

Permittee: Montanore Minerals Corporation
Operating Permit #: 00150
Location: Libby, Lincoln County
Date: May 2022, Revised August 2022, Revised December 2022

This minor permit revision request follows the format of Administrative Rules of Montana ARM 17.24.120 of the Rules and Regulations Governing the Montana Hard-Rock Mining Reclamation Act.

Montanore Minerals Corporation (MMC or Company) prepared this minor permit revision to Hard Rock Operating Permit No. 00150 for the Libby Exploration Project (Project). MMC holds Operating Permit No. 00150 authorizing completion of the Libby Adit and construction, operation, and reclamation of the Project. Exploration activities were authorized at the Libby Adit Site in Exploration License No. 00429, issued on April 19, 1989. The license was later incorporated into Operating Permit No. 00150 issued in 1993. Since then, minor revisions have been authorized by the Montana Department of Environmental Quality (DEQ) as follows:

- Minor Revision MR 06-001, 2006: Excavate a reclaimed area to expose the Libby Portal and assess dewatering needs (volume and water quality).
- Minor Revision MR 06-002, 2006: Resume suspended activities associated with the exploration and drilling program with minor modifications.
- Minor Revision MR 08-002, 2008: Change location of surface facilities at the Libby Adit Site.
- Minor Revision MR 20-001, 2020: Reduction in surface water, groundwater, and aquatics monitoring.

Existing surface facilities at the Libby Adit Site are located on private land within the patented claim boundary. Most of these facilities were installed during the initial 1989-1991 work on the adit and/or the 2009 rehabilitation program (see below).

The Libby Adit was constructed in the late 1980s. Operations ceased in the early 1990s allowing the decline to flood with groundwater. The existing Libby Adit (decline) is approximately 14,000 feet in length, 18 feet wide, and 18 feet high. MR 06-002 authorized rehabilitation and dewatering of 14,000 feet of the Libby Adit.

In 2009, MMC rehabilitated approximately half of the decline. This work involved dewatering and installation of ground support/utilities/ventilation. As part of the ongoing care and maintenance program for the Libby Adit, MMC pumps a daily average of 30 gallon per minute (gpm), with some minimal seasonal fluctuations, to the Water Treatment Plant (WTP) prior to discharge to Outfall 001 in accordance with the Montana Pollutant Discharge Elimination System (MPDES) permit. This pumping effort maintains the underground adit open to the 7,200-foot level.

A. General Summary of Revision

The activities under this minor revision are similar in nature to those previously authorized for mineral resources exploration under MR 06-002. MMC will proceed with completing rehabilitation and dewatering of the Libby Adit as authorized under MR 06-002.

This minor revision to Operating Permit No. 00150 consists of a modification to the underground drift layout to conduct exploration from above the mineral resources zone instead of below as presented in MR 06-002. This minor revision also includes modification of surface facilities at the Libby Adit Site to maximize waste rock storage space within the confines of the existing surface disturbance area.

Modifications to Operating Permit No. 00150 in this minor revision include the following:

- Construction of underground drifts and drill stations to conduct exploration from above the mineral resource zone adding an additional 100 feet of underground drift construction.
- Modification of surface facilities within previously disturbed area at the Libby Adit Site:
 - Expansion of the existing Waste Rock Storage Area (WRSA #1) to increase the storage capacity of the facility to approximately 77,000 cubic yards (yd³).
 - Expansion of the authorized WRSA #2 to increase the storage capacity of the facility to approximately 87,000 yd³.
 - Construction of a new double-lined 360,000-gallon capacity Waste Rock Sump (WRS).
 - Relocation of a soil stockpile to accommodate construction of WRSA #2.
 - Installation of two aboveground 20,000-gallon double-walled fuel tanks.
- MMC will perform the work over a period of approximately 4 to 5 years following initiation of dewatering and rehabilitation work.

Surface Facilities

All surface facilities will remain within the previously disturbed area at the Libby Adit Site. No new disturbances will be created as an outcome of the modifications presented in this minor revision. **Table 1** presents the area for the Libby Adit Site facilities associated with this minor revision. **Figure 1** shows the change in surface facilities at the Libby Adit Site.

Table 1 Minor Revision Disturbance

Facility	Total Disturbance Area (acres)
WRSA #1	2.6
WRSA #2	4.0
WRS/Percolation Pond	1.3
Soil Stockpile	0.4
Portal Pad	5.0
Other	6.1
Total	19.4

Waste Rock Storage Areas (WRSAs)

Under this minor modification, MMC will expand the existing WRSA #1 and expand the footprint of the previously authorized WRSA #2. All waste rock material generated underground will be placed on the two lined WRSAs with meteoric infiltration through waste rock captured and treated prior to discharge through existing MPDES outfall. The maximum height of the WRSAs will be 59 feet.

MMC will extend existing WRSA #1 northwest from the edge of the existing lined area toward the WTP. The expansion of WRSA #1 will include installation of a polyvinyl chloride (PVC) geomembrane liner that ties into the existing PVC liner and anchored along a perimeter berm. A plan view and cross-section of WRSA #1 is shown on **Figure 2**. The total storage capacity for WRSA #1 will be approximately 77,000 yd³.

MMC will also expand the authorized footprint of WRSA #2 (MMC has yet to place waste rock in WRSA #2). WRSA #2 will include installation of a HDPE liner and have a storage capacity of approximately 87,000 yd³. A plan view and cross-section of WRSA #2 is shown on **Figure 3**.

An underdrain collection system will be constructed within the expanded WRSA areas that include a series of underdrain pipes located throughout the WRSA floor to collect and convey meteoric infiltration to a specified exit point near the WRS (described below). Underdrain pipes will consist of 4-inch diameter perforated corrugated polyethylene (CPE) pipe encapsulated in drainage material.

A plan view and cross-section of the reclaimed WRSA #1 and WRSA #2 are shown on **Figure 4** and **Figure 5**, respectively. MMC will grade final slopes of the WRSAs to be a maximum of 3 Horizontal:1 Vertical and install a barrier (geosynthetic) cover to eliminate infiltration from precipitation overlain by growth media on both facilities. To achieve this final slope configuration, MMC will offload approximately 58,000 yd³ of waste rock material (31,000 yd³ WRSA #1; 27,000 yd³ from WRSA #2) and haul the material in the Libby Adit. A portion of the waste rock material will also be used to backfill the WRS and percolation pond and regraded and covered with topsoil as part of the reclamation activities. MMC will place 12 inches of growth media over the WRSA slopes.

Waste Rock Sump (WRS)

MMC will construct a new 360,000-gallon capacity WRS to replace the existing 75,000-gallon-capacity single liner sump (**Figure 6**). Runoff from the WRSAs and precipitation that infiltrates to the liner below the facilities will be directed to the lined WRS. The WRS will be double-lined with 80-mil HDPE liner and include a leak detection system. Water collected at the WRSAs will be directed, via exit points, to the WRS which is sized to manage runoff from a 100-year, 24-hour storm event. The exit points are located at both ends of the WRS. WRSA #1 flows in from the west with two existing pipes; WRSA #2 flows in from the east with new, proposed pipes. **Figure 6** shows the exit points for WRSA #1 and WRSA #2. A cross section of the collection pipes from WRSA #1 to the WRS is shown on **Figure 6**.

MMC will continue to manage water discharge in accordance with the MPDES permit. Water in the WRS will be periodically pumped to the WTP prior to discharge to Outfall 001. MMC will be capable of pumping up to 200 gpm from the WRS to the WTP. Water levels in the sump will be monitored and pumped to the WTP as needed to prevent overflow. Prior to initiation of construction of the expanded WTP, MMC will submit to DEQ the proposed WTP design for approval. MMC will continue to operate the WRS and the WTP until no water is collecting and the sump is backfilled and reclaimed.

At closure, once no more water is visible in the WRS, MMC will backfill the sump with waste rock material pushed down from the WRSA. The area will be graded to avoid ponding of meteoric water. MMC will spread topsoil and revegetate with the approved seed mix. **Figure 7** shows the plan view and cross-section of the reclaimed WRS.

Soil Stockpile

Topsoil (growth media) has been removed and stockpiled at the Libby Adit Site for use during reclamation. Approximately 15,200 yd³ of topsoil is stockpiled at the site. MMC will develop a new soil stockpile at the southeast portion of the Libby Adit Site (**Figure 1**). MMC will move the existing soil stockpile (approximately 2,000 yd³) located within the footprint of WRSA #2 to the new soil stockpile. Topsoil stockpiles will be depleted once MMC spreads the material over the Libby Adit Site for reclamation of facilities. The stockpile areas will be regraded and contoured, ripped, and scarified to loosen compacted soil. MMC will establish vegetation using the approved seed mix. MMC does not anticipate purchasing topsoil from an outside source.

MMC proposes to evenly distribute topsoil to reclaim facilities at Libby Adit Site. Development of WRSA #2 will require disturbing existing revegetated slopes on the south side of the Libby Adit Site and on the northeast side of WRSA #2. MMC will salvage available soil material and store the material in the new topsoil stockpile. Areas such as road cuts may not require placement of topsoil at closure. MMC will complete an assessment of areas that require placement of topsoil and may use organic amendment to improve revegetation. MMC will assess the need for topsoil material to meet closure objectives based on specific areas at the Libby Adit Site. Should the assessment demonstrate that there is an insufficient volume of topsoil available, MMC will investigate the area located south of WRSA #2 (down to Libby Creek, as shown on **Figure 1**) as a potential source of growth media.

Fuel Storage Facilities

As fuel storage requirements increase for the Project, MMC will install two aboveground 20,000-gallon double-walled fuel tanks within covered concrete-floored areas. Required secondary containment for these tanks will be provided by the secondary tank wall which jackets the inner containment tank. These tanks will be designed, constructed, and installed in accordance with ARM 17.57.105 – Design, Construction, and Installation Standards for Aboveground Double-Walled Petroleum Storage Tank Systems. The stationary (fixed) diesel fuel tanks, including day tanks, will be stored within covered concrete floors. For containment purposes, fueling will occur on a concrete pad adjacent to the fuel storage area to the extent practical.

At closure, fuel tanks will be properly disposed off-site. MMC will visually inspect the secondary containment concrete for presence of oily residue. Concrete will be cleaned if oily, broken in pieces less than 3-feet in size, and buried or used as backfill material for the Libby Adit. MMC will regrade the fuel facility area, place 24 inches of topsoil, and seed with the approved seed mix.

Underground Activities

Rehabilitation and Dewatering

MMC will complete rehabilitation of the lower segment of the Libby Adit and dewatering activities as authorized in MR 06-002. Authorized discharge locations from the WTP included the percolation pond (Outfall 001), infiltration system, and/or direct discharge to Libby Creek. Under this minor revision, all Libby Adit water will be treated in the WTP and discharged in Outfall 001 only.

Libby Adit Extension and Underground Drift Construction

Once the existing Libby Adit is dewatered and rehabilitated, MMC will begin underground construction to extend the existing adit and establish drill stations. Previous plans and layout for underground drifts under MR 06-002 included construction of underground workings to reach an area below the mineral resource. MMC will modify the underground drifts layout to conduct exploration from drill stations located above the mineral resource. MMC will construct an inclined adit extension to above the currently defined resource along with lateral drifts (**Figure 8**).

The revised underground layout will include constructing an extension of the Libby Adit by approximately 4,200 feet and constructing 6,300 feet of drifts to conduct exploration activities. Underground construction under MR 06-002 consisted of extending the Libby Adit by 3,300 feet and construction of 7,100 feet of drifts. This minor revision will add 900 feet of adit and subtract 800 feet of drifts (**Figure 9**). The proposed design changes for the underground development will generate an estimated 135,000 yd³ of waste rock material. The underground lateral drifts proposed in this Minor Revision are reduced to 15x15 feet drifts compared to 18x18 feet as presented in MR 06-002.

Underground Drilling Program

Modification for the underground drilling program consists of new underground drill locations (above the mineral resources instead of below the zone). MMC will conduct mineral exploration from approximately 35 underground drill stations located in drifts above the mineralized zone.

Work Schedule

Project activities are anticipated to last approximately 4 to 5 years, excluding closure. Because activities, data evaluation, and reclamation could overlap, total duration of the Project may be up to 7 years.

B. Non-Significance Determination

This revision is deemed non-significant as defined in 82-4-342(5) Montana Code Annotated (MCA) given that the proposed changes are the same as previously authorized activities (e.g., underground construction to support mineral exploration and construction of surface facilities on existing disturbance) under Operating Permit No. 00150. Activities under this minor revision will not increase the Operating Permit No. 00150 boundary and no new disturbance will occur at the Libby Adit Site. This minor revision does not include an increase in waste rock generated from underground drift construction.

MMC will continue to manage water, including adit dewatering, in accordance with the active MPDES permit. None of the proposed changes will result in new or different discharges to either surface or groundwater.

MMC will reclaim the Libby Adit Site in accordance with its Operating Permit No. 00150. This minor revision will not change the current approved reclamation plan objectives and goals. All previous permit commitments associated with topsoil salvage and replacement, sediment control, and reclamation as approved in Operating Permit No. 00150 will be maintained.

C. Previous Environmental Analyses

- United States Department of Agriculture (USDA) Forest Service, Montana Department of State Lands, Montana Department of Health and Environmental Sciences, and Montana Department of Natural Resources and Conservation. 1992. Final Environmental Impact Statement, Montanore Project. 471 pages plus appendices.
- United States Department of Agriculture (USDA) Forest Service. 1993. Record of Decision, Montanore Project, Final Environmental Impact Statement. Kootenai National Forest (KNF). Libby, MT. 22 pages plus appendices.
- Montana Department of State Lands (DSL). 1992. Record of Decision, Montanore Project. On file with the DEQ.
- United States Forest Service and Montana Department of Environmental Quality (USFS and DEQ). 2015. Joint Final Environmental Impact Statement, Montanore Project. December 2015.
- Montana Department of Environmental Quality. 2016. Record of Decision, Montanore Project. February.

D. Prior Commitments to Reclamation and Approved Standards

MMC will conduct operations associated with this revision in accordance with Operating Permit No. 00150 previously approved reclamation plans or standards applicable to the revision. MMC will reclaim the Libby Adit Site in accordance with its Operating Permit No. 00150.

Under this minor revision, MMC will install two plugs in the Libby Adit instead of one as authorized under MR 06-002. The proposed plug design under this minor revision will be the same as presented in MR 06-002 except that MMC will install two plugs instead of one. MMC will develop final engineering design once the adit is developed, and specific characteristics of the underground development are understood. Additional information on adit conditions is required to complete the plug design.

The main portal plug will be installed in the Libby Adit near the bedrock/colluvial contact located approximately 600 feet from the portal opening. This plug will act as a water-retaining structure. To ensure long-term stability, MMC will backfill the adit to the main portal plug using approximately 7,000 yd³ of waste rock material.

MMC will install another plug at the entrance of the adit or portal opening to restrict access. Because no water is anticipated in the colluvial zone of the adit, the portal plug will not be a water retention feature. Once the surface plug is installed, excavated material from the portal pad will be placed back over the portal plug and general opening and regraded to match surrounding topography. Additional waste rock will be placed in front of the entrance portal plug to match adjacent topography, with a final cover of growth media and revegetated.

E. Bonding

DEQ currently holds a reclamation bond of \$1,154,966 to cover reclamation of 11.6 acres at the Libby Adit Site. DEQ will develop a new reclamation bond for additional activities within the Libby Adit Site. MMC will post a bond in the amount determined by DEQ before starting all Project-related activities and disturbances. All disturbances will be fully bonded for reclamation. Reclamation bond will be reviewed in its entirety with the next 5-year bond review or earlier as needed.

F. Replacement Pages and Maps for the Permitted Plan of Operations

As required under ARM 17.24.120(b), MMC will provide updated replacement pages to Operating Permit No. 00150 once DEQ has finalized review of the minor revision. Updated replacement pages will include text, figures, and maps necessary to incorporate the revision into the Operating and Reclamation Plan for Operating Permit No. 00150.

G. Construction, Operating, Reclamation, Monitoring, and Contingency Plans

Other than the plans described in Operating Permit No. 00150 and this minor revision, there are not any other necessary changes.

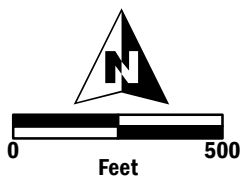
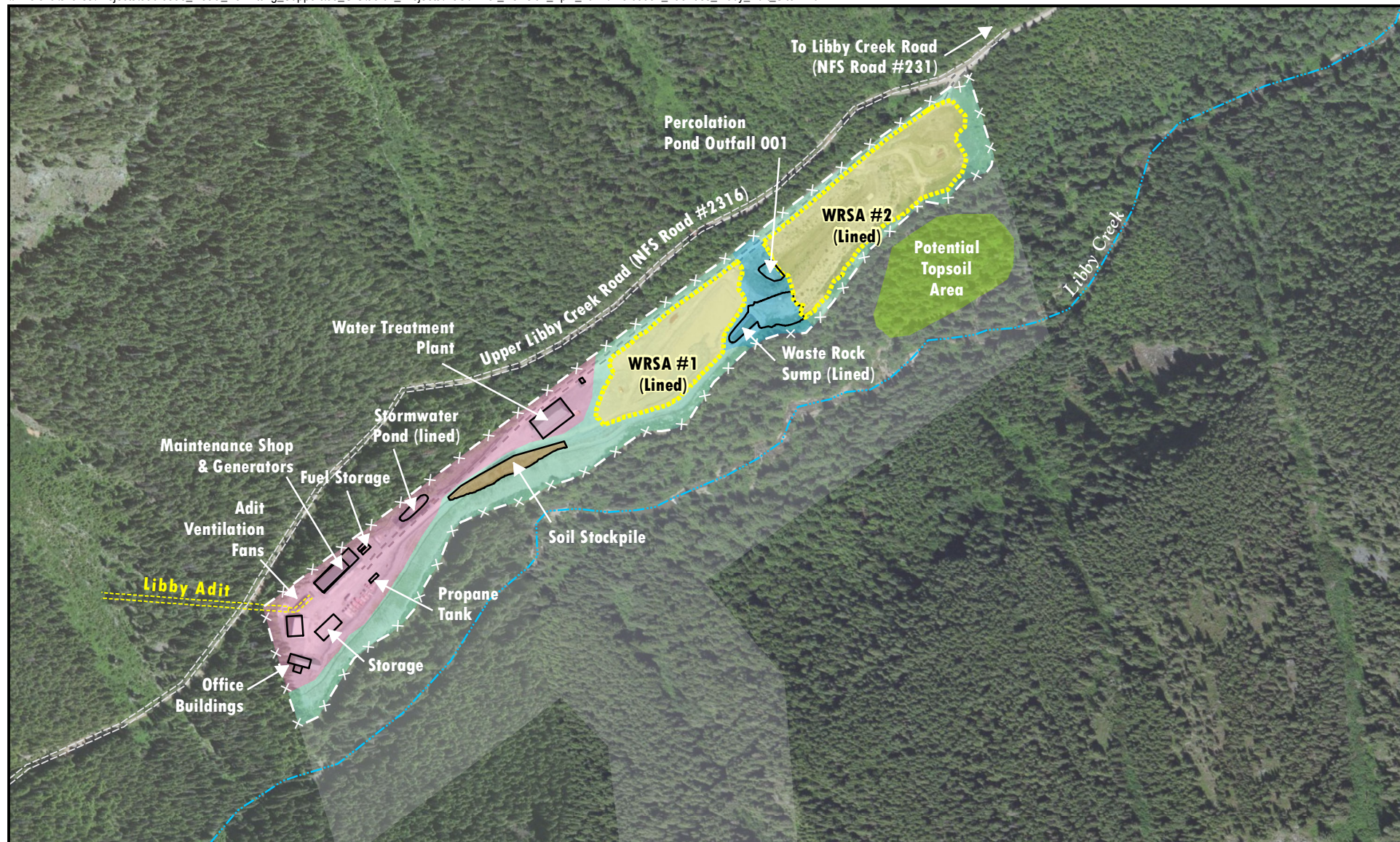
Until additional work to dewater and rehab the adit begins, MMC will continue to implement the monitoring program established under MR 20-001 (reduction in surface water, groundwater, and aquatics monitoring). Once all required authorizations are in place (both from the State and US Forest Service) and work commences, MMC will resume the monitoring program previously approved under MR 08-001.

H. Updated Map

An updated map (**Figure 1**) showing relevant Project features is attached.

List of Figures

Figure 1	Exploration Project Facilities at the Libby Adit Site
Figure 2	WRSA # 1 Expansion Plan View and Cross-Section
Figure 3	WRSA #2 Expansion Plan View and Cross-Section
Figure 4	Reclaimed WRSA # 1 Plan View and Cross-Section
Figure 5	Reclaimed WRSA #2 Plan View and Cross-Section
Figure 6	WRS Plan View and Cross-Section
Figure 7	Reclaimed WRS Plan View and Cross-Section
Figure 8	Libby Adit Site Extension and Drift Construction
Figure 9	Underground Construction and Exploration Schematic



Private Land

Fence

Waste Rock Storage Area (WRSA)

Disturbance Acreage Summary

WRSA #1 - 2.6 Acres

WRSA #2 - 4.0 Acres

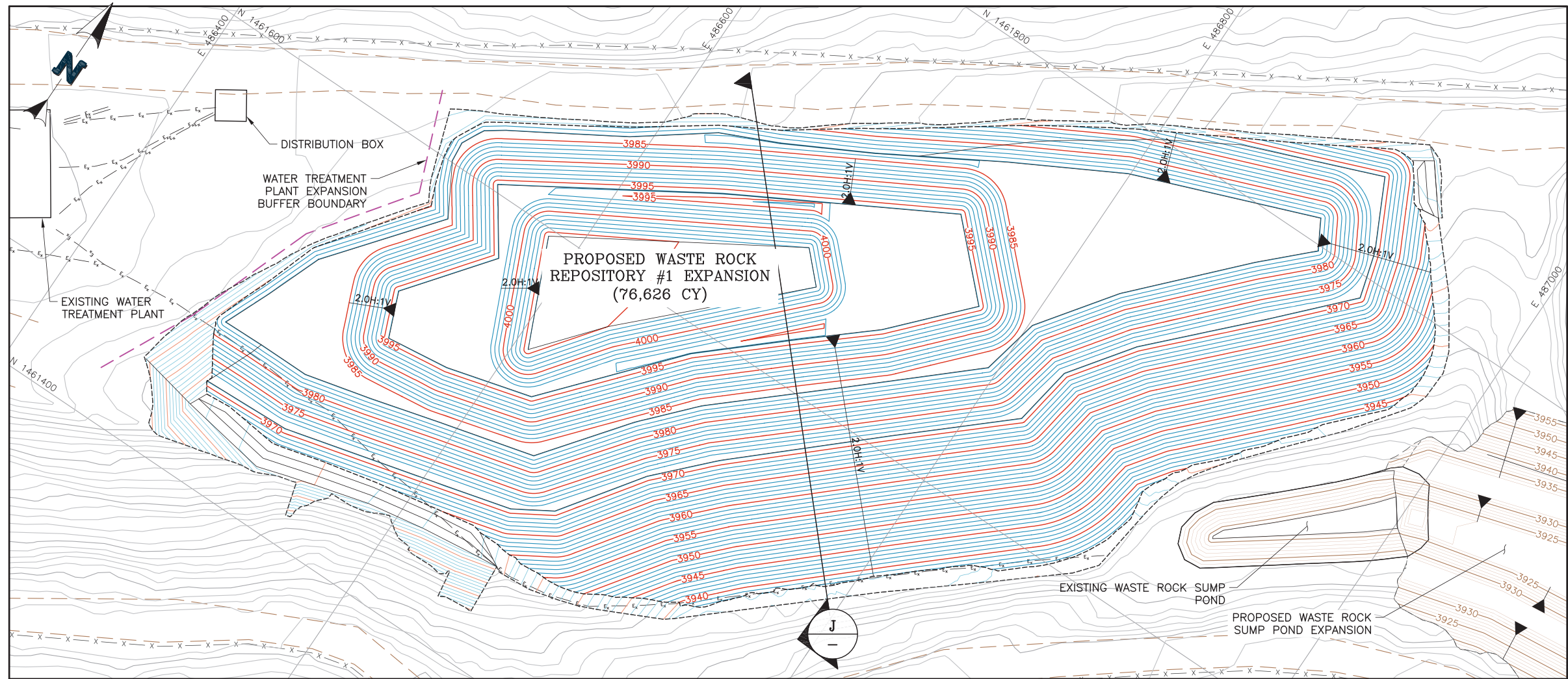
Perc Pond/WRS - 1.3 Acres

Soil Stockpile - 0.4 Acres

Portal Pad - 5.0 Acres

Other - 6.1 Acres

Exploration Project Facilities
at the Libby Adit Site
Libby Exploration Project
Lincoln County, Montana
FIGURE 1

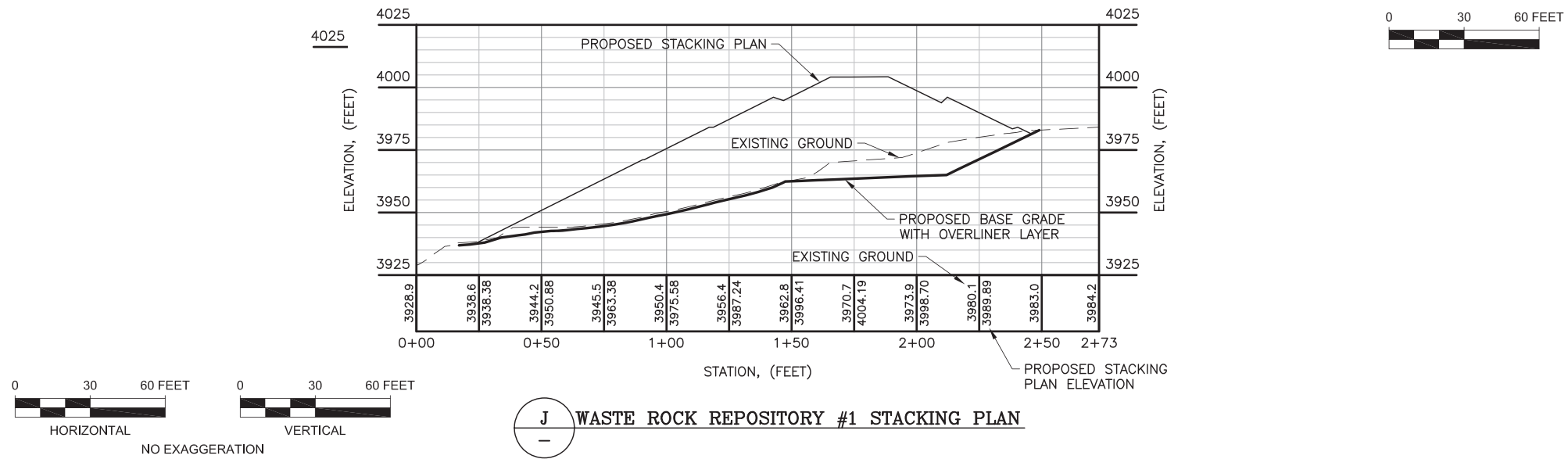


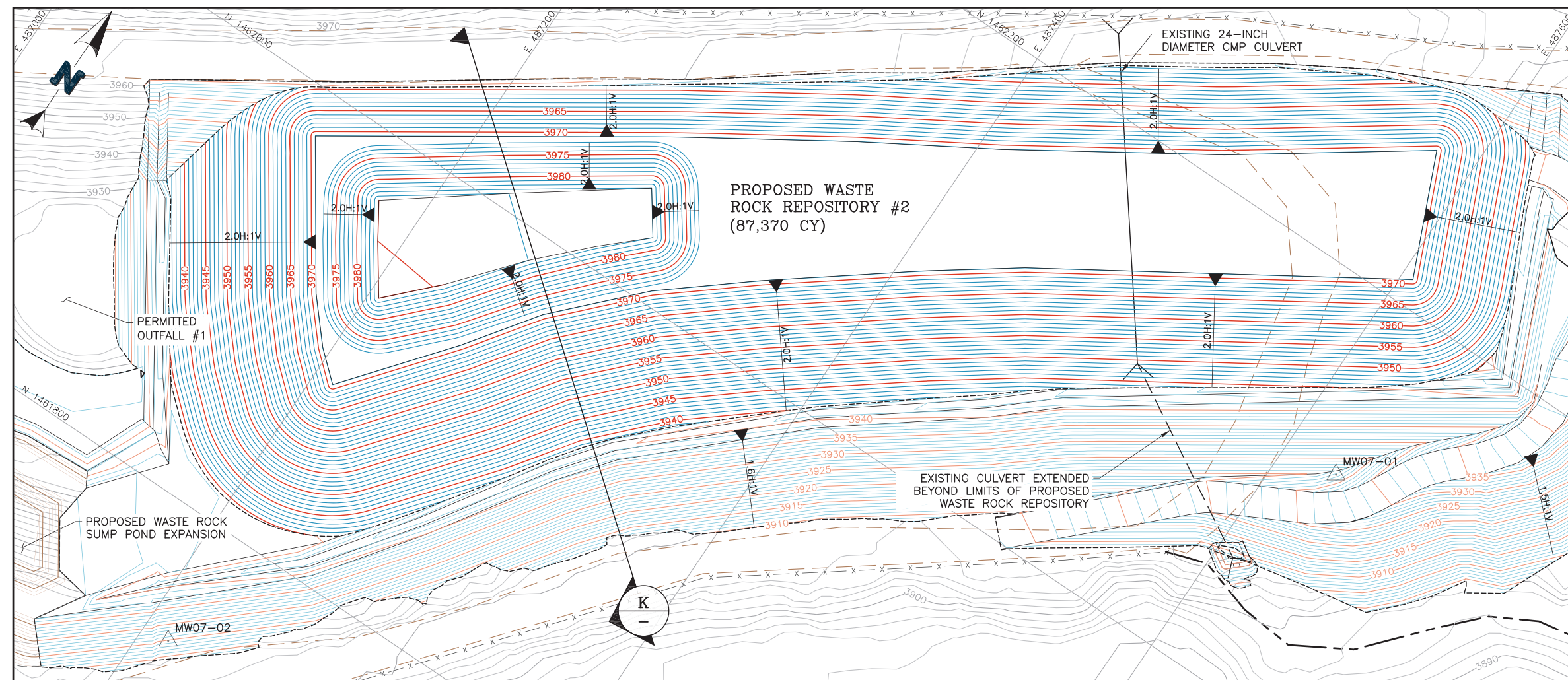
LEGEND:

- EXISTING GROUND CONTOURS
- PROPOSED STACKING PLAN FOR WASTE ROCK REPOSITORY #1
- PROPOSED BASE GRADE CONTOURS
- EXISTING ROADS/TRAILS
- PROPOSED CONTOURS FOR SUMP POND EXPANSION
- EXISTING FENCE
- EXISTING UNDERGROUND POWER

NOTES:

1. THE OVERLINER LAYER VOLUME IS INCLUDED IN FACILITY CAPACITY.
2. STACKING REQUIREMENTS INCLUDE 2H:1V MAXIMUM SIDE SLOPES, 60' MAX HEIGHT, AND A 60' TOP WIDTH AREA FOR EQUIPMENT MANEUVERING.



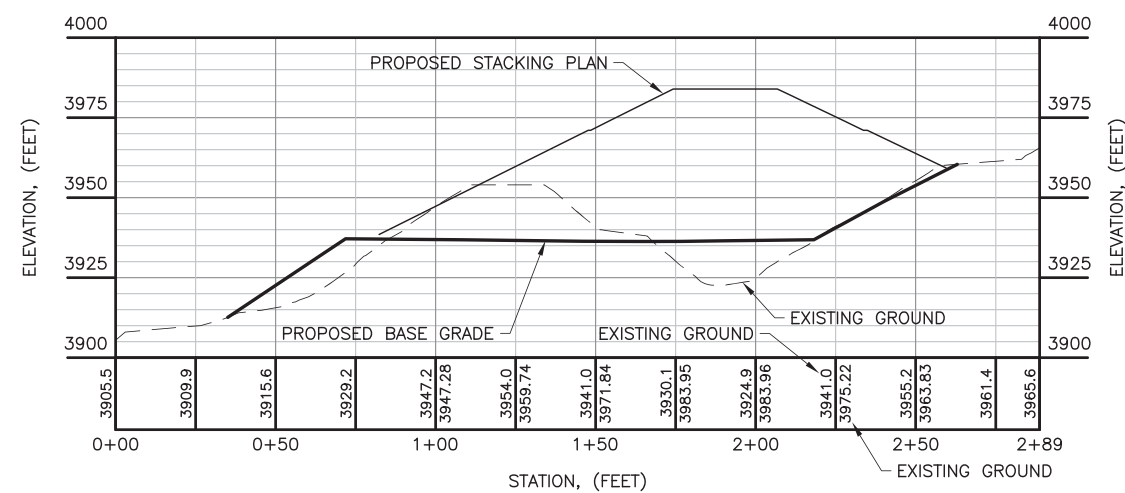


LEGEND:

- EXISTING GROUND CONTOURS
- PROPOSED STACKING PLAN FOR WASTE ROCK REPOSITORY
- PROPOSED BASE GRADE CONTOURS
- PROPOSED SUMP CONTOURS
- EXISTING ROADS/TRAILS
- EXISTING FENCE
- PROJECT BOUNDARY

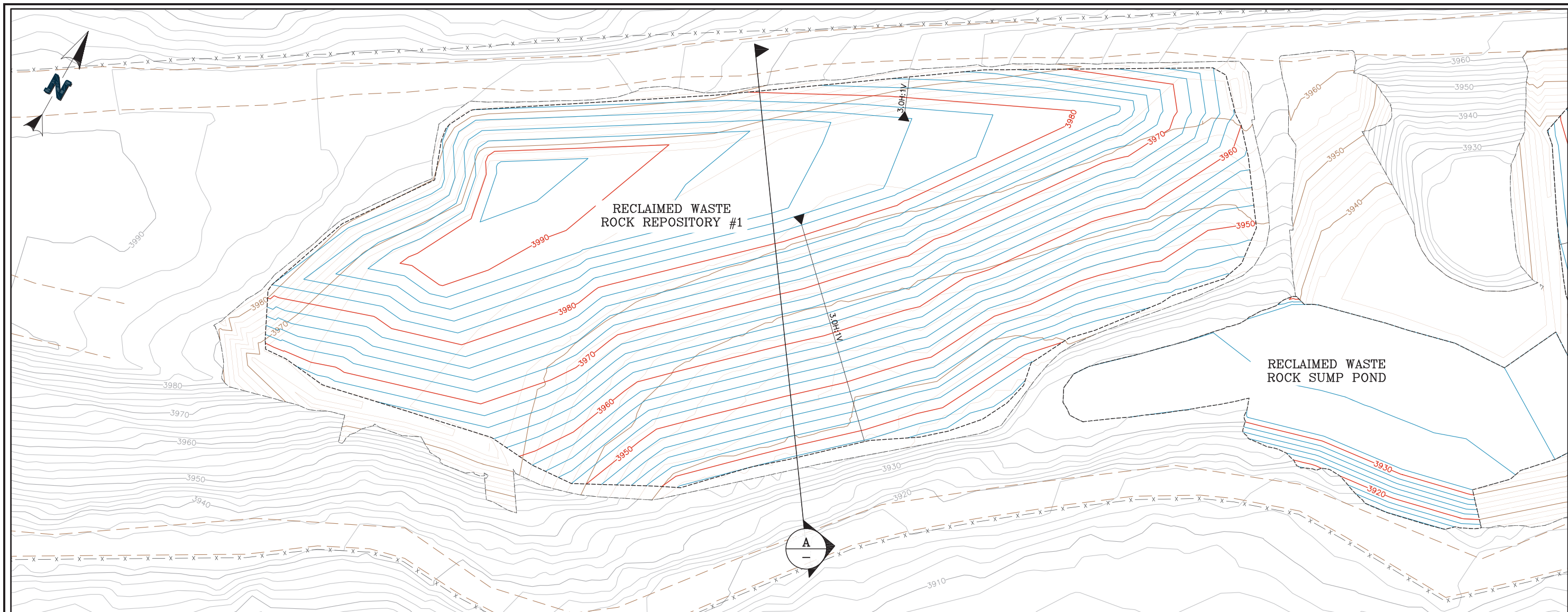
NOTES:

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2. STACKING REQUIREMENTS INCLUDE 2H:1V MAXIMUM SIDE SLOPES, 60' MAX HEIGHT, AND A 60' TOP WIDTH AREA FOR EQUIPMENT MANEUVERING.



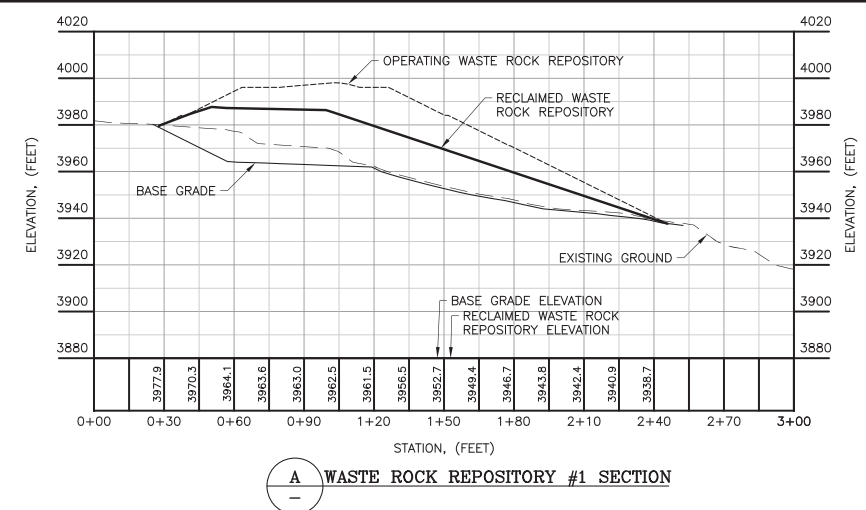
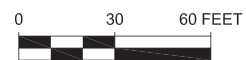
K WASTE ROCK REPOSITORY #2 STACKING PLAN

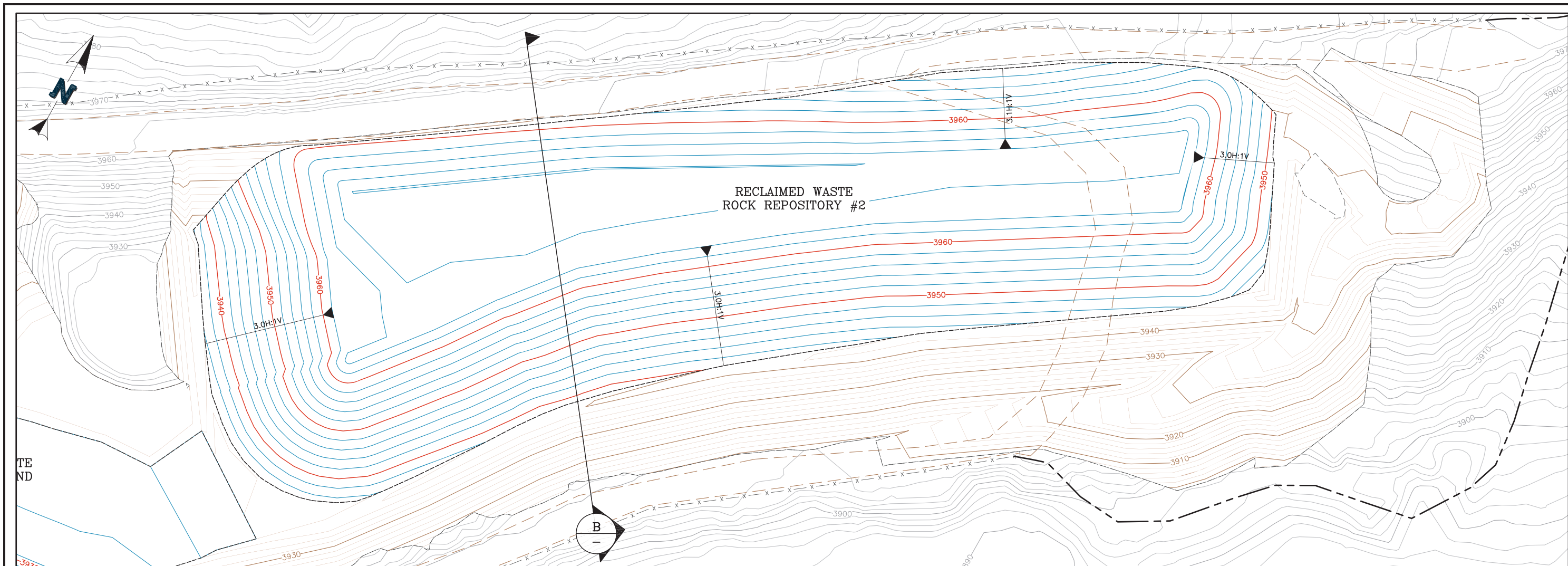
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NO EXAGGERATION



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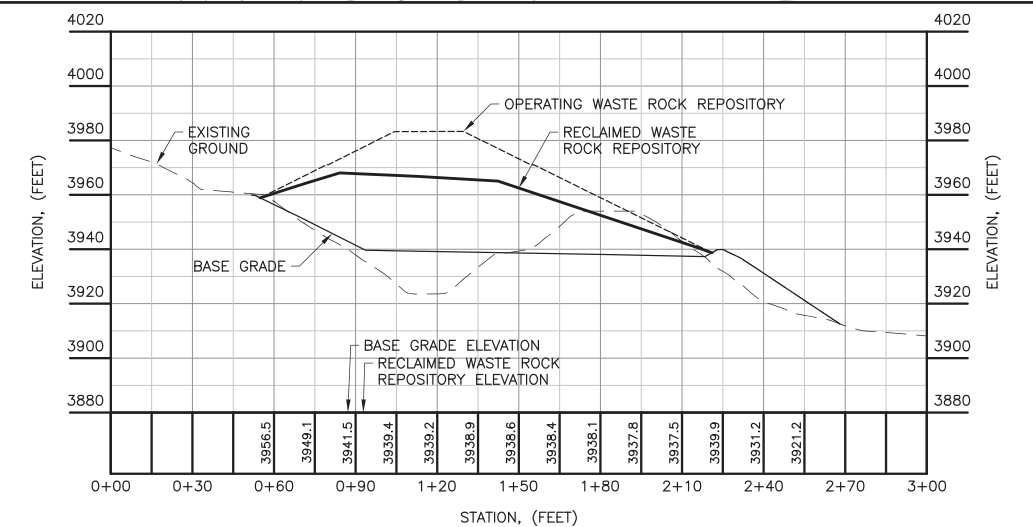
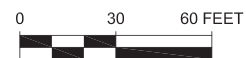
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- PROPOSED RECLAMATION CONTOURS
- DESIGN CONTOURS
- EXISTING ROADS/TRAILS
- EXISTING FENCE



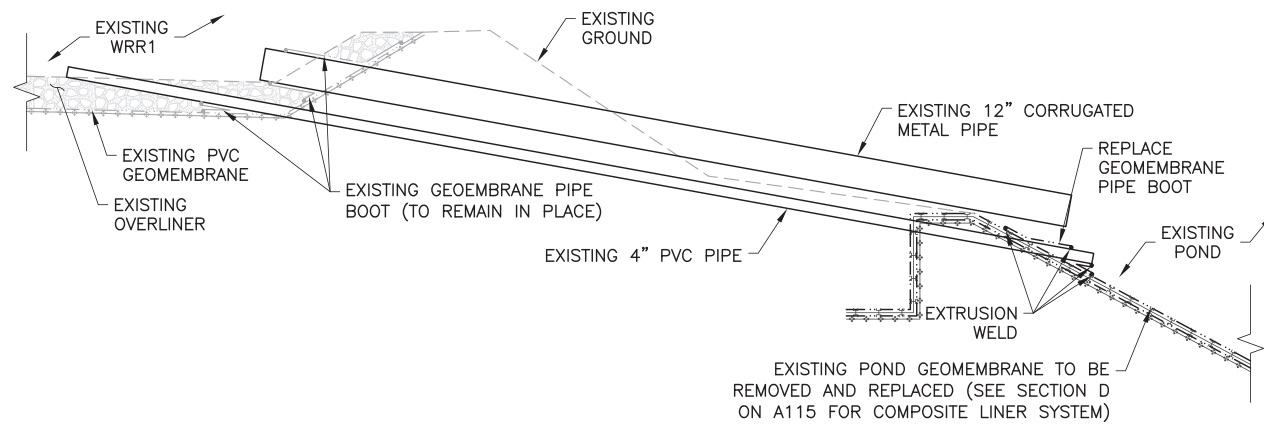
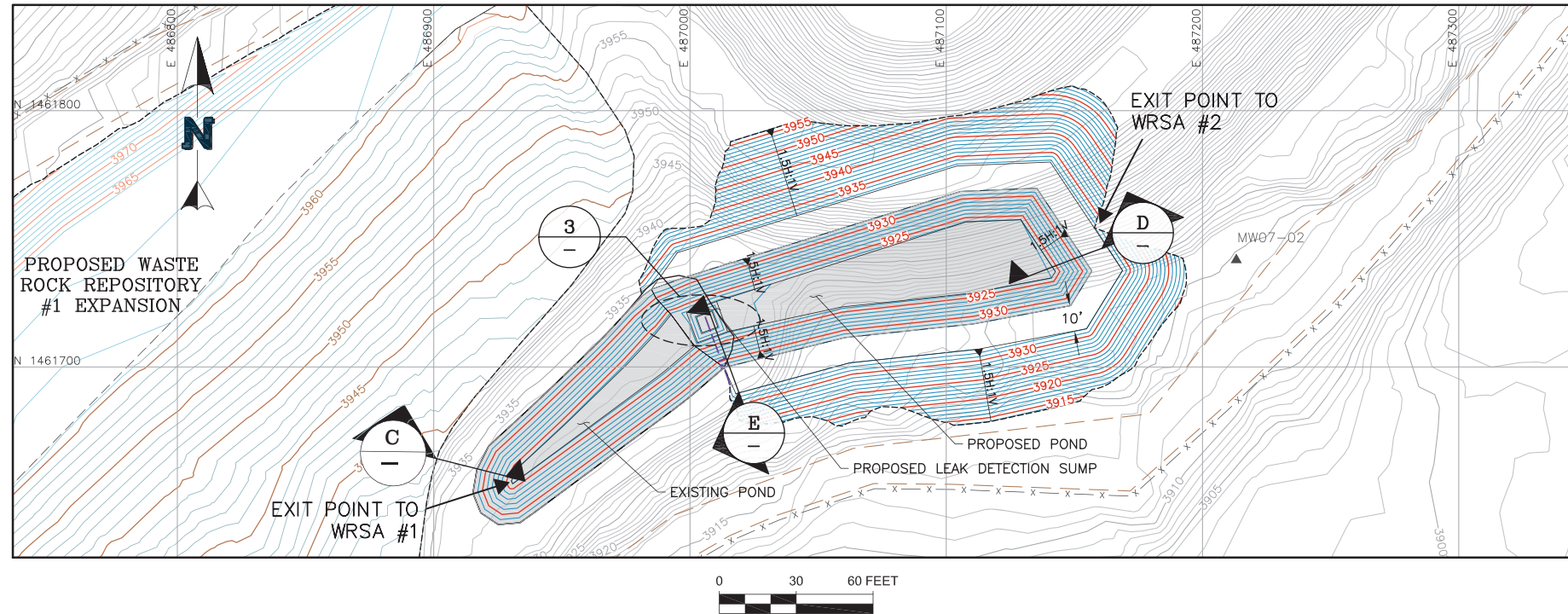


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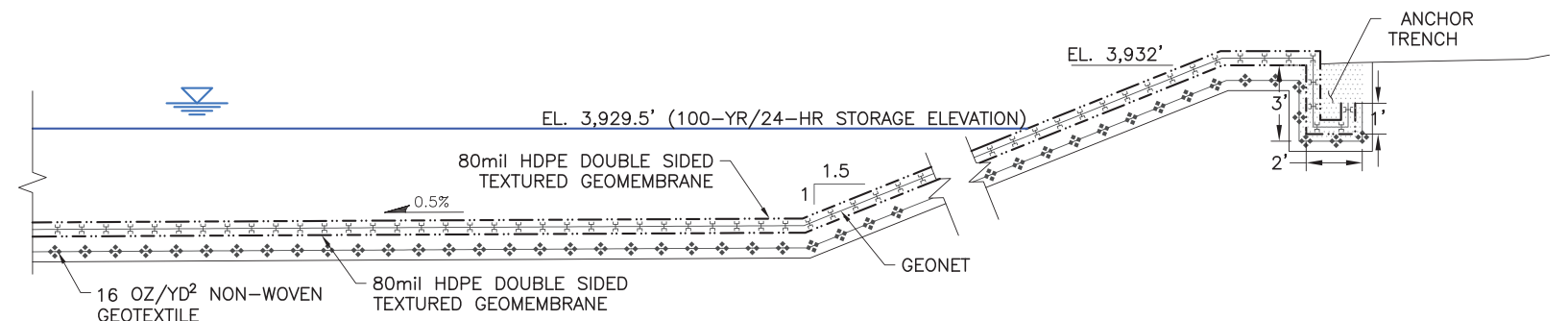
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- EXISTING ROADS/TRAILS
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- PROJECT BOUNDARY



B WASTE ROCK REPOSITORY #2 SECTION

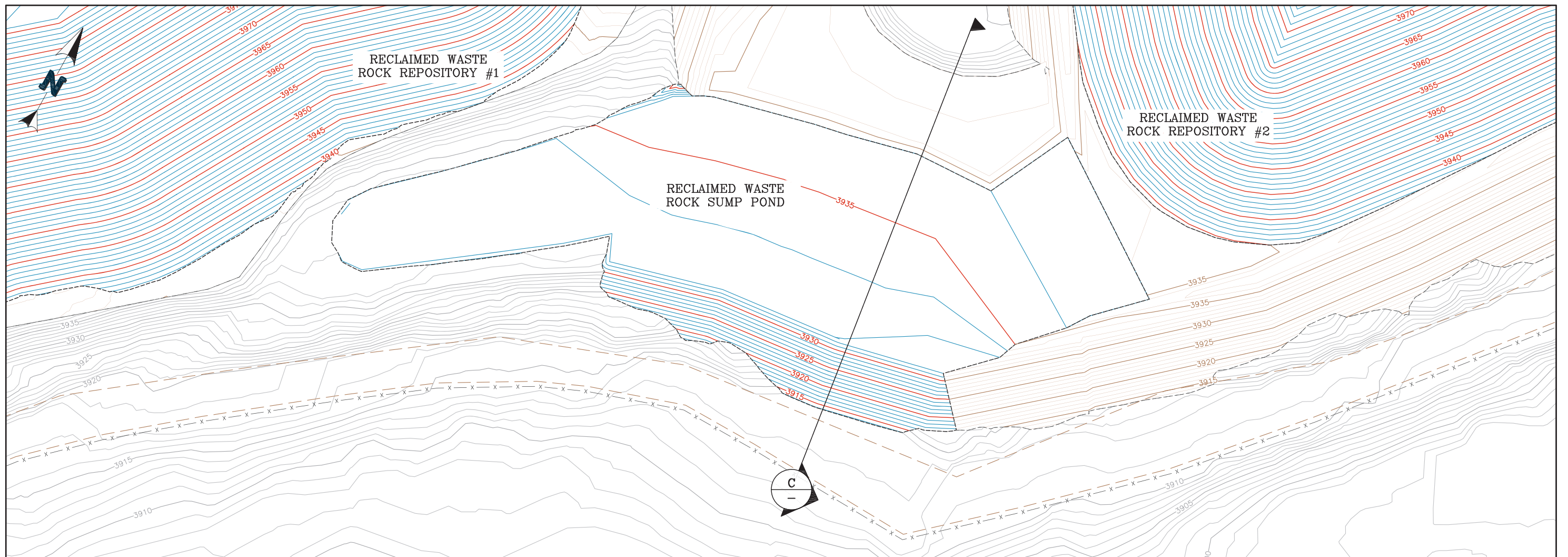


C WRR1 COLLECTION PIPES TO SUMP POND



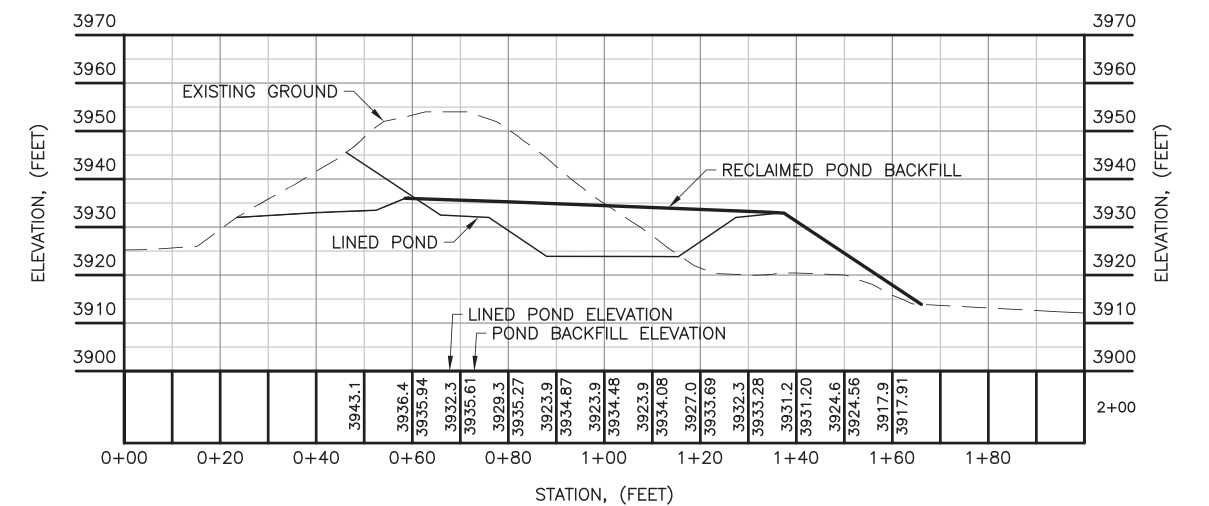
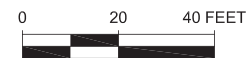
D WASTE ROCK SUMP POND SECTION

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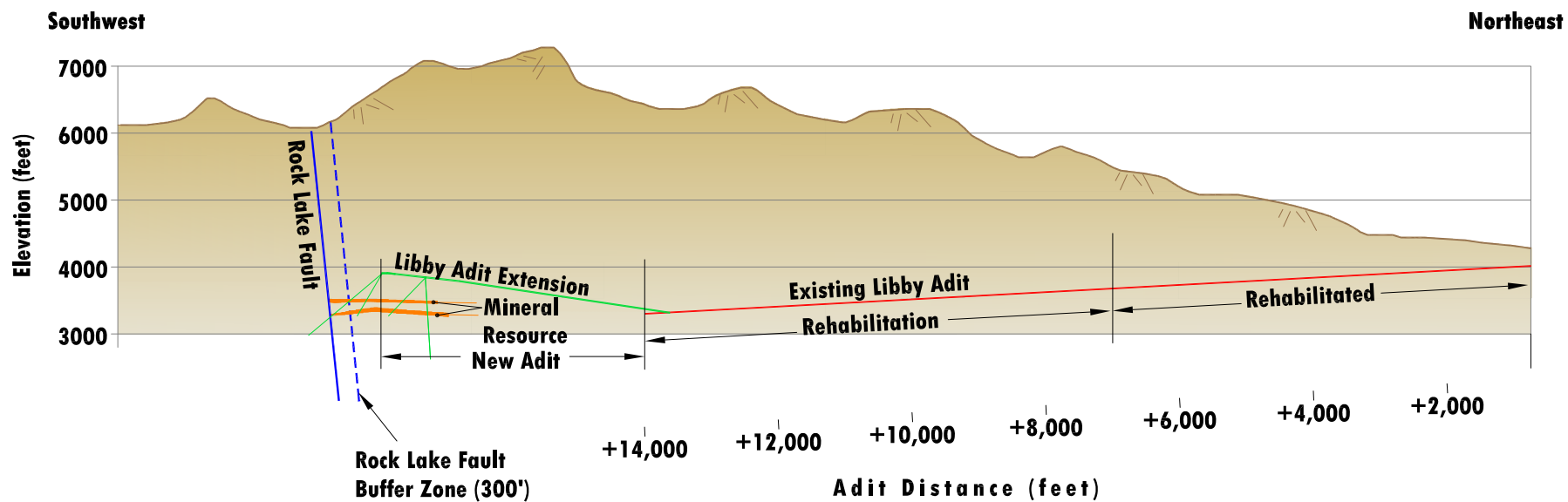


LEGEND:

- EXISTING GROUND CONTOURS
- PROPOSED RECLAMATION CONTOURS
- DESIGN CONTOURS
- EXISTING ROADS/TRAILS
- EXISTING FENCE



C
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WASTE ROCK SUMP POND

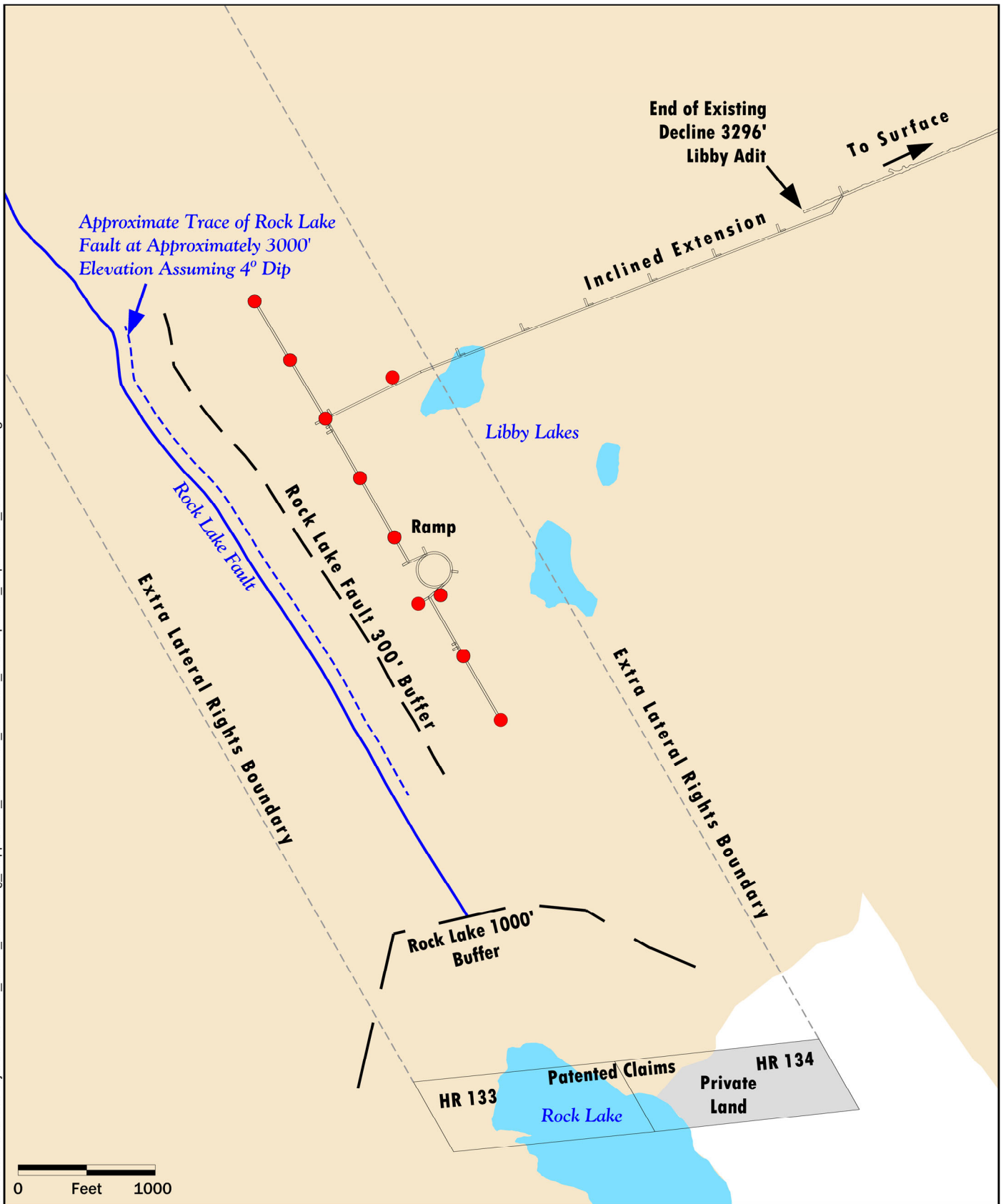


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Libby Adit Site Extension and Drift Construction
 Libby Exploration Project
 Lincoln County, Montana
 FIGURE 8

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● Approximate Location of Drill Stations

■ Cabinet Mountains Wilderness

Underground Construction and Exploration Schematic
Libby Exploration Project
Lincoln County, Montana
FIGURE 9