NEW MEXICO

Abandoned Mine Lands

Project Manual
Including Plans and Specifications
For Construction of

LAKE VALLEY MINE SAFEGUARD PROJECT – PHASE IV

Lake Valley, New Mexico

PROJECT NO.
EMNRD-MMD-2010-02

AUTHORIZED BY:

ABANDONED MINE LAND PROGRAM
MINING and MINERALS DIVISION
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
STATE OF NEW MEXICO

(with reclamation fees paid by the New Mexico Coal Industry)

April 2010

00002 – CERTIFICATE PAGE

PROJECT NAME: Lake Valley Mine Safeguard Project – Phase IV

LOCATION: Lake Valley, New Mexico

PROJECT NUMBER: EMNRD-MMD-2010-02

ENGINEER OF RECORD: John A. Kretzmann, P.E.
Mining and Minerals Division
1220 South St. Francis Drive
Santa Fe, New Mexico 87505
Telephone 505.476.3423

The technical material and data contained in the specifications were prepared under the supervision and direction of the undersigned, whose seal as a Professional Engineer (P.E.), licensed to practice in the State of New Mexico, is affixed below.

John A. Kretzmann, P.E. (Project Engineer)	7931 License No.
Authorized Representative/Title Energy, Minerals and Natural Resources Department	Date

Bill Richardson, Governor

All questions about the meaning or intent of these documents shall be submitted only to the Engineer of Record, stated above, in writing. Refer to Section 00120 - Supplementary Instructions to Bidders as to interpretations.

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PURCHASING DIVISION
P.O. BOX 6850
SANTA FE, NEW MEXICO 87502-6850
(505) 827-0472

BIDDER:

PROJECT: LAKE VALLEY MINE
SAFEGUARD PROJECT – PHASE IV
LAKE VALLEY, NEW MEXICO
PROJECT NO.: EMNRD-MMD-2010-02

ARCHITECT/ENGINEER OF RECORD
John A. Kretzmann, P.E.

Telephone: (505) 476.3423
FAX: (505) 476.3402

OWNER: Abandoned Mine Land Program
Mining and Minerals Division
Energy, Minerals and Natural Resources Department
State of New Mexico
1220 S. St. Francis Drive
Santa Fe, New Mexico 87505

Telephone: (505) 476.3400

INVITATION TO BID
CONSTRUCTION CONTRACT

BID NUMBER: **00-521-00-05159**

Sealed bid opening: _____
NM STATE PURCHASING DIVISION

DATE: Friday, May 21, 2010 @ 2:00 PM

Procurement Specialist:
Natalie Jimenez / 505-827-0251

IMPORTANT: BIDS MUST BE SUBMITTED IN A SEALED ENVELOPE WITH THE BID NUMBER AND OPENING DATE CLEARLY INDICATED ON THE BOTTOM LEFT HAND SIDE OF THE FRONT OF THE ENVELOPE.

SEALED BIDS WILL BE RECEIVED UNTIL THE ABOVE-SPECIFIED DATE AND LOCAL TIME, THEN PUBLICLY OPENED AT THE NEW MEXICO STATE PURCHASING DIVISION OFFICE AND READ ALOUD. HAND DELIVER BIDS TO THE STATE PURCHASING DIVISION, JOSEPH M. MONTOYA BLDG., ROOM 2016, 1100 ST. FRANCIS DR., SANTA FE, NM, 87505.

THIS BID IS SUBJECT TO THE REQUIREMENTS OF THE BIDDING DOCUMENTS AS DEFINED IN THE "INSTRUCTIONS TO BIDDERS," SECTION 00100.

THE BID PROPOSAL FORM MUST BE ACCOMPANIED BY A SURETY BOND, SUBCONTRACTOR LISTING FORM, AND DOCUMENTS SPECIFIED IN THE "INSTRUCTIONS TO BIDDERS."

This mailing contains three pages

INVITATION TO BID page 2

PLEASE NOTE: All hand-delivered bids must be received at the State Purchasing Division Office and should be submitted at the front desk, Room 2016.

Bidding Documents may be obtained at the office of the Architect/ Engineer of Record upon payment of **$NO CHARGE (LIMIT ONE PER COMPANY)** for each complete set. CHECKS SHOULD BE MADE PAYABLE **TO "N/A".** Incomplete sets will not be issued. The successful Bidder will receive refund of his deposit, and any unsuccessful Bidder who returns the Bidding Documents in good and complete condition within fifteen (15) days of the Bid Opening will also receive refund of this deposit. No deposits will be returned after the fifteen-day period.

BIDDING DOCUMENTS MAY BE REVIEWED AT THE FOLLOWING LOCATIONS:

ARCHITECT/ENGINEER OF RECORD
1220 S. ST. FRANCIS DRIVE
SANTA FE, NM 87505
(505) 476.3430
JOHN.KRETZMANN@STATE.NM.US

CONSTRUCTION NEWS SERVICE
308 WEST SILLMORE, SUITE 101
COLORADO SPRINGS, CO 80907
(719) 632.9292

BUILDER'S NEWS AND PLAN ROOM
3435 PRINCETON DRIVE NE
ALBUQUERQUE, NEW MEXICO 87107
(505) 884.1752

MARKET REPORTER II,
ISQFT PLAN ROOM
308 WEST FILLMORE STREET,
SUITE 101
COLORADO SPRINGS, CO 80907
CONSTRUCTION REPORTER
1609 SECOND STREET NW
P.O. BOX 6116
ALBUQUERQUE, NM 87197
(505) 243.9793

DODGE REPORTS
1615 UNIVERSITY BOULEVARD NE
ALBUQUERQUE, NEW MEXICO 87102
(505) 243.2817

MHC/AGC
4625 RIPLEY DR.
EL PASO, TEXAS 79922
915.581.0498

THE PLAN ROOM AT SUN GLASS
648 W. BROADWAY
FARMINGTON, NM 87401
(505) 327.0700
SUN4@DIGII.NET

Bids shall be presented in the form of a total Base Bid proposal under a Lump Sum Contract plus any additive or deductive alternates that are selected by the Owner. A bid must be submitted on all bid items and alternates; segregated bids will not be accepted. Plans and specifications are available from the Architect/Engineer of record.

NOTE: Base Bid price shall not include state gross receipts or local options taxes. Taxes will be included in the Contracted Amount at prevailing rates as a separate item to be paid by Owner.

In submitting this bid, each Bidder must satisfy all terms and conditions of the Bidding Documents.

All work covered by this Invitation to Bid shall be in accordance with applicable state laws and, if the bid amount is $60,000 or more, is subject to the minimum wage rate determination issued by the New Mexico Department of Workforce Solutions, Labor and Industrial Division, for this project. If the bid amount of the contractor or any tier of subcontractor exceeds $50,000, the contractor and subcontractor must comply with the registration requirements pursuant to the Public Works Minimum Wage Act.

Bid Security in the form of a surety bond executed by a surety company authorized to do business in the State of New Mexico in the amount of **5%** of the total bid, or the equivalent in cash by means of a cashier's check or in a form satisfactory to the Owner, must accompany each bid in accordance with the Instructions to Bidders.

A 100% Performance Bond and a 100% Payment and Materials Bond for the total contract amount, including appropriate New Mexico Gross Receipts Tax, executed by a surety company authorized to do business in the State of New Mexico shall be required from the successful Bidder prior to award of contract. A subcontractor shall provide performance and payment bonds if the subcontractor's contract (to the Contractor) for work to be performed is $125,000 or more. Failure of a subcontractor to provide the required bonds shall not subject owner to any increase in cost due to approved substitution of subcontractor.

A completed Subcontractor Listing Form must accompany each bid.

The Bidding Documents contain a time for completion of the work and further impose liquidated damages for failure to complete the work within that time period.

No Bidder may withdraw his bid for **45 DAYS** after the actual date of the opening thereof.

The Owner intends to award this Project to the lowest responsible Bidder. The Owner reserves the right to reject any and all bids, to waive technical irregularities, and to award the contract to the Bidder whose bid it deems to be in the best interest of the Owner.

Attention of the Bidder is particularly directed to the current requirements as to Resident Contractor's Preference per NMSA 1978, Section 13-4-3. The provisions of NMSA 1978, Sections 13-4-1 through 13-4-4 are not applicable to projects receiving federal aid or when the expenditure of federal funds designated for a specific contract is involved.

MANDATORY PRE-BID CONFERENCE

A Mandatory Pre-bid Conference will be held as follows:

DATE: **Wednesday, May 12, 2010** TIME: **10:30 a.m.**

LOCATION: **At the schoolhouse in Lake Valley, off State Highway 27 between Mile Posts 12 and 13, between Hillsboro and Nutt, NM. See Figures 1 and 2. Interested parties will tour many of the project sites from this location with AML Program Staff.**

END OF INVITATION TO BID

VENDOR INFORMATION FORM APPENDIX A

PURSUANT TO INTERNAL REVENUE SERVICE REGULATIONS, VENDORS MUST FURNISH THEIR TAXPAYER IDENTIFICATION NUMBER (TIN) TO THE STATE. IF THIS NUMBER IS NOT PROVIDED, THE VENDOR MAY BE SUBJECT TO A 20% WITHHOLDING ON EACH PAYMENT. TO AVOID THIS 20% WITHHOLDING AND TO ENSURE ACCURATE TAX INFORMATION IS REPORTED TO THE INTERNAL REVENUE SERVICE AND THE STATE, PLEASE USE THIS FORM TO PROVIDE THE REQUESTED INFORMATION.

Legal Business Name:_____

_____

Address:_____

_____

Telephone Number:_____

9 DIGIT TAXPAYER IDENTIFICATION NUMBER

Social Security Number:_____ - _____ - _____

---- or ----

Federal Employer Identification Number_____

Type of Business (Check One):

_____Individual
_____Sole Proprietorship
_____Partnership
_____General _____Limited
_____Corporation
_____Public Service Corporation
_____Government/Nonprofit
_____Other (please specify)

_____

OTHER TAX ACCOUNT NUMBERS

New Mexico CRS Identification Number:_____

State Unemployment Tax Number:_____

Under penalties of perjury, I hereby declare that I have examined this form and to the best of my knowledge and belief, it is true and correct, and complete.

_____	_____
Name (print or type)	Title (print or type)

_____	_____	_____
Signature	Date	Telephone

SPD 9-90

00100 – INSTRUCTIONS TO BIDDERS

Title IV of the federal Surface Mining Control and Reclamation Act (SMCRA) of 1977, 30 U.S.C. Section 1201, et seq. provides for the reclamation of abandoned mine lands. All operators of coal mining operations subject to the provisions of the Act pay to the Secretary of the Interior Department, for deposit in the fund, a reclamation fee of thirty-five cents per ton (35¢/tn.) of coal produced by surface coal mining and fifteen cents per ton (15¢/tn.) of coal produced by underground mining. Under SMCRA, individual states acquire federal funds from the Office of Surface Mining, Reclamation, and Enforcement (OSMRE) to administer an approved state reclamation program and to implement specific reclamation projects. The New Mexico Energy, Minerals and Natural Resources Department (EMNRD) administers the Abandoned Mine Land (AML) Program within New Mexico pursuant to a state approved plan and the requirements of the New Mexico Abandoned Mine Reclamation Act, NMSA 1978, Section 69-25B-1, et seq. The supervision and coordination of work done under the AML Program are conducted by the Mining and Minerals Division (MMD) of EMNRD. Wherever the term Owner is used, it shall mean the MMD Director.

MMD has obtained 100% federal funds for this construction project. MMD is, by this Invitation to Bid (ITB), requesting bids from responsible, qualified Bidders for the construction project in accordance with the terms of this ITB. Bidders are advised that responsive bids are invited from both profit making and nonprofit organizations. EMNRD is an affirmative action and equal opportunity employer.

The deadline date for receipt of bids is no later than as listed on Page 1. One each of the required bid documents, with original signature, must be received and stamped in at the State Purchasing Division of the General Services Department, Room 2016, Joseph M. Montoya Building, 1100 Saint Francis Drive, Santa Fe, New Mexico 87505 (1.505.827.0472). Bids in response to this ITB will be opened publicly at the State Purchasing Division, Joseph M. Montoya Building, 1100 Saint Francis Drive, Santa Fe, New Mexico 87505. The name of each Bidder, the lump sum of each bid, and the Bidder's Contractor License Number will be announced.

The Contract Time for project completion shall be no later than three hundred sixty five (365) calendar days, including all Sundays, holidays, and non-work days, after the Contractor receives a "Notice to Proceed" via certified mail.

An abstract of the bids may be available for public inspection from the State Purchasing Division upon request. Those portions of any bid for which a Bidder has made a written request for confidentiality and for which the MMD Director has made a finding which concurs in that confidentiality shall be withheld from public inspection.

***IMPORTANT* - BIDS MUST BE SUBMITTED IN A SEALED ENVELOPE WITH THE INVITATION TO BID NUMBER AND OPENING DATE CLEARLY INDICATED ON THE BOTTOM LEFT-HAND SIDE OF THE FRONT OF THE ENVELOPE.**

00120 – SUPPLEMENTARY INSTRUCTIONS TO BIDDERS

The following shall be included with each responsive bid:

I. Information

A fully completed Vendor Information Form (see Section 00010, Pre-Bid Information), including the name, address, telephone number, Taxpayer Identification Numbers, and signature of the Bidder, or of an officer or employee who has the authority of the Bidder. Do not leave blanks. This signature shall signify that the matters stated or certified on the form are true and accurate to the best of the Bidder's knowledge.

II. Bid

A fully completed Bid Form (Section 00300), including the name, address, telephone number, New Mexico Contractor's License Number, Contractor and Subcontractor New Mexico Labor Enforcement Fund Registration Numbers for bids and subcontracts greater than $50,000.00, and signature of the Bidder, or of an officer or employee who has the authority to bind the Bidder. Do not leave blanks. This signature shall signify that the matters stated or certified in the bid are true and accurate to the best of the Bidder's knowledge and that the bid was made without collusion or fraud.

III. Security

Bid security shall be required of Bidders for construction contracts procured by competitive sealed bid. A bid security shall be in the form of a negotiable Surety Bond (see an example in Section 00410), Cashier's Check, Certified Check, or Money Order in the amount of at least 5% of the total bid payable to the Energy, Minerals and Natural Resources Department. A letter of credit is not acceptable

IV. References

A list of the Bidder's general background including relevant resources, capabilities, experience, and references with telephone numbers (Section 00420). Do not leave blanks. The Bidder must have a minimum of five years of related construction experience to qualify.

V. Supplements

A complete listing of all subcontractors (Section 00430), if applicable, including for each subcontractor: the work to be performed; the subcontractor's name, address, telephone number, and New Mexico Contractor License Number, if applicable; and a complete listing of pertinent equipment (Section 00450) including for each piece of equipment: the type, manufacturer, model, capacity, and condition. Do not leave blanks.

If for any reason this ITB requires further amendment, such amendments shall be sent via addenda to all parties recorded by the Project Engineer as having received the Bidding Documents. Each Bidder shall be required to acknowledge the receipt of any addenda on the bid form. If such addenda become necessary, they will be distributed within a reasonable time to allow the Bidders to consider the amendment in preparation of their bid.

A responsive bid to the ITB shall be submitted as a sealed bid and shall include project costs for each work task on the Bid Form (Section 00300). Prices quoted in these sealed bids shall be firm fixed prices for both lump sum and/or unit prices as listed on the Bid Form. This ITB shall become a part of the final contract agreement.

The total bid amounts as read at the Bid Opening are tentative only and subject to verification of mathematical accuracy. Such verification may result in a change to the order of the bids. The Bidder with the lowest overall total bid price will be announced as the apparent low Bidder. The apparent low Bidder's bid will be carefully evaluated to insure that it complies with the evaluation criteria listed below and the other requirements of this ITB. The bid will be awarded with reasonable promptness by written Notice of Award via certified mail to the lowest responsible Bidder. If for any reason the apparent low Bidder does not meet all of the evaluation criteria listed below or comply with all of the requirements of this ITB, the next lowest Bidder will be evaluated and awarded the contract if the evaluation criteria are met.

The evaluation criteria are:

1. possession of a valid New Mexico Contractor License appropriate for the work;

2. proof of registration with Labor and Industrial Bureau of the Labor Relations Division of the New Mexico Department of Workforce Solutions for Contractor and subcontractors that submit a bid valued at more $50,000;

3. a proven record of satisfactory work performance.

This evaluation is not conducted to determine whether one Bidder's offering is superior to another Bidder's but only to determine that a Bidder's offering is acceptable as set forth in the ITB.

Each Bidder shall submit information sufficient to evaluate the bid based on documentation of the Bidder's proven ability to perform the required tasks. Failure to provide the information required to evaluate the bid shall result in rejection of the bid without further discussion.

All questions about the meaning or intent of the Bidding Documents shall be submitted to the Project Engineer in writing. Replies will be issued by Addenda mailed or delivered to all parties recorded by the Project Engineer as having received the Bidding Documents. Questions received <u>less than 10 days</u> before the date for opening of Bids will not be answered. Only questions answered by formal written Addenda will be binding. Oral and other interpretations or clarifications will be without legal effect. Bidders or the Contractor shall promptly notify the Project Engineer of any ambiguity, inconsistency, or error which they may discover upon examination of the Bidding Documents or of the site and local conditions.

Note: Because this project is 100% federally funded, the 5% New Mexico Resident Contractor's Preference will not apply.

VI. <u>New Mexico Employees Health Insurance</u>

Pursuant to Executive Order 2007-049, as of January 1, 2008, if the successful Bidder has, or grows to, six or more employees who work, or who are expected to work, an average of at least 20 hours per week over a six-month period during the term of the contract, the successful Bidder must agree to:

(a) have in place, and agree to maintain for the term of the contract, health insurance for those employees and offer that health insurance to those employees no later than July 1, 2008 if the expected annual value in the aggregate of any and all contracts between contractor and the state exceed $1,000,000; or

(b) have in place, and agree to maintain for the term of the contract, health insurance for those employees and offer that health insurance to those employees no later than July 1, 2009 if the expected annual value in the aggregate of any and all contracts between contractor and the state exceed $500,000; or

(c) have in place, and agree to maintain for the term of the contract, health insurance for those employees and offer that health insurance to those employees no later than July 1, 2010 if the expected annual value in the aggregate of any and all contracts between contractor and the state exceed $250,000.

("Expected annual value" means the amount of money that Contractor can reasonably expect to be paid through the provision of services or goods made pursuant to a contract with the State of New Mexico. Such reasonable expectation shall be based upon, in order of preference, 1) the face value of a contract if such value exists; 2) projections made by the state based on historical data if such data exists; or 3) best estimates made by the state. In the case of a projection or best estimate, the state's projection or best estimate shall be final, binding and accepted by Contractor.)

The successful Bidder must agree to maintain a record of the number of employees who have (a) accepted health insurance; (b) declined health insurance due to other health insurance coverage already in place; or (c) declined health insurance for other reasons. These records are subject to review and audit by a representative of the state.

The successful Bidder must agree to advise all employees of the availability of state publicly-financed health care coverage programs by providing each employee with, as a minimum, the following web site link to additional information: http://www.insurenewmexico.state.nm.us/.

For indefinite quantity, indefinite delivery contracts (price agreements without specific limitations on quantity and providing for an indeterminate number of orders to be placed against it); these requirements shall apply the first day of the second month after bidder reports combined sales (from state and, if applicable, from local public bodies if from a state price agreement) of $250,000, $500,000 or $1,000,000, depending on the dollar value threshold in effect at that time.

VII. Use of Brand Name Specifications

Use of any brand name herein is for the purpose of describing the standard of quality, performance and characteristics desired and is not intended to limit or restrict competition.

00125 – BID ASSURANCES

In addition to the requirements above, the Bidder must make, include, and agree to the following assurances as a part of the responsive bid submitted in response to this Invitation for Bids (ITB)

I. General

This ITB does not commit EMNRD to pay any costs incurred by any Bidder in the submission of a responsive bid, in making necessary studies and designs for the responsive bid, or in procuring or contracting for services or supplies for the preparation of the responsive bid. Issuance of this ITB does not constitute an award commitment by EMNRD. An ITB may be canceled and any or all bids may be rejected in whole or in part, when it is in the best interest of EMNRD. Technical irregularities may be waived that do not affect the contractual conditions, delivery, price, quality, or quantity of the

construction, services, or items of tangible personal property that are bid. EMNRD specifically reserves the right to reject even responsible, qualified bids that make it impossible to determine the true amount of the bid, and bids that exceed EMNRD's budgeted or available funds for the project. Final approval for funding is contingent upon approval from the Department of the Interior: Office of Surface Mining - Albuquerque Area Office.

II. Confidentiality

It is further understood that all bids shall become a part of the official file on this matter without obligation to EMNRD and shall be made available for public inspection, unless the Bidder specifies in writing that specific portions of the bid are confidential and are to be held confidential by EMNRD in accordance with NMSA 1978, Section 71-2-8. All matter intended to be confidential shall be submitted in a sealed envelope marked "confidential" and each page of the material shall also be marked clearly with the word "confidential". EMNRD reserves the right to review information submitted as to confidentiality. For this purpose, confidential information includes, but is not limited to, matter that relates to trade secrets or which is privileged commercial or financial information that affects the competitive rights of the person, firm, or corporation that submits it.

III. Inspection

To assure EMNRD that the Bidder has the competence, equipment, facilities, and staff to furnish the services required under this contract, EMNRD shall be allowed to determine the adequacy of the competence, equipment, facilities, and staff of any Bidder considered for the contract award. For this purpose, if EMNRD deems it appropriate, the Bidder shall permit representatives of EMNRD to make an inspection of the Bidder's equipment and facilities.

IV. Samples

Bid samples or descriptive literature should not be submitted unless expressly requested. Regardless of any attempt by a Bidder to condition the bid, unsolicited bid samples or descriptive literature, which are submitted at the Bidder's risk, will not be examined or tested, and will not be deemed to vary any of the provisions of this ITB.

V. Cancellation

Failure by the successful Bidder to return the signed contract with acceptable contract bond and insurance within 10 working days after receipt via certified mail of the Notice of Award shall be just cause for the cancellation of the award and the forfeiture of the proposal guaranty which shall become the property of EMNRD, not as a penalty, but in liquidation of damages sustained.

00130 – MANDATORY PRE-BID CONFERENCE

Prospective Bidders are required to inspect the site where the work is to be conducted to familiarize themselves with the existing conditions that may affect the performance of the contract work. The pre-bid conference is mandatory for potential prime contractors. Failure to attend the pre-bid conference will be cause for rejection of a bid. Attendance by company representatives will be indicated by sign-in sheets kept by AML representatives. Subcontractors and suppliers are not required to attend the pre-bid conference; however, failure to inspect the site will not relieve subcontractors and suppliers from the responsibility of properly estimating the difficulty and cost of performing their portion of the work.

The mandatory pre-bid conference and site showing will be held at the project site to explain the work requirements. AML representatives will guide potential Bidders through the proposed work sites and will answer any questions. See Page 3 for date, location, and time.

Those wishing to attend are advised to be prompt.

The site showing is expected to take three to four hours. Access to some sites may require four-wheel drive vehicles (AML can transport some prospective bidders in state vehicles). On-site roads are unimproved, and narrow. Access to some sites also requires walking across scrubby, sometimes steep and rocky terrain. AML advises attendees to bring food, water, and appropriate clothing and shoes.

NOTE: NOTHING STATED AT THE PRE-BID CONFERENCE SHALL CHANGE THIS INVITATION FOR BIDS UNLESS SUCH CHANGE IS MADE BY WRITTEN AMENDMENT.

This page was intentionally left blank.

00300 – BID FORMS

BID ITEM	MATERIAL OR WORK DESCRIPTION	ESTIMATED QUANTITY[1]	BID AMOUNT[2]
1.	Mobilization (Not to exceed 10% of TOTAL BASE BID)	For the lump sum of	

_____ Dollars ($_____)
(Written Whole Dollars and Zero Cents)

2. Backfill Feature "Rattlesnake" Shaft For the lump sum of

_____ Dollars ($_____)
(Written Whole Dollars and Zero Cents)

3. Construct Toroid Tire Plug Closure at Feature 048-021OC For the lump sum of

_____ Dollars ($_____)
(Written Whole Dollars and Zero Cents)

4. Construct Horizontal Bat Gate with PUF Plug, CSP Riser and Collar at Feature 048-021aS For the lump sum of

_____ Dollars ($_____)
(Written Whole Dollars and Zero Cents)

5. Construct Airflow Closure with Concrete Plug, CSP Riser and Concrete Encasement at Feature 048-035S For the lump sum of

_____ Dollars ($_____)
(Written Whole Dollars and Zero Cents)

6. Construct Toroid Tire Plug Closure at Feature 049-000T For the lump sum of

_____ Dollars ($_____)
(Written Whole Dollars and Zero Cents)

7. Construct Toroid Tire Plug Closure at Feature 049-021T For the lump sum of

_____ Dollars ($_____)
(Written Whole Dollars and Zero Cents)

[1] *The estimated quantities of materials and work required to complete the project are approximations only and are given as a basis for calculation upon which the contract award will be determined.*
[2] *The bid amount shall exclude the applicable state gross receipts tax or applicable local option tax.*

BID ITEM	MATERIAL OR WORK DESCRIPTION	ESTIMATED QUANTITY[1]	BID AMOUNT[2]
8.	Construct Horizontal Bat Gate with PUF Plug, CSP Riser and Collar at Feature 049-066S	For the lump sum of	

_____ Dollars ($_____)
(Written Whole Dollars and Zero Cents)

9.	Construct Horizontal Bat Gate with PUF Plug, CSP Riser and Collar at Feature 049-067S	For the lump sum of	

_____ Dollars ($_____)
(Written Whole Dollars and Zero Cents)

10.	Construct Horizontal Bat Gate with PUF Plug, CSP Riser and Collar at Feature 049-068S	For the lump sum of	

_____ Dollars ($_____)
(Written Whole Dollars and Zero Cents)

11.	Construct Horizontal Bat Gate with PUF Plug, CSP Riser and Collar at Feature 049-069S	For the lump sum of	

_____ Dollars ($_____)
(Written Whole Dollars and Zero Cents)

12.	Construct Horizontal Bat Gate with PUF Plug, CSP Riser and Collar at Feature 049-070S	For the lump sum of	

_____ Dollars ($_____)
(Written Whole Dollars and Zero Cents)

13.	Construct Bat Cupola with PUF Plug, Plug, Concrete Plug, CSP Riser and Concrete Footing at Feature 049-087S	For the lump sum of	

_____ Dollars ($_____)
(Written Whole Dollars and Zero Cents)

14.	Construct Horizontal Bat Gate with PUF Plug, CSP Riser and Collar at Feature 049-116S	For the lump sum of	

_____ Dollars ($_____)
(Written Whole Dollars and Zero Cents)

BID ITEM	MATERIAL OR WORK DESCRIPTION	ESTIMATED QUANTITY[3]	BID AMOUNT[4]
15.	Construct Bat Gate in CSP and		

[1] *The estimated quantities of materials and work required to complete the project are approximations only and are given as a basis for calculation upon which the contract award will be determine.*
[2] *The bid amount shall exclude the applicable state gross receipts tax or applicable local option tax.*
[3] *The estimated quantities of materials and work required to complete the project are approximations only and are given as a basis for calculation upon which the contract award will be determine.*
[4] *The bid amount shall exclude the applicable state gross receipts tax or applicable local option tax.*

PUF Plug at Feature 050-131T For the lump sum of

_____Dollars ($_____)
(Written Whole Dollars and Zero Cents)

16. Construct Bat Cupola with PUF Plug, CSP Riser and Collar at Feature 052-046S For the lump sum of

_____Dollars ($_____)
(Written Whole Dollars and Zero Cents)

17. Construct Horizontal Bat Gate with PUF Plug, CSP Riser and Collar at Feature 052-085S For the lump sum of

_____Dollars ($_____)
(Written Whole Dollars and Zero Cents)

18. Construct Horizontal Bat Gate with PUF Plug, CSP Riser and Collar at Feature 052-086S For the lump sum of

_____Dollars ($_____)
(Written Whole Dollars and Zero Cents)

19. Construct PUF Plug with Scoria Fill at Feature 052-089S For the lump sum of

_____Dollars ($_____)
(Written Whole Dollars and Zero Cents)

20. Construct Toroid Tire Plug or PUF Plug at Feature 053-060S (PUF estimated at 13 CY will not be paid per unit; include as part of lump sum) For the lump sum of

_____Dollars ($_____)
(Written Whole Dollars and Zero Cents)

21. Construct Horizontal Bat Gate with PUF Plug, CSP Riser and Collar at Feature 053-084S For the lump sum of

_____Dollars ($_____)
(Written Whole Dollars and Zero Cents)

BID ITEM	**MATERIAL OR WORK DESCRIPTION**	**ESTIMATED QUANTITY**[1]	**BID AMOUNT**[2]

22. Polyurethane Foam, Complete in Place For the unit price of

_____ Dollars per Cubic Yard ($_____)
(Written Whole Dollars and Zero Cents) PER CY

X 210 Cubic Yards =

_____Dollars ($ _____)

[1] *The estimated quantities of materials and work required to complete the project are approximations only and are given as a basis for calculation upon which the contract award will be determine.*
[2] *The bid amount shall exclude the applicable state gross receipts tax or applicable local option tax.*

(Written Whole Dollars and Zero Cents)

23. High-Strength Steel Mesh, Complete in Place For the unit price of

_____ Dollars per Square Foot ($_____)
(Written Whole Dollars and Zero Cents) PER SF

X 1,500 Square Feet =

_____Dollars ($ _____)
(Written Whole Dollars and Zero Cents)

24. Mechanical Rock Anchors, Complete in Place For the unit price of

_____ Dollars per Each ($_____)
(Written Whole Dollars and Zero Cents) PER EA

X 14 Each =

_____Dollars ($ _____)
(Written Whole Dollars and Zero Cents)

25. Grout Bonded Rock and Soil Anchors, Complete in Place For the unit price of

_____ Dollars per Each ($_____)
(Written Whole Dollars and Zero Cents) PER EA

X 16 Each =

_____Dollars ($ _____)
(Written Whole Dollars and Zero Cents)

BID ITEM	MATERIAL OR WORK DESCRIPTION	ESTIMATED QUANTITY[1]	BID AMOUNT[2]

26. Obliteration of Existing Access Roads, Complete in Place — For the unit price of

_____ Dollars per Thousand Linear Feet ($_____)
(Written Whole Dollars and Zero Cents) PER THOUSAND LF

X 2.00 Thousand Linear Feet =

_____ Dollars ($ _____)
(Written Whole Dollars and Zero Cents)

27. Construct Vehicular Barrier, 150 Linear Feet — For the lump sum of

_____ Dollars ($ _____)
(Written Whole Dollars and Zero Cents)

28. Seeding, Complete in Place — For the unit price of

_____ Dollars per Acre ($_____)
(Written Whole Dollars and Zero Cents) PER AC

X 2.5 Acres =

_____ Dollars ($ _____)
(Written Whole Dollars and Zero Cents)

29. Allowance for Site Maintenance and Cleanup of Previous Phases — For the lump sum of

Five Thousand Dollars ($ 5,000.00)
(Written Whole Dollars and Zero Cents)

TOTAL BASE BID[3]

_____ Dollars ($ _____)
(Written Whole Dollars and Zero Cents)

(Amounts shall be shown in both words and figures. In case of discrepancy, the amount shown in words shall govern.

[1] *The estimated quantities of materials and work required to complete the project are approximations only and are given as a basis for calculation upon which the contract award will be determine.*
[2] *The bid amount shall exclude the applicable state gross receipts tax or applicable local option tax.*
[3] *The bid amount shall exclude the applicable state gross receipts tax or applicable local option tax.*

I agree to the assurances set out in the Invitation for Bids, all of which are incorporated in this Bid Form by reference. I certify that I have the authority to bind the Bidder. The matters stated in this bid are true and accurate to the best of the Bidder's knowledge. This bid is made without collusion or fraud.

SIGNED: _____

TITLE: _____

DATE: _____

BIDDER'S NAME: _____

ADDRESS: _____

TELEPHONE NO.: _____

NEW MEXICO CONTRACTOR'S LICENSE NO: _____

LICENSE CATEGORIES: _____

CONTRACTOR NM LABOR ENFORCEMENT FUND REGISTRATION NO.:[1]

_____

SUBCONTRACTOR LABOR ENFORCEMENT FUND REGISTRATION NO.(S):[1]

_____

_____

_____

I (we) do hereby acknowledge receipt of the following addenda to the project documents:

Addendum No. _____ **Dated:** _____

Addendum No. _____ **Dated:** _____

Addendum No.: _____ **Dated:** _____

[1] Required for bids and subcontracts valued at more than fifty thousand dollars ($50,000).

00400 – SUPPLEMENTS TO BID FORMS

00410 - Bid Security Form

Bond No. _____

KNOW ALL MEN BY THESE PRESENTS, that we _____

_____

(Insert full name and address or legal title of Contractor)

as Principal, hereinafter called the Principal, and _____

_____

(Insert full name and address or legal title of Surety)

a corporation duly organized under the laws of the State of New Mexico as Surety, hereinafter called the Surety, are held and firmly bound unto the Energy, Minerals and Natural Resources Department, 1220 South St. Francis Drive, Santa Fe, New Mexico 87505, as Obligee, hereinafter called the Obligee, in the sum of _____ _____Dollars ($_____), for the payment of which sum well and truly to be made, the said Principal and the said Surety, bind ourselves, our heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents.

WHEREAS, the Principal has submitted a bid for the Project.

NOW, THEREFORE, if the Obligee shall accept the bid of the Principal and the Principal shall enter into a Contract with the Obligee in accordance with the terms of such bid, and give such bond or bonds as may be specified in the bidding or Contract Documents with good and sufficient surety for the faithful performance of such Contract and for the prompt payment of labor and material furnished in the prosecution thereof, or in the event of the failure of the Principal to enter such Contract or give such bond or bonds, if the Principal shall pay to the Obligee the difference not to exceed the penalty hereof between the amount specified in said bid and such larger amount for which the Obligee may in good faith contract with another party to perform the Work covered by said bid, then this obligation shall be null and void, otherwise to remain in full force and effect.

Signed and sealed this _____ day of _____, 20__.

_____
PRINCIPAL (Seal)

_____
WITNESS

_____
TITLE

_____
SURETY (Seal)

_____
WITNESS

_____
TITLE

00420 - Bidder's Qualification Forms

CONTRACTOR'S QUALIFICATION STATEMENT

To be filled out by the Bidder and returned with the responsive Bid.

Experience

List the major construction projects that your organization has completed in the past five (5) years, giving the name of the project, project owner, contract amount, date of completion, and percentage of the cost of the work performed with your own forces. Do not leave blanks.

1. Project Name: _____

Owner: _____

Contract Amount: $_____

Completion Date: _____ Percentage: _____

2. Project Name: _____

Owner: _____

Contract Amount: $_____

Completion Date: _____ Percentage: _____

3. Project Name: _____

Owner: _____

Contract Amount: $_____

Completion Date: _____ Percentage: _____

4. Project Name: _____

Owner: _____

Contract Amount: $_____

Completion Date: _____ Percentage: _____

5. Project Name: _____

Owner: _____

Contract Amount: $_____

Completion Date: _____ Percentage: _____

I. References

List references for the above projects including work performed, contact person, firm represented, mailing address, and phone number with area code. Do not leave blanks.

1. Work Performed: _____

_____

Contact Name: _____

Firm Represented: _____

Mailing Address: _____

_____

Phone Number: (____) _____

2. Work Performed: _____

_____

Contact Name: _____

Firm Represented: _____

Mailing Address: _____

_____

Phone Number: (____) _____

3. Work Performed: _____

_____

Contact Name: _____

Firm Represented: _____

Mailing Address: _____

_____

Phone Number: (____) _____

4. Work Performed: _____

_____

Contact Name: _____

Firm Represented: _____

Mailing Address: _____

_____

Phone Number: (____) _____

5. Work Performed: _____

_____

Contact Name: _____

Firm Represented: _____

Mailing Address: _____

_____

Phone Number: (____) _____

LIST OF SUBCONTRACTORS AND EQUIPMENT

To be filled out by the Bidder and returned with the responsive Bid.

BIDDER: _____

00430 – SUBCONTRACTORS LIST

Any person submitting a bid shall in this bid set forth the name and location of the place of business of each subcontractor under subcontract to the Contractor who will perform work or labor or render service to the Contractor in or about the construction of the public works construction project and whose total contract will be in excess of five thousand dollars ($5,000.00); and the nature of the work which will be done by each subcontractor under the New Mexico Subcontractors Fair Practices Act, NMSA 1978, Section 13-4-34. The Contractor shall list only one subcontractor for each category as defined by the Contractor in this bid. Do not leave blanks. If no subcontractors, indicate such. The statute does not require listings of second tier subcontractors, material suppliers, and subcontractors whose contracts are less than $5,000.

1. Work: _____

_____

Firm Represented: _____

Mailing Address: _____

City: _____ State: _____ Zip Code: _____

Phone No.: (_____) _____ License No.: _____

2. Work: _____

_____

Firm Represented: _____

Mailing Address: _____

City: _____ State: _____ Zip Code: _____

Phone No.: (_____) _____ License No.: _____

3. Work: _____

_____

Firm Represented: _____

Mailing Address: _____

City: _____ State: _____ Zip Code: _____

Phone No.: (_____) _____ License No.: _____

4. Work: _____

_____

Firm Represented: _____

Mailing Address: _____

City: _____ State: _____ Zip Code: _____

Phone No.: (_____) _____ License No.: _____

5. Work: _____

_____

Firm Represented: _____

Mailing Address: _____

City: _____ State: _____ Zip Code: _____

Phone No.: (_____) _____ License No.: _____

6. Work: _____

_____

Firm Represented: _____

Mailing Address: _____

City: _____ State: _____ Zip Code: _____

Phone No.: (_____) _____ License No.: _____

00450 – EQUIPMENT LIST

List all pertinent equipment proposed to be employed on the above Project as required by the bidding documents. Attach a list on a separate piece of paper if more space is needed.

1. Equipment Type: _____

Manufacturer: _____

Model: _____

Capacity: _____

Condition: _____

2. Equipment Type: _____

Manufacturer: _____

Model: _____

Capacity: _____

Condition: _____

3. Equipment Type: _____

Manufacturer: _____

Model: _____

Capacity: _____

Condition: _____

4. Equipment Type: _____

Manufacturer: _____

Model: _____

Capacity: _____

Condition: _____

5. Equipment Type: _____

Manufacturer: _____

Model: _____

Capacity: _____

Condition: _____

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00500 – AGREEMENT FORMS

SHARE Contract No. 000 …
EMNRD Contract No. 10-521-0620-_____

STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

CONSTRUCTION SERVICES CONTRACT

THIS AGREEMENT is made and entered into by and between the State of New Mexico Energy, Minerals and Natural Resources Department, hereinafter referred to as "EMNRD", and _____ hereinafter referred to as the "Contractor". Supervision and coordination of work under this Agreement shall be performed by and through the Director of the Mining and Minerals Division, hereinafter referred to as "MMD", of EMNRD.

IT IS MUTUALLY AGREED BETWEEN THE PARTIES:

I. Scope of Work

A. The Contractor shall perform the work described in the Specifications for the Lake Valley Mine Safeguard Project – Phase IV, Lake Valley, New Mexico, in the Project Manual which is part of Invitation to Bid (ITB) No. EMNRD-MMD-2010-02 which, together with the Project Manual, are incorporated herein by reference. This ITB was solicited by the Purchasing Division as ITB No. 00-521-00-05159. The Project Manual, Specifications, ITB, and Contractor's completed ITB are all incorporated into and made a part of this Agreement by reference. EMNRD shall have the sole authority to approve any changes to the Scope of Work and the Specifications and to approve the Contractor's final work product.

B. Upon receiving the written Notice to Proceed via certified mail, the Contractor shall mobilize to the site and commence work within 10 working days. Prior to commencement of work, the Contractor shall obtain all necessary permits required for this work.

C. **BEFORE ANY WORK IS INITIATED**, the Contractor shall give notice to all utility companies that provide service to the contract site and inform the utility companies of the work to be performed.

II. Compensation

A. Subject to additions or deductions pursuant to change orders, the total amount of this construction contract is _____ Dollars ($_____), which includes the amount of the accepted bid plus the appropriate New Mexico Gross Receipts Tax.

B. The New Mexico Gross Receipts Tax levied on the amounts payable under this Agreement shall be paid by the Contractor out of the sum set forth in Paragraph II. A. above.

C. EMNRD shall make payment upon receipt of a detailed and certified Application for

Payment, a copy of which is included herein at Section 00900 of the Project Manual. EMNRD shall have 15 days from the date it receives written notice from Contractor requesting payment to certify that work completed or services for which payment is requested are accepted or rejected. If certified as accepted, EMNRD shall then make payment to Contractor within 21 days of Owner's certification of acceptance. Owner may make payment to Contractor by first class mailing, electronic funds transfer, or by hand-delivery of the undisputed amount of a pay request based on work completed. If payment is made by mail, the payment shall be deemed tendered on the date it is postmarked. If EMNRD fails to pay Contractor within 21 days, EMNRD shall pay interest to Contractor beginning on the 22nd day after the payment was due, computed at 1.5 percent of the undisputed amount per month or fraction of a month until the payment is issued. If EMNRD receives an improperly completed invoice, EMNRD shall, within seven days of receiving the invoice, notify Contractor in what way the invoice is improperly completed, and EMNRD has no further duty to pay on the improperly completed invoice until Contractor submits it as complete. In the event work completed or services are rejected, Contractor shall promptly remedy all defects to EMNRD's satisfaction and resubmit its invoice. EMNRD shall have no obligation to make payment until Contractor submits a properly completed invoice.

Contractor shall comply with the Prompt Payment Act, NMSA 1978, Chapter 57, Article 28, in making prompt payments to its subcontractors and suppliers for amounts owed for work performed relating to this Contract within seven days of receipt of payment from EMNRD.

D. **Final Payment:** Twenty-one days after certification of completion, any amounts remaining due the Contractor or subcontractor under the terms of this contract shall be paid by EMNRD upon presentation of the following: a properly executed release and duly certified payment voucher; a release of all claims and claims of lien against EMNRD arising under and by virtue of this contract; and proof of completion.

III. Term

This Agreement shall not become effective until all of the following events occur: (1) execution by an authorized representative of Contractor and of Owner; and (2) encumbering of funds for the Agreement by the Department of Finance and Administration (DFA) of the State of New Mexico. This Agreement shall terminate on [insert term], unless terminated pursuant to Paragraphs IV, IX, or XXI infra.

IV. Termination

A. EMNRD's Discretion

1. EMNRD may, by written order, terminate this Agreement or any portion thereof after determining that, for reasons beyond either EMNRD's or the Contractor's control, the Contractor is prevented from proceeding with or completing the work as originally contracted for, and that termination would therefore be in the public interest. Such reasons for termination may include, but need not be limited to, executive orders of the President relating to prosecution of war or national defense, a national emergency which creates a serious shortage of materials, orders from duly constituted authorities relating to energy conservation, and restraining orders or injunctions obtained by third-party citizen action resulting from national, state or local environmental protection laws or where the issuance of such order or injunction is primarily caused by acts or omissions of persons or agencies other than the Contractor.

2. If EMNRD orders termination of this Agreement effective on a certain date, payment will be made for the actual number of units or items of work completed at the contract unit price, or as mutually agreed for items of work partially completed.

3. Acceptable materials, obtained by the Contractor for the work but which have not been incorporated therein, may, at the option of EMNRD, be purchased from the Contractor at actual cost, delivered to a prescribed location, or otherwise disposed of as mutually agreed.

4. After receipt of notice of termination pursuant to this Section IV.A. from EMNRD, the Contractor may submit a claim for costs not covered above or elsewhere in the Specifications. Such claim may include such cost items as reasonable idle equipment time, mobilization efforts, overhead expenses attributable to the project terminated, legal and accounting charges involved in claim preparation, subcontractor costs not otherwise paid for, actual idle labor costs if work is stopped in advance of termination date, and guaranteed payments for private land usage as part of the original contract. In no event, however, will loss of anticipated profits be considered as part of any settlement.

5. The Contractor agrees to make all cost records available to the extent necessary to determine the validity and amount of each item claimed.

6. Termination of a contract or portion thereof shall not relieve the Contractor of any contractual responsibilities for the work completed, nor shall it relieve the surety of its obligation for and concerning any just claim arising out of the work performed.

B. Contractor's Default

1. If the Contractor:

a. fails to begin the work under the contract within the time specified in the Notice to Proceed, or
b. fails to perform the work with sufficient skilled workers and equipment or with sufficient proper materials to assure the prompt completion of said work, or
c. fails to comply with laws, ordinances, rules, regulations or orders of public authority having jurisdiction, or
d. performs the work unsuitably or neglects or refuses to remove materials or to perform anew such work as may be rejected as unacceptable and unsuitable, or
e. discontinues the prosecution of the work, or
f. fails to resume work which has been discontinued within a reasonable time after notice to do so, or
g. becomes insolvent or is declared bankrupt or commits any acts of bankruptcy or insolvency, or
h. allows a final judgment, in a suit filed in connection with this contract, to stand against the Contractor unsatisfied for a period of thirty (30) working days, or
i. makes an assignment, in connection with this contract, for the benefit of creditors, or
j. fails to carry on the work in an acceptable manner, or
k. otherwise has committed a substantial breach of the contract,

then EMNRD will give notice in writing to Contractor and the surety of such delay, neglect, or default,

and will specify those provisions which have been violated and the corrective measures to be taken.

2. If the Contractor or surety, within a period of 10 working days after such notice, does not proceed in accordance therewith, then EMNRD will, upon written notification from EMNRD of the fact of such delay, neglect, or default, and of the Contractor's failure to comply with such notice, have full power and authority without violating this Agreement to take possession of the premises and of all materials thereon and finish the work by whatever method it may deem expedient. In such case, the Contractor shall not be entitled to receive any further payment until the work is finished.

V. Status of the Contractor

The Contractor and its agents and employees are independent Contractors performing construction services for EMNRD and are not employees of the State of New Mexico. The Contractor and its agents and employees shall not accrue leave, retirement, insurance, bonding, use of state vehicles, or any other benefits afforded to employees of the State of New Mexico as a result of this Agreement.

VI. Assignment

The Contractor shall not assign or transfer any interest in this Agreement or assign any claims for money due or to become due under this Agreement without the prior written approval of EMNRD.

VII. Subcontracting

The Contractor shall comply fully with the provisions of the New Mexico Subcontractor's Fair Practices Act, NMSA 1978, Sections 13-4-31 through 13-4-42. The Contractor shall not subcontract any portion of the services to be performed under this Agreement or obligate itself in any manner to any third party, with respect to any rights or responsibilities under this Agreement, without the prior written approval of EMNRD.

VIII. Records and Audit

The Contractor shall maintain detailed time and expenditure records that indicate the date, time, nature and cost of services rendered during the Agreement's term and effect and retain them until June 30, 2014. These records shall be maintained and available within the State of New Mexico if the Contractor has an office within the state; otherwise, Contractor shall make such records available to EMNRD within 30 days upon EMNRD's request. The records shall be subject to inspection by EMNRD, DFA and the State Auditor and the federal Office of Surface Mining. Contractor further agrees to include in all subcontracts hereunder the same right of inspection and audit against all subcontractors. EMNRD shall have the right to audit billings both before and after payment. Payment under this Agreement shall not foreclose EMNRD's right to recover excessive or illegal payments. The periods of inspection and audit may be extended for records, which relate to litigation or settlement of claims arising out of performance of this Agreement and costs and expenses of this Agreement for which exception is under consideration by the federal funding agency or any authorized representative and shall continue until all potential litigation, appeals, claims or exceptions have expired or been resolved.

IX. Appropriations

The terms of this Agreement are contingent upon sufficient appropriations and authorization

being made by the Legislature of New Mexico, the federal Congress, and the U.S. Department of the Interior for the performance of this Agreement. If sufficient appropriations and authorization are not made, this Agreement shall terminate upon written notice being given by EMNRD to the Contractor. EMNRD's decision as to whether sufficient appropriations are available shall be final, binding and accepted by Contractor.

X. Release

The Contractor, upon final payment of the amount due under this Agreement, releases EMNRD, its officers and employees, and the State of New Mexico from all liabilities, claims, and obligations whatsoever arising from or under this Agreement. The Contractor agrees not to purport to bind the State of New Mexico to any obligation not assumed herein by the State of New Mexico unless the Contractor has express written authority to do so, and then only within the strict limits of that authority.

XI. Confidentiality

Any confidential information provided to or developed by the Contractor in the performance of this Agreement shall be kept confidential and shall not be made available to any individual or organization by the Contractor without the prior written approval of EMNRD.

XII. Amendment

This Agreement shall not be altered, changed, or amended except by instrument in writing executed by the parties hereto.

XIII. Scope of Agreement

This Agreement incorporates all of the agreements, covenants, and understandings between the parties hereto concerning the subject matter hereof, and all such agreements, covenants, and understandings have been merged into this written Agreement. No prior agreements or understandings, verbal or otherwise, of the parties or their agents shall be valid or enforceable unless embodied in this Agreement.

XIV. Civil and Criminal Liability Notice

The Procurement Code, NMSA 1978, Sections 13-1-28 through 13-1-199, imposes civil and criminal penalties for its violation. In addition, the New Mexico criminal statutes impose felony penalties for bribes, gratuities, and kickbacks.

XV. Equal Opportunity Compliance

The Contractor agrees to abide by all federal and state laws and rules and regulations, and executive orders of the Governor of the State of New Mexico, pertaining to equal employment opportunity. In accordance with all such laws of the State of New Mexico, the Contractor assures that no person in the United States shall, on the grounds of race, religion, color, national origin, ancestry, sex, age, physical or mental handicap, or serious medical condition, spousal affiliation, sexual orientation or gender identity, be excluded from employment with or participation in, be denied the benefits of, or be

otherwise subjected to discrimination under any program or activity performed under this Agreement. If Contractor is found not to be in compliance with these requirements during the life of this Agreement, Contractor agrees to take appropriate steps to correct these deficiencies.

XVI. Applicable Law

This Agreement shall be governed by the laws of the State of New Mexico.

XVII. Waiver

No waiver of any of the terms or conditions of this Agreement shall be valid or binding unless the waiver request is submitted in writing by the party making the request and then approved and signed by the party granting the waiver.

I. Notices

A. Unless EMNRD shall specify otherwise in writing, notices and all other matters concerning the work to be performed hereunder shall be addressed to EMNRD as follows:

Project Engineer: John A. Kretzmann, P.E.

Contracting Division: Mining and Minerals Division
Energy, Minerals and Natural Resources Department
State of New Mexico
1220 South St. Francis Drive
Santa Fe, New Mexico 87505
1.505.476.3400

B. Unless the Contractor shall specify otherwise in writing, notices and all other matters concerning the work to be performed hereunder shall be addressed to the Contractor as follows:

@@Contractor Company Name
@@Contractor Address
@@Contractor City & State
@@Contractor Phone Number

C. Any and all notices or other communications required or permitted by this Agreement or by law to be served or given to either party hereto by the other party hereto shall be in writing and shall be deemed duly served and given upon actual receipt by or three (3) working days subsequent to certified mailing to the party to whom it is directed.

XVIII. Indemnification

The Contractor shall indemnify and forever hold and save EMNRD, the State of New Mexico, its officers, and employees harmless against any and all suits, causes of action, claims, liabilities, damages, losses, and attorney's fees and all other expenses of any kind from any source which may arise out of this Agreement or any amendment hereto if caused by the act or omission of the Contractor, its officers,

employees, servants, or agents. Nothing in this Agreement shall be construed to waive or limit any defense at law to which EMNRD is entitled.

XIX. Duty to Insure

A. In respect solely to the work occasioned by this Agreement, the Contractor shall obtain and maintain at all times during the term of this Agreement, and any extension thereof, insurance of the kind and in the amounts herein specified. Such insurance shall be provided by insurance companies authorized to do business in New Mexico and shall name the "State of New Mexico, EMNRD, MMD, and its agents and employees thereof" as either additional insured, co-insured, or principal beneficiary.

1. General Liability. Bodily injury liability and property damage liability insurance in the following minimum amounts: $500,000 for damages to or destruction of property arising out of a single occurrence; $1,000,000 to any person for any number of claims arising out of a single occurrence for all damages other than property damages, and $1,000,000 for all claims arising out of a single occurrence.

2. Automobile Liability. Automobile liability insurance covering the ownership, operation, and maintenance of owned, non-owned, and hired vehicles, in the following amounts:

Bodily injury liability –
$700,000.00 each person
$1,000,000.00 each occurrence;

Property damage liability--
$1,000,000.00 each occurrence.

3. Workers' Compensation. The Contractor shall comply fully with the provisions of the New Mexico Workers' Compensation Act, NMSA 1978, Sections 52-1-1 through 52-1-70.

B. The Contractor shall furnish EMNRD with certificates of insurance and such other proof of insurance as EMNRD may require, prior to commencing work under the Contract, and shall not commence any work under this Contract until the required insurance coverage is obtained. The insurance coverage shall not be changed, canceled, or allowed to lapse without giving EMNRD 30 working days prior written notice.

XXI. New Mexico Employees Health Insurance

Pursuant to Executive Order 2007-049, if the Contractor has, or grows to, six or more employees who work, or who are expected to work, an average of at least 20 hours per week over a six-month period during the term of the contract, the Contractor shall:

(a) have in place, and agree to maintain for the term of this contract, health insurance for those employees and offer that health insurance to those employees no later than July 1, 2008 if the expected annual value in the aggregate of any and all contracts between contractor and the state exceed $1,000,000; or

(b) have in place, and agree to maintain for the term of this contract, health

insurance for those employees and offer that health insurance to those employees no later than July 1, 2009 if the expected annual value in the aggregate of any and all contracts between contractor and the state exceed $500,000; or

(c) have in place, and agree to maintain for the term of this contract, health insurance for those employees and offer that health insurance to those employees no later than July 1, 2010 if the expected annual value in the aggregate of any and all contracts between contractor and the state exceed $250,000.

(2) The Contractor shall maintain a record of the number of employees who have (a) accepted health insurance; (b) declined health insurance due to other health insurance coverage already in place; or (c) declined health insurance for other reasons. These records are subject to review and audit by a representative of the state.

(3) The Contractor shall advise all employees of the availability of state publicly-financed health care coverage programs by providing each employee with, as a minimum, the following web site link to additional information: http://insurenewmexico.state.nm.us/.

(4) For indefinite quantity, indefinite delivery contracts (price agreements without specific limitations on quantity and providing for an indeterminate number of orders to be placed against it); these requirements shall apply the first day of the second month after bidder reports combined sales (from state and, if applicable, from local public bodies if from a state price agreement) of $250,000, $500,000 or $1,000,000, depending on the dollar value threshold in effect at that time.

XXII. Disputes

Any dispute, other than the Contractor's acts set forth in Paragraph IV.B., concerning a question of fact arising under this Agreement, not disposed of by agreement, shall, first, be decided by the Director of the Mining and Minerals Division, who shall reduce a decision to writing and furnish a signed copy to the Contractor. Such decision shall be final and conclusive unless, within 30 calendar days from the date of notification by certified mail thereof, the Contractor mails or otherwise furnishes to the Division Director, a written appeal, addressed to the Secretary of the Energy, Minerals and Natural Resources Department. The Contractor shall be afforded an opportunity to be heard and to offer evidence. The decision of the Secretary of the Energy, Minerals and Natural Resources Department or the authorized representative thereof, shall be final and conclusive, unless within 30 calendar days from the date of notification of the Secretary's decision by certified mail the Contractor submits a written request to the Secretary that the dispute be submitted to binding arbitration in accordance with Paragraph XXIII. Pending final decision of a dispute hereunder, and unless otherwise notified by EMNRD, the Contractor shall proceed diligently with the performance of the Agreement and in accordance with the Secretary of EMNRD.

XXIII. Arbitration

Any controversy or claim arising between the parties not resolved pursuant to Paragraph XXII shall be settled by binding arbitration pursuant to the Commercial Arbitration Rules of the American Arbitration Association and judgment on the award rendered by the arbitrator(s) may be entered in any court having jurisdiction thereof.

XXIV. Suspension of Work

A Suspension of Work Notice may be issued by the Project Manager if any reasonable basis exists to believe that any action of the Contractor is contrary to the intent of this Agreement or if any health or safety standard is violated after verbal or written notice to cease such activities has gone unheeded. No work performed after documentation of issuance of a Suspension of Work Notice shall be eligible for payment while such notice is in effect. No work shall proceed until such notice is vacated by the MMD Director.

XX. Compliance with Minimum Wage Rate Decision

This Agreement is within the scope of the Public Minimum Wage Act, NMSA 1978, Sections 13-4-11, et seq. The Minimum Wage Rate Decision No. SI-10-0501 A of the New Mexico Labor and Industrial Division (1.505.841.4400) shall be complied with by the Contractor and any subcontractors. A copy of the Decision is included at Section 00830 of the Project Manual.

XXI. Required Bond for Public Works Contractor

This Agreement is within the scope of NMSA 1978, Sections 13-4-18 through13-4-20. **BEFORE BEGINNING ANY WORK UNDER THIS AGREEMENT**, the Contractor shall furnish a performance bond (see example in Section 00610 of the Project Manual) and a payment bond (see example in Section 00620 of the Project Manual) both executed by the Contractor and issued by a surety authorized to do business in the State of New Mexico in an amount equal to 100% of the total Agreement price. Agreement price equals bid total plus gross receipts tax. A letter of credit is not acceptable.

The performance bond shall be conditioned upon the Contractor's performance and faithful completion of this Agreement, according to the terms, in compliance with all requirements of law. The payment bond shall guarantee payments of all just claims for the labor performed and for materials and supplies furnished, whether the labor and supplies are furnished to the prime Contractor or any subcontractors. These bonds shall be in the form approved by EMNRD. The surety shall be subject to the approval of EMNRD. The decision of EMNRD shall be accepted by the Contractor as final.

XXII. Liquidated Damage

It is mutually agreed by the parties hereto that time for the performance of the Agreement is of the essence. Should the Contractor fail to perform the entire project within the Contract Time for project completion (see Section 00100 of the Project Manual), the Contractor agrees to the charge of $300 per calendar day of liquidated damages representing inconvenience and monetary damage to the general public. Damages shall commence on the calendar day following the last day for performance of work under the Agreement. The Contractor stipulates that EMNRD may withhold additional payments under the Agreement or attach the performance bond to cover the liquidated damages set forth above. Liquidated damages shall continue until notice of satisfactory completion is forwarded by the Project Manager to the Project Engineer.

Signatures.

IN WITNESS WHEREOF, the parties have executed this Agreement as of the date first written below.

STATE OF NEW MEXICO, ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

By:_____ Date: _____
Cabinet Secretary or Designee

CONTRACTOR NAME

By: _____ Date: _____
Authorized Representative/Title

The records of the Taxation and Revenue Department reflect that the Contractor is registered with the Taxation and Revenue Department of the State of New Mexico to pay gross receipts and compensating taxes.

FOR:
STATE OF NEW MEXICO
TAXATION AND REVENUE
DEPARTMENT

Contractor Name: @@@@@@@@@@

NM I.D. NO.: @@@@@@@@@

By: _____

Date: _____

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00600 – BONDS AND CERTIFICATES

00610 - PERFORMANCE BONDS

Bond No. _____

KNOW ALL MEN BY THESE PRESENTS: that _____

_____

(Insert full name and address or legal title of Contractor)

as Principal, hereinafter called Contractor, and, _____

_____

(Insert full name and address or legal title of Surety)

as Surety, hereinafter called Surety, are held and firmly bound unto the Energy, Minerals and Natural Resources Department, 1220 South St. Francis Drive, Santa Fe, New Mexico 87505, as Obligee, hereinafter called the Owner, in the amount of _____ Dollars ($_____), for the payment whereof Contractor and Surety bind themselves, their heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents.

WHEREAS, Contractor has by written agreement dated _____, 20__, entered into a contract with Owner for the Lake Valley Mine Safeguard Project – Phase IV, Project No. EMNRD-MMD-2010-02, Lake Valley, New Mexico, in accordance with the enclosed Drawings and Specifications, which contract is by reference made a part hereof, and is hereinafter referred to as the Contract.

Performance Bond

NOW THEREFORE, THE CONDITION OF THIS OBLIGATION is such that, if Contractor shall promptly and faithfully perform said Contract, then this obligation shall be null and void; otherwise it shall remain in full force and effect.

The surety hereby waives notice of any alteration or extension of time made by the Owner.

Whenever Contractor shall be, and declared by Owner to be in default under the Contract, the Owner having performed Owner's obligations thereunder, the Surety may promptly remedy the default, or shall promptly

1) Complete the Contract in accordance with its terms and conditions, or
2) Obtain a bid or bids for completing the Contract in accordance with its terms and conditions, and upon determination by Surety of the lowest responsible bidder, or, if the Owner elects, upon determination by the Owner and the Surety jointly of the lowest responsible bidder, arrange for a contract between such bidder and Owner, and make available as Work progresses (even though there should be a default or a succession of defaults under the contract or contracts of completion arranged under this paragraph) sufficient funds to pay the cost of completion less the balance of the contract price; but not exceeding, including other costs and damages for which the Surety may be liable hereunder, the amount set forth in the first paragraph hereof. The term "balance of the contract price," as used in this paragraph, shall mean the total amount payable by Owner to Contractor under the Contract and any amendments thereto, less the amount properly paid by Owner to Contractor.

Any suit under this bond must be instituted before the expiration of two (2) years from the date on which final payment under the Contract falls due.

No right of action shall accrue on this bond to or for the use of any person or corporation other than the Owner named herein or the heirs, executors, administrators, or successors of the Owner.

Signed and sealed this _____ day of _____, 20__.

_____
PRINCIPAL (Seal)

_____
WITNESS

_____
TITLE

_____
SURETY (Seal)

_____
WITNESS

_____
TITLE

00620 - PAYMENT BONDS

Bond No. _____

THIS BOND IS ISSUED SIMULTANEOUSLY WITH PERFORMANCE BOND IN FAVOR OF THE OWNER CONDITIONED ON THE FULL AND FAITHFUL PERFORMANCE OF THE CONTRACT.

KNOW ALL MEN BY THESE PRESENTS: that _____

_____

(Insert full name and address or legal title of Contractor)

as Principal, hereinafter called Contractor, and,

_____

(Insert full name and address or legal title of Surety)

as Surety, hereinafter called Surety, are held and firmly bound unto the Energy, Minerals and Natural Resources Department, 1220 South St. Francis Drive, Santa Fe, New Mexico 87505, as Obligee, hereinafter called the Owner, in the amount of _____ Dollars ($), for the payment whereof Principal and Surety bind themselves, their heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents.

WHEREAS, Principal has by written agreement dated _____, 20__, entered into a contract with Owner for the Lake Valley Mine Safeguard Project – Phase IV, Project No. EMNRD-MMD-2010-02, Lake Valley, New Mexico, in accordance with the enclosed Drawings and Specifications, which contract is by reference made a part hereof, and is hereinafter referred to as the Contract.

Labor and Material Payment Bond

NOW THEREFORE, THE CONDITION OF THIS OBLIGATION is such that, if Principal shall promptly make payment to all claimants as hereinafter defined, for all labor and material used or reasonably required for use in the performance of the Contract, then this obligation shall be void; otherwise it shall remain in full force and effect, subject, however, to the following conditions:

1. A claimant is defined as one having a direct contract with the Principal or with a Subcontractor of the Principal for labor, material, or both, used or reasonably required for use in the performance of the Contract, labor and material being construed to include that part of water, gas, power, light, heat, oil, gasoline, telephone service, or rental of equipment directly applicable to the Contract.
2. The above named Principal and Surety hereby jointly and severally agree with the Owner that every claimant as herein defined, who has not been paid in full before the expiration of a period of ninety (90) days after the date on which the last of such claimant's work or labor was done or performed, or materials were furnished by such claimant, may sue on this bond for the use of such claimant, prosecute the suit to final judgement for such sum or sums as may be justly due claimant, and have execution thereon. The Owner shall not be liable for the payment of any costs or expenses of any such suit.
3. No suit or action shall be commenced hereunder by any claimant:

a) Unless claimant, other than one having a direct contract with the Principal, shall have given written notice to any two (2) of the following: the Principal, the Owner, or the Surety above named, within ninety (90) days after such claimant did or performed the last of the work or labor, or furnished the last of the materials for which said claim is made, stating with substantial accuracy the amount claimed and the name of the party to whom the materials were furnished, or for whom the work or labor was done or performed. Such notice shall be served by mailing the same by registered mail or certified mail, postage prepaid, in an envelope addressed to the Principal, Owner, or Surety, at any place where an office is regularly maintained for the transaction of business, or served in any manner in which legal process may be served in the state in which the aforesaid project is located, save that such service need not be made by a public officer.

b) After the expiration of one (1) year following the date on which Principal ceased Work on said Contract, it being understood, however, that if any limitation embodied in this bond is prohibited by any law controlling the construction hereof such limitation shall be deemed to be amended so as to be equal to the minimum period of limitation permitted by such law.

c) Other than in a state court of competent jurisdiction in and for the county or other political subdivision of the state in which the Project, or any part thereof, is situated, or in the United States District Court for the district in which the Project, or any part thereof, is situated, and not elsewhere.

4. The amount of this bond shall be reduced by and to the extent of any payment or payments made in good faith hereunder, inclusive of the payment by Surety of mechanics' liens which may be filed of record against said improvement, whether or not claim for the amount of such lien be presented under and against this bond.

Signed and sealed this _____ day of _____, 20__.

_____
PRINCIPAL (Seal)

_____
WITNESS

_____
TITLE

_____
SURETY (Seal)

_____
WITNESS

_____
TITLE

00650 – CERTIFICATE OF INSURANCE

This certificate is issued as a matter of information only and confers no rights upon the addressee. It does not amend, extend, or alter the coverage afforded by the policies listed below.

Name and Address of Insured	COMPANIES AFFORDING COVERAGE	
Covering (Project Name and Location)	A	
Address: Mining and Minerals Division Energy, Minerals and Natural Resources Department State of New Mexico 1220 South St. Francis Drive Santa Fe, New Mexico 87505	B	
	C	
	D	
	E	
	F	

This is to certify that the following described policies, subject to their terms, conditions, and exclusions, have been issued to the above named insured and are in force at this time.

TYPE OF INSURANCE	CO. CODE	POLICY NUMBER	EXPIRATION DATE	LIMITS OF LIABILITY IN THOUSANDS		
					EACH OCCURRENCE	AGGREGATE
(a) Worker's Compensation (b) Employer's Liability				**Statutory**		
					$	**Each Accident**
Comprehensive General Liability including: ☐ Premises – Operations ☐ Independent Contractors ☐ Products and Completed Operations ☐ Broad Form Property Damage ☐ Contractual Liability ☐ Explosion and Collapse Hazard ☐ Underground Hazard ☐ Personal Injury with Employment Exclusion Deleted				Bodily Injury Property Damage	$ $	$ $
				Bodily Injury and Property Damage Combined	$	$
				*Applies to Products and Completed Operations Hazard		$ (Personal Injury)
Comprehensive Automobile Liability ☐ Owned ☐ Hired ☐ Non-Owned				Bodily Injury (Each Person Bodily Injury (Each Accident)	$ $	
				Property Damage	$	
				Bodily Injury and Property Damage Combined	$	
Excess Liability ☐ Umbrella Form ☐ Other than Umbrella				Bodily Injury and Property Damage Combined	$	$
Other (Specify)				The State of New Mexico, EMNRD, MMD, and its agents and employees thereof are either additional insured, co-insured, or principal beneficiary.		

1. Products and completed Operations coverage will be maintained for a minimum period of ☐ 1 ☐ 2 year(s) after final payment
2. Has each of the above listed policies been endorsed to reflect the company's obligation to notify the addressee in the event of cancellation or non-renewal?
   Yes ☐ ☐

CERTIFICATION

I hereby certify that I am an authorized representative of each of the insurance companies listed above, and that the coverage's afforded under the policies listed above will not be canceled or allowed to expire unless thirty (30) days written notice has been given to the addressee of this certificate.

Name of Issuing Agency _____ Signature of Authorized Representative _____

Address _____ Date of Issue _____

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00700 – GENERAL CONDITIONS

00704 - DIFFERING SITE CONDITIONS

During the progress of work, if subsurface or latent physical conditions are encountered at the site differing materially from those indicated in the contract or if unknown physical conditions of an unusual nature, differing materially from those ordinarily encountered and generally recognized as inherent in the work provided for in the contract, are encountered at the site, the party discovering such conditions shall promptly notify the other party in writing of the specific differing conditions before they are disturbed and before the affected work is performed.

Upon written notification, the Project Engineer will investigate the conditions, and if the Project Engineer determines that the conditions materially differ and cause an increase or decrease in the cost or time required for the performance of any work under the contract, an adjustment, excluding loss of anticipated profits, will be made and the contract modified in writing accordingly. The Project Engineer will notify the Contractor of the determination whether or not an adjustment of the contract is warranted.

No contract adjustment that results in a benefit to the Contractor will be allowed unless the Contractor has provided the required written notice.

No contract adjustment will be allowed under this clause for any effects caused by unchanged work.

00713 – WARRANTY AND GUARANTEE

The Contractor shall obtain and assign to EMNRD all manufacturers' and producers' guarantees or warranties which are normally provided as customary trade practice for items and materials incorporated into the work. In the absence of a manufacturer's or producer's guarantee, the Contractor warrants that equipment and material incorporated into the work is free from any defects or imperfections in workmanship and material for a period of one year after acceptance by EMNRD. The Contractor shall promptly, without cost to EMNRD, and in accordance with EMNRD's written instructions, either correct such defective work, or, if it has been rejected by EMNRD, remove it from the site and replace it with nondefective work. If the Contractor does not promptly comply with the terms of such instructions, or in an emergency where delay would cause serious risk of loss or damage, EMNRD may have the defective work removed and replaced, and all direct, indirect, and consequential costs of such removal and replacement (including but not limited to fees and charges of engineers, architects, attorneys, and other professionals) will be paid by the Contractor.

00720 - DUTIES, RESPONSIBILITIES AND LIMITATIONS OF AUTHORITY OF THE PROJECT MANAGER

A. General.

The Project Manager is the EMNRD employee who monitors construction, who acts as as directed by and under the supervision of the Project Engineer, and who will confer with the Project Engineer regarding his actions. The Project Manager's dealings in matters pertaining to the on-site work shall in general be only with the Project Engineer and the Contractor, and dealings with subcontractors

shall only be through or with the full knowledge of the Contractor. Written communication with EMNRD will be through or as directed by the Project Engineer.

B. Duties and Responsibilities.

The Project Manager will:

1. Schedules: Review the progress schedule prepared by the Contractor and consult with the Project Engineer concerning acceptability.

2. Conferences: Attend preconstruction conferences, progress meetings, job conferences as required in consultation with the Project Engineer, and other project related meetings.

3. Liaison: Serve as the Project Engineer's liaison with the Contractor, working principally through the Contractor's superintendent and assist him in understanding the intent of the Contract Documents.

4. Shop Drawings and Samples:

    a. Receive and record date of receipt of shop drawings and samples, receive samples that are furnished at the site by the Contractor, and notify the Project Engineer of their availability for examination.

    b. Advise the Project Engineer and the Contractor or its superintendent immediately of the commencement of any work requiring a shop drawing or sample submission if the Project Engineer has not accepted the submission.

5. Review of Work, Rejection of Defective Work, Inspections and Tests:

    a. Conduct on-site observations of the work in progress to assist the Project Engineer in determining if the work is proceeding in accordance with the Contract Documents, and that completed work will conform to the Contract Documents.

    b. Report to the Project Engineer whenever he believes that any work is unsatisfactory, faulty or defective or does not conform to the Contract Documents, or does not meet the requirements of any inspections, tests or approvals required to be made, or has been damaged prior to final payment; and advise the Project Engineer when he believes work should be corrected or rejected or should be uncovered for observation, or requires special testing, inspection or approval.

    c. Verify that tests, equipment and systems startups and operating and maintenance instructions are conducted as required by the Contract Documents and in presence of the required personnel, and that the Contractor maintains adequate records thereof; observe, record and report to the Project Engineer appropriate details relative to the test procedures and startups.

d. Accompany visiting inspectors representing public or other agencies having jurisdiction over the Project, record the outcome of these inspections and report to the Project Engineer.

6. Interpretation of Contract Documents: Transmit to Contractor the Project Engineer's clarifications and interpretations of the Contract Documents.

7. Modifications: Consider and evaluate the Contractor's suggestions for modifications in drawings or Specifications and report them with recommendations to the Project Engineer.

8. Records:

a. Maintain at the job site orderly files for correspondence, reports of job conferences, shop drawings and samples submissions, reproductions of original Contract Documents including all addenda, change orders, field orders, additional drawings issued subsequent to the execution of the Contract, the Project Engineer's clarifications and interpretations of the Contract Documents, progress reports, and other Project related documents.

b. Keep a diary or log book, recording hours on the job site, weather conditions, data relative to questions of extras or deductions, list of visiting officials and representatives of manufacturers, fabricators, suppliers and distributors, daily activities, decisions, observations in general and specific observations in more detail as in the case of observing test procedures. Send copies to the Project Engineer.

c. Record names, addresses and telephone numbers of all the Contractors, subcontractors and major suppliers of materials and equipment.

9. Reports:

    a. Furnish the Project Engineer periodic reports as required of progress of the work and the Contractor's compliance with the approved progress schedule and schedule of shop drawing submissions.

    b. Consult with the Project Engineer in advance of scheduled major tests, inspections or start of important phases of the work.

    c. Report immediately to the Project Engineer upon the occurrence of any accident.

10. Payment Requisitions: Review applications for payment with the Contractor for compliance with the established procedure for their submission and forward them with recommendations to the Project Engineer, noting particularly their relation to the schedule of values, work completed and materials and equipment delivered at the site but not incorporated in the work.

11. Certificates, Maintenance and Operation manuals: During the course of the work, verify that certificates, maintenance and operation manuals and other data required to be assembled and furnished by the Contractor are applicable to the items actually installed; and deliver this material to the Project Engineer for his review prior to final acceptance of the work.

12. Completion:

    a. Before the Contractor issues written certification to the Project Engineer that the project is complete, submit to the Contractor a pre-final list of observed items requiring completion or correction.

    b. Conduct final inspection in the company of the Project Engineer and the Contractor and prepare a final list of items to be completed or corrected.

    c. Verify that all items on final list have been completed or corrected and make recommendations to the Project Engineer concerning acceptance.

C. Limitations of Authority.

Except upon written instructions of the Project Engineer and notification to the Contractor, the Project Manager:

1. Shall not authorize any deviation from the Contract Documents or approve any substitute materials or equipment.
2. Shall not exceed limitations on the Project Engineer's authority as set forth in the Contract Documents.

3. Shall not undertake any of the responsibilities of the Contractor, subcontractors or the Contractor's superintendent, or expedite the work.

4. Shall not issue directions relative to any aspect of the means, methods, techniques, sequences or procedures of construction unless such is specifically called for in the Contract Documents.

5. Shall not issue directions as to safety precautions and programs in connection with the work.

6. Shall not participate in specialized field or laboratory test, unless such is specifically called for in the Contract Documents.

7. Shall not receive any materials, supplies, equipment, etc. on behalf of the Contractor.

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00800 – SUPPLEMENTARY CONDITIONS

00820 - ADDITIONAL ARTICLES

The following sections describe additional articles under this contract.

00824 - STATUTORY REQUIREMENTS

00825 - CERTIFICATION REGARDING DEBARMENT, SUSPENSION AND OTHER RESPONSIBILITY MATTERS, DRUG-FREE WORKPLACE REQUIREMENTS AND LOBBYING

U.S. DEPARTMENT OF THE INTERIOR
Office of Surface Mining Reclamation and Enforcement

Certifications Regarding Debarment, Suspension and Other Responsibility Matters, Drug-Free Workplace Requirements and Lobbying

Persons signing this form should refer to the regulations referenced below for complete instructions.

Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion - Lower Tier Covered Transactions (See Appendix B of Subpart D of 43 CFR 12).

Certification Regarding Drug-Free Workplace Requirements (Grantees Other Than Individuals) (See Appendix C of Subpart D of 43 CFR 12).

Certification Regarding Lobbying (See 43 CFR 18).

Signature on this form provides for compliance with certification requirements under 43 CFR Parts 12 and 18. The certifications shall be treated as a material representation of fact upon which reliance will be placed when the Office of Surface Mining determines to award the covered transaction, grant or cooperative agreement.

PART A: Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion - Lower Tier Covered Transactions

___ *CHECK IF THIS CERTIFICATION IS FOR A LOWER TIER COVERED TRANSACTION AND IS APPLICABLE.*

1. The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible or voluntarily excluded from participation in this transaction by any Federal department or agency.

2. Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

PART B: Certification Regarding Drug Free Workplace Requirements

___ *CHECK IF THIS CERTIFICATION IS FOR AN APPLICANT WHO IS NOT AN INDIVIDUAL.*

1. The grantee certifies that it will or continue to provide a drug-free workplace by:

(a) Publishing a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession or use of a controlled substance is prohibited in the grantee's workplace and specifying the actions that will be taken against employees for violation of such prohibition;

(b) Establishing an ongoing drug-free awareness program to inform employees about --
(1) The dangers of drug abuse in the workplace;
(2) The grantee's policy of maintaining a drug-free workplace;
(3) Any available drug counseling, rehabilitation and employee assistance programs; and
(4) The penalties that may be imposed upon employees for drug abuse violations occurring in the workplace;

(c) Making it a requirement that each employee to be engaged in the performance of the grant be given a copy of the statement required by paragraph (a);

(d) Notifying the employee in the statement required by paragraph (a) that, as a condition of employment under the grant, the employee will --
(1) Abide by the terms of the statement and
(2) Notify the employer in writing of his or her conviction for a violation of a criminal drug statute occurring in the workplace no later than five calendar days after such conviction;

(e) Notifying the agency in writing, within ten calendar days after receiving notice under subparagraph (d)(2) from an employee or otherwise receiving actual notice of such conviction. Employers of convicted employees must provide notice, including position title, to every grant officer on whose grant activity the convicted employee was working, unless the Federal agency has designated a central point for the receipt of such notices. Notice shall include the identification numbers(s) of each affected grant;

(f) Taking one of the following actions, within 30 calendar days of receiving notice under subparagraph (d)(2), with respect to any employee who is so convicted --
(1) Taking appropriate personnel action against such an employee, up to and including termination, consistent with the requirements of the Rehabilitation Act of 1973, as amended; or
(2) Requiring such employee to participate satisfactorily in a drug abuse assistance or rehabilitation program approved for such purposes by a Federal, State or local health, law enforcement, or other appropriate agency;

(g) Making a good faith effort to continue to maintain a drug-free workplace through implementation of paragraphs (a), (b), (c), (d), (e) and (f).

2. The grantee shall provide below the site(s) of the performance of work done in connection with the specific grant:

   Place of Performance (Street address, city, county, state, zip code)

   ___ Check if there are workplaces on file that are not identified here.

PART C: Certification Regarding Lobbying

___ *CHECK IF CERTIFICATION IS FOR THE AWARD OF ANY OF THE FOLLOWING AND THE AMOUNT EXCEEDS $100,000: A FEDERAL GRANT OR COOPERATIVE AGREEMENT; SUBCONTRACT OR SUBGRANT UNDER THE GRANT OR COOPERATIVE AGREEMENT.*

The undersigned certifies, to the best of his or her knowledge and belief, that:

1. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of an agency, a Member of Congress and officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

2. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

3. The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants and contracts under grants, loans and cooperative agreements) and that all subrecipients shall certify accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by Section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

As the authorized certifying official, I hereby certify that the above specified certifications are true.

SIGNATURE OF AUTHORIZED CERTIFYING OFFICIAL

NAME DATE

TITLE

This form consolidates DI-1953, DI-1954, DI-1955, DI-1956 and DI-1963.

DI-2010 (March 1995)
Modified for AML Use

00826 – Applicant/Violator System Information

REQUEST FOR AN APPLICANT/VIOLATOR SYSTEM (AVS) AML CONTRACTOR DATA EVALUATION

An AVS data evaluation for AML contractors is required under the Federal rules at 30 CFR 874.16. Please provide the information requested below and send your request via postal mail, e-mail or FAX to:

Liz Cox
Office of Surface Mining
Applicant/Violator System Office
2679 Regency Road
Lexington, Kentucky 40503
Telephone: 800.643.9748 ext.472
FAX: 859.260.8418
E-mail: lcox@osmre.gov

Date_____ Requesting Office _____

Contact_____

Contact's Telephone_____

Preferred response method:

E-MAIL : _____
or
FAX: (____ _)_____

Level of your request: Emergency _____
(Expect your response within 4 hrs if received before 3 PM Eastern)

Non-Emergency_____
(Expect your response with 2 business days)
Note to Evaluator:

Note to Evaluator:

Instructions for Completing AML Contractor Form OMB #1029-01191

Part A: General Information. Part A should be completed by the AML Contractor.

Part B: Legal Structure. Part B should be completed by the AML Contractor.

Part C: Certifying and updating information in the Applicant/Violator System (AVS). Part C should be completed by the AML Contractor, selecting the statement that best describes their situation.

If information is accurate, complete and up-to-date, then check the first statement and sign and date. Attach the Entity OFT printout to the OMB #1029-0119 form and submit the form and attachment to the AML Contracting Officer your business is working with. 2

Upon reviewing an Entity OFT printout, if you discover the information contained in AVS is not accurate, complete and up-to-date, then check the second statement and complete Part D to provide missing or corrected information that needs reflected in AVS. Attach the Entity OFT printout to the OMB #1029-0119 form and submit the form and attachment to the AML Contracting Officer your business is working with.

If your business does not appear to have any information in AVS, then check the third statement and complete Part D. Submit the OMB #1029-0119 form to the AML Contracting Officer your business is working with.

Part D:
If current Entity OFT information for your business is incomplete, incorrect, or if you believe there is no information currently in the AVS for your business, you must complete Part D. Submit the OMB #1029-0119 form to the AML Contracting Officer your business is working with.

1 If you need any assistance completing OMB #1029-0119, please contact the AVS Office at 800.643.9748.
2 You may obtain your business' Entity OFT for certification purposes two ways. One way is to contact the AVS Office at 800.643.9748 and request the information. The second way is to access the AVS from your personal computer by visiting https://avss.osmre.gov. Click "Access AVS", and then Login as Guest. Place your cursor on the "Entity" Module and "Click". Type your business name in search box and press enter key. If more than one entity record appears, select your company and then "Click" on the "relationship" tab to display your Entity OFT information. Print the Entity OFT from AVS

OMB #1029-0119
Expiration Date: 1/31/13

AML CONTRACTOR INFORMATION FORM

You must complete this form for your AML contracting officer to request an eligibility evaluation from the Office of Surface Mining to determine if you are eligible to receive an AML contract. This requirement applies to contractors and their sub-contractors and is found under OSM's regulations at 30 CFR 874.16.

Part A: **General Information**

Business Name: _____ Tax Payer ID No.: _____
Address: _____
City: _____ State: _____ Zip Code: _____ Phone: _____
Fax No.: _____ E-mail address: _____

Part B: Legal Structure

( ) Corporation ( ) Sole Proprietorship ( ) Partnership ( ) LLC
( ) Other (please specify) _____

Part C: Certifying and updating information in the Applicant/Violator System (AVS).
Select only one of the following options, follow the instructions for that option, and sign below.

I, _____, have the express authority to certify that:
(**print name**)

1. _____Information on the **attached** Entity Organizational Family Tree (OFT) from AVS is accurate, complete, and up-to-date. If you select this option, you **must** attach an Entity OFT from AVS to this form. Sign and date below and do not complete Part D.

2. _____Part of the information on the **attached** Entity OFT from AVS is missing or incorrect and must be updated. If you select this option, you **must** attach an Entity OFT from AVS to this form. Use Part D to provide the missing or corrected information. Sign and date below and complete Part D.

3._____Our business currently has no information in AVS. If you select this option, you must provide all information required in Part D. Sign and date below and complete Part D.

_____ _____ _____
Date Signature Title

IMPORTANT! In order to certify in Part C to the accuracy of existing information in AVS, you must obtain a copy of your business' Entity OFT. To obtain an Entity OFT, contact the AVS Office, toll-free, at 800-643-9748 or from the AVS website at https://avss.osmre.gov.

Part D.

Contractor Name: _____

If the current entity and Entity OFT information for your business is incomplete or incorrect in AVS, or if there is no information in AVS for your business, you must provide all of the following information as it applies to your business affiliations. Please make as many copies of this page as you require.

• Every officer (President, Vice President, Secretary, Treasurer, etc.);
• All Directors;
• All persons performing a function similar to a Director;
• Every person or business that owns 10% or more of the voting stock in your business;
• Every partner, if your business is a partnership;
• Every member and manager, if your business is a limited liability company; and
• Any other person(s) who has the ability to determine the manner in which the AML reclamation project is being conducted.

Name _____ Position/Title _____
Address _____ Telephone # _____
_____ % of Ownership _____
Begin Date: _____ Ending Date: _____

Name _____ Position/Title _____
Address _____ Telephone # _____
_____ % of Ownership _____
Begin Date: _____ Ending Date: _____

Name _____ Position/Title _____
Address _____ Telephone # _____
_____ % of Ownership _____
Begin Date: _____ Ending Date: _____

Name _____ Position/Title _____
Address _____ Telephone # _____
_____ % of Ownership _____
Begin Date: _____ Ending Date: _____

PAPERWORK REDUCTION STATEMENT

The Paperwork Reduction Act of 1995 (44 U.S.C. 3501) requires us to inform you that: Federal Agencies may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number. This information is necessary for all successful bidders prior to the distribution of AML funds, and is required to obtain a benefit.

Public reporting burden for this form is estimated to range from 15 minutes to 1 hour, with an average of 22 minutes per response, including time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. You may direct comments regarding the burden estimate or any other aspect of this form to the Information Collection Clearance Officer, Office of Surface Mining Reclamation and Enforcement, Room 202 SIB, Constitution Ave., NW, Washington, D.C. 20240.

00830 – WAGE DETERMINATION SCHEDULE

NEW MEXICO DEPARTMENT OF WORKFORCE SOLUTIONS - PUBLIC WORKS BUREAU QUESTIONS?? Call OR E-mail:

Patricia Barela @ (505) 841-4411 OR patricia.barela@state.nm.us or
Lori Griego @ (505) 841-4408 OR lori.griego2@state.nm.us or
Michael Fanestiel @ (505) 841-4417 OR michael.fanestiel@state.nm.us fax (505) 841-4423

CONTRACTING AGENCY / OWNER	County	Decision Date	Decision No.
Abandoned Mine Land Program	Sierra	04/08/10	SI-10-0501 A
Mine Reclamation Bureau		Expires for Bids	
Type of Construction: A		12/31/10	

Description of Work: Lake Valley Mine Safeguard Project – Phase IV
Backfilling of one mine opening; construction of bat gates, airflow closures, bat cupolas, polyurethane foam plugs, toroid tire plugs, and steel mesh closures at 24 mine openings. Seeding of disturbed areas.

***REMINDER* to those preparing BID documents:** If bids are not opened by the above "Expires for Bids" date, a **NEW** wage decision may be required. If bids are NOT submitted before new wage rates go into effect, a NEW wage decision WILL be required. Call the Public Works Bureau at (505) 841-4417 to check status of new wage rates.

N O T I C E S

ALL contractors **MUST** have an active registration with the Labor Enforcement Fund before bidding on any public works project. Bids from contractors who are not registered will be considered **INVALID**.

The General/Prime Contractor selected for this project **MUST** submit a completed Statement of Intent to Pay Prevailing Wages to the Contracting Agency (or it's agent) before any work is started.

Sub-contractors & 2nd/3rd Tier Contractors **MUST** also submit Statements through their General/Prime before they start work. The General/Prime is responsible for informing the Contracting Agency or it's agent whenever there is a change to the subcontractors on the project.

The Contracting Agency or it's agent **MUST** fill out and submit the Notification of Award and Subcontractor list to the Public Works Bureau and forward the remainder of this wage decision package to the General/Prime Contractor that is awarded the project contract. That contractor is also responsible for making certain that all subcontractors have copies of the wage decision and other needed forms.

The General/Prime Contractor **MUST** post the wage rate table at the job site outside the Superintendent's trailer/office in an easily accessible place.

Workers **MUST** be classified & paid according to the work they perform, regardless of qualifications.
These wage rates are good for the life of a project.
Lake Valley Mine Safeguard Project – Phase IV: Wage Decision # SI-10-0501 A

Backfilling of one mine opening; construction of bat gates, airflow closures, bat cupolas, polyurethane foam plugs, toroid tire plugs, and steel mesh closures at 24 mine openings. Seeding of disturbed areas.

TYPE "A" - STREET, HIGHWAY, UTILITY & LIGHT ENGINEERING

Effective January 1, 2010

Trade Classification	Base Rate	Fringe Rate
Bricklayer/Blocklayer/Stonemason	17.74	0.26
Carpenter/Lather	15.99	0.44
Cement Mason	15.52	0.26
Ironworker	21.77	6.03
Painter (Brush/Roller/Spray)	17.56	0.44
Electricians (outside)		
Groundman	26.79	11.03
Equipment Operator	29.61	11.03
Lineman/Wireman or Tech	30.20	11.03
Cable Splicer	31.38	11.03
Plumber/Pipefitter	28.30	4.07
Laborers		
Group I	13.73	0.35
Group II	14.03	0.35
Group III	14.43	0.35
Operators		
Group I	15.74	0.26
Group II	15.94	0.26
Group III	16.52	0.26
Group IV	16.54	0.26
Group V	16.53	0.26
Group VI	16.69	0.26
Group VII	16.74	0.26
Group VIII	16.89	0.26
Group IX	17.39	0.26
Group X	18.19	0.26

Truck Drivers		
Group I	13.32	0.26
Group II	13.52	0.26
Group III	13.72	0.26
Group IV	13.92	0.26

NOTE: SUBSISTENCE AND INCENTIVE PAY DO NOT APPLY TO TYPE "A" CONSTRUCTION.

BILL RICHARDSON
GOVERNOR

KEN ORTIZ
SECRETARY

NEIL MEONI
DEPTUY SECRETARY

STATE OF NEW MEXICO
DEPARTMENT OF WORKFORCE SOLUTIONS
Public Works Bureau
625 Silver Ave SW, Suite 410
Albuquerque, NM 87102
(505) 841-4400 / FAX (505) 841-4423

TERESA C. GOMEZ
DEPUTY SECRETARY

Dear Owner/Contracting Agency:

The enclosed wage decision packet must be used in the contract resulting from the bid opening on this project and, excluding the Notification of Award, and Subcontractor List, **MUST BE FORWARDED** to the prospective general contractor that has been awarded the bid. The general contractor must post the complete wage decision at the job site in an easily accessible place. Failure to do so may result in fines. Furthermore, each subcontractor must receive a copy of the wage decision and use these rates to pay all employees.

LABOR ENFORCEMENT FUND – STRICTLY ENFORCED

NOTE: Any general contractors must be registered with the **Labor Enforcement Fund** prior to the bidding process or the bid shall be deemed invalid. All subcontractors or tier subcontractors bidding more than $60,000 on a Public Works contract **MUST** be registered with the Labor & Industrial Division. Visit our website at www.dws.state.nm.us, click "Public Works" for a Labor Enforcement Fund Form and other forms. **REMINDER TO THOSE PREPARING BID DOCUMENTS:** IF BIDS ARE NOT OPENED BY 12/31/10; NEW WAGE RATES *MAY* BE REQUIRED. IF YOU HAVE ANY QUESTIONS, PLEASE CALL **505-841-4417**.

Weekly certified payrolls are required on all public works projects. All certified payrolls must be submitted to the general contractor and the owner/contracting agency. The general contractor must have copies of certified payrolls available to this office within ten days of a written request. Please do **NOT** submit any certified payrolls to our office unless our office requests them.

NM Apprenticeship and Training Fund payments are paid by each general contractor/subcontractor/tier(s) to either an approved apprenticeship program or to our office **(NMDWS, Public Works Bureau, PO Box 27428, Albuquerque, NM 87125-7428).** Payments are due for all hours in each trade a company has on the job site that has an apprenticeship contribution rate on the state wage decision. These payments are for the hours worked by both journeyman and apprentices, regardless of whether the company has apprentices or not. If the project has both Federal and State funding, the payments are still required. Only when the project has all Federal funds, is the project exempt. On Type "A" projects, where there are no contribution rates, apprenticeship payments do not apply. On projects with two types of construction, the contribution applies for the work under the type construction with contribution rates. Failure to pay Apprenticeship contributions is a violation of the Apprentice and Training Act and may result in penalties. If you have any Apprenticeship questions, please feel free to call (505) 841-4403.

BILL RICHARDSON
GOVERNOR

KEN ORTIZ
SECRETARY

STATE OF NEW MEXICO
DEPARTMENT OF WORKFORCE SOLUTIONS
Public Works Bureau
625 Silver Ave SW, Suite 410
Albuquerque, NM 87102
(505) 841-4400 / FAX (505) 841-4423

TERESA C. GOMEZ
DEPUTY SECRETARY

NOTICE TO ALL PUBLIC WORKS CONTRACTORS

PERTINENT INFORMATION IN ACCORDANCE WITH THE NM PUBLIC WORKS MINIMUM WAGE ACT

The Public Works Bureau insures compliance of the Public Works Minimum Wage Act (13-4-11 through 13-4-17, NMSA 78). This office issues prevailing wage rates for each project for inclusion in the bid documents. After a project contract is signed, the **Notification of Award (NOA)** and **Subcontractor List** must be completed and sent to the Public Works Bureau by the Contracting Agency or it's agent. The **Statement of Intent to Pay Prevailing Wages** must be completed by the contractors performing work on the project and sent through the General Contractor to the Public Works Bureau. A Statement of Intent to Pay Prevailing Wages is required from each construction contractor before they start work on a state or locally funded construction project costing a total of $60,000 or more. Every contractor (general, sub, second tier, etc.) must pay those rates through weekly payment and payroll.

Wage rates include a base rate and a fringe rate of pay. In many cases, an additional cost to the contractor is an apprenticeship contribution rate per hour for both journeyman and apprentices. A **monthly apprenticeship contribution compliance form and check for payment** (when applicable) is required and should be sent to NMDWS, Public Works Bureau, PO Box 27428, Albuquerque, NM 87125-7428. After a contractor completes work on a project, but before his final payment, an **Affidavit of Wages Paid** must be completed and sent to the Public Works Bureau – through the General Contractor.

Each employee must receive the full base and fringe rate per hour for all hours worked in their job classification, regardless of the qualifications or license held. The only exception is for workers with a current certification in approved apprenticeship programs. The apprentice must also receive the full benefit of the fringe rate. Fringe benefits may also be paid into approved health benefit programs, pension programs, life insurance programs, company holiday and vacation programs and/or training programs that are not apprenticeship programs (*i.e.:* an OSHA 10 safety program). If fringe benefits are paid to a third-party account, the employee must have quarterly statements provided to them. The third way of paying fringe benefits, is to pay as a combination of cash and into approved programs. This office will sometimes ask for complete breakdowns of all payment to insure total compliance.

The minimum wage, or greater, as shown on individual wage decisions must be paid. "In addition, the contractor, subcontractor employer or any person acting as a contractor shall be liable to any affected employee for liquidated damages in the sum of one hundred dollars ($100.00) for each calendar day on which a contractor, subcontractor, employer or any person acting as a contractor has willfully required or permitted an individual laborer or mechanic to work in violation of the provisions of the Public Works Minimum Wage Act" (13-4-14.C, NMSA 78). When questions arise about the requirements of the Act or the Public Works Minimum Wage Act Policy Manual they must be resolved as soon as possible. If you have questions, please call (505) 841-4417.

LABOR ENFORCEMENT FUND
(STRICTLY ENFORCED)

13-4-13.1 Public works contracts; registration of contractors and subcontractors.

A. Except as otherwise provided in this subsection, in order to submit a bid valued at more than sixty thousand dollars ($60,000) in order to respond to a request for proposals or to be considered for award of any portion of a public works project greater than sixty thousand dollars ($60,000) for a public works project that is subject to the Public Works Minimum Wage Act [13-4-10 NMSA 1978], the contractor, serving as a prime contractor or not, shall be registered with the division. Bidding documents issued or released by a state agency or political subdivision of the state shall include a clear notification that each contractor, prime contractor or subcontractor is required to be registered pursuant to this subsection. The provisions of this section do not apply to vocational classes in public schools or public post-secondary educational institutions.

B. The state or any political subdivision of the state shall not accept a bid on a public works project subject to the Public Works Minimum Wage Act from a prime contractor that does not provide proof or required registration for itself.

C. Contractors and subcontractors may register with the division on a form provided by the division and in accordance with workforce solutions department rules. The division shall charge an annual registration fee of two hundred dollars ($200). The division shall issue to the applicant a certificate of registration within fifteen days after receiving from the applicant the completed registration form and the registration fee.

D. Registration fees collected by the division shall be deposited in the labor enforcement fund.

13-4-14.1 Labor enforcement fund; creation; use.

The "labor enforcement fund" is created in the state treasury. The fund shall consist of contractor and subcontractor registration fees collected by the labor and industrial division of the labor department and all investment and interest income from the fund. The fund shall be administered by the division, and money in the fund is appropriated to the division for administration and enforcement of the Public Works Minimum Wage Act [13-4-10 NMSA 1978]. Money in the fund shall not revert to the general fund at the end of a fiscal year.

13-4-14.2 Registration cancellation, revocation, suspension; injunctive relief.

The director may:

A. cancel, revoke or suspend with conditions, including probation, the registration of any party required to be registered pursuant to the Public Works Minimum Wage Act [13-4-10 NMSA 1978] for failure to comply with the registration provisions or for good cause, subject to appeal pursuant to Section 13-4-15 NMSA 1978; and

B. seek injunctive relief in district court for failure to comply with the registration provisions of the Public Works Minimum Wage Act.

PAYROLL STATEMENT OF COMPLIANCE

Wage Decision No.: _____

I, _____, _____ do hereby state:
(Name of Signatory Party) (Title)

(1) that I pay or supervise the payment of the persons employed by: _____
(Contractor or Subcontractor)
on the _____
(Name of Project)
that during the payroll period commencing on the _____day of_____, 20__and ending the ____day of _____, 20__, all persons employed on said project have been paid the full weekly wages earned, that no deductions have been or will be made either directly or indirectly to or on behalf of said _____ from the full weekly wages earned by any
(Contractor or Subcontractor)
person, other than deductions permitted by law. Anyone found in violation of the NM Public Works Minimum Wage Act [13-4-11 to 13-4-17 NMSA 1978] could be subject to penalties and debarment.

(2) That any payrolls otherwise under this contract required to be submitted for the above period are correct and complete; that the wage rates for laborer or mechanic conform with the work he performed.

(3) That any apprentice(s) employed in the above period are duly registered in a bona fide apprenticeship program registered with the State Apprenticeship agency recognized by the Bureau of Apprenticeship & Trng., US Dept. of Labor, or properly enrolled in a bona fide training program approved for application on public works construction projects by the appropriate state (SAC) and/or federal agency(ies) (BAT) if and as required by law & applicable federal regulation.

(4) **FRINGE BENEFITS:** ***(Please Spell Out Any/All Acronyms)***

__(a) ARE PAID TO APPROVED PLAN, FUND, OR PROGRAM in addition to the basic hourly wage rates paid to each laborer or mechanic listed in the above-referenced payroll, payments of fringe benefits as listed in the contract have been or will be made to appropriate program for the benefit of such employees.

If paid to an approved plan, fund, or program, please fill out name of program w/fringe breakdown per hour below:

Name of Program Used for Fringe Benefits:				
Pension =	Health/Welfare =	Holiday/Vac. =	Life Ins. =	Training* =
(If additional space is needed for more programs/fringe breakdowns, please attach a separate page.)				

FRINGE BENEFITS:

1. *Pension*
2. *Health/Welfare*
3. *Holiday/Vacation*
4. *Life Insurance*
5. *Training (not Apprenticeship)* *

FRINGE BREAKDOWN SAMPLE:

Fringe Benefit	Amount
401(K) Plan	$8.98/hr
Vacation	$2.23/hr

__(b) **Paid to Union Program** - If paid to a Union and fringe benefits differ from employee to employee, and/or job contract, please provide fringe breakdown for each employee and attach copy of Union contract.

__(c) ARE PAID IN CASH, each laborer or mechanic listed in the above-referenced payroll has been paid as indicated on the payroll, an amount not less than the sum of the applicable basic hourly wage rate plus the amount of the required fringe benefits as listed in the contract.

Section 13-1D-1 to Section 13-1D-8, NMSA 1978 provides for employers to agree to make contributions to approved apprentice & training programs in New Mexico in which the employer is a participant to the public works apprentice and training fund administered by the Public Works Bureau of the Labor & Industrial Division of the New Mexico State Department of Labor. Contributions shall be made in the same manner and in the same amount as apprentice and training contributions required pursuant to wage rate determinations made by the Labor & Industrial Division Director.

APPRENTICESHIP CONTRIBUTIONS: (Please check applicable blank)

__Check paid to: NM Public Works Apprenticeship & Training Fund - Public Works Bureau, Labor & Industrial Div.

__Check paid to: _____ _____
(Name & address of approved Apprenticeship & Training Program) (Program No.)

_____ _____ _____ _____
Print Name of Certifying Official: Signature of Certifying Official: Title & Phone No.: Date:

The willful falsification of any of the above statements may subject the contractor or subcontractor to civil or criminal prosecution. See Section 1001 of Title 18 and Section 231 of Title 31 of the United States Code.

Revised April/2006

INSTRUCTIONS FOR FILLING OUT STATEMENT OF INTENT

FOR GENERAL CONTRACTOR:

1. Fill in general contractor information and provide signature.
2. State Wage Dec. No. as listed in bid documents. (example: BE-07-0123 B)
3. Project Title - Listed in bid documents. Whatever the project is.
4. Project Physical Address - Exact location of project (job site).
5. Estimated Start & Completion Dates of project
6. General Contractor's Contract Amount - Project cost .

FOR SUBCONTRACTOR:

1. Fill in general contractor information, but general contractor signature is not needed.
2. Fill in subcontractor section as indicated and provide signature. Send to GC. Sub-contract amount – list subcontract amount.
   PLEASE NOTE: A SEPARATE SIGNED FORM IS NEEDED FOR EACH CONTRACTOR.

FOR 2ND. TIER SUB:

1. Fill in general contractor information, but general contractor signature is not needed.
2. Fill in subcontractor section; subcontractor signature not needed. Send to GC.
3. Fill in 2nd. Tier sub section and provide signature.
4. 2nd Tier contract amount – list amount.

For 3rd TIER & HIGHER: Attach a copy of this completed form & list the 3rd tier contractor info under the 2nd tier contractor with a note.

Effective July 1, 2009 - ALL contractors bidding on public works contracts for $60,000 or more MUST be registered with the Labor & Industrial Division prior to bidding the project. The registration form may be found on the DWS web page at www.dws.state.nm.us under Public Works and Forms. Print the Labor Enforcement Fund Form and mail it along with a check for $200 to the address at the top of the form. A list of registered contractors may be reviewed on the same page as the registration form. Registration is good for one year, and after registration, contractors may bid as many contracts as they wish. Upon expiration of the registration, contractors may complete projects, but in order to bid new ones after the expiration, they must register again. NOTE: All Statements of Intent to Pay Prevailing Wages must go to the GC to submit to the Department of Workforce Solutions for approval. DWS will return approved Affidavits to the GC who should forward to the subs.

NOTE: If form is faxed, we do not need the originals, unless the fax is not legible.

TYPE "A" - STREET, HIGHWAY, UTILITY & LIGHT ENGINEERING

Effective January 1, 2010

Trade Classification	Base Rate	Fringe Rate
Bricklayer/Blocklayer/Stonemason	17.74	0.26
Carpenter/Lather	15.99	0.44
Cement Mason	15.52	0.26
Ironworker	21.77	6.03
Painter (Brush/Roller/Spray)	17.56	0.44
Electricians (outside)		
Groundman	26.79	11.03
Equipment Operator	29.61	11.03
Lineman/Wireman or Tech	30.20	11.03
Cable Splicer	31.38	11.03
Plumber/Pipefitter	28.30	4.07
Laborers		
Group I	13.73	0.35
Group II	14.03	0.35
Group III	14.43	0.35
Operators		
Group I	15.74	0.26
Group II	15.94	0.26
Group III	16.52	0.26
Group IV	16.54	0.26
Group V	16.53	0.26
Group VI	16.69	0.26
Group VII	16.74	0.26
Group VIII	16.89	0.26
Group IX	17.39	0.26
Group X	18.19	0.26
Truck Drivers		
Group I	13.32	0.26
Group II	13.52	0.26
Group III	13.72	0.26
Group IV	13.92	0.26

NOTE: SUBSISTENCE AND INCENTIVE PAY DO NOT APPLY TO TYPE "A" CONSTRUCTION.

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00900 – APPLICATION FOR PAYMENT

APPLICATION FOR PAYMENT
LAKE VALLEY MINE SAFEGUARD PROJECT – PHASE IV
Lake Valley, New Mexico
EMNRD-MMD-2010-02

Contract No. 10-521-0620-@@@@@@@@ Contractor: _____. Billing No. _____ Billing Date _____ Terminate _____

Mailing Address: _____ Billing represents work completed through (date) _____

ITEM NO.	MATERIAL OR WORK DESCRIPTION	ESTIMATED QUANTITY	CONTRACT AMOUNT	UNITS THIS BILLING	AMOUNTS THIS BILLING	UNITS PREVIOUS BILLINGS	AMOUNTS PREVIOUS BILLINGS	UNITS REMAINING	AMOUNTS REMAINING
1.	Mobilization (not to exceed 10% of total base bid)	For the lump sum of	$_____						
2.	Backfill Feature "Rattle Snake" Shaft	For the lump sum of	$_____						
3.	Construct Toroid Tire Plug Closure at Feature 048-021OC	For the lump sum of	$_____						
4.	Construct Horizontal Bat Gate with PUF Plug, CSP Riser and Collar at Feature 048-021aS	For the lump sum of	$_____						
5.	Construct Airflow Closure with Concrete Plug, CSP Riser and Concrete Encasement at Feature 048-035S	For the lump sum of	$_____						
6.	Construct Toroid Tire Plug Closure at Feature 049-000T	For the lump sum of	$_____						
7.	Construct Toroid Tire Plug at Feature 049-021T	For the lump sum of	$_____						
8.	Construct Horizontal Bat Gate with PUF Plug, CSP Riser and Collar at Feature 049-066S	For the lump sum of	$_____						
9.	Construct Horizontal Bat Gate with PUF Plug, CSP Riser and Collar at Feature 049-067S	For the lump sum of	$_____						
10.	Construct Horizontal Bat Gate with PUF Plug, CSP Riser and Collar at Feature 049-068S	For the lump sum of	$_____						

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ITEM NO.	MATERIAL OR WORK DESCRIPTION	ESTIMATED QUANTITY	CONTRACT AMOUNT	UNITS THIS BILLING	AMOUNTS THIS BILLING	UNITS PREVIOUS BILLINGS	AMOUNTS PREVIOUS BILLINGS	UNITS REMAINING	AMOUNTS REMAINING
11.	Construct Horizontal Bat Gate with PUF Plug, CSP Riser and Collar at Feature 049-069S	For the lump sum of	$_____						
12.	Construct Horizontal Bat Gate with PUF Plug, CSP Riser and Collar at Feature 049-070S	For the lump sum of	$_____						
13.	Construct Bat Cupola with PUF Plug, Concrete Plug, CSP Riser and Concrete Footing at Feature 049-087S	For the lump sum of	$_____						
14.	Construct Horizontal Bat Gate with PUF Plug, CSP Riser and Collar at Feature 049-116S	For the lump sum of	$_____						
15.	Construct Bat Gate in CSP and PUF Plug at Feature 050-131T	For the lump sum of	$_____						
16.	Construct Bat Cupola with PUF Plug, CSP Riser and Collar at Feature 052-046S	For the lump sum of	$_____						
17.	Construct Horizontal Bat Gate with PUF Plug, CSP Riser and Collar at Feature 052-085S	For the lump sum of	$_____						
18.	Construct Horizontal Bat Gate with PUF Plug, CSP Riser and Collar at Feature 052-086S	For the lump sum of	$_____						
19.	Construct PUF Plug with Scoria Fill at Feature 052-089S	For the lump sum of	$_____						
20.	Construct Toroid Tire Plug or PUF Plug at Feature 053-060S	For the lump sum of	$_____						
21.	Construct Horizontal Bat Gate with PUF Plug, CSP Riser and Collar at Feature 053-084S	For the lump sum of	$_____						

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ITEM NO.	MATERIAL OR WORK DESCRIPTION		ESTIMATED QUANTITY		CONTRACT AMOUNT	UNITS THIS BILLING	AMOUNTS THIS BILLING	UNITS PREVIOUS BILLINGS	AMOUNTS PREVIOUS BILLINGS	UNITS REMAINING
22.	Polyurethane Foam, Complete in Place	$_____ X	210 Cubic Yards	=	$_____					
23.	High-Strength Steel Mesh, Complete in Place	$_____ X	1,500 Square Feet	=	$_____					
24.	Mechanical Rock Anchors Complete in Place	$_____ X	14 Each	=	$_____					
25.	Grouted Rock Anchors Complete in Place	$_____ X	16 Each	=	$_____					
26.	Obliteration of Existing Access Roads, Complete in Place	$_____ X	2.00 Thousand Linear Feet	=	$_____					
27.	Construct Vehicle Barrier		For the lump sum of		$_____					
28.	Seeding, Complete in Place	$_____ X	2.5 Acres	=	$_____					
29.	Allowance for Site Maintenance and Cleanup of Previous Phases		For the lump sum of		$ 5,000.00					
				Subtotal	$_____					
	GROSS RECEIPTS TAX = LOCAL RATE (6.1875% through 6/30/10) x Subtotal				$_____					
				TOTAL CONTRACT	$_____					

CERTIFICATION

I do hereby certify that the work described herein has been performed and that no previous payment for the Total Amount Due this Statement, as shown above, has been received.

By:_____ Mining and Minerals Division Director

Date:_____

By:_____ Contractor

Date:_____

By:_____ AML Project Engineer

Date:_____

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SPECIFICATIONS

Please Note – Use of Brand Name Specifications: Use of any brand name herein is for the purpose of describing the standard of quality, performance and characteristics desired and is not intended to limit or restrict competition.

DIVISION 1 - GENERAL REQUIREMENTS

The following sections describe the general requirements of this project.

01010 – SUMMARY OF WORK

The Lake Valley Mine Safeguard Project - Phase IV area is located in and around the ghost town of Lake Valley, seventeen miles south of the town of Hillsboro, in Sierra County, New Mexico. The project area (see Figures 1 and 2) is on private land in Sections 20, 21, and 33, of Township 18 South, Range 7 West.

This project involves the following work:

- Backfilling of one mine opening using mine waste and other nearby material.
- Construction of a bat gate inside a corrugated steel pipe culvert with a polyurethane foam (PUF) plug at one decline.
- Construction of an airflow closure with corrugated steel pipe riser inside PUF and concrete plugs and concrete encasement at one shaft.
- Construction of horizontal bat compatible closures with corrugated steel pipe risers, precast concrete units, concrete collars, and PUF plugs at 10 shafts.
- Construction of bat cupolas at two shafts, one with a PUF plug, corrugated steel pipe riser, scoria fill, precast concrete units and concrete collar and one with a concrete footing placed on a cast-in-place concrete plug on a PUF plug.
- Construction of a PUF plug closure with scoria fill and clay plug at one shaft and a PUF plug at another shaft (as an alternative).
- Construction of large toroid tire plug closures, with small toroid mats and geotextile mesh and cloth, at one shaft (as an alternative), one decline and two stope openings.
- Construction of steel mesh airflow closures with rock anchors at four shafts and an underground room.

- Closure of temporary construction access roads and obliteration of specified existing roads.

- Seeding of all areas disturbed by construction, including temporary construction access roads and obliterated roads.

Note the time restrictions for closure of some of the mine features, as detailed in Table II of Division 2.

Demobilization shall be conducted in such a manner to ensure that the Contractor leaves all project areas in as good or better condition than before disturbance.

01011 – SUMMARY OF PROJECT AND CONSTRUCTION ACCESS

The project site consists of 20 shafts, two stopes, two declines, and one underground room all of which are dangerous to the public at large. Mine features to be safeguarded in this project and the methods and time restrictions for safeguarding are summarized in Table II in Division 2.

To the maximum extent practicable, construction access is limited to existing jeep trails and roads, except as otherwise shown, specified, or allowed by the Project Manager.

Some project areas are believed to be over underground stopes with thin and possibly unstable layer of rock. All construction equipment, including ATV's and light trucks, and personal vehicles are prohibited from traveling within such areas. The Contractor shall be responsible for thoroughly investigating site conditions and scheduling his equipment, equipment operations, personnel, and safety procedures to prevent accidents and injuries.

01012 – AVOIDANCE AREAS FOR PRESERVATION OF CULTURAL AND BIOLOGICAL RESOURCES

The Contractor shall avoid designated cultural and biological resources including those shown in the Drawings. The Contractor shall avoid these features with all heavy equipment and shall cooperate with the Project Manager for access routes to be taken to the mine openings associated with these features. No construction disturbances (including excavation, fill and stockpiling of construction materials) or moving of artifacts shall take place within designated avoidance areas. Avoidance zones extend to five meters (16.4 feet) from the designated structures, except where construction is indicated within this zone in which case the disturbance within the avoidance zone shall be minimized as practicable. The Project Manager or Project Engineer may designate special avoidance areas.

Wherever the Contractor is working with equipment near designated avoidance features and avoidance areas and wherever construction access routes pass next to these features, the Contractor shall place four-foot high, temporary, high-visibility barrier fencing (Hi-Vis, ADPI, or equivalent) around the features. Barrier fencing shall be removed upon completion of work.

The Contractor shall bear all direct, indirect, and consequential costs of repairs due to unauthorized damage caused by his operations to cultural and biological resources to be avoided. These costs shall include but are not limited to fees and charges of engineers, attorneys, and other professionals, made necessary thereby.

The Contractor shall cooperate fully to preserve archaeological and historic artifacts and any threatened or endangered species found within the project area. If the Contractor encounters a previously uninventoried archaeological site, historic site, or species listed as or proposed to be listed as threatened or endangered, the Contractor shall terminate all further operation in that immediate area until the archaeological or biological preservation agencies have had the opportunity to survey the site. This termination shall not preclude continuation of work in other areas nor shall it entitle the Contractor to additional payment in any form, other than an extension of time, unless the Contractor is substantially precluded from working on the entire project.

01015 – CONTRACTOR'S USE OF THE PREMISES

The Contractor shall take reasonable measures to avoid traffic conflicts between vehicles of the Contractor's employees and private citizens and to avoid overloading of any driveways, roads and streets. The Contractor shall limit the access of equipment and trucks to the project site and provide protection for any improvements over which trucks and equipment must pass to reach the job site.

01025 – MEASUREMENT AND PAYMENT

The measurement for payment is as defined below. Payment shall be made based on the applicable unit or lump sum price bid therefor in the Bid Form (Section 00300). The estimated quantities of materials and work required to complete the project are approximations only and are given as a basis for calculation upon which the contract award will be determined. All estimated quantities could vary considerably and will depend on the actual conditions encountered at the time the work is performed. AML reserves the right to decrease or increase any or all of the quantities of materials or work as may be deemed necessary during the project.

01027 – APPLICATIONS FOR PAYMENT

All Applications for Payment for work performed under this contract shall whenever practicable, first be reviewed by the Project Manager before being submitted to:

Mining and Minerals Division
Energy, Minerals, and Natural Resources Department
State of New Mexico
1220 South St. Francis Drive
Santa Fe, New Mexico 87505

All Applications for Payment shall include appropriate backup, such as daily reports, load counts, and cross-sections. Contract amount equals total base bid plus gross receipts tax.

01028 – PRICES

The following subsections describe the lump sum and unit prices to be paid under this contract.

I. Lump Sum Prices

The basis of payment of lump sum prices as outlined in the Bid Form is as follows:

A. Mobilization

Payment for Mobilization will be made at the lump sum prices bid therefor in the Bid Form but shall not 10% of the total base bid. It is the intent of this specification to provide for the Contractor to receive 100% of the mobilization bid item by the time he has completed ten percent of his total original contract amount less mobilization. Total original contract amount less mobilization shall mean the total amount bid as compensation for the contract, excluding gross receipts tax, less the amount bid for mobilization. For lesser amounts of work completed (less than 10%), the Contractor shall receive a prorated portion of the mobilization.

In addition, payment for Mobilization will not be made until the Project Engineer's approval of an adequate performance. An "adequate performance" will be satisfied when the Contractor has shown the ability to successfully perform the required tasks of this project as outlined in these Specifications to the satisfaction of the Project Engineer. In case of any weather delays, compensation for additional Mobilization will not be made.

Payment for Mobilization shall include all equipment, fees, fuel, insurance, labor, permits, personnel, supervision and transportation to assemble, drive, operate, place, position, provide security measures for, and transport equipment, field offices, fuel, implements, machinery, materials, and support facilities to and at the job site in conformance with the Project Manager's directives and these Specifications. This amount shall include complete Mobilization no matter how often equipment is transported to individual sites within the project area.

B. Backfilling of Specified Mine Features

Payment for backfilling to close the specified mine features will be made at the lump sum price bid therefor in the Bid Form. This price shall include all work necessary to complete the closures in accordance with the specifications. This work shall include complete specified demolition of existing structures at the mine features, stacking of salvageable materials and disposal of debris; the tasks necessary to access the mine features, including clearing as necessary; excavation, transportation, and placement of backfill; grading of backfill and borrow areas; and including all equipment, labor, material, and supervision costs necessary to complete installation.

C. Construction of Specified Polyurethane Foam Closures

Payment for construction of the specified polyurethane foam closures will be made at the lump sum price bid therefor in the Bid Form. This price shall include all work necessary to complete the installation in accordance with the Drawings and specifications. This includes site preparation, the tasks necessary to access the mine features and to close temporary construction access roads, clearing as necessary, demolition as specified, preservation of site features as specified, specified site work, installation of survey caps, all construction materials other than the polyurethane foam itself (including formwork, drain pipe, drainage grate and frame, and accessories) and all equipment, labor and supervision necessary for complete installation.

D. Construction of Horizontal Bat Compatible Closures, Airflow Closures, Bat Gates, Bat Cupolas and Toroid Tire Plugs

Payment for construction of the specified horizontal bat compatible closures, airflow closures, bat gates, bat cupolas and toroid tire plugs will be made at the lump sum price bid therefor in the Bid Form. This price shall include all work necessary to complete the installation in accordance with the drawings and specifications, including access to site and closure of temporary access roads, site preparation, excavation and backfill, fabrication, formwork, construction materials, other than polyurethane foam, except Feature 053-060S, where required (including structural steel and steel assemblies, used tires, geogrid mesh, geotextile cloth, anchor bars, grating, corrugated steel pipe risers, precast concrete units, cast-in-place concrete, grout, reinforcing steel, anchor bolts, rock, bolts and nuts, drain pipes, scoria fill and drainage aggregate), welding, and all equipment, labor, and supervision necessary for complete installation.

E. Construction of Vehicular Barrier

Payment for construction of the specified vehicular barrier near Feature 049-087S will be made at the lump sum price bid therefor in the Bid Form. This price shall include all work necessary to complete the installation in accordance with the drawings and specifications, including access to site, site preparation, excavation of ditch, construction of berm, acquisition and placement of required boulders and all equipment, labor and supervision necessary for complete installation.

II. Unit Prices

The methods of measurement and the basis of payment of unit prices as outlined in the Bid Form are as follows:

A. Polyurethane Foam

Measurement for payment for PUF will be made by estimating the accepted quantity of foam installed in the specified mine openings.

For machine applied foam, the proportioner shall have a direct reading device to monitor output of components and the PUF applicators shall inform the Project Manager of the constant to be used to estimate PUF quantities actually installed. The Project Manager may examine barrels of material with a dipstick with the assistance of the PUF applicators in order to provide a second measure of quantities installed.

For poured-in-place foam, measurements of the volumes of component material used will be the basis for calculating the amount of foam installed. The Project Manager may examine barrels of material with a dipstick with the assistance of the PUF applicators in order to confirm the measurement of quantities installed.

Measurement for payment will be based on attaining the specified thickness of foam to create a plug within the openings and computations of volumes installed will be based on the specified minimum nominal density of the polyurethane foam.

For pre-bagged foam, the manufacturer's standard rated volume of expanded foam per bag and the number of bags used in the specified mine openings will be used to estimate the quantity of foam installed.

No payment will be made for off-ratio PUF or for PUF lost due to form failure. No separate payment will be made for construction of the PUF plug used as an alternative at Feature 053-060S.

B. High-Strength Steel Mesh

Measurement for payment for providing and installing high-strength steel mesh will be made along the accepted perimeter of each installed mesh panel to calculate the square footage of mesh installed. Payment for this item will be made at the unit price per square foot bid therefor in the Bid Form. This price shall include all work necessary to complete the installation of steel mesh in accordance with the drawings and specifications, including site preparation, materials (including steel mesh, clamps, and accessories) and backfilling above the mesh as required and all equipment, labor, material and supervision costs necessary to complete installation.

C. Rock Anchors

Measurement for payment for providing and installing rock anchors will be made by the number and type of units properly installed at the high-strength steel mesh closures. Payment for this item of work will be made at the unit price per accepted rock bolt anchor as shown in the Bid Form. This price shall include all work necessary to complete the installation of rock anchors in accordance with the drawings and specifications, including site preparation, hole drilling, anchor test loading, materials (including anchors, grout, compression claws, spike plates, and accessories) and all equipment, labor, materials and supervision costs necessary to complete installation.

D. Obliteration of Existing Roads

Measurement for payment for obliteration of indicated existing roads will be made per linear feet, as measured in the field, parallel to the obliterated surface using methods acceptable to the Project Engineer.

Payment for road obliteration will be made at the unit price bid therefor in the Bid Form. This price shall include scarifying/ripping the entire road surface, salvaging and stockpiling of all topsoil and vegetation, re-contouring road prisms to match existing contours, extreme roughening, covering of surface with topsoil, and placement of large boulders or other vehicular barrier acceptable to the Project Engineer at all access points, and including all equipment, labor, material and supervision costs necessary to complete installation.

E. Seeding

Measurement for payment for seeding will be made by the acre, as measured in the field, parallel to the seeded surface using methods acceptable to the Project Engineer.

Payment for seeding will be made at the unit price bid therefor in the Bid Form. This price shall include soil preparation including tilling, topdressing, incorporating specified soil amendments, seeding by broadcasting, mulching and fertilizing, including all equipment, labor, material and supervision costs necessary to complete installation, of all areas disturbed by construction activities.

Disturbed areas include on-site borrow areas, depressions and mounds at shafts, filled areas at adits, temporary access routes and obliterated roads, areas occupied by the Contractor for campsites, office, plant sites, equipment parking, haul roads, closed access trails, stockpile and storage areas, service areas and areas stripped of native covering.

III. Allowances

The methods of measurement and the basis of payment of unit prices as outlined in the Bid Form are as follows:

A. Allowance for Site Maintenance and Cleanup of Previous Phases

Payment for site maintenance and cleanup of previous phases will be made at negotiated prices for particular items of work identified by the Project Engineer. Maintenance and cleanup work items under consideration at the time of bidding include color grouting between two courses of precast stackable concrete units at an existing airflow closure, filling of small subsidence features, installation of waterbars or rolling dips along existing roads, and construction of walking trails.

01030 – ALTERNATES

Whenever equipment or materials are specified or described in the Contract Documents by using the name of a proprietary item or the name of a particular supplier, the naming of the item is intended to establish the type, function, and quality required. Unless the name is followed by words indicating that no substitution is permitted, the Project Engineer may accept equipment or materials of other suppliers if the Contractor submits sufficient information to allow for adequate determination that the equipment or materials proposed are equivalent or equal to that named.

01035 – MODIFICATION PROCEDURES

The following section describes procedures for making modifications to the contract by change orders. Modifications may involve changes in contract sum, contract time, and scope.

01036 – CHANGE ORDER PROCEDURES

The Contractor shall submit a request for any changes in the work under this contract, in writing, to the Project Engineer. No changes in work or quantities shown shall be authorized until a properly executed Change Order has been issued by MMD. Any work performed outside the original quantities or scope of work, before the issuance of a properly executed Change Order, shall be at the Contractor's risk.

The Contract Time may only be changed by a Change Order. Any claim for an extension in the Contract Time shall be based on written notice delivered to the Project Engineer within fifteen working days of the occurrence of the event causing the claim. The extent of the claim with supporting data shall be included unless the Project Engineer allows additional time to ascertain more accurate data. The Project Engineer shall determine all claims for adjustment in the Contract Time. Any change in the Contract Time resulting from any such claim shall be incorporated in a Change Order. The Contract Time will be extended in an amount equal to time lost due to delays beyond the control of the Contractor if a claim is made therefore as provided above. Such delays shall include, but may not be restricted to, acts or neglect beyond the Contractor's control, epidemics, fires, floods, labor disputes, abnormal weather conditions, or acts of nature. In the event delays in construction occur due to weather, the conditions as outlined above will be in effect. If the Contractor leaves the project area due to a weather delay, the Contractor shall be responsible for assuring that all areas are left in a clean and safe condition as approved and directed by the Project Manager. In case of any weather delays, compensation for additional Mobilization or Demobilization will not be made.

01040 – COORDINATION

The following sections define the parties responsible for coordination of the contract work at the project and job site levels.

01041 - PROJECT COORDINATION

The Project Engineer will send the Contractor Notices to Proceed, Change Orders, other contract documents, and approvals on Applications for Payment. The Project Manager or Project Engineer may issue a Suspension of Work Notice if he has any reasonable basis to believe that the Contractor is violating any condition or term of the contract or specifications, or that violations of health and safety standards will occur unless such notice is issued. No work shall proceed until the Suspension of Work Notice has been vacated.

01042 – MECHANICAL AND ELECTRICAL COORDINATION

The Contractor shall be responsible for the coordination of all mechanical and electrical aspects of the contract work. This includes overseeing of the general operation and maintenance of that equipment.

01043 – JOB SITE ADMINISTRATION

The Contractor shall be responsible for the administration of the contract work at the job site. This includes assuring that all equipment and materials used for the contract work meet the required specifications set forth and that all work is performed in a timely and orderly manner. The Contractor shall be responsible for initiating, maintaining, and supervising all safety precautions and programs concerning the work. The Contractor shall designate a full time on-site superintendent or authorized representative who shall be present or can be contacted readily during project working hours. This person shall represent the Contractor in dealing with the Project Manager and shall insure adherence to these specifications and any other directives.

01050 – FIELD ENGINEERING

The Contractor shall be responsible for locating and avoiding all underground utilities at the contract work site. If damage to the utilities occurs during the contract work, the damage shall be repaired at the Contractor's expense.

The Contractor shall also be responsible for the proper setting of all construction staking. The Contractor shall provide engineering surveys for construction to establish reference points that are necessary to enable the Work to proceed. The Contractor shall be responsible for surveying and laying out the Work, shall protect and preserve any established reference points, and shall make no changes or relocations without the prior written approval of the Project Engineer. The Contractor shall report to the Project Engineer whenever any reference point is lost or destroyed or requires relocation because of necessary changes in grades or locations. The Contractor shall replace and accurately relocate all reference points so destroyed, lost, or moved. When it becomes necessary in the construction of public works, to remove or obliterate any triangulation station, bench mark, corner monument, stake, witness mark, or other reference mark, it shall be the duty of the Contractor in charge of the work to cause to be established by a New Mexico registered land surveyor one or more permanent reference marks which shall be plainly marked as witness corners or reference marks, as near as practicable to the original mark,

and to record a map, field notes, or both, with the county clerk and county surveyor of the county wherein located, showing clearly the position of the marks established with reference to the position of the original work. The surveys or measurements made to connect the reference marks with the original mark shall be of at least the same order of precision as the original survey.

01060 – REGULATORY REQUIREMENTS

The Contractor shall keep fully informed of all federal and state laws, all local laws, ordinances, and regulations, and all orders and decrees of bodies or tribunals having any jurisdiction or authority which in any manner affect those engaged or employed on the work or which in any way affect the conduct of the work. The Contractor shall at all times observe and comply with all such laws, ordinances, regulations, orders, and decrees and shall protect and indemnify the State of New Mexico and its representatives against any claim or liability arising from or based on the violation of any such law, ordinance, regulation, order, or decree, whether by the Contractor or any employees. The Contractor shall procure all permits and licenses, pay all charges, fees, royalties, and taxes, and give all notices necessary and incidental to the due and lawful prosecution of the work.

01090 – REFERENCES

Reference to standard specifications, manuals, or codes of any technical association, organization, or society, or to laws or regulations of any governmental authority, whether such reference be specific or by implication, shall mean the latest standard specification, manual, code, laws, or regulation in effect at the time of opening of Bids, except as may be otherwise specifically stated. However, no provision of any referenced standard specification, manual, or code (whether or not specifically incorporated by reference in the Contract Documents) shall be effective to change the duties and responsibilities of the Contractor.

01092 - ABBREVIATIONS

The following is an explanation of the abbreviations that may be used in the contract documents:

1.	AASHTO	American Association of State Highway and Transportation Officials
2.	ACI	American Concrete Institute
3.	AML	Abandoned Mine Land Program of MMD
4.	ANSI	American National Standards Institute
5.	ASTM	American Society for Testing and Materials
6.	AWS	American Welding Society
7.	CRSI	Concrete Reinforcing Steel Institute
8.	EMNRD	Energy, Minerals, and Natural Resources Department (state)
9.	MMD	Mining and Minerals Division of EMNRD
10.	OSMRE	Office of Surface Mining, Reclamation, and Enforcement (federal)
11.	SAE	Society of Automotive Engineers

01094 – DEFINITIONS

The following is a definition of the terms that may be used in the contract documents (source: A Dictionary of Mining, Mineral, and Related Terms, Paul W. Thrush, Bureau of Mines, Department of the Interior, Washington, D.C., 1968):

1.	adit	A horizontal or nearly horizontal passage driven from the surface for the working or dewatering of a mine.
2.	back	The roof or upper part in any underground mining cavity.
3.	cribbing	The close setting of timber supports when shaft sinking through loose ground.
4.	collar	Timbering or concrete around the mouth or top of a shaft; the junction of a mine shaft and the surface.
5.	drift	A horizontal passage underground.
6.	entry	A haulage road, gangway, or airway to the surface.
7.	gob pile	A pile of heap mine refuse on the surface.
8.	incline	A shaft not vertical; usually on the dip of a vein.
9.	lagging	Planks, slabs, or small timbers placed over the caps or behind the posts of the timbering, not to carry the main weight, but to form a ceiling or a wall, preventing fragments or rock from falling through.
10.	lining	The brick, concrete, cast iron, or steel casing placed around a tunnel or shaft as a support.
11.	loading chute	A three-sided tray for loading or for transfer of material from one transport unit to another.
12.	portal	Any entrance to a mine.
13.	red dog	Material of a reddish color resulting from the combustion of shale and other mine waste dumps on the surface.
14.	shaft	An excavation of limited area compared with its depth, made for finding or mining ore or coal, raising water, ore, rock, or coal, hoisting and lowering personnel and material, or ventilating underground workings.

15.	spoil	The overburden or on-ore material removed in gaining access to the ore or mineral material in surface mining.
16.	stope	An excavation in which ore has been excavated in a series of steps.
17.	stull	A timber prop set between the walls of a stope, or supporting the mine roof.
18.	subsidence	A sinking down of a part of the earth's crust.
19.	talus	A heap of coarse rock waste at the foot of a cliff.
20.	tipple	Originally the place where the mine cars were tipped and emptied of their coal, and still used in that sense, although now more generally applied to the surface structures of a mine, including the preparation plant and loading tracks.
21.	winze	Interior mine shaft.

01100 – SPECIAL PROJECT PROCEDURES

The following section describes special procedures for alteration, preservation, security, hazardous materials, and other types of projects demanding unique procedures. Safety procedures and methods for all underground work inside abandoned mine entries shall be in accordance with the "New Mexico Mine Safety Code for All Mines," published by the New Mexico Institute of Mining & Technology, State Inspector of Mines, Bureau of Mine Inspection, P.O. Box W105, Socorro, NM 87801, 1.505.835.5460.

01135 - HAZARDOUS AND CONFINED AREA PROCEDURES

This project requires construction work in, around, and over hazardous and unprotected mine shafts, stopes, adits, and other openings which may be open to the surface or hidden from view by vegetation, trash, debris, or thin and unstable layers of surface materials or rock. The Contractor shall be responsible for thoroughly investigating the site conditions and scheduling his equipment, equipment operations, personnel, and safety procedures to prevent accidents and injuries.

Before entry, the Contractor shall review safety procedures with all persons entering the mine. At least one standby person, whenever possible someone who is trained in CPR and mine rescue procedures, shall remain outside the mine during entry by others. The standby person(s) shall have access to first aid, appropriate rescue equipment, and a vehicle and shall know where the nearest telephone for emergency calls is found. A communication system shall be established between the person(s) working inside the mine and the standby person(s) outside.

All persons entering the mine opening shall wear appropriate clothing and carry appropriate gear, including, as required for the conditions present, harnesses, head, hand and foot protection, life lines, respirators or self-contained breathing apparatuses, and other special equipment. Proper ventilation and adequate lighting at the workplace inside the mine entry shall be provided. The Contractor shall review with his workers and personnel the use of hazardous chemicals or materials, electrical power, or internal combustion engines inside mine entries for safety precautions and procedures.

The Contractor is fully responsible for construction safety and shall keep the Project Manager informed of his hazardous area safety procedures. Following is a discussion of some common abandoned mine hazards and appropriate procedures to be followed.

I. Bad Air

Miners use the term "bad air" to describe an atmosphere that will not support life. The poor air circulation in some mine openings can allow carbon dioxide (CO_2), carbon monoxide (CO), methane, hydrogen sulfide (H_2S), or radon gas to accumulate. These gases are treacherous inside mine openings and even experienced miners have been killed or harmed by entering areas containing them. Carbon monoxide cannot be readily detected and is lethal in very small amounts. The Contractor shall follow the following and other appropriate hazardous bad air procedures.

An oxygen meter shall be used to test air before and while any personnel work inside a mine opening. The oxygen meter shall be a National Mine Service (NMS) OX231 oxygen meter or equivalent. The oxygen meter shall continuously monitor oxygen levels and have an audible warning signal. If the oxygen level falls below 19 percent, all personnel shall withdraw from the working area in the mine until the oxygen content increases to safe levels.

Any remedy for increasing oxygen content of the working area or providing ventilation from the surface shall be determined in consultation with the Project Manager.

II. Adit Cave-ins

Cave-ins are a danger in any abandoned mine. Disturbances such as vibrations caused by walking, speaking, blasting, hammering, percussion drilling, or construction equipment may cause a cave-in inside an inactive mine. The Contractor shall follow appropriate adit cave-in protection procedures, including scaling and barring of loose rock before beginning work in an area, shoring of decayed or weak timber framing, and shoring, jacking, or rock bolting of materials in the back (roof) and sides of the adits.

III. Collar Cave-ins

The collar or top of a shaft, stope, or subsidence often contains decomposed rock, decayed timbers, and other conditions that allow for rapid disintegration at the opening. With the additional weight and vibration of construction machinery, workers, and backfilling operations

near the mine opening, the area around the collar can slide into the opening, along with nearby machinery and men. Backfilling operations can tear loose cribbing or lining in a shaft leading to collapse at the collar. The Contractor shall follow appropriate collar cave-in protection procedures.

IV. Falling

Because a shaft or stope has little light, the feeling of height and normal reaction to "pull back" is not evident to most persons. Many abandoned mine shafts, stopes, and winzes are deep enough to insure that anyone that falls down them is badly injured or killed. Rescue operations of a fallen person can also be extremely hazardous.

The Contractor shall follow appropriate hazardous fall protection procedures. This includes proper lighting, barricades, fences, personal fall arrest systems, guardrails, covers, safety net systems, safety monitoring systems, and other protection as suitable for the conditions. Fall protection shall be in accordance with OSHA regulations regarding construction fall protection (OSHA 29 CFR Subpart M). These regulations establish a six-foot threshold for the height at which fall protection is required, require employers to provide training for each employee who might be exposed to a fall hazard, and prohibit the use of body belts for fall protection and the use of non-locking snap hooks.

V. Loose Rock

A mineshaft or open stope will weather in much the same way as a cliff. Loose rocks are always found on timbers or on the walls. A small rock that falls a sufficient distance can penetrate a person's skull. The Contractor shall follow appropriate hazardous loose rock protection procedures, including scaling of loose rock, construction of shields, and wearing of head protection.

01170 - INDUSTRIAL WASTES AND TOXIC SUBSTANCES

The Contractor shall comply with all applicable laws and regulations existing or hereafter enacted or promulgated regarding industrial wastes and toxic substances. In any event, the Contractor shall comply with the Toxic Substances Control Act of 1976, as amended (15 U.S.C. 2601, et seq.) regarding any toxic substances that are used, generated by or stored at the project site. See 40 C.F.R., Part 702799. Additionally, any release of toxic substances (leaks, spills, etc.) greater than the reportable quantity established by 40 C.F.R., Part 117, shall be reported as required by the Comprehensive Environmental Response, Compensation and Liability Act of 1980, Section 102b. A copy of any report required or requested by any federal agency or state government because of a reportable release or spill of any toxic substances shall be furnished to the Project Engineer concurrent with the filing of the reports to the involved federal agency or state government.

01200 – PROJECT MEETINGS

The following sections describe the required project meetings that the Contractor is expected to attend.

01210 - PRECONSTRUCTION CONFERENCES

Before starting work at the site, a conference will be held to review the construction schedules; to establish procedures for handling documents, drawings, other submissions, and for processing Applications for Payment; and to establish a working understanding between the parties as to the nature of the project. Present at the conference will be the Project Manager, the Project Engineer, the Contractor, the Contractor's superintendent, and other persons as appropriate. The Contractor shall present his progress schedule at the preconstruction conference as specified in Section 01310 below and his fire prevention and awareness plan as specified in Section 01565 below.

01220 - PROGRESS MEETINGS

Progress meetings may be held during construction for purposes of scheduling and coordination of work. Throughout the life of the project, the Contractor shall keep the Project Manager and Project Engineer well informed of the schedule of work.

01300 – SUBMITTALS

The following sections describe the required documents and reports to be submitted by the Contractor during the contract work.

01310 - PROGRESS SCHEDULES

The Contractor shall provide a detailed progress schedule to be followed in completing the work. This schedule shall be submitted in writing at the preconstruction conference and shall show the anticipated time required by the Contractor to complete each item of work in the Bid Form. Schedules may be prepared as a horizontal bar chart with a separate bar for each major portion of work or operation, identifying the first workday of each week.

01320 - PROGRESS REPORTS

The Contractor shall submit written accurate daily progress reports to the Project Manager. The reports shall include but are not limited to work accomplished, quantities of unit price bid items installed, including load tickets as appropriate, records of any complaints including corrective actions taken, records of visitors to the site, and records of any personal injury or property damage incidents. The Contractor's authorized representative shall meet the Project Manager a minimum of once each week to verify and sign-off on all payable units of work performed during that week. The authorized representatives from both parties shall be designated at the start of the project during the preconstruction conference.

01340 - SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES

The Contractor shall submit shop drawings, product data, and samples as required in the specifications. Submittals shall be organized such that each submittal covers items in no more than one specification section. The Contractor shall allow a minimum of 21 calendar days for the Project Engineer's review; shorter periods for Project Engineer's review will not be acceptable. The Contractor shall allow acceptable time for the entire review process including transmittal, initial Project Engineer's review, correction and resubmission, final review, and distribution.

Engineering data and shop drawings covering all equipment and fabricated materials shall be submitted to the Project Engineer for review and comments. These data shall include drawings and descriptive information in sufficient detail to show the kind, size, arrangement, and operation of component materials and devices; the external connections, anchorages, and supports required; and performance characteristics and dimensions needed for installation and correlation with other materials and equipment. Data submitted shall include drawings showing essential details of any changes proposed by the Contractor.

It shall be the duty of the Contractor to check all data and shop drawings for completeness before submittal for Project Engineer's review. Each drawing or data sheet shall have indicated thereon the proposed use of the item as it pertains to the Work. Catalog cuts, pages, or copies submitted for review shall have items proposed for use in the Work clearly marked and identified. The current catalog number, date, and revision and drawing number (if applicable) shall be included.

Deviations from the drawings or specifications shall be identified on each submittal and shall be referenced in the Contractor's transmittal letter. The submittal for such deviations shall also include details of changes proposed and modifications required for all affected portions of the Work.

Shop drawings and other review data shall be submitted to the Project Engineer only from the Contractor.

The Contractor's submittal of shop drawings and other review material shall represent that he has reviewed the details and requirements of the Contract Documents, that he has coordinated the subject of the submittal with other portions of the Work, and that he has verified dimensions, quantities, construction details, materials, and installation criteria, as applicable for the Work. The Contractor shall accept full responsibility for the completeness of each submittal and, for re-submittals, verify that exceptions noted on the previous submittal have been accounted for.

Any requirement for more than one resubmission or delay in obtaining Project Engineer's review of submittals will not entitle the Contractor to an extension of Contract Time unless authorized by Change Order.

The Project Engineer's review of drawings and data submitted by the Contractor will cover only general conformity to the drawings and specifications, external connections, and dimensions that affect the plans and layout. The Project Engineer's disposition of submittals will not constitute a blanket approval of all dimensions, quantities, and details of the material, equipment, or item shown. Regardless of the corrections made in, or disposition given to, such drawings and data by the Project Engineer, the Contractor shall be responsible for the accuracy of such drawings and data and for their conformity and compliance with the contract documents.

No work shall be performed in connection with the fabrication or manufacture of materials and equipment, nor shall any material, accessory, or appurtenance be purchased until the drawings and data therefor have been reviewed.

Four copies of each drawing and necessary data shall be submitted to the Project Engineer. Each drawing or data sheet shall be clearly marked as instructed above. Submittals will be accepted only from the Contractor.

When the drawings and data are returned NOT APPROVED or RETURNED FOR CORRECTION, corrections shall be made as noted by the Project Engineer and four corrected copies resubmitted as instructed above.

When drawings and data are returned marked NO EXCEPTIONS NOTED, EXCEPTIONS NOTED, or RECORD COPY, no additional copies need be submitted.

The Project Engineer will return two copies with comments to the Contractor. The Contractor shall send additional copies with the original submittal if the Contractor requires more than two copies.

All drawings and data, after final processing by the Project Engineer, shall become a part of the contract documents and the work shown or described thereby shall be performed in conformity therewith unless otherwise required by the Project Engineer.

01380 - CONSTRUCTION PHOTOGRAPHS

The Contractor may provide routine periodic construction photographs to support Applications for Payment and to supplement Project Record Documents.

01400 – QUALITY CONTROL

The following sections outline the duties, responsibilities, and qualifications of inspectors, testing laboratories, and the Contractor's quality control requirements required to perform the contract work.

01405 - CONTRACT QUALITY CONTROL

The Contractor shall be responsible for the maintenance of quality control throughout the period of the contract work. This includes making periodic spot checks to assure that equipment, materials, and construction quality, meet the contract specifications.

01410 - TESTING LABORATORY SERVICES

Independent commercial testing laboratories shall perform all tests required by the contract documents to determine compliance with the specifications. The testing laboratories shall be acceptable to the Project Engineer. The laboratories shall be in the regular business of testing services in accordance with the specifications for which tests are required, and shall be staffed with trained and experienced technicians, equipped properly, and fully qualified to perform the specified tests in accordance with reference standards.

All testing services for tests of materials required by the contract documents shall be the responsibility of the Contractor. The Project Engineer shall review all sources of materials before delivery of the materials to the job site. Before the performance of any testing, the Contractor shall obtain the concurrence of the Project Engineer for the laboratory or laboratories selected by the Contractor.

The Contractor shall require the producer or manufacturer of materials, for which the specifications require inspection or testing services during the production or manufacturing process, to arrange for and pay an independent organization to perform the specified services.

The Project Manager will determine the exact time and location of field sampling and testing. The Project Manager or Project Engineer may require additional sampling and testing as necessary to assure that materials conform to the contract documents. The Contractor shall pay the costs of any retesting or re-sampling required when initial tests or samples fail to meet the specified requirements.

Written reports of tests furnished by the Contractor for the Project Engineer's review shall be submitted in conformance to the procedures set forth in Section 01340.

01500 – CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS

The following sections specify the types of construction facilities and temporary controls the Contractor shall provide for completion of the contract work.

01505 - MOBILIZATION

The Contractor shall furnish and mobilize all specified construction facilities, temporary controls, equipment, labor, materials, power, supervision, and supplies to the site and commence work within ten working days after receipt via certified mail of the Notice to Proceed. Mobilization includes everything necessary to complete the required contract work. The

Contractor shall inform the Project Manager of plans and schedules to move all equipment, machinery, and supplies to the job site. The Contractor shall locate and position the staging area including field offices, parking, storage, and support facilities as directed and approved by the Project Manager. All equipment and machinery shall be moved onto the job site in conformance with previously approved plans and schedules. It is the Contractor's responsibility to arrange for storage facilities for equipment and materials. City, state, federal, or other public or private property shall not be used as temporary storage or parking areas for any equipment or materials unless written clearance is obtained by the Contractor from the appropriate public officials or private individuals. The Contractor must be prepared to move all necessary equipment to each construction site within the project area. This movement of equipment shall be at the Contractor's expense and should be covered under Bid Item No. 1, Mobilization, on the Bid Form.

01510 - TEMPORARY UTILITIES

The following sections describe temporary utilities, controls, facilities, and construction aids required during construction. They include requirements for installation, maintenance, and removal.

01516 - TEMPORARY SANITARY FACILITIES

The Contractor shall provide temporary sanitation facilities during the contract work. The facility shall be installed on the project site in a location removed from the immediate contract work area. The facility shall be locked to prevent unauthorized access during the times work is not conducted. The Contractor shall remove the facility upon completion of the contract work and restore the area.

01530 – BARRIERS AND ENCLOSURES

The Contractor shall provide barricades with blinking markers for all equipment on roadways and pedestrian walkways. The barricades shall be no less than twenty feet from the front and rear of any equipment in the described rights-of-way. Traffic control devices shall be in substantial conformance with the American Traffic Services Association (ATSA) Guide for Work Area Traffic Control. The Contractor shall remove the barricades upon completion of the contract work.

01533 - TREE, PLANT AND WILDLIFE PROTECTION

I. Tree and Plant Protection

Environmental disturbance shall be kept to a practical minimum.

In steep areas and around vegetation, the Contractor shall, before beginning work, discuss the planned extent and nature of disturbance with the Project Manager. Existing plants and trees shall be protected from damage or injury resulting from the Contractor's operations. Damaged trees and shrubs shall be trimmed to remove broken limbs where minor damage has occurred.

Where directed by the Project Manager, cut or scarred surfaces of trees or shrubs shall be treated with a heavy coat of a tree sealant approved by the Project Manager.

II. Wildlife Protection

All area wildlife, including bats and owls, that may use the mine features are protected, and this hazard abatement effort shall not adversely affect them. Shooting at and chasing wildlife is prohibited.

At or before the preconstruction conference, the Contractor shall submit a construction schedule, which includes anticipated dates of closure of specified mine features, in accordance with Section 01310. Based on this schedule the AML biological staff will give authorization to proceed on closure of the mine features that require netting, tarping, or smoke bombing to exclude animals before closure. It is solely the Contractor's responsibility to obtain this authorization. Normally a minimum of one week written notice of the dates of closure is needed from the Contractor to the AML biological staff. After approval of the schedule, any need for changes shall be coordinated with the AML biological staff a minimum of 48 hours before closure of the features. The Contractor's failure to follow this procedure may result in stoppage of the construction activity at his expense until the biological staff can reschedule netting and tarping of the specified features.

The Contractor shall aid AML staff in using smoke bombs to expel remaining bats or other animals before backfilling or closing a mine feature, in covering the entrances of designated mine features with tarps or other barricades after the animals have exited and in removing the barricades following closure. The Contractor shall provide sufficient numbers and sizes of tarps, polyethylene sheets or other satisfactory covers for this purpose.

All mine openings, except those whose workings can be fully visually checked by the Project Manager and those which are safeguarded by the construction of bat closures, airflow closures or high-strength steel mesh, shall be tarped or netted before closure and require agreement on the dates of closure

During construction of bat closures, the Contractor shall schedule his activities so the bats can readily pass through the partially completed closures from one hour before sunset until sunrise. In addition, during construction of bat closures at shafts, the Contractor shall take positive measures to reduce the rock and other material that drop into those mine features.

Internal combustion engines, including those used on air compressors, shall be placed such that exhaust from the engine is not drawn into the mine openings.

01535 - PROTECTION OF INSTALLED WORK

The Contractor shall protect installed work and control traffic in the immediate area to prevent damage from subsequent operations.

01540 – SECURITY

The Contractor shall act to assure the protection of the contract work and equipment at the contract work site. The Contractor shall furnish, install, and maintain safety fences around any hazardous or high-voltage equipment at the site for the duration of the project. Where appropriate, the Contractor shall restrict access to the project site by barricading access roads during off-hours and by posting "No Admittance" and "Hard Hat Area" signs.

01550 – ACCESS ROADS AND PARKING AREAS

Unless otherwise indicated, all Contractor personnel and equipment shall enter and leave the project site via existing roads and trails. Upon the regrading, recontouring, or reclamation of any part of the site, further vehicular use shall be limited to that necessary to complete operations. Any access routes that are determined by the Project Manager to be maintained throughout the project duration shall be left in as good or better condition than the condition before the start of the project. Existing roads and trails shall be used whenever possible.

Equipment shall be "walked" or operated cross-country to travel to work sites where roads do not exist. The Contractor shall advise the Project Manager and obtain prior approval every time any road blading, clearing, or dozing is required for access. Topdressing shall be stripped and stockpiled before blading as directed by the Project Manager. All unspecified roads, trails, or travel routes shall be regraded to approximate original contours, reclaimed, and revegetated, as necessary, in conformance with the specifications at no additional cost to EMNRD. Where directed by the Project Manager, the Contractor shall build earthen berms to discourage vehicular traffic and to control erosion on closed temporary construction access roads.

01560 – TEMPORARY CONTROLS

The Contractor shall take all reasonable steps to reduce any inconvenience and disruption to the public because of this project. The Contractor shall provide the following temporary controls for the duration of the contract work.

01561 - CONSTRUCTION CLEANING

The Contractor shall keep the contract work area, equipment, and adjacent areas free from spillages of construction and maintenance materials during the contract work. The Contractor shall also provide for the containment of solid debris created by unpackaging construction materials and waste from meals consumed at the contract work site. The Contractor shall assure the cleanup and removal of all spillages and solid debris to an approved disposal site at the end of each contract workday.

01562 - DUST CONTROL

The Contractor shall take all necessary measures to control dust emanations from the construction equipment. The Contractor shall assure that the equipment used in the contract work is fitted with all standard dust control devices. To maintain the health and safety of project personnel, dust control measures at this site shall comply with all local, state, and federal health and safety regulations. The Contractor shall be prepared to begin dust control measures anytime at the request of the Project Manager. Water for dust control shall be distributed in sufficient quantity and at proper times by water trucks equipped with spray bars approved by the Project Manager. The quantity of water required and the frequency of watering shall be dependent upon the weather and the site's surface conditions and may vary throughout the project duration.

01564 - NOISE CONTROL

The Contractor shall assure that all equipment used in the contract work is fitted with standard noise suppression devices.

01565 - FIRE PREVENTION AND SAFETY AWARENESS

The Contractor shall develop an emergency plan that will outline precautionary measures and identify initial attack resources and procedures in case of a fire incident. This plan will be submitted to the Project Manager at the Pre-Construction meeting. The Project Manager will then provide feedback about the plan. The Contractor shall provide the fire emergency plan to all individuals working on this project.

Examples of precautionary measures might be:

1. Inspect all motorized and mechanized equipment to insure mufflers and spark arresters are operating properly.

2. Insure personnel are properly trained on the safe use of welding torches, arc welders, generators, saws, power grinders, chainsaws, and other tools and are also familiar with the potential of this equipment to create hot sparks and ignite fires.

3. Avoid welding or cutting in areas next to and above flammable materials or during windy conditions. This would pertain to materials inside the mine as well as outside the mine. Welding shall not take place within 25 feet of polyurethane foam during application. After its application, welding shall not take place above it without first covering the surface with at least 6" of fill material.

Examples of resources and procedures might be:

1. Maintain adequate fire extinguishers, water tanks, sprayers, and other equipment at the work site that would enable personnel to immediately extinguish any accidental ignition.

2. Have personnel observe the work area while welders are operating (welders cannot see where the sparks are falling when he is under the welding hood).

3. Assign an individual to be responsible for the area being "safe" (no hot sparks, iron is cold) before leaving the work site.

4. Develop an emergency notification procedure in case the fire incident is or appears to be reaching an out-of-control status.

The Contractor shall obey all fire restrictions declared by the landowner(s) (i.e. U.S. Forest Service or Bureau of Land Management).

01570 – TRAFFIC REGULATION

The Contractor shall take the following measures for regulation of traffic at the contract work site.

01572 - FLAGGERS

The Contractor shall post flaggers during the off-loading and on-loading of equipment or materials in roadways at the contract work site. The flaggers shall halt traffic during the off-loading or on-loading process or direct traffic to an alternate route.

01574 - HAUL ROUTES

The Contractor shall consult with the authority having jurisdiction in establishing public thoroughfares to be used for haul routes and site access.

01580 – PROJECT IDENTIFICATION AND SIGNS

At least one temporary project sign shall be furnished and erected by the Contractor at the most convenient point of public access to the project site. The project identification sign shall be installed within ten working days after the receipt via certified mail of the Notice to Proceed or within five days after the Contractor initially mobilizes to the project site, whichever comes first. The sign is to be a minimum of four feet by eight feet by three quarter inch (4' x 8' x 3/4") exterior grade plywood and is to give the project title, project number, and other data within the box on the Title Page (Section 00001). Exterior quality paint in contrasting colors shall be used. The Contractor shall remove sign, framing, supports, and foundations at completion of Project and restore the area. The costs connected to the construction, painting, erection, and later removal of the sign should be covered under Bid Item No. 1, Mobilization, on the Bid Form.

01590 – FIELD OFFICES AND SHEDS

Portable or mobile buildings, or buildings constructed with floors raised above ground, may be provided by the Contractor in locations approved by the Project Manager and the

landowner. At completion of work, the Contractor shall remove all buildings, foundations, utility services, and debris and restore areas.

01600 – MATERIALS AND EQUIPMENT

All materials and equipment required to complete the work shall be as specified. Any substitution to the specified products requires prior approval by the Project Engineer.

01700 – CONTRACT CLOSEOUT

The following sections specify the duties and responsibilities of the Contractor to close out the contract.

01701 - CONTRACT CLOSEOUT PROCEDURES

When work is completed, the Contractor shall submit project record documents to the Project Manager.

01702 - FINAL INSPECTION

Upon written notice from the Contractor that the entire Work or an agreed portion thereof is complete, the Project Engineer will make a final inspection with the Project Manager and Contractor and will notify the Contractor in writing of all particulars in which this inspection reveals that the Work is incomplete or defective. The Contractor shall immediately take such measures as are necessary to remedy such deficiencies.

01710 - FINAL CLEANING

After completion of all work, the Contractor shall demobilize and remove all equipment, materials, spills, supplies, and trash from the project site and shall reclaim all areas disturbed by the Contractor's activities. Unless otherwise specified, developed, maintained roads that existed before commencement of the Contractor's activities need not be reclaimed, but must be left in a condition equal to or better than what existed before the Contractor's activities began. Fences, gates, plants, sod, and other surface materials disrupted by these operations shall be replaced or restored to original or better conditions immediately upon completion of work at the site. Other damage to private or public property shall be immediately repaired. All such cleanup, repair, or replacement work shall be done at the Contractor's expense and to the satisfaction of the Project Manager pending approval of the appropriate public officials and property owners. Payment for Demobilization should be covered under Bid Item No. 1, Mobilization, on the Bid Form.

01720 – PROJECT RECORD DOCUMENTS

The Contractor shall prepare final Project Record Documents providing information regarding all aspects of the Work, both concealed and visible, to enable future modification of the Work to proceed without lengthy and expensive site measurement, investigation, and examination. At Contract closeout, the Contractor shall deliver Project Record Documents and samples under provisions of Section 01701.

END OF DIVISION 1

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DIVISION 2 – SITEWORK

The following sections describe the sitework to be performed under this contract.

02050 – DEMOLITION

The following section describes selective demolition to be performed under this contract.

02070 - SELECTIVE DEMOLITION

The mine openings may require the removal of debris such as boards, signs, timbers, wire, etcetera. Salvageable materials shall be neatly stacked on the site, while trash shall be properly disposed of at the Contractor's expense at an appropriate licensed landfill. All fasteners shall be removed from the lumber and timbers. All specified or established avoidance areas shall be avoided and the recommendations of the archaeological report and the State Historic Preservation Office (SHPO) will be followed.

Other debris and timbers that may cause bridging of backfill material or otherwise interfere with construction shall be removed as directed by the Project Manager.

02100 – SITE PREPARATION

Before closure of the mine features, the Contractor shall provide tarps and assist AML biological staff in excluding animals from the features to be closed. Refer to the requirements in Section 01533.

02110 - SITE CLEARING

This work shall consist of clearing, grubbing, trimming, removing and disposing of vegetation and debris in accordance with these specifications, except those items designated to remain. This work shall also include the preservation from damage or defacement of all vegetation and items designated to remain.

Within construction limits for borrowing backfill material, all surface debris, roots, stumps, trees, and other objectionable protruding obstructions shall be cleared with the Project Manager's concurrence.

02200 – EARTHWORK

The following sections describe the earthwork to be performed under this contract.

Generally the following sequence of earth moving operations is required:

A. Available topdressing shall be stripped from all borrow and fill areas, bladed access roads, and other areas to be disturbed and stockpiled nearby for use in accordance with Section 02921. Vegetation smaller than three inches in diameter shall remain in the stockpiled topdressing and later spread with the topdressing. Where topdressing is unavailable, not retrievable, or judged by the Project Manager to be unsuitable, other suitable on-site material that can support vegetation shall be designated in the specifications or by the Project Manager for use as topdressing.

B. Project shafts, stopes, adits, and subsidences shall be backfilled and the areas graded as specified.

C. Lastly, the stockpiled or other suitable topdressing shall be spread on the areas specified and all disturbed areas. These areas shall be seeded, mulched, and fertilized as specified.

02210 - GRADING

The following sections describe the grading to be performed under this contract.

02211 - ROUGH GRADING

Unless otherwise specified or indicated, all cut and fill slopes shall be rough graded so that slopes are not steeper than three horizontal to one vertical (3h:1v) in earth, two horizontal to one vertical (2h:1v) in incompetent rock and very rocky soils, and one half horizontal to one vertical (0.5h:1v) in competent rock. Where specified and as directed by the Project Manager, the Contractor shall grade sites and construct drainage ditches around safeguarded mine features to divert storm water away from those features.

Where cut slopes in competent rock are steeper than one and a half horizontal to one vertical (1.5h:1v), the maximum uninterrupted vertical height of the slopes shall be no more than ten feet. A series of slopes, each at between one half horizontal to one vertical (0.5h:1v) and one and a half horizontal to one vertical (1.5h:1v), may be constructed in competent rock if horizontal benches or terraces a minimum of six feet wide, with inslopes of at least 4 percent, are built at a vertical spacing of no more than ten feet.

02212 - DECOMPACTION

Before construction demobilization and following the need for any construction access to each abandoned mine site, the Contractor shall decompact areas compacted by construction activity, including temporary work areas and access trails, and staging, storage and parking areas. Areas where more than four feet of overburden material has been removed shall also be decompacted.

Where bedrock is exposed at the surface, such decompaction will not be required. Decompaction methods shall be effective at reducing soil density to a minimum depth of twelve inches (except where bedrock is closer to the surface) and shall be accomplished without inverting the soil layers. Where practicable, ripping shall be done along the contour. Alternatives to ripping or auguring for decompaction shall be acceptable to the Project Engineer.

02216 - ACCESS ROAD CLOSURES

Before construction demobilization and following the need for any construction access to the abandoned mine site, the Contractor shall close temporary construction access roads as specified and as directed by the Project Manager. The Contractor shall outslope the road surface and remove all berms along the outer edge of the road. By grading material toward the cut bank, the Contractor shall take care not to spill graded material over the fill slope. The outslope shall be enough to divert water over the bank at approximately four to eight percent. The surface of the closed road shall be covered with topsoil to a minimum depth of six (6) inches and made uneven using extreme roughening as specified in Section 02900 – Landscaping.

The Contractor shall construct berms and cross-ditches, as shown in the drawings and as directed by the Project Manager, to restrict vehicular access and control erosion.

In addition, cross-drains shall be located to divert water where the road traverses a ridge, above and below road junctions, above steep incurves to prevent bank cutting and to keep road surface water from entering a draw, below sharp incurves to prevent water from a draw from coursing down the road, and below seeps and springs.

02218 - ROAD OBLITERATION

The Contractor shall relieve soil compaction by scarifying/ripping the entire road surface with the excavator bucket to a depth of 12 to 24 inches. All topsoil and vegetation shall be salvaged and stockpiled so that it can be used after re-contour is complete.

The Contractor shall re-contour road prisms (re-establishing natural drainage across the landscape) to match as close as practicable, the original topography and contours of the hillside. Road fill shall be removed, placing it on the cut bench and shaping it to fit the contour up to the top of the cut slope. Also, side-cast piles of embankment in the vicinity of the fill slope that were created when the road was originally constructed shall be removed. Surface of re-contoured

material shall be made uneven using extreme roughening as specified in Section 02900 - Landscaping.

All disturbed areas are to be seeded with the specifications and seed mix mentioned in Section 02933.

The Contractor shall prevent unauthorized use by re-contouring entrances and placing large boulders or other method of prohibiting vehicular access acceptable to the Project Engineer at all access points.

02220 - EXCAVATING, BACKFILLING, AND COMPACTING

The following sections describe the excavating, backfilling, and compacting to be performed under this contract.

02222 - EXCAVATION

The Contractor shall reopen as necessary the adits, shafts, stopes, and subsidences that may be partially closed, by mucking out the debris, earth, and rock plugging or partially plugging them. Before removing any backfill or borrow, the Contractor shall discuss with the Project Manager where material shall be excavated, and shall obtain the Project Manager's approval of the excavation plan.

02223 - BACKFILLING OF MINE OPENINGS

This work shall consist of backfilling mine openings with onsite or imported fill materials as designated in the specifications or as directed by the Project Manager.

I. General

Before backfilling mine openings, the Contractor shall remove cribbing, garbage, wood and other materials as specified and as directed by the Project Manager. All trash and debris shall be hauled to a permitted landfill or transfer station.

Backfill material shall be free of snow, ice, frozen lumps, logs, timbers, significant amounts of woody or vegetative debris, other deleterious materials and materials of such size and shape that they may bridge the opening being filled.

Hand backfilling is an option at sites difficult for equipment access or too steep to operate equipment safely.

II. Adit Backfilling

Unless otherwise specified, adits shall be backfilled to a minimum depth of fifteen feet from the inner top of the fill to the outer top of the fill. No spaces shall be left between the top of the

fill and the back (roof) of the adit that exceed three inches and no space shall be left between the top of the fill and the back (roof) of the adit at the entrance of the adit. In certain situations, a tamping device or fabricated ram may be required to place the necessary fill.

Wherever practicable or as directed by the Project Manager, the entire length of backfill shall consist of rocks to reduce the chances of erosion of the material and discourage anyone from digging through the fill.

Where the opening to an adit is recessed into a hill slope, the trench in front of the adit shall be partially backfilled as shown on the Drawings and with no abrupt changes in the slope between the backfilled entry and the surrounding ground.

III. Shaft, Pit and Open Stope Backfilling

Shafts, pits, stopes, declines, trenches and subsidence features shall be backfilled completely from the bottom of the feature to the specified minimum distance above or below the surface.

In shafts and stopes with intact or partially intact cribbing or lining to remain, the maximum size of backfill material shall have no dimension exceeding twelve inches. Care shall be taken during backfilling to reduce damage to the cribbing or lining to prevent bridging of fill materials on collapsed timbers and to minimize potential for collapse of the collar.

Where judged to be feasible by the Project Manager, the Contractor may break collapsed timbers deeper than can practicably be removed by other methods by dropping heavy rock, boulders, or broken concrete during the initial stages of backfill.

Wherever practicable, at least 80 percent by weight of fill material shall be larger than ¾ inch. In shafts, stopes and declines, the coarsest available backfill material shall be used from the bottom of each drift level to a minimum height of five times the diameter or diagonal dimension of the shaft above the drift floor level.

IV. Slow Backfill

Slow backfill is designated for closure of some features; the purpose is to create enough loud noise, vibration and dust to expel bats and birds that may be in the underground mine workings. Hand backfilling is by definition slow backfill and will not require special procedures unless directed otherwise by the Project Manager.

When using equipment, the following procedure shall be followed. The first one-quarter cubic yard of fill material placed to backfill the shaft or stope shall be slowly placed into the mine opening. Fill operations shall then cease for two minutes to allow time for bats and birds to escape. After three repetitions of quarter-yard fill increments interspersed with waiting periods of two minutes, this procedure shall be repeated using one-half cubic yard increments, again with

two-minute pauses between fill operations. To the extent practicable, fill material for the slow backfill process shall be gravel-sized and not larger than 1½ inches.

The Project Manager may require the Contractor to vary this procedure. Variations may be made depending on the size and depth of the mine opening, the complexity of the underground workings, the availability of properly sized material at the fill site and his judgment of the effect of the operation on bats and birds in the openings.

After this initial slow placement of backfill material and with the concurrence of the Project Manager, the Contractor may proceed with normal backfilling operations.

V. Final Layer of Fill

Wherever practicable, the final eight- to twelve-inch layer of the fill at mine openings shall be soil of comparable quality to the undisturbed soil surrounding the backfilled feature. Note the topdressing requirements of Section 02921.

02224 - BORROW

Except where otherwise specified or indicated, fill shall come from the areas immediately at and surrounding the mine features or from nearby mine waste piles as the Project Manager directs. Preferentially, mine waste material shall be used. Material may come from other areas as required and as directed by the Project Manager.

For indicated mine openings and as required, fill material shall be taken from designated borrow areas as indicated in the drawings. Any other non-designated borrow sources shall be approved before use by the Project Manager and, for borrow sites on nearby BLM lands, by the Bureau of Land Management. Topdressing at onsite borrow areas shall be stripped and stockpiled before borrow operations. Haul routes for borrow material shall be approved by the Project Manager before commencement of hauling.

Except as otherwise noted or allowed by the Project Manager, the Contractor shall not use any mine waste material from within avoidance areas, shall avoid undermining the cultural features within avoidance areas during borrow operations, and shall not leave disturbed slopes in the mine waste steeper than two horizontal to one vertical (2h:1v) outside avoidance areas.

02229 - COMPACTION

Material used for fill shall be compacted whenever possible using multiple passes with available heavy equipment. The fill in adits, shafts, stopes, and subsidences shall obtain a compaction density not less than what the equipment can reasonably obtain to the satisfaction of the Project Manager.

Where vibratory compaction equipment is used, it shall be the Contractor's responsibility to insure that vibrations do not damage nearby structures or underground mine voids.

02270 - SLOPE PROTECTION AND EROSION CONTROL

The following sections describe the slope protection and erosion control to be performed under this contract.

02276 - PRECAST STACKABLE CONCRETE UNITS

Precast stackable concrete units shall have a minimum 28-day compressive strength of 3000 psi. The concrete shall have adequate freeze/thaw protection with a maximum moisture absorption of 8 percent. Exterior dimensions may vary. Units shall be capable of a convex radius of 25 inches. Construction drawings are based on the "Cottage/Country Stone" units by Rockwood Retaining Walls, Inc. (http://www.rockwoodwalls.com) and any of their authorized manufacturers or distributors. These units are four inches high, twelve inches wide, and eight and a half inches deep with an approximate weight of 26½ pounds. Color of units shall be as selected by the Project Engineer.

Units from other manufacturers may be acceptable, following review by the Project Engineer. Any substitution shall have equal quality of construction, similar materials, and the same performance characteristics as that specified. If the Project Engineer accepts the proposed substitution, the Contractor shall accept the unqualified responsibility for the performance of the substituted item. Changes or modifications of construction caused by the substitution shall be the responsibility of the Contractor and shall be at his sole expense.

I. Drainage Aggregate

Drainage aggregate shall be angular, clean stone or granular fill meeting the following gradation as determined in accordance with ASTM D422.

Sieve Size	Percent Passing
1 inch	100
3/4 inch	75-100
No. 4	0-60
No. 40	0-50
No. 200	0-5

Drainage aggregate shall be placed in uncompacted layers of eight inches or less and compacted by slicing with a shovel or vibrating.

II. Scoria Fill

Scoria fill shall be clean, crushed scoria (or other approved equivalent lightweight aggregate) with a dry unit weight of no more than 46 pounds per cubic foot and with not less than 95% passing a 1½" sieve and with not less than 90 percent retained on a #4 sieve.

Scoria fill shall be placed in uncompacted layers of eight inches or less and compacted by slicing with a shovel or vibrating.

The Contractor shall excavate to the lines and grades shown on the construction drawings and as required for the footing dimensions. The first course shall be aligned by using a string line at straight walls sections and each face unit leveled side-to-side and front to back. The first course of units shall be placed side by side so they are touching. Units shall be placed side by side for the full length of the wall. Proper alignment may be achieved with the aid of a string line or offset from a baseline. The clean granular fill behind the units shall be placed and compacted by slicing with a shovel as each course is finished. All excess material shall be swept from the top of units before installing the next course.

Permanent mechanical connection shall be made at the top two courses with construction adhesive. Adhesive shall be applied to the top surface of units below and the upper units then placed into position. All surfaces shall be clean, dry and free of dust, oil, grease, frost, and moisture. Adhesive shall be a one-part, water-resistant, freeze-thaw stable, super strength, flexible, and quick curing industrial adhesive that conforms to ASTM 2339. The adhesive shall be "SB-10 Paver Bond Powerseal Adhesive" by Surebond, Inc. (http://www.surebond.com)[1], or approved equivalent.

The Contractor shall follow the manufacturers' installation recommendations for concrete units and adhesive.

02600 - PIPED UTILITY MATERIALS

The following sections describe piped utility materials to be installed under this Contract.

02613 - CORRUGATED METAL PIPE

Corrugated metal pipe and connectors shall be manufactured and inspected in conformance with the requirements of AASHTO M36 and as hereinafter specified. The size and gauge of the pipe to be furnished shall be as shown in the drawing or specified herein. Nominal diameter or dimensions as referred to in AASHTO M36 shall be defined as the minimum inside dimension of the pipe.

Materials for corrugated metal pipe, pipe arches, and appurtenances shall be as specified in AASHTO M36. Pipe in which the seams indicate slippage or unraveling will be rejected. The

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butt-welding joint at sheet ends will be acceptable if a good weld is performed and damaged spelter coating is satisfactorily repaired. Sawed ends on pipes will be permitted provided all burrs are removed. Spelter coating damaged by welding or fabrication shall be repaired and recoated in accordance with AASHTO M36. Corrugated steel pipe shall be 16-gage minimum.

Bands for connecting helically corrugated pipe with re-rolled ends or corrugated metal pipe shall conform to the requirements of AASHTO M36. Flange bands will not be permitted. The bottom of the installed pipe shall be in contact with the shaped bedding throughout its full length. Pipe shall be inspected before any backfill is placed. Any pipe found out of alignment, unduly settled, or damaged shall be taken up and re-laid or replaced

02800 - SITE IMPROVEMENTS

Cattle guards, curbs, fences, gates, gutters, sidewalks, and other road or street improvements destroyed, removed, or damaged during construction shall be replaced with the same type and dimensions of units removed and shall be equal to and consistent with the undisturbed portions of the improvements existing before the project.

02890 - SURVEY CAPS

A new six-foot long nominal 3½ -inch inside diameter galvanized steel pipe (4.0" O.D., minimum 9.11 lbs./ft.) shall be installed in front of backfilled and safeguarded mine features as indicated in Table II. The lower two feet of pipe shall be set in concrete a minimum of one foot in diameter and the upper twelve inches of pipe shall extend above grade. The Contractor shall grout a survey cap, provided by the Project Manager, into the pipe using a non-shrink grout, such as Moly Parabound, Pour Rock, or Quikrete. Alternately, where the Project Manager concurs, the Contractor may drill and grout a cap in undisturbed, competent rock or concrete immediately next to each specified feature. This is the preferred method at structural closures with exposed concrete or grout or nearby competent rock.

02900 - LANDSCAPING

The following sections describe revegetation to be performed under this contract.

02920 - SOIL PREPARATION / EXTREME SURFACE ROUGHENING

Prior to seedbed preparation, the Contractor shall grade all disturbed areas as described, decompact those areas specified above, and apply extreme roughening as specified below. Disturbed areas include the mine backfill borrow areas, depressions and mounds at safeguarded shafts, filled areas at adits, temporary access and haul routes, closed access roads, areas stripped of native vegetation and any other surface disturbed areas except as otherwise specified.

On slopes up to 1.5h:1v, the soil surface in areas to be seeded shall be prepared to be continuously rough and hummocky. This shall be accomplished by using an excavator bucket, or

other acceptable methods that produce similar results, to create pockets and furrows to trap water and create favorable microclimates for plant growth. Basins shall be 18 to 24-inches deep and the width of the bucket (up to four-feet wide).

The most common construction method is to dig a bucket load of soil and then drop it from two to three feet above the soil surface. The process shall be repeated in a random, continuous and overlapping pattern. Finished roughened soils shall be difficult to walk over. On fine silty and clayey soils, the pocks shall be as large as practicable, resembling moguls on a ski slope. No work shall be done when the moisture content of the soil is unfavorable (too wet or extremely dry) or the ground is in a nontillable condition.

The specified topsoil, fertilizer and humate shall be spread just before and incorporated during the extreme surface roughening procedure. After roughening, seed shall be broadcast or hydroseeded as specified below. In areas with extremely dry and loose soil, the Project Manager may require the Contractor to wait until the soil has settled before seeding.

Large and small boulders may be left exposed on site prior to seeding, either singly or in groupings that blend with the natural surroundings, as directed by the Project Manager. The Project Manager may require that additional boulders be placed on site to enhance visual variation and provide wildlife habitat.

Unless the soil is severely compacted or as otherwise noted, soil preparation will not be required for discontinuous, isolated areas of disturbance less than 0.05 acres (approximately 2,500 square feet or 50 feet by 50 feet), such as areas around mine portal closures.

The extent of seedbed preparation shall not exceed the area on which the entire seeding operation can be applied to such prepared seedbed before any surfaces crusting or loss of seed and fertilizer due to erosion. If erosion or crusting occurs, the entire area affected shall be reworked beginning with seedbed preparation.

02921 - TOPDRESSING

As specified, on construction sites, mined areas, and other critical areas where the existing surface material is either chemically or physically unsuited to support adequate vegetation, the best available soil material shall be evenly spread on the surface in sufficient depths to maintain plant growth. Available topdressing in all areas to be disturbed shall be set aside prior to deeper soil disturbance for excavation, mine feature backfilling and access road blading.

Topdressing shall be applied generally along the contour, but if hazardous conditions arise, the application may be in another direction. In all cases, placement shall be such that erosion is kept to a minimum. All topdressed slopes shall be prepared by extreme roughening before planting to reduce erosion.

02930 - GRASSES

The following section describes the seeding to be conducted under this contract.

02933 - SEEDING

Following completion of seedbed preparation, the Contractor shall seed areas according to the Specifications and as follows:

I. Seeding Time

Seeding shall be accomplished between June 15 and August 31 of each year, unless specific permission in writing is issued by the Project Engineer to allow seeding before or after these dates. Seeding shall not be done when the soil is too wet, too dry, or otherwise untillable.

II. Seed Species and Mixtures

To assure AML that the seed purchased shall exhibit the characteristics associated with the given variety, and that it is genetically pure, the Contractor shall provide certified seed of named varieties. For the unnamed varieties, the seed shall be obtained by the Contractor from a source adapted to the climate and soil in which it is being planted; that is, a similar land resource area which is not more than approximately three hundred miles south or about two hundred miles east, north, or west. The percentage of each species comprising seed mixtures for application is outlined below. The mixture is to be used for revegetation of areas defined above in Section 02920. Seed species and varieties, which are well adapted to the soil, climate, and topography of the disturbed areas, shall be used in revegetation and are discussed below.

III. Seeding Methods

A. Broadcasting/Hydroseeding

The seed shall be broadcast or hydroseeded. When broadcast seeding, passes shall be made over the site to be seeded such that an even distribution of seed is obtained. Broadcast seeding shall take place immediately following the completion of final soil preparation. Broadcast seeding shall not be conducted when wind velocities would prohibit an even seed distribution. Broadcast seeding shall be followed by hand raking, manual use of a drag chain, or sweeping with sturdy tree or shrub branches to cover seed. This shall be done over the entire seeded area but shall not be so extreme as to reduce the extent of soil relief.

Broadcast seeding of large areas shall be done using hand-operated “cyclone-type” mechanical seeders. All seeding equipment used shall be equipped with a metering device and set to the appropriate seeding rate.

Broadcast seeding of small areas of disturbance, less than 0.05 acres (approximately 2500 square feet or 50 feet by 50 feet) may be done by hand scattering. Raking of small areas is not necessary if there is sufficient surface roughness to ensure that seeds will fall in crevices and other micro-topographic depressions such that weather and gravity will cause them to be covered and stay in place.

After completion of the broadcast seeding and seed covering, organic debris such as logs, tree stumps and grubbed vegetation shall be randomly redistributed across the sites. This shall be done at the Project Manager's direction for the purpose of creating visual variation, ground shading, and production of wildlife habitat. Care shall be taken to avoid leveling the soil surface.

B. Completion

If the Contractor is scheduled to close the project outside the specified seeding time when seeding is the only incomplete item, the Contractor shall complete only seed bed preparation and 75 percent of the lump sum bid price for seeding will be retained. Then the job shall be held open for seeding during the next seeding season with the remainder of the bid price being paid upon completion and acceptance of seeding. Application of a final layer of mulch, at the rates described below, shall then be carried out after seeding.

If all of the work required by the contract, except seeding, is completed before seeding is accomplished because of seasonal limitations, partial acceptance of the work will be made with final acceptance delayed until seeding has been accomplished in accordance with these specifications. Liquidated damages will not be assessed against the Contractor during the interim period between the dates of partial acceptance and final acceptance if such delay is the result of seasonal limitations.

C. Seeding Rates

Seeding rates are given in Table I. Pure Live Seed (PLS) expresses seed quality. PLS is a percentage of pure, viable seed in a particular lot of seed. PLS is calculated by multiplying the percent total germination by the percent purity and dividing by one hundred (100):

$$\text{Percent PLS} = \frac{\text{Purity x Germination}}{100}$$

Table I – SEED MIX / Lake Valley Mine Safeguard Project – Phase IV

No.	Species	Scientific Name	PLS/lb.	PLS/Ft.^{2}	Application Rate lbs. PLS/Ac.
1.	Purple three-awn	*Aristida purpurea*	250,000	6	1.04
2.	Sand dropseed	*Sporobolus cryptandrus*	5,600,000	4	0.03
3.	Sideoats grama	*Bouteloua curtipendula*	159,200	6	1.64
4.	Alkali sacation	*Sporobolus ariroides (var. Salado)*	1,750,000	4	0.10
5.	Desert needlegrass	*Stipa Speciosa*	225,000	2	0.39
6.	Curly mesquite	*Hilaria belangeri*	269,000	2	0.32
7.	Bottlebrush squirreltail	*Elymus elymoides*	192,000	3	0.68
8.	Desert Broom	*Baccharis sarothroides*	900,000	3	0.15
9.	Desert marigold	Baileya multiradiata	1,060,000	5	0.21
10.	Fourwing saltbush	*Atriplex canescens*	44,203	4	3.94
11.	Nelson globemallow*	*Sphaerealcea parvifolia*	500,000	3	0.26
12.	Common sunflower	*Helinathus annuus*	46,919	2	1.85
13.	Bird of paradise	*Caesalpinia gilliesii*	60,000	2	1.45
		Totals	**46**		**12.49**

*Contractor may substitute Scarlet globemallow (*Sphaerealcea coccinea*) for Nelson globemallow if difficult to find locally.

All seed shall comply with the New Mexico seed law, NMSA 1978, Sections 76-10-11 through -22 and the New Mexico Department of Agriculture (NMDA) Rule 21 NMAC 18.4.1 (Seed Standards and Classifications). Invoices or bag labels showing purity and germination for all seed shall be provided to the Project Manager before seeding.

The Contractor shall protect and care for seeded areas until final acceptance of the work, and shall repair all damage to seeded areas caused by pedestrian or vehicular traffic at no additional cost to EMNRD.

02940 – MULCHING

The Contractor shall apply mulch to all seedbed areas. Mulching will not be permitted when the wind velocity exceeds fifteen miles per hour. The mulch type shall be coarse bark and/or wood chips or chunks, pecan shells, or approved equivalent. Materials shall be wind resistant. No more than 15 percent, by loose volume, shall pass through a 0.25-inch sieve. The mulch shall not contain resin, tannin, or other compounds in quantities that would be detrimental to plant life. Sawdust or materials with noxious seed or plants will not be acceptable. Chipped, but uncomposted, yard waste will not be acceptable unless the material is certified to be free of weed seed.

The mulch shall be spread uniformly over the prepared area either by hand or with a mechanical mulch spreader. Mulch shall be applied by the Contractor to all seeded areas

immediately after seeds are planted to provide suitable surface litter for improvement of moisture conditions and to reduce the potential for damaging erosion or soil blowing which might occur before or during plant establishment.

The rate of application of woody mulch shall be 35 to 40 cubic yards per acre (approximately ¼-inch thick after spreading).

Manufactured wood mulch products are acceptable for use. Manufactured wood mulch, if used, shall be an engineered all-wood, long-strand soil erosion control mulch that is a blend of geometrically regular wood elements that have a straw-like form and function. The materials shall be inherently free of noxious weed seed and other additives detrimental to plant life. Special wood mulch shall be "Woodstraw Model LS64-100" by Forest Concepts, LLC (877.838.4759, www.woodstraw.com)[1], or approved equivalent. After amending and seeding, special wood mulch shall be evenly placed at a rate targeted to provide 50 percent soil cover. Mulch shall be spread in a manner recommended by the manufacturer and to provide even coverage.

02955 – SALVAGE OF NATIVE PLANTS

Before any area is disturbed for access, borrow, fill or other construction activities, the Contractor shall thoroughly scout the area for native plant species. All significant plants shall be avoided wherever practicable. Of those that need to be disturbed, the Contractor shall salvage those that can be replanted, as the Project Manager directs and as specified below. Species that shall be salvaged include prickly pears (*Opuntia spp.*) and other cactus species, including pincushion types.

Plants to be salvaged shall be dug from the soil before earthmoving operations, preserving as many roots and as much of the soil around the roots as practicable. The south side of the plant and the soil line shall be marked with paint or marking crayons. When transplanted the plant shall be placed in the same orientation it was exposed to before harvesting.

The top half of prickly pear pads shall be cut from the mother plant. Before replanting, cactus roots on the mother plant and the cut prickly pear pads shall be allowed to dry in a shaded, ventilated location for at least two weeks but no more than six weeks. Cactus of other species and other salvaged plants shall be planted as soon as possible but no more than one week after harvest.

Salvaged plants shall be placed into well-drained soil, preferably in areas that have been disturbed by construction activities and along closed access roads. The soil in the planting areas shall be tested before planting by filling a planting hole with water. If the water drains within four hours, the site is suitable.

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The cactus plants shall be placed into the planting hole at their original orientation and planting height to avoid sunburn and stem decay. The bottom one-third of the cut prickly pear pads shall be covered with soil, with the pads oriented so that their broad sides face east and west. The planting holes shall be backfilled with native, unamended soil and the air in the soil worked out by gently moving the soil with a rod or pole. The plants shall be watered in at the time of planting; no further watering is required. Larger specimens shall be staked as necessary as determined by the Project Manager.

02970 – LANDSCAPE MAINTENANCE

The following section describes the fertilizing to be conducted under this contract.

02971 – FERTILIZING

During final soil preparation, the Contractor shall work 75 pounds of nitrogen per acre (1.7 pounds per thousand square feet) in an organic fertilizer and 220 pounds per acre (5.0 pounds per thousand square feet) of humate into the surface soil. Acceptable organic fertilizers include "Biosol 6-1-3," available from Rocky Mountain Bio-Products, Inc., "Fertil-Fibers" 6-4-1 (Quatro Environmental, Inc.) and "Sustane 5-2-4" (Sustane/Natural Fertilizer of America)[1].

Note that application rates for the organic fertilizer are based on its nitrogen content. Thus, 1,250 pounds per acre of Biosol or Fertil-Fibers (29 pounds per 1,000 square feet) or 1,500 pounds per acre of Sustane (34 pounds per 1,000 square feet) would be required.

Humate shall be 70% grade humus or better. Electrical conductivity (E.C.) of the humate shall be less than 8.0 µmhos/cm. One source of humate is Mesa Verde Resources, P.O. Box 8632, Albuquerque, N.M. (505.268.5330)[2].

The Contractor shall provide bag labels, invoices, analyses, or other documentation showing the purity and composition of the fertilizer and humate to the Project Manager.

02990 - SUBMITTALS

Complete data and specifications for the precast stackable concrete units, construction adhesive, drainage aggregate, scoria fill, organic-based fertilizer (if use of other than the products specified is proposed), humate, and accessories shall be submitted in accordance with the procedure set forth in Section 01340.

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[2] Use of brand names is for the purpose of describing the standard of quality, performance and characteristics desired and is not intended to limit or restrict competition.

Table II
PROJECT SUMMARY INCLUDING APPROXIMATE MINE OPENING DIMENSIONS AND MINE FILL VOLUME ESTIMATES

The approximate mine opening dimensions and mine fill volume estimates are provided only for the information of the potential Bidder. The Abandoned Mine Land Program makes absolutely no guarantee of their accuracy or precision. Volume estimates are of the material that may be required to fill the mine cavities and adjacent areas as indicated, including an allowance for shrinkage, irregularities and known underground mine voids. All mine features are irregular in shape. Estimates of mine fill volumes are generally not indicated at structural closures; excavation, fill and other earthmoving activities there are considered incidental to the work. Mine fill volume estimates are indicated at those structural closures with significant volumes of earthwork required.

For bat and owl protection, construction at some mine openings is limited to certain periods of the year. **At sites with construction time restrictions, allowable work periods are italicized below. Work outside the specified periods shall take place only with the written permission of the Project Engineer.**

AML NUMBER	MINE OPENING	DIMENSIONS (FEET)	VOLUME (C.Y.)	WORK REQUIRED/COMMENTS
DEVASTOS RANCH				
Rattlesnake	Shaft	8'x10'x19'D	70	Travel to site; Backfill to surface; *October 1 through April 1 preferred*
SITE 046 NORTH CAROLINA LODE				
046-104.1ST	Underground Room	Variable	-	Construct High-Strength Steel Mesh Cover; Preserve timber door frame; *Anytime*
SITE 048 STRIEBY LODE				
048-005S	Shaft	4½'x5½'x8'D	-	Construct High-Strength Steel Mesh Cover; *September 1 through April 30*
048-021OC	Decline Adit	8'x22'x13'D	575	Construct Toroid Tire Plug Closure; Backfill with imported fill and nearby material as indicated; Install survey cap; *September 1 through April 30*
048-021aS	Shaft	5'x6½'x15'D; 11'x15' Crater	10	Construct Horizontal Bat Gate with PUF Plug, CSP Riser and Collar; Install survey cap; *September 1 through April 30*

AML NUMBER	MINE OPENING	DIMENSIONS (FEET)	VOLUME (C.Y.)	WORK REQUIRED/COMMENTS
048-035S	Shaft	4'x5'x57'D	580	Construct Airflow Closure with Concrete Plug, CSP Riser, and Encasement; Install survey cap; *September 1 through April 30;* Close temporary construction access road
048-056S	Shaft	4½'x5½'x25'D; 17'x18' Crater	-	Construct High-Strength Steel Mesh Cover; *September 1 through April 30*
SITE 049 COLUMBIA LODE				
049-000T	Stope	7W'x9L'	275	Construct Toroid Tire Plug; Backfill with imported fill and nearby material as indicated; Install survey cap; *September 1 through April 30*
049-021T	Hema Decline	16'Wx3.4'H	145	Construct Toroid Tire Plug; Install survey cap; *September 1 through April 30;* Close temporary construction access road
049-066S	Shaft	7½'x10'x29'D	25	Construct Horizontal Bat Gate with PUF Plug, CSP Riser and Collar; Install survey cap; *September 1 through April 30;* Close temporary construction access road
049-067S	Shaft	4'x5'x13'D	5	Construct Horizontal Bat Gate with PUF Plug, CSP Riser and Collar; Install survey cap; *September 1 through April 30*
049-068S	Shaft	4½'x7½'x49'D	35	Construct Horizontal Bat Gate with PUF Plug, CSP Riser and Collar; Install survey cap; *April 1 through September 30*
049-069S	Shaft	8'x11'x27'D	25	Construct Horizontal Bat Gate with PUF Plug, CSP Riser and Collar; Install survey cap; *September 1 through April 30*
049-070S	Shaft	3½'x7'x31'D	10	Construct Horizontal Bat Gate with PUF Plug, CSP Riser and Collar; Install survey cap; *September 1 through April 30*
049-087S	Shaft	9'x10½'x48'D	60	Construct Bat Cupola with PUF Plug, Concrete Plug, CSP Riser and Concrete Footing; Install survey cap; *September 1 through April 30*

AML NUMBER	MINE OPENING	DIMENSIONS (FEET)	VOLUME (C.Y.)	WORK REQUIRED/COMMENTS
049-116S	Shaft	4'x6'x14'D	20	Construct Horizontal Bat Gate with PUF Plug, CSP Riser and Collar; Install survey cap; *September 1 through April 30*
SITE 050 APACHE LODE				
050-130S	Shaft	5½'x7'x18'D	-	Construct High-Strength Steel Mesh Cover; *April 1 through September 30*
050-131T	Decline	8'Wx3½'H	65	Construct Bat Gate in CSP and PUF Plug; Install survey cap; *April 1 through September 30*
SITE 051 LITTLE ONE LODE				
051-081S	Shaft	5'x8'x80'D	-	Construct High-Strength Steel Mesh Cover; *September 1 through April 30;* Close temporary construction access road
SITE 052 LAST CHANCE LODE				
052-046S	Shaft	4½'x5'x16'D	10	Construct Bat Cupola with PUF Plug, CSP Riser, Collar and Rip Rap Cover; Install survey cap; *September 1 through April 30*
052-085S	Shaft	5 ½'x9'x68'D	10	Construct Horizontal Bat Gate with PUF Plug, CSP Riser and Collar ; Install survey cap; *September 1 through April 30*; Close temporary construction access road
052-086S	Shaft	5'x7½' x67'D	30	Construct Horizontal Bat Gate with PUF Plug, CSP Riser and Collar; Install survey cap; *September 1 through April 30*
052-089S	Shaft	5'x9'x63'	-	Construct PUF Plug with scoria fill and clay cap; Install survey cap; *September 1 through April 30;* Close temporary construction access road
SITE 053 COMSTOCK LODE				
053-060S	Shaft	4½'x7½' x129'D	30	Smoke bomb; Construct Toroid Tire Plug or PUF Plug; Install survey cap; *Anytime*

AML NUMBER	MINE OPENING	DIMENSIONS (FEET)	VOLUME (C.Y.)	WORK REQUIRED/COMMENTS
053-084S	Shaft	4'x5' x57'D	10	Construct Horizontal Bat Gate with PUF Plug, CSP Riser and Collar; Install survey cap; *September 1 through April 30*
		TOTAL (ROUNDED)	2,000	

END OF DIVISION 2

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DIVISION 3 – CONCRETE

This work shall consist of furnishing and placing Portland cement concrete to construct cast-in-place concrete caps over vertical and near vertical mine openings and footings, in substantial compliance with the specifications and the lines, grades, and dimensions shown on the plans or established by the Project Manager. This work includes excavation of footings, furnishing and installation of forms, reinforcing steel, and concrete.

This work shall consist of grouting as indicated on the drawings. Unless otherwise specified all grouting shall be done with non-shrink grout.

03001 – GENERAL REQUIREMENTS

All cast-in-place concrete shall be accurately formed, properly placed, and finished as indicated on the drawings and as specified in this section.

At least twenty-four (24) hours in advance, the Contractor shall inform the Project Engineer and Project Manager of the times and places at which he intends to place concrete. No concrete shall be placed without prior examination of the foundation conditions, formwork, and steel reinforcing by the Project Engineer or Project Manager.

All concrete work shall conform to all requirements of ACI 301, Specifications for Structural Concrete for Buildings, except as modified by the requirements below.

03010 - CONCRETE MATERIALS

I. Materials

A. Cement

All cement used in concrete shall be Portland cement conforming to all requirements of ASTM C150, Type II, low alkali. High-early-strength Type III Portland cement may be used in concrete at the Contractor's option. When Portland cement is delivered in packages, the name and brand of the manufacturer and the type shall be plainly identified thereon. When cement is delivered in bulk, the same information shall be contained in the shipping invoices accompanying the shipment. A bag shall contain 94 pounds net weight and will be considered equal to one cubic foot. A barrel shall consist of 376 pounds net weight and will be considered equal to four cubic feet. The Contractor shall obtain from the manufacturer and furnish a certificate of compliance stating that the cement delivered to the work complies with the requirements herein provided. To prevent deterioration after delivery, cement and aggregates shall be stored as to prevent intrusion of foreign matter. Any material that has deteriorated or has been contaminated shall not be used for concrete.

B. Admixtures

Admixtures shall conform to ASTM C494. Sugar, calcium chloride or admixtures containing chloride from other than impurities from admixture ingredients will not be permitted. Air entraining admixtures shall be required and shall conform to ASTM C260. Water reducing admixtures may be used and shall conform to ASTM C494 or ASTM C1017.

C Curing Compounds

Liquid membrane-forming compounds for curing concrete shall conform to the requirements of ASTM C309.

D. Water

Water for concrete shall be clean and free from harmful amounts of acids, alkalis, oils, organic materials, salts, sand, sewage, or other deleterious substances and shall be furnished by the Contractor. Water shall be potable and shall have a pH value of not less than 4.5 nor more than 8.5 as determined by AASHTO T26 before its use. The sulfate content as SO_4 shall not exceed one thousand parts per million (1,000 ppm).

E. Fine Aggregate

1. General Characteristics. Fine aggregate shall consist of natural sand, manufactured sand, or a combination thereof, or other accepted inert materials composed of clean, durable, hard, uncoated, well-rounded grains.

2. Grading. Fine aggregate shall be well graded and, when tested by standard laboratory sieves, shall conform to the following:

Sieve (ASTM E11)	Percent Passing by Weight
3/8-in.	100
No. 4	95 to 100

The fine aggregate shall have not more than 45 percent passing any sieve and retained on the next consecutive sieve of those shown above, and its fineness modulus shall be not less than 2.3 nor more than 3.1.

3. Deleterious Substances. The maximum percentage of deleterious substances shall not exceed the following limits:

Clay lumps	3.0% by weight

Material finer than No. 200 sieve	3.0% by weight
Coal and lignite	1.0% by weight
Other deleterious substances	1.0% by weight

All fine aggregate shall be free from harmful amounts of alkali and organic impurities.

4. Soundness. Fine aggregate shall conform to the requirements of magnesium sulfate soundness of ASTM C33. The maximum loss in five (5) cycles shall not exceed 12 percent by weight.

F. Coarse Aggregate

1. General Characteristics. Coarse aggregate shall consist of natural gravel, crushed gravel, crushed stone, or crushed hydraulic-cement concrete, or a combination thereof, or other accepted inert materials having clean durable, hard, strong pieces; free from adherent coatings; and conforming to the requirements of these Specifications. Fifty percent by weight of the minus ¾ inch sieve size particles shall have a minimum of two fractured faces.

2. Grading. Coarse aggregate shall be well graded between the limits specified and shall conform to the following requirements:

Sieve	Percent Passing by Weight
1-in.	100
¾-in.	95 to 100

3. Deleterious Substances. The maximum allowable percentage of deleterious substances and physical properties shall not exceed the following limits:

Soft fragments	2.0% by weight
Clay lumps	0.25% by weight
Material finer than No. 200 sieve	1.0% by weight
Coal and lignite	0.25% by weight

4. Sampling and Testing. Methods of sampling and testing the coarse and fine aggregate shall be in accordance with ASTM C33.

II. Concrete Mix Design

Structural concrete for concrete footings and collars for steel bat cupolas and for other shaft bat compatible and airflow closures shall be made with aggregates and cement conforming to a minimum compressive strength of 3,500 pounds per square inch (psi) after 28

days. The concrete shall contain a minimum of 611 pounds of cement (6.5 bags) per cubic yard and a maximum water/cement ratio of 0.49. Fine aggregate shall be not less than 38 percent or more than 42 percent by weight of the mix.

All other concrete, including concrete for unreinforced cast-in-place plugs and hollow core plugs, shall conform to a minimum of 3,000 psi after 28 days.

All concrete shall have an entrained air content between 4 percent and 8 percent by volume when determined with the requirements of ASTM C231.

III. Mixing Concrete

If the concrete is mixed on the site, equipment and mixing procedures shall conform to ACI 301. All concrete shall be thoroughly mixed in a batch mixer of an accepted type and capacity for not less than two minutes after all the materials including water have been placed in the drum. During mixing, the drum shall be operated at the speed specified by the manufacturer of the equipment. The entire contents of the mixer shall be discharged before being recharged, and the mixer shall be cleaned frequently. The concrete shall be mixed only in such quantities as are required for immediate use. No retempering of concrete will be permitted. Hand mixed concrete will not be permitted except by special acceptance of the Project Engineer.

IV. Ready-Mixed Concrete

At the option of the Contractor, ready-mixed concrete may be used instead of concrete mixed at the job site. Ready-mixed concrete shall conform to all requirements of ASTM C94 and these Specifications as to grading of aggregates, strengths, consistency, and so on. The Project Manager shall have free access to the mixing plant at all times. Ready-mixed concrete shall be continuously mixed from the time the water is added until the time of use. Concrete shall be delivered to the site of the work, and discharged from the truck mixer or truck agitator shall be completed within one hour after the cement contacts the mixing water or with aggregates that are surface wet. The organization supplying ready-mixed concrete shall have sufficient plant and transportation facilities to assure continuous delivery of concrete at the required rate.

V. Proportioning

The proper proportioning of aggregates and cement will be determined by an acceptable independent testing laboratory at the expense of the Contractor. The proportioning of aggregates will be the most suitable combination of aggregates that will give the necessary workability and desired consistency when mixed with water and cement as specified. The ratio of cement to dry, fine aggregate shall be that necessary to provide the maximum amount of density of the mixture when used with the minimum amount of water required to produce the specified slump in the resulting concrete. This determination of the proper ratio shall be made by testing laboratory, at the expense of the Contractor, using representative samples of the

aggregates which will be used, and before use shall be reviewed by the Project Engineer. The batch proportions used shall be such that full bags of cement are used in each batch.

VI. Consistency

The consistency for concrete shall be kept uniform for each class of work and shall be checked by means of slump tests. The slump for concrete shall be not less than two inches and not more than four inches. The consistency of the concrete shall be varied as directed by the Project Engineer or Project Manager. If through accident, intention, or error in mixing, any concrete is too wet, such concrete shall not be incorporated in the work, but shall be discarded as waste material at an accepted disposal area.

VII. Placing Concrete

Where indicated, mine openings to be closed with a cast-in-place footings and steel structures and cast-in-place concrete caps shall be excavated to competent bedrock or founded on clean, durable existing concrete. The Contractor is responsible for site inspections, testing or exploration necessary to insure that the bid adequately reflects excavation conditions including hand trimming and leveling required.

The surface of hardened concrete upon which fresh concrete is to be placed shall be rough, clean, sound, and damp. The hardened surface shall be cleaned of all laitance, foreign substances (including curing compound), washed with clean water, and wetted thoroughly preceding placement of fresh concrete.

Concrete shall be handled from the mixer to the place of final deposit as rapidly as possible by methods that prevent separation or loss of ingredients. It shall be deposited as nearly as practicable in its final position to avoid rehandling. It shall be deposited in continuous layers, the thickness of which generally shall not exceed 12 inches.

The rate of depositing concrete in forms shall be controlled to prevent deflection of the form panels. The concrete shall be thoroughly compacted by means of a suitable mechanical vibrator. Vibrating shall be supplemented with hand spading the concrete around the reinforcing steel.

The Contractor is cautioned that cold weather protection for concrete may be required should concrete be placed in the winter months. If cold weather concreting is done, it shall conform to the requirements of ACI 306R. No concrete shall be placed or be allowed to cure without protection in any weather where the temperature falls below forty degrees Fahrenheit (40° F) at any time during the daily 24-hour period. The period of time such protection shall be maintained shall be not less than seven days. If hot weather concreting is done, it shall conform to the requirements of ACI 305R.

Concrete shall have a temperature of at least 50°F and not more than 80°F at the time of placing. At no time during placement or curing shall the concrete surface temperature be allowed to fall below 40°F. Concrete shall not be placed on frozen ground. Frozen aggregate shall not be used in concrete.

Finishes of concrete work shall be as specified in ACI 301.

VIII. Concrete Equipment

All concrete equipment used shall be of a type, capacity, and mechanical condition suitable for accomplishing all requirements of this work and all applicable local, state, and federal codes and regulations, both safety and otherwise. Equipment shall be maintained in first class operating condition at all times. Concrete equipment may include a mixer equipped with a mechanically operated paddle type agitator or equivalent. This may be accomplished by using a single or multiple batch bin system. A water meter shall be installed by the Contractor on water lines to permit accurate measurement of the quantity of water used in making the various mixes. The Contractor shall supply certificates of calibration for all gauges and meters used on this work. Water supply lines for mixing shall be routed for maximum protection and minimum traffic interruption. Facilities shall be provided by the Contractor to measure the proportion of aggregate, cement, sand, water and admixtures required in the design mix. In addition, the Contractor shall devise a system to accurately measure the volume of concrete delivered from the mixing plant or transportation vehicle per unit of time.

IX. Tests

For each 10 cubic yards of concrete or portion thereof placed, one sampling for compressive strength, consisting of a minimum of three cylinders shall be taken and paid for by the Contractor. Bagged concrete mix pre-approved by the project engineer is excluded from this requirement. All sample cylinders shall be taken at the same time: one cylinder to be used for a seven-day test and two for a 28-day test following standard lab curing. The Project Manager may require additional random samples, which will be done at EMNRD's expense.

An independent testing laboratory accepted by the Project Engineer shall make all tests of aggregates, cement, and concrete. Samples of concrete for specimens shall be taken at the mixer, or in the case of ready-mixed concrete, from the transportation vehicle during discharge in accordance with ASTM C172. Test cylinders shall be made and cured in accordance with ASTM C31. The test specimens shall be molded immediately after the sample is taken and then placed in a protected spot and kept under curing conditions similar to the conditions under which the concrete they represent is being cured. They shall be removed to the testing laboratory not sooner than six days after casting.

The testing of cylinders shall be in accordance with ASTM C39. A slump test shall be made of each 25 cubic yards or fraction thereof, of concrete placed, or at the direction of

the Project Manager. Slump tests shall be in accordance with ASTM C143 and shall be paid for by the Contractor.

03100 - CONCRETE FORMWORK

Concrete structures shall be cast in place with proper formwork. The Contractor shall be fully responsible for reinstallation of concrete structures should forming materials and methods fail to adequately support the concrete. All cast-in-place concrete structures shall meet the tolerances for formed surfaces specified in ACI 301.

03200 - CONCRETE REINFORCEMENT

03210 - REINFORCING STEEL

I. Bars

Reinforcing steel bars shall be new billet steel conforming to ASTM A615, Grade 60.

II. Placing Reinforcing Steel

Reinforcing steel, before being placed, shall be thoroughly cleaned of heavy rust, scale or other coatings that will destroy or reduce the bond. A slight coating of rust will not be considered objectionable. Reinforcement shall be carefully formed to the dimensions indicated. It shall not be bent or straightened in a manner that will injure the material, including heating by a torch. Bars with kinks or bends not shown shall not be used. Reinforcing steel shall be accurately placed and secured against displacement by using annealed iron wire of not less than No. 18 gauge or suitable clips. The reinforcing steel shall be supported using bar supports to support the steel the proper distance above the bottom of the footings.

03250 - CONCRETE ACCESSORIES

Bar supports shall meet the requirements of CRSI Class C, plastic protected, or Class E, stainless steel protected.

A survey marker supplied by the Project Manager shall be set in each exposed cast-in-place footing, cap, or structure. At the location indicated by the Project Manager, the survey marker shall be cast in the structure or grouted by drilling a hole and grouting the cap in place using a non-shrink grout such as Moly Parabond, Quikrete, or Pour Rock, or approved equal. Alternately the survey marker may be fixed in the concrete structure using epoxy grout. For caps that are backfilled, a pipe monument as specified in Section 02890 and as shown on the drawings.

03300 - CAST-IN-PLACE CONCRETE

03310 - INTEGRALLY COLORED CAST-IN-PLACE CONCRETE

The Contractor shall submit product data and manufacturer's instructions for pigments and curing compounds to be used at integrally colored cast-in-place concrete. With the submittal shall be included the pigment manufacturer's color chart for color selection by the Project Engineer, indicating pigment number and required dosage rate. Submittals are for general color selection and may vary somewhat from concrete finished in the field according to Specifications.

Delivery, storage and handling of pigments shall comply with manufacturer's instructions. Pigments shall be delivered to the job site or batch plant in original, unopened packaging and shall be stored in dry conditions.

Pigments shall comply with ASTM C979 and shall be Davis Colors manufactured by Davis Colors, or approved equivalent[1]. Dosage rate shall be based on the weight of Portland cement, fly ash, lime and other cementitious materials but not aggregate or sand, and shall not exceed 10 percent of the weight of the cementitious materials content. The pigments shall be mixed in accordance with manufacturer's instructions, until pigments are uniformly dispersed throughout the mixture and disintegrating bags, if used, have disintegrated.

Curing compound for colored concrete shall comply with ASTM C309 and be approved by the pigment manufacturer for use with colored concrete. Curing compound shall be "Color Seal II" tinted to match colored concrete and manufactured by Davis Colors, or approved equivalent[2].

Formwork for integrally colored concrete shall be as specified above.

Minor variations in the final appearance of colored concrete, which are similar to natural variations in color and appearance of unpigmented concrete, are acceptable.

All efflorescence shall be removed with mild detergent or milt acid cleaners formulated to remove efflorescence, following initial testing on a small area to ensure that the surface will not be etched or discolored. Appropriate skin and eye protection shall be used.

03370 - CONCRETE CURING

All concrete, regardless of temperature, weather, or season, shall be allowed to cure (kept moist) for a period of not less than seven days after the concrete is poured. Curing will not be required longer than 72 hours only if high-early-strength concrete (Type III) is used.

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The concrete in structures shall reach a minimum compressive strength of 3,000 psi before attachment of the steel structures or backfilling can occur, except for backfilling shallow edges of concrete caps. Backfill material shall be placed in maximum two-foot lifts and shall be placed in a manner which will prevent damage to the structures and which will allow these structures to assume the load from the fill gradually and uniformly. The material shall be compacted to a density of no less than what the backfill equipment is reasonably capable of obtaining to the satisfaction of the Project Manager.

Note that uneven curing of integrally colored concrete will lead to uneven color. Requirements for curing compounds used at colored concrete are specified above. Discolored concrete cured with plastic membrane sheets or non-approved compounds will be rejected. Concrete temperatures for colored concrete shall be maintained between 65 and 85°F for the first three days after placing.

03600 - GROUTS

This section specifies grouting as indicated on the drawings.

03610 - GROUT MATERIALS

Nonshrinking grout	L&M Construction Chemicals “Crystex” or “Premier” or “Duragrout”, Master Builders "Masterflow 713 Plus” or “Masterflow 928” or “Set Grout”, Euclid “Hi-Flow Grout” or “N-S Grout”, "Five Star Grout", or approved equivalent[1], meeting the requirements of ASTM C1107, Grade C
Water	Clean and free from deleterious substances

03620 - NONSHRINKING GROUT

Nonshrinking grout shall be furnished factory premixed so only water is added at the job site. Grout shall be mixed in a mechanical mixer. No more water shall be used than is necessary to produce a flowable grout. The grout shall meet strength requirements of f'_c = 5,000 psi.

Concrete foundations to receive nonshrinking grout shall be saturated with water for 24 hours prior to grouting.

Grout shall be placed in strict accordance with the directions of the manufacturer so all spaces and cavities are filled without voids. Forms shall be provided where structural

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components will not confine the grout. The grout shall be finished smooth in all locations where the edge of the grout will be exposed to view after it has reached its initial set.

Nonshrinking grout shall be protected against rapid loss of moisture by covering with wet rags or polyethylene sheets. After edge finishing is completed, the grout shall be wet cured for at least seven days.

03990 - SUBMITTALS

Each proposed concrete mix shall be submitted in accordance with the procedure set forth in Section 01340, which submittal shall include the following information:

1. Slump on which design is based;

2. Total gallons of water per cubic yard;

3. Brand, type, composition and quantity of cement;

4. Specific gravity, source and gradation of each aggregate;

5. Ratio of fine to total aggregate;

6. Surface dry weight of each aggregate per cubic yard;

7. Brand, type, ASTM designation, active chemical ingredients, and quantity of each admixture; and

8. Compressive strength base on seven-day and 28-day compression tests.

Other submittals shall be made as required by ACI 301.

The Contractor shall submit manufacturer's data or catalog information, including placing and finishing recommendations, for the grout materials, curing compounds and coloring pigment furnished. Submittals shall be made in accordance with the procedure set forth in Section 01340.

END OF DIVISION 3

DIVISION 5 - METALS

The following section specifies all items fabricated from metal shapes, plates, sheets, rods, bars, or castings, and all other wrought or cast metal items. Fabricated metal items that are detailed in the contract documents but not mentioned specifically herein shall be fabricated in accordance with the applicable requirements of this section.

05010 – METAL MATERIALS

All materials shall be new and undamaged and shall conform to pertinent ASTM or other industry standard specifications including the following:

STEEL

Shapes, Plates, and Bars (including concrete imbedded items other than reinforcing steel)	ASTM A588 or ASTM A242 (weathering)
Structural Tubing	ASTM A847 or ASTM A606, Type 4 (weathering)
Grating	A606, Type 4 (weathering) or AISI 304/316 (stainless steel)
Bolts and Nuts	ASTM F593 and F594, (stainless steel grade 18.8 or 316) or ASTM A325, Type 3 (weathering) and A563, grade C3 or DH3 (weathering)
Flat Washers	ANSI B27.2, of the same material as bolts and nuts

Bat closures shall be fabricated from high strength (F_y=50,000 psi), self-weathering, low alloy, atmospheric corrosion resistant steel as specified above.

05030 - METAL FINISHES

Specified hereunder are shop-applied coatings. It is the intent of these specifications to use atmospheric corrosion resistant structural steel, grating and appurtenances to the fullest extent practicable. This section specifies the required shop coatings for metal services where it is not practicable to use a corrosion resistant material.

05031- SHOP COATING

I. Materials

Unless otherwise authorized, shop applied prime coatings shall be:

Zinc-rich Urethane Primer Tnemec "90-97 Tneme-Zinc" or DuPont "Imron 62 ZF", or approved equal[1]

For repair of hot-dip galvanized surfaces and to rustproof welds, field applied coatings shall be:

Cold Galvanizing Compound Z.R.C. Cold Galvanizing Compound, or approved equal.[2]

II. Cleaning

Surfaces shall be dry and of a proper temperature when coated, and free of grease, oil, dirt, dust, grit, rust, loose mill scale, weld flux, slag, weld spatter, or other objectionable substances. Articles to be galvanized shall be pickled before galvanizing. All other ferrous metal surfaces shall be cleaned by high power wire brushing or blasting. Welds shall be scraped, chipped, and brushed as necessary to remove all weld spatter.

III. Galvanizing

All galvanizing shall be done after fabrication by the hot-dip process in conformity with requirements of ASTM A123, A153 and A385.

IV. Steel

Unless otherwise specified, all ungalvanized structural and miscellaneous steel shall be given an anticorrosion prime coat in the shop after fabrication. Steel surfaces shall be prime coated as soon as practicable after cleaning. All painting shall be done in a heated structure if the outside air temperature is below 50 degrees Fahrenheit. Steel shall not be moved or handled until the shop coat is dry and hard.

Plates, shapes, and bars of weathering steel shall not be shop or field primed or painted, except as noted.

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V. Aluminum

All surfaces of aluminum that will be in contact with concrete, mortar, or dissimilar metals shall be given a heavy coat of coal tar paint.

VI. Other Surfaces

No shop coating will be required for zinc-coated steel, stainless steel, or bronze surfaces.

VII. Film Thickness

The dry film thickness of the shop coating shall be at least 2.5 mils for the zinc-rich urethane primer.

05500 – METAL FABRICATIONS

Structural steel members shall be fabricated in accordance with drawings that are a part of the contract documents. The Contractor shall verify all dimensions prior to fabrication. All bolt holes shall be drilled.

Non-corrosion resistant structural steel members shall be cleaned, prepared, and shop primed, unless otherwise specified. Surfaces to be field welded or in contact with concrete shall not be primed.

05501 - FIELD ERECTION

Structural steel and miscellaneous metals shall be erected in accordance with drawings that are a part of the contract documents.

Structural steel and miscellaneous metal shall be stored on blocking so that no metal touches the ground and water cannot collect thereon. The material shall be protected against bending under its own weight or superimposed loads. Care shall be taken in handling steel and miscellaneous metals to avoid unsightly gouges and scrapes.

The Contractor shall make adequate provisions for all erection loads and for sufficient temporary bracing to maintain the structure safe, plumb and in true alignment until completion of erection and installation of necessary permanent bracing.

Before assembly, surfaces to be in contact with each other shall be thoroughly cleaned. All parts shall be assembled accurately as shown on the drawings. Light drifting will be permitted to draw parts together, but drifting to match unfair holes will not be permitted. Any enlargement of holes necessary to make connections in the field shall be done by reaming with twist drills. Enlarging holes by burning is absolutely prohibited.

After erection, all welds, abrasions, and surfaces not shop primed, except surfaces to be in contact with concrete, shall be primed, unless the steel is weathering steel. The primer shall be consistent with the shop prime coat.

Weathering steel shall be kept as clean and free as possible from mud, grease, oil, paint, concrete or mortar splatter, and other foreign substances to minimize on-the-job cleaning. Paint or crayon identification marks shall be made in locations not visible on the finished structure; otherwise, these marks must be removed from the visible surfaces during the final cleaning operation. Objectionable substances on weathering steel, especially on highly visible exterior surfaces and including mill scale on the surfaces visible from the mine opening, shall be removed by solvents, high-speed power brushing, scraping, sand or grit blast cleaning, or other suitable methods. Surfaces of welds shall be given special treatment by scraping and wire brushing as necessary to remove all slag and weld spatter. Tools that produce excessive roughness shall not be used.

Welders certified in accordance with AWS specifications for the intended work shall do all field welding. A copy of certifications shall be furnished to the Project Manager. All welding shall be consistent with the requirements of AWS D1.1, "Structural Welding Code," including adequate edge preparation and preheating and the selection of proper flux (when applicable).

For weathering steel, the use of properly dried, low-hydrogen electrodes and fluxes are specified by the AWS and shall be used. The capping runs of multi-run fillet and butt welds shall have strength, corrosion resistance, and weathered appearance similar to that of the base metal by use of appropriate alloy electrodes for the final two exposed top layers with the weld composition for weathering steel matching the base metal. Conventional electrodes may be used for the body of such welds. Conventional electrodes may also be used for butt welds with a single run each side and for single run fillet welds of up to $^{5}/_{16}$-inch leg length.

All joints shall be welded unless otherwise indicated. Weathering steel fabrications shall be welded to eliminate surfaces on which moisture accumulation can occur and joints shall be tight to so that moisture cannot enter between plies of material. All joints in weathering steel, including fillet welds, shall be continuously welded to avoid moisture and corrosion traps such as crevices.

An oxygen meter shall be used to test air before and during field erection and welding of metal fabrications or any other work inside mine openings. The oxygen meter shall be a National Mine Service (NMS) OX231 oxygen meter or equivalent. The oxygen meter shall continuously monitor oxygen levels and have an audible warning. If the oxygen level falls below 19 percent, all personnel shall withdraw from the working area in the mine until the oxygen content increases to safe levels.

Any remedy for increasing oxygen content of the working area or providing ventilation from the surface shall be determined in consultation with the Project Manager.

05530 – GRATING

Specified hereunder is all steel grating, including accessories.

05531 - FABRICATION

The Contractor shall verify all dimensions that affect grating prior to fabrication. Serrated grating shall be provided for all exterior applications and plain grating for all interior applications, unless otherwise noted on the drawings.

Unless otherwise noted on the drawings, grating shall be of the welded or pressure locked steel type with bearing bars at $1\frac{3}{16}$ inches on center and cross bars spaced at 4 inches on center. Bearing bars shall be at least $\frac{3}{16}$ inch thick. Bearing bar depth shall be 1¼ inches. Where noted, grating shall be full depth banded, and bands shall be $\frac{3}{16}$ inch thick. Bands shall be welded to first, last, and every fourth intermediate bar. All grating shall be fabricated from weathering, "Corten," steel or, if not available, stainless steel.

Cross bars and edge bars of adjacent grating panels shall align. Grating shall be fabricated to fit with no more than ¼-inch clearance between panels. All bearing bars shall be parallel. All grating shall be fabricated to lie flat with no tendency to rock. Poorly fitting or damaged grating will be rejected.

05532 - INSTALLATION

Metal grating units and accessories shall be installed in accordance with specifications, drawings that are a part of the contract documents and shop drawings reviewed by the Project Engineer.

Grating shall be positioned on supports and the final positions adjusted and accurately aligned before being permanently fastened by welding. Grating units shall be placed flat and square and secured to supports without warp or deflection or tendency to rock after installation. No more than ¼-inch clearance between panels will be permitted. The first, last, and every fourth bearing bar shall be welded to the supports with a $\frac{3}{16}$ -inch fillet weld ¾-inch long. All field welds and repairs to hot-dip galvanized surfaces shall be painted with a minimum of two coats of cold galvanizing compound. Slag shall be chipped or wire brushed and completely removed prior to paint application.

ASTM A36 steel frames bolted to or cast in concrete to support grating shall be hot-dipped galvanized in accordance with ASTM A123 after fabrication. Weathering steel frames shall not be galvanized but shall be cleaned as specified above for weathering steel.

05540 – EXPANDED METAL

The expanded metal shall have the following characteristics:

Base Material	ASTM F1267 (Stainless Steel, Grade 304 or 316)
Style	¾" - #16
Sheet Size:	
LWD	2'
SWD	12' or as required
Type	Standard or Raised (Flattened **NOT** Acceptable)
Quantity	As required
Pattern	Reverse
Edge Condition	Bonded Edges (Closed)

The expanded metal shall be attached to the culvert using stainless steel self-tapping screws and washers.

05990 – SUBMITTALS

Complete data, detailed drawings, and setting or erection drawings covering all structural and miscellaneous metal items, including bolts and nuts, shall be submitted in accordance with the procedure set forth in Section 01340.

END OF DIVISION 5

DIVISION 13 - SPECIAL CONSTRUCTION

The following sections describe the special construction to be performed under this contract.

13050 - POLYURETHANE FOAM CLOSURES

The following section describes the polyurethane foam (PUF) closures to be installed in the specified mine features. The work consists of installing a bottom form, installing PUF to specifications, backfilling over the PUF to the specified level, and, where required, installing corrugated steel riser pipes with steel grates and ventilation/drainage pipes.

The Contractor shall inform the Project Engineer and Project Manager of the times and places at which PUF is to be placed at least three working days in advance.

13051 - MATERIALS AND EQUIPMENT

Unless otherwise specified, polyurethane foam (PUF) shall have a minimum installed density of 1.85 pounds per cubic foot (p.c.f.). Machine-applied or poured-in-place PUF shall be equivalent to SWD Urethane Co. “SWD 425,” North Carolina Foam Inc. "NCFI-811," Foam Concepts Inc., "EFS Equipment-less Foam Sealant", Mine Seal, LLC, “PUF-Seal” or Urethane Contractors Supply and Consulting "SES III 2.0 Pour." Bagged PUF shall be equivalent to Foam Concepts Inc. "EFS Equipment-less Foam Sealant" or Mine Seal, LLC “PUF-Seal,”[1] or approved equal.

PUF characteristics shall conform to the following standards:

PUF CHARACTERISTIC	STANDARD	SPECIFICATION
Density	As specified	ASTM D1622
Closed Cell Content	>85%	ASTM D6226
Compressive Strength	25 psi minimum	ASTM D1621
Water Absorption	0.2 lbs./sq. ft. maximum	ASTM D2842
Exothermic Reaction Rate	Low	-
Fire Resistance	High	-

PUF used in mine closures shall not contain chlorinated fluorocarbons (CFC's) or hydro-chlorofluorocarbons (HCFC’s).

The proportioning unit shall be capable of attaining a minimum temperature of 125°F and shall be a Gusmer Model H-112 or equivalent[1]. For remote project locations, or with the

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approval of the Project Manager, smaller capacity proportioners will be acceptable. In this event the proportioner shall be the Gusmer FF or equivalent.

Minimum heated hose length from proportioner to gun shall be 80 feet. The hose shall maintain or increase component temperature from the proportioner. Longer heated hose lengths may be required depending upon the distance form the proportioning unit to the reclamation site. Approval of the Project Manager is required for the use of any length of unheated hose on a PUF closure.

The application gun shall be capable of mixing plural components in the proper ratio at the minimum acceptable output of four pounds per minute. The gun shall be a Gusmer AR mechanically self-cleaning design or equivalent. Application guns constructed by individuals or manufacturers not typically used in the PUF industry may be used if warranted by the PUF supplier or manufacturer.

For poured foam, separate component measuring and mixing containers shall be used. Each component shall be assigned a specific measuring container, each marked with a predetermined volume level corresponding to the required mix ratio. The components shall always be measured in the same quantities, the components added in a separate container, and thoroughly mixed using an appropriate mixing device. In all cases, measuring and mixing of poured PUF shall be done in strict accordance with manufacturer's recommendations, including maintenance of recommended temperatures of the components for mixing and placement. The Contractor shall supply a proper thermometer and use it to check each mixed batch.

The manufacturer shall package bagged foam with pre-measured amounts of each component.

Foam shall be used prior to the end of the manufacturer's designated shelf life.

Corrugated steel pipe used for access to or venting of the mine shall be as specified in Division 2. Unless otherwise indicated, corrugated steel pipe shall consist of 14 or 16 gauge galvanized steel pipe with helical or annular corrugations. The pipe shall be free of rust, gaps in seams, holes in the wall, and deformations that reduce the inside diameter by more than two inches.

13052 - MATERIAL SAFETY, HANDLING AND TRANSPORT

Materials shall be stored in accordance with the manufacturer's recommendations. All safety precautions outlined by the Polyurethane Division of the Society of Plastics Industries,

desired and is not intended to limit or restrict competition.

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NFPA, OSHA, EPA, and the manufacturer's Material Safety Data Sheets (MSDS) shall be observed. MSDS and technical data sheet shall be on-site and available at all times.

There shall be no welding, smoking, or open flames within 25 feet of PUF application. A minimum 15-pound, class ABC, fire extinguisher shall be on site during foam application.

Workers wearing organic respirator masks and safety glasses or goggles shall apply PUF. State or federal regulations requiring additional safety equipment shall supersede these requirements.

The Contractor shall follow all applicable state and local regulations for the transport and use of PUF and chemicals required for cleanup. The Contractor shall obtain any required permits for transportation. In the event of a component leak or spill, the Contractor shall notify the appropriate agencies and jurisdictions.

An oxygen meter shall be used to test air before and during installation of the bottom forms or any other work inside a mine opening. The oxygen meter shall be a National Mine Service (NMS) OX231 oxygen meter or equivalent. The oxygen meter shall continuously monitor oxygen levels and have an audible warning. If the oxygen level falls below 19 percent, all personnel shall withdraw from the working area in the mine until the oxygen content increases to safe levels.

Any remedy for increasing oxygen content of the working area or providing ventilation from the surface shall be determined in consultation with the Project Manager.

13055 - EXECUTION

Debris, dirt, and loose rock in the mine opening shall be cleared wherever PUF will be installed. Historic debris shall be placed neatly to the side of the completed opening. Trash shall be taken to permitted landfill or transfer station. No mine equipment such as skips or carts shall be embedded in PUF.

I. Formwork

The bottom form and cross members may consist of any commonly available building materials capable of sustaining an initial lift of two to four feet of PUF. Acceptable cross member materials include, but are not limited to, reinforcing steel, 2x4's, dowels, cardboard tubes, and fabric air-inflated plugs. Acceptable bottom form materials include, but are not limited to, plywood, cardboard, paneling, and carpeting. Any combination of the above materials will be acceptable. Alternate bottom forms shall be reviewed with the Project Manager prior to use.

The formwork shall be installed at that level specified in the closure drawings or as directed by the Project Engineer following uncovering by the Contractor of the existing conditions within the mine opening. Unless otherwise indicated, cross members may be placed at an angle no greater than 20 degrees from the horizontal as long as both ends are seated in competent rock. The bottom form shall be set over the cross members.

All bottom forms shall be completed prior to the application of any polyurethane foam. The Contractor shall provide the Project Manager with a list of installed depth to bottom forms for polyurethane foam closures. Any breach in the bottom form caused by rock fall or other reason shall be repaired prior to the arrival of PUF applicators at that site. The Contractor shall be responsible for the integrity of the bottom form and the loss of any polyurethane should it fail.

II. Ventilation/Drainage Pipe and Corrugated Steel Pipe

The ventilation/drainage pipe shall consist of a six-inch diameter Schedule 40 PVC or similar gauge HDPE pipe. The ventilation/drainage pipe shall be cut with a hacksaw across the circumference to create slits no longer than three inches and no less than ¼-inch wide at six-inch increments. Only the portions of the pipe exposed to common fill, granular fill, and lightweight aggregate fill shall be slit.

Four to twelve inches of the ventilation/drainage pipe shall extend above the finish grade, except where otherwise indicated. The six-inch PVC or HDPE pipe shall be encased in an eight-inch steel sleeve in the portion exposed above grade and for two feet below grade, except where otherwise indicated. The annular area shall be filled with concrete or grout.

The ventilation/drainage pipe and corrugated steel pipe for access shall be placed over a portion of the bottom form unobstructed by cross members. In shafts with more than one compartment, the access pipe shall be placed in one of the outside compartments, or as directed by the Project Manager. Both pipes shall be open to the underlying mine void after installation of the foam and shall be supported by a tripod or other load-bearing device such that the load is not placed on the bottom form. Any welding that takes place above the PUF closure shall take place prior to placement of PUF in the mine opening or after installation of the backfill. Under no circumstances shall welding take place over exposed PUF.

The slits made for drainage in the ventilation/drainage pipe shall be covered with visqueen or polyethylene tape during foam application. After application of PUF the visqueen or tape shall be removed exposing the slits. Any foam covering the slits shall be removed to allow an unobstructed flow of water into the pipe.

The corrugated steel pipe shall have PUF covering the outside of the pipe at least two inches thick in the common fill section of the PUF plug. Polyurethane foam may be draped or splashed against the culvert during foam installation to achieve this coverage.

Steel strap with a width greater than two inches shall be welded to the steel sleeve across the opening of the ventilation/drainage pipe in such a manner as to prevent rocks with a dimension greater than two inches from being dropped down the pipe. As an alternative, steel grating as specified in Division 5 may be cut to fit the opening across the ventilation/drainage pipe and welded in place.

III. Polyurethane Foam (PUF)

The depth of polyurethane foam installed to plug a shaft or stope opening shall be as specified or indicated in the contract documents or as directed by the Project Engineer.

In large pours, PUF can get hot enough to actually melt and even burn. This may leave a hollowed out plug or "eggshell" that has very little strength. The remaining foam will be cracked and discolored, very similar to severe UV damage.

Polyurethane foam shall be installed in lifts with a maximum rise of 18 inches. The lifts shall be installed no sooner than 20 minutes apart (and no sooner than 30 minutes apart for ambient air temperatures above 84°F) and have a maximum lift height of three vertical feet per hour. Installed PUF lifts shall pass through the tack free stage before applying the next lift. At no time shall sprayed or poured PUF cut into the rising foam. The PUF shall be applied in such a manner that the entire void is filled, that shadow zones or voids are not created during PUF application, and that temperatures are not raised to unsafe levels.

The Project Manager may use an infrared non-contact thermometer to monitor exothermic generation. If the ambient air temperature is below 60F, extra time will be required to allow the PUF to fully expand and may prevent each lift from reaching a full height of 18 inches. Every degree of ambient air temperature over 65°F adds at least two degrees to the temperature of the rising foam. Ambient air temperatures above 90˚F can cause problems with PUF formation. PUF application shall cease if heating or off-ratio foam is observed. The Contractor shall remedy off-ratio foam and demonstrate proper quality PUF to the Project Manager before application resumes. The surface temperature should reach a plateau and start to drop before resuming foam installation. If using bulk foam, reduce the quantity per bucket as the day heats up.

Bagged or poured-in-place polyurethane foam shall be placed in strict accordance with the manufacturer's recommendations, including the need for thorough mixing of components. If required by the Project Engineer, the manufacturer of bagged or poured-in-place polyurethane foam shall provide a certified representative experienced in the placement of their product for a minimum of one eight-hour day. This representative will direct field operations and instruct the Contractor in the proper mixing, placement, and safety procedures for bagged or poured-in-place PUF.

The surfaces of the void to be filled shall be as free as possible of grease and standing water. PUF shall not be applied to surfaces with running water. Remedial action for such situations shall be reviewed with the Project Manager. Polyurethane foam shall not be applied directly to a debris plug, but shall be applied to a bottom form of known physical and chemical properties. PUF shall not be applied during rain unless the foam is fully protected from interaction with water by a physical barrier.

If off-ratio PUF is observed, the applicator must stop, correct the imbalance, and continue application with the proper ratio PUF. Correction and determination of the foam ratio shall be done on a plastic sheet away from the work area. Any lift of off-ratio PUF comprising over two percent of the intended PUF column heights shall be removed. An amount of off-ratio PUF less than two percent of the specified volume may remain if allowed to cool and if the outer perimeter of off-ratio PUF is removed. If off-ratio foam comprises more than 10 % of the specified PUF volume, five percent of the price bid for the site will be deducted as a penalty.

The Contractor shall be responsible for lost or damaged equipment. Damages or claims arising from PUF overspray shall be the responsibility of the Contractor. Under no circumstances shall foreign material be placed in the PUF material unless specifically specified or authorized by the Project Manager. Non-PUF materials shall be non-toxic and non-hazardous and shall not compromise the strength or water saturation characteristics of the PUF.

Upon reaching the specified grade level for application of PUF, the Contractor shall undertake cleanup of PUF operations.

IV. Field Quality Control

The Project Manager will make periodic checks of the quality of PUF applied. The principal check on quality will be visual. Acceptable PUF shall be tan-white to buff in color with no vesicles and a smooth to coarse orange peel surface. Any one of the following conditions shall cause PUF application to cease and efforts to correct the off-ratio condition begun.

Condition	Possible Cause
Dark PUF color	Excess A Component
Smooth and Glassy	
Friable or Brittle PUF	
Improper Density	
Light in Color to White	Excess B Component
Bad Cell Structure	
Mottled Appearance	
Blowholes or Pinholes	

Condition	Possible Cause
Slow Rise	Bad Material
Poor Cell Structure	
Frequent Equipment Clogging	
Slow Curing	
Poor Physical Properties	
Air Bubbles on Surface	Pouring Too Fast Between Lifts
Tension Cracks on Surface	
Excessive Air Bubbles	

At any time during PUF application the Project Manager may call for a density test. The Contractor shall provide and fill a container for this purpose and the sample will be tested for density. The density of the sample shall be within the range of 1.85 to 3.00 pounds per cubic foot. Density tests indicating that PUF installed is not within the minimum specified range shall cause corrective action resulting in PUF within the acceptable nominal range, less deviation due to barometric pressure changes from Standard Temperature and Pressure.

The Contractor shall conduct density tests of PUF at no additional expense to EMNRD. At the discretion of the Project Manager, density tests showing PUF in the acceptable range will be taken in the center of the cavity to which PUF is being applied. A sampling box constructed of sheet aluminum and lined with polyethylene shall be lowered into the cavity to take a representative sample of PUF just above the level of installed polyurethane.

At the option of the Project Manager, up to three one-cubic-foot samples of PUF may be taken from the job site for density analysis at the Contractor's expense. In addition, at the option of the Project Manager, up to three samples of up to 100 cubic inches in volume may be taken for on-site tensile strength testing at the Contractor's expense. PUF shall be provided for the samples at no additional cost to EMNRD.

V. Backfilling

To protect the PUF from vandalism if the site is to be left unattended, two to six inches of fill shall be uniformly shoveled over the foam as soon as possible after the last layer of PUF has solidified. No sooner than 96 hours after PUF application, the remaining void above the PUF plug shall be backfilled. The first two-foot lift of fill shall be placed by hand, bucket, or chute to lower the velocity of impact against the PUF. With approval of the Project Manager, this fill may be placed by streaming from heavy equipment such as a loader bucket. The depths and types of fill over the PUF shall be as indicated or specified in the contract documents or as directed by the Project Manager. Unless otherwise indicated, the minimum cover shall be 24 inches of common fill.

Unless otherwise specified or directed by the Project Manager, common fill above polyurethane foam closures shall be nearby cohesionless mine waste material or other nearby cohesionless material with no pieces larger than six inches in diameter, free of debris or trash, and containing no materials classified as toxic or hazardous.

Fill above the polyurethane foam closures shall be placed in a manner that will prevent damage to the polyurethane foam plug and riser pipes and will allow these structures to assume the load from the fill gradually and uniformly.

The use of riding vibratory compaction equipment shall be prohibited above polyurethane foam closures and vibrations due to other construction equipment operations shall be kept to a minimum in these areas. With care and for the minimum acceptable period of time, small walk-behind compaction equipment, such as rammer tampers, may be used in these areas.

VI. Survey Caps

As described in Division 2, a steel pipe with grouted survey cap shall be installed near the ventilation/drainage pipe. Where the PUF/interface is less than five feet below finish grade, the pipe shall be set in a concrete footing, which shall be at least one foot in diameter and extend from the PUF/fill interface to a height of two feet. The upper six inches to one foot of pipe shall extend above grade. Where the PUF/fill interface is more than five feet below the finish grade, a six-foot long pipe shall be used. The lower two feet of pipe shall be set in concrete a minimum of one foot in diameter and the upper six inches to one foot of pipe shall extend above grade.

Alternately, the Contractor may drill and grout the cap in undisturbed, competent rock or concrete at or immediately adjacent to the feature.

VII. Cleanup

The Contractor shall clean the site of all PUF fragments and overspray. PUF overspray greater than ⅛-inch thick on timbers or historic materials shall be scraped or ablated to ⅛ inch minus to permit ultraviolet degradation of oversprayed polyurethane. Tools and equipment shall be cleaned in such a manner as to avoid injury to vegetation or wildlife. Handling of chemicals used in cleanup shall comply with all applicable local, State and Federal regulations.

13130 - PRE-ENGINEERED STRUCTURES

The following section describes the high strength steel mesh to be installed over specified mine features.

13137 – HIGH-STRENGTH STEEL MESH

I. General

The work consists of furnishing, transporting and constructing high-strength steel mesh closures over mine openings in accordance with the contract documents and the manufacturer's standards and requirements. The mesh shall be installed at the locations shown on the plans as directed by the Project Manager or Project Engineer.

Rock anchors shall be installed at the closure location in sufficient numbers to insure that unauthorized visitors cannot circumvent the mesh to gain entrance to the mine. Rock anchor spacing shall not exceed twelve feet between adjacent anchors, unless otherwise directed by the Project Engineer.

II. Materials

In order for the Contractor to identify the components easily to minimize installation time, the manufacturer shall properly mark all materials.

A. Mesh

The mesh shall be woven construction and shall be diamond shaped. The mesh shall be made with 4-millimeter diameter wire and the ends of each wire formed into a loop and twisted. The loops of the wire mesh shall be fastened together to prevent unraveling of the mesh. The wire shall be alloyed high-strength carbon steel wire with a tensile strength greater than or equal to 1,770 N/mm^2.

The wire shall be galvanized with a zinc/aluminum coating with a minimum weight of $150g/m^2$. The coating shall be 95% zinc and 5% aluminum.

The size of the mesh opening shall be 103 millimeters by 180 millimeter (+/-2%) and the depth of the mesh shall be 16 millimeters (+/-1 millimeter). The mesh shall have 5.6 meshes per meter across the mesh and 9.7 meshes per meter down the mesh. The mesh opening shall have an inside circular diameter (incircle diameter of mesh) of 80 millimeters.

High tensile strength steel mesh shall be "Tecco" by Geobrugg (www.geobrugg.com, 505.438.6161) or approved equal[1].

B. Compression Claws

Compression claws shall be 6-millimeter diameter carbon steel bar and hot dipped galvanized to a minimum layer thickness of 85 microns.

C. Spike Plates

The plate shall be made from 10-millimeter thick steel plate and be hot dipped galvanized to a minimum layer thickness of 85 microns. The plate shall be diamond shaped with a width of 190 millimeters and a length of 330 millimeters.

D. Rock and Soil Anchors

The Contractor shall acquire complete installation instructions from the manufacturer for all rock and soil anchors. The Contractor shall be responsible for the proper installation of all rock and soil anchors. If guidance from the manufacturer is different than the specifications given in this manual, the Project Engineer shall be contacted for pre-approval before any actions are taken by the Contractor.

E. Mechanical Rock Anchors

Anchors installed directly into competent rock, as determined by the Project Engineer, shall be 1" diameter R1H Hollow-Core Spin-Lock Rock Bolts by Williams Form Engineering, Inc. or an approved equal[2]. The anchor depth into the rock shall be a minimum of 30 inches. The Contractor shall have the option to use this type of anchor at waste pile locations if competent rock is located under a waste pile and/or overburden greater than three feet in depth and the rock anchor is secured at least 14 inches into the rock. Total rock anchor length shall not be less than 36 inches.

F. Grout Bonded Rock and Soil Anchors

Anchors installed in any substratum that is not competent rock shall be grout-bonded anchors with spherical nuts and grade 75 ksi all-threaded bars, by Williams Form Engineering, Inc. or approved equal[3]. Bars shall meet the requirements of ASTM A615 and have a nominal

[1] Use of brand names is for the purpose of describing the standard of quality, performance and characteristics desired and is not intended to limit or restrict competition.
[2] Use of brand names is for the purpose of describing the standard of quality, performance and characteristics desired and is not intended to limit or restrict competition.
[3] Use of brand names is for the purpose of describing the standard of quality, performance and characteristics desired and is not intended to limit or restrict competition.

thread diameter of one inch (bar designation #8). Fasteners shall be epoxy coated galvanized in accordance with ASTM A153 to a thickness between 30 and 40 mils. Bars shall be rated for Multiple Corrosion Protection I (MCP I) and shall be epoxy coated with a sleeve over the bar in the free-stressing zone and grout fill inside the sleeve after tensioning to lock in the pre-stress. The embedment depth for grout bonded anchors shall be at least five feet.

The anchor deformation pattern shall comply with ASTM A615. Drill hole and rock anchor installation and grouting procedures shall be as recommended by the manufacturer. All units shall be centered in the drill hole grout with centralizers to assure a grout cover of approximately one inch around the bar.

Epoxy coated bars and fasteners shall be done in accordance with ASTM A775. Prior to installation of each anchor, the Contractor shall repair any scratches and other coating defects on the epoxy-coated bars using an epoxy field patch kit provided by the anchor manufacturer. In addition, the end hardware for epoxy-coated bars, including plates and nuts, shall be field coated with the manufacturer-supplied epoxy. The anchor head shall be galvanized or otherwise treated for corrosion protection according to the recommendations of the anchor manufacturer.

The Contractor shall pump cementitious grout (conforming to ASTM C845, Williams "Wil-X-Cement" grout, or approved equal[1]) to completely fill the annular space between the bar and the drill hole wall.

G. Miscellaneous Materials

The vendor of the wire mesh system shall supply all miscellaneous materials associated with the system. All miscellaneous material associated with the wire mesh system such as clips, thimbles, etc., shall be hot dipped galvanized.

III. System Installation

The Contractor shall dress the slope, removing all brush, debris and loose rock in accordance with the contract documents.

The Contractor shall locate the anchors on the slope as shown on the contract drawings. The anchors shall be installed in accordance with the anchor manufacturer's instructions.

The Contractor shall install the anchors in depressions and low points in order to pull the mesh into them and against the ground, and as indicated on the contract drawings. Alternately, the mesh may be laid on the slope first, followed by anchor installation, depending on site conditions.

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After the anchors are installed, set and load tested, the Contractor shall form hollows of four to twelve inches deep at each anchor if placed on waste piles.

The mesh shall be laid on the slope by unrolling down the slope. The rolls can be shortened or lengthened as necessary by removing or adding sections, respectively. The mesh panels shall be overlapped by minimum of one mesh. The overlapped mesh panels shall be fastened with compression claws with two at each mesh. The compression claws are installed with one claw directly above the loop and one directly below the loop.

At obstructions that cannot be moved and will obstruct proper mesh installation, the mesh shall be cut and the mesh pieces bent back and secured in place with aluminum clamps.

The spike plates shall be placed onto the anchors. Using a hydraulic wrench, the nuts shall be tightened and the spike plates and mesh pushed into the hollows in order to tension the mesh between 1,125 and 4,500 pounds (5kN and 20kN). The nuts shall be torqued to an anchor pre-stress force of 1,675 pounds (7.5kN) and a tightening torque of 125 foot-pounds (0.17 kN*m).

IV. Field Installation Supervision

The manufacturer shall include at no extra cost to EMNRD one day of eight hours installation supervision by a qualified field engineer. Travel and living expenses shall be borne by the manufacturer. All costs for the field supervision shall be included in the unit bid price.

13140 – TOROID TIRE PLUGS

This section describes the toroid tire plug closures to be installed at specified mine features. At each site, the work consists of wedging large, used tires into the mine opening, covering these with fill, placing a tire mat over this fill then placing a geogrid mesh on top of the tire mat and a geotextile cloth on top of the mesh, finished by three feet of backfill material. For photos of this process, please use the following web address: http://members.shaw.ca/nta/nltribe/.

I. Materials

A. Used Tires

For each feature to be safeguarded using toroid tire plugs, an estimated number and size of used tires needed is found on the construction drawings. The Contractor shall be responsible for obtaining and transporting the necessary tires. For transport, the Contractor shall either hire a registered scrap tire hauler or register as a scrap tire hauler per the Recycling and Illegal Dumping Act (NMSA 1978, 74-13-1, et seq.). EMNRD will provide the required used tire disposal permit and associated fees per the Recycling and Illegal Dumping Act. Contractor shall follow all permit requirements.

The tires used to plug the openings shall be variously sized, used or spent large-scale earth moving and construction equipment tires. Tires shall be free of contaminants such as oil, grease, gasoline, diesel fuel, etc., that could create a fire hazard. A supply of used or spent highway truck tires shall form the toroid mat. Tires may be worn, but shall be complete or nearly complete units that will perform the desired engineering functions. Project Engineer or Project Manager has the right to reject any tires deemed unsatisfactory.

B. Geogrid and Geotextile Nonwoven Cloth

The geotextile placed on top of the toroid mat shall be a biaxial geogrid and a geotextile nonwoven cloth.

Biaxial geogrid is composed of high molecular weight, high tenacity multifilament polyester yarns that are woven into a stable network placed under tension. The high strength polyester yarns are coated with a polymer coating. Geogrids are inert to biological degradation and are resistant to naturally encountered chemicals, alkalis and acids. Biaxial geogrid shall meet or exceed all material properties listed in Table III below.

Table III – Minimum Average Roll Values (MARV) Required for Biaxial Geogrid

REINFORCEMENT PROPERTIES		**TEST METHOD**	**MARV VALUES** Lbs/ft	kN/m
Ultimate Strength	MD XMD	ASTM 6637	2,388 3,870	34.9 56.5
Initial Modulus	MD XMD	ASTM 6637	178,000 172,900	2,598 2,524
Load at 2% Strain	MD XMD	ASTM 6637	526 578	7.7 8.4
2% Secant Moduli	MD XMD	ASTM 6637	26,300 28,900	383.6 421.5
Load at 5% Strain	MD XMD	ASTM 6637	792 1,042	11.5 15.2
5% Secant Moduli	MD XMD	ASTM 6637	15,840 20.840	231 304
True in place strength after site damage testing based on TRI method of "installation" damage testing with poorly graded gravel (GP) and well groomed gravel (SW).				
Load at 2% Strain	MD (GP) MD (SW)	ASTM 6637 & ASTM 5818	401 490	5.9 6.6
Load at 2% Strain	XMD (GP) XMD (SW)	ASTM 6637 & ASTM 5818	521 570	7.6 8.3
Load at 5% Strain	MD (GP) MD (SW)	ASTM 6637 & ASTM 5818	795 972	11.6 14.1
REINFORCEMENT PROPERTIES		**TEST METHOD**	**MARV VALUES** Lbs/ft	kN/m
Load at 5 % Strain	XMD (GP) XMD (SW)	ASTM 6637 & ASTM 5818	715 781	10.4 11.4

Coefficient of Pullout Interaction		ASTM 6706 Sandy Gravel Sand	 C_i = 1.0 C_i = 1.0
Aperture Size		Measured	MD 1.0 in. XMD 1.0 in.

a. The nonwoven needle punched geotextile cloth specified herein shall be made from polypropylene staple fiber.

b. The geotextile shall be manufactured from prime quality virgin polymer.

c. The geotextile shall be able to withstand direct exposure to ultraviolet radiation from Sun for up to 30 days without any noticeable effect on index or performance properties.

d. Geotextile shall meet or exceed all material properties listed in Table IV below.

Table IV – Minimum Average Roll Values (MARV) Required for Nonwoven Needlepunched Geotextiles

FABRIC PROPERTY	**TEST METHOD**	**UNITS**	**MARV**
Weight	ASTM 0-3776	oz/yd^2	*12.0 (407g/*m^2)
Grab Tensile Strength	ASTM 0-4632	lbs	300 (1.33kN)
Grab Elongation	ASTM 0-4632	%	50
Trapezoidal Tear	ASTM 0-4533	lbs	115 (0.511kN)
Puncture Strength	ASTM 0-4833	lbs	180 (0.80kN)
Mullen Burst	ASTM 0-3786	psi	600 (4134kPa)
Permittivity	ASTM 0-4491	sec^{-1}	1.0
Water Flow Rate	ASTM 0-4491	gpm/ft^2	75 (3055 l/*min/m*^{2}*)*
AOS	ASTM 0-4751	US Sieve	100 (0.150mm)
UV Resistance (Retained, 500 hrs.)	ASTM 0-4355	% Strength	70
Note: Values are MARV, reported in weaker principle direction; "MARV" indicates minimum average roll value calculated as the typical minus two standard deviations. Statistically, it yields a 97.7% degree of confidence that any sample taken during quality assurance testing will exceed the value reported.			

Other material may be acceptable, following review by the Project Engineer. Any substitution shall have equal quality of construction, similar materials, and the same performance characteristics as that specified. If the Project Engineer accepts the proposed substitution, the Contractor shall accept the unqualified responsibility for the performance of the substituted item. Changes or modifications of construction caused by the substitution shall be the responsibility of the Contractor and shall be at their sole expense.

II. Execution

A. Preparation

Timbers, debris, sloughed rock and soil, and other material as required shall be removed from the mine opening to the point where the opening is defined and adequately shaped for installation of the tire plug. Topsoil (as indicated by the growth of vegetation and as directed by the Project Manager) shall be pulled back and stockpiled for later use.

B. Tire Plugs

The tire plugs shall provide dynamic, expandable, flexible plugs that expand to fill the mine openings. A variety of tire sizes will be needed as mine openings come in various shapes and dimensions. The arrangement of tire placement may be, and likely will be, varied from that indicated on the drawings to fit site conditions and tire availability, as long as the functionality of the plug is not compromised. Where bat access is required at a mine opening, the tire plug shall be positioned first and then the corrugated steel pipe with a PUF plug shall be placed as indicated.

The Contractor shall adapt the use of the recycled tires to the shape and size of the mine opening. As indicated on the drawings, many of the openings can be successfully plugged by arranging the tires in a stack of four to six tires, tied together with galvanized 5/16th inch steel cable. Elsewhere individual tires can be used, placed vertically adjacent to each other. The tires shall be compressed by an excavator, wedged into the hole, and the compressed stack allowed to expand to fill the hole.

As directed by the Project Manager and as indicated on the drawings, polyurethane foam may be used to fill gaps between the tire plug and corrugated steel pipe installed for bat access. Authorized use of polyurethane foam at tire plugs will be paid for at the unit price per cubic yard bid therefor in the Bid Form.

A layer of mineral soil, non-organic fill material shall be placed above the completed plug to create a platform. With the throat of the mine opening now stabilized, an area around the opening shall be cleared to allow room for the mat. Except as otherwise indicated, this cleared area shall be larger than the opening by about half again. As this larger area is cleared, additional topsoil shall be removed and added to the topsoil stockpile for later use.

Experience has shown that a Caterpillar 325 tracked excavator (or equivalent) with thumb is required to handle, compress and place the toroid tire plugs. The Contractor shall provide the equipment; supplies, small tools and personnel necessary to complete the toroid tire plug closures.

C. Tire Mat, Mesh and Cloth

The next layer placed is referred to as the tire mat. This mat shall be made up of a number of highway truck tires linked together by joining adjacent tires with a clamped or swaged loop of galvanized 5/16th inch steel cable. The mat shall be sufficiently large to cover the area of the mine opening and a minimum of three feet over stable rock on all sides and as indicated on the drawings.

Immediately over the tire mat, the Contractor shall place the specified geogrid mesh so that it completely covers the tire mat. Directly above the geotextile mesh the Contractor shall place a layer of geotextile cloth that completely covers the mesh.

D. Backfilling, Recontouring and Reseeding

The next layer shall be composed of gravel, broken rock, or nearby or imported acceptable material applied to a depth of at least three feet over the entire mat area. The contour of the final reclamation shall be established with drainage leading surface water away from the safeguarded mine opening and diverting any flow of water which may be directed toward the opening or as indicated on the drawings. The final layer shall be the topsoil that was salvaged earlier. The final step is revegetation as described under Section 02900, Landscaping. A survey cap as specified shall be placed at each toroid tire plug.

13990 - SUBMITTALS

Complete data covering polyurethane foam, geogrid mesh, geotextile cloth and accessories shall be submitted in accordance with the procedure set forth in Section 01340.

In addition, the Contractor shall provide the Project Engineer with a copy of the state registration for the scrap tire hauler.

END OF DIVISION 13