



**NEW MEXICO**  
***Abandoned Mine Land Program***

Project Manual  
Including Plans and Specifications  
for Construction of

SAN PEDRO MINE SAFEGUARD PROJECT – PHASE III

Santa Fe County, New Mexico

PROJECT NO.  
EMNRD-MMD-2020-04

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)

SEPTEMBER 2020



**00002 – CERTIFICATION PAGE**

PROJECT NAME: San Pedro Mine Safeguard Project – Phase III

LOCATION: Santa Fe County, New Mexico

PROJECT NUMBER: EMNRD-MMD-2020-04

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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.



Meghan J. McDonald, P.E. (Project Engineer)

21690

License No.

A handwritten signature in blue ink, appearing to read "Jay Lee".

Authorized Representative/Title  
Director - Energy, Minerals and  
Natural Resources Department

9/28/2020

Date

**Michelle Lujan Grisham, Governor**

**All questions about the meaning or intent of these documents shall be submitted only to the General Services Department, State Purchasing Division Procurement Specialist, in writing. Refer to Section 00120 - Supplementary Instructions to Bidders as to interpretations.**

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**00004 – LIST OF FIGURES, STATUTES, AND TABLES**

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The following sections list the figures, statutes, and tables that are referenced in the Specifications and are incorporated herein by reference as if set out in their entirety.

**I. FIGURES**

The following figures may be found as an attachment:

Figure 1:	Title Sheet
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**II. STATUTES**

The following statutes may be referenced in the text:

NMSA 1978, §§ 13-1-28 through 199:	Procurement Code
NMSA 1978, §§ 13-4-1 through 30:	Public Works Contracts
NMSA 1978, §§ 13-4-31 through 43:	Subcontractors Fair Practices Act
NMSA 1978, §§ 41-4-1 through 2:	Tort Claims Act
NMSA 1978, §§ 52-1-1 through 70:	Workers' Compensation Act
NMSA 1978, §§ 69-25B-1 through 12:	Abandoned Mine Reclamation Act
NMSA 1978, §§ 74-13-1, <i>et seq.</i> :	Recycling and Illegal Dumping Act
NMSA 1978, §§ 76-10-11 through 22:	New Mexico Seed Law

**III. TABLES**

The following tables are referenced in the text:

Table I:	Project Summary Table
Table II:	Seed Mix Table



**00100 – INSTRUCTIONS TO BIDDERS**

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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 SMCRA pay to the Secretary of the Interior Department, for deposit in the fund, a reclamation fee of thirty one and a half (31.5) cents per ton of coal produced by surface coal mining and thirteen and a half (13.5) cents per ton 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 AML Program within New Mexico pursuant to a state approved plan and the requirements of the New Mexico Abandoned Mine Reclamation Act, NMSA 1978, § 69-25 B-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. EMNRD, MMD, and Owner may be collectively referred to as “EMNRD.”

MMD has obtained one hundred percent (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.

**Please see the Invitation to Bid Form for additional details.**

The Contract Time for project completion shall be no later than two hundred forty (240) calendar days, including all Sundays, holidays, and non-work days, after the Contractor receives a Notice to Proceed via USPS 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 SPD Director has made a finding which concurs in that confidentiality shall be withheld from public inspection.

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**00120 – SUPPLEMENTARY INSTRUCTIONS TO BIDDERS**

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The following shall be included with each responsive bid on the Bid Form:

I. Information

Fully completed Vendor Information, including the name, address, telephone number, Taxpayer Identification Numbers, New Mexico Contractor's License Number, Contractor and Subcontractor New Mexico Labor Enforcement Fund Registration Numbers for bids and subcontracts greater than sixty thousand dollars (\$60,000.00), 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. 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 the Bid Form), Cashier's Check, Certified Check, or Money Order in the amount of at least five percent (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. See Bid Form. Do not leave blanks. The Bidder must have a minimum of five (5) years of related construction experience to qualify.

V. Supplements

A complete listing of all subcontractors (to be listed on the Bid Form), 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 (to be listed on the Bid Form) 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 State of New Mexico Purchasing Division 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 ensure 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, qualified Bidder. If for any reason the apparent low Bidder does not meet all the evaluation criteria listed below or comply with all 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 include:**

1. Possession of a valid New Mexico Contractor License appropriate for the work;
2. Proof of registration with Labor Relations Division of the New Mexico Department of Workforce Solutions for contractor and all subcontractors when Bidder submits a bid valued at more than sixty thousand dollars (\$60,000.00); and
3. Proven records of satisfactory work performance for both Bidder and listed subcontractors.

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 State Purchasing Division Procurement Specialist. 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 less than seven (7) business days 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 effect. Bidders or the Contractor shall promptly notify the Project Engineer of any ambiguity, inconsistency, or error which they may perceive upon examination of the Bidding Documents or of the site and local conditions.

***Note: Because this project is one hundred percent (100%) federally funded, neither the New Mexico Resident Contractor's Preference nor the New Mexico Resident Veterans preference, apply to this procurement.***

#### VI. New Mexico Employees Health Insurance

- A. If Bidder has, or grows to, six (6) or more employees who work, or who are expected to work, an average of at least twenty (20) hours per week over a six (6) month period during the term of any Agreement which may result from this ITB, Bidder agrees, by submitting a bid, to have in place, and agree to maintain for the Agreement's term, health insurance for those employees and offer that health insurance to those employees if the expected annual value in the aggregate of any and all contracts between Bidder and the state exceed two hundred fifty thousand dollars (\$250,000).
- B. Bidder agrees to maintain a record of the number of employees who have:
- 1) accepted health insurance;
  - 2) declined health insurance due to other health insurance coverage already in place; or
  - 3) declined health insurance for other reasons.

These records are subject to review and audit by a representative of the state.

- C. Bidder agrees to advise all employees of the availability of state publicly-financed health care coverage programs.

#### VI. 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.

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**00125 – BID ASSURANCES**

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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 the State of New Mexico. EMNRD may waive, in its sole discretion, technical irregularities 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 responsible, qualified bids from which EMNRD is not able 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 Field Office.

II. Confidentiality

It is further understood that all bids shall become a part of the official file on this matter without obligation of 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, § 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 inspect 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 ten (10) business 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.

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### **00130 – MANDATORY PRE-BID CONFERENCE**

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Prospective Bidders are required to attend the pre-bid conference, in order to familiarize themselves with the site where the work is to be conducted the existing conditions that may affect the performance of the contract work. Subcontractors and suppliers are not required to attend the pre-bid conference; however, failure to participate in the virtual pre-bid meeting will not relieve subcontractors and suppliers from the responsibility of properly estimating the difficulty and cost of performing their portion of the work.

Due to the State of New Mexico's efforts to prevent further exposure/spread of the Coronavirus Disease 2019 (Covid-19) and to continue to practice social distancing, the AML Program will be holding a virtual mandatory pre-bid meeting via Zoom, a web-based video conferencing tool. Please see the Invitation to Bid form for details regarding the meeting.

AML representatives will present the work site conditions and the scope of work during the virtual meeting. Potential Offerors must submit questions in writing to be considered binding to Mark Lujan ([Mark.Lujan@state.nm.us](mailto:Mark.Lujan@state.nm.us)). See the Invitation to Bid for date, location, and time. Those wishing to attend are advised to be prompt.

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

**ATTACHMENT CHECKLIST**

**The following forms and attachments shall be submitted with your bid  
(forms located in the Bid Form document):**

- A. \_\_\_ Bidder Information
- B. \_\_\_ Schedule of Values
- C. \_\_\_ Experience Summary
- D. \_\_\_ References List
- E. \_\_\_ Equipment List
- F. \_\_\_ Bid Security Bond Form with Agent's Affidavit
- G. \_\_\_ Subcontractor & Department of Workforce Solutions, Industrial & Labor  
Division Listing Requirements
- H. \_\_\_ List of Subcontractors
- I. \_\_\_ DOI OSMRE Certification Regarding Debarment, Suspension and Other  
Responsibility Matters, Drug-Free Workplace Requirements and Lobbying
- J. \_\_\_ DOI OSMRE Applicant/Violator System Information Form

**The following forms and attachments are due at time of award  
(forms located in this project manual):**

- K. \_\_\_ Certificate of Insurance with Agency named as additional insured (all  
subcontractors also insured)
- L. \_\_\_ Performance Bond and Labor & Material Payment Bond
- M. \_\_\_ Wage Rate Determination if bid amount is sixty thousand dollars (\$60,000.00)  
or more issued by NM Dept. of Workforce Solutions

**The following forms shall be submitted after award  
(form located in this project manual):**

- N. \_\_\_ Application for Payment (*submit when invoicing*)

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**00500 – SAMPLE AGREEMENT FORMS**

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**SHARE Contract No. 10-52100-20-06025**

**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 (EMNRD), and **XXXXXX** (Contractor). EMNRD’s Director and staff of the Mining and Minerals Division (MMD) shall supervise and coordinate the work under this Construction Services Contract (Agreement).

***IT IS MUTUALLY AGREED BETWEEN THE PARTIES:***

I. Scope of Work

A. The Contractor shall perform the work described in the Specifications for the San Pedro Mine Safeguard Project, Phase III, Santa Fe County, New Mexico in the Project Manual which is part of Invitation to Bids (ITB) No. EMNRD-MMD-2020-04. The ITB was solicited by the General Services Department, State Purchasing Division ITB No. 10-52100-20-06025. The Project Manual, Specifications, ITB, and Contractor’s completed Bid Response (dated: XXXXX) 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. Within thirty (30) calendar days of receiving the written Notice to Proceed (NTP) via certified mail, the Contractor shall mobilize to the site and commence work. 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. In the event that work performed in connection with this Agreement may disturb utilities, Contractor shall coordinate with utility companies to ensure that locations of overhead or buried utilities and appurtenances are marked. Prior to work taking place, Contractor shall provide advance notice to consumers who may be affected by service disruption.

II. Compensation

A. EMNRD shall pay the Contractor in current funds for the performance of the Work, subject to additions and deductions by Change Order as provided in the Contract

Documents, the Contract Sum of \_\_\_\_\_ (\$xxx,xxx.xx), including New Mexico Gross Receipts Taxes, if applicable.

The Contract Sum is determined as follows:

Total Base Bid	\$ _____
Gross Receipts Tax @ 7.1250%	\$ _____
Total Contract Sum	\$ _____

If the state gross receipts tax or local option tax increases the Contractor must submit a request for a change order in order to increase the state gross receipts tax or local option tax on this Agreement (1.4.1.24 NMAC).

Agreements solicited by competitive sealed bids shall require that the bid amount exclude the applicable state gross tax or local option tax but that EMNRD shall be required to pay the tax including any increase in the tax becoming effective after this Agreement is entered into. The tax shall be shown as a separate amount on each billing or requires for payment made under this Agreement.

B. Subject to subparagraph II.A. above, and based on Applications for Payment (invoice), a copy of which is included herein at Section 00900 of the Project Manual, submitted to the EMNRD Project Engineer by the Contractor and Certificates for Payment issued by the EMNRD Project Engineer, EMNRD shall make progress payments on account of the Contract Sum, to the Contractor as provided in the Contract Documents for the period ending the last day of the month as follows: no later than twenty-one (21) days following receipt by EMNRD of the undisputed Application for Payment, one hundred percent (100%) of the portion of the Contract Sum properly allocable to labor, materials, and equipment incorporated in the Work, and one hundred percent (100%) of the portion of the Contract Sum properly allocable to materials and equipment suitably stored at the site or some other location agreed upon in writing for the period covered by the Application for Payment, less the aggregate of previous payments made by EMNRD; and upon Substantial Completion of the entire Work, a sum sufficient to increase the total payments to one hundred percent (100%) of the Contract Sum, less such amounts as the EMNRD Project Engineer shall determine for all incomplete Work and unsettled claims as provided in the Contract Documents, which shall be paid in accordance with this Compensation Section.

C. Prompt Payment Act Compliance: Contractor shall comply with the Prompt Payment Act, NMSA 1978, § 57-28-5(C), in making prompt payments to its subcontractors and suppliers for amounts owed for work performed relating to this Agreement within seven days of receipt of payment from EMNRD.

D. Final Payment: Final payment constituting the entire undisputed and unpaid balance of the Contract Sum shall be paid by EMNRD to the Contractor within ten (10) days after the EMNRD Project Engineer completes a final inspection and the EMNRD Project Manager notifies the Project Engineer that all incomplete and unacceptable work that was noted during the Final Inspection has been corrected.

III. Term and Liquidated Damage for Inconvenience and Increased Administrative Cost

The Work to be performed under this Agreement shall commence no later than thirty (30) consecutive calendar days after the date of written "Notice to Proceed." Project completion (see Section 00100 of the Project Manual) shall be no later than 240 days, including all Sundays, holidays, and non-work days, after the Contractor receives a written Notice to Proceed, except as hereafter extended by EMNRD by valid written Change Order.

The parties agree that time for the performance of this Agreement is of the essence. Should the Contractor fail to perform the entire project within the Contract Time for project completion, the Contractor agrees to the charge of three hundred dollars (\$300) per calendar day of liquidated damages representing inconvenience and increased administrative cost. Such damages shall begin to accrue on the calendar day following the last day for performance of work under this Agreement. The Contract stipulates that EMNRD may withhold additional payments under this Agreement or attach the performance bond to cover the liquidated damages set forth above or to cover the cost of any duplicative work that is made necessary by Contractor's failure to perform as required by this Agreement. Liquidated damages shall continue until written notice of satisfactory completion is forwarded by the Project Manager to the Project Engineer. This provision is limited to damages for inconvenience and increased administrative cost and shall not otherwise affect EMNRD's right to seek other remedies including other damages, at law or in equity.

IV. Termination

A. For Reasons Beyond Contractor's Control

1. EMNRD may, by written order, terminate this Agreement or any portion thereof after determining that, for reasons beyond 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, acts of God, labor strikes, 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 shall 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 Contractor obtains for the work but which have not been incorporated therein, may, at EMNRD's option, be purchased from the Contractor at actual cost, delivered to a prescribed location, or otherwise disposed of as mutually agreed.

4. After receipt of EMNRD's notice of termination issued pursuant to this Section IV.A., 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 solely in preparing the claim for costs, 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, shall loss of anticipated profits be considered as part of any settlement.

5. The Contractor agrees to make all cost records available upon EMNRD's request.

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. For Reasons Within Contractor's Control:

1. If the Contractor:
  - a. fails to begin the work under this Agreement within the time specified in the Notice to Proceed;
  - 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;
  - c. fails to comply with laws, ordinances, rules, regulations or orders of public authority having jurisdiction;
  - 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;
  - e. discontinues the prosecution of the work, without EMNRD's prior written approval;

- f. fails to resume work which has been discontinued without EMNRD's prior written approval within a reasonable time after notice to do so;
- g. becomes insolvent or files for bankruptcy or is placed into bankruptcy by creditors, or commits any acts of bankruptcy or insolvency;
- h. allows a final judgment, in a suit filed in connection with this agreement, to stand against the Contractor unsatisfied for a period of 30 business days;
- i. makes an assignment, in connection with this Agreement, for the benefit of creditors;
- j. fails to carry on the work in an acceptable manner; or
- k. otherwise has committed a material breach of this Agreement.

If EMNRD wishes to terminate this Agreement for any of the above reasons, EMNRD shall give notice in writing to Contractor and the surety of the occurrence(s) upon which EMNRD bases the termination, and the corrective measures to be taken (Default Notice), if any. Failure of EMNRD to provide a default notice or terminate this Agreement shall not operate as a waiver by EMNRD either at the time of such failure or in the future.

If the Contractor or surety, within a period of ten (10) business days after such notice, does not proceed in accordance therewith, then EMNRD shall 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 for the work that Contractor performed after the date of the Default Notice until the work is finished. EMNRD shall also have all remedies available to it at law and in equity.

#### 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 Subcontractors Fair Practices Act, NMSA 1978, § 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 show the date, time, nature and cost of services rendered under this Agreement and retain them for six years from the date of final payment under this Agreement. 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 New Mexico within five business days upon EMNRD's request. The records shall be subject to inspection by EMNRD, DFA, the State Auditor and the U.S. Department of the Interior (DOI). 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 DOI 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 DOI 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 accepted by the Contractor and shall be final.

#### 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. This release is self-executing upon such final payment. The Contractor agrees not to purport to bind the State of New Mexico to any obligation 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 or Change Order

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 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 expressly incorporated into this Agreement.

XIV. Civil and Criminal Liability Notice

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

XV. Equal Opportunity Compliance

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, 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, without

giving effect to its choice of law provisions. In any lawsuit filed that relates to or arises from this Agreement or any obligations hereunder, venue shall be only in the New Mexico State District Court in Santa Fe, New Mexico. By executing this Agreement, Contractor agrees and consents to the personal jurisdiction of the State Court of New Mexico over any and all lawsuits relating to or arising from this Agreement or any obligation hereunder.

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.

XVIII. Notices

A. Unless EMNRD specifies otherwise in a writing that is delivered pursuant to this Paragraph, notices and all other matters concerning the work to be performed hereunder shall be addressed to EMNRD as follows:

Project Engineer: Meghan J. McDonald, P.E.  
Mining and Minerals Division  
Energy, Minerals and Natural Resources Department  
1220 South St. Francis Drive  
Santa Fe, New Mexico 87505  
505.629.9872

B. Unless the Contractor shall specify otherwise in a writing that is delivered pursuant to this Paragraph, notices and all other matters concerning the work to be performed hereunder shall be addressed to the Contractor as follows:

NAME OF CONTRACTOR  
ADDRESS  
ADDITIONAL ADDRESS  
CITY, ST, ZIP  
(XXX) XXX-XXXX

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) business days subsequent to certified mailing to the party to whom it is directed, whichever is earlier.

XIX. Indemnification



The Contractor shall defend, indemnify, and hold harmless EMNRD, and its officers, employees, agents and representatives, and the State of New Mexico from all actions, proceedings, claims, demands, costs, damages, attorneys' fees, and all other liabilities and expenses of any kind from any source that may arise out of this Agreement's performance, caused by the negligent or intentional act or failure to act of Contractor, its officers, employees, servants, subcontractors, consultants, clients, or agents, resulting in injury or damage to persons or property during the time when Contractor, its officers, agents, employees, servants, subcontractors, or consultants has or is performing services pursuant to this Agreement. In the event that any action, suit, or proceeding related to the services performed by Contractor, its officers, agents, employees, servants, subcontractors, clients, consultants under this Agreement is brought against Contractor, or any of its officers, agents, employees, servants, subcontractors or consultants, Contractor shall, as soon as practicable but no later than two days after it receives notice thereof, notify EMNRD's legal counsel and the Risk Management Division of the New Mexico General Services Department by certified mail. Nothing in this Agreement shall be deemed to be a waiver by the State of New Mexico of the provisions of the Tort Claims Act, NMSA 1978, §§ 41-4-1 *et seq.*

XX. 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 third-party beneficiaries and shall specifically state the coverage provide under the policy is primary over any other valid and collectible insurance and provide a waiver of subrogation.

1. General Liability. Bodily injury liability and property damage liability insurance in the following minimum amounts: five hundred thousand dollars (\$500,000.00) for damages to or destruction of property arising out of a single occurrence; one million dollars (\$1,000,000.00) to any person for any number of claims arising out of a single occurrence for all damages other than property damages, and one million dollars (\$1,000,000.00) 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 –**

Seven hundred thousand dollars (\$700,000.00) each person

One million dollars (\$1,000,000.00) each occurrence;

**Property damage liability--**

One million dollars (\$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, §§ 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 this Agreement, and shall not commence any work under this Agreement until the required insurance coverage is obtained. The insurance coverage shall not be changed, canceled, or allowed to lapse without giving EMNRD thirty (30) business days' prior written notice.

**XXI. New Mexico Employees Health Insurance**

A. If Contractor has, or grows to, six (6) or more employees who work, or who are expected to work, an average of at least twenty (20) hours per week over a six (6) month period during the term of this Agreement, Contractor certifies, by signing this Agreement, to have in place, and agree to maintain for this Agreement's term, health insurance for those employees and offer that health insurance to those employees if the expected annual value in the aggregate of any and all contracts between Contractor and the state exceed two hundred fifty thousand (\$250,000).

- B. Contractor agrees to maintain a record of the number of employees who have:
- 1) accepted health insurance;
  - 2) declined health insurance due to other health insurance coverage already in place; or
  - 3) declined health insurance for other reasons.

These records are subject to review and audit by a representative of the state.

C. Contractor agrees to advise all employees of the availability of state publicly-financed health care coverage programs.

**XXII. Disputes**

Any dispute, other than the Contractor's acts set forth in Section IV, Termination, B., For Reasons Within Contractor's Control, concerning a question of fact arising under this Agreement, not disposed of by agreement, shall, first, be decided by the MMD Director, who shall reduce a decision to writing and furnish a signed copy to the Contractor. Such decision

shall be final and conclusive unless, within thirty (30) calendar days from the date of notification of the decision by certified mail, the Contractor mails or otherwise furnishes to the MMD Director, a written appeal, addressed to the EMNRD Secretary, to which MMD may respond in ten (10) business days. The Contractor shall be afforded an opportunity to be heard. The decision of the EMNRD Secretary or the authorized representative thereof, shall be final and conclusive.

XXIII. Suspension of Work

A Suspension of Work Notice may be issued by the Project Manager if the Project Manager believes that any action of the Contractor is contrary to the intent of this Agreement or that any health or safety standard is violated or that a threat to public health or safety exists. No work performed after 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, in writing, by the MMD Director.

XXIV. Compliance with the Public Works Minimum Wage Act and Minimum Wage Rate Decision

A. If the Work to be performed under this Agreement is subject to the provisions of the Public Works Minimum Wage Act, NMSA 1978, Section 13-4-11 *et seq.*, Contractor shall comply with such act and applicable state rules. Each Application for Payment submitted to EMNRD shall include a certification by Contractor that it has complied with the provisions of NMSA 1978, Section 13-4-11 and applicable state rules when making wage payments for work performed pursuant to this Agreement.

B. This Agreement is within the scope of the Public Works Minimum Wage Act, NMSA 1978, §§ 13-4-10, *et seq.* The Minimum Wage Rate Decision No. xxx of the New Mexico Labor and Industrial Division (1.505.841.4408) shall be complied with by the Contractor and any subcontractors. A copy of the Decision is included at Section 00830 of the Project Manual.

C. If compensation to be paid under this Agreement is in excess of sixty thousand dollars (\$60,000.00), the minimum wages and fringe benefits to be paid to various classes of laborers and mechanics, shall be based upon the wages and benefits that will be determined by the Director (Director) of the Labor Relations Division (LRD) of the New Mexico Workforce Solutions Department, to be prevailing for the corresponding classes of laborers and mechanics employed on contract work of a similar nature in the state or locality.

D. The Contractor, subcontractor, employer or a person acting as a contractor shall pay all mechanics and laborers employed on the site of the project, unconditionally and not less often than once a week and without subsequent unlawful deduction or rebate on any account, the

full amounts accrued at time of payment computed at wage rates and fringe benefit rates not less than those determined pursuant to NMSA 1978, Section 13-4-11.B to be the prevailing wage rates and prevailing fringe benefit rates issued for this project.

E. Pursuant to 11.1.2.9.B(6) through (10) NMAC, Public Works Minimum Wage Act Policy Manual, Contractor and all tiers of subcontractors shall submit certified weekly payroll records to EMNRD on a bi-weekly basis, and, to the LRD Director when requested by the Director or an interested party such as contractors, contracting agencies, labor organizations and contractor associations.

1. All payroll records provided to EMNRD must contain the following information in the specified format:

- (a) the employee’s full name and address need only appear on the first payroll on which the employee’s name appears, unless a change of address necessitates an additional submittal to reflect the new address;
- (b) the employee’s classification (or classifications);
- (c) the employee’s hourly wage rate (or rates); the employee’s hourly fringe benefits; and where applicable, the employee’s overtime hourly wage rate (or rates);
- (d) the daily and weekly hours worked in each classification, including actual overtime hours worked (not adjusted);
- (e) the itemized deductions made;
- (f) the net wages paid; and
- (g) the number of the wage rate decision issued on the project by the Director.

2. All payrolls shall be numbered, starting with number one for the first payroll at the beginning of the job and continuing in numerical order until the job is completed.

3. Contractor and each of his or her subcontractors shall submit a bi-weekly statement of compliance in the following form:

Date \_\_\_\_\_

I, \_\_\_\_\_, (Name of Signatory Party)

(Title)

do hereby state:

That I pay or supervise the payment of the persons employed by \_\_\_\_\_ (contractor or subcontractor) on the \_\_\_\_\_; that (building or work)

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 rebates have been or will be made either directly or indirectly to or on behalf of said \_\_\_\_\_ (Contractor or subcontractor) from the full weekly wages earned by any person and that no deductions have been made either directly or indirectly from the full wages earned by any person, other than deductions permitted by law.

That any payrolls under this Agreement required to be submitted for the above period are correct and complete; that the wage rates for laborers or mechanics contained therein are not less than the applicable wage rates incorporated into the Agreement; that the classifications set forth therein for each laborer or mechanic conform with the work he performed. That any apprentices or trainees employed in the above period are duly registered in a bona fide apprenticeship program registered with a state apprenticeship agency recognized by the office of apprenticeship United States department of labor, or properly enrolled in a bona fide training program approved for application on public works construction projects by the appropriate state or federal agency(ies) if and as required by law and applicable federal regulation.

I, \_\_\_\_\_, being first duly sworn on oath under penalty of perjury, swear that the foregoing information is true and correct.

Notary: Subscribed and sworn to before me at \_\_\_\_\_ this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_\_.

\_\_\_\_\_  
Notary public

\_\_\_\_\_  
(SIGNATURE)

\_\_\_\_\_  
(DATE)

My commission expires: \_\_\_\_\_

4. The Contractor and all subcontractors and their tiers shall deliver or mail to EMNRD legible copies of the certified weekly payrolls prepared in accordance with these regulations to the prime contractor and the contracting agency no more than five (5) working days following the close of the second payroll period. Weekly payrolls shall be submitted bi-weekly.

5. The affidavit form must be filed prior to the final payment to a Contractor. Bond monies and retainage will be released only to Contractors who have filed affidavits pursuant to the provisions of 11.1.2. NMAC. Any Contractor or subcontractor who files a false statement or refuses to file any statement or record required to be filed under the provisions of 11.1.2 NMAC shall be considered as non-compliant and shall be subject to debarment proceedings. EMNRD and Contractor shall keep all certified payroll records for four (4) years after the completion of this Agreement.

F. EMNRD shall require wage rate inspections during the period of construction.

G. Contractors and all contracting tiers on projects must file a statement of intent to pay prevailing wages (intent), and an affidavit of wages paid (affidavit). The intent form must be filed with EMNRD within three (3) business days of the award of each respective contract. EMNRD will make no payments to a non-compliant contractor until an intent form is filed.

H. Contractor or subcontractor shall post minimum wage rates in a prominent, easily accessible place at the site of each particular project.

I. The LRD Director shall furnish EMNRD with a poster containing the minimum wage rates. EMNRD shall forward said poster to Contractor for posting at each particular project site.

J. Contractor and subcontractor shall comply with all requirements imposed by the Public Works Minimum Wage Act and 11.1.2 NMAC.

K. Contractor's records shall be subject to inspection by state and federal agencies that have jurisdiction over such matters to determine compliance with the provisions of NMSA 1978, Section 13-4-11 *et seq.*, as provided above or by an applicable federal or state law. If Contractor fails to comply with the provisions of this Section XXVII, EMNRD may terminate this Agreement by giving notice in the manner provided herein.

XXV. Required Bond for Public Works Contractor

This Agreement is within the scope of NMSA 1978, §§ 13-4-18 through 13-4-20. 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 one hundred percent (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.

XXVI. Compliance with Trafficking Victims Protection Act of 2000

A. Pursuant to 2 C.F.R, Chapter 1, Part 175, § 175, EMNRD may immediately and unilaterally terminate this Agreement without penalty if the Contractor or subcontractor:

- 1) engages in severe forms of trafficking in persons during this Agreement's term;
- 2) procures a commercial sex act during this Agreement's term; or
- 3) uses forced labor in the performance of this Agreement.

B. Contractor shall immediately inform EMNRD of any information Contractor receives from any source alleging a violation of a prohibition in Paragraph A. of this Section 13.28.

C. Contractor shall include the requirements of this Section XXIII in any subcontract which may result from this Agreement.

XXVII. Compliance with use of Minority Business Enterprises (MBEs) and Women's Business Enterprises (WBEs)

Contractor shall take affirmative steps to assure that MBEs and WBEs are used when possible as sources of supplies, equipment, construction, and services. The affirmative steps shall include the following:

- a) including qualified MBEs/WBEs on solicitation lists;
- b) assuring that MBEs/WBEs are solicited once they are identified;
- c) when economically feasible, dividing total requirements into smaller tasks or quantities so as to permit maximum MBE/WBE participation;
- d) where feasible, establishing delivery schedules which will encourage MBE/WBE participation;
- e) encouraging use of the services of the U.S. Department of Commerce's Minority Business Development Agency and the U. S. Small Business Administration to identify MBEs/WBEs, as required; and
- e) if any subcontracts are to be let, requiring the subcontractor to take the affirmative steps listed above.

XXIX. Compliance with Federal Laws

A. Contractor shall comply with 2 C.F.R. Sections 200.318 through 200.326 for procurement conducted pursuant to this Agreement.

B. If this Agreement is valued at more than one hundred thousand dollars (\$100,000), Contractor shall comply with all applicable standards orders or requirements issued under the federal Clean Air Act (42 U.S.C. §7401 et seq.); Clean Water Act (33 U.S.C. §1251 et seq.); Executive Order 11738 (Providing for Administration of the Clean Air Act and the Federal Water Pollution Control Act with Respect to Federal Contracts, Grants, or Loans); and U.S. Environmental Protection Agency regulations.

C. If this Agreement is valued at more than one hundred thousand dollars (\$100,000), Contractor shall comply with 40 U.S.C §§ 3702 and 3704 of the Contract Work Hours and Safety Standards Act (Act), as supplemented by U.S. Department of Labor regulations (29 C.F.R. Part 5). Under 40 U.S.C. 3702 of the Act, Contractor must compute the wages of every mechanic and laborer on the basis of a standard work week of forty (40) hours. Work in excess of the standard work week is permissible provided that the worker is compensated at a rate of not less than one and one-half (1 ½) times the basic rate of pay for all hours worked in excess of forty (40) hours in the work week. The requirements of 40 U.S.C § 3704 are applicable to construction work and provide that no laborer or mechanic must be required to work in surroundings or under working conditions which are unsanitary, hazardous or dangerous. These requirements do not apply to the purchases of supplies or materials or articles ordinarily available on the open market.

D. Contractor shall comply with Section 6002 of the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act. The requirements of Section 6002 include procuring only items designated in guidelines of the EPA at 40 C.F.R. Part 247 that contain the highest percentage of recovered materials practicable, consistent with maintaining a satisfactory level of competition, where the purchase price of the items exceeds ten thousand dollars (\$10,000) or the value of the quantity acquired during the preceding fiscal year exceeded ten thousand dollars (\$10,000); procuring solid waste management services in a manner that maximizes energy and resource recovery; and establishing an affirmative procurement program for procurement of recovered materials identified in the EPA guidelines.

E. If the value of this Agreement exceeds one hundred thousand dollars (\$100,000), Contractor shall comply with the Byrd Anti-Lobbying Amendment (31 U.S.C. § 1352) regarding the limitations of use of appropriated funds to influence certain federal contracting and financial transactions.

F. Contractor shall comply with the Copeland “Anti-Kickback” Act (40 U.S.C. 3145), as supplemented by U.S. Department of Labor regulations (29 C.F.R. Part 3, Contractors and Subcontractors on Public Building or Public Work Financed in Whole or in Part by Loans or Grants from the United States”). Contractor and subcontractors are prohibited from inducing, by any means, any person employed in the construction, completion, or repair of public work, to give up any part of the compensation to which he or she is otherwise entitled. EMNRD shall report all suspected or reported violations to the Office of Surface Mining Reclamation and Enforcement.

G. Contractor shall not award subcontracts to parties listed on the government-wide exclusions in the System for Award Management (SAM) in accordance with the OMG guidelines at 2 C.F.R. 180 that implement Executive Orders 12549 (3 C.F.R. part 1986 Comp., p. 189) and 12689 (3 C.F.R. part 1989 Comp., p. 235), “Debarment and Suspension.” SAM



Exclusions contains the names of parties debarred, suspended, or otherwise excluded by agencies, as well as parties declared ineligible under statutory or regulatory authority other than Executive Order 12549.

[Signatures begin on next page.]

**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**

By: \_\_\_\_\_ Date: \_\_\_\_\_  
Authorized Representative

\_\_\_\_\_  
Printed Name and Title

**STATE OF NEW MEXICO, GENERAL SERVICES DEPARTMENT, STATE PURCHASING DIVISION**

By: \_\_\_\_\_ Date: \_\_\_\_\_  
State Purchasing Agent

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.

**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 San Pedro Mine Safeguard Project, Phase III, Project No. EMNRD-MMD-2020-04, Santa Fe County, 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.

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### 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\_.

\_\_\_\_\_  
WITNESS

\_\_\_\_\_  
PRINCIPAL (Seal)

\_\_\_\_\_  
TITLE

\_\_\_\_\_  
WITNESS

SURETY

(Seal)

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 San Pedro Mine Safeguard Project, Phase III, No. EMNRD-MMD-2020-04, Santa Fe County, 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.

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**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 judgment 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\_\_.

\_\_\_\_\_ (Seal)  
PRINCIPAL

\_\_\_\_\_  
WITNESS

\_\_\_\_\_  
TITLE

\_\_\_\_\_ (Seal)  
SURETY

\_\_\_\_\_  
WITNESS

\_\_\_\_\_  
TITLE

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**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.

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  Covering (Project Name and Location)  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>COMPANIES AFFORDING COVERAGE</b>	
	A	
	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				<b>Statutory</b>		
					\$	<b>Each Accident</b>
Comprehensive General Liability including:  <input type="checkbox"/> Premises – Operations <input type="checkbox"/> Independent Contractors <input type="checkbox"/> Products and Completed Operations  <input type="checkbox"/> Broad Form Property Damage <input type="checkbox"/> Contractual Liability <input type="checkbox"/> Explosion and Collapse Hazard <input type="checkbox"/> Underground Hazard <input type="checkbox"/> 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  <input type="checkbox"/> Owned <input type="checkbox"/> Hired <input type="checkbox"/> Non-Owned				Bodily Injury (Each Person)	\$	
				Bodily Injury (Each Accident)	\$	
				Property Damage	\$	
				Bodily Injury and Property Damage Combined	\$	
Excess Liability <input type="checkbox"/> Umbrella Form <input type="checkbox"/> 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  No

**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**

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**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 non-defective 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 and Responsibilities of the Project Manager and Project Engineer**

## A. General

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

EMNRD Project Manager: Laurence D' Alessandro

EMNRD Project Engineer: Meghan J. McDonald, P.E.

The Project Engineer shall be responsible for the following duties and responsibilities:

- a. Review, for compliance with design concepts, shop drawings submitted by the construction Contractor.
- b. Review laboratory, shop and mill test reports on materials and provide inspection at the manufacturing facilities during the production of materials specific to the project.
- c. Visit the project site at appropriate intervals as construction proceeds to observe and report on the progress and the quality of the executed work.
- d. Attend preconstruction conferences, progress meetings, and job conferences as required and other project related meetings.
- e. Issue instructions from the AML Program to the construction Contractor, issue necessary interpretations and clarifications of contract documents, prepare change orders requiring special inspections and testing of the work, and make recommendations as to acceptability of the work.
- f. Make recommendations to the AML Program on corrective actions or contractual measures that the AML Program may exercise.
- g. Prepare sketches and, where required, designs and design drawings and specifications, required to resolve problems due to actual field conditions encountered, including cost estimates for alternatives where required, and provide to EMNRD.
- h. Determine amounts of progress payments due, based on degree of completion of the work, and recommend issuance of such payments by EMNRD.
- i. Prepare record drawings from information submitted by the contractor and Construction Observer and provide to EMNRD.



- j. Make a final inspection and written report on completion of the project, including recommendations concerning final payment to the construction contractor, to EMNRD.
- k. Provide copies of construction records, including approved submittals and shop drawings, laboratory and test reports, reports on job-related conferences and meetings, construction progress reports, Construction Observer's diary or log book, Storm Water Pollution Prevention Plan, etc. to EMNRD within one month of preparation or completion.

The Construction Observer/Project Manager shall be responsible for the following duties and responsibilities:

a. Schedules:

Review the progress schedule prepared by the construction contractor and consult with the Project Engineer concerning acceptability.

b. Conferences:

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

c. Liaison:

Serve as the Project Engineer's liaison with the construction contractor, working principally through the construction contractor's superintendent, and assist him or her in understanding the intent of Contract Documents.

d. Access:

In conjunction with the AML archeologist (or the AML Program's archeological contractor) flag or mark avoidance areas specified in the approved archaeological report for the project to ensure that avoidance areas are avoided at all times by the construction contractor, subcontractors and suppliers.

e. Shop Drawings and Samples:

1. 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.
2. 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.

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

1. 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.
2. Report to the Project Engineer whenever the Project Manager 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 the Project Manager believes work should be corrected or rejected or should be uncovered for observation, or requires special testing, inspection or approval.
3. 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.
4. 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.

g. Interpretation of Contract Documents:

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

h. Modifications:

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

i. 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 after 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.

d. Provide EMNRD with copies of all records by contract termination date.

j. 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, personal injury, or property damage incidents.

k. 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.

l. Certificates, Maintenance and Operation Manuals: During 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 installed; and deliver this material to the Project Engineer for review prior to final acceptance of the work.

m. 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.

#### B. Limitations of Authority.

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

- a. Shall not authorize any deviation from the Contract Documents or approve any substitute materials or equipment.
- b. Shall not exceed limitations on the Project Engineer's authority as set forth in the Contract Documents.
- c. Shall not undertake any of the responsibilities of the Contractor, subcontractors or the Contractor's superintendent, or expedite the work.
- d. 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.
- e. Shall not issue directions as to safety precautions and programs regarding the work.
- f. Shall not participate in specialized field or laboratory test, unless such is specifically called for in the Contract Documents.
- g. Shall not receive any materials, supplies, equipment, etc. on behalf of the Contractor.

**00830 – WAGE DETERMINATION SCHEDULE**



**LABOR RELATIONS DIVISION**

401 Broadway NE  
Albuquerque, NM 87102  
Phone: 505-841-4400  
Fax: 505-841-4424

226 South Alameda Blvd  
Las Cruces, NM 88005  
Phone: 575-524-6195  
Fax: 575-524-6194

**WWW.DWS.STATE.NM.US**

1596 Pacheco St, Suite 103  
Santa Fe, NM 87505  
Phone: 505-827-6817  
Fax: 505-827-9676

**Wage Decision Approval Summary**

1) Project Title: SAN PEDRO MINE SAFEGUARD PROJECT PHASE III  
Requested Date: 08/10/2020  
Approved Date: 08/11/2020  
Approved Wage Decision Number: SF-20-1624-H

**Wage Decision Expiration Date for Bids: 12/09/2020**

2) Physical Location of Jobsite for Project:  
Job Site Address: Golden/San Pedro  
Job Site City: Santa Fe  
Job Site County: Santa Fe

3) Contracting Agency Name (Department or Bureau): NM Energy, Minerals, and Natural Resources Department  
Contracting Agency Contact's Name: Meghan McDonald  
Contracting Agency Contact's Phone: (505) 476-3408 Ext.

4) Estimated Contract Award Date: 09/15/2020

5) Estimated total project cost: \$275,000.00  
a. Are any federal funds involved?: Yes - \$275,000.00  
b. Does this project involve a building?: No  
c. Is this part of a larger plan for construction on or appurtenant to the property that is subject to this project?: No  
d. Are there any other Public Works Wage Decisions related to this project?: No  
e. What is the ultimate purpose or functional use of the construction once it is completed?:  
The San Pedro Safeguard Project - Phase III area is located in Golden, Santa Fe County, New Mexico. The project area is located on flat to moderately steep terrain within the USGS Golden Quadrangle. Project features are located on private land with one project feature located on State Trust land. Surface geology consists of Quaternary alluvial deposits and Tertiary intrusive rocks. Site vegetation consists of moderately-dense piñon and juniper trees, forbs, and grasses. A Google Earth file containing locations of the project features and access routes may be obtained by contacting the AML Program.

This project involves the following work:

Backfilling 52 mine features consisting of prospect pits and vertical shafts using mine waste soil and rock;

Construction of Vertical Double Culverts with Bat Gate and Polyurethane Foam, constructed on two vertical shafts;

Construction of Horizontal Culvert with Bat Gate in Grouted Rock Bulkhead; constructed on three horizontal ad

6) Classifications of Construction:

Classification Type and Cost Total	Description
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<p><b>Heavy Engineering (H)</b> Cost: \$275,000.00</p>	<p>The San Pedro Safeguard Project - Phase III area is located in Golden, Santa Fe County, New Mexico. The project area is located on flat to moderately steep terrain within the USGS Golden Quadrangle. Project features are located on private land with one project feature located on State Trust land. Surface geology consists of Quaternary alluvial deposits and Tertiary intrusive rocks. Site vegetation consists of moderately-dense piñon and juniper trees, forbs, and grasses. A Google Earth file containing locations of the project features and access routes may be obtained by contacting the AML Program.</p> <p>This project involves the following work:</p> <ul style="list-style-type: none"><li>▣ Backfilling 52 mine features consisting of prospect pits and vertical shafts using mine waste soil and rock;</li><li>▣ Construction of Vertical Double Culverts with Bat Gate and Polyurethane Foam, constructed on two vertical shafts;</li><li>▣ Construction of Horizontal Culvert with Bat Gate in Grouted Rock Bulkhead; constructed on three horizontal adits; one of the closures includes a removeable locking bar;</li><li>▣ Construction of two barbed wire fences around open prospect pits;</li><li>▣ Capping an 8-inch diameter, 93 feet deep vertical pipe with a weathering steel cap;</li><li>▣ Seeding of all areas disturbed by construction.</li></ul>
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**LABOR RELATIONS DIVISION**

401 Broadway NE  
Albuquerque, NM 87102  
Phone: 505-841-4400  
Fax: 505-841-4424

226 South Alameda Blvd  
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Fax: 575-524-6194

**WWW.DWS.STATE.NM.US**

1596 Pacheco St, Suite 103  
Santa Fe, NM 87505  
Phone: 505-827-6817  
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## PUBLIC WORKS PROJECT REQUIREMENTS

As a participant in a Public Works project valued at more than \$60,000 in the state of New Mexico, the following list addresses many of the responsibilities that are defined by statute or regulation to each project stakeholder.

### Contracting Agency

- Ensure that all contractors wishing to bid on a Public Works project when the project is \$60,000 or more are actively registered with the Public Works and Apprenticeship Application (PWAA) website: <http://www.dws.state.nm.us/pwaa> (Contractor Registration) prior to bidding.
- Please submit Notice of Award (NOA) and Subcontractor List(s) to the PWAA website promptly after the project is awarded.
- Please update the Subcontractor List(s) on the PWAA website whenever changes occur.
- All sub-contractors and tiers (excluding professional services) regardless of contract amount must be listed on the Subcontractor List and must adhere to the Public Works Minimum Wage Act.
- Ninety days after project completion please go into the PWAA system and close the project. Only contracting agencies are allowed to close the project. Agents or contractors are not allowed to close projects.

### General Contractor

- Provide a complete Subcontractor List and Statements of Intent (SOI) to Pay Prevailing Wages for all contractors, regardless of amount of work, to the contracting agency within 3 (three) days of award.
- Ensure that all subcontractors wishing to bid on a Public Works project have an active Contractor Registration with the Public Works and Apprenticeship Application (PWAA) website: <http://www.dws.state.nm.us/pwaa> prior to bidding when their bid will exceed \$60,000.
- Make certain the Public Works Apprentice and Training Act contributions are paid either to an approved Apprenticeship Program or to the Public Works Apprentice and Training Fund.
- Confirm the Wage Rate poster, provided in PWAA, is displayed at the job site in an easily accessible place.
- When the project has been completed, make sure the Affidavits of Wages Paid (AWP) are sent to the contracting agency.
- All subcontractors and tiers (excluding professional services) regardless of contract amount must pay prevailing wages, be listed on the Subcontractor List, and adhere to the Public Works Minimum Wage Act.

**LABOR RELATIONS DIVISION**

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Fax: 505-827-9676

**Subcontractor**

- Ensure that all subcontractors wishing to bid on a Public Works project have an active Contractor Registration with the Public Works and Apprenticeship Application (PWAA) website: <http://www.dws.state.nm.us/pwaa> prior to bidding when their bid will exceed \$60,000.
- Make certain the Public Works Apprentice and Training Act contributions are paid either to an approved Apprenticeship Program or to the Public Works Apprentice and Training Fund.
- All subcontractors and tiers (excluding professional services) regardless of contract amount must pay prevailing wages, be listed on the Subcontractor List, and adhere to the Public Works Minimum Wage Act.

**Additional Information**

Reference material and forms may be found in the New Mexico Department of Workforce Solutions Public Works web pages at: <https://www.dws.state.nm.us/Labor-Relations/Labor-Information/Public-Works>.

**CONTACT INFORMATION**

Contact the Labor Relations Division for any questions relating to Public Works projects by email at [public.works@state.nm.us](mailto:public.works@state.nm.us) or call (505) 841-4400.



**Type H - Heavy Engineering**  
*Effective January 1, 2019*

Trade Classification	Base Rate	Fringe Rate	Apprenticeship
Asbestos Worker - Heat & Frost Insulator	32.01	11.11	0.60
Boilermaker	34.97	27.35	0.60
Bricklayer/Blocklayer/StoneMason	23.78	8.34	0.60
Carpenter/Lather	24.08	10.34	0.60
Millwright/Piledriver	39.72	16.68	0.60
Cement Mason	21.00	9.38	0.60
<b>Electricians</b>			
<b>Outside Classifications</b>			
Groundman	22.81	11.93	0.60
Equipment Operator	32.73	14.51	0.60
Lineman/Tech	38.51	16.02	0.60
Cable Splicer	42.36	17.01	0.60
<b>Inside Classifications</b>			
Wireman/Tech	31.55	10.75	0.60
Cable Splicer	34.71	10.84	0.60
Glazier	20.25	5.05	0.60
Ironworker	26.50	15.56	0.60
Painter (Brush/Roller/Spray)	21.25	8.82	0.60
Plumber/Pipefitter	32.40	12.45	0.60
Roofer	24.49	7.80	0.60
SheetmetalWorker	30.28	16.60	0.60
<b>Operators</b>			
Group I	20.35	5.94	0.60
Group II	20.54	5.94	0.60
Group III	20.73	5.94	0.60
Group IV	20.87	5.94	0.60
Group V	20.98	5.94	0.60
Group VI	21.16	5.94	0.60
Group VII	21.18	5.94	0.60
Group VIII	23.06	5.94	0.60
Group IX	28.67	5.94	0.60
Group X	31.87	5.94	0.60
<b>Laborers</b>			
Group I	16.86	5.63	0.60
Group II	17.61	5.63	0.60
Group III	19.12	5.63	0.60
Group IV	19.52	5.63	0.60
<b>Truck Drivers</b>			
Group I	16.15	7.52	0.60
Group II	16.15	7.52	0.60
Group III	16.15	7.52	0.60
Group IV	16.15	7.52	0.60
Group V	16.15	7.52	0.60
Group VI	16.15	7.52	0.60
Group VII	16.15	7.52	0.60
Group VIII	16.21	7.52	0.60
Group IX	18.15	7.52	0.60

**NOTE: All Contractors are required to pay SUBSISTENCE, ZONE AND INCENTIVE PAY according to the particular trade. Details are located in a PDF attachment at [WWW.DWS.STATE.NM.US](http://WWW.DWS.STATE.NM.US). Search Labor Relations/Labor Information/Public Works/Prevailing Wage Rates.**

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**00900 – APPLICATION FOR PAYMENT**

**APPLICATION FOR PAYMENT  
San Pedro Mine Safeguard Project - Phase III  
Santa Fe County, New Mexico  
EMNRD-MMD-2020-04**

Contract No. \_\_\_\_\_ Contractor: \_\_\_\_\_ Billing No. \_\_\_\_\_ Billing Date \_\_\_\_\_ Terminate \_\_\_\_\_

Mailing Address: \_\_\_\_\_ Billing represents work completed through (date) \_\_\_\_\_

<u>ITEM NO.</u>	<u>MATERIAL OR WORK DESCRIPTION</u>	<u>BASIS OF EVALUATION</u>	<u>CONTRACT AMOUNT</u>	<u>UNITS OR PERCENT THIS BILLING</u>	<u>AMOUNTS THIS BILLING</u>	<u>UNITS OR PERCENT PREVIOUS BILLINGS</u>	<u>AMOUNTS PREVIOUS BILLINGS</u>	<u>UNITS OR PERCENT REMAINING</u>	<u>AMOUNTS REMAINING</u>
1.	Mobilization (Not to exceed 10% of total base bid)	For the lump sum of							
2.	Backfill Feature in Area 1 (G29)	For the lump sum of							
3.	Backfill Features in Area 2 (G3, G48, G50, G51, G52, and G53)	For the lump sum of							
4.	Backfill Features in Area 3 (G1, G15, G16, G17, G18, G21, and G54)	For the lump sum of							
5.	Backfill Features in Area 4 (G2, G19, G22, G24, G36, G44, G45, G46, and G47)	For the lump sum of							

<b><u>ITEM NO.</u></b>	<b><u>MATERIAL OR WORK DESCRIPTION</u></b>	<b><u>BASIS OF EVALUATION</u></b>	<b><u>CONTRACT AMOUNT</u></b>	<b><u>UNITS OR PERCENT THIS BILLING</u></b>	<b><u>AMOUNTS THIS BILLING</u></b>	<b><u>UNITS OR PERCENT PREVIOUS BILLINGS</u></b>	<b><u>AMOUNTS PREVIOUS BILLINGS</u></b>	<b><u>UNITS OR PERCENT REMAINING</u></b>	<b><u>AMOUNTS REMAINING</u></b>
6.	Backfill Features in Area 5 (G13, G31, G32, G33, G40, G42, and G43)	For the lump sum of							
7.	Backfill Features in Area 6 (G5, G9, G10, and G11)	For the lump sum of							
8.	Backfill Features in Area 7 (G6, G7, G8, G12, and G34)	For the lump sum of							
9.	Backfill Features in Area 8 (G30, G35, and G49)	For the lump sum of							
10.	Backfill Feature in Area 9 (G4)	For the lump sum of							
11.	Backfill Feature in Area 10 (G37)	For the lump sum of							
12.	Backfill Features in Area 11 (G56, G60, G61, and G62)	For the lump sum of							
13.	Backfill Features in Area 12 (G41, G65, G66, and G67)	For the lump sum of							
14.	Construct Vertical Double Culverts with Bat Gate and Polyurethane Foam at Feature G14	For the lump sum of							
15.	Construct Vertical Double Culverts with Bat Gate and Polyurethane Foam at Feature G23	For the lump sum of							

<u>ITEM NO.</u>	<u>MATERIAL OR WORK DESCRIPTION</u>	<u>BASIS OF EVALUATION</u>	<u>CONTRACT AMOUNT</u>	<u>UNITS OR PERCENT THIS BILLING</u>	<u>AMOUNTS THIS BILLING</u>	<u>UNITS OR PERCENT PREVIOUS BILLINGS</u>	<u>AMOUNTS PREVIOUS BILLINGS</u>	<u>UNITS OR PERCENT REMAINING</u>	<u>AMOUNTS REMAINING</u>
16.	Construct Horizontal Culvert with Bat Gate with Removeable Bar in Grouted Rock Bulkhead at Feature G25	For the lump sum of							
17.	Construct Horizontal Culvert with Bat Gate with Grouted Rock Bulkhead at Features G26 and G27	For the lump sum of							
18.	Construct Weathering Steel Cap Over 8 inch Diameter Vertical Pipe at Feature G39	For the lump sum of							
19.	Construct Barbed Wire Fencing at Features G63 and G68	For the unit price per LF of fence constructed							
20.	Seeding, Complete in Place	For the unit price per acre of seeded ground							
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: \_\_\_\_\_ By: \_\_\_\_\_ By: \_\_\_\_\_

Contractor

AML Project Engineer

Mining and Minerals Division Director

DATE: \_\_\_\_\_ DATE: \_\_\_\_\_ 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.

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#### 01010 – SUMMARY OF WORK

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The San Pedro Safeguard Project - Phase III area is located in Golden, Santa Fe County, New Mexico. The project area (see Figure 1) is located on flat to moderately steep terrain within the USGS Golden Quadrangle. Project features are located on private land with one project feature located on State Trust land. Surface geology consists of Quaternary alluvial deposits and Tertiary intrusive rocks. Site vegetation consists of moderately-dense piñon and juniper trees, forbs, and grasses. A Google Earth file containing locations of the project features and access routes may be obtained by contacting the AML Program.

This project involves the following work:

- Backfilling 52 mine features (see Figure 6) consisting of prospect pits and vertical shafts using mine waste soil and rock;
- Construction of Vertical Double Culverts with Bat Gate and Polyurethane Foam (see Figure 2), constructed on two vertical shafts;
- Construction of Horizontal Culvert with Bat Gate in Grouted Rock Bulkhead (see Figures 3, 4, and 5); constructed on three horizontal adits; one of the closures includes a removeable locking bar;
- Construction of two barbed wire fences (see Figure 7) around open prospect pits;
- Capping an 8-inch diameter, 93 feet deep vertical pipe with a weathering steel cap (see Table 1);
- Seeding of all areas disturbed by construction.

Note the requirements for bat inspection, exclusion, and/or slow backfill at some of the mine features, as detailed in Table I. All features are accessible by equipment; see Sections 01011, 01012 and 01550 for terrain access restrictions.

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.



**TABLE I: PROJECT SUMMARY****INCLUDING APPROXIMATE MINE OPENING DIMENSIONS, MINE FILL VOLUME, AND GATE DIMENSION ESTIMATES**

The approximate mine opening dimensions (Length or Height (L) x Width (W) x Depth (D)) 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 may be indicated at those structural closures with significant volumes of earthwork required.

See Figures for details on each closure type. A Google Earth file containing locations of the project features and access routes may be obtained by contacting the AML Program.

For bat and owl protection, construction at some mine openings requires visual inspections by the AML Program's Environmental staff or have slow backfill requirements. **Wildlife-related requirements are italicized below.**

<b>AML FEATURE NUMBER</b>	<b>TYPE OF MINE OPENING</b>	<b>OPENING DIMENSIONS (FEET, LxWxD)</b>	<b>VOLUME (CY)</b>	<b>CLOSURE TYPE, GATE DIMENSIONS (LxW), COMMENTS (<i>WILDLIFE REQUIREMENTS IN ITALICS</i>)</b>
G1	Shaft in Pit	3 x 3 x 30	10	Slow Backfill; Remove and dispose of refrigerator from shaft opening
G2	Shaft in Pit	15 x 15 x 30	250	Backfill
G3	Shaft in Pit	4 x 4 x	34	Slow Backfill
G4	Shaft in Pit	15 x 15 x 8	66	Backfill
G5	Shaft in Pit	20 x 20 x 18	266	Backfill
G6	Shaft in Pit	28 x 25 x 14	362	Backfill
G7	Shaft in Pit	20 x 20 x 8	118	Backfill
G8	Shaft in Pit	25 x 25 x 20	462	Backfill
G9	Shaft in Pit	14 x 14 x 20	145	Backfill
G10	Shaft in Pit	16 x 14 x 12	99	Backfill
G11	Shaft in Pit	15 x 14 x 10	77	Backfill

AML FEATURE NUMBER	TYPE OF MINE OPENING	OPENING DIMENSIONS (FEET, LxWxD)	VOLUME (CY)	CLOSURE TYPE, GATE DIMENSIONS (LxW), COMMENTS ( <i>WILDLIFE REQUIREMENTS IN ITALICS</i> )
G12	Shaft in Pit	10 x 10 x 15	55	Backfill
G13	Shaft in Pit	17 x 15 x 10	94	Slow Backfill
G14	Shaft in Pit	5.5 x 5.5 x 36	N/A	Vertical Double Culverts with Bat Gate, includes polyurethane foam (PUF), scoria fill; install survey marker
G15	Shaft in Pit	10 x 10 x 15	55	Backfill with <i>Visual Inspection</i>
G16	Shaft in Pit	13 x 11 x 13	68	Slow Backfill
G17	Shaft in Pit	10 x 10 x 15	55	Slow Backfill
G18	Shaft in Pit	12 x 10 x 12	53	Backfill
G19	Shaft in Pit	10 x 8 x 36	106	Backfill
G20	No Work			
G21	Shaft in Pit	13 x 10 x 25	120	Backfill
G22	Shaft in Pit	12 x 10 x 12	53	Backfill
G23	Shaft	5 x 4.5 x 25	N/A	Vertical Double Culverts with Bat Gate, includes polyurethane foam (PUF), scoria fill; install survey marker
G24	Pit	15 x 15x 18	150	Backfill
G25	Adit	4.5 x 10 x 32	N/A	Culvert bat gate in grouted rock bulkhead, including removeable lock bar; install survey marker
G26	Adit	1.5 x 3 x 27	N/A	Culvert bat gate in grouted rock bulkhead install survey marker
G27	Adit	1.5 x 3 x 15	N/A	Culvert bat gate in grouted rock bulkhead
G28	No Work			
G29	Pit	12 x 10 x 9	40	Backfill
G30	Shaft	3 x 3 x 38	12	Slow Backfill; <i>Exclusion with tarps and mesh plus smoke bombing, complete work before October 31</i>
G31	Pit	12 x 12 x 10	53	Backfill
G32	Pit	12 x 10 x 9	40	Backfill
G33	Shaft in Pit	12 x 10 x 10	44	Backfill

AML FEATURE NUMBER	TYPE OF MINE OPENING	OPENING DIMENSIONS (FEET, LxWxD)	VOLUME (CY)	CLOSURE TYPE, GATE DIMENSIONS (LxW), COMMENTS ( <i>WILDLIFE REQUIREMENTS IN ITALICS</i> )
G34	Pit	15 x 12 x 9	60	Backfill
G35	Pit	10 x 8 x 9	26	Backfill
G36	Pit	14 x 12 x 10	62	Backfill
G37	Shaft in Pit	15 x 10 x 18	100	Backfill
G38	No Work			
G39	Vent Hole Pipe	8" ID x 8.5-8.75" OD x 93 ft deep	N/A	Circular weathering steel plate welded to top of vertical pipe
G40	Shaft in Pit	15 x 10 x 15	83	Backfill
G41	Shaft in Pit	13 x 12 x 10	57	Backfill
G42	Shaft in Pit	15 x 12 x 12	80	Backfill
G43	Shaft in Pit	15 x 13 x 15	108	Backfill
G44	Shaft in Pit	9 x 4 x 9	12	Backfill
G45	Shaft in Pit	15 x 12 x 12	80	Backfill
G46	Shaft in Pit	20 x 14 x 10	103	Backfill
G47	Shaft in Pit	19 x 15 x 10	105	Backfill
G48	Shaft in Pit	8 x 5 x 10	14	Backfill
G49	Shaft in Pit	10 x 10 x 8	29	Backfill
G50	Shaft in Pit	12 x 8 x 14	49	Backfill
G51	Shaft in Pit	15 x 10 x 15	83	Backfill
G52	Shaft in Pit	12 x 8 x 14	49	Backfill
G53	Pit	18 x 10 x 9	60	Backfill
G54	Shaft in Pit	10 x 4 x 12	17	Backfill
G55	No Work			
G56	Shaft	10 x 10 x 14	51	Backfill
G57	No Work			

AML FEATURE NUMBER	TYPE OF MINE OPENING	OPENING DIMENSIONS (FEET, LxWxD)	VOLUME (CY)	CLOSURE TYPE, GATE DIMENSIONS (LxW), COMMENTS ( <i>WILDLIFE REQUIREMENTS IN ITALICS</i> )
G58	No Work			
G59	No Work			
G60	Pit	13 x 13 x 14	87	Backfill
G61	Pit	15 x 13 x 8	57	Backfill
G62	Pit	10 x 10 x 14	51	Backfill
G63	Pit	10 x 10 x 14	N/A	Barbed Wire Fencing (approximately 175 linear feet); perform work with AML cultural compliance staff present
G64	No Work			
G65	Pit	20 x 15 x 9	100	Backfill
G66	Pit	20 x 15 x 20	222	Backfill
G67	Pit	15 x 15 x 15	125	Backfill
G68	Pit	16 x 15 x 8	N/A	Barbed Wire Fencing (approximately 175 linear feet); perform work with AML cultural compliance staff present
G69	No Work			
G70	No Work			
Total:	60 Work Features: <ul style="list-style-type: none"> <li>- 52 Backfills (4,757 cubic yards of fill)</li> <li>- 2 Vertical Shafts with Bat Gates Set in Double Culverts</li> <li>- 3 Horizontal Adits with Bat Gates</li> <li>- 2 Pits with Fencing</li> <li>- 1 Special Feature (welded cap over pipe)</li> </ul>			

**01011 –Construction Access Requirements**

Surface disturbance caused by the project’s activities shall be minimized to the maximum extent practicable. Ground disturbances during construction shall be limited to a maximum perimeter of 20 feet from each mine feature. The Contractor shall use the access paths as delineated by AML staff and shall avoid all marked archaeological avoidance areas. Equipment trips to the mine features from established roads shall be kept to an absolute minimum and materials shall be hand carried to avoid excessive traffic as directed by the Project Manager. The Contractor shall include surface disturbance minimization measures in the appropriate bid item.

Equipment shall be rubber-tired or rubber-tracked and large equipment shall not be allowed. Excavators shall be no more than 20,000 pounds, and backhoes shall be no more than 15,000 pounds weight. Contractor shall provide submittals with equipment specifications prior to mobilizing to the site. All heavy equipment shall be washed with a high-pressure washer to remove any possible noxious weed seed or seed parts prior to arrival in the project area. Written confirmation of washing shall be submitted to the Project Engineer prior to mobilizing to the site.

The Contractor shall be responsible for thoroughly investigating site conditions and scheduling 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 all designated cultural and biological resources including those shown in the Drawings and those discovered during construction. The Contractor shall avoid these areas with all equipment, vehicles, foot traffic, and any other ground surface disturbing activities.

Avoidance areas extend up to 50 feet (15 meters) from the designated cultural and biological resources, unless otherwise indicated by AML staff. Where it is infeasible to complete construction activities without disturbing the designated avoidance areas, avoidance area distances and access may be adjusted, in coordination with AML staff, to accommodate construction activities and ensure resources are not impacted. The Contractor shall also coordinate with the Project Manager for access routes to be taken around designated avoidance areas to construction work sites. Disturbance adjacent to designated avoidance areas shall be minimized as practicable.

The Project Manager or Project Engineer may designate additional avoidance areas as deemed necessary. No construction disturbances including excavation, fill, stockpiling of construction materials, staging, etc. shall take place within designated avoidance areas.

When the Contractor is working near designated avoidance areas and where construction access routes pass next to these locations, 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 mitigation or repairs due to unauthorized damage caused by the Contractor's operations to cultural or biological resources within designated avoidance areas. 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. Moving, removal or collecting of archaeological or historic materials or biological specimens from the project area or vicinity is prohibited. If the Contractor encounters a previously unidentified archaeological site, historic site, artifacts, or species suspected to be listed as or proposed to be listed as threatened or endangered, the Contractor shall terminate all operation in that immediate area (100 foot radius, 30 meters) until the archaeological or biological preservation agencies have been notified and had the opportunity to assess the discovery 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.

Because construction is expected to commence during the Fall of 2020, the project may extend into migratory bird season (March 15 to July 15, 2021), and a preconstruction migratory bird survey may be required. If needed, the AML Program will contract an outside consulting firm to perform the bird survey. The Contractor shall contact the AML Program Project Engineer at least one month prior to commencement of construction to coordinate this survey or three weeks prior to Notice to Proceed. Failure by the Contractor to timely coordinate a preconstruction migratory bird survey may impact the Contractor's schedule and no additional time or compensation will be granted. Following receipt of NTP, the Contractor shall be responsible for maintaining nest-free conditions in construction-impacted areas. The Contractor shall comply with the requirements of the Migratory Bird Treaty Act, the U.S. Fish and Wildlife Service (USFWS), and shall not cause harm or harassment to migratory birds.

If occupied nests are found, they must be avoided until after the juvenile birds have fledged (flown from the nest). If nest avoidance is not feasible and relocation must occur, the project shall be placed on suspension at the Contractor's expense, while the AML Program coordinates with USFWS for a permit. If the USFWS denies the relocation permit request, the project suspension shall continue until after the migratory bird nesting seasons ends, or after all juvenile birds have left the nest as determined by the Project Manager, or through consultation with the AML Program.

**01013 – BACKGROUND AND SITE HISTORY**

The San Pedro Mine Safeguard Phase III project is located east of State Road 14 in Golden, New Mexico on the United States Geological Survey (USGS) 7.5-minute Golden Quadrangle map. Project features are largely located in two clusters approximately 65 acres and 18 acres in size, respectively at elevations ranging from 6,720 feet to 7,190 feet above mean sea level. The proposed mine closures are located. The project site includes lands owned or under the jurisdiction of state and private entities.

The project is set in the Golden Placer Field. Mining in the area extends into Colonial times as early Spanish explorers reported the presence of silver ores in the San Pedro Mountains exploited at the direction of Oñate by 1600. Mining for gold in the area began also in colonial times. By 1835, placer mining began in what was named the New Placer mining district. Lack of sufficient water limited production in the placer mines. But placer mining continued through the 1920s with several wells dug to increase productivity. Remnants of these mining efforts abound along the alluvial deposits covering the project area. The more dangerous of these are the subject of the safeguard efforts of this 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 vehicles 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 Engineer before being submitted to:

Meghan J. McDonald, P.E.  
Mining and Minerals Division  
Energy, Minerals, and Natural Resources Department  
State of New Mexico  
1220 South St. Francis Drive  
Santa Fe, New Mexico 87505  
Meghan.McDonald@state.nm.us

All Applications for Payment shall include appropriate backup, such as daily reports, load counts, etc. 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 price of the Contractor's bid in the Bid Form but shall not exceed 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 the Contractor has completed ten percent of the total original contract amount, less mobilization, and upon submitting an Application For Payment. 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 from 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 or from individual sites within the project area.

Mobilization shall also include preparation of an Occupational Safety and Health Administration (OSHA) compliant Health and Safety Plan (HASP) detailing the site-specific hazards and safety precautions associated with site work. The HASP shall include a list of responsible persons, hazard identification, hazard controls and safe practices, emergency and accident response, employee training requirements, chemical safety data sheets (SDS), and communication information and procedures.

Mobilization shall also include preparation of any other required pre-construction submittals as specified in this manual.

Mobilization shall also include providing materials for animal exclusion as defined in the beginning of Division 2 – Sitework.

#### B. Backfill of Specified Mine Features

Payment for backfill to close the specified mine features will be made at the lump sum price of the Contractor's bid in the Bid Form. The lump sum price shall include all work necessary to complete the backfill in accordance with the specifications. This work shall include the tasks necessary to access the mine feature, including clearing as necessary; surface disturbance minimization measures; 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 and mitigate associated land disturbances according to the specifications.

#### C. Construction of Vertical Double Culverts with Bat Gate and Polyurethane Foam (Shafts)

Payment for construction of the specified vertical double culverts with bat gate and supported with polyurethane foam (PUF) will be made at the lump sum price of the Contractor's bid in the Bid Form. This price shall include all work necessary to complete the installations in accordance with the drawings and specifications, including access to site, surface disturbance minimization measures, site preparation, excavation and backfill, fabrication, formwork, construction materials (including structural steel and steel assemblies, corrugated steel pipe, cast-in-place concrete, grout, anchor bolts, rock bolts, rock, bolts and nuts, locking bars), welding, mixing and placement of polyurethane foam, constructing and installing survey marker; and including all equipment, labor, and supervision necessary for

complete installation and mitigate associated land disturbances according to the specifications.

D. Construction of Horizontal Culvert with Bat Gate in Grouted Rock Bulkhead (Adits)

Payment for construction of the specified horizontal culverts with bat gate in grouted rock bulkhead will be made at the lump sum price of the Contractor's bid in the Bid Form. This price shall include all work necessary to complete the installations in accordance with the drawings and specifications, including access to site, surface disturbance minimization measures, site preparation, excavation and backfill, fabrication, formwork, construction materials (including structural steel and steel assemblies, corrugated steel pipe, cast-in-place concrete, grout, anchor bolts, rock, bolts and nuts, locking bars), welding, constructing and installing survey marker; and including all equipment, labor, and supervision necessary for complete installation and mitigate associated land disturbances according to the specifications.

E. Pipe Capping

Payment for construction of the weathering steel cap over an existing 8-inch diameter vertical pipe (approximately 93-feet deep) will be made at the lump sum price of the Contractor's bid 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, surface disturbance minimization measures, site preparation, fabrication, construction materials (including steel), welding; and including all equipment, labor, and supervision necessary for complete installation and mitigate associated land disturbances according to the specifications.

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. Barbed Wire Fencing

Measurement for payment for barbed wire fencing will be made by the linear foot along the top of the fence from outside to outside of end posts for each continuous run of fence. Payment for barbed wire fencing will be made by the unit price per linear foot bid therefor in the Bid Form. This price shall include all work necessary to complete the installation of fence in accordance with the drawings and specifications, including site preparation and providing and installing all fencing, posts, concrete, fencing appurtenances and all equipment, labor, material and supervision costs necessary to complete installation.

B. Seeding

The unit of measurement for payment for seeding will be per disturbed 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 of the Contractor's bid on the Bid Form multiplied by the number of units installed. This price shall include soil preparation including raking, topdressing, incorporating specified soil amendments and seeding by broadcasting including all equipment, labor, material and supervision costs necessary to complete installation, of all areas disturbed by construction activities.

Any surface disturbance areas of the project must be seeded/revegetated. Disturbed areas may include but are not limited to: 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, closed access trails, stockpile and storage areas, service areas and areas stripped of native covering.

### **01030 – ALTERNATES**

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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 written request for any changes in the work under this contract 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 that 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 and materials 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**

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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 Engineer may issue a Suspension of Work Notice if there is 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**

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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**

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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**

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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:

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|-----|--------|--|
| 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)   |

## **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):

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|----|----------|--|
| 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**

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The following section describes special procedures for work suspension, alteration, preservation, security, hazardous materials, and other types of special project procedures.

#### **01110 – SUSPENSION OF WORK ON WEEKENDS**

An AML representative shall be on site at all times that work is in progress at any location on site other than the staging areas and designated project roads. An AML representative will arrive at the site at noon on Mondays and leave the project site at noon on Fridays. During weekends, with the approval of the Project Manager or Project Engineer, the Contractor may stage equipment and materials at staging areas and along roads designated by the Project Manager or work on pre-fabrication work at staging areas.

#### **01135 - HAZARDOUS AND CONFINED AREA PROCEDURES**

This project requires construction work around and over hazardous and unprotected mine shafts, 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 equipment, equipment operations, personnel, and safety procedures to prevent accidents and injuries.

The Contractor is fully responsible for thoroughly investigating the site conditions and



scheduling equipment, equipment operations, personnel, and safety procedures to prevent accidents and injuries. The Contractor shall follow appropriate procedures in accordance with OSHA regulations. The Contractor shall designate a site safety officer for each shift. The site safety officer shall be present on-site while work is performed. The site safety officer shall be CPR/First Aid trained and certified and shall conduct daily safety tailgate meetings at the start of each shift. Safety incidents shall be reported to the Project Manager as soon as is practicable.

The Contractor is fully responsible for construction safety and shall keep the Project Manager informed of 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<sub>2</sub>), carbon monoxide (CO), methane, hydrogen sulfide (H<sub>2</sub>S), 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 not allow entry of personnel into any mine opening.

#### 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 adit entrance.

#### 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 workers. 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 ensure that anyone falling into them are 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 C.F.R. 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.

The Contractor is responsible for ensuring adequate fall protection and tie/off points are maintained at mine features that are not accessible by heavy equipment. Details should be included in the Contractor's health and safety plan.

#### V. Loose Rock

A mine shaft or open stope will weather in much the same way as a cliff. Loose rocks are always found above and behind 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**

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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 Engineer, the Project Manager, the Contractor, the Contractor's superintendent, and other persons as appropriate. The Contractor shall present a progress schedule at the preconstruction conference as specified in Section 01310 below and the fire prevention and awareness plan as specified in Section 01565 below.

**01220 - PROGRESS MEETINGS**

The Project Engineer or Project Manager will lead progress meetings at the beginning of each work week during construction for purposes of scheduling and coordination of work. These meetings shall be attended by the Project Engineer and/or the Project Manager, the Contractor Superintendent and/or the Contractor Owner/ Chief Officer. These meetings will also provide an opportunity to discuss safety issues, weather issues, and any other issues with the project 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**

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

**01310 - CONSTRUCTION SCHEDULE**

The Contractor shall provide a detailed construction schedule to be followed in completing the work. This schedule shall be submitted a minimum of one month before mobilization to the site 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. Any proposed deviations from the schedule shall be submitted to the Project Engineer in writing for review and approval.

**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.

**01330 – HEALTH AND SAFETY PLAN**

The Contractor shall prepare a HASP detailing the site-specific hazards and safety precautions associated with site work. The HASP shall comply with OSHA standards and shall include a list of responsible persons, hazard identification, hazard controls and safe practices, emergency and accident response, employee training requirements, SDS, and communication information and procedures.

**The HASP shall also describe hazards related to the COVID-19 Pandemic.** The HASP shall include the Contractor's Infections Disease Preparedness and Response Plan, which shall include:

- Where, how, and to what sources of Covid-19 site personnel might be exposed.
- Non-occupational risk factors at home and in community settings.
- Workers' individual risk factors (e.g., older age; presence of chronic medical conditions, including immunocompromising conditions; pregnancy).
- Controls necessary to address these risks.
- Basic infection prevention measures.
- Policies and procedures for prompt identification and isolation of sick people.
- Workplace controls for reducing the risk of Covid-19 spread in the workplace.

Additional information and safety resources related to COVID-19 can be found on OSHA's website: <https://www.osha.gov/SLTC/covid-19/>

Contractor shall follow New Mexico Department of Health Public Health Orders, Executive Orders, and COVID safe practices for construction. Additional information maybe be found on the New Mexico Department of Health Coronavirus Disease 2019 webpage at <https://cv.nmhealth.org/>.

The Contractor shall submit a draft of the HASP to the Project Engineer for review and comment a minimum of one month before mobilization to the site. The Contractor shall finalize the HASP and submit a final copy to the Project Engineer prior to beginning work on the

project site.

#### **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 indicate 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. Submittals from Subcontractors shall not be allowed.

The Contractor's submittal of shop drawings and other review material shall represent that he or she has reviewed the details and requirements of the Contract Documents, that he or she has coordinated the subject of the submittal with other portions of the Work, and that he or she 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 and approved.

A copy 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 a corrected copy 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 a copy 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**

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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 tests or 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 and accredited 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**

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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 Project Engineer will issue the Notice to Proceed in two stages. The first “Pre-construction” Notice to Proceed will authorize payment for necessary pre-construction items that will not involve ground disturbance or mobilization to the project site. The second “Construction” Notice to Proceed will authorize all remaining construction items.

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 thirty calendar days after receipt via certified mail or confirmed email receipt of the “Construction” Notice to Proceed. Mobilization includes everything necessary to complete the required contract work. The Contractor shall inform the Project Engineer 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. All heavy equipment shall be washed with a high-pressure washer to remove any possible noxious weed seed or seed parts prior to arrival in the project area. 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 facilities shall consist of a portable toilet, separate portable hand washing station, **and other facilities defined in the Contractor’s Health and Safety Plan related to the COVID-19**



**Pandemic.** The facilities shall be installed on the project site prior to the start of work on mine features in a staging area approved by the Project Manager and Project Engineer. The toilet facility shall be locked to prevent unauthorized access during the times work is not conducted. The facilities shall be maintained in a functioning and sanitary condition by the Contractor for the duration of the project. The Contractor shall ensure that supplies for the temporary facility do not run out. 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 any limbs must be removed the Contractor shall cut branches away from the bole to avoid damage to the branch collar.

#### **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.

30 days before mobilization to the site 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 Project Manager will review, and if acceptable 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. After approval of the schedule, any need for changes shall be coordinated with the AML Project Manager and appropriate 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-compatible closures, airflow closures or high-strength steel mesh, shall be tarped or netted (one-inch mesh material, e.g., chicken wire, polypropylene or similar material) 72 hours before closure and require agreement on the dates of closure.

During construction of bat closures, the Contractor shall schedule construction 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.

Open trenches associated with construction present an entrapment and injury hazard to wildlife. The Contractor shall minimize the number and length of open trenches at any given time through excavation planning. The Contractor shall avoid leaving trenches open at night by using temporary backfill. Alternatively, the Contractor may construct temporary wildlife escape ramps at a 4H:1V slope in trenches to be left open overnight. The Contractor shall inspect trenches each morning and shall alert AML of the presence of animals in the trenches. AML will coordinate the removal of the wildlife from the trenches before trenching work proceeds.

#### **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**

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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.

The entrance gate to the project site off NM Highway 14 to Luz del Cielo shall be closed at all times.

**01550 – ACCESS ROADS, PARKING AREAS AND STAGING AREAS**

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Surface disturbance caused by the project's activities shall be minimized to the maximum extent practicable. 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. The Project Engineer will identify staging and parking areas during the mandatory pre-bid meeting which shall be used by the Contractor for all storage needs. Trips to and from the staging area and work sites shall be minimized to the maximum extent practicable.

Equipment shall be "walked" or operated cross-country to travel to work sites where roads do not exist or where road conditions preclude use of equipment trailers, using a path designated by the Project Manager in consultation with Environmental Compliance staff and the Contractor. No equipment or vehicles shall be operated off the existing roads from the period starting at 4:00 pm on Friday to 9:00 am on Monday unless the Project Manager is present. No new paths shall be bladed or improved.

Overland access routes shall be smoothed by hand tools within 24 hours of completion of construction. Equipment trips to the mine features from established roads shall be kept to an absolute minimum and materials may need to be hand carried to avoid excessive traffic. Equipment shall be rubber-tired or rubber-tracked and large equipment will not be allowed. 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.

**01560 – TEMPORARY CONTROLS**

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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.

**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 Engineer at the Pre-Construction meeting. The Project Engineer 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 ensure mufflers and spark arresters are operating properly.

2. Ensure 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.

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 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 any fire restrictions declared by the landowner(s) (i.e. Private and State of New Mexico).

### **01570 – TRAFFIC REGULATION**

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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 or near 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**

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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 three days after the Contractor initially mobilizes to the project site. 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 or equivalent and is to give the project title, project number, and other data within the box on the Title Page (Section 00001). The lettering shall be a minimum of two inches tall, Tahoma font, project name in bold font, and with capitalization and word organization as shown on the Title Page. 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**

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

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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**

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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 Engineer.

**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. The final inspection shall occur before construction equipment is mobilized off site.

#### **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**

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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.

Before any disturbance of the mine features, the Contractor shall provide tarps and one-inch mesh material (chicken wire, polypropylene, or similar material) and assist AML staff or consultants in excluding animals from the features to be closed. Refer to the requirements in Section 01533.

### **02050 – DEMOLITION**

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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, timbers, wire, trash, 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**

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The following section describes site preparation to be performed under this contract.

#### **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. The Contractor shall remove vegetation outside of the migratory bird nesting season (March 15-September 1). If any vegetation is to be removed during the migratory bird nest season, the Contractor shall contact the Project Manager four weeks prior to the removal to allow for completion of a migratory bird survey.

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**

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

**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. Diverted flows shall not be directed onto identified cultural resource or endangered plant areas.

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. If the vertical height of the cut exceeds 10 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), shall be constructed in the competent rock provided that 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 decompact. Areas shall be decompact to the satisfaction of the Project Manager.

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 submitted to the Project Engineer for review.

**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 adits that may be partially closed, by mucking out the debris, earth, and rock plugging or partially plugging them. The Contractor shall reopen adits with equipment and shall not physically enter the mine. Before removing any backfill or borrow, the Contractor shall discuss with the Project Manager where material shall be excavated and stored 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, trash, 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 back from the adit opening. 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, and trenches 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  $\frac{3}{4}$  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  $1\frac{1}{2}$  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 or her 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 approved 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 in consultation with AML cultural resource staff. 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 or by tamping using the equipment bucket. The fill 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 ensure that vibrations do not damage nearby structures or underground mine voids.

**02230 - AGGREGATES**

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The following sections describe aggregates to be installed under this Contract.

**I. Drainage Aggregate**

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

<u>Sieve Size</u>	<u>Percent Passing</u>
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 six inches or less and compacted by slicing by tamping with hand equipment.

**II. Scoria**

Scoria fill shall be clean, crushed scoria (or other approved equivalent lightweight aggregate) with a dry unit weight of no more than 65 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.

**02600 - PIPED UTILITY MATERIALS**

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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 on the Figures 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 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.

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.

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**

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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.

### **02820 – FENCES**

Fencing Specifications shall conform to the requirements set forth in AASHTO M181, the New Mexico Standard for Public Works Construction, Section 410 and NMSA 1978, Sections 77-16-1 through 77-16-18, as modified below.

#### **III. General**

The Contractor shall submit a test certificate to the Project Engineer certifying that the fencing materials conform to the requirements herein provided. When the locations of manufacturing plants allow, the plants may be inspected for compliance with specified manufacturing methods and material samples will be obtained for laboratory testing for compliance with material quality requirements. This can be the basis for acceptance of manufacturing lots as to quality. All materials will be subject to inspection for acceptance as to condition to check for compliance before or during incorporation of

materials in the work. All fences shall be installed in the locations specified and as directed by the Project Manager.

#### IV. Wire Fence

This work shall consist of the construction of fence and gates in substantial compliance with the specifications, lines and grades shown on the plans or established by the Project Engineer.

##### A. Wire

All fences shall consist of four wires spaced as indicated.

Barbed wire shall conform to ASTM A121 Class 1 or 3 coating and shall consist of two strands of nominal 12 gauge (0.099-inch) coated diameter wire with either 2-point, fourteen gauge (0.080-inch) diameter barbs spaced approximately four inches apart or 4-point, 14 gauge (0.080-inch) barbs spaced approximately five inches apart. The shape of barbs may be flat, half-round, or round. Instead of galvanizing, the wire may be coated with aluminum alloy at the rate of not less than 0.30 ounces per square foot of wire surface and the barbs at the rate of not less than 0.25 ounces per square foot of wire surface.

Tie wires for fastening barbed wire to steel posts shall be not less than thirteen gauge (0.109-inch) coated diameter and galvanized conforming to ASTM A1 12. Eleven gauge (0.120-inch) coated diameter or heavier wire fasteners or metal clamps may be used instead of tie wires when approved in advance by the Project Engineer.

Stays for wire fences shall be not less than 9 gauge (0.142-inch) coated diameter galvanized wire conforming with ASTM A116 and of length and spacing shown on the plans.

##### B. Brace Panels and Posts

Line posts shall be metal. All posts shall be of the type, size and length shown on the plans and as herein provided.

Metal posts shall be fabricated from rail, billet, or commercial grade steel conforming to ASTM A702 and shall be galvanized or painted green as required. All metal posts throughout the project shall be either galvanized or painted the same color green. Galvanizing shall conform to ASTM A123. When painted green, the posts shall be cleaned of all loose scale before finishing and painted with one or more coats of weather resistant, air baking or drying, green paint or enamel.

Metal line posts shall consist of heavy-duty steel spaced sixteen- and one-half feet apart. Metal line posts shall have a minimum weight of 1.33 pounds per foot exclusive of anchor plates. A minus tolerance not to exceed 5 percent of the minimum weight of each post will be permitted. A plus tolerance of two inches and a minus tolerance of one inch in the length of each post will be permitted. Metal line posts may be I-beam, T-beam, U-beam, Y-beam, or H-column section.



Line posts shall be provided with corrugations, lugs, ribs, or notches spaced approximately one inch on centers to engage the required fence wire in designated spaces. Posts with punched tabs to be crimped around the wire will not be accepted. Anchor plates shall be an area of not less than eighteen square inches, shall weigh not less than 0.67 pound each and shall be securely welded, bradded, swaged, or riveted to each line post in a way that prevents displacement when the posts are driven.

#### C. Fittings

All fittings, hardware and appurtenances for fences shall be commercial quality steel, malleable iron, or wrought iron and shall be galvanized in accordance with the requirements of ASTM A153. Fittings shall be black PVC-coated with ultraviolet-resistant coating.

#### III. Construction

Due to nearby avoidance areas, fencing construction, including driving of all support posts and wiring, shall be completed by hand. All nearby specified or established avoidance areas shall be avoided.

The Contractor shall perform vegetation clearing and grubbing outside of the migratory bird nesting window (March 15 to September 1 ) as may be necessary to construct the fences to the required grade and alignment. At locations where fence runs are completed, appropriate adjustment in post spacing shall be made to conform to the requirements for the type of closure indicated.

The tops of all posts shall be set to the required depth and alignment. Cutting off the tops of posts shall be allowed only with the approval of the Project Manager and under the conditions specified. Wire or fencing of the size and type required shall be firmly attached to the posts and braced in the manner indicated. All wire shall be stretched tautly and shall be installed to the required elevations. At each location where an electric transmission, distribution, or secondary line crosses any of the fences covered by these specifications, the Contractor shall furnish and install a ground conforming to National Electrical Code requirements if conditions warrant such installation.

Wire fences shall be constructed in conformity with the details and at locations shown on the plans or staked by the Project Manager. All posts shall be set plumb and to the depth and spacing shown on the plans. Excavations for footings and anchors shall be to dimensions shown on plans or established by the Project Engineer. Metal line posts may be driven. Posthole backfill shall be placed in thin layers and each layer solidly compacted. Posts set in rock shall be placed as directed by the Project Manager.

Mechanical stretcher or other device designated for such use shall stretch fence wire and welded wire fabric. Stretching by motor vehicle will not be permitted. The length between pull posts shall not exceed nine hundred ninety feet for barbed wire fence.

Intermediate braces shall be placed at intervals not to exceed nine hundred ninety feet and shall be spaced evenly between corner posts.

Corner posts and braces shall be placed at appropriate fence angles or bends.

Fence materials of the same manufacturer, type, or process, conforming with the specifications and details shown on the plans, shall be used throughout the work unless otherwise authorized in writing by the Project Engineer.

#### **02890 - SURVEY MARKERS**

A survey marker shall be installed in locations indicated by the Project Manager. The Contractor shall install a survey marker, provided by the Project Manager, into the concrete foundation of all bat gates requiring concrete foundations and within bulkhead walls. Otherwise, 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 I. 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 marker, provided by the Project Manager, into the pipe using a non-shrink grout, such as Quikrete Non-Shrink General Purpose Grout, or approved equivalent. Alternately, where the Project Manager concurs, the Contractor may drill and grout a survey marker into undisturbed, competent rock or concrete immediately next to each specified feature.

#### **02900 - LANDSCAPING**

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

#### **02920 - SOIL PREPARATION / SURFACE ROUGHENING**

Prior to seedbed preparation, the Contractor shall grade all disturbed areas as described, decompact those areas specified above, and roughen the surface 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, overland routes, 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 small pockets and furrows to trap water and create favorable microclimates for plant growth.

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. Seed shall be applied before soil surface crusting occurs. Loss of seed and fertilizer due to erosion shall be prevented from occurring. If crusting or erosion 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 as determined by the Project Manager 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 surface 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 as determined by the Project Manager.

## 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 as determined by the Project Manager. 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.

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 II. 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):

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

**Table II – SEED MIX**  
**San Pedro Mine Safeguard Project – Phase III**

<u>No.</u>	<u>Species</u>	<u>Scientific Name</u>	<u>Bulk Seed/lb.</u>	<u>Percent of Total Mix</u>	<u>Application Rate lbs. seed /Acre</u>
1.	Purple three-awn	<i>Aristida purpurea</i>	250,000	11%	1.75
2.	Sand dropseed	<i>Sporobolus cryptandrus</i>	5,600,000	13%	2.00
3.	Sideoats grama	<i>Bouteloua curtipendula</i> (var. <i>Vaughn</i> )	159,200	9%	1.50
4.	Blue grama	<i>Bouteloua gracilis</i>	135,000	32%	5.10
5.	Indian ricegrass	<i>Oryzopsis hymnoides</i> (var. <i>Paloma</i> )	188,000	9%	1.36

6.	American vetch	<i>Vicia Americana</i>	32,833	5%	0.85
7.	Winterfat	<i>Krascheninnikovia lanata</i>	123,000	13%	2.04
8.	Scarlet globemallow	<i>Spharealcea coccinea</i>	500,000	5%	0.85
9.	Wyoming Indian paintbrush	<i>Catilleja linariifolia</i>	4,915,000	3%	0.55

<b>Totals</b>	<b>100%</b>	<b>16.0 lb/ac</b>
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All seed shall comply with NMSA 1978, Sections 76-10-11 through -22 and 21.18.4.NMAC, 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.

**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 with AML compliance staff 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.

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.

### **02990 SUBMITTALS**

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Complete data and specifications for the following items shall be submitted in accordance with the procedure set forth in Section 01340:

- Materials:
  - Drainage aggregate
  - Scoria
  - Corrugated metal pipe
  - Fencing and accessories
  - Seed
- Excavation Plan (Section 02222)
  - Borrow Source Identification Plan (if applicable)

- **END OF DIVISION 2**

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### **DIVISION 3 – CONCRETE**

This work shall consist of furnishing and placing concrete to construct cast-in-place concrete footings for bat gates 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 also consist of grouted rock bulkheads and grouted survey markers as indicated on Table I. Unless otherwise specified, all grouting shall be done with non-shrink grout. This work includes any excavation for base of bulkheads, furnishing and installation of forms, grouted rock, and grout.

#### **03001 – GENERAL REQUIREMENTS**

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

At least forty-eight (48) hours in advance, the Contractor shall inform the Project Engineer and Project Manager of the times and places at which the Contractor intends to place concrete and grout. No concrete or grout 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 appropriate requirements of ACI 301, Specifications for Structural Concrete for Buildings, except as modified by the requirements below.

#### **03010 - CONCRETE MATERIALS**

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##### **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<sub>4</sub> 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-Mix 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 (2) inches and not more than (4) 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 ensure 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.

The Contractor is also cautioned that hot weather protection for concrete shall be required should concrete be placed in the summer months or during any time of hot weather (defined in ACI 305R as high ambient temperature, high concrete temperature, low relative humidity, and high wind speed). 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 four cylinders shall be taken and paid for by the Contractor. Bagged concrete mix such as Quikrete® pre-approved by the Project Engineer is excluded from this requirement. All sample cylinders shall be taken at the same time, and four cylinders shall be taken per sampling event. Following standard lab curing, one cylinder shall be used for a seven-day test, two cylinders for 28-day test, and one cylinder for an extra sample to be used as required. 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**

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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**

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#### **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**

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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 structure or in the rock adjacent to the structure as approved by the Project Manager. 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 Quikrete Non-Shrink General Purpose Grout, or approved equivalent. Alternately the survey marker may be fixed in the concrete structure using epoxy grout. For backfilled features, a pipe monument as specified in Section 02890 and as shown on the drawings shall be installed on those features directed in Table I.

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**03300 - CAST-IN-PLACE CONCRETE**

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**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. 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.

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 mild 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. Alternatives to 7 days of wet curing shall be submitted to the Project Engineer for review. Curing will not be required longer than 72 hours only if high-early-strength concrete (Type III) is used.

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 12 inch lifts (loose thickness) 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 - GROUT**

This section specifies grouting as indicated on the drawings.

**03610 - GROUT MATERIALS**

Non-shrink grout	Quikrete "Non-Shrink General Purpose 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 <sup>1</sup> , meeting the requirements of ASTM C1107, Grade C
Water	Clean and free from deleterious substances

**03620 – NON-SHRINK GROUT**

Non-shrink 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 non-shrink grout shall be saturated with water for 24 hours prior to grouting.

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

Non-shrink 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. Alternatives to 7 days of wet curing shall be submitted to the Project Engineer for review.

### **03990 - SUBMITTALS**

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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;
8. Compressive strength based on 7-day and 28-day compression tests; and
9. Other submittals shall be made as required by ACI 301.

The Contractor shall submit the following information for both concrete and grout:

1. Manufacturer's data or catalog information, including placing and finishing recommendations, wet-curing method, and weather protection method for the concrete and grout materials and any curing compounds.
2. Manufacturer's data or catalog information on the coloring pigment furnished.

3. A proposed wet-curing method for review by the Project Engineer.
4. A cold weather and/or hot weather concreting plan, as applicable, for review by the Project Engineer.

Submittals shall be made in accordance with the procedure set forth in Section 01340.

**END OF DIVISION 3**

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## 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

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

#### I. 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
Round Bar for Removable Bars in Bat Gates	ASTM A128, Manganese content 12-14%, Carbon 1.00-1.25%

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 (weathering 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 equivalent<sup>1</sup>

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 equivalent.<sup>2</sup>

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.

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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.

#### IV. Steel

Unless otherwise specified and if such an occasion shall occur, 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.

#### 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 brass 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.

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### **05500 – METAL FABRICATIONS**

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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. Torch cutting/burning of bolt holes will not be permitted.

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 American Welding Society (AWS) specifications for the intended work shall do all 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 more than 10 feet 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.

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### **05990 – SUBMITTALS**

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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. A detailed description of welding processes to be utilized (including electrode classification) and the American Welding Society certifications shall also be submitted.

**END OF DIVISION 5**

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## **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) 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 bat gates.

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 (pcf). Machine-applied or poured-in-place PUF shall be equivalent to SWD Urethane Co. "SWD 425," North Carolina Foam Inc. "NCFI-811," Foam Concepts LLC, "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,"<sup>1</sup> or approved equal.

PUF characteristics shall conform to the following standards:

<b>PUF CHARACTERISTIC</b>	<b>STANDARD</b>	<b>SPECIFICATION</b>
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 hydrochlorofluorocarbons (HCFC's).

The proportioning unit shall be capable of attaining a minimum temperature of 125°F and shall be a Gusmer Model H-11 or equivalent. For remote project locations, or with the 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 from 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.

### **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, 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 more than 10 feet 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 Engineer 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 or other bearing material. 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 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.

<u>Condition</u>	<u>Possible Cause</u>
Dark PUF color Smooth and Glassy Friable or Brittle PUF Improper Density	Excess A Component
Light in Color to White Bad Cell Structure Mottled Appearance Blowholes or Pinholes	Excess B Component
Slow Rise Poor Cell Structure Frequent Equipment Clogging Slow Curing Poor Physical Properties	Bad Material
Air Bubbles on Surface Tension Cracks on Surface Excessive Air Bubbles	Pouring Too Fast Between Lifts

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 18 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 Markers**

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 1/8-inch thick on timbers or historic materials shall be scraped or ablated to 1/8 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.

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**13990 - SUBMITTALS**

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Complete data covering polyurethane foam and accessories shall be submitted in accordance with the procedure set forth in Section 01340.

**END OF DIVISION 13**