Forest Road 450, from its junction with the haul road to the turnout to the planned portal. Final access to the surface facility area will be an upgrade of approximately one-half mile of an existing, unnamed USFS two-track.

Road upgrades are expected to involve widening (12- to 18-foot width, depending on location), construction of periodic (line-of-sight) turnouts, placement of appropriate sub-base material and gravel, cattle guards, and new culverts. Laramide would be responsible for ongoing road maintenance, including snow removal, to provide safe and efficient year-round access to the surface portal facilities area.

The road upgrade work would accommodate highway-legal trucks used to haul uranium ore from the site. This road is intended for low-volume mixed traffic, including on-highway trucks. It is not intended for large, off-highway MSHA haul trucks. It would be designed under NMDOT and AASHTO low-volume road criteria rather than mine haul-road width rules and applicable USFS road standards on CNF-managed land. The selected typical section provides a 12- to 18-foot gravel traveled way with 2-foot shoulders and adjacent ditches (approximately 24–30 feet total disturbed width), with additional widening at curves, grades, intersections, and designated pull-outs to allow safe passing and turning movements for loaded trucks and light vehicles. Horizontal and vertical alignment, sight distance, and cross-slope are checked against AASHTO low-volume guidelines for a 25 mph design speed (with lower operating speeds in constrained areas), providing a defensible, practical balance between operational safety, construction cost, and environmental disturbance. It is expected that approximately 12 to 15 truckloads of ore would be hauled from the mine daily, though this would be determined by actual production rates.

Traffic analysis and engineering would be prepared to address New Mexico Department of Transportation (NMDOT) access, turning, and gate requirements at NM 605. As part of permitting, NMDOT may require a site threshold assessment. A driveway access permit would be obtained prior to constructing the haul road improvements in the NMDOT ROW.

2.4.11.2 Administrative Office and Shifter Facilities

Trailers or modular buildings would be used as temporary office space, conference and training space, and break rooms for Laramide employees and contractors. Project administration offices would be housed in a double-wide trailer or a modular building. A separate trailer or building would be available for shifters and safety manager offices. As appropriate during development work, followed by actual mining

operations, other storage trailers or structures would be provided for storing mine safety and rescue equipment, as well as personal protective equipment (PPE). As development transitions to mining operations, there is sufficient space for expanding office facilities if necessary to house additional administrative and management personnel.

2.4.11.3 Dry Facility (Miners' Change Facilities)

Separate trailers or modular buildings would be installed to house change facilities (dry). These would include lockers, lavatories, and showers. As development activities transition to mining operations, Laramide may expand the dry facilities to accommodate additional workforce.

2.4.11.4 Ventilation Facilities

Ventilation is a vital aspect of the health and safety program for underground uranium operations. Laramide will install ventilation fans to ensure proper airflow to workspaces.

The primary ventilation fan would be located at the surface portal facilities. Smaller secondary booster fans may be placed underground to increase ventilation. This may include a booster exhaust fan near the bottom of the escape raise. These secondary fans would assist in directing ventilation to and from working areas.

The air volumes are expected to be sufficient to comply with MSHA ventilation requirements for underground uranium operations. Laramide would also comply with applicable state air quality standards and permit requirements for the site.

2.4.11.5 Power Supply

Initial portal site and underground development work would be powered by portable diesel generators. Such early construction work will require minimal electric power.

Power needed for mine operations would be obtained from a local provider. Above- or below-ground service to the mine would then be constructed. Although electric service would provide primary power to the site, Laramide expects to maintain diesel generators on-site for a backup power source.

2.4.11.6 Compressor Facility

Air compressors would be installed near the portal to supply compressed air for certain underground equipment, such as drills. They would be protected from the weather in a structure enclosed with siding to muffle sound.

2.4.11.7 Communications

Laramide would install telephone and Internet communications to the site using area providers. Underground communications would be provided by phone lines from both the shifter and main administration offices to various points in the underground workings. Phones would be placed at intervals throughout the underground workings in conformance with MSHA standards.

2.4.11.8 Outdoor Lighting

The mine is expected to operate 24 hours a day. For safety reasons, outdoor lighting would be required during hours of darkness. Industry-standard methods for minimizing the impact of artificial light on surrounding areas would be implemented, including lighting only carefully targeted areas, directing light downwards and towards the site, using shrouded light fixtures, limiting light use to when necessary, and

using lights with tuned frequencies to minimize the visual impacts. Lighting would meet applicable night sky standards and minimize light pollution impacts on nocturnal wildlife.

2.4.11.9 First Aid and Safety-Related Facilities

The permit area is near the city of Grants, where hospital and ambulance services are available in the event of medical emergencies. First aid supplies would be in marked containers strategically placed around the site. These kits would be in the office and dry and shifter offices, while other first aid supplies would be located underground.

A training room would be incorporated into the floor plans for the shifter or administrative office. Laramide expects to provide safety training, including MSHA-required new miner training and refresher training, on-site.

2.4.11.10 Security and Fencing

A four-strand barbed wire perimeter fence would be installed around the La Jara Mesa Project surface facilities area. A gate would be installed on the surface facilities access road where it leaves Forest Road 405. It would be locked after normal business hours to prohibit unauthorized entrance. Laramide management, including shift supervisors, would have keys to allow access during non-normal business hours. “No-trespassing” signs would be posted at strategic sites to discourage unauthorized access.

The powder magazines of explosives would be secured in locked containers and stored separately from the main surface portal facilities. The explosive storage area would be enclosed by an 8-foot-high chain-link security fence with angled barbed wire on top and fitted with a locked gate to limit access.

The Escape Raise surface area would be enclosed by an 8-foot-high chain-link security fence with angled barbed wire on top and fitted with a locked gate to provide access for authorized employees. The escape raise would be covered by a grate to allow ventilation but prevent unauthorized access.

2.5 Wildlife Mitigation and Contingency Plan

Because most mining would occur underground with no on-site mill or tailings facility, and no dewatering would occur, impacts to wildlife would primarily be associated with the loss of vegetation and habitat features within the Permit Area during development of surface mine facilities. Indirect impacts would be associated with access road and haul road grading, as well as haul traffic, initial blasting, and construction noise. The USFS is expected to make a determination of *no effect* with regard to federally listed species. State-protected species, migratory bird, and raptor impacts are being evaluated. The implementation of avoidance or mitigation measures may be required. In accordance with NMAC 19.10.6.602 D (13) (d) and 19.10.6.603 C (2), Laramide expects to implement the following wildlife protection measures at a minimum:

- Fencing would be installed around the surface facilities area and escape raise to prevent access by livestock and to limit wildlife access.
- Physical disturbance would be limited to only those areas needed for the surface and access facilities of the La Jara Mesa Project. This would minimize impacts on the surrounding habitat that may be used by wildlife.
- If electric transmission or distribution power poles are needed, they would include electrocution prevention features to protect raptors.

- Employees and contractors would be notified of applicable timing restrictions, avoidance measures, and construction or facilities management requirements associated with wildlife protections.

- Reclamation and re-vegetation would be implemented as soon as practical during operations at the final cessation of mining activities and in accordance with state and USFS reclamation requirements.

- Site clearing and grading would occur outside of the general migratory bird nesting season, or preconstruction surveys would be provided to identify occupied nests on the site for avoidance or permitting. Timing restrictions applicable to raptor nesting may be imposed based on baseline data.

Diesel fuel and gasoline would be stored in accordance with an approved Spill Prevention Control and Countermeasure (SPCC) Plan for the operation as required by federal oil spill prevention regulations (40CFR112). The SPCC plan will include safeguards and timely cleanup measures to prevent direct and indirect impacts to wildlife, vegetation, and watercourses.

2.6 Erosion and Sediment Control Plan

The NMAC19.10.6.603 C (5-10) requires the prevention of unnecessary or undue degradation of lands, both on-site and off-site. Laramide would implement BMPs to minimize or eliminate erosion and subsequent down-drainage sedimentation. This would include maintaining diversion structures and sediment traps to ensure the short- and long-term effectiveness of erosion and sediment control facilities. Laramide plans to implement the following erosion and sediment control measures:

- Vegetation would be removed only from areas directly affected by the La Jara Mesa Project activities. Other areas will not be cleared.

- Growth-medium material removal activities would be scheduled for the dry periods to reduce the potential for erosion and soil losses.

- Cut-and-fill slopes for service and access roads would be designated to prevent erosion. Drainage and diversion ditches with cross drains would be constructed where necessary. Disturbed slopes would be re-vegetated, mulched, or otherwise stabilized to minimize erosion as soon as practicable following construction.

- Road embankment slopes would be graded and re-vegetated to minimize or prevent erosion, as practicable.

- Off-road vehicle travel would be prohibited.

- Drainage impacts would be limited to those necessary to develop the site.

- As part of early site development, diversions would be constructed around affected areas to minimize erosion.

- Stormwater management facilities such as ponds would be graded to pre-mine contours, and arroyos re-established as necessary to drain the reclaimed site.

- Waste rock surfaces are expected to be left rough, and benches would be placed to minimize slope lengths to no longer than 300 feet to help minimize the development of erosion gullies.
- Diversion channels would be designated and constructed for long-term stability.
- Reclamation and re-vegetation would be implemented as soon as practical for long-term stability.

Laramide would install and maintain stormwater facilities at the La Jara Mesa Project site. Drainage from undisturbed areas would be routed around the surface facilities.

2.7 Post Mining Use

The post-project land is expected to be undeveloped rangeland and wildlife use (Section 2.8).

2.8 Reclamation Plan

Laramide considers reclamation to be integral to the La Jara Mesa Project. The purpose of reclamation is to return surface-disturbed areas to a stabilized and productive condition consistent with area land use. Proposed reclamation practices for the site have been developed based on successful methods used for mining operations in New Mexico and the western United States. The practices proposed for the La Jara Mesa Project would meet or exceed the requirements of Sections 69-36-7(H)4, 19.10.6.602 D (15) (g), 19.10.6.603 A, and 19.10.6.603 C.

The current land use in the permit area is primarily undeveloped rangeland. The emphasis of the reclamation plan would be to close and seal mine portals (and the escape raise), remove surface facilities and infrastructure, and establish a vegetative community on the disturbed surface areas to restore the site to the desired post-mine use. This is expected to be rangeland and wildlife use.

Two types of reclamation are scheduled and will be implemented:

- Construction reclamation
- Final reclamation

2.8.1 Construction Reclamation

Construction reclamation refers to reclamation efforts on lands disturbed during the course of site development and will include activities (such as growth medium removal, stockpiling, and stabilization) that are a prelude to final reclamation. Where possible, growth medium would be removed from areas to be affected by the La Jara Mesa Project surface facilities. This material would be stockpiled for final reclamation as described in Section 2.4.9. Stockpiled growth medium material would be protected from wind and water to avoid erosion. During the first normal planting season following development of the growth medium stockpile, the stockpile would be seeded in accordance with approved USFS and MMD seed mixtures (Table 2-8).

Table 2-8 Reclamation Seed Mixture

Species	Pounds of Pure Live Seed Per Acre
Western wheatgrass	8
Prairie June grass	3
Sideoats grama	5
Sand dropseed	1
Arizona fescue	4
TOTAL	**21**
Note: This proposed seed mixture is considered tentative, pending CNF approval	

Stormwater and sediment control structures (such as diversion ditches and sediment traps/detention basins) would be constructed and maintained to minimize the potential for erosion and sediment loading during project operations. Laramide would develop and maintain a stormwater management plan for the La Jara Mesa Project site. Stormwater on the site would be controlled by constructing proper grading, ditching, dugout basins, drop structures in diversion ditches with energy dissipaters, and silt fencing as described in Sections 2.4.2 and 2.6.

Undesirable invasive and noxious weeds can infest disturbed areas, both in the short and long term. Control measures that may be implemented include hand-pulling, hand-digging, and biological control to prevent and restrict the spread of noxious weeds. Certified noxious weed-free mulch and seed mixtures would be used to reclaim disturbed areas and control the spread of weedy species.

2.8.2 Final Reclamation

Final reclamation activities would be implemented once mining ceases. Reclamation would include the mine portals, the escape raise, surface facility areas, and the site access road (the portion not needed for long-term land use purposes). The general reclamation progression would be:

- Decommissioning of facilities
- Removal of structures and facilities
- Portal and escape raise closure
- Recontouring and regrading
- Growth medium replacement
- Fertilizing, mulching, and seeding
- Fence removal

2.8.2.1 Decommissioning of Facilities

Following the permanent closure of the operation, salvageable equipment, instrumentation, and furniture would be removed prior to demolition/removal of structures and facilities.

2.8.2.2 Removal of Structures and Facilities

Unless ongoing beneficial use is determined based on the development and mining work, project site

structures and other facilities will be demolished and/or dismantled and removed from the site at the time of permanent closure. This would include office and maintenance structures, compressor facility, water and fuel storage tanks, the power line, other temporary trailers, and ancillary storage facilities. Salvageable equipment and trailers may be moved to another project, sold, or properly disposed of off-site. Unsalvageable portions of any facilities, such as a concrete pad used at the temporary maintenance shop, would be broken up and buried on site in accordance with solid waste regulations of the New Mexico Environmental Improvement Board (i.e., definition of “clean fill” under Title 20, Environmental Protection, Chapter 9, Solid Waste, Part 2, Solid Waste Management General Requirements). As applicable, the CNF would determine the location and depth of the disposal if it is located on CNF-managed lands.

Laramide does not propose to construct permanent roads that would remain after final closure of the project.

2.8.2.3 Portal and Escape Raise Closure

The project site portals would be closed in accordance with NMAC Section 9.10.6.603 C (1)(a). A concrete, cemented cinder block, or similar constructed bulkhead will be installed inside each portal. Each incline would be backfilled with waste rock material, extending from the portal bulkhead to outside the actual portal. The escape raise would be closed. A reinforced concrete slab would be placed over the borehole on firm bedrock and anchored into solid bedrock. This concrete would be constructed for permanence and to sustain the expected weight of the rock material (4–5 feet) that would cover it. An additional 10 to 15 percent volume of material would likely be placed to allow for future settlement. This rock would then be graded to provide for drainage away from the backfilled opening. Growth material (estimated at 12 inches) will be spread on top of the rock fill, and the site will be seeded with the mixture presented in Table 2-8.

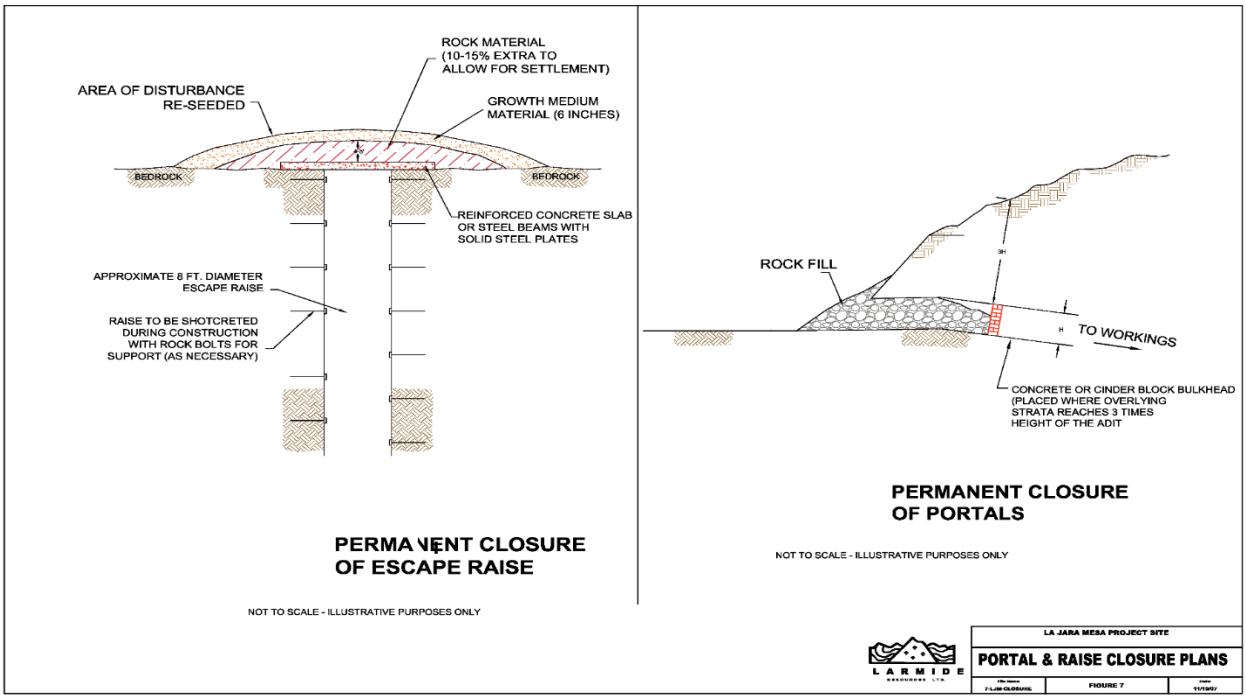


Figure 2-9 Escape Raise Closure

2.8.2.4 Recontouring and Regrading

In accordance with NMAC Sections 19.10.6.603 D (1-5) and 19.10.6.603 F, surface lands disturbed by Laramide would be contoured and graded, as necessary, to blend into the surrounding topography and terrain. Final slopes of the portal pad area would be graded to a slope of 3H:1V or less. Compacted areas such as roads and the top of the portal pad would be ripped, disked, or otherwise left in a roughened condition prior to the replacement of growth medium material.

Waste rock materials removed from the underground operations do not represent any potential for acid rock drainage. This, coupled with the relatively low precipitation in the area and the proposed stormwater diversion design around the waste rock storage area, would minimize the potential for pollutant release. Laramide would restore the areas disturbed by surface facilities to a condition that limits erosion.

2.8.2.5 Growth Medium Replacement

Growth medium material that has been salvaged and stockpiled during site facilities development would be distributed across recontoured and re-graded areas prior to fertilizing, mulching, and seeding.

2.8.2.6 Fertilizing, Mulching, and Seeding

Chemical and physical changes can occur in stockpiled growth medium material. Following replacement, growth medium samples would be analyzed for pH, nitrogen, phosphorus, and potassium to determine their fertility and nutrient status. Approximately one sample per acre will be taken to determine the fertility of the growth medium. For present planning purposes, it is assumed that an inorganic fertilizer (12% nitrogen, 15% phosphorus, 14% potassium) would be applied to the reapplied growth medium. A fertilizer rate of approximately 200 pounds per acre is expected. This would be revised, as appropriate, after the growth medium nutrient sampling and subsequent fertilization recommendations from a qualified soil

scientist and/or soils laboratory.

Straw mulch or other approved stabilizing material would be applied to the growth medium material to reduce erosion, promote stabilization, and enhance seed germination. For present planning purposes, 2 tons of certified weed-free straw mulch per acre is estimated. Regraded areas would be broadcast seeded with the seed mixture in Table 2-8. Fertilizing and seeding would be done prior to the onset of the monsoon season to maximize rainfall potential and increase revegetation success.

Laramide would implement established reclamation requirements pursuant to NMAC 19.10.6.603 G to stabilize the site and establish a self-sustaining vegetative community for the post-mine land use of undeveloped rangeland and wildlife use.

Under 19.10.12.1204 (A), a 12-year period of liability (post closure and reclamation) for a reclamation bond for non-coal mining operations is required in New Mexico. Post-reclamation revegetation monitoring and sampling are required for a minimum of 2 years of the liability period.

Laramide proposes to estimate reclamation costs based on the 1996 MMD Closeout Plan Guidelines in accordance with final closure and reclamation plans. Details required in the final reclamation cost estimate are expected to satisfy the bonding requirements of both the state and USFS.

Reclamation activities and procedures may be revised through the ongoing development and evaluation of the environmental impact statement (EIS) for the project. The USFS is the lead agency responsible for implementing the National Environmental Policy Act (NEPA) for the project. As the mine permitting entity, the state may require revisions.

2.8.2.7 Fence Removal

The chain-link security fencing around the explosives storage area would be dismantled and removed from the site once the explosives and storage magazines are removed. Similarly, the chain-link security fencing around the escape raise would be removed once the raise is closed and reclaimed. The four-strand barbed wire fence installed around the perimeter of the surface portal area would remain in place for 3 years after site closure to encourage successful revegetation. This fencing would exclude livestock and reduce grazing at the site. Unless it has some long-term benefit, this fencing will be removed in the third year after site closure.

2.9 Reclamation Schedule

Final closure and reclamation activities would be conducted as required by 19.10.6.602 D (15) (h) (whether construction or final) and will be timed to take advantage of optimal climatic conditions. Closure will be initiated immediately following the end of ore production and is expected to require approximately 2 to 3 months of concentrated on-site work. During this closure implementation period, all remaining surface facilities would be decommissioned, disturbed areas would be regraded to final contours, and mine openings would be closed or secured in accordance with the approved reclamation plan.

Post-closure reclamation milestones would include completion of final grading, installation of permanent drainage controls, placement of growth media, and seeding of disturbed areas. Seeding would generally be scheduled in May or June to align with the onset of the North American monsoon season, which is a period of favorable soil moisture and climatic conditions for vegetation establishment.

Following the completion of physical closure and revegetation, a post-closure monitoring period would begin

to assess vegetation establishment, drainage performance, overall stability of reclaimed areas, and other metrics. Maintenance or adaptive management actions would be identified for implementation during this period to meet reclamation performance standards.

2.10 Post Mining Topography

Upon final cessation of underground operations, and after facilities and structures are removed, disturbed areas will be contoured and graded, as necessary, to blend into the surrounding topography and terrain, and minimize the erosion of reclaimed areas (Figure 2-10).

2.11 Post Mining Acid or Other Toxic Drainage

In accordance with19.10.6.602 D (15) (j), no description of post-mining acid or other toxic drainage is included, as no toxic drainage is expected from the proposed project. The acid-generating and acid-neutralizing potential of rock samples representative of the waste rock stockpile was measured during the previous baseline data collection . Updated baseline data for the current project proposal is expected in summer 2026.

In previous baseline data collection and testing, most samples demonstrated net acid-neutralizing potential. Testing to simulate metal leaching by precipitation found that, with few exceptions, metals were not leached in amounts that exceeded accepted guidelines. The low concentrations of sulfide, sulfur, and metals and the relative abundance of carbonate in the waste rock, combined with the relatively low precipitation in the area and the proposed stormwater facilities, are expected to reduce or eliminate the potential for release of toxic drainage.

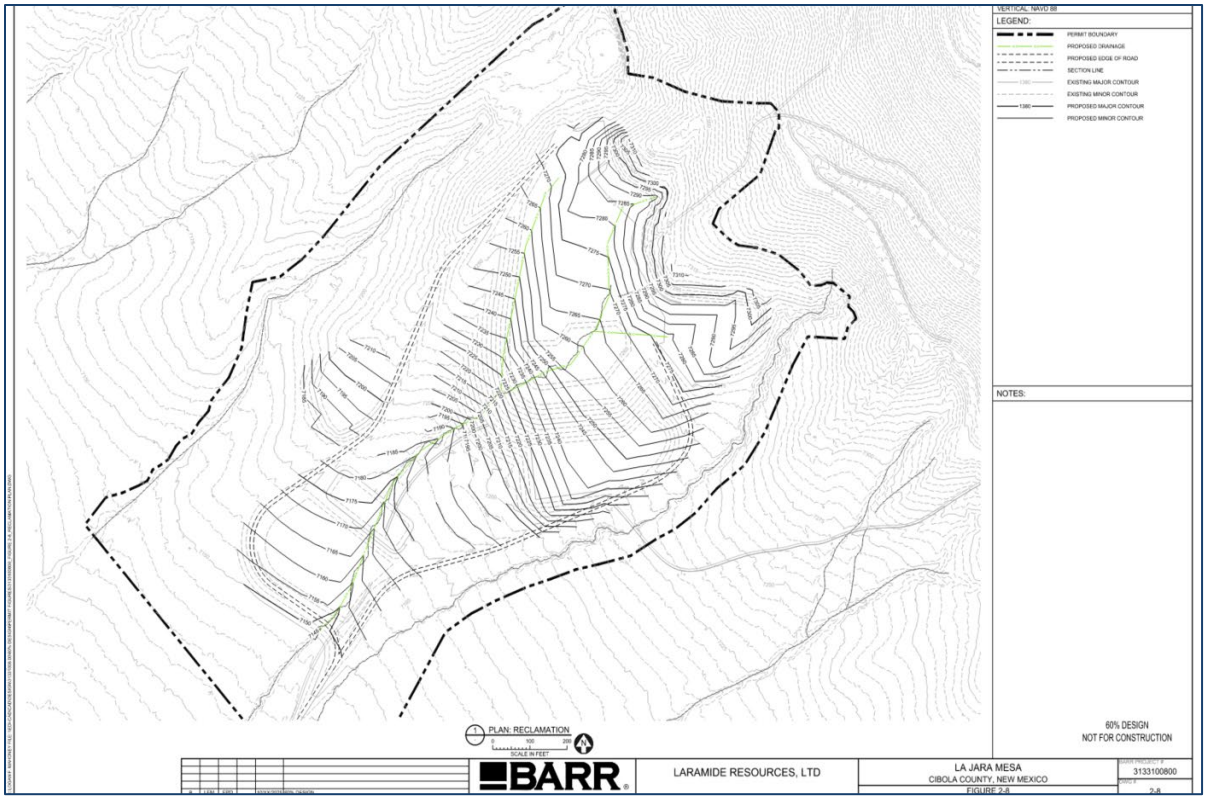


Figure 2-10 Post Mining Contour Map Contemporaneous Reclamation

Section 2.8.1 (Construction Reclamation) details the requirements of NMAC Sections 19.10.6.602 D (k) and 19.10.6.603 B and describes how the La Jara Mesa surface facilities would be constructed and maintained to minimize erosion. Most reclamation activities would occur at final mine closure and will be considered as final (not contemporaneous) reclamation. To the extent practicable, as part of surface facility construction, Laramide will employ reclamation to reduce erosion and the potential for down-drainage sedimentation.

2.12 Geotechnical Inspections and Observations

Prior to site development and construction, Laramide or its facility design representative will develop designs based on geological characterization of site conditions and material types, as well as the planned operational practices described within this document. Where applicable, the design basis, quality assurance, and quality control will be included in the technical specifications that guide facility construction. The site facilities, including excavation and fill placement, will be developed based on the available geological and hydrogeological information. Therefore, the potential for geotechnical risk has been mitigated.

However, throughout facility construction and operation, ongoing inspections and observations will be conducted to evaluate compliance with technical specifications and identify any changes in geotechnical assumptions or conditions. If a variation is identified, Laramide and the applicable engineer of record will evaluate the condition and determine whether there is an impact on design or operation.

The level of investigation does depend on the type of observed geological variation and potential georisk. This may include the following:

- Increasing visual inspection and observation frequency
- Collecting samples for laboratory testing
- Installing appropriate geotechnical and/or hydrology monitoring instrumentation
- Updating the design or design basis analysis
- Modifying the excavation or fill placement geometry
- Implementing other means of mechanical stabilization

3 Additional Information

Laramide will submit additional information, as appropriate and in accordance with 19.10.6.602 D (16), in response to requests from the approving agency.

4 Performance, Reclamation Standards, and Requirements

Laramide has designed its operational and reclamation plans to incorporate appropriate BMPs and technology for an underground mining operation. Reclamation standards, BMPs, and environmental protection measures are proposed in accordance with NMAC Section 19.10.6.602 A.

4.1 Protection Assurance

In accordance with Section 19.10.6.603 C, Laramide would conduct development, conduct mining, and implement reclamation activities to protect human health, the environment, wildlife, and domestic animals.

4.1.1 Signs, Markers, and Safeguarding

Appropriate warning signs and restrictions, as outlined in NMAC Section 19.10.6.603 C.(1)(*b-f*), would be implemented and posted at strategic site locations. Signs would be placed in accordance with MSHA-specific standards and regulations.

Access to the surface facilities, to the powder magazine, and to the collar of the escape raise would be restricted as detailed in Section 2.4.11 (Other Facilities and Structures). In addition to the four-strand barbed wire perimeter fence around the surface facilities, a gate would be installed on the access road to prohibit unauthorized entrance. “No Trespassing” signs would be posted at strategic sites to discourage unauthorized access. The powder magazines of explosives would be in secured containers enclosed by a locked, 8-foot-high chain-link security fence with angled barbed wire on top. A gate would be installed to provide access only for authorized employees. Similarly, the surface area for the escape raise would also be enclosed by an 8-foot-high chain-link security fence with angled barbed wire on top, and a locked gate, allowing access only for authorized employees.

Any permit area outside of fencing would be identified by survey markers rather than posts that wildlife may knock down or break.

A sign with the telephone number to use in the event of an emergency would be posted at the access point from Forest Road 405.

Laramide prioritizes worker safety. The mine would be operated in accordance with MSHA health and safety standards.

4.1.2 Cultural Resources

Cultural resources inventory updates and reporting for the permit area are in progress. They will be completed in accordance with USFS and State of New Mexico regulations. Site testing will be conducted if required. Avoidance or mitigation, including data recovery, may apply to the resources present.

Pursuant to Section 106 of the National Historic Preservation Act, the USFS is leading tribal consultation for the proposed project. This includes ongoing consultation regarding the determination that the proposed project will adversely affect the Mount Taylor Traditional Cultural Property (TCP), which is listed on the National Register of Historic Properties (NRHP). Mitigation measures to address adverse effects will be identified through the consultation process and consensus-building with stakeholders.

- Pursuant to NMAC 19.10.6.603 C (3), Laramide and its contractors would comply with all avoidance and or mitigation measures identified through the inventory, evaluation of significance, and determinations of effects related to cultural resources.

- Laramide expects to become a signatory to and comply with a Memorandum of Understanding to identify and address effects, define roles, and define mitigation responsibilities associated with historic properties such as the Mount Taylor TCP and eligible sites.

- If cultural deposits are unearthed or otherwise encountered during the construction and installation of the surface facilities at the La Jara Mesa Project, such construction activities will cease in the area of discovery. The Forest Service and the New Mexico State Historic Preservation Office (SHPO) will be notified, and appropriate resource protection measures will be developed and implemented.

4.1.3 Hydrologic Balance

Underground mining operations would be limited to geologic formations that are above the regional groundwater aquifer. Operations will not impact aquifers. The proposed mine would impact three ephemeral arroyos in the permit area and disturb a limited area for its surface facilities, minimizing effects to the surface hydrologic balance. Reclamation will restore the pre-mining surface drainage patterns in accordance with NMAC 19.10.6.603 C (4). Refer to Section 2.4.2 for information on drainage and control of suspended solids.

4.1.4 Stream Diversions

There are no intermittent or perennial streams in the Permit Area. The stormwater program described in Section 2.4.2 is designed to restrict suspended solids to levels at or below background levels down-drainage of the site.

Arroyos in the permit area flow only in response to major precipitation events. Information about the surface water hydrology and sampling results for specific analytes will be provided in a Baseline Data Report (BDR).

The design parameters for diversion ditches are provided in Section 2.4.2 (Impoundments and Stormwater Control) in accordance with 19.10.6.603 C(4)(*d*).

4.1.5 Impoundments

Please refer to Section 2.4.2 for design criteria for this basin and a description of other stormwater controls. A stormwater containment basin would be located down-drainage of the portal facilities (see site layout figures and Figure 4-1). Pond sizing and detailed drawings can be found in the 60% drawing design set in Appendix A. Pond sizing information is provided in Appendix B.

Table 4-1 Proposed Stormwater Pond Sizing and Volumes

60% Design Pond Parameters			
Parameters	Process Water Pond (ft)	MSGP Industrial Stormwater Pond	
		Lined	Unlined
Freeboard(ft)	2	1	1
Bottom of Pond Elev(ft)	7164.5	7167	7160.5
Overflow/Max Design Elev (ft)	7269	7172	7164
Top of Embankment Elev(ft)	7271	7175	7165
Overflow/Max Design Volume (cf)	140,558	67,986	174,675
Overflow/Max Design Volume (ac-ft)	3.23	1.56	4.01

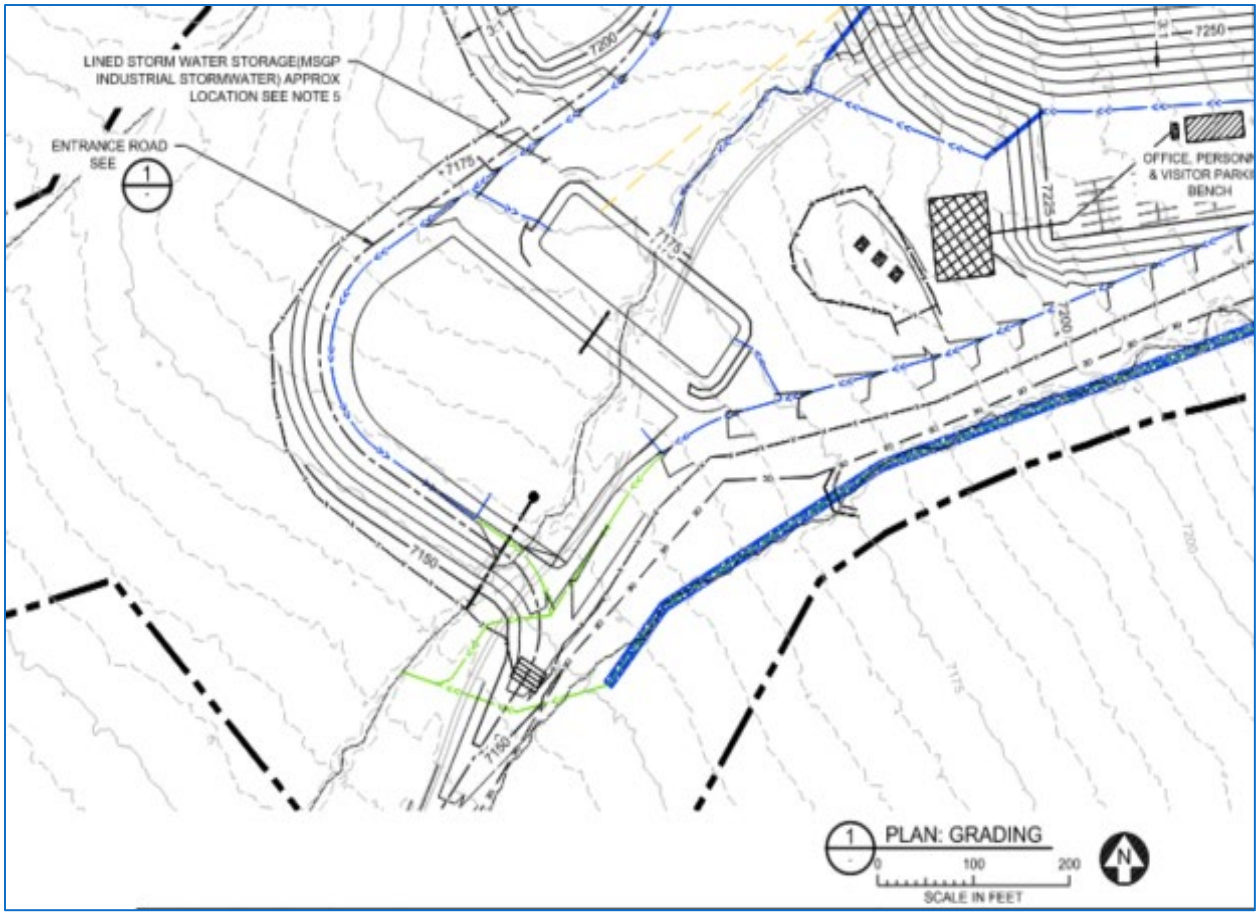


Figure 4-1 Stormwater Detention Pond 60-Percent Design Grading Plan

As part of final reclamation activities, Laramide proposes to remove the stormwater containment basin and restore positive drainage in accordance with 19.10.6.603 C (6)(*b)*.

A waste rock disposal area would be stabilized and maintained, as described in Section 2.6 (Erosion and Sediment Control Plan). As part of final reclamation at the end of mining operations, Laramide would grade the waste rock pile such that final slopes will be 3H:1V or less.

Growth medium stockpiles would be protected from wind and water erosion. Because these stockpiles would remain in place for the duration of the mining, they would be seeded during the first normal planting season following their completion.

4.1.6 Riparian and Wetland Areas

NMAC Section 19.10.6.603 C (8) is not applicable to the La Jara Mesa Project. No riparian areas or wetlands have been identified in the permit area.

4.1.7 Subsidence Control

No surface subsidence is expected at the La Jara Mesa Project given the depth of the deposit and the method of “room and pillar” mining, which would include partial backfill of waste rock material in mined-out areas (NMAC Section 19.10.6.603 C (10)). Most significantly, the average height of the mined volumes

would be approximately 10 feet from sill to back, which is small in comparison to the depth of the mined volumes at greater than 600 feet beneath the surface; therefore, it would not be possible for the collapse of mined-out areas to propagate to and affect the surface of La Jara Mesa.

4.1.8 Aquifer Disruption

No aquifer impacts are expected due to the subsurface geology of the permit area.

4.1.8.1 Mining Beneath Perennial Streams

There would be no mining beneath perennial streams, as none are located in the permit area.

4.1.9 Explosives

In accordance with NMAC 19.10.6.603 (11), Laramide will employ trained and certified personnel who will use and handle explosives for underground operations in accordance with MSHA regulations. MSHA regulates underground explosives storage, transport, and use in 30 CFR, Part 57, Safety and Health Standards—Underground Metal and Nonmetal Mines, Subpart E, Explosives.

The only surface blasting that might be used will involve the “face-up” areas for the two planned portal entries. In this case, Laramide will conduct blasting to minimize “flyrock.”

4.1.10 Non-Point Source Releases

Given the planned safeguards for fuel and other chemical storage at the La Jara Mesa Project, the non-mineralized character of the waste rock stockpile, the absence of mine tailings, and the acid-neutralizing character of the native rocks in the project area, Laramide does not expect any acid or toxic releases either during or following mining operations.

4.1.11 Self-Sustaining Site

Laramide’s goals are for reclaimed sites to be self-sustaining and able to adhere to applicable environmental requirements and standards for post-mining, reclaimed sites in accordance with NMAC Section 19.10.6.603 H.

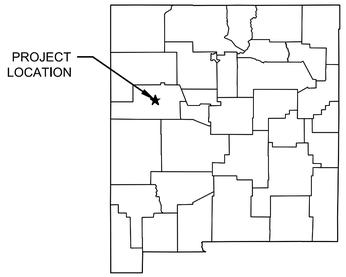
Appendix A

60 Percent Designs

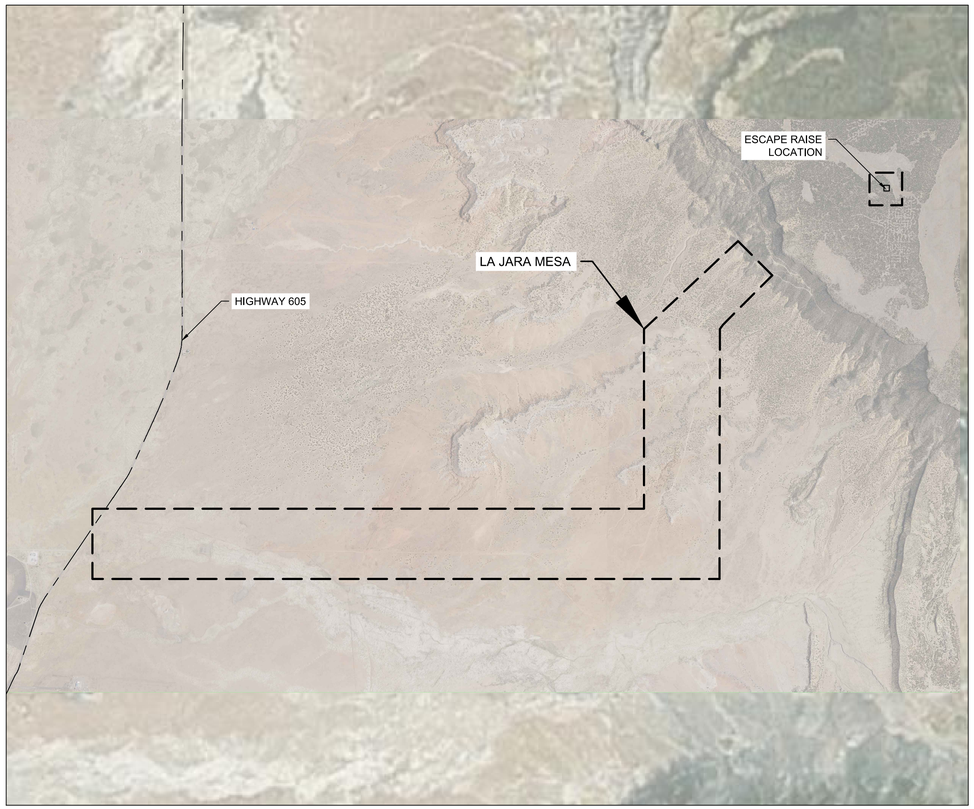
LARAMIDE RESOURCES, LTD

LA JARA MESA

CIBOLA COUNTY, NEW MEXICO



LOCATION MAP
NOT TO SCALE



VICINITY MAP
NOT TO SCALE

SHEET INDEX		
SHEET		TITLE
G100	...	COVER SHEET
G101	...	EXISTING CONDITONS
G102	...	MINE SITE FACILITIES PLAN 1
G103	...	MINE SITE FACILITIES PLAN 2
G104	...	DRAINAGE PLAN
G105	...	SWPPP EROSION CONTROL
C100	...	GRADIN PLAN
C101	...	PROCESS WATER POND PLAN & SECTION
C102	...	MSGP INDUSTRIAL STORMWATER DETENTION POND PLAN & SECTION
C103	...	PROCESS & MSGP INDUSTRIAL STORMWATER POND DETAILS
C-200	...	DRAIANGE DETAILS
C-201	...	DRAINAGE DETAILS
C-300	...	FACILITIES DETAILS
C-400	...	ACCESS ROAD OVERVIEW PLAN
C-401	...	ACCESS ROAD PLAN & PROFILE STA. 0+00 TO STA. 50+00
C-402	...	ACCESS ROAD PLAN & PROFILE STA. 50+00 TO STA. 100+00
C-403	...	ACCESS ROAD PLAN & PROFILE STA. 100+00 to STA. 150+00
C-404	...	ACCESS ROAD PLAN & PROFILE STA. 150+00 TO STA. 200+00
C-405	...	ACCESS ROAD PLAN & PROFILE STA. 200+00 TO STA. 250+00
C-406	...	ACCESS ROAD PLAN & PROFILE STA. 250+00 TO END

REFERENCING

LIMITS OF SECTION CUT

SECTION IDENTIFIER

SECTION REFERENCES
(SHEET SECTION IS
LOCATED ON)

SECTION IDENTIFIER

1 / C001 SECTION: SECTION TITLE

SECTION REFERENCES
(SHEET SECTION IS CALLED OUT)

DETAIL IDENTIFIER

DETAIL REFERENCES
(SHEET DETAIL IS
LOCATED ON)

DETAIL IDENTIFIER

1 / C001 DETAIL: DETAIL TITLE

DETAIL REFERENCES
(SHEET DETAIL IS CALLED OUT)

ABBREVIATIONS AND SYMBOLS

APPROX	APPROXIMATE
ASCE	AMERICAN SOCIETY OF CIVIL ENGINEERS
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
CONC	CONCRETE
DIP	DUCTILE IRON PIPE
EL	ELEVATION
F.F.E.	FINISHED FLOOR ELEVATION
HARN	HIGH ACCURACY REFERENCE NETWORK
ID	INSIDE DIAMETER
IE	INVERT ELEVATION
MAX	MAXIMUM
MIN	MINIMUM
NAVD	NORTH AMERICAN VERTICAL DATUM
NGVD	NATIONAL GEODETIC VERTICAL DATUM
NO.	NUMBER
OC	ON CENTER
PVC	POLYVINYL CHLORIDE
ROW	RIGHT-OF-WAY
TBD	TO BE DETERMINED
TYP	TYPICAL
@	AT
Ø	DIAMETER

NOTES:

1. COMPLY WITH ALL APPLICABLE LOCAL, STATE, AND FEDERAL CODES, PERMITS, AND REGULATIONS.
2. VERIFY ALL QUANTITIES, GRADES, AND DIMENSIONS.
3. TOPOGRAPHIC INFORMATION BASED ON USGS TOPOGRAPHY DATED FEBRUARY 12TH, 2025. SURVEY VERTICAL DATUM BASED ON VERTICAL DATUM OF NAVD88 (FEET).
4. FIELD-LOCATE ALL SITE UTILITIES (PRIVATE AND PUBLIC) PRIOR TO STARTING THE WORK. ALL UTILITIES SHOWN ON THE PLANS ARE APPROXIMATE. ANY UTILITIES DAMAGED BY CONTRACTOR SHALL BE REPAIRED TO THE SATISFACTION OF UTILITY OWNER AT CONTRACTOR'S COST.
5. 60% DESIGN – NOT FOR CONSTRUCTION. SUBJECT TO CHANGE PENDING COMPLETION OF FINAL HYDROLOGY, HYDRAULICS, AND FLOODPLAIN ANALYSES.
6. DRAWINGS ISSUED FOR INTERMEDIATE DESIGN REVIEW ONLY. FINAL DESIGN AND CONSTRUCTION DOCUMENTS WILL INCORPORATE COMPLETED DRAINAGE, FLOODPLAIN, AND GEOTECHNICAL STUDIES.

811 Know what's **below.** **Call 811** before you dig.

60% DESIGN
NOT FOR CONSTRUCTION

#	BY	CHK	APP	DATE	RELEASE/REVISION DESCRIPTION
B	LFM	SAP	SAP	12/05/2025	60% DESIGN
A	LFM	FPD		7/1/2025	30% DESIGN

BARR ENGINEERING CO.
170 S MAIN ST
SUITE 500
SALT LAKE CITY, UT 84101

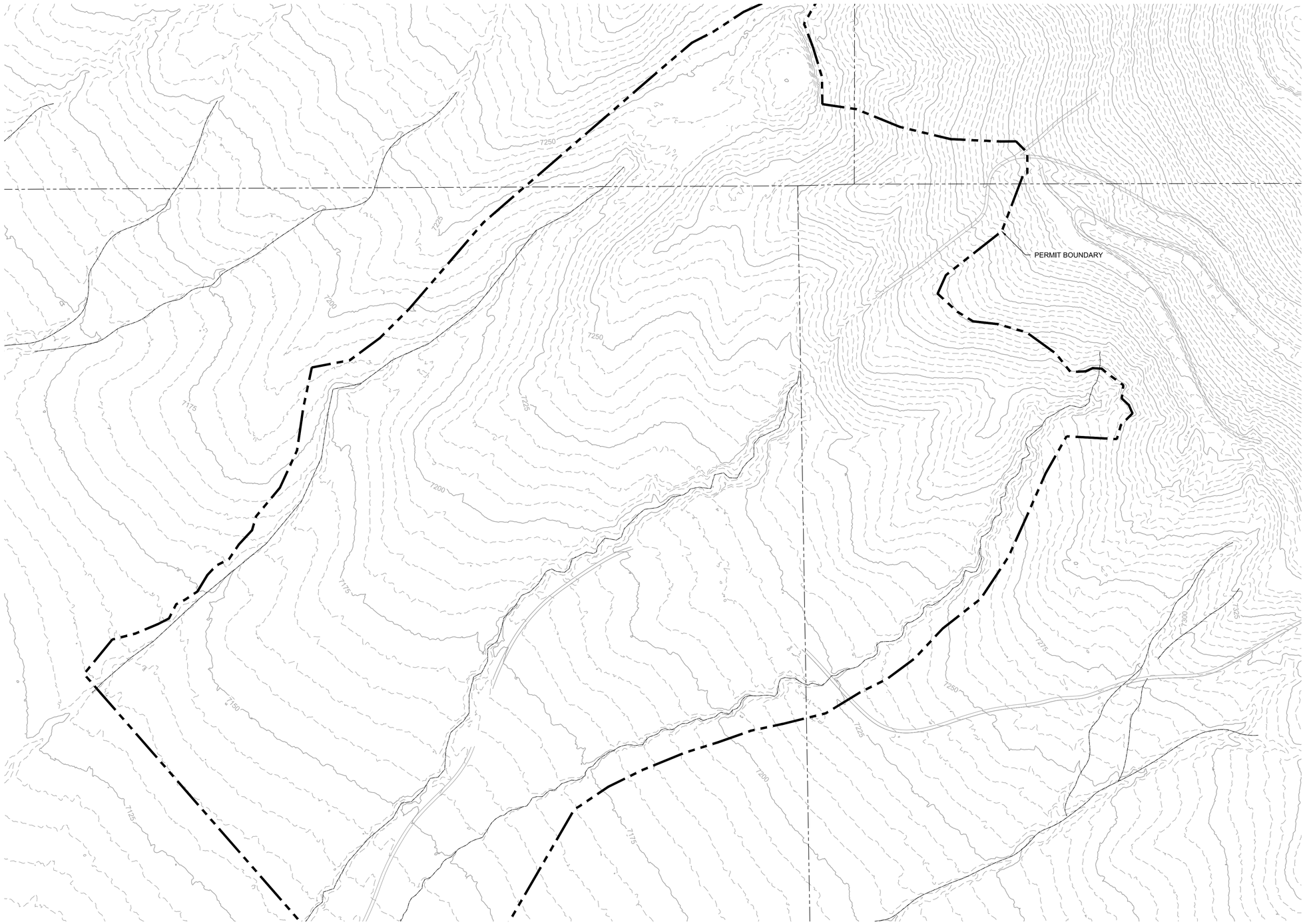
PH: 1-800-632-2277
WWW.BARR.COM
-

LARAMIDE RESOURCES, LTD

CLIENT PROJECT # -

LA JARA MESA
CIBOLA COUNTY, NEW MEXICO
COVER SHEET

BARR PROJECT # 3133100800
DWG # G100
REV # B



1 - PLAN: EXISTING CONDITIONS

0 100 200

SCALE IN FEET

N

PROJECT DATUM:

HORIZONTAL: NAD83 NEW MEXICO STATE PLANE, WEST ZONE
VERTICAL: NAVD 88

LEGEND:

- PERMIT BOUNDARY
- SECTION LINE
- 1380 EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- EXISTING ROADS
- EXISTING EPHEMERAL

NOTES:

60% DESIGN
NOT FOR CONSTRUCTION

#	BY	CHK	APP	DATE	RELEASE/REVISION DESCRIPTION
B	LFM	SAP	SAP	12/05/2025	60% DESIGN
A	LFM	FPD		7/1/2025	30% DESIGN

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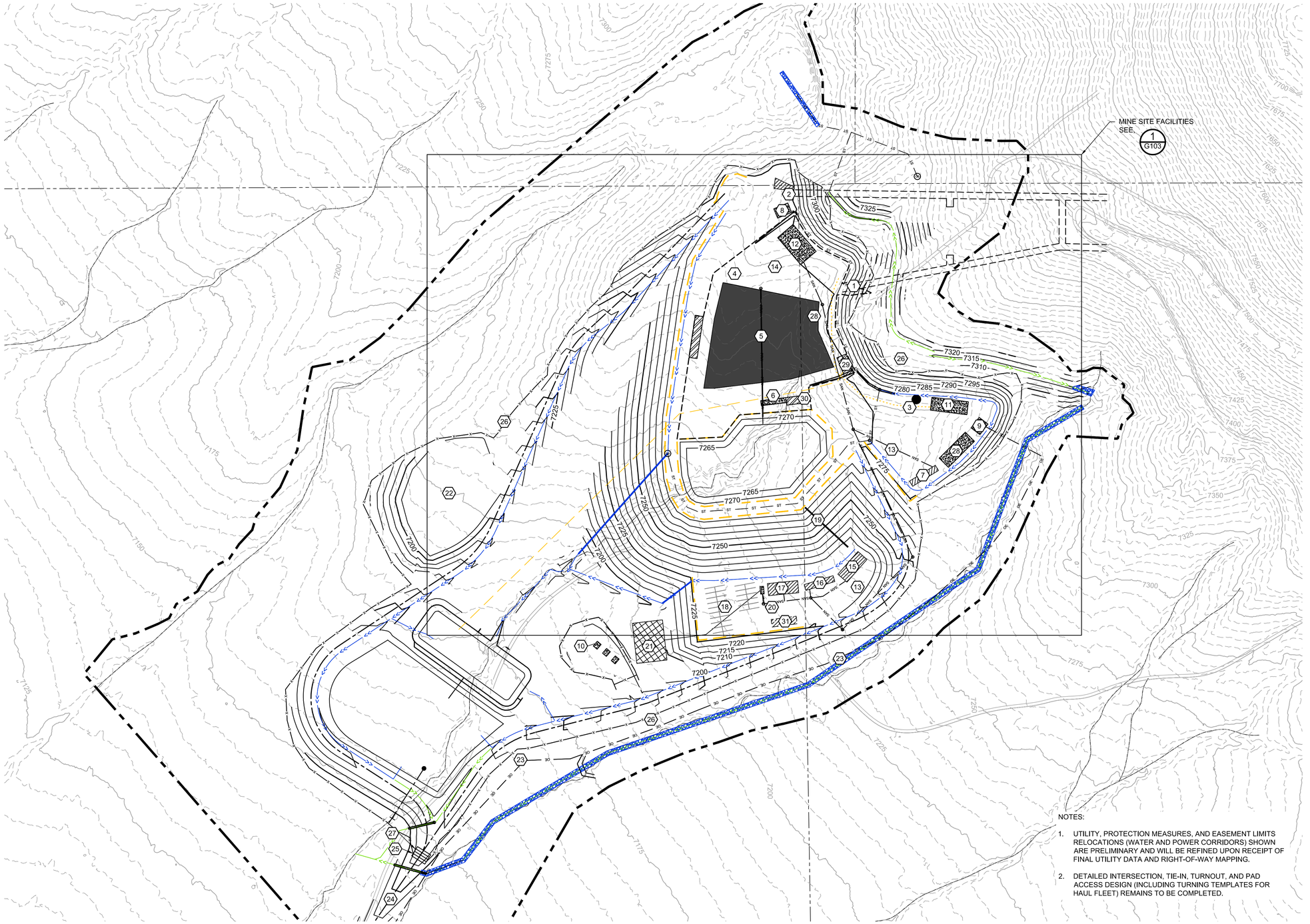
CLIENT PROJECT # -

LARAMIDE RESOURCES, LTD

LA JARA MESSA
CIBOLA COUNTY, NEW MEXICO
60% DESIGN
EXISTING CONDITIONS

BARR PROJECT # 3133100800
DWG # G101
REV # B



1 PLAN: MINE SITE FACILITIES

0 100 200

SCALE IN FEET

NOTES:

1. UTILITY, PROTECTION MEASURES, AND EASEMENT LIMITS RELOCATIONS (WATER AND POWER CORRIDORS) SHOWN ARE PRELIMINARY AND WILL BE REFINED UPON RECEIPT OF FINAL UTILITY DATA AND RIGHT-OF-WAY MAPPING.
2. DETAILED INTERSECTION, TIE-IN, TURNOUT, AND PAD ACCESS DESIGN (INCLUDING TURNING TEMPLATES FOR HAUL FLEET) REMAINS TO BE COMPLETED.

PROJECT DATUM:

HORIZONTAL: NAD83 NEW MEXICO STATE PLANE, WEST ZONE
VERTICAL: NAVD 88

LEGEND:

- PERMIT BOUNDARY
- SECTION LINE
- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- PROPOSED MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- PROPOSED FENCE
- MHSA SAFETY BERMS
- PROPOSED OVERHEAD ELECTRIC
- PROPOSED STORAGE AREA
- PROPOSED DIVERSION EROSION PROTECTION
- PROPOSED CONTAINMENT DRAINAGE DITCH
- PROPOSED DIVERSION
- PROPOSED STRUCTURE/EQUIPMENT
- PROPOSED SEPTIC LEACH FIELD
- PROPOSED STRUCTURE CONCRETE BASE
- PROPOSED BUS PARKING
- PROPOSED CULVERT
- PROPOSED STORM SEWER
- PROPOSED SANITARY SEWER
- PROCESS WATER CONTAINMENT BOUNDARY
- FUEL LINE
- RAW WATER SUPPLY
- PROPOSED DROP STRUCTURE
- PROPOSED STAIRCASE
- MH PROPOSED MANHOLE
- CB PROPOSED CATCH BASIN
- SAN PROPOSED SANITARY MANHOLE

KEY NOTES:

1. MAIN PORTAL ENTRANCE
2. VENTILATION FAN / SECONDARY ACCESS
3. WATER STORAGE TANK / PUMPING STATION
4. WASTE ROCK PILE
5. ORE STOCKPILE
6. PORTABLE SCALE
7. SAFETY & SHIFTER TRAILER
8. COMPRESSOR
9. SUBSTATION
10. EXPLOSIVE STORAGE W/ GATE BERM & SECURITY FENCING
11. FUEL STORAGE
12. MAINTENANCE SHOP
13. OUTSIDE STORAGE & CONEX TRAILERS
14. EQUIPMENT PARKING
15. MENS CHANGE TRAILER (DRY)
16. WOMENS CHANGE TRAILER (DRY)
17. OFFICE TRAILER
18. EMPLOYEE & VISITOR PARKING (25-30 SPACES)
19. STAIRCASE TO PORTAL BENCH
20. SEPTIC TANK
21. SEPTIC LEACH FIELD
22. GROWTH MEDIUM STOCKPILE
23. POWERLINE
24. SITE ACCESS ROAD - 18 FOOT RUNNING SURFACE
25. GATE
26. PERIMETER FENCE (4-STRAND BARBED WIRE)
27. CATTLE GUARD
28. GENERATORS
29. WHEEL WASH AREA
30. RUMBLE STRIP
31. BUS PARKING

60% DESIGN
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#	BY	CHK	APP	DATE	RELEASE/REVISION DESCRIPTION
B	LFM	SAP	SAP	12/05/2025	60% DESIGN
A	LFM	FPD		7/1/2025	30% DESIGN

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LARAMIDE RESOURCES, LTD

CLIENT PROJECT # -

LA JARA MESA
CIBOLA COUNTY, NEW MEXICO
MINE SITE FACILITIES
PLAN

BARR PROJECT # 3133100800
DWG # G102
REV # B

PROJECT DATUM:

HORIZONTAL: NAD83 NEW MEXICO STATE PLANE, WEST ZONE
VERTICAL: NAVD 88

LEGEND:

- PERMIT BOUNDARY
- SECTION LINE
- 1380 EXISTING MAJOR CONTOUR
- 1379 EXISTING MINOR CONTOUR
- 1380 PROPOSED MAJOR CONTOUR
- 1379 PROPOSED MINOR CONTOUR
- PROPOSED FENCE
- MHSA SAFETY BERMS
- OE PROPOSED OVERHEAD ELECTRIC
- PROPOSED STORAGE AREA
- PROPOSED DIVERSION EROSION PROTECTION
- PROPOSED CONTAINMENT DRAINAGE DITCH
- PROPOSED DIVERSION
- PROPOSED STRUCTURE/EQUIPMENT
- PROPOSED SEPTIC LEACH FIELD
- PROPOSED STRUCTURE CONCRETE BASE
- PROPOSED BUS PARKING
- PROPOSED CULVERT
- ST PROPOSED STORM SEWER
- SAN PROPOSED SANITARY SEWER
- PROCESS WATER CONTAINMENT BOUNDARY
- FUEL LINE
- RAW WATER SUPPLY
- PROPOSED DROP STRUCTURE
- PROPOSED STAIRCASE
- MH PROPOSED MANHOLE
- CB PROPOSED CATCH BASIN
- SAN PROPOSED SANITARY MANHOLE

KEY NOTES:

1. MAIN PORTAL ENTRANCE
2. VENTILATION FAN / SECONDARY ACCESS
4. WASTE ROCK PILE
5. ORE STOCKPILE
6. PORTABLE SCALE
7. SAFETY & SHIFTER TRAILER
8. COMPRESSOR
9. SUBSTATION
11. FUEL STORAGE
12. MAINTENANCE SHOP
13. OUTSIDE STORAGE & CONEX TRAILERS
14. EQUIPMENT PARKING
15. MENS CHANGE TRAILER (DRY)
16. WOMENS CHANGE TRAILER (DRY)
17. OFFICE TRAILER
18. EMPLOYEE & VISITOR PARKING (25-30 SPACES)
19. STAIRCASE TO PORTAL BENCH
20. SEPTIC TANK
21. SEPTIC LEACH FIELD
22. GROWTH MEDIUM STOCKPILE
26. PERIMETER FENCE (4-STRAND BARBED WIRE)
28. GENERATORS
29. WHEEL WASH AREA
30. RUMBLE STRIP
31. BUS PARKING

NOTES:

1. DETAILED INTERSECTION, TIE-IN, TURNOUT, AND PAD ACCESS DESIGN (INCLUDING TURNING TEMPLATES FOR HAUL FEET) REMAINS TO BE COMPLETED.
2. SANITARY SEWER LINES ARE PRELIMINARY AND SHALL BE FINALIZED UPON COMPLETION OF HYDRAULIC ANALYSIS AND FINAL DESIGN.

1 - PLAN: MINE SITE FACILITIES

0 50 100
SCALE IN FEET

N

60% DESIGN
NOT FOR CONSTRUCTION

#	BY	CHK	APP	DATE	RELEASE/REVISION DESCRIPTION
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A	LFM	FPD		7/1/2025	30% DESIGN

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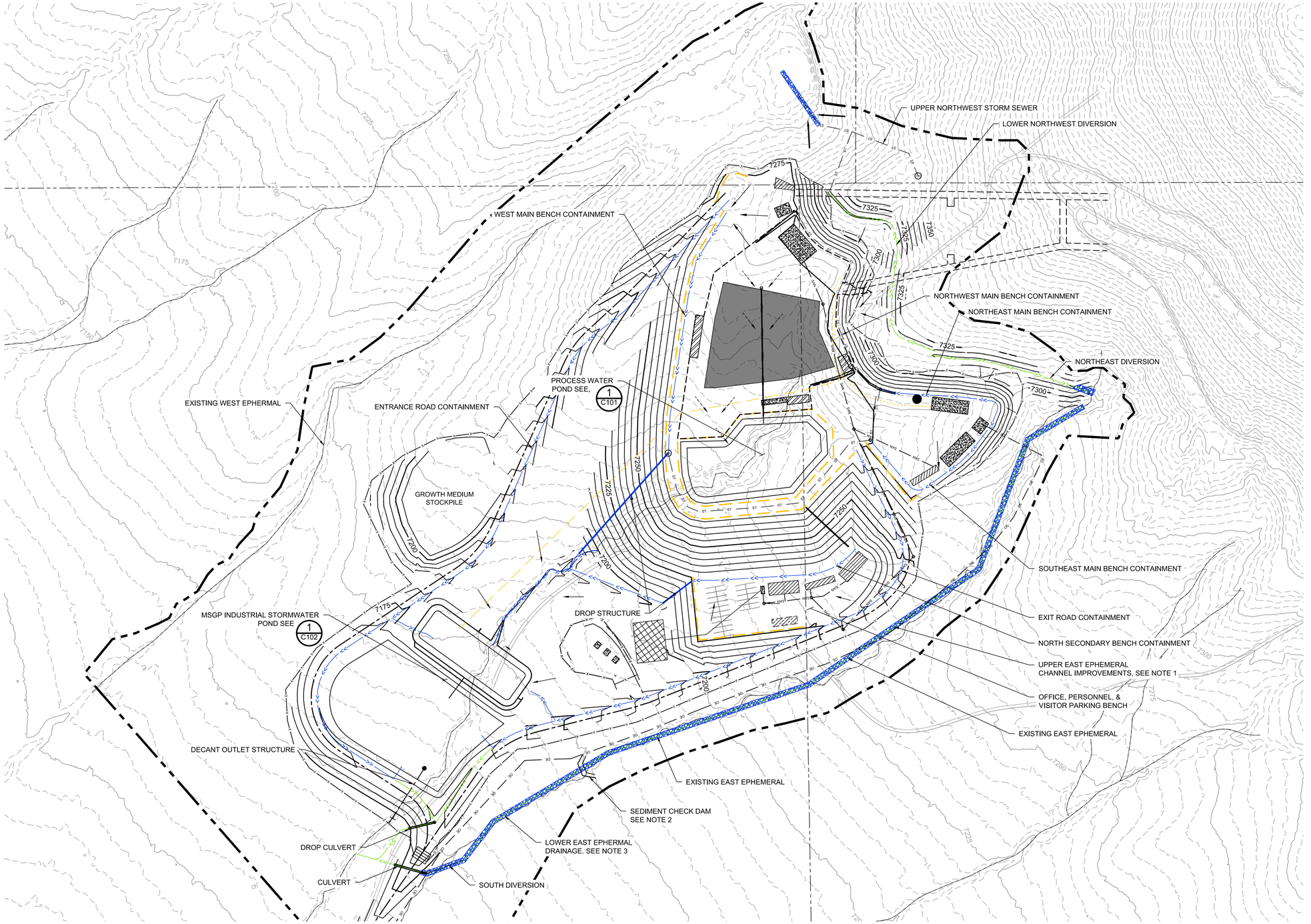
CLIENT PROJECT # -

LA JARA MESA
CIBOLA COUNTY, NEW MEXICO
MINE SITE FACILITIES
MAIN BENCHES PLAN

BARR PROJECT # 3133100800
DWG # G103
REV # B



1 - PLAN: DRAINAGE PLAN

0 100 200

SCALE IN FEET

PROJECT DATUM:

HORIZONTAL: NAD83 NEW MEXICO STATE PLANE, WEST ZONE
VERTICAL: NAVD 88

LEGEND:

- PERMIT BOUNDARY
- SECTION LINE
- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- PROPOSED MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- PROPOSED FENCE
- MHSA SAFETY BERMS
- PROPOSED OVERHEAD ELECTRIC
- PROPOSED STORAGE AREA
- PROPOSED DIVERSION EROSION PROTECTION
- PROPOSED CONTAINMENT DRAINAGE DITCH
- PROPOSED DIVERSION
- PROPOSED STRUCTURE/EQUIPMENT
- PROPOSED SEPTIC LEACH FIELD
- PROPOSED STRUCTURE CONCRETE BASE
- PROPOSED BUS PARKING
- PROPOSED CULVERT
- PROPOSED STORM SEWER
- PROPOSED SANITARY SEWER
- PROCESS WATER CONTAINMENT BOUNDARY
- FUEL LINE
- RAW WATER SUPPLY
- PROPOSED DROP STRUCTURE
- PROPOSED STAIRCASE
- PROPOSED MANHOLE
- PROPOSED CATCH BASIN
- PROPOSED SANITARY MANHOLE
- INDUSTRIAL WATER FLOW
- CLEAN WATER FLOW
- PROCESS WATER FLOW

NOTES:

1. EAST EPHERMAL CHANNEL IMPROVEMENTS ARE TO INCLUDE STRAIGHTENING OF CHANNEL TO MITIGATE SCOURING ALONG BENDS, RIPRAP AS NEEDED TO STABILIZE CHANNEL AND PERIODIC CHECK DAMS AS NEEDED TO CONTROL WATER VELOCITIES (TO BE FINALIZED AT FINAL DESIGN).
2. EAST EPHERMAL SEDIMENT CHECK DAM TO MITIGATE SEDIMENTATION IN LOWER EAST EPHERMAL DRAINAGE. CURRENT LOCATION IS APPROXIMATE (TO BE FINALIZED AT FINAL DESIGN).
3. LOWER EAST EPHERMAL CHANNEL IMPROVEMENT ARE TO INCLUDE ESTABLISHING AND STABILIZING PRIMARY FLOW PATH TO SOUTH DIVERSION (TO BE FINALIZED AT FINAL DESIGN).
4. FINAL DITCH GRADES, LINING TYPES, INLETS/OUTLETS, AND CHECK DAMS WILL BE SET DURING DETAILED DRAINAGE DESIGN.
5. TEMPORARY AND PERMANENT EROSION AND SEDIMENT CONTROL MEASURES SHOWN ARE CONCEPTUAL; FINAL LOCATIONS, TYPESAND QUANTITIES WILL BE DEVELOPED WITH THE FINAL DRAINAGE AND STORM WATER MANAGMENT DEISGN AND APPLICABLE PERMITS.
6. CULVERT SIZES, INVERTS, AND LOCATIONS ARE PRELIMINARY AND SHALL BE FINALIZED UPON COMPLETION OF DETAILED HYDROLOGIC MODELING, HYDRAULIC CAPACITY CHECKS, AND DRAINAGE DESIGN.

60% DESIGN
NOT FOR CONSTRUCTION

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B	LFM	SAP	SAP	12/05/2025	60% DESIGN
A	LFM	FPD		7/1/2025	30% DESIGN

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CLIENT PROJECT # -

LARAMIDE RESOURCES, LTD

LA JARA MESA
CIBOLA COUNTY, NEW MEXICO
DRAINAGE PLAN

BARR PROJECT # 3133100800
DWG # G104
REV # B

MAIN OPERATIONS BENCH

PROCESS WATER POND

GROWTH MEDIUM STOCKPILE

MSGP INDUSTRIAL STORM WATER POND LINED CELL

MSGP INDUSTRIAL STORM WATER POND UNLINED CELL

RIPRAP APRON

SEDIMENT DAM

OFFICE, PERSONAL, VISITOR PARKING BENCH

1 - PLAN: EROSION CONTROL PLAN

0 100 200

SCALE IN FEET

N

PROJECT DATUM:

HORIZONTAL: NAD83 NEW MEXICO STATE PLANE, WEST ZONE
VERTICAL: NAVD 88

LEGEND:

- PERMIT BOUNDARY
- SECTION LINE
- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- PROPOSED MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- PROPOSED FENCE
- MHSA SAFETY BERMS
- PROPOSED OVERHEAD ELECTRIC
- PROPOSED STORAGE AREA
- PROPOSED DIVERSION EROSION PROTECTION
- PROPOSED CONTAINMENT DRAINAGE DITCH
- PROPOSED DIVERSION
- PROPOSED STRUCTURE/EQUIPMENT
- PROPOSED SEPTIC LEACH FIELD
- PROPOSED STRUCTURE CONCRETE BASE
- PROPOSED BUS PARKING
- PROPOSED CULVERT
- PROPOSED STORM SEWER
- PROPOSED SANITARY SEWER
- PROCESS WATER CONTAINMENT BOUNDARY
- FUEL LINE
- RAW WATER SUPPLY
- PROPOSED DROP STRUCTURE
- PROPOSED STAIRCASE
- PROPOSED DIVERSION BERM
- PROPOSED MANHOLE
- PROPOSED CATCH BASIN
- PROPOSED SANITARY MANHOLE

NOTES:

60% DESIGN
NOT FOR CONSTRUCTION

#	BY	CHK	APP	DATE	RELEASE/REVISION DESCRIPTION
B	LFM	SAP	SAP	12/05/2025	60% DESIGN
A	LFM	FPD		7/1/2025	30% DESIGN

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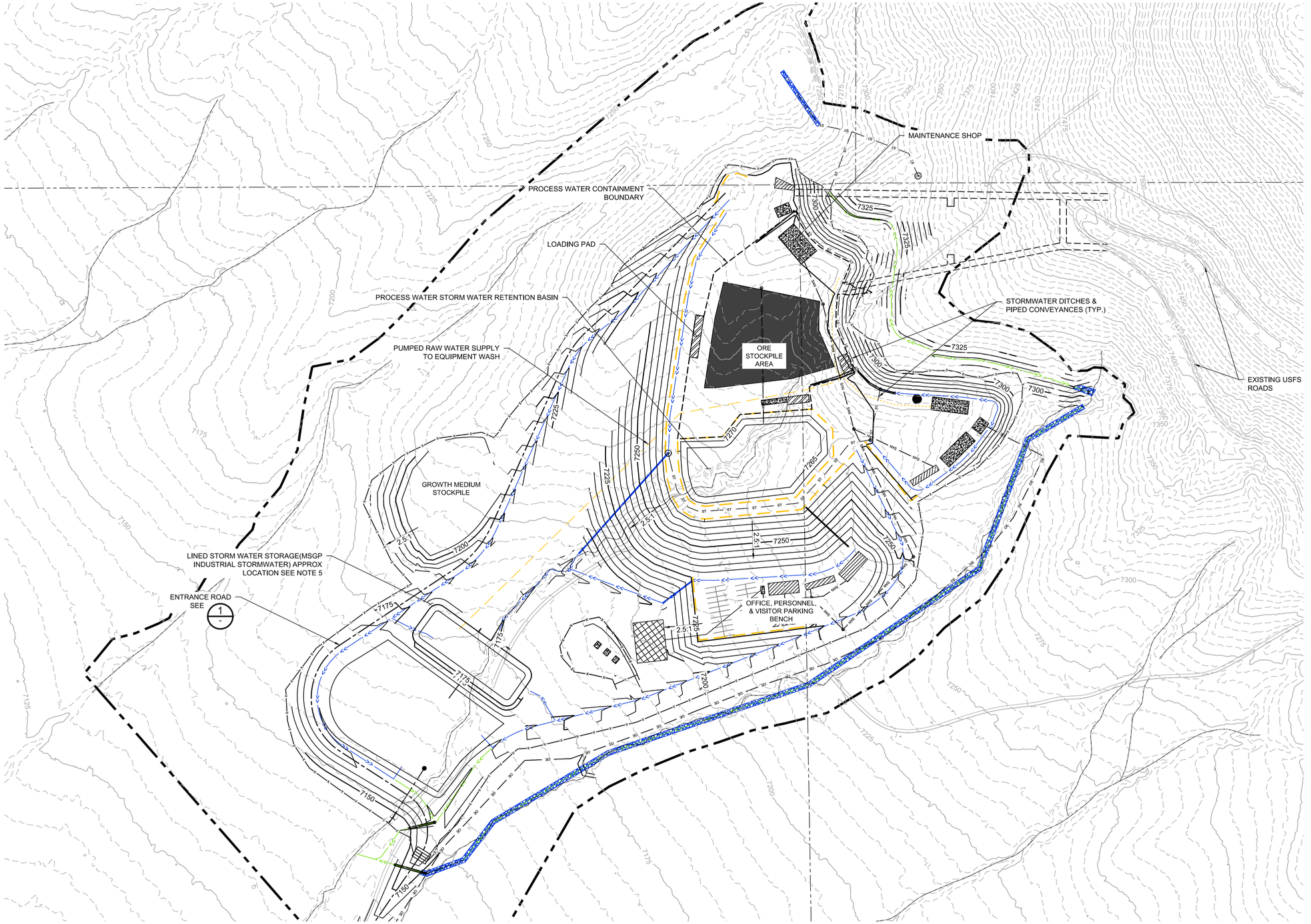
CLIENT PROJECT # -

LA JARA MESA
CIBOLA COUNTY, NEW MEXICO
SWPP EROSION CONTROL PLAN

BARR PROJECT # 3133100800
DWG # G105
REV # B



1/- PLAN: GRADING

0 100 200

SCALE IN FEET

N

PROJECT DATUM:

HORIZONTAL: NAD83 NEW MEXICO STATE PLANE, WEST ZONE
VERTICAL: NAVD 88

LEGEND:

- PERMIT BOUNDARY
- SECTION LINE
- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- PROPOSED MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- PROPOSED FENCE
- MHSA SAFETY BERMS
- PROPOSED OVERHEAD ELECTRIC
- PROPOSED STORAGE AREA
- PROPOSED DIVERSION EROSION PROTECTION
- PROPOSED CONTAINMENT DRAINAGE DITCH
- PROPOSED DIVERSION
- PROPOSED STRUCTURE/EQUIPMENT
- PROPOSED SEPTIC LEACH FIELD
- PROPOSED STRUCTURE CONCRETE BASE
- PROPOSED BUS PARKING
- PROPOSED CULVERT
- PROPOSED STORM SEWER
- PROPOSED SANITARY SEWER
- PROCESS WATER CONTAINMENT BOUNDARY
- FUEL LINE
- RAW WATER SUPPLY
- PROPOSED DROP STRUCTURE
- PROPOSED STAIRCASE
- PROPOSED MANHOLE
- PROPOSED CATCH BASIN
- PROPOSED SANITARY MANHOLE

NOTES:

1. CUT/FILL SLOPES, BENCHING, AND RETAINING REQUIREMENTS ARE CONSERVATIVE BUT PRELIMINARY; FINAL SLOPES AND STABILIZATION MEASURES WILL BE BASED ON GEOTECHNICAL ASSESSMENT HAS BEEN SCHEDULED, BUT AS SITE MATERIAL BECOMES AVAIALBLE IT WILL BE ASSESSED FOR GEOTECHNICAL PARAMETERS AND DESIGN ADJUSTED WHERE NECESSARY.

60% DESIGN
NOT FOR CONSTRUCTION

#	BY	CHK	APP	DATE	RELEASE/REVISION DESCRIPTION
B	LFM	SAP	SAP	12/05/2025	60% DESIGN
A	LFM	FPD		7/1/2025	30% DESIGN

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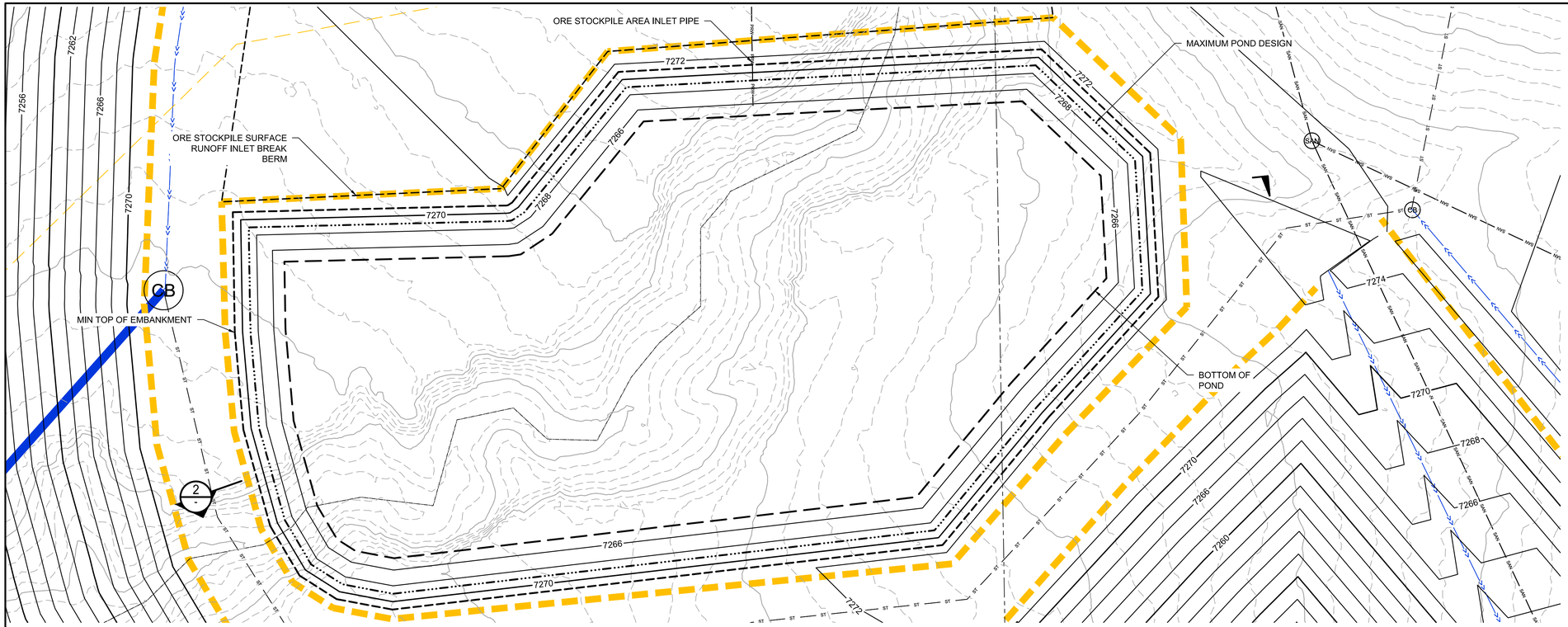
CLIENT PROJECT # -

LA JARA MESA
CIBOLA COUNTY, NEW MEXICO
GRADING

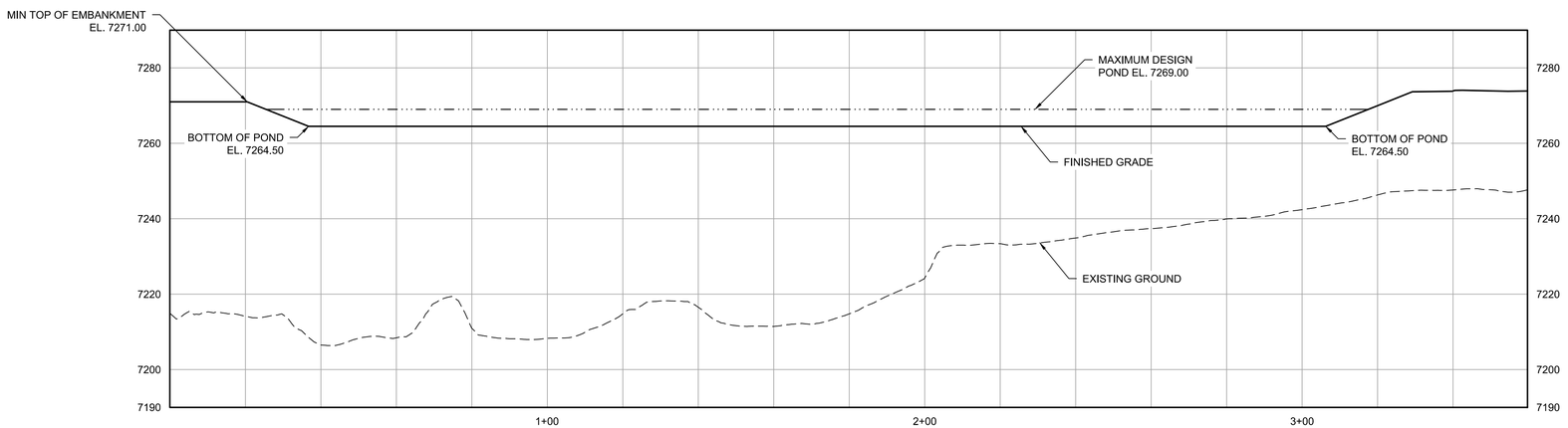
BARR PROJECT # 3133100800
DWG # C100
REV # B



1 - PLAN: PROCESS WATER POND

0 50 100

SCALE IN FEET



2 - SECTION: PROCESS WATER POND

PROJECT DATUM:

HORIZONTAL: NAD83 NEW MEXICO STATE PLAN, WEST ZONE
VERTICAL: NAVD 88

LEGEND:

- PERMIT BOUNDARY
- SECTION LINE
- 1380 — EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- 1380 — PROPOSED MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- MHSA SAFETY BERMS
- PROPOSED CONTAINMENT DRAINAGE DITCH
- PRW — PROPOSED PROCESS WATER PIPE
- ST — PROPOSED STORM SEWER
- SAN — PROPOSED SANITARY SEWER
- PROCESS WATER CONTAINMENT BOUNDARY
- PROPOSED DROP STRUCTURE
- MH — PROPOSED MANHOLE
- CB — PROPOSED CATCH BASIN
- SAN — PROPOSED SANITARY MANHOLE

NOTES:

1. PROCESS WATER POND MAXIMUM DESIGN VOLUME: 3.23 AC-FT
2. PIPE SIZES, INVERTS, AND LOCATIONS ARE PRELIMINARY AND SHALL BE FINALIZED UPON COMPLETION OF DETAILED HYDRAULIC CAPACITY CHECKS, AND DRAINAGE DESIGN

60% DESIGN
NOT FOR CONSTRUCTION

#	BY	CHK	APP	DATE	RELEASE/REVISION DESCRIPTION
B	LFM	SAP	SAP	12/05/2025	60% DESIGN
A	LFM	FPD		10/XX/2025	60% DESIGN

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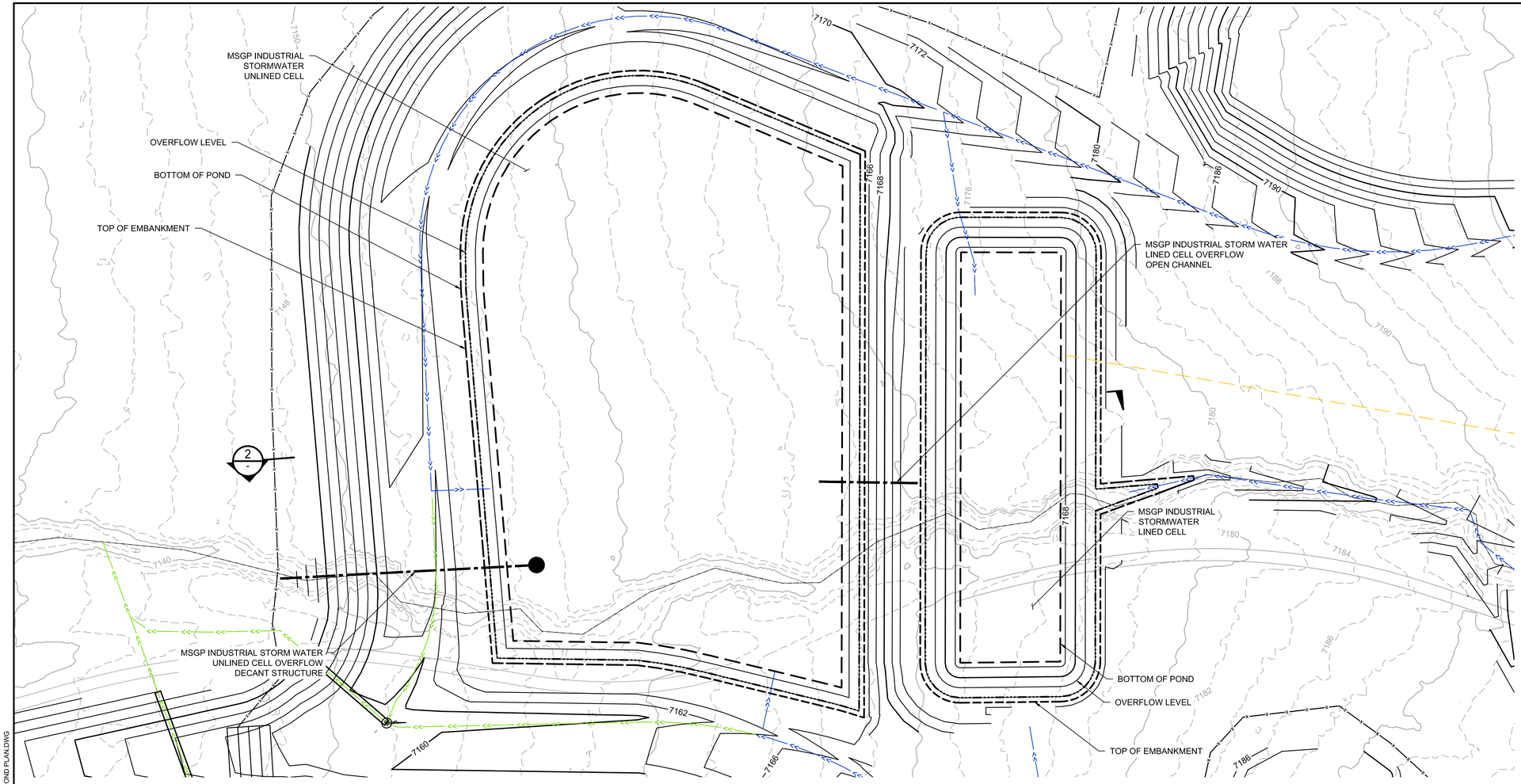
LARAMIDE RESOURCES, LTD

CLIENT PROJECT # -

LA JARA MESA
CIBOLA COUNTY, NEW MEXICO
60% DESIGN
PROCESS WATER POND PLAN & SECTION

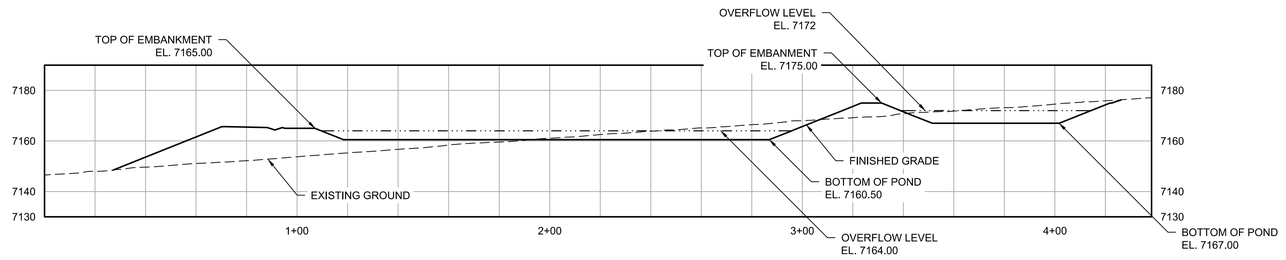
BARR PROJECT # 3133100800
DWG # C101
REV # B



1 - PLAN: MSGP INDUSTRIAL STORMWATER DENTENTION POND

0 30 60

SCALE IN FEET



2 - SECTION: MSGP INDUSTRIAL STORMWATER DENTENTION POND SOUTH TO NORTH

PROJECT DATUM:

HORIZONTAL: -
VERTICAL: -

LEGEND:

- PERMIT BOUNDARY
- SECTION LINE
- 1380 EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- 1380 PROPOSED MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- PROPOSED FENCE
- PROPOSED STORMWATER CONTAINMENT BASIN
- OE PROPOSED OVERHEAD ELECTRIC
- PROPOSED DIVERSION EROSION PROTECTION
- PROPOSED CONTAINMENT DRAINAGE DITCH
- PROPOSED DIVERSION
- PROPOSED CULVERT
- CB PROPOSED CATCH BASIN

NOTES:

1. MSGP INDUSTRIAL STORM WATER LINED CELL STORAGE VOLUME TO OVERFLOW LEVEL: 1.56 AC-FT.
2. MSGP INDUSTRIAL STORM WATER UNLINED CELL STORAGE VOLUME TO OVERFLOW LEVEL: 4.01 AC-FT.
3. PIPE SIZES, INVERTS, AND LOCATIONS ARE PRELIMINARY AND SHALL BE FINALIZED UPON COMPLETION OF DETAILED HYDRAULIC CAPACITY CHECKS, AND DRAINAGE DESIGN.
4. OVERFLOW SIZES, INVERTS, AND LOCATIONS ARE PRELIMINARY AND SHALL BE FINALIZED UPON COMPLETION OF FINAL DESIGN.

60% DESIGN
NOT FOR CONSTRUCTION

#	BY	CHK	APP	DATE	RELEASE/REVISION DESCRIPTION
B	LFM	SAP	SAP	12/05/2025	60% DESIGN
A	LFM	FPD		10/XX/2025	60% DESIGN

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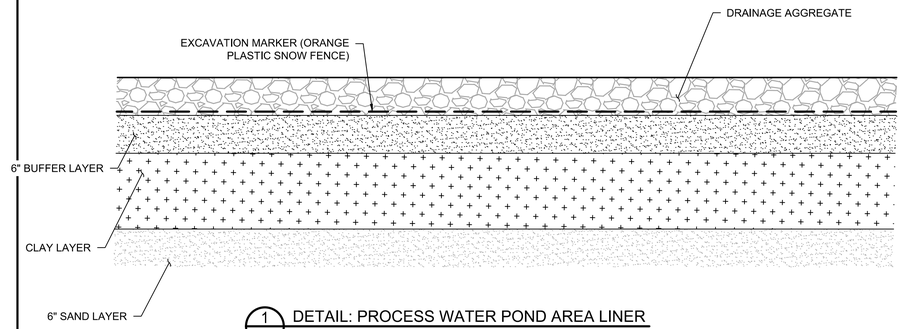
LARAMIDE RESOURCES, LTD

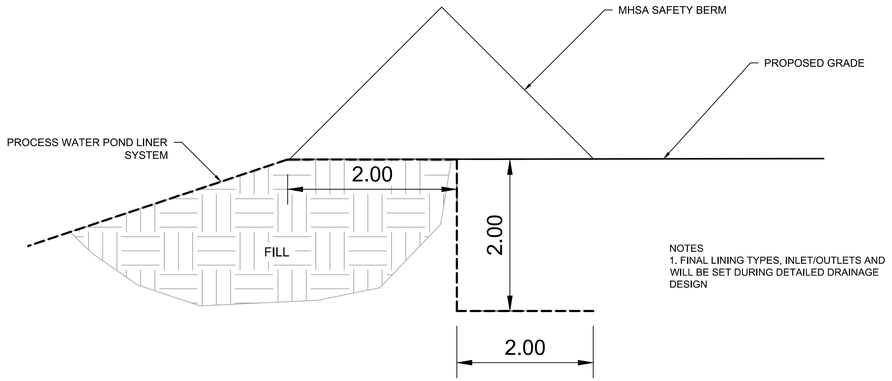
CLIENT PROJECT # -

LA JARA MESA
CIBOLA COUNTY, NEW MEXICO
60% DESIGN
PROCESS WATER POND PLAN & SECTION

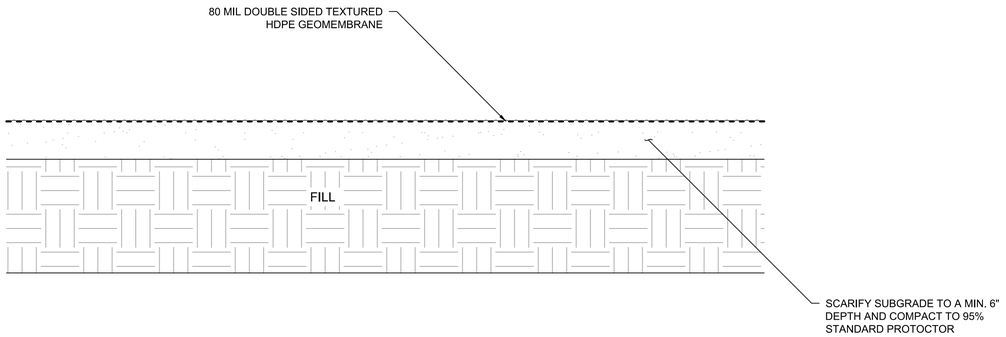
BARR PROJECT # 3133100800
DWG # C102
REV # B



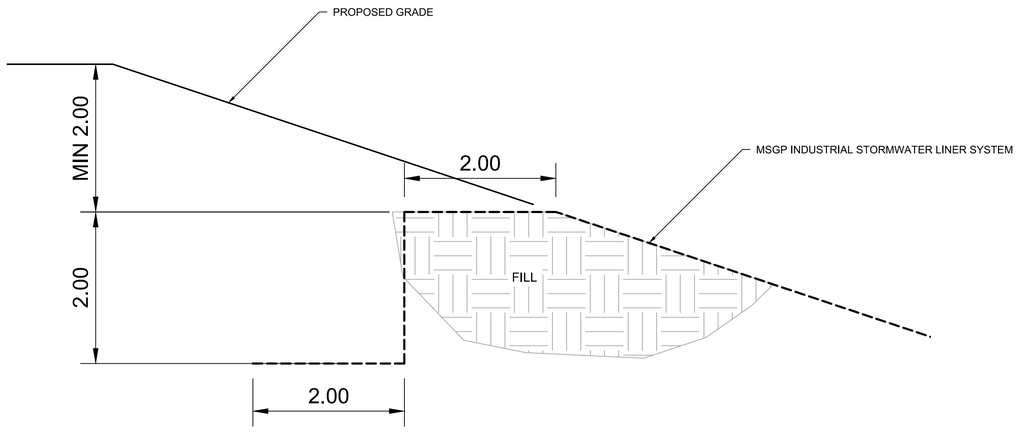
1 - DETAIL: PROCESS WATER POND AREA LINER
NOT TO SCALE



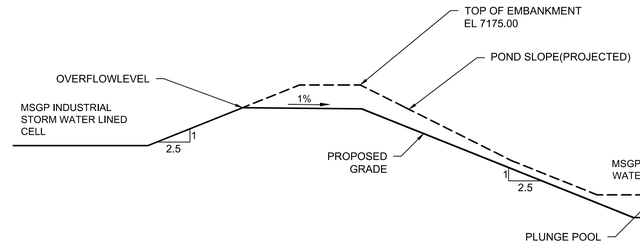
4 - DETAIL: PROCESS WATER POND LINER ANCHOR TRENCH
NOT TO SCALE



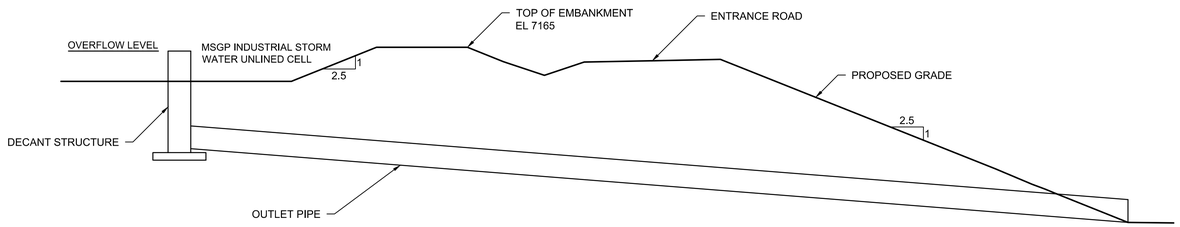
2 - DETAIL: PROCESS & INDUSTRIAL STORMWATER LINER SYSTEM
NOT TO SCALE



3 - DETAIL: MSGP INDUSTRIAL STORMWATER POND LINER ANCHOR TRENCH
NOT TO SCALE



5 - DETAIL: MSGP INDUSTRIAL STORMWATER POND LINED CELL OVERLOW
NOT TO SCALE



6 - DETAIL: MSGP INDUSTRIAL STORMWATER POND UNLINED CELL OVERFLOW
NOT TO SCALE

60% DESIGN
NOT FOR CONSTRUCTION

#	BY	CHK	APP	DATE	RELEASE/REVISION DESCRIPTION
B	LFM	SAP	SAP	12/05/2025	60% DESIGN
A	LFM	FPD		7/1/2025	30% DESIGN

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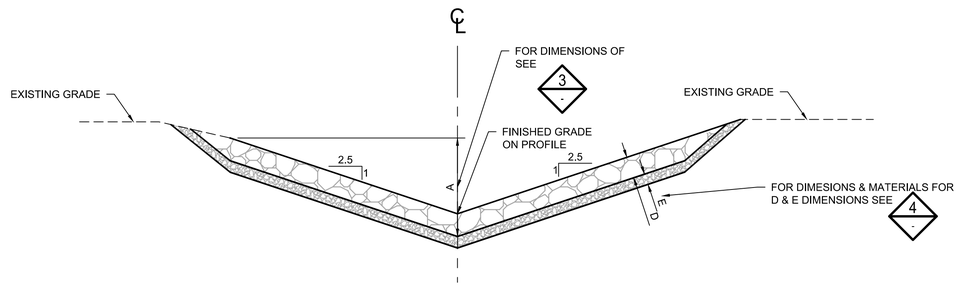
LARAMIDE RESOURCES, LTD

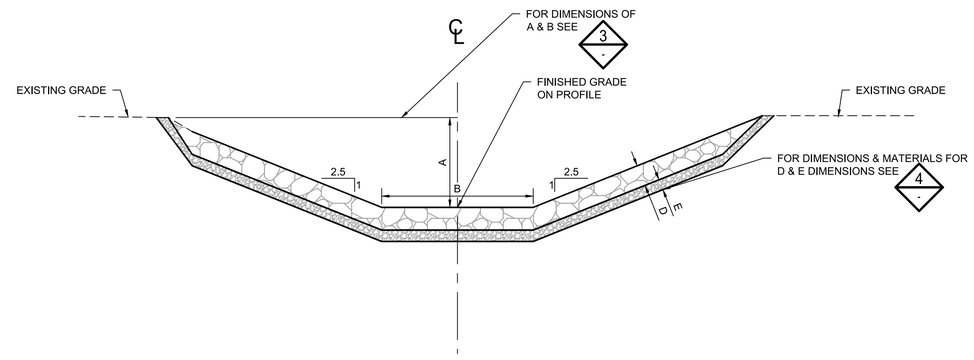
CLIENT PROJECT # -

LA JARA MESA
CIBOLA COUNTY, NEW MEXICO
PROCESS & MSGP INDUSTRIAL STORMWATER POND DETAILS

BARR PROJECT # 3133100800
DWG # C103
REV # B



1 G104 SECTION: DIVERSION DITCH (TYP)



2 G104 SECTION: CONTAINMENT DITCH (TYP)

CHANNEL DETAIL SCHEDULE						
DITCH	STA.	DETAIL NO.	SHEET	MIN. DEPTH (A)	MIN. BOTTOM WIDTH (B)	BERM WIDTH ©
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-

3 - DETAIL: DIVERSION DITCH GEOMETRY SCHEDULE (TO BE DESIGNED)

CHANNEL RIPRAP SCHEDULE			
EROSION PROTECTION	RIPRAP DEPTH (D)	FILTER MATERIAL	FILTER DEPTH (E)
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-

4 - DETAIL: DIVERSION DITCH GEOMETRY SCHEDULE (TO BE DESIGNED)

NOTES
1. STATIONING AND TO BE DETERMINED AFTER FINAL HYDRAULIC ASSESSMENT.
2. FINAL DITCH GRADES, INLETS/OUTLETS WILL BE SET DURING DETAILED DRAINAGE DESIGN

60% DESIGN
NOT FOR CONSTRUCTION

#	BY	CHK	APP	DATE	RELEASE/REVISION DESCRIPTION
B	LFM	SAP	SAP	12/05/2025	60% DESIGN
A	LFM	FPD		7/1/2025	30% DESIGN

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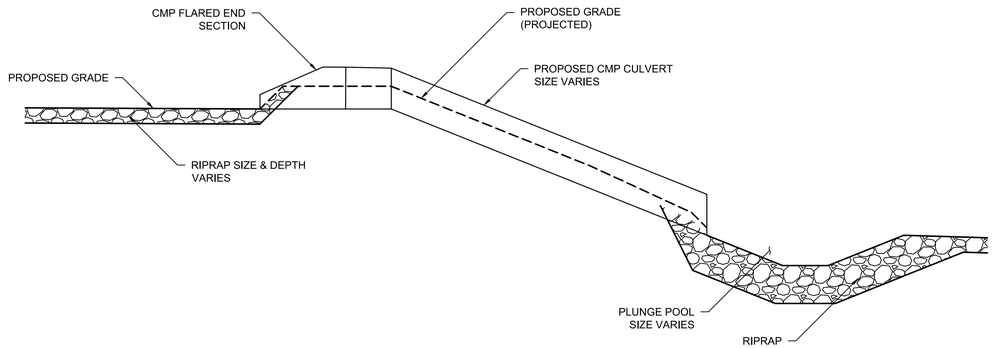
CLIENT PROJECT # -

LA JARA MESA
CIBOLA COUNTY, NEW MEXICO
DRAINAGE
DETAILS

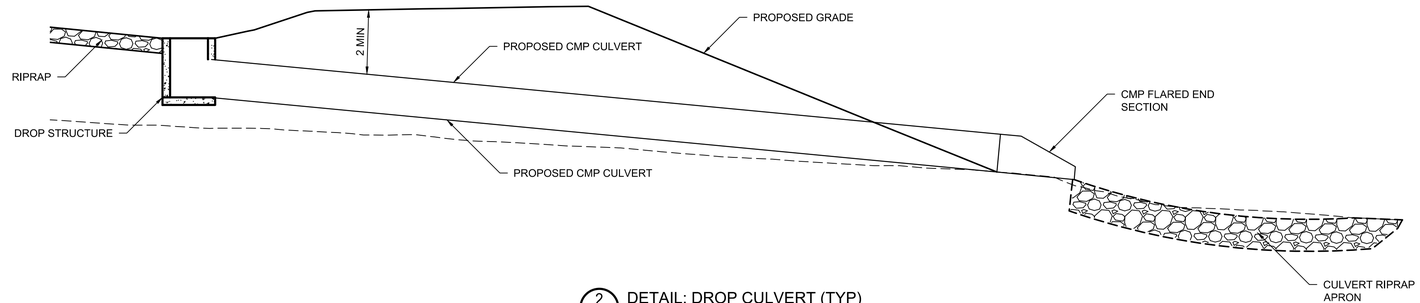
BARR PROJECT # 3133100800
DWG # C200
REV # B



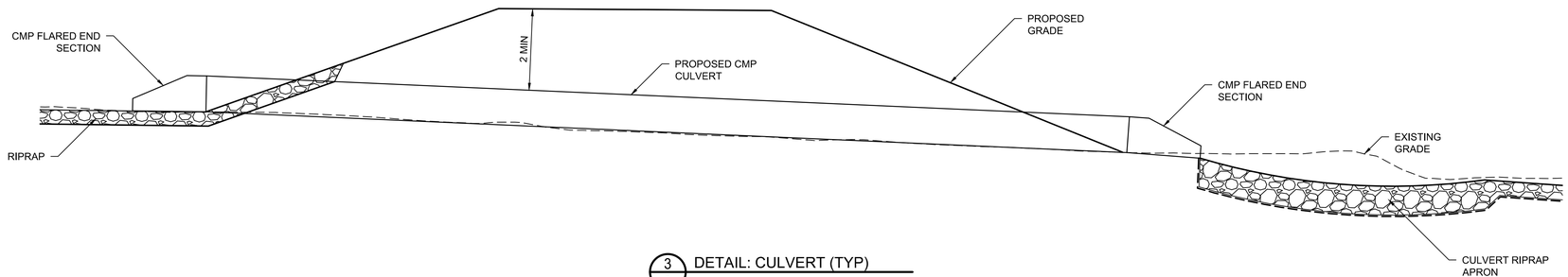
1 - DETAIL: PIPE DROP STRUCTURE (TYP)

NOTES:

1. CULVERT SIZES, INVERTS AND LOCATIONS ARE PRELIMINARY AND SHALL BE FINALIZED UPON COMPLETION OF DETAILED HYDROLOGIC MODELING, HYDRAULIC CAPACITY CHECKS, AND ROAD-SIDE DRAINAGE DESIGN FOR THE REQUIRED DESIGN STORM EVENTS.
2. TEMPORARY AND PERMANENT EROSION AND SEDIMENT CONTROL MEASURES SHOWN ARE CONCEPTUAL; FINAL LOCATIONS, TYPES, AND QUANTITIES WILL BE DEVELOPED WITH THE FINAL DRAINAGE AND STORMWATER MANAGEMENT DESIGN AND APPLICABLE PERMITS.



2 - DETAIL: DROP CULVERT (TYP)



3 - DETAIL: CULVERT (TYP)

60% DESIGN
NOT FOR CONSTRUCTION

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B	LFM	SAP	SAP	12/05/2025	60% DESIGN
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CLIENT PROJECT # -

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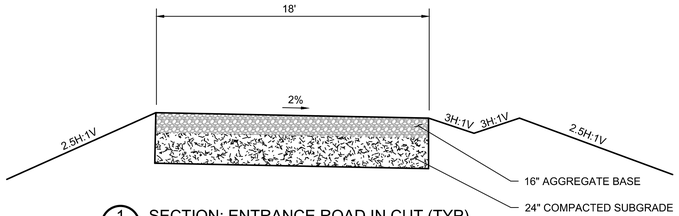
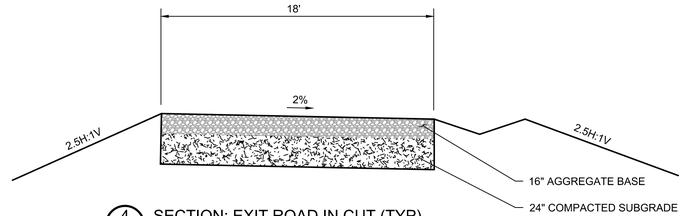
CIBOLA COUNTY, NEW MEXICO
DRAINAGE
DETAILS

BARR PROJECT # 3133100800
DWG # C201
REV # B



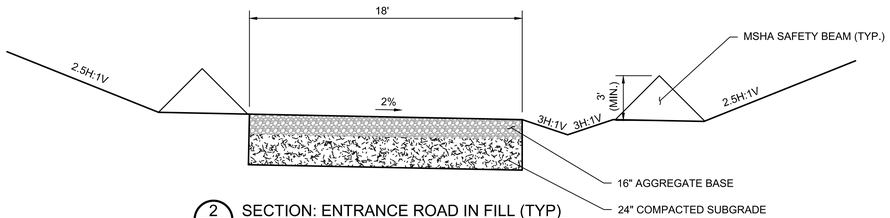
1 C100 SECTION: ENTRANCE ROAD IN CUT (TYP)

0 5 10
SCALE



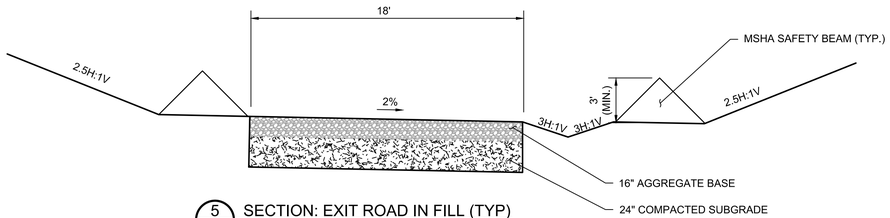
4 C100 SECTION: EXIT ROAD IN CUT (TYP)

0 5 10
SCALE



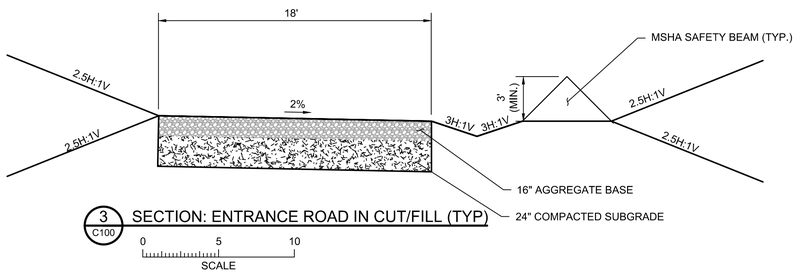
2 C100 SECTION: ENTRANCE ROAD IN FILL (TYP)

0 5 10
SCALE



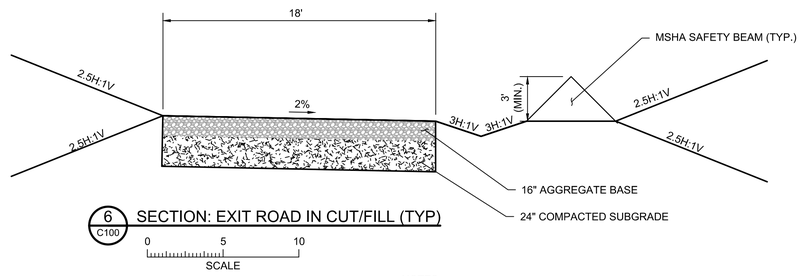
5 C100 SECTION: EXIT ROAD IN FILL (TYP)

0 5 10
SCALE



3 C100 SECTION: ENTRANCE ROAD IN CUT/FILL (TYP)

0 5 10
SCALE



6 C100 SECTION: EXIT ROAD IN CUT/FILL (TYP)

0 5 10
SCALE

NOTES:

1. FINAL PAVEMENT AND STRUCTURAL SECTION DESIGN (THICKNESS AND MATERIALS) WILL BE BASED ON FINAL TRAFFIC LOADING, SUBGRADE INVESTIGATION, AND MINE ACCESS/ HAUL ROAD DESIGN CRITERIA

60% DESIGN
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#	BY	CHK	APP	DATE	RELEASE/REVISION DESCRIPTION
B	LFM	SAP	SAP	12/05/2025	60% DESIGN
A	LFM	FPD		7/1/2025	30% DESIGN

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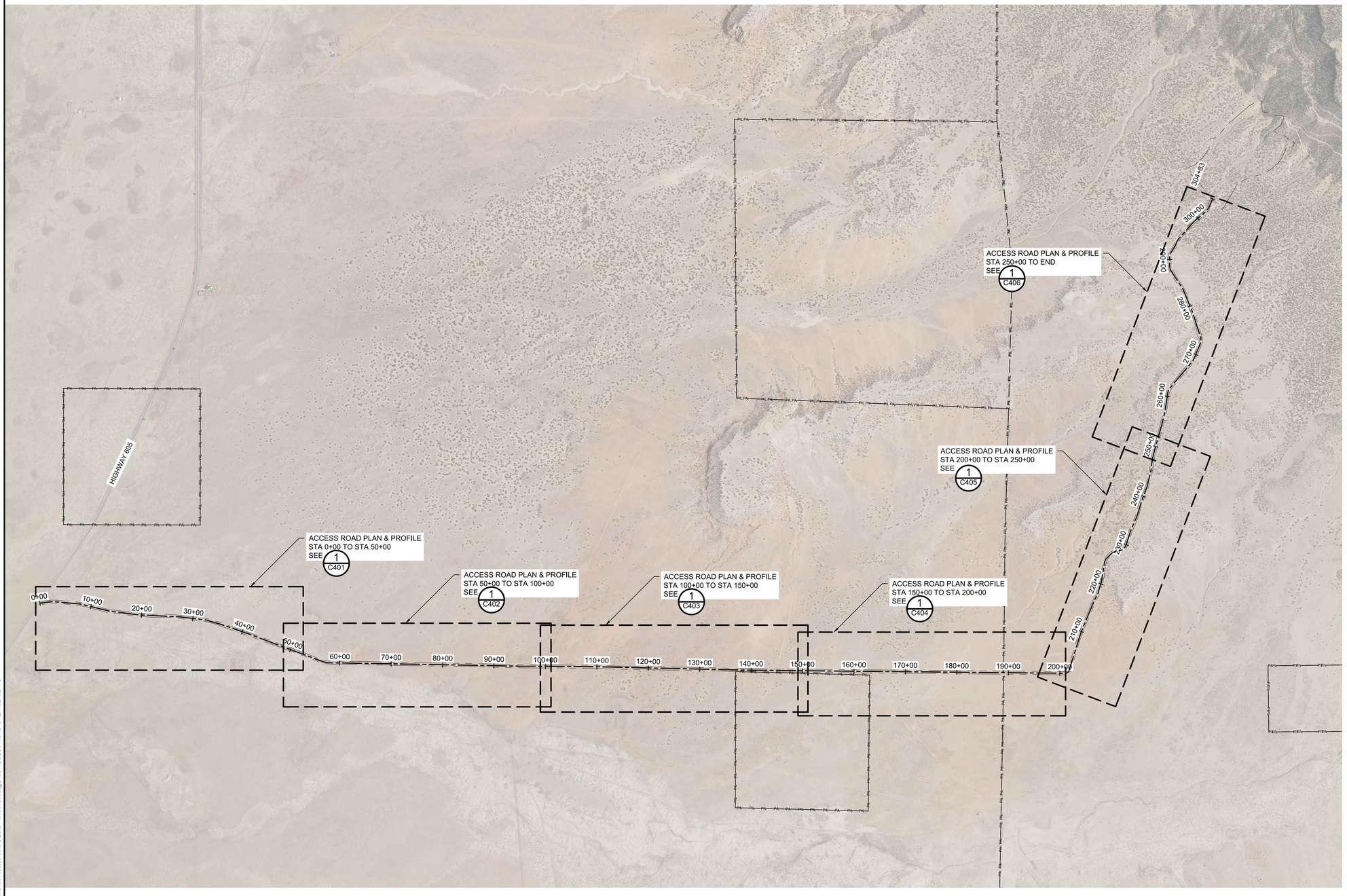
CLIENT PROJECT # -

LA JARA MESA
CIBOLA COUNTY, NEW MEXICO
ROAD
SECTION & DETAILS

BARR PROJECT # 3133100800
DWG # C300
REV # B



1 PLAN: ACCESS ROAD OVERVIEW
1" = 1000'
0 1000 2000
SCALE IN FEET

N

PROJECT DATUM:

HORIZONTAL: NW83-CF
VERTICAL: NAD83

LEGEND:

1+00 PROPOSED ACCESS ROAD CENTERLINE

P/L P/L P/L PROPERTY LINE

NOTES:

1. ROAD ALIGNMENT AND DRAINAGE FEATURES ARE SUBJECT RO ADJUSTMENT BASED ON ONGOING ENVIRONMENTAL, WETLANDS, AND CULTURAL RESOURCE REVIEWS AND ASSOCIATED PERMIT CONDITIONS.
2. FINAL STORMWATER, EROSION CONTROL, AND FLOODPLAIN-RELATED PERMIT CONDITIONS WILL BE INCORPORATED INTO THE 90% AND FINAL DESIGN.
3. UTILITY, PROTECTION MEASURES, AND EASEMENT LIMITS RELOCATIONS (WATER AND POWER CORRIDORS) SHOWN ARE PRELIMINARY AND WILL BE REFINED UPON RECEIPT OF FINAL UTILITY DATA AND RIGHT-OF-WAY MAPPINGS.

PRELIMINARY DRAFT
NOT FOR CONSTRUCTION

#	BY	CHK	APP	DATE	RELEASE/REVISION DESCRIPTION
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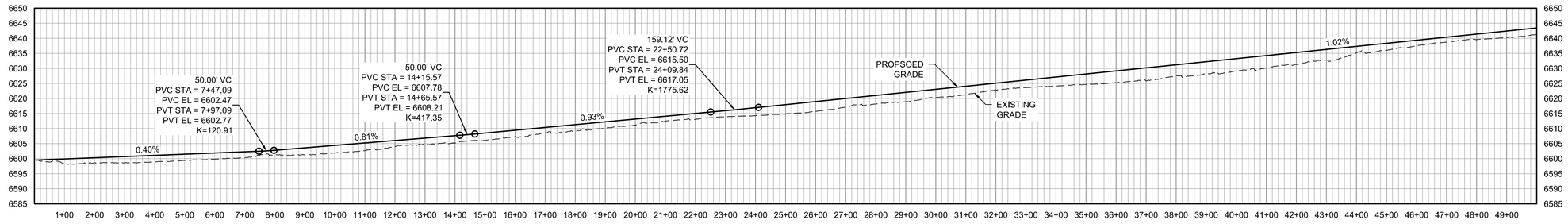
LA JARA MESA
CIBOLA COUNTY, NEW MEXICO
ACCESS ROAD OVERVIEW
PLAN

BARR PROJECT # 3133100800
DWG # C400
REV # A

1/- PLAN: ACCESS ROAD STA 0+00 TO STA 50+00

0 200 400

SCALE IN FEET



2/- PLAN: ACCESS ROAD STA 0+00 TO STA 50+00

0 200 400 0 20 40

HORIZONTIAL SCALE IN FEET VERTICAL SCALE IN FEET

PROJECT DATUM:

HORIZONTAL: NW83-CF
VERTICAL: NAD83

LEGEND:

- 1380 — EXISTING MAJOR CONTOUR
- 1379 — EXISTING MINOR CONTOUR
- 1+00 — PROPOSED CENTERLINE
- P/L — P/L — P/L — PROPERTY LINE

NOTES:

1. CULVERT SHALL HAVE A MIN COVER DEPTH OF 2'.
2. CULVERT SIZES, INVERTS, AND LOCATIONS ARE PRELIMINARY AND SHALL BE FINALIZED UPON COMPLETION OF DRTAILED HYDROLOGIC MODELING, HYDRAULIC CAPACITY CHECKS, AND ROAD-SIDE DRAINAGE DESIGN FOR THE REQUIRED DESIGN STORM EVENTS.
3. ROADWAY VERTICAL PROFILE AND SIDE-SLOPE GRADING AT WATERCOURSE CROSSINGS ARE PRELIMINARY; FINAL GRADES ARE SUBJECT TO ADJUSTMENT FOLLOWING DETAILED BACKWATER ANALYSIS AND FLOODPLAIN DELINEATION.

60% DESIGN
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#	BY	CHK	APP	DATE	RELEASE/REVISION DESCRIPTION
A	LFM	SAP	SAP	12/05/2025	60% DESIGN

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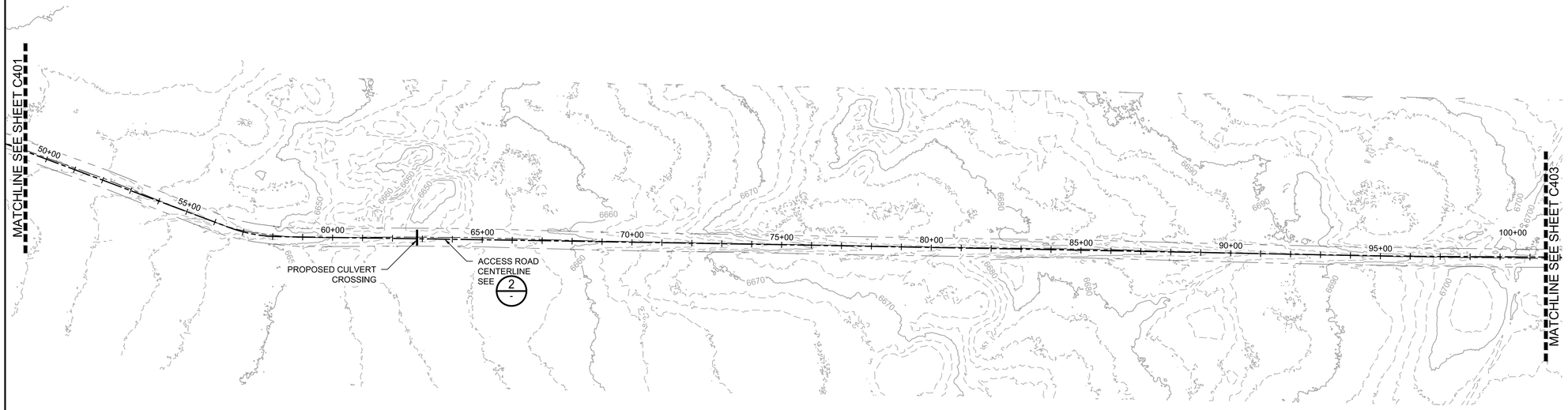
ACCESS ROAD
PLAN & PROFILE
STA 0+00 TO 50+00

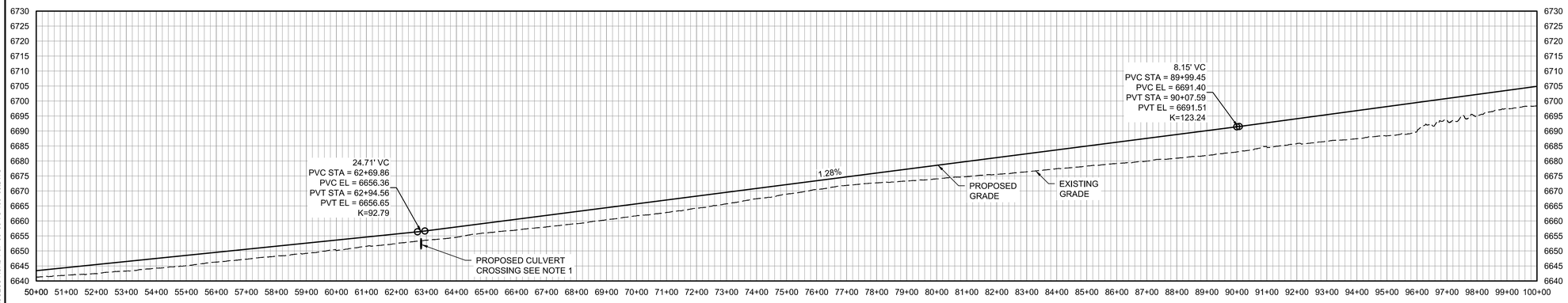
BARR PROJECT # 3133100800
DWG # C401
REV # A



1/C400 PLAN: ACCESS ROAD STA 50+00 TO STA 100+00

0 200 400

SCALE IN FEET



2/- PROFILE: ACCESS ROAD STA 50+00 TO STA 100+00

0 200 400 0 20 40

HORIZONTIAL SCALE IN FEET VERTICAL SCALE IN FEET

PROJECT DATUM:

HORIZONTAL: NW83-CF
VERTICAL: NAD83

LEGEND:

- 1380 — EXISTING MAJOR CONTOUR
- 1379 — EXISTING MINOR CONTOUR
- 1+00 — PROPOSED CENTERLINE
- P/L P/L P/L — PROPERTY LINE
- PROPOSED CULVERT CROSSING

NOTES:

1. CULVERT SHALL HAVE A MIN COVER DEPTH OF 2'.
2. CULVERT SIZES, INVERTS, AND LOCATIONS ARE PRELIMINARY AND SHALL BE FINALIZED UPON COMPLETION OF DRTAILED HYDROLOGIC MODELING, HYDRAULIC CAPACITY CHECKS, AND ROAD-SIDE DRAINAGE DESIGN FOR THE REQUIRED DESIGN STORM EVENTS.
3. ROADWAY VERTICAL PROFILE AND SIDE-SLOPE GRADING AT WATERCOURSE CROSSINGS ARE PRELIMINARY; FINAL GRADES ARE SUBJECT TO ADJUSTMENT FOLLOWING DETAILED BACKWATER ANALYSIS AND FLOODPLAIN DELINEATION.

60% DESIGN
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#	BY	CHK	APP	DATE	RELEASE/REVISION DESCRIPTION
A	LFM	SAP	SAP	12/05/2025	60% DESIGN

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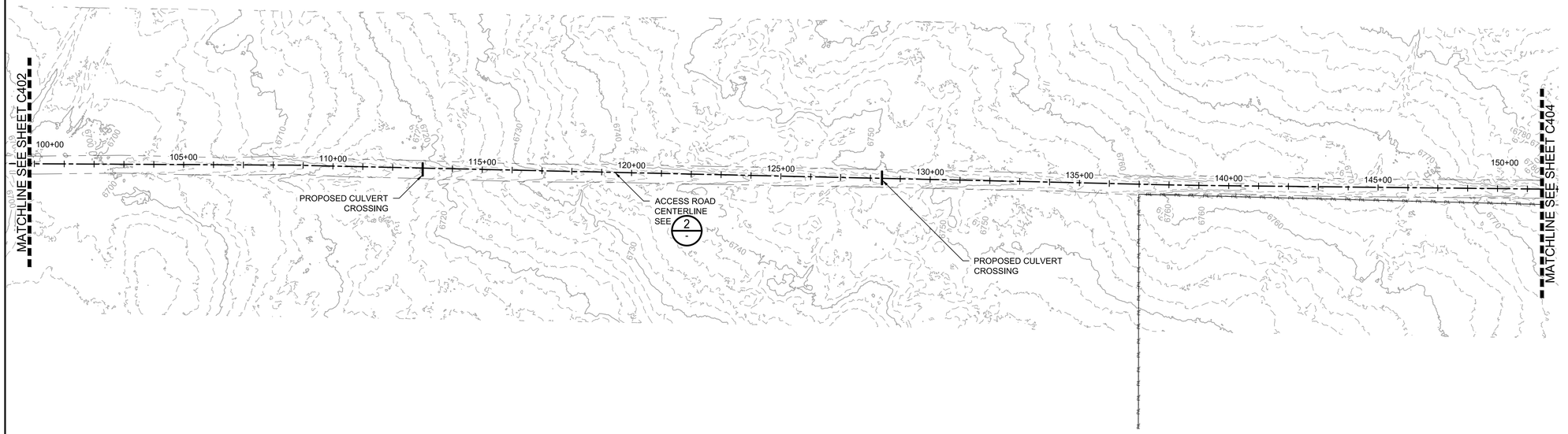
ACCESS ROAD
PLAN & PROFILE
STA 50+00 TO 100+00

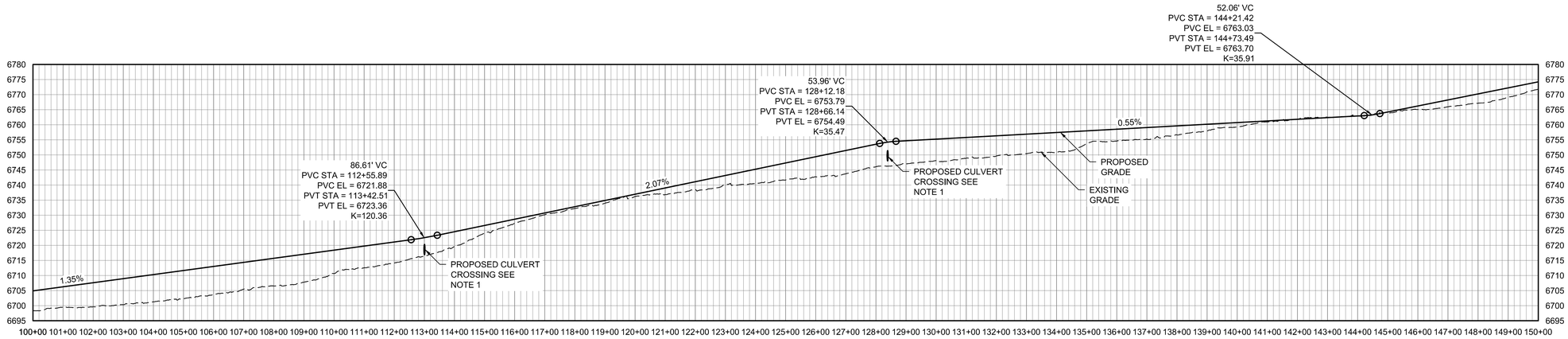
BARR PROJECT # 3133100800
DWG # C402
REV # A



1/C400 PLAN: ACCESS ROAD STA 100+00 TO STA 150+00

0 200 400

SCALE IN FEET



2/- PROFILE: ACCESS ROAD STA 100+00 TO STA 150+00

0 200 400 0 20 40

HORIZONTIAL SCALE IN FEET VERTICAL SCALE IN FEET

PROJECT DATUM:

HORIZONTAL: NW83-CF
VERTICAL: NAD83

LEGEND:

- 1380 — EXISTING MAJOR CONTOUR
- 1379 — EXISTING MINOR CONTOUR
- 1+00 — PROPOSED CENTERLINE
- P/L — P/L — P/L — PROPERTY LINE
- PROPOSED CULVERT CROSSING

NOTES:

1. CULVERT SHALL HAVE A MIN COVER DEPTH OF 2'.
2. CULVERT SIZES, INVERTS, AND LOCATIONS ARE PRELIMINARY AND SHALL BE FINALIZED UPON COMPLETION OF DRTAILED HYDROLOGIC MODELING, HYDRAULIC CAPACITY CHECKS, AND ROAD-SIDE DRAINAGE DESIGN FOR THE REQUIRED DESIGN STORM EVENTS.
3. ROADWAY VERTICAL PROFILE AND SIDE-SLOPE GRADING AT WATERCOURSE CROSSINGS ARE PRELIMINARY; FINAL GRADES ARE SUBJECT TO ADJUSTMENT FOLLOWING DETAILED BACKWATER ANALYSIS AND FLOODPLAIN DELINEATION.

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#	BY	CHK	APP	DATE	RELEASE/REVISION DESCRIPTION
A	LFM	SAP	SAP	12/05/2025	60% DESIGN

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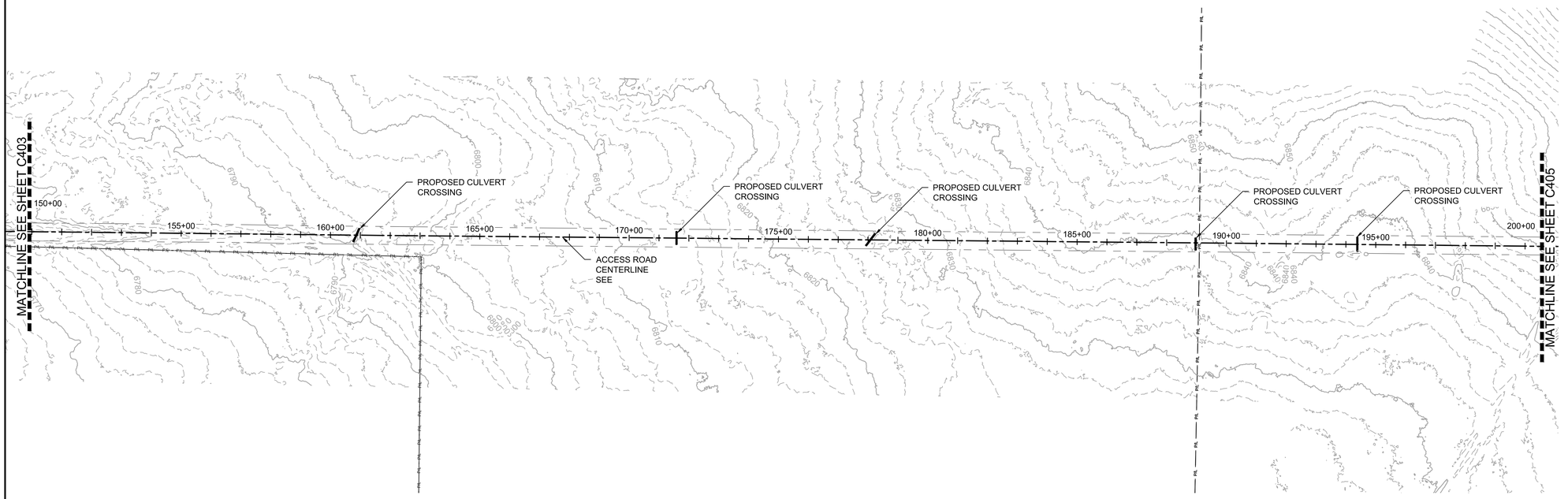
STA 100+00 TO 150+00

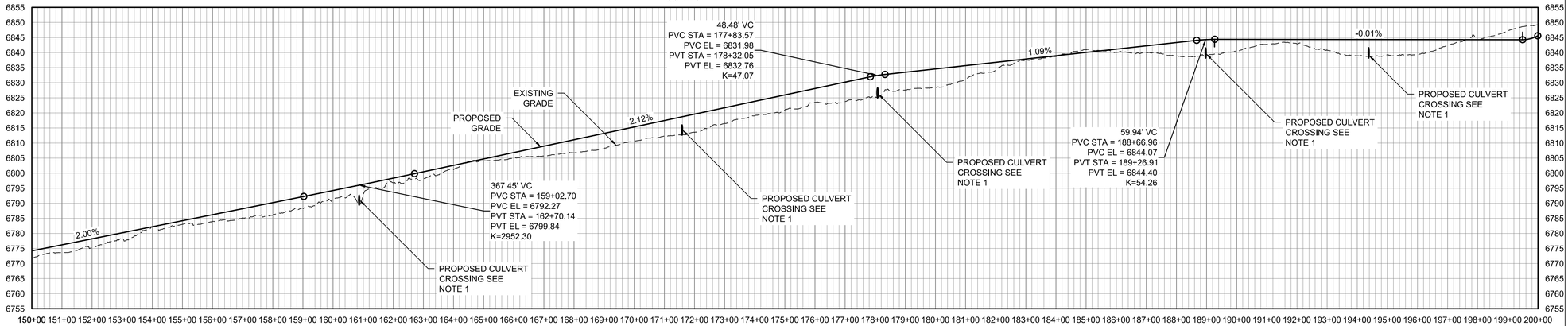
BARR PROJECT # 3133100800
DWG # C403
REV # A



1 / C400 PLAN: ACCESS ROAD STA 150+00 TO STA 200+00

0 200 400

SCALE IN FEET



2 / - PROFILE: ACCESS ROAD STA 150+00 TO STA 200+00

0 200 400 (HORIZONTIAL SCALE IN FEET) 0 20 40 (VERTICAL SCALE IN FEET)

PROJECT DATUM:

HORIZONTAL: NW83-CF
VERTICAL: NAD83

LEGEND:

- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- PROPOSED CENTERLINE
- PROPERTY LINE
- PROPOSED CULVERT CROSSING

NOTES:

1. CULVERT SHALL HAVE A MIN COVER DEPTH OF 2'.
2. CULVERT SIZES, INVERTS, AND LOCATIONS ARE PRELIMINARY AND SHALL BE FINALIZED UPON COMPLETION OF DRTAILED HYDROLOGIC MODELING, HYDRAULIC CAPACITY CHECKS, AND ROAD-SIDE DRAINAGE DESIGN FOR THE REQUIRED DESIGN STORM EVENTS.
3. ROADWAY VERTICAL PROFILE AND SIDE-SLOPE GRADING AT WATERCOURSE CROSSINGS ARE PRELIMINARY; FINAL GRADES ARE SUBJECT TO ADJUSTMENT FOLLOWING DETAILED BACKWATER ANALYSIS AND FLOODPLAIN DELINEATION.

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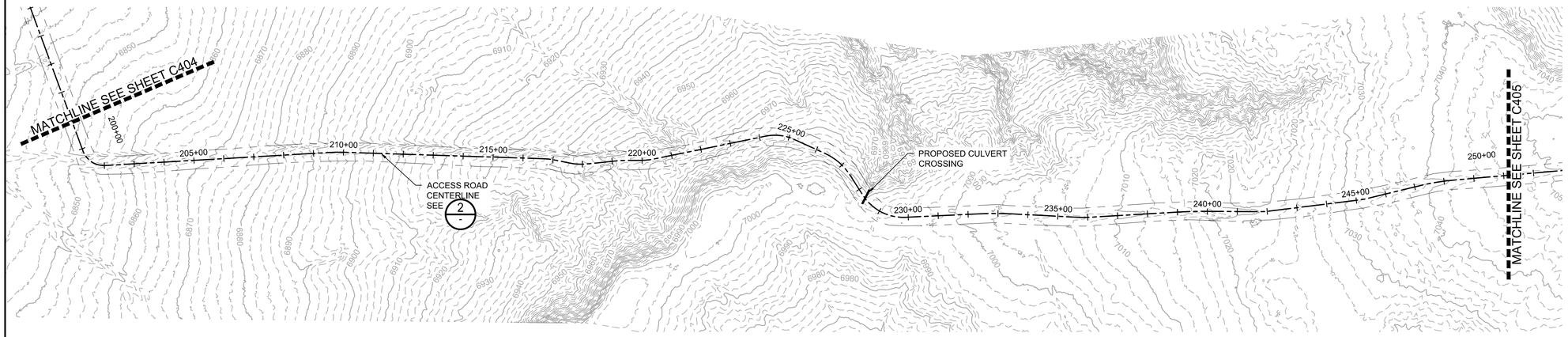
ACCESS ROAD
PLAN & PROFILE
STA 150+00 TO 200+00

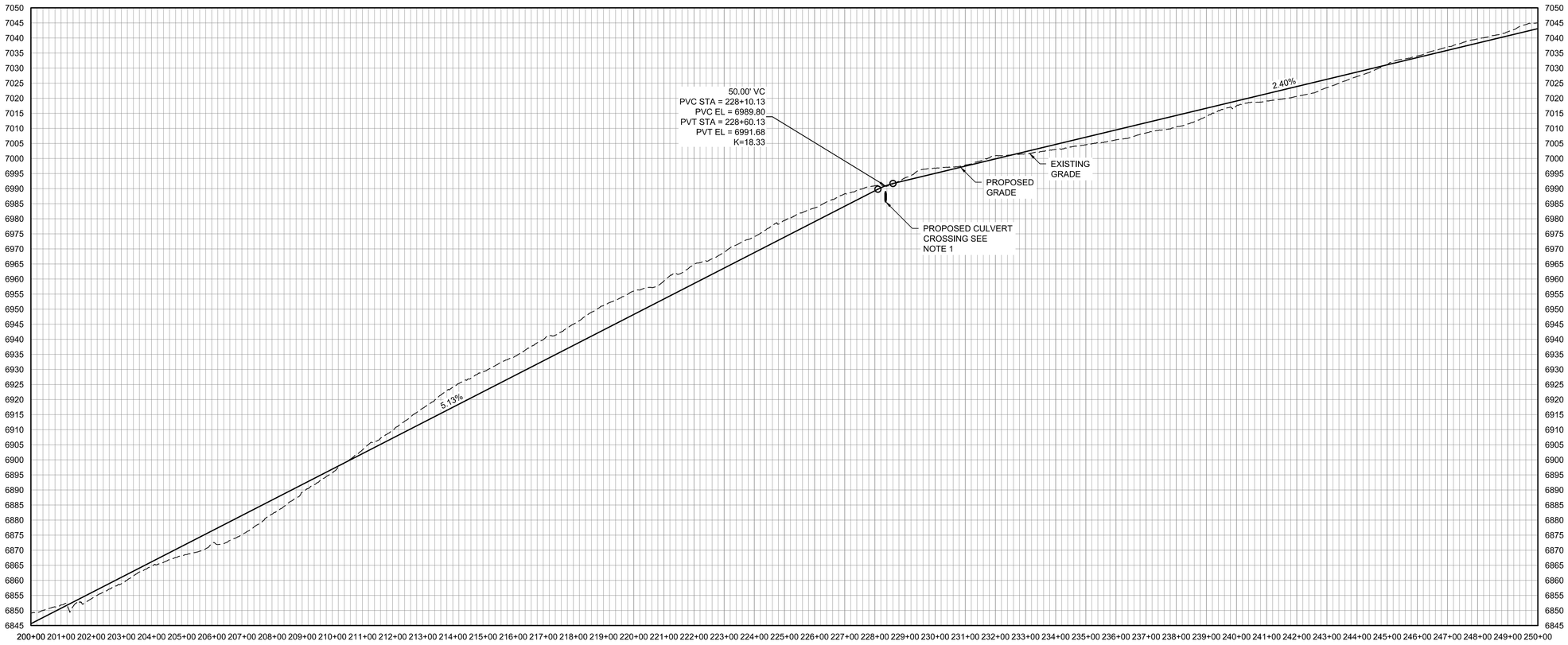
BARR PROJECT # 3133100800
DWG # C404
REV # A



1 C400 PLAN: ACCESS ROAD STA 200+00 TO STA 250+00

0 200 400

SCALE IN FEET



2 - PROFILE: ACCESS ROAD STA 200+00 TO STA 250+00

0 200 400 0 20 40

HORIZONTIAL SCALE IN FEET VERTICAL SCALE IN FEET

PROJECT DATUM:

HORIZONTAL: NW83-CF
VERTICAL: NAD83

LEGEND:

- 1380 — EXISTING MAJOR CONTOUR
- 1379 — EXISTING MINOR CONTOUR
- 1+00 — PROPOSED CENTERLINE
- P/L P/L P/L — PROPERTY LINE
- PROPOSED CULVERT CROSSING

NOTES:

1. CULVERT SHALL HAVE A MIN COVER DEPTH OF 2'.
2. CULVERT SIZES, INVERTS, AND LOCATIONS ARE PRELIMINARY AND SHALL BE FINALIZED UPON COMPLETION OF DRTAILED HYDROLOGIC MODELING, HYDRAULIC CAPACITY CHECKS, AND ROAD-SIDE DRAINAGE DESIGN FOR THE REQUIRED DESIGN STORM EVENTS.
3. ROADWAY VERTICAL PROFILE AND SIDE-SLOPE GRADING AT WATERCOURSE CROSSINGS ARE PRELIMINARY; FINAL GRADES ARE SUBJECT TO ADJUSTMENT FOLLOWING DETAILED BACKWATER ANALYSIS AND FLOODPLAIN DELINEATION.

60% DESIGN
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A	LFM	SAP	SAP	12/05/2025	60% DESIGN

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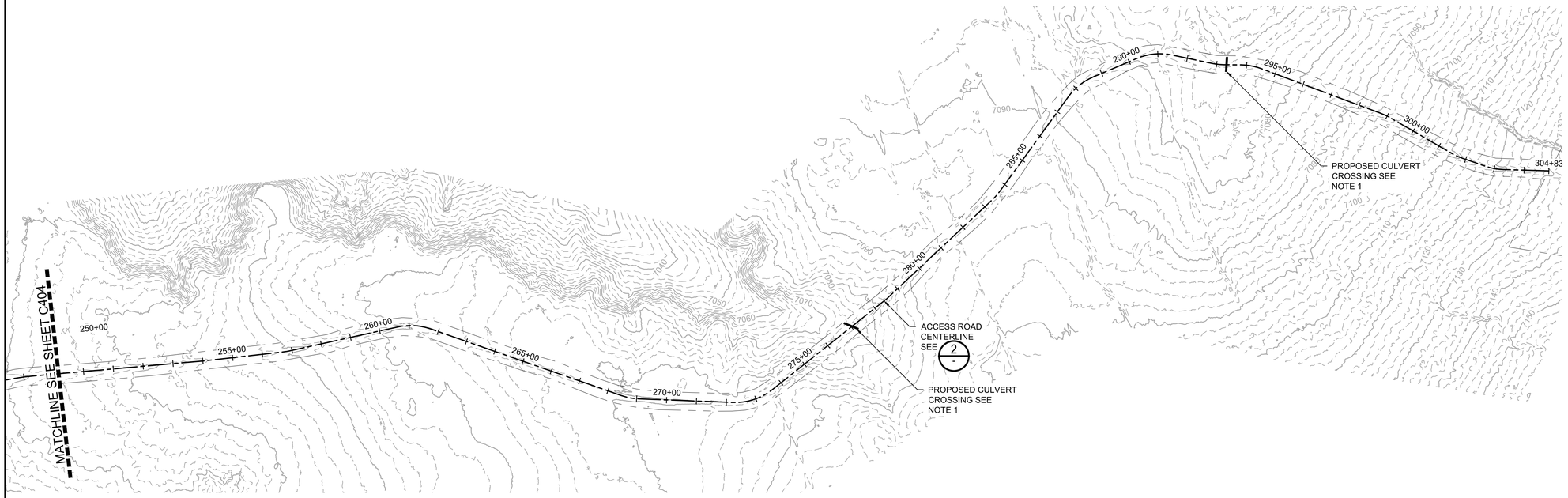
ACCESS ROAD
PLAN & PROFILE
STA 200+00 TO 250+00

BARR PROJECT # 3133100800
DWG # C405
REV # A



1/C400 PLAN: ACCESS ROAD STA 250+00 TO END

0 200 400

SCALE IN FEET

PROJECT DATUM:

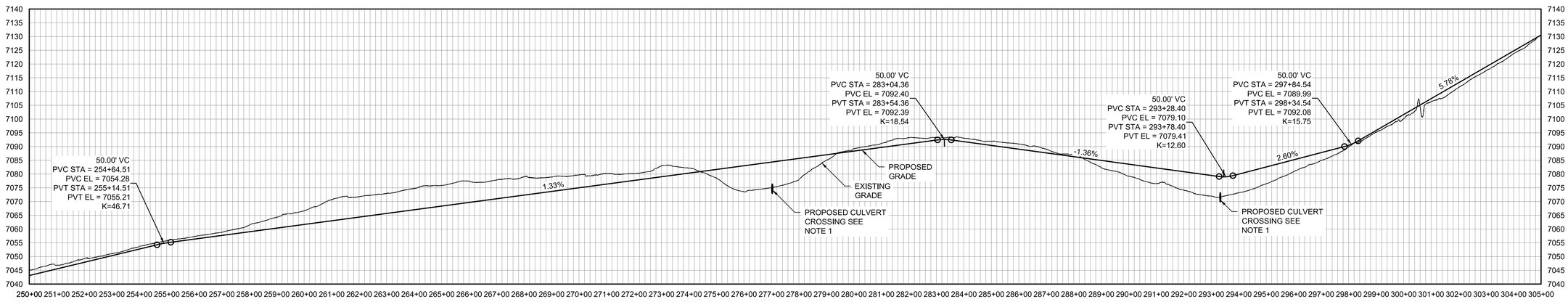
HORIZONTAL: NW83-CF
VERTICAL: NAD83

LEGEND:

- 1380 — EXISTING MAJOR CONTOUR
- 1379 — EXISTING MINOR CONTOUR
- 1+00 — PROPOSED CENTERLINE
- P/L — P/L — P/L — PROPERTY LINE
- PROPOSED CULVERT CROSSING

NOTES:

1. CULVERT SHALL HAVE A MIN COVER DEPTH OF 2'.
2. CULVERT SIZES, INVERTS, AND LOCATIONS ARE PRELIMINARY AND SHALL BE FINALIZED UPON COMPLETION OF DRTAILED HYDROLOGIC MODELING, HYDRAULIC CAPACITY CHECKS, AND ROAD-SIDE DRAINAGE DESIGN FOR THE REQUIRED DESIGN STORM EVENTS.
3. ROADWAY VERTICAL PROFILE AND SIDE-SLOPE GRADING AT WATERCOURSE CROSSINGS ARE PRELIMINARY; FINAL GRADES ARE SUBJECT TO ADJUSTMENT FOLLOWING DETAILED BACKWATER ANALYSIS AND FLOODPLAIN DELINEATION.



2/- PROFILE: ACCESS ROAD STA 250+00 TO END

0 200 400 0 20 40

HORIZONTIAL SCALE IN FEET VERTICAL SCALE IN FEET

60% DESIGN
NOT FOR CONSTRUCTION

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Appendix B

Process and Stormwater Pond Sizing

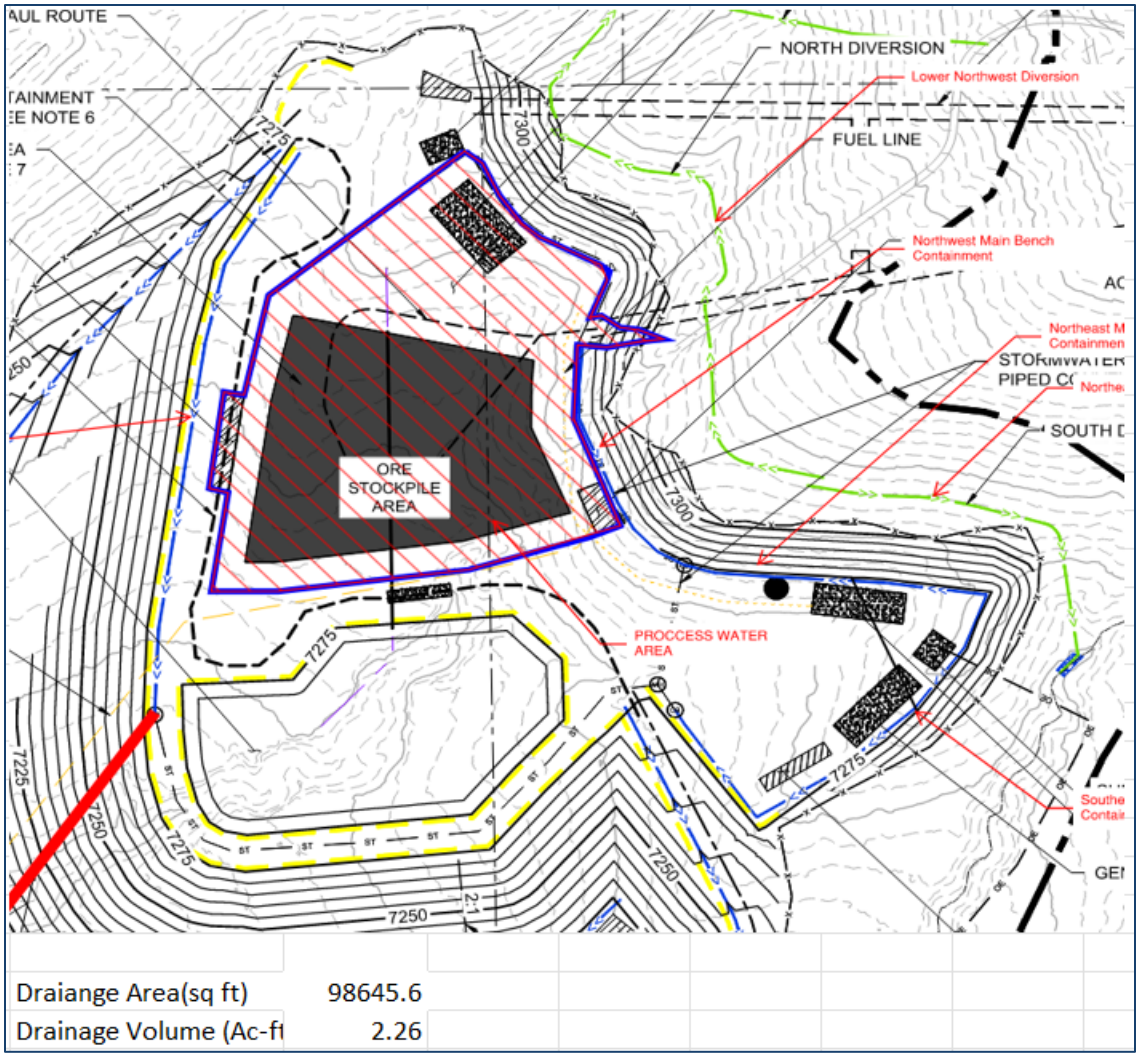

Figure B-1 Process Pad Collection Area

Table B-1 Sizing Scenarios

Scenario 1 Assumes (Curve Number is 99)	
Event	**Rainfall Depth**
Precipitation depth, 200-year, 45-day storm	7.58 inches
Process Water Area, 200-Year, 45-Day Storm	
Area	98645.5761 ft^2
Curve number	98 dim
S (potential maximum retention) with specified CN	0.20 dim
Runoff SCS with specified CN	6.90 in
% runoff	91%
Runoff Volume, 200-Year, 45-Day Storm	
Cubic feet	56,751
Cubic yards	2102
Gallons	424554
Million gallons	0.42
Acre feet	1.3
Scenario 2 Assumes (Curve Number is 99)	
Event	**Rainfall Depth**
Precipitation depth, 200-year, 45-day storm	8.07 inches
Process Water Area, 200-Year, 45-Day Storm	
Area	98645.5761 ft^2
Curve number (CN)	98 dim
S (potential maximum retention) with specified CN	0.20 dim
Runoff SCS with specified CN	7.83 in
%Runoff	97%
Runoff Volume, 200-year, 45-Day Storm	
Cubic feet	64,368
Cubic yards	2,384
Gallons	481,537
Million gallons	0.48
Acre-feet	1.5
Scenario 3 Assumes (Curve Number is 99)	
Event	**Rainfall Depth**
Precipitation depth, 200-year, 45-day storm	8.66 inches
Process Water Area, 500-Year, 45-Day Storm	
Area	98645.5761 ft^2
Curve number (CN)	98 dim
S (potential maximum retention) with specified CN	0.20 dim
Runoff SCS with specified CN	8.42 in
%Runoff	97%
Runoff Volume, 200-Year, 45-Day Storm	
Cubic feet	69,215
Cubic yards	2,564
Gallons	517,797
Million gallons	0.52
Acre-feet	1.6

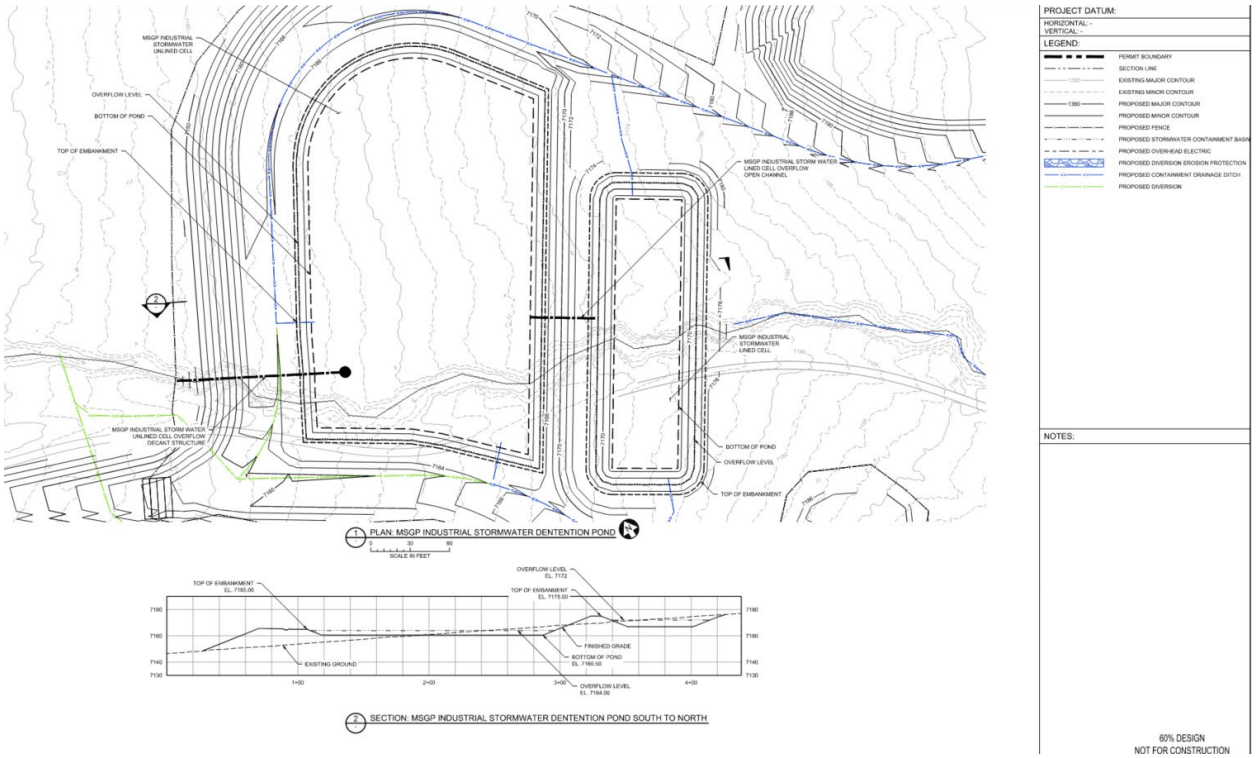

Figure B-2 MSGP Stormwater Pond Sizing (Sizes Based on Use and Loss)

Upper, Lined Pond
MSGP Lined Industrial Stormwater Pond Assumptions

- 10 to 15 days of water storage based on MORP/MPO chart project water use requirements
- 1 foot of freeboard
- HDPE liner system (2 feet of material above top of freeboard for liner anchoring)
- Water from MSGP will not be used in underground operation
- Water from MSGP industrial stormwater pond will be used in surface facilities
- Surface dust control (except in process water areas and contingency

Table B-2 Estimated Water Demands

	GPM	1-Day Water Demand (Ac-Ft)	10-Day Water Demand (Ac-Ft)	15-Day Water Demand (Ac-Ft)
Surface Facilities	7.3	0.03	0.32	0.48
Surface/Road Dust Control	15.4	0.07	0.68	1.02
Contingency	0.3	0.00	0.01	0.02
Total	23	0.10	1.01	1.52
Target Lined Pond Volume (Ac-Ft): 1.52				

Lower, Unlined Stormwater Pond Assumptions

- 24-hour, 100-year storm event
- 1 foot of freeboard
- Able to infiltrate a 24-hour, 100-year storm event in 30 days
- Infiltration rates based on EPA onsite *WWT Manual* table

Table B-3 Infiltration Characteristics for the 24-Hour 100-Year Storm

24-Hour, 100-Year Storm (2.66 Inches)	
Stormwater Pond Volume	3.37 acre-ft
Infiltration Rate High	1.6 gal/ft^2-day
	0.226 acre-ft/day
Infiltration Rate Low	0.8 gal/ft^2-day
	0.11 acre-ft/day
Area of Pond	1.06 acres
Days (High Infiltration)	14.88 days
Days (Low Infiltration	29.76 days

Table B-4 Mine Site Ditch HydroCAD Output

Ditches

Reach-Node ID	Length (ft)	Inlet Inv. (ft)	Outlet Inv. (ft)	Slope	Peak Depth (ft)	Ditch depth (ft)	Ditch Bottom Width (ft)	Ditch Top Width (ft)	Max Flow (cfs)	Max velocity (ft/s)	Description	Updated 12/4/25
ID-1	380.92	7276.92	7275	0.5%	0.38	0.88	1	5.4	1.3	3.8	NEMB	Y
ID-2	234.96	7276.92	7274.71	0.9%	0.49	0.99	1	5.95	2.9	3.7	SEMB	Y
ID-3	508.07	7272.68	7270.14	0.5%	0.51	1.01	1	6.05	1.8	4.6	WMB-1	Y
ID-4	25.35	7270.14	7261.67	33.3%	0.18	0.68	1	4.4	1.8	6.9	WMB-2	
ID-5	227.3	7261.69	7185.92	33.3%	0.36	0.86	1	5.3	4.9	7.2	WMB-3	
ID-6	52.38	7182.94	7180.63	4.4%	0.52	1.02	1	6.1	8.8	5.3	WMB-4	Y
ID-7	196.63	7180.63	7173	3.9%	1.01	1.51	2	9.55	26.9	6.8	WMB-5	Y
ID-8	360.58	7224	7222.28	0.5%	0.82	1.32	2	8.6	9.4	4.2	NSB-1	Y
ID-9	53.79	7222.28	7204.87	32.4%	0.32	0.82	2	6.1	6.7	7.3	NSB-2	
ID-10	169.15	7197.5	7187.94	5.7%	0.52	1.02	2	7.1	9.1	6.1	NSB-3	Y
ID-11	43.92	7187.94	7182.72	11.9%	0.43	0.93	2	6.7	9.1	7.2	NSB-4	Y
ID-12	854.75	7274.76	7183.65	10.7%	0.81	1.31	0	6.55	10.4	11.6	Exit Road 1	Y
ID-13	487.45	7183.65	7157.86	5.3%	0.87	1.37	0	6.9	10.3	8.6	Exit Road 2	Y
ID-14	1393.96	7271.81	7158.24	8.1%	1.1	1.6	0	8.0	20.1	12.0	Entrance Road 1	Y
ID-15	490.21	7158.24	7158.81	-0.1%	1.21	1.71	0	8.6	15.2	7.6	Entrance Road 2	

Table B-5 Storm Sewer Pipe HydroCAD Output

Storm Sewer

Reach-Node ID	Length (ft)	Inlet Inv. (ft)	Outlet Inv. (ft)	Slope	Peak Depth (ft)	Diameter (ft)	Max Flow (cfs)	Max velocity (ft/s)	Description	Updated 12/4/25
SS-1	218.4	7267.00	7265.91	0.5%	0.52	2	1.8	3.3	NWMB-1	N
SS-2	213.4	7265.91	7264.84	0.5%	0.89	2	4.8	3.8	NWMB-2	N
SS-3	103.7	7264.84	7264.32	0.5%	1.1	2.5	8.6	4.1	NWMB-3	N
SS-4	600.73	7264.32	7261.38	0.5%	1.09	2.5	8.5	5.2	NWMB-4	Y
SS-5	26.3	7270.14	7261.38	33.3%	0.28	2.5	4.9	16.1	WMB-3	Y
SS-5B	235.3	7261.38	7182.94	33.3%	0.45	2.5	12.6	21.7	WMB-3B	Y
SS-7	76.99	7222.28	7197.5	32.2%	0.48	2	12.4	21.4	NSB-2	Y

Table B-6 Diversion Ditch HydroCAD Output

Diversion Ditches

Reach-Node ID	Length (ft)	Inlet Inv. (ft)	Outlet Inv. (ft)	Slope	Peak Depth (ft)	Ditch Depth/Culvert Diameter(ft)	Top width (ft)	Max Flow (cfs)	Max velocity (ft/s)	Description	Updated 12/5/2025
Div-1A	8.76	7316.27	7313.87	27.4%	0.45	2	--	9.0	12.8	Northeast diversion 1	Y
Div-1B	194.18	7313.87	7312.71	0.6%	1.11	1.61	8.1	9.0	3.2	Northeast diversion 2	Y
Div-1C	89.89	7312.71	7309.71	3.3%	0.89	1.39	7.0	8.7	4.9	Northeast diversion 3	Y
Div-1D	53.66	7309.71	7292.1	32.8%	0.62	1.12	5.6	8.7	9.3	Northeast diversion 4	Y
Div-2	293.28	7409.15	7279.21	44.3%	0.29	2	--	5.1	19.7	Upper Northwest Diversion 1 (upper northwest inlet to junction)	Y
Div-3	140.23	7279.21	7228.84	35.9%	0.44	2	--	10.9	22.0	Upper Northwest Diversion 2 (Junction to upper northwest outlet)	Y
Div-4A	450.45	7317.34	7313.94	0.8%	1.03	1.53	7.7	6.7	5.2	Lower Northwest Diversion 1	N
Div-4B	65.43	7313.94	7295.02	28.9%	0.36	2	--	6.4	17.2	Lower Northwest Diversion 2	Y
Div-4C	26.83	7295.02	7294.75	1.0%	0.78	2	--	6.4	5.7	Lower Northwest Diversion 3	Y
Div-4D	40.17	7294.75	7279.21	38.7%	0.33	2	--	6.4	19.0	Lower Northwest Diversion 4	Y
Div-5A	9.18	7150.86	7147.8	33.3%	1.08	1.58	7.9	37.9	13.2	South Diversion 1	Y
Div-5B	69.42	7147.8	7146.89	1.3%	1.83	2.33	11.7	37.9	4.5	South Diversion 2	Y
Div-5C	62.67	7146.89	7144.06	4.5%	1.18	2	--	37.8	20.0	South Diversion 3	Y
Div-5D	78.76	7144.06	7138.03	7.7%	1.37	1.87	9.4	37.8	8.5	South Diversion 4	Y