

**SANTA FE COUNTY
PUBLIC WORKS DEPARTMENT**

INVITATION FOR BID



IFB No. 2019-0119-PW/MAM

**SURFACE AND DRAINAGE
IMPROVEMENTS TO
MULTIPLE COUNTY ROADS**

JANUARY 2019

SANTA FE COUNTY

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**ADVERTISEMENT
INVITATION FOR BID
IFB NO. 2019-0119-PW/MAM
SURFACE AND DRAINAGE IMPROVEMENTS
FOR MULTIPLE COUNTY ROADS**

The Santa Fe County Public Works Department requests bids for the purpose of procuring a licensed construction company for surface and drainage improvements to multiple Santa Fe County Roads. The work consists of surface and drainage improvements in accordance with the NMDOT specifications. 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 Friday, January 25, 2019 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 January 16, 2019 @ 4:00PM at the Santa Fe County Projects Division located at 901 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 Michelle A. Marmion, Santa Fe County, by telephone at (505) 992-6753, by email at mmarmion@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: January 6 & 7, 2019

INFORMATION FOR BIDDERS

Bids are requested by Santa Fe County for surface and drainage improvements to multiple roads in La Cienega, Santa Fe County in accordance with the NMDOT specifications and other contract documents prepared by Santa Fe County.

1. LOCATION AND DESCRIPTION OF WORK:

The work to be completed is located in the La Cienega area within Santa Fe County, New Mexico. Racetrack Subdivision enters Paseo Real 4.4 miles south of NM 599 and Paseo Real intersection or 360 linear feet south east of Camino Torcido Loop and Paseo Real. Camino Torcido Loop enters Paseo Real 4.3 miles south of NM 599 and Paseo Real intersection.

Racetrack Subdivision

To construct surface and drainage improvements on .43 miles of Camino Largo, .18 miles of Calle Corto and .14 miles of Camino Mocho in accordance with the plans and specifications. Improvements include but are not limited to Subgrade Preparation, 4" of Base course, 2" of Hot Mix Asphalt, and storm drain and culvert installation.

Add Alternative #1 Placement of Driveway Culvert End Sections.

Add Alternative #2 consists of Base course and Minor Paving along .15 miles Calle Corto.

Add Alternative #3 consists of Base course and Minor Paving along .14 miles of Camino Mocho.

Camino Torcido Loop

To construct surface and drainage improvements on .85 miles of Camino Torcido Loop in accordance with the plans and specifications. Improvements include but are not limited to Subgrade Preparation, 5" of Base course, 2 1/2" of Hot Mix Asphalt, and culvert installation.

Add Alternative #1 Consists of building a storm drain system and guardrail along Paseo Real.

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 on Friday, January 25, 2019 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. **CONTRACT TIME:** The number of days for the completion of work (the contract time) is 180 calendar days.
5. **COPIES OF BIDDING DOCUMENTS:** Bid Documents are available by contacting Michelle A. Marmion, Santa Fe County, by telephone at (505) 992-6753 or by email at mmarmion@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 will be held on **Wednesday, January 16, 2019** at the Santa Fe County Projects Division located at **901 W. Alameda Suite 20C, Santa Fe, New Mexico 87501**. The Pre-Bid Conference is **MANDATORY**.
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.
8. **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:

Michelle A. Marmion, Procurement Specialist Senior
Santa Fe County Purchasing Division
142 W. Palace Avenue (Second Floor) Santa Fe, NM 87501
Ph. (505) 992-6753
Fax (505) 989-3243
Email – mmarmion@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 G).

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%, 8% or 7% lower than the bid actually received, depending on the business' annual revenue.

The in-state resident contractor preference is not cumulative with the resident veteran contractor preference.

The in-state and veteran preferences do not apply to procurement of services or goods involving federal funds or federal grant funds.

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.
 - C. The awarded contractor must register all active subcontractors on the State of New Mexico Workforce Solutions website upon approval of Notice of award entered by Santa Fe County.
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:

Michelle Marmion, 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 the lowest combination of base bid 1 and base bid 2.
 - 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.
 - E. The awarded contractor must register all active subcontractors on the State of New Mexico Workforce Solutions website upon approval of Notice of Award entered by Santa Fe County.
- 25. **LIQUIDATED DAMAGES:** Liquidated damages in the amount of two thousand dollars (\$2,000.00) 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

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 and the County's supplementary conditions attached hereto.
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. **LIVING WAGE:** Contractor shall comply with the requirements of Santa Fe County Ordinance 2014-1 (Establishing a Living Wage).

THIS SECTION INTENTIONALLY LEFT BLANK

BID PROPOSAL
IFB No. 2019-0119-PW/MAM
SURFACE AND DRAINAGE ROAD IMPROVEMENTS
TO MULTIPLE COUNTY ROADS

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 surface and drainage improvements to multiple roads located in La Cienega. 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 twenty (20) working 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.

Corporation organized under
the Laws of the State of

New Mexico Contractor's License No.

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

**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. 2019-0119-PW/MAM
PROJECT: SURFACE AND DRAINAGE
IMPROVEMENTS TO
MULTIPLE COUNTY ROADS**

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 surface and drainage improvements to Racetrack Subdivision/Torcido Loop, 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 twenty (20) working 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: _____

BID SHEETS
IFB NO. 2019-0119-PW/MAM VARIOUS ROAD IMPROVEMENTS

BASE BID ITEM NO. 1		RACE TRACK SUBDIVISION				
ITEM NO.	LINE NUMBER	DESCRIPTION	UNIT	ESTIMATE QUANTITIES	COST PER UNIT	EXTENDED PRICE
1	201000	CLEARING AND GRUBBING	AC			
2	203000	UNCLASSIFIED EXCAVATION	CY			
3	207000	SUBGRADE PREPARATION	SY			
4	303000	BASE COURSE	TON			
5	416000	MINOR PAVING	SY			
6	570437	24" STORM DRAIN CULVERT PIPE	LF			
7	570441	24" CULVERT PIPE END SECTION	EACH			
8	570449	30" STORM DRAIN CULVERT PIPE	LF			
9	570461	36" STORM DRAIN CULVERT PIPE	LF			
10	570467	42" STORM DRAIN CULVERT PIPE	LF			
11	570471	42" STORM DRAIN CULVERT PIPE ES	EACH			
12	570152	21"S x 15"R (NOMINAL) CULVERT PIPE ARCH	LF			
13	602060	RIPRAP CLASS G	SY			
14	603281	SWPPP PLAN PREPARATION AND MAINTENANCE	LS			
15	621000	MOBILIZATION	LS			
16	623115	MEDIAN DROP INLET 5'x5' (RURAL) H=6'-1" TO 9'-0"	EACH			
17	623116	MEDIAN DROP INLET 5'x5' (RURAL) H=9'-1" TO 12'-0"	EACH			
18	623401	DROP INLET 4' X 4' (TYPE I) H = 4' - 0"	EACH			
19	623407	DROP INLET 4' X 4' (TYPE I) H = 6'-1" TO 8'-0"	EACH			
20	667131	REMOVE AND RESET MAILBOXES	EACH			
21	701030	REMOVE AND RESET PANEL SIGN	EACH			
22	702811	TRAFFIC CONTROL	LS			
23	801000	CONSTRUCTION STAKING BY THE CONTRACTOR	LS			
24	910000	OPEN CHANNEL (COBB PROPERTY)	CY			
25	910001	OPEN CHANNEL BASIN	LS			
TOTAL BID ITEMS 1 - 25 WRITTEN IN NUMBERS						
				Dollars & Cents		
TOTAL BID ITEMS 1 - 25 WRITTEN IN WORDS						
ALL BID ITEMS ARE EXCLUSIVE OF GROSS RECEIPTS TAX (GRT)						

ADDITIVE ALTERNATE 1 DRIVEWAY CULVERT END SECTIONS					
LINE NUMBER	DESCRIPTION	UNIT	ESTIMATE	COST PER UNIT	EXTENDED PRICE
570153	21"S x 15"R (NOMINAL) CULVERT PIPE ARCH END SECTION	EACH	64		
TOTAL ADDITIVE ALTERNATE 1 WRITTEN IN NUMBERS					
				DOLLARS & CENTS	
TOTAL ADDITIVE ALTERNATE 1 WRITTEN IN WORDS					
ALL BID ITEMS ARE EXCLUSIVE OF GROSS RECEIPTS TAX (GRT)					

ADDITIVE ALTERNATE 2 BASE COURSE AND MINOR PAVING CALLE CORTO STATION 0+00 - 8+00					
LINE NUMBER	DESCRIPTION	UNIT	ESTIMATE	COST PER UNIT	EXTENDED PRICE
303000	BASE COURSE	TON	410		
416000	MINOR PAVING	SY	1,900		
TOTAL ADDITIVE ALTERNATE 2 WRITTEN IN NUMBERS					
				DOLLARS & CENTS	
TOTAL ADDITIVE ALTERNATE 2 WRITTEN IN WORDS					
ALL BID ITEMS ARE EXCLUSIVE OF GROSS RECEIPTS TAX (GRT)					

ADDITIVE ALTERNATE 3 BASE COURSE AND MINOR PAVING CAMINO MOCHO STATION 100+25 - 107+63					
LINE NUMBER	DESCRIPTION	UNIT	ESTIMATE	COST PER UNIT	EXTENDED PRICE
303000	BASE COURSE	TON	375		
416000	MINOR PAVING	SY	1,700		
TOTAL ADDITIVE ALTERNATE 3 WRITTEN IN NUMBERS					
				DOLLARS & CENTS	
TOTAL ADDITIVE ALTERNATE 3 WRITTEN IN WORDS					
ALL BID ITEMS ARE EXCLUSIVE OF GROSS RECEIPTS TAX (GRT)					

BID SHEETS CONTINUED
IFB NO. 2019-0119-PW/MAM VARIOUS ROAD IMPROVEMENTS

BASE BID ITEM NO. 2		CAMINO TORCIDO LOOP				
ITEM NO.	LINE NUMBER	DESCRIPTION	UNIT	ESTIMATE QUANTITIES	COST PER UNIT	EXTENDED PRICE
1	201000	CLEARING AND GRUBBING	ACRE	3		
2	203000	UNCLASSIFIED EXCAVATION	CU.YD.	6,000		
3	207000	SUBGRADE PREPARATION	SQ.YD.	11,200		
4	209000	BLADING AND RESHAPING	MILE	0.05		
5	303150	BASE COURSE 5"	TON	3100		
6	408100	PRIME COAT MATERIAL	TON	21		
7	416000	MINOR PAVING (1 lift of 2.5" HMA SP-IV)	TON	1530		
8	511000	STRUCTURAL CONCRETE, CLASS A	CU.YD.	55		
9	540060	REINFORCING BARS GRADE 60	LBS.	10570		
10	570018	18" CULVERT PIPE	LIN.FT.	5		
11	570024	24" CULVERT PIPE	LIN.FT.	250		
12	570036	36" CULVERT PIPE	LIN.FT.	60		
13	570042	42" CULVERT PIPE	LIN.FT.	150		
14	570152	21" SX15" R (NOMINAL) CULVERT PIPE ARCH	LIN.FT.	830		
15	601000	REMOVAL OF STRUCTURES AND OBSTRUCTIONS	L.S.	L.S.		
16	602010	RIPRAP CLASS B	CU.YD.	52		
17	602060	RIPRAP CLASS G	SQ.YD.	0		
17	603200	SILT FENCE	LIN.FT.	610		
18	603221	CHECK DAM TYPE II	LIN.FT.	40		
19	603260	CULVERT PROTECTION	SQ.YD.	3150		
20	603281	SWPPP PLAN PREPARATION AND MAINTENANCE	L.S.	L.S.		
21	606001	SINGLE FACE W-BEAM GUARDRAIL	LIN.FT.	225		
22	606052	END TREATMENT TL-2 END TERMINAL	EACH	2		
23	606053	END TREATMENT W-BEAM END ANCHOR	EACH	2		
24	607026	CHAIN LINK FENCE 6'	LIN.FT.	210		
25	607320	STANDARD GATE, 20'	EACH	1		
26	618000	TRAFFIC CONTROL MANAGEMENT	L.S.	L.S.		
27	621000	MOBILIZATION	L.S.	L.S.		
28	667110	MAIL BOX INSTALLATION-SINGLE	L.S.	L.S.		
29	701031	REMOVE AND RESET TRAFFIC SIGN	L.S.	L.S.		
30	801000	CONSTRUCTION STAKING BY THE CONTRACTOR	L.S.	L.S.		
TOTAL BID ITEMS 1 - 30 WRITTEN IN NUMBERS						
				Dollars & Cents		
TOTAL BID ITEMS 1 - 30 WRITTEN IN WORDS						
ALL BID ITEMS ARE EXCLUSIVE OF GROSS RECEIPTS TAX (GRT)						
ADDITIVE ALTERNATE 1 PASEO REAL DRAINAGE IMPROVEMENTS						
	LINE NUMBER	DESCRIPTION	UNIT	ESTIMATE	COST PER UNIT	EXTENDED PRICE
	511000	STRUCTURAL CONCRETE, CLASS A	CU.YD.	25		
	540060	REINFORCING BARS GRADE 60	LBS.	550		
	570042	42" CULVERT PIPE	LIN.FT.	440		
	602010	RIPRAP CLASS B	CU.YD.	38		
	602060	RIPRAP CLASS G	SQ.YD.	0		
	603200	SILT FENCE	LIN.FT.	1030		
	606001	SINGLE FACE W-BEAM GUARDRAIL	LIN.FT.	165		
	606052	END TREATMENT TL-2 END TERMINAL	EACH	1		
	606053	END TREATMENT W-BEAM END ANCHOR	EACH	1		
TOTAL ADDITIVE ALTERNATE 3 WRITTEN IN NUMBERS						
					DOLLARS & CENTS	
TOTAL ADDITIVE ALTERNATE 3 WRITTEN IN WORDS						
ALL BID ITEMS ARE EXCLUSIVE OF GROSS RECEIPTS TAX (GRT)						

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 _____, 2019.

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 _____ 2019.

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 _____, 2019.

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 _____, 2019, for the surface and drainage improvements to multiple roads in Santa Fe County.

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 _____, 2019.

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 _____, 2019, with the COUNTY for the surface and drainage improvements to multiple roads 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 _____, 2019.

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 _____, 2019, with the
COUNTY for the surface and drainage improvements to multiple county roads, 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 _____, 2019.

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. 2019-0119-PW/MAM
SURFACE AND DRAINAGE IMPROVEMENTS
TO MULTIPLE COUNTY ROADS**

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 Michelle A. Marmion no later than January 16, 2019 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).

Michelle A. Marmion, Procurement Specialist Senior
Santa Fe County Purchasing Division
142 W. Palace Avenue
Santa Fe, NM 87504
Phone: (505) 992-6753 Fax: (505) 989-3243
E-mail: mmarmion@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 _____, 2019.

NOTARY PUBLIC

My Commission Expires:

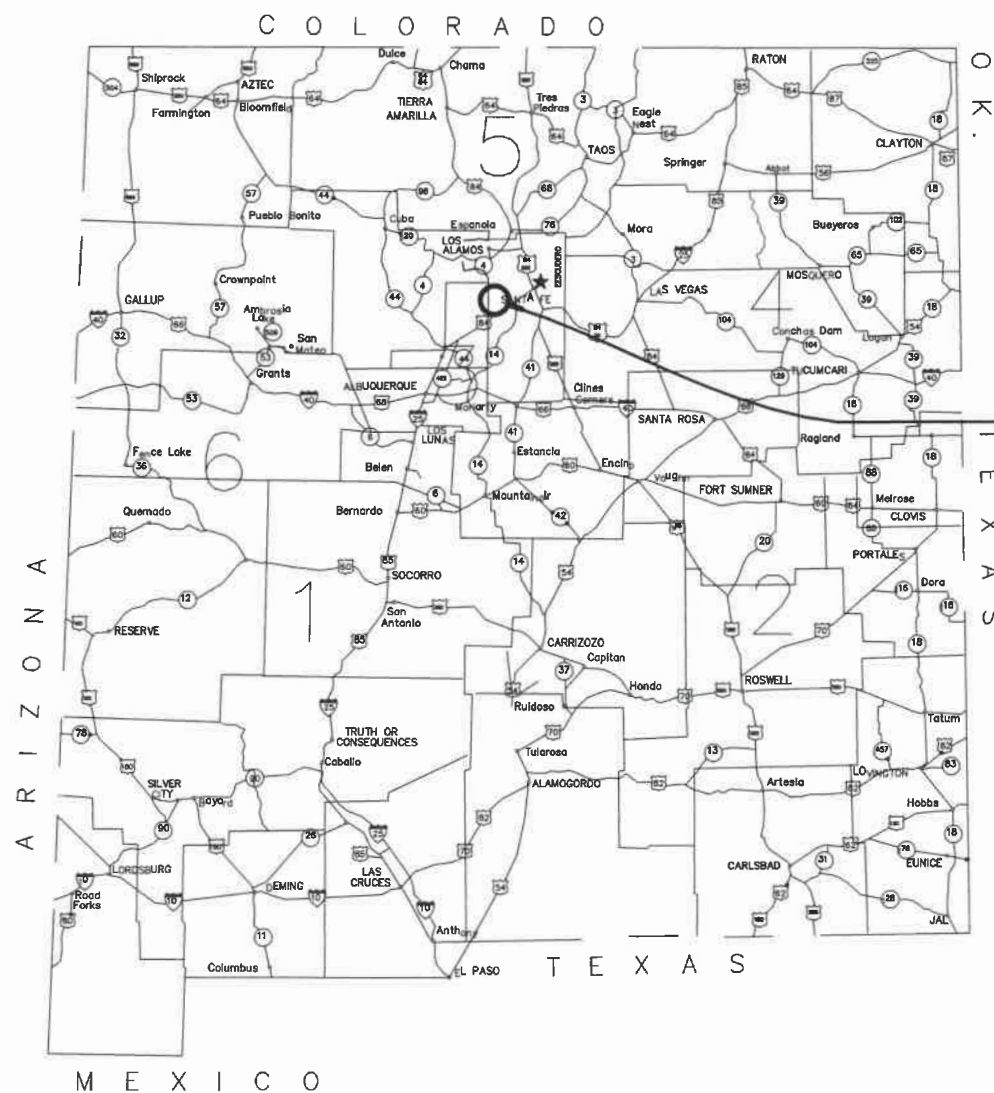
APPENDIX D

PLANS AND SPECIFICATIONS

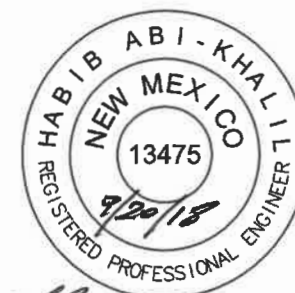


RACETRACK SUBDIVISION DRAINAGE AND ROAD IMPROVEMENTS SANTA FE COUNTY PROJECT No. 6207

FINAL
CONSTRUCTION PLANS
SEPTEMBER 2018



PROJECT
LOCATION



Habib Abi-Khalil

APPROVALS

HORROCKS
ENGINEERS

6100 UPTOWN BLVD. NE
SUITE 105
ALBUQUERQUE, NM 87110
(505) 553-1972

SANTA FE COUNTY PUBLIC WORKS DIRECTOR

DATE

SANTA FE COUNTY PROJECT ENGINEER

DATE

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ABBREVIATIONS, VICINITY MAP LEGEND AND UTILITY CONTACTS	G2	1-2
INDEX OF SHEETS	G3	1-3
SUMMARY OF QUANTITIES	G4	1-4
GENERAL NOTES	G5	1-5
GENERAL NOTES	G6	1-6
TYPICALS:		
TYPICAL SECTION AND DETAILS	DT1	2-1
ROADWAY PLAN AND PROFILE:		
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Signature of Habib Abi-Khalil

REV	DATE	BY	DESCRIPTION
REVISIONS			

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HORIZONTAL
NO SCALE
VERTICAL
NO SCALE

WARNING

IF THIS BAR DOES NOT
MEASURE 1" THEN
DRAWING IS NOT TO SCALE

HORROCKS

ENGINEERS

6100 Uptown Blvd. NE
Suite 105
Albuquerque, NM 87110
(505) 553-1972

SANTA FE COUNTY
RACETRACK SUBDIVISION

INDEX OF SHEETS

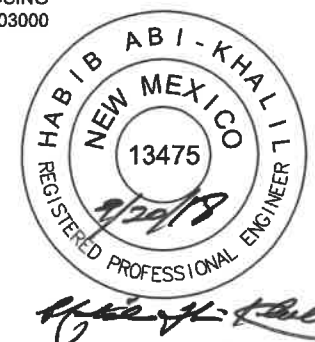
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DRAWN	DJE	DATE	SEPTEMBER 2018	SHEET No.	1-3
CHECKED	HE	DATE	SEPTEMBER 2018	DRAWING No.	G3

* START BASE COURSE ON CAMINO LARGO AT STATION 8+00.
STOP BASE COURSE ON CAMINO MOCHO AT STATION 100+25.


** START MINOR PAVING ON CAMINO LARGO AT STATION 8+00.
STOP MINOR PAVING ON CAMINO MOCHO AT STATION 100+25.

ROADWAY EARTHWORK ESTIMATED VOLUMES			
FOR INFORMATION ONLY. SHRINK FACTOR NOT ESTIMATED			
	CUT REQUIRED	FILL REQUIRED	NET
CAMINO MOCHO	501 CY	40 CY	461 CY EXPORT
CAMINO LARGO & CALLE CORTO	1735 CY	391 CY	1344 CY EXPORT
TOTAL	2236 CY	431 CY	1805 CY EXPORT
BID QUANTITY	2300 CY		

* EXCESS MATERIAL SHALL BECOME THE PROPERTY OF THE CONTRACTOR. HAULING AND DISPOSING OF SUCH MATERIAL AS PER GENERAL CONSTRUCTION NOTE 24 WILL BE INCIDENTAL TO ITEM 203000 UNCLASSIFIED EXCAVATION.



DESIGNED	DATE	SANTA FE COUNTY PROJECT No.
TRH	SEPTEMBER 2018	6207
DRAWN	DATE	SHEET No.
DJE	SEPTEMBER 2018	1-4
CHECKED	DATE	DRAWING No.
HE	SEPTEMBER 2018	G4

			SCALE	WARNING  IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE	<div style="font-size: 2em; font-weight: bold; margin-bottom: 5px;">HORROCKS</div> <div style="display: flex; align-items: center; justify-content: center;"> <div style="width: 20px; height: 20px; background-color: black; margin: 0 5px;"></div> <div style="width: 50px; height: 10px; background-color: orange; margin: 0 5px;"></div> </div> <div style="font-size: 1.5em; font-weight: bold;">ENGINEERS</div>
			HORIZONTAL		
			NO SCALE		
			VERTICAL		
			NO SCALE		

REV	DATE	BY	DESCRIPTION

REVISIONS

6100 Uptown Blvd. NE
Suite 105
Albuquerque, NM 87110
(505) 553-1972

**SANTA FE COUNTY
RACETRACK SUBDIVISION**

SUMMARY OF QUANTITIES

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- HORROCKS**
ENGINEERS

1. ALL UTILITY LOCATIONS ON PLANS ARE APPROXIMATE AND ARE **MAPPING GRADE ONLY**. CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING BLUE STAKES FOR FURTHER LOCATION OF ALL UTILITIES. CALL 811 OR (505) 260-1990.
2. PIPE LENGTHS SHOWN ON PLAN SHEETS ARE HORIZONTAL.
3. PAVEMENT MARKINGS (STRIPING) ARE NOT REQUIRED.
4. CONTRACTOR IS TO AVOID THE ARCHAEOLOGICAL SITE ON THE NORTHWEST CORNER OF CALLE CORTO. CONTRACTOR SHALL CONTACT THE NEW MEXICO STATE HISTORIC PRESERVATION OFFICE TO GAIN MAPS OR BOUNDARIES OF THIS AREA. THE CONTRACTOR SHALL PLACE TEMPORARY FENCING ON ARCH SITE BOUNDARIES TO PREVENT ACCIDENTAL DAMAGE TO SITE. MATERIALS, PLACEMENT AND REMOVAL OF TEMPORARY FENCING WILL BE INCIDENTAL TO THE PROJECT AND NO ADDITIONAL PAYMENT WILL BE MADE.

specific parts

UTILITIES

1. INFRASTRUCTURE CONSTRUCTION SHALL CONFORM TO APPLICABLE SECTIONS OF THE NEW MEXICO DEPARTMENT OF TRANSPORTATION'S STANDARD SPECIFICATIONS FOR HIGHWAY AND BRIDGE CONSTRUCTION, LATEST EDITION", INCLUDING LATEST PUBLISHED AMENDMENTS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY AND POTHOLE ANY POTENTIAL UTILITY CONFLICTS. THE CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGE CAUSED BY CONSTRUCTION ACTIVITIES TO PUBLIC OR PRIVATE PROPERTY, INCLUDING UTILITIES. THIS WORK SHALL BE CONSIDERED INCIDENTAL TO THE COMPLETION OF THE PROJECT AND NO SEPARATE MEASUREMENT OR PAYMENT WILL BE MADE. RELOCATION OF UTILITIES WITHIN SANTA FE COUNTY RIGHT OF WAY SHALL BE THE RESPONSIBILITY OF THE INDIVIDUAL UTILITY COMPANY AS PER SANTA FE COUNTY ORDINANCE 2003-1.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE INTEGRITY OF ALL UTILITIES DURING THE COURSE OF WORK REGARDLESS OF ANY LOCATION SHOWN ON THE PLANS OR OTHER FIELD EVIDENCE, OR LACK THEREOF. NOTIFICATION TO NEW MEXICO ONE CALL AT 811 FOR UTILITY LOCATES A MINIMUM OF 48 HOURS IN ADVANCE OF ANY EXCAVATION IS REQUIRED. MAINTENANCE OF UTILITY LOCATES SHALL BE CONTINUED THROUGHOUT THE PROJECT LIFE. THIS WORK SHALL BE CONSIDERED INCIDENTAL TO THE COMPLETION OF THE PROJECT AND NO SEPARATE MEASUREMENT OR PAYMENT WILL BE MADE.
3. THE CONTRACTOR SHALL BE REQUIRED TO COORDINATE SCHEDULING OF WORK WITH THE RESPECTIVE UTILITY OWNERS. THIS WORK WILL BE CONSIDERED INCIDENTAL TO CONSTRUCTION AND NO SEPARATE MEASUREMENT OR PAYMENT WILL BE MADE.
4. CONTRACTOR SHALL COORDINATE ACTIVITIES TWO WEEKS PRIOR TO CONSTRUCTION WITH ALL UTILITIES WHEN WORKING NEAR OR AROUND ANY UTILITIES WITHIN CONTRACT BOUNDARY. THE CONTRACTOR IS ADVISED THAT UTILITY RELOCATIONS MAY HAVE TO BE PERFORMED CONCURRENT WITH CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE FOR UTILITY WORK IN CONJUNCTION WITH CONSTRUCTION OPERATIONS AND SHALL BE REQUIRED TO COORDINATE THE SCHEDULING OF WORK WITH THE RESPECTIVE UTILITY OWNERS HAVING GIVEN AT LEAST TWO WEEKS ADVANCE NOTICE. ANY CLAIMS FOR DELAY SHALL BE CONTROLLED BY THE TERMS AND CONDITIONS OF SUBSECTION 105.6 "COOPERATION WITH UTILITIES" AND 107.21 "CONTRACTOR RESPONSIBILITY FOR UTILITY PROPERTY AND SERVICES" OF THE SSHBC. UTILITY CONTACT INFORMATION IS PROVIDED. THIS SHALL BE CONSIDERED INCIDENTAL TO THE COMPLETION OF THE PROJECT AND NO SEPARATE MEASUREMENT OR PAYMENT WILL BE MADE.
5. SANTA FE COUNTY ORDINANCE 2003-01 - AN ORDINANCE REGULATING PROCEDURES FOR WORKING IN, DISTURBING AND REPAIRING COUNTY PROPERTY AND RIGHTS OF WAY. THE COUNTY EXPRESSLY RESERVES THE RIGHT TO CHANGE THE GRADE, INSTALL, RELOCATE, OR WIDEN THE PUBLIC RIGHT OF WAYS WITHIN THE COUNTY AND SUBJECT TO ALL REGULATORY APPROVALS, THE FACILITY OWNER SHALL RELOCATE, AT ITS OWN EXPENSE, ITS FACILITIES AND APPURTENANCES IN ORDER TO ACCOMMODATE THE PAVING, INSTALLATION, RELOCATION, WIDENING, OR CHANGING OF THE GRADE OR LOCATION OF ANY SUCH PUBLIC RIGHT OF WAY, INCLUDING IF NECESSARY, RELOCATING FACILITIES TO A SUFFICIENT DISTANCE WITHIN THE RIGHT OF WAY AND TO PERMIT A REASONABLE WORK AREA FOR MACHINERY AND INDIVIDUALS ENGAGED IN SUCH OR TO PROTECT THE HEALTH, SAFETY, OR WELFARE OF THE PUBLIC.

EXCAVATION, BACKFILL AND EARTHWORK

1. BORROW MATERIAL PLACED WITHIN TWO (2) FEET VERTICALLY AND Laterally OF THE FINAL SUBGRADE ELEVATIONS SHALL MEET THE DESIGN R-VALUE AS SHOWN ON THE PLANS. PRIOR TO BORROW OPERATIONS THE CONTRACTOR SHALL PERFORM R-VALUE TESTING IN ACCORDANCE WITH AASHTO T-T190 AT THE BEST FIT EXUDATION PRESSURE OF 300 PSI FOR EACH BORROW SOURCE. DURING BORROW PLACEMENT IF THE PROJECTS ENGINEER OBSERVES CHANGES IN SOIL PROPERTIES, INLCUDING GRADATION, PLASTICITY LIMITS OR ANY OTHER PROPERTIES, ADDITIONAL AASHTO T-190 TESTS MAY BE REQUIRED.
2. EARTHWORK HAUL AND EMBANKMENT FILL. THE EARTHWORK HAUL AND EMBANKMENT FILL ON THIS PROJECT WILL BE CONSIDERED AS INCLUDED IN THE CONTRACT PRICE FOR "203000 - UNCLASSIFIED EXCAVATION", AS APPLICABLE, AND NO SEPARATE MEASUREMENT OR PAYMENT WILL BE MADE.
3. THE CONTRACTOR SHALL WARP SLOPES WHERE NECESSARY TO STAY WITHIN THE RIGHT OF WAY OR CONSTRUCTION EASEMENT LIMITS. THIS SHALL BE CONSIDERED INCIDENTAL TO THE CONTRACT PRICE FOR "203000 - UNCLASSIFIED EXCAVATION", AND NO SEPARATE MEASUREMENT OR PAYMENT WILL BE MADE.
4. UPON COMPLETION OF THE PROJECT, THE CONTRACTOR SHALL SEED ANY AREAS DISTURBED BY CONSTRUCTION ACTIVITY. REVEGETATION SHALL BE CONSIDERED TO COMPLETION OF THE PROJECT, CLASS A SEEDING AND Q TO SOQ AND NO SEPARATE MEASUREMENT OR PAYMENT WILL BE MADE.
5. THE CONTRACTOR IS TO DISPOSE OF ALL MATERIALS AND SPOILS PER LOCAL CODES OF CITY, COUNTY, STATE AND FEDERAL REGULATIONS.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL, DISPOSAL AND HAUL OF MATERIALS REQUIRED TO COMPLETE THE PROJECT. THIS WORK SHALL BE CONSIDERED INCLUDED IN THE CONTRACT PRICE FOR "601000 - REMOVAL OF STRUCTURES AND OBSTRUCTIONS", AND THE CONTRACTOR WILL NOT RECEIVE ADDITIONAL COMPENSATION FOR UNLISTED REMOVALS.
7. THE CONTRACTOR SHALL GRADE THE ROADSIDE DITCHES TO DRAIN AND ENSURE THAT EACH STRUCTURE WILL DRAIN AND FLOW PROPERLY.
8. PRESERVE THE MATERIAL BELOW AND BEYOND THE LINES AND GRADES WHILE CONDUCTING EXCAVATION OPERATIONS.
9. BEFORE BEGINNING EXCAVATION, GRADING, AND EMBANKMENT OPERATIONS, PERFORM THE NECESSARY CLEARING AND GRUBBING IN ACCORDANCE WITH SSHBC SECTION 201, "CLEARING AND GRUBBING". NOTIFY THE PROJECT MANAGER BEFORE OPENING EXCAVATION OR BORROW AREAS.
10. TAKE CROSS SECTION ELEVATIONS OF THE GROUND SURFACE BEFORE OPENING EXCAVATION OR BORROW AREAS.
11. DEWATERING IS NOT ANTICIPATED, BUT MAY BE REQUIRED. ANY DEWATERING SHALL BE CONSIDERED INCIDENTAL TO THE COMPLETION OF THE PROJECT.
12. STORMWATER MANAGEMENT AND STORMWATER DIVERSION DURING CONSTRUCTION SHALL BE PERFORMED BY THE CONTRACTOR. ALL WORK ASSOCIATED WITH STORMWATER MANAGEMENT AND STORMWATER DIVERSION DURING CONSTRUCTION SHALL BE INCLUDED IN ITEM 603281 - SWPPP PREPARATION AND MAINTENANCE - AND NO SEPARATE PAYMENT WILL BE MADE THEREFOR.

TRAFFIC CONTROL

1. TRAFFIC CONTROL SHALL BE PERFORMED IN ACCORDANCE WITH SANTA FE COUNTY TRAFFIC CONTROL SPECIFICATION DATED JANUARY 26, 2018. A TRAFFIC CONTROL PLAN SHALL BE SUBMITTED AND IS INCLUDED IN THE PAY ITEM FOR TRAFFIC CONTROL. THE TRAFFIC CONTROL PLAN SHALL BE SUBMITTED ON 11" X 17" PAPER AND SHALL BE STAMPED BY A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF NEW MEXICO.
2. TRAFFIC CONTROL DEVICES, SHALL BE INSTALLED, MAINTAINED, AND REMOVED BY THE CONTRACTOR IN ACCORDANCE WITH THE TRAFFIC CONTROL PLANS. TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE LATEST PUBLISHED EDITION OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.
3. TRAFFIC SIGNS MOUNTED ON PORTABLE SUPPORTS SHALL NOT BE USED FOR A DURATION OF MORE THAN THREE (3) DAYS. ALL TEMPORARY CONSTRUCTION SIGNAGE WILL BE PLACED ON A PERMANENT SIGN POST IF SIGN NEEDS TO REMAIN IN THE SAME PLACE FOR LONGER THAN THREE (3) DAYS.

SURVEY

1. MAINTENANCE OF AS-BUILT PLANS. THE CONTRACTOR SHALL MAINTAIN AN UP TO DATE SET OF AS-BUILT PLANS FOR THE PROJECT. THESE PLANS SHALL BE KEPT CURRENT, WITHIN TWO WEEKS, AT ALL TIMES AND SHALL BE SUBJECT TO REVIEW BY THE PROJECT MANAGER THROUGHOUT THE PROJECT AND WILL BE REVIEWED BY THE PROJECT MANAGER FOR ACCURACY AND COMPLETENESS AT LEAST ONCE EVERY 30 DAYS. UPON 50% COMPLETION OF THE PROJECT THE CONTRACTOR SHALL SUBMIT PROGRESS AS-BUILT PLANS TO THE PROJECT MANAGER FOR REVIEW. THE FINAL AS-BUILT PLANS BEARING THE SIGNED SEAL AND CERTIFICATION OF THE CONTRACTOR'S SURVEYOR SHALL BE SUBMITTED TO THE PROJECT MANAGER PRIOR TO ANY FINAL PAYMENT, THIS WORK IS INCLUDED IN THE CONTRACT PRICE FOR "80100 - CONSTRUCTION STAKING" AND NO SEPARATE MEASUREMENT OR PAYMENT WILL BE MADE.
2. THE CONTRACTOR SHALL BE REQUIRED TO FIELD VERIFY ALL DIMENSIONS, ELEVATIONS, LENGTHS, WIDTHS AND CONTROL POINTS PRIOR TO COMMENCING ANY WORK ON THE PROJECT. THIS WORK WILL BE CONSIDERED INCLUDED IN THE CONTRACT PRICE FOR "801000 - CONSTRUCTION STAKING" AND NO ADDITIONAL MEASUREMENT OR PAYMENT WILL BE MADE.
3. THE CONTRACTOR'S SURVEYOR SHALL BE A LICENSED NEW MEXICO PROFESSIONAL LAND SURVEYOR.
4. THE CONTRACTOR SHALL TAKE PRECAUTIONS TO PROTECT HORIZONTAL AND VERTICAL CONTROL SURVEY MONUMENTS (MARK) FROM DAMAGE PRIOR TO INITIATING CONSTRUCTION. IF DURING THE COURSE OF CONSTRUCTION OPERATIONS, THE CONTRACTOR DISTURBS OR DESTROYS A MARK, THE CONTRACTOR SHALL ESTABLISH A NEW MARK IN COMPLIANCE WITH THE STANDARDS AND PROCEDURES SET FORTH IN THE GEODETIC MARK PRESERVATION GUIDEBOOK, NATIONAL GEODETIC SURVEY, MARCH 1990. CONSTRUCTION STAKING DOCUMENTATION WILL BECOME THE PROPERTY OF THE COUNTY WHEN THE WORK IS COMPLETE. PROVIDE CONSTRUCTION-STAKING DOCUMENTATION TO THE PROJECT MANAGER. SUBMIT EARTHWORK QUANTITIES, SLOPE STAKING, SURFACE EXTRACTED CROSS SECTIONS AND EARTHWORK CALCULATIONS TO THE PROJECT MANAGER FOR REVIEW BEFORE COMPLETING THAT PHASE OF WORK. ENSURE A NEW MEXICO LICENSED PROFESSIONAL SURVEYOR OR PROFESSIONAL ENGINEER STAMPS AND CERTIFIES THE QUANTITIES AND ALL SUBMITTALS. THE COUNTY WILL NOT ACCEPT EARTHWORK QUANTITIES UNTIL THE PROJECT MANAGER REVIEWS AND APPROVES THESE QUANTITIES. THIS WORK SHALL BE CONSIDERED INCLUDED IN THE CONTRACT PRICE FOR "801000 - CONSTRUCTION STAKING" AND NO SEPARATE MEASUREMENT OR PAYMENT WILL BE MADE. .

PAVEMENT, SIDEWALK, CURB AND GUTTER

1. IF A PAVEMENT DROP-OFF IS CREATED DURING CONSTRUCTION, THE CONTRACTOR SHALL INITIATE PROTECTIVE PAVEMENT DROP-OFF PROCEDURES IN ACCORDANCE WITH SANTA FE COUNTY SPECIFICATION TRAFFIC CONTROL DATED JANUARY 26, 2018. THIS WORK SHALL BE CONSIDERED INCIDENTAL TO THE PROJECT AND NO SEPARATE PAYMENT SHALL BE MADE.
2. THE PROJECT MANAGER WILL EVALUATE HMA TEST RESULTS ACCORDING TO THE FREQUENCY INDICATED IN THE NMDOT MINIMUM TESTING REQUIREMENTS AND IN ACCORDANCE WITH SSHBC SECTION 423 FOR HOT-MIX-ASPHALT-SUPERPAVE (QLA AND NON-QLA). IN THE EVENT AN INDIVIDUAL TEST REPORT OF THE MATERIAL CHARACTERISTICS ARE OUTSIDE THE ACCEPTANCE TESTING TOLERANCES LISTED IN TABLE 423.3.6.2.1:1 OR A PAVEMENT DENSITY TEST IS BELOW 92%. THE PROJECT MANAGER WILL DETERMINE WHETHER THE MATERIAL PLACED DURING THE DAY'S PRODUCTION IS ACCEPTABLE, WILL NEED TO BE REMOVED AND REPLACED, WILL BE SUBJECT TO A PRICE REDUCTION, OR IF CORRECTIVE ACTION IS REQUIRED TO BRING THE MATERIAL BACK INTO SPECIFICATION.
3. SAWCUT LOCATIONS SHALL BE DETERMINED BY THE PROJECT MANAGER. SAWCUTTING SHALL BE CONSIDERED INCLUDED IN THE CONTRACT PRICE FOR "601000 - REMOVAL OF STRUCTURES AND OBSTRUCTIONS" AND NO SEPARATE MEASUREMENT OR PAYMENT WILL BE MADE.

PERMITTING

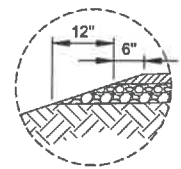
1. THE CONTRACTOR WILL BE RESPONSIBLE FOR SECURING SWPPP PERMITS AS REQUIRED BY APPLICABLE COUNTY, STATE, AND FEDERAL REGULATIONS.
2. THE CONTRACTOR SHALL IDENTIFY THEIR BORROW SOURCE AND SECURE ALL PERMITS AND ENVIRONMENTAL CLEARANCES REQUIRED BY ALL APPLICABLE SPECIFICATIONS PRIOR TO THE PRECONSTRUCTION CONFERENCE. THIS INFORMATION SHALL BE PROVIDED TO THE OWNER AND THE OWNERS PROJECT REPRESENTATIVE AT LEAST ONE WEEK PRIOR TO THE PRECONSTRUCTION CONFERENCE.
3. A SANTA FE COUNTY EXCAVATION RESTORATION PERMIT IS REQUIRED FOR THIS PROJECT. HOWEVER SANTA FE COUNTY WILL WAIVE THE PERMIT FEE. CONTACT JOHNNY BACA AT SANTA FE COUNTY TRAFFIC DEPARTMENT FOR ADDITIONAL INFORMATION AND DETAILS 505-992-3020.



Handwritten signature of Habib A. B. I. Khalil

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				SCALE		WARNING		HORROCKS ENGINEERS		6100 Uptown Blvd. NE Suite 105 Albuquerque, NM 87110 (505) 553-1972		SANTA FE COUNTY RACETRACK SUBDIVISION		DESIGNED TRH		DATE SEPTEMBER 2018		SANTA FE COUNTY PROJECT No. 6207	
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DETAIL OF HMA AND
BASE COURSE TAPER.

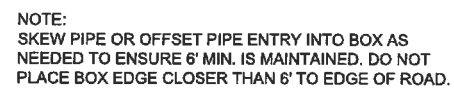
A TYPICAL SECTION
- CAMINO LARGO
CAMINO MOCHO
CALLE CORTO



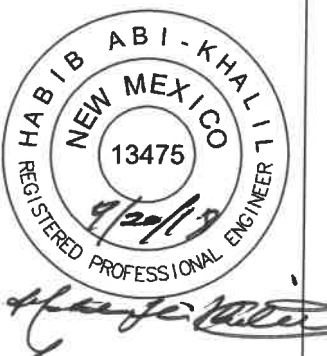
B TYPICAL DRIVEWAY DETAIL

-
- Diagram illustrating a ditch cross-section with the following components and dimensions:
- PROTECT-IN-PLACE EXISTING GATE IF PRESENT**: Indicated by a dashed line and a square symbol on the left side.
 - ROW**: Right-of-Way line, indicated by a vertical dashed line.
 - 3" THICK BASE COURSE. IF LANDSCAPING OR PAVEMENT IS PRESENT RESTORE TO ORIGINAL CONDITION.**: Indicated by a horizontal line at the top right.
 - 6.00'**: Dimension indicating the width of the base course area.
 - (1)**: Label for the ditch bottom.
 - (2)**: Label for the ditch side slope.
 - (3)**: Label for the ditch bottom.
 - 3:1 OR FLATTER SLOPE**: Indicated by a line pointing to the ditch side slope.
 - 21" X 15" CMP ARCH PIPE WITH END SECTIONS**: Indicated by a line pointing to the ditch bottom.
 - SLOPE VARIES**: Indicated by a line pointing to the ditch side slope.
 - (4)**: Label for the ditch bottom.

- C** SECTION




D DETAIL



SCALE	
HORIZONTAL	1" = 10'
VERTICAL	NO SCALE

WARNING

0 1/2 1



IF THIS BAR DOES NOT
MEASURE 1" THEN
DRAWING IS NOT TO SCALE

HORROCKS

ENGINEERS

6100 Uptown Blvd. NE
Suite 105
Albuquerque, NM 87110
(505) 553-1972

**SANTA FE COUNTY
RACETRACK SUBDIVISION**

TYPICAL SECTIONS AND DETAILS

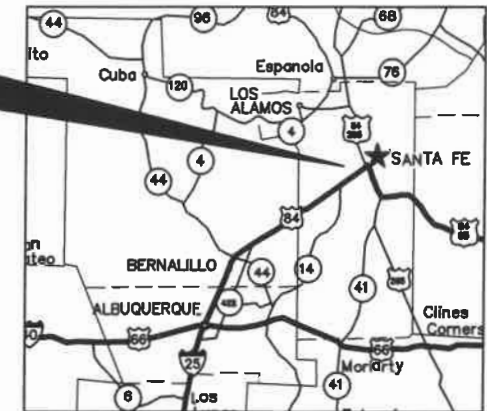
DESIGNED	DATE	SANTA FE COUNTY PROJECT No.
TRH	SEPTEMBER 2018	6207
DRAWN	DATE	SHEET No.
DJE	SEPTEMBER 2018	2-1
CHECKED	DATE	DRAWING No.
HE	SEPTEMBER 2018	DT1

USGLO BRASS CAP
T15N, R8E
1/4 COR SEC 17, 20

SITE LOCATION



VICINITY MAP
NOT TO SCALE



LEGEND

- FOUND USGLO BRASS CAP
- SET #5 YELLOW PLASTIC CAP "WHPACIFIC LS 10856"

CAMINO LARGO

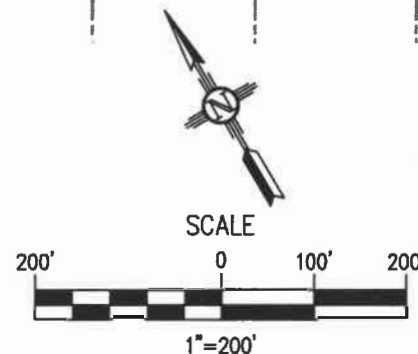
PASEO REAL

CAMINO MOCHO

CAMINO LARGO

NOTES

1. BASIS OF BEARINGS, BEARINGS ARE NAD83(2011) NEW MEXICO CENTRAL STATE PLANE GRID BEARINGS BASED ON AN NGS ONLINE POSITIONING USER SERVICE (OPUS) SOLUTION OBTAINED AT CP-1
2. THE COORDINATES SHOWN ON THE DRAWING ARE MODIFIED (SURFACE) NAD83 SPC NM(W) COORDINATES AND WERE DERIVED BY SCALING STATE PLANE GRID COORDINATES BY PROJECT COMBINED SCALE FACTOR OF 1.0003905024 AROUND AN ORIGIN OF 0,0.
3. ALL DISTANCES INDICATED ON THIS DRAWING ARE GROUND DISTANCES.
4. ALL BEARINGS INDICATED ON THIS DRAWING ARE STATE PLANE GRID BEARINGS.
5. ELEVATIONS ARE BASED ON THE OPUS SOLUTION AT CP-1, ELEVATION=6171.42 FEET, DATUM: NAVD88.
6. ALL DISTANCES, ELEVATIONS AND COORDINATES ARE EXPRESSED IN US SURVEY FEET.
7. THE GEOID USED FOR THIS PROJECT WAS GEOID 12B (CONUS)
8. THE CONTROL WAS ESTABLISHED USING REAL TIME KINEMATIC (RTK) OBSERVATIONS.
9. EQUIPMENT UTILIZED FOR THIS SURVEY: TRIMBLE TSC3 DATA COLLECTOR, TRIMBLE R6 MODEL 4 RECEIVERS (x2) AND A TRIMBLE TDL 450H RADIO UNIT.



SURVEY CONTROL TABLE				
POINT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
1	1671889.30	1679755.70	6171.42	SET REBAR - CNTRL -
2	1672438.63	1680168.64	6171.58	SET REBAR - CNTRL -
3	1670959.25	1681217.17	6220.41	SET REBAR - CNTRL -
USGLO	1677845.43	1679188.55	6159.59	FND USGLO BC 1/4 COR SEC 17, 20

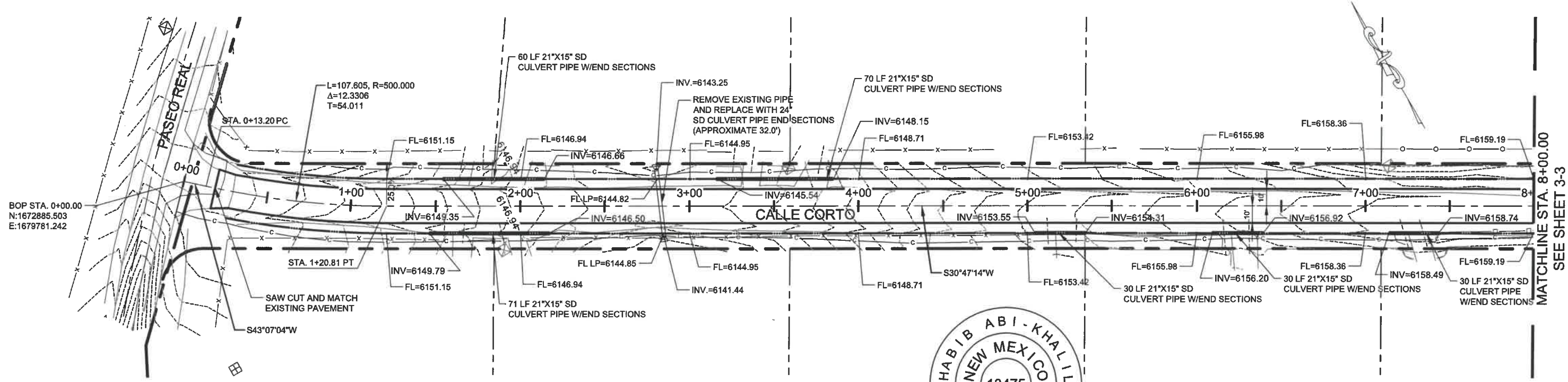


SANTA FE COUNTY
RACETRACK SUBDIVISION

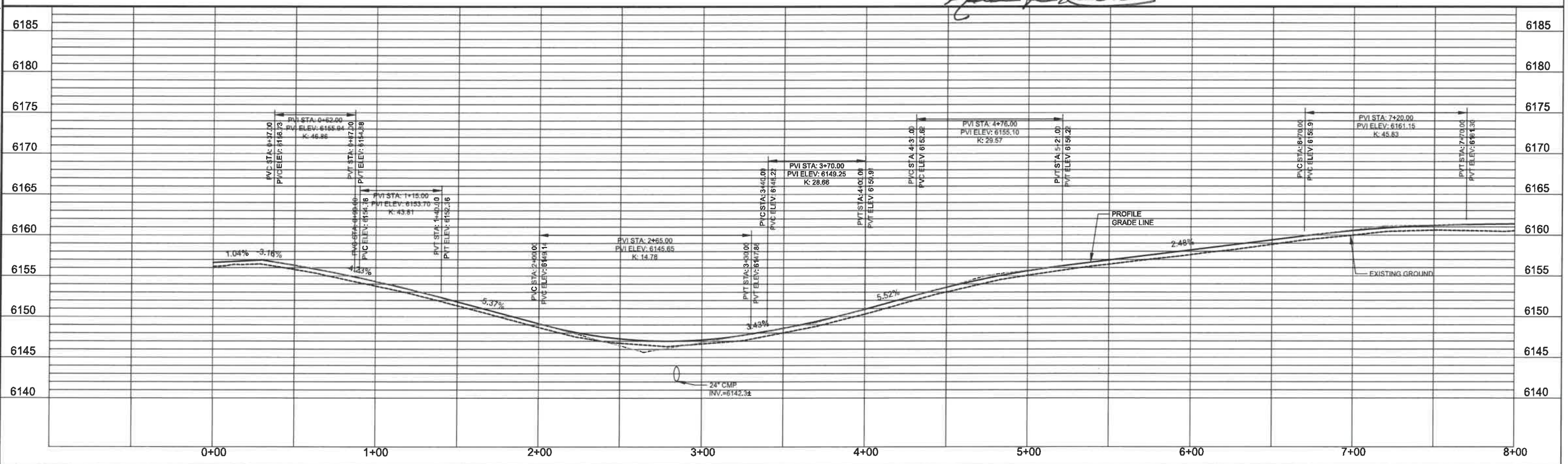
SURVEY CONTROL

DESIGNED	TRH	DATE	MAR. 2018	PROJECT NO.	6207
DRAWN	HE	DATE	MAR. 2018	SHEET NO.	3-1
CHECKED		DATE	MAR. 2018	DRAWING NO.	SC-1

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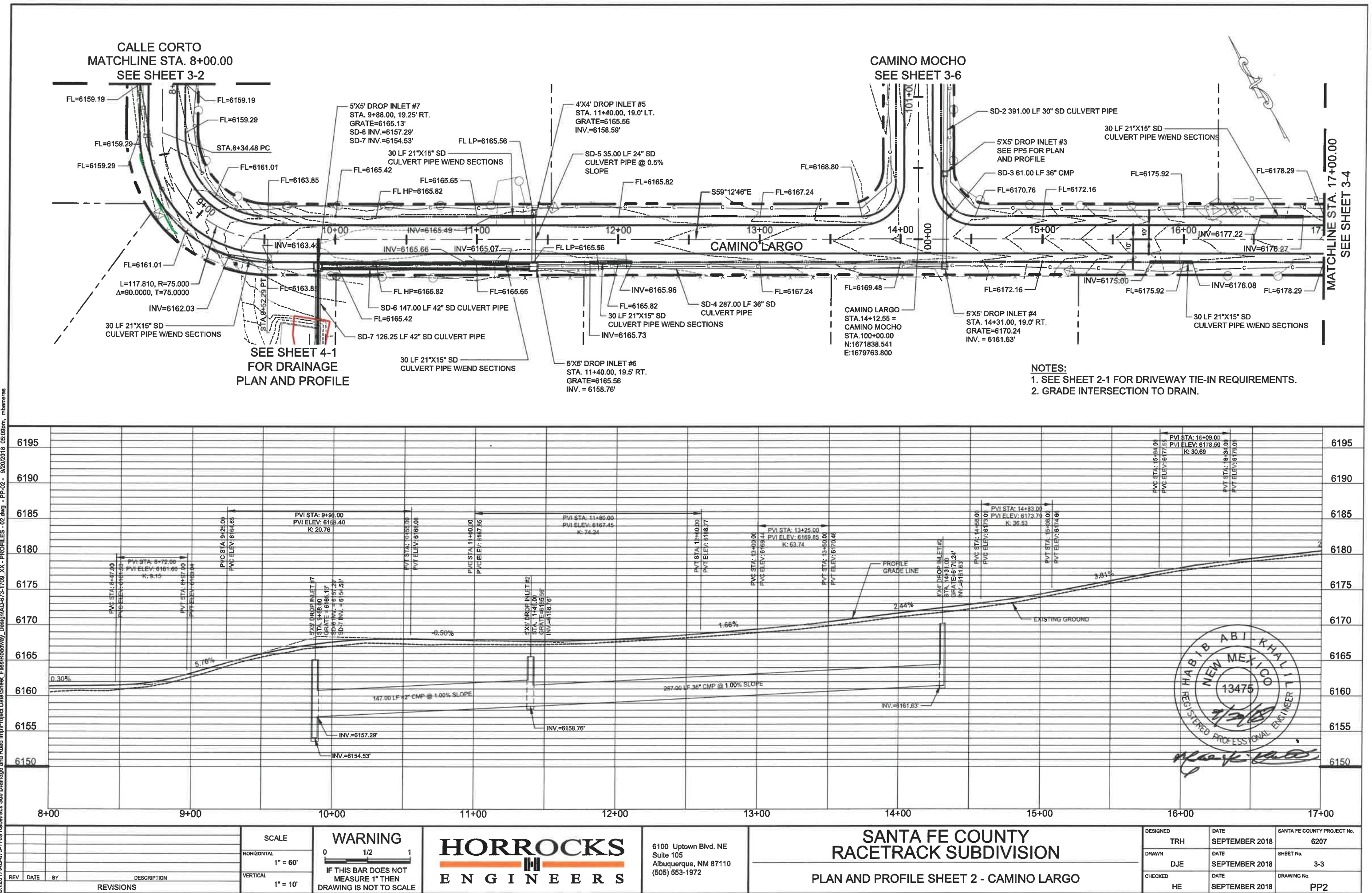


NOTES:
1. SEE SHEET 2-1 FOR DRIVEWAY TIE-IN REQUIREMENTS.

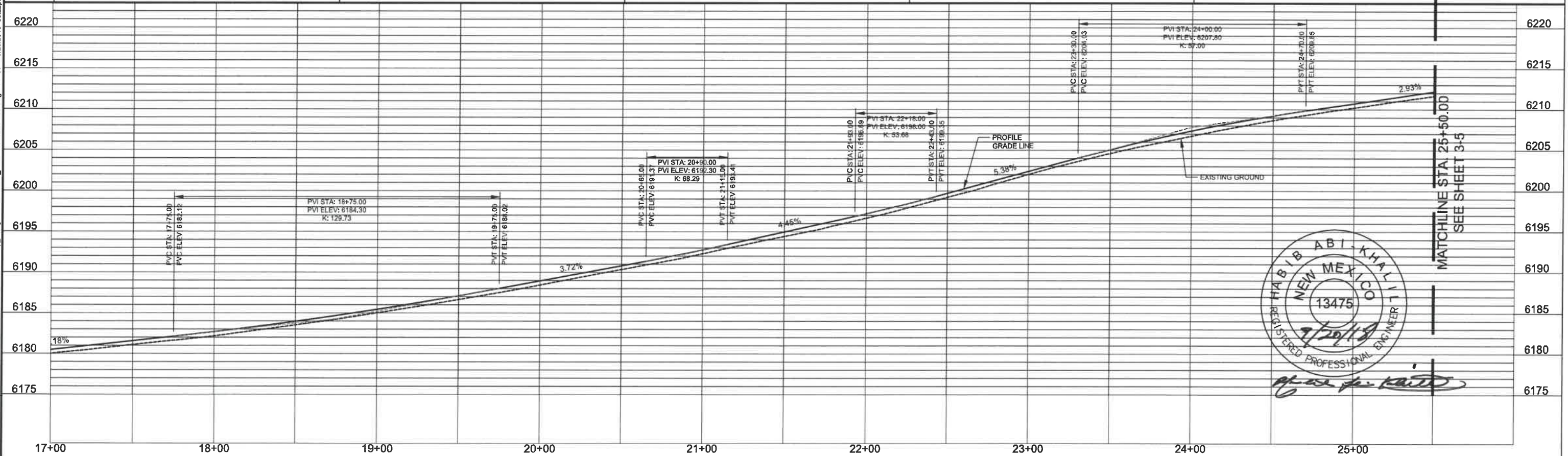
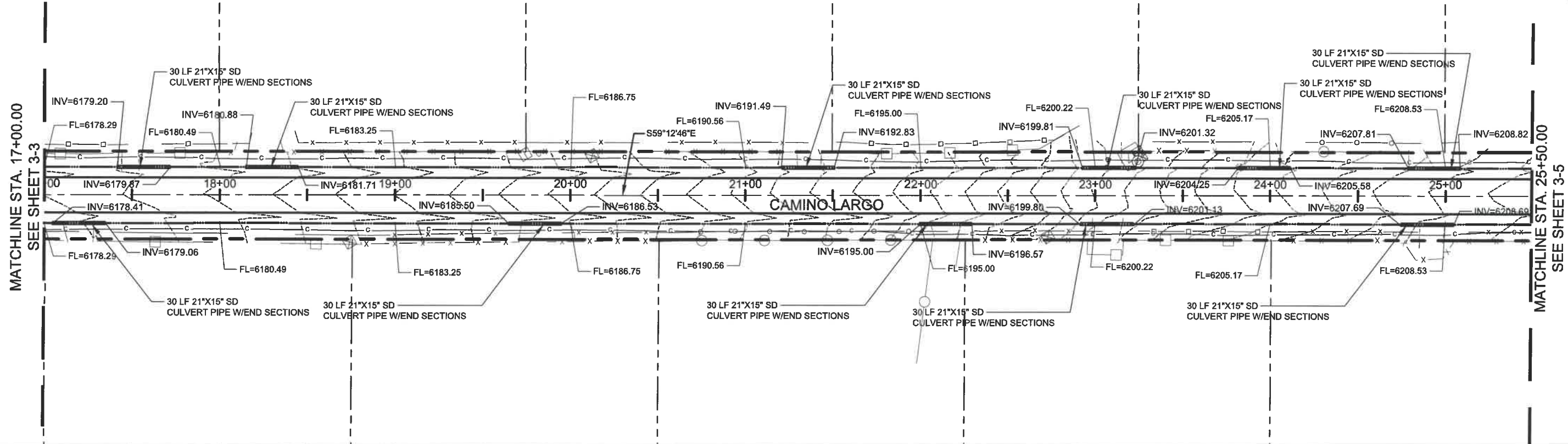


REVISIONS				SCALE HORIZONTAL: 1" = 60' VERTICAL: 1" = 10'	WARNING 0 1/2 1 IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE	HORROCKS ENGINEERS	6100 Uptown Blvd. NE Suite 105 Albuquerque, NM 87110 (505) 553-1972	SANTA FE COUNTY RACETRACK SUBDIVISION		DESIGNED: TRH DATE: SEPTEMBER 2018 DRAWN: DJE DATE: SEPTEMBER 2018 CHECKED: HE DATE: SEPTEMBER 2018	SANTA FE COUNTY PROJECT No. 6207 SHEET No. 3-2 DRAWING No. PP1
PLAN AND PROFILE SHEET 1 - CALLE CORTO											

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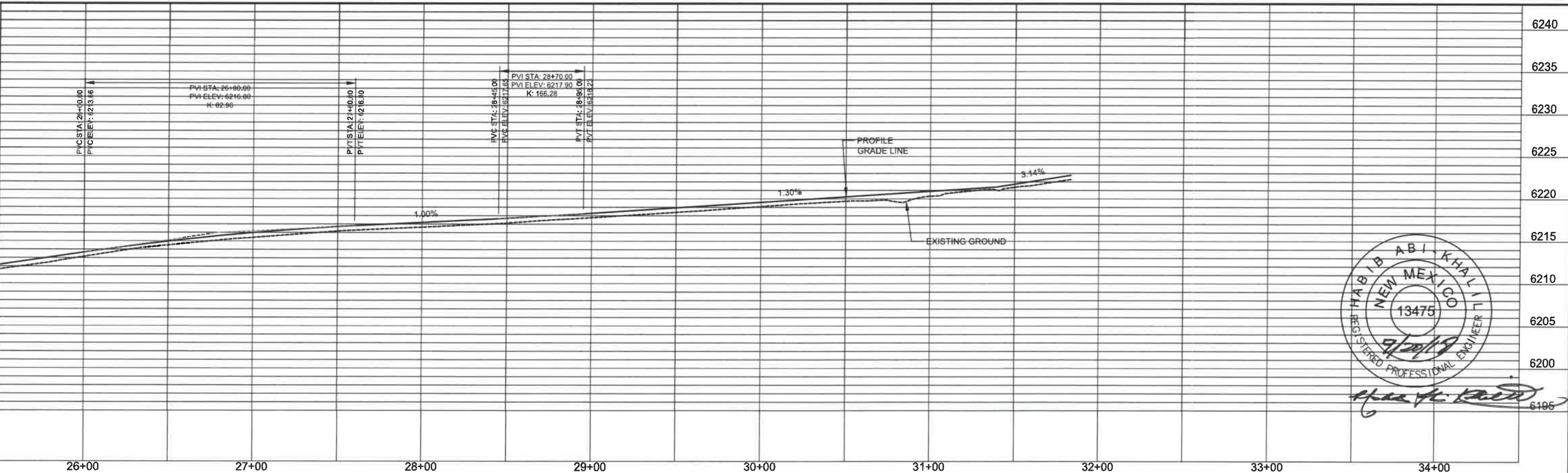
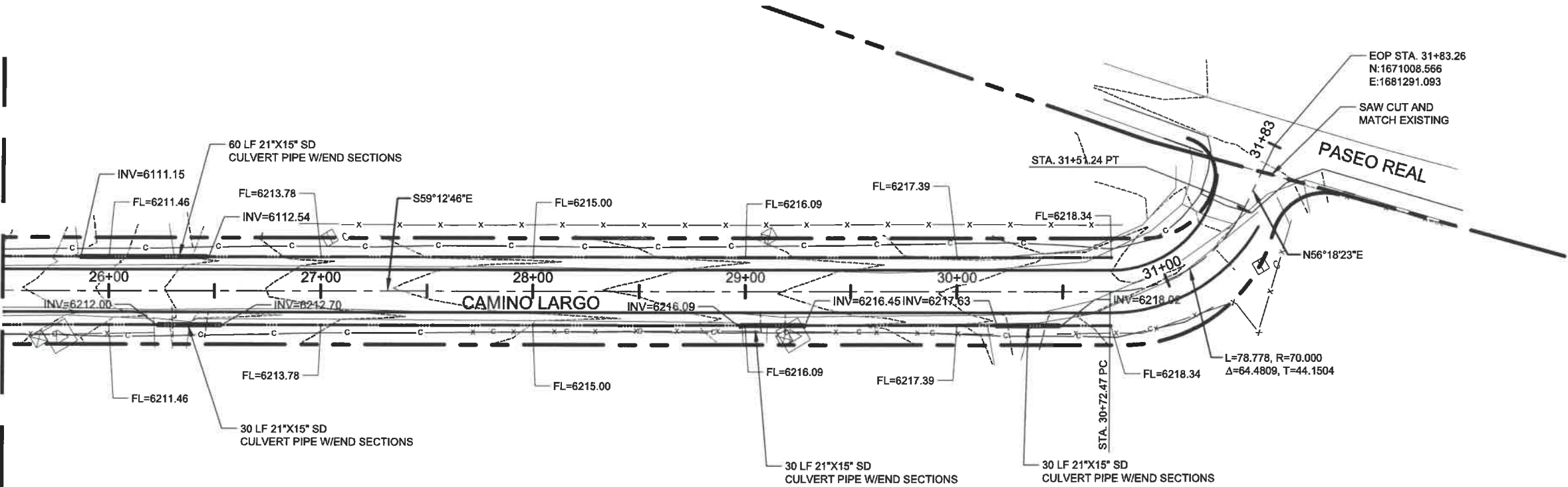
NOTES:
1. SEE SHEET 2-1 FOR DRIVEWAY TIE-IN REQUIREMENTS.



				SCALE		WARNING		HORROCKS		6100 Uptown Blvd. NE Suite 105 Albuquerque, NM 87110 (505) 553-1972		SANTA FE COUNTY RACETRACK SUBDIVISION				DESIGNED TRH		DATE SEPTEMBER 2018		SANTA FE COUNTY PROJECT No. 6207	
				HORIZONTAL				ENGINEERS								DRAWN DJE		DATE SEPTEMBER 2018		SHEET No. 3-4	
				VERTICAL		IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE						PLAN AND PROFILE SHEET 3 - CAMINO LARGO				CHECKED HE		DATE SEPTEMBER 2018		DRAWING No. PP3	
REV				DATE				BY				DESCRIPTION									

C:\2017\AQ-673-1709 Racetrack Sub Drainage and Road Imp\Project Data\Sheet_Files\Roadway_Design\AQ-673-1709_XX - PROFILES - 04.dwg - PP-04 - 9/20/2018 05:27pm, mbaneras

MATCHLINE STA. 25+50.00
SEE SHEET 3-4



REV	DATE	BY	DESCRIPTION

SCALE
HORIZONTAL 1" = 60'
VERTICAL 1" = 10'

WARNING

0 1/2 1

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

HORROCKS
ENGINEERS

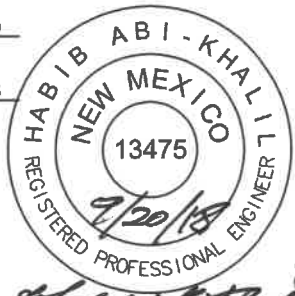
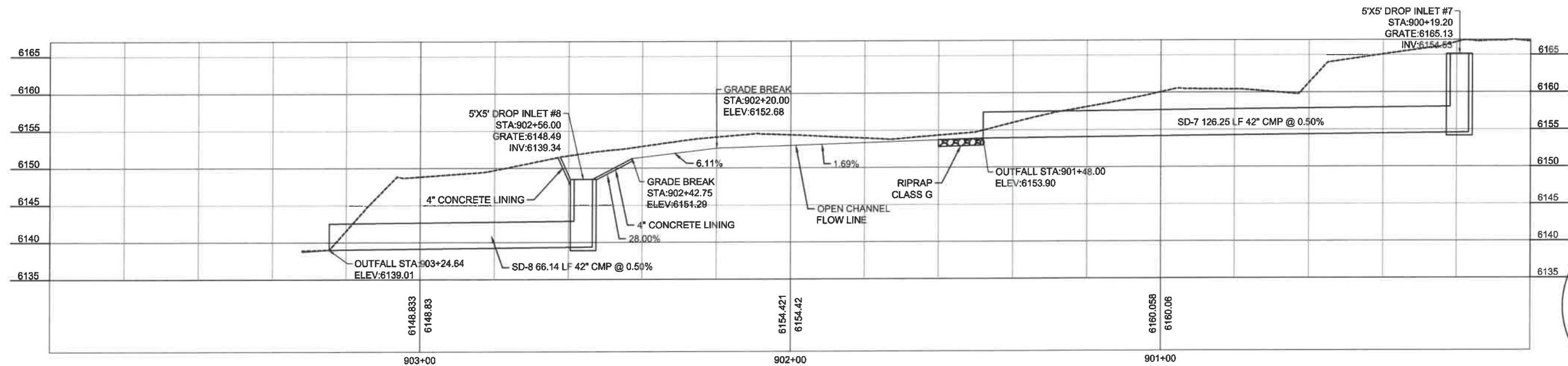
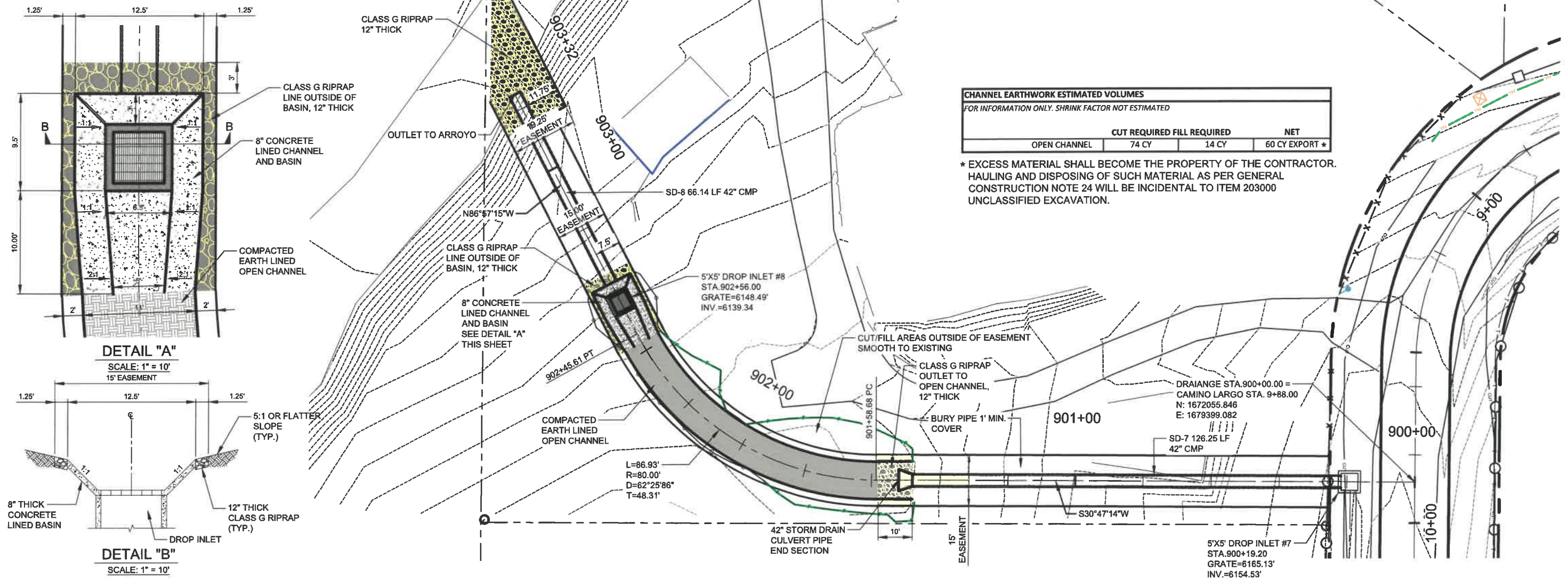
6100 Uptown Blvd. NE
Suite 105
Albuquerque, NM 87110
(505) 553-1972

**SANTA FE COUNTY
RACETRACK SUBDIVISION**

PLAN AND PROFILE SHEET 4 - CAMINO LARGO

DESIGNED TRH	DATE SEPTEMBER 2018	SANTA FE COUNTY PROJECT No. 6207
DRAWN DJE	DATE SEPTEMBER 2018	SHEET No. 3-5
CHECKED HE	DATE SEPTEMBER 2018	DRAWING No. PP4

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REV	DATE	BY	DESCRIPTION

SCALE
HORIZONTAL 1" = 30'
VERTICAL AS SHOWN

WARNING
0 1/2 1
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

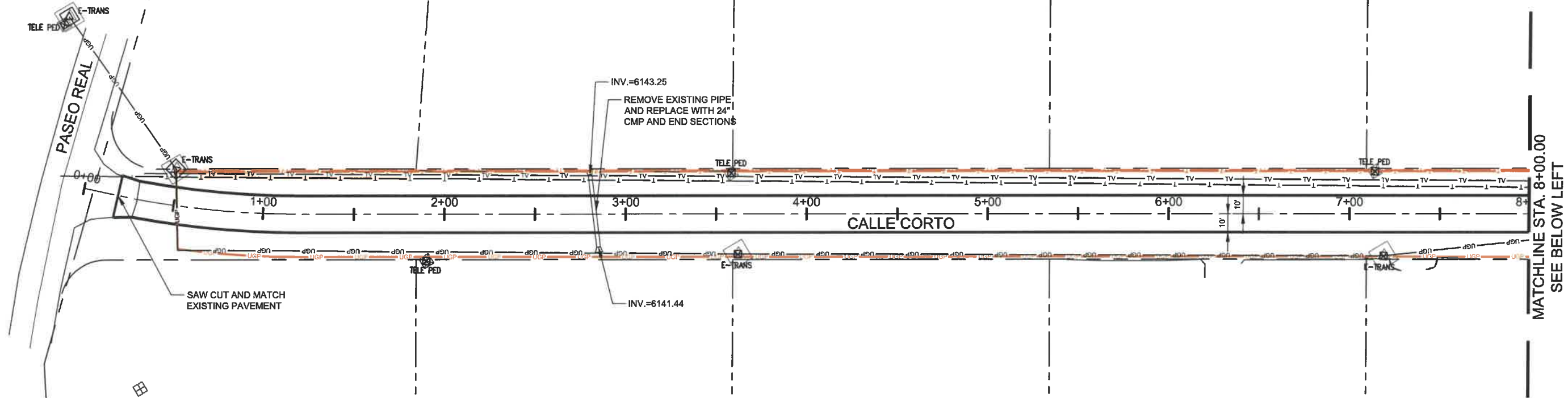
HORROCKS ENGINEERS

6100 Uptown Blvd. NE
Suite 105
Albuquerque, NM 87110
(505) 553-1972

**SANTA FE COUNTY
RACETRACK SUBDIVISION**

DRAINAGE PLAN AND PROFILE SHEET

DESIGNED TRH	DATE SEPTEMBER 2018	SANTA FE COUNTY PROJECT No. 6207
DRAWN DJE	DATE SEPTEMBER 2018	SHEET No. 4-1
CHECKED HE	DATE SEPTEMBER 2018	DRAWING No. GR1



LEGEND:

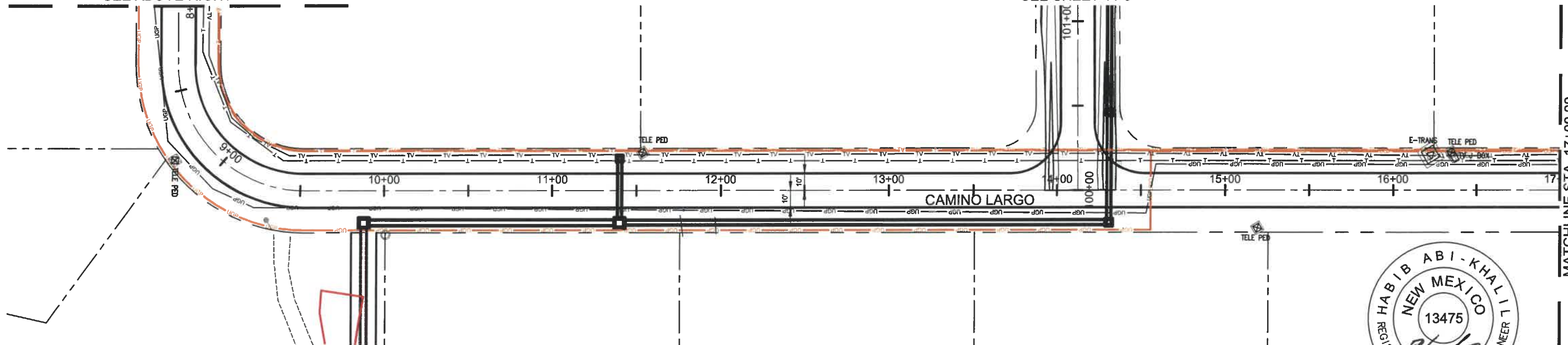
- EXISTING LINE TO REMAIN
- EXISTING LINE TO BE RELOCATED
- POSSIBLE NEW LINE LOCATION



NOTES:

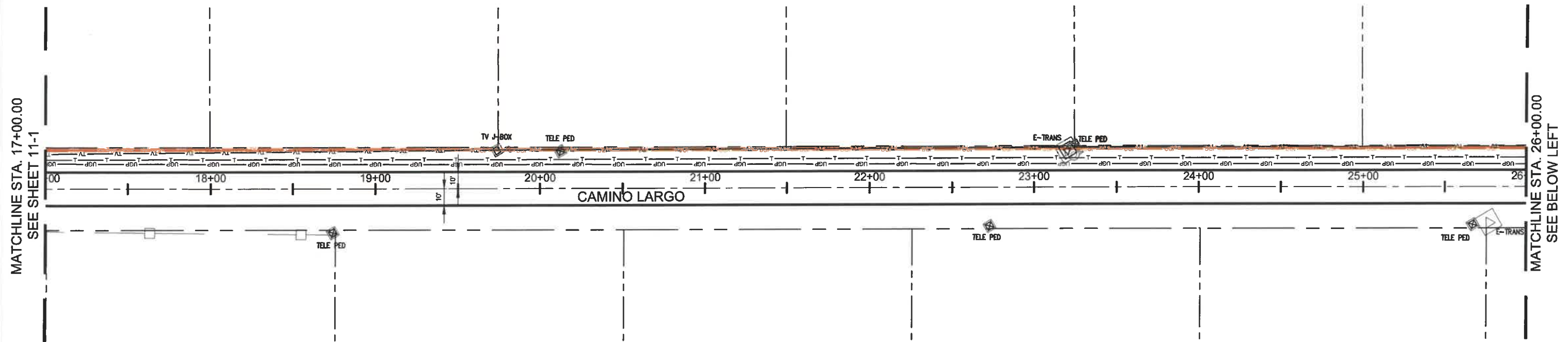
- EXISTING UTILITIES SHOWN ARE INTENDED AS MAPPING GRADE ONLY, TO INDICATE THE POSSIBLE PRESENCE OF UTILITY LINES IN THE AREA.
- NEW UTILITIES ARE SHOWN AS POSSIBLE SCHEMATIC LOCATIONS ONLY. THESE DO NOT REPRESENT ACTUAL PLANNED FUTURE UTILITY LOCATIONS.
- LINE LOCATIONS ARE NOT INTENDED TO BE ACCURATE AND MAY VARY SIGNIFICANTLY FROM LINWORK SHOWN.
- SERVICE LATERALS ARE NOT SHOWN
- HORROCKS ENGINEERS TAKES NO RESPONSIBILITY FOR ACCURACY OF UTILITIES SHOWN, OR FOR PRESENCE OF UTILITIES NOT SHOWN
- NEW MEXICO GAS HAS PLANS TO INSTALL FACILITIES IN THIS AREA

MATCHLINE STA. 8+00.00
SEE ABOVE RIGHT

CAMINO MOCHO
SEE SHEET 11-3



				SCALE		WARNING		HORROCKS		6100 Uptown Blvd. NE Suite 105 Albuquerque, NM 87110 (505) 553-1972		SANTA FE COUNTY RACETRACK SUBDIVISION				DESIGNED  DJE DATE SEPTEMBER 2018 SANTA FE COUNTY PROJECT No. 6207	
				HORIZONTAL												DRAWN DJE DATE SEPTEMBER 2018 SHEET No. 11-1	
				1" = 60'		IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE		E N G I N E E R S								CHECKED HE DATE SEPTEMBER 2018 DRAWING No. UT1	
REV				DATE		BY		DESCRIPTION				UTILITY PLAN SHEET 1					
REVISIONS																	

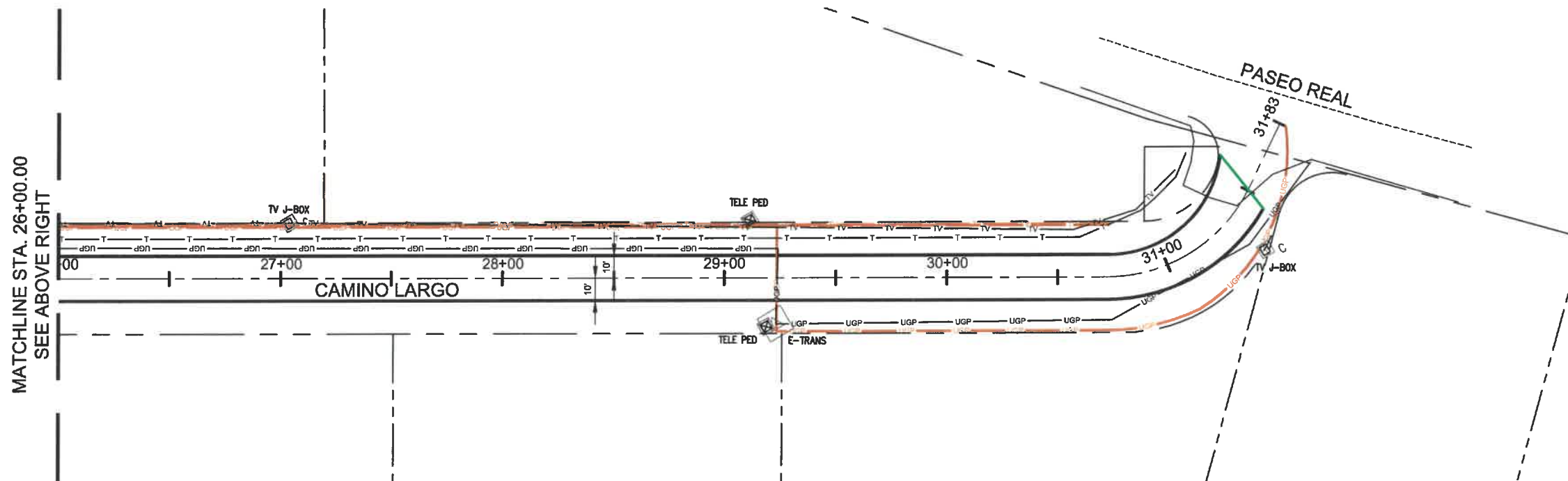


LEGEND:

EXISTING LINE TO REMAIN
EXISTING LINE TO BE RELOCATED
POSSIBLE NEW LINE LOCATION

NOTES:

- NOTES:**
1. EXISTING UTILITIES SHOWN ARE INTENDED AS MAPPING GRADE ONLY, TO INDICATE THE POSSIBLE PRESENCE OF UTILITY LINES IN THE AREA.
 2. NEW UTILITIES ARE SHOWN AS POSSIBLE SCHEMATIC LOCATIONS ONLY. THESE DO NOT REPRESENT ACTUAL PLANNED FUTURE UTILITY LOCATIONS.
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 6. NEW MEXICO GAS HAS PLANS TO INSTALL FACILITIES IN THIS AREA




REV	DATE	BY	DESCRIPTION
REVISIONS			

SCALE	
HORIZONTAL	1" = 60'
VERTICAL	1" = 10'

WARNING

0 1/2 1



IF THIS BAR DOES NOT
MEASURE 1" THEN
DRAWING IS NOT TO SCALE

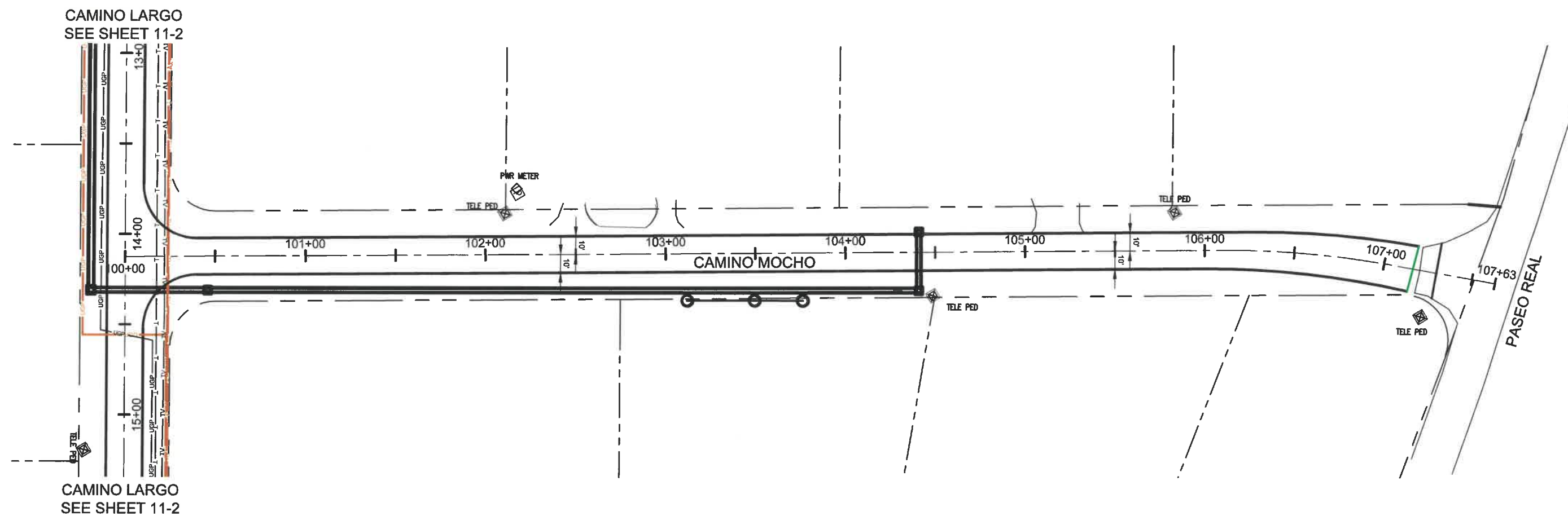
HORROCKS
ENGINEERS

6100 Uptown Blvd. NE
Suite 105
Albuquerque, NM 87110
(505) 553-1972

**SANTA FE COUNTY
RACETRACK SUBDIVISION**

UTILITY PLAN SHEET 2

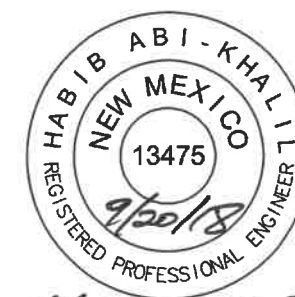
DESIGNED	DATE	SANTA FE COUNTY PROJECT NO.
TRH	SEPTEMBER 2018	6207
DRAWN	DATE	SHEET No.
DJE	SEPTEMBER 2018	11-2
CHECKED	DATE	DRAWING No.
HE	SEPTEMBER 2018	UT2



LEGEND:

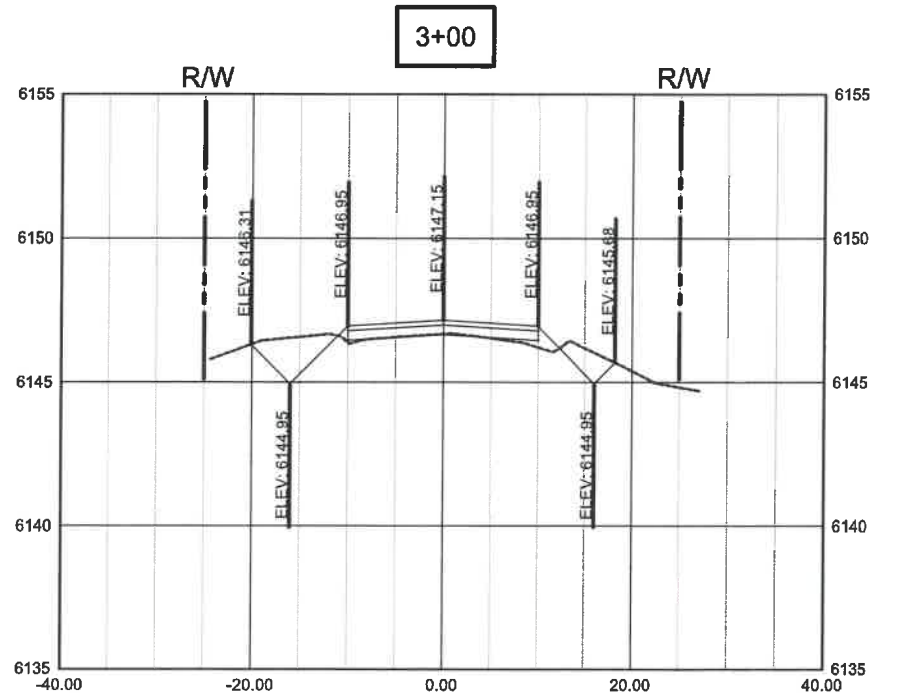
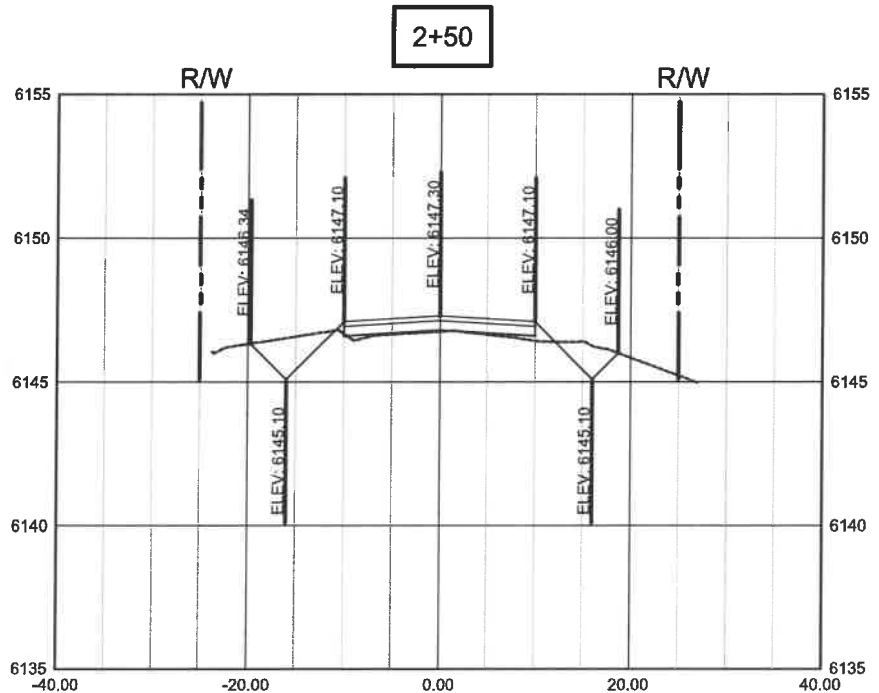
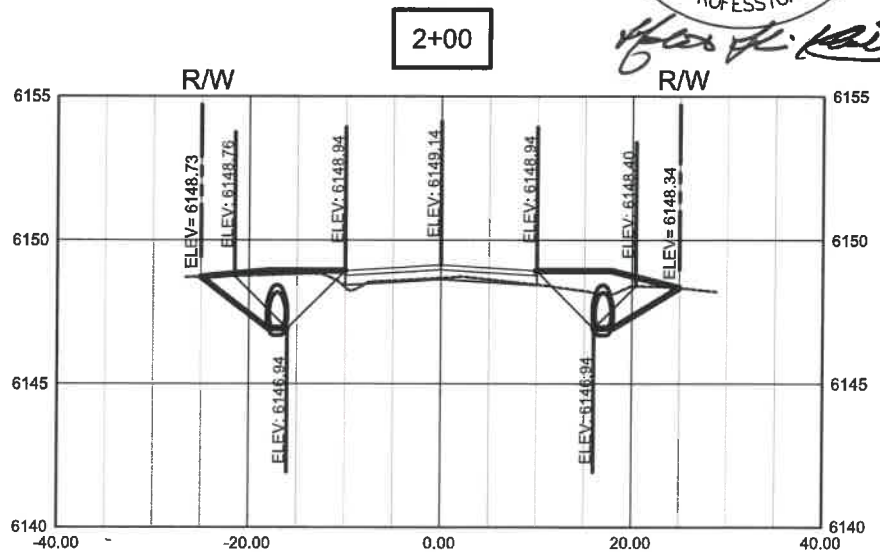
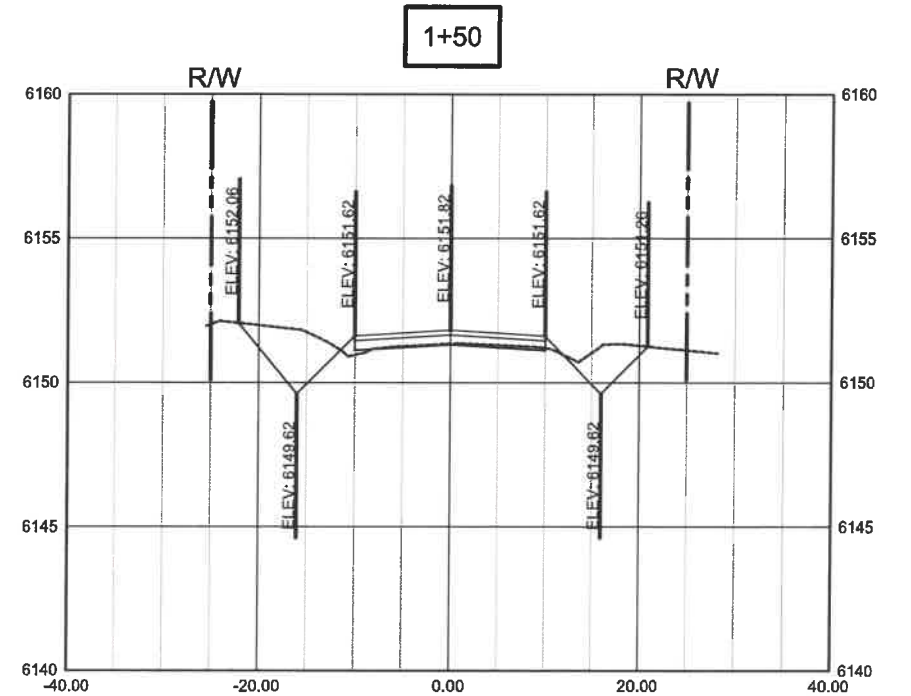
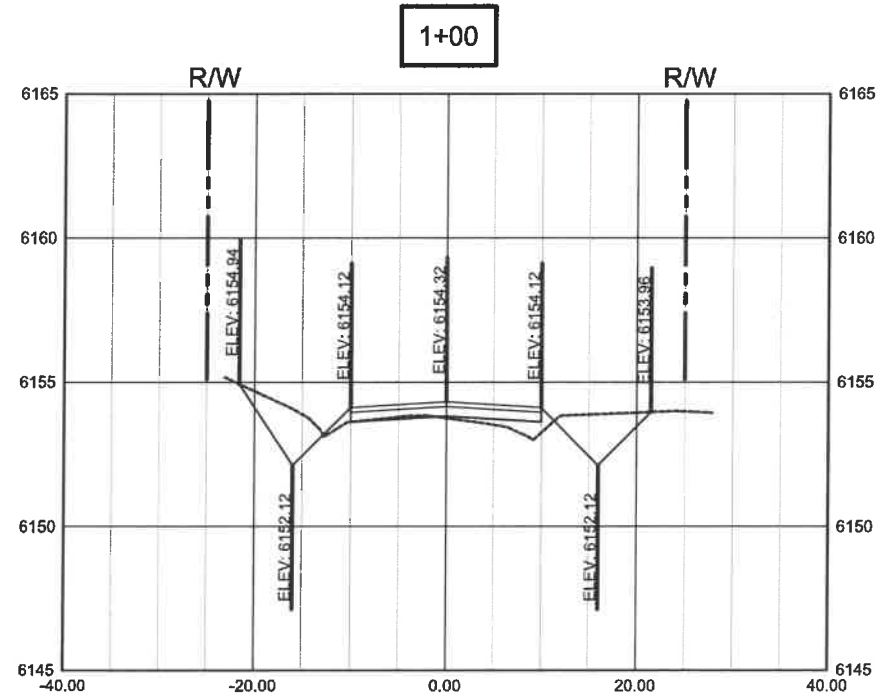
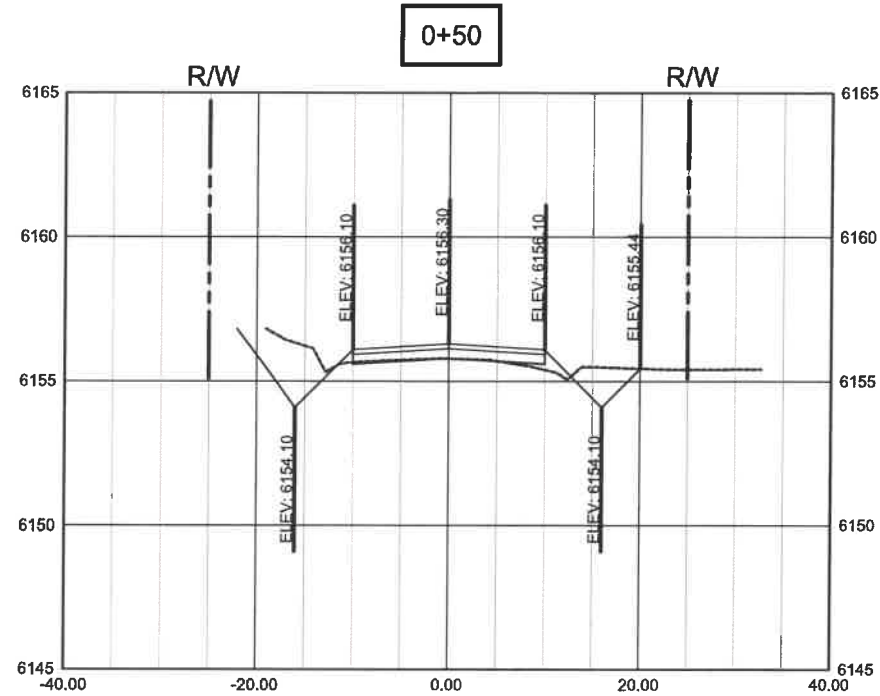
EXISTING LINE TO REMAIN
EXISTING LINE TO BE RELOCATED
POSSIBLE NEW LINE LOCATION

1. EXISTING UTILITIES SHOWN ARE INTENDED AS MAPPING GRADE ONLY, TO INDICATE THE POSSIBLE PRESENCE OF UTILITY LINES IN THE AREA.
2. NEW UTILITIES ARE SHOWN AS POSSIBLE SCHEMATIC LOCATIONS ONLY. THESE DO NOT REPRESENT ACTUAL PLANNED FUTURE UTILITY LOCATIONS.
3. LINE LOCATIONS ARE NOT INTENDED TO BE ACCURATE AND MAY VARY SIGNIFICANTLY FROM LINEWORK SHOWN.
4. SERVICE LATERALS ARE NOT SHOWN
5. HORROCKS ENGINEERS TAKES NO RESPONSIBILITY FOR ACCURACY OF UTILITIES SHOWN, OR FOR PRESENCE OF UTILITIES NOT SHOWN
6. NEW MEXICO GAS HAS PLANS TO INSTALL FACILITIES IN THIS AREA



				<p>SCALE</p> <p>HORIZONTAL</p> <p>1" = 60'</p> <p>VERTICAL</p> <p>1" = 10'</p>		<p>WARNING</p> <p>0 1/2 1</p> <p>IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE</p>		<p>HORROCKS</p> <p>E N G I N E E R S</p>		<p>6100 Uptown Blvd. NE Suite 105 Albuquerque, NM 87110 (505) 553-1972</p>		<p>SANTA FE COUNTY RACETRACK SUBDIVISION</p> <p>UTILITY PLAN SHEET 3</p>				<p>DESIGNED</p> <p>TRH</p> <p>DATE</p> <p>SEPTEMBER 2018</p> <p>SANTA FE COUNTY PROJECT N</p> <p>6207</p>		<p>DRAWN</p> <p>DJE</p> <p>DATE</p> <p>SEPTEMBER 2018</p> <p>SHEET No.</p> <p>11-3</p>		<p>CHECKED</p> <p>HE</p> <p>DATE</p> <p>SEPTEMBER 2018</p> <p>DRAWING No.</p> <p>UT3</p>	
<p>REV</p> <p>DATE</p> <p>BY</p> <p>DESCRIPTION</p> <p>REVISIONS</p>																					

C:\2017\MAC-673-1709 RaceTrack Sub Drainage and Road Imp\Project Data\Sheet_Files\Typical\AQ-673-1709_13 - Cross Sections-01 - 6-1.dwg - CS-01 - 9/20/2018 07:10pm, mbarraas



REV	DATE	BY	DESCRIPTION

SCALE
HORIZONTAL
1" = 20'
VERTICAL
NO SCALE

WARNING

0 1/2 1

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

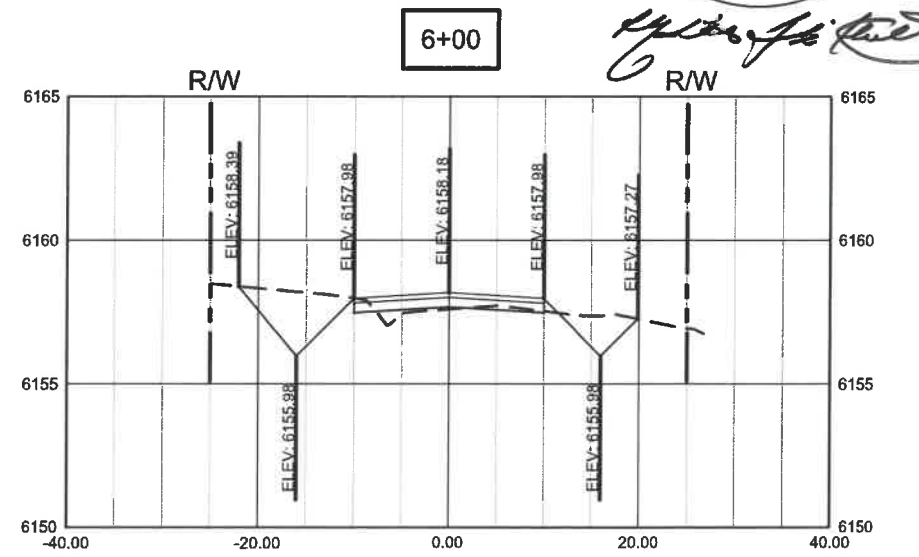
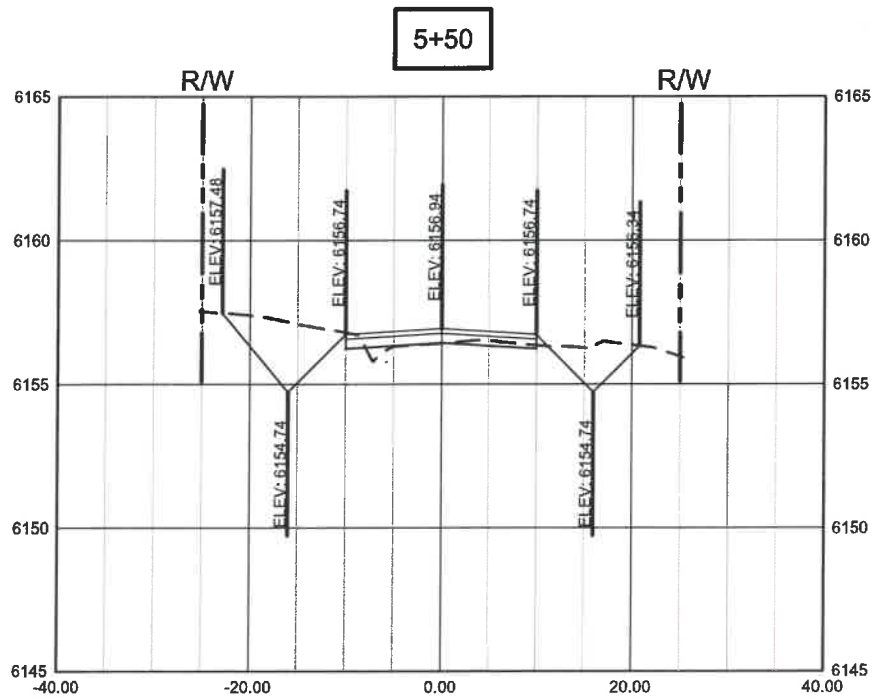
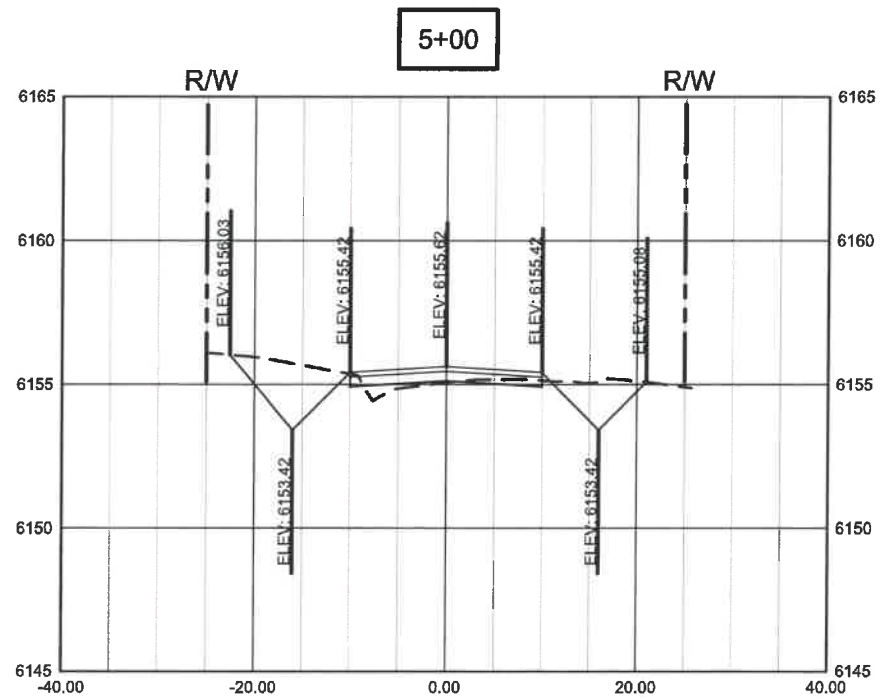
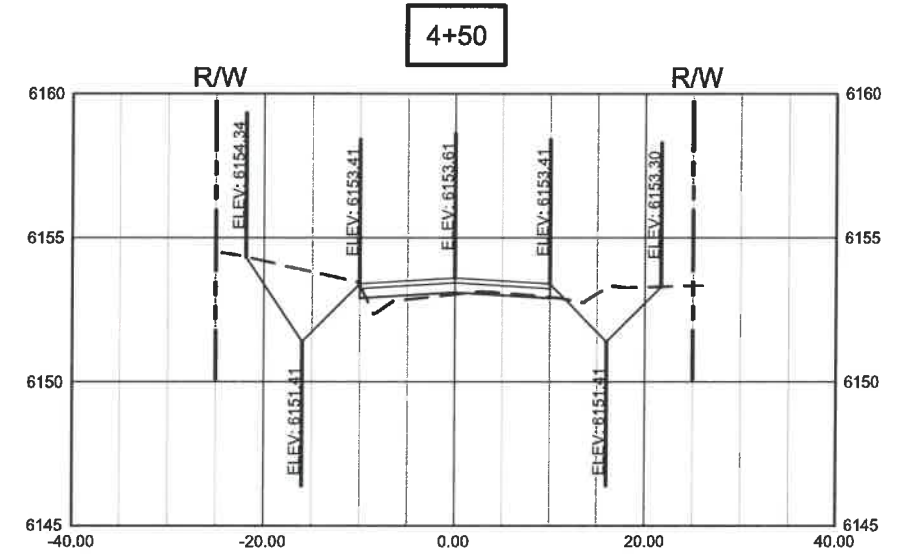
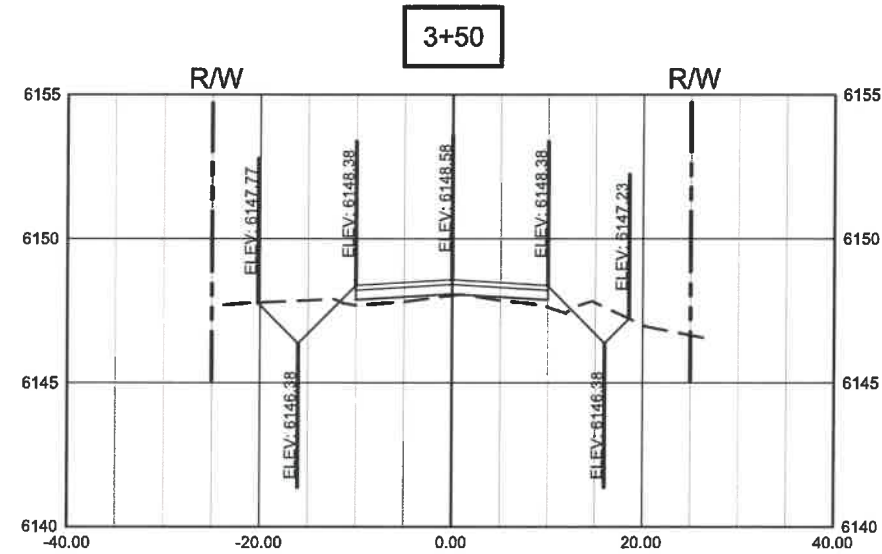
HORROCKS
ENGINEERS

6100 Uptown Blvd. NE
Suite 105
Albuquerque, NM 87110
(505) 553-1972

SANTA FE COUNTY
RACETRACK SUBDIVISION
CROSS SECTIONS SHEET 1 - CALLE CORTO

DESIGNED	TRH	DATE	SEPTEMBER 2018	SANTA FE COUNTY PROJECT No.	6207
DRAWN	DJE	DATE	SEPTEMBER 2018	SHEET No.	13-1
CHECKED	HE	DATE	SEPTEMBER 2018	DRAWING No.	CS1

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[Signature]

REV	DATE	BY	DESCRIPTION

SCALE
HORIZONTAL
1" = 20'
VERTICAL
NO SCALE

WARNING

0 1/2 1

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

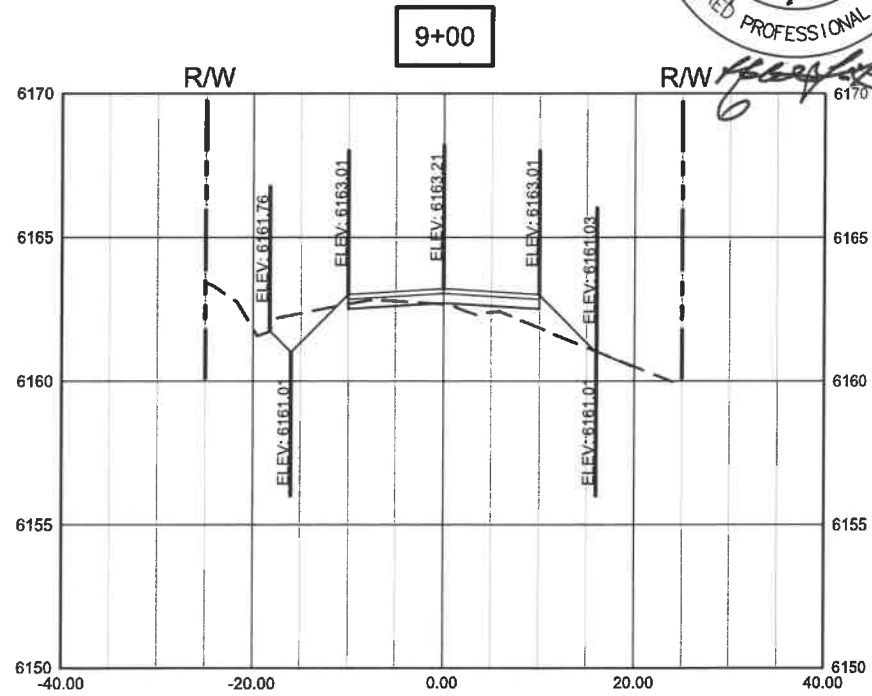
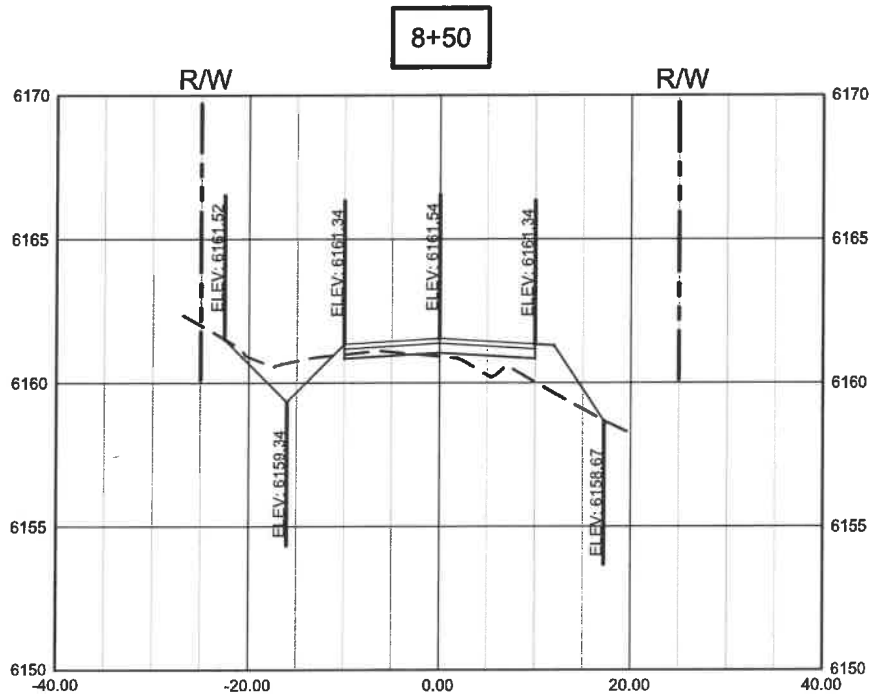
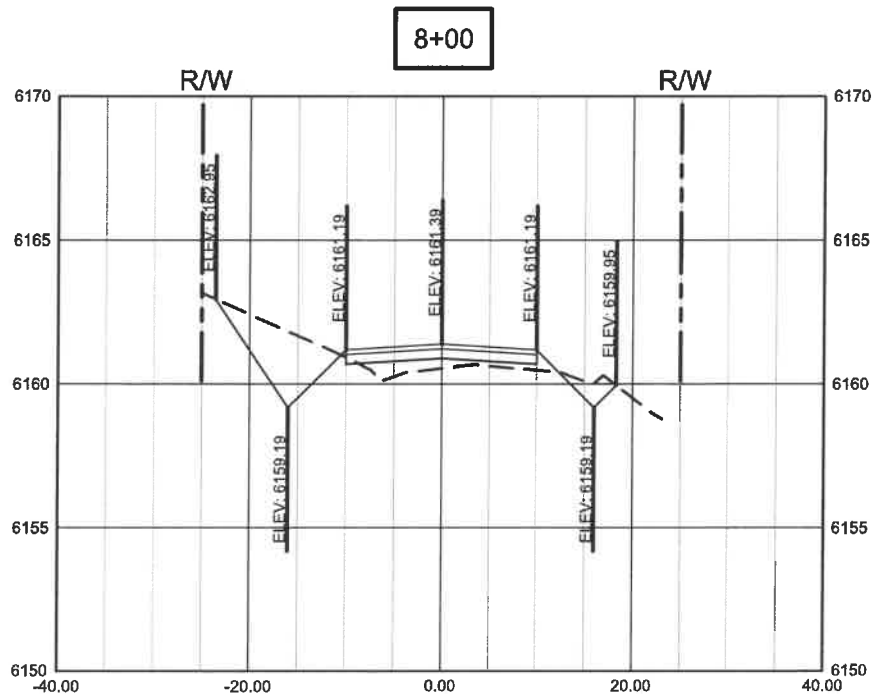
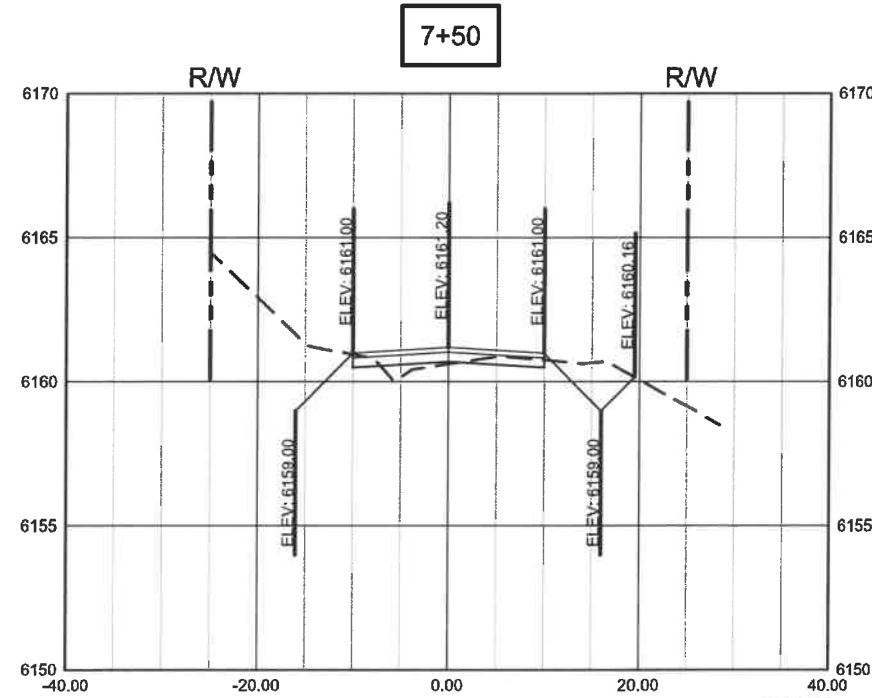
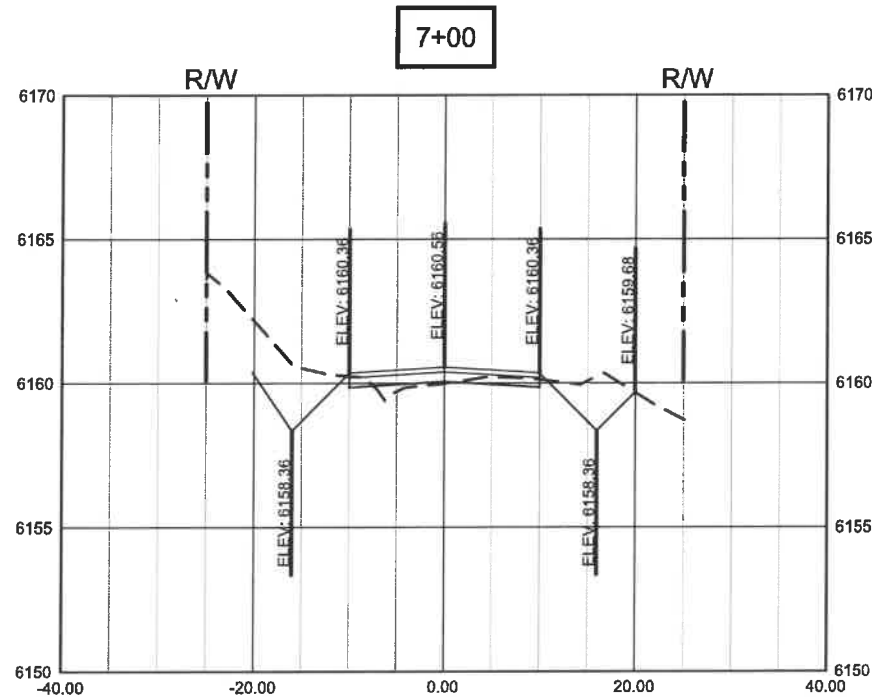
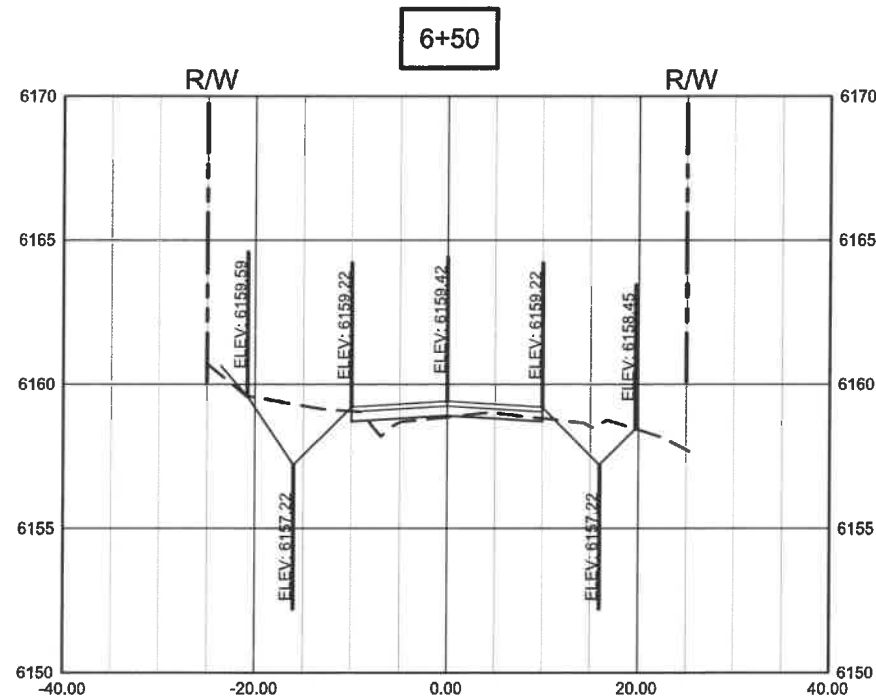
HORROCKS
ENGINEERS

6100 Uptown Blvd. NE
Suite 105
Albuquerque, NM 87110
(505) 553-1972

SANTA FE COUNTY
RACETRACK SUBDIVISION
CROSS SECTIONS SHEET 2 - CALLE CORTO

DESIGNED	DATE	SANTA FE COUNTY PROJECT No.
TRH	SEPTEMBER 2018	6207
DRAWN	DATE	SHEET No.
DJE	SEPTEMBER 2018	13-2
CHECKED	DATE	DRAWING No.
HE	SEPTEMBER 2018	CS2

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REV	DATE	BY	DESCRIPTION

SCALE
HORIZONTAL
1" = 20'
VERTICAL
NO SCALE

WARNING

0 1/2 1

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

HORROCKS

ENGINEERS

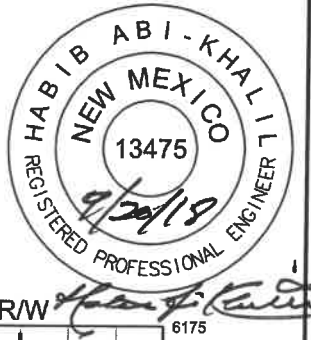
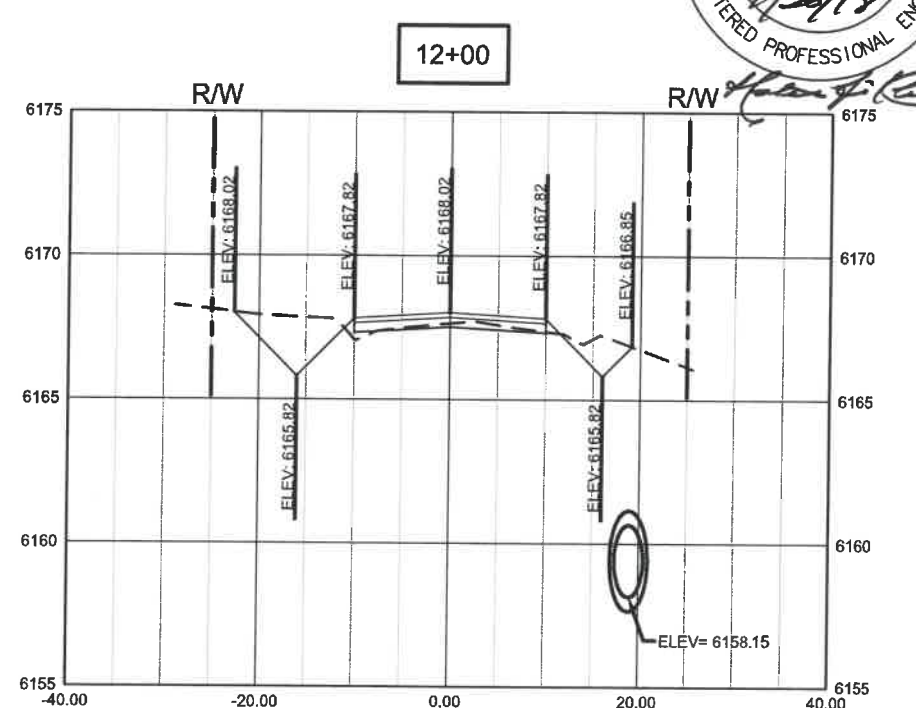
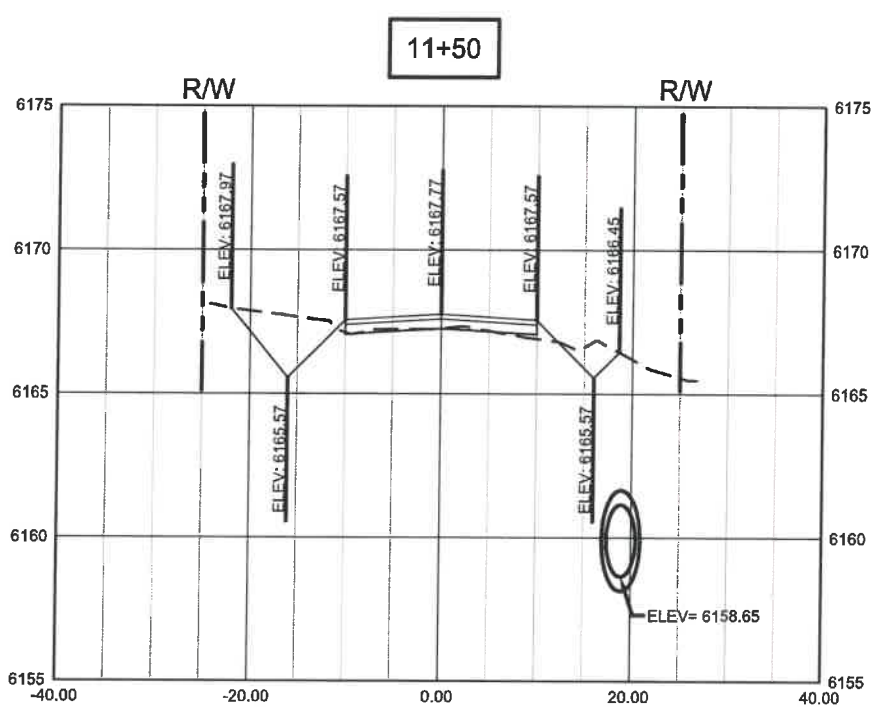
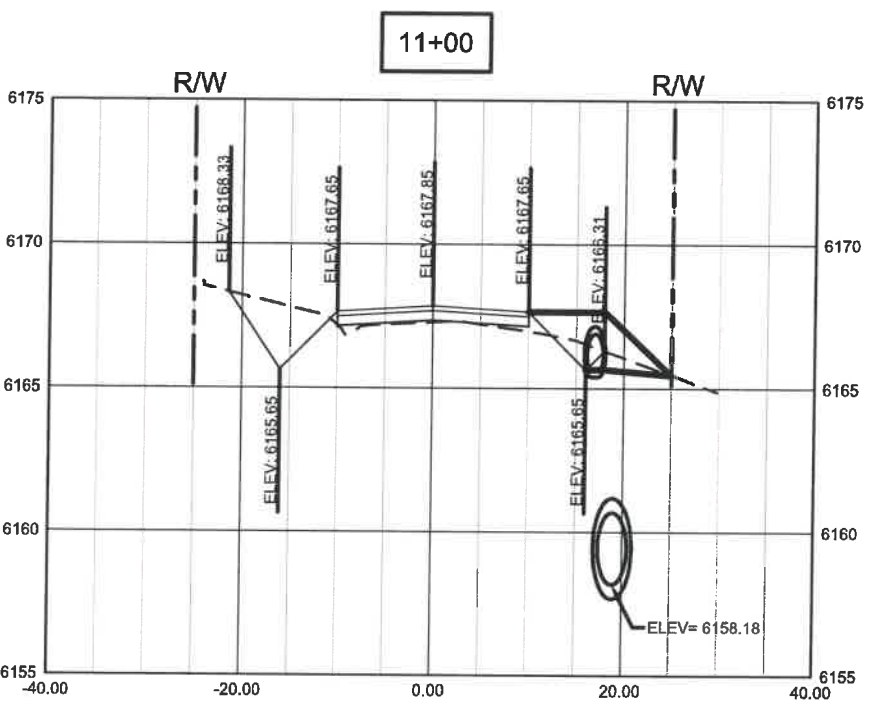
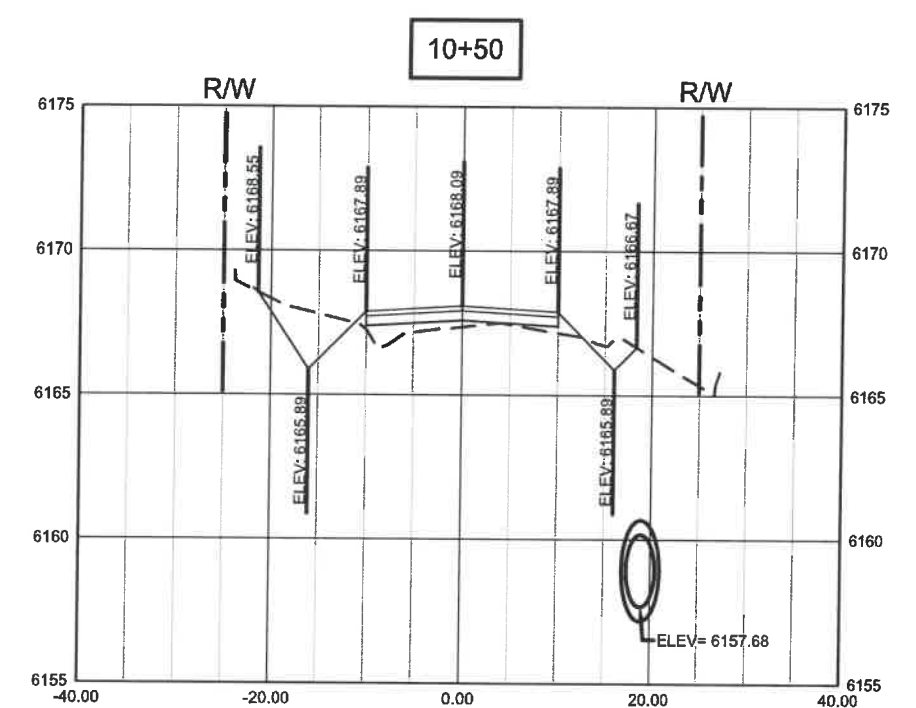
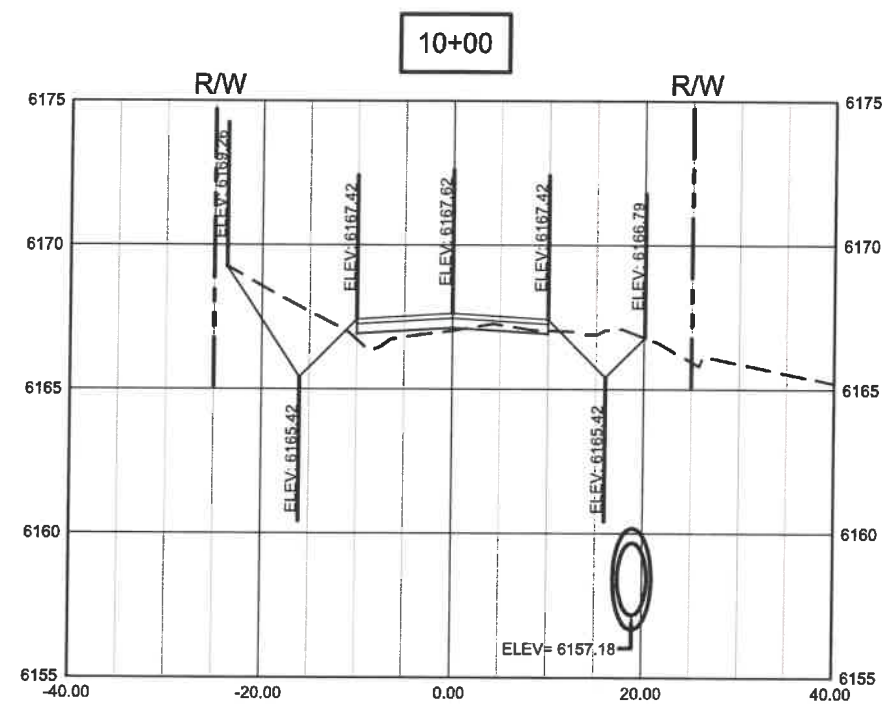
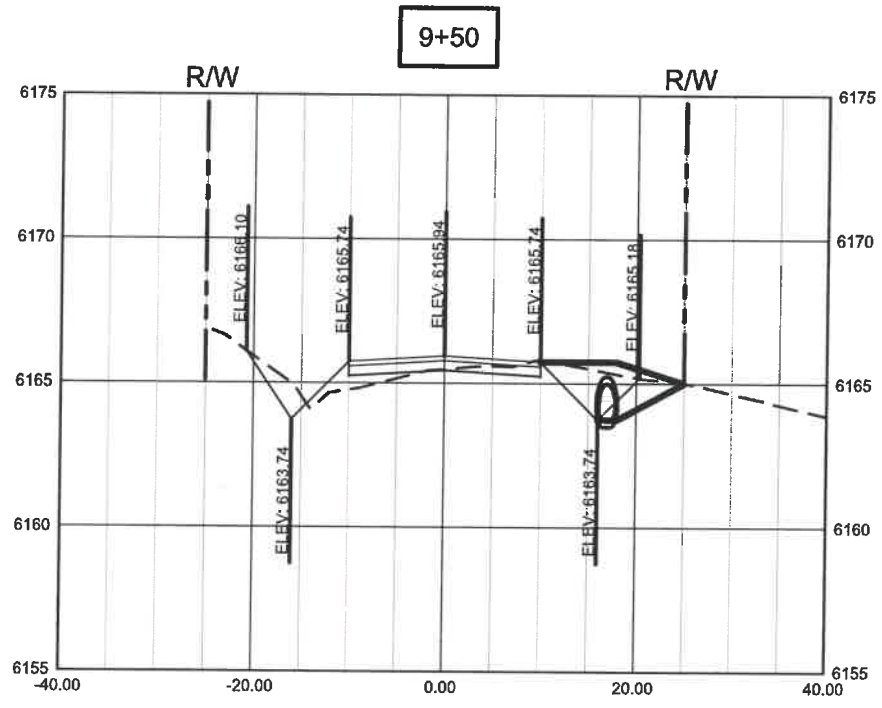
6100 Uptown Blvd. NE
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SANTA FE COUNTY
RACETRACK SUBDIVISION

CROSS SECTIONS SHEET 3 - CALLE CORTO & CAMINO LARGO

DESIGNED	TRH	DATE	SEPTEMBER 2018	SANTA FE COUNTY PROJECT No.	6207
DRAWN	DJE	DATE	SEPTEMBER 2018	SHEET No.	13-3
CHECKED	HE	DATE	SEPTEMBER 2018	DRAWING No.	CS3

C:\2017\AC-673-1709 Racetrack Sub Drainage and Road Imp\Project Data\Sheet_Files\Typicals\AC-673-1709_13 - Cross Sections-02 - 13-4.dwg - CS-04 - 9/20/2018 07:27pm, mbanerjee



REV	DATE	BY	DESCRIPTION

SCALE	WARNING
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1" = 20'	IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE
VERTICAL	
NO SCALE	

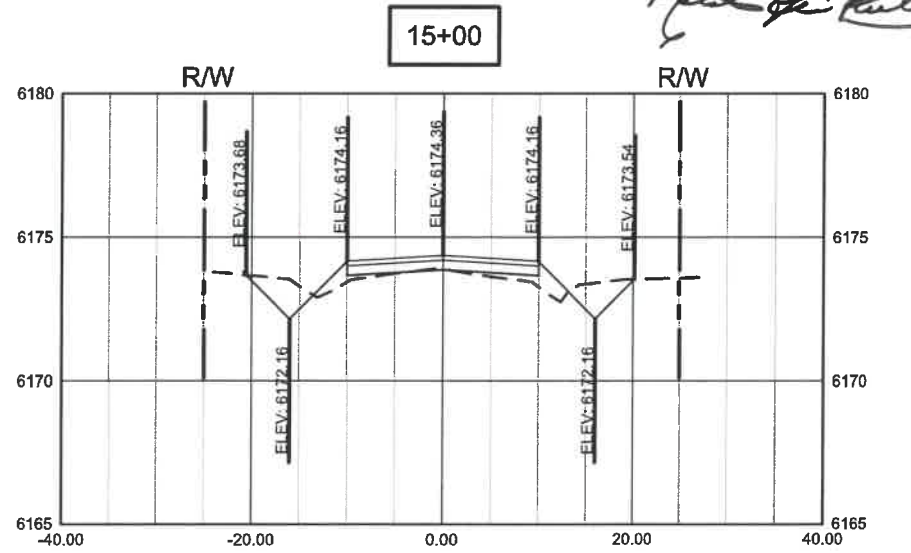
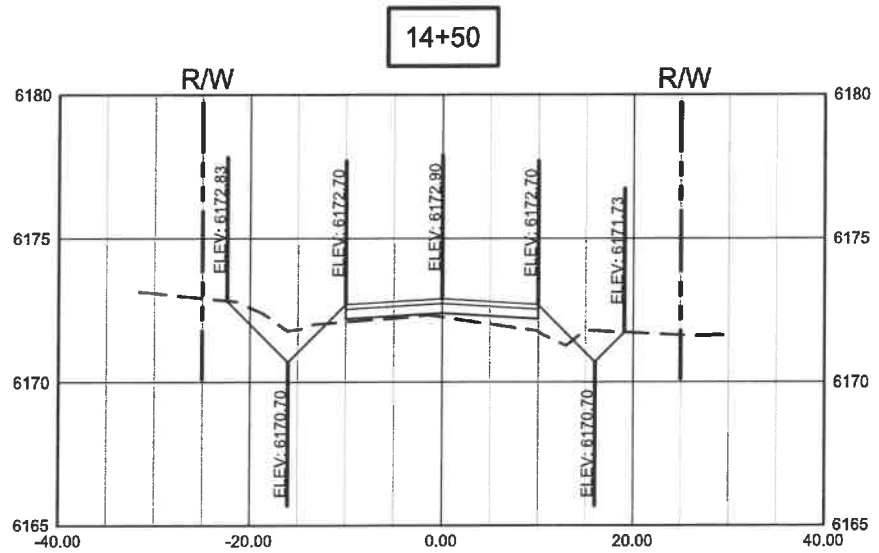
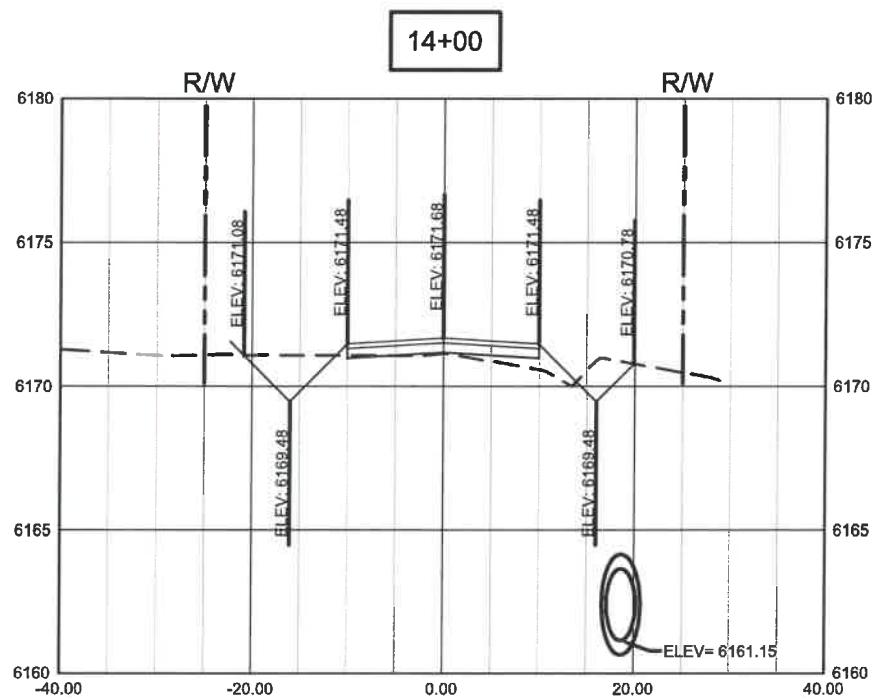
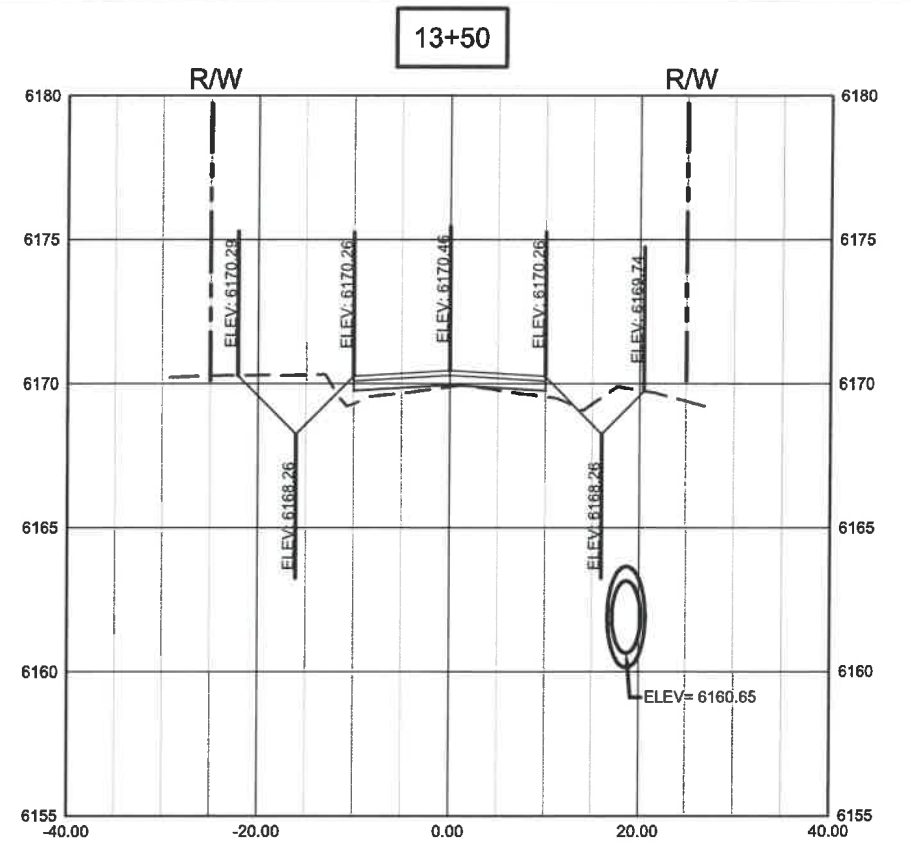
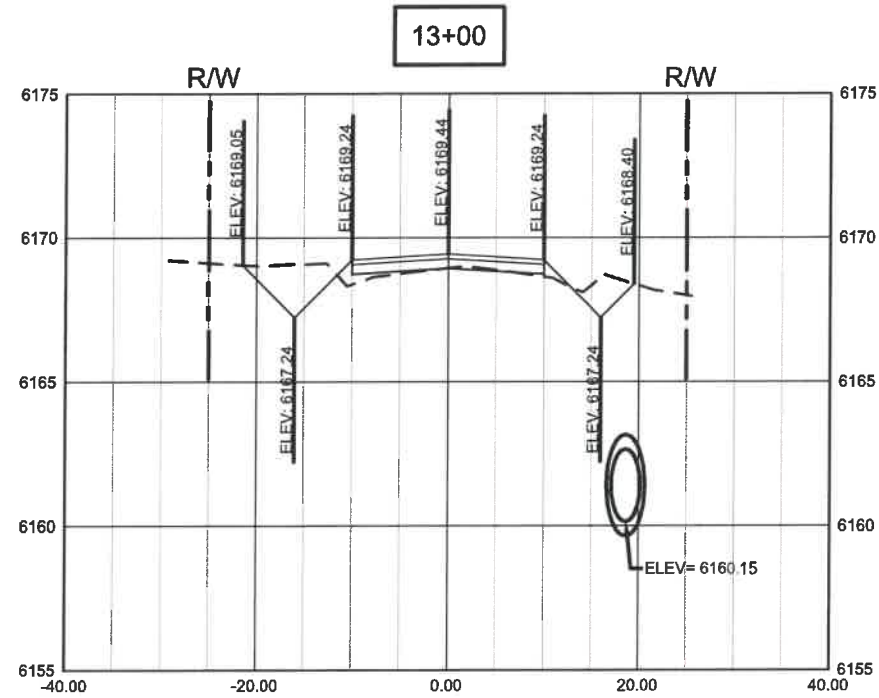
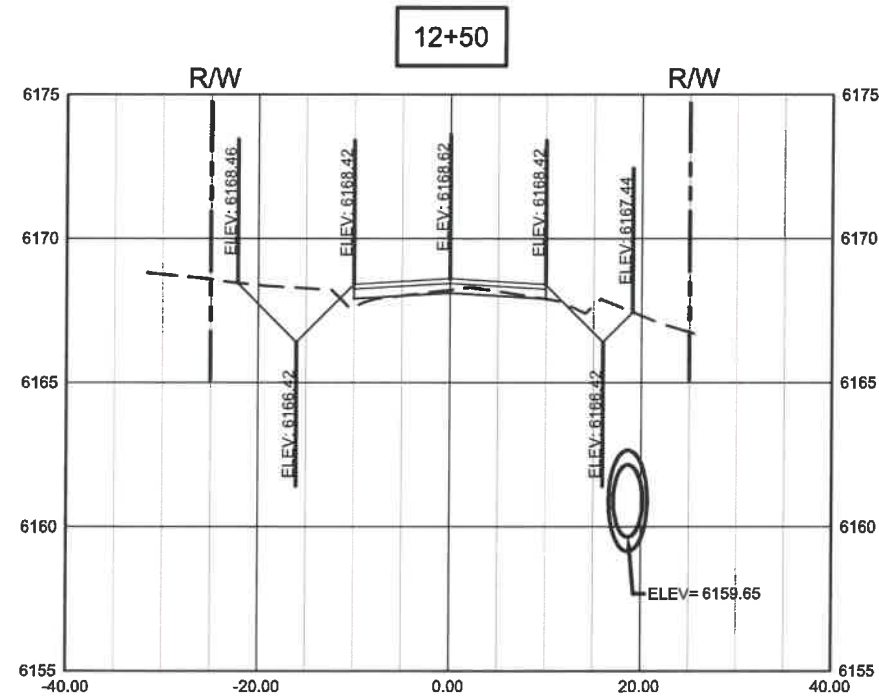


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SANTA FE COUNTY
RACETRACK SUBDIVISION
CROSS SECTIONS SHEET 4 - CAMINO LARGO

DESIGNED	TRH	DATE	SEPTEMBER 2018	SANTA FE COUNTY PROJECT No.	6207
DRAWN	DJE	DATE	SEPTEMBER 2018	SHEET No.	13-4
CHECKED	HE	DATE	SEPTEMBER 2018	DRAWING No.	CS4

C:\P2017\AQ-673-709 Racetrack Sub Drainage and Road Imp\Project Data\Sheet_Files\Typical\AQ-673-709_13 - Cross Sections-02 - 13-5.dwg - CS-05 - 9/20/2018 07:31pm, mbarreras



Handwritten signature

REV	DATE	BY	DESCRIPTION

SCALE
HORIZONTAL
1" = 20'
VERTICAL
NO SCALE

WARNING

0 1/2 1

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE



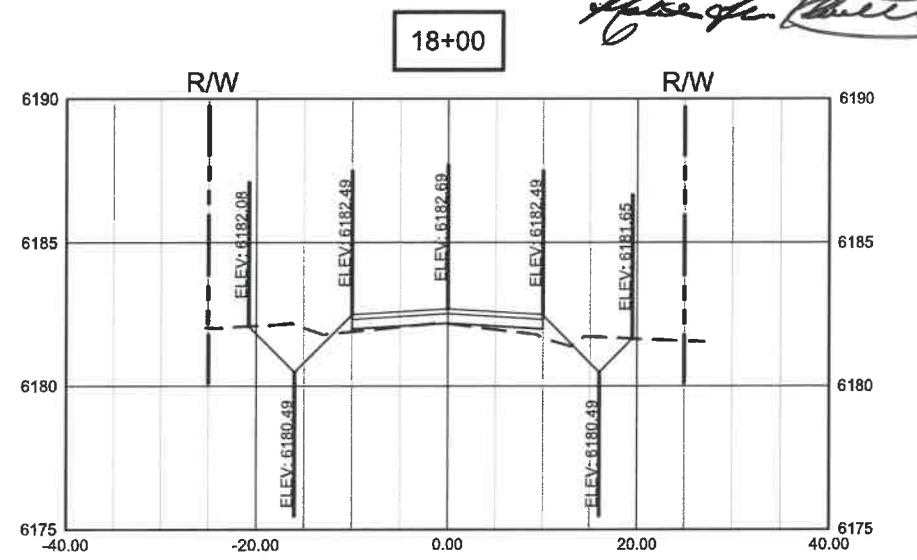
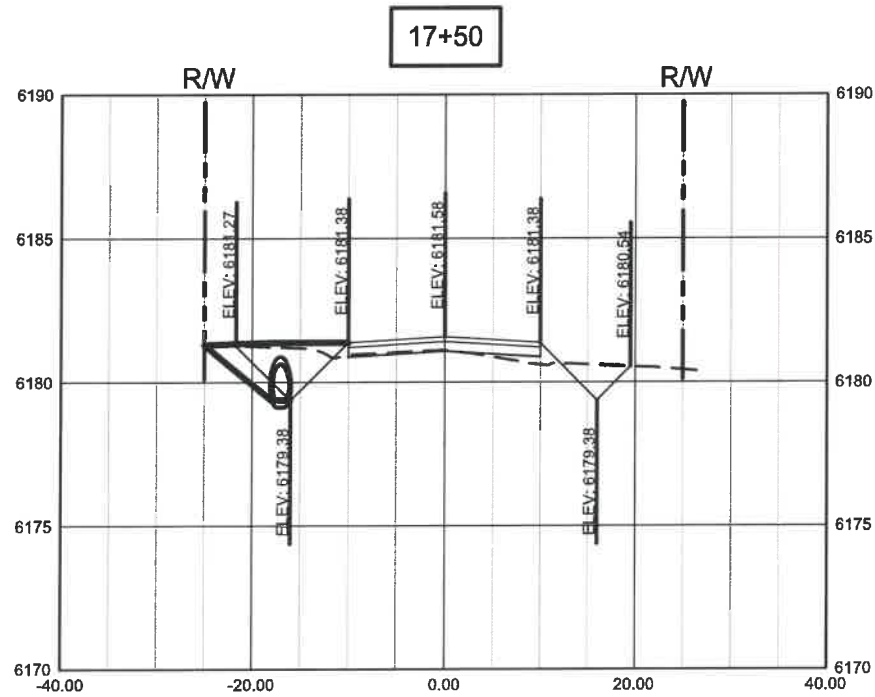
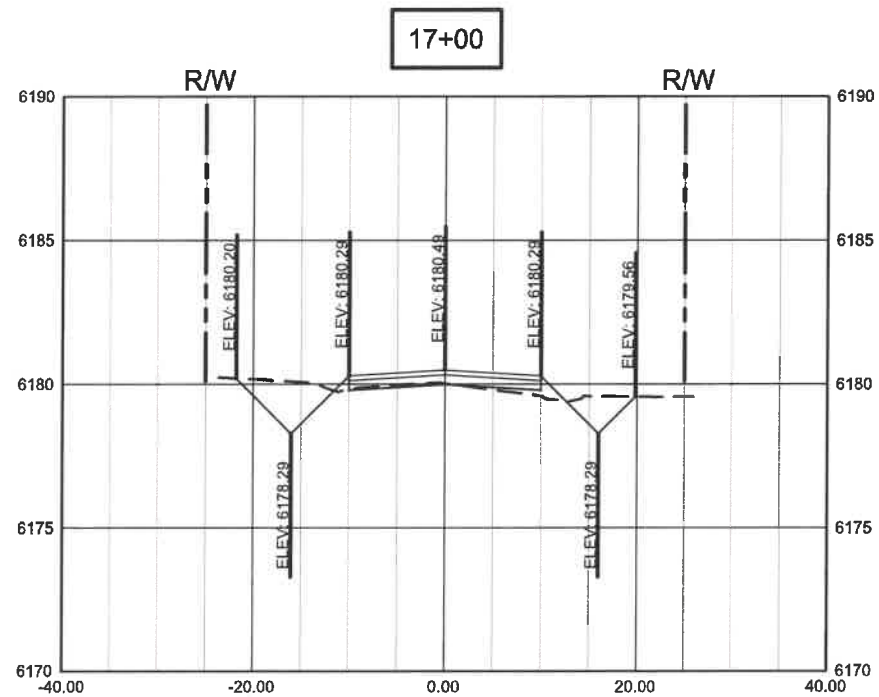
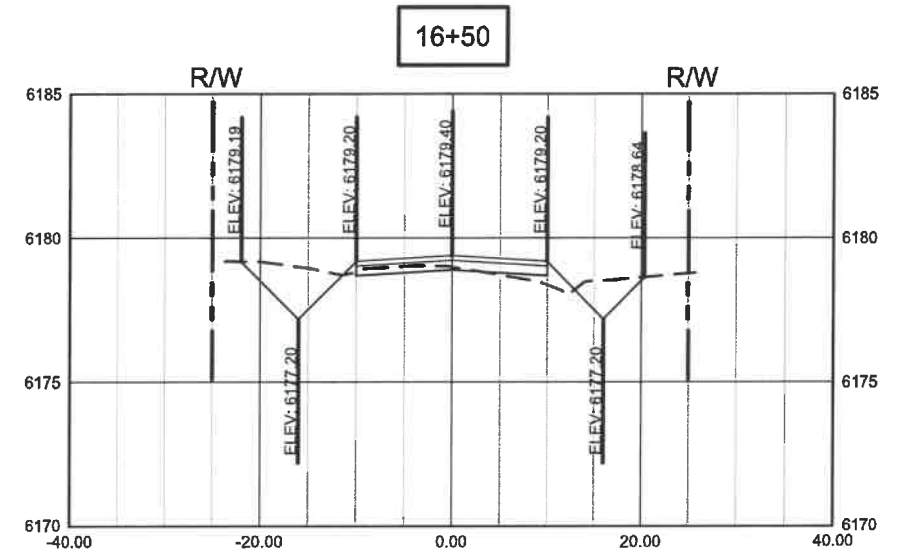
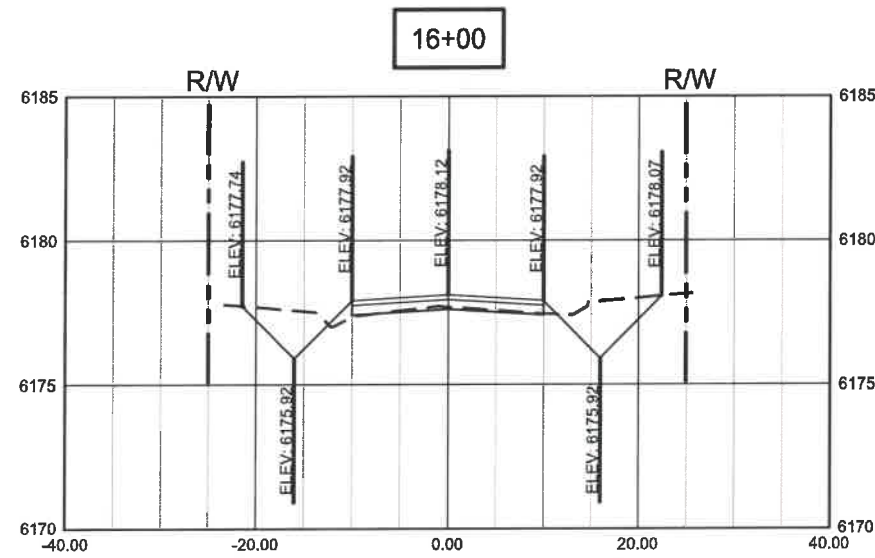
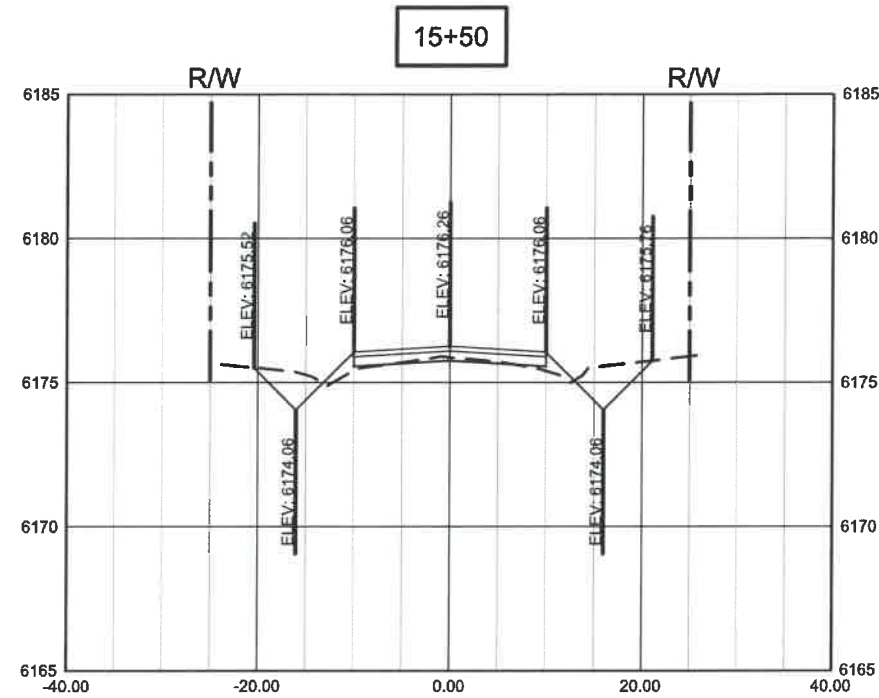
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**SANTA FE COUNTY
RACETRACK SUBDIVISION**

CROSS SECTIONS SHEET 5 - CAMINO LARGO

DESIGNED	TRH	DATE	SEPTEMBER 2018	SANTA FE COUNTY PROJECT No.	6207
DRAWN	DJE	DATE	SEPTEMBER 2018	SHEET No.	13-5
CHECKED	HE	DATE	SEPTEMBER 2018	DRAWING No.	CS5

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Handwritten signature of Habib A. Khalil

REV	DATE	BY	DESCRIPTION

SCALE
HORIZONTAL
1" = 20'
VERTICAL
NO SCALE

WARNING

0 1/2 1

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE



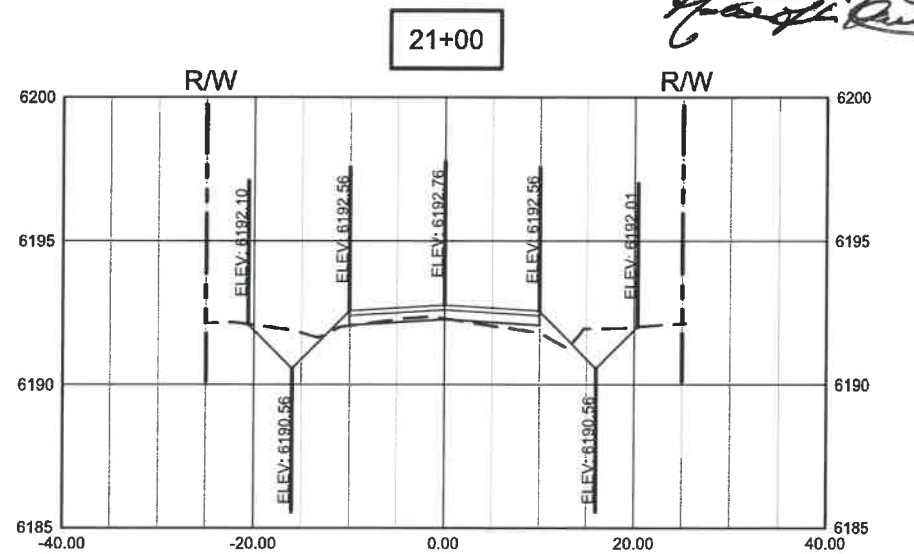
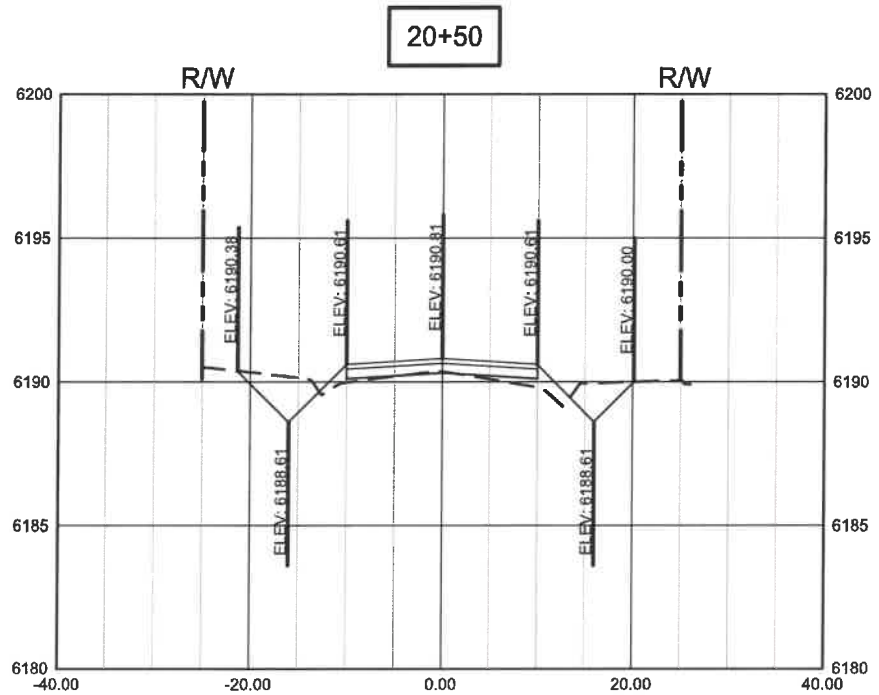
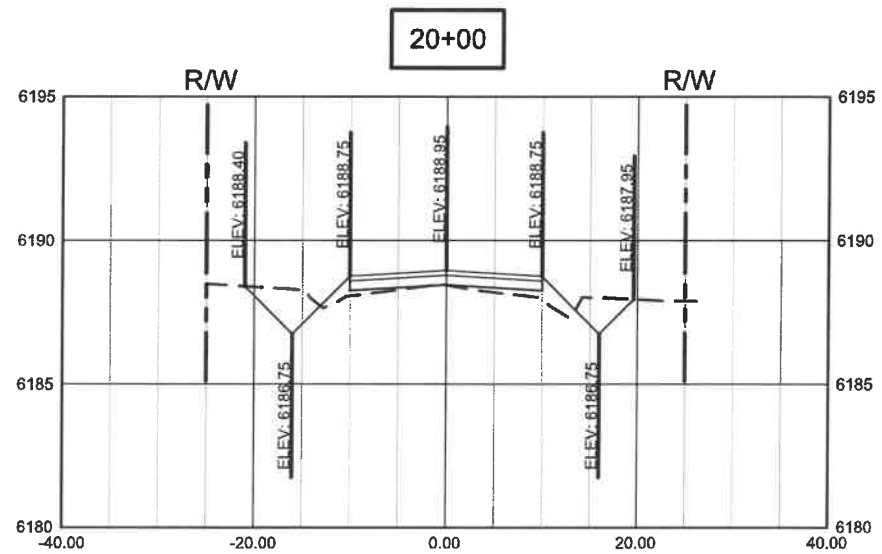
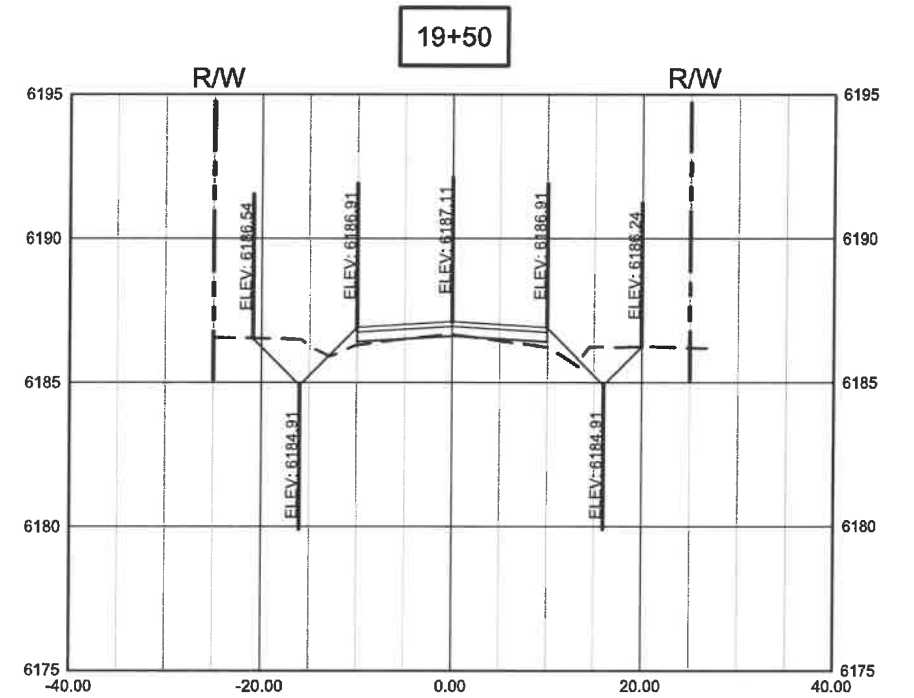
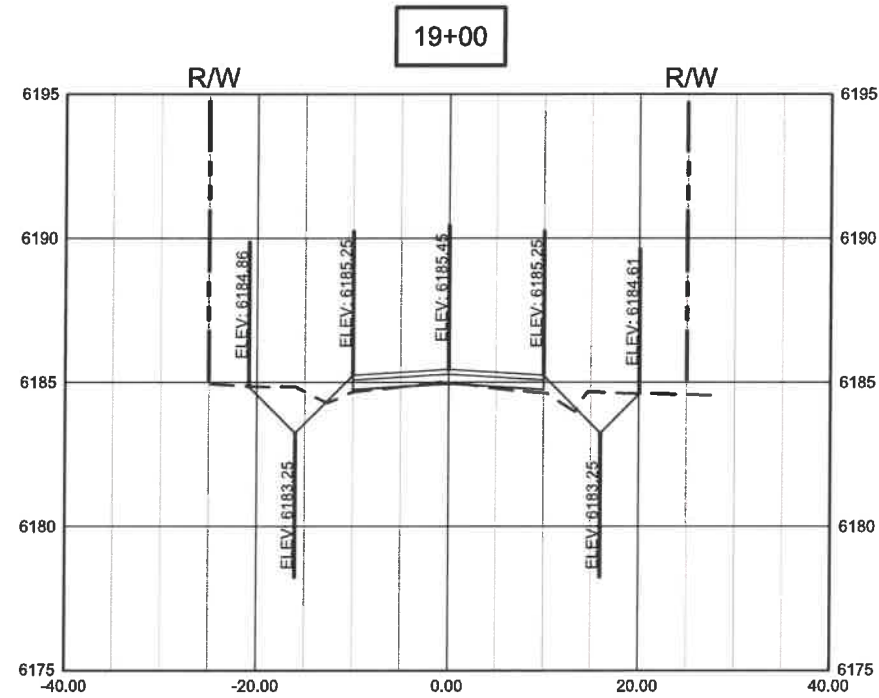
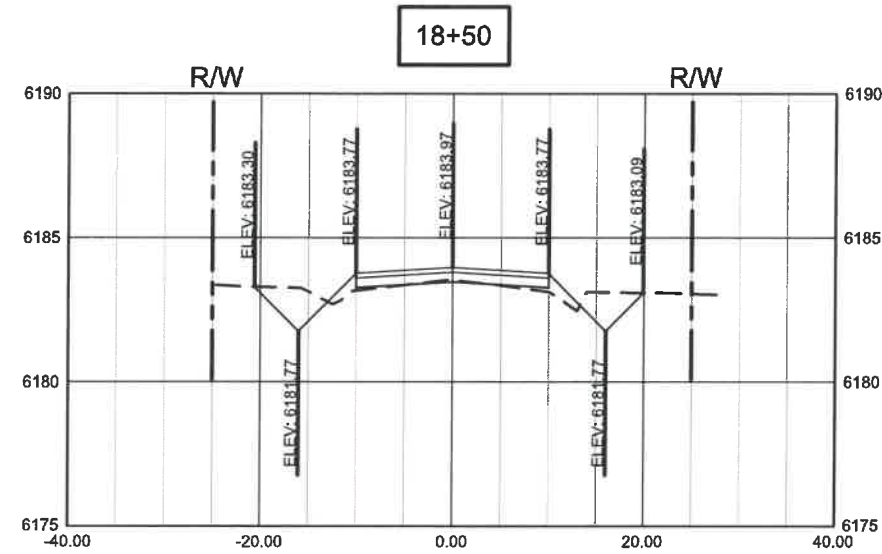
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**SANTA FE COUNTY
RACETRACK SUBDIVISION**

CROSS SECTIONS SHEET 6 - CAMINO LARGO

DESIGNED	TRH	DATE	SEPTEMBER 2018	SANTA FE COUNTY PROJECT No.	6207
DRAWN	DJE	DATE	SEPTEMBER 2018	SHEET No.	13-6
CHECKED	HE	DATE	SEPTEMBER 2018	DRAWING No.	CS6

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H. Abu-Khalil

REV	DATE	BY	DESCRIPTION

SCALE
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1" = 20'
VERTICAL
NO SCALE

WARNING

0 1/2 1

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

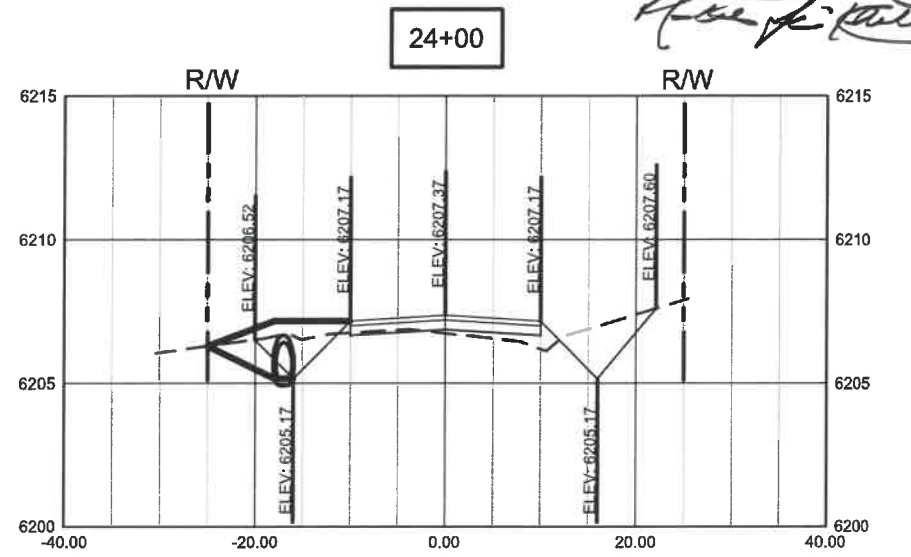
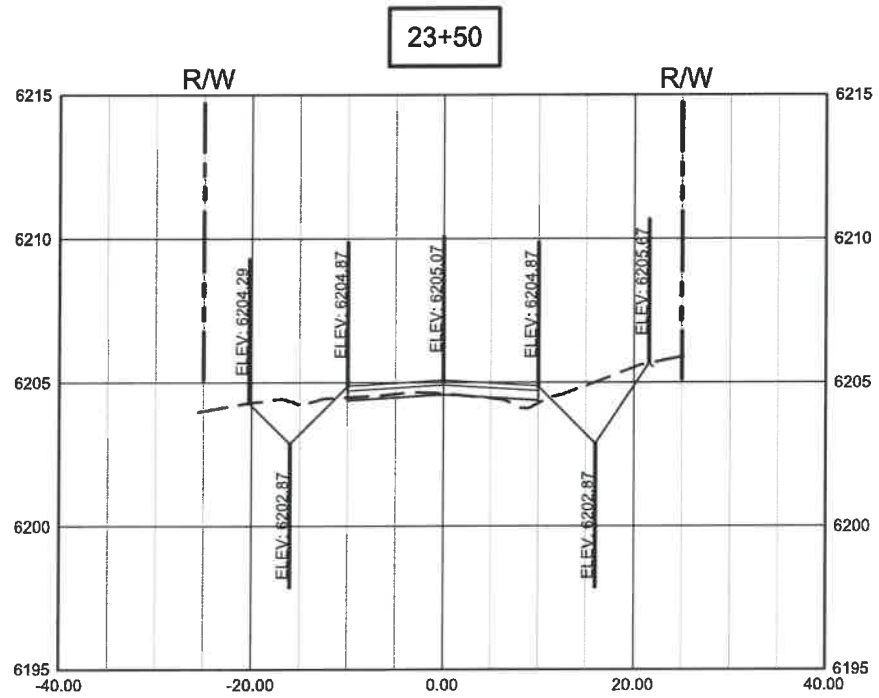
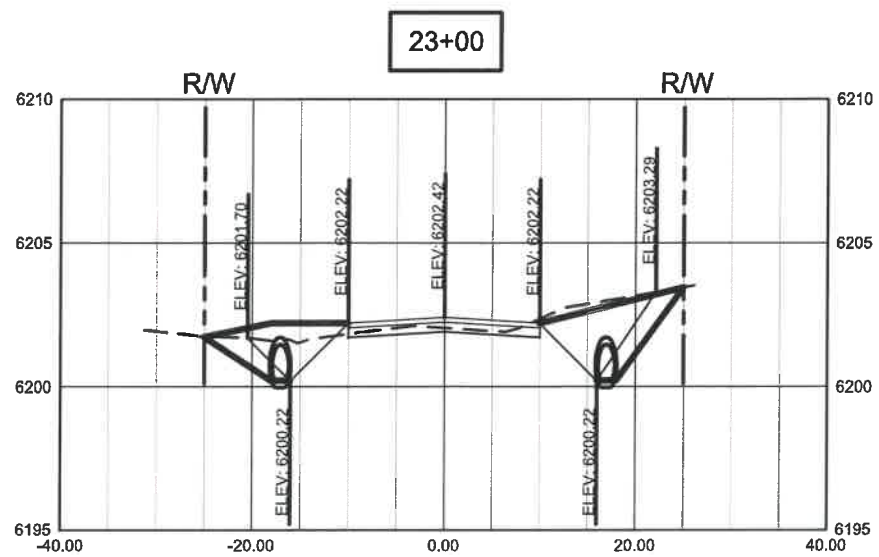
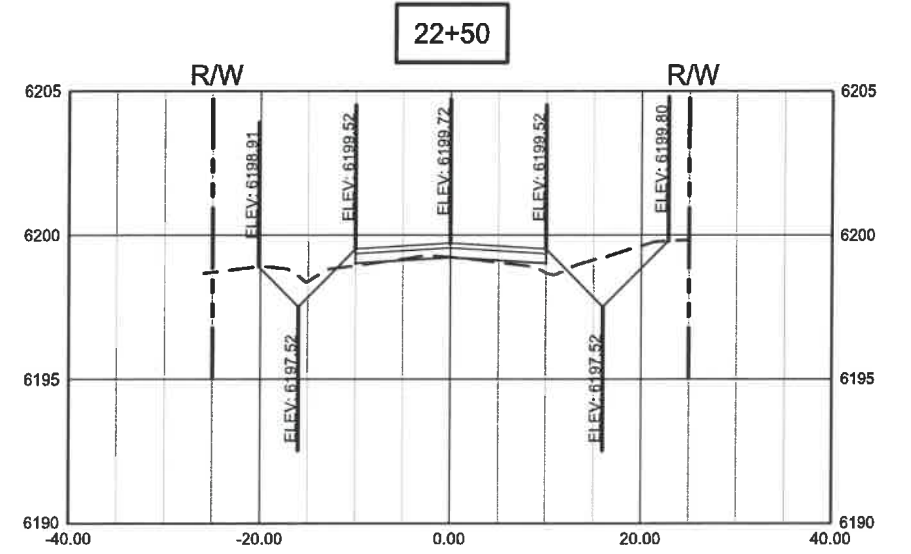
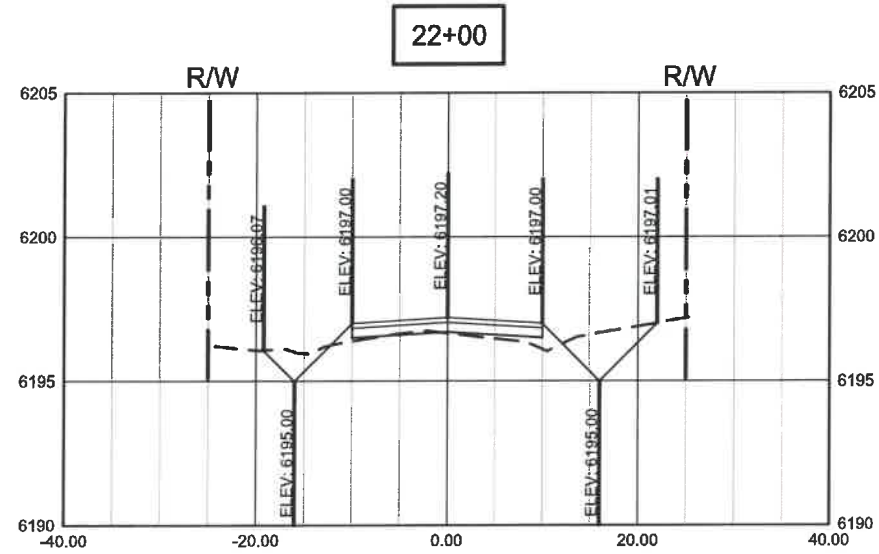
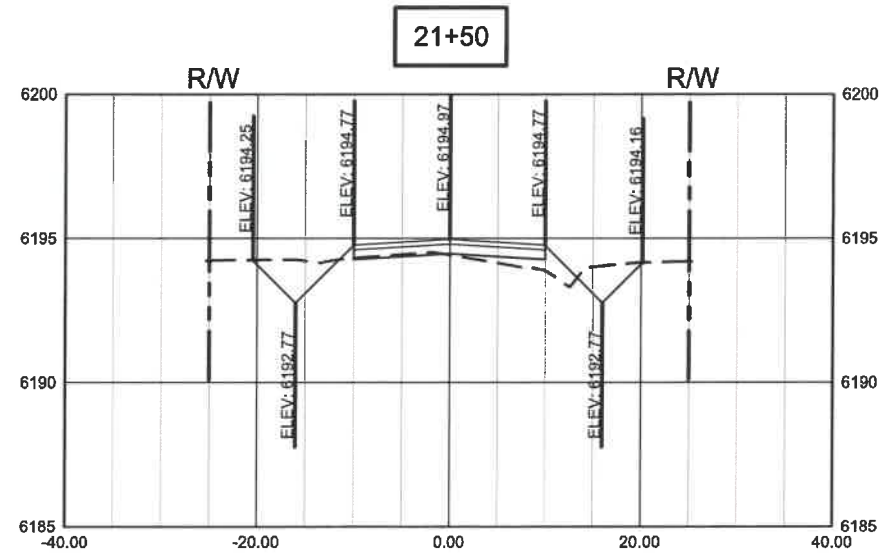
HORROCKS
ENGINEERS

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SANTA FE COUNTY
RACETRACK SUBDIVISION
CROSS SECTIONS SHEET 7 - CAMINO LARGO

DESIGNED	TRH	DATE	SEPTEMBER 2018	SANTA FE COUNTY PROJECT No.	6207
DRAWN	DJE	DATE	SEPTEMBER 2018	SHEET No.	13-7
CHECKED	HE	DATE	SEPTEMBER 2018	DRAWING No.	CS7

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H. Abu-Khalil

REV	DATE	BY	DESCRIPTION

SCALE
HORIZONTAL
1" = 20'
VERTICAL
NO SCALE

WARNING

0 1/2 1

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

HORROCKS

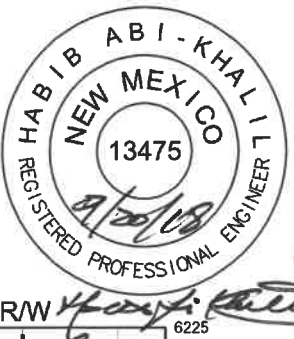
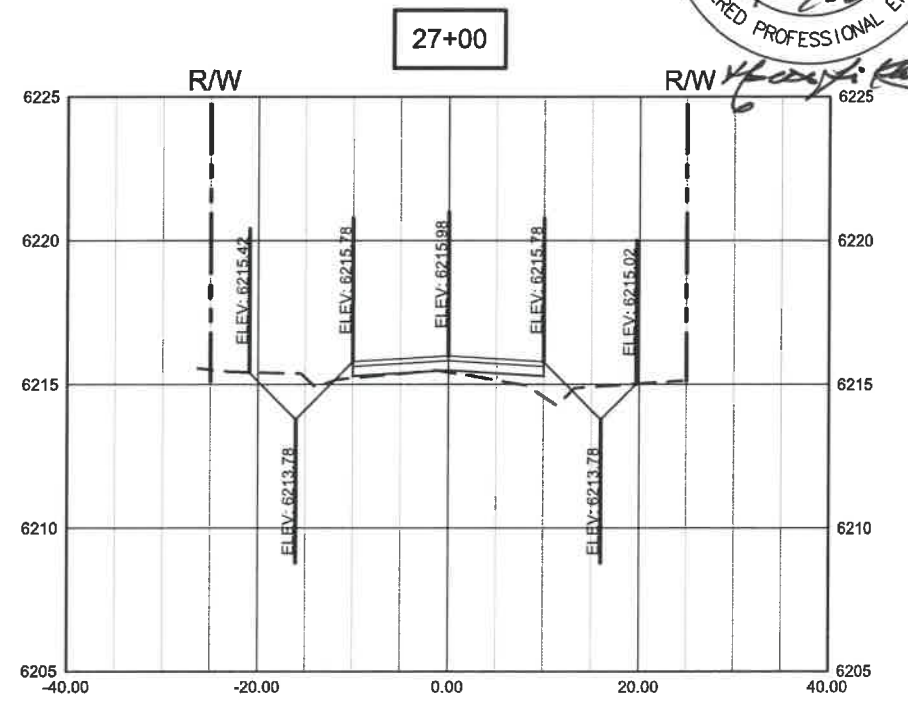
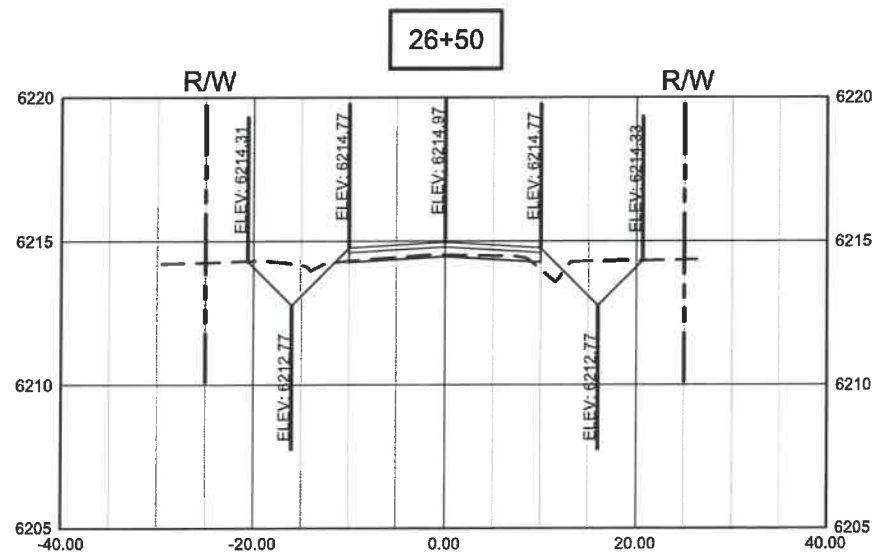
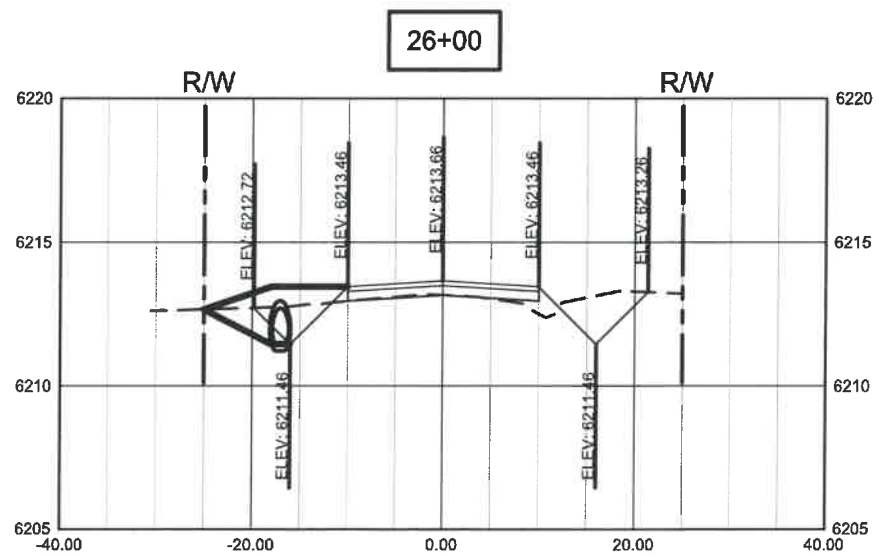
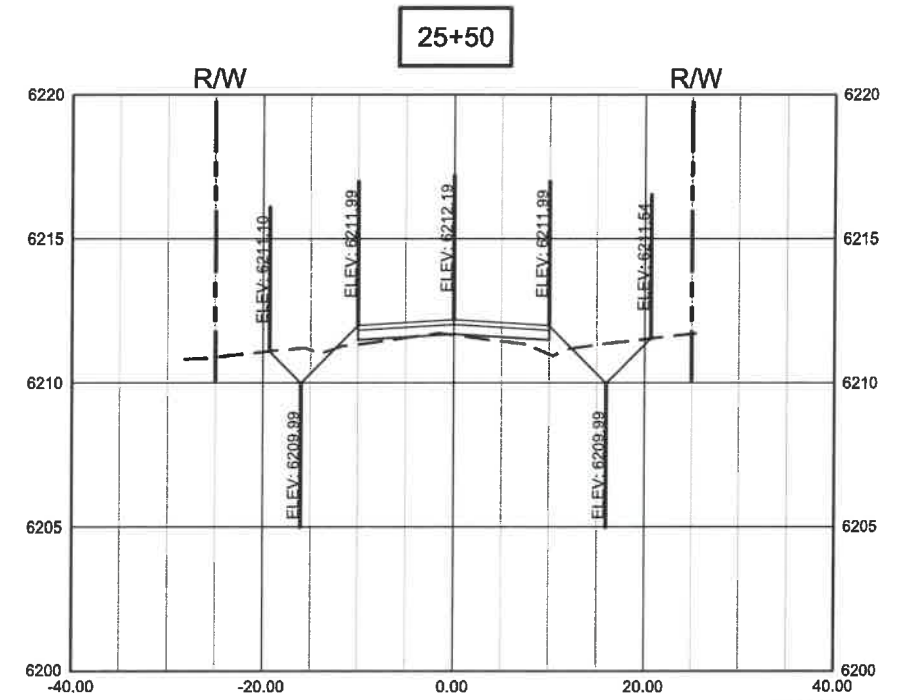
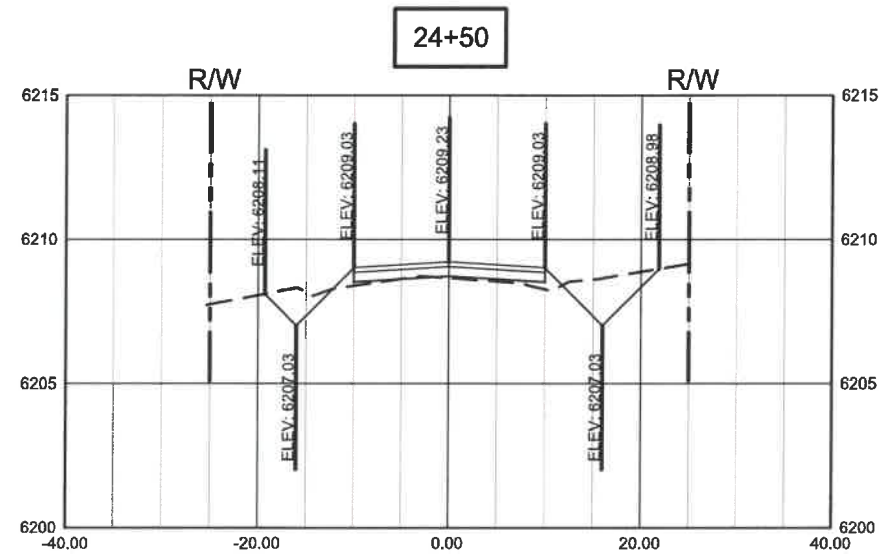
ENGINEERS

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SANTA FE COUNTY
RACETRACK SUBDIVISION

CROSS SECTIONS SHEET 8 - CAMINO LARGO

DESIGNED	TRH	DATE	SEPTEMBER 2018	SANTA FE COUNTY PROJECT No.	6207
DRAWN	DJE	DATE	SEPTEMBER 2018	SHEET No.	13-8
CHECKED	HE	DATE	SEPTEMBER 2018	DRAWING No.	CS8

[illegible]

SCALE
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1" = 20'
VERTICAL
NO SCALE

WARNING

0 1/2 1

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

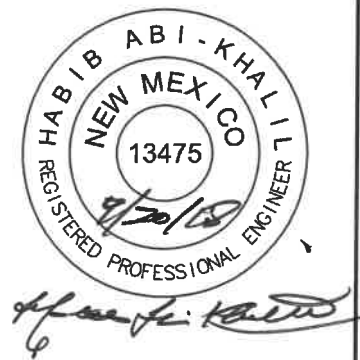
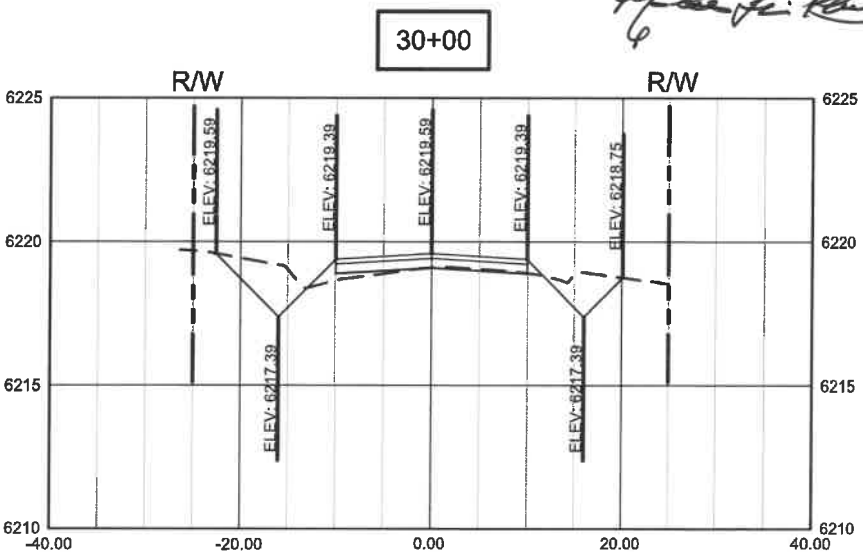
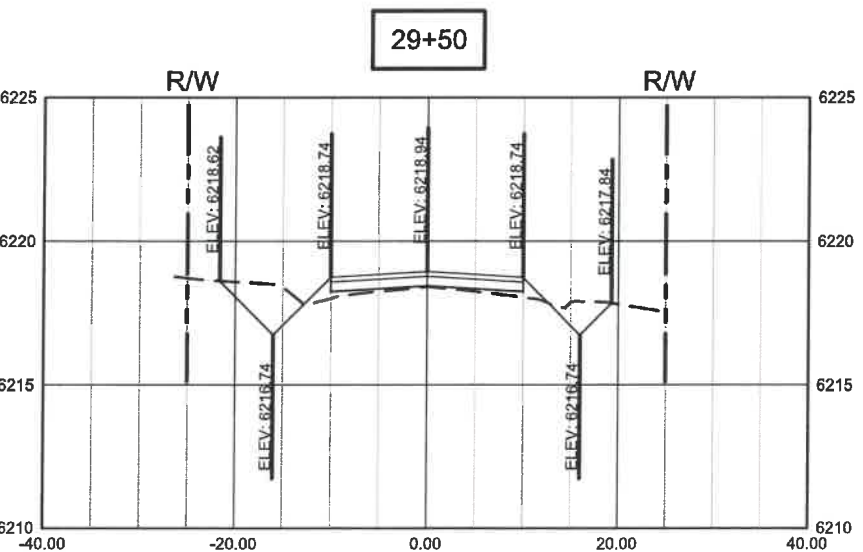
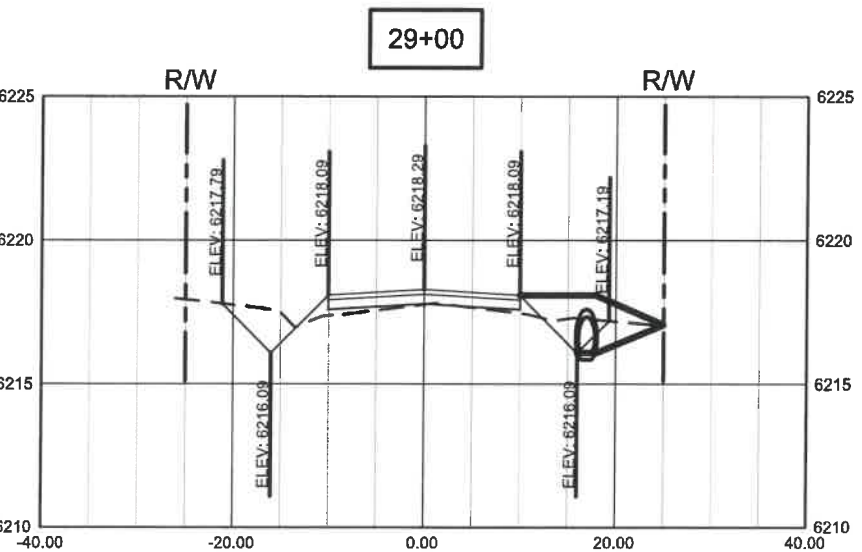
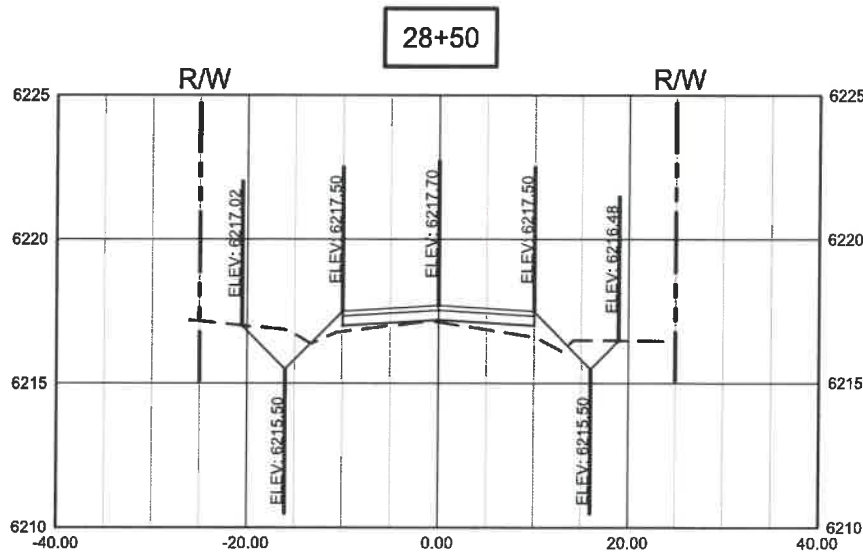
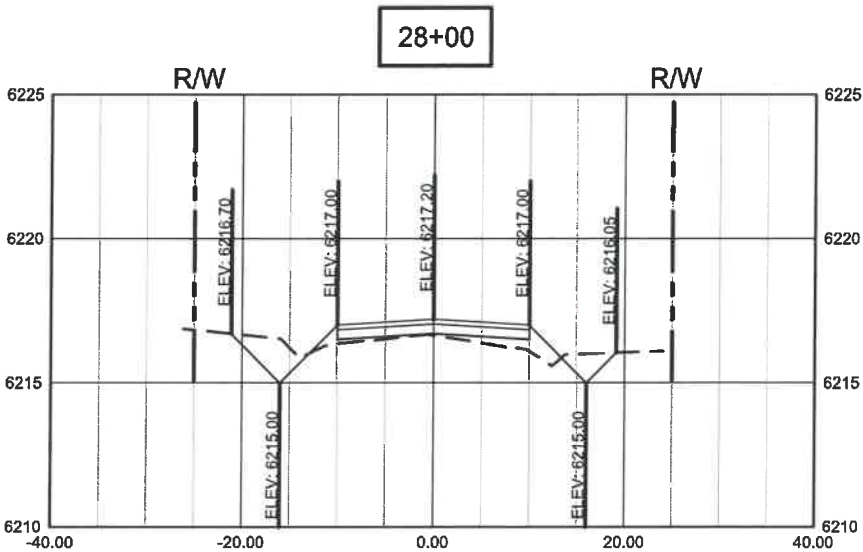
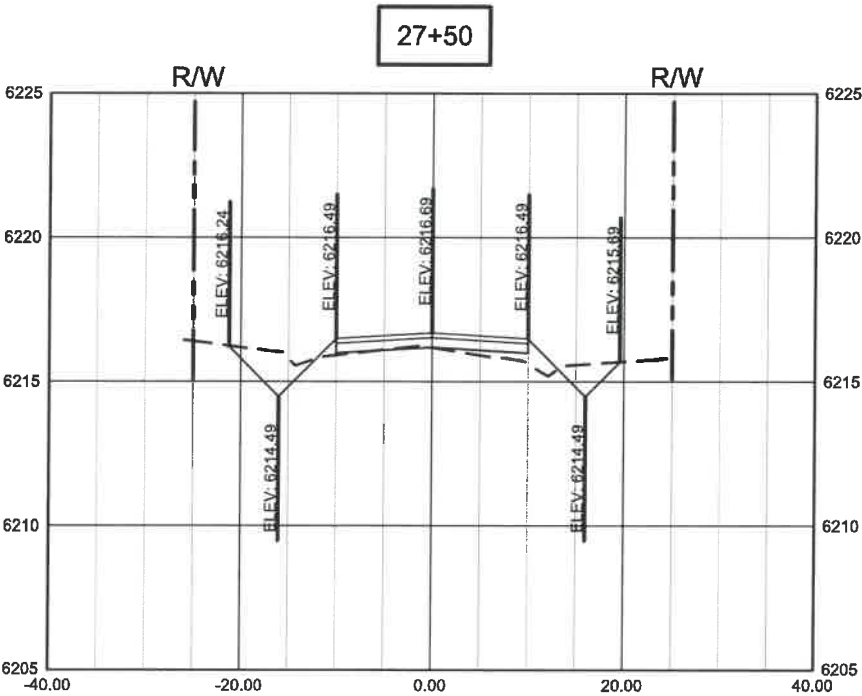
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SANTA FE COUNTY RACETRACK SUBDIVISION

DESIGNED	DATE	SANTA FE COUNTY PROJECT No.
TRH	SEPTEMBER 2018	6207
DRAWN	DATE	SHEET No.
DJE	SEPTEMBER 2018	13-9
CHECKED	DATE	DRAWING No.
HE	SEPTEMBER 2018	CS9

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REV	DATE	BY	DESCRIPTION

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1" = 20'	IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE
VERTICAL	
NO SCALE	

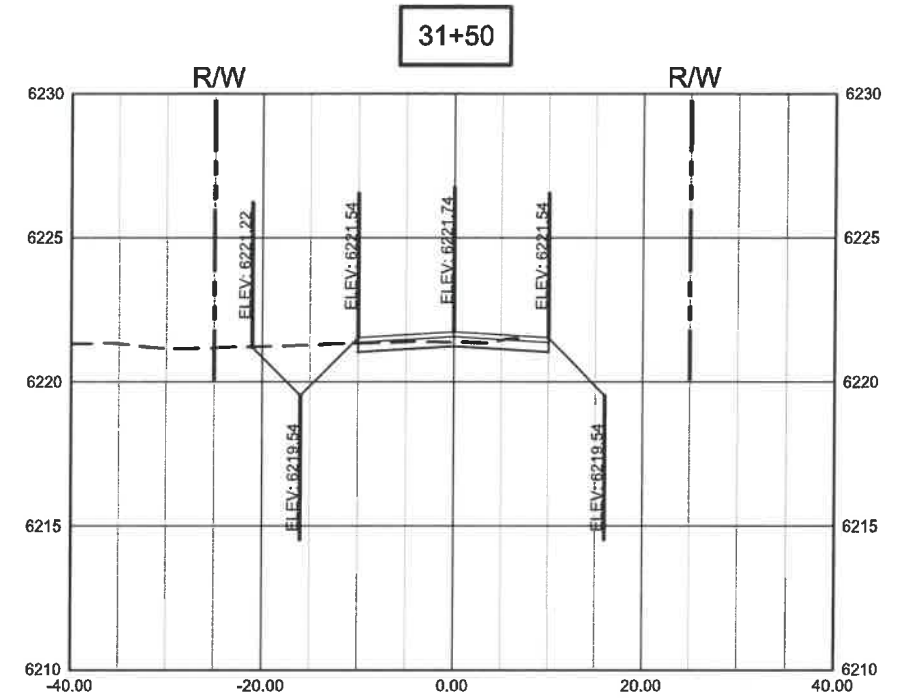
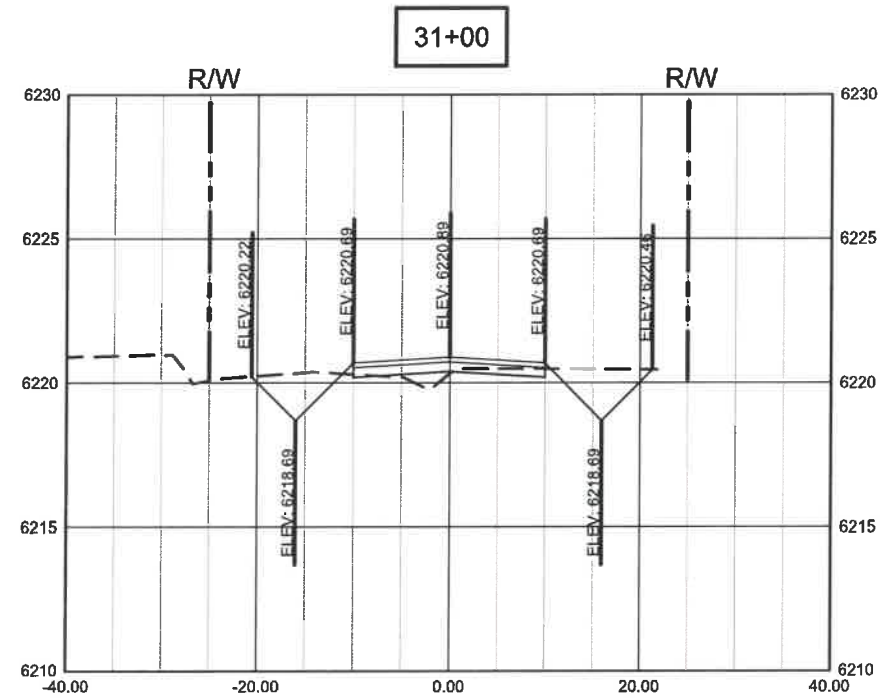
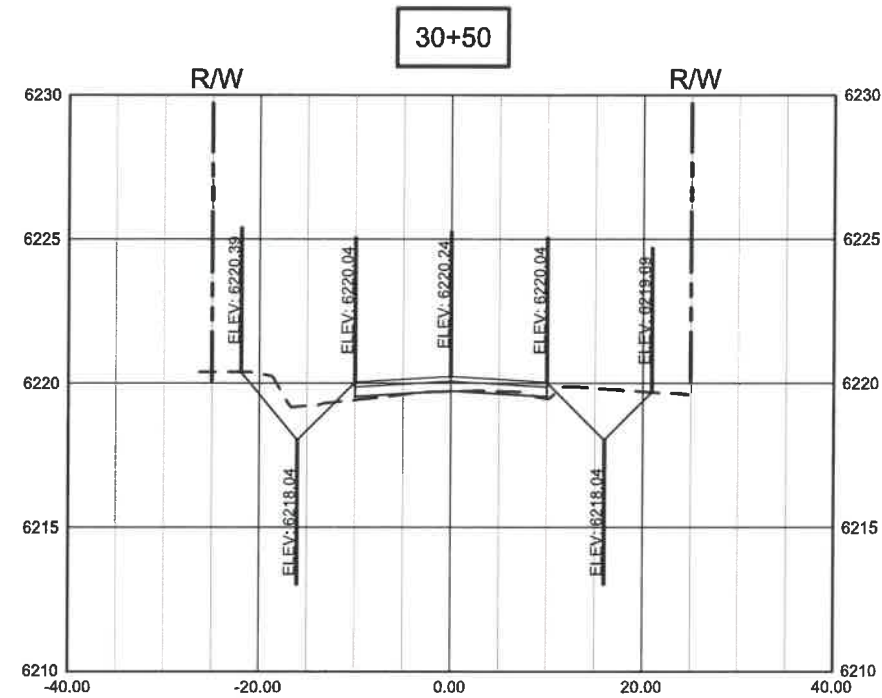


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SANTA FE COUNTY RACETRACK SUBDIVISION

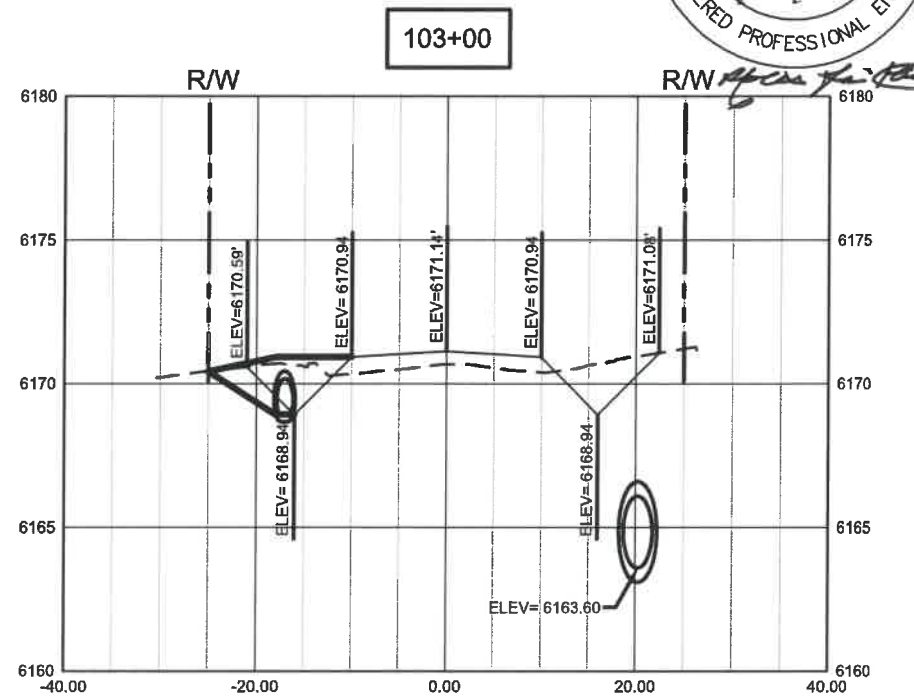
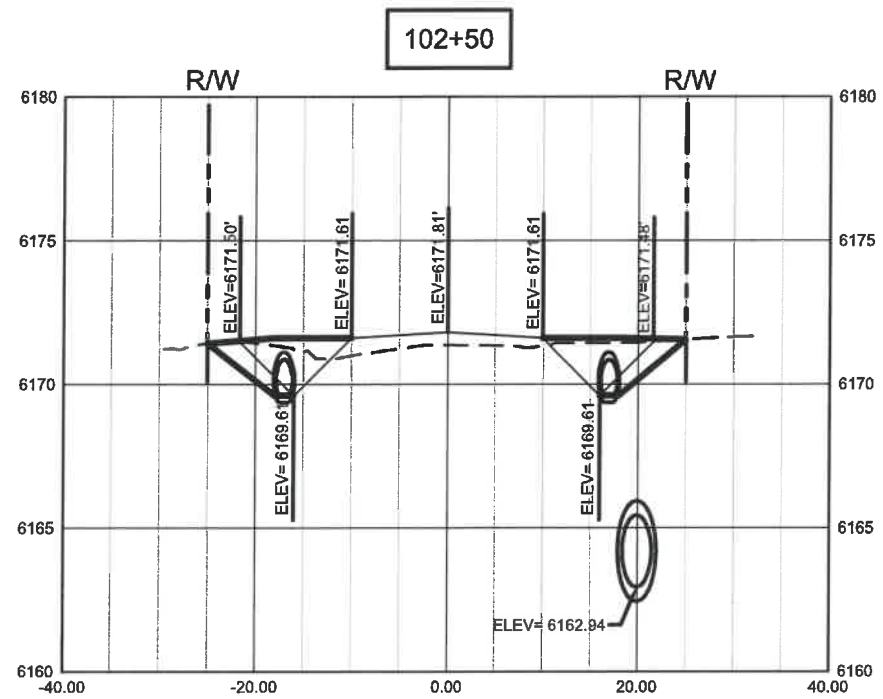
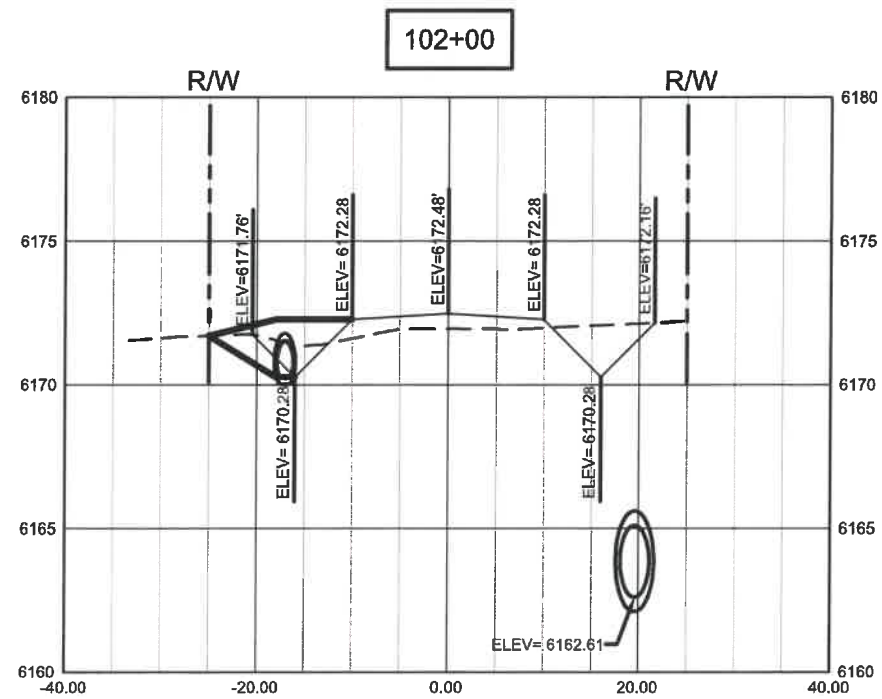
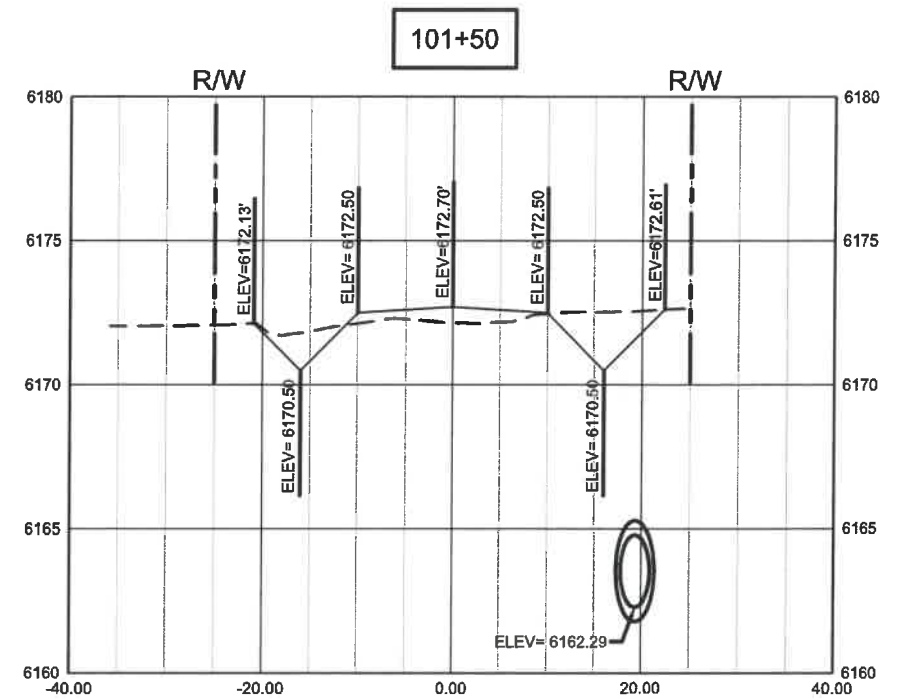
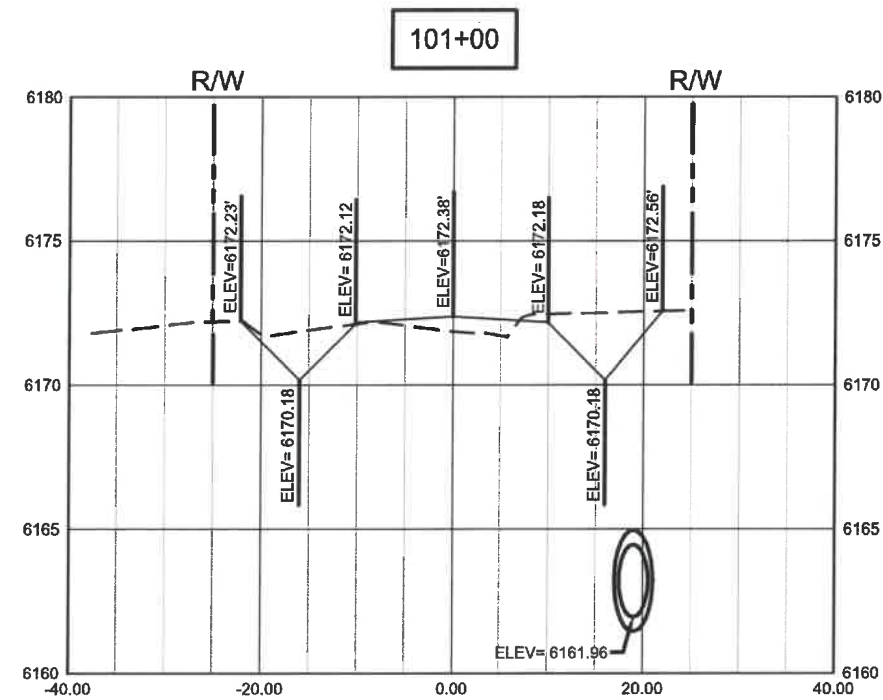
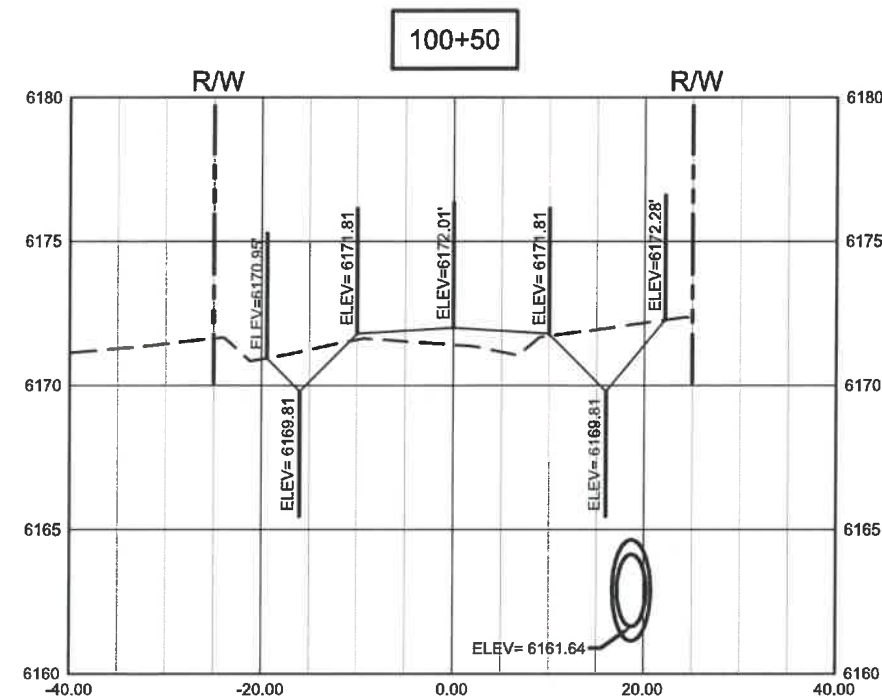
CROSS SECTIONS SHEET 10 - CAMINO LARGO

DESIGNED	TRH	DATE	SEPTEMBER 2018	SANTA FE COUNTY PROJECT No.	6207
DRAWN	DJE	DATE	SEPTEMBER 2018	SHEET No.	13-10
CHECKED	HE	DATE	SEPTEMBER 2018	DRAWING No.	CS10



Handwritten signature

				SCALE		WARNING  IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE				6100 Uptown Blvd. NE Suite 105 Albuquerque, NM 87110 (505) 553-1972		SANTA FE COUNTY RACETRACK SUBDIVISION				DESIGNED	DATE	SANTA FE COUNTY PROJECT No.
				HORIZONTAL								TRH				SEPTEMBER 2018	6207	
				1" = 20'								DRAWN				DATE	SHEET No.	
				VERTICAL								DJE				SEPTEMBER 2018	13-11	
				NO SCALE								CHECKED				DATE	DRAWINGS No.	
												HE				SEPTEMBER 2018	CS11	
REV DATE BY DESCRIPTION REVISIONS												CROSS SECTIONS SHEET 11 - CAMINO LARGO						



REV	DATE	BY	DESCRIPTION
REVISIONS			

SCALE	
HORIZONTAL	
1" = 20'	
VERTICAL	
NO SCALE	

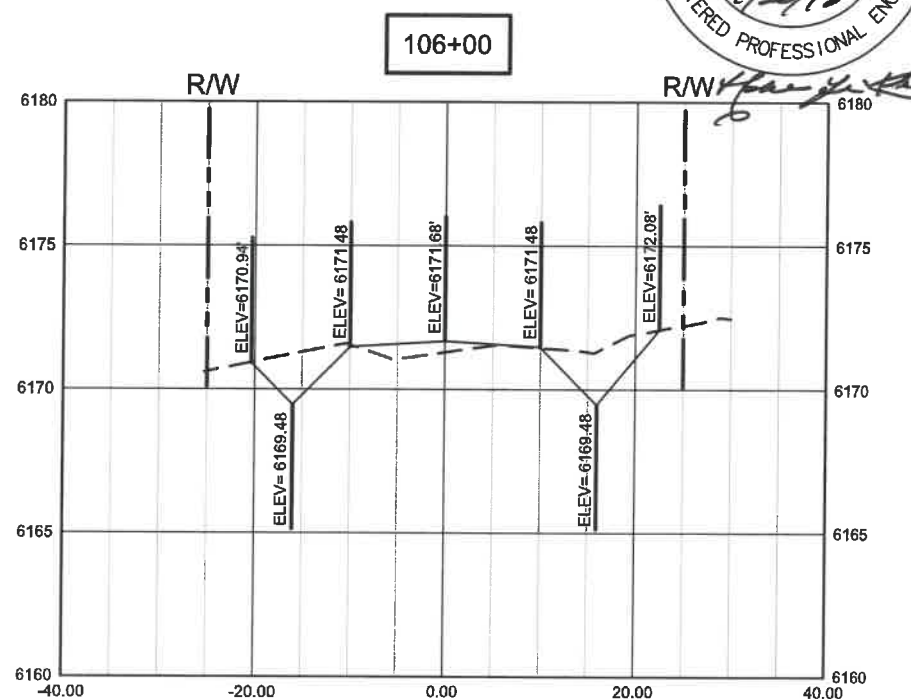
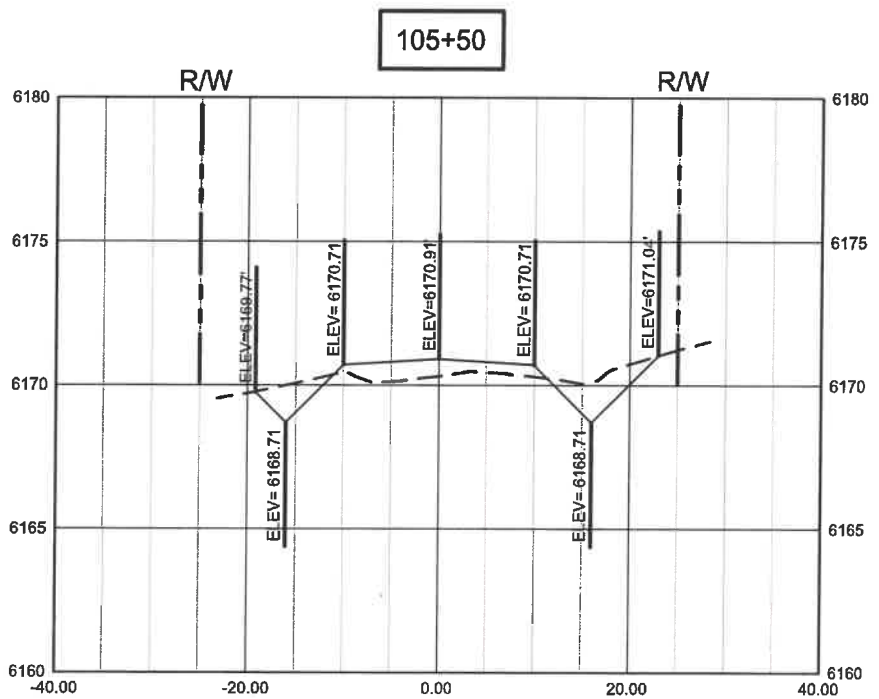
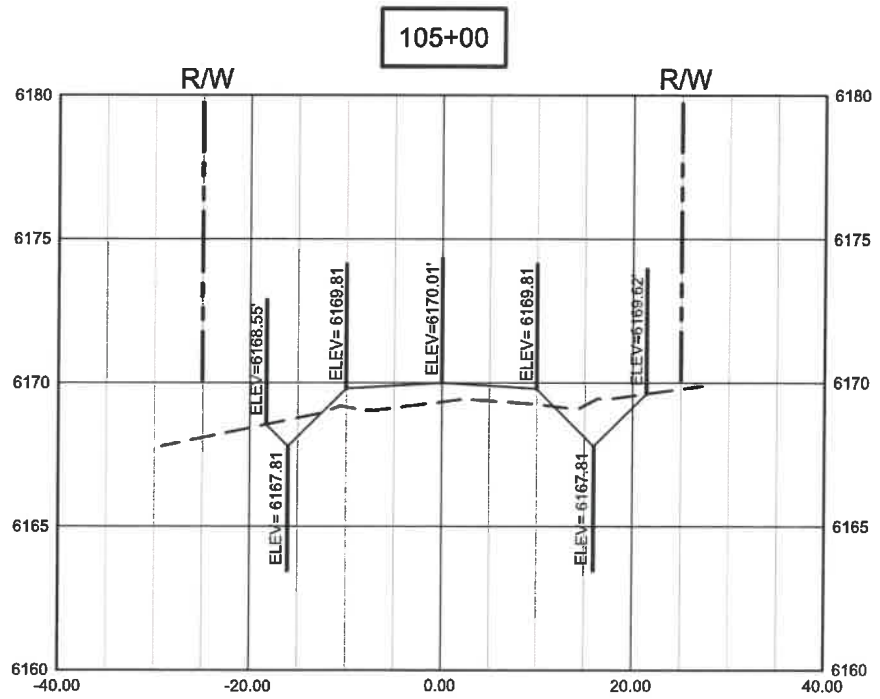
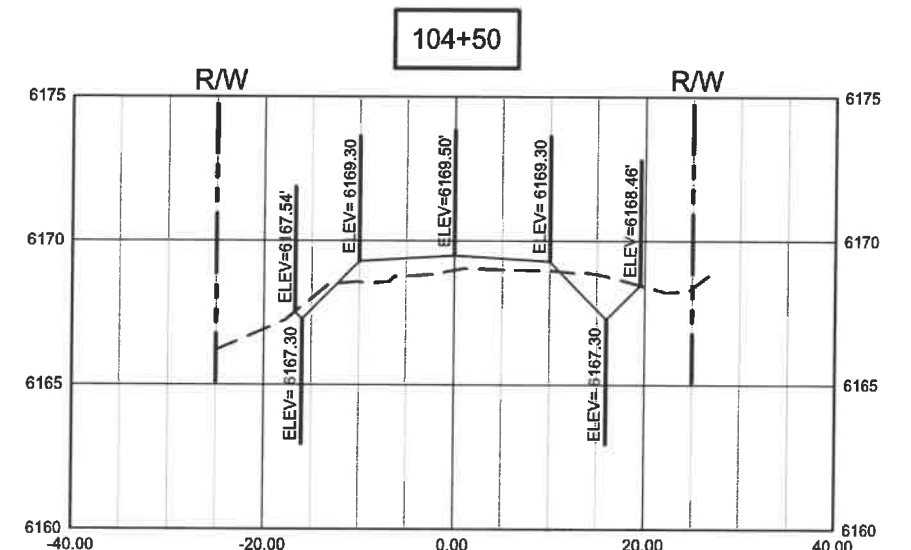
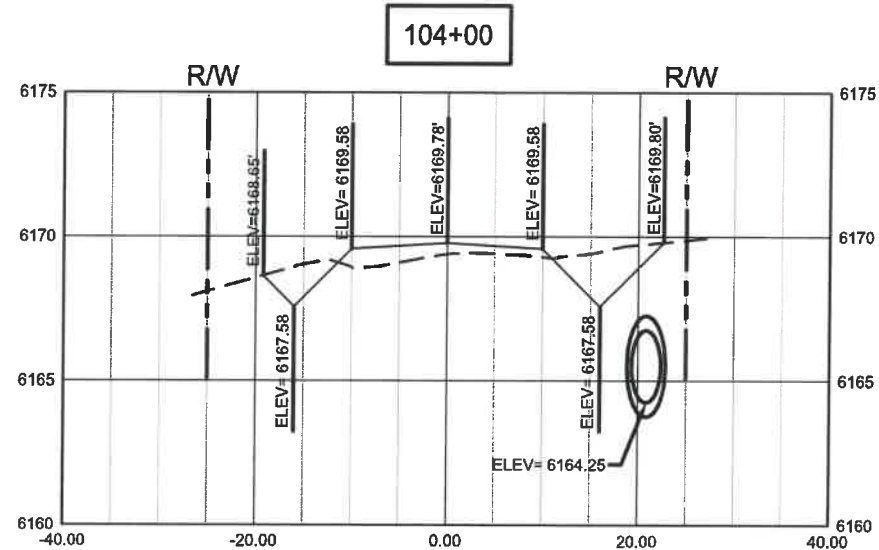
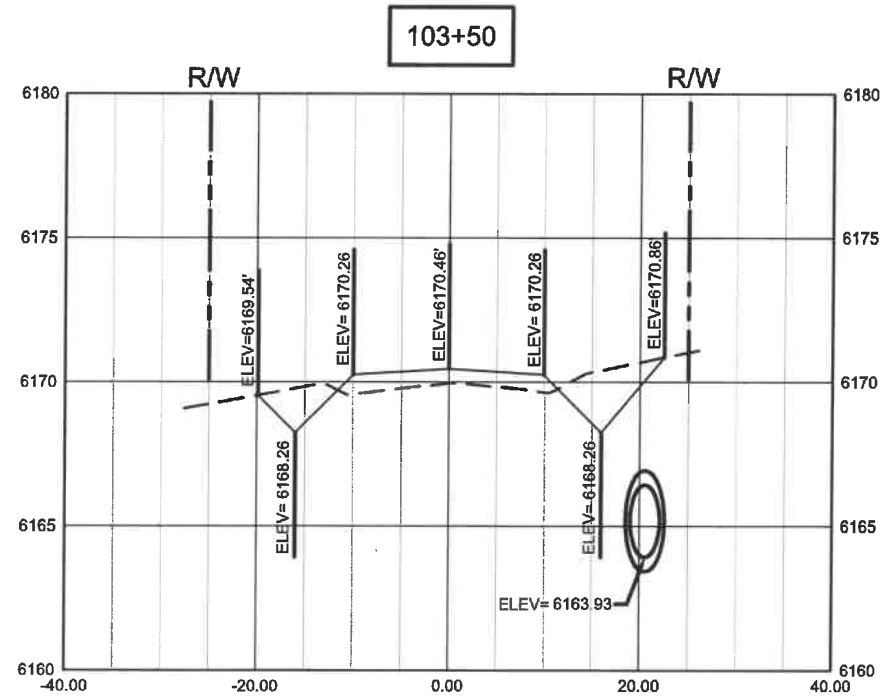


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SANTA FE COUNTY RACETRACK SUBDIVISION

DESIGNED	DATE	SANTA FE COUNTY PROJECT No.
TRH	SEPTEMBER 2018	6207
DRAWN	DATE	SHEET No.
DJE	SEPTEMBER 2018	13-12
CHECKED	DATE	DRAWING No.
HE	SEPTEMBER 2018	CS12

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REV	DATE	BY	DESCRIPTION

SCALE
HORIZONTAL
1" = 20'
VERTICAL
NO SCALE

WARNING

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

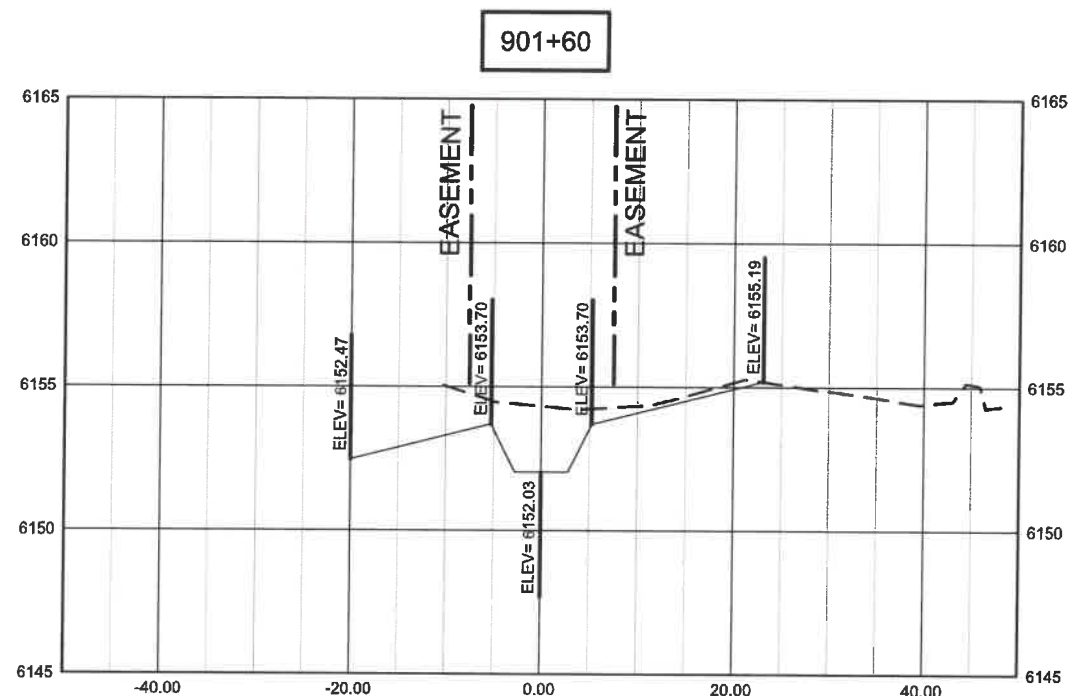
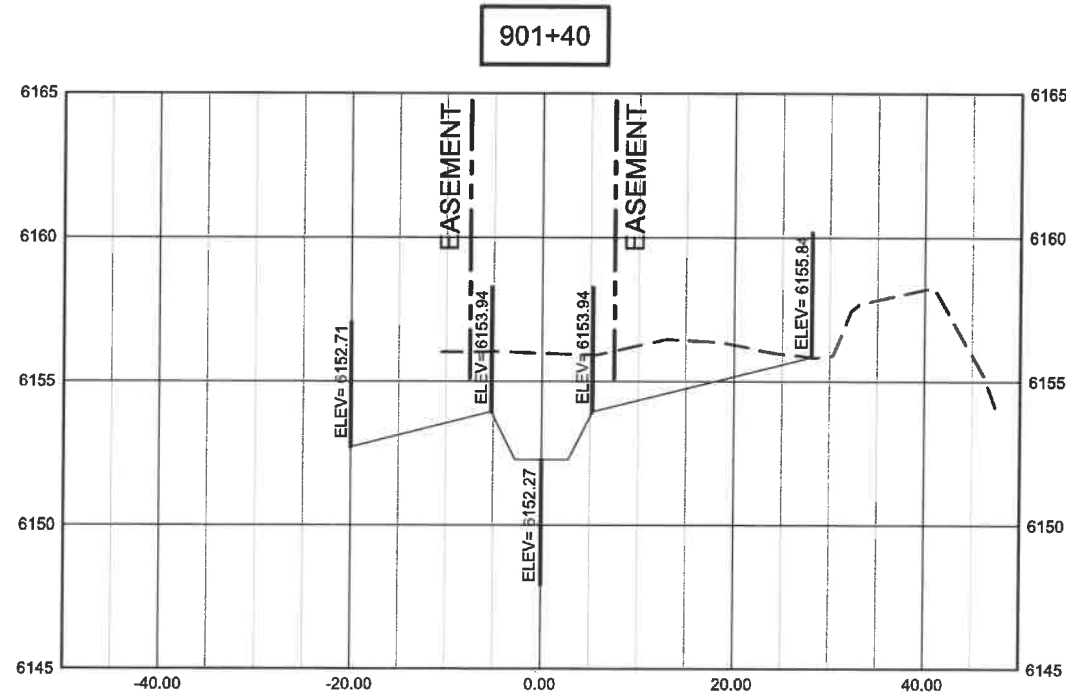
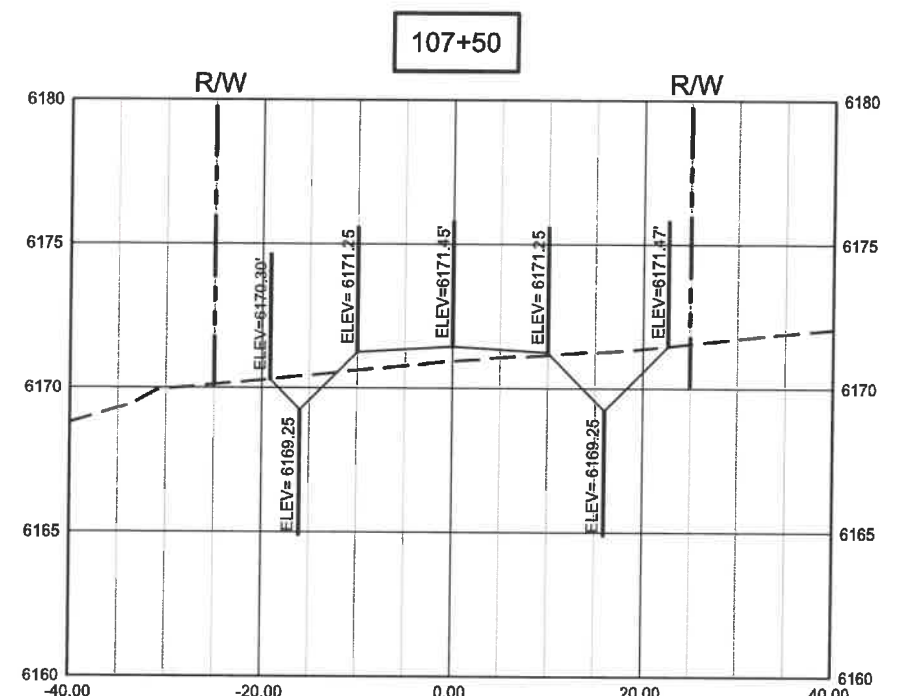
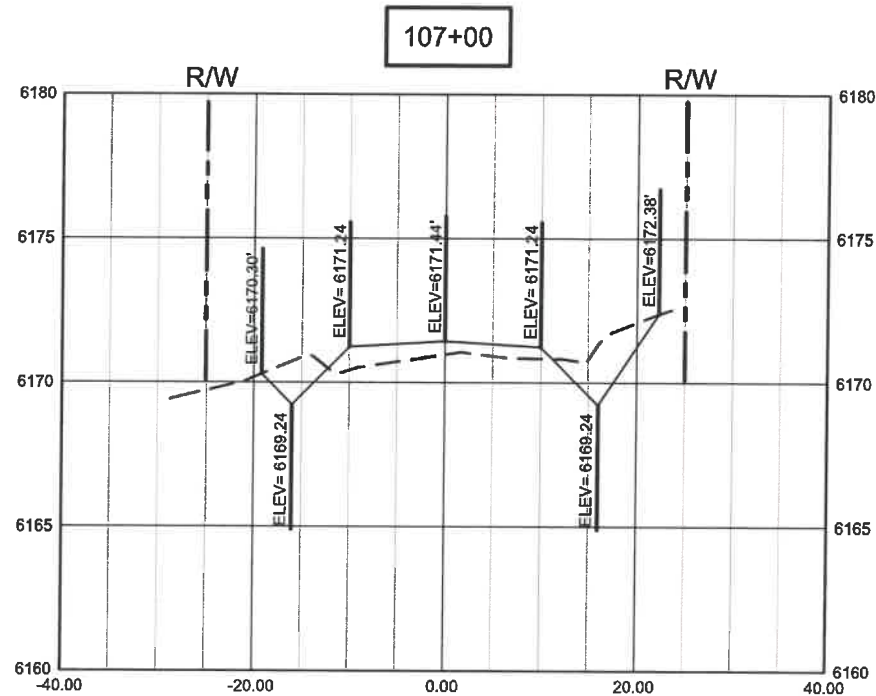
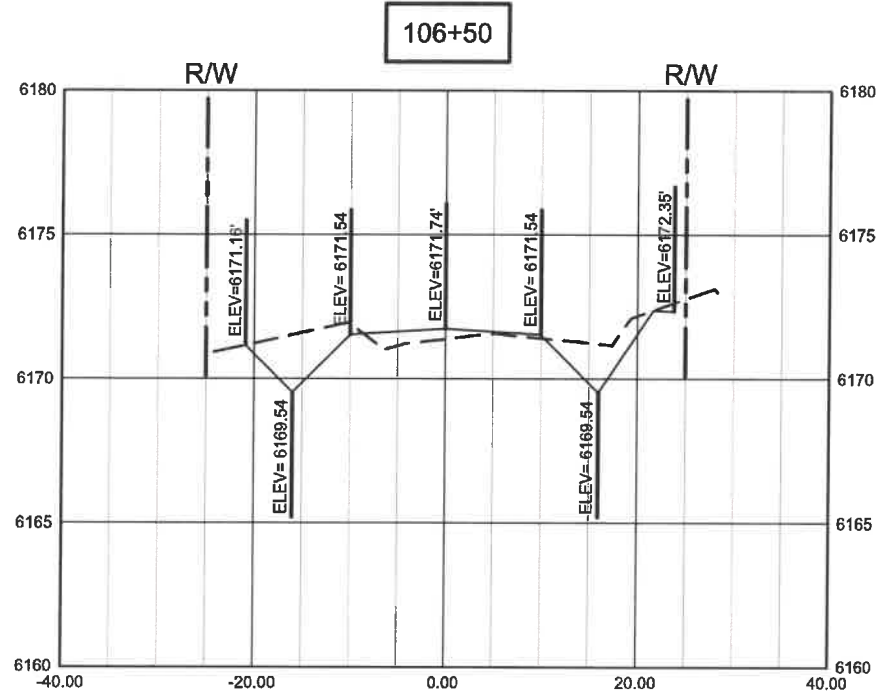


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SANTA FE COUNTY
RACETRACK SUBDIVISION
CROSS SECTIONS SHEET 13 - CAMINO MOCHO

DESIGNED	DATE	SANTA FE COUNTY PROJECT No.
TRH	SEPTEMBER 2018	6207
DRAWN	DATE	SHEET No.
DJE	SEPTEMBER 2018	13-13
CHECKED	DATE	DRAWING No.
HE	SEPTEMBER 2018	CS13

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REV	DATE	BY	DESCRIPTION

SCALE
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1" = 20'
VERTICAL
NO SCALE

WARNING
IF THIS BAR DOES NOT
MEASURE 1" THEN
DRAWING IS NOT TO SCALE

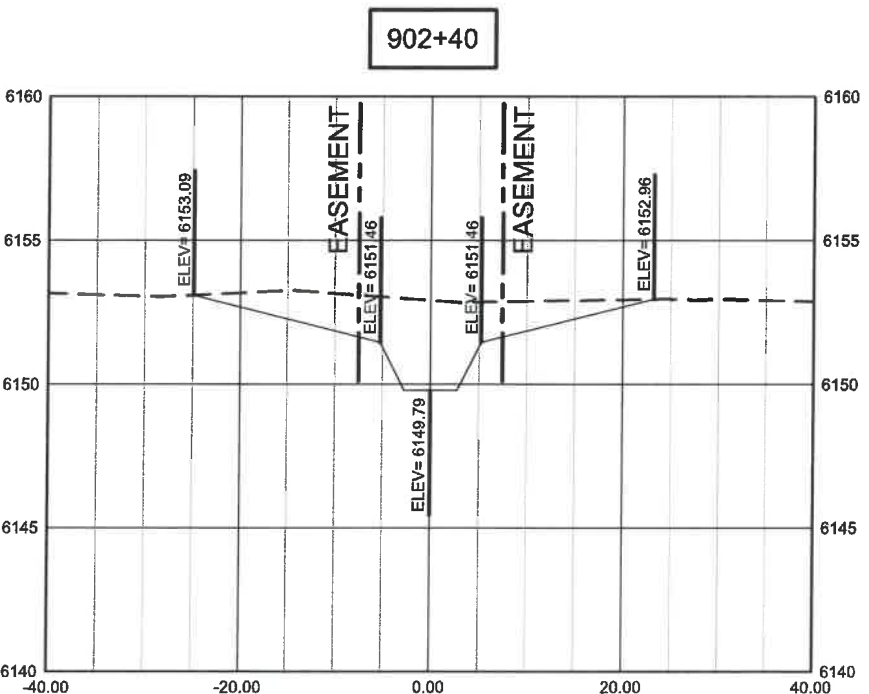
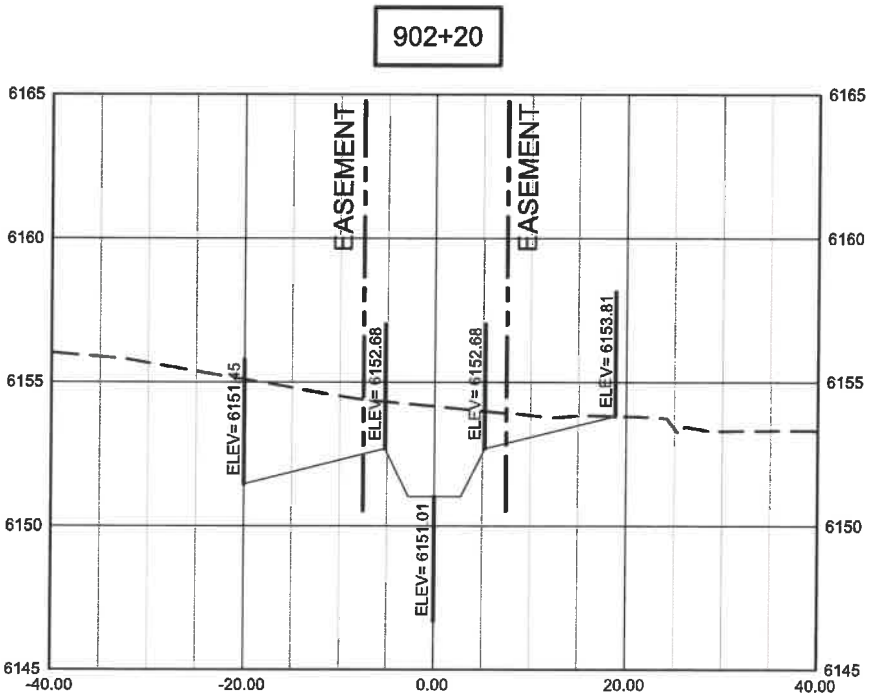
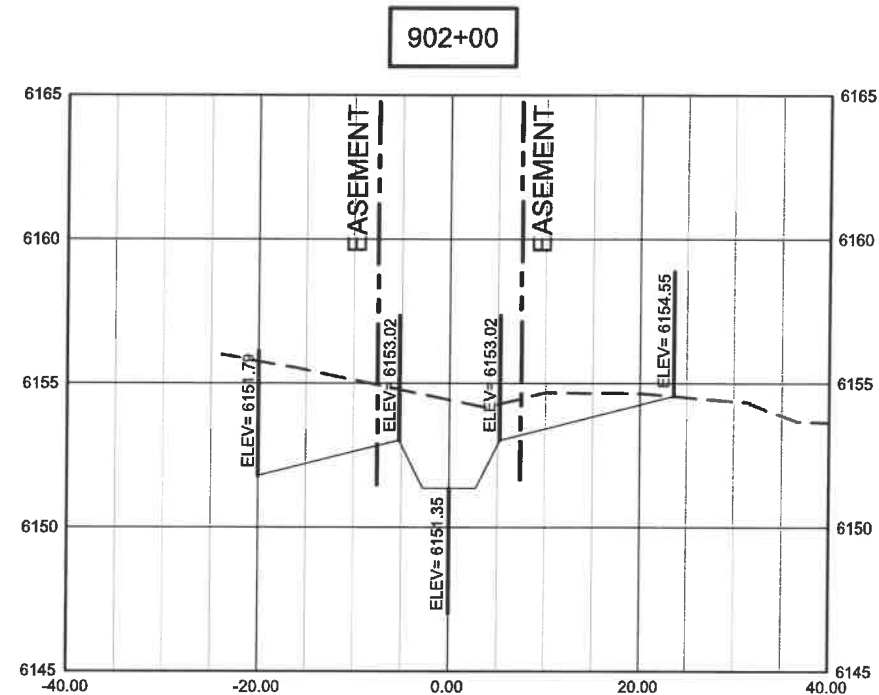
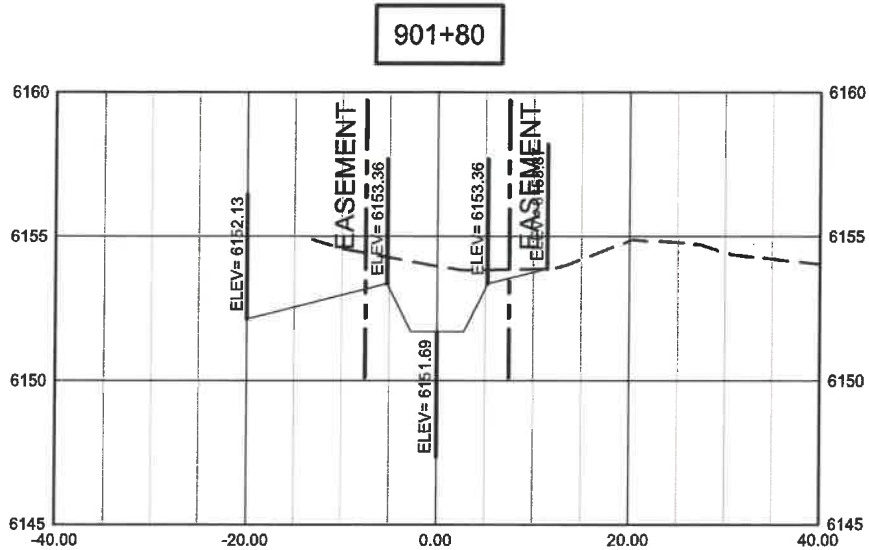
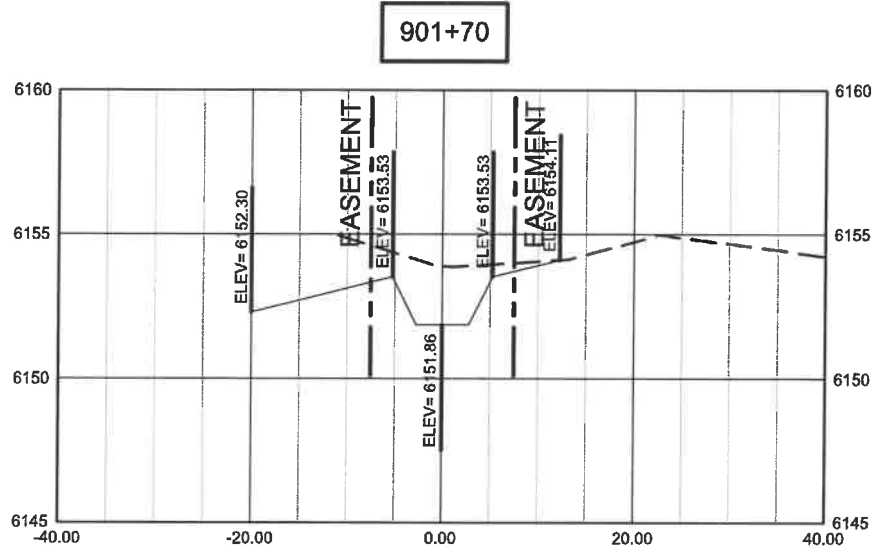
HORROCKS
ENGINEERS

6100 Uptown Blvd, NE
Suite 105
Albuquerque, NM 87110
(505) 553-1972

**SANTA FE COUNTY
RACETRACK SUBDIVISION**
CROSS SECTIONS SHEET 14 - CAMINO MOCHO & OPEN CHANNEL

DESIGNED	DATE	SANTA FE COUNTY PROJECT No.
TRH	SEPTEMBER 2018	6207
DRAWN	DATE	SHEET No.
DJE	SEPTEMBER 2018	13-14
CHECKED	DATE	DRAWING No.
HE	SEPTEMBER 2018	CS14

C:\2017\AQ-673-1709 Racetrack Sub Drainage and Road Imp\Project Data\Sheet_Files\Typical\AQ-673-1709_13 - Cross Sections-15 - 13-15.dwg - CS-14 - 9/20/2018 08:12pm, mbarneas



REV	DATE	BY	DESCRIPTION

SCALE
HORIZONTAL
1" = 20'
VERTICAL
NO SCALE

WARNING
0 1/2 1
IF THIS BAR DOES NOT
MEASURE 1" THEN
DRAWING IS NOT TO SCALE



6100 Uptown Blvd. NE
Suite 105
Albuquerque, NM 87110
(505) 553-1972

**SANTA FE COUNTY
RACETRACK SUBDIVISION**
CROSS SECTIONS SHEET 15 - OPEN CHANNEL

DESIGNED	TRH	DATE	SEPTEMBER 2018	SANTA FE COUNTY PROJECT No.	6207
DRAWN	DJE	DATE	SEPTEMBER 2018	SHEET No.	13-15
CHECKED	HE	DATE	SEPTEMBER 2018	DRAWING No.	CS15

SANTA FE COUNTY PUBLIC WORKS DEPARTMENT

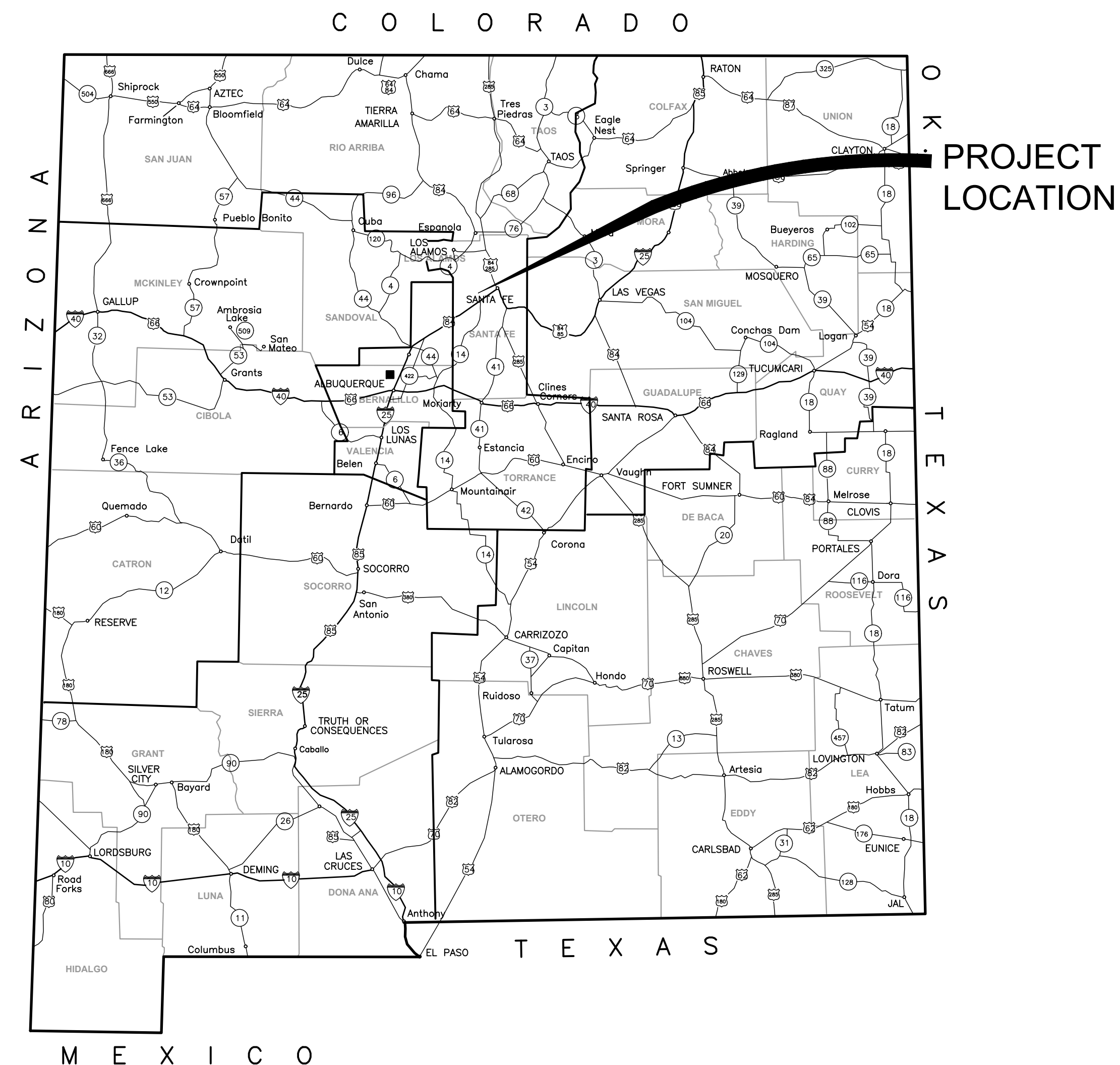
FINAL CONSTRUCTION PLANS

CAMINO TORCIDO LOOP

DRAINAGE AND ROAD IMPROVEMENTS

SANTA FE COUNTY PROJECT NO. 6183

SEPTEMBER 2018



SANTA FE COUNTY PUBLIC WORKS DIRECTOR _____ DATE _____



SEPTEMBER 20, 2018

CONVENTIONAL SIGNS

ON PLAN

STATE LINE

COUNTY LINE

LAND GRANT LINE

TOWNSHIP OR RANGE LINE

SECTION LINE

CITY OR TOWN LIMIT

UNFENCED PROPERTY LINE

REFERENCE LINE □ POINT

WIRE FENCE

RAIL FENCE

STONE OR ADOBE FENCE

PICKET FENCE

TELEPHONE-TELEGRAPH LINE

PROTECTION DITCH □ DIKE

RETAINING WALL

ARROYO

RIVER OR CREEK

IRRIGATION DITCH

CONCRETE SIDEWALK

PRESENT TRAVELED ROAD

TRAIL

RAILROAD-TITLE PAGE

RAILROAD-PLAN PAGE

ON PROFILE

BRIDGE

PIPE CULVERT

BO □ CULVERT

VERTICAL CURVE

DATUM LINE
GROUND ELEVATION

DATUM LINE
GRADE ELEVATION

BRIDGE

CULVERT

HOUSE BUILDING

CHURCH

CEMETERY

SCHOOL

TOWN-TITLE PAGE

BLUFF OR HILLS

SURFACING PIT

TREE

WINDMILL

SECTION CORNER

B M
1235

BENCH MARK

RIGHT OF WAY LINE

P.C. 5+32.1

P.T. 6+73.4

SURVEY CENTER LINE

RAILROAD CATTLEGUARD

HIGHWAY CATTLEGUARD

BRIDGE

SPILLWAY

HOUSE BUILDING

CHURCH

CEMETERY

SCHOOL

TOWN-TITLE PAGE

BLUFF OR HILLS

SURFACING PIT

TREE

WINDMILL

SECTION CORNER

B M
1235

BENCH MARK

BRIDGE

PIPE CULVERT

BO □ CULVERT

VERTICAL CURVE

DATUM LINE
GROUND ELEVATION

DATUM LINE
GRADE ELEVATION

BRIDGE

CULVERT

HOUSE BUILDING

CHURCH

CEMETERY

SCHOOL

TOWN-TITLE PAGE

BLUFF OR HILLS

SURFACING PIT

TREE

WINDMILL

SECTION CORNER

B M
1235

BENCH MARK

E

ELECTRIC BOX TRANSFORMER

E

ELECTRIC MANHOLE

☀

STREET LIGHT

□

POWER POLE

⊙

SERVICE POLE

T

TELEPHONE PEDESTAL

TV

CATV PEDESTAL

✕

EXISTING MAILBOX

○

EXISTING BOLLARD

SHIPPING POINTS

SANTA FE, NM

THE 2014 EDITION OF NEW MEXICO DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR HIGHWAY AND BRIDGE CONSTRUCTION SHALL GOVERN CONSTRUCTION OF THIS PROJECT.

DESIGN CONTACTS:

DANIEL SMITH
PROJECT MANAGER
PUBLIC WORKS DEPARTMENT/PROJECT DIVISION
SANTA FE COUNTY
dssmith@santafecountynm.gov
(505) 986-2416

ED DUBOIS, PE
PROJECT MANAGER
HDR ENGINEERING
ed.dubois@hdrinc.com
(505) 830-5400

DAN PFEIFER, PE
DRAINAGE ENGINEER
HDR ENGINEERING
daniel.pfeifer@hdrinc.com
(505) 830-5400

LEGEND

THIS CONTRACT

BITUMINOUS SURFACED

GRAVEL SURFACED

GRADED AND DRAINED

UNIMPROVED

PRIMITIVE

VICINITY MAP

PROJECT IS LOCATED WITHIN THE CIENEGUILLA GRANT, PROJECTED TOWNSHIP 16N, RANGE 08E, SECTION 20

INTENT OF PROJECT:

ROADWAY RECONSTRUCTION, PAVEMENT SECTIONS (FLEXIBLE AND RIGID), EARTHWORK (EXCAVATION AND BORROW), DRAINAGE STRUCTURES (STORM DRAIN CULVERT PIPE AND DRAINAGE SWALE), EROSION CONTROL MEASURES, TRAFFIC CONTROL (PHASING, DETOURS) AND MISCELLANEOUS CONSTRUCTION.

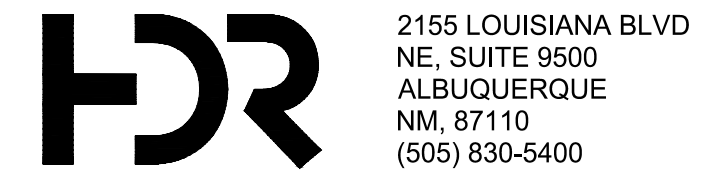
01/01/2018

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1			
NO.	DESCRIPTION	DATE	BY
REVISIONS (OR CHANGE NOTICES)			
SANTA FE COUNTY CAMINO TORCIDO LOOP DRAINAGE AND ROAD IMPROVEMENTS			
VICINITY MAP AND LEGEND			

DESIGNED BY: HDR

HDR PROJECT NO. 10061021

SHEET NO. 01-02



GENERAL NOTES:

1. COORDINATES SHOWN HEREON ARE MODIFIED (SURFACE) N.M. STATE PLANE COORDINATES, (NAD 83 - CENTRAL ZONE) AND WERE DERIVED BY GPS RTK OBSERVATIONS REFERENCED TO THE "TRIMBLE VRSNOW REGIONAL RTK NETWORK." SCALING STATE PLANE GRID COORDINATES BY THE PROJECT COMBINED FACTOR OF CF = 1.0003885761 AROUND AN ORIGIN OF 0,0. ELEVATIONS SHOWN HEREON ARE NAVD 88 AND HAVE BEEN ADJUSTED TO THE FEDERAL BASE NETWORK CONTROL STATION "11 SC" (ELEVATION USED = 6175.48'). THE COORDINATES AND ELEVATIONS ARE EXPRESSED IN US SURVEY FEET.
2. COORDINATES PROVIDED ARE MODIFIED STATE PLANE COORDINATES BASED ON HORIZONTAL DATUM NAD83. ELEVATIONS ARE BASED ON VERTICAL DATUM NAVD88.

CONTROL POINT DATA:

- CP-100:
N = 1,673,151.55'
E = 1,679,476.30'
ELEV. = 6136.40'
- CP-101:
N = 1,674,953.72'
E = 1,680,268.53'
ELEV. = 6151.76'
- CP-102:
N = 1,675,136.68'
E = 1,679,736.17'
ELEV. = 6144.74'
- CP-103:
N = 1,673,342.93'
E = 1,679,113.36'
ELEV. = 6128.58'

ALIGNMENT CURVE TABLE				
CURVE #	RADIUS	LENGTH	TANGENT	Δ
C1	150.00'	40.53'	20.39'	15°28'49.56"
C2	150.00'	40.35'	20.30'	15°24'41.49"
C3	150.00'	41.52'	20.89'	15°51'32.23"
C4	150.00'	41.34'	20.80'	15°47'24.16"
C5	53.32'	88.80'	58.62'	95°25'01.86"
C6	75.00'	114.72'	71.97'	87°38'20.49"
C7	615.00'	165.03'	83.02'	15°22'30.38"
C10	500.00'	73.17'	36.65'	8°23'03.69"
C11	62.52'	27.53'	13.99'	25°13'42.21"
C12	87.54'	66.69'	35.05'	43°38'51.41"
C13	162.56'	42.72'	21.48'	15°03'20.77"
C14	162.56'	66.06'	33.49'	23°16'57.02"
C15	62.52'	56.92'	30.61'	52°10'02.41"
C16	37.52'	58.73'	37.31'	89°41'16.25"
C17	87.53'	48.49'	24.88'	31°44'24.56"
C18	237.60'	101.13'	51.34'	24°23'15.05"



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1			
NO.	DESCRIPTION	DATE	BY
REVISIONS (OR CHANGE NOTICES)			
SANTA FE COUNTY CAMINO TORCIDO LOOP DRAINAGE AND ROAD IMPROVEMENTS			
SURVEY CONTROL PLAN, HORIZONTAL LAYOUT AND PLAN AND PROFILE SHEET MAP INDEX			

HDR

2155 LOUISIANA BLVD
NE, SUITE 9500
ALBUQUERQUE
NM 87110
(505) 830-5400

GENERAL NOTES:

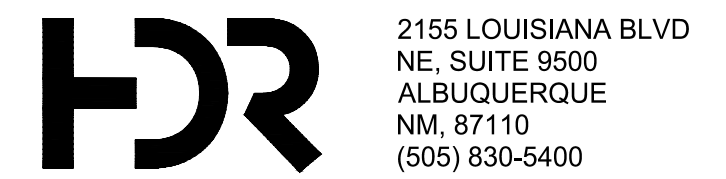
1. CONTRACTOR IS LIMITED TO ALL CONSTRUCTION ACTIVITIES LOCATED WITHIN THE 50' RIGHT-OF-WAY AND 20' EASEMENTS ON PRIVATE PROPERTY AS SHOWN ON THIS SHEET. EXISTING FENCING AND APPURTENANCES SHALL NOT BE DISTURBED AND MUST BE REPLACED IN KIND IF DISTURBED.
2. ALL EXISTING SURFACE UTILITY FEATURES, IF ANY, LOCATED WITHIN GRADING AREAS SHALL BE ADJUSTED TO FINISHED GRADE.
3. EXISTING STORM DRAIN LOCATIONS ARE APPROXIMATE. CONTRACTOR SHALL VERIFY, SIZING, LOCATIONS, AND ELEVATIONS IN FIELD PRIOR TO CONSTRUCTION OR EXCAVATION OF ANY STRUCTURES, GRADING, AND PIPE.



EDWARD A. DUBOIS, J.R.
NEW MEXICO
17615
LICENSED PROFESSIONAL ENGINEER

DESIGNED BY: HDR
HDR PROJECT NO. 10061021
SHEET NO. 01-04

4			
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NO.	DESCRIPTION	DATE	BY
REVISIONS (OR CHANGE NOTICES)			
SANTA FE COUNTY CAMINO TORCIDO LOOP DRAINAGE AND ROAD IMPROVEMENTS			
OVERALL SITE PLAN			



INDEX OF SHEETS:

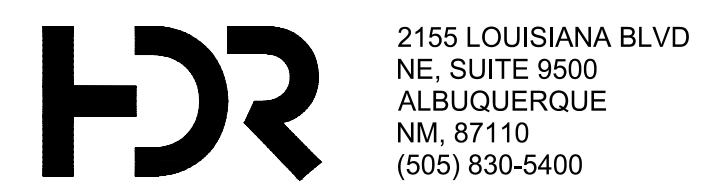
SHEET NO.	DESCRIPTION	REV. DATE
SECTION-1		
01-01	COVER SHEET	
01-02	VICINITY MAP AND LEGEND	
01-03	SURVEY CONTROL PLAN HORIZONTAL LAYOUT AND PLAN AND PROFILE SHEET MAP INDEX	
01-04	OVERALL SITE PLAN	
01-05	INDEX OF SHEETS AND LIST OF STANDARD DRAWINGS	
01-06	SUMMARY OF QUANTITIES	
01-07 TO 01-08	SANTA FE COUNTY GENERAL NOTES	
01-09	ADDITIONAL GENERAL NOTES	
SHEET SUBTOTAL: 9		
SECTION-2		
02-01	TYPICAL SECTIONS	
02-02	SURFACING SCHEDULE	
02-03	STRUCTURE QUANTITIES	
02-05 TO 02-07	TEMPORARY EROSION & SEDIMENT CONTROL PLAN	
02-08	MISCELLANEOUS QUANTITIES	
02-09	MISCELLANEOUS DETAILS	
SHEET SUBTOTAL: 9		
SECTION-3		
03-01	ROADWAY PLAN AND PROFILE STA BOP TO 17+00	
03-02	ROADWAY PLAN AND PROFILE STA 17+00 TO 24+00	
03-03	ROADWAY PLAN AND PROFILE STA 24+00 TO 31+00	
03-04	ROADWAY PLAN AND PROFILE STA 31+00 TO 38+00	
03-05	ROADWAY PLAN AND PROFILE STA 38+00 TO 45+00	
03-06	ROADWAY PLAN AND PROFILE STA 45+00 TO 52+00	
03-07	ROADWAY PLAN AND PROFILE STA 52+00 TO EOP	
03-08	EASEMENT (20') CHANNEL PLAN AND SECTIONS	
03-08A	EASEMENT (20') CHANNEL PLAN AND SECTIONS	
03-09	EASEMENT (20') CHANNEL PROFILES	
03-10	EASEMENT (20') CHANNEL PROFILES	
SHEET SUBTOTAL: 11		
SECTION-6		
06-01	TRAFFIC CONTROL DETAILS	
SHEET SUBTOTAL: 1		
SECTION-10		
10-01	DRAINAGE STRUCTURE PLAN (ADDITIVE ALTERNATIVE 1)	
10-02	DRAINAGE STRUCTURE DETAILS	
10-03	DRAINAGE STRUCTURE DETAILS	
10-03A	DRAINAGE STRUCTURE DETAILS	
10-04	DRAINAGE STRUCTURE DETAILS	
SHEET SUBTOTAL: 5		
SECTION-11		
11-01	EXISTING UTILITIES STA BOP TO 24+00	
11-02	EXISTING UTILITIES STA 24+00 TO 38+00	
11-03	EXISTING UTILITIES STA 38+00 TO 52+00	
11-04	EXISTING UTILITIES STA 52+00 TO STA EOP	
SHEET SUBTOTAL: 4		
SECTION-12		
	STANDARD DRAWINGS (SEE RIGHT FOR LIST)	
SHEET SUBTOTAL: 14		
PROJECT TOTAL (SHEET TOTAL AND STANDARD DRAWING TOTAL): 53		

LIST OF STANDARD DRAWINGS:

SHEET NO.	DESCRIPTION	REV. DATE
SECTION-12		
206-07-1/1	CORRUGATE METAL CULVERT AND PIPE ARCHES BEDDING AND BACKFILL DETAILS	8/29/2008
511-03-2/2	PIPE CULVERT HEADWALLS	10/19/2011
603-01-2/7	TEMPORARY EROSION & SEDIMENT CONTROL MEASURES CHECK DAMS	11/29/2004
603-01-3/7	TEMPORARY EROSION & SEDIMENT CONTROL MEASURES SILT FENCE	11/29/2004
603-01-4/7	TEMPORARY EROSION & SEDIMENT CONTROL MEASURES CULVERT & DROP INLET PROTECTION	11/29/2004
606-GR31-1/20	W-BEAM GUARDRAIL	5/6/2014
606-GR31-4/20	BEAM GUARDRAIL POSTS AND BLOCKS	5/6/2014
606-GR31-6/20	TYPICAL INSTALLATION AND SURFACING DETAILS	5/6/2014
606-GR31-8/20	END TREATMENT TL-2 END TERMINAL	5/6/2014
606-GR31-9/20	END TREATMENT W-BEAM END ANCHOR & THRIE BEAM END ANCHOR	5/6/2014
606-GR31-11/20	END TREATMENT W-BEAM AND ANCHOR DETAILS	5/6/2014
606-GR31-16/20	DRAINAGE STRUCTURE PROTECTION SYSTEM	5/6/2014
606-GR31-20/20	W-BEAM GUARDRAIL END SECTIONS	5/6/2014
607-04-1/1	STANDARD CHAIN LINK FENCES AND GATES	11/29/2004
SHEET SUBTOTAL: 14		

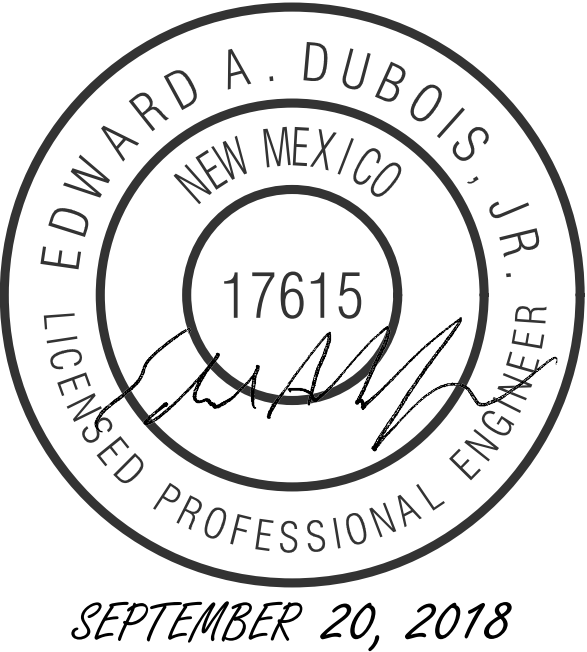


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NO.	DESCRIPTION	DATE	BY
REVISIONS (OR CHANGE NOTICES)			
SANTA FE COUNTY CAMINO TORCIDO LOOP DRAINAGE AND ROAD IMPROVEMENTS			
INDEX OF SHEETS AND LIST OF STANDARD DRAWINGS			

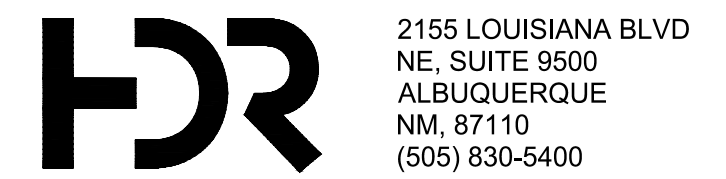


SUMMARY OF QUANTITIES																
NMDOT ITEM NO.	SHORT DESCRIPTION	UNIT	ROADWAY		ADDITIVE ALTERNATIVE 1		CONSTRUCTION ENGINEERING		CONSTRUCTION SIGNING		UTILITIES		PERMANENT SIGNING & STRIPING		PROJECT TOTAL	
			ESTIMATE	FINAL	ESTIMATE	FINAL	ESTIMATE	FINAL	ESTIMATE	FINAL	ESTIMATE	FINAL	ESTIMATE	FINAL	ESTIMATE	FINAL
201000	CLEARING AND GRUBBING	ACRE	3												3	
203000	UNCLASSIFIED EXCAVATION	CU.YD.	6,000												6,000	
207000	SUBGRADE PREPARATION	SQ.YD.	11,200												11,200	
209000	BLADING AND RESHAPING	MILE	.05												.05	
303150	BASE COURSE 5"	TON	3,100												3,100	
408100	PRIME COAT MATERIAL	TON	21												21	
416000	MINOR PAVEMENT	TON	1,530												1,530	
511000	STRUCTURAL CONCRETE, CLASS A	CU.YD.	55		25										80	
540060	REINFORCING BARS GRADE 60	LBS.	10,570		550										11,120	
570018	18" CULVERT PIPE	LIN.FT.	5												5	
570024	24" CULVERT PIPE	LIN.FT.	250												250	
570036	36" CULVERT PIPE	LIN.FT.	60												60	
570042	42" CULVERT PIPE	LIN.FT.	150		440										590	
570152	21" SX15" R (NOMINAL) CULVERT PIPE ARCH	LIN.FT.	830												830	
601000	REMOVAL OF STRUCTURES AND OBSTRUCTIONS	L.S.	L.S.												L.S.	
602010	RIPRAP CLASS B	CU.YD.	52		38										90	
603200	SILT FENCE	LIN.FT.	610		1,030										1,640	
603221	CHECK DAM TYPE II	LIN.FT.	40												40	
603260	CULVERT PROTECTION	SQ.YD.	3,150												3,150	
603281	SWPPP PLAN PREPARATION AND MAINTENANCE	L.S.					L.S.								L.S.	
606001	SINGLE FACE W-BEAM GUARDRAIL	LIN.FT.	225		165										390	
606052	END TREATMENT TL-2 END TERMINAL	EACH	2		1										3	
606053	END TREATMENT W-BEAM END ANCHOR	EACH	2		1										3	
607026	CHAIN LINK FENCE 6'	LIN.FT.	210												210	
607320	STANDARD GATE, 20'	EACH	1												1	
618000	TRAFFIC CONTROL MANAGEMENT	L.S.					L.S.								L.S.	
621000	MOBILIZATION	L.S.	L.S.												L.S.	
667110	MAIL BOX INSTALLATION-SINGLE	L.S.	L.S.												L.S.	
701031	REMOVE AND RESET TRAFFIC SIGN	L.S.											L.S.		L.S.	
801000	CONSTRUCTION STAKING BY THE CONTRACTOR	L.S.					L.S.								L.S.	

SUMMARY OF QUANTITIES - ADDITIVE ALT. 1				
NMDOT ITEM NO.	SHORT DESCRIPTION	UNIT	TOTAL	
			ESTIMATE	FINAL
511000	STRUCTURAL CONCRETE, CLASS A	CU.YD.	25	
540060	REINFORCING BARS GRADE 60	LBS.	550	
570042	42" CULVERT PIPE	LIN.FT.	440	
602010	RIPRAP CLASS B	CU.YD.	38	
603200	SILT FENCE	LIN.FT.	1,030	
606001	SINGLE FACE W-BEAM GUARDRAIL	LIN.FT.	165	
606052	END TREATMENT TL-2 END TERMINAL	EACH	1	
606053	END TREATMENT W-BEAM END ANCHOR	EACH	1	



4			
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1			
NO.	DESCRIPTION	DATE	BY
REVISIONS (OR CHANGE NOTICES)			
SANTA FE COUNTY CAMINO TORCIDO LOOP DRAINAGE AND ROAD IMPROVEMENTS SUMMARY OF QUANTITIES			



GENERAL CONSTRUCTION NOTES:

- ALL CONSTRUCTION TO BE PERFORMED UNDER THIS CONTRACT SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE NEW MEXICO STATE DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR HIGHWAY AND BRIDGE CONSTRUCTION (SSHBC).
- THE CONTRACTOR SHALL NOT INSTALL ITEMS AS SHOWN ON THESE PLANS WHEN FIELD CONDITIONS ARE DIFFERENT THAN SHOWN IN THE PLANS. SUCH CONDITIONS SHALL BE BROUGHT TO THE ATTENTION OF THE SANTA FE COUNTY PROJECTS ENGINEER IN A TIMELY MANNER. IN THE EVENT THAT CONTRACTOR DOES NOT NOTIFY THE ENGINEER IN A TIMELY MANNER, THE CONTRACTOR ASSUMES FULL RESPONSIBILITY AND EXPENSE FOR ANY REVISIONS NECESSARY, INCLUDING ENGINEERING DESIGN FEES.
- THE CONTRACTOR SHALL PROVIDE INGRESS AND EGRESS TO LOCAL BUSINESSES AND RESIDENCES FOR THE DURATION OF THE PROJECT. THE CONTRACTOR SHALL ADVISE OF AND SCHEDULE ACCESS CLOSURES AT LEAST 48 HOURS IN ADVANCE, WITH PROPERTY OWNERS AND THE PROJECT MANAGER.
- IN THE CASE OF CONFLICTS BETWEEN PLANS AND SPECIFICATIONS, RESOLUTION SHALL BE MADE BY USING THE MORE RESTRICTIVE REQUIREMENTS AS DETERMINED BY THE PROJECT MANAGER AND APPROVED BY SANTA FE COUNTY.
- ALL MATERIALS UTILIZED FOR CONSTRUCTION NEED TO BE SUBMITTED TO THE PROJECT MANAGER FOR APPROVAL PRIOR TO USE ON THE PROJECT.
- CONCRETE CYLINDERS WILL NOT BE ALLOWED TO DETERMINE EARLY STRENGTH OF CONCRETE FOR CONSTRUCTION RELATED PURPOSES. THE CONTRACTOR WILL NOT BE ALLOWED TO SUPERIMPOSE LOADS ON OR AGAINST LOAD CARRYING MEMBERS, FLOOR SLABS, RETAINING WALLS UNTIL THE CONCRETE HAS REACHED 75% OF ITS COMPRESSIVE STRENGTH IN ACCORDANCE WITH THE MATURITY METHOD, ASTM C1074. CONCRETE BOX CULVERTS AND WINGWALLS WILL NOT BE ALLOWED TO BE BACKFILLED UNTIL 100% OF THE COMPRESSIVE STRENGTH HAS BEEN ACHIEVED IN ACCORDANCE WITH ASTM C1074.
- THE CONSTRUCTION CLEAR ZONE FOR THIS PROJECT IS THE ENTIRE PROJECT AREA INCLUDING DESIGNATED PARKING AREAS. THE CONTRACTOR SHALL NOT STORE EQUIPMENT OR MATERIAL WITHIN THE CONSTRUCTION CLEAR ZONE, UNLESS THE EQUIPMENT OR MATERIAL IS PROPERLY SHIELDED UTILIZING CURRENT SAFETY DESIGN AND INSTALLATION METHODS. THE DESIGN FOR SHIELDING SHALL BE PROVIDED BY THE CONTRACTOR AND MUST BE APPROVED BY THE PROJECT MANAGER BEFORE IMPLEMENTING. THIS WORK SHALL BE CONSIDERED INCIDENTAL TO THE COMPLETION OF THE PROJECT AND NO SEPARATE MEASUREMENT OR PAYMENT WILL BE MADE.
- ALL ESTIMATED QUANTITIES SCHEDULED IN THE PLANS ARE FOR ESTIMATING PURPOSES ONLY. PAYMENT AND MEASUREMENT OF QUANTITIES SHALL BE DONE IN ACCORDANCE WITH SECTION 109 – MEASUREMENT AND PAYMENT OF THE NMDOT STANDARD SPECIFICATIONS FOR HIGHWAY AND BRIDGE CONSTRUCTION CURRENT EDITION.
- IT IS THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN WATER FOR CONSTRUCTION. THIS SHALL BE CONSIDERED INCIDENTAL TO THE COMPLETION OF THE PROJECT AND NO SEPARATE MEASUREMENT OR PAYMENT WILL BE MADE.
- ATTENDANCE AT THE PRE-CONSTRUCTION CONFERENCE (PRE-CON) AND BI-WEEKLY PROGRESS MEETINGS IS MANDATORY. THIS WORK SHALL BE CONSIDERED INCIDENTAL TO THE COMPLETION OF THE PROJECT AND NO SEPARATE MEASUREMENT OR PAYMENT WILL BE MADE.
- PER SANTA FE COUNTY ORDINANCE 2003-1, THE CONTRACTOR MUST SUBMIT THE FOLLOWING DOCUMENTS TO THE TRAFFIC MANAGER (JOHNNY BACA) AT THE PRE-CON:
 - CONTRACTORS LICENSE
 - COPY OF THEIR LIABILITY INSURANCE
 - COPIES OF THE PAYMENT AND PERFORMANCE BOND
 - COMPLETED PERMIT APPLICATION
 - TRAFFIC CONTROL PLAN STAMPED BY A PROFESSIONAL ENGINEER
 - PROJECT SCHEDULE
- SANTA FE COUNTY WAIVES ANY AND ALL RESPONSIBILITY AND IS NOT LIABLE FOR PROBLEMS WHICH ARISE FROM FAILURE TO FOLLOW THESE PLANS, SPECIFICATIONS AND THE DESIGN INTENT THEY CONVEY OR FOR PROBLEMS WHICH ARISE FROM FAILURE TO OBTAIN AND/OR FOLLOW SFC GUIDANCE WITH RESPECT TO ANY ERRORS, OMISSIONS, INCONSISTENCIES, AMBIGUITIES OR CONFLICTS.
- STORM WATER POLLUTION PREVENTION PLANS (SWPPP) SHALL BE SUBMITTED FOR APPROVAL BY SANTA FE COUNTY AT THE PRE-CON. AFTER COMPLETION OF THE PROJECT, THE CONTRACTOR IS REQUIRED TO MAINTAIN SWPPP CONTROLS THROUGHOUT THE WARRANTY PERIOD. AT THE END OF THE ONE YEAR WARRANTY PERIOD ALL TEMPORARY SWPPP CONTROLS SHALL BE REMOVED. THIS WORK SHALL BE CONSIDERED INCLUDED IN THE CONTRACT PRICE FOR "603000 – STORM WATER POLLUTION PREVENTION PLANS AND MAINTENANCE" AND NO SEPARATE MEASUREMENT OR PAYMENT WILL BE MADE. EPA NOTICE OF INTENT (NOI) IS REQUIRED 7 DAYS PRIOR TO PRE-CON, AND PROVIDED TO SANTA FE COUNTY.
- CONTRACTOR SHALL SUBMIT ASTM OR AASHTO CERTIFICATES OF MATERIAL COMPLIANCE TO THE OWNERS REPRESENTATIVE, AND THE SANTA FE COUNTY PROJECT ENGINEER, NO LESS THAN 5 DAYS PRIOR TO INITIATING ANY WORK INVOLVING SUCH MATERIALS.
- SANTA FE COUNTY INITIATED PRECONSTRUCTION CONFERENCE SHALL BE CONDUCTED IN THE PRESENCE OF THE PROJECT ENGINEER AND/OR THE OWNERS PROJECT REPRESENTATIVE (OPR) PRIOR TO THE INITIATION OF ANY CONSTRUCTION ACTIVITY. THE CONTRACTOR SHALL NOTIFY THE COUNTY NO LESS THAN 24 HOURS FROM THE BEGINNING OF ANY CONSTRUCTION WORK.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL REMOVALS REQUIRED TO COMPLETE THIS PROJECT. IF ADDITIONAL REMOVALS NOT LISTED IN THE PLANS ARE NECESSARY TO COMPLETE THIS PROJECT, THE WORK AND COSTS ASSOCIATED WILL BE CONSIDERED AS INCLUDED IN THE CONTRACT PRICE FOR REMOVAL OF STRUCTURES AND OBSTRUCTIONS AND NO SEPARATE MEASUREMENT OR PAYMENT WILL BE MADE THEREFOR.
- THE CONTRACTOR WILL PROVIDE AT ITS OWN EXPENSE AND WITH OUT ANY LIABILITY TO SANTA FE COUNTY ADDITIONAL LAND AND ACCESS THERETO THAT THE CONTRACTOR MAY DESIRE FOR A TEMPORARY STAGING AREA OR ESTBLISHMENT OF A YARD FOR STORAGE OF EQUIPMENT AND MATERIALS. CONTRACTOR IS RESPONSIBLE FOR COUNTY ENVIRONMENTAL & ARCHAEOLOGICAL CLEARANCES, TAXES AND FEES. BEST MANAGEMENT PRACTICES AND CLEANUP SHALL APPLY TO ANY SUCH AREAS OR YARDS UTILIZED FOR THE PROJECT.
- ALL CONTRACTOR WORK ACTIVITY SHALL BE CONFINED TO THE CONSTRUCTION LIMITS OF THE PROJECT. THERE SHALL BE NO ENCRoACHMENT ONTO ADJACENT PROPERTIES, EITHER DURING CONSTRUCTION OR THROUGH ESTBLISHMENT AND USE OF THE CONTRACTORS STAGING YARD(S) UNLESS LEGAL EASEMENTS(S)/AGREEMENT(S) IS/ARE EXECUTED AND APPROVED BY THE PROJECT MANAGER.
- THE CONTRACTOR SHALL PROPERLY HANDLE AND DISPOSE OF MATERIAL (I.E. ASPHALT, CONCRETE, VEGETATION, UNSTABLE EARTH, METAL AND OTHER DEBRIS) REMOVED ON THE PROJECT BY HAULING IT TO AN APPROVED LANDFILL IN ACCORDANCE WITH THE REGULATIONS OF THE NEW MEXICO SOLID WASTE ACT. THE CONTRACTOR WILL BE RESPONSIBLE FOR ALL LANDFILL DUMPING FEES & HAULING INVOLVED AND THIS WORK SHALL BE CONSIDERED INCIDENTAL AND NO SEPARATE PAYMENT WILL BE MADE THEREFOR

SURVEY MONUMENTS, PROPERTY CORNERS AND BENCHMARKS:

- CONTRACTOR SHALL NOTIFY THE OWNER AT LEAST SEVEN (7) DAYS BEFORE BEGINNING ANY CONSTRUCTION ACTIVITY THAT COULD DAMAGE OR DISPLACE SURVEY MONUMENTS, PROPERTY CORNERS, OR PROJECT BENCHMARKS SO THE COUNTY SURVEYOR MAY TAKE NECESSARY MEASURES TO ENSURE THE PRESERVATION OF THESE ITEMS. CONTRACTOR SHALL NOT DISTURB PERMANENT SURVEY MONUMENTS WITHOUT THE CONSENT OF THE COUNTY SURVEYOR AND SHALL NOTIFY THE COUNTY SURVEYOR AND BEAR THE EXPENSE OF REPLACING ANY THAT MAY BE DISTURBED WITHOUT PERMISSION. REPLACEMENT SHALL BE DONE ONLY BY THE COUNTY SURVEYOR.

DIMENSIONS:

- ALL STATIONING AND ELEVATIONS SHOWN ARE TO THE CENTERLINE OF ROADWAY, UNLESS OTHERWISE NOTED.
- ALL DISTANCES ARE HORIZONTAL GROUND DISTANCES.

CONSTRUCTION LIMITS:

- CONTRACTOR SHALL WORK WITHIN THE CONSTRUCTION LIMITS AS SHOWN ON THE PLANS. EQUIPMENT TRAFFIC OUTSIDE THESE LIMITS WILL NOT BE PERMITTED WITHOUT WRITTEN PERMISSION OF THE ENGINEER.
- PRIOR TO BEGINNING ANY CONSTRUCTION ACTIVITIES WITHIN ADJACENT RIGHT-OF-WAYS OR WITHIN PROPERTY NOT OWNED BY THE OWNER OF THE PROJECT SITE, THE CONTRACTOR SHALL OBTAIN ALL PERMITS AND PERMISSIONS IN WRITING.
- OVERNIGHT PARKING OF CONSTRUCTION VEHICLES ON PRIVATE PROPERTY IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
- CONTRACTOR SHALL PARK EQUIPMENT AND VEHICLES SO AS NOT TO INTERFERE WITH NORMAL ACTIVITIES OF RESIDENTS OR OTHER CONTRACTORS ON SITE.
- CONTRACTOR IS LIMITED TO ALL CONSTRUCTION ACTIVITIES WITHIN THE RIGHT-OF-WAY. EXISTING FENCING SHALL NOT BE DISTURBED AND SHALL BE REPLACED IN KIND IF DISTURBED.

SAFETY:

- CONTRACTOR SHALL COMPLY WITH APPLICABLE FEDERAL, STATE, LOCAL, LAWS, ORDINANCES AND REGULATIONS CONCERNING CONSTRUCTION SAFETY AND HEALTH.
- ONLY THE CONTRACTOR SHALL BE RESPONSIBLE FOR SAFETY OF ALL WORK. ALL WORK, INCLUDING WORK WITHIN TRENCHES, SHALL BE IN ACCORDANCE WITH THE OCCUPATIONAL SAFETY AND HEALTH ACT (OSHA). ALL EXCAVATION, TRENCHING, AND SHORING ACTIVITIES SHALL BE CARRIED OUT IN ACCORDANCE WITH OSHA 29 CFR 1926.650 SUBPART P AS A MINIMUM STANDARD.
- CONTRACTOR SHALL TAKE NECESSARY SAFETY PRECAUTIONS AS REQUIRED BY FEDERAL, STATE AND LOCAL AUTHORITIES TO PROTECT PEDESTRIAN AND VEHICULAR TRAFFIC IN THE CONSTRUCTION AREA, WHICH INCLUDE BUT ARE NOT LIMITED TO: MAINTAINING ADEQUATE WARNING SIGNS, BARRICADES, LIGHTS, GUARD FENCES, WALKS AND BRIDGES.
- THE CONTRACTOR SHALL BARRICADE CONSTRUCTION SITES AT ALL TIMES PER THE MUTCD, CURRENT EDITION. A TRAFFIC CONTROL PLAN SHALL BE SUBMITTED FOR APPROVAL AT LEAST FIVE (5) WORKING DAYS PRIOR TO CONSTRUCTION.
- CONTRACTOR SHALL MAINTAIN ALL CONSTRUCTION BARRICADES AND SIGNAGE AT ALL TIMES AND SHALL VERIFY THE PROPER LOCATION OF ALL BARRICADING AT THE BEGINNING AND END OF EACH DAY.
- IF A PAVEMENT DROP-OFF IS CREATED DURING CONSTRUCTION, THE CONTRACTOR SHALL INITIATE PROTECTIVE ACTION IN ACCORDANCE WITH THE NMDOT'S CURRENT "DROP-OFF GUIDELINE". THIS WORK SHALL BE CONSIDERED INCIDENTAL TO THE COMPLETION OF THE PROJECT AND NO SEPARATE MEASUREMENT OR PAYMENT WILL BE MADE.

INSPECTION AND TESTING:

- THE CONTRACTOR SHALL EMPLOY THE SERVICES OF A REGISTERED, LICENSED GEOTECHNICAL ENGINEER TO OBSERVE AND TEST ALL CONTROLLED EARTHWORK. THE GEOTECHNICAL ENGINEER SHALL PROVIDE ON-SITE OBSERVATION DURING CONSTRUCTION OF CONTROLLED EARTHWORK. THE CONTRACTOR SHALL NOTIFY THE ENGINEER AT LEAST TWO (2) WORKING DAYS IN ADVANCE OF ANY FIELD OPERATIONS OF CONTROLLED EARTHWORK OR OF ANY RESUMPTION OF OPERATIONS AFTER STOPPAGE. TESTS OF FILL MATERIALS AND EMBANKMENTS SHALL BE MADE IN ACCORDANCE WITH COUNTY TECHNICAL SPECIFICATIONS.
- CONTRACTOR SHALL INSPECT ALL TRENCH EXCAVATIONS DAILY AND WHENEVER A CHANGE OF CONDITIONS OCCURS IN ACCORDANCE WITH OSHA GUIDELINES. AT MINIMUM INSPECTION OF TRENCH EXCAVATIONS SHALL INCLUDE BUT NOT BE LIMITED TO:
 - INSPECTION OF THE SIDE OF THE OPENED EXCAVATION AND SUBSURFACE AREA ADJACENT TO THE EXCAVATION FOR THE OCCURRENCE OF TENSION CRACKS, SOIL SPALL, OR OTHER EVIDENCE OF SOIL MOVEMENT.
 - INSPECTION OF THE AREA AROUND THE EXCAVATION AND THE EXCAVATION ITSELF FOR EVIDENCE OF EXISTING UTILITIES AND PREVIOUSLY DISTURBED SOILS.
 - INSPECTION OF THE EXCAVATION AND AREAS ADJACENT TO THE EXCAVATION FOR THE PRESENCE OF WATER SEEPING INTO THE EXCAVATION, SURFACE WATER, AND THE LEVEL OF THE EXISTING WATER TABLE.

EROSION CONTROL AND ENVIRONMENTAL PROTECTION:

- THE CONTRACTOR SHALL CONFORM TO ALL OWNER AND FEDERAL DUST AND EROSION CONTROL REGULATIONS. THE CONTRACTOR SHALL PREPARE AND OBTAIN ANY DUST CONTROL OR EROSION CONTROL PERMITS FROM THE REGULATORY AGENCIES. WATERING, AS REQUIRED FOR CONSTRUCTION DUST CONTROL SHALL BE CONSIDERED INCIDENTAL TO CONSTRUCTION AND NO SEPARATE MEASUREMENT OR PAYMENT WILL BE MADE. CONSTRUCTION AREAS SHALL BE WATERED FOR DUST CONTROL IN COMPLIANCE WITH GOVERNMENT ORDINANCES. THE CONTRACTOR SHALL COORDINATE WITH THE OWNER FOR WATER AVAILABILITY AND USE. THE CONTRACTOR SHALL SUPPLY ALL EQUIPMENT AND MATERIALS NECESSARY FOR PROVIDING WATER.
- THE CONTRACTOR SHALL SECURE NPDES PERMITS REQUIRED BY APPLICABLE COUNTY, STATE, AND FEDERAL REGULATIONS.
- THE CONTRACTOR SHALL PROMPTLY REMOVE ANY MATERIAL EXCAVATED WITHIN THE PUBLIC RIGHT-OF-WAY OR ADJACENT PROPERTY TO KEEP IT FROM WASHING OFF THE PROJECT SITE.
- THE CONTRACTOR SHALL INSTALL ANY TEMPORARY DRAINAGE CONTROL MEASURES NECESSARY TO SAFELY CONVEY STORMWATER RUNOFF TO EXISTING OUTFALLS. CONTRACTOR SHALL ENSURE THAT NO SOIL ERODES FROM THE SITE ONTO ADJACENT PROPERTY BY CONSTRUCTION OF TEMPORARY EROSION CONTROL BERMS OR INSTALLING SILT FENCES AT THE PROPERTY LINES (OR LIMITS OF CONSTRUCTION IF DESIGNATED) AND WETTING SOIL TO PREVENT IT FROM BLOWING. ANY DAMAGE TO PRIVATE PROPERTY OR IMPROVEMENTS CONSTRUCTED BY THE CONTRACTOR RESULTING FROM STORMWATER FLOWS SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
- ANY AREAS DISTURBED BY CONSTRUCTION AND NOT IDENTIFIED FOR SPECIFIC PERMANENT TREATMENT BY THE PROJECT LANDSCAPING PLAN OR IMPERVIOUS SURFACES ON THE SITE PLAN SHALL BE REVEGETATED WITH GRASS SOD IF PREVIOUSLY GRASSED OR RECLAMATION SEEDING IF AREA WAS NATIVE PRIOR TO CONSTRUCTION. CONTRACTOR SHALL COORDINATE SPECIFIC TREATMENT WITH THE COUNTY PROJECT MANAGER.
- ALL WASTE PRODUCTS FROM THE CONSTRUCTION SITE, INCLUDING ITEMS DESIGNED FOR REMOVAL, CONSTRUCTION WASTE, CONSTRUCTION EQUIPMENT WASTE PRODUCTS (OIL, GAS, TIRES, ETC.), GARBAGE, GRUBBING, EXCESS CUT MATERIAL, VEGETATIVE DEBRIS, ETC. SHALL BE APPROPRIATELY DISPOSED OF OFFSITE AT NO ADDITIONAL COST TO THE OWNER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS REQUIRED FOR HAUL OR DISPOSAL OF WASTE PRODUCTS, AND TO ENSURE THAT THE WASTE DISPOSAL SITE COMPLIES WITH GOVERNMENT REGULATIONS REGARDING THE ENVIRONMENT, ENDANGERED SPECIES, AND ARCHAEOLOGICAL RESOURCES.
- ALL EXCAVATED MATERIAL THAT IS NOT REQUIRED TO BE REUSED MUST BE REMOVED FROM THE PROJECT AREA WITHIN A TIMELY MANNER AS APPROVED BY ENGINEER. SPOIL PILES WILL BE ALLOWED ONLY WITH WRITTEN PERMISSION BY THE COUNTY PROJECT MANAGER.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CLEANUP AND REPORTING OF SPILLS OF HAZARDOUS MATERIALS ASSOCIATED WITH THE CONSTRUCTION SITE. HAZARDOUS MATERIALS, INCLUDES GASOLINE, DIESEL FUEL, MOTOR OIL, SOLVENTS, CHEMICALS, PAINT, ETC. WHICH MAY BE A THREAT TO THE ENVIRONMENT. THE CONTRACTOR SHALL REPORT THE DISCOVERY OF PAST OR PRESENT SPILLS TO THE NEW MEXICO EMERGENCY RESPONSE AT (505) 476-9635 AND THE NEW MEXICO ENVIRONMENT DEPT. AT (505) 827-9329.
- THE CONTRACTOR SHALL PROPERLY HANDLE AND DISPOSE OF ALL ASPHALT REMOVED ON THE PROJECT BY HAULING TO AN APPROVED DISPOSAL SITE IN ACCORDANCE WITH THE REQUIREMENTS OF THE NEW MEXICO SOLID WASTE ACT.
- THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE REGULATIONS CONCERNING CONSTRUCTION NOISE AND HOURS OF OPERATION AS STATED IN THE SPECIFICATIONS.

- THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE REGULATIONS CONCERNING SURFACE AND UNDERGROUND WATER. CONTACT WITH SURFACE WATER BY CONSTRUCTION EQUIPMENT AND PERSONNEL SHALL BE MINIMIZED. EQUIPMENT MAINTENANCE AND REFUELING OPERATIONS SHALL BE PERFORMED IN AN ENVIRONMENTALLY SAFE MANNER IN COMPLIANCE WITH GOVERNMENT AND OWNER REGULATIONS.
- CONTRACTOR SHALL MAINTAIN A GRAFFITI-FREE SITE. CONTRACTOR SHALL PROMPTLY REMOVE ANY AND ALL GRAFFITI FROM EQUIPMENT, WHETHER PERMANENT OR TEMPORARY.

TRAFFIC CONTROL

- TRAFFIC CONTROL SHALL BE PERFORMED IN ACCORDANCE WITH SANTA FE COUNTY TRAFFIC CONTROL SPECIFICATION DATED JANUARY 26, 2018. A TRAFFIC CONTROL PLAN SHALL BE SUBMITTED AND IS INCLUDED IN THE PAY ITEM FOR TRAFFIC CONTROL. THE TRAFFIC CONTROL PLAN SHALL BE SUBMITTED ON 11"X 17" PAPER AND SHALL BE STAMPED BY A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF NEW MEXICO.
- TRAFFIC CONTROL DEVICES, SHALL BE INSTALLED, MAINTAINED, AND REMOVED BY THE CONTRACTOR IN ACCORDANCE WITH THE TRAFFIC CONTROL PLANS. TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE LATEST PUBLISHED EDITION OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.
- TRAFFIC SIGNS MOUNTED ON PORTABLE SUPPORTS SHOULD NOT BE USED FOR A DURATION OF MORE THAN THREE (3) DAYS. ALL TEMPORARY CONSTRUCTION SIGNAGE WILL BE PLACED ON A PERMANENT SIGN POST IF SIGN NEEDS TO REMAIN IN THE SAME PLACE FOR LONGER THAN THREE (3) DAYS.

DESIGN SURVEY:

- THIS DESIGN IS BASED ON SURVEY INFORMATION PROVIDED BY OTHERS. THE ENGINEER CANNOT WARRANTY THIS INFORMATION. ANY DISCREPANCIES BETWEEN THE DESIGN AND SITE CONDITIONS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER IMMEDIATELY.
- ALL COORDINATE, ELEVATION, AND CONTOUR INFORMATION FOR THE EASEMENT CHANNEL IS BASED ON SURVEY DATA OBTAINED BY THE COUNTY.
- COORDINATES PROVIDED ARE MODIFIED STATE PLANE COORDINATES BASED ON HORIZONTAL DATUM NAD83. ELEVATIONS ARE BASED ON VERTICAL DATUM NAVD88.
- CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS AS NECESSARY PRIOR TO CONSTRUCTION. THIS WORK SHALL BE CONSIDERED INCIDENTAL TO THE COST OF PIPE INSTALLATION AND NO ADDITIONAL PAYMENT SHALL BE MADE.
- ALL CONSTRUCTION STAKING, I.E. PIPELINE BENDS AND/OR INVERT ELEVATIONS, ETC., ARE THE RESPONSIBILITY OF THE CONTRACTOR.
- MAINTENANCE OF AS-BUILT PLANS. THE CONTRACTOR SHALL MAINTAIN AN UP TO DATE SET OF AS-BUILT PLANS FOR THE PROJECT. THESE PLANS SHALL BE KEPT CURRENT, WITHIN TWO WEEKS, AT ALL TIMES AND SHALL BE SUBJECT TO REVIEW BY THE PROJECT MANAGER THROUGHOUT THE PROJECT AND WILL BE REVIEWED BY THE PROJECT MANAGER FOR ACCURACY AND COMPLETENESS AT LEAST ONCE EVERY 30 DAYS. UPON 50% COMPLETION OF THE PROJECT THE CONTRACTOR SHALL SUBMIT PROGRESS AS-BUILT PLANS TO THE PROJECT MANAGER FOR REVIEW. THE FINAL AS-BUILT PLANS BEARING THE SIGNED SEAL AND CERTIFICATION OF THE CONTRACTOR'S SURVEYOR SHALL BE SUBMITTED TO THE PROJECT MANAGER PRIOR TO ANY FINAL PAYMENT. THIS WORK IS INCLUDED IN THE CONTRACT PRICE FOR "80100 – CONSTRUCTION STAKING" AND NO SEPARATE MEASUREMENT OR PAYMENT WILL BE MADE.
- THE CONTRACTOR SHALL BE REQUIRED TO FIELD VERIFY ALL DIMENSIONS, ELEVATIONS, LENGTHS, WIDTHS AND CONTROL POINTS PRIOR TO COMMENCING ANY WORK ON THE PROJECT. THIS WORK WILL BE CONSIDERED INCLUDED IN THE CONTRACT PRICE FOR "801000 – CONSTRUCTION STAKING" AND NO ADDITIONAL MEASUREMENT OR PAYMENT WILL BE MADE.
- THE CONTRACTOR'S SURVEYOR SHALL BE A LICENSED NEW MEXICO PROFESSIONAL LAND SURVEYOR.
- THE CONTRACTOR SHALL TAKE PRECAUTIONS TO PROTECT HORIZONTAL AND VERTICAL CONTROL SURVEY MONUMENTS (MARK) FROM DAMAGE PRIOR TO INITIATING CONSTRUCTION. IF DURING THE COURSE OF CONSTRUCTION OPERATIONS, THE CONTRACTOR DISTURBS OR DESTROYS A MARK, THE CONTRACTOR SHALL ESTABLISH A NEW MARK IN COMPLIANCE WITH THE STANDARDS AND PROCEDURES SET FORTH IN THE GEODETIC MARK PRESERVATION GUIDEBOOK, NATIONAL GEODETIC SURVEY, MARCH 1990. CONSTRUCTION STAKING DOCUMENTATION WILL BECOME THE PROPERTY OF THE COUNTY WHEN THE WORK IS COMPLETE. PROVIDE CONSTRUCTION-STAKING DOCUMENTATION TO THE PROJECT MANAGER. SUBMIT EARTHWORK QUANTITIES, SLOPE STAKING, SURFACE EXTRACTED CROSS SECTIONS AND EARTHWORK CALCULATIONS TO THE PROJECT MANAGER FOR REVIEW BEFORE COMPLETING THAT PHASE OF WORK. ENSURE A NEW MEXICO LICENSED PROFESSIONAL SURVEYOR OR PROFESSIONAL ENGINEER STAMPS AND CERTIFIES THE QUANTITIES AND ALL SUBMITTALS. THE COUNTY WILL NOT ACCEPT EARTHWORK QUANTITIES UNTIL THE PROJECT MANAGER REVIEWS AND APPROVES THESE QUANTITIES. THIS WORK SHALL BE CONSIDERED INCLUDED IN THE CONTRACT PRICE FOR "801000 – CONSTRUCTION STAKING" AND NO SEPARATE MEASUREMENT OR PAYMENT WILL BE MADE.

PERMITTING:

- THE CONTRACTOR WILL BE RESPONSIBLE FOR SECURING SWPPP PERMITS AND ANY CONSTRUCTION RELATED PERMITS AS REQUIRED BY APPLICABLE COUNTY, STATE, AND FEDERAL REGULATIONS.
- THE CONTRACTOR SHALL IDENTIFY THEIR BORROW SOURCE AND SECURE ALL PERMITS AND ENVIRONMENTAL CLEARANCES REQUIRED BY ALL APPLICABLE SPECIFICATIONS PRIOR TO THE PRECONSTRUCTION CONFERENCE. THIS INFORMATION SHALL BE PROVIDED TO THE OWNER AND THE OWNERS PROJECT REPRESENTATIVE AT LEAST ONE WEEK PRIOR TO THE PRECONSTRUCTION CONFERENCE.
- A SANTA FE COUNTY EXCAVATION RESTORATION PERMIT IS REQUIRED FOR THIS PROJECT. HOWEVER SANTA FE COUNTY WILL WAIVE THE PERMIT FEE. CONTACT JOHNNY BACA AT SANTA FE COUNTY TRAFFIC DEPARTMENT FOR ADDITIONAL INFORMATION AND DETAILS 505-992-3020.



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NO.	DESCRIPTION	DATE	BY
REVISIONS (OR CHANGE NOTICES)			
SANTA FE COUNTY CAMINO TORCIDO LOOP DRAINAGE AND ROAD IMPROVEMENTS			
SANTA FE COUNTY GENERAL NOTES			

GENERAL UTILITIES:

1. THE LOCATIONS, ELEVATIONS, AND DIMENSIONS OF EXISTING UTILITY LINES, PIPELINES, OR UNDERGROUND UTILITY LINES SHOWN ON THE PLANS IS APPROXIMATE BASED ON THE BEST INFORMATION AVAILABLE THAT WAS PROVIDED TO THE ENGINEER BY OTHERS. THE INFORMATION MAY BE INACCURATE OR INCOMPLETE. OTHER UNDERGROUND LINES MAY EXIST THAT ARE NOT SHOWN. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE LOCATION, ELEVATIONS, AND DIMENSIONS OF ALL UTILITY LINES, PIPELINES, AND UNDERGROUND UTILITY LINES THAT PERTAIN TO AND AFFECT THE CONSTRUCTION OF THIS PROJECT PRIOR TO COMMENCING WITH CONSTRUCTION. ANY DAMAGE TO UTILITIES OR COLLATERAL DAMAGE CAUSED BY THE CONTRACTOR SHALL BE THE FULL RESPONSIBILITY OF THE CONTRACTOR.
2. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL EXCAVATE AND FIELD VERIFY THE HORIZONTAL AND VERTICAL LOCATIONS OF ALL POTENTIAL CONFLICTING UTILITIES AT NO ADDITIONAL COST TO THE OWNER. THE CONTRACTOR SHALL POTHOLE EXISTING UTILITIES AHEAD OF CONSTRUCTION TO ALLOW FOR ANY NECESSARY ADJUSTMENTS OR REALIGNMENTS, AND TO VERIFY PIPE TYPES FOR ORDERING PROPER TRANSITION AND/OR TIE-IN FITTINGS THAT MAY BE REQUIRED. SHOULD A CONFLICT EXIST BETWEEN THE FIELD INFORMATION AND THE PLANS, THE CONTRACTOR SHALL NOTIFY THE ENGINEER SO THE CONFLICT CAN BE RESOLVED WITH MINIMAL DELAY. POTHOLING SHALL BE COMPLETED A MINIMUM OF 1000 LF IN ADVANCE OF CONSTRUCTION. THE COST OF POTHOLING SHALL BE CONSIDERED INCIDENTAL TO THE PROJECT.
3. CONTRACTOR SHALL CONTACT THE STATEWIDE UTILITY LOCATOR SERVICE AT 800-321-2537 AT LEAST TWO (2) WORKING DAYS PRIOR TO BEGINNING CONSTRUCTION. AFTER THE UTILITIES ARE SPOTTED THE CONTRACTOR SHALL EXPOSE ALL PERTINENT UTILITIES TO VERIFY THEIR VERTICAL AND HORIZONTAL LOCATION. IF A CONFLICT EXISTS BETWEEN EXISTING UTILITIES AND PROPOSED CONSTRUCTION THE CONTRACTOR SHALL NOTIFY THE ENGINEER SO THAT THE CONFLICT CAN BE RESOLVED WITH MINIMAL DELAY.
4. CONTRACTOR SHALL EXERCISE DUE CARE TO AVOID DISTURBING ANY EXISTING UTILITIES ABOVE OR BELOW GROUND. UTILITIES THAT ARE DAMAGED BY CONSTRUCTION SHALL BE REPAIRED OR REPLACED AT THE CONTRACTOR'S EXPENSE. ANY ADJUSTMENT OR RELOCATION OF EXISTING UTILITIES (UNDERGROUND, SURFACE, OR OVERHEAD) SHALL BE COORDINATED WITH THE OWNER OF THE AFFECTED UTILITY AT LEAST FIVE (5) WORKING DAYS PRIOR TO CONSTRUCTION TO PREVENT DISRUPTION TO SERVICE.
5. ALL UTILITY LINES NOT SPECIFICALLY DESIGNATED TO BE REMOVED AND REPLACED ON THE PLANS, SHALL BE MAINTAINED IN SERVICE. SHORING, SHEETING AND OTHER MEANS OF SUPPORT SHALL BE EMPLOYED BY THE CONTRACTOR TO PREVENT DAMAGE OR LOSS OF THESE EXISTING UTILITIES. BEAM AND CABLE OR OTHER ADEQUATE SUPPORTS SHALL BE USED FOR TEMPORARY SUPPORT OF ALL UTILITY LINES AS NECESSARY. THE COSTS ASSOCIATED WITH PROTECTING EXISTING UTILITIES IN PLACE SHALL BE CONSIDERED INCIDENTAL TO THE PROJECT.
6. CONTRACTOR SHALL PROVIDE A UTILITY SUPPORT DESIGN FOR ALL LARGE AND/OR CRITICAL SERVICES (E.G. COMMUNICATIONS AND ELECTRIC DUCT BANKS, EXPOSED GRAVITY LINE JOINTS, PRESSURIZED WATER LINES, SEWER FORCE MAINS, ETC.). THE DESIGN AND INSTALLATION OF BOTH CRITICAL AND NON CRITICAL SUPPORTS SHALL BE PERFORMED AT THE CONTRACTOR'S EXPENSE. ANY DAMAGE TO EXISTING UTILITIES SHALL PROMPTLY BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
7. CONTRACTOR SHALL COORDINATE WITH PERTINENT UTILITY COMPANIES OF ALL EXISTING UTILITY LINES AND APPURTENANCES ENCOUNTERED DURING CONSTRUCTION THAT REQUIRE RELOCATION. NO ADDITIONAL COMPENSATION WILL BE ALLOWED FOR DELAYS OR INCONVENIENCES CAUSED BY UTILITY COMPANY WORK CREWS. THE CONTRACTOR SHALL RESCHEDULE HIS ACTIVITIES AS NECESSARY TO ALLOW UTILITY CREWS TO PERFORM THEIR REQUIRED WORK.
8. ALL INTERFERING PORTIONS OF ABANDONED UTILITY LINES THAT ARE EXPOSED AS A RESULT OF CONSTRUCTION SHALL BE REMOVED AND DISPOSED OF BY THE CONTRACTOR.
9. CONTRACTOR SHALL COORDINATE ANY REQUIRED UTILITY INTERRUPTIONS WITH THE AFFECTED UTILITY COMPANY AT LEAST FIVE (5) WORKING DAYS PRIOR TO THE INTERRUPTION. UTILITIES SHALL BE NOTIFIED AT LEAST TWO (2) WORKING DAYS PRIOR TO EXCAVATION, DISCONNECTION, CONNECTION, OR REMOVAL OF ANY PIPE OR CONDUIT FOR THE AFFECTED UTILITY TO HAVE A REPRESENTATIVE AT THE PROJECT SITE.
10. EXISTING VALVES SHALL ONLY BE OPERATED BY THE APPROPRIATE UTILITY COMPANY. CONTRACTOR SHALL NOTIFY THE UTILITY AT LEAST SEVEN (7) WORKING DAYS BEFORE ANY VALVE, NEW OR EXISTING, NEEDS TO BE OPERATED.
11. ANY DAMAGE TO THE EXISTING FACILITIES (CURB & GUTTER, PAVEMENT, CONDUITS, LANDSCAPING, UTILITY LINES, ETC.) DURING CONSTRUCTION SHALL BE REPLACED AT THE CONTRACTORS' EXPENSE.
12. INFRASTRUCTURE CONSTRUCTION SHALL CONFORM TO APPLICABLE SECTIONS OF THE NEW MEXICO DEPARTMENT OF TRANSPORTATION'S STANDARD SPECIFICATIONS FOR HIGHWAY AND BRIDGE CONSTRUCTION, 2014 EDITION", INCLUDING LATEST PUBLISHED AMENDMENTS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY AND POTHOLE ANY POTENTIAL UTILITY CONFLICTS. THE CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGE CAUSED BY CONSTRUCTION ACTIVITIES TO PUBLIC OR PRIVATE PROPERTY, INCLUDING UTILITIES. THIS WORK SHALL BE CONSIDERED INCIDENTAL TO THE COMPLETION OF THE PROJECT AND NO SEPARATE MEASUREMENT OR PAYMENT WILL BE MADE. RELOCATION OF UTILITIES WITHIN SANTA FE COUNTY RIGHT OF WAY SHALL BE THE RESPONSIBILITY OF THE INDIVIDUAL UTILITY COMPANY AS PER SANTA FE COUNTY ORDINANCE 2003-1.
13. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE INTEGRITY OF ALL UNDERGROUND UTILITIES DURING THE COURSE OF WORK REGARDLESS OF ANY LOCATION SHOWN ON THE PLANS OR OTHER FIELD EVIDENCE, OR LACK THEREOF. NOTIFICATION TO NEW MEXICO ONE CALL AT 811 FOR UTILITY LOCATES A MINIMUM OF 48 HOURS IN ADVANCE OF ANY EXCAVATION IS REQUIRED. MAINTENANCE OF UTILITY LOCATES SHALL BE CONTINUED THROUGHOUT THE PROJECT LIFE. THIS WORK SHALL BE CONSIDERED INCIDENTAL TO THE COMPLETION OF THE PROJECT AND NO SEPARATE MEASUREMENT OR PAYMENT WILL BE MADE.
14. THE CONTRACTOR SHALL BE REQUIRED TO COORDINATE SCHEDULING OF WORK WITH THE RESPECTIVE UTILITY OWNERS. THIS WORK WILL BE CONSIDERED INCIDENTAL TO CONSTRUCTION AND NO SEPARATE MEASUREMENT OR PAYMENT WILL BE MADE.
15. CONTRACTOR SHALL COORDINATE ACTIVITIES TWO WEEKS PRIOR TO CONSTRUCTION WITH ALL UTILITIES WHEN WORKING NEAR OR AROUND ANY UTILITIES WITHIN CONTRACT BOUNDARY. THE CONTRACTOR IS ADVISED THAT UTILITY RELOCATIONS MAY HAVE TO BE PERFORMED CONCURRENT WITH CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE FOR UTILITY WORK IN CONJUNCTION WITH CONSTRUCTION OPERATIONS AND SHALL BE REQUIRED TO COORDINATE THE SCHEDULING OF WORK WITH THE RESPECTIVE UTILITY OWNERS HAVING GIVEN AT LEAST TWO WEEKS ADVANCE NOTICE. ANY CLAIMS FOR DELAY SHALL BE CONTROLLED BY THE TERMS AND CONDITIONS OF SUBSECTION 105.6 "COOPERATION WITH UTILITIES" AND 107.21 "CONTRACTOR RESPONSIBILITY FOR UTILITY PROPERTY AND SERVICES" OF THE SSHBC. UTILITY CONTACT INFORMATION IS PROVIDED. THIS SHALL BE CONSIDERED INCIDENTAL TO THE COMPLETION OF THE PROJECT AND NO SEPARATE MEASUREMENT OR PAYMENT WILL BE MADE.
16. SANTA FE COUNTY ORDINANCE 2003-01 – AN ORDINANCE REGULATING PROCEDURES FOR WORKING IN, DISTURBING AND REPAIRING COUNTY PROPERTY AND RIGHTS OF WAY. THE COUNTY EXPRESSLY RESERVES THE RIGHT TO CHANGE THE GRADE, INSTALL, RELOCATE, OR WIDEN THE PUBLIC RIGHT OF WAYS WITHIN THE COUNTY AND SUBJECT TO ALL REGULATORY APPROVALS, THE FACILITY OWNER SHALL RELOCATE, AT ITS OWN EXPENSE, ITS FACILITIES AND APPURTENANCES IN ORDER TO ACCOMMODATE THE PAVING, INSTALLATION, RELOCATION, WIDENING, OR CHANGING OF THE GRADE OR LOCATION OF ANY SUCH PUBLIC RIGHT OF WAY, INCLUDING IF NECESSARY, RELOCATING FACILITIES TO A SUFFICIENT DISTANCE WITHIN THE RIGHT OF WAY AND TO PERMIT A REASONABLE WORK AREA FOR MACHINERY AND INDIVIDUALS ENGAGED IN SUCH TO PROTECT THE HEALTH, SAFETY, OR WELFARE OF THE PUBLIC.

STORM DRAIN:

1. ALL DISTURBED STORM DRAIN MANHOLES, CATCH BASINS, INLETS, OR OTHER APPURTENANCES SHALL BE ADJUSTED TO FINAL GRADE.
2. REMOVAL AND DISPOSAL OF EXISTING CULVERTS IS INCIDENTAL TO THE PROJECT. IT IS THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE WITH PROPERTY OWNER TO SEE IF THEY WOULD LIKE TO RETAIN OWNERSHIP OF THEIR EXISTING DRIVEWAY CULVERT. IF THE PROPERTY OWNER DOESN'T WANT THE EXISTING DRIVEWAY CULVERT THEN IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO DISPOSE OF THE CULVERT.

ELECTRICAL:

1. ALL ELECTRICAL MANHOLES, PEDESTALS, POLES AND OTHER APPURTENANCES SHALL BE ADJUSTED TO GRADE BY THE APPROPRIATE UTILITY COMPANY IF REQUIRED FOR CONSTRUCTION. CONTRACTOR SHALL COORDINATE WITH APPROPRIATE UTILITY COMPANY.

GAS:

1. ALL GAS VALVES AND GAS MANHOLES, SHALL BE ADJUSTED TO GRADE BY THE APPROPRIATE UTILITY COMPANY IF REQUIRED FOR CONSTRUCTION. CONTRACTOR SHALL COORDINATE WITH APPROPRIATE UTILITY COMPANY.

TELECOMMUNICATIONS:

1. ALL TELEPHONE MANHOLES, PEDESTALS, POLES AND OTHER APPURTENANCES SHALL BE ADJUSTED TO GRADE BY THE APPROPRIATE UTILITY COMPANY IF REQUIRED BY CONSTRUCTION. CONTRACTOR SHALL COORDINATE WITH APPROPRIATE UTILITY COMPANY.
2. CONTRACTOR SHALL EXERCISE CAUTION WHEN CROSSING OR WORKING ADJACENT TO FIBER OPTIC LINES. CONTRACTOR SHALL SUPPORT EXPOSED FIBER OPTIC LINES AS NECESSARY, AND AS APPROVED BY APPROPRIATE UTILITY COMPANY.

CONCRETE:

1. CONTRACTOR SHALL UTILIZE 4,000 PSI STRUCTURAL CONCRETE UNLESS OTHERWISE NOTED IN PLANS OR SPECIFICATIONS.
2. ALL REINFORCING STEEL SHALL BE GRADE 60 UNLESS OTHERWISE NOTED.
3. ALL SPLICES IN REINFORCING STEEL SHALL BE 2- FEET 6- INCH MINIMUM UNLESS OTHERWISE NOTED.
4. ALL EXPOSED EDGES ON CAST-IN-PLACE CONCRETE STRUCTURES SHALL HAVE A 1" CHAMFER UNLESS OTHERWISE NOTED.

PAVEMENT:

1. IF A PAVEMENT DROP-OFF IS CREATED DURING CONSTRUCTION, THE CONTRACTOR SHALL INITIATE PROTECTIVE PAVEMENT DROP-OFF PROCEDURES IN ACCORDANCE WITH SANTA FE COUNTY SPECIFICATION TRAFFIC CONTROL DATED JANUARY 26, 2018. THIS WORK SHALL BE CONSIDERED INCIDENTAL TO THE PROJECT AND NO SEPARATE PAYMENT SHALL BE MADE.
2. THE PROJECT MANAGER WILL EVALUATE HMA TEST RESULTS ACCORDING TO THE FREQUENCY INDICATED IN THE NMDOT MINIMUM TESTING REQUIREMENTS AND IN ACCORDANCE WITH SSHBC SECTION 423 FOR HOT-MIX- ASPHALT-SUPERPAVE (QLA AND NON-QLA). IN THE EVENT AN INDIVIDUAL TEST REPORT OF THE MATERIAL CHARACTERISTICS ARE OUTSIDE THE ACCEPTANCE TESTING TOLERANCES LISTED IN TABLE 423.3.6.2.1:1 OR A PAVEMENT DENSITY TEST IS BELOW 92%. THE PROJECT MANAGER WILL DETERMINE WHETHER THE MATERIAL PLACED DURING THE DAY'S PRODUCTION IS ACCEPTABLE, WILL NEED TO BE REMOVED AND REPLACED, WILL BE SUBJECT TO A PRICE REDUCTION, OR IF CORRECTIVE ACTION IS REQUIRED TO BRING THE MATERIAL BACK INTO SPECIFICATION.
3. SAWCUT LOCATIONS SHALL BE DETERMINED BY THE PROJECT MANAGER. SAWCUTTING SHALL BE CONSIDERED INCLUDED IN THE CONTRACT PRICE FOR "601000 – REMOVAL OF STRUCTURES AND OBSTRUCTIONS" AND NO SEPARATE MEASUREMENT OR PAYMENT WILL BE MADE.
4. TRENCH RESTORATION AND PAVING SHALL BE COMPLETED PROMPTLY FOLLOWING THE INSTALLATION OF PIPE LINES AND APPURTENANCES. THE CONTRACTOR WILL NOT BE ALLOWED TO CONTINUE WITH PIPE LAYING ACTIVITIES AT OTHER LOCATIONS WITHIN THE PROJECT AREA UNTIL SUFFICIENT RESTORATION OF THE PAVING AND STREET SECTION OF THE PREVIOUS WORK AREA HAS BEEN COMPLETED. DURING THE COURSE OF THE PROJECT THERE SHALL BE NO MORE THAN TWO COUNTY BLOCKS OR A MAXIMUM OF 1,500 LF IN WHICH TRENCH RESTORATION AND PAVING HAS NOT BEEN FULLY COMPLETED. THE REPLACEMENT OF THE EXISTING UTILITIES AND THE INSTALLATION OF NEW UTILITY LINES SHALL BE COMPLETED IN ADVANCE OF STARTING THE PAVEMENT WORK. TEMPORARY PAVEMENT SHALL BE PLACED IN ALL TRENCHES REQUIRED FOR THE UTILITY REPLACEMENTS IN THOSE AREAS THAT MUST MAINTAIN TRAFFIC UNTIL THE FINAL PAVEMENT WORK STARTS IN EACH AREA. TEMPORARY STRIPING SHALL BE THE CONTRACTOR'S RESPONSIBILITY. MAINTENANCE OF THE TEMPORARY PAVING AND STRIPING SHALL BE AT THE CONTRACTOR'S EXPENSE.
5. ALL ASPHALT CONCRETE PAVEMENT SHALL BE DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH THE SPECIFICATIONS OUTLINED IN SECTIONS 116 AND 2400 OF THE NEW MEXICO STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, LATEST EDITION.
6. PAVEMENT SUBGRADE COMPACTION SHALL CONFORM TO THE SPECIFICATIONS OUTLINED IN SECTION 301 OF THE NEW MEXICO STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, LATEST EDITION.
7. WHEN ABUTTING NEW PAVEMENT TO EXISTING PAVEMENT, SAWCUT EXISTING PAVEMENT EDGE TO A CONTINUOUS, NEAT, STRAIGHT LINE AS NECESSARY TO REMOVE ANY BROKEN OR CRACKED PAVEMENT AND MATCH NEW PAVEMENT ELEVATION TO EXISTING. CONTRACTOR SHALL TAKE CARE TO AVOID DAMAGING SAWCUT EDGE WITH EQUIPMENT OR OTHER OPERATIONS, AND SHALL RE-SAWCUT A CONTINUOUS, NEAT, STRAIGHT LINE AS NECESSARY SHOULD SAWCUT EDGE BE DAMAGED. SPRAY SAWCUT EDGE WITH TACK COAT PRIOR TO PAVEMENT PLACEMENT PER NEW MEXICO STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, LATEST EDITION. NO SEPARATE PAYMENT WILL BE MADE FOR SAWCUTTING.
8. CONTRACTOR SHALL NOT PAVE OVER ANY SURFACE FEATURE (I.E. GAS VALVE, MANHOLE COVER, ETC.) WITHOUT PRIOR WRITTEN APPROVAL FROM THE COUNTY PROJECT MANAGER.
9. ALL SUBGRADE AND SUBBASE MATERIAL ENCOUNTERED IN PAVEMENT REMOVAL AND REPLACEMENT THAT IS DETERMINED BY THE ENGINEER TO MEET THE SPECIFICATIONS MAY BE REUSED. HOWEVER, THE MATERIAL SHALL BE PROCESSED AND COMPACTED TO MEET MOISTURE CONTENT AND PERCENT COMPACTION REQUIRED BY THE SPECIFICATIONS.
10. ALL FENCING WHICH IS DAMAGED OR REMOVED SHALL BE REPLACED IN KIND.
11. CONTRACTOR SHALL PLACE BITUMINOUS MATERIAL WITH THE USE OF A LAYDOWN MACHINE WHERE PAVEMENT IS 8- FEET IN WIDTH OR WIDER.
12. ALL NEW STREET PAVING AND DRIVEWAYS, ABUTTING EXISTING AREAS SHALL MATCH THE ELEVATION OF THOSE AREAS.
13. ALL ASPHALTIC CONCRETE SHALL BE MINIMUM 1,800 LB. STABILITY AND COMPACTED TO 93-97% MODIFIED MARSHALL DENSITY UNLESS OTHERWISE NOTED ON THE PLANS.
14. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO EXISTING INFRASTRUCTURE (WALLS, ETC.) DURING CONSTRUCTION, APART FROM THOSE SECTIONS INDICATED FOR REMOVAL ON THE PLANS. REPAIR OR REPLACEMENT OF SAME SHALL BE AT THE CONTRACTOR'S OWN EXPENSE.
15. CONTRACTOR SHALL BE RESTRICTED TO THE USE OF 35 TON NON-VIBRATING ROLLER MAXIMUM TO OBTAIN THE REQUIRED COMPACTION IN PAVEMENT STRUCTURE, ROADWAY BACKFILL, EMBANKMENT, AND SUBGRADES IN URBAN AREAS WHERE THE USE OF HEAVIER EQUIPMENT COULD DAMAGE RESIDENCES UNDERGROUND UTILITIES OR OTHER PERMANENT STRUCTURES.
16. CONTRACTOR SHALL USE PARALLEL OR PERPENDICULAR PAVEMENT CUTS ONLY. NO DIAGONAL CUTS IN EXISTING PAVEMENT WILL BE PERMITTED PER NEW MEXICO STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION STD DWG 2465.
17. DAMAGE TO EXISTING LANDSCAPING BY CONTRACTOR SHALL BE REPAIRED BY THE CONTRACTOR (I.E. ALL RUTS FILLED WITH CLEAN ROCK OR TURF TO MATCH THE SURROUNDING GROUND). EXCESS SOIL, ROCK, ETC. SHALL BE REMOVED TO LEAVE THE SITES CLEAN. ALL LANDSCAPING THAT IS DISTURBED DURING CONSTRUCTION SHALL BE REPLACED IN ACCORDANCE WITH COUNTY STANDARD SPECIFICATIONS.

EXCAVATION, BACKFILL & EARTHWORK

1. ALL EXCAVATION WILL BE GOVERNED BY FEDERAL, STATE AND LOCAL LAWS, RULES, AND REGULATIONS CONCERNING CONSTRUCTION SAFETY AND HEALTH.
2. FOR PIPE TRENCH EXCAVATION, CONTRACTOR SHALL COMPLY WITH THE OSHA REGULATIONS STANDARD 29 CFR 1926. TRENCH SUPPORT AND TEMPORARY SHORING SHALL BE REQUIRED FOR PROTECTION OF LIFE AND LIMB DURING PIPE CONSTRUCTION TO SATISFY CONSTRAINTS IDENTIFIED IN THE DRAWINGS FOR LIMITS OF DISTURBANCE, PROTECTION OF EXISTING UTILITIES, TRAFFIC CONTROL, ETC. AND SHALL BE DESIGNED BY CONTRACTOR IN ACCORDANCE WITH OSHA STANDARDS.
3. ALL EXCAVATED MATERIAL THAT IS NOT REQUIRED TO BE REUSED SHALL BE REMOVED FROM THE PROJECT AREA WITHIN FOUR (4) DAYS OF EXCAVATION. SPOIL PILES WILL BE ALLOWED ONLY WITH WRITTEN PERMISSION OF THE ENGINEER.
4. DESIGN AND CONSTRUCTION OF ALL FORMS, SHORING, AND TEMPORARY BRACING SHALL COMPLY WITH 29 CFR 1926 AND THESE COSTS SHALL BE CONSIDERED INCIDENTAL TO THE PROJECT.
5. NO MATERIAL PITS HAVE BEEN DESIGNATED FOR THIS PROJECT. THE CONTRACTOR MAY OBTAIN SPECIFIED BORROW OR SURFACING MATERIAL FROM ANY ACCEPTABLE SOURCE.
6. ALL TRENCH EXCAVATION BACKFILL WITHIN THE ROADWAY PRISM SHALL BE COMPACTED TO 95% OF THE MODIFIED PROCTOR PER ASTM D-698 OR D-1557 AS APPLICABLE.
7. ANY EARTHWORK HAUL ON THIS PROJECT WILL BE CONSIDERED AS INCLUDED IN THE CONTRACT PRICE FOR EXCAVATE AND DISPOSE OF UNCLASSIFIED MATERIAL AND NO SEPARATE PAYMENT WILL BE MADE.
8. CONTRACTOR SHALL UTILIZE FLOWABLE FILL WHEREVER BACKFILL MATERIAL CANNOT BE PLACED AND COMPACTED BETWEEN THE NEW PIPE LINE AND EXISTING UTILITIES OR IF THE VERTICAL SEPARATION BETWEEN THE NEW PIPE LINE AND EXISTING UTILITY IS LESS THAN 12-INCHES. THIS COST IS INCIDENTAL TO BACKFILL COSTS.
9. CONTRACTOR SHALL USE CAUTION NEAR ALL EXISTING STRUCTURES INCLUDING MASONRY WALLS, BUILDINGS, ETC. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO STRUCTURES CAUSED BY CONTRACTOR'S OPERATIONS.
10. FOR TRENCH DEPTHS EXCEEDING 20- FEET, CONTRACTOR SHALL SUBMIT VERIFICATION TO COUNTY PROJECT MANAGER THAT TRENCH SUPPORT IS DESIGNED AND SEALED BY A REGISTERED PROFESSIONAL ENGINEER.
11. CONTRACTOR SHALL RETURN ALL GRADES TO EXISTING ELEVATIONS AND CONDITIONS AFTER CONSTRUCTION OF THE PIPE UNLESS OTHERWISE INDICATED.
12. CONTRACTOR SHALL CONSTRUCT SAFETY/SECURITY FENCING AROUND ALL OPEN EXCAVATIONS OR REFILL PORTION OF OPEN TRENCH AT NO ADDITIONAL COST TO OWNER.
13. IF BORROW IS REQUIRED, CONTRACTOR SHALL BE RESPONSIBLE FOR:
 - IDENTIFYING A SOURCE THAT MEETS PROJECT REQUIREMENTS.
 - ALL COSTS ASSOCIATED WITH OBTAINING AND TRANSPORTING BORROW MATERIAL.
14. BORROW MATERIAL PLACED WITHIN TWO (2) VERTICALLY AND Laterally OF THE FINAL SUBGRADE ELEVATIONS SHALL MEET THE DESIGN R-VALUE AS SHOWN ON THE PLANS. PRIOR TO BORROW OPERATIONS THE CONTRACTOR SHALL PERFORM R-VALUE TESTING IN ACCORDANCE WITH AASHTO T-1190 AT THE BEST FIT EXUDATION PRESSURE OF 300 PSI FOR EACH BORROW SOURCE. DURING BORROW PLACEMENT IF THE PROJECTS ENGINEER OBSERVES CHANGES IN SOIL PROPERTIES, INCLUDING GRADATION, PLASTICITY LIMITS OR ANY OTHER PROPERTIES, ADDITIONAL AASHTO T-190 TESTS MAY BE REQUIRED.
15. EARTHWORK HAUL AND EMBANKMENT FILL. THE EARTHWORK HAUL AND EMBANKMENT FILL ON THIS PROJECT WILL BE CONSIDERED AS INCLUDED IN THE CONTRACT PRICE FOR "203000 – UNCLASSIFIED EXCAVATION", AS APPLICABLE, AND NO SEPARATE MEASUREMENT OR PAYMENT WILL BE MADE.
16. THE CONTRACTOR SHALL WARP SLOPES WHERE NECESSARY TO STAY WITHIN THE RIGHT OF WAY OR CONSTRUCTION EASEMENT LIMITS. THIS SHALL BE CONSIDERED INCIDENTAL TO THE CONTRACT PRICE FOR "203000 – UNCLASSIFIED EXCAVATION", AND NO SEPARATE MEASUREMENT OR PAYMENT WILL BE MADE.
17. UPON COMPLETION OF THE PROJECT, THE CONTRACTOR SHALL SEED ANY AREAS DISTURBED BY CONSTRUCTION ACTIVITY. REVEGETATION SHALL BE CONSIDERED INCLUDED IN THE CONTRACT PRICE FOR "632000 – CLASS A SEEDING" AND NO SEPARATE MEASUREMENT OR PAYMENT WILL BE MADE.
18. THE CONTRACTOR IS TO DISPOSE OF ALL MATERIALS AND SPOILS PER LOCAL CODES OF CITY, COUNTY, STATE AND FEDERAL REGULATIONS.
19. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL, DISPOSAL AND HAUL OF MATERIALS REQUIRED TO COMPLETE THE PROJECT. THIS WORK SHALL BE CONSIDERED INCLUDED IN THE CONTRACT PRICE FOR "601000 – REMOVAL OF STRUCTURES AND OBSTRUCTIONS", AND THE CONTRACTOR WILL NOT RECEIVE ADDITIONAL COMPENSATION FOR UNLISTED REMOVALS.
20. THE CONTRACTOR SHALL GRADE THE ROADSIDE DITCHES TO DRAIN AND ENSURE THAT EACH STRUCTURE WILL DRAIN AND FLOW PROPERLY.
21. PRESERVE THE MATERIAL BELOW AND BEYOND THE LINES AND GRADES WHILE CONDUCTING EXCAVATION OPERATIONS.
22. BEFORE BEGINNING EXCAVATION, GRADING, AND EMBANKMENT OPERATIONS, PERFORM THE NECESSARY CLEARING AND GRUBBING IN ACCORDANCE WITH SSHBC SECTION 201, "CLEARING AND GRUBBING". NOTIFY THE PROJECT MANAGER BEFORE OPENING EXCAVATION OR BORROW AREAS.
23. TAKE CROSS SECTION ELEVATIONS OF THE GROUND SURFACE BEFORE OPENING EXCAVATION OR BORROW AREAS.
24. DEWATERING IS NOT ANTICIPATED, BUT MAY BE REQUIRED. ANY DEWATERING SHALL BE CONSIDERED INCIDENTAL TO THE COMPLETION OF THE PROJECT.
25. STORMWATER MANAGEMENT AND STORMWATER DIVERSION DURING CONSTRUCTION SHALL BE PERFORMED BY THE CONTRACTOR. ALL WORK ASSOCIATED WITH STORMWATER MANAGEMENT AND STORMWATER DIVERSION DURING CONSTRUCTION SHALL BE INCLUDED IN ITEM 603281 – SWPPP PREPARATION AND MAINTENANCE – AND NO SEPARATE PAYMENT WILL BE MADE THEREFOR.



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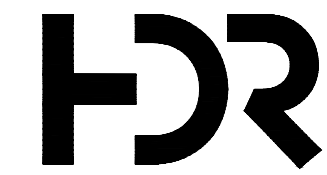


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REVISIONS (OR CHANGE NOTICES)			
SANTA FE COUNTY CAMINO TORCIDO LOOP DRAINAGE AND ROAD IMPROVEMENTS			
SANTA FE COUNTY GENERAL NOTES			

GENERAL CONSTRUCTION NOTES:

1. THE ENGINEER SHALL BE NOTIFIED 24 HOURS PRIOR TO ANY CONSTRUCTION WORK. CONSTRUCTION WORK PERFORMED WITHOUT NOTIFICATION TO AND APPROVAL BY THE OWNER'S REPRESENTATIVE SHALL BE SUBJECT TO EXPOSURE, INSPECTION, AND REPLACEMENT AT THE CONTRACTOR'S EXPENSE.
2. THE CONTRACTOR SHALL COORDINATE WORK SCHEDULES WITH THE OWNER'S REPRESENTATIVE SO AS TO PREVENT ANY CONFLICTING WORK CONDITIONS.
3. PRIOR TO CONSTRUCTION, CONTRACTOR SHALL VERIFY THE HORIZONTAL AND VERTICAL LOCATIONS OF ALL OBSTRUCTIONS WITH THE POTENTIAL TO AFFECT CONSTRUCTION. SHOULD A CONFLICT EXIST, THE CONTRACTOR SHALL NOTIFY THE ENGINEER SO THAT THE CONFLICT CAN BE RESOLVED WITH MINIMAL DELAY. THIS WORK SHALL BE CONSIDERED INCIDENTAL TO THE COST OF CONSTRUCTION AND NO ADDITIONAL PAYMENT WILL BE MADE.
4. CONTRACTOR SHALL VERIFY THE EXISTING SIZE AND PIPE MATERIAL TYPE AT ALL POINTS OF CONNECTION PRIOR TO MAKING THE CONNECTION. SHOULD A CONFLICT EXIST THE CONTRACTOR SHALL NOTIFY THE ENGINEER SO THAT THE CONFLICT CAN BE RESOLVED WITH MINIMAL DELAY. THIS WORK SHALL BE CONSIDERED INCIDENTAL TO THE COST OF CONSTRUCTION AND NO ADDITIONAL PAYMENT WILL BE MADE.
5. THE TERM "REMOVE" USED IN THIS PLAN SET INCLUDES THE DISPOSAL OF SAID MATERIAL IN ACCORDANCE WITH COUNTY TECHNICAL SPECIFICATIONS & CONSTRUCTION STANDARDS, LATEST EDITION.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DISPOSING OF ALL DEBRIS AND OTHER SUCH WASTE MATERIAL AT DISPOSAL SITES APPROVED BY GOVERNMENTAL AGENCIES REGULATING THE DISPOSAL OF SUCH MATERIALS. ALL OVER-EXCAVATION OF EARTHWORK SPOILS OF CLEAN MATERIAL SHALL BE HAULED TO THE COUNTY'S 599 MAINTENANCE YARD BY THE CONTRACTOR. THIS OVER-EXCAVATION COST INCLUDING ALL HAULING AND DISPOSAL SHALL BE INCLUDED IN NMDOT ITEM 203000 UNCLASSIFIED EXCAVATION.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING AND/OR REMOVING AND REINSTALLING MAILBOXES AND/OR ANY TRAFFIC SIGNS FOR CONSTRUCTION ADJACENT TO THE ROADWAY.
8. IF HUMAN REMAINS ARE ENCOUNTERED DURING CONSTRUCTION, APPROPRIATE LAW ENFORCEMENT AUTHORITIES AND THE OFFICE OF THE MEDICAL EXAMINER SHALL BE CONTACTED. IF HUMAN REMAINS ARE DETERMINED BY THE OFFICE OF THE MEDICAL EXAMINER NOT TO BE RECENT, SANTA FE COUNTY SHALL NOTIFY THE STATE HISTORIC PRESERVATION OFFICER (SHPO) AT 505-827-6320.
9. IF ANY PREVIOUSLY UNIDENTIFIED ARCHEOLOGICAL OR CULTURAL ARTIFACTS ARE FOUND DURING CONSTRUCTION, WORK SHALL STOP IN THAT AREA AND THE CONTRACTOR SHALL NOTIFY SANTA FE COUNTY IMMEDIATELY. SANTA FE COUNTY SHALL NOTIFY THE STATE HISTORIC PRESERVATION OFFICER (SHPO) AT 505-817-6320
10. SANTA FE COUNTY MAY REQUIRE ADDITIONAL ARCHEOLOGICAL MONITORING AND/OR DATA RECOVERY BY OTHERS, AT NO ADDITIONAL COST TO THE CONTRACTOR. HOWEVER, THE CONTRACTOR SHALL BE REQUIRED TO COORDINATE SCHEDULING WORK INCLUDING ANY GROUND DISTURBANCE. THIS WORK WILL BE CONSIDERED INCIDENTAL TO CONSTRUCTION AND NO SEPARATE MEASUREMENT OR PAYMENT WILL BE MADE.
11. PER SHEET 03-01, AN ENVIRONMENTAL AREA WITH IDENTIFIED ARCHEOLOGICAL AND CULTURAL ARTIFACTS, KNOWN AS BUFFER AREA 2 HAS BEEN IDENTIFIED. THIS AREA WITHIN THE SANTA FE COUNTY RIGHT-OF-WAY IS NOT TO BE DISTURBED UNDER ANY CIRCUMSTANCE. REFER TO NOTE 9 ON THIS SHEET.
12. PER SHEET 03-02, AN ENVIRONMENTAL AREA WITH IDENTIFIED ARCHEOLOGICAL AND CULTURAL ARTIFACTS, KNOWN AS BUFFER AREA 1 HAS BEEN IDENTIFIED. THIS AREA WITHIN THE SANTA FE COUNTY RIGHT-OF-WAY IS NOT TO BE DISTURBED UNDER ANY CIRCUMSTANCE. REFER TO NOTE 9 ON THIS SHEET.
13. CONTRACTOR TO REMOVE AND DISPOSE OF EXISTING VEGETATION AND TREES AS REQUIRED FOR CONSTRUCTION WITHIN THE 50' SANTA FE COUNTY RIGHT-OF-WAY.
14. CONTRACTOR TO PROTECT AND SAVE ALL TREES ON PRIVATE PROPERTY EASEMENTS UNLESS REMOVAL IS DIRECTED BY SANTA FE COUNTY.



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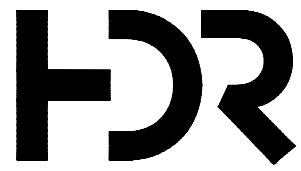
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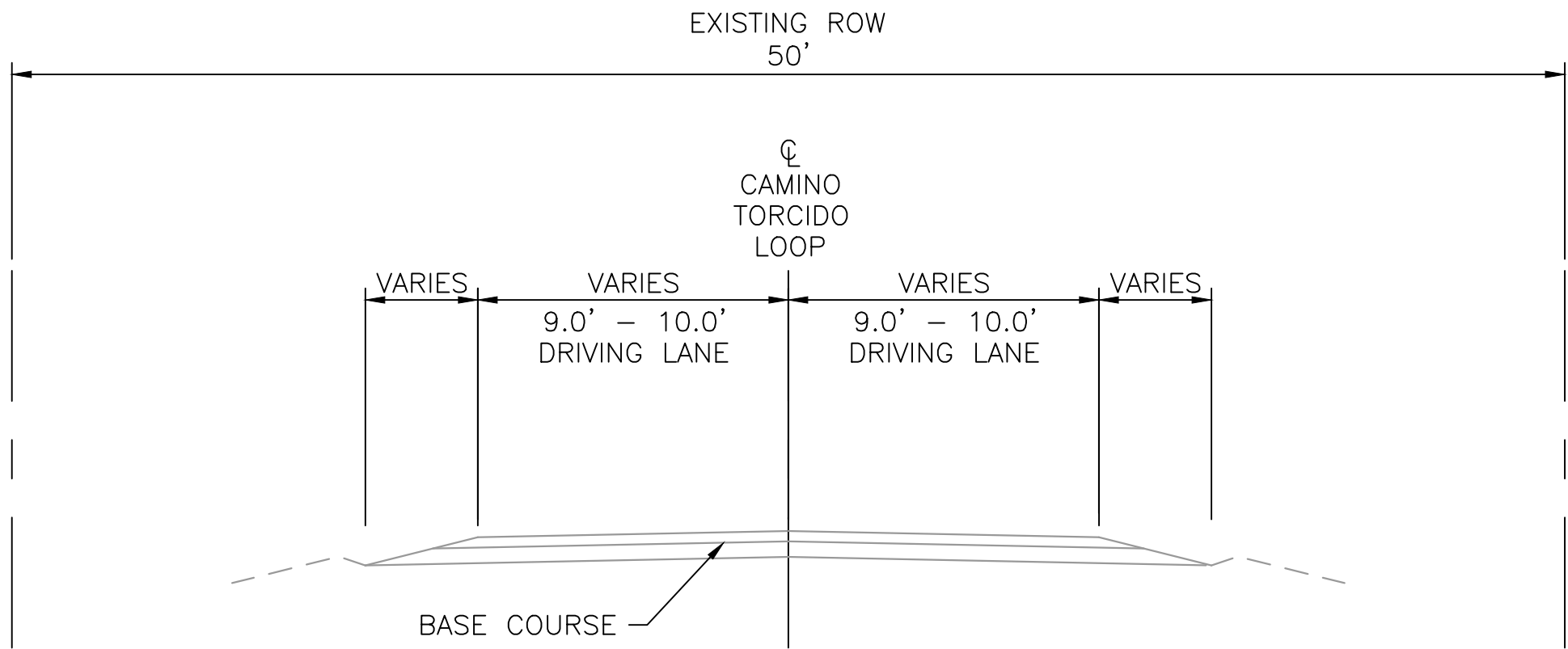
REVISIONS (OR CHANGE NOTICES)

SANTA FE COUNTY
CAMINO TORCIDO LOOP
DRAINAGE AND ROAD IMPROVEMENTS

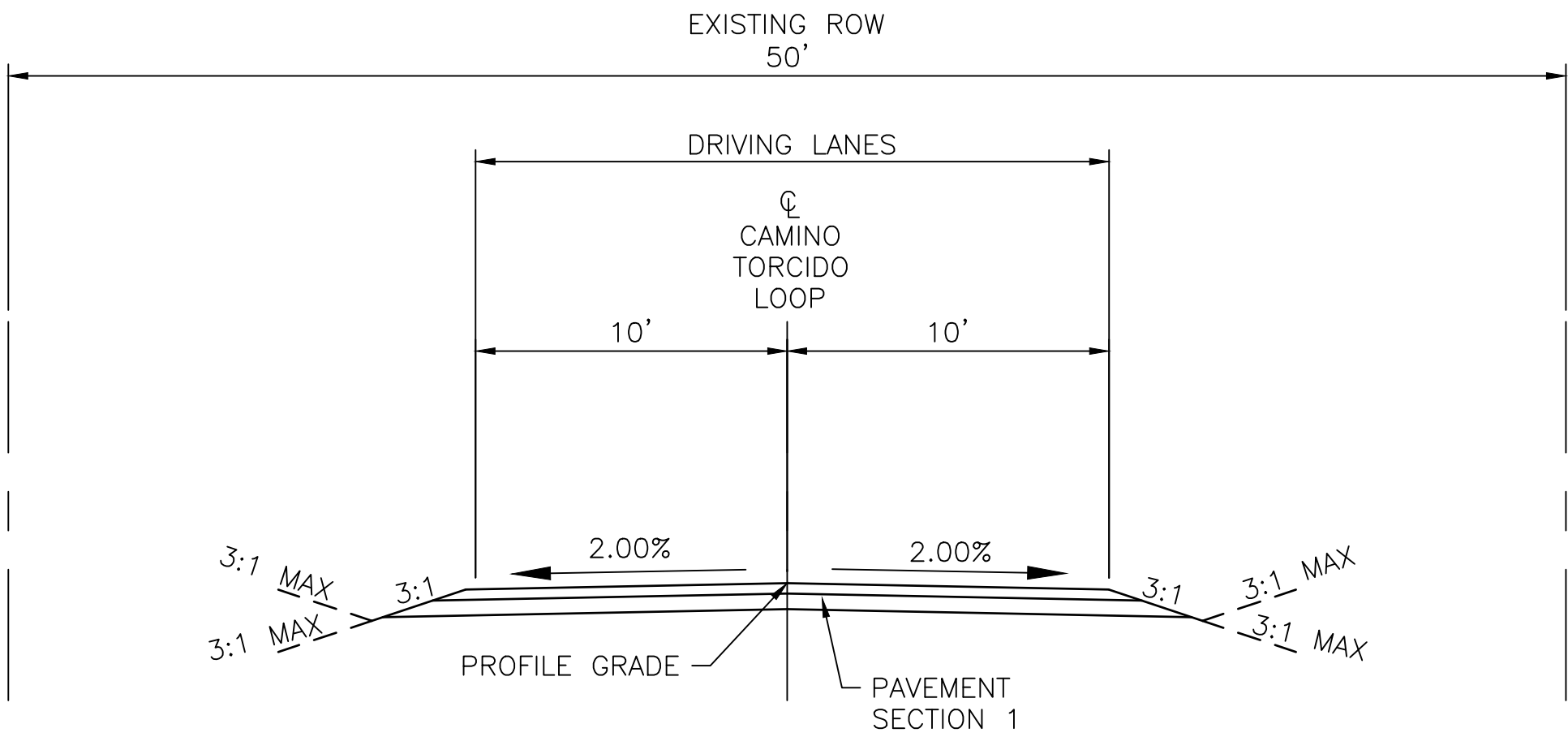
ADDITIONAL
GENERAL NOTES



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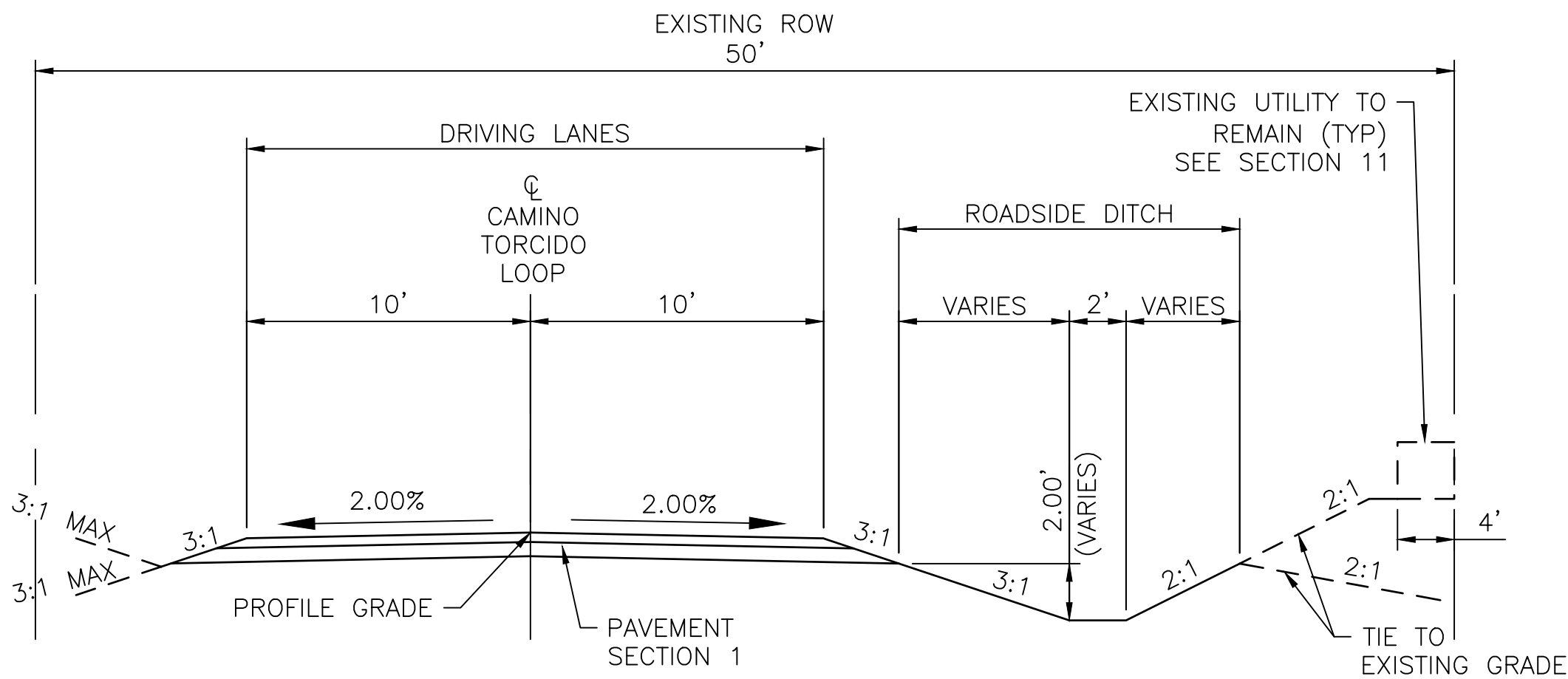


EXISTING TYPICAL SECTION 1
STA. 10+22.26 TO STA. 54+62.99



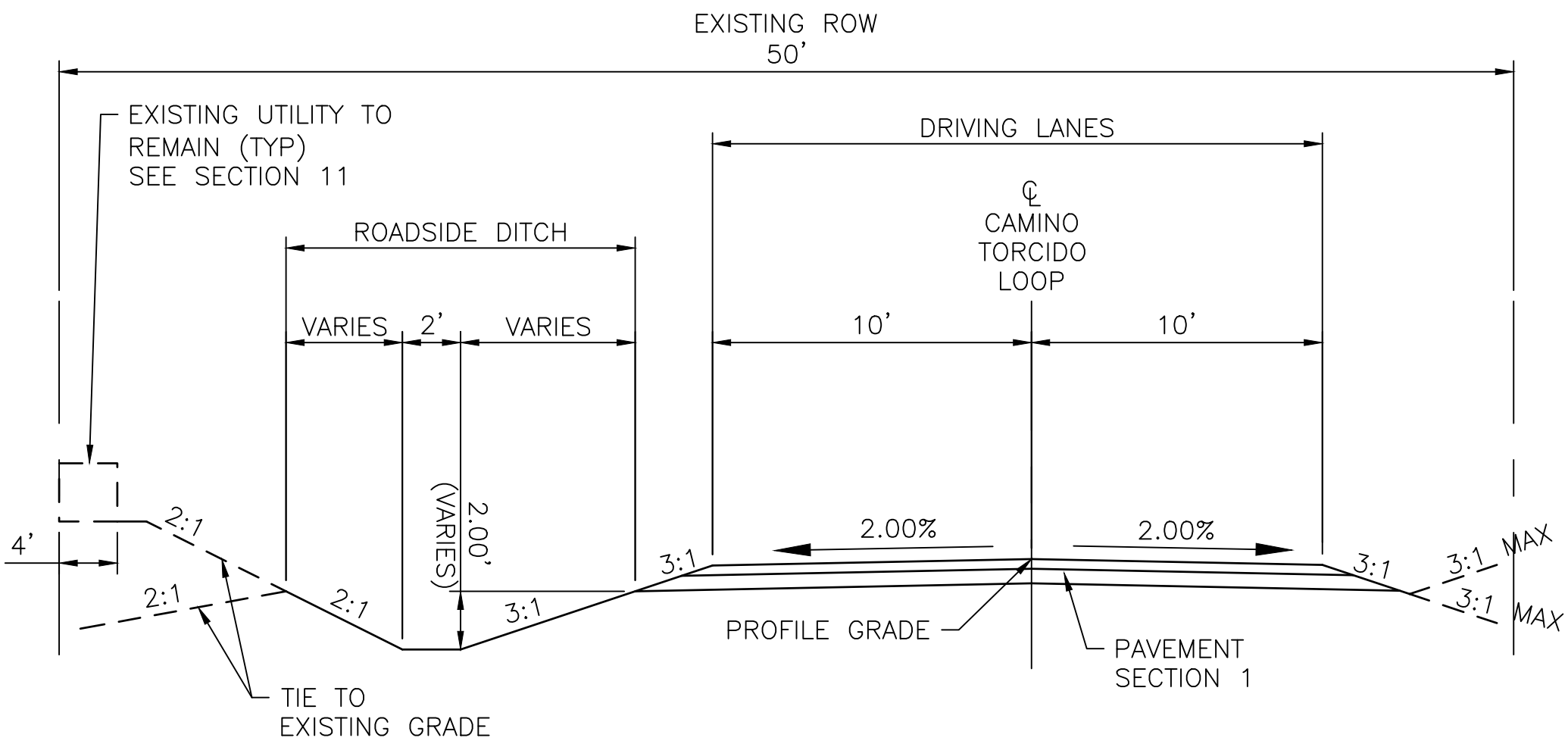
PROPOSED TYPICAL SECTION 1
STA. 11+51.31 TO STA. 13+56.26
STA. 35+43.86 TO STA. 36+01.07
STA. 51+00.00 TO STA. 53+78.74

TRANSITION
STA. 10+22.26 TO STA. 11+51.31
STA. 53+78.74 TO STA. 54+62.99



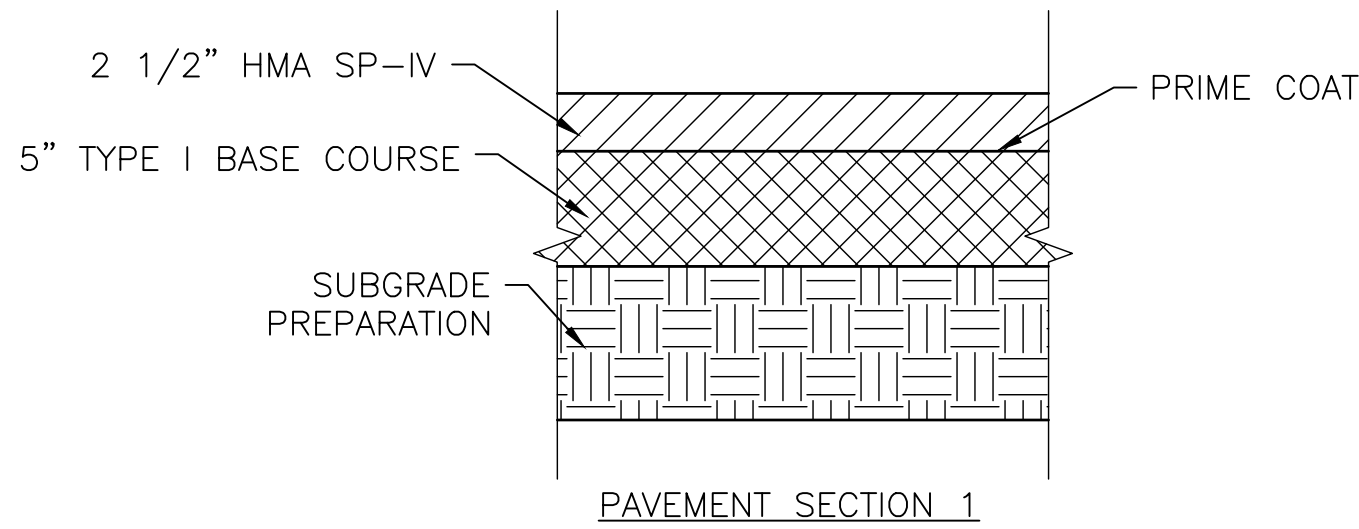
PROPOSED TYPICAL SECTION 2
STA. 13+56.26 TO STA. 17+85.34
STA. 22+50.00 TO STA. 35+43.86

TRANSITION
STA. 17+85.34 TO STA. 18+56.23



PROPOSED TYPICAL SECTION 3
STA. 18+56.23 TO STA. 22+40.15
STA. 36+01.07 TO STA. 49+60.00

TRANSITION
STA. 22+40.15 TO STA. 22+50.00
STA. 49+60.00 TO STA. 51+00.00



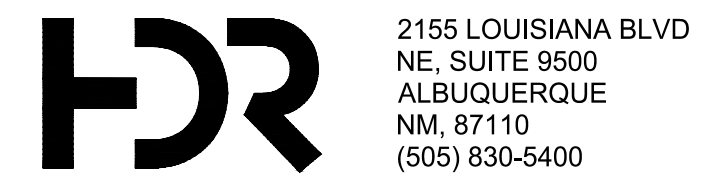
SEPTEMBER 20, 2018

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SANTA FE COUNTY
CAMINO TORCIDO LOOP
DRAINAGE AND ROAD IMPROVEMENTS

TYPICAL SECTIONS



SURFACING SCHEDULE - MINOR PAVEMENT

						ITEM NO. 207000	ITEM NO. 303160				ITEM NO. 416000			*	*	ITEM NO. 408100	
						SUBGRADE PREPARATION	BASE COURSE				MINOR PAVEMENT			76-22 PERFORMANCE GRADED ASPHALT MATERIAL	HYDRATED LIME	PRIME COAT MATERIAL	
STATION	TO	STATION	LOCATION	DECRPTION	LENGTH (FT)	(SY)	(SY)	DEPTH (IN)	(CY)	TON	DEPTH (IN)	SY	TON	TON	TON	SY	TON
BOP	-	EOP				11116.94	11116.94	5.00	1544.02	3049.44	2.50	11116.94	1524.72	79.29	15.25	11116.94	20.84
TOTAL:						11116.94	11116.94		1544.02	3049.44		11116.94	1524.72	79.29	15.25		20.84
USE						11200	11200		1600	3100		11200	1530	80	16		21

- NOTES:
1. AMOUNTS OF BITUMINOUS MATERIAL SHOWN ARE FOR ESTIMATING PURPOSES ONLY. CORRECT AMOUNTS WILL BE DETERMINED BY THE MATERIAL AND TESTING LABORATORY.
 2. * HYDRATED LIME AND PG 76-22 QUANTITIES ARE SHOWN FOR INFORMATION OF THE CONTRACTOR ONLY.
 3. MINOR PAVEMENT SHALL BE HMA SP IV

ESTIMATED SURFACING FACTORS

ITEM	PG 76-22	PG 70-28	TACK COAT SECT. 407 GAL/SY	PRIME COAT SECT. 408 GAL/SY	HYDRATED LIME	UNIT WEIGHT LBS/CY	Gallons/TON
BASE COURSE						3950 *	
SUBGRADE TREATMENT					5.00%	3150	240
HMA TYPE SP-IV	5.2% ** OF WEIGHT OF TOTAL MIX				1.00% *	3950 *	
ASPHALT MATERIAL FOR TACK COAT			0.08 ***				240
PRIME COAT MATERIAL				0.45 ***			240

SURFACING NOTES:
* FOR ESTIMATING PURPOSES ONLY, ACTUAL WEIGHTS OR PERCENT SHALL BE DETERMINED BY APPROVED MIX DESIGN.
** FOR ESTIMATING PURPOSES ONLY, ACTUAL WEIGHTS OR PERCENT SHALL BE DETEMINED BY THE DISTRICT LAB.
*** FOR ESTIMATING PURPOSES ONLY, APPLICATION RATE SHALL BE DETERMINED BY THE PROJECT MANAGER.



SEPTEMBER 20, 2018

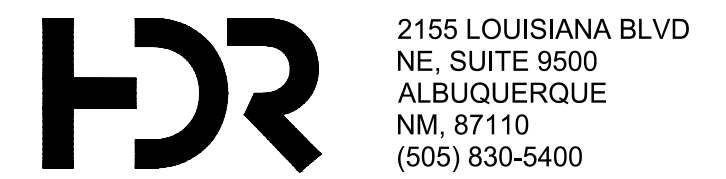
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SANTA FE COUNTY CAMINO TORCIDO LOOP DRAINAGE AND ROAD IMPROVEMENTS SURFACING SCHEDULE			

ESTIMATED STRUCTURE QUANTITIES										
			511000	540060	570018	570024	570036	570042	570152	602010
			STRUCTURAL CONCRETE, CLASS A	REINFORCING BARS GRADE 60	18" CULVERT PIPE	24" CULVERT PIPE	36" CULVERT PIPE	42" CULVERT PIPE	21"x15"R (NOMINAL) CULVERT PIPE ARCH	RIPRAP CLASS B
STATION	STRUCTURE	SKEW	C.Y.	LBS.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	C.Y.
ROADWAY / DITCHES / CHANNEL ADDITIVE ALTERNATIVE 1			55	10570	5	250	60	150	825	52
			25	550				438		38
STRUCTURE TOTALS			80	11120	5	250	60	588	825	90
USE			80	11120	5	250	60	590	830	90

TEMPORARY EROSION AND SEDIMENT CONTROL PLAN SUMMARY OF ESTIMATED QUANTITIES						
ITEM NUMBER	ITEM	UNIT	ROADWAY	ADDITIVE ALTERNATIVE 1	SUBTOTAL	USE
603200	SILT FENCE	LIN. FT.	610	1030	1640	1640
603221	CHECK DAM TYPE II	LIN.FT.	40		40	40
603260	CULVERT PROTECTION	SQ. YD.	3150		3150	3150

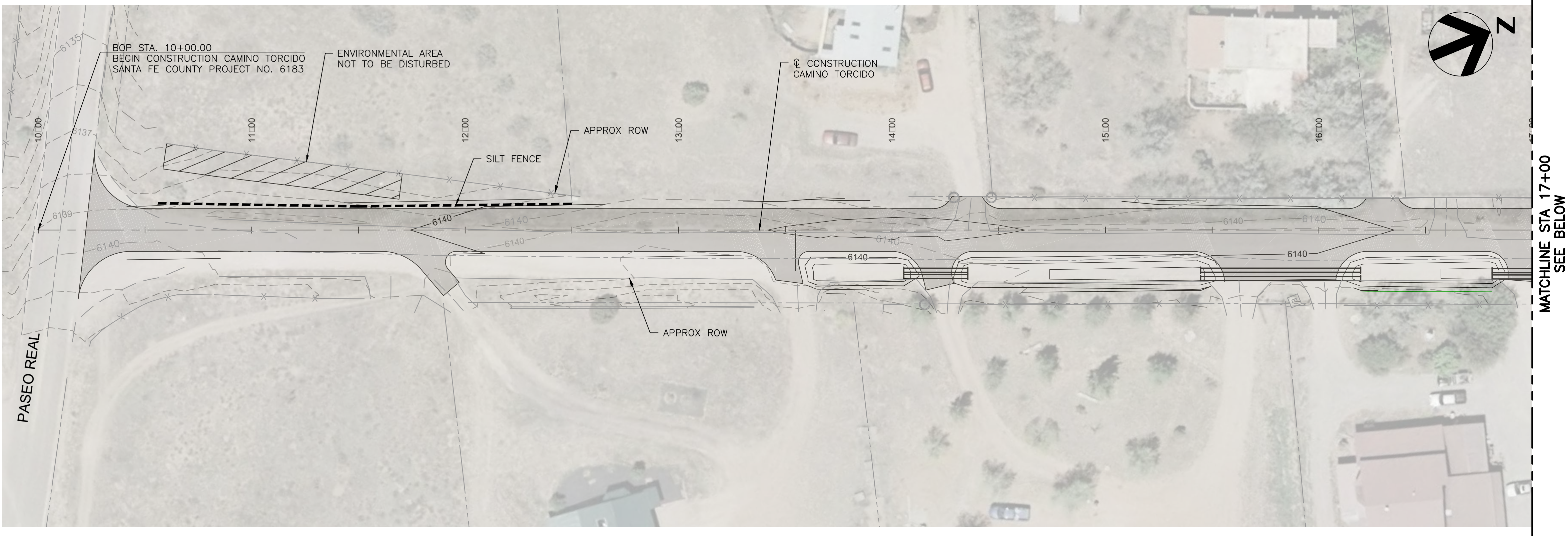


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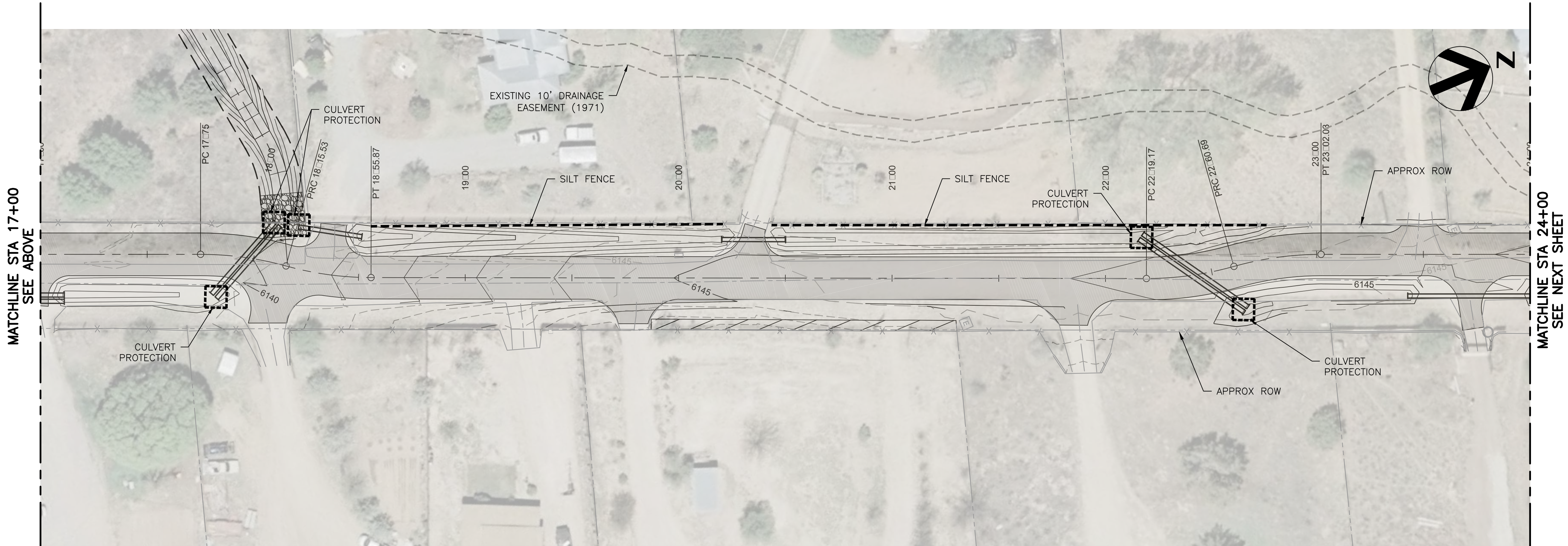
GENERAL NOTES:

- 1. INSTALL CHECK DAM PER NMDOT STD DWG 603-01-2/7.
- 2. INSTALL SILT FENCE PER NMDOT STD DWG 603-01-2/7.
- 3. INSTALL CULVERT PROTECTION PER NMDOT STD DWG 603-01-4/7.



CAMINO TORCIDO

SCALE: 1"=30'



CAMINO TORCIDO

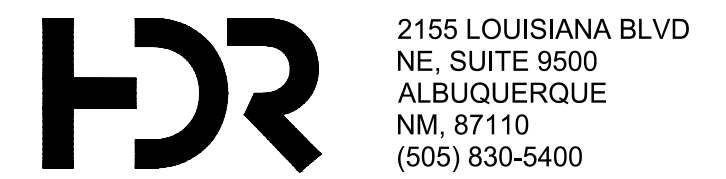
SCALE: 1"=30'



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NO.	DESCRIPTION	DATE	BY
REVISIONS (OR CHANGE NOTICES)			

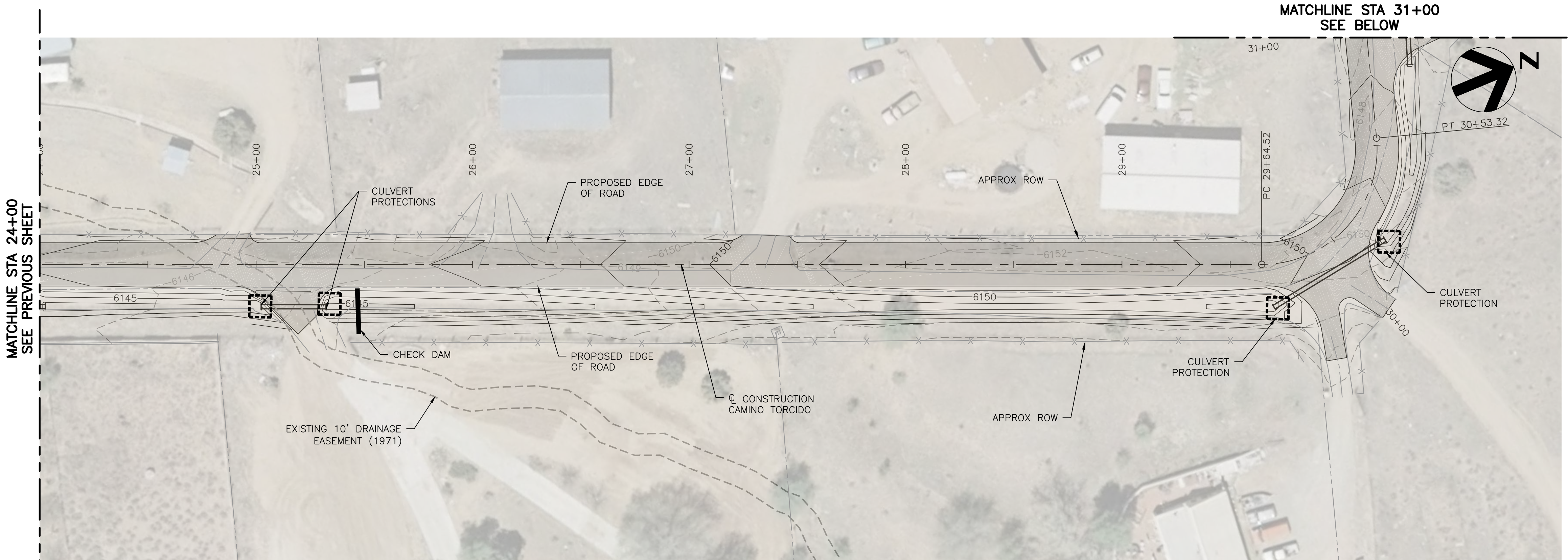
SANTA FE COUNTY
CAMINO TORCIDO LOOP
DRAINAGE AND ROAD IMPROVEMENTS

TEMPORARY EROSION □
SEDIMENT CONTROL PLAN



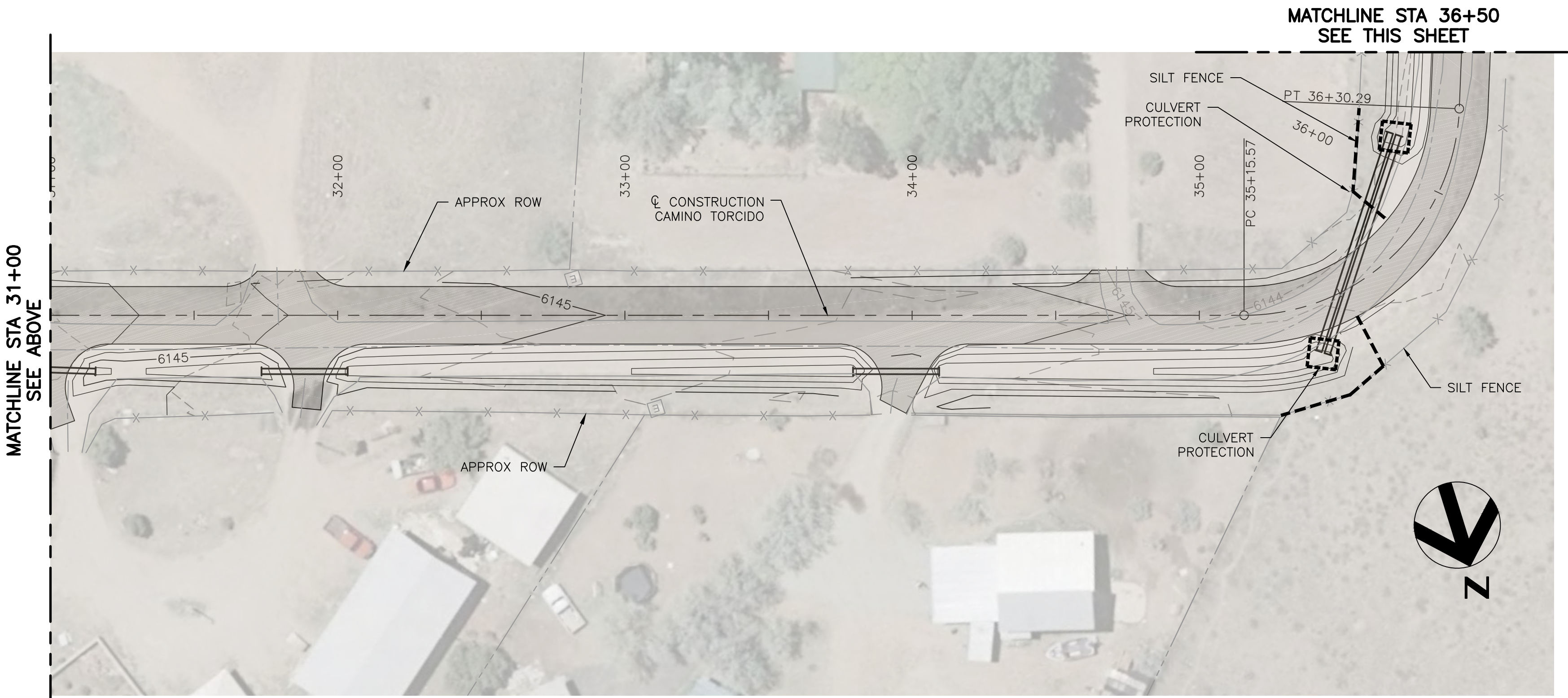
GENERAL NOTES:

- 1. INSTALL CHECK DAM PER NMDOT STD DWG 603-01-2/7.
- 2. INSTALL SILT FENCE PER NMDOT STD DWG 603-01-2/7.
- 3. INSTALL CULVERT PROTECTION PER NMDOT STD DWG 603-01-4/7.



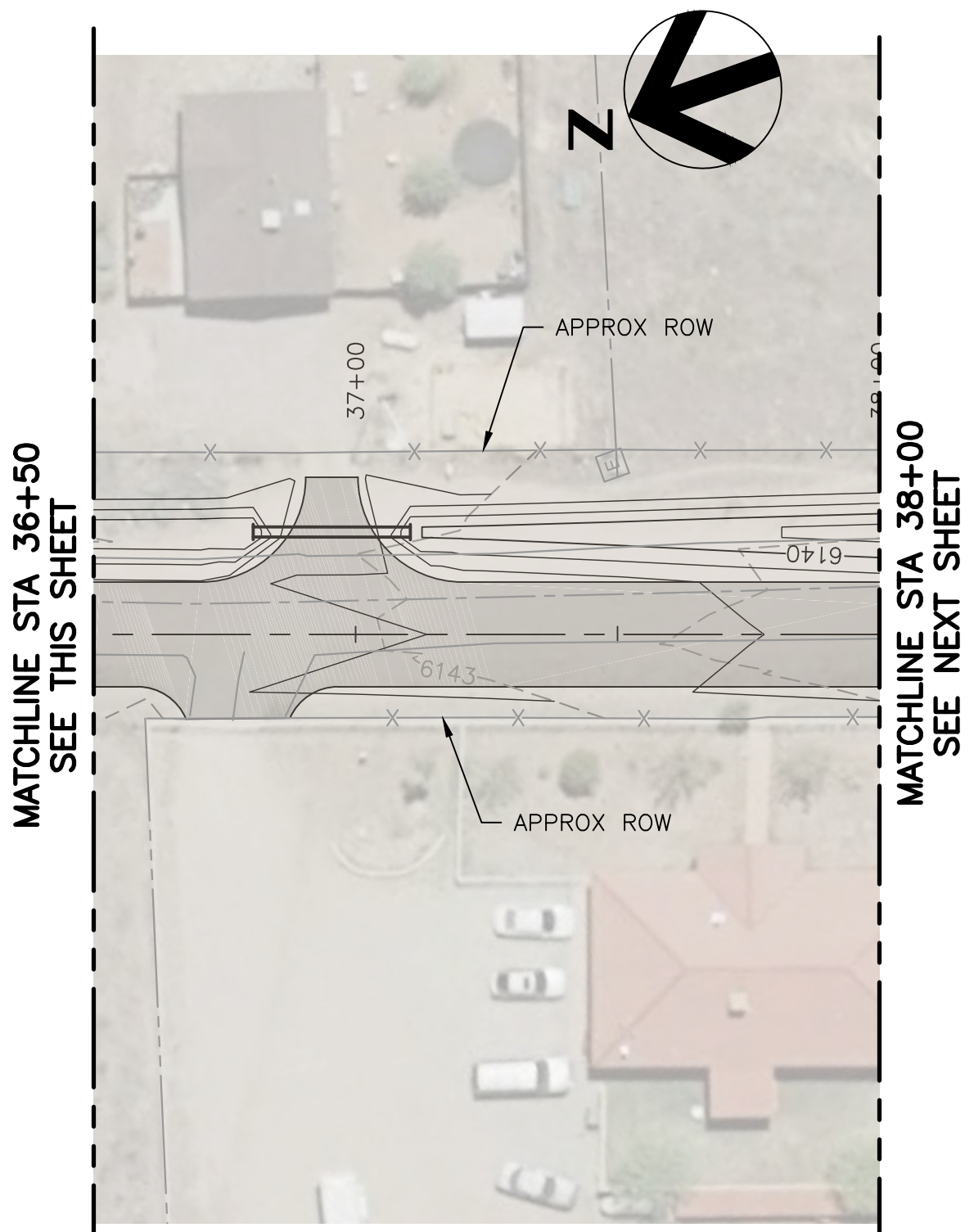
CAMINO TORCIDO

SCALE: 1"=30'



CAMINO TORCIDO

SCALE: 1"=30'

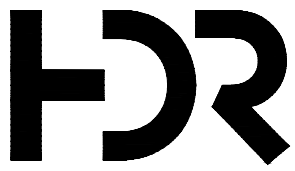


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NO.	DESCRIPTION	DATE	BY
REVISIONS (OR CHANGE NOTICES)			

SANTA FE COUNTY
CAMINO TORCIDO LOOP
DRAINAGE AND ROAD IMPROVEMENTS

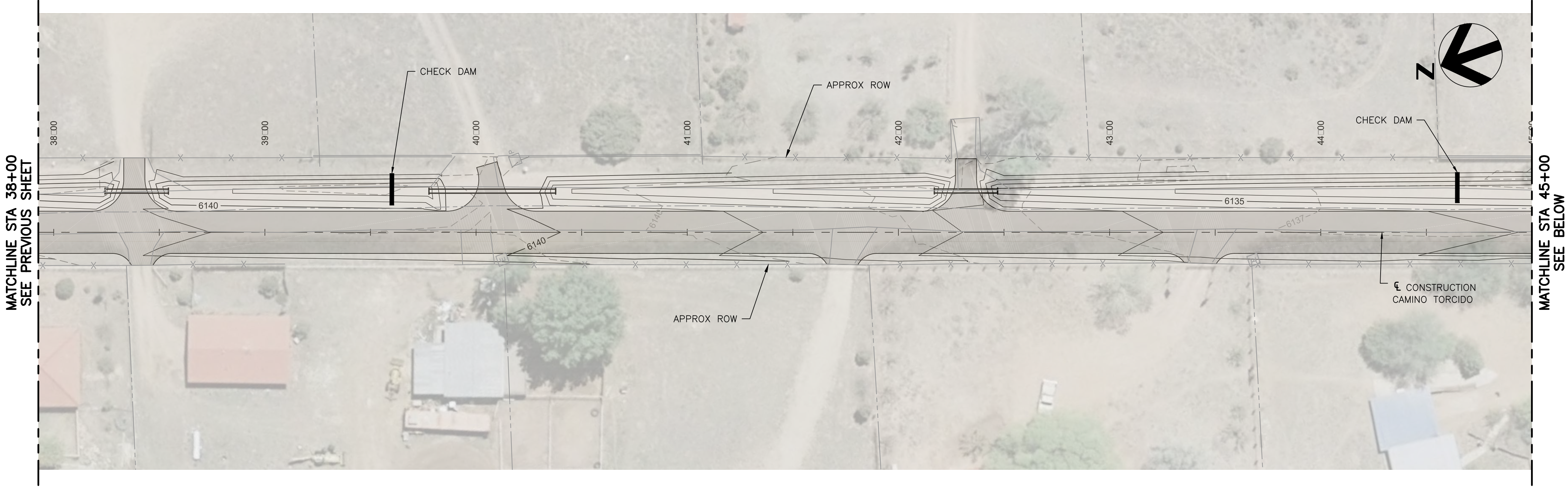
TEMPORARY EROSION □
SEDIMENT CONTROL PLAN



2155 LOUISIANA BLVD
NE, SUITE 9500
ALBUQUERQUE
NM, 87110
(505) 830-5400

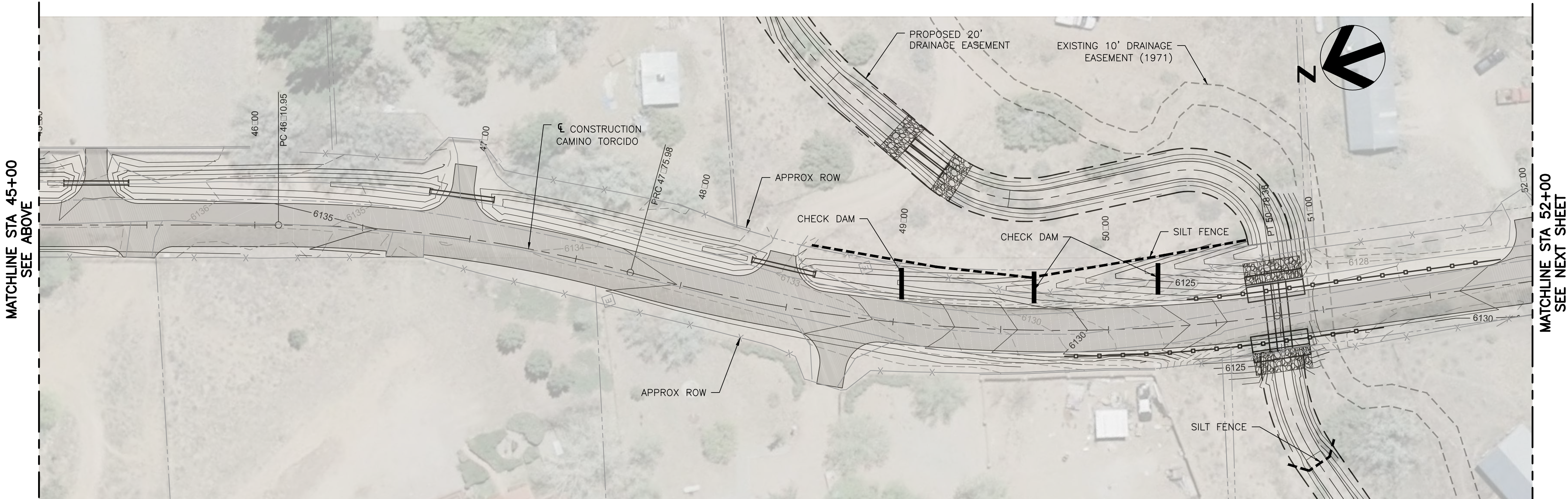
GENERAL NOTES:

1. INSTALL CHECK DAM PER NMDOT STD DWG 603-01-2/7.
2. INSTALL SILT FENCE PER NMDOT STD DWG 603-01-2/7.
3. INSTALL CULVERT PROTECTION PER NMDOT STD DWG 603-01-4/7.



CAMINO TORCIDO

SCALE: 1"=30'



CAMINO TORCIDO

SCALE: 1"=30'



SEPTEMBER 11, 2018

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NO.	DESCRIPTION	DATE	BY
REVISIONS (OR CHANGE NOTICES)			

SANTA FE COUNTY
CAMINO TORCIDO LOOP
DRAINAGE AND ROAD IMPROVEMENTS

TEMPORARY EROSION
SEDIMENT CONTROL PLAN

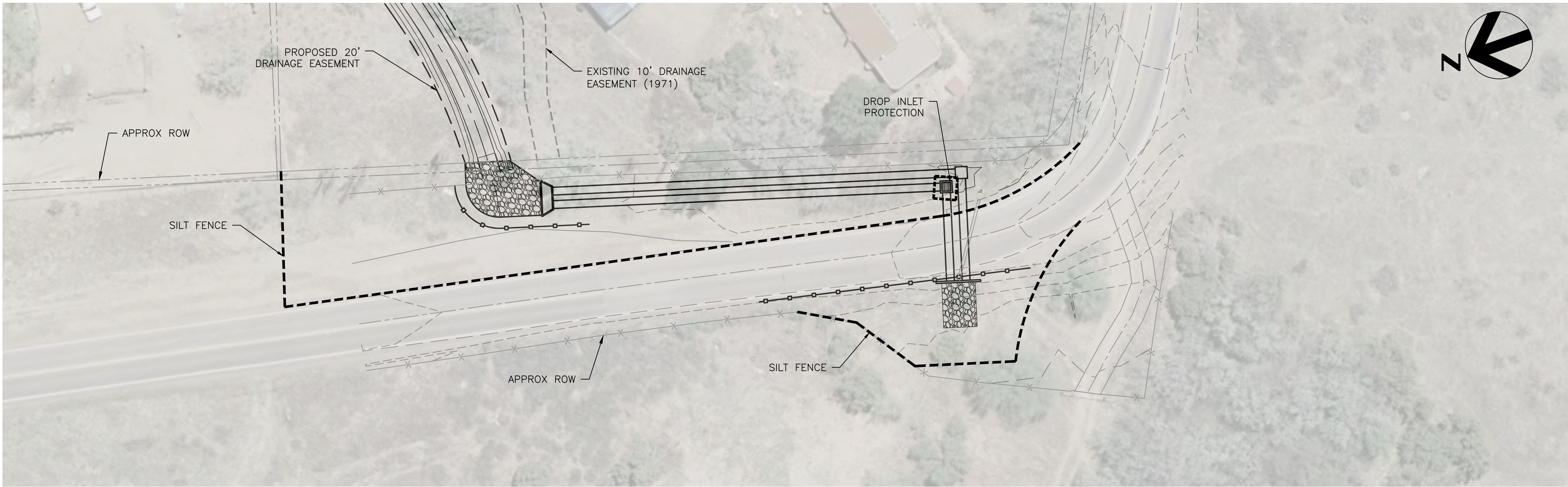
GENERAL NOTES:

1. INSTALL CHECK DAM PER NMDOT STD DWG 603-01-2/7.
2. INSTALL SILT FENCE PER NMDOT STD DWG 603-01-2/7.
3. INSTALL CULVERT PROTECTION PER NMDOT STD DWG 603-01-4/7.



CAMINO TORCIDO

SCALE: 1"=30'



PASEO REAL (ADDITIVE ALTERNATIVE 1)



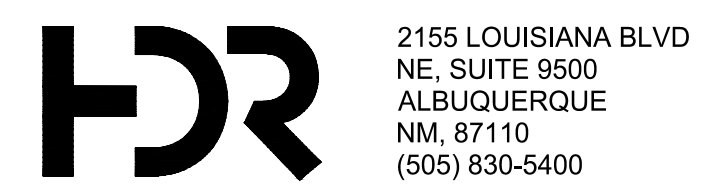
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NO.	DESCRIPTION	DATE	BY

REVISIONS (OR CHANGE NOTICES)

SANTA FE COUNTY
CAMINO TORCIDO LOOP
DRAINAGE AND ROAD IMPROVEMENTS

TEMPORARY EROSION
SEDIMENT CONTROL PLAN



201000 - CLEARING AND GRUBBING						
STATION	OFFSET	TO	STATION	OFFSET	ACRE	DESCRIPTION
BOP		-	EOP		2.30	ROADWAY
					0.36	EASEMENT
					0.18	ADDITIVE ALTERNATIVE 1
TOTAL					2.84	
USE					3.0	

209000 - BLADING AND RESHAPING						
STATION	OFFSET	TO	STATION	OFFSET	MILE	DESCRIPTION
					0.03	PROPERTY #10
TOTAL					0.03	
USE					0.05	

EARTHWORK SUMMARY					
STATION	STATION	203000 UNCLASSIFIED EXCAVATION (CU.YD.)	EMBANKMENT (CU.YD.)	WASTE	REMARKS
ALIGNMENT: CAMINO TORCIDO LOOP					
10+00.00	55+03.45	1553.67	1072.46	-481.21	ROADWAY
10+00.00	55+03.45	3634.14	107.19	-3,526.95	ROADSIDE DITCHES
ALIGNMENT: EASEMENT CHANNEL					
10+00.00	41+98.31	811.92	7.17	-804.75	
TOTAL:		5,999.73		-4,812.91	
USE		6000		-4800	
203000 UNCLASSIFIED EXCAVATION				6000 CU.YD.	
WASTE				-4800 CU.YD.	

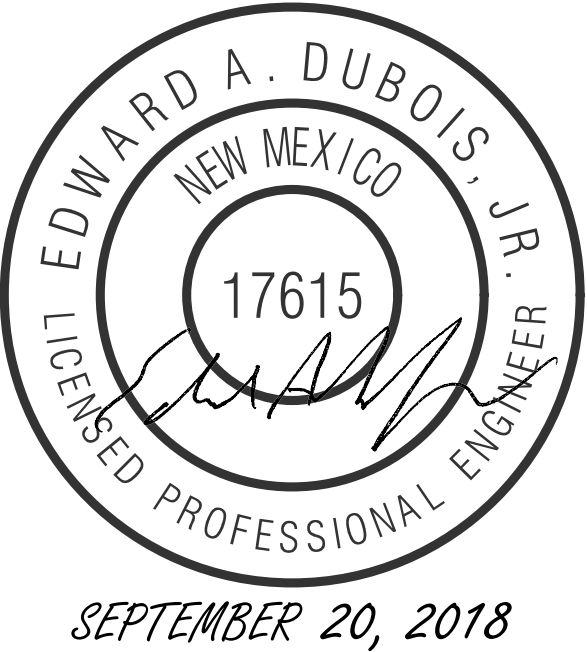
607026 - CHAIN LINK FENCE 6'						
STATION	OFFSET	TO	STATION	OFFSET	LF	DESCRIPTION
16+00.07	244.30' L	-	17+85.47	251.00' L	203.00	PROPERTY #10
TOTAL					203.00	
USE					210	

607320 - STANDARD GATE, 20'						
STATION	OFFSET	TO	STATION	OFFSET	EA	DESCRIPTION
17+52.94	248.58' L	-	17+72.94	249.16' L	1	PROPERTY #10
TOTAL					1	
USE					1	

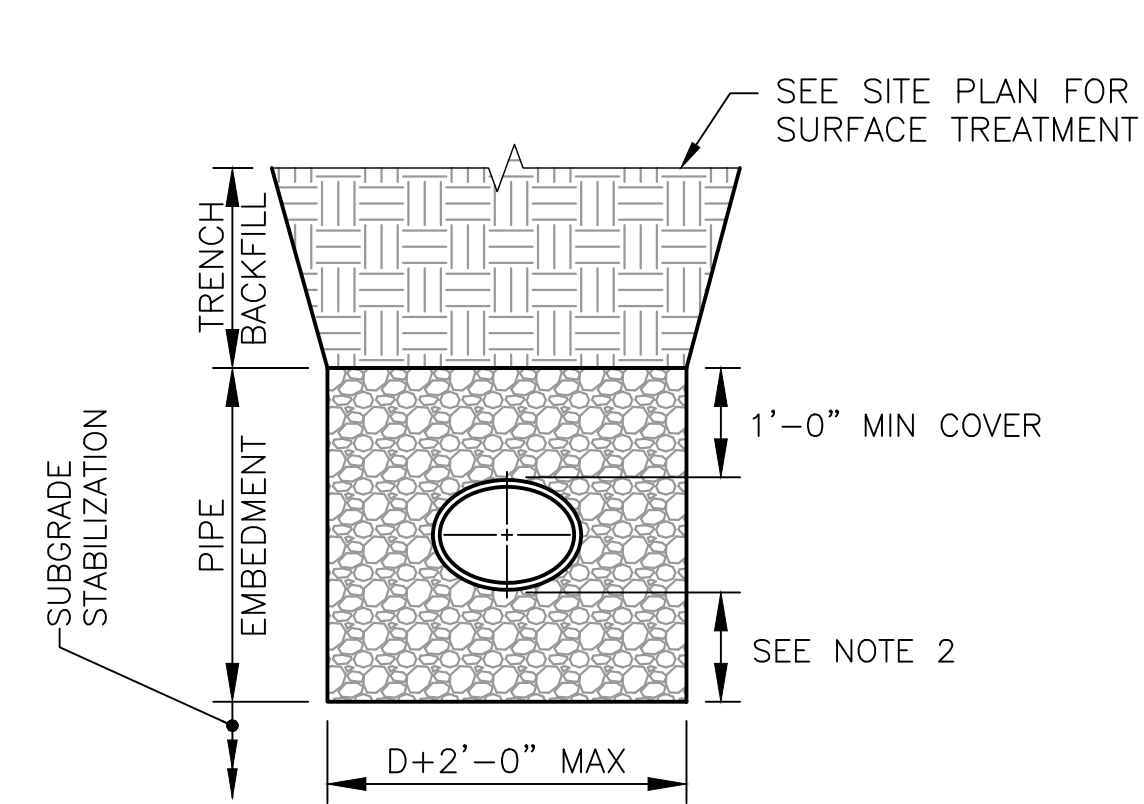
606001 SINGLE FACE W-BEAM GUARDRAIL						
STATION	OFFSET	TO	STATION	OFFSET	LF	DESCRIPTION
					225.0	ROADWAY
					165.0	ADDITIVE ALTERNATIVE 1
TOTAL					390.00	
USE					390	

606052 END TREATMENT TL-2 END TERMINAL						
STATION	OFFSET	TO	STATION	OFFSET	EA	DESCRIPTION
					2	ROADWAY
					1	ADDITIVE ALTERNATIVE 1
TOTAL					3	
USE					3	

606053 END TREATMENT W-BEAM END ANCHOR						
STATION	OFFSET	TO	STATION	OFFSET	EA	DESCRIPTION
					2	ROADWAY
					1	ADDITIVE ALTERNATIVE 1
TOTAL					3	
USE					3	

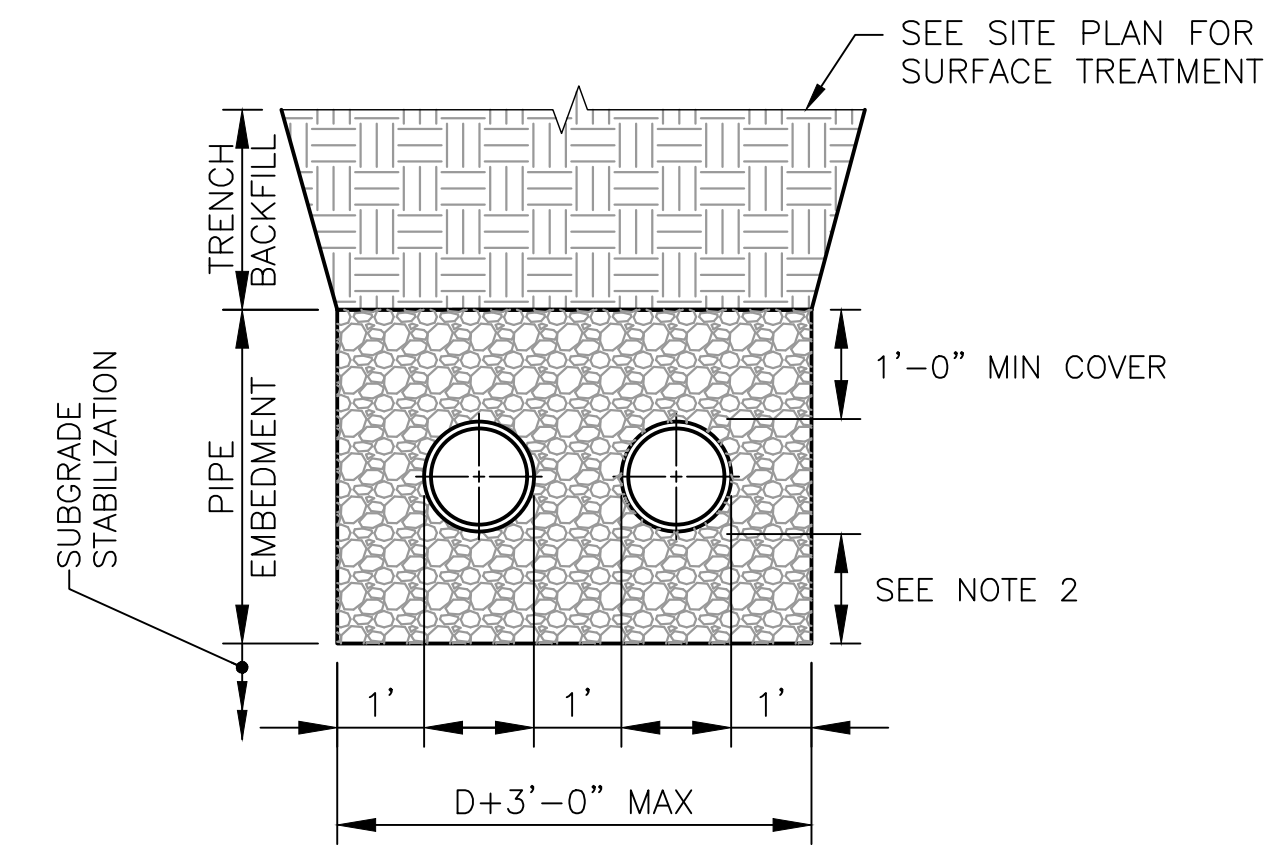


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NO.	DESCRIPTION	DATE	BY
REVISIONS (OR CHANGE NOTICES)			
SANTA FE COUNTY CAMINO TORCIDO LOOP DRAINAGE AND ROAD IMPROVEMENTS MISCELLANEOUS QUANTITIES			



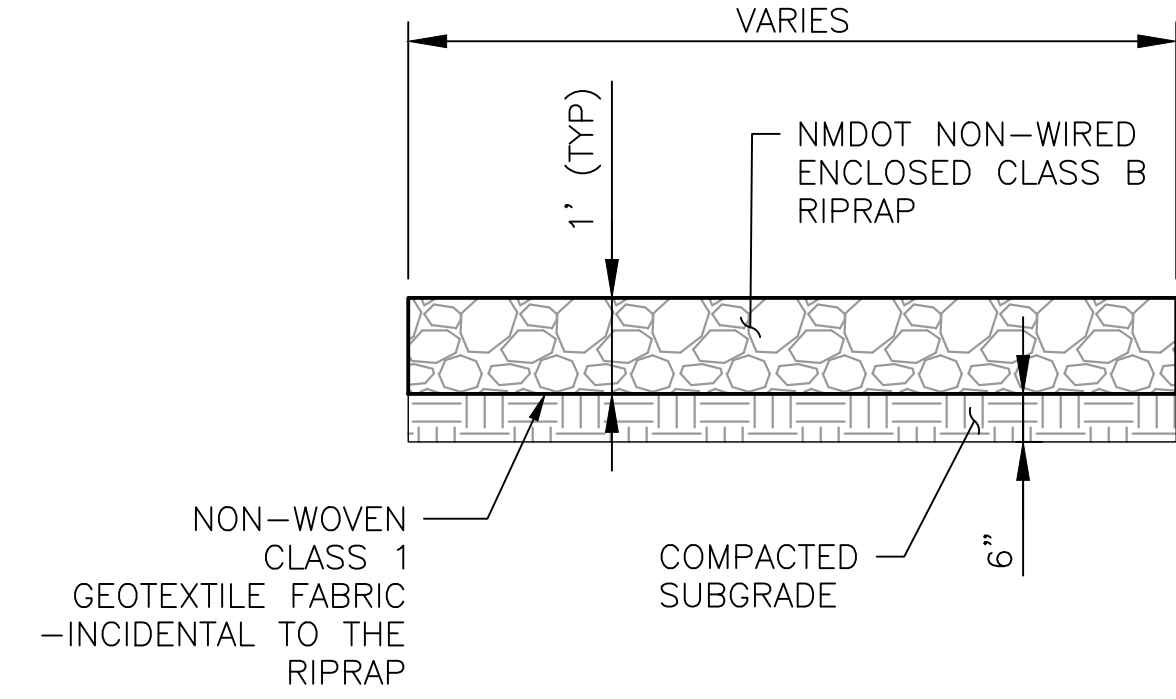
- NOTES:
1. D = OUTSIDE DIAMETER OF PIPE.
 2. DEPTH PER PIPE MANUFACTURER'S RECOMMENDATIONS.
MIN DEPTH OF EMBEDMENT: 2.25'.

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NTS
**TYPICAL DRIVEWAY PIPE
TRENCH DETAIL (21"X15" ARCH CMP)**

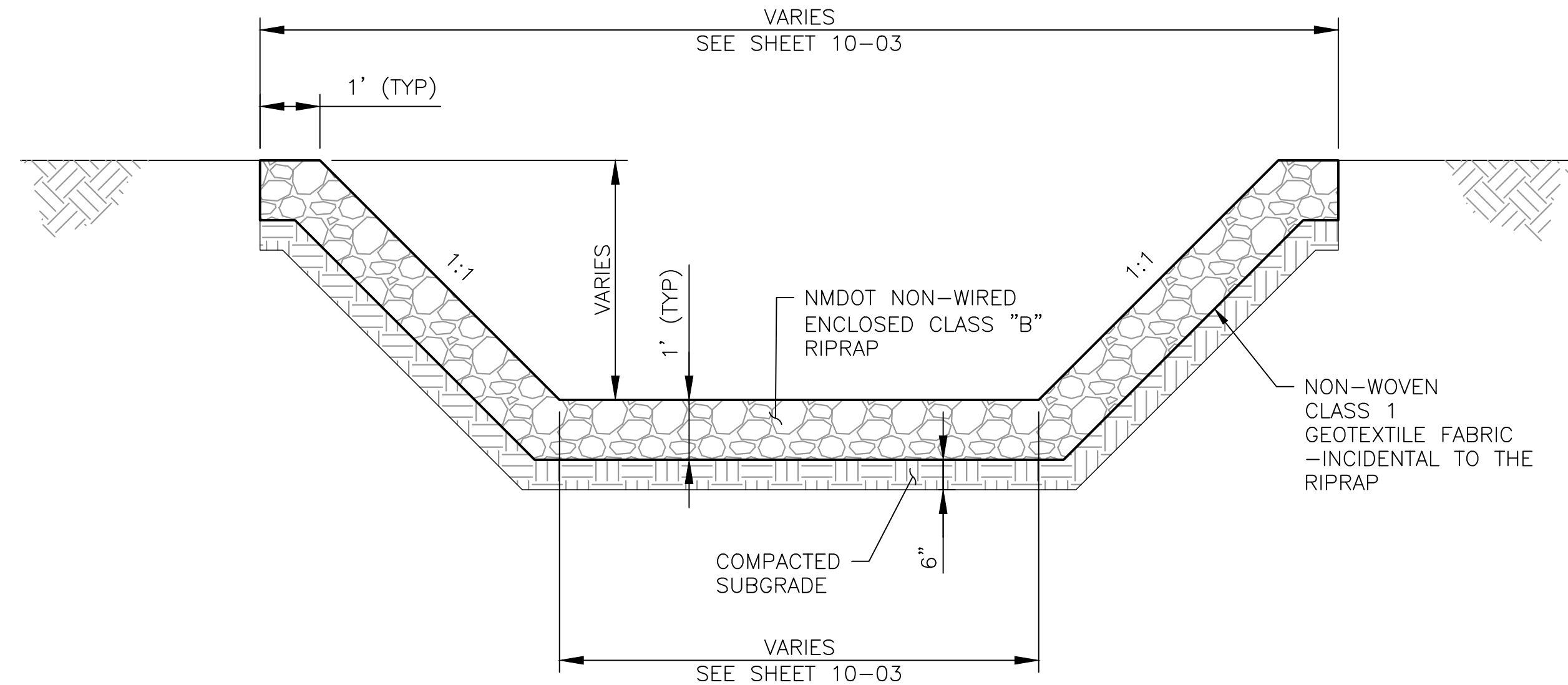


- NOTES:
1. D = OUTSIDE DIAMETER OF PIPE.
 2. DEPTH PER PIPE MANUFACTURER'S RECOMMENDATIONS.
MIN DEPTH OF EMBEDMENT: 36"; 2.25' (ARCH CMP)

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NTS
**TYPICAL ROADWAY PIPE TRENCH DETAIL
(2-24" CMP OR 2-21"X15" ARCH CMP)**



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NTS
RIPRAP DETAIL



4
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NTS
CHANNEL RIPRAP SECTION



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NO.	DESCRIPTION	DATE	BY
REVISIONS (OR CHANGE NOTICES)			
SANTA FE COUNTY CAMINO TORCIDO LOOP DRAINAGE AND ROAD IMPROVEMENTS			
MISCELLANEOUS DETAILS			

GENERAL NOTES:

1. CONTRACTOR IS LIMITED TO ALL CONSTRUCTION ACTIVITIES WITHIN THE 50' RIGHT-OF-WAY. EXISTING FENCING IS NOT TO BE DISTURBED AND MUST BE REPLACED IN KIND IF DISTURBED.

KEYED NOTES:

1. INSTALL DRIVEWAY CULVERT. SEE SHEET 10-02 FOR DRAINAGE STRUCTURE DETAILS.
2. INSTALL 2-21"x15" SQUASH PIPE CULVERT. SEE SHEET 02-09 FOR DETAIL.
3. INSTALL 2-24" CMP CULVERTS. SEE SHEET 02-09 FOR DETAIL.

LEGEND:

CONSTRUCT ASPHALT PAVEMENT SECTION. SEE SHEET 02-01 FOR DETAIL.

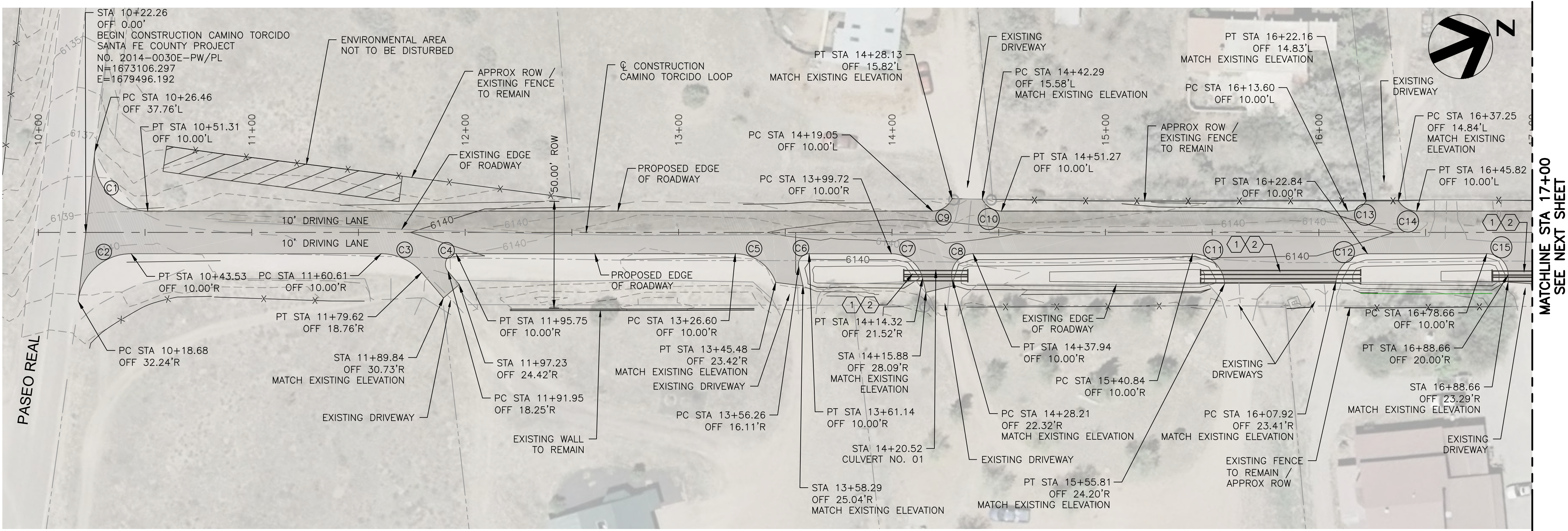
CURVE TABLE				
CURVE #	RADIUS	LENGTH	TANGENT	DELTA
C1	25.00	42.04	27.93	96°20'16.03"
C2	25.00	36.50	22.38	83°39'43.97"
C3	25.00	21.60	11.52	49°29'35.78"
C4	5.00	11.39	10.85	130°30'24.22"
C5	20.00	24.71	14.21	70°46'44.67"
C6	5.00	8.97	6.26	102°46'25.30"
C7	15.00	20.05	11.85	76°36'05.17"
C8	10.00	18.05	12.66	103°23'54.83"
C9	10.00	11.39	6.40	65°16'22.25"
C10	10.00	11.13	6.22	63°47'27.32"
C11	15.00	22.76	14.22	86°57'20.23"
C12	15.00	21.97	13.49	83°55'17.46"
C13	10.00	10.28	5.65	58°53'28.03"
C14	10.00	10.28	5.65	58°54'40.96"
C15	10.00	15.71	10.00	90°00'00.00"



NO.	DESCRIPTION	DATE	BY
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REVISIONS (OR CHANGE NOTICES)			

SANTA FE COUNTY
CAMINO TORCIDO LOOP
DRAINAGE AND ROAD IMPROVEMENTS

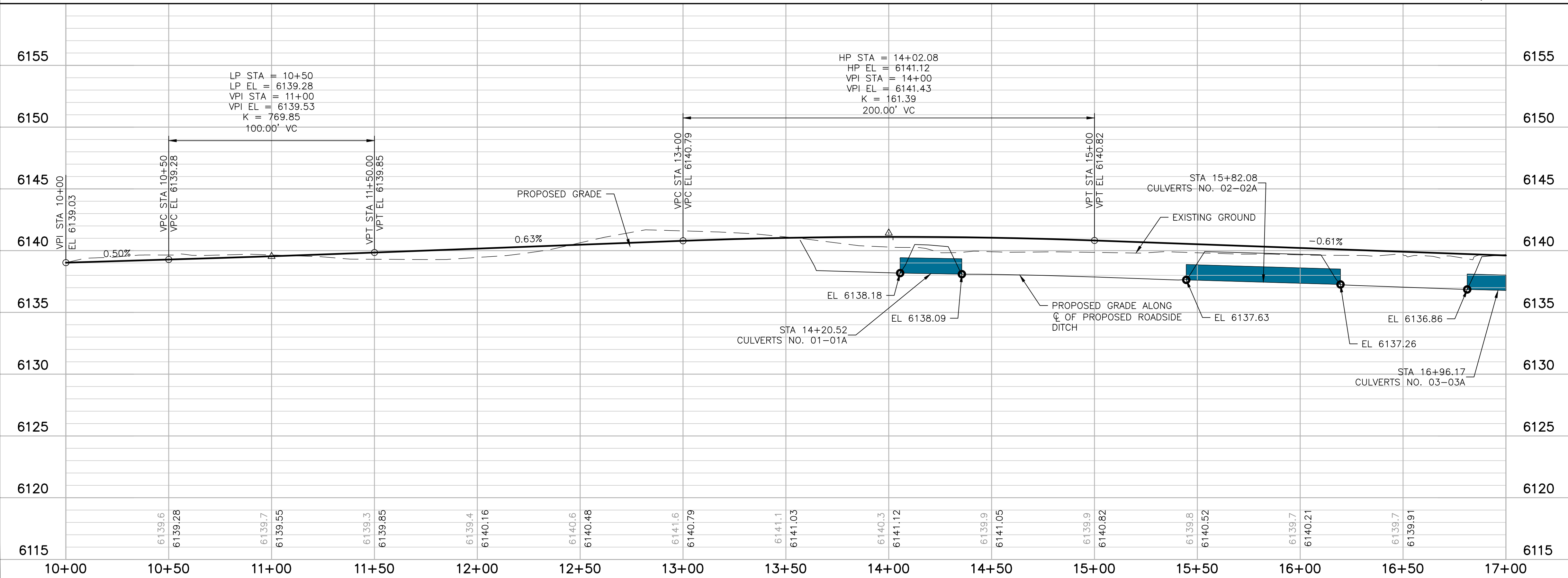
ROADWAY PLAN AND PROFILE
STA BOP TO 17+00



CULVERT INSTALLATION TABLE					
PIPE #	STATION (@ CENTER)	UPSTREAM INV. EL.	DOWNSTREAM INV. EL.	SIZE (DIA.)	MATERIAL
01-01A	14+20.52	6138.18	6138.09	2-21"x15"	CMP
02-02A	15+82.08	6137.63	6137.26	2-21"x15"	CMP
03-03A	16+96.17	6136.86	6136.73	2-21"x15"	CMP

CAMINO TORCIDO LOOP

SCALE: { HORIZ: 1"=30'
VERT: 1"=5'



GENERAL NOTES:

1. CONTRACTOR IS LIMITED TO ALL CONSTRUCTION ACTIVITIES WITHIN THE 50' RIGHT-OF-WAY. EXISTING FENCING IS NOT TO BE DISTURBED AND MUST BE REPLACED IN KIND IF DISTURBED.

KEYED NOTES:

1. INSTALL DRIVEWAY CULVERT. SEE SHEET 10-02 FOR DRAINAGE STRUCTURE DETAILS.
2. INSTALL 21"x15" SQUASH PIPE CULVERT. SEE SHEET 02-09 FOR DETAIL.
3. INSTALL 2-24" CMP CULVERTS. SEE SHEET 02-09 FOR DETAIL.

LEGEND:

CONSTRUCT ASPHALT PAVEMENT SECTION. SEE SHEET 02-01 FOR DETAIL.

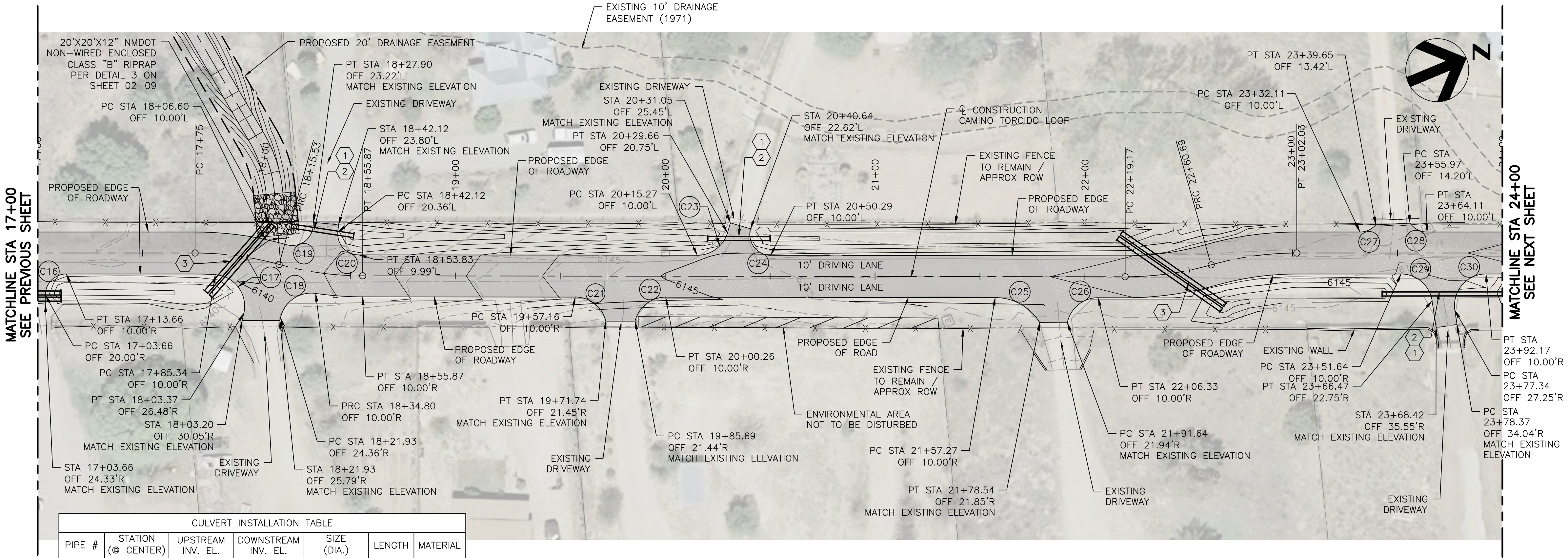
CURVE TABLE					
CURVE #	RADIUS	LENGTH	TANGENT	DELTA	
C16	10.00	15.71	10.00	90°00'00.00"	
C17	15.00	25.94	17.59	99°04'59.78"	
C18	15.00	22.27	13.76	85°04'58.44"	
C19	10.00	17.55	12.03	100°32'49.79"	
C20	9.90	16.67	11.08	96°26'02.76"	
C21	15.00	19.98	11.78	76°18'07.89"	
C22	15.00	19.97	11.78	76°17'02.92"	
C23	15.00	19.25	11.21	73°32'00.54"	
C24	10.00	18.35	13.07	105°09'43.59"	
C25	25.00	25.43	13.94	58°16'28.69"	
C26	15.00	20.48	12.19	78°12'34.81"	
C27	10.00	8.53	4.54	48°51'31.88"	
C28	10.00	9.52	5.16	54°33'59.52"	
C29	15.00	21.30	12.90	81°22'39.10"	
C30	15.00	25.82	17.45	98°37'20.90"	



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NO.	DESCRIPTION	DATE	BY

SANTA FE COUNTY
CAMINO TORCIDO LOOP
DRAINAGE AND ROAD IMPROVEMENTS

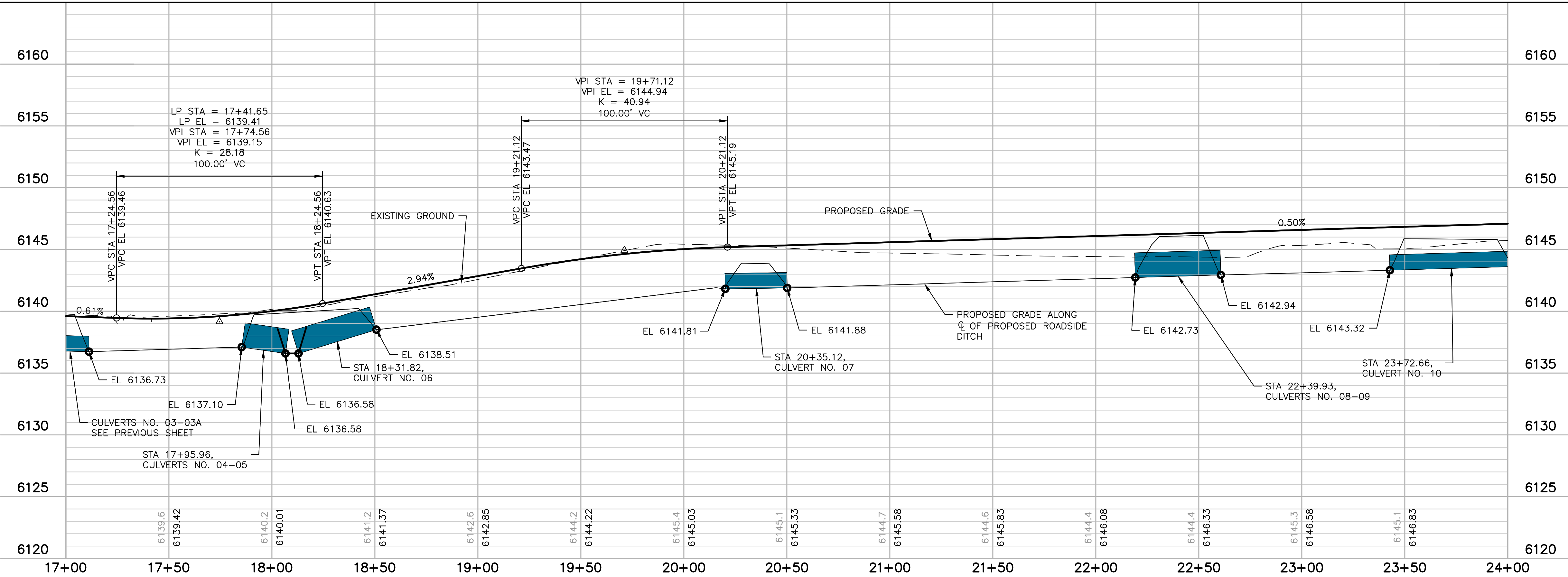
ROADWAY PLAN AND PROFILE
STA 17+00 TO STA 24+00



CULVERT INSTALLATION TABLE					
PIPE #	STATION (@ CENTER)	UPSTREAM INV. EL.	DOWNSTREAM INV. EL.	SIZE (DIA.)	MATERIAL
04-05	17+95.96	6137.10	6136.58	2-24"	CMP
06	18+31.82	6138.51	6136.58	21" X 15"	CMP
07	20+35.12	6141.88	6141.81	21" X 15"	CMP
08-09	22+39.93	6142.94	6142.73	2-24"	CMP
10	23+72.66	6143.62	6143.32	21" X 15"	CMP

CAMINO TORCIDO LOOP

SCALE: { HORIZ: 1"=30'
VERT: 1"=5'



GENERAL NOTES:

1. CONTRACTOR IS LIMITED TO ALL CONSTRUCTION ACTIVITIES WITHIN THE 50' RIGHT-OF-WAY. EXISTING FENCING IS NOT TO BE DISTURBED AND MUST BE REPLACED IN KIND IF DISTURBED.

KEYED NOTES:

1. INSTALL DRIVEWAY CULVERT. SEE SHEET 10-02 FOR DRAINAGE STRUCTURE DETAILS.
2. INSTALL 21"x15" SQUASH PIPE CULVERT. SEE SHEET 02-09 FOR DETAIL.
3. INSTALL 2-24" CMP CULVERTS. SEE SHEET 02-09 FOR DETAIL.

LEGEND:

CONSTRUCT ASPHALT PAVEMENT SECTION. SEE SHEET 02-01 FOR DETAIL.

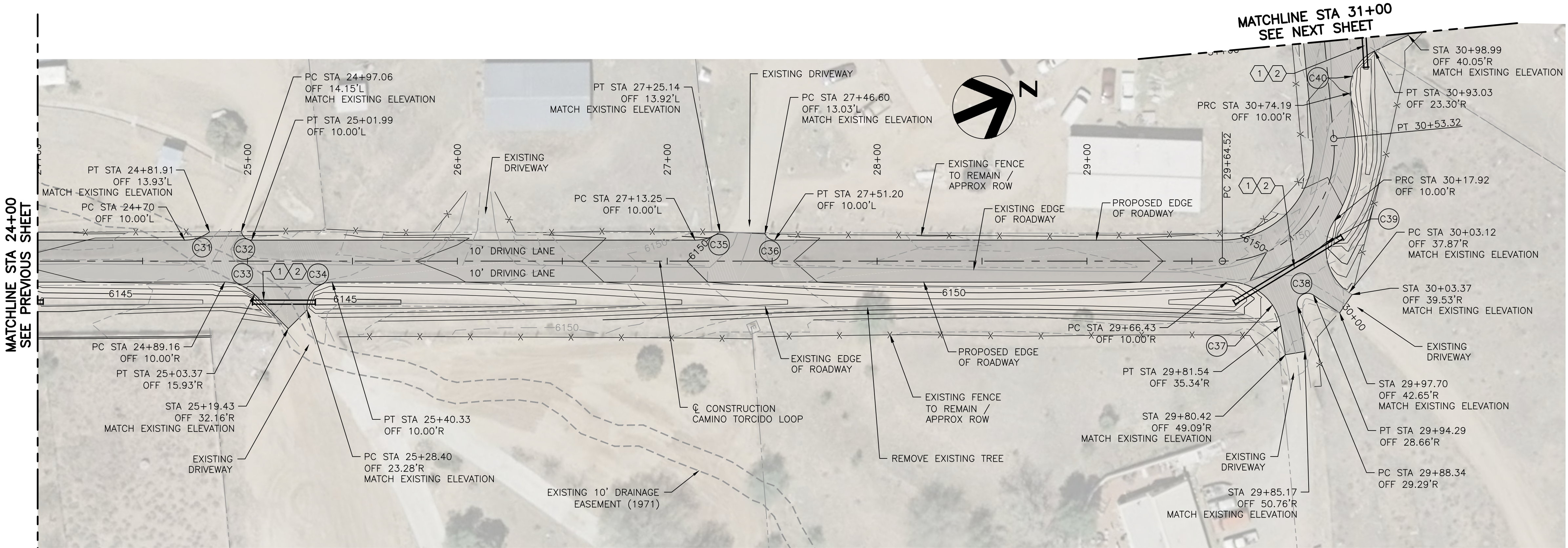
CURVE TABLE				
CURVE #	RADIUS	LENGTH	TANGENT	DELTA
C31	20.00	12.75	6.60	36°32'18.39"
C32	5.00	7.00	4.21	80°14'05.71"
C33	20.00	15.81	8.35	45°17'57.75"
C34	12.00	20.13	13.35	96°06'53.43"
C35	20.00	12.74	6.59	36°29'03.67"
C36	5.00	5.83	3.30	66°49'02.06"
C37	25.00	36.06	21.98	82°38'58.70"
C38	5.00	11.64	11.62	133°26'17.49"
C39	25.00	38.65	24.39	88°34'43.54"
C40	20.00	24.59	14.12	70°25'51.37"



NO.	DESCRIPTION	DATE	BY
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SANTA FE COUNTY
CAMINO TORCIDO LOOP
DRAINAGE AND ROAD IMPROVEMENTS

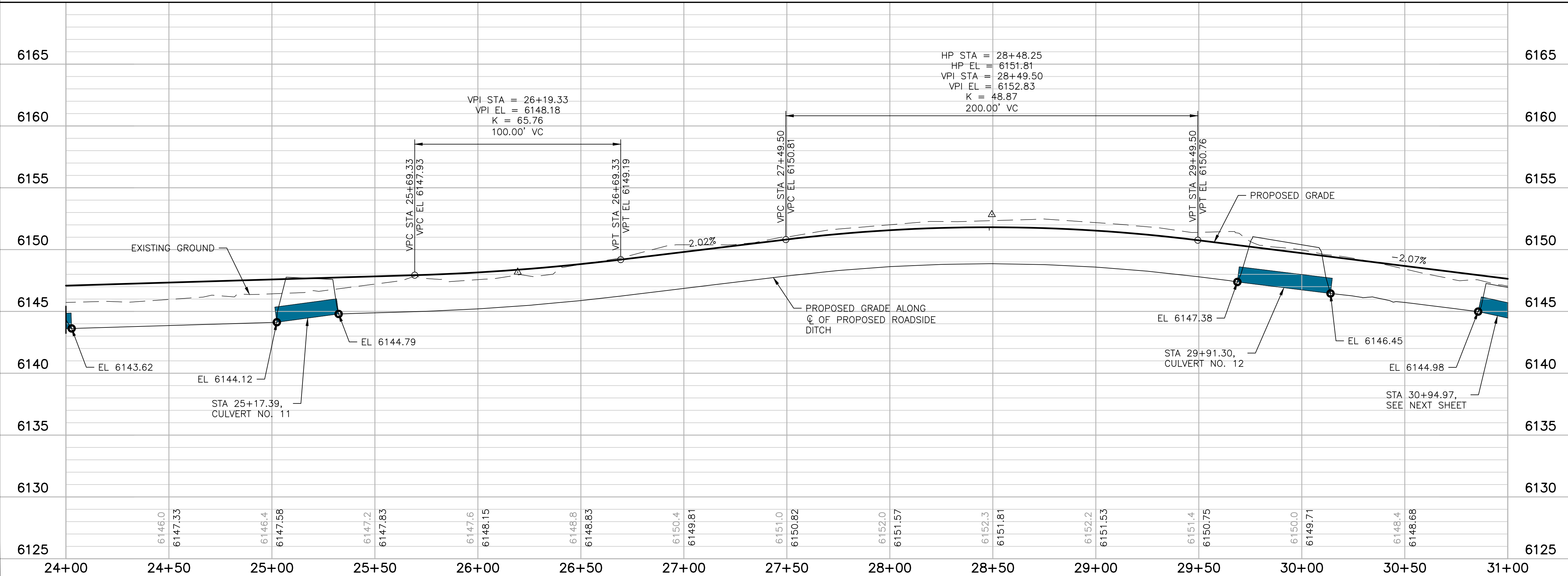
ROADWAY PLAN AND PROFILE
STA 24+00 TO STA 31+00



CULVERT INSTALLATION TABLE					
PIPE #	STATION (@ CENTER)	UPSTREAM INV. EL.	DOWNSTREAM INV. EL.	SIZE (DIA.)	LENGTH
11	25+17.39	6144.79	6144.12	21" X 15"	30'
12	29+91.30	6147.38	6146.45	21" X 15"	60'

CAMINO TORCIDO LOOP

SCALE: { HORIZ: 1"=30'
VERT: 1"=5'



GENERAL NOTES:

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KEYED NOTES:

1. INSTALL DRIVEWAY CULVERT. SEE SHEET 10-02 FOR DRAINAGE STRUCTURE DETAILS.
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3. INSTALL 2-24" CMP CULVERTS. SEE SHEET 02-09 FOR DETAIL.

LEGEND:

CONSTRUCT ASPHALT PAVEMENT SECTION. SEE SHEET 02-01 FOR DETAIL.

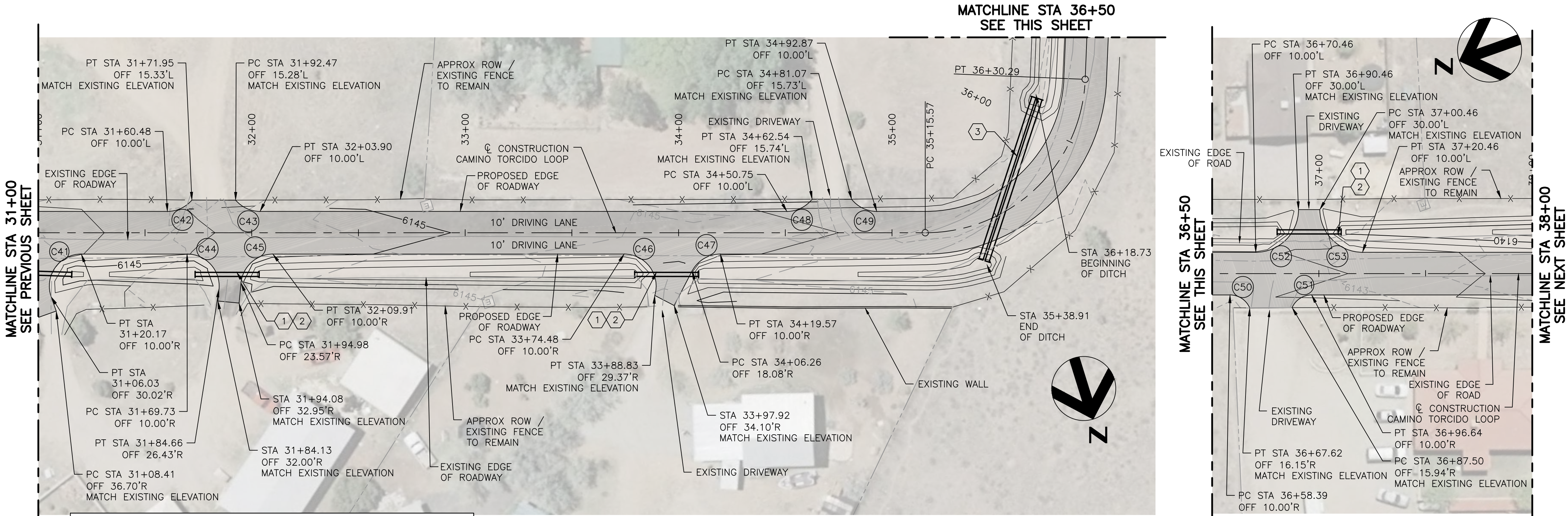
CURVE TABLE				
CURVE #	RADIUS	LENGTH	TANGENT	DELTA
C41	15.00	28.69	21.25	109°34'08.63"
C42	15.00	13.06	6.98	49°52'39.79"
C43	15.00	12.99	6.93	49°37'18.56"
C44	15.00	24.99	16.50	95°28'07.29"
C45	15.00	22.13	13.63	84°31'52.71"
C46	15.00	28.00	20.25	106°56'07.40"
C47	15.00	16.36	9.10	62°30'20.78"
C48	15.00	13.58	7.29	51°51'15.50"
C49	15.00	13.57	7.29	51°50'28.00"
C50	10.00	11.76	6.67	67°22'04.48"
C51	10.00	11.53	6.50	66°03'32.51"
C52	20.00	31.42	20.00	90°00'00.00"
C53	20.00	31.42	20.00	90°00'00.00"



NO.	DESCRIPTION	DATE	BY
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SANTA FE COUNTY
CAMINO TORCIDO LOOP
DRAINAGE AND ROAD IMPROVEMENTS

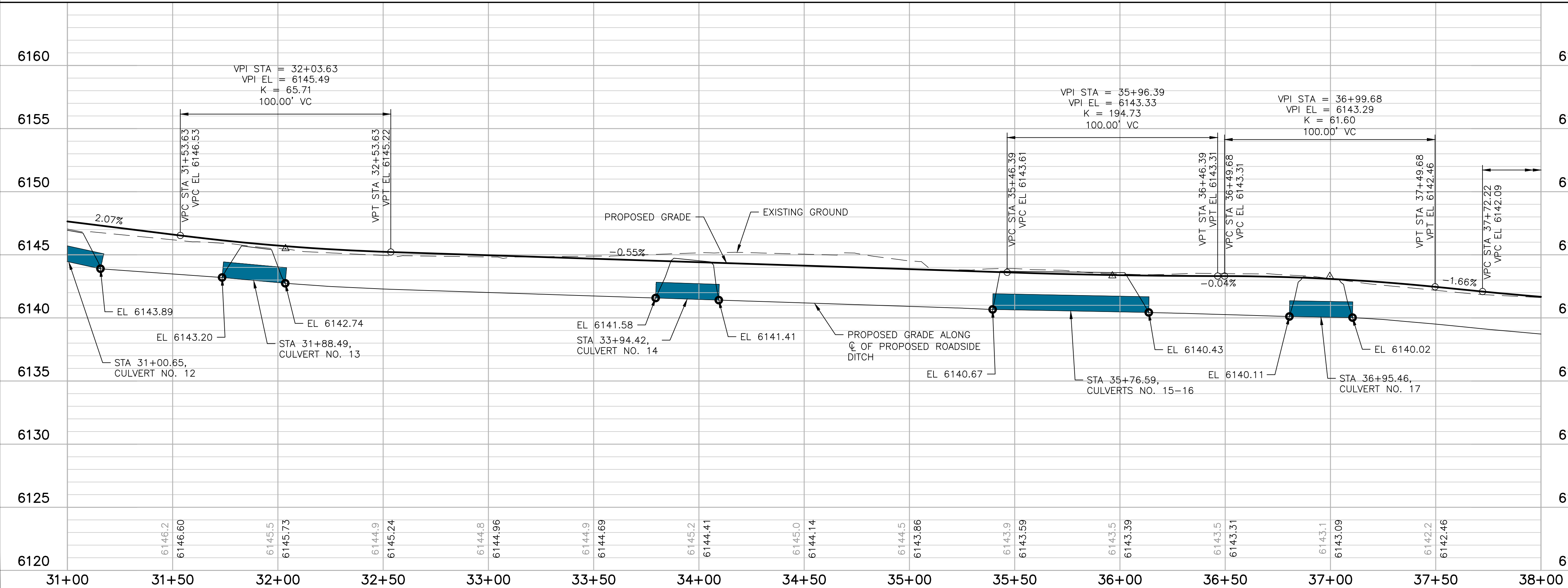
ROADWAY PLAN AND PROFILE
STA 31+00 TO STA 38+00



CULVERT INSTALLATION TABLE					
PIPE #	STATION (@ CENTER)	UPSTREAM INV. EL.	DOWNSTREAM INV. EL.	SIZE (DIA.)	LENGTH
12	31+00.65	6144.98	6143.89	21" X 15"	30'
13	31+88.49	6143.20	6142.74	21" X 15"	30'
14	33+94.42	6141.58	6141.41	21" X 15"	30'
15-16	35+76.59	6140.67	6140.43	2-24"	80'
17	36+95.46	6140.11	6140.02	21" X 15"	30'

CAMINO TORCIDO LOOP

SCALE: { HORIZ: 1"=30'
VERT: 1"=5'






CAMINO TORCIDO LOOP



CURVE TABLE				
CURVE #	RADIUS	LENGTH	TANGENT	DELTA
C54	15.00	23.56	15.00	90°00'38.64"
C55	15.00	23.56	15.00	89°59'21.36"
C56	10.00	11.22	6.28	64°17'07.34"
C57	10.00	11.16	6.24	63°58'00.00"
C58	15.00	27.76	19.92	106°02'12.86"
C60	10.00	10.53	5.81	60°20'44.37"
C61	10.00	10.92	6.07	62°32'56.87"
C62	15.00	23.56	15.00	90°00'00.00"
C63	15.00	23.56	15.00	90°00'00.00"
C65	10.00	10.36	5.70	59°20'30.42"

1. CONTRACTOR IS LIMITED TO ALL CONSTRUCTION ACTIVITIES WITHIN THE 50' RIGHT-OF-WAY. EXISTING FENCING IS NOT TO BE DISTURBED AND MUST BE REPLACED IN KIND IF DISTURBED.

1. INSTALL DRIVEWAY CULVERT. SEE SHEET 10-02 FOR DRAINAGE STRUCTURE DETAILS.
2. INSTALL 21"x15" SQUASH PIPE CULVERT. SEE SHEET 02-09 FOR DETAIL.
3. INSTALL 2-24" CMP CULVERTS. SEE SHEET 02-09 FOR DETAIL.

 CONSTRUCT ASPHALT PAVEMENT SECTION.
SEE SHEET 02-01 FOR DETAIL.



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NO.	DESCRIPTION	DATE	BY
REVISIONS (OR CHANGE NOTICES)			

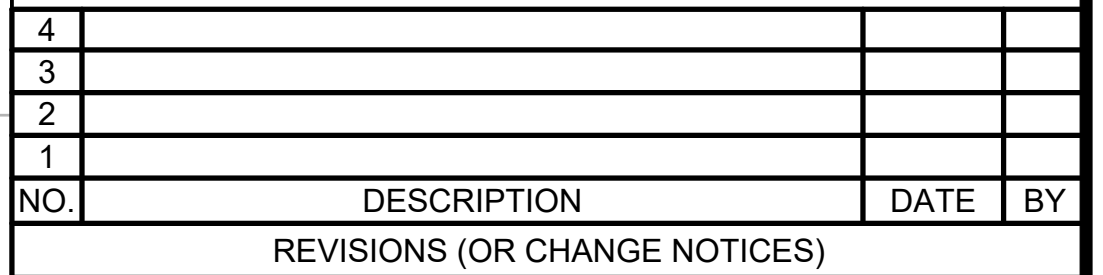
SANTA FE COUNTY
CAMINO TORCIDO LOOP
DRAINAGE AND ROAD IMPROVEMENTS

ROADWAY PLAN AND PROFILE
STA 38+00 TO STA 45+00



CULVERT INSTALLATION TABLE						
PIPE #	STATION (@ CENTER)	UPSTREAM INV. EL.	DOWNSTREAM INV. EL.	SIZE (DIA.)	LENGTH	MATERIAL
21	45+26.56	6132.96	6132.80	21" x 15"	30'	CMP
22	46+93.71	6131.67	6131.64	21" x 15"	30'	CMP
23	48+46.21	6130.85	6130.00	21" x 15"	30'	CMP
27	50+82.84	6119.97*	6119.77*	42"	32'	CMP
28	50+82.84	6119.97*	6119.77*	42"	32'	CMP

SCALE: $\begin{cases} \text{HORIZ: } 1''=30' \\ \text{VERT: } 1''=5' \end{cases}$

ROADWAY PLAN AND PROFILE
STA 45+00 TO STA 52+00


GENERAL NOTES:

1. CONTRACTOR IS LIMITED TO ALL CONSTRUCTION ACTIVITIES WITHIN THE 50' RIGHT-OF-WAY. EXISTING FENCING IS NOT TO BE DISTURBED AND MUST BE REPLACED IN KIND IF DISTURBED.

KEYED NOTES:

1. INSTALL DRIVEWAY CULVERT. SEE SHEET 10-02 FOR DRAINAGE STRUCTURE DETAILS.
2. INSTALL 21"x15" SQUASH PIPE CULVERT. SEE SHEET 02-09 FOR DETAIL.
3. INSTALL 2-24" CMP CULVERTS. SEE SHEET 02-09 FOR DETAIL.

LEGEND:

-  CONSTRUCT ASPHALT PAVEMENT SECTION. SEE SHEET 02-01 FOR DETAIL.

CURVE TABLE				
CURVE #	RADIUS	LENGTH	TANGENT	DELTA
C78	10.00	15.45	9.75	88°31'49.48"
C79	10.00	15.82	10.12	90°39'39.32"
C80	25.00	36.91	22.74	84°35'20.64"
C81	25.00	41.99	27.88	96°13'42.57"
C82	15.00	23.00	14.45	87°51'13.06"

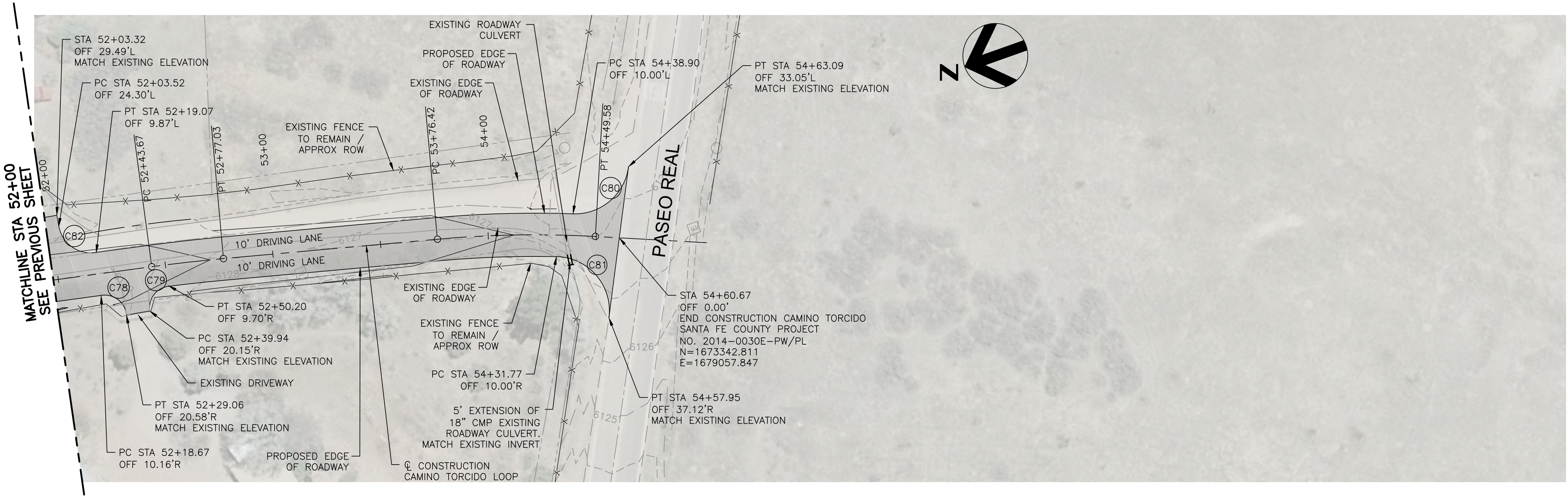


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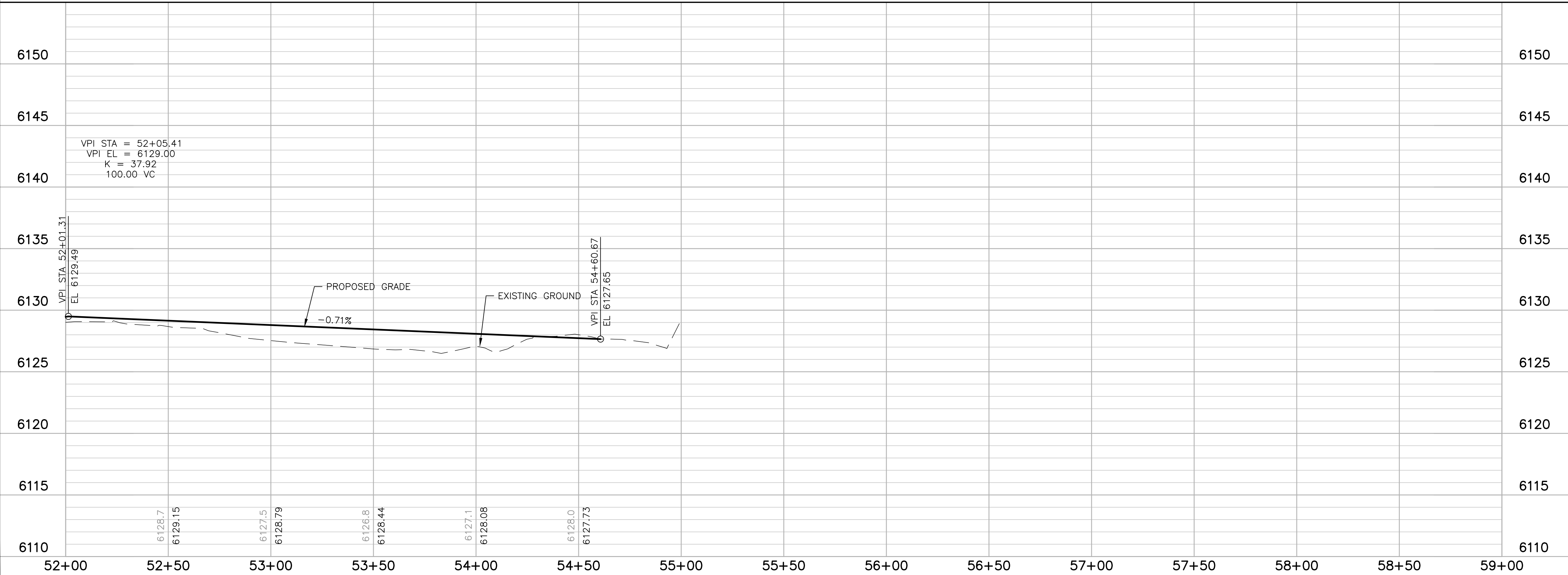
SANTA FE COUNTY
CAMINO TORCIDO LOOP
DRAINAGE AND ROAD IMPROVEMENTS

ROADWAY PLAN AND PROFILE
STA 52+00 TO STA EOP



CAMINO TORCIDO LOOP

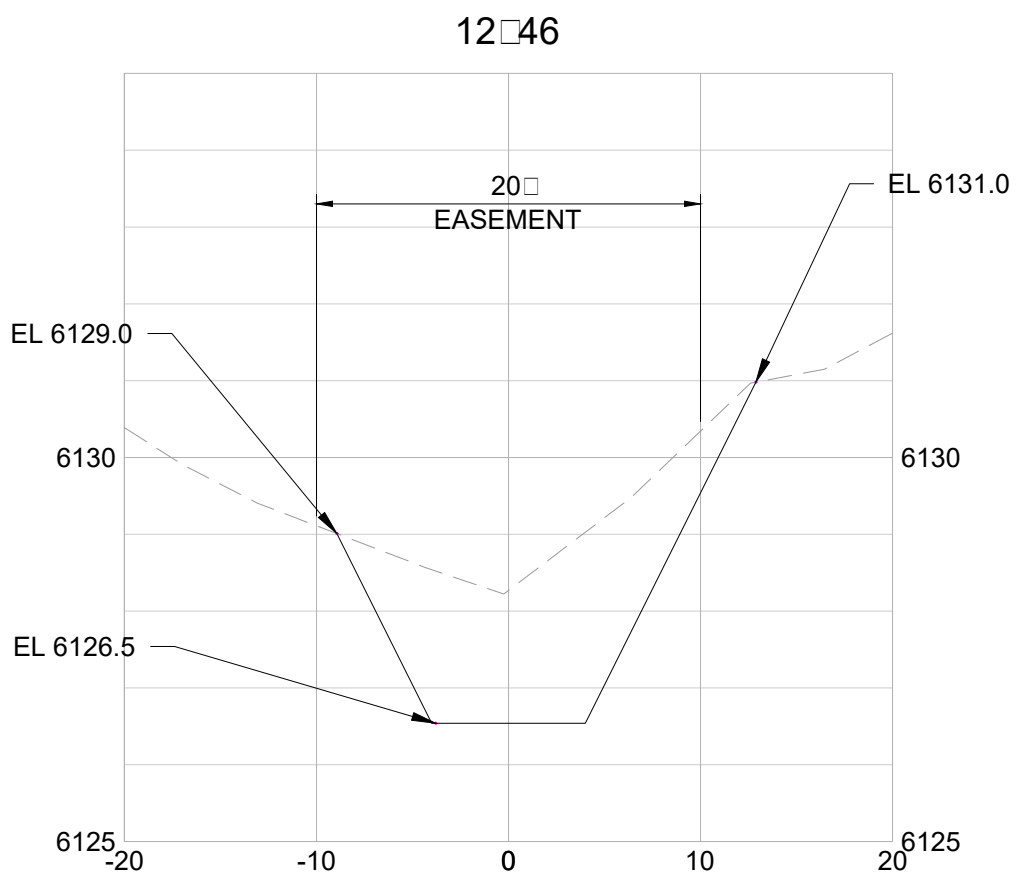
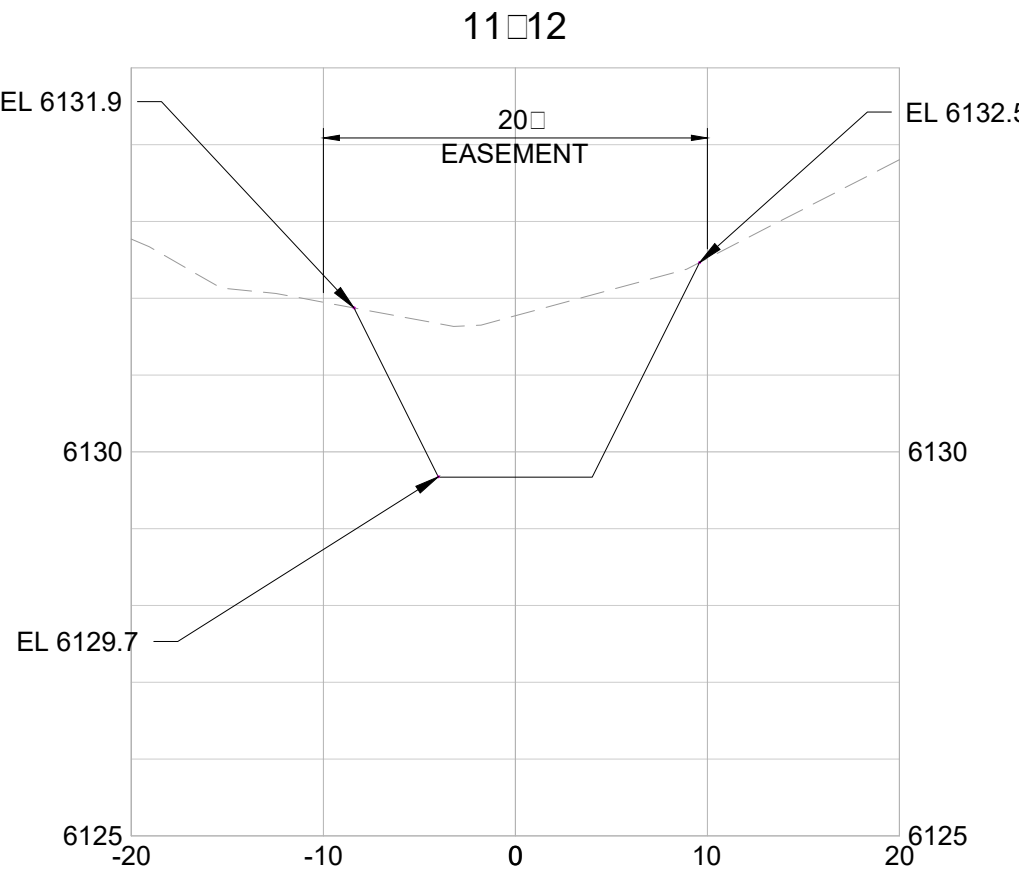
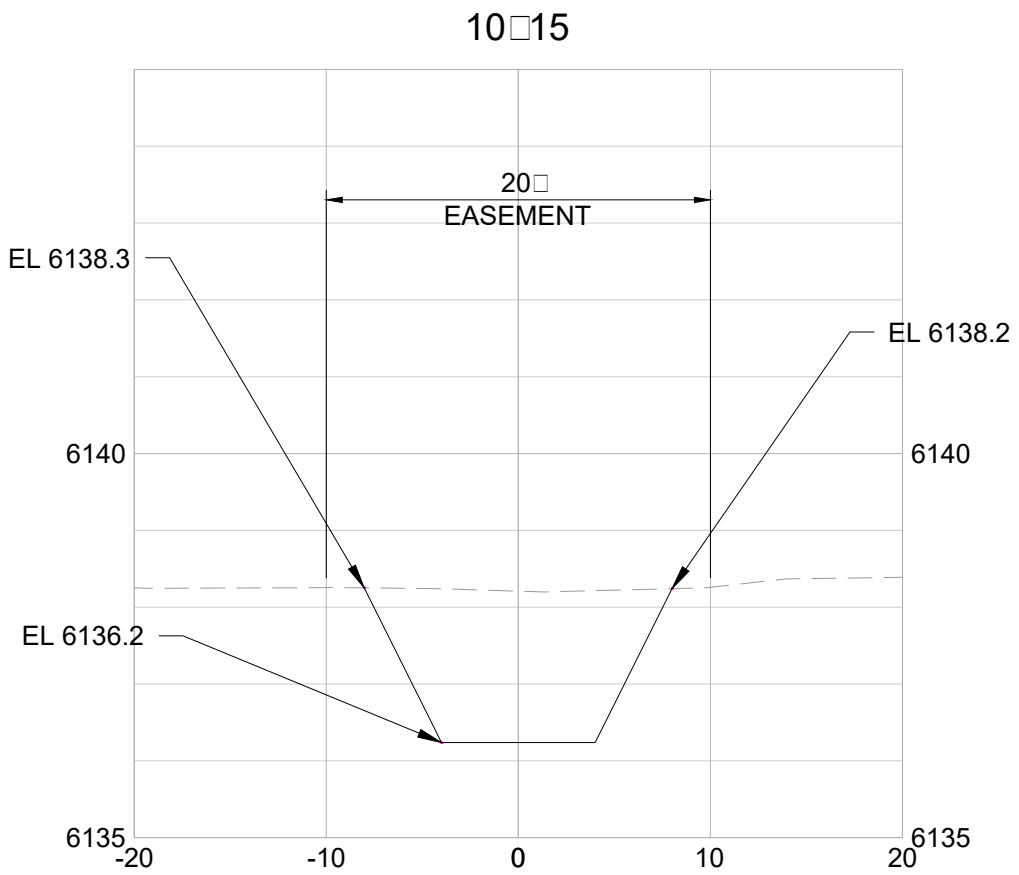
SCALE: { HORIZ: 1"=30'
VERT: 1"=5'



- GENERAL NOTES:
- SURVEY INFORMATION OUTSIDE OF ROADWAY RIGHT-OF-WAY IS LIDAR DATA PROVIDED FROM SANTA FE COUNTY. CONTRACTOR TO VERIFY ELEVATIONS BEFORE CONSTRUCTION.
 - SEE DETAIL 1 ON SHEET 10-02 FOR CHANNEL TYPICAL SECTION.
 - CONTRACTOR IS LIMITED TO ALL CONSTRUCTION ACTIVITIES LOCATED WITHIN THE 50' RIGHT-OF-WAY AND 20' EASEMENTS ON PRIVATE PROPERTY AS SHOWN ON THIS SHEET. EXISTING FENCING AND APPURTENANCES SHALL NOT BE DISTURBED AND MUST BE REPLACED IN KIND IF DISTURBED.
 - ALL EXISTING SURFACE UTILITY FEATURES, IF ANY, LOCATED WITHIN GRADING AREAS SHALL BE ADJUSTED TO FINISHED GRADE.



20' EASEMENT CHANNEL PLAN
SCALE: 1" = 50'



CHANNEL SECTIONS - SEGMENT 1
HORIZONTAL SCALE: 1" = 10'
VERTICAL SCALE: 1" = 2.5'

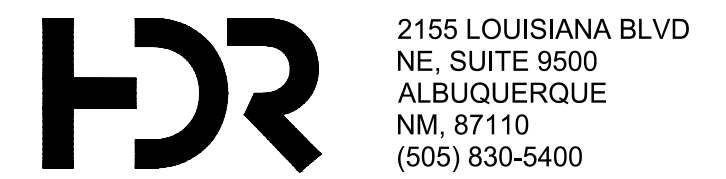


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REVISIONS (OR CHANGE NOTICES)			

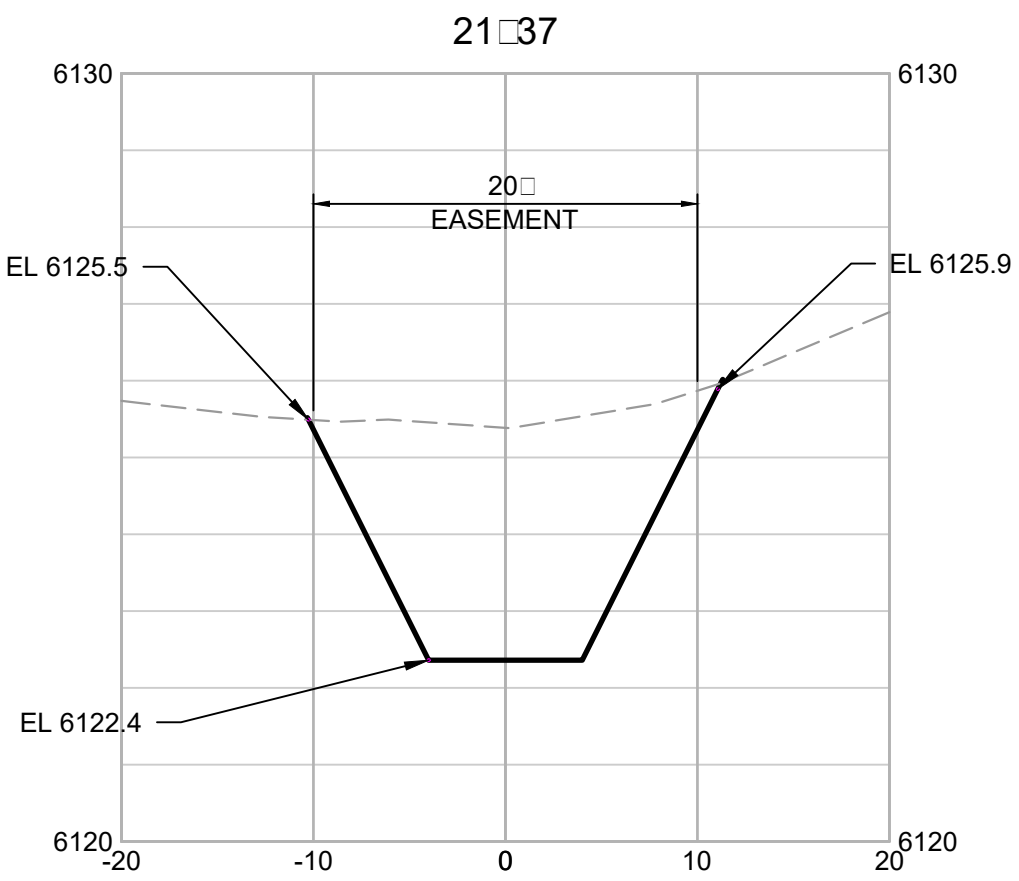
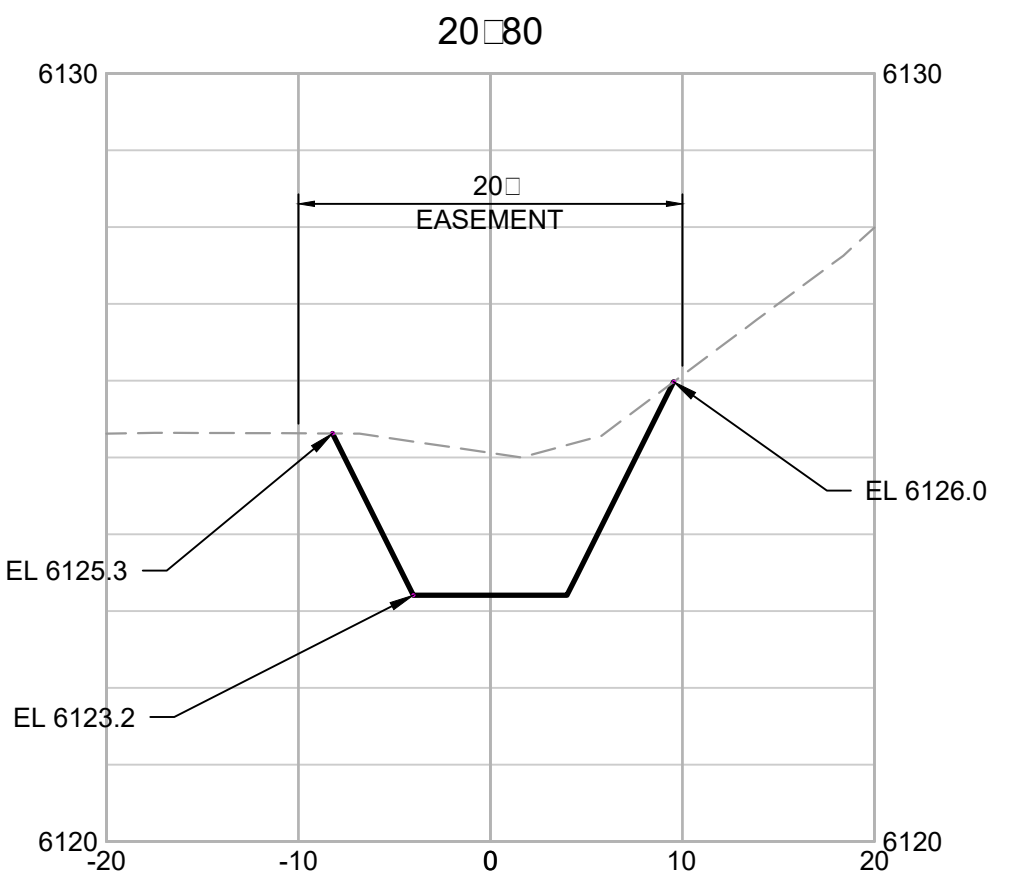
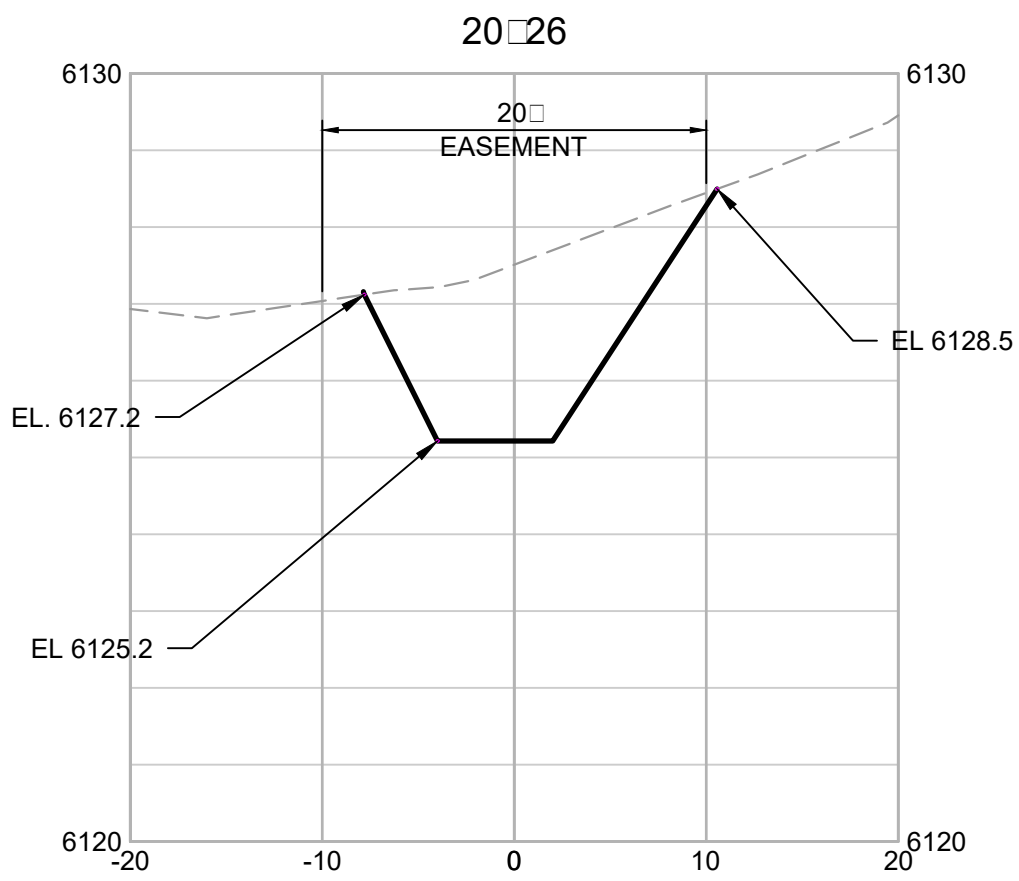
SANTA FE COUNTY
CAMINO TORCIDO LOOP
DRAINAGE AND ROAD IMPROVEMENTS

CHANNEL SECTIONS



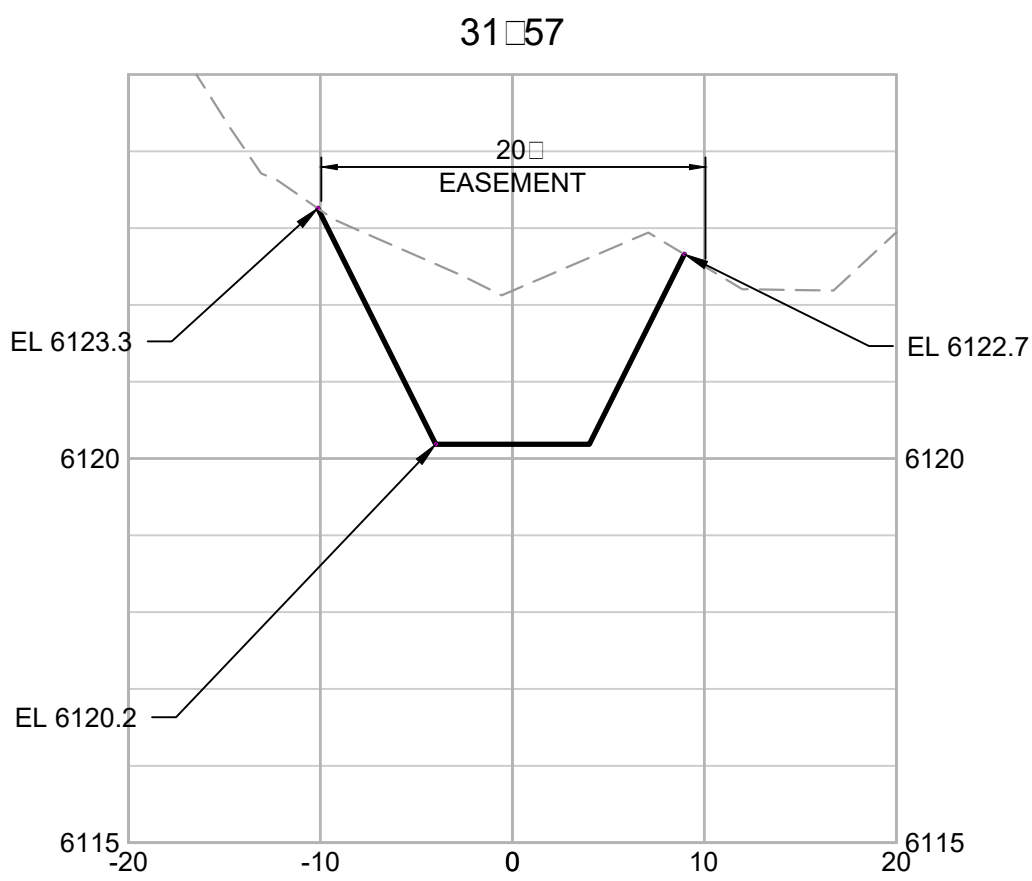
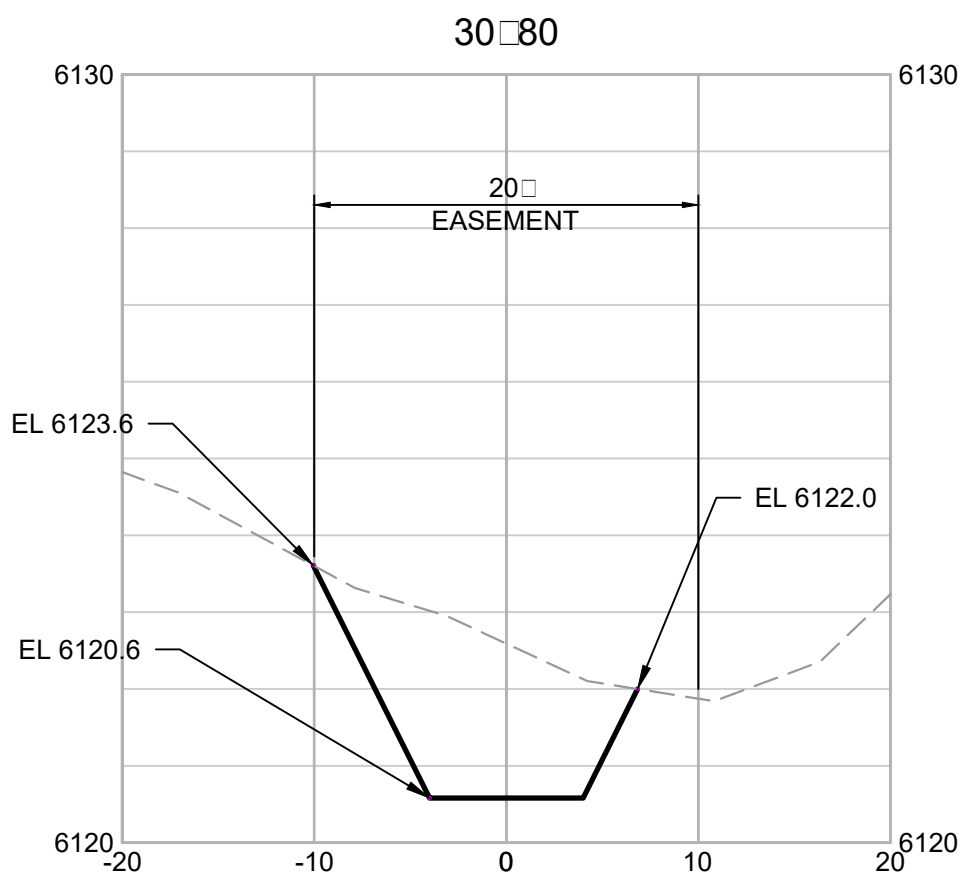
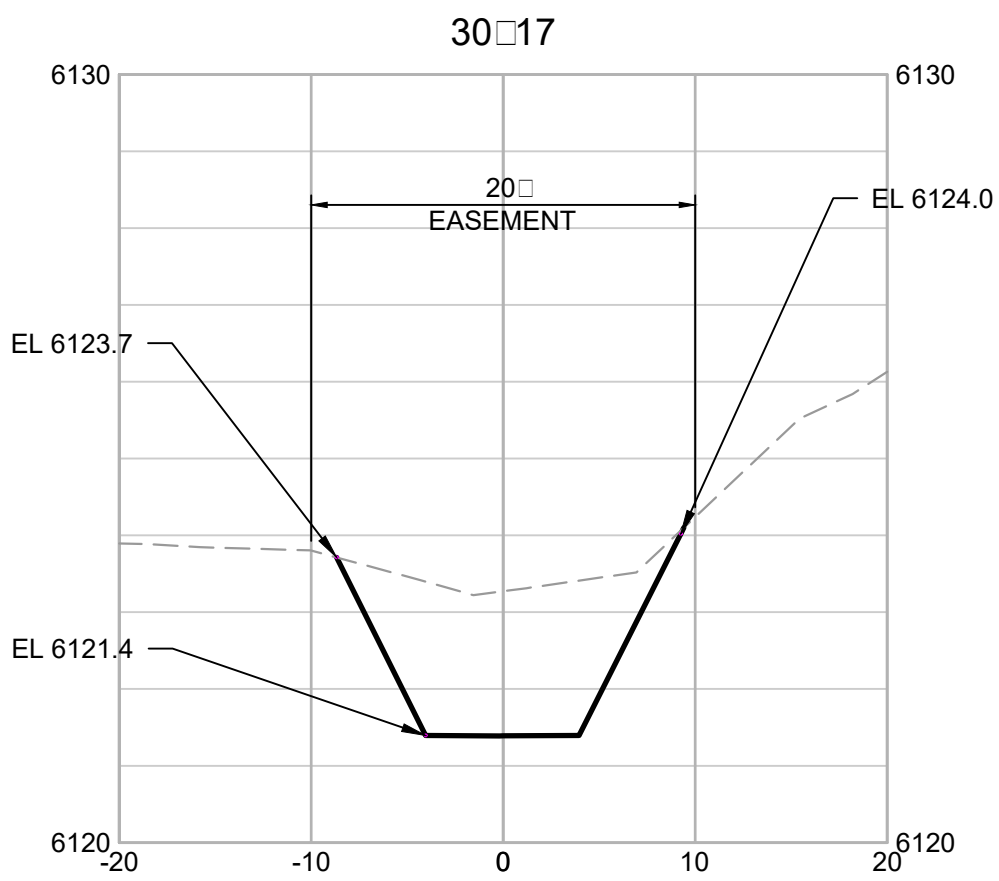
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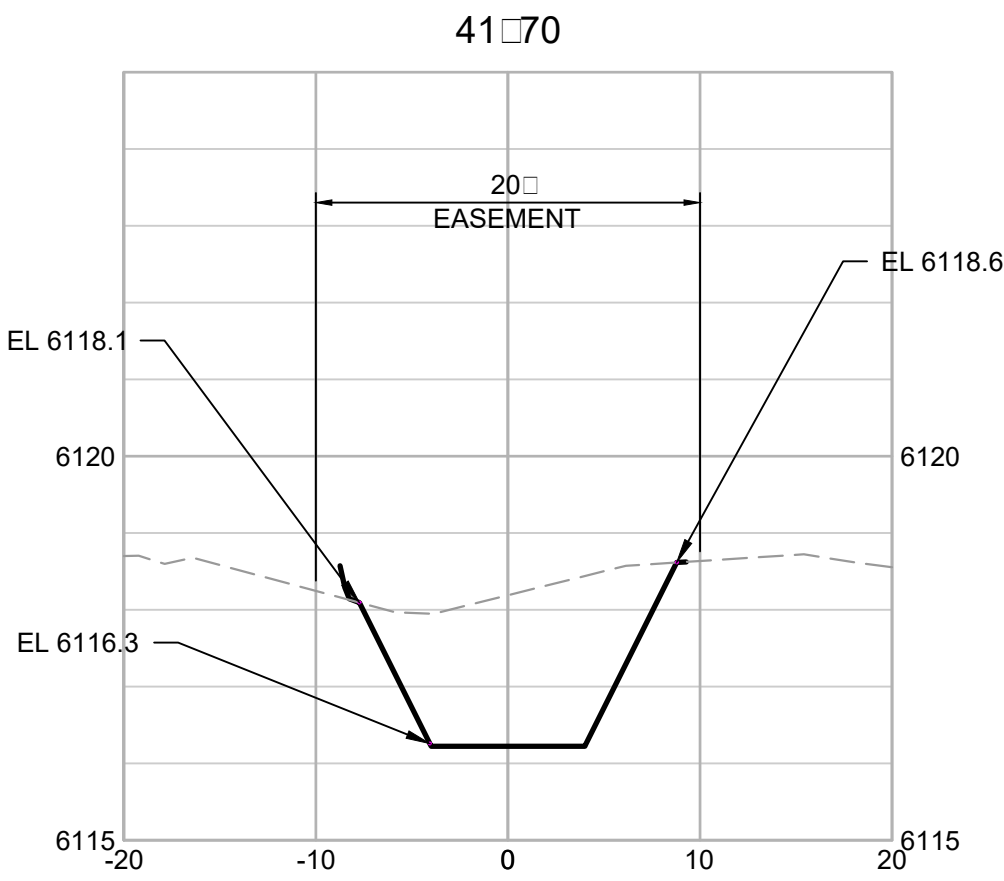
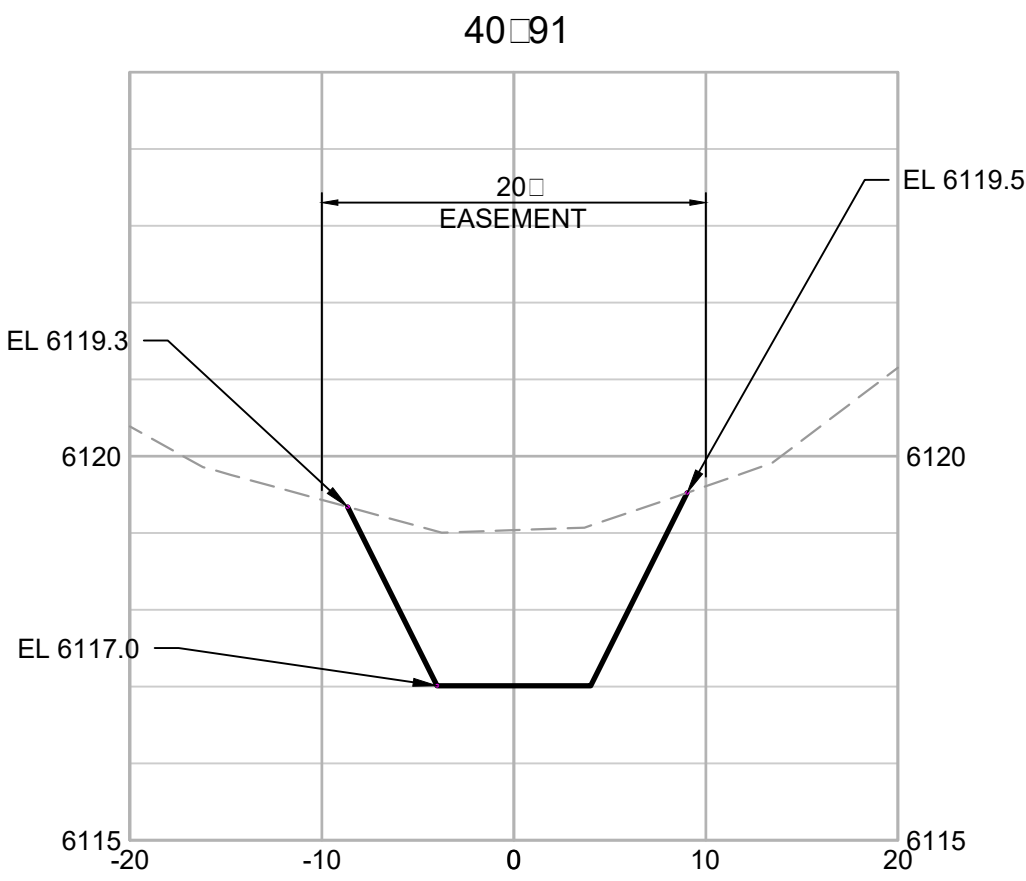
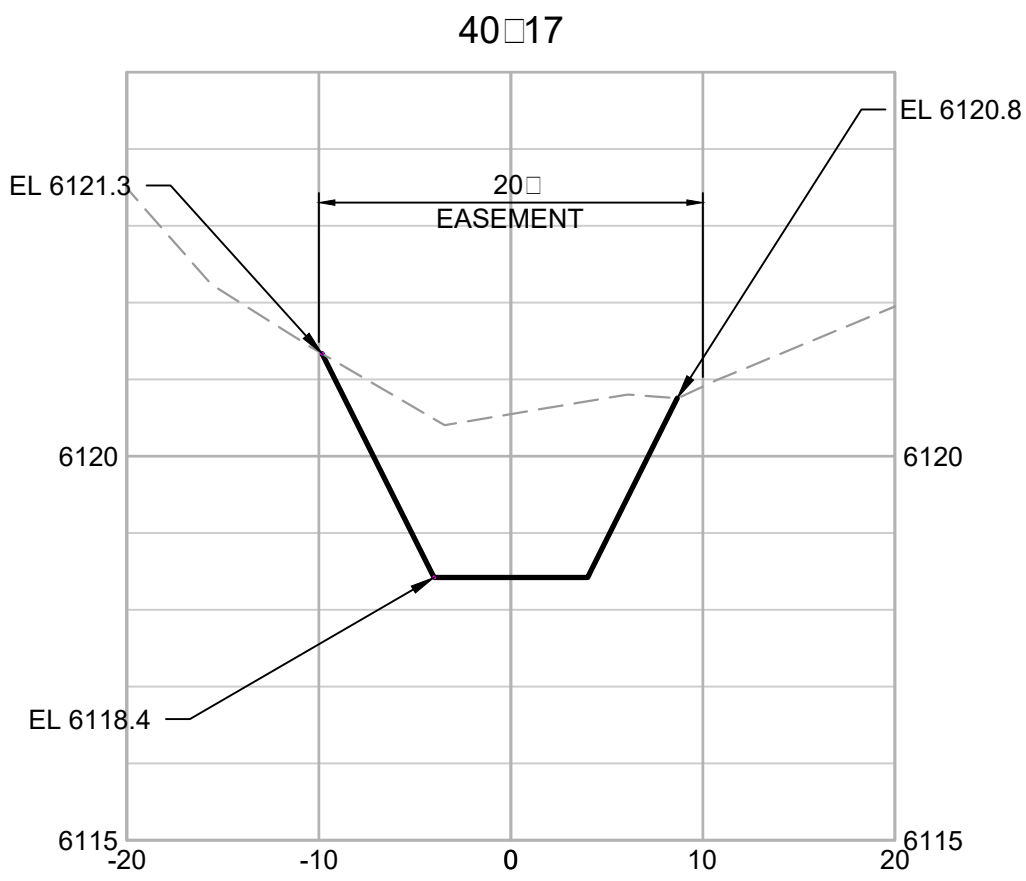
CHANNEL SECTIONS – SEGMENT 2

HORIZONTAL SCALE: 1" = 10'
VERTICAL SCALE: 1" = 2.5'



CHANNEL SECTIONS – SEGMENT 3

HORIZONTAL SCALE: 1" = 10'
VERTICAL SCALE: 1" = 2.5'



CHANNEL SECTIONS – SEGMENT 4

HORIZONTAL SCALE: 1" = 10'
VERTICAL SCALE: 1" = 2.5'

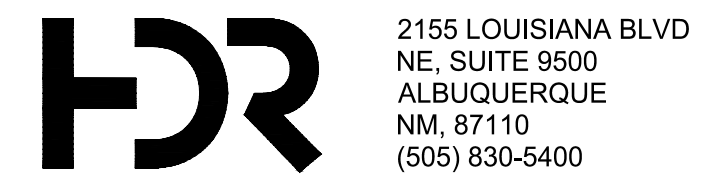


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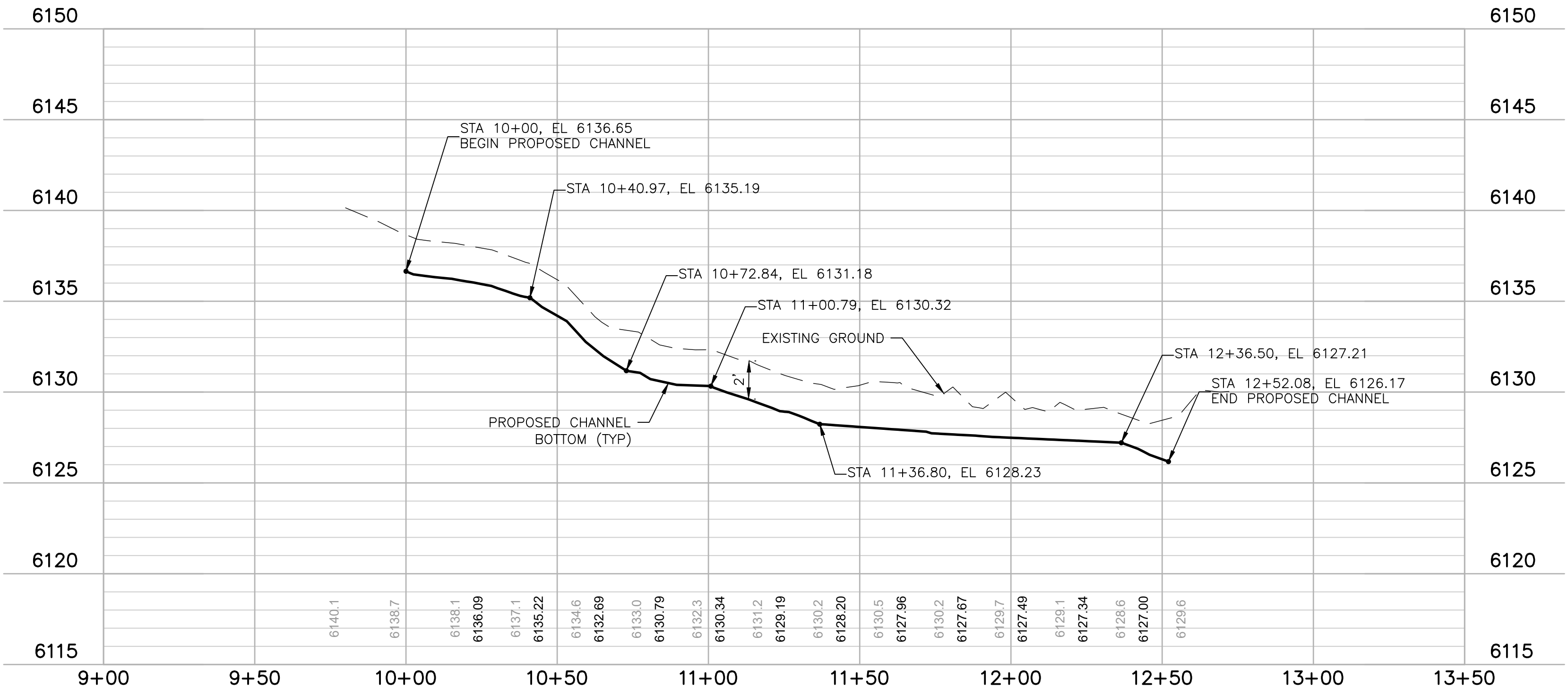
SANTA FE COUNTY
CAMINO TORCIDO LOOP
DRAINAGE AND ROAD IMPROVEMENTS

CHANNEL SECTIONS



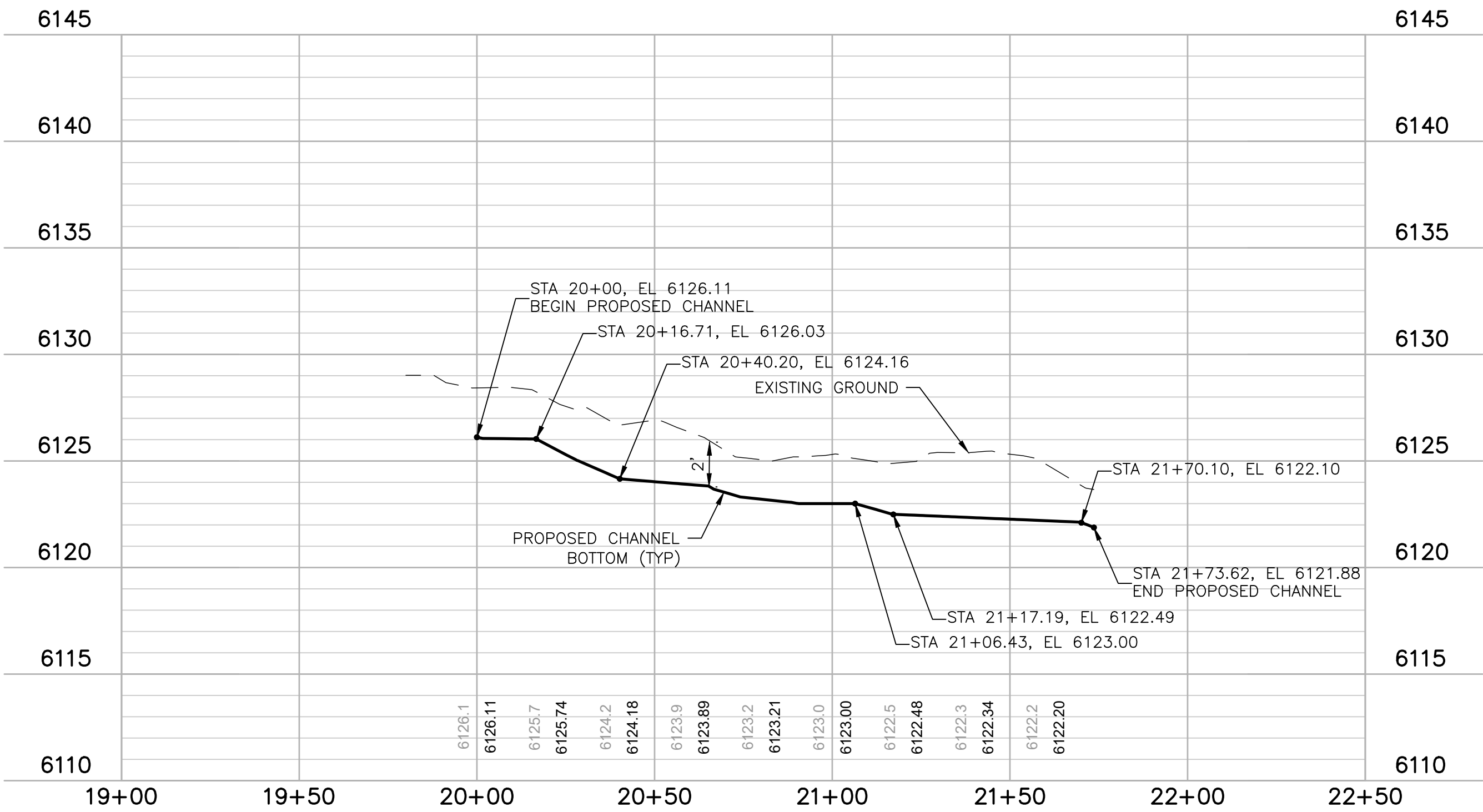
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SEGMENT 1

SCALE: { HORIZ: 1"=30'
VERT: 1"=5'



SEGMENT 2

SCALE: { HORIZ: 1"=30'
VERT: 1"=5'



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REVISIONS (OR CHANGE NOTICES)

SANTA FE COUNTY
CAMINO TORCIDO LOOP
DRAINAGE AND ROAD IMPROVEMENTS

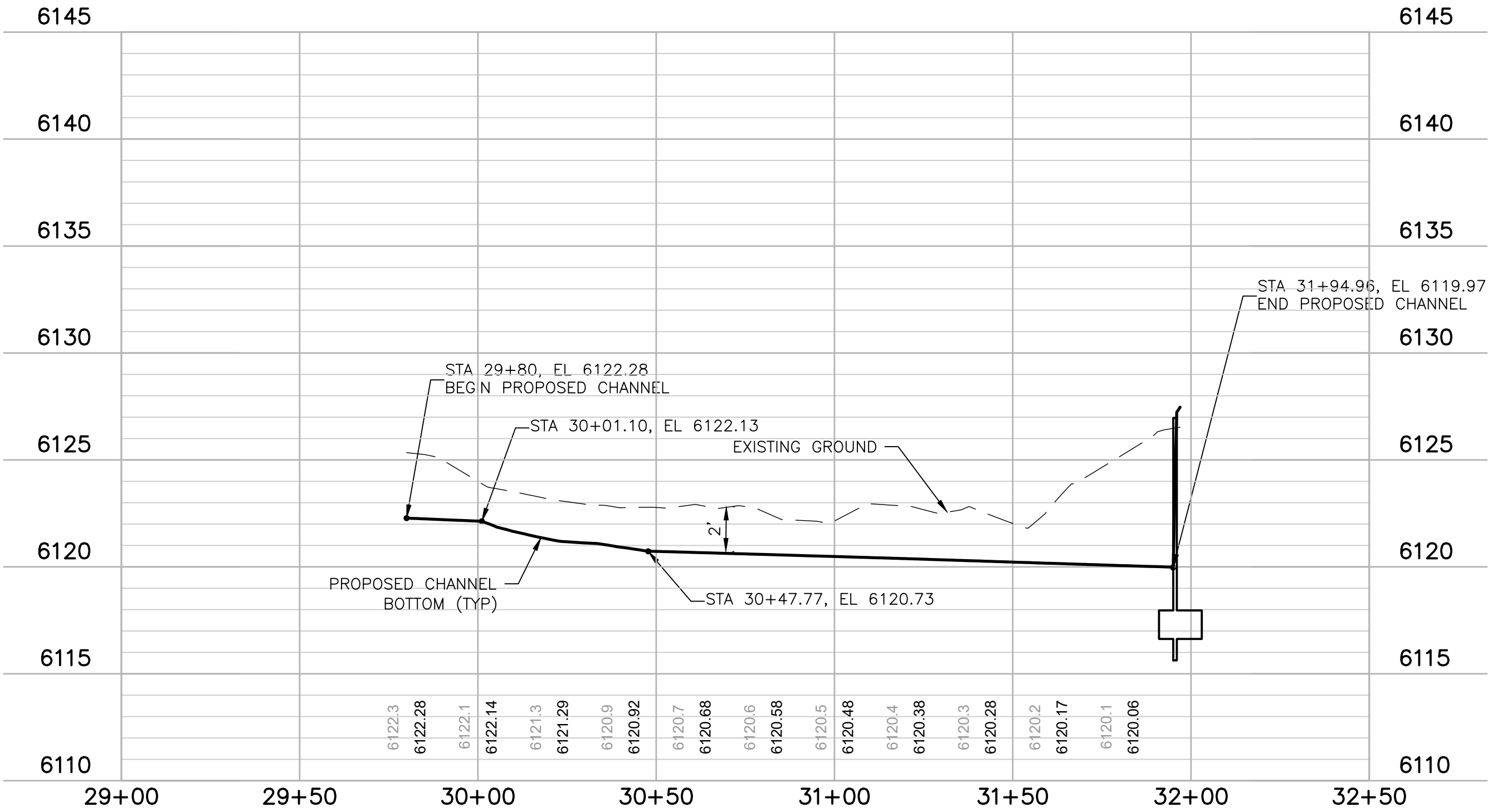
EASEMENT CHANNEL PROFILES

HDR

2155 LOUISIANA BLVD
NE, SUITE 9500
ALBUQUERQUE
NM 87110
(505) 830-5400

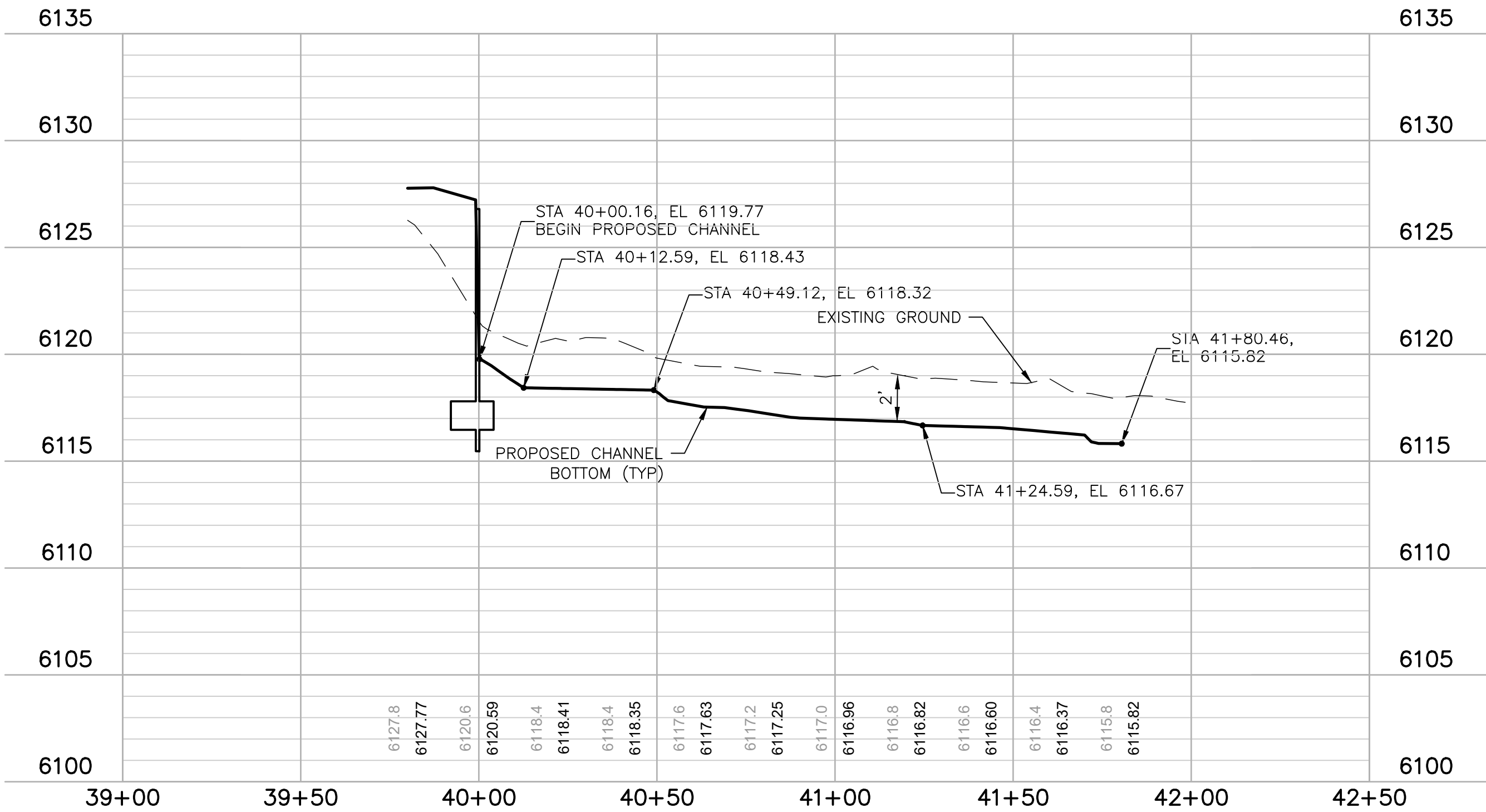
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SEGMENT 3

SCALE: { HORIZ: 1"=30'
VERT: 1"=5'



SEGMENT 4

SCALE: { HORIZ: 1"=30'
VERT: 1"=5'



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NO.	DESCRIPTION	DATE	BY

REVISIONS (OR CHANGE NOTICES)

SANTA FE COUNTY
CAMINO TORCIDO LOOP
DRAINAGE AND ROAD IMPROVEMENTS
EASEMENT CHANNEL PROFILES



2155 LOUISIANA BLVD
NE, SUITE 9500
ALBUQUERQUE
NM 87110
(505) 830-5400

GENERAL NOTES:

1. ALL CONSTRUCTION WARNING SIGNS SHALL HAVE A BLACK LEGEND ON ORANGE BACKGROUND.
2. ALL ADVANCE WARNING SIGNS SHALL BE A MINIMUM OF 36" BY 36" IN SIZE AND SHALL HAVE ONE WARNING LIGHT.
3. ARROW PANEL REQUIRED FOR EACH LANE CLOSURE ON ARTERIAL AND COLLECTOR STREETS.
4. ALL TRAFFIC CONTROL FOR THE PROJECT SHALL MEET MUTCD REQUIREMENTS.

RECOMMENDED SIGN SPACING(D) FOR
ADVANCE WARNING SIGN SERIES

SPEED MILES PER HOUR	MINIMUM DISTANCE IN FEET	
	BETWEEN SIGNS	FROM LAST SIGN TO TAPER
0-20	10 X SPEED LIMIT	10 X SPEED LIMIT
25-30	10 X SPEED LIMIT	10 X SPEED LIMIT
30-35	10 X SPEED LIMIT	10 X SPEED LIMIT
40-45	10 X SPEED LIMIT	10 X SPEED LIMIT
50-60	10 X SPEED LIMIT	10 X SPEED LIMIT

TAPER CRITERIA

TYPE OF TAPER	TAPER LENGTH
---------------	--------------

UPSTREAM TAPER:	L MINIMUM
MERGING TAPER	1/2 L MINIMUM
SHIFTING TAPER	1/2 L MINIMUM
SHOULDER TAPER	1/2 L MINIMUM
TWO-WAY TRAFFIC TAPER	100 FEET MAXIMUM
DOWNSTREAM TAPERS	100 FEET PER LANE

TAPER LENGTH COMPUTATION

SPEED LIMIT

40 MPH OR LESS	$L = \frac{WS^2}{60}$
40 MPH OR GREATER	$L = W \times S$

L = TAPER LENGTH
W = WIDTH OF OFFSET IN FEET
S = POSTED SPEED OR OFF-PEAK
85-PERCENTILE SPEED IN MPH

LEGEND

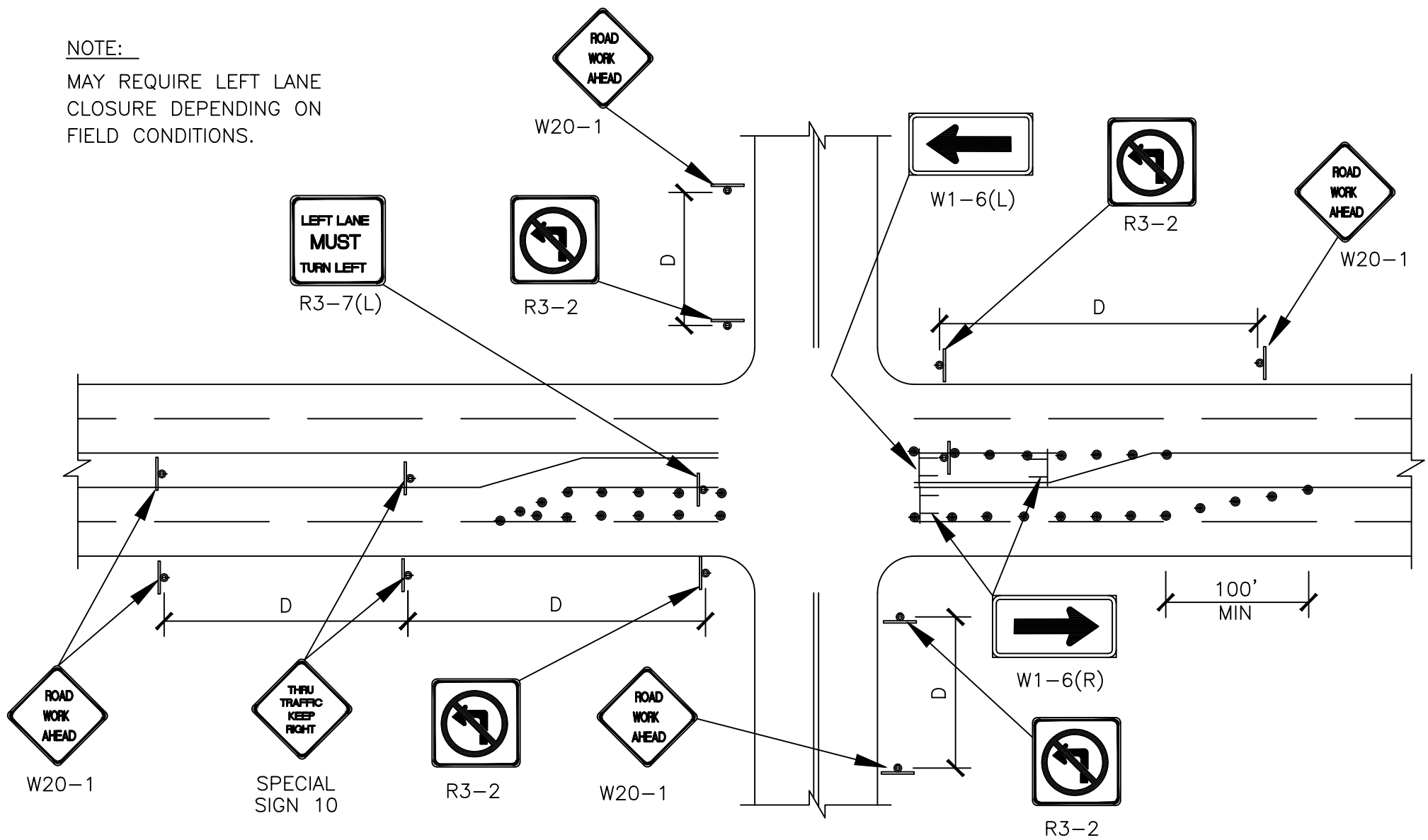
	WORK AREA
	BARRICADE - TYPE I, TYPE II, VERTICAL PANEL, OR BARREL
	BARRICADE - TYPE III
	VERTICAL PANEL
	WARNING SIGN
	D DISTANCE BETWEEN SIGNS - A DISTANCE MEASURED IN FEET EQUAL TO A VALUE OF TEN TIMES THE SPEED LIMIT OF THE STREET
	FLAGMAN POSITION
	S SPACING BETWEEN BARRICADES - A DISTANCE MEASURED IN FEET EQUAL TO THE STREET LIMIT OF THE STREET
	L TAPER LENGTH - SEE CHART BELOW

THE TANGENT LENGTH IS EQUAL TO THE TAPER LENGTH FOR A GIVEN STREET.

TAPER REQUIREMENT

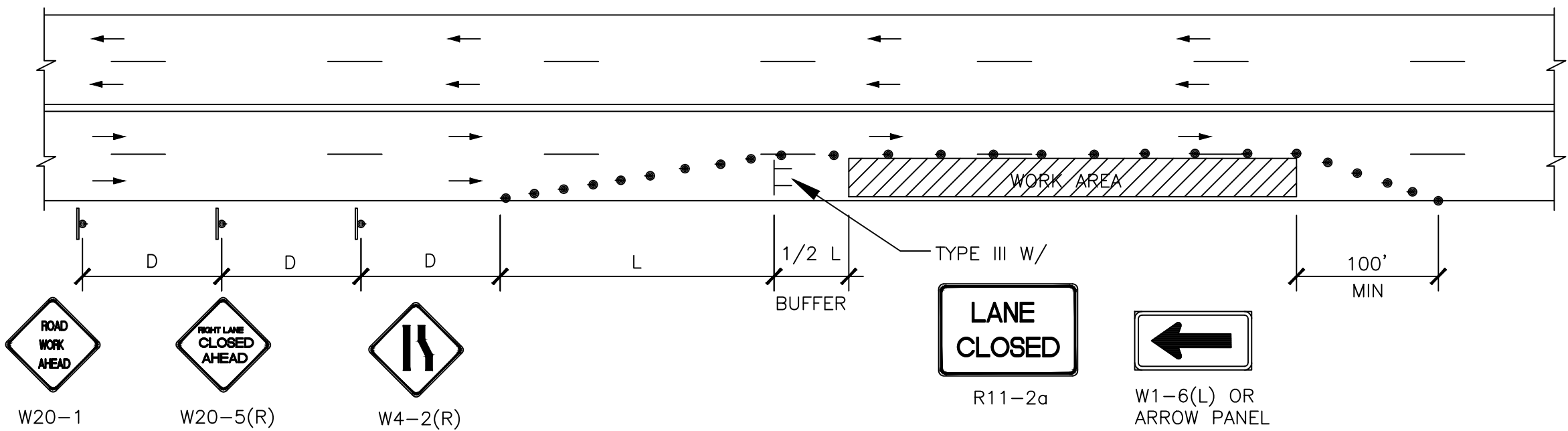
SPEED LIMIT (MPH)	TAPER LENGTH(L) (FEET)			MINIMUM NUMBER OF DEVICES FOR TAPER	MAXIMUM DEVICE SPACING IN FEET	
	10' LANE	11' LANE	12' LANE		ALONG TAPER	AFTER TAPER
20	70	75	80	5	20	20
25	105	115	125	6	25	25
30	150	165	180	7	30	30
35	205	225	245	8	35	35
40	270	295	320	9	40	40
45	450	495	540	13	45	45
50	500	550	600	13	50	50
55	550	605	660	13	55	55

NOTE:
MAY REQUIRE LEFT LANE
CLOSURE DEPENDING ON
FIELD CONDITIONS.

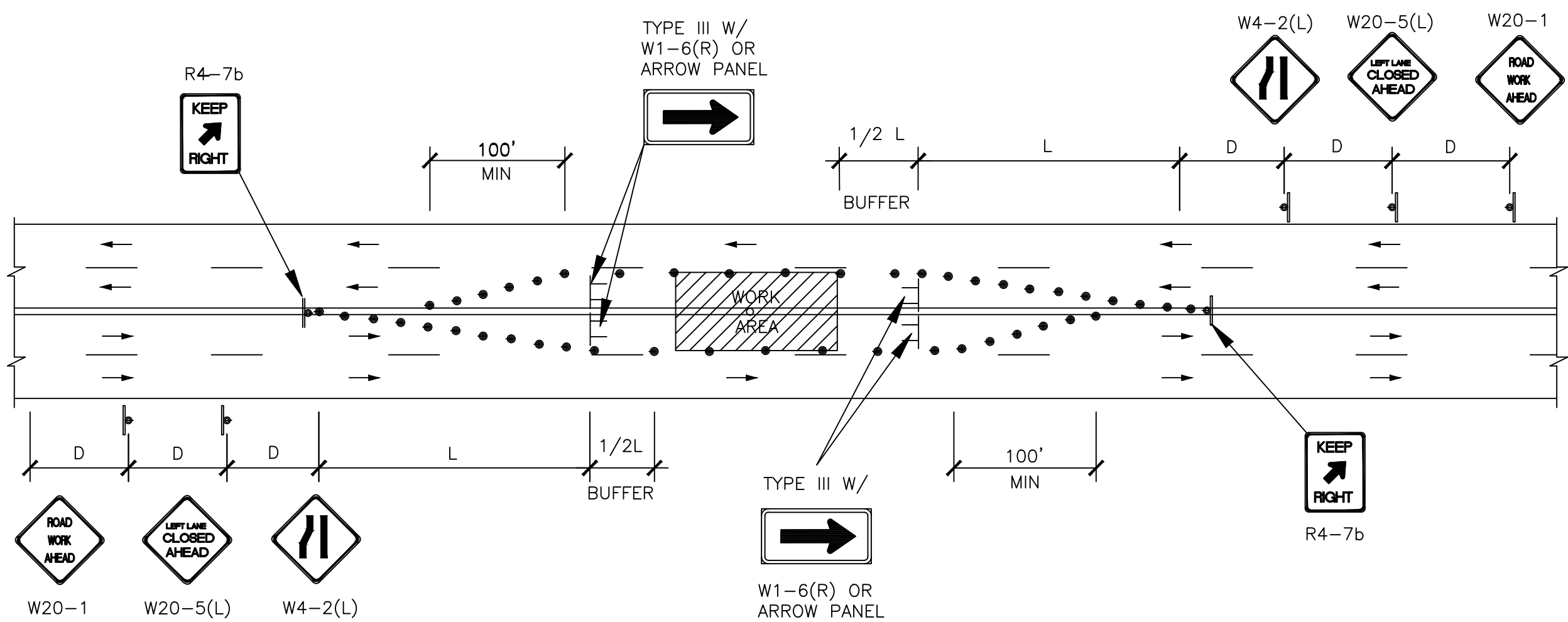


TYPICAL LANE CLOSURE AT INTERSECTION

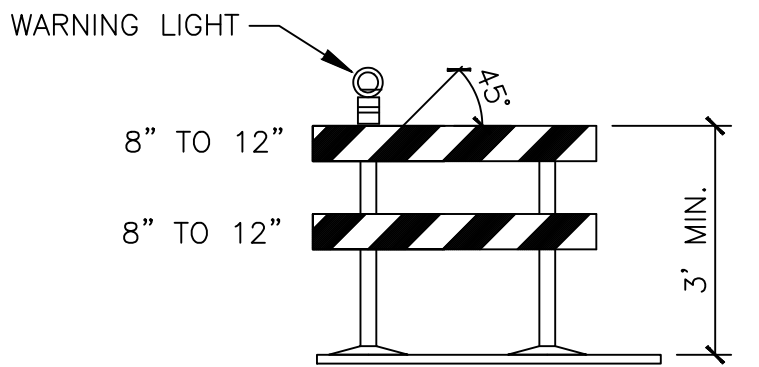
- NOTES:
1. DEPENDING ON WORK ZONE LOCATION.
 2. MAY REQUIRE CLOSURE OF EITHER ONE OF TWO LEFT TURN LANES (WHERE APPLICABLE).



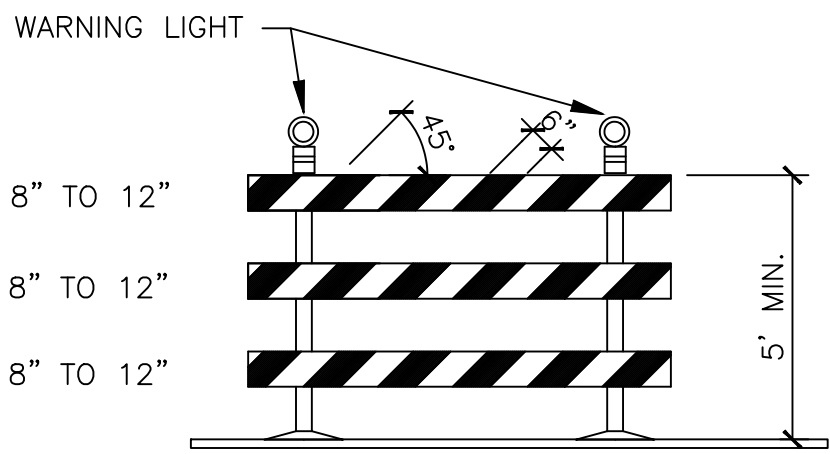
TYPICAL RIGHT LANE CLOSURE



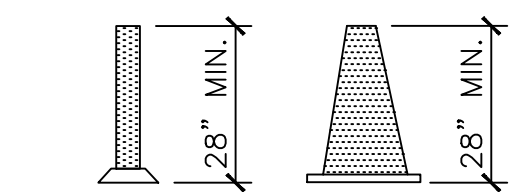
TYPICAL LEFT LANE CLOSURE



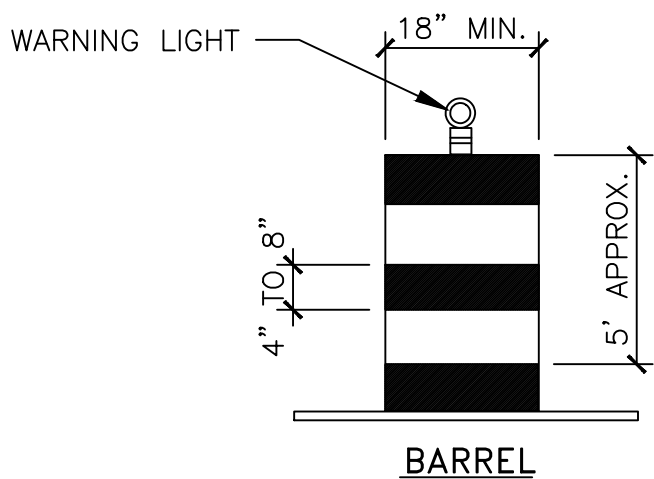
TYPE II BARRICADE COLLAPSIBLE
NOTE: STRIPES SHALL SLOPE DOWNWARD
TOWARD DIRECTION OF TRAVEL



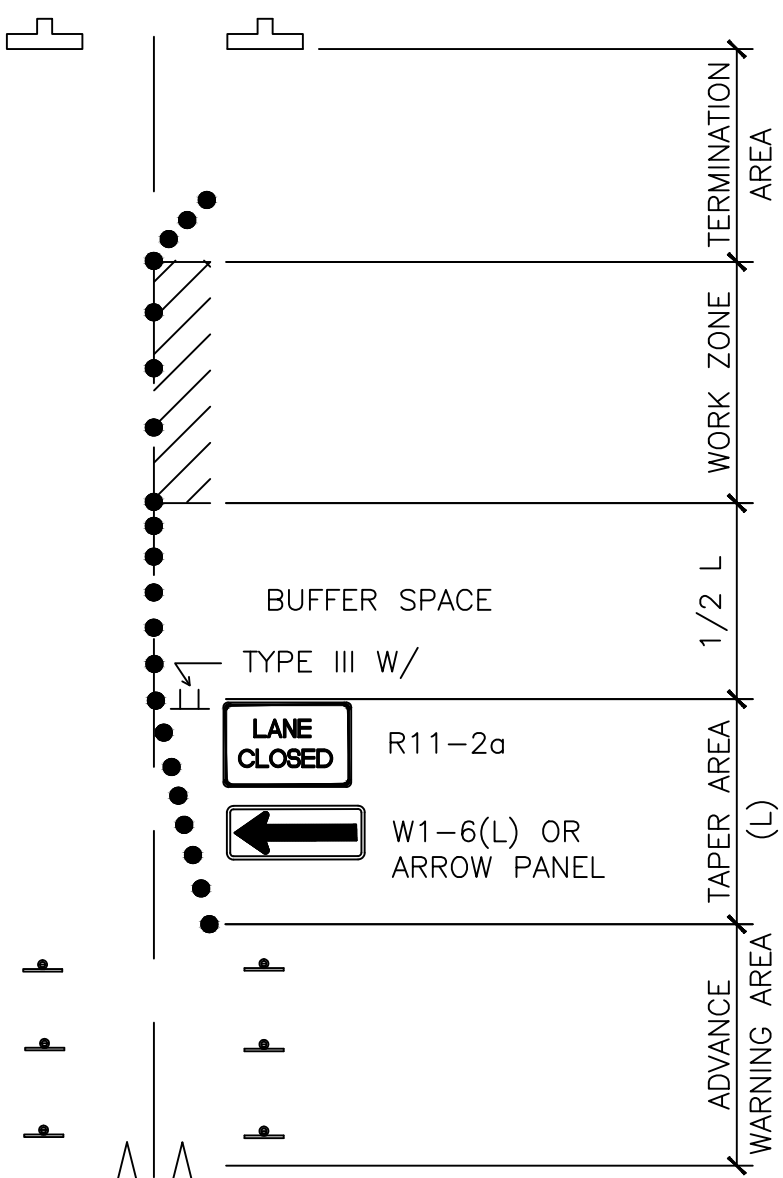
TYPE III BARRICADE



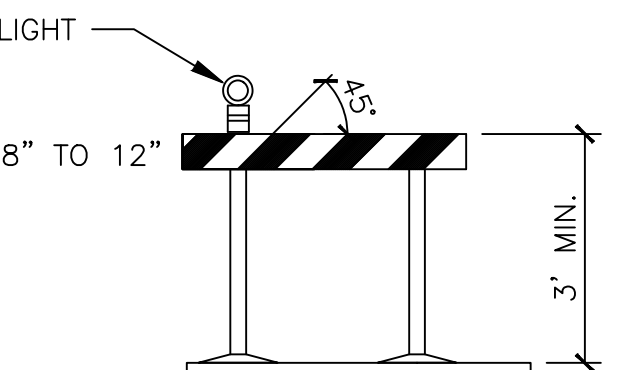
CONES



BARREL



TRAFFIC CONTROL ELEMENTS



TYPE I BARRICADE COLLAPSIBLE
NOTE: STRIPES SHALL SLOPE DOWNWARD
TOWARD DIRECTION OF TRAVEL



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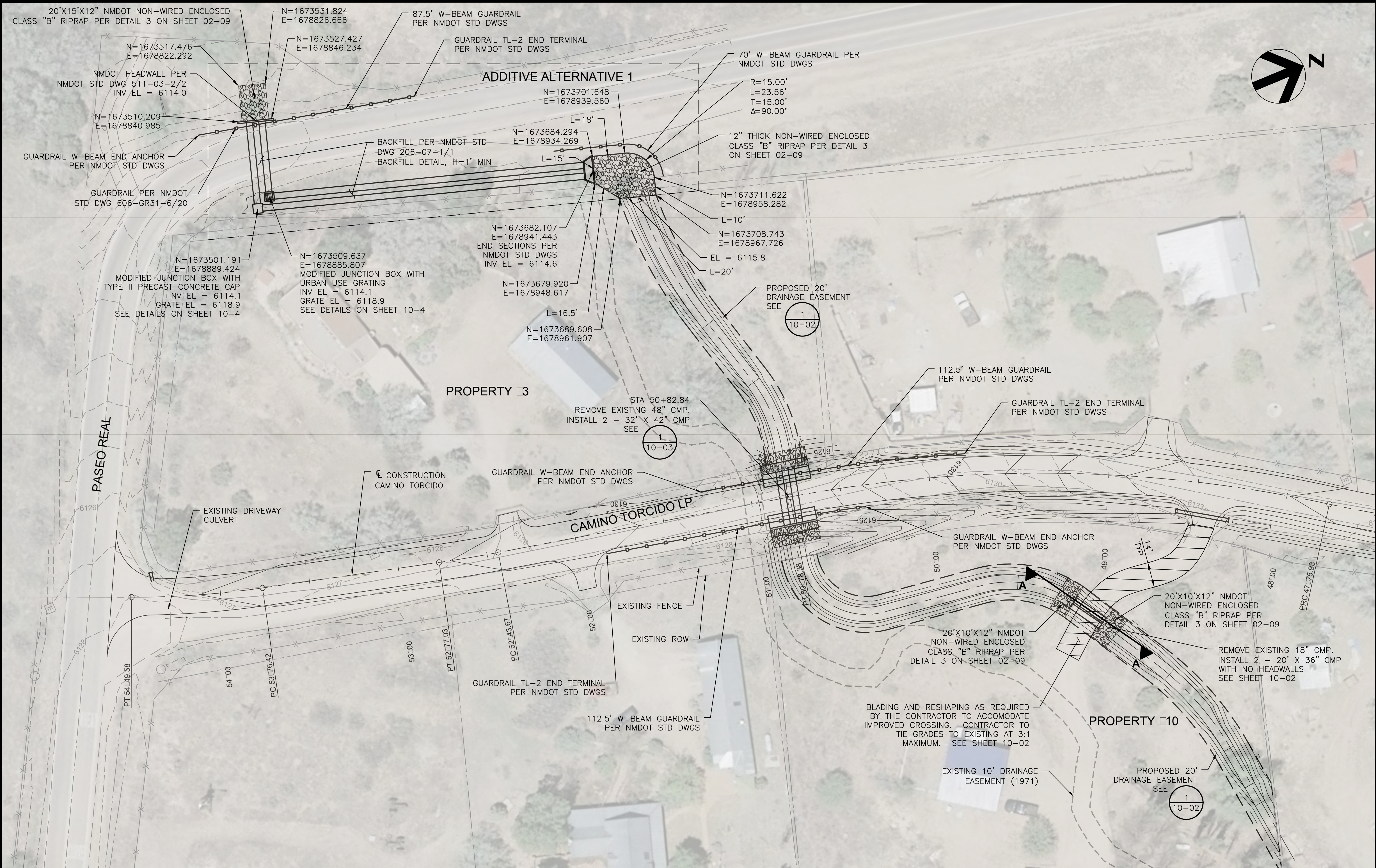
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SANTA FE COUNTY
CAMINO TORCIDO LOOP
DRAINAGE AND ROAD IMPROVEMENTS

TRAFFIC CONTROL DETAILS

GENERAL NOTES:

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- SEE DETAIL 1 ON SHEET 10-02 FOR CHANNEL TYPICAL SECTION.
- EXISTING STORM DRAIN LOCATIONS ARE APPROXIMATE. CONTRACTOR SHALL VERIFY, SIZING, LOCATIONS, AND ELEVATIONS IN FIELD PRIOR TO CONSTRUCTION OR EXCAVATION OF ANY STRUCTURES, GRADING, AND PIPE.
- FOR ADDITIVE ALTERNATIVE 1: CONTRACTOR TO GRADE THE EXISTING AREA OVER THE STORM DRAIN PIPING (EAST OF PASEO REAL) TO MAINTAIN 1' OF COVER OF THE PIPES AND GRADE THE AREA TO THE NEW JUNCTION BOX GRATE.
- FOR ADDITIVE ALTERNATIVE 1: CONTRACTOR TO GRADE EXISTING AREA TO THE WEST TO ALLOW THE CULVERT TO DAYLIGHT.

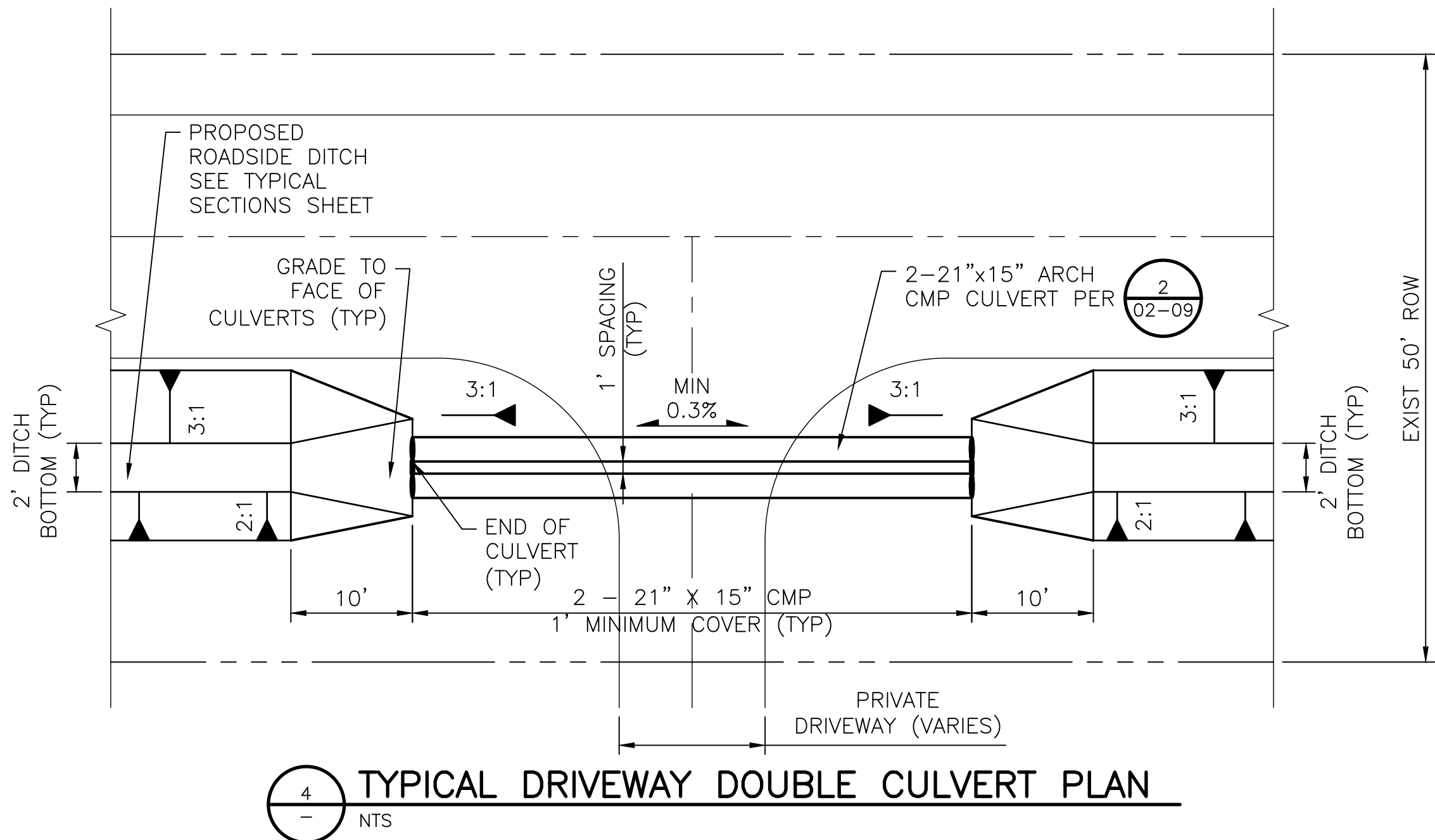
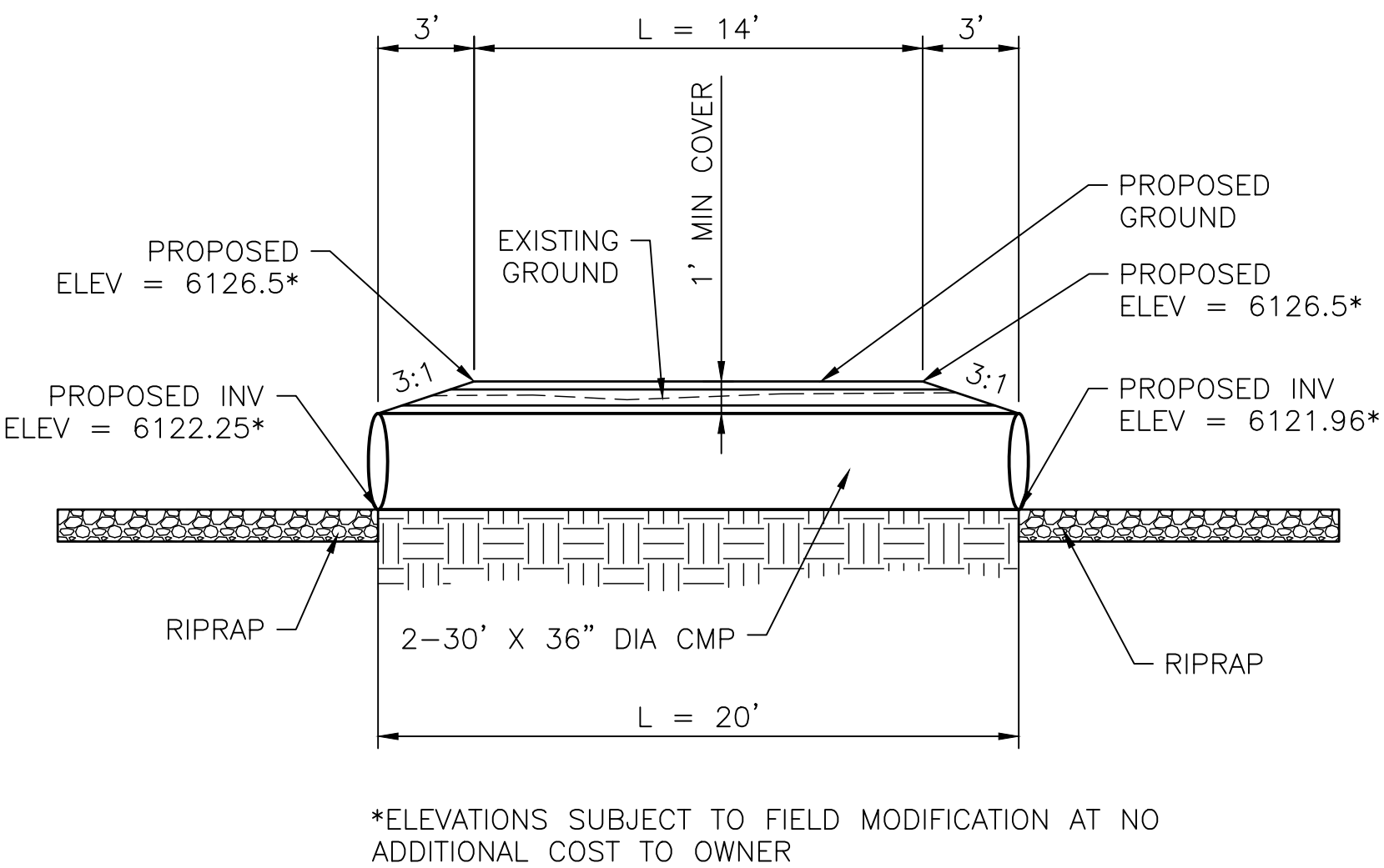
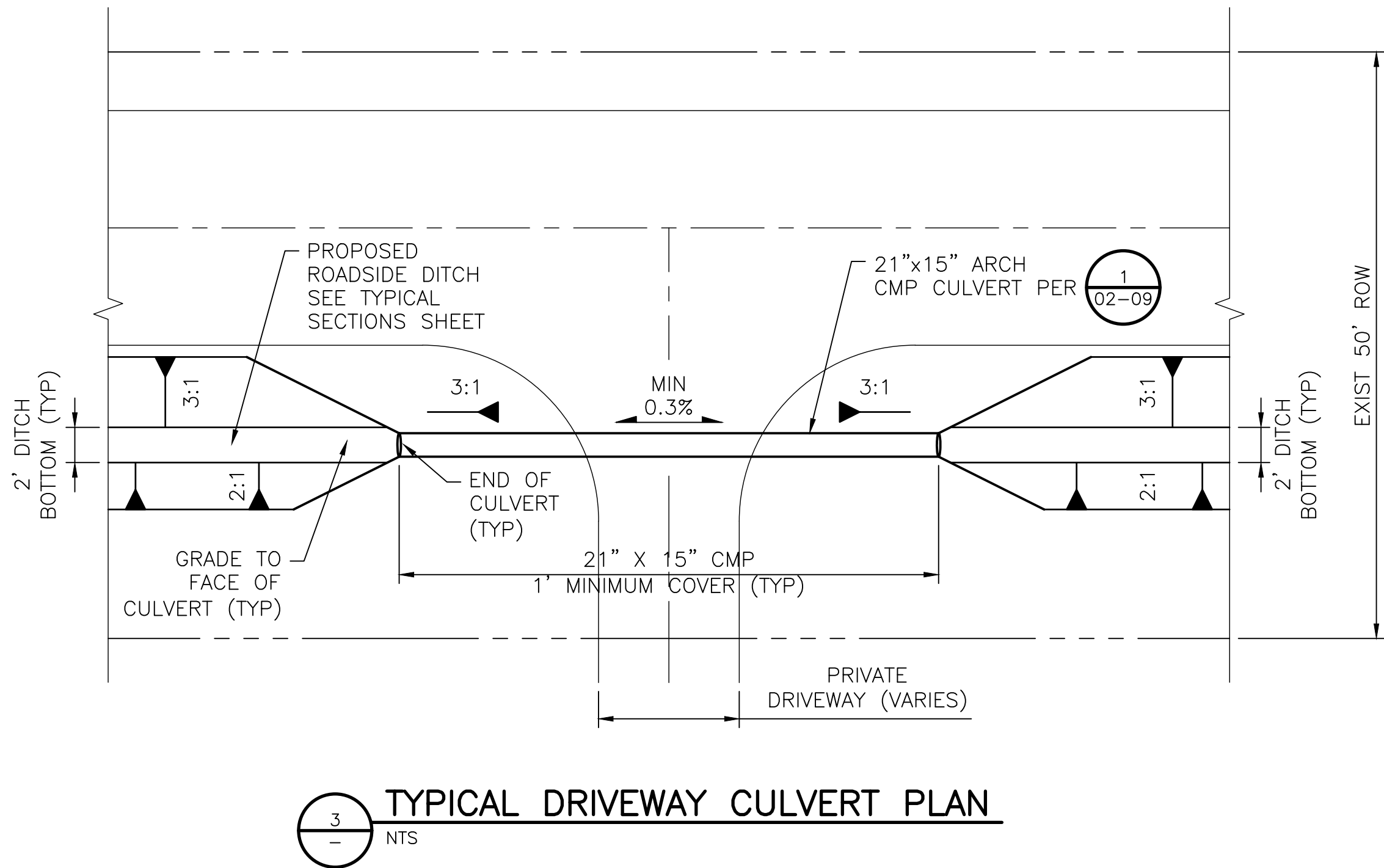
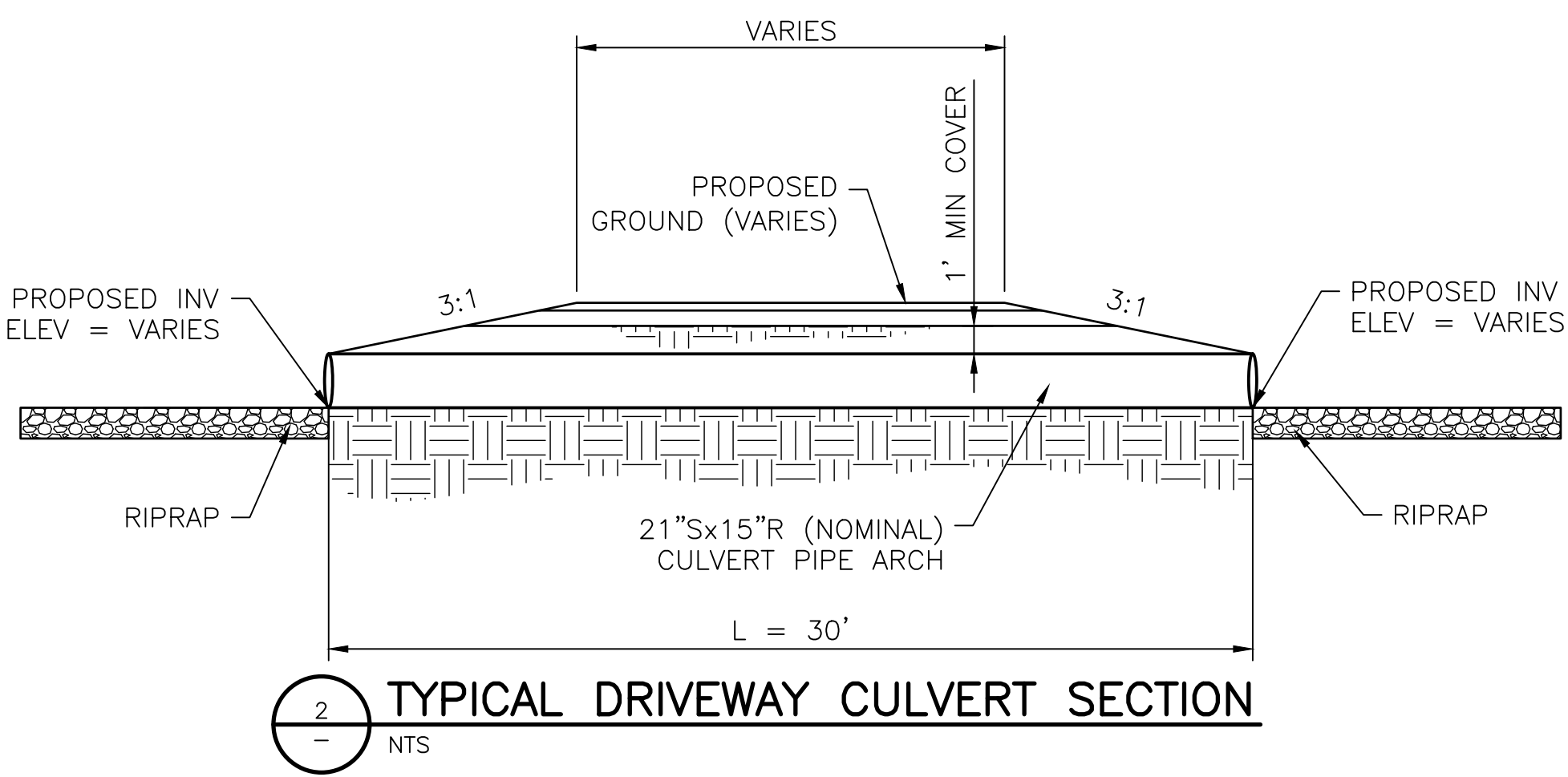
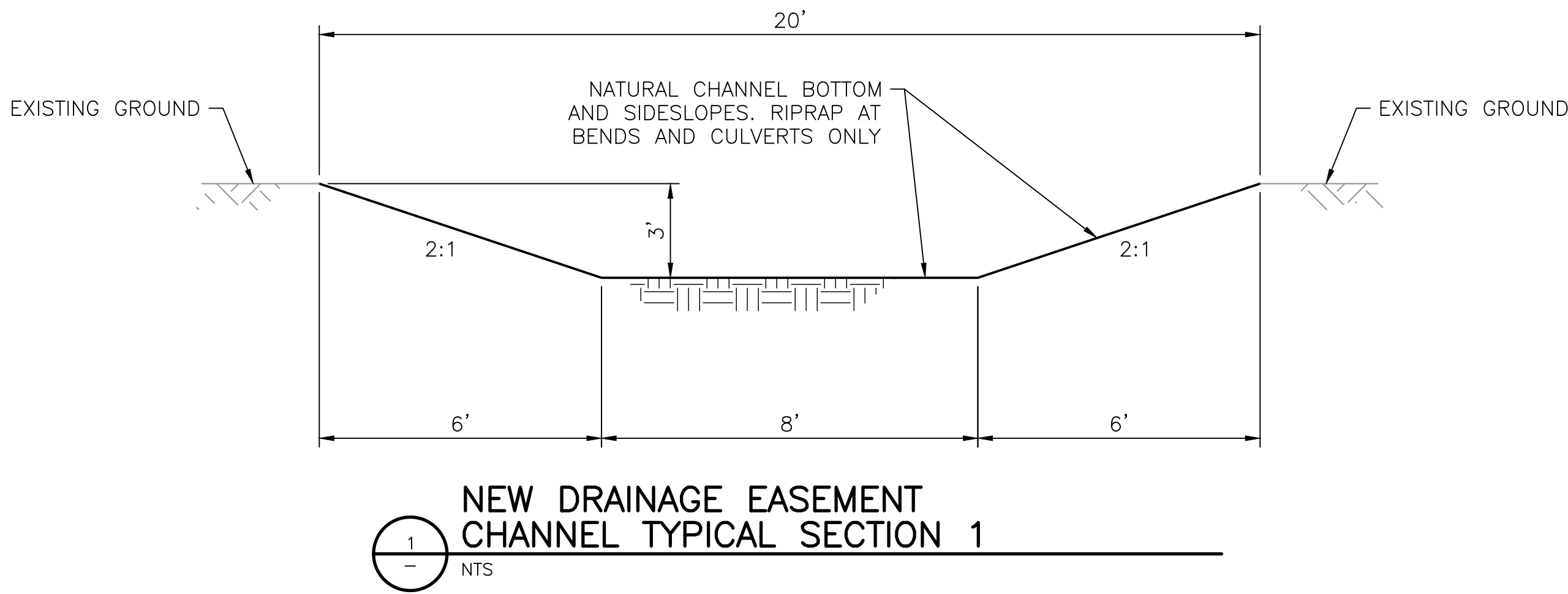


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SANTA FE COUNTY
CAMINO TORCIDO LOOP
DRAINAGE AND ROAD IMPROVEMENTS

DRAINAGE STRUCTURE PLAN
WITH ADDITIVE ALTERNATE 1

- GENERAL NOTES:**
1. CONTRACTOR TO TIE INTO EXISTING GROUND ACCORDINGLY.



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SANTA FE COUNTY CAMINO TORCIDO LOOP DRAINAGE AND ROAD IMPROVEMENTS DRAINAGE STRUCTURE DETAILS			

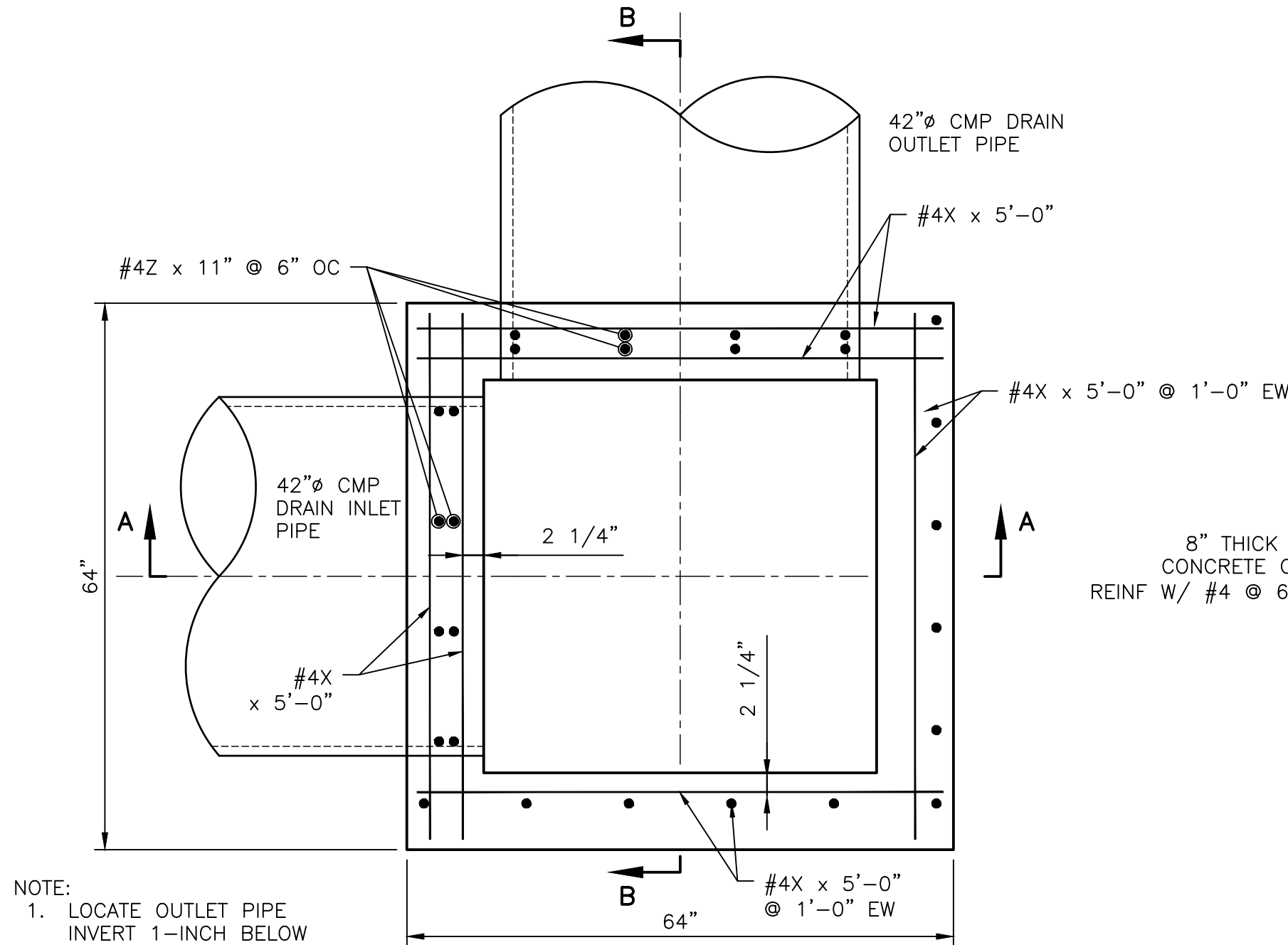


GENERAL NOTES:

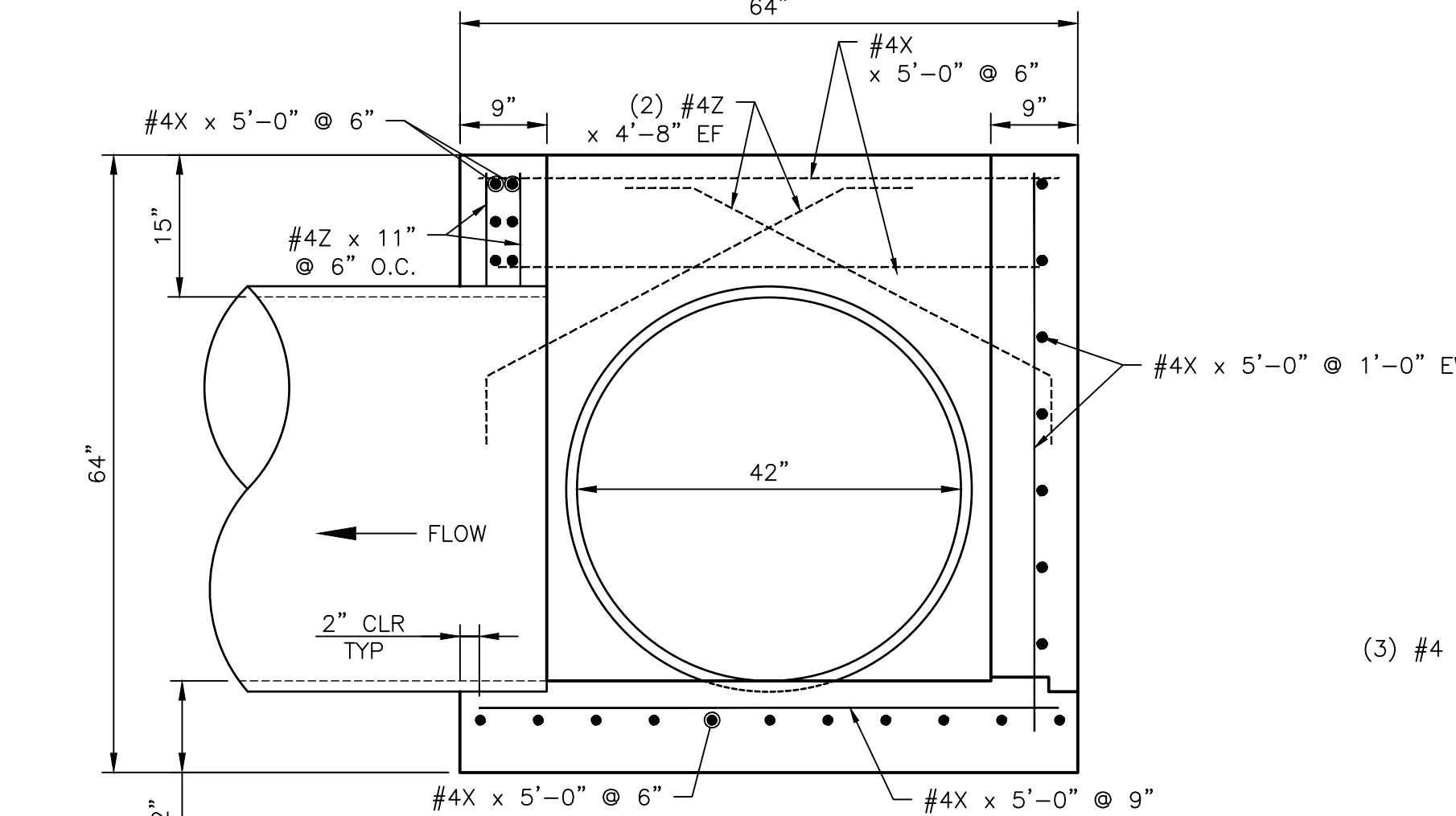
1. MARKSMANSHIP AND MATERIALS SHALL CONFORM TO THE NEW MEXICO DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATION FOR HIGHWAY AND BRIDGE CONSTRUCTION, CURRENT EDITION.
2. ALL CONCRETE SHALL BE CLASS "A". CHAMFER EXPOSED EDGES OF CONCRETE 3/4" UNLESS OTHERWISE NOTED ON THE DETAILS.
3. REINFORCING BARS SHALL CONFORM TO A.A.S.H.T.O. SPECIFICATION M 31. GRADE 60. DIMENSIONS REFER TO THE CENTERLINE OF BAR UNLESS OTHERWISE NOTED ON THE DETAILS.
4. STRUCTURAL STEEL SHALL CONFORM TO A.A.S.H.T.O. SPECIFICATION M 183 AND SHALL BE GIVEN A PROTECTIVE COATING IN CONFORMANCE WITH THE SPECIFICATIONS.
5. THIS DETAIL WAS CREATED BASED ON NMDOT STANDARD DRAWING 623-01-1/1.
6. SECURE GRATING TO EMBEDDED ANGLE WITH CLIPS OR ANCHORS THAT CAN BE REMOVED, MIN 2 EACH SIDE.

DESIGN DATA:

DESIGN ACCORDING TO AASHTO SPECIFICATIONS CURRENT EDITION.
DESIGN STRESSES:
REINFORCED CONCRETE: $f'_c=3,000$ PSI, $f_y=60,000$ PSI, $n=10$
STRUCTURAL STEEL: $f_s=24,000$ PSI, $f_y=36,000$ PSI
AT-REST EARTH PRESSURE: 68 LB/CF EQUIV. FLUID PRESSURE, 2'-0" SURCHARGE.
LIVE LOAD ON URBAN GRATING: ONE 16,000 LBS WHEEL PLUS 30" IMPACT.
LIVE LOAD ON RURAL GRATING: ONE 16,000 LBS WHEEL PLUS 30" IMPACT, 35% OVERSTRESS.

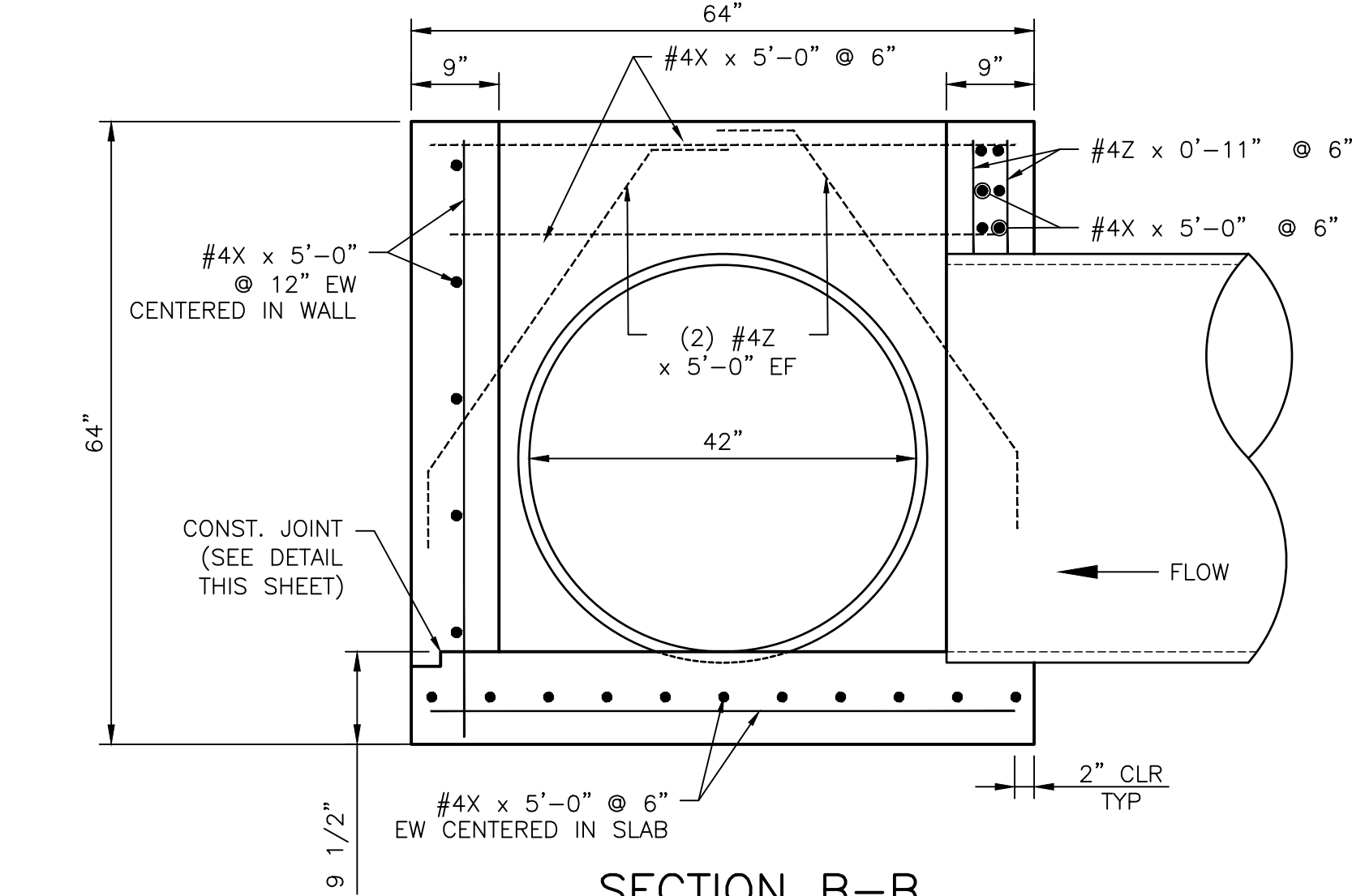


PLAN

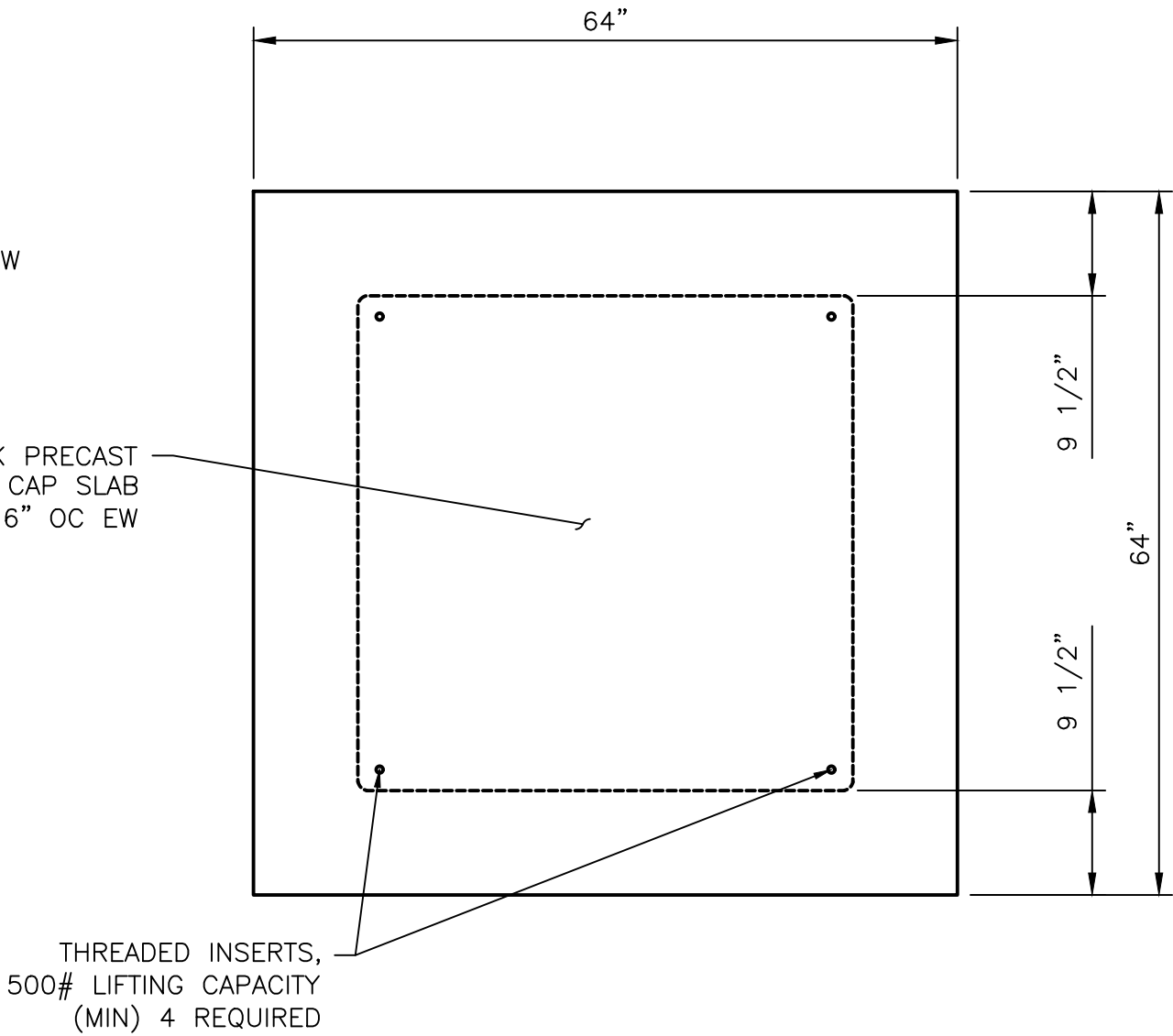


SECTION A-A

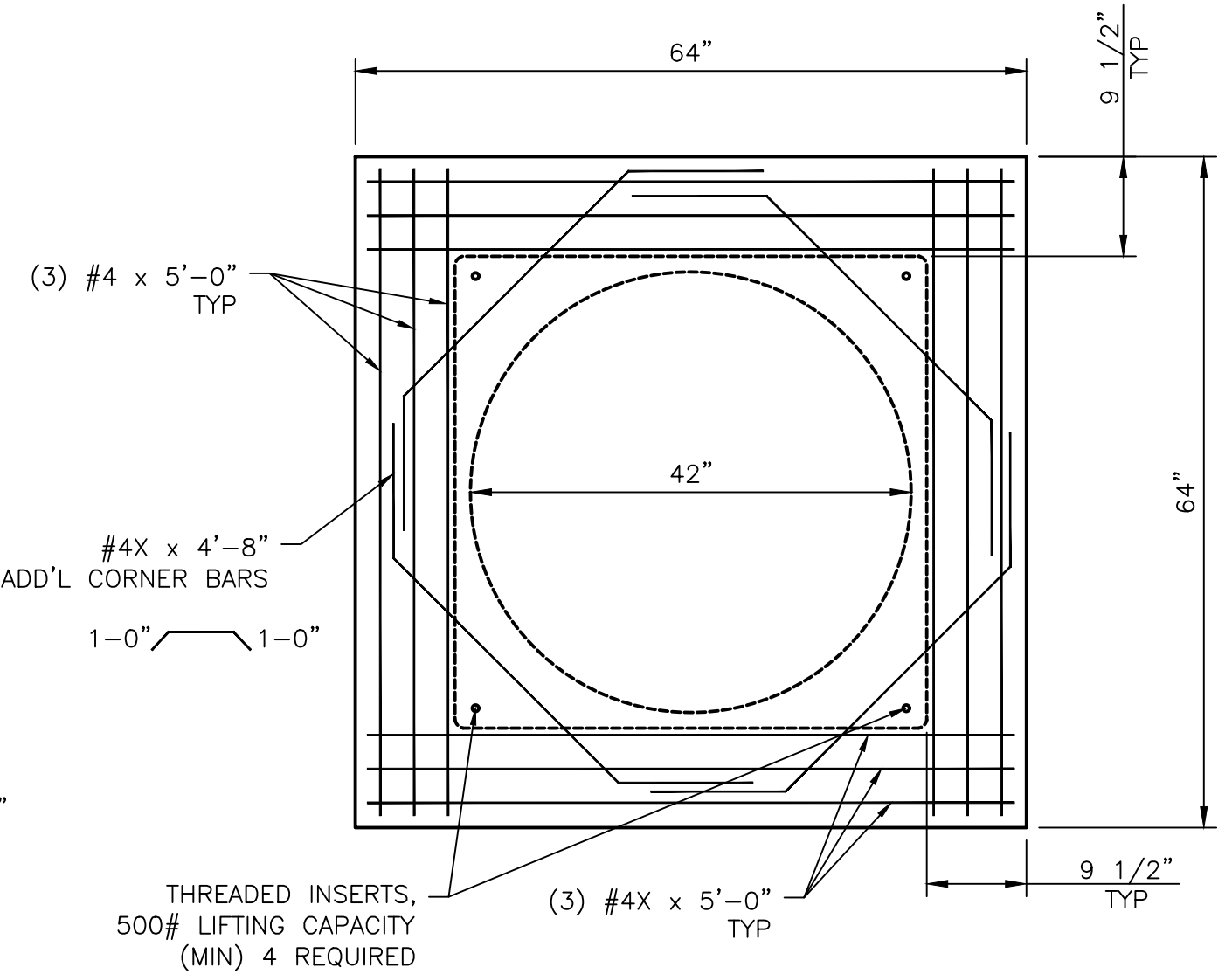
*PROVIDE A NOMINAL SLAB THICKNESS OF 9 1/2" AT INLETS. SLOPE TOP OF SLAB FROM INLET PIPE TO OUTLET PIPE.



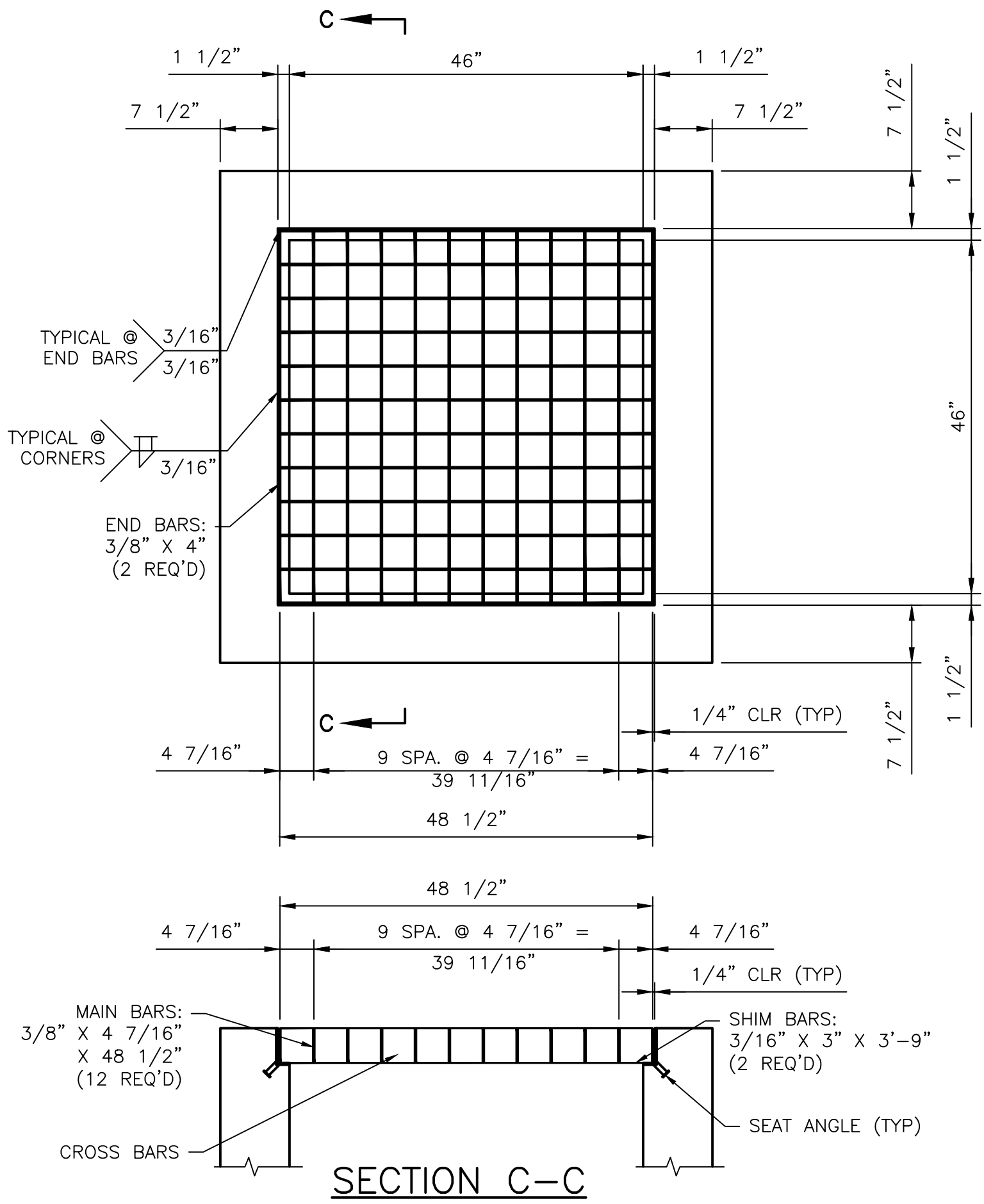
SECTION B-B



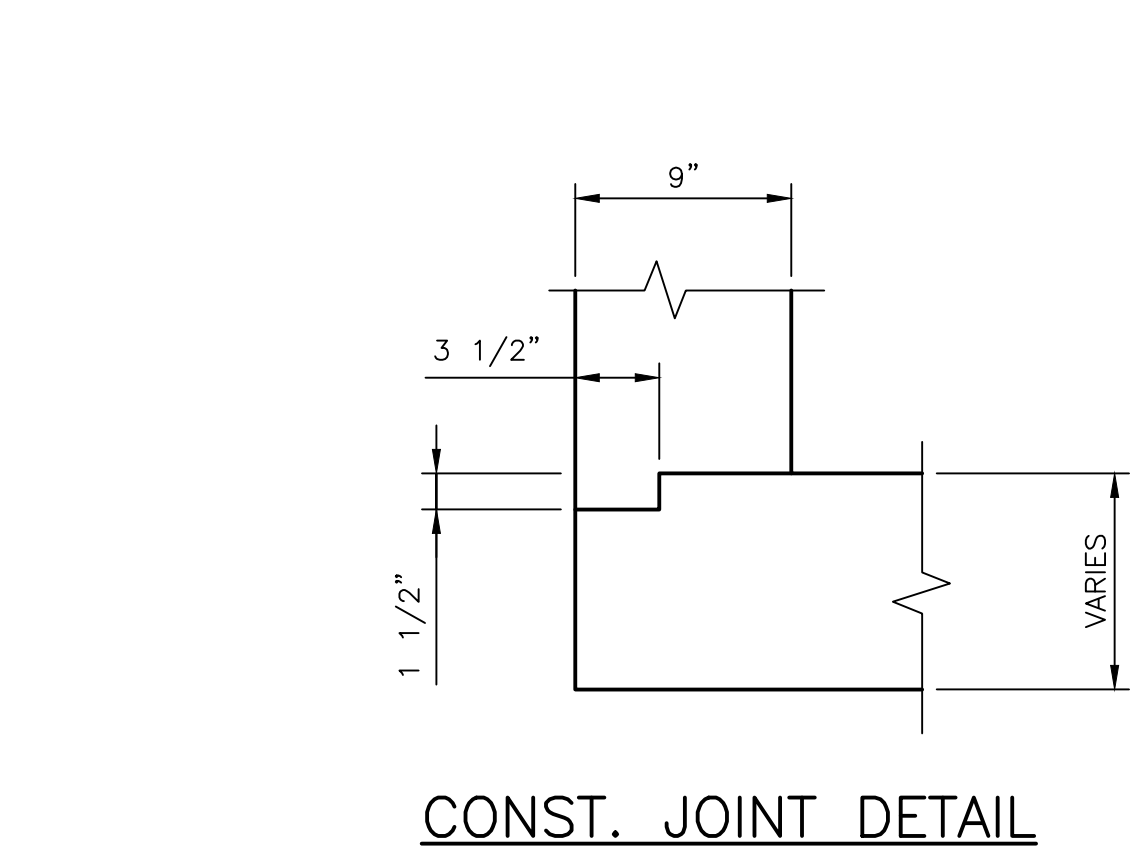
TYPE II PRECAST
CONCRETE CAP



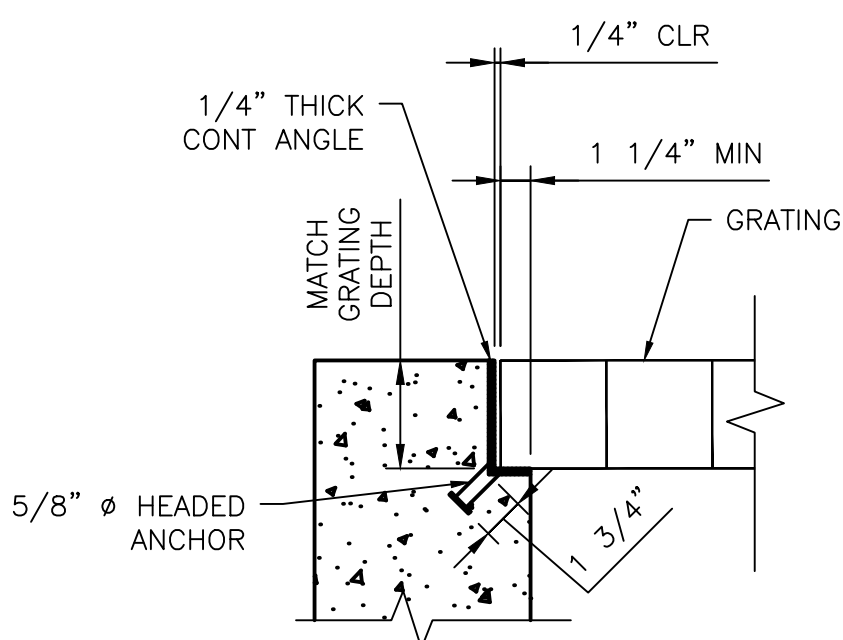
TYPE III PRECAST
CONCRETE CAP



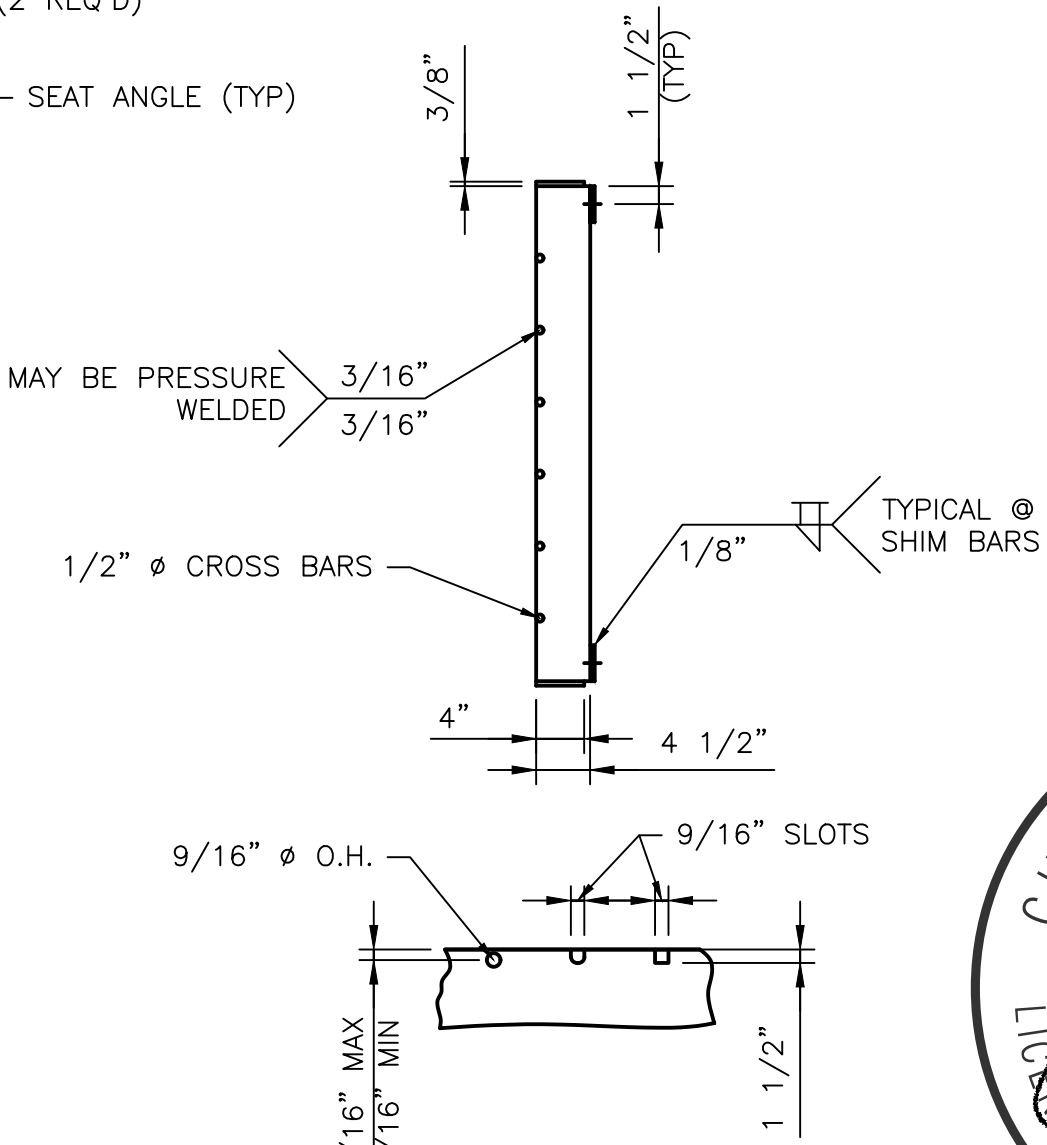
SECTION C-C



CONST. JOINT DETAIL



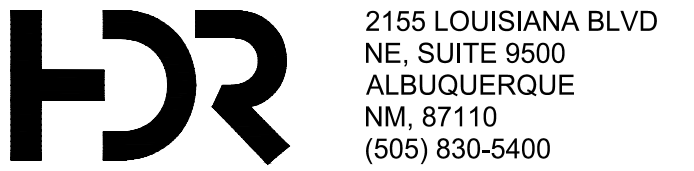
SEAT ANGLE DETAIL



DETAIL "X"
(ALTERNATIVE METHODS)



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SANTA FE COUNTY CAMINO TORCIDO LOOP DRAINAGE AND ROAD IMPROVEMENTS			
DRAINAGE STRUCTURE DETAILS			



GENERAL NOTES:

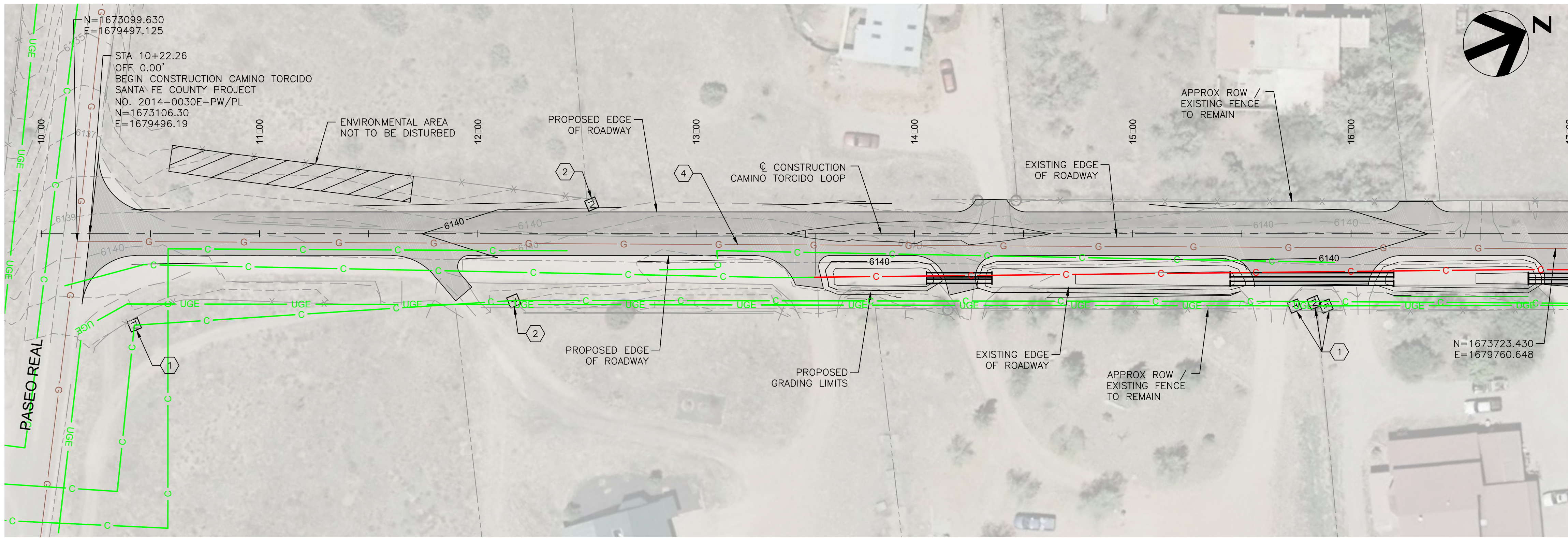
- 1. SEE SHEETS 03-01 TO 03-07 FOR PLAN AND GRADING.
- 2. CONTRACTOR SHALL VERIFY UTILITY LOCATIONS IN FIELD PRIOR TO CONSTRUCTION AND/OR EXCAVATION ACTIVITIES.
- 3. CONTRACTOR TO COORDINATE WITH UTILITY COMPANIES FOR RELOCATION, EXCAVATION AND/OR INSTALLATION OF UTILITIES AT NO ADDITIONAL COST TO THE OWNER.

KEYED NOTES:

- 1. TO REMAIN IN PLACE UNDISTURBED. (GREEN)
- 2. CONTRACTOR TO ADJUST EXISTING UTILITY STRUCTURE TO NEW GRADE.
- 3. TO BE RELOCATED BY UTILITY OWNER. (RED)
- 4. FUTURE UTILITY LINE. (BROWN)

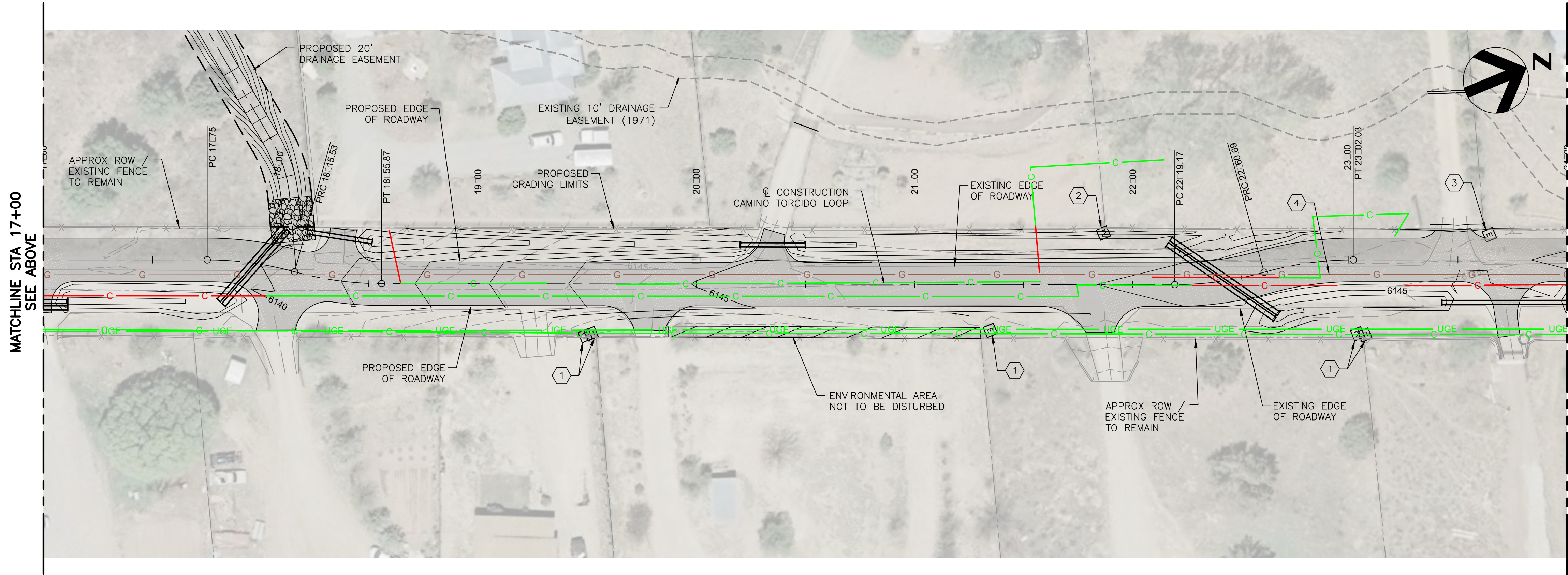
LEGEND:

- ASPHALT PAVEMENT SECTION PER 2/02-09.
- EXISTING ELECTRIC PEDESTAL
- EXISTING TELEPHONE PEDESTAL
- EXISTING CATV PEDESTAL
- APPROX. LOCATION OF EXISTING UNDERGROUND ELECTRIC LINE
- APPROX. LOCATION OF FUTURE GAS LINE
- APPROX. LOCATION OF EXISTING COMMUNICATION LINES



CAMINO TORCIDO LOOP

SCALE: 1"=30'



CAMINO TORCIDO LOOP

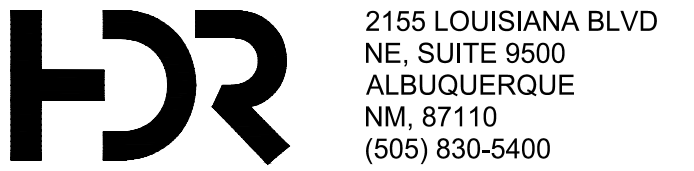
SCALE: 1"=30'



4			
3			
2			
1			
NO.	DESCRIPTION	DATE	BY

SANTA FE COUNTY
CAMINO TORCIDO LOOP
DRAINAGE AND ROAD IMPROVEMENTS

EXISTING UTILITIES
BOP TO STA 24+00



GENERAL NOTES:

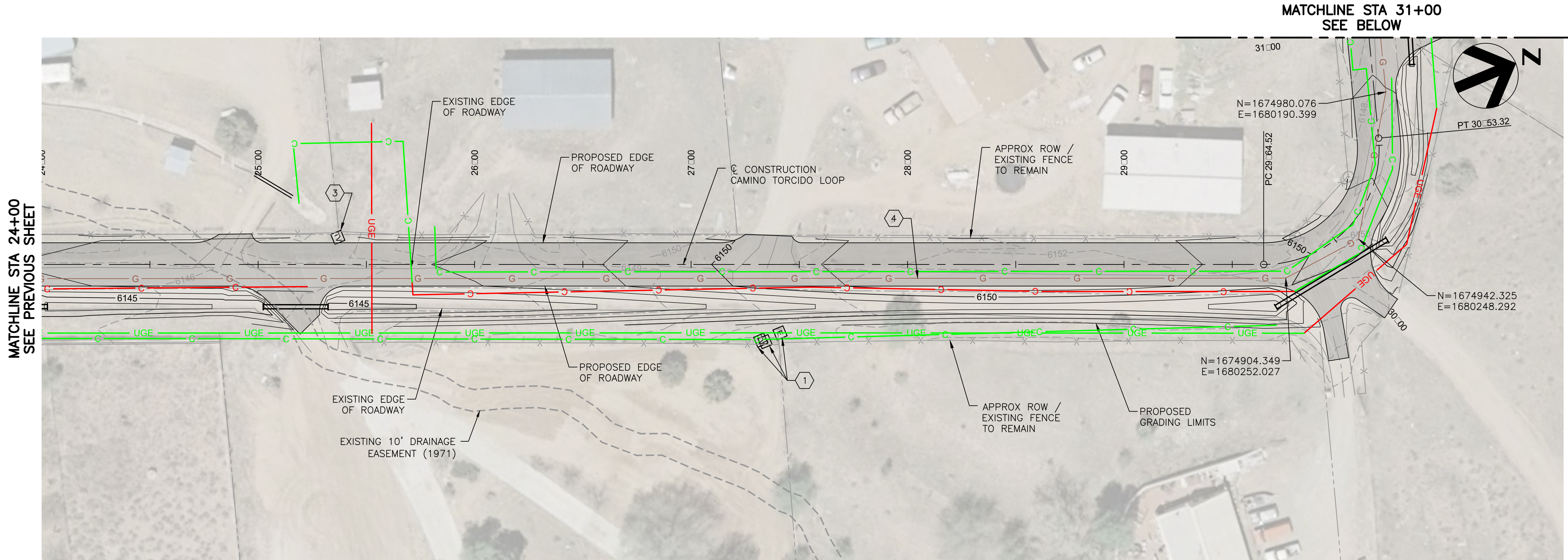
- 1. SEE SHEETS 03-01 TO 03-07 FOR PLAN AND GRADING.
- 2. CONTRACTOR SHALL VERIFY UTILITY LOCATIONS IN FIELD PRIOR TO CONSTRUCTION AND/OR EXCAVATION ACTIVITIES.
- 3. CONTRACTOR TO COORDINATE WITH UTILITY COMPANIES FOR RELOCATION, EXCAVATION AND/OR INSTALLATION OF UTILITIES AT NO ADDITIONAL COST TO THE OWNER.

KEYED NOTES:

- 1. TO REMAIN IN PLACE UNDISTURBED. (GREEN)
- 2. CONTRACTOR TO ADJUST EXISTING UTILITY STRUCTURE TO NEW GRADE.
- 3. TO BE RELOCATED BY UTILITY OWNER. (RED)
- 4. FUTURE UTILITY LINE. (BROWN)

LEGEND:

- ASPHALT PAVEMENT SECTION PER 2/02-09.
- EXISTING ELECTRIC PEDESTAL
- EXISTING TELEPHONE PEDESTAL
- EXISTING CATV PEDESTAL
- APPROX. LOCATION OF EXISTING UNDERGROUND ELECTRIC LINE
- APPROX. LOCATION OF FUTURE GAS LINE
- APPROX. LOCATION OF EXISTING COMMUNICATION LINES

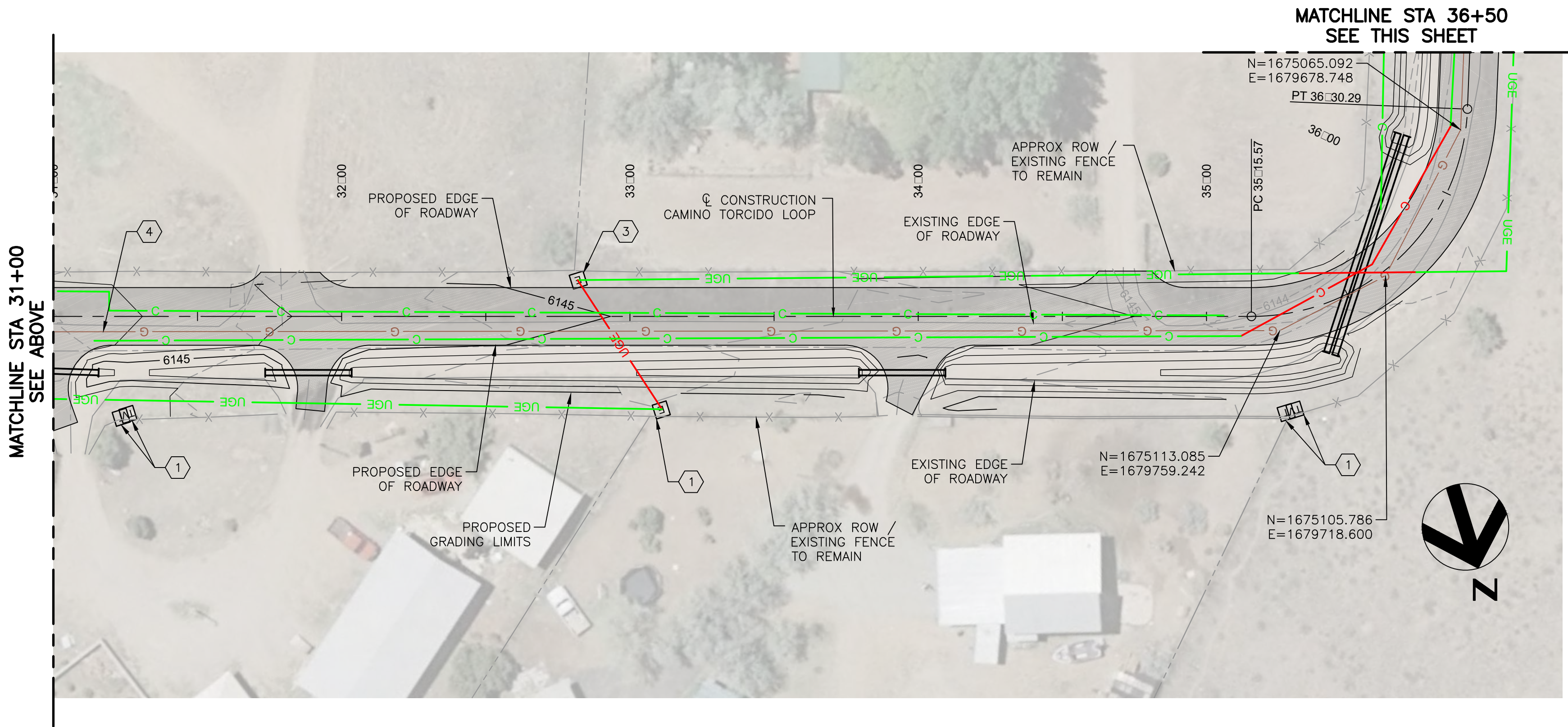


MATCHLINE STA 24+00
SEE PREVIOUS SHEET

MATCHLINE STA 31+00
SEE BELOW

CAMINO TORCIDO LOOP

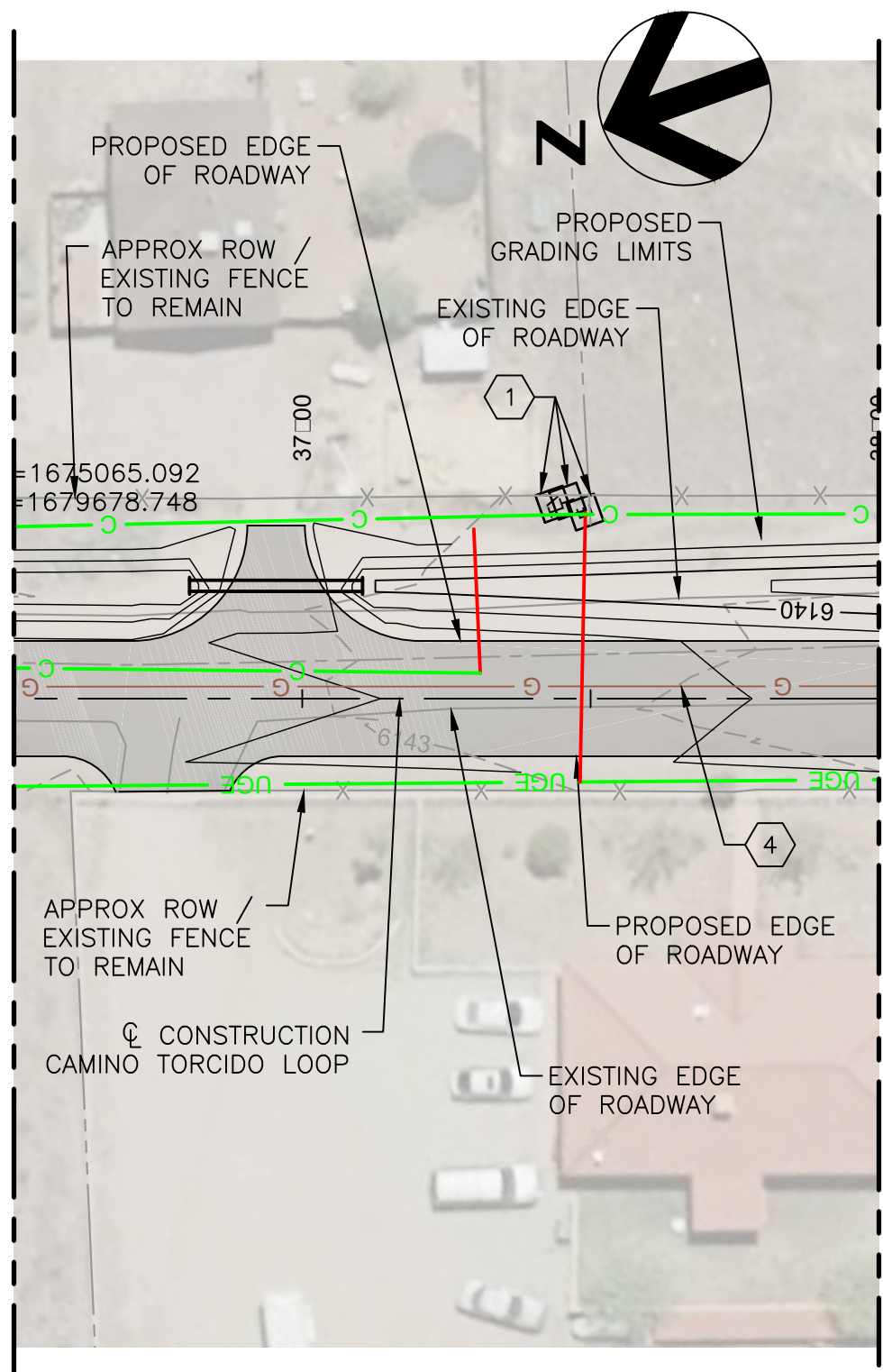
SCALE: 1"=30'



MATCHLINE STA 31+00
SEE ABOVE

MATCHLINE STA 36+50
SEE THIS SHEET

CAMINO TORCIDO LOOP



MATCHLINE STA 36+50
SEE THIS SHEET

MATCHLINE STA 38+00
SEE NEXT SHEET

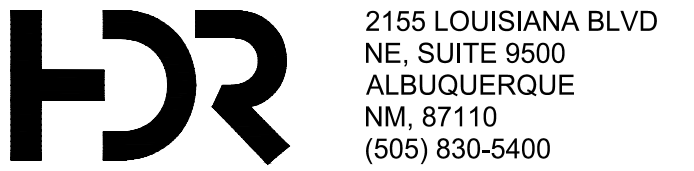


4			
3			
2			
1			
NO.	DESCRIPTION	DATE	BY

SANTA FE COUNTY
CAMINO TORCIDO LOOP
DRAINAGE AND ROAD IMPROVEMENTS

EXISTING UTILITIES
STA 24+00 TO STA 38+00

SCALE: 1"=30'



GENERAL NOTES:

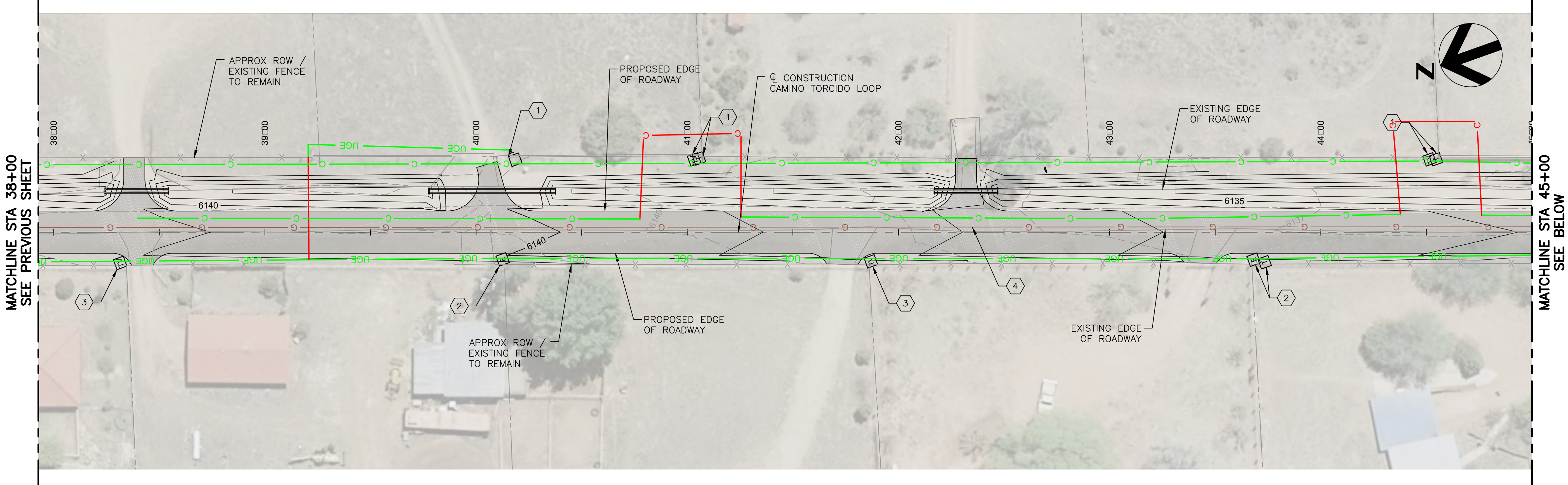
- 1. SEE SHEETS 03-01 TO 03-07 FOR PLAN AND GRADING.
- 2. CONTRACTOR SHALL VERIFY UTILITY LOCATIONS IN FIELD PRIOR TO CONSTRUCTION AND/OR EXCAVATION ACTIVITIES.
- 3. CONTRACTOR TO COORDINATE WITH UTILITY COMPANIES FOR RELOCATION, EXCAVATION AND/OR INSTALLATION OF UTILITIES AT NO ADDITIONAL COST TO THE OWNER.

KEYED NOTES:

- 1. TO REMAIN IN PLACE UNDISTURBED. (GREEN)
- 2. CONTRACTOR TO ADJUST EXISTING UTILITY STRUCTURE TO NEW GRADE.
- 3. TO BE RELOCATED BY UTILITY OWNER. (RED)
- 4. FUTURE UTILITY LINE. (BROWN)

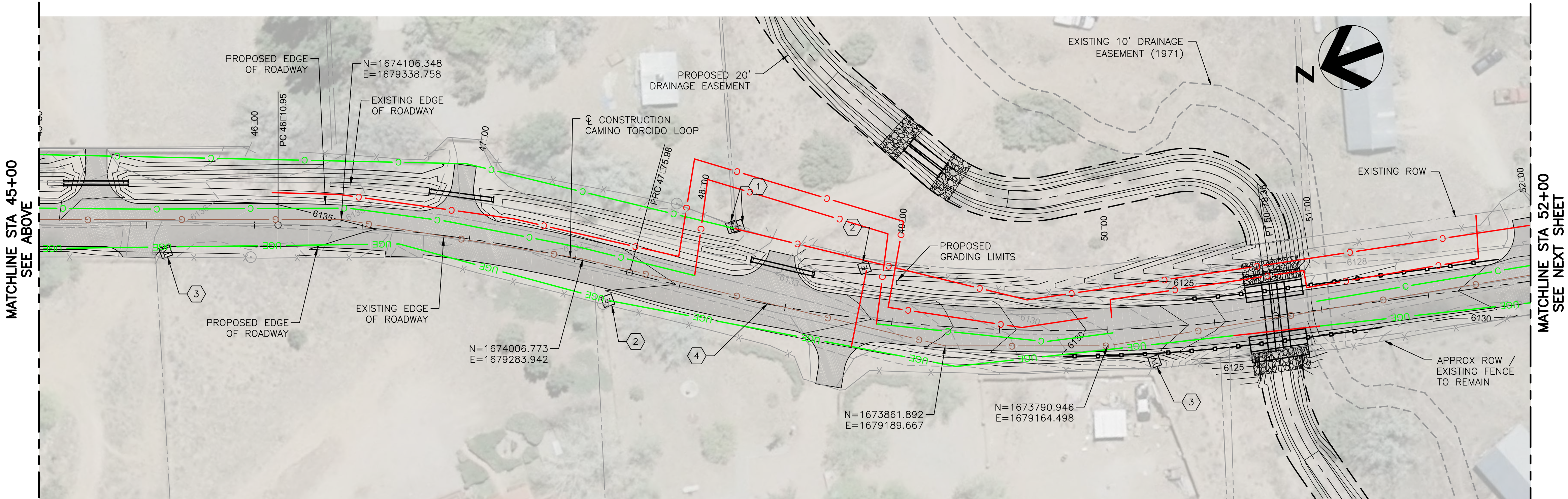
LEGEND:

- ASPHALT PAVEMENT SECTION PER 2/02-09.
- EXISTING ELECTRIC PEDESTAL
- EXISTING TELEPHONE PEDESTAL
- EXISTING CATV PEDESTAL
- APPROX. LOCATION OF EXISTING UNDERGROUND ELECTRIC LINE
- APPROX. LOCATION OF FUTURE GAS LINE
- APPROX. LOCATION OF EXISTING COMMUNICATION LINES



CAMINO TORCIDO LOOP

SCALE: 1"=30'



CAMINO TORCIDO LOOP

SCALE: 1"=30'

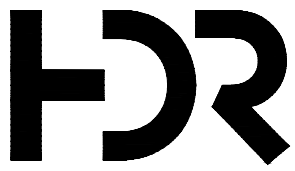


SEPTEMBER 11, 2018

4			
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2			
1			
NO.	DESCRIPTION	DATE	BY

SANTA FE COUNTY
CAMINO TORCIDO LOOP
DRAINAGE AND ROAD IMPROVEMENTS

EXISTING UTILITIES
STA 38+00 TO 52+00



2155 LOUISIANA BLVD
NE, SUITE 9500
ALBUQUERQUE
NM, 87110
(505) 830-5400

GENERAL NOTES:

- 1. SEE SHEETS 03-01 TO 03-07 FOR PLAN AND GRADING.
- 2. CONTRACTOR SHALL VERIFY UTILITY LOCATIONS IN FIELD PRIOR TO CONSTRUCTION AND/OR EXCAVATION ACTIVITIES.
- 3. CONTRACTOR TO COORDINATE WITH UTILITY COMPANIES FOR RELOCATION, EXCAVATION AND/OR INSTALLATION OF UTILITIES AT NO ADDITIONAL COST TO THE OWNER.

KEYED NOTES:

- 1. TO REMAIN IN PLACE UNDISTURBED. (GREEN)
- 2. CONTRACTOR TO ADJUST EXISTING UTILITY STRUCTURE TO NEW GRADE.
- 3. TO BE RELOCATED BY UTILITY OWNER. (RED)
- 4. FUTURE UTILITY LINE. (BROWN)

LEGEND:

- ASPHALT PAVEMENT SECTION PER 2/02-09.
- EXISTING ELECTRIC PEDESTAL
- EXISTING TELEPHONE PEDESTAL
- EXISTING CATV PEDESTAL
- UGE — APPROX. LOCATION OF EXISTING UNDERGROUND ELECTRIC LINE
- G — APPROX. LOCATION OF FUTURE GAS LINE
- C — APPROX. LOCATION OF EXISTING COMMUNICATION LINES



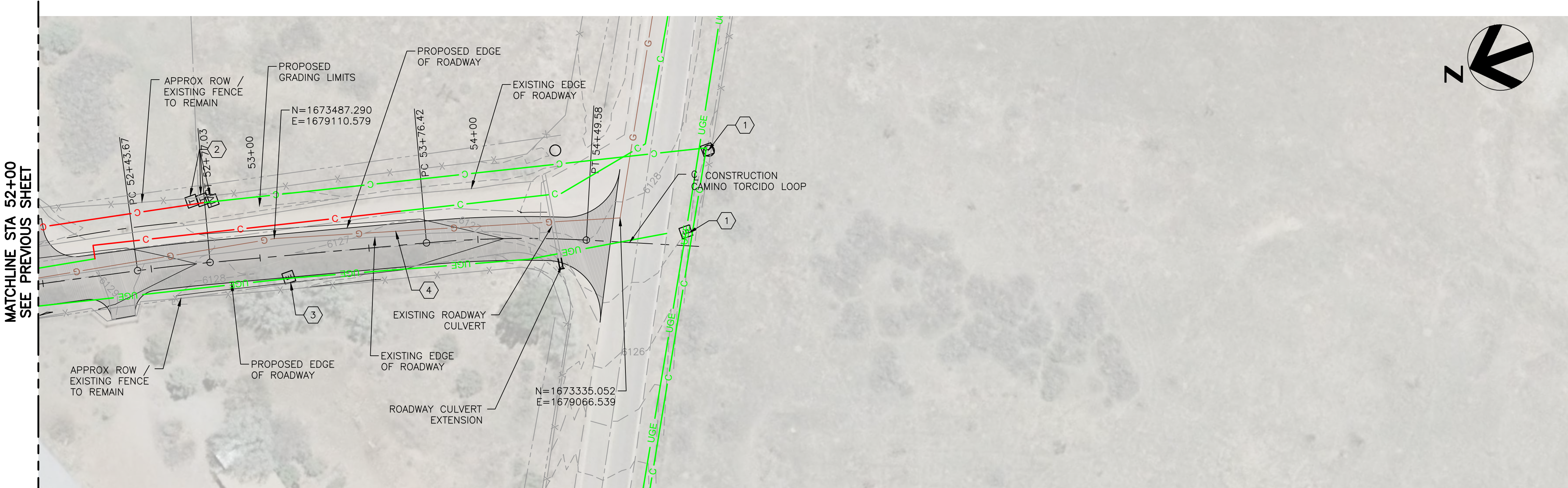
0000 ST 0, 2018

4			
3			
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1			
NO.	DESCRIPTION	DATE	BY

REVISIONS (OR CHANGE NOTICES)

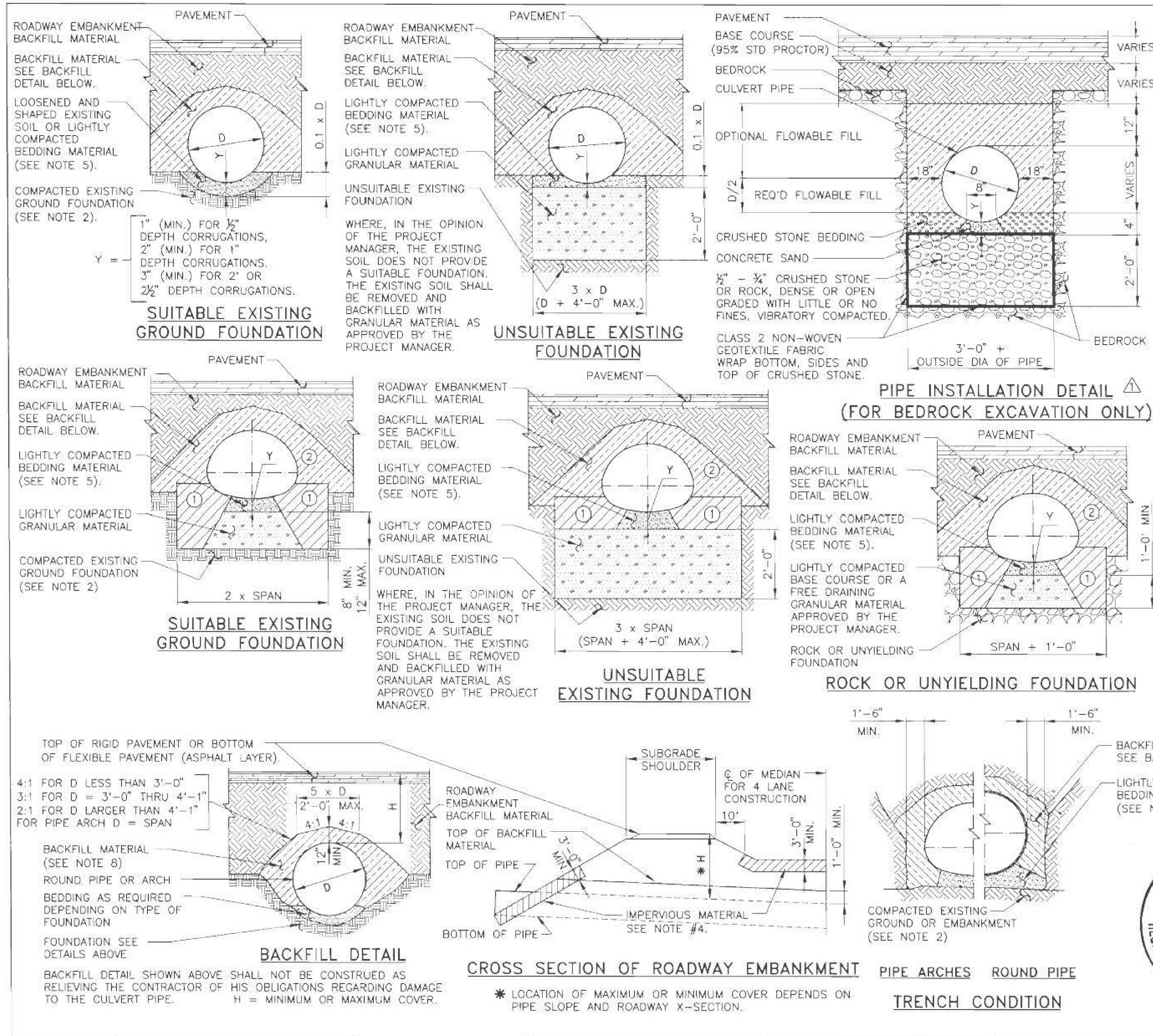
SANTA FE COUNTY
CAMINO TORCIDO LOOP
DRAINAGE AND ROAD IMPROVEMENTS

EXISTING UTILITIES
STA 52+00 TO EOP



CAMINO TORCIDO LOOP

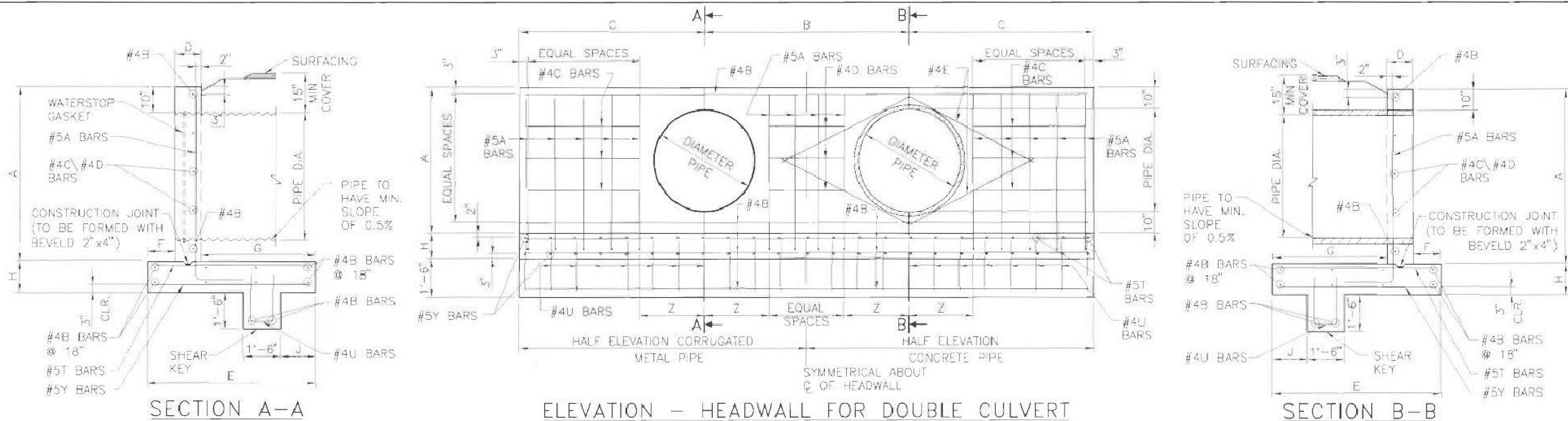
SCALE: 1"=30'



KEY	SYMBOL	DESCRIPTION
①		100% COMPACTION
②		90% COMPACTION

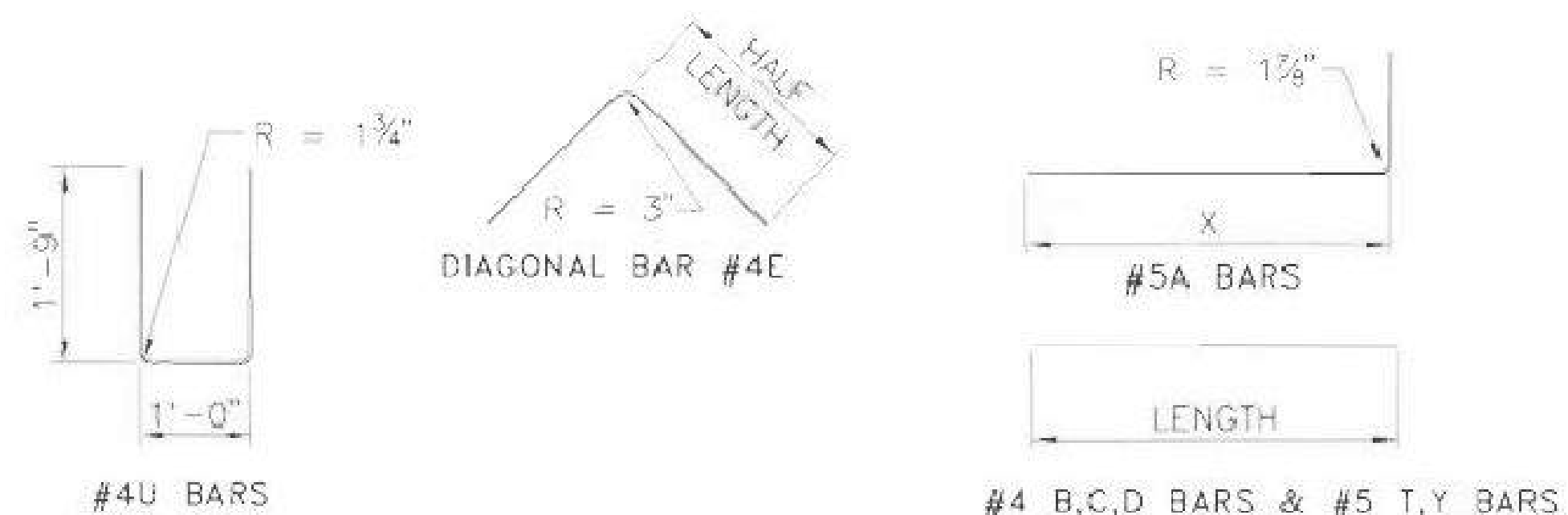


NO.	DATE	REV. BY	DESCRIPTION
2/14/07	YML	REVISIONS TO BEDROCK DETAIL	
REVISIONS (OR CHANGE NOTICES)			
NEW MEXICO DEPARTMENT OF TRANSPORTATION STANDARD DRAWING			
CORRUGATED METAL CULVERT AND PIPE ARCHES BEDDING AND BACKFILL DETAILS			
DESIGNED BY	DRAWN BY SKL	CHECKED BY TM/YML	
206-07-1/1			
1 OF 1			



* DENOTES THAT THE SHEAR KEY OF FOOTING IS NOT REQUIRED.

CONCRETE HEADWALLS																																			
BAR SPACINGS SHOWN ARE APPROXIMATE ONLY											QUANTITIES SHOWN ARE FOR 2 HEADWALLS																								
PIPE DIAMETER	D I M E N S I O N S										REQUIRED FOR TWO HEADWALLS WITH ONE PIPE																								
	A	B	C	D	E	F	G	H	J	O ₁	#5A BARS				#4B BARS		#4C BARS			#4E BARS		#4U BARS			#5Y BARS			#5T BARS			QUANTITIES				
											NO.	LENGTH	X	SPACING	Z	NO.	LENGTH	NO.	LENGTH	SPACING	NO.	LENGTH	NO.	LENGTH	SPACING	NO.	LENGTH	SPACING	NO.	LENGTH	SPACING	NO.	LENGTH	SPACING	REINFORCING STEEL-LBS
*	18"	3'-2"	3'-0"	3'-3"	10"	3'-6"	9"	1'-11"	12"	N/A	6'-6"	12	4'-10"	3'-10"	1'-0"	1'-1"	20	0'-3"	4	2'-0"	1'-4"	4	4'-0"	N/A	N/A	N/A	14	3'-0"	12"	14	3'-3"	12"	251	2.78	2.85
*	24"	3'-8"	4'-0"	4'-0"	10"	3'-6"	9"	1'-11"	12"	N/A	8'-0"	12	5'-4"	4'-4"	1'-0"	1'-4½"	20	0'-3"	4	2'-6"	1'-7"	4	5'-0"	N/A	N/A	N/A	18	3'-0"	12"	18	3'-3"	12"	295	3.58	3.69
*	30"	4'-2"	5'-0"	4'-9"	10"	3'-6"	9"	1'-11"	12"	N/A	9'-6"	12	5'-10"	4'-10"	1'-0"	1'-8"	20	0'-3"	8	3'-3"	1'-3"	4	6'-0"	N/A	N/A	N/A	20	3'-0"	12"	20	3'-3"	12"	360	4.45	4.60
	36"	4'-8"	6'-0"	5'-9"	10"	4'-6"	10"	2'-10"	12"	9"	11'-6"	16	6'-4"	5'-4"	1'-0"	1'-11½"	22	0'-3"	8	4'-0"	1'-5"	4	7'-0"	24	4'-6"	12"	24	3'-11"	12"	24	4'-3"	12"	588	8.41	8.63
	42"	5'-2"	7'-0"	6'-6"	10"	4'-6"	10"	2'-10"	12"	9"	13'-0"	16	6'-10"	5'-10"	1'-0"	2'-3"	22	0'-3"	8	4'-6"	1'-6"	4	8'-0"	26	4'-6"	12"	26	3'-11"	12"	26	4'-3"	12"	646	9.77	10.05
	48"	5'-8"	8'-0"	7'-3"	10"	5'-6"	11"	3'-9"	12"	10"	14'-6"	20	7'-4"	6'-4"	1'-0"	2'-6½"	24	0'-3"	12	4'-9"	1'-3"	4	9'-0"	30	4'-6"	12"	30	4'-10"	12"	30	5'-3"	12"	849	12.26	12.62
	54"	6'-2"	9'-0"	8'-0"	10"	5'-6"	11"	3'-9"	12"	10"	16'-0"	24	7'-10"	6'-10"	1'-0"	2'-10"	24	0'-3"	12	5'-0"	1'-5"	4	10'-0"	32	4'-6"	12"	32	4'-10"	12"	32	5'-3"	12"	948	13.85	14.29
	60"	6'-8"	10'-0"	8'-9"	10"	6'-6"	12"	4'-8"	13"	11"	17'-6"	32	8'-5"	7'-5"	0'-9"	3'-1½"	28	0'-3"	12	5'-6"	1'-6½"	4	11'-0"	36	4'-6"	12"	36	5'-9"	12"	48	6'-3"	9"	1314	17.50	18.03



BAR BENDING DIAGRAMS
(SEE TABLE FOR BARS REQUIRED)

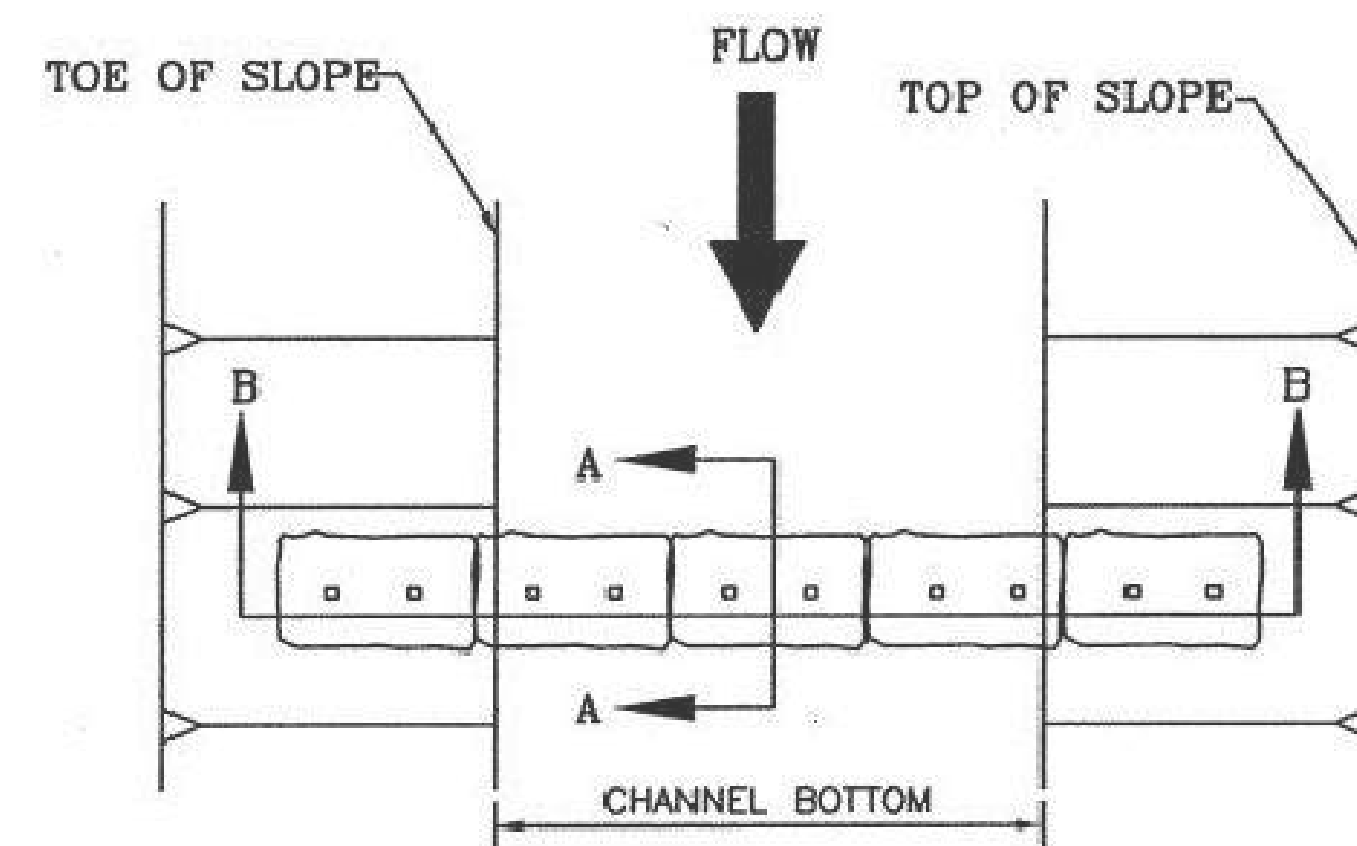
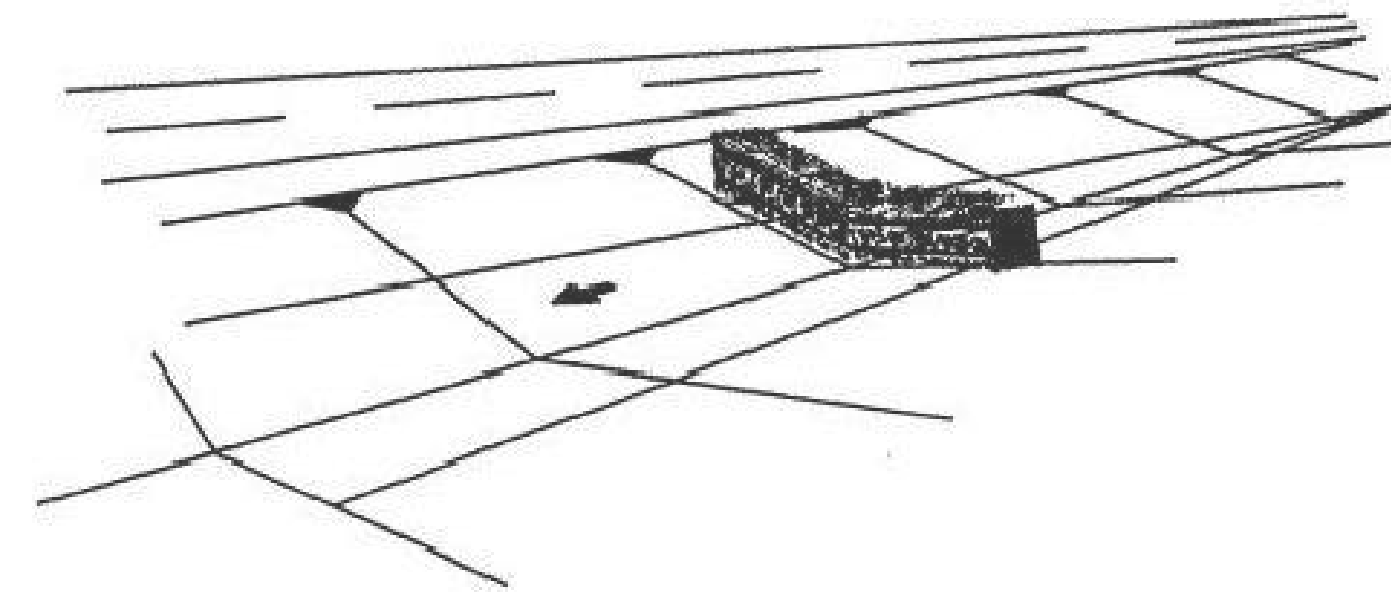
$$O_1 = 2C \quad O_2 = 2C + B$$

$$O_3 = 2C + 2B \quad O_6 = 2C + (n-1)B$$

WHERE n = NUMBER OF PIPES

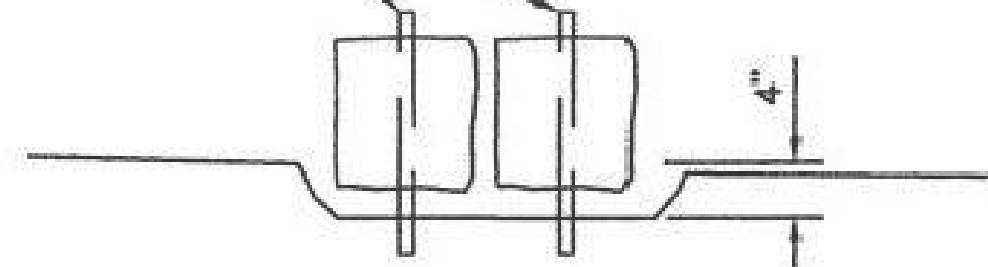


DATE	BY	DESCRIPTION
8/2011	YML	REDESIGNED BY LRFD.
REVISIONS (OR CHANGE NOTICES)		
NEW MEXICO DEPARTMENT OF TRANSPORTATION STANDARD DRAWING		
PIPE CULVERT HEADWALLS		
DESIGNED BY: YML DRAWN BY: SKL CHECKED BY: YML/TM		
511-03-2/2 2 of 2		

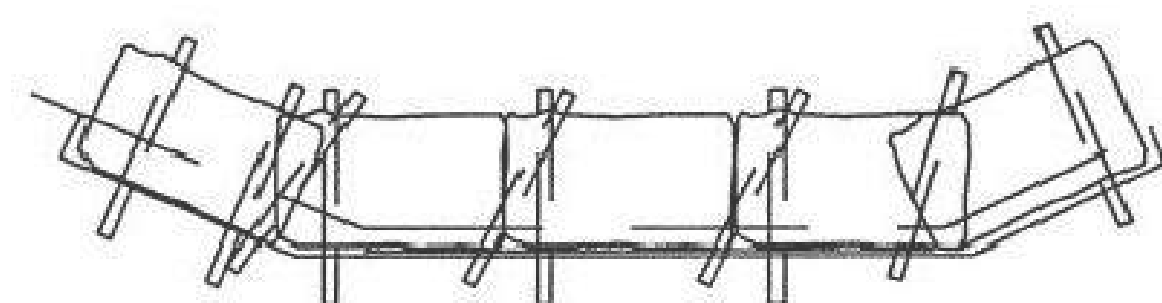


PLAN

2" x 2" STAKES 6" TO 12" IN GROUND. DRIVE STAKES FLUSH WITH TOP OF BALE.



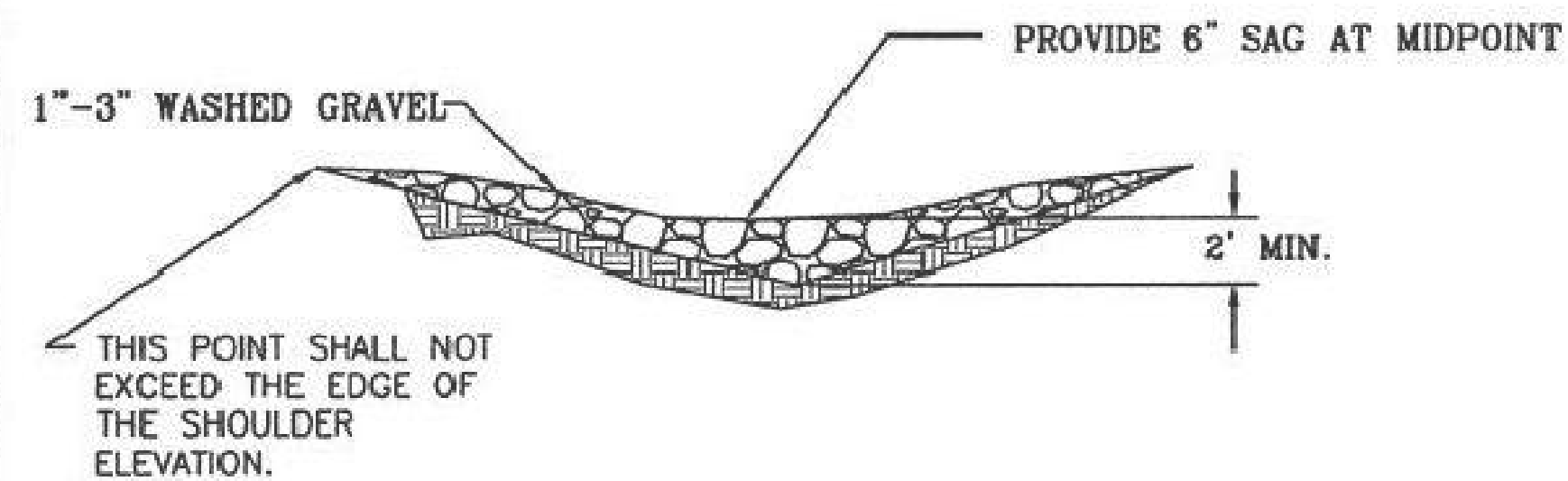
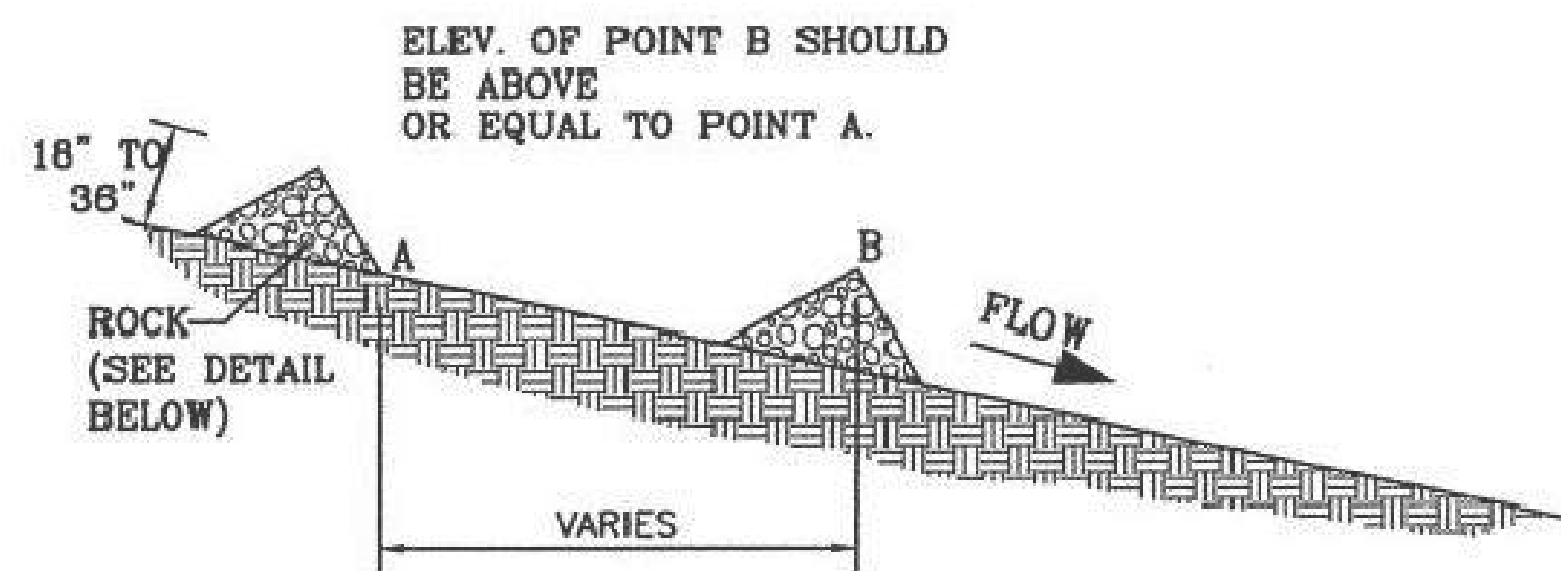
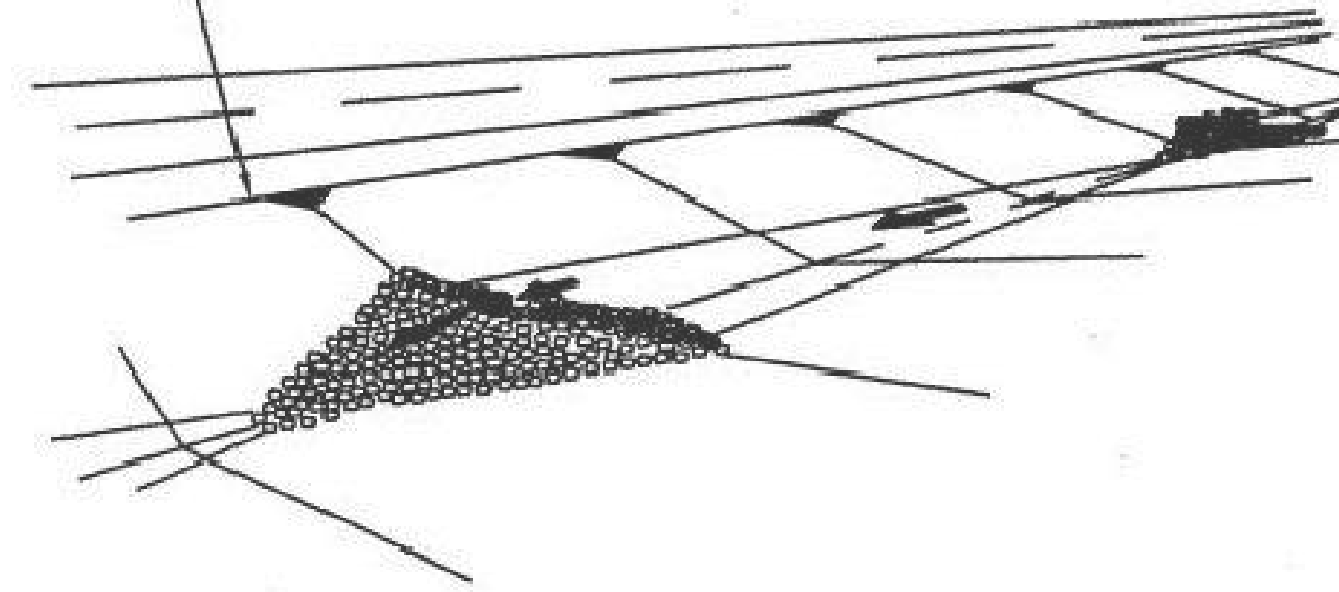
SECTION A-A



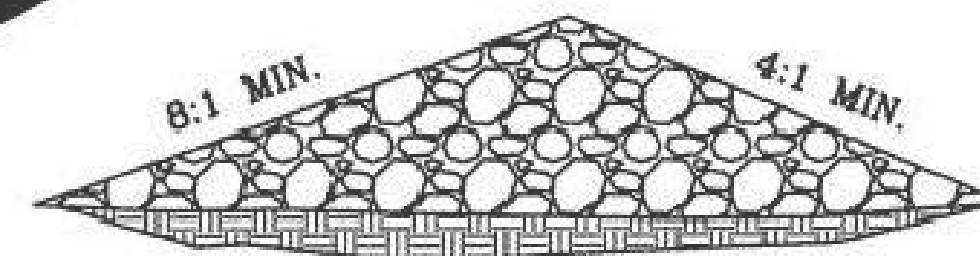
SECTION B-B

TYPE III
(STRAW BALE)

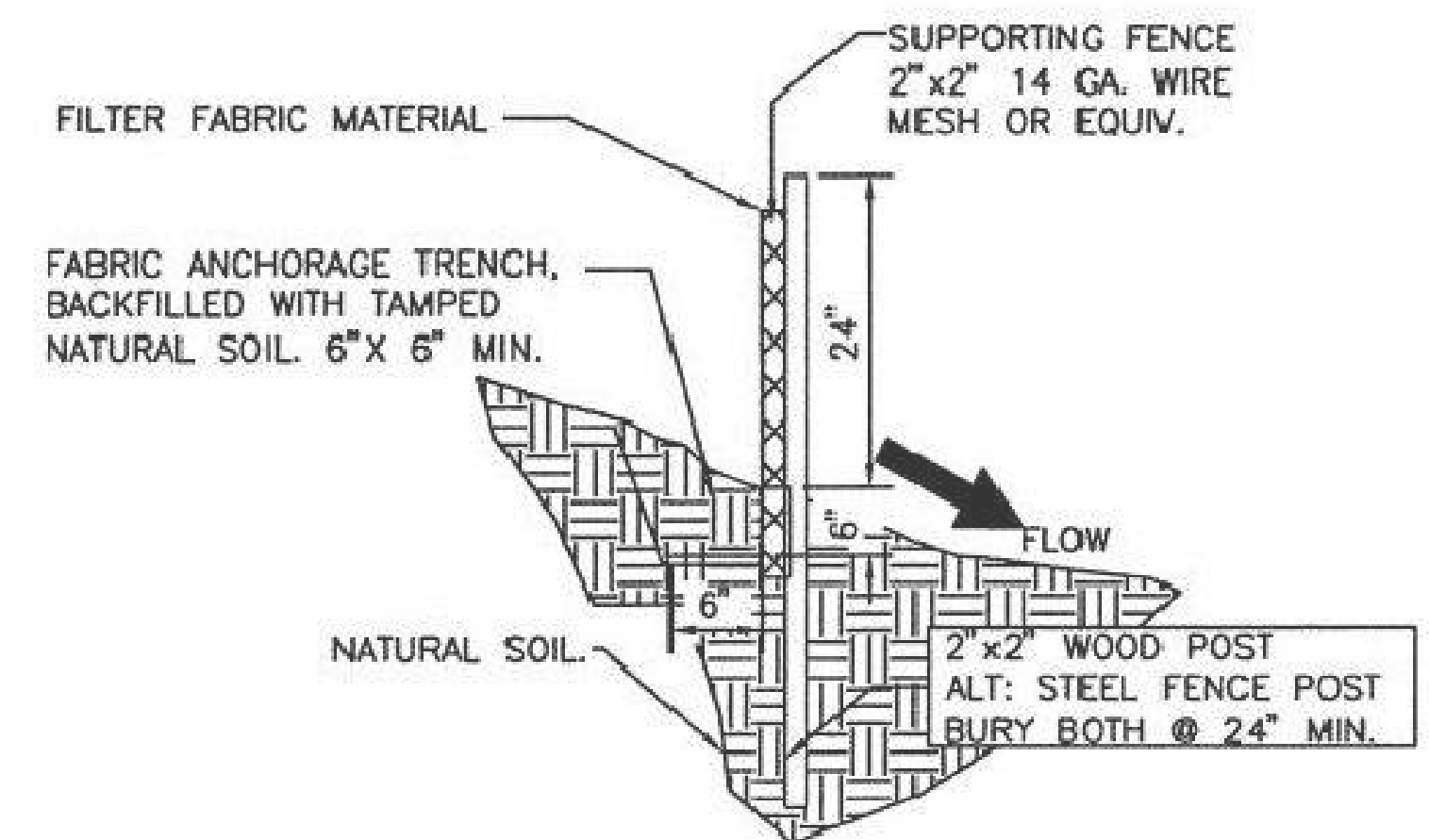
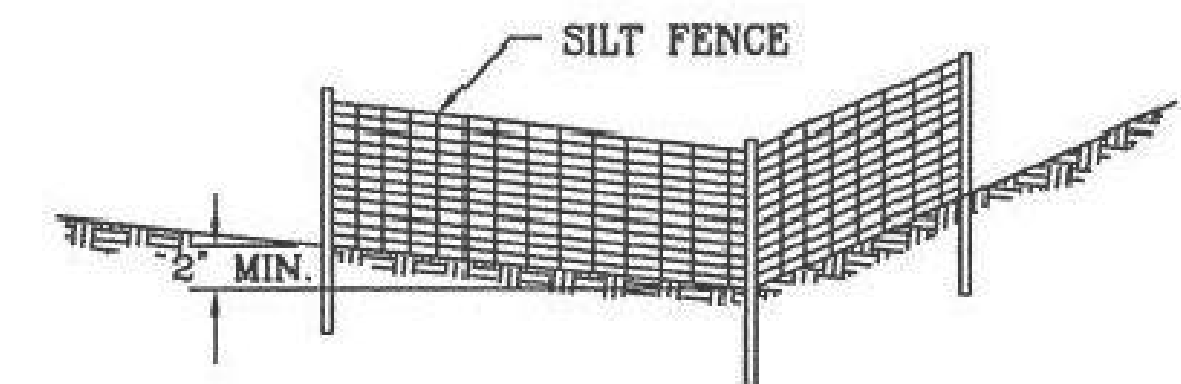
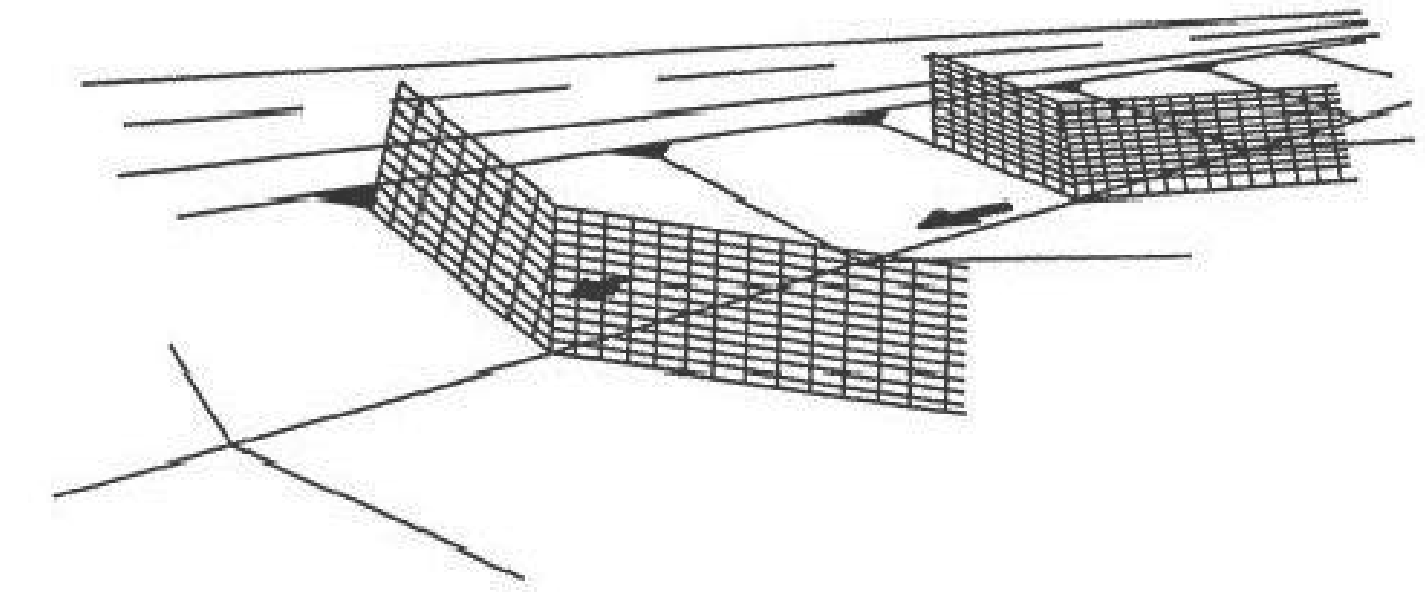
EDGE OF SHOULDER



TRAFFIC FLOW

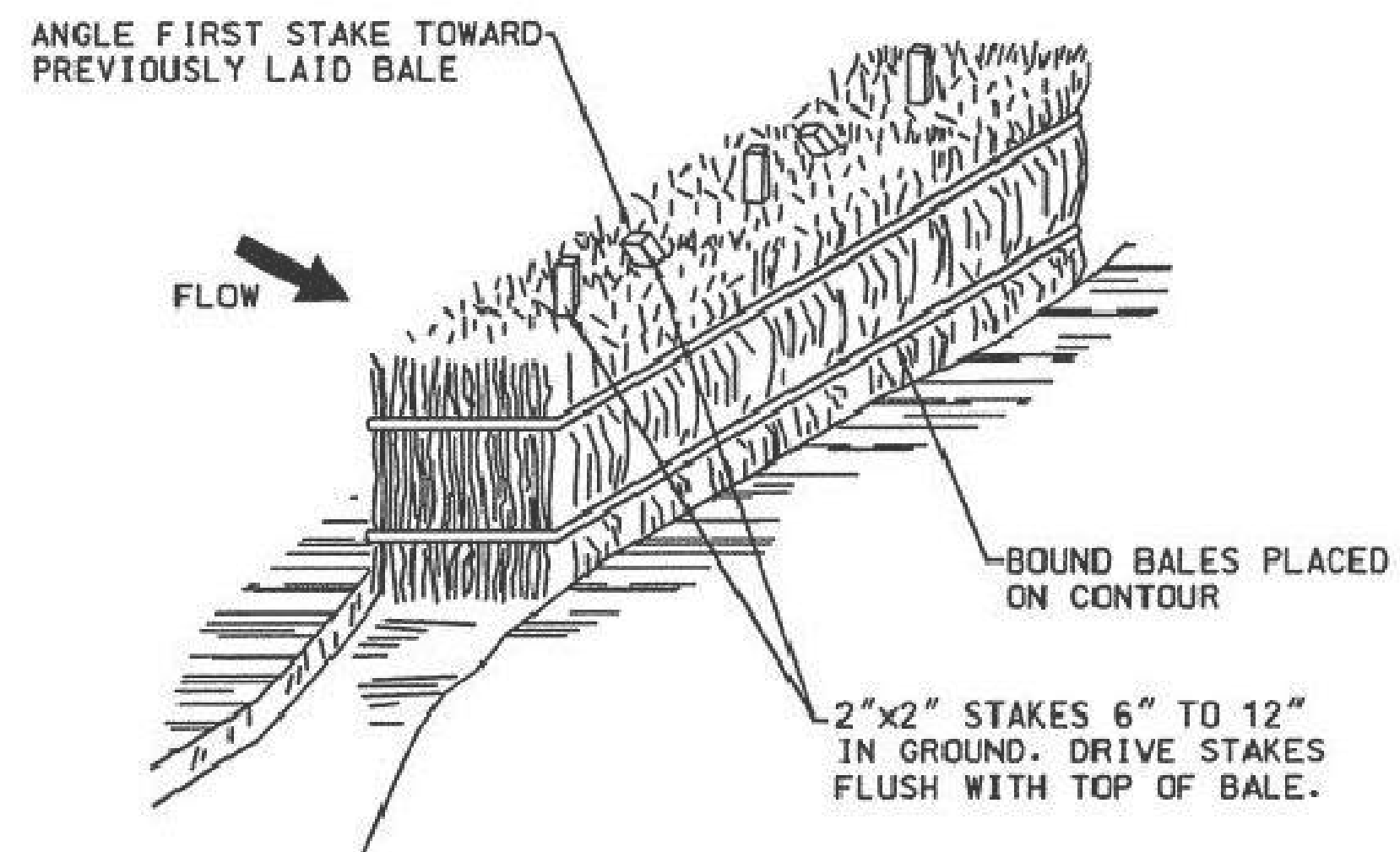


TYPE II
STONE DAM

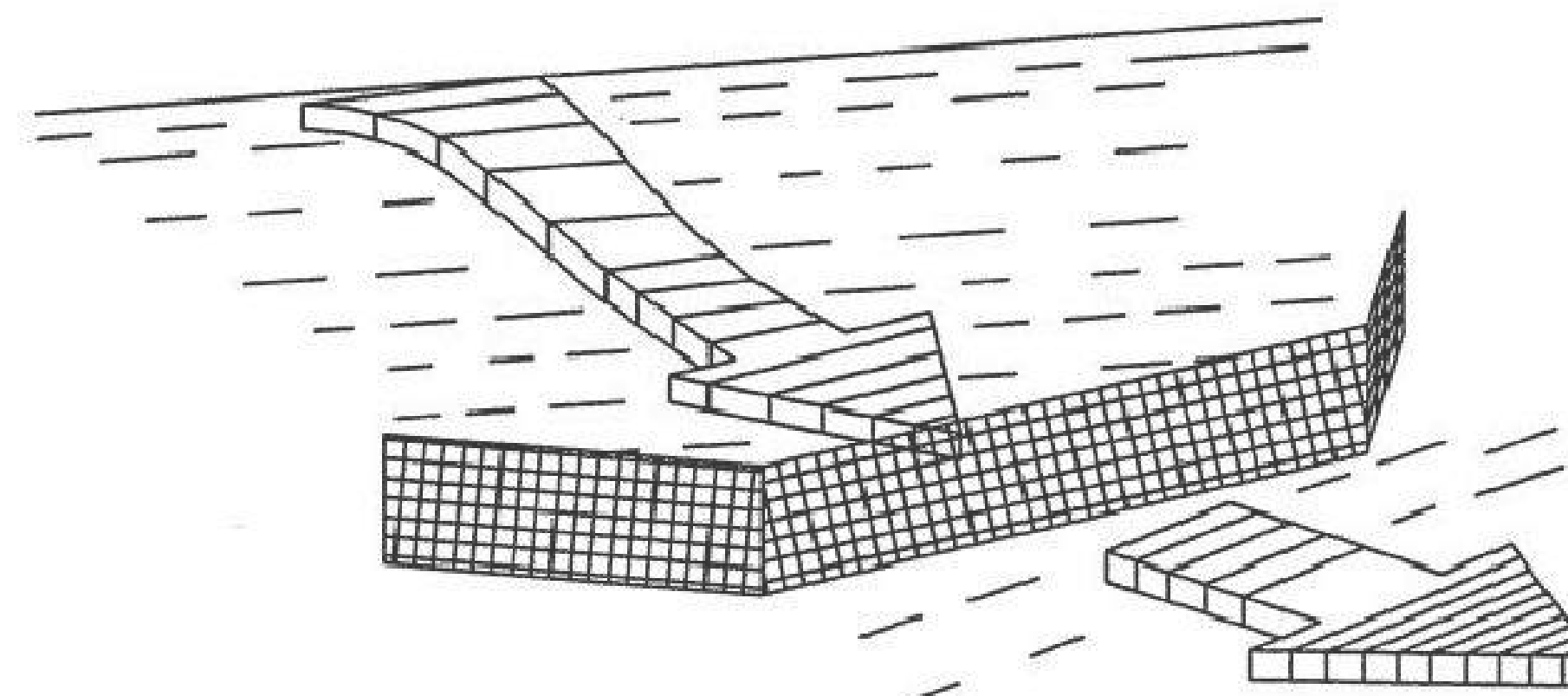
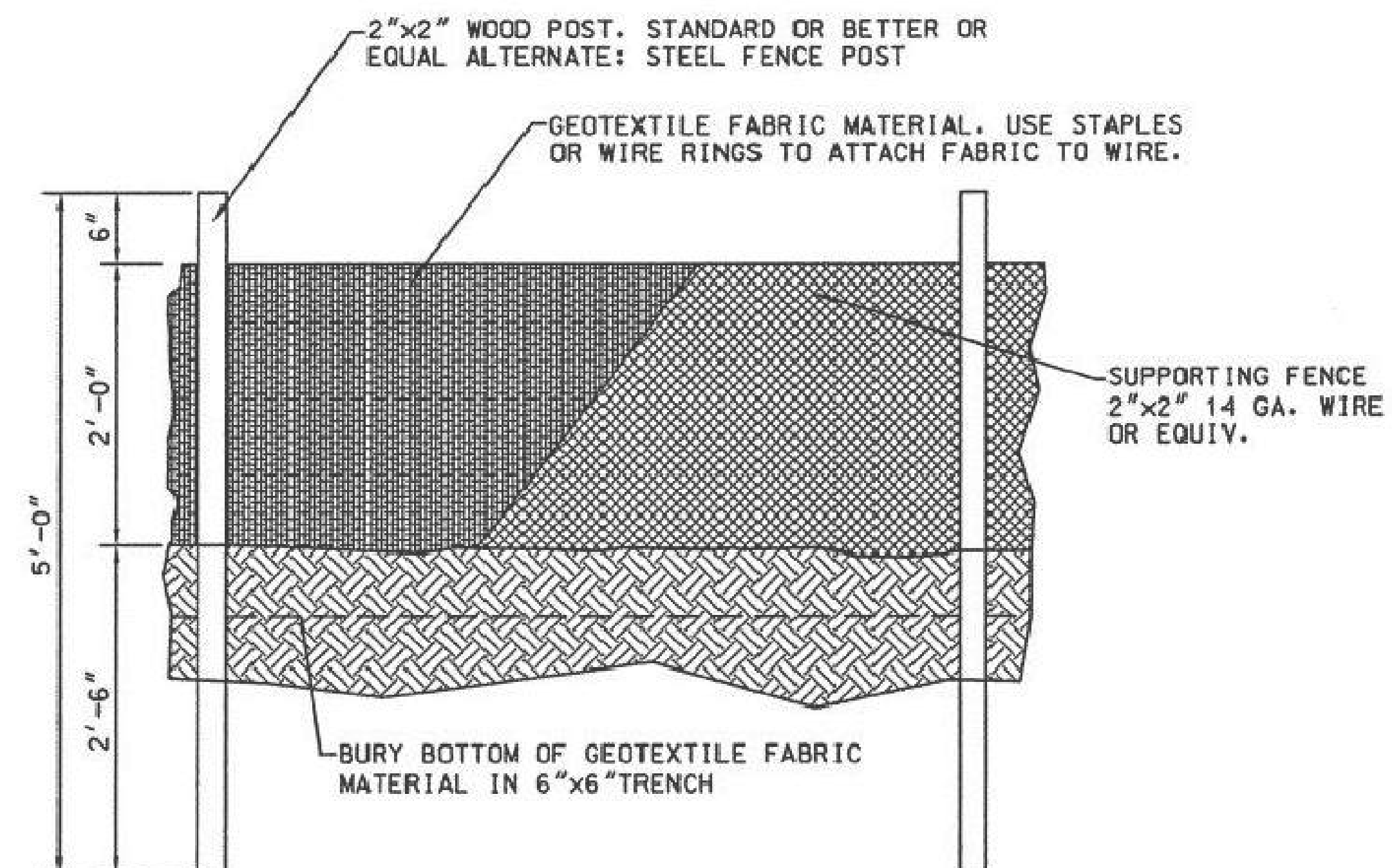


TYPE I SILT FENCE

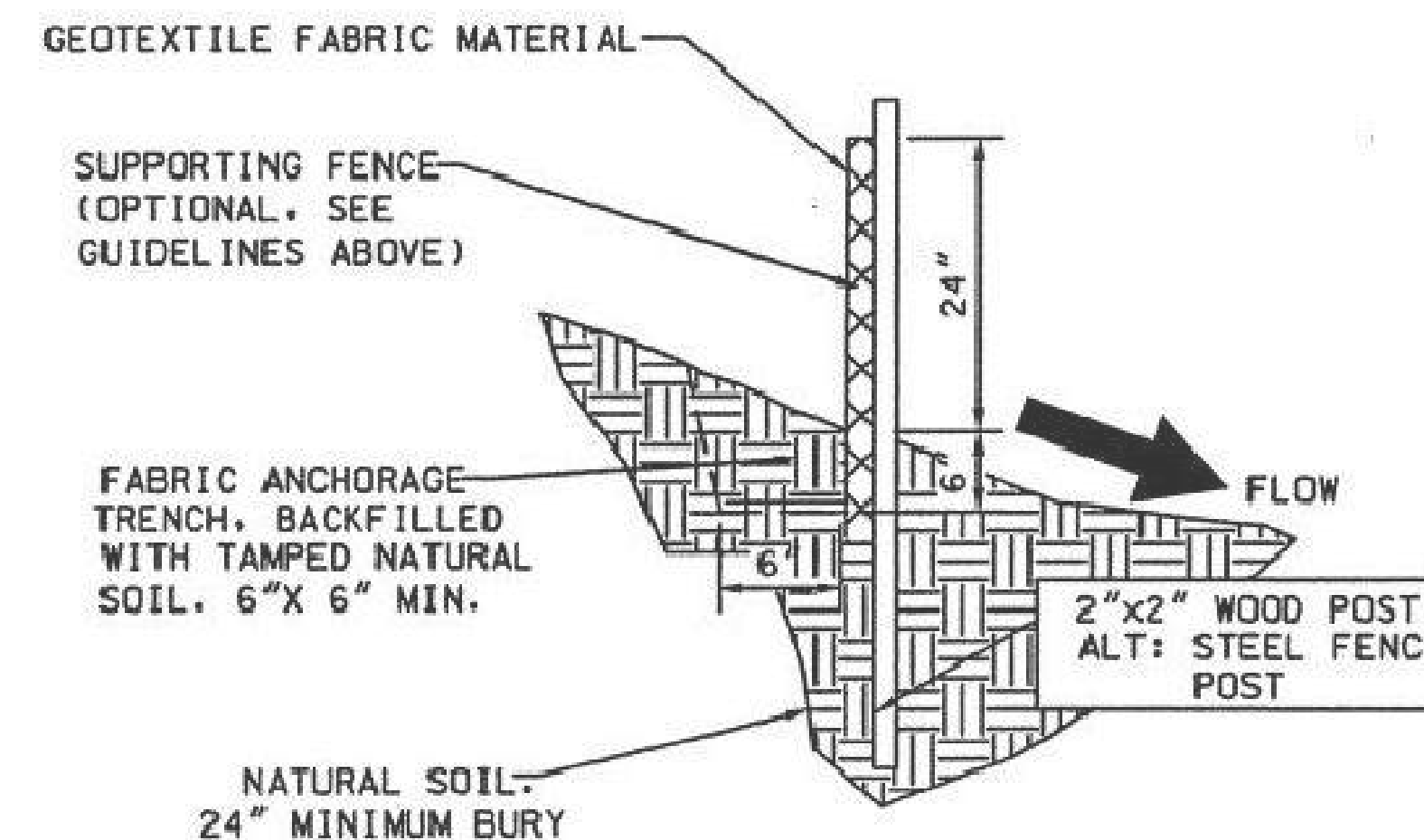
NO.	DATE	REV. BY	DESCRIPTION
REVISIONS (OR CHANGE NOTICES)			
NEW MEXICO DEPARTMENT OF TRANSPORTATION STANDARD DRAWING			
TEMPORARY EROSION & SEDIMENT CONTROL MEASURES CHECK DAMS			
APPROVED	Raymundo VanHoven 11/29/04		DATE
DESIGNED BY	DRAWN BY	CHECKED BY	
603-01-2/7			SHEET 2 OF 7



**TYPE II
STRAW BALE OPTION**



**TYPE I
SILT FENCE**



NOTES: SILT FENCE AND CHECK DAM

THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE POST SPACING FOR SILT FENCES TO MINIMIZE MAINTENANCE.

1. POST SPACING SHALL BE 4 FT. MAXIMUM WITHOUT SUPPORTING FENCE, 10 FT. MAXIMUM WITH SUPPORTING FENCE.

2. POSTS FOR 4 FT. MAXIMUM POST SPACING SHALL BE 2 INCH SQUARE NOMINAL SIZE OR HEAVIER WOOD POSTS, OR STANDARD "T" OR "U" SECTION STEEL POSTS WEIGHING NOT LESS THAN 2 LBS. PER. LINEAR FOOT.

POSTS FOR 10 FT. MAXIMUM POST SPACING SHALL BE 4 INCH SQUARE NOMINAL SIZE OR HEAVIER WOOD POSTS, OR STEEL POSTS AS SPECIFIED ABOVE.

3. SUPPORTING FENCE SHALL BE WIRE MESH (14 GA. MIN., 1 INCH MAX. MESH OPENINGS), SNOW FENCE, PLASTIC FENCE OR APPROVED.

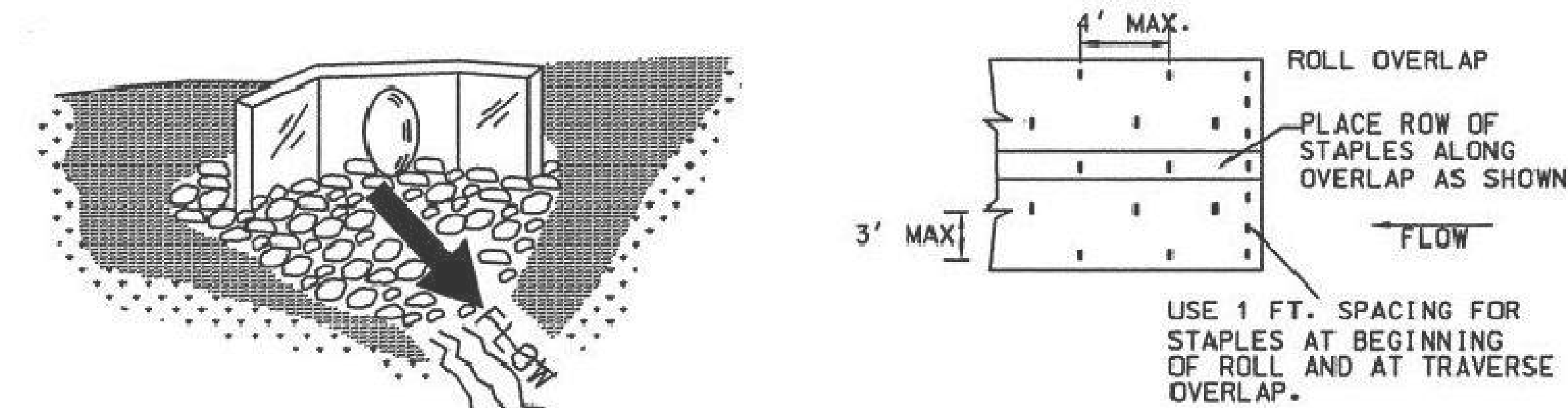
4. SUPPORTING FENCE SHALL BE FASTENED SECURELY TO POSTS WITH STAPLES OR WIRE TIES. GEOTEXTILE FABRIC SHALL BE FASTENED SECURELY TO SUPPORTING FENCE WITH WIRE TIES SPACED AT 2 FT. CENTERS ALONG THE TOP AND MID-SECTION. WHEN A SUPPORTING FENCE IS NOT USED, GEOTEXTILE FABRIC SHALL BE SECURELY FASTENED TO POSTS WITH STAPLES OR WIRE TIES.

5. WHEN SILT FENCE IS USED FOR CHECK DAMS INSTALLED IN DITCHES, A SUPPORTING FENCE SHALL BE PROVIDED, WITH MAXIMUM POST SPACING OF 10 FT.

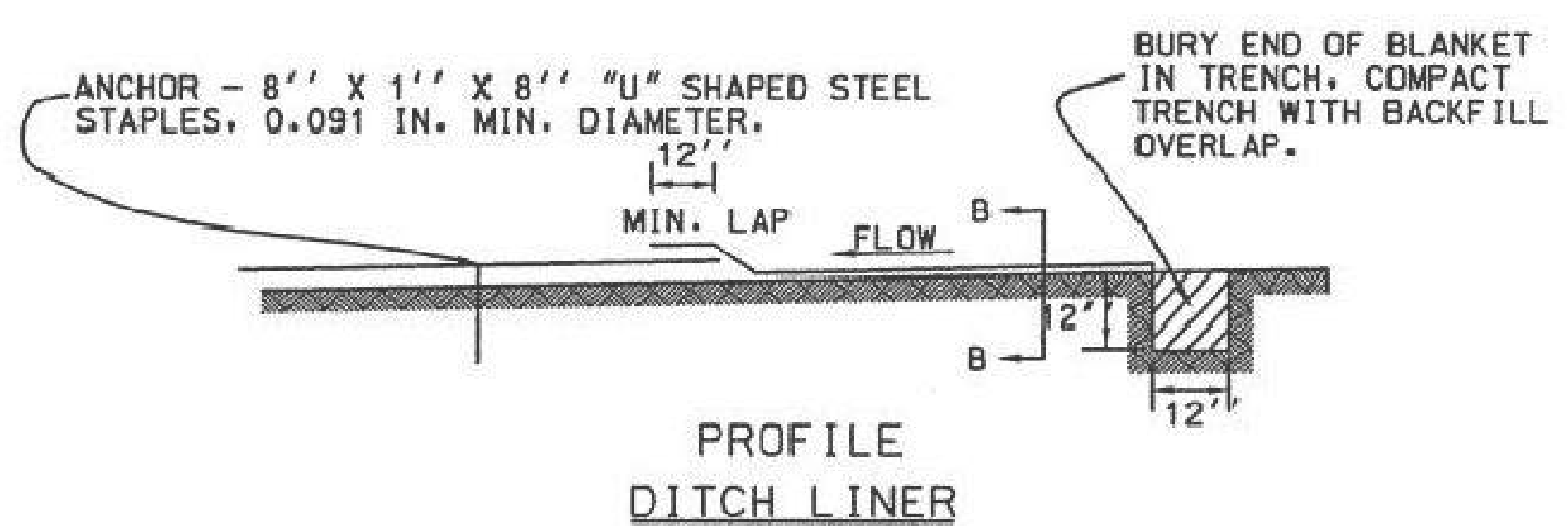
6. STANDARD "T" OR "U" SECTION STEEL POSTS SHALL NOT BE USED WITHIN THE CONSTRUCTION CLEAR ZONE RECOVERY AREA.

7. STRAW BALES ARE NOT INTENDED FOR USE ON NEW MEXICO DEPARTMENT OF TRANSPORTATION PROJECTS.

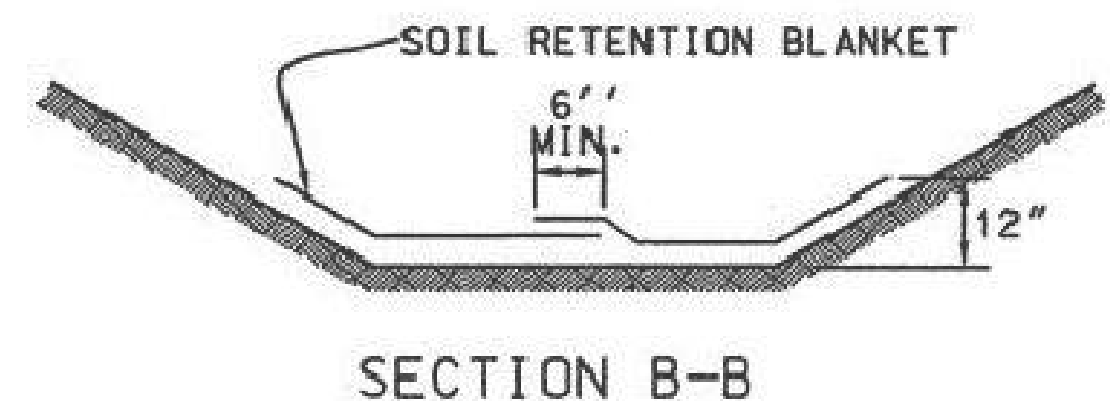
NO.	DATE	REV. BY	DESCRIPTION
REVISIONS (OR CHANGE NOTICES)			
NEW MEXICO DEPARTMENT OF TRANSPORTATION STANDARD DRAWING			
TEMPORARY EROSION & SEDIMENT CONTROL MEASURES SILT FENCE			
APPROVED	Raymundo Von Hoven		11/29/09
DESIGNED BY		DATE	
DRAWN BY		CHECKED BY	
603-01-3/7			



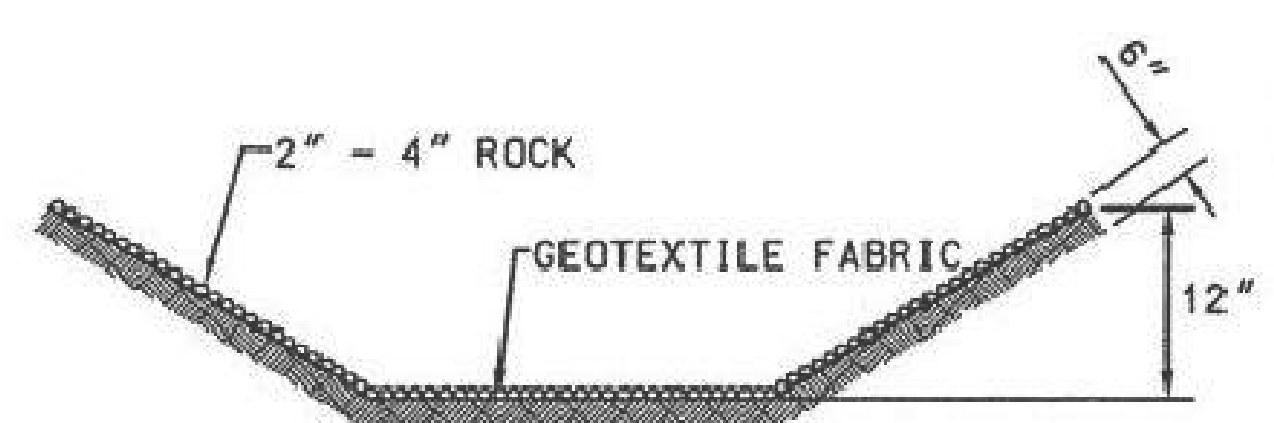
TYPICAL DITCH LINER INSTALLATIONS AT CULVERTS



PROFILE DITCH LINER



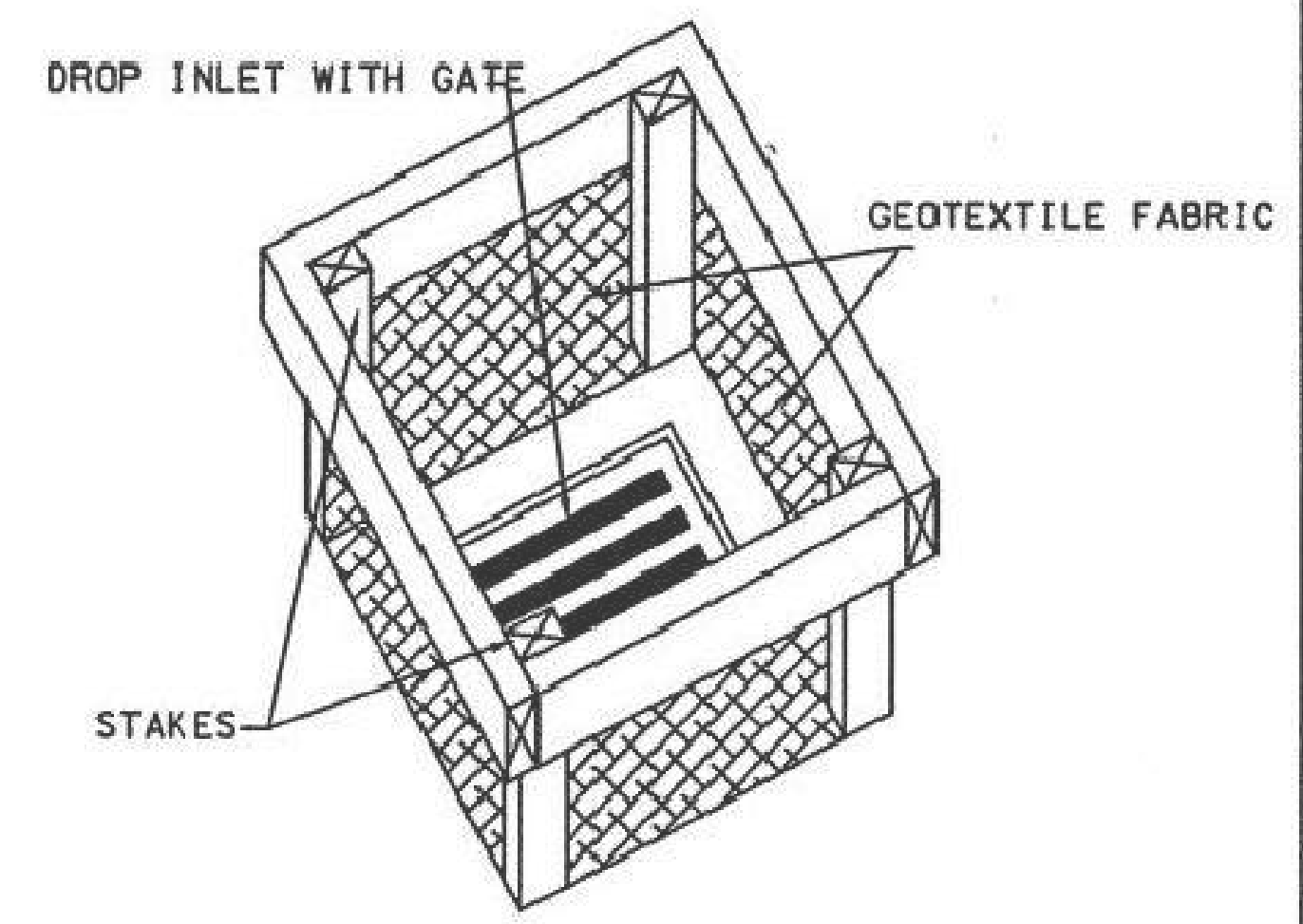
SECTION B-B



SECTION B-B

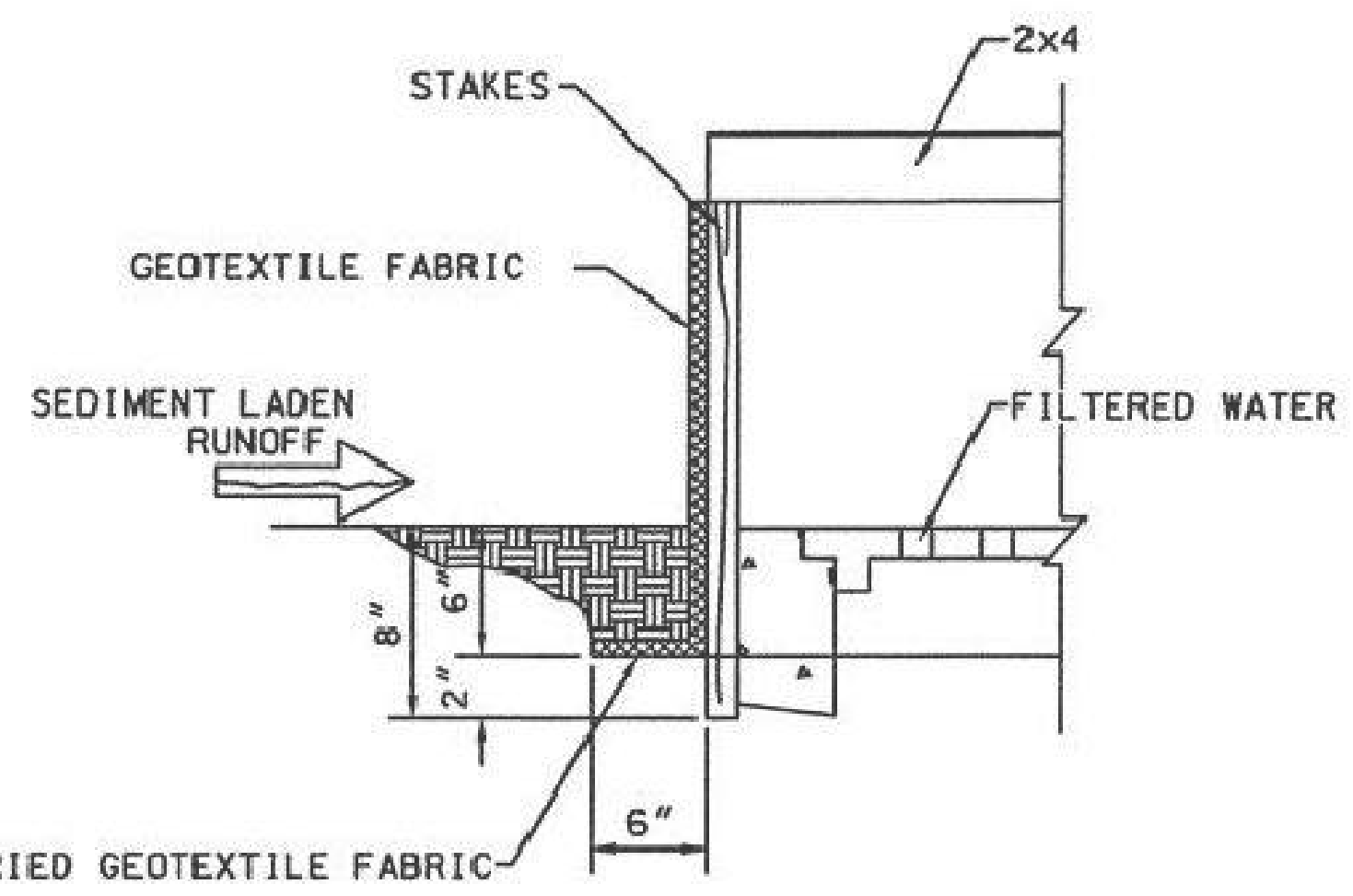
CULVERT PROTECTION

- NOTES: CULVERT PROTECTION
1. WHEN CULVERT PROTECTION IS SPECIFIED, EITHER SOIL RETENTION BLANKETS OR SOIL RETENTION ROCK MAY BE PROVIDED.
 2. THE CULVERT PROTECTION WIDTH REQUIRED SHALL BE IN ACCORDANCE WITH THESE DETAILS UNLESS SPECIFIED OTHERWISE.
 3. THE SOIL RETENTION BLANKET INSTALLATION SHOWN OUTLINES MINIMUM REQUIREMENTS. MANUFACTURER'S RECOMMENDATIONS SHALL BE USED IF THEY ARE MORE STRINGENT.

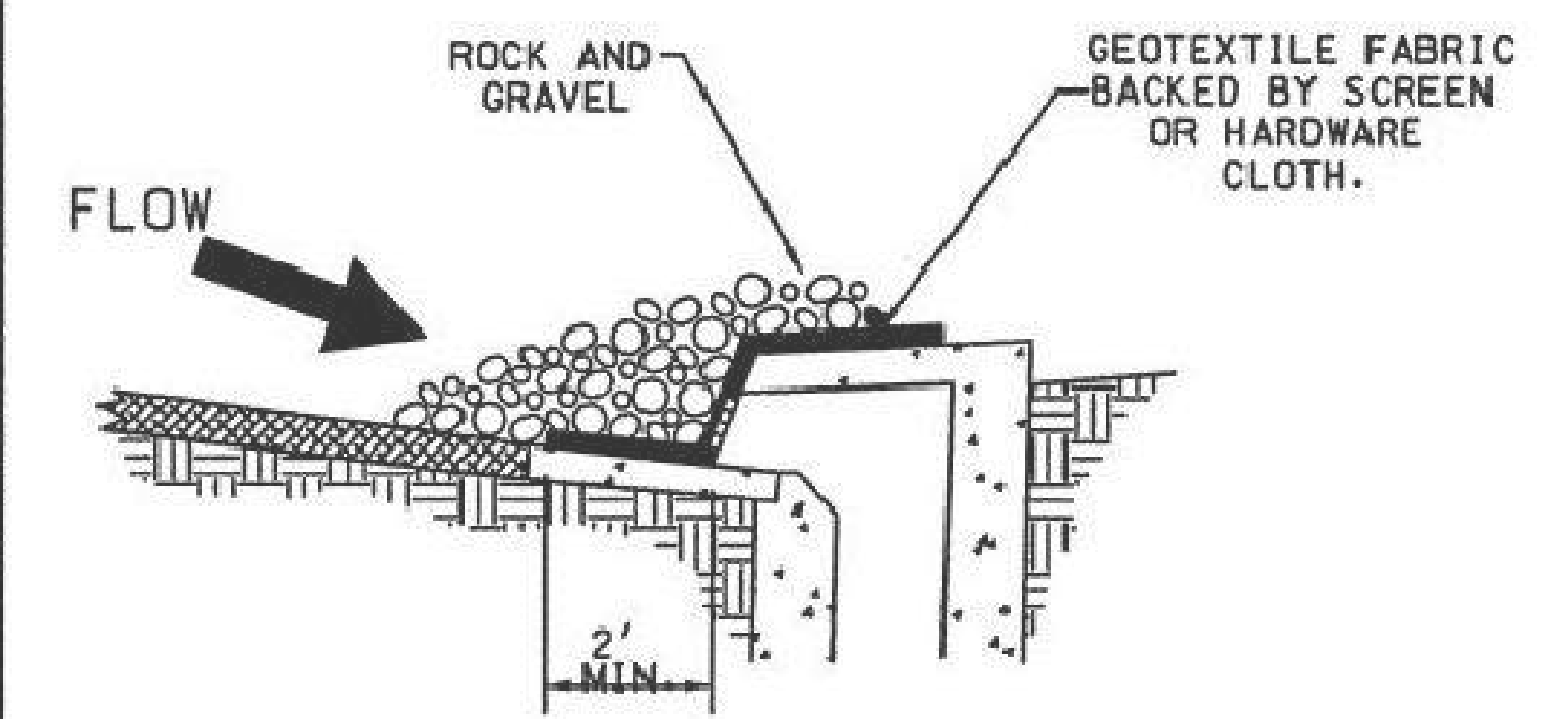


TYPE I

NOTE: WHEN SPECIFIED, ROCKS OR STRAW BALES CAN BE SUBSTITUTED FOR SILT FENCE.



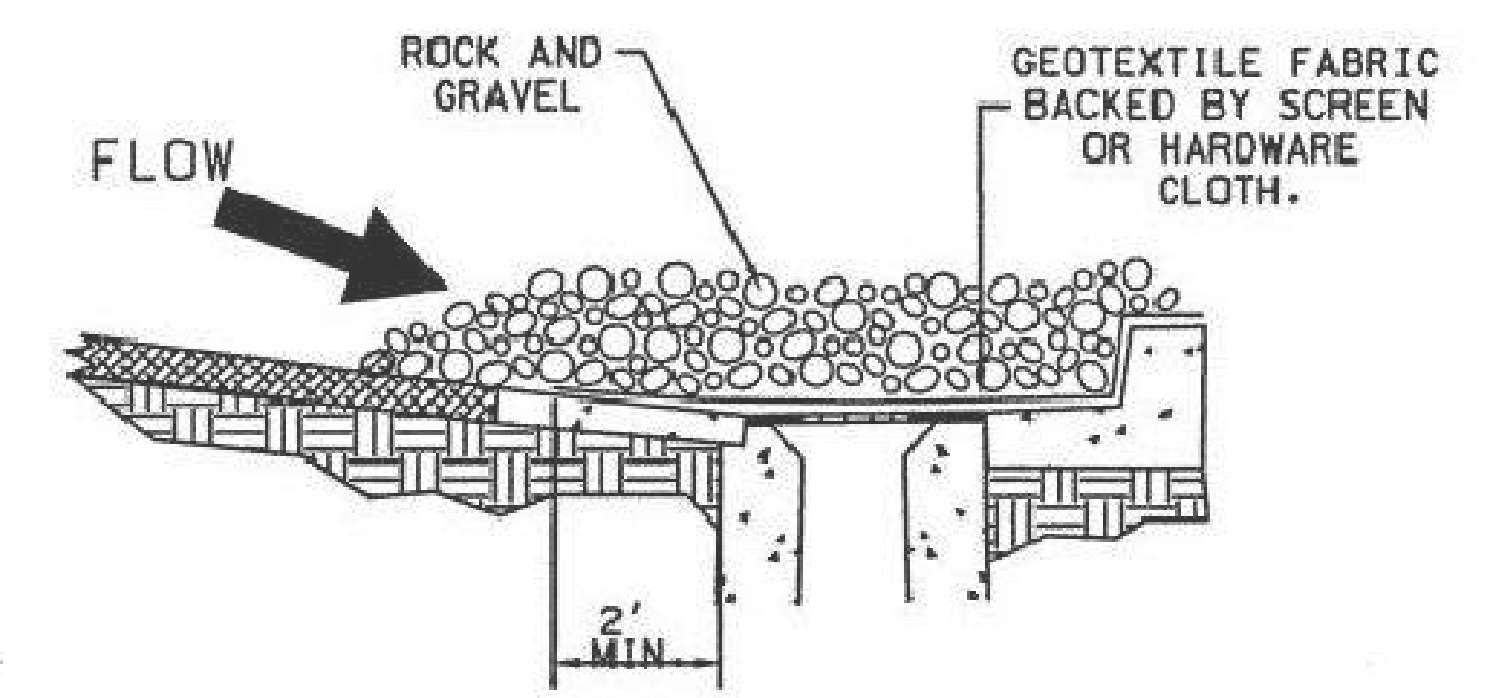
DROP INLET PROTECTION



TYPE I CURB OPENING

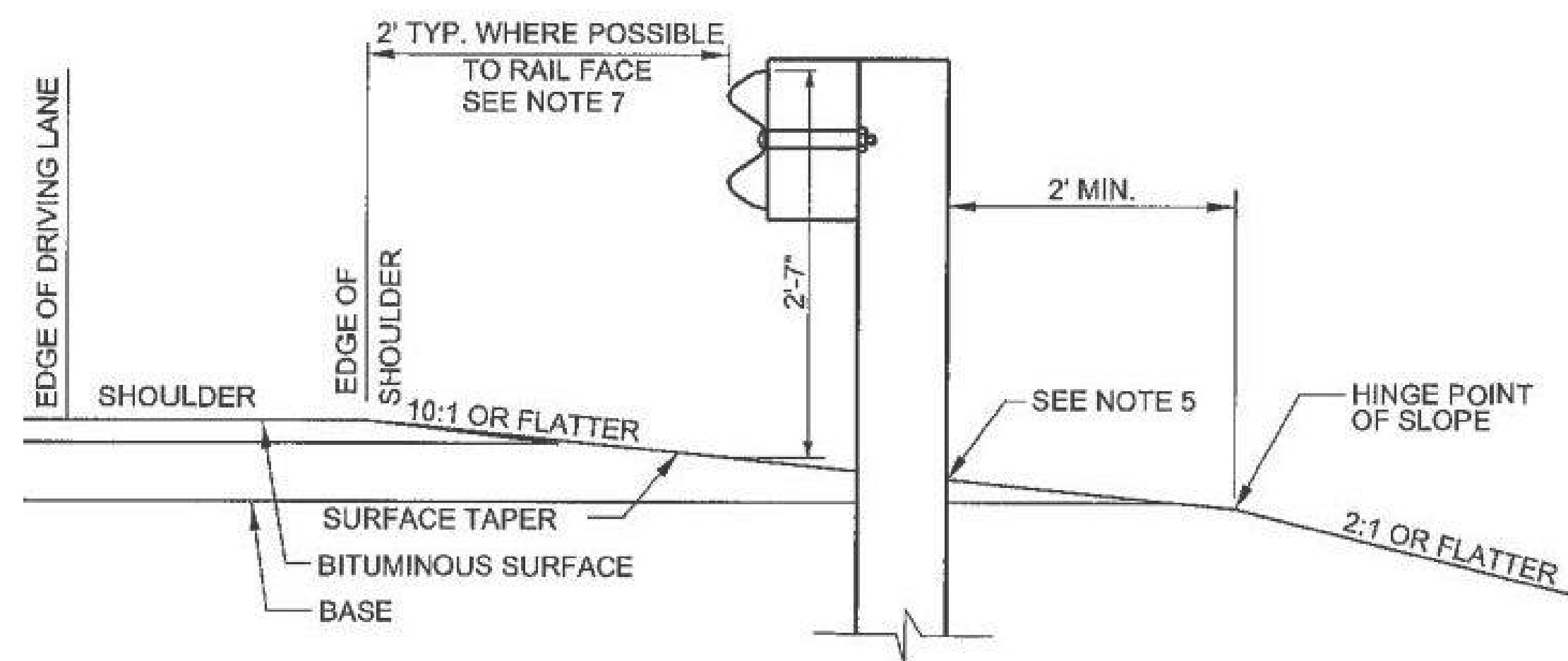
NOTES: GRAVEL INLET PROTECTION

1. THIS INSTALLATION IS FOR A TYPE I CURB DROP INLET ONLY. THE TYPE II, III TO "N" INSTALLATION IS SIMILAR.
2. THE SPACING OF THE LONGITUDINAL BRACING SHALL NOT EXCEED 5 FT.

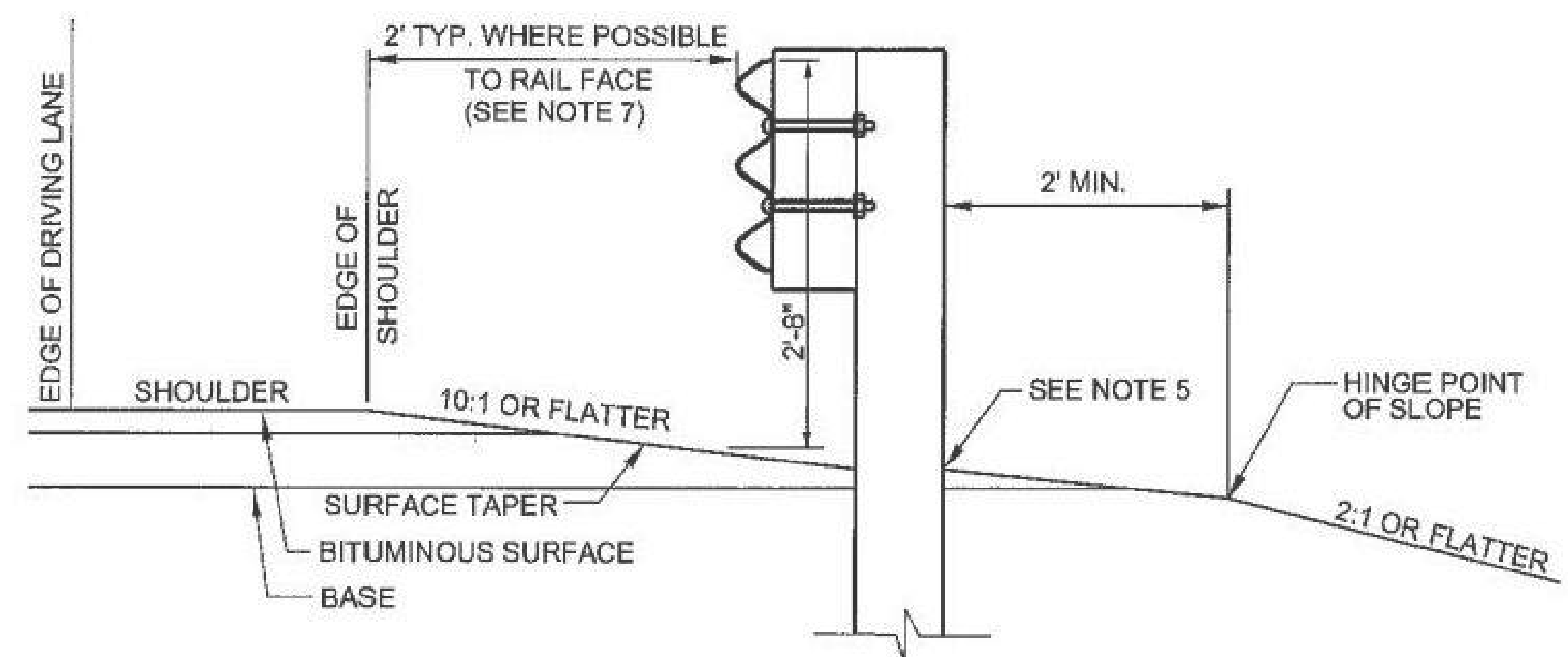


TYPE II CURB DROP INLET

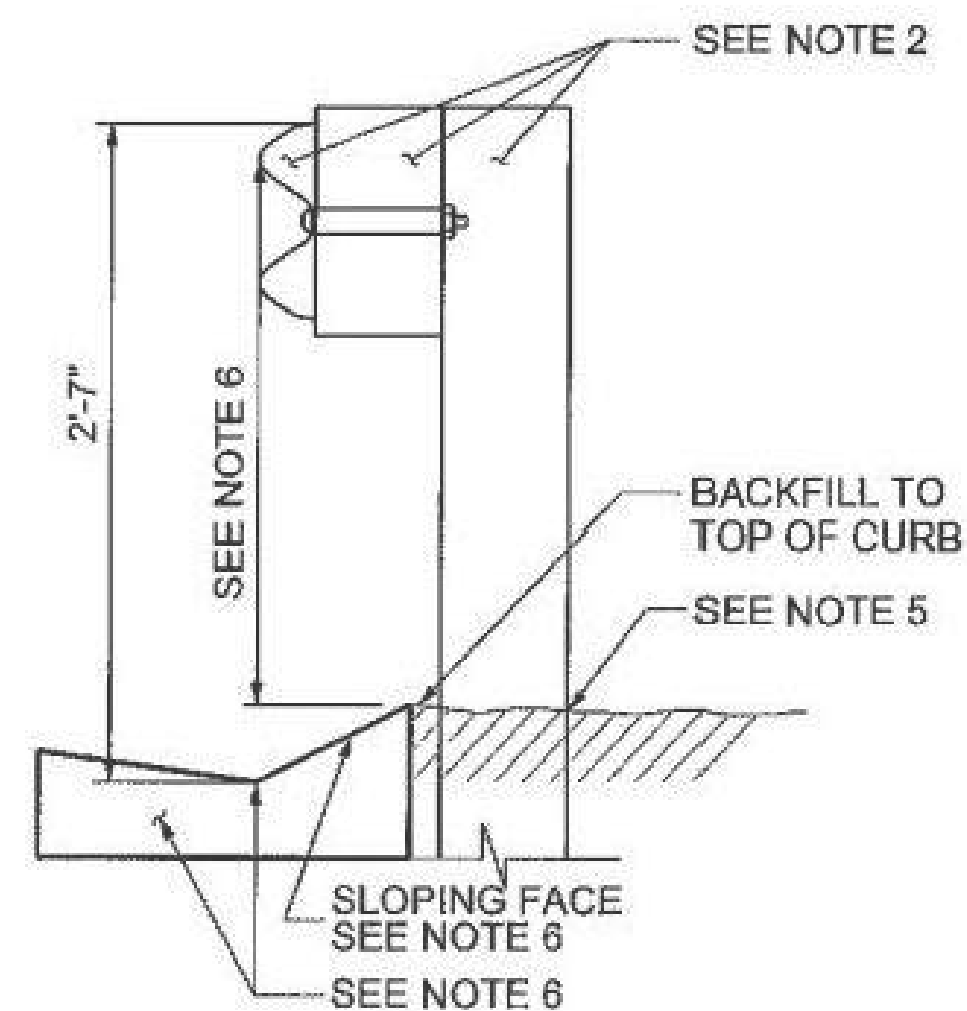
NO.	DATE	REV. BY	DESCRIPTION
REVISIONS (OR CHANGE NOTICES)			
NEW MEXICO			
DEPARTMENT OF TRANSPORTATION			
STANDARD DRAWING			
TEMPORARY EROSION & SEDIMENT			
CONTROL MEASURES			
CULVERT & DROP INLET PROTECTION			
APPROVED <i>Raymunda Van Hoven</i> 11/29/09			
DESIGNED BY _____ DRAWN BY _____ CHECKED BY _____			
603-01-4/7			



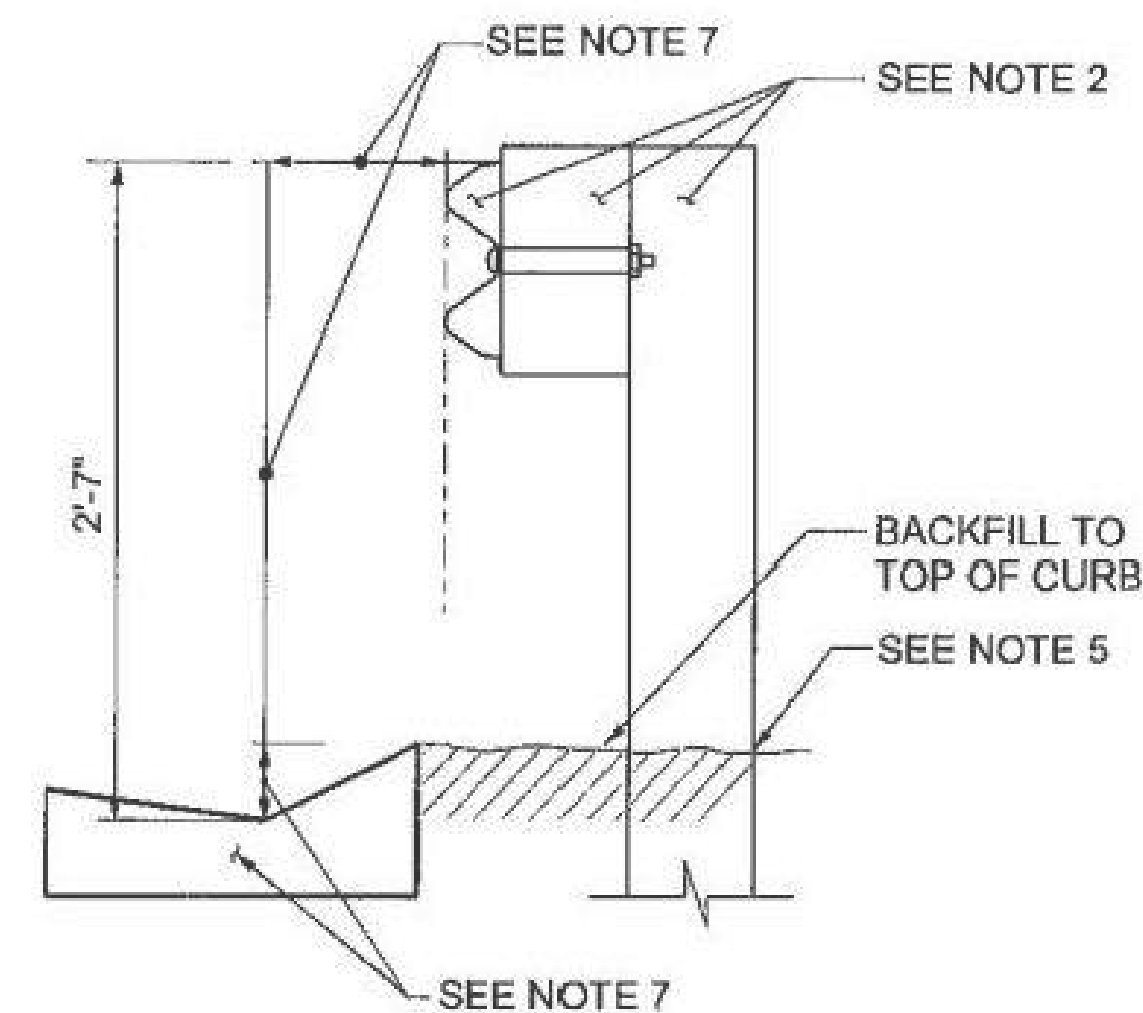
W-BEAM GUARDRAIL STANDARD
INSTALLATION AND SURFACING DETAILS



THRIE BEAM GUARDRAIL STANDARD
INSTALLATION AND SURFACING DETAILS



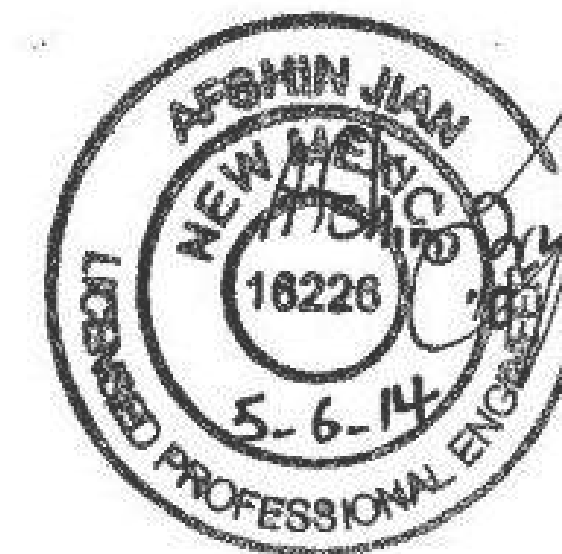
W-BEAM GUARDRAIL
AT FACE OF CURB
ALL DESIGN SPEEDS



W-BEAM GUARDRAIL
AWAY FROM CURB FACE
DESIGN SPEEDS LESS THAN
45 MPH AND 45 TO 60 MPH

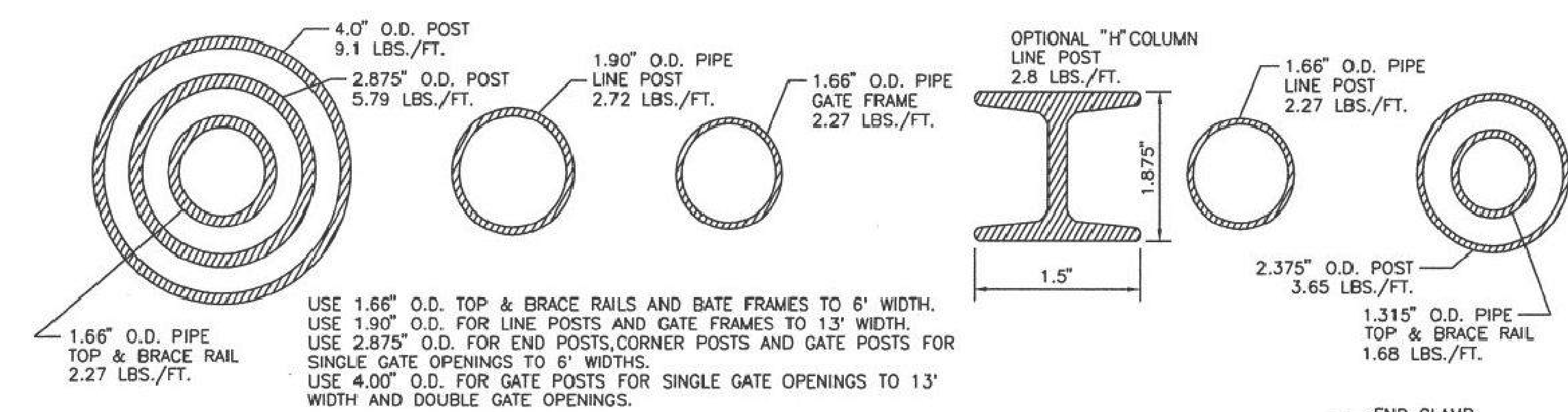
NOTES

- STANDARD BEAM GUARDRAIL POST SPACING FOR SINGLE AND DOUBLE FACE W-BEAM AND THRIE BEAM SHALL BE 6'-3" ON CENTER.
- FOR POST AND BLOCK DETAILS, SEE SHEET 606-GR31-4/20.
- CONSTRUCTION TOLERANCE SHALL BE $\pm 1/2"$ FOR GUARDRAIL HEIGHT.
- GUARDRAIL FACE MAY BE PLACED AT EDGE OF SHOULDER WHEN SLOPES BEHIND GUARDRAIL WILL NOT ALLOW FOR 2' TYPICAL SETBACK WHILE MAINTAINING THE MINIMUM 2' DISTANCE FROM THE SLOPE HINGE POINT.
- POST LEAVE OUT SHALL BE OBSERVED WHEN POSTS ARE RESTRAINED BY ROCK, ASPHALT OR CONCRETE. SEE SHEET 606-GR31-5/20.
- SINGLE FACE GUARDRAIL CAN BE USED WITH ANY COMBINATION OF SLOPING FACED CURB THAT IS 6" OR SHORTER IF INSTALLED FLUSH WITH THE FACE OF THE GUARDRAIL ON ROADS WITH DESIGN SPEEDS UP TO 50 MPH. FOR DESIGN SPEEDS FROM 50 MPH TO 60 MPH A 4" OR SHORTER SLOPING CURB IS RECOMMENDED FOR INSTALLATION WHERE THE FACE OF THE CURB IS FLUSH WITH THE FACE OF THE GUARDRAIL. FOR DESIGN SPEEDS ABOVE 60 MPH THE SLOPING FACE OF THE CURB SHALL BE 1V:3H OR FLATTER AND NO TALLER THAN 4" HIGH. THE GUTTER LINE OF THE CURB SHALL BE CONSIDERED TO BE THE SAME LOCATION AS THE FACE OF THE CURB AND SHALL ALSO BE THE LOCATION FROM WHERE GUARDRAIL HEIGHT IS MEASURED.
- SINGLE FACE GUARDRAIL MAY BE USED WITH 6" HIGH OR SHORTER SLOPING FACED CURB AS LONG AS THE FACE OF THE GUARDRAIL IS LOCATED AT LEAST 8 FT. BEHIND THE FACE OF THE CURB ON ROADS WHERE THE DESIGN SPEED IS UP TO 45 MPH. FOR DESIGN SPEEDS FROM 45 TO 50 MPH GUARDRAILS MAY BE USED WITH 4" HIGH OR SHORTER SLOPING CURBS AS LONG AS THE FACE OF THE METAL BARRIER IS LOCATED AT LEAST 13 FT. BEHIND THE CURB. THE GUTTER LINE OF THE CURB SHALL BE WHERE OFFSET TO RAIL FACE AND RAIL HEIGHT IS MEASURED.



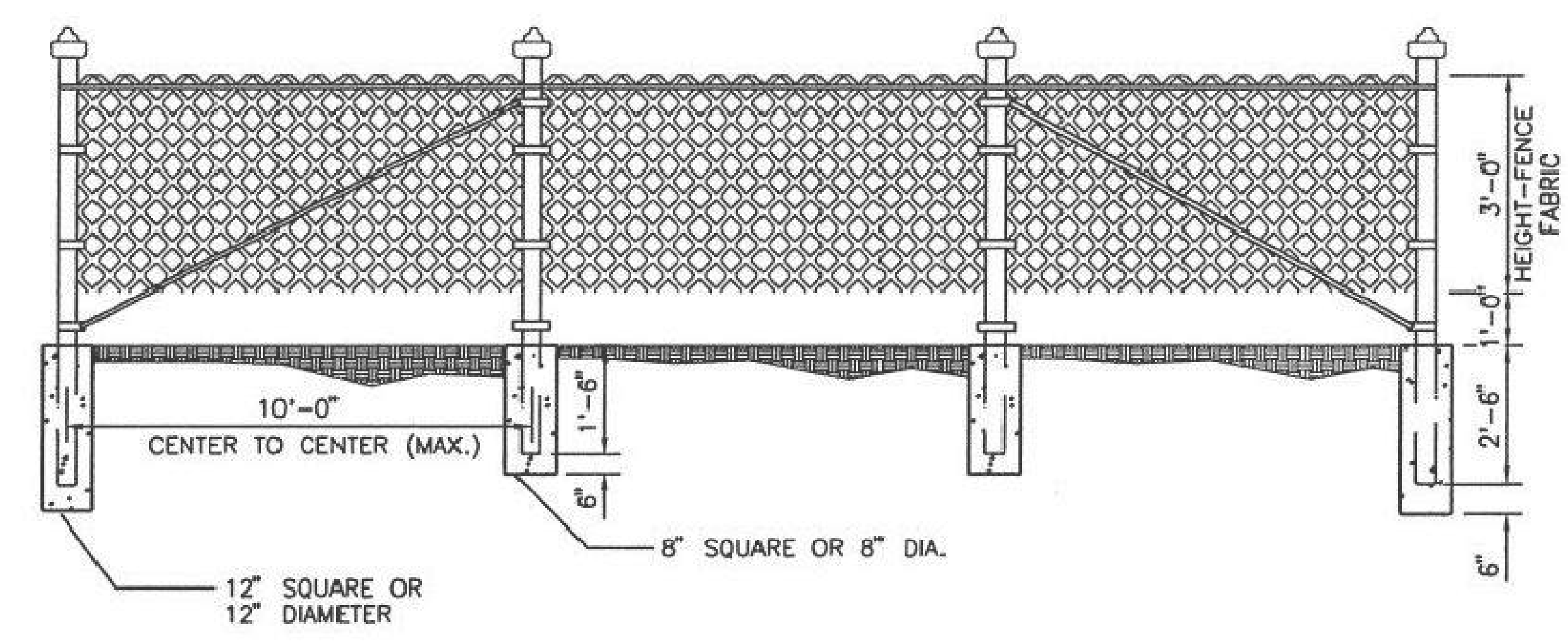
DRAWING SCALE = NOT TO SCALE

NO.	DATE	REV. BY	DESCRIPTION
REVISIONS (OR CHANGE NOTICES)			
NEW MEXICO DEPARTMENT OF TRANSPORTATION STANDARD DRAWING			
TYPICAL INSTALLATION AND SURFACING DETAILS			
APPROVED		DESIGN ENGINEER	DATE
606-GR31-6/20			



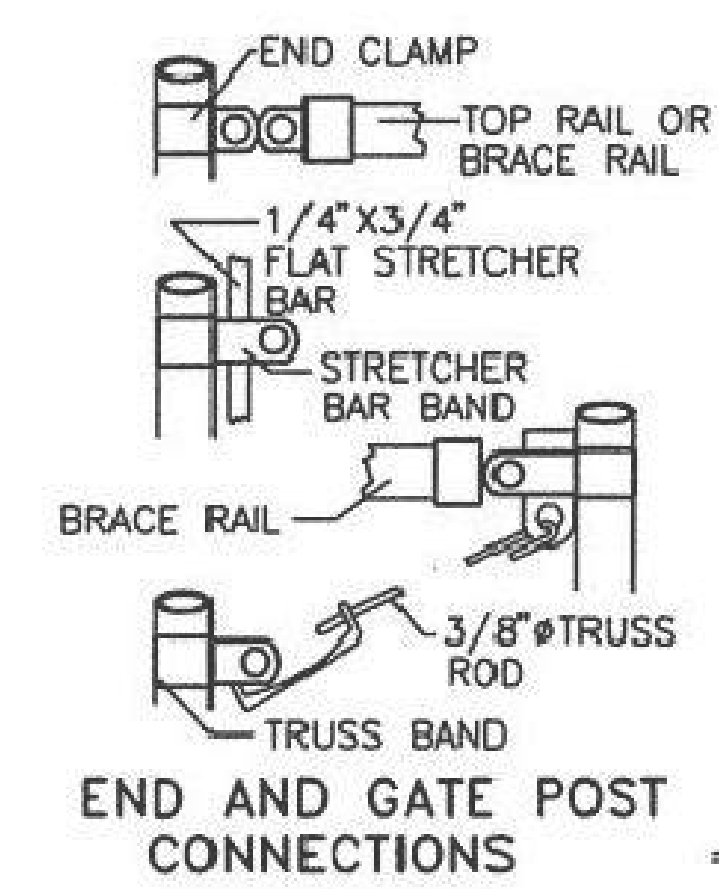
GENERAL NOTES

1. TUBULAR POSTS, BRACES AND TOP RAILS SHALL CONFORM TO THE REQUIREMENTS OF ASTM DESIGNATION F 1083.
2. CHAIN LINK FABRIC SHALL CONFORM TO AASHTO DESIGNATION M-181.
3. ALL CONCRETE TO BE CLASS "A".
4. KNUCKLED SALVAGE SHALL BE USED.
5. DIAMETER (O.D.) SHOWN HEREON ARE NOMINAL SIZES AS ESTABLISHED BY THE AMERICAN STANDARDS ASSOCIATION.



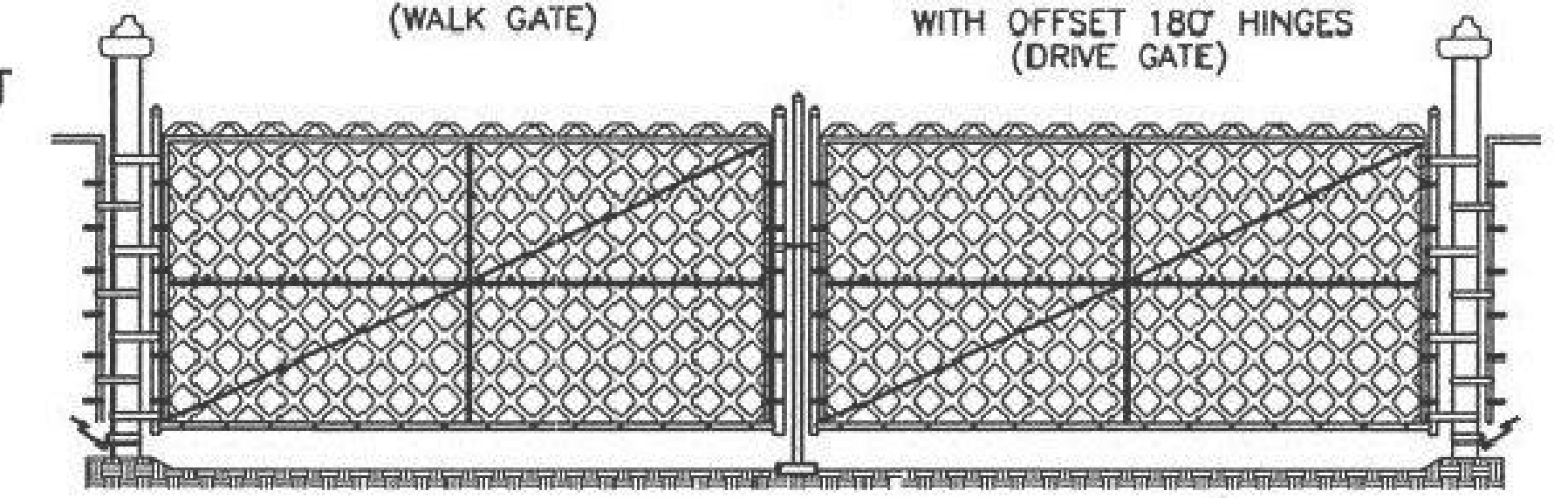
CHAIN LINK 4' ACCESS CONTROL FENCE

TOP RAIL USE 1.315" O.D.
FOR LINE POSTS USE 1.66" O.D.
FOR END POSTS USE 2.375" O.D.

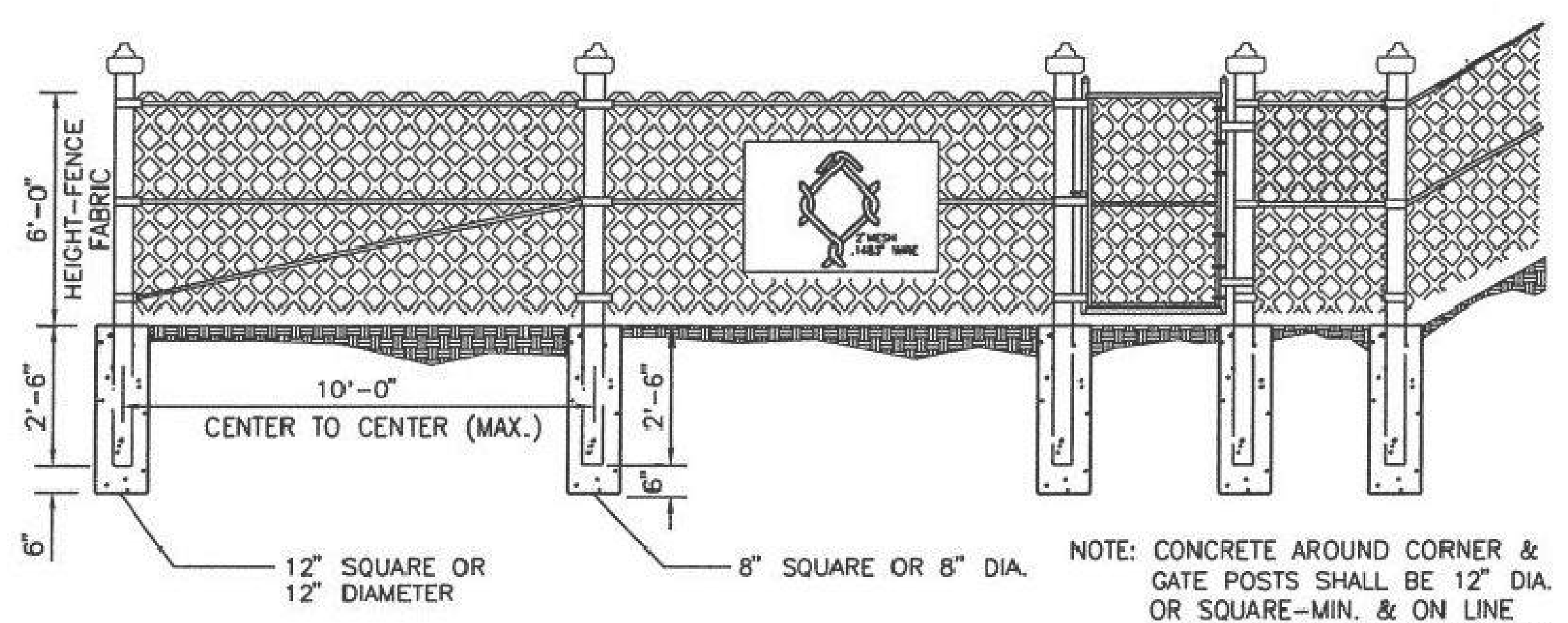
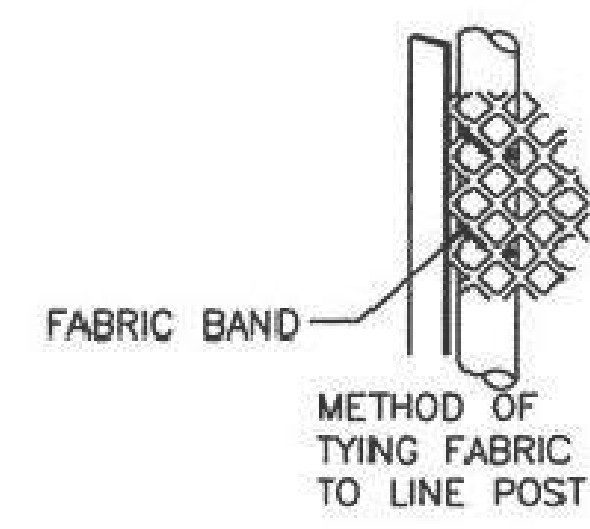


SINGLE GATE (WALK GATE)

SINGLE GATE WITH OFFSET 180° HINGES (DRIVE GATE)



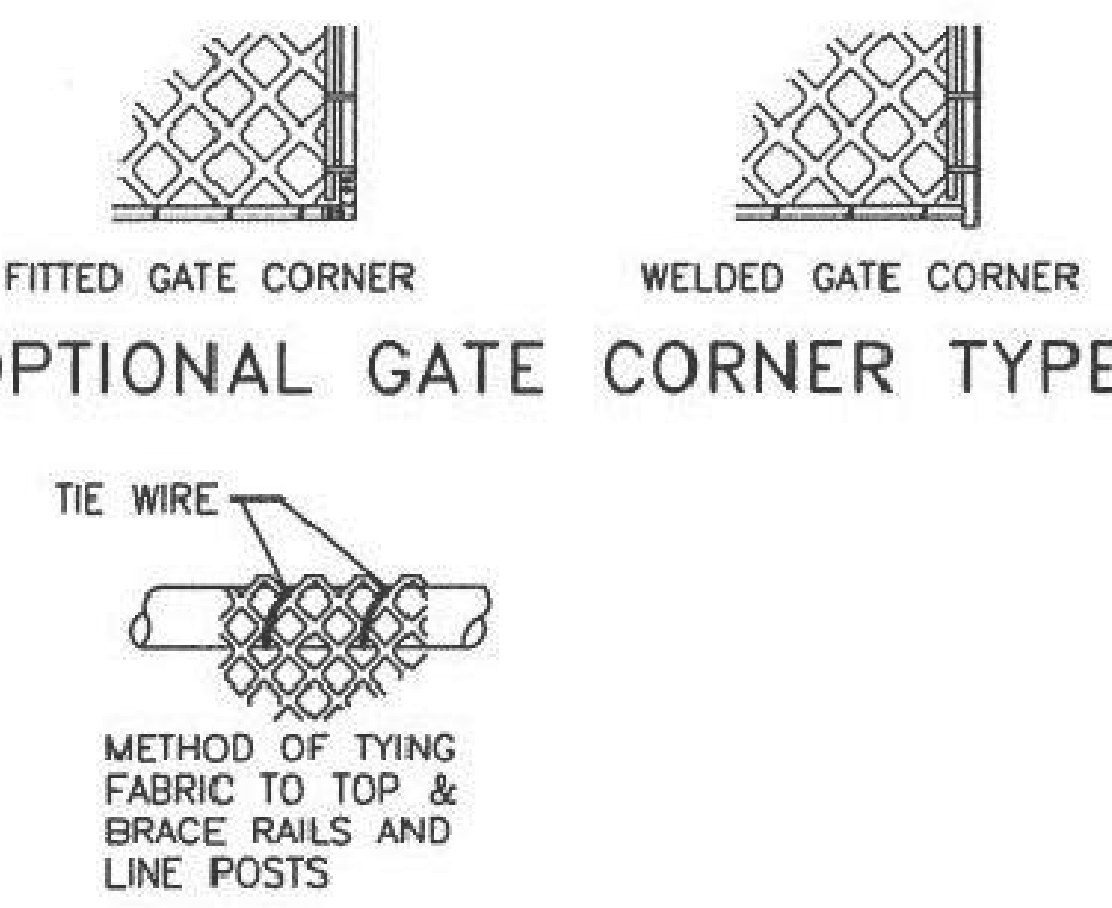
DOUBLE GATE WITH OFFSET 180° HINGES (DRIVE GATE)



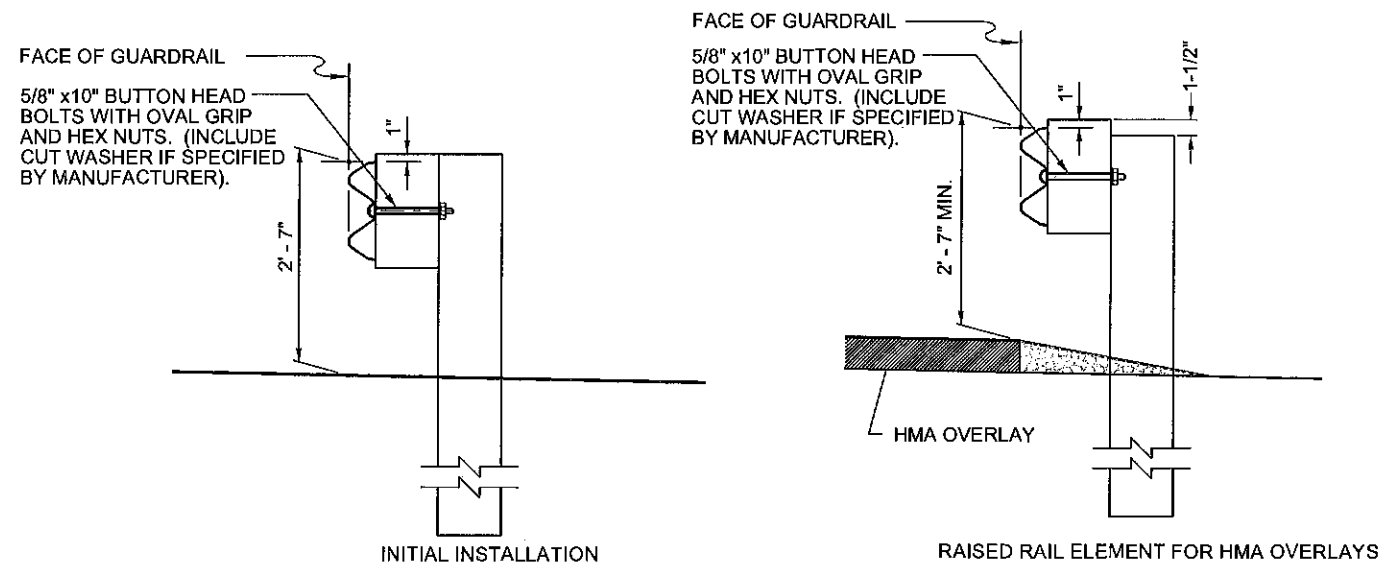
6' CHAIN LINK FENCE WITH GATE

NOTE: CONCRETE AROUND CORNER & GATE POSTS SHALL BE 12" DIA. OR SQUARE-MIN. & ON LINE POSTS 8" DIA. OR SQUARE MIN.

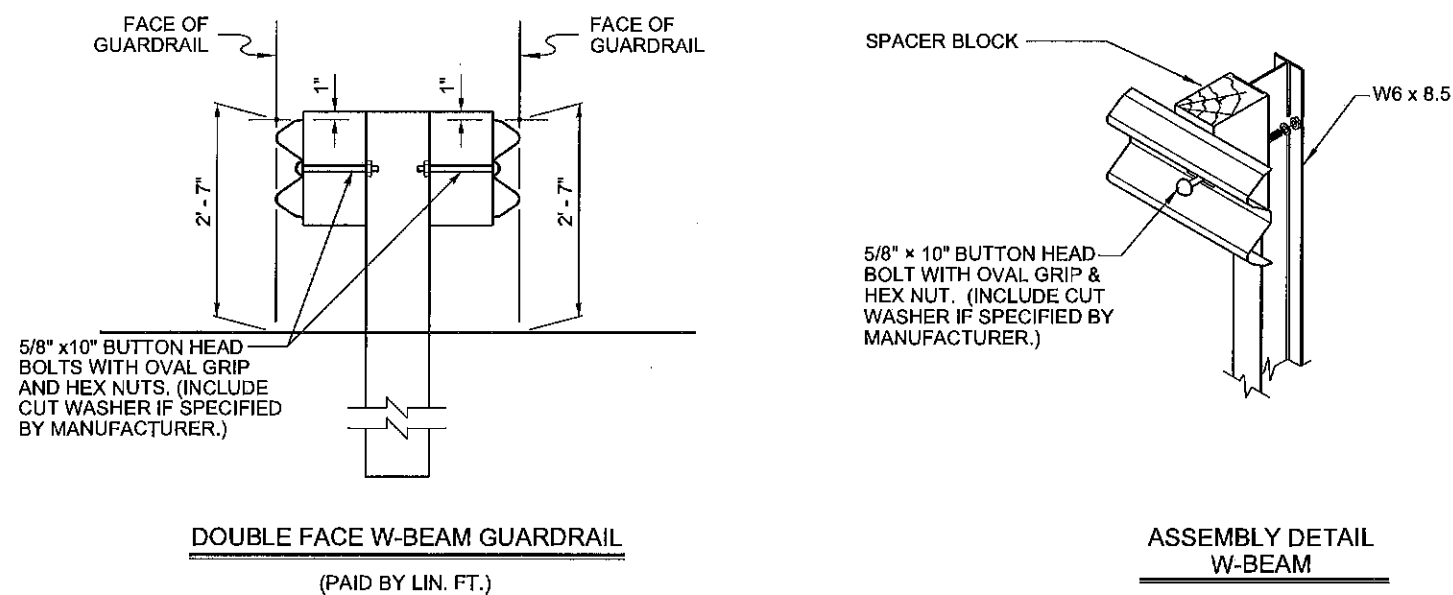
OPTIONAL GATE CORNER TYPES



NO.	DATE	REV. BY	DESCRIPTION
REVISIONS (OR CHANGE NOTICES)			
NEW MEXICO DEPARTMENT OF TRANSPORTATION STANDARD DRAWING			
STANDARD CHAIN LINK FENCES AND GATES			
APPROVED	DESIGN ENGINEER	DATE	11/29/04
DESIGNED BY _____ DRAWN BY _____ CHECKED BY _____			
607-04-1/1 SHEET 1 OF 1			

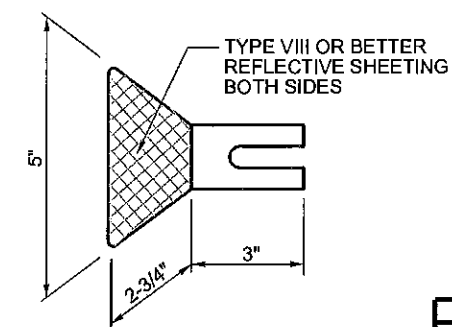
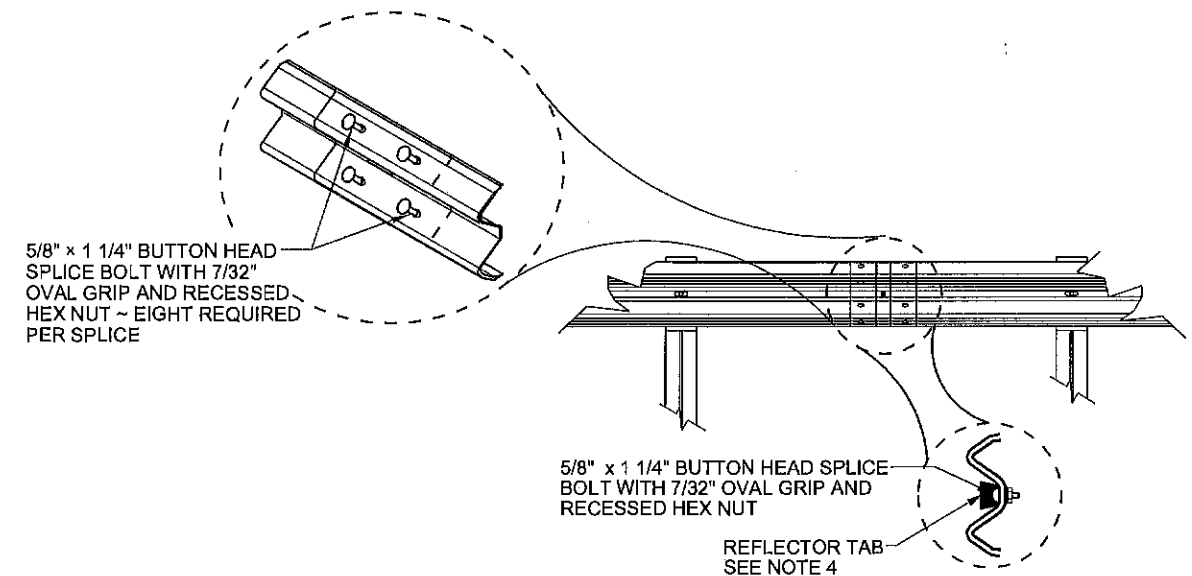


SINGLE FACE W-BEAM GUARDRAIL
(PAID BY LIN. FT.)



NOTES

1. SINGLE AND DOUBLE FACE W-BEAM GUARDRAIL POST SPACING SHALL BE 6'-3" ON CENTER.
2. SINGLE AND DOUBLE FACE W-BEAM GUARDRAIL SHALL USE W6 x 8.5 STEEL POSTS FOR SPACER BLOCK DETAILS, SEE SHEET 606-GR31-4/20.
3. EXISTING POSTS SHALL NOT BE RAISED. REPLACE POSTS AS NECESSARY TO ACHIEVE REQUIRED GUARDRAIL HEIGHT.
4. REFLECTOR TABS SHALL BE PLACED AT 25' INTERVALS (EVERY 25' AT SPLICE) ON ALL GUARDRAIL INSTALLATIONS (12'-6" ON 2 LANE HIGHWAY). THE COLOR OF THE REFLECTIVE SHEETING ON THE REFLECTOR TABS SHALL BE THE SAME AS THE COLOR OF THE SHOULDER LINE PAVEMENT MARKING IN FRONT OF THE BARRIER. TABS SHALL HAVE A MINIMUM OF 8.75 SQ. IN. OF TYPE VIII OR BETTER REFLECTIVE SHEETING ON BOTH SIDES AND SHALL ATTACH SECURELY UNDER HEAD OF 5/8" BUTTON HEAD BOLT.
5. SPLICES SHALL BE LAPPED SO THE FREE END DOES NOT FACE TRAFFIC FLOW.
6. CONSTRUCTION TOLERANCE SHALL BE $\pm 1/2"$ FOR GUARDRAIL HEIGHT.
7. GUARDRAIL FACE MAY BE PLACED AT EDGE OF SHOULDER ONLY WHEN SLOPES BEHIND GUARDRAIL WILL NOT ALLOW FOR 2' TYPICAL SETBACK, SEE SHEET 606-GR31-6/20.
8. POST LEAVE OUT SHALL BE OBSERVED WHEN POSTS ARE RESTRAINED BY ROCK, ASPHALT, OR CONCRETE OR ARE PLACED IN THE SURFACING TAPER. SEE SHEET 606-GR31-5/20 FOR POST LEAVEOUT.
9. DOUBLE FACE W-BEAM GUARDRAIL SHALL BE PAID AS MEASURED ALONG CENTERLINE OF POST OF INSTALLATION. EACH RAIL ELEMENT WILL NOT BE MEASURED AND PAID SEPARATELY.
10. SEE SHEET 606-GR31-6/20 FOR TYPICAL GUARDRAIL INSTALLATIONS.

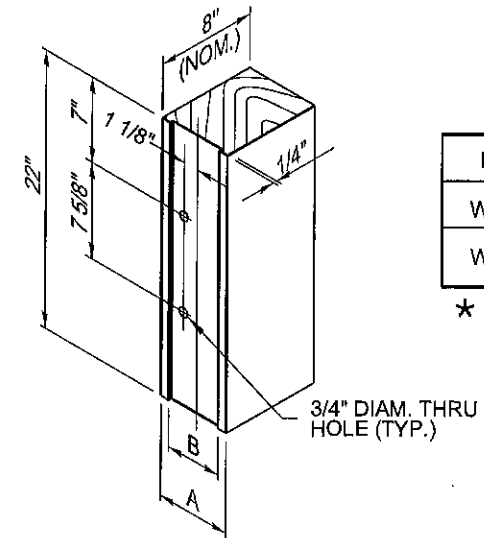
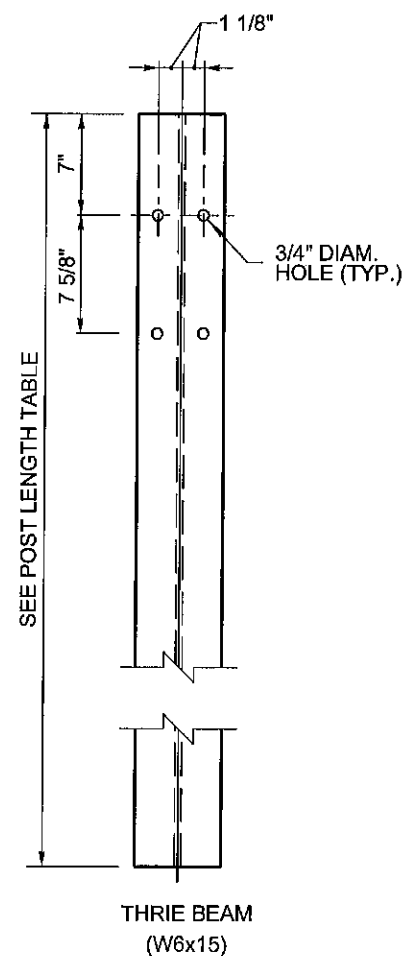
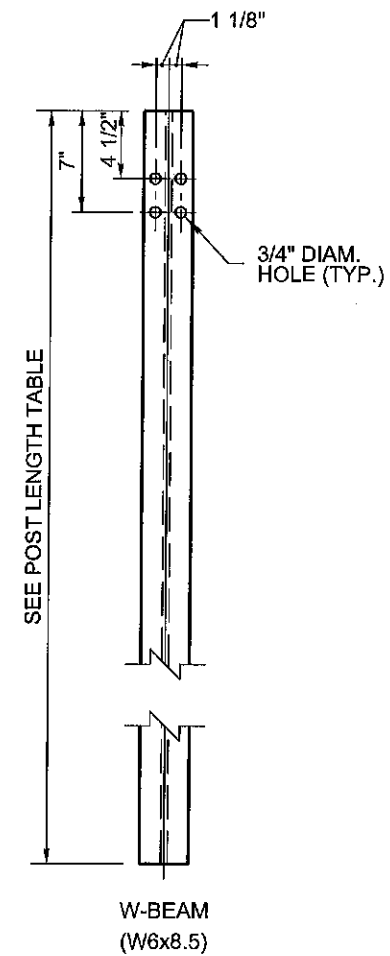


REFLECTORIZED WASHER



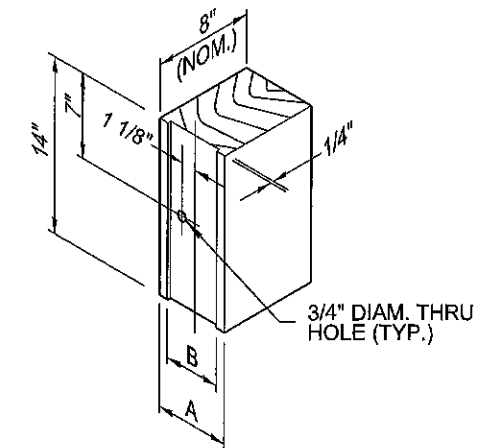
NO.	DATE	REV. BY	DESCRIPTION
REVISIONS (OR CHANGE NOTICES)			
NEW MEXICO DEPARTMENT OF TRANSPORTATION STANDARD DRAWING			
W-BEAM GUARDRAIL			
APPROVED		DESIGN ENGINEER	DATE
606-GR31-1/20			

DRAWING SCALE = NOT TO SCALE



POST	A	B
W6 x 8.5	6"★	4 1/4"
W6 x 15	8"★	6 1/4"

★ NOMINAL (NOM.)



THRIE BEAM SPACER BLOCK
FOR STEEL POST
SEE NOTE

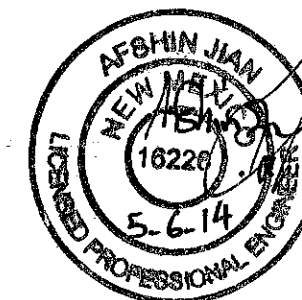
W-BEAM SPACER BLOCK
FOR STEEL POST
SEE NOTE

STEEL POST

POST LENGTH TABLE	
DESCRIPTION	STEEL
SINGLE FACE W-BEAM	6' - 0"
DOUBLE FACE W-BEAM	6' - 0"
SINGLE FACE THRIE-BEAM	6' - 6"
DOUBLE FACE THRIE-BEAM	7' - 0"

NOTE:

SPACER BLOCKS MAY CONSIST OF WOOD, PLASTIC, OR COMPOSITE MATERIAL ON THE APPROVED PRODUCTS LIST.

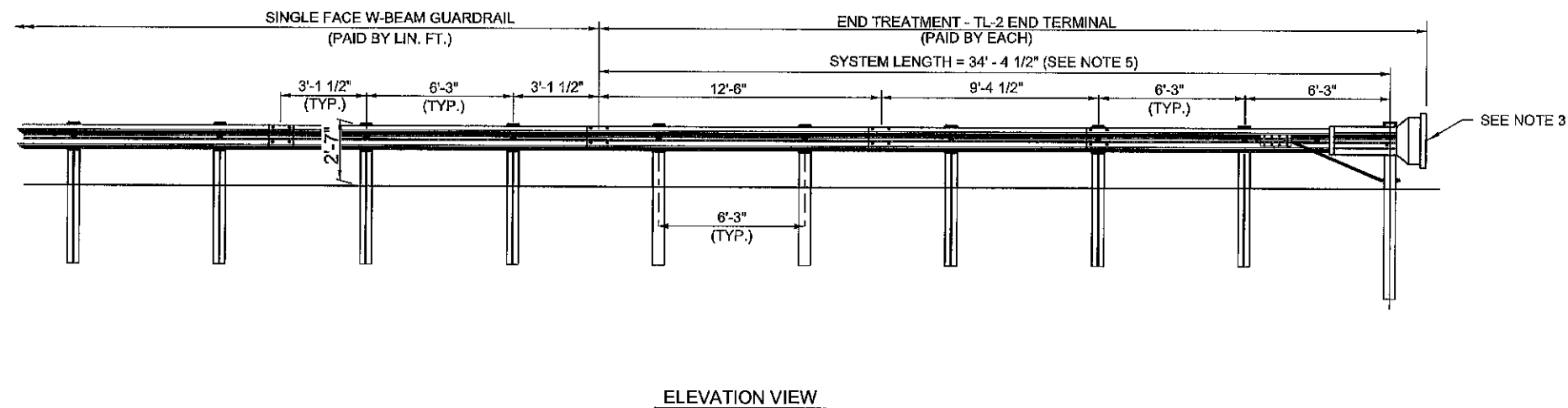
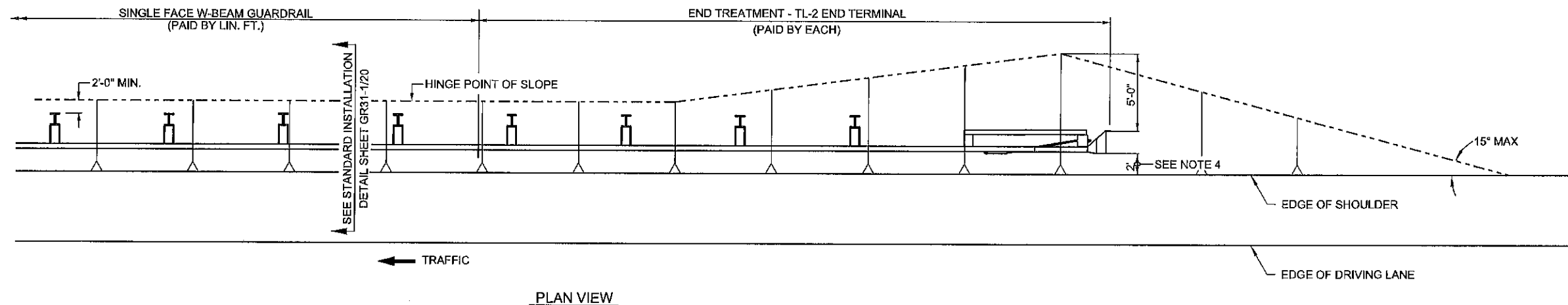


NO.	DATE	REV. BY	DESCRIPTION
REVISIONS (OR CHANGE NOTICES)			
NEW MEXICO DEPARTMENT OF TRANSPORTATION STANDARD DRAWING			
BEAM GUARDRAIL POSTS AND BLOCKS			
APPROVED		DESIGN ENGINEER	DATE
606-GR31-4/20			

DRAWING SCALE = NOT TO SCALE

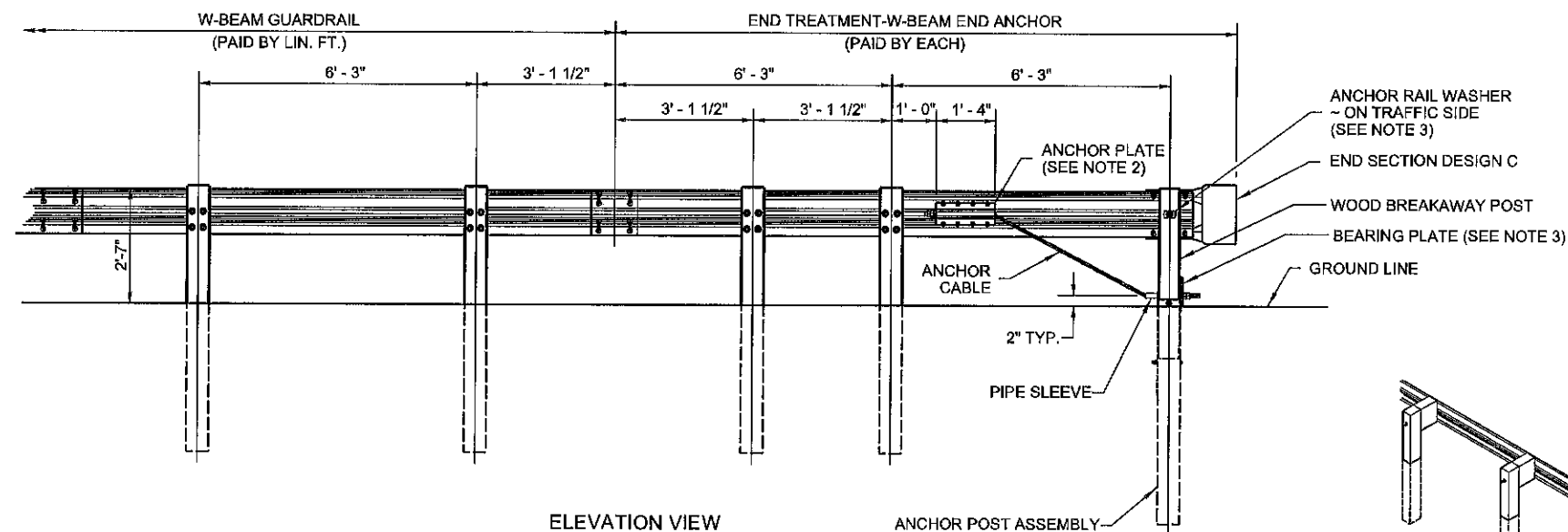
NOTES:

1. END TREATMENT SHOWN IS A GENERAL DEPICTION OF A NOMINAL 37'-6" NMDOT ACCEPTED END TERMINAL THAT IS FHWA ACCEPTED AS CRASHWORTHY AT TEST LEVEL 2 (TL-2) AND MAY BE USED IN APPLICATIONS WITH SPEEDS OF 40 MPH OR LESS.
2. ACCEPTED END TREATMENT, ON THE DEPARTMENT'S APPROVED PRODUCT LIST, SHALL BE INSTALLED ACCORDING TO MANUFACTURERS' INSTALLATION INSTRUCTIONS.
3. A REFLECTORIZED OBJECT MARKER SHALL BE INSTALLED. ADHESIVE BACKED REFLECTIVE SHEETING MAY BE APPLIED DIRECTLY TO GUARDRAIL END TREATMENT IMPACT HEAD AS PER THE MANUFACTURERS RECOMMENDATION. DIRECT APPLIED SHEETING SHALL PROVIDE A SMOOTH SURFACE AND HAVE NO WRINKLES, AIR BUBBLES, CUTS OR TEARS. REFLECTIVE MATERIAL SHALL BE TYPE VIII OR BETTER WITH YELLOW BACK GROUND AND BLACK CHEVRON STRIPES. STRIPES SHALL BE ORIENTED WITH THEIR TOPS AWAY FROM TRAFFIC AND ANGLED DOWN AT 45° TOWARDS TRAFFIC.
4. THESE END TREATMENTS DO NOT REQUIRE AN OFFSET AT THE END. END TREATMENTS SHALL BE INSTALLED ENSURING THE END PIECE IS 2' OFF THE SHOULDER. A MAXIMUM FLARE OF 25:1 OR FLATTER OVER THE LENGTH OF THE TREATMENT IS ALLOWED.
5. END TREATMENTS SHALL BE OF THE LENGTH AND TEST LEVEL SPECIFIED IN THESE DRAWINGS AND AS SPECIFIED BY THE MANUFACTURER FOR THE INTENDED END TREATMENT TYPE TEST LEVEL. ONLY END TREATMENTS CURRENTLY ON THE NMDOT APPROVED PRODUCTS LIST WILL BE ACCEPTED FOR INSTALLATION. FOR SPECIFIC END TREATMENT DETAILS, SEE MANUFACTURERS' DRAWINGS.
6. SHOP DRAWINGS AND MANUFACTURERS' INSTALLATION INSTRUCTIONS SHALL BE SUBMITTED BY THE CONTRACTOR TO THE PROJECT MANAGER A MINIMUM OF FIVE DAYS PRIOR TO INSTALLATION TO ENSURE THAT THE COMPONENTS DELIVERED AND INSTALLED BY THE CONTRACTOR ARE IN ACCORDANCE WITH THE MANUFACTURER'S DRAWINGS, SPECIFICATIONS, AND INSTALLATION INSTRUCTIONS.
7. WARP ALL GRADE TRANSITIONS TO CREATE SMOOTH SURFACE CONTOURS.

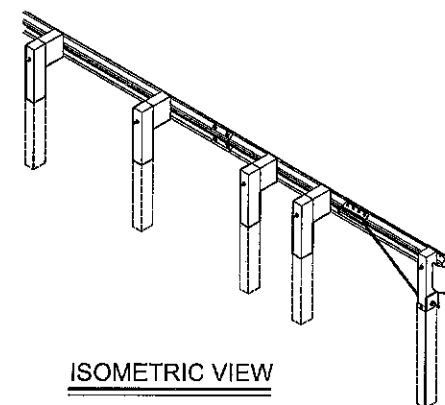


NO.	DATE	REV. BY	DESCRIPTION
REVISIONS (OR CHANGE NOTICES)			
NEW MEXICO DEPARTMENT OF TRANSPORTATION STANDARD DRAWING			
END TREATMENT TL-2 END TERMINAL			
APPROVED		DESIGN ENGINEER	DATE
606-GR31-8/20			

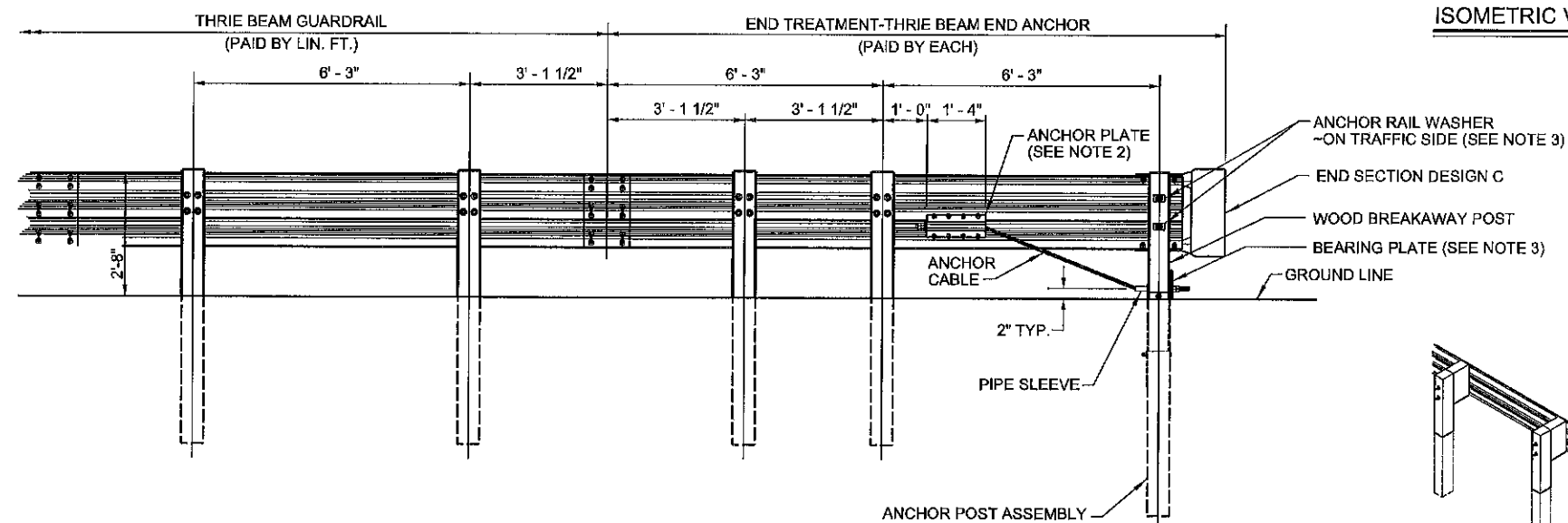
DRAWING SCALE = NOT TO SCALE



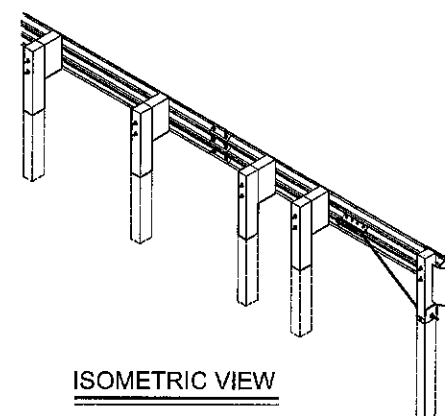
ELEVATION VIEW
END TREATMENT
W-BEAM END ANCHOR
PAID AS EACH



ISOMETRIC VIEW



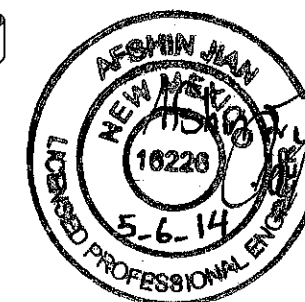
ELEVATION VIEW
END TREATMENT
THRIE BEAM END ANCHOR
PAID AS EACH



ISOMETRIC VIEW

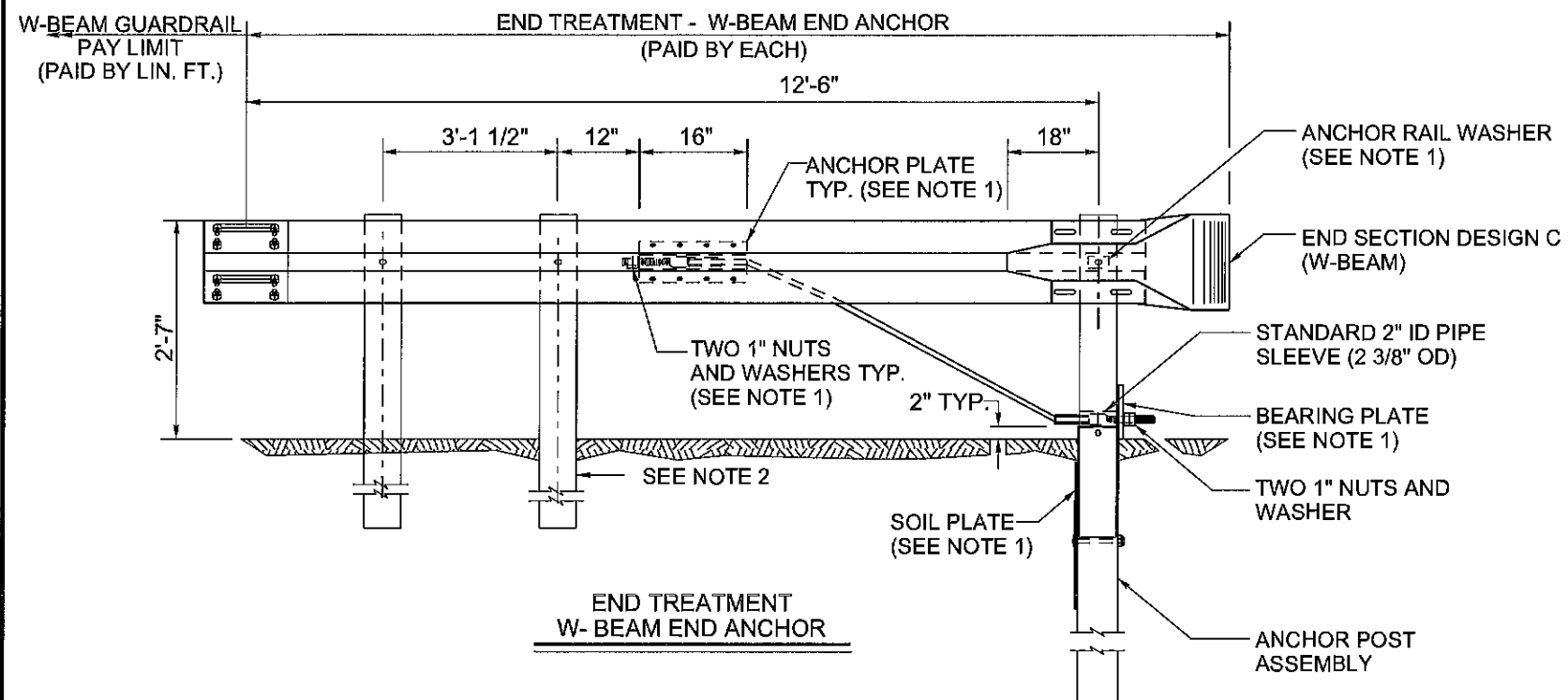
NOTES:

1. FOR USE ON THE DOWNSTREAM END OF GUARDRAIL RUNS, WHEN A CRASHWORTHY TL-3 OR TL-2 END TERMINAL IS NOT REQUIRED.
2. ACCEPTED SYSTEMS ON THE DEPARTMENT'S APPROVED PRODUCTS LIST SHALL BE INSTALLED ACCORDING TO MANUFACTURERS' INSTALLATION INSTRUCTIONS.
3. SHOP DRAWINGS AND MANUFACTURER'S INSTALLATION INSTRUCTIONS SHALL BE SUBMITTED BY THE CONTRACTOR TO THE PROJECT ENGINEER A MINIMUM OF FIVE DAYS PRIOR TO INSTALLATION.
4. FOR ADDITIONAL DETAILS NOT SHOWN, SEE SHEET 606-GR31-11/20 AND SHEET 606-GR31-12/20.

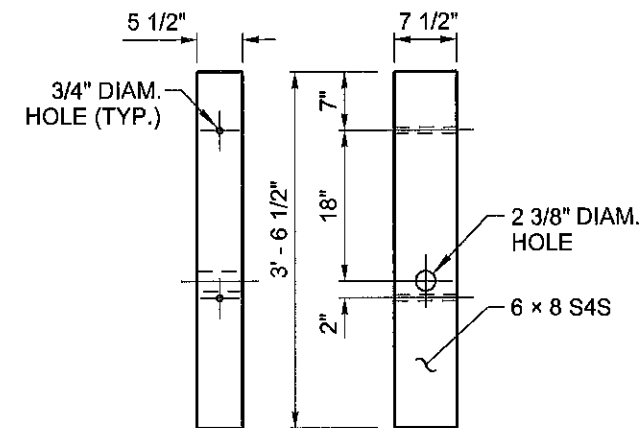


NO.	DATE	REV. BY	DESCRIPTION
REVISIONS (OR CHANGE NOTICES)			
NEW MEXICO DEPARTMENT OF TRANSPORTATION STANDARD DRAWING			
END TREATMENT W-BEAM END ANCHOR & THRIE BEAM END ANCHOR			
APPROVED		DESIGN ENGINEER	DATE
606-GR31-9/20			

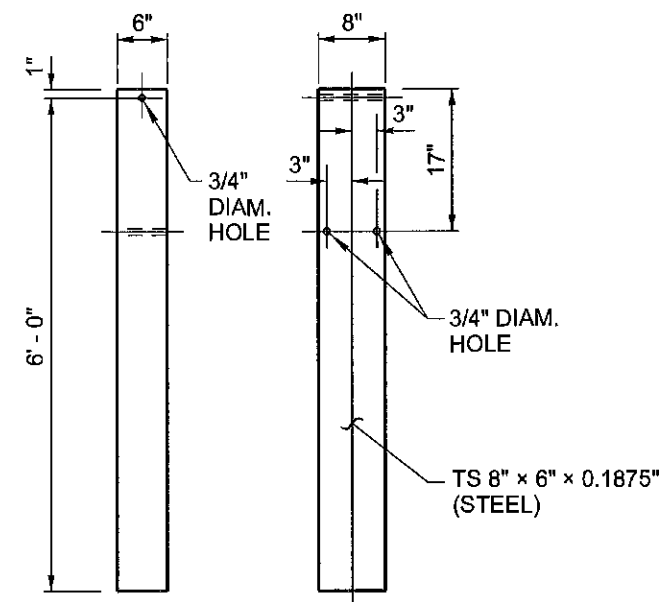
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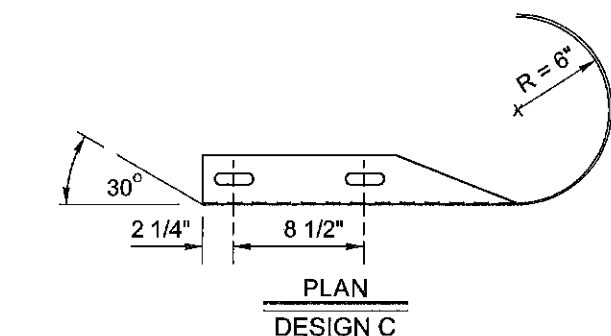
END TREATMENT
W-BEAM END ANCHOR



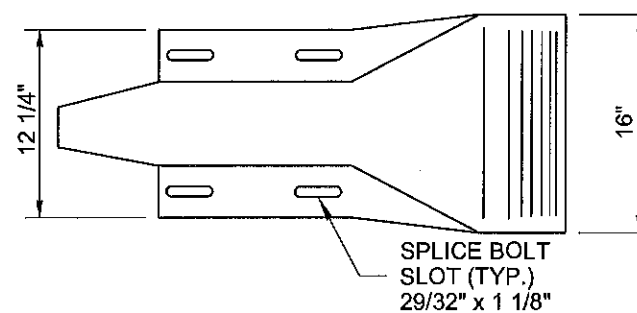
W-BEAM
WOOD BREAKAWAY POST



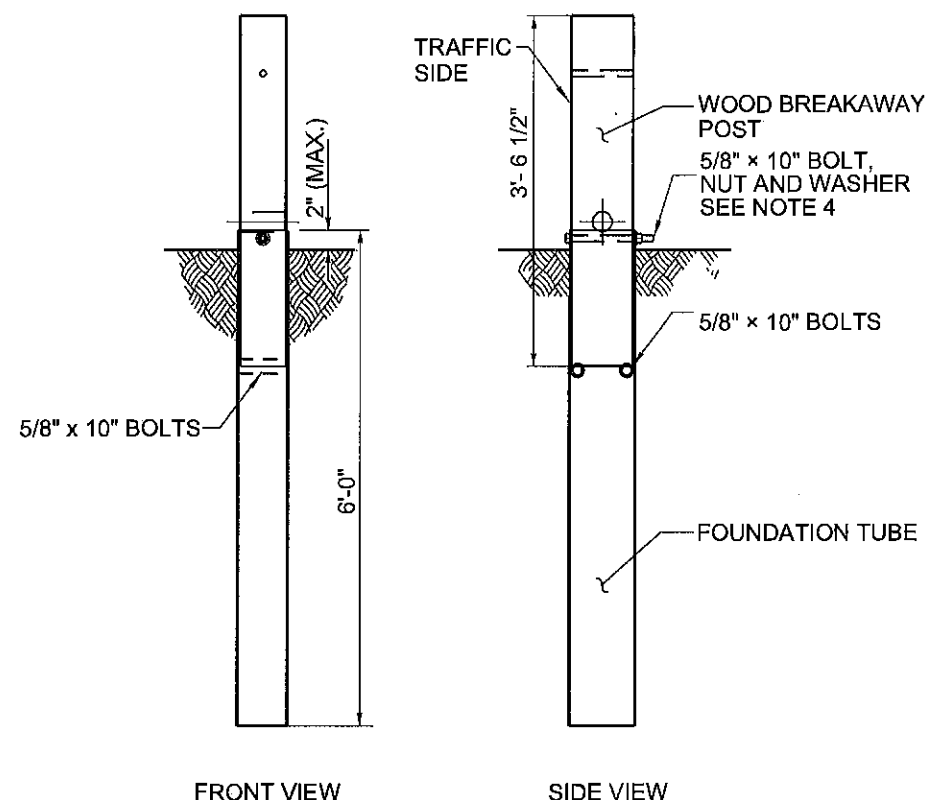
FOUNDATION TUBE



PLAN
DESIGN C



ELEVATION
DESIGN C



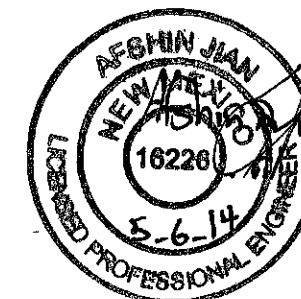
FRONT VIEW

SIDE VIEW

ANCHOR POST ASSEMBLY

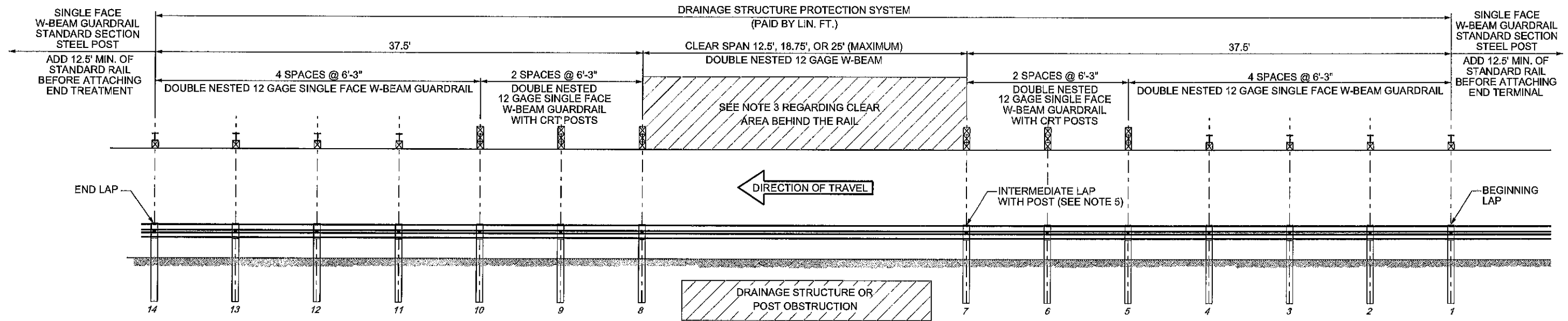
NOTES:

1. FOR DETAILS NOT SHOWN, SEE SHEET 606-GR31-13/20.
2. POST AND BLOCK SHALL MATCH BEAM GUARDRAIL POSTS.
3. THE WOOD, BREAKAWAY POSTS SHALL BE S4S TIMBER WITH A STRESS GRADE MARKED OR CERTIFIED BY A RECOGNIZED ASSOCIATION OR AGENCY WHICH IS CERTIFIED BY THE BOARD OF REVIEW. AMERICAN LUMBER STANDARDS COMMITTEE TO GRADE THE SPECIES. WOOD PRESERVATIVES SHALL COMPLY TO THE REQUIREMENTS OF AASHTO DESIGNATION M133.
4. BOLT SHALL BE INSTALLED FROM THE EMBANKMENT SIDE.

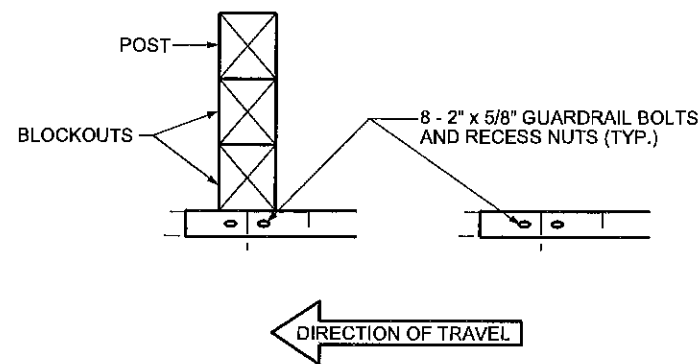


NO.	DATE	REV. BY	DESCRIPTION
REVISIONS (OR CHANGE NOTICES)			
NEW MEXICO DEPARTMENT OF TRANSPORTATION STANDARD DRAWING			
END TREATMENT W-BEAM END ANCHOR DETAILS			
APPROVED _____		DESIGN ENGINEER	DATE _____
606-GR31-11/20			

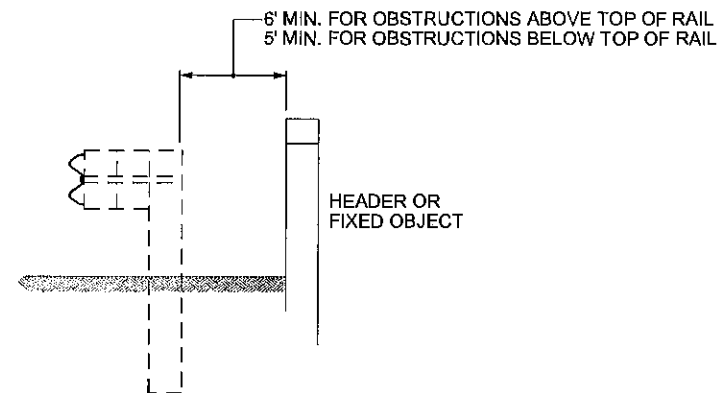
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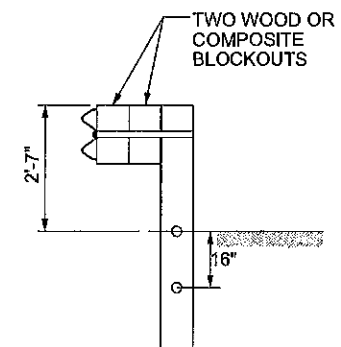
DRAINAGE STRUCTURE PROTECTION SYSTEM
(PAID BY LIN. FT.)



LAP SPLICES
SEE NOTE 4



**DYNAMIC DEFLECTION
IN CLEAR SPAN AREA**
SEE NOTE 3



CRT WOOD POSTS
SEE NOTE 2

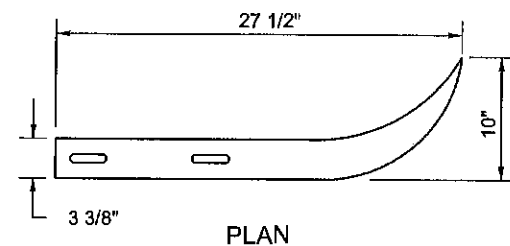
NOTES:

1. POSTS 1-4 AND 11-14 STANDARD STEEL POSTS WITH BLOCKOUTS. (SEE SHEET 606-GR31-1/20).
2. POSTS 5-10 ARE CRT WOOD POSTS WITH TWO WOOD OR COMPOSITE BLOCKOUTS. ONLY CRT POSTS SHALL BE WOOD.
3. CLEAR AREA BEHIND BACK OF RAIL SHALL BE:
5 FEET MINIMUM FOR OBSTRUCTIONS LESS THAN OR EQUAL TO THE HEIGHT OF THE TOP OF RAIL.
6 FEET MINIMUM FOR OBSTRUCTIONS TALLER THAN THE TOP OF RAIL.
4. LAP SPLICES IN THE DIRECTION OF ADJACENT TRAFFIC.
5. 25'-0" RAIL LENGTHS MAY BE USED TO ELIMINATE THE INTERMEDIATE LAP WITHOUT A POST. DO NOT PLACE A 25' RAIL WITHOUT A POST UNLESS NEEDED DUE TO THE LENGTH OF GAP.
6. DESIGN MUST MEET NCHRP 350 AND MASH TEST LEVEL 3 FHWA ACCEPTANCE.

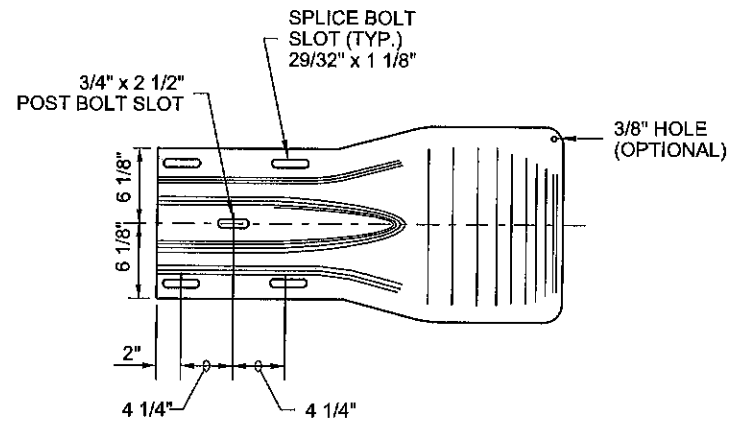


NO.	DATE	REV. BY	DESCRIPTION
REVISIONS (OR CHANGE NOTICES)			
NEW MEXICO DEPARTMENT OF TRANSPORTATION STANDARD DRAWING			
DRAINAGE STRUCTURE PROTECTION SYSTEM			
APPROVED _____		DESIGN ENGINEER	DATE _____
606-GR31-16/20			

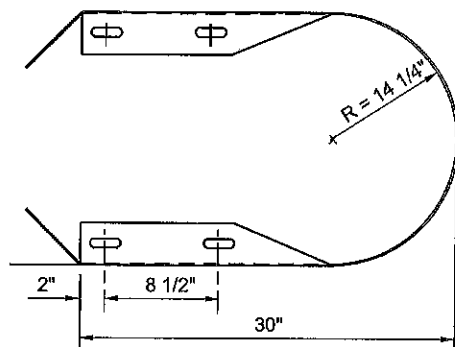
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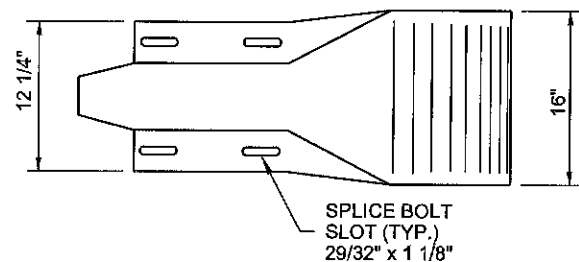
PLAN



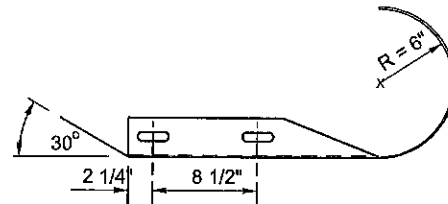
ELEVATION
DESIGN A



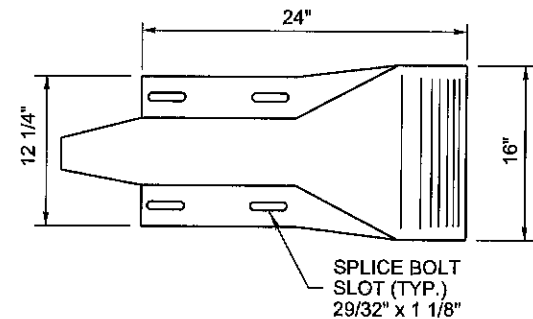
PLAN



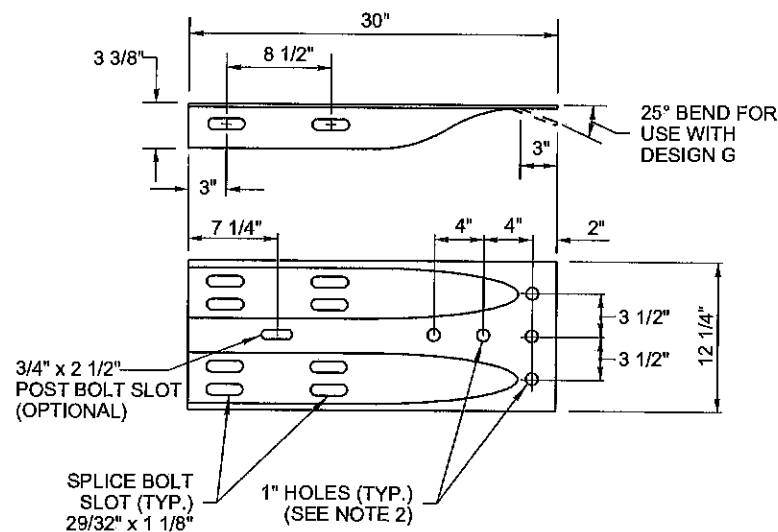
ELEVATION
DESIGN D



PLAN



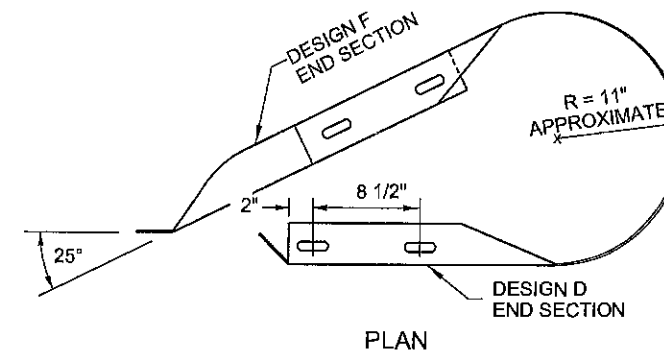
ELEVATION
DESIGN C



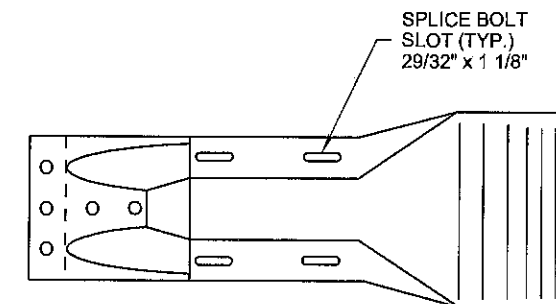
ELEVATION
DESIGN F
(SEE NOTE 4)

NOTES:

1. END SECTION DESIGN C SHALL BE USED EXCEPT WHERE NOTED ON THE PLANS OR CONTRACT.
2. ATTACH GUARDRAIL TO BRIDGE RAIL OR CONCRETE BARRIER WITH 7/8" DIAMETER BOLTS (FIVE MINIMUM) WITH THIN SLAB FERRULE INSERTS OR RESIN BONDED ANCHORS. SEE THE CONTRACT PLANS.
3. A SINGLE PIECE HAVING SIMILAR DIMENSIONAL SHAPE TO DESIGN G AND MATING WITH THE W-BEAM GUARDRAIL IS AN ACCEPTABLE ALTERNATE.
4. IN CASES WHERE DESIGN "F" END SECTION IS LAPPED ON THE OUTSIDE OF THE GUARDRAIL, A GALVANIZED 1" ID, 2" OD, 0.134" THICK, NARROW TYPE A PLAIN WASHER OR AN ANCHOR RAIL WASHER SHALL BE PLACED UNDER THE SPLICE BOLT HEADS.



PLAN



ELEVATION
DESIGN G
(SEE NOTE 3)



NO.	DATE	REV. BY	DESCRIPTION
REVISIONS (OR CHANGE NOTICES)			
NEW MEXICO DEPARTMENT OF TRANSPORTATION STANDARD DRAWING			
W-BEAM GUARDRAIL END SECTIONS			
APPROVED	DESIGN ENGINEER	DATE	
606-GR31-20/20			

DRAWING SCALE = NOT TO SCALE

APPENDIX E

N.M. WAGE DETERMINATION



STATE OF NEW MEXICO
NEW MEXICO DEPARTMENT OF
WORKFORCE SOLUTIONS
Labor Relations Division
121 Tijeras Ave NE, Suite 3000
Albuquerque, NM 87102
www.dws.state.nm.us

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.



STATE OF NEW MEXICO
NEW MEXICO DEPARTMENT OF
WORKFORCE SOLUTIONS
Labor Relations Division
121 Tijeras Ave NE, Suite 3000
Albuquerque, NM 87102
www.dws.state.nm.us

- 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 or call (505) 841-4400.

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

Effective January 1, 2018

Trade Classification	Base Rate	Fringe Rate
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
Electricians (outside)		
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
Laborers		
Group I	11.96	5.55
Group II	12.26	5.55
Group III	12.66	5.55
Operators		
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
Truck Drivers		
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. Search Labor Relations/Labor Information/Public Works/Prevailing Wage Rates.

APPENDIX F

**DRAINAGE REPORT FOR RACETRACK SUBDIVISION
TOPOGRAPHIC SURVEY
SURVEY CONTROL & ROW MAPS**



SANTA FE COUNTY RACETRACK Subdivision



HYDRAULIC DESIGN AND RECOMMENDATIONS

PREPARED FOR HORROCKS ENGINEERING BY: ASH ENGINEERING INC

MARCH 25, 2018

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PROJECT DESCRIPTION

Ash Engineering Inc. has performed a drainage study and storm drain design for Santa Fe County Racetrack Subdivision. The project includes paving Camino Largo, Camino Corto, and Camino Mocho and installing a storm drain system with ditches and an outfall to the existing arroyo. The hydrology used in this report is from Santa Fe Engineering Consultants LLC drainage report, dated January 2016. For more information on project parameters and scope, please refer to this document

PROJECT LOCATION

The project is located in Santa Fe County, NM, at approximate coordinates 35.593522° latitude and 106.118122° W. longitude.

HYDROLOGY

For a complete hydrology report, please see Santa Fe Engineering Consultants LLC drainage report (DR), dated January 2016. A flow rate of 23.6 CFS for the 24-hour, 100-year event from Table 6 of DR was used as the injected flow to the beginning of the storm drain system on Camino Mocho. Also, a flow rate of 16.0 was used as the injected flow to DI-3. The Rational Formula was used to estimate the runoff from onsite areas. The 10-minute intensity of 5.91 in/hr was used with the “C” coefficient of 0.98 for the roadway. The areas were calculated in acres.

HYDRAULIC ANALYSIS

The FHWA Hydraulic Toolbox was used to perform the hydraulic analyses of the drop inlets and the storm drain system. The following table shows the results:

Node	Size	Q-100	Inv. Elev. Upstream	Inv. Elev. Downstream	Bypass Flow	Flow Depth	Rational Formula,
		CFS	CFS	CFS	CFS	Feet	CIA (Coef. Intensity, Area)
DI-1	4’x4’	2.20	6164.04	6164.04	0		(0.98)(5.91)(0.38)
SD-1	24”	2.20	6164.04	6163.89		0.51	
DI-2	4’x4’	23.4	6163.89	6163.89	0		
SD-2	30”	25.60	6163.89	6161.93		1.83	
DI-3	4’x4’	16	6161.93	6161.93	0.33		
SD-3	36”	41.60	6161.93	6161.63		2.19	

[Type text]

DI-4	4'x4'	3.75	6161.63	6161.63	0.025		(0.98)(5.91)(0.59)
SD-4	36"	45.35	6161.63	6158.76		1.81	
DI-5	4'x4'	0.58	6158.94	6158.94	0		(0.98)(5.91)(0.10)
SD-5	24"	0.58	6158.94	6158.76		0.22	
DI-6	5'x5'	0.58	6158.76	6158.76	0		(0.98)(5.91)(0.10)
SD-6	42"	45.93	6158.76	6157.28		1.83	
DI-7	5'x5'	0.29	6157.28	6157.28	0		(0.98)(5.91)(0.05)
SD-7	42"	46.22	6157.28	6156.65		2.06	
DI-8	5'x5'	46.22	6139.33	6139.33	0		
SD-8	42"	46.22	6139.33	6139.00		2.06	

RECOMMENDATIONS AND OBSERVATIONS

The overall storm drain system works well using a minimum slope of 0.5% for all conveyances. Because of the grade difference for the outfall, a vertical drop inlet chamber was used to dissipate the flow energy before the flow goes out of the outfall into the arroyo. The drop inlet junction has a 5' x 5' inlet in sag with a basin over 2' tall in order to prevent overflowing of the basin. The basin will be concrete-lined to protect against the high velocities. By using this vertical junction and having the invert of the outfall pipe several feet lower, it was possible to have a slope of 0.5% for the outfall pipe (SD-8) with low velocity flows entering the arroyo. Nonetheless, an outlet protection wire-enclosed riprap class A is recommended for the arroyo at the outlet location (please see p & p sheets for details).

As per Santa Fe County preference it was decided to re-establish the flow continuity in Calle Corto by removing and installing in kind 1-24" CMP under the road at the location where the historic flow discharges to the road.

Appendix A has all the hydraulic calculations.

Appendix A

Hydraulic Analysis Report

Project Data

Project Title:

Designer:

Project Date: Sunday, March 25, 2018

Project Units: U.S. Customary Units

Notes:

Median/Ditch Drop-Inlet Analysis: DI-1

Notes:

Using the following channel: DI-1 Input Q

Channel Analysis: DI-1 Input Q

Notes:

Input Parameters

Channel Type: Trapezoidal

Side Slope 1 (Z1): 2.0000 ft/ft

Side Slope 2 (Z2): 2.0000 ft/ft

Channel Width: 4.0000 ft

Longitudinal Slope: 0.0050 ft/ft

Manning's n: 0.0350

Flow: 2.2000 cfs

Result Parameters

Depth: 0.3510 ft

Area of Flow: 1.6506 ft²

Wetted Perimeter: 5.5699 ft

Hydraulic Radius: 0.2963 ft

Average Velocity: 1.3329 ft/s

Top Width: 5.4041 ft

Froude Number: 0.4250

Critical Depth: 0.2036 ft

Critical Velocity: 2.4516 ft/s

Critical Slope: 0.0322 ft/ft

Critical Top Width: 4.81 ft

Calculated Max Shear Stress: 0.1095 lb/ft²

Calculated Avg Shear Stress: 0.0925 lb/ft²

Median/Ditch Drop-Inlet Analysis: DI-2

Notes:

Using the following channel: DI-2 Input Q

Channel Analysis: DI-2 Input Q

Notes:

Input Parameters

Channel Type: Trapezoidal

Side Slope 1 (Z1): 2.0000 ft/ft

Side Slope 2 (Z2): 2.0000 ft/ft

Channel Width: 4.0000 ft

Longitudinal Slope: 0.0050 ft/ft

Manning's n: 0.0350

Flow: 16.0000 cfs

Result Parameters

Depth: 1.0612 ft

Area of Flow: 6.4975 ft²

Wetted Perimeter: 8.7460 ft

Hydraulic Radius: 0.7429 ft

Average Velocity: 2.4625 ft/s

Top Width: 8.2450 ft

Froude Number: 0.4888

Critical Depth: 0.7004 ft

Critical Velocity: 4.2294 ft/s

Critical Slope: 0.0231 ft/ft

Critical Top Width: 6.80 ft

Calculated Max Shear Stress: 0.3311 lb/ft²

Calculated Avg Shear Stress: 0.2318 lb/ft²

Inlet Data:

Grate Width: 4.0000 ft

Grate Length: 4.0000 ft

Computed Data:

Median/Ditch Drop-Inlet Analysis: DI-3

Notes:

Using the following channel: DI-3 Input Q

Channel Analysis: DI-3 Input Q

Notes:

Input Parameters

Channel Type: Trapezoidal

Side Slope 1 (Z1): 2.0000 ft/ft

Side Slope 2 (Z2): 2.0000 ft/ft

Channel Width: 4.0000 ft

Longitudinal Slope: 0.0050 ft/ft

Manning's n: 0.0350

Flow: 16.0000 cfs

Result Parameters

Depth: 1.0612 ft

Area of Flow: 6.4975 ft²

Wetted Perimeter: 8.7460 ft

Hydraulic Radius: 0.7429 ft

Average Velocity: 2.4625 ft/s

Top Width: 8.2450 ft

Froude Number: 0.4888

Critical Depth: 0.7004 ft

Critical Velocity: 4.2294 ft/s

Critical Slope: 0.0231 ft/ft

Critical Top Width: 6.80 ft

Calculated Max Shear Stress: 0.3311 lb/ft²

Calculated Avg Shear Stress: 0.2318 lb/ft²

Inlet Data:

Grate Width: 4.0000 ft

Grate Length: 4.0000 ft

Computed Data:

Median/Ditch Drop-Inlet Analysis: DI-4

Notes:

Using the following channel: DI-4 Input Q

Channel Analysis: DI-4 Input Q

Notes:

Input Parameters

Channel Type: Trapezoidal

Side Slope 1 (Z1): 2.0000 ft/ft

Side Slope 2 (Z2): 2.0000 ft/ft

Channel Width: 4.0000 ft

Longitudinal Slope: 0.0100 ft/ft

Manning's n: 0.0350

Flow: 3.7500 cfs

Result Parameters

Depth: 0.3910 ft

Area of Flow: 1.8695 ft²

Wetted Perimeter: 5.7484 ft

Hydraulic Radius: 0.3252 ft

Average Velocity: 2.0059 ft/s

Top Width: 5.5638 ft

Froude Number: 0.6098

Critical Depth: 0.2863 ft

Critical Velocity: 2.8640 ft/s

Critical Slope: 0.0292 ft/ft

Critical Top Width: 5.15 ft

Calculated Max Shear Stress: 0.2440 lb/ft²

Calculated Avg Shear Stress: 0.2029 lb/ft²

Inlet Data:

Grate Width: 4.0000 ft

Grate Length: 4.0000 ft

Computed Data:

Median/Ditch Drop-Inlet Analysis: DI-5

Notes:

Using the following channel: DI-5 Input Q

Channel Analysis: DI-5 Input Q

Notes:

Input Parameters

Channel Type: Trapezoidal

Side Slope 1 (Z1): 2.0000 ft/ft

Side Slope 2 (Z2): 2.0000 ft/ft

Channel Width: 4.0000 ft

Longitudinal Slope: 0.0100 ft/ft

Manning's n: 0.0350

Flow: 0.5800 cfs

Result Parameters

Depth: 0.1309 ft

Area of Flow: 0.5578 ft²

Wetted Perimeter: 4.5853 ft

Hydraulic Radius: 0.1216 ft

Average Velocity: 1.0398 ft/s

Top Width: 4.5235 ft

Froude Number: 0.5218

Critical Depth: 0.0855 ft

Critical Velocity: 1.6260 ft/s

Critical Slope: 0.0416 ft/ft

Critical Top Width: 4.34 ft

Calculated Max Shear Stress: 0.0817 lb/ft²

Calculated Avg Shear Stress: 0.0759 lb/ft²

Inlet Data:

Grate Width: 4.0000 ft

Grate Length: 4.0000 ft

Computed Data:

Median/Ditch Drop-Inlet Analysis: DI-6

Notes:

Using the following channel: DI-6 Input Q

Channel Analysis: DI-6 Input Q

Notes:

Input Parameters

Channel Type: Trapezoidal

Side Slope 1 (Z1): 2.0000 ft/ft

Side Slope 2 (Z2): 2.0000 ft/ft

Channel Width: 4.0000 ft

Longitudinal Slope: 0.0100 ft/ft

Manning's n: 0.0350

Flow: 0.5800 cfs

Result Parameters

Depth: 0.1309 ft

Area of Flow: 0.5578 ft²

Wetted Perimeter: 4.5853 ft

Hydraulic Radius: 0.1216 ft

Average Velocity: 1.0398 ft/s

Top Width: 4.5235 ft

Froude Number: 0.5218

Critical Depth: 0.0855 ft

Critical Velocity: 1.6260 ft/s

Critical Slope: 0.0416 ft/ft

Critical Top Width: 4.34 ft

Calculated Max Shear Stress: 0.0817 lb/ft²

Calculated Avg Shear Stress: 0.0759 lb/ft²

Inlet Data:

Grate Width: 4.0000 ft

Grate Length: 4.0000 ft

Computed Data:

Channel Analysis: SD-1

Notes:

Input Parameters

Channel Type: Circular

Pipe Diameter: 2.0000 ft

Longitudinal Slope: 0.0050 ft/ft

Manning's n: 0.0130

Flow: 2.2000 cfs

Result Parameters

Depth: 0.5010 ft

Area of Flow: 0.6159 ft²

Wetted Perimeter: 2.0967 ft

Hydraulic Radius: 0.2937 ft

Average Velocity: 3.5721 ft/s

Top Width: 1.7332 ft

Froude Number: 1.0560

Critical Depth: 0.5151 ft

Critical Velocity: 3.4346 ft/s

Critical Slope: 0.0045 ft/ft

Critical Top Width: 1.75 ft

Calculated Max Shear Stress: 0.1563 lb/ft²

Calculated Avg Shear Stress: 0.0916 lb/ft²

Channel Analysis: SD-2

Notes:

Input Parameters

Channel Type: Circular

Pipe Diameter: 2.5000 ft

Longitudinal Slope: 0.0050 ft/ft

Manning's n: 0.0130

Flow: 25.6000 cfs

Result Parameters

Depth: 1.8245 ft

Area of Flow: 3.8383 ft²

Wetted Perimeter: 5.1209 ft

Hydraulic Radius: 0.7495 ft

Average Velocity: 6.6695 ft/s

Top Width: 2.2203 ft

Froude Number: 0.8939

Critical Depth: 1.7236 ft

Critical Velocity: 7.0924 ft/s

Critical Slope: 0.0058 ft/ft

Critical Top Width: 2.31 ft

Calculated Max Shear Stress: 0.5692 lb/ft²

Calculated Avg Shear Stress: 0.2339 lb/ft²

Channel Analysis: SD-3

Notes:

Input Parameters

Channel Type: Circular

Pipe Diameter: 3.0000 ft

Longitudinal Slope: 0.0050 ft/ft

Manning's n: 0.0130

Flow: 41.6000 cfs

Result Parameters

Depth: 2.1882 ft

Area of Flow: 5.5240 ft²

Wetted Perimeter: 6.1423 ft

Hydraulic Radius: 0.8993 ft

Average Velocity: 7.5308 ft/s

Top Width: 2.6656 ft

Froude Number: 0.9219

Critical Depth: 2.1006 ft

Critical Velocity: 7.8688 ft/s

Critical Slope: 0.0055 ft/ft

Critical Top Width: 2.75 ft

Calculated Max Shear Stress: 0.6827 lb/ft²

Calculated Avg Shear Stress: 0.2806 lb/ft²

Channel Analysis: SD-4

Notes:

Input Parameters

Channel Type: Circular

Pipe Diameter: 3.0000 ft

Longitudinal Slope: 0.0100 ft/ft

Manning's n: 0.0130

Flow: 45.3500 cfs

Result Parameters

Depth: 1.8141 ft

Area of Flow: 4.4698 ft²

Wetted Perimeter: 5.3454 ft

Hydraulic Radius: 0.8362 ft

Average Velocity: 10.1459 ft/s

Top Width: 2.9335 ft

Froude Number: 1.4485

Critical Depth: 2.1943 ft

Critical Velocity: 8.1855 ft/s

Critical Slope: 0.0059 ft/ft

Critical Top Width: 2.66 ft

Calculated Max Shear Stress: 1.1320 lb/ft²

Calculated Avg Shear Stress: 0.5218 lb/ft²

Channel Analysis: SD-5

Notes:

Input Parameters

Channel Type: Circular

Pipe Diameter: 2.0000 ft

Longitudinal Slope: 0.0100 ft/ft

Manning's n: 0.0130

Flow: 0.5800 cfs

Result Parameters

Depth: 0.2206 ft

Area of Flow: 0.1888 ft²

Wetted Perimeter: 1.3541 ft

Hydraulic Radius: 0.1394 ft

Average Velocity: 3.0727 ft/s

Top Width: 1.2530 ft

Froude Number: 1.3952

Critical Depth: 0.2610 ft

Critical Velocity: 2.4034 ft/s

Critical Slope: 0.0050 ft/ft

Critical Top Width: 1.35 ft

Calculated Max Shear Stress: 0.1376 lb/ft²

Calculated Avg Shear Stress: 0.0870 lb/ft²

Channel Analysis: SD-6

Notes:

Input Parameters

Channel Type: Circular

Pipe Diameter: 3.0000 ft

Longitudinal Slope: 0.0100 ft/ft

Manning's n: 0.0130

Flow: 45.9300 cfs

Result Parameters

Depth: 1.8294 ft

Area of Flow: 4.5145 ft²

Wetted Perimeter: 5.3766 ft

Hydraulic Radius: 0.8397 ft

Average Velocity: 10.1738 ft/s

Top Width: 2.9268 ft

Froude Number: 1.4436

Critical Depth: 2.2075 ft

Critical Velocity: 8.2381 ft/s

Critical Slope: 0.0060 ft/ft

Critical Top Width: 2.65 ft

Calculated Max Shear Stress: 1.1416 lb/ft²

Calculated Avg Shear Stress: 0.5239 lb/ft²

Channel Analysis: SD-7

Notes:

Input Parameters

Channel Type: Circular

Pipe Diameter: 3.5000 ft

Longitudinal Slope: 0.0050 ft/ft

Manning's n: 0.0130

Flow: 46.2200 cfs

Result Parameters

Depth: 2.0549 ft

Area of Flow: 5.8722 ft²

Wetted Perimeter: 6.1106 ft

Hydraulic Radius: 0.9610 ft

Average Velocity: 7.8710 ft/s

Top Width: 3.4465 ft

Froude Number: 1.0627

Critical Depth: 2.1208 ft

Critical Velocity: 7.5786 ft/s

Critical Slope: 0.0045 ft/ft

Critical Top Width: 3.42 ft

Calculated Max Shear Stress: 0.6411 lb/ft²

Calculated Avg Shear Stress: 0.2998 lb/ft²

Median/Ditch Drop-Inlet Analysis: DI-7

Notes:

Using the following channel: DI-7 Input Q

Channel Analysis: DI-7 Input Q

Notes:

Input Parameters

Channel Type: Trapezoidal

Side Slope 1 (Z1): 2.0000 ft/ft

Side Slope 2 (Z2): 2.0000 ft/ft

Channel Width: 4.0000 ft

Longitudinal Slope: 0.0100 ft/ft

Manning's n: 0.0350

Flow: 0.2900 cfs

Result Parameters

Depth: 0.0867 ft

Area of Flow: 0.3618 ft²

Wetted Perimeter: 4.3877 ft

Hydraulic Radius: 0.0825 ft

Average Velocity: 0.8016 ft/s

Top Width: 4.3468 ft

Froude Number: 0.4896

Critical Depth: 0.0542 ft

Critical Velocity: 1.3028 ft/s

Critical Slope: 0.0479 ft/ft

Critical Top Width: 4.22 ft

Calculated Max Shear Stress: 0.0541 lb/ft²

Calculated Avg Shear Stress: 0.0515 lb/ft²

Inlet Data:

Grate Width: 4.0000 ft

Grate Length: 4.0000 ft

Computed Data:

Channel Analysis: DI-2 Input Q

Notes:

Input Parameters

Channel Type: Trapezoidal

Side Slope 1 (Z1): 2.0000 ft/ft

Side Slope 2 (Z2): 2.0000 ft/ft

Channel Width: 4.0000 ft

Longitudinal Slope: 0.0050 ft/ft

Manning's n: 0.0350

Flow: 16.0000 cfs

Result Parameters

Depth: 1.0612 ft

Area of Flow: 6.4975 ft²

Wetted Perimeter: 8.7460 ft

Hydraulic Radius: 0.7429 ft

Average Velocity: 2.4625 ft/s

Top Width: 8.2450 ft

Froude Number: 0.4888

Critical Depth: 0.7004 ft

Critical Velocity: 4.2294 ft/s

Critical Slope: 0.0231 ft/ft

Critical Top Width: 6.80 ft

Calculated Max Shear Stress: 0.3311 lb/ft²

Calculated Avg Shear Stress: 0.2318 lb/ft²

Channel Analysis: DI-1 Input Q

Notes:

Input Parameters

Channel Type: Trapezoidal

Side Slope 1 (Z1): 2.0000 ft/ft

Side Slope 2 (Z2): 2.0000 ft/ft

Channel Width: 4.0000 ft

Longitudinal Slope: 0.0050 ft/ft

Manning's n: 0.0350

Flow: 2.2000 cfs

Result Parameters

Depth: 0.3510 ft

Area of Flow: 1.6506 ft²

Wetted Perimeter: 5.5699 ft

Hydraulic Radius: 0.2963 ft

Average Velocity: 1.3329 ft/s

Top Width: 5.4041 ft

Froude Number: 0.4250

Critical Depth: 0.2036 ft

Critical Velocity: 2.4516 ft/s

Critical Slope: 0.0322 ft/ft

Critical Top Width: 4.81 ft

Calculated Max Shear Stress: 0.1095 lb/ft²

Calculated Avg Shear Stress: 0.0925 lb/ft²

Channel Analysis: DI-4 Input Q

Notes:

Input Parameters

Channel Type: Trapezoidal

Side Slope 1 (Z1): 2.0000 ft/ft

Side Slope 2 (Z2): 2.0000 ft/ft

Channel Width: 4.0000 ft

Longitudinal Slope: 0.0100 ft/ft

Manning's n: 0.0350

Flow: 3.7500 cfs

Result Parameters

Depth: 0.3910 ft

Area of Flow: 1.8695 ft²

Wetted Perimeter: 5.7484 ft

Hydraulic Radius: 0.3252 ft

Average Velocity: 2.0059 ft/s

Top Width: 5.5638 ft

Froude Number: 0.6098

Critical Depth: 0.2863 ft

Critical Velocity: 2.8640 ft/s

Critical Slope: 0.0292 ft/ft

Critical Top Width: 5.15 ft

Calculated Max Shear Stress: 0.2440 lb/ft²

Calculated Avg Shear Stress: 0.2029 lb/ft²

Channel Analysis: DI-5 Input Q

Notes:

Input Parameters

Channel Type: Trapezoidal

Side Slope 1 (Z1): 2.0000 ft/ft

Side Slope 2 (Z2): 2.0000 ft/ft

Channel Width: 4.0000 ft

Longitudinal Slope: 0.0100 ft/ft

Manning's n: 0.0350

Flow: 0.5800 cfs

Result Parameters

Depth: 0.1309 ft

Area of Flow: 0.5578 ft²

Wetted Perimeter: 4.5853 ft

Hydraulic Radius: 0.1216 ft

Average Velocity: 1.0398 ft/s

Top Width: 4.5235 ft

Froude Number: 0.5218

Critical Depth: 0.0855 ft

Critical Velocity: 1.6260 ft/s

Critical Slope: 0.0416 ft/ft

Critical Top Width: 4.34 ft

Calculated Max Shear Stress: 0.0817 lb/ft²

Calculated Avg Shear Stress: 0.0759 lb/ft²

Channel Analysis: DI-3 Input Q

Notes:

Input Parameters

Channel Type: Trapezoidal

Side Slope 1 (Z1): 2.0000 ft/ft

Side Slope 2 (Z2): 2.0000 ft/ft

Channel Width: 4.0000 ft

Longitudinal Slope: 0.0050 ft/ft

Manning's n: 0.0350

Flow: 16.0000 cfs

Result Parameters

Depth: 1.0612 ft

Area of Flow: 6.4975 ft²

Wetted Perimeter: 8.7460 ft

Hydraulic Radius: 0.7429 ft

Average Velocity: 2.4625 ft/s

Top Width: 8.2450 ft

Froude Number: 0.4888

Critical Depth: 0.7004 ft

Critical Velocity: 4.2294 ft/s

Critical Slope: 0.0231 ft/ft

Critical Top Width: 6.80 ft

Calculated Max Shear Stress: 0.3311 lb/ft²

Calculated Avg Shear Stress: 0.2318 lb/ft²

Channel Analysis: DI-6 Input Q

Notes:

Input Parameters

Channel Type: Trapezoidal

Side Slope 1 (Z1): 2.0000 ft/ft

Side Slope 2 (Z2): 2.0000 ft/ft

Channel Width: 4.0000 ft

Longitudinal Slope: 0.0100 ft/ft

Manning's n: 0.0350

Flow: 0.5800 cfs

Result Parameters

Depth: 0.1309 ft

Area of Flow: 0.5578 ft²

Wetted Perimeter: 4.5853 ft

Hydraulic Radius: 0.1216 ft

Average Velocity: 1.0398 ft/s

Top Width: 4.5235 ft

Froude Number: 0.5218

Critical Depth: 0.0855 ft

Critical Velocity: 1.6260 ft/s

Critical Slope: 0.0416 ft/ft

Critical Top Width: 4.34 ft

Calculated Max Shear Stress: 0.0817 lb/ft²

Calculated Avg Shear Stress: 0.0759 lb/ft²

Channel Analysis: DI-7 Input Q

Notes:

Input Parameters

Channel Type: Trapezoidal

Side Slope 1 (Z1): 2.0000 ft/ft

Side Slope 2 (Z2): 2.0000 ft/ft

Channel Width: 4.0000 ft

Longitudinal Slope: 0.0100 ft/ft

Manning's n: 0.0350

Flow: 0.2900 cfs

Result Parameters

Depth: 0.0867 ft

Area of Flow: 0.3618 ft²

Wetted Perimeter: 4.3877 ft

Hydraulic Radius: 0.0825 ft

Average Velocity: 0.8016 ft/s

Top Width: 4.3468 ft

Froude Number: 0.4896

Critical Depth: 0.0542 ft

Critical Velocity: 1.3028 ft/s

Critical Slope: 0.0479 ft/ft

Critical Top Width: 4.22 ft

Calculated Max Shear Stress: 0.0541 lb/ft²

Calculated Avg Shear Stress: 0.0515 lb/ft²

Median/Ditch Drop-Inlet Analysis: DI-8

Notes:

Using the following channel: DI-8 Input Q

Channel Analysis: DI-8 Input Q

Notes:

Input Parameters

Channel Type: Trapezoidal

Side Slope 1 (Z1): 2.0000 ft/ft

Side Slope 2 (Z2): 2.0000 ft/ft

Channel Width: 4.0000 ft

Longitudinal Slope: 0.5400 ft/ft

Manning's n: 0.0130

Flow: 46.2200 cfs

Result Parameters

Depth: 0.2968 ft

Area of Flow: 1.3632 ft²

Wetted Perimeter: 5.3272 ft

Hydraulic Radius: 0.2559 ft

Average Velocity: 33.9055 ft/s

Top Width: 5.1871 ft

Froude Number: 11.6553

Critical Depth: 1.2880 ft

Critical Velocity: 5.4572 ft/s

Critical Slope: 0.0028 ft/ft

Critical Top Width: 9.15 ft

Calculated Max Shear Stress: 9.9998 lb/ft²

Calculated Avg Shear Stress: 8.6227 lb/ft²

Inlet Data:

Grate Width: 5.0000 ft

Grate Length: 5.0000 ft

Computed Data:

Channel Analysis: DI-8 Input Q

Notes:

Input Parameters

Channel Type: Trapezoidal

Side Slope 1 (Z1): 2.0000 ft/ft

Side Slope 2 (Z2): 2.0000 ft/ft

Channel Width: 4.0000 ft

Longitudinal Slope: 0.5400 ft/ft

Manning's n: 0.0130

Flow: 46.2200 cfs

Result Parameters

Depth: 0.2968 ft

Area of Flow: 1.3632 ft²

Wetted Perimeter: 5.3272 ft

Hydraulic Radius: 0.2559 ft

Average Velocity: 33.9055 ft/s

Top Width: 5.1871 ft

Froude Number: 11.6553

Critical Depth: 1.2880 ft

Critical Velocity: 5.4572 ft/s

Critical Slope: 0.0028 ft/ft

Critical Top Width: 9.15 ft

Calculated Max Shear Stress: 9.9998 lb/ft²

Calculated Avg Shear Stress: 8.6227 lb/ft²

Channel Analysis: SD-8

Notes:

Input Parameters

Channel Type: Circular

Pipe Diameter: 3.5000 ft

Longitudinal Slope: 0.0050 ft/ft

Manning's n: 0.0130

Flow: 46.2200 cfs

Result Parameters

Depth: 2.0549 ft

Area of Flow: 5.8722 ft²

Wetted Perimeter: 6.1106 ft

Hydraulic Radius: 0.9610 ft

Average Velocity: 7.8710 ft/s

Top Width: 3.4465 ft

Froude Number: 1.0627

Critical Depth: 2.1208 ft

Critical Velocity: 7.5786 ft/s

Critical Slope: 0.0045 ft/ft

Critical Top Width: 3.42 ft

Calculated Max Shear Stress: 0.6411 lb/ft²

Calculated Avg Shear Stress: 0.2998 lb/ft²



PASEO DE SAN ANTONIO

CAMINO MONTOYA

CALLE CORTO

CAMINO MOCHO

PASEO REAL

PASEO DE MARTINEZ

CAMINO LARGO

LUGAR DE ORTEGA

6120

6180

6200

6160

6140

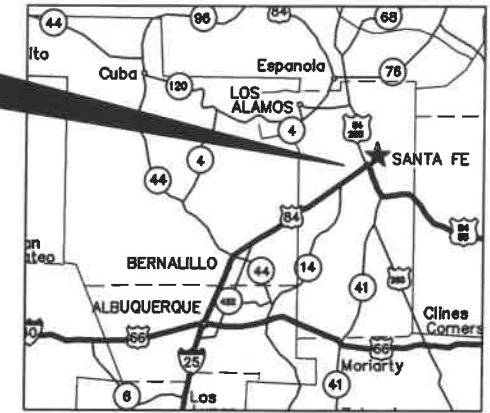
6220

USGLO BRASS CAP
T15N, R8E
1/4 COR SEC 17, 20

SITE LOCATION



VICINITY MAP
NOT TO SCALE



LEGEND

- FOUND USGLO BRASS CAP
- SET #5 YELLOW PLASTIC CAP "WHPACIFIC LS 10856"

PASEO REAL

CAMINO LARGO

CAMINO MOCHO

CAMINO LARGO

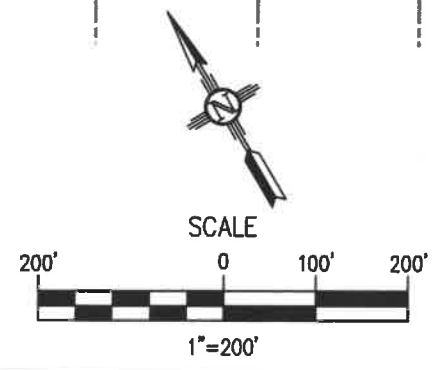
WHP CP1

WHP CP2

WHP CP3

NOTES

1. BASIS OF BEARINGS, BEARINGS ARE NAD83(2011) NEW MEXICO CENTRAL STATE PLANE GRID BEARINGS BASED ON AN NGS ONLINE POSITIONING USER SERVICE (OPUS) SOLUTION OBTAINED AT CP-1
2. THE COORDINATES SHOWN ON THE DRAWING ARE MODIFIED (SURFACE) NAD83 SPC NM(W) COORDINATES AND WERE DERIVED BY SCALING STATE PLANE GRID COORDINATES BY PROJECT COMBINED SCALE FACTOR OF 1.0003905024 AROUND AN ORIGIN OF 0,0.
3. ALL DISTANCES INDICATED ON THIS DRAWING ARE GROUND DISTANCES.
4. ALL BEARINGS INDICATED ON THIS DRAWING ARE STATE PLANE GRID BEARINGS.
5. ELEVATIONS ARE BASED ON THE OPUS SOLUTION AT CP-1, ELEVATION=6171.42 FEET, DATUM: NAVD88.
6. ALL DISTANCES, ELEVATIONS AND COORDINATES ARE EXPRESSED IN US SURVEY FEET.
7. THE GEOID USED FOR THIS PROJECT WAS GEOID 12B (CONUS)
8. THE CONTROL WAS ESTABLISHED USING REAL TIME KINEMATIC (RTK) OBSERVATIONS.
9. EQUIPMENT UTILIZED FOR THIS SURVEY: TRIMBLE TSC3 DATA COLLECTOR, TRIMBLE R6 MODEL 4 RECEIVERS (x2) AND A TRIMBLE TDL 450H RADIO UNIT.

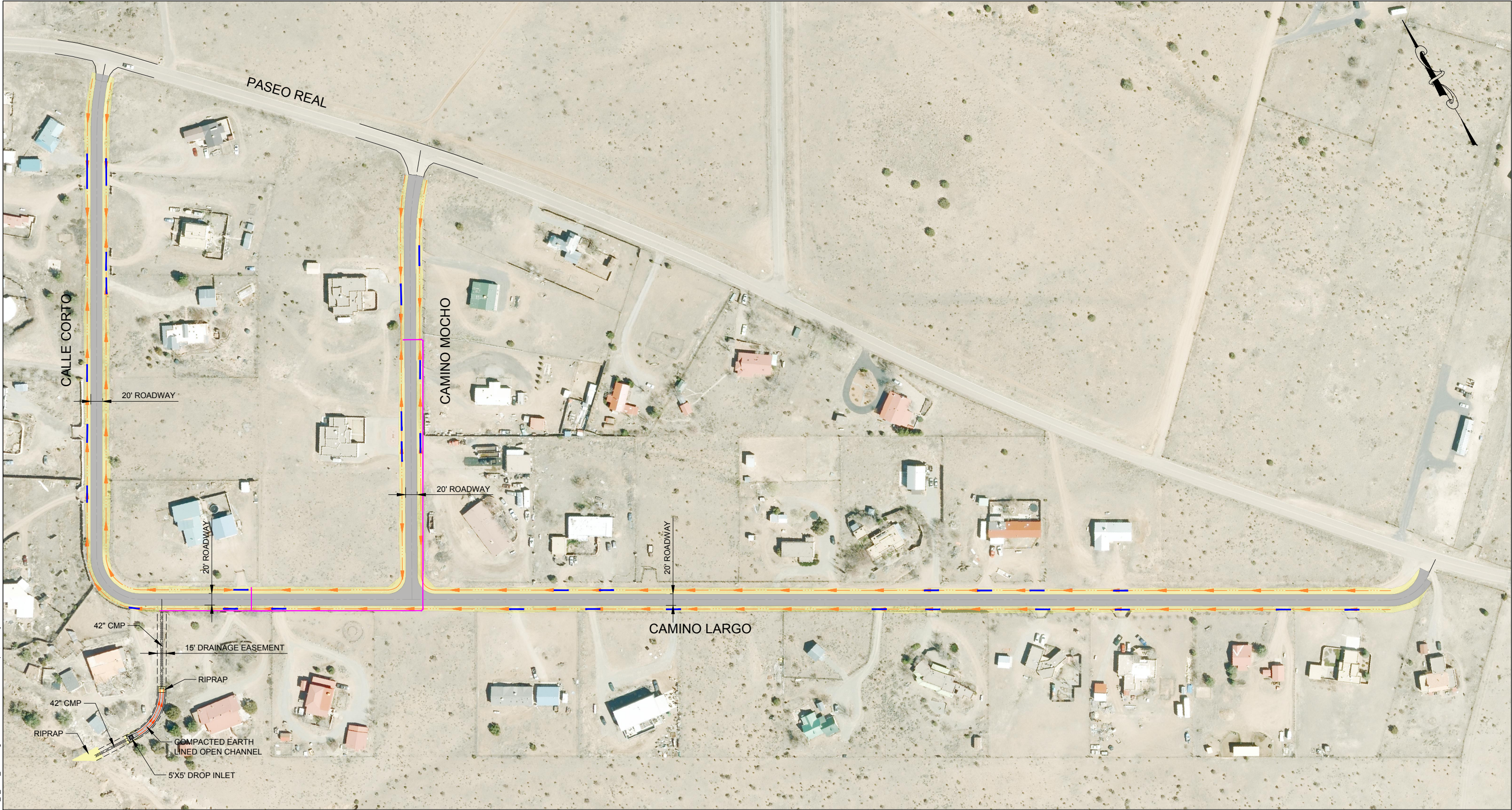


SURVEY CONTROL TABLE				
POINT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
1	1671889.30	1679755.70	6171.42	SET REBAR - CNTRL -
2	1672438.63	1680168.64	6171.58	SET REBAR - CNTRL -
3	1670959.25	1681217.17	6220.41	SET REBAR - CNTRL -
USGLO	1677845.43	1679188.55	6159.59	FND USGLO BC 1/4 COR SEC 17, 20



P:\Horrocks Engineers, Inc\2020\20707\NewExecutionSurvey\Drawings\SF Co Racetrack SubDiv Surv CTRL Map.dwg - Layout2 - 6/28/2018 11:52am. dmorgan

<table><tr><th>REV</th><th>DATE</th><th>BY</th><th>DESCRIPTION</th></tr><tr><td> </td><td> </td><td> </td><td> </td></tr></table>	REV	DATE	BY	DESCRIPTION					<table><tr><td>SCALE</td></tr><tr><td>HORIZONTAL</td></tr><tr><td>1" = 160'</td></tr><tr><td>VERTICAL</td></tr><tr><td>NO SCALE</td></tr></table>	SCALE	HORIZONTAL	1" = 160'	VERTICAL	NO SCALE	<table><tr><td>WARNING</td></tr><tr><td>0 1/2 1</td></tr><tr><td>IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE</td></tr></table>	WARNING	0 1/2 1	IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE	<table><tr><td>HORROCKS</td></tr><tr><td>ENGINEERS</td></tr></table>	HORROCKS	ENGINEERS	<table><tr><td>6100 Uptown Blvd. NE</td></tr><tr><td>Suite 105</td></tr><tr><td>Albuquerque, NM 87110</td></tr><tr><td>(505) 553-1972</td></tr></table>	6100 Uptown Blvd. NE	Suite 105	Albuquerque, NM 87110	(505) 553-1972	<table><tr><td colspan="2">SANTA FE COUNTY</td></tr><tr><td colspan="2">RACETRACK SUBDIVISION</td></tr><tr><td colspan="2">SURVEY CONTROL</td></tr></table>	SANTA FE COUNTY		RACETRACK SUBDIVISION		SURVEY CONTROL		<table><tr><td>DESIGNED</td><td>DATE</td><td>PROJECT NO.</td></tr><tr><td>TRH</td><td>MAR. 2018</td><td>6207</td></tr><tr><td>DRAWN</td><td>DATE</td><td>SHEET NO.</td></tr><tr><td>HE</td><td>MAR. 2018</td><td>3-1</td></tr><tr><td>CHECKED</td><td>DATE</td><td>DRAWING NO.</td></tr><tr><td> </td><td>MAR. 2018</td><td>SC-1</td></tr></table>	DESIGNED	DATE	PROJECT NO.	TRH	MAR. 2018	6207	DRAWN	DATE	SHEET NO.	HE	MAR. 2018	3-1	CHECKED	DATE	DRAWING NO.		MAR. 2018	SC-1
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HE	MAR. 2018	3-1																																																		
CHECKED	DATE	DRAWING NO.																																																		
	MAR. 2018	SC-1																																																		



PROPOSED ROADSIDE DITCH

ROADWAY IMPROVEMENTS

ROADSIDE DITCH FLOW DIRECTION

EXISTING ROW

PROPOSED DRIVEWAY CULVERTS

PROPOSED 21"x15" CMP ARCH PIPE

REV	DATE	BY	DESCRIPTION		
REVISIONS					

SCALE

HORIZONTAL

1" = 160'

VERTICAL

NO SCALE

WARNING

0 1/2 1

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

HORROCKS

ENGINEERS

6100 Uptown Blvd. NE

Suite 105

Albuquerque, NM 87110

(505) 553-1972

SANTA FE COUNTY

RACETRACK SUBDIVISION

ROADWAY AND DRAINAGE EXHIBIT

DESIGNED	DATE	SANTA FE COUNTY PROJECT No.
	JUNE 2018	6207
DRAWN	DATE	SHEET No.
	JUNE 2018	1-1
CHECKED	DATE	DRAWING No.
	JUNE 2018	EXHIBIT-1

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APPENDIX G
DRAINAGE REPORT FOR CAMINO TORCIDO
TOPOGRAPHIC SURVEY
SURVEY CONTROL & ROW MAPS

Technical Memorandum

To: Carlos Vigil, Santa Fe County Public Works

From: Angela Valdez, PE, HDR Engineering, Inc.

Date: August 8, 2014

Re: **Camino Torcido Road and Drainage Improvements Project**
Public Works Project No. 6183

Background and Purpose

Camino Torcido Loop is located Santa Fe County off County Road 56, approximately 3.4 miles southwest of the Wastewater Treatment Facility and Santa Fe Municipal Airport. The road is just less than 1 mile in length. Figure 1, Location Map, shows the location of Camino Torcido Road.

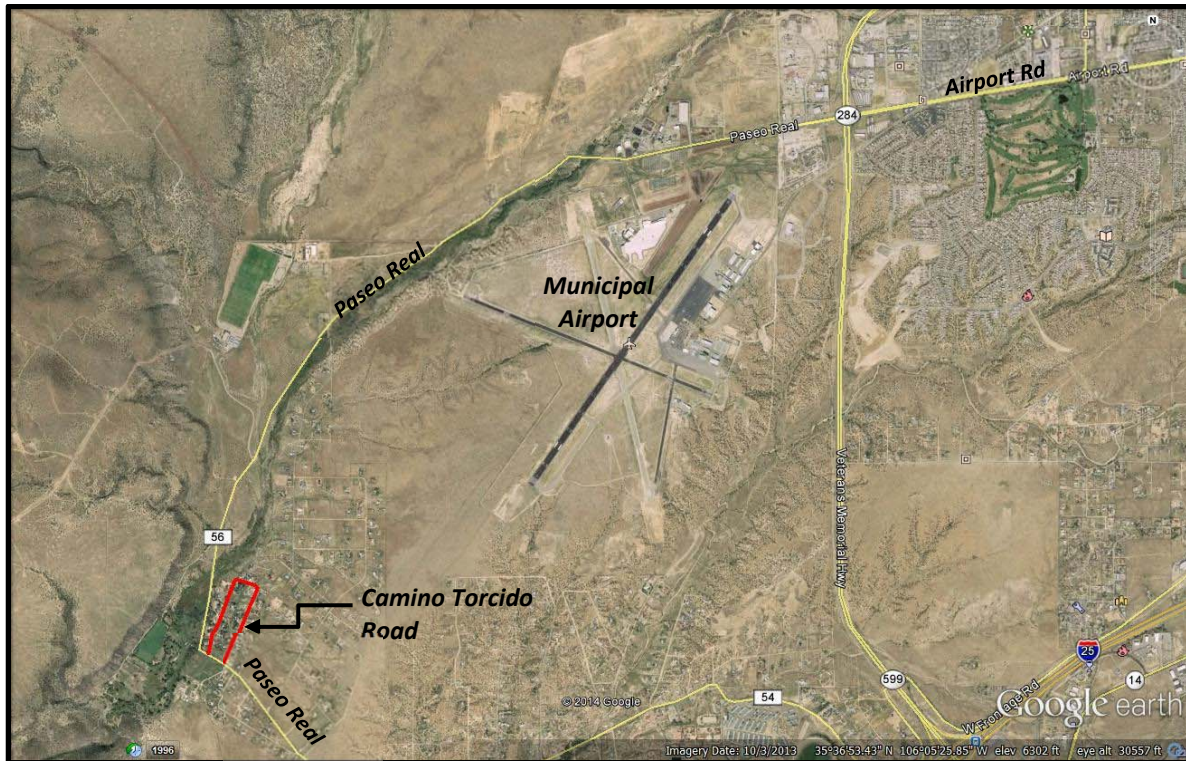


Figure 1 – Location Map



Camino Torcido is a dirt road that does not currently contain any storm drain system improvements. There is one culvert crossing located near the south end of the west leg of Torcido Loop. The purpose of this memorandum is to provide hydrologic and hydraulic analysis and recommend preliminary design alternatives for roadway and drainage improvements along Camino Torcido Loop between the eastern and western intersections with County Road 56 (Paseo Real). The recommended alternatives, including concrete ditches, a segment of inverted roadway section and crossing culverts will help divert stormwater flooding residents along the east leg and discharge it under the west leg of Camino Torcido. Benefits include channels and roadway that will provide capacity to collect off-site runoff and reduce impacts to adjacent properties.

Two cultural sites have been identified along the east leg of Camino Torcido. The site locations were provided by the Museum of New Mexico, Office of Archaeological Studies and are identified in the preliminary plans provided to the County. Impacts to the archaeological sites from proposed improvements will need to be evaluated during final design.

Preliminary Drainage Analysis

Hydrologic Analysis

Methodology

Due to the County's budget limitations as well as the remote location of the project the County requested that the 10-year, 6-hour and 25-year, 6-hour storm events be analyzed for initial hydrologic analysis. Runoff was estimated using the Rational Method as per NMDOT Drainage Manual, Volume 1 Hydrology (1995). Existing conditions including land use and topographic information are based on field reconnaissance and 2009 Lidar Data with 2' Contours as well as 2009 Aerial Imagery provided by Santa Fe County. Soil property data was obtained from the NRCS Web Soil Survey which indicates that the primary soil types in the project limits include Hydrologic Soil Group. Type A and Type B soils.

To estimate the peak discharge from each basin, the Rational Method needs several parameter inputs, including time of concentration (T_c), rainfall intensities (i), runoff coefficient (C) and watershed areas for each basin within the study area. Spreadsheets used to estimate these values can be found in Sheets D-1 to D-6.

Basin Delineation

The watershed was divided into ten basins using AutoCAD Civil 3D 2013, 2' contours and the 2009 aerial imagery provided by Santa Fe County. Nomenclature was listed as either East or West based on the downstream segment of Camino Torcido directly affected. The basin delineations are provided in the Drainage Basin Map in Exhibit A.



Runoff Coefficient Estimation

The runoff coefficients, C , were selected depending on ground cover, hydrologic soil group, type of development, and 1-hour rainfall depth for the design return period. The values were selected per Figure 3-16 provided in the NMDOT Hydrology Manual assuming existing conditions within the watershed. More developed areas within the watershed were assigned 20% impervious suburban conditions, others, 10% rural conditions based on the 2009 aerial imagery provided by Santa Fe County. Considering the land use varies throughout the watershed, the C values were weighted per basin and used for analysis.

Time of Concentration

The Upland Method, as described in the NMDOT Drainage Manual, Volume 1 Hydrology (1995), was used to estimate times of concentration for portions of the basins that contained overland flow and shallow concentrated flow conditions. Average velocities were estimated using Figure 3-10 provided in the Hydrology Manual. The graphs are based on average slope and land use within each basin. The travel time is then estimated by dividing the total length of the flow component by the average velocity.

Times of concentration for those portions of the basins which contain channelized flow were estimated using the Kirpich Formula. The Kirpich Formula estimates travel time by incorporating the length and slope of channel components.

Each basin contained several components necessary to calculate the average time of concentration. Flow lengths and elevations for the starting and ending points of lines were determined using AutoCAD Civil 3D 2013 and were divided to distinguish between overland flow, shallow concentrated flow and channelized flow.

Peak Discharge Estimation

Estimated basin areas, runoff coefficients, T_c values and rainfall intensities were used to estimate peak discharges for the 10 year and 25 year storm events. Calculated peak discharges are larger in basins 20, 70 and 90 for both 10 year and 25 year storm events. As a result of the large flows additional analysis was completed for the half of the 10 year storm event values. Peak discharge calculations are provided in Sheets D-1 through D-6.



Hydraulic Analysis

Methodology

Preliminary hydraulic analysis was completed using Bentley Flow Master, StormCAD V8i and the Culvert Master Programs. As discussed in the Peak Discharge Estimation section, estimated peak flows for the 10 year storm event were larger than anticipated and would require larger storm collection and conveyance facilities. Therefore, peak flows for half of the 10 year storm event were evaluated to evaluate an alternative, smaller storm system.

Hydraulic Modeling Results

East and West Leg of Torcido

In the Flow Master program, a triangular concrete channel was modeled using the peak discharges from the full 10 year storm event. In addition to the concrete channel, inverted roadways with curb and gutter as well as without curb and gutter were both analyzed in order to optimize the system as a whole. A rip rap channel section was also analyzed for both the 10 year and half of the 10 year storm events to convey collected runoff from the east leg to the west leg of the roadway.

Channel slopes were assumed similar to the road grades provided in the preliminary roadway design. Flow Master Output for each alternative is provided in Sheets A-1 to A-18.

North Leg of Torcido

Bentley Culvert Master was used to identify the number of 18" culverts needed to convey runoff from the north side of the road to the south side along the east-west leg of Camino Torcido. Crossing pipes were also implemented into the storm drain system along the east leg of Camino Torcido. Sheets B-1 to B-11 contain the output for the analysis completed in Culvert Master.

In the StormCAD V8i program, four different alternatives were analyzed. Considering the large peak discharge values estimated for the 10 and 25 year storm events, flow rates for the 10 year storm event were halved and analyzed. Two types of storm drains were assessed for the storm drain system, corrugated metal pipe (CMP) and high-density polyethylene pipe (HDPE). CMP pipe requires larger pipe sizes to convey the same amount of flow than the HDPE system because of a larger Manning's n value of the CMP pipe. StormCAD Output for each alternative is provided in Sheets C-1 to C-4.

A summary of the evaluated systems is provide below:

- **Alternative 1 (East Leg), 10 Year Storm Event (CMP Pipe)** – 2' deep concrete ditch along one side of the road; inverted roadway section; CMP storm drain pipe sizes ranging from 36" to 66" diameter.
- **Alternative 1 (East Leg), 10 Year Storm Event (HDPE Pipe):** 10 Year Storm Event – 2' deep concrete ditch along one side of the road; inverted roadway section; HDPE



storm drain pipe sizes ranging from 36" to 54" diameter.

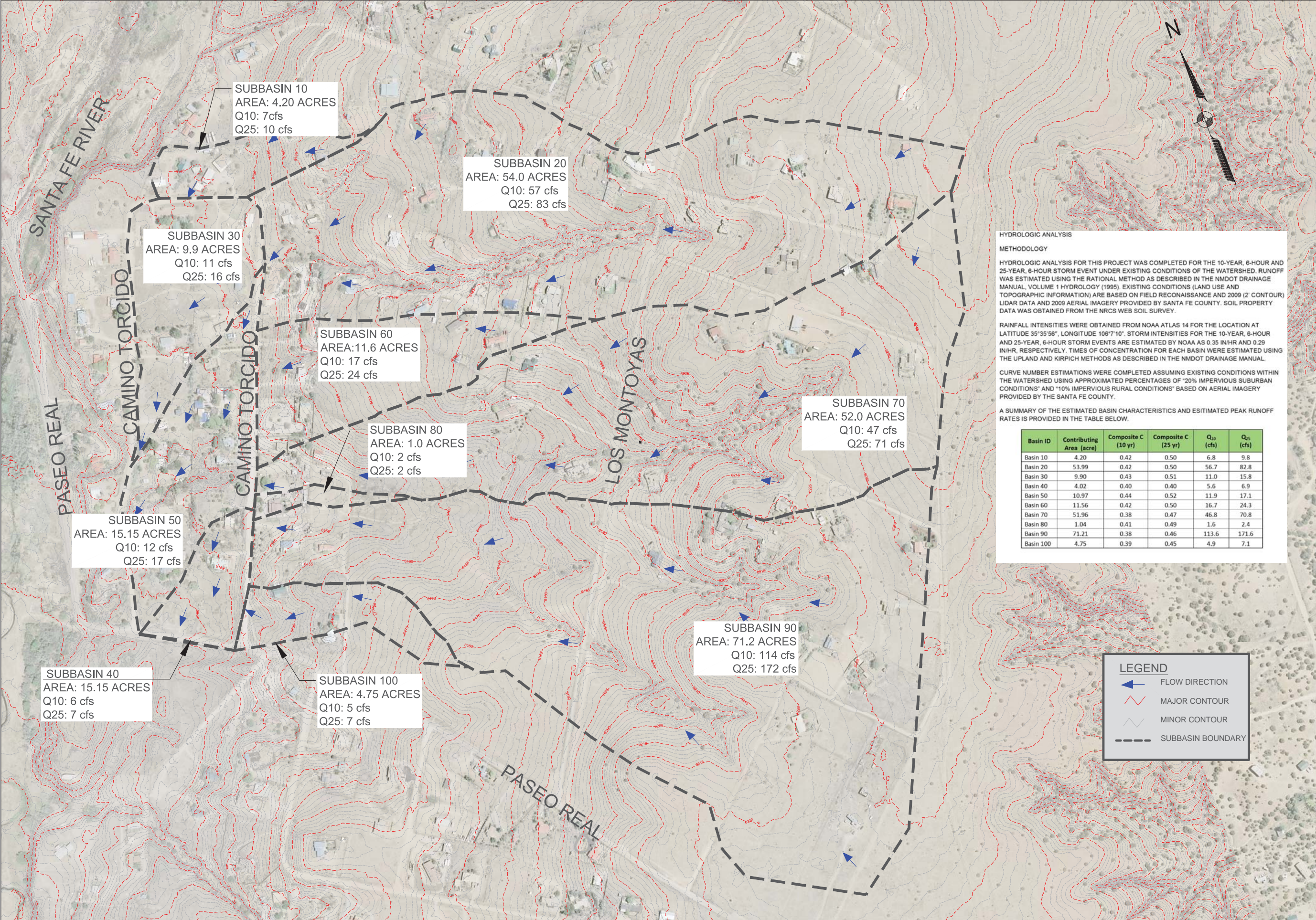
- **Alternative 2 (East Leg):** ½ 10 Year Storm Event – 2' deep concrete ditch along one side of the road; inverted roadway section; CMP storm drain pipe sizes ranging from 36" to 48" diameters.
- **Alternative 2:** ½ 10 Year Storm Event - HDPE storm drain pipe sizes ranged from 24" to 42" diameters.
- **Rip Rap Channel Alternative:** Rip Rap channel along the south end of Camino Torcido rather than a storm drain to convey collected runoff from the east leg to the west leg. Analysis was run for both the 10-year and ½ of the 10-year flows.

Conclusion

Additional hydraulic analysis will be necessary in order to provide final drainage system design based on the improvements and alternatives Santa Fe County approves for final design. Preliminary construction estimates for the various alternatives were provided for each of the alternatives. A summary of the anticipated costs are provided below (including 20% contingency).

- **Alternate 1 (10-year, CMP Storm Drain):** \$ 1,096,030 (basic roadway and storm drain improvements)
- **Alternate 1 (10-year, HDPE Storm Drain):** \$ 1,161,057 (basic roadway and storm drain improvements)
- **Alternate 2 (Half 10-year, CMP Storm Drain):** \$ 1,026,219 (basic roadway and storm drain improvements)
- **Alternate 2 (Half 10-year, HDPE Storm Drain):** \$ 1,051,587 (basic roadway and storm drain improvements)
- **Alternate 3 (10-year, CMP Storm Drain, Rip Rap Channel):** \$ 1,095,045 (basic roadway and storm improvements; 3.5' deep trapezoidal channel)
- **Alternate 3 (10-year, HDPE Storm Drain, Rip Rap Channel):** \$1,146,105 (basic roadway and storm improvements; 3.5' deep trapezoidal channel)
- **Alternate 3 (Half 10-year, CMP Storm Drain, Rip Rap Channel):** \$ 1,030,961 (basic roadway and storm improvements; 2.5' deep trapezoidal channel)
- **Alternate 3 (Half 10-year, HDPE Storm Drain, Rip Rap Channel):** \$ 1,033,570 (basic roadway and storm improvements; 2.5' deep trapezoidal channel)





HYDROLOGIC ANALYSIS

METHODOLOGY

HYDROLOGIC ANALYSIS FOR THIS PROJECT WAS COMPLETED FOR THE 10-YEAR, 6-HOUR AND 25-YEAR, 6-HOUR STORM EVENT UNDER EXISTING CONDITIONS OF THE WATERSHED. RUNOFF WAS ESTIMATED USING THE RATIONAL METHOD AS DESCRIBED IN THE NMDOT DRAINAGE MANUAL, VOLUME 1 HYDROLOGY (1995). EXISTING CONDITIONS (LAND USE AND TOPOGRAPHIC INFORMATION) ARE BASED ON FIELD RECONNAISSANCE AND 2009 (2' CONTOUR) LIDAR DATA AND 2009 AERIAL IMAGERY PROVIDED BY SANTA FE COUNTY. SOIL PROPERTY DATA WAS OBTAINED FROM THE NRCS WEB SOIL SURVEY.

RAINFALL INTENSITIES WERE OBTAINED FROM NOAA ATLAS 14 FOR THE LOCATION AT LATITUDE 35°35'56", LONGITUDE 106°7'10". STORM INTENSITIES FOR THE 10-YEAR, 6-HOUR AND 25-YEAR, 6-HOUR STORM EVENTS ARE ESTIMATED BY NOAA AS 0.35 IN/HR AND 0.29 IN/HR, RESPECTIVELY. TIMES OF CONCENTRATION FOR EACH BASIN WERE ESTIMATED USING THE UPLAND AND KIRPICH METHODS AS DESCRIBED IN THE NMDOT DRAINAGE MANUAL.

CURVE NUMBER ESTIMATIONS WERE COMPLETED ASSUMING EXISTING CONDITIONS WITHIN THE WATERSHED USING APPROXIMATED PERCENTAGES OF "20% IMPERVIOUS SUBURBAN CONDITIONS" AND "10% IMPERVIOUS RURAL CONDITIONS" BASED ON AERIAL IMAGERY PROVIDED BY THE SANTA FE COUNTY.

A SUMMARY OF THE ESTIMATED BASIN CHARACTERISTICS AND ESITIMATED PEAK RUNOFF RATES IS PROVIDED IN THE TABLE BELOW.

Basin ID	Contributing Area (acre)	Composite C (10 yr)	Composite C (25 yr)	Q ₁₀ (cfs)	Q ₂₅ (cfs)
Basin 10	4.20	0.42	0.50	6.8	9.8
Basin 20	53.99	0.42	0.50	56.7	82.8
Basin 30	9.90	0.43	0.51	11.0	15.8
Basin 40	4.02	0.40	0.40	5.6	6.9
Basin 50	10.97	0.44	0.52	11.9	17.1
Basin 60	11.56	0.42	0.50	16.7	24.3
Basin 70	51.96	0.38	0.47	46.8	70.8
Basin 80	1.04	0.41	0.49	1.6	2.4
Basin 90	71.21	0.38	0.46	113.6	171.6
Basin 100	4.75	0.39	0.45	4.9	7.1

LEGEND

- FLOW DIRECTION
- MAJOR CONTOUR
- MINOR CONTOUR
- SUBBASIN BOUNDARY



CAMINO TORCIDO ROAD AND DRAINAGE IMPROVEMENTS PROJECT

DRAINAGE BASIN MAP

1" = 125'

10 yr East Side: Concrete

Project Description

Friction Method	Manning Formula
Solve For	Discharge

Input Data

Roughness Coefficient	0.013	
Channel Slope	0.00610	ft/ft
Normal Depth	2.00	ft
Left Side Slope	4.00	ft/ft (H:V)
Right Side Slope	3.00	ft/ft (H:V)

Results

Discharge	121.70	ft ³ /s
Flow Area	14.00	ft ²
Wetted Perimeter	14.57	ft
Hydraulic Radius	0.96	ft
Top Width	14.00	ft
Critical Depth	2.37	ft
Critical Slope	0.00245	ft/ft
Velocity	8.69	ft/s
Velocity Head	1.17	ft
Specific Energy	3.17	ft
Froude Number	1.53	
Flow Type	Supercritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	2.00	ft
Critical Depth	2.37	ft
Channel Slope	0.00610	ft/ft
Critical Slope	0.00245	ft/ft

10 yr West Side: Concrete

Project Description

Friction Method	Manning Formula
Solve For	Discharge

Input Data

Roughness Coefficient	0.013	
Channel Slope	0.00620	ft/ft
Normal Depth	2.00	ft
Left Side Slope	3.00	ft/ft (H:V)
Right Side Slope	4.00	ft/ft (H:V)

Results

Discharge	122.69	ft ³ /s
Flow Area	14.00	ft ²
Wetted Perimeter	14.57	ft
Hydraulic Radius	0.96	ft
Top Width	14.00	ft
Critical Depth	2.38	ft
Critical Slope	0.00245	ft/ft
Velocity	8.76	ft/s
Velocity Head	1.19	ft
Specific Energy	3.19	ft
Froude Number	1.54	
Flow Type	Supercritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	2.00	ft
Critical Depth	2.38	ft
Channel Slope	0.00620	ft/ft
Critical Slope	0.00245	ft/ft

RipRap Lined Channel- 10 yr

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.069	
Channel Slope	0.01407	ft/ft
Left Side Slope	3.00	ft/ft (H:V)
Right Side Slope	3.00	ft/ft (H:V)
Bottom Width	6.00	ft
Discharge	188.00	ft ³ /s

Results

Normal Depth	3.14	ft
Flow Area	48.44	ft ²
Wetted Perimeter	25.86	ft
Hydraulic Radius	1.87	ft
Top Width	24.84	ft
Critical Depth	2.19	ft
Critical Slope	0.06449	ft/ft
Velocity	3.88	ft/s
Velocity Head	0.23	ft
Specific Energy	3.37	ft
Froude Number	0.49	
Flow Type	Subcritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	3.14	ft
Critical Depth	2.19	ft
Channel Slope	0.01407	ft/ft

RipRap Lined Channel- 10 yr

GVF Output Data

Critical Slope 0.06449 ft/ft

RipRap Lined Channel- 1/2 of 10 yr

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.069	
Channel Slope	0.01407	ft/ft
Left Side Slope	3.00	ft/ft (H:V)
Right Side Slope	3.00	ft/ft (H:V)
Bottom Width	6.00	ft
Discharge	94.00	ft ³ /s

Results

Normal Depth	2.27	ft
Flow Area	29.03	ft ²
Wetted Perimeter	20.34	ft
Hydraulic Radius	1.43	ft
Top Width	19.60	ft
Critical Depth	1.52	ft
Critical Slope	0.07096	ft/ft
Velocity	3.24	ft/s
Velocity Head	0.16	ft
Specific Energy	2.43	ft
Froude Number	0.47	
Flow Type	Subcritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	2.27	ft
Critical Depth	1.52	ft
Channel Slope	0.01407	ft/ft

RipRap Lined Channel- 1/2 of 10 yr

GVF Output Data

Critical Slope 0.07096 ft/ft

10 yr ES: Inverted Crown Roadway

Project Description

Friction Method Manning Formula
Solve For Discharge

Input Data

Channel Slope 0.00610 ft/ft
Normal Depth 0.20 ft
Section Definitions

Station (ft)	Elevation (ft)
0+00	0.20
0+10	0.00
0+20	0.20

Roughness Segment Definitions

Start Station & Elevation	End Station & Elevation	Roughness Coefficient
(0+00, 0.20)	(0+20, 0.20)	0.017

Options

Current Roughness weighted Method Pavlovskii's Method
Open Channel Weighting Method Pavlovskii's Method
Closed Channel Weighting Method Pavlovskii's Method

Results

Discharge 2.94 ft³/s
Elevation Range 0.00 to 0.20 ft
Flow Area 2.00 ft²
Wetted Perimeter 20.00 ft
Hydraulic Radius 0.10 ft
Top Width 20.00 ft
Normal Depth 0.20 ft
Critical Depth 0.18 ft
Critical Slope 0.00932 ft/ft
Velocity 1.47 ft/s

10 yr ES: Inverted Crown Roadway

Results

Velocity Head	0.03	ft
Specific Energy	0.23	ft
Froude Number	0.82	
Flow Type	Subcritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.20	ft
Critical Depth	0.18	ft
Channel Slope	0.00610	ft/ft
Critical Slope	0.00932	ft/ft

Cross Section for 10 yr ES: Inverted Crown Roadway

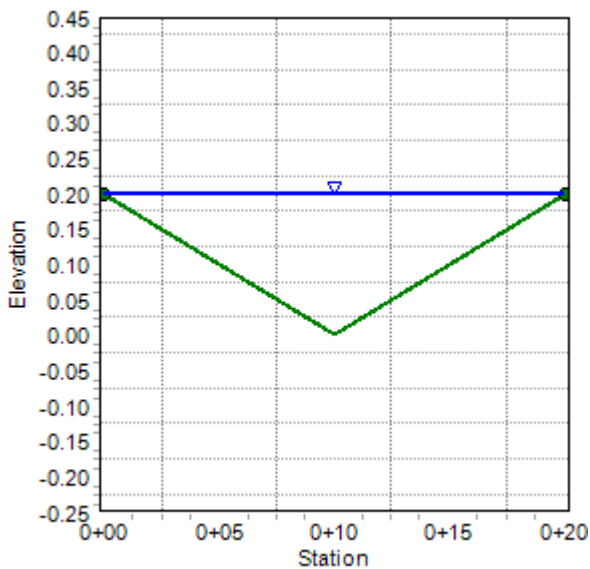
Project Description

Friction Method	Manning Formula
Solve For	Discharge

Input Data

Channel Slope	0.00610	ft/ft
Normal Depth	0.20	ft
Discharge	2.94	ft ³ /s

Cross Section Image



10 yr WS: Inverted Crown Roadway

Project Description

Friction Method	Manning Formula
Solve For	Discharge

Input Data

Channel Slope	0.00620	ft/ft
Normal Depth	0.20	ft
Section Definitions		

Station (ft)	Elevation (ft)
0+00	0.02
0+10	0.00
0+20	0.02

Roughness Segment Definitions

Start Station & Elevation	End Station & Elevation	Roughness Coefficient
(0+00, 0.02)	(0+20, 0.02)	0.017

Options

Current Roughness weighted Method	Pavlovskii's Method
Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

Results

Discharge	8.54	ft ³ /s
Elevation Range	0.00 to 0.02	ft
Flow Area	3.80	ft ²
Wetted Perimeter	20.36	ft
Hydraulic Radius	0.19	ft
Top Width	20.00	ft
Normal Depth	0.20	ft
Critical Depth	0.19	ft
Critical Slope	0.00765	ft/ft
Velocity	2.25	ft/s

10 yr WS: Inverted Crown Roadway

Results

Velocity Head	0.08	ft
Specific Energy	0.28	ft
Froude Number	0.91	
Flow Type	Subcritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.20	ft
Critical Depth	0.19	ft
Channel Slope	0.00620	ft/ft
Critical Slope	0.00765	ft/ft

Cross Section for 10 yr WS: Inverted Crown Roadway

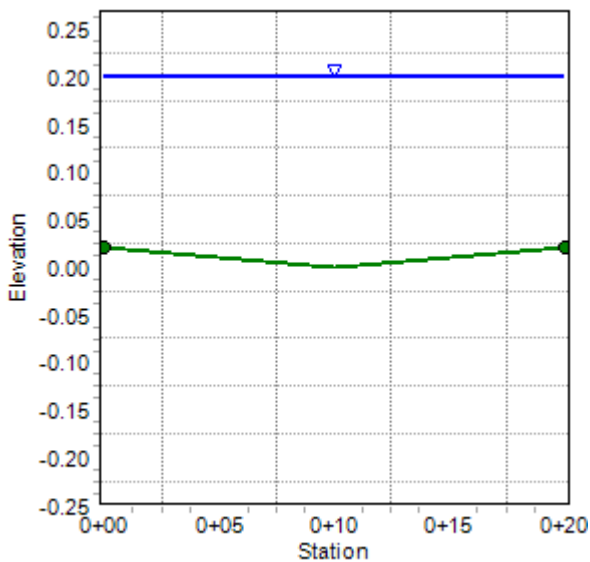
Project Description

Friction Method	Manning Formula
Solve For	Discharge

Input Data

Channel Slope	0.00620	ft/ft
Normal Depth	0.20	ft
Discharge	8.54	ft ³ /s

Cross Section Image



10 yr ES: Inverted Crown w/ Curb

Project Description

Friction Method Manning Formula
Solve For Discharge

Input Data

Channel Slope 0.00610 ft/ft
Normal Depth 0.20 ft
Section Definitions

Station (ft)	Elevation (ft)
0+00	0.53
0+01	0.20
0+02	0.20
0+12	0.00
0+22	0.20
0+23	0.20
0+23	0.53

Roughness Segment Definitions

Start Station & Elevation	End Station & Elevation	Roughness Coefficient
(0+00, 0.53)	(0+02, 0.20)	0.013
(0+02, 0.20)	(0+22, 0.20)	0.017
(0+22, 0.20)	(0+23, 0.53)	0.013

Options

Current Roughness Weighted Method Pavlovskii's Method
Open Channel Weighting Method Pavlovskii's Method
Closed Channel Weighting Method Pavlovskii's Method

Results

Discharge 2.94 ft³/s
Elevation Range 0.00 to 0.53 ft
Flow Area 2.00 ft²
Wetted Perimeter 20.00 ft

10 yr ES: Inverted Crown w/ Curb

Results

Hydraulic Radius	0.10	ft
Top Width	20.00	ft
Normal Depth	0.20	ft
Critical Depth	0.18	ft
Critical Slope	0.00932	ft/ft
Velocity	1.47	ft/s
Velocity Head	0.03	ft
Specific Energy	0.23	ft
Froude Number	0.82	
Flow Type	Subcritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.20	ft
Critical Depth	0.18	ft
Channel Slope	0.00610	ft/ft
Critical Slope	0.00932	ft/ft

Cross Section for 10 yr ES: Inverted Crown w/ Curb

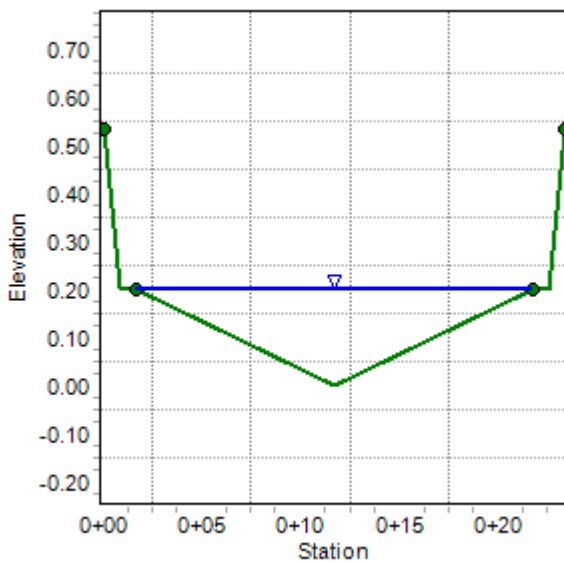
Project Description

Friction Method	Manning Formula
Solve For	Discharge

Input Data

Channel Slope	0.00610	ft/ft
Normal Depth	0.20	ft
Discharge	2.94	ft ³ /s

Cross Section Image



10 yr WS: Inverted Crown w/ Curb

Project Description

Friction Method Manning Formula
Solve For Discharge

Input Data

Channel Slope 0.00620 ft/ft
Normal Depth 0.20 ft
Section Definitions

Station (ft)	Elevation (ft)
0+00	0.53
0+01	0.20
0+02	0.20
0+12	0.00
0+22	0.20
0+23	0.20
0+23	0.53

Roughness Segment Definitions

Start Station & Elevation	End Station & Elevation	Roughness Coefficient
(0+00, 0.53)	(0+02, 0.20)	0.013
(0+02, 0.20)	(0+22, 0.20)	0.017
(0+22, 0.20)	(0+23, 0.53)	0.013

Options

Current Roughness Weighted Method Pavlovskii's Method
Open Channel Weighting Method Pavlovskii's Method
Closed Channel Weighting Method Pavlovskii's Method

Results

Discharge 2.97 ft³/s
Elevation Range 0.00 to 0.53 ft
Flow Area 2.00 ft²
Wetted Perimeter 20.00 ft

10 yr WS: Inverted Crown w/ Curb

Results

Hydraulic Radius	0.10	ft
Top Width	20.00	ft
Normal Depth	0.20	ft
Critical Depth	0.19	ft
Critical Slope	0.00931	ft/ft
Velocity	1.48	ft/s
Velocity Head	0.03	ft
Specific Energy	0.23	ft
Froude Number	0.83	
Flow Type	Subcritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.20	ft
Critical Depth	0.19	ft
Channel Slope	0.00620	ft/ft
Critical Slope	0.00931	ft/ft

Cross Section for 10 yr WS: Inverted Crown w/ Curb

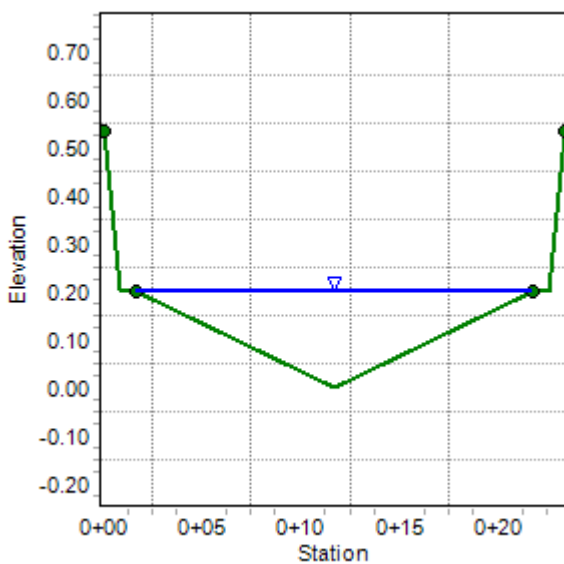
Project Description

Friction Method	Manning Formula
Solve For	Discharge

Input Data

Channel Slope	0.00620	ft/ft
Normal Depth	0.20	ft
Discharge	2.97	ft ³ /s

Cross Section Image



Culvert Calculator Report

Basin 20 Collection

Solve For: Discharge

Culvert Summary			
Allowable HW Elevation	12.25 ft	Headwater Depth/Height	1.33
Computed Headwater Elev.	12.25 ft	Discharge	25.17 cfs
Inlet Control HW Elev.	12.02 ft	Tailwater Elevation	0.00 ft
Outlet Control HW Elev.	12.25 ft	Control Type	Outlet Control
Grades			
Upstream Invert	10.25 ft	Downstream Invert	10.00 ft
Length	25.00 ft	Constructed Slope	0.010000 ft/ft
Hydraulic Profile			
Profile	CompositeM2PressureProfile	Depth, Downstream	1.12 ft
Slope Type	Mild	Normal Depth	N/A ft
Flow Regime	Subcritical	Critical Depth	1.12 ft
Velocity Downstream	5.92 ft/s	Critical Slope	0.026310 ft/ft
Section			
Section Shape	Circular	Mannings Coefficient	0.024
Section Material	CMP	Span	1.50 ft
Section Size	18 inch	Rise	1.50 ft
Number Sections	3		
Outlet Control Properties			
Outlet Control HW Elev.	12.25 ft	Upstream Velocity Head	0.35 ft
Ke	0.20	Entrance Loss	0.07 ft
Inlet Control Properties			
Inlet Control HW Elev.	12.02 ft	Flow Control	N/A
Inlet Type	Reveled ring, 33.7° (1.5:1) bevels	Area Full	5.3 ft²
K	0.00180	HDS 5 Chart	3
M	2.50000	HDS 5 Scale	B
C	0.02430	Equation Form	1
Y	0.83000		

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Culvert Calculator Report

Basin 50 Collection (10 yr) CMP

Solve For: Discharge

Culvert Summary			
Allowable HW Elevation	6,129.00 ft	Headwater Depth/Height	1.25
Computed Headwater Elev.	6,129.00 ft	Discharge	278.60 cfs
Inlet Control HW Elev.	6,128.72 ft	Tailwater Elevation	0.00 ft
Outlet Control HW Elev.	6,129.00 ft	Control Type	Entrance Control
Grades			
Upstream Invert	6,124.00 ft	Downstream Invert	6,121.48 ft
Length	72.00 ft	Constructed Slope	0.035000 ft/ft
Hydraulic Profile			
Profile	S2	Depth, Downstream	2.33 ft
Slope Type	Steep	Normal Depth	2.32 ft
Flow Regime	Supercritical	Critical Depth	2.92 ft
Velocity Downstream	12.22 ft/s	Critical Slope	0.018247 ft/ft
Section			
Section Shape	Circular	Mannings Coefficient	0.024
Section Material	CMP	Span	4.00 ft
Section Size	48 inch	Rise	4.00 ft
Number Sections	3		
Outlet Control Properties			
Outlet Control HW Elev.	6,129.00 ft	Upstream Velocity Head	1.39 ft
Ke	0.50	Entrance Loss	0.69 ft
Inlet Control Properties			
Inlet Control HW Elev.	6,128.72 ft	Flow Control	N/A
Inlet Type	Headwall	Area Full	37.7 ft²
K	0.00780	HDS 5 Chart	2
M	2.00000	HDS 5 Scale	1
C	0.03790	Equation Form	1
Y	0.69000		

B-2

Culvert Calculator Report

Basin 50 Collection (HALF 10 yr) CMP

Solve For: Discharge

Culvert Summary			
Allowable HW Elevation	6,129.00 ft	Headwater Depth/Height	1.43
Computed Headwater Elev.	6,129.00 ft	Discharge	160.26 cfs
Inlet Control HW Elev.	6,128.98 ft	Tailwater Elevation	0.00 ft
Outlet Control HW Elev.	6,129.00 ft	Control Type	Entrance Control
Grades			
Upstream Invert	6,124.00 ft	Downstream Invert	6,121.48 ft
Length	72.00 ft	Constructed Slope	0.035000 ft/ft
Hydraulic Profile			
Profile	S2	Depth, Downstream	2.34 ft
Slope Type	Steep	Normal Depth	2.34 ft
Flow Regime	Supercritical	Critical Depth	2.80 ft
Velocity Downstream	11.73 ft/s	Critical Slope	0.022683 ft/ft
Section			
Section Shape	Circular	Mannings Coefficient	0.024
Section Material	CMP	Span	3.50 ft
Section Size	42 inch	Rise	3.50 ft
Number Sections	2		
Outlet Control Properties			
Outlet Control HW Elev.	6,129.00 ft	Upstream Velocity Head	1.47 ft
Ke	0.50	Entrance Loss	0.73 ft
Inlet Control Properties			
Inlet Control HW Elev.	6,128.98 ft	Flow Control	N/A
Inlet Type	Headwall	Area Full	19.2 ft²
K	0.00780	HDS 5 Chart	2
M	2.00000	HDS 5 Scale	1
C	0.03790	Equation Form	1
Y	0.69000		

B-3

Culvert Calculator Report

Basin 50 Collection (10 yr) HDPE

Solve For: Discharge

Culvert Summary			
Allowable HW Elevation	6,129.00 ft	Headwater Depth/Height	1.25
Computed Headwater Elev.	6,129.00 ft	Discharge	278.60 cfs
Inlet Control HW Elev.	6,128.80 ft	Tailwater Elevation	0.00 ft
Outlet Control HW Elev.	6,129.00 ft	Control Type	Entrance Control
Grades			
Upstream Invert	6,124.00 ft	Downstream Invert	6,121.48 ft
Length	72.00 ft	Constructed Slope	0.035000 ft/ft
Hydraulic Profile			
Profile	S2	Depth, Downstream	1.87 ft
Slope Type	Steep	Normal Depth	1.55 ft
Flow Regime	Supercritical	Critical Depth	2.92 ft
Velocity Downstream	16.17 ft/s	Critical Slope	0.004562 ft/ft
Section			
Section Shape	Circular	Mannings Coefficient	0.012
Section Material	Corrugated HDPE (Smooth Interior)	Span	4.00 ft
Section Size	48 inch	Rise	4.00 ft
Number Sections	3		
Outlet Control Properties			
Outlet Control HW Elev.	6,129.00 ft	Upstream Velocity Head	1.39 ft
Ke	0.50	Entrance Loss	0.69 ft
Inlet Control Properties			
Inlet Control HW Elev.	6,128.80 ft	Flow Control	N/A
Inlet Type	Square edge w/headwall	Area Full	37.7 ft²
K	0.00980	HDS 5 Chart	1
M	2.00000	HDS 5 Scale	1
C	0.03980	Equation Form	1
Y	0.67000		

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Culvert Calculator Report

Basin 50 Collection (HALF 10 yr) HDPE

Solve For: Discharge

Culvert Summary			
Allowable HW Elevation	6,129.00 ft	Headwater Depth/Height	1.67
Computed Headwater Elev.	6,129.00 ft	Discharge	145.17 cfs
Inlet Control HW Elev.	6,129.00 ft	Tailwater Elevation	0.00 ft
Outlet Control HW Elev.	6,128.89 ft	Control Type	Inlet Control
Grades			
Upstream Invert	6,124.00 ft	Downstream Invert	6,121.48 ft
Length	72.00 ft	Constructed Slope	0.035000 ft/ft
Hydraulic Profile			
Profile	S2	Depth, Downstream	1.82 ft
Slope Type	Steep	Normal Depth	1.57 ft
Flow Regime	Supercritical	Critical Depth	2.69 ft
Velocity Downstream	16.15 ft/s	Critical Slope	0.008910 ft/ft
Section			
Section Shape	Circular	Mannings Coefficient	0.012
Section Material	Corrugated HDPE (Smooth Interior)	Span	3.00 ft
Section Size	36 inch	Rise	3.00 ft
Number Sections	2		
Outlet Control Properties			
Outlet Control HW Elev.	6,128.89 ft	Upstream Velocity Head	1.83 ft
Ke	0.20	Entrance Loss	0.37 ft
Inlet Control Properties			
Inlet Control HW Elev.	6,129.00 ft	Flow Control	N/A
Inlet Type	Beveled ring, 33.7° bevels	Area Full	14.1 ft²
K	0.00180	HDS 5 Chart	3
M	2.50000	HDS 5 Scale	B
C	0.02430	Equation Form	1
Y	0.83000		

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Culvert Calculator Report

Basin 60 Collection

Solve For: Discharge

Culvert Summary			
Allowable HW Elevation	12.23 ft	Headwater Depth/Height	1.33
Computed Headwater Elev.	12.23 ft	Discharge	8.47 cfs
Inlet Control HW Elev.	12.02 ft	Tailwater Elevation	0.00 ft
Outlet Control HW Elev.	12.23 ft	Control Type	Outlet Control
Grades			
Upstream Invert	10.23 ft	Downstream Invert	10.00 ft
Length	23.00 ft	Constructed Slope	0.010000 ft/ft
Hydraulic Profile			
Profile	CompositeM2PressureProfile	Depth, Downstream	1.13 ft
Slope Type	Mild	Normal Depth	N/A ft
Flow Regime	Subcritical	Critical Depth	1.13 ft
Velocity Downstream	5.95 ft/s	Critical Slope	0.026538 ft/ft
Section			
Section Shape	Circular	Mannings Coefficient	0.024
Section Material	CMP	Span	1.50 ft
Section Size	18 inch	Rise	1.50 ft
Number Sections	1		
Outlet Control Properties			
Outlet Control HW Elev.	12.23 ft	Upstream Velocity Head	0.36 ft
Ke	0.20	Entrance Loss	0.07 ft
Inlet Control Properties			
Inlet Control HW Elev.	12.02 ft	Flow Control	N/A
Inlet Type	Beveled ring, 45° (1:1) bevels	Area Full	1.8 ft²
K	0.00180	HDS 5 Chart	3
M	2.50000	HDS 5 Scale	A
C	0.03000	Equation Form	1
Y	0.74000		

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Culvert Calculator Report

Basin 70 Collection

Solve For: Discharge

Culvert Summary			
Allowable HW Elevation	6,140.00 ft	Headwater Depth/Height	1.33
Computed Headwater Elev.	6,140.00 ft	Discharge	29.85 cfs
Inlet Control HW Elev.	6,139.78 ft	Tailwater Elevation	0.00 ft
Outlet Control HW Elev.	6,140.00 ft	Control Type	Entrance Control
Grades			
Upstream Invert	6,138.00 ft	Downstream Invert	6,131.07 ft
Length	22.00 ft	Constructed Slope	0.315000 ft/ft
Hydraulic Profile			
Profile	S2	Depth, Downstream	0.58 ft
Slope Type	Steep	Normal Depth	0.57 ft
Flow Regime	Supercritical	Critical Depth	1.22 ft
Velocity Downstream	15.80 ft/s	Critical Slope	0.031198 ft/ft
Section			
Section Shape	Circular	Mannings Coefficient	0.024
Section Material	CMP	Span	1.50 ft
Section Size	18 inch	Rise	1.50 ft
Number Sections	3		
Outlet Control Properties			
Outlet Control HW Elev.	6,140.00 ft	Upstream Velocity Head	0.65 ft
Ke	0.20	Entrance Loss	0.13 ft
Inlet Control Properties			
Inlet Control HW Elev.	6,139.78 ft	Flow Control	N/A
Inlet Type	Reveled ring, 33.7° (1.5:1) bevels	Area Full	5.3 ft²
K	0.00180	HDS 5 Chart	3
M	2.50000	HDS 5 Scale	B
C	0.02430	Equation Form	1
Y	0.83000		

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Culvert Calculator Report

Basin 70 Collection Box

Solve For: Discharge

Culvert Summary			
Allowable HW Elevation	6,140.00 ft	Headwater Depth/Height	1.00
Computed Headwater Elev.	6,140.00 ft	Discharge	55.44 cfs
Inlet Control HW Elev.	6,139.80 ft	Tailwater Elevation	0.00 ft
Outlet Control HW Elev.	6,140.00 ft	Control Type	Entrance Control
Grades			
Upstream Invert	6,138.00 ft	Downstream Invert	6,131.07 ft
Length	22.00 ft	Constructed Slope	0.315000 ft/ft
Hydraulic Profile			
Profile	S2	Depth, Downstream	0.35 ft
Slope Type	Steep	Normal Depth	0.29 ft
Flow Regime	Supercritical	Critical Depth	1.14 ft
Velocity Downstream	19.85 ft/s	Critical Slope	0.006507 ft/ft
Section			
Section Shape	Box	Mannings Coefficient	0.013
Section Material	Concrete	Span	2.00 ft
Section Size	2 x 2 ft	Rise	2.00 ft
Number Sections	4		
Outlet Control Properties			
Outlet Control HW Elev.	6,140.00 ft	Upstream Velocity Head	0.57 ft
Ke	0.50	Entrance Loss	0.29 ft
Inlet Control Properties			
Inlet Control HW Elev.	6,139.80 ft	Flow Control	N/A
Inlet Type	33.7° wingwall flares - offset	Area Full	16.0 ft²
K	0.49500	HDS 5 Chart	13
M	0.66700	HDS 5 Scale	2
C	0.02520	Equation Form	2
Y	0.88100		

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Culvert Calculator Report

Basin 70 Collection Elliptical

Solve For: Discharge

Culvert Summary

Allowable HW Elevation	6,140.00 ft	Headwater Depth/Height	1.25
Computed Headwater Elev.	6,140.00 ft	Discharge	46.41 cfs
Inlet Control HW Elev.	6,139.70 ft	Tailwater Elevation	0.00 ft
Outlet Control HW Elev.	6,140.00 ft	Control Type	Entrance Control

Grades

Upstream Invert	6,138.00 ft	Downstream Invert	6,131.07 ft
Length	22.00 ft	Constructed Slope	0.315000 ft/ft

Hydraulic Profile

Profile	S2	Depth, Downstream	0.47 ft
Slope Type	Steep	Normal Depth	0.39 ft
Flow Regime	Supercritical	Critical Depth	1.15 ft
Velocity Downstream	20.18 ft/s	Critical Slope	0.005016 ft/ft

Section

Section Shape	Horizontal Ellipse	Mannings Coefficient	0.013
Section Material	Concrete	Span	2.52 ft
Section Size	19x30 inch	Rise	1.60 ft
Number Sections	3		

Outlet Control Properties

Outlet Control HW Elev.	6,140.00 ft	Upstream Velocity Head	0.57 ft
Ke	0.50	Entrance Loss	0.28 ft

Inlet Control Properties

Inlet Control HW Elev.	6,139.70 ft	Flow Control	N/A
Area Full	9.9 ft²		
K	0.01000	HDS 5 Chart	29
M	2.00000	HDS 5 Scale	1
C	0.03980	Equation Form	1
Y	0.67000		

Square edge type headwall (horizontal ellipse)

B-9

Culvert Calculator Report

Basin 90 Collection

Solve For: Discharge

Culvert Summary			
Allowable HW Elevation	12.22 ft	Headwater Depth/Height	1.33
Computed Headwater Elev.	12.22 ft	Discharge	9.90 cfs
Inlet Control HW Elev.	12.22 ft	Tailwater Elevation	0.00 ft
Outlet Control HW Elev.	12.21 ft	Control Type	Inlet Control
Grades			
Upstream Invert	10.22 ft	Downstream Invert	10.00 ft
Length	22.00 ft	Constructed Slope	0.010000 ft/ft
Hydraulic Profile			
Profile	S2	Depth, Downstream	1.11 ft
Slope Type	Steep	Normal Depth	1.08 ft
Flow Regime	Supercritical	Critical Depth	1.21 ft
Velocity Downstream	7.08 ft/s	Critical Slope	0.007752 ft/ft
Section			
Section Shape	Circular	Mannings Coefficient	0.012
Section Material	Corr. Material HDPE (Smooth Interior)	Span	1.50 ft
Section Size	18 inch	Rise	1.50 ft
Number Sections	1		
Outlet Control Properties			
Outlet Control HW Elev.	12.21 ft	Upstream Velocity Head	0.65 ft
Ke	0.20	Entrance Loss	0.13 ft
Inlet Control Properties			
Inlet Control HW Elev.	12.22 ft	Flow Control	N/A
Inlet Type	Beveled ring, 33.7° bevels	Area Full	1.8 ft²
K	0.00180	HDS 5 Chart	3
M	2.50000	HDS 5 Scale	B
C	0.02430	Equation Form	1
Y	0.83000		

B-10

Culvert Calculator Report

Torcido Loop: North Leg Culverts

Solve For: Headwater Elevation

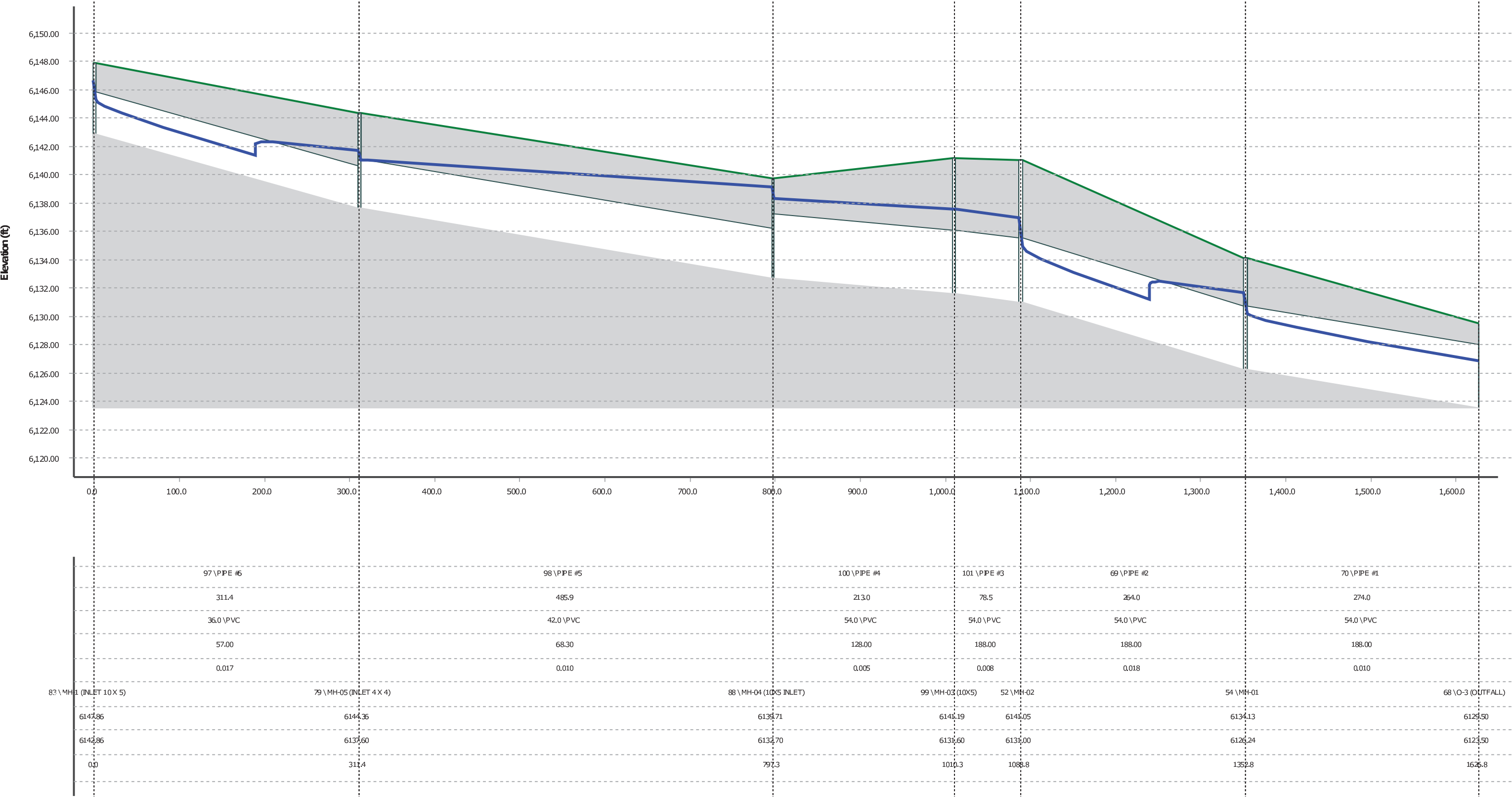
Culvert Summary			
Allowable HW Elevation	12.80 ft	Headwater Depth/Height	0.79
Computed Headwater Elev.	11.44 ft	Discharge	7.00 cfs
Inlet Control HW Elev.	11.34 ft	Tailwater Elevation	0.00 ft
Outlet Control HW Elev.	11.44 ft	Control Type	Outlet Control
Grades			
Upstream Invert	10.25 ft	Downstream Invert	10.00 ft
Length	25.00 ft	Constructed Slope	0.010000 ft/ft
Hydraulic Profile			
Profile	M2	Depth, Downstream	0.71 ft
Slope Type	Mild	Normal Depth	0.85 ft
Flow Regime	Subcritical	Critical Depth	0.71 ft
Velocity Downstream	4.22 ft/s	Critical Slope	0.017930 ft/ft
Section			
Section Shape	Circular	Mannings Coefficient	0.024
Section Material	CMP	Span	1.50 ft
Section Size	18 inch	Rise	1.50 ft
Number Sections	2		
Outlet Control Properties			
Outlet Control HW Elev.	11.44 ft	Upstream Velocity Head	0.18 ft
Ke	0.90	Entrance Loss	0.16 ft
Inlet Control Properties			
Inlet Control HW Elev.	11.34 ft	Flow Control	N/A
Inlet Type	Projecting	Area Full	3.5 ft²
K	0.03400	HDS 5 Chart	2
M	1.50000	HDS 5 Scale	3
C	0.05530	Equation Form	1
Y	0.54000		

B-11

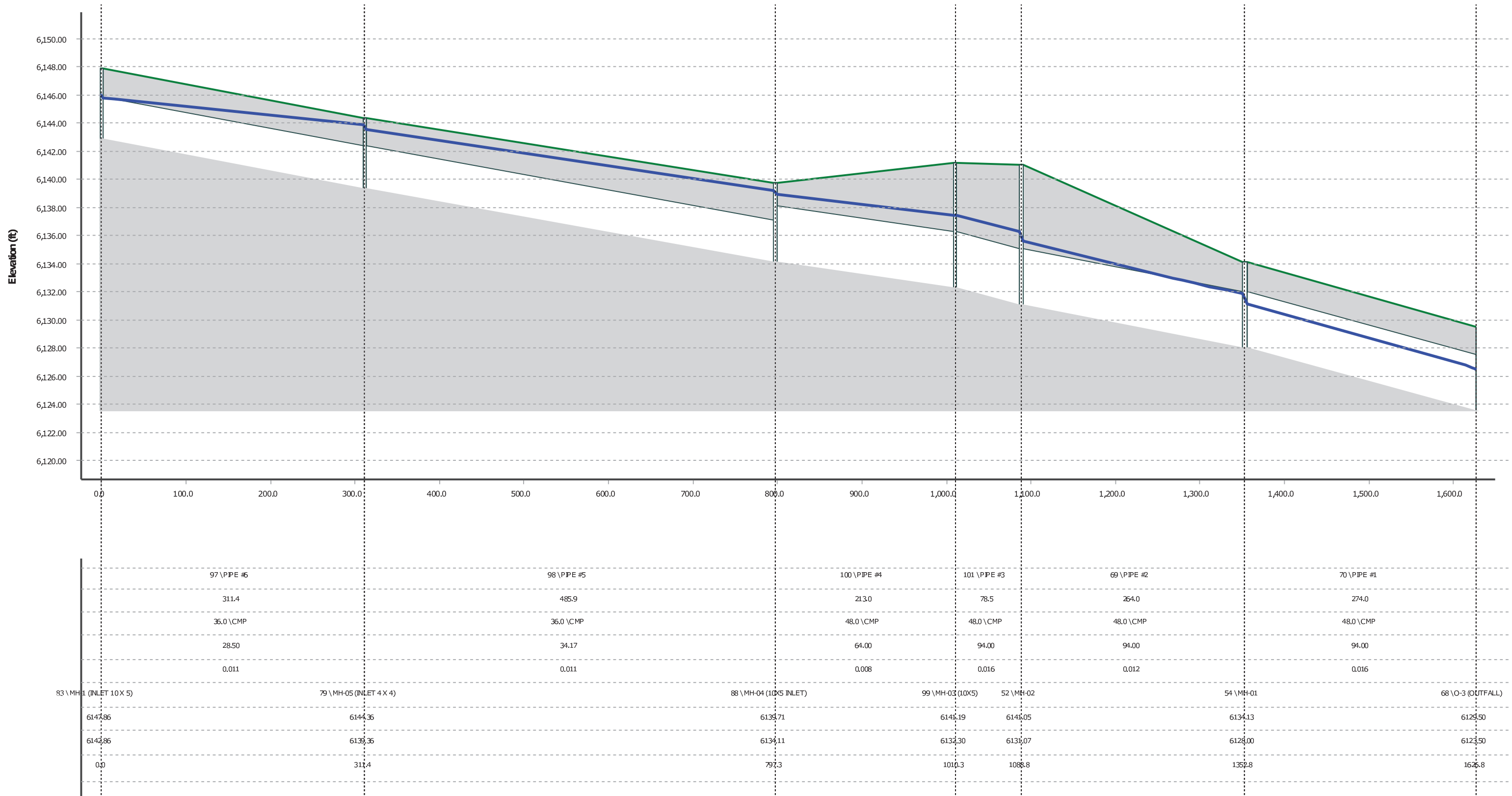
Torcido Loop: CMP - Full 10 Year



Torcido Loop: HDPE - Full 10 Year



Torcido Loop: CMP - Half of 10 Year



Torrido Loop: HDPE - Half of 10 Year



Storm Runoff Calculations

Basin ID	Contributing Area (acre)	10 yr composite c value	25 yr composite c value	Tc (min)	i 10 yr (in/hr)	i 25 yr (in/hr)	Q ₁₀ (cfs)	Q ₂₅ (cfs)	Basin ID	East or West	1/2 of 10 Year Storm
Basin 10	4.20	0.42	0.50	10.0	3.8	4.7	7	10	Basin 10	West	3.5
Basin 20	53.99	0.42	0.50	24.1	2.5	3.1	57	83	Basin 20	East	28.5
Basin 30	9.90	0.43	0.51	23.1	2.6	3.2	11	16	Basin 30	West	5.5
Basin 40	4.02	0.40	0.40	12.1	3.5	4.3	6	7	Basin 40	West	3.0
Basin 50	10.97	0.44	0.52	24.9	2.5	3.0	12	17	Basin 50	West	6.0
Basin 60	11.56	0.42	0.50	12.8	3.4	4.2	17	24	Basin 60	East	8.5
Basin 70	51.96	0.38	0.47	26.5	2.4	2.9	47	71	Basin 70	East	23.5
Basin 80	1.04	0.41	0.49	10.0	3.8	4.7	2	2	Basin 80	East	0.9
Basin 90	71.21	0.38	0.46	7.5	4.2	5.2	114	172	Basin 90	East	56.8
Basin 100	4.75	0.39	0.45	21.5	2.7	3.3	5	7	Basin 100	West	2.5
							East Side Flow	235	352		
							West Side Flow	40	57		
							Total Flow	276	409		

6hr-10 Year Analysis									
Composite C calculation			Composite C calculation			Composite C calculation			
Basin 10			Basin 50			Basin 90			
Land Use	C value	Area (ac)	Land Use	C value	Area (ac)	Land Use	C value	Area (ac)	
Suburban 20% Impervious	0.46	2.51	Suburban 20% Impervious	0.46	8.73	Suburban 20% Impervious	0.46	4.75	
Rural 10% Impervious	0.37	1.69	Pasture Sandy Soil	0.37	2.24	Rural 10% Impervious	0.37	66.46	
Full Composite & Area	0.42	4.20	Full Composite & Area	0.44	10.97	Full Composite & Area	0.38	71.21	
Composite C calculation			Composite C calculation			Composite C calculation			
Basin 20			Basin 60			Basin 100			
Land Use	C value	Area (ac)	Land Use	C value	Area (ac)	Land Use	C value	Area (ac)	
Suburban 20% Impervious	0.46	29.05	Suburban 20% Impervious	0.46	6.32	Suburban 20% Impervious	0.46	0.46	
Rural 10% Impervious	0.37	24.94	Rural 10% Impervious	0.37	5.24	Bare Packed Soil Smooth	0.40	1.41	
Full Composite & Area	0.42	53.99	Full Composite & Area	0.42	11.56	Rural 10% Impervious	0.37	2.88	
						Full Composite & Area	0.39	4.75	
Composite C calculation			Composite C calculation			Composite C calculation			
Basin 30			Basin 70			Basin 40			
Land Use	C value	Area (ac)	Land Use	C value	Area (ac)	Land Use	C value	Area (ac)	
Suburban 20% Impervious	0.46	6.70	Suburban 20% Impervious	0.46	6.04	Suburban 20% Impervious	0.46	1.22	
Rural 10% Impervious	0.37	3.20	Rural 10% impervious	0.37	45.92	Rural 10% Impervious	0.37	2.80	
Full Composite & Area	0.43	9.90	Full Composite & Area	0.38	51.96	Full Composite & Area	0.40	4.02	
Composite C calculation			Composite C calculation						
Basin 80									
Land Use	C value	Area (ac)							
Suburban 20% Impervious	0.46	0.48							
Rural 10% Impervious	0.37	0.56							
Full Composite & Area	0.41	1.04							

6hr-25 Year Analysis								
Composite C calculation			Composite C calculation			Composite C calculation		
Basin 10			Basin 50			Basin 90		
Land Use	C value	Area (ac)	Land Use	C value	Area (ac)	Land Use	C value	Area (ac)
Suburban 20% Impervious	0.53	2.51	Suburban 20% Impervious	0.53	8.73	Suburban 20% Impervious	0.53	4.75
Rural 10% Impervious	0.46	1.69	Rural 10% Impervious	0.46	2.24	Rural 10% Impervious	0.46	66.46
Full Composite & Area	0.50	4.20	Full Composite & Area	0.52	10.97	Full Composite & Area	0.46	71.21
Composite C calculation			Composite C calculation			Composite C calculation		
Basin 20			Basin 60			Basin 100		
Land Use	C value	Area (ac)	Land Use	C value	Area (ac)	Land Use	C value	Area (ac)
Suburban 20% Impervious	0.53	29.05	Suburban 20% Impervious	0.53	6.32	Suburban 20% Impervious	0.53	0.46
Rural 10% Impervious	0.46	24.94	Rural 10% Impervious	0.46	5.24	Bare Packed Soil Smooth	0.4	1.41
Full Composite & Area	0.50	53.99	Full Composite & Area	0.50	11.56	Rural 10% Impervious	0.46	2.88
						Full Composite & Area	0.45	4.75
Composite C calculation			Composite C calculation			Composite C calculation		
Basin 30			Basin 70			Basin 40		
Land Use	C value	Area (ac)	Land Use	C value	Area (ac)	Land Use	C value	Area (ac)
Suburban 20% Impervious	0.53	6.70	Suburban 20% Impervious	0.53	6.04	Suburban 20% Impervious	0.46	1.22
Rural 10% Impervious	0.46	3.20	Rural 10% Impervious	0.46	45.92	Rural 10% Impervious	0.37	2.80
Full Composite & Area	0.51	9.90	Full Composite & Area	0.47	51.96	Full Composite & Area	0.40	4.02
			Composite C calculation					
			Basin 80					
			Land Use	C value	Area (ac)			
			Suburban 20% Impervious	0.53	0.48			
			Rural 10% Impervious	0.46	0.56			
			Full Composite & Area	0.49	1.04			

Basin 10	
Sheet Flow (Upland Method)	
Segment ID	
Surface Description (from Upland Graph)	Nearly Bare and Untilled
High Elevation, ft	6178
Low Elevation, ft	6170
Length, ft	256
Slope (Percent)	
3.1	
Velocity, ft/s (Fig. 3-10)	1.8
Tt=L/(60*V), min	2.4
Shallow Concentrated Flow (Upland Method)	
Segment ID	
Surface Description	Nearly Bare and Untilled
High Elevation, ft	6170
Low Elevation, ft	6145
Length, ft	695
Slope (Percent)	3.6
Velocity, ft/s (Fig. 3-10)	1.9
Tt=L/(60*V), min	6.0
Total Time of Concentration, min	
8.4	

Basin 20		
Sheet Flow (Upland Method)		
Segment ID		
Surface Description (from Upland Graph)	Nearly Bare and Untilled	
High Elevation, ft	6249	
Low Elevation, ft	6247	
Length, ft	321	
Slope (Percent)	0.6	
Velocity, ft/s (Fig. 3-10)	0.8	
Tt=L/(60*V), min	6.8	
Shallow Concentrated Flow (Upland Method)		
Segment ID		
Surface Description	Nearly Bare and Untilled	
High Elevation, ft	6247	
Low Elevation, ft	6220	
Length, ft	894	
Slope (Percent)	3.0	
Velocity, ft/s (Fig. 3-10)	1.8	
Tt=L/(60*V), min	8.5	
Channel Flow (Kirpich Method)		
Segment ID		
Pipe Diameter/Material	N/A	N/A
High Elevation, ft	6220	6159
Low Elevation, ft	6159	6151
Length, ft	1732	380
Slope (Percent)	3.5	2.1
Velocity, ft/s	1.9	1.9
Tt=L/(60*V), min	8.8	3.3
Total Time of Concentration, min		
24.1		

Basin 30	
Sheet Flow (Upland Method)	
Segment ID	
Surface Description (from Upland Graph)	Nearly Bare and Untilled
High Elevation, ft	6151
Low Elevation, ft	6147
Length, ft	152
Slope (Percent)	
2.6	
Velocity, ft/s (Fig. 3-10)	1.6
Tt=L/(60*V), min	1.6
Shallow Concentrated Flow (Upland Method)	
Segment ID	
Surface Description	Nearly Bare and Untilled
High Elevation, ft	6147
Low Elevation, ft	6135
Length, ft	1293
Slope (Percent)	0.9
Velocity, ft/s (Fig. 3-10)	1.0
Tt=L/(60*V), min	21.6
Total Time of Concentration, min	
23.1	

Basin 50	
Sheet Flow (Upland Method)	
Segment ID	
Surface Description (from Upland Graph)	Minimum Tillage Cultivation
High Elevation, ft	6152
Low Elevation, ft	6149
Length, ft	98
Slope (Percent)	
3.1	
Velocity, ft/s (Fig. 3-10)	0.9
Tt=L/(60*V), min	1.8
Shallow Concentrated Flow (Upland Method)	
Segment ID	
Surface Description	Minimum Tillage Cultivation
High Elevation, ft	6149
Low Elevation, ft	6137
Length, ft	669
Slope (Percent)	1.8
Velocity, ft/s (Fig. 3-10)	0.7
Tt=L/(60*V), min	16.6
Channel Flow (Kirpich Method)	
Segment ID	
Pipe Diameter/Material	N/A
High Elevation, ft	6137
Low Elevation, ft	6129
Length, ft	675
Slope (Percent)	1.2
Velocity, ft/s	0.5
Tt=L/(60*V), min	6.5
Total Time of Concentration, min	
24.9	

Basin 60	
Sheet Flow (Upland Method)	
Segment ID	
Surface Description (from Upland Graph)	Nearly Bare and Untilled
High Elevation, ft	6205
Low Elevation, ft	6195
Length, ft	297
Slope (Percent)	
3.4	
Velocity, ft/s (Fig. 3-10)	1.9
Tt=L/(60*V), min	2.7
Shallow Concentrated Flow (Upland Method)	
Segment ID	
Surface Description	Nearly Bare and Untilled
High Elevation, ft	6195
Low Elevation, ft	6145
Length, ft	1240
Slope (Percent)	
4.0	
Velocity, ft/s (Fig. 3-10)	2.0
Tt=L/(60*V), min	10.2
Total Time of Concentration, min	12.8

Basin 70	
Sheet Flow (Upland Method)	
Segment ID	
Surface Description (from Upland Graph)	Nearly Bare and Untilled
High Elevation, ft	6250
Low Elevation, ft	6245
Length, ft	372
Slope (Percent)	
1.3	
Velocity, ft/s (Fig. 3-10)	1.2
Tt=L/(60*V), min	5.3
Shallow Concentrated Flow (Upland Method)	
Segment ID	
Surface Description	Nearly Bare and Untilled
High Elevation, ft	6245
Low Elevation, ft	6230
Length, ft	538
Slope (Percent)	
2.8	
Velocity, ft/s (Fig. 3-10)	1.7
Tt=L/(60*V), min	5.3
Channel Flow (Kirpich Flow)	
Segment ID	
Pipe Diameter/Material	N/A
High Elevation, ft	6170
Low Elevation, ft	6140
Length, ft	1222
Slope (Percent)	
2.5	
Velocity, ft/s	1.8
Tt=L/(60*V), min	7.7
Total Time of Concentration, min	26.5

Basin 80	
Sheet Flow (Upland Method)	
Segment ID	
Surface Description (from Upland Graph)	Minimum Tillage Cultivation
High Elevation, ft	6156
Low Elevation, ft	6154
Length, ft	106
Slope (Percent)	
1.9	
Velocity, ft/s (Fig. 3-10)	0.7
Tt=L/(60*V), min	2.6
Shallow Concentrated Flow (Upland Method)	
Segment ID	
Surface Description	Minimum Tillage Cultivation
High Elevation, ft	6154
Low Elevation, ft	6140
Length, ft	608
Slope (Percent)	
2.3	
Velocity, ft/s (Fig. 3-10)	1.5
Tt=L/(60*V), min	6.6
Total Time of Concentration, min	9.2

Basin 90	
Sheet Flow (Upland Method)	
Segment ID	
Surface Description (from Upland Graph)	Nearly Bare and Untilled
High Elevation, ft	6223
Low Elevation, ft	6222
Length, ft	368
Slope (Percent)	
0.3	
Velocity, ft/s (Fig. 3-10)	0.5
Tt=L/(60*V), min	11.9
Shallow Concentrated Flow (Upland Method)	
Segment ID	
Surface Description	Nearly Bare and Untilled
High Elevation, ft	6222
Low Elevation, ft	6214
Length, ft	465
Slope (Percent)	
1.7	
Velocity, ft/s (Fig. 3-10)	1.3
Tt=L/(60*V), min	5.9
Channel Flow (Kirpich Method)	
Segment ID	
Pipe Diameter/Material	N/A
High Elevation, ft	6168
Low Elevation, ft	6140
Length, ft	1021
Slope (Percent)	2.7
Velocity, ft/s	0.9
Tt=L/(60*V), min	6.46
Total Time of Concentration, min	31.7

Basin 100	
Sheet Flow (Upland Method)	
Segment ID	
Surface Description (from Upland Graph)	Minimum Tillage Cultivation
High Elevation, ft	6182
Low Elevation, ft	6179
Length, ft	126
Slope (Percent)	
2.4	
Velocity, ft/s (Fig. 3-10)	0.8
Tt=L/(60*V), min	2.7
Shallow Concentrated Flow (Upland Method)	
Segment ID	
Surface Description	Minimum Tillage Cultivation
High Elevation, ft	6179
Low Elevation, ft	6140
Length, ft	1083
Slope (Percent)	
3.6	
Velocity, ft/s (Fig. 3-10)	1.0
Tt=L/(60*V), min	18.8
Total Time of Concentration, min	21.5

Basin 40	
Sheet Flow (Upland Method)	
Segment ID	
Surface Description (from Upland Graph)	Nearly Bare and Untilled
High Elevation, ft	6140
Low Elevation, ft	6137
Length, ft	142
Slope (Percent)	
2.1	
Velocity, ft/s (Fig. 3-10)	1.6
Tt=L/(60*V), min	1.5
Shallow Concentrated Flow (Upland Method)	
Segment ID	
Surface Description	Nearly Bare and Untilled
High Elevation, ft	6137
Low Elevation, ft	6128
Length, ft	637
Slope (Percent)	
1.4	
Velocity, ft/s (Fig. 3-10)	1.0
Tt=L/(60*V), min	10.6
Total Time of Concentration, min	12.1

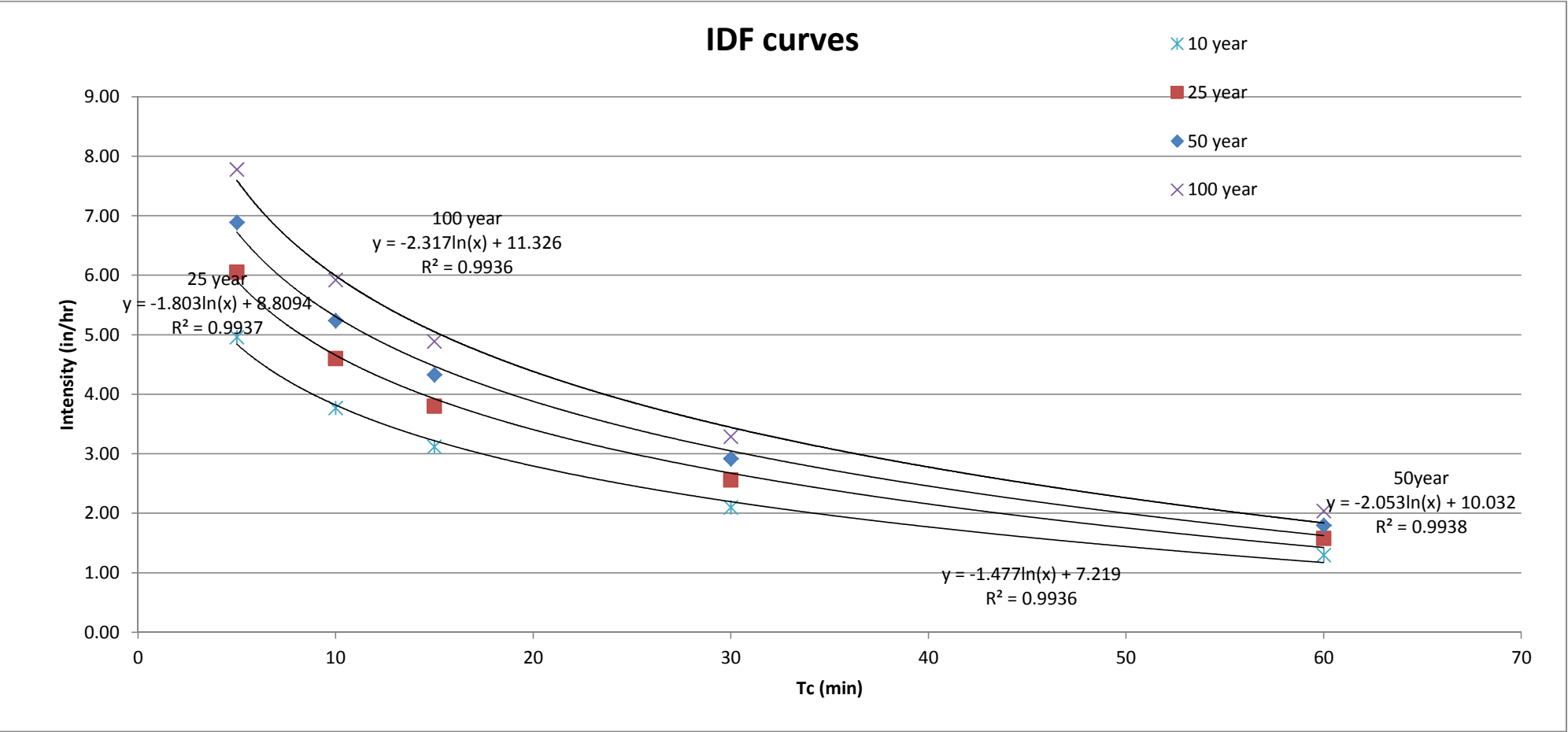
Precipitation Intensity Estimates (in/hr)																		
ARI* (years)	5	10	15	30	60	120	3 hr	6 hr	12 hr	24 hr	48 hr	4 day	7 day	10 day	20 day	30 day	45 day	60 day
1	2.4	1.82	1.51	1.02	0.629	0.375	0.267	0.154	0.088	0.051	0.029	0.017	0.011	0.009	0.006	0.005	0.004	0.003
2	3.11	2.37	1.96	1.32	0.816	0.48	0.34	0.195	0.11	0.064	0.036	0.021	0.014	0.011	0.007	0.006	0.005	0.004
5	4.16	3.17	2.62	1.76	1.09	0.632	0.442	0.249	0.139	0.079	0.045	0.026	0.017	0.013	0.009	0.007	0.006	0.005
10	4.96	3.77	3.12	2.1	1.3	0.754	0.524	0.291	0.162	0.092	0.051	0.03	0.019	0.015	0.01	0.008	0.006	0.006
25	6.05	4.6	3.8	2.56	1.58	0.92	0.639	0.35	0.193	0.109	0.061	0.035	0.023	0.018	0.011	0.009	0.007	0.006
50	6.89	5.24	4.33	2.92	1.8	1.05	0.728	0.396	0.216	0.122	0.068	0.039	0.025	0.02	0.012	0.01	0.008	0.007
100	7.78	5.92	4.89	3.29	2.04	1.19	0.824	0.444	0.241	0.135	0.075	0.043	0.028	0.022	0.014	0.011	0.008	0.007
200	8.68	6.61	5.46	3.68	2.28	1.34	0.925	0.494	0.266	0.149	0.083	0.047	0.03	0.024	0.015	0.012	0.009	0.008
500	9.92	7.55	6.24	4.2	2.6	1.55	1.06	0.561	0.3	0.167	0.092	0.053	0.033	0.027	0.016	0.012	0.01	0.008
1000	10.9	8.3	6.86	4.62	2.86	1.71	1.18	0.616	0.327	0.181	0.1	0.057	0.036	0.028	0.017	0.013	0.01	0.009

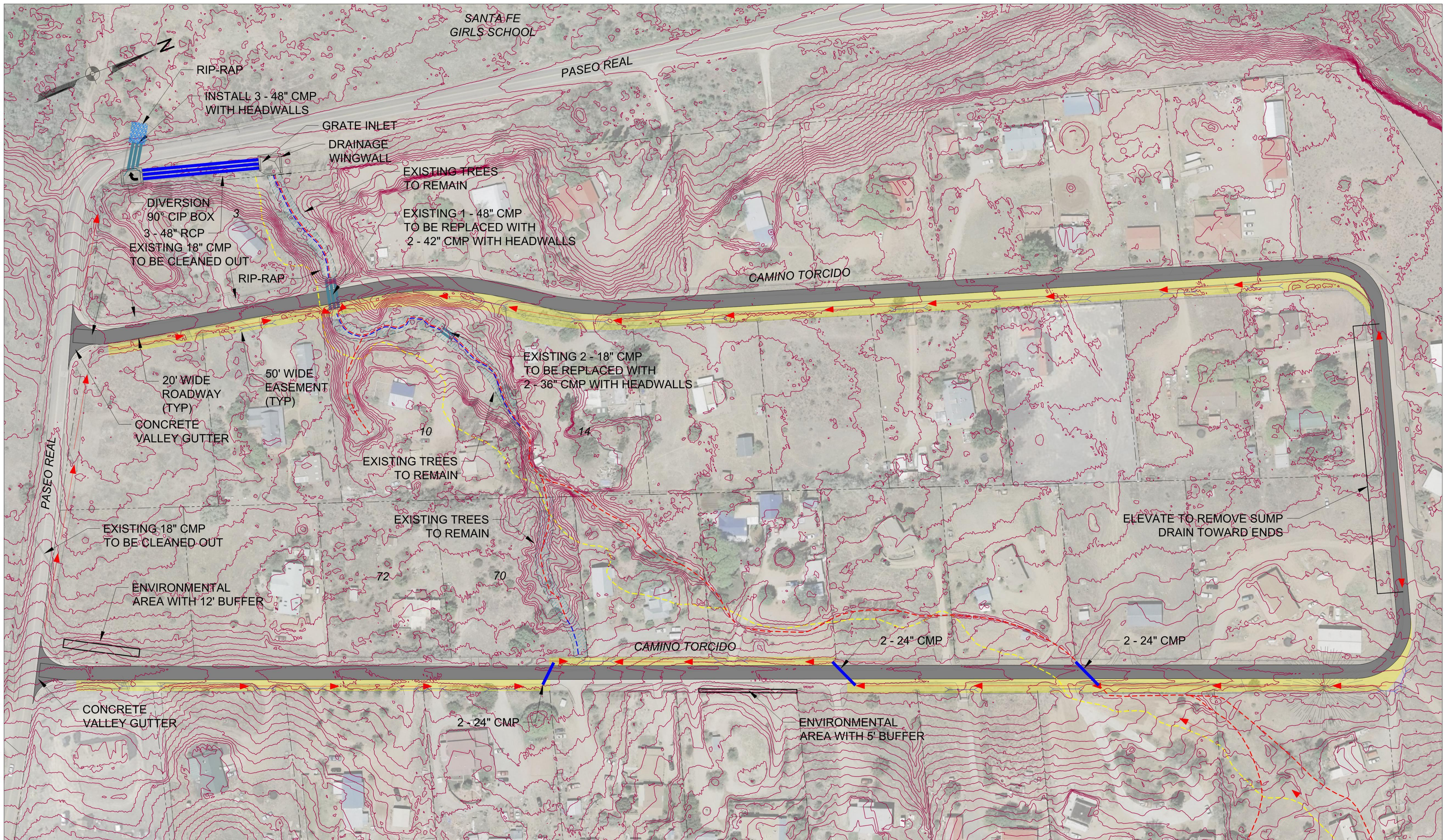
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50 year IDF eqn = -2.05 ln(x) 10.03

25 year IDF eqn = -1.8 ln(x) 8.81

10 year IDF eqn = -1.48 ln(x) 7.22



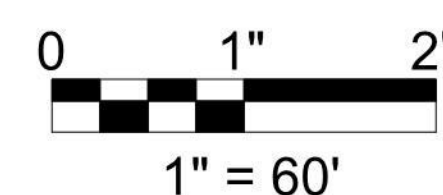


LEGEND:

- ROADWAY IMPROVEMENTS
- PROPOSED 25' DRAINAGE EASEMENT
- APPROX. EXISTING 10' DRAINAGE EASEMENT (1971) TO BE REMOVED
- PARCEL NUMBER / ID

- PROPOSED DRIVEWAY CULVERTS
- PROPOSED FLOW PATH
- APPROX. LOCATION OF EXISTING PROPERTY LINES
- OBSERVED FLOWPATH
- FLOW DIRECTION
- PROPOSED ROADSIDE DITCH

SCALE:



SANTA FE COUNTY, NEW MEXICO

OPTION 3

CAMINO TORCIDO ROAD IMPROVEMENTS PROJECT
PRELIMINARY PROPOSED ROADWAY & DRAINAGE
PLAN

HDR PROJECT NO. 10061021

12-07-2017

July 7, 2017

Mr. Edward DuBois, P.E.
HDR
2155 Louisiana Blvd. NE
Suite 9500
Albuquerque, NM 87110

Report on Control Survey for Camino Torcido Loop Topographic Survey, City of Santa Fe, N.M.

The following is a summary of the procedures used and the results obtained during our recent field surveys on the above-mentioned project:

1. The scope of work called for CobbFendley to set and survey a minimum of 4 primary control points throughout the project area. The control points were to be established in locations suitable for future construction activities.
2. The control points were observed utilizing GPS RTK procedures referenced to the "Trimble Survey Regional VRSNow RTK Network". These observations were conducted using Trimble R8 GNSS receivers in which all control points were observed a minimum of two times each utilizing differing satellite constellations. The points were then re-initialized upon using adjustable height rover rods to ensure repeatable results. The redundant observations were then averaged to obtain the final state plane coordinates and elevations. A local project combined factor was then computed and subsequently used to generate the modified (surface) coordinates. The final coordinates and elevations were checked with observations to the NGS Control Station "SC 11" (see attached control station datasheet).
3. The data is delivered in the following format:
 - New Mexico State Plane Coordinates (NAD 83 – Central Zone) modified to surface local project coordinates (Project Combined Factor = 1.0003885761 at 0,0 origin)
 - Elevations referred to the NAVD 88 datum and modeled by GEOID 12A
 - Coordinates and elevations expressed in U.S. Survey Feet
4. Attached as additional reference information are the following:
 - Control point listings in both N.M. State Plane grid coordinates and modified (surface) local project coordinates and elevations
 - NGS Control Station datasheet
 - CobbFendley Control Point Description Sheets

I, Randolph C. Hewitt, New Mexico Professional Surveyor No. 14730, do hereby certify that this Control Survey Report was prepared by me or under my direct supervision based on an actual survey on the ground as described herein; that I am responsible for this survey; and that the survey and report meet the minimum standards for surveying in New Mexico.



Randolph C. Hewitt, NMPS No. 14730

July 7, 2017

Date

Local Project Coordinates and Elevations**Topo Survey : Torcido Loop - HDR****Control - Torcido Loop**

Cobb Fendley & Associates, Inc.
 3820 Academy Parkway North, N.E.
 Albuquerque, New Mexico 87109
 United States of America

Phone: (505) 508-0786
 Fax: (505) 508-0837
 www.cobbfendley.com
 rhewitt@cobbfendley.com

Project file data**Coordinate System**

Name:	Q:\2017\02006_HDR\04_Torcido Loop\SUR	Name:	US State Plane 1983
	\VRS Ties\VRS Control.vce	Datum:	NAD 1983 (Conus)
Size:	43 KB	Zone:	New Mexico Central 3002
Modified:	7/6/2017 1:54:05 PM (UTC:-6)	Geoid:	GEOID12A (Conus)
Time zone:	Mountain Standard Time	Vertical datum:	NAVD 88
Reference number:	1702-006-04		
Description:	Control - Torcido Loop		
Comment 1:			CF = 1.0003885761
Comment 2:			1/CF = 0.9996115748
Comment 3:			

Point List

ID	Northing (US survey foot)	Easting (US survey foot)	Elevation (US survey foot)	Feature Code
100	1673151.550	1679476.299	6136.395	CP-100 (5RB/PC)
101	1674953.718	1680268.533	6151.758	CP-101 (5RB/PC)
102	1675136.678	1679736.170	6144.737	CP-102 (5RB/PC)
103	1673342.927	1679113.359	6128.576	CP-103 (5RB/PC)

7/6/2017 2:17:01 PM	Q:\2017\02006_HDR\04_Torcido Loop\SUR\VRS Ties\VRS Control.vce	Trimble Business Center
---------------------	---	-------------------------

State Plane Coordinates and Elevations

Topo Survey : Torcido Loop - HDR		Control - Torcido Loop	
Cobb Fendley & Associates, Inc.		Phone: (505) 508-0786	
3820 Academy Parkway North, N.E.		Fax: (505) 508-0837	
		www.cobbfendley.com	
Albuquerque, New Mexico 87109		rhewitt@cobbfendley.com	
United States of America			
Project file data		Coordinate System	
Name:	Q:\2017\02006_HDR\04_Torcido Loop\SUR \VRS Ties\VRS Control.vce	Name:	US State Plane 1983
Size:	43 KB	Datum:	NAD 1983 (Conus)
Modified:	7/6/2017 1:54:05 PM (UTC:-6)	Zone:	New Mexico Central 3002
Time zone:	Mountain Standard Time	Geoid:	GEOID12A (Conus)
Reference number:	1702-006-04	Vertical datum:	NAVD 88
Description:	Control - Torcido Loop		
Comment 1:			
Comment 2:			
Comment 3:			

Additional Coordinate System Details

Local Site Settings			
Project latitude:	N30°53'39.07852"	Ground scale factor:	0.9996115748
Project longitude:	W111°28'36.02951"	False northing offset:	0.000
Project height:	5998.291	False easting offset:	0.000

Point List

ID	Northing (US survey foot)	Easting (US survey foot)	Elevation (US survey foot)	Feature Code
100	1672501.656	1678823.948	6136.395	CP-100 (5RB/PC)
101	1674303.124	1679615.874	6151.758	CP-101 (5RB/PC)
102	1674486.013	1679083.718	6144.737	CP-102 (5RB/PC)
103	1672692.958	1678461.149	6128.576	CP-103 (5RB/PC)

7/6/2017 2:20:37 PM	Q:\2017\02006_HDR\04_Torcido Loop\SUR\VRS Ties\VRS Control.vce	Trimble Business Center
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The NGS Data Sheet

See file [dsdata.pdf](#) for more information about the datasheet.

```
PROGRAM = datasheet95, VERSION = 8.12.1
1 National Geodetic Survey, Retrieval Date = JUNE 9, 2017
FO0894 *****
FO0894 DESIGNATION - 11 SC
FO0894 PID - FO0894
FO0894 STATE/COUNTY- NM/SANTA FE
FO0894 COUNTRY - US
FO0894 USGS QUAD - TURQUOISE HILL (1993)
FO0894
FO0894 *CURRENT SURVEY CONTROL
FO0894
FO0894* NAD 83(2011) POSITION- 35 34 23.37813(N) 106 05 14.35939(W) ADJUSTED
FO0894* NAD 83(2011) ELLIP HT- 1862.856 (meters) (06/27/12) ADJUSTED
FO0894* NAD 83(2011) EPOCH - 2010.00
FO0894* NAVD 88 ORTHO HEIGHT - 1882.290 (meters) 6175.48 (feet) ADJUSTED
FO0894
FO0894 GEOID HEIGHT - -19.480 (meters) GEOID12B
FO0894 NAD 83(2011) X - -1,439,602.942 (meters) COMP
FO0894 NAD 83(2011) Y - -4,991,766.698 (meters) COMP
FO0894 NAD 83(2011) Z - 3,690,857.007 (meters) COMP
FO0894 LAPLACE CORR - 5.72 (seconds) DEFLEC12B
FO0894 DYNAMIC HEIGHT - 1879.721 (meters) 6167.05 (feet) COMP
FO0894 MODELED GRAVITY - 979,201.8 (mgal) NAVD 88
FO0894
FO0894 VERT ORDER - FIRST CLASS II
FO0894
FO0894 Network accuracy estimates per FGDC Geospatial Positioning Accuracy
FO0894 Standards:
FO0894 FGDC (95% conf, cm) Standard deviation (cm) CorrNE
FO0894 Horiz Ellip SD_N SD_E SD_h (unitless)
FO0894 -----
FO0894 NETWORK 0.32 0.55 0.14 0.12 0.28 0.02549690
FO0894 -----
FO0894 Click here for local accuracies and other accuracy information.
FO0894
FO0894
FO0894 The horizontal coordinates were established by GPS observations
FO0894 and adjusted by the National Geodetic Survey in June 2012.
FO0894
FO0894 NAD 83(2011) refers to NAD 83 coordinates where the reference frame has
FO0894 been affixed to the stable North American tectonic plate. See
FO0894 NA2011 for more information.
FO0894
FO0894 The horizontal coordinates are valid at the epoch date displayed above
FO0894 which is a decimal equivalence of Year/Month/Day.
FO0894
FO0894 The orthometric height was determined by differential leveling and
FO0894 adjusted by the NATIONAL GEODETIC SURVEY
FO0894 in June 1991.
FO0894
FO0894 Significant digits in the geoid height do not necessarily reflect accuracy.
FO0894 GEOID12B height accuracy estimate available here.
FO0894
FO0894 The X, Y, and Z were computed from the position and the ellipsoidal ht.
FO0894
FO0894 The Laplace correction was computed from DEFLEC12B derived deflections.
FO0894
FO0894 The ellipsoidal height was determined by GPS observations
FO0894 and is referenced to NAD 83.
FO0894
FO0894 The dynamic height is computed by dividing the NAVD 88
FO0894 geopotential number by the normal gravity value computed on the
FO0894 Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45
FO0894 degrees latitude (g = 980.6199 gals.).
FO0894
FO0894 The modeled gravity was interpolated from observed gravity values.
FO0894
FO0894 The following values were computed from the NAD 83(2011) position.
FO0894
FO0894; North East Units Scale Factor Converg.
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FO0894:SPC NM C - 507,169.815 514,744.808 MT 0.99990268 +0 05 40.7
FO0894:SPC NM C - 1,663,939.63 1,688,791.92 sFT 0.99990268 +0 05 40.7
FO0894:UTM 13 - 3,937,151.302 401,474.962 MT 0.99971962 -0 37 57.3
FO0894
FO0894! - Elev Factor x Scale Factor = Combined Factor
FO0894:SPC NM C - 0.99970770 x 0.99990268 = 0.99961041
FO0894:UTM 13 - 0.99970770 x 0.99971962 = 0.99942740
FO0894
FO0894_U.S. NATIONAL GRID SPATIAL ADDRESS: 13SDV0147437151(NAD 83)
FO0894
FO0894 SUPERSEDED SURVEY CONTROL
FO0894
FO0894 NAD 83(2007)- 35 34 23.37788(N) 106 05 14.36028(W) AD(2002.00) 0
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FO0894 ELLIP H (08/10/01) 1862.900 (m) GP() 3 2
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FO0894 ELLIP H (03/20/97) 1862.944 (m) GP() 3 1
FO0894 NAVD 88 1882.29 (m) 6175.5 (f) LEVELING 3
FO0894
FO0894.Superseded values are not recommended for survey control.
FO0894
FO0894.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
FO0894.See file [dsdata.pdf](#) to determine how the superseded data were derived.
FO0894
FO0894_MARKER: DB = BENCH MARK DISK
FO0894_SETTING: 7 = SET IN TOP OF CONCRETE MONUMENT
FO0894_STAMPING: 11 SC 1951 6172
FO0894_MARK LOGO: USGS
FO0894_PROJECTION: PROJECTING 15 CENTIMETERS
FO0894_MAGNETIC: N = NO MAGNETIC MATERIAL
FO0894_STABILITY: C = MAY HOLD, BUT OF TYPE COMMONLY SUBJECT TO
FO0894+STABILITY: SURFACE MOTION
FO0894_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR
FO0894+SATELLITE: SATELLITE OBSERVATIONS - 2004
FO0894
FO0894 HISTORY - Date Condition Report By
FO0894 HISTORY - 1951 MONUMENTED USGS
FO0894 HISTORY - 1984 GOOD NGS
FO0894 HISTORY - 19960105 GOOD CHANCE
FO0894 HISTORY - 2004 GOOD BOHAN
FO0894 HISTORY - 20050616 GOOD INDIV
FO0894
FO0894 STATION DESCRIPTION
FO0894
FO0894'DESCRIBED BY NATIONAL GEODETIC SURVEY 1984
FO0894'17.3 KM (10.75 MI) SW FROM SANTA FE.
FO0894'11.3 KM (7.0 MI) SOUTHWEST ALONG U.S. HIGHWAY 85 (CERRILLOS ROAD) FROM
FO0894'ITS JUNCTION WITH U.S. HIGHWAY 285 (ST. FRANCIS DRIVE) IN SANTA FE,
FO0894'THENCE 6.0 KM (3.75 MI) SOUTHWEST ALONG INTERSTATE HIGHWAY 25, 0.2 KM
FO0894'(0.1 MI) SOUTHWEST OF MILEPOST 274, 60.4 M (198.2 FT) SOUTHEAST OF THE
FO0894'CENTERLINE OF THE NORTHEAST BOUND LANES OF THE HIGHWAY, 22.6 M
FO0894'(74.1 FT) SOUTHEAST OF THE CENTERLINE OF A FRONTAGE ROAD, 6.3 M
FO0894'(20.7 FT) SOUTHWEST OF A FENCE CORNER, 5.6 M (18.4 FT) NORTHEAST OF A
FO0894'FIELD ENTRANCE, AND 0.6 M (2.0 FT) NORTHWEST OF A FENCE.
FO0894'THE MARK IS 0.3 METERS S FROM A WITNESS POST
FO0894'THE MARK IS 0.3 M BELOW THE FRONTAGE ROAD.
FO0894
FO0894 STATION RECOVERY (1996)
FO0894
FO0894'RECOVERY NOTE BY JE CHANCE AND ASSOCIATES 1996 (MFY)
FO0894'RECOVERED IN GOOD CONDITION. A NEW AND COMPLETE DESCRIPTION FOLLOWS
FO0894'THE STATION IS LOCATED APPROXIMATELY 17.3 KM (10.75 MI) SOUTHWEST OF
FO0894'THE CITY OF SANTA FE ALONG INTERSTATE HIGHWAY 25. THE STATION IS
FO0894'LOCATED ON STATE OF NEW MEXICO HIGHWAY RIGHT-OF-WAY TO REACH THE
FO0894'STATION FROM THE JUNCTION OF INTERSTATE 25 AND STATE HIGHWAY 599 (EXIT
FO0894'276 UNDERPASS ON INTERSTATE 25) , PROCEED SOUTHEAST ON STATE HIGHWAY
FO0894'599 FOR 0.64 KM (0.40 MI) TO THE FRONTAGE ROAD ON THE RIGHT. TURN
FO0894'RIGHT AND GO SOUTHWEST FOR 3.6 KM (2.25 MI) ON THE FRONTAGE ROAD TO
FO0894'THE STATION ON THE LEFT THE STATION IS A BENCH MARK DISK SET IN THE
FO0894'TOP OF A ROUND CONCRETE MONUMENT. THE STATION IS LOCATED 0.2 KM (0.10
FO0894'MI) SOUTHWEST OF MILEPOST 274, 60.4 M (198.2 FT) SOUTHEAST OF THE
FO0894'CENTERLINE OF THE NORTHEAST BOUND LANES OF INTERSTATE 25, 22.6 M (74.1
FO0894'FT) SOUTHEAST OF THE CENTERLINE OF THE FRONTAGE ROAD, 6.3 M (20.7 FT)
FO0894'SOUTHWEST OF A FENCE CORNER, 0.5 M (1.6 FT) NORTHWEST OF A FENCE, 0.2
FO0894'M (0.7 FT) SOUTHWEST FROM A WITNESS POST, AND 0.3 M (1.0 FT) BELOW THE
FO0894'FRONTAGE ROAD
FO0894
FO0894 STATION RECOVERY (2004)
FO0894
FO0894'RECOVERY NOTE BY BOHANNAN HUSTON INCORPORATED 2004
FO0894'RECOVERY NOTE BY BOHANNAN HUSTON INCORPORATED 2004 RECOVERED IN GOOD

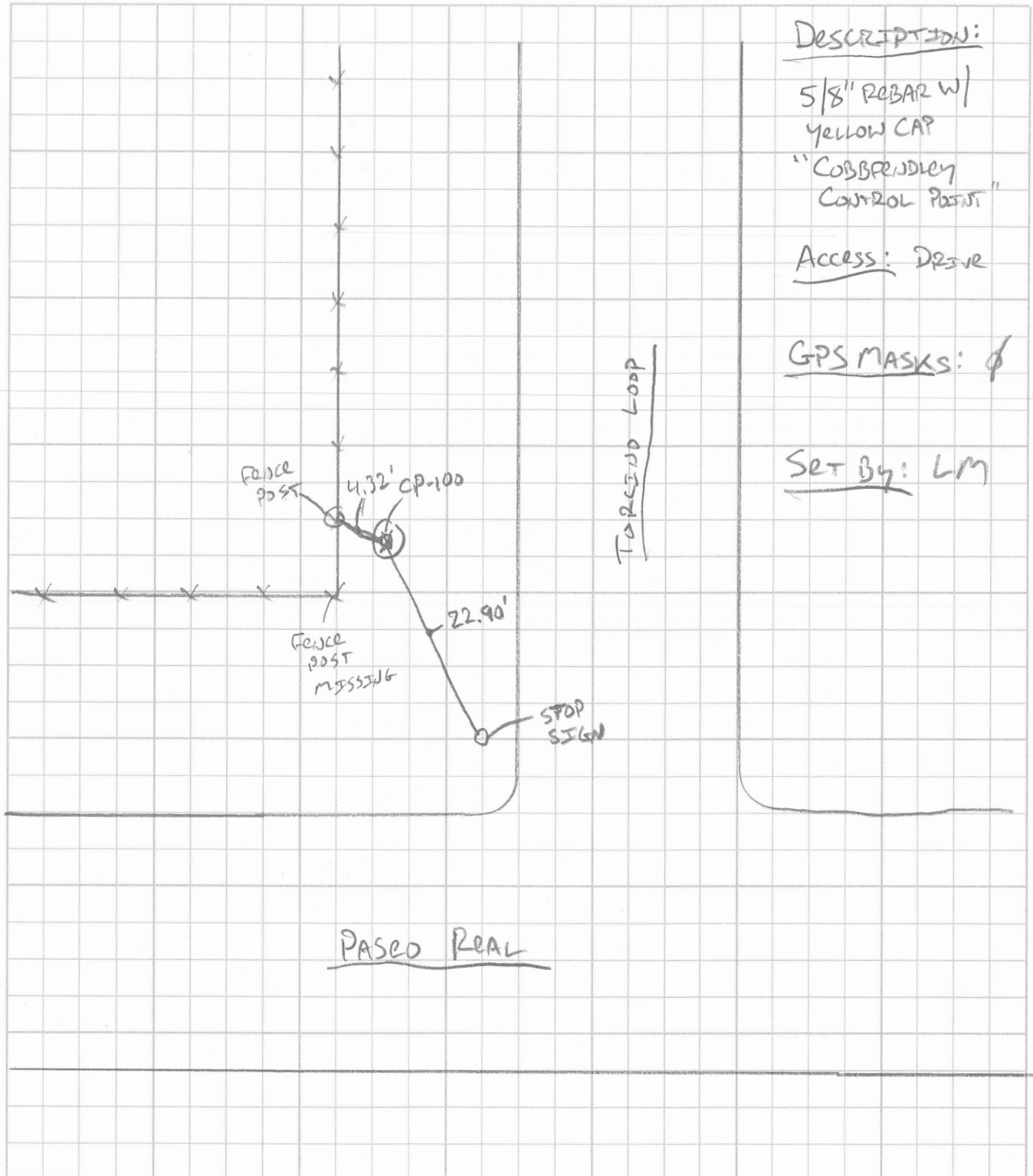
DATASHEETS

FO0894'CONDITION.
FO0894
FO0894 STATION RECOVERY (2005)
FO0894
FO0894'RECOVERY NOTE BY INDIVIDUAL CONTRIBUTORS 2005 (BHI)
FO0894'RECOVERED IN GOOD CONDITION.

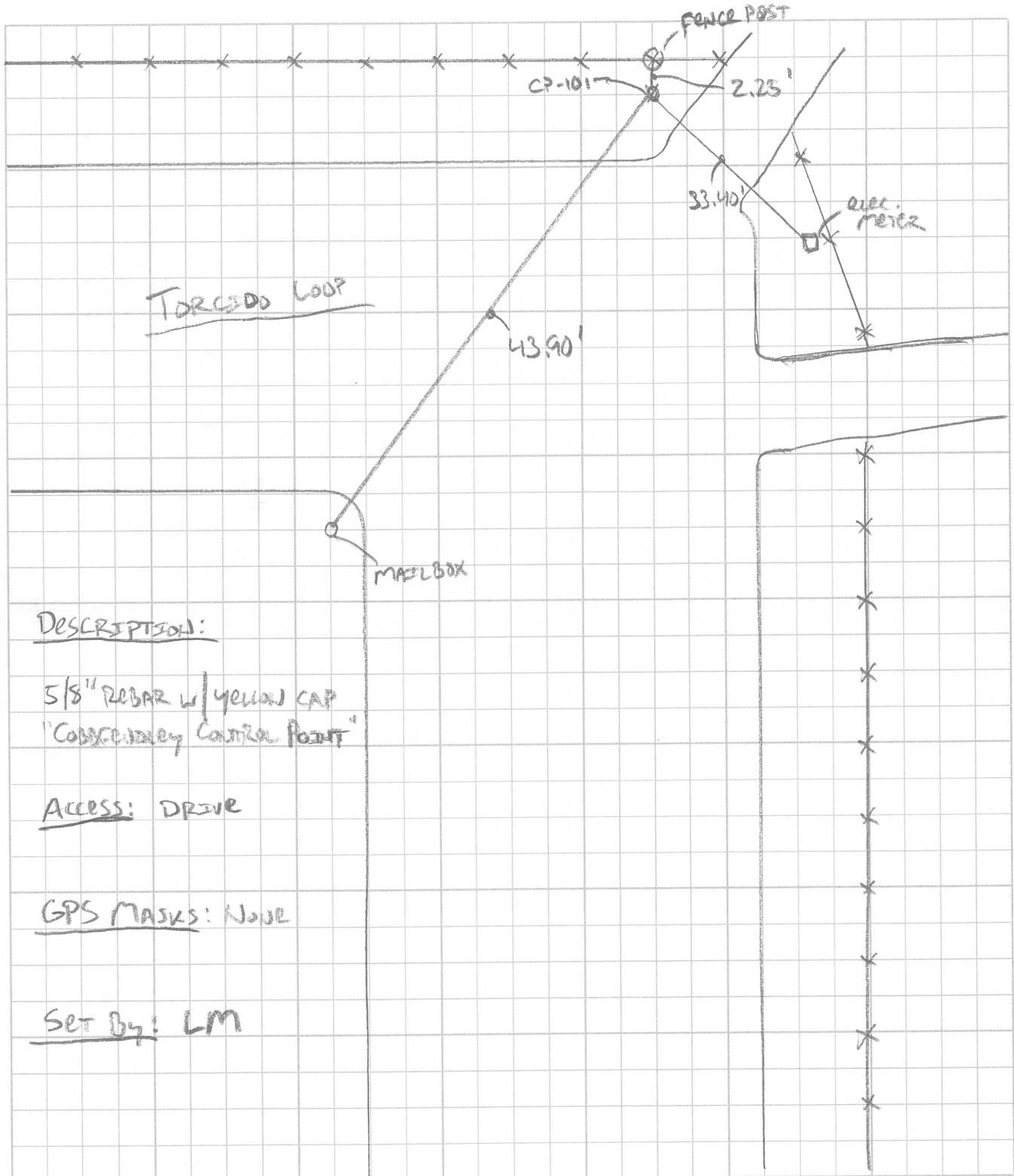
*** retrieval complete.
Elapsed Time = 00:00:02

Project Name: TORCIDO LOOP
 Project Number: 1702-006-04 Staff Name: L. MCKNIGHT
 Date: 6/12/17 Subject: CP-100

-2-



Project Name: TORCIDO LOOP
 Project Number: 1702-006-04 Staff Name: L. MCKNIGHT
 Date: 6/12/17 Subject: CP-101



Project Name: TORCUDO LOOP

Project Number: 1702-006-04 Staff Name: L. MCKNIGHT

Date: 6/12/17 Subject: CP-102

BLOCK / ADDBE WALL

CP-102

25.30'

CATV PED

TPED

49.20'

TORCUDO LOOP

SIGN
POST W/
NO SIGN

DESCRIPTION:

- 5/8" REBAR W/ YELLOW CAP
"COBBFENDLEY CONTROL POINT"

Access: DRIVE

GPS MASKS: ϕ

Set By: LM

Project Name: TORCIDA LOOP
 Project Number: 1702-006-04 Staff Name: L. MCKNIGHT
 Date: 6/12/17 Subject: CP-103

DESCRIPTION:

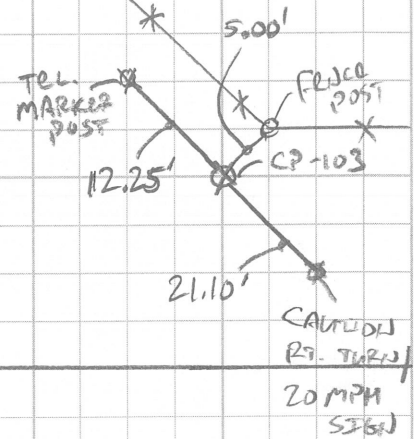
- 5/8" REBAR W/ YELLOW CAP
"COBBFENDLEY CONTROL POINT"

ACCESS: DRIVE

GPS MASKS: 0

Set By: LM

TORCIDA LOOP



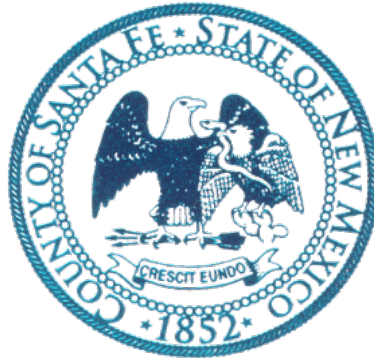
PASERO REAL

TRANSFORMER BOX

APPENDIX G

SAMPLE CONSTRUCTION AGREEMENT

**AGREEMENT BETWEEN SANTA FE COUNTY AND CONTRACTOR
FOR CONSTRUCTION SERVICES**



**SANTA FE COUNTY
ADMINISTRATIVE SERVICES DEPARTMENT
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.]

Hereafter "County":

Katherine Miller, County Manager
Santa Fe County
PO Box 276
Santa Fe, New Mexico 87504-0276
TELEPHONE: 505-986-6200
FAX: 505-995-2740

Hereafter "Contractor":

TELEPHONE: _____
E-MAIL ADDRESS: _____

ENGINEER

NAME: Horrocks Engineers,
Attention: Bryan R. Foote, PE
ADDRESS: 6100 Uptown Blvd., Ste. 105
Albuquerque, New Mexico 87110
TELEPHONE: (505) 872-2080

HDR Engineering Inc,
Attention: Chris Rodriguez, PE
2155 Louisiana Blvd. NE Suite 9500
Albuquerque, New Mexico 87110
(505) 830-5400

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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. _____ for construction services for _____; and

WHEREAS, the Contractor submitted its bid, dated _____ in response to IFB No. _____; and

WHEREAS, the County is authorized to enter into a construction contract for the Project pursuant to Sections 13-1-100, NMSA 1978; and

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; and

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	Attachment A
-Addenda and Modifications issued	Attachment B
before and after execution of this Contract	

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:

Insert description of work

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 _____ () calendar 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 _____ dollars (\$) 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 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	\$	
	\$	
	\$	
Total Contract Amount	\$, exclusive of NM grt

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 21 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 22nd 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 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 first written above.

SANTA FE COUNTY

Henry P. Roybal, Chair
Santa Fe County Board of County Commissioners

ATTESTATION

Geraldine Salazar
Santa Fe County Clerk

Approved as to form:

Gregory S. Shaffer
Santa Fe County Attorney

Date

Finance Department:

Don D. Moya
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 *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/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.
- 1.3 *Calendar Day*** Each and every Day shown on the calendar, beginning and ending at midnight.
- 1.4 *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.
- 1.5 *Contractor*** is a person, firm or corporation with whom the contract is entered into with the County.
- 1.6 *Construction Documents*** All drawings, specifications and addenda associated with a specific construction project.
- 1.7 *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.
- 1.8 *Day*** The word “day” means a calendar day of 24 hours measured from midnight to the next midnight.
- 1.9 *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).

- 1.10 *Lump Sum Agreement (See Stipulated Sum Agreement)***
- 1.11 *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.
- 1.12 *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.
- 1.13 *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.
- 1.14 *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.
- 1.15 *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).
- 1.16 *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.
- 1.17 *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.
- 1.18 *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.
- 1.19 *Services*** Includes services performed, workmanship, and material furnished or utilized in the performance of services.
- 1.20 *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).

- 1.21** *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.
- 1.22** *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.
- 1.23** *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.
- 1.24** *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.
- 1.25** *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 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 sub-subcontractors 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 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 30 days, the breaching party shall have a reasonable time to cure the breach, provided that, within 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 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 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 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 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 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 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 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 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

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 _____, 20__, 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 _____, 2017.

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 _____, 2017, 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 _____, 2017.

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 incur 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 _____ calendar days thereafter, which shall be _____, 2017, 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 _____ DEPARTMENT

By:

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 he 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 <input type="text"/> days.	
The date of Substantial Completion as of the date of this Change Order therefore is: <input type="text"/>	

CHANGE ORDER SIGNATURE PAGE

APPROVED

SANTA FE COUNTY By: _____ Date: _____

Approved as to form:

By: _____ Date: _____
R. Bruce Frederick
County Attorney

Finance Department:

By: _____ Date: _____
Stephanie S.
Clarke Finance
Director

CONTRACTOR By: _____ Date: _____

Title: _____

ARCHITECT/ENGINEER By: _____ Date: _____

Title: _____

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
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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)