

**SECTION 22**

**SUPPORT FACILITIES**

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**SUPPORT FACILITIES**

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**SECTION 22**

**SUPPORT FACILITIES**

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**SECTION 22**

**SUPPORT FACILITIES**

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**EXHIBIT**

**NUMBER**

**EXHIBIT TITLE**

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[22.1-1](#)

Location Map Mine Support Facilities

**SECTION 22**

**SUPPORT FACILITIES**

**LIST OF REVISIONS DURING PERMIT TERM**

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<b>REV.</b>		<b>DATE</b>
<b>NUMBER</b>	<b>REVISION DESCRIPTION</b>	<b>APPROVED</b>

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## **SECTION 22 SUPPORT FACILITIES**

Mine facilities for the Pinabete Mine Plan permit area (permit area) are comprised of transportation facilities and water storage and/or treatment facilities such as ponds, impoundments, berms, or embankments. These facilities are discussed in Section 23 (Roads), Section 25 (Sediment Control Plan), and Section 26 (Drainage Control Plan).

Support facilities include various permanent structures (structures in place for longer than 6 months) which are greater than 100 square feet and not readily mobile (e.g., not on wheels or skids) or are attached to a permanent foundation. These facilities may include, but are not limited to: coal handling facilities; buildings and support facility areas; water, sewage, and other utility facilities; pipelines, electrical lines, and communication facilities; exploration holes, boreholes, wells, and other underground openings; and other structures and facilities. Mine and support facilities are presented on [Exhibit 22.1-1](#).

Various structures not meeting the criteria outlined above, mobile structures, utility connections, and other such facilities of insignificant magnitude will be situated on disturbed lands and operated under the applicable regulatory requirements, but will not require regulatory approval. Plans for all proposed support facilities meeting the criteria outlined above will be submitted to the Office of Surface Mining Reclamation and Enforcement (OSM) for prior approval per 30 CFR § 780.38.

All support facilities are designed, constructed, and maintained in a manner to minimize adverse environmental impacts, meet applicable building codes, and comply with Mine Safety and Health Administration (MSHA) safety and health standards. Surface runoff from disturbed areas is either retained in sediment ponds or controlled to comply with effluent limitations. The locations of the support facilities are presented on [Exhibit 22.1-1](#) and described on [Table 22.1-1](#).

Construction of the support facilities could commence following permit approval and will take approximately 12 months to complete. Unless otherwise noted, support facilities will remain in place throughout the life of the operation. Acres of disturbance associated with the support facilities and phase of mining are discussed in Section 50 (Bonding). Reclamation of the facilities described will be conducted according to the procedures described in Section 32 (Temporary Structures and Facilities Removal and Reclamation) and Section 33 (Post-Reclamation Roads, Building, Facilities, and Other Structures).

### **22.1 Existing Support Facilities and Structures**

BHP Navajo Coal Company (BNCC) will use existing structures at Navajo Mine to facilitate the Pinabete Mine Plan mining and reclamation operations. Existing support facilities are addressed in the Navajo Mine PAP. Refer to Section 11.5.1 and Exhibit 11-11 of the Navajo Mine PAP for more detailed information.

## **22.2 Coal Handling Facilities**

### *22.2.1 Coal Transportation Facilities*

Coal transport from the pit to field stockpile locations will be accomplished with haulage trucks as discussed in Section 20 (Mining Operations). No other coal transportation facilities are included with the Pinabete Mine Plan.

### *22.2.2 Coal Preparation, Processing, and Load-out Facilities*

No new coal preparation, processing or load-out facilities are planned with the Pinabete Mine Plan.

### *22.2.3 Coal Stockpiles*

The Pinabete Mine Plan has one future coal stockpile area. The approximate maximum capacity and date of construction is presented in [Table 22.2-1](#).

To facilitate blending, the field stockpile will be segregated by coal quality, i.e., sulfur content and BTU. There will be several piles within the field stockpile facility, each containing a different quality of coal. The coal piles are built with coal haul trucks and rubber-tired dozers. The loaded trucks drive up a pile on one end, dump their loads, and then drive off the other end. Rubber-tired dozers level the dumped piles and compact the coal. As necessary, depending on blending requirements, the coal quality needed will be loaded from the Area 4 coal stockpile onto trucks and hauled to the Lowe stockpile facility. The location of the Area 4 coal stockpile is presented on [Exhibit 22.1-1](#).

Surface runoff from the disturbed areas associated with the coal stockpiles is collected in sediment ponds for evaporation. Berms and v-ditches are utilized to direct the flows to a sediment pond. Refer to Section 25 (Sediment Control Plan) for discussion on the various types of drainage and sediment control structures used to comply with the applicable effluent standards.

The drainage and sediment control structures associated with the coal stockpiles will be maintained to design standards. Periodic inspections will be conducted to ensure proper maintenance and safe operating conditions.

## **22.3 Buildings and Support Facility Areas**

The main support facility for the Pinabete Mine Plan operations is the existing Area 3 support facility. This facility is addressed in the Navajo Mine PAP (OSM Permit No. NM-0003F) (BNCC 2009). Refer to Section 11.5.1 and Exhibit 11-11 of the Navajo Mine PAP for more detailed information and the location of the facility.

## **22.4 Water, Sewage, and Other Utility Facilities**

The irrigation water supply to the Pinabete Mine Plan operations will be from an extension of the existing irrigation pipeline at Navajo Mine. The existing pipeline terminates near the south end of the Dixon Haul Road in Area 3. This waterline will be extended to Area 4 North and Area 4 South at a future date prior to beginning irrigation and revegetation for Pinabete Mine Plan reclamation.

## **22.5 Pipelines, Electrical Lines, and Communications Facilities**

### Pipelines

Refer to Section 22.4 regarding water supply pipelines. There are no other pipelines planned with the Pinabete Mine Plan.

### Electric Power Lines

Power for Pinabete Mine Plan operations will be supplied over a 69-kV distribution system. The mainline within the permit area will be approximately 13.5 miles in length and loop around the mining area. Approximately 5.8 miles of existing powerline were constructed in 2010 associated with Navajo Mine Area 4 North development. Refer to the Navajo Mine PAP Exhibit 11-11 for location of the portions of the mainline inside the Navajo Mine permit area (BNCC 2009). Approximately 7.7 miles of new powerline are proposed to be constructed prior to development of the mining operations in the Area 4 South portion of the permit area. Stub lines will be constructed off the mainline at approximately 5,000-foot intervals to service the pits. The locations of the power lines are presented on [Exhibit 22.1-1](#). Power lines will be constructed and designed in a manner to prevent the electrocution of raptors.

### Communication Facility

The mine communication system will use a microwave-based radio and telephone system.

## **22.6 Exploration Holes, Boreholes, Wells, and Other Underground Openings**

### Exploration and Geotechnical Holes

BNCC will periodically conduct development drilling and sampling within the permit area to delineate and characterize coal, overburden, interburden materials, and hydrologic conditions or to perform geotechnical evaluations in both active and future mining areas. Drilling and sampling are the primary means of determining the depth, thickness, physical and chemical characteristics, and degree of hydrologic saturation of the geologic materials to be disturbed or otherwise affected by mining. Although each drilling program may involve a different area and slightly different objectives, all will generally involve similar activities, including:

- Establishment of staging areas (for temporary storage of drilling equipment and supplies)
- Construction of temporary roads
- Drilling, sampling, and geophysical surveying of completed drill holes



- Subsequent reclamation of all disturbance outside of the five-year affected lands area

When the need for additional drilling arises, a drilling plan will be developed. Its content will consist of: number of holes, locations, drill depths, access routes, and reclamation of the drill sites. At minimum, a field approval will be obtained from OSM prior to commencing drilling activities within the permit area.

Given that exploration activities may occur at the same time and in proximity to ongoing surface mining operations, the drilling activities will be managed in a manner that will minimize harm to the environment, cultural resources, wildlife, and livestock; and ensure safe operations. These measures may include but are not limited to fences, barricades, or other approved protective devices.

All drilling activities conducted for exploration or installation of monitoring wells will adhere to the following criteria:

- Drilling will be conducted with air or air-water mist whenever practicable to minimize the use of drilling mud
- Drilling sites and associated access roads will be located in a manner to minimize disturbance and impacts to environmental resources
- Minimal excavation and/or site preparation may be required at drill sites including grading to provide a safe, level working location and construction of mud pits (when wet drilling is required)
- In the event a mud pit is required, a maximum of 12 inches of soil material will be stockpiled immediately adjacent to the mud pit and the mud pit will be excavated to the required depth with excavated soil stockpiled adjacent to the mud pit. The extent of the mud pit will be kept to the practical minimum
- Before reclamation activities, collected wet cuttings and/or drilling mud will be allowed to dry before being covered with the excavated material and replacement of any stockpiled soil.

Sealing and reclamation of exploration holes, bore holes, wells, and other underground openings are discussed in Section 32 (Temporary Structures and Facilities Removal and Reclamation) and Section 40 (Environmental Protection).

#### Wells

Monitoring wells have been installed to assess the potential impacts to ground water; refer to Section 42 (Monitoring, Maintenance, Inspections, and Examinations) for the monitoring plan and details.

#### **22.7 Other Structures and Facilities**

The anticipated dates for construction and reclamation of the East Haul Road are 2024 and 2041, respectively.

*22.7.1 Explosives Handling and Storage Facilities*

Explosives storage facility for blasting agents and explosives' magazines will be located in Area 3, in the Navajo Mine permit area. Refer to Section 11.5 and Exhibit 11-11 of the Navajo Mine Permit (OSM Permit No. NM-0003F) (BNCC 2009). A typical storage facility consists of an ammonium nitrate silo, diesel fuel storage tanks, and a silo for emulsion blasting product.

*22.7.2 Noncoal Mine Waste Storage Areas*

Noncoal mine waste will be transported off-site to a landfill. Refer to Section 20 (Mining Operations) for the handling and disposal of noncoal mine waste.

BNCC may use an on-site landfarm to bioremediate petroleum contaminated soils that are collected on-site. Should BNCC decide to construct and manage a landfarm on-site, the location of the site and a description of the management practices will be included in this section.

*22.7.3 Air and Water Pollution Control Facilities*

Water pollution control facilities consist of sediment ponds and drainage control structures, discussed in Section 25 (Sediment Control Plan) and Section 26 (Drainage Control Plan) of this permit application package. Monitoring, maintenance, and inspection of the water pollution control facilities are discussed in Section 42 (Monitoring, Maintenance, Inspection, and Examinations).

Air pollution control facilities and procedures are discussed in Section 8 (Compliance with Air and Water Quality Laws and Regulations) and Section 40 (Environmental Protection). Monitoring, maintenance, and inspection of the air pollution control facilities are discussed in Section 42 (Monitoring, Maintenance, Inspection, and Examinations).

**22.8 Overburden Stockpiles**

There will be potentially one overburden stockpile in the permit area at the location shown on [Exhibit 22.1-1](#). This overburden stockpile location may be used starting in Fiscal Year 2025 to store overburden from the Area 4 South boxcut area for later use in reclamation backfilling and grading. The stockpile is estimated to have capacity to store 7 million bank cubic yards. A site-specific sediment control design certified by a professional engineer will be submitted and approved prior to start of topsoil removal and overburden stockpiling. The overburden stockpile would be removed for final backfilling and grading at the end of mining operations expected to occur after Fiscal Year 2039. Refer to Section 25.1.5 for a description of the measures to be taken to stabilize the surface of the stockpile and minimize wind and water erosion.

## 22.9 Soil Stockpiles

Topdressing stockpiles are managed in a manner to minimize wind and water erosion, and to avoid sources of contamination. A perimeter berm and/or surface water control structures are constructed around the stockpiles to minimize loss and contamination from water erosion. To minimize loss from water and wind erosion, the stockpile surfaces will be stabilized by mulching and seeding. Topdressing stockpiles that will remain undisturbed for longer than six months will be mulched and those that will be undisturbed for one year or longer will be seeded and mulched during the next appropriate seeding period. Refer to Section 25 (Sediment Control Plan) for more information on stabilizing stockpile surfaces. After a stockpile is depleted, if appropriate, the stockpile area will be left with adequate topdressing so that it may also be reclaimed. All stockpiles are clearly marked so that other mining activities do not inadvertently disturb or contaminate them. The berms and ditches are inspected on a routine basis and repaired as needed.

The typical berm and/or ditch shown on [Figure 22.9-1](#) will be used on stockpiles that have other surface drainage controls downstream, such as sediment ponds, impoundments, or the mining pit. It will not be used on the stockpiles where there would be potential for a discharge to occur onto an undisturbed area, reclaimed area, or off the permit area. A site-specific design certified by a professional engineer will be submitted for approval if such is the case.

During periods of haulage either into or out of a topdressing stockpile, the perimeter berm will be breached to allow for equipment access. When the haulage has been completed the perimeter berm will be reconstructed.

Topdressing is not removed from stockpiles until required for redistribution on graded areas. However, stockpiles may be relocated to facilitate mining and/or reclamation. Information on the volume of relocated topdressing will be provided to OSM prior to and upon completion of the relocation. Changes or revisions to the permit necessitated by topdressing stockpile relocations will also be submitted to OSM. The topsoil removed is stockpiled only when it is impractical to promptly redistribute on graded areas.

Site-specific designs will be developed for future topdressing stockpiles TS-404, TS-405 and TS-406 prior to start of stockpiling operations. The stockpile locations are presented on [Exhibit 22.1-1](#). The drainage control plan and designs will be included with the site-specific designs.

The approximate capacities of the topdressing stockpiles are presented on [Table 22.9-1](#). Refer to Section 36 (Post-Reclamation Soil) for information on the removal and reclamation of stockpile areas.

**22.10 Information Collection and Analysis**

All certified exhibits for Section 22 (Support Facilities) are available for review upon request at the BNCC offices or the OSM, Western Region, technical office in Denver, Colorado. Certified as-built drawings will be kept on file at the mine site and made available upon request.

*Personnel*

Persons or organizations responsible for data collection, analysis, and preparation of this permit application package section:

Ron Van Valkenburg  
Kent Applegate  
BHP Navajo Coal Company

*References*

BHP Navajo Coal Company. 2009. Navajo Mine Permit Application Package. OSM Permit No. NM0003F. On file with the Office of Surface Mining Reclamation and Enforcement- Western Region Technical Office. Denver, Colorado.

Table 22.1-1 Pinabete Mine Plan Support Facilities

Facility ID	Use, construction, operation and maintenance	Design drawings	Construction date	Removal or reclamation date	Removal and reclamation plan
Coal stockpile	See Section 22.2.3	<a href="#">Exhibit 22.1-1</a>	2025	2041	See Section 32.3
Power lines	See Section 22.5	<a href="#">Exhibit 22.1-1</a>	2025	2041	See Section 32.6
Exploration/geotechnical holes & wells	See Section 22.6	N/A	N/A	N/A	See Section 32.7
Noncoal mine waste storage areas	See Section 22.7.2	N/A	N/A	N/A	N/A
Overburden stockpiles	See Section 22.8	<a href="#">Exhibit 22.1-1</a>	2025	2041	See Section 36.2.3.3
Soil stockpiles	See Section 22.9	<a href="#">Figure 22.9-1</a>	See <a href="#">Table 22.9-1</a>	See <a href="#">Table 22.9-1</a>	See Section 36.2.3.3
Topdressing Stockpile TS-403	See Section 22.9	<a href="#">Figure 22.9-1</a>	2010	2041	See Section 36.2.3.3
Topdressing Stockpile TS-404	See Section 22.9	<a href="#">Exhibit 22.1-1</a>	See <a href="#">Table 22.9-1</a>	See <a href="#">Table 22.9-1</a>	See Section 36.2.3.3
Topdressing Stockpile TS-406	See Section 22.9	<a href="#">Exhibit 22.1-1</a>	See <a href="#">Table 22.9-1</a>	See <a href="#">Table 22.9-1</a>	See Section 36.2.3.3

Table 22.2-1 Approximate Maximum Capacities and Dates of Construction for Pinabete Mine Plan Coal Stockpiles

Name	Capacity (tons)	Construction date
Area 4 Coal Stockpile	1,000,000	2024
Total	1,000,000	

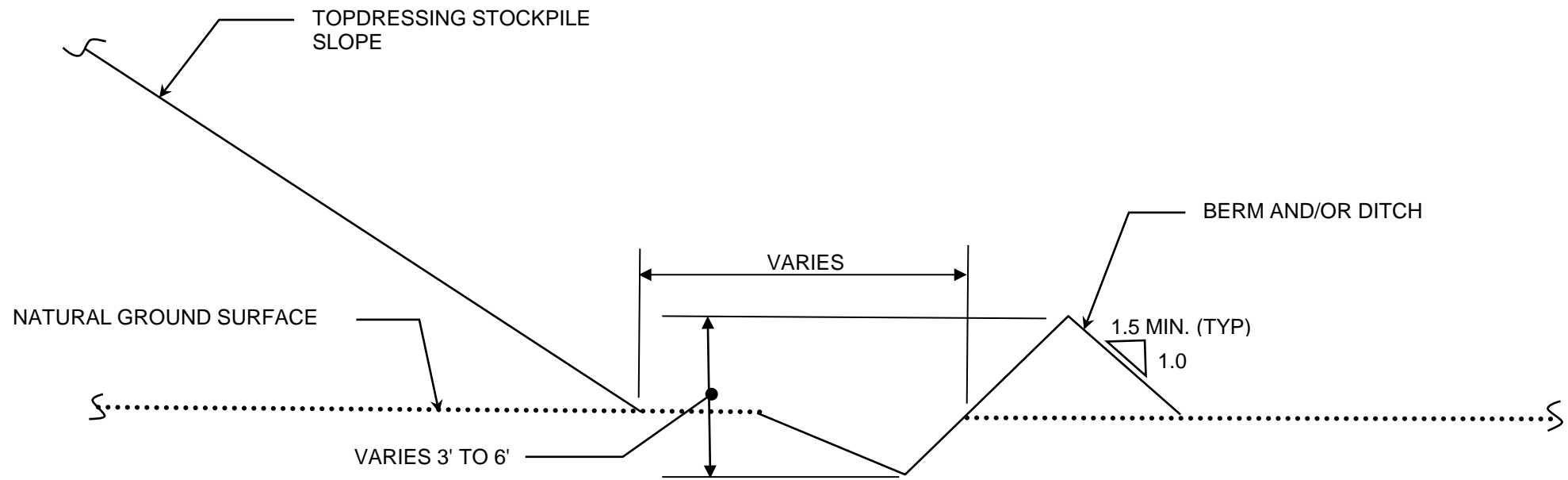
Table 22.9-1 Pinabete Mine Plan Topdressing Stockpiles

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Stockpile ID	Soil type	Capacity (cubic yards)	Construction date	Removal or reclamation date
Topdressing Stockpile TS-403 <sup>1</sup>	Topdressing	250,000	2010	2041
Topdressing Stockpile TS-404	Topdressing	1,200,000	2024	2041
Topdressing Stockpile TS-406	Topdressing	60,000	2022	2041

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<sup>1</sup> Topdressing Stockpile TS-403 constructed under Navajo Mine OSM Permit No. NM-0003F approvals (BNCC 2009)



**TOPDRESSING STOCKPILE PERIMETER BERM**  
**TYPICAL SECTION**  
**NTS**

**CERTIFICATION STATEMENT**

I, RON C. VAN VALKENBURG, HEREBY CERTIFY THAT THIS FIGURE WAS REVIEWED BY ME AND THE INFORMATION SHOWN IS ACCURATE AND COMPLETE TO THE BEST OF MY KNOWLEDGE.



**NOTES:**

1. THE TYPICAL BERM AND/OR DITCH SHOWN WILL BE USED AROUND ONLY THE TOPDRESSING STOCKPILES HAVING OTHER DRAINAGE OR SEDIMENT CONTROLS DOWNSTREAM, SUCH AS SEDIMENT PONDS, IMPOUNDMENTS OR THE MINING PIT. IT WILL NOT BE USED IF THE STOCKPILE IS LOCATED NEAR THE PERMIT BOUNDARY OR WHERE THERE IS A POTENTIAL FOR A DISCHARGE TO OCCUR OFF THE PERMIT AREA OR ONTO A RECLAIMED AREA. FOR THE LATTER CASE A SITE SPECIFIC DESIGN WILL BE SUBMITTED FOR APPROVAL.

**FIGURE 22.9-1**

**BHP NAVAJO COAL COMPANY**  
**NAVAJO MINE PINABETE PERMIT**



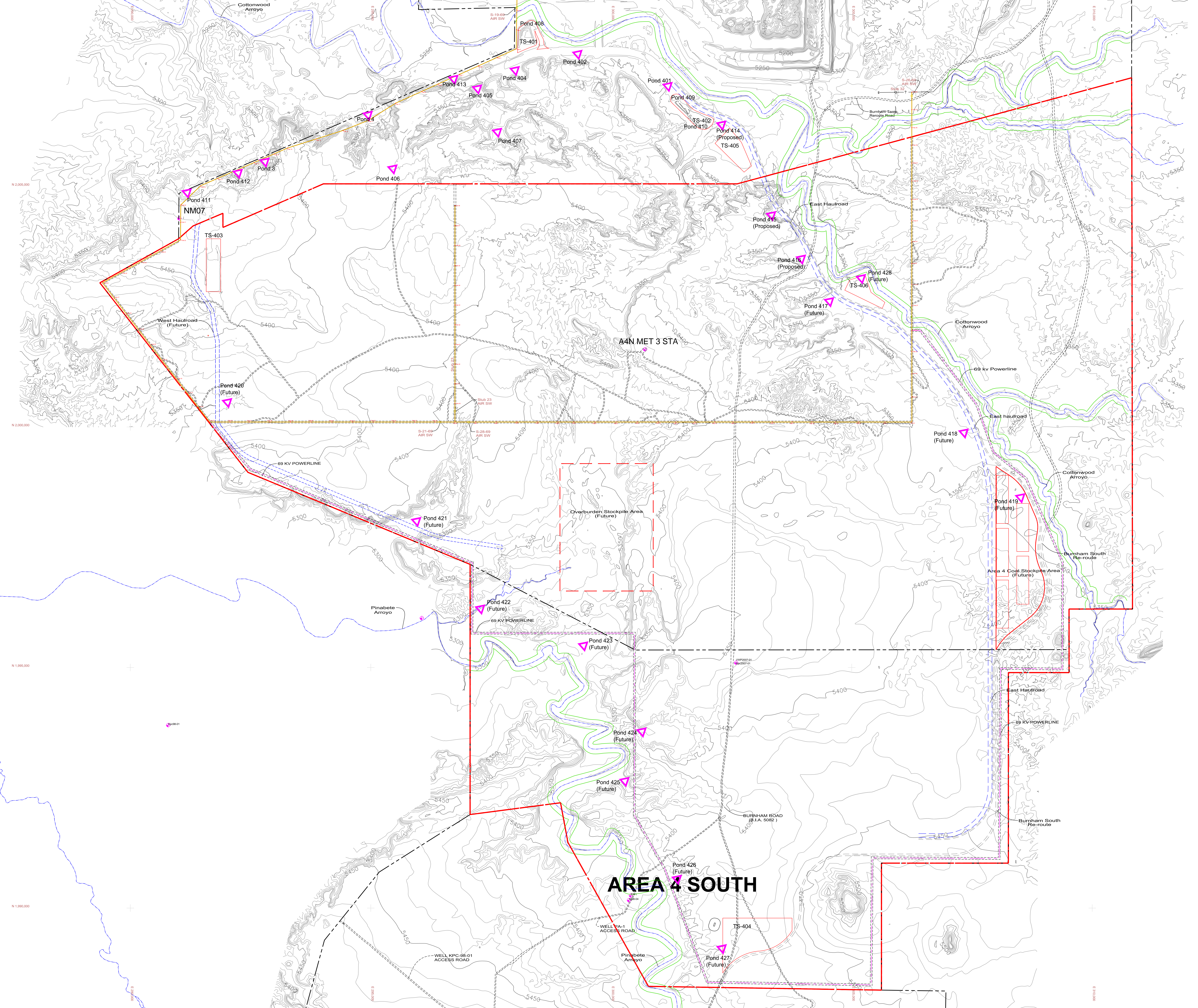
P.O. BOX 1717 FRUITLAND, NEW MEXICO 87416/PHONE 505-598-4200/FAX 505-598-4229

**TOPDRESSING STOCKPILE BERM**  
**TYPICAL SECTION**

REV. NO.	DATE	REVISIONS:	APPROVALS			
			ENGR.	E.Q.	P.E.	CHIEF ENGR
1	Feb-12	ORIGINAL PAP SUBMITTAL	RV		RV	

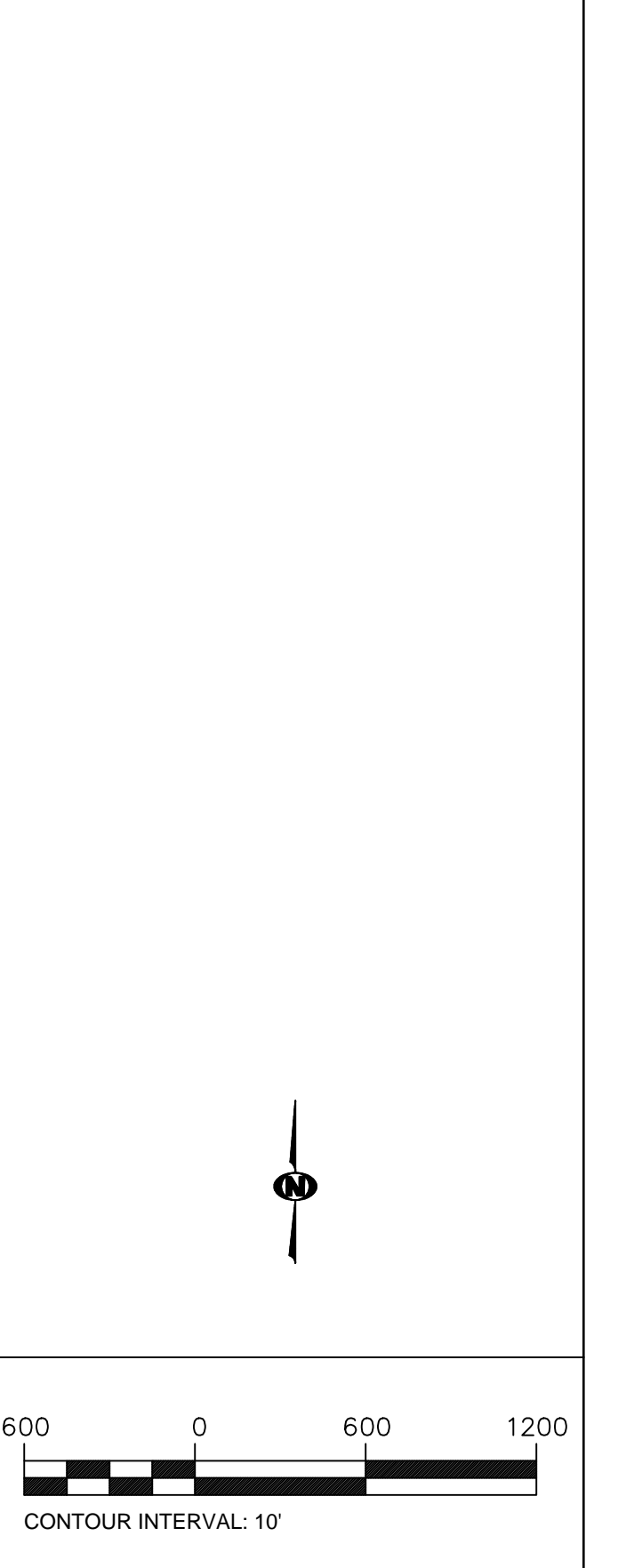
Drawn By: LR      Approved By: RV      Date: Feb 2012





**LEGEND**

- PAVED ROAD
- DIRT ROAD
- HAUL ROAD
- TRAIL
- BUILDING
- FENCE
- IRRIGATION LINE
- CULVERT
- DAM
- DRAINAGE
- RAILROAD
- STEAM BUFFER ZONE
- POWERLINE
- SPOT ELEVATION
- INDEX CONTOUR
- INTERMEDIATE CONTOUR
- 218
- 5422.45
- L-30
- LEASE BOUNDARY
- POST-2016 PERMIT BOUNDARY
- MONITORING SITES
- POND LOCATION POINTS



Topo Revised by  
Aero-Graphics, Inc.  
2930 South West Temple  
Salt Lake City, Utah 84115

Notes:  
1. The design data for the mine support facilities are referenced on Tables 22.1-1, 23.2-1 and 26.2-1.  
2. The hydrology and supporting design data for the drainage control structures are referenced on Table 26.2-1.

Original certified signed exhibits are maintained at the mine site and at CSM.

NO.	DATE	BY	DESCRIPTION	REV.	NO.	DATE	BY	DESCRIPTION	REV.

**CERTIFICATION STATEMENT**  
I, Ron C. Van Valkenburg, hereby certify that this drawing was reviewed by me and that the information shown is complete and accurate to the best of my knowledge.



**EXHIBIT 22.1-1**  
**BHP NAVAJO COAL COMPANY**  
  
P.O. BOX 1717      PHONE (505) 938-4200  
MILFORD, NEW MEXICO 87416      FAX (505) 938-4200

**LOCATION MAP**  
**MINE SUPPORT**  
**FACILITIES**

PREPARED BY: [ ] DRAWN BY: [ ] RY: [ ] SCALE: 1"=600'  
APPROVED BY: [ ] DATE: Feb 2012 Sheet 1 of 1