

**SANTA FE COUNTY  
PUBLIC WORKS DEPARTMENT**

**INVITATION FOR BID**



**IFB No. 2018-0336-PW/MM**

**CONSTRUCTION SERVICES  
FOR COUNTY ROAD 67F LA BARBARIA ROAD  
DRAINAGE AND ROAD IMPROVEMENTS**

**JUNE 2018**

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**ADVERTISEMENT  
INVITATION FOR BID  
IFB No. 2018-0336-PW/MM  
CONSTRUCTION SERVICES FOR COUNTY ROAD 67F  
LA BARBARIA ROAD DRAINAGE AND ROAD IMPROVEMENTS**

The Santa Fe County Public Works Department requests bids for the purpose of procuring a licensed construction company for road improvements to County Road 67F La Barbaria Road. Bids may be held for ninety (90) days subject to all action by the County. Santa Fe County reserves the right to reject any and all bids in part or in whole. A completed bid package must be submitted in a sealed container indicating the bid title and number along with the bidding firm's name and address clearly marked on the outside of the container. **All bids must be received by 2:00 PM on Wednesday, July 18, 2018 at the Santa Fe County Purchasing Division, 142 W. Palace Avenue (Bokum Building, Second Floor), Santa Fe, N.M. 87501.** By submitting a bid for the requested materials and/or services each firm is certifying that their bid is in compliance with regulations and requirements stated within the IFB package.

**A Pre-Bid Conference will be held on June 28, 2018 @ 2:00PM at the Santa Fe County Projects Division located at 949 W. Alameda Suite 20C, Santa Fe, New Mexico. The Pre-Bid Conference is MANDATORY. Bidders must be in attendance and on time in order to submit a bid.**

**EQUAL OPPORTUNITY EMPLOYMENT:** All qualified bidders will receive consideration of contract(s) without regard to race, color, religion, sex, national origin, ancestry, age, physical and mental handicap, serious mental condition, disability, spousal affiliation, sexual orientation or gender identity.

An Invitation for Bid packages is available by contacting Maricela Martinez, Santa Fe County, by telephone at (505) 992-9864, by email at [mcmartinez@santafecountynm.gov](mailto:mcmartinez@santafecountynm.gov) or by accessing the Santa Fe County website at [http://www.santafecountynm.gov/asd/current\\_bid\\_solicitations](http://www.santafecountynm.gov/asd/current_bid_solicitations)

**BIDS RECEIVED AFTER THE DATE AND TIME SPECIFIED ABOVE WILL NOT BE ACCEPTED.**

Santa Fe County  
Publish: June 17 & 18, 2018

## INFORMATION FOR BIDDERS

Bids are by licensed and certified construction companies for the Construction Services for County Road 67F La Barbaria Road Drainage and Road Improvements.

### 1. LOCATION AND DESCRIPTION OF WORK:

The work to be completed is located within Santa Fe County, New Mexico. The construction consists of but not limited to: grading and drainage improvements; paving, striping, and traffic control. The construction on the base bid consists of improving and addressing drainage issues on  $\pm 0.70$  miles of CR 67F (La Barbaria Road). The Bid Alternative consists of improving and addressing drainage issues on  $\pm 0.23$  miles of CR 67F (La Barbaria Road).

The Contractor shall supply all labor, materials and equipment necessary to complete the work in accordance with the construction plans and specifications. The bid shall include all permits, fees, tie-in fees for all utilities, overhead and profit and incidental costs in the bid amounts. All applicable taxes **shall not** be included in the bid amounts.

All applicable laws and ordinances and the rules and regulations of all authorities having jurisdiction over the project shall apply to the contractor and all agreements between the contractor and the County.

### 2. TIME AND PLACE OF RECEIVING AND OPENING BIDS:

**All bids must be received by 2:00 PM (MDT) on Wednesday, July 18, 2018 at the Santa Fe County Purchasing Division, 142 W. Palace Avenue (Bokum Building, Second Floor), Santa Fe, N.M. 87501.** A bid received after the specified time will not be considered and will be returned to the bidder unopened.

### 3. SPECIFICATIONS: The construction of this project will be in accordance with the specifications and drawings provided by the County, which are included in this bid package.

### 4. MANDATORY COMPLETION DATE: The mandatory completion date for this contract is June 30, 2019 to commence on the date Notice to Proceed is granted or as direct by Santa Fe County. There will be no extensions for any reason.

### 5. COPIES OF BIDDING DOCUMENTS: Bid Documents are available by contacting Maricela Martinez, Santa Fe County, by telephone at (505) 992-9864 or by email at [mcmartinez@santafecountynm.gov](mailto:mcmartinez@santafecountynm.gov), or by visiting our website at [www.santafecountynm.gov/asd/current bid solicitations](http://www.santafecountynm.gov/asd/current_bid_solicitations).

Bidders shall use complete sets of Bidding Documents in preparing bids; the owner assumes no responsibility for errors or misinterpretations resulting from the use of incomplete sets of Bidding Documents. No license or grant of use of the Bidding Documents is conferred by issuance of copies of the bidding documents.

6. **Pre-Bid Conference:** A Pre-Bid Conference and Site Visit will be held on **Thursday, June 28, 2018** at the **Santa Fe County Projects Division** located at **949 W. Alameda Suite 20C, Santa Fe, New Mexico 87501**. **The Pre-Bid Conference is MANDATORY. Bidders must be in attendance and on time in order to submit a bid.**
7. **BIDDER'S REPRESENTATION:** By submitting a bid the bidder represents that: a) the bidder has read and understands the Bid Documents and Contract Documents; b) the bid is made in compliance with the Bid Documents and Contract Documents; c) The bidder has visited the site and has become familiar with local conditions under which the Work is to be performed, and has correlated the bidder's personal observations with the requirements of the proposed Contract Documents; d) the bidder has familiarized itself with federal, state and local laws, ordinances, rules, and regulations affecting performance of the Work; and e) the bid is based upon the materials, equipment and systems required by the Bid Documents without exception; and f) the County shall rely on these representations.
9. **INTERPRETATIONS/ADDENDA:** All questions about the meaning or intent of the contract documents shall be submitted to the Procurement Manager in writing. Replies will be issued by written addenda mailed or delivered to all parties recorded by the printer, as having received the bidding documents at least five (5) calendar days before the scheduled bid opening date. Questions received less than seven (7) calendar days prior to the date for opening of bids will not be answered. Only questions answered by formal written addenda will be binding. Oral and other interpretations or clarifications will be without legal effect. Written questions or inquiries in relation to the Invitation for Bid will be directed to:

Maricela Martinez, Procurement Specialist Senior  
 Santa Fe County Purchasing Division  
 142 W. Palace Avenue (Second Floor)  
 Santa Fe, NM 87501  
 Ph. (505) 992-9864  
 Fax (505) 989-3243  
 Email – [mcmartinez@santafecountynm.gov](mailto:mcmartinez@santafecountynm.gov)

Addenda will be transmitted to all bidders that are listed on the Bid Holder's List at the printer(s) who have received a complete set of Bid Documents.

Copies of addenda will be made available for inspection wherever Bid Documents are on file for that purpose. Each addendum shall be part of the contract documents as specified in the written contract, attached to these specifications, (see Appendix D).

Addenda will be issued no later than five (5) working days prior to the date for receipt of bids except an addendum withdrawing the request for bids or one which includes postponement of the date for receipt of bids.

Each bidder shall ascertain prior to submitting a bid that the bidder has received all addenda and the bidder shall acknowledge receipt in the bid.

10. **PREFERENCES IN PROCUREMENT:**

***New Mexico In-state Preference.***

- A. New Mexico law, Section 13-1-22 NMSA 1978, provides a preference in the award of a public works contract for an “**in-state resident contractor**”. Application of a resident contractor preference requires the bidder to provide a copy of a valid and current certificate as a resident contractor. Certificates are issued by the state taxation and revenue department.

If a bidder submits with its bid a copy of a valid and current in-state resident contractor certificate, the bidder’s bid will be deemed to be 5% lower than the bid actually submitted.

Certification by the department of taxation and revenue for the resident contractor takes into consideration such activities as the business or contractor’s payment of property taxes or rent in the state and payment of unemployment insurance on employees who are residents of the state.

**OR**

B. ***New Mexico Resident Veteran Preference.***

New Mexico law, Section 13-1-22 NMSA 1978, provides a preference in the award of a public works contract for a “**resident veteran contractor**”. Certification by the department of taxation and revenue for the resident veteran contractor requires the bidder to provide evidence of annual revenue and other evidence of veteran status.

A bidder who wants the veteran contractor preference to be applied to its bid is required to submit with its bid the certification from the department of taxation and revenue and the sworn affidavit attached hereto as Appendix C.

If a bidder submits with its bid a copy of a valid and current veteran resident contractor certificate, the bidder’s bid will be deemed to be 10% lower than the bid actually received.

**The resident contractor preference is not cumulative with the resident veteran contractor preference.**

Additional information about obtaining the certificate as a resident contractor and resident veteran contractor may be found at:  
<http://www.tax.newmexico.gov/Businesses/Pages/In-StatePreferenceCertification.aspx>.

11. **SUBCONTRACTORS, SUPPLIERS AND OTHERS:** The contractor shall be required to fully comply with the Subcontractors Fair Practices Act, NMSA 1978, 13-4-31 to 13-4-42.

- A. The contractor, in the bid documents, must identify in writing to the County those portions of the work that it proposes to subcontract and after the Notice of Award, may only subcontract other portions of the work with the County's written consent.
  - B. Any subcontractor who will be providing more than \$5,000 or one-half of one percent of the architect's or engineer's estimate of the total project cost (not including alternates) whichever is greater for any service, must be listed on the Subcontractor Listing. The subcontractor listing threshold for this IFB is \$5,000.
  - C. All subcontractors must be listed on the subcontractor list with their license number regardless of the amount of the job they will be performing. All subcontractors be required to adhere to the wage rates no matter the dollar amount of work to be performed.
12. **SUBSTITUTIONS:** The materials, products, and equipment described in the Bid Documents establish a standard of required function, dimension, appearance and quality to be met by any proposed substitution. No substitution will be considered prior to receipt of bids.
13. **WAGE RATES/REGISTRATION WITH THE LABOR AND INDUSTRIAL DIVISION OF THE LABOR DEPARTMENT:** The contractor shall be required to fully comply with the Public Works Minimum Wage Act, NMSA 1978, 13-4-11 thru 13-4-17. If the minimum wage rate determination for the project is not included in the initial Bid Documents, it will be furnished in an addendum.

A contractor or subcontractors who submit a bid valued at more than sixty thousand dollars (\$60,000) for a public works project that is subject to the Public Works Minimum Wage Act must be registered with the New Mexico Workforce Solutions at the time of the bid opening. The registration number shall be provided in the bid submitted by the contractor in the space provided for subcontracts with work proposed. After the bid opening, the registration numbers will be verified by the County and the bid will be determined to be non-responsive and disqualified if the registration numbers are *“inactive”* and the contractor does not provide proof of the required registration for itself or its subcontractors for work proposed over sixty thousand dollars (\$60,000).

For a public works contract whose value is \$60,000 or more, the NM Public Works Minimum Wage Act, 13-4-11 NMSA 1978, also requires all tiers of subcontractors to submit certified weekly payroll records to the general contractor and the County biweekly. If this provision applies, and shall require all tiers of subcontractors, to submit certified weekly payroll records to the contractor and the County's Project Manager for this project.

14. **BID FORM:**

- A. The bid forms are included in the bidding documents; additional copies may be obtained from the Santa Fe County Purchasing Division.
- B. Bid forms must be completed in either ink or typewritten. The bid price of each item on the form must be stated in numerals and written words; in case of an error in extensions in the unit price schedule the unit price shown in written words shall govern.

- C. Bids by corporations must be executed in the corporate name by the president or a vice president (or other corporate office accompanied by evidence of authority to sign) and the corporate seal shall be affixed and attested by the secretary or an assistant secretary. The corporate address and state of incorporation shall be shown below the signature.
- D. Bids by partnerships must be executed in the partnership name and signed by a partner, their title must appear under their signature and the official address of the partnership must be shown below the signature.
- E. All names must be typed or printed below the signature.
- F. The bid shall contain an acknowledgment of receipt of all addenda (the numbers of which shall be filled in on the bid form).

15. **BID SECURITY:** Each individual bid shall be accompanied by bid security equal to 5% of the amount of the bid. Such bid security shall be in the form of a certified or cashier's check made payable to the County or a surety bond issued by a surety authorized to conduct business in the State of New Mexico and who is approved in federal circular 570 as published by the U.S. Treasury Department.

By submitting the bid and providing the bid security, the bidder pledges to enter into a binding contract with the County and will furnish bonds covering the faithful performance of the contract and payment of all obligations arising hereunder.

The County will have the right to retain the bid security of bidders to whom an award is being considered until either the contract has been executed and bonds, if required, have been furnished or the specified time has elapsed so that bids may be withdrawn or all bids have been rejected.

16. **POWER OF ATTORNEY:** Attorneys in fact who sign bonds must attach certified effective copies of their Power of Attorney to all bonds.
17. **QUALIFICATION OF BIDS:** All contractors and subcontractors must have a valid New Mexico license appropriate to the work herein specified at the time the bid is submitted.
18. **SUBMISSION OF BIDS:** Bids shall be submitted at the time and place indicated in the "Advertisement for Bids" on page 3 of this IFB and shall be enclosed in an opaque sealed envelope, marked with the project title, name and address of the bidder, N.M. License Number, and accompanied by the list of subcontractors and other required documents. All blanks must be filled in. Conditional bids will not be considered. The envelope shall be addressed to:

Maricela Martinez, Procurement Specialist, Senior  
 Santa Fe County Purchasing Division  
 142 W. Palace Avenue (Second Floor)  
 Santa Fe, NM 87501

19. **MODIFICATION AND WITHDRAWAL OF BIDS:** A bid may not be modified, withdrawn or canceled by the bidder following the time and date designated for the receipt of bids, and each bidder so agrees to these conditions by submitting a bid.

Prior to the time and date designated for receipt of bids, a bid submitted may be modified or withdrawn by notice to the County at the address designated for receipt of bids. Such notice shall be in writing and signed by the bidder.

Upon receipt such written confirmation shall be date and time stamped by the County on or before the date and time set for receipt of bids. A modification of a bid shall be worded as not to reveal the amount of the original bid.

20. **GROSS RECEIPTS TAXES:** The amount of the bid shall exclude applicable New Mexico Gross Receipts Taxes or applicable local option taxes. The applicable gross receipts tax or applicable local option taxes shall be computed and shown as a separate amount on each request for payment made under the contract.
21. **CONSIDERATION OF BIDS:** Bids received on time will be opened publicly and will be read aloud, and an abstract of the amounts of the base bids and alternates or bid items, if any, will be made available to the bidders. Each bid shall be open to public inspection.
22. **BID OPENING PROCEDURE:** The person or persons opening the bids shall verify that the requirements of the Instruction to Bidders have been fulfilled, and shall read aloud the name of each apparently responsive bidder and the bid amount(s). If any requirements have not been met, the bid shall be deemed non-responsive and disqualified. Each bid shall be reviewed for the following:
  - A. Bid Proposal – Include name of bidder, type of organization, contractor’s license number and DOL registration number and all required signatures.
  - B. Bid Form- Include acknowledgement of all addenda, if applicable, bidder’s name, title, address, telephone number, contractor’s license number and type, United States Treasury number, resident preference certificate, if applicable, and all required signatures.
  - C. Bid Sheet-Include best price offered, **excluding** GRT.
  - D. Non-Collusion Affidavit for Prime Bidder Form-Include all required notarized signatures.
  - E. Certification of Non-Segregated Facilities Form-Include all required notarized signatures.
  - F. Certification of Bidder Regarding Equal Employment Opportunity Form-Include all required signatures.
  - G. Bid Bond-Include all required notarized signatures.
  - H. Bid Security- Shall be in the form of a certified or cashier’s check made payable to the County or a surety bond issued by a surety.
  - I. Subcontractor’s Listing Form-List of all subcontractors performing work, include name, address, telephone number, license number and **active** NM Department of Workforce Solutions Registration Number.
  - J. Campaign Contribution Disclosure Form-Include all required signatures.
  - K. Valid certificate of resident business or resident contractor.

**IF ANY OF THESE REQUIREMENTS HAVE NOT BEEN MET, THE BID MAY BE DISQUALIFIED AND CONSIDERED NON-RESPONSIVE.**

23. **BIDS TO REMAIN OPEN:** All bids shall remain open for ninety (90) days after the day of the bid opening.
24. **AWARD OF CONTRACT:**
  - A. The County reserves the right to reject any and all bids and waive any and all informalities or technicalities and the right to disregard all nonconforming or conditional bids or counter proposals.
  - B. If a contract is to be awarded, it will be awarded to the lowest responsible bidder submitting a bid that is either: (i) the lowest base bid; or (ii) the lowest bid including the base bid and the alternate(s); or (iii) the lowest bid including the base bid and any combination of the alternates.
  - C. If the lowest responsible bidder has otherwise qualified, the lowest bidder may negotiate with the County for a lower bid if the lowest bid is within **ten percent** over budgeted project funds in order to prevent all bids from being rejected. No change in the original scope and/or terms and conditions will be allowed. Negotiations may be permitted with product, materials, and equipment alternatives as determined to be in the best interest of the County.
  - D. Alternates may be accepted and awarded in any manner or order based on available budget. The County reserves the right not to award any particular alternate.
25. **LIQUIDATED DAMAGES:** Liquidated damages in the amount of one thousand five hundred dollars (\$1,500.00) per each calendar day shall be assessed after the completion date (as adjusted by change orders) until the issuance of a Certificate of Substantial Completion for the entire project.
26. **PREFERENCES IN EQUIPMENT AND MATERIAL:** In the construction of this project, the County has no preference for any process, type of equipment, or kind of material, but will consider all processes, types of equipment or kinds of material offered on a usual competitive basis if they are in fact equal to that specified and will accomplish the purpose intended. The County reserves the right to be the sole judge as to whether or not a different process, type of equipment or kind of material offered is in fact equal to that specified.
27. **LICENSE OR ROYALTY FEES:** Licenses and/or royalty fees for products or for processes must be paid for directly by the contractor.
28. **PERMITS:** It is the responsibility of the contractor and each subcontractor to obtain permits and inspections required by the County and/or the State of New Mexico or any other entity that may have jurisdiction over the construction.
29. **COLLUSION:** No bidder shall be interested in more than one bid. Collusion among bidders or the submission of more than one bid under different names by any firms or individual shall be cause for rejection of all bids in question without consideration.



30. **QUANTITIES:** The quantities set forth in the bid proposal are estimated quantities on which bids will be compared and which will be the basis for award of contract. Payment will be made for work actually performed.
31. **PROTEST PROCEDURE:** Any bidder who is aggrieved in connection with procurement may protest to the County Purchasing Manager as set forth in Resolution No. 2006-60 by the Board of County Commissioners. A copy of Resolution No. 2006-60 is available upon request. The protest must be in writing and be submitted within fifteen (15) days after the facts or occurrences. The complete procedures and requirements regarding protests and resolution of protests are available from the Santa Fe County Purchasing Division upon request.
32. **CONTRACTOR'S QUALIFICATION STATEMENT:** A bidder to whom award of a contract is under consideration shall submit, upon request, information and data to prove that its financial resources, production or service facilities, personnel, and service reputation and experience are adequate to make satisfactory delivery of the services, construction, or items of personal property described in the Bidding Documents.
33. **BOND REQUIREMENTS – PERFORMANCE BOND AND PAYMENT BOND:** If awarded the contract, a bidder shall furnish bonds covering the faithful performance of the contract and payment of all obligations arising thereunder. The amount of the bonds, performance and payment, shall each be equal to 100% of the contract sum. Bonds shall be issued by a surety authorized to conduct business in the State of New Mexico and who is approved in federal circular 570 as published by the U.S. Treasury Department. The cost of the bonds shall be included in the bid.
34. **TIME OF DELIVERY AND FORM OF BONDS:** The bidder shall deliver the required bonds to the County no later than seven (7) days following the date of execution of the contract. If the Work is to be commenced prior thereto in response to a letter of intent, the bidder shall, prior to commencement of the Work, submit evidence satisfactory to the County that such bonds will be furnished and delivered in accordance with this section.  
  
The bidder shall require the attorney-in-fact who executes the required bonds on behalf of the surety to affix thereto a certified and current copy of the power of attorney.
35. **WARRANTY:** The contractor shall furnish a written warranty of workmanship to the Procurement Manager for a period of one (1) year following the completion date in addition to all other warranties required by the Contract Documents.
36. **NOTICE OF AWARD:** A written Notice of Award shall be issued by the County after review and approval of the bid and related documents.
37. **IDENTICAL BIDS:** If two or more identical low bids are received, the County will apply the process described at Section 13.1.110 NMSA 1978, of the State Procurement Code.

38. **CANCELLATION OF AWARD:** When in the best interest of the public, the County may cancel the award of any contract at any time before the execution of said contract by all parties without any liability against the County.
39. **NOTICE TO PROCEED:** The County will issue a written Notice to Proceed and a purchase order to the contractor stipulating the date from which contract time will be charged and the date contract time is to expire.
40. **FAILURE TO EXECUTE CONTRACT:** Failure to return the signed contract with acceptable contract bonds and certificate of insurance within ten (10) calendar days after the date of the Notice of Award shall be just cause for the cancellation of the award. The award may then be made to the next lowest responsible bidder, or the work may be re-advertised and constructed under contract or otherwise, as the owner may decide.
41. **INSURANCE REQUIREMENTS:** At a minimum upon execution of the Agreement between the County and the contractor, the contractor shall furnish to the County, Certificates of Insurance naming Santa Fe County as an additional insured for the insurance coverage as specified in the sample contract and the exhibit to the contract.
42. **CLARIFICATION OF NON-COLLUSION AFFIDAVIT OF SUBCONTRACTOR, AND CERTIFICATION OF SUBCONTRACTOR REGARDING EQUAL EMPLOYMENT OPPORTUNITY:** The general contractor is not required to present completed "Non-Collusion Affidavit of Subcontractor" and "Certification of Subcontractor Regarding Equal Employment Opportunity" forms from their subcontractors at the time of bid submittal; however, once the contract is awarded, the general contractor is responsible for providing these forms along with the bonds and certificate of insurance.
43. **SUBCONTRACTOR PERFORMANCE AND PAYMENT BOND:** A subcontractor whose work to be performed on a public works building project is one hundred twenty- five thousand dollars (\$125,000.) or more shall submit a performance and payment bond in the amount of the work they are to perform on the project. These bonds will be submitted within the stated (10) calendar days after the date of the Notice to Award.
44. **OPERATIONS AND MAINTENANCE MANUALS:** At the completion of the project but prior to the Substantial Completion certificate approved by the engineer, the contractor shall submit to the architect two (2) copies of a three ring binder with all maintenance and operations instructions for all systems and items within this phase of construction, if applicable.
45. **NOTICE:** The Procurement Code, Sections 13-1-28 through 13-1-199 NMSA 1978, imposes civil and misdemeanor criminal penalties for its violation. In addition, the New Mexico criminal statutes impose felony penalties for bribes, gratuities, and kickbacks.
46. **SUFFICIENT APPROPRIATION:** Any contract awarded as a result of this IFB process may be terminated if sufficient appropriations or authorizations do not exist. Such termination will be effected by sending written notice to the contractor. The County's decision as to

whether sufficient appropriations and authorizations are available will be accepted by the contractor as final.

47. **NUMBER OF BIDS ACCEPTED:** Bidders shall submit only one (1) bid in response to this IFB.
48. **DOUBLE-SIDED DOCUMENTS:** All submitted bids/proposal documents shall be double-sided, pursuant to Santa Fe County Resolution 2013-7, Adopting Sustainable Resource Management Principles, Section 2. A. Waste Reduction and Reuse... "all documents are to be double-sided, including those that are generated by outside entities using County funds and by consultants and contractors doing business with the County".
49. **LIVING WAGE:** Contractor shall comply with the requirements of Santa Fe County Ordinance 2014-1 (Establishing a Living Wage) as amended by 2014-5.

**THIS SECTION INTENTIONALLY LEFT BLANK**

**BID PROPOSAL  
IFB No. 2018-0336-PW/MM  
CONSTRUCTION SERVICES  
FOR COUNTY ROAD 67F LA BARBARIA ROAD  
DRAINAGE AND ROAD IMPROVEMENTS**

To Santa Fe County, State of New Mexico, Owner:

In compliance with the Information for Bidders and in strict conformance with the Contract Documents, \_\_\_\_\_, hereinafter called the Bidder, organized and existing under the laws of the State of New Mexico as a \_\_\_\_\_ (type of business or legal entity), hereby proposes to perform all the WORK required for the construction services for County Road 67F La Barbaria Road located in Santa Fe County, New Mexico.

The undersigned declares that it is the only person or parties interested in the proposal as principals are those named herein; that the proposal is made without collusion with any person, firm or corporation; that it has carefully examined the specifications, including special provisions, if any, and that it has made a personal examination of the site of the work, that it is to furnish all the necessary machinery, tools, apparatus and other means of construction and do all the work and furnish all the materials specified in the manner and the time prescribed; that it understands that the quantities are approximate only and subject to increase or decrease, and that it is willing to perform any increased or decreased quantities of work at unit price bid.

The undersigned hereby agrees to execute and deliver the Construction Agreement within ten (10) days, or such further time as may be allowed in writing by Santa Fe County after receiving notification of the acceptance of this proposal, and it is hereby mutually understood and agreed that in case we do not, Santa Fe County may proceed to award the contract to others.

We hereby agree to commence the work within fifteen (15) days, or such further time as may be allowed in writing by Santa Fe County after notification to proceed.

The undersigned proposes to guarantee all work performed under these plans, specifications and contract for one year after acceptance by the County and repair and maintain same until the date of acceptance by Santa Fe County.

\_\_\_\_\_  
Signature-Title

(Corporate Seal)

\_\_\_\_\_  
Corporate Name

\_\_\_\_\_  
Address

\_\_\_\_\_  
City, State, Zip Code

Names of individual members of  
firms or names and titles of all  
officers of Corporation.

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Corporation organized under  
the Laws of the State of

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New Mexico Contractor's License No.

NM Department of Workforce Solutions,  
Public Works Labor Enforcement Fund  
Registration Number:

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**SANTA FE COUNTY  
BID FORM**

FROM: \_\_\_\_\_

\_\_\_\_\_ hereinafter called "Bidder".

TO: Santa Fe County  
142 West Palace Avenue  
Santa Fe, New Mexico 87501

hereinafter called "CONTRACTING AGENCY",

BID FOR: **IFB No. 2018-0336-PW/MM**  
PROJECT: **CONSTRUCTION SERVICES FOR COUNTY ROAD  
67F LA BARBARIA ROAD DRAINAGE AND ROAD  
IMPROVEMENTS**

Purchasing Division:

The bidder has familiarized itself with the existing conditions on the project area affecting the cost of the work and with the contract documents which includes:

- A. Advertisement for Bids
- B. Instructions for Bidders
- C. Bid Proposal and other required bid forms as listed herein
- D. Form of Agreement
- E. Form of Performance Bond
- F. Form of Labor and Material Payment Bond
- G. Technical Specifications
- H. All information provided in the Project Manual and Drawings

Therefore, the Bidder hereby proposes to furnish all supervision, technical personnel, labor, materials, tools appurtenances, equipment, and services (including all utility and transportation services) required to complete the Construction Services for County Road 67F La Barbaria Road, in accordance with the above listed documents.

(Amounts are to be shown in both words and figures. In case of discrepancy, the amount shown in words will govern). Bidder has provided unit prices for the scope of work.

In submitting this bid, the Bidder understands that the right is reserved by Santa Fe County to reject any irregular or all bids, waive any technicalities in the bids, and accept the bid deemed to be in the best interest of the public and that Santa Fe County intends to award one contract (if at all) for the items bid. If written notice of the acceptance of this bid is mailed, telegraphed or otherwise delivered to the undersigned within ninety (90) days after the opening thereof or at any time thereafter before this bid is withdrawn, the undersigned agrees to execute and deliver the agreement in the prescribed form within ten (10) days after the agreement is presented to it for signature.

All Addenda pertaining to this Project shall be acknowledged by the Bidder in the spaces provided below:

Addendum No.                      Date	Acknowledged by Bidder or Its Authorized Representative	Date Acknowledged
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

**Failure to acknowledge receipt, as provided above, may be considered sufficient grounds for disqualification of the bidder and rejection of his proposal.** It shall be the bidder's responsibility to become fully advised of all Addenda prior to submitting his bid.

The Bidder agrees to commence work under this Contract within fifteen (15) days after, a date to be specified in a written "Notice to Proceed" from Santa Fe County or its authorized agents. Bidder further agrees to pay liquidated damages as provided in the Contract Documents.

This Bid Proposal contains the following:

- A. Bid Proposal
- B. Bid Form
- C. Bid Sheet(s)
- D. Non-Collusion Affidavit for Prime Bidder
- E. Certification of Non-segregated Facilities
- F. Certification of Bidder Regarding Equal Employment Opportunity
- G. Bid Bond
- H. Subcontractors Listing (as included in this packet)
- I. Campaign Contribution Disclosure Form
- J. Preference Certificate(s)

Respectfully submitted:

Name of Bidder: \_\_\_\_\_

Official Address: \_\_\_\_\_

By: \_\_\_\_\_  
(Signature)

Title: \_\_\_\_\_

Date: \_\_\_\_\_

Telephone No.: \_\_\_\_\_

\*New Mexico Contractor's License Number and Types: \_\_\_\_\_

United States Treasury Number: \_\_\_\_\_

Resident Preference Certificate Number: \_\_\_\_\_

**LA BARBARIA DRAINAGE AND ROAD IMPROVMENTS - BID PROPOSAL (BASE BID)**

LINE	ITEM #	DESCRIPTION	UNIT	APPROX. QUANTITY
1	201000	<b>CLEARING AND GRUBBING</b>	<b>L.S.</b>	<b>1</b>
		Unit Bid Price (Written in WORDS)	Unit Bid Price (Written in NUMBERS)	Total Item Bid Price (Written in NUMBERS)
		Dollars and Cents	Dollars and Cents	Dollars and Cents
2	203000	<b>UNCLASSIFIED EXCAVATION</b>	<b>CU YD</b>	<b>1500</b>
		Unit Bid Price (Written in WORDS)	Unit Bid Price (Written in NUMBERS)	Total Item Bid Price (Written in NUMBERS)
		Dollars and Cents	Dollars and Cents	Dollars and Cents
3	203100	<b>BORROW</b>	<b>CU YD</b>	<b>4000</b>
		Unit Bid Price (Written in WORDS)	Unit Bid Price (Written in NUMBERS)	Total Item Bid Price (Written in NUMBERS)
		Dollars and Cents	Dollars and Cents	Dollars and Cents
4	207000	<b>SUBGRADE PREPARATION</b>	<b>SQ YD</b>	<b>4240</b>
		Unit Bid Price (Written in WORDS)	Unit Bid Price (Written in NUMBERS)	Total Item Bid Price (Written in NUMBERS)
		Dollars and Cents	Dollars and Cents	Dollars and Cents
5	210001	<b>UNSUITABLE MATERIAL EXCAVATION</b>	<b>CU YD</b>	<b>50</b>
		Unit Bid Price (Written in WORDS)	Unit Bid Price (Written in NUMBERS)	Total Item Bid Price (Written in NUMBERS)
		Dollars and Cents	Dollars and Cents	Dollars and Cents
6	210002	<b>MAJOR STRUCTURES EXCAVATION</b>	<b>CU YD</b>	<b>380</b>
		Unit Bid Price (Written in WORDS)	Unit Bid Price (Written in NUMBERS)	Total Item Bid Price (Written in NUMBERS)
		Dollars and Cents	Dollars and Cents	Dollars and Cents
7	210003	<b>MAJOR STRUCTURES BACKFILL</b>	<b>CU YD</b>	<b>250</b>
		Unit Bid Price (Written in WORDS)	Unit Bid Price (Written in NUMBERS)	Total Item Bid Price (Written in NUMBERS)
		Dollars and Cents	Dollars and Cents	Dollars and Cents
8	303160	<b>BASE COURSE 6"</b>	<b>SQ YD</b>	<b>4240</b>
		Unit Bid Price (Written in WORDS)	Unit Bid Price (Written in NUMBERS)	Total Item Bid Price (Written in NUMBERS)
		Dollars and Cents	Dollars and Cents	Dollars and Cents
9	416000	<b>MINOR PAVING 3"</b>	<b>SQ YD</b>	<b>4240</b>
		Unit Bid Price (Written in WORDS)	Unit Bid Price (Written in NUMBERS)	Total Item Bid Price (Written in NUMBERS)
		Dollars and Cents	Dollars and Cents	Dollars and Cents
10	511000	<b>STRUCTURAL CONCRETE CLASS A</b>	<b>CU YD</b>	<b>10</b>
		Unit Bid Price (Written in WORDS)	Unit Bid Price (Written in NUMBERS)	Total Item Bid Price (Written in NUMBERS)
		Dollars and Cents	Dollars and Cents	Dollars and Cents
11	511030	<b>STRUCTURAL CONCRETE, CLASS AA</b>	<b>CU YD</b>	<b>80</b>
		Unit Bid Price (Written in WORDS)	Unit Bid Price (Written in NUMBERS)	Total Item Bid Price (Written in NUMBERS)
		Dollars and Cents	Dollars and Cents	Dollars and Cents



12	511200	<b>SLOPE PAVING</b>	<b>SQ YD</b>	<b>40</b>
		Unit Bid Price (Written in WORDS)	Unit Bid Price (Written in NUMBERS)	Total Item Bid Price (Written in NUMBERS)
		Dollars and Cents	Dollars and Cents	Dollars and Cents
13	540060	<b>REINFORCING BARS GRADE 60</b>	<b>LBS</b>	<b>500</b>
		Unit Bid Price (Written in WORDS)	Unit Bid Price (Written in NUMBERS)	Total Item Bid Price (Written in NUMBERS)
		Dollars and Cents	Dollars and Cents	Dollars and Cents
14	540160	<b>EPOXY COATED REINFORCING BARS GRADE 60</b>	<b>LBS</b>	<b>8000</b>
		Unit Bid Price (Written in WORDS)	Unit Bid Price (Written in NUMBERS)	Total Item Bid Price (Written in NUMBERS)
		Dollars and Cents	Dollars and Cents	Dollars and Cents
15	570154	<b>24"S x 18"R (NOMINAL) CULVERT PIPE ARCH</b>	<b>LIN. FT</b>	<b>240</b>
		Unit Bid Price (Written in WORDS)	Unit Bid Price (Written in NUMBERS)	Total Item Bid Price (Written in NUMBERS)
		Dollars and Cents	Dollars and Cents	Dollars and Cents
16	570155	<b>24"S x 18"R (NOMINAL) CULVERT PIPE ARCH END SECTION</b>	<b>EACH</b>	<b>11</b>
		Unit Bid Price (Written in WORDS)	Unit Bid Price (Written in NUMBERS)	Total Item Bid Price (Written in NUMBERS)
		Dollars and Cents	Dollars and Cents	Dollars and Cents
17	570162	<b>42"S x 29"R (NOMINAL) CULVERT PIPE ARCH</b>	<b>LIN. FT</b>	<b>100</b>
		Unit Bid Price (Written in WORDS)	Unit Bid Price (Written in NUMBERS)	Total Item Bid Price (Written in NUMBERS)
		Dollars and Cents	Dollars and Cents	Dollars and Cents
18	570163	<b>42"S x 29"R (NOMINAL) CULVERT PIPE ARCH END SECTION</b>	<b>EACH</b>	<b>6</b>
		Unit Bid Price (Written in WORDS)	Unit Bid Price (Written in NUMBERS)	Total Item Bid Price (Written in NUMBERS)
		Dollars and Cents	Dollars and Cents	Dollars and Cents
19	570599	<b>13'7"S x 4'7"R x 63' METAL BOX CULVERT</b>	<b>LIN. FT</b>	<b>63</b>
		Unit Bid Price (Written in WORDS)	Unit Bid Price (Written in NUMBERS)	Total Item Bid Price (Written in NUMBERS)
		Dollars and Cents	Dollars and Cents	Dollars and Cents
20	601000	<b>REMOVAL OF STRUCTURES AND OBSTRUCTIONS</b>	<b>L.S.</b>	<b>1</b>
		Unit Bid Price (Written in WORDS)	Unit Bid Price (Written in NUMBERS)	Total Item Bid Price (Written in NUMBERS)
		Dollars and Cents	Dollars and Cents	Dollars and Cents
21	602000	<b>RIPRAP CLASS A</b>	<b>CU YD</b>	<b>250</b>
		Unit Bid Price (Written in WORDS)	Unit Bid Price (Written in NUMBERS)	Total Item Bid Price (Written in NUMBERS)
		Dollars and Cents	Dollars and Cents	Dollars and Cents
22	602010	<b>RIPRAP CLASS B</b>	<b>CU YD</b>	<b>120</b>
		Unit Bid Price (Written in WORDS)	Unit Bid Price (Written in NUMBERS)	Total Item Bid Price (Written in NUMBERS)
		Dollars and Cents	Dollars and Cents	Dollars and Cents

23	603220	CHECK DAM TYPE I	LIN. FT	180
		Unit Bid Price (Written in WORDS)	Unit Bid Price (Written in NUMBERS)	Total Item Bid Price (Written in NUMBERS)
		Dollars and Cents	Dollars and Cents	Dollars and Cents
24	603260	CULVERT PROTECTION	SQ YD	70
		Unit Bid Price (Written in WORDS)	Unit Bid Price (Written in NUMBERS)	Total Item Bid Price (Written in NUMBERS)
		Dollars and Cents	Dollars and Cents	Dollars and Cents
25	603262	COMPOSTED MULCH SOCKS	LIN. FT	1680
		Unit Bid Price (Written in WORDS)	Unit Bid Price (Written in NUMBERS)	Total Item Bid Price (Written in NUMBERS)
		Dollars and Cents	Dollars and Cents	Dollars and Cents
26	603281	SWPPP PLAN PREPARATION AND MAINTENANCE	L.S.	1
		Unit Bid Price (Written in WORDS)	Unit Bid Price (Written in NUMBERS)	Total Item Bid Price (Written in NUMBERS)
		Dollars and Cents	Dollars and Cents	Dollars and Cents
27	606610	TEMPORARY CWB RETAINED BY THE CONTRACTOR	LIN. FT	320
		Unit Bid Price (Written in WORDS)	Unit Bid Price (Written in NUMBERS)	Total Item Bid Price (Written in NUMBERS)
		Dollars and Cents	Dollars and Cents	Dollars and Cents
28	606619	RESETTING OF CONCRETE WALL BARRIER	LIN. FT	960
		Unit Bid Price (Written in WORDS)	Unit Bid Price (Written in NUMBERS)	Total Item Bid Price (Written in NUMBERS)
		Dollars and Cents	Dollars and Cents	Dollars and Cents
29	607079	PEDESTRIAN/BICYCLE RAILING	LIN. FT	48
		Unit Bid Price (Written in WORDS)	Unit Bid Price (Written in NUMBERS)	Total Item Bid Price (Written in NUMBERS)
		Dollars and Cents	Dollars and Cents	Dollars and Cents
30	609200	HEADER CURB	LIN. FT	3720
		Unit Bid Price (Written in WORDS)	Unit Bid Price (Written in NUMBERS)	Total Item Bid Price (Written in NUMBERS)
		Dollars and Cents	Dollars and Cents	Dollars and Cents
31	618000	TRAFFIC CONTROL MANAGEMENT	L.S.	1
		Unit Bid Price (Written in WORDS)	Unit Bid Price (Written in NUMBERS)	Total Item Bid Price (Written in NUMBERS)
		Dollars and Cents	Dollars and Cents	Dollars and Cents
32	621000	MOBILIZATION	L.S.	1
		Unit Bid Price (Written in WORDS)	Unit Bid Price (Written in NUMBERS)	Total Item Bid Price (Written in NUMBERS)
		Dollars and Cents	Dollars and Cents	Dollars and Cents
33	632020	CLASS C SEEDING	ACRE	0.75
		Unit Bid Price (Written in WORDS)	Unit Bid Price (Written in NUMBERS)	Total Item Bid Price (Written in NUMBERS)
		Dollars and Cents	Dollars and Cents	Dollars and Cents

34	663049	PRE CONSTRUCTION UTILITY SURVEY	L.S.	1
		Unit Bid Price (Written in WORDS)	Unit Bid Price (Written in NUMBERS)	Total Item Bid Price (Written in NUMBERS)
		Dollars and Cents	Dollars and Cents	Dollars and Cents
35	668000	DEWATERING	L.S.	1
		Unit Bid Price (Written in WORDS)	Unit Bid Price (Written in NUMBERS)	Total Item Bid Price (Written in NUMBERS)
		Dollars and Cents	Dollars and Cents	Dollars and Cents
36	701000	PANEL SIGNS	SQ FT	80
		Unit Bid Price (Written in WORDS)	Unit Bid Price (Written in NUMBERS)	Total Item Bid Price (Written in NUMBERS)
		Dollars and Cents	Dollars and Cents	Dollars and Cents
37	701100	STEEL POST AND BASE POST FOR ALUMINUM PANEL SIGNS	LIN. FT	230
		Unit Bid Price (Written in WORDS)	Unit Bid Price (Written in NUMBERS)	Total Item Bid Price (Written in NUMBERS)
		Dollars and Cents	Dollars and Cents	Dollars and Cents
38	702810	TRAFFIC CONTROL DEVICES FOR CONSTRUCTION	L.S.	1
		Unit Bid Price (Written in WORDS)	Unit Bid Price (Written in NUMBERS)	Total Item Bid Price (Written in NUMBERS)
		Dollars and Cents	Dollars and Cents	Dollars and Cents
39	704000	RETROREFLECTORIZED PAINTED MARKINGS	LIN. FT	6948
		Unit Bid Price (Written in WORDS)	Unit Bid Price (Written in NUMBERS)	Total Item Bid Price (Written in NUMBERS)
		Dollars and Cents	Dollars and Cents	Dollars and Cents
40	720060	VEHICULAR IMPACT ATTENUATORY UNIT - WORK ZONE	EACH	2
		Unit Bid Price (Written in WORDS)	Unit Bid Price (Written in NUMBERS)	Total Item Bid Price (Written in NUMBERS)
		Dollars and Cents	Dollars and Cents	Dollars and Cents
41	720110	REMOVE/RESET IMPACT ATTENUATOR UNIT	EACH	6
		Unit Bid Price (Written in WORDS)	Unit Bid Price (Written in NUMBERS)	Total Item Bid Price (Written in NUMBERS)
		Dollars and Cents	Dollars and Cents	Dollars and Cents
42	801000	CONSTRUCTION STAKING BY THE CONTRACTOR	L.S.	1
		Unit Bid Price (Written in WORDS)	Unit Bid Price (Written in NUMBERS)	Total Item Bid Price (Written in NUMBERS)
		Dollars and Cents	Dollars and Cents	Dollars and Cents
TOTAL BASE BID AMOUNT (EXCLUDING NM GROSS RECEIPTS TAX)				
(Written in WORDS)			DOLLARS AND CENTS	

**LA BARBARIA DRAINAGE AND ROAD IMPROVMENTS - BID PROPOSAL (BID ALTERNATE #1)**

LINE	ITEM #	DESCRIPTION	UNIT	APPROX. QUANTITY
1	201000	<b>CLEARING AND GRUBBING</b>	<b>L.S.</b>	<b>1</b>
		Unit Bid Price (Written in WORDS)	Unit Bid Price (Written in NUMBERS)	Total Item Bid Price (Written in NUMBERS)
		Dollars and Cents	Dollars and Cents	Dollars and Cents
2	203000	<b>UNCLASSIFIED EXCAVATION</b>	<b>CU YD</b>	<b>500</b>
		Unit Bid Price (Written in WORDS)	Unit Bid Price (Written in NUMBERS)	Total Item Bid Price (Written in NUMBERS)
		Dollars and Cents	Dollars and Cents	Dollars and Cents
3	203100	<b>BORROW</b>	<b>CU YD</b>	<b>500</b>
		Unit Bid Price (Written in WORDS)	Unit Bid Price (Written in NUMBERS)	Total Item Bid Price (Written in NUMBERS)
		Dollars and Cents	Dollars and Cents	Dollars and Cents
4	207000	<b>SUBGRADE PREPARATION</b>	<b>SQ YD</b>	<b>1280</b>
		Unit Bid Price (Written in WORDS)	Unit Bid Price (Written in NUMBERS)	Total Item Bid Price (Written in NUMBERS)
		Dollars and Cents	Dollars and Cents	Dollars and Cents
5	303160	<b>BASE COURSE 6"</b>	<b>SQ YD</b>	<b>1280</b>
		Unit Bid Price (Written in WORDS)	Unit Bid Price (Written in NUMBERS)	Total Item Bid Price (Written in NUMBERS)
		Dollars and Cents	Dollars and Cents	Dollars and Cents
6	416000	<b>MINOR PAVING 3"</b>	<b>SQ YD</b>	<b>1280</b>
		Unit Bid Price (Written in WORDS)	Unit Bid Price (Written in NUMBERS)	Total Item Bid Price (Written in NUMBERS)
		Dollars and Cents	Dollars and Cents	Dollars and Cents
7	570018	<b>18" CULVERT PIPE</b>	<b>LIN. FT</b>	<b>10</b>
		Unit Bid Price (Written in WORDS)	Unit Bid Price (Written in NUMBERS)	Total Item Bid Price (Written in NUMBERS)
		Dollars and Cents	Dollars and Cents	Dollars and Cents
8	570019	<b>18" CULVERT PIPE END SECTION</b>	<b>EACH</b>	<b>2</b>
		Unit Bid Price (Written in WORDS)	Unit Bid Price (Written in NUMBERS)	Total Item Bid Price (Written in NUMBERS)
		Dollars and Cents	Dollars and Cents	Dollars and Cents
9	570154	<b>24"S x 18"R (NOMINAL) CULVERT PIPE ARCH</b>	<b>LIN. FT</b>	<b>30</b>
		Unit Bid Price (Written in WORDS)	Unit Bid Price (Written in NUMBERS)	Total Item Bid Price (Written in NUMBERS)
		Dollars and Cents	Dollars and Cents	Dollars and Cents
10	570155	<b>24"S x 18"R (NOMINAL) CULVERT PIPE ARCH END SECTION</b>	<b>EACH</b>	<b>2</b>
		Unit Bid Price (Written in WORDS)	Unit Bid Price (Written in NUMBERS)	Total Item Bid Price (Written in NUMBERS)
		Dollars and Cents	Dollars and Cents	Dollars and Cents
11	601000	Unit Bid Price (Written in WORDS)	Unit Bid Price (Written in NUMBERS)	Total Item Bid Price (Written in NUMBERS)
		Dollars and Cents	Dollars and Cents	Dollars and Cents
		Dollars and Cents	Dollars and Cents	Dollars and Cents
12	602000	<b>RIPRAP CLASS A</b>	<b>CU YD</b>	<b>10</b>
		Unit Bid Price (Written in WORDS)	Unit Bid Price (Written in NUMBERS)	Total Item Bid Price (Written in NUMBERS)
		Dollars and Cents	Dollars and Cents	Dollars and Cents

13	602010	<b>RIPRAP CLASS B</b>	<b>CU YD</b>	<b>90</b>
		Unit Bid Price (Written in WORDS)	Unit Bid Price (Written in NUMBERS)	Total Item Bid Price (Written in NUMBERS)
			Dollars and Cents	Dollars and Cents
14	603260	<b>CULVERT PROTECTION</b>	<b>SQ YD</b>	<b>20</b>
		Unit Bid Price (Written in WORDS)	Unit Bid Price (Written in NUMBERS)	Total Item Bid Price (Written in NUMBERS)
		Dollars and Cents	Dollars and Cents	Dollars and Cents
15	603262	<b>COMPOSTED MULCH SOCKS</b>	<b>LIN. FT</b>	<b>510</b>
		Unit Bid Price (Written in WORDS)	Unit Bid Price (Written in NUMBERS)	Total Item Bid Price (Written in NUMBERS)
		Dollars and Cents	Dollars and Cents	Dollars and Cents
16	603281	<b>SWPPP PLAN PREPARATION AND MAINTENANCE</b>	<b>L.S.</b>	<b>1</b>
		Unit Bid Price (Written in WORDS)	Unit Bid Price (Written in NUMBERS)	Total Item Bid Price (Written in NUMBERS)
		Dollars and Cents	Dollars and Cents	Dollars and Cents
17	606001	<b>SINGLE FACE W-BEAM GUARDRAIL</b>	<b>LIN. FT</b>	<b>140</b>
		Unit Bid Price (Written in WORDS)	Unit Bid Price (Written in NUMBERS)	Total Item Bid Price (Written in NUMBERS)
		Dollars and Cents	Dollars and Cents	Dollars and Cents
18	606053	<b>END TREATMENT W-BEAM END ANCHOR</b>	<b>EACH</b>	<b>2</b>
		Unit Bid Price (Written in WORDS)	Unit Bid Price (Written in NUMBERS)	Total Item Bid Price (Written in NUMBERS)
		Dollars and Cents	Dollars and Cents	Dollars and Cents
19	609200	<b>HEADER CURB</b>	<b>LIN. FT</b>	<b>1220</b>
		Unit Bid Price (Written in WORDS)	Unit Bid Price (Written in NUMBERS)	Total Item Bid Price (Written in NUMBERS)
		Dollars and Cents	Dollars and Cents	Dollars and Cents
20	618000	<b>TRAFFIC CONTROL MANAGEMENT</b>	<b>L.S.</b>	<b>1</b>
		Unit Bid Price (Written in WORDS)	Unit Bid Price (Written in NUMBERS)	Total Item Bid Price (Written in NUMBERS)
		Dollars and Cents	Dollars and Cents	Dollars and Cents
21	621000	<b>MOBILIZATION</b>	<b>L.S.</b>	<b>1</b>
		Unit Bid Price (Written in WORDS)	Unit Bid Price (Written in NUMBERS)	Total Item Bid Price (Written in NUMBERS)
		Dollars and Cents	Dollars and Cents	Dollars and Cents
22	632020	<b>CLASS C SEEDING</b>	<b>ACRE</b>	<b>0.25</b>
		Unit Bid Price (Written in WORDS)	Unit Bid Price (Written in NUMBERS)	Total Item Bid Price (Written in NUMBERS)
		Dollars and Cents	Dollars and Cents	Dollars and Cents
23	663049	<b>PRE CONSTRUCTION UTILITY SURVEY</b>	<b>L.S.</b>	<b>1</b>
		Unit Bid Price (Written in WORDS)	Unit Bid Price (Written in NUMBERS)	Total Item Bid Price (Written in NUMBERS)
		Dollars and Cents	Dollars and Cents	Dollars and Cents
24	668000	<b>DEWATERING</b>	<b>L.S.</b>	<b>1</b>
		Unit Bid Price (Written in WORDS)	Unit Bid Price (Written in NUMBERS)	Total Item Bid Price (Written in NUMBERS)
		Dollars and Cents	Dollars and Cents	Dollars and Cents

25	701000	PANEL SIGNS	SQ FT	53
		Unit Bid Price (Written in WORDS)	Unit Bid Price (Written in NUMBERS)	Total Item Bid Price (Written in NUMBERS)
		Dollars and Cents	Dollars and Cents	Dollars and Cents
26	701100	STEEL POST AND BASE POST FOR ALUMINUM PANEL SIGNS	LIN. FT	127
		Unit Bid Price (Written in WORDS)	Unit Bid Price (Written in NUMBERS)	Total Item Bid Price (Written in NUMBERS)
		Dollars and Cents	Dollars and Cents	Dollars and Cents
27	702810	TRAFFIC CONTROL DEVICES FOR CONSTRUCTION	L.S.	1
		Unit Bid Price (Written in WORDS)	Unit Bid Price (Written in NUMBERS)	Total Item Bid Price (Written in NUMBERS)
		Dollars and Cents	Dollars and Cents	Dollars and Cents
28	801000	CONSTRUCTION STAKING BY THE CONTRACTOR	L.S.	1
		Unit Bid Price (Written in WORDS)	Unit Bid Price (Written in NUMBERS)	Total Item Bid Price (Written in NUMBERS)
		Dollars and Cents	Dollars and Cents	Dollars and Cents
TOTAL BID ALTERNATE #1 AMOUNT (EXCLUDING NM GROSS RECEIPTS TAX)				
(Written in WORDS)			DOLLARS AND CENTS	

**NON-COLLUSION AFFIDAVIT OF PRIME BIDDER**

STATE OF NEW MEXICO

COUNTY OF \_\_\_\_\_

\_\_\_\_\_ being first duly sworn, deposes and says that:

(1) They are the \_\_\_\_\_ of \_\_\_\_\_ the Bidder that has submitted the attached Bid Proposal;

(2) They are fully informed respecting the preparation and contents of the attached Bid Proposal and of all pertinent circumstances respecting such bid;

(3) Such bid is genuine and is not a collusive or sham bid;

(4) Neither the said bidder nor any of its officers, partners, owners, agents, representatives, employees or parties in interest, including this affiant, has in any way colluded, conspired, connived or agreed, directly or indirectly with any other bidder, firm or person to submit a collusive or sham bid in connection with the contract for which the attached bid has been submitted or to refrain from bidding in connection with such contract, or has in any manner, directly or indirectly, sought by agreement or collusion or communications or conference with any other bidder, or to secure through any collusion, conspiracy, connivance or unlawful agreement any advantage against the Contracting Agency or any person interested in the proposed contract; and

(5) The price or prices quoted in the attached bid are fair and proper and are not tainted by any collusion, conspiracy, connivance or unlawful agreement on the part of the bidder or any of its agents, representatives, owners, employees, or parties in interest, including this affiant.

(SIGNED) \_\_\_\_\_

TITLE \_\_\_\_\_

SUBSCRIBED AND SWORN to before me this \_\_\_\_ day of \_\_\_\_\_ 2018.

\_\_\_\_\_  
NOTARY PUBLIC

My Commission Expires \_\_\_\_\_

# NON-COLLUSION AFFIDAVIT OF SUBCONTRACTOR

STATE OF NEW MEXICO

COUNTY OF \_\_\_\_\_

\_\_\_\_\_ being first duly sworn, deposes and says that:

(1) It is the \_\_\_\_\_ of \_\_\_\_\_, hereinafter referred to as the "Subcontractor".

(2) It is fully informed respecting the preparation and contents of the Subcontractor's proposal submitted by the Subcontractor to \_\_\_\_\_, the Contractor, for certain work in connection with the \_\_\_\_\_ contract pertaining to the \_\_\_\_\_ project in \_\_\_\_\_.

(3) Such Subcontractors proposal is genuine and is not a collusive or sham proposal.

(4) Neither the Subcontractor nor any of its officers, partners, owners, agents, representatives, employees or parties in interest, including this affiant, has in any way colluded, conspired, connived or agreed, directly or indirectly with any other bidder, firm or person to submit a collusive or sham bid in connection with the contract for which the attached bid has been submitted or to refrain from bidding in connection with such contract, or has in any manner, directly or indirectly, sought by agreement or collusion or communications or conference with any other bidder, or to secure through any collusion, conspiracy, connivance or unlawful agreement any advantage against the Contracting Agency or any person interested in the proposed contract; and

(5) The price or prices quoted in the Subcontractor's proposal are fair and proper and are not tainted by any collusion, conspiracy, connivance or unlawful agreement on the part of the bidder or any of its agents, representatives, owners, employees, or parties in interest, including this affiant.

(SIGNED) \_\_\_\_\_

TITLE \_\_\_\_\_

SUBSCRIBED AND SWORN to before me this \_\_\_\_\_ day of \_\_\_\_\_ 2018.

\_\_\_\_\_  
Notary Public

My Commission Expires: \_\_\_\_\_

## SUBCONTRACTS

A. The contractor shall not execute an agreement with any subcontractor or permit any subcontractor to perform any work included in this contract until it has submitted a Non-Collusion Affidavit from the subcontractor, is substantially the form shown below, and has received written approval of such subcontractor from Santa Fe County.

B. No proposed subcontractor shall be disapproved by Santa Fe County except for cause.



- C. The contractor shall be as fully responsible to Santa Fe County for the acts and omissions of its subcontractors and of persons either directly or indirectly employed by them, as it is for the acts and omissions of persons directly employed by them.
- D. The contractor shall cause appropriate provision to be inserted in all subcontracts relative to the work to require compliance by each subcontractor with the applicable provisions of the contract for the improvements embraced.
- E. Nothing contained in the contract shall create any contractual relation between any subcontractor and Santa Fe County.

**THIS SECTION INTENTIONALLY LEFT BLANK**

**CERTIFICATION OF NON-SEGREGATED FACILITIES**

(Applicable to construction contracts and related subcontracts exceeding \$10,000, which are not exempt from the Equal Opportunity Clause).

The construction contractor certifies that it does not maintain or provide for its employees any segregated facility at any of its establishments, and that it does not permit its employees to perform their services at any location, under its control, where segregated facilities are maintained. The construction contractor certifies further that it will not maintain or provide for its employees any segregated facilities at any of its establishments, and that it will not permit its employees to perform their services at any location, under its control, where segregated facilities are maintained. The construction contractor agrees that a breach of this certification is a violation of the Equal Opportunity Clause in this contract. As used in this certification, the term "segregated facilities" means any waiting room, work areas, rest rooms and wash rooms, restaurants and other eating areas, time clock, locker rooms and other storage or dressing areas, parking lots, drinking foundations, recreating or entertainment areas, transportation, and housing facilities provided for employees which are segregated by explicit directive or are in fact segregated on the basis of race, creed, color, or national origin, because of habit, local custom, or otherwise. The construction contractor agrees that (except where it has obtained identical certifications from proposed subcontractors for specific time periods) it will obtain identical certifications from proposed SUBCONTRACTORS prior to the award of subcontracts exceeding \$10,000 which are not exempt from the provisions of the Equal Opportunity Clause and that it will retain such certifications in its files.

SIGNED: \_\_\_\_\_

TITLE: \_\_\_\_\_

SUBSCRIBED AND SWORN to before me this \_\_\_\_ day of \_\_\_\_\_, 2018.

\_\_\_\_\_

NOTARY PUBLIC

My Commission Expires: \_\_\_\_\_

**CERTIFICATION OF BIDDER REGARDING  
EQUAL EMPLOYMENT OPPORTUNITY**

**INSTRUCTIONS**

This certification is required pursuant to Executive Order 11246 (30 F. R. 12319-25). The implementing rules and regulations provide that any bidder or prospective contractor, or any of their proposed subcontractors, shall state as an initial part of the bid or negotiations of the contract or subcontract whether it has participated in any previous contract or subcontract subject to the equal opportunity clause; and, if so, whether it has filed all compliance reports due under applicable instructions.

Where the certification indicates that the bidder has not filed a compliance report due under applicable instructions, such bidder shall be required to submit a compliance report within seven calendar days after bid opening. No contract shall be awarded unless such report is submitted.

---

**CERTIFICATION OF BIDDER**

Bidder's Name: \_\_\_\_\_

Address: \_\_\_\_\_

\_\_\_\_\_

1. Bidder has participated in a previous contract or subcontract subject to the Equal Opportunity Clause.

Yes \_\_\_\_ No \_\_\_\_

2. Compliance reports were required to be filed in connection with such contract or subcontract.

Yes \_\_\_\_ No \_\_\_\_

---

Certification -- The information above is true and complete to the best of my knowledge and belief.

---

NAME AND TITLE OF SIGNER (PLEASE TYPE)

---

SIGNATURE

---

DATE

**CERTIFICATION OF SUBCONTRACTOR REGARDING  
EQUAL EMPLOYMENT OPPORTUNITY**

**INSTRUCTIONS**

This certification is required pursuant to Executive Order 11246 (30 F. R. 12319-25). The implementing rules and regulations provide that any bidder or prospective contractor, or any of their proposed subcontractors, shall state as an initial part of the bid or negotiations of the contract or subcontract whether it has participated in any previous contract or subcontract subject to the equal opportunity clause; and, if so, whether it has filed all compliance reports due under applicable instructions.

Where the certification indicates that the bidder has not filed a compliance report due under applicable instructions, such bidder shall be required to submit a compliance report within seven calendar days after bid opening. No contract shall be awarded unless such report is submitted.

---

**CERTIFICATION OF SUBCONTRACTOR**

Subcontractor's Name: \_\_\_\_\_

Address: \_\_\_\_\_  
\_\_\_\_\_

1. Subcontractor has participated in a previous contract or subcontract subject to the Equal Opportunity Clause.  
Yes \_\_\_\_ No \_\_\_\_
2. Compliance reports were required to be filed in connection with such contract or subcontract.  
Yes \_\_\_\_ No \_\_\_\_

---

Certification -- The information above is true and complete to the best of my knowledge and belief.

---

NAME AND TITLE OF SIGNER (PLEASE TYPE)

---

SIGNATURE

---

DATE

**BID BOND**

A. KNOW ALL MEN BY THESE PRESENT, THAT WE \_\_\_\_\_ hereinafter called the PRINCIPAL, as PRINCIPAL and the \_\_\_\_\_, of \_\_\_\_\_ a Corporation duly organized under the laws of the State of \_\_\_\_\_, and authorized to do business in the State of New Mexico, hereinafter called the SURETY, as SURETY are held and firmly bound unto Santa Fe County, a Municipal Corporation, hereinafter called the OBLIGEE, in the sum of \_\_\_\_\_ DOLLARS (\$\_\_\_\_\_) for the payment of which sum well and truly to be made, the said Principal and the said Surety, bind ourselves, our heirs, executors, administrators, successors, and assigns, jointly and severally, firmly be these presents.

WHEREAS, the Principal has submitted the accompanying bid, dated \_\_\_\_\_, 2018, for the Construction Services for County Road 67F La Barbaria Road.

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

C. SIGNED AND SEALED THIS \_\_\_\_\_ DAY OF \_\_\_\_\_, 2018.

\_\_\_\_\_  
BIDDER

By: \_\_\_\_\_  
PRINCIPAL

(SEAL)

\_\_\_\_\_  
WITNESS

By: \_\_\_\_\_  
SURETY

\_\_\_\_\_  
WITNESS

Title: \_\_\_\_\_

**PERFORMANCE BOND**

A. KNOW ALL MEN BY THESE PRESENT, THAT WE \_\_\_\_\_, as PRINCIPAL hereinafter called the "CONTRACTOR" and \_\_\_\_\_, as SURETY hereinafter called the "SURETY", are held and firmly bound unto OBLIGEE Santa Fe County, a Political Subdivision of the State of New Mexico, hereinafter called the "COUNTY", in the sum 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.

B. WHEREAS, the CONTRACTOR has a written contract dated \_\_\_\_\_, 2018, with the COUNTY for the Construction Services for County Road 67F La Barbaria Road located in Santa Fe County, New Mexico, in accordance with drawings and specifications which contract is referenced made part hereof, and is hereinafter referred to as the "Contract."

C. NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION is such that, if CONTRACTOR shall promptly and faithfully perform said Contract (including any amendment thereto), then this obligation shall be null and void; otherwise it shall remain in full force and effect until the COUNTY shall by written instrument notify the SURETY that the obligation is discharged, except that the obligation shall continue for at least three (3) months following the expiration of the term of the Contract.

1. The SURETY hereby waives notice of any alteration or extension of the Contract time made by the COUNTY.
2. Whenever CONTRACTOR shall be, and is declared by the COUNTY to be in default under the Contract, the COUNTY having performed the COUNTY'S obligations thereunder, the SURETY must promptly remedy the default and shall promptly:
  - (1) Complete the Contract in accordance with its terms and conditions, or
  - (2) Obtain a bid or bids for submission to the COUNTY for completing the Contract in accordance with its terms and conditions, and upon determination by the COUNTY and SURETY of the lowest responsible bidder, arrange for a contract between such bidder and Santa Fe County, and make available as work progresses (even though there should be a default or a secession 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 the COUNTY to CONTRACTOR under the Contract and any amendments thereto, less the amount properly paid by the COUNTY to CONTRACTOR.

D. No right of action shall accrue on this Performance Bond to or for the use of any person or corporation other than Santa Fe County named herein or the heirs, executors, administrators, or successors of Santa Fe County.

E. This Bond shall be enforceable without the need to have recourse to any judicial or arbitral proceedings.

SIGNED AND SEALED THIS \_\_\_\_\_ DAY OF \_\_\_\_\_, 2018.

\_\_\_\_\_  
CONTRACTOR – PRINCIPAL (signature)

By: \_\_\_\_\_  
(Printed name and title)

\_\_\_\_\_  
NOTARY PUBLIC (seal)

My Commission expires: \_\_\_\_\_

\_\_\_\_\_  
SURETY (signature)

\_\_\_\_\_  
(Printed name and title)

\_\_\_\_\_  
NOTARY PUBLIC (seal)

My Commission expires: \_\_\_\_\_

\_\_\_\_\_  
SURETY'S Authorized New Mexico Agent

## LABOR AND MATERIAL PAYMENT BOND

KNOW ALL MEN BY THESE PRESENT, THAT WE

\_\_\_\_\_ as PRINCIPAL hereinafter called the "PRINCIPAL" and  
 \_\_\_\_\_ as SURETY hereinafter called the "SURETY", are held and firmly  
 bound unto Santa Fe County, a Political Subdivision of the State of New Mexico as OBLIGEE hereinafter  
 called the "COUNTY", for the use and benefit of any claimants as herein below defined, 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, the PRINCIPAL has a written contract dated \_\_\_\_\_, 2018, with the COUNTY  
 for the Construction Services for County Road 67F La Barbaria Road located in Santa Fe County, New  
 Mexico, which must be constructed in accordance with drawings and specifications which contract is  
 referenced and made a part hereof, and is hereinafter referred to as the "Contract."

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 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 but not be  
 limited to that part of water, gas, power, light, heat, oil, gasoline, telephone services or rental of  
 equipment directly applicable to the Contract.
2. The above named PRINCIPAL and SURETY hereby jointly and severally agree with the  
 COUNTY 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, prosecute  
 a suit to final judgment for such sum or sums as may be justly due claimant, and have execution  
 thereof. The COUNTY shall not be liable for payment of any cost or expenses of any such suit.
3. No suit or action shall be commenced hereunder by any claimant:
  - a. Unless claimant, or other than one having a direct contract with the PRINCIPAL, shall  
 have written notice in the form of an sworn statement to the COUNTY and any one or  
 both of the following: the PRINCIPAL or SURETY above named, within ninety (90)  
 days after such said claim is made or suit filed, 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.
  - b. Such notice shall be served by mailing the same by registered mail or certified mail,  
 postage prepaid, in an envelope addressed to the COUNTY, PRINCIPAL or SURETY,  
 at any place where an office is regularly maintained by said COUNTY, PRINCIPAL or  
 SURETY 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.



4. Any suit under this Labor and Material Bond must be instituted in accordance with the statute of limitation under Section 37-1-3 NMSA 1978.
5. No right of action shall accrue on this Bond to or for the use of any person or corporation other than subcontractors or sub-subcontractors of the said Contract between PRINCIPAL and Santa Fe County named herein.

SIGNED AND SEALED THIS \_\_\_\_\_ DAY OF \_\_\_\_\_, 2018.

\_\_\_\_\_  
CONTRACTOR – PRINCIPAL (signature)

By: \_\_\_\_\_  
(Printed name and title)

\_\_\_\_\_  
NOTARY PUBLIC (seal)

My Commission expires: \_\_\_\_\_

\_\_\_\_\_  
SURETY (signature)

\_\_\_\_\_  
(Printed name and title)

\_\_\_\_\_  
NOTARY PUBLIC (seal)

My Commission expires: \_\_\_\_\_

\_\_\_\_\_  
SURETY'S Authorized New Mexico Agent

**SUBCONTRACTOR LISTING**

1. To be fully executed and included with Bid as a condition of the Bid (13-4-31 through 13-4-42 NMSA 1978).
2. For the purposes of this Project all subcontractors, regardless of contract amount, must be listed on the subcontractor list.
3. The Bidder shall list the Subcontractor's Name, the City or County of the Place of Business and the Category of Work that will be done by each Subcontractor

Trade:	Name of Subcontractor:	
Address:		
Telephone No:	License No:	NM Dept. of Workplace Solutions Registration No.
Signature of Subcontractor (To be obtained after award of contract):		
Trade:	Name of Subcontractor:	
Address:		
Telephone No:	License No:	NM Dept. of Workplace Solutions Registration No.
Signature of Subcontractor (To be obtained after award of contract):		
Trade:	Name of Subcontractor:	
Address:		
Telephone No:	License No:	NM Dept. of Workplace Solutions Registration No.
Signature of Subcontractor (To be obtained after award of contract):		
Trade:	Name of Subcontractor:	
Address:		
Telephone No:	License No:	NM Dept. of Workplace Solutions Registration No.
Signature of Subcontractor (To be obtained after award of contract):		

Trade:	Name of Subcontractor:	
Address:		
Telephone No:	License No:	NM Dept. of Workplace Solutions Registration No.
Signature of Subcontractor (To be obtained after award of contract):		
Trade:	Name of Subcontractor:	
Address:		
Telephone No:	License No:	NM Dept. of Workplace Solutions Registration No.
Signature of Subcontractor (To be obtained after award of contract):		
Trade:	Name of Subcontractor:	
Address:		
Telephone No:	License No:	NM Dept. of Workplace Solutions Registration No.
Signature of Subcontractor (To be obtained after award of contract):		
Trade:	Name of Subcontractor:	
Address:		
Telephone No:	License No:	NM Dept. of Workplace Solutions Registration No.
Signature of Subcontractor (To be obtained after award of contract):		
Trade:	Name of Subcontractor:	
Address:		
Telephone No:	License No:	NM Dept. of Workplace Solutions Registration No.
Signature of Subcontractor (To be obtained after award of contract):		

Trade:	Name of Subcontractor:	
Address:		
Telephone No:	License No:	NM Dept. of Workplace Solutions Registration No.
Signature of Subcontractor (To be obtained after award of contract):		
Trade:	Name of Subcontractor:	
Address:		
Telephone No:	License No:	NM Dept. of Workplace Solutions Registration No.
Signature of Subcontractor (To be obtained after award of contract):		
Trade:	Name of Subcontractor:	
Address:		
Telephone No:	License No:	NM Dept. of Workplace Solutions Registration No.
Signature of Subcontractor (To be obtained after award of contract):		
Trade:	Name of Subcontractor:	
Address:		
Telephone No:	License No:	NM Dept. of Workplace Solutions Registration No.
Signature of Subcontractor (To be obtained after award of contract):		
Trade:	Name of Subcontractor:	
Address:		
Telephone No:	License No:	NM Dept. of Workplace Solutions Registration No.
Signature of Subcontractor (To be obtained after award of contract):		

**APPENDIX A**

**ACKNOWLEDGEMENT OF RECEIPT FOR  
IFB No. 2018-0336-PW/MM  
CONSTRUCTION SERVICES  
FOR COUNTY ROAD 67F LA BARBARIA ROAD  
DRAINAGE AND ROAD IMPROVEMENTS**

In acknowledgement of receipt of this Invitation for Bids the undersigned agrees that he/she has received a complete copy, beginning with the title page, and ending with the contractual documents. Completed forms must be submitted to **Maricela Martinez** no later than **June 28, 2018** to receive any addenda for this solicitation.

Only Bidders that return this form in a timely manner will receive copies of addenda to this IFB.

FIRM: \_\_\_\_\_  
 REPRESENTED BY: \_\_\_\_\_  
 TITLE: \_\_\_\_\_  
 PHONE NO.: \_\_\_\_\_  
 FAX NO.: \_\_\_\_\_  
 E-MAIL ADDRESS: \_\_\_\_\_  
 MAILING ADDRESS: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 DELIVERY ADDRESS: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

By: \_\_\_\_\_ Date: \_\_\_\_\_  
 (Signature)  
 Name: \_\_\_\_\_  
 (Printed)  
 Title: \_\_\_\_\_

This name and address will be used for all correspondence related to the Invitation For Bids (IFB).

Maricela Martinez  
 Santa Fe County Purchasing Division  
 142 W. Palace Avenue  
 Santa Fe, NM 87504  
 Phone: (505) 992-9864 Fax: (505) 989-3243  
 E-mail: [mcmartinez@santafecountynm.gov](mailto:mcmartinez@santafecountynm.gov)

## APPENDIX B

### CAMPAIGN CONTRIBUTION DISCLOSURE

Pursuant to the Procurement Code, Sections 13-1-28, et seq., NMSA 1978 and NMSA 1978, § 13-1-191.1 (2006), as amended by Laws of 2007, Chapter 234, any prospective contractor seeking to enter into a contract with any state agency or local public body **for professional services, a design and build project delivery system, or the design and installation of measures the primary purpose of which is to conserve natural resources** must file this form with that state agency or local public body. This form must be filed even if the contract qualifies as a small purchase or a sole source contract. The prospective contractor must disclose whether they, a family member or a representative of the prospective contractor has made a campaign contribution to an applicable public official of the state or a local public body during the two years prior to the date on which the contractor submits a proposal or, in the case of a sole source or small purchase contract, the two years prior to the date the contractor signs the contract, if the aggregate total of contributions given by the prospective contractor, a family member or a representative of the prospective contractor to the public official exceeds two hundred and fifty dollars (\$250) over the two year period.

Furthermore, the state agency or local public body may cancel a solicitation or proposed award for a proposed contract pursuant to Section 13-1-181 NMSA 1978 or a contract that is executed may be ratified or terminated pursuant to Section 13-1-182 NMSA 1978 of the Procurement Code if: 1) a prospective contractor, a family member of the prospective contractor, or a representative of the prospective contractor gives a campaign contribution or other thing of value to an applicable public official or the applicable public official's employees during the pendency of the procurement process or 2) a prospective contractor fails to submit a fully completed disclosure statement pursuant to the law.

The state agency or local public body that procures the services or items of tangible personal property shall indicate on the form the name or names of every applicable public official, if any, for which disclosure is required by a prospective contractor.

THIS FORM MUST BE INCLUDED IN THE REQUEST FOR PROPOSALS AND MUST BE FILED BY ANY PROSPECTIVE CONTRACTOR WHETHER OR NOT THEY, THEIR FAMILY MEMBER, OR THEIR REPRESENTATIVE HAS MADE ANY CONTRIBUTIONS SUBJECT TO DISCLOSURE.

The following definitions apply:

**“Applicable public official”** means a person elected to an office or a person appointed to complete a term of an elected office, who has the authority to award or influence the award of the contract for which the prospective contractor is submitting a competitive sealed proposal or who has the authority to negotiate a sole source or small purchase contract that may be awarded without submission of a sealed competitive proposal.

**“Campaign Contribution”** means a gift, subscription, loan, advance or deposit of money or other thing of value, including the estimated value of an in-kind contribution, that is made

to or received by an applicable public official or any person authorized to raise, collect or expend contributions on that official's behalf for the purpose of electing the official to statewide or local office. "Campaign Contribution" includes the payment of a debt incurred in an election campaign, but does not include the value of services provided without compensation or unreimbursed travel or other personal expenses of individuals who volunteer a portion or all of their time on behalf of a candidate or political committee, nor does it include the administrative or solicitation expenses of a political committee that are paid by an organization that sponsors the committee.

**"Family member"** means spouse, father, mother, child, father-in-law, mother-in-law, daughter-in-law or son-in-law of (a) a prospective contractor, if the prospective contractor is a natural person; or (b) an owner of a prospective contractor.

**"Pendency of the procurement process"** means the time period commencing with the public notice of the request for proposals and ending with the award of the contract or the cancellation of the request for proposals.

**"Prospective contractor"** means a person or business that is subject to the competitive sealed proposal process set forth in the Procurement Code or is not required to submit a competitive sealed proposal because that person or business qualifies for a sole source or a small purchase contract.

**"Representative of a prospective contractor"** means an officer or director of a corporation, a member or manager of a limited liability corporation, a partner of a partnership or a trustee of a trust of the prospective contractor.

Name(s) of Applicable Public Official(s) if any: \_\_\_\_\_  
(Completed by State Agency or Local Public Body)

#### DISCLOSURE OF CONTRIBUTIONS BY PROSPECTIVE CONTRACTOR:

Contribution Made By: \_\_\_\_\_

Relation to Prospective Contractor: \_\_\_\_\_

Date Contribution(s) Made: \_\_\_\_\_  
\_\_\_\_\_

Amount(s) of Contribution(s) \_\_\_\_\_  
\_\_\_\_\_

Nature of Contribution(s) \_\_\_\_\_  
\_\_\_\_\_

Purpose of Contribution(s) \_\_\_\_\_  
\_\_\_\_\_

(Attach extra pages if necessary)

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

\_\_\_\_\_  
Title (position)

**--OR--**

**NO CONTRIBUTIONS IN THE AGGREGATE TOTAL OVER TWO HUNDRED FIFTY DOLLARS (\$250) WERE MADE** to an applicable public official by me, a family member or representative.

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

\_\_\_\_\_  
Title (Position)



## APPENDIX C

### Resident Veterans Preference Certification

\_\_\_\_\_ (NAME OF CONTRACTOR) hereby certifies the following in regard to application of the resident veterans' preference to this procurement.

**Please check box below:**

☐ I declare under penalty of perjury that my business prior year revenue starting January 1 ending December 31 is less than \$1M allowing me the 10% preference discount on this solicitation. I understand that knowingly giving false or misleading information about this fact constitutes a crime.

"I agree to submit a report or reports to the State Purchasing Division of the General Services Department declaring under penalty of perjury that during the last calendar year starting January 1 and ending on December 31, the following to be true and accurate:

"In conjunction with this procurement and the requirements of this business application for a Resident Veteran Business Preference/Resident Veteran Contractor Preference under Sections 13-1-21 or 13-1-22 NMSA 1978, which awarded a contract which was on the basis of having such veterans preference, I agree to report to the State Purchasing Division of the General Services Department the awarded amount involved. I will indicate in the report the award amount as a purchase from a public body or as a public works contract from a public body as the case may be."

"I understand that knowingly giving false or misleading information on this report constitutes a crime".

I declare under penalty of perjury that this statement is true to the best of my knowledge. I understand that giving false or misleading statements about material fact regarding this matter constitutes a crime.

\_\_\_\_\_  
(Signature of Business Representative)\*

\_\_\_\_\_  
(Date)

\*Must be an authorized signatory of the Business.

The representations made in checking the box constitutes a material representation by the business that is subject to protest and may result in denial of an award or un-award of the procurement involved if the statements are proven to be incorrect.

SIGNED AND SEALED THIS \_\_\_\_\_ DAY OF \_\_\_\_\_, 2018.

\_\_\_\_\_  
NOTARY PUBLIC

My Commission Expires:

\_\_\_\_\_

**APPENDIX D**

**NOTICE TO CONTRACTORS**

**SPECIAL PROVISIONS**

## NOTICE TO CONTRACTORS

La Barbaria Drainage and Road Improvements  
April 2018

### CONTRACT TIME

This Contract shall be governed by a mandatory completion date allowed by the Owner to the Contractor to substantially complete the project as defined in Section 101.4 – Terms and Definitions of the NMDOT Standard Specifications.

#### **Mandatory Completion Date:**

The mandatory completion date for this contract is **June 30, 2019** to commence on the date Notice to Proceed is granted or as directed by Santa Fe County.

#### **Maintaining Public Access**

All work associated with construction of the roadway prism and new drainage crossings of the Arroyo Hondo shall be built while maintaining public access through the project area for the duration of the contract. Requests for a one-time road closure, not to exceed **eight hours** in duration, for installing each of the drainage culverts crossing the Arroyo Hondo may be proposed by the Contractor to the Project Manager. If the Contractor fails to reopen the road within the eight hour period, the Contractor shall be assessed one day of liquidated damages plus an additional \$250.00 for each additional hour until the road is reopened.

#### **Substantial Completion and Final Payment:**

All work associated with construction shall be built to Substantial Completion no later than mandatory completion date or as directed by Santa Fe County in accordance with the definition of “Substantial Completion” per Section 101.4 - Terms and Definitions of the NMDOT Standard Specifications.

#### **Cumulative Imposition of Liquidated Damages**

If the Contractor fails to meet the Mandatory Completion Date, described above, within the timeframe allotted and does not exercise the right to an extension of contract time as defined in Section 108.6 – Determination and Extension of Contract Time, then the Contractor shall be assessed liquidated damages in accordance with the Agreement between Owner and Contractor for Construction Contract.

#### **Progress Schedule**

The Contractor shall submit to the project manager and the County a progress schedule (CPM) to the County two (2) weeks prior to the preconstruction conference for review and approval prior to initiating any work. The critical path project schedule is to include logic points, or production levels, used in its development and shall include Contract & Substantial Completion Time. The schedule shall be updated monthly or as requested by the project manager.

**Contract Time Scheduling Due to River Run-Off**

The Contractor should schedule their work accordingly with regards to anticipated run-off within the Arroyo Hondo.

The Contractor may utilize pipes, diversions, berms or other measures to accommodate run-off flows during construction as approved by the Project Manager. The cost of accommodating river flows shall be considered included in “Item 603281 – SWPPP Plan Preparation and Maintenance” and “Item 668000 – Dewatering” and no separate measurement of payment will be made therefore.

As within all waterways of the United States, all state and federal rules and regulations regarding construction within waterways apply. Specifically, the Contractor shall follow all New Mexico Environment Department (NMED), US Army Corp. of Engineers (USACE) and Environmental Protection Agency (EPA) rules and regulations as it pertains to 401, 404, 33 and NPDES permits.

**END OF NOTICE**

**NOTICE TO CONTRACTORS**  
**SANTA FE COUNTY PROJECT NO. 2014-0216-PW**  
**La Barbaria Drainage and Road Improvements**  
**January 2018**

**COORDINATION WITH UTILITY COMPANIES**

**WORK DESCRIPTION**

Utility relocations are anticipated on this project. The Contractor's work shall include coordination efforts with respective utility owners, including the time required for utility facilities located within the project limits to be located and relocated if necessary. This Notice to Contractor does not change the requirements as outlined in the Standard Specifications for Highway and Bridge Construction regarding utilities.

**CONSTRUCTION REQUIREMENTS**

The following utility facilities exist within the public right-of-way. The Contractor shall make the necessary arrangements with the utility owner(s), and shall submit a scope of work to be accomplished including an associative schedule to complete the work. This shall be officially acknowledged and verified by a representative of the utility owner, and a copy provided to the Project Manager. The Contractor shall provide construction staking and layout for the utility relocations and/or installations if required. After the staking and layout have been completed, and specific work areas are made available to the utility, the utility facility will be relocated within the allotted number of working days agreed to by the Owner.

<b>Utility Owner</b>	<b>Contact &amp; Ph. No.</b>	<b>Location</b>	<b>Schedule</b>
Public Service Co. of New Mexico –	Tom Dominguez (505) 473-3209	Unknown	Protect in place or relocate as needed
Century Link	Doug Dale (505) 473-2194	BOP to EOP	Protect in place or relocate as needed
Private wells and water supply lines	Bernadette McGuire-Rivera (202) 253-1586	BOP to Sta 104-60	Protect in place or relocate as needed

#### **OTHER REQUIREMENTS**

Utilities shown on the construction plans, which will not be relocated, shall require the Contractor to take the necessary precautions to protect the utility from damage caused by construction operations. If any such utility is damaged, the Contractor shall bear the cost of repair to the satisfaction of the utility owner.

**END OF NOTICE**

**NOTICE TO CONTRACTORS**  
**SANTA FE COUNTY PROJECT NO. 2014-0216-PW**  
**La Barbaria Drainage and Road Improvements**  
**April 2018**

**BID ALTERNATIVE**

This Notice includes administrative and procedural requirements for the bid alternative.

**DEFINITION OF TERMS**

- A. Bid Alternative: An amount proposed by bidders and stated on the Bid Form for certain work described in the Contract Documents that may be added to the Base Bid amount if Owner decides to incorporate the Bid Alternative into the work for this project.
  - 1. The cost for the alternative is the net addition to the Base Bid costs to incorporate the Bid Alternative into the Work. No other adjustments are made to the Contract Amount.
  - 2. The County at its sole discretion will award in the Contract, the Base Bid with or without Bid Alternative #1. The bid ranking and low bidder may differ based on the County's selection to award the Base Bid with or without the Bid Alternative #1.

**PROCEDURES**

- A. Coordination: Modify or adjust affected adjacent work as necessary to completely integrate work of the alternate into Project.
  - 1. Include as part of the alternative, miscellaneous devices, accessory objects, and similar items incidental to or required for a complete installation whether or not indicated as part of alternative.
- B. Notification: Immediately following award of the Contract, notify each party involved, in writing, of the status of the alternative. Indicate if the alternative has been accepted, rejected, or deferred for later consideration. Include a complete description of negotiated modifications to the alternative.
- C. Execute accepted alternative under the same conditions as other work of the Contract.
- D. A description of the Base Bid and Bid Alternative is included at the end of this Section.

## **DESCRIPTION**

- A. **BASE BID:** The Base Bid represents the work necessary to construct the project improvements between Stations 100+00.00 and 118+25.00 as shown in the construction plans. See the Contract Documents for additional information.
- B. **BID ALTERNATIVE #1:** Bid Alternate No. 1 represents the work necessary to construct the project improvements between Stations 118+25.00 and 124+80.00 as shown in the construction plans. See the Contract Documents for additional information.

## **SEQUENCING / PHASING REQUIREMENTS**

There are no separate sequencing and phasing requirements for the Base Bid and Bid Alternate #1. There will be no lag time between the Base Bid and Bid Alternate #1.

**END OF NOTICE**



February 12, 2014

## SPECIAL PROVISIONS MODIFYING

### SECTIONS:

**303 BASE COURSE****403 OPEN GRADED FRICTION COURSE (NON-QLA)****412 HOT IN-PLACE RECYCLING OF ASPHALT PAVEMENT****413 SINGLE-MACHINE HOT IN-PLACE SURFACE REPAVING****415 PAVEMENT SURFACE RESTORATION****416 MINOR PAVING****417 MISCELLANEOUS PAVING****451 PORTLAND CEMENT CONCRETE PAVEMENT****517 PRECAST CONCRETE STRUCTURES****518 PRE-STRESSED CONCRETE MEMBERS**

The 2014 Edition of the New Mexico Department of Transportation Standard Specifications for Highway and Bridge Construction shall apply in addition to the following:

#### **303.5.1 Work Included in Payment**

The development of the Contractor Quality Control Plan shall be included in the payment and is considered incidental to the completion of this Bid Item. All references to 901.2 "Contractor Quality Control" is for reference only and no separate measurement will be made.

#### **403.5.2 Work Included in Payment**

The development of the Contractor Quality Control Plan shall be included in the payment and is considered incidental to the completion of this Bid Item. All references to 901.2 "Contractor Quality Control" is for reference only and no separate measurement will be made.

#### **412.5.1 Work Included in Payment**

The development of the Contractor Quality Control Plan shall be included in the payment and is considered incidental to the completion of this Bid Item. All references to 901.2 "Contractor Quality Control" is for reference only and no separate measurement will be made.

#### **413.5.1 Work Included in Payment**

The development of the Contractor Quality Control Plan shall be included in the payment and is considered incidental to the completion of this Bid Item. All references to 901.2 "Contractor Quality Control" is for reference only and no separate measurement will be made.

**415.5.2 Work Included in Payment**

The development of the Contractor Quality Control Plan shall be included in the payment and is considered incidental to the completion of this Bid Item. All references to 901.2 "Contractor Quality Control" is for reference only and no separate measurement will be made.

**416.5.1 Work Included in Payment**

The development of the Contractor Quality Control Plan shall be included in the payment and is considered incidental to the completion of this Bid Item. All references to 901.2 "Contractor Quality Control" is for reference only and no separate measurement will be made.

**417.5.1 Work Included in Payment**

The development of the Contractor Quality Control Plan shall be included in the payment and is considered incidental to the completion of this Bid Item. All references to 901.2 "Contractor Quality Control" is for reference only and no separate measurement will be made.

**451.5.2 Work Included in Payment**

The development of the Contractor Quality Control Plan shall be included in the payment and is considered incidental to the completion of this Bid Item. All references to 901.2 "Contractor Quality Control" is for reference only and no separate measurement will be made.

**517.5.1 Work Included in Payment**

The development of the Contractor Quality Control Plan shall be included in the payment and is considered incidental to the completion of this Bid Item. All references to 901.2 "Contractor Quality Control" is for reference only and no separate measurement will be made.

**518.5.1 Work Included in Payment**

Add the following:

The development of the Contractor Quality Control Plan shall be included in the payment and is considered incidental to the completion of this Bid Item. All references to 901.2 "Contractor Quality Control" is for reference only and no separate measurement will be made.

February 24, 2014

## **SPECIAL PROVISIONS MODIFYING**

### **SECTIONS:**

**203 EXCAVATION, BORROW, AND EMBANKMENT**

**405 DETOUR PAVEMENTS**

**408 PRIME COAT**

**605 DRAINS**

**608 SIDEWALKS, DRIVE PADS AND CONCRETE MEDIAN PAVEMENT**

**609 CURB AND GUTTER**

The 2014 Edition of the New Mexico Department of Transportation Standard Specifications for Highway and Bridge Construction shall apply in addition to the following:

Delete reference to **304 Base Course** and replace with **303 Base Course** for the following subsections:

**203.3.3 Rock Cuts**

**405.3.1 General**

**408.3.3 Preparation of Surface**

**605.2.3 Granular Materials**

**608.2.3 Bed Course Material**

**609.2.3 Bed Course Material**

**609.3.1 Foundation**

June 28, 2017

## SPECIAL PROVISIONS MODIFYING SECTION 201 CLEARING AND GRUBBING

The 2014 Edition of the New Mexico Department of Transportation Standard Specifications for Highway and Bridge Construction shall apply in addition to the following:

Delete **Section 201: CLEARING AND GRUBBING** in its entirety and replace with the following:

### 201.1 DESCRIPTION

This Work consists of clearing, grubbing, scalping, removing, and disposing of vegetation and debris. This Work includes protecting vegetation designated to remain and removal or control of all State-listed noxious weed species identified in the Contract. Scalping includes the removal of material such as brush, roots, sod, stumps, and the residue of agricultural crops.

### 201.2 MATERIALS

### 201.3 CONSTRUCTION REQUIREMENTS

#### 201.3.1 General

The Department will establish Right of Way lines, construction limits, and designate trees, shrubs, plants, and other items to remain. The Contractor shall comply with Section 620, "Selective/Non-Selective Herbicide Application" for herbicide application.

The Contractor shall remove and dispose of all refuse and non-organic material from within the Project limits. Surface debris, trees, stumps, roots, organic matter, and other obstructions that can be chipped or broken down to an appropriate size and readily blended into the topsoil during final stabilization may remain within the Project limits. When approved by the Project Manager, the Contractor may leave undisturbed stumps and other solid objects within the Roadway Prism that do not extend more than six (6) inches above existing ground and will be at least four (4) ft below the finished Subgrade elevation. The Contractor shall backfill and compact material placed in stump holes and other holes in accordance with Section 203.3.5, "Embankments."

The Contractor shall prune low-hanging branches from trees or shrubs designated to remain and prune overhanging tree branches to provide a clearance 20 ft above the Roadway surface. Pruning of trees and shrubs shall be performed in accordance with American National Standards Institute (ANSI) A300 Standard Part 1 Pruning.

The Contractor shall confine operations including dragging, piling, and burning of debris to Department approved areas.

The Contractor shall remove or control all State-listed Class A noxious weed species within the Right of

Way Project limits as identified in the Contract in a manner that prevents their re-growth and spread. Herbicide use shall comply with all applicable Federal, State, County and Municipal regulations and ordinances." The Contractor shall comply with Section 620, "Selective/Non-Selective Herbicide Application" of the current New Mexico State Department of Transportation Standard Specifications for Highway and Bridge Construction for herbicide application.

The current New Mexico Noxious Weed List is available at:  
<http://plants.usda.gov/java/noxious?rptType=State&statefips=35> .

### **201.3.2 Salvageable Timber**

The Contractor shall fell and cut timber (to the specified length) in accordance with the Contract. The Contractor shall stack cut logs as directed by the Project Manager.

### **201.3.3 Scalping**

The Contractor shall scalp before excavation or placement of Embankment and remove organic material under pipe Culvert bedding, regardless of Embankment height.

### **201.3.4 Removal and Disposal of Material**

The Contractor shall remove from the Right of Way, Materials that cannot be safely and properly disposed (burned or chipped) of within the Project, and dispose at locations outside the Project.

The Contractor shall obtain written permission from the owners of property used for debris material disposal.

The Contractor shall burn Materials:

1. In accordance with applicable laws and regulations;
2. Under the constant care of competent watchmen; and
3. Without damage to items designated to remain on the Right of Way, surrounding property, or vegetative cover.

The Roadway and adjacent areas shall have a neat and finished appearance after any removal and disposal of material. The Contractor shall not accumulate flammable Materials on or adjacent to the Right of Way.

## **201.4 METHOD OF MEASUREMENT**

Clearing and grubbing will be measured as a Lump sum unit.

## **201.5 BASIS OF PAYMENT**

<b>Pay Item</b>	<b>Pay Unit</b>
<i>Clearing and Grubbing</i>	Lump Sum

#### 201.5.1 Work Included in Payment

The Department will consider the following Work as included in the payment for Clearing and Grubbing and no separate payment will be made:

1. Obtaining disposal locations and in making the disposal;
2. When clearing and grubbing is not established as a pay item;
3. Herbicide applied for noxious weed control; and
4. Delivery to storage site if required of salvageable timber.

Selective / Non-Selective Herbicide Application will be paid only if the Plans list this item in the Estimated Quantities table.

June 28, 2017

**SPECIAL PROVISIONS**  
**MODIFYING**  
**SECTION 203: EXCAVATION, BORROW, AND EMBANKMENT**

The 2014 Edition of the New Mexico Department of Transportation Standard Specifications for Highway and Bridge Construction shall apply in addition to the following:

Delete **Section 203: EXCAVATION, BORROW, AND EMBANKMENT** in its entirety and replace with the following:

**203.1 DESCRIPTION**

This Work consists of performing excavation in soil and rock Material, providing borrow Material, constructing Embankment, hauling, disposing, placing, and compacting Materials.

**203.2 MATERIALS**

The Department will provide geotechnical investigation and pavement investigation results (when available) in the Contract documents. The Contractor shall use the results for information only.

**203.2.1 Material Classifications**

**203.2.1.1 Rock Excavation**

Rock excavation is material that meets one (1) of the following field test criteria:

1. **Ripping Test.** Material that cannot be broken down with two passes parallel to construction centerline with a single tooth ripper mounted on a crawler-type tractor in low gear with a minimum net flywheel power rating of 312 hp;
2. **Seismic Test.** Material that has a seismic velocity greater than 6,000 ft/s. The Contractor shall submit the qualifications of the individual performing and interpreting the seismic testing to Project Manager for approval a minimum of 14 Days prior to testing. Perform the Ripping Test to resolve differences in material classification if seismic velocities fall below 6,000 ft/s;
3. **Handling Test.** Boulders or detached stones having a volume greater than one (1) yd<sup>3</sup> that cannot be readily broken down with excavation Equipment.

**203.2.1.2 Unclassified Excavation**

Unclassified excavation shall consist of the excavation of all Materials other than rock excavation obtained within the right of way. Suitable Material obtained from unclassified excavation shall be used for areas that require Embankment.

**203.2.1.3 Borrow**

Borrow shall consist of Contractor provided suitable Embankment Materials obtained from an approved source outside the Right of Way, unless otherwise specified in the Contract. The Contractor shall only

utilize borrow when the following conditions are met, unless approved otherwise by the Project Manager.

1. All unclassified excavation material has be utilized in the contractor's current phase of construction;
2. The contractor has requested to begin Borrow operations and the Project Manager has concurred; and
3. Embankment areas that require borrow have been bladed and cross sectioned by the Contractor and provided to the Project Manager.

Borrow Material placed within two (2) Ft, vertically and laterally, of final Subgrade elevations shall meet the design R-Value as shown in the Contract. Prior to borrow operations the Contractor shall perform R-value testing in accordance with AASHTO T-190 at the best fit exudation pressure of 300 psi at each borrow source. This information shall be submitted to the Project Manager with the request to begin borrow operations. During borrow placement, if the Project Manager observes changes in soil properties, including gradation, plasticity limits, and/or additional soil characteristics, then, at the Project Manager's request, additional AASHTO T-190 tests may be required, at the Contractors expense.

When work conforming to Section 306 "Portland Cement or Lime Treated Subgrade" is specified in the Contract, the Contractor shall perform sulfate testing in accordance with AASHTO T290 at each borrow source. Sulfate content shall be determined and reported as parts per million (ppm). Soils with sulfate contents equal to or greater than 2,000 ppm shall not be used as borrow.

#### **203.2.1.4 Unstable Subgrade Stabilization**

See Section 203A, "Unstable Subgrade Stabilization", when specified in the Contract.

#### **203.2.1.5 Unsuitable Embankment Material**

Unsuitable Material includes organic Materials, frozen lumps, ice, and soils such as peat, shale, gypsum or other Materials that may degrade with time, or are contaminated. Suitable Material that is unstable may be reworked to create a stable platform as directed by the Project Manager.

Material below embankment and areas identified by the Project Manager and determined to be unsuitable shall be excavated and disposed of in accordance with Section 107, "Legal Relations, Environmental Requirements, and Responsibility to the Public" unless otherwise specified in the Contract.

When unsuitable Material is removed and disposed of, the resulting void shall be filled with Material suitable for its planned use as directed by the Project Manager. Such suitable Material shall be placed and compacted in accordance with this specification.

### **203.3 CONSTRUCTION REQUIREMENTS**

#### **203.3.1 General**

The Contractor shall finish excavation and Embankment for the Roadway, intersections, and entrances to reasonably smooth and uniform surfaces. The Contractor shall not remove Materials from the Project limits without the approval of the Project Manager.

The Contractor shall ensure Borrow Material placed within the top two (2) Ft of the finished Subgrade



meets the minimum design R-value.

The Contractor shall preserve the Materials below and beyond the lines and grades while conducting excavation operations. Before beginning excavation, grading, and Embankment operations, the Contractor shall perform the necessary clearing and grubbing in accordance with Section 201, "Clearing and Grubbing." The Contractor shall notify the Project Manager before opening excavation or borrow areas. The Contractor shall take cross section elevations of the ground surface before opening excavation or borrow areas.

The Contractor shall terminate operations in the immediate area of environmental or Cultural Resources not listed in the Contract, until the Department reviews and completes appropriate mitigation actions in accordance with Section 107.12, "Environmental, Hazardous Materials and Cultural Resource Discoveries."

### **203.3.2 Excavation**

Within cut sections, the Contractor shall remove excavated Material from the limits of the cut section to the Subgrade elevation for the width of the Roadbed. The Contractor shall finish Roadbed cut sections to a smooth and uniform surface. The Contractor shall remove unsuitable Material below finished Subgrade in accordance with 203.2.1.5, "Unsuitable Material." The Contractor shall take cross-sectional measurements after the removal of unsuitable Material.

### **203.3.3 Rock Cuts**

The Contractor shall perform proper drilling and blasting operations in accordance with the specified practices. When required, the Contractor shall perform controlled blasting of rock excavation to produce a clean face on the excavated cut. The Contractor shall ensure subsequent blasting and excavation operations do not affect previously excavated faces. The Contractor shall not excavate more than six (6) inches below the specified Subgrade elevation for Roadbed cuts in rock, unless directed otherwise. The Contractor shall not leave undrained pockets on the Roadbed surface. The Contractor shall place and compact Base Course on the rock cut foundation in accordance with Section 303, "Base Course."

#### **203.3.3.1 Blasting Requirements**

The Contractor shall use controlled blasting to establish a specified backslope with minimal blast damage, and production blasting to facilitate excavation. Before the start of blasting, the Contractor shall notify adjacent property owners, occupants and utility owners.

##### **203.3.3.1.1 Definitions**

**Blasting Operations.** Activities related to blasting including, but not limited to the following:

1. Collaring and drilling blast holes;
2. Preparing, fixing, loading, and firing explosive charges;
3. Assessing the blast after detonation; and
4. Handling misfires.

**Buffer Row.** The first row of production blast holes immediately adjacent and drilled in a plane

parallel to the controlled blast line. The explosive load in the buffer row should be reduced from standard production loads to minimize damage to the backslope of the final excavation.

**Controlled Blasting.** The controlled use of explosives and blasting accessories in carefully spaced and aligned blast holes to provide a free surface or shear plane in the rock along the specified backslope, and to limit fly rock, permanent ground displacement, air concussion, and overbreak. Controlled blasting methods include pre-splitting and cushion blasting.

**Cushion Blasting (Trim Blasting).** The simultaneous detonation of one (1) line of blast holes along a specified excavation backslope after the main excavation is complete. This method is performed to trim the excavation to the final backslope.

**Final Line (Controlled Blast Line).** Refers to the row of controlled blast holes drilled in the plane of a specified excavation backslope. The controlled blast holes drilled in this plane constitute the basis for payment under the Controlled Blasting pay item. The Department considers the blast holes drilled in front of the final line blast holes to be production blast holes, which are Incidental to the Rock Excavation pay item.

**Pre-Splitting.** The simultaneous detonation of one (1) line of blast holes drilled along a specified excavation backslope before production blast holes are fired.

**Production Blasting.** Fragmentation blasting in the main excavation area.

#### 203.3.3.1.2 Submittals

##### 203.3.3.1.2.1 Blaster in Charge

The Contractor shall not begin drilling or blasting Work until the Project Manager approves of the Blaster in Charge. The Contractor shall submit the name and qualifications of the proposed Blaster in Charge to the Project Manager for approval at least 30 Days before the delivery of explosive Material to the Project. The Contractor shall provide the following information:

1. Proof of a license by the applicable State and/or local regulatory agencies to possess, transport, and use explosives; and
2. A list of, and references, for at least three (3) blasting Projects, of similar complexity, successfully completed within the previous five (5) years.

The Blaster in Charge must be on site during blasting operations.

##### 203.3.3.1.2.2 Blasting Plans

The Contractor shall submit a General Blasting Plan to the Project Manager for each cut that requires blasting, at least two (2) weeks before the start of drilling and blasting operations on a specified cut. The Contractor shall provide the following information in the General Blasting Plan:

1. Description of the proposed blasting operation;
2. Preliminary design criteria for production and controlled blasting, including blast hole depths and patterns; and

3. Details regarding the proposed explosives and blasting accessories;

The Contractor shall submit a Detailed Blasting Plan at least 48 H before an individual blast. The Contractor shall provide the following information in the Detailed Blasting Plan:

1. Station limits of the proposed location of the blast, including the bench elevation, if applicable;
2. Date and time the blasting will occur;
3. Required removal of overburden, if applicable;
4. Plan and cross section diagrams of proposed drill pattern for controlled and production blast holes, including buffer rows, free face, burden, blast hole spacing, blast hole diameters, blast hole angles, lift height, and subdrill depth. Draw these Plans and cross sections to scale;
5. Loading diagram showing the type and amount of explosives, primers, and initiators; and the location, depth, and type of stemming;
6. Initiation sequence of controlled and production blast holes, including delay times and the delay system; and
7. Manufacturer's data sheets for the explosives, primers, and initiators to be used.

The Contractor shall submit the blasting Plans to the Project Manager for review and acceptance. The Project Manager will review and provide comments to the Contractor. The Contractor shall submit revisions to the blasting Plans for final review and acceptance. The Contractor shall not proceed with drilling and blasting operations related to a General Blasting Plan or loading of blast holes associated with a Detailed Blasting Plan without written notice.

The Contractor shall cease blasting operations and submit revised blasting Plans if the Department determines that the blasting operations under the employed methods are causing property damage in and beyond the Right of Way.

#### **203.3.3.1.2.3 Blasting Records**

The Contractor shall prepare and submit to the Department a Blasting Record for each blast, on the Day of the blast. The Contractor shall provide the following information in a Blasting Record:

1. Actual dimensions of the shot, including blast hole diameters and depths, burden, spacing, subdrilling depths, stemming, powder loads, powder factors, and timing;
2. A drawing or sketch showing the direction of the face and the physical shot layout;
3. The location of the blast in relation to Project stationing and elevation;
4. The date and time of loading and detonation;
5. The name and signature of the person responsible for loading and firing;
6. Comments by Blaster in Charge regarding misfires, fly rock occurrences, unusual results or effects; and damage to existing facilities, adjacent property, or completed Work;
7. Vibration and blast monitoring results; and
8. Any complaints received due to the blasting.

### 203.3.3.1.3 Explosives

The Contractor shall transport, store, handle, and use explosives in accordance with applicable federal, State, and local laws and regulations. The Contractor shall purchase explosives and accessory devices from industry recognized Suppliers and manufactures. The Contractor shall use explosives and accessory devices in accordance with manufacturer instructions. The Contractor shall not use expired products.

The CFR specifies responsibility for the following federal agencies regarding the administration of regulations involving explosive Materials:

1. Bureau of Alcohol, Tobacco, Firearms, and Explosives (ATF). Storage and accountability of record keeping and security in accordance with 27 CFR part 555;
2. OSHA. Transportation, worker safety, and health in accordance with title 29 CFR; storage and safe blasting practices in handling and use in accordance with 29 CFR part 1926.900 et seq; and
3. Federal Department of Transportation (USDOT). Transportation and public safety, 49 CFR.

The fire marshal, sheriff, or other local officials, may have additional regulations for explosive Materials.

### 203.3.3.1.4 Safety

The Contractor shall follow safe practices, including the following:

1. Federal, State, and local regulations pertaining to the transportation, storage, and use of explosives must be strictly followed;
2. When required, the Blaster in Charge must obtain a blasting permit from the local regulatory agency before blasting;
3. Only persons authorized and qualified based on training and experience will handle and use explosives;
4. No person will smoke; carry matches or other flame producing devices; or carry firearms or loaded cartridges while in or near a motor vehicle that is transporting explosives;
5. Keep track of explosives at all times. Explosives must be stored and locked in an approved magazine facility in accordance with the applicable provisions of the Department, ATF, and OSHA until used in blasting;
6. Post appropriate signs in the required areas and vehicles in accordance with federal regulations;
7. Safely station the necessary guards or flag persons on Highways during blasting to control Highway traffic; and
8. Before starting Work in the cut, observe the entire blast area for at least five (5) minutes after each blast. Remove potentially dangerous rocks or other Material located beyond the excavation limits. Cease blasting operations if the required slopes are not stable, or if the safety and convenience of the public are being jeopardized.

### 203.3.3.1.5 Vibration Risk Survey

For each cut that requires blasting, the Contractor shall perform a vibration risk survey of nearby buildings, Structures, utilities, water supplies, or environmentally sensitive areas that may be at risk of blasting or construction damage. The Contractor shall perform the vibration risk survey in accordance with Section 617, "Vibration Monitoring and Video Taping." The Contractor shall obtain written approval for the vibration risk survey from the Project Manager before drilling blast holes.

### 203.3.3.1.6 Blasting Test Sections

The Contractor shall demonstrate the adequacy of proposed Blasting Plan with a blasting test section(s) for Material of different geologic characteristics. For Projects involving multiple cuts in similar geologic Materials, the Project Manager may reduce the requirement for a blasting test section in each cut. Blasting test sections include drilling, blasting, and excavating cut sections approximately 100 Ft long to determine the optimal combination of method, blast hole spacing, and charge. When field conditions warrant, the Project Manager may direct the Contractor to use test section lengths less than 100 Ft long.

Blasting test section requirements include the following:

1. The Contractor shall perform the blasting test section in accordance with Section 203.3.3.1, "Blasting Requirements." The Contractor shall prepare and submit a Detailed Blasting Plan for the test section to the Project Manager at least 48 H before the planned time of the blast. The Contractor shall not start blasting the test section until the Project Manager accepts the Detailed Blasting Plan;
2. Unless the Contractor's Detailed Blasting Plan indicates otherwise, the Contractor shall begin the tests with the controlled blast holes spaced at 30 inches; and
3. After blasting, the Contractor shall remove a sufficient amount of material from the test section to determine if the blast hole diameter, blast hole spacing, and amount of explosives are adequate to provide the required backslope. The Contractor shall not continue drilling of the test section area until the test section is excavated and the Department evaluates the results.

If, at any time during the progress of the main blasting operation, the methods of drilling and blasting do not produce the desired results, the Contractor shall revise and retest the blasting techniques until a technique produces the required results. The Department will consider the results to be unsatisfactory if:

1. There is an excessive amount of breakage beyond the indicated lines and grade;
2. There is excessive flyrock;
3. The final backslope within the specified tolerances is not uniform or overhangs are created;
4. Ground vibration and air blast levels exceed limits as stated in Section 617, "Vibration Monitoring and Video Taping;"
5. There are violations of other requirements of the Specifications;
6. The slopes are unstable;
7. The safety of the public is jeopardized; and
8. Property or natural features are endangered.

### **203.3.3.1.7 Blasting Execution**

#### **203.3.3.1.7.1 Notification and Schedule**

The following requirements will apply to the notification and scheduling of blasting procedures:

1. The Contractor shall coordinate blasting operations with the Project Manager and notify the Project Manager a minimum of 1.5 H before the blast. The Contractor shall provide a one (1) hour timeframe for the blast. For example, if the Contractor notifies the Project Manager by 9:00 a.m. the blast may occur between 10:30 a.m. and 11:30 a.m.;
2. The Contractor shall provide notice to the required federal, State, and local agencies before each blast, as required by the blasting permits;
3. The Contractor shall notify occupants of buildings and owners of Structures and utilities of the blast time and location at least 48 H before the start of drilling or blasting; and
4. The Contractor shall detonate blasts at the planned time, unless approved otherwise by the Project Manager.

#### **203.3.3.1.7.2 General Requirements**

The Contractor shall cover the blast area with blasting mats, soil, or another equally serviceable material, before firing blasts in areas where flying rock may result in personal injury or damage to property or the Work.

#### **203.3.3.1.7.3 Controlled Blasting Requirements**

The Contractor shall perform controlled blasting in accordance with the Detailed Blasting Plans that produced acceptable results in blasting test sections. The Contractor shall perform control blasting using either pre-splitting or cushion blasting in accordance with the following requirements:

1. If the overburden does not support the drill holes, completely remove the overburden soil and loose rock along the top of the cut to expose the rock surface before drilling the controlled blast holes;
2. Mechanically monitor the blast hole angles;
3. Drill and space blast holes with a nominal diameter from two (2) inch to three (3) inch, in accordance with the blasting test sections or the results achieved in similar geologic Materials. Do not exceed three (3) Ft;
4. Use proper Equipment and technique to ensure that no blast holes deviate from the plane of the backslope shown in the Plans by more than eight (8) inches, parallel or normal to the slope. The Department will not pay for blast holes exceeding these limits unless the Project Manager approves the obtained slopes;
5. Drill the controlled blast holes at the required slope inclination, to the full depth of the cut, or to a pre-determined stage elevation. The maximum drill depth is 30 Ft. Use shallower holes if the directional control is inadequate. If more than five percent (5%) of the controlled blast holes are misaligned in any one (1) lift, reduce the height of the lifts until the eight (8) inch tolerance is met. The length of controlled blast holes may be incrementally increased once satisfactory directional control and blast results are demonstrated;
6. Drill unloaded and un-stemmed guide holes to the same diameter, in the same plane, and to the same tolerance as the controlled blast holes;

7. The Department will allow a maximum offset of 24 inches from the bottom of each lift to allow for drill Equipment clearances, when the cut requires more than one (1) lift. Begin drilling the control blast hole at a point that allows the necessary offsets, and adjust at the start of lower lifts as necessary to compensate for drift in the upper lifts;
8. Do not use horizontal blast holes for controlled blasting;
9. Use explosive charges, detonating cord, and other items necessary for the blasting operation in accordance with the manufacturer's recommendations and instructions;
10. Before placing charges, ensure the hole is free of obstructions. Use casing if necessary to prevent the walls of the hole from collapsing;
11. Use only standard explosives manufactured especially for the type of controlled blasting (cushion or pre-splitting). Do not load ammonium nitrate and fuel oil in the controlled blast holes. Use explosives and blasting accessories appropriate for the conditions of the blast hole (including water in the holes) and necessary to achieve satisfactory results;
12. Assemble and affix continuous column cartridge-type explosives to the detonating cord in accordance with the explosive manufacturer's instructions;
13. The bottom charge in a blast hole may be larger than the charges above, but not large enough to cause overbreak. Place the top charge far enough below the collar and sufficiently reduced in size to avoid overbreaking or heaving; and
14. Use a dry, angular, and granular Material that passes a 3/8 inch sieve to stem the controlled blast holes, from the top charge to the hole collar.

#### **203.3.3.1.7.4 Pre-Split Blasting**

The Contractor shall perform pre-split blasting in accordance with Section 203.3.3.1.7.3, "Controlled Blasting Requirements," and the following requirements:

1. Detonate the pre-split blast holes before drilling for production blasting; or fire the pre-split blast holes at least 75 Ms before the production holes if detonated in the same blast;
2. Fire pre-split blast holes simultaneously, unless ground vibrations, noise, or air blast are excessive. Fire pre-split holes in delayed sections and reduce the charge weight per delay to mitigate excessive effects;
3. The line of pre-split blast holes will extend beyond the limits of the production blast holes to be detonated. The minimum length of this extension will be 30 Ft or to the end of the cut, but will not be greater than one-half of the distance of the expected blast advance; and
4. Do not perform pre-split blasting if the distance between the controlled blast line and free face is less than 20 Ft or less than three (3) times the blast hole depth, whichever is greater.

#### **203.3.3.1.7.5 Cushion Blasting**

The Contractor shall perform cushion blasting in accordance with item No. 3 of Section 203.3.3.1.7.3, "Controlled Blasting Requirements," and the following requirements:

1. Perform cushion blasting as part of the final shot after other blasting is finished;
2. If the final shot includes production blast holes, detonate the cushion blast no more than 75 Ms or less than 25 Ms after the production blast; and
3. Fire cushion blast holes simultaneously, unless ground vibrations, noise, or air blast are excessive.

Fire cushion blast holes in delayed sections and reduce the charge weight per delay to mitigate excessive effects.

#### **203.3.3.1.7.6 Production Blasting**

The Contractor shall perform production blasting in accordance with the Blasting Plan that produced acceptable results in blasting test sections and the following requirements:

1. Minimize blast damage to the final excavation backslope;
2. Drill buffer rows of production blast holes on a plane approximately parallel to the controlled blast line;
3. Place the buffer row of production blast holes no closer than 6 Ft to the controlled blast line unless the Contractor can prove the final excavation backslope will not be damaged by the production blast;
4. Where necessary to minimize damage to the excavation backslope, load blast holes in the buffer row lighter than other production holes;
5. Ensure the bottoms of production blast holes are not lower than the bottom of controlled blast holes, except in the lowest lift;
6. Ensure the diameter of production blast holes does not exceed six (6) inches, unless approved by the Project Manager;
7. Before placing charges, ensure the hole is free of obstructions. Use casing, if necessary, to prevent the walls of the hole from collapsing;
8. Use a dry, angular, and granular Material that passes a 3/8 inch sieve to stem the holes, from the top charge to the hole collar;
9. Detonate production blast holes in a controlled delay sequence toward a free face;
10. Do not use horizontal holes for production blasting, except for Equipment access; and
11. Use explosives and blasting accessories appropriate for wet or dry blast hole conditions as necessary to achieve satisfactory results.

#### **203.3.3.1.7.7 Scaling and Stabilization of Slopes Established by Controlled Blasting**

The Contractor shall perform scaling and stabilization of slopes established by controlled blasting in accordance with the following requirements:

1. Observe the entire blast area following a blast before starting Work in the cut. If any rocks are loose, hanging, or potentially dangerous within a blast area, the Contractor shall remove them. Scale slopes by hand using a standard steel mine scaling rod. Use other methods to supplement or in lieu of hand scaling, such as, machine scaling, hydraulic splitters, or light blasting, if approved by the Project Manager;
2. Slopes shall be scaled and stabilized before further construction activities take place. Scale slopes throughout the span of the Contract and as often as necessary to keep the slopes free of hazardous loose rock or overhangs; and
3. Cease blasting operations if the following conditions exist:
  - 3.1. There is an excessive amount of breakage beyond the specified lines and grade;
  - 3.2. There is excessive flyrock;
  - 3.3. The final backslope within the specified tolerances is not uniform;



- 3.4. Ground vibration and air blast levels exceed limits specified in Section 617, "Vibration Monitoring and Video Taping;"
- 3.5. There are violations of other requirements of the Specifications;
- 3.6. The slopes are unstable;
- 3.7. The safety of the public is jeopardized; and
- 3.8. Property or natural features are endangered.

#### **203.3.4 Borrow**

The Contractor shall be responsible for obtaining the borrow source, unless otherwise specified in the Contract. The Contractor shall exhaust all available suitable Material from unclassified excavation operations prior to utilizing a borrow source. The Contractor shall notify the Project Manager, in writing, when there is no longer unclassified excavation Material for Embankment and request that borrow operations commence. Borrow placed prior to this notification shall not be paid. If the Contractor places more than the specified amount of borrow and causes a waste of unclassified excavation, the Department will deduct the wasted amount from the borrow volume, as measured in the borrow area. After unclassified excavation is complete, the Contractor shall blade the areas that require borrow to allow accurate payment measurements by cross sectioning by the Contractor. The Contractor shall maintain and restore Right of Way fencing removed for borrow operations to its original condition or better to prevent livestock from entering Right of Way at all times during the project.

#### **203.3.5 Embankments**

The Contractor shall not place Embankment Material on frozen earth, or incorporate frozen soils in Embankments. The Contractor shall suspend Embankment construction if Embankment Materials become frozen. The Contractor shall not resume until the Materials are thawed and suitable for compaction. Before beginning Embankment construction, the Contractor shall perform scalping in accordance with Section 201, "Clearing and Grubbing." The Contractor shall bench new Embankments into the following:

1. Natural slopes including rock;
2. Existing Embankments; or
3. Phased Embankment construction.

The Contractor shall ensure benches are wide enough to allow operation and placement of compacting Equipment. The Contractor shall recompact new Embankment Material and Material that is cut out at no additional cost to the Department. The Contractor shall not place rock, broken concrete, or other solid Materials in Embankment areas where driven pilings, drilled shafts, utility lines, or other Structures are specified in the Plans.

##### **203.3.5.1 Roadbed Embankments**

The Contractor shall break up the original ground surface to at least six (6) inches by plowing, scarifying, or stepping up. The Contractor shall compact this area in accordance with Section 203.3.6, "Moisture and Density Control." The Contractor shall place Material for Roadbed Embankment in uniform lifts not exceeding eight (8) inches thick and compact in accordance with Section 203.3.6, "Moisture and Density Control."

The Department will allow rocks no larger than three (3) Ft (in any dimension) as long as the Contractor distributes and fills the interstices to form a dense mass. If the interstices between the rock fragments cannot be completely filled and compacted, the Contractor shall use bridging geotextile, approved by the Project Manager, over the top of the rock fragments to prevent the overlying Embankment Material from filling the interstices. The Contractor shall not use rock fragments that may degrade with time or may be water sensitive (such as shale or gypsum) as rock fill in Roadbed Embankments.

The Contractor may place larger rocks greater than three (3) Ft in any dimension in the toe of the slope in accordance with the following requirements:

1. No rock is larger than one-half the Embankment height or ten (10) Ft;
2. No rock is placed in fill height less than eight (8) Ft, measured at the edge of the Roadway Shoulder; and
3. Place rocks inside a line six (6) inches from the slope stake, space a minimum of three (3) Ft from edge to edge, and cover with approved Embankment Material.

The Contractor shall construct rock Embankments to a maximum of six (6) inches below Subgrade elevation. The Contractor shall consolidate rock fills by using the appropriate Equipment and methods approved by the Project Manager.

#### **203.3.5.2 Non-Roadbed Embankment**

The Contractor shall break up the original ground surface to at least six (6) inches by plowing, scarifying, or stepping up. The Contractor shall compact this area in accordance with Section 203.3.6, "Moisture and Density Control." The Contractor shall place Material for Non-Roadbed Embankment in uniform lifts not exceeding eight (8) inches thick and compact in accordance with Section 203.3.6, "Moisture and Density Control."

If the Embankment Material consists of rock, place the rock in layers of sufficient depth to contain the largest rock in the Material, and carefully distribute and fill the interstices to form a dense mass.

#### **203.3.6 Moisture and Density Control**

Maximum dry density of all soil types encountered or used will be determined in accordance with AASHTO T 180 (Modified Proctor), Method A or D (TTCP Modified) and AASHTO T 224.

The Contractor shall construct Roadbed, Roadbed Embankment, non-roadbed Embankment, and Roadway Median excavation or Embankment, with moisture and density control. The Contractor shall compact each layer of Embankment to at least 95% of maximum density as specified above. The Contractor shall ensure that the in-place moisture content of the soil shall not be less than five percent (5%) below optimum moisture content or greater than two percent (2%) above optimum moisture content, at the time of compaction. For soils with a plasticity index of 15 or greater, the Contractor shall ensure the moisture content of the soil at the time of compaction is between optimum moisture to optimum moisture plus four percent (4%). If the moisture content at the time of compaction is not within the specified range, the Contractor shall moisten or dry the Material, then thoroughly mix the Material to the full lift depth before re-compacting. No additional payment shall be made for the reworking of materials that do not fall within the ranges specified above.

Roadbed Embankments that contain mostly rock or coarse-grained Material (65% or greater retained on the No. 4 sieve) do not require moisture and density control, except the top six (6) inches of the Embankment; construct in accordance with Section 207.3, "Construction Requirements." Non-roadbed Embankments of rock Material will not require moisture and density control unless otherwise specified in the Contract.

The Department will perform field densities in accordance with AASHTO T 310 or other Department approved methods. Densities shall be measured at each lift before the next subsequent lift is placed in accordance with Minimum Testing Requirements.

## **203.4 METHOD OF MEASUREMENT**

### **203.4.1 Rock Excavation**

The Department will measure Rock Excavation based on the estimated percentages if shown in the Contract, unless otherwise requested by the Contractor and approved by the Department.

If the Contractor requests, the Department will measure Rock Excavation in its original position for Material classified as Rock Excavation in accordance with Section 203.2.1.1, "Rock Excavation." Before excavation, the Contractor and Project Manager must agree on the limits of Material classified as rock excavation. The Contractor shall calculate volumes in accordance with Section 203.4.3, "Unclassified Excavation and Borrow." The Contractor shall include in measurements the overbreakage in rock excavation a maximum of ten (10) inches beyond the backslope specified in the Plans or as directed by the Project Manager. The Department will use the blaster's drill-hole log cards to determine the quantities of rock excavation covered by soil or overburden. The Contractor shall provide these log cards as part of the surveying records.

The Department will pay for stabilization necessitated by existing geological conditions and for Base Course and geotextile if necessary as required to backfill rock Subgrade conditions.

### **203.4.2 Controlled Blasting**

The Department will measure Controlled Blasting by the blast holes drilled along the final line, whether loaded or not; and will measure the lengths from the top of the rock surface to the elevation of the Roadway ditch or to a bench elevation set by the Project Manager. The Department based the quantities for Controlled Blasting shown in the Plans on assumed blast hole spacing; the actual quantities depend on field conditions and the results from test sections.

### **203.4.3 Unclassified Excavation and Borrow**

For each phase of the Project, identified in the Contract or approved by the Department, the Contractor shall measure the original ground surface of any areas that are designated as unclassified excavation (cut sections) and/or Embankment (fill sections using available unclassified excavation Material), or Borrow (fill sections when all unclassified excavation Material has been exhausted). Prior to any Work continuing in completed excavation areas, the Contractor shall measure the newly excavated ground surface "final surface". For embankment and borrow areas the contractor shall measure the final surface once these operations are completed and accepted by the Project Manager. Prior to commencing Borrow operations the Contractor must ensure that all requirements of 203.2.1.3, "Borrow" have been met. Earthwork

quantities will be calculated as the neat volume from the original ground surface (less the existing roadway surfacing) between the limits shown on the plans, and/or authorized changes by the Project Manager, and the new ground surface. The Department will not apply any shrinkage or swell factor due to payment being made on the final cross sectioned volume.

For the measurements described above the Contractor shall survey and submit the original ground surface and final surface data at completion of each phase of construction using an electronic XML-compatible format approved by the Project Manager. The Contractor shall use a New Mexico licensed Engineer or New Mexico licensed surveyor to stamp and certify cross-sections at 50 Ft. intervals, unless otherwise specified in the Contract or approved by the Project Manager prior to commencement of earthwork operations. The Contractor shall submit certified volume summary reports to the Project Manager based on this electronic data for each phase of construction including a report that summarizes the basis for the final volumes.

## 203.5 BASIS OF PAYMENT

<b>Pay Item</b>	<b>Pay Unit</b>
<i>Rock Excavation</i>	Cubic Yard
<i>Unclassified Excavation</i>	Cubic Yard
<i>Borrow</i>	Cubic Yard
<i>Unsuitable Material Excavation</i>	Cubic Yard
<i>Controlled Blasting</i>	Linear Foot

### 203.5.1 Double Handling

The Department will pay for excavated Materials that require more than one (1) handling as identified within the Contract before final placement, including fertile topsoil required to be stockpiled and reserved for later use in the Work:

1. At the Bid Item Unit Price for unclassified excavation, for each handling approved by the Project Manager; or
2. As another item of Work for the second handling if specified in the Contract.

However, if the Contractor handles excavated and borrow Materials more than once, at the Contractor's request or at the convenience of the Contractor, there will be no additional cost to the Department. If the Contractor chooses to stockpile excess unclassified excavation Material to be used as borrow in a later phase, the Department will not pay for this Material as double handling. Double handling shall not be paid for Material that is excavated and placed in the same phase of the Project.

### 203.5.2 Work Included in Payment

The Department will consider the item(s) listed in this section as included in the pay items(s) listed 203.5, "Basis of Payment" and will not measure or pay for them separately:

1. Controlled blasting drill holes through overburden;
2. Production blasting;

3. Scaling within the limits of a final backslope established by controlled blasting;
4. Damage resulting from blasting;
5. Mobilization of any Equipment and testing of rock in accordance with Section 203.2.1.1, "Rock Excavation;"
6. Time Delays to perform testing of rock in accordance with Section 203.2.1.1, "Rock Excavation;"
7. Material required to fill the voids and irregularities in Embankment areas below the tolerance limit from the specified elevation;
8. Bridging geotextiles required to prevent overlying Embankment Material from migrating into the interstices between rock fragments;
9. Fence removal and replacement;
10. AASHTO T-190 Resistance R-Value and Expansion Pressure of Compacted Soils, including sampling, laboratory testing and reporting;
11. AASHTO T-290 Water-Soluble Sulfate Ion Content in Soil, including sampling, laboratory testing, and reporting;
12. Survey, calculations, and engineering;
13. Hauling and/or disposal related to Rock Excavation, Unclassified Excavation, Borrow, and Unsuitable Material Excavation; and
14. Suitable backfill Material for Unsuitable Material Excavation.

The Contractor shall dispose of Material in accordance with Section 107, "Legal Relations, Environmental Requirements, and Responsibility to the Public" unless otherwise specified in the Contract. The Contractor shall not dispose of Material within the project limits without written approval from the Project Manager.

June 28, 2017

**SPECIAL PROVISIONS**  
**MODIFYING**  
**SECTION 206: EXCAVATION AND BACKFILL FOR CULVERTS AND MINOR**  
**STRUCTURES**

The 2014 Edition of the New Mexico Department of Transportation Standard Specifications for Highway and Bridge Construction shall apply in addition to the following:

Delete **Section 206: EXCAVATION AND BACKFILL FOR CULVERTS AND MINOR STRUCTURES** in its entirety and replace with the following:

**206.1 DESCRIPTION**

This Work consists of excavating, placing and compacting select backfill, bedding, and flowable fill materials, and disposing of material related to construction of Minor Structures. Excavation includes dewatering, pumping, bailing, draining, sheeting, bracing, and Incidentals required for proper execution of the Work.

Ditches required at Culvert inlets and outlets, and other locations indicated in the Plans are included under the item for Unclassified Excavation.

**206.2 MATERIALS**

**206.2.1 Select Backfill**

The Contractor shall furnish a suitable, well-graded, compactible material free of Recycled Asphalt Pavement (RAP), organic matter, clay balls, lumps, rock fragments that may degrade with time such as shale or gypsum and other deleterious materials. Select backfill material shall conform to the following and be placed in accordance with the Contract:

- a) For structures and pipes other than plastic pipe:
  - 1) Maximum particle size: two (2) inch
  - 2) Soil classification, AASHTO M 145 A-1 or A-2-4
- b) For plastic pipe:
  - 1) Maximum particle size: 1½ inch
  - 2) Soil classification, AASHTO M 145 A-1 or A-2-4

All Backfill Material shall meet the electrochemical criteria where specified in the Contract.

**206.2.2 Flowable Fill**

The Contractor may substitute flowable fill for select backfill in accordance with Section 516, "Flowable Fill," at no additional cost to the Department. The Contractor shall secure Culverts and minor Structures to prevent flotation.

### **206.2.3 Bedding**

The Contractor shall furnish a suitable, well-graded, non-plastic, free draining material, free of Recycled Asphalt Pavement (RAP), organic matter, clay balls, lumps, rock fragments that may degrade with time such as shale or gypsum and other deleterious materials. Bedding material shall conform to the following and be placed in accordance with the Contract:

- (a) Maximum particle size: ½ inch or half the corrugation depth, whichever is smaller
- (b) Material passing No. 200 (75-µm) sieve: ten percent (10.0%) max AASHTO T 27 and AASHTO T 11

All Bedding Material shall meet the electrochemical requirements where specified in the Contract.

### **206.2.4 Unsuitable Material**

Unsuitable Material includes organic materials, frozen lumps, ice; soils such as peat, shale, gypsum or other Materials that may degrade with time, or are contaminated soil. Suitable Material that is unstable may be reworked to create a stable platform as directed by the Project Manager.

Material below minor Structures and areas identified by the Project Manager, determined to be unsuitable shall be excavated and disposed of in accordance with Section 107, "Legal Relations, Environmental Requirements, and Responsibility to the Public" unless otherwise specified in the Contract.

When unsuitable Material is removed and disposed of, the resulting void shall be filled with Material suitable for its planned use as directed by the Project Manager. Such suitable Material shall be placed and compacted in accordance with this specification.

## **206.3 CONSTRUCTION REQUIREMENTS**

### **206.3.1 General**

The Contractor shall remove unsuitable foundation material below the specified bottom-of-structure elevation and replace with approved Material, as directed by the Project Manager. The Contractor shall use backfill Material to backfill Culverts in accordance with Section 206.2.1, "Select Backfill," or Section 206.2.2, "Flowable Fill," unless otherwise shown on the Plans. The Contractor shall ensure the moisture content of the soil; at the time of compaction is not less than five percent (5%) below optimum moisture content or greater than optimum moisture content. The Contractor shall compact the top six (6) inches of existing ground to at least 95% of maximum density in accordance with AASHTO T 180 (Modified Proctor), Method A or D (TTCP Modified). The Contractor shall maintain the density, approved surface elevation, and shape of the foundation immediately before placing Structures and forms.

The Contractor shall distribute backfill Material in uniform layers, each no more than eight (8) inches thick (loose measurement) and compact to 95 percent (95%) maximum density. At the time of compaction, the Contractor shall ensure that the in-place moisture content of the soil is not less than three percent (3%) below optimum moisture content or greater than three percent (3%) above optimum moisture content in accordance with AASHTO T 180 (Modified Proctor), Method A or D (TTCP Modified) and AASHTO T 224. Test for field density and moisture content using nuclear methods in accordance with AASHTO T 310.

Application of load including backfill against new masonry or concrete Structures shall be in accordance with Section 511.3.5.6, "Sequence of Placement and Application of Load." The Contractor shall maintain Structure alignment and integrity during backfill compaction. The Contractor shall not place backfill on frozen earth or with frozen Materials. The Contractor shall suspend operations until Material is thawed and meets requirements of this specification. The Contractor shall remove sheeting and bracing before placing backfill.

### **206.3.2 Pipe Culverts, Storm Drains, and Structural Plate Pipe**

For preparation and installation of pipe culverts, storm drains, and structural plate pipes with bottoms the Contractor shall remove rock and other unyielding foundation material a minimum of four (4) inches (maximum 12 inches) below the bottom of the Structure. The Contractor shall backfill this added depth with an approved Material as identified in the Contract. The Contractor shall excavate trenches as described in the Contract to allow for pipe joining and compaction of the bedding and backfill Material under and around the pipe in accordance with Section 206.3.1, "Construction Requirements, General." The Contractor shall ensure that the trench width for pipes and Culverts conforms to the trench widths requirements in Section 570.3.2, "Excavation and Backfill." The Contractor shall uniformly compact the trench for its full length and width. If specified in the Contract, the Contractor shall provide the longitudinal camber of the specified magnitude for cross drains.

### **206.3.3 Box Culverts and Other Drainage Structures**

For preparation and installation of box culverts and other drainage structures the Contractor shall excavate material to the elevations established by the Contract. The Contractor shall not remove material, except unsuitable material, below the final grade, if placing footings on excavated surfaces other than rock. The Contractor shall remove rock and other unyielding foundation material a maximum 12 inches below the bottom of the Structure. The Contractor shall clean rock seams and cavities, and fill with concrete or grout. If the Contractor's excavation extends beyond the neat lines shown in the Contract, the Contractor shall use concrete (of the same class as the footing) to backfill these areas, at no additional cost to the Department.

The Contractor shall notify the Project Manager after each footing excavation. The Contractor shall not place footings until the excavation depth and foundation materials are approved by the Project Manager. The Contractor shall maintain the moisture and density and the approved surface elevation and shape of the foundation before installing reinforcing steel.

## **206.4 METHOD OF MEASUREMENT**



The Project Manager will measure the void created by the removal of Unsuitable Material Excavation below the bottom-of-structure elevation.

## 206.5 BASIS OF PAYMENT

Pay Item	Pay Unit
<i>Unsuitable Material Excavation</i>	Cubic Yard

The Department will pay for rock excavation in accordance with Section 203, "Excavation, Borrow, and Embankment."

### 206.5.1 Work Included in Payment

Excavation, disposal of unsuitable material, bedding, backfill and select backfill Materials, placement and compaction of bedding and select backfill Materials for Culverts, storm drains, other drainage Structures, box Culverts, and minor Structures shall be included in the Contract unit price per linear foot of Structure identified in the Contract.

Excavation shall include all dewatering, pumping, bailing, draining, sheeting, bracing, and Incidentals required for proper execution of the Work. Select backfill shall include the use of Section 516, "Flowable Fill." Backfilling with concrete of the same class as the footings where the Contractor excavates below the established final elevation for bottom of footings or beyond the neat lines of the footings in rock or other hard foundation material shall be included in the Contract unit price per linear foot of Culvert. Unrippable rock or unyielding material will be defined and paid for as covered in Section 203, "Excavation, Borrow, and Embankment."

June 28, 2017

**SPECIAL PROVISIONS  
MODIFYING  
SECTION: 207 SUBGRADE PREPARATION**

The 2014 Edition of the New Mexico Department of Transportation Standard Specifications for Highway and Bridge Construction shall apply in addition to the following:

Delete **Section 207: SUBGRADE PREPARATION** in its entirety and replace with the following:

**207.1 DESCRIPTION**

This Work consists of compacting and finishing the Subgrade.

**207.2 MATERIALS—Reserved**

**207.3 CONSTRUCTION REQUIREMENTS**

Maximum dry density of all soil types encountered or used will be determined in accordance with AASHTO T 180 (Modified Proctor), Method A or D (TTCP Modified) and AASHTO T 224.

The Contractor shall ensure the top two (2) ft of borrow Materials in the finished Subgrade is comprised of material with the design R-value.

The Contractor shall compact the top six (6) inches of the Roadbed to 95% of maximum density.

The Contractor shall ensure the soil moisture content (at the time of compaction) is from optimum to optimum minus five percent (5%). For soils with a PI of 15 or greater, the Contractor shall ensure the moisture content of the soil at the time of compaction is from optimum moisture to optimum moisture plus four percent (4%).

Field density tests shall be performed in accordance with the "Minimum Testing Requirements", in accordance with AASHTO T 310, or by other Department approved methods.

**207.3.1 Tolerances**

The Contractor shall ensure the top surface of the finished subgrade along centerline shall not vary by more than 0.1 foot above or below established grade and 0.05 foot above or below the typical cross-section measured on the finished surface at right angles to the centerline. All deviations from these tolerances shall be corrected.

**207.4 METHOD OF MEASUREMENT**

The Department will measure Subgrade preparation using the dimensions shown in the Contract and/or approved modifications.

**207.5 BASIS OF PAYMENT****Pay Item***Subgrade Preparation***Pay Unit**

Square Yard

**207.5.1 Work Included in Payment**

No payment will be made for rehandling or reworking material to meet moisture and density requirements.

Proof rolling for Unstable Subgrade Stabilization shall be considered Incidental to the Contract and will not be measured or paid for separately.

July 28, 2017

**SPECIAL PROVISIONS  
MODIFYING  
SECTION 209 BLADING AND RESHAPING**

The 2014 Edition of the New Mexico Department of Transportation Standard Specifications for Highway and Bridge Construction shall apply in addition to the following:

Delete **Section 209: BLADING AND RESHAPING** in its entirety and replace with the following:

**209.1 DESCRIPTION**

This Work consists of constructing or restoring and shaping Roadbeds and Base Course to the typical section or as specified in the Contract.

**209.2 MATERIALS—Reserved**

**209.3 CONSTRUCTION REQUIREMENTS**

The Contractor shall shape the surface of the Roadbed or Base Course Materials to the typical section or as specified in the Contract with approved existing Materials. Any unapproved existing Roadbed or Base Course materials shall be replaced in accordance with the requirements of Section 203, "Excavation, Borrow, and Embankment" and Section 303, "Base Course", as directed by the Project Manager.

**209.3.1 Compaction**

The Contractor shall perform the following to the top six (6) inches of the Roadbed or Base Course, after restoring the grade and typical section:

1. Scarify;
2. Water; and,
3. Compact to 95% of maximum density per AASHTO T180 Method A or D (TTCP Modified). Ensure the moisture content of the Roadbed and Base Course Materials meet the requirements of Section 203, "Excavation, Borrow and Embankment;" and Section 303, "Base Course".

**209.3.2 Tolerances**

The Contractor shall ensure the top surface of the finished Roadbed or Base Course Materials along centerline shall not vary by more than 0.1 foot above or below established grade and 0.05 foot above or below the typical cross-section measured on the finished surface at right angles to the centerline. All deviations from these tolerances shall be corrected.

**209.4 METHOD OF MEASUREMENT**

The Department will measure blading and reshaping along the Roadbed centerline or the typical section.

**209.5 BASIS OF PAYMENT**

<b>Pay Item</b>	<b>Pay Unit</b>
<i>Blading and Reshaping</i>	Mile

**209.5.1 Work Included in Payment**

The Department will consider as included in the payment for the pay item(s) listed in this section and will not measure or pay separately for the following Work:

1. Restoring Grade and typical section;
2. Material placement and compaction;
3. Reworking or rehandeling of Materials to meet compaction requirements; and
4. Finishing Roadbed or Base Course to uniform grade and typical section.

March 23, 2018

## **SPECIAL PROVISIONS MODIFYING**

### **SECTION 210: EXCAVATION AND BACKFILL FOR MAJOR STRUCTURES**

The 2014 Edition of the New Mexico Department of Transportation Standard Specifications for Highway and Bridge Construction shall apply in addition to the following:

Delete **Section 210: EXCAVATION AND BACKFILL FOR MAJOR STRUCTURES** in its entirety and replace with the following:

#### **210.1 DESCRIPTION**

This Work consists of excavating, disposing of Material, supplying and placing backfill Material related to the construction of Major Structures identified in the Contract. Excavation and backfill for major Structures includes dewatering, temporary shoring and bracing and other Incidentals required for proper execution of the Work.

#### **210.2 MATERIALS**

##### **210.2.1 Select Backfill**

The Contractor shall use Base Course per Section 303 "Base Course", A-1 or A-2-4 Material as determined by AASHTO M145 composed of stone, crushed stone, crushed or screened gravel, caliche, sand, or a combination thereof. The Contractor shall use Material that is free of Deleterious Materials, peat, gypsum, shale or other Materials that may degrade with time. Material shall not contain lumps or stones with an average dimension greater than two (2) inches.

The Contractor shall not use Recycled Asphalt Pavement (RAP) as select backfill Materials. The Contractor shall not use Base Course containing RAP for use as select backfill Materials.

##### **210.2.2 Approach Slab**

The Contractor shall use AASHTO Soil Classifications A-1-a Material with a maximum coarse fraction size of 1.5 inches or Base Course per Section 303, "Base Course" under the approach slab. The Contractor shall extend the Material to a minimum of ten (10) feet beyond the end of the approach, unless otherwise specified in the Contract, for the full width of the abutment and to the depth indicated in the Contract. Recycled Asphalt Material (RAP) shall not be used within this prism.

##### **210.2.3 Unsuitable Material**

Unsuitable Material includes organic Materials, frozen lumps, ice, and soil/rock such as peat, shale, gypsum or other Materials that may degrade with time, or are contaminated. Suitable Material that is unstable may be reworked to create a stable platform as directed by the Project Manager.

Material identified by the Project Manager and determined to be unsuitable shall be excavated and disposed of in accordance with Section 107, "Legal Relations, Environmental Requirements, and Responsibility to the Public" unless otherwise specified in the Contract.

When unsuitable Material is removed and disposed of, the resulting void shall be filled with Material suitable for its planned use as directed by the Project Manager. Such suitable Material shall be placed and compacted in accordance with Section 210.3.2, "Compaction."

### **210.3 CONSTRUCTION REQUIREMENTS**

#### **210.3.1 General**

The Contractor shall excavate material to the elevations established in the Contract. The Contractor shall not remove material, except unsuitable material, below the final grade, if placing footings on excavated surfaces other than rock. The Contractor shall remove rock and other unyielding foundation material a maximum of 12 inches below the bottom of the Structure. The Contractor shall clean rock seams and cavities, and fill with concrete or grout. This additional concrete or grout is Extra Work. The Contractor shall notify the Project Manager after each footing excavation. The Contractor shall not place footings until the Project Manager approves the excavation depth and the foundation material.

The Contractor shall dewater wet pits for inspection and for construction of footings. When necessary, the Contractor shall install well-braced cofferdams, built as watertight as practical. The Contractor shall not use timber or bracing inside cofferdams that cannot be removed without damage to the concrete. The Contractor shall make temporary Structures large enough to provide ample room for pile driving, drilled shaft construction, form construction, inspection, and sump pumps. The Contractor shall straighten or move cofferdams that threaten to damage the Structure. The Contractor shall submit to the Project Manager Working Drawings showing proposed methods of constructing cofferdams, cribs, shoring, or similar temporary Structures sealed by a New Mexico licensed Engineer. The submittal of Working Drawings does not relieve the Contractor of any responsibility.

The Contractor shall backfill excavated areas not occupied by piles, shafts, abutments, or other permanent Structures to the adjoining finished surface elevation. The Contractor shall not use rock in backfill that is within two (2) ft of the Structure. The Contractor shall place backfill Material in approximately level layers for the length and width of the backfilled area. When necessary to prevent wedge action, the Contractor shall bench the slopes bounding the area being backfilled in accordance with Section 203.3.5.1, "Roadbed Embankments." The Contractor shall dispose of unsuitable excavated material outside of the Roadway Prism as directed by the Project Manager. Before placing backfill Material against new masonry or concrete Structures, the Contractor shall wait until the concrete has developed its specified design strength as determined in Section 510.3.5.1, "Concrete Strength" or until the concrete reaches 80% of the specified compressive strength but no less than 2,500 psi, as determined by the Maturity Method, in accordance with Section 510.3.5.2, "In-place Concrete Strength Measurements." The Contractor shall prevent unbalanced loading while placing backfill Material.

### 210.3.2 Compaction

The Contractor shall make layers of uncompacted backfill no more than eight (8) inches thick. Before placing the next layer, the Contractor shall compact to 95% of the maximum density near optimum moisture content for AASHTO Soil Classifications A-1-a Material and Roadway Embankment as determined by AASHTO T 180 (Modified Proctor), Method A or D (TTCP Modified). The Contractor shall use nuclear methods to determine field densities in accordance with AASHTO T 310.

Prior to concrete placement the foundation soils shall be compacted to at least 95% of maximum density as determined by AASHTO T 180 (Modified Proctor), Method A or D (TTCP Modified).

## 210.4 METHOD OF MEASUREMENT

### 210.4.1 Major Structure Excavation

For each phase of the Project, identified in the Contract or approved by the Department, the Contractor shall measure the original ground surface of any areas that are designated as Structure Excavation. Prior to any Work continuing in completed excavation areas, the Contractor shall measure the newly excavated ground surface "final surface." Major structure excavation quantities shall be measured and calculated as the neat volume below the original ground surface between the limits shown in the Contract, and/or approved changes by the Project Manager, and the final excavated ground surface.

For the measurements described above the Contractor shall survey and submit the original ground surface and final excavated ground surface data at completion of each phase of construction or completed major structure using an electronic XML-compatible format approved by the Project Manager with a volume summary report summarizing the basis for the final volumes. If no cross section intervals are shown in the plans the Contractor shall propose cross-section intervals, to the Project Manager, that adequately quantify the volumes. The approved intervals shall be used for the entire project unless otherwise specified in the Contract and/or approved by the Project Manager prior to commencement of earthwork operations. The Contractor shall use a New Mexico licensed Engineer or New Mexico licensed surveyor to stamp and certify the surveyed cross-sections and the volume summary report.

Do not include the following volumes in structure excavation:

1. Material excavated outside vertical planes located 18 inches outside and parallel to the limits of the footings or foundations;
2. Excavation required because of slides, cave-ins, silting or filling due to lack of support of sides, the action of the elements or carelessness of the Contractor;
3. Any material included within the staked limits of the surfacing and unclassified excavation for which measurement is covered under other sections;
4. Water or other liquid material;
5. Material excavated before measurements of the original ground or embankment placement;
6. Material rehandled, except when the contract specifically requires excavation after embankment placement; and
7. Rock encountered during structural excavation will be paid per Section 203.4.1, "Rock Excavation."



## 210.4.2 Major Structure Backfill

For each phase of the Project, identified in the Contract or approved by the Department, the Contractor shall measure major structure backfill by the cubic yard compacted in place in accordance with the limits shown in the Contract. The Contractor shall calculate major structure backfill as the neat volume above the existing or excavated ground surface between the limits shown on the plans, and/or authorized changes by the Project Manager, and the final compacted ground surface. The Department will not apply any shrinkage or swell factors due to payment being made on the final cross sectioned volume.

For the measurements described above the Contractor shall survey and submit the existing or excavated ground surface and final compacted ground surface data at completion of each phase of construction or completed major structure using an electronic XML-compatible format approved by the Project Manager with a volume summary report summarizing the basis for the final volumes. If no cross section intervals are shown in the plans the Contractor shall propose cross-section intervals, to the Project Manager, that adequately quantify the volumes. The approved intervals shall be used for the entire project unless otherwise specified in the Contract and/or approved by the Project Manager prior to commencement of earthwork operations. The Contractor shall use a New Mexico licensed Engineer or New Mexico licensed surveyor to stamp and certify the surveyed cross-sections and the volume summary report.

No measurement for payment will be made of backfill required because of slides, cave-ins, silting or filling due to lack of support of sides, over excavation or any other the action of the elements or carelessness of the Contractor.

## 210.5 BASIS OF PAYMENT

<b>Pay Item</b>	<b>Pay Unit</b>
<i>Major Structure Excavation</i>	Cubic Yard
<i>Major Structure Backfill</i>	Cubic Yard
<i>Unsuitable Material Excavation</i>	<i>Cubic Yard</i>
<i>Dewatering</i>	Lump Sum

### 210.5.1 Work Included in Payment

Payment will be full compensation for the Work and Materials prescribed in this Section.

Excavation and Backfill for Major Structures includes the following:

1. Material compaction to 95% of maximum density as determined by AASHTO T 180 (Modified Proctor), Method A or D (TTCP Modified);
2. All temporary shoring and bracing;
3. Suitable backfill Material for Unsuitable Material Excavation;
4. Hauling and disposal of Material related to Structure Excavation and Unsuitable Material Excavation; and
5. Survey, calculations, and engineering.

The Contractor shall dispose of Material in accordance with Section 107, "Legal Relations, Environmental Requirements, and Responsibility to the Public" unless otherwise specified in the Contract. The Contractor shall not dispose of Material within the project limits without written approval from the Project Manager.

July 28, 2107

## SPECIAL PROVISIONS

### MODIFYING

### SECTION 213 OBLITERATING OLD ROAD

The 2014 Edition of the New Mexico Department of Transportation Standard Specifications for Highway and Bridge Construction shall apply in addition to the following:

Delete **Section 213: OBLITERATING OLD ROAD** in its entirety and replace with the following:

#### 213.1 DESCRIPTION

This Work consists of obliterating old Road.

#### 213.2 MATERIALS—Reserved

#### 213.3 CONSTRUCTION REQUIREMENTS

After the old Road is no longer needed for traffic, the Contractor shall remove and stockpile existing surfacing Materials to Subgrade in an environmentally acceptable manner.

The Contractor shall fill ditches, rough grade the Road (to blend with the surrounding terrain) and form natural rounded slopes (approved by the Project Manager). Next, the Contractor shall scarify or plow (to thoroughly mix the remaining surfacing material with earth), harrow, and smooth the Roadbed.

#### 213.4 METHOD OF MEASUREMENT

The Contractor shall measure obliterating old road along the centerline of the old Road.

#### 213.5 BASIS OF PAYMENT

Pay Item	Pay Unit
<i>Obliterating Old Road</i>	Mile

##### 213.5.1 Work Included in Payment

The Department will consider as included in the payment for the pay item(s) listed in this section and will not measure or pay separately for the following Work:

1. Removing and stockpiling existing surfacing Materials; and
2. Grading, scarifying, and plowing.

May 30, 2017

## SPECIAL PROVISIONS MODIFYING

### SECTION 401: PAVEMENT SMOOTHNESS MEASUREMENT

The 2014 Edition of the New Mexico Department of Transportation Standard Specifications for Highway and Bridge Construction shall apply in addition to the following:

Delete Table 401.5.1.2:2 of subsection 401.5.1.2 Pay Adjustment for PCC Pavement and substitute the following:

Table 401.5.1.2:2  
MRI Based Profile Pay Adjustment Schedule  
for Category II PCCP Projects

Pay Adjustment (\$ per square Yard)			
MRI (Mean Roughness Index) inch/0.1mi			Category II
<65.0			0.00
65.0	to	66.0	-0.12
66.1	to	67.0	-0.24
67.1	to	68.0	-0.36
68.1	to	69.0	-0.48
69.1	to	70.0	-0.60
70.1	to	71.0	-0.72
71.1	to	72.0	-0.84
72.1	to	73.0	-0.96
73.1	to	74.0	-1.08
74.1	to	75.0	-1.20
75.1	to	76.0	-1.32
76.1	to	77.0	-1.44
77.1	to	78.0	-1.56
78.1	to	79.0	-1.68
79.1	to	80.0	-1.80
>80.0			Corrective Work Required

Delete the fourth paragraph of Subsection **401.3.1.4 Profile Measurement Operations** in its entirety and replace with the following:

Measure the longitudinal smoothness of the final surface of HMA, WMA, OGFC, PCCP, and CRCP using a Department certified profile measurement device. Operate the profile measurement device in accordance with AASHTO R 57 "Operating Inertial Profiling Systems" and manufacturer's recommendations and procedures established by TTCP. The profile measurement device shall be equipped with dual-sensors, bar lasers up to four (4.0) inches long, that measures the profile traces for each wheel path. Locate outside trace three (3) feet from and parallel to the approximate location of the pavement edge line. Ensure the center line distance between sensors is 70.0 inches  $\pm$  (1.0) inch. At transverse joints, commence profile traces at the joint location. Operate the device on the driving surface of the Roadway at the manufacturer's recommended speed without interfering with traffic or its own operation.

February 22, 2016

**SPECIAL PROVISIONS**  
**MODIFYING**  
**SECTION 402: ASPHALT MATERIALS, HYDRATED LIME, AND ANHYDRITE BASED**  
**MATERIAL**

The 2014 Edition of the New Mexico Department of Transportation Standard Specifications for Highway and Bridge Construction shall apply in addition to the following:

**402.2 MATERIALS**

Include the following subsection:

**402.2.7.6 Emulsified Petroleum Resin Prime (EPR-1)**

Provide EPR-1 designated emulsified petroleum resin prime in accordance with Table 402.2.7.6:1, "Emulsified Petroleum Resin Prime."

**Table 402.2.7.6:1**  
**Emulsified Petroleum Resin Prime**

Test	EPR-1
Particle Charge Test	Positive
Residue from Evaporation Test, % <sup>a</sup>	60+
Sieve Test, Retained on 0.850mm Sieve, % <sup>b</sup>	0.1-
Viscosity, Saybolt Furol at 77 °F, Seconds	14-60

<sup>a</sup>ASTM D-244 Evaporation Test for percent of residue is modified by heating 50 gram sample to 300°F until foaming ceases, then cool immediately and calculate results

<sup>b</sup>Test procedure with ASTM except that distilled water shall be used in place of 2%w sodium oleate solution

April 7, 2014

**SPECIAL PROVISIONS**  
**MODIFYING**  
**SECTION 403: OPEN GRADED FRICTION COURSE (NON-QLA)**

The 2014 Edition of the New Mexico Department of Transportation Standard Specifications for Highway and Bridge Construction shall apply in addition to the following:

Delete Subsection **403.2.5 Mix Design** and replace with the following:

**403.2.5 Mix Design**

A Department approved Private Testing Lab will develop the OGFC mix design in accordance with ASTM D 7064, "Standard Practice for Open Graded Friction Course (OGFC) Mix Design", as modified by the New Mexico Department of Transportation State Asphalt Engineer. The mix design shall be signed by a professional Engineer licensed by the NM Board of Registration for Professional Engineers and Land Surveyors. The JMF gradation will be within the master range for the specified type of OGFC. The mix design will establish a single percentage of aggregate passing each required sieve size and a single percentage of asphalt Material to be added to the aggregate. The mix design will specify whether to add hydrated lime or anhydrite based material and how much to use. The Mix Design shall identify the minimum and maximum mixing and placement temperatures of the mix. Add a minimum of one percent (1%) hydrated lime or anhydrite based material, include it in the gradation for establishing the mix design.

Delete Subsection **403.3.6.1.1 Suspension of Operations** and replace with the following:

**403.3.6.1.1 Suspension of Operations**

If one (1) or more properties listed in Subsection 403.3.6.2, Department Quality Assurance, fail to meet the specification requirements for a period of one (1) Day or a maximum production of 1000 tons; the production will be halted by the Project Manager. Use the gradation information to determine causes or factors that may be a contribution to the problem and prepare a plan to solve the problem. Approval of the plan must be obtained from the Project Manager before resumption of paving operations. Upon approval of the proposed plan, the Contractor may resume operations to determine if the actions taken have corrected the problem. Limit production to 1000 tons that will be tested in 500 ton increments. If that testing indicates that the problem has been corrected, the Contractor may resume full operations. If the problem has not been corrected, further trial runs and testing as described herein will be required. Take corrective action to remedy any property of the mix that is out of specification. Contractors who elect to produce Material that is not within the specification limits do so at their own risk. Price reductions due to out of specification Material being placed will be deducted from the unit price of the item in accordance with the Department's current Acceptance and Price Reduction Procedures. All Material that is rejected shall be removed and replaced with specification Material at the Contractor's expense. Material that is improperly

graded or segregated or fails to meet the requirements herein provided shall be corrected or removed and disposed of immediately as directed by the Project Manager at the Contractor's expense.



February 13, 2014

**SPECIAL PROVISIONS  
MODIFYING  
SECTION 405: DETOUR PAVEMENTS**

The 2014 Edition of the New Mexico Department of Transportation Standard Specifications for Highway and Bridge Construction shall apply in addition to the following:

Amend Subsection **405.3 CONSTRUCTION REQUIREMENTS** to include the following:

**405.3.1 General**

Construct the Detour pavement in accordance with the following applicable Specifications:

6. Section 423 Hot-Mix Asphalt – Superpave (QLA & NON-QLA);"
7. Section 424 Warm Mix Asphalt."

February 22, 2016

**SPECIAL PROVISIONS  
MODIFYING  
SECTION 408: PRIME COAT**

The 2014 Edition of the New Mexico Department of Transportation Standard Specifications for Highway and Bridge Construction shall apply in addition to the following:

**408.2 MATERIALS**

Revise the following subsection:

**408.2 Materials**

Provide one (1) of the following types of prime coat asphalt Material:

1. Asphalt emulsified prime (AE-P);
2. Penetrating emulsified prime (PE-P);
3. Emulsified Petroleum Resin Prime (EPR-1);
4. MC-70; or
5. Other Material approved by the Project Manager.

Provide prime coat asphalt Material in accordance with Section 402, "Asphalt Materials, Hydrated Lime, and Anhydrite Based Material."

April 8, 2016

**SPECIAL PROVISIONS**  
**MODIFYING**  
**SECTION 423: HOT MIX ASPHALT – SUPERPAVE (QLA AND NON-QLA)**

The 2014 Edition of the New Mexico Department of Transportation Standard Specifications for Highway and Bridge Construction shall apply in addition to the following:

Insert the following paragraph as third paragraph in Subsection **423.2.7 Reclaimed Asphalt Pavement**:

**423.2.7 Reclaimed Asphalt Pavement**

If Plus Grades of PG asphalt binder is specified on the project, for quantities greater than 15% RAP, the Contractor shall extract, recover, and combine the RAP's asphalt binder with a virgin asphalt binder per AASHTO M 323, Appendix A. The Contractor shall ensure the resultant binder meets the entire AASHTO M 320 required Project PG asphalt binder properties indicated on the approved mix design including the additional Plus Grade requirements for Elastic Recovery and Solubility.

Delete Subsection **423.3.4.2 Haul Equipment** in its entirety and replace with the following:

**423.3.4.2 Haul Equipment**

Haul asphalt mixtures with trucks that are tarped and have tight, clean, smooth metal beds and a thin coat (a minimal amount) of Department approved release agent in accordance with Section 423.3.4.2.1.

Include the following subsection:

**423.3.4.2.1 Asphalt Release Agents (ARA)**

Use Asphalt Release Agents (ARA) for prevention of asphalt mixtures adhering to haul trucks and any other type of equipment that is used for asphalt paving operations. ARA shall meet the requirement of Table 423.3.4.2.1:1 and shall be on the NMDOT's Approved Products List. All testing will be in accordance with the NTPEP Evaluation of Asphalt Release Agents AASHTO ARA 14-01.

**Table 423.3.4.2:1**  
**Asphalt Release Agent Properties**

Test	Result
7-Day Asphalt Stripping Test	
Diluted	No Stripping
Full Strength	No Stripping
Mixture Slide Test (Truck beds)	10 g retained, maximum
Asphalt Performance Test	Does not fail after 3 pours

Delete Subsection **423.3.5.7 Test Strip & Shakedown Period** in its entirety and replace with the following:

#### **423.3.5.7 Test Strip & Shakedown Period**

Construct a test strip for each HMA mix design to be incorporated in the project prior to placing the material on mainline. The test strip will consist of a maximum of 1,000 tons, the minimum test strip size will be 500 tons or as approved by the Project Manager. Construct the test strip on shoulders, low volume segments of the pavement, or area approved by the Project Manager.

Obtain a minimum of three (3) Contractor and three (3) agency samples to evaluate the JMF, process control, and placement operations. If necessary, based on the results obtained from the test strip, develop a revised JMF, modify placement operations, and/or implement adjustments to process control procedures. Production and placement operations performed prior to approval of a revised JMF are at the Contractor's risk.

The test strip will be evaluated for acceptance according to Table 423.3.5.7:1 "Test Strip Acceptance Limits". If accepted, the test strip will be paid at the unit price for HMA Complete or HMA per Section 423.5 "Payment". If rejected, said material shall be handled in accordance with Section 423.3.6.1.3 Adherence to Specifications and Rejection of Non-specification Material. Remove rejected test strip material placed within the Roadway Prism at no cost to the Department. If the Contractor disagrees with removing and replacing unacceptable material placed in test strips outside the Roadway Prism, the Assistant District Engineer for Construction, based on engineering judgment, will decide if the material can remain in place with a maximum pay factor of 50%, or shall be removed and replaced at no cost to the Department.

If the test strip is rejected, construct a subsequent test strip. Do not proceed to full production until an accepted test strip is produced. After the test strip is accepted, continue to evaluate the mix properties and the JMF during the placement of the first two (2) sublots in the first lot. Changes may be made to the JMF or the mix proportions and/or properties with the concurrence of the State Materials Bureau, Project Manager, and Assistant District Engineer for Construction. For changes made prior to the completion of the first two (2) sublots, the adjustments will be applied to the entire lot for purposes of payment.

The Project Manager may waive test strip requirements for the Project, if requested by the Contractor based on prior experience with the JMF.

For QLA Projects, the Shakedown Period is defined as the first two (2) sublots produced in the first lot.

For Non-QLA Projects, the Shakedown Period is defined as the test strip. As the test strip is placed, evaluate the mix properties and the JMF. Changes may be made to the JMF or the mix proportions and/or properties with the concurrence of the State Materials Bureau, Project Manager, and the Assistant District Engineer for Construction.

**Table 423.3.5.7:1**  
**Test Strip Acceptance Testing Limits <sup>a,c</sup>**

<b>Characteristic</b>	<b>Allowable Tolerances from TV</b>
Air Voids, %	± 2.0
Pavement Density % <sup>c</sup>	90% to 97%
Hydrated Lime or Anhydrite Based Material %	±0.2%
Voids in the Mineral Aggregate (VMA), % <sup>a</sup>	± 2.0
Asphalt Content % <sup>a,b</sup>	± 0.50

<sup>a</sup> Asphalt Content will be determined using AASHTO T308 as modified by TTCP.

<sup>b</sup> HMA will not be rejected based on Asphalt Content Determined by AASHTO T 308

<sup>c</sup> Acceptance will be based on the average test values.

Include the following to Subsection **423.3.7 Dispute Resolution**:

#### **423.3.7 Dispute Resolution**

Include the following to the list of possible Laboratory selections:

The State Asphalt Engineer will select a Laboratory, without disclosing the name of the lab to Department Project personnel or Contractor personnel from the following, not in priority order:

3. State Materials Bureau Laboratory

April 8, 2016

**SPECIAL PROVISIONS  
MODIFYING  
SECTION 424: WARM MIX ASPHALT**

The 2014 Edition of the New Mexico Department of Transportation Standard Specifications for Highway and Bridge Construction shall apply in addition to the following:

Delete the first sentence of Subsection **424.2.3 Asphalt Binder** in its entirety and replace with the following:

After the Warm Mix Additive is introduced, the PG grade of the binder shall comply with the PG grade as specified in the Contract.

Delete Subsection **424.2.3.1 Warm Mix Additive or Technology** in its entirety and replace with the following:

**424.2.3.1 Warm Mix Additive or Technology**

Only Warm Mix Additives or Technologies approved by the Product Evaluation Program and listed on the NMDOT Approved Products List can be used on Department Projects.

To be placed on the Approved Products List, the WMA additive Supplier shall verify that the binder with the additive meets the PG grade of the specified binder. The potential additive Supplier shall demonstrate this to the Department by evaluating the Asphalt Binder containing the WMA additive at the expected additive dosage rates for compliance with the specified PG grade in accordance with AASHTO M320, Table 1 and Section 402.2.5, "Performance Graded Asphalt Binder ( PGAB)."

The type and dosage rate of Warm Mix Additives shall comply with the recommendations of the Warm Mix Additive Supplier. Warm Mix Additive dosage rates shall not deviate from those recommended by the Warm Mix Additive Supplier. If a terminal blend Warm Mix Additive is used, the dosage rate shall be shown on the Materials Certificate of Compliance.

For foamed asphalt systems, only foam systems that are approved by the State Asphalt Engineer shall be used.

Insert the following paragraph as third paragraph in Subsection **424.2.7 Reclaimed Asphalt Pavement**:

**424.2.7 Reclaimed Asphalt Pavement**

If Plus Grades of PG asphalt binder is specified on the project, for quantities greater than 15% RAP, the Contractor shall extract, recover, and combine the RAP's asphalt binder with a virgin asphalt binder per AASHTO M 323, Appendix A. The Contractor shall ensure the resultant binder meets the entire AASHTO M

320 required Project PG asphalt binder properties indicated on the approved mix design including the additional Plus Grade requirements for Elastic Recovery and Solubility.

Delete Subsection **424.3.2 Mix Temperature Requirements** in its entirety and replace with the following:

#### **424.3.2 Mix Temperature Requirements**

For Non-foamed asphalt mixtures, the Contractor shall not allow the temperature of the WMA discharged from the mixer into the transport vehicle to be greater than 275 degrees F or less than 215 degrees F unless written recommendations by the asphalt cement Supplier, the Warm Mix Additive Supplier and the Mix Design Laboratory are provided to the Project Manager.

For Foamed asphalt mixtures utilizing RAP, the temperature may be increased up to 10 degrees above 275 degrees F when discharged from the mixer into the transport vehicle, as allowed in the approved mix design. The mix shall not be less than 215 degrees F unless written recommendations by the asphalt cement Supplier, the Warm Mix Additive Supplier and the Mix Design Laboratory are provided to the Project Manager.

WMA delivered to the Project with mix temperatures outside the acceptable range shall, at the sole discretion of the Project Manager, be removed and replaced at no cost to the Department.

Delete Subsection **424.3.4.2 Haul Equipment** in its entirety and replace with the following:

#### **424.3.4.2 Haul Equipment**

Haul asphalt mixtures with trucks that are tarped and have tight, clean, smooth metal beds and a thin coat (a minimal amount) of Department approved release agent in accordance with Section 424.3.4.2.1.

Include the following subsection:

##### **424.3.4.2.1 Asphalt Release Agents (ARA)**

Use Asphalt Release Agents (ARA) for prevention of asphalt mixtures adhering to haul trucks and any other type of equipment that is used for asphalt paving operations. ARA shall meet the requirement of Table 424.3.4.2.1:1 and shall be on the NMDOT's Approved Products List. All testing will be in accordance with the NTPEP Evaluation of Asphalt Release Agents AASHTO ARA 14-01.

**Table 424.3.4.2.1:1**  
**Asphalt Release Agent Properties**

Test	Result
7-Day Asphalt Stripping Test	
Diluted	No Stripping
Full Strength	No Stripping
Mixture Slide Test (Truck beds)	10 g retained, maximum
Asphalt Performance Test	Does not fail after 3 pours

Delete Subsection **424.3.5.7 Test Strip & Shakedown Period** in its entirety and replace with the following:

#### **424.3.5.7 Test Strip & Shakedown Period**

Construct a test strip for each WMA mix design to be incorporated in the project prior to placing the material on the mainline. The test strip will consist of a maximum of 1,000 tons, the minimum test strip size will be 500 tons or as approved by the Project Manager. Construct the test strip on shoulders, low volume segments of the pavement, or area approved by the Project Manager.

Obtain a minimum of three (3) Contractor and three (3) agency samples to evaluate the JMF, process control, and placement operations. If necessary, based on the results obtained from the test strip, develop a revised JMF, modify placement operations, and/or implement adjustments to process control procedures. Production and placement operations performed prior to approval of a revised JMF are at the Contractor's risk.

The test strip will be evaluated for acceptance according to Table 424.3.5.7:1 "Test Strip Acceptance Limits". If accepted, the test strip will be paid at the unit price for WMA Complete or WMA per Section 424.5 "Payment." If rejected, said material shall be handled in accordance with Section 424.3.6.1.3 Adherence to Specifications and Rejection of Non-specification Material. Remove rejected test strip material placed within the Roadway Prism at no cost to the Department. If the Contractor disagrees with removing and replacing unacceptable material placed in test strips outside the Roadway Prism, the Assistant District Engineer for Construction, based on engineering judgment, will decide if the material can remain in place with a maximum pay factor of 50%, or shall be removed and replaced at no cost to the Department.

If the test strip is rejected, construct a subsequent test strip. Do not proceed to full production until an accepted test strip is produced. After the test strip is accepted, continue to evaluate the mix properties and the JMF during the placement of the first two (2) sublots in the first lot. Changes may be made to the JMF or the mix proportions and/or properties with the concurrence of the State Materials Bureau, Project Manager and Assistant District Engineer for Construction. For changes made prior to the completion of the first two (2) sublots, the adjustments will be applied to the entire lot for purposes of payment.



The Project Manager may waive test strip requirements for the Project, if requested by the Contractor based on prior experience with the JMF.

For QLA Projects, the Shakedown Period is defined as the first two (2) sublots produced in the first lot.

For Non-QLA Projects, the Shakedown Period is defined as the test strip. As the test strip is placed, evaluate the mix properties and the JMF. Changes may be made to the JMF or the mix proportions and/or properties with the concurrence of the State Materials Bureau, Project Manager and the Assistant District Engineer for Construction.

**Table 424.3.5.7:1**  
**Test Strip Acceptance Testing Limits <sup>a,c</sup>**

Characteristic	Allowable Tolerances from TV
Air Voids, %	± 2.0
Pavement Density % <sup>c</sup>	90% to 97%
Hydrated Lime or Anhydrite Based Material %	±0.2%
Voids in the Mineral Aggregate (VMA), % <sup>a</sup>	± 2.0
Asphalt Content % <sup>a,b</sup>	± 0.50

<sup>a</sup> Asphalt Content will be determined using AASHTO T308 as modified by TTCP.

<sup>b</sup> HMA will not be rejected based on Asphalt Content Determined by AASHTO T 308

<sup>c</sup> Acceptance will be based on the average test values.

Include the following to Subsection **424.3.7 Dispute Resolution**:

#### **424.3.7 Dispute Resolution**

Include the following to the list of possible Laboratory selections:

The State Asphalt Engineer will select a Laboratory, without disclosing the name of the lab to Department Project personnel or Contractor personnel from the following, not in priority order:

3. State Materials Bureau Laboratory

June 6, 2017

**SPECIAL PROVISIONS**  
**MODIFYING**  
**SECTION 450: PORTLAND CEMENT CONCRETE PAVEMENT (PCCP) (QLA)**

The 2014 Edition of the New Mexico Department of Transportation Standard Specifications for Highway and Bridge Construction shall apply in addition to the following:

**450.3.1 Proportioning**

Use a Class F-LS concrete mix that has been reviewed and approved in accordance with Section 509 by the State Concrete Engineer. If the concrete is not slip-formed, an approved Class AA-HPD concrete mix shall be used instead of Class F.

Mix and place all concrete in accordance with Section 510.3 except for the following subsections: 510.3.5.5 "Price Adjustments", 510.3.5.5.1 "Cylinder Based Price Adjustments", and 510.3.5.5.2 "Price Adjustment based on In-Place Strength Tests".

Use a concrete mix that has been approved for use in the Freeze-Thaw zone, as defined in Section 509.2.8.2, "Freeze-Thaw Risk Zones" in which the Project is located.

Keep a copy of the approved mix design available on the jobsite when using the concrete mix.

**450.3.4 Joints**

Delete the first paragraph, and replace with the following:

Submit the proposed joint layout plan in .pdf format to the Project Manager, State Pavement Engineer and the State Materials Bureau for review and approval at least four (4) weeks before starting concrete slab construction. The proposed joint layout plan shall have the lane markings, and manholes and utilities where applicable, clearly depicted. Attempts shall be made in the submitted jointing plan for mainline paving not to place longitudinal joints in the wheel path. After receiving the recommendations and/or responses from the State Pavement Engineer and from the State Materials Bureau, the Project Manager will either approve or reject the submittal within 10 Working Days from the date of submittal.

Delete the second paragraph, and replace with the following:

Construct joints at the locations, intervals, and dimensions shown in the approved joint layout plan, and seal them in accordance with Section 452, "Sealing and Resealing Concrete Pavement Joints." Ensure no re-entrant corners. For typical slabs the longitudinal joint spacing shall not exceed 12 feet and the transverse joint spacing shall not exceed 15 feet. The maximum slab length-to-width ratio shall not be greater than 1.25:1 for the primary traveled lanes and longitudinal joints shall be placed within the lane stripe or as approved by the Project Manager and NMDOT Pavement Engineer. For joints in shoulders and non-mainline paving, length to width ratios exceeding 1.25:1 may be required to maintain the continuity of

the joints. Longitudinal tied joints shall be placed between bike lanes and primary traveled lanes. Skewed joints are not allowed. Avoid tapered joints if possible. If a tapered joint is formed, place a control joint at:

Delete fifth paragraph that states "Begin sawcutting of the joints as soon as possible"

Add to seventh paragraph, at the beginning:

Time to cut longitudinal and transverse joints is to be determined by the contractor. Approval of jointing plan by NMDOT does not absolve the contractor from responsibility of PCCP panels containing uncontrolled cracks. The Project shall not be granted Substantial Completion until all panels containing cracks have been removed and replaced.

#### **450.3.4.1 Longitudinal Joints**

Delete the second paragraph, and replace with the following:

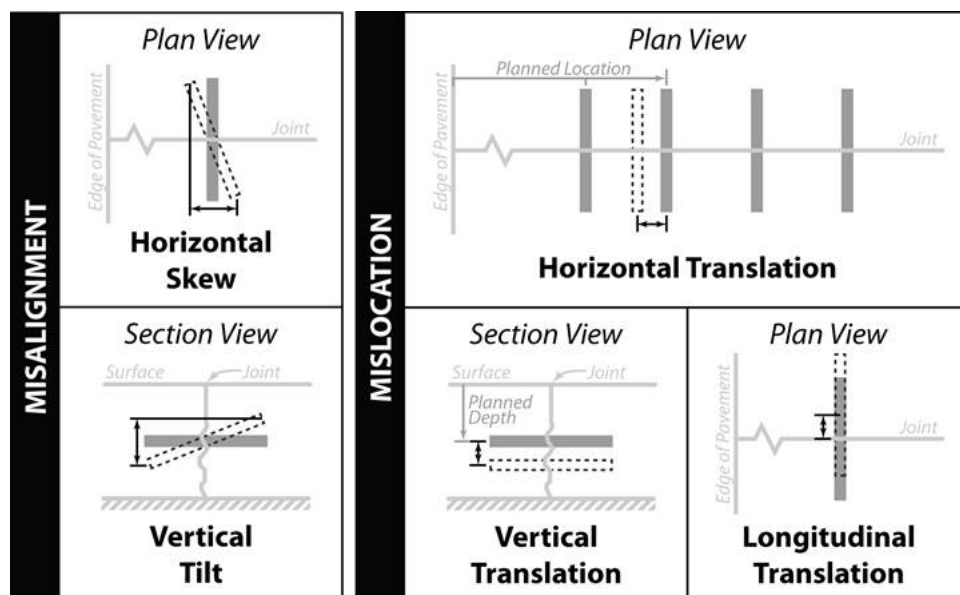
The combined width of all concrete slabs tied together in any one placement shall not be more than 40 feet.

#### **450.3.4.2 Transverse Joints**

Delete the last sentence of the second paragraph, and replace with the following;

Dowel placement tolerances are:

- Horizontal Skew = 3/8 inch
- Vertical Tilt = 3/8 inch
- Horizontal translation = two (2) inches
- Vertical Translation = one (1) inch
- Longitudinal Translation / Side Shift = one (1) inch



- Horizontal Skew – The deviation of the dowel bar from true parallel alignment from the edge of the pavement, measured over the entire length of the dowel bar.
- Vertical Tilt – The deviation of the dowel bar from true parallel alignment from the surface of the pavement, measured over the entire length of the dowel bar.
- Alignment – The degree to which a dowel bar aligns true (e.g., parallel) to the horizontal and vertical planes of the pavement.
- Misalignment – Any deviation in either the horizontal or vertical plane from a true alignment condition (e.g., horizontal skew or vertical tilt).

#### 450.3.4.4 Final Location of Dowels and Tie Bars

Delete the first paragraph, and replace with the following;

Within 72 hours of concrete placement confirm that the final location of the transverse dowel bars and the longitudinal tie bars comply with the specified location and placement tolerances for every transverse joint and longitudinal joint in the first 120 linear feet of paving, or as otherwise specified. Ground Penetrating Radar equipped with dual side-by-side antennas or approved equal approved by the Project Manager and

State Concrete Engineer can be used for all embedded steel reinforcement. Magnetic Tomography (i.e.: MIT Scan 2) may be utilized. Regardless of the equipment used, the results from the nondestructive testing shall be confirmed by drilling or coring for at least three (3) dowel bars within the first 120 linear feet of paving.

#### **450.3.5.3 Surfacing Smoothness Requirements**

Delete the second paragraph and 1. in its entirety;

Test the longitudinal smoothness of the PCCP finished surface in each through traffic lane and passing lane with an approved Profile, in accordance with Section 401, "Pavement Smoothness Measurement."

#### **450.3.5.4 Straightedge Measurements**

Measure the surface of PCCP not subject to Profiler measurements using an approved 10-foot straightedge at both right angles and parallel to the centerline. Correct surface deviations in accordance with Section 401.

#### **450.3.8 Protections from and Opening to Traffic**

Delete the second paragraph, and replace with the following:

Contractor is required to use Maturity Method, in accordance with Section 510.3.5.2 "In-Place Concrete Strength Measurements" and Section 450.3.3.2 "Placing, Spreading, and Consolidating Concrete" to determine time to allow traffic to operate on concrete pavement.

### **450.5 BASIS OF PAYMENT**

Include the following paragraph to **BASIS OF PAYMENT**.

#### **Work Included in Payment**

The Department considers dowels, tie bars, joint Materials, and required coring, including filling the core holes with concrete, Incidental to the Work in accordance with Section 452, "Sealing and Resealing Concrete Pavement Joints."

April 16, 2014

**SPECIAL PROVISIONS  
MODIFYING**

**SECTION 451: PORTLAND CEMENT CONCRETE PAVEMENT (PCCP) (Non-QLA)**

The 2014 Edition of the New Mexico Department of Transportation Standard Specifications for Highway and Bridge Construction shall apply in addition to the following:

Delete subsection **451.3.9.1 Contractor Quality Control**, and replace with the following;

**451.3.9.1 Contractor Quality Control**

See Section 450.3.10.1, "Contractor Quality Control"

January 27, 2015

**SPECIAL PROVISIONS**  
**MODIFYING**  
**SECTION 452: SEALING AND RESEALING CONCRETE PAVEMENT JOINTS**

The 2014 Edition of the New Mexico Department of Transportation Standard Specifications for Highway and Bridge Construction shall apply in addition to the following:

Delete subsection **452.2.1 Sealant**, and replace with the following:

**452.2.1 Sealant**

Joint sealant Material will either be a Type NS or SL single component silicone formulation meeting the requirements of ASTM D 5893 or a single component low modulus polyurethane formulation meeting the requirements of ASTM C 920 and Table 452.2.2:1, "Polyurethane Sealant Physical Requirements."

Provide a qualified manufacturer's representative on the Project for at least the first Day of sealant application. Prepare and seal the joints in accordance with proper procedures approved by the manufacturer's representative.

Obtain the manufacturer's written verification of primer, backer, and sealant compatibility.

January 30, 2015

**SPECIAL PROVISIONS**  
**MODIFYING**  
**SECTION 455: DIAMOND GRINDING AND DIAMOND GROOVING OF PORTLAND**  
**CEMENT CONCRETE PAVEMENT (PCCP)**

The 2014 Edition of the New Mexico Department of Transportation Standard Specifications for Highway and Bridge Construction shall apply in addition to the following:

Replace the following sub-section with:

**455.3.4 Final Surface Finish**

Produce a pavement surface in accordance with Section 450.3.5.3, "Surfacing Smoothness Requirements."

Ensure the texture has parallel longitudinal corrugations that present a narrow ridge corduroy-type appearance. Make the peaks and grooves approximately 0.08 inch apart in elevation. Make the grooves from 0.08 inch to 0.16 inch wide, and the peaks from 0.08 inch to 0.12 inch wide. Determine the appropriate number of grooves per yard to produce the specified surface requirements.



November 6, 2017

**SPECIAL PROVISIONS**  
**MODIFYING**  
**SECTION 504: LOAD TESTING OF BEARING PILES**

The 2014 Edition of the New Mexico Department of Transportation Standard Specifications for Highway and Bridge Construction shall apply in addition to the following:

Delete SECTION 504: LOAD TESTING OF BEARING PILES in its entirety and substitute the following:

**504.1 DESCRIPTION**

This Work consists of static axial compressive load tests (pile load test), static axial tensile load tests (pile pullout tests), and high strain dynamic measurements (dynamic measurements) of piles for the purpose of determining ultimate bearing capacity and pile pullout capacity.

For driven piles, dynamic measurements determine driving stresses, pile integrity, and hammer efficiency. For cast-in-place concrete piles (drilled shafts), dynamic measurements verify pile integrity.

**504.1.1 Contractor's Responsibilities**

**504.1.1.1 Dynamic Measurements**

Provide labor, Equipment, and Materials necessary to drill the dynamic test piles holes and for mounting transducers. Provide the analysis Equipment power supply.

Where dynamic measurements are to be made on cast-in-place piles, provide a gravity drop hammer and pile cushioning. Excavate around the pile, cut the permanent casing, drill holes in the test pile(s) and provide impacts on cast-in-place dynamic test piles as required.

If a Pile Dynamic Test Consultant Testing is required, as designated on the plans, the consultant's qualifications and equipment must meet the requirements of this Section and Section 504.3 "Equipment." Pile Dynamic Consultant Equipment must meet the requirements of Section 504.3.1.5 "Pile Driving Analyzer." Perform field Pile Dynamic Testing with an experienced technician or engineer having at least two (2) years of experience with Pile Dynamic Testing methods. Use a licensed Professional Engineer having at least three (3) years of experience in Pile Dynamic Testing performed to interpret the recorded measurements and generate reports.

At the option of the State Geotechnical Engineer, Department personnel may perform the Pile Dynamic Testing.

**504.1.1.2 Pile Load and Pile Pullout Tests**

Provide everything necessary to perform pile load or pile pullout tests. Record load measurement and pile movement readings, and produce a report(s) showing the load displacement curve(s).

## **504.1.2 Department's Responsibilities**

### **504.1.2.1 Dynamic Measurements**

If Pile Dynamic Testing performed by the Department is required, as designated on the plans, the Department will provide the Equipment to perform dynamic measurements and the Department will provide personnel to take the dynamic measurements.

### **504.1.2.2 Pile Load and Pile Pullout Tests**

The Contract will specify the anchor pile requirements. The Department will provide personnel to observe and monitor the Contractor's test apparatus, test methods, and data collection.

## **504.1.3 Pile Testing Mobilization**

Mobilize testing Equipment as needed and as designated by the Contract or authorized by the State Geotechnical Engineer. Mobilize testing Equipment only after receipt of written authorization.

## **504.2 SUBMITTALS**

### **504.2.1 Load Test Frame**

Submit the proposed load test frame and anchorage method, details, and design computations 30 Days before the start of pile load tests and pile pullout tests. Use a professional Engineer licensed in New Mexico to prepare and seal the proposed loading apparatus detail Plans.

### **504.2.2 Certificates of Calibration**

Submit a calibration certificate and a calibration chart relating pressure to load for the load pressure gauge(s) from a certified Laboratory before use. Calibrate each jack and its gauge as a unit. Submit a calibration certificate for load cell(s). Calibrate gauges and cells within six (6) months before use.

### **504.2.3 Pile and Equipment Data Form**

Submit a *Pile and Driving Equipment Data Form* as required in Section 501.2.3.1, "Pile Driving Equipment Submittals," when proposing a gravity drop hammer for dynamic measurements of cast-in-place piles.

## **504.3 EQUIPMENT**

### **504.3.1 Equipment for Dynamic Testing**

#### **504.3.1.1 Power Supply**

Provide dynamic test Equipment electric power that supplies 10 A, 115 V, 55 Hz to 60 Hz, A.C. only. If a field generator is used as the power source, provide functioning voltage and frequency level monitoring

meters.

#### **504.3.1.2 Gauge Mounting Equipment**

Provide a power drill, bits, taps, and expandable masonry anchor studs to drill holes in the dynamic test piles for bolting transducers to the piles. Provide a six (6) lb rubber mallet hammer when dynamic testing is specified on precast concrete piles.

#### **504.3.1.3 Personnel Lift**

To assist with the installation of instruments, provide a hydraulic, telescoping arm personnel lift. Provide a personnel lift with adequate length to reach the top of the pile while the pile is located in the leads.

The contractor may use an alternative to a personnel lift in accordance with Section 504.3.4.1.2 "Preparation for Testing."

#### **504.3.1.4 Gravity Drop Hammer**

Provide a gravity drop hammer and pile cushion when cast-in-place piles dynamic testing is specified. Provide the minimum hammer ram weight and free fall height and cushion thickness specified in the Contract. Equip gravity hammers with guides to ensure concentric drive head impact.

If approved by the State Geotechnical Engineer, the Contractor may use a diesel hammer with the minimum required ram weight and impact energy. Cut-off the fuel flow.

#### **504.3.1.5 Pile Driving Analyzer**

Perform the Pile Dynamic Testing using a Pile Driving Analyzer® (PDA) system (Model 8G or PAX) or equivalent. The Dynamic Testing Consultant shall furnish all equipment necessary for the Pile Dynamic Testing such as sensors, cables or wireless transmitters, etc.,. The equipment shall conform to the requirements of ASTM D-4945.

### **504.3.2 Equipment for Pile Load Test**

Provide testing Equipment and measuring systems in accordance with ASTM D 1143, except as modified within these Specifications.

#### **504.3.2.1 Load System**

Provide a load system capable of applying 250% of the required ultimate pile capacity. Provide a load test frame design compatible with the anchor pile requirements in accordance with Section 504.3.4.2.1, "Test Pile and Anchor Pile Requirements."

Construct the apparatus so that it is possible to place load increments gradually without causing test pile or load test frame vibration.

#### **504.3.2.2 Load Application System**

Use hydraulic jacks to apply the load. When using multiple jacks, fit each jack with a pressure gauge in addition to the master hydraulic pressure gauge. Use jacks from the same manufacturer with the same rated capacity. Connect jacks to a common manifold with pressure supplied by one (1) hydraulic pump.

#### **504.3.2.3 Load Measuring System**

Provide a dual load measuring system (gauge and load cell) to verify the test pile load. Calibrate the load cell and mount it between the load frame and the pile head to confirm the load recorded from the pressure gauge.

#### **504.3.2.4 Settlement Measuring System**

Use a dual settlement measuring system. Provide two (2) dial gauges bearing on the reference beams at opposite sides of the pile, below the test plate. Support the reference beams outside of pile-soil movement influences. Provide two (2) linear variable differentiating transformers, with remote digital read-outs bearing on reference beams on opposite sides of the pile.

### **504.3.3 Equipment for Pile Pullout Test**

Use testing Equipment and measuring systems in accordance with Section 504.3.2, "Equipment for Pile Load Test," except as modified within these Specifications.

#### **504.3.3.1 Load System**

Provide a load system capable of applying 200% of the required ultimate pile pullout capacity.

#### **504.3.3.2 Reaction System**

It is permissible to use suitable cribbing or other bearing plates for reaction points instead of anchor piles. Use cribbing or bearing plates of sufficient size and stiffness to limit undesirable reaction frame movement.

### **504.3.4 Testing Requirements**

#### **504.3.4.1 Preconstruction Wave Equation Analysis**

The State Geotechnical Engineer or Dynamic Testing Consultant shall use the submitted information required in Section 501.2.3.1 "Pile Driving Submittals" to perform wave equation analyses and shall prepare a summary report of the wave equation results. The wave equation analysis (using GRLWEAP™ software by Pile Dynamics, Inc. or equivalent) shall be used to assess the ability of the proposed driving system to install the pile to the required capacity and desired penetration depth within the allowable driving stresses.

Approval of the proposed driving system by the Engineer shall be based upon the wave equation analyses indicating that the proposed driving system meeting the requirements of Section 501.3.1.4 "Approval of Driving System."

A Preliminary Wave Equation Analysis Acceptance Chart shall be developed and submitted to the Project Manager a minimum of seven (7) days before commencing pile driving. Submit the Preliminary Wave Equation Analysis Acceptance Chart meeting the template requirements as provided by the NMDOT Geotechnical Engineering and Exploration Section.

#### **504.3.4.2 Dynamic Pile Testing Requirements**

Perform dynamic testing during the pile driving as described in the Contract as "Dynamic Test Piles." The State Geotechnical Engineer may decide to designate additional piles shown in the Contract as dynamic test piles.

##### **504.3.4.2.1 Driven Pile Preconstruction Meeting**

Attend and respond to comments provided by NMDOT at the required Driven Pile Preconstruction Conference held after all submittals have been approved. The Driven Pile Preconstruction Conference will take place no less than one (1) week before the start of pile driving.

##### **504.3.4.2.2 Notification to Proceed**

Notify the Project Manager at least 21 Days before commencing dynamic test pile testing. Confirm the testing schedule with the Project Manager 3 Days before the testing date. Notify the Project Manager promptly of any changes in the schedule. Test dynamic test piles before any other piles are driven or installed, unless the Project Manager approves otherwise.

##### **504.3.4.2.3 Preparation for Testing**

Prepare dynamic test piles as follows:

1. **Drilling for Mounting Transducers.** Drill holes for mounting the transducers. Bolt the instruments near the head of the pile at the location and using a bolt pattern designated by the State Geotechnical Engineer.

Drilling requirements for each test pile include the following:

- 1.1. Steel pipe piles: Seven (7) holes drilled with a 7/32 inch diameter bit, tapped to accommodate ¼ in bolts;
- 1.2. Steel HP piles: Five (5) holes drilled with a 5/16 inch diameter bit through the web;
- 1.3. Precast concrete or cast-in-place concrete piles: Seven (7) ¼ inch x 1 ½ inch holes with ¼ inch expandable anchor studs set in the holes to accommodate ¼ inch bolts;

2. **Wave Speed Measurements.** When precast concrete piles are specified as dynamic test piles, place the pile horizontally on wooden sleepers so that it is not in contact with the ground or with other piling. The State Geotechnical Engineer will take wave speed measurements for the Pile Driving Analyzer (PDA) by hitting the pile with a six (6) lb rubber mallet hammer. The Department will not require wave speed measurements for steel piles;
1. **Transducer Installation.** Install the instruments while the pile is in the leads using a man-lift raised to the top of the pile.  
As an alternative to the man-lift requirement, the State Geotechnical Engineer may install the instruments after the pile is driven to a tip elevation of ten (10) ft above the Plan tip elevation.

#### 504.3.4.2.4 Procedure for Testing Driven Piles

The following are the procedures for testing driven piles for either Department or Consultant Pile Dynamic Testing:

1. Drive the test pile in accordance with Section 501.3.5, "Pile Driving Operations," while monitoring the dynamic measurements;
2. Monitor the test pile stresses that result from the driving to ensure that the compressive or tensile stresses do not exceed the allowable driving stresses as defined in Table 501.3.1.4:1, "Wave Equation Analysis Allowable Driving Stress." If the monitored pile stresses exceed these criteria, stop driving. Perform necessary modifications to the driving operation to ensure that pile damage does not occur;
3. Monitor the test pile stresses on individual gauges to determine if non-axial driving is indicated. If the pile bends beyond acceptable allowances, stop driving and realign the driving system;
4. If the Contract specifies an estimated penetration elevation, drive the first dynamic test pile until the required ultimate capacity or the estimated penetration elevation is achieved;

If the Contract specifies a minimum penetration elevation, drive the first dynamic test pile to that elevation;

If the test pile does not achieve the required ultimate capacity at the estimated or minimum penetration elevation, splice the test pile with additional length of pile.

Remove and relocate the instruments to the spliced section. Proceed with driving until the ultimate driving capacity is achieved;

5. Forty-eight hours after the initial drive, restrike each test pile previously driven with the dynamic measuring Equipment installed. The State Geotechnical Engineer may allow shorter wait periods depending on soil and test conditions. Alternatively, the Contract may require longer wait periods, multiple restrike intervals, or both on a given test pile. Use a "warm" hammer that has previously driven at least one (1) pile other than the test pile(s), to restrike the test pile(s). The maximum total number of hammer blows for the restrike is 40.

#### 504.3.4.2.5 Procedure for Testing Cast-in-Place Piles

The following are the procedures for testing cast-in-place piles:

1. When the Contractor casts the dynamic test pile(s), the Inspector will make three (3) test cylinders of concrete or grout for each test pile in accordance with AASHTO T 23M.  
Provide concrete that will achieve a compressive strength at seven (7) Days of 3,000 psi;
2. After seven (7) Days, weigh the three (3) concrete test cylinders and report the average unit weight to the State Geotechnical Engineer.

Test one (1) concrete cylinder at seven (7) Days. If the compressive strength is at least 3,000 psi, test the other two (2) cylinders. Report the average of the three (3) breaks to the State Geotechnical Engineer.

Perform the dynamic test on the test pile the same Day that the cylinders are broken;

3. If the first test cylinder breaks at less than 3,000 psi, report the result to the State Geotechnical Engineer. The State Geotechnical Engineer may decide either to have the last two (2) cylinders tested the same Day or to wait up to a maximum of 14 additional Days before breaking the last two (2) cylinders. The Day the last two (2) cylinders are tested, re-weigh the cylinders and determine the average unit weight of the concrete.

Perform the dynamic test on the test pile the same Day the last two (2) cylinders are broken;  
There will be no added compensation to the Contractor and no time extension to the Contract if Delays occur because the concrete does not achieve the required strength at seven (7) Days.

4. Use the average compressive strength and the average unit weight of the concrete to estimate the modulus of elasticity and the wave speed of the concrete for input into the PDA;
5. Perform excavation around the test pile as needed to mount the gauges. Typically, the required depth of excavation will be twice the diameter of the pile;
6. Attach the instruments to the pile head and impact the pile with the ram at the free fall height directed by the State Geotechnical Engineer. Each test pile will not require more than 40 blows.  
Monitor the pile stresses that result from the ram impact to ensure that the compressive or tensile stresses do not exceed the allowable pile driving stresses defined in Table 501.3.1.4:1, "Wave Equation Analysis Allowable Driving Stress." If the monitored pile stresses exceed these criteria, the Department will direct the Contractor to reduce the ram free fall height or add pile cushioning.

#### **504.3.4.2.6 Case Pile Wave Analysis**

NMDOT Geotechnical Engineering and Exploration Section personnel or approved Pile Dynamic Testing Consultant will perform the Case Pile Wave Analysis as designated on the plans or determined by the NMDOT State Geotechnical Engineer.

Signal matching analysis (by CAPWAP® software, available from Pile Dynamics, Inc. or equivalent) of the dynamic pile testing data shall be performed on data obtained from the end of initial driving and the beginning of restrike of specified Pile Dynamic Test piles. CAPWAP analysis should be performed by an

engineer who meets the minimum requirements outlined in Section 504.1.1.1 "Dynamic Measurements", and is capable of returning analysis within one (1) working day from time of transmission. The State Geotechnical Engineer or Dynamic Testing Consultant may request additional analyses at selected pile penetration depths.

#### **504.3.4.3 Pile Load and Pile Pullout Testing Requirements**

##### **504.3.4.3.1 Test Pile and Anchor Pile Requirements**

1. Driven Piles. Apply the load to a production pile driven in the final Plan location, unless otherwise specified in the Contract, and apply the test frame against anchor (tension) piles;

Use production piles driven in final Plan locations for the anchor piles unless the layout of the test frame reaction points is fixed and inconsistent with the production pile layout or unless an alternative pile type is required to develop adequate pullout resistance. The Project Manager will decide if anchor piles that are not final production piles may be cut-off below final grade or pulled after the testing is completed;

2. Cast-in-Place Piles. Apply the load to a production pile located in the final Plan location, unless otherwise shown in the Contract. Use either driven piles or cast-in-place piles as anchor piles. Do not use anchor piles as final production piles. Provide cast-in-place anchor piles with reinforcement capable of carrying the pile tension force.

##### **504.3.4.3.2 Commencement of Load Test**

Unless otherwise specified in the Contract, wait a minimum of 24 h between driving or installing anchor piles or the test pile and commencing with the pile load or pile pullout test.

When testing pipe piles filled with concrete or cast-in-place concrete piles, begin load tests after the concrete has attained a compressive strength of 2,500 psi.

##### **504.3.4.3.3 Load Testing Procedures**

Conduct pile load tests and pile pullout tests in accordance with the following requirements:

1. Perform the *Quick Load Test Method for Individual Piles* in accordance with ASTM D 1143, but take the load test to the first of either failure of the test pile or capacity of the load system;
2. Test pile failure is defined as total vertical pile movement equal to the greater of either five percent (5%) of the pile diameter or two (2) inches;
3. If failure occurs, remove the test load in four (4) approximately equal amounts with a five minute interval between removals;
4. For pile load tests where piles are 24 inch or less in diameter or width, the ultimate capacity is the load that produces a settlement of the pile head in accordance with the following equation:



$$S_f = S + (0.15 + 0.008D) \quad (1)$$

Where,

- $S_f$  is the settlement at the ultimate pile capacity in inches
- $D$  is the pile diameter or width in inches
- $S$  is the elastic deformation of pile length in inches

Use the following equation for piles with diameters or widths greater than 24 inches:

$$S_f = S + \frac{D}{30} \quad (2)$$

Where,

- $S_f$  is the settlement at the ultimate pile capacity in inches
- $D$  is the pile diameter or width in inches
- $S$  is the elastic deformation of pile length in inches

5. For pile pullout tests, the State Geotechnical Engineer will determine when the ultimate pile capacity is attained.

#### 504.3.4.4 Completion of Dynamic Testing of Driven Piles

After completing the dynamic test pile(s) at a Substructure element, prepare the pile(s) for any specified pile load or pile pullout test(s).

If no load testing is required as determined in Section 501.3.6, "Pile Acceptance", the Final Wave Equation Analysis Acceptance Charts, based on results of the Pile Dynamic Testing, should be submitted to the Project Manager within thirty six (36) hours after completion of PDA testing and CAPWAP analyses at the applicable bridge or structure element.

The Dynamic Testing Consultant shall prepare a written report of the of the Pile Dynamic Testing results within seven (7) days of completion of all dynamic test piles specified. This report shall include the results of static load test(s) (if performed) and shall contain a discussion of the pile capacity obtained from the dynamic and static testing. The report shall also discuss hammer and driving system performance, driving stress levels, and pile integrity.

Drive production piles no deeper than the estimated or minimum penetration elevation before receiving the field Acceptance criteria. Record the average hammer stroke and pile set after driving of each pile to determine pile Acceptance once the driving criteria is established. After receiving the field Acceptance criteria, drive piles until attaining the required ultimate capacity.

#### 504.3.4.5 Completion of Dynamic Testing of Cast-in-Place Piles

Base the required production pile tip elevation on the dynamic testing and load testing results if specified. The State Geotechnical Engineer will require up to 36 h after completion of the last test pile to provide the pile tip elevation.

Unless the State Geotechnical Engineer directs otherwise, place no other piles until receiving the production pile tip elevation.

#### 504.3.4.6 Completion of Load Testing

After completing the specified load test(s) to the Project Manager's satisfaction, dismantle the test apparatus and Equipment and remove from the site. Use the load test results to determine the ultimate pile capacity Acceptance criteria of driven piles as established under Section 501.3.6, "Pile Acceptance," and to confirm ultimate pile capacities determined by dynamic pile tests.

Pulled anchor piles of the same type as the production piles may be reused as production piles if not rejected by the Project Manager due to damage as covered in Section 501.3.6.3, "Damaged Pile Limitations."

For cast-in-place piles, use the load test results to determine the pile penetration requirements, if no subsequent dynamic testing is specified.

The State Geotechnical Engineer will require up to 36 h after completion of the last test pile to provide the pile tip elevation.

Re-drive production piles used as anchor piles in accordance with Section 501.3.6, "Pile Acceptance."

#### 504.4 METHOD OF MEASUREMENT—Reserved

#### 504.5 BASIS OF PAYMENT

Pay Item	Pay Unit
<i>Pile Testing Mobilization</i>	Lump Sum
<i>Pile Load Test</i>	Each
<i>Pile Pullout Test</i>	Each
<i>Pile Dynamic Test</i>	Each
<i>Pile Dynamic Test Consultant Testing</i>	Each
<i>Case Pile Wave Analysis Test</i>	Each
<i>Case Pile Wave Analysis Test Consultant Testing</i>	Each

#### 504.4.1 Work Included in Payment

The following Work will be considered as included in the payment for the mail item(s) and will not be measured or paid for separately: Non-production anchor and test piles which will not remain in use as part of the permanent structure.

December 9, 2016

**SPECIAL PROVISIONS  
MODIFYING  
SECTION 509: PORTLAND CEMENT CONCRETE MIX DESIGNS**

The 2014 Edition of the New Mexico Department of Transportation Standard Specifications for Highway and Bridge Construction shall apply in addition to the following:

Add performance requirement No. 12 to Section 509.2.8.4.2 Concrete Mix Design Designing & Proportion as follows:

12. For Class F-LS concrete mixtures and for HPD concrete mixtures, use coarse aggregates to produce CRCP concrete with a Coefficient of Thermal Expansion (CTE) not more than a value of 5.5 microstrain/°F as tested in accordance with AASHTO T336.

April 25, 2017

**SPECIAL PROVISIONS  
MODIFYING  
SECTION 510: PORTLAND CEMENT CONCRETE**

The 2014 Edition of the New Mexico Department of Transportation Standard Specifications for Highway and Bridge Construction shall apply in addition to the following:

Delete Subsection **510.3.4.3.2 Continuous Concrete Placements** in its entirety and replace with the following:

**510.3.4.3.2 Continuous Concrete Placements**

It is common practice to place and test concrete at the same time, therefor:

As concrete is being placed and tested, concrete tests which are outside the allowable concrete test ranges may be encountered and are to be immediately reported to the Project Manager. Concrete that has already been placed shall be removed if the slump is more than one (1) inch over the specified limits or air is more than ½% below the minimum air specified. The Project Manager then can determine to place or halt the placement of the remaining concrete. The Project Manager can determine if the placed concrete needs to be removed or if it can remain. In the event that two (2) consecutive trucks or any two (2) out of six (6) trucks are outside the allowable testing ranges, concrete shall not be placed in the structure until the concrete testing is performed prior to the placement operation and the allowable concrete test ranges are shown to be in the allowable range. If concrete from five (5) consecutive trucks are delivered within allowable concrete testing parameters, then the placement and testing of concrete can once again be performed concurrently.

Payment of concrete that deviated from required parameters will receive a 50% pay reduction in addition to the outcome of the final pay factors for the concrete.

October 26, 2017

## SECTION 511: CONCRETE STRUCTURES

### 511.1 DESCRIPTION

This Work consists of constructing concrete box Culverts, headwalls, retaining walls, abutments, bents, piers, slabs, girders, and Incidental Structures requiring the use of concrete, except pre-stressed members.

### 511.2 MATERIALS

When waterproofing is required by the Contract but a type is not specified, either fluid-applied waterproofing or sheet membrane waterproofing shall be used.

#### 511.2.1 Portland Cement Concrete

The Contractor shall use concrete mixes that have been designed in accordance with Section 509, "Portland Cement Concrete Mix Designs" and approved for use on NMDOT Projects by the State Materials Bureau for the freeze/thaw risk zone in which the Project is located. A higher risk zone concrete may be substituted.

#### 511.2.2 Steel Reinforcing

The contractor shall provide steel reinforcement in accordance with Section 540. "Steel Reinforcement."

#### 511.2.3 Bonding Agent

The Contractor shall use a bonding agent that meets the requirements of ASTM C1059, Type II.

#### 511.2.4 Form Release Agent

The Contractor may use form release agents at their discretion. Compatibility must be confirmed in a letter from the Manufacturer of subsequent surface treatments including but not limited to penetrating water repellent treatment, stains, and/or paints. If compatibility cannot be confirmed, form release residue shall be removed per the surface preparation recommendations of the manufacturer of the subsequent product.

When integrally colored concrete is used, the Contractor shall use form release agents that are non-staining and minimize surface imperfections of concrete.

#### 511.2.5 Liquid Applied Evaporation Reducers

Unless otherwise specified in the Contract Documents, the Contractor may utilize liquid-applied

evaporation reducers to reduce the effects of excessive rate of evaporation at the surface of plastic concrete. Evaporation reducers shall be commercially available water-based compounds that are specifically designed to form a thin monomolecular film to reduce rapid moisture loss from the concrete surface prior to curing. The product shall be certified to have no adverse effects on the cement hydration process or the concrete and that it reduces surface moisture evaporation from the concrete when performing concrete operations in direct sun, wind, high temperatures, and/or low relative humidity.

## **511.2.6 Curing Materials**

### **511.2.6.1 Liquid Membrane Forming Compounds**

The Contractor shall use Type 1-D or Type 2 liquid membrane-forming concrete curing compounds that comply with ASTM C 309.

When integrally colored concrete is used, the Contractor shall use only curing compounds specifically recommended for use with colored concrete and in accordance with ASTM C309 Type 1.

### **511.2.6.2 Linseed Oil Emulsion**

The Contractor shall not use linseed oil emulsion-curing agent.

### **511.2.6.3 Sheet Materials for Curing Concrete**

The Contractor shall use concrete curing sheet Materials in accordance with AASHTO M 171. The Department will only allow the white reflective type.

## **511.2.7 Joint Materials**

The Contractor shall provide joint filler material in accordance with AASHTO M213 or AASHTO M153 Type I or IV (no cork).

The Contractor shall provide liquid-applied joint sealant in accordance with Section 452, "Sealing and Resealing Concrete Pavement Joints" at non-Bridge joint locations.

## **511.2.8 Extruded Polystyrene**

The Contractor shall provide extruded polystyrene that complies with ASTM C578 Types X or XII (15 psi), Type IV (25 psi), or Type VII (60 psi). If strength is not shown in contract documents, use Type IV (25 psi). Extruded or expanded polystyrene may be used interchangeably.

## **511.2.9 Tear-Web Waterstop**

Waterstop at the joint between abutment cap and abutment diaphragm shall be tear-web waterstop. The Contractor shall provide a product that meets the requirements of Table 511.2.8:1.

**TABLE 511.2.9:1**

Typical	ASTM	Minimum
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Properties	Method	Value
Water Absorption	D-570	0.10%
Tear Resistance, lb/in	D-624	225
Specific Gravity, (+/- 0.05)	D-792	1.38
Hardness, Shore A (+/-5, 10 sec. delay)	D-2240	80
Tensile, psi	D-638, Type IV	2000
Elongation %	D-638, Type IV	350
Low Temperature Brittleness @ -35° F	D-746	No Failure
Stiffness in Flexure, psi	D-747	600
<b>Accelerated Extraction, USACE CRD-C572</b>		
Tensile, psi	D-638, Type IV	1600
Elongation, %	D-638, Type IV	300
<b>Effect of Alkali, USACE CRD-C572</b>		
Weight Change, %	-----	+0.25%, - 0.10%
Change in Hardness, Shore A	D-2240	+/-5 points

#### 511.2.10 Sheet Membrane Waterproofing

When specified in the Contract Documents, the Contractor shall install waterproof membrane materials. For this application, the Contractor shall provide flexible, sheet membrane waterproofing material that is a minimum 50 mil thickness. Compatible surface primers, adhesives and flashings shall be used as recommended by the manufacturer's application instruction. The material shall meet the requirements of Table 511.2.10:1.

**TABLE 511.2.10:1**

Typical Properties	ASTM Method	Value
water vapor permeance	ASTM E96	0.05 perms max
Elongation	ASTM D412	300% min
tensile strength	ASTM D412	300 psi min
peel strength	ASTM D903	8 lbs/in min
puncture resistance	ASTM E154	45 lbf min

### 511.2.11 Fluid-Applied Waterproofing

When specified in the Contract Documents, the Contractor shall install cold, fluid-applied waterproof membrane materials on concrete walls prior to backfill. For this application, the Contractor shall provide seamless rubberized asphalt membrane at a minimum thickness of 30 mils. Compatible surface primers, and joint, crack, and corner treatments shall be used as recommended by the manufacturer's application instruction. The material shall meet the requirements of Table 511.2.11:2.

TABLE 511.2.11:2

Typical Properties	ASTM Method	Value
solids by weight	ASTM D1644	60% min
Elongation	ASTM D412	300% min
water vapor permeance	ASTM E96	0.1 perms max
Hardness	ASTM C661	60 max

### 511.2.12 Swellable Hydrophilic Waterstop

Swellable hydrophilic waterstop shall meet the requirements of ASTM D-71, ASTM D-6, and ASTM D-217.

1. Properties:

- a. Specific gravity — ASTM D71: 1.35
- b. Hydrocarbon content — ASTM D4: 47%
- c. Volatile matter — ASTM D6: 1%
- d. Penetration cone in accordance with ASTM D217 at 77 degrees F (25 degrees C): 40 mm
- f. Service temperature range: -30 to 180 degrees F (-34 to 82 degrees C)



### **511.3 CONSTRUCTION REQUIREMENTS**

#### **511.3.1 Concrete Placement**

Concrete shall be placed and tested for compliance with the Project Specifications in accordance with Section 510.

#### **511.3.2 Temporary Works and Falsework**

##### **511.3.2.1 Temporary Works**

The Contractor shall perform temporary works in accordance with the current edition of the AASHTO Guide Design Specification for Bridge Temporary Works and the AASHTO Construction Handbook for Bridge Temporary Works.

Although the document contains "Guide Design Specifications," consider them to have the same importance and standing as a code or a specification. If the content of the collaboration documents appears permissive with words such as "should," "could," "may," etc., consider the content to be a requirement unless otherwise approved by the State Bridge Engineer.

In the event of a conflict between a referenced code and this specification, this specification will take precedence.

##### **511.3.2.2 Falsework and Falsework Foundations**

The Contractor shall construct Structure in accordance with Section 511, "Concrete Structures," and Section 512, "Superstructure Concrete", as applicable.

The Contractor shall design, construct, and maintain falsework and falsework foundation to provide the required strength and rigidity, and to support loads without settlement. The Contractor shall have a professional Engineer licensed in the State of New Mexico design the falsework and its foundation. The design of the falsework and foundation will be required if one (1) or more of the following conditions apply:

1. If the height of the Structure is greater than ten (10) ft, (excluding concrete Culverts with bottom slabs);
2. Where the supported span is greater than 15 ft;
3. Where traffic, other than workmen involved in constructing the Structure, will travel under the falsework.

The Contractor shall place the falsework on an adequate foundation. The maximum foundation bearing pressure is 2,000 pounds per square foot unless a Geotechnical investigation indicates a higher value can be used. The Contractor shall provide methods for measuring settlement or movement of falsework and forms under load. If falsework shows settlement greater than 3/8 inch at the vertical supports, the Contractor shall stop the Work and correct the settlement or movement.

If pilings are used for falsework, the Contractor shall pull or cut off falsework pilings. The Contractor

shall ensure the cut-off elevations are one (1) ft below the low water level, natural ground, or bottom of proposed channel.

If required, the Contractor shall submit Plans for falsework to the State Bridge Engineer for approval. The Contractor shall submit proposed changes to existing Structures required for maintenance of traffic to the Project Manager for approval. 30 Days shall be allowed for the initial review. 15 additional Days shall be allowed for each resubmittal.

### **511.3.3 Form Construction**

The Contractor shall make forms mortar tight and sufficiently rigid to prevent deformation due to the pressure of the concrete and other loads incidental to the construction operations, including vibration. The Contractor shall construct and maintain forms to prevent the joints from opening. The Contractor shall construct and maintain forms used on surfaces in public view such that the finished concrete surface will be smooth and of uniform color and texture.

The Contractor shall remove loose dirt, laitance and miscellaneous debris from the bottom of the forms before placing concrete.

The Contractor shall fillet forms and chamfer them 3/4 inch, unless required otherwise in the Contract, and give them a bevel or draft for easy removal of projections such as girders and copings.

#### **511.3.3.1 Form Lumber**

The Contractor shall use lumber that is planed on at least one (1) side and the two (2) edges for exposed concrete surfaces. The Contractor shall place the planed face so that it will be the formed surface for the concrete being placed.

#### **511.3.3.2 Metal Ties**

The Contractor shall construct metal ties and anchorages within the forms to permit the removal of a portion of the tie connections without damaging the concrete, and provide at least 1/2 inch depth of cover from the concrete surface.

#### **511.3.3.3 Surface Treatment of Forms**

The Contractor shall ensure that forms have been properly wetted before placing concrete.

The Contractor shall use form release agents at their discretion before placing reinforcing steel. The Contractor shall not use form release agents that adhere to or discolor the concrete.

#### **511.3.3.4 Metal Forms**

The Contractor shall provide metal forms thick enough to prevent bending and maintain their shape. The Contractor shall use countersunk bolts and rivet heads. The Contractor shall use clamps, pins, and other connecting devices designed to hold forms rigidly together and for removal without damaging the concrete. The Contractor shall use metal forms that have a smooth surface and line up properly.

The Contractor may use metal forms that remain part of the Structure in accordance with the Contract or as approved by the State Bridge Engineer. The Contractor shall use permanent steel Bridge deck forms in accordance with Section 512.3.4.1, "Permanent Steel Deck Forms."

#### **511.3.3.5 Reuse of Forms**

The Contractor shall continuously maintain the shape, strength, rigidity, water tightness, and surface smoothness of reused forms. The Contractor shall resize warped or bulged lumber before reusing it.

#### **511.3.4 Temperature and Weather Limitations**

The Contractor shall keep the concrete mixture temperature between 50 °F to 90 °F at the time of placement.

##### **511.3.4.1 Cold Weather Concrete**

The Contractor shall place cold weather concrete in accordance with ACI 306, *Cold Weather Concreting*.

If air temperatures are likely to fall below 40 °F during the placement or curing periods, the Contractor shall submit a cold weather concreting and curing plan to the Project Manager for approval by the State Concrete Engineer before concrete placement. The Contractor shall allow 14 Days for review. The Contractor shall ensure that the plan details the methods and Equipment to maintain the required concrete temperatures over the entire concrete pour area.

Information submitted will include, but not be limited to:

- Whether or not outside heating sources will be used (and how the exhaust will be vented away from the fresh concrete);
- Whether or not the rate of surface evaporation is expected to exceed the limitations detailed in 511.3.4.3, "Rate of Evaporation Limitations" and measures to be taken
- What the target mix temperature will be;
- How the concrete will be protected from the ambient conditions;
- Curing methods to be used during and following the protection period;
- How soon after the placement the protection from the ambient conditions will be implemented;
- Who will be responsible for insuring that the proper protection from the environment is properly implemented;
- How the actual temperature of the concrete will be monitored;
  - How often will this be checked;
  - Who will do the checking;
- What actions will be taken if the temperatures fall below the target points;
- Who will be responsible for taking the necessary actions;
- Who the contact will be if Department Personnel need to transmit notices or information about the cold weather conditions.

Review and acceptance of the Cold Weather Concreting and Curing Plan shall not relieve the Contractor from its obligation to perform the Work and provide Materials in strict conformance with the Contract.

The Contractor shall not place concrete directly onto any surface that is less than 40 °F unless otherwise approved by the Project Manager. The Contractor shall not place concrete on frozen ground.

If placing concrete at or below air temperatures of 35 °F, the Contractor shall provide suitable enclosures and heating devices. The Contractor shall vent exhaust from combustion type heating devices outside the placing area so that the exhaust fumes cannot come in contact with the freshly placed concrete.

The Contractor shall ensure the concrete surface temperatures never fall below 45 °F during placement and the first three (3) Days after placing. The Contractor shall not let the surface temperature fall below 40 °F during the next four (4) Days after the initial 3 Day curing period, or until the in-place strength determined by the *Maturity Method*, in accordance with Section 510.3.5.2, "In-Place Concrete Strength Measurements" indicates that 75% of the design strength is achieved.

The Contractor shall monitor the minimum concrete temperatures at various locations including edges and corners of slabs or other Structures, and check immediately before placing insulating material over the concrete.

If heating the aggregates or water, the Contractor shall use heating methods and Equipment that can heat the Material uniformly. The Contractor shall not heat the Materials to more than 110 °F. During the heating or mixing process, the Contractor shall not add cement to water and aggregate combinations that are hotter than 90 °F.

#### **511.3.4.2 Hot Weather Concrete**

The Contractor shall place hot weather concrete in accordance with ACI 305, *Hot Weather Concreting*.

Hot weather is any combination of the following conditions that tends to impair the quality of freshly mixed or hardened concrete by accelerating the rate of moisture loss and rate of cement hydration or otherwise causing detrimental results: high ambient temperature; high concrete temperature; low relative humidity; wind speed; solar radiation.

The Contractor shall estimate the rate of evaporation at the surface of the concrete per 511.3.4.3, "Rate of Evaporation Limitations". If the rate of evaporation is anticipated to be greater than 0.2 lb per sq ft per hour, the Contractor shall submit a hot weather concreting and curing plan to the Project Manager for approval by the State Concrete Engineer before concrete placement. The Contractor shall allow 14 Days for review.

The Contractor's Hot Weather Concreting and Curing Plan shall include measures that shall be taken by the Contractor at their expense and maintained to the satisfaction of the Project Manager to reduce the rate of evaporation during initial cure to within the specified rate. The methods can include but not be limited to following

1. Erect windbreaks to reduce the wind velocity over the concrete surface;
2. Place concrete during nighttime or early morning hours;

3. Use cool aggregate and mixing water to lower the fresh concrete temperature;
4. Increase the relative humidity at the site with a fog spray; and/or
5. Apply a liquid-applied evaporation reducer

Review and acceptance of the Hot Weather Concreting and Curing Plan shall not relieve the Contractor from its obligation to perform the Work and provide Materials in strict conformance with the Contract.

#### **511.3.4.3 Rate of Evaporation Limitations**

The "Rate of Evaporation Limitations" are detailed in ACI 305 – Hot Weather Concrete. These procedures lessen the potential of plastic-shrinkage cracking in concrete. The "Rate of Evaporation Limitations" apply to Bridge decks, approach slabs, CBC (top and bottom slabs), slipped formed concrete Structures, all PCCP and structural shotcrete. ACI 308 – Guide to Curing Concrete emphasizes that the rate of evaporation limitations can be exceeded in both cold and hot weather and must be addressed in both conditions.

The Contractor shall determine the anticipated rate of evaporation of surface moisture from the concrete by utilizing Figure 511.3.4.3:1 – "Surface Evaporation from Concrete". The Contractor shall not place concrete if the anticipated rate of evaporation exceeds 0.20 lb per square foot per hour at the site over any ten (10) minute period, unless measures are taken to prevent excessive moisture loss from the surface of the concrete during initial curing. See 511.3.4.2 for acceptable measures. These measures must be detailed in the Cold Weather Concrete Plan per 511.3.4.1 or the Hot Weather Concrete Plan per 511.3.4.2.

During the concrete placement, the wind speed, relative humidity and ambient air temperature shall be collected via a computerized weather station that shall be provided and retained by the Contractor. The weather station shall be an automated system that does not require any human support or effort after its initial set-up. The Contractor shall record readings at minimum five (5) minute intervals until the final curing system has been physically applied. Copies of these readings shall be submitted to the Project Manager within 24 hours of the placement. Measurements to determine the Surface Evaporation from the Concrete shall be taken at a height of approximately five (5) feet above the deck for relative humidity and ambient air temperature, and between a height of 20 inches and five (5) feet for wind speed.

For concrete placements that are smaller than 10 cubic yards, a handheld anemometer may be used in lieu of a weather station. The handheld anemometer shall be capable of measuring wind speed, humidity and air temperature; and shall be supplied and retained by the Contractor.

Figure 511.3.4.3:1  
Surface Evaporation from Concrete (reference ACI 305)

To use this chart:

1. Enter with air temperature,  
move up to relative humidity
2. Move right to concrete  
temperature
3. Move down to wind velocity
4. Move left; Read approximate  
rate of evaporation

#### **511.3.4.3.1 Wind Break**

If a wind break is used, the wind break shall be a minimum height of eight (8) ft- 0 inches protecting the Bridge deck, approach slabs, sleeper footings and/or transition slabs (if applicable). All areas of the freshly placed concrete must be protected by the wind break. The nature and type of windbreak to be used shall be approved by the Project Manager prior to placement of any Superstructure concrete.

#### **511.3.4.3.2 Fogging System**

If a fogging system is used, a water fog shall be continuously applied over the surface of the freshly placed concrete in such a manner that the entire surface is kept at a relative humidity of 90% or greater and the surface of concrete is kept at an evaporation potential of 0.15 pound/square foot/hour or less, as determined from Figure 511.3.4.3:1. The evaporation potential shall be determined prior to fogging and outside the wind protection, and continuously monitored with evaporation potential measurements taken and recorded at least once every five (5) min throughout the entire placement, and continuing until the concrete curing system has been completely installed. If a wind break and/or fogging are being used, the Contractor shall obtain these readings from the protected area at a height of approximately five (5) feet above the protected concrete.

The area to be fogged shall be the entire area of the freshly placed concrete, which has not had the final finish applied. This fog shall be delivered through a network of nozzles, which are properly spaced to provide a uniform fog at the surface of the concrete. The nozzles used shall be of the type, which atomizes the water so that there are no visually discernible droplets of water. The area of coverage from each nozzle shall overlap all adjacent nozzle coverage by at least one (1) ft. It shall be demonstrated prior to the placement of the concrete that the intended system is capable of delivering the required fogging environment for at least twice the anticipated required time. The Contractor shall not finish or otherwise mix any of the fogging water into the fresh concrete.

The intended system must be properly field tested, and approved by the State Materials Bureau before being used on any Superstructure concrete. Fogging shall continue until the surface is treated with an approved curing method.

#### **511.3.4.3.3 Liquid Applied Evaporation Reducers**

If a liquid-applied evaporation reducer is used, it shall be selected from the Departments Approved Products list and must be applied in strict accordance with manufacturer's application instructions.

Liquid applied evaporation reducers are not curing compounds and are not finishing aids. Liquid applied evaporation reducers are to be used to reduce surface evaporation during the initial cure of concrete. Initial cure of concrete typically occurs up to and including bull-floating. Multiple applications of liquid applied evaporation reducer may be required, reference manufacturer's application instructions.

Upon commencing surface finishing (beyond bull-floating), further application of liquid evaporation reducers shall not be allowed (liquid evaporation reducers cannot be used as finishing-aids). Cure concrete after surface finishing in accordance with 511.3.9 – Curing.

#### **511.3.5 Concrete Placement**

Concrete shall be placed and tested for compliance with the Project Specifications in accordance with Section 510, "Portland Cement Concrete".

The Contractor shall not place concrete until the Project Manager approves the reinforcing steel and forms. The Contractor shall ensure that forms are clean and free of rust, grease, and other Deleterious Material immediately before placing the concrete. The Contractor shall remove wooden form spacers immediately before placing concrete in that area.

The Contractor shall vibrate the concrete during placement to force the coarse aggregate from external surfaces and to bring mortar against the forms to produce a smooth finish significantly free of water, air pockets, and honeycombs.

The Contractor shall place concrete in girders, walls, and other similar Structures in horizontal layers. The Contractor shall ensure that the concrete is not too thick for the vibrator to consolidate and merge it with the previous layer. The Contractor shall not pour concrete layers deeper than two (2) ft.

The Contractor shall not place concrete faster than the rate used for the design of the forms. The Contractor shall adjust the rate for the temperature of the concrete being placed.

#### **511.3.5.1 Chutes and Troughs**

The Contractor shall avoid segregation of the Materials and the displacement of the reinforcement when placing the concrete. The Contractor shall use metal or metal-lined open troughs and chutes; do not use aluminum. All tools used for the moving and/or spreading of the concrete shall be square pointed tools. The Contractor shall not use round nose shovels and spreading tools.

Where the Contract requires steep slopes, the Contractor shall equip the chutes with baffle boards or use short lengths that reverse the direction of movement.

The Contractor shall keep chutes, troughs, and pipes clean and free of hardened concrete by thoroughly flushing with water after each pour. The Contractor shall discharge the water used for flushing away from the placed concrete.

The Contractor shall not allow concrete to free fall for more than three (3) ft. For CBC walls and retaining walls that are less than or equal to ten (10) inches thick, maximum free fall heights shall not apply. For CBC walls and retaining walls greater than ten (10) inch thick, concrete may have a free fall of less than nine (9) ft.

The Contractor shall fill each part of the form by placing the concrete as close to the final position as possible. The Contractor shall vibrate the concrete during placement to force the coarse aggregate back from the forms and around the reinforcement without displacing the bars. After the concrete's initial set, the Contractor shall not jar the forms or place strain on the ends of projecting reinforcement.

#### **511.3.5.2 Concrete Pumping**

If placing concrete by pumping, the Contractor shall install pumping Equipment so that vibrations



resulting from the operation do not damage the concrete being placed. The Contractor shall obtain Project Manager approval before using concrete pumping Equipment.

Before placing the concrete, the Contractor shall clean the Equipment thoroughly. The Contractor shall operate the Equipment so that it pumps a continuous flow of concrete without air pockets and without an appreciable loss of slump or entrained air.

The Contractor shall control the loss of entrained air by one (1) or more of the following methods:

1. Tie the end of the pump hose so that the discharge end is pointing upward, forming a "J" at the end of the hose;
2. Install a series of four (4) consecutive elbows to form a 360° loop;
3. Reduce the diameter of the end of the pump line; or
4. Limit the enclosed angle of the boom arms to an angle of 135° or more.

The Contractor shall make sure that the discharge of the concrete from the pump is as close as possible to the bottom of the structure being placed, but in no case shall it be allowed to drop a distance greater than four (4) feet with the exception of CBC walls where the walls equal to or less than ten (10) inch thick, concrete may have a free fall of less than nine (9) ft.

The Contractor shall not use aluminum pipe. The Contractor shall not add water to the concrete during pumping. If water is added at the pump hopper to clear a clogged pump, the Contractor shall dispose of the concrete in the hopper and the line.

#### **511.3.5.3 Conveyers and Belts**

The Contractor may use conveyor belts to transport the concrete from the point of delivery to the point of placement. If using multiple belts, the Contractor shall ensure that the drop from one (1) belt to the next is no greater than 18 inches. At the end of the last belt, the Contractor shall not allow the concrete to free-fall more than four (4) ft. The Contractor shall ensure that the concrete coming off the end of any belt is not being segregated. If segregation occurs, the Contractor shall slow down the speed of the belt until segregation no longer occurs.

#### **511.3.5.4 Placing Concrete Under Water**

If placing concrete under water, the Contractor shall submit a mix design and procedure plan to the Project Manager. The Project Manager may require up to 30 Days to approve them. The Contractor shall allow time in the schedule to accommodate this approval process.

#### **511.3.5.5 Vibrating/Consolidation**

Unless otherwise directed by the Project Manager, and excluding drilled shafts, the Contractor shall consolidate concrete with suitable mechanical vibrators operating within the concrete. During concrete placement, the Contractor shall keep enough personnel, vibrators, and other tools available to assure adequate consolidation. If necessary, the Contractor shall supplement vibrating with hand spading with suitable tools to assure proper consolidation. If using vibrators, the Contractor shall use procedures in accordance with ACI 309 – Consolidation of Concrete.

The Contractor shall not use a "jitterbug" or any other flat tool that could cause concrete segregation.

The Contractor shall use vibrators that have each been certified within the last 90 Days to provide 8,500 to 12,500 vpm.

The Contractor shall operate vibrators to consolidate the concrete thoroughly around the reinforcement and embedded fixtures and into corners and angles of the forms. The Contractor shall not use vibrators to make concrete flow or run. The Contractor shall vibrate long enough to accomplish consolidation, but do not vibrate so long to cause segregation or air bubbles. The Contractor shall insert the vibrators vertically into the concrete, and immediately withdraw upward along the same line with the opposite motion. The Contractor shall not drag the vibrator horizontally across the placing area.

When operating vibrators, the Contractor shall avoid contact with reinforcing bars, particularly epoxy coated reinforcing bars or bars that extend into concrete that has taken an initial set. If vibrating concrete in areas reinforced with epoxy-coated bars, the Contractor shall cover the vibrators with nonmetallic sleeves to prevent damage to the epoxy coating.

#### **511.3.5.6 Sequence of Placement and Application of Load**

The Contractor shall not place superimposed loads on or against load carrying members, floor slabs, or retaining walls until the concrete reaches 75% of specified design compressive strength but no less than 2,500 psi, determined in accordance with Section 510.3.5.2, "In-Place Concrete Strength Measurements." Concrete Box Culverts and CBC wingwalls shall not be backfilled until specified design compressive strength has been achieved.

The Contractor shall submit a concrete placement schedule to the Project Manager upon request. The Contractor shall plan and schedule concrete placement to prevent damage to previously placed concrete or to the curing or protection systems of previously placed concrete.

The following applies to concrete placement scheduling:

1. 1. The Contractor may erect reinforcement and formwork for walls, columns, and pier caps 24 h after placement of footings or floor slab concrete. Unless otherwise provided, the Contractor may place concrete columns, walls, and pier caps, 48 h after placement of footing or floor slab concrete;
2. Do not set beams or girders, or place Superstructure concrete until Substructure forms have been stripped sufficiently to determine the quality of the concrete;
3. Do not place the load of the Superstructure on the Substructure until the Substructure concrete has been in place for at least 14 Days or until in-place strength measured by the *Maturity Method* indicates that the concrete has attained 75% of the design strength;
4. Ensure that the concrete has achieved sufficient strength as determined by the *Maturity Method* in accordance with the form design before placing concrete for integral horizontal members, such as pier caps or top slabs;
5. Place the vertical members at least seven (7) Days before mounting friction collars or falsework brackets that will support the weight of horizontal members. Ensure that the vertical members have attained the specified strength before applying loads, unless the Department

approves otherwise;

6. Limit monolithic casting of walls and deck slabs of concrete box Culverts to Culverts that are six (6) ft high or less. Construct box Culvert walls higher than six (6) ft in accordance with this subsection;
7. If the concrete is not gaining strength as expected, the Assistant District Engineer of Construction may extend the waiting periods. Conduct construction operations in a manner that does not damage the previously placed concrete.

#### **511.3.5.7 Supplementary Lighting**

The Contractor shall not mix, place, or finish concrete when the natural light is insufficient without using an adequate artificial lighting system, approved by the Project Manager. The Contractor shall test the lighting system at least one (1) Day before placing the concrete to assure that the system will provide sufficient light, without shadows or dark areas for placing, testing and finishing concrete. The Contractor shall ensure that the lights do not create a hazard for traffic on adjacent Roadways or Detours.

#### **511.3.6 Removal of Forms**

The Contractor shall not remove the forms until the concrete is strong enough to avoid damage by removing the forms.

If in-place strength tests in accordance with Section 510.3.5.2, "In-Place Concrete Strength Measurements," are not used to control field operations, remove forms in accordance with Table 511.3.6:1, "Timetable for Removal of Forms," not counting those Days when the temperature is below 40 °F.

Table 511.3.6:1

## Timetable for Removal of Forms

Structural component	Minimum time for removal
Bottom of beams	14 Days
Bridge decks <sup>a</sup>	seven (7) Days
Floor slabs	seven (7) Days
CBC Floors	seven (7) Days
CBC Top Slab	seven (7) Days
Walls	24 h
Columns	48 h
Sides of beams	24 h
All other parts	24 h
<sup>a</sup> Additional requirements of Section 512, "Superstructure Concrete," shall apply.	

If one (1) of the test methods in Section 510.3.5.2, "In-Place Concrete Strength Measurements," is used to control the field operations, the Contractor may remove forms from the bottom of beams and floor slabs when the concrete reaches 75% of the design compressive strength.

### 511.3.7 Joints

The Contractor shall make construction joints in concrete Structures in accordance with the Plans, unless otherwise directed or approved by the Project Manager.

If the concrete placement is interrupted and additional construction joints are required, the Contractor shall place the additional joints in planes perpendicular to the principal lines of stress, and at points of minimum shear, as approved by the Project Manager.

#### 511.3.7.1 Keyed Joints

The Contractor shall mechanically bond construction joints with keys formed by beveled strips embedded in the surface of the concrete. The Contractor shall make the keys from 1 3/8 inch to 1 1/2 inch deep. The Contractor shall place the keys centrally within the thickness of the joint. The Contractor shall ensure that the keys have a width that is one-third of the depth of the smallest dimension of the joint. The keys do not need to exceed the clear distance between reinforcing mats, or be greater than eight (8) inches. The Contractor shall provide raised keys in accordance with the Plans.

#### 511.3.7.2 Bonding New Concrete to Existing

If bonding new and existing concrete, the Contractor shall retighten the forms before depositing new concrete on or against the hardened concrete. The Contractor shall roughen the surface of the hardened concrete without loosening the aggregate or damaging the concrete on the surface. The Contractor shall thoroughly clean the surface of foreign matter and laitance.

The Contractor shall utilize a bonding method at the interface between the hardened and fresh

concrete by covering the cleaned and saturated surfaces with a coating of enriched mortar (reference Section 533 for enriched mortar specifications or a bonding agent from the Approved Product List. The Contractor shall place the new concrete before the enriched mortar reaches an initial set. If using a bonding agent, the Contractor shall follow the manufacturer's application instructions. The Contractor shall place the concrete continuously from joint to joint, and finish the face edges of exposed joints in accordance with the Plans.

#### **511.3.7.3 Water Stops and Flashings**

The Contractor shall provide and place water stops, and flashings per the Contract documents. The Contractor shall splice or solder water stops and flashings to form continuous watertight joints.

Swellable hydrophilic waterstop shall be installed with 2" minimum concrete cover. Materials shall be installed per manufacturer's installation instructions.

#### **511.3.7.4 Joint Sealing Materials**

The Contractor shall install joint sealers in accordance with the manufacturer's recommendations, including surface preparation and the use of primers and backer-rod as required.

### **511.3.8 Miscellaneous Construction**

#### **511.3.8.1 Setting of Bearings**

The Contractor shall ensure the surfaces on which metal masonry plates and elastomeric bearing pads will rest are flat and on level planes. If using elastomeric bearing pads, the Contractor shall finish the Bridge seats slightly high and grind to the correct elevation.

If it is necessary to adjust the elevation of a bearing upward, the Contractor shall make the adjustment by placing full size shim plates. If it is necessary to adjust the elevation of a bearing downward, the Contractor shall make the adjustment by diamond grinding to a level plane-bearing surface. The Contractor shall not use grout to level or adjust elevation.

If placing a bearing surface below the level of adjacent concrete, the Contractor shall ensure water drains away from the masonry plate or elastomeric bearing pad.

The Contractor shall finish sections of Bridge seats on abutments or piers on both sides of bearing assemblies to drain, with a slope of from 1/16 inch to 1/8 inch per foot. The Contractor shall correct depressions that retain water.

#### **511.3.7.2 Waterproofing**

If required in the Contract, the Contractor shall protect the backsides of abutment backwalls and wingwalls by waterproofing. The Contract shall define the vertical and horizontal limits of the waterproofing. The material shall be installed in conformance with the manufacturer's application instructions.

### **511.3.8 Finishing**

The Contractor shall perform finishing after removing forms in accordance with the Contract.

#### **511.3.8.1 Exposed Surfaces**

The Department considers "exposed surfaces" as surfaces that are not buried in the ground or permanently covered by the fill, or against which the fill is not permanently placed. However, the Department does not consider the inside surfaces of concrete box drainage Culverts and concrete box girders, and the bottom side of concrete Bridge decks as "exposed surfaces."

#### **511.3.8.2 Class 1, Ordinary Surface Finish**

The Contractor shall apply a Class 1 finish to exposed surfaces as a final finish or before a Class 2, Rubbed Surface Finish, or a Class 4, Special Surface Finish.

A Class 1 finish includes the removal of rods, bolts, or other form ties to at least 1/2 inch deep from the face of the concrete. The Contractor shall fill tie holes and honeycombs with mortar composed of one (1) part cement and two (2) parts sand; use the same brand and type of cement as used in the concrete.

The Contractor shall remove objectionable fins, bulges, and projections by rubbing with carborundum bricks or by other methods approved by the Project Manager. If necessary, the Contractor shall clean the entire surface. The Contractor shall keep such surfaces in an acceptable condition until final Acceptance of the Work.

The Contractor shall apply a Class 1 finish to surfaces buried in the ground or permanently against the fill, except that form ties may be cut off even with the concrete surface, and fins, minor bulges, projections, stains, and discolorations do not need to be removed.

Unless specified otherwise in the Contract, the Contractor shall apply a Class 1 finish to the front faces of backwalls of abutments, the top surfaces of Bridge seats on piers and abutments, and concrete curtain walls between pier pilings.

The Contractor shall apply a Class 1 finish to the inside surfaces of concrete box drainage Culverts, except as noted in Section 511.3.8.3, "Class 2, Rubbed Surface Finish."

#### **511.3.8.3 Class 2, Rubbed Surface Finish**

The Contractor shall apply a Class 2 finish to concrete surfaces generally exposed to public view.

The Contract may specify a Class 4, Special Surface Finish with selected colors, for various components or parts of components. If the Contract specifies a Class 4, Special Surface Finish, the Contractor shall apply a Class 2 finish first, unless otherwise approved by the Project Manager.

A Class 2 finish consists of a Class 1 finish, then thoroughly wetting the surface and applying a mortar.

The Contractor shall apply a thin mortar, composed of one (1) part cement and four (4) parts sand, and rub it into holes and pockets; use the same brand and type of cement as used in the concrete. The

Contractor shall use sand passing a No. 16 sieve. The Contractor shall allow the mortar to remain until it has set sufficiently to prevent removal by subsequent rubbing operations. The Contractor shall rub the surface with a No. 25 to No. 30 carborundum brick, then, rub with burlap to remove excess mortar. If the completed rubbed surface does not look uniform, the Contractor shall make a final finish by wet rubbing with a No. 30 carborundum brick.

The Contractor shall apply Class 2 finish to the following:

1. Outside vertical surfaces of Bridge decks;
2. Outside surfaces of exterior girders, curb and rail posts seen in elevation view;
3. Curb tops, post tops, inside faces of curbs, and faces of hand rails;
4. Exposed surfaces of pier columns and caps;
5. Abutment wingwalls and Bridge seats one (1) ft below final grade;
6. Bridge rehabilitation Projects with existing slope paving;
7. Top surface of slope paving (tops of Bridge seats require only a Class 1 finish);
8. Exposed surfaces of barrier railings on Bridges or concrete box Culverts;
9. Exposed surfaces of miscellaneous concrete Structures extending above Shoulder line grade and inside walls of concrete underpass Structures.
10. Concrete box Culverts used for drainage, on the soffit and streamside faces of headwalls and wingwalls, and for six (6) inches down the back side of wingwalls; and
11. The interiors of sidewalls to one (1) ft back from the face of the Culvert at the tops of the sidewalls, and extending on a 45° line downward and inward.

#### **511.3.8.4 Class 3, Float Finish**

The Contractor shall apply a Class 3 finish to upper surfaces not formed, such as tops of walls, headwall, tops of slabs and bottom slabs of box Culverts, copings and Bridge seats, except tops of Bridge decks, Sidewalks, or curbs.

A Class 3 finish consists of placing an excess amount of concrete in the forms and striking off this excess concrete with a template, forcing the coarse aggregate below the surface. After striking off the concrete, the Contractor shall thoroughly work the surface with a wooden, cork, or canvas float without adding water or cement. Before the final finish has set, the Contractor shall use a fine brush to remove surface film and to produce a fine grain, smooth, sanded texture.

#### **511.3.8.5 Class 4, Special Surface Finish**

When specified in the Contract documents, the Contractor shall apply a Class 4, Special Surface Finish. The Class 4, Special Surface Finish shall be applied in accordance with Specification Section 548 - Concrete Coatings.

The Contractor shall apply the Class 4 finish over the Class 2 finish, unless directed otherwise by the Project Manager.

The Contractor shall apply the Class 4 finish consistent with the location requirements of 511.3.8.3 Class 2,

Rubbed Surface Finish. If repairing existing Structures, apply a Class 4 finish to the entire surface of the repaired components.

### 511.3.9 Curing

The Contractor shall cure all concrete in accordance with ACI 308 – Guide to Curing Concrete. All concrete shall receive a minimum of seven (7) Days of curing treatment. The Contractor shall use curing methods in accordance with Table 511.3.10:1, "Curing of Concrete Structures," unless the Contract specifies otherwise.

If the Department allows the Contractor to choose the curing method, the Contractor shall obtain the approval of the Project Manager before beginning curing operations.

**Table 511.3.10:1**  
**Curing of Concrete Structures**

<b>Method designation</b>	<b>Curing method description</b>
Method 1	Water curing
Method 2	Curing compound
Method 3	Form curing
Method 4	Combination of Method 1 and Method 2
<b>Structure description</b>	<b>Curing methods</b>
<u>Top surfaces of:</u>	
Bridge decks <sup>a</sup>	4
Approach slabs	4
Concrete curbs, gutters and Sidewalks	1 or 2
Pier caps, abutment Bridge seats	1 or 2
Wingwalls and parapet walls	1 or 2



All vertical concrete surfaces that begin in contact with form materials, including but not limited to:

Barrier walls, barrier railing, wingwalls, parapet walls, abutments, box culverts, decks, slabs, curbs, gutters, sidewalks, construction joints 3

Elevated horizontal surfaces on the underside of structural elements that begin in contact with temporary form materials including but not limited to: 3

pier caps, girders, structural slabs

Slip Formed Concrete elements including but not limited to: 2

concrete wall barriers, curb, gutter

All other concrete<sup>b</sup> 1, 2, or 3

<sup>a</sup>See Section 512.3.10.1, "Curing," for additional curing requirements for Bridge decks.

<sup>b</sup>Unless the Contract specifies otherwise.

#### 511.3.9.1 Method 1, Water Curing

The Contractor shall keep the concrete thoroughly and continuously wet and covered for at least seven (7) Days. The Contractor shall place and anchor covers, mats, and sheeting to ensure continuous contact with the concrete surfaces.

The Contractor shall cover concrete slabs as soon as possible with a double layer of clean, wet burlap or cotton mats, or other moisture retaining Material approved by the Project Manager. The Contractor shall ensure that the moisture retaining Materials lay flat with no wrinkles and that adjacent strips of moisture retaining materials overlap at least 12 inches. After installation, the Contractor shall soak the moisture retaining material and add moisture as required to ensure that it is not allowed to become dry for the duration of the specified curing period. The Project Manager will determine the suitability of the moisture retaining material for reuse, based on the cleanliness and absorptive ability of the Materials.

In addition to the moisture absorptive material, the Contractor shall install plastic sheeting over the moisture absorptive material. If the slabs are on grade, the Contractor shall extend the cover materials at least twice the slab's thickness beyond the edges of the slab, and make sure that the entire exposed surface of the concrete is protected. If the slab is a Bridge deck, the Contractor shall place the cover materials to fully protect exposed edges and unformed surfaces of the concrete.

The Contractor may temporarily remove the cover from surfaces that require a rubbed finish for finishing, but shall restore the cover as soon as possible.

#### 511.3.9.2 Method 2, Curing Compound

Application of curing compound shall be in accordance with manufacturer's application recommendations.

For slabs, Bridge decks and other flatwork, the Contractor shall apply the curing compound to the fresh concrete as soon after finishing as allowed by the manufacturer.

The Contractor shall thoroughly mix the membrane forming curing compound per the manufacturer's recommendations.

The Contractor shall not apply the curing compound in rainy conditions. The Contractor shall adhere to the thermal limitations as specified by the manufacturer – typically, the product when stored should not be allowed to freeze and should not be applied when the air or concrete temperature is less than 40 degrees Fahrenheit.

The Contractor shall apply the curing compound under pressure with an atomizing-type spray nozzle. The Contractor shall uniformly cover the entire surface area at the rate recommended by the manufacturer or at a rate of at least one (1) gal per 175 ft<sup>2</sup> whichever rate is greater. The Contractor shall use spray Equipment with enough pressure to force the curing compound to leave the nozzle as a fine mist. If the nozzle becomes plugged, the Contractor shall immediately clear the nozzle before continuing the application. The Contractor shall not continue to spray curing compound through a nozzle that has become plugged or obstructed.

The Contractor shall apply the curing compound by first spraying back and forth in one (1) direction until a uniform covering has been achieved. Then, the Contractor shall spray back and forth in a direction perpendicular to the first application until a second, uniform covering has been achieved. The Contractor shall ensure that the entire curing surface has been uniformly covered with two (2) coatings of curing compound. The Contractor shall not apply the curing compound to exposed reinforcing steel.

The Contractor shall protect all surfaces covered with curing compound for seven (7) Days after application. The Contractor shall provide walkways and mats for workmen, Material, and Equipment.

The Contractor shall not use a curing compound that exhibits separation, segregation, or skimming.

The Contractor shall not apply curing compound to surfaces that will receive a Class 2 or Class 4 finish, unless the Contractor thoroughly cleans the surfaces per the recommendations of the manufacturer of the Class 2 or Class 4 finish product.

#### **511.3.9.3 Method 3, Form Curing**

The Contractor shall leave forms in place in accordance with 511.3.6. The Contractor shall keep wood forms moist during the curing period and replenish the system with water to maintain a continuously moist condition. The Contractor shall cure exposed surfaces with Methods 1 or 2.

Form removal shall be in accordance with 511.3.6 "Removal of Forms". Should forms be removed prior to the specified seven (7) day curing period, the Contractor shall immediately resume curing by Method 2.

For Structures with formed surfaces that require the application of a finish per 511.3.8 "Finishing" such as barrier walls, barrier railings on Bridges, wingwalls, or parapets on Bridges or box Culverts, the Contractor shall remove the forms in accordance with 511.3.6 "Form Removal", finish the concrete in accordance with 511.3.8 "Finishing", and resume curing with Method 2 for the duration of the curing period. The Contractor shall not pause curing for more than two (2) hours.

#### **511.3.9.4 Method 4, Combination of Curing Compound and Water Curing**

The Contractor shall apply Method 2 curing compound as soon after finishing as is allowed by the manufacturer.

When the concrete is hard enough that placement loads and burlap or cotton mats can be applied without marring the concrete surface or deformation of structural elements, the Contractor shall apply Method 1 curing directly over the curing compound coated surface.

#### **511.3.9.5 Equipment and Personnel Readiness**

The Contractor shall show the Project Manager that curing Material and Equipment (including backup sprayers and mixers) are in working order, at least one (1) Day before concrete placement.

#### **511.3.9.6 Temperature Requirements for Storage and Application**

The Contractor shall store curing compounds in protected areas away from weather and extreme temperatures and per the manufacturer's recommendations. The Contractor shall dispose of compounds that have been frozen in storage. The Contractor shall apply curing compounds when the temperature of the compound is between 50 °F and 95 °F.

#### **511.3.10 Penetrating Water Repellent Treatment Solution**

The Contractor shall saturate the exposed surfaces of the following concrete Structures with a penetrating water repellent treatment in accordance with Section 532, "Penetrating Water Repellent Treatment;"

1. Bridge wingwalls;
2. Front and side faces of abutment Bridge seats;
3. Front faces of abutments, backwalls and diaphragms;
4. Top surfaces of Bridge seats on piers and abutments;
5. Pier columns, stem walls and vertical surfaces of pier caps;
6. Top and vertical side surfaces of Bridge decks, except in the areas where using epoxy Bridge deck overlays;
7. Top surfaces of concrete approach slabs;
8. Concrete barrier railings;
9. Concrete wall barriers; and
10. Sidewalks, curbs and gutters on Structures.

The Contractor shall extend treatment to at least one (1) ft below the final groundline.

The Contractor shall not treat the underside of pier caps, or side and end surfaces of concrete approach slabs.

#### 511.4 METHOD OF MEASUREMENT

The Department will measure all pay items using the dimensions shown in the Contract or approved modifications.

#### 511.5 BASIS OF PAYMENT

Pay Item	Pay Unit
<i>Structural Concrete, Class _____</i>	Cubic Yard
<i>Structural Concrete, Class _____, _____ inch</i>	Square Yard
<i>Substructure Concrete, Class _____</i>	Cubic Yard

##### 511.5.1 Work Included in Payment

The following Work and items will be considered as included in the payment for the main item(s) and will not be measured or paid for separately:

1. Waterstops and flashings;
2. Waterproofing;
3. Premolded and preformed joint fillers;
4. Concrete required to fill overbreakage in excavation when footings or walls are cast against vertical or horizontal faces of excavation;
5. Installation of drains and weep holes;
6. Extruded polystyrene;
7. Means and methods associated with placement of concrete in hot and cold weather conditions, including but not limited to wind break, fogging systems, and temporary heat.

February 2, 2015

**SPECIAL PROVISIONS  
MODIFYING  
SECTION 512: SUPERSTRUCTURE CONCRETE**

The 2014 Edition of the New Mexico Department of Transportation Standard Specifications for Highway and Bridge Construction shall apply in addition to the following:

**512.3 CONSTRUCTION REQUIREMENTS**

Delete Subsection 512.3.7.3 Rate of Evaporation Limitations and substitute with the following:

Comply with Section 511.3.4.5 Rate of Evaporation Limitations.

**512.3.10 Final Operations**

Delete Subsection 512.3.10.1 Curing and substitute with the following:

Unless otherwise specified in the Contract, cure Bridge decks and approach slabs in accordance with Section 511.3.10, "Curing." Ensure forms supporting Bridge decks remain in place for at least seven (7) Days.

July 14, 2016

## SPECIAL PROVISIONS MODIFYING SECTION 519: SHOTCRETE

The 2014 Edition of the New Mexico Department of Transportation Standard Specifications for Highway and Bridge Construction shall apply in addition to the following:

Include Subsection 519.2.1.1 and 519.2.1.2 to include the following:

### 519.2.1.1 Fine Aggregate Quality Requirements

Provide fine aggregate with the following properties:

1. A soundness Loss of 12 or less when tested in accordance with AASHTO T 104 using magnesium sulfate solution and a test duration of five (5) cycles; and
2. A sand equivalent of at least 75 when tested in accordance with AASHTO T 176.

### 519.2.1.2 Fine Aggregate Gradation Requirements

Fine aggregates shall comply with Table 519.2.1.2:1 for either Grading No.1 or Grading No. 2

Table 519.2.1.2:1 Fine Aggregate Gradation

Sieve size, U.S. standard square mesh	Percent by weight passing individual sieves	
	Grading No. 1	Grading No. 2
3/4 in. (19 mm)	—	—
1/2 in. (12 mm)	—	100
3/8 in. (10 mm)	100	90 to 100
No. 4 (4.75 mm)	95 to 100	70 to 85
No. 8 (2.4 mm)	80 to 98	50 to 70
No. 16 (1.2 mm)	50 to 85	35 to 55
No. 30 (600 µm)	25 to 60	20 to 35
No. 50 (300 µm)	10 to 30	8 to 20
No. 100 (150 µm)	2 to 10	2 to 10

March 4, 2015

**SPECIAL PROVISIONS**  
**MODIFYING**  
**SECTION 532: PENETRATING WATER REPELLENT TREATMENT**

The 2014 Edition of the New Mexico Department of Transportation Standard Specifications for Highway and Bridge Construction shall apply in addition to the following:

**532.4 METHOD OF MEASUREMENT**

Delete Subsection **532.4 METHOD OF MEASUREMENT** and substitute with the following:

Penetrating Water Repellent Treatment of existing concrete surface areas will be paid for at the contract unit price per square yard.

**532.5 BASIS OF PAYMENT**

<b>Pay Item</b>	<b>Pay Unit</b>
Penetrating Water Repellent Treatment	Square Yard

Include the following Subsection:

**532.51 Work Included in Payment**

Penetrating Water Repellent Treatment applied to surfaces of new concrete structures will be considered as included in the payment for the main items and will not be paid for separately.

November 20, 2017

**SPECIAL PROVISIONS**  
**MODIFYING**  
**SECTION 536: POLYMER CONCRETE BRIDGE DECK OVERLAY**

The 2014 Edition of the New Mexico Department of Transportation Standard Specifications for Highway and Bridge Construction shall apply in addition to the following:

Replace the following Subsection **536.3.6 Usage Limitations** in its entirety.

The manufacturer's application requirements shall govern. If the manufacturer does not provide guidance on the following items, the following shall apply:

1. PCC shall not be less than 28 Days of age at the time of overlay.
2. The concrete shall be dry at the time of overlay application. The criteria for "dry" shall be established by:
  - a. ASTM D 4263: for every 500 square feet, an 18 inch x 18 inch plastic sheet shall be taped to the deck with 2" duct tape. The test area shall be protected from direct sunlight, direct heat, and damage to the plastic. After 16 hours, the concrete shall be considered dry when no moisture appears on the bottom of the plastic.
  - b. It is also acceptable to use a moisture meter in conformance with ASTM F2659.
    - i. Unless otherwise directed by the manufacturer, the reading shall be 4% or less.
    - ii. The meter shall be an electrical impedance moisture meter specifically developed and calibrated for the non-destructive measurement of the comparative moisture condition in concrete floor slabs.
    - iii. The moisture meter shall be used and calibrated in accordance with the manufacturer's written recommendations. The moisture meter manufacturer's recommendations and the calibration data shall be provided to the Project Manager for acceptance prior to use on the project.
3. The air and deck temperature shall be a minimum of 40 °F at the time of overlay application, and for eight (8) hours after overlay application. Do not use artificial methods to raise the deck temperature.

For new Bridge decks with unventilated stay-in-place forms, in addition to the manufacturer's application requirements, the Contractor shall not install the overlay on PCC that is less than 56 Days of age.

Delete Subsection **536.3.11 Warranty** in its entirety.



November 17, 2016

**SPECIAL PROVISIONS  
MODIFYING  
SECTION 537: POLYESTER CONCRETE BRIDGE DECK OVERLAY**

The 2014 Edition of the New Mexico Department of Transportation Standard Specifications for Highway and Bridge Construction shall apply in addition to the following:

Delete Subsection **537.3.11 Warranty** in its entirety.

March 31, 2016

## **SPECIAL PROVISIONS MODIFYING SECTION 544 – PROTECTIVE COATING OF NEW STRUCTURAL STEEL**

The 2014 Edition of the New Mexico Department of Transportation Standard Specifications for Highway and Bridge Construction shall apply in addition to the following:

Replace **Section 544 Protective Coating of New Structural Steel** in its entirety with the following:

### **544.1 DESCRIPTION**

This Work consists of applying liquid coating materials to steel surfaces.

Refer to Section 541 "Steel Structures" for galvanized (hot-dipped)" applications. Refer to Section 545 "Protective Coating of Miscellaneous Structural Steel" for two coat and powder coating applications. Note that bridge railings are included in 545. Refer to Section 546 "Recoating Structures" for repairs to new coatings. The Contractor shall adhere to all requirements in Section 547 "Safety and Environmental Requirements for Painting Operations" of this specification.

#### **544.1.1 Terminology and Standards**

The Contractor shall use terminology in accordance with the following standards:

Society for Protective Coatings (SSPC) Painting Manual Volume 2  
Surface Preparation Standards, Guides, and Specifications, Section 2 of the SSPC Painting Manual  
Volume 2 (SSPC-SP) American Architectural Manufacturer's Association (AAMA)  
American Association of State Highway and Transportation Officials (AASHTO)  
American Society for Testing and Materials (ASTM)  
American Institute of Steel Construction (AISC)

### **544.2 MATERIALS**

#### **544.2.1 Coating System**

The Contractor shall select a complete coating system comprised of products meeting all performance requirements as listed in Table 544.2.1:1 below. Testing shall be in accordance with AASHTO R-31. All products in each system shall be from the same manufacturer. All products shall be represented on the latest version of the manufacturer's product data sheet as being suitable for use on bridges and capable of being applied at the specified dry film thickness requirements in Table 544.3.4.4:1

Inorganic Zinc-Rich Primer – Shall achieve minimum SSPC Paint 20 Level 2 requirements for amount of zinc dust in the dry film of equal to or greater than 77% by weight.

Epoxy Intermediate Coat – Shall be a two-component epoxy, polyamide or polyamidoamine, including Phenalkamine coatings with minimum solids by volume of 65%.

Polyurethane Topcoat – Shall be a two-component aliphatic polyurethane coating with minimum solids by volume of 65%.

Table 544.2.1:1  
Acceptable Product Requirements

TEST	REF. NO.	PRODUCT(S)	ACCEPTANCE CRITERIA	COMMENTS
Slip Coefficient	ASTM A 325, Appendix A.	IOZ	Class B, Min. 0.5	
Salt Fog Resistance	ASTM B 117	P/I/T (IOZ)	(A) No Delamination Allowed (B) Rust – Max creep 4mm, Avg. creep 2mm @5000 Hrs. (C) Blister – Conversion #8 @ 4000 Hrs.	
Cyclic Weathering Resistance	ASTM D 5894	P/I/T (IOZ)	(A) No Delamination Allowed (B) Rust – Max creep 4mm, Avg. creep 2mm @5040 Hrs. (C) Blister – Conversion #9 @ 4032 Hrs.	
Adhesion Pull-Off Strength	ASTM D 4541	IOZ Alone  P/I/T (IOZ)	2.4 MPa (600 psi)  2.4 MPa (600 psi)	
Freeze-Thaw Stability Pull-Off Strength	ASTM D 4541	P/I/T (IOZ)	2.4 MPa (350 psi) 4.1 MPa (600 psi) 2.4 MPa (350 psi) 4.1 MPa (600 psi)	Requires same average as adhesion pull-off strength results, with no tests measuring less than 60% of those results
Field History	NA	P/I/T (IOZ)	Five (5) Bridges with Minimum two (2) year successful field history	

P = Primer; I = Intermediate coat; T = Topcoat; IOZ = Inorganic Zinc Rich Primer

For structural components that require a galvanized (hot-dipped) coating, reference 541.2.6 "Structural Steel Coatings".

Primer information for the use of organic zinc for touch-up and repair is included in Section 546: Recoating Structures

If the Contract does not specify a color, the Contractor shall use the color Federal Standard 16307, RAL 7004, Pantone 423, or approved equal.

#### **544.2.2 Submittals**

The Contractor shall provide a submittal for the proposed coating option and manufacturer to the Project Manager at least 30 Days before coating operations. If the color varies from the specified color, the Contractor shall submit color samples on boards at least eight (8) inches by ten (10) inches for review and approval.

The Department may take random coating Materials samples during the Work for testing.

When the contract requires painting more than 1,500 sq ft of steel surface, the Contractor shall submit a coating plan 30 Days prior to start of coating operations. Sample coating plans are available on the NMDOT website.

##### **544.2.2.1 Certification**

After the Department approves the coating Material, the Contractor shall submit:

1. Notarized manufacturer's Certificates of Compliance stating that the Materials are the same as those described in the manufacturer's product data sheets.
2. Certified test reports from an independent laboratory performed in accordance with AASHTO R-31, showing acceptable performance results as listed on the chart in Section 544.2.1. The Contractor shall submit two (2) copies of each to the Department.

##### **544.2.2.2 Product Data Sheets**

The Contractor shall provide manufacturer's product data sheets and SDS with each Submittal that shows the following:

1. Mixing and thinning directions;
2. Recommended spray nozzles and pressures;
3. Minimum/maximum drying time, including re-coat times, for shop or field applied coats; and
4. Manufacturer recommended application procedures, including temperature requirements.

##### **544.2.2.3 Contractor Qualifications**

When the contract requires painting more than 1,500 sq. ft of steel surface, the Contractor shall demonstrate qualification by one of the following two methods:

###### **Method 1**

Obtain SSPC QP 1 certification for field painting or either SSPC-QP 3 certification or the AISC Sophisticated Paint Endorsement (SPE) for shop painting. The Contractor shall perform and

document QA/QC inspections daily. QA/QC inspection documents shall be electronically submitted to the Project Manager on a weekly basis.

#### Method 2

Provide a coating plan and provide for NACE certified inspection (Level 2 minimum). The inspection services shall include but not be limited to:

1. Surface preparation and cleanliness inspection verifying profile and appropriate surface preparation.
2. Confirm and document products match approved submittals and certification letters. Document the batch numbers of all coatings.
3. Inspection of primer coat to include dry film thickness readings. Review contractors QA/QC reports for environmental conditions and document.
4. Observe application of stripe coat on the intermediate coat and document environmental readings during the start and stop of application. Review contractors QA/QC reports.
5. Inspect intermediate coat to include dry film thickness readings. Review Contractor's QA/QC reports.
6. Observe start and stop of finish coat application and document environmental conditions.
7. Inspect members after transportation, prior to subsequent coating and / or final acceptance.
8. Final inspection to include visual inspection for runs, sags, and foreign material in coating. Also perform final dry film thickness inspection.
9. Electronically submit interim reports after each inspection to the Project Manager within 3 working days.
10. Electronically submit comprehensive final report including photos to the Project Manager within 14 Days of completion of inspection. Final report shall include QA/QC daily inspections performed by the Contractor.
11. Add field connection points

Any deficiencies shall be corrected and re-inspected by the NACE inspector prior to proceeding.

Samples of a coating plan and QA/QC inspection documents are available on the NMDOT website.

Provisions for demonstration of qualifications are incidental to the performance of the coating; no additional payment shall be made. NMDOT shall be granted open access to the coating operation to perform inspections and to review documentation of Contractor inspections.

### 544.3 CONSTRUCTION REQUIREMENTS

The Contractor shall apply coatings in conformance with SSPC – PA 1 “Shop, Field and Maintenance Painting of Steel” and with SSPC – PA Guide 13 “Guide Specification for Application of Coating Systems with Zinc-Rich Primers to Steel Bridges” (aka AASHTO/NSBA Steel Bridge Collaboration S 8.1)

#### 544.3.1 Surface Preparation for Priming

The Contractor shall remove oil, grease, and other contaminants with methods specified in SSPC-SP I

Solvent Cleaning, or other Department-approved methods.

The Contractor shall blast-clean the carbon steel surfaces, in preparation for coating, in accordance with SSPC-SP 10 Near White Metal Blast Cleaning.

Prior to commencing full surface preparation activities, the Contractor shall prepare an acceptance standard on a flat portion of the surface to be cleaned, located by the Project Manager. The Project Manager shall make the final determination as to whether prepared surfaces meet the specification. The surfaces shall be evaluated using the SSPC-Vis 1, Visual Standard for Dry Abrasive Blast Cleaning. The Contractor shall provide the SSPC-Vis 1 manual for the Project Manager for inspection and acceptance. The Vis 1 Guide shall become the property of the Department.

The Contractor shall select the type of abrasive. All abrasives brought to the site shall be stored in a clean and dry environment. Abrasives shall not be recycled or re-used without NMDOT approval. The Contractor shall ensure that the abrasives produce a uniform profile from one (1) mil to three (3) mils with an angular pattern as measured in accordance with SSPC-PA 17 / ASTM D 4417 Standard Test Methods for Field Measurement of Surface Profile of Blast Cleaned Steel. If surface profile requirements of the coating manufacturer differ from those specified herein, the Contractor shall comply with the coating manufacturer's requirements. Actual replica test tapes used shall be maintained with the permanent project inspection records. The profile shall be measured a minimum of three (3) times for every 500 feet of surface area, or as directed by the Project Manager.

The Contractor shall prepare all corners, pockets, re-entrant angles, splice plates and bolted or riveted connection plates. The Contractor shall remove fins, tears, slivers, and burred or sharp edges found during the blast cleaning operation. The Contractor shall grind and re-blast the area in accordance with SSPC-SP 10 Near White Metal Blast Cleaning.

Immediately prior to coating application, the Contractor shall ensure that the surface complies with the degree of cleaning specified in SSPC-SP 10, including but not limited to ensuring the absence of dust, loose residue, oil, grease, rust or other contaminants.

### **544.3.2 Coating Preparation**

#### **544.3.2.1 Mixing Coatings**

The Contractor shall mix coatings using a power mixer. The Contractor shall not use paint shakers. The Contractor shall mix the coatings, as much as possible, in the original containers. Only complete kits shall be mixed and used.

The Contractor shall strain coatings through a 30 – 60 mesh screen, or per coating the manufacturer's recommendations. Zinc pigmented primers shall have no clumps of zinc remaining in the coating after mixing and during application.

The Contractor shall agitate mixed primers continuously from straining through application.

#### **544.3.2.2 Thinning Coatings**

The Contractor shall not thin the coatings without the approval of the Project Manager. If it is necessary to thin the coatings, the Contractor shall thin the Material in accordance with the manufacturer's recommendations.

#### **544.3.3 Temperature and Weather Limitations**

The application of a coating system shall occur only when the air and substrate temperature is within the range indicated by the manufacturer's written instructions for both application and curing and can be expected to remain in that range.

The following conditions shall be considered but shall not supersede the manufacturer's written instructions. The Contractor shall apply the coating when the air and surface temperatures are above 40 °F and at least 5 °F above the dew point. The Contractor shall apply the coatings when the relative humidity is 85% or lower. Coatings shall not be applied in rain, wind, snow, fog or mist. Coatings shall not be applied on frosted or ice-coated surfaces. The Contractor shall apply inorganic zinc primers when the relative humidity is 50% or higher. Manufacturer may require water misting of inorganic zinc primers for proper curing.

#### **544.3.4 Coating Applications**

The Contractor shall not apply coatings until the Project Manager approves the surface preparation. Prior to application of subsequent coats the Project Manager shall verify that surfaces are free of dust and any deleterious contaminants. The Project Manager may waive this approval.

When the contract requires painting more than 1,500 square feet of steel surface, the Contractor shall have a coating manufacturer representative present to provide technical assistance at the start of each coating operation.

The Contractor shall apply subsequent coats within the recoat window specified by the manufacturer. If the recoat time period is exceeded, the undercoat surface shall be specially treated as recommended by the manufacturer before subsequent coats are applied. Such treatments include but are not limited to mild abrasion, solvent treatment, or use of a fog coat.

##### **544.3.4.2 Coating Options**

The Contractor shall use one (1) of the following coating options:

1. Apply the primer, intermediate, and protective topcoat in the shop; or
2. Apply the prime coat in the shop and the intermediate and protective topcoat in the field; or
3. Apply the primer and intermediate coat in the shop and the protective topcoat in the field.

##### **544.3.4.3 Spray Equipment**

The Contractor shall apply coatings with spray nozzles at pressures recommended by the coating system manufacturer.

The Contractor shall use conventional or airless spray systems to apply the coatings, following manufacturer application instructions.

#### 544.3.4.4 Film Thickness Requirements

The Contractor shall provide coating thicknesses in accordance with Table 544.3.4.4:1, "Required Film Thicknesses." The Department will reject the coating if the DFT (dry film thickness) gauge shows less than the specified minimum thickness for any coating.

**Table 544.3.4.4:1  
Required Film Thicknesses**

<b>Coating</b>	<b>Dry film thickness range (mils)</b>
Primer	2.0 – 4.0
Intermediate	4.0 – 6.0
Polyurethane Protective Topcoat	3.0 – 5.0

The Contractor shall determine the dry film thickness using magnetic film thickness gauges, SSPC PA 2 Procedure for Determining Conformance to Dry Coating Thickness Requirements. The Contractor shall calibrate the gauges on blasted steel with plastic shims approximately the same thickness as the minimum dry film thickness. All dry film thickness requirements are to be measures above the peaks of the blast profile.

#### 544.3.4.5 Primer Application

The Contractor shall prime coat all Structural Steel surfaces, except as noted in Section 544.3.4.6, "Bolted and Welded Connections."

The Contractor shall not apply primers over blasted steel that has begun to rust or bloom. The Contractor shall apply primer in a smooth, wet, continuous film.

A stripe coat of primer material shall be applied to all edges, corners, seams, crevices, interior angles, junctions of joining members, rivets, bolt heads, nuts and threads, welds and similar irregularities. The stripe coats shall be of sufficient thickness to completely hide the surface being covered and shall be followed, as soon as practicable, by a full application of the appropriate coating to its specified thickness.

The Contractor shall apply all coatings according to the latest manufacturer's written instructions. The Contractor shall repair deficiently primed areas in accordance with the manufacturer's recommendations and as directed by the Project Manager. The Contractor shall remove dry overspray with light sanding.

The Contractor shall give steel Bridge sole plates one (1) coat of zinc rich primer. The Contractor shall mask-off strips where sole plates will be welded to beam flanges and surfaces that will be in contact with elastomeric bearing pads. After welding, the Contractor shall apply a primer touch-up to the welded areas.

#### 544.3.4.6 Bolted and Welded Connections



The Contractor shall blast clean faying (contact) surfaces in accordance with SSPC-SP 10 Near White Metal Blast Cleaning, and leave uncoated for bolting and/or field welding.

The Contractor shall make uncoated areas slightly larger than the contact areas to ensure that the bolted connections clamp down only on the blast-cleaned Material and not on painted surfaces.

The Contractor shall mask off faying areas to protect them from rust during hauling and storage. The Contractor shall apply a rust prohibitor to the faying surfaces or coat the faying areas with a Class B primer (slip coefficient equal to or greater than 0.50), as listed in Table 544.2.1:1. The Department will approve the rust prohibitor or Class B primer. Before bolting, the Contractor shall remove the rust prohibitor. The Contractor shall not remove Class B primers before bolting, unless required.

Immediately before bolting and/or field welding, the Contractor shall ensure the exposed connection areas are in accordance with SSPC-SP 10 Near White Metal Blast Cleaning. The Contractor shall apply the complete coating system to these surfaces after erection. The Contractor shall mask-off connection areas to leave neat lines between the connection area coating and previously coated areas.

The Contractor shall apply the topcoats on bolted field connections after placing the deck.

#### **544.3.4.7 Intermediate Coat Application**

After cleaning and before applying the intermediate coating system, the Contractor shall mask opposite sides of the diaphragms and stiffeners over areas that the direct tension indicators will bear on. The Contractor shall not coat these areas until after erection and bolt tightening.

Before applying the intermediate coat, the Contractor shall tie coat the galvanized components using manufacturer's recommended tie coat Material. The Contractor shall apply the tie coat with a brush.

The Project Manager will inspect the primed surfaces before the Contractor applies the intermediate coat.

The Contractor shall not apply the intermediate coat to the following Structural Steel surfaces:

1. Faying surfaces of bolted connections (Section 544.3.4.6, "Bolted and Welded Connections");
2. The top flange top surfaces of beams, girders or diaphragms to be embedded in concrete;
3. Bearing surfaces resting on concrete Substructures or are subject to sliding and rotational movement; and
4. Bearing surfaces in contact with elastomeric bearing pads.

A stripe coat of intermediate material shall be applied to all edges, corners, seams, crevices, interior angles, junctions of joining members, rivets, bolt heads, nuts and threads, welds and similar irregularities. The stripe coats shall be of sufficient thickness to completely hide the surface being covered and shall be followed, as soon as practicable, by a full application of the appropriate coating to its specified thickness.

#### **544.3.4.8 Urethane Protective Topcoat Application**

The Contractor shall apply the polyurethane protective topcoat only on cured intermediate coat.

#### **544.3.5 Handling Steel**

The Contractor shall protect uncoated faying surfaces to minimize corrosion during shipping and storage.

The Contractor shall store Structural Steel on pallets so it does not rest on dirt. The Contractor shall store beams and girders in an upright (as erected) position.

The Contractor shall use softeners to insulate steel from chains. The Contractor shall pad hooks and slings for hoisting steel. The Contractor shall space parts during shipment so that no rubbing occurs.

The Contractor shall use rubber rollers, soft support pads, or other protective devices on Equipment support members or fasteners resting on or attached to newly coated surfaces.

#### **544.3.6 Protection of the Work and the Public**

During the coating operations, the Contractor shall protect structures from blast cleaning operations, paint splatter, splashes and smirches with protective covering or other methods approved by the Project Manager.

When the protective devices or procedures are ineffective, the Project Manager may suspend the Work until corrections take place.

The Contractor shall remove blasting and coating debris from all on-site work before reopening the area to traffic.

#### **544.3.6 Field Repair of Liquid Coatings**

Field repair of liquid coatings shall be performed in accordance with Section 546 "Recoating Structures" and the manufacturer's recommendations. Field repair shall be accomplished with the same coating system used for the original application with the exception that organic zinc rich primer may always be used.

The Contractor shall field repair coated areas that are rusted or damaged. The Contractor shall prepare the surface in accordance with 546.3.1 "Surface Preparation of Existing Bridges and Structures" or with methods approved by the Project Manager.

The Contractor shall prime large areas using spray Equipment, brush, or roller. The Contractor shall prime small areas with a brush. The Contractor shall spray or brush the topcoat. Two (2) or more coats may be necessary to build up the required film thickness. The Contractor shall apply topcoat only to areas where the topcoat is damaged. Requirements of Section 546.3, "Construction Requirements" apply to field repairs.

#### **544.3.7 Inspection**

The Contractor will be responsible for performing and documenting Quality Control (QC) inspections of all shop / field surface preparation and coating activities. When the contract requires painting more than 1,500 square feet of steel surface, the Contractor shall reference Section 544.2.2.3 Contractor Qualifications. When the contract required painting less than 1,500 square feet of steel surface, the Contractor shall document all QC inspection activities, measurements and observations on the Daily Inspection report. These reports shall be submitted to the Project Manager at a minimum on a weekly basis and shall account for all work performed.

The Contractor shall notify the Project Manager at least ten (10) Days before surface preparation and/or coating to allow adequate time to plan inspection activities.

After completing erection, the Project Manager will inspect the surfaces to be embedded in concrete. The Contractor shall repair damaged or rusted surfaces before placing decks. After placing the deck and at an agreed upon time, the Project Manager will inspect the entire steel Structure for coating system damage. The Project Manager will mark damaged areas for repair and will re-inspect after repairs are complete.

#### **544.3.7 Final Operations**

##### **544.3.7.1 Final Cleaning**

The Contractor shall clean the steel Structure, bearings, and Bridge seat tops after completing coating activities.

##### **544.3.7.2 Stenciling**

At the completion of coating operations, the Contractor shall stencil in four (4) inch high black letters on the inside of the fascia girders at two (2) locations designated by the Project Manager:

1. The completion month and year;
2. The term "Section 544;" and
3. The coating manufacturer.

The Contractor shall make the markings with the same material used for the urethane protective coats.

Example: "6/93-Section 544, Excel Coatings"

#### **544.4 METHOD OF MEASUREMENT—Reserved**

#### **544.5 BASIS OF PAYMENT**

The Department will pay for the coating system as Incidental to Structural Steel, in accordance with Section 541, "Steel Structures."

March 31, 2016

## SPECIAL PROVISIONS

### MODIFYING

### SECTION 545 – PROTECTIVE COATING OF MISCELLANEOUS STRUCTURAL STEEL

The 2014 Edition of the New Mexico Department of Transportation Standard Specifications for Highway and Bridge Construction shall apply in addition to the following:

Replace **SECTION 545 PROTECTIVE COATING OF MISCELLANEOUS STRUCTURAL STEEL** in its entirety with the following:

#### **545.1 DESCRIPTION**

This Work consists of coating new steel elements including:

1. bridge railing
2. pedestrian railing
3. drop inlet grates and frames,
4. cattle guards grates,
5. field coating of new steel piling
6. CWB access panels
7. gates
8. headgates & flapgates
9. I-beam posts
10. safety grates
11. sole plates and bearing devices
12. misc. steel elements

#### **545.1.1 Terminology and Standards**

The Contractor shall use terminology in accordance with the following standards:

Society for Protective Coatings (SSPC) Painting Manual Volume 2  
Surface Preparation Standards, Guides, and Specifications, Section 2 of the SSPC Painting Manual  
Volume 2 (SSPC-SP)  
American Architectural Manufacturer's Association (AAMA)  
American Association of State Highway and Transportation Official (AASHTO)  
American Society for Testing and Materials (ASTM)  
American Institute of Steel Construction (AISC)  
National Association of Corrosion Engineers (NACE)

#### **545.2 MATERIALS**

The Contractor shall apply the coating system specified within the Contract Documents. If the Contract Documents do not specify a specific coating system, the Contractor may select the coating system from Table 545.2:1.

**Table 545.2:1**  
**Coating System Selection Matrix**

Specification Section	Coating System								Color Comments
	galvanize	3-Coat poly	2-Coat epoxy s	2-Coat epoxy f	2-Coat acrylic	Powder Coat	3-Coat poly	2-Coat acrylic	if not galvanized, color (unless otherwise noted in drawings)
	541	544	545	545	545	545	546	546	
	541.2.6.1	544.2.1	545.2.1	545.2.2	545.2.3	545.2.4	546.2.1	546.2.2	
Element									
new structural steel	X	X					R		light gray*
metal Bridge railing	X					X		R	light gray*
metal Pedestrian railing	X					X		R	light gray*
drop inlet grates & frames	X		X	X				R	light gray*
cattle guard grates			X	X				R	safety yellow
CWB Access Panels	X		X	X	X	X		R	light gray*
Gates	X		X	X	X	X		R	interstate green
Headgates & Flapgates **			X	X	X				light gray**
I-Beam Posts	X		X	X	X	X		R	interstate green
new steel pilings							X R		light gray*
sole plates & bearing devices			X					R	light gray*
safety grates	X		X	X		X		R	light gray*
Misc. steel	X		X	X	X	X		R	light gray*
Coating Component									
galvanizing	C								
inorganic zinc primer		C	C		C				
organic zinc primer				C	C		C	C	
epoxy intermediate		C					C	***	
polyurethane topcoat		C					C		
epoxy topcoat			C	C					
acrylic topcoat					C			C	
powder coating						C			

"X" denotes a coating system that is acceptable for each element. Specific coating systems noted in the Contract Documents supersede the information provided in this table.

"R" denotes the coating system that is allowable for recoating unless otherwise specified in the Contract Documents. Reference 546 "Recoating Structures" for additional information. All recoating is allowable as field applied.

"C" denotes the coating system component, reference specification section for details.

\* If the Contract does not specify a color, the Contractor shall use the color Federal Standard 16307, RAL 7004, Pantone 423, or approved equal.

\*\* If purchased as an assembly, any corrosion inhibiting coating that is provided by the manufacturer is acceptable.

\*\*\* Intermediate or tie-coat to be provided if recommended by the manufacturer.

### 545.2.1 Coating System No. 1: Shop Applied 2-Coat with Epoxy Topcoat

The Contractor shall select a complete coating system comprised of products meeting all performance requirements as listed in Table 545.2.1:1 below. Testing shall be in accordance with AASHTO R-31. All products in each system shall be from the same manufacturer. All products shall be represented on the latest version of the manufacturer's product data sheet as being suitable for use on bridges and capable of being applied at the specified dry film thickness requirements in Table 545.3.6:1.

Inorganic Zinc-Rich Primer – Shall achieve minimum SSPC Paint 20 Level 2 requirements for amount of zinc dust in the dry film of equal to or greater than 77% by weight.

Epoxy Topcoat Coat – Shall be a two-component epoxy polyamide or polyamidoamine coating, including Phenalkamine coatings with minimum solids by volume of 65%.

**Table 545.2.1:1**  
**Acceptable Product Requirements**

TEST	REF. NO.	PRODUCT(S)	ACCEPTANCE CRITERIA	COMMENTS
Slip Coefficient	ASTM A 325, Appendix A.	IOZ	Class B, Min. 0.5	
Salt Fog Resistance	ASTM B 117	P/T (IOZ)	(A) No Delamination Allowed (B) Rust – Max creep 4mm, Avg. creep 2mm @5000 Hrs. (C) Blister – Conversion #8 @ 4000 Hrs.	
Cyclic Weathering Resistance	ASTM D 5894	P/T (IOZ)	(A) No Delamination Allowed (B) Rust – Max creep 4mm, Avg. creep 2mm @5040 Hrs. (C) Blister – Conversion #9 @ 4032 Hrs.	
Adhesion Pull-Off Strength	ASTM D 4541	IOZ Alone	2.4 MPa (350 psi)	
		P/T (IOZ)	2.4 MPa (350 psi)	
Freeze-Thaw Stability Pull-Off Strength	ASTM D 4541	P/T (IOZ)	2.4 MPa (350 psi)	
			4.1 MPa (600 psi)	
			2.4 MPa (350 psi)	
			4.1 MPa (600 psi)	
Field History	NA	P/T (IOZ)	Five (5) Bridges with Minimum two (2) year successful field history	

P = Primer; T = Topcoat, IOZ = Inorganic Zinc Rich Primer

Primer information for the use of organic zinc for touch-up and repair is included in Section 546: Recoating Structures.

#### 545.2.2 Coating System No. 2: Field Applied 2 Coat with Epoxy Topcoat

The Contractor shall select products meeting all performance requirements as listed in Table 546.2.1:1 below. Testing shall be in accordance with AASHTO R-31. All products used in a system shall be from the same manufacturer. All products shall be represented on the latest version of the manufacturer's product data sheet as being suitable for use on bridges and capable of being applied at the specified dry film thickness requirements in Table 546.3.5:1.

Epoxy Organic Zinc-Rich Primer (used to prime exposed bare steel areas only, spot prime) shall achieve minimum SSPC Paint 20 Level 2 requirements for amount of zinc dust in the dry film of equal to or greater than 77% by weight.

Epoxy Top Coat over existing finishes (applied over zinc primer and other sound existing coatings deemed suitable for over coating by the coating manufacturer's representative) shall be a two-component, surface tolerant epoxy coating with minimum solids by volume of 65%.

**Table 545.2.2:1  
Acceptable Product Requirements**

TEST	REF. NO.	PRODUCT(S)	ACCEPTANCE CRITERIA	COMMENTS
Salt Fog Resistance	ASTM B 117	P/T (OZ)	(A) No Delamination Allowed (B) Rust – Max creep 8mm, Avg. creep 4mm @5000 Hrs. (C) Blister – Conversion #7 @ 4000 Hrs.	
Cyclic Weathering Resistance	ASTM D 5894	P/T (OZ)	(A) No Delamination Allowed (B) Rust – Max creep 8mm, Avg. creep 4mm @5040 Hrs. (C) Blister – Conversion #8 @ 4032 Hrs.	
Adhesion Pull-Off Strength	ASTM D 4541	OZ Alone  P/T (OZ)	  4.1 MPa (600 psi)  4.1 MPa (600 psi)	
Freeze-Thaw Stability Pull-Off Strength	ASTM D 4541	P/T (OZ)	2.4 MPa (350 psi) 4.1 MPa (600 psi) 2.4 MPa (350 psi) 4.1 MPa (600 psi)	Requires same average as adhesion pull-off strength results, with no tests measuring less than 60% of those results
Field History	NA	P/T (OZ)	Five (5) Bridges with Minimum two (2) year successful field history	

P = Primer; T = Topcoat, OZ = Epoxy Organic Zinc Rich Primer

### 545.2.3 Coating System No. 3: Shop or Field Applied 2 - Coat with Acrylic Topcoat

The Contractor shall select products meeting all performance requirements as listed in Table 545.2.1:1 above for Inorganic Zinc Rich Primer or Table 545.2.2:1 for Organic Zinc Rich Primer and 545.2.3:1 for Acrylic Top Coat below as applicable. It is acceptable to use either inorganic or organic zinc rich primer for 545.2.3 Coating System 3. All products used in a system shall be from the same manufacturer. All products shall be represented on the latest version of the manufacturer's product data sheet as being suitable for use on bridges and capable of being applied at the specified dry film thickness requirements in Table 546.3.5:1.

Epoxy Organic Zinc-Rich Primer (used to prime exposed bare steel areas) shall achieve minimum SSPC Paint 20 Level 2 requirements for amount of zinc dust in the dry film of equal to or greater than 77% by weight (Table 545.2.1:1), or;

Inorganic Zinc-Rich Primer (used to prime exposed bare steel areas) shall achieve minimum SSPC Paint 20 Level 2 requirements for amount of zinc dust in the dry film of equal to or greater than 77% by weight (Table 545.2.2:1), and;

Acrylic Topcoat (applied as overcoat over sound existing coatings deemed suitable for over coating by the coating manufacturer's representative or for repair to the finish of certain items per Section 545 Miscellaneous Steel) shall be a high performance DTM acrylic coating with minimum solids by volume of 38%. Suitable for application over zinc rich primers (Table 545.2.3:1).

Table 545.2.3:1  
Acceptable Product Requirements

TEST	REF. NO.	PRODUCT(S)	ACCEPTANCE CRITERIA	COMMENTS
Adhesion Pull-Off Strength	ASTM D 4541	HPA	> 500 lbs.	One coat applied over blasted steel
Flexibility	ASTM D 522	HPA	Pass: No cracking / flaking	1/8 " conical mandrel One coat applied over blasted steel
Hardness (Pencil)	ASTM D 3363	HPA	Final Cure: "F"	One coat applied over blasted steel
Impact	ASTM D 2794	HPA	> 140 in. lbs.	One coat applied over blasted steel

HPA = High Performance Acrylic



#### **545.2.4 Coating System No. 4 – Powder Coating**

The Contractor shall obtain primer and topcoat from one (1) manufacturer. The Contractor shall select a coating system that meets the requirements of AAMA 2604.

#### **545.2.5 Galvanizing or Zinc Coating**

Reference Section 541.2.6.1.

#### **545.2.6 Submittals**

The Contractor shall provide a submittal for the proposed coating option and manufacturer to the Project Manager at least 30 Days before coating operations. If the color varies from the specified color, the Contractor may submit color samples on boards at least eight (8) inches by ten (10) inches for review and approval.

The Department may take random coating Materials samples during the Work for testing.

When the contract requires painting more than 1,500 square feet of steel surface, the Contractor shall submit a coating plan 30 Days prior to start of coating operations. Sample coating plans are available on the NMDOT website. The Project Manager shall have the option to waive the coating plan requirement.

##### **545.2.6.1 Certification**

Prior to coating application, the Contractor shall submit:

1. Notarized manufacturer's Certificates of Compliance stating that the Materials are the same as those described in the manufacturer's product data sheets.
2. Certified test reports from an independent laboratory performed in accordance with AASHTO R-31, showing acceptable performance results as listed on the chart in Section 545.

##### **545.2.6.2 Product Data Sheets**

The Contractor shall provide manufacturer's product data sheets and SDS with each Submittal that shows the following:

1. Mixing and thinning directions;
2. Recommended spray nozzles and pressures;
3. Minimum/maximum drying time, including re-coat times, for shop or field applied coats; and
4. Manufacturer recommended application procedures, including surface preparation and temperature requirements.

#### **545.2.7 Contractor Qualifications**

When the contract requires painting more than 1,500 sq ft of steel surface, the Contractor shall demonstrate qualification by one of the following two methods:

**Method 1**

Obtain SSPC QP 1 certification for field painting or either SSPC-QP 3 certification or the AISC Sophisticated Paint Endorsement (SPE) for shop painting. The Contractor shall perform and document QA/QC inspections daily. QA/QC inspection documents shall be electronically submitted to the Project Manager on a weekly basis.

**Method 2**

Provide a coating plan and provide for NACE certified inspection (Level 2 minimum). The inspection services shall include but not be limited to:

1. Surface preparation and cleanliness inspection verifying profile and appropriate surface preparation.
2. Confirm products match approved submittals and certification letters. Document the batch numbers of all coatings.
3. Inspection of primer coat to include dry film thickness readings. Review contractors QA/QC reports for environmental conditions and document.
4. Observe application of stripe coat on the intermediate coat and document environmental readings during the start up of application. Review contractors QA/QC reports.
5. Inspect intermediate coat to include dry film thickness readings. Review Contractor's QA/QC reports.
6. Observe start up of finish coat application and document environmental conditions.
7. Final inspection to include visual inspection for runs, sags, and foreign material in coating. Also perform final dry film thickness inspection.
8. Inspect members after transportation, prior to subsequent coating and / or final acceptance.
9. Electronically submit interim reports after each inspection to the Project Manager within 3 working days.
10. Electronically submit comprehensive final report including photos to the Project Manager within 14 days of completion of inspection. Final report shall include QA/QC daily inspections performed by the Contractor.

Any deficiencies shall be corrected and reinspected by the NACE inspector prior to proceeding.

Samples of a coating plan and QA/QC inspection documents are available on the NMDOT website.

Provisions for demonstration of qualifications are incidental to the performance of the coating, no additional payment shall be made. NMDOT shall be granted open access to the coating operation to perform inspections and to review documentation of Contractor inspections.

The Project Manager shall have the option to waive the Contractor Qualification requirement for Miscellaneous Structural Steel scope.

**545.3 CONSTRUCTION REQUIREMENTS****545.3.1 Liquid Coating Systems No. 1, No. 2, and No. 3**

The Contractor shall apply coatings in conformance with SSPC – PA 1 “Shop, Field and Maintenance Painting of Steel” and with SSPC – PA Guide 13 “Guide Specification for Application of Coating Systems with Zinc-Rich Primers to Steel Bridges” (aka AASHTO/NSBA Steel Bridge Collaboration S 8.1) and the manufacturer’s application instructions.

#### **545.3.1.1 Surface Preparation**

The Contractor shall remove contaminants in accordance with SSPC-SP 1, or other methods approved by the Project Manager.

Surface preparation for all steel elements include in Section 545 shall be in accordance with SSPC-SP10 / NACE 2 Near White Blast Cleaning: When viewed without magnification shall be free of all visible oil, grease, dust, dirt, mill scale, rust, coating, oxides, corrosion products and other foreign matter of at least 95% of each unit area. Staining shall be limited to no more than 5 percent of each unit area, and may consist of light shadows, slight streaks, or minor discolorations caused by stains of rust, stains of mill scale, or stains of previously applied coatings. Unit area shall be approximately 3 in. x 3 in. (9 sq. in.).

Prepared surfaces shall be evaluated using the SSPC-VIS 3 Guide and Reference Photographs. The Contractor shall provide a current copy of the SSPC-VIS 3 Guide and Standard to the Project Manager. It shall become the property of the Department.

The Contractor shall maintain the steel dust free and prime within eight (8) hours after blast cleaning. The Contractor shall re-clean rusted or contaminated surfaces at no additional cost to the Department. The Contractor shall mask areas that require field welding before coating.

The Contractor shall clean again before applying each subsequent coat.

#### **545.3.1.2 Coating**

##### **545.3.1.2.1 Mixing the Coating**

The Contractor shall mix the coating with a power mixer to a smooth and lump-free consistency, in accordance with the coating manufacturer’s Specifications.

The Contractor shall mix the coating as much as possible in the original containers and continue mixing until the metallic powder or pigment is in suspension. The Contractor shall keep mixed primers continuously agitated before and during application.

##### **545.3.1.2.2 Thinning the Coating**

The Contractor shall not thin the coatings without the approval of the Project Manager. If it is necessary to thin the coatings, the Contractor shall thin the Material in accordance with the manufacturer’s recommendations.

##### **545.3.1.2.3 Temperature and Weather Limitations**

The Contractor shall only apply the coatings when the ambient air temperature and surface

temperature of the steel are both above 50 °F and at least five (5) °F above the dew point.

The Contractor shall not apply the coatings when there is condensation or frost on the metal surfaces.

The Contractor shall not apply the coatings when the relative humidity is higher than 85 percent.

#### **545.3.1.2.4 Coating Applications**

The Contractor shall not apply coating until the Department approves the surface preparation. The Department may waive this inspection.

A stripe coat of primer and intermediate material shall be applied to all edges, corners, seams, crevices, interior angles, junctions of joining members, rivets, bolt heads, nuts and threads, welds and similar irregularities. The stripe coats shall be of sufficient thickness to completely hide the surface being covered and shall be followed, as soon as practicable, by a full application of the appropriate coating to its specified thickness.

The Contractor shall repair coated areas where the primer or topcoat runs, sags or cracks.

The Contractor shall not apply any coating until the previous coat has fully cured or per the manufacturer's application requirements.

The Contractor shall allow the manufacturer's minimum recommended cure time to lapse between coats. If more than 30 Days elapse between the primer application and the topcoat application, the Contractor shall contact the coating system manufacturer for surface preparation recommendations before applying subsequent coats.

The Department may accept minor cosmetic defects in ground level miscellaneous Structural Steel components not in public view, if the defects will not affect durability.

#### **545.3.1.2.5 Required Coating of Components**

The Contractor shall apply the primer and topcoat to steel surfaces, except those that will contact elastomeric bearing pads or are subject to sliding and rotational movements.

The Contractor shall coat new steel piling from the bottoms of the pier caps to two (2) ft. below the finished grade or streambed elevations.

#### **545.3.1.2.6 Coating of Sole Plates for Concrete Bridges**

The Contractor shall deliver sole plates to the Project with one (1) coat of primer applied to all surfaces except masked-off strips, where the sole plates will be welded to the shoe plates, and surfaces that will contact elastomeric bearing pads.

Before installation, the Contractor shall clean surfaces that will contact pads in accordance with SSPC-SP 6. The Contractor shall clean off all rust on sole plates prior to installing and welding.

After installing the pads and welding the sole plates to the shoe plates, the Contractor shall touch up the primer and apply topcoat to exposed surfaces.

#### 545.3.1.2.7 Spray Equipment

The Contractor shall apply the coatings with spray nozzles at the manufacturer recommended pressures.

#### 545.3.1.2.8 Film Thickness Requirements

The Contractor shall apply coatings in accordance with Table 545.3.1.2.8:1, "Required Film Thicknesses."

<b>Table 545.3.1.2.8:1 Required Film Thicknesses</b>	
<b>Coating</b>	<b>Dry film thickness range (mils)</b>
Primer (IOZ) OR	2 - 4
Primer (OZ)	3 - 5
Topcoat (epoxy) OR	4 - 6
Topcoat (acrylic)	2 - 4

#### 545.3.1.2.9 Field Repair of Liquid Coatings

Field repair of liquid coatings shall be performed in accordance with Section 546 "Recoating Structures" and the manufacturer's recommendations. Field repair shall be accomplished with the same coating system used for the original application with the exception that organic zinc rich primer may always be used.

The Contractor shall field repair coated areas that are rusted or damaged. The Contractor shall prepare the surface in accordance with 546.3.1 "Surface Preparation of Existing Bridges and Structures" or with methods approved by the Project Manager.

The Contractor shall prime large areas using spray Equipment, brush, or roller. The Contractor shall prime small areas with a brush. The Contractor shall spray or brush the topcoat. Two (2) or more coats may be necessary to build up the required film thickness. The Contractor shall apply topcoat only to areas where the topcoat is damaged. Requirements of Section 546.3, "Construction Requirements" apply to field repairs.

### 545.3.2 Powder Coating System No. 3

#### 545.3.2.1 Surface Preparation

The Contractor shall remove contaminants in accordance with SSPC-SP 1, or other methods approved by the Project Manager. The Contractor shall blast clean in accordance with SSPC-SP10 Near-

White Metal Blast Cleaning. Additionally, for powder-coated surfaces, an iron or zinc phosphate wash shall be included to provide long-term corrosion protection.

#### 545.3.2.2 Primer Application

The Contractor shall use a primer that is a zinc rich epoxy powder coating designed for use over ferrous metal substrates. The Contractor shall apply the zinc rich epoxy powder coat primer to a minimum of two (2) mils dry film thickness, above the peaks of any blast profile.

#### 545.3.2.3 Topcoat Application

The Contractor shall use a topcoat that is a super durable polyester powder coating designed to provide for maximum UV exposure protection. The Contractor shall apply the polyester topcoat to a minimum of three (3) mils dry film thickness before the primer has cured or as recommended by the manufacturer.

**Table 545.3.2.3:1  
Required Film Thicknesses**

<b>Coating</b>	<b>Dry film thickness range (mils)</b>
Zinc-rich epoxy primer	Min. 2 mils
Polyester topcoat	Min. 3 mils

The Contractor shall use a magnetic film thickness gage or an electronic film thickness detector to determine dry film thickness per SSPC – PA 2 "Procedure for Determining Conformance to Dry Coating Thickness Requirements".

#### 545.3.2.4 Fixturing

The Contractor shall suspend the components by suitable metal hooks or fixtures to provide a sufficient electrical grounding path. The Contractor shall affix the components with a minimum of direct contact area with the fixture device.

#### 545.3.2.5 Curing

The Contractor shall place the powder-coated components in a suitable oven and cure per the manufacturer's recommended cure cycle. The Contractor shall remove the components from the oven and allow cooling. The Contractor shall visually inspect the components to ensure a smooth continuous uniform finish, free from runs, sags, pinholes or other defects.

#### 545.3.2.6 Touch-up Painting / Field Repair of Powder Coatings

Field repair of powder coatings shall be performed in accordance with Section 546 "Recoating Structures" and the manufacturer's recommendations. The Contractor shall use Coating System No. 1 from Section 546.2.1, using the epoxy organic zinc-rich primer only where bare metal is exposed.

The Contractor shall field repair coated areas that are rusted or damaged.

#### **545.4.8 Handling Steel**

The Contractor shall handle or load newly coated Structural Steel only when the coating has fully cured.

The Contractor shall store coated components on pallets or in other approved ways so that the steel does not rest on soil.

The Contractor shall protect steel coatings from binding chains with approved softeners. The Contractor shall hoist with padded hooks and slings. The Contractor shall space parts during shipment to ensure that no rubbing occurs.

#### **545.4.9 Provisions for Inspection**

The Contractor will be responsible for performing and documenting Quality Control (QC) inspections of all shop / field surface preparation and coating activities. When the contract requires painting more than 1,500 sq. ft. of steel surface, the Contractor shall reference Section 544.2.2.3 Contractor Qualifications. When the contract required painting less than 1,500 sq. ft. of steel surface, the Contractor shall document all QC inspection activities, measurements and observations on the Daily Inspection report. These reports shall be submitted to the Project Manager at a minimum on a weekly basis and shall account for all work performed.

The Contractor shall notify the Project Manager at least ten (10) Days before surface preparation and/or coating to allow adequate time to plan inspection activities.

After completing erection, the Project Manager will inspect the surfaces to be embedded in concrete. The Contractor shall repair damaged or rusted surfaces before placing decks. After placing the deck and at an agreed upon time, the Project Manager will inspect the entire steel Structure for coating system damage. The Project Manager will mark damaged areas for repair and will re-inspect after repairs are complete.

#### **545.4.10 Protection of the Work and Public**

During the coating operations, the Contractor shall protect the work and the public from blast cleaning operations, paint splatter, splashes and smirches with protective covering or other methods approved by the Project Manager.

When the protective devices or procedures are ineffective, the Project Manager may suspend the Work until corrections take place.

#### **545.4.11 METHOD OF MEASUREMENT—Reserved**

#### **545.4.12 BASIS OF PAYMENT**

The Department will pay for the coating system as Incidental to Structural Steel, in accordance with Section 541, "Steel Structures."

September 15, 2017

**SPECIAL PROVISIONS  
MODIFYING  
SECTION 546: RECOATING STRUCTURES**

The 2014 Edition of the New Mexico Department of Transportation Standard Specifications for Highway and Bridge Construction shall apply in addition to the following:

Replace **Section 546 – Recoating Structures** in its entirety with the following:

**SECTION 546: RECOATING STRUCTURES**

**546.1 DESCRIPTION**

This Work consists of surface preparation and recoating existing Structural Steel. Touch-up paint of surfaces coated per Sections 544, 545 and 546 is included.

The Contractor shall adhere to Section 547: Safety and Environmental Requirements for Painting Operations.

**546.2 MATERIALS**

Projects that require SSPC – SP 6 shall engage 546.2.1 Coating System 1, unless otherwise specified in the contract documents.

Projects that require SSPC – SP 3, SSPC – SP 11, and/or SSPC 16 shall engage 546.2.2 Coating System 2, unless otherwise specified in the contract documents.

Reference 545.2:1 for additional information regarding coating systems that are allowable for specific elements.

If the Contract does not specify a color, the Contractor shall use the color Federal Standard 16307, RAL 7004, Pantone 423, or approved equal. If another color is specified in the Contract, the Contractor shall select an approved system that is available in the specified color.

All products shall be on the Approved Products List.

**546.2.1 Coating System No. 1 – Polyurethane Topcoat**

The Contractor shall select products meeting all performance requirements as listed in Table 546.2.1:1 below. Testing shall be in accordance with AASHTO R-31. All products used in a system shall be from the same manufacturer. All products shall be represented on the latest version of the manufacturer's product data sheet as being suitable for use on bridges and capable of being applied at the specified dry film thickness requirements in Table 546.3.5:1.

Epoxy Organic Zinc-Rich Primer shall achieve minimum SSPC Paint 20 Level 2 requirements for



amount of zinc dust in the dry film of equal to or greater than 77% by weight. Epoxy Organic Zinc-Rich Primer shall not be required when surface preparation of SSPC – SP 3 and / or SSPC – SP 11 are employed.

Epoxy Intermediate Coat or Tie-Coat over existing finishes shall be a two-component epoxy, polyamide or polyanidoamine, including phenikamine coating with minimum solids by volume of 65%. Epoxy Intermediate Coat or Tie-Coat shall be required unless specifically excluded by the manufacturer in the compatibility confirmation letter that shall be submitted per 546.2.3.

Polyurethane Topcoat shall be a two-component aliphatic polyurethane coating with minimum solids by volume of 65%.

**Table 546.2.1:1**  
**Acceptable Product Requirements**

TEST	REF. NO.	PRODUCT(S)	ACCEPTANCE CRITERIA	COMMENTS
Salt Fog Resistance	ASTM B 117	P/I/T (OZ)	(A) No Delamination Allowed (B) Rust – Max creep 8mm, Avg. creep 4mm @5000 Hrs. (C) Blister – Conversion #7 @ 4000 Hrs.	
Cyclic Weathering Resistance	ASTM D 5894	P/I/T (OZ)	(A) No Delamination Allowed (B) Rust – Max creep 8mm, Avg. creep 4mm @5040 Hrs. (C) Blister – Conversion #8 @ 4032 Hrs.	
Adhesion Pull-Off Strength	ASTM D 4541	OZ Alone  P/I/T (OZ)	4.1 MPa (600 psi)  4.1 MPa (600 psi)	
Freeze-Thaw Stability Pull-Off Strength	ASTM D 4541	P/I/T (OZ)	2.4 MPa (350 psi) 4.1 MPa (600 psi) 2.4 MPa (350 psi) 4.1 MPa (600 psi)	Requires same average as adhesion pull-off strength results, with no tests measuring less than 60% of those results
Field History	NA	P/I/T (OZ)	Five (5) Bridges with Minimum two (2) year successful field history	

P = Primer; I = Intermediate coat; T = Topcoat; OZ = Epoxy Organic Zinc Rich Primer

#### 546.2.2 Coating System No. 2 – Acrylic Topcoat

The Contractor shall select products meeting all performance requirements as listed in Table 546.2.1:1 above and 546.2.2:1 below as applicable. All products used in a system shall be from the same manufacturer. All products shall be represented on the latest version of the manufacturer's product data sheet as being suitable for use on bridges and capable of being applied at the specified dry film thickness requirements in Table 546.3.5:1.

Epoxy Organic Zinc-Rich Primer shall achieve minimum SSPC Paint 20 Level 2 requirements for amount of zinc dust in the dry film of equal to or greater than 77% by weight (Table 546.2.1:1). Epoxy Organic Zinc-Rich Primer shall not be required when surface preparation of SSPC – SP 3 and / or SSPC – SP 11 are employed.

Epoxy Intermediate Coat or Tie-Coat over existing finishes shall be a two-component epoxy, polyamide or polyanidoamine, including phenikamine coating with minimum solids by volume of 65% (Table 546.2.1:1). Epoxy Tie-Coat shall be required unless specifically excluded by the manufacturer in the compatibility confirmation letter that shall be submitted per 546.2.3.

Acrylic Topcoat shall be a high performance DTM acrylic coating with minimum solids by volume of 38% (Table 546.2.2:1).

**Table 546.2.2:1**  
**Acceptable Product Requirements**

TEST	REF. NO.	PRODUCT(S)	ACCEPTANCE CRITERIA	COMMENTS
Adhesion Pull-Off Strength	ASTM D 4541	HPA	> 500 lbs.	One coat applied over blasted steel
Flexibility	ASTM D 522	HPA	Pass: No cracking / flaking	1/8 " conical mandrel One coat applied over blasted steel
Hardness (Pencil)	ASTM D 3363	HPA	Final Cure: "F"	One coat applied over blasted steel
Impact	ASTM D 2794	HPA	> 140 in. lbs.	One coat applied over blasted steel

HPA = High Performance Acrylic

The Contractor may substitute Polyurethane topcoat for Acrylic topcoat at their discretion pending full system submittal and approval.

### 546.2.3 Submittals

In addition to the submittals require per Section 106 Control of Materials, the Contractor shall provide the following submittals to the Project Manager at least 30 Days before coating operations:

1. Product data and SDS for each product in the system
2. Surface preparation requirements
3. Application instructions
  - a. Mixing and thinning directions
  - b. Recommended spray nozzles and pressures
  - c. Minimum / maximum drying times, including re-coat times for shop or field coatings
  - d. Temperature requirements
4. Letter from the manufacturer detailing the coating system components and the compatibility of those components to adjacent materials including but not limited to:
  - a. every product in the system (primer, intermediate, topcoat, etc)
  - b. any preapplied or preexisting products (such as existing coatings)
  - c. any post applied products (such as anti-graffiti coating)
  - d. any modifications to the surface preparation or application instructions related to the total system performance.
5. If the color varies from the specified color, the Contractor shall submit color samples on boards at least eight (8) inches by ten (10) inches for review and approval.
6. Documentation related to Contractor Qualifications per 546.2.3.1

Prior to coating application, the Contractor shall submit a notarized manufacturer's Certificates of Compliance stating that the Materials are the same as those described in the manufacturer's product data sheets.

#### **546.2.3.1 Contractor Qualifications**

When the contract requires painting more than 500 square feet of steel surface, the Contractor shall demonstrate qualification by one of the following two methods:

##### **Method 1**

Obtain SSPC QP 1 certification for field painting or either SSPC-QP 3 certification or the AISC Sophisticated Paint Endorsement (SPE) for shop painting. The Contractor shall perform and document QA/QC inspections daily. QA/QC inspection documents shall be electronically submitted to the Project Manager on a weekly basis.

##### **Method 2**

Provide a coating plan and provide for NACE certified inspection (Level 2 minimum). The inspection services shall include but not be limited to:

1. Surface preparation and cleanliness inspection verifying profile and appropriate surface preparation.
2. Confirm products match approved submittals and certification letters. Document batch numbers of all coatings.
3. Inspection of primer coat to include dry film thickness readings. Review contractors QA/QC reports for environmental conditions and document.
4. Observe application of stripe coat on the intermediate coat and document environmental readings during the start-up of application. Review contractors QA/QC reports.
5. Inspect intermediate coat to include dry film thickness readings. Review Contractor's QA/QC reports.
6. Observe start-up of finish coat application and document environmental conditions.

7. Final inspection to include visual inspection for runs, sags, and foreign material in coating. Also perform final dry film thickness inspection.
8. Inspect members after transportation, prior to subsequent coating and / or final acceptance.
9. Electronically submit interim reports after each inspection to the Project Manager within 3 working days.
10. Electronically submit comprehensive final report including photos to the Project Manager within 14 Days of completion of inspection. Final report shall include QA/QC daily inspections performed by the Contractor.

Any deficiencies shall be corrected and re-inspected by the NACE inspector prior to proceeding.

Provisions for demonstration of qualifications are incidental to the performance of the coating, no additional payment shall be made. NMDOT shall be granted open access to the coating operation to perform inspections and to review documentation of Contractor inspections. The Project Manager shall have the option to waive the Contractor Qualification requirement.

### **546.3 CONSTRUCTION REQUIREMENTS**

The Contractor shall apply coatings in conformance with SSPC – PA 1 “Shop, Field and Maintenance Painting of Steel” and with SSPC – PA Guide 13 “Guide Specification for Application of Coating Systems with Zinc-Rich Primers to Steel Bridges” (aka AASHTO/NSBA Steel Bridge Collaboration S 8.1), SSPC-TU 3 “Technical Update No. 3 Overcoating”, and the manufacturer’s application instructions.

#### **546.3.1 Surface Preparation of Existing Bridges and Structures**

The Contractor shall perform surface preparation in accordance with the most stringent of the following:

1. At locations where loosely adherent coatings or corrosion are NOT present: SSPC – SP 1, and
2. At locations where loosely adherent coatings are present: SSPC – SP 3, and
3. At locations where corrosion is present: SSPC – SP 11 or
4. Specific contract document requirements or
5. Specific guidance by the Project Manager or
6. Manufacturer recommendations (per the application instructions as amended by the manufacturer’s letter submitted per 546.2.3 #4d if applicable)

##### **546.3.1.1 Surface Preparation Description and Evaluation**

Various SSPC surface preparation standards are cited in this section. For reference, a brief summary of each is listed below. The Contractor is responsible to perform to the current versions of all requirements of the full and complete standards available directly from SSPC, The Society for Protective Coatings.

###### **SSPC-SP1 Solvent Cleaning**

Removes all visible oil, grease, soil, drawing and cutting compounds, and other soluble contaminants from steel surfaces with solvent, vapor, cleaning compound, alkali, emulsifying

agent, or steam. SSPC-SP 1 is a prerequisite to all hand tool, power tool and abrasive cleaning standards. SSPC-SP1 shall be incidental.

#### SSPC-SP3 Power Tool Cleaning

Removes all loose mill scale, loose rust, loose paint, and other loose detrimental foreign matter by power wire brushing, power sanding, power grinding, power tool chipping, and power tool descaling. Tightly adherent, intact materials may remain.

#### SSPC-SP6 Commercial Blast Cleaning

When viewed without magnification shall be free of all visible oil, grease, dirt, dust, loose mill scale, rust, and coating, but will permit staining from rust, mill scale, or previously applied coatings. The surface will not necessarily be uniform in color.

#### SSPC-SP7 / NACE 4 Brush-Off Blast Cleaning

When viewed without magnification, the surface shall be free of all visible oil, grease, dirt, dust, loose mill scale, loose rust, and loose coating. Tightly adherent mill scale, rust, and coating may remain on the surface. Mill scale, rust, and coating are considered tightly adherent if they cannot be removed by lifting with a dull putty knife.

#### SSPC-SP10 / NACE 2 Near-White Blast Cleaning

When viewed without magnification shall be free of all visible oil, grease, dust, dirt, mill scale, rust, coating, oxides, corrosion products and other foreign matter of at least 95% of each unit area. Staining shall be limited to no more than 5 percent of each unit area, and may consist of light shadows, slight streaks, or minor discolorations caused by stains of rust, stains of mill scale, or stains of previously applied coatings. Unit area shall be approximately 3 in. x 3 in. (9 sq. in.). SSPC-SP10 shall only be engaged when required by the manufacturer. It shall be paid under the bid item for SSPC-SP6.

#### SSPC-SP11 Power Tool Cleaning to Bare Metal

When viewed without magnification, the surface shall be free of all visible oil, grease, dirt, dust, mill scale, rust, paint, oxides, corrosion products, and other foreign matter. Slight residues of rust and paint may be left in the lower portion of pits if the original surface is pitted. The surface profile shall not be less than 1 mil (25 microns).

SSPC-SP16 Brush-Off Blast Cleaning of Coated and Uncoated Galvanized Steel, Stainless Steels, and Non-Ferrous Metals. When viewed without magnification, the surface shall be free of all visible oil, grease, dirt, dust, metal oxides (corrosion products), and other foreign matter. Intact, tightly adherent coating is permitted to remain. A coating is considered tightly adherent if it cannot be removed by lifting with a dull putty knife. The surface shall have a minimum profile of 0.75 mil (19 microns).

Prepared surfaces shall be evaluated using the SSPC standards. The following references will be provided to the Project Manager by the Contractor for inspection and acceptance of prepared surfaces:

- If SP 10, SP 6, SP 14 or SP 7 are engaged: SSPC-VIS 1 Guide and Standard (includes reference photographs)

- If SP 2, SP 3, SP 11 are engaged: SSPC-VIS 3 Guide and Standard (includes reference photographs)
- If SP 12 is engaged: SSPC-VIS 4 Guide and Standard (includes reference photographs)

SSPC VIS Guide and Standard shall become the property of the Department. Provide current version.

#### **546.3.1.2 SSPC-SP 1 - Solvent and Pre-Cleaning**

The Contractor shall clean exposed areas in accordance with SSPC-SP 1 Solvent Cleaning.

The Project Manager may approve cleaning with high pressure water and an approved, mild detergent to supplement solvent cleaning, where more effective or suitable. This method of pre-cleaning is required on all surfaces that have been exposed to chloride contamination from the use of road salts for snow and ice control.

#### **546.3.1.3 SSPC-SP 3 Power-Tool Cleaning**

The Contractor shall remove poorly adhering coatings and prepare the surface with power-tools in accordance with SSPC-SP 3, Power Tool Cleaning. At the Contractor's discretion, SSPC-SP 7 or SSPC \_ SP 12 WJ 3 may be employed in lieu of SSPC-SP 3.

#### **546.3.1.4 SSPC-SP 6 – Commercial Blast Cleaning**

The requirement for commercial blast cleaning shall be established by the more stringent of contract documents or the manufacturer's recommendations.

#### **546.3.1.5 SSPC-SP 7 – Brush-Off Wet Blast Cleaning**

The requirement for brush-off wet blast cleaning shall be established by the more stringent of contract documents or the manufacturer's recommendations. Acceptability of wet cleaning shall be determined by the Project Manager as confirmed against project environmental constraints.

#### **546.3.1.6 SSPC-SP 10 – Near-White Blast Cleaning**

The requirement for near-white blast cleaning shall be established by the manufacturer's recommendations. SSPC-SP 10 shall be paid under the same bid item as SSPC-SP 6.

#### **546.3.1.7 SSPC-SP 11 – Power-Tool Cleaning to Bare Metal**

The Contractor shall clean areas that show moderate to severe corrosion in accordance with SSPC-SP 11, *Power-Tool Cleaning to Bare Metal*. Areas too large to be prepared using power tools may be cleaned per SSPC SP-6 Commercial Blast Cleaning at the Contractor's discretion.

The Project Manager will mark additional areas for cleaning in accordance with SSPC-SP 11. The Contractor shall clean at least two (2) inches beyond the damaged areas in all directions. The Contractor shall feather the exposed edges of the cleaned areas in accordance with SSPC-SP 11. The Contractor

shall not leave ragged edges of intact paint. During and after power-tool cleaning, the Contractor shall maintain the degree of cleaning specified in accordance with SSPC-SP 11.

The Department will accept these surfaces by visually comparing them to a prepared standard on the Project. The Contractor shall prepare a Project standard by power-tool cleaning an area designated for recoating. Before cleaning, the Contractor shall ensure that the prepared standard is in accordance with SSPC-Vis 3, *Visual Standard for Power and Hand-Tool Cleaned Steel*, Pictorial Standard E SP 11, F SP 11, and G SP 11, and obtain Department approval. The Contractor shall prepare at least one (1) standard for each Structure. More than one (1) standard may be necessary if the cleaned steel differs significantly from the photographic standards. For recoating Bridges, the Contractor shall make the standard at least one (1) ft. × one (1) ft. For recoating Bridge railing or minor Structures, the standard may be smaller. The Contractor shall protect the Project standard from corrosion and contamination by applying a clear polyurethane coat. Upon completing the cleaning Work, the Contractor shall re-clean and coat the standard. If the standard becomes deteriorated or ineffective, the Contractor shall re-establish it at no additional cost to the Department.

The SSPC VIS 1 "Guide and Reference Photographs for Steel Surfaces Prepared by Dry Abrasive Blast Cleaning" shall be used in this same manner to prepare a standard for surfaces that are blast cleaned per SSPC SP-7 and SP-10.

SSPC \_ SP 12 WJ 3 may be employed in lieu of SSPC-SP 3. At the Contractor's discretion, SSPC-SP 7 or

#### **546.3.1.8 SSPC-SP 12 WJ-3 – Thorough Waterjetting**

The requirement for thorough waterjetting shall be established by the more stringent of contract documents or the manufacturer's recommendations. Acceptability of waterjet cleaning shall be determined by the Project Manager as confirmed against project environmental constraints.

#### **546.3.1.9 SSPC SP-16 – Galvanized Surfaces**

Previously galvanized surfaces shall be prepared by the Contractor in accordance with SSPC-SP16 – Brush-Off Blast Cleaning of Coated and Uncoated Galvanized Steel. Brush-off blast cleaning includes SSPC-SP1 solvent cleaning or other method approved by the project manager to remove oil, grease, or other contaminants. The SSPC-SP1 is followed by a dry abrasive blasting using compressed air, blast nozzles, and abrasives. To avoid formation of zinc oxides that will result in potential coating failure, blast cleaning must occur when the surface temperature is a minimum of 5 degrees above the dew point and the surface cannot be permitted to get damp after cleaning. The Contractor shall apply coating as soon as possible after surface cleaning.

The Contractor shall apply intermediate and top coat products in accordance with manufacturer's application instructions and this specification.

#### **546.3.1.10 Preparing Glossy Surfaces**

All previously coated glossy surfaces shall be lightly abraded / deglossed prior to re-coating.

#### **546.3.1.11 Testing for Chloride Contamination**

Prepared surfaces with exposed metal will be tested by the Contractor for chloride contamination. All test areas will be recorded for retesting purposes. A minimum of five (5) tests per 1,000 s.f. or fraction thereof shall be conducted prior to surface preparation. If results greater than 7micrograms per cubic centimeter are detected, the surface shall be re-cleaned as specified and re-tested at the same frequency. If acceptable results are achieved, surface preparation may begin.

#### **546.3.1.9 Abrasives Used in Blast Cleaning Operations**

When blast cleaning options are employed in lieu of SSPC SP – 3 and SP – 11 standards (ie SP-7 and SP-6), the Contractor shall select the type of abrasive. All abrasives brought to the site shall be stored in a clean and dry environment. Abrasives shall not be recycled or re-used without NMDOT approval.

#### **546.3.1.10 Limited Access Areas**

A best effort with the specified methods of cleaning shall be performed in limited access areas. These methods may need to be supplemented with other equipment such as angle nozzles, to properly clean the limited access areas. The acceptability of the best effort cleaning in these areas is at the sole discretion of the Project Manager.

When replacing a concrete Bridge deck, the Contractor shall not clean or coat the top surfaces of top flanges of beams and girders and shear connectors.

#### **546.3.1.11 Chemical Paint Removal**

Chemical removal products and methods may be approved by the Department.

### **546.3.2 Coating**

#### **546.3.2.1 Mixing the Coatings**

The Contractor shall mix the coatings with a power mixer in accordance with the coating manufacturer's directions until the Material is smooth and lump-free. The Contractor shall not use paint shakers.

The Contractor shall mix the Material as far as possible in its original container and continue mixing until the metallic powder or pigment is in suspension.

The Contractor shall thoroughly disperse the coating solids that may have settled to the bottom of the container. The Contractor shall strain coatings through a 30 – 60 mesh screen, or per coating manufacturer's recommendations.

The Contractor shall continuously agitate mixed coatings until application.

#### **546.3.2.2 Thinning the Coating**

The Contractor shall not thin the coatings without the approval of the Project Manager. If it is necessary to thin the coatings, the Contractor shall thin the Material in accordance with the manufacturer's



recommendations.

### **546.3.2.3 Coating Application**

The Contractor shall apply the coating system with a brush, roller, or by spraying (preferred). The Contractor shall use nozzles and pressures in accordance with the manufacturer's recommendations.

A stripe coat shall be applied to all edges, corners, seams, crevices, interior angles, junctions of joining members, rivets, bolt heads, nuts and threads, welds and similar irregularities. The stripe coats shall be of sufficient thickness to completely hide the surface being covered and shall be followed, as soon as practicable, by a full application of the appropriate coating to its specified thickness.

### **546.3.2.4 Temperature and Weather Limitations**

#### **546.3.2.4.1 Temperature**

The Contractor shall apply the coating when the air and surface temperatures are above 50 °F and at least five (5) °F above the dew point.

The Contractor shall not apply coatings on metal surfaces with condensation or frost.

#### **546.3.2.4.2 Humidity**

The Contractor shall not apply the coatings when the relative humidity is above 85 %.

### **546.3.3 Priming**

The Contractor shall prime coat all steel surfaces prepared in accordance with SSPC SP-11. The Contractor shall apply primer the same day as cleaning, unless otherwise authorized by the Project Manager. The Contractor shall re-clean surfaces that develop rust or are contaminated with deleterious material before coating, at no additional cost to the Department.

### **546.3.4 Intermediate and Topcoat**

The Contractor shall ensure the primer is cured and dry before applying subsequent coats.

The Contractor shall not allow the manufacturer's recommended maximum time to lapse between coats.

### **546.3.5 Thickness of Coatings**

The Department will reject the coating if the DFT (dry film thickness) gauge shows less than the specified minimum thickness for any coating. The Contractor shall provide coating thicknesses in accordance with Table 546.3.5:1, "Required Film Thicknesses."

**Table 546.3.5:1**  
**Required Film Thicknesses**

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Coating	Dry film thickness range (mils)
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Coating System No. 1 - Polyurethane Topcoat Overcoat / Repair System (As required For Surfaces Coated Per Section 544 New Structural Steel and Certain Items Per Section 545 Miscellaneous Steel)

Primer (epoxy organic zinc)	3.0 – 5.0 mils
Intermediate (epoxy)	5.0 – 8.0 mils
Topcoat (polyurethane)	3.0 – 5.0 mils

Coating System No. 2 - Acrylic Topcoat Overcoat / Repair System (As Required for Designated Items Per Section 545 Miscellaneous Steel)

Primer (epoxy organic zinc)	3.0 – 5.0 mils
Topcoat (acrylic)	2.0 – 4.0 mils

The Contractor shall determine the dry film thickness using magnetic film thickness gauges, per latest version of SSPC PA-2 Procedure for Determining Conformance to Dry Coating Thickness Requirements. The Contractor shall calibrate the gauges on blasted steel with plastic shims approximately the same thickness as the minimum dry film thickness. All dry film thickness requirements are to be measures above the peaks of the blast profile.

#### 546.3.6 Field Repair of Liquid Coatings

Field repair shall be accomplished with the same coating system used for the original application with the exception that organic zinc rich primer may always be used.

The Contractor shall field repair coated areas that are rusted or damaged. The Contractor shall prepare the surface in accordance with 546.3.1 "Surface Preparation of Existing Bridges and Structures" or with methods approved by the Project Manager.

The Contractor shall prime large areas using spray Equipment, brush, or roller. The Contractor shall prime small areas with a brush. The Contractor shall spray or brush the topcoat. Two (2) or more coats may be necessary to build up the required film thickness. The Contractor shall apply topcoat only to areas where the topcoat is damaged.

#### 546.3.7 Protection of the Work and Public

During the coating operations, the Contractor shall protect the work and the public from blast cleaning operations, paint splatter, splashes and smirches with protective covering or other methods approved by the Project Manager.

When the protective devices or procedures are ineffective, the Project Manager may suspend the Work until corrections take place.

The Contractor shall remove blasting and coating debris from all on-site work before reopening the area to traffic.

#### **546.3.8 Inspection**

The Contractor will be responsible for performing and documenting Quality Control (QC) inspections of all shop / field surface preparation and coating activities. When the contract requires painting more than 500 square feet of steel surface, the Contractor shall reference Section 544.2.2.3 Contractor Qualifications. When the contract required painting less than 500 square feet of steel surface, the Contractor shall document all QC inspection activities, measurements and observations on the Daily Inspection report. These reports shall be submitted to the Project Manager at a minimum on a weekly basis and shall account for all work performed.

The Contractor shall notify the Project Manager at least ten (10) Days before surface preparation and/or coating to allow adequate time to plan inspection activities.

After completing erection, the Project Manager will inspect the surfaces to be embedded in concrete. The Contractor shall repair damaged or rusted surfaces before placing decks. After placing the deck and at an agreed upon time, the Project Manager will inspect the entire steel Structure for coating system damage. The Project Manager will mark damaged areas for repair and will re-inspect after repairs are complete.

#### **546.4 METHOD OF MEASUREMENT**

The Project Manager will measure cleaned areas in accordance with SSPC-SP 11 and SSPC-SP 3 before the application of the prime coat.

#### **546.5 BASIS OF PAYMENT**

<b>Pay Item</b>	<b>Pay Unit</b>
Recoating Structures	Lump Sum
SP 6 Commercial Blast Cleaning	Lump Sum
SP 3 Power Tool Cleaning	Square Foot
SP 11 Power Tool Cleaning	Square Foot
SP 16 Brush-Off Blast Cleaning of Galvanized Steel	Lump Sum

##### **546.5.1 Work Included in Payment**

The following items will be considered as included in the payment for Recoating Structures and will not be measured and paid for separately:

1. Cleaning all exposed areas of existing steel members in accordance with SSPC-SP 1;
2. When SSPC-SP 6 is performed at the Contractor's discretion in lieu of SSPC-SP 11, SSPC-SP 11 shall be used as the pay item;

3. When SSPC-SP 7 is performed at the Contractor's discretion in lieu of SSPC-SP 3, SSPC-SP 3 shall be used as the pay item;
4. SSPC-SP 11 power-tool cleaning and priming of those areas designated in the Contract to be so included in the Lump sum price.
5. SSPC-SP 3 power-tool cleaning and priming of those areas designated in the Contract to be so included in the Lump sum price;
6. When the manufacturer requires surface preparation other than SSPC-SP 6, 3, 11, or 16 and the surface preparation is not called out to be incidental to other bid items, the surface preparation shall be paid through an existing pay item that is closest in effort to that required. The Project Manager shall determine which pay item shall be used.
7. Furnishing and applying the appropriate coating system to all exposed steel surfaces of the structure;
8. Any field touch-up required to correct shipping or installation damage.
9. Final cleanup of the structure and the immediate area; and
10. Re-caulking the perimeters of all railing post base plates per Section 543.

September 15, 2017

## SPECIAL PROVISIONS MODIFYING SECTION 548 COATING OF CONCRETE

The 2014 Edition of the New Mexico Department of Transportation Standard Specifications for Highway and Bridge Construction shall apply in addition to the following:

### 548.1 DESCRIPTION

This Work consists of applying Class 4, Special Surface Finish to concrete. Reference 511.3.8 "Finishing" for additional required surface treatment. This section includes specifications for colored concrete stain/sealer, thin film liquid applied coatings (referred to as paint), and textured coating.

For Penetrating Water Repellent Treatment, see Section 532. For Permanent Anti-Graffiti Protective Coating, see Section 531.

### 548.2 MATERIALS

The following coating systems are included in this specification:

1. Coating System 548-1: colored concrete stain/sealer
2. Coating System 548-2: paint
3. Coating System 548-3: textured coating

When the Contract Documents require a Class 4 Special Surface Finish, the Contractor shall provide Coating System 1: colored concrete stain/sealer, unless another method is specifically required in the Contract Documents.

For new construction with no drainage systems, Coating Systems 1, 2, and 3 require the application of waterproofing materials on the backside of below grade walls such as retaining walls and planter boxes. Waterproofing shall be per Section 511.

Unless noted in the Contract Documents, the color shall be selected by the Project Manager from the Federal Standard 595C color chart for Coating Systems 1, 2, and 3.

The Contractor shall select a coating system from the Department's Approved Products List for Coating Concrete.

#### 548.2.1 Coating System 548-1: Colored Concrete Stain/Sealer

The Contractor shall provide an acrylic polymer penetrating concrete stain. Compositions including acrylic, silicone, silane and / or siloxane are acceptable. Solid, opaque, and semi-transparent products are acceptable. The stain shall contain a minimum of 40.3% solids by mass and meet the requirements described in Table 548.2.1:1

**Table 548.2.1:1**

Test Description	Test	Criteria
Water Vapor Transmission	ASTM D1653	0.4-0.8 grains/ sq.ft. / hr.
Adhesion to Concrete	ASTM D7234	500 psi
Wind Driven Rain Resistance	ASTM D6904 or TT-C-555B 48 hr duration	no visible leaks, no weight gain
Accelerated Weathering	ASTM D4587 - 11 cycle, 1,000 hour duration	pass

The Contractor shall apply two (2) coats. The manufacturer shall determine the composition of the two coats: ie one coat of stain and one coat of sealer, or two coats of stain. Both coats shall be provided by the same manufacturer.

#### **548.2.2 Coating System 548-2: Paint**

The Contractor shall provide paint products from the Master Painters Institute's Approved Product List – MPI #108. The product shall possess the following properties:

1. Does not show excessive settling in a freshly opened full container
2. Easily re-disperses with a paddle to a smooth, homogeneous state free of curdling, livering, caking, color separation, lumps and skins
3. Brushes on easily
4. Shows no running or sagging tendencies when applied to smooth vertical surfaces
5. Dries to a uniform finish.

The final condition of the concrete must have penetrating water repellent properties consistent with ASTM D6532, water absorption shall perform a minimum of 80% better than untreated material. A combination of products may be required to meet this requirement (paint, sealer, penetrating water repellent, etc.). For coating system 548-2, the Contractor shall provide a letter from the manufacturer recommending the order of application of products that will meet their product requirements and water repellent capability. This letter shall confirm the compatibility of all products in the system.

#### **548.2.3 Coating System 548-3: Textured Coating**

The Contractor shall provide a textured coating product from the Master Painters Institute's Approved Product List MPI #42.

A light sand texture shall be provided unless otherwise specified in the Contract Documents (note: textured coatings can be specified as smooth).

The final condition of the concrete must have penetrating water repellent properties consistent with ASTM D6532, water absorption shall perform a minimum of 80% better than untreated material. A combination of products may be required to meet this requirement (textured coating, sealer, penetrating water repellent, etc.). For coating system 548-3, the Contractor shall provide a letter from the manufacturer recommending the order of application of products that will meet their product requirements and water repellent capability. This letter shall confirm the compatibility of all products in the system.

#### **548.2.4 Submittals**

The Contractor shall submit manufacturer's product data sheets, application instructions, paint certifications and an application plan 30 Days prior to application of coatings.

The Contractor shall provide a coating Application Plan according to the manufacturer's written recommendations. The Plan shall include:

1. Proposed surface preparation
2. Mixing and thinning directions
3. Rate of application
4. Recommended spray nozzles and pressures
5. Number of necessary coats
6. Allowable ambient air temperature range
7. Allowable ambient surface temperature range
8. Application equipment qualification of workers
9. Safety and damage protection plan

If the color varies from the specified color, the Contractor shall submit color samples on boards at least eight (8) inches by ten (10) inches for review and approval.

### **548.3 CONSTRUCTION REQUIREMENTS**

#### **548.3.1 General**

Prior to application of a Class 4 Special Surface Finish (reference 511.3.9.5), the Contractor shall ensure that the surface meets the requirements of a Class 2, Rubbed Surface Finish (reference 511.3.9.3).

The Class 2 Rubbed Surface Finish, including any patch material, must be allowed 28 days to cure prior to the application of coating systems unless otherwise recommended by the manufacturer and approved by the Department.

#### **548.3.2 Surface Preparation**

The Contractor shall prepare the surface in conformance with the manufacturer's recommendations and shall, at a minimum, include power spraying with a minimum 4000 PSI sprayer with a zero degree rotary nozzle at a 6" stand-off distance. The Contractor may also find it necessary to employ detergents or abrasives. Unless otherwise directed by the manufacturer, the prepared surface shall be in conformance with SSPC-SP 13 / NACE No. 6 'Surface Preparation of Concrete.' The concrete surface

must be free of contaminants, curing compounds, form release agents, efflorescence, and existing incompatible coatings, laitance, loosely adhered concrete, and dust and shall provide a sound, uniform substrate.

Alkalinity testing by the Contractor and associated follow-up action shall be required if recommended by the manufacturer.

#### **548.3.3 Temperature and Weather Limitations**

The Contractor shall apply coatings on concrete surfaces that have cured for a minimum of 28 Days and only when the atmospheric temperature is in the range from 50 degrees F to 100 degrees F, and when the relative humidity is at or below 85 percent. Coatings shall only be applied to a surface which is at least 5 degrees F above the dew point. The surface temperature should remain above the minimum temperature specified above until the coating is thoroughly dry. Coatings shall not be applied when weather conditions exist which might damage the work such as windborne dust. With the approval of the Project Manager, temperature and weather limitations may be adjusted to those conditions recommended by the Manufacturer.

#### **548.3.4 Precoating Requirements**

The Contractor shall allow the surface to visually dry completely before application of coatings.

All concrete surfaces shall be inspected by the Project Manager prior to application of coatings.

Do not apply penetrating water repellent treatment to the concrete surface before coating the concrete, unless otherwise recommended by the manufacturer.

#### **548.3.5 Coating Application**

Coating shall be applied in accordance with SSPC-PA 14.

No coating shall be applied until the preceding coat has dried/cured to the extent specified by the manufacturer.

All coatings shall be applied so that the cured film is continuous and pin-hole free.

##### **548.3.5.1 Thinning the Coatings**

The Contractor shall not thin the coating Material without Manufacturer and Department approval.

##### **548.3.5.2 Application Equipment Requirements**

Spray application equipment shall be employed to apply the coatings unless otherwise recommended by the manufacturer. The Contractor shall employ application equipment that meets the requirements of the manufacturer. Brushes and rollers may be used for touch-up paint and on areas less than 20 SQFT.



### 548.3.5.3 Dry Film Thickness

The Contractor shall apply the coatings at the dry film thickness recommended by the manufacturer. Dry film thickness shall be measured by the Contractor in accordance with ASTM D6132 using an ultrasonic film thickness gage that shall be provided and retained by the Contractor. Dry film thickness readings shall be taken and recorded every 1,000 SQFT or at a minimum of once per workshift.

### 548.3.6 Inspection and Reporting

The Contractor shall maintain daily field reports that include:

- weather and temperature data
- surface preparation observations including photographs
- product tracking information including lot and batch numbers of the products applied
- description of equipment used and names of applicators
- records of dry film thickness (reference 548.3.5.3)

The Contractor shall submit the inspection reports to the Project Manager on a weekly basis.

### 548.3.7 Project Test Area

For areas greater than 500 square feet, a project test area shall be prepared and tested by the Contractor. The test area can be either on the structure itself or on a sample that is representative of the substrate to be coated. The test panel shall be no smaller than three (3) sq. ft. in size. The test panel shall be of the same material and application process as the final product.

Following cure, adhesion testing shall be performed by the Contractor on the test panel in accordance with ASTM D7234. The location of the disbondment for each of the three pulls shall be within the concrete substrate (ie, cohesive failure of the concrete). Testing shall be observed by the Project Manager. Results of the test shall be submitted in writing to the Project Manager.

## 548.4 METHOD OF MEASUREMENT

Coating of the Concrete surfaces will be measured by the square foot.

## 548.5 BASIS OF PAYMENT

Pay Item	Pay Unit
<i>Coating of Concrete – Stain</i>	Square Foot
<i>Coating of Concrete – Paint</i>	Square Foot
<i>Coating of Concrete – Textured Coating</i>	Square Foot

### 548.5.1 Work Included in Payment

The Department will consider as included in the payment for the pay item(s) listed in this section and will not measure or pay separately for the following Work:

1. Preparation of the concrete surfaces to be painted;
2. Protection of pedestrian, vehicular or other traffic near or under the work from paint spatter and disfigurement; and
3. Inspection and testing as required by this Specification and the Contract Documents.

November 17, 2016

**SPECIAL PROVISIONS  
MODIFYING  
SECTION 564: PREFORMED CLOSED CELL FOAM BRIDGE JOINT SEALS**

The 2014 Edition of the New Mexico Department of Transportation Standard Specifications for Highway and Bridge Construction shall apply in addition to the following:

Delete Subsection **564.3.8 Warranty** in its entirety.

September 15, 2017

## SPECIAL PROVISIONS FOR SECTION 565 – PREFORMED SILICONE-COATED FOAM JOINT SYSTEM

The 2014 Edition of the New Mexico Department of Transportation Standard Specifications for Highway and Bridge Construction shall apply in addition to the following:

### 565.1 DESCRIPTION

This Work consists of providing and installing preformed, pre-compressed, self-expanding foam with silicone precoated surface. The foam is bonded in place with a structural epoxy adhesive. The silicone precoated surface is sealed to the bridge with silicone sealant. This system is referred to herein as "joint system."

### 565.2 MATERIALS

#### 565.2.1 Joint System

The Contractor shall provide 100% waterproof pre-compressed polymer impregnated open cell polyurethane foam topped with a silicone coating. Provide a joint system comprised of the following three (3) components:

1. Cellular polyurethane foam impregnated with 100% hydrophobic polymer, water based emulsion and factory coated with highway-grade, fuel resistant silicone.
2. Field-applied epoxy adhesive primer.
3. Field-injected silicone sealant.

The Contractor shall provide a total system from a single manufacturer.

#### 565.2.1.1 Open Cell Polyurethane

Provide a foam seal with the following properties:

1. Provide a foam with a working range of 50% in tension and 50% in compression. Factory fabricate changes in plane and direction using factory fabricated watertight transition assemblies on inside and outside corners for 45 degrees and 90 degree bends.
2. Bleeding: none at 180 deg. F@ 50% compression for 3 hrs.
3. UV Resistance, no changes 2000 hrs., in accordance with ASTM G155.
4. Provide a polymer impregnation agent.

#### 565.2.1.2 Epoxy Adhesive

Use 100% solids, two component moisture sensitive modified epoxy adhesive which meets ASTM C-881.

#### **565.2.1.3 Silicone Sealant**

Use a one part, cold applied chemically curing silicone joint sealant which meets ASTM D 5893. Silicone shall be fuel resistant.

### **565.3 CONSTRUCTION REQUIREMENTS**

#### **565.3.1 General**

The Contractor shall be certified by the manufacturer for installation of the joint system. If the Contractor is not certified, the Contractor shall ensure that a technical representative from the manufacturer is present for the duration of the joint system installation.

#### **565.3.2 Installation**

The Contractor shall install the components of the joint system when the temperature is within the range specified by the manufacturer of each system component. The Contractor shall store materials in accordance with the manufacturer's requirements.

The Contractor shall install field-applied epoxy adhesive primer and field-injected silicone sealant as directed by the manufacturer. Prior to installation, measure the opening of the existing joint at different locations and compute the mean opening. Furnish the seal joint topped with fuel resistant silicone in a width greater than the mean measured joint extension which when compressed will form bellow(s) as recommended by the manufacturer. Furnish a foam seal having a depth appropriate for the joint width as recommended by the manufacturer.

The Contractor shall prepare surfaces to receive the sealant. For concrete surfaces, repair spalls, chips, irregular or unsound joint surfaces to provide smooth joint surfaces in a manner approved by the Project Manager. Blast clean steel surfaces in accordance with SSPC-SP 6, "Industrial Blast Cleaning." After preparing the surface, notify the Project Manager for inspection of the joint before installing the joint system. Ensure joint sides are dry of solvents or other cleaning agents prior to installation.

At deck edges, the joint material shall not extend horizontally beyond the deck, but shall turn down and seal the deck edge in the vertical plane. The joint material shall extend 1" below the bottom of the deck.

When factory fabricated universal 90's are required, the Contractor shall start installation with these members. Apply epoxy adhesive to the sides of the joint header as directed by the manufacturer. Unwrap joint system and place in joint opening as directed by the manufacturer. Provide a minimum recess of 1/2" for joint sizes 1/2" – 1-1/4" and a minimum recess of 3/4" for sizes 1-1/2" – 4". Prior to placing joint system in the joint opening, verify depth using a wooden block shaped in the form of a 'T.' Before the epoxy cures, install a bead of silicone sealant between the foam and the silicone topping.

#### **565.3.3 Acceptance Test Procedures**

The Contractor shall perform a watertight integrity test of the joint system if required by the Project Manager. The test shall be observed by the Project Manager. The test results shall be photographically recorded and transmitted to the Project Manager. Unless otherwise directed by the manufacturer, the water integrity test shall be as follows: Wait a minimum of 72 hours after the joint is placed. Flood the joint with water. Visually verify that there are not any leaks on the underside of the joint as observed by the Project Manager. Joints that leak will not be accepted. Repair leaky joints in accordance with the manufacturer's recommendations.

#### **565.4 METHOD OF MEASUREMENT**

The joint system will be measured by the linear foot from end to end along the joint centerline.

#### **565.5 BASIS OF PAYMENT**

<b>Pay Item</b>	<b>Pay Unit</b>
Preformed Silicone-Coated Foam Joint System	Linear Foot

##### **565.5.1 Work Included in Payment**

The Department will consider as included in the payment for the joint system and will not measure or pay separately for the following Work:

1. All material, labor and Certificate of Compliance;
2. All other costs associated with providing and installing of the joint system; and
3. Technical representative if required.

March 23, 2018

## SPECIAL PROVISIONS MODIFYING

### SECTION 570: PIPE CULVERTS

The 2014 Edition of the New Mexico Department of Transportation Standard Specifications for Highway and Bridge Construction shall apply in addition to the following:

Add the following Pay Item to Subsection 570.5 Basis of Payment.

#### 570.5 BASIS OF PAYMENT

Pay Item	Pay Unit
Dewatering	Lump Sum

Replace the following Subsection 570.5.1 Work Included in Payment in its entirety.

#### 570.5.1 Work Included in Payment

The following Work and items shall be considered as included in the payment for the major items and will not be measured or paid for separately:

- A. All joint Materials, shear connectors required for joining sections;
- B. Testing and Certification of all Culverts; and
- C. The coating of aluminum and aluminized steel pipe Type 2 when placed with fresh concrete. Removal of Culvert pipe shall be paid for in accordance with Section 601, Removal of Structures and Obstructions. Excavation for Culverts shall be measured and paid for in accordance with Section 206, Excavation and Backfill for Culverts and Minor Structures Siphon Culvert pipe Work shall include trenching, connections to transitions, pipe joining, installation of pipe, fittings miscellaneous components; including elbows, drains and blowoffs, backfill and compaction, encasing or special backfill and hydrostatic testing.

July 7, 2015

## SPECIAL PROVISIONS FOR SECTION 602: SLOPE AND EROSION PROTECTION STRUCTURES

The 2014 Edition of the New Mexico Department of Transportation Standard Specifications for Highway and Bridge Construction shall apply in addition to the following:

**602.2.1 Classifications** Delete Class D Classification from **Table 602.2.1:1** and substitute the following:

The Department will classify riprap and gabions in accordance with Table 602.2.1:1 "Riprap Classifications and Gabion Requirements" with the exception of Class D, Derrick Stone. Class D, Derrick Stone will follow the gradation requirements in Table 602.2.1:2 "Gradation Requirements for Class D, Derrick Stone" shown below.

**Table 602.2.1:2**  
**Gradation Requirements for Class D, Derrick Stone**

CLASS, DESCRIPTION	PERCENT OF ROCK EQUAL OR SMALLER BY COUNT, D <sub>x</sub>	RANGE OF INTERMEDIATE DIMENSION <sup>1</sup> , (inches)	RANGE OF ROCK WEIGHT <sup>2</sup> , (pounds)
D, Derrick Stone <sup>3</sup>	100	30	5000
	70	24 – 18	1780 – 2500
	40	11 – 14	360 – 500
	20	6 – 8	70 - 100

<sup>1</sup> Intermediate dimension measured as the shortest straight-line distance from one side of the rock or rock particle to the other on the maximum projection plane (plane of rock or rock particle with the largest projected surface area).

<sup>2</sup> Weights based on a specific gravity of 2.65.

<sup>3</sup> Include spalls and rock fragments to provide a stable dense mass.



July 17, 2017

**SPECIAL PROVISIONS**  
**MODIFYING**  
**SECTION 606: METAL AND CONCRETE WALL BARRIER**

The 2014 Edition of the New Mexico Department of Transportation Standard Specifications for Highway and Bridge Construction shall apply in addition to the following:

Delete **Section 606: METAL AND CONCRETE WALL BARRIER** in its entirety and replace with the following:

**606.1 DESCRIPTION**

This Work consists of constructing guardrail, permanent concrete wall barrier (CWB), temporary concrete wall barrier (TCWB), end treatments, transitions, and protection systems.

**606.2 MATERIALS**

**606.2.1 Guardrail**

The types of guardrail are as follows:

Single face W-beam guardrail;  
Double faced W-beam guardrail;  
Single face Thrie beam guardrail; and  
Double faced Thrie beam guardrail.

Each guardrail type shall have galvanized rail elements unless otherwise specified in the Contract. Use Materials for guardrail installations in accordance with the current edition of the AASHTO Task Force 13 *Guide to Standardized Highway Barrier Hardware*.

**606.2.1.1 Rail Elements**

**606.2.1.1.1 Galvanized Guardrail**

Provide guardrail elements with a corrugated beam in accordance with AASHTO M 180, Type 2, Class A.

Galvanize steel rail elements before or after fabrication in accordance with AASHTO M 180 if necessary.

Provide required hardware and fittings in accordance with AASHTO M 30 for the specified diameter and strength class.

#### **606.2.1.1.2 Weathering Guardrail**

Provide corrosion-resistant "weathering" guardrail Materials if specified in the Contract. Weathering guardrail Materials shall consist of A 606 Type 4 steel, be in accordance with AASHTO M 180, Class A, Type 4 standards, and shall ensure they have a corrosion resistance at least four times that of plain carbon steel.

#### **606.2.1.1.3 Double Nested Guardrail**

Provide a second rail element attached to each face as specified in the Contract. The second rail element shall have the same galvanization or "weathering" properties as that of the exterior rail element.

#### **606.2.1.2 Fasteners**

Unless otherwise specified, galvanize fasteners in accordance with AASHTO M 111 or ASTM A 153. Galvanize after fabrication.

Provide bolts in accordance with ASTM A 307 and nuts in accordance with ASTM A 563, Grade A or better.

Provide fasteners for weathering guardrail in accordance with AASHTO M 180 for Type 4 steel.

#### **606.2.1.3 Posts**

##### **606.2.1.3.1 Reserved**

##### **606.2.1.3.2 Structural Shape Posts**

Provide structural shape posts in accordance with ASTM A 36 and galvanize them in accordance with ASTM A 123. Do not perform punching, drilling, or cutting after galvanizing. Provide posts for guardrail in accordance with NCHRP Report 350 Recommended Procedures for the Safety Performance Evaluation of Highway Features and the AASHTO Manual for Assessing Safety Hardware (MASH).

#### **606.2.1.4 Offset Blocks**

##### **606.2.1.4.1 Wood Offset Blocks**

Provide wood offset blocks as specified for the guardrail and end treatment type. Wood offset blocks shall be Southern Yellow Pine, Western Larch, Ponderosa Pine, Douglas Fir, or Lodgepole Pine and either rough sawn (unplaned) or S4S with nominal dimensions specified and with a stress grade of at least 1,200 psi.

The size tolerance of rough-sawn blocks in the direction of the bolt holes will be within  $\pm 1/4$  in. of specified dimensions. Only use one combination of post and block for any one continuous length of barrier.

Provide wood preservatives and treatment in accordance with AASHTO M 133 and AWPA C14.

##### **606.2.1.4.2 Plastic and Composite Offset Blocks**

Provide plastic or composite offset blocks as specified for the guardrail and end treatment type and in accordance with the guardrail manufacture's recommendations.

Ensure Suppliers of plastic or composite blocks proposed for inclusion on the Department's Approved Products List submit certification to the Project Manager for approval by the State Traffic Engineer.

#### **606.2.2 Reserved**

#### **606.2.3 Concrete Wall Barrier (CWB) and Temporary Concrete Wall Barrier (TCWB)**

The types of CWB are as follows:

1. Slip-formed CWB;
2. Cast-in-place CWB; and
3. Precast CWB.

CWB shall be installed by slip-forming or cast-in-place. TCWB shall be precast.

Use Class A concrete in accordance with Section 509, "Portland Cement Concrete Mix Designs." Provide reinforcing steel in accordance with Section 540, "Steel Reinforcement." Provide preformed asphalt joint filler in accordance with AASHTO M 213. Provide penetrating water repellent in accordance with Section 532, "Penetrating Water Repellent Treatment."

A 3/8" diameter, ASTM A416 Grade 270, AASHTO M 203M, uncoated seven-wire steel strands may be substituted for the AASHTO M31, Grade 60 deformed bars provided that the steel strands are uncoated, clean and free from dirt, loose rust, oil, grease or other Deleterious Material, for Slip-formed CWB.

#### **606.2.3.1 CWB Steel Access Panel**

Provide and install CWB steel access panels in accordance with the Plans or as directed by the Project Manager.

Contour the steel access panel to the shape of and flush with the CWB. The Department will not allow the steel access panel to compromise the structural integrity and performance of the CWB assembly. Provide steel in accordance with AASHTO M 270, Grade 36. Coat the steel access panel in accordance with Section 545, "Protective Coating of Miscellaneous Structural Steel."

#### **606.2.4 End Treatments**

The types of end treatments are as follows:

- End Treatment – W-beam TL-3 end terminal (for all speeds);
- End Treatment – W-beam TL-2 end terminal (for speeds of 40 mph or less);
- End Treatment – W-beam end anchor;
- End Treatment – Thrie beam end anchor; and
- End Treatment – W-beam driveway end anchor (for curved guardrail for minor approaches and driveways).

Provide End Treatments on the Department's Approved Products List which are required to meet NCHRP Report 350 or the AASHTO Manual for Assessing Safety Hardware (MASH).

W-beam TL-3 End Terminals may be used for all posted speeds.

W-beam TL-2 End Terminals may be used for posted speeds of 40 mph or less.

W-beam End Anchors shall be used on the downstream end of W-beam guardrail runs when a crash-worthy TL-3 or TL- 2 terminal is not required.

Thrie beam End Anchors shall be used on the downstream end of thrie beam guardrail runs when a crash-worthy TL-3 or TL-2 end terminal is not required.

Driveway End Anchors maybe used on curved W-beam guardrail installations at minor roadway intersections such as driveways and low speed roadway approaches to the mainline.

### 606.2.5 Transitions

Transition types may include the following or others as specified in the Contract:

- Transition from W-Beam to thrie beam;
- Transition from guardrail to rigid barrier;
- Transition from existing guardrail to 31" guardrail.

### 606.2.6 Protection Systems

Protection Systems may include the following or others as specified in the Contract:

- Median Protection System;
- Drainage Structure Protection System.

Each system is comprised of W-beam, thrie beam, and expansion/reducer sections working in conjunction to provide increased protection for bridge piers, fixed objects and drainage structures. The minimum lengths required for each component of the system, as well as the required post spacing, shall be as indicated in the Contract.

### 606.2.7 Materials Certification

Provide MTRs and certificates of compliance in accordance with Section 106.4 "Certificates of Compliance" to the Project Manager, certifying that the Materials and fabrication are in accordance with these specifications. Fabrication shall be done by an identifiable source.

### 606.2.8 Member Identification and Marking

Ensure the manufacturer permanently stamps the specific type of guardrail end treatment at each location to correspond with those shown on the shop drawings provided to the Project Manager, so that each is readily identifiable in the field.

### 606.2.9 Reflective Barrier Delineators

Provide amber-colored reflective barrier delineators for median barriers and white reflectors for shoulder-side barriers in accordance with the Contract and **Section 703, "Traffic Markers."**

Place reflective barrier delineators back to back on median barriers.

### **606.3 CONSTRUCTION REQUIREMENTS**

During construction, prevent exposed Steel or concrete barrier ends from creating a hazard to the traveling public.

#### **606.3.1 Guardrail Installation**

Installation of guardrail shall be done by personnel certified by the manufacturer. Provide certification to the Project Manager.

Position steel parts stored in transit, in open cars or trucks, or outside in yards or at job sites to allow free drainage and air circulation. Handle fabricated steel parts to avoid gouges, scratches, and dents.

Keep the steel clean of Deleterious Material. If the Contract specifies a weathering guardrail, the Department will not consider natural oxidation (mill scale) to be Deleterious Material and will not allow galvanizing, blast cleaning, or pickling of weathering guardrail to remove the mill scale.

Draw bolts tight (except adjustment bolts). Use bolts that are long enough to extend beyond the nuts.

##### **606.3.1.1 Steel Posts**

Set posts plumb, in hand-dug or mechanically made holes, or by driving. If upward vertical adjustment of posts is necessary, remove and reinstall the post.

##### **606.3.1.1.1 Steel Posts in Asphalt**

The Contractor shall construct a leave out for all W-beam locations in asphalt.

Perform post drilling or driving operations that does not cause bulging, distressing, or other disturbance of the asphalt surface.

If bulging or other distress of the asphalt surfacing occur when drilling or driving steel posts, remove and reinstall these posts using guide holes drilled through the asphalt surfacing. Make the guide holes with a minimum 8-inch diameter.

If after precutting or drilling the guide holes, bulging or other distress of the asphalt surfacing occurs or if posts cannot be driven to the specified depths, cease the driving, remove the posts, and extend the guide holes as necessary or as directed by the Project Manager.

Backfill and compact postholes with acceptable Material, such as Base Course or cold mix, placed in thin layers, to within three (3) inches of the surface grade. Place three (3) inches of Base Course in accordance with Section 303, manually tamp and neatly level to surface grade. Apply an emulsion to the leave out area within 24 hours of compaction as approved by the Project Manager.

Steel posts in asphalt thicker than 8 inches shall be constructed as steel posts in rock per section 606.3.1.1.3.

#### **606.3.1.1.2 Steel Posts in Concrete**

The Contractor shall construct a leave-out for all W-beam and thrie-beam locations in concrete.

Backfill and compact postholes with acceptable Material, such as Base Course or cold mix, placed in thin layers, to within three (3) inches of the surface grade. Place three (3) inches of Base Course in accordance with Section 303, manually tamp and neatly level to surface grade. Apply an emulsion to the leave out area within 24 hours of compaction as approved by the Project Manager.

#### **606.3.1.1.3 Steel Posts in Rock**

When W-beam posts are restrained by asphalt or concrete surfacing, a leaveout shall be constructed.

Perform post drilling operations that does not cause bulging, distressing, or other disturbance of the asphalt surface.

If bulging or other distress of the asphalt surfacing occur when driving steel posts, remove and reinstall these posts using guide holes drilled through the asphalt surfacing. Make the guide holes with a minimum 8 inch diameter.

If after precutting or drilling the guide holes, if bulging or other distress of the asphalt surfacing occurs or if posts cannot be driven to the specified depths, cease the driving, remove the posts, and extend the guide holes as necessary or as directed by the Project Manager.

Backfill and compact postholes with acceptable Material, such as Base Course or cold mix, placed in thin layers, to within three (3) inches of the surface grade. Place three (3) inches of Base Course in accordance with Section 303, manually tamp and neatly level to surface grade. Apply an emulsion to the leave out area within 24 hours of compaction as approved by the Project Manager.

#### **606.3.1.2 Thrie Beams and W-Beams**

Erect smooth and continuous rail elements. Overlap rails in the same direction as the traffic flow

of the nearest lane. The Department will only allow such drilling or cutting that is necessary for special connections and for sampling in the field.

Shop-fabricate curved rails having a radius of 150 ft. or less to the appropriate curvature specified in the Plans.

### **606.3.1.3 Repair of Damaged Coating**

If the galvanizing of guardrail or appurtenances is damaged, repair the coating by galvanizing or by coating with two coats of zinc dust-zinc oxide paint in accordance with Federal Specification TT-P-641 or Military Specification ML-P-21035.

### **606.3.2 Reserved**

## **606.3.3 Concrete Wall Barrier and Temporary Concrete Wall Barrier Installation**

### **606.3.3.1 Concrete Wall Barrier and Temporary Concrete Wall Barrier Fabrication**

Fabricate CWB in accordance with Section 510, "Portland Cement Concrete," and Section 511, "Concrete Structures."

Construct TCWB in accordance with the Plans.

Construct CWB in accordance with the Plans. Ensure that the top of the completed barrier does not deviate from the Plans more than  $\pm 0.19$  inches. Place reinforcement in accordance with Section 540. Give the CWB a Class 2, Rubbed Surface Finish, or Class 4, Special Surface Finish, in accordance with Section 511.3.8, "Finishing."

The reinforcement shall be placed as shown on the approved drawings. When substituting steel strands caution must be taken to prevent and avoid displacement from detailed orientation.

If the manufacturer requires sandblasting, do not displace mortar used in the surface finish from the bubble pockets, pits, depressions, and honeycombs.

Cure CWB in accordance with Section 511.3.9, "Curing".

Treat the entire exposed surfaces of CWB with penetrating water-repellent treatment in accordance with Section 532, "Penetrating Water Repellent Treatment."

When called for in the Contract, apply penetrating water repellent first, then the Special Surface Finish.



The Department will not require fly ash in the PCC used to fabricate TCWB.

#### **606.3.3.2 Permanent Concrete Wall Barrier Joint Treatment**

When sawing transverse weakened-plane joints, perform the sawing after the concrete has hardened enough to prevent raveling, crumbling, or shape deformation. Saw control joints at intervals designated in the Plans or as directed by the Project Manager. After completing the sawing operations, clean the sawed area of debris.

Make a construction joint after the day's permanent placement operations and at locations when concrete placement is interrupted for 30 minutes or more.

#### **606.3.3.3 Permanent Concrete Wall Barrier Installation**

Construct footings and foundations, and prepare the Subgrade to 95% of maximum density in accordance with AASHTO T 180 (Modified Proctor), Method D (TTCP Modified) as necessary, before placing the CWB.

Construct vertically offset (atypical) CWB as specified in the Plans.

##### **606.3.3.3.1 Temporary Concrete Wall Barrier Requirements**

The Contractor shall precast TCWB as specified in the Plans. The Contractor shall not intermix CWB of different designs, shapes, or lengths. The Contractor shall set TCWB in accordance with the Contract and the approved traffic control plan. Provide necessary loading, hauling, and unloading at designated sites.

The Contractor shall reset the TCWB during construction, as required by the Contract.

After completing the project, the Contractor shall remove, load, haul, unload, and stockpile the Department retained or Department provided CWB at the locations required in the Contract or as directed by the Project Manager.

##### **606.3.3.3.2 Temporary Concrete Wall Barrier (Retained by the Contractor)**

If the Contract specifies TCWB retained by the Contractor, the Contractor shall provide new or used TCWB. TCWB retained by the Contractor will remain the property of the Contractor upon completion of the project.

The Contractor shall provide connecting hardware for the TCWB assembly.

**606.3.3.3.3 Temporary Concrete Wall Barrier (Retained by the Department)**

If the Contract specifies TCWB retained by the Department, the Contractor shall provide new TCWB.

TCWB retained by the Department , including shop drawings and connecting hardware, as approved by the Project Manager, will become the property of the Department upon completion of the project.

The Contractor shall remove, dispose and replace Department retained TCWB that is not Accepted by the Project Manager.

**606.3.3.3.4 Department-Furnished Temporary Concrete Wall Barrier**

If the Contract specifies Department-furnished TCWB, the Contractor shall load, haul, and unload Department-furnished TCWB from origins to destinations.

Department-furnished TCWB will remain the property of the Department upon completion of the project.

If the Contract specifies Department-furnished TCWB, the Contractor shall provide connecting hardware for the TCWB assembly, if missing from the TCWB units.

**606.3.4 End Terminal or End Anchorage Installation (End Treatment Systems)**

Install end treatment systems in accordance with the manufacturer's recommendations and approved shop drawings. Installations shall be performed by certified personnel.

**606.3.5 Transition Installation**

Install transitions in accordance with project plans and approved shop drawings.

**606.3.6 Protection System Installation**

Install Protection Systems in accordance with the project plans and approved drawings.

Assembly and installation of each component of the Protection System shall be supervised at all times by the Contractor's representative certified by the manufacturer.

### **606.3.7 Embankment Grading Requirements**

Compact Embankment Material to 95% of maximum density in accordance with AASHTO T 180 (Modified Proctor), Method D (TTCP Modified). Unless otherwise specified in the Contract, the ground surface between the edge of the shoulder and the hinge point of the slope behind the guardrail shall be graded at 10:1 (H:V) or flatter. Warp all grade transitions to create smooth surface contours.

### **606.3.8 Drainage Requirements**

Provide guardrail drainage components as specified in the Contract.

When asphalt paving is specified in the project plans, a minimum thickness of 1 ½ inches of hot mix asphalt shall be placed and compacted beneath the guardrail area.

Asphalt curb or concrete curb may be used to direct surface runoff as specified in the project plans. Metal curbs are not allowed. For Transitions from guardrail to rigid barrier, do not extend the asphalt curb or concrete curb beyond the thrie beam to W-beam reducer element. If additional curb length is needed, then extend the curb through the entire Transition and add 12.5 ft. of nested W-beam adjacent to and upstream of the thrie beam to W-beam reducer element. All asphalt curb or concrete curb shall be placed below the guardrail offset block with the face of the curb aligned with the face of the guardrail.

### **606.3.9 Vegetation Management Requirements**

Provide vegetation management as specified in the Contract. Vegetation management may consist of asphalt paving, concrete paving, or application of an approved herbicide.

## **606.4 METHOD OF MEASUREMENT**

### **606.4.1 Guardrail Measurement**

Guardrail will be measured and paid in linear feet of guardrail that has been satisfactorily completed and accepted, exclusive of that length of guardrail that is within the pay limits of end treatments and transitions, as specified. Measurement will be made along the centerline of the barrier.

Weathering Guardrail will be measured and paid in linear feet of guardrail that has been satisfactorily completed and accepted, exclusive of that length of guardrail that is within the pay limits of end treatments and transitions, as specified. Measurement will be made along the centerline of the barrier.

Curved Guardrail will be measured and paid as linear feet of standard Guardrail.

#### **606.4.2 Reserved**

#### **606.4.3 Concrete Wall Barrier Measurement**

CWB and TCWB will be measured along the centerline of the barrier. CWB flare within CWB Transition Section will be measured as CWB.

#### **606.4.4 End Terminal or End Anchor (End Treatment System) Measurement**

End Treatment Systems will be measured and paid in units of each completed and accepted, inclusive of integral transition sections connecting the End Treatment to the corresponding guardrail or concrete wall barrier. Each End Treatment is inclusive of all necessary posts, blocks, connections, anchorage, fasteners, grading, drainage elements, vegetation management components and leave-outs.

#### **606.4.5 Transition Measurement**

Transitions will be paid by each for transitions that have been satisfactorily completed and accepted. Measurement will be made along the transition centerline and exclusive of that length of barrier that is within the pay limits of end treatments or the corresponding guardrail or concrete wall barrier. Transitions that are integral to the end treatment system shall be considered to be part of the end treatment system and shall not be measured or paid separately. Each Transition is inclusive of all necessary anchorage fasteners, grading, drainage elements, and vegetation management components.

#### **606.4.6 Protection System Measurement**

Protection Systems will be measured and paid in units of linear feet of the protection system that has been satisfactorily completed and accepted. Measurement will be made along the protection system centerline and exclusive of that length of barrier that is within the pay limits of end treatments. Each Protection System is inclusive of all necessary anchorage, fasteners, grading, drainage elements, vegetation management components and leave-outs.

#### **606.4.7 Removal and Reinstall Guardrail**

Remove and Reinstall Guardrail will be measured and paid in linear feet of guardrail that has been satisfactorily removed, replaced, and accepted exclusive of end treatments and transitions. Measurement will be made along the railing face center to center of the outermost post in the length of guardrail being measured.

**606.5 BASIS OF PAYMENT**

<b>Pay Item</b>	<b>Pay Unit</b>
Guardrail	Linear Foot
Weathering Guardrail	Linear Foot
End Terminals	Each
End Anchors	Each
Transitions	Each
Protection Systems	Linear Foot
Remove and Reinstall Guardrail	Linear Foot
Concrete Wall Barrier	Linear Foot
TCWB Retained by the Contractor	Linear Foot
Resetting of TCWB	Linear Foot
TCWB Retained by the Department (___ ft)	Linear Foot
Resetting of TCWB (___ ft)	Linear Foot
Department-Furnished TCWB (___ ft)	Linear Foot
TCWB Retained by the Contractor (___ ft)	Linear Foot
Concrete Wall Barrier (Modified)	Linear Foot
Concrete Wall Barrier (Half Section)	Linear Foot

**606.5.1 Work Included in Payment**

The following work and items will be considered as included in the payment for the main item(s) and will not be measured or paid for separately:

- A. All loading, hauling, unloading, stockpiling, or disposal;
- B. Moving or removal of temporary barrier;
- C. Footings and foundations;
- D. Offset Blocks;
- E. Reflective sheeting and reflectors installed on guardrail, end treatments, and transitions;
- F. End treatment posts, sleeves, anchors, barrier rail and impact head;
- G. Backfilling and compacting of holes created by removal and installation of posts;
- H. Embankment material, placement, and grading;
- I. Placement and compaction of asphalt material;
- J. Construction of surfacing;
- K. Construction of post leaveouts;

- L. Construction of asphalt curbs;
- M. Patching material at posts;
- N. All connecting hardware;
- O. Reflective barrier delineators installed on CWB and TCWB;
- P. Curing of CWB and application of penetrating water-repellent treatment;
- Q. Connection pins for TCWB;
- R. Concrete wall barrier access panel;
- S. Reinforcing Steel;
- T. Transitions that are integral to end treatment systems; and
- U. Replacement of unacceptable Department retained TCWB due to Contractor mishandling.
- V. Guardrail post installation in rock.

July 6, 2015

**SPECIAL PROVISIONS  
MODIFYING  
SECTION 607: FENCE**

The 2014 Edition of the New Mexico Department of Transportation Standard Specifications for Highway and Bridge Construction shall apply in addition to the following:

Delete **607.2.2.2 Posts** and replace with the following:

Provide metal or wood corner, brace, intermediate brace gate, and line posts of the specified type, size, and length in accordance with the Contract.

Permanently cap all vertical metal pipes on fence and gate supports. Ensure that the top coating and color of the pipe is maintained.

November 17, 2016

**SPECIAL PROVISIONS**  
**MODIFYING**  
**SECTION 608: SIDEWALKS, DRIVE PADS, AND CONCRETE MEDIAN PAVEMENT**

The 2014 Edition of the New Mexico Department of Transportation Standard Specifications for Highway and Bridge Construction shall apply in addition to the following:

Delete Subsection **608.3.8.4 Warranties** in its entirety.

Delete Subsection **608.5.1 Work Included in Payment** in its entirety and replace with the following:

The following Work and items will be considered Incidental to the main items:

1. Excavation, backfill, compaction, expansion joint, coloring, and other related items and appurtenances;
2. Bedding Material;
3. All labor, manufacturer field assistance, Materials, Equipment, submittals, repairs, and cleanup; and
4. Detectable warning surface.



July 6, 2015

**SPECIAL PROVISIONS  
MODIFYING  
SECTION 610: CATTLE GUARDS**

The 2014 Edition of the New Mexico Department of Transportation Standard Specifications for Highway and Bridge Construction shall apply in addition to the following:

**610.2.1 General**

Permanently cap all vertical metal pipes.

Replace the following under **SECTION 610**:

**610.2.2 Precast Concrete Cattle Guards**

Use Class AA concrete in accordance with Section 510. "Portland Cement Concrete".

The Department will reject cattle guards with cracks, chips, spalls, or honeycombed or patched areas in excess of 30 in<sup>2</sup>; or those that fail to meet the minimum strength requirements.

Provide shop drawings in accordance with section 105.2 of the New Mexico State Department of Transportation Standard Specifications for Highway and Bridge Construction 2014 Edition, and in accordance with the current edition of the ACI Detailing Manual

Fabricate precast concrete cattle guard steel grids and other steel "appurtenances" in accordance with Section 541.

September 21, 2016

**SPECIAL PROVISIONS**  
**MODIFYING**  
**SECTION 618: TRAFFIC CONTROL MANAGEMENT**

The 2014 Edition of the New Mexico Department of Transportation Standard Specifications for Highway and Bridge Construction shall apply in addition to the following:

Delete Subsection **618.2.2 Duties** in its entirety and replace with the following;

**618.2.2 Duties**

The TCS's only responsibility is traffic control management. The Department may allow exceptions to this rule if the Project is small and requires limited traffic control. The Project Manager and the District Traffic Engineer will determine approval of the exception at the preconstruction conference.

The TCS's primary duties include the following:

1. Providing management and supervision services at the Project site;
2. Preparing revisions requested by the Contractor to the traffic control plan in the Contract and submitting the new traffic control plan, in CAD format or hand drafted on a 12 inch × 18 inch piece of 20-pound paper using current drafting standards, to the Project Manager for approval by the District Traffic Engineer. Complex traffic control Plans require development by a registered professional Engineer prior to submittal to the Project Manager;
3. Coordinating the flagging and signing personnel training;
4. Supervising the flagging and signing personnel;
5. Coordinating traffic control operations for the duration of the Contract, including those of Subcontractors, utility companies, and Suppliers, to ensure that traffic control is in place and fully operational before the commencement of Work. When dealing with utility companies, the TCS shall coordinate concurrent utility traffic control with other construction traffic control to avoid conflicts;
6. Coordinating, in writing, Project activities with the appropriate individual traffic control, law enforcement, and fire control agencies;
7. Preparing and submitting statements concerning Road closures, Delays, and other Project activities to the news media, as necessary. Before submittal to the news media, the Contractor shall submit news releases to the Project Manager for review and approval;
8. Notifying the Project Manager of accidents related to the Project traffic control;
9. Recording time and date of accident notification in accordance with Section 618.2.2.1, "Traffic Control Diary;"
10. Attending the preconstruction conference;
11. Maintaining, cleaning, and replacing traffic control devices in use per the current traffic control plan during working and non-working hours.

12. Throughout the duration of construction the Contractor shall be responsible to keep the Project Manager and the District Public Relations Officer informed of any lane closures that will restrict the normal flow of traffic and any information regarding construction activities at least forty-eight (48) hours in advance.

July 6, 2015

**SPECIAL PROVISIONS  
MODIFYING  
SECTION 622: FIELD LABORATORIES AND FIELD OFFICES**

The 2014 Edition of the New Mexico Department of Transportation Standard Specifications for Highway and Bridge Construction shall apply in addition to the following:

Delete 622.2.1.8 Field Laboratory Facsimile Machine Facilities in its entirety and replace with the following:

**622.2.1.8 Field Laboratory Internet Access**

Provide Internet access as approved by the Project Manager.

July 6, 2015

**SPECIAL PROVISIONS  
MODIFYING  
SECTION 631: RUMBLE STRIPS**

The 2014 Edition of the New Mexico Department of Transportation Standard Specifications for Highway and Bridge Construction shall apply in addition to the following:

Delete **631.5.1 Work Included in Payment** and include the following:

The following Work and items will be considered as included in the payment for the main items and will not be measured or paid for separately: Equipment and labor; repair of incorrectly placed rumble strips; continuous application of seal coat to completed rumble strips in accordance with Section 407; and repair of damaged pavement.

July 28, 2017

## **SPECIAL PROVISIONS**

### **MODIFYING**

### **SECTION 632: REVEGETATION**

The 2014 Edition of the New Mexico Department of Transportation Standard Specifications for Highway and Bridge Construction shall apply in addition to the following:

Delete Section 632 - **REVEGETATION** in its entirety and replace with the following:

#### **632.1 DESCRIPTION**

This revegetation Work consists of preparing the soil, seeding, mulching, crimping, and the application of tackifier to areas stripped of vegetation during construction operations and are required to be revegetated. For additional information refer to the US Clean Water Act as outlined in the Environmental Protection Agency (EPA) National Pollutant Discharge Elimination System (NPDES) Storm Water Pollution Prevention Plan (SWPPP). Construction staking and digital submittals are included in the scope of the revegetation Work.

#### **632.2 MATERIALS**

Provide submittals as per Table 632.3.4:1, "Operations Sequence for Classes of Seeding," for all Materials to the Project Manager at a minimum of ten (10) working days before revegetation Work commences. Submittals shall conform to the specifications and the revegetation Plan, and shall be on the Approved Products List. Rock Mulch material submittal shall be required and will not appear on the Approved Product List.

All bulk materials delivered to the project shall be accompanied by a certified weigh master ticket for materials utilized per project as per Section 109.1, "Measurement of Quantity." Split loads of fertilizer, seed, straw, tackifier, and bonded fiber matrix may be allowed with proper weigh master ticket and contractor affidavit. Split loads shall not be allowed for compost mulch and rock mulch.

All packaged Materials delivered to the Project shall be wrapped or otherwise securely protected from weather which might affect their integrity. Materials in weather-damaged packaging shall be rejected for use on the Project.

Certification for bulk Materials shall comply with Section 106.4, "Certificates of Compliance." Notify Project Inspectors when bulk Materials are delivered so loads may be inspected and verified.

The Contractor shall ensure that straw bales stored on the Project shall not exceed 20% moisture content.

##### **632.2.1 Temporary Soil Stabilant/Tackifiers for Class A Seeding**

Temporary soil stabilant and tackifier shall be considered the same and the terms used

interchangeably. When used as part of seeding operations it shall be applied at a rate of 200 pounds per acre.

Tackifiers shall be plant-derived and bio-degradable and be composed of either guar, psyllium (Plantago ovata), or starch.

**Guar.** Guar is a plant based product derived from the ground endosperm of the guar plant, treated with dispersant agents for easy mixing.

**Psyllium.** Psyllium is composed of the finely ground muciloid coating of Plantago ovata seeds that is applied as a dry powder or in a wet slurry to the surface of the soil. It dries to form a firm but re-wettable membrane that binds soil particles together but permits germination and growth of seed. Psyllium requires twelve (12) to eighteen (18) hours drying time.

**Starch.** Starch is non-ionic, cold-water soluble (pre-gelatinized) granular cornstarch. The Material is mixed with water. Approximate drying time is nine (9) to twelve (12) hours.

### 632.2.2 Seed for Class A and C Seeding

The Project seed list shall conform to the NMDOT Revegetation Zone and Seed List Maps at the NMDOT website or at the following link: <http://arcg.is/1RHjFkJ>.

The list used shall be the year the Project was let. The Contract shall specify varieties of certified weed-free seed in accordance with New Mexico Seed Law (NMSA 1978, § 76-10-11 et seq.).

Provide certified seed of named varieties in accordance with the minimum standards of the appropriate seed certification agency.

Wild-sourced native seed may be used and need not be certified, however, must meet all the other requirements of Section 632.2.2.1, "Seed Labeling and Certification."

Seed submittal shall be a list from a certified seed producer showing the common name, botanical name, pure live seed, total poundage, and NMDOT Project control number, as per the revegetation/erosion control Plan.

All seed suppliers must be on the current Approved Products List and provide documentation that their certifying state agency belongs to the Association of Official Seed Certifying Agencies (AOSCA).

Seed mixtures shall be pre-mixed and bagged certifying the mixture quantity and percentage as noted in the contract.

All seed delivered to the Project shall be stored in a container protected from rodents and moisture and not subject to temperatures higher than 90°F.

#### 632.2.2.1 Seed Labeling and Certification

Seal and label each bag in accordance with the Federal Seed Act (7 U.S.C. § 1551 et seq.) and NMDA

seed labeling requirements (NMSA 1978, § 76-10-13). Provide the following information on each bag tag for each species:

1. Variety (specify if certified);
2. Kind of seed;
3. Lot number;
4. Purity;
5. Germination;
6. Percentage crop seed, percentage inert, percentage noxious weeds, in accordance with New Mexico Seed Law (NMSA 1978, § 76-10-11. et seq)
7. Origin;
8. Test date; and
9. Weight (in pounds) of this species or percentage of total lot.

Provide seed analysis results that are not older than twelve (12) months prior to use.

Seed suppliers shall provide one-acre seed bags.

Provide to the Project Manager documentation of seed origin and pure live seed content from a certified testing Laboratory. Seed must arrive in the original sealed containers from the Certified Supplier and the Revegetation Contractor must provide all tags and certifications to the Project Manager. Certification must be provided that the seed has been stored in appropriate conditions in the twelve (12) months before arriving at the Project. Each seed bag shall have a unique identifying number and the certified seed Supplier shall maintain records of seed bag identification numbers for a period of three (3) years.

### **632.2.3 Fertilizer for Class A and C Seeding**

Fertilizer shall be organic, slow release with an N-P-K (nitrogen, phosphorous, potassium) analysis of either 3-6-3 or 3-7-2 and blended with endo-mycorrhizza and humates. Application rate shall be 1,000 lbs. per acre. Humates must comprise a minimum of 12% by weight. Endo-mycorrhiza must be arbuscular with a minimum propagule of 1.33 propagules per gram. Provide fertilizer (specified type and formulation) and supplier's certification in accordance with the contract. Each bag or tote of fertilizer shall have a visible, sealed, and un-altered analysis tag from the manufacturer that must be approved by an authorized person prior to application of the material. The tag must include the manufacturer's information, the N-P-K analysis of the product, and the weight of the bag or tote. NMDOT reserves the right to inspect any bill of lading or packing slips from the supplier to verify quantity of material on site.

### **632.2.4 Hydro-Mulch - Bonded Fiber Matrix (BFM) for Class C Seeding**

Hydro-mulch shall be Bonded Fiber Matrix (BFM). BFM is a hydraulically-applied blanket that controls soil erosion and accelerates seed germination. BFM is a three-dimensional composite of wood or paper fibers bonded by polymer tackifier that provides high performance erosion prevention on slopes. Dye and tackifier shall be included in the BFM formulation. BFM shall be applied at a rate of 3,500 lbs. per acre. As a hydraulic erosion control product (HECP) as defined by the Erosion Control Technology Council, the BFM



or its equivalent shall be Type 3 or higher in functional longevity as defined in Table 1 of the 2014 Standard Specifications for Hydraulic Erosion Control Products (HECPs) Part 2.01.

#### **632.2.5 Rock Mulch for Class C Seeding**

Rock mulch shall be 3/4 inch to one (1) inch diameter with a minimum of two Fractured Faces. Rock which is black in color will not be acceptable. Pumice rock is not acceptable.

#### **632.2.6 Composted Mulch for Class A Seeding**

Furnish and place composted mulch as shown on the revegetation plan and in accordance with the criteria as described below. Composted mulch provider must be registered with or permitted by the New Mexico Environment Department Solid Waste Bureau and must be in compliance with 20 NMAC 9.1.

Composted mulch is defined as the product of a controlled aerobic thermophilic biological decomposition process that meets the quality requirements in Table 632.2.6:1, "Material and Operations for Classes of Seeding." Raw Materials used in producing composted mulch may include green waste, animal manure, animal bedding, paper waste, food waste, biosolids or other non-toxic organic matter, but shall not include animal mortalities.

Concentrated compost mulch shall not be allowed as a substitute for composted mulch.

Table 632.2.6:1			
Requirements of Compost Mulch			
Material	Measure	Method	Criterion
All Composted Mulches	Moisture Content*	Evaporative Loss at 105°C (220°F)	Between 35% and 60%
	Particle Size	Sieve	40% minimum to 100% maximum of Material may pass 3/4" screen: 100% of pieces smaller than 4" in length and 2" in diameter.
	Electrical Conductivity*	1:5 slurry (mass basis)	<10 mmho/cm
	pH*	1:5 slurry (mass basis)	pH 5.0 - 8.0
	Organic Matter*	Loss on ignition at 550°C (1022°F)	25% - 100% of dry weight
	Maturity	Germination test in 50:50 (volume basis) mixture of 3/4 inch screened composted mulch and twice-rinsed nursery sand.	Minimum 50% germination to second set of leaves for marigold seeds.
	Stability		Maximum core temperature of 43°C (110°F) after 48 hours in 5 foot tall conical pile, with moisture adjusted to between 40% and 60%.
	Debris	By volume	Less than one percent (1%) inorganic debris, including but not limited to glass, plastic, stones, and metal.
Composted Mulches with Wastewater Biosolids	Trace Metals*	HNO <sub>3</sub> digestion	Complies with Table 3 of 40 CFR 503.13.
	Fecal Coliforms*	MPN with A-1 broth	<1000 MPN/dry gram
* Tests marked with asterisks must be performed by a suitable analytical Laboratory; other tests may be performed by the composted mulch producer.			

### 632.2.6.1 Acceptance

Compost mulch suppliers on the Approved Products List are approved for project use. The NMDOT Landscape Architect shall review lab analysis and submittals from the compost producers every 180 days and confirm their listing on the Approved Products List.

Before delivering composted mulch, provider shall furnish documentation that includes the following:

1. The raw Materials, by percentage of volume, used in the production of the delivered composted mulch;
2. Daily temperature records for at least 20% of the piles or batches used to produce the delivered composted mulch, illustrating attainment of at least 130°F for at least seven (7) consecutive Days;
3. A Laboratory analysis for criteria shown in Table 632.2.6:1, "Material and Operations for Classes of Seeding," performed on composted mulch no more than 180 Days prior to composted mulch delivery; and
4. An affidavit, signed by a corporate officer, confirming that the composted mulch meets each requirement shown in Table 632.2.6:1, "Material and Operations for Classes of Seeding."

### 632.2.6.2 Straw Mulch for Class A Seeding

Do not use rotten or moldy straw. All straw mulch must be barley straw and is to be free of noxious weeds as certified by an industry-recognized forage certification authority. The date on the straw certification may not be older than one (1) year from the date of the straw inspection. Before Acceptance the Contractor shall provide to the Project Manager weight tickets signed by a certified weighmaster as per Section 109.1, "Measurement of Quantity," which confirms that the amount of bulk Materials delivered to the Project equals tonnage required for the Project per the determined acreage.

## 632.3 CONSTRUCTION REQUIREMENTS

### 632.3.1 Equipment

All Equipment shall be inspected and calibrated daily by the Contractor to confirm Equipment is in good working order prior to commencing work. An Inspector shall witness the inspection and calibration.

To avoid the spread of noxious weeds, all revegetation Equipment (including but not limited to trucks, trailers, tractors, hydro-seeders, drill seeders, straw blasters, and disks) shall be pressure-washed to remove all visible mud, soil, and debris prior to entering the Project limits within the state right of way. If Equipment leaves the Project for any reason it shall be re-inspected when returned to the job site.

Disking attachments shall have a minimum six (6) foot carriage with front and rear discs.

Crimping Equipment shall have a minimum eight (8) foot wide carriage.

Skid steer attachments may only be used on confined areas for seeding operations.

Skid steers shall not be used for spreading compost unless in a confined area.

**632.3.1.1 Drill Seeder**

Drill seeding Equipment shall be inspected so that drill seed drop tubes are not torn or clogged. All seed loaded into Equipment shall be verified by an Inspector to confirm correct application rates. An Inspector must verify that the auger in the seed bin is rotating and that seed is dropping through drop tubes.

The drill seeder must be calibrated daily to prevent loss of seed or to prevent over-seeding. Calibration is necessary to control rate and depth of seed distribution. Calibration procedure and demonstration shall be as per manufacturer's specifications.

Ensure that the Equipment has the following:

1. Double disc openers with 'A' frames
2. Depth bands;
3. Drop tubes;
4. Packer wheels or drag chains;
5. Rate control attachments;
6. Seed boxers with covers and agitators for trashy seed; and
7. Keyway holding auger to shaft

**632.3.1.2 Hydro-Seeder**

The hydro-seeder cannons, hoses and agitators shall be in good working condition. The hydro-seeder shall be capable of applying materials up to distances of 200'.

**632.3.2 Materials and Sampling**

Inspector must be present when Materials are to be loaded into Equipment or distributed on the areas to be seeded. Contractor shall provide all containers and bags to the Project Inspector for verification.

A one (1) quart sealed zip lock bag of seed Material labeled with the Material identification and the Project control number is to be provided to the NMDOT Landscape Architect for examination and testing. The Department may reject Materials not in accordance with the Contract.

**632.3.3 Pre-Seeding Conference**

A mandatory pre-seeding conference called by the Project Manager shall be held on the Project before revegetation Work begins. Attending will be the NMDOT Project Manager or representative, the NMDOT Landscape Architect or certified seeding Inspector, the General Contractor or representative, and the Revegetation Contractor.

The purpose of the meeting is to inspect the project, and off-site yards, pits, and borrow roads for confirmation of their revegetation requirements. The Project Manager shall have at the pre-seeding meeting

documentation of all pits, Contractor yards, etc. approved for use on the Project. Per 632.3.12, "Seeding Operations for Class A and Class C Seeding," test strip location shall be verified following the Pre-seeding Conference.

Submittals must be provided to the Project Manager and Landscape Architect ten (10) Days prior to the proposed start of revegetation Work. Any revegetation Work done prior to this inspection shall be rejected.

All areas to be revegetated shall be measured and confirmed for each class of seeding in accordance with Section 801, "Construction Staking By The Contractor." The Project Manager and the Contractor shall field verify and agree on the acreage for each Class before any Materials are ordered or delivered to the Project

The Prime Contractor shall provide minutes of this meeting for review and approval by the Project Manager and Landscape Architect or representative.

There will be no change in Materials or the scope of revegetation Work after the Contractor begins seeding operations.

For revegetation Work areas to be considered ready for revegetation they shall be accessible, free of Equipment, and no further construction processes occurring which would interfere with seeding operations. No further revegetation Work or Equipment access shall occur on areas which have been revegetated. Areas designated as Class C treatment shall be track-walked with tracks parallel to the toe of slope to compact and score the slopes prior to revegetation.

Slopes which have eroded or otherwise degraded may need to be re-graded before revegetation.

The Prime Contractor shall maintain a minimum twelve (12) foot wide Equipment access to all revegetated areas for use by revegetation Subcontractor until revegetation Work is complete.

#### **632.3.3.1 Weather Limitations**

Revegetation Work shall not be performed when the ground is frozen or when temperatures are below 32°F. No revegetation work shall be performed when wind speed exceeds fifteen (15) miles per hour as measured with a wind meter by the Inspector.

#### **632.3.4 Seeding Classes**

Provide the various classes and the Material and operations for each class in accordance with Table 632.3.4:1, "Operations Sequence for Classes of Seeding."

Table 632.3.4:1		
Operations Sequence for Classes of Seeding		
Operation	Seeding Class	
	A	C
Disk seed bed to four (4) inches	X	---
Apply fertilizer by broadcast, then disk to four (4) inches	X	---
Apply one (1) inch compost mulch, disk to four (4) inches	X	---
Drill seed	X	---
Straw crimp; apply tackifier, dye	X	---
Scarify soil surface vertically to slope	---	X
Hydro apply seed, fertilizer, dye, tackifier	---	X
Scarify seeded areas horizontally to slope	---	X
Hydro-mulch; apply tackifier, dye	---	X
Rock Mulch	---	X
Note: No seeding shall be applied on frozen ground		
Key:	X = required	
	--- = not required	
The Department defines the seeding classes as follows:		
1	Class A = seeding with a drill seeder (slopes up to 3:1 or flatter)	
2	Class C = seeding with hydro-seeder (slopes steeper than 3:1 to a maximum of 2:1)	

### 632.3.5 Modified Class A Seeding for Narrow Areas or Areas Inaccessible to Drill Seeding Equipment

Any areas less than 3:1 in slope requiring revegetation which are less than eight (8) ft. wide or are inaccessible to drill seeding Equipment shall use the following procedure and payment is to be made at the Class A rate.

Disk soil to a four (4) inch depth with one (1) inch of incorporated compost mulch and fertilize as per Class A treatment. A skid steer with attachments may be used.

A hydro-seeder shall then be used to apply the seed, dye, tackifier, and hydro mulch in two (2) steps as described below.

Step 1. Apply seed, dye, and tackifier to the newly disked soil.

Step 2. Apply an approved bonded fiber mulch with tackifier applied in two (2) coats from opposing directions at rate of 2,500 lbs. per acre.

Seed in these areas shall be applied at twice the specified rates and no extra payment shall be made therefore.

### 632.3.6 Revegetation of Areas Outside the Project Limits

Revegetation of all disturbed off-site locations will be in accordance with Sec. 104.7, "Final Cleanup," and the appropriate class of seeding will be used for the terrain. Section 632, "Revegetation," procedures will be followed for all public lands and private lands that are required to be revegetated unless other seed lists and procedures are required in a resource agency permit.

The Contractor must provide as part of submittals a letter of intent from landowners for off-site locations to be used as per Section 104.7, "Final Cleanup." The letter of intent must acknowledge the landowner's right to have revegetation performed as per our specifications and if that revegetation right is waived the owner acknowledges that neither the Contractor nor NMDOT shall be responsible for any claims, including but not limited to fugitive dust, noxious weeds, and siltation of waterways, related to the owner's decision to forgo revegetation. When revegetation Work is being performed on private land, a right of access permit for inspection of the revegetation Work for that private land must be provided by the Contractor to Project Management and shall be considered incidental to the Work.

The Contractor shall provide documentation of the treatment used and notify Project Management when the revegetation Work is being performed so Inspectors may be present.

**Table 632.3.6:1**  
**Schedule of Materials for Class A Seeding**

<b>CLASS A REVEGETATION MATERIALS PER ACRE</b>				
<u><b>TACKIFIER</b></u>	<u><b>COMPOST MULCH</b></u>	<u><b>SEED</b></u>	<u><b>STRAW</b></u>	<u><b>FERTILIZER</b></u>
200 lbs.	134 cubic yards	Per revegetation zone list	2 tons	1000 lbs.

**Table 632.3.6:2**  
**Schedule of Materials for Class C Seeding**

<b>CLASS C REVEGETATION MATERIALS PER ACRE</b>			
<u><b>HYDRO MULCH WITH TACKIFIER</b></u>	<u><b>SEED</b></u>	<u><b>ROCK MULCH</b></u>	<u><b>FERTILIZER</b></u>
3,500 lbs.	Per revegetation zone list X2	200 cubic yards	1,000 lbs.

### 632.3.7 Materials Certifications

Provide all certifications for required Material to the Project Manager before the Project begins.

### 632.3.8 Seedbed Preparation for Class A Seeding

Till the seedbed with a disk, harrow, or chiseling tools to at least four (4) inches deep. Uproot competitive vegetation during seedbed preparation, and uniformly work the soil to a surface free of clods, large stones, or other Deleterious Material that would interfere with seeding Equipment. Ensure Inspector approves area that was disked before compost is added to the soil.

Add fertilizer by broadcast and disc, harrow, or chisel to a depth of four (4) inches.

Add one (1) inch of compost mulch as specified by disc, harrow, or chisel to a depth of four (4) inches.

The same day as and preceding tilling compost mulch into the seedbed water shall be added to the compost mulch at a rate of 2,500 gallons per each 134 cubic yards. This is to aid in the incorporation of the mulch into the seedbed. All compost mulch must be incorporated into the seedbed.

Till across the slope, along the contour. Do not till the seedbed if the moisture content of the soil is outside the limits recommended by the seed Supplier for planting, or the ground is in a non-tillable condition.

Do not prepare more seedbed area on which the entire seeding operation can be applied before the surface crusts or loses seed and fertilizer to erosion. If erosion or crusting occurs, perform seedbed preparation again.

After seed bed preparation and before drill seeding commences all rocks larger than four (4) inches in diameter shall be removed from the seed bed and no payment shall be made therefore.

Any Class A area considered too rocky for drill seeding use shall have four (4) inches of bedding or clean fill placed so that Class A operations can occur as in Table 632.3.4:1, "Operations Sequence for Classes of Seeding."

#### **632.3.9 Scarification for Class C Seeding**

Class C slopes shall be scarified, competitive vegetation uprooted, and roughed up by chain harrow or raking in a vertical slope direction immediately before hydro-seeding and again horizontally across the slope following hydro-seeding so that seed has good adherence to the surface and soil cover.

Following scarification of the slopes all rocks larger than four (4) inches in diameter shall be removed from the hydro-seed bed and no payment shall be made therefore.

#### **632.3.10 Fertilizer for Class A and Class C Seeding**

Fertilizer bags shall be examined before use to confirm correct analysis and content. Notify Project Inspector when bags are to be loaded into machines and all bags shall be collected and counted confirming correct amounts used.

Apply the fertilizer uniformly to the prepared seedbed. Class A shall be broadcast and Class C shall be hydro-applied. Mix fertilizer in the hydro-seeder for a minimum of five (5) minutes before applying.

#### **632.3.11 Compost Mulch for Class A Seeding**

The Contractor shall wet down compost mulch so that wind loss is kept to a minimum. Stockpiles shall be less than six (6) ft. tall and oriented perpendicularly to the prevailing winds to prevent wind loss.

The certified Inspector shall verify the moisture after unloading 1/3 of the load. The Contractor shall provide a organic matter moisture measuring probe capable of measuring up to 65% moisture content. The device shall be the property of the Contractor and no extra payment therefore shall be made.

Regardless of the compost mulch moisture content, Project Management may require further wetting of



compost mulch at delivery to prevent loss through wind. No extra payment shall be made therefore.

The certified Inspector shall verify the load is full before unloading by climbing up on the trailer to confirm the Material is up to the front of the trailer. Indications of a short load are gaps at the front of the truck, overloading at the back of the truck, and slip staining of the Material from the original loading line.

#### **632.3.12 Seeding Operations for Class A and Class C Seeding**

Uniformly apply the seed mix at a rate in accordance with the Contract. Do not drive vehicles or other Equipment on seeded areas. The Contractor is responsible for protecting revegetation Work until Acceptance.

A test strip of each class of seeding shall be provided by Contractor before commencing general seeding. Each test strip shall measure no less than 1,000 square feet in a configuration which works for the Equipment and the site, shall be at a location of the Contractor's choosing within the Project, and shall be done as per specifications with a certified Inspector and the Landscape Architect or representative present. The test strip is to verify equipment functionality, proper adjustment and application rate.

Upon Acceptance of the test plot the Contractor may proceed with seeding operations. If the test strip is not accepted, establish a new 1,000 square foot test strip location and re-verify. The Contractor shall not proceed to full seeding operation until an acceptable test strip has been produced. Payment will only be made for accepted test strips and shall be made under appropriate class of seeding.

The Contractor shall coordinate with Project Management prior to starting seeding operations to ensure that an Inspector is present at all times. No revegetation Work shall be performed without the presence of a certified Inspector.

Once seed is installed on a given Project area all operations to complete that class of seeding for that area must be completed the same Day.

If rainfall or some other factor prevents the Contractor from seeding to the specified depth on prepared surfaces, the Contractor shall prepare the seedbed and apply seed again, at no additional cost to the Department.

Class C areas are to be seeded at twice the standard rate and no extra payment is to be made therefore.

Do not perform seeding operations when wind velocity exceeds fifteen (15) mph.

#### **632.3.13 Drill Seeding for Class A Seeding**

Plant seed 1/2 inch deep unless otherwise specified in the Contract. Ensure that the distance between the drilled furrows is no more than eight (8) inches. If the furrow openers on the drill exceed eight (8) inches, re-drill the area.

#### **632.3.14 Hydro-Seeding for Class C Seeding**

Seed shall be applied in a slurry with fertilizer, dye, and tackifier. All Materials loaded into Equipment

shall be verified by NMDOT Project Inspectors to confirm correct application rates. Mix all materials for a minimum of five (5) minutes before application.

#### **632.3.15 Hydro-Mulching for Class C Seeding**

Hydro-mulching shall be applied in two sweeps from opposing directions to ensure coverage is complete. Dye and tackifier shall be included in slurry so that Project Inspectors can confirm coverage. Mulch must be applied the same Day as the seed to protect seed. All Materials loaded into Equipment shall be verified by NMDOT Project Inspectors to confirm correct application rates. Mix all Materials for a minimum of five (5) minutes before application.

Contractor shall provide Project Management a laminated color reference card from the BFM manufacturer showing a close-up reference photograph of their product installed at the rate of 3,500 lbs. per acre.

#### **632.3.16 Straw Mulching for Class A Seeding**

Anchor straw mulch using a crimper with flat serrated discs at least one (1) inch thick with dull edges, spaced no more than nine (9) inches apart. Ensure that the disc diameter is large enough to prevent the frame of the Equipment from dragging in mulch.

Ensure that straw mulch crimping is at least two (2) inches deep and do not cover it with excessive amounts of soil. Perform mulch anchoring across the slope where practical, with no more than two (2) passes of the anchoring Equipment. Straw shall be evenly distributed over entire bedding area with no bare areas showing or areas with straw deeper than four (4) inches in depth before crimping.

Ensure that the rate of application of straw mulch is at least two (2) tons of air-dry straw per acre. The Inspector shall verify the total tons per acre of straw required per acre.

Ensure that straw mulch has at least 50% of fibers exceeding ten (10) inches long on the ground after application.

Spread straw mulch following drill seeding with a mechanical mulch spreader or by hand. If spreading by hand, tear apart the bales of mulch and fluff it before spreading.

Anchor straw following crimping with an approved tackifier with green dye at a rate of 200 lbs. per acre. The tackifier shall be Incidental to the seeding.

When crimping the straw is impractical due to rocky areas it may be spread and not crimped. Tackifier will be applied as per specification. This method shall be approved by the Project Manager for rocky areas only.

When the revegetation Work is being done the Contractor shall verify straw bale moisture content with a straw bale moisture meter with an eight (8) inch minimum length probe for the duration of the Project. An Inspector must be present and record this test. The moisture meter shall remain the property of the Contractor following Project completion and the testing shall be considered Incidental to the Project. Each bale must be tested to confirm that the bale interior moisture content is no greater than 20%. Any bales

with moisture above this level shall be rejected and removed from the Project. Higher levels of moisture may indicate the presence of mold and the risk of spontaneous combustion.

### **632.3.17 Rock Mulch**

The finished rock mulch surface must be smooth and uniform maintaining the original flow lines, slope gradients, and contours of the job. Rock mulch must be applied in a fashion not to tear up or damage the hydro-mulch when being placed. Methods and means of rock mulch installation are not specified and may vary as per access. Damaged hydro-mulch shall be replaced and no extra payment made therefore.

### **632.3.18 Class C Slopes with over 50' of Slope Length**

Class C slopes in excess of 50' of slope length (measured along the slope face from toe to crest) shall have the following treatment.

Class G rip-rap shall be used for the lower portion of the slope from the toe upwards to the point where there will not be more than 50' of slope length covered with 3/4 inch to one (1) inch rock mulch described in 632.2.5, "Rock Mulch for Class C Seeding," and Table 632.3.4:1, "Operations Sequence for Classes of Seeding." The rip rap shall be placed over the hydro-seeded and mulched surface in a way that does not damage the applied mulch treatment, shall be installed from the toe of the slope upwards and shall be one layer of Class G rip-rap in thickness.

## **632.4 METHOD OF MEASUREMENT**

The Contractor shall digitally provide for approval a to-scale printable revegetation plan as part of the submittals before the mandatory pre-seeding meeting. The plan shall identify each area by the class of seeding as per Table 632.3.4:1, "Operations Sequence for Classes of Seeding." Quantities shall match those produced by construction staking and shall include all off-site areas.

An accompanying table to the plan shall be submitted showing the amount of each Material apportioned for each area on the Project and the acreage of that sub-area. Included in the plan shall be all off-Project areas requiring revegetation as enumerated in Section 632.5, "Basis of Payment."

## **632.5 BASIS OF PAYMENT**

<b>Pay Item</b>	<b>Pay Unit</b>
<i>Class A Seeding</i>	Acre
<i>Class C Seeding</i>	Acre

### **632.5.1 Revegetation Work Included in Payment**

The following revegetation Work items shall be considered as included in payment for the main items and shall not be measured or paid for separately:

- A. Tackifier for straw mulch;
- B. All compost mulch, fertilizer Materials, and water added at tilling;

- C. Rock for rock mulch;
- D. Seeding of the areas occupied by the Contractor for campsites, office, plant sites, Equipment parking, service areas, areas stripped of native vegetation through unnecessary or improper construction practices by the Contractor, and any fertilizing;
- E. Moisture probe for straw bales and compost mulch;
- F. Weed removal and disposal prior to seed operations;
- G. Revegetation plan;
- H. Right of access permit to be provided by Contractor for inspection of off-site locations located on private property;
- I. Multiple mobilizations to meet NPDES requirements; and
- J. Construction staking

November 17, 2016

**SPECIAL PROVISIONS  
MODIFYING  
SECTION 664: LANDSCAPE PLANTING**

The 2014 Edition of the New Mexico Department of Transportation Standard Specifications for Highway and Bridge Construction shall apply in addition to the following:

Delete Subsection **664.3.2 Care and Replacement** in its entirety and replace with the following:

If the Contractor installs a drip irrigation system, the Contractor shall hand water the plants until the drip irrigation system is in place and operational.

Delete Subsection **664.5.1 Work Included in Payment** in its entirety and replace with the following:

The following Work and items will be considered as included in the payment for the main items and will not be measured or paid for separately:

1. Furnishing, transporting, and planting of plants; and
2. Excavation, furnishing prepared backfill mixture, wrapping, staking, watering, care, and maintenance; of plants.

March 23, 2018

## **SPECIAL PROVISIONS FOR SECTION 668: DEWATERING**

The 2014 Edition of the New Mexico Department of Transportation Standard Specifications for Highway and Bridge Construction shall apply in addition to the following:

### **1.0 DESCRIPTION**

- 1.0.1 The work in this section includes site dewatering necessary to lower and maintain groundwater levels and hydrostatic pressure to permit excavation and construction to be performed properly under dry conditions.

Dewatering includes providing access to the channel bottom, installing and removing temporary materials to support construction equipment within the channel, construction of surface water diversions around the work zone, and the maintenance thereof.

- 1.0.1.1 The groundwater shall be lowered and maintained to an absolute minimum; this is defined as groundwater being below the lowest point of excavation for the work being performed.

- 1.0.1.2 All work shall comply with all state and federal environmental permitting requirements at all times including the Clean Water Act (CWA), Section 401 and 404.

- 1.0.2 Dewatering operations shall be adequate to assure the integrity of the finished work. The responsibility for conducting the dewatering operation in a manner which will protect adjacent structures and facilities rests solely with the Contractor. The cost of repairing any damage to adjacent structures and restoration of facilities shall also solely rest on the responsibility of the Contractor.

- 1.0.3 The Contractor shall bear the sole responsibility for the design, installation, operation, monitoring and removal of the dewatering system to comply with the requirements in this section and any applicable regulatory agencies. The Contractor shall be required to install additional dewatering equipment as may be required throughout the duration of the project to maintain groundwater level as described in Paragraph 1.0 1.1.

### **2.0 SCHEDULE AND PLAN**

- 2.0.1 Ten days prior to the pre-construction conference, the Contractor shall submit a detailed written dewatering plan including: dewatering method(s), a list of equipment, all materials, estimated pumping rates and a schedule of values.

- 2.0.2 Fluctuations of the groundwater level can occur due to seasonal variations in the amount of rainfall, run off and other factors not evident. The information provided in the Contract

may not be adequate for a Contractor to evaluate construction conditions or design the dewatering system. The Contractor should independently interpret the soil/groundwater conditions taking into consideration their intended means and methods of dewatering, and the Contractor may perform exploration at their own expense as necessary for design of the dewatering system.

- 2.0.2.1 Due to possible variations of soil conditions and groundwater levels the Contractor shall be responsible for changing or modifying the dewatering system to accommodate such variations.

### **3.0 CONTROL AND OBSERVATION**

- 3.0.1 Adequate maintenance shall be conducted by the Contractor to ensure that the stability of excavated areas are not adversely affected by water, that erosion is controlled and that flooding of excavation or damage to structures does not occur. It is solely the Contractors responsibility for site excavation, safety and compliance with OSHA regulations.
- 3.0.2 The Department reserves the right to install measuring devices to observe the groundwater levels and monitor the performance of the system(s).
- 3.0.3 When directed by the Project Manager, the Contractor shall be required to excavate a pothole to determine if the groundwater is at the acceptable maximum level or lower as defined in Paragraph 1.0.1.1.
  - 3.0.3.1 When observation of the groundwater level is complete the pothole shall be backfilled with clean 3" crushed limestone.
  - 3.0.3.2 If directed the Contractor shall excavate a pothole, disturbing the smallest footprint possible, to the elevation as described in Paragraph 1.0.1.1. Said pothole excavation shall be made with the following minimum frequency: At the beginning of every day where any trench or excavated area has not been completely backfilled. At every 150-lineal feet of excavated area. At the end of every day. (The pothole made at the end of the day shall be left open and shall be used as the pothole for the beginning of the next day of construction.

### **4.0 INSPECTION**

- 4.0.1 During or after any excavation, if the Contractor observes insufficient soil stability present that may prevent proper installation for the specified Work, the Contractor shall call for inspection of conditions by the Project Manager.
- 4.0.2 If after dewatering has lowered the groundwater level as specified and unacceptable conditions is found by the Project Manager, then the Contractor may be directed to lower the groundwater to an acceptable level lower than that defined in Paragraph 1.0.1.1. If more extensive dewatering is required the Contractor must achieve the revised acceptable groundwater level before construction may continue.

### **5.0 EXECUTION**

- 5.0.1 The Contractor shall furnish, install and operate pumps, pipes, appliances and equipment of sufficient capability to maintain the maximum or lower groundwater elevation described in Paragraph 1.0.1.1 within the excavation limits until backfilled, unless otherwise authorized by the Project Manager.
- 5.0.2 The Contractor shall provide temporary ground surface piping necessary to convey discharge to an acceptable containment area(s) with the capacity to store said discharge. All rerouting of temporary piping necessary to complete the project will be provided by the Contractor. Discharge directly onto the ground surface shall be permitted only if approved by the Project Manager.
- 5.0.3 An adequate system shall be designed, installed and maintained to lower and maintain the groundwater elevations as described in Paragraph 1.0.1.1 to permit excavation, construction of structures and placement of fill materials to be performed under dry conditions.
- 5.0.4 Heavy equipment may not enter the surface water. If flowing water must be temporarily diverted around the work area, the Contractor shall use non-erodible sand bag dams wrapped in geotextile fabric (dirt cofferdams are not acceptable). Best Management Practices must be utilized to prevent contact of sediment, oil grease, uncured concrete and other pollutants from entering the water (in this case, the Best Management Practice to achieve this condition is dewatering the work area so water can't contact sediment and pollutants). The Contractor may install some kind of non-erodible containment dam(s), downstream dam(s) may be built as well, to prevent water "backwatering" into the work area, none of this precludes the option of building diversion channels/pipes to convey water around the work area, instead of pumping.
- 5.0.5 The system shall be placed into operation prior to beginning excavating below the natural groundwater level, to lower the groundwater to the elevation as defined in Paragraph 1.0.1.1, and shall be operated continuously 24 hours a day, 7 days a week until all work has been constructed and backfilling has been completed.
  - 5.0.5.1 If the dewatering system shuts down or if pumping is suspended, the groundwater levels will need to be lowered to the required level, as defined in Paragraph 1.0.1.1, and verified by the Project Manager before continuing any construction, including excavation and backfilling. The Project Manager may also require compaction, moisture and/or other soils testing of any backfill that is prematurely subjected to groundwater to verify said soil's stability prior to placement of additional backfill, if said soils are determined to be unacceptable, the Contractor shall be required to remove and replace damaged soils at his own expense.

## 6.0 BASIS OF PAYMENT

- 6.0.1 The measurement and payment for all Work covered under this section will be made at the contract lump sum price for "Dewatering" which shall constitute full compensation for providing a design plan, obtaining any necessary permits, furnishing all equipment, labor and materials to install, operate, maintain and remove the dewatering system, in



accordance with all applicable regulations. Potholes and crushed limestone backfill shall also be considered as included in the lump sum price for "Dewatering". The contract lump sum price for "Dewatering" shall constitute full compensation for designing, constructing, maintaining, and removing the materials to support construction equipment.

6.0.2 No payment shall be made to the Contractor until copies of the permits are supplied to the Project Manager.

6.0.3 The Contractor shall be required to submit a schedule of values to the Project Manager to illustrate constituent pricing of the lump sum price. The schedule of values shall include all associated equipment, work and materials defined in the appropriate supporting section of the standard specifications, including all revisions, when applicable. This schedule of values will be used to determine the appropriate payment of the lump sum to be attributed to each progress milestone. The Contractor shall not initiate any work on the project until this schedule of values has been provided to and accepted by the Project Manager.

**Payment will be made under:**

**PAY ITEM**

**PAY UNIT**

Dewatering

Lump Sum

April 4, 2016

**SPECIAL PROVISIONS  
MODIFYING  
SECTION 702: CONSTRUCTION TRAFFIC CONTROL DEVICES**

The 2014 Edition of the New Mexico Department of Transportation Standard Specifications for Highway and Bridge Construction shall apply in addition to the following:

Add to Subsection **702.5.1 WORK INCLUDED IN PAYMENT**;

E. Removal of signs and devices as well as all other items associated with and required for installation or function of devices used for construction traffic control devices.

November 9, 2016

## SPECIAL PROVISIONS MODIFYING SECTION 704: PAVEMENT MARKINGS

The 2014 Edition of the New Mexico Department of Transportation Standard Specifications for Highway and Bridge Construction shall apply in addition to the following:

Add the following to Subsection **704.2.2 Reflectorized Glass Beads**:

Glass beads are not required for black paint used for contrast pavement markings.

Delete the following sentence from Subsection **704.3.2 Equipment**:

The Department will allow placing temporary striping during construction with other Equipment designed for application of paint or beads.

Add the following sentence to the end of Subsection **704.3.4.4 Number of Striping Applications**:

Temporary reflectorized painted markings consist of a single (1) application of markings, unless otherwise specified in the Contract.

Add the following to the end of Subsection **704.3.4.5 Repair and Replacement of Unacceptable or Damaged Striping**:

Temporary reflectorized painted markings shall be replaced or repaired when damaged, or when retroreflectance falls below minimum levels as defined in Table 704.3.4.5:1, at no additional cost to the Department. If problem areas are found, at the Department's discretion, the Department will take measurements at a minimum of every  $\frac{1}{4}$  (0.25) mile and an average will be calculated for every mile, as applicable. Measurements will be taken using 30-meter geometry in units of mcd/m<sup>2</sup>/lux. At the Department's discretion, the striping may be inspected at night to determine if the markings have sufficient retroreflectivity.

**Table 704.3.4.5:1  
Temporary Reflectorized Painted Markings Minimum Retroreflectance**

<b>Stripe Color</b>	<b>Minimum Retroreflectance (millicandelas)</b>
White	187.5
Yellow	112.5

Delete Subsection **704.3.5.2 Paint Application Rate** and replace with the following:

For permanent markings, apply paint at a rate of 22 to 25 wet mils. (25.15 gal per mile of paint for a solid four (4) inch line and 6.31 gal per mile for a broken four (4) inch line).

For temporary markings, apply paint at a rate of 15 wet mils (16.5 gal per mile of four (4) inch solid and 4.13 gallons per mile for a broken four (4) inch line).

Apply other widths of striping at appropriate multiples of these minimum rates for solid and broken paint stripes.

Add the following to Subsection **704.3.5.5 Glass Reflectorizing Beads Application Rate:**

Glass beads are not required for black paint used for contrast pavement markings.

Add the following to Subsection **704.5.2 Work Included in Payment:**

F. Black out lines for contrast markings if specified in the Contract.

April 4, 2014

**SPECIAL PROVISIONS  
MODIFYING  
SECTION 705: GENERAL REQUIREMENTS FOR TRAFFIC SIGNAL AND LIGHTING  
SYSTEMS**

The 2014 Edition of the New Mexico Department of Transportation Standard Specifications for Highway and Bridge Construction shall apply in addition to the following:

Delete Subsection **705.5 BASIS OF PAYMENT** and replace with the following;

**705.5 BASIS OF PAYMENT**

Signal/Lighting System Start-up Costs will be paid for the actual cost incurred, not to exceed the fixed amount entered by the Department into the Bid Schedule.

Provide the Project Manager with a detailed cost breakdown, including receipts and invoices of actual costs incurred.

For the purpose of bidding, the Department will enter into the Bid Schedule a fixed amount for Signal/Lighting System Start-up Costs.

<b>Pay Item</b>	<b>Pay Unit</b>
Signal/Lighting System Start-up Costs	Allowance

January 30, 2009

**SPECIAL PROVISIONS  
MODIFYING  
SECTION 802: POST CONSTRUCTION PLANS**

The 2014 Edition of the New Mexico Department of Transportation Standard Specifications for Highway and Bridge Construction shall apply in addition to the following:

Delete Subection **802.3 BASIS OF PAYMENT** and replace with the following;

**802.3 BASIS OF PAYMENT**

Post Construction Plans will be paid for the actual cost incurred, not to exceed the fixed amount entered by the Department into the Bid Schedule.

Provide the Project Manager with a detailed cost breakdown, including receipts and invoices of actual costs incurred.

For the purpose of bidding, the Department will enter into the Bid Schedule a fixed amount for Post Construction Plans.

<b>Pay Item</b>	<b>Pay Unit</b>
Post Construction Plans	Lump Sum

January 29, 2015

**SPECIAL PROVISIONS  
MODIFYING  
SECTION 901: QUALITY CONTROL/QUALITY ASSURANCE (QC/QA)**

The 2014 Edition of the New Mexico Department of Transportation Standard Specifications for Highway and Bridge Construction shall apply in addition to the following:

Add subsection **901.4.1 Aggregate Index** to follow **901.4 EVALUATION OF MATERIALS FOR ACCEPTANCE**.

**901.4.1 Aggregate Index**

**901.4.1.1 Description**

The AI combines test values from the Los Angeles Wear Test, Soundness Loss Test, and Absorption Test. The AI is a single value representing the overall quality of the source from which the aggregates are obtained. Do not use to evaluate individual aggregate stockpile quality.

**901.4.1.2 Sampling and Testing Procedures**

Determine Los Angeles Wear, Soundness Loss, and Absorption values for the AI equation using at least five (5) random test samples obtained from all stockpiles at the source in accordance with AASHTO T 2. Submit all of the five (5) samples to a Department approved private Laboratory for combination into a single sample. The Project Manager or the State Materials Bureau will have a list of approved private Laboratories. Extract a representative test sample from the single sample to determine the Los Angeles Wear and Absorption values. Prepare the sample used to determine the Absorption as follows:

Plus 3/4 in	1000 grams
3/4 in to 1/2 in	1000 grams
1/2 in to 3/8 in	1000 grams
3/8 in to #4	1000 grams

Separate the remaining amount of the single sample into five (5) test samples using the procedures in AASHTO T 248. Calculate a Soundness Loss value for each of these five (5) samples using Table 901.4.1.2:1, "Standard Gradation for Soundness Loss Testing."

**Table 901.4.1.2:1**  
**Standard Gradation for Soundness Loss Testing**

Sieve size	% passing
1 1/4 in	100
1 in	100
3/4 in	79
1/2 in	53
3/8 in	34
No. 4	0

Average the five (5) soundness loss results to obtain the overall soundness loss value for the subject aggregate pit.

#### **901.4.1.3 Testing of Aggregates**

Perform the following tests using a Department-approved private Laboratory or the State Materials Bureau:

1. Los Angeles Wear (in accordance with AASHTO T 96, Method B);
2. Soundness Loss (in accordance with AASHTO T 104); and
3. Absorption (in accordance with AASHTO T 85 or NMDOT 001 (2006)).

Use the same private Laboratory for the entire project unless otherwise approved (in writing) by the Project Manager.

Obtain samples under the observation of the Project Manager or Department designee. Split samples into two (2) samples in accordance with AASHTO T 248, if requested by the Project Manager. The private Laboratory and the State Materials Bureau will each test one (1) sample. Send copies of test reports to the Project Manager.

#### **901.4.1.4 Frequency of Testing**

Submit samples at least once every year to maintain continuous approval of Commercial Material Sources.



### 901.4.1.5 Equation

Calculate the AI of a coarse aggregate to the nearest whole number in accordance with the following equation:

$$AI = \frac{1}{3} \sqrt{LA^{2.2} + SL^{3.0} + A^{4.0}} \quad (1)$$

Where:

- AI* is the aggregate index
- LA* is the Los Angeles Wear, the percent of aggregate wear at 500 revolutions if tested in accordance with AASHTO T 96
- SL* is the soundness loss of the sample if tested in accordance with AASHTO T 104 using magnesium sulfate with a test duration of 5 cycles and a standard gradation
- A* is the absorption, the amount of moisture retained if tested in accordance with AASHTO T 85

Example:

1. Determine the L.A. Wear as a whole number – for example, 25;
2. Determine the Soundness Loss as a whole number – for example, 15;
3. Determine the Absorption as a whole number – for example, 3;
4. Calculate the value of the L.A. Wear taken to the 2.2 power – that is,  $25^{2.2} = 1189.8$ ;
5. Calculate the value of the Soundness Loss taken to the 3rd power – that is,  $15^3 = 3375.0$ ;
6. Calculate the value of the Absorption taken to the 4th power – that is,  $3^4 = 81.0$ ;
7. Add the value obtained from steps 4, 5, and 6 – that is,  $1189.8 + 3375.0 + 81.0 = 4645.8$ ;
8. Determine the square root of Step 7 – that is,  $\sqrt{4645.8} = 68.2$ ;
9. Divide the result from Step 8 by 3 – that is,  $68.2 \div 3 = 22.7$ ; The A.I. for this sample is 23.

**901.7 BASIS OF PAYMENT**

Replace Table 901.7:5 with the following:

Table 901.7:5			
Minimum Process Control Guidelines for Portland Cement Concrete Pavement (QC)			
Item	Property	Testing frequency	Test method
Fresh Concrete for PCCP	Unit Weight	1 per 125 yd <sup>3</sup>	AASHTO T 121
	Air Entrainment	1 per 125 yd <sup>3</sup>	AASHTO T 121
	Slump	1 per 125 yd <sup>3</sup>	AASHTO T 119
	Compressive Strength	1 per 125 yd <sup>3</sup>	AASHTO T 22, 23, 231
PCCP in Place	Thickness <sup>a</sup>	2 per 2,500 yd <sup>2 b</sup>	—
<sup>a</sup> Complete corrective Work specified in Section 450.3.5.2, "Surfacing Smoothness Requirements," before determining pavement thickness  <sup>b</sup> Determine thickness by actual survey conducted before and after the construction of the PCCP at fixed, randomly selected locations.			

**APPENDIX E**

**PLANS AND SPECIFICATIONS**

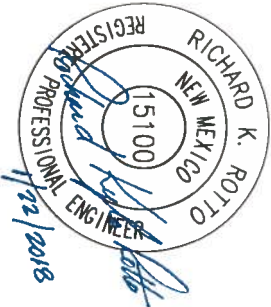
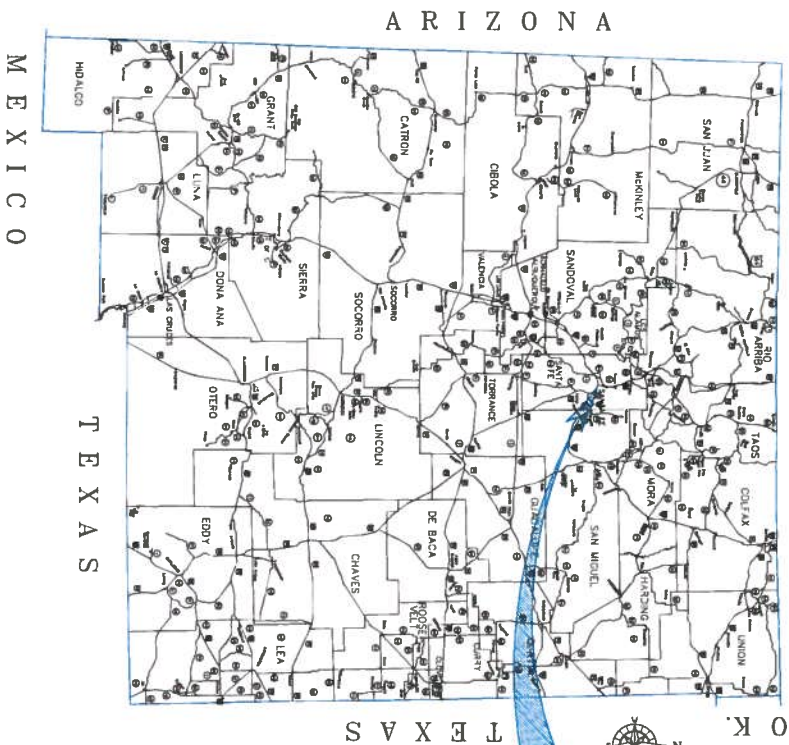
SANTA FE COUNTY PUBLIC WORKS DEPARTMENT  
SANTA FE COUNTY


FINAL CONSTRUCTION PLANS  
LA BARBARA RD.  
DRAINAGE AND ROAD IMPROVEMENTS (CR-67F)  
SANTA FE COUNTY PROJECT NUMBER 2014-0216-PW



APPROVED *Not Applicable* *8/15/18* DATE *4/17/18*  
SANTA FE COUNTY  
LAND USE DEPARTMENT

APPROVED *[Signature]* DATE *4/12/18*  
SANTA FE COUNTY  
PUBLIC WORKS DIRECTOR



  
SANTA FE COUNTY PUBLIC WORKS  
424 N.W. 599  
SANTA FE, NEW MEXICO 87504  
PHONE: 505-992-5010

  
LOUIS BERGER  
2019 GAUSTICO STREET, SUITE M-1  
SANTA FE, NEW MEXICO 87505  
PHONE: 505-989-7788  
FAX: 505-989-7787

## ON PLAIN

- # SYMBOLS ON PROFILE

ON PROFILE



### VERTICAL CURVE



EXISTING CULVERT PIPE



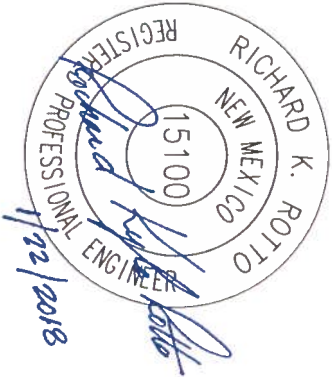
PROPOSED CULVERT PIPE



## BOOK NUMBERS

NO BOOK NO. FOR THIS PROJECT  
DATA WAS ELECTRONICALLY COLLECTED

THESE PLANS WERE PREPARED  
AND/OR ASSEMBLED BY:  
LOUIS BERGER GROUP, INC.  
(505) 989-7788



**TYPE OF CONSTRUCTION:**  
ROADWAY CONSTRUCTION,  
DRAINAGE IMPROVEMENTS  
AND EARTHWORK.

VICINITY MAP

SANTA FE COUNTY  
LA BARBARIA RD. DRAINAGE  
AND ROAD IMPROVEMENTS (CR-67F)

SHEET 1-2



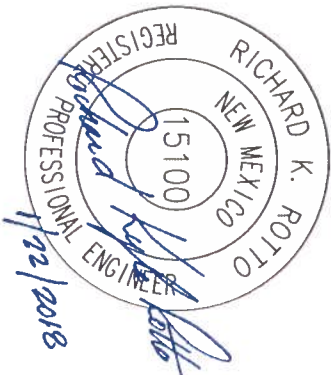
## INDEX OF SHEETS

NUMBER	DESCRIPTION	REV.DATE	SERIAL
1-SHEETS			
1-1	COVER		
1-2	VICINITY MAP		
1-3	INDEX OF SHEETS		
1-4	SUMMARY OF QUANTITIES		
1-5	GENERAL NOTES		
	SUBTOTAL = 5 SHEETS		
2-SHEETS			
2-1	TYPICAL SECTIONS		
2-2	MISCELLANEOUS DETAILS		
2-3	BASE BID MISCELLANEOUS QUANTITIES		
2-3a	BID ALTERNATE #1 MISCELLANEOUS QUANTITIES		
2-4	BASE BID ESTIMATED STRUCTURE QUANTITIES		
2-4a	BID ALTERNATE #1 ESTIMATED STRUCTURE QUANTITIES		
2-5 to 2-7	TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES		
2-8	STORM WATER POLLUTION PREVENTION PLAN		
2-9	STA. 106+54 ALBC GENERAL NOTES		
2-10	STA. 106+54 ALBC PLAN, PROFILE AND BACKFILL		
2-11	STA. 106+54 ALBC END ELEV'S & WINGWALL SECTS		
2-12	STA. 106+54 ALBC UPSTREAM HEADWALL DETAILS		
2-13	STA. 106+54 ALBC DOWNSTREAM HEADWALL DETAILS		
2-14	STA. 106+54 ALBC MISCELLANEOUS DETAILS		
	SUBTOTAL = 16 SHEETS		
3-SHEETS			
3-1 to 3-5	PLAN AND PROFILE SHEETS		
	SUBTOTAL = 5 SHEET		
4-SHEETS			
4-1 to 4-4	TURNOUT PROFILES		
	SUBTOTAL = 4 SHEETS		
5-SHEETS	(NOT USED)		
	SUBTOTAL = 0 SHEET		
6-SHEETS			
6-1	TRAFFIC NOTES		
6-2	TRAFFIC CONTROL SIGNFACE DETAILS		
6-3 to 6-4	TRAFFIC CONTROL PHASING PLAN		
6-5 to 6-8	ALBC TRAFFIC CONTROL PHASING PLAN		
	SUBTOTAL = 8 SHEETS		
7-SHEETS			
7-1 to 7-2	PERMANENT SIGNING & STRIPING PLAN		
7-3	BASE BID PERMANENT SIGNING & STRIPING QUANTITIES		
7-3a	BID ALTERNATE #1 PERMANENT SIGNING & STRIPING QUANTITIES		
	SUBTOTAL = 4 SHEET		
8-SHEETS	(NOT USED)		
	SUBTOTAL = 0 SHEETS		
9-SHEETS	(NOT USED)		
	SUBTOTAL = 0 SHEETS		
10-SHEETS			
10-1 to 10-4	STRUCTURE PLACEMENT SECTIONS		
	SUBTOTAL = 4 SHEET		
11-SHEETS	(NOT USED)		
	SUBTOTAL = 0 SHEET		
12-SHEETS			
12-1 to 12-34	CROSS SECTIONS		
	SUBTOTAL = 34 SHEET		
	SUBTOTAL = 80 SHEETS		

## INDEX OF NMDOT STANDARD DRAWINGS

NUMBER	DESCRIPTION	REV. DATE	SERIAL
	MAXIMUM AND MINIMUM COVER STEEL PIPE ARCHES HELICAL CORRUGATED METAL AND STRUCTURAL PLATES	04/10/2012	206-04-1/3
	CORRUGATED METAL CULVERT AND PIPE ARCHES BEDDING AND BACKFILL DETAILS	08/29/2008	206-07-1/1
	EXCAVATION AND BACKFILL FOR BRIDGES, WALLS AND CBC'S	08/27/2008	210-01-1/1
	PIPE ARCH CULVERT HEADWALLS	10/19/2011	511-04-1/2
	PIPE ARCH CULVERT HEADWALLS	10/19/2011	511-04-2/2
	CULVERT PIPE END SECTIONS (METAL)	11/10/2009	570-02-1/2
	WIRE ENCLOSE RIPRAP CLASS "A"	11/16/2009	602-01-1/1
	EROSION CONTROL AT CULVERT PIPES	11/16/2009	602-02-1/1
	TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES	11/29/2004	603-01-1/7
	TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES CHECK DAMS	11/29/2004	603-01-2/7
	TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES CULVERT & DROP INLET PROTECTION	11/29/2004	603-01-4/7
	W-BEAM GUARDRAIL	05/06/2014	606-GR31-1/20
	BEAM GUARDRAIL ELEMENTS	05/06/2014	606-GR31-3/20
	BEAM GUARDRAIL POSTS AND BLOCKS	05/06/2014	606-GR31-4/20
	TYPICAL INSTALLATION AND SURFACING DETAILS	05/06/2014	606-GR31-6/20
	END TREATMENT W-BEAM END ANCHOR & THREE BEAM END ANCHOR	05/06/2014	606-GR31-9/20
	END TREATMENT W-BEAM END ANCHOR DETAILS	05/06/2014	606-GR31-11/20
	CURVED GUARDRAIL DETAILS	05/06/2014	606-GR31-14/20
	W-BEAM GUARDRAIL END SECTIONS	05/06/2014	606-GR31-20/20
	PEDESTRIAN RAILING WITHOUT HANDRAIL	01/10/2013	607-20-1/4
	PEDESTRIAN RAILING WITH HANDRAIL	01/10/2013	607-20-2/4
	PEDESTRIAN RAILING FOUNDATION DETAILS	01/10/2013	607-20-3/4
	PEDESTRIAN HANDRAIL TEMPLATE FOR RAIL BRACKET	01/10/2013	607-20-4/4
	SIDEWALK CURB AND GUTTER	11/16/2009	609-01-1/1
	SMALL SIGN SUPPORT INSTALLATION DETAILS	1/11/2005	701-02-1/3
	SMALL SIGN SUPPORT INSTALLATION DETAILS	2/3/2005	701-02-2/3
	MULTI-DIRECTIONAL SLIP BASE POST DETAILS	1/11/2005	701-02-3/3
	TEMPORARY TRAFFIC CONTROL GENERAL NOTES	3/2/2017	702-01-1/5
	TEMPORARY TRAFFIC CONTROL GENERAL NOTES	12/10/2015	702-01-2/5
	CONSTRUCTION & MAINTENANCE SIGN FACE DETAILS	12/10/2015	702-01-3/5
	CHANNELIZATION DEVICES FOR CONSTRUCTION, MAINTENANCE, UTILITY & INCIDENT MANAGEMENT OPERATIONS	11/13/2015	702-01-4/5
	BOPEOP SIGNING (2-LANE)	7/15/2005	702-03-1/1
	ROAD OBJECT MARKER DETAILS	03/14/2005	703-01-1/3
	DELINEATORS & OBJECT MARKERS	01/11/2005	703-01-3/3
	TYPICAL RAISED PAVEMENT MARKER PLACEMENT	01/11/2005	704-01-1/2

NOTE: STANDARD DRAWINGS LISTED ARE ONLY FOR INFORMATION TO THE CONTRACTOR. IF THERE ARE OTHER STANDARD DRAWINGS NOT LISTED WHICH ARE REQUIRED TO COMPLETE THE WORK, IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO IDENTIFY THEM AND UTILIZE ACCORDINGLY.

[illegible]

SANTA FE COUNTY  
LA BARBARIA RD. DRAINAGE  
AND ROAD IMPROVEMENTS (CR-67F)

INDEX OF SHEETS

LOUIS BERGER  
2019 GALISTEO ST. SUITE M-1  
SANTA FE, NEW MEXICO

PROJECT  
NO.  
2014-0216-PW

SHEET  
NO. 1-3

DESIGNED BY: PE &amp; IPT

**DRAWN BY: CS**

**CHECKED BY: RKR**

APPROVED BY: RKR      DATE: 01/22/18

PROJECT NO. 2014-0216-PW SHEET 1-3

SUMMARY OF QUANTITIES

ITEM NO.	ITEM DESCRIPTION	UNIT	BASE BID		BID A/L. #1		PROJECT TOTALS	
			ESTIMATE	FINAL	ESTIMATE	FINAL	ESTIMATE	FINAL
201000	CLEARING AND GRUBBING	L.S.	L.S.		L.S.		L.S.	
203000	UNCLASSIFIED EXCAVATION	CU.YD.	1,500		500		2,000	
203100	BORROW	CU.YD.	4,000		500		4,500	
207000	SUBGRADE PREPARATION	SQ.YD.	4,240		1,280		5,520	
210001	UNSUITABLE MATERIAL EXCAVATION	CU.YD.	50		0		50	
210002	MAJOR STRUCTURE EXCAVATION	CU.YD.	380		0		380	
210003	MAJOR STRUCTURE BACKFILL	CU.YD.	250		0		250	
303160	BASE COURSE 6"	SQ.YD.	4,240		1,280		5,520	
416000	MINOR PAVEMENT 2 1/2"	SQ.YD.	4,240		1,280		5,520	
511000	STRUCTURAL CONCRETE CLASS A	CU.YD.	10		0		10	
511030	STRUCTURAL CONCRETE CLASS AA	CU.YD.	80		0		80	
511200	SLOPE PAVING	SQ.YD.	40.0		0.0		40.0	
540060	REINFORCING BARS GRADE 60	LBS	500		0		500	
540160	EPOXY COATED REINFORCING BARS GRADE 60	LBS	8,000		0		8,000	
570018	18" CULVERT PIPE	LN.FT.	0		10		10	
570019	18" CULVERT PIPE END SECTION	EACH	0		2		2	
570154	24" SX18"R (NOMINAL) CULVERT PIPE ARCH	LN. FT	240		30		270	
570155	24" SX18"R (NOMINAL) CULVERT PIPE ARCH END SECTION	EACH	11		2		13	
570162	42"S x 29"R (NOMINAL) CULVERT PIPE ARCH	LN.FT.	100		0		100	
570163	42"S x 29"R (NOMINAL) CULVERT PIPE ARCH END SECTION	EACH	6		0		6	
571599	137"S X 47"R X 63' ALUMINUM BOX CULVERT	LN. FT.	63		0		63	
601000	REMOVAL OF STRUCTURES AND OBSTRUCTIONS	L.S.	L.S.		L.S.		L.S.	
602000	RIPRAP CLASS A	CU.YD.	250		10		260	
602010	RIPRAP CLASS B	CU.YD.	120		90		120	
603220	CHECK DAM TYPE I	LN.FT.	180		0		180	
603260	CULVERT PROTECTION	SQ.YD.	70		20		90	
603262	COMPOSTED MULCH SOCK	LN.FT.	1,680		510		2,190	
603281	SWPPP PLAN PREPARATION AND MAINTENANCE	L.S.	L.S.		L.S.		L.S.	
606001	SINGLE FACE W-BEAM GUARDRAIL	LN.FT.	0		140		140	
606053	END TREATMENT W-BEAM END ANCHOR	EACH	0		2		2	
606610	TEMPORARY CWB RETAINED BY THE CONTRACTOR	LN.FT.	320		0		320	
606619	RESETTING OF CONCRETE WALL BARRIER	LN.FT.	960		0		960	
607079	PEDESTRA/BICYCLE RAILING	LN.FT.	48		0		48	
609200	HEADER CURB	LN.FT.	3720		1220		4940	
618000	TRAFFIC CONTROL MANAGEMENT	L.S.	L.S.		L.S.		L.S.	
621000	MOBILIZATION	L.S.	L.S.		L.S.		L.S.	
632020	CLASS C SEEDING	ACRE	0.75		0.25		1	
663049	PRE CONSTRUCTION UTILITY SURVEY	L.S.	L.S.		L.S.		L.S.	
668000	DEWATERING	L.S.	L.S.		L.S.		L.S.	
701000	PANEL SIGNS	SQ.FT.	80		53		133	
701100	STEEL POST AND BASE POST FOR ALUMINUM PANEL SIGNS	LN.FT.	230		127		357	
702810	TRAFFIC CONTROL DEVICES FOR CONSTRUCTION.	L.S.	L.S.		L.S.		L.S.	
704000	RETROREFLECTORIZED PAINTED MARKINGS	LN.FT.	6,948		0		6,948	
720060	VEHICULAR IMPACT ATTENUATOR UNIT - WORK ZONES	EACH	2		0		2	
720110	REMOVE/RESET IMPACT ATTENUATOR UNIT	EACH	6		0		6	
801000	CONSTRUCTION STAKING BY THE CONTRACTOR	L.S.	L.S.		L.S.		L.S.	

RICHARD K. ROTTO

NEW MEXICO

15100

REGISTERED PROFESSIONAL ENGINEER

1/22/2018

SANTA FE COUNTY

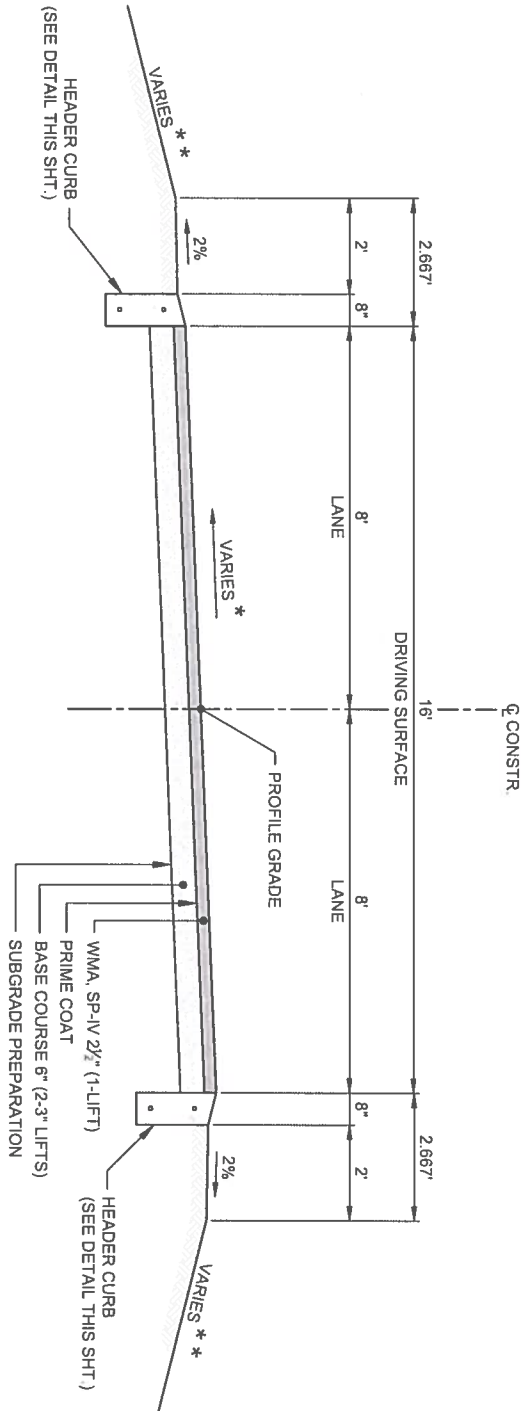
LA BARBARIA RD. DRAINAGE AND ROAD IMPROVEMENTS (GR-67F)

SUMMARY OF QUANTITIES





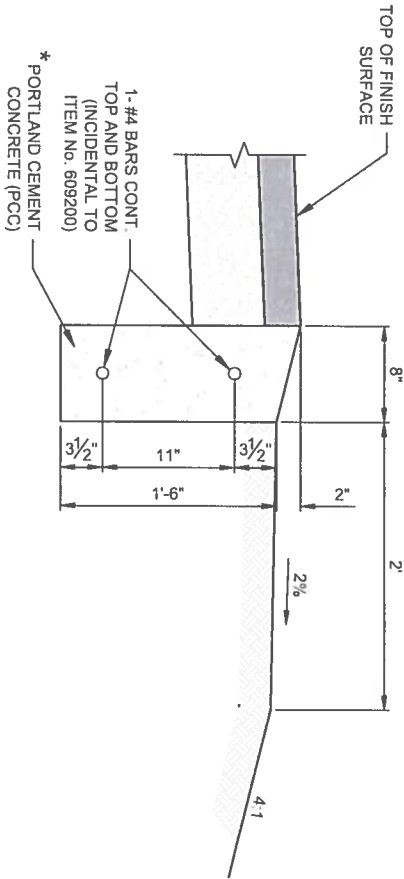




TYPICAL SECTION "B"

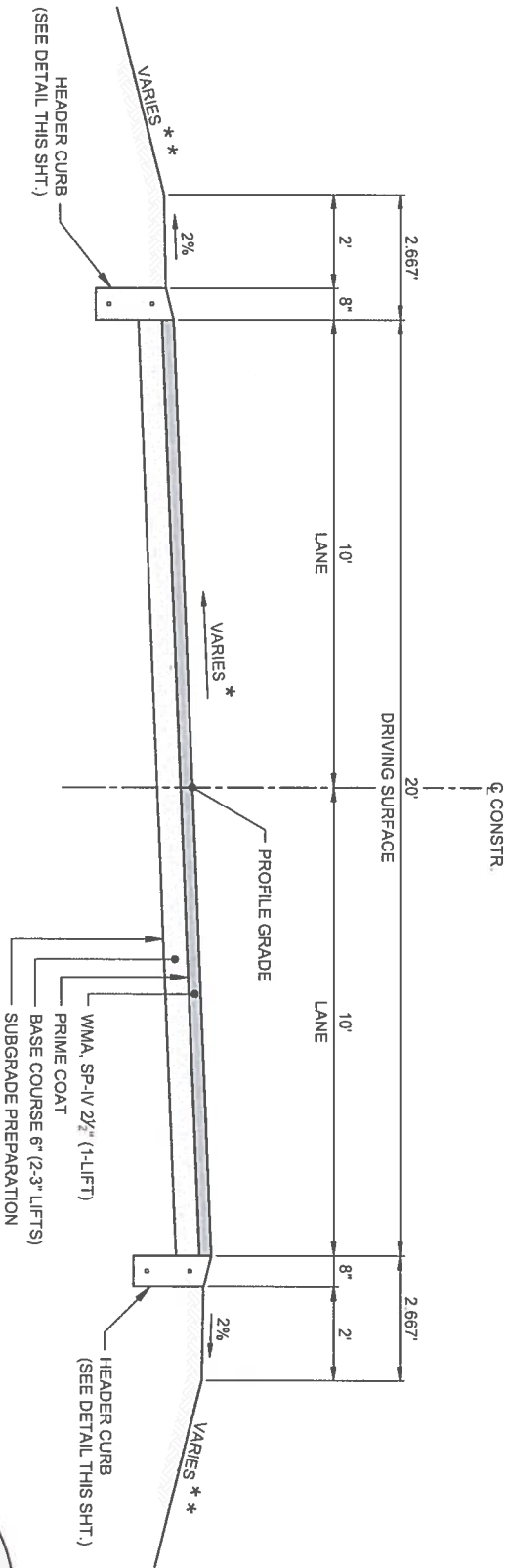
STA. 112+40.00 TO STA. 124+80.00

\* SEE PLAN AND PROFILE SHEETS FOR SUPERELEVATION DIAGRAMS  
\* \* SEE CROSS SECTIONS FOR CUT AND FILL SLOPES



HEADER CURB DETAIL

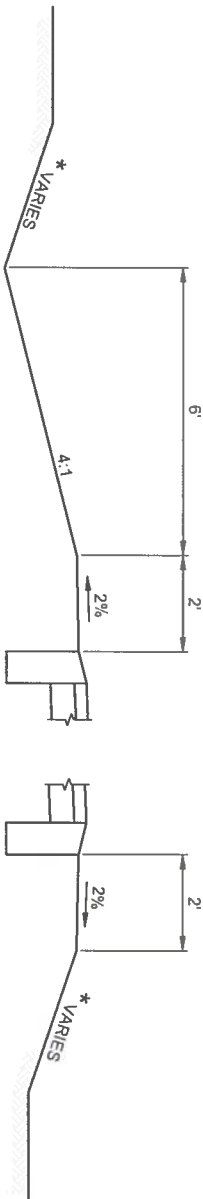
\* FOR TYPE OF PCC, REFER TO NMDOT STANDARD SPECIFICATION: SECTION 609 - CURB AND GUTTER



TYPICAL SECTION "A"

STA. 100+00.00 TO STA. 112+20.00  
STA. 112+20.00 TO STA. 112+40.00 - TRANSITION TO TYPICAL SECTION "B"

\* SEE PLAN AND PROFILE SHEETS FOR SUPERELEVATION DIAGRAMS  
\* \* SEE CROSS SECTIONS FOR CUT AND FILL SLOPES



CUT SLOPE

FILL SLOPE

SLOPE SELECTION DETAILS

\* FOR SLOPE, REFER TO CROSS SECTION SHEETS



NO.	DESCRIPTION	DATE	BY

SANTA FE COUNTY  
LA BARBARIA RD. DRAINAGE  
AND ROAD IMPROVEMENTS (CR-67F)

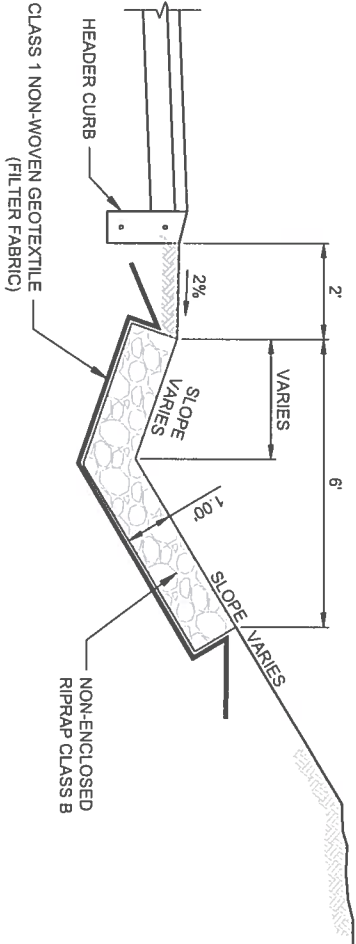
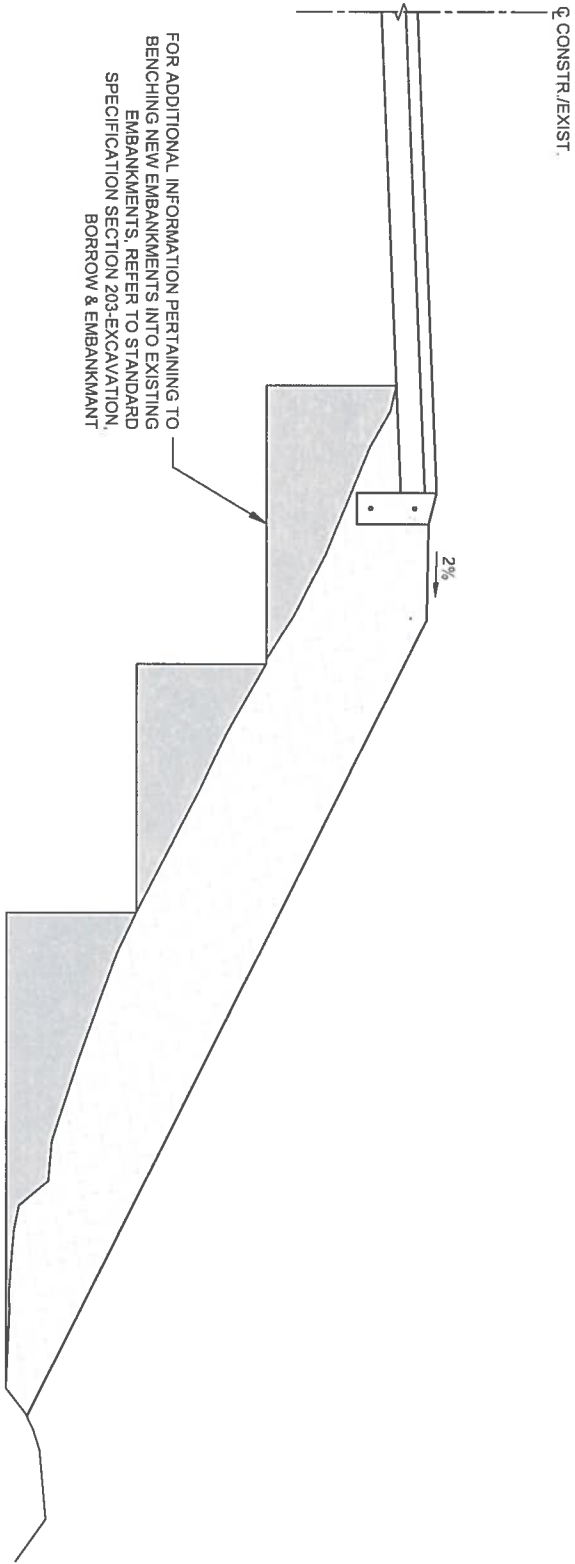
TYPICAL SECTIONS

LEGEND

PAY LIMITS

NON-PAY LIMITS

FILL SLOPE BENCH DETAIL

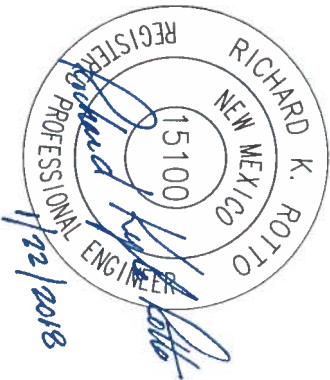
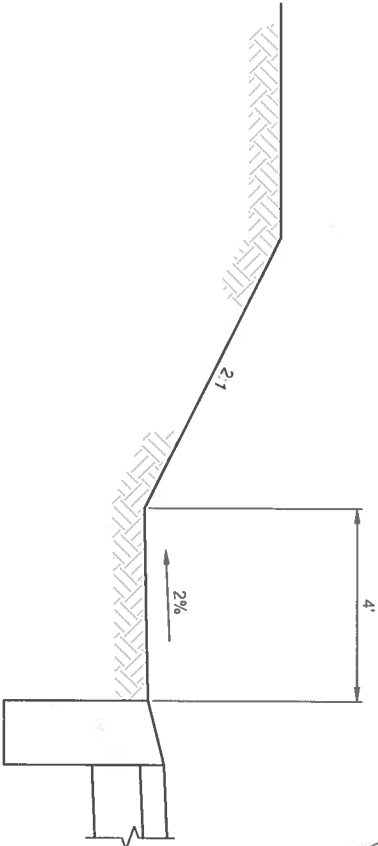


RIP-RAP LINED "V" DITCH DETAIL

STA. 117+24.50 TO STA. 121+60.00 RT.

SPECIAL CUT SLOPE DETAIL

STA. 100+00.00 TO STA. 101+25.00 LT.





LOUIS BERGER  
2019 GALISTEO ST. SUITE M-1  
SANTA FE, NEW MEXICO

PROJECT NO.	SHEET NO.
2014-0216-PW	2-3

CONSTRUCTION ENGINEERING  
& LUMP SUM ITEMS

ITEM NUMBER	DESCRIPTION	UNITS	QUANTITY
201 000	CLEARING AND GRUBBING	LUMP SUM	L.S.
601 000	REMOVAL OF STRUCTURES AND OBSTRUCTIONS	LUMP SUM	L.S.
603 280	SWPPP MANAGEMENT	LUMP SUM	L.S.
618 000	TRAFFIC CONTROL MANAGEMENT	LUMP SUM	L.S.
621 000	MOBILIZATION	LUMP SUM	L.S.
663 049	PRE CONSTRUCTION UTILITY SURVEY	LUMP SUM	L.S.
668 000	DEWATERING	LUMP SUM	L.S.
702 810	TRAFFIC CONTROL DEVICES FOR CONSTRUCTION	LUMP SUM	L.S.
801 001	CONSTRUCTION STAKING BY THE CONTRACTOR	LUMP SUM	L.S.

ITEM NO. 601 000

REMOVAL OF STRUCTURES AND OBSTRUCTIONS

STATION	TO	STATION	LOC	REMARKS
100+00.00		118+25.00	LT. & RT.	TREES
100+00.00		118+25.00	LT. & RT.	SIGNING
100+00.00		100+50.00	LT. & RT.	EXISTING PAVEMENT & HEADER CURB
106+54.00			LT. & RT.	EXISTING 2'-42" CMPS
111+87.00			LT.	EXISTING CMPS
113+50.03			LT.	EXISTING CMPS
115+31.54			LT.	EXISTING CMPS
117+00.00			LT. & RT.	EXISTING CMP

ITEM NO. 609 200  
HEADER CURB

KEYED NOTE	STATION	TO	STATION	QUANTITY LIN. FT.	REMARKS
HC-1	100+00.00	10.00' RT.	110+66.00	10.00' RT.	1063.50
HC-2	111+21.54	10.00' RT.	118+25.00	8.00' RT.	700.92
HC-4	100+00.00	10.00' LT.	102+34.44	10.00' LT.	236.93
HC-5	102+95.77	10.00' LT.	111+84.36	60.80' LT.	927.77
HC-6	112+00.33	61.80' LT.	113+94.31	43.84' LT.	251.78
HC-7	114+01.92	34.52' LT.	115+55.38	45.03' LT.	218.03
HC-8	115+59.64	34.75' LT.	118+25.00	8.00' LT.	312.18
PROJECT TOTAL				3711.11	
PROJECT USE				3720	

ITEM NOS 203000, 203100  
EARTHWORK SUMMARY

STATION	UNCL. EXCAV. CU. YD.	FILL	203100 BORROW CU. YD.	REMARKS
		TOTAL (CU. YD.)		
BOP to 118+25.00	1,157.16	4,840.63	3,683.47	EARTHWORK
SUB-TOTAL	1,157.16	4,840.63	3,683.47	
USE	1,500		4,000	

ITEM NO. 303 160  
BASE COURSE 6"

STATION	TO	STATION	QUANTITY SQ. YD.	REMARKS
100+00.00		118+25.00	3790.35	LA BARBARIA RD.
		102+54.63	78.84	TURNOUT LT.
		110+76.66	80.88	TURNOUT RT.
		111+86.99	115.32	TURNOUT LT.
		113+50.03	78.79	TURNOUT LT.
		115+31.54	86.68	TURNOUT LT.
PROJECT TOTAL			4230.86	
PROJECT USE			4240	

ITEM NO. 416 000  
MINOR PAVEMENT 2 1/2"

STATION	TO	STATION	QUANTITY SQ. YD.	REMARKS
100+00.00		118+25.00	3790.35	LA BARBARIA RD.
		102+54.63	78.84	TURNOUT LT.
		110+76.66	80.88	TURNOUT RT.
		111+86.99	115.32	TURNOUT LT.
		113+50.03	78.79	TURNOUT LT.
		115+31.54	86.68	TURNOUT LT.
PROJECT TOTAL			4230.86	
PROJECT USE			4240	

ITEM NO. 632 020  
CLASS "C" SEEDING

STATION	TO	STATION	LOC.	QUANTITY ACRE
100+00.00		118+25.00	LT. & RT.	0.44
PROJECT TOTAL				0.44
PROJECT USE				0.75

ITEM NO. 602 000  
RIPRAP CLASS A

KEYED NOTE	STATION	TO	STATION	QUANTITY CU. YD.
RR-1	105+90.00	12.67' RT.	106+27.90	12.86' RT.
RR-2	106+40.00	23.88' RT.	106+52.50	14.27' RT.
RR-3	106+96.09	14.28' LT.	106+68.70	23.88' LT.
RR-4	106+87.80	15.00' LT.	107+28.90	12.67' LT.
RR-5	111+25.00	12.67' LT.	111+81.70	60.63' LT.
RR-6	112+03.00	61.95' LT.	113+92.61	45.91' LT.
RR-7	114+03.61	32.45' LT.	115+36.68	35.11' LT.
RR-8	115+61.05	32.66' LT.	117+90.00	10.67' LT.
PROJECT TOTAL				309.19
PROJECT USE				310

ITEM NO. 602 010  
RIPRAP CLASS B

KEYED NOTE	STATION	TO	STATION	QUANTITY CU. YD.
RR-9	117+26.00	10.67' RT.	118+25.00	10.67' RT.
PROJECT TOTAL				26.22
PROJECT USE				30

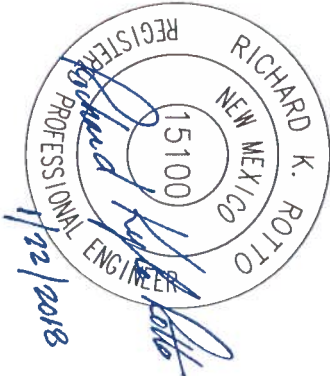
ITEM NO. 607 079  
PEDESTRIAN/BICYCLE RAILING

STATION	TO	STATION	QUANTITY LIN. FT.	REMARKS
106+24.71	16.75' RT.	106+50.34	16.75' RT.	24.00
106+58.24	16.75' LT.	106+85.07	16.75' LT.	24.00
PROJECT TOTAL			48.00	
PROJECT USE			48	

SANTA FE COUNTY

LA BARBARIA RD. DRAINAGE  
AND ROAD IMPROVEMENTS (CR-67F)

BASE BID  
MISCELLANEOUS QUANTITIES



DESIGNED BY: PE & IPT

DRAWN BY: CS

CHECKED BY: RKR

APPROVED BY: RKR

REVISIONS (OR CHANGE NOTICES)

PROJECT NO. 2014-0216-PW

SHEET 2-3

SANTA FE COUNTY



LOUIS BERGER  
2019 GALISTEO ST. SUITE M-1  
SANTA FE, NEW MEXICO

PROJECT NO.	SHEET NO.
2014-0216-PW	2-3d

CONSTRUCTION ENGINEERING  
& LUMP SUM ITEMS

ITEM NUMBER	DESCRIPTION	UNITS	QUANTITY
201 000	CLEARING AND GRUBBING	LUMP SUM	L.S.
601 000	REMOVAL OF STRUCTURES AND OBSTRUCTIONS	LUMP SUM	L.S.
603 280	SWPPP MANAGEMENT	LUMP SUM	L.S.
618 000	TRAFFIC CONTROL MANAGEMENT	LUMP SUM	L.S.
621 000	MOBILIZATION	LUMP SUM	L.S.
663 049	PRE CONSTRUCTION UTILITY SURVEY	LUMP SUM	L.S.
668 000	DEWATERING	LUMP SUM	L.S.
702 810	TRAFFIC CONTROL DEVICES FOR CONSTRUCTION	LUMP SUM	L.S.
801 001	CONSTRUCTION STAKING BY THE CONTRACTOR	LUMP SUM	L.S.

ITEM NO. 609 200  
HEADER CURB

KEYED NOTE	STATION	TO	STATION	QUANTITY LIN. FT.	REMARKS
HC-2	118+25.00	10.00' RT.	123+08.76	8.00' RT.	477.61
HC-3	123+52.20	8.00' RT.	124+80.00	8.00' RT.	127.48
HC-8	118+25.00	34.75' LT.	124+33.74	8.00' LT.	612.04
PROJECT TOTAL				1217.13	
PROJECT USE				1220	

ITEM NO'S 203000, 203100  
EARTHWORK SUMMARY

STATION	203000 UNCL. EXCAV. CU. YD.	FILL	203100 BORROW CU. YD.	REMARKS
		TOTAL (CU. YD.)		
118+25.00 to EOP	364.04	871.14	507.10	EARTHWORK
SUB-TOTAL	364.04	871.14	507.10	
USE	500		500	

ITEM NO. 303 160  
BASE COURSE 6"

STATION	TO	STATION	QUANTITY SQ. YD.	REMARKS
118+25.00		124+80.00	1163.97	LA BARBARIA RD.
	123+27.43		72.70	TURNOUT RT.
	124+50.09		40.28	TURNOUT LT.
PROJECT TOTAL			1276.95	
PROJECT USE			1280	

ITEM NO. 602 010  
RIPRAP CLASS B

KEYED NOTE	STATION	TO	STATION	QUANTITY CU. YD.
RR-9	118+25.00	10.67' RT.	121+60.00	10.67' RT.
				87.78
PROJECT TOTAL				87.78
PROJECT USE				90

ITEM NO. 601 000

REMOVAL OF STRUCTURES AND OBSTRUCTIONS

STATION	TO	STATION	LOC	REMARKS
118+25.00		124+80.00	LT. & RT.	TREES
118+25.00		124+80.00	LT. & RT.	SIGNING

ITEM NO's: 606 001, 606 053  
METAL BARRIER SCHEDULE

KEYED NOTE	STATION	TO	STATION	LOC	606001	606053 *
					SINGLE FACE W-BEAM GUARDRAIL LIN. FT.	END TREATMENT W-BEAM END ANCHOR EACH
MB-1	118+40.00		119+60.00	LT.	131.25	2
TOTALS					131.25	2
USE					140	2

\* END TREATMENT SHALL BE SKT-350, TL-2 OR APPROVED EQUAL

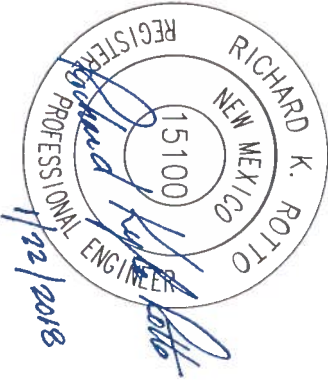
ITEM NO. 416 000  
MINOR PAVEMENT 2 1/2"

STATION	TO	STATION	QUANTITY SQ. YD.	REMARKS
118+25.00		124+80.00	1163.97	LA BARBARIA RD.
	123+27.43		72.70	TURNOUT RT.
	124+50.09		40.28	TURNOUT LT.
PROJECT TOTAL			1276.95	
PROJECT USE			1280	

ITEM NO. 632 020  
CLASS "C" SEEDING

STATION	TO	STATION	LOC.	QUANTITY ACRE
118+25.00		124+80.00	LT. & RT.	0.16
PROJECT TOTAL				0.16
PROJECT USE				0.25

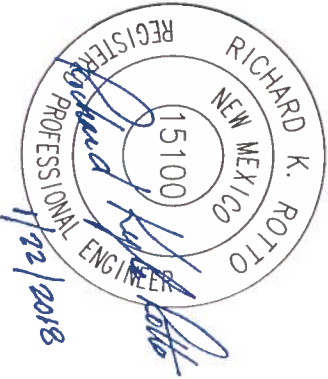
SANTA FE COUNTY  
LA BARBARIA RD. DRAINAGE  
AND ROAD IMPROVEMENTS (CR-67F)  
BID ALTERNATE #1  
MISCELLANEOUS QUANTITIES





BASE BID  
ESTIMATED STRUCTURE  
QUANTITIES

BASE BID ESTIMATED STRUCTURE QUANTITIES				210002	210003	511000	511030	511200	540060	540160	570018	570019	570154	570155	570162	570163	571599	602000		
KEYED NOTE	STATION	STRUCTURE	SKEW	MAJOR STRUCTURE EXCAVATION		MAJOR STRUCTURE BACKFILL		STRUCTURAL CONCRETE CLASS A	STRUCTURAL CONCRETE CLASS AA	SLOPE PAVING	REINFORCING BARS GRADE 60	EPOXY COATED REINFORCING BARS GRADE 60	18" CULVERT PIPE	18" CULVERT PIPE END SECTION	24"S x 18"R (NOMINAL) CULVERT PIPE ARCH	24"S x 18"R (NOMINAL) CULVERT PIPE ARCH END SECTION	42"S x 29"R (NOMINAL) CULVERT PIPE ARCH	42"S x 29"R (NOMINAL) CULVERT PIPE ARCH END SECTION	13'-7" S x 4'-7" R x 54' ALUMINUM BOX CULVERT	RIPRAP CLASS A
				CU. YDS		CU. YDS		CU. YDS		LBS.	LBS.	LIN. FT.	EACH	LIN. FT.	EACH	LIN. FT.	EACH	LIN. F. T.	CU. YDS.	
SS-1	106+54.00	BUILD 1- 13'-7"S x 4'-7"R x 63' ALUMINUM BOX CULVERT w/ HEADWALLS LT. & RT.	45°	380		250			75			7500							63	
SS-2	111+87.00	BUILD 1- 42"S x 29"R x 27' CMAP w/ END SECTIONS LT. & RT.	5°															27	2	
SS-3	113+50.03	BUILD 1- 42"S x 29"R x 36' CMAP w/ END SECTIONS LT. & RT.	37°															36	2	
SS-4	115+31.54	BUILD 1- 42"S x 29"R x 32' CMAP w/ END SECTIONS LT. & RT.	22°															32	2	
SS-5	102+50.00	BUILD 2- 24"S x 18"R x 31' CMAP w/ END SECTIONS LT. & RT.	0°																	
SS-6	103+00.00	BUILD 1- 24"S x 18"R x 44' CMAP w/ END SECTIONS LT. & RT.	45°																	
SS-7	105+50.00	BUILD 1- 24"S x 18"R x 40' CMAP w/ END SECTIONS LT. & RT.	0°															40	2	
SS-8	112+60.00	BUILD 1- 24"S x 18"R x 29' CMAP w/ END SECTION LT. & HEADWALL AND SLOPE PAVING RT.	0°							9.33	165	165				29	1			
SS-9	115+00.00	BUILD 1- 24"S x 18"R x 29' CMAP w/ END SECTION LT. & HEADWALL AND SLOPE PAVING RT.	0°							13.51	165	165				29	1			
SS-10	117+20.00	BUILD 1- 24"S x 18"R x 28' CMAP w/ END SECTION LT., 8' x 8' x 1' EC PAD LT. & HEADWALL AND SLOPE PAVING RT.	0°							11.08	165	165				28	1			
PROJECT TOTAL				380		250		4.95	75	33.92	495	7995	0	0	232	11	95	6	63	2.37
PROJECT USE				380		250		10	80	40	500	8000	0	0	240	11	100	6	70	3



SANTA FE COUNTY				LA BARBARIA RD. DRAINAGE AND ROAD IMPROVEMENTS (CR-67F)			
BASE BID				ESTIMATED STRUCTURE QUANTITIES			
NO.				DATE			
DESCRIPTION				BY			
REVISIONS (OR CHANGE NOTICES)							




LOUIS BERGER  
2019 GALISTEO ST, SUITE M-1  
SANTA FE, NEW MEXICO

PROJECT NO.		SHEET NO.
2014-0216-PW		2-40

BID ALTERNATE #1  
ESTIMATED STRUCTURE  
QUANTITIES

BID ALTERNATE #1 ESTIMATED STRUCTURE QUANTITIES																																
KEYED NOTE	STATION	STRUCTURE	SKEW																													
				MAJOR STRUCTURE EXCAVATION	210002	MAJOR STRUCTURE BACKFILL	210003	STRUCTURAL CONCRETE CLASS A	511000	STRUCTURAL CONCRETE CLASS AA	511030	SLOPE PAVING	511200	REINFORCING BARS GRADE 60	540060	EPOXY COATED REINFORCING BARS GRADE 60	540160	18" CULVERT PIPE	570018	18" CULVERT PIPE END SECTION	570019	24"S x 18"R (NOMINAL) CULVERT PIPE ARCH	570154	24"S x 18"R (NOMINAL) CULVERT PIPE ARCH END SECTION	570155	42"S x 29"R (NOMINAL) CULVERT PIPE ARCH	570162	42"S x 29"R (NOMINAL) CULVERT PIPE ARCH END SECTION	570163	13'-7" S x 4'-7" R x 54' ALUMINUM BOX CULVERT	571599	RIPRAP CLASS A
SS-11	123+17.00	BUILD 1'-24"S x 18"R x 29' CMAP w/ END SECTIONS LT. & RT. & 10' x 8' x 1' EC PAD LT.	10°																			29	2									2.96
SS-12	123+52.00	EXISTING 18" CULVERT PIPE TO REMAIN, CLEAN OUT EXISTING PIPE. BUILD 1'-18" x 6' CMP w/ END SECTION LT., 10' x 8' x 1' EC PAD LT. & END SECTION RT.	0°														6	2														2.96
PROJECT TOTAL				0	0	0	0	0	0	0	0	0	0	0	0	0	6	2	29	2	2	0	0	0	0	0	0	0	0	0	0	5.92
PROJECT USE				0	0	0	0	0	0	0	0	0	0	0	0	0	10	2	30	2	2	0	0	0	0	0	0	0	0	0	0	10

RICHARD K. ROTO  
NEW MEXICO  
REGISTERED PROFESSIONAL ENGINEER  
15100

  
1/22/2018

SANTA FE COUNTY			
LA BARBARIA RD. DRAINAGE AND ROAD IMPROVEMENTS (CR-67F)			
BID ALTERNATE #1 ESTIMATED STRUCTURE QUANTITIES			
NO.	DESCRIPTION	DATE	BY
REVISIONS (OR CHANGE NOTICES)			











PROJECT NO.	SHEET NO.
2014-0216-PW	2-7

**BID ALTERNATE #1 - TEMPORARY EROSION & SEDIMENT CONTROL QUANTITIES**

STATION	TO	STATION	CHECK DAM	CULVERT	COMPOSTED
			TYPE I	PROTECTION	MULCH SOCKS
			603220	603260	603262
100+00.00		118+25.00	LIN. FT.	SQ. YDS.	LIN. FT.
			180	66	1678
SUB-TOTAL			180	66	1678
USE			180	70	1680

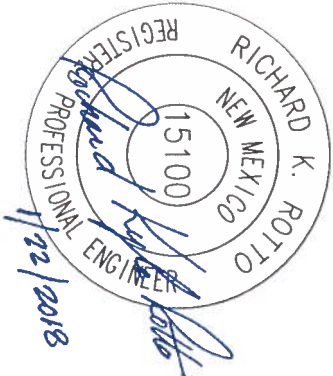
STATION	TO	STATION	CHECK DAM	CULVERT	COMPOSTED
			TYPE I	PROTECTION	MULCH SOCKS
			603220	603260	603262
118+25.00		124+80.00	LIN. FT.	SQ. YDS.	LIN. FT.
				12	507
SUB-TOTAL			0	12	507
USE			0	20	510

NOTES: ACTUAL QUANTITIES AND LOCATIONS MAY BE REVISED IN THE FIELD TO MATCH CONDITIONS AS APPROVED BY THE PROJECT MANAGER.

NOTES: ACTUAL QUANTITIES AND LOCATIONS MAY BE REVISED IN THE FIELD TO MATCH CONDITIONS AS APPROVED BY THE PROJECT MANAGER.

[illegible]

SANTA FE COUNTY  
LA BARBARIA RD. DRAINAGE  
AND ROAD IMPROVEMENTS (CR-67F)  
TEMPORARY EROSION AND  
SEDIMENT CONTROL MEASURES



NMDO TOP PROJECTS REQUIRE ELECTRONIC NOI SUBMISSION- PAPER SUBMISSION REQUIRES PRIOR APPROVAL.

PERMIT NUMBER:  
NMR100000 STATE OF NEW MEXICO, EXCEPT INDIAN COUNTRY  
NMR101000 INDIAN COUNTRY WITHIN THE STATE OF NEW MEXICO, EXCEPT NAVAJO RESERVATION LANDS THAT ARE COVERED UNDER ARIZONA PERMIT AZ100001 AND UTE MOUNTAIN RESERVATION LANDS THAT ARE COVERED UNDER COLORADO PERMIT COR100001.

OPERATOR NAME: COUNTY OF SANTA FE

POINT OF CONTACT: PROJECT MANAGER

NOI PREPARED BY: PROJECT MANAGER

PROJECT / SITE NAME: CR-67F (LA BARBARIA ROAD)

PROJECT / SITE ADDRESS: LA BARBARIA RD., SANTA FE COUNTY, NEW MEXICO

LATITUDE:  
32.6619° N

LONGITUDE:  
107.1727° W

ESTIMATED PROJECT START DATE:  
TO BE DETERMINED BY PROJECT MANAGER

ESTIMATED PROJECT COMPLETION DATE:  
TO BE DETERMINED BY PROJECT MANAGER

ESTIMATED AREA TO BE DISTURBED (NEAREST 1/4 ACRE):  
0.55 ACRES

TYPE OF CONSTRUCTION  
ROADWAY CONSTRUCTION/DRAINAGE

DEMOLITION OF ANY STRUCTURES, 10,0000 SQUARE FEET OR GREATER BUILT OR RENOVATED BEFORE JANUARY 1, 1980? (YES/NO)  
NO

WAS THE PREDEVELOPMENT LAND USE FOR AGRICULTURE? (YES/NO)  
NO

COMMENCED EARTH-DISTURBING ACTIVITIES?:  
NO

PREVIOUS NPDES PERMIT? IF YES, PERMIT NO.:  
NO

MUNICIPAL SEPARATE STORM SEWER SYSTEM (MS4): (NAME)  
N/A

SURFACE WATERS WITHIN 50 FT? (YES/NO)  
YES

RECEIVING WATER:  
ARROYO HONDO

IMPAIRED WATERS:  
NO IMPAIRMENT LISTED

IMPAIRED WATERS METHOD: ONLINE CONSULTATION OF NEW MEXICO ENVIRONMENT DEPARTMENT LISTING OF STATEWIDE 303D AND TMDL IMPAIRMENTS.

TIER 2, TIER 2.5, TIER 3 WATERS - (CONSULT 2017 CGP APPENDIX "F")

CHEMICAL TREATMENT INFORMATION - TYPICAL SANTA FE COUNTY PROJECT WILL NOT UTILIZE THESE CHEMICALS.

SWPPP CONTACT INFORMATION - COUNTY PROJECT MANAGER

ENDANGERED SPECIES CRITERIA - (A, B, C, D, E, OR F): CRITERIA 'A'

HISTORIC PRESERVATION - HISTORIC PROPERTIES WILL NOT BE IMPACTED.

THE ENVIRONMENTAL COMMITMENTS WILL INDICATE EXISTENCE OF HISTORIC PROPERTIES. IF HISTORIC PROPERTIES EXIST, THE TESP SHEETS CAN SHOW NO EFFECT ON HISTORIC PROPERTIES.

ALL STORMWATER CONTROLS REQUIRE SUBSURFACE DISTURBANCE.

CERTIFICATION: NOI MUST BE CERTIFIED BY "A PRINCIPAL EXECUTIVE OFFICER OR RANKING ELECTED OFFICIAL".

GENERAL NOTES:

1. THE 2012 EDITION OF NMDO NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) MANUAL AND SECTION 603 - TEMPORARY EROSION AND SEDIMENT CONTROL OF THE 2014 NEW MEXICO DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR HIGHWAY AND BRIDGE CONSTRUCTION - SHALL BE USED AS MINIMUM REQUIREMENTS TO DEVELOP OR MODIFY THE STORM WATER POLLUTION PREVENTION PLAN (SWPPP).
2. THE NPDES PERMIT NUMBER FOR THE PROJECT OR A COPY OF THE NOTICE OF INTENT (NOI), IF A PERMIT NUMBER HAS NOT YET BEEN ASSIGNED, SHALL BE POSTED AT THE PROJECT SITE OR THE FIELD OFFICE AT ALL TIMES DURING CONSTRUCTION.
3. THE STORM WATER POLLUTION PREVENTION PLAN (SWPPP) AND ALL MAINTENANCE AND INSPECTION REPORTS SHALL BE SIGNED BY A QUALIFIED INSPECTOR ASSIGNED BY THE CONTRACTOR. THE SWPPP AND THE INSPECTION REPORTS SHALL BE AVAILABLE TO EPA REPRESENTATIVES AT ALL TIMES DURING CONSTRUCTION.
4. INFORMATION NEEDED TO COMPLETE THE NOTICE OF INTENT (NOI) IS PROVIDED IN THIS PLAN.
5. THE CONTRACTOR SHALL SPECIFICALLY DEFINE ALL REQUIRED CONTROL MEASURES FOR EACH CONSTRUCTION PHASE, AND SHALL COMPLY WITH THE PROVISIONS OF THE NPDES MANUAL AND THE 2017 CONSTRUCTION GENERAL PERMIT.
6. THE FINAL SEEDING AND REVEGETATION PLAN, ALONG WITH THE MEASURES SHOWN ON THE FINAL STABILIZATION TESP SHEETS (IF INCLUDED) SERVE AS THE FINAL SOIL STABILIZATION MANAGEMENT PRACTICE.

SOIL LOSS COMPUTATION

Benchmark: Precip.  
Alternative Treatment: none  
Rainfall Factor (RUSLE): 30  
Soil Name & Text: Emmedo-Zalazano-Rock outcrop  
Soil Loss Tolerance (T): 0.48  
Wind Climate Factor: 0.48  
RUSLE C Factor (leaf %): 0.05  
Field Slope: 18  
Field 2: 0.05  
Field 3: 0.02  
Field 4: 0.02  
Field 5: 0.02  
Field 6: 0.02  
Field 7: 0.02  
Field 8: 0.02  
Field 9: 0.02  
Field 10: 0.02  
Field 11: 0.02  
Field 12: 0.02  
Field 13: 0.02  
Field 14: 0.02  
Field 15: 0.02  
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1.0. GENERAL CONDITIONS

1.1. THE CONTRACTOR SHALL FURNISH ALL LABOR, MATERIAL AND EQUIPMENT AND PERFORM ALL WORK AND SERVICES NECESSARY TO COMPLETE IN A SATISFACTORY MANNER THE SITE PREPARATION, EXCAVATION, FOOTINGS, CULVERT INSTALLATION, HEADWALLS, WINGWALLS, FILLING, COMPACTION, AND GRADING AS SHOWN ON THE PLANS AND AS DESCRIBED THEREIN. THIS WORK IS TO BE ACCOMPLISHED UNDER THE OBSERVATION OF THE OWNER OR HIS DESIGNATED REPRESENTATIVE.

1.2. THE WORK TO CONSTRUCT THE ALUMINUM BOX CULVERT STRUCTURE IS TO BE PAID FOR UNDER THE FOLLOWING UNIT BID PRICES:

PAY ITEM	PAY UNIT
210001 - UNSUITABLE MATERIAL EXCAVATION	CU YD.
210002 - MAJOR STRUCTURE EXCAVATION	CU YD.
210003 - MAJOR STRUCTURE BACKFILL	CU YD.
510030 - STRUCTURAL CONCRETE CLASS AA	CU YD.
540160 - EPOXY COATED REINFORCING BARS GRADE 60	LBS.
571599 - 1377S x 47R x 63 ALUMINUM BOX CULVERT	LIN. FT.
601000 - REMOVAL OF STRUCTURES AND OBSTRUCTIONS	L.S.
602000 - RIPRAP CLASS A	CU YD.
607079 - PEDESTRIAN/BICYCLE RAILING	LIN. FT.
668000 - DEWATERING	L.S.

1.3. THE CONTRACTOR SHALL EXAMINE, INVESTIGATE AND INSPECT THE CONSTRUCTION SITE AS TO THE NATURE AND LOCATION OF THE WORK, AND THE GENERAL AND LOCAL CONDITIONS AT THE CONSTRUCTION SITE, INCLUDING, WITHOUT LIMITATION, THE CHARACTER OF SURFACE OR SUBSURFACE CONDITIONS AND OBSTACLES TO BE ENCOUNTERED ON AND AROUND THE CONSTRUCTION SITE; AND SHALL MAKE SUCH ADDITIONAL INVESTIGATION AS HE MAY DEEM NECESSARY FOR THE PLANNING AND PROPER EXECUTION OF THE WORK. IF CONDITIONS OTHER THAN THOSE INDICATED ARE DISCOVERED BY THE CONTRACTOR, THE OWNER SHOULD BE NOTIFIED IMMEDIATELY. THE MATERIAL WHICH THE CONTRACTOR BELIEVES TO BE A CHANGED CONDITION SHOULD NOT BE DISTURBED SO THAT THE OWNER CAN INVESTIGATE THE CONDITION.

1.4. THE CONSTRUCTION SHALL BE PERFORMED UNDER THE DIRECTION OF THE MANUFACTURER'S REPRESENTATIVE WHO IS EXPERIENCED WITH ALUMINUM BOX CULVERTS.

1.5. THE CONTRACTOR SHALL FURNISH ALL LABOR, MATERIALS, AND EQUIPMENT, AND PERFORM ALL WORK AND SERVICES NECESSARY TO COMPLETE IN A SATISFACTORY MANNER THE SITE PREPARATION, EXCAVATION, FILLING, COMPACTION AND GRADING AS SHOWN ON THE PLANS AND AS DESCRIBED THEREIN.

1.6. THIS WORK SHALL CONSIST OF ALL CLEARING AND GRADING, REMOVAL OF EXISTING STRUCTURES UNLESS OTHERWISE STATED, PREPARATION OF THE LAND TO BE FILLED, SPREADING AND COMPACTION OF THE FILL, AND ALL SUBSIDIARY WORK NECESSARY TO COMPLETE THE GRADING OF THE CUT AND FILL AREAS TO CONFORM WITH THE LINES, GRADES, SLOPES, AND SPECIFICATIONS.

1.7. THIS WORK IS TO BE ACCOMPLISHED UNDER THE CONSTANT AND CONTINUOUS SUPERVISION OF THE OWNER OR HIS DESIGNATED REPRESENTATIVE.

2.0. METAL CULVERT

2.1. GENERAL

2.1.1. THIS WORK SHALL CONSIST OF FURNISHING, FABRICATING, AND INSTALLATION OF AN ALUMINUM BOX CULVERT STRUCTURE IN CONFORMANCE WITH SPECIFICATION SECTION 571, THE MANUFACTURER PROVISIONS, AND THE DETAILS SHOWN ON THE PLANS.

2.1.2. THE CONTRACTOR SHALL VERIFY THE ACTUAL LOCATION OF ALL UTILITIES IN THE FIELD BEFORE BEGINNING ANY WORK THAT COULD BE IMPACTED BY THESE UTILITIES.

2.1.3. CONTRACTOR MUST NOTIFY/CONTACT ALL UTILITY COMPANIES TO DETERMINE EXACT LOCATIONS OF EXISTING UTILITIES PRIOR TO COMMENDING ANY WORK ON THIS CONTRACT.

2.1.4. CONTRACTOR SHALL COORDINATE CONSTRUCTION WITH WORK DONE BY OTHERS ADJACENT TO OR WITHIN THE CONTRACT LIMITS.

2.1.5. DESIGN AND CERTIFICATION OF THE STRUCTURE SHALL BE IN ACCORDANCE WITH SECTION 571.2.5.1

2.2. DIMENSIONS

2.2.1. THE PROPOSED STRUCTURE SHALL BE AN ALUMINUM BOX CULVERT STRUCTURE WITH THE FOLLOWING MINIMUM DIMENSIONS:

STRUCTURE DESIGNATION: CONTECH ALBC STRUCTURE NUMBER 22366	SPAN: 13'-7"	RISE: 4'-7"
	THICKNESS: 3 GAGE (0.150 INCHES) AT CROWN	THICKNESS: 3 GAGE (0.150 INCHES) AT HAUNCHES
	REINFORCING RIBS AT CROWN: TYPE IV RIB @ 18"	REINFORCING RIBS AT HAUNCHES: TYPE IV RIB @ 18"
	INLET: FULL INLET	

2.2.2. ALL PLAN DIMENSIONS ON THE CONTRACT DRAWINGS ARE MEASURED IN A TRUE HORIZONTAL PLANE UNLESS OTHERWISE NOTED.

2.2.3. ALL DIMENSIONS, LOCATIONS, AND ELEVATIONS OF EXISTING STRUCTURES SHOWN ON THE CONTRACT DRAWINGS SHALL BE VERIFIED BY THE CONTRACTOR IN THE FIELD.

3.0. ASSEMBLY

3.1. THE STRUCTURE SHALL BE ASSEMBLED IN ACCORDANCE WITH THE SHOP DRAWINGS PROVIDED BY THE MANUFACTURER AND PER THE MANUFACTURER'S RECOMMENDATIONS.

3.2. BOLTS SHALL BE TIGHTENED USING AN APPLIED TORQUE OF BETWEEN 100 AND 150 FOOT POUNDS OR AS REQUIRED BY THE MANUFACTURER.

3.3. THE MITER ENDS OF THE ALUMINUM BOX CULVERT SHALL BE FIELD CUT AND GROUND SMOOTH AFTER THE CONCRETE HEADWALLS HAVE REACHED 3,000 PSI COMPRESSIVE STRENGTH AS VERIFIED THROUGH TESTING.

4.0. INSTALLATION

4.1. THE STRUCTURE SHALL BE INSTALLED IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS, THE MANUFACTURER'S RECOMMENDATIONS

4.2. THE STRUCTURE CAN BE PREASSEMBLED AND LIFTED INTO PLACED ALL AT ONCE OR IN SECTIONS ALLOWING FOR STAGED CONSTRUCTION. IF THE SITE CONDITIONS ALLOW, STRUCTURES CAN BE ASSEMBLED IN PLACE. A QUALIFIED ERECTION ENGINEER SHOULD BE ENGAGED BY THE CONTRACTOR TO DETERMINE THE MOST APPROPRIATE CONSTRUCTION METHOD BASED ON SPECIFIC SITE CONDITIONS.

4.3. DURING INSTALLATION AND PRIOR TO THE CONSTRUCTION OF PERMANENT EROSION CONTROL AND END TREATMENT PROTECTION, SPECIAL PRECAUTIONS MAY BE NECESSARY.

4.4. THE STRUCTURE MUST BE PROTECTED FROM UNBALANCED LOADS AND FROM ANY STRUCTURAL LOADS OR HYDRAULIC FORCES THAT MIGHT BEND OR DISTORT THE UNSUPPORTED ENDS OF THE STRUCTURE.

4.5. EROSION OR WASHOUT OF PREVIOUSLY PLACED SOIL SUPPORT MUST BE PREVENTED TO ENSURE THAT THE STRUCTURE MAINTAINS ITS LOAD CAPACITY.

5.0. HEADWALLS/WINGWALLS/TOEWALLS

5.1. THE HEADWALLS, WINGWALLS AND TOEWALLS SHALL CONSIST OF CLASS AA REINFORCED CONCRETE CONFORMING TO SECTION 511 OF THE STANDARD SPECIFICATIONS.

5.2. THE HEADWALLS SHALL BE ANCHORED TO THE ALUMINUM BOX CULVERT IN THE MANNER SHOWN ON THE PLANS AND SHALL BE FORMED AND POURED IN ACCORDANCE WITH THE PLAN DIMENSIONS.

5.3. ROUND WEEP HOLES SHALL BE PLACED IN THE WALLS AS SHOWN ON THE CONSTRUCTION DRAWINGS. A GRAULAR ENVELOPE, CONSISTING OF CLEAN, CRUSHED, DURABLE 3/4" STONE OR EQUIVALENT, SHALL BE PLACED BEHIND EACH WEEP HOLE FOR A DISTANCE OF APPROXIMATELY 1 FOOT FROM ALL EDGES OF THE WEEP HOLE. A FREE-DRAINING GEOTEXTILE SCREEN SHALL BE PLACED BETWEEN THE WEEP HOLE AND THE STONE TO PREVENT EROSION OF THE STONE.

5.4. ALL REINFORCEMENT SHALL BE FURNISHED IN THE FULL LENGTHS INDICATED ON THE PLANS UNLESS OTHERWISE PERMITTED, EXCEPT FOR SPLICES SHOWN ON THE PLANS, SPLICING OF BARS WILL NOT BE PERMITTED WITHOUT WRITTEN APPROVAL.

5.5. IN LAPPED SPLICES, THE BARS SHALL BE PLACED AND WIRED IN SUCH A MANNER AS TO MAINTAIN THE MINIMUM DISTANCE TO THE SURFACE OF THE CONCRETE SHOWN ON THE PLANS.

5.6. PROVIDE MEMBRANE WATER PROOFING TO THE BACKSIDE OF HEADWALLS AND WINGWALLS.

6.0. SELECT BACKFILL

6.1. SELECT BACKFILL SHALL BE PLACED TO A MINIMUM DISTANCE OF 6 FEET HORIZONTALLY, AS MEASURED FROM THE SPRINGLINE OF THE STRUCTURE, AND TO A DISTANCE OF 3 FEET ABOVE THE CROWN OF THE STRUCTURE OR TO THE BOTTOM OF THE FLEXIBLE PAVEMENT AS SHOWN ON THE CONSTRUCTION DRAWINGS.

6.2. SELECT BACKFILL SHALL MEET THE MATERIAL REQUIREMENTS OF SECTION 2102.1.

6.3. BACKFILL MUST BE DENSE GRADED MATERIAL. OPEN-GRADED OR GAP-GRADED MATERIALS ARE NOT ALLOWED.

6.4. ONSITE MIXING OR BLENDING TO ACHIEVE SPECIFIED GRADATION IS NOT ALLOWED.

6.5. MAXIMUM PARTICLE SIZE SHALL NOT EXCEED 3 INCHES.

6.6. THE STONE PARTIAL

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SANTA FE, NEW MEXICO

7.0. PLACEMENT OF BACKFILL

7.1. A NON-WOVEN CLASS 1 GEOTEXTILE PER SPECIFICATION SECTION 604 SHALL BE USED WHERE SHOWN IN THE PLANS.

7.2. THE SELECT BACKFILL SHALL BE BROUGHT UP RELATIVELY LEVEL, ON BOTH SIDES OF THE PIPE. IF THE BACKFILL ON ONE SIDE IS MUCH HIGHER THAN THE BACKFILL ON THE OTHER, THE UNBALANCED SOIL PRESSURE MAY DISTORT THE STRUCTURE.

7.3. CARE SHALL BE EXERCISED TO ENSURE THAT NO LARGE STONES ARE PLACED NEAR THE PIPE AND THAT THE GRANULAR BACKFILL MATERIAL IS CLEAN AND FREE FROM ORGANIC MATERIAL OR ANY OTHER MATERIAL NOT MEETING THE SPECIFICATIONS.

7.4. CARE MUST BE EXERCISED TO ENSURE THAT THE BACKFILL IS COMPACTED UNIFORMLY. NON-UNIFORM COMPACTION CREATES DIFFERENTIAL DISTORTION OF THE STRUCTURE. PARTICULAR ATTENTION TO ACHIEVING PROPER COMPACTION MUST BE GIVEN TO THE AREA UNDER THE HAUNCHES OF STRUCTURES WITH BOTTOM SINCE THIS AREA COULD BE SUBJECT TO HIGHER STRESSES ON THE BACKFILL THAN ANY OTHER PORTION OF THE STRUCTURE. HAND TAMPERS SHALL BE USED TO ACCOMPLISH THIS COMPACTION.

7.5. TAMPING OPERATIONS SHALL CONTINUE IN EIGHT (8) INCH LIFTS UNTIL THE BACKFILL ELEVATION HAS REACHED THE TOP OF THE PIPE. TWELVE INCH LIFTS SHALL THEN BE UTILIZED UNTIL THE BACKFILLING OPERATION HAS REACHED 24 INCHES OF MATERIAL OVER THE CROWN OF THE STRUCTURE. EIGHT (8) INCH LIFTS SHALL THEN BE USED UNTIL THREE (3) FEET OF MATERIAL (OR FINISHED GRADE) OVER THE STRUCTURE HAS BEEN ACCOMPLISHED.

7.6. IT IS RECOMMENDED THAT EVERY LIFT ON EACH SIDE OF THE STRUCTURE BE TESTED FOR DENSITY AND MOISTURE CONTENT TO ENSURE THAT THE PREVIOUSLY REFERENCED COMPACTION REQUIREMENTS ARE BEING MET. IF ANY TEST FAILS TO MEET THE REQUIRED PERCENT COMPACTION, A SECOND TEST SHALL BE PERFORMED TO CONFIRM THE FAILURE. IF THE COMPACTION FAILS TO MEET THE REQUIREMENTS AGAIN, THE CONTRACTOR SHALL BE REQUESTED TO RECOMPACT THE ENTIRE LIFT UNTIL IT MEETS THE SPECIFIED DENSITY. THE OBJECTIVE OF THE COMPACTION OPERATION IS TO ACCOMPLISH A UNIFORM SPECIFIED COMPACTION THROUGHOUT THE ENTIRE LIFT.

7.7. LARGE EQUIPMENT SHALL BE KEPT AT LEAST TWO (2) FEET HORIZONTALLY AWAY FROM THE SPRINGLINE OF THE PIPE. IT SHALL BE NOTED THAT DUE TO THE FLEXIBILITY OF THE STRUCTURAL PLATE, APPLICATION OF A VIBRATING COMPACTION FORCE TOO CLOSE TO ONE SIDE OF THE STRUCTURE MAY RESULT IN THE GRANULAR MATERIAL MOVING AWAY FROM THE STRUCTURE ON THE OPPOSITE SIDE OF THE STRUCTURE. IN SUCH CASES, THE COMPACTION EQUIPMENT SHALL BE MOVED SLIGHTLY AWAY FROM THE STRUCTURE SUCH THAT THE VIBRATING FORCE IS NOT IMPARTED INTO THE STRUCTURE.

7.8. THE FILL SHALL BE PUSHED OVER THE STRUCTURE WITH THE DOZER OPERATING 45° TO 90° TO THE AXIS OF THE STRUCTURE GRADUALLY WORKING THE BACKFILL OVER THE STRUCTURE CROWN. AFTER PLACEMENT OF ANOTHER ONE (1) FOOT LIFT, COMPACTION OF THE BACKFILL CAN BE ACCOMPLISHED OVER THE STRUCTURE BY OPERATING THE COMPACTORS AT 90° TO THE AXIS OF THE SPAN. THE REMAINING FILL OVER THE SPAN IS THEN PLACED IN EIGHT (8) INCH LIFTS UNTIL THE MINIMUM SPECIFIED BACKFILL (OR FINISHED GRADE) HAS BEEN PLACED OVER THE STRUCTURE. THE REMAINDER OF THE TRENCH FILLING OPERATION OUTSIDE THE SELECT GRANULAR FILL CAN BE ACCOMPLISHED USING APPROVED EMBANKMENT SOIL OR THE SELECT GRANULAR MATERIAL.

DESIGNED BY: PE & IPT

DRAWN BY: CS

CHECKED BY: RKR

APPROVED BY: RKR

DATE: 01/22/18

PROJECT NO. 2014-0216-PW

SHEET 2-9

SANTA FE COUNTY

LA BARBARIA RD. DRAINAGE AND ROAD IMPROVEMENTS (CR-67F)

STA. 106+54 ALBC GENERAL NOTES

REGISTERED PROFESSIONAL ENGINEER

RICHARD K. ROTO

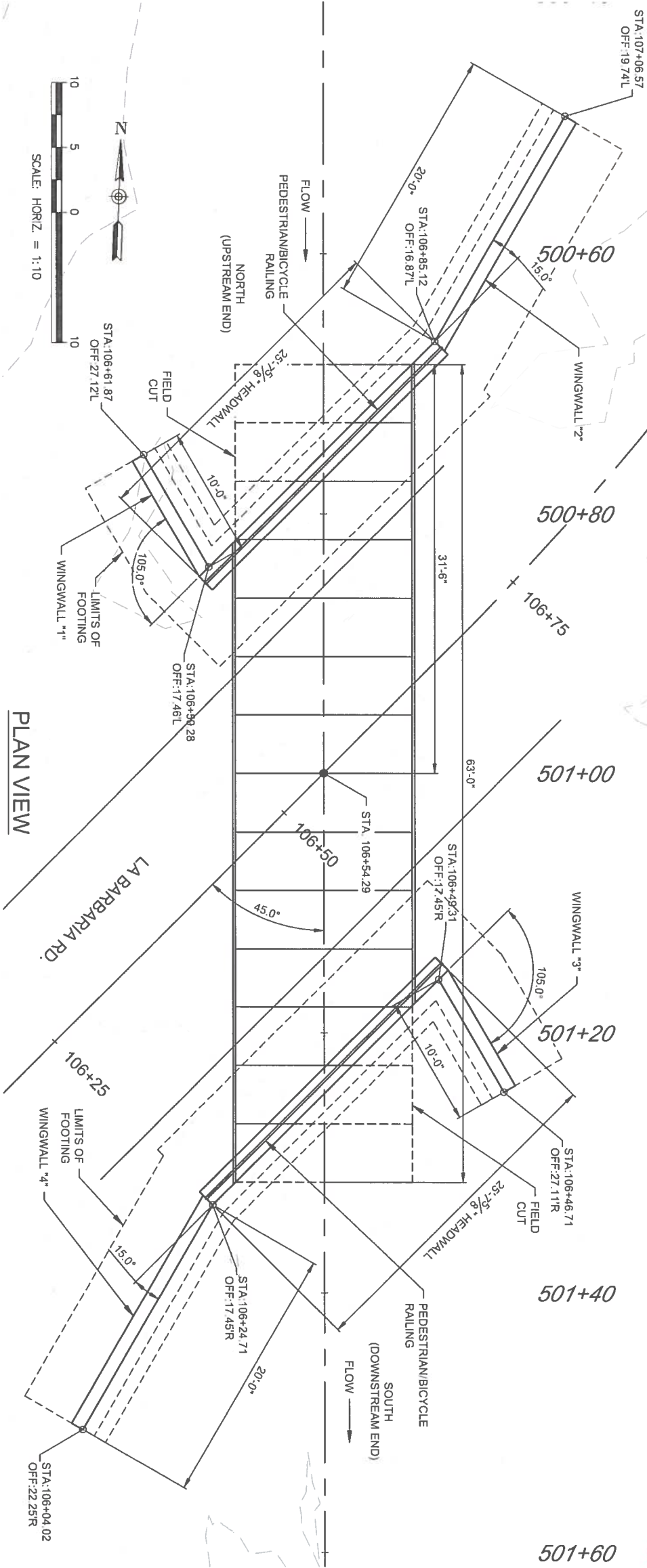
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1/22/2018

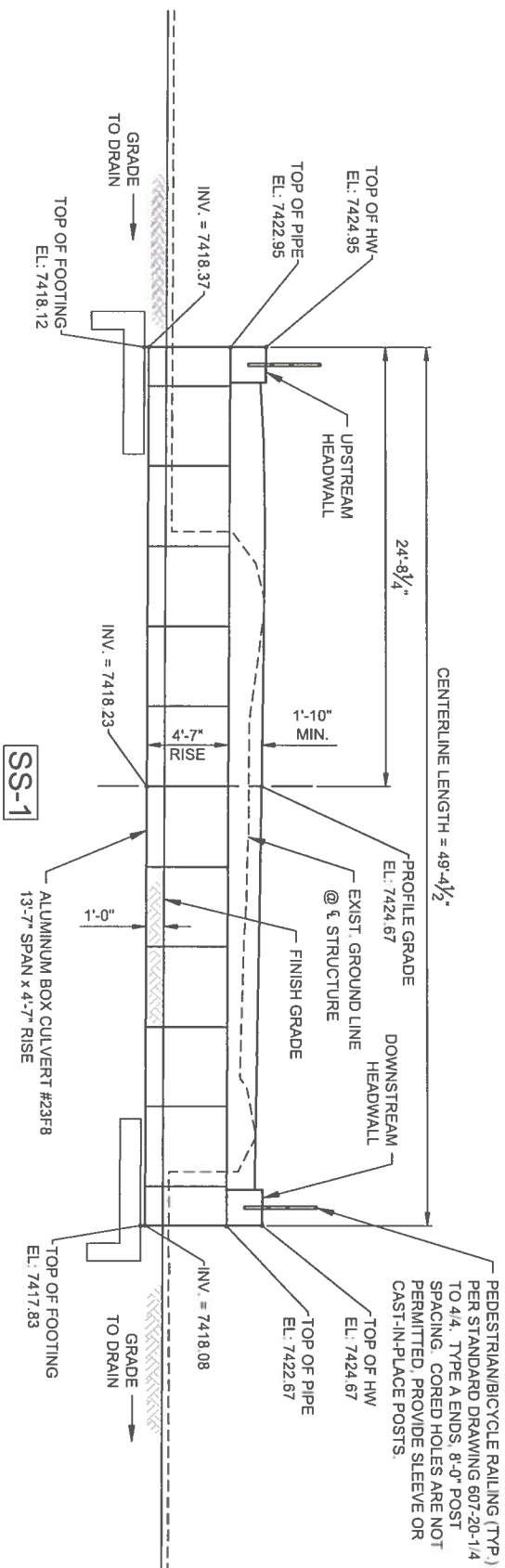
REVISIONS (OR CHANGE NOTICES)

NO.	DESCRIPTION	DATE	BY
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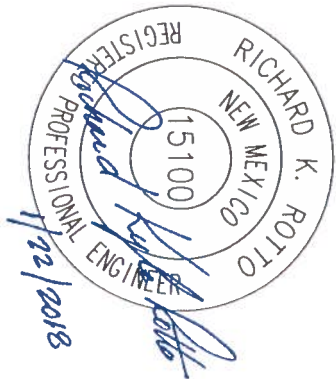
PLAN VIEW



PROFILE THROUGH CENTERLINE OF CULVERT

SS-1

PEDESTRIAN/BICYCLE RAILING (TYP.)  
PER STANDARD DRAWING 607-20-1/4  
TO 4/4. TYPE A ENDS, 8'-0" POST  
SPACING. CORED HOLES ARE NOT  
PERMITTED. PROVIDE SLEEVE OR  
CAST-IN-PLACE POSTS.



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SANTA FE, NEW MEXICO

PROJECT NO.	SHEET NO.
2014-0216-PW	2-10

SANTA FE COUNTY

DESIGNED BY: PE & IPT

DRAWN BY: CS

CHECKED BY: RKR

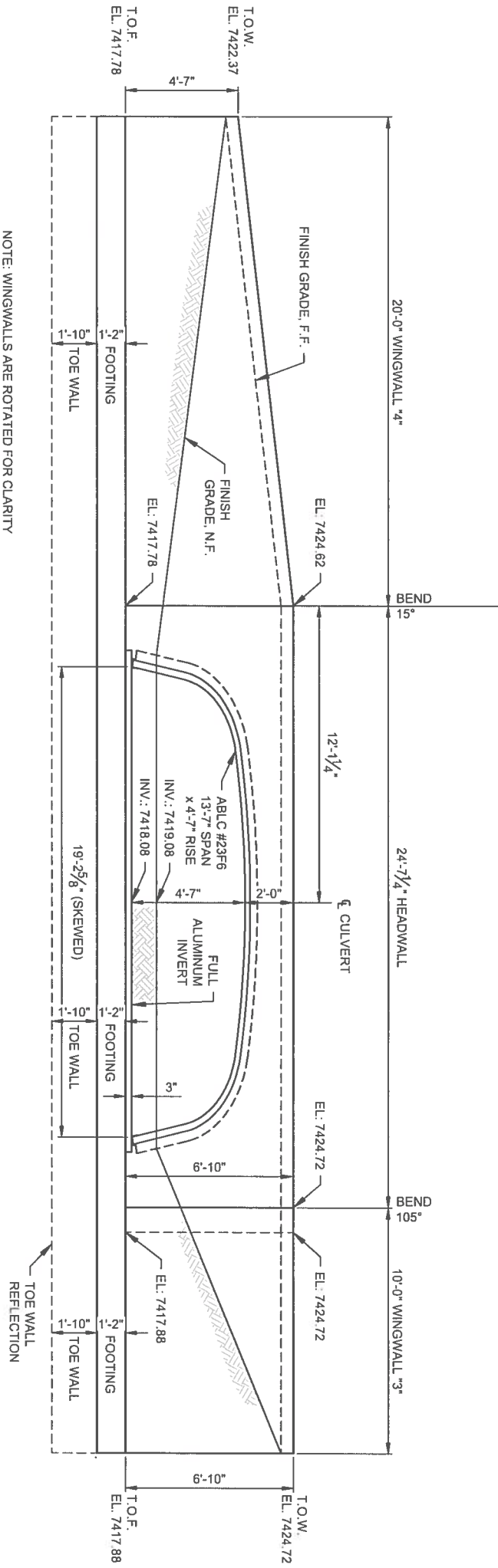
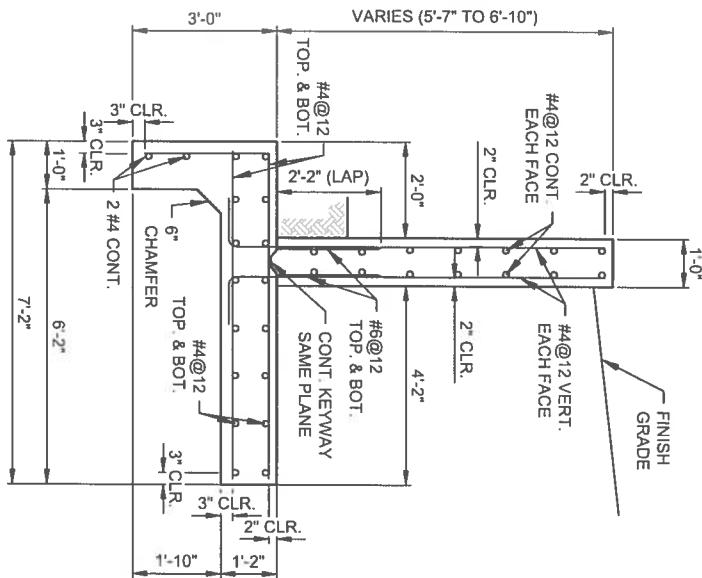
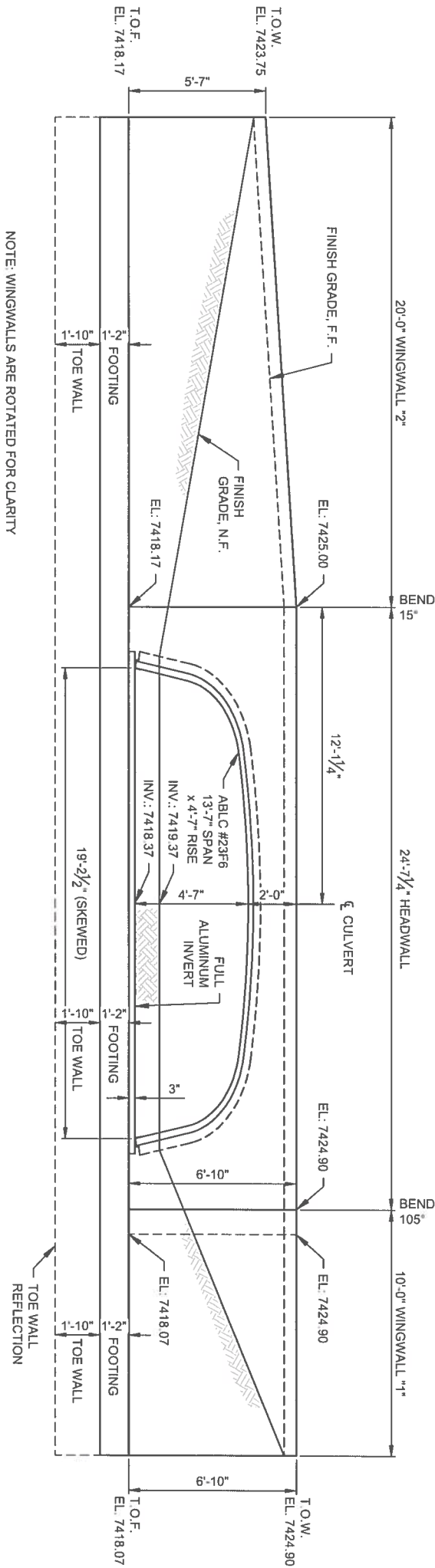
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PROJECT NO. 2014-0216-PW SHEET 2-10

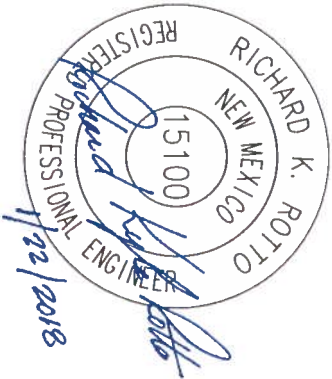
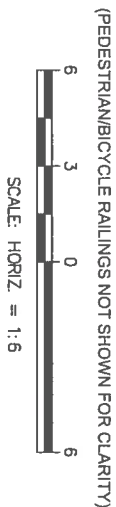
SANTA FE COUNTY  
LA BARBARIA RD. DRAINAGE  
AND ROAD IMPROVEMENTS (CR-67F)

STA. 106+54 ALBC  
PLAN, PROFILE AND BACKFILL



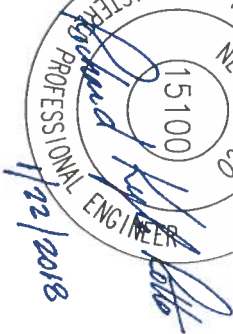


TYPICAL WINGWALL SECTION



SANTA FE COUNTY			LA BARBARIA RD. DRAINAGE AND ROAD IMPROVEMENTS (CR-67F)		
			STA. 106+54 ALBC		
			END ELEV'S & WINGWALL SECT'S		
NO.	DESCRIPTION	DATE	BY		

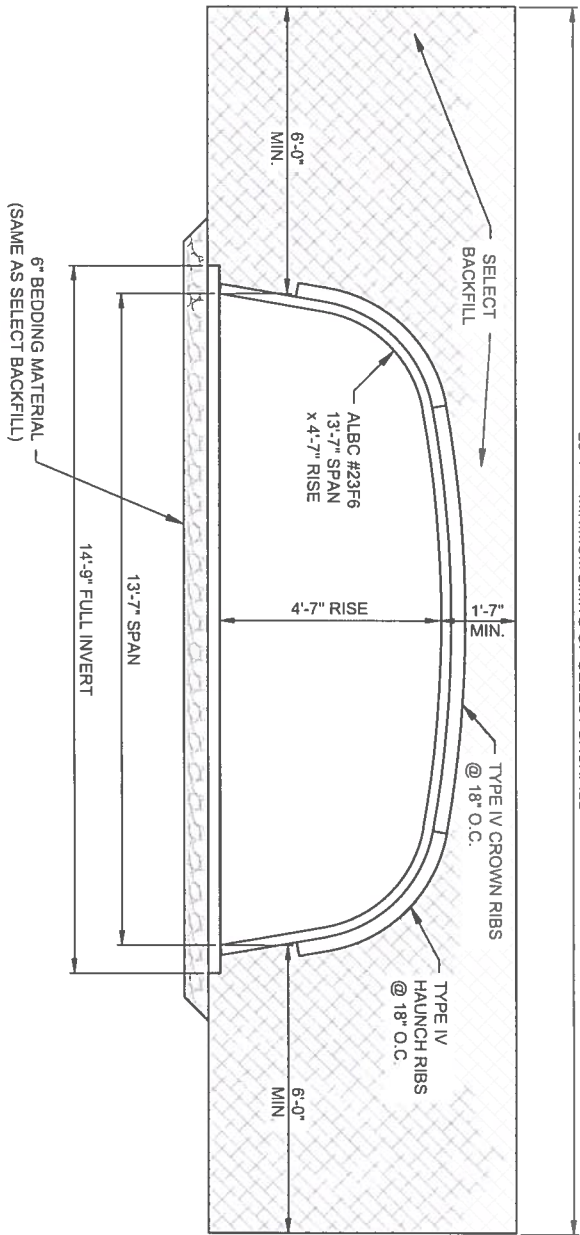




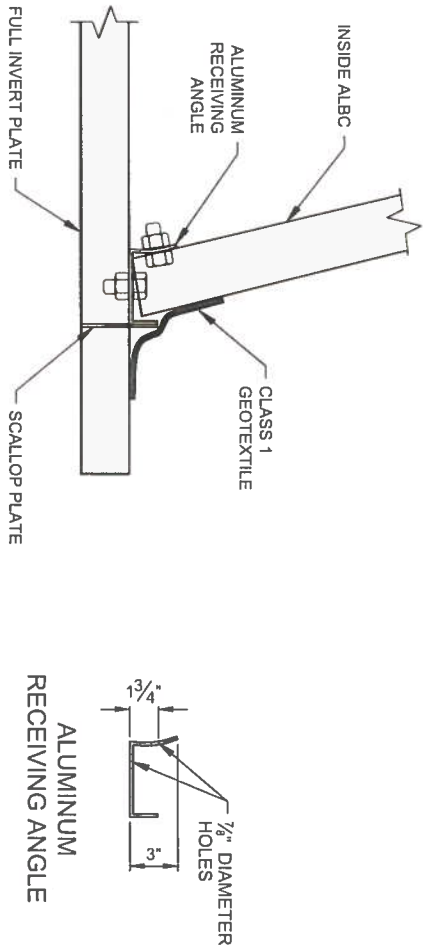
SANTA FE COUNTY  
LA BARBARA RD. DRAINAGE  
AND ROAD IMPROVEMENTS (CR-67F)  
STA. 106+54 ALBC  
DOWNSTREAM HEADWALL DETAILS



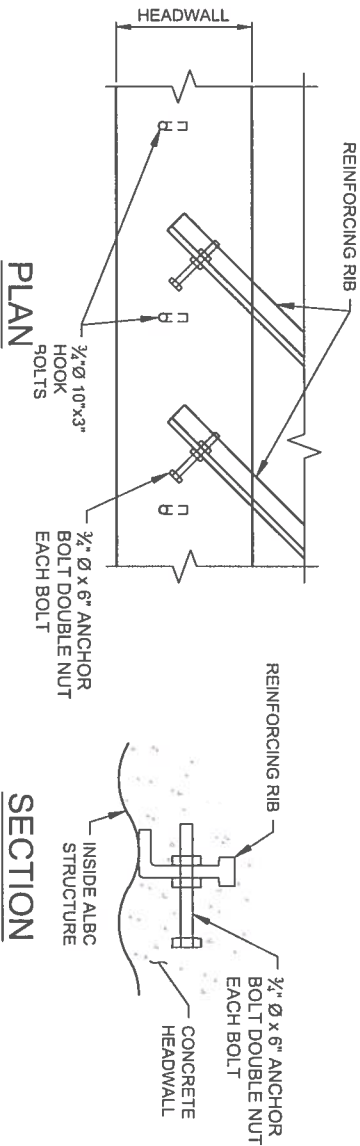
25'-7" = MINIMUM LIMITS OF SELECT BACKFILL



TYPICAL BACKFILL SECTION



DETAIL OF ALBC CONNECTION TO FULL INVERT PLATE

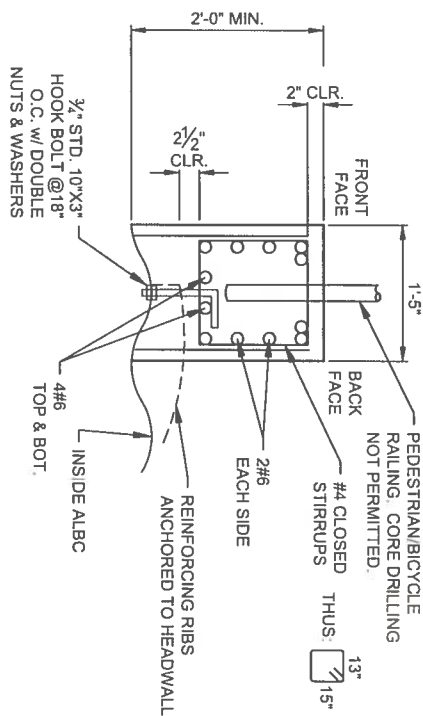


PLAN

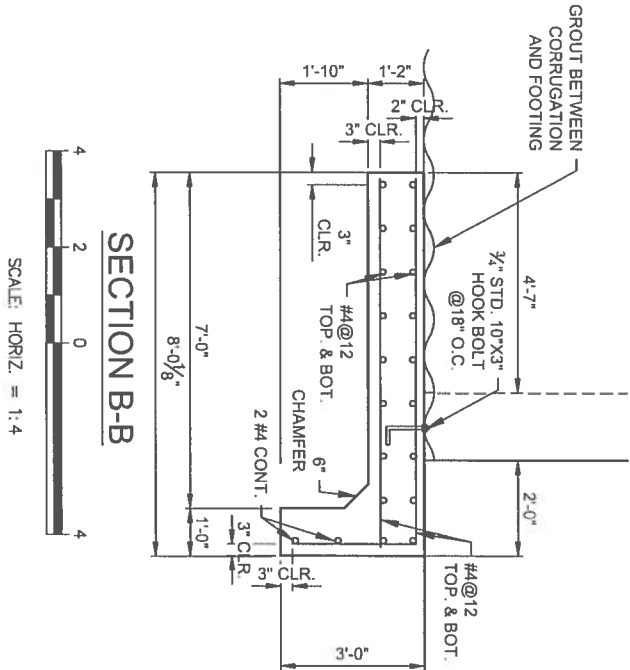
SECTION

TYPICAL DETAIL OF REINFORCING RIB ANCHORED INTO SKEWED HEADWALL

NOT TO SCALE



SECTION A-A



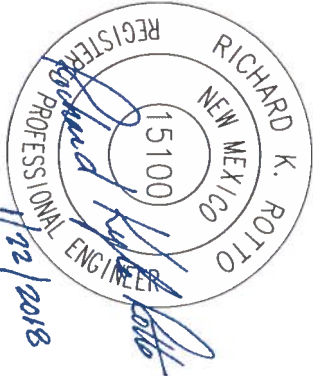
SECTION B-B



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SANTA FE, NEW MEXICO

PROJECT NO.	SHEET NO.
2014-0216-PW	2-14

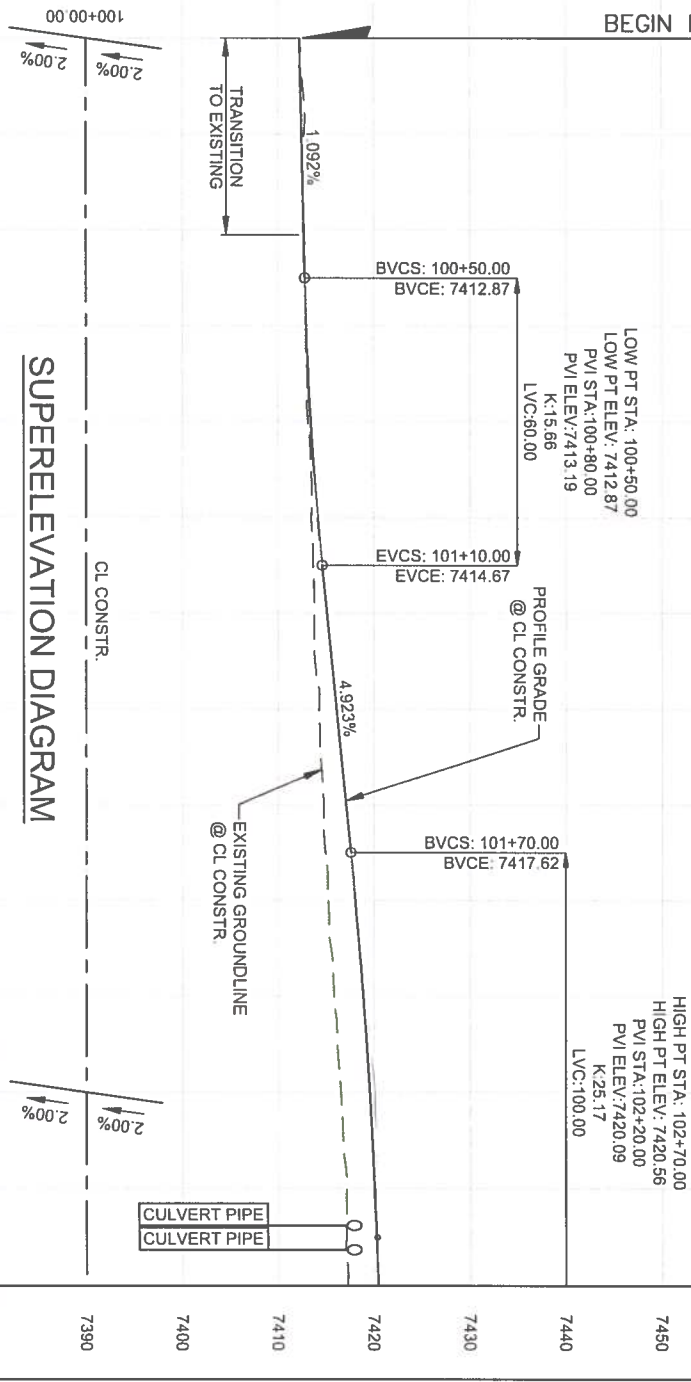
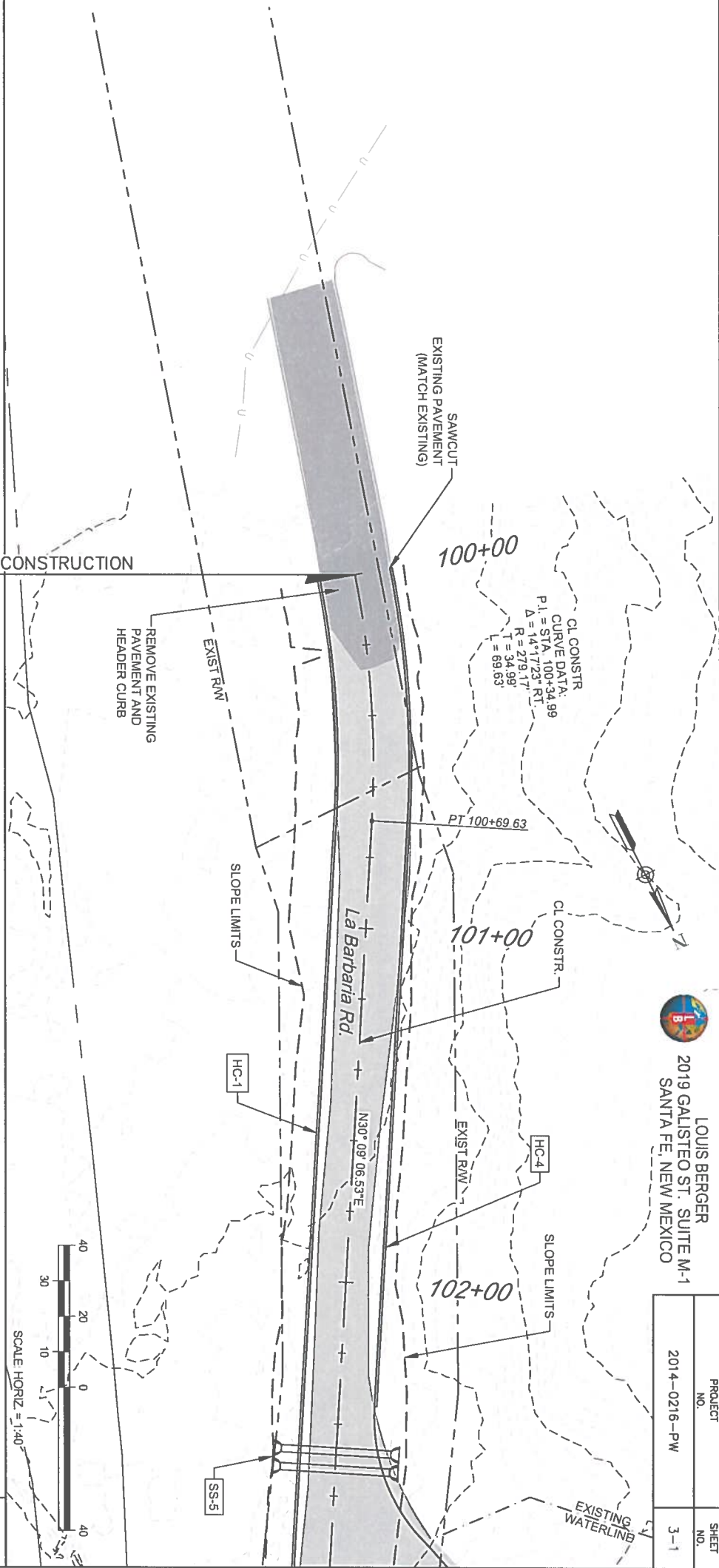
SANTA FE COUNTY  
LA BARBARIA RD. DRAINAGE  
AND ROAD IMPROVEMENTS (CR-67F)  
STA. 106+54 ALBC  
MISCELLANEOUS DETAILS





**NOTES:**

1. ALL CONSTRUCTION CENTERLINES AND EXISTING GROUNDLINE PROFILES SPECIFIED ON THE PLAN AND PROFILE SHEETS HAVE BEEN DERIVED FROM AN ELECTRONIC DIGITAL TERRAIN MODEL AND HAVE BEEN USED FOR ESTIMATING PURPOSES ONLY. CONSTRUCTION CENTERLINES AND EXISTING GROUNDLINE PROFILES SHALL BE FIELD VERIFIED BY THE CONTRACTOR, PRIOR TO INITIATING ANY CONSTRUCTION WITHIN THE EXISTING ROADWAY PRISM. THE CONTRACTOR SHALL UTILIZE THE FIELD VERIFICATION DATA TO REESTABLISH EXISTING HORIZONTAL AND VERTICAL ALIGNMENTS THROUGHOUT THE PROJECT LIMITS. THE CONTRACTOR SHALL SUBMIT ALL MODIFICATIONS TO THE PROPOSED HORIZONTAL AND VERTICAL ALIGNMENTS TO THE PROJECT MANAGER PRIOR TO CONSTRUCTION.
2. SURVEY DATA PROVIDED BY PRECISION SURVEYS, INC.
3. AN ELECTRONIC FILE WILL BE MADE AVAILABLE TO THE CONTRACTOR'S SURVEYOR TO ASSIST WITH THE DEVELOPMENT OF CONSTRUCTION STAKING OF THE HORIZONTAL GEOMETRY OF THE PROPOSED IMPROVEMENTS IN LIEU OF TABULATED DATA.



## SUPERELEVATION DIAGRAM

DESIGNED BY: PE &amp; IPT

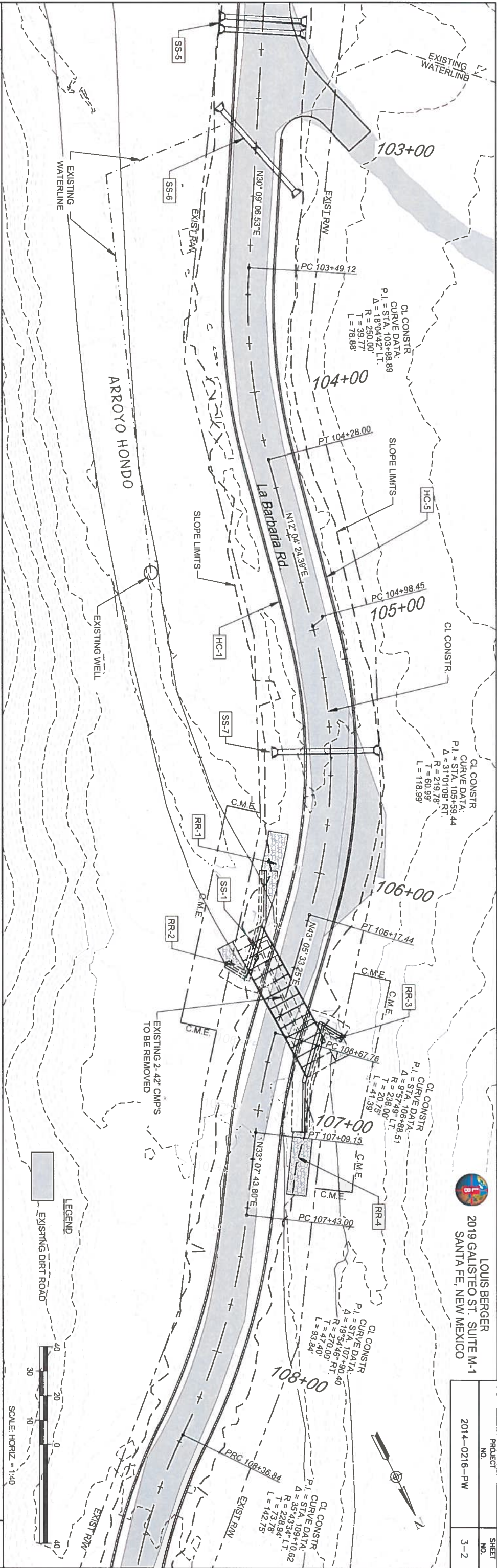
**DRAWN BY: CS**

CHECKED BY: RKR

**APPROVED BY: RKR**

DATE: 01/22/18

PROJECT NO. 2014-0216-PWSHEET 3-1



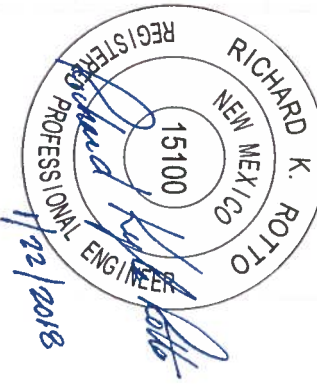
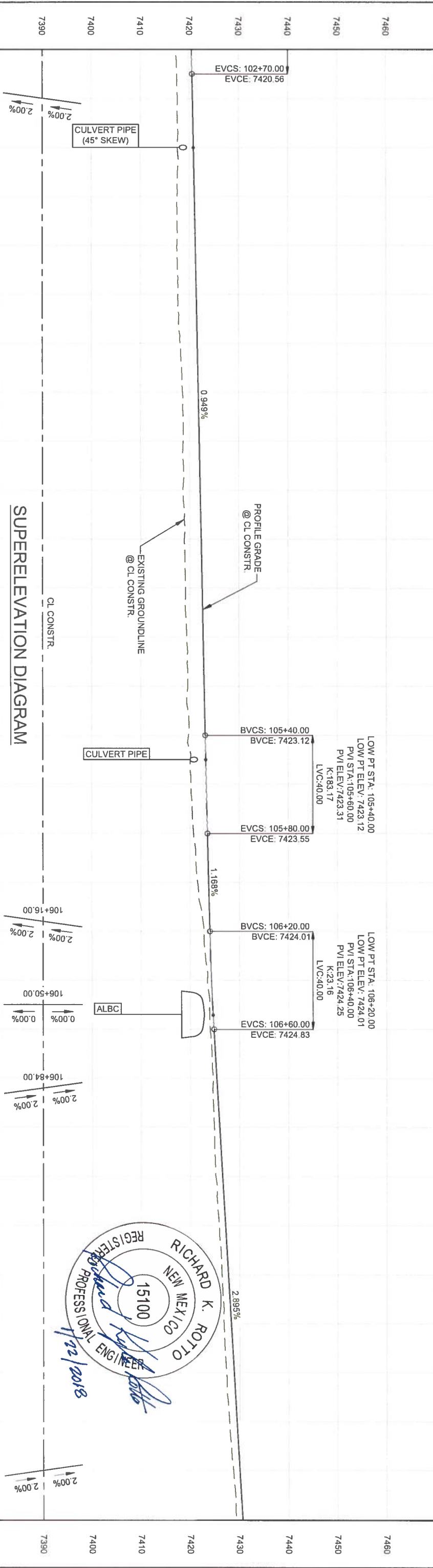
LOUIS BERGER  
2019 GALISTEO ST. SUITE M-1  
SANTA FE, NEW MEXICO

PROJECT NO.

2014-0216-PW

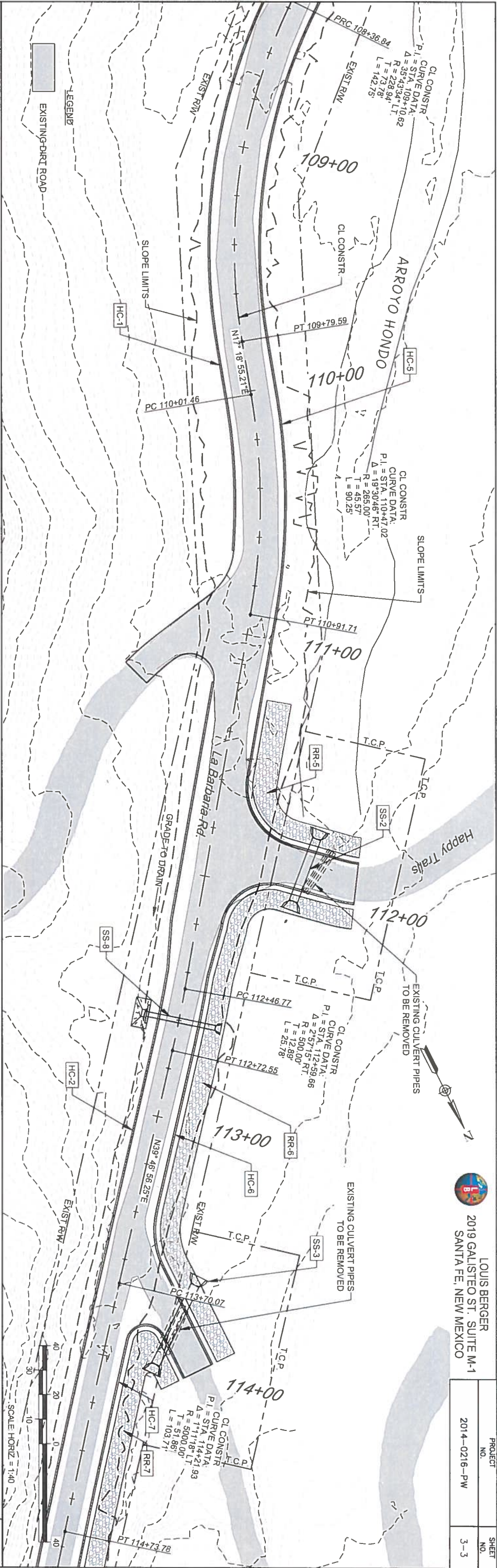
SHEET NO.

3-2



SANTA FE COUNTY	103+00	104+00	105+00	106+00	107+00	108+00
DESIGNED BY: PE & IPT	DRAWN BY: CS	CHECKED BY: RKR	APPROVED BY: RKR	DATE: 01/22/18	PROJECT NO. 2014-0216-PW	SHEET 3-2





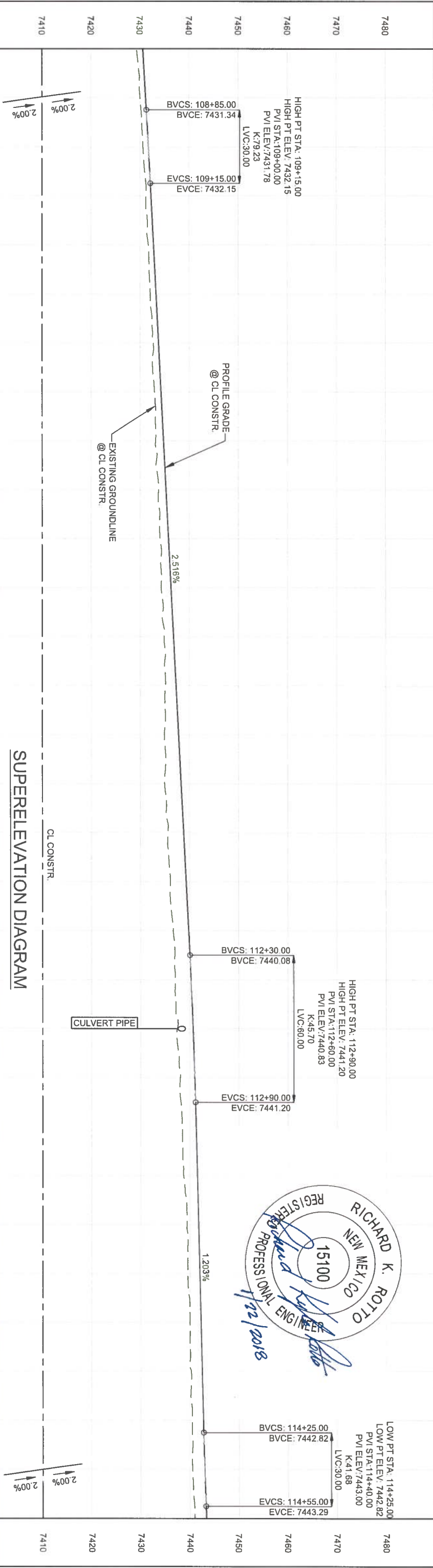
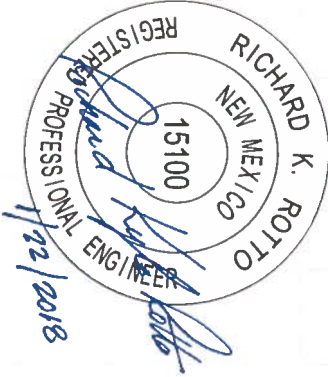
LOUIS BERGER  
2019 GALISTEO ST. SUITE M-1  
SANTA FE, NEW MEXICO

PROJECT NO.

2014-0216-PW

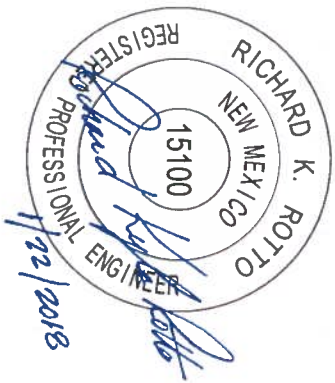
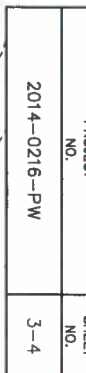
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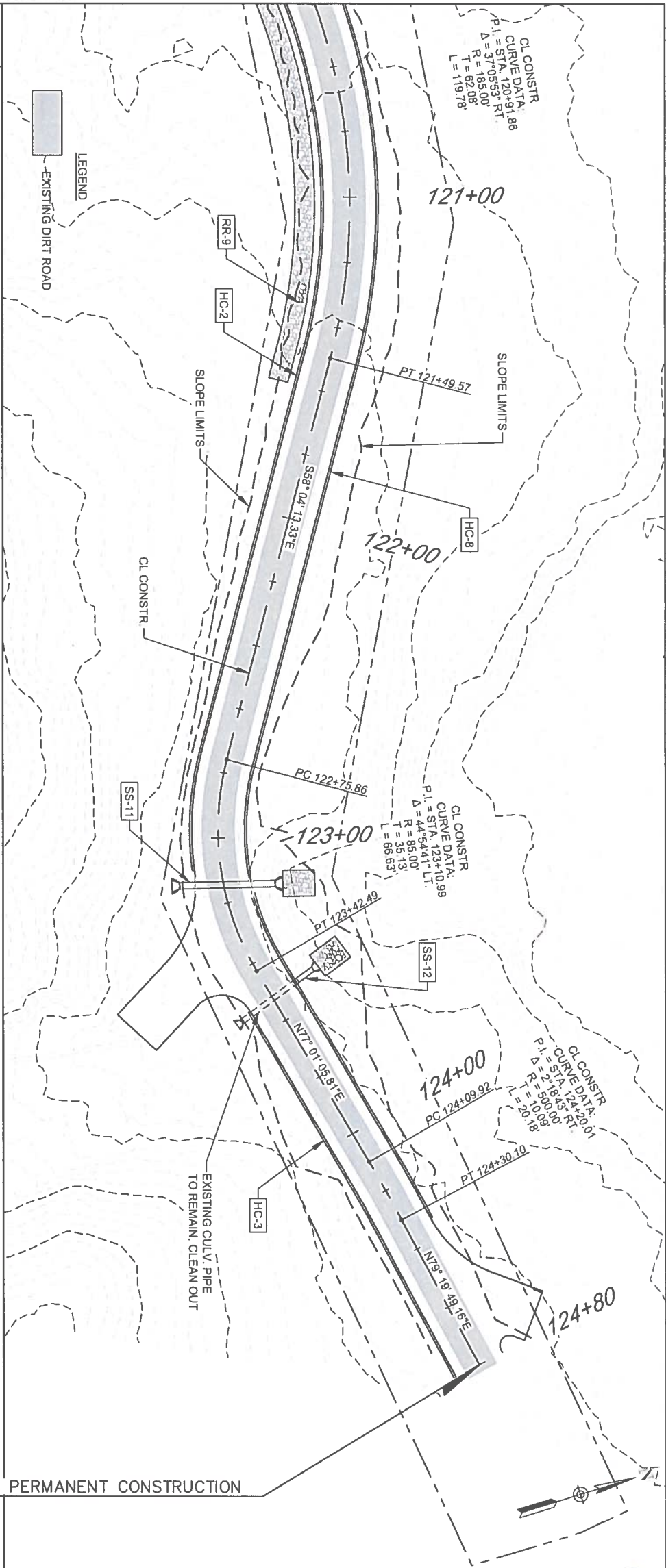


SUPERELEVATION DIAGRAM



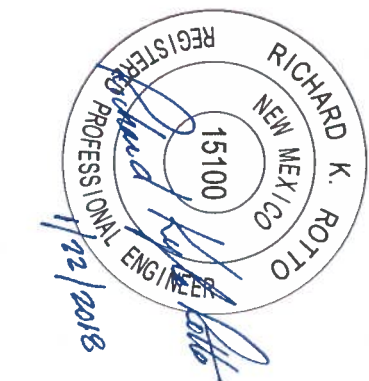
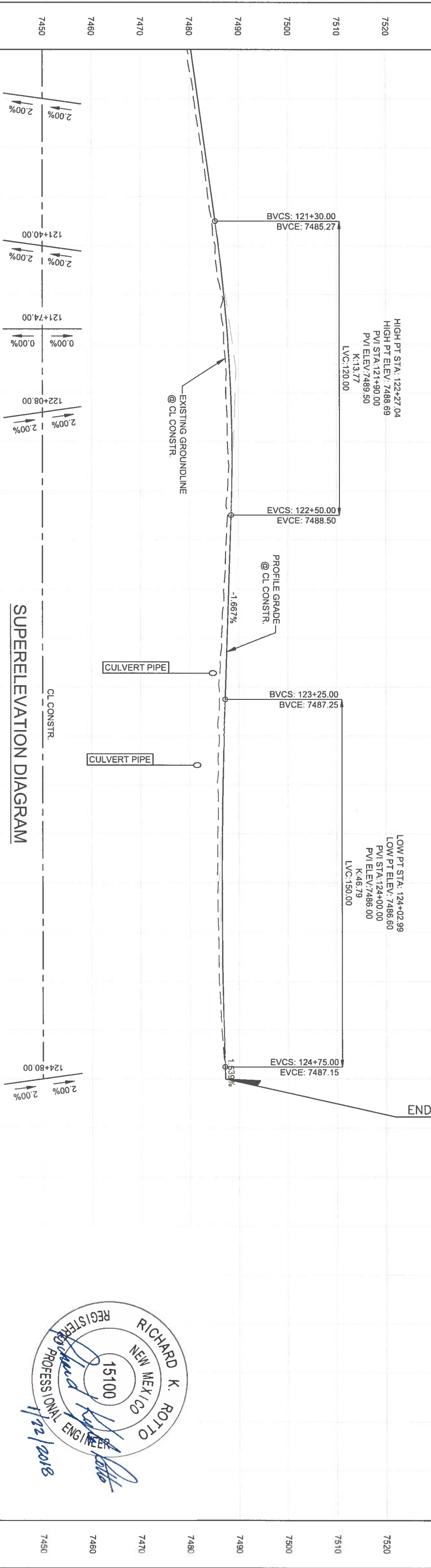






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2019 GALISTEO ST., SUITE M-1  
SANTA FE, NEW MEXICO

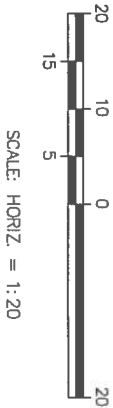
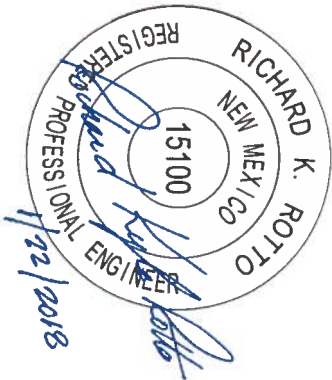
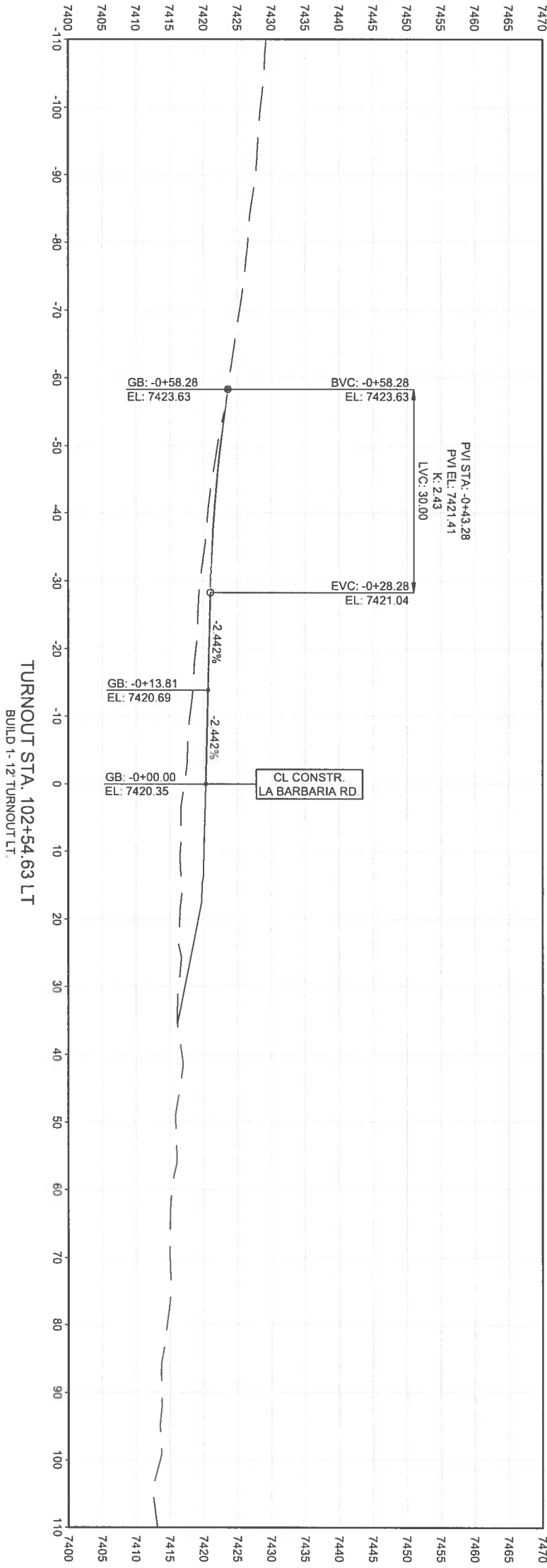
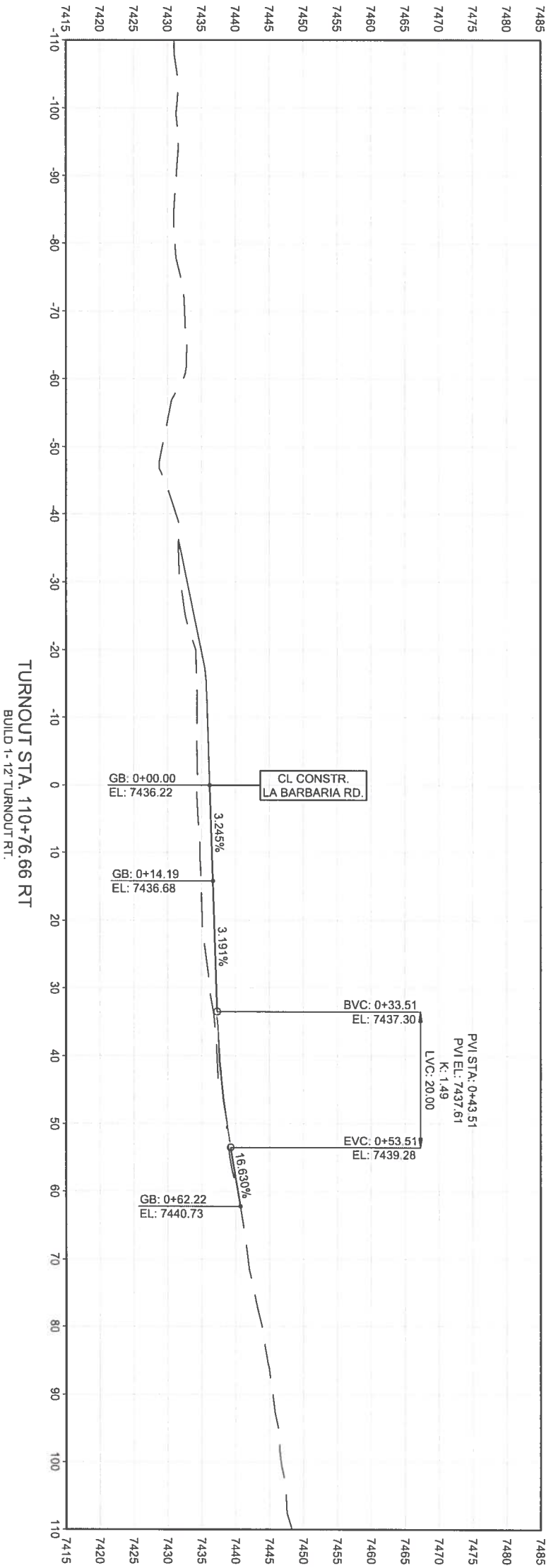
PROJECT NO.	SHEET NO.
2014-0216-PW	3-5





LOUIS BERGER  
2019 GALISTEO ST. SUITE M-1  
SANTA FE, NEW MEXICO

PROJECT		SHEET
NO.	NO.	NO.
2014-0216-PW		4-1



NO.	DESCRIPTION	DATE	BY
1			
2			
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6			

SANTA FE COUNTY  
LA BARBARIA RD. DRAINAGE  
AND ROAD IMPROVEMENTS (CR-67F)  
LA BARBARIA RD.  
TURNOUT PROFILES

SANTA FE COUNTY

DESIGNED BY: PE & IPT

DRAWN BY: CS

CHECKED BY: RKR

APPROVED BY: RKR

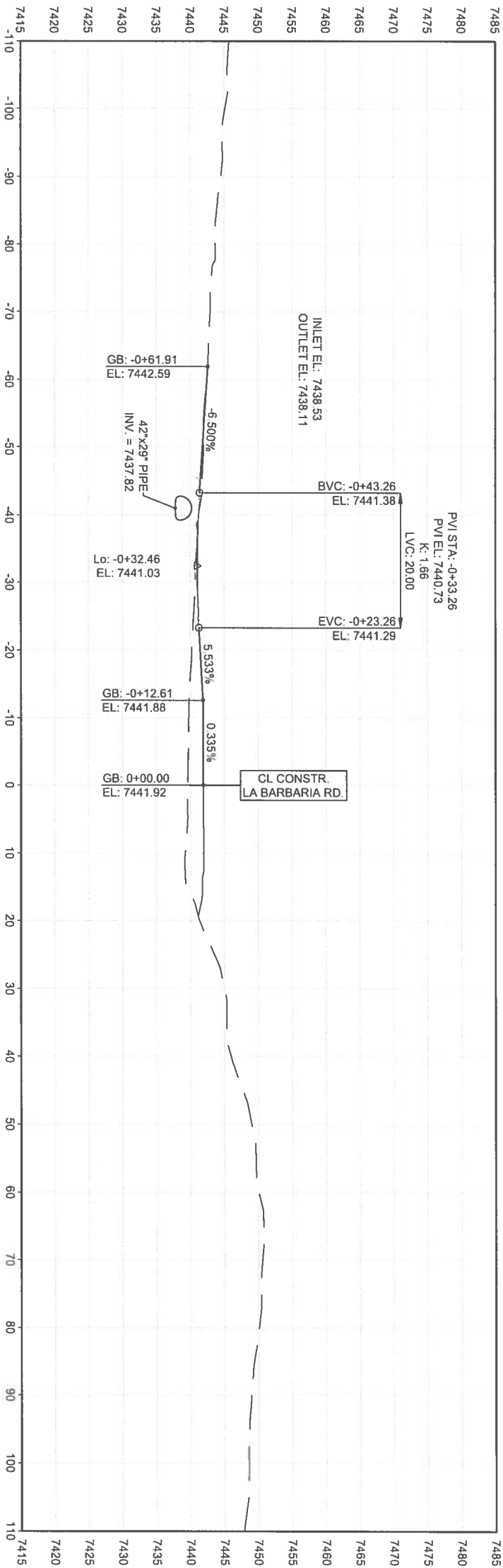
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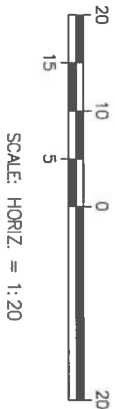
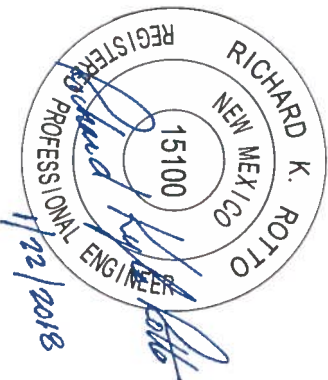
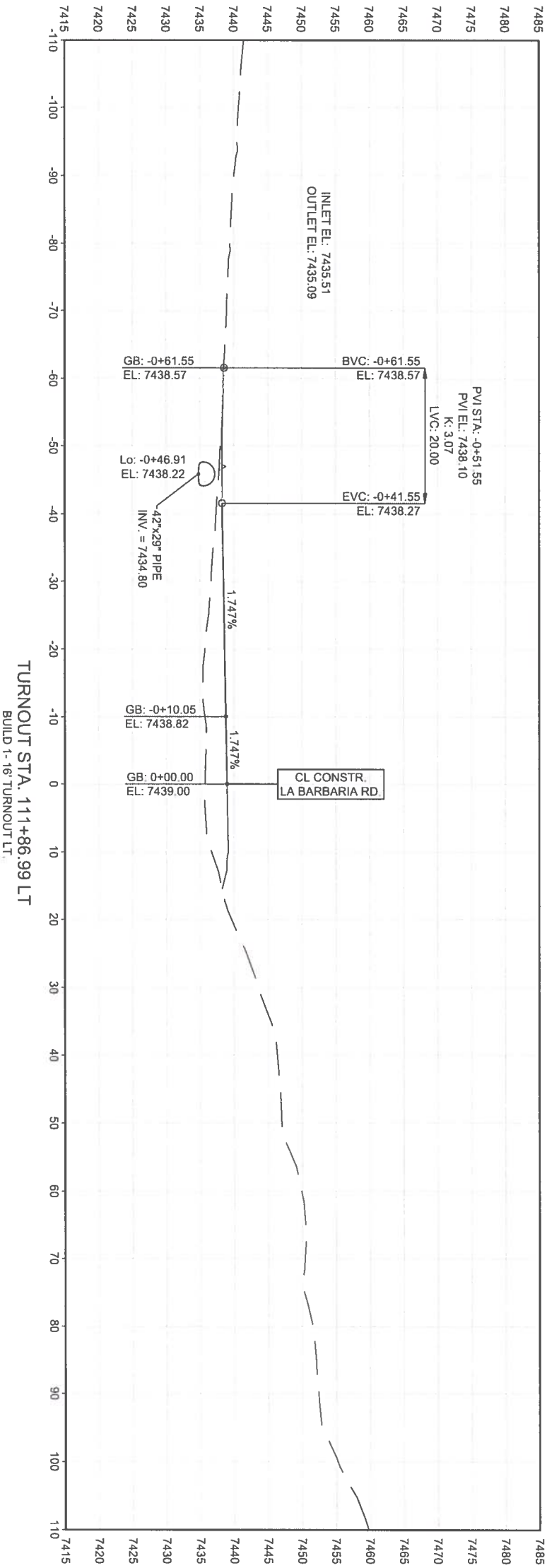


LOUIS BERGER  
2019 GALISTEO ST. SUITE M-1  
SANTA FE, NEW MEXICO

PROJECT		SHEET
NO.	NO.	NO.
2014-0216-PW		4-2



○ ○ ○



NO.	DESCRIPTION	DATE	BY
1			
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SANTA FE COUNTY

LA BARBARIA RD. DRAINAGE AND ROAD IMPROVEMENTS (CR-67F)

LA BARBARIA RD. TURNOUT PROFILES

SANTA FE COUNTY

DESIGNED BY: PE & IPT

DRAWN BY: CS

CHECKED BY: RKR

APPROVED BY: RKR

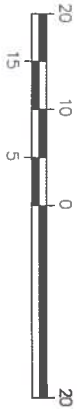
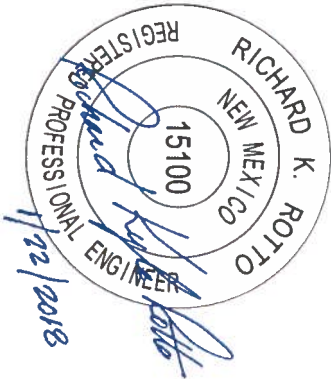
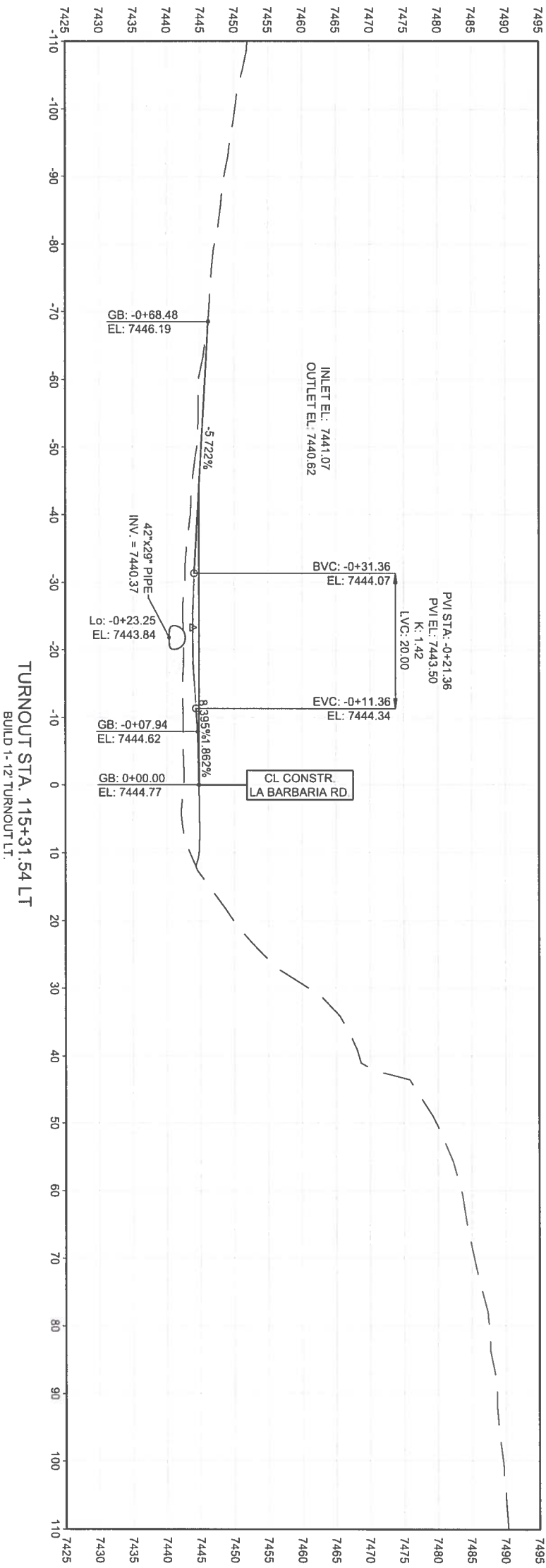
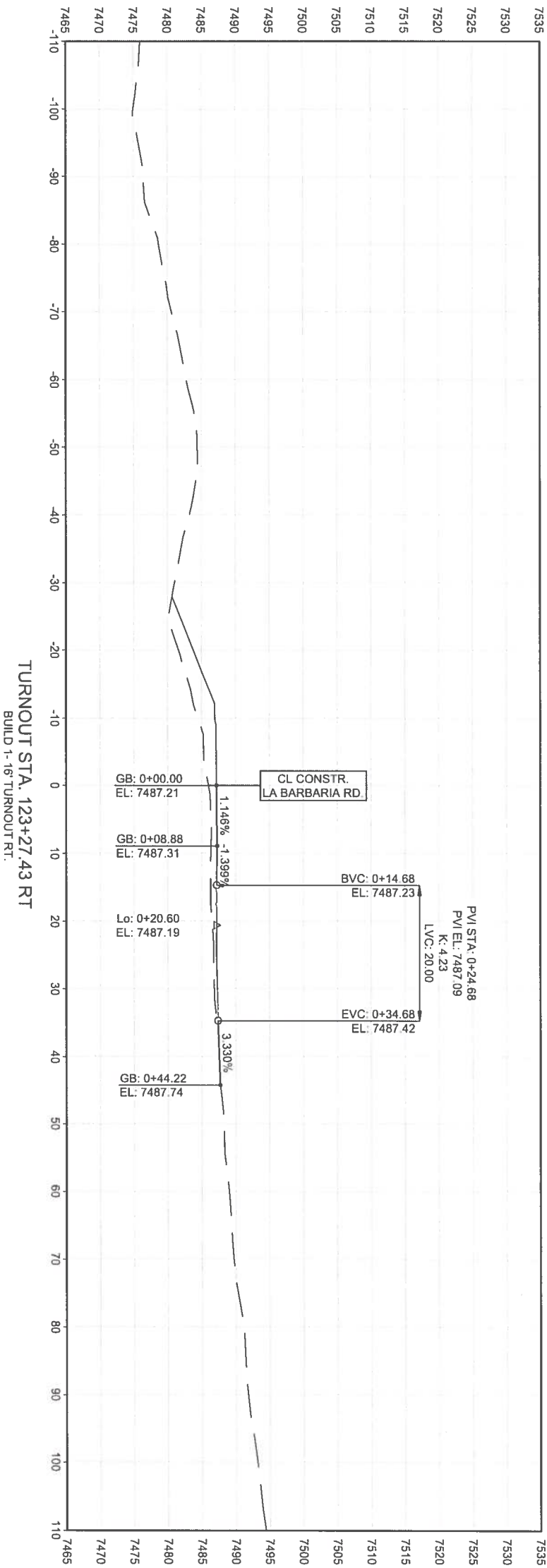
DATE: 01/22/18

PROJECT NO. 2014-0216-PW SHEET 4-2



LOUIS BERGER  
2019 GALISTEO ST. SUITE M-1  
SANTA FE, NEW MEXICO

PROJECT		SHEET
NO.	NO.	NO.
2014-0216-PW		4-3



NO.	DESCRIPTION	DATE	BY
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SANTA FE COUNTY  
LA BARBARIA RD. DRAINAGE  
AND ROAD IMPROVEMENTS (CR-67F)  
LA BARBARIA RD.  
TURNOUT PROFILES

SANTA FE COUNTY

DESIGNED BY: PE & IPT

DRAWN BY: CS

CHECKED BY: RKR

APPROVED BY: RKR

DATE: 01/22/18

PROJECT NO. 2014-0216-PW

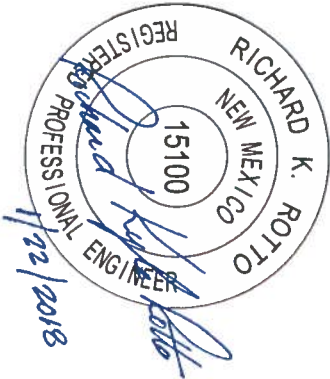
SHEET 4-3



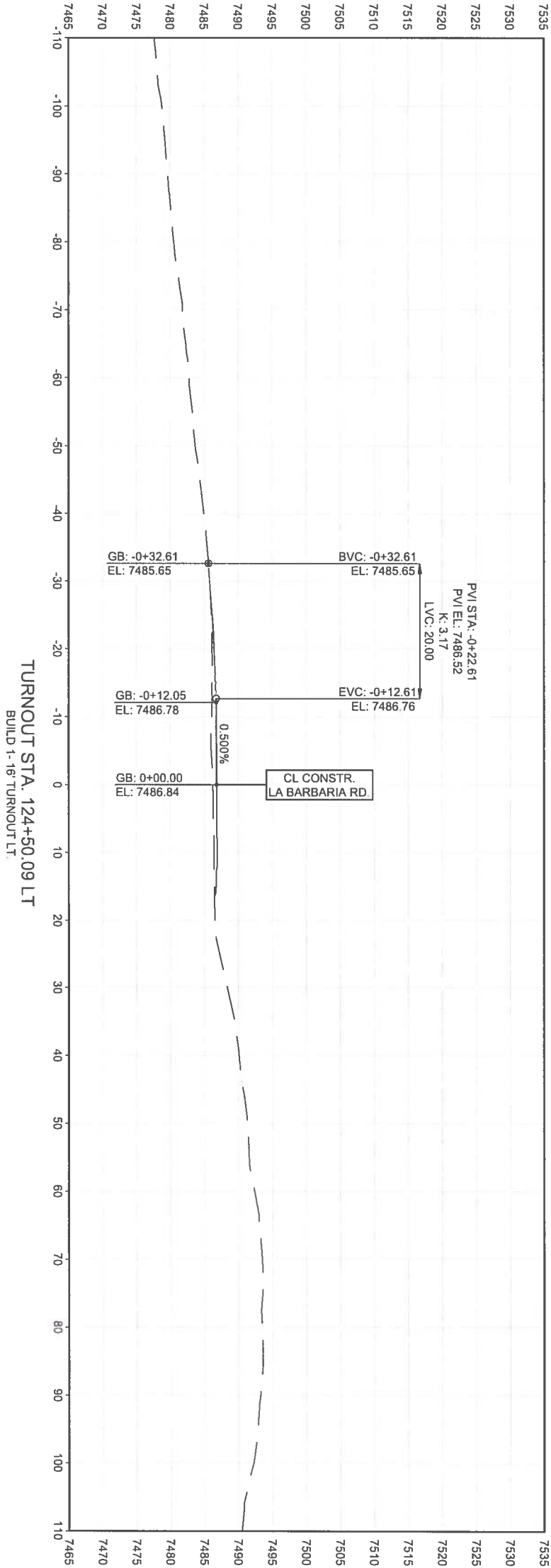


LOUIS BERGER  
2019 GALISTEO ST. SUITE M-1  
SANTA FE, NEW MEXICO

PROJECT		SHEET
NO.	NO.	NO.
2014-0216-PW		4-4



NO.	DESCRIPTION	DATE	BY
REVISIONS (OR CHANGE NOTICES)			
SANTA FE COUNTY			
LA BARBARIA RD. DRAINAGE AND ROAD IMPROVEMENTS (CR-67F)			
LA BARBARIA RD. TURNOUT PROFILES			



TURNOUT STA. 124+50.09 LT  
BUILD 1'-16" TURNOUT LT.

SANTA FE COUNTY

DESIGNED BY: PE & IPT

DRAWN BY: CS

CHECKED BY: RKR

APPROVED BY: RKR

DATE: 01/22/18

PROJECT NO. 2014-0216-PW

SHEET 4-4



LOUIS BERGER  
2019 GALISTEO ST. SUITE M-1  
SANTA FE, NEW MEXICO

PROJECT		SHEET
NO.	NO.	NO.
2014-0216-PW		6-1

TRAFFIC NOTES:

- TRAFFIC CONTROL PLAN: THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING AN APPROVED TRAFFIC CONTROL PLAN, STAMPED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF NEW MEXICO, FOR THIS PROJECT IN ACCORDANCE WITH SPECIAL PROVISION 618 - TRAFFIC CONTROL MANAGEMENT. ALL TRAFFIC CONTROL DEVICES TO BE USED IN THIS PROJECT SHALL COMPLY WITH SECTION 702 - CONSTRUCTION TRAFFIC CONTROL DEVICES OF THE NMDOT STANDARD SPECIFICATIONS FOR HIGHWAY & BRIDGE CONSTRUCTION, 2014 EDITION. THE CONTRACTOR SHALL SUBMIT THE TRAFFIC CONTROL PLAN FOR REVIEW AND APPROVAL BY THE COUNTY STAFF 1 WEEK PRIOR TO THE PRE-CONSTRUCTION MEETING.
- TRAFFIC CONTROL PLAN CHANGES: ANY PROPOSED CHANGES TO THE CONSTRUCTION SEQUENCE AND/OR TRAFFIC CONTROL PLAN MUST BE SUBMITTED BY THE CONTRACTOR TO THE PROJECT MANAGER FOR APPROVAL. NO PAYMENT WILL BE MADE FOR ANY ADDITIONAL COST RESULTING FROM CHANGES TO CONSTRUCTION SEQUENCE OR TRAFFIC CONTROL PLAN. THE CONTRACTOR SHALL BE REQUIRED TO SUBMIT A LETTER OF JUSTIFICATION FOR THE CHANGES WITH THE FOLLOWING ITEMS INCLUDED:
  - A REVISED TRAFFIC CONTROL PLAN INCLUDING A SUMMARY OF QUANTITIES AND A COST ESTIMATE.
  - THE REVISED TRAFFIC CONTROL PLAN SHALL BE DRAFTED ON 11 X 17 PAPER AND SEALED BY A LICENSED ENGINEER. THE SUBMITTAL PAPER SHALL MEET CURRENT DRAFTING STANDARDS.
  - CHANGES TO THE TRAFFIC CONTROL PLAN MUST BE APPROVED BY THE COUNTY AT LEAST ONE (1) WEEK IN ADVANCE OF IMPLEMENTING CHANGES IN THE FIELD, UNLESS OTHERWISE APPROVED BY THE PROJECT MANAGER.
- AT THE END OF EACH WORKDAY, TRAFFIC MUST BE OPENED TO TWO-LANE, TWO-WAY TRAFFIC AS DEPICTED ON SECTION B-B FOR NON-CONSTRUCTION HOURS. IF SECTION B-B CAN NOT BE OBTAINED ON THE EXISTING TEMPORARY BASE COURSE MUST BE INSTALLED AS SHOWN IN THE DETOUR PAVEMENT DETAIL, SHT 6-3 OF PLANS.
- UNDER NO CIRCUMSTANCES WILL THE CONTRACTOR BE ALLOWED TO PERFORM ANY WORK REQUIRING LANE CLOSURES DURING WEEKDAY PEAK HOURS AS DEFINED BELOW: WEEKDAY PEAK HOURS SHALL BE DEFINED AS OCCURRING FROM 6:30AM TO 8:30AM AND 4:00PM TO 6:00PM. MONDAY THROUGH FRIDAY. CONTRACTOR REQUESTS FOR LANE CLOSURES ON WEEKENDS OR ON SANTA FE COUNTY RECOGNIZED HOLIDAYS WILL BE HIGHLY DISCOURAGED. IF NO OTHER VIABLE ALTERNATIVE EXISTS SANTA FE COUNTY WILL CONSIDER SUCH REQUESTS ON A CASE BY CASE BASIS. WEEKENDS SHALL BE DEFINED AS BEGINNING AT 12:00PM ON FRIDAY AND ENDING AT 6:30AM ON MONDAY. ONCE TRAFFIC CONTROL DEVICES HAVE BEEN SET IN PLACE FOR A LANE CLOSURE, THE CONTRACTOR WILL BE REQUIRED TO MAINTAIN AN ACTIVE CREW WITHIN THE WORK AREA UNTIL SUCH TIME AS THE CONTRACTOR OPERATIONS ARE COMPLETE AND THE LANE CLOSURE IS REMOVED.
- FLAGGING AND/OR PILOT CAR OPERATIONS SHALL BE DONE IN ACCORDANCE WITH THE MOST CURRENT MANUAL ON TRAFFIC CONTROL DEVICES (MUTCD). ALL MATERIALS AND LABOR REQUIRED TO PERFORM THIS WORK SHALL BE CONSIDERED AS INCLUDED IN ITEM 702810 - TRAFFIC CONTROL DEVICES FOR CONSTRUCTION (LUMP SUM) AND NO SEPARATE MEASUREMENT OR PAYMENT WILL BE MADE THEREFORE.
- THE WORK ZONE LENGTH WILL BE ESTABLISHED BY THE PROJECT MANAGER AND PROJECT ENGINEER TO ENSURE THE SAFETY OF THE PUBLIC DURING WORKING AND NON WORKING HOURS. FOR ESTIMATING PURPOSES ONLY THE TRAFFIC CONTROL PLANS DELINEATE A WORK ZONE LENGTH OF 650 FT.
- THE CONTRACTOR SHALL USE TYPE VIII OR IX DIAMOND GRADE SHEETING A ON ALL CONSTRUCTION SIGNS.
- RESPONSIBLE PARTY: THE CONTRACTOR SHALL HAVE A CERTIFIED TRAFFIC CONTROL SUPERVISOR READILY AVAILABLE DURING WORKING HOURS AND ON CALL DURING NON WORKING HOURS TO INSPECT AND MAINTAIN PROJECT TRAFFIC CONTROL, OR AS DIRECTED BY THE PROJECT MANAGER.
- MUTCD: THE CONTRACTOR SHALL ADHERE TO ALL REQUIREMENTS LISTED IN THE CURRENT EDITION OF THE MANUAL ON UNIFORM TRAFFIC DEVICES (MUTCD).
- DEVICE REQUIREMENTS: ALL DEVICES SHALL ADHERE TO THE REQUIREMENTS OF SECTION 702 - TRAFFIC CONTROL DEVICES FOR CONSTRUCTION, IN THE 2014 EDITION OF THE NMDOT SPECIFICATIONS BOOK.
- CONSTRUCTION SIGNING: ALL CONSTRUCTION SIGNING SHALL BE BLACK ON REFLECTIVE ORANGE UNLESS OTHERWISE SPECIFIED. ALL CONSTRUCTION BARRICADES AND CHANNELIZATION DEVICES SHALL BE ORANGE ON WHITE REFLECTORIZED UNLESS OTHERWISE SPECIFIED.
- REMOVING/COVERING OF SIGNS: ALL NON-APPLICABLE SIGNING, WITHIN OR IN ADVANCE OF THE WORK ZONE, SHALL BE REMOVED OR COVERED COMPLETELY WITH AN OPAQUE NON-LIGHT TRANSMITTING MATERIAL. ALL REMAINING, NON-APPLICABLE TRAFFIC CONTROL DEVICES ARE TO BE REMOVED AND STORED AT LOCATIONS DESIGNATED BY THE PROJECT MANAGER.
- CLEANING OF SIGNS: ALL TRAFFIC CONTROL DEVICES SHALL BE KEPT CLEAN THROUGHOUT THE DURATION OF CONSTRUCTION. ANY SIGN THAT IS TAGGED BY GRAFFITI SHALL BE CLEANED WITHIN 24 HOURS OR REMOVED AND REPLACED.
- TRAFFIC CONTROL DEVICES: ALL TRAFFIC CONTROL DEVICES TO BE USED ON THIS PROJECT SHALL BE CONSIDERED AS INCLUDED IN THE UNIT BID PRICE FOR ITEM 702810 - TRAFFIC CONTROL DEVICES FOR CONSTRUCTION, AND NO SEPARATE MEASUREMENT OR PAYMENT WILL BE MADE.
- DRAINAGE DURING CONSTRUCTION: THE CONTRACTOR SHALL PROVIDE FOR ADEQUATE DRAINAGE, FREE OF PONDING, WITHIN THE LIMITS OF THE PROJECT DURING CONSTRUCTION. THIS SHALL INCLUDE ROADWAY AND ANY TEMPORARY FACILITIES, ACCESS ROADS, OR DRIVEWAYS CONSTRUCTED FOR THE PROJECT. THIS WORK, WHICH MAY REQUIRE TEMPORARY DRAINAGE CONSTRUCTION, PUMPING, OR OTHER METHODS, WILL BE CONSIDERED INCIDENTAL TO COMPLETION OF THE PROJECT AND NO SEPARATE MEASUREMENT OR PAYMENT WILL BE MADE. DIVERSION OF DRAINAGE ONTO PRIVATE PROPERTY WILL NOT BE PERMITTED.

TRAFFIC NOTES CONTINUED:

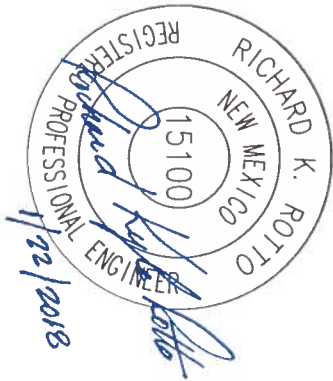
- ACCESS TO BUSINESSES AND RESIDENCES: THE CONTRACTOR SHALL PROVIDE INGRESS AND EGRESS TO ALL BUSINESSES AND RESIDENTS IMPACTED BY CONSTRUCTION FOR THE DURATION OF THIS PROJECT. THE CONTRACTOR SHALL SCHEDULE ALL ACCESS CLOSURES WITH THE PROJECT MANAGER AT LEAST ONE WEEK PRIOR TO CLOSURE. THE CONTRACTOR SHALL NOTIFY ALL BUSINESSES AND RESIDENCES THAT WILL BE IMPACTED BY PROPOSED CLOSURE AT LEAST 48 HOURS IN ADVANCE. CLOSURES SHALL BE NO LONGER THAN 8 HOURS.
- EXISTING MAIL BOXES: THE CONTRACTOR SHALL COORDINATE WITH MAIL RECIPIENTS OWNERS AND THE POSTAL MASTER FOR THE REMOVAL AND/OR RESETTING OF MAIL BOXES.

SUGGESTED SEQUENCE OF CONSTRUCTION (ROADWAY)

- PHASE I
- INSTALL BOP AND EOP SIGNING AS DEPICTED ON THE NMDOT STANDARD DRAWING 702-03-1/1 BOP / EOP SIGNING (2-LANE).
  - IMPLEMENT A ONE-LANE CLOSURE AS PER THE PHASE I - CONSTRUCTION HOURS TRAFFIC CONTROL PLAN.
  - CONSTRUCT ALL EMBANKMENT AND EXCAVATION WITHIN THE DESIGNATED WORK ZONE UP TO THE SUB-GRADE ELEVATION.
  - IF NECESSARY, PLACE TEMPORARY MATERIAL TO PROVIDE THE REQUIRED ROADWAY WIDTH TO ACCOMMODATE TWO-WAY TRAFFIC DURING NON-CONSTRUCTION HOURS. (SEE TRAFFIC NOTE NO. 3)
  - AT THE END OF EACH WORKDAY, OPEN ROADWAY TO TWO-WAY TRAFFIC, USING THE PHASE I NON-CONSTRUCTION HOURS TRAFFIC CONTROL PLAN.
- PHASE II
- IMPLEMENT A ONE-LANE CLOSURE AS PER THE PHASE II - CONSTRUCTION HOURS TRAFFIC CONTROL PLAN.
  - CONSTRUCT ALL EMBANKMENT AND EXCAVATION WITHIN THE DESIGNATED WORK ZONE UP TO THE SUB-GRADE ELEVATION.
  - IF NECESSARY, PLACE TEMPORARY MATERIAL TO PROVIDE THE REQUIRED ROADWAY WIDTH TO ACCOMMODATE TWO-WAY TRAFFIC DURING NON-CONSTRUCTION HOURS. (SEE TRAFFIC NOTE NO. 3)
  - AT THE END OF EACH WORKDAY, OPEN ROADWAY TO TWO-WAY TRAFFIC, USING THE PHASE II NON-CONSTRUCTION HOURS TRAFFIC CONTROL PLAN.
- PHASE III
- IMPLEMENT A ONE-LANE CLOSURE AS PER THE PHASE I CONSTRUCTION HOURS TRAFFIC CONTROL PLAN.
  - CONSTRUCT THE PROPOSED BASE COURSE AND ASPHALT AS DEPICTED ON TYPICAL SECTION, SHT 2-1 OF PLANS, WITHIN THE DESIGNATED WORK ZONE.
  - IMPLEMENT A ONE-LANE CLOSURE AS PER THE PHASE II CONSTRUCTION HOURS TRAFFIC CONTROL PLAN.
  - CONSTRUCT THE PROPOSED BASE COURSE AND ASPHALT AS DEPICTED ON TYPICAL SECTION, SHT 2-1 OF PLANS, WITHIN THE DESIGNATED WORK ZONE.
  - AT THE END OF EACH WORKDAY, OPEN ROADWAY TO TWO-WAY TRAFFIC, USING THE PHASE I OR PHASE II NON-CONSTRUCTION HOURS TRAFFIC CONTROL PLAN.
- PHASE IV
- INSTALL PERMANENT SIGNING, STRIPING, REVEGETATION, AND ALL OTHER APPURTENANCES REQUIRED TO COMPLETE THE PROJECT.

SUGGESTED SEQUENCE OF CONSTRUCTION (ALBC)

- PHASE A1
- IMPLEMENT A ONE-LANE CLOSURE AS PER THE PHASE A1 - CONSTRUCTION HOURS TRAFFIC CONTROL PLAN. THE PHASE A1 TRAFFIC CONTROL PLAN MAY BE INTEGRATED INTO THE PHASE I TRAFFIC CONTROL PLAN WITH MODIFICATIONS.
  - IF NECESSARY, PLACE TEMPORARY MATERIAL TO PROVIDE THE REQUIRED ROADWAY WIDTH TO ACCOMMODATE ONE-WAY TRAFFIC. (SEE TRAFFIC NOTE NO. 3)
  - CONSTRUCT THE FOOTINGS OF THE UPSTREAM HEADWALL AND WINGWALLS.
  - AT THE END OF EACH WORKDAY, OPEN ROADWAY TO ONE-WAY TRAFFIC, USING THE PHASE A1 NON-CONSTRUCTION HOURS TRAFFIC CONTROL PLAN.
- PHASE A2
- IMPLEMENT A ONE-LANE CLOSURE AS PER THE PHASE A2 - CONSTRUCTION HOURS TRAFFIC CONTROL PLAN. THE PHASE A2 TRAFFIC CONTROL PLAN MAY BE INTEGRATED INTO THE PHASE II TRAFFIC CONTROL PLAN WITH MODIFICATIONS.
  - IF NECESSARY, PLACE TEMPORARY MATERIAL TO PROVIDE THE REQUIRED ROADWAY WIDTH TO ACCOMMODATE ONE-WAY TRAFFIC. (SEE TRAFFIC NOTE NO. 3)
  - CONSTRUCT DOWNSTREAM HEADWALL FOOTING, A PORTION OF THE ALUMINUM BOX CULVERT, AND THE HEADWALL AND WINGWALLS.
  - AT THE END OF EACH WORKDAY, OPEN ROADWAY TO TWO-WAY TRAFFIC, USING THE PHASE A2 NON-CONSTRUCTION HOURS TRAFFIC CONTROL PLAN.
- PHASE A3
- IMPLEMENT A ONE-TIME ROAD CLOSURE, NOT TO EXCEED EIGHT HOURS, AS PER THE PHASE A3 TRAFFIC CONTROL PLAN.
  - EXCAVATE THE REMAINING EMBANKMENT, INSTALL THE REMAINING PORTIONS OF THE ALUMINUM BOX CULVERT AND BACKFILL THE STRUCTURE WITH BALANCED FILL WITHIN THE DESIGNATED WORK ZONE UP TO THE SUB-GRADE ELEVATION.
- PHASE A4
- IMPLEMENT A ONE-LANE CLOSURE AS PER THE PHASE A4 - CONSTRUCTION HOURS TRAFFIC CONTROL PLAN. THE PHASE A4 TRAFFIC CONTROL PLAN MAY BE INTEGRATED INTO THE PHASE I TRAFFIC CONTROL PLAN WITH MODIFICATIONS.
  - CONSTRUCT UPSTREAM HEADWALL AND WINGWALLS.
  - AT THE END OF EACH WORKDAY, OPEN ROADWAY TO ONE-WAY TRAFFIC, USING THE PHASE A4 NON-CONSTRUCTION HOURS TRAFFIC CONTROL PLAN.



Δ	REVISED NOTES 2 & 6	2/27/18	RRR	
NO.	DESCRIPTION	DATE	BY	

REVISIONS (OR CHANGE NOTICES)

DESIGNED BY: PE & IPT

DRAWN BY: CS

CHECKED BY: RKR

APPROVED BY: RKR

DATE: 01/22/18

PROJECT NO. 2014-0216-PW

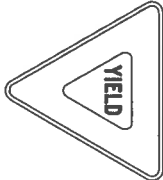
SHEET 6-1

SANTA FE COUNTY  
LA BARBARIA RD. DRAINAGE  
AND ROAD IMPROVEMENTS (CR-67F)

TRAFFIC NOTES/  
SUGGESTED SEQUENCE  
OF CONSTRUCTION



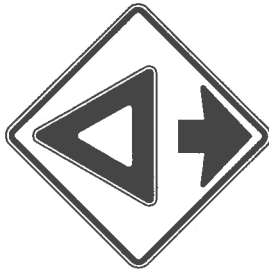
G20-2-60  
60" x 24"  
BLK/ORANGE



R1-2-36  
36" x 36"  
RED/WHITE



R1-2aP  
24" x 18"  
BLK/WHITE



W3-2-48  
48" x 48"  
BLK/ORANGE



W3-4-48  
48" x 48"  
BLK/ORANGE



W13-1-24-16  
24" x 24"  
BLK/ORANGE



W20-1-48-1000  
48" x 48"  
BLK/ORANGE



W20-1-48-1/2  
48" x 48"  
BLK/ORANGE



W20-3-48  
48" x 48"  
BLK/ORANGE



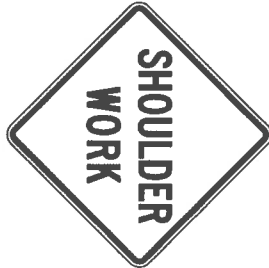
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BLK/ORANGE



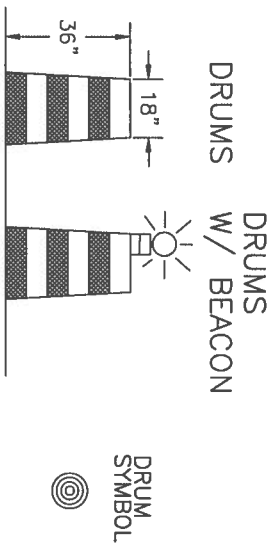
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BLK/ORANGE



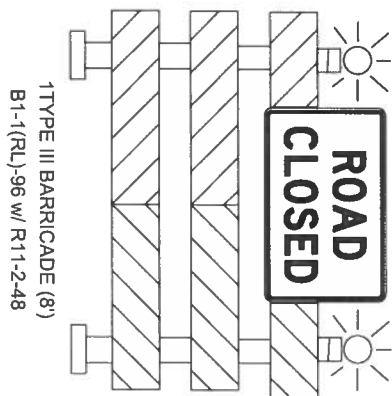
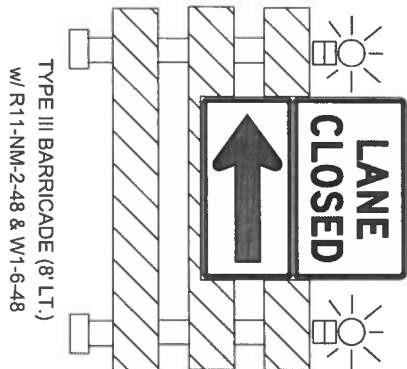
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BLK/ORANGE



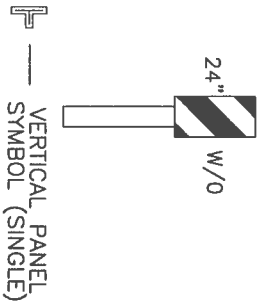
W21-5-48  
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BLK/ORANGE



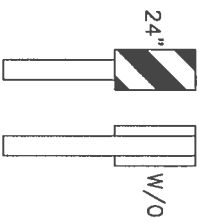
ALL DRUMS SHALL COMPLY WITH THE SPECIFICATIONS OF SECTION 702 - TRAFFIC CONTROL DEVICES FOR CONSTRUCTION, NMSHTD STANDARD SPECIFICATIONS FOR HIGHWAY AND BRIDGE CONSTRUCTION, CURRENT EDITION.



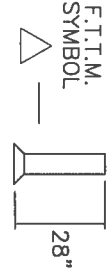
VERTICAL PANEL  
(SINGLE)



VERTICAL PANEL  
(BACK TO BACK)



FLEXIBLE TUBULAR  
TRAFFIC MARKER



B-1dL-8 (STRIPE LEFT)  
B-1dR-8 (STRIPE RIGHT)  
B-1dLR-8 (STRIPE LEFT & RIGHT)

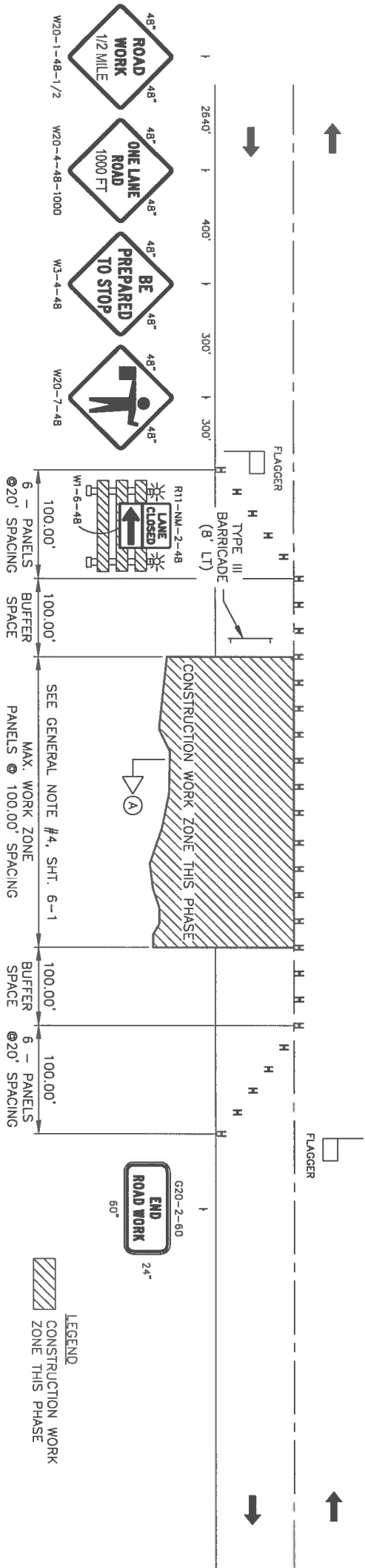
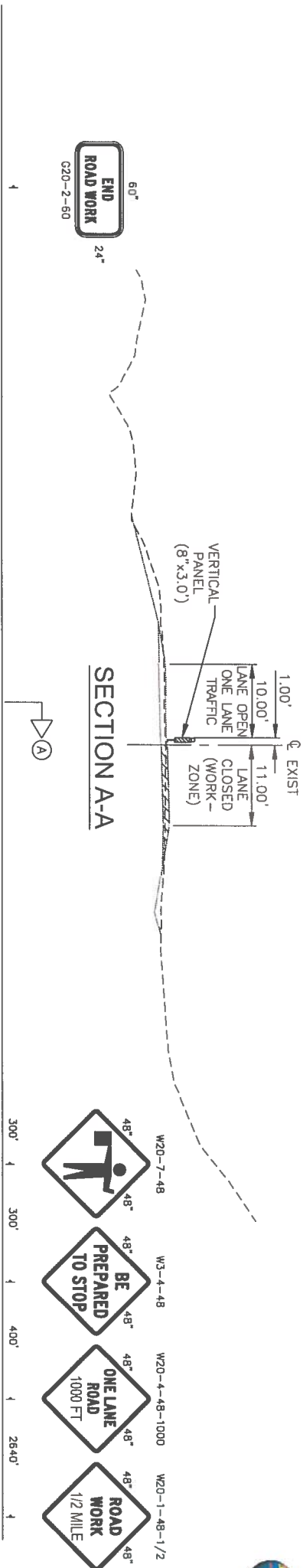
## SIGN FACE DETAILS \* FOR CONSTRUCTION / MAINTENANCE

1. EACH SIGN FACE SHOWN ON PLANS SHALL MEET THE SPECIFICATIONS IN THE STANDARD HIGHWAY SIGNS MANUAL & MUTCD (CURRENT EDITION). REFER TO CURRENT EDITIONS FOR PROPER ARRANGEMENT AND SPACING OF LETTERS, LETTER HEIGHT, LETTER SERIES, SYMBOLS AND BORDERS.
2. SEE MUTCD (CURRENT EDITION) FOR ADDITIONAL SIGNS.

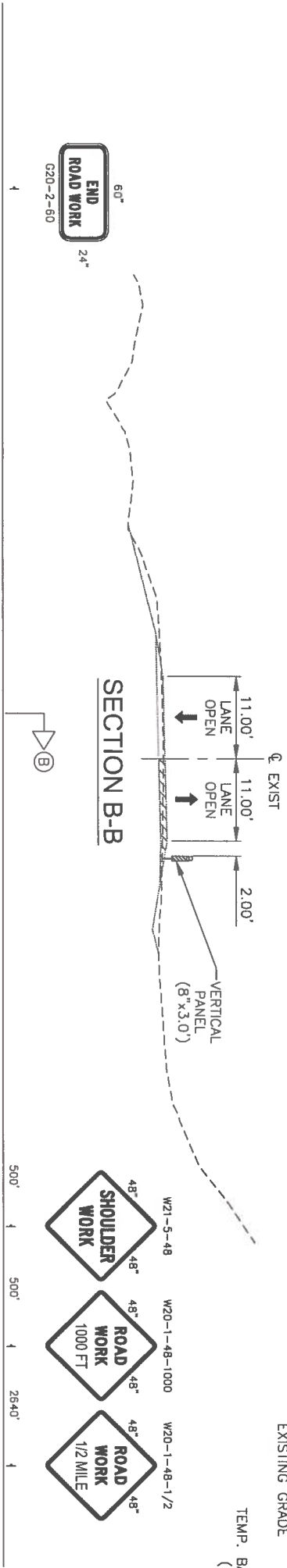
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NO.	DESCRIPTION	DATE	BY
REVISIONS (OR CHANGE NOTICES)			

SANTA FE COUNTY  
LA BARBARIA RD. DRAINAGE  
AND ROAD IMPROVEMENTS (CR-67F)  
TRAFFIC CONTROL  
SIGNFACE DETAILS



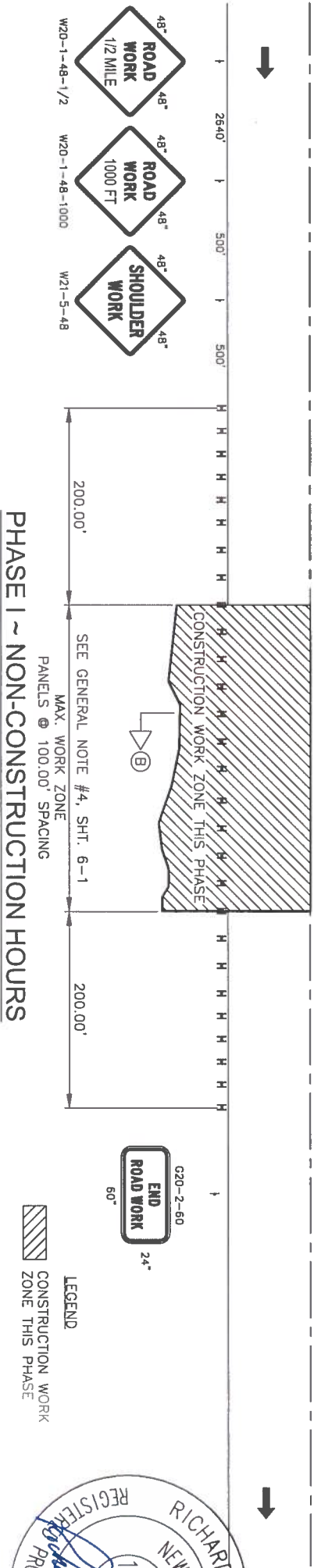
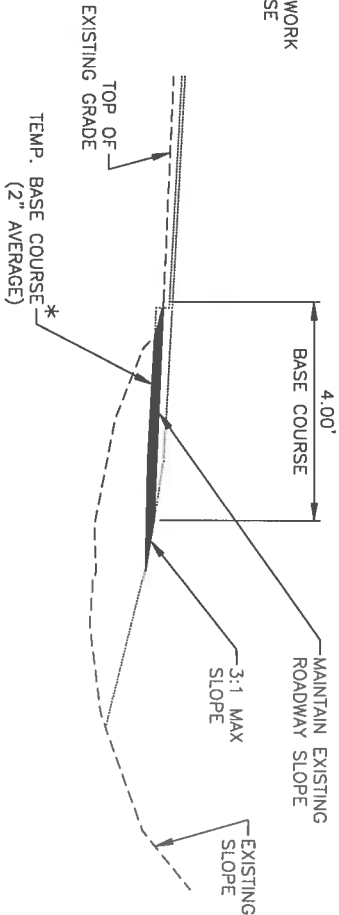


PHASE I ~ CONSTRUCTION HOURS



DETOUR PAVEMENT DETAIL

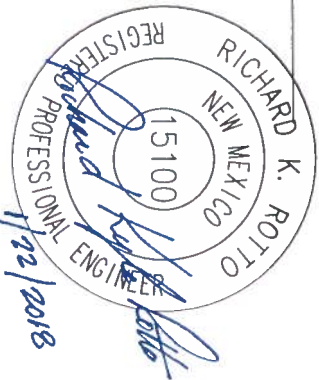
\* THE USE OF TEMPORARY BASE COURSE SHALL BE DIRECTED IN THE FIELD BY THE PROJECT MANAGER.



PHASE I ~ NON-CONSTRUCTION HOURS

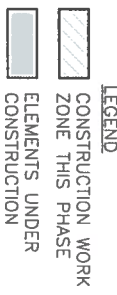
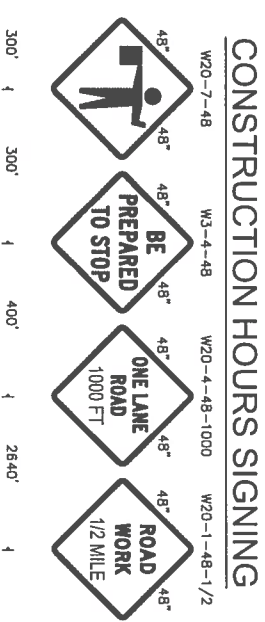
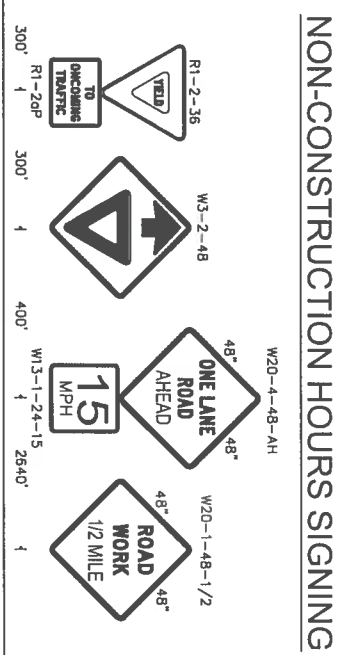
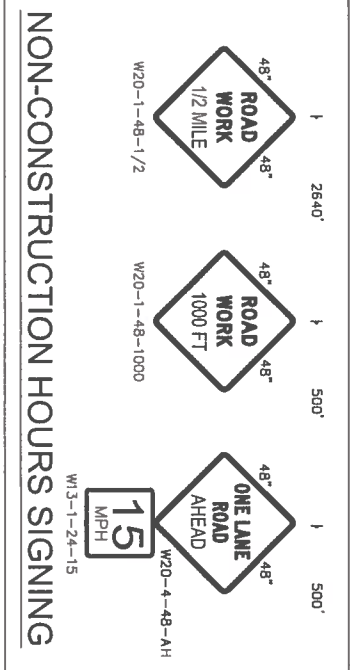
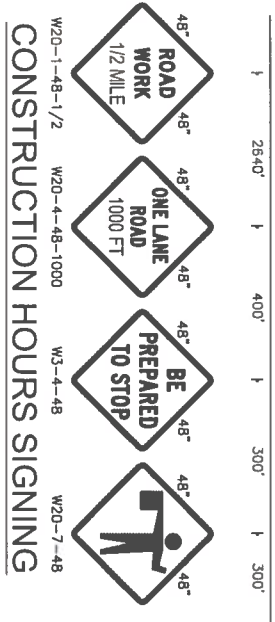
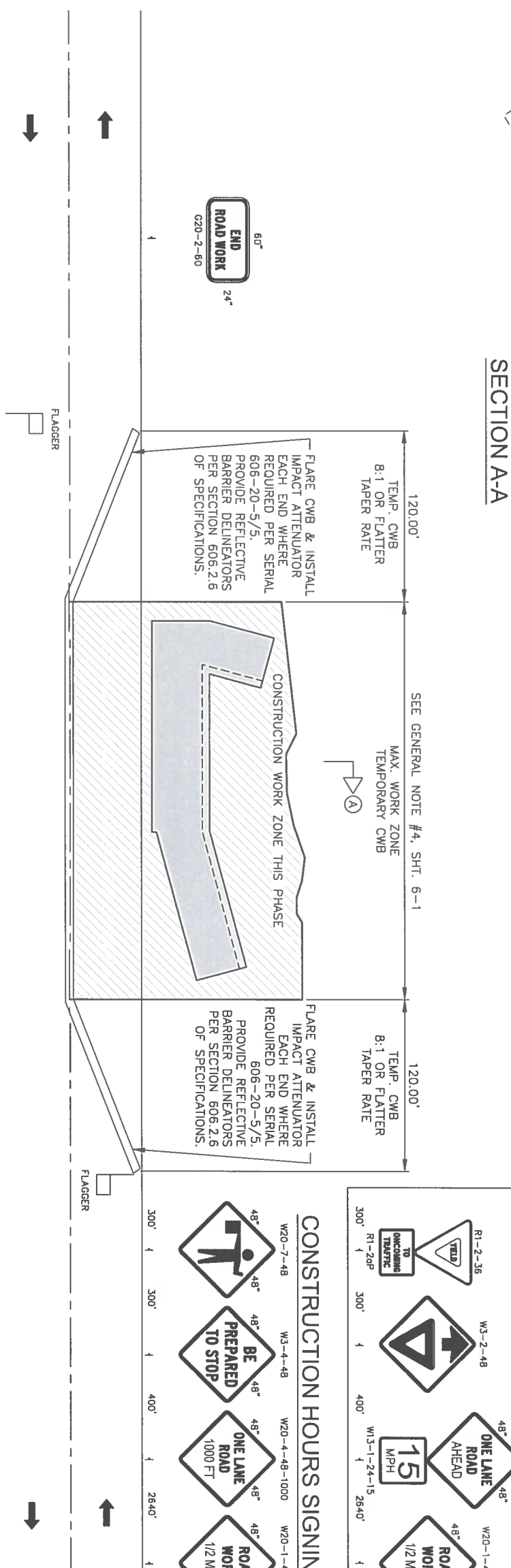
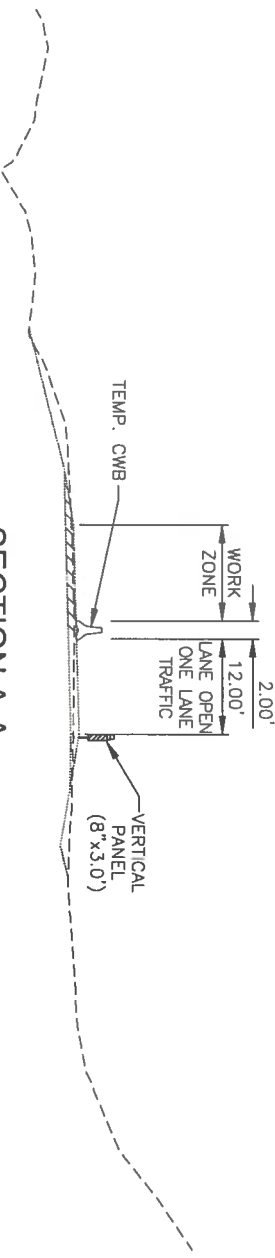
MAX. WORK ZONE  
PANELS @ 100.00' SPACING

LEGEND  
CONSTRUCTION WORK  
ZONE THIS PHASE

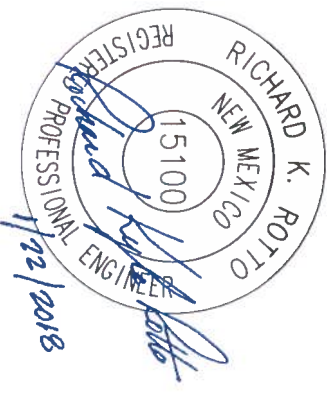


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REVISIONS (OR CHANGE NOTICES)				
SANTA FE COUNTY				
LA BARBARIA RD. DRAINAGE AND ROAD IMPROVEMENTS (CR-67F)				
PHASE I				
TRAFFIC CONTROL PLAN				
NO.	DESCRIPTION	DATE	BY	
1	REVISED TRAFFIC CONTROL SIGNING	2/27/18	RIKR	





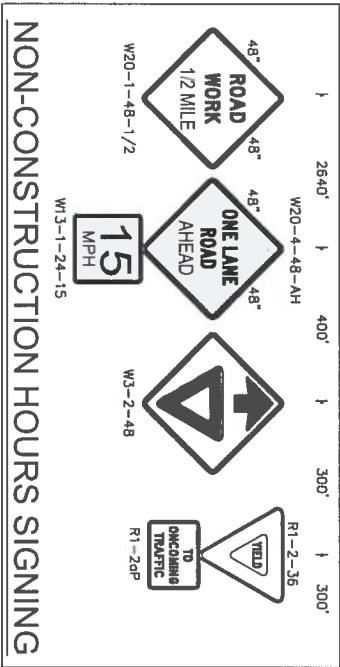
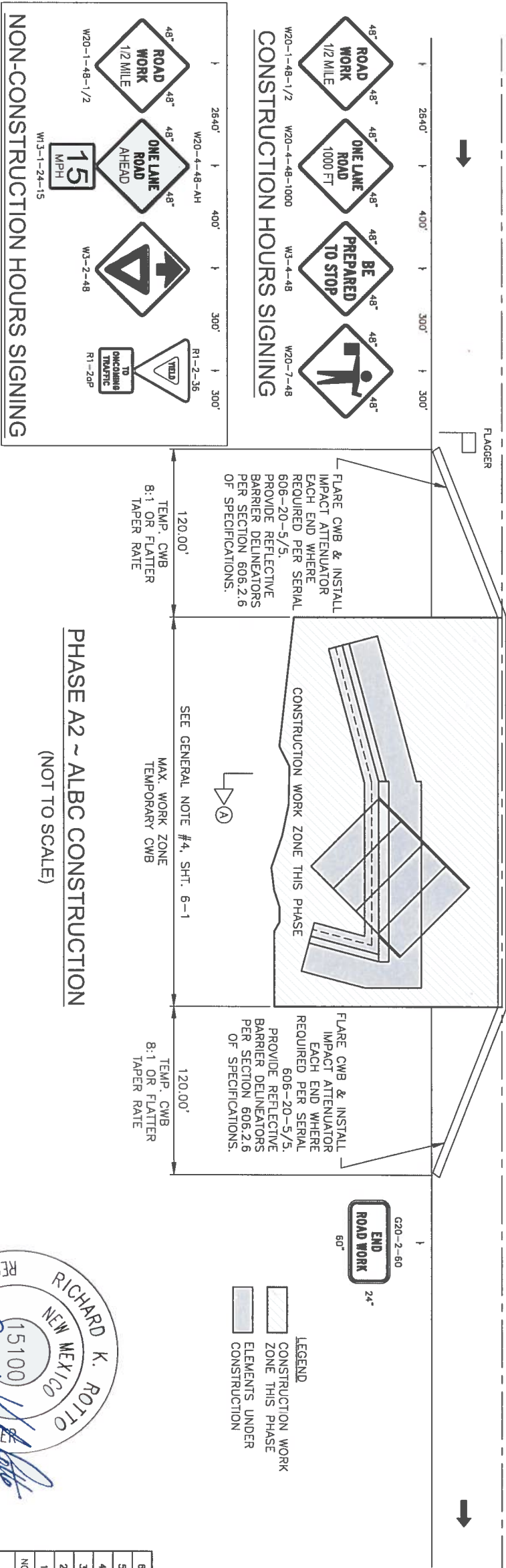
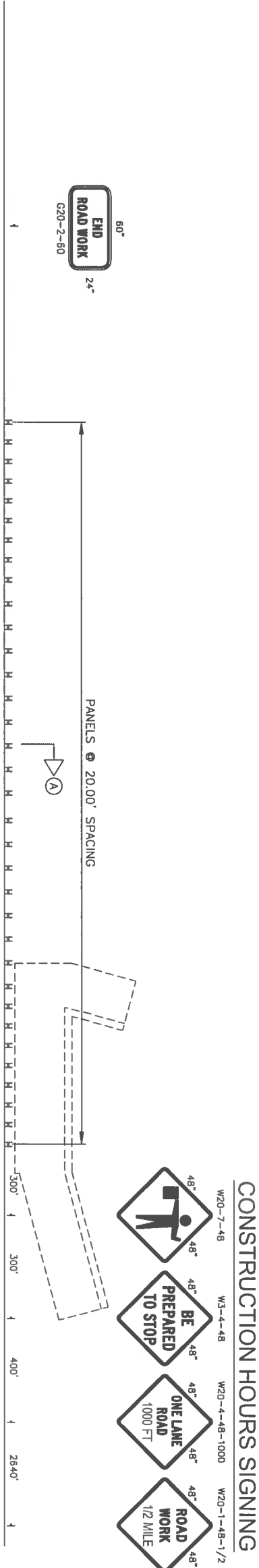
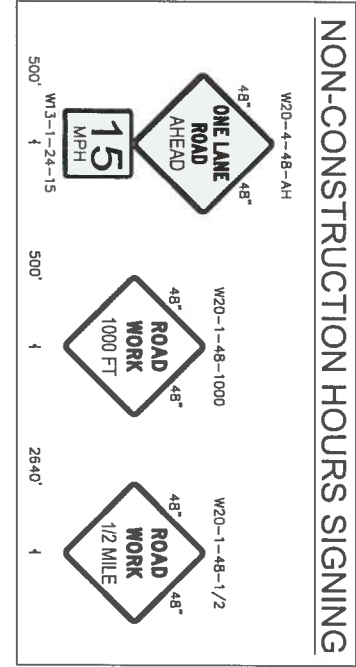
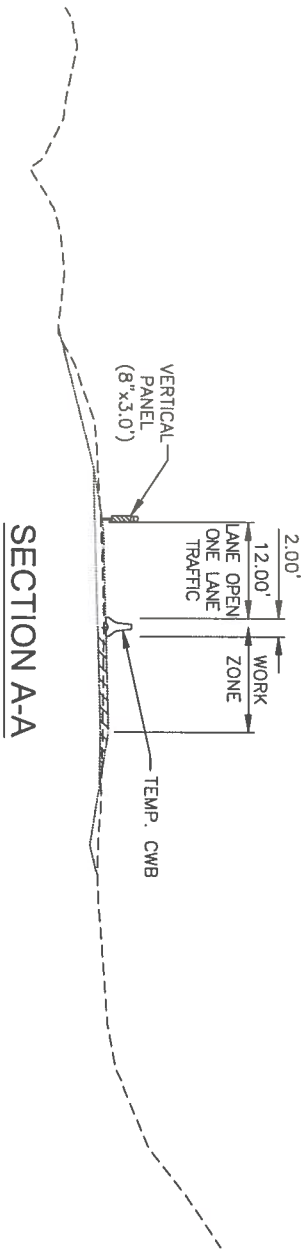
PHASE A1 ~ ALBC CONSTRUCTION  
(NOT TO SCALE)



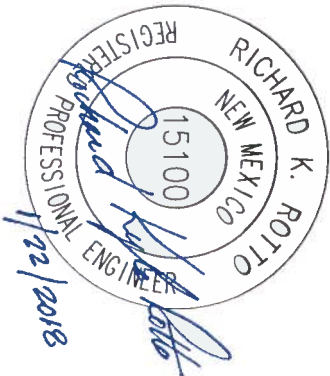
NO.	DESCRIPTION	DATE	BY
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SANTA FE COUNTY  
LA BARBARA RD. DRAINAGE  
AND ROAD IMPROVEMENTS (CR-67F)  
PHASE A1  
ALBC TRAFFIC CONTROL PLAN





PHASE A2 ~ ALBC CONSTRUCTION  
(NOT TO SCALE)



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1	DESCRIPTION		
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6	DESCRIPTION		

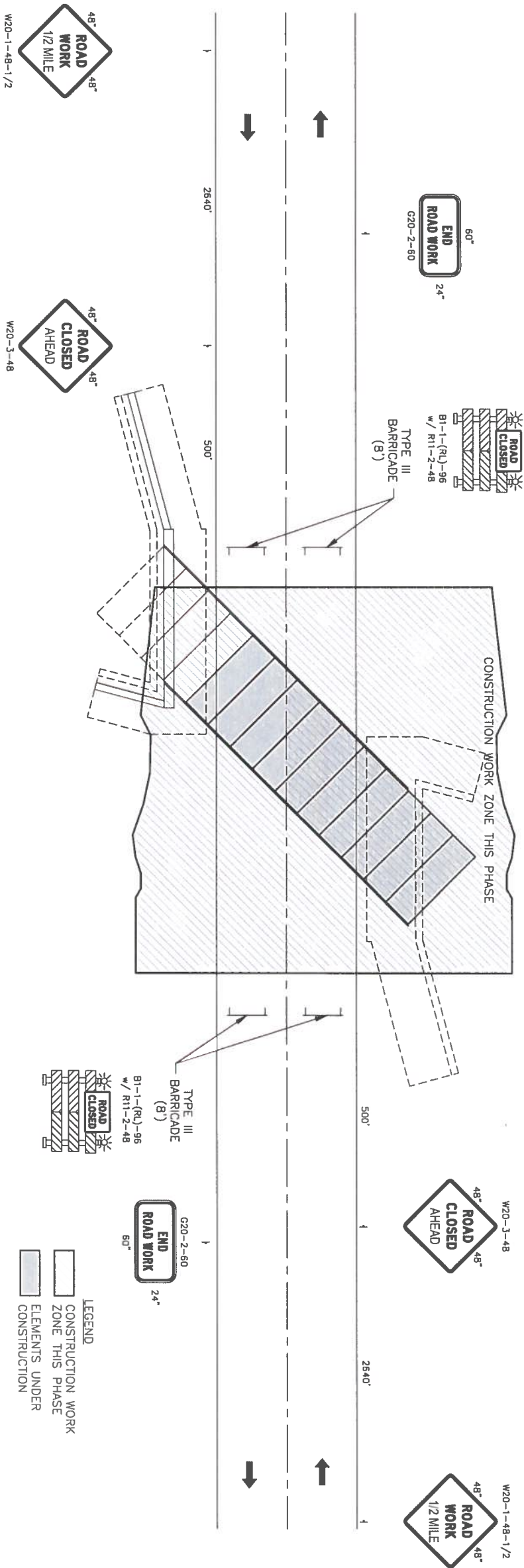
SANTA FE COUNTY  
LA BARBARIA RD. DRAINAGE  
AND ROAD IMPROVEMENTS (GR-67F)  
PHASE A2  
ALBC TRAFFIC CONTROL PLAN

LOUIS BERGER  
2019 GALISTEO ST. SUITE M-1  
SANTA FE, NEW MEXICO

PROJECT NO.	SHEET NO.
2014-0216-PW	6-7

NOTES:

- ONE-TIME ROAD CLOSURE; NOT TO EXCEED 8 HOURS. SEE CONTACT TIME, NOTICE TO CONTRACTORS.
- SEE TRAFFIC CONTROL NOTE 16 ON SHEET 6-1 FOR NOTICE REQUIREMENTS.



PHASE A3 ~ ALBC CONSTRUCTION  
(NOT TO SCALE)

SANTA FE COUNTY

DESIGNED BY: PE & IPT

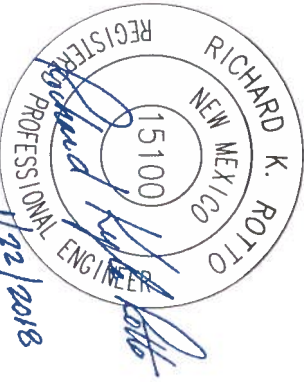
DRAWN BY: CS

CHECKED BY: RKR

APPROVED BY: RKR

DATE: 01/22/18

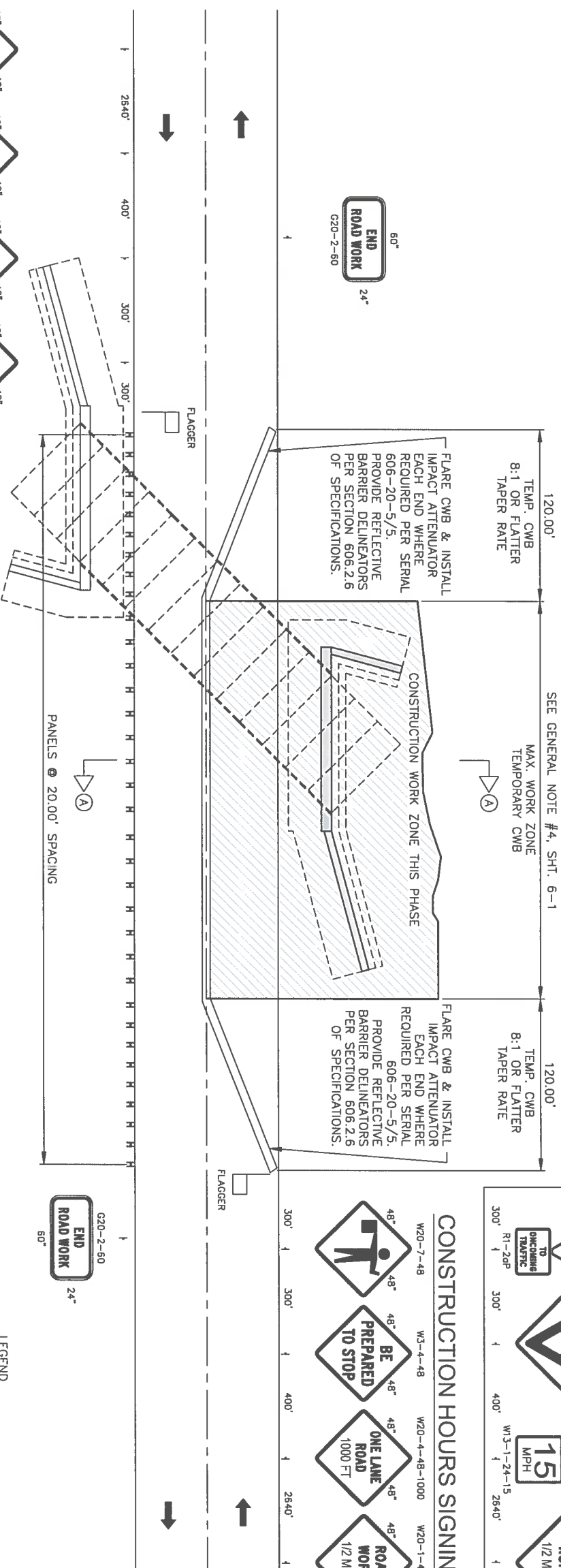
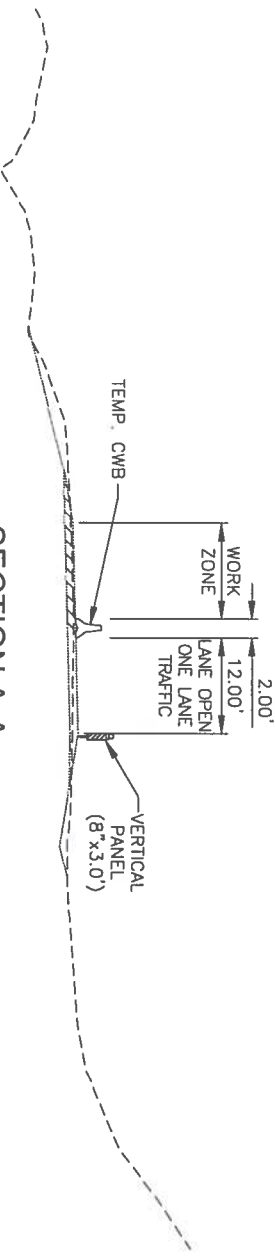
PROJECT NO. 2014-0216-PW SHEET 6-7



LA BARBARIA RD. DRAINAGE  
AND ROAD IMPROVEMENTS (CR-67F)  
PHASE A3  
ALBC TRAFFIC CONTROL PLAN

NO.	DESCRIPTION	DATE	BY
1	REVISIONS (OR CHANGE NOTICES)		
2			
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**NON-CONSTRUCTION HOURS SIGNING**

W20-4-48-AH

W3-2-48

W20-1-48-1/2

ONE LANE ROAD AHEAD

15 MPH

ROAD WORK 1/2 MILE

TO OBTAINING TRAFFIC

R1-2-36

R1-2-6P

**CONSTRUCTION HOURS SIGNING**

W20-7-48

W3-4-48

W20-4-48-1000

W20-1-48-1/2

BE PREPARED TO STOP

ONE LANE ROAD 1000 FT

ROAD WORK 1/2 MILE

**CONSTRUCTION HOURS SIGNING**

W20-1-48-1/2

W20-4-48-1000

W3-4-48

W20-7-48

ROAD WORK 1/2 MILE

ONE LANE ROAD 1000 FT

BE PREPARED TO STOP

ROAD WORK 1/2 MILE

**NON-CONSTRUCTION HOURS SIGNING**

W20-1-48-1/2

W20-1-48-1000

W20-4-48-AH

ONE LANE ROAD AHEAD

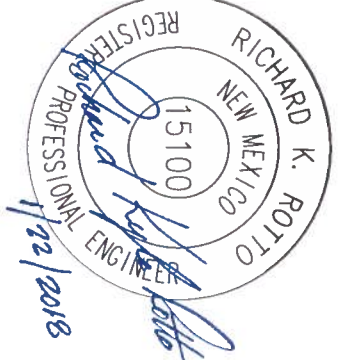
15 MPH

PHASE A4 ~ ALBC CONSTRUCTION  
(NOT TO SCALE)

**LEGEND**

CONSTRUCTION WORK ZONE THIS PHASE

ELEMENTS UNDER CONSTRUCTION



NO.	DESCRIPTION	DATE	BY
1			
2			
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6			

SANTA FE COUNTY

LA BARBARIA RD. DRAINAGE AND ROAD IMPROVEMENTS (CR-67F)

PHASE A4

ALBC TRAFFIC CONTROL PLAN

SANTA FE COUNTY

DESIGNED BY: PE & IPT

DRAWN BY: CS

CHECKED BY: RKR

APPROVED BY: RKR

DATE: 01/22/18

PROJECT NO. 2014-0216-PW SHEET 7-1

LOUIS BERGER  
2019 GALISTEO ST. SUITE M-1  
SANTA FE, NEW MEXICO

PROJECT NO.	SHEET NO.
2014-0216-PW	7-1

36"

12"

OM3-L-12

12" x 36"

BLK / YLW

36"

12"

OM3-R-12

12" x 36"

BLK / YLW

36"

12"

OM3-L-12

12" x 36"

BLK / YLW

36"

12"

OM3-R-12

12" x 36"

BLK / YLW

36"

36"

R1-1-30

30" x 30"

WHT / RED

36"

8"

HAPPY TRAILS

D3-1a

WHT/GRN

36"x8"

42"

36"

8"

LA BARBARIA RD.

D3-1b

WHT/GRN

36"x8"

8"

30"

30"

PAVEMENT ENDS

W8-3-30

30" x 30"

BLK / YLW

30"

24"

SPEED LIMIT 25

R2-1-25

24" x 30"

BLK / WHT

30"

30"

ROAD NARROWS

W5-1-30

30" x 30"

BLK / YLW

24"

18"

W1-8L-18

18" x 24"

BLK / YLW

24"

18"

W1-8R-18

18" x 24"

BLK / YLW

SIGNFACE DETAILS

NOTES:

1. W1-8 SIGNS SHALL BE INSTALLED AT A MINIMUM HEIGHT OF 4 FEET, MEASURED VERTICALLY FROM THE BOTTOM OF THE SIGN TO THE ELEVATION OF THE NEAR EDGE OF THE TRAVELED WAY OR AS APPROVED BY SANTA FE COUNTY.
2. ALL OTHER PERMANENT SIGNS SHALL BE INSTALLED IN ACCORDANCE TO NMDOT STANDARD DRAWINGS 701-02-1/3 TO 701-02-3/3.

NO.	DESCRIPTION	DATE	BY
1	SANTA FE COUNTY		
2	LA BARBARIA RD. DRAINAGE		
3	AND ROAD IMPROVEMENTS (CR-67F)		
4	PERMANENT SIGNING & STRIPING		
5			
6			

SANTA FE COUNTY

DESIGNED BY: PE & IPT

DRAWN BY: CS

CHECKED BY: RKR

APPROVED BY: RKR

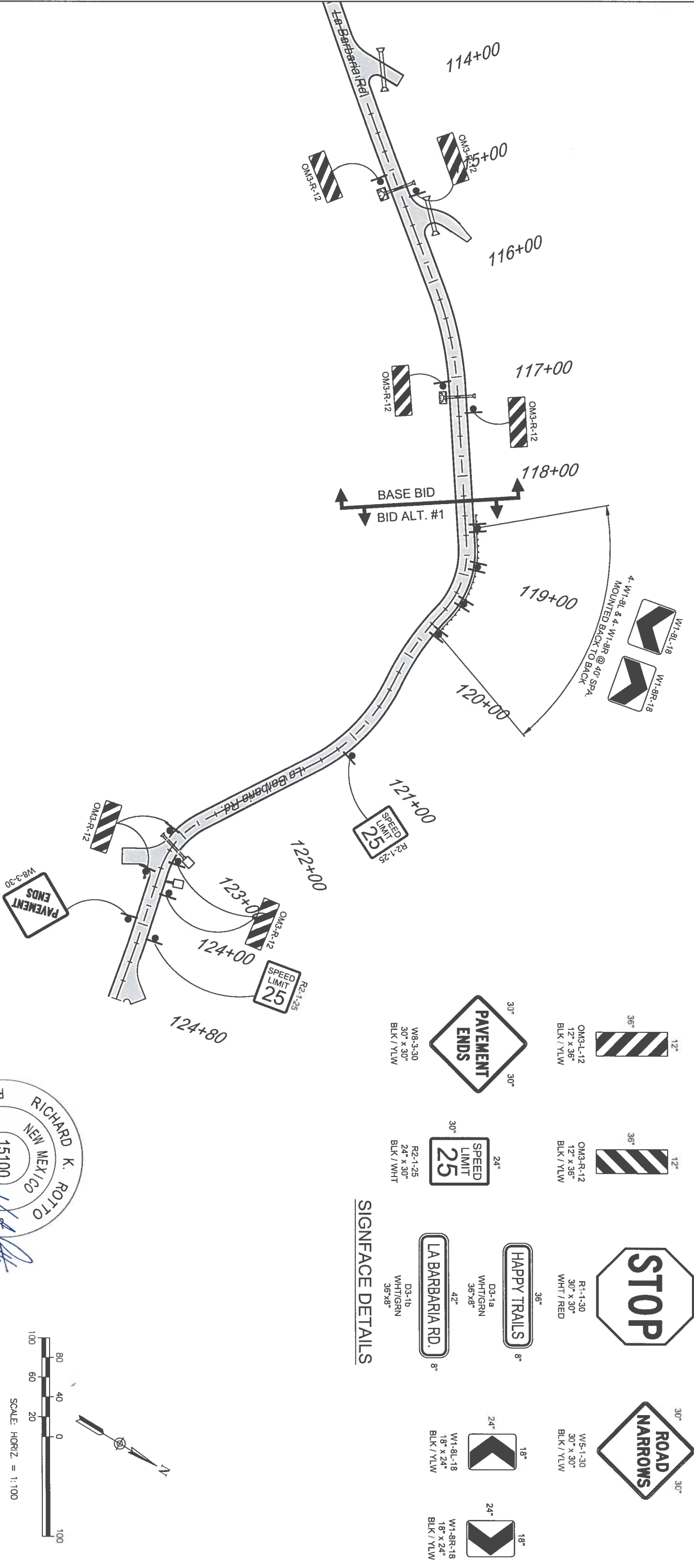
DATE: 01/22/18

PROJECT NO. 2014-0216-PW SHEET 7-2



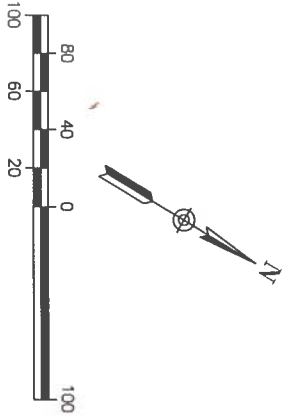
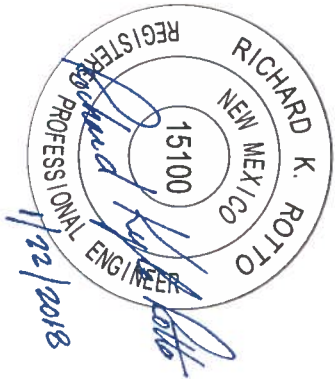
LOUIS BERGER  
2019 GALISTEO ST. SUITE M-1  
SANTA FE, NEW MEXICO

PROJECT NO.	SHEET NO.
2014-0216-PW	7-2



NOTES:

1. W1-8 SIGNS SHALL BE INSTALLED AT A MINIMUM HEIGHT OF 4 FEET MEASURED VERTICALLY FROM THE BOTTOM OF THE SIGN TO THE ELEVATION OF THE NEAR EDGE OF THE TRAVELED WAY OR AS APPROVED BY SANTA FE COUNTY.
2. ALL OTHER PERMANENT SIGNS SHALL BE INSTALLED IN ACCORDANCE TO NMDOT STANDARD DRAWINGS 701-02-113 TO 701-02-313.



NO.	DESCRIPTION	DATE	BY
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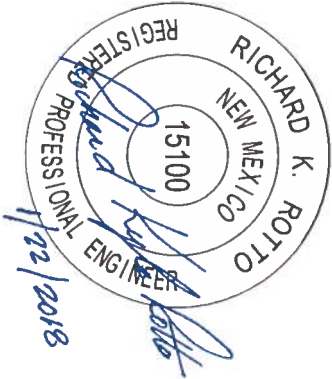
SANTA FE COUNTY  
LA BARBARIA RD. DRAINAGE  
AND ROAD IMPROVEMENTS (CR-67F)  
PERMANENT SIGNING & STRIPING

SUMMARY OF QUANTITIES			
ITEM NO.	ITEM DESCRIPTION	UNIT	TOTAL
701000	PANEL SIGNS	SQ.FT.	80
701100	STEEL POST AND BASE POST FOR ALUMINUM PANEL SIGNS	LIN.FT.	230
704000	RETROREFLECTORIZED PAINTED MARKINGS	LIN.FT.	6948

SIGN CODE	NO. OF SIGNS	TOTAL SIGN AREA (SQ.FT)	POST LENGTHS (LIN.FT.)				MOUNTING REQUIREMENTS - SQUARE TUBING						BASE POSTS	
			LEFT	CENTER	RIGHT	TOTAL	1-1/2" x 1-1/2"	1-3/4" x 1-3/4"	2" x 2"	2-1/4" x 2-1/4"	2-3/16" x 2-3/16"	2-1/2" x 2-1/2"	NO.	TOTAL LENGTH (LIN.FT.)
OM3-L	2	6.00		8.00		16.00			✓				2	7
OM3-R	14	42.00		8.00		112.00			✓				14	49
R1-1	1	6.25		8.00		8.00			✓				1	3.5
R2-1-25	3	15.00		8.00		24.00			✓				3	10.5
D3-1a	1	2.00		*		*							*	
D3-1b	1	2.33		*		*							*	
W/S-1	1	6.25		*		*							*	
PROJECT TOTALS		79.83				160.00								70
PROJECT USE		80				160								70

\* MOUNTED ON ANOTHER SIGN POST

704000 - RETROREFLECTORIZED PAINTED MARKINGS	
ALIGNMENT	4" SOLID YELLOW (LIN.FT.)
CL LA BARBARIA RD. (1158 X2 STRIPES)	2316
SUB-TOTALS	2316
PROJECT TOTAL	2316
X 3 APPLICATIONS	6948
USE	6948



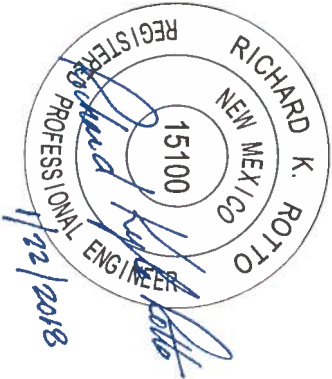
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NO.	DESCRIPTION	DATE BY
REVISIONS (OR CHANGE NOTICES)		
SANTA FE COUNTY		
LA BARBARIA RD. DRAINAGE AND ROAD IMPROVEMENTS (CR-67F)		
BASE BID		
PERMANENT SIGNING & STRIPING QUANTITIES		



SUMMARY OF QUANTITIES			
ITEM NO.	ITEM DESCRIPTION	UNIT	TOTAL
701000	PANEL SIGNS	SQ.FT.	53
701100	STEEL POST AND BASE POST FOR ALUMINUM PANEL SIGNS	LIN.FT.	127

ESTIMATED SIGNING & POST LENGTH QUANTITIES											
SIGN CODE	NO. OF SIGNS	TOTAL SIGN AREA (SQ.FT)	POST LENGTHS (LIN.FT.)			MOUNTING REQUIREMENTS - SQUARE TUBING					
			LEFT	CENTER	RIGHT	TOTAL	1-1/2" x 1-1/2"	1-3/4" x 1-3/4"	2" x 2"	2-1/4" x 2-1/4"	2-3/16" x 2-1/2"
OM3-R	4	12.00		8.00		32.00			✓		
R2-1-25	2	10.00		8.00		16.00			✓		
W8-3	1	6.25		8.00		8.00			✓		
W1-8L	4	12.00		8.00		32.00			✓		
W1-8R	4	12.00		*		*					*
PROJECT TOTALS		52.25				88.00					
PROJECT USE		53				88					

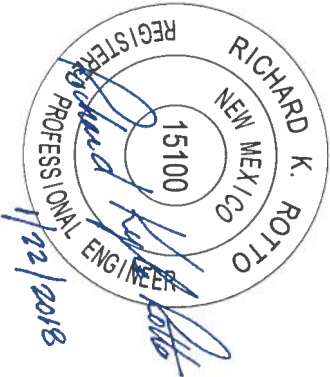
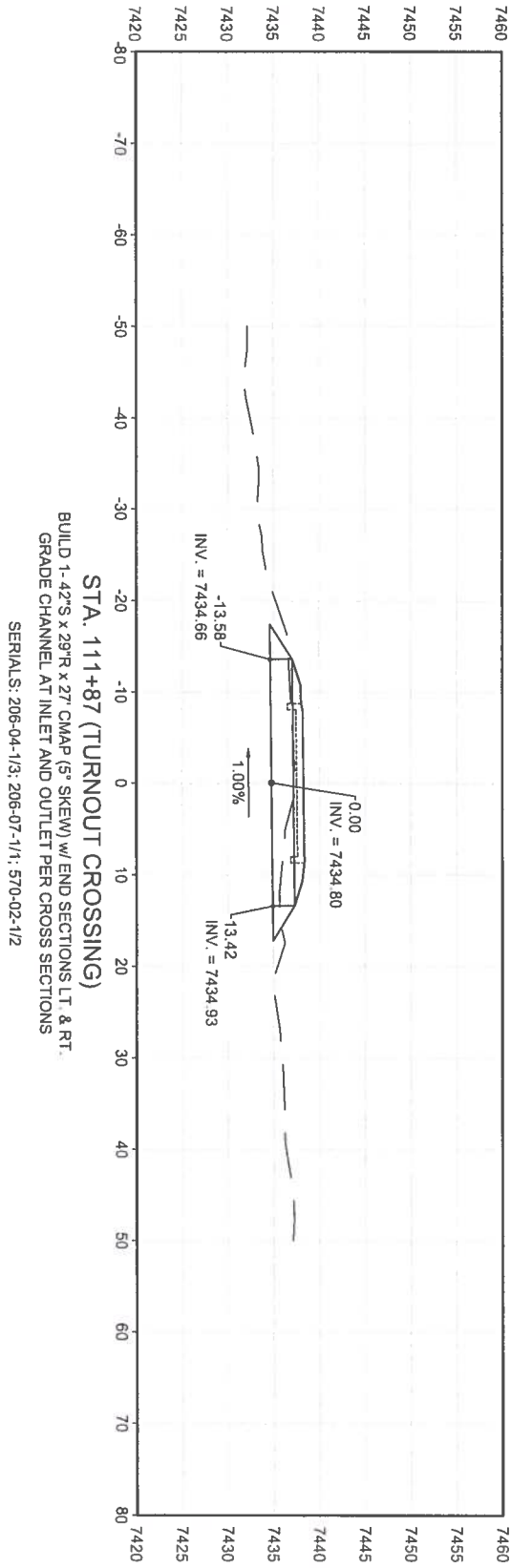
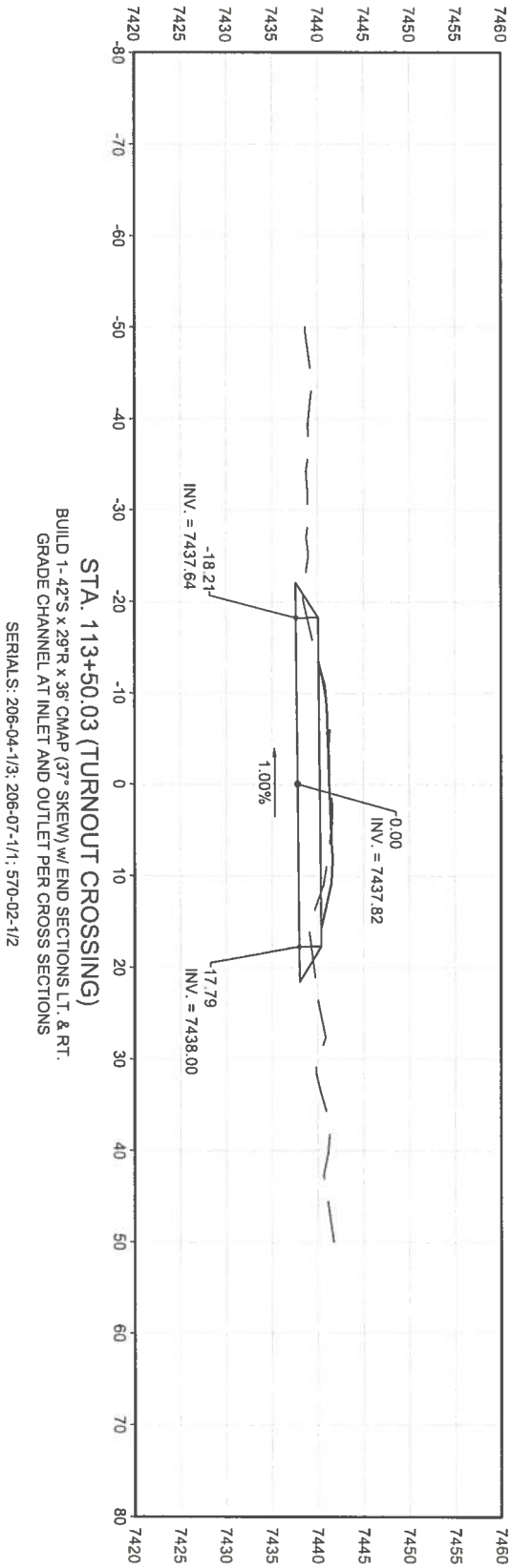
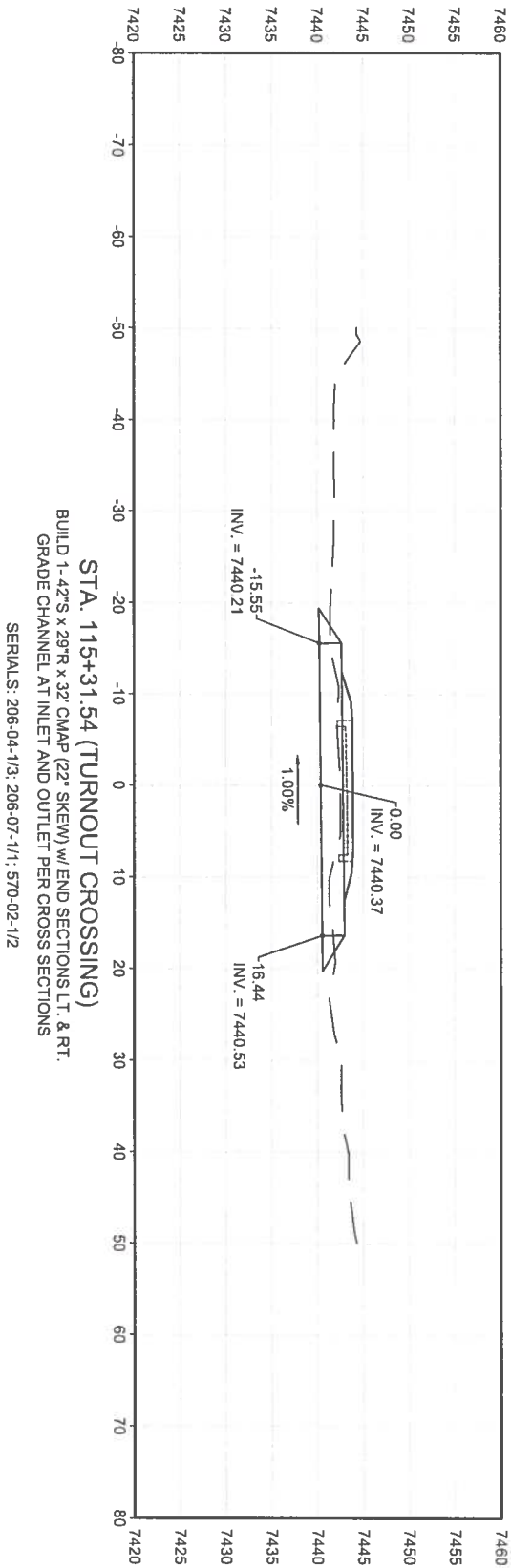
\* MOUNTED ON ANOTHER SIGN POST



6			
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NO.	DESCRIPTION	DATE	BY

SANTA FE COUNTY  
LA BARBARIA RD. DRAINAGE  
AND ROAD IMPROVEMENTS (CR-67F)  
BID ALTERNATE #1  
PERMANENT SIGNING & STRIPING  
QUANTITIES

PROJECT		SHEET
NO.		NO.
2014-0216-PW		10-1



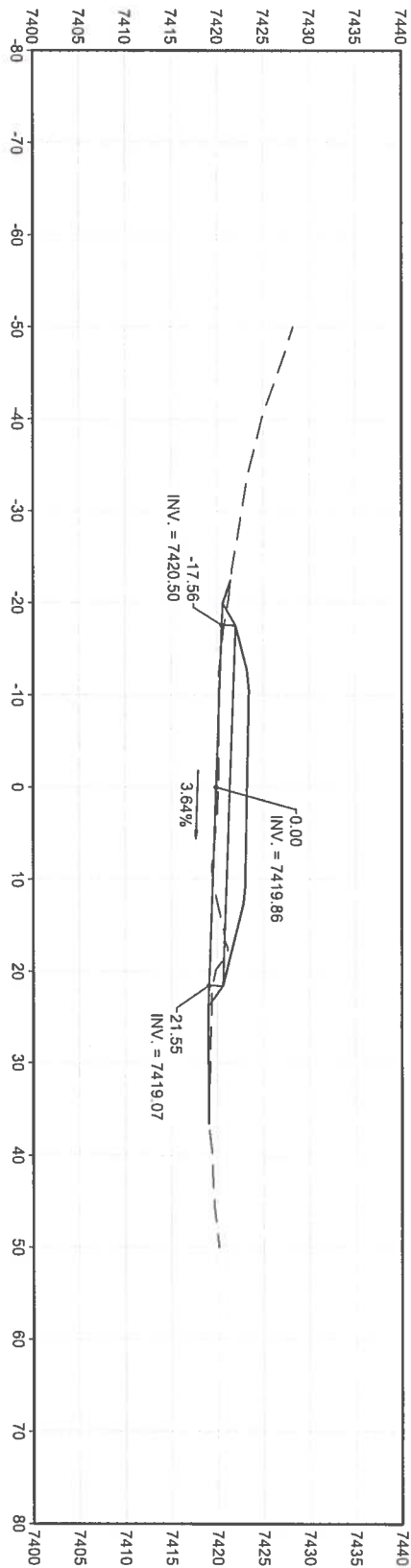
NO.	DESCRIPTION	DATE	BY
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SANTA FE COUNTY  
LA BARBARIA RD. DRAINAGE  
AND ROAD IMPROVEMENTS (CR-67F)  
STRUCTURE PLACEMENT  
SECTIONS

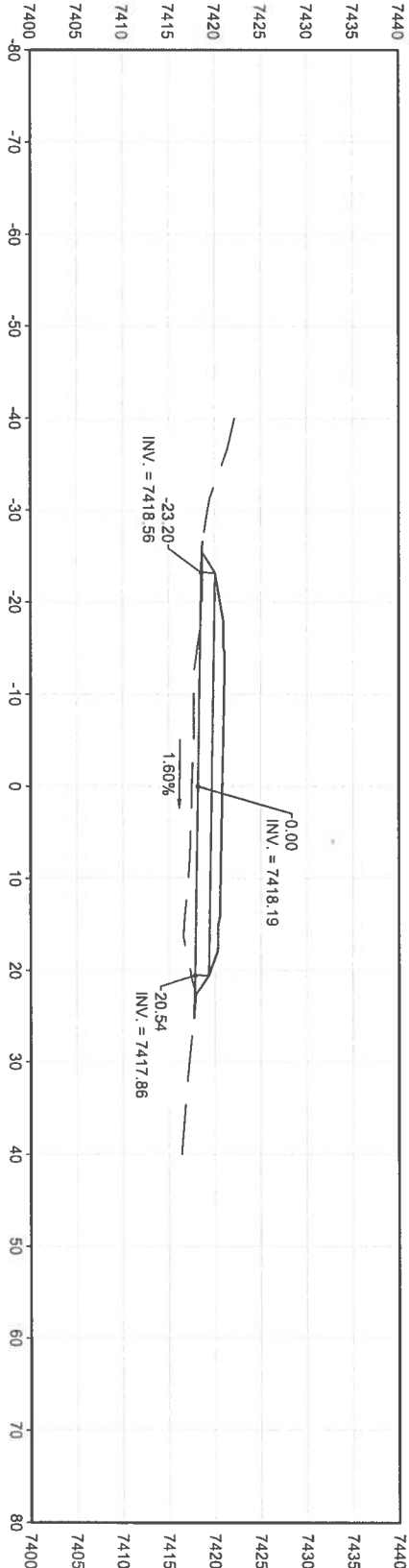


LOUIS BERGER  
2019 GALISTEO ST., SUITE M-1  
SANTA FE, NEW MEXICO

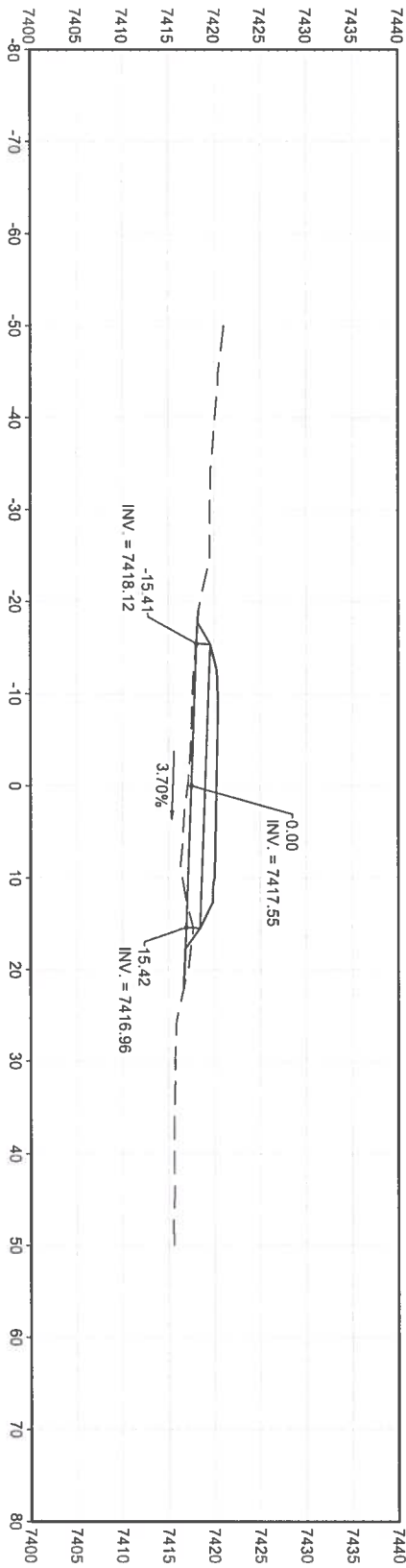
PROJECT NO.		SHEET NO.
2014-0216-PW		10-2



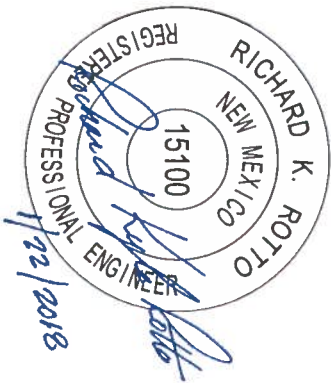
STA. 105+50.00  
BUILD 1-24'S x 18'R x 40' CMAP w/ END SECTIONS LT. & RT.  
SERIALS: 206-04-1/3; 206-07-1/1; 570-02-1/2



STA. 103+00.00 (45° SKEW LF)  
BUILD 1-24'S x 18'R x 44' CMAP w/ END SECTIONS LT. & RT.  
SERIALS: 206-04-1/3; 206-07-1/1; 570-02-1/2



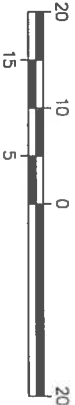
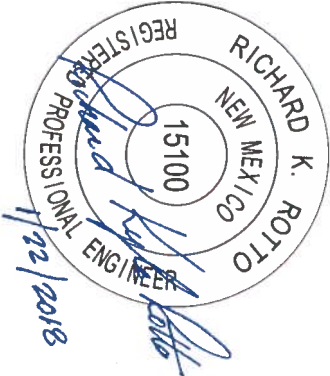
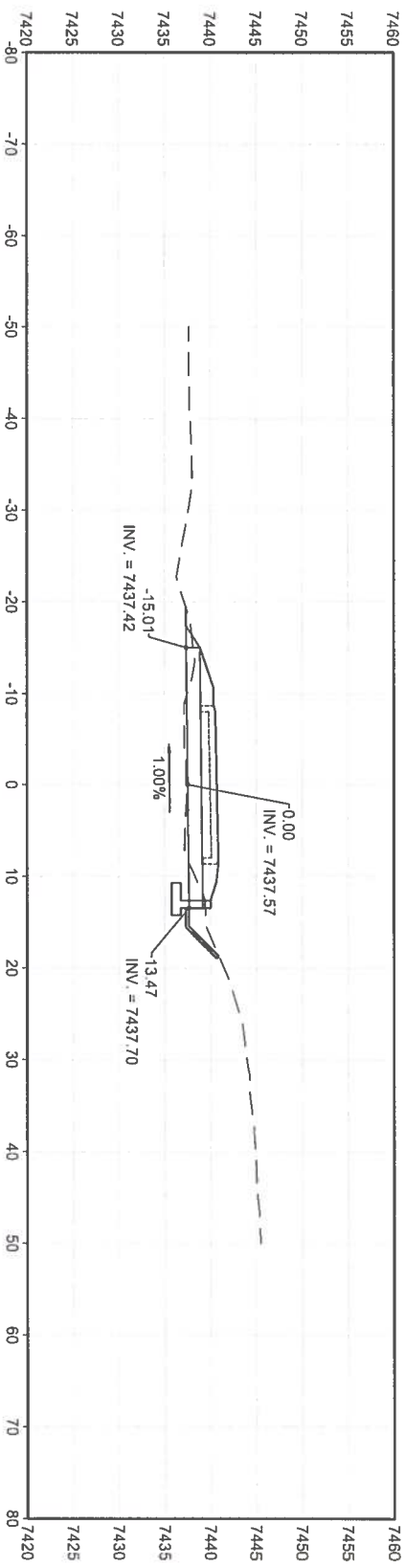
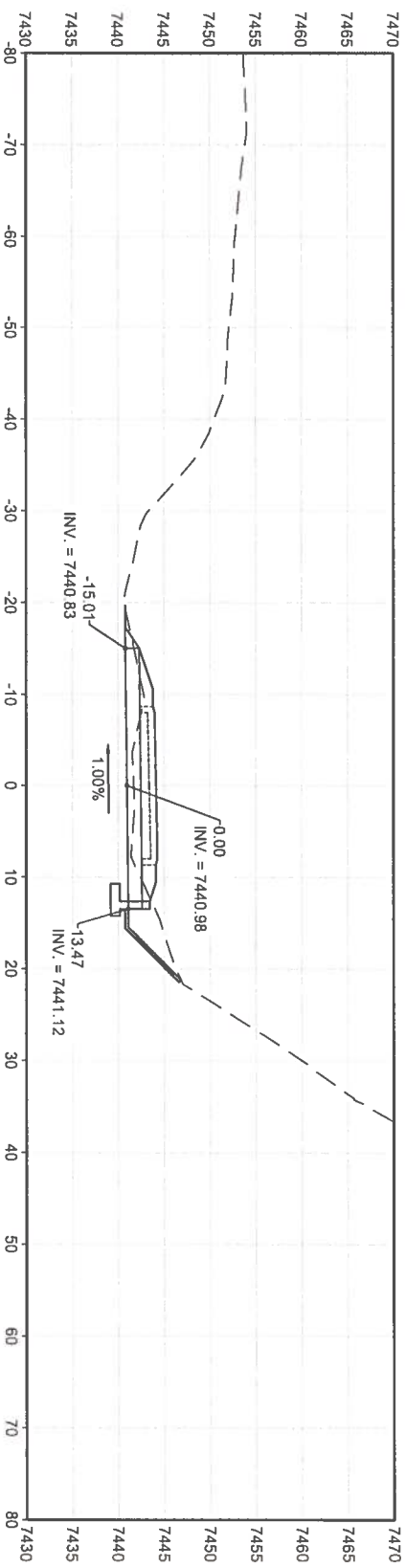
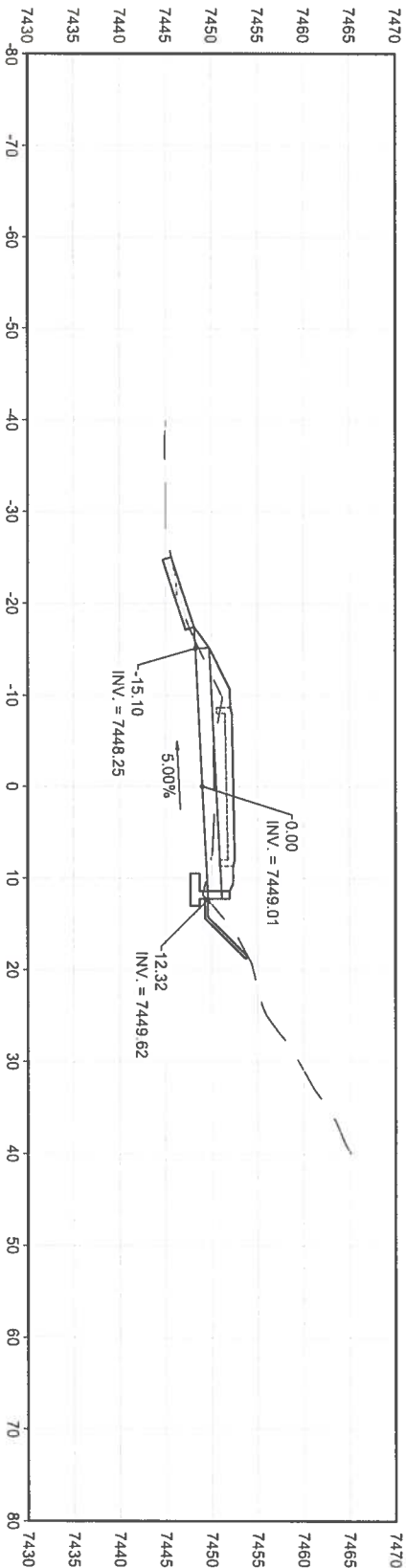
STA. 102+50.00  
BUILD 2-24'S x 18'R x 31' CMAP w/ END SECTIONS LT. & RT.  
SERIALS: 206-04-1/3; 206-07-1/1; 570-02-1/2



NO.	DESCRIPTION	DATE	BY
6			
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REVISIONS (OR CHANGE NOTICES)			

SANTA FE COUNTY  
LA BARBARIA RD. DRAINAGE  
AND ROAD IMPROVEMENTS (CR-67F)  
STRUCTURE PLACEMENT  
SECTIONS

PROJECT NO.	SHEET NO.
2014-0216-PW	10-3



SCALE: HORIZ. = 1:20

NO.	DESCRIPTION	DATE	BY
6			
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NO.	DESCRIPTION	DATE	BY
REVISIONS (OR CHANGE NOTICES)			

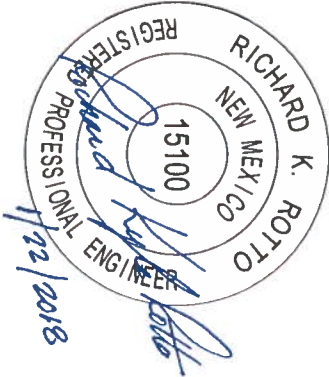
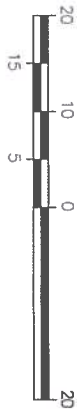
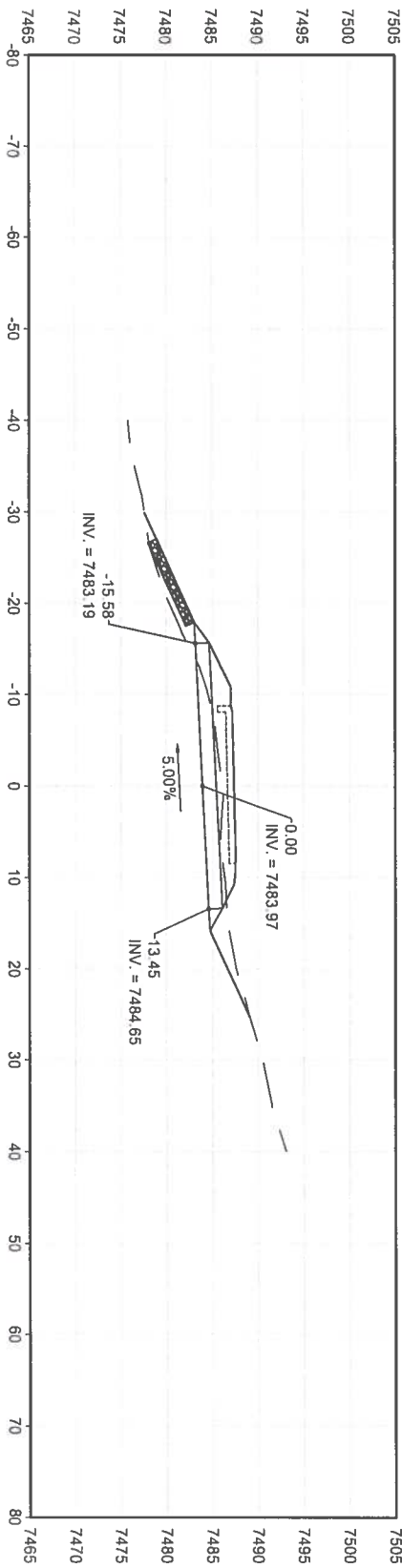
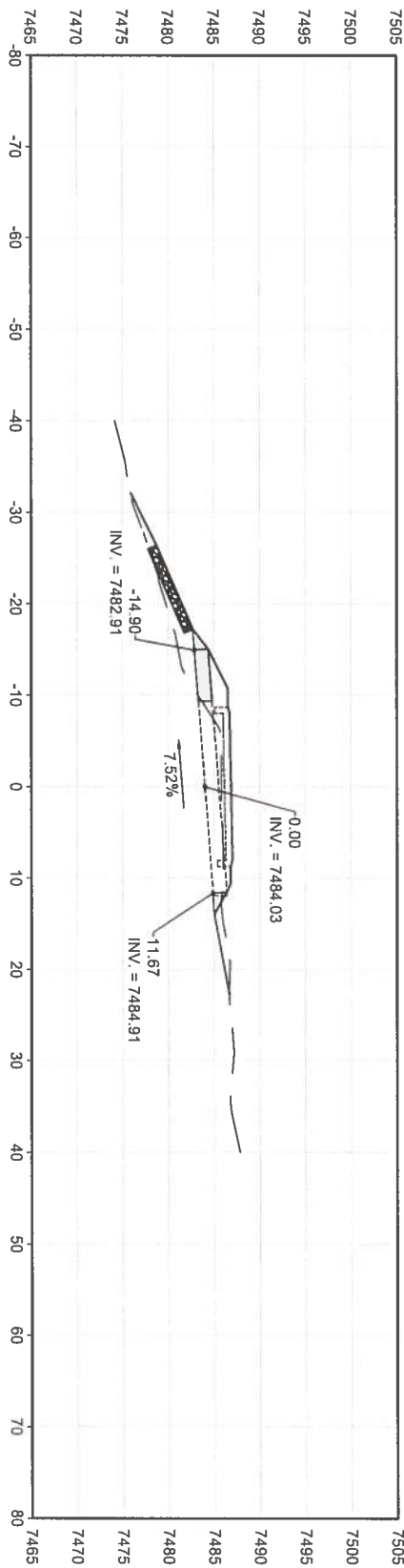
SANTA FE COUNTY  
LA BARBARIA RD. DRAINAGE  
AND ROAD IMPROVEMENTS (CR-67F)  
STRUCTURE PLACEMENT  
SECTIONS





LOUIS BERGER  
2019 GALISTEO ST. SUITE M-1  
SANTA FE, NEW MEXICO

PROJECT		SHEET
NO.		NO.
2014-0216-PW		10-4



NO.	DESCRIPTION	DATE	BY
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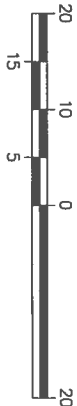
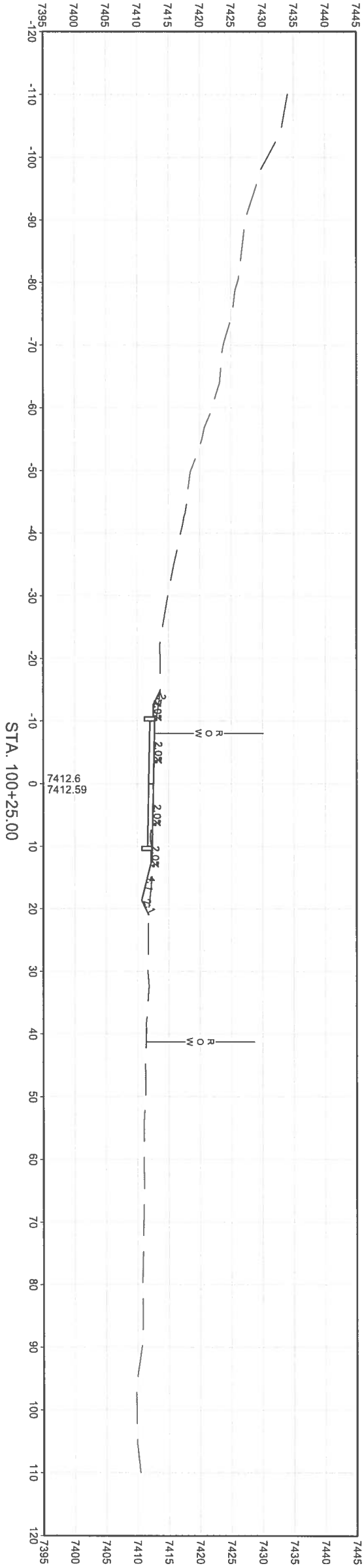
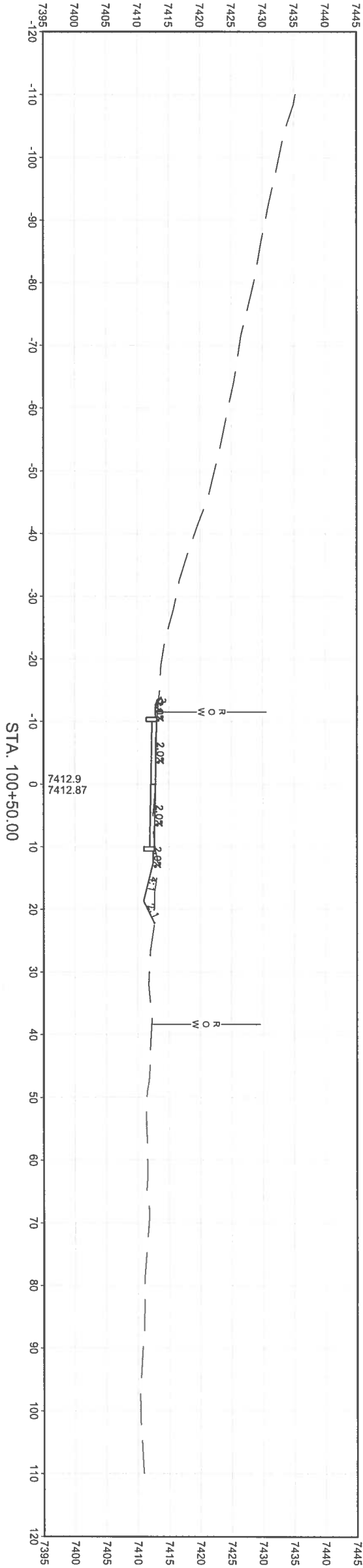
REVISIONS (OR CHANGE NOTICES)

SANTA FE COUNTY  
LA BARBARIA RD. DRAINAGE  
AND ROAD IMPROVEMENTS (CR-67F)  
STRUCTURE PLACEMENT  
SECTIONS

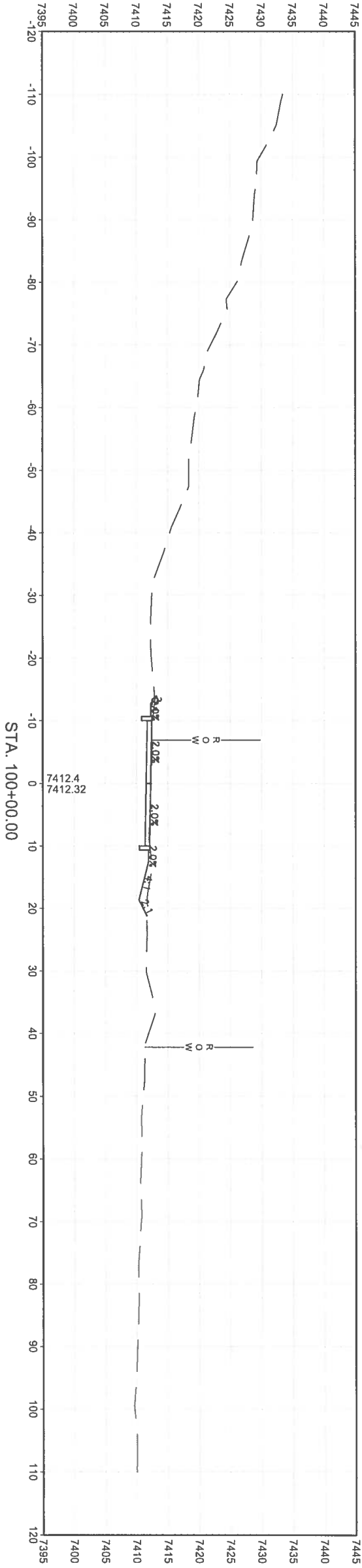


LOUIS BERGER  
2019 GALISTEO ST. SUITE M-1  
SANTA FE, NEW MEXICO

PROJECT		SHEET
NO.	NO.	NO.
2014-0216-PW		12-1



SCALE: HORIZ. = 1:20



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NO.	DESCRIPTION	DATE	BY

REVISIONS (OR CHANGE NOTICES)

SANTA FE COUNTY

LA BARBARIA RD. DRAINAGE  
AND ROAD IMPROVEMENTS (CR-67F)

LA BARBARIA RD.  
CROSS SECTIONS

SANTA FE COUNTY

DESIGNED BY: PE & IPT

DRAWN BY: CS

CHECKED BY: RKR

APPROVED BY: RKR

DATE: 01/22/18

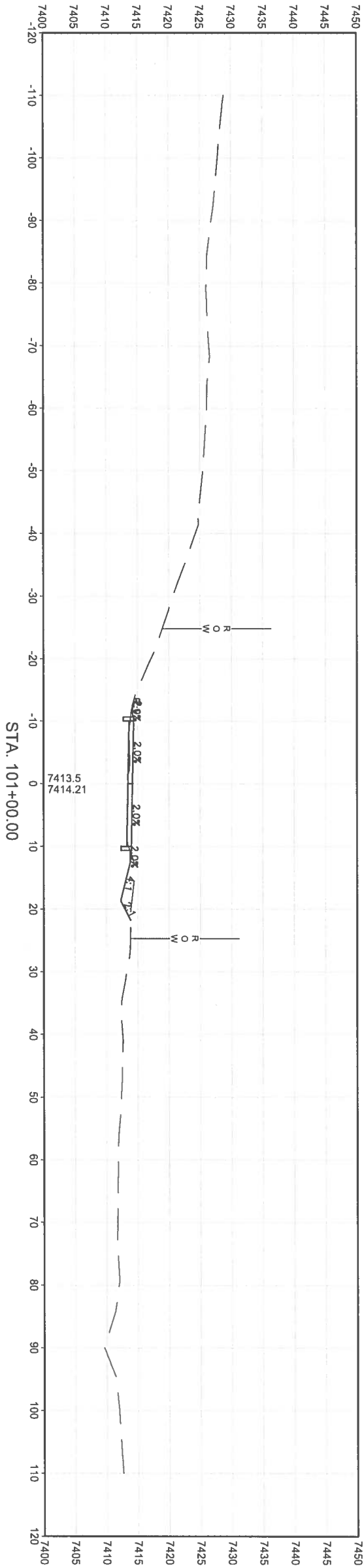
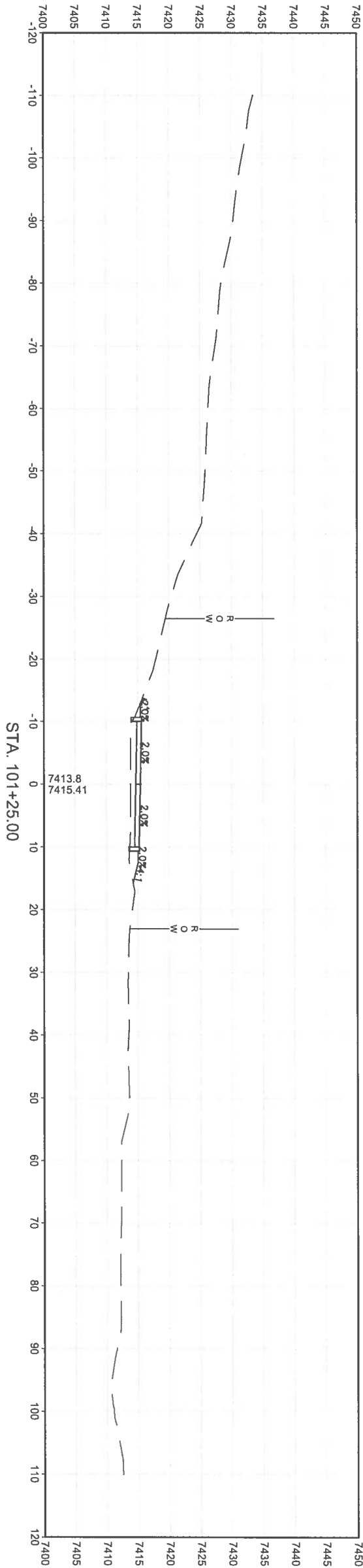
PROJECT NO. 2014-0216-PW

SHEET 12-1



LOUIS BERGER  
2019 GALISTEO ST. SUITE M-1  
SANTA FE, NEW MEXICO

PROJECT		SHEET
NO.		NO.
2014-0216-PW		12-2



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NO.	DESCRIPTION	DATE	BY

REVISIONS (OR CHANGE NOTICES)

SANTA FE COUNTY

LA BARBARIA RD. DRAINAGE  
AND ROAD IMPROVEMENTS (CR-67F)

LA BARBARIA RD.  
CROSS SECTIONS

STA. 100+75.00

SANTA FE COUNTY

DESIGNED BY: PE & IPT

DRAWN BY: CS

CHECKED BY: RKR

APPROVED BY: RKR

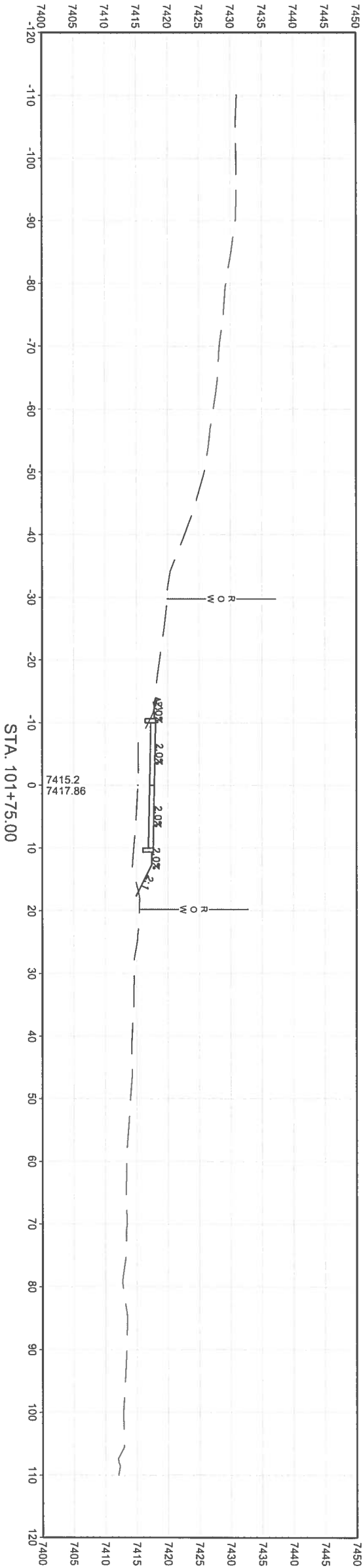
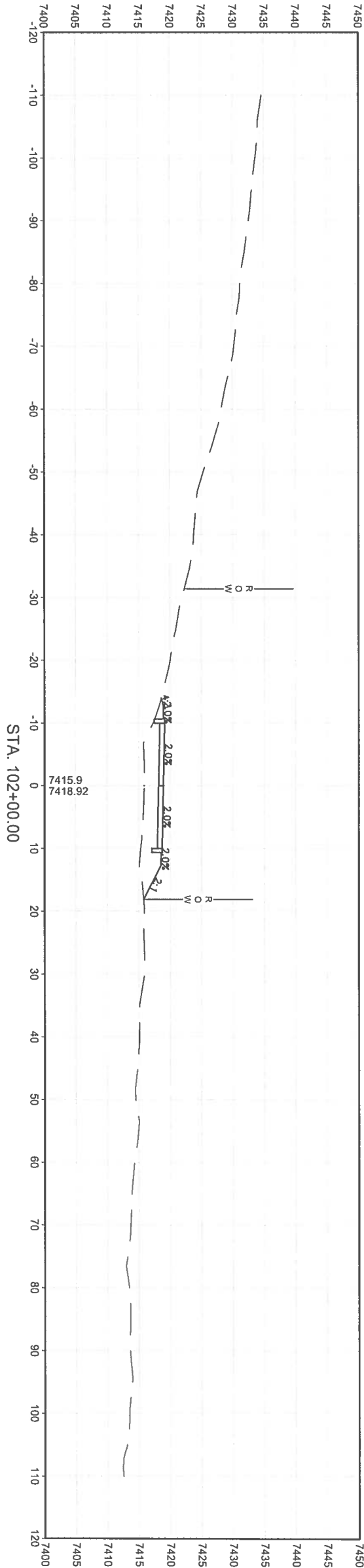
DATE: 01/22/18

PROJECT NO. 2014-0216-PW SHEET 12-2



LOUIS BERGER  
2019 GALISTEO ST. SUITE M-1  
SANTA FE, NEW MEXICO

PROJECT		SHEET
NO.		NO.
2014-0216-PW		12-3



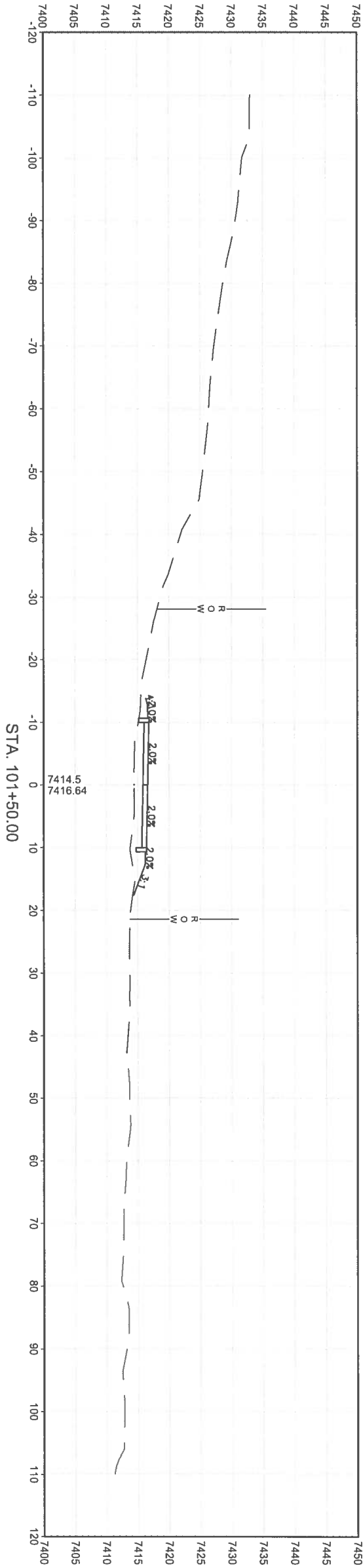
NO.	DESCRIPTION	DATE	BY
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REVISIONS (OR CHANGE NOTICES)

SANTA FE COUNTY

LA BARBARIA RD. DRAINAGE  
AND ROAD IMPROVEMENTS (CR-67F)

LA BARBARIA RD.  
CROSS SECTIONS



SANTA FE COUNTY

DESIGNED BY: PE & IPT

DRAWN BY: CS

CHECKED BY: RKR

APPROVED BY: RKR

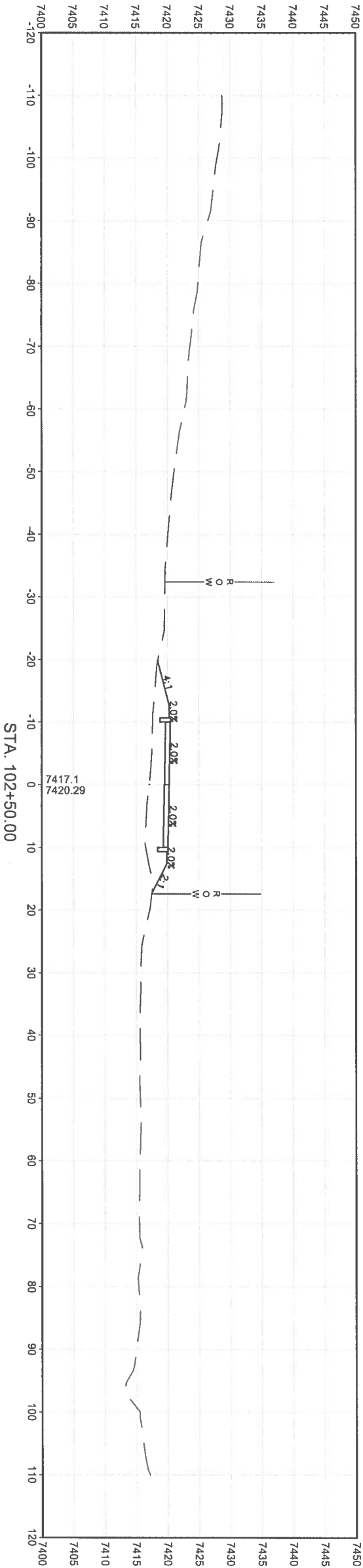
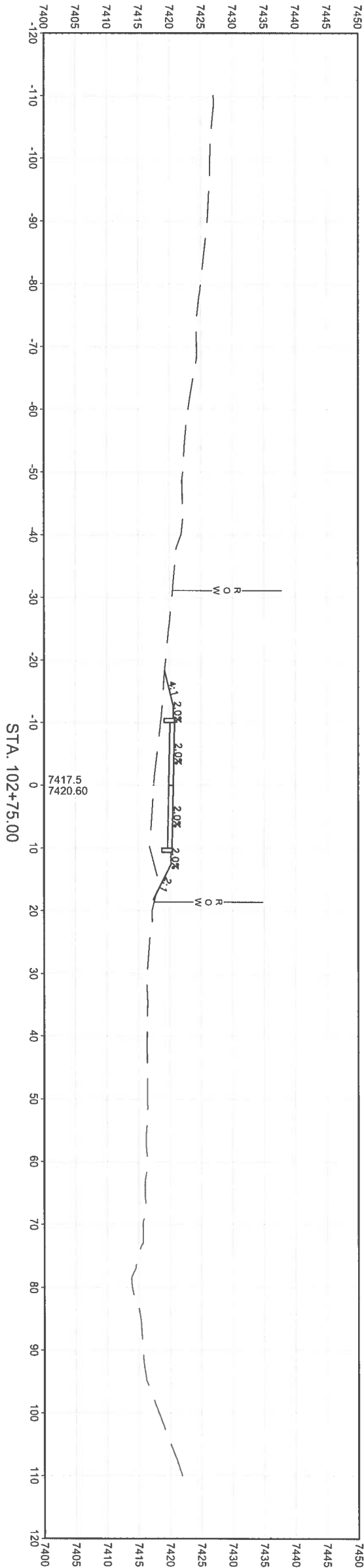
DATE: 01/22/18

PROJECT NO. 2014-0216-PW SHEET 12-3



LOUIS BERGER  
2019 GALISTEO ST. SUITE M-1  
SANTA FE, NEW MEXICO

PROJECT		SHEET
NO.		NO.
2014-0216-PW		12-4



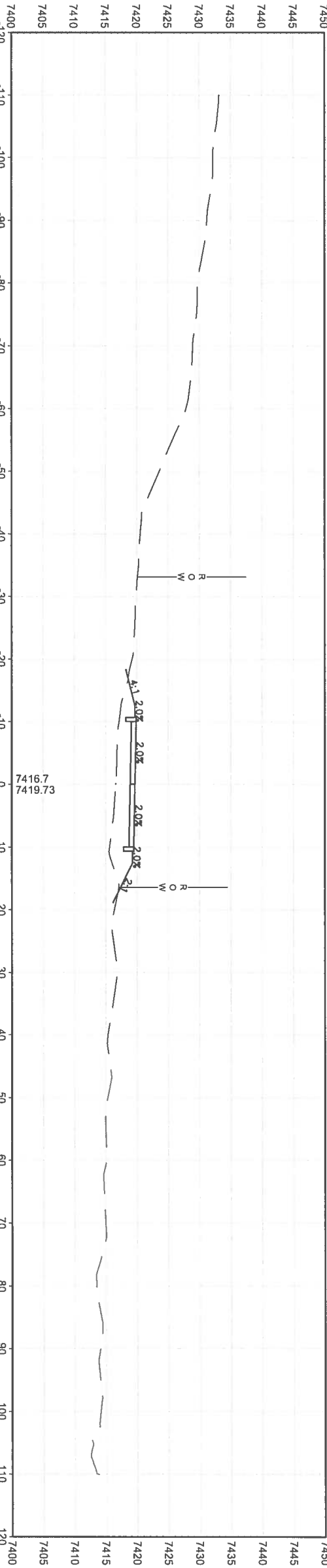
SCALE: HORIZ. = 1:20

NO.	DESCRIPTION	DATE	BY
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REVISIONS (OR CHANGE NOTICES)

SANTA FE COUNTY  
LA BARBARIA RD. DRAINAGE  
AND ROAD IMPROVEMENTS (CR-67F)  
LA BARBARIA RD.  
CROSS SECTIONS

STA. 102+25.00



SANTA FE COUNTY

DESIGNED BY: PE & IPT

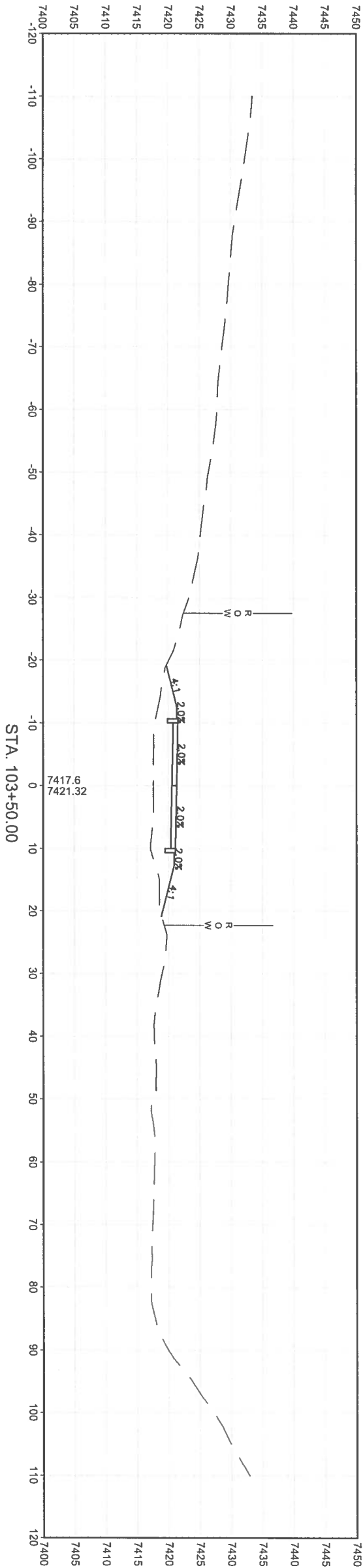
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CHECKED BY: RKR

APPROVED BY: RKR

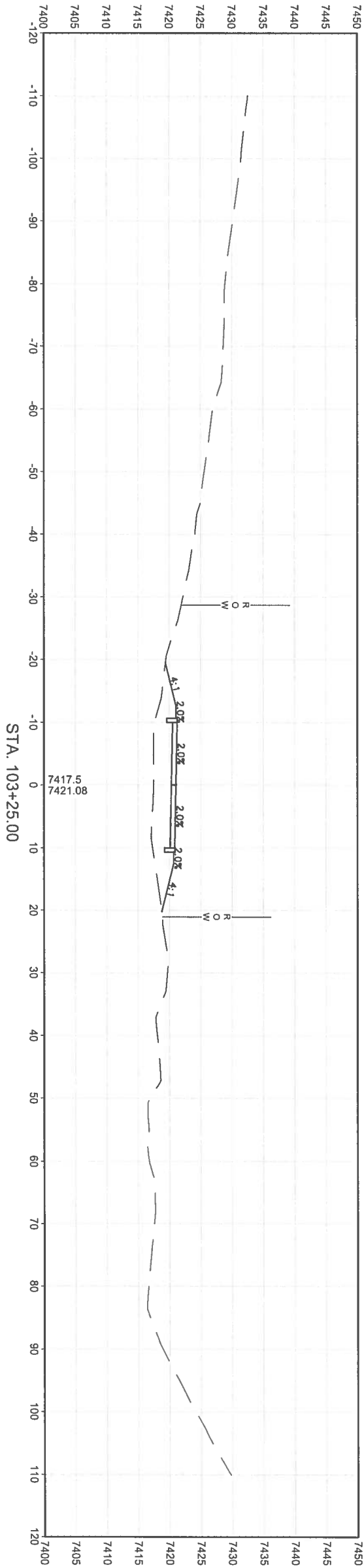
DATE: 01/22/18

PROJECT NO. 2014-0216-PW SHEET 12-4



LOUIS BERGER  
2019 GALISTEO ST. SUITE M-1  
SANTA FE, NEW MEXICO

PROJECT		SHEET
NO.		NO.
2014-0216-PW		12-5

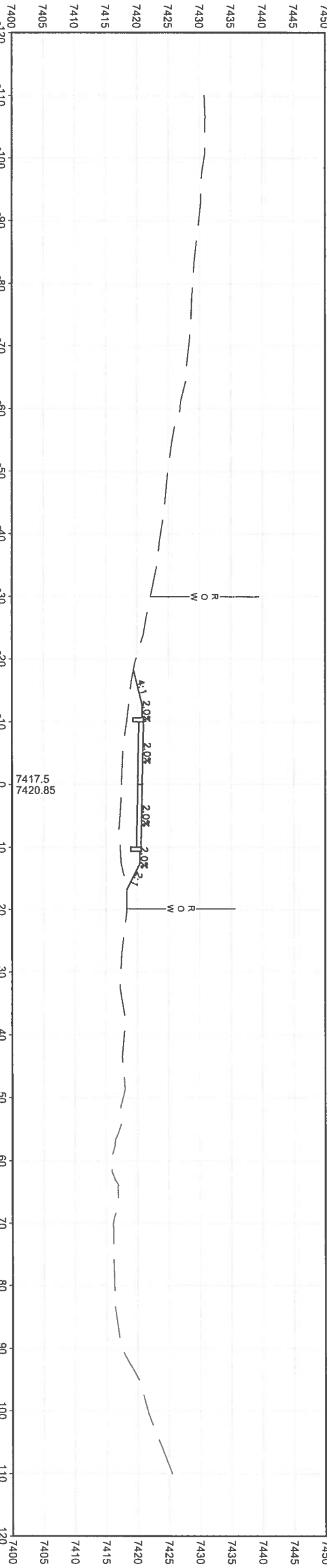


SCALE: HORIZ. = 1:20

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NO.	DESCRIPTION	DATE	BY
REVISIONS (OR CHANGE NOTICES)			

SANTA FE COUNTY  
LA BARBARIA RD. DRAINAGE  
AND ROAD IMPROVEMENTS (CR-67F)  
LA BARBARIA RD.  
CROSS SECTIONS

STA. 103+00.00



SANTA FE COUNTY

DESIGNED BY: PE & IPT

DRAWN BY: CS

CHECKED BY: RKR

APPROVED BY: RKR

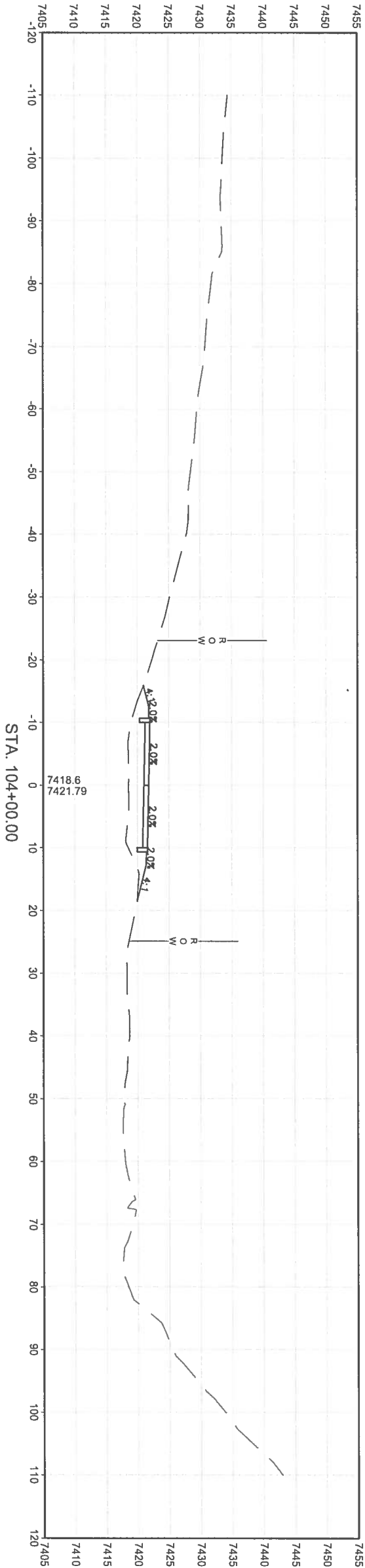
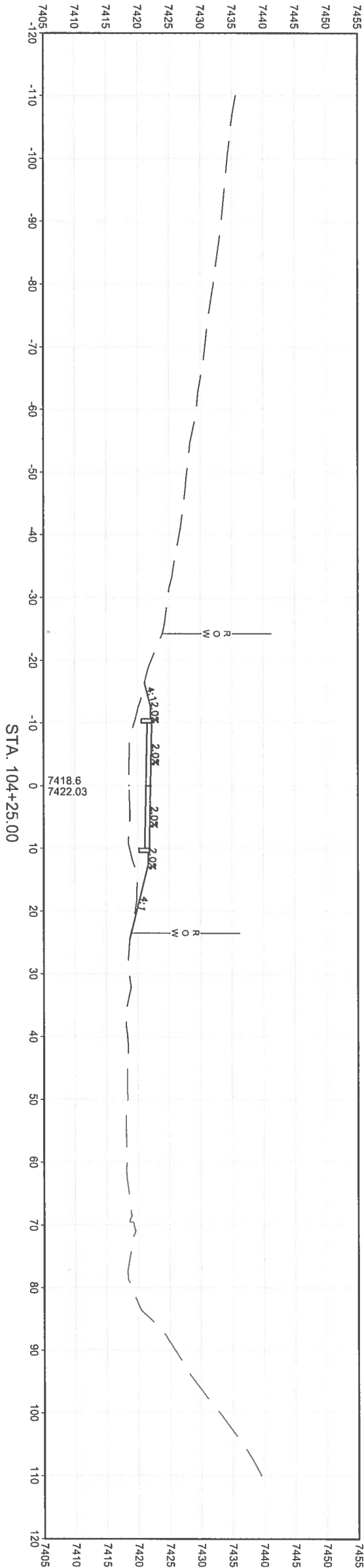
DATE: 01/22/18

PROJECT NO. 2014-0216-PW SHEET 12-5



LOUIS BERGER  
2019 GALISTEO ST. SUITE M-1  
SANTA FE, NEW MEXICO

PROJECT		SHEET
NO.		NO.
2014-0216-PW		12-6



SCALE: HORIZ. = 1: 20

NO.	DESCRIPTION	DATE	BY
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REVISIONS (OR CHANGE NOTICES)

SANTA FE COUNTY

LA BARBARIA RD. DRAINAGE  
AND ROAD IMPROVEMENTS (CR-67F)

LA BARBARIA RD.  
CROSS SECTIONS

STA. 103+75.00

SANTA FE COUNTY

DESIGNED BY: PE & IPT

DRAWN BY: CS

CHECKED BY: RKR

APPROVED BY: RKR

DATE: 01/22/18

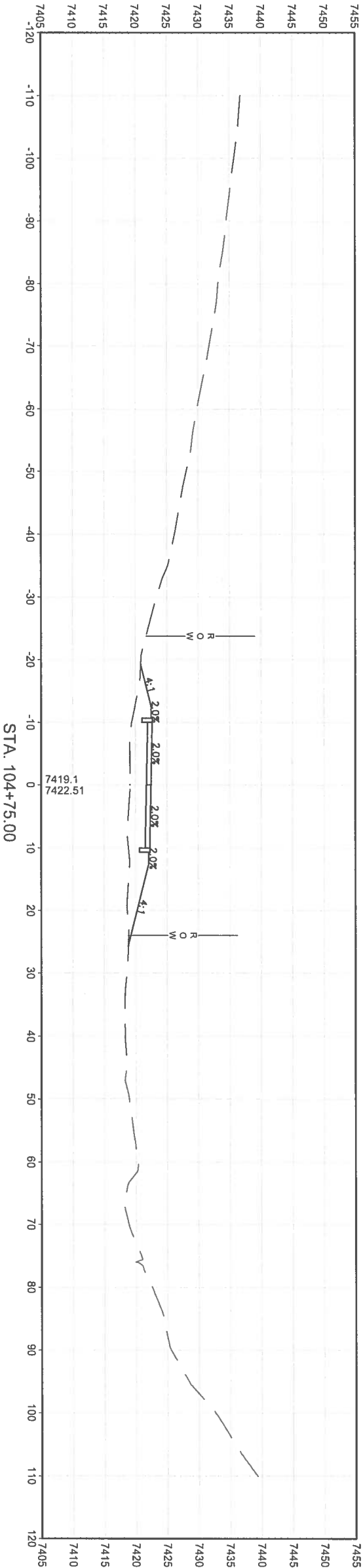
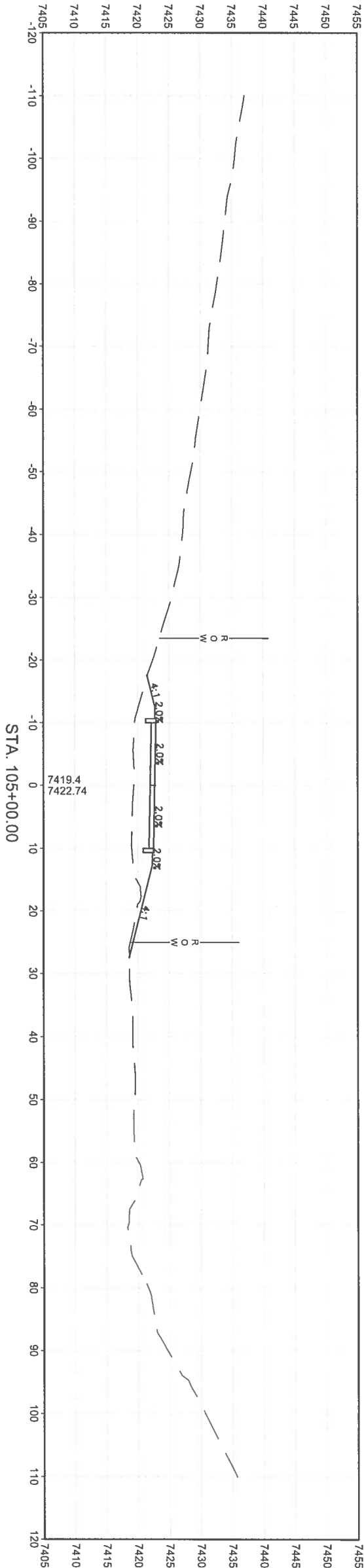
PROJECT NO. 2014-0216-PW

SHEET 12-6

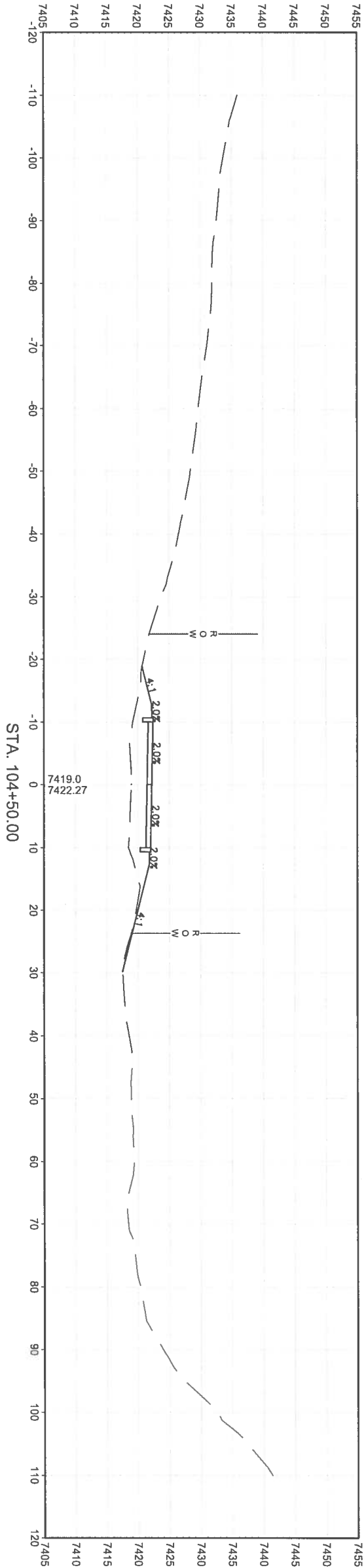


LOUIS BERGER  
2019 GALISTEO ST. SUITE M-1  
SANTA FE, NEW MEXICO

PROJECT		SHEET
NO.		NO.
2014-0216-PW		12-7



SCALE: HORIZ. = 1:20



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NO.	DESCRIPTION	DATE	BY
REVISIONS (OR CHANGE NOTICES)			

SANTA FE COUNTY  
LA BARBARIA RD. DRAINAGE  
AND ROAD IMPROVEMENTS (CR-67F)  
LA BARBARIA RD.  
CROSS SECTIONS

SANTA FE COUNTY

DESIGNED BY: PE & IPT

DRAWN BY: CS

CHECKED BY: RKR

APPROVED BY: RKR

DATE: 01/22/18

PROJECT NO. 2014-0216-PW

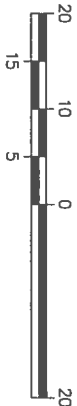
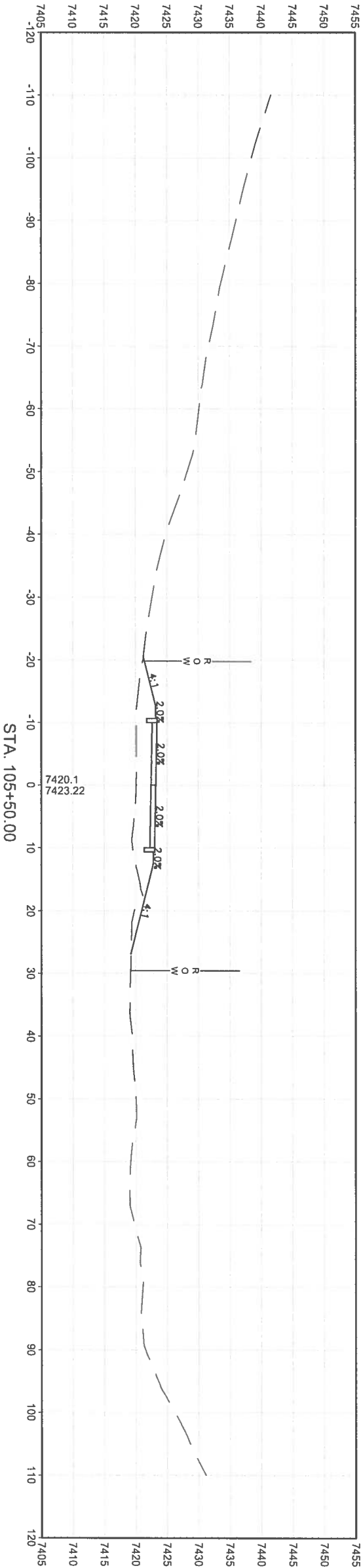
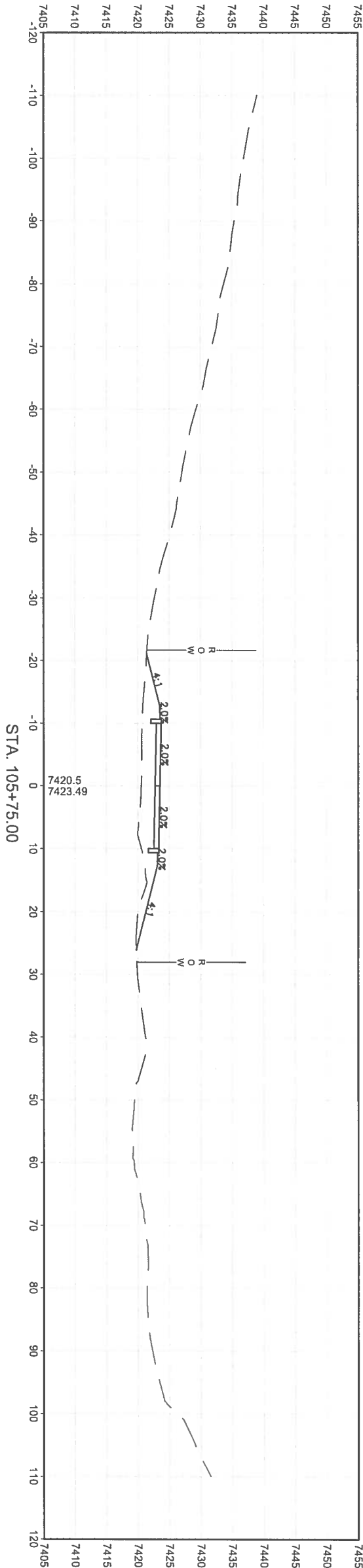
SHEET 12-7





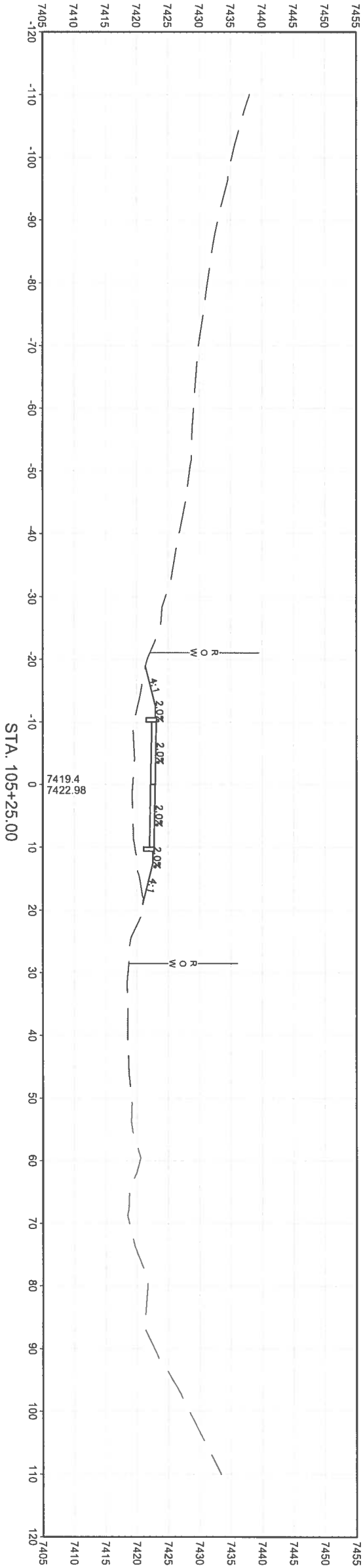
LOUIS BERGER  
2019 GALISTEO ST., SUITE M-1  
SANTA FE, NEW MEXICO

PROJECT		SHEET
NO.		NO.
2014-0216-PW		12-8



SCALE: HORIZ. = 1:20

NO.	DESCRIPTION	DATE	BY
REVISIONS (OR CHANGE NOTICES)			
SANTA FE COUNTY			
LA BARBARIA RD. DRAINAGE			
AND ROAD IMPROVEMENTS (CR-67F)			
LA BARBARIA RD.			
CROSS SECTIONS			



SANTA FE COUNTY

DESIGNED BY: PE & IPT

DRAWN BY: CS

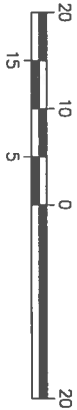
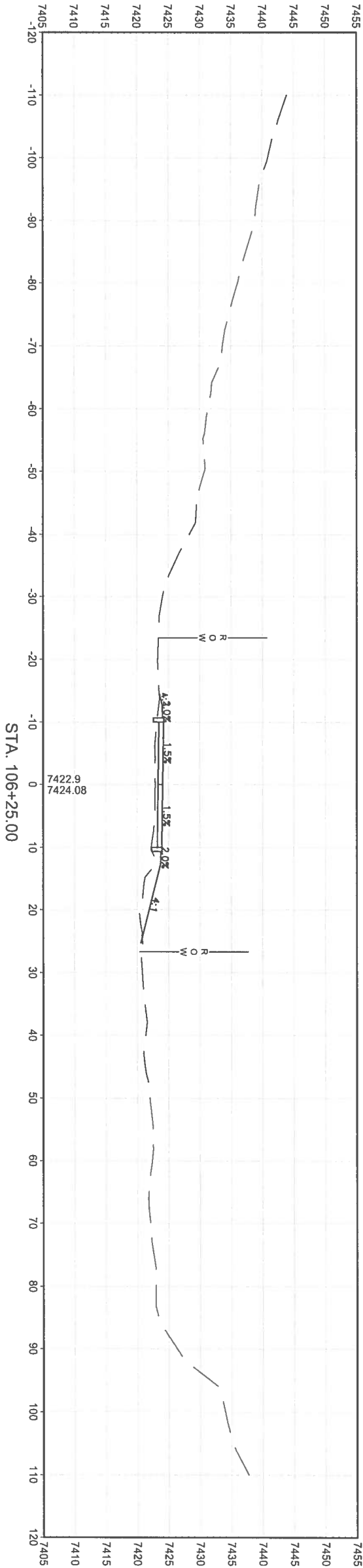
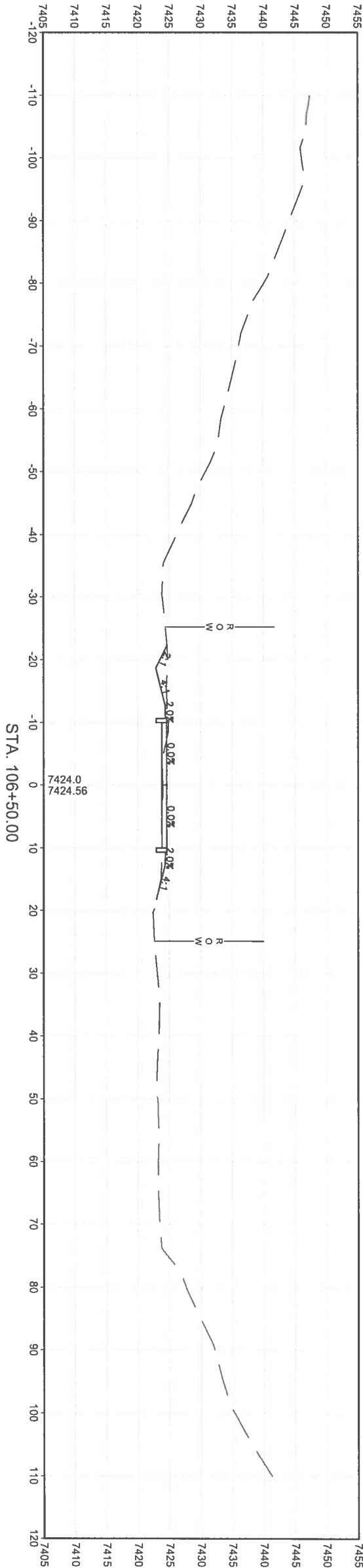
CHECKED BY: RKR

APPROVED BY: RKR

DATE: 01/22/18

PROJECT NO. 2014-0216-PW SHEET 12-8

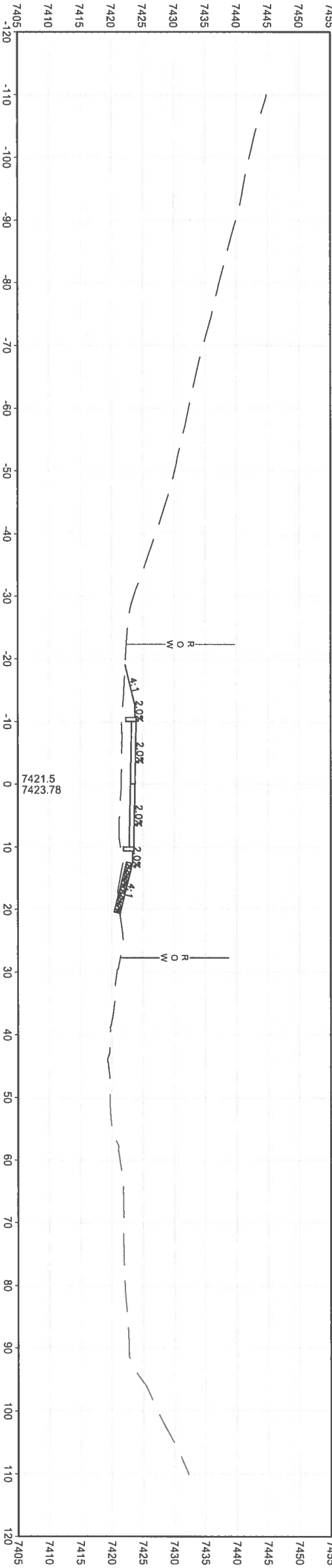
PROJECT		SHEET
NO.		NO.
2014-0216-PW		12-9



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NO.	DESCRIPTION	DATE	BY
REVISIONS (OR CHANGE NOTICES)			

SANTA FE COUNTY  
LA BARBARIA RD. DRAINAGE  
AND ROAD IMPROVEMENTS (CR-67F)  
LA BARBARIA RD.  
CROSS SECTIONS

STA. 106+00.00

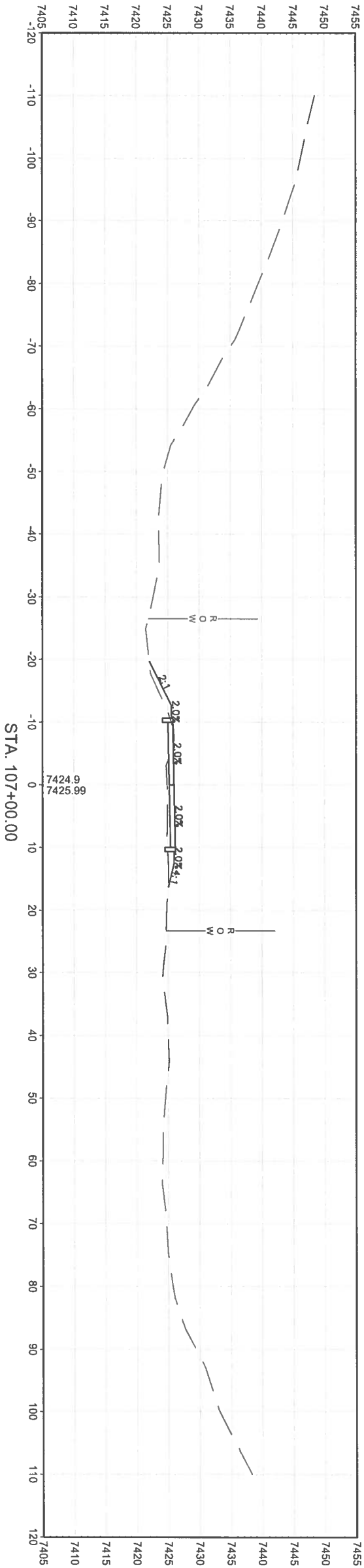
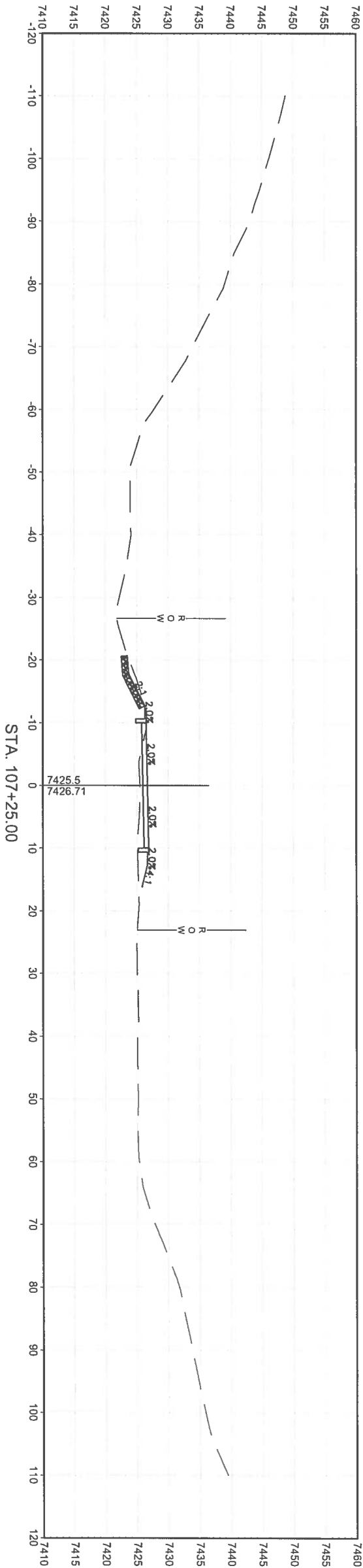




LOUIS BERGER

2019 GALISTEO ST., SUITE M-1  
SANTA FE, NEW MEXICO

PROJECT		SHEET
NO.		NO.
2014-0216-PW		12-10



SCALE: HORIZ. = 1:20

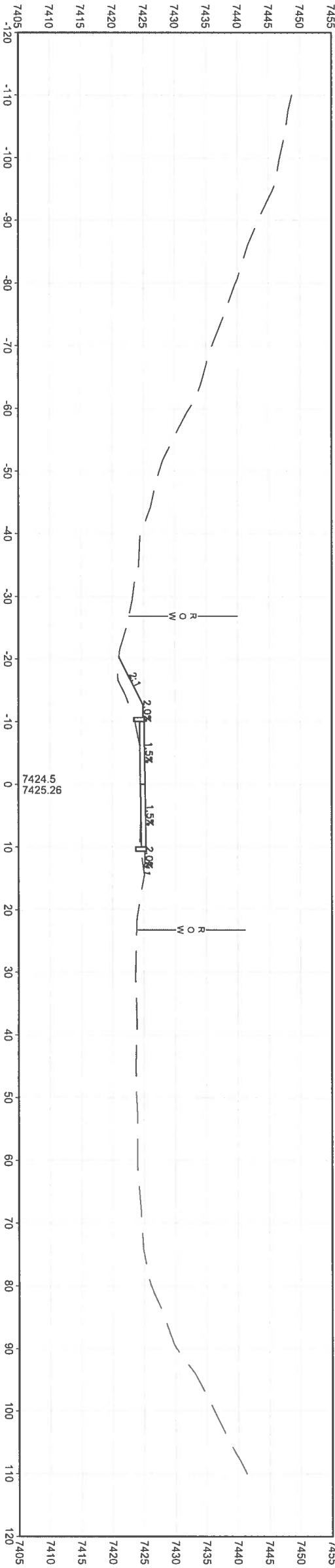
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NO.	DESCRIPTION		DATE
	REVISIONS (OR CHANGE NOTICES)		BY

SANTA FE COUNTY

LA BARBARIA RD. DRAINAGE  
AND ROAD IMPROVEMENTS (CR-67F)

LA BARBARIA RD.  
CROSS SECTIONS

STA. 106+75.00



SANTA FE COUNTY

DESIGNED BY: PE & IPT

DRAWN BY: CS

CHECKED BY: RKR

APPROVED BY: RKR

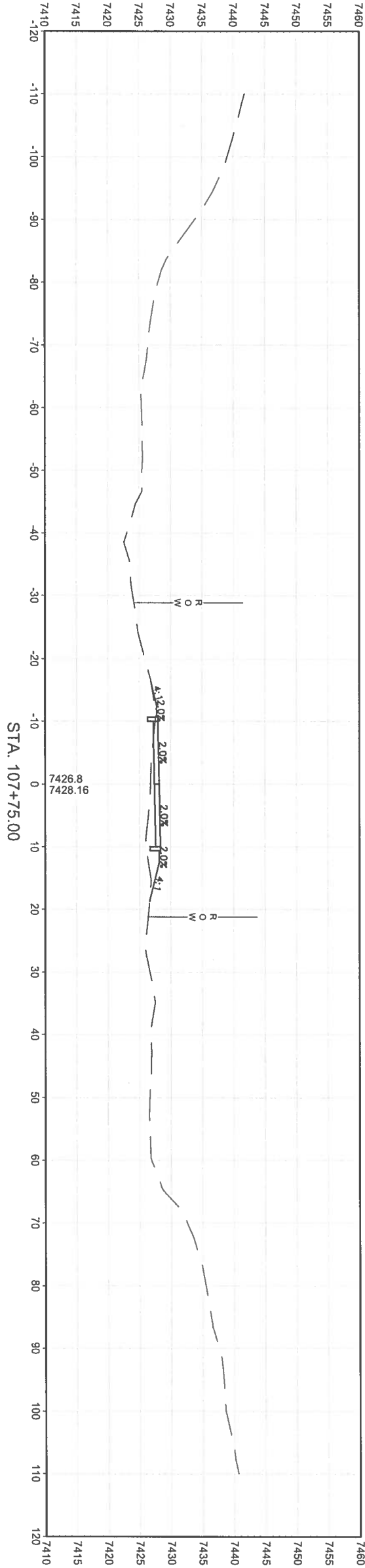
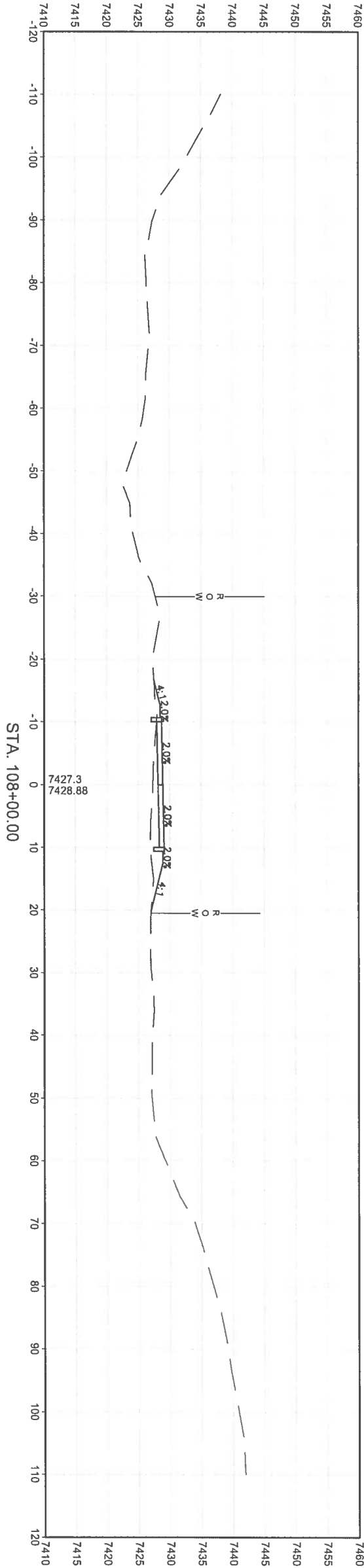
DATE: 01/22/18

PROJECT NO. 2014-0216-PW SHEET 12-10



LOUIS BERGER  
2019 GALISTEO ST. SUITE M-1  
SANTA FE, NEW MEXICO

PROJECT NO.		SHEET NO.
2014-0216-PW		12-11



SCALE: HORIZ. = 1:20

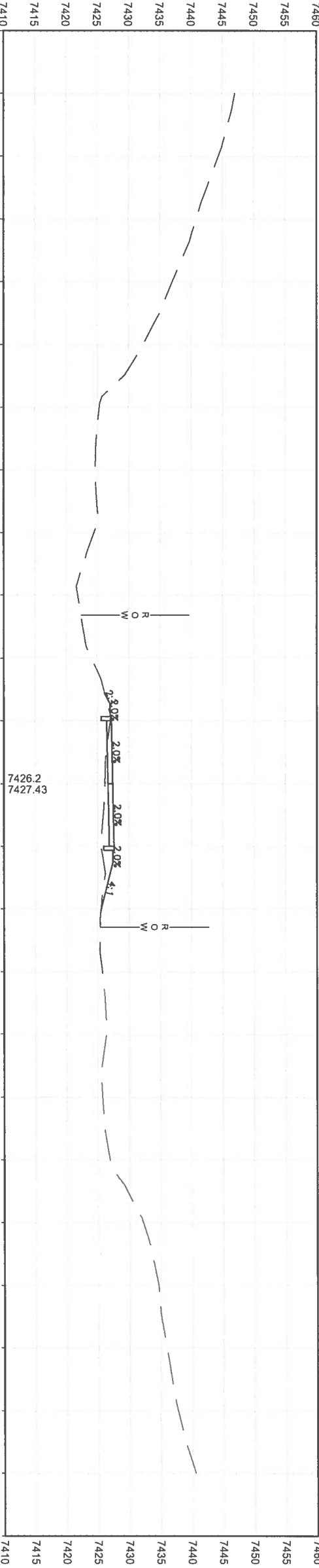
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SANTA FE COUNTY

LA BARBARIA RD. DRAINAGE  
AND ROAD IMPROVEMENTS (CR-67F)

LA BARBARIA RD.  
CROSS SECTIONS

STA. 107+50.00



SANTA FE COUNTY

DESIGNED BY: PE & IPT

DRAWN BY: CS

CHECKED BY: RKR

APPROVED BY: RKR

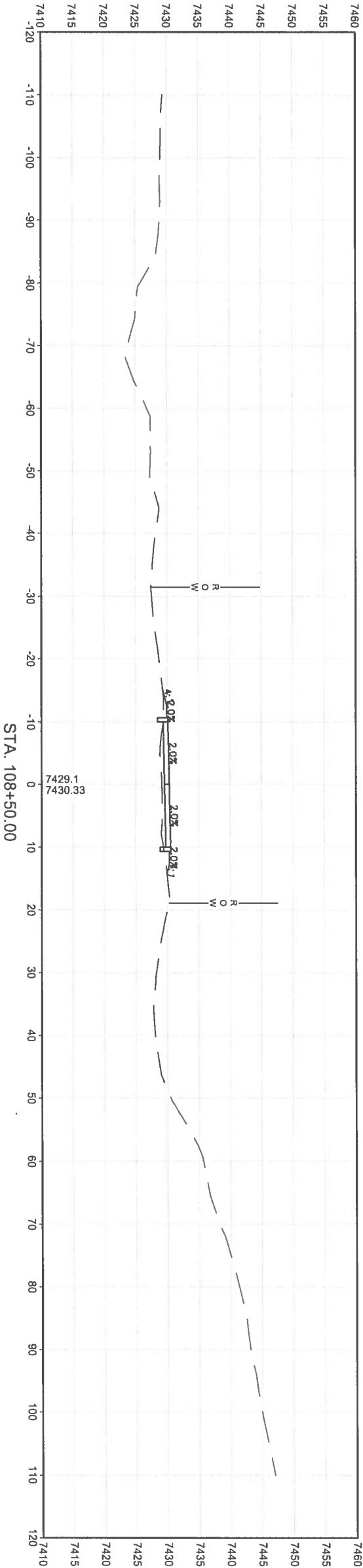
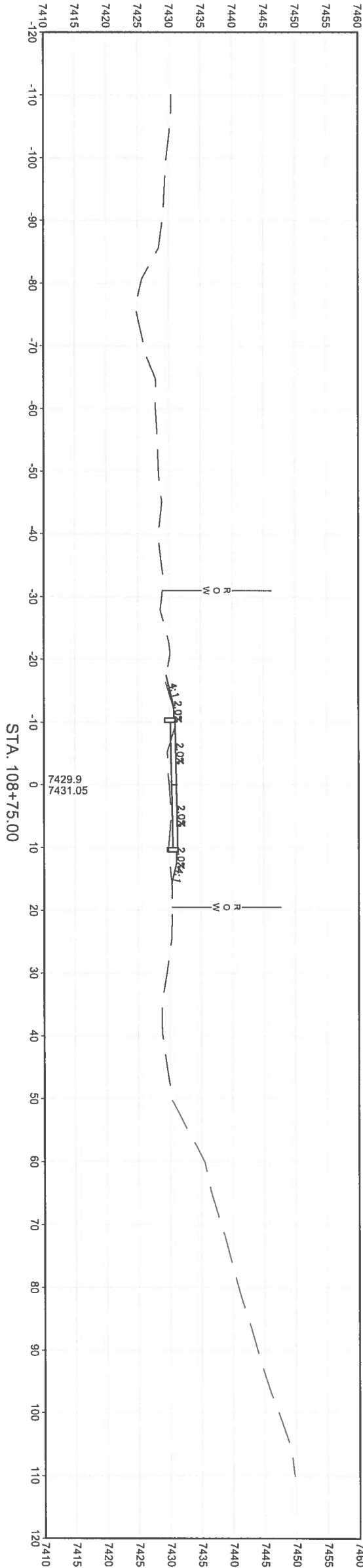
DATE: 01/22/18

PROJECT NO. 2014-0216-PW SHEET 12-11

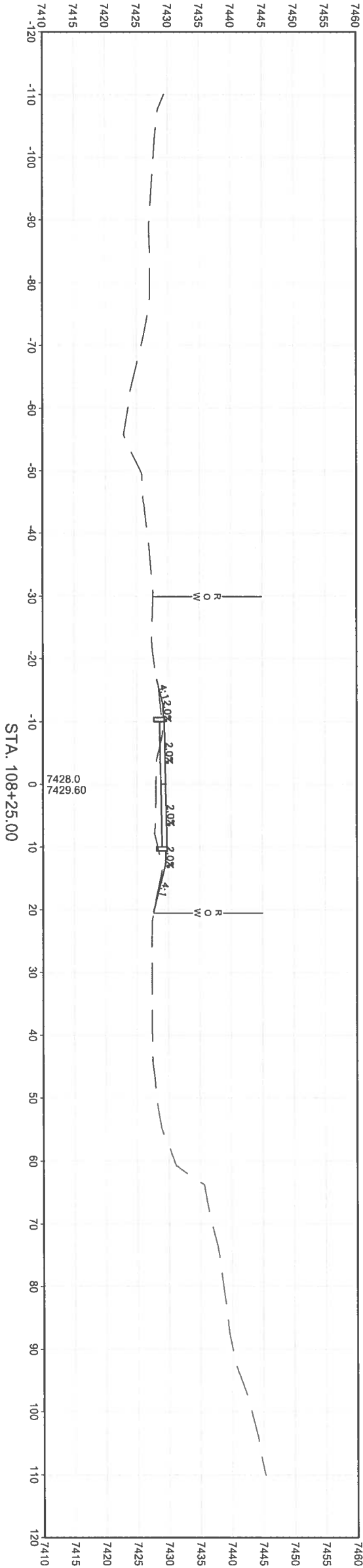


LOUIS BERGER  
2019 GALISTEO ST. SUITE M-1  
SANTA FE, NEW MEXICO

PROJECT		SHEET
NO.		NO.
2014-0216-PW		12-12



SCALE: HORIZ. = 1:20



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NO.	DESCRIPTION	DATE	BY

REVISIONS (OR CHANGE NOTICES)

SANTA FE COUNTY

LA BARBARIA RD. DRAINAGE  
AND ROAD IMPROVEMENTS (CR-67F)

LA BARBARIA RD.  
CROSS SECTIONS

SANTA FE COUNTY

DESIGNED BY: PE & IPT

DRAWN BY: CS

CHECKED BY: RKR

APPROVED BY: RKR

DATE: 01/22/18

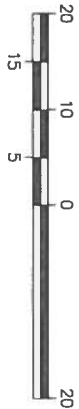
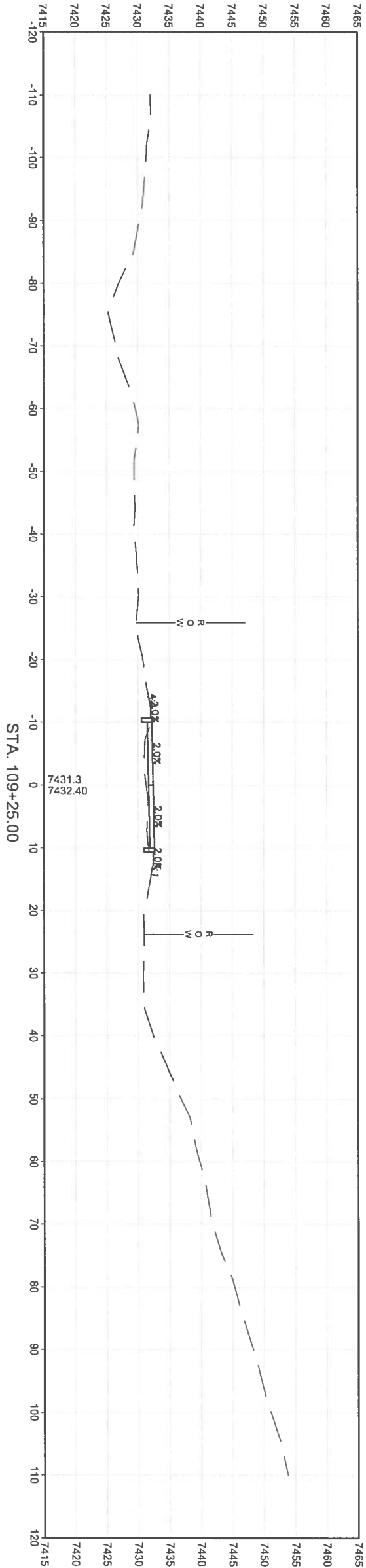
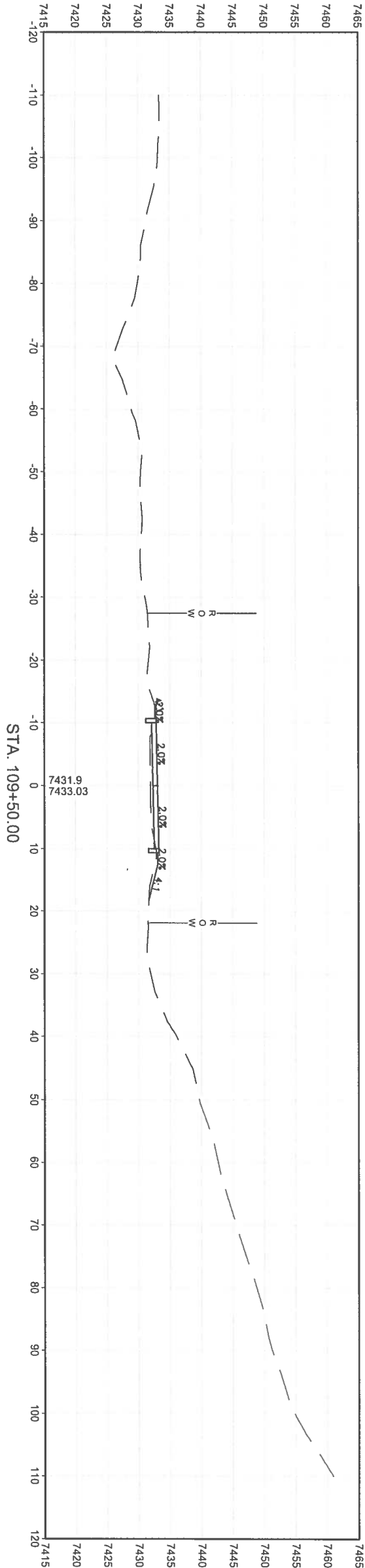
PROJECT NO. 2014-0216-PW

SHEET 12-12



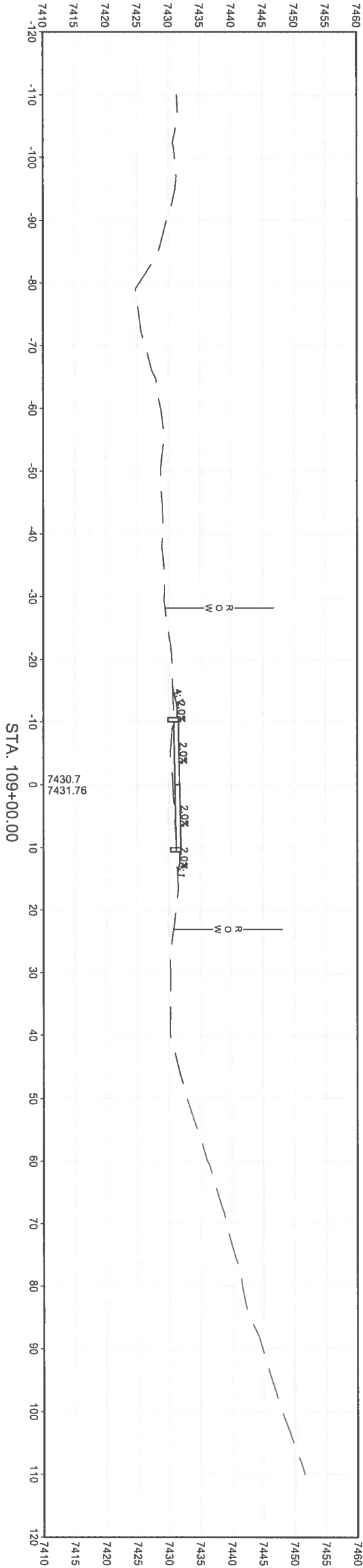
LOUIS BERGER  
2019 GALISTEO ST. SUITE M-1  
SANTA FE, NEW MEXICO

PROJECT		SHEET
NO.		NO.
2014-0216-PW		12-13



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NO.	DESCRIPTION	DATE	BY
REVISIONS (OR CHANGE NOTICES)			

SANTA FE COUNTY  
LA BARBARIA RD. DRAINAGE  
AND ROAD IMPROVEMENTS (CR-67F)  
LA BARBARIA RD.  
CROSS SECTIONS



SANTA FE COUNTY

DESIGNED BY: PE & IPT

DRAWN BY: CS

CHECKED BY: RKR

APPROVED BY: RKR

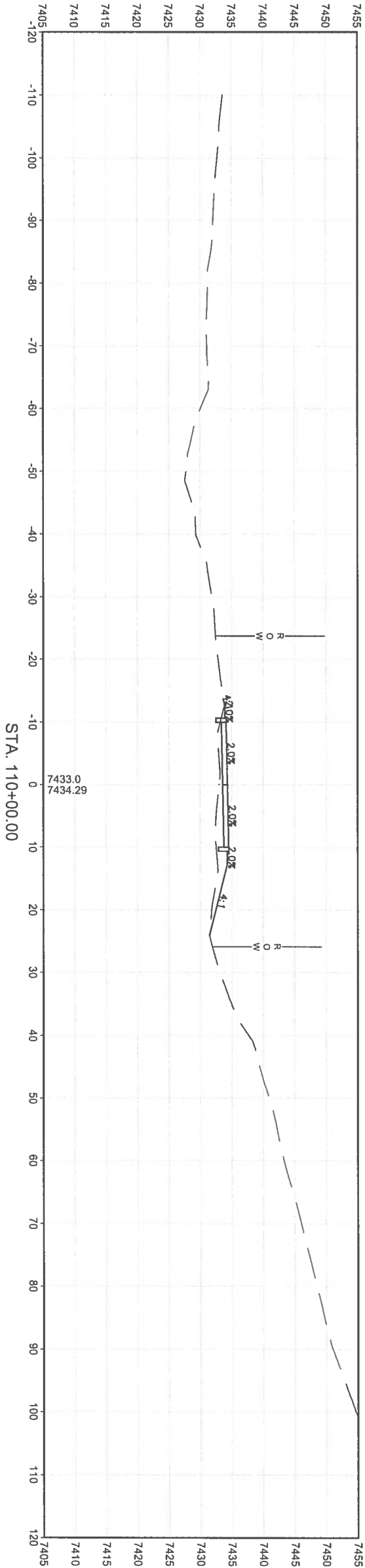
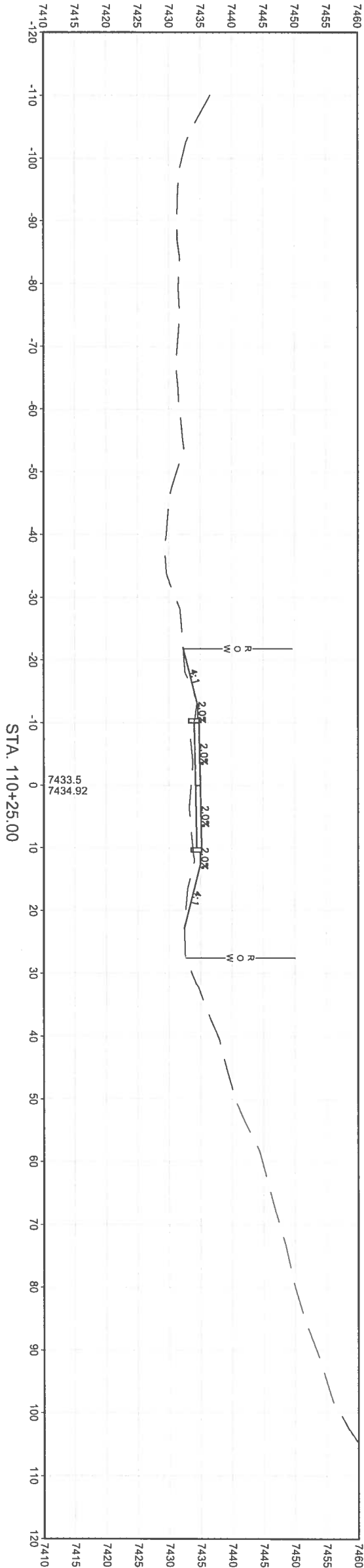
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PROJECT NO. 2014-0216-PW SHEET 12-13

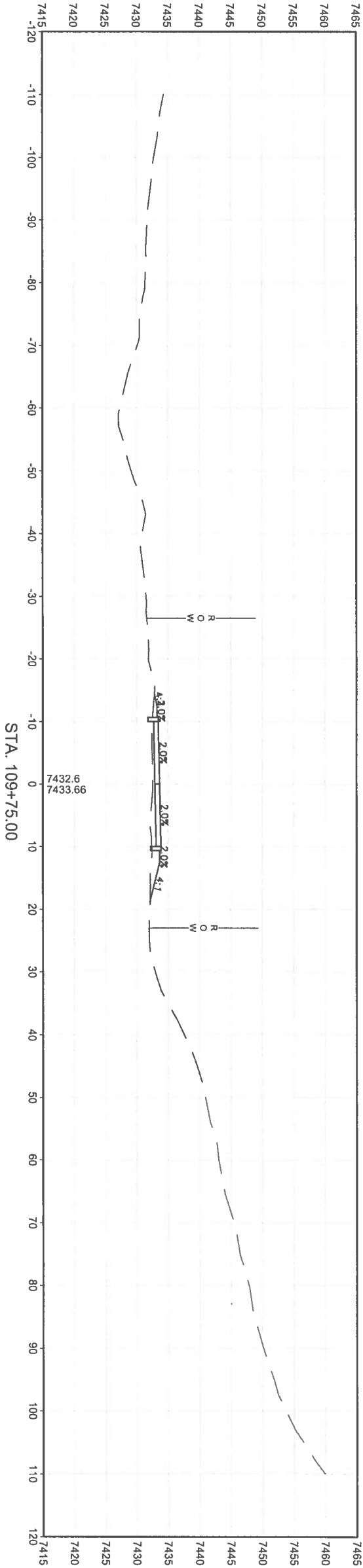


LOUIS BERGER  
2019 GALISTEO ST. SUITE M-1  
SANTA FE, NEW MEXICO

PROJECT		SHEET
NO.		NO.
2014-0216-PW		12-14



SCALE: HORIZ. = 1:20



NO.	DESCRIPTION	DATE	BY
REVISIONS (OR CHANGE NOTICES)			
SANTA FE COUNTY			
LA BARBARIA RD. DRAINAGE AND ROAD IMPROVEMENTS (CR-67F)			
LA BARBARIA RD. CROSS SECTIONS			
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SANTA FE COUNTY

DESIGNED BY: PE & IPT

DRAWN BY: CS

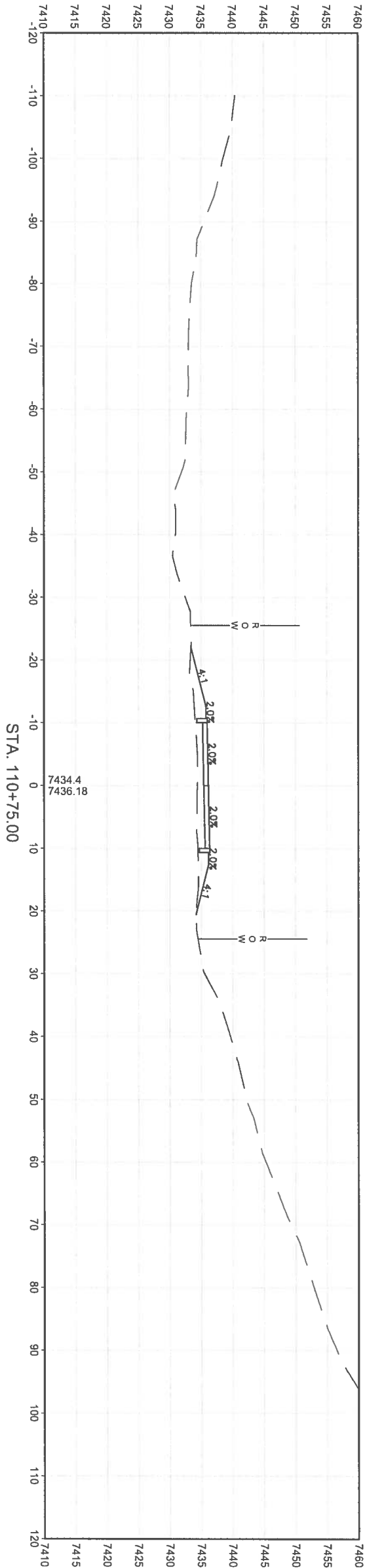
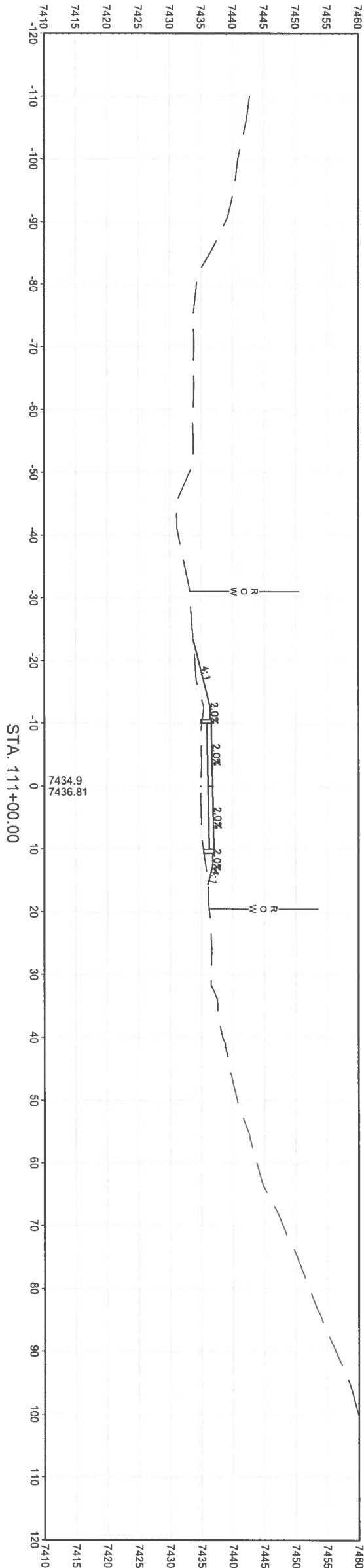
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DATE: 01/22/18

PROJECT NO. 2014-0216-PW SHEET 12-14

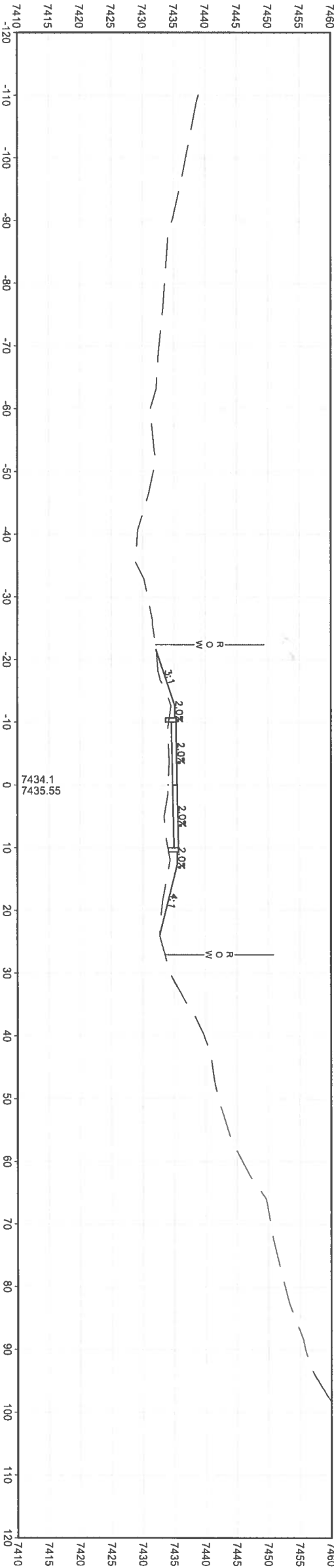
PROJECT		SHEET
NO.		NO.
2014-0216-PW		12-15



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NO.	DESCRIPTION	DATE	BY
REVISIONS (OR CHANGE NOTICES)			

SANTA FE COUNTY  
LA BARBARIA RD. DRAINAGE  
AND ROAD IMPROVEMENTS (CR-67F)  
LA BARBARIA RD.  
CROSS SECTIONS

STA. 110+50.00



SANTA FE COUNTY

DESIGNED BY: PE & IPT

DRAWN BY: CS

CHECKED BY: RKR

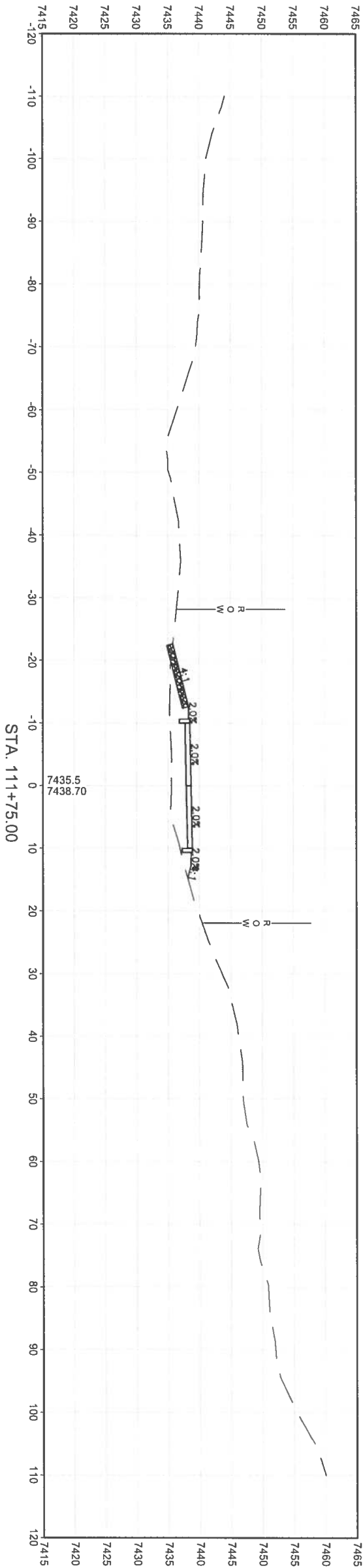
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DATE: 01/22/18

PROJECT NO. 2014-0216-PW

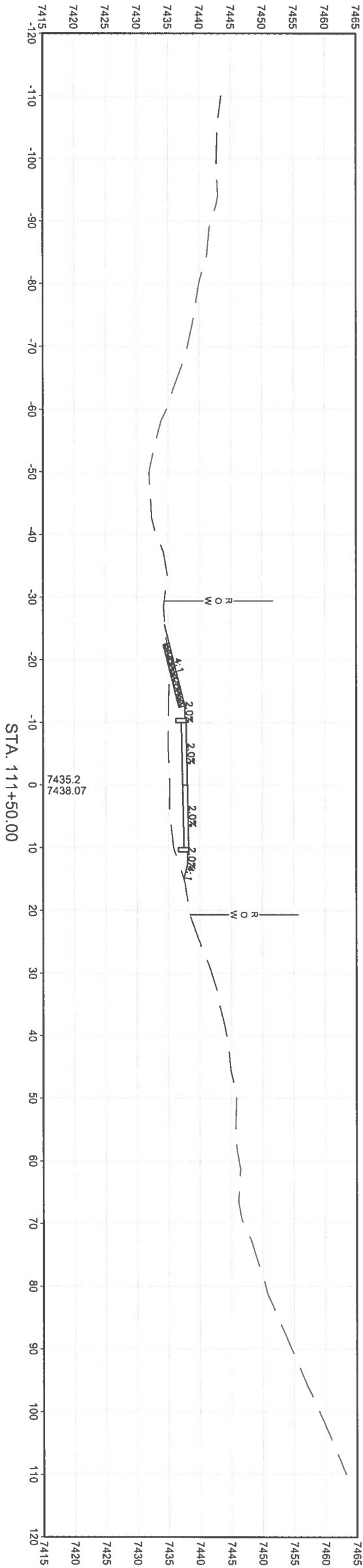
SHEET 12-15





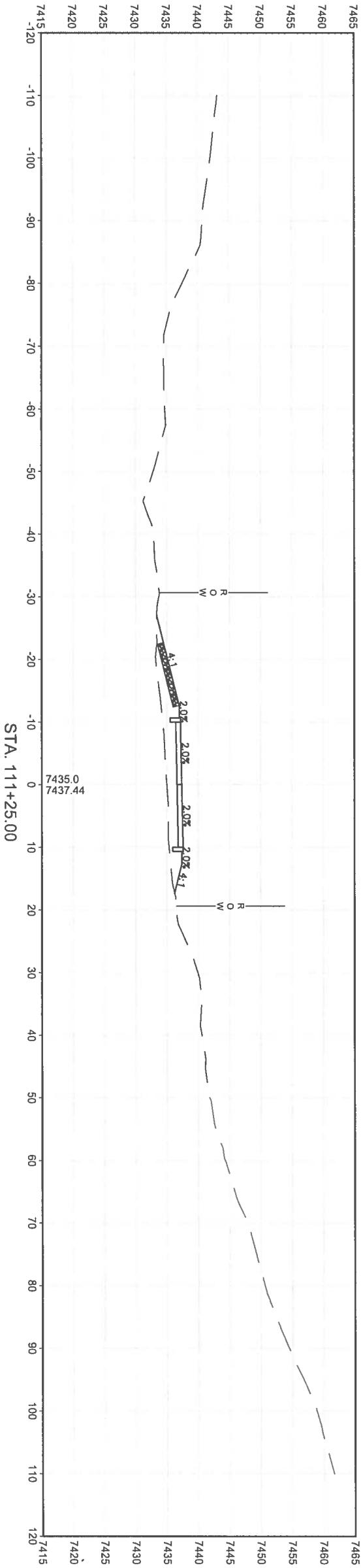
LOUIS BERGER  
2019 GALISTEO ST., SUITE M-1  
SANTA FE, NEW MEXICO

PROJECT NO.		SHEET NO.
2014-0216-PW		12-16



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NO.	DESCRIPTION	DATE	BY
REVISIONS (OR CHANGE NOTICES)			

SANTA FE COUNTY  
LA BARBARIA RD. DRAINAGE  
AND ROAD IMPROVEMENTS (CR-67F)  
LA BARBARIA RD.  
CROSS SECTIONS



SANTA FE COUNTY

DESIGNED BY: PE & IPT

DRAWN BY: CS

CHECKED BY: RKR

APPROVED BY: RKR

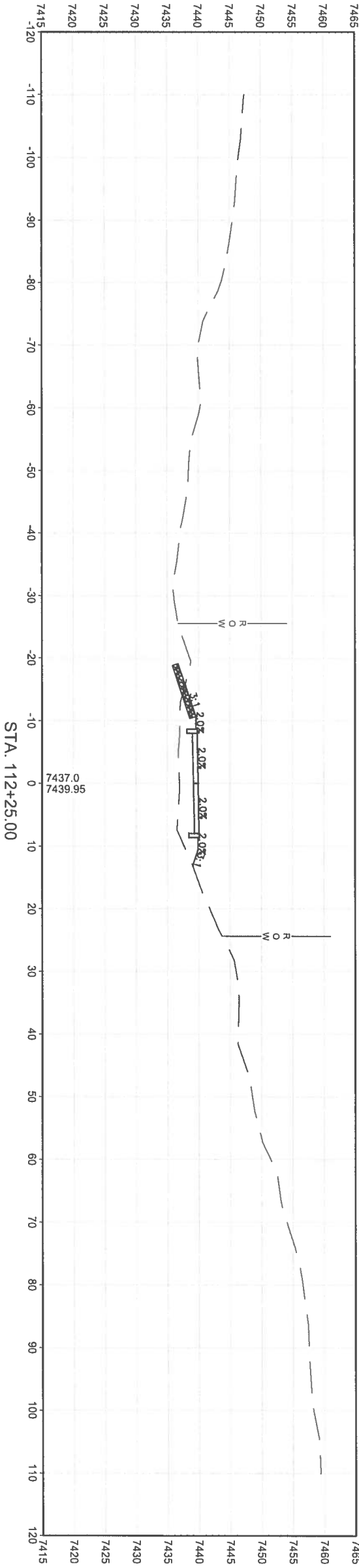
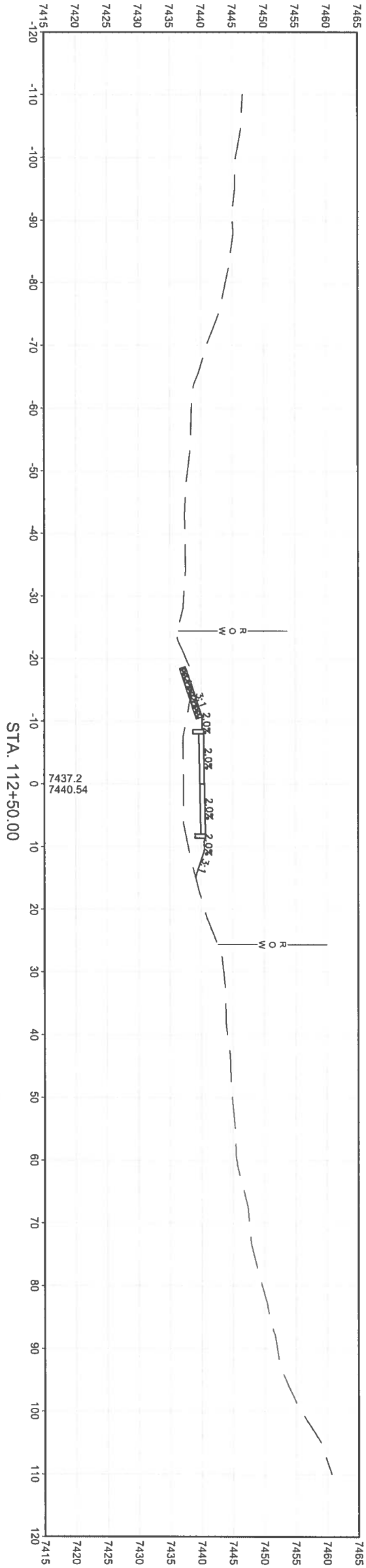
DATE: 01/22/18

PROJECT NO. 2014-0216-PW SHEET 12-16



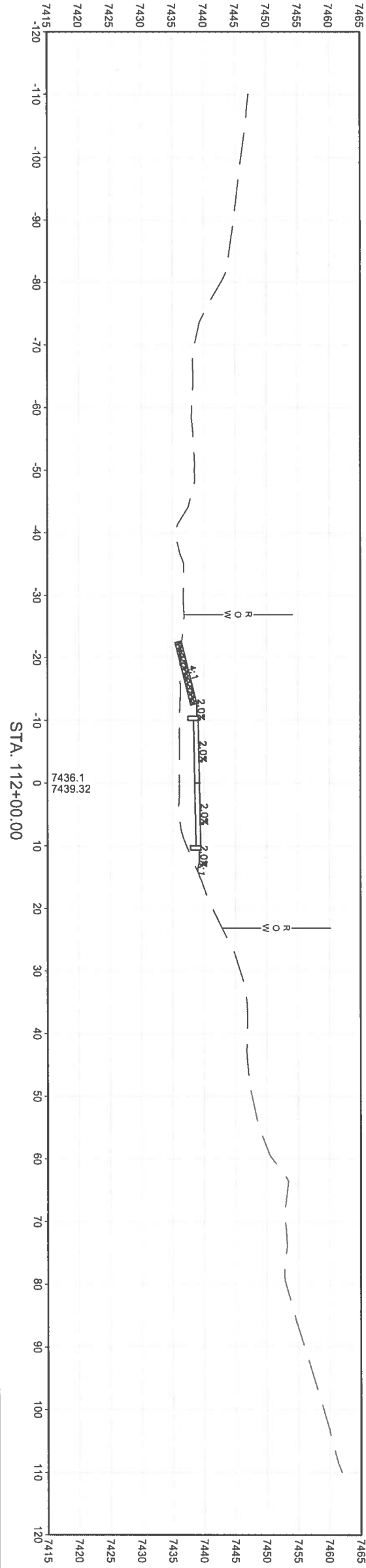
LOUIS BERGER  
2019 GALISTEO ST. SUITE M-1  
SANTA FE, NEW MEXICO

PROJECT		SHEET
NO.		NO.
2014-0216-PW		12-17



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NO.	DESCRIPTION	DATE	BY
REVISIONS (OR CHANGE NOTICES)			

SANTA FE COUNTY  
LA BARBARIA RD. DRAINAGE  
AND ROAD IMPROVEMENTS (CR-67F)  
LA BARBARIA RD.  
CROSS SECTIONS



SANTA FE COUNTY

DESIGNED BY: PE & IPT

DRAWN BY: CS

CHECKED BY: RKR

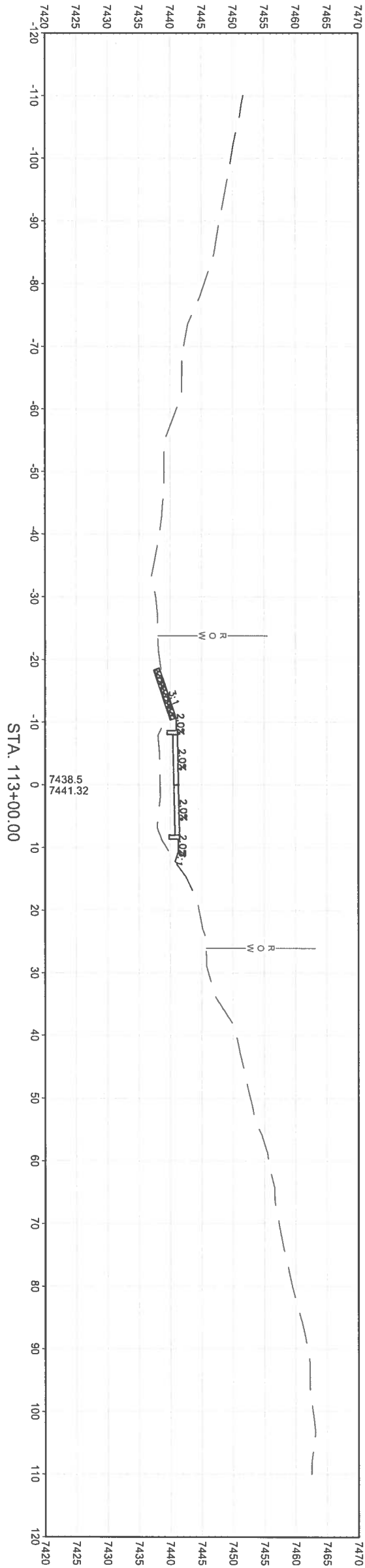
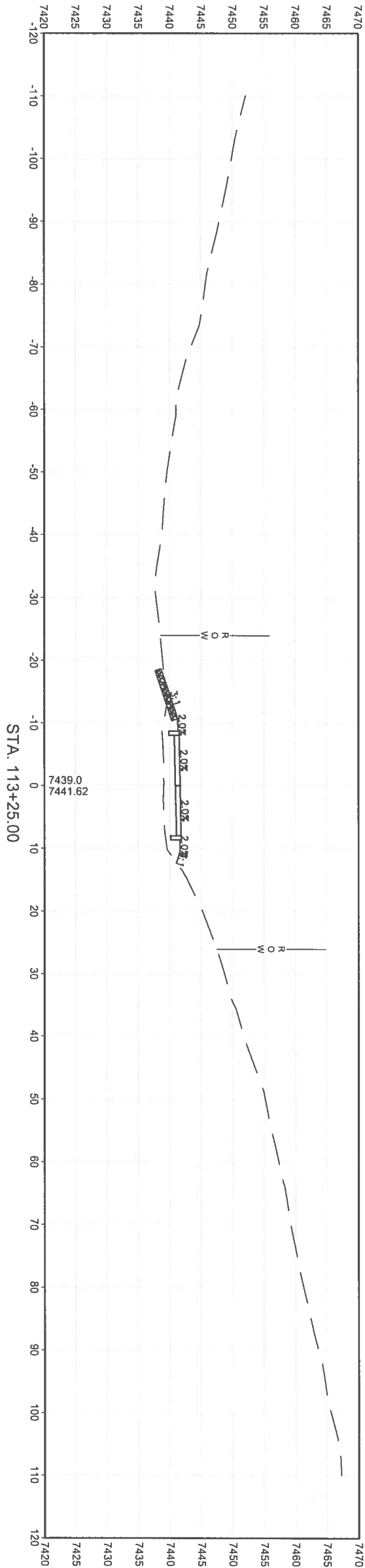
APPROVED BY: RKR

DATE: 01/22/18

PROJECT NO. 2014-0216-PW SHEET 12-17

LOUIS BERGER  
2019 GALISTEO ST. SUITE M-1  
SANTA FE, NEW MEXICO

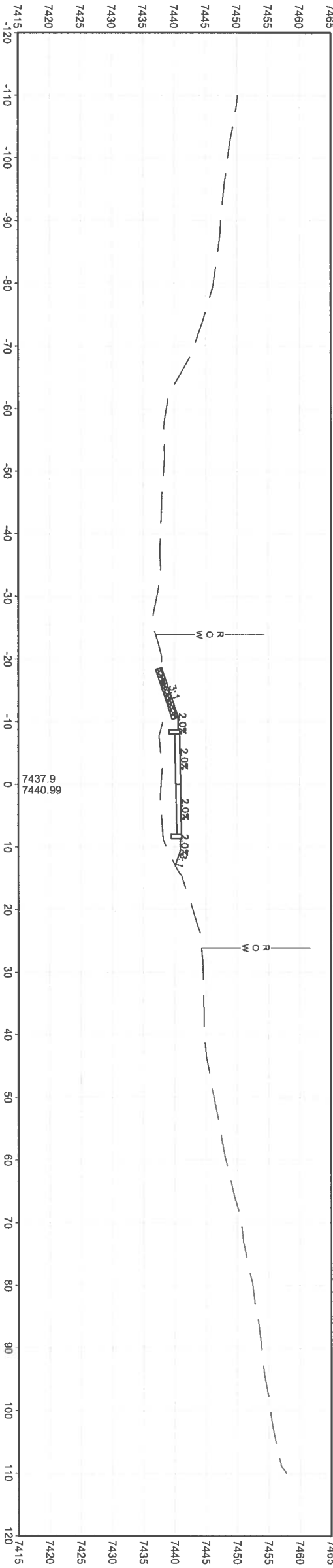
PROJECT		SHEET
NO.		NO.
2014-0216-PW		12-18



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NO.	DESCRIPTION	DATE	BY
REVISIONS (OR CHANGE NOTICES)			

SANTA FE COUNTY  
LA BARBARIA RD. DRAINAGE  
AND ROAD IMPROVEMENTS (CR-67F)  
LA BARBARIA RD.  
CROSS SECTIONS

STA. 112+75.00



SANTA FE COUNTY

DESIGNED BY: PE & IPT

DRAWN BY: CS

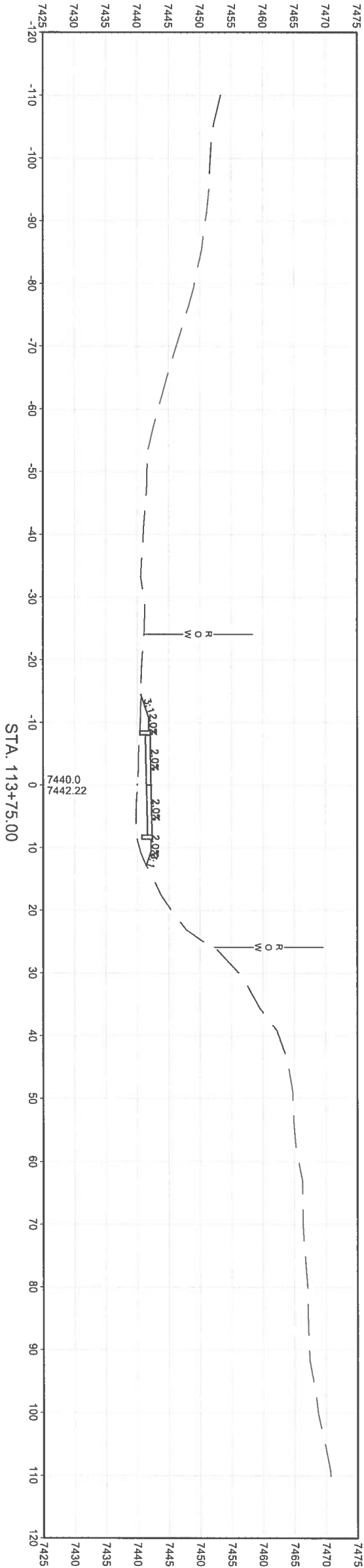
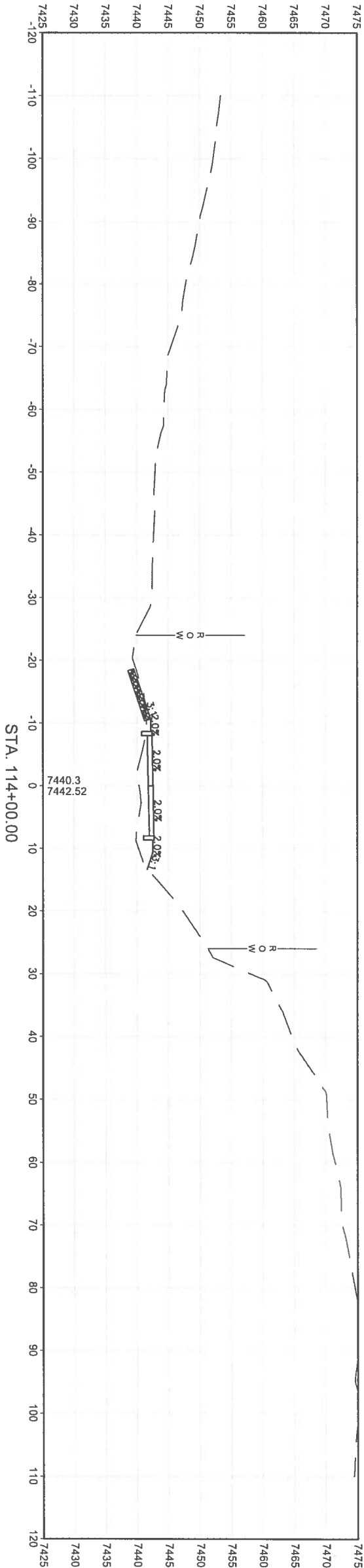
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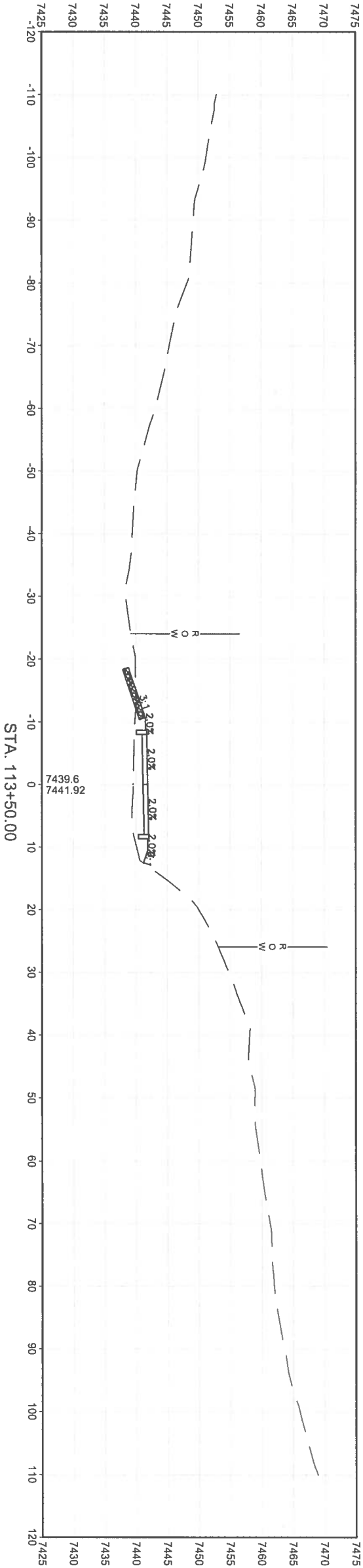
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PROJECT NO. 2014-0216-PW SHEET 12-18

PROJECT		SHEET
NO.	NO.	NO.
2014-0216-PW		12-19



SCALE: HORIZ. = 1:20



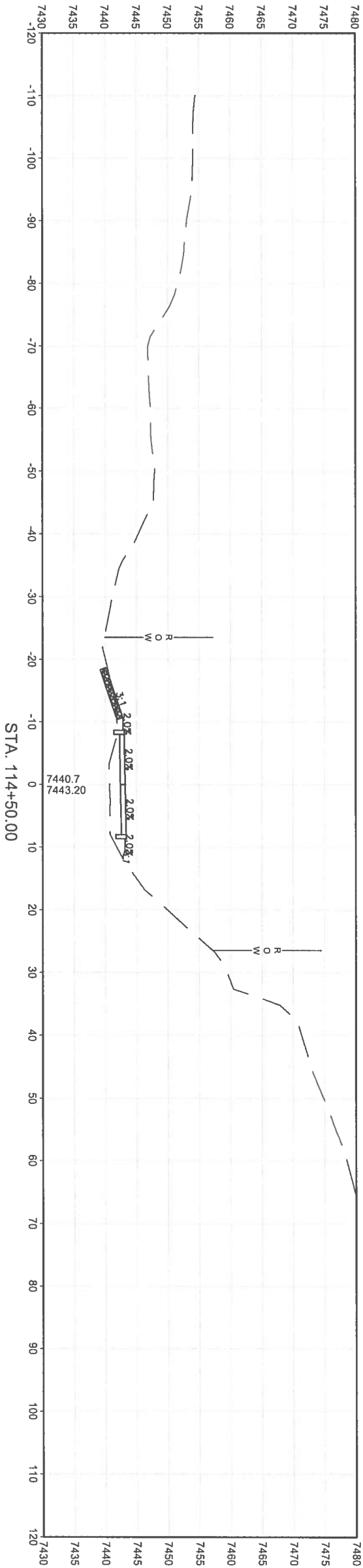
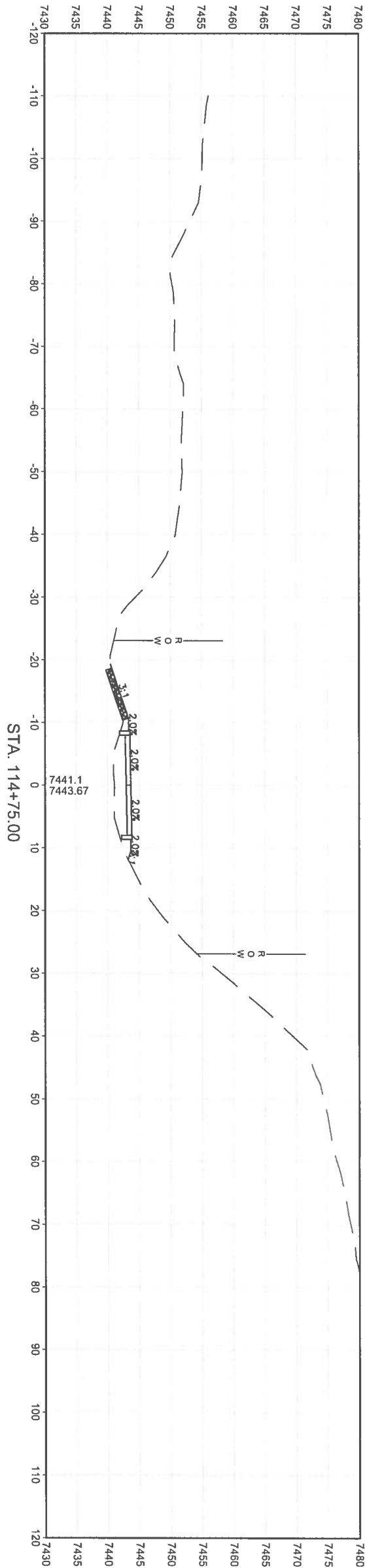
NO.	DESCRIPTION	DATE	BY
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REVISIONS (OR CHANGE NOTICES)			

SANTA FE COUNTY  
LA BARBARIA RD. DRAINAGE  
AND ROAD IMPROVEMENTS (CR-67F)  
LA BARBARIA RD.  
CROSS SECTIONS

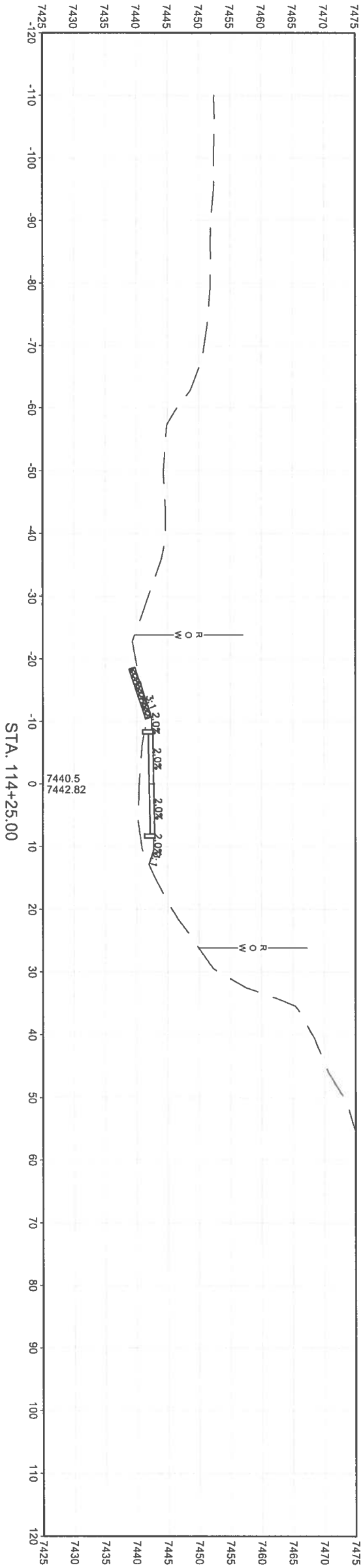


LOUIS BERGER  
2019 GALISTEO ST., SUITE M-1  
SANTA FE, NEW MEXICO

PROJECT		SHEET
NO.		NO.
2014-0216-PW		12-20



SCALE: HORIZ. = 1:20



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NO.	DESCRIPTION	DATE	BY

SANTA FE COUNTY  
LA BARBARIA RD. DRAINAGE  
AND ROAD IMPROVEMENTS (CR-67F)  
LA BARBARIA RD.  
CROSS SECTIONS

SANTA FE COUNTY

DESIGNED BY: PE & IPT

DRAWN BY: CS

CHECKED BY: RKR

APPROVED BY: RKR

DATE: 01/22/18

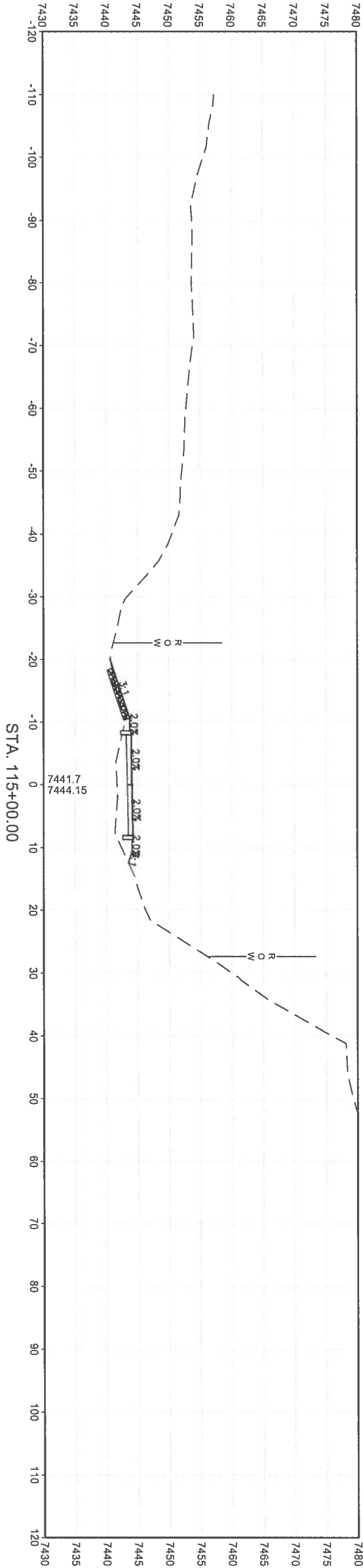
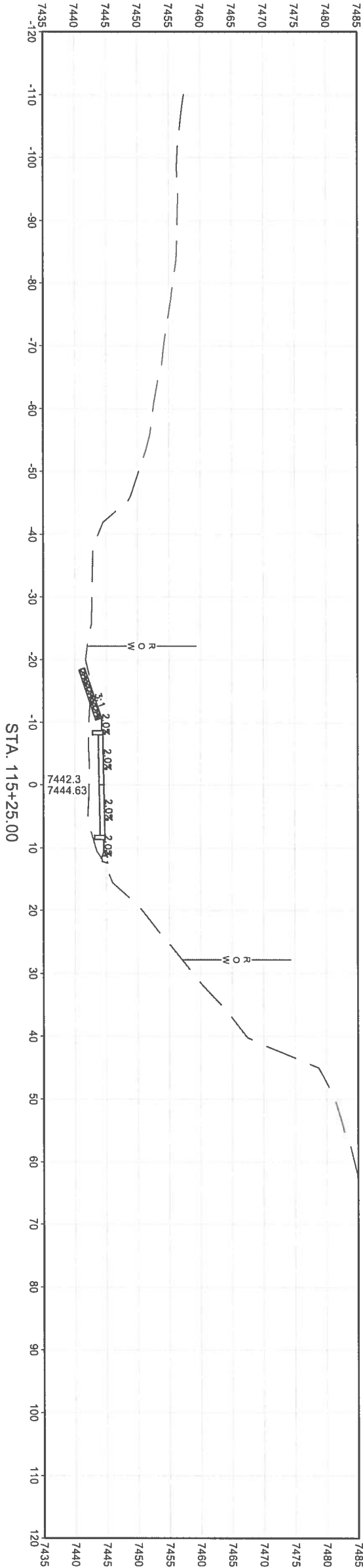
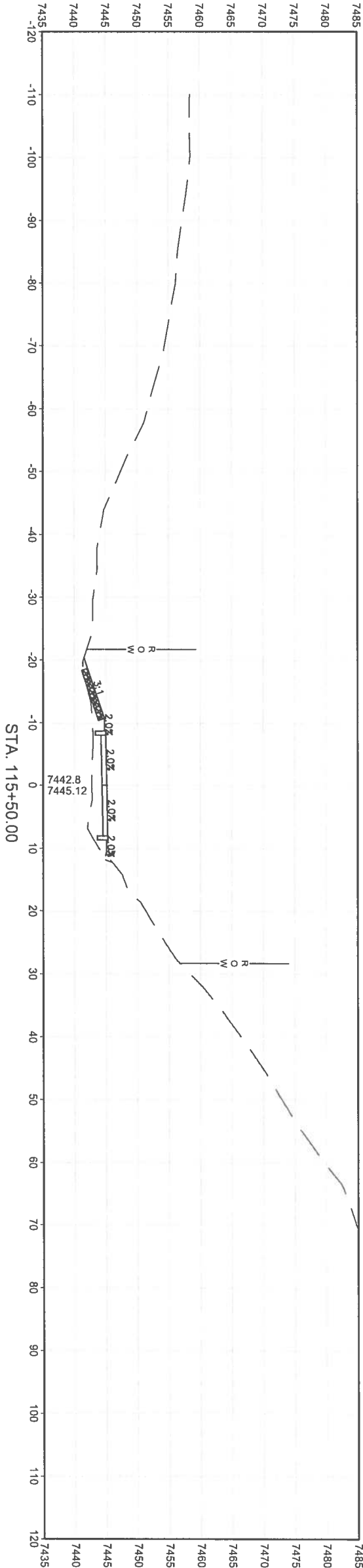
PROJECT NO. 2014-0216-PW

SHEET 12-20



LOUIS BERGER  
2019 GALISTEO ST. SUITE M-1  
SANTA FE, NEW MEXICO

PROJECT		SHEET
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LA BARBARIA RD. DRAINAGE  
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LA BARBARIA RD.  
CROSS SECTIONS

SANTA FE COUNTY

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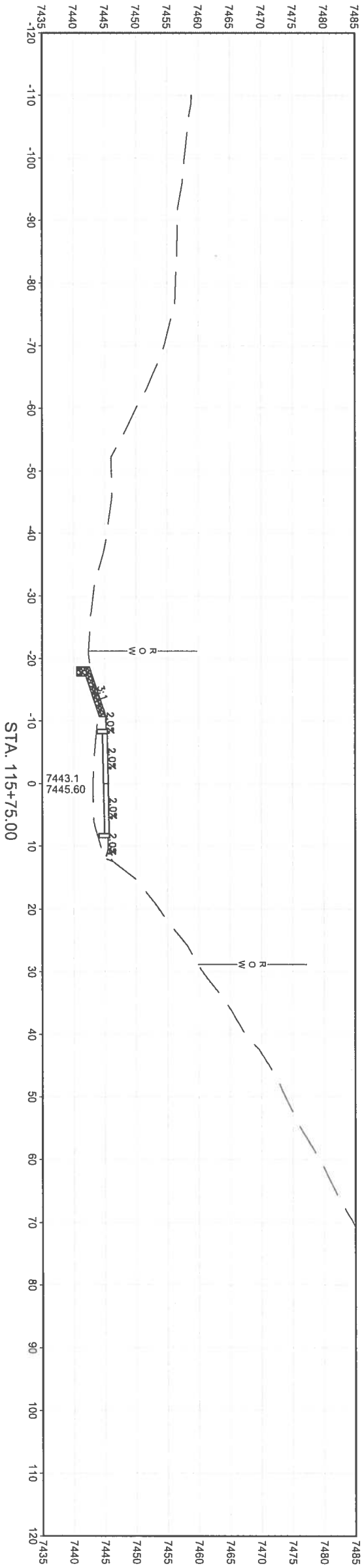
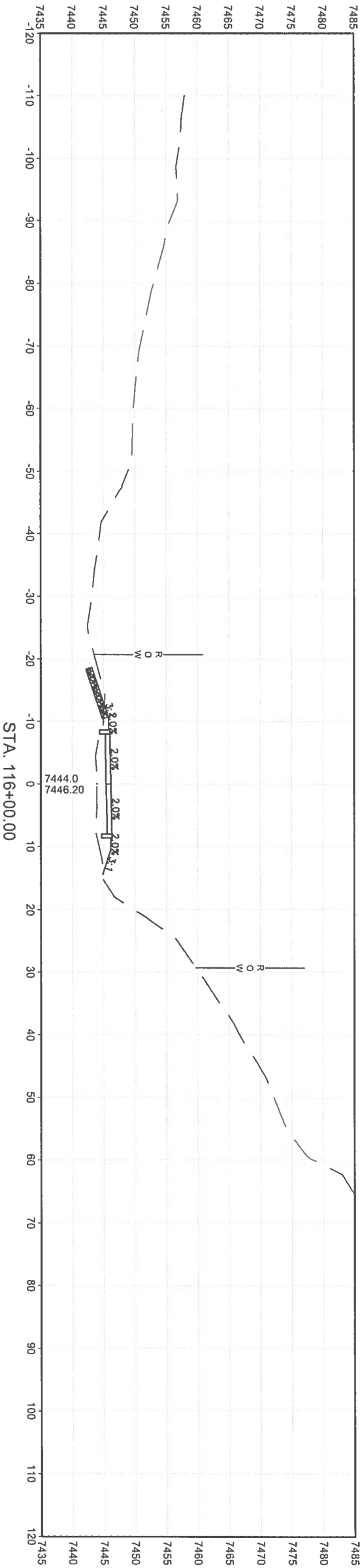
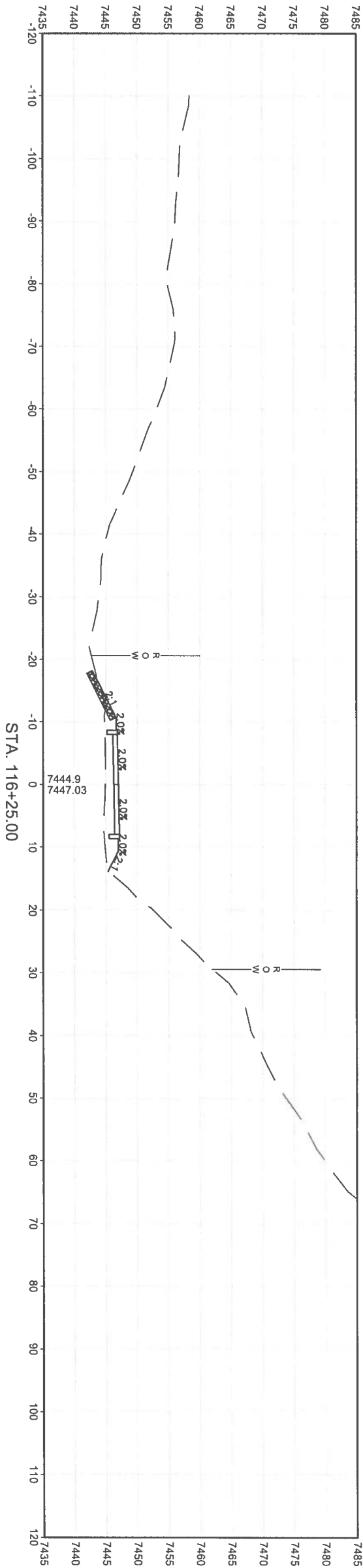
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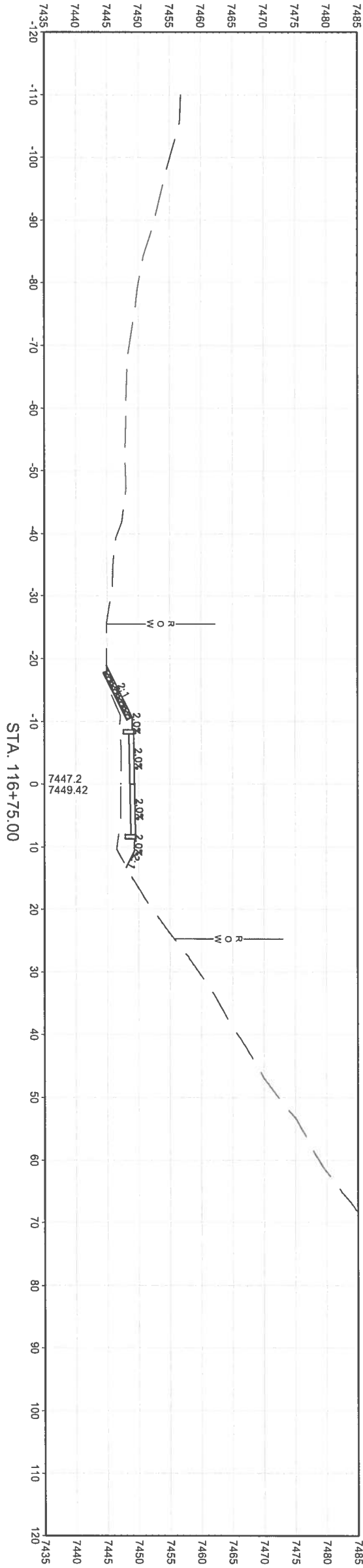
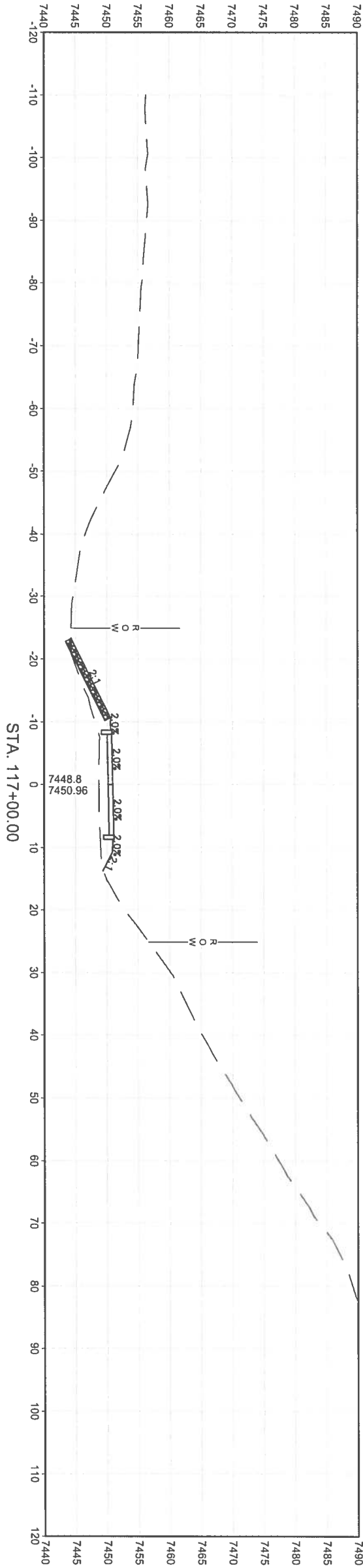
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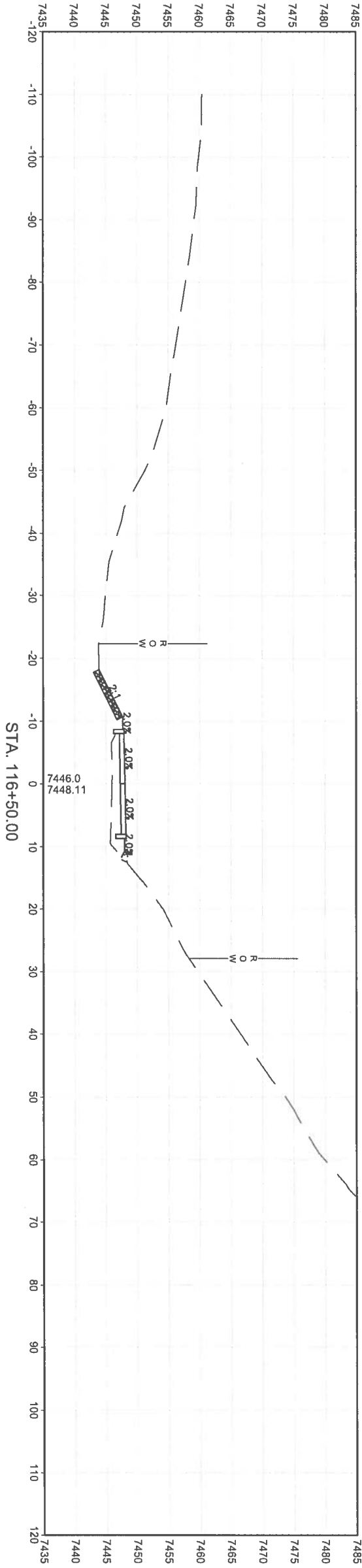


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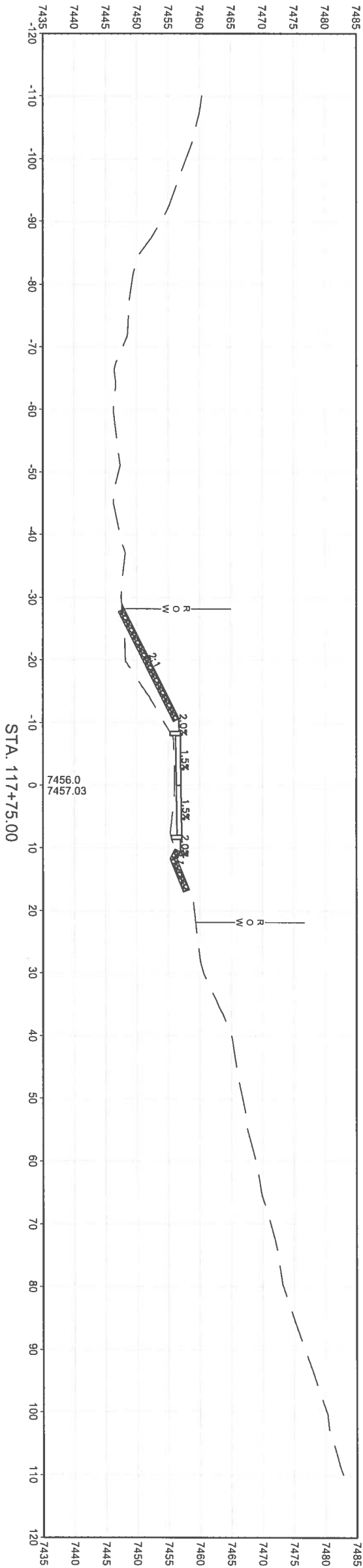
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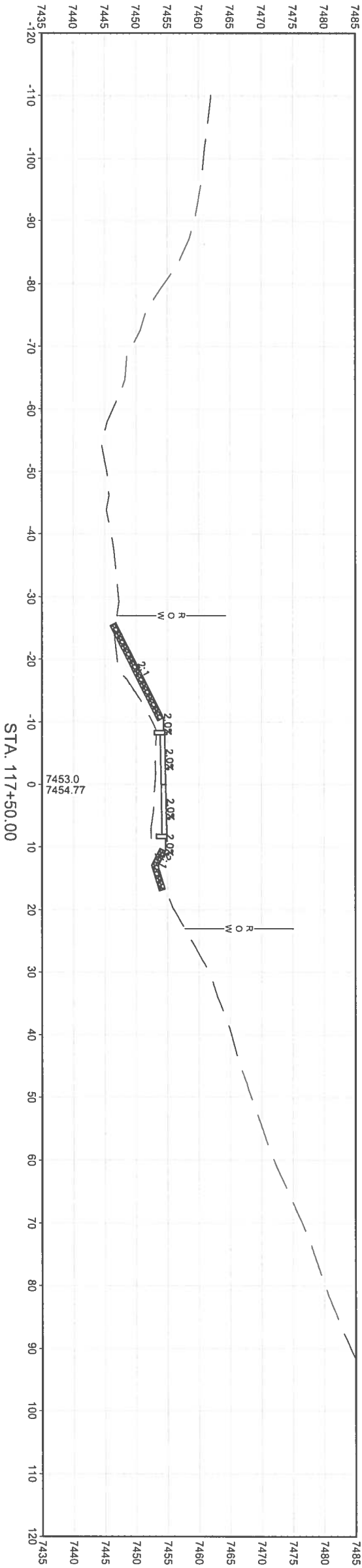
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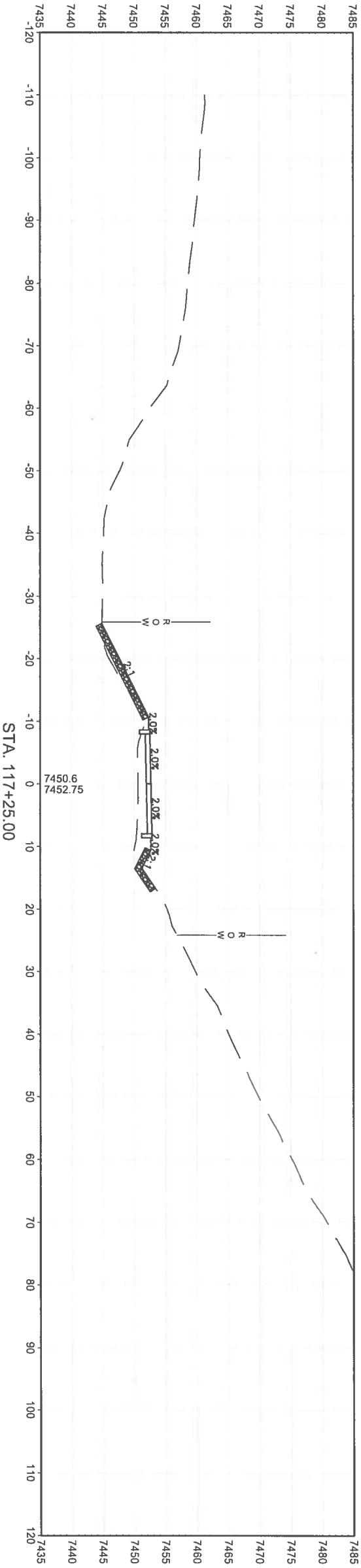


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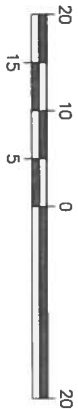
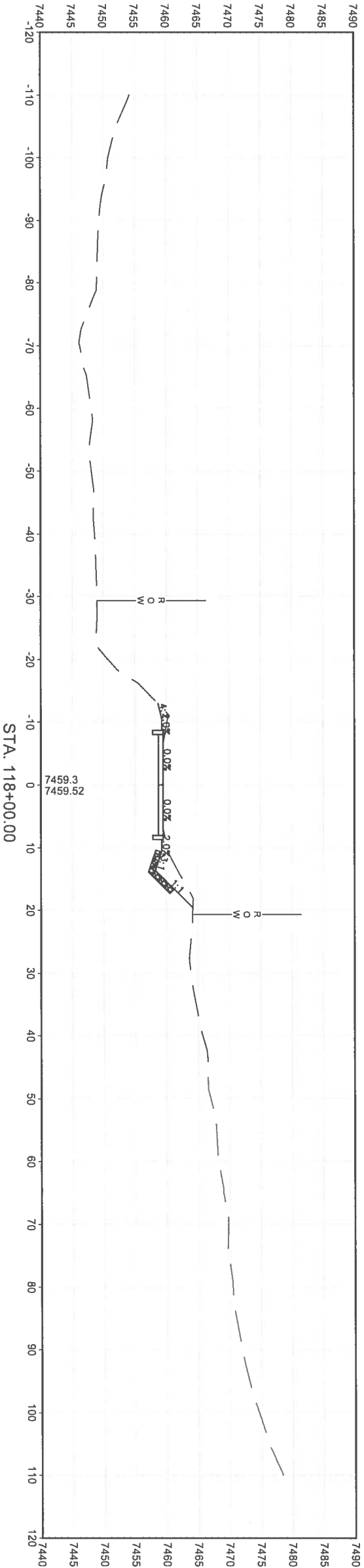
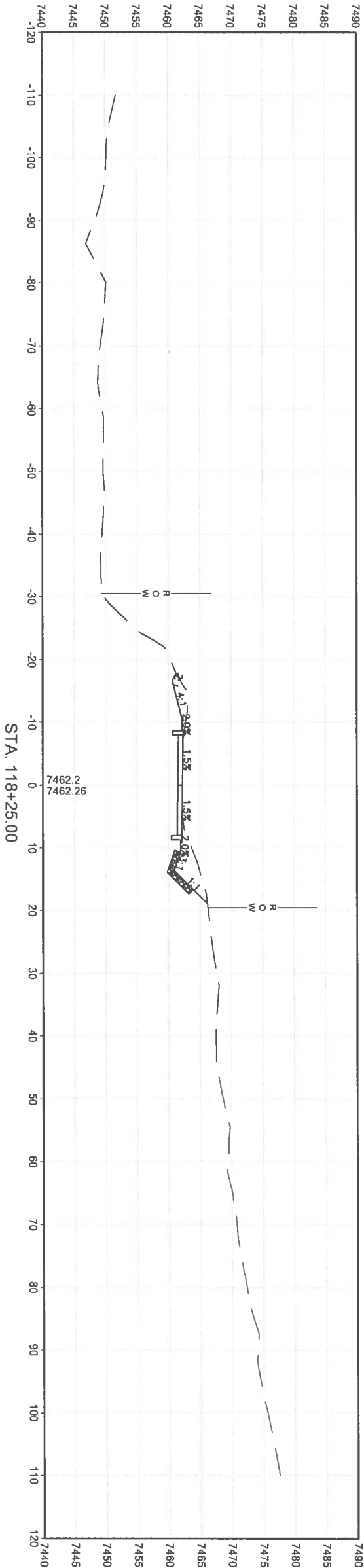
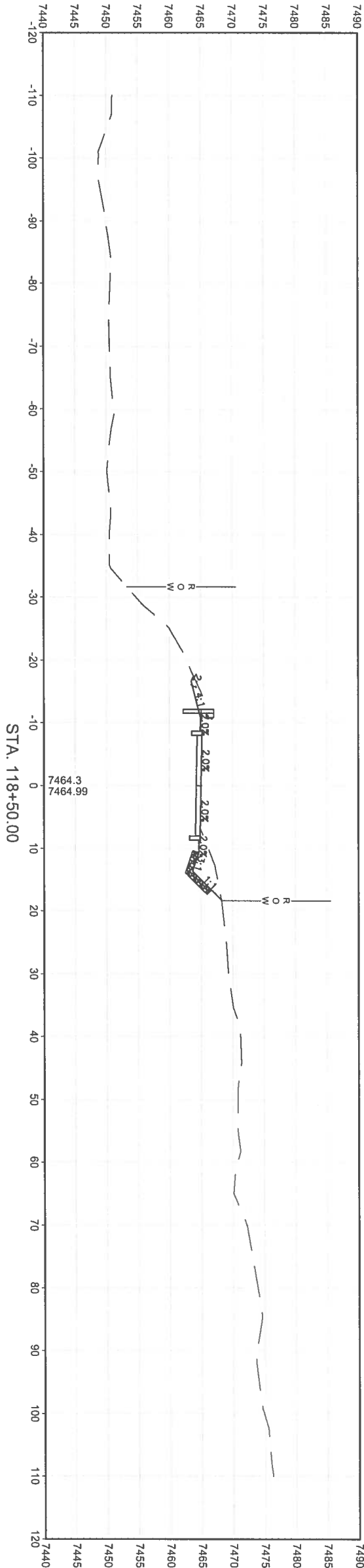
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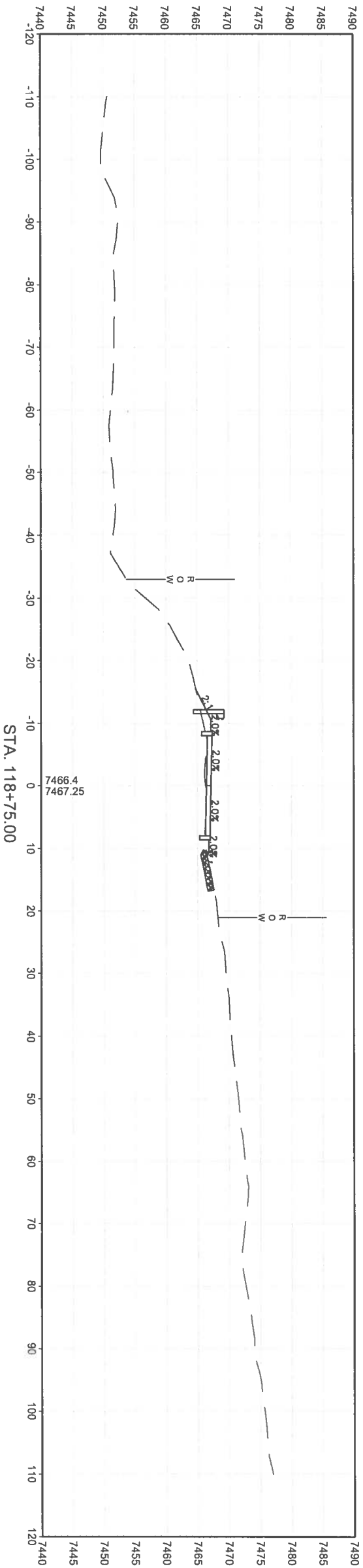
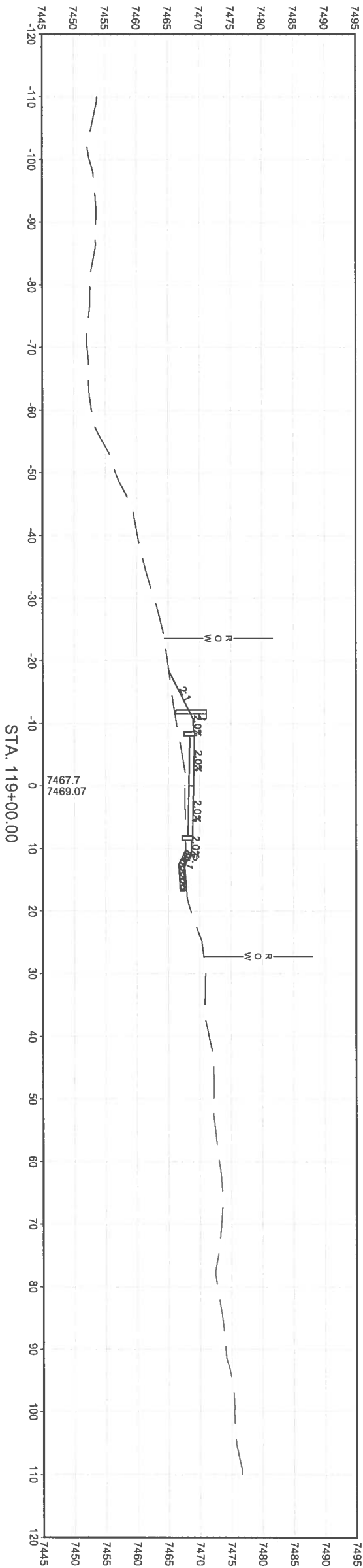
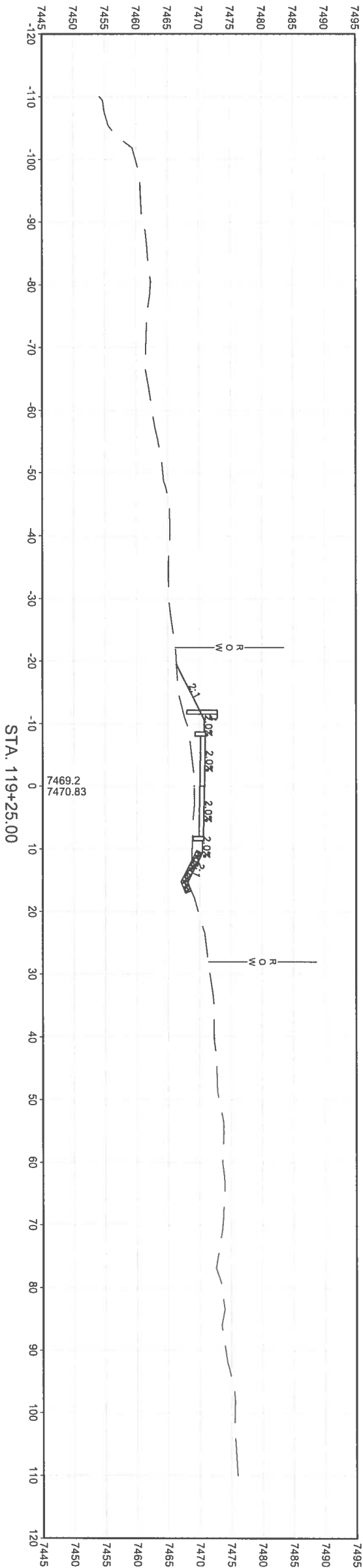
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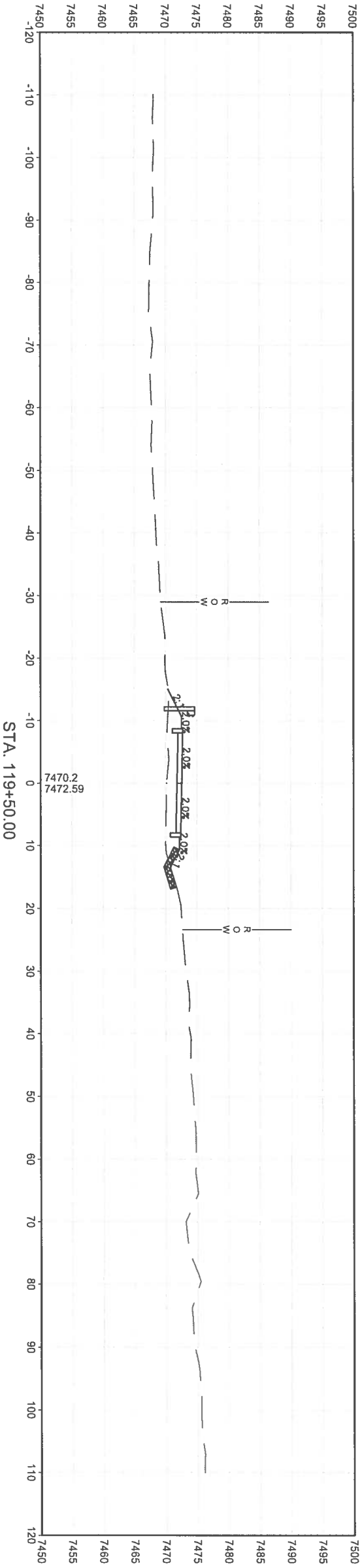
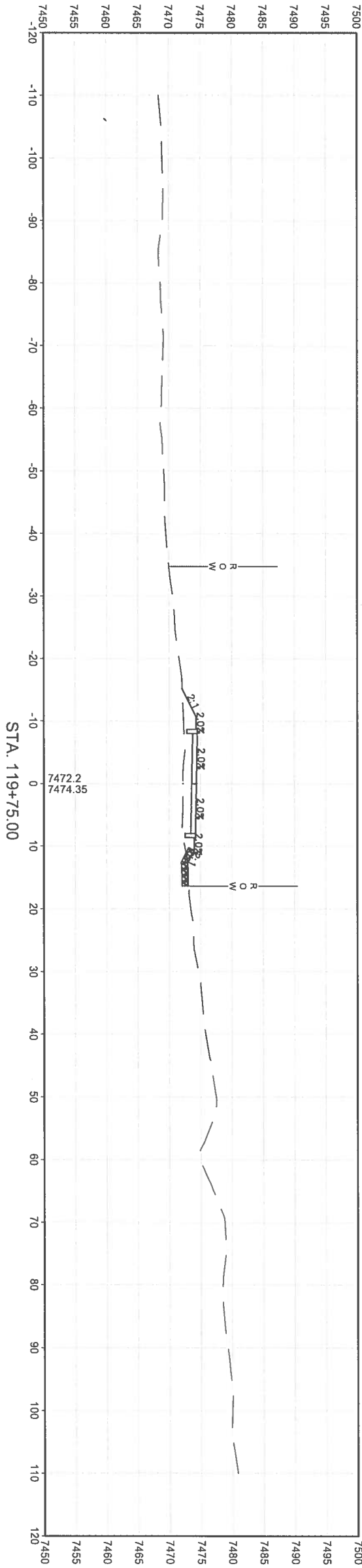
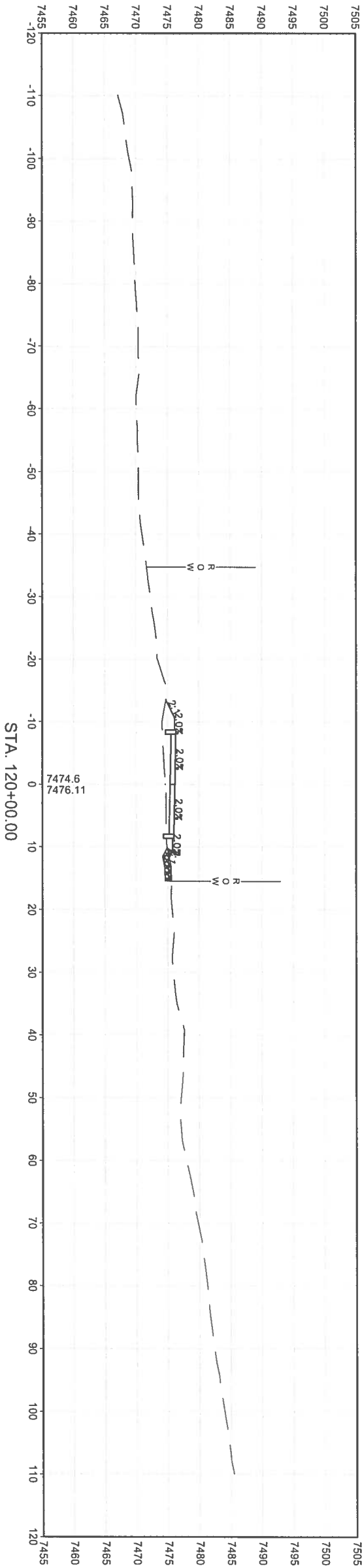
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CROSS SECTIONS

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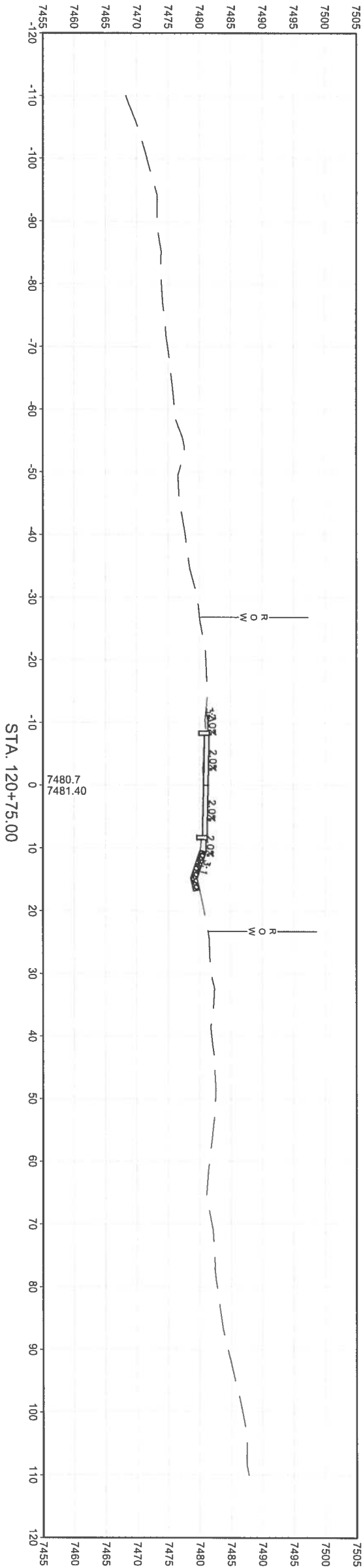
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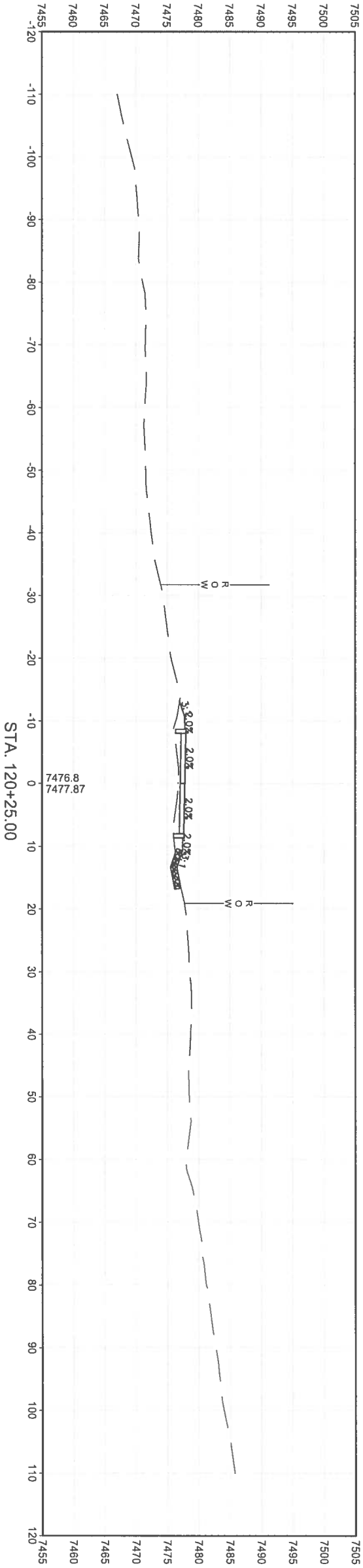
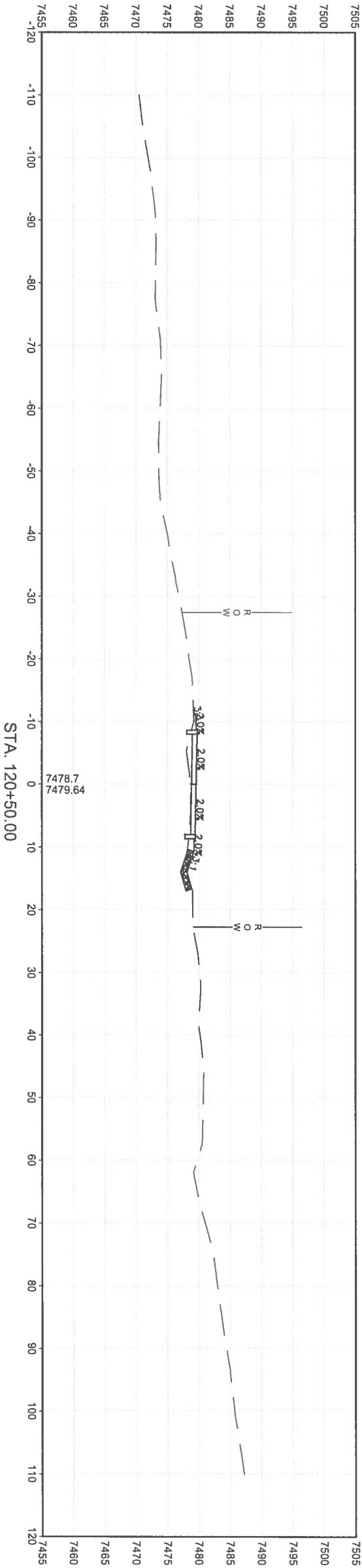
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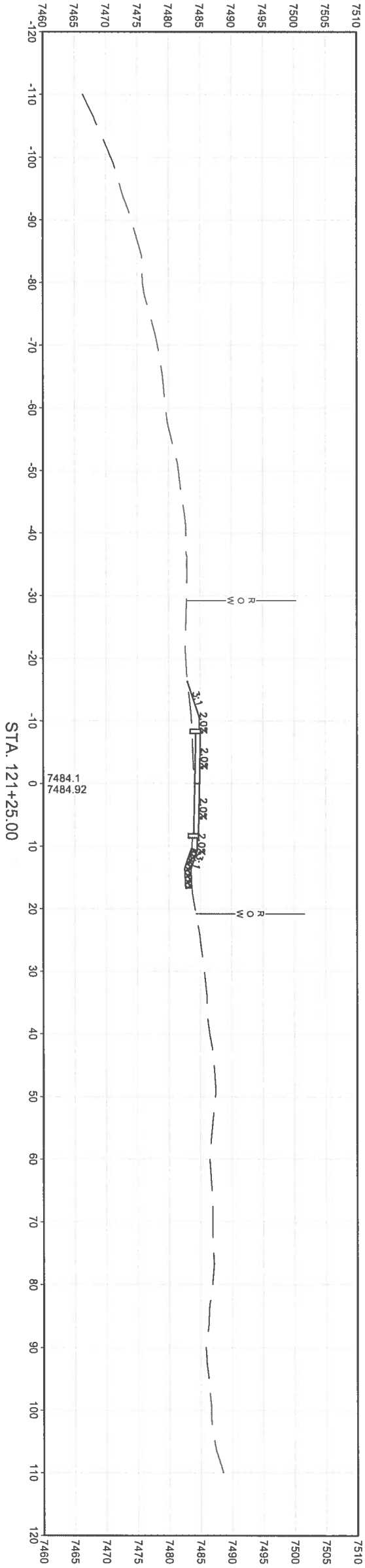
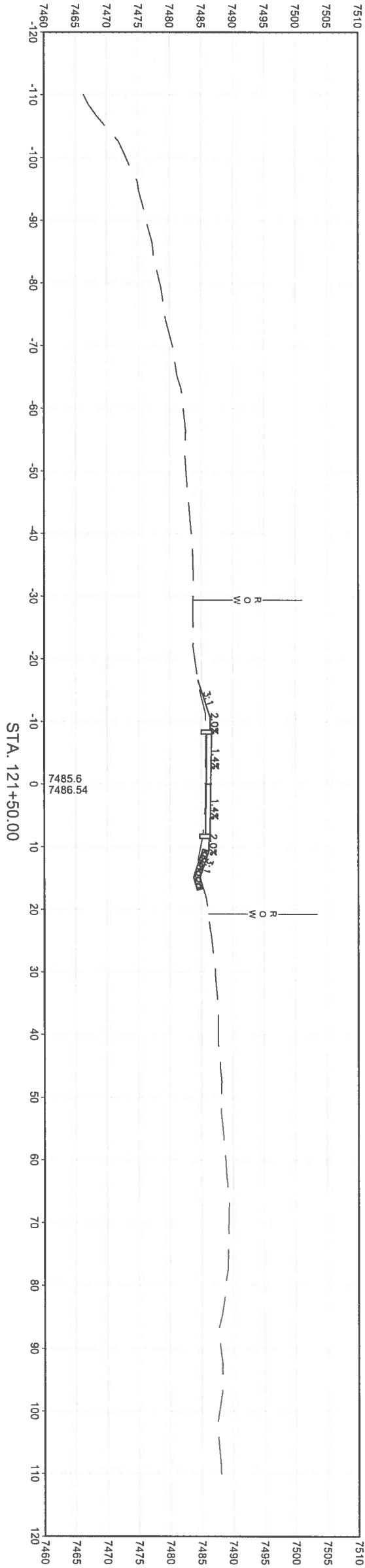
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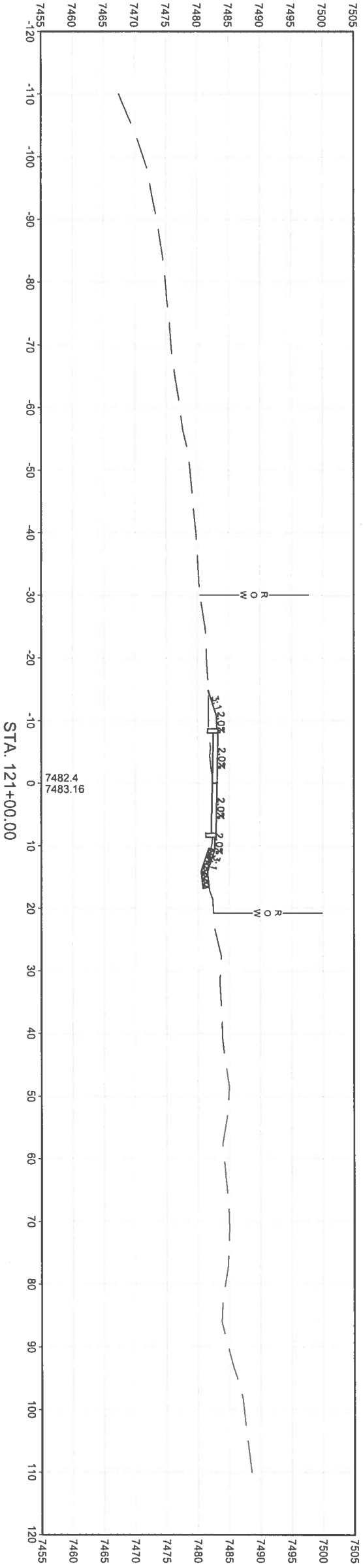


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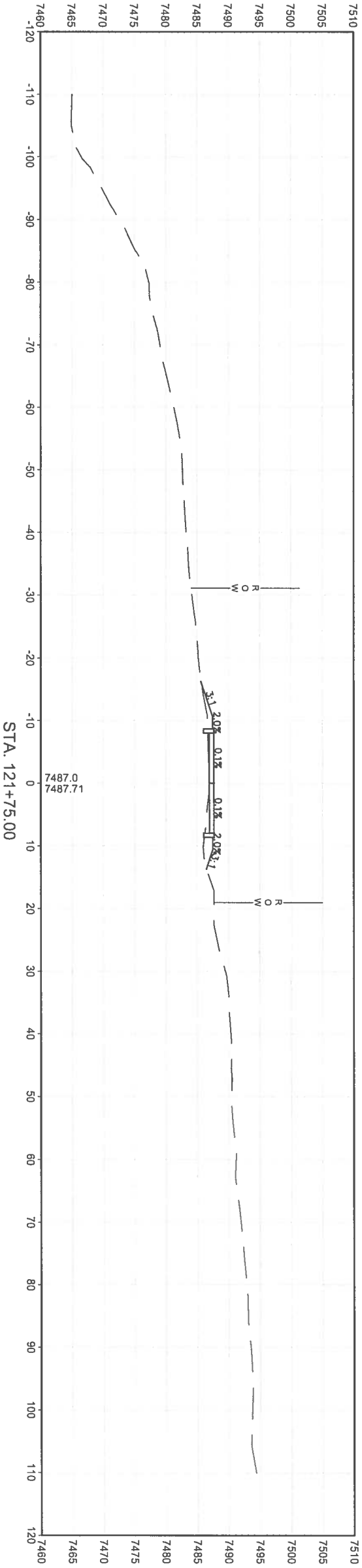
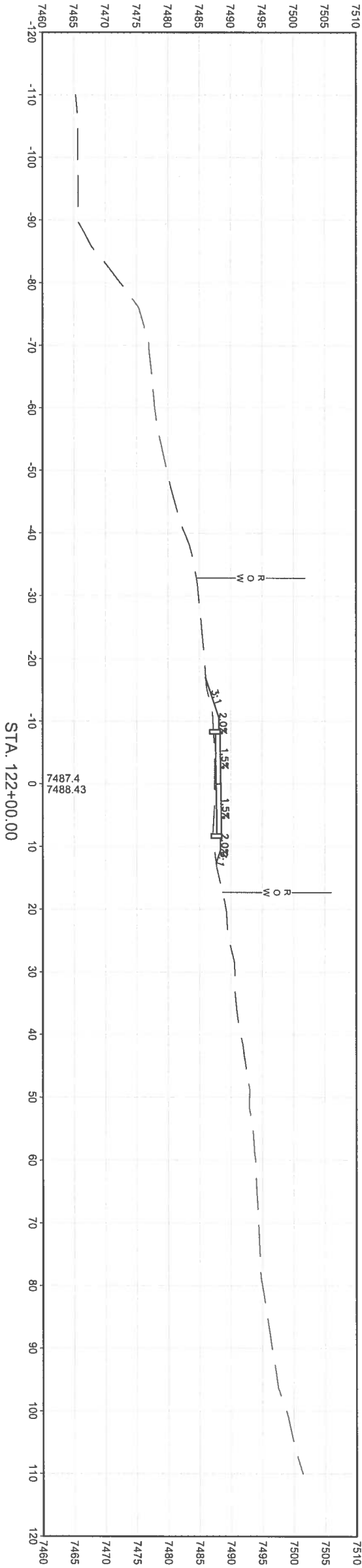
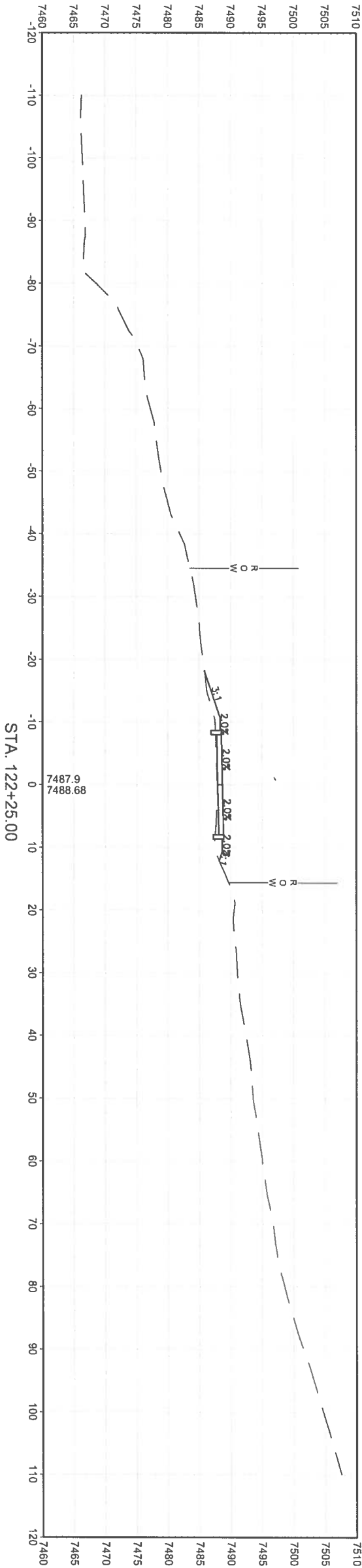
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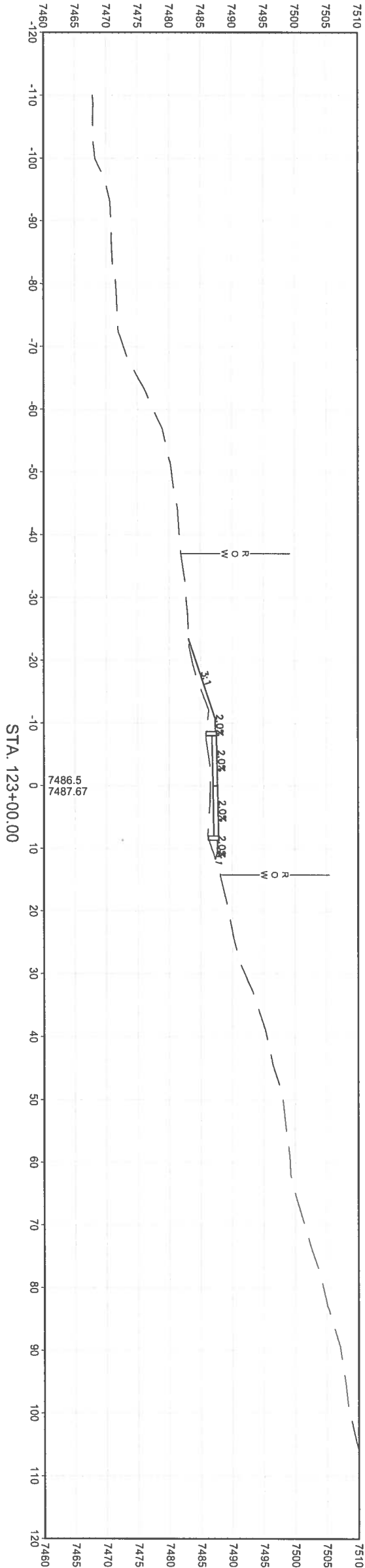
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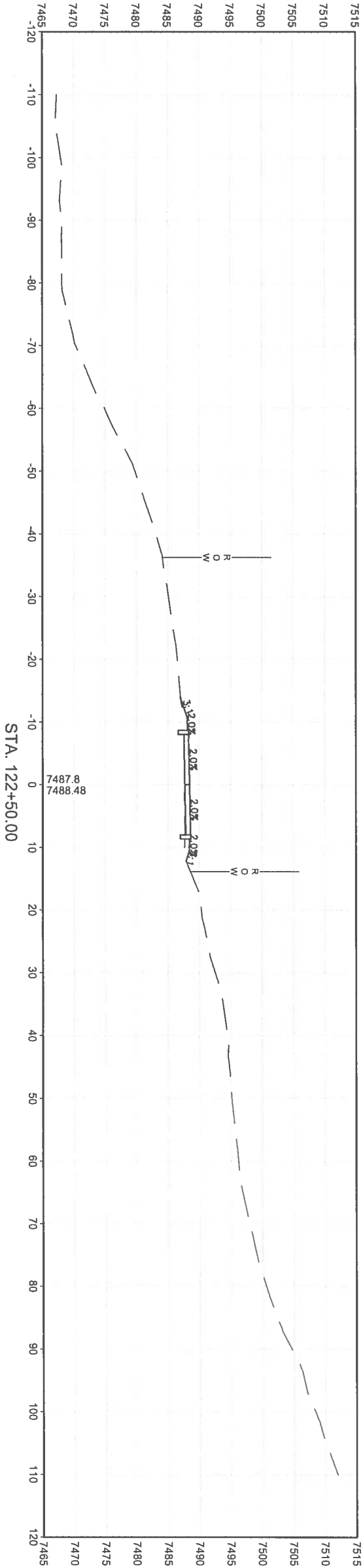
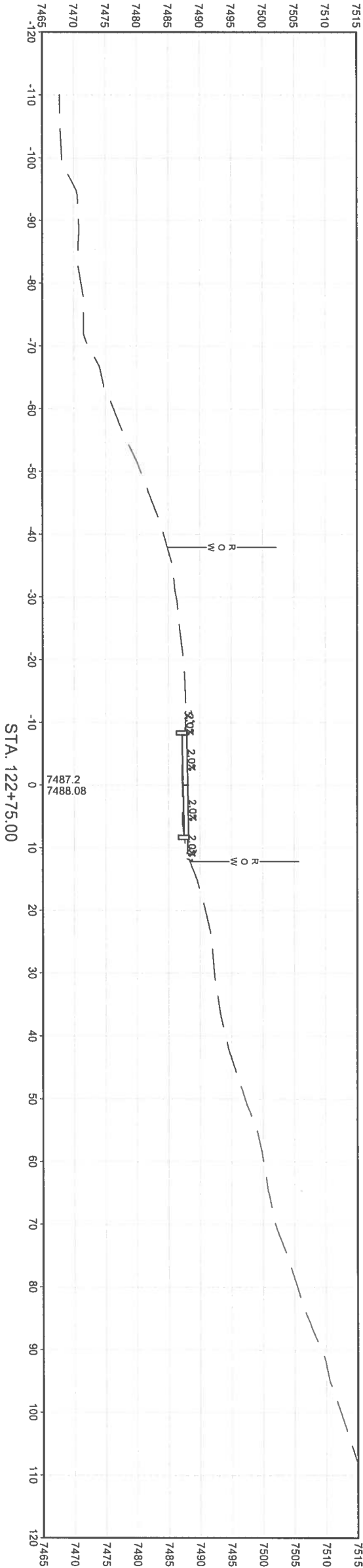
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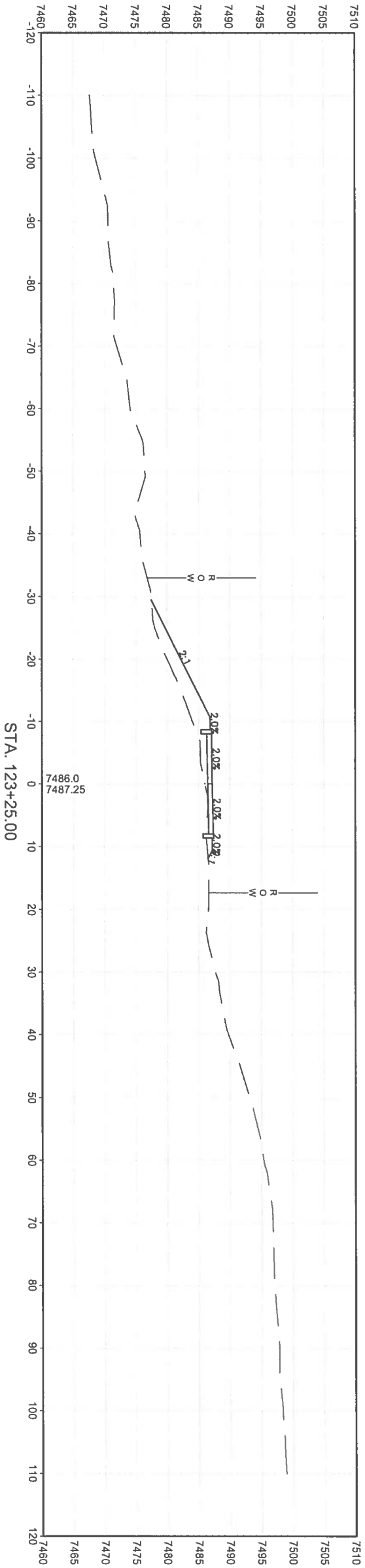
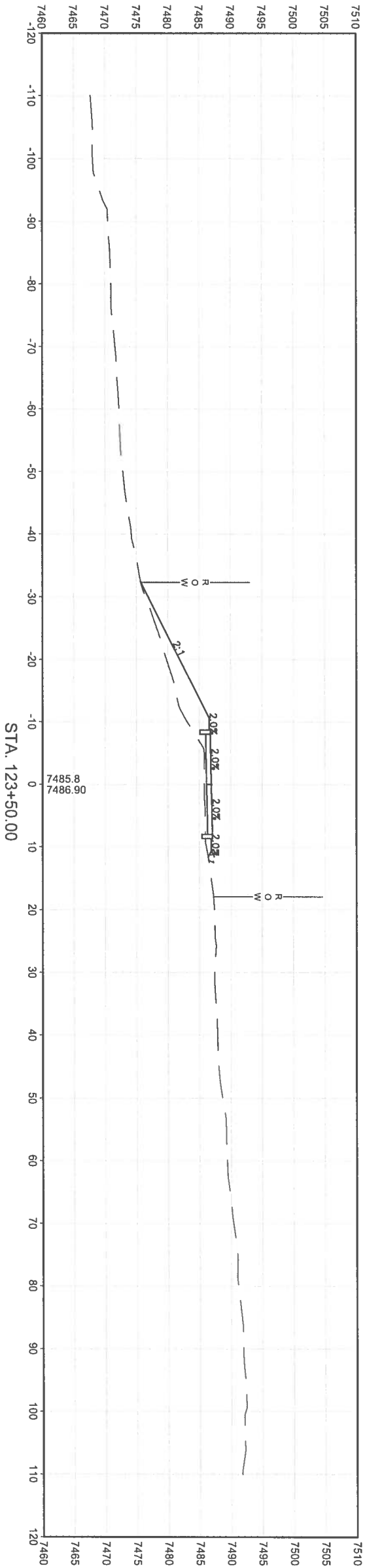
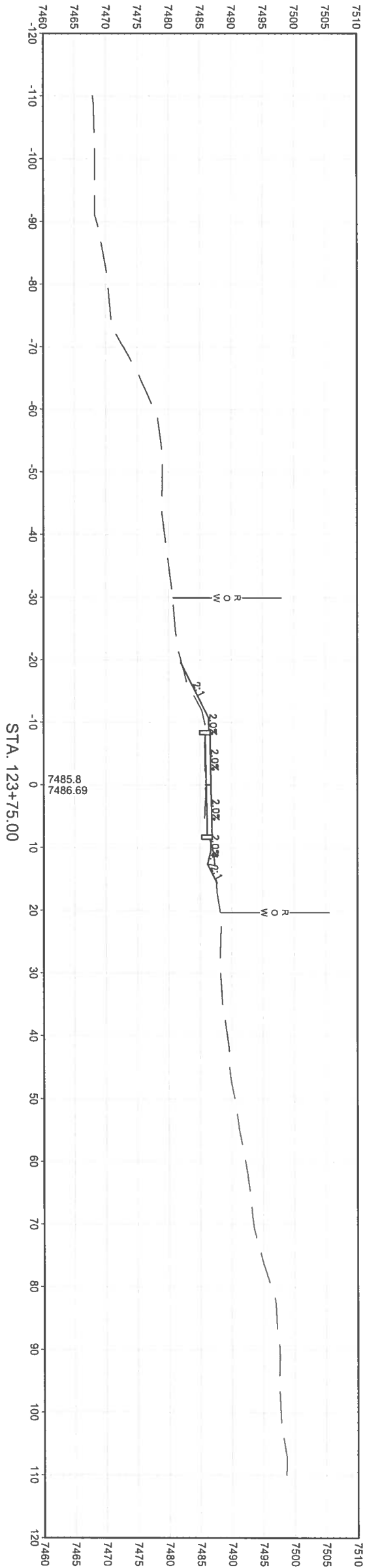
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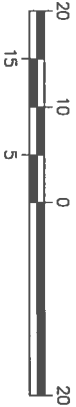
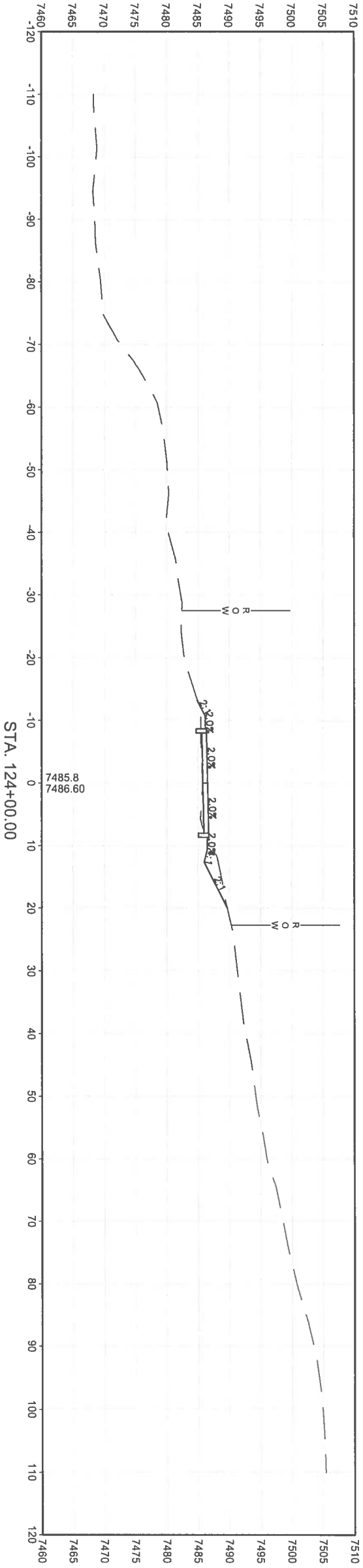
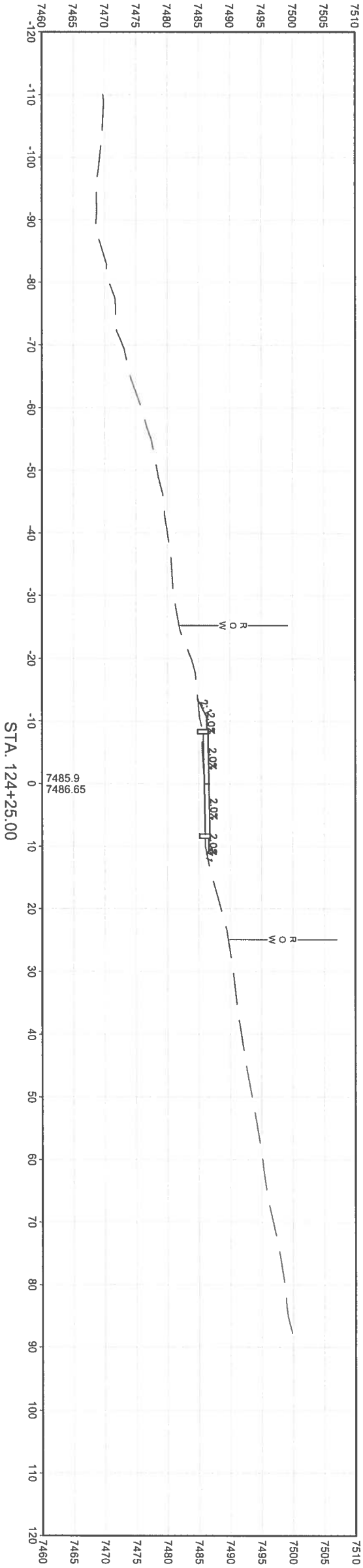
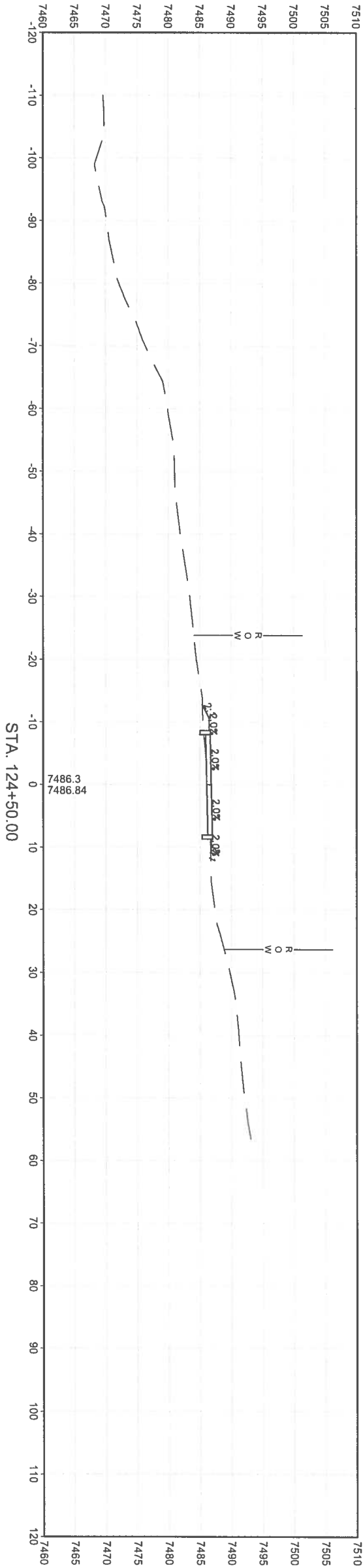
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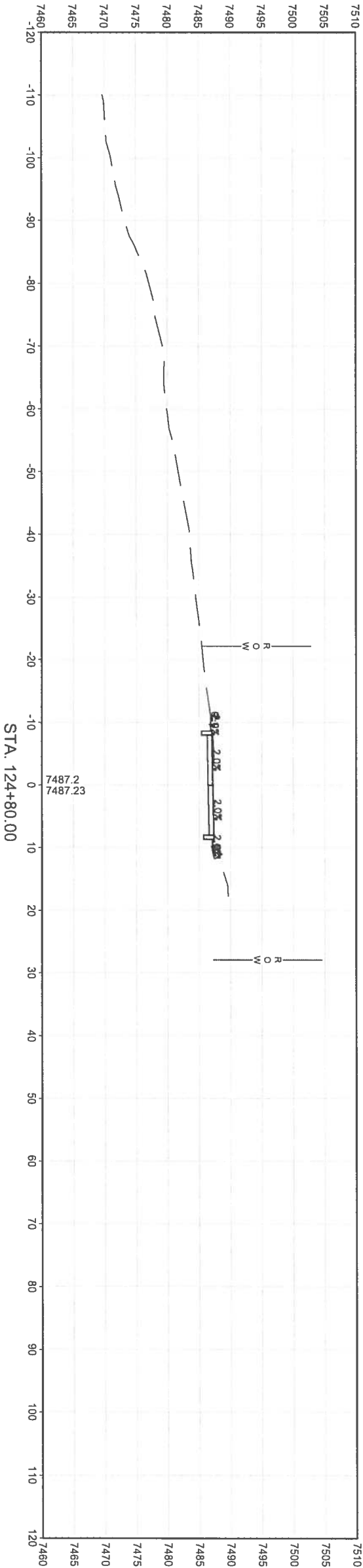
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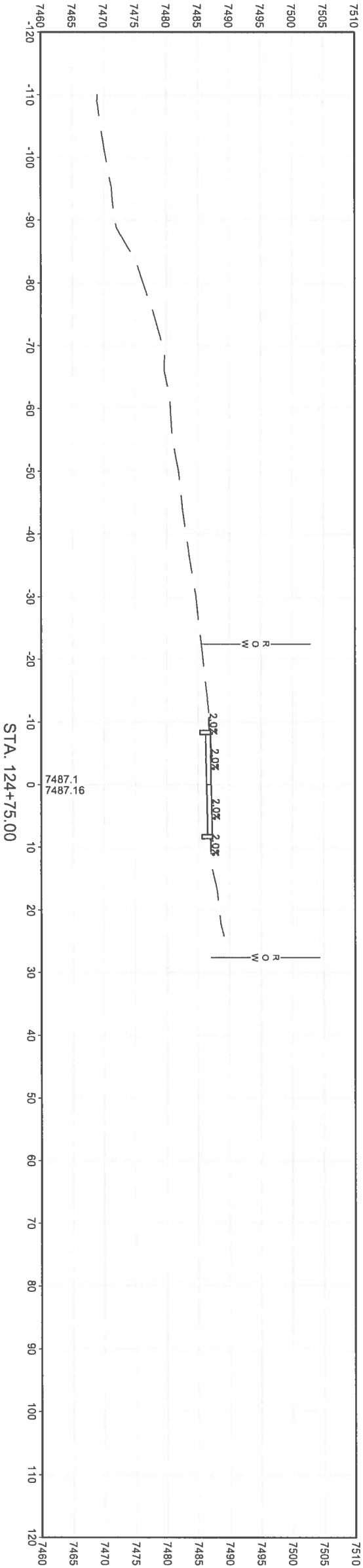


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**APPENDIX F**

**N.M. WAGE DETERMINATION**

## 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.
- Submit weekly certified payroll bi-weekly to the Contracting Agency.
- 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.
- Make sure, when a project has been completed, the Affidavits of Wages Paid (AWP) are sent to the Contracting Agency.

- All Subcontractors 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.

### **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.
- Submit weekly certified payroll bi-weekly to the General Contractor(s).
- 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 be listed on the Subcontractor List and must adhere to the Public Works Minimum Wage Act.

### **Additional Information**

Reference material and forms may be found at 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 "A" - STREET, HIGHWAY, UTILITY & LIGHT ENGINEERING**

**Effective January 1, 2018**

<b>Trade Classification</b>	<b>Base Rate</b>	<b>Fringe Rate</b>
Bricklayer/Blocklayer/Stonemason	23.52	8.84
Carpenter/Lather	24.00	9.97
Cement Mason	17.42	6.35
Ironworker	26.50	15.30
Painter (Brush/Roller/Spray)	16.75	6.28
Plumber/Pipefitter	28.95	12.23
<b>Electricians (outside)</b>		
Groundman	22.36	11.56
Equipment Operator	32.08	14.09
Lineman/Wireman or Tech	37.75	15.57
Cable Splicer	41.53	16.56
<b>Laborers</b>		
Group I	11.96	5.55
Group II	12.26	5.55
Group III	12.66	5.55
<b>Operators</b>		
Group I	16.94	6.33
Group II	17.69	6.33
Group III	17.80	6.33
Group IV	17.88	6.33
Group V	18.00	6.33
Group VI	18.14	6.33
Group VII	18.52	6.33
Group VIII	18.75	6.33
Group IX	25.70	6.33
Group X	28.60	6.33
<b>Truck Drivers</b>		
Group I	16.00	7.17
Group II	16.00	7.17
Group III	16.00	7.17
Group IV	16.00	7.17

**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.

**APPENDIX G**

**DRAINAGE REPORT FOR LA BARBARIA**

**TOPOGRAPHIC SURVEY**

**SURVEY CONTROL & ROW MAPS**





THE Louis Berger Group, INC.

**FINAL DRAINAGE STUDY  
FOR  
SANTA FE COUNTY LA BARBARIA ROAD DRAINAGE IMPROVEMENTS**

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**PROJECT NO. 2014-0030A-PW/PL**

Prepared for:

**COUNTY OF SANTA FE**

June 2014

Prepared by:

**The Louis Berger Group, Inc.**



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## EXECUTIVE SUMMARY

This Drainage Report conducted by Louis Berger Group contains a detailed hydrology study and a brief hydraulic analysis in order to provide recommendations for managing storm water and reducing roadway flooding in the Arroyo Hondo drainage basin along La Barbara Road in Santa Fe County, New Mexico. The study was requested by the County of Santa Fe.

Storm-related flooding has recurred throughout the Arroyo Hondo watershed drainage basin, especially along the La Barbara Road. In this area, the sediment laden storm runoff impact the road and deposit sediment during high intense storm events.

Currently, the existing structures along La Barbara Road are in poor conditions and are not properly sized even for modest flood events. There are no drainage accommodations to manage offsite runoff from tributaries crossing the road within the study limits.

The hydrology study provides the estimated discharges for various recurrence intervals from the contributing drainage area affecting the roadway at specified concentration points. The analyses performed in this study were carried out following the general guideline of the NMDOT Drainage Manual, Volume I, Hydrology. The Simplified Peak Flow Method is used to estimate the discharges for the offsite basins.

The proposed structures spanning the Arroyo Hondo are capable to convey the 2-year flood events safely. During a meeting with Santa Fe County, a 2-year flood event was agreed to as the basis of structure selection as larger flood events would require significant roadway and channel modifications.

A portion of the project, downstream of Happy Trails, lies within the FEMA floodplain Zone AE hazard designation. The remaining upstream portion of the project is beyond the limits of FEMA's detailed study area and is considered an area of minimal flood hazard (Zone X). This study includes hydraulic analysis to evaluate the effect of road improvements within the Zone AE area established FEMA's floodplain map. The U.S. Army Corps of Engineers, Hydrologic Engineering Center River Analysis System HEC-RAS 4.1.0 program was utilized to evaluate the channel hydraulics along the road and to develop recommendations for proposed drainage improvements along La Barbara road. Cross-sections were obtained from the 2-foot contour at locations along the channel upstream and downstream of the points of interest and existing culverts. Based on the available elevation data there will be 2 to 4 inches rise of 100-year base flood elevations due to proposed development. As such, we anticipate that a Letter of Map Revision (LOMR) will be required within 6-months of the completion of construction.

The study was based on digital GIS data provided by Santa Fe County for use on this project. Parcel boundaries were provided by the Santa Fe County GIS Department. Although the GIS data was relied upon for planning purposes, re-evaluation of the hydraulic recommendations will be necessary during the design phase once a design level project specific topographic survey (1-foot contours) is obtained.

Effective floodplain management will require careful consideration of the effects of roadway and drainage improvements to the hydraulic conveyance of storm water throughout the study area.

## **1 GENERAL BACKGROUND**

### **1.1. Introduction**

The Louis Berger Group, Inc. was contacted by the County of Santa Fe to perform a detailed drainage study to investigate the existing drainage conditions along the La Barbaria Road located within the Arroyo Hondo watershed. As a part of study, LBG was consulted to provide a drainage plan in which the runoff is contained within the existing creek and reduce the impact of offsite runoff on the La Barbaria road during normal storm events. The study also provides solutions to mitigate the current drainage problems and present alternatives that consider flood control, storm water management and runoff conveyance, as well as plan for future events.

A scoping meeting was held with representatives of Santa Fe County on February 6, 2014 to discuss the intent of the County and to develop the scope of the project. The digital GIS data, including elevation data text files, parcel and road shape files was provided by the Santa Fe County GIS department for use on the project.

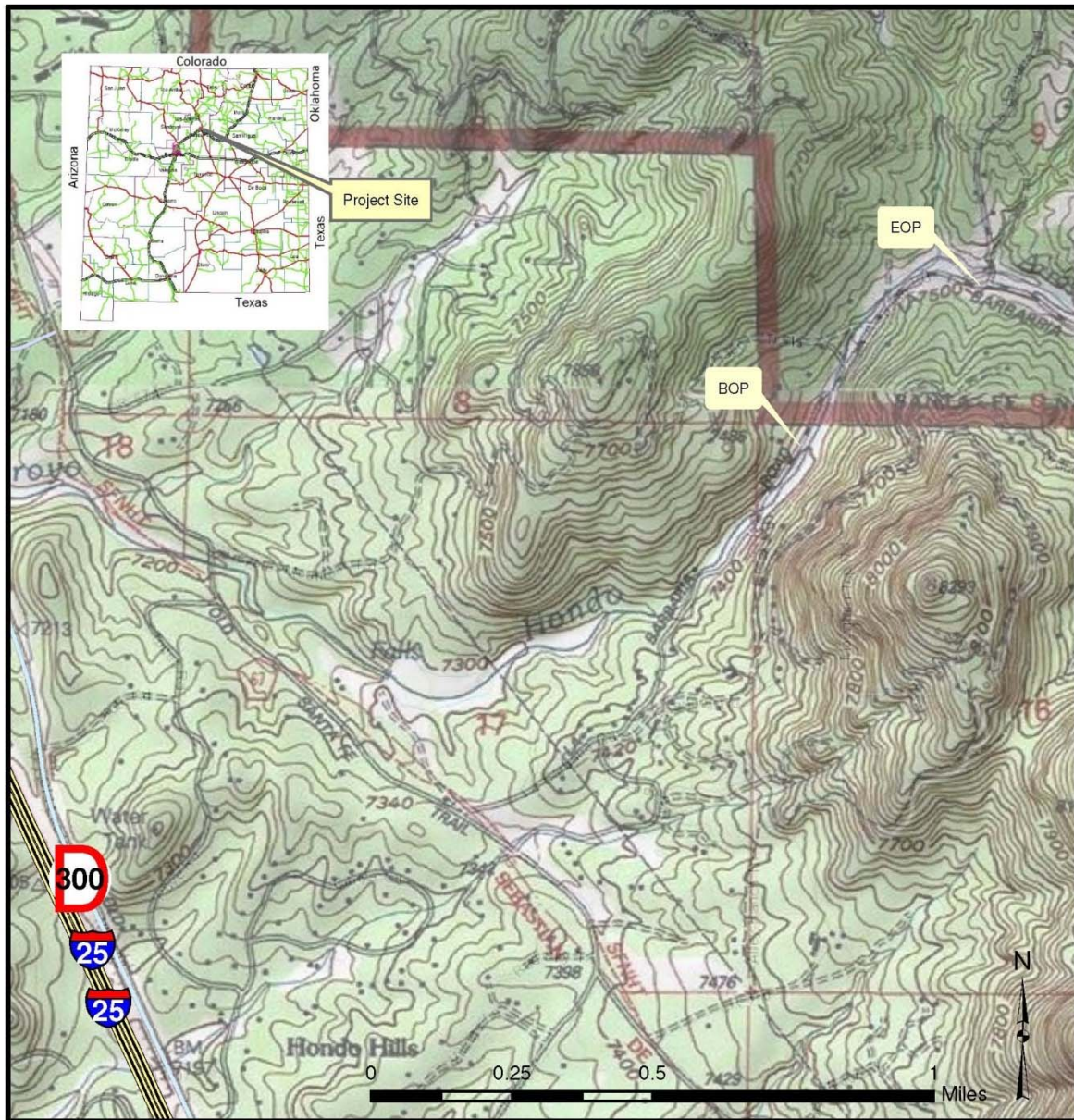
### **1.2. Site Investigations**

A site visit was conducted on February 20, 2014 to investigate the existing field condition. The purpose of the visit was to evaluate the existing structures and road condition along the arroyo and the drainage deficiencies of the road.

### **1.3. Basin Characteristics**

The project site is located in Section 9, T16N, R10E in Santa Fe County, New Mexico, as shown in **Figure 1**. Arroyo Hondo is an ephemeral stream which runs east to west from Atalaya Mountains to its confluence with the Arroyo de los Chamisos at the south west of City of Santa Fe. The La Barbaria Road project limit is located within the upstream reach of Arroyo Hondo and it is aligned parallel to arroyo. The size of watershed contributing runoff at project site is about 7.53 square miles.

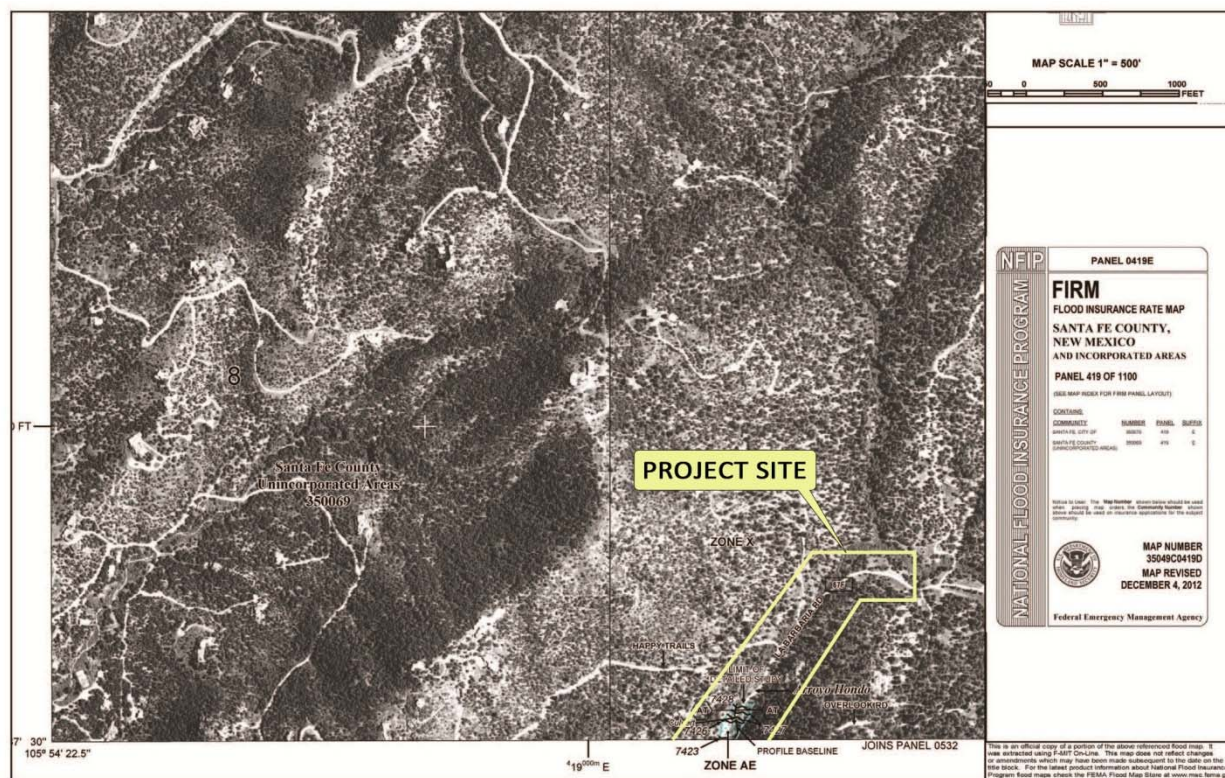






## 1.4. Flood Plain

The Digital Flood Insurance Rate Map (DFIRM) prepared by FEMA is shown in **Figure 2**. Below Happy Trails, the Arroyo Hondo is designated as Zone AE - a Special Flood Hazard Area (SFHA), which is an area subject to a 1% annual chance of water inundation by the base flood (100-year flood). Zone AE includes lands that are subject to flooding during the 100-year flood event and base flood elevations are determined. The south 860 feet length of project lies within Zone AE.



**Figure 2 – Flood Insurance Rate Map (FIRM)**

## 1.5. Data Collection

The rainfall data was obtained from the “Point Precipitation-Frequency Atlas of the United States” National Oceanic & Atmospheric Administration (NOAA) Atlas 14. Rainfall depth grid, for 6-hour and 24-hour durations was downloaded from NOAA website. The rainfall depth for various return periods is shown in **Table 1**.

**Table 1 – NOAA Rainfall Depth**

Depth - Duration - Frequency (DDF) Table						
	2-year	5-year	10-year	25-year	50-year	100-year
5-min	0.250	0.338	0.400	0.470	0.540	0.632
10-min	0.388	0.525	0.620	0.729	0.838	0.981
15-min	0.492	0.665	0.786	0.924	1.062	1.243
30-min	0.682	0.921	1.089	1.280	1.472	1.723
60-min	0.863	1.166	1.378	1.621	1.863	2.180
2-hr	0.989	1.304	1.533	1.819	2.077	2.385
3-hr	1.073	1.397	1.637	1.952	2.222	2.523
6-hr	1.230	1.570	1.830	2.200	2.490	2.780
12-hr	1.430	1.800	2.090	2.490	2.800	3.120
24-hr	1.630	2.030	2.350	2.780	3.110	3.460

The General Soil Map of the U.S., New Mexico, State Soil Geographic Database (STATGO) published by the Natural Resources Conservation Service (NRCS) was used to determine the hydrological soil group of the basin. The hydrological group categorizes the surface and subsurface soils in terms of their ability to absorb water. Group “A” such as sandy soils is the most permeable whereas group “D” soils are not. **Figure 3** shows the distribution of the hydrologic soil group within the drainage basins. For the most part, the drainage areas contributing to this project consist of colluvium derived from granite, gneiss, and schist over residuum weathered from granite. The natural drainage class is well drained. On the surface, these soils are mostly loamy-skeletal.

The land use map was obtained from the United States Geological Survey (USGS) website, and shows the land use as mostly Evergreen Forest Land. These soils support a fair stand of native vegetation. The upper basin overstory vegetation generally consists of pinion and juniper. The land use map is shown in **Figure 4**. The land use map was updated to include new developments such as roads and buildings.

## 2. HYDROLOGY

The hydrology analyses performed for this project were carried out following the general guideline of the NMDOT Drainage Manual, Volume I, Hydrology. The Simplified Peak Flow Method is used to estimate the design discharges for the basins. This method is recommended for rural watershed less than five square miles for offsite watersheds. This method estimates the peak rate of runoff and runoff volume from small to medium size watersheds. Infiltration and other losses are estimated using the SCS Curve Number (CN) methodology. For more information regarding application of this method and curve numbers determination refer to NMDOT Drainage Manual (see page 3-22 to page 3-27).



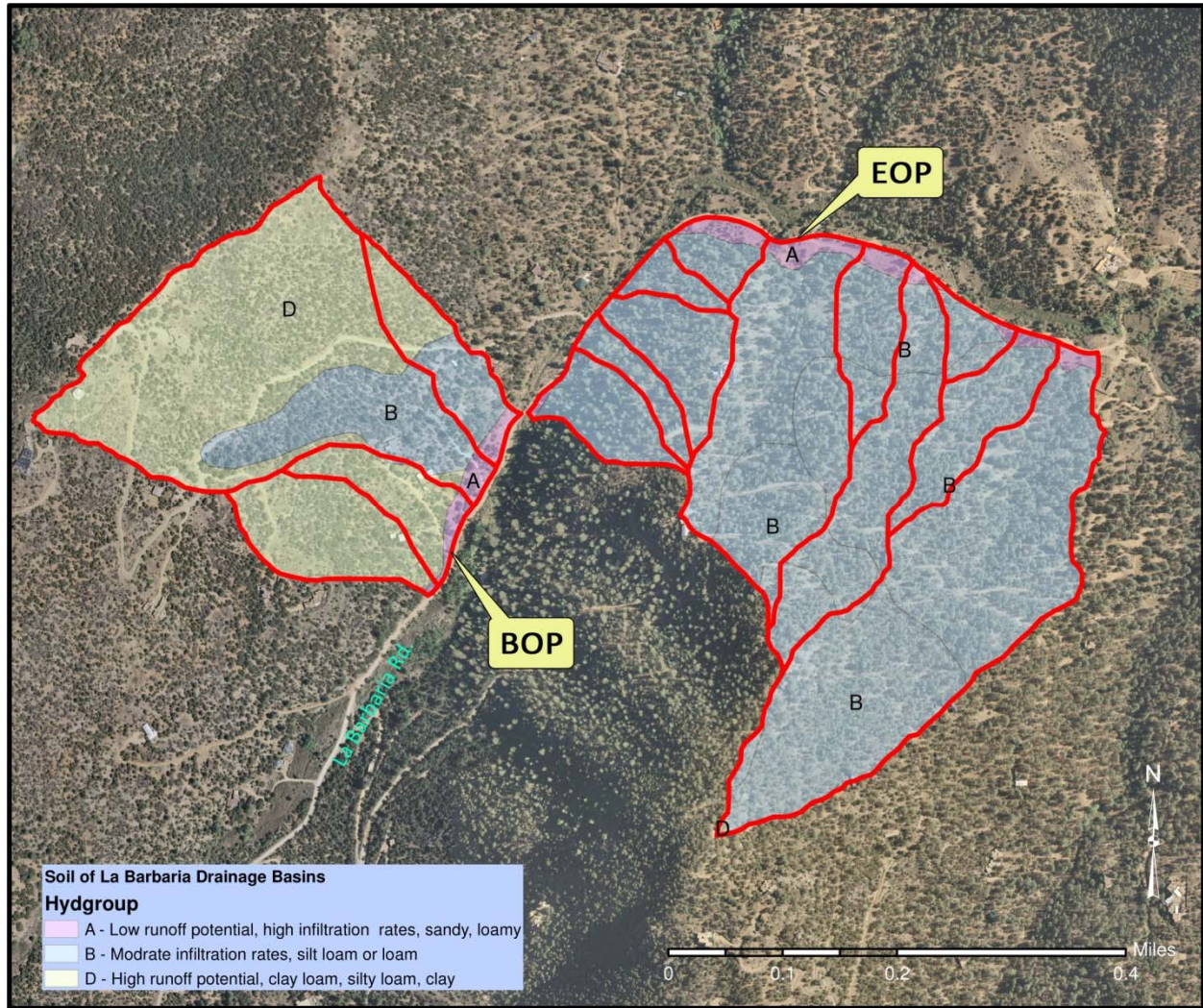


Figure 3 – Soil Map



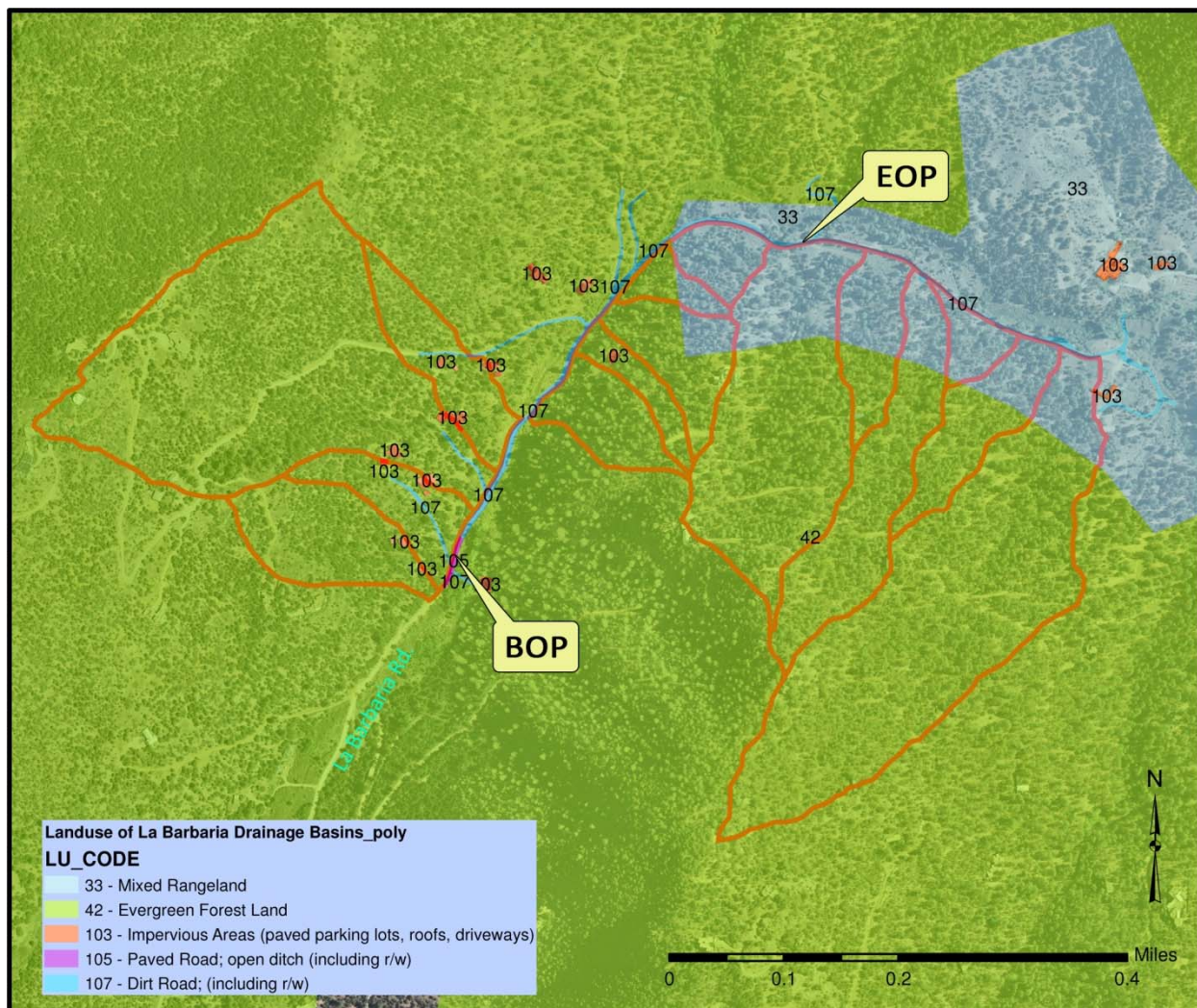


Figure 4 – Land Use Map

## 2.1. Basin Delineation

Watershed Modeling System (WMS 9.1) software program was used to delineate the drainage area. Ten (10) meter Digital Elevation Model (DEM) grid was downloaded from USGS website and used to create an elevation model for the larger watersheds. The digital elevation data provided by County were used to delineate the offsite basins affecting the La Barbara road. The drainage basins are shown in **Figure 5**. As shown, the basin is divided into subareas to reflect representative conditions for model parameters at each subarea and points of interest.



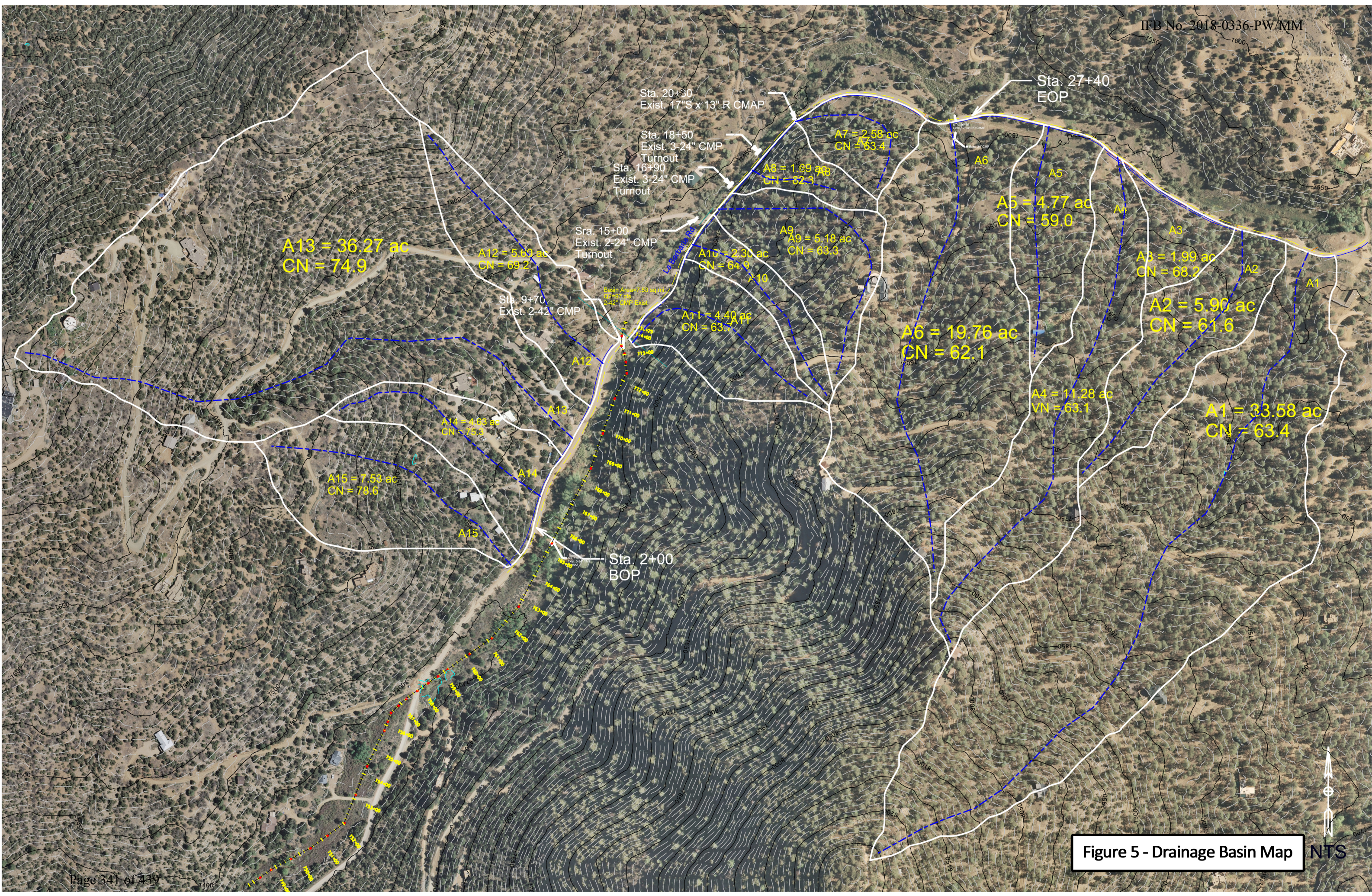


Figure 5 - Drainage Basin Map NTS



## 2.2. Curve Number

The curve number is a value used to determine runoff and is based upon land use, soil type, relative soil moisture content, vegetation type, and vegetation cover density. For each subarea a weighted curve number was calculated using soil and land use shape files utilizing WMS program. The calculated weighted curve numbers are included in APPENDIX.

## 2.3. Time of Concentration

Time of concentration (Tc), which is defined as the time required for runoff to travel from the hydraulically most distance part of the watershed to point of interest, was determined using the Upland Method as described in the NMDOT Drainage Manual. Figure 3-10 of NMDOT Drainage Manual is used to estimate the travel time for overland flow and shallow concentrated flow. The Kirpich equation was used to calculate travel time for the gullied or channel section of the primary drainage pass. The WMS Time Computation coverage and elevation model were used to calculate the streams length and slope. The minimum allowable 10 minutes is used for Tc. **Table 2** summarizes the travel time computations for each basin.

Basin ID	FLOW TYPE 1	FLOW TYPE 2	ELEV. 1	LENGTH 1 (ft.)	ELEV. 2	LENGTH 2 (ft.)	ELEV. 3	Tc 1 (hrs.)	Tc 2 (hrs.)	TOTAL Tc (hrs.)
A1	SG	GW	8246	400	8098	2595	7528	0.03	0.10	0.17
A2	SG	GW	7727	400	7634	750	7517	0.03	0.03	0.17
A3	SG	GW	7611	346	7508			0.02		0.17
A4	SG	GW	8005	400	7833	1710	7505	0.02	0.07	0.17
A5	SG	GW	7670	400	7570	499	7496	0.03	0.02	0.17
A6	SG	GW	7922	400	7760	1458	7487	0.02	0.06	0.17
A7	SG	GW	7560	400	7478	220	7453	0.03	0.01	0.17
A8	SG	GW	7566	400	7486	87	7447	0.03	0.00	0.17
A9	SG	GW	7670	400	7602	733	7440	0.04	0.03	0.17
A10	SG	GW	7699	400	7546	437	7435	0.03	0.02	0.17
A11	SG	GW	7698	400	7544	524	7424	0.03	0.02	0.17
A12	SG	GW	7715	400	7540	658	7423	0.02	0.03	0.17
A13	SG	GW	7853	400	7772	1928	7417	0.03	0.08	0.17
A14	SG	GW	7590	400	7487	529	7413	0.03	0.03	0.17
A15	SG	GW	7639	400	7533	702	7413	0.03	0.03	0.17

 Basins Located within the Project Limits

**Table 2 – Time of Concentration Computation**

## 2.4. Discharge Calculation

The Simplified Peak Flow Method as recommended in NMDOT Drainage Manual is used to simulate the surface runoff response of the basins to precipitation. The basin contributing runoff to La Barbaria Road is subdivided into a series of smaller basins based on the topographic conditions and the locations of the existing ravines when they intersect the road (**Figure 6**). The

peak discharges for various frequencies are calculated for each basin and the results are summarized in **Table 3**.

The FEMA Flood Insurance Study (FIS) used the regression equations developed by USGS to estimate the magnitude and frequency of flood-peak discharges. A re-run of the National Flood Frequency (NFF) equations is shown below for the Arroyo Hondo Basin.

Input Parameters:					
State:	New Mexico				
Crippen and Bue Region:	None				
Region:	Peak FLOW Central Mountain Valley Region 6				
Variable values:					
Variable Name	Abbreviation	Value	Units	Minimum	Maximum
Drainage Area	DRNAREA	7.53	square miles	0.16	3660
Average Channel Elevation	CELVBLUE	7988.00	feet	5310	9280
24 Hour 10 Year Precipitation	I24H10Y	2.35	inches	2.15	3
Output:					
Type	Peak [cfs]	Frequency [year]	Equivalent Year	Error [%]	
Rural	97	2	0	100	
Rural	265	5	0	69	
Rural	458	10	0	57	
Rural	798	25	0	46	
Rural	1165	50	0	43	
Rural	1650	100	0	41	
Rural	3269	500	0	43	

**Figure 6 – FEMA Flood Insurance Study Peak Discharges**

SCS WORKSHEET  
Discharge Calculations

BASIN ID	D.A. (ac.)	Q 100 (cfs)	Q 50 (cfs)	Q 25 (cfs)	Q 10 (cfs)	Q 2 (cfs)	Curve Number	Soil Type				Total Tc (HR.)	Unit q cfs/ac-in	Rainfall (in.)					q 100 (in.)	q 50 (in.)	q 25 (in.)	q 10 (in.)	q 2 (in.)
								%A	%B	%C	%D			100-year	50-year	25-year	10-year	2-year					
A1	33.58	41.4	31.2	22.5	12.9	2.3	63.4		100			0.17	1.876	3.46	3.11	2.78	2.35	1.63	0.658	0.495	0.357	0.205	0.036
A2	5.90	6.4	4.7	3.3	1.8	0.2	61.6	4	96			0.17	1.876	3.46	3.11	2.78	2.35	1.63	0.580	0.429	0.303	0.166	0.022
A3	1.99	3.3	2.6	2.0	1.2	0.3	68.2	12	88			0.17	1.876	3.46	3.11	2.78	2.35	1.63	0.888	0.693	0.524	0.330	0.091
A4	11.28	13.6	10.2	7.4	4.2	0.7	63.1	2	98			0.17	1.876	3.46	3.11	2.78	2.35	1.63	0.645	0.483	0.348	0.198	0.034
A5	4.77	4.3	3.1	2.1	1.0	0.1	59.0	10	90			0.17	1.876	3.46	3.11	2.78	2.35	1.63	0.475	0.341	0.232	0.117	0.008
A6	19.76	22.3	16.6	11.8	6.5	1.0	62.1	4	96			0.17	1.876	3.46	3.11	2.78	2.35	1.63	0.601	0.447	0.317	0.176	0.026
A7	2.58	3.2	2.4	1.7	1.0	0.2	63.4	26	74			0.17	1.876	3.46	3.11	2.78	2.35	1.63	0.658	0.495	0.357	0.205	0.036
A8	1.69	1.9	1.4	1.0	0.6	0.1	62.3		100			0.17	1.876	3.46	3.11	2.78	2.35	1.63	0.610	0.454	0.323	0.181	0.027
A9	5.18	6.3	4.8	3.4	2.0	0.3	63.3		100			0.17	1.876	3.46	3.11	2.78	2.35	1.63	0.653	0.491	0.354	0.203	0.035
A10	2.30	3.1	2.4	1.8	1.0	0.2	64.9		100			0.17	1.876	3.46	3.11	2.78	2.35	1.63	0.726	0.553	0.406	0.241	0.050
A11	4.40	5.5	4.2	3.0	1.7	0.3	63.7	3	97			0.17	1.876	3.46	3.11	2.78	2.35	1.63	0.671	0.506	0.367	0.212	0.039
A12	5.60	9.9	7.8	5.9	3.8	1.1	69.2	9	48			0.17	1.876	3.46	3.11	2.78	2.35	1.63	0.941	0.739	0.563	0.361	0.105
A13	36.27	86.2	69.9	55.4	38.2	14.5	74.9	2	25			0.17	1.876	3.46	3.11	2.78	2.35	1.63	1.267	1.028	0.815	0.561	0.214
A14	4.63	11.2	9.1	7.2	5.0	1.9	75.3	13	2			0.17	1.876	3.46	3.11	2.78	2.35	1.63	1.292	1.050	0.835	0.577	0.223
A15	7.53	21.3	17.6	14.2	10.2	4.4	78.6		3			0.17	1.876	3.46	3.11	2.78	2.35	1.63	1.508	1.245	1.008	0.720	0.309

Basin Located within the Project Limits

Basins Located within the Project Limits

Table 3 – Discharge Calculation - Simplified Method

### 3. HYDRAULIC ANALYSIS

The U.S. Army Corps of Engineers, Hydrologic Engineering Center River Analysis System HEC-RAS 4.1.0 software program was utilized for the hydraulic analysis of the stream to evaluate the “no adverse effect” criteria of the Department of Environmental Conservation for all developments within the established AE-zones of FEMA flood maps. Other software such as HY-8 7.3 developed by Federal Highway Administration (FHWA) is used for culvert hydraulic analysis. Cross-sections were obtained from the 2-foot contour at locations along the channel upstream and downstream of the points of interest and existing culverts. All elevations used in this analysis are obtained from the digital GIS data provided by Santa Fe County GIS Department and are not valid for design purpose. It is recommended to re-evaluate the geometrics and hydraulic properties of the channel and structures using 1-foot contour mapping of the topographic surface condition.

#### 3.1. Proposed improvements

Within the project limits, La Barbaria Road crosses over the Arroyo Hondo at one (1) location with 2-42” pipes capable of conveying a 2-year storm event. Additionally, there are three (3) other structures at existing driveway turnouts crossing the Arroyo Hondo, which are hardly capable to convey the normal annual runoff. The drainage structures at these driveway turnouts are in very poor condition.

It is proposed to replace these three (3) structures spanning the Arroyo Hondo with 12’x3’ Concrete Box Culvert (CBC). The proposed structures will provide sufficient capacity to convey runoff from a 2-year storm event. A 2-year event was chosen because any larger structures at these locations will adversely affect the floodplain and require substantial roadway and channel modification. The current and proposed capacities of these structures are shown in **Table 4**.

Station	Drainage Area (sq. mi.)	Q <sub>2</sub> (cfs) USGS/NMDOT	Proposed Structures Arroyo Hondo	Structure Capacity (cfs)	Existing Structure	Exist. Structure Capacity (cfs)
18+50	7.53	97/122	1-12’x3’ CBC, 20’ Length at 2% slope and 9” embedment depth, each crossing	149.4	3-24” CMP at Turnout (Stream Crossing)	42.0
16+90	7.53	97/122			3-24” CMP at Turnout (Stream Crossing)	41.7
15+00	7.53	97/122			2-24” CMP at Turnout (Stream Crossing)	29.5
9+70	7.53	97/122	1-12’x3’ CBC, 50’ Length at 2% slope and 9” embedment depth	149.4	2-42” CMP, 42° LF (Stream Crossing)	92.0

**Table 4 – Existing and Proposed Structures spanning the Arroyo Hondo**

There are nine (9) tributary basins within the project limits that cross La Barbaria Road. These are identified as basins A6 through A14 in **Figure 5**. The 25-year storm was chosen to evaluate the existing and new structures in the tributary basins. **Table 5** summarizes the preliminary design recommendations for existing and proposed structures crossing La Barbaria Road within basins A6 through A14. **Figures 7 and 8** shows the locations of the proposed structures along an established alignment for La Barbaria Road.



Station	Basin ID	D.A. (ac.)	Q <sub>25</sub> (cfs)	Q <sub>50</sub> (cfs)	Q <sub>100</sub> (cfs)	Proposed Structures La Barbara Road	HW <sub>25</sub> (ft.)	Existing Structure
26+76	A6	19.76	11.8	16.6	22.3	Remove Existing, Build 1-24"S x 18"R CMAP W/End Section	1.29	1-17"S x 13"R CMAP
26+28						Build 1-24"S x 18"R CMAP W/End Section, 30° LF	1.29	None
20+30	A7	2.58	1.7	2.4	3.2	Remain, Clean Existing, Build End Sections	0.73	1-17"S x 13"R CMAP, 45° LF
18+20	A8	1.69	1.0	1.4	1.9	Build 1-24"S x 18"R CMAP W/End Section	0.44	None
15+80	A9	5.18	3.4	4.8	6.3	Build 1-24"S x 18"R CMAP W/End Section	0.90	None
13+60 to 15+60	A10	2.3	1.8	2.4	3.1	Build 6' wide, 1.5' deep V-shape bar ditch RT to convey runoff south	Depth 0.48	None
10+00 to 13+60	A11	4.4	3.0	4.2	5.5	Build 6' wide, 1.5' deep V-shape bar ditch RT to convey runoff south	Depth 0.57	None
8+70	A12	5.6	5.9	7.8	9.9	Build 1-24"S x 18"R CMAP W/End Section	1.29	None
6+60	A13	36.27	55.4	69.9	86.2	Build 1-24"S x 18"R CMAP W/End Section	2.63	None
5+80						Build 2-24"S x 18"R CMAP W/End Section	2.70	None
3+20	A14	4.63	7.2	9.1	11.2	Build 1-24"S x 18"R CMAP W/End Section	1.47	None
2+00 to 3+50	Reconstruction - Raise roadway grade 0.0' (BOP) to 1.0', Build 6' wide 1.5' deep Bar ditch on LT							
3+50 to 13+75	Raise roadway grade 1.0' to 2.0', build 6' wide 1.5' deep bar ditch on LT/RT as shown on the plans							
13+75 to 22+00	Raise roadway grade 2.0 to 2.5', build 6' wide 1.5' deep bar ditch on RT							
22+00 to 26+00	Raise roadway grade 2.5' to 1.0', build 6' wide 1.5' deep bar ditch on RT							
26+00 to 27+40	Raise roadway grade 1.0' (EOP), build 6' wide 1.5' deep bar ditch on RT							

Table 5 – Proposed Structures and Drainage Improvements



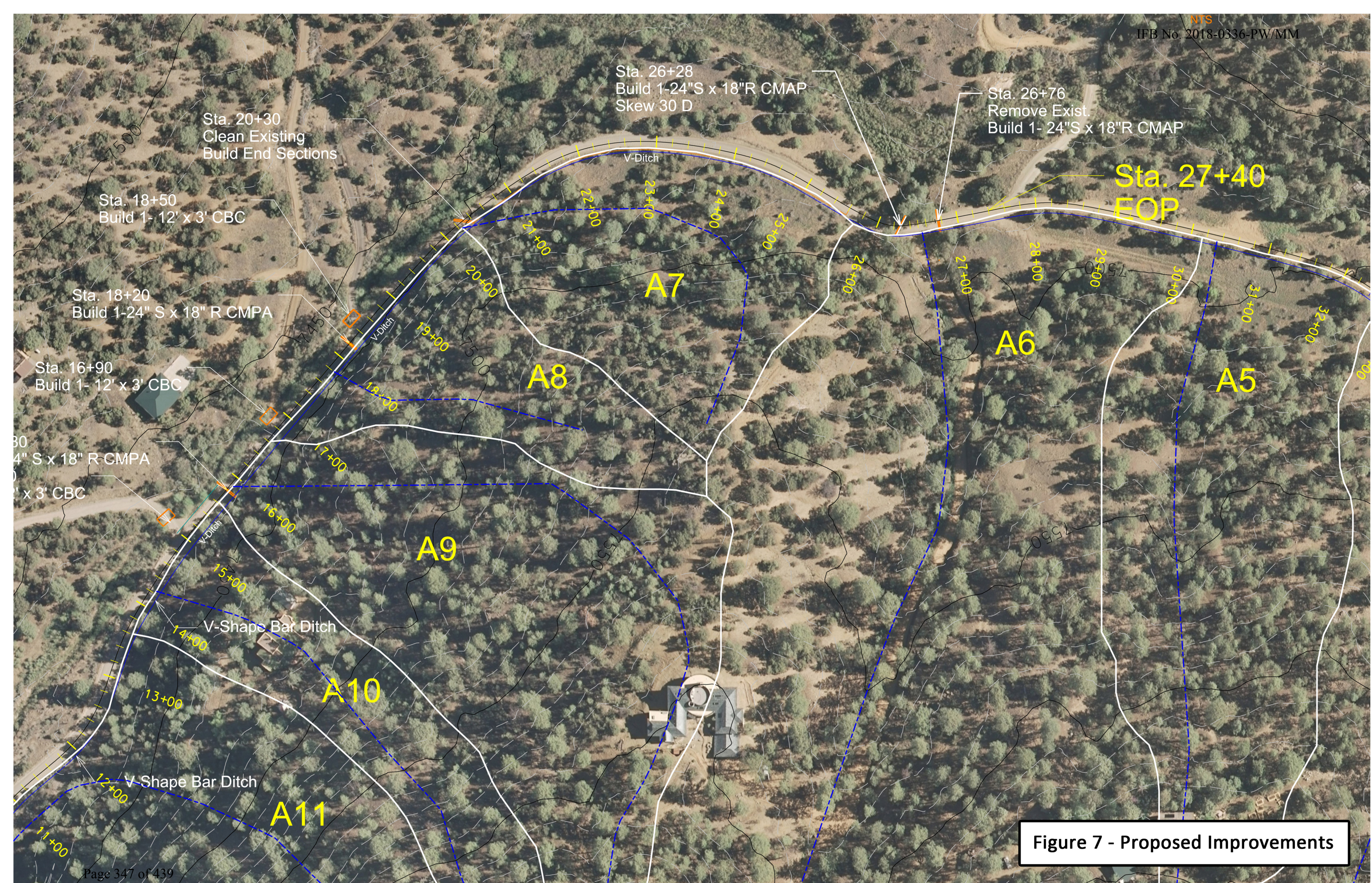


Figure 7 - Proposed Improvements



IFB No. 2018-0336-PW/MM  
Sta. 18+20  
Build 1-24" S x 18" R CMPA

Sta. 16+90  
Build 1- 12' x 3' CBC

Sta. 15+80  
Build 1-24" S x 18" R CMPA  
Sta. 15+00  
Build 1- 12' x 3' CBC

V-Shape Bar

V Shape Bar Ditch

Sta. 9+70  
Build 1- 12' x 3' CBC

A12

A13

A14

A15

Sta. 8+70  
Build 1- 24"S x 18"R CMAP

Sta. 6+60  
Build 1- 24"S x 18"R CMAP

Sta. 5+80  
Build 2- 24"S x 18"R CMAP

Ata. 3+20  
Build 1 - 24"S x 18"R CMAP

Sta. 2+00  
BOP

1" = 100'

Figure 8 - Proposed Improvements



#### 4. FLOOD PLAIN EVALUATION UNDER DEVELOPMENT

The Zone AE flood plain at south part of the project was evaluated for the effect of proposed development for the “no-rise” and/or “no adverse effect” criteria. The HEC-RAS computer program was utilized for this evaluation. Four models were used for this investigation;

**Effective Model:** The effective model is the basis of the current regulatory standard in effect for the community, and serves as the starting point for the modeling of any proposed development in the floodplain. This model is used to determine the Base Flood Elevation (BFE).

**Duplicate Effective Model:** The duplicate effective model is a copy of the hydraulic model used in effective Flood Insurance Study (FIS). It represents a re-run of the Effective Model using the data provided by FEMA. The same software is used for modeling steps.

**Corrected Effective Model (Pre-Project Condition):** The corrected effective Model corrects any modeling errors that exist in the Duplicate Effective Model, adds any additional cross sections if required, incorporate natural changes in the flood plain (such as changes in the road grade), and incorporate more detailed topographic information than that used in the Effective Model. This model is modified accordingly to represent the pre-project condition.

**Corrected Effective Model (Post-Project Condition):** The pre-project condition is revised to reflect post-project conditions. All physical changes including proposed roadway grade modifications and structure replacement are incorporated into this model.

**Table 6** shows the calculated water surface elevations for various models. The affected cross sections are shown in **Figure 9**. The HEC-RAS hydraulic outputs are included in APPENDIX.

Model Section Number	Effective Model	Duplicate Effective Model Elevation (ft)	Dup- Eff	Corrected Effective Model (Pre-Project) Elevation (ft)	Pre- Dup	Corrected Effective Model (Post-Project) Elevation (ft)	Post- Pre
77425	7428.44	7428.44	0.00	7427.60	-0.84	7427.95	0.35
77380	7427.31	7427.31	0.00	7426.99	-0.32	7427.21	0.22
77351	Culvert						
77309	7425.99	7425.99	0.00	7424.85	-1.14	7425.19	0.34
77106	7422.06	7422.06	0.00	7422.03	-0.03	7422.33	0.30
76902	7417.95	7417.95	0.00	7418.19	0.24	7418.42	0.23
76658	7413.17	7413.17	0.00	7412.91	-0.26	7412.88	-0.03
76590	7411.73	7411.73	0.00	7411.44	-0.29	7411.44	0.00
76539	Culvert						
76488	7410.90	7410.90	0.00	7409.55	-1.35	7409.55	0.00
76314	7404.57	7404.57	0.00	7404.51	-0.06	7404.51	0.00
76011	7397.00	7397.00	0.00	7396.92	-0.08	7396.92	0.00

**Table 6 – Comparison of Flood Elevation For Various Models**





Figure 9 - HEC-RAS Cross Sections



## 5. CONCLUSION AND RECOMMENDATION

The lack of proper drainage facilities along the La Barbara road causes local flooding and creates safety issues for the commuters. The road grade continuously has been lowered due to annual maintenance activities. In addition, the existing structures at the turnouts crossing the Arroyo Hondo are not properly sized for anticipated annual flows. The runoff overtops the turnouts and enters the road during storm events.

This report provides a detailed hydrology study for watersheds which contribute runoff into La Barbara road. Several structures are proposed to convey the runoff and to prevent the overtopping. It is also recommended that the road grade to be raised as needed to allow for bar-ditch construction and to provide minimum required cover for new structures.

It was found that the existing structures at the Arroyo Hondo were poorly designed and constructed and have very limited capacity to convey the normal flows. The proposed structures are capable to convey the 2-year flood events safely. The size of the drainage structures needed to convey larger flood events, such as the 5-year, 10-year, 25-year, 50-year, and 100-year design events, would require significant roadway and channel modifications. During a meeting with Santa Fe County, a 2-year flood event was agreed to as the basis of structure selection as larger flood events would require significant roadway and channel modifications.

LBG also investigated the effect of the project development within the established floodplain. Based on the available elevation data there will be 2 to 4 inches rise of 100-year base flood elevations due to proposed development. As such, we anticipate that a Letter of Map Revision (LOMR) will be required within 6-months of the completion of construction per Title 44, Part 60.3(c)(10) and Part 65.3 of the Code of Federal Regulations. A Conditional Letter of Map Revision (CLOMR) is expected to be optional, but not required.

Although the digital GIS data was relied upon for planning purposes, re-evaluation of the hydraulic analysis of flood plain and structures will be necessary during the design phase once a design level project specific topographic survey is obtained.

The existing 2-42" CMP located downstream outside of the project limit was evaluated for its capacity. Addition of 1-42" CMP with headwall at the ends and 1.5 feet cover will increase the capacity of the structure up to 210 cfs. This is well above the 2-year flow (97 cfs) and below 5-year flow (265 cfs).

In general, the following activities are required to develop the recommendations in this report:

- Obtain a complete topographic survey of existing ground conditions including channel and roadway within the project corridor;
- Refine hydraulic analysis of channel using design level topographic data;
- Re-evaluate the size and hydraulic capacities of proposed structures;

- Re-evaluate the effect of project development on the FEMA map using the survey of existing ground;
- Evaluate property ownership and right-of-way requirements; and,
- Conduct preliminary and final drainage design and prepare construction plans to include roadway plan & profile, structural placement sections, and etc.
- Within 6-months of the completion of construction, submit a LOMR to FEMA.

## APPENDIX

## NOAA POINT PRECIPITATION



NOAA Atlas 14, Volume 1, Version 5  
Location name: Santa Fe, New Mexico, US\*  
Latitude: 35.6293°, Longitude: -105.8684°  
Elevation: 7834ft\*  
\* source: Google Maps



### POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Sarah Dietz, Sarah Heim, Lillian Hiner, Kazungu Maitaria, Deborah Martin, Sandra Pavlovic, Ishani Roy, Carl Trypaluk, Dale Unruh, Fenglin Yan, Michael Yekta, Tan Zhao, Geoffrey Bonnin, Daniel Brewer, Li-Chuan Chen, Tye Parzybok, John Yarchoan

NOAA, National Weather Service, Silver Spring, Maryland

[PF tabular](#) | [PF graphical](#) | [Maps & arials](#)

### PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches) <sup>1</sup>										
Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	0.206 (0.177–0.239)	0.266 (0.229–0.311)	0.354 (0.303–0.413)	0.421 (0.361–0.490)	0.512 (0.437–0.594)	0.582 (0.494–0.674)	0.656 (0.555–0.760)	0.731 (0.614–0.846)	0.834 (0.694–0.965)	0.915 (0.757–1.06)
10-min	0.313 (0.269–0.364)	0.404 (0.348–0.473)	0.539 (0.462–0.628)	0.640 (0.549–0.746)	0.779 (0.665–0.905)	0.885 (0.752–1.03)	0.999 (0.844–1.16)	1.11 (0.935–1.29)	1.27 (1.06–1.47)	1.39 (1.15–1.62)
15-min	0.387 (0.334–0.451)	0.501 (0.431–0.586)	0.668 (0.573–0.779)	0.794 (0.681–0.925)	0.966 (0.824–1.12)	1.10 (0.932–1.27)	1.24 (1.05–1.43)	1.38 (1.16–1.60)	1.57 (1.31–1.82)	1.73 (1.43–2.00)
30-min	0.522 (0.449–0.607)	0.675 (0.581–0.789)	0.900 (0.770–1.05)	1.07 (0.916–1.25)	1.30 (1.11–1.51)	1.48 (1.26–1.71)	1.67 (1.41–1.93)	1.86 (1.56–2.15)	2.12 (1.76–2.45)	2.33 (1.92–2.70)
60-min	0.646 (0.556–0.752)	0.835 (0.718–0.977)	1.11 (0.954–1.30)	1.32 (1.13–1.54)	1.61 (1.37–1.87)	1.83 (1.55–2.12)	2.06 (1.74–2.39)	2.30 (1.93–2.66)	2.62 (2.18–3.04)	2.88 (2.38–3.34)
2-hr	0.786 (0.667–0.948)	1.00 (0.851–1.21)	1.32 (1.12–1.60)	1.57 (1.32–1.89)	1.91 (1.60–2.30)	2.18 (1.82–2.62)	2.47 (2.05–2.96)	2.77 (2.28–3.31)	3.18 (2.59–3.81)	3.51 (2.83–4.20)
3-hr	0.843 (0.724–1.01)	1.07 (0.915–1.28)	1.39 (1.18–1.66)	1.64 (1.39–1.96)	1.99 (1.68–2.38)	2.27 (1.91–2.71)	2.56 (2.14–3.06)	2.87 (2.37–3.42)	3.29 (2.69–3.93)	3.64 (2.95–4.33)
6-hr	0.979 (0.851–1.15)	1.23 (1.07–1.44)	1.57 (1.35–1.84)	1.83 (1.57–2.14)	2.20 (1.88–2.57)	2.48 (2.11–2.91)	2.78 (2.35–3.25)	3.08 (2.59–3.61)	3.50 (2.90–4.09)	3.83 (3.15–4.48)
12-hr	1.13 (0.992–1.31)	1.42 (1.25–1.65)	1.79 (1.56–2.07)	2.07 (1.81–2.40)	2.47 (2.14–2.86)	2.77 (2.40–3.21)	3.08 (2.65–3.57)	3.40 (2.91–3.94)	3.83 (3.24–4.43)	4.17 (3.50–4.82)
24-hr	1.30 (1.20–1.42)	1.63 (1.50–1.78)	2.03 (1.87–2.21)	2.35 (2.16–2.56)	2.78 (2.54–3.03)	3.11 (2.84–3.39)	3.46 (3.14–3.76)	3.81 (3.45–4.14)	4.28 (3.84–4.65)	4.64 (4.15–5.06)
2-day	1.48 (1.37–1.61)	1.85 (1.71–2.01)	2.30 (2.12–2.50)	2.67 (2.45–2.89)	3.15 (2.89–3.42)	3.53 (3.23–3.83)	3.92 (3.57–4.25)	4.32 (3.91–4.68)	4.84 (4.36–5.27)	5.26 (4.70–5.73)
3-day	1.61 (1.48–1.74)	2.01 (1.85–2.18)	2.49 (2.30–2.70)	2.88 (2.65–3.13)	3.41 (3.13–3.69)	3.82 (3.49–4.14)	4.23 (3.86–4.59)	4.66 (4.23–5.05)	5.23 (4.71–5.68)	5.67 (5.08–6.17)
4-day	1.73 (1.60–1.88)	2.16 (1.99–2.34)	2.68 (2.47–2.91)	3.10 (2.85–3.36)	3.66 (3.36–3.96)	4.10 (3.75–4.44)	4.55 (4.15–4.92)	5.00 (4.54–5.41)	5.61 (5.06–6.08)	6.09 (5.46–6.61)
7-day	2.07 (1.91–2.23)	2.58 (2.39–2.79)	3.18 (2.94–3.44)	3.65 (3.37–3.94)	4.28 (3.95–4.63)	4.77 (4.38–5.15)	5.26 (4.82–5.68)	5.75 (5.25–6.22)	6.41 (5.81–6.95)	6.91 (6.23–7.50)
10-day	2.36 (2.19–2.56)	2.94 (2.73–3.19)	3.63 (3.37–3.94)	4.18 (3.87–4.53)	4.92 (4.54–5.32)	5.48 (5.05–5.93)	6.06 (5.56–6.56)	6.64 (6.06–7.19)	7.40 (6.72–8.04)	8.00 (7.22–8.70)
20-day	3.18 (2.95–3.44)	3.96 (3.68–4.30)	4.84 (4.49–5.24)	5.51 (5.11–5.97)	6.38 (5.91–6.91)	7.02 (6.49–7.61)	7.66 (7.05–8.31)	8.28 (7.60–9.00)	9.08 (8.30–9.88)	9.68 (8.80–10.5)
30-day	3.92 (3.65–4.22)	4.87 (4.54–5.25)	5.91 (5.51–6.37)	6.69 (6.22–7.20)	7.68 (7.13–8.26)	8.40 (7.78–9.04)	9.11 (8.42–9.81)	9.78 (9.02–10.5)	10.6 (9.75–11.5)	11.2 (10.3–12.2)
45-day	4.94 (4.62–5.29)	6.14 (5.74–6.58)	7.37 (6.89–7.90)	8.28 (7.73–8.86)	9.40 (8.77–10.1)	10.2 (9.49–10.9)	11.0 (10.2–11.8)	11.7 (10.8–12.5)	12.6 (11.6–13.5)	13.2 (12.2–14.3)
60-day	5.76 (5.39–6.16)	7.16 (6.70–7.67)	8.59 (8.05–9.22)	9.63 (9.01–10.3)	10.9 (10.2–11.7)	11.8 (11.0–12.7)	12.7 (11.8–13.6)	13.5 (12.5–14.5)	14.5 (13.4–15.6)	15.2 (14.0–16.4)

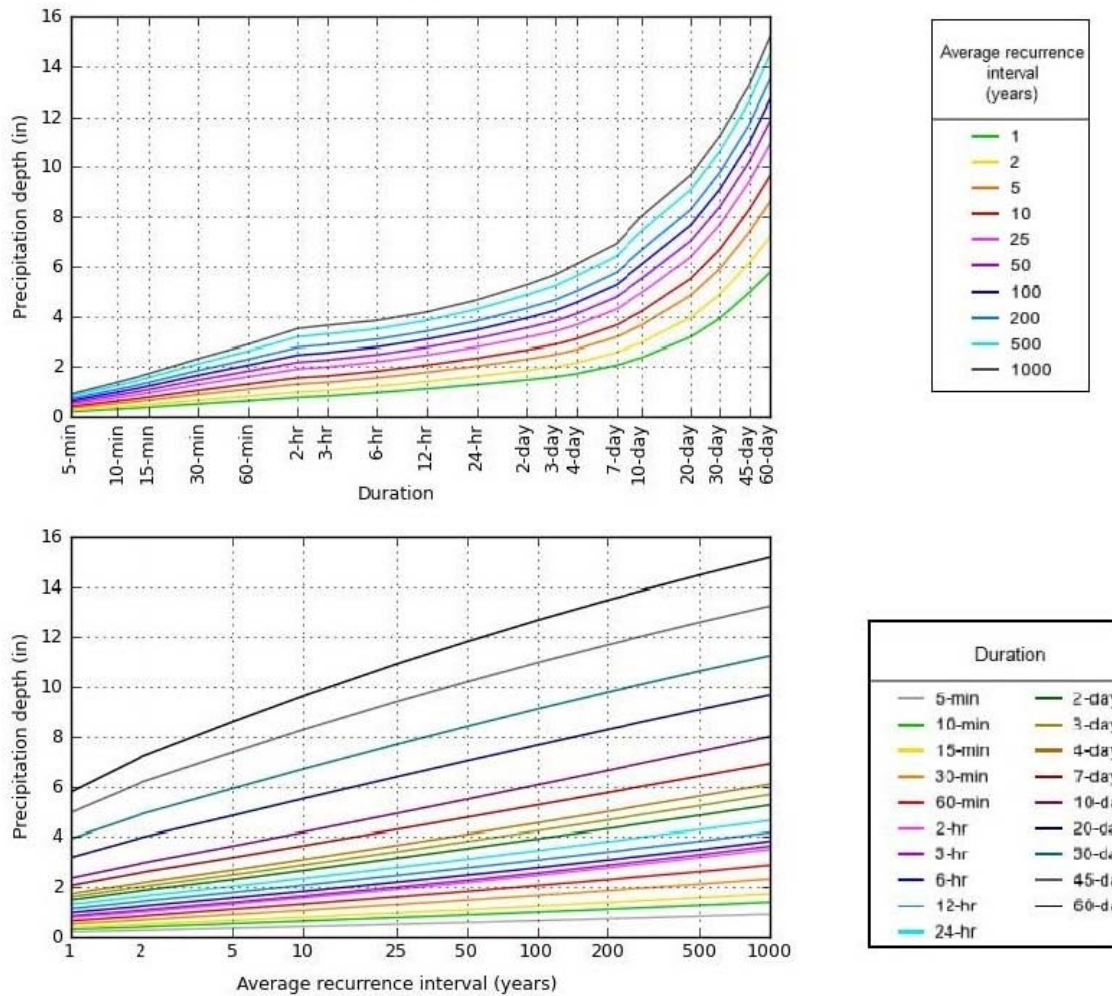
<sup>1</sup> Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).  
Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.  
Please refer to NOAA Atlas 14 document for more information.

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### PF graphical

PDS-based depth-duration-frequency (DDF) curves  
Latitude: 35.6293°, Longitude: -105.8684°



NOAA Atlas 14, Volume 1, Version 5

Created (GMT): Thu Apr 17 15:38:33 2014

## WEIGHTED CURVE NUMBERS

cn\_report for La Barbaria basin.txt  
=====

### Runoff Curve Number Report (Generated by WMS)

Fri Apr 11 12:51:58 2014

#### Runoff Curve Number Report for Basin A8

HSG	Land Use Description	CN	Area acres	Product CN x A
B	Evergreen Forest Land	64	0.980	62.698
B	Mixed Rangeland	60	0.714	42.860

CN (Weighted) = Total Product \ Total Area  
=====

62.3133

#### Runoff Curve Number Report for Basin A15

HSG	Land Use Description	CN	Area acres	Product CN x A
D	Evergreen Forest Land	79	7.281	575.227
B	Evergreen Forest Land	64	0.166	10.652
D	Impervious areas(paved parking lots, roofs, dr	98	0.042	4.078
A	Evergreen Forest Land	40	0.042	1.664

CN (Weighted) = Total Product \ Total Area  
=====

78.558

#### Runoff Curve Number Report for Basin A14

HSG	Land Use Description	CN	Area acres	Product CN x A
D	Evergreen Forest Land	79	3.775	298.263
D	Impervious areas(paved parking lots, roofs, dr	98	0.104	10.165
B	Evergreen Forest Land	64	0.021	1.328
D	Dirt Road; (including r/w)	89	0.145	12.924
A	Evergreen Forest Land	40	0.519	20.744
A	Dirt Road; (including r/w)	72	0.021	1.494
A	Paved Road; open ditch (including r/w)	83	0.041	3.444

CN (Weighted) = Total Product \ Total Area  
=====

75.3049

#### Runoff Curve Number Report for Basin A13

HSG	Land Use Description	CN	Area acres	Product CN x A
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Page 1

cn\_report for La Barbaria basin.txt

B	Evergreen Forest Land	64	8.861	567.088
D	Evergreen Forest Land	79	26.686	2108.214
B	Impervious areas(paved parking lots, roofs, dr	98	0.146	14.269
D	Impervious areas(paved parking lots, roofs, dr	98	0.021	2.038
B	Dirt Road; (including r/w)	82	0.042	3.411
A	Evergreen Forest Land	40	0.458	18.304
A	Dirt Road; (including r/w)	72	0.062	4.493

CN (Weighted) = Total Product \ Total Area  
=====

74.9226

Runoff Curve Number Report for Basin A12

HSG	Land Use Description	CN	Area acres	Product CN x A
D	Evergreen Forest Land	79	2.355	186.041
B	Evergreen Forest Land	64	2.565	164.173
B	Impervious areas(paved parking lots, roofs, dr	98	0.168	16.485
A	Evergreen Forest Land	40	0.505	20.185

CN (Weighted) = Total Product \ Total Area  
=====

69.1729

Runoff Curve Number Report for Basin A11

HSG	Land Use Description	CN	Area acres	Product CN x A
A	Dirt Road; (including r/w)	72	0.021	1.488
A	Evergreen Forest Land	40	0.062	2.481
B	Evergreen Forest Land	64	4.320	276.500

CN (Weighted) = Total Product \ Total Area  
=====

63.6995

Runoff Curve Number Report for Basin A10

HSG	Land Use Description	CN	Area acres	Product CN x A
B	Evergreen Forest Land	64	2.233	142.936
B	Impervious areas(paved parking lots, roofs, dr	98	0.063	6.137

CN (Weighted) = Total Product \ Total Area  
=====

64.9273

Runoff Curve Number Report for Basin A9

HSG	Land Use Description	CN	Area acres	Product CN x A
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cn\_report for La Barbaria basin.txt

B	Dirt Road; (including r/w)	82	0.021	1.698
B	Evergreen Forest Land	64	4.100	262.412
B	Mixed Rangeland	60	1.056	63.366

CN (Weighted) = Total Product \ Total Area  
=====

63.256

Runoff Curve Number Report for Basin A7

HSG	Land Use Description	CN	Area acres	Product CN x A
B	Evergreen Forest Land	64	0.021	1.353
A	Mixed Rangeland	37	0.740	27.375
B	Mixed Rangeland	60	1.818	109.079

CN (Weighted) = Total Product \ Total Area  
=====

53.4344

Runoff Curve Number Report for Basin A6

HSG	Land Use Description	CN	Area acres	Product CN x A
B	Evergreen Forest Land	64	14.942	956.285
B	Mixed Rangeland	60	3.975	238.489
A	Mixed Rangeland	37	0.832	30.800
A	Dirt Road; (including r/w)	72	0.021	1.498

CN (Weighted) = Total Product \ Total Area  
=====

62.0674

Runoff Curve Number Report for Basin A5

HSG	Land Use Description	CN	Area acres	Product CN x A
B	Mixed Rangeland	60	2.321	139.250
B	Evergreen Forest Land	64	1.906	122.010
A	Mixed Rangeland	37	0.539	19.934

CN (Weighted) = Total Product \ Total Area  
=====

59

Runoff Curve Number Report for Basin A4

HSG	Land Use Description	CN	Area acres	Product CN x A
B	Evergreen Forest Land	64	9.591	613.797

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B	Mixed Rangeland	60	1.495	89.711
A	Mixed Rangeland	37	0.150	5.532
A	Dirt Road; (including r/w)	72	0.043	3.076

CN (Weighted) = Total Product \ Total Area  
=====

63.142

Runoff Curve Number Report for Basin A1

HSG	Land Use Description	CN	Area acres	Product CN x A
B	Evergreen Forest Land	64	31.002	1984.110
B	Mixed Rangeland	60	2.111	126.683
A	Mixed Rangeland	37	0.439	16.243
B	Impervious areas(paved parking lots, roofs, dr	98	0.021	2.049

CN (Weighted) = Total Product \ Total Area  
=====

63.4166

Runoff Curve Number Report for Basin A2

HSG	Land Use Description	CN	Area acres	Product CN x A
B	Evergreen Forest Land	64	3.977	254.498
B	Mixed Rangeland	60	1.632	97.948
A	Mixed Rangeland	37	0.293	10.841

CN (Weighted) = Total Product \ Total Area  
=====

61.5532

Runoff Curve Number Report for Basin A3

HSG	Land Use Description	CN	Area acres	Product CN x A
A	Dirt Road; (including r/w)	72	0.041	2.951
A	Mixed Rangeland	37	0.184	6.825
B	Mixed Rangeland	60	1.722	103.294
B	Evergreen Forest Land	64	0.041	2.623

CN (Weighted) = Total Product \ Total Area  
=====

58.1959

## HY-8 ANALYSIS RESULTS

### Crossing Summary Table

Culvert Crossing: Sta 3+20

Headwater Elevation (ft)	Total Discharge (cfs)	Culvert 1 Discharge (cfs)	Roadway Discharge (cfs)	Iterations
100.00	0.00	0.00	0.00	1
100.42	0.91	0.91	0.00	1
100.62	1.82	1.82	0.00	1
100.83	2.73	2.73	0.00	1
100.94	3.64	3.64	0.00	1
101.09	4.55	4.55	0.00	1
101.22	5.46	5.46	0.00	1
101.35	6.37	6.37	0.00	1
101.47	7.20	7.20	0.00	1
101.62	8.19	8.19	0.00	1
101.75	9.10	9.10	0.00	1
102.50	12.56	12.56	0.00	Overtopping

### Crossing Summary Table

Culvert Crossing: Sta 5+80

Headwater Elevation (ft)	Total Discharge (cfs)	Culvert 1 Discharge (cfs)	Roadway Discharge (cfs)	Iterations
100.00	0.00	0.00	0.00	1
100.68	4.66	4.66	0.00	1
101.10	9.32	9.32	0.00	1
101.44	13.98	13.98	0.00	1
101.79	18.64	18.64	0.00	1
102.28	23.30	23.30	0.00	1
102.57	27.96	25.67	2.20	11
102.64	32.62	26.22	6.34	5
102.69	36.90	26.63	10.19	4
102.75	41.94	27.04	14.86	4
102.80	46.60	27.37	19.16	3
102.50	25.11	25.11	0.00	Overtopping



## Crossing Summary Table

Culvert Crossing: Sta 6+60

Headwater Elevation (ft)	Total Discharge (cfs)	Culvert 1 Discharge (cfs)	Roadway Discharge (cfs)	Iterations
100.00	0.00	0.00	0.00	1
100.68	2.33	2.33	0.00	1
101.10	4.66	4.66	0.00	1
101.44	6.99	6.99	0.00	1
101.79	9.32	9.32	0.00	1
102.28	11.65	11.65	0.00	1
102.55	13.98	12.74	1.19	13
102.59	16.31	12.92	3.35	5
102.63	18.50	13.06	5.40	4
102.66	20.97	13.19	7.69	3
102.69	23.30	13.28	9.93	3
102.50	12.56	12.56	0.00	Overtopping

## Crossing Summary Table

Culvert Crossing: Sta 8+70

Headwater Elevation (ft)	Total Discharge (cfs)	Culvert 1 Discharge (cfs)	Roadway Discharge (cfs)	Iterations
100.00	0.00	0.00	0.00	1
100.38	0.78	0.78	0.00	1
100.57	1.56	1.56	0.00	1
100.68	2.34	2.34	0.00	1
100.81	3.12	3.12	0.00	1
100.98	3.90	3.90	0.00	1
101.11	4.68	4.68	0.00	1
101.22	5.46	5.46	0.00	1
101.29	5.90	5.90	0.00	1
101.45	7.02	7.02	0.00	1
101.56	7.80	7.80	0.00	1
102.50	12.56	12.56	0.00	Overtopping

### Crossing Summary Table

Culvert Crossing: Sta 15+80

Headwater Elevation (ft)	Total Discharge (cfs)	Culvert 1 Discharge (cfs)	Roadway Discharge (cfs)	Iterations
100.00	0.00	0.00	0.00	1
100.42	0.48	0.48	0.00	1
100.43	0.96	0.96	0.00	1
100.54	1.44	1.44	0.00	1
100.64	1.92	1.92	0.00	1
100.76	2.40	2.40	0.00	1
100.82	2.88	2.88	0.00	1
100.90	3.36	3.36	0.00	1
100.90	3.40	3.40	0.00	1
101.05	4.32	4.32	0.00	1
101.12	4.80	4.80	0.00	1
102.50	12.55	12.55	0.00	Overtopping

### Crossing Summary Table

Culvert Crossing: Sta 18+20

Headwater Elevation (ft)	Total Discharge (cfs)	Culvert 1 Discharge (cfs)	Roadway Discharge (cfs)	Iterations
100.00	0.00	0.00	0.00	1
100.16	0.14	0.14	0.00	1
100.22	0.28	0.28	0.00	1
100.33	0.42	0.42	0.00	1
100.32	0.56	0.56	0.00	1
100.36	0.70	0.70	0.00	1
100.40	0.84	0.84	0.00	1
100.43	0.98	0.98	0.00	1
100.44	1.00	1.00	0.00	1
100.50	1.26	1.26	0.00	1
100.53	1.40	1.40	0.00	1
102.50	12.56	12.56	0.00	Overtopping



### Crossing Summary Table

Culvert Crossing: Sta 20+30

Headwater Elevation (ft)	Total Discharge (cfs)	Culvert 1 Discharge (cfs)	Roadway Discharge (cfs)	Iterations
100.00	0.00	0.00	0.00	1
100.41	0.24	0.24	0.00	1
100.35	0.48	0.48	0.00	1
100.44	0.72	0.72	0.00	1
100.52	0.96	0.96	0.00	1
100.59	1.20	1.20	0.00	1
100.66	1.44	1.44	0.00	1
100.73	1.68	1.68	0.00	1
100.73	1.70	1.70	0.00	1
100.85	2.16	2.16	0.00	1
100.91	2.40	2.40	0.00	1
102.50	6.38	6.38	0.00	Overtopping

### Crossing Summary Table

Culvert Crossing: Sta 26+76

Headwater Elevation (ft)	Total Discharge (cfs)	Culvert 1 Discharge (cfs)	Roadway Discharge (cfs)	Iterations
100.00	0.00	0.00	0.00	1
100.40	1.66	1.66	0.00	1
100.59	3.32	3.32	0.00	1
100.78	4.98	4.98	0.00	1
100.89	6.64	6.64	0.00	1
101.02	8.30	8.30	0.00	1
101.15	9.96	9.96	0.00	1
101.27	11.62	11.62	0.00	1
101.29	11.80	11.80	0.00	1
101.51	14.94	14.94	0.00	1
101.63	16.60	16.60	0.00	1
102.50	25.11	25.11	0.00	Overtopping

## HEC-RAS RESULTS

### DUPLICATE EFFECTIVE MODEL

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
Reach-1	77425	100-year	1650.00	7424.00	7428.44		7429.12	0.007882	7.65	354.42	137.21	0.65
Reach-1	77380	100-year	1650.00	7420.01	7427.31		7428.54	0.010601	10.30	296.56	121.71	0.73
Reach-1	77351		Culvert									
Reach-1	77309	100-year	1650.00	7420.02	7425.99		7427.04	0.013011	10.18	325.32	153.25	0.81
Reach-1	77106	100-year	1650.00	7416.00	7422.06		7422.95	0.011972	10.26	293.98	91.08	0.80
Reach-1	76902	100-year	1650.00	7416.00	7417.95		7419.20	0.037973	9.60	208.07	122.96	1.25
Reach-1	76658	100-year	1650.00	7410.00	7413.17		7413.51	0.005741	5.34	442.48	179.45	0.53
Reach-1	76590	100-year	1650.00	7406.03	7411.73		7412.76	0.013252	10.42	331.15	145.92	0.84
Reach-1	76539		Culvert									
Reach-1	76488	100-year	1650.00	7405.99	7410.90		7411.77	0.012959	9.21	350.44	179.95	0.82
Reach-1	76314	100-year	1650.00	7402.00	7404.57		7405.43	0.021089	8.71	294.11	163.00	0.98
Reach-1	76011	100-year	1650.00	7392.00	7397.00		7397.44	0.004493	6.03	407.27	129.68	0.50
Reach-1	75869	100-year	1650.00	7390.00	7396.80		7396.97	0.001060	3.75	623.99	121.47	0.26
Reach-1	75808	100-year	1650.00	7387.30	7394.58		7396.36	0.038927	11.80	187.14	57.16	0.84
Reach-1	75760		Culvert									
Reach-1	75710	100-year	1650.00	7386.00	7393.23		7395.60	0.048103	12.77	145.24	36.78	0.92
Reach-1	75482	100-year	1650.00	7381.29	7384.99		7385.27	0.015902	5.37	429.69	174.59	0.51
Reach-1	75383	100-year	1650.00	7380.00	7382.72		7383.21	0.029968	5.75	313.52	165.39	0.65
Reach-1	75333	100-year	1650.00	7376.08	7381.63		7381.95	0.017490	6.78	432.89	190.58	0.52
Reach-1	75298		Culvert									
Reach-1	75260	100-year	1650.00	7376.09	7380.09		7380.33	0.016011	5.56	444.58	168.47	0.50
Reach-1	75049	100-year	1650.00	7371.30	7374.88		7375.62	0.033286	7.48	266.83	110.85	0.73
Reach-1	74898	100-year	1650.00	7366.00	7368.98		7368.69	0.045772	7.28	230.71	99.69	0.81
Reach-1	74391	100-year	1650.00	7344.00	7348.46		7349.56	0.033956	8.85	215.01	70.13	0.76
Reach-1	73847	100-year	1650.00	7324.66	7329.17		7330.06	0.037670	8.92	251.50	98.68	0.79
Reach-1	73309	100-year	1650.00	7311.77	7315.77		7316.07	0.013646	4.76	401.43	153.48	0.47
Reach-1	72811	100-year	1650.00	7304.00	7307.66		7308.08	0.019406	5.70	348.16	140.78	0.55
Reach-1	72320	100-year	1650.00	7296.69	7299.46		7299.63	0.014689	3.33	513.37	310.99	0.44
Reach-1	71808	100-year	1650.00	7291.69	7294.34		7294.42	0.005521	2.32	742.89	379.59	0.28
Reach-1	71600	100-year	1650.00	7290.00	7292.01		7292.32	0.052896	5.26	405.44	397.92	0.79
Reach-1	71394	100-year	1650.00	7240.00	7246.81		7248.24	0.037538	10.53	200.82	63.07	0.80
Reach-1	71193	100-year	1650.00	7234.00	7240.70		7241.75	0.025889	8.30	207.70	50.93	0.67
Reach-1	70807	100-year	1650.00	7224.00	7232.92		7233.68	0.015385	7.36	262.92	65.22	0.53
Reach-1	70391	100-year	1650.00	7220.00	7223.78		7224.59	0.037730	7.81	250.62	102.78	0.77
Reach-1	69997	100-year	1650.00	7210.00	7213.85		7214.16	0.014399	5.07	398.91	259.51	0.48
Reach-1	69650	100-year	1650.00	7200.00	7205.33		7206.34	0.049593	10.79	247.48	108.50	0.90
Reach-1	69399	100-year	1650.00	7190.30	7197.41		7197.59	0.003737	3.45	484.21	115.66	0.26
Reach-1	69296		Bridge									

CORRECTED EFFECTIVE MODEL- PRE

HEC-RAS Plan: Pre River: Arroyo Hondo Reach: Reach-1 Profile: 100-year

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
Reach-1	77425	100-year	1650.00	7424.00	7427.60	7427.60	7428.79	0.017857	9.93	256.51	117.77	0.95
Reach-1	77380	100-year	1650.00	7420.01	7426.99	7426.99	7428.17	0.013019	10.34	292.78	121.42	0.76
Reach-1	77351	Culvert										
Reach-1	77309	100-year	1650.00	7420.02	7424.85	7424.81	7425.84	0.017509	10.50	303.87	131.93	0.93
Reach-1	77106	100-year	1650.00	7416.00	7422.03	7420.99	7422.85	0.011920	9.85	291.61	73.86	0.77
Reach-1	76902	100-year	1650.00	7415.58	7418.19	7418.19	7419.13	0.030763	8.71	237.43	125.15	1.13
Reach-1	76658	100-year	1650.00	7409.30	7412.91		7413.28	0.006245	5.52	425.43	176.42	0.55
Reach-1	76590	100-year	1650.00	7406.03	7411.44	7411.44	7412.46	0.014874	10.52	323.08	142.85	0.87
Reach-1	76539	Culvert										
Reach-1	76488	100-year	1650.00	7405.99	7409.55	7409.55	7410.20	0.019059	8.89	341.01	161.89	0.93
Reach-1	76314	100-year	1650.00	7401.34	7404.51	7404.51	7405.39	0.022852	8.87	288.23	162.39	1.01
Reach-1	76011	100-year	1650.00	7392.48	7396.92		7397.41	0.005612	6.41	382.98	128.87	0.55
Reach-1	75869	100-year	1650.00	7390.00	7396.86		7397.03	0.001023	3.71	631.77	121.80	0.25
Reach-1	75808	100-year	1650.00	7387.30	7394.58	7394.58	7396.36	0.038927	11.80	187.14	57.16	0.84
Reach-1	75760	Culvert										
Reach-1	75710	100-year	1650.00	7386.00	7393.23	7393.23	7395.60	0.048103	12.77	145.24	36.78	0.92
Reach-1	75482	100-year	1650.00	7381.29	7385.03		7385.30	0.015238	5.29	435.92	175.13	0.50
Reach-1	75383	100-year	1650.00	7380.00	7382.68		7383.19	0.031048	5.85	307.48	164.78	0.67
Reach-1	75333	100-year	1650.00	7376.08	7381.63	7380.89	7381.95	0.017542	6.79	432.42	190.51	0.52
Reach-1	75298	Culvert										
Reach-1	75260	100-year	1650.00	7376.09	7380.11	7379.65	7380.34	0.015694	5.53	447.46	168.63	0.50
Reach-1	75049	100-year	1650.00	7371.30	7374.93		7375.64	0.031620	7.36	271.77	111.53	0.71
Reach-1	74898	100-year	1650.00	7366.00	7368.94	7368.67	7369.78	0.048430	7.40	226.62	99.40	0.83
Reach-1	74391	100-year	1650.00	7344.00	7348.48	7348.01	7349.57	0.033337	8.79	216.45	70.29	0.76
Reach-1	73847	100-year	1650.00	7324.66	7329.15	7328.88	7330.06	0.038445	8.98	249.67	98.49	0.80
Reach-1	73309	100-year	1650.00	7311.77	7315.50		7315.87	0.018844	5.28	360.42	150.47	0.54
Reach-1	72811	100-year	1650.00	7304.00	7308.09	7306.83	7308.39	0.012174	4.90	409.71	147.32	0.45
Reach-1	72320	100-year	1650.00	7296.69	7299.11		7299.38	0.030681	4.16	406.66	302.01	0.61
Reach-1	71808	100-year	1650.00	7291.69	7294.49		7294.56	0.004423	2.16	797.31	381.30	0.25
Reach-1	71600	100-year	1650.00	7290.00	7292.01	7292.01	7292.32	0.052896	5.26	405.44	397.92	0.79
Reach-1	71394	100-year	1650.00	7240.00	7247.04	7246.64	7248.28	0.031103	9.86	215.89	64.24	0.74
Reach-1	71193	100-year	1650.00	7234.00	7240.26	7239.63	7241.55	0.036103	9.19	185.69	49.14	0.77
Reach-1	70807	100-year	1650.00	7224.00	7233.35		7233.98	0.011791	6.75	291.92	69.31	0.47
Reach-1	70391	100-year	1650.00	7220.00	7223.41	7223.41	7224.52	0.060061	9.08	213.32	98.75	0.95
Reach-1	69997	100-year	1650.00	7210.00	7213.89	7212.71	7214.19	0.013807	5.00	404.41	260.30	0.47
Reach-1	69650	100-year	1650.00	7200.00	7205.47	7205.47	7206.36	0.042493	10.19	262.40	123.29	0.84
Reach-1	69399	100-year	1650.00	7190.30	7197.40	7194.02	7197.58	0.003761	3.45	483.25	115.53	0.26
Reach-1	69296	Bridge										



CORRECTED EFFECTIVE MODEL- POST

HEC-RAS Plan: post River: Arroyo Hondo Reach: Reach-1 Profile: 100-year

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
Reach-1	77425	100-year	1650.00	7424.00	7427.95	7427.95	7429.06	0.013794	9.29	272.38	131.31	0.85
Reach-1	77380	100-year	1650.00	7420.01	7427.21	7427.21	7428.37	0.011927	10.16	298.75	122.88	0.73
Reach-1	77351	Culvert										
Reach-1	77309	100-year	1650.00	7420.02	7425.19	7425.19	7426.22	0.015561	10.46	313.71	136.89	0.89
Reach-1	77106	100-year	1650.00	7416.00	7422.33	7421.56	7423.29	0.012386	10.44	285.10	77.32	0.79
Reach-1	76902	100-year	1650.00	7415.58	7418.42	7418.42	7419.53	0.029789	9.02	213.03	107.22	1.13
Reach-1	76658	100-year	1650.00	7409.30	7412.88		7413.29	0.006844	5.74	407.29	176.03	0.58
Reach-1	76590	100-year	1650.00	7406.03	7411.44	7411.44	7412.45	0.014859	10.50	323.58	142.77	0.87
Reach-1	76539	Culvert										
Reach-1	76488	100-year	1650.00	7405.99	7409.55	7409.55	7410.20	0.019059	8.89	341.01	161.89	0.93
Reach-1	76314	100-year	1650.00	7401.34	7404.51	7404.51	7405.39	0.022852	8.87	288.23	162.39	1.01
Reach-1	76011	100-year	1650.00	7392.48	7396.92		7397.41	0.005612	6.41	382.98	128.87	0.55
Reach-1	75869	100-year	1650.00	7390.00	7396.86		7397.03	0.001023	3.71	631.77	121.80	0.25
Reach-1	75808	100-year	1650.00	7387.30	7394.58	7394.58	7396.36	0.038927	11.80	187.14	57.16	0.84
Reach-1	75760	Culvert										
Reach-1	75710	100-year	1650.00	7386.00	7393.23	7393.23	7395.60	0.048103	12.77	145.24	36.78	0.92
Reach-1	75482	100-year	1650.00	7381.29	7385.03		7385.30	0.015238	5.29	435.92	175.13	0.50
Reach-1	75383	100-year	1650.00	7380.00	7382.68		7383.19	0.031048	5.85	307.48	164.78	0.67
Reach-1	75333	100-year	1650.00	7376.08	7381.63	7380.89	7381.95	0.017542	6.79	432.42	190.51	0.52
Reach-1	75298	Culvert										
Reach-1	75260	100-year	1650.00	7376.09	7380.11	7379.65	7380.34	0.015694	5.53	447.46	168.63	0.50
Reach-1	75049	100-year	1650.00	7371.30	7374.93		7375.64	0.031620	7.36	271.77	111.53	0.71
Reach-1	74898	100-year	1650.00	7366.00	7368.94	7368.67	7369.78	0.048430	7.40	226.62	99.40	0.83
Reach-1	74391	100-year	1650.00	7344.00	7348.48	7348.01	7349.57	0.033337	8.79	216.45	70.29	0.76
Reach-1	73847	100-year	1650.00	7324.66	7329.15	7328.88	7330.06	0.038445	8.98	249.67	98.49	0.80
Reach-1	73309	100-year	1650.00	7311.77	7315.50		7315.87	0.018844	5.28	360.42	150.47	0.54
Reach-1	72811	100-year	1650.00	7304.00	7308.09	7306.83	7308.39	0.012174	4.90	409.71	147.32	0.45
Reach-1	72320	100-year	1650.00	7296.69	7299.11		7299.38	0.030681	4.16	406.66	302.01	0.61
Reach-1	71808	100-year	1650.00	7291.69	7294.49		7294.56	0.004423	2.16	797.31	381.30	0.25
Reach-1	71600	100-year	1650.00	7290.00	7292.01	7292.01	7292.32	0.052896	5.26	405.44	397.92	0.79
Reach-1	71394	100-year	1650.00	7240.00	7247.04	7246.64	7248.28	0.031103	9.86	215.89	64.24	0.74
Reach-1	71193	100-year	1650.00	7234.00	7240.26	7239.63	7241.55	0.036103	9.19	185.69	49.14	0.77
Reach-1	70807	100-year	1650.00	7224.00	7233.35		7233.98	0.011791	6.75	291.92	69.31	0.47
Reach-1	70391	100-year	1650.00	7220.00	7223.41	7223.41	7224.52	0.060061	9.08	213.32	98.75	0.95
Reach-1	69997	100-year	1650.00	7210.00	7213.89	7212.71	7214.19	0.013807	5.00	404.41	260.30	0.47
Reach-1	69650	100-year	1650.00	7200.00	7205.47	7205.47	7206.36	0.042493	10.19	262.40	123.29	0.84
Reach-1	69399	100-year	1650.00	7190.30	7197.40	7194.02	7197.58	0.003761	3.45	483.25	115.53	0.26
Reach-1	69296	Bridge										



## PHOTOS



Sta. 9+70, 2-42" CMP



Sta. 15+00, 2-24" CMP





Sta. 16+90, 3-24" CMP



Sta. 18+50, 3-24" CMP





Sta. 20+30, 17"S x 13"R CMAP, 45° Skew



Sta. 26+76, 17"S x 13"R CMAP





Requires Grade Correction



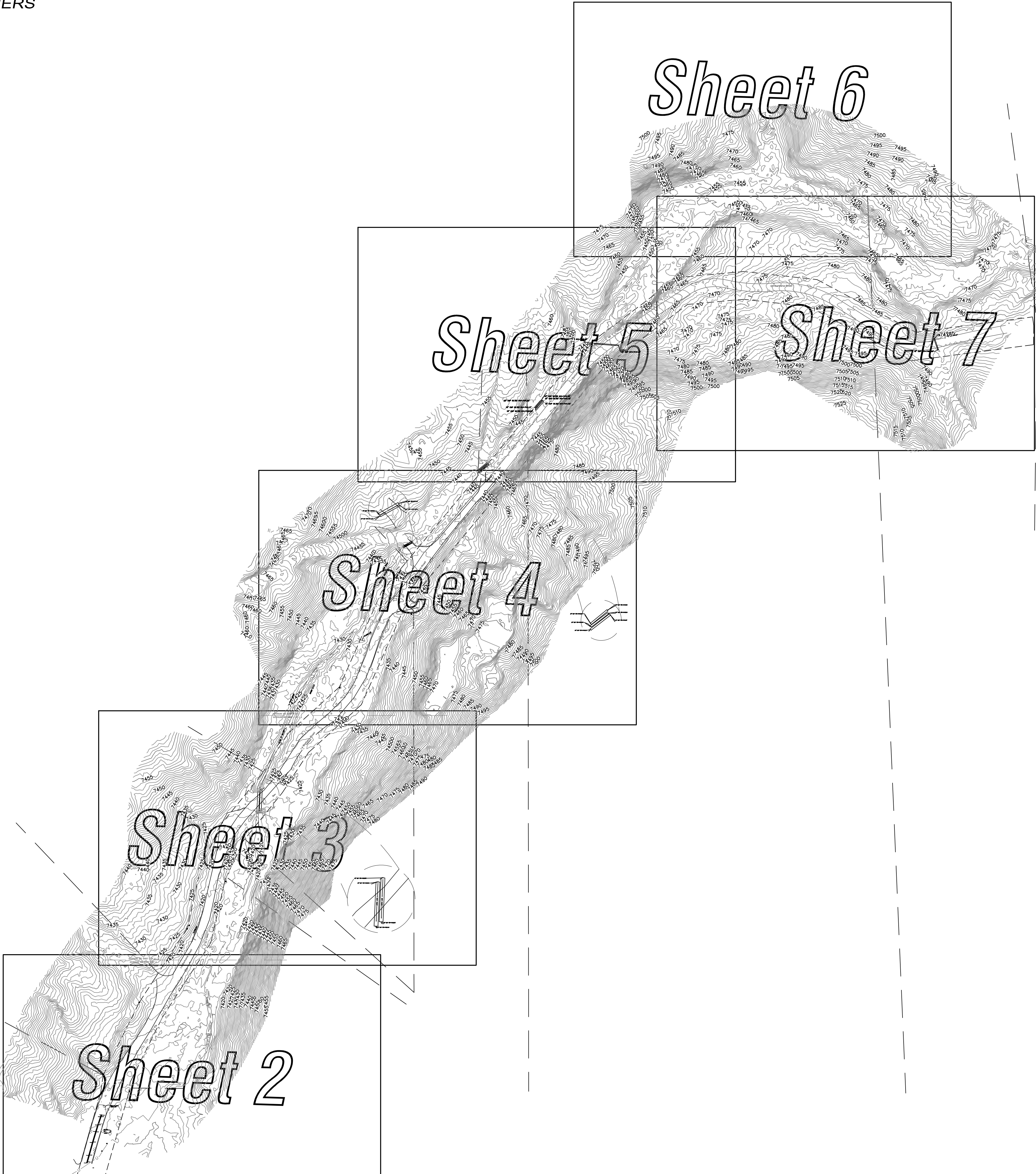
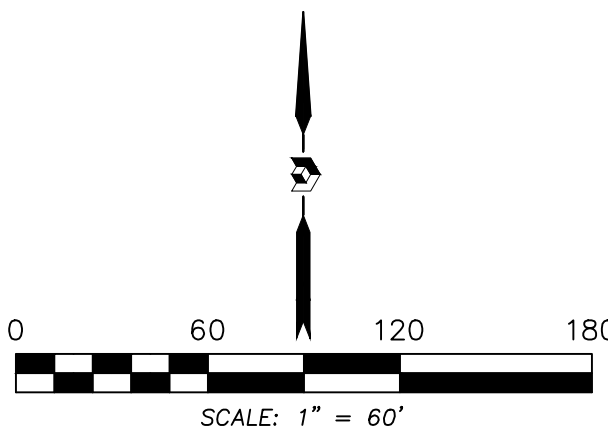


THIS IS NOT A BOUNDARY SURVEY  
APPARENT LOT LINES AND PROPERTY CORNERS  
ARE SHOWN FOR ORIENTATION ONLY

Control Network

POINT NO.	NORTHING	EASTING	ELEVATION	DESCRIPTION
1	1683104.65	1746946.637	7427.576	BASE
10	1682511.08	1746723.965	7411.673	SET_CP/PK NAIL
11	1683404.16	1747206.226	7432.308	SET_CP/PK NAIL
12	1683973.9	1748081.778	7490.963	SET_CP/RWAC NO.4 11993
13	1683914.53	1748361.521	7492.819	SET_CP/RWAC NO.4 11993
14	1683953.48	1748660.599	7492.28	SET_CP/RWAC NO.4 11993

Topographic Survey of  
a Portion of  
**La Barbara Road**  
Santa Fe County, New Mexico  
January 2018



Notes

1. FIELD SURVEY PERFORMED ON MARCH 2016--JANUARY 2018.
2. ALL BEARINGS ARE GRID BEARINGS: N.M. STATE PLANE COORDINATES, CENTRAL ZONE--NAD 1983.
3. ALL DISTANCES ARE GROUND DISTANCES: U.S. SURVEY FOOT.
4. PLAT REFERENCES:
  - A. "RIGHT OF WAY SURVEY PLAT SHOWING DEDICATION OF 50' ROADWAY TO THE COUNTY OF SANTA FE AS CONTINUATION OF EXISTING COUNTY ROAD 67-F" (07/01/1999, BK. 418, PG. 005--007
6. LOCATION OF UNDERGROUND UTILITIES AND EASEMENTS NOT VERIFIED BY THIS PLAN. UNDERGROUND UTILITIES MAY EXIST WHERE NONE ARE SHOWN. UNDERGROUND UTILITY LOCATION IS BASED UPON INFORMATION PROVIDED BY OTHERS AND MAY BE INCOMPLETE OR OBSOLETE AT THE TIME OF CONSTRUCTION. THE OWNER SHOULD INFORM HIMSELF OF THE LOCATION OF ANY UTILITY LINE, PIPELINE, OR UNDERGROUND UTILITY LINE IN OR NEAR THE AREA OF THE WORK IN ADVANCE OF AND DURING EXCAVATION WORK. THE OWNER IS FULLY RESPONSIBLE FOR ANY AND ALL DAMAGE CAUSED BY ITS FAILURE TO LOCATE, IDENTIFY AND PRESERVE ANY AND ALL EXISTING UTILITIES, PIPELINES AND UNDERGROUND UTILITY LINES. THE OWNER IS URGED TO COMPLY WITH STATE STATUTES, MUNICIPAL AND LOCAL ORDINANCES, RULES AND REGULATIONS, IF ANY, PERTAINING TO THE LOCATION OF THESE LINES, IN PLANNING AND CONDUCTING EXCAVATION. THE OWNER SHOULD MAKE THEMSELVES AWARE OF REGULATIONS STATED IN CHAPTER 62, ARTICLE 14, NMSA 1978 RELATING TO EXCAVATION DAMAGE TO PIPELINES AND UNDERGROUND UTILITY LINES.
7. THIS MAP HAS BEEN PRODUCED ACCORDING TO PROCEDURES THAT HAVE BEEN DEMONSTRATED TO PRODUCE DATA THAT MEETS OR EXCEEDS THE MINIMUM STANDARDS FOR A TOPOGRAPHIC MAP COMPILED AT A SCALE OF 1"=20' WITH A CONTOUR INTERVAL OF ONE FOOT.

Surveyor's Certificate

I, LARRY W. MEDRANO, A PROFESSIONAL LAND SURVEYOR REGISTERED IN THE STATE OF NEW MEXICO, LICENSE NUMBER 11993, DO HEREBY CERTIFY THAT THIS TOPOGRAPHIC SURVEY WAS PREPARED BY ME BY FIELD SURVEYS USING GPS RTK MEASUREMENTS BASED ON SITE HORIZONTAL/VERTICAL CALIBRATION UTILIZING AGRS MONUMENTS, ELEVATIONS BASED ON OPUS SOLUTION 88960535.16o OPI456320852485 THIS SURVEY MEETS THE MINIMUM STANDARDS FOR TOPOGRAPHIC SURVEYING IN NEW MEXICO AS ADOPTED BY THE NEW MEXICO BOARD OF LICENSURE FOR PROFESSIONAL ENGINEERS AND SURVEYORS. THIS IS NOT A BOUNDARY SURVEY.

LARRY W. MEDRANO  
N.M.P.S. No. 11993

DATE



**PRECISION**  
SURVEYS, INC.

OFFICE LOCATION:  
9200 San Mateo Boulevard, NE  
Albuquerque, NM 87113

505.856.5700 PHONE  
505.856.7900 FAX

Sheet 1 of 7

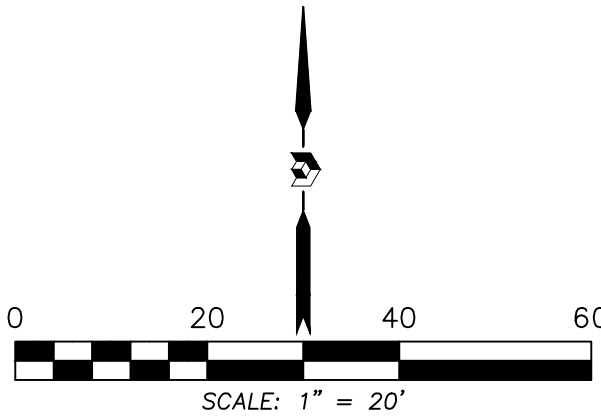
COORDINATE AND DIMENSION INFORMATION

STATE PLANE ZONE:	GRID BOUNDING COORDINATES:	TYPE:
NM-C	GRID	STANDARD
HORIZONTAL DATUM: NAD83	VERTICAL DATUM: NAVD88	ROTATION ANGLE: 0° 00' 00.00"
CONTROL USED: NATIONAL GEODETIC SURVEY		MATCHES DRAWING UNITS YES
COMBINED SCALE FACTOR: GRID TO GROUND: 1.0004395031 GROUND TO GRID: 0.99956069	DISTANCE ANNOTATION: GROUND BEARING ANNOTATION: GRID	BASE POINT FOR SCALING AND/OR ROTATION: N = 0 E = 0 ELEVATION TRANSLATION: ±0.00' ELEVATIONS VALID: YES



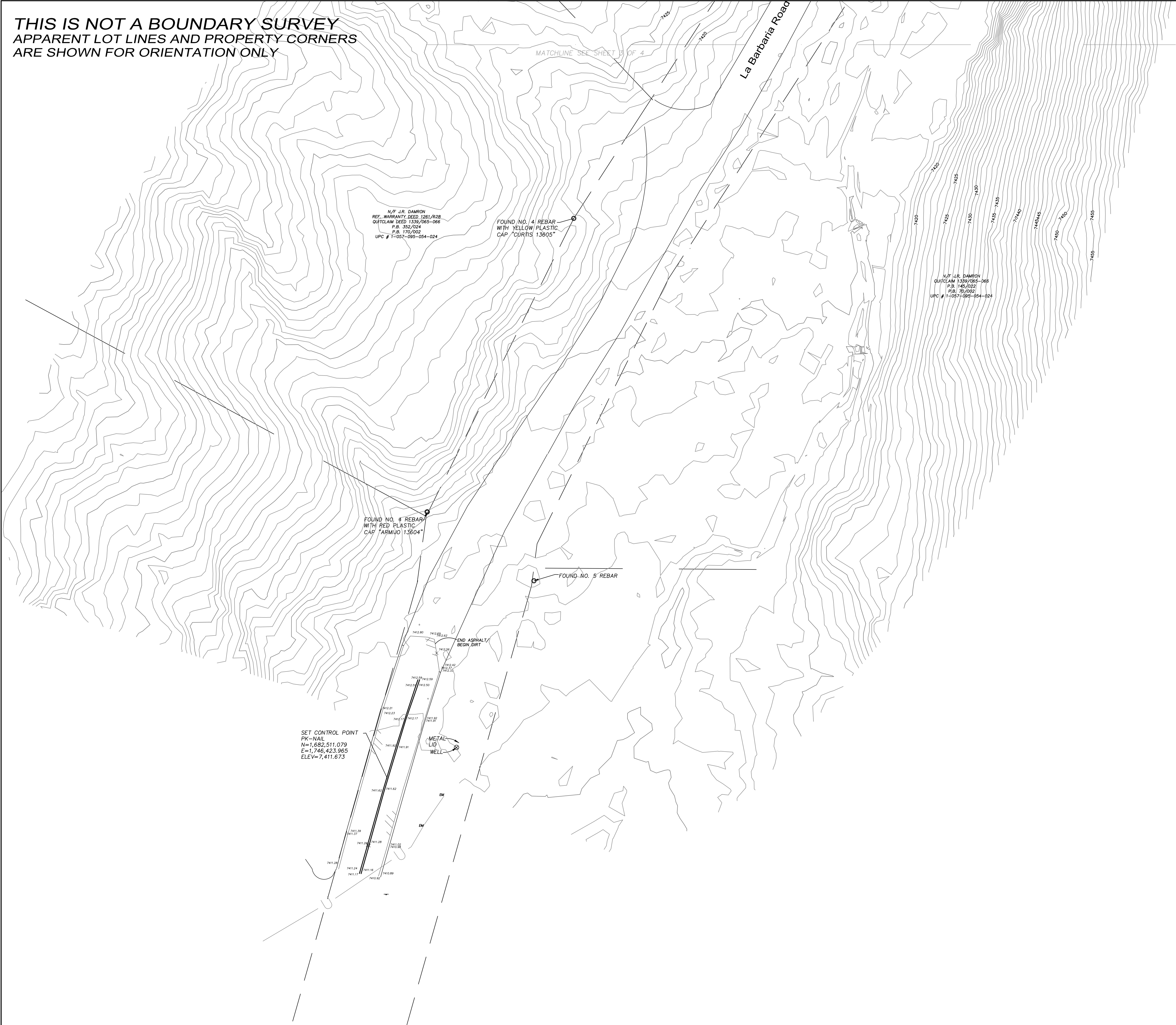
THIS IS NOT A BOUNDARY SURVEY  
APPARENT LOT LINES AND PROPERTY CORNERS  
ARE SHOWN FOR ORIENTATION ONLY

Topographic Survey of  
a Portion of  
**La Barbara Road**  
Santa Fe County, New Mexico  
January 2018



**Legend**

—	MEASURED BEARING AND DISTANCES
○	FOUND AND USED MONUMENT AS DESIGNATED
□	TELEPHONE PEDESTAL



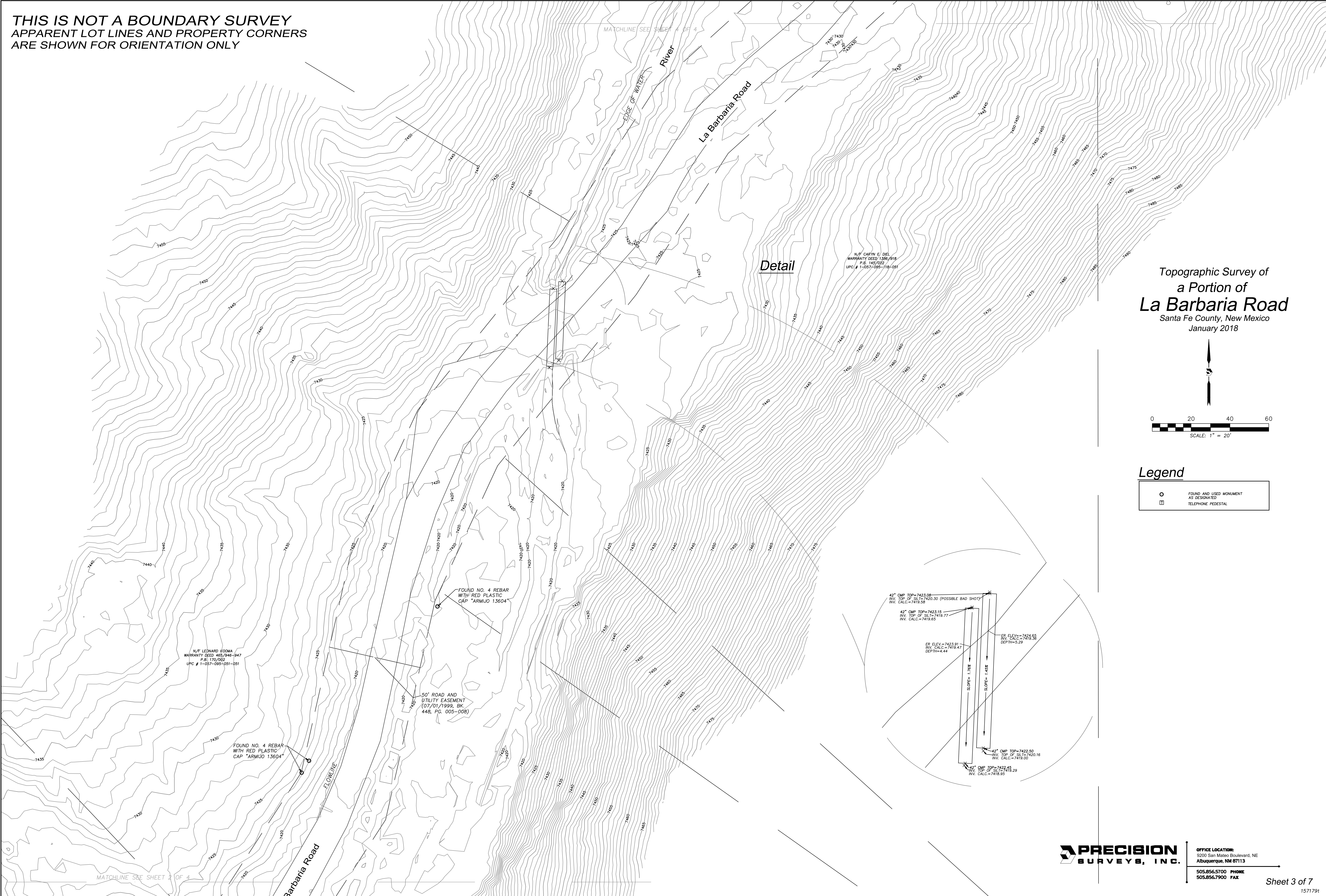
**PRECISION**  
SURVEYS, INC.

OFFICE LOCATION:  
9200 San Mateo Boulevard, NE  
Albuquerque, NM 87113

505.856.5700 PHONE  
505.856.7900 FAX



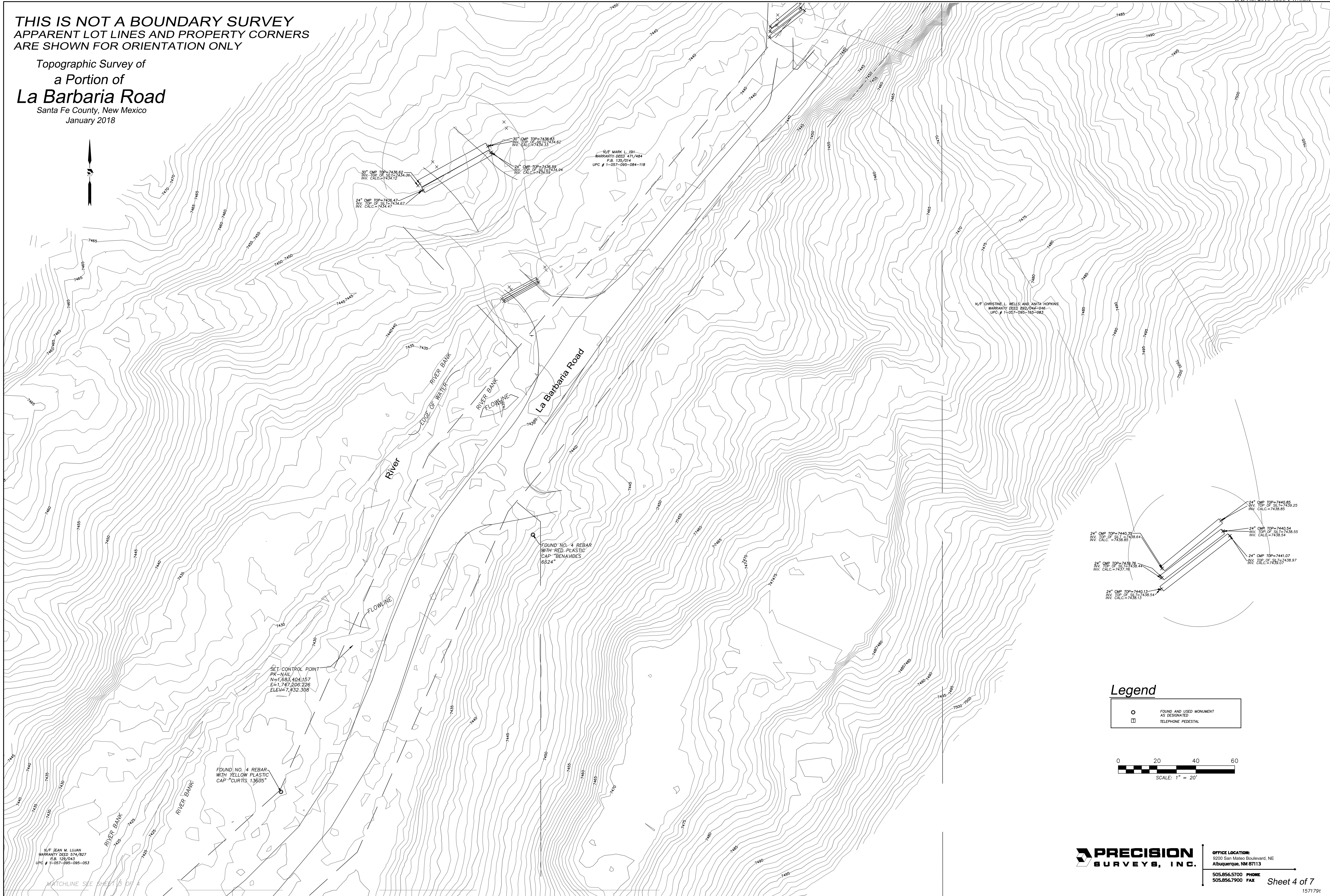
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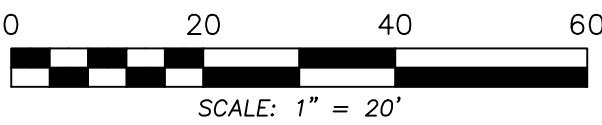
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Topographic Survey of  
a Portion of  
**La Barbaria Road**  
Santa Fe County, New Mexico  
January 2018



Legend

○	FOUND AND USED MONUMENT AS DESIGNATED
□	TELEPHONE PEDESTAL



**PRECISION**  
SURVEYS, INC.

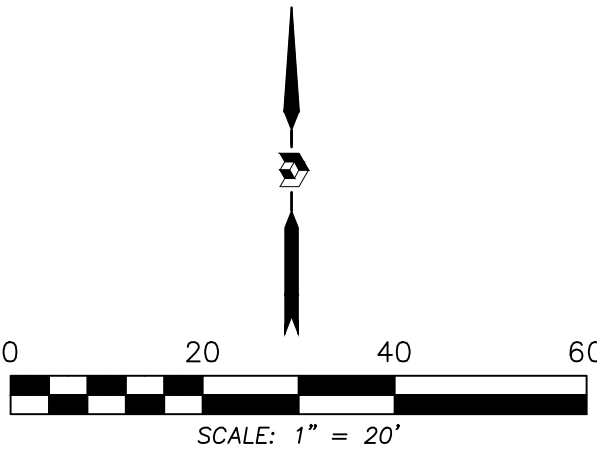
OFFICE LOCATION:  
9200 San Mateo Boulevard, NE  
Albuquerque, NM 87113

505.856.5700 PHONE  
505.856.7900 FAX



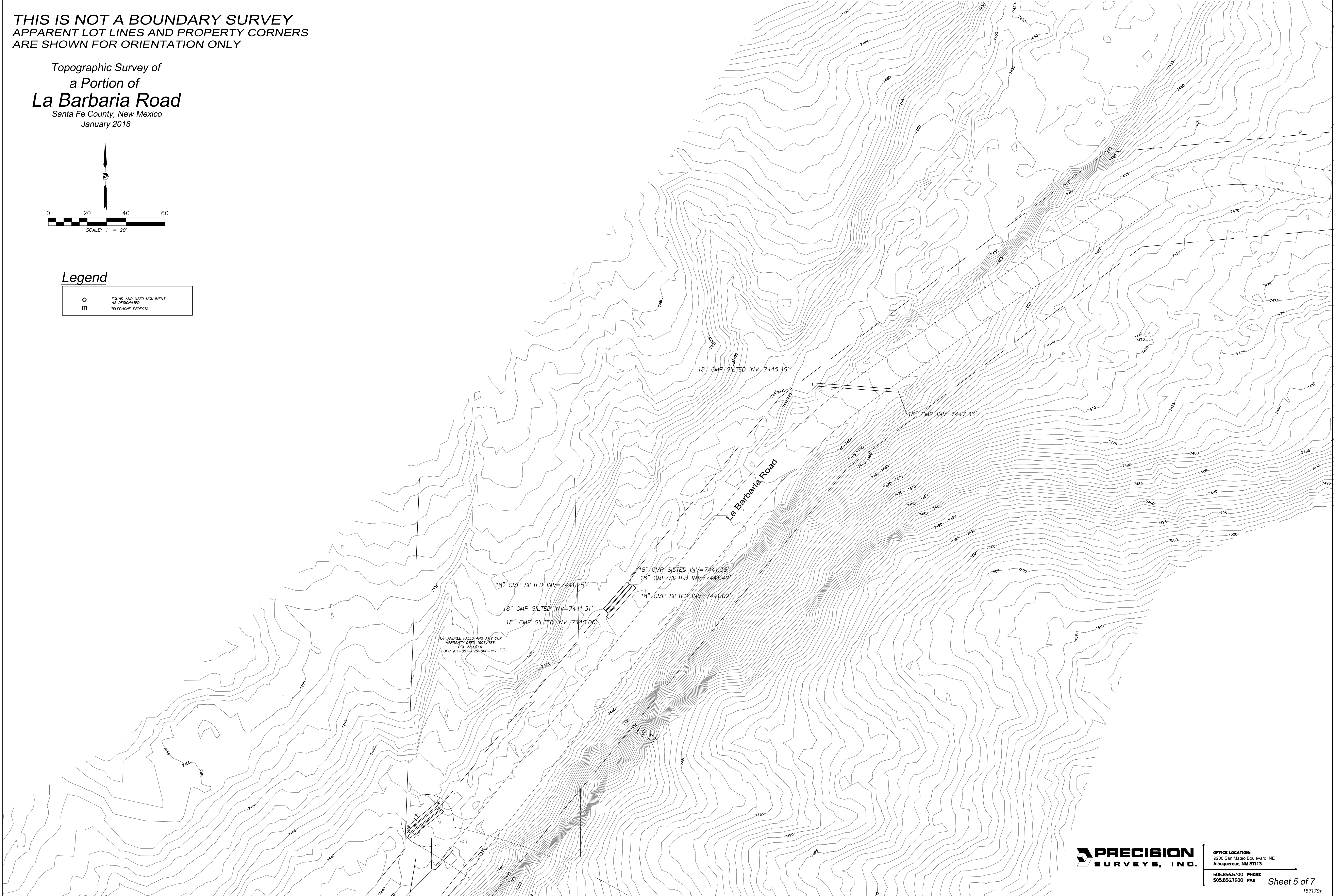
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Topographic Survey of  
a Portion of  
**La Barbaria Road**  
Santa Fe County, New Mexico  
January 2018



**Legend**

○	FOUND AND USED MONUMENT AS DESIGNATED
□	TELEPHONE PEDESTAL



**PRECISION**  
SURVEYS, INC.

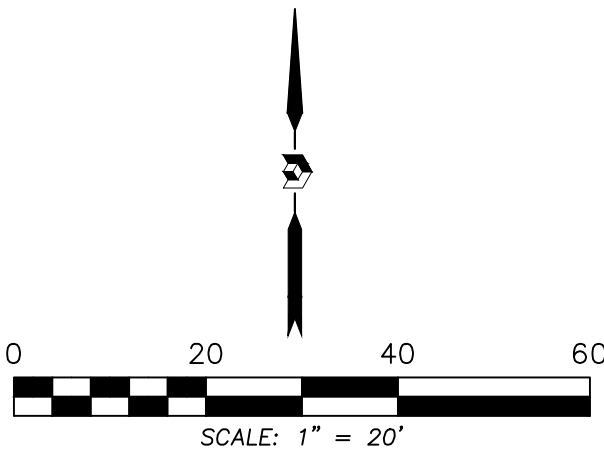
OFFICE LOCATION:  
9200 San Mateo Boulevard, NE  
Albuquerque, NM 87113

505.856.5700 PHONE  
505.856.7900 FAX



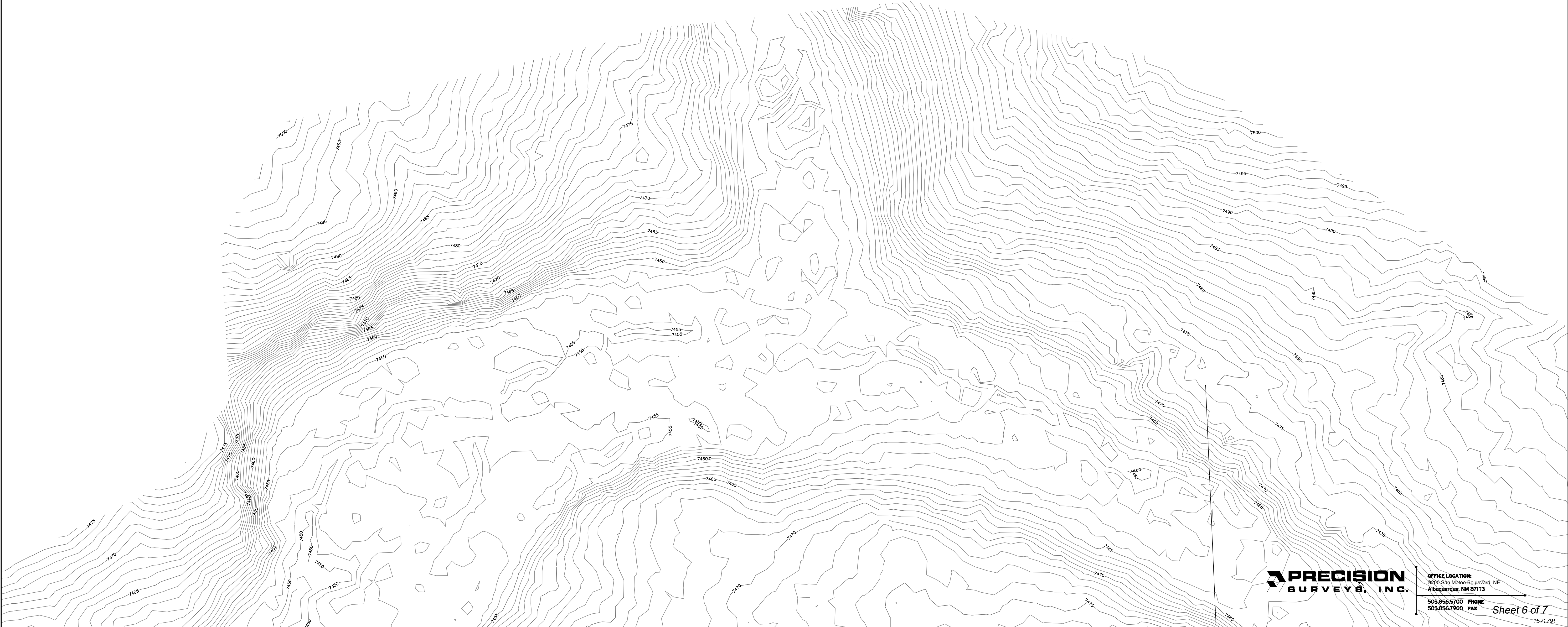
THIS IS NOT A BOUNDARY SURVEY  
APPARENT LOT LINES AND PROPERTY CORNERS  
ARE SHOWN FOR ORIENTATION ONLY

Topographic Survey of  
a Portion of  
**La Barbara Road**  
Santa Fe County, New Mexico  
January 2018

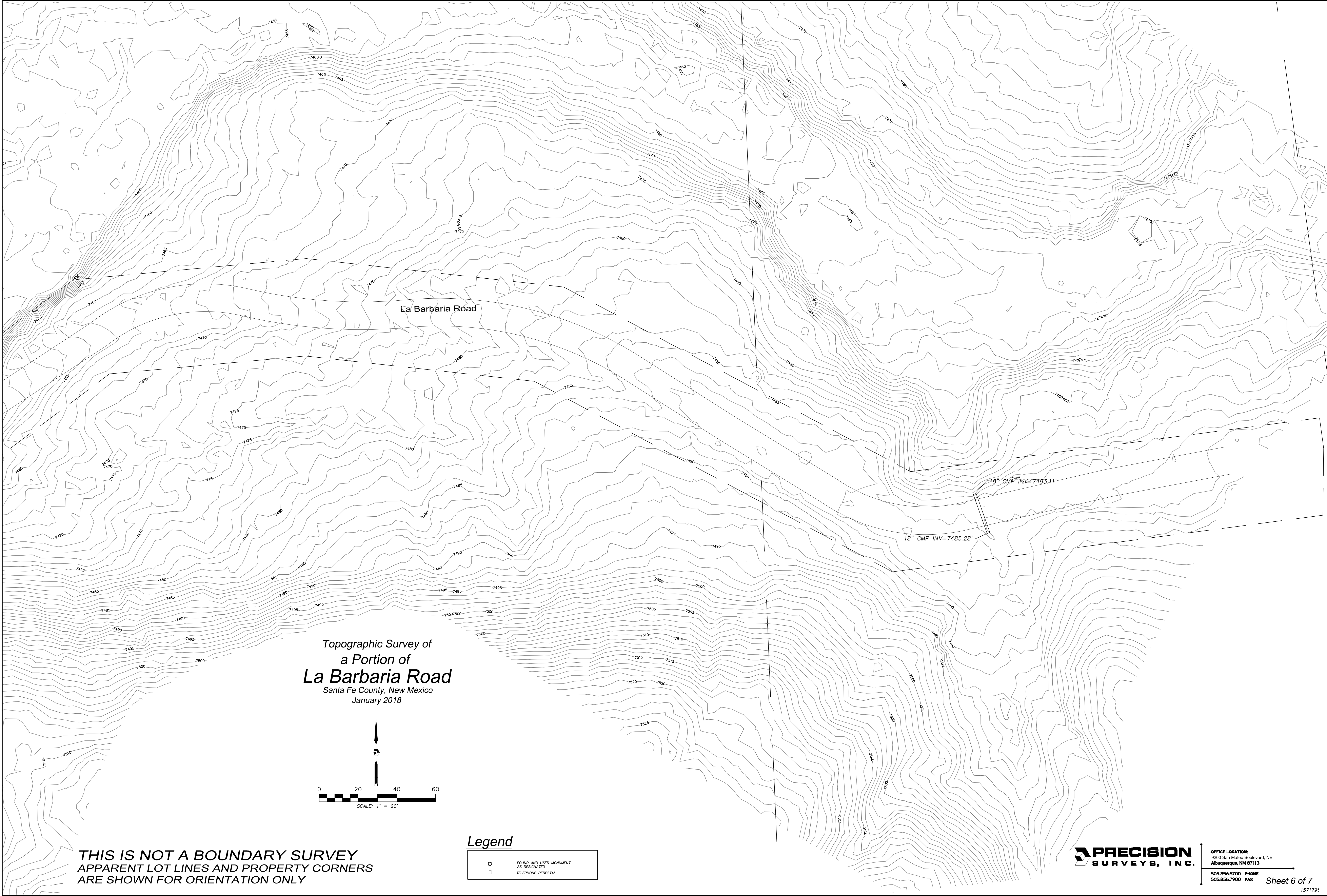


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⌚	TELEPHONE PEDESTAL

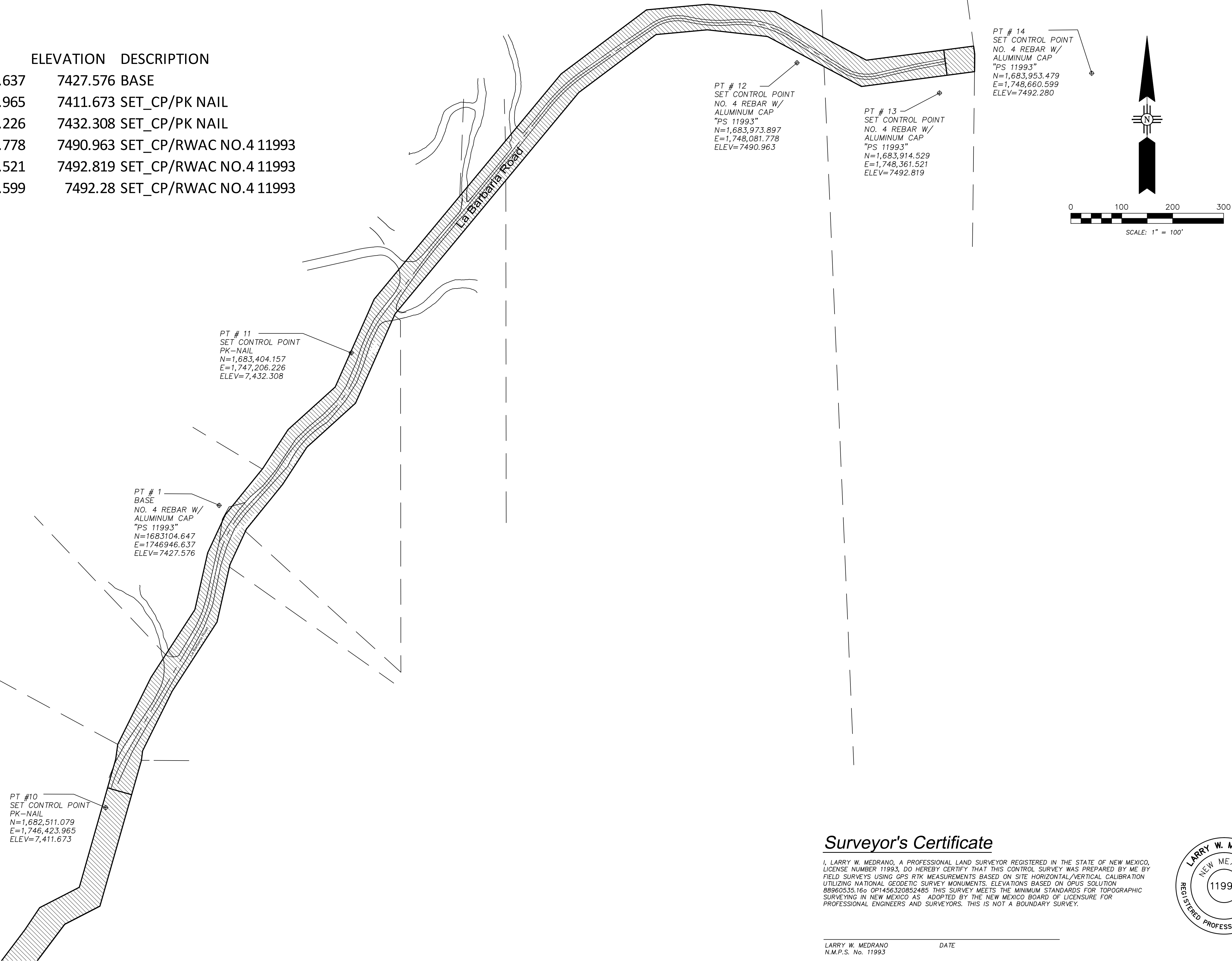






Control Network  
A Portion of  
**La Barbara Road**  
Santa Fe County, New Mexico  
January 2018

POINT NO.	NORTHING	EASTING	ELEVATION	DESCRIPTION
1	1683104.647	1746946.637	7427.576	BASE
10	1682511.079	1746723.965	7411.673	SET_CP/PK NAIL
11	1683404.157	1747206.226	7432.308	SET_CP/PK NAIL
12	1683973.897	1748081.778	7490.963	SET_CP/RWAC NO.4 11993
13	1683914.529	1748361.521	7492.819	SET_CP/RWAC NO.4 11993
14	1683953.479	1748660.599	7492.28	SET_CP/RWAC NO.4 11993



Surveyor's Certificate

I, LARRY W. MEDRANO, A PROFESSIONAL LAND SURVEYOR REGISTERED IN THE STATE OF NEW MEXICO, LICENSE NUMBER 11993, DO HEREBY CERTIFY THAT THIS CONTROL SURVEY WAS PREPARED BY ME BY FIELD SURVEYS USING GPS RTK MEASUREMENTS BASED ON SITE HORIZONTAL/VERTICAL CALIBRATION UTILIZING NATIONAL GEODETIC SURVEY MONUMENTS. ELEVATIONS BASED ON OPUS SOLUTION 88960535.160 OP1456320852485 THIS SURVEY MEETS THE MINIMUM STANDARDS FOR TOPOGRAPHIC SURVEYING IN NEW MEXICO AS ADOPTED BY THE NEW MEXICO BOARD OF LICENSURE FOR PROFESSIONAL ENGINEERS AND SURVEYORS. THIS IS NOT A BOUNDARY SURVEY.

LARRY W. MEDRANO  
N.M.P.S. No. 11993

DATE



COORDINATE AND DIMENSION INFORMATION			
STATE PLANE (ONE):	GRID (GROUND COORDINATES):	TYPE:	
NMCS	GRID	STANDARD	
HORIZONTAL DATUM:	VERTICAL DATUM:	ROTATION ANGLE:	MATCHES DRAWING UNITS
NAD83	NAVD88	0° 00' 00.00"	YES
CONTROL USED:	BASE POINT FOR SCALING AND/OR ROTATION:		
NATIONAL GEODETIC SURVEY	N <input type="checkbox"/> 0		
COMBINED SCALE FACTOR:	DISTANCE ANNOTATION:	E <input type="checkbox"/> 0	
GRID TO GROUND: 1.000 ± 9.0E-1	GROUND		
GROUND TO GRID: 0.999 ± 0.009	GRID	ELEVATION TRANSLATION:	ELEVATIONS VALID:
		± 0.00'	YES



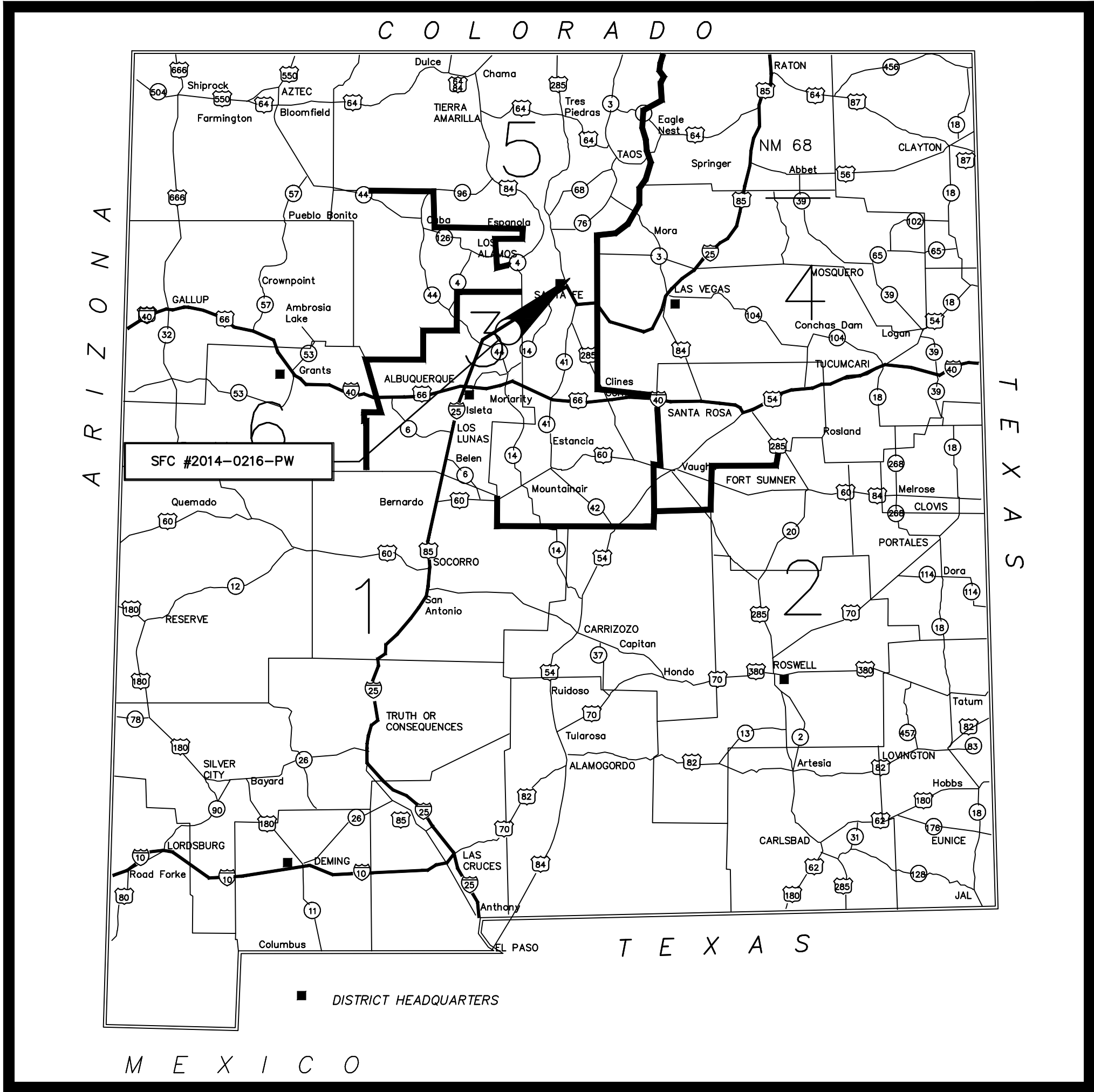
OFFICE LOCATION:  
9200 San Mateo Boulevard, NE  
Albuquerque, NM 87113  
505.856.5700 PHONE  
505.856.7900 FAX



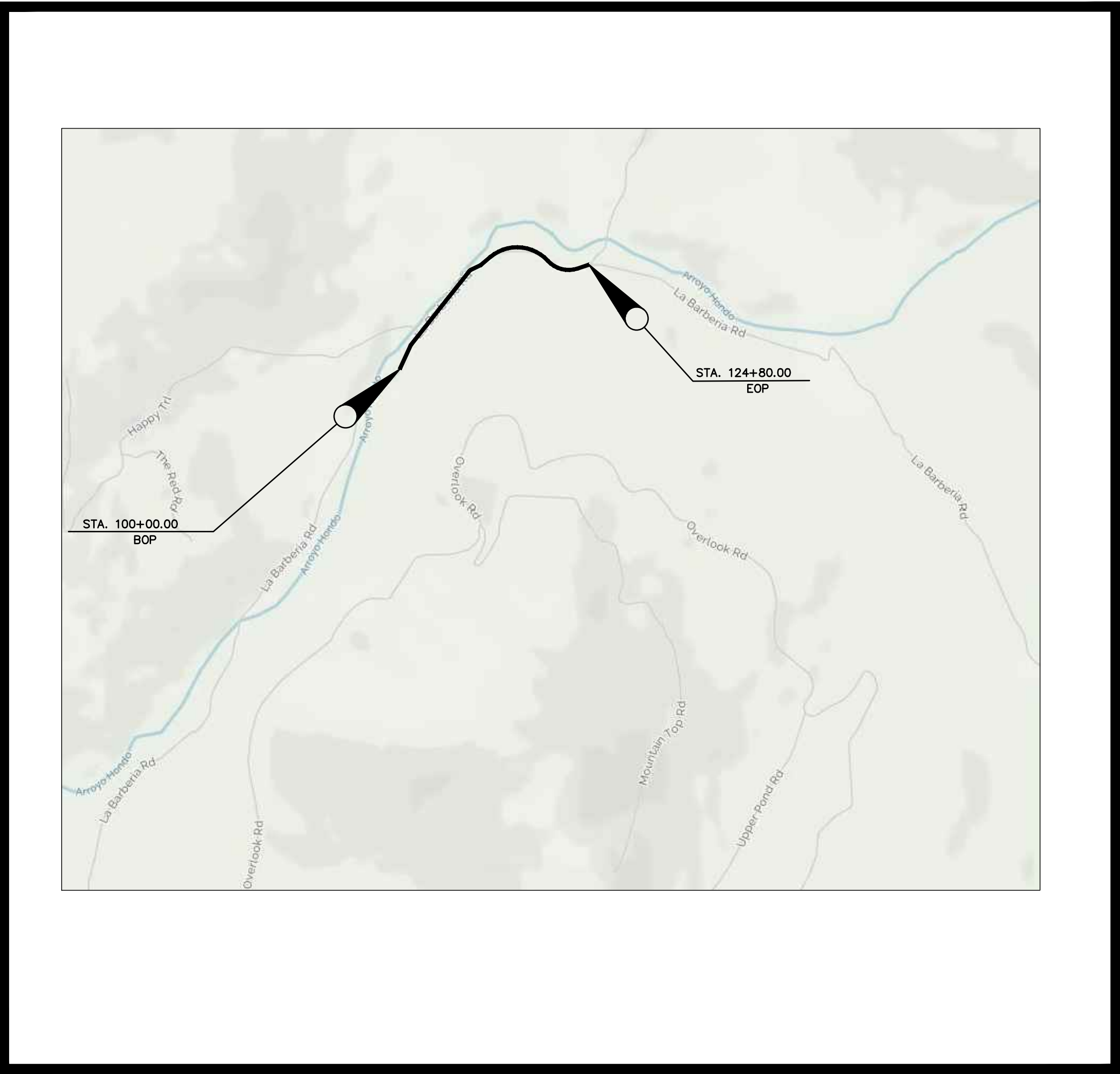
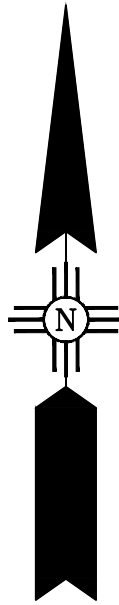
TITLE SHEET  
RIGHT-OF-WAY MAPS  
LA BARBARIA ROAD  
DRAINAGE AND ROAD IMPROVEMENTS

LENGTH OF PROJECT = 0.4697 MILES  
LENGTH OF R.O.W. = 0.4697 MILES

INDEX OF SHEETS	
No.	DESCRIPTION
1	TITLE SHEET
1A	PARCEL BLOCK & SHEET LAYOUT
2	STA. 100+00.00 TO STA. 114+73.78
3	STA. 114+73.78 TO STA. 124+80.00



VICINITY MAP  
N.T.S.



LOCATION MAP  
N.T.S.

FINAL MAP \_\_\_\_\_  
DATE \_\_\_\_\_

5			
4			
3			
2			
1			
NO.	DESCRIPTION	DATE	BY
REVISIONS (OR CHANGE NOTICES)			

SANTA FE COUNTY  
RIGHT-OF-WAY MAP  
SFC PROJECT NO.  
**20100216PW**

SANTA FE COUNTY  
SCALE: NTS SHEET 1 OF 3

Right-of-Way Maps Prepared By:	
DESIGNED BY: RR	
DRAWN BY: JK	
CHECKED BY: LWM	

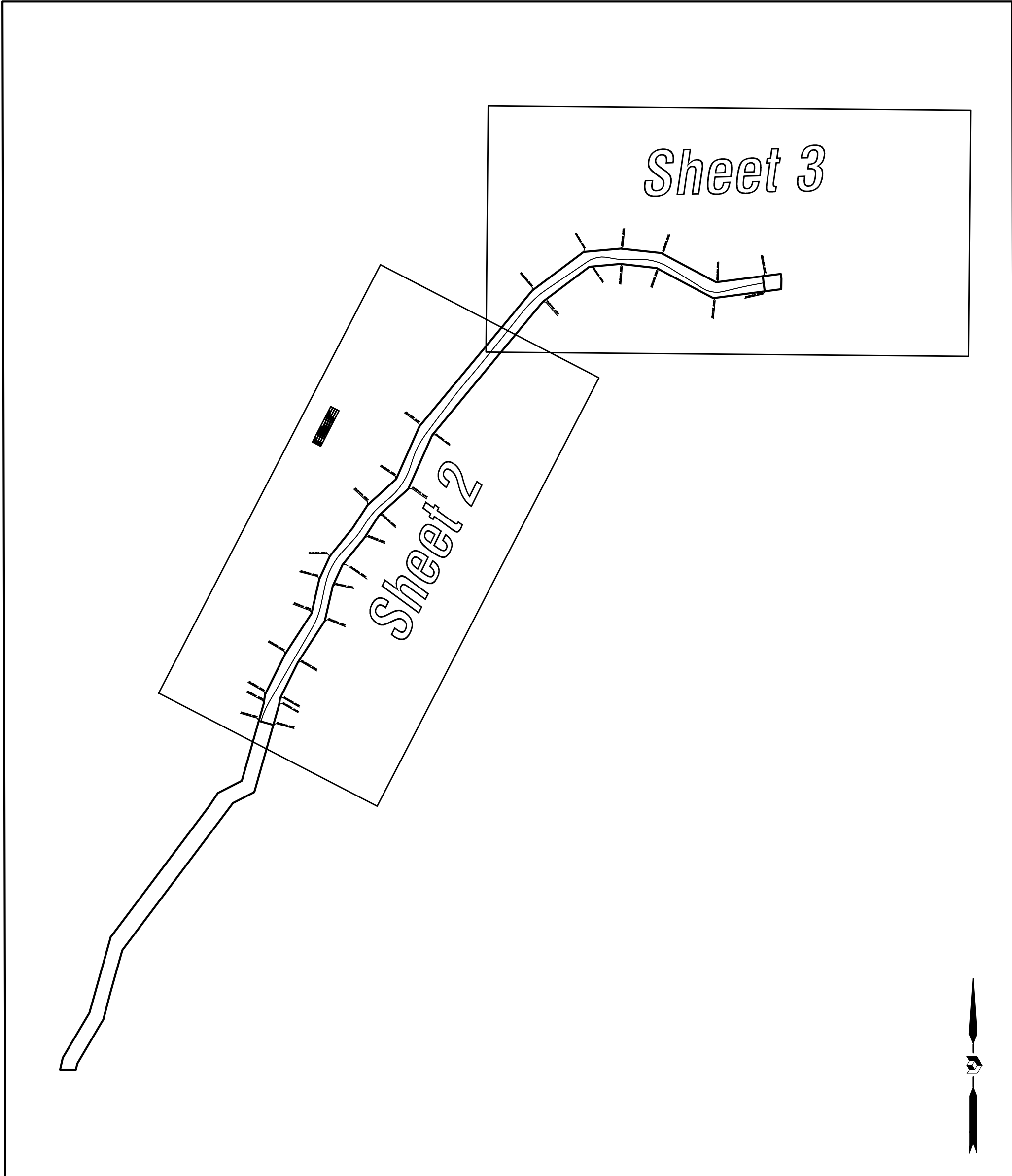
PRECISION SURVEYS, INC.  
10000 N. MESA LANE, SUITE 100  
ALBUQUERQUE, NM 87112  
(505) 261-1000  
WWW.PRECISIONSURVEYS.COM

Temporary Construction Permit

TCP Number	Owner	Area	
		Acres	Sq. Ft
2-TCP-1	MARK L. ISH	0.116	5,053
2-TCP-2	MARK L. ISH	0.0539	2,349
2-TCP-3	ANDREE FALLS AND AMY COX	0.0387	1,687
3-TCP-1	ANDREE FALLS AND AMY COX	0.0254	1,108
3-TCP-2	CHRISTINE L. WELLS AND ANITA HOPKINS	0.0456	1,988

Construction Maintenance Easement

CME Number	Owner	Area	
		Acres	Sq. Ft
2-CME-1	LEONARD KOOMA	0.0203	882
2-CME-2	JEAN M. LUJAN	0.0102	444
2-CME-3	CARYN E. DIEL	0.0312	1,360



SHEET INDEX

FINAL MAP \_\_\_\_\_  
DATE \_\_\_\_\_

5			
4			
3			
2			
1			
NO.	DESCRIPTION	DATE	BY
REVISIONS (OR CHANGE NOTICES)			

SANTA FE COUNTY

RIGHT OF WAY MAP

SFC PROJECT NO.

20100216PW

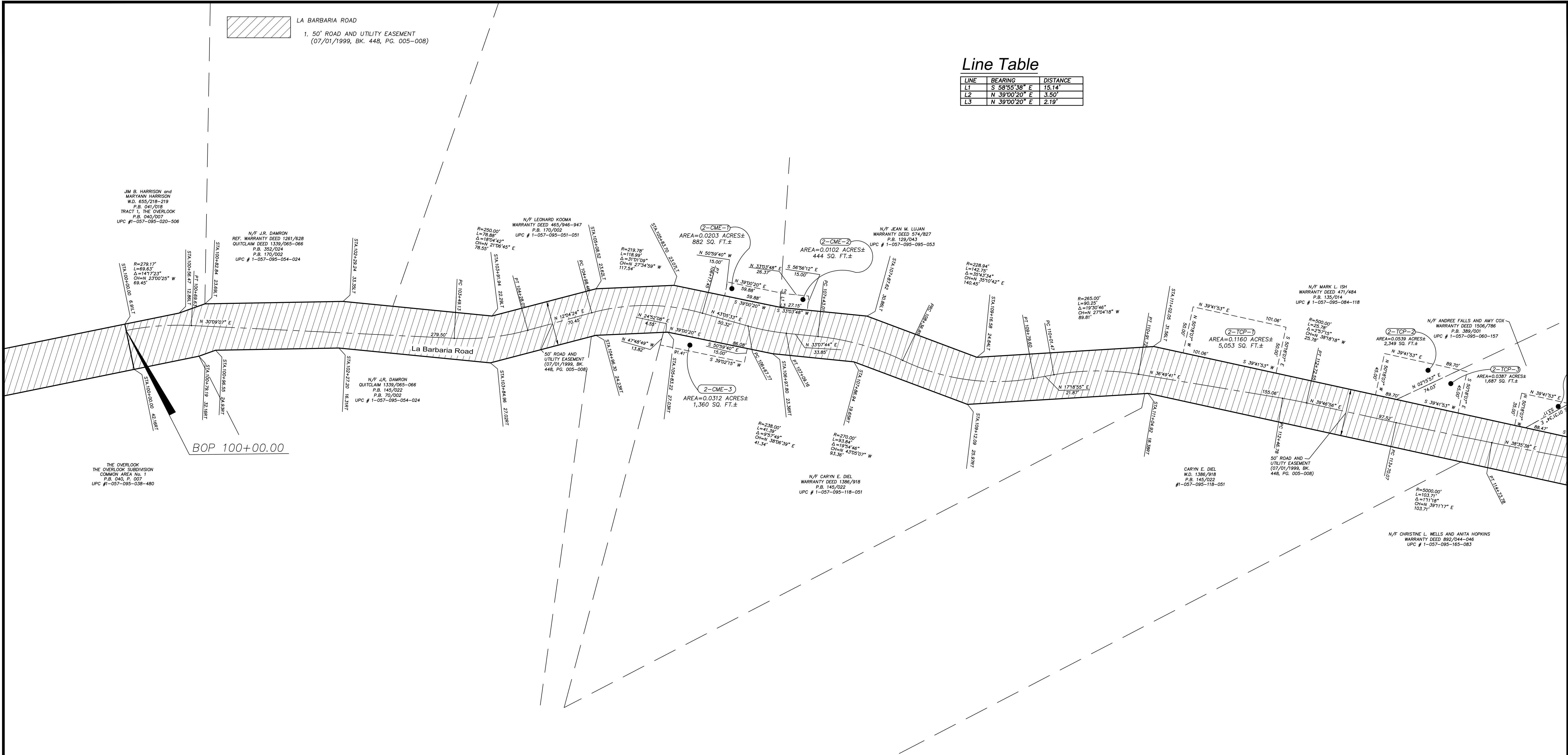
SANTA FE

SCALE: NTS

COUNTY

SHEET 1A OF 3

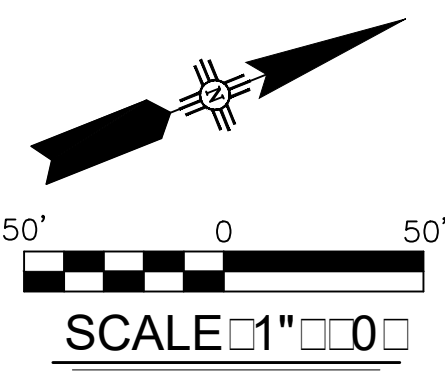
Right-of-Way Maps Prepared By:	Designed By: RR
	Drawn By: JK
	Checked By: LWM



**SURVEYOR'S CERTIFICATE**  
I, CERTIFY THAT I AM A REGISTERED PROFESSIONAL SURVEYOR AND THESE RIGHT OF WAY MAPS ARE AN INTERIM PRODUCT OF PROJECT DESIGN DEVELOPMENT AND WERE PREPARED BY ME OR UNDER MY DIRECTION AND ARE BASED ON THE ACTUAL FIELD SURVEY PERFORMED UNDER MY DIRECTION IN MARCH, 2016 THROUGH JANUARY, 2018. CONFORMANCE WITH THE STATE OF NEW MEXICO'S MINIMUM STANDARDS FOR RIGHT OF WAY



LARRY W. MEDRANO, N.M.P.S. NO. 11993  
PRECISION SURVEYS, INC.  
9200 SAN MATEO BLVD, NE  
ALBUQUERQUE, NEW MEXICO 87113



**SECTION 9**  
**TOWNSHIP 16 NORTH, RANGE 10 EAST**

Right-of-Way Maps Prepared By:	
Designed By:	RR
Drawn By:	DLM
Checked By:	LWM

FINAL MAP \_\_\_\_\_ DATE \_\_\_\_\_

5			
4			
3			
2			
1			
NO.	DESCRIPTION	DATE	BY
REVISIONS (OR CHANGE NOTICES)			

SANTA FE COUNTY

RIGHT OF WAY MAP

SFC PROJECT NO.

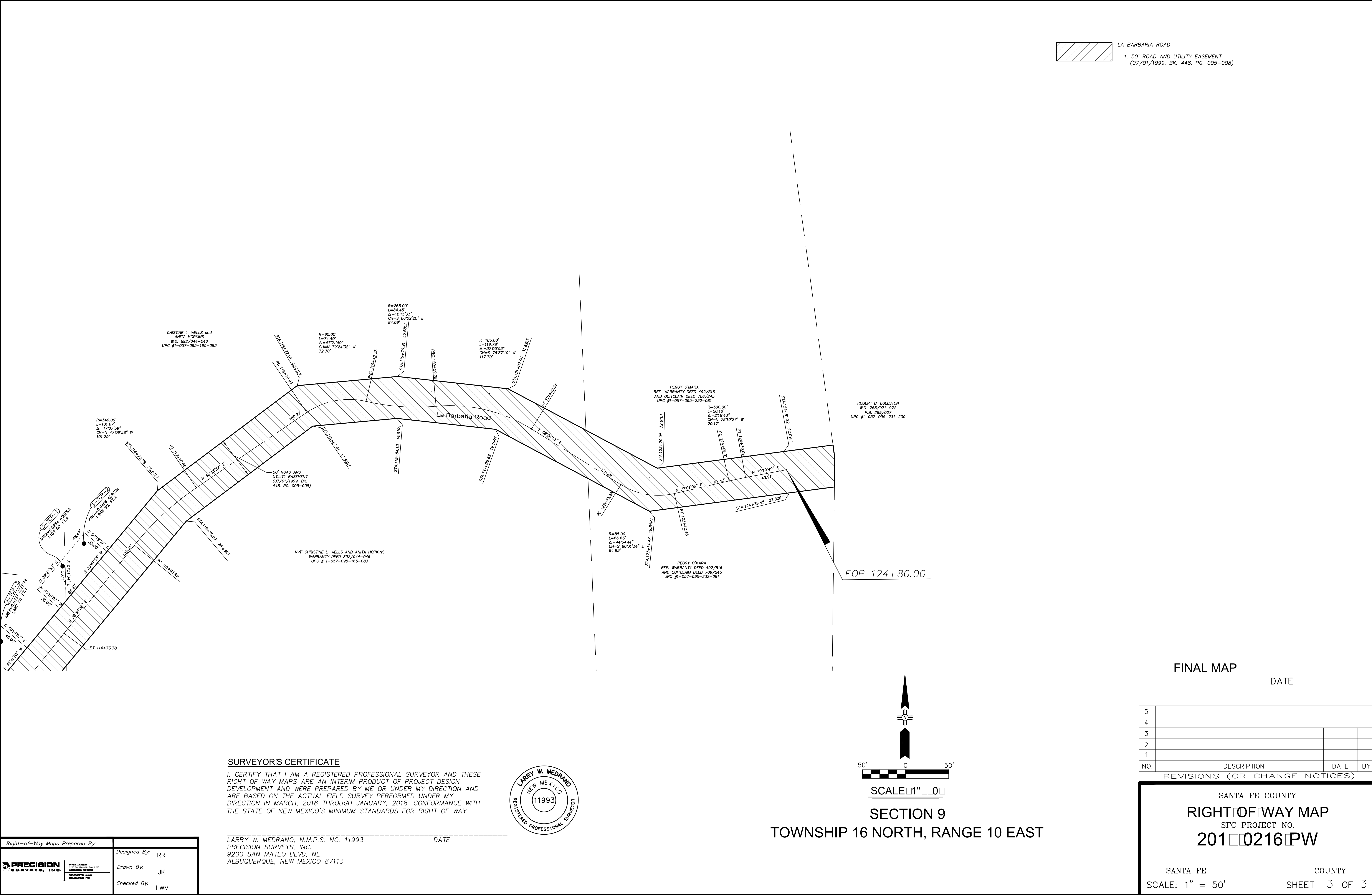
2010216PW

SANTA FE

COUNTY

SCALE: 1" = 50'

SHEET 2 OF 3

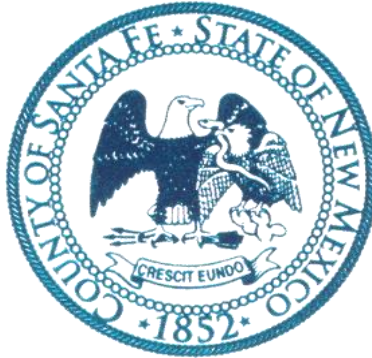




**APPENDIX H**

**SAMPLE CONSTRUCTION AGREEMENT**

**SAMPLE  
AGREEMENT BETWEEN SANTA FE COUNTY AND CONTRACTOR  
FOR CONSTRUCTION SERVICES**



**SANTA FE COUNTY  
PURCHASING DIVISION  
2014 EDITION**

[Changes, additions, deletions and/or any modifications other than those agreed upon by the parties upon execution of this contract, without the written consent of Santa Fe County shall render this document null and void.]

THIS DOCUMENT HAS IMPORTANT LEGAL CONSEQUENCES; CONSULTATION WITH AN ATTORNEY IS ENCOURAGED WITH RESPECT TO ITS COMPLETION OR MODIFICATION.

Hereafter "County":

Katherine Miller, County Manager  
Santa Fe County  
PO Box 276  
Santa Fe, New Mexico 87504-0276  
TELEPHONE: 505-986-6200  
FAX: 505-985-2740

Hereafter "Contractor":

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

TELEPHONE: \_\_\_\_\_  
E-MAIL ADDRESS: \_\_\_\_\_

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## **RECITALS**

**WHEREAS**, in accordance with Section 13-1-103 through Section 13-1-110 NMSA 1978, the County issued Invitation for Bid (IFB) No. 2018-0336-PW/MM for construction services for drainage and road improvements for La Barbaria Road;

**WHEREAS**, the Contractor submitted its bid, dated \_\_\_\_\_ in response to IFB No. 2018-0336-PW/MM;

**WHEREAS**, the County is authorized to enter into a construction contract for the Project pursuant to Sections 13-1-100, NMSA 1978;

**WHEREAS**, the Contractor hereby represents that it is a licensed contractor of the State of New Mexico pursuant to Chapter 60, Article 13 NMSA 1978;

**WHEREAS**, the Owner agrees to hire the Contractor, and the Contractor agrees to provide Construction Services as required herein for the Project in accordance with the terms and conditions set forth in this Agreement; and,

**WHEREAS**, the County requires the services of the Contractor, and the Contractor is willing to provide these services and both parties wish to enter into this Agreement.

## **ARTICLE 1 THE CONTRACT DOCUMENTS**

### **1.1 DOCUMENTS**

The contract documents consist of the following:

- Agreement between County and Contractor
  - General Conditions of the Construction Contract
  - Conditions of the Work of the Construction Contract
  - Bid Sheet
  - Addenda and Modifications issued before and after execution of this Contract
- Attachment A  
Attachment B

### **1.2 CERTIFICATES AND DOCUMENTATION**

The following certificates and documentation are hereby attached as exhibits as follows:

- |  |           |
|--|-----------|
| Project Manual                                 | Exhibit A |
| Technical Specifications as listed in Plan Set | Exhibit B |
| Labor and Material Payment Bond                | Exhibit C |
| Performance Bond                               | Exhibit D |
| Assignment of Antitrust Claims                 | Exhibit E |
| Certificate of Insurance                       | Exhibit F |

Notice of Award  
Notice to Proceed  
Change Order  
Certificate of Substantial Completion

Exhibit G  
Exhibit H  
Exhibit I  
Exhibit J

## **ARTICLE 2 THE WORK**

### **2.1 THE WORK**

The Contractor shall perform all the Work required by the Contract Documents for the following:

The Contractor shall supply all labor, materials and equipment necessary to complete the work in accordance with the construction plans and specifications.

## **ARTICLE 3 EFFECTIVE DATE, TIME OF COMMENCEMENT, SUBSTANTIAL COMPLETION AND AMENDMENTS**

### **3.1 EFFECTIVE DATE**

The Effective Date of this Agreement is the date of signature by the County.

### **3.2 TIME OF COMMENCEMENT**

The work to be performed under this Contract shall be commenced no later than ten (10) consecutive calendar days after the date of written Notice to Proceed issued by the County, hereto attached as Exhibit H.

### **3.3 SUBSTANTIAL COMPLETION**

The Contractor shall achieve Substantial Completion of the entire work no later than one hundred eight (180) working days from the date of the Notice to Proceed, except as hereafter extended by valid written Change Order. A Certificate of Substantial Completion, attached hereto as Exhibit J, will be issued by the County to the Contractor, as adjusted by any Change Order, attached hereto as Exhibit I.

### **3.4 TIME FOR COMPLETION AND LIQUIDATED DAMAGES**

Should the Contractor neglect, refuse, or otherwise fail to complete the Work within the time specified in this Article, the Contractor agrees that Liquidated Damages in the amount of Two Thousand Dollars (\$2000.00) shall be assessed per each calendar day that expires after the date of substantial completion, as adjusted by any change order, and until issuance by the County of a



certificate of Substantial Completion in accordance with Paragraph 7 EFFECTIVE DATE AND TERM of the General Conditions.

- A. It is hereby understood and mutually agreed, by and between the Contractor and the County, that the date of beginning and the time for completion as specified in the contract of the work to be done hereunder are *essential conditions* of this contract and it is further mutually understood and agreed that the work outlined in this contract shall be commenced on a date to be specified in the "Notice to Proceed."
- B. The Contractor agrees that work shall be prosecuted regularly, diligently and uninterruptedly at such rate of progress as will insure full completion thereof within the time specified. It is expressly understood and agreed, by and between the Contractor and the County, that the time for the completion of the work described herein is a reasonable time for the completion of the same, taking into consideration the average climatic range and usual industrial conditions prevailing in this locality.
- C. If the Contractor shall neglect, fail or refuse to complete the work within the time herein specified or any proper extension thereof granted by the County, then the Contractor does hereby agree, as a part consideration for the awarding of this contract, to pay to the County the amount specified in the contract, not as a penalty but as liquidated damages for such breach of contract as herein set forth, for each and every calendar day that the contract shall be in default after the time stipulated in the contract for completing the work.
- D. The amount is fixed and agreed upon by and between the Contractor and the County because of the impracticability and extreme difficulty of fixing and ascertaining the actual damages the County would in such event sustain, and the amount is agreed to be the amount of damages which the County would sustain and the amount shall be retained from time to time by the County from current periodical estimates.
- E. It is agreed that time is of the essence of each and every portion of this contract and of the specifications wherein a definite and certain length of time is fixed for the performance of any act whatsoever and where under the contract an additional time is allowed for the completion of any work, the new time limit fixed by such extension shall be of the essence of this contract. Provided that the Contractor shall not be charged with liquidated damages or any excess cost when the County determines that the Contractor is without fault and the Contractor's reasons for the time extension are acceptable to the County. Provided that the Contractor shall not be charged with liquidated damages or any excess cost when the delay in completion of the work is due:
  - 1. To any preference, priority or allocation order duly issued by the County;
  - 2. To unforeseeable cause beyond the control and without the fault or negligence of the Contractor, including but not restricted to, acts of God, or of the public enemy, acts of the County, acts of another contractor in the performance of a contract with the County, fires, floods, epidemics, quarantine restrictions, strikes, freight embargoes, and severe weather;

3. To any delays of subcontractors or suppliers occasioned by any of the causes specified in subsections above.

F. Provided further, that the Contractor shall, within ten (10) days from the beginning of such delay, unless the County shall grant a further period of time prior to the date of final settlement of the contract, notify the County in writing of the causes of the delay, who shall ascertain the facts and extent of the delay and notify the Contractor within a reasonable time of its decision in the matter.

### **3.5 AMENDMENTS**

This Agreement may be amended by mutual agreement by both parties upon issuance of a Change Order by the County to the Contractor. Any such amendment shall be in accordance with Paragraph 10 AMENDMENTS-CHANGE ORDERS of the General Conditions. Unless otherwise agreed to by the parties, an amendment shall not affect any outstanding Purchase Order(s) issued by the County prior to the effective date of the amendment.

## **ARTICLE 4 CONTRACT SUM**

### **4.1 LUMP SUM**

The County 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, an agreed upon Lump Sum of (enter dollar amount in words) Dollars (\$0.00 enter dollar amount), exclusive of New Mexico gross receipts tax.

### **4.2 CONTRACT AMOUNT**

**The Contract sum is determined as follows:**

(insert data from bid form concerning base bid, alternates, etc.)

Base Bid	\$
List Alternates, if applicable	\$
	\$
	\$
<b>Total Contract Amount</b>	<b>\$</b>

## **ARTICLE 5 PROGRESS PAYMENTS**

### **5.1 PROGRESS PAYMENTS**

Based upon an Application for Payment submitted to the County by the Contractor and Certificates for Payment issued by the County, the County 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:

- A. No later than (21) working days following receipt by the County of an 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 the County; less such amounts as the Architect/ Engineer shall determine for all incomplete Work and unsettled claims as provided in the Contract Documents (Section 57-28-5, NMSA 1978).
- B. When making payments, the County, Contractor or subcontractor shall not retain, withhold, hold back or in any other manner not pay amounts owed for work performed. For additional information regarding retainage and the Prompt Payment Act (refer to Section 57-28-5, NMSA 1978).
- C. Contractors and subcontractors shall make prompt payment to their subcontractors and suppliers for amounts owed for work performed on the construction project within twenty-one days after receipt of payment from the County, contractor or subcontractor. If the contractor or subcontractor fails to pay its subcontractor and suppliers by first-class mail or hand delivery within twenty-one days after receipt of an undisputed request for payment, the contractor or subcontractor shall pay interest to its subcontractors and suppliers beginning on the twenty-second day after payment was due, computed at one and one-half percent of the undisputed amount per month or fraction of a month until payment is issued. These payment provisions apply to all tiers of contractors, subcontractors and suppliers (Section 57-28-1 et. seq. NMSA 1978).
- D. In preparing estimates the material delivered on the site and preparatory work done may be taken into consideration.
- E. All material and work covered by partial payments made shall thereupon become the sole property of the County, but this provision shall not be construed as relieving the Contractor from the sole responsibility for the care and protection of materials and work upon which payments have been made or the restoration of any damaged work, or as a waiver of the right of the County to require the fulfillment of all of the terms of the contract.
- F. County's right to withhold certain amounts and make application thereof. The Contractor agrees that it will indemnify and hold the County harmless from all claims growing out of the lawful demands of subcontractors, laborers, workmen, mechanics, material men, and furnisher of machinery and parts thereof, equipment, power tools, and all supplies, including commissary, incurred in the furtherance of the performance of this contract. The Contractor shall, at the County's request, furnish satisfactory

evidence that all obligations of the nature hereinabove designated have been paid, discharged, or waived. If the Contractor fails so to do, then the County may, after having served written notice on the said Contractor, either pay unpaid bills, of which the County has written notice, direct, or withhold from the Contractor's unpaid compensation a sum of money deemed reasonably sufficient to pay any and all such lawful claims until satisfactory evidence is furnished that all liabilities have been fully discharged whereupon payment to the Contractor shall be resumed, in accordance with the terms of this contract, but in no event shall the provisions of this sentence be construed to impose any obligations upon the County to either the Contractor or its Surety. In paying any unpaid bills of the Contractor, the County shall be deemed the agent of the Contractor, and any payment so made by the County shall be considered as a payment made under the contract by the County to the Contractor and the County shall not be liable to the Contractor for any such payments made in good faith.

## **ARTICLE 6 FINAL PAYMENT**

### **6.1 FINAL PAYMENT**

The entire unpaid balance of the Contract Sum, shall be paid by the County to the Contractor within thirty (30) calendar days after notification of the County by the Architect/Engineer that all incomplete and unacceptable work that was noted during the Substantial Completion Inspection and listed on the attachment to the Certificate of Substantial Completion has been corrected, and provided the Contract has been fully performed and a final Certificate for Payment has been issued by the Architect/Engineer. In addition, the Contractor shall provide to the County a certified statement of Release of Liens and Consent of Surety.

### **6.2 ACCEPTANCE OF FINAL PAYMENT CONTITUTES RELEASE**

The acceptance by the Contractor of final payment shall be and shall operate as a release to the County of all claims and all liability to the Contractor for all things done or furnished in connection with this work and for every act and neglect of the County and others relating to or arising out of this work. No payment, however, final or otherwise, shall operate to release the Contractor or its sureties from any obligations under this contract or the Performance and Payment Bond.

**IN WITNESS WHEREOF**, the parties have duly executed this Agreement as of the date of last signature by the parties.

**SANTA FE COUNTY**

\_\_\_\_\_  
Anna Hansen  
Santa Fe County Board of County Commissioners

\_\_\_\_\_  
Date

**ATTESTATION:**

\_\_\_\_\_  
Geraldine Salazar  
Santa Fe County Clerk

**REVIEWED AS TO LEGAL FORM AND SUFFICIENCY**

\_\_\_\_\_  
R. Bruce Frederick  
Santa Fe County Attorney

\_\_\_\_\_  
Date

**FINANCE DEPARTMENT APPROVAL:**

\_\_\_\_\_  
Stephanie Schardin Clarke  
Santa Fe County Finance Director

\_\_\_\_\_  
Date

**CONTRACTOR:**

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

\_\_\_\_\_  
Print Name

\_\_\_\_\_  
Print Title

**GENERAL CONDITIONS  
TO AGREEMENT BETWEEN SANTA FE COUNTY  
AND CONTRACTOR  
FOR CONSTRUCTION SERVICES**

**1.0 DEFINITIONS**

The following terms as used in this contract are respectively defined as follows:

- 1.1 *Application for Payment*** Contractor's written request for payment for completed portions of the work and, for materials delivered or stored and properly labeled for the respective project.
- 1.2 *Bidder*.** An individual, partnership, firm, corporation, joint venture, or their authorized representative submitting a Bid.
- 1.3 *Change Order*** A written document between the County and the Contractor signed by the County and the Contractor authorizing a change in the work or an adjustment in the contract sum or the contract time. A change order may be signed by the Architect or Engineer, provided they have written authority from the County for such procedure and that a copy of such written authority is furnished to the Contractor upon request. The contract sum and the contract time may be changed only by change order. A change order may be in the form of additional compensation or time; or less compensation or time known as a Deduction (from the contract) the amount deducted from the contract sum by change order.
- 1.4 *Calendar Day*** Each and every Day shown on the calendar, beginning and ending at midnight.
- 1.5 *Contract Period*** The elapsed number of working days or calendar days from the specified date of commencing work to the specified date of completion, as specified in the contract.
- 1.6 *Contractor*** is a person, firm or corporation with whom the contract is entered into with the County.
- 1.7 *Construction Documents*** All drawings, specifications and addenda associated with a specific construction project.
- 1.8 *Construction Schedule*** A schedule in form satisfactory to the County, showing the proposed dates of commencement and completion of each of the various subdivisions of work required under the contract documents and the anticipated amount of each monthly payment that will become due the Contractor in accordance with the progress schedule.
- 1.9 *Day*** The word "day" means a calendar day of 24 hours measured from midnight to the next midnight.



- 1.10 *Labor and Material Payment Bond*** A written form of security from a surety (bonding) company to the County, on behalf of an acceptable prime Contractor or subcontractor, guaranteeing payment to the County in the event the Contractor fails to pay for all labor, materials, equipment, or services in accordance with the contract. (see Performance Bond and Surety Bond).
- 1.11 *Lump Sum Agreement (See Stipulated Sum Agreement)***
- 1.12 *Lump Sum Bid*** A single entry amount to cover all labor, equipment, materials, services, and overhead and profit for completing the construction of a variety of unspecified items of work without the benefit of a cost breakdown.
- 1.13 *Lump Sum Contract*** A written contract between the County and Contractor wherein the County agrees to pay the contractor a specified sum of money for completing a scope of work consisting of a variety of unspecified items or work.
- 1.14 *Payment Bond*** A written form of security from a surety company to the County, on behalf of an acceptable prime contractor or subcontractor, guaranteeing payment to all persons providing labor, materials, equipment, or services in accordance with the contract.
- 1.15 *Performance Bond*** A written form of security from a surety company to the County, on behalf of an acceptable prime contractor or subcontractor, guaranteeing the completion of the work in accordance with the terms of the contract.
- 1.16 *Progress Payment*** A payment from the County to the Contractor determined by calculating the difference between the completed work and materials stored and a predetermined schedule of values or unit costs. (see Schedule of Values, Unit Costs).
- 1.17 *Progress Schedule*** A pictorial or written schedule (including a graph or diagram) that shows proposed and actual start and completion dates of the various work elements.
- 1.18 *Punch list*** a list of items to be completed or corrected, prepared by the Architect/Engineer, checked and augmented as required by the Contractor or Construction Manager is appended hereto as Exhibit J. Note: The failure to include any item on such list does not relieve the Contractor of the responsibility to complete all work in accordance with the contract documents.
- 1.19 *Schedule of Values*** A statement furnished by the Contractor to the Architect or Engineer and the County reflecting the portions of the contract sum allotted for the various parts of the work and used as the basis for reviewing the Contractor's Applications for Payment.
- 1.20 *Services*** Includes services performed, workmanship, and material furnished or utilized in the performance of services.

- 1.21 *Stipulated Sum Agreement*** A written agreement in which a specific amount is set forth as the total payment for completing the contract (See Lump Sum Contract).
- 1.22 *Subcontractor*** is a person, firm or corporation supplying labor and materials or only labor for work at the site of the project for, and under separate contract or agreement with, the Contractor.
- 1.23 *Unit Price Contract*** A written contract wherein the County agrees to pay the Contractor a specified amount of money for each unit of work successfully completed as set forth in the contract.
- 1.24 *Unit Prices*** A predetermined price for a measurement or quantity of work to be performed within a specific contract. The designated unit price would include all labor materials, equipment or services associated with the measurement or quantity established.
- 1.25 *Working Day*** means every day except Saturday, Sunday and holidays recognized by Santa Fe County. Based on a review of weather that may adversely affect the Contractor's ability to effectively prosecute the Work, and the actual Work performed by the Contractor, the Architect or Engineer will determine (between the end of the day and noon of the next day) if the County will charge a Working Day. If the Contractor was able to effectively prosecute Work on a critical path item for six (6) or more hours on a Saturday, Sunday or County-recognized Holiday, the Architect or Engineer may charge a Working Day.
- 1.26 *Work on (at) the project*** is work to be performed at the location of the project, including the transportation of materials and supplies to or from the location of the project by employees of the Contractor and any subcontractor.

## **2. CONTRACT AND CONTRACT DOCUMENTS**

- 2.1 Entire Agreement.** This Agreement represents the entire contract between the parties and, except as otherwise provided herein, may not be amended, changed, modified, or altered without the written consent of the parties hereto. This Agreement incorporates all of the conditions, agreements, and understandings between the parties concerning the subject matter of this Agreement, and all such conditions, understandings, and agreements have been merged into this written Agreement. No prior condition, agreement, or understanding, verbal or otherwise, of the parties or their agents shall be valid or enforceable unless incorporated in this written Agreement.
- 2.2 Relationship of Contract Documents.** The Contract Documents are complementary, and any requirement of one Contract Document shall be as binding as if required by all.
- 2.3 Conflicting Conditions.** Any provisions in any of the Contract Documents which may be in conflict or inconsistent with any of the paragraphs in these General Conditions shall be void to the extent of such conflict or inconsistency.

### **3. PLANS, SPECIFICATIONS AND ADDENDA**

- 3.1** The plans, specifications and addenda, hereinafter enumerated in Article 1 of the Agreement Between County and Contractor for Construction shall form part of this Contract and the provisions thereof shall be as binding upon the parties hereto as if they were herein fully set forth. The table of contents, titles, headings, running headlines and marginal notes contained herein and in said documents are solely to facilitate reference to various provisions of the Contract Documents and in no way affect or limit the interpretation of the provisions to which they refer.
- 3.2** Certificates and Documents Incorporated. All certificates and documentation required by the provisions of the Agreement shall be attached to this Agreement at the time of execution, and are hereby incorporated by reference as though set forth in full in this Agreement to the extent they are consistent with its conditions and terms.

### **4. CONTRACT SECURITY – BONDS**

- 4.1** Performance Bond. The Contractor shall furnish a performance bond in an amount at least equal to one hundred percent (100%) of the contract sum as security for the faithful performance of this contract. The performance bond and the payment bond may be in one or in separate instruments in accordance with local law.
- 4.2** Payment Bond. The Contractor shall provide payment bond in an amount not less than one hundred percent (100%) of the contract price or in a penal sum not less than that prescribed by state, territorial or local law, as security for the payment of all persons performing labor on the project under this contract, furnishing materials in connection with this contract and all of Contractor's requirements as specified in the contract documents. The Payment Bond shall remain in effect until one year after the date when final payment becomes due.
- 4.3** Additional or Substitute Bond. If at any time the County for justifiable cause shall be or become dissatisfied with any surety or sureties, then upon the Performance or Payment Bonds, the Contractor shall within five (5) days after notice from the County so to do, substitute an acceptable bond (or bonds) in such form and sum and signed by such other surety or sureties as may be satisfactory to the County. The premiums on such bond shall be paid by the Contractor. No further payments shall be deemed due nor shall be made until the new surety or sureties shall have furnished such an acceptable bond to the County.
- 4.4** Labor and Material Bond. The Contractor shall provide to the County Labor and Material Bond in an amount equal to the required payments by the Contractor to pay specified subcontractors, laborers, and materials suppliers associated with the project.

### **5. TERMS AND MEANINGS**

Terms used in this Agreement that are defined in the Conditions of the Contract shall have the meanings designated in those Conditions.

- 5.1 Words and Phrases.** Words, phrases, and abbreviations which have well-known technical or trade meanings used in the Contract Documents shall be used according to such recognized meanings. In the event of a conflict, the more stringent meaning shall govern.
- 5.2 Gender, Singular/Plural.** Words of any gender used in this Agreement shall be held and construed to include any other gender, and words in the singular number shall be held to include the plural, unless the context otherwise requires.
- 5.3 Captions and Section Headings.** The captions and section headings contained in this Agreement are for convenience of reference only, and in no way limit, define, or enlarge the terms, scope and conditions of this Agreement.
- 5.4 Interchangeable Terms.** For purposes of all provisions within this Agreement and all attachments hereto, the terms “Agreement” and “Contract” shall have the same meaning and shall be interchangeable.

## **6. COMPLIANCE WITH APPLICABLE LAW, CHOICE OF LAW**

- 6.1** This Agreement shall be governed exclusively by the provisions hereof and by the laws of the State of New Mexico and applicable ordinances of Santa Fe County.
- 6.2** In performing its obligations hereunder, the Contractor shall comply with all applicable laws, ordinances, and regulations, including Santa Fe County Ordinance 2014-1 (Establishing a Living Wage).
- 6.3** Minimum Wage Rates. The Contractor, all subcontractors and subsubcontractors warrants and agree to will comply with all applicable provisions of the New Mexico Public Works Minimum Wage Act as outlined in the Bid Documents. Wage rates are not applicable to projects costing less than \$60,000.
- 6.4** This Agreement shall be construed in accordance with the substantive laws of the State of New Mexico, without regard to its choice of law rules. Contractor and the County agree that the exclusive forum for any litigation between them arising out of or related to this Agreement shall be federal and state district courts of New Mexico.
- 6.5** Pursuant to 13-1-191, NMSA 1978, reference is hereby made to the criminal laws of New Mexico, including §30-14-1, §30-24-2, and §30-41-1 through 3 NMSA 1978, which prohibit bribes, kickbacks, and gratuities, violation of which constitutes a felony. Further, the Procurement Code, 13-1-28 through 13-1-199 NMSA 1978, imposes civil and criminal penalties for its violation.
- 6.6** New Mexico Tort Claims Act. By entering into this Agreement, neither party shall be responsible for liability incurred as a result of the other party’s acts or omissions in connection with this Agreement. Any liability incurred in connection with this Agreement is subject to the immunities and limitations of the New Mexico Tort Claims Act, Sections 41-4-1, et Seq. NMSA 1978, as amended. The County and its “public employees” as defined in the New Mexico Tort Claims Act, do not waive sovereign immunity, do not waive any

defense and do not waive any limitation of liability pursuant to law. No provision in this Agreement modifies or waives any provision of the New Mexico Tort Claims Act.

- 6.7** Provision Required by Law Deemed Inserted. Each and every provision of law and clause required by law to be inserted in this contract shall be deemed to be inserted herein and the contract shall be read and enforced as though it were included herein, and if through mistake or otherwise any such provision is not inserted, or is not correctly inserted, then upon the application of either party the contract shall forthwith be physically amended to make such insertion or correction.

## **7. EFFECTIVE DATE AND TERM**

- 7.1** This Agreement shall, upon due execution by all parties, become effective in accordance with the Agreement Between County and Contractor for Construction, Article 3 - Effective Date, Time of Commencement and Substantial Completion. This Agreement shall not become effective until: (1) approved by the Santa Fe County Commissioners and/or the County Manager or their designee; and (2) signed by all parties required to sign this Agreement.
- 7.2** This Contract shall achieve Substantial Completion in accordance with the Agreement Between County and Contractor, Article 3 - Effective Date, Time of Commencement and Substantial Completion, unless earlier terminated pursuant to Section 8 (Termination) or 9, (Appropriations and Authorizations) of these General Conditions.

## **8. TERMINATION**

- 8.1** Termination of Agreement for Cause. Either party may terminate the Agreement based upon any material breach of this Agreement by the other party. The non-breaching party shall give the breaching party written notice of termination specifying the grounds for the termination. The termination shall be effective thirty (30) days from the breaching party's receipt of the notice of termination, during which time the breaching party shall have the right to cure the breach. If, however, the breach cannot with due diligence be cured within thirty (30) days, the breaching party shall have a reasonable time to cure the breach, provided that, within thirty (30) days of its receipt of the written notice of termination, the breaching party began to cure the breach and advised the non-breaching party in writing that it intended to cure.
- 8.2** Termination for Convenience of the County. The County may, in its discretion, terminate this Agreement at any time for any reason by giving the Contractor written notice of termination. The notice shall specify the effective date of termination, which shall not be less than fifteen (15) days from the Contractor's receipt of the notice. The County shall pay the Contractor for acceptable work, determined in accordance with the specifications and standards set forth in this Agreement, performed before the effective date of termination but shall not be liable for any work performed after the effective date of termination.
- 8.3** Right of the County to Terminate Contract In the event that any of the provisions of this contract are violated by the Contractor, or by any of its subcontractors, the County may serve written notice upon the Contractor and the Surety of its intention to terminate the contract,

such notices to contain the reasons for such intention to terminate the contract, and unless within ten (10) days after the serving of such notice upon the Contractor, such violation or delay shall cease and satisfactory arrangement of correction be made, the contract shall, upon the expiration of said ten (10) days, cease and terminate. In the event of any such termination, the County shall immediately serve notice thereof upon the Surety and the Contractor and the Surety shall have the right to take over and perform the contract. Provided, however, that if the Surety does not commence performance thereof within ten (10) days from the date of the mailing to such Surety of notice of termination, the County may take over the work and prosecute the same to completion by contract or by force account and at the expense of the Contractor and the Contractor and its Surety shall be liable to the County for any excess cost occasioned the County thereby, and in such event the County may take possession of and utilize in completing the work, such materials, appliances, and plant as may be on the site of the work and necessary therefore.

## **9. APPROPRIATIONS AND AUTHORIZATIONS**

This Agreement is contingent upon sufficient appropriations and authorizations being made for performance of this Agreement by the Santa Fe County Board of County Commissioners and/or, if state funds are involved, the New Mexico State Legislature. If sufficient appropriations and authorizations are not made in this or future fiscal years, this Agreement shall terminate upon written notice by the County to the Contractor. Such termination shall be without penalty to the County, and the County shall have no duty to reimburse the Contractor for expenditures made in the performance of this Agreement. The County is expressly not committed to expenditure of any funds until such time as they are programmed, budgeted, encumbered and approved for expenditure by the County. The County's decision as to whether sufficient appropriations and authorizations have been made for the fulfillment of this Agreement shall be final and not subject to challenge by the Contractor in any way or forum, including a lawsuit.

## **10. AMENDMENTS – CHANGE ORDERS**

Contract Documents may be amended by a Change Order, hereto attached as Exhibit I to allow for additions, deletions, and revision as specified in Article 2 "The Work" of the Agreement between Santa Fe County and the Contractor or to amend the terms and conditions by a Change Order.

## **11. INDEMNIFICATION**

**11.1** The Contractor shall defend, indemnify, and hold harmless the County and its elected officials, agents, and employees from any losses, liabilities, damages, demands, suits, causes of action, judgments, costs or expenses (including but not limited to court costs and attorneys' fees) resulting from or directly or indirectly arising out of the Contractor's performance or non-performance of its obligations under this Agreement, including but not limited to the Contractor's breach of any representation or warranty made herein.

**11.2** The Contractor agrees that the County shall have the right to control and participate in the defense of any such demand, suit, or cause of action concerning matters that relate to the

County and that such suit will not be settled without the County's consent, such consent can not to be unreasonably withheld. If a conflict exists between the interests of the County and the Contractor in such demand, suit, or cause of action, the County may retain its own counsel to represent the County's interest.

- 11.3** The Contractor's obligations under this section shall not be limited by the provisions of any insurance policy the Contractor is required to maintain under this Agreement.

## **12. AGGRIEVEMENT PROCEDURE DURING CONTRACT ADMINISTRATION**

- 12.1** Any claims, disputes, or other matters in question between the Contractor and the County, except those which have been waived by the making or acceptance of final payment as provided in Paragraph 6.2 of the Agreement Between Santa Fe County and Contractor for Construction, shall be presented in the form of a written request accompanied by supporting data to the Architect/Engineer for formal decision, with a copy to the other party. Such formal decision of the Architect/Engineer is binding upon the Contractor and the Owner unless either or both notify each other and the Architect/Engineer in writing within fifteen (15) days of their receipt of the decision that they are unwilling to abide by the Architect's/Engineer's decision, are thereby aggrieved in connection with the decision, and are separately exercising such rights as either may have under the Contract Documents or by law and regulation. If the Architect/Engineer fails to provide a written decision or a reasonable schedule to issue a written decision within ten (10) days after the County or the Contractor has presented its request, that party may consider itself aggrieved and may proceed to exercise its rights.
- 12.2** A settlement agreement signed by the County and the Contractor shall supersede and cancel any other dispute resolution proceedings regarding the same matter.
- 12.3** Unless work is stopped or payment withheld in accordance with the conditions of the Contract, or unless otherwise agreed in writing, the Contractor shall carry on the Work and maintain its progress during any dispute resolution proceedings, and the Owner shall continue to make payments to the Contractor in accordance with the Contract Documents.

## **13. DISPUTE RESOLUTION**

- 13.1** Either County or Contractor may request mediation pursuant to the New Mexico Public Works Mediation Act, 13-4C-1 NMSA 1978, of any claim before such decision become final and binding. The request for mediation shall be submitted in writing to the other party. Timely submission of the request shall stay the effect of Paragraph 12.1.
- 13.2** County and Contractor shall participate in the mediation process in good faith. The process shall be completed within Sixty (60) days of filing of the request. The mediation shall be governed by the rules for mediation pursuant to the New Mexico Public Works Mediation Act.
- 13.3** If the dispute is not resolved by mediation, the dispute shall be resolved through litigation in



the district court. The parties agree that the exclusive forum for such litigation shall be the State of New Mexico District Court for the First Judicial District at Santa Fe, New Mexico. Contractor irrevocably consents to the jurisdiction of said Court and agrees to accept service of a summons and complaint by mail or commercial courier service in accordance with Rule 1-004(E)(3) NMRA.

#### **14. INSURANCE**

- 14.1** The Contractor shall not commence work under this contract until they have obtained all the insurance required under this paragraph and such insurance has been approved by the County, nor shall the Contractor allow any subcontractor to commence work on its subcontract until the insurance required of the subcontractor has been so obtained and approved.
- 14.2** Proof of Carriage of Insurance. The Contractor shall furnish the County with certificates showing the type, amount, class of operations covered, effective dates and date of expiration of policies. Such certificates shall also contain substantially the following statement: "Should any of the above described policies be cancelled before the expiration date thereof, notice will be delivered in accordance with the policy provisions".
- 14.3** General Conditions. The Contractor shall submit evidence of insurance as is required herein. Policies of insurance shall be written by companies authorized to write such insurance in New Mexico.
- 14.4** General Liability Insurance, Including Automobile. The Contractor shall procure and maintain during the life of this Agreement a comprehensive general liability and automobile insurance policy with liability limits in amounts not less than \$1,000,000.00 combined single limits of liability for bodily injury, including death, and property damage for any one occurrence. Said policies of insurance shall include coverage for all operations performed for the County by the Contractor; coverage for the use of all owned, non-owned, hired automobiles, vehicles and other equipment, both on and off work; and contractual liability coverage under which this Agreement is an insured contract. The Santa Fe County shall be a named additional insured on the policy.
- 14.5** Subcontractor's Public Liability and Property Damage Insurance and Vehicle Liability Insurance. The Contractor shall either 1) require each of its subcontractors to procure and to maintain during the life of its subcontract, Subcontractor's Public Liability and Property Damage Insurance and Vehicle Liability Insurance of the type and in the amounts specified in 14.4 above.
- 14.6** Workers' Compensation Insurance. The Contractor shall comply with the provisions of the Workers' Compensation Act, 52-1-1 to 52-1-70 NMSA 1978. The Contractor shall procure and shall maintain during the life of this contract Workmen's Compensation Insurance as required by applicable State law for all of its employees to be engaged in work at the site of the project under this Contract and, in case of any such work sublet, the Contractor shall require the subcontractor similarly to provide Workmen's Compensation Insurance for all of

the latter's employees to be engaged in such work unless such employees are covered by the protection afforded by the Contractor's Workmen's Compensation Insurance. In case any class of employees engaged in hazardous work on the project under this contract is not protected under the Workmen's Compensation law, the Contractor shall provide and shall cause each subcontractor to provide adequate employer's liability insurance for the protection of such of its employees as are not otherwise protected.

- 14.7** Scope of Insurance and Special Hazards. The insurance require under subparagraphs 14.4 and 14.5 hereof shall provide adequate protection for the Contractor and his subcontractors, respectively, against damage claims which may arise from operations under this Contract, whether such operations be by the insured or by anyone directly or indirectly employed by him and, also against any of the special hazards which may be encountered in the performance of this Contract.
- 14.8** Builder's Risk Insurance (Fire and Extended Coverage). Until the project is completed and accepted by the County, the County, or Contractor at the County's option is required to maintain Builder's Risk Insurance (fire and extended coverage) on a 100 percent completed value basis on the insurable portion of the project for the benefit of the County, the Contractor, subcontractors as their interests may appear. The Contractor shall not include any costs for Builder's Risk Insurance (fire and extended coverage) premiums during construction unless the Contractor is required to provide such insurance; however, this provision shall not release the Contractor from its obligation to complete, according to plans and specifications, the project covered by the contract, and the Contractor and his Surety shall be obligated to full performance of the Contractor's undertaking.
- 14.9** Increased Limits. If, during the life of this Agreement, the New Mexico State Legislature increases the maximum limits of liability under the Tort Claims Act (NMSA 1978, Sections 41-4-1 through 41-4-29, as amended), the Contractor shall increase the maximum limits of any insurance required herein.
- 14.10** Additional insured. Santa Fe County will be listed as an additional insured on all policies, and proof of coverage must be provided before work begins. Contractor shall maintain adequate insurance in at least the maximum amounts which the County could be liable under the New Mexico Tort Claims Act. It is the sole responsibility of the Contractor to be in compliance with the law.
- 15. INDEPENDENT CONTRACTOR**
- 15.1** The Contractor and the Contractor's agents and employees are independent contractors performing professional and technical services for the County and are not employees of the County. The Contractor and the Contractor's agents and employees shall not accrue leave, retirement, insurance, bonding, use of County's vehicles, or any other benefits afforded to employees of the County as a result of this Agreement.
- 15.2** The Contractor shall not subcontract any portion of the services to be performed under this Agreement without prior written approval of the County.

**15.3** The Contractor shall maintain detailed time records which indicate the date, time and nature of services rendered. These records shall be subject to inspection by the County and the State Auditor. The County shall have the right to audit billings both before and after payment. Payment under this Agreement shall not foreclose the right of the County to recover excessive illegal payments.

**16. CONFLICT OF INTEREST OF OFFICERS OR EMPLOYEES OF THE LOCAL JURISDICTION, MEMBERS OF THE LOCAL GOVERNING BODY, OR OTHER PUBLIC OFFICIALS**

**16.1** No officer or employee of the local jurisdiction or its designees or agents, no member of the governing body, and no other public official of the locality who exercises any function or responsibility with respect to this contract, during its tenure or for one year thereafter, shall have any interest, direct or indirect, in any contract or subcontract, or the proceeds thereof, for work to be performed. Further, the Contractor shall cause to be incorporated in all subcontracts the language set forth in this paragraph prohibiting conflict of interest.

**16.2** No official of the County who is authorized in such capacity and on behalf of the County to negotiate, make, accept or approve, or to take part in negotiating, making accepting or approving any architectural, engineering, inspection, construction or material supply contract or any subcontract in connection with the construction of the project, shall become directly or indirectly interested personally in this contract or in any part hereof. No officer, employee, architect, attorney, engineer or inspector of or for the County who is authorized in such capacity and on behalf of the County to exercise any legislative, executive, supervisory or other similar functions in connection with the construction of the project, shall become directly or indirectly interested personally in this contract or in any part thereof, any material supply contract, subcontract, insurance contract, or any other contract pertaining to the project.

**16.3** The Contractor warrants that the Contractor presently has no interest and shall not acquire any interest, direct or indirect, which would conflict in any manner or degree with the performance or services required under this Agreement.

**17. ASSIGNMENT**

**17.1** 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 advance written approval of the County. Any attempted assignment or transfer without the County's advance written approval shall be null and void and without any legal effect.

**18. SUBCONTRACTING**

**18.1** The Contractor shall not subcontract or delegate any portion of the services to be performed under this Agreement without the advance written approval of the County. Any attempted subcontracting or delegating without the County's advance written approval shall be null and void and without any legal effect.

- 18.2** Contractor shall provide to the County a listing of subcontractors within ten (10) days of the Contract award.
- 18.3** Contractor shall adhere to all provisions of the Subcontractor's Fair Practices Act 13-4-31 to 13-4-42, NMSA 1978.
- 18.4** Contractor shall provide to the County completed Non-Collusion Affidavit of Subcontractor form and Certification of Subcontractor Regarding Equal Employment Opportunity form for all subcontractors listed.
- 18.5** The Contractor shall not award any work to any subcontractor without prior written approval of the County, which approval will not be given until the Contractor submits to the County a written statement concerning the proposed award to the subcontractor, which statement shall contain such information as the County may require.
- 18.6** The Contractor shall be as fully responsible to the County for the acts and omissions of its subcontractors, and of persons either directly or indirectly employed by them, as they are for the acts and omissions of persons directly employed by them.
- 18.7** The Contractor shall cause appropriate provisions to be inserted in all subcontracts relative to the work to bind subcontractors to the Contractor by the terms of the General Conditions and other contract documents insofar as applicable to the work of subcontractors and to give the Contractor the same power as regards terminating any subcontract that the County may exercise over the Contractor under any provision of the contract documents.
- 18.8** Nothing contained in this contract shall create any contractual relation between any subcontractor and the County.
- 18.9** All Work performed for Contractor by a Subcontractor or Supplier will be pursuant to an appropriate written agreement between Contractor and the Subcontractor or Supplier which specifically binds the Subcontractor or Supplier to the applicable terms and conditions of the Contract Documents for the benefit of County. Any contract between Contractor and a Subcontractor or Supplier shall provide that any remedy or claim for nonpayment of sums due or owing to Subcontractor or Supplier or services performed or materials provided is against Contractor and not County, subject to any remedy or rights Subcontractor or Supplier may have under the terms of the Contractor's Performance Bond and Section 13-4-19 NMSA 1978, the New Mexico Little Miller Act.

## **19. PERSONNEL**

- 19.1** All work performed under this Agreement shall be performed by the Contractor or under its supervision.
- 19.2** The Contractor represents that it has, or will secure at its own expense, all personnel required to discharge its obligations under this Agreement. Such personnel (i) shall not be employees of or have any contractual relationships with the County and (ii) shall be fully qualified and

licensed or otherwise authorized or permitted under federal, state, and local law to perform such work.

## 20. NOTICES

- 20.1** Any notice required to be given to either party by this Agreement shall be in writing and shall be delivered in person, by courier service or by U.S. mail, either first class or certified, return receipt requested, postage prepaid, as follows:

To the County: Santa Fe County  
Office of the County Attorney  
102 Grant Avenue  
Santa Fe, New Mexico 87501

To the Contractor: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

- 20.2** Nothing herein contained shall preclude the giving of any such written notice by personal service. The address to which notices shall be mailed to either party may be changed by written notice given by such party to the other as hereinabove provided.

## 21. RELEASE

The Contractor, upon final payment of the amounts due under this Agreement, releases the County, the County's officers and employees from all liabilities and obligations arising from or under this Agreement, including, without limitation, all damages, losses, costs, liability, and expenses, including, without limitation, attorney's fees and costs of litigation that the Contractor may have.

## 22. WAIVER

No provision of this Agreement shall be deemed to have been waived by either party unless such waiver be in writing signed by the party making the waiver and addressed to the other party; nor shall any custom or practice which may evolve between the parties in the administration of the terms hereof be construed to waive or lessen the right of either party to insist upon performance by the other party in strict accordance with the terms hereof. Further, the waiver by any party of a breach by the other party of any term, covenant, or condition hereof shall not operate as a waiver of any subsequent breach of the same or any other term, covenant, or condition thereof.

## CONDITIONS OF THE WORK

## **1. ADDITIONAL INSTRUCTIONS AND DETAIL DRAWINGS**

- 1.1** The Contractor will be furnished additional instructions and detail drawings as necessary to carry out the work included in the Contract. The additional drawings and instructions supplied to the Contractor will coordinate with the Contract Documents and will be so prepared that they can be reasonably interpreted as part thereof. The Contractor shall carry out the work in accordance with the additional detail drawings and instructions. The Contractor and the Architect/Engineer/County will prepare jointly (a) a schedule, fixing the dates at which special detail drawings will be required, such drawings, if any, to be furnished by the Architect/ Engineer/County in accordance with the schedule, and (b) a schedule fixing the respective dates for the submission of shop drawings, the beginning of manufacture, testing and installation of materials, supplies and equipment, and the completion of the various parts of the work; each schedule to be subject to change from time to time in accordance with progress of the work.

## **2. SHOP OR SETTING DRAWINGS**

- 2.1** The Contractor shall submit promptly to the Architect/Engineer/County two (2) copies of each shop or setting drawing prepared in accordance with the schedule predetermined as aforesaid. After examination of such drawings by the Architect/Engineer/County and the return thereof, the Contractor shall make such corrections to the drawings as have been indicated and shall furnish the Architect/ Engineer/County with two corrected copies. If requested by the Architect/Engineer/County the Contractor must furnish additional copies. Regardless of corrections made in or approval given to such drawings by the Architect/Engineer/County, the Contractor will be responsible for the accuracy of such drawings and for their conformity to the Plans and Specifications, unless the Contractor notifies the Architect/Engineer/County in writing of any deviations at the time the Contractor furnishes such drawings.

## **3. MATERIALS, SERVICES AND FACILITIES**

**3.1** It is understood that except as otherwise specifically stated in the Contract Documents, the Contractor shall provide and pay for all materials, labor, tools, equipment, water, light, power, transportation, superintendence, temporary construction of every nature, and all other services and facilities of every nature whatsoever necessary to execute, complete, and deliver the work within the specified time.

**3.2** Any work necessary to be performed after regular working hours, on Sundays or legal holidays, shall be performed without additional expense to the County.

## **4. CONTRACTOR'S TITLE TO MATERIALS**

- 4.1** No materials or supplies for the work shall be purchased by the Contractor or by any subcontractor subject to any chattel mortgage or under a conditional sale contract or other agreement by which an interest is retained by the seller. The Contractor warrants that he/she has good title to all materials and supplies used by him/her in the work, free from all liens,

claims or encumbrances.

## **5. INSPECTION AND TESTING OF MATERIALS**

- 5.1** All materials and equipment used in the construction of the project shall be subject to adequate inspection and testing in accordance with accepted standards. The laboratory or inspection agency shall be selected by the County. The County will pay for all laboratory inspection service direct, and not as a part of the Contract.
- 5.2** Materials of construction, particularly those upon which the strength and durability of the structure may depend, shall be subject to inspection and testing to establish conformance with specifications and suitability for uses intended.

## **6. "OR EQUAL" CLAUSE**

- 6.1** Whenever a material, article or piece of equipment is identified on the plans or in the specifications by reference to manufacturers' or vendors' names, trade names, catalogue numbers, etc., it is intended merely to establish a standard; and, any material, article, or equipment or other manufacturers and vendors which will perform adequately the duties imposed by the general design will be considered equally acceptable provided the material, article, or equipment so proposed, is, in the opinion of the Architect/Engineer/County, of equal substance and function. It shall not be purchased or installed by the Contractor without the Architect/Engineer/County's written approval.

## **7. PATENTS**

- 7.1** The Contractor shall hold and save the County and its officers, agents, servants, and employees harmless from liability of any nature or kind, including cost and expenses for, or on account of, any patented or unpatented invention, process, article, or appliance manufactured or used in the performance of the Contract, including its use by the County, unless otherwise specifically stipulated in the Contract Documents.
- 7.2** License and/or Royalty Fees for the use of a process which is authorized by the County of the project must be reasonable, and paid to the holder of the patent, or its authorized licensee, direct by the County and not by or through the Contractor.
- 7.3** If the Contractor uses any design, device or materials covered by letters, patent or copyright, the Contractor shall provide for such use by suitable agreement with the County of such patented or copyrighted design, device or material. It is mutually agreed and understood, that, without exception, the Contract prices shall include all royalties or costs arising from the use of such design, device or materials, in any way involved in the work. The Contractor and/or its Sureties shall indemnify and save harmless the County of the project from any and all claims for infringement by reason of the use of such patented or copyrighted design, device or materials, or any trademark or copyright in connection with work agreed to be performed under this Contract, and shall indemnify the County for any cost, expense or damage which it may be obliged to pay by reason of such infringement at any time during



the prosecution of the work or after, completion of the work.

## **8. SURVEYS, PERMITS AND REGULATIONS**

- 8.1** Unless otherwise expressly provided for in the Specifications, the County will furnish to the Contractor all surveys necessary for the execution of the work.
- 8.2** Unless otherwise expressly provided for in the Specifications, the Contractor shall procure and pay all permits, licenses and approvals necessary for the execution of this Contract.
- 8.3** The Contractor shall comply with all laws, ordinances, rules, orders, and regulations relating to performance of the work, the protection of adjacent property, and the maintenance of passageways, guard fences or other protective facilities.

## **9. CONTRACTOR'S OBLIGATIONS**

- 9.1** The Contractor shall and will, in good workmanlike manner, do and perform all work and furnish all supplies and materials, machinery, equipment, facilities and means, except as herein otherwise expressly specified, necessary or proper to perform and complete all the work required by this Contract, within the time herein specified. The Contractor will perform the Work in accordance with the provisions of this Contract and said specifications and in accordance with the plans and drawings covered by this Contract any and all supplemental plans and drawings, and in accordance with the directions of the Architect/Engineer/County as given from time to time during the progress of the work. The Contractor shall furnish, erect, maintain, and remove such construction plans and such temporary works as may be required.
- 9.2** The Contractor shall observe, comply with, and be subject to all terms, conditions, requirements, and limitations of the Contract and specifications, and shall do, carry on, and complete the entire work to the satisfaction of the Architect/Engineer and the County.

## **10. WEATHER CONDITIONS**

- 10.1** In the event of temporary suspension of work, or during inclement weather, or whenever the Architect/Engineer/County shall direct, the Contractor will, and will cause its subcontractors to protect carefully its and their work and materials against damage or injury from the weather. If, in the opinion of the Architect/Engineer/County, any work or materials shall have been damaged or injured by reason of failure on the part of the Contractor or any of its Subcontractors so to protect its work, such materials shall be removed and replaced at the expense of the Contractor.

## **11. PROTECTION OF WORK AND PROPERTY-EMERGENCY**

- 11.1** The Contractor shall at all times safely guard the County's property from injury or loss in

connection with this Contract. The Contractor shall at all times safely guard and protect its own work, and that of adjacent property from damage. The Contractor shall replace or make good any such damage, loss or injury unless such is caused directly by errors contained in the Contract or by the County, or its duly authorized representatives.

**11.2** In case of an emergency which threatens loss or injury of property, and/or safety of life, the Contractor will be allowed to act, without previous instructions from the Architect/Engineer/County, in a diligent manner. The Contractor shall notify the Architect/Engineer/County immediately thereafter. Any claim for compensation by the Contractor due to such extra work shall be promptly submitted to the Architect/Engineer/County for approval.

**11.3** Where the Contractor has not taken action but has notified the Architect/Engineer/County of an emergency threatening injury to persons or to damage to the work or any adjoining property, the Contractor shall act as instructed or authorized by the Architect/Engineer/County.

**11.4** The amount of reimbursement claimed by the Contractor on account of any emergency action shall be determined in the manner provided in Paragraph 15 of these Conditions of the Work.

## **12. INSPECTION**

**12.1** The authorized representatives and agents of the County shall be permitted to inspect all work, materials, payrolls, records of personnel, invoices of materials, and other relevant data and records.

## **13. REPORTS, RECORDS AND DATA**

**13.1** The Contractor shall submit to the County such schedule of quantities and costs, progress schedules, payrolls, reports, estimates, records and other data as the County may request concerning work performed or to be performed under this Contract.

## **14. SUPERINTENDENT BY CONTRACTOR**

**14.1** At the site of the work the Contractor shall employ a construction superintendent or foreman who shall have full authority to act for the Contractor. It is understood that such representative shall be acceptable to the Architect/ Engineer/County and shall be one who can be continued in that capacity for the particular job involved unless he/she ceases to be on the Contractor's payroll.

## **15. CHANGES IN WORK**

**15.1** No changes in the work covered by the approved Contract Documents shall be made without having prior written approval of the County. Charges or credits for the work covered by the

approved change shall be determined by one or more, or a combination of the following methods:

- A. Unit bid prices previously approved.
- B. An agreed lump sum.
- C. The actual cost of:
  - 1) Labor, including foremen;
  - 2) Materials entering permanently into the work;
  - 3) The County's or rental cost of construction equipment during the time of use on the extra work;
  - 4) Power and consumable supplies for the operation of power equipment;
  - 5) Insurance;
  - 6) Social Security and old age and unemployment contributions.
- D. To the costs for changes in work a fixed fee will be added to be agreed upon but not to exceed ten percent (10%) of the actual cost of the work. The fee shall be compensation to cover the cost of supervision, overhead, bond, profit and any other general expenses.

## **16. EXTRAS**

- 16.1** Without invalidating the contract, the County may order extra work or make changes by altering, adding to or deducting from the work, the contract sum being adjusted accordingly, and the consent of the Surety being first obtained where necessary or desirable. All the work of the kind bid upon shall be paid for at the price stipulated in the proposal, and no claims for any extra work or materials shall be allowed unless the work is ordered in writing by the County or the Architect/Engineer, acting officially for the County, and the price is stated in such order.

## **17. INSPECTION OF SERVICES**

- 17.1** The Contractor shall provide and maintain an inspection system acceptable to the County covering the services under this Contract. Complete records of all inspection work performed by the Contractor shall be maintained and made available to the County during contract performance and for as long afterwards as the Contract requires.
- 17.2** The County has the right to inspect and test all services called for by the Contract, to the extent practicable at all times and places during the term of the Contract. The County shall perform inspections and tests in a manner that will not unduly delay the work.
- 17.3** If the County performs inspections or tests on the premises of the Contractor or a subcontractor, the Contractor shall furnish, and shall require subcontractors to furnish, at no increase in contract price, all reasonable facilities and assistance for the safe and convenient performance of these duties.
- 17.4** If any of the services do not conform with the Contract requirements, the County may require the Contractor to perform the services again in conformity with Contract requirements, at no increase in contract amount. When the defects in services cannot be corrected by re-performance, the County may require the Contractor to take necessary action to ensure that

future performance conforms to contract requirements; and reduce the Contract sum to reflect the reduced value of the services performed.

- 17.5** If the Contractor fails to promptly perform the services again or to take the necessary action to ensure future performance in conformity with Contract requirements, the County may by contract or otherwise, perform the services and charge to the Contractor any cost incurred by the County that is directly related to the performance of such service, or terminate the Contract for default.

## **18. CORRECTION OF WORK**

- 18.1** All work, all materials, whether incorporated in the work or not, all processes of manufacture, and all methods of construction shall be at all times and places subject to the inspection of the Architect/ Engineer/County who shall be the final judge of the quality and suitability of the work, materials, processes of manufacture, and methods of construction for the purposes for which they are used. Should they fail to meet their approval they shall be forthwith reconstructed, made good, replaced and/or corrected, as the case may be, by the Contractor at its own expense. Rejected material shall immediately be removed from the site. If, in the opinion of the Architect/Engineer/County, it is undesirable to replace any defective or damaged materials or to reconstruct or correct any portion of the work injured or not performed in accordance with the Contract Documents, the compensation to be paid to the Contractor hereunder shall be reduced by such amount as in the judgment of the Architect/Engineer/County shall be equitable.

## **19. WARRANTY OF CONSTRUCTION**

- 19.1** In addition to any other warranties in this Contract, the Contractor warrants that work performed under this Contract conforms to the Contract requirements and is free of any defect in equipment, material, or design furnished, or workmanship performed by the Contractor or any subcontractor or supplier at any tier.
- 19.2** This warranty shall continue for a period of one (1) year from the date of final acceptance of the work. If the County takes possession of any part of the work before final acceptance, this warranty shall continue for a period of one (1) year from the date the County takes possession.
- 19.3** The Contractor shall remedy at the Contractor's expense any failure to conform, or any defect. In addition, the Contractor shall remedy at the Contractor's expense any damage to County-owned or controlled real or personal property, when that damage is the result of the Contractor's failure to conform to contract requirements or any defect of equipment, material, workmanship, or design furnished.
- 19.4** The Contractor shall restore any work damaged in fulfilling the terms and conditions of this clause. The Contractor's warranty with respect to work repaired or replaced will run for one (1) year from the date of repair or replacement.

- 19.5** The County shall notify the Contractor, in writing, within a reasonable time after the discovery of any failure, defect, or damage.
- 19.6** If the Contractor fails to remedy any failure, defect, or damage within a reasonable time after receipt of notice, the County shall have the right to replace, repair, or otherwise remedy the failure, defect, or damage at the Contractor's expense.
- 19.7** With respect to all warranties, express or implied, from subcontractors, manufacturers, or suppliers for work performed and materials furnished under this Contract, the Contractor shall obtain all warranties that would be given in normal commercial practice; require all warranties to be executed, in writing, for the benefit of the County, if directed by the County; and, enforce all warranties for the benefit of the County, if directed by the County.
- 19.8** In the event the Contractor's warranty under subparagraph 19.4 of this clause has expired, the County may bring suit at its expense to enforce a subcontractor's, manufacturer's, or supplier's warranty.
- 19.9** Unless a defect is caused by the negligence of the Contractor or subcontractor or supplier at any tier, the Contractor shall not be liable for the repair of any defects of material or design furnished by the County nor for the repair of any damage that results from any defect in County-furnished material or design.
- 19.10** This warranty shall not limit the County's rights under the Inspection and Acceptance clause of this Contract with respect to latent defects, gross mistakes, or fraud.

## **20. SUBSURFACE CONDITIONS FOUND DIFFERENT**

- 20.1** Should the Contractor encounter sub-surface and/or latent conditions at the site materially differing from those shown on the Plans or indicated in the Specifications, the Contractor shall immediately give notice to the Architect/Engineer/County of such conditions before they are disturbed. The Architect/Engineer/County will thereupon promptly investigate the conditions, and if they find that they materially differ from those shown on the Plans or indicated in the Specifications, they will at once make such changes in the Plans and/or Specifications as they may find necessary, any increase or decrease of cost resulting from such changes to be adjusted in the manner provided in Paragraph 15 above.

## **21. CLAIMS FOR EXTRA COST**

- 21.1** No claim for extra work or cost shall be allowed unless the same was done in pursuance of a written order of the Architect/Engineer approved by the County, as aforesaid, and the claim presented with the first estimate after the changed or extra work is done. When work is performed under the terms of General Conditions, the Contractor shall furnish satisfactory bills, payrolls and vouchers covering all items of cost and when requested by the County, giving the County access to accounts relating thereto.

## **22. CONSTRUCTION SCHEDULE AND PERIODIC ESTIMATES**

- 22.1** Immediately after execution and delivery of the Contract, and before the first partial payment is made, the Contractor shall deliver to the County an estimated construction progress schedule in a form satisfactory to the County, showing the proposed dates of commencement and completion of each of the various subdivisions of work required under the Contract Documents and the anticipated amount of each monthly payment that will become due to the Contractor in accordance with the progress schedule. The Contractor shall also furnish on forms to be supplied by the County (a) a detailed estimate giving a complete breakdown of the Contract sum and (b) periodic itemized estimates of work done for the purpose of making partial payments thereof. The costs employed in making up any of these schedules will be used only for determining the basis of partial payments and will not be considered as fixing a basis for additions to or deductions from the Contract price.

## **22.2 Schedule**

The Contractor shall, within five (5) days after the effective date of Notice to Proceed, prepare and submit five (5) copies of a progress schedule covering project operations for the Contract period. This progress schedule shall be of the type generally referred to as a Critical Path Method (CPM), Critical Path Schedule (CPS), and Critical Path Analysis (CPA), and other similar designations. The CPM shall be used to control the timing and sequences of the project. All work shall be done in accordance with the CPM Planning and Scheduling. A written statement of explanation shall be submitted with the progress schedule. All costs incurred by the contractor to implement the CPM shall be borne by the Contractor.

## **23. ASSIGNMENTS**

- 23.1** The Contractor shall not assign the whole or any part of this Contract or any monies due or to become due hereunder without written consent of the County. In case the Contractor assigns all or any part of any monies due or to become due under this Contract, the instrument of assignment shall contain a clause substantially to the effect that it is agreed that the right of the assignee in and to any monies due or to become due to the Contractor shall be subject to prior claims of all persons, firms and corporations of services rendered or materials supplied for the performance of the work called for in this Contract.

## **24. MUTUAL RESPONSIBILITY OF CONTRACTORS**

- 24.1** If, through acts of neglect on the part of the Contractor, any other Contractor or any subcontractor shall suffer loss or damage on the work, the Contractor agrees to settle with such other Contractor or subcontractor by agreement or arbitration if such other Contractor or subcontractors will so settle. If such other Contractor or subcontractor shall assert any claim against the County on account of any damage alleged to have been sustained, the County shall notify the Contractor, who shall indemnify and save harmless the County against any such claim.

## **25. SEPARATE CONTRACT**

- 25.1** The Contractor shall coordinate its operations with those of other contractors. Cooperation will be required in the arrangement for the storage of materials and in the detailed execution of the work. The Contractor, including its subcontractors, shall keep informed of the progress and the detail work of other contractors and shall notify the Architect/ Engineer/County immediately of lack of progress or defective workmanship on the part of other contractors. Failure of a contractor to keep informed of the work progressing on the site and failure to give notice of lack of progress or defective workmanship by others shall be construed as acceptance by the Contractor of the status of the work as being satisfactory for proper coordination with its own work.

## **26. ARCHITECT/ENGINEER'S AUTHORITY**

- 26.1** The Architect/Engineer/County shall give all orders and directions contemplated under this Contract and specifications, relative to the execution of the work. The Architect/Engineer/County shall determine the amount, quality, acceptability, and fitness of the several kinds of work and materials which are to be paid for under this Contract and shall decide all questions which may arise in relation to said work and the construction thereof. The Architect/Engineer/County's estimates and decisions shall be final and conclusive, except as herein otherwise expressly provided. In case any question shall arise between the parties hereto relative to said contract or specifications, the determination or decision of the Architect/Engineer/County shall be a condition precedent to the right of the Contractor to receive any money or payment for work under this Contract affected in any manner or to any extent by such question.
- 26.2** The Architect/Engineer/County shall decide the meaning and intent of any portion of the specifications and of any plans or drawings where the same may be found obscure or be in dispute. Any differences or conflicts in regard to their work which may arise between the Contractor under this Contract and other Contractors performing work for the County shall be adjusted and determined by the Architect/Engineer/County.

## **27. STATED ALLOWANCES**

- 27.1** It is understood that Contractor has included in its proposal for the Contract sum all allowances including "Allowed Materials" The Contractor shall purchase the "Allowed Materials" as directed by the County on the basis of the lowest and best bid of at least three competitive bids. If the actual sum for purchasing the "Allowed Materials" is more or less than the "Cash Allowance," the Contract sum shall be adjusted accordingly. The adjustment in contract price shall be made on the basis of the purchase price without additional charges for overhead, profit, insurance or any other incidental expenses. The cost of installation of the "Allowed Materials" shall be included in the applicable sections of the Contract Specifications covering this work.

## **28. USE OF PREMISES AND REMOVAL OF DEBRIS**

- 28.1** The Contractor expressly undertakes at its own expense:

A. to take every precaution against injuries to persons or damage to property;



- B. to store its apparatus, materials, supplies and equipment in such orderly fashion at the site of the work as will not unduly interfere with the progress of its work or the work of any other subcontractors;
- C. to place upon the work or any part thereof only such loads as are consistent with the safety of the portion of the work;
- D. to clean up frequently all refuse, rubbish, scrap materials, and debris caused by its operations, to the end that at all times the site of the work shall present a neat, orderly and workmanlike appearance;
- E. before final payment to remove all surplus material, false-work, temporary structures, including foundations thereof, plant of any description and debris of every nature resulting from its operations, and to put the site in a neat, orderly condition.
- F. to effect all cutting, fitting or patching of its work required to make the same to conform to the plans and specifications and, except with the consent of the Architect/Engineer/County, not to cut or otherwise alter the work of any other Contractor.

## **29. QUANTITIES OF ESTIMATE**

- 29.1** Wherever the estimated quantities of work to be done and materials to be furnished under this Contract are shown in any of the documents including the proposal, they are given for use in comparing bids and the right is especially reserved except as herein otherwise specifically limited, to increase or diminish them as may be deemed reasonably necessary or desirable by the County to complete the work contemplated by this Contract, and such increase or diminution shall in no way void this Contract, nor shall any such increase or diminution give cause for claims or liability for damages.

## **30. LANDS AND RIGHTS-OF-WAY**

- 30.1** Prior to the start of construction, the County shall obtain all lands and rights-of-way necessary for the carrying out and completions of work to be performed under this Contract.

## **31. GENERAL GUARANTY**

- 31.1** Neither the final certificate of payment nor any provision in the Contract Documents, nor partial or entire occupancy of the premises by the County, shall constitute an acceptance of work not done in accordance with the Contract Documents or relieve the Contractor of liability in respect to any express warranties or responsibility for faulty materials or workmanship. The Contractor shall remedy any defects in the work and pay for any damage to other work resulting therefrom, which shall appear within a period of one (1) year from the date of final acceptance of the work unless a longer period is specified. The County will give notice of observed defects with reasonable promptness.

## **32. PROTECTION OF LIVES AND HEALTH**

- 32.1** The Contractor shall exercise proper precaution at all times for the protection of persons and property and shall be responsible for all damages to persons or property, either on or off the

site, which occur as a result of its prosecution of the work. The safety provisions of applicable laws and building and construction codes shall be observed and the Contractor shall take or cause to be taken, such additional safety and health measures as the County may determine to be reasonably necessary.

### **33. INTEREST OF MEMBER**

**33.1** No member of Santa Fe Board of County Commissioners shall be admitted to any share or part of this Contract or to any benefit that may arise therefrom.

### **34. OTHER PROHIBITED INTERESTS**

**34.1** No official of the County who is authorized in such capacity and on behalf of the County to negotiate, make, accept or approve, or to take part in negotiating, making accepting or approving any architectural, engineering, inspection, construction or material supply contract or any subcontract in connection with the construction of the project, shall become directly or indirectly interested personally in this Contract or in any part hereof. No officer, employee, architect, attorney, engineer or inspector of or for the County who is authorized in such capacity and on behalf of the County to exercise any legislative, executive, supervisory or other similar functions in connection with the construction of the project, shall become directly or indirectly interested personally in this Contract or in any part thereof, any material supply contract, subcontract, insurance contract, or any other contract pertaining to the project.

### **35. USE AND OCCUPANCY PRIOR TO ACCEPTANCE BY COUNTY**

**35.1** The Contractor agrees to the use and/or occupancy of a portion or unit of the project before formal acceptance by the County, provided the County:

- A. Secures written consent of the Contractor except in the event, in the opinion of the Architect/ Engineer, the Contractor is chargeable with unwarranted delay in final cleanup of punch list items or other contract requirements.
- B. Secures endorsement from the insurance carrier and consent of the surety permitting occupancy of the building or use of the project during the remaining period of construction.
- C. When the project consists of more than one building, and one of the buildings is occupied, secures permanent fire and extended coverage insurance, including a permit to complete construction. Consent of the surety must also be obtained.

# **ATTACHMENT A**

## **BID SHEETS**

## **ATTACHMENT B**

### **ADDENDA & MODIFICATIONS**

**EXHIBIT A**  
PROJECT MANUAL

## **EXHIBIT B**

TECHNICAL SPECIFICATIONS AS LISTED IN PLAN SET

## EXHIBIT C

### LABOR AND MATERIAL PAYMENT BOND

(SAMPLE)

KNOW ALL MEN BY THESE PRESENT, THAT WE \_\_\_\_\_

\_\_\_\_\_ as PRINCIPAL hereinafter called the "PRINCIPAL" and \_\_\_\_\_ as SURETY hereinafter called the "SURETY", are held and firmly bound unto Santa Fe County, a Political Subdivision of the State of New Mexico as OBLIGEE hereinafter called the "COUNTY", for the use and benefit of any claimants as herein below defined, 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, the PRINCIPAL has a written contract dated \_\_\_\_\_, 2015, with the COUNTY for the construction services for the (insert project description) in Santa Fe County, New Mexico, which must be constructed in accordance with drawings and specifications which contract is referenced and made a part hereof, and is hereinafter referred to as the "Contract."

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 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 but not be limited to that part of water, gas, power, light, heat, oil, gasoline, telephone services or rental of equipment directly applicable to the Contract.
2. The above named PRINCIPAL and SURETY hereby jointly and severally agree with the COUNTY 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, prosecute a suit to final judgment for such sum or sums as may be justly due claimant, and have execution thereof. The COUNTY shall not be liable for payment of any cost or expenses of any such suit.
3. No suit or action shall be commenced hereunder by any claimant:
  - a. Unless claimant, or other than one having a direct contract with the PRINCIPAL, shall have written notice in the form of an sworn statement to the COUNTY and any one or both of the following: the PRINCIPAL or SURETY above named, within ninety (90) days after such said claim is made or suit filed, 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.
  - b. Such notice shall be served by mailing the same by registered mail or certified mail, postage prepaid, in an envelope addressed to the COUNTY, PRINCIPAL or SURETY, at any place where an office is regularly maintained by said COUNTY, PRINCIPAL



or SURETY 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.

4. Any suit under this Labor and Material Bond must be instituted in accordance with the statute of limitation under Section 37-1-3 NMSA 1978.
5. No right of action shall accrue on this Bond to or for the use of any person or corporation other than subcontractors or sub-subcontractors of the said Contract between PRINCIPAL and Santa Fe County named herein.

SIGNED AND SEALED THIS \_\_\_\_\_ DAY OF \_\_\_\_\_, 2015.

\_\_\_\_\_  
CONTRACTOR – PRINCIPAL (signature)

By: \_\_\_\_\_  
(Printed name and title)

\_\_\_\_\_  
NOTARY PUBLIC (seal)

My Commission expires: \_\_\_\_\_

\_\_\_\_\_  
SURETY (signature)

\_\_\_\_\_  
(Printed name and title)

\_\_\_\_\_  
NOTARY PUBLIC (seal)

My Commission expires: \_\_\_\_\_

\_\_\_\_\_  
SURETY'S Authorized New Mexico Agent

**EXHIBIT D****PERFORMANCE BOND**  
(SAMPLE)

A. KNOW ALL MEN BY THESE PRESENT, THAT WE \_\_\_\_\_, as PRINCIPAL hereinafter called the "CONTRACTOR" and \_\_\_\_\_, as SURETY hereinafter called the "SURETY", are held and firmly bound unto OBLIGEE Santa Fe County, a Political Subdivision of the State of New Mexico, hereinafter called the "COUNTY", in the sum 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.

B. WHEREAS, the CONTRACTOR has a written contract dated \_\_\_\_\_, 2015, with the COUNTY for the construction services for the (insert project description) Santa Fe County, New Mexico, in accordance with drawings and specifications which contract is referenced made part hereof, and is hereinafter referred to as the "Contract."

C. NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION is such that, if CONTRACTOR shall promptly and faithfully perform said Contract (including any amendment thereto), then this obligation shall be null and void; otherwise it shall remain in full force and effect until the COUNTY shall by written instrument notify the SURETY that the obligation is discharged, except that the obligation shall continue for at least three (3) months following the expiration of the term of the Contract.

1. The SURETY hereby waives notice of any alteration or extension of the Contract time made by the COUNTY.
2. Whenever CONTRACTOR shall be, and is declared by the COUNTY to be in default under the Contract, the COUNTY having performed the COUNTY'S obligations thereunder, the SURETY must promptly remedy the default and shall promptly:
  - (1) Complete the Contract in accordance with its terms and conditions, or
  - (2) Obtain a bid or bids for submission to the COUNTY for completing the Contract in accordance with its terms and conditions, and upon determination by the COUNTY and SURETY of the lowest responsible bidder, arrange for a contract between such bidder and Santa Fe County, and make available as work progresses (even though there should be a default or a secession 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 the COUNTY to CONTRACTOR under the Contract and any amendments thereto, less the amount properly paid by the COUNTY to CONTRACTOR.

D. No right of action shall accrue on this Performance Bond to or for the use of any person or corporation other than Santa Fe County named herein or the heirs, executors, administrators, or successors of Santa Fe County.

E. This Bond shall be enforceable without the need to have recourse to any judicial or arbitral proceedings.

SIGNED AND SEALED THIS \_\_\_\_\_ DAY OF \_\_\_\_\_, 2015.

\_\_\_\_\_  
CONTRACTOR – PRINCIPAL (signature)

By: \_\_\_\_\_  
(Printed name and title)

\_\_\_\_\_  
NOTARY PUBLIC (seal)

My Commission expires: \_\_\_\_\_

\_\_\_\_\_  
SURETY (signature)

\_\_\_\_\_  
(Printed name and title)

\_\_\_\_\_  
NOTARY PUBLIC (seal)

My Commission expires: \_\_\_\_\_

\_\_\_\_\_  
SURETY'S Authorized New Mexico Agent

## EXHIBIT E

### ASSIGNMENT OF ANTITRUST CLAIMS

TO BE EXECUTED BY GENERAL CONTRACTORS, SUBCONTRACTORS, SUPPLIERS,  
AND SUBSUBCONTRACTORS OF CONTRACTORS ON COUNTY CONTRACTS.

FIRM NAME:  
ADDRESS:

PROJECT:

PHONE NO.:

PROJECT NO:

\_\_\_\_\_ agrees that any and all claims which it may have or may inure to it for overcharges resulting from antitrust violations as to goods, services, and materials purchased in connection with the above-referenced project are hereby assigned to Santa Fe County, but only to the extent that such overcharges are passed on to the County. It is agreed that the undersigned retains all rights to any such antitrust claims to the extent of any overcharges not passed on to the County, including the right to any treble damages attributable thereto.

FIRM: \_\_\_\_\_

BY: \_\_\_\_\_  
Signed by Individual empowered to obligate Suppliers,  
Subcontractors or Subsubcontractors

TITLE: \_\_\_\_\_

**EXHIBIT F**  
**CERTIFICATE OF LIABILITY INSURANCE**

## EXHIBIT G

### NOTICE OF CONTRACT AWARD

**TO:**

**FROM:** \_\_\_\_\_, Public Works Department

**CONTRACT NO.** \_\_\_\_\_

**This is to inform that you that you have been awarded the Contract for:**

Project Name: \_\_\_\_\_

Date of Award \_\_\_\_\_ Amount of Award \_\_\_\_\_

**Contractor Information:**

Firm Name: \_\_\_\_\_ License# \_\_\_\_\_

Address: \_\_\_\_\_ Phone # \_\_\_\_\_

**It is anticipated that construction will take place:**

Approximate Starting Date: \_\_\_\_\_ Approximate Completion Date: \_\_\_\_\_

Santa Fe County hereby accepts your offer on the solicitation No. \_\_\_\_\_ as reflected in this award document. The rights and obligations of the parties shall be subject to and governed by this document and any documents attached or incorporated by reference.

**SANTA FE COUNTY**

Name of Public Works Director or designee: \_\_\_\_\_  
(Print Name)

\_\_\_\_\_  
Signature

## EXHIBIT H

### NOTICE TO PROCEED

TO:

DATE:

PROJECT:

ATTN:

PROJECT NO.

CONTRACT NO.

IFB NO.

Enclosed is your copy of the Contract, which has been approved. Please consider this letter as official NOTICE TO PROCEED on the above-referenced project.

Your firm shall commence work within ten (10) calendar days of the above date and shall achieve Substantial Completion [REDACTED] calendar days thereafter, which shall be [REDACTED], 2015, unless modified by Change Order.

It is essential that you make reference to the above-stated project number on all documents sent to the Architect/Engineer from your office. These documents shall include correspondence, change order proposals, change orders, payment request statements, and all other project-related material which you forward to the Architect/Engineer for information and processing.

Also, before you may start any Work at the site, you must (add any other requirements):

OWNER:

Santa Fe County

SFC [REDACTED] DEPARTMENT

By:

[REDACTED]  
Director, SFC Department



# EXHIBIT I

## CHANGE ORDER

PROJECT:

CONTRACTOR  
CHANGE ORDER NO:

ARCHITECT/ENGINEER

PROJECT NO:

Contractor Telephone:  
Contractor e-mail:  
ENGINEER'S/ARCHITECT'S PROJECT NO:

---

CHANGE ORDER JUSTIFICATION (Provide definitive reason for proposed change order.)

---

You are directed to make the following changes in this Contract: (Provide a detailed description of the Scope of the Work.)

---

NOT VALID UNTIL SIGNED BY BOTH THE COUNTY AND THE ARCHITECT/ENGINEER.  
Signature of the Contractor indicates his agreement herewith, including any adjustment in the Contract Sum or Contract Time.

---

The Original Contract Sum was	
Net change by previously authorized Change Orders	\$0.00
The Contract Sum prior to this Change Order was the Contract Sum will be increased/decreased/unchanged	
by this Change Order in the amount of	\$0.00
The new contract Sum including this Change Order will be	\$0.00
The Contract Time will be increased/decreased/unchanged by <span style="background-color: #cccccc; display: inline-block; width: 40px; height: 1em; vertical-align: middle;"></span> days.	
The date of Substantial Completion as of the date of this Change Order therefore is: <span style="background-color: #cccccc; display: inline-block; width: 100px; height: 1em; vertical-align: middle;"></span>	

**CHANGE ORDER SIGNATURE PAGE**

**REVIEWED**

Santa Fe County By: \_\_\_\_\_ Date: \_\_\_\_\_

**AGREED AND RECOMMENDED**

CONTRACTOR By: \_\_\_\_\_ Date: \_\_\_\_\_

Title: \_\_\_\_\_

ARCHITECT/ENGINEER By: \_\_\_\_\_ Date: \_\_\_\_\_

**APPROVED**

SANTA FE COUNTY By: \_\_\_\_\_ Date: \_\_\_\_\_

## EXHIBIT J

### CERTIFICATE OF SUBSTANTIAL COMPLETION

**SANTA FE COUNTY – (INSERT DEPARTMENT)**

**Public Works Director or designee (name):** \_\_\_\_\_

**CONTRACTOR:** \_\_\_\_\_

Contractor Purchase Order Number: \_\_\_\_\_

**ARCHITECT/ENGINEER:** \_\_\_\_\_

Project Name: \_\_\_\_\_

Contract Date: \_\_\_\_\_

Project Description - Article 2 to Agreement Between Santa Fe County and Contractor (include address and project location description):

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

The contractor hereby certifies the Work of this project to be in complete conformance to the Contract Documents and is substantially complete, enabling the County to make use of the Work as intended.

By its signature below the Contractor further requests Architect/Engineer and County to inspect the Work and to concur in the Work's substantial completion by their signature and/or to provide in a timely manner to Contractor a listing of work items adjudged by them as remaining to be completed or corrected. Contractor agrees to complete and correct all work items (Punch List) representative of such listing within \_\_\_\_ days from date of receipt from Architect/Engineer.

**Contractor**

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Print Name

\_\_\_\_\_  
Date

**Accepted by Santa Fe County**

Signature (Public Works Director or Designee)	Print Name	Date
---	------------	------

**Inspected/Concurrence Architect/Engineer**

Signature	Print Name	Date
-----------	------------	------

**PUNCH LIST**

A list of items (Punch List) to be completed or corrected, verified by the Architect/Engineer and County, is appended hereto. Failure to include any incomplete items on such list does not alter the responsibility of the Contractor to provide all Work in complete conformance with the Contract Documents.

The Contractor shall complete or correct the work on the punch list appended hereto by \_\_\_\_\_  
(Date)

The punch list consists of \_\_\_\_\_ (indicate number of items) items.

The Work performed under this Contract has been reviewed and found to be substantially complete by the Director of Public Works who has hereby established the Date of Substantial Completion as \_\_\_\_\_ (date) which is also the date of commencement of all warranties and guarantees required by the Contract Documents. The Date of Substantial Completion of the Work or designated portion thereof is the date established by the Director of Public Works (or designee) when construction is sufficiently complete, in accordance with the Contract Documents, so the County may occupy the Work, or designated portion thereof, for the use for which it is intended.

The County accepts the Work or designated portion thereof as substantially complete and assumes full possession thereof, in accordance with the contract documents.

Punch List Items: (Use additional sheets if necessary)