



Purchasing Division

Invitation for Bid

IFB-4199-16-DH

B ½ Rd. Overpass at U.S. 50 Multimodal Conversion Project

Responses Due:

September 8, 2016 prior to 3:30 pm MST

Accepting Electronic Responses Only

Responses Only Submitted Through the Rocky Mountain E-Purchasing System (RMEPS)

<https://www.rockymountainbidsystem.com/default.asp>

(Purchasing Representative does not have access or control of the vendor side of RMEPS. If website or other problems arise during response submission, vendor **MUST** contact RMEPS to resolve issue prior to the response deadline. 800-835-4603)

Purchasing Representative:

Duane Hoff, Senior Buyer

duaneh@gjcity.org

(970)244-1545

This document has been developed specifically to solicit competitive responses for this solicitation, and may not be the same as previous City of Grand Junction/Mesa County solicitations. All vendors are urged to thoroughly review this solicitation prior to responding. Submittal by **FAX, EMAIL or HARD COPY IS NOT ACCEPTABLE** for this solicitation.

Invitation for Bids

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1. Instructions to Bidders

- 1.1. **Purpose:** The City of Grand Junction is soliciting competitive bids from qualified and interested companies for all labor, equipment, and materials required for the **B½ Rd. Overpass at U.S. 50 Multimodal Conversion Project**. All dimensions and scope of work should be verified by Contractors prior to submission of bids.

Note: This project shall be constructed in accordance with the current Davis Bacon Wage Rate Determination (Refer to Standard Special Provisions).

IFB Questions:

Duane Hoff, Senior Buyer

970-244-1545

duaneh@gjcity.org

- 1.2. **Mandatory Pre-Bid Meeting:** **Prospective bidders are required to attend the mandatory pre-bid meeting on August 30, 2016 at 10:00am.** Meeting location will be at City Hall in the City Council Auditorium, located at 250 N. 5th Street, Grand Junction, CO. This meeting also allows the Owner to know who is planning on submitting a bid for the project. The purpose of this visit will be to inspect and to clarify the contents of this Invitation for Bids (IFB).
- 1.3. **The Owner:** The Owner is the City of Grand Junction, Colorado and is referred to throughout this Solicitation. The term Owner means the Owner or his authorized representative.
- 1.4. **Prequalification Requirement: (CITY ONLY)** Contractors submitting bids over \$50,000 must be pre-qualified in accordance with the City's "*Rules and Procedures for Pre-qualification of Contractors*". All bids received by the specified time will be opened, but the City will reject bids over \$50,000 from contractors who have not been prequalified. Application forms for prequalification are available at the Administration Office of the Department of Public Works, City Hall, 250 North Fifth Street, Room 245. Call 970-256-4126 or 970-244-1555 for additional information. Contractors who are currently prequalified with the Colorado Department of Transportation (CDOT) will meet the requirements for prequalification by the City, unless the City has information or basis to the contrary. Due to the time required to process applications, *all applications must be submitted no later than two weeks prior to the Response Due Date.* Application link: <http://www.gjcity.org/PreQualification.aspx>
- 1.5. **Submission:** **Each bid shall be submitted in electronic format only, and only through the Rocky Mountain E-Purchasing website** (<https://www.rockymountainbidssystem.com/default.asp>). *This site offers both "free" and "paying" registration options that allow for full access of the Owner's documents and for electronic submission of proposals.* (Note: "free" registration may take up to 24 hours to process. Please Plan accordingly.) Please view our "**Electronic Vendor Registration Guide**" at <http://www.gjcity.org/BidOpenings.aspx> for details. (Purchasing Representative does not have access or control of the vendor side of

RMEPS. If website or other problems arise during response submission, vendor **MUST** contact RMEPS to resolve issue prior to the response deadline. **800-835-4603**)

- 1.6. Modification and Withdrawal of Bids Before Opening.** Bids may be modified or withdrawn by an appropriate document stating such, duly executed and submitted to the place where Bids are to be submitted at any time prior to Bid Opening.
- 1.7. Printed Form for Price Bid:** All Price Bids must be made upon the Price Bid Schedule attached, and should give the amounts both in words and in figures, and must be signed and acknowledged by the bidder.

The Offeror shall specify a unit price in figures for each pay item for which a quantity is given and shall provide the products (in numbers) of the respective unit prices and quantities in the Extended Amount column. The total Bid price shall be equal to the sum of all extended amount prices. When an item in the Price Bid Schedule provides a choice to be made by the Offeror, Offeror's choice shall be indicated in accordance with the specifications for that particular item and thereafter no further choice shall be permitted.

Where the unit of a pay item is lump sum, the lump sum amount shall be shown in the "extended amount" column and included in the summation of the total Bid.

All blank spaces in the Price Bid Schedule must be properly filled out.

Bids by corporations must be executed in the corporate name by the president or vice president or other corporate office accompanied by evidence of authority to sign. The corporate address and state of incorporation shall be shown below the signature.

Bids by partnerships must be executed in the partnership name and signed by a partner whose title must appear under the signature and the official address of the partnership must be shown below the signature.

All names must be typed or printed below the signature.

The Offeror's Bid shall contain an acknowledgement of receipt of all Addenda, the numbers of which shall be filled in on the Contractor's Bid Form.

The contact information to which communications regarding the Bid are to be directed must be shown.

- 1.8. Exclusions:** No oral, telephonic, emailed, or facsimile bid will be considered
- 1.9. Contract Documents:** The complete IFB and bidder's response compose the Contract Documents. Copies of bid documents can be obtained from the City Purchasing website, <http://www.gjcity.org/BidOpenings.aspx>.
- 1.10. Additional Documents:** ~~The July 2010 edition of the "City Standard Contract Documents for Capital Improvements Construction", Plans, Specifications and other Bid Documents are available for review or download on the Public Works &~~

~~Planning/Engineering page at www.gjcity.org. Electronic copies may be obtained on a CD format at the Department of Public Works and Planning at City Hall.~~

- 1.11. Definitions and Terms:** See Article I, Section 3 of the General Contract Conditions in the *Standard Contract Documents for Capital Improvements Construction*.
- 1.12. Examination of Specifications:** Bidders shall thoroughly examine and be familiar with the project Statement of Work. The failure or omission of any Offeror to receive or examine any form, addendum, or other document shall in no way relieve any Offeror from any obligation with respect to his bid. The submission of a bid shall be taken as evidence of compliance with this section. Prior to submitting a bid, each Offeror shall, at a minimum:
- a. Examine the *Contract Documents* thoroughly;
 - b. Visit the site to familiarize themselves with local conditions that may in any manner affect cost, progress, or performance of the Work;
 - c. Become familiar with federal, state, and local laws, ordinances, rules, and regulations that may in any manner affect cost, progress or performance of the Work;
 - d. Study and carefully correlate Bidder's observations with the *Contract Documents*, and;
 - e. Notify the Engineer of all conflicts, errors, ambiguities or discrepancies in or among the *Contract Documents*

On request, the Owner will provide each Offeror access to the site to conduct such investigations and tests as each Bidder deems necessary for submission of a Bid. It shall be the Offeror's responsibility to make or obtain any additional examinations, investigations, explorations, tests and studies and obtain any additional information and data which pertain to the physical conditions (including without limitation, surface, subsurface and underground utilities) at or contiguous to the site or otherwise which may affect cost, progress or performance of the work and which the Offeror deems necessary to determine its Bid for performing the work in accordance with the time, price and other terms and conditions of the *Contract Documents*. Location of any excavation or boring made by Offeror shall be subject to prior approval of Owner and applicable agencies. Offeror shall fill all holes, restore all pavements to match the existing structural section and shall clean up and restore the site to its former condition upon completion of such exploration. The Owner reserves the right to require the Offeror to execute an access agreement with the Owner prior to accessing the site.

The lands upon which the Work is to be performed, rights of way, and access thereto, and other lands designated for use by Contractor in performing the Work, are identified on the Drawings.

Information and data reflected in the *Contract Documents* with respect to underground utilities at or contiguous to the site are based upon information and data furnished to

the Owner and the Engineer by the owners of such underground utilities or others, and the Owner does not assume responsibility for the accuracy or completeness thereof, unless it is expressly provided otherwise in the *Contract Documents*.

By submission of a Bid, the Offeror shall be conclusively presumed to represent that the Offeror has complied with every requirement of these Instructions to Bidders, that the *Contract Documents* are not ambiguous and are sufficient in scope and detail to indicate and convey understanding of all terms and conditions for performance of the Work.

- 1.13. Questions Regarding Statement of Work:** Any information relative to interpretation of Scope of Work or specifications shall be requested of the Purchasing Representative, in writing, in ample time prior to the response time.
- 1.14. Addenda & Interpretations:** If it becomes necessary to revise any part of this solicitation, a written addendum will be posted electronically on the City's website at <http://www.gjcity.org/BidOpenings.aspx>. The Owner is not bound by any oral representations, clarifications, or changes made in the written specifications by Owner, unless such clarification or change is provided in written addendum form from the City Purchasing Representative.
- 1.15. Taxes:** The Owner is exempt from State retail and Federal tax. The bid price must be net, exclusive of taxes.
- 1.16. Sales and Use Taxes:** The Contractor and all Subcontractors are required to obtain exemption certificates from the Colorado Department of Revenue for sales and use taxes in accordance with the provisions of the General Contract Conditions. Bids shall reflect this method of accounting for sales and use taxes on materials, fixtures and equipment.
- 1.17. Offers Binding 60 Days:** Unless additional time is required by the Owner, or otherwise specified, all formal offers submitted shall be binding for sixty (60) calendar days following opening date, unless the Bidder, upon request of the Purchasing Representative, agrees to an extension.
- 1.18. Collusion Clause:** Each bidder by submitting a bid certifies that it is not party to any collusive action or any action that may be in violation of the Sherman Antitrust Act. Any and all bids shall be rejected if there is evidence or reason for believing that collusion exists among bidders. The Owner may, or may not, accept future bids for the same services or commodities from participants in such collusion.
- 1.19. Disqualification of Bidders:** A Bid will not be accepted from, nor shall a Contract be awarded to, any person, firm, or corporation that is in arrears to the Owner, upon debt or contract, or that has defaulted, as surety or otherwise, upon any obligation to the Owner, or that is deemed irresponsible or unreliable.

Bidders may be required to submit satisfactory evidence that they are responsible, have a practical knowledge of the project bid upon and that they have the necessary financial and other resources to complete the proposed Work.

Either of the following reasons, without limitation, shall be considered sufficient to disqualify a Bidder and Bid:

- a. More than one Bid is submitted for the same Work from an individual, firm, or corporation under the same or different name; and
- b. Evidence of collusion among Bidders. Any participant in such collusion shall not receive recognition as a Bidder for any future work of the Owner until such participant has been reinstated as a qualified bidder.

1.20. Public Disclosure Record: If the bidder has knowledge of their employee(s) or sub-contractors having an immediate family relationship with a City/County employee or elected official, the bidder must provide the Purchasing Representative with the name(s) of these individuals. These individuals are required to file an acceptable "Public Disclosure Record", a statement of financial interest, before conducting business with the City/County.

2. General Contract Conditions for Construction Projects

2.1. The Contract: This Invitation for Bid, submitted documents, and any negotiations, when properly accepted by the City/County, shall constitute a contract equally binding between the City/County and Contractor. The contract represents the entire and integrated agreement between the parties hereto and supersedes all prior negotiations, representations, or agreements, either written or oral. The contract may be amended or modified with Change Orders, Field Orders, or Addendums.

2.2. The Work: The term Work includes all labor necessary to produce the construction required by the Contract Documents, and all materials and equipment incorporated or to be incorporated in such construction.

2.3. Execution, Correlation, Intent, and Interpretations: The Contract Documents shall be signed in not less than triplicate by the Owner (City/County) and Contractor. City/County will provide the contract. By executing the contract, the Contractor represents that he/she has visited the site, familiarized himself with the local conditions under which the Work is to be performed, and correlated his observations with the requirements of the Contract Documents. The Contract Documents are complementary, and what is required by any one, shall be as binding as if required by all. The intention of the documents is to include all labor, materials, equipment and other items necessary for the proper execution and completion of the scope of work as defined in the technical specifications and drawings contained herein. All drawings, specifications and copies furnished by the City/County are, and shall remain, City/County property. They are not to be used on any other project, and with the exception of one contract set for each party to the contract, are to be returned to the owner on request at the completion of the work.

2.4. The Owner: The Owner is the City of Grand Junction and/or Mesa County, Colorado and is referred to throughout the Contract Documents. The term Owner means the

Owner or his authorized representative. The Owner shall, at all times, have access to the work wherever it is in preparation and progress. The Contractor shall provide facilities for such access. The Owner will make periodic visits to the site to familiarize himself generally with the progress and quality of work and to determine, in general, if the work is proceeding in accordance with the contract documents. Based on such observations and the Contractor's Application for Payment, the Owner will determine the amounts owing to the Contractor and will issue Certificates for Payment in such amounts, as provided in the contract. The Owner will have authority to reject work which does not conform to the Contract documents. Whenever, in his reasonable opinion, he considers it necessary or advisable to insure the proper implementation of the intent of the Contract Documents, he will have authority to require the Contractor to stop the work or any portion, or to require special inspection or testing of the work, whether or not such work can be then be fabricated, installed, or completed. The Owner will not be responsible for the acts or omissions of the Contractor, and sub-Contractor, or any of their agents or employees, or any other persons performing any of the work.

- 2.5. Contractor:** The Contractor is the person or organization identified as such in the Agreement and is referred to throughout the Contract Documents. The term Contractor means the Contractor or his authorized representative. The Contractor shall carefully study and compare the General Contract Conditions of the Contract, Specification and Drawings, Scope of Work, Addenda and Modifications and shall at once report to the Owner any error, inconsistency or omission he may discover. Contractor shall not be liable to the Owner for any damage resulting from such errors, inconsistencies or omissions. The Contractor shall not commence work without clarifying Drawings, Specifications, or Interpretations.
- 2.6. Sub-Contractors:** A sub-contractor is a person or organization who has a direct contract with the Contractor to perform any of the work at the site. The term sub-contractor is referred to throughout the contract documents and means a sub-contractor or his authorized representative.
- 2.7. Award of Sub-Contractors & Other Contracts for Portions of the Work:** As soon as practicable after bids are received and prior to the award of the contract, the successful Contractor shall furnish to the Owner, in writing for acceptance, a list of the names of the sub-contractors or other persons or organizations proposed for such portions of the work as may be designated in the proposal requirements, or, if none is so designated, the names of the sub-contractors proposed for the principal portions of the work. Prior to the award of the contract, the Owner shall notify the successful Contractor in writing if, after due investigation, has reasonable objection to any person or organization on such list. If, prior to the award of the contract, the Owner has a reasonable and substantial objection to any person or organization on such list, and refuses in writing to accept such person or organization, the successful Contractor may, prior to the award, withdraw their proposal without forfeiture of proposal security. If the successful Contractor submits an acceptable substitute with an increase in the proposed price to cover the difference in cost occasioned by the substitution, the Owner may, at their discretion, accept the increased proposal or may disqualify the Contractor. If, after the award, the Owner refuses to accept any person or organization on such list, the Contractor shall submit an acceptable substitute and the contract sum

shall be increased or decreased by the difference in cost occasioned by such substitution and an appropriate Change Order shall be issued. However, no increase in the contract sum shall be allowed for any such substitution unless the Contractor has acted promptly and responsively in submitting a name with respect thereto prior to the award.

- 2.8. Quantities of Work and Unit Price:** Materials or quantities stated as unit price items in the Bid are supplied only to give an indication of the general scope of the Work, and are as such, estimates only. The Owner does not expressly or by implication agree that the actual amount of Work or material will correspond therewith, and reserves the right after award to increase or decrease the quantity of any unit item of the Work without a change in the unit price except as set forth in Article VIII, Section 70 of the *General Contract Conditions*. The City also reserves the right to make changes in the Work (including the right to delete any bid item in its entirety or add additional bid items) as set forth in Article VIII, Sections 69 through 71 of the *General Contract Conditions*.
- 2.9. Substitutions:** The materials, products and equipment described in the *Solicitation Documents* shall be regarded as establishing a standard of required performance, function, dimension, appearance, or quality to be met by any proposed substitution. No substitution will be considered prior to receipt of Bids unless the Offeror submits a written request for approval to the City Purchasing Division at least ten (10) days prior to the date for receipt of Bids. Such requests for approval shall include the name of the material or equipment for which substitution is sought and a complete description of the proposed substitution including drawings, performance and test data, and other information necessary for evaluation, including samples if requested. The Offeror shall set forth changes in other materials, equipment, or other portions of the Work including changes of the work of other contracts, which incorporation of the proposed substitution would require to be included. The Owner's decision of approval or disapproval of a proposed substitution shall be final. If the Owner approves a proposed substitution before receipt of Bids, such approval will be set forth in an Addendum. Offerors shall not rely upon approvals made in any other manner.
- 2.10. Supervision and Construction Procedures:** The Contractor shall supervise and direct the work, using his best skill and attention. He shall be solely responsible for all construction means, methods, techniques, sequences and procedures and for coordinating all portions of the work under the contract.
- 2.11. Warranty:** The Contractor warrants to the Owner that all materials and equipment furnished under this contract will be new unless otherwise specified, and that all work will be of good quality, free from faults and defects and in conformance with the Contract Documents. All work not so conforming to these standards may be considered defective. If required by Owner, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment. If within ten (10) days after written notice to the Contractor requesting such repairs or replacement, the Contractor should neglect to make or undertake with due diligence to the same, the City may make such repairs or replacements. All indirect and direct costs of such correction or removal or replacement shall be at the Contractor's expense. The Contractor will also bear the expenses of making good all work of others destroyed or damaged by the correction, removal or replacement of his defective work.

- 2.12. Permits, Fees, & Notices:** The Contractor shall secure and pay for all permits, governmental fees and licenses necessary for the proper execution and completion of the work. The Contractor shall give all notices and comply with all laws, ordinances, rules, regulations and orders of any public authority bearing on the performance of the work. If the Contractor observes that any of the Contract Documents are at variance in any respect, he shall promptly notify the Owner in writing, and any necessary changes shall be adjusted by approximate modification. If the Contractor performs any work knowing it to be contrary to such laws, ordinances, rules and regulations, and without such notice to the Owner, he shall assume full responsibility and shall bear all costs attributable.
- 2.13. Responsibility for Those Performing the Work:** The Contractor shall be responsible to the Owner for the acts and omissions of all his employees and all sub-contractors, their agents and employees, and all other persons performing any of the work under a contract with the Contractor.
- 2.14. Use of the Site:** The Contractor shall confine operations at the site to areas permitted by law, ordinances, permits and the Contract Documents, and shall not unreasonably encumber the site with any materials or equipment.
- 2.15. Cleanup:** The Contractor at all times shall keep the premises free from accumulation of waste materials or rubbish caused by his operations. At the completion of work he shall remove all his waste materials and rubbish from and about the project, as well as all his tools, construction equipment, machinery and surplus materials.
- 2.16. Insurance:** The Contractor shall secure and maintain such insurance policies as will provide the coverage and contain other provisions specified in the General Contract Conditions, or as modified in the Special Contract Conditions.

The Contractor shall file a copy of the policies or Certificates of Insurance acceptable to the City with the Engineer within ten (10) Calendar Days after issuance of the Notice of Award. These Certificates of Insurance shall contain a provision that coverage afforded under the policies shall not be canceled unless at least thirty (30) Calendar Days prior written notice has been given to the City.

- 2.17. Indemnification:** The Contractor shall defend, indemnify and save harmless the Owner and the Colorado Department of Transportation (CDOT), and all its officers, employees, insurers, and self-insurance pool, from and against all liability, suits, actions, or other claims of any character, name and description brought for or on account of any injuries or damages received or sustained by any person, persons, or property on account of any negligent act or fault of the Contractor, or of any Contractor's agent, employee, sub-contractor or supplier in the execution of, or performance under, any contract which may result from proposal award. Contractor shall pay any judgment with cost which may be obtained against the Owner growing out of such injury or damages.
- 2.18. Miscellaneous Conditions:** Material Availability: Contractors must accept responsibility for verification of material availability, production schedules, and other

pertinent data prior to submission of bid. It is the responsibility of the bidder to notify the Owner immediately if materials specified are discontinued, replaced, or not available for an extended period of time. OSHA Standards: All bidders agree and warrant that services performed in response to this invitation shall conform to the standards declared by the US Department of Labor under the Occupational Safety and Health Act of 1970 (OSHA). In the event the services do not conform to OSHA standards, the Owner may require the services to be redone at no additional expense to the Owner.

- 2.19. Time:** Time is of the essence with respect to the time of completion of the Project and any other milestones or deadline which are part of the Contract. It will be necessary for each Bidder to satisfy the City of its ability to complete the Work within the Contract Time set forth in the Contract Documents. The Contract Time is the period of time allotted in the Contract Documents for completion of the work. The date of commencement of the work is the date established in a Notice to Proceed. If there is no Notice to Proceed, it shall be the date of the Contract or such other date as may be established therein, or as established as entered on the Bid Form. The Date of Substantial Completion of the work or designated portions thereof is the date certified by the Owner when construction is sufficiently complete, in accordance with the Contract Documents.
- 2.20. Progress & Completion:** The Contractor shall begin work on the date of commencement as defined in the Contract, and shall carry the work forward expeditiously with adequate forces and shall complete it within the contract time.
- 2.21. Payment & Completion:** The Contract Sum is stated in the Contract and is the total amount payable by the Owner to the Contractor for the performance of the work under the Contract Documents. Upon receipt of written notice that the work is ready for final inspection and acceptance and upon receipt of application for payment, the Owner's Project Manager will promptly make such inspection and, when he finds the work acceptable under the Contract Documents and the Contract fully performed, the Owner shall make payment in the manner provided in the Contract Documents.
- 2.22. Bid Bond:** Each Bid shall as a guaranty of good faith on the part of the Bidder be accompanied by a Bid Guaranty consisting of: a certified or cashier's check drawn on an approved national bank or trust company in the state of Colorado, and made payable without condition to the City; or a **Bid Bond** written by an approved corporate surety in favor of the City. The amount of the Bid Guaranty shall not be less than 5% of the total Bid amount. Once a Bid is accepted and a Contract is awarded, the apparent successful bidder has ten calendar days to enter into a contractor in the form prescribed and to furnish the bonds with a legally responsible and approved surety. Failure to do so will result in forfeiture of the Bid Guaranty to the City as Liquidated Damages.

Each bidder shall guaranty its total bid price for a period of sixty (60) Calendar Days from the date of the bid opening.

- 2.23. Performance & Payment Bonds:** Contractor shall furnish a Performance and a Payment Bond, each in an amount at least equal to that specified for the contract amount as security for the faithful performance and payment of all Contractor's

obligations under the Contract Documents. These bonds shall remain in effect for the duration of the Warranty Period (as specified in the Special Conditions). Contractor shall also furnish other bonds that may be required by the Special Conditions. All bonds shall be in the forms prescribed by the Contract Documents and be executed by such sureties as (1) are licensed to conduct business in the State of Colorado and (2) are named in the current list of "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies" as published in Circular 570 (amended) by the Audit Staff, Bureau of Accounts, U.S. Treasury Department. All bonds signed by an agent must be accompanied by a certified copy of the Authority Act. If the surety on any bond furnished by the Contractor is declared bankrupt, or becomes insolvent, or its rights to do business in Colorado are terminated, or it ceases to meet the requirements of clauses (1) and (2) of this section, Contractor shall within five (5) days thereafter substitute another bond and surety, both of which shall be acceptable to the City.

2.24. Retention: The Owner will deduct money from the partial payments in amounts considered necessary to protect the interest of the Owner and will retain this money until after completion of the entire contract. The amount to be retained from partial payments will be five (5) percent of the value of the completed work, and not greater than five (5) percent of the amount of the Contract. When the retainage has reached five (5) percent of the amount of the Contract no further retainage will be made and this amount will be retained until such time as final payment is made.

2.25. Liquidated Damages for Failure to Enter Into Contract: (CITY ONLY) Should the Successful Bidder fail or refuse to enter into the Contract within ten Calendar Days from the issuance of the Notice of Award, the City shall be entitled to collect the amount of such Bidder's Bid Guaranty as Liquidated Damages, not as a penalty but in consideration of the mutual release by the City and the Successful Bidder of all claims arising from the City's issuance of the Notice of Award and the Successful Bidder's failure to enter into the Contract and the costs to award the Contract to any other Bidder, to readvertise, or otherwise dispose of the Work as the City may determine best serves its interest.

2.26. Liquidated Damages for Failure to Meet Project Completion Schedule: (CITY ONLY) If the Contractor does not achieve Final Completion by the required date, whether by neglect, refusal or any other reason, the parties agree and stipulate that the Contractor shall pay liquidated damages to the City for each such day that final completion is late. As provided elsewhere, this provision does not apply for delays caused by the City. The date for Final Completion may be extended in writing by the Owner.

The Contractor agrees that as a part of the consideration for the City's awarding of this Contract liquidated damages in the daily amount of **\$350.00** is reasonable and necessary to pay for the actual damages resulting from such delay. The parties agree that the real costs and injury to the City for such delay include hard to quantify items such as: additional engineering, inspection and oversight by the City and its agents; additional contract administration; inability to apply the efforts of those employees to the other work of the City; perceived inefficiency of the City; citizens having to deal with the construction and the Work, rather than having the benefit of a completed Work, on

time; inconvenience to the public; loss of reputation and community standing for the City during times when such things are very important and very difficult to maintain.

The Contractor must complete the Work and achieve final completion included under the Bid Schedule in the number of consecutive calendar days after the City gives is written Notice to Proceed. When the Contractor considers the entire Work ready for its intended use, Contractor shall certify in writing that the Work is substantially complete. In addition to the Work being substantially complete, Final Completion date is the date by which the Contractor shall have fully completed all clean-up, and all items that were identified by the City in the inspection for final completion. Unless otherwise stated in the Special Conditions, for purposes of this liquidated damages clause, the Work shall not be finished and the Contract time shall continue to accrue until the City gives its written Final Acceptance.

If the Contractor shall fail to pay said liquidated damages promptly upon demand thereof after having failed to achieve Final Completion on time, the City shall first look to any retainage or other funds from which to pay said liquidated damages; if retainage or other liquid funds are not available to pay said liquidated damages amounts, the Surety on the Contractor's Performance Bond and Payment Bond shall pay such liquidated damages. In addition, the City may withhold all, or any part of, such liquidated damages from any payment otherwise due the Contractor.

Liquidated damages as provided do not include any sums to reimburse the City for extra costs which the City may become obligated to pay on other contracts which were delayed or extended because of the Contractor's failure to complete the Work within the Contract Time. Should the City incur additional costs because of delays or extensions to other contracts resulting from the Contractor's failure of timely performance, the Contractor agrees to pay these costs that the City incurs because of the Contractor's delay, and these payments are separate from and in addition to any liquidated damages.

The Contractor agrees that the City may use its own forces or hire other parties to obtain Substantial or Final Completion of the work if the time of completion has elapsed and the Contractor is not diligently pursuing completion. In addition to the Liquidated Damages provided for, the Contractor agrees to reimburse the City for all expenses thus incurred.

2.27. Contingency/Force Account: Contingency/Force Account work will be authorized by the Owner's Project Manager and is defined as minor expenses to cover miscellaneous or unforeseen expenses related to the project. The expenses are not included in the Drawings, Specifications, or Scope of Work and are necessary to accomplish the scope of this contract. Contingency/Force Account Authorization will be directed by the Owner through an approved form. Contingency/Force Account funds are the property of the Owner and any Contingency/Force Account funds, not required for project completion, shall remain the property of the Owner. Contractor is not entitled to any Contingency/Force Account funds, that are not authorized by Owner or Owner's Project Manager.

2.28. Protection of Persons & Property: The Contractor shall comply with all applicable laws, ordinances, rules, regulations and orders of any public authority having

jurisdiction for the safety of persons or property or to protect them from damage, injury or loss. Contractor shall erect and maintain, as required by existing safeguards for safety and protection, and all reasonable precautions, including posting danger signs or other warnings against hazards promulgating safety regulations and notifying owners and users of adjacent utilities. When or where any direct or indirect damage or injury is done to public or private property by or on account of any act, omission, neglect, or misconduct by the Contractor in the execution of the work, or in consequence of the non-execution thereof by the Contractor, he shall restore, at his own expense, such property to a condition similar or equal to that existing before such damage or injury was done, by repairing, rebuilding, or otherwise restoring as may be directed, or it shall make good such damage or injury in an acceptable manner.

- 2.29. Changes in the Work:** The Owner, without invalidating the contract, may order changes in the work within the general scope of the contract consisting of additions, deletions or other revisions, the contract sum and the contract time being adjusted accordingly. All such changes in the work shall be authorized by Change Order and shall be executed under the applicable conditions of the contract documents. A Change Order is a written order to the Contractor signed by the Owner issued after the execution of the contract, authorizing a change in the work or an adjustment in the contract sum or the contract time. The contract sum and the contract time may be changed only by Change Order.
- 2.30. Claims for Additional Cost or Time:** If the Contractor wishes to make a claim for an increase in the contract sum or an extension in the contract time, he shall give the Owner written notice thereof within a reasonable time after the occurrence of the event giving rise to such claim. This notice shall be given by the Contractor before proceeding to execute the work, except in an emergency endangering life or property in which case the Contractor shall precede in accordance with the regulations on safety. No such claim shall be valid unless so made. Any change in the contract sum or contract time resulting from such claim shall be authorized by Change Order.
- 2.31. Minor Changes in the Work:** The Owner shall have authority to order minor changes in the work not involving an adjustment in the contract sum or an extension of the contract time and not inconsistent with the intent of the contract documents.
- 2.32. Field Orders:** The Owner may issue written Field Orders which interpret the Contract Documents in accordance with the specifications, or which order minor changes in the work in accordance with the agreement, without change in the contract sum or time. The Contractor shall carry out such Field Orders promptly.
- 2.33. Uncovering & Correction of Work:** The Contractor shall promptly correct all work rejected by the Owner as defective or as failing to conform to the contract documents whether observed before or after substantial completion and whether or not fabricated installed or competed. The Contractor shall bear all costs of correcting such rejected work, including the cost of the Owner's additional services thereby made necessary. If within one (1) year after the date of completion or within such longer period of time as may be prescribed by law or by the terms of any applicable special guarantee required by the contract documents, any of the work found to be defective or not in accordance with the contract documents, the Contractor shall correct it promptly after receipt of a

written notice from the Owner to do so unless the Owner has previously given the Contractor a written acceptance of such condition. The Owner shall give such notice promptly after discover of condition. All such defective or non-conforming work under the above paragraphs shall be removed from the site where necessary and the work shall be corrected to comply with the contract documents without cost to the Owner. The Contractor shall bear the cost of making good all work of separate Contractors destroyed or damaged by such removal or correction. If the Owner prefers to accept defective or non-conforming work, he may do so instead of requiring its removal and correction, in which case a Change Order will be issued to reflect an appropriate reduction in the payment or contract sum, or, if the amount is determined after final payment, it shall be paid by the Contractor.

- 2.30. Amendment:** No oral statement of any person shall modify or otherwise change, or affect the terms, conditions or specifications stated in the resulting contract. All amendments to the contract shall be made in writing by the Owner.
- 2.31. Assignment:** The Contractor shall not sell, assign, transfer or convey any contract resulting from this IFB, in whole or in part, without the prior written approval from the Owner.
- 2.32. Compliance with Laws:** Bids must comply with all Federal, State, County and local laws governing or covering this type of service and the fulfillment of all ADA (Americans with Disabilities Act) requirements.
- 2.33. Confidentiality:** All information disclosed by the Owner to the Contractor for the purpose of the work to be done or information that comes to the attention of the Contractor during the course of performing such work is to be kept strictly confidential.
- 2.34. Conflict of Interest:** No public official and/or City/County employee shall have interest in any contract resulting from this IFB.
- 2.35. Contract Termination:** This contract shall remain in effect until any of the following occurs: (1) contract expires; (2) completion of services; (3) acceptance of services or, (4) for convenience terminated by either party with a written *Notice of Cancellation* stating therein the reasons for such cancellation and the effective date of cancellation.
- 2.36. Employment Discrimination:** During the performance of any services per agreement with the Owner, the Contractor, by submitting a Bid, agrees to the following conditions:
 - 2.36.1.** The Contractor shall not discriminate against any employee or applicant for employment because of race, religion, color, sex, age, handicap, or national origin except when such condition is a legitimate occupational qualification reasonably necessary for the normal operations of the Contractor. The Contractor agrees to post in conspicuous places, visible to employees and applicants for employment, notices setting forth the provisions of this nondiscrimination clause.

- 2.36.2.** The Contractor, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, shall state that such Contractor is an Equal Opportunity Employer.
- 2.36.3.** Notices, advertisements, and solicitations placed in accordance with federal law, rule, or regulation shall be deemed sufficient for the purpose of meeting the requirements of this section.
- 2.37. Affirmative Action:** In executing a Contract with the City, the Contractor agrees to comply with Affirmative Action and Equal Employment Opportunity regulations presented in the General Contract Conditions.
- 2.38. Immigration Reform and Control Act of 1986 and Immigration Compliance:** The Offeror certifies that it does not and will not during the performance of the contract employ illegal alien workers or otherwise violate the provisions of the Federal Immigration Reform and Control Act of 1986 and/or the immigration compliance requirements of State of Colorado C.R.S. § 8-17.5-101, *et seq.* (House Bill 06-1343).
- 2.39. Ethics:** The Contractor shall not accept or offer gifts or anything of value nor enter into any business arrangement with any employee, official, or agent of the Owner.
- 2.40. Failure to Deliver:** In the event of failure of the Contractor to deliver services in accordance with the contract terms and conditions, the Owner, after due oral or written notice, may procure the services from other sources and hold the Contractor responsible for any costs resulting in additional purchase and administrative services. This remedy shall be in addition to any other remedies that the Owner may have.
- 2.41. Failure to Enforce:** Failure by the Owner at any time to enforce the provisions of the contract shall not be construed as a waiver of any such provisions. Such failure to enforce shall not affect the validity of the contract or any part thereof or the right of the Owner to enforce any provision at any time in accordance with its terms.
- 2.42. Force Majeure:** The Contractor shall not be held responsible for failure to perform the duties and responsibilities imposed by the contract due to legal strikes, fires, riots, rebellions, and acts of God beyond the control of the Contractor, unless otherwise specified in the contract.
- 2.43. Independent Contractor:** The Contractor shall be legally considered an Independent Contractor and neither the Contractor nor its employees shall, under any circumstances, be considered servants or agents of the Owner. The Owner shall be at no time legally responsible for any negligence or other wrongdoing by the Contractor, its servants, or agents. The Owner shall not withhold from the contract payments to the Contractor any federal or state unemployment taxes, federal or state income taxes, Social Security Tax or any other amounts for benefits to the Contractor. Further, the Owner shall not provide to the Contractor any insurance coverage or other benefits, including Workers' Compensation, normally provided by the Owner for its employees.
- 2.44. Nonconforming Terms and Conditions:** A bid that includes terms and conditions that do not conform to the terms and conditions of this Invitation for Bid is subject to

rejection as non-responsive. The Owner reserves the right to permit the Contractor to withdraw nonconforming terms and conditions from its bid prior to a determination by the Owner of non-responsiveness based on the submission of nonconforming terms and conditions.

Items for non-responsiveness may include, but not be limited to:

- a. Submission of the Bid on forms other than those supplied by the City;
- b. Alteration, interlineation, erasure, or partial detachment of any part of the forms which are supplied herein;
- c. Inclusion of unauthorized additions conditional or alternate Bids or irregularities of any kind which may tend to make the Bid incomplete, indefinite, or ambiguous as to its meaning;
- d. Failure to acknowledge receipt of any or all issued Addenda;
- e. Failure to provide a unit price or a lump sum price, as appropriate, for each pay item listed except in the case of authorized alternative pay items;
- f. Failure to list the names of Subcontractors used in the Bid preparation as may be required in the Solicitation Documents;
- g. Submission of a Bid that, in the opinion of the Owner, is unbalanced so that each item does not reasonably carry its own proportion of cost or which contains inadequate or unreasonable prices for any item;
- h. Tying of the Bid with any other bid or contract; and
- i. Failure to calculate Bid prices as described herein.

2.45. Evaluation of Bids and Offers: The Owner reserves the right to:

- reject any and all Bids,
- waive any and all informalities,
- negotiate final terms with the Successful Bidder, and
- disregard any and all nonconforming, nonresponsive or conditional Bids.

Discrepancies between words and figures will be resolved in favor of words. Discrepancies between Unit Prices and Extended Prices will be resolved in favor of the Unit Prices. Discrepancies between the indicated sum of any column of figures and the correct sum thereof will be resolved in favor of the correct sum. The corrected extensions and totals will be shown in the tabulation of Bids.

The Owner may consider the qualifications and experience of Subcontractors and other persons and organizations (including those who are to furnish the principal items of material or equipment) proposed for those portions of the work as to which the identity of Subcontractors and other persons and organizations must be submitted. Operating costs, maintenance considerations performance data, and guarantees of materials and equipment may also be considered by the Owner.

The Owner will conduct such investigations as deemed necessary to assist in the evaluation of any Bid and to establish the responsibility, qualifications and financial ability of the Offeror, proposed Subcontractors and other persons and organizations to do the Work in accordance with the *Contract Documents* to the City's satisfaction within the Contract Time.

The Offeror shall furnish the Owner all information and data requested by the Owner to determine the ability of the Offeror to perform the Work. The Owner reserves the right to reject the Bid if the evidence submitted by, or investigation of such Offeror fails to satisfy the Owner that such Offeror is properly qualified to carry out the obligations of the Contract and to complete the Work contemplated therein.

By submitting a Bid, each Offeror authorizes the Owner to perform such investigation of the Offeror as the Owner deems necessary to establish the responsibility, qualifications and financial ability of the Offeror and, by its signature thereon, authorizes the Owner to obtain reference information concerning the Offeror and releases the party providing such information and the Owner from any and all liability to the Offeror as a result of such reference information so provided.

The Owner reserves the right to reject the Bid of any Offeror who does not pass any evaluation to the Owner's satisfaction.

If the Contract is to be awarded, it will be awarded to the Offeror who, by evaluation, the Owner determines will best meet the Owner's interests.

The Owner reserves the right to accept or reject the Work contained in any of the Price Bid Schedules or alternates, either in whole or in part.

2.46. Award of Contract: Unless otherwise indicated, a single award will be made for all the bid items in an individual bid schedule. In the event that the Work is contained in more than one Bid Schedule, the City may award Schedules individually or in combination. In the case of two Bid Schedules which are alternative to each other, only one of such alternative Schedules will be awarded. Within forty-five (45) Calendar Days of Bid Opening, the City will issue a Notice of Award to the Successful Bidder which will be accompanied by four (4) unsigned copies of the Contract and the Performance and Payment Bond forms. Within ten (10) Calendar Days thereafter, the Successful Bidder shall sign and deliver four (4) copies of the Contract, Performance Bond, Payment Bond and Certificates of Insurance to the City. Within ten (10) Calendar Days thereafter, the City will deliver two (2) fully executed counterparts of the Contract to the Contractor. No contract shall exist between the Successful Bidder and the City and the Successful Bidder shall have no rights at law or in equity until the Contract has been duly executed by the City.

The Successful Bidder's failure to sign and submit a Contract and other documents set forth in this Paragraph within the prescribed time shall be just cause of annulment of the award, and forfeiture of the Bid Guaranty. The award of Contract may then be made to the next qualified Bidder in the same manner as previously prescribed.

- 2.47. Ownership:** All plans, prints, designs, concepts, etc., shall become the property of the Owner.
- 2.48. Oral Statements:** No oral statement of any person shall modify or otherwise affect the terms, conditions, or specifications stated in this document and/or resulting agreement. All modifications to this request and any agreement must be made in writing by the Owner.
- 2.49. Patents/Copyrights:** The Contractor agrees to protect the Owner from any claims involving infringements of patents and/or copyrights. In no event shall the Owner be liable to the Contractor for any/all suits arising on the grounds of patent(s)/copyright(s) infringement. Patent/copyright infringement shall null and void any agreement resulting from response to this IFB.
- 2.50. Remedies:** The Contractor and Owner agree that both parties have all rights, duties, and remedies available as stated in the Uniform Commercial Code.
- 2.51. Venue:** Any agreement as a result of responding to this IFB shall be deemed to have been made in, and shall be construed and interpreted in accordance with, the laws of the City of Grand Junction, Mesa County, Colorado.
- 2.52. Expenses:** Expenses incurred in preparation, submission and presentation of this IFB are the responsibility of the company and cannot be charged to the Owner.
- 2.53. Sovereign Immunity:** The Owner specifically reserves its right to sovereign immunity pursuant to Colorado State Law as a defense to any action arising in conjunction to this agreement.
- 2.54. Non-Appropriation of Funds:** The contractual obligation of the Owner under this contract is contingent upon the availability of appropriated funds from this fiscal year budget as approved by the City Council or Board of County Commissioners from this fiscal year only. State of Colorado Statutes prohibit obligation of public funds beyond the fiscal year for which the budget was approved. Anticipated expenditures/obligations beyond the end of the current Owner's fiscal year budget shall be subject to budget approval. Any contract will be subject to and must contain a governmental non-appropriation of funds clause.
- 2.55. Cooperative Purchasing:** Purchases as a result of this solicitation are primarily for the City/County. Other governmental entities may be extended the opportunity to utilize the resultant contract award with the agreement of the successful provider and the participating agencies. All participating entities will be required to abide by the specifications, terms, conditions and pricings established in this Bid. The quantities furnished in this bid document are for only the City/County. It does not include

quantities for any other jurisdiction. The City or County will be responsible only for the award for its jurisdiction. Other participating entities will place their own awards on their respective Purchase Orders through their purchasing office or use their purchasing card for purchase/payment as authorized or agreed upon between the provider and the individual entity. The City/County accepts no liability for payment of orders placed by other participating jurisdictions that choose to piggy-back on our solicitation. Orders placed by participating jurisdictions under the terms of this solicitation will indicate their specific delivery and invoicing instructions.

- 2.56. Keep Jobs in Colorado Act:** Contractor shall be responsible for ensuring compliance with Article 17 of Title 8, Colorado Revised Statutes requiring 80% Colorado labor to be employed on public works. Contractor shall, upon reasonable notice provided by the Owner, permit the Owner to inspect documentation of identification and residency required by C.R.S. §8-17-101(2)(a). If Contractor claims it is entitled to a waiver pursuant to C.R.S. §8-17-101(1), Contractor shall state that there is insufficient Colorado labor to perform the work such that compliance with Article 17 would create an undue burden that would substantially prevent a project from proceeding to completion, and shall include evidence demonstrating the insufficiency and undue burden in its response.

Unless expressly granted a waiver by the Owner pursuant to C.R.S. §8-17-101(1), Contractor shall be responsible for ensuring compliance with Article 17 of Title 8, Colorado Revised Statutes requiring 80% Colorado labor to be employed on public works. Contractor shall, upon reasonable notice provided by the Owner, permit the Owner to inspect documentation of identification and residency required by C.R.S. §8-17-101(2)(a).

2.56.1. "Public project" is defined as:

- (a) any construction, alteration, repair, demolition, or improvement of any land, building, structure, facility, road, highway, bridge, or other public improvement suitable for and intended for use in the promotion of the public health, welfare, or safety and any maintenance programs for the upkeep of such projects
- (b) for which appropriate or expenditure of moneys may be reasonably expected to be \$500,000.00 or more in the aggregate for any fiscal year
- (c) except any project that receives federal moneys.

3. Statement of Work

3.1. GENERAL: The City of Grand Junction is soliciting competitive bids from qualified and interested companies for all labor, equipment, and materials required for the **B½ Rd. Overpass at U.S. 50 Multimodal Conversion Project**. All dimensions and scope of work should be verified by Contractors prior to submission of bids.

3.2. PROJECT DESCRIPTION: The Project generally consists of the installation of 648 Tons of HMA, 96 SY of Concrete Pavement, 3,171 Tons Aggregate Base Course, 1,716 LF of Curb and Gutter, 1,474 SY of Concrete Sidewalk, Guardrail, Reinforced Concrete Pipe, Excavation and Embankment.

3.3. SPECIAL CONDITIONS & PROVISIONS:

3.3.1 Mandatory Pre-Bid Meetings: Prospective bidders are required to attend the mandatory pre-bid meeting on August 30, 2016 at 10:00am. Meeting location will be in the City Council Auditorium, located at City Hall, 250 N. 5th Street, Grand Junction, CO. This meeting also allows the Owner to know who is planning on submitting a bid for the project. The purpose of this visit will be to inspect and to clarify the contents of this Invitation for Bids (IFB).

3.3.2 QUESTIONS REGARDING SOLICIATION PROCESS/SCOPE OF WORK:

Duane Hoff Jr., Senior Buyer
City of Grand Junction
duaneh@gjcity.org

3.3.3 Project Manager: The Project Manager for the Project is Lee Cooper, Project Manager, who can be reached at (970)256-4155. During Construction, all notices, letters, submittals, and other communications directed to the City shall be addressed and mailed or delivered to:

City of Grand Junction
Department of Public Works and Planning
Attn: Lee Cooper, Project Manager
250 North Fifth Street
Grand Junction, CO 81501

3.3.4 Affirmative Action: The Contractor is not required to submit a written Affirmative Action Program for the Project.

3.3.5 Pricing: Pricing shall be all inclusive to include but not be limited to: all labor, equipment, supplies, materials, freight (F.O.B. Destination – Freight Pre-paid and Allowed to each site), travel, mobilization costs, fuel, set-up and take down costs, and full-time inspection costs, and all other costs related to the successful completion of the project.

The Owner shall not pay nor be liable for any other additional costs including but not limited to: taxes, shipping charges, insurance, interest, penalties, termination payments, attorney fees, liquidated damages, etc.

3.3.6 Freight/Shipping: All freight/shipping shall be F.O.B. Destination – Freight Pre-Paid and Allowed to the project site(s), Grand Junction, CO.

3.3.7 Contractor must meet all federal, state, and local rules, regulations, and requirements for providing such services.

3.3.8 Contract: A binding contract shall consist of: (1) the IFB and any amendments thereto, (2) the bidder's response (bid) to the IFB, (3) clarification of the bid, if any, and (4) the City's Purchasing Department's acceptance of the bid by "Notice of Award" or by "Purchase Order". All Exhibits and Attachments included In the IFB shall be incorporated into the contract by reference.

A. The contract expresses the complete agreement of the parties and, performance shall be governed solely by the specifications and requirements contained therein.

B. Any change to the contract, whether by modification and/or supplementation, must be accomplished by a formal contract amendment signed and approved by and between the duly authorized representative of the bidder and the City Purchasing Division or by a modified Purchase Order prior to the effective date of such modification. The bidder expressly and explicitly understands and agrees that no other method and/or no other document, including acts and oral communications by or from any person, shall be used or construed as an amendment or modification to the contract.

3.3.9 Time of Completion: The scheduled time of Completion for the Project is **89 Calendar Days** from the starting date specified in the Notice to Proceed.

Completion is achieved when site cleanup and all punch list items (resulting from the final inspection) have been completed. Completion shall have the meaning set forth in Article I, Section 3 (Definitions and Terms) of the General Contract Conditions.

3.3.10 Working Days and Hours: No work shall be done on Saturdays, Sundays or City Holidays without the written consent of the City. No work, other than preparation and clean-up, shall be done outside the hours between 8:00 a.m. and 4:30 p.m. without the written consent of the City. Requests for such work shall be made a minimum of forty-eight (48) hours prior to the day or days for which the request is being made. Emergency work may be done without prior consent provided the Contractor notifies the Project Engineer or Project Inspector prior to beginning the work.

3.3.11 Licenses and Permits: Contractor is responsible for obtaining all necessary licenses and permits required for Construction, at Contractors expense. See Section 2.12. Contractor shall supply to Owner all copies of finalized permits.

3.3.12 Permits: The following permits are required for the Project and will be obtained by the City at no cost to the Contractor:

- Colorado Department of Public Health and Environment (CDPHE) – **Colorado Discharge Permit System (CDPS)**. The City of Grand Junction will obtain a Rainfall Erosivity Waiver for exclusion from CDPS Stormwater Permitting for Small Construction Projects (less than five acres).

The following permits are required for the Project and shall be obtained and paid for by the Contractor, with the costs included in the total bid price for the Project:

- Colorado Department of Public Health and Environment (CDPHE) – **Dewatering Permit**

- 3.3.13 City Furnished Materials:** The City will furnish the following materials for the Project:
- AutoCAD drawings for survey stake-out.
- 3.3.14 Project Newsletters:** A newsletter for the Project will be prepared and distributed by the City prior to construction starting. It will include general information about the Project including street closures, duration of work, parking restrictions, project schedule, and the names and telephone numbers of the contacts for the City and Contractor. The newsletter will be mailed approximately two weeks before the Contractor commences work.
- 3.3.15 Project Sign:** Project signs, if any, will be furnished and installed by the City.
- 3.3.16 Authorized Representatives of the City:** Those authorized to represent the City shall include Purchasing Agent, Engineers, and Inspectors employed by the City, only.
- 3.3.17 Stockpiling Materials and Equipment:** When approved by the Project Engineer, the Contractor may stockpile and store materials and equipment within public right-of-way. The Contractor shall be responsible for obtaining written permission to use private property for storage of materials and equipment. Copies of the above-mentioned agreements shall be submitted to the Project Engineer prior to use of the property.
- 3.3.18 Traffic Control:** See Project Special Provision
- 2.3.19 Traffic Detector Loops:** Not applicable to Project.
- 3.3.20 Clean-Up:** The Contractor shall clear the construction site of all trash and on-site waste daily, including scrap from construction materials. The costs for all clean-up work shall be considered incidental and will not be paid for separately.
- 3.3.21 Quality Control Testing:** Supplier shall perform quality control testing on concrete. The City will perform all other necessary QA/QC.
- 3.3.22 Schedule of Submittals:** Contractor shall deliver these submittals at least two days prior to the pre-construction meeting:
- Traffic Control Plans
 - Project Schedule
- 3.3.23 Uranium Mill Tailings:** It is anticipated that radioactive mill tailings will not be encountered on this Project.
- 3.3.24 Fugitive Petroleum or Other Contamination:** It is anticipated that soil contamination from fugitive petroleum or other contaminants will not be encountered with the Project.
- 3.3.25 Excess Material:** All excess materials shall be disposed in accordance with General Contract Condition Section 50.

- 3.3.26 Construction Equipment Storage:** During non-working hours along B ½ Road, the Contractor will be allowed to store construction equipment and/or construction materials within the traffic controlled work zone within the City roadway right-of-way and CDOT right-of-way.
- 3.3.27 Asphalt Removal and Temporary Asphalt Millings:** Asphalt pavement shall be removed full-depth using the “T” Top section detail shown in the construction plans. The pavement joints/edges from the milling process shall be located either at the edge or at the center of the traffic lane. No longitudinal pavement joint/edge shall fall in the location of vehicle wheel paths.
- 3.3.28 Schedule of Submittals:** The Contractor at a minimum shall deliver these submittals at the pre-construction:
- Construction schedule submitted at or prior to the pre-construction meeting and updated as necessary to reflect actual conditions
 - Hourly rate table for labor and equipment to be used on this project.
 - Provide Traffic Control Plan for all phases of work
 - Guardrail submittals
 - Hot Mix Asphalt
 - Concrete Mix Designs
 - Aggregate Base Course (Class 1, 3, & 6)
 - Conduit
- 3.3.29 Existing Utilities and Structures:** The location of existing utilities and structures shown on the Plans are approximate. It is the responsibility of the Contractor to locate and protect all structures and utilities in accordance with General Contract Condition Section 37. The Contractor shall coordinate with the utility companies any necessary relocation of utilities and schedule his work accordingly. See Project Special Provisions.
- 3.3.30 Incidental Items:** Any item of work not specifically identified or paid for directly, but which is necessary for the satisfactory completion of any paid items of work, will be considered as incidental to those items, and will be included in the cost of those items.
- 3.3.31 Pedestrian Lights:** Contractor shall immediately order the pedestrian lights once a fully executed Contract is signed between the City and the Contractor. The Sternberg Pedestrian Lights are estimated to take 10-12 weeks for delivery from when the order is placed.

3.4. SCOPE OF WORK & SPECIFICATIONS: See Specifications and Construction Plans.

3.5. IFB TENTATIVE TIME SCHEDULE:

Invitation for Bids available	August 14, 2016
Mandatory Pre-Bid Meeting	August 30, 2016
Inquiry deadline, no questions after this date	September 1, 2016
Addendum Posted	September 2, 2016
Submittal deadline for proposals (Bid Opening)	September 8, 2016
City Council or Board of Commissioners Approval	September 21, 2016
Notice of Award & Contract execution	TBD
Bonding & Insurance Cert due	TBD
Preconstruction meeting	October 4, 2016 @ 2:00pm
Work begins	October 10, 2016
Final Completion	89 Calendar Days from Notice to Proceed
Holidays:	Veteran's Day – November 11, 2016 Thanksgiving – November 24, 2016 Day After Thanksgiving – November 25, 2016 Christmas Day – December 26, 2016

4. Contractor's Bid Form

Bid Date: _____

Project: IFB-4199-16-DH "B ½ Rd. Overpass at U.S. 50 Multimodal Conversion Project"

Bidding Company: _____

Name of Authorized Agent: _____

Email _____

Telephone _____ **Address** _____

City _____ **State** _____ **Zip** _____

The undersigned Bidder, in compliance with the Invitation for Bids, having examined the Instruction to Bidders, General Contract Conditions, Statement of Work, Specifications, and any and all Addenda thereto, having investigated the location of, and conditions affecting the proposed work, hereby proposes to furnish all labor, materials and supplies, and to perform all work for the Project in accordance with Contract Documents, within the time set forth and at the prices stated below. These prices are to cover all expenses incurred in performing the work required under the Contract Documents, of which this Contractor's Bid Form is a part.

The undersigned Contractor does hereby declare and stipulate that this offer is made in good faith without collusion or connection to any person(s) providing an offer for the same work, and that it is made in pursuance of, and subject to, all terms and conditions of the Instructions to Bidders, the Specifications, and all other Solicitation Documents, all of which have been examined by the undersigned.

The Contractor also agrees that if awarded the Contract, to provide insurance certificates within ten (10) working days of the date of Notification of Award. Submittal of this offer will be taken by the Owner as a binding covenant that the Contractor will be prepared to complete the project in its entirety.

The Owner reserves the right to make the award on the basis of the offer deemed most favorable, to waive any formalities or technicalities and to reject any or all offers. It is further agreed that this offer may not be withdrawn for a period of sixty (60) calendar days after closing time. Submission of clarifications and revised offers automatically establish a new thirty day (30) period.

RECEIPT OF ADDENDA: the undersigned Contractor acknowledges receipt of Addenda to the Solicitation, Specifications, and other Contract Documents.

State number of Addenda received: _____.

It is the responsibility of the Bidder to ensure all Addenda have been received and acknowledged.

Bid Schedule: B 1/2 Rd. Overpass at US 50 Multimodal Conversion Project

Item No.	CDOT, City Ref.	Description	Quantity	Units	Unit Price	Total Price
1	201-00000	Clearing and Grubbing	1.	LS	\$ _____	\$ _____
2	202-00000	Removal of Structure and Obstructions	1.	LS	\$ _____	\$ _____
3	202-00010	Removal of Tree	10.	EA	\$ _____	\$ _____
4	202-00021	Removal of Manhole	1.	EA	\$ _____	\$ _____
5	202-00035	Removal of Pipe	33.	LF	\$ _____	\$ _____
6	202-00090	Removal of Delineator	16.	EA	\$ _____	\$ _____
7	202-00195	Removal of Median Cover	48.	SY	\$ _____	\$ _____
8	202-00200	Removal of Sidewalk	18.	SY	\$ _____	\$ _____
9	202-00201	Removal of Curb	136.	LF	\$ _____	\$ _____
10	202-00202	Removal of Gutter	11.	LF	\$ _____	\$ _____
11	202-00203	Removal of Curb and Gutter	181.	LF	\$ _____	\$ _____
12	202-00220	Removal of Asphalt Mat	3,076.	SY	\$ _____	\$ _____
13	202-00240	Removal of Asphalt Mat (Planing)	305.	SY	\$ _____	\$ _____
14	202-00250	Removal of Pavement Marking	23.	SF	\$ _____	\$ _____
15	202-00425	Removal of Bridge Railing	232.	LF	\$ _____	\$ _____
16	202-00810	Removal of Ground Sign	10.	EA	\$ _____	\$ _____
17	202-00821	Removal of Sign Panel	3.	EA	\$ _____	\$ _____
18	202-01000	Removal of Fence	216.	LF	\$ _____	\$ _____
19	203-00010	Unclassified Excavation (Complete In Place)	2,723.	CY	\$ _____	\$ _____
20	203-00100	Muck Excavation	150.	CY	\$ _____	\$ _____
21	203-01597	Potholing	25.	HOUR	\$ _____	\$ _____
22	208-00002	Erosion Log (12 inch)	820.	LF	\$ _____	\$ _____

Bid Schedule: B 1/2 Rd. Overpass at US 50 Multimodal Conversion Project

Item No.	CDOT, City Ref.	Description	Quantity	Units	Unit Price	Total Price
23	208-00035	Aggregate Bag	144.	LF	\$ _____	\$ _____
24	208-00045	Concrete Washout Structure	2.	EA	\$ _____	\$ _____
25	208-00052	Storm Drain Inlet Protection (Type II)	20.	LF	\$ _____	\$ _____
26	208-00103	Removal and Disposal of Sediment (Labor)	30.	HOUR	\$ _____	\$ _____
27	208-00105	Removal and Disposal of Sediment (Equipment)	30.	HOUR	\$ _____	\$ _____
28	208-00106	Sweeping (Sediment Removal)	40.	HOUR	\$ _____	\$ _____
29	208-00206	Erosion Control Supervisor	60.	DAY	\$ _____	\$ _____
30	208-00300	Temporary Berms	1,100.	LF	\$ _____	\$ _____
31	210-00050	Reset Fire Hydrant	2.	EA	\$ _____	\$ _____
32	210-00810	Reset Ground Sign	8.	EA	\$ _____	\$ _____
33	210-00815	Reset Sign Panel	3.	EA	\$ _____	\$ _____
34	210-01700	Reset Sprinkler Head	19.	EA	\$ _____	\$ _____
35	210-04010	Adjust Manhole	3.	EA	\$ _____	\$ _____
36	210-04050	Adjust Valve Box	15.	EA	\$ _____	\$ _____
37	210-04060	Adjust Water Meter	3.	EA	\$ _____	\$ _____
38	212-00006	Seeding (Native)	0.7	AC	\$ _____	\$ _____
39	213-00061	Mulch Tackifier	67.	LB	\$ _____	\$ _____
40	213-00065	Inorganic Mulch	170.	CY	\$ _____	\$ _____
41	304-01000	Aggregate Base Course (Class 1)	1,581.	TON	\$ _____	\$ _____
42	304-03000	Aggregate Base Course (Class 3)	300.	TON	\$ _____	\$ _____
43	304-06000	Aggregate Base Course (Class 6)	1,364.	TON	\$ _____	\$ _____
44	403-00720	Hot Mix Asphalt (Patching) (Asphalt)	12.	TON	\$ _____	\$ _____

Bid Schedule: B 1/2 Rd. Overpass at US 50 Multimodal Conversion Project

Item No.	CDOT, City Ref.	Description	Quantity	Units	Unit Price	Total Price
45	403-34741	Hot Mix Asphalt (Grading SX) (75) (PG 64-22)	571.	TON	\$ _____	\$ _____
46	403-34771	Hot Mix Asphalt (Grading SX) (75) (PG 76-28)	73.	TON	\$ _____	\$ _____
47	411-10255	Emulsified Asphalt (Slow-Setting)	244.	GAL	\$ _____	\$ _____
48	412-00800	Concrete Pavement (8 Inch)	96.	SY	\$ _____	\$ _____
49	420-00133	Geotextile (Separator) (Class 2)	100.	SY	\$ _____	\$ _____
50	506-01020	Geogrid Reinforcement	100.	SY	\$ _____	\$ _____
51	602-00000	Reinforcing Steel	1,360.	LB	\$ _____	\$ _____
52	603-01185	18 Inch Reinforced Concrete Pipe (Complete In Place)	50.	LF	\$ _____	\$ _____
53	603-01245	24 Inch Reinforced Concrete Pipe (Complete In Place)	9.	LF	\$ _____	\$ _____
54	603-01425	42 Inch Reinforced Concrete Pipe (Complete In Place)	51.	LF	\$ _____	\$ _____
55	603-01485	48 Inch Reinforced Concrete Pipe (Complete In Place)	86.	LF	\$ _____	\$ _____
56	603-02185	23x14 Inch Reinforced Concrete Pipe (Complete In Place)	20.	LF	\$ _____	\$ _____
57	604-19005	Inlet Special (5 Foot)	3.	EA	\$ _____	\$ _____
58	604-13005	Inlet Type 13 (5 Foot)	2.	EA	\$ _____	\$ _____
59	604-30010	Manhole Slab Base (10 Foot)	1.	EA	\$ _____	\$ _____
60	604-30015	Manhole Slab Base (15 Foot)	1.	EA	\$ _____	\$ _____
61	606-00710	Guardrail Type 7 (Style CA)	1,407.	LF	\$ _____	\$ _____
62	606-00900	Guardrail (Special)	220.	LF	\$ _____	\$ _____
63	606-01370	Transition Type 3G (31 in. MGS)	1.	EA	\$ _____	\$ _____

Bid Schedule: B 1/2 Rd. Overpass at US 50 Multimodal Conversion Project

Item No.	CDOT, City Ref.	Description	Quantity	Units	Unit Price	Total Price
64	606-02005	End Anchorage (Flared) (31 in. MGS)	1.	EA	\$ _____	\$ _____
65	608-00000	Concrete Sidewalk	1,522.	SY	\$ _____	\$ _____
66	608-00010	Concrete Curb Ramp	104.	SY	\$ _____	\$ _____
67	609-20010	Curb Type 2 (Section B)	60.	LF	\$ _____	\$ _____
68	609-21023	Curb and Gutter Type 2 (Section II-B) (Special)	1,729.	LF	\$ _____	\$ _____
69	609-24003	Gutter Type 2 (3 Foot)	25.	LF	\$ _____	\$ _____
70	612-00001	Delineator (Type I)	1.	EA	\$ _____	\$ _____
71	613-00207	2 Inch Electrical Conduit (Bridge) (Special)	236.	LF	\$ _____	\$ _____
72	613-01200	2 Inch Electrical Conduit (Plastic)	2,807.	LF	\$ _____	\$ _____
73	613-04010	Conduit (4" Broadband)	2,784.	LF	\$ _____	\$ _____
74	613-07001	Type One Pull Box	27.	EA	\$ _____	\$ _____
75	613-07010	Pull Box (Surface Mounted)	1.	EA	\$ _____	\$ _____
76	613-07040	Pull Box (30"x48"x24") (Broadband)	6.	EA	\$ _____	\$ _____
77	613-10000	Wiring	1.	LS	\$ _____	\$ _____
78	613-30005	Light Standard and Luminaire (Pedestrian)	28.	EA	\$ _____	\$ _____
79	613-40012	Light Standard Foundation (Special)	28.	EA	\$ _____	\$ _____
80	613-50106	Lighting Control Center (Special)	1.	EA	\$ _____	\$ _____
81	614-00011	Sign Panel (Class I)	26.5	SF	\$ _____	\$ _____
82	614-00012	Sign Panel (Class II)	54.	SF	\$ _____	\$ _____
83	614-01503	Steel Sign Support (2-inch Round)(Post and Socket)	2.	EA	\$ _____	\$ _____

Bid Schedule: B 1/2 Rd. Overpass at US 50 Multimodal Conversion Project

Item No.	CDOT, City Ref.	Description	Quantity	Units	Unit Price	Total Price
84	614-01573	Steel Sign Support (2-1/2 Inch Round NP-40)(Post & Slipbase)	6.	EA	\$ _____	\$ _____
85	614-80314	Barricade (Type 3 F-D)	1.	EA	\$ _____	\$ _____
86	619-50480	6 Inch Plastic Pipe	30.	LF	\$ _____	\$ _____
87	620-00020	Sanitary Facility	1.	EA	\$ _____	\$ _____
88	625-00000	Construction Surveying	1.	LS	\$ _____	\$ _____
89	626-00000	Mobilization	1.	LS	\$ _____	\$ _____
90	627-00005	Epoxy Pavement Marking	39.	GAL	\$ _____	\$ _____
91	627-30410	Preformed Thermoplastic Pavement Marking (Xwalk-Stop Line)	608.	SF	\$ _____	\$ _____
92	630-00000	Flagging	500.	HOUR	\$ _____	\$ _____
93	630-00007	Traffic Control Inspection	32.	DAYS	\$ _____	\$ _____
94	630-00012	Traffic Control Management	80.	DAYS	\$ _____	\$ _____
95	630-80336	Barricade (Type 3 M-B) (Temporary)	5.	EA	\$ _____	\$ _____
96	630-80341	Construction Traffic Sign (Panel Size A)	22.	EA	\$ _____	\$ _____
97	630-80342	Construction Traffic Sign (Panel Size B)	16.	EA	\$ _____	\$ _____
98	630-80344	Construction Sign Panel (Special)	21.	SF	\$ _____	\$ _____
99	630-80358	Advance Warning Flashing or Sequencing Arrow Panel (Type C)	2.	EA	\$ _____	\$ _____
100	630-80359	Portable Message Sign Panel	60.	DAYS	\$ _____	\$ _____
101	630-80360	Drum Channelizing Device	80.	EA	\$ _____	\$ _____
102	630-80363	Drum Channelizing Device (With Light) (Flashing)	80.	EA	\$ _____	\$ _____
103	630-80380	Traffic Cone	160.	EA	\$ _____	\$ _____

Bid Schedule: B 1/2 Rd. Overpass at US 50 Multimodal Conversion Project

Item No.	CDOT, City Ref.	Description	Quantity	Units	Unit Price	Total Price
MCR	700-70010	Minor Contract Revisions	---	---	---	\$ 75,000.00

Bid Amount: \$ _____

Bid Amount: _____ **dollars**

Contractor's Name: _____

Contractor's Address: _____

Contractor's Phone #: _____

The undersigned Bidder proposes to subcontract the following portion of Work:

<u>Name & address of Sub-Contractor</u>	<u>Description of work to be performed</u>	<u>% of Contract</u>
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

The undersigned Bidder acknowledges the right of the City to reject any and all Bids submitted and to waive informalities and irregularities therein in the City's sole discretion.

By submission of the Bid, each Bidder certifies, and in the case of a joint Bid each party thereto certifies as to his own organization, that this Bid has been arrived at independently, without collusion, consultation, communication, or agreement as to any matter relating to this Bid with any other Bidder or with any competitor.

PROJECT SPECIAL PROVISIONS

COLORADO
DEPARTMENT OF TRANSPORTATION
SPECIAL PROVISIONS
B ½ Rd. Overpass at U.S. HWY 50 Multimodal Conversion Project

The 2011 Standard Specifications for Road and Bridge Construction controls construction of this project. The following special provisions supplement or modify the Standard Specifications and take precedence over the Standard Specifications and plans.

PROJECT SPECIAL PROVISIONS

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NOTICE TO BIDDERS

The proposal guaranty shall be a certified check, cashier's check, or bid bond in the amount of 5 percent of the Contractor's total bid.

Pursuant to subsections 102.04 and 102.05, it is recommended that bidders on this project review the work site and plan details with an authorized City representative. Prospective bidders shall contact one of the following listed authorized City representatives at least 12 hours in advance of the time they wish to go over the project.

City Engineering Manager Engineer - Trent Prall
Office Phone: 970-256-4047
Email: trentonp@gjcity.org

Project Engineer - Lee Cooper
Office Phone: 970-256-4155
Cell Phone: 970-589-4985
Email: leec@gjcity.org

City Buyer - Duane Hoff
Office Phone: 970-244-1545
Email: duaneh@gjcity.org

The above referenced individuals are the only representatives of the City with authority to provide any information, clarification, or interpretation regarding the plans, specifications, and any other contract documents or requirements.

A mandatory pre bid conference will be held on Tuesday, August 30, 2016 beginning at 10:00 am in the City Hall Auditorium at City Hall. Bids will be accepted only from pre-qualified bidders who attend the mandatory pre-bid conference.

Questions received from bidders along with City's responses will be posted on Rocky Mountain Bid Net and the City of Grand Junction's website in the Bids section and will be listed as Addenda. Below is the link to the website: <http://www.gjcity.org/bids.aspx>

If the bidder has a question or requests clarification that involves the bidder's innovative or proprietary means and methods, phasing, scheduling, or other aspects of construction of the project, the Project Engineer will address the question or clarification. The Project Engineer will keep the bidder's innovation confidential and will not share this information with other bidders.

The Project Engineer will determine whether questions are innovative or proprietary in nature. If the Project Engineer determines that a question does not warrant confidentiality, the bidder may withdraw the question. If the bidder withdraws the question, the Project Engineer will not answer the question and the question will not be documented in an Addendum on the City's web site. If the bidder does not withdraw the question, the question will be answered, and both the question and the City's answer will be posted on the web site within an Addendum. If the Project Engineer agrees that a question warrants confidentiality, the Project Engineer will answer the question, and keep both question and answer confidential. The City will keep a record of both question and answer in their confidential file.

All comments and questions shall be directed to the Project Engineer and the City Buyer listed above prior to 5:00 P.M. on Thursday, September 1, 2016. Final questions and answers will be posted no later than Tuesday morning of bid opening week.

Federal Aid Project No.: TAP M555-032
Project Code: 20736

April 28, 2016

Questions and answers shall be used for reference only and shall not be considered part of the Contract.

COMMENCEMENT AND COMPLETION OF WORK

The Contractor shall complete all work within 89 calendar days in accordance with the "Notice to Proceed."

Completion is achieved when site clean-up and all punch list items (resulting from the final inspection) have been completed. Final Completion shall be the date upon which the Work, in the City's opinion and based upon its inspection, is acceptable and fully performed in accordance with the Contract Documents, and all other requirements or conditions to the City's advertisement of the Project for final payment have been fulfilled. Final Completion shall be evidenced by the City's issuance of a Letter of Final Acceptance.

The anticipated schedule for the Project is as follows:

Invitation for Bids available:	August 14, 2016
Mandatory Pre-Bid Meeting:	August 30, 2016
Inquiry Deadline:	September 1, 2016
Addenda Issued by:	September 2, 2016
Bid Opening:	September 8, 2016
City Council approval:	September 21, 2016
Notice of Award:	TBD
Contract, Bond and Insurance Cert:	TBD
Preconstruction Meeting:	October 4, 2016
Begin Work:	October 10, 2016
Final Completion:	January 6, 2017

Section 108 of the Standard Specifications is hereby revised for this project as follows:

Subsection 108.03 shall include the following:

Salient features for this project are:

- (1) Clearing and Grubbing
- (2) Guardrail removal
- (3) Preliminary BMP's installation
- (4) Storm drain pipe, storm inlets and manhole installation
- (5) Guardrail installation
- (6) Utility installations
- (7) Grading operations
- (8) Concrete work
- (9) Pedestrian light installation
- (10) Inorganic mulch installation
- (11) Asphalt patching
- (12) Striping and Signage

Disadvantaged Business Enterprise (DBE) Contract Goal

This is a federally-assisted construction project. As described in the CDOT DBE Standard Special Provision, the Bidder shall make good faith efforts to meet the following contract goal:

4.8 Percent DBE participation.

ON THE JOB TRAINING CONTRACT GOAL

The Department has determined that On the Job Training shall be provided to trainees with the goal of developing full journey workers in the types of trade or classification involved. The contract goal for On the Job Trainees working in an approved training plan in this Contract has been established as follows:

Minimum number of total On the Job Training required **0** hours

REVISION OF SECTION 202
REMOVAL OF ASPHALT MAT

Section 202 of the Standard Specifications is hereby revised for this project as follows:

Subsection 202.01 shall include the following:

This work includes removal and disposal of existing asphalt mat within the project limits as shown on the plans or at locations directed by the Engineer.

In subsection 202.02 delete the seventh paragraph and replace with the following:

The existing asphalt mat shall be removed in a manner that minimizes contamination of the removed mat with underlying material. The removed mat shall become the property of the Contractor and shall be disposed of outside the project site.

REVISION OF SECTION 202
REMOVAL OF ASPHALT MAT (PLANING)

Section 202 of the Standard Specifications is hereby revised for this project as follows:

Subsection 202.09 shall include the following:

The City of Grand Junction will retain all of the asphalt millings removed from the existing asphalt mat on this project from the planing operations.

For this project the asphalt millings that the City of Grand Junction will retain shall be delivered and stockpiled at the following location by the Contractor:

City Shops Facility located at: 333 West Avenue (near Riverside Parkway)

Subsection 202.12 shall include the following:

Unless otherwise specified in the Contract, the disposal and hauling of the asphalt millings to other locations or its use on the project or at other locations will not be measured and paid for separately, but shall be included in the work.

REVISION OF SECTION 203
EMBANKMENT MATERIAL

Section 203 of the Standard Specifications is hereby revised for this project as follows:

In subsection 203.03(a), first paragraph, after the second sentence add the following:

Embankment material, whether excavated from the site or imported, shall have an R-value equal to or greater than 40 when tested by the Hveem Stabilometer. The Contractor shall provide a certified R-Value test result to the Project Engineer for approval prior to any material placement on the Project. Excavated material shall meet a minimum R-value of 40, or it shall not be used as embankment.

Delete subsection 203.13(f), and replace with the following:

- (f) *Proof Rolling*. Proof rolling will not be measured and paid for separately, but shall be included in the work.

REVISION OF SECTION 206
EXCAVATION AND BACKFILL FOR CULVERTS

Section 206 of the Standard Specifications is hereby revised for this project as follows:

Delete subsection 206.02(b) and replace with the following:

- (b) Bed Course Material. Bed course material shall also be referred to as Type A Pipe Bedding Material. Type A Pipe Bedding Material shall meet the following gradation requirements:

Sieve Size	Percent passing, by weight
	Pipe bedding & hauch (crushed rock) Type A
2 Inch	-----
1 Inch	100%
#4	20% max.

Subsection 206.07 shall include the following:

Structure excavation and structure backfill required for all culverts and extensions will not be measured and paid for separately but shall be included in the work.

REVISION OF SECTION 213
MULCHING

Section 213 of the Standard Specifications is hereby revised for this project as follows:

Subsection 213.02 shall include the following:

Inorganic Mulch for landscape mulch shall be 1-1/2 inch tan granite rock, as is naturally available in the region. Rock mulch shall be free of trash, sticks or roots. Submit sample to the Project Engineer for approval at least 30 days prior to placing on project.

Subsection 213.03 shall include the following:

(g) *Inorganic Mulch (Decorative)*. A 4-inch thick layer of granite shall be uniformly applied to all landscape beds as shown on the plans or as directed.

Subsection 213.04 shall include the following:

The quantity of inorganic mulch will not be measured but shall be the quantity designated in the contract, except that measurements will be made for revisions requested by the Engineer, or for discrepancies of plus or minus five percent of the total quantity designated in the Contract.

Subsection 213.05 shall include the following:

Payment will be made under:

Pay Item	Pay Unit
Inorganic Mulch	Cubic Yard

REVISION OF SECTION 304
AGGREGATE BASE COURSE

Section 304 of the Standard Specifications is hereby revised for this project as follows:

Subsection 304.02 shall include the following:

Materials for the base course shall be Aggregate Base Course (Class 6) as shown in subsection 703.03.

The aggregate base course (Class 6) must meet the gradation requirements and have a resistance value of at least 78 respectively when tested by the Hveem Stabilometer method.

Subsection 304.08 shall include the following:

The accepted quantities of aggregate base course, of the class specified, will be paid for at the contract price bid per ton as shown in the bid schedule.

The contract unit price for aggregate base course, of the class specified, shall include hauling and disposal of any unsuitable structure excavated material.

1
 REVISION OF SECTION 403
 HOT MIX ASPHALT

Section 403 of the Standard Specifications is hereby revised for this project as follows:

Subsection 403.02 shall include the following:

The design mix for hot mix asphalt shall conform to the following:

◆ Table 403-1						
Property	Test Method	Value For Grading				
				SX(75)		SX(75) Patching
Air Voids, percent at: N (design)	CPL 5115			3.5 – 4.5		3.5 – 4.5
Lab Compaction (Revolutions): N (design)	CPL 5115			75		75
Stability, minimum	CPL 5106			30		30
Aggregate Retained on the 4.75 mm (No. 4) Sieve for S, SX and SG, and on the 2.36mm (No. 8) Sieve for ST and SF with at least 2 Mechanically Induced fractured faces, % minimum*	CP 45			80%		80%
Accelerated Moisture Susceptibility Tensile Strength Ratio (Lottman), minimum	CPL 5109 Method B			80		80
Minimum Dry Split Tensile Strength, kPa (psi)	CPL 5109 Method B			205 (30)		205 (30)
Grade of Asphalt Cement, Top Layer				PG76-28		PG64-22
Grade of Asphalt Cement, Layers below Top				PG64-22		PG64-22
Voids in the Mineral Aggregate (VMA) % minimum	CP 48			See Table 403-2		See Table 403-2
Voids Filled with Asphalt (VFA), %	AI MS-2			65-80		65-80
Dust to Asphalt Ratio Fine Gradation Coarse Gradation	CP 50			0.6 – 1.2 0.8 – 1.6		0.6 - 1.2 0.8 – 1.6
Note: AI MS-2 = Asphalt Institute Manual Series 2 Note: Mixes with gradations having less than 40% passing the 4.75 mm (No. 4) sieve shall be approached with caution because of constructability problems. Note: Gradations for mixes with a nominal maximum aggregate size of one-inch or larger are considered a coarse gradation if they pass below the maximum density line at the #4 screen. Gradations for mixes with a nominal maximum aggregate size of 3/4" to 3/8" are considered a coarse gradation if they pass below the maximum density line at the #8 screen. Gradations for mixes with a nominal maximum aggregate size of #4 or smaller are considered a coarse gradation if they pass below the maximum density line at the #16 screen. *Fractured face requirements for SF may be waived by RME depending on project conditions.						

2
 REVISION OF SECTION 403
 HOT MIX ASPHALT

All mix designs shall be run with a gyratory compaction angle of 1.25 degrees and properties must satisfy Table 403-1. Form 43 will establish construction targets for Asphalt Cement and all mix properties at Air Voids up to 1.0 percent below the mix design optimum. CDOT will establish the production asphalt cement and volumetric targets based on the Contractor's mix design and the relationships shown between the hot mix asphalt mixture volumetric properties and asphalt cement contents on the Form 429. CDOT may select a different AC content other than the one shown at optimum on the Contractor's mix design in order to establish the production targets as contained on the Form 43. Historically, Air Voids adjustments typically result in asphalt cement increases from 0.1 to 0.5 percent. Contractors bidding the project should anticipate this change and factor it into their unit price bid.

Table 403-2

Nominal Maximum Size*, mm (inches)	Minimum Voids in the Mineral Aggregate (VMA)			
	***Design Air Voids **			
	3.5%	4.0%	4.5%	5.0%
37.5 (1½)	11.6	11.7	11.8	N/A
25.0 (1)	12.6	12.7	12.8	
19.0 (¾)	13.6	13.7	13.8	
12.5 (½)	14.6	14.7	14.8	
9.5 (¾)	15.6	15.7	15.8	
4.75 (No. 4)	16.6	16.7	16.8	16.9
	* The Nominal Maximum Size is defined as one sieve larger than the first sieve to retain more than 10%. ** Interpolate specified VMA values for design air voids between those listed. *** Extrapolate specified VMA values for production air voids beyond those listed.			

The Contractor shall prepare a quality control plan outlining the steps taken to minimize segregation of HMA. This plan shall be submitted to the Engineer and approved prior to beginning the paving operations. When the Engineer determines that segregation is unacceptable, the paving shall stop and the cause of segregation shall be corrected before paving operations will be allowed to resume.

3
REVISION OF SECTION 403
HOT MIX ASPHALT

Hot mix asphalt for patching shall conform to the gradation requirements for Hot Mix Asphalt (Grading SX).

A minimum of 1 percent hydrated lime by weight of the combined aggregate shall be added to the aggregate for all hot mix asphalt.

Acceptance samples shall be taken at the location specified in either Method B or C of CP 41.

Subsection 403.03 shall include the following:

Delete subsection 403.05 and replace with the following:

403.05 The accepted quantities of hot mix asphalt will be paid for in accordance with subsection 401.22, at the contract unit price per ton for the bituminous mixture.

Payment will be made under:

Pay Item	Pay Unit
Hot Mix Asphalt (Grading SX)(75)(PG 64-22)	Ton
Hot Mix Asphalt (Grading SX)(75)(PG 76-28)	Ton
Hot Mix Asphalt (Patching) (Asphalt)	Ton

Aggregate, asphalt recycling agent, asphalt cement, additives, hydrated lime, and all other work and materials necessary to complete each hot mix asphalt item will not be paid for separately, but shall be included in the unit price bid. When the pay item includes the PG binder grade, any change to the submitted mix design optimum asphalt cement content to establish production targets on the Form 43 will not be measured and paid for separately, but shall be included in the work. No additional compensation will be considered or paid for any additional asphalt cement, plant modifications and additional personnel required to produce the HMA as a result in a change to the mix design asphalt cement content.

Historically, typical asphalt cement increases reflected on the Form 43 are from 0.1 to 0.5 percent. However, the Contractor should anticipate the AC increases typical of his mixes. Contractors bidding the project should anticipate this change and factor it into their unit price bid.

When the pay item does not include the PG binder grade, asphalt cement will be measured and paid for in accordance with Section 411. Asphalt cement used in Hot Mix Asphalt (Patching) will not be measured and paid for separately, but shall be included in the work.

Excavation, preparation, and tack coat of areas to be patched will not be measured and paid for separately, but shall be included in the work.

REVISION OF SECTION 603
REINFORCED CONCRETE PIPE

Section 603 of the Standard Specifications is hereby revised for this project as follows:

Subsection 603.02 shall include the following:

Reinforced concrete pipe shall be manufactured from concrete that meets the requirements for severity of sulfate exposure Class 2 specified in subsection 601.04.

Subsection 603.12 shall include the following:

Type A bedding and haunch material will not be paid for separately but shall be included in the cost of the pipe.

1
REVISION OF SECTION 608
DETECTABLE WARNINGS

Section 608 of the Standard Specifications is hereby revised for this project as follows:

Subsection 608.01 shall include the following:

This work includes the installation of detectable warnings on concrete curb ramps as shown on the plans.

Subsection 608.02 shall include the following:

Detectable warnings on curb ramps shall be truncated domes of the dimensions shown on the plans. Domes shall be prefabricated by the manufacturer as a pattern on embeddable surface plates, concrete pavers, or masonry pavers.

Plates and pavers shall meet all Americans with Disabilities Act (ADA) requirements for truncated domes, and when installed, shall be capable of producing the pattern of domes shown on the plans.

Pavers shall meet the requirements of ASTM C 902 or ASTM C 936.

Plates used shall be one of the products approved for use as detectable warnings listed on CDOT's Approved Products List.

The domes and their underlying surface shall have a discernible contrast of color from the adjacent surface. The contrasting colors shall not be black and white.

The paver contrast shall be achieved by adding pigment during the fabrication of the paver. Prior to the start of work, the Contractor shall submit appropriate documentation from the manufacturer verifying that the contrast has been met, along with a sample paver, to the Engineer for approval.

When plates are used, prior to the start of work, the Contractor shall submit appropriate documentation from the manufacturer verifying that the contrast has been met, along with a sample plate, to the Engineer for approval.

Bedding and joint sand for pavers shall be free of deleterious or foreign matter. The sand shall be natural or manufactured from crushed rock. Limestone screenings or stone dust shall not be used. Sand for bedding material shall conform to ASTM C 33. Sand that is to be placed between joints shall conform to ASTM C 144.

Subsection 608.03 shall include the following:

(g) *Detectable Warnings for curbs ramps.*

1. Pavers. Pre-fabricated pavers for detectable warnings shall be brought to the site in steel banded, plastic banded or plastic wrapped cubes capable of being transported by a fork lift or clamp lift. Pavers shall be carefully removed and stacked in a manner which results in the least amount of damage. All pavers that are damaged during transport or delivery will be rejected and shall be replaced at the Contractor's expense. Minor cracks or chipping due to transport and handling that do not interfere with the structural integrity of the paver or the overall pattern of truncated domes will not be deemed as grounds for rejection.

REVISION OF SECTION 608
DETECTABLE WARNINGS

The Contractor shall spread the bedding sand evenly in the area shown on the plans and shall screed the sand to an appropriate embedment depth as shown on the plans or as directed by the Engineer. Sufficient sand shall be placed to stay ahead of laid pavers

Pavers shall be placed in a running bond pattern. Pavers shall be installed such that the base of the truncated dome is at the same elevation as the adjoining surface, allowing for a smooth transition between the curb ramp and the detectable warning.

When cut pavers are required to fill gaps between the pavers and the edge of concrete, the Contractor shall bevel portions of the truncated domes at a 45-degree angle to create a smooth transition between the partial dome and the curb ramp surface. Unless otherwise directed by the Engineer, pavers shall be cut and installed in such a manner that the domes on the cut sections will not significantly impact the overall pattern of the truncated domes.

The Contractor shall use a plate vibrator to embed the pavers into the sand. The size and type of plate vibrator shall be in accordance with manufacturer's recommendations, or as directed by the Engineer. All pavers that are damaged during embedment shall be replaced at the Contractor's expense.

Joint spacing between paver units shall be in accordance with the manufacturer's recommendations, or as approved by the Engineer. Joints shall be filled completely with joint sand. Excess sand shall be removed by sweeping.

2. Plates. Prior to installation of the plates, concrete conforming to subsection 608.02 shall be installed and consolidated as a base for the plates. The concrete shall be placed to a thickness that will allow the base surface of the plates to be at the same elevation as the adjacent concrete. The plates shall be embedded into the plastic concrete in accordance with the manufacturer's specifications.

Subsection 608.05 shall include the following:

Detectable warnings on curb ramps, including sand, pavers, plates, and all other work and materials necessary for fabrication, transport, and installation will not be measured and paid for separately, but shall be included in the work.

REVISION OF SECTION 630
PORTABLE MESSAGE SIGN PANEL

Section 630 of the Standard Specifications is hereby revised for this project as follows:

Subsection 630.01 shall include the following:

This work includes furnishing, operating, and maintaining a portable message sign panel.

Add subsection 630.031 immediately following subsection 630.03 as follows:

630.031 Portable Message Sign Panel. Portable message sign panel shall be furnished as a device fully self contained on a portable trailer, capable of being licensed for normal highway travel, and shall include leveling and stabilization jacks. The panel shall display a minimum of three - eight character lines. The panel shall be a dot-matrix type with an LED legend on a flat black background. LED signs shall have a pre-default message that activates before a power failure. The sign shall be solar powered with independent back-up battery power. The sign shall be capable of 360 degrees rotation and shall be able to be elevated to a height of at least five feet above the ground measured at the bottom of the sign. The sign shall be visible from one-half mile under both day and night conditions. The message shall be legible from a minimum of 750 feet. The sign shall automatically adjust its light source to meet the legibility requirements during the hours of darkness. The sign enclosure shall be weather tight and provide a clear polycarbonate front cover.

Solar powered message signs shall be capable of operating continuously for 10 days without any sun. All instrumentation and controls shall be contained in a lockable enclosure. The sign shall be capable of changing and displaying sign messages and other sign features such as flash rates, moving arrows, etc.

Each sign shall also conform to the following:

- (1) In addition to the onboard solar power operation with battery back-up, each sign shall be capable of operating on a hard wire, 100-110 VAC, external power source.
- (2) All electrical wiring, including connectors and switch controls necessary to enable all required sign functions shall be provided with each sign.
- (3) Each sign shall be furnished with an operating and parts manual, wiring diagrams, and trouble-shooting guide.
- (4) The portable message sign shall be capable of maintaining all required operations under Colorado mountain-winter weather conditions.
- (5) Each sign shall be furnished with an attached license plate and mounting bracket.
- (6) Each sign shall be wired with a 7-prong male electric plug for the brake light wiring system.

Subsection 630.13 shall include the following:

The portable message sign panel shall be on the project site at least 7 calendar days prior to the start of active roadway construction. Maintenance, storage, operation, relocation to different sites during the project, and all repairs of portable message sign panels shall be the responsibility of the Contractor.

Subsection 630.15 shall include the following:

Portable message sign panels will be measured one of the two following ways:

- (1) By the actual number of days each portable message sign is used on the project as approved by the Engineer.
- (2) By the maximum number of approved units in use on the project at any one time.

REVISION OF SECTION 630
PORTABLE MESSAGE SIGN PANEL

Subsection 630.16 shall include the following:

Pay Item	Pay Unit
Portable Message Sign Panel	Day

FORCE ACCOUNT ITEMS

DESCRIPTION

This special provision contains the Department's estimate for force account items included in the Contract. The estimated amounts marked with an asterisk will be added to the total bid to determine the amount of the performance and payment bonds. Force Account work shall be performed as directed by the Engineer.

BASIS OF PAYMENT

Payment will be made in accordance with subsection 109.04. Payment will constitute full compensation for all work necessary to complete the item.

Force account work valued at \$5,000 or less, that must be performed by a licensed journeyman in order to comply with federal, state, or local codes, may be paid for after receipt of an itemized statement endorsed by the Contractor.

<u>Force Account Item</u>	<u>Estimated Quantity</u>	<u>Amount</u>
F/A Minor Contract Revisions	F.A.	\$75,000.00*
F/A Partnering	F.A.	\$500.00
F/A Fuel Cost Adjustment	F.A.	\$5,000.00
F/A Furnish & Install Electrical Service	F.A.	\$8,000.00
F/A Sprinklers	F.A.	\$6,000.00
F/A Erosion Control	F.A.	\$2,500.00

F/A Minor Contract Revisions – This work consists of minor work authorized and approved by the Engineer, which is not included in the Contract plans or specifications and is necessary to accomplish the scope of work of this Contract. This F/A item shall be included in the bonds.

F/A Partnering – This work is described in Standard Special Provision, “Partnering Program”.

F/A Fuel Cost Adjustment – This work is described in Stand Special Provision, Revision of Section 109 – Fuel Cost Adjustment.

F/A On the Job Trainee – This work is described in Standard Special Provision, “On the Job Training”.

F/A Furnish & Install Electrical Service – This force account will be used to reimburse the Contractor for the Utility company furnishing and installing electrical service.

F/A Sprinklers – This force account will be used to reimburse the Contractor labor and supplies used to repair and relocate private irrigation systems.

F/A Erosion Control – This force account will be used to pay for additional erosion control measures not itemized in the plan sheets.

TRAFFIC CONTROL PLAN - GENERAL

The key elements of the Contractor's method of handling traffic (MHT) are outlined in subsection 630.10(a).

The components of the TCP for this project are included in the following:

- (1) Subsection 104.04 and Section 630 of the specifications.
- (2) Standard Plan S-630-1, Traffic Controls for Highway Construction and Standard Plan S-630-2.
- (3) Construction phasing details:
 - The Contractor shall begin work on the B $\frac{1}{2}$ Road Overpass and work in coordination with CDOT's U.S. HWY 50 Project if necessary.
 - The majority of B $\frac{1}{2}$ Road work shall begin after the Guardrail, Guardrail (Special), Guardrail Type 7 and asphalt paving have been completed along the overpass.
 - The Contractor will be allowed to close the eastbound lane of B $\frac{1}{2}$ Road from Parkview Ave. to 27 $\frac{3}{4}$ Road during the Contractor's working hours. During the Contractor's non-working hours, the eastbound lane of B $\frac{1}{2}$ Road shall be opened up to traffic.
 - The overpass shall not be opened to traffic until all items associated with the overpass improvements are complete.
- (4) Detour Details:
 - During Contractor's working hours along B $\frac{1}{2}$ Road, the eastbound B $\frac{1}{2}$ Road traffic will need to be detoured to the signalized intersection at 27 $\frac{3}{4}$ Road via HWY 50.
 - No detour anticipated for westbound B $\frac{1}{2}$ Road traffic.

The Contractor shall submit for approval to the City Project Engineer, a Traffic Control Plan (TCP) prepared by an American Traffic Safety Services Association (ATSSA) certified individual or a professional traffic engineer, consistent with the M.U.T.C.D. 7 days prior to the pre-construction meeting. The TCP shall include, but not be limited to, closing the B $\frac{1}{2}$ Road Overpass to traffic, providing and maintaining all detour routes and TCP signage.

Unless otherwise approved by the Engineer, the Contractor's equipment shall follow normal and legal traffic movements. The Contractor's ingress and egress of the work area shall be accomplished with as little disruption to traffic as possible. Traffic control devices shall be removed by picking up the devices in a reverse sequence to that used for installation. This may require moving backwards through the work zone. When located behind barrier or at other locations shown on approved traffic control plans, equipment may operate in a direction opposite to adjacent traffic.

The Contractor shall not have construction equipment or materials in the lanes open to traffic at any time, unless approved by the Engineer.

During the resurfacing work, only one lane may be closed to traffic at any time unless approved by the Engineer.

All costs incidental to the foregoing requirements shall be included in the original contract prices for the project.

UTILITIES

Known utilities within the limits of this project are:

-or- The following utilities are within the limits of this project but are not expected to be involved.

CITY OF GRAND JUNCTION (Sanitary & Storm Sewer)	BRET GUILLORY	970-244-1590
XCEL ENERGY (Electric & Gas)	JON PRICE	970-244-2693
CENTURY LINK (Telephone & Fiber Optic)	CHRIS JOHNSON	970-244-4311
CHARTER (Cable Television)	JEFF VALDEZ	970-263-2314
UTE WATER CONSERVANCY DISTRICT	JUSTIN BATES	970-256-2889
		Cell: 970-589-9153

The work described in these plans and specifications requires coordination between the Contractor and the utility companies in accordance with subsection 105.11 in conducting their respective operations as necessary to complete the utility work with minimum delay to the project.

The Contractor shall be required to meet with each utility owner impacted by the work a minimum of fifteen (15) days in advance of any construction operations to coordinate required utility work with the construction activity. Coordination with utility owners includes, but is not limited to, providing and periodically updating an accurate construction schedule that includes all utility work elements. Surveying and/or staking of utility relocations to be performed by the owner shall be the responsibility of the owner.

The Contractor shall conduct coordination meetings as required for the purpose of coordinating construction activities with the utility owners. However, traffic control for utility work outside of typical project work hours or outside of project limits shall be the responsibility of the utility owner.

The Contractor shall provide traffic control for any utility work expected to be coordinated with construction operations as directed by the Engineer.

The work listed below shall be performed by the Contractor in accordance with the plans and specifications, and as directed by the Engineer. The Contractor shall keep each utility company advised of any work being done to its facility, so that the utility company can coordinate its inspections for final acceptance of the work with the Engineer.

CITY OF GRAND JUNCTION (Sanitary & Storm Sewer) Prior Notice: 2-3 working days

Contractor Responsibilities –

Contractor is responsible for contacting the City of Grand Junction if there are any questions regarding the existing sanitary and storm sewer pipes along B ½ Road. The Contractor shall also notify the City of Grand Junction if invert elevations of existing structures in the field differ from the elevations shown in the construction plans. There should be no relocations necessary for both sanitary and storm sewer pipes.

Utility Owner's Responsibilities –

The City of Grand Junction will coordinate with the Contractor and provide locates and information regarding the sanitary and storm sewer. Any relocations, if necessary, will need to be completed by the Contractor.

XCEL ENERGY (Electric & Gas) Prior Notice: 15 working days

Contractor Responsibilities –

Contractor is responsible for coordinating their construction activities with Xcel Energy's relocation efforts. There is potential for the new storm drain piping associated with the new storm drain inlets to be in conflict with the existing gas line along B ½ Road. There are four (4) new storm drain inlets that could potentially have a conflict with the existing gas lines. The City of Grand Junction did not complete any potholing operations. The Contractor will need to identify and pothole all possible conflict locations based on field locates and construction plan information. If pothole information identifies a conflict,

notification to the utility owner will be required in a timely manner to allow said utility owner ability to adjust or relocate their facility. The Contractor shall be responsible for protecting all utility facilities from damage from their operations.

Contractor is responsible for purchasing the electric meter from Xcel Energy for service of the new pedestrian lights. The Contractor shall use the Force Account pay item (F/A Furnish & Install Electric Service) for the purchase of the electric meter.

Utility Company Responsibilities –

Xcel Energy will coordinate with the Contractor and provide locates and relocations of their facilities as needed.

Xcel Energy will sell an electric meter to the contractor for service to the pedestrian lights.

CENTURY LINK (Telephone & Fiber Optic) Prior Notice: 15 working days

Contractor Responsibilities –

Contractor is responsible for coordinating their construction activities with Century Link's relocation efforts. There is one manhole and two storm drain pipes that are to be installed and are identified as potential conflict between utilities. The Contractor will need to identify and pothole all possible conflict locations based on field locates and construction plan information. If pothole information identifies a conflict, notification to the utility owner will be required in a timely manner to allow said utility owner ability to adjust or relocate their facility. The Contractor shall be responsible for protecting all utility facilities from damage from their operations.

Potential conflicts currently identified at the following locations:

STA 20+93, 35' RT – New storm manhole and storm drain pipes could potentially be in conflict with the existing telephone pedestal and the underground telephone lines.

Utility Company Responsibilities –

Century Link will coordinate with the Contractor and provide locates and relocations of their facilities as needed.

CHARTER (Cable Television) Prior Notice: 15 days

Contractor Responsibilities –

Contractor is responsible for coordinating their construction activities with Charter's relocation efforts. The new detached sidewalk and the new underground conduits that are to be installed and are identified as potential conflict between utilities. The Contractor will need to identify and pothole all possible conflict locations based on field locates and construction plan information. If pothole information identifies a conflict, notification to the utility owner will be required in a timely manner to allow said utility owner ability to adjust or relocate their facility. The Contractor shall be responsible for protecting all utility facilities from damage from their operations.

Potential conflicts currently identified at the following locations:

STA 29+45, 35' RT – New detached sidewalk and underground conduits could potentially be in conflict with Charter's pedestal and any underground utility lines.

Utility Company Responsibilities –

Charter will coordinate with the Contractor and provide locates and relocations of their facilities as needed. The new location of the pedestal will be decided upon in the field with the Project Engineer present.

UTE WATER CONSERVANCY DISTRICT – Prior Notice: 15 days

Contractor Responsibilities –

Contractor is responsible for coordinating the relocation of two existing fire hydrants as shown in the plans. The Contractor is responsible for the relocation and installation of the fire hydrants. The new detached sidewalk that is to be installed creates a conflict with the current fire hydrant locations. The Contractor shall be responsible for protecting all utility facilities from damage from their operations. During construction should the Contractor discover a conflict with the water line and another underground utility, the Contractor shall notify the Project Engineer and Ute Water immediately.

Fire hydrant relocations:

STA 26+60, 38' RT to STA 26+58, 46' RT

STA 30+68, 30' RT to STA 30+67, 25' RT

Utility Company Responsibilities –

Ute Water will coordinate with the Contractor and provide locates of their facilities as needed, and provide relocation oversight to make sure the fire hydrants are installed to Ute Water standards.

GENERAL:

The Contractor shall comply with Article 1.5 of Title 9, CRS ("Excavation Requirements") when excavation or grading is planned in the area of underground utility facilities. The Contractor shall notify all affected utilities at least two (2) business days, not including the day of notification, prior to commencing such operations. The Contractor shall contact the Utility Notification Center of Colorado (UNCC) at (8-1-1) or 1-800-922-1987 to have locations of UNCC registered lines marked by member companies. All other underground facilities shall be located by contacting the respective company. For CDOT owned utility facilities the Contractor shall call the CDOT Region 3 Traffic Section at 970-683-6271 to request locates. Utility service laterals shall also be located prior to beginning excavating or grading.

The location of utility facilities as shown on the plan and profile sheets, and herein described, were obtained from the best available information.

All costs incidental to the foregoing requirements will not be paid for separately but shall be included in the work.

STANDARD SPECIAL PROVISIONS

COLORADO
 DEPARTMENT OF TRANSPORTATION
 SPECIAL PROVISIONS
 B½ Rd. Overpass at U.S. HWY 50 Multimodal Conversion Project

STANDARD SPECIAL PROVISIONS

Name	Date	No. of Pages
Revision of Section 105 – Construction Surveying	(July 31, 2014)	1
Revision of Section 105 and 106 – Conformity to the Contract of Hot Mix Asphalt (Less than 5000 Tons)	(January 15, 2015)	8
Revision of Section 106 – Buy America Requirements	(November 6, 2014)	1
Revision of Section 106 – Certificates of Compliance and Certified Test Reports	(February 3, 2011)	1
Revision of Section 106, 627 and 713 - Glass Beads for Pavement Marking	(May 12, 2016)	2
Revision of Section 106 – Material Sources	(October 31, 2013)	1
Revision of Section 106 – Supplier List	(January 30, 2014)	1
Revision of Section 107 – Contractor Obtained Stormwater Construction Permit	(March 29, 2016)	6
Revision of Section 107 - Responsibility for Damage Claims, Insurance Types, and Coverage Limits	(February 3, 2011)	1
Revision of Section 107 – Project Payrolls	(May 2, 2013)	1
Revision of Section 107 – Warning Lights for Work Vehicles and Equipment	(January 30, 2014)	1
Revision of Section 108 – Delay and Extension of Contract Time	(April 30, 2015)	2
Revision of Section 108 – Liquidated Damages	(October 29, 2015)	1
Revision of Section 108 – Notice to Proceed	(July 31, 2014)	1
Revision of Section 108 – Subletting of Contract	(January 31, 2013)	1
Revision of Section 109 – Compensation for Compensable Delays	(May 5, 2011)	1
Revision of Section 109 – Fuel Cost Adjustment	(February 3, 2011)	2
Revision of Section 109 – Measurement of Quantities	(February 3, 2011)	1
Revision of Section 109 – Measurement of Water	(January 06, 2012)	1
Revision of Section 109 – Prompt Payment	(January 31, 2013)	1
Revision of Section 109 – Scales	(October 29, 2015)	1
Revision of Section 208 – Erosion Control	(March 29, 2016)	23
Revision of Section 401 – Compaction of Hot Mix Asphalt	(April 26, 2012)	1
Revision of Section 412, 601, and 711 – Liquid Membrane-Forming Compounds for Curing Concrete	(May 5, 2011)	1
Revision of Section 106 and 412 – Surface Texture of Portland Cement Concrete Pavement	(October 29, 2015)	3
Revision of Section 601 and 701 – Cements and Pozzolans	(November 6, 2014)	4
Revision of Section 601 – Concrete Batching	(February 3, 2011)	1
Revision of Section 601 – Concrete Finishing	(February 3, 2011)	1
Revision of Section 601 – Concrete Slump Acceptance	(October 29, 2015)	1
Revision of Section 603 – Culvert Pipe Inspection	(October 2, 2014)	1
Revision of Section 612 – Delineators	(February 3, 2011)	1
Revision of Section 630 – Retroreflective Sign Sheeting	(May 8, 2014)	1
Revision of Section 702 – Bituminous Materials	(March 29, 2016)	11
Revision of Section 703 – Aggregate for Bases (Without RAP)	(October 31, 2013)	1
Revision of Section 703 – Aggregate for Hot Mix Asphalt	(November 1, 2012)	2
Revision of Section 703 – Concrete Aggregates	(July 28, 2011)	1
Revision of Section 712 – Water for Mixing or Curing Concrete	(February 3, 2011)	1
Revision of Section 713 – Reflectors for Delineators and Median Barrier	(May 2, 2013)	1
Revision of Section 713 – Sign Panel Backgrounds	(November 6, 2014)	1

Affirmative Action Requirements – Equal Employment Opportunity	(February 3, 2011)	10
Disadvantaged Business Enterprise (DBE) Requirements	(Dec. 26, 2013)	9
Minimum Wages, Colorado, U.S. Department of Labor General Decision Number CO160024, Highway Construction for Larimer, Mesa, and Weld counties.	(January 8, 2016)	7
On the Job Training	(July 29, 2011)	3
Partnering Program	(February 3, 2011)	1
Required Contract Provisions – Federal-Aid Construction Contracts	(October 31, 2013)	14

REVISION OF SECTION 105
CONSTRUCTION SURVEYING

Section 105 of the Standard Specifications is hereby revised for this project as follows:

In subsection 105.13, delete (a) and replace with the following:

- (a) *Contractor Surveying.* When the bid schedule contains pay item 625, Construction Surveying, the City of Grand Junction will provide control points and bench marks as described in the Contract. The Contractor shall furnish and set construction stakes establishing lines and grades in accordance with the provisions of Section 625. The Engineer may order extra surveying which will be paid for at a negotiated rate not to exceed \$150 per hour.

In subsection 105.13 (b), delete the sixth paragraph and replace with the following:

The Contractor shall be held responsible for the preservation of all stakes and marks, and if any are destroyed, disturbed or removed by the Contractor, subcontractors, or suppliers, the cost of replacing them will be charged against the Contractor and will be deducted from the payment for the work at a negotiated rate not to exceed \$150 per hour.

REVISION OF SECTIONS 105 AND 106
CONFORMITY TO THE CONTRACT OF HOT MIX ASPHALT
(LESS THAN 5000 TONS)

Sections 105 and 106 of the Standard Specifications are hereby revised for this project as follows:

Delete subsection 105.05 and replace with the following:

105.05 Conformity to the Contract of Hot Mix Asphalt. Conformity to the Contract of all Hot Mix Asphalt, Item 403, except Hot Mix Asphalt (Patching) and temporary pavement will be determined by tests and evaluations of elements that include asphalt content, gradation, in-place density and joint density in accordance with the following:

All work performed and all materials furnished shall conform to the lines, grades, cross sections, dimensions, and material requirements, including tolerances, shown in the Contract.

For those items of work where working tolerances are not specified, the Contractor shall perform the work in a manner consistent with reasonable and customary manufacturing and construction practices.

When the Engineer finds the materials or work furnished, work performed, or the finished product are not in conformity with the Contract and has resulted in an inferior or unsatisfactory product, the work or material shall be removed and replaced or otherwise corrected at the expense of the Contractor.

Materials will be sampled randomly and tested by the Department in accordance with Section 106 and with the applicable procedures contained in the Department's Field Materials Manual. The approximate maximum quantity represented by each sample will be as set forth in Section 106. Additional samples may be selected and tested as set forth in Section 106 at the Engineer's discretion.

A process will consist of either a single test value or a series of test values resulting from related tests of an element of the Contractor's work and materials. An element is a material or workmanship property that can be tested and evaluated for quality level by the Department approved sampling, testing, and analytical procedures. All materials produced will be assigned to a process. A change in process is defined as a change that affects the element involved. For any element, with the exception of the process for joint density element, a process normally will include all produced materials associated with that element prior to a change in the job mix formula (Form 43). For joint density, a new process will be established for each new layer of pavement or for changes in joint construction. Density measurements taken within each compaction test section will be a separate process. The Engineer may separate a process in order to accommodate small quantities or unusual variations.

Evaluation of materials for pay factors (PF) will be done using only the Department's acceptance test results. Each process will have a PF computed in accordance with the requirements of this Section. Test results determined to have sampling or testing errors will not be used.

Except for in-place density measurements taken within a compaction test section, any test result for an element greater than the distance $2 \times V$ (see Table 105-2) outside the tolerance limits will be designated as a separate process and the pay factor will be calculated in accordance with subsection 105.05(a). An element pay factor less than zero shall be zero. The calculated PF will be used to determine the Incentive/Disincentive Payment (I/DP) for the process.

In the case of in-place density or joint density the Contractor will be allowed to core the exact location (or immediately adjacent location for joint density) of a test result more than $2 \times V$ outside the tolerance limit. The core must be taken and furnished to the Engineer within eight hours after notification by the Engineer of the test result. The result of this core will be used in lieu of the previous test result. Cores not taken within eight hours after notification by the Engineer will not be used in lieu of the test result. All costs associated with coring will be at the Contractor's expense.

(a) *Representing Small Quantities.* When it is necessary to represent a process by only one or two test results, PF will be the average of PFs resulting from the following:

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 REVISION OF SECTIONS 105 AND 106
 CONFORMITY TO THE CONTRACT OF HOT MIX ASPHALT
 (LESS THAN 5000 TONS)

If the test result is within the tolerance limits then PF = 1.00

If the test result is above the maximum specified limit, then

$$PF = 1.00 - [0.25(T_O - T_U)/V]$$

If the test result is below the minimum specified limit, then

$$PF = 1.00 - [0.25(T_L - T_O)/V]$$

Where: PF = pay factor.
 V = V factor from Table 105-2.
 T_O = the individual test result.
 T_U = upper specification limit.
 T_L = lower specification limit.

The calculated PF will be used to determine the I/DP for the process.

- (b) *Determining Quality Level.* Each process with three or more test results will be evaluated for a quality level (QL) in accordance with Colorado Procedure 71.
- (c) *Gradation Element.* Each specified sieve, with the exception of 100 percent passing sieves, will be evaluated for QL separately. The lowest calculated QL for a sieve will be designated as the QL for gradation element for the process.
- (d) *Joint Density Element.* Joint Density will be tested according to subsection 401.17.
- (e) *Process Pay Factor.* Using the calculated QL for the process, compute PF as follows: The final number of random samples (Pn) in each process will determine the final pay factor. . As test values are accumulated for each process, Pn will change accordingly. When the process has been completed, the number of random samples it contains will determine the computation of PF, based on Table 105-3 and formula (1) below. When Pn is from 3 to 9, or greater than 200, PF will be computed using the formulas designated in Table 105-3. Where Pn is equal to or greater than 10 and less than 201, PF will be computed by formula (1):

$$(1) PF = \frac{(PF_1 + PF_2)}{2} + \left[\frac{(PF_2 + PF_3)}{2} - \frac{(PF_1 + PF_2)}{2} \right] \times \frac{(Pn_2 - Pn_x)}{(Pn_2 - Pn_3)}$$

Where, when referring to Table 105-3:

PF₁= PF determined at the next lowest Pn formula using process QL
 PF₂= PF determined using the Pn formula shown for the process QL
 PF₃= PF determined at the next highest Pn formula using process QL
 Pn₂= the lowest Pn in the spread of values listed for the process Pn formula

REVISION OF SECTIONS 105 AND 106
CONFORMITY TO THE CONTRACT OF HOT MIX ASPHALT
(LESS THAN 5000 TONS)

Pn_3 = the lowest Pn in the spread of values listed for the next highest Pn formula

Pn_x = the actual number of test values in the process

REVISION OF SECTIONS 105 AND 106
CONFORMITY TO THE CONTRACT OF HOT MIX ASPHALT
(LESS THAN 5000 TONS)

When evaluating the item of Furnish Hot mix asphalt, the PF for the element of In-Place Density shall be 1.0.

Regardless of QL, the maximum PF in relation to Pn is limited in accordance with Table 105-3.

As test results become available, they will be used to calculate accumulated QL and PF numbers for each process. The process I/DP's will then be calculated and accumulated for each element and for the item. The test results and the accumulated calculations will be made available to the Contractor upon request.

Numbers from the calculations will be carried to significant figures and rounded according to AASHTO Standard Recommended Practice R-11, Rounding Method.

- (f) *Evaluation of Work.* When the PF of a process is 0.75 or greater, the finished quantity of work represented by the process will be accepted at the appropriate pay factor. If the PF is less than 0.75, the Engineer may:
1. Require complete removal and replacement with specification material at the Contractor's expense;
 - or
 2. Where the finished product is found to be capable of performing the intended purpose and the value of the finished product is not affected, permit the Contractor to leave the material in place.

If the material is permitted to remain in place the PF for the process will not be greater than 0.75. When condition red, as described in Section 106, exists for any element, resolution and correction will be in accordance with Section 106. Material, which the Engineer determines is defective, may be isolated and rejected without regard to sampling sequence or location within a process.

If removal and replacement is required because the joint density PF for a process is below 0.75, the Contractor shall remove and replace the full lane width adjacent to and including at least 6 inches beyond the visible joint line for the entire length of joint representing the process. If the lane removed is adjacent to another joint, that joint shall also be removed to a point 6 inches beyond the visible joint line. When a single joint density core is more than 2V outside the tolerance limits, the removal and replacement limits shall be identified by coring the failing joint at 25 foot intervals until two successive cores are found to be 1V or less below the minimum tolerance limit. If removal and replacement is required, the Contractor shall submit documentation identifying the process to be used to correct the area in question in writing. The process will be approved by the Engineer before commencing the corrective work.

REVISION OF SECTIONS 105 AND 106
CONFORMITY TO THE CONTRACT OF HOT MIX ASPHALT
(LESS THAN 5000 TONS)

Table 105-2
“W” AND “V” FACTORS FOR VARIOUS ELEMENTS

Hot Mix Asphalt		
Element	V Factor	W Factor
2.36 mm (No. 8) mesh and larger sieves	2.80	N/A
600 µm (No. 30) mesh sieve	1.80	N/A
75 µm (No. 200) mesh sieve	0.80	N/A
Gradation	N/A	15
Asphalt Content	0.20	25
In-place Density	1.10	45
Joint Density	1.60	15

Table 105-3
FORMULAS FOR CALCULATING PF BASED ON PN

Pn	When Pn as shown at left is 3 to 9, or greater than 200, use designated formula below to calculate Pay Factor, PF = ..., when Pn is 10 to 200, use formula (1) above:	Maximum PF
3	$0.31177 + 1.57878 (QL/100) - 0.84862 (QL/100)^2$	1.025
4	$0.27890 + 1.51471 (QL/100) - 0.73553 (QL/100)^2$	1.030
5	$0.25529 + 1.48268 (QL/100) - 0.67759 (QL/100)^2$	1.030
6	$0.19468 + 1.56729 (QL/100) - 0.70239 (QL/100)^2$	1.035
7	$0.16709 + 1.58245 (QL/100) - 0.68705 (QL/100)^2$	1.035
8	$0.16394 + 1.55070 (QL/100) - 0.65270 (QL/100)^2$	1.040
9	$0.11412 + 1.63532 (QL/100) - 0.68786 (QL/100)^2$	1.040
10 to 11	$0.15344 + 1.50104 (QL/100) - 0.58896 (QL/100)^2$	1.045
12 to 14	$0.07278 + 1.64285 (QL/100) - 0.65033 (QL/100)^2$	1.045
15 to 18	$0.07826 + 1.55649 (QL/100) - 0.56616 (QL/100)^2$	1.050
19 to 25	$0.09907 + 1.43088 (QL/100) - 0.45550 (QL/100)^2$	1.050
26 to 37	$0.07373 + 1.41851 (QL/100) - 0.41777 (QL/100)^2$	1.055
38 to 69	$0.10586 + 1.26473 (QL/100) - 0.29660 (QL/100)^2$	1.055
70 to 200	$0.21611 + 0.86111 (QL/100)$	1.060
≥ 201	$0.15221 + 0.92171 (QL/100)$	1.060

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(LESS THAN 5000 TONS)

(g) *Process I/DP Computation.*

$$I/DP = (PF - 1)(QR)(UP)(W/100)$$

Where:	I/DP	=	Incentive/Disincentive Payment
	PF	=	Pay Factor
	QR	=	Quantity in Tons of HMA Represented by the Process
	UP	=	Unit Bid Price of Asphalt Mix
	W	=	Element Factor from Table 105-2

When AC is paid for separately UP shall be:

$$UP = [(Ton_{HMA})(UP_{HMA}) + (Ton_{AC})(UP_{AC})]/Ton_{HMA}$$

Where:	Ton _{HMA}	=	Tons of Asphalt Mix
	UP _{HMA}	=	Unit Bid Price of Asphalt Mix
	Ton _{AC}	=	Tons of Asphalt Cement
	UP _{AC}	=	Unit Bid Price of Asphalt Cement

For the joint density element:

$$UP = UP_{HMA}$$

Where: UP_{HMA} is as defined above.

When AC is paid for separately UP shall be:

$$UP = [(BTon_{HMA})(BUP_{HMA}) + (BTon_{AC})(BUP_{AC})]/BTon_{HMA}$$

Where:	BTon _{HMA}	=	Bid Tons of Asphalt Mix
	BUP _{HMA}	=	Unit Bid Price of Asphalt Mix
	BTon _{AC}	=	Bid Tons of Asphalt Cement
	BUP _{AC}	=	Unit Bid Price of Asphalt Cement

- (h) *Element I/DP.* The I/DP for an element shall be computed by accumulating the process I/DP's for that element.
- (i) *I/DP for a Mix Design.* The I/DP for a mix design shall be computed by accumulating the individual I/DP's for the asphalt content, in-place density, and gradation elements for that mix design. The accumulated quantities of materials for each element must be the same at the end of I/DP calculations for a mix design.
- (j) *Project I/DP.* The I/DP for the project shall be computed by accumulating the mix design I/DP's and the joint density I/DP's. The accumulated quantities of materials for each element must be the same at the end of I/DP calculations for the project.

Delete subsection 106.05 and replace with the following:

106.05 Sampling and Testing of Hot Mix Asphalt. All hot mix asphalt, Item 403, except Hot Mix Asphalt (Patching) and temporary pavement shall be tested in accordance with the following program of process control testing and acceptance testing:

The Contract will specify whether process control testing by the Contractor is mandatory or voluntary.

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(a) *Process Control Testing.*

1. **Mandatory Process Control.** When process control testing is mandatory the Contractor shall be responsible for process control testing on all elements and at the frequency listed in Table 106-1. Process control testing shall be performed at the expense of the Contractor.

After completion of compaction, in-place density tests for process control shall be taken at the frequency shown in Table 106-1. The results shall be reported in writing to the Engineer on a daily basis. Daily plots of the test results with tonnage represented shall be made on a chart convenient for viewing by the Engineer. All of the testing equipment used for in-place density testing shall conform to the requirements of acceptance testing standards, except nuclear testing devices need not be calibrated on the Department's calibration blocks.

For elements other than in-place density, results from quality control tests need not be plotted, or routinely reported to the Engineer. This does not relieve the Contractor from the responsibility of performing such testing along with appropriate plant monitoring as necessary to assure that produced material conforms to the applicable specifications. Quality control test data shall be made available to the Engineer upon request.

2. **Voluntary Process Control.** The Contractor may conduct process control testing. Process control testing is not required, but is recommended on the elements and at the frequency listed in Table 106-1.

All of the testing equipment used for in-place density testing shall conform to the requirements of acceptance testing standards, except nuclear testing devices need not be calibrated on the Department's calibration blocks.

- (b) *Acceptance Testing.* Acceptance testing is the responsibility of the Department. For acceptance testing the Department will determine the locations where samples or measurements are to be taken and as designated in Section 403. The maximum quantity of material represented by each test result, the elements, the frequency of testing and the minimum number of test results will be in accordance with Table 106-1. The location or time of sampling will be based on the stratified random procedure as described in CP 75. Acceptance sampling and testing procedures will be in accordance with the Schedule for Minimum Materials Sampling, Testing and Inspection in the Department's Field Materials Manual. Samples for project acceptance testing shall be taken by the Contractor in accordance with the designated method. The samples shall be taken in the presence of the Engineer. Where appropriate, the Contractor shall reduce each sample to the size designated by the Engineer. The Contractor may retain a split of the each sample which cannot be included as part of the Contractor's process control testing. Dispute of the acceptance test results in accordance with CP-17 will not be allowed unless a provision for check testing has been included in the Contract and it has been successfully completed. All materials being used are subject to inspection and testing at any time prior to or during incorporation into the work.

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Table 106-1
SCHEDULE FOR MINIMUM SAMPLING AND TESTING

Element	Process Control	Acceptance
Asphalt Content	1/500 tons	1/1000 tons
Theoretical Maximum Specific Gravity	1.1000 tons, minimum 1/day	1/1000 tons, minimum 1/day
Gradation	1/Day	1/2000 tons
In-Place Density	1/500 tons	1/500 tons
Joint Density	1 core/2500 linear feet of joint	1 core /5000 linear feet of joint
Aggregate Percent Moisture ⁽³⁾	1/2000 tons or 1/Day if less than 2000 tons	1/2000 tons
Percent Lime ^{(3) (4)}	1/Day	Not applicable
<p>Notes:</p> <p>(1) The minimum number of in-place density tests for acceptance will be 5.</p> <p>(2) Process control tests for gradation are not required if less than 250 tons are placed in a day. The minimum number of process control tests for gradation shall be one test for each 1000 tons or fraction thereof.</p> <p>(3) Not to be used for incentive/disincentive pay. Test according to CP 60B and report results from Form 106 or Form 565 on Form 6.</p> <p>(4) Verified per Contractor's QC Plan.</p>		

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- (c) *Reference Conditions.* Three reference conditions can exist determined by the Moving Quality Level (MQL). The MQL will be calculated in accordance with the procedure in CP 71 for Determining Quality Level (QL). The MQL will be calculated using only acceptance tests. The MQL will be calculated on tests 1 through 3, then tests 1 through 4, then tests 1 through 5, then thereafter on the last five consecutive test results. The MQL will not be used to determine pay factors. The three reference conditions and actions that will be taken are described as follows:
1. Condition green will exist for an element when an MQL of 90 or greater is reached, or maintained, and the past five consecutive test results are within the specification limits.
 2. Condition yellow will exist for all elements at the beginning of production or when a new process is established because of changes in materials or the job-mix formula, following an extended suspension of work, or when the MQL is less than 90 and equal to or greater than 65. Once an element is at condition green, if the MQL falls below 90 or a test result falls outside the specification limits, the condition will revert to yellow or red as appropriate.
 3. Condition red will exist for any element when the MQL is less than 65. The Contractor shall be notified immediately in writing and the process control sampling and testing frequency increased to a minimum rate of 1/250 tons for that element. The process control sampling and testing frequency shall remain at 1/250 tons until the process control QL reaches or exceeds 78. If the QL for the next five process control tests is below 65, production will be suspended.

If gradation is the element with MQL less than 65, the Department will test one randomly selected sample in the first 1250 tons produced in condition red. If this test result is outside the tolerance limits, production will be suspended. (This test result will not be included as an acceptance test.)

After condition red exists, a new MQL will be started. Acceptance testing will stay at the frequency shown in Table 106-1. After three acceptance tests, if the MQL is less than 65, production will be suspended.

Production will remain suspended until the source of the problem is identified and corrected. Each time production is suspended, corrective actions shall be proposed in writing by the Contractor and approved in writing by the Engineer before production may resume.

Upon resuming production, the process control sampling and testing frequency for the elements causing the condition red shall remain at 1/250 tons. If the QL for the next five process control tests is below 65, production will be suspended again. If gradation is the element with MQL less than 65, the Department will test one randomly selected sample in the first 1250 tons produced in condition red. If this test result is outside the tolerance limits, production will be suspended.

November 6, 2014

REVISION OF SECTION 106
BUY AMERICA REQUIREMENTS

Section 106 of the Standard Specifications is hereby revised for this project as follows:

Subsection 106.11 shall include the following:

The Contractor shall maintain a document summarizing the date and quantity of all steel and iron material delivered to the project. The document shall show the pay item, quantity of material delivered to the project, along with the quantity of material installed by the cutoff date for the monthly progress payment. The summary shall also reconcile the pay item quantities to the submitted Buy America certifications. The Contractor shall also maintain documentation of the project delivered cost of all foreign steel or iron permanently incorporated into the project. Both documents shall be submitted to the Engineer within five days of the cutoff date for the monthly progress payment. A monthly summary shall be required even if no steel or iron products are incorporated into the project during the month. The summary document does not relieve the Contractor of providing the necessary Buy America certifications of steel and or iron prior to permanent incorporation into the project.

REVISION OF SECTION 106
CERTIFICATES OF COMPLIANCE AND
CERTIFIED TEST REPORTS

Section 106 of the Standard Specifications is hereby revised for this project as follows:

In subsection 106.12, delete the second paragraph and replace it with the following:

The original Certificate of Compliance shall include the Contractor's original signature as directed above. The original signature (including corporate title) on the Certificate of Compliance, under penalty of perjury, shall be of a person having legal authority to act for the manufacturer. It shall state that the product or assembly to be incorporated into the project has been sampled and passed all specified tests in conformity to the plans and specifications for this project. One legible copy of the fully signed Certificate of Compliance shall be furnished to the Engineer prior to installation of material. The original shall be provided to the Engineer before payment for the represented item will be made.

In subsection 106.13, delete the second paragraph and replace it with the following:

The Certified Test Report shall be a legible copy or an original document and shall include the Contractor's original signature as directed above. The signature (including corporate title) on the Certified Test Report, under penalty of perjury, shall be of a person having legal authority to act for the manufacturer or the independent testing laboratory. It shall state that the test results show that the product or assembly to be incorporated into the project has been sampled and passed all specified tests in conformity to the plans and specifications for this project. One legible copy or original document of the fully signed Certified Test Report shall be furnished to the Engineer prior to installation of material. Failure to comply may result in delays to the project or rejection of the materials.

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 REVISION OF SECTIONS 106, 627 AND 713
 GLASS BEADS FOR PAVEMENT MARKING

Sections 106, 627, and 713 are hereby revised for this project as follows:

Subsection 106.11 shall include the following:

All post-consumer and industrial glass beads for pavement marking shall have been manufactured from North American glass waste streams in the United States of America. The bead manufacturer shall submit a COC in accordance with subsection 106.12 confirming that North American glass waste streams were used in the manufacture of the glass beads.

Subsection 627.06 (c) shall include the following:

Glass beads shall be applied into the thermoplastic pavement marking by means of a low pressure, gravity drop bead applicator.

In subsection 713.08, delete the first and third paragraphs and replace with the following:

713.08 Glass Beads for Pavement Marking. Glass beads for pavement marking shall conform to AASHTO M 247, except for the following:

(1) Gradation:

U.S. Mesh	Microns	% Passing	
		Epoxy and MMA	Waterborne, Low VOC and High Build
16	1180	90-100	100
18	1000	65-80	97-100
20	850		85-100
30	600	30-50	50-70
40	425		10-35
50	300	0-5	0-10
80	180		0-5

(2) Roundness: All beads shall meet a minimum of 80 percent true spheres in accordance with the Office of Federal Lands Highways FLH T520 or a computerized optical testing method.

(3) Color / Clarity: Beads shall be colorless, clear, and free of carbon residues.

(4) Refractive Index: Minimum 1.51 by oil immersion method.

(5) Air Inclusions: Less than 5 percent by visual count.

(6) Coatings: Per manufacturer's recommendation for optimum adhesion and embedment.

(7) Chemical Resistance: Beads shall be resistant to hydrochloric acid, water, calcium chloride, and sodium sulfide as tested per methods outlined in sections 4.3.6 to 4.3.9 of the TT-B Federal Spec.1325D.

(8) For Epoxy Pavement Marking, a minimum of 40 percent of the total weight shall be manufactured using a molten kiln direct melt method. For Waterborne and Low VOC Paint, a minimum of 15 percent of the total weight shall be manufactured using a molten kiln direct melt method. All molten kiln direct melt glass beads shall be above the 600 µm (#30) sieve.

REVISION OF SECTIONS 106, 627 AND 713
GLASS BEADS FOR PAVEMENT MARKING

- (9) Glass beads used for any type of pavement marking shall not contain more than 75 parts per million (ppm) arsenic, 75 ppm antimony and 100 ppm lead, as tested in accordance with EPA methods 3052 and 6010C, or other approved testing method

REVISION OF SECTION 106
MATERIAL SOURCES

Section 106 of the Standard Specifications is hereby revised for this project as follows:

In subsection 106.02 (a), delete the third paragraph and replace with the following:

The Contract will indicate whether the Department/Owner has or has not obtained the necessary County or City Zoning Clearance and the required permit from Colorado Department of Natural Resources needed to explore and remove materials from the available source. If the Department/Owner did not obtain the necessary clearances or permits, the Contractor shall obtain them. Any delays to the project or additional expenses that are incurred while these clearances or permits are being obtained shall be the responsibility of the Contractor. The Contractor shall ensure that the requirements of the permits do not conflict with the pit construction and reclamation requirements shown in the Contract for the available source.

In subsection 106.02 (b), delete the first paragraph and replace with the following:

(b) *Contractor Source*. Sources of sand, gravel, or borrow other than available sources will be known as contractor sources. The contractor source will be tested by the Department/Owner and approved by the Engineer prior to incorporation of the material into the project. If the submitted materials do not meet the contract specifications it will become the Contractor's responsibility to re-sample and test the material. The Contractor will supply the Department/Owner with passing test results from an AASHTO accredited laboratory and signed and sealed by a Professional Engineer. If requested by the Engineer, the Department/Owner will then re-sample and re-test the material for compliance to the contract specifications. The Contractor shall produce material which meets contract specifications throughout construction of the project.

The cost of sampling, testing, and corrective action by the Contractor will not be paid for separately but shall be included in the work.

January 30, 2014

REVISION OF SECTION 106
SUPPLIER LIST

Section 106 of the Standard Specifications is hereby revised for this project as follows:

Subsection 106.01 shall include the following:

Prior to beginning any work the Contractor shall submit to the Engineer a completed Form 1425, Supplier List. During the performance of the Contract, the Contractor shall submit an updated Form 1425 when requested by the Engineer.

Failure to comply with the requirements of this subsection shall be grounds for withholding of progress payments.

REVISION OF SECTION 107
WATER QUALITY CONTROL
(CONTRACTOR OBTAINED STORMWATER PERMIT)

Section 107 of the Standard Specifications is hereby revised for this project as follows:

Delete subsection 107.25 and replace with the following:

107.25 Water Quality Control. The project work shall be performed using practices that minimize water pollution during construction. All the practices listed in (b) below shall be followed to minimize the pollution of any State waters, including wetlands.

(a) Definitions.

1. Areas of Disturbance (AD). Locations where any activity has altered the existing soil cover or topography, including vegetative and non-vegetative activities during construction.
2. Construction Site Boundary/Limits of Construction (LOC). The project area defined by the Stormwater Construction Permit.
3. Discharge of Pollutants. One or more pollutants leaving the LOC or entering State waters or other conveyances.
4. Limits of Disturbed Area (LDA). Proposed limits of ground disturbance as shown on the Plans.
5. Pollutant. Dredged spoil, dirt, slurry, solid waste, incinerator residue, sewage, sewage sludge, garbage, trash, chemical waste, biological nutrient, biological material, radioactive material, heat, wrecked or discarded equipment, rock, sand, or any industrial, municipal, or agricultural waste, as defined in the Colorado Code of Regulations (CCR) [5 CCR 1002-61, 2(76)]
6. Pollution. Man-made, man-induced, or natural alteration of the physical, chemical, biological, and radiological integrity of water. [25-8-103 (16), CRS]
7. State waters. Defined in subsection 101.77.

(b) Construction Requirements.

1. The Contractor shall comply with the "Colorado Water Quality Control Act" (Title 25, article 8, CRS), the "Protection of Fishing Streams" (Title 33, Article 5, CRS), the "Clean Water Act" (33 USC 1344), regulations promulgated, certifications or permits issued, and to the requirements listed below. In the event of conflicts between these requirements and water quality control laws, rules, or regulations of other Federal, or State agencies, the more restrictive laws, rules, or regulations shall apply.
2. If the Contractor determines construction of the project will result in a change to the permitted activities or LDA, the Contractor shall detail the changes in a written report to the Engineer. Within five days after receipt of the report, the Engineer, after coordination with Region Planning and Environmental Manager (RPEM), will approve or reject in writing the request for change, or detail a course of action including revision of existing permits or obtaining new permits.
3. If construction activities result in noncompliance of any permit requirement, the project will be suspended and the permitting agency notified, if required. The project will remain suspended until the Engineer receives written approval by the permitting agency.
4. The Contractor is legally required to obtain all permits associated with specific activities within, or off the Right of Way, such as borrow pits, concrete or asphalt plant sites, waste disposal sites, or other facilities. It is the Contractor's responsibility to obtain these permits. The Contractor shall consult with the Engineer, and contact the Colorado Department of Public Health and Environment (CDPHE) or other appropriate federal, state, or local agency to determine the need for any permit.

REVISION OF SECTION 107
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5. The Contractor shall conduct the work in a manner that prevents pollution of any adjacent State waters. Erosion control work shall be performed in accordance with Section 208, this subsection, and all other applicable parts of the Contract.
6. Prior to the Environmental Pre-construction Conference the SWMP Administrator, identified in subsection 208.03(c), shall identify and describe all potential pollutant sources, including materials and activities, and evaluate them for the potential to contribute pollutants to stormwater discharges associated with construction activities. The list of potential pollutants shall be continuously updated during construction. At a minimum, each of the following shall be evaluated for the potential for contributing pollutants to stormwater discharges and identified in the SWMP, if found to have such potential:
 - (1) All exposed and stored soils
 - (2) Vehicle tracking of sediments
 - (3) Management of contaminated soils
 - (4) Vehicle and equipment maintenance and fueling
 - (5) Outdoor storage activities (building materials, fertilizers, chemicals, etc.)
 - (6) Significant dust or particle generating processes
 - (7) Routine maintenance involving fertilizers, pesticides, detergents, fuels, solvents, oils, etc.
 - (8) On site waste management practices (waste piles, dumpsters, etc.)
 - (9) Dedicated asphalt and concrete batch plants
 - (10) Concrete truck and equipment washing, including the concrete truck chute and associated fixtures and equipment
 - (11) Concrete placement and finishing tool cleaning
 - (12) Non-industrial waste sources that may be significant, such as worker trash and portable toilets
 - (13) Loading and unloading operations
 - (14) Other areas or procedures where spills could occur

The SWMP Administrator shall record the location of potential pollutants on the site map. Descriptions of the potential pollutants shall be added to the SWMP notebook.

At or prior to the Environmental Pre-construction Conference the Contractor shall submit a Spill Response Plan for any petroleum products, chemicals, solvents, or other hazardous materials in use, or in storage, at the work site. See subsection 208.06(c) for Spill Response Plan requirements. Work shall not be started until the plan has been submitted to and approved by the Engineer.

On site above ground bulk storage containers with a cumulative storage shell capacity greater than 1,320 U.S. gallons, or storage containers having a "reasonable expectation of an oil discharge" to State waters, are subject to the Spill Prevention, Control and Countermeasure Plan (SPCC) Rule. Oil of any type and in any form is covered, including, but not limited to: petroleum; fuel oil; sludge; oil refuse; oil mixed with wastes other than dredged spoil. EPA Region 8 is responsible for administering and enforcing the SPCC plan requirements in Colorado. Prior to start of work, the Contractor shall submit a SPCC Form which has been approved by the EPA for the project.

REVISION OF SECTION 107
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7. The Contractor shall obtain a Construction Dewatering (CDW) permit from CDPHE anytime uncontaminated groundwater, including groundwater that is commingled with stormwater or surface water, is encountered during construction activities and the groundwater or commingled water needs to be discharged to State waters. If contaminated groundwater is encountered, a Remediation permit may be needed from CDPHE in accordance with Section 250.
8. Water from dewatering operations shall not be directly discharged into any State waters, unless allowed by a permit. Water from dewatering shall not be discharged into a ditch unless:
 - (1) Written permission is obtained from the owner of the ditch.
 - (2) It is covered in the approved CDW or Remediation permit that allows the discharge.
 - (3) A copy of this approval is submitted to the Engineer. A copy of the Permit shall be submitted to the Engineer prior to dewatering operations commencing.

If the site is covered by a Colorado Discharge Permit System Stormwater Construction Permit (CDPS-SCP) and the following conditions are met, a separate CDW permit will not be required for discharge to the ground:

- (1) The source is identified in the Stormwater Management Plan (SWMP) as updated by the SWMP Administrator.
- (2) The SWMP describes and locates the practices implemented at the site to control stormwater pollution from the dewatering of groundwater or stormwater.
- (3) The SWMP describes and locates the practices to be used that will ensure that no groundwater from construction dewatering is discharged from the LOC as surface runoff or to surface waters or storm sewers.
- (4) Groundwater and groundwater combined with stormwater do not contain pollutants in concentrations exceeding the State groundwater standards in Regulations 5 CCR 1002-41 and 42.

If surface water are diverted around a construction area and no pollutants are introduced during the diversion, a CDW Permit is not required. If the diverted water enters the construction area and contacts pollutant sources (e.g. disturbed soil, concrete washout, etc.), the Contractor shall obtain a CDW permit for the discharge of this water to State waters or to the ground.

Construction Dewatering may be discharged to the ground on projects that are not covered by a CDPS-SCP if the conditions of the CDPHE's low risk guidance document for Discharges of Uncontaminated Groundwater to Land are met. The conditions of this guidance are:

- (1) The source of the discharge is solely uncontaminated groundwater or uncontaminated groundwater combined with stormwater and does not contain pollutants in concentrations that exceed water quality standards for groundwater referenced above.
- (2) Discharges from vaults or similar structures shall not be contaminated. Potential sources of contamination include process materials used, stored, or conveyed in the structures, or introduced surface water runoff from outside environments that may contain oil, grease, and corrosives.
- (3) The groundwater discharge does not leave the project boundary limits where construction is occurring.
- (4) Land application is conducted at a rate and location that does not allow for any runoff into State waters or other drainage conveyance systems, including but not limited to streets, curb and gutter, inlets, borrow ditches, open channels, etc.

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- (5) Land application is conducted at a rate that does not allow for any ponding of the groundwater on the surface, unless the ponding is a result of implementing BMPs that are designed to reduce velocity flow. If the BMPs used result in ponding, the land application shall be done in an area with a constructed containment, such as an excavation or berm area with no outfall. The constructed containment shall prevent the discharge of the ponding water offsite as runoff.
- (6) A visible sheen is not evident in the discharge.
- (7) BMPs are implemented to prevent any sediment deposited during land application from being transported by stormwater runoff to surface waters or other conveyances.
- (8) All BMPs used shall be selected, installed, implemented, and maintained according to good Engineering, hydrologic and pollution control practices. The selected BMPs shall provide control for all potential pollutant sources associated with the discharge of uncontaminated groundwater to land. The discharge shall be routed in such a way that it will not cause erosion to land surface. Energy dissipation devices designed to protect downstream areas from erosion by reducing the velocity of flow (such as hose attachments, sediment and erosion controls) shall be used when necessary to prevent erosion.

Discharged water shall be drained slowly so that it soaks into the ground without running outside the project boundary or causing flooding issues. The discharge shall be routed in such a way that it will not contact petroleum products or waste.

9. At least 15 days prior to commencing dredging or fill operations in a watercourse, the Contractor shall provide written notification to owners or operators of domestic or public water supply intakes or diversion facilities, if these facilities are within 20 miles downstream from the dredging or fill operations. Notification shall also be given to Owners or operators of other intakes or diversions that are located within five miles downstream from the site of the project. Identities of downstream owners and operators can be obtained from Colorado Division of Water Resources, Office of the State Engineer.
10. Temporary fill into wetlands or streams will not be allowed, except as specified in the Contract and permits. If such work is allowed, upon completion of the work all temporary fills shall be removed in their entirety and disposed of in an upland location outside of flood plains unless otherwise specified in the Contract.
11. Construction operations in waters of the United States as defined in 33 CFR Part 328.3, including wetlands, shall be restricted to areas and activities authorized by the U.S. Army Corps of Engineers as shown in the Contract. Fording waters will be allowed only as authorized by the U.S. Army Corps of Engineers 404 Permit.
12. Wetland areas outside of the permitted limits of disturbance shall not be used for storage, parking, waste disposal, access, borrow material, or any other construction support activity.
13. Pollutant byproducts of highway construction, such as concrete, asphalt, solids, sludges, pollutants removed in the course of treatment of wastewater, excavation or excess fill material, and material from sediment traps shall be handled, stockpiled, and disposed of in a manner that prevents entry into State waters, including wetlands. Removal of concrete waste and washout water from mixer trucks, concrete finishing tools, concrete saw and all concrete material removed in the course of construction operations or cleaning shall be performed in a manner that prevents waste material from entering State waters. A minimum of ten days prior to the start of the construction activity, the Contractor shall submit in writing a Method Statement for Containing Pollutant Byproducts to the Engineer for approval.
14. The use of chemicals such as soil stabilizers, dust palliatives, herbicides, growth inhibitors, fertilizers, deicing salts, etc., shall be in accordance with the manufacturer's recommended application rates, frequency, and instructions.

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15. All materials stored on-site shall be stored in a neat, orderly manner, in their original containers, with the original manufacturer's label. Materials shall not be stored in a location where they may be carried into State waters at any time.
16. Spill prevention and containment measures conforming to subsection 208.06 shall be used at storage, and equipment fueling and servicing areas to prevent the pollution of any State waters, including wetlands. All spills shall be cleaned up immediately after discovery, or contained until appropriate cleanup methods can be employed. Manufacturer's recommended methods for spill cleanup shall be followed, along with proper disposal methods. When required by the Colorado Water Quality Control Act, Regulation 5 CCR 1002-61, spills shall be reported to the Engineer and CDPHE in writing.
17. The Contractor shall prevent construction activities from causing grass or brush fires.
18. The construction activities shall not impair Indian tribal rights, including, but not limited to, water rights, and treaty fishing and hunting rights.
19. Prior to start of work, the Contractor shall certify in writing to the Engineer that construction equipment has been cleaned prior to initial site arrival. Vehicles and equipment shall be free of soil and debris capable of transporting noxious weed seeds or invasive species onto the site. Additional equipment required for construction shall also be certified prior to being brought onto the project site.
20. Vehicles which have been certified by the Contractor as having been cleaned prior to arrival on site may be cleaned on site at an approved area where wash water can be properly contained. Vehicles leaving and reentering the project site shall be recertified.
21. At the end of each day the Contractor shall collect all trash and dispose of it in appropriate containers.
22. Construction waste that is considered a pollutant or contaminant shall be collected and disposed of in appropriate containers. This material may be stockpiled on the project when it is contained or protected by an appropriate BMP.

(c) *Measurement and Payment.*

1. All the work listed in (b) above, including but not limited to dewatering, erosion control for dewatering, and disposal of water resulting from dewatering operations, including all costs for CDPHE concurrences and permits, will not be measured and paid for separately, but shall be included in the work.
2. The Contractor shall be liable for any penalty (including monetary fines) applied to the Department caused by the Contractor's noncompliance with any water quality permit or certification. Monetary fines shall be deducted from any money due to the Contractor. If the monetary fine is in excess of all the money due to the Contractor, then the Contractor shall pay to the Department the amount of such excess.
3. The Contractor will not receive additional compensation, or time extensions, for any disruption of work or loss of time caused by any actions brought against the Contractor for failure to comply with good Engineering, hydrologic and pollution control practices.
4. If a spill occurs as a direct result of the Contractor's actions or negligence, the clean-up of such spill shall be performed by the Contractor at the Contractor's expense.
5. Areas exposed to erosion by fire resulting from the Contractor's operations shall be stabilized in accordance with Section 208 by the Contractor and at the Contractor's expense.

(d) *Contractor Obtained Stormwater Construction Permit.* The Contractor shall obtain a Colorado Discharge Permit System Stormwater Construction Permit (CDPS-SCP) for any project work that disturbs at least 1 acre of land. The Contractor shall apply for and obtain the permit upon award of the Contract. The Contractor shall provide a copy of permit certification or the submitted CDPS-SCP application to the Engineer prior to or

REVISION OF SECTION 107
WATER QUALITY CONTROL
(CONTRACTOR OBTAINED STORMWATER PERMIT)

at Pre-construction Conference. No work shall begin until the CDPS-SCP permit has been approved from CDPHE, unless otherwise directed. A copy of the Permit and application to obtain a permit shall be placed in the project SWMP notebook.

If a Utility Company has pulled a permit for the area prior to the Contractor being on site, then the Contractor shall coordinate with the Utility Company to transfer those areas over to the Contractor prior to work commencing. The Contractor shall not commence construction until Application for Transfer of Ownership for All Permits, Certifications and Authorizations has been approved by CDPHE and submitted to the Engineer.

To initiate Partial Acceptance of the stormwater construction work (including seeding and planting required for erosion control), the Contractor shall request in writing a Stormwater Completion Walkthrough. The Engineer will set up the walkthrough and will include: the Engineer or designated representative, Superintendent or designated representative, Stormwater Management Plan (SWMP) Administrator, Region Water Pollution Control Manager (RWPCM) and Landscape Architect representing the region. Unsatisfactory and incomplete erosion control work will be identified in this walkthrough, and will be summarized by the Engineer in a punch list. The Water Quality Permit Transfer to Maintenance Punch List may be used as a template in creating the Engineer's punch list.

The Engineer will coordinate with CDOT Maintenance on regular inspections of the corrective work. The completed action items associated with the corrective work shall be shown as completed on the Punch List. Upon completion of all items shown, the Contractor shall submit the completed Punch List to the Engineer for review. Upon written approval of the Punch List, the Contractor shall submit the "Application for Transfer of Ownership for All Permits, Certifications and Authorizations" to the CDPHE requesting transfer of ownership of the CDPS-SCP to CDOT Maintenance. When requested by CDOT Maintenance and approved by the Engineer, the Permit may be transferred by the Contractor to the Resident Engineer instead of CDOT Maintenance.

Until the transfer of the permit has been approved by the CDPHE the Contractor shall continue to adhere to all permit requirements. Requirements shall include erosion control inspections, BMP installation, BMP maintenance, BMP repair, including seeded areas, and temporary BMP removal. All documentation shall be submitted to the Engineer and placed in the SWMP notebook.

All costs associated with the Contractor applying for, holding, and transferring the CDPS-SCP permit between parties will not be measured and paid for separately, but shall be included in the work in accordance with subsection 107.02.

February 3, 2011

REVISION OF SECTION 107
RESPONSIBILITY FOR DAMAGE CLAIMS,
INSURANCE TYPES AND COVERAGE LIMITS

Section 107 of the Standard Specifications is hereby revised for this project as follows:

Delete subsection 107.15(c) and replace it with the following:

- (c) Each insurance policy shall include provisions preventing cancellation or non-renewal without at least 30 days prior notice to Contractor. The Contractor shall forward to the Engineer any such notice received within seven days of the Contractor's receipt of such notice.

REVISION OF SECTION 107
PROJECT PAYROLLS

Section 107 of the Standard Specifications is hereby revised for this project as follows:

Subsection 107.01 shall include the following:

As related to the Form FHWA 1273, Required Contract Provisions Federal-Aid Construction Contracts, the Contractor shall check all Contractor and subcontractor project payrolls regarding accuracy of pay classification, pay hours, and pay rates. The Contractor shall sign and date all payrolls signifying this check has been performed.

January 30, 2014

REVISION OF SECTION 107
WARNING LIGHTS FOR WORK VEHICLES AND EQUIPMENT

Section 107 of the Standard Specifications is hereby revised for this project as follows:

Subsection 107.06 (b) shall include the following:

All work vehicles and mobile equipment shall be equipped with one or more functioning warning lights mounted as high as practicable, which shall be capable of displaying in all directions one or more flashing, oscillating, or rotating lights for warning roadway traffic. The lights shall be amber in color. The warning lights shall be activated when the work vehicle or mobile equipment is operating within the roadway, right of way or both. All supplemental lights shall be SAE Class 1 certified.

REVISION OF SECTION 108
DELAY AND EXTENSION OF CONTRACT TIME

Section 108 of the Standard Specifications is hereby revised for this project as follows:

In subsection 108.08, delete (c) and (d) and replace with the following:

(c) *Delay*. Any event, action or factor that extends the performance period of the Contract.

1. *Excusable Delay*: A delay that was beyond the Contractor's control and was not due to the Contractor's fault or negligence. The Department may grant a contract time extension for an excusable delay.
 - A. *Compensable Delay*: A delay that the Department, not the Contractor, is responsible for entitling the Contractor to a time extension and monetary compensation. Monetary compensation for compensable delays will be made in accordance with Subsection 109.10.
 - B. *Noncompensable Delay*: An excusable delay that neither the Contractor nor the Department is responsible for that may entitle the Contractor to a contract time extension but no additional monetary compensation. Contract time allowed for the performance of the work may be extended for delays due to force majeure (i.e. acts of God, acts of the public enemy, terrorist acts, fires, floods, area wide strikes, embargoes, or unusually severe weather).
2. *Nonexcusable Delay*: A delay that was reasonably foreseeable or within the control of the Contractor for which the Department will not grant monetary compensation or a contract time extension.
3. *Concurrent Delay*. Independent delays to critical activities occurring at the same time.
 - A. The Department will not grant a time extension or additional compensation for the period of time that a non-excusable delay is concurrent with an excusable delay.
 - B. The Department may grant time but no compensation for the period of time that a non-compensable delay is concurrent with a compensable delay.

Delays in delivery of materials or fabrication scheduling resulting from late ordering, financial considerations, or other causes that could have been foreseen or prevented will be considered nonexcusable delays. However, delays caused by fuel shortage or delay in delivery of materials to the Contractor due to some unusual market condition caused by industry-wide strike, national disaster, area-wide shortage, or other reasons beyond the control of the Contractor which prevent procurement of materials or fuel within the allowable contract time limits will be considered excusable delays.

(d) *Extension of Contract Time*. The Contractor's assertion that insufficient contract time was specified is not a valid reason for an extension of contract time. For time extension requests, the Contractor shall provide a two-part submittal: part one shall consist of a written notice of the delay and part two shall consist of the Contractor's delay documentation and supporting analysis.

Part 1: The Contractor shall provide the written notice of delay within seven days of the delay occurrence. The notice shall describe the delay and include documentation substantiating the nature and cause of the delay. Failure to submit the written notice constitutes a waiver of entitlement to additional time or compensation.

Part 2: This shall be submitted within 30 days of the written notice. The Contractor shall include all documentation needed to support the time extension request. In order to request additional contract time for an unexpected delay, the Contractor shall provide a contemporaneous schedule analysis in accordance with subsection 108.03. The schedule analysis shall show that the delayed activity or activities were on the critical path or became critical due to the delay.

REVISION OF SECTION 108
DELAY AND EXTENSION OF CONTRACT TIME

The Engineer will base a determination of an allowable contract time extension on:

- (1) The current Schedule in effect at the time of the alleged delay;
- (2) The supporting documentation submitted by the Contractor;
- (3) The contemporaneous schedule analysis; and
- (4) Any other relevant information available to the Engineer.

For a time extension request resulting from a change order, the Contractor shall demonstrate the delay to the project completion date by:

- (1) Inserting a fragnet containing the change order activities into an unprogressed copy of the schedule that is current at the time of the change order;
- (2) tying the fragnet into the schedule logic; and
- (3) Recalculating the schedule.

The Department will not consider delays to activities which do not affect the performance period of the Contract as a basis for a Contract time extension. If the Engineer grants a contract time extension, the revised Contract Completion date will be in effect as though it were the original contract date.

A Contractor's failure to have an approved, or approved with comments, current project schedule in place will preclude the Department from considering a Contractor's a time extension request.

REVISION OF SECTION 108
LIQUIDATED DAMAGES

Section 108 of the Standard Specifications is hereby revised for this project as follows:

In subsection 108.09, delete the Schedule of Liquidated Damages and replace with the following:

Original Contract Amount (\$)		Liquidated Damages per Calendar Day (\$)
From More Than	To And Including	
0	150,000	500
150,000	500,000	1,000
500,000	1,000,000	1,600
1,000,000	2,000,000	2,300
2,000,000	4,000,000	4,100
4,000,000	10,000,000	5,800
10,000,000	----	7,000

July 31, 2014

REVISION OF SECTION 108
NOTICE TO PROCEED

Section 108 of the Standard Specifications is hereby revised for this project as follows:

Delete subsection 108.02 and replace with the following:

108.02 Notice to Proceed. The Contractor shall not commence work prior to the issuance of a Notice to Proceed. The "Notice to Proceed" will stipulate the date on which contract time commences. When the Contractor proceeds with work prior to that date, contract time will commence on the date work actually begins. The Contractor shall commence work under the Contract on or prior to the 15th day following Contract execution or the 30th day following the date of award, whichever comes later, or in accordance with the selected start date allowed in the special provisions.

REVISION OF SECTION 108
SUBLETTING OF CONTRACT

Section 108 of the Standard Specifications is hereby revised for this project as follows:

Delete subsection 108.01 and replace with the following:

108.01 Subletting of Contract. The Contractor shall not sublet, sell, transfer, assign, or dispose of the Contract or Contracts, or any portion thereof without written permission of the Engineer. Prior to beginning any work by subcontractor, the Contractor shall request permission from the Engineer by submitting a completed Sublet Permit Application, CDOT Form No. 205. The subcontract work shall not begin until the Contractor has received the Engineer's written permission. The Contractor shall make all project related written subcontracts, agreements, and purchase orders available to the Engineer for viewing, upon request and at a location convenient to the Engineer.

The Contractor will be permitted to sublet a portion of the Contract, however, the Contractor's organization shall perform work amounting to 30 percent or more of the total original contract amount. Any items designated in the contract as "specialty items" may be performed by subcontract. The cost of "specialty items" so performed by subcontract may be deducted from the total original contract amount before computing the amount of work required to be performed by the Contractor's own organization. The original contract amount includes the cost of material and manufactured products which are to be purchased or produced by the Contractor and the actual agreement amounts between the Contractor and a subcontractor. Proportional value of a subcontracted partial contract item will be verified by the Engineer. When a firm both sells material to a prime contractor and performs the work of incorporating the materials into the project, these two phases shall be considered in combination and as constituting a single subcontract.

The calculation of the percentage of subcontracted work shall be based on subcontract unit prices.

Subcontracts or transfer of Contract shall not release the Contractor of liability under the Contract and Bond.

May 5, 2011

REVISION OF SECTION 109
COMPENSATION FOR COMPENSABLE DELAYS

In subsection 109.10, delete the first two paragraphs and replace with the following:

109.10 Compensation for Compensable Delays. If the Engineer determines that a delay is compensable in accordance with either subsection 105.22, 105.23, 105.24, or 108.08, monetary compensation will be determined in accordance with this subsection.

- (a) These categories represent the only costs that are recoverable by the Contractor. All other costs or categories of costs are not recoverable:
- (1) Actual wages and benefits, including FICA, paid for additional labor not otherwise included in (5) below;
 - (2) Costs for additional bond, insurance and tax;
 - (3) Increased costs for materials;
 - (4) Equipment costs calculated in accordance with subsection 109.04(c) for Contractor owned equipment and based on invoice costs for rented equipment;
 - (5) Costs of extended job site overhead;
 - (6) Costs of salaried employees not otherwise included in (1) or (5) above incurred as a direct result of the delay;
 - (7) Claims from subcontractors and suppliers at any level (the same level of detail as specified herein is required for all such claims);
 - (8) An additional 16 percent will be added to the total of items (1) through (7) as compensation for items for which no specific allowance is provided, including profit and home office overhead.

1
 REVISION OF SECTION 109
 FUEL COST ADJUSTMENT

Section 109 of the Standard Specifications is hereby revised for this project as follows:

Subsection 109.06 shall include the following:

(h) *Fuel Cost Adjustments.* Contract cost adjustments will be made to reflect increases or decreases in the monthly average prices of gasoline, diesel and other fuels from the average price for the month preceding the month in which bids were received for the Contract. These cost adjustments are not changes to the Contract unit prices bid. When bidding, the Contractor shall specify on the Form 85 whether the cost adjustment will apply to the Contract. After bids are submitted, the Contractor will not be given any other opportunity to accept or reject this adjustment. If the Contractor fails to indicate a choice on the Form 85, the cost adjustment will not apply to the Contract. If the fuel cost adjustment is accepted by the Contractor, the adjustment will be made in accordance with the following criteria:

1. Cost adjustments will be based on the fuel price index established by the Department and calculated as shown in subsection 109.06(h)2.D below. The index will be the monthly average of the rates posted by the Oil Price Information Service (OPIS) for Denver No. 2 Diesel. The rate used will be the *OPIS Average* taken from the OPIS Standard Rack table for *Ultra-Low Sulfur w/Lubricity Gross Prices* (ULS column), expressed in dollars per gallon and rounded to two decimal places.
2. Cost adjustments will be made on a monthly basis subject to the following conditions:
 - A. Adjustment will be based on the pay quantities on the monthly partial pay estimate for each of the pay items listed in the table below for which fuel factors have been established. Adjustment will be made only when the pay item is measured by the pay unit specified in the table:

Item	Pay Unit	Fuel Factor (FF)
202-Removal of Asphalt Mat (Planing)	Square Yard	0.006 Gal/SY/Inch depth
203-Excavation (muck, unclassified) Embankment, Borrow	Cubic Yard	0.29 Gal/CY
206-Structure Excavation and Backfill [applies only to quantities paid for by separate bid item; no adjustment will be made for pay items that include structure excavation & backfill, such as RCP(CIP)]	Cubic Yard	0.29 Gal/CY
304-Aggregate Base Course (Class___)	Cubic Yard	0.85 Gal/CY
304-Aggregate Base Course (Class___)	Ton	0.47 Gal./Ton
403-Hot Mix Asphalt (HMA) (Grading ___) *	Ton	2.47 Gal/Ton
412- Concrete Pavement (8-Inch)	Square Yard	0.03 Gal/SY/Inch thickness
412-Place Concrete Pavement**	Square Yard	0.03 Gal/SY/Inch thickness
*Hot Mix Asphalt (Patching) is not subject to fuel cost adjustment.		
**Use the thickness shown on the plans.		

REVISION OF SECTION 109
FUEL COST ADJUSTMENT

- B. A fuel cost adjustment will be made only when the current fuel price index varies by more than 5 percent from the price index at the time of bid, and only for that portion of the variance in excess of 5 percent. Fuel cost adjustments may be either positive or negative dollar amounts.
- C. Fuel cost adjustments will not be made for any partial estimate falling wholly after the expiration of contract time.
- D. Adjustment formula:

EP greater than BP:

$$FA = (EP - 1.05 BP)(Q)(FF)$$

EP less than BP:

$$FA = (EP - 0.95 BP)(Q)(FF)$$

Where:

BP	= Average fuel price index for the calendar month prior to the calendar month in which bids are opened
EP	= Average fuel price index for the calendar month prior to the calendar month in which the partial estimate pay period ends
FA	= Adjustment for fuel costs in dollars
FF	= Fuel usage factor for the pay item
Q	= Pay quantity for the pay item on the monthly partial pay estimate

Note: When the pay item is based on area, and the rate of fuel use varies with thickness, Q should be determined by multiplying the area by the thickness. For example: for 1000 square yards of 8-inch concrete pavement Q should be 8000.

Example: Bids are opened on July 16. The BP will be the average of the daily postings for June 1 through June 30. For an estimate cut-off date selected by the Contractor at the Pre-Construction Conference of the 20th of the month a February estimate will include HMA quantities (Q) measured from the 21st of January through the 20th of February, the FF will be 2.47 Gal/Ton, and the EP index used to calculate FA will be the average of the daily postings for January 1 through January 31 as established by CDOT.

- E. Fuel cost adjustment will not be made for the quantity of any item that is left in place at no pay.
- F. Fuel cost adjustments will not be made to items of work added to the Contract by Change Order after the award of the Contract.

The fuel cost adjustment will be the sum of the individual adjustments for each of the pay items shown. No adjustment will be made for fuel costs on items other than those shown. The factors shown are aggregate adjustments for all types of fuels used, including but not limited to gasoline, diesel, propane, and burner fuel. No additional adjustments will be made for any other type of fuel.

Fuel cost adjustments resulting in an increased payment to the Contractor will be paid for under the planned force account item: Fuel Cost Adjustment. Fuel cost adjustments resulting in a decreased payment to the Contractor will be deducted from monies owed the Contractor.

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REVISION OF SECTION 109
MEASUREMENT OF QUANTITIES

Section 109 of the Standard Specifications is hereby revised for this project as follows:

In subsection 109.01, delete the 17th paragraph and replace it with the following:

Vehicles used to haul material being paid for by weight shall bear a plainly legible identification mark. Each of these vehicles shall be weighed empty daily at times directed by the Engineer. The Contractor shall furnish to the Engineer, in writing, a vehicle identification sheet that lists the following for each delivery vehicle to be used on the project:

- (1) identification mark
- (2) vehicle length
- (3) tare weight
- (4) number of axles
- (5) the distance between extreme axles
- (6) information related to legal weight, including the Permit No. and permitted weight of each vehicle for which the State has issued an overweight permit.

This information shall be furnished prior to time of delivery of the material and at any subsequent time the Contractor changes vehicles, combination vehicles, axle length relationships, or overweight permitting of vehicles.

January 6, 2012

REVISION OF SECTION 109
MEASUREMENT OF WATER

Section 109 of the Standard Specifications is hereby revised for this project as follows:

In subsection 109.01, delete the twenty-sixth paragraph and replace with the following:

Water may be measured either by volume or weight. Water meters shall be accurate within a range of ± 3 percent. When water is metered, the Contractor shall use an approved metering device and shall furnish the Engineer a certificate showing the meter has been accurately calibrated within the time allowed in the following schedule:

2 inch	4 years
4 inch to 6 inch	2 years
8 inch to 10 inch	1 year

January 31, 2013

REVISION OF SECTION 109
PROMPT PAYMENT

Section 109 of the Standard Specifications is hereby revised to include the following:

Subsection 109.06 (e) shall include the following:

The Contractor shall submit the Form 1418, Monthly Payment Report, along with the project schedule updates, in accordance with subsections 108.03 (b) or 108.03 (c) (3). Failure to submit a complete and accurate Form 1418 shall be grounds for CDOT to withhold subsequent payments or retainage to the Contractor.

October 29, 2015

REVISION OF SECTION 109
SCALES

Section 109 of the Standard Specifications is hereby revised for this project as follows:

In subsection 109.01, delete the 11th paragraph and replace with the following:

Materials measured or proportioned by weight shall be weighed on accurate scales. Scales shall be accurate within the allowable tolerances as prescribed by State law. The scales shall be tested for accuracy by the Colorado Department of Agriculture or an approved Colorado Department of Agriculture vendor (<https://www.colorado.gov/pacific/aginspection/scale-companies>) as least once each year, each time the scales are relocated, and as often as the Engineer may deem necessary. Scales shall be furnished by the Contractor or the Contractor may utilize commercial scales.

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 REVISION OF SECTION 208
 EROSION CONTROL

Section 208 is hereby deleted from the Standard Specifications for this project and replaced with the following:

DESCRIPTION

208.01 This work consists of constructing, installing, maintaining, and removing when required, Best Management Practices (BMPs) during the life of the Contract to prevent or minimize erosion, sedimentation, and pollution of any State waters as defined in subsection 107.25, including wetlands.

The Contractor shall coordinate the construction of temporary BMPs with the construction of permanent BMPs to assure economical, effective, and continuous erosion and sediment control throughout the construction period.

When a provision of Section 208 or an order by the Engineer requires that an action be immediate or taken immediately, it shall be understood that the Contractor shall at once begin effecting completion of the action and pursue it to completion in a manner acceptable to the Engineer, and in accordance with the Colorado Discharge Permit System Stormwater Construction Permit (CDPS-SCP) requirements.

MATERIALS

208.02 Erosion control materials are subject to acceptance in accordance with subsection 106.01. Erosion control materials shall be subject to the following approval process:

Material	Approval Process	Notes:
Erosion Bales (Weed Free)	COC	The Contractor shall provide a transit certificate number or a copy of the transit certificate as supplied from the producer.
Silt Fence	COC	
Silt Berm	APL	
Erosion Log (Type 1 and 2)	COC	
Silt Dikes	COC	
Pre-fabricated Concrete Washout Structures (above ground)	APL	
Pre-fabricated Vehicle Tracking Pad	APL	
Aggregate Bag	COC	
Storm Drain Inlet Protection (Type I, II and III)	APL	

The material for BMPs shall conform to the following:

- (a) *Erosion Bales.* Material for erosion bales shall consist of Certified Weed Free hay or straw. The hay or straw shall be certified under the Colorado Department of Agriculture Weed Free Forage Certification Program and inspected as regulated by the Weed Free Forage Act, Title 35, Article 27.5, CRS. Each certified weed free erosion bale shall be identified by blue and orange twine binding the bales.

The Contractor shall not place certified weed free erosion bales or remove their identifying twine until the Engineer has inspected and accepted them.

The Contractor may obtain a current list of Colorado Weed Free Forage Crop Producers who have completed certification by contacting the Colorado Department of Agriculture, Weed Free Forage Program, 305 Interlocken Pkwy, Broomfield, CO 80021, Contact: Weed Free Forage Coordinator at (303) 869-9038. Also available at www.colorado.gov/ag/csd.

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 REVISION OF SECTION 208
 EROSION CONTROL

Bales shall be approximately 5 cubic feet of material and weigh at least 35 pounds. Stakes shall be wood and shall be 2 inch by 2 inch nominal.

- (b) *Silt Fence*. Silt fence posts shall be wood with a minimum length of 42 inches. Wood posts shall be 1.5 inch by 1.5 inch nominal. Geotextile shall be attached to wood posts with three or more staples per post.

Silt fence geotextile shall conform to the following requirements:

Physical Requirements for Silt Fence Geotextiles

Property	Wire Fence Supported Requirements	Self-Supported Requirements Geotextile Elongation <50%	Test Method
Grab Strength, lbs	90 minimum	124 minimum	ASTM D 4632
Permittivity sec-1	0.05	0.05	ASTM D 4491
Ultraviolet Stability	Minimum 70% Strength Retained	Minimum 70% Strength Retained	ASTM D 4355

Silt Fence (Reinforced). Silt fence posts shall be metal T-post with a minimum length of 66 inches. Metal posts shall be “studded tee” with .095 inch minimum wall thickness. Wire fabric reinforcement for the silt fence geotextile shall be a minimum of 10 gauge, with a maximum mesh spacing of 6 inches. Geotextile shall be attached to welded wire fabric with ties or nylon cable ties 12 inch O.C. at top, mid and bottom wire. Welded wire fabric shall be attached to the post with a minimum three 12 gauge wire ties per post. Vinyl or rubber safety caps shall be installed on all T-post.

- (c) *Temporary Berms*. Temporary berms shall be constructed of compacted soil.
- (d) *Temporary Slope Drains*. Temporary slope drains shall consist of fiber mats, plastic sheets, stone, concrete or asphalt gutters, half round pipe, metal or plastic pipe, wood flume, flexible rubber or other materials suitable to carry accumulated water down the slopes. Outlet protection riprap shall conform to section 506. Erosion control geotextile shall be a minimum Class 2, conforming to subsection 712.08.
- (e) *Silt Berm*. Silt berm shall consist of an ultraviolet (UV) stabilized high-density polyethylene, shall be triangular in shape, and shall have the following dimensions:

Width	6 - 11 inches
Height	6 - 10 inches
Weight	0.3 - 1.4 lbs./sq. ft.
Percent Open Area	30 – 50%

Securing spikes shall be 10 to 12 inch x 0.375 inch diameter (minimum).

- (f) *Rock Check Dam*. Rock Check dams shall be constructed of stone. Stone shall meet the requirements of Section 506.
- (g) *Sediment Trap*. In constructing an excavated Sediment Trap, excavated soil may be used to construct the dam embankment, provided the soil meets the requirements of subsection 203.03. Outlet protection riprap shall be the size specified in the Contract and shall conform to Section 506. Erosion control geotextile shall be a minimum Class 1, conforming to subsection 712.08.

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 REVISION OF SECTION 208
 EROSION CONTROL

(h) *Erosion log.* Shall be one of the following types unless otherwise shown on the plans:

- (1) Erosion Log (Type 1) shall be curled aspen wood excelsior with a consistent width of fibers evenly distributed throughout the log. The casing shall be seamless, photo-degradable tube netting and shall have minimum dimensions as shown in Table 208-1, based on the diameter of the log called for on the plans. The curled aspen wood excelsior shall be fungus free, resin free, and free of growth or germination inhibiting substances.
- (2) Erosion Log (Type 2) shall consist of a blend of 30-40 percent weed free compost and 60-70 percent wood chips. The compost/wood blend material shall pass a 50 mm (2 inch) sieve with a minimum of 70 percent retained on the 9.5 mm (3/8 inch) sieve and comply to subsection 212.02 for the remaining compost physical properties. The compost/wood chip blend may be pneumatically shot into a geotextile cylindrical bag or be pre-manufactured. The geotextile bag shall consist of material with openings of 1/8 to 3/8 inches of HDPE or polypropylene mesh (knitted, not extruded), and contain the compost/wood chip material while not limiting water infiltration.

Erosion log (Type 1 and Type 2) shall have minimum dimensions as shown in Table 208-1, based on the diameter of the log.

**Table 208-1
 NOMINAL DIMENSIONS OF EROSION LOGS**

Diameter Type 1 (Inches)	Diameter Type 2 (Inches)	Length (feet)		Weight (minimum) (pounds/foot)	Stake Dimensions (Inches)
		Min.	Max.		
9	8	10	180	1.6	1.5 by 1.5 (nominal) by 18
12	12	10	180	2.5	1.5 by 1.5(nominal) by 24
20	18	10	100	4.0	2 by 2 (nominal) by 30

Stakes to secure erosion logs shall consist of pinewood or hardwood.

(i) *Silt Dikes.* Silt dikes shall be pre-manufactured triangular shaped urethane foam covered with a woven geotextile fabric. The fabric aprons shall extend a minimum of two feet beyond each side of the triangle.

Each silt dike shall have the following dimensions:

Dimension	Length
Center height	8 to 10 inches
Base	16 to 21 inches
Section length	3 to 7 feet
Section width including fabric extensions	5.6 feet

Staples shall be 6 gauge and at least 8 inches long.

(j) *Concrete Washout Structure.* The Contractor shall construct a washout structure that will contain washout from concrete placement and construction equipment cleaning operations. Embankment required for the concrete washout structure may be excavated material, provided that this material meets the requirements of Section 203 for embankment.

A pre-fabricated concrete washout structure shall only be used when specified in the Contract. It shall consist of a watertight container designed to contain liquid and solid waste from concrete washout.

(k) *Vehicle Tracking Pad.* Aggregate for the vehicle tracking pad shall be crushed natural aggregate with at least two fractured faces that meets the following gradation requirements:

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 REVISION OF SECTION 208
 EROSION CONTROL

Sieve size **Percent by weight**
Passing Square Mesh Sieves

75 mm (3 inch)	100
50 mm (2 inch)	0-25
19.0 mm (¾ inch)	0-15

Recycled crushed concrete or asphalt shall not be used for vehicle tracking pads.

Erosion Control Geotextile shall be Class 2 and conform to the requirements of subsection 712.08.

Pre-fabricated vehicle tracking pads if specified in the Contract shall have the following properties.

Minimum overall dimensions of the modular systems shall be:

Width of pad along edge of roadway	14 feet
Length of pad	30 feet

Weight (min.) (lbs./sq. ft.)	8
Crush strength (min.) (psi)	400

- (l) *Aggregate Bag.* Aggregate bags shall consist of crushed stone or recycled rubber filled fabric with the following properties:

Diameter (inches)	Weight (minimum) (pounds per foot)
6-8	6
10	10
12	15

Rubber used in bags shall be clean, 95 percent free of metal and particulates.

Crushed stone contained in the aggregate bags shall conform to subsection 703.09, Table 703-7 for Class C.

The aggregate bag shall consist of a woven geotextile fabric with the following properties:

Property	Requirement	Test Method
Grab Tensile Strength	90 lbs. min.	ASTM D 4632
Trapezoid Tear Strength	25 lbs. min.	ASTM D 4533
Mullen Burst	300 psi	ASTM D 3786
Ultraviolet Resistance	70%	ASTM D 4355

- (m) *Storm Drain Inlet Protection.* Storm drain inlet protection shall consist of aggregate filled fabric with the following dimensions:

Storm Drain Inlet	Protection Types
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Protection Properties	¹ Type I	Type II	³ Type III
Diameter	4 in.	4 in.	N/A
Minimum Section Length	7 ft.	5 ft.	5 ft.
Apron Insert	---	30 in. or sized to grate	30 in or sized to grate
¹ Type I protection shall be used with Inlet Type R. ² Type II protection shall be used with Combination Inlet. Option A or B ³ Type III protection Inlet Vane Grate only. Option A or B			

The storm drain inlet protection (Type I, II and III) shall consist of a woven geotextile fabric with the following properties:

Property	Test Method	Unit	Requirement
Grab tensile strength	ASTM D 4632	lbs.	minimum 350X280
Mullen Burst Strength	ASTM D 3786	lbs.	600
Trapezoid Tear Strength	ASTM D 4533	lbs.	minimum 110X95
Percent Open Area	COE-22125-86	%	28
Water Flow Rate	ASTM D 4491	gal./min./sq. ft.	250
Ultraviolet Resistance	ASTM D 4355	%	70

Curb roll for storm drain inlet protection (Type I and II) shall have an approximate weight of 7 to 10 pounds per linear foot of device. The device shall be capable of conforming to the shape of the curb. Aggregate contained in the storm drain inlet device shall consist of gravel or crushed stone conforming to Table 703-7 for Class C.

Storm drain inlet protection (Type III) shall have insert containment (option A) or insert without storage capacity (option B).

CONSTRUCTION REQUIREMENTS

208.03 Project Review, Schedule, and Transportation Erosion Control Supervisor. Prior to construction, an on-site Environmental Pre-construction Conference shall be held. The conference shall be attended by:

- (1) The Engineer,
- (2) The Superintendent,
- (3) The Contractor's SWMP Administrator
- (4) Supervisors or Foremen of subcontractors working on the project,
- (5) The Region Water Pollution Control Manager (RWPCM), and
- (6) CDOT personnel (e.g., CDOT Landscape Architect) who prepared or reviewed the Stormwater Management Plan (SWMP).

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At this conference, the attendees shall discuss the SWMP, CDPS-SCP, sensitive habitats on site, wetlands, other vegetation to be protected, and the enforcement mechanisms for not meeting the requirements of this specification.

Prior to beginning construction the Contractor shall evaluate the project site for storm water draining into or through the site. When such drainage is identified, BMPs (i.e., Control Measures) shall be used if possible to divert stormwater from running on-site and becoming contaminated with sediment or other pollutants. The diversion may be accomplished with a temporary pipe or other conveyance to prevent water contamination or contact with pollutants. Run-on water that cannot be diverted shall be treated as construction runoff and adequate BMPs shall be employed.

The SWMP Administrator shall evaluate all non-stormwater coming onto the site, such as springs, seeps, and landscape irrigation return flow. If such flow is identified, BMPs shall be used to protect off-site water from becoming contaminated with sediment or other pollutants.

The SWMP Administrator shall review existing inlets and culverts to determine if inlet protection is needed due to water flow patterns. Prior to beginning construction, inlets and culverts needing protection shall be protected and the location of the implemented BMP added to the SWMP site map.

Prior to construction, the Contractor shall implement appropriate BMPs for protection of wetlands, sensitive habitat and existing vegetation from ground disturbance and other pollutant sources, in accordance with the approved project schedule as described in subsection 208.03(b).

When additional BMPs are required and approved by the Engineer, the Contractor shall implement the additional BMPs and the SWMP Administrator shall record and describe them on the SWMP site map. The approved BMPs will be measured and paid for in accordance with subsections 208.11 and 208.12.

(a) *Project Review.* The Contractor may submit modifications to the Contract's BMPs in a written proposal to the Engineer. The written proposal shall include the following information:

- (1) Reasons for changing the BMPs.
- (2) Diagrams showing details and locations of all proposed changes.
- (3) List of appropriate pay items indicating new and revised quantities.
- (4) Schedules for accomplishing all erosion and sediment control work.
- (5) Effects on permits or certifications caused by the proposed changes.

The Engineer will approve or reject the written proposal in writing within 5 working days after the submittal. The Engineer may require additional control measures prior to approving the proposed modifications. Additional modifications and additional BMPs will be paid for at the Contract Unit Price for the specific items involved. If no items exist, they will be paid for as extra work in accordance with subsection 109.04.

(b) *Erosion and Sediment Control Activities.* The erosion and sediment control activities shall be included in the weekly meeting update. The project schedule shall specifically indicate the sequence of clearing and grubbing, earthwork operations, and construction of temporary and permanent erosion control features and stabilization. Project schedule shall include erosion and sediment control work for haul roads, borrow pits, storage and asphalt or concrete batch sites, and all areas within the project limits. If during construction the Contractor proposes changes which would affect the Contract's BMPs, the Contractor shall propose revised BMPs to the Engineer for approval in writing. If necessary, the SWMP Administrator shall update proposed sequencing of major activities in the SWMP. Revisions shall not be implemented until the proposed measures have been approved in writing by the Engineer.

(c) *Erosion Control Management (ECM).* Erosion Control Management for this project shall consist of Erosion Control Inspection and the Administration of the Stormwater Management Plan (SWMP). All ECM staff shall have working knowledge and experience in construction, and shall have successfully completed the Transportation Erosion Control Supervisory Certificate Training (TECS) as provided by the Department. The Superintendent will not be permitted to serve in an ECM role. The Erosion Control Inspector and the Stormwater Administrator may be the same person in projects involving less than 40 acres of disturbed area.

1. Stormwater Management Plan (SWMP) Administration. The SWMP Plan shall be maintained by a SWMP Administrator. The SWMP Administrator shall have completed the TECS certification training as provided by the Department. In the case of a project requiring only one TECS, the SWMP Administrator may also

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be the Erosion Control Inspector for the project. The name of the SWMP Administrator shall be recorded on SWMP Plan Section 3. B. The SWMP Administrator shall have full responsibility to maintain and update the SWMP Plan and identify to the Superintendent critical action items needed to conform to the CDPS-SCP as follows:

- (1) Complete the SWMP Notebook as described in subsection 208.03 (d).
- (2) Participate in the Environmental Pre-construction Conference
- (3) Attend weekly meetings
- (4) Attend all Headquarter and Region water quality control inspections. The Contractor and the Contractor's SWMP Administrator will be notified a minimum of five days in advance of each inspection by the CDOT region or headquarter water quality staff.
- (5) Coordinate with the Superintendent to implement necessary actions to reduce anticipated or presently existing water quality or erosion problems resulting from construction activities.
- (6) Coordinate with the Superintendent to ensure that all labor, material, and equipment needed to install, maintain, and remove BMPs are available as needed.
- (7) During construction, update and record the following items on the SWMP site map as changes occur:
 - (i) Limits of Construction (LOC).
 - (ii) Areas of disturbance (AD) are limits of disturbance (LDA).
 - (iii) Limits of cut and fill.
 - (iv) Areas used for storage of construction materials, equipment, soils, or wastes.
 - (v) Location of any dedicated asphalt or concrete batch plants.
 - (vi) Location of construction offices and staging areas.
 - (vii) Location of work access routes during construction.
 - (viii) Location of borrow and waste.
 - (ix) Location of temporary, interim and permanent stabilization.
 - (x) Location of outfall(s)
 - (xi) Arrows showing direction of surface flow
 - (xii) Structural and non-structural BMPs
 - (xiii) LDA and LOC lines as defined in subsection 107.25
- (8) Amend the SWMP whenever there are: additions, deletions, or changes to BMPs. SWMP revisions shall be recorded immediately. Items shall be dated and initialed by the SWMP Administrator. Specifically, amendments shall include the following:
 - (i) A change in design, construction, operation, or maintenance of the site which would require the implementation of new or revised BMPs; or
 - (ii) Changes when the SWMP proves to be ineffective in achieving the general objectives of controlling pollutants in stormwater discharges associated with construction activity.
 - (iii) Changes when BMPs are no longer necessary and are removed.

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- (9) Complete vegetative survey transects when required in accordance with CDOT Erosion Control and Stormwater Quality Guide.
- (10) Start a new site map before the current one becomes illegible. All site maps shall remain in the SWMP notebook.
- (11) Document all inspection and maintenance activities. The SWMP and documentation shall be kept on the project site.
- (12) When adding or revising BMPs on the SWMP, add a narrative explaining what, when, where, why, and how the BMP is being used, and add a detail to the SWMP notebook.
 - (i) How to install and inspect the BMP
 - (ii) Where to install the BMP
 - (iii) When to maintain the BMP
- (13) If using existing topography, vegetation, etc. as a BMP, label it as such on the SWMP site map; add a narrative as to when, where, why, and how the BMP is being used.
- (14) Indicate BMPS in use or not in use by recording on Standard Plans M-208-1, M-216-1, and M-615-1 in the SWMP notebook
- (15) Record on the SWMP, the approved Method Statement for Containing Pollutant Byproducts.
- (16) Update the potential pollutants list in the SWMP notebook and Spill Response Plan throughout construction.

2. Erosion Control Inspection.

Erosion control inspection shall be performed by TECS certified staff assigned as Erosion Control Inspector (ECI) to the project. One ECI is required for every 40 acres of total disturbed area which is currently receiving temporary and interim stabilization measures as defined in subsection 208.04 (e). An ECI shall not be responsible for more than 40 acres in the project. Accepted permanent stabilization methods as defined in subsection 208.04 (e) will not be included in the 40 acres.

ECI duties shall be as follows:

- (1) Coordinate with the SWMP Administrator on reporting the results of inspections
- (2) Review the construction site for compliance with the Stormwater Construction Permit.
- (3) Inspect with the Superintendent and the Engineer (or their designated representatives) the stormwater management system at least every seven calendar days. Post storm event inspections shall be conducted within 24 hours after the end of any precipitation or snow melt event that may cause surface erosion. If no construction activities will occur following a storm event, post-storm event inspections shall be conducted prior to commencing construction activities, but no later than 72 hours following the storm event. The occurrence of delay in inspections shall be documented in the inspection report. Form 1176 shall be used for all 7 day inspections and inspections following storm events. The Contractor shall notify the Erosion control inspector when a storm event occurs. Failure to perform inspections on time will result in liquidated damages in accordance with subsection 208.09.

Inspections are not required at sites when construction activities are temporarily halted, when snow cover exists over the entire site and melting conditions do not pose a risk of surface erosion. This exception shall be applicable only during the period where melting conditions do not exist, and applies

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to the routine 7 day, Headquarters and Region inspections, as well as the post-storm event inspections. The following information shall be documented on Form 1176 for use of this exclusion: dates when snow cover occurred, date when construction activities ceased, and date melting conditions began.

The order of precedence for required inspections shall be as follows:

- (i) Headquarter water quality inspections
- (ii) Region water quality inspections
- (iii) Post-storm event inspections
- (iv) 7 day inspections

When one of the listed inspections is performed, the inspections listed below it need not be performed on that day if the required CDOT and Contractor personnel participated in the inspection.

For example: A 7 day inspection is not required on the same day a headquarters or Region inspection is conducted. A sheet shall be placed in the inspections area of the SWMP Notebook to refer to the date inspection performed.

- (4) Follow all other agency Stormwater requirements and inspections unless a waiver or other agreement has been made.
 - (5) The ECI shall immediately report to the Contractor's Superintendent and the SWMP Administrator the following instances of noncompliance:
 - (i) Noncompliance which may endanger health or the environment.
 - (ii) Spills or discharge of hazardous substance or oil which may cause pollution of waters of the State.
 - (iii) Discharge of stormwater which may cause an exceedance of a water quality standard.
 - (iv) Upset conditions that occur on site.
 - (6) Spills, leaks, or overflows that result in the discharge of pollutants shall be documented on the Form 1176 by the ECI. The ECI shall record the time and date, weather conditions, reasons for spill, and how it was remediated.
- (d) *Documentation Available on the Project.* The following Contract documents and references will be made available for reference at the CDOT field office during construction:
1. SWMP Notebook. The Engineer will provide a SWMP Notebook at the Preconstruction Conference, which is and shall remain the property of CDOT. CDOT will initially provide the documentation for the first four items when available. The Contractor shall provide the contents required for items (5) through (18). The notebook shall be stored in the CDOT field office or at another on-site location approved by the Engineer. The SWMP Administrator shall modify and update the notebook as needed to reflect actual site conditions, prior to or as soon as practicable but in no case more than 72 hours after the change. The following Contract documents and reports shall be kept, maintained, and updated in the notebook under the appropriate items by the SWMP Administrator:
 - (1) SWMP Plan Sheets - Notes, tabulation, sequence of major activities, area of disturbance, existing soil data, existing vegetation percent cover, potential pollutant sources, receiving water, non-stormwater discharges and environmental impacts.

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- (2) Site Map and Plan Title Sheet - Construction site boundaries, ground surface disturbance, limits of cut and fill, flow arrows, structural BMPs, non-structural BMPs, Springs, Streams, Wetlands and surface water. Also included on the sheets is the protection of trees, shrubs and cultural resources.
- (3) Specifications - Standard and Project special provisions related to Stormwater and Erosion Control.
- (4) Standard Plans M-208-1, M-216-1 and M-615-1
- (5) BMP Details not in Standard Plan M-208-1 - Non-standard details.
- (6) Weekly meeting sign in sheet.
- (7) Calendar of Inspections -Calendar of inspections marking when all inspections take place.
- (8) Form 1176 – Weekly meeting notes and inspection report
- (9) Region and Headquarter Water Quality Reports and Form 105(s) relating to Water Quality.
- (10) Description of Inspection and Maintenance Methods - Description of inspection and maintenance methods implemented at the site to maintain all BMPs identified in the SWMP and Items not addressed in the design
- (11) Spill Response Plan - Reports of reportable spills submitted to CDPHE
- (12) List and Evaluation of Potential Pollutants - List of potential pollutants as described in subsection 107.25 and approved Method Statement for Containing Pollutant Byproducts.
- (13) Other Correspondence e.g., agreements with other MS4s, approved deferral request, CDPHE audit documentation, Water Quality Permit Transfer to Maintenance Punch List and other miscellaneous documentation.
- (14) TECS Certifications of the SWMP Administrator and all ECIs, keep current through the life of the project.
- (15) Environmental Pre-construction Conference – Conference agenda with a certification of understanding of the terms and conditions of the CDPS-SCP and SWMP. The certification shall be signed by all attendees. A certification shall also be signed by all attendees of meetings held for new subcontractors beginning work on the project that could adversely affect water quality after the Environmental Pre-construction Conference has been held.
- (16) All Project Environmental Permits - All project environmental permits and associated applications and certifications, including, CDPS-SCP, Senate Bill 40, USACE 404, temporary stream crossings, dewatering, biological opinions and all other permits applicable to the project, including any separate CDPS-SCP obtained by the Contractor for staging area on private property, asphalt or concrete plant, etc.
- (17) Photographs Documenting Existing Vegetation – Project photographs shall be time stamped on paper with a maximum of four colored images per 8 ½ inch by 11 inch sheet and/or a digital copy of all photographs on CD-ROM/Flash Drive in (JPG format), documenting existing vegetation prior to construction commencing. On the bottom of each photograph shall be a description using Station Number or Mile Post of where the photograph was taken.
- (18) Permanent Water Quality Plan Sheets - Plan sheets and specifications for permanent water quality structures, riprap.

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The Engineer will incorporate the documents and reports available at the time of award. The Contractor shall provide and insert all other documents and reports as they become available during construction. The SWMP Administrator shall finalize the SWMP for CDOT Maintenance use upon completion of the project. SWMP completeness shall be approved by the Engineer, corrections to the SWMP shall be at the Contractor's expense. The following Reference materials shall be used:

- (1) CDOT Erosion Control and Stormwater Quality Guide.
- (2) CDOT Erosion Control and Stormwater Quality Field Guide.

(e) *Weekly Meetings.* The Engineer, Superintendent and the SWMP Administrator shall conduct a weekly meeting with supervisors involved in construction activities that could adversely affect water quality. The meeting shall follow an agenda prepared by the Engineer or a designated representative, and have a sign in sheet on which the names of all attendees shall be recorded. The SWMP Administrator shall take notes of water quality comments and action items at each weekly meeting, and place the agenda and sign in sheet in the SWMP notebook. At this meeting the following shall be discussed and documented on Form 1176:

- (1) Requirements of the SWMP.
- (2) Problems that may have arisen in implementing the site specific SWMP or maintaining BMPs.
- (3) Unresolved issues from inspections and concerns from last inspection
- (4) BMPS that are to be installed, removed, modified, or maintained.
- (5) Planned activities that will effect stormwater in order to proactively phase BMPs.
- (6) Recalcitrant inspection findings

All subcontractors who were not in attendance at the Environment Pre-construction conference shall be briefed on the project by the Engineer, Superintendent, and the SWMP Administrator prior to start of work. The SWMP Administrator shall record the names of these subcontractors as an addendum to the list of attendees, and added the SWMP Notebook.

208.04 Best Management Practices (BMPs) for Stormwater.

The SWMP Administrator shall modify the SWMP to clearly describe and locate all BMPs implemented at the site to control potential sediment discharges.

Vehicle tracking control shall be used at all vehicle and equipment exit points from the site to prevent sediment exiting the Limits of Construction (LOC) of the project site. Access shall be provided only at locations approved by the Engineer. The SWMP Administrator shall record vehicle tracking control pad locations on the SWMP site map.

New inlets and culverts shall be protected during their construction. Appropriate protection of each culvert and inlet shall be installed immediately. When riprap is called for at the outlet of a culvert, it shall be installed within 24 hours of completion of each pipe. The Contractor shall remove sediment, millings, debris, and other pollutants from within the newly constructed drainage system in accordance with the CDPS-SCP, prior to use, at the Contractor's expense. All removed sediment shall be disposed of outside the project limits in accordance with all applicable regulations.

Concrete products wasted on the ground during construction shall include, but shall not be limited to: excess concrete removed from forms, spills, slop, and all other unused concrete are potential pollutants that shall be contained or protected by an approved BMP at a pre-approved containment area. The concrete shall be picked up and recycled in accordance with 6 CCR 1007-2 (CDPHE Regulations Pertaining to Solid Waste Sites and Facilities) at regular intervals, as directed. The uses of recycled concrete from approved recycling facilities shall be in accordance with Section 203.

(a) *Unforeseen Conditions.* The Contractor shall design and implement erosion and sediment BMPs for correcting conditions unforeseen during the design of the project, or for emergency situations, that develop during construction. The Department's "Erosion Control and Stormwater Quality Guide" shall be used as a reference document for the purpose of designing erosion and sediment BMPs. Measures and methods proposed by the Contractor shall be reviewed and approved in writing by the Engineer prior to installation.

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- (b) *Other Agencies.* If CDPHE, US Army Corps of Engineers (USACE), or the Environmental Protection Agency (EPA) reviews the project site and requires additional measures to prevent and control erosion, sediment, or pollutants, the Contractor shall cease and desist activities resulting in pollutant discharge and immediately implement these measures. If the work may negatively affect another MS4, the Contractor shall cease and desist activities resulting in the discharge and shall implement appropriate measures to protect the neighboring MS4, including installing additional measures. . Implementation of these additional measures will be paid for at contract unit price.
- (c) *Work Outside the Right of Way.* Disturbed areas, including staging areas, which are outside CDOT ROW and outside easements acquired by CDOT for construction, are the responsibility of the Contractor. These areas may be subject to a separate CDPS-SCP or other permits. The Contractor shall acquire these permits and submit copies to the Engineer prior to any disturbance. These permits, shall be acquired and all erosion and sediment control work performed at the Contractor's expense. These areas are subject to inspections by CDOT or any other agency, as agreed upon in writing.
- (d) *Construction Implementation.* The Contractor shall incorporate BMPs into the project as outlined in the accepted schedule.
- (e) *Stabilization.* Once earthwork has started, the Contractor shall continue erosion BMPs until permanent stabilization of the area has been completed and accepted. Clearing, grubbing and slope stabilization measures shall be performed regularly to ensure final stabilization. Failure to properly maintain erosion control and stabilization methods, either through improper phasing or sequencing will require the Contractor to repair or replace sections of earthwork at his expense. The Contractor shall schedule and implement the following stabilization measures during the course of the project:
- (1) *Temporary Stabilization.* At the end of each day, the Contractor shall stabilize disturbed areas by surface roughening, vertical tracking, or a combination thereof. Disturbed areas are locations where actions have been taken to alter the existing vegetation and/or underlying soil of a site, such as clearing, grading, road bed preparation, soil compaction, and movement and stockpiling of top soils. Other stabilization measures may be implemented, as approved. The maximum area of temporary stabilization shall not exceed 20 acres.
 - (2) *Interim Stabilization.* Stockpiles and disturbed areas as soon as known with reasonable certainty that work will be temporarily halted for 14 days or more shall be stabilized using one or more of the specified following methods:
 - (i) Application of 1.5 tons of mechanically crimped certified weed free hay or straw in combination with an approved organic mulch tackifier.
 - (ii) Placement of bonded fiber matrix in accordance with Section 213.
 - (iii) Placement of mulching (hydraulic) wood cellulose fiber mulch with tackifier, in accordance with Section 213.
 - (iv) Application of spray-on mulch blanket in accordance with Section 213. Magnesium Chloride, Potassium Chloride and Sodium Chloride, or other salt products, will not be permitted as a stabilization method.Protection of the interim stabilization method is required. Reapplication may be required as approved.
 - (3) *Summer and Winter Stabilization.* Summer and winter stabilization is defined as months when seeding will not be permitted. As soon as the Contractor knows shutdown is to occur, interim stabilization shall be applied to the disturbed area. Protection of the interim stabilization method is required. Reapplication of interim stabilization may be required as directed.

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- (4) **Permanent Stabilization.** Permanent stabilization is defined as the covering of disturbed areas with seeding, mulching with tackifier, soil retention coverings, and such non-erodible methods such riprap, road shouldering, etc., or a combination thereof as required by the Contract. Other permanent stabilization techniques may be proposed by the Contractor, in writing, and shall be used when approved in writing by the Engineer. Permanent stabilization shall begin within 48 hours after topsoil placement, soil conditioning, or combination thereof starts and shall be pursued to completion.
- (5) **Final Stabilization.** Final stabilization is defined as when all ground disturbing activities at the site have been completed, and uniform vegetative cover has been established with an individual plant density of at least 70 percent of pre-disturbance levels, or equivalent permanent physical erosion reduction methods have been employed.
- (f) **Maintenance.** Erosion and sediment control practices and other protective measures identified in the SWMP as BMPs for stormwater pollution prevention shall be maintained in effective operating condition until the CDPS-SCP has been transferred to CDOT. BMPs shall be continuously maintained in accordance with good engineering, hydrologic and pollution control practices, including removal of collected sediment when silt depth is 50 percent or more of the height of the erosion control device. When possible, the Contractor shall use equipment with an operator rather than labor alone to remove the sediment.

Maintenance of erosion and sediment control devices shall include replacement of such devices upon the end of their useful service life as recommended by the Contractor and approved by the Engineer. Maintenance of rock check dams and vehicle tracking pads shall be limited to removal and disposal of sediment or addition of aggregate. Damages resulting from failure to maintain BMPs shall be paid at the contractors expense.

Complete site assessment shall be performed as part of comprehensive inspection and maintenance procedures, to assess the adequacy of BMPs at the site and the necessity of changes to those BMPs to ensure continued effective performance. Where site assessment results in the determination that new or replacement BMPs are necessary, the BMPs shall be installed to ensure continuous effectiveness. When identified, BMPs shall be maintained, added, modified or replaced as soon as possible, immediately in most cases.

Approved new or replaced BMPs will be measured and paid for in accordance with subsections 208.11 and 208.12. Devices damaged due to the Contractor's negligence shall be replaced at Contractor's expense.

From the time seeding and mulching work begins until the date the Contract work is accepted, the Contractor shall maintain all seeded areas. Damage to seeded areas or to mulch materials shall be immediately restored. Damage to seeded areas or to mulch materials due to Contractor negligence shall be immediately restored at the Contractor's expense. Restoration of other damaged areas will be measured and paid for under the appropriate bid item.

Temporary BMPs may be removed upon completion of the project, as determined by the Water Quality Partial Acceptance walk-through. If removed, the area in which these BMPs were constructed shall be returned to a condition similar to that which existed prior to its disturbance. Removed BMPs shall become the property of the Contractor.

If a project delay occurs, the Contractor shall be responsible to continue erosion and sediment control operations beyond the original contract time.

Sediment removed during maintenance of BMPs and material from street sweeping may be used in or on embankment, provided it meets conditions of Section 203 and is distributed evenly across the embankment.

Whenever sediment collects on the paved surface, the surface shall be cleaned. Street washing will not be allowed. Storm drain inlet protection shall be in place prior to shoveling, sweeping, or vacuuming. Sweeping shall be completed with a pickup broom or equipment capable of collecting sediment. Sweeping with a kick broom will not be allowed.

Material from pavement saw cutting operations shall be cleaned from the roadway surface during operations using a vacuum. A BMP, such as a berm, shall be placed to contain slurry from joint flushing operations until

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the residue can be removed from the soil surface. Aggregate bags, erosion logs or other permeable BMPs shall not be used. Residue shall not flow into driving lanes. It shall be removed and disposed of in accordance with subsection 107.25(b) 13. Material containment and removal will not be paid for separately, but shall be included in the work.

208.05 Construction of BMPs. BMPs shall be constructed in accordance with Standard Plans M-208-1, M-216-1 and with the following.

- (a) *Seeding, Mulching, Sodding, Soil Retention Blanket.* Seeding, mulching, sodding, and soil retention blanket shall be performed in accordance with Sections 212, 213, and 216.
- (b) *Erosion Bales.* The bales shall be anchored securely to the ground with wood stakes.
- (c) *Silt Fence.* Silt fence shall be installed in locations specified in the Contract prior to any grubbing or grading activity.
- (d) *Temporary Berms.* Berms shall be constructed to the dimensions shown in the Contract, and sufficiently compacted to prevent erosion or failure. If the berm erodes or fails, it shall be immediately repaired or replaced at the Contractor's expense.
- (e) *Temporary Diversion.* Diversions shall be constructed to the dimensions shown in the Contract, and graded to drain to a designated outlet. The berm shall be sufficiently compacted to prevent erosion or failure. If the diversion erodes or fails, it shall be immediately repaired or replaced at the Contractor's expense.
- (f) *Temporary Slope Drains.* Temporary slope drains shall be installed prior to installation of permanent facilities or growth of adequate ground cover on the slopes. All temporary slope drains shall be securely anchored to the slope. The inlets and outlets of temporary slope drains shall be protected to prevent erosion.
- (g) *Silt Berm.* Prior to installation of silt berms, the Contractor shall prepare the surface of the areas in which the berms are to be installed such that they are free of materials greater than 2 inches in diameter and are suitably smooth for the installation of the silt berms, as approved. Silt berms shall be secured with spikes. The Contractor shall install the silt berm in a manner that will prevent water from going around or under the silt berm. Silt berms shall be installed on top of soil retention blanket.
- (h) *Rock Check Dam.* Rock shall be installed at locations shown on the plans. Rock check dams shall conform to the dimensions shown on the plans.
- (i) *Riprap Outlet Protection.* Geotextile used shall be protected from cutting or tearing. Overlaps between two pieces of geotextile shall be 1 foot minimum. Riprap size shall be as shown on the plans.
- (j) *Storm Drain Inlet Protection.* Prior to installation, the Contractor shall sweep the surface of the area in which the storm drain inlet protection devices are to be installed such that the pavement is free of sediment and debris. The ends of the inlet protection Type 1 and Type 2 shall extend a minimum of 1 foot past each end of the inlet.

The Contractor shall remove all accumulated sediment and debris from the surface surrounding all storm drain inlet protection devices after each rain event or as directed. The Contractor shall remove accumulated sediment from Type II and III containment area when it is more than a maximum one third full of sediment, or as directed.

The Contractor shall protect storm drain facilities adjacent to locations where pavement cutting operations involving wheel cutting, saw cutting, sand blasting, or abrasive water jet blasting are to take place.

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- (k) *Sediment Trap*. Sediment traps shall be installed to collect sediment laden water and to minimize the potential of pollutants leaving the project site. Locations shall be as shown on the plans or as directed.

Sediment traps shall be constructed prior to disturbance of upslope areas and shall be placed in locations where runoff from disturbed area can be diverted into the trap.

The area under the embankment shall be cleared, grubbed and stripped of any vegetation and roots.

Fill material for the embankment shall be free of roots or other vegetation, organic material, large stones, and other objectionable material.

Sediment shall be removed from the trap when it has accumulated to one half of the wet storage depth of the trap and shall be disposed of in accordance with subsection 208.04(f).

- (l) *Erosion Logs*. Erosion logs shall be embedded 2 inches into the soil. Stakes shall be embedded to a minimum depth of 12 inches. At the discretion of the Engineer, a shallower depth may be permitted if rock is encountered.

The Contractor shall maintain the erosion logs during construction to prevent sediment from passing over or under the logs.

- (m) *Silt Dikes*. Prior to installation of silt dikes, the Contractor shall prepare the surface of the areas in which the silt dikes are to be installed such that they are free of materials greater than two inches in diameter and are suitably smooth for the installation of the silt dikes, as approved by the Engineer.

- (n) *Concrete Washout Structure*. The concrete washout structure shall meet or exceed the dimensions shown on the plans or be used in accordance with manufacturer's recommendations. Work on this structure shall not begin until written acceptance is provided by the Engineer.

Concrete washout structure shall conform to standard plan M-208-1 and shall meet the following requirements:

- (1) Structure shall contain all washout water.
- (2) Stormwater shall not carry wastes from washout and disposal locations.
- (3) The site shall be located a minimum of 50 horizontal feet from State waters and shall meet all requirements for containment and disposal as defined in subsection 107.25.
- (4) The site shall be signed as "Concrete Washout".
- (5) The site shall be accessible to appropriate vehicles.
- (6) Freeboard capacity shall be included into structure design to reasonably ensure the structure will not overtop during or because of a precipitation events.
- (7) The Contractor shall prevent tracking of washout material out of the washout structure.
- (8) Solvents, flocculents, and acid shall not be added to wash water.
- (9) The structure shall be surrounded on three sides by a compacted berm.
- (10) The structure shall be fenced with orange plastic construction fencing to provide a barrier to construction equipment and to aid in identification of the concrete washout area.

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(11) Concrete waste, liquid and solid, shall not exceed 2/3 the storage capacity of the washout structure.

Pre-fabricated concrete washout structures shall meet the following requirements:

- (1) Structure shall contain all washout water.
- (2) Structure shall be located 50 horizontal feet away from State waters, and shall be confined so that no potential pollutants will enter State waters and other sensitive areas as defined in the Contract. Locations shall be as approved by the Engineer. The site shall be delineated with orange plastic fence or other means and signed as "Concrete Washout".
- (3) The site shall be accessible to appropriate vehicles.
- (4) Freeboard capacity shall be included into structure design to reasonably ensure the structure will not overtop during or because of a precipitation event.
- (5) Solvents, flocculants, and acid shall not be added to wash water.
- (6) Concrete waste, liquid and solid, shall not exceed 2/3 the storage capacity of the washout structure.
- (7) Prefabricated structures cannot be moved when they contain liquid, unless otherwise approved.
- (8) The concrete washout structure shall be completed and ready for use prior to concrete placement operations.
- (9) Washout areas shall be checked and maintained as required. On site permanent disposal of concrete washout waste is not allowed.

All liquid and solid wastes, including contaminated sediment and soils generated from concrete washout shall be hauled away from the site and disposed of properly at the Contractor's expense.

(o) *Vehicle Tracking Pad (VTP)*. Vehicle tracking pads shall be constructed to the minimum dimensions shown in the Contract, unless otherwise directed by the Engineer. Construction of approved vehicle tracking pads shall be completed before any disturbance of the area.

The Contractor shall maintain each vehicle tracking pad during the entire time that it is in use for the project. The vehicle tracking pad shall be removed at the completion of the project unless otherwise directed by the Engineer. Additional aggregate may be required for maintenance and will be paid for under Pay Item, Maintenance Aggregate (Vehicle Tracking Pad).

(p) *Detention Pond*. Permanent detention ponds shown on the construction plans may be used as temporary BMPs if all the following conditions are met:

- (1) The pond is designated as a construction BMP in the SWMP.
- (2) The pond outfall and outlet are designed and implemented for use as a BMP during construction in accordance with good engineering, hydrologic, and pollution control practices. The stormwater discharges from the outfall shall not cause degradation or pollution of State waters, and shall have BMPs, as appropriate.
- (3) All silt shall be removed and the pond returned to the design grade and contour prior to project acceptance

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- (q) *Aggregate Bag*. Aggregate bags shall be placed on a stable surface, consisting of pavement, grass or gravel. Aggregate bags shall be placed to conform to the surface without gaps. Discharge water shall not cause erosion.
- (r) *Surface Roughening*. Surface roughening creates horizontal grooves along the contour of the slope. Roughening may be accomplished by furrowing, scarifying, ripping or disking the soil surface to create a 2 to 4 inch minimum variation in soil surface. Surface roughening will not be paid for separately, but shall be included in the work.
- (s) *Vertical Tracking*. Vertical tracking involves driving a tracked vehicle up and down the soil surface and creating horizontal grooves and ridges along the contour of the slope. Sandy soils or soils that are primarily rock need not be tracked. Vertical tracking will not be paid for separately, but shall be included in the work.

208.06 Materials Handling and Spill Prevention. The SWMP Administrator shall clearly describe and record on the SWMP, all practices implemented at the site to minimize impacts from procedures or significant material that could contribute pollutants to runoff. Areas or procedures where potential spills can occur shall have a Spill Response Plan in place as specified in subsections 107.25(b) 6 or 208.06(c). Construction equipment, fuels, lubricants, and other petroleum distillates shall not be stored or stockpiled within 50 horizontal feet of any State waters or more if the Contractor determines necessary. Equipment fueling and servicing shall occur only within approved designated areas.

- (a) *Bulk Storage Structures*. Bulk storage structures for petroleum products and other chemicals shall have impervious secondary containment or equivalent adequate protection so as to contain all spills and prevent any spilled material from entering State waters. Secondary containment shall be capable of containing the combined volume of all the storage containers plus at least 10 percent freeboard. For secondary containment that is used and may result in accumulation of stormwater within the containment, a plan shall be implemented to properly manage and dispose of all accumulated stormwater which is deemed to be contaminated (e.g., has an unusual odor or sheen).
- (b) *Lubricant Leaks*. The Contractor shall inspect equipment, vehicles, and repair areas daily to ensure petroleum, oils, and lubricants (POL) are not leaking onto the soil or pavement. Absorbent material or containers approved by the Engineer shall be used to prevent leaking POL from reaching the soil or pavement. The Contractor shall have onsite approved absorbent material or containers of sufficient capacity to contain any POL leak that can reasonably be foreseen. The Contractor shall inform all Spill Response Coordinators in accordance with the Spill Response Plan if unforeseen leakage is encountered. All materials resulting from POL leakage control and cleanup shall become the property of the Contractor and shall be removed from the site. Control, cleanup, and removal of by-products resulting from POL leaks shall be performed at the Contractor's expense.
- (c) *Spill Response Plan*. A spill Response Plan shall be developed and implemented to establish operating procedures for handling potential pollutants and preventing spills.

The Response Plan shall contain the following information:

- (1) Identification and contact information of each Spill Response Coordinator
- (2) Locations of areas on project site where equipment fueling and servicing operations are permitted.
- (3) Location of cleanup kits.
- (4) Quantities of chemicals and locations stored on site.
- (5) Label system for chemicals and Safety Data Sheets (SDS) for products.
- (6) Clean up procedures to be implemented in the event of a spill that does not enter State waters or ground water.

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- (7) Procedures for spills of any size that enter surface waters or ground water, or have the potential to do so. CDOT's Erosion Control and Stormwater Quality Guide contains Spill notification contacts and phone numbers required in the Spill Response Plan.
- (8) A summary of the employee training provided.

Information in items (1) through (8) shall be updated in the SWMP Notebook when they change.

208.07 Stockpile Management. Material stockpiles shall be located 50 horizontal feet away from State waters, and shall be confined so that no potential pollutants will enter State waters and other sensitive areas as defined in the Contract. Locations shall be approved by the Engineer.

Erodible stockpiles (including topsoil) shall be contained with acceptable BMPs at the toe (or within 20 feet of the toe) throughout construction. BMPs shall be approved by the Engineer. The SWMP Administrator shall describe, detail, and record the sediment control devices on the SWMP.

208.08 Limits of Disturbance. The Contractor shall limit construction activities to those areas within the limits of disturbance shown on the plans and cross-sections. Construction activities, in addition to the Contract work, shall include the on-site parking of vehicles or equipment, on-site staging, on-site batch plants, haul roads or work access, and all other action which would disturb existing soil conditions. Staging areas within the LDA shall be as approved by the Engineer. Construction activities beyond the limits of disturbance due to Contractor negligence shall be restored to the original condition by the Contractor at the Contractor's expense. The SWMP Administrator shall tabulate additional disturbances not identified in the CDPS_SCP application and indicate changes to locations and quantities on the SWMP. The Contractor shall report the changes and additional disturbances to the Engineer, Water Quality Control Division of CDPHE and all other involved agencies.

The Contractor shall pursue and stabilize all disturbances to completion.

208.09 Failure to Perform Erosion Control. Failure to implement the Stormwater Management Plan is a violation of the CDPS – SCP and CDOT specifications. CDOT is obligated to implement enforcement mechanisms in accordance with CDOT's MS4 Permit COS000005 for Stormwater Management and erosion control Best Management Practices. Penalties may be assessed to the Contractor by the appropriate agencies. Penalties will be assessed by the Department as liquidated damages for failure to meet the Permit. All fines assessed to the Department for the Contractor's failure to implement the SWMP will be deducted from moneys due the Contractor in accordance with subsection 107.25(c) 2.

The Contractor will be subject to liquidated damages for incidents of failure to perform erosion control as required by the Contract. Liquidated damages will be applied for failure to comply with the CDPS-SCP and these specifications, including the following:

- (1) Failure to include erosion control in the project schedule or failure to include erosion control in each schedule update as specified in subsection 208.03(b).
- (2) Failure of the Contractor to perform the inspections required by subsection 208.03(c) 2.
- (3) Failure of the Contractor to implement necessary actions required by the Engineer as required by subsection 208.03(c).
- (4) Failure to amend the SWMP and implement BMPs as required by subsection 208.04.
- (5) Failure to keep documentation and records current.
- (6) Failure to construct or implement erosion control or spill containment measures required by the Contract, or failure to construct or implement them in accordance with the Contractor's approved schedule as required by subsection 208.06(c).
- (7) Failure to limit temporary stabilization to 20 or fewer acres as required by subsection 208.04 (e).

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- (8) Failure to replace or perform maintenance on an erosion control feature after notice from the Engineer or from a water quality inspection as required by subsection 208.04(f).
- (9) Failure to remove and dispose of sediment from BMPs as required.
- (10) Failure to install and properly utilize a concrete washout structure for containing washout from concrete placement operations.
- (11) Failure to perform stabilization as required by subsection 208.04 (e).
- (12) Failure of the Superintendent or designated representative to attend inspections as required by subsection 208.03(c) and record findings in the appropriate form.
- (13) Failure to prevent discharges not composed entirely of stormwater from leaving the Construction Site.
- (14) Failure to provide the survey of Permanent Water Quality BMPs when required on the project in accordance with 208.10.

The Engineer will immediately notify the Contractor of each incident of failure to perform erosion control in accordance with the CDPS-SCP and these specifications, including items (1) through (14) above by issuing the Form 105. Correction shall be made as soon as possible but no later than 48 hours from the date of notification to correct the failure. The Contractor will be charged liquidated damages in the amount of \$970 for each day after the 48 hour period has expired, that one or more of the incidents of failure to perform the requirements for each Form 105 remains uncorrected. Liquidated damages will begin at Midnight of the date the 48 hours has expired.

This deduction will not be considered a penalty, but will be considered liquidated damages based on estimated additional construction engineering costs. The liquidated damages will accumulate, for each cumulative day that one or more of the incidents remain uncorrected. The number of days for which liquidated damages are assessed will be cumulative for the duration of the project; that is: the damages for a particular day will be added to the total number of days for which liquidated damages are accumulated on the project. The liquidated damages will be deducted from any monies due the Contractor.

If all other failures are not corrected within 48 hours after liquidated damages have begun to be assessed, the Engineer will issue a Stop Work Order in accordance with subsection 105.01. Work shall not resume until the Engineer has approved a written corrective action plan submitted by the Contractor that includes measures to prevent future violations and a schedule for implementation.

If the Contractor requires more than 96 hours to perform the corrective work from the date on the Form 105, the Contractor shall submit a request for deferment. The deferment request shall be in writing and shall include the specific failure, temporary measures until final correction is made, the methodology which will be employed to make the correction and interim milestones to completing the work. The Region Water Pollution Control Manager (RWPCM), Engineer, the SWMP Administrator and the Contractor shall concur on this deferral and set a proposed date of completion. If approved, the Contractor shall complete the corrective measures by Midnight of the proposed completion date. If corrective work is not corrected by the completion date the Engineer will issue a Stop Work Order. Liquidated Damages will apply retroactively back to the 48 hours after the 105 date of notification. Liquidated Damages will be assessed until the corrective work has been completed and accepted.

Deferment of work to correct failures to perform erosion control will not affect the Contractor's other contractual responsibilities, notifications for other non-compliance, nor the final completion date of the project. Liquidated Damages for other non-compliance notifications will continue to apply during the deferment period in addition to liquidated damages associated with the deferment.

Based on the submittal date of the approved deferment Liquidated Damages and a Stop Work Order may not be mandated to the Contractor.

Disagreements regarding the suggested corrective action for a BMP compliance issue between the Project Engineer, SWMP Administrator, and Superintendent, shall be discussed with the Resident Engineer and Region Water Pollution Control Manager. If after the discussions, the Project Engineer and the Contractor are still in disagreement and feel that additional compensation is owed, the Contractor will follow the decision of the Project

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Engineer, keep track of the costs and negotiate further with the Project Engineer. If after pursuing the issue, the Contractor is unable to reach agreement with the Project Engineer, then the Contractor can follow the dispute process outlined in subsection 105.22.

If the Contractor's corrective action plan and schedule are not submitted and approved within 96 hours of the initial notice, the Engineer will issue a Stop Work Order and have an on-site meeting with the Superintendent, SWMP Administrator, and the Superintendent's supervisor. This meeting will also be attended by the Resident Engineer, the Region Water Pollution Control Manager, and the Region Program Engineer. This meeting will identify and document needed corrective actions and a schedule for completion. If after the meeting, the unacceptable work is not remedied within the schedule as agreed to in the meeting, the Engineer will take action to effect compliance with the CDPS-SCP and these specifications by utilizing CDOT Maintenance personnel or other non-Contractor forces and deduct the cost from any moneys due or to become due to the Contractor pursuant to subsection 105.17. Delays due to these Stop Work Orders shall be considered non-excusable. The Stop Work Order shall be in place until the project is in CDPS-SCP compliance.

If the Contractor remains non-responsive to requirements of the on-site meeting, the Engineer will start default or Contract termination procedures in accordance with subsections 108.09 and 108.10. CDOT will proceed with corrective or disciplinary action in accordance with the Rules for Prequalification, Debarment, Bidding and Work on Transportation, Road, Highway and Bridge Public Projects.

When a failure meets any one of the following conditions, the Engineer will immediately issue a Stop Work Order in accordance with subsection 105.01 irrespective of any other available remedy:

- (1) It may endanger health or the environment.
- (2) It consists of a spill or discharge of hazardous substances or oil which may cause pollution of the waters of the state.
- (3) It consists of a discharge which may cause a violation of a water quality standards.

208.10 Items to Be Completed Prior to Requesting Partial Acceptance of Water Quality Work.

- (a) *Reclamation of Washout Areas.* After concrete operations are complete, washout areas shall be reclaimed in accordance with subsection 208.05(n) at the Contractor's expense.
- (b) *Survey.* When Permanent Water Quality BMPs (Permanent BMP) are required on the project, the Contractor shall survey the BMPs to confirm that they conform to the configuration and grade shown on the Plans. The survey shall conform to Section 625. The results of the survey shall be submitted as Microstation or AutoCad drawing files and PDF files, showing both designed and final elevations and configurations. Paper versions of the drawings shall be submitted with the stamp and seal of the Contractor's Surveyor.

The Engineer and the CDOT Hydraulics Engineer for the region will perform a walkthrough of the Permanent BMPs to confirm conformance to material requirements, locations and dimensions of the Permanent BMPs. Permanent BMPs not meeting the Contract requirements will be identified in writing by the Engineer, and shall be repaired or replaced at the Contractor's expense. Correction surveys shall be performed at the Contractor's expense to confirm the locations and dimensions of each Permanent BMP. Final as-built plans of the Permanent BMPs shall be provided to the Engineer and the CDOT Region and Headquarter Permanent Water Quality Control Specialist for their records.

- (c) *Locations of Temporary BMPs.* The Engineer will identify locations where modification, cleaning or removal of temporary BMPs are required, and will provide these in writing to the Contractor. Upon completion of work required, the SWMP Administrator shall modify the SWMP to provide an accurate depiction of BMPS to remain on the project site.

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METHOD OF MEASUREMENT

208.11 Erosion Control Management will be measured as the actual number of days of ECM work performed onsite, regardless of the number of ECIs required, including erosion control inspections, documentation, meeting participation, SWMP Administration, and the preparation of the SWMP notebook.

Erosion bales will be measured by the actual number installed and accepted.

Silt fence, silt berms, erosion logs, aggregate bags, silt dikes, temporary berms, rock check dams, temporary diversions, and temporary slope drains, will be measured by the actual number of linear feet that are installed and accepted. Measured length will not include required overlap.

Concrete washout structure will be measured by the actual number of structures that are installed and accepted.

Storm drain inlet protection will be measured by linear foot or actual number of devices that are installed and accepted.

Sediment trap quantities will be measured by the actual number installed and accepted.

Removal of trash that is not generated by construction activities will be measured by the actual number of hours that Contractor workers actively remove trash from the project. Each week the Contractor shall submit to the Engineer a list of workers and the hours spent collecting such trash.

Removal of accumulated sediment from traps, basins, areas adjacent to silt fences and erosion bales, and other clean out excavation of accumulated sediment, and the disposal of such sediment, will be measured by the number of hours that equipment, labor, or both are used for sediment removal.

Vehicle tracking pads will be measured by the actual number constructed and accepted.

Additional aggregate required for maintaining vehicle tracking pads will be measured as the actual number of cubic yards installed and accepted.

BASIS OF PAYMENT

208.12 ECM and BMPs will be paid for at the Contract unit price for each of the items listed below that appear in the bid schedule.

Payment will be made under:

Pay Item	Pay Unit
Aggregate Bag	Linear Foot
Concrete Washout Structure	Each
Erosion Bales (Weed Free)	Each
Erosion Control Management	Day
Erosion Log (Type 1) (____ Inch)	Linear Foot
Erosion Log (Type 2) (____ Inch)	Linear Foot
Pre-Fabricated Concrete Washout Structure	Each
Pre-Fabricated Vehicle Tracking Pad	Each
Maintenance Aggregate (Vehicle Tracking Pad)	Cubic Yard
Removal and Disposal of Sediment (Equipment)	Hour
Removal and Disposal of Sediment (Labor)	Hour
Removal of Trash	Hour
Rock Check Dam	Each
Sediment Basin	Each
Sediment Trap	Each
Silt Berm	Linear Foot
Silt Dike	Linear Foot
Silt Fence	Linear Foot
Silt Fence (Reinforced)	Linear Foot

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Storm Drain Inlet Protection (Type__)	Linear Foot
Storm Drain Inlet Protection (Type__)	Each
Sweeping (Sediment Removal)	Hour
Temporary Berm	Linear Foot
Temporary Diversion	Linear Foot
Temporary Slope Drains	Linear Foot
Vehicle Tracking Pad	Each

Payment for Erosion Control Management (ECM) will be full compensation for all labor, materials and equipment necessary for the SWMP Administrator and Erosion Control Inspectors to perform all the work described in this specification. This includes assembling items 5-19 and required updates to the SWMP Notebook on site.

The SWMP Administrator and ECI's commute times will not be measured and paid for separately, but shall be included in the work.

Modifications to the SWMP Notebook due to construction errors or survey errors by the contractor shall be at the Contractor's expense.

Temporary erosion control will be measured and paid for by the BMPs used. Surface roughening and vertical tracking will not be measured and paid for separately but shall be included in the work. Payment for each BMP item will be full compensation for all work and materials required to furnish, install, maintain and remove the BMP when directed.

Payment for Removal and Disposal of Sediment (Equipment) will be full compensation for use of the equipment, including the operator. Payment for Removal and Disposal of Sediment (Labor) will be full compensation for use of the labor.

Payment for concrete washout structure, whether constructed or prefabricated, will be full compensation for all work and materials required to install, maintain, and remove the item. Maintenance and relocation, as required, of these structures throughout the duration of the project will not be measured and paid for separately, but shall be included in the work.

Silt berm spikes will not be measured and paid for separately, but shall be included in the work. When required, soil retention blankets will be measured and paid for in accordance with Section 216. Silt dike staples will not be measured and paid for separately, but shall be included in the work.

Spray-on mulch blankets required by the Contract, including those used in both interim and final stabilization, will be measured and paid for in accordance with Section 213.

Payment for storm drain inlet protection will be full compensation for all work, materials, and equipment required to complete the item, including surface preparation, maintenance throughout the project, and removal upon completion of the work. Aggregate will not be measured and paid for separately, but shall be included in the work.

Sweeping, when used as a BMP as shown in the Contract, will be measured by the number of hours that a pickup broom or equipment capable of collecting sediment, authorized by the Engineer, is used to remove sediment from the roadway or other paved surfaces. Each week the Contractor shall submit to the Engineer a statement detailing the type of sweeping equipment used and the number of hours it was used to pick up sediment. Operator will not be measured and paid for separately, but shall be included in the work.

Stakes, anchors, connections, geotextile, riprap and tie downs used for temporary slope drains will not be measured and paid for separately, but shall be included in the work.

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Payment for vehicle tracking pad will be full compensation for all work, materials and equipment required to construct, maintain, and remove the entrance upon completion of the work. Aggregate and geotextile will not be measured and paid for separately, but shall be included in the work. If additional aggregate for maintenance of vehicle tracking pads is required, it will be measured by the cubic yard in accordance with Section 304 and will be paid for under this Section.

Seeding, sod, mulching, soil retention blanket, and riprap will be measured and paid for in accordance with Sections 212, 213, 216, and 506.

Geotextile (Erosion Control) (Class 2) will be measured and paid for in accordance with Section 420.

All work and materials required to perform the permanent BMP survey and furnish the electronic files shall be included in the original unit price bid for surveying. Surveying will be measured and paid for in accordance with Section 625.

Payment will be made for BMPs replaced as approved by the Engineer. Temporary erosion and sediment BMPs required due to the Contractor's negligence, carelessness, or failure to install permanent controls as a part of the work as scheduled or ordered by the Engineer or for the Contractor's convenience, shall be performed at the Contractor's expense. If the Contractor fails to complete construction within the contract time, payment will not be made for Section 208 pay items for the period of time after expiration of the contract time. These items shall be provided at the Contractor's expense.

REVISION OF SECTION 401
COMPACTION OF HOT MIX ASPHALT

Section 401 of the Standard Specifications is hereby revised for this project as follows:

In subsection 401.17, delete the first paragraph and replace with the following:

401.17 Compaction. The hot mix asphalt shall be compacted by rolling. Both steel wheel and pneumatic tire rollers will be required. The number, weight, and type of rollers furnished shall be sufficient to obtain the required density while the mixture is in a workable condition. Compaction shall begin immediately after the mixture is placed and be continuous until the required density is obtained. When the mixture contains unmodified asphalt cement (PG 58-28 or PG 64-22) or modified (PG 58-34), and the surface temperature falls below 185 °F, further compaction effort shall not be applied unless approved, provided the Contractor can demonstrate that there is no damage to the finished mat. If the mixture contains modified asphalt cement (PG 76-28, PG 70-28 or PG 64-28) and the surface temperature falls below 230 °F, further compaction effort shall not be applied unless approved, provided the Contractor can demonstrate that there is no damage to the finished mat.

Warm Mix Asphalt compaction requirements shall conform to CP 59.

In subsection 401.17, delete the third paragraph and replace with the following:

SMA shall be compacted to a density of 93 to 97 percent of the daily theoretical maximum specific gravity, determined according to CP 51. All other HMA shall be compacted to a density of 92 to 96 percent of the daily theoretical maximum specific gravity, determined according to CP 51. If more than one theoretical maximum specific gravity test is taken in a day, the average of the theoretical maximum specific gravity results will be used to determine the percent compaction. Field density determinations will be made in accordance with CP 44 or 81.

In subsection 401.17, second to last paragraph, delete the first sentence and replace with the following:

After production paving work has begun, a new Roller Pattern shall be demonstrated when a change in the compaction process is implemented.

REVISION OF SECTIONS 412, 601 AND 711
LIQUID MEMBRANE-FORMING COMPOUNDS
FOR CURING CONCRETE

Sections 412, 601 and 711 of the Standard Specifications are hereby revised for this project as follows:

In subsection 412.14, first paragraph, delete the second sentence and replace with the following:

The impervious membrane curing compound shall meet the requirements of ASTM C 309, Type 2 and shall be volatile organic content (VOC) compliant.

In subsection 601.13 (b), first paragraph, delete the second sentence and replace with the following:

A volatile organic content (VOC) compliant curing compound conforming to ASTM C 309, Type 2 shall be used on surfaces where curing compound is allowed, except that Type 1 curing compound shall be used on exposed aggregate or colored concrete, or when directed by the Engineer.

In subsection 601.16 (a) 1., delete the first sentence and replace with the following:

1. Membrane Forming Curing Compound Method. A volatile organic content (VOC) compliant curing compound conforming to ASTM C 309, Type 2 shall be uniformly applied to the surface of the deck, curbs and sidewalks at the rate of 1 gallon per 100 square feet.

Delete subsection 711.01 and replace with the following:

711.01 Curing Materials. Curing materials shall conform to the following requirements:

Burlap Cloth made from Jute or Kenaf	AASHTO M 182
Liquid Membrane-Forming Compounds for Curing Concrete	ASTM C 309
Sheet Materials for Curing Concrete	AASHTO M 171*
*Only the performance requirements of AASHTO M171 shall apply.	

Straw used for curing shall consist of threshed straw of oats, barley, wheat, or rye. Clean field or marsh hay may be substituted for straw when approved by the Engineer. Old dry straw or hay which breaks readily in the spreading process will not be accepted.

REVISION OF SECTIONS 106 AND 412
SURFACE TEXTURE OF PORTLAND CEMENT CONCRETE PAVEMENT

Sections 106 and 412 of the Standard Specifications are hereby revised for this project as follows:

~~Subsection 106.06 (a) shall include the following:~~

~~The Contractor shall submit the proposed method of PCCP texturing at the Pre-Construction conference for approval by the Engineer. The Contractor shall perform process control (PC) testing for the pavement surface texture depth in accordance with CP 77 Method B. All PC results for surface texture depth measurements shall be included in the Contractor's QC notebook. The start of PC testing for texturing depth shall be completed within 24 hours after the first 500 linear feet of textured pavement is placed for each lane. Paving shall not proceed until results are accepted by the Engineer.~~

~~Surface texture will be considered acceptable when the average texture depth (ATD) of the panel is greater than 0.05 inch. When the ATD is less than 0.05 inches, the Contractor shall determine the area represented by this test. The area shall be determined by taking additional tests at 15 foot intervals parallel to the centerline in each direction from the affected location until two consecutive tests are found to be within the specified limits. Any surface with unacceptable texturing exceeding 25 linear feet in any lane or shoulder greater than 8 feet wide shall be diamond ground full width of the lane. Upon the second unacceptable test result, the Contractor shall notify the Engineer, in writing, the action taken to provide an acceptable surface texture.~~

~~Subsection 106.06 (b) shall include the following~~

~~The Department will perform surface texture acceptance testing in accordance with CP 77 Method B. The Department will determine the panel locations where acceptance test measurements are to be taken. One stratified random acceptance test per 2,500 linear feet or fraction thereof in each lane and shoulder wider than 8 feet shall be taken with a minimum of one test per day when the Contractor is paving.~~

~~When the Department locates areas of surface texture that do not meet the minimum ATD, the Contractor will be notified and the Contractor shall be responsible for identifying the limits of the deficient texture depth. After the Engineer approves the limits, the Contractor shall correct the deficient surface texture by diamond grinding full lane width to provide an ATD greater than 0.05 inch at no additional cost to the project. Correcting surface texture deficiencies shall occur prior to pavement smoothness testing and pavement thickness determinations.~~

In subsection 106.06, delete the Tining Depth element from Tables 106-2 and 106-3 and replace with the following:

Table 106-2

Element	Minimum Testing Frequency Contractor's Quality Control
Average Texture Depth	1 per 528 linear feet in each lane and shoulder wider than 8 feet.

Table 106-3

Element	Minimum Testing Frequency Contractor's Quality Control
Average Texture Depth	1 per 528 linear feet in each lane and shoulder wider than 8 feet.

Delete subsection 412.07 (c)

Delete subsection 412.12 (c) and (d) and replace with the following:

(c) *Final Finish and Stationing.* The final surface of the pavement shall be uniformly textured with a broom, burlap drag, artificial turf or diamond ground in order to obtain the specified texture depth. Surface imperfections resulting from the texturing operation shall be corrected by the Contractor at no additional cost.

REVISION OF SECTIONS 106 AND 412
SURFACE TEXTURE OF PORTLAND CEMENT CONCRETE PAVEMENT

~~Broom, burlap drag or artificial turf texture shall be installed within 15 minutes after strike-off, or as pavement conditions allow.~~

~~Diamond grinding shall be performed using diamond blades mounted on a self-propelled machine designed for diamond grinding and texturing concrete pavement. The equipment shall have a positive means of vacuuming the grinding residue from the pavement surface, leaving the surface in a clean, near-dry condition. Diamond grinding shall not occur until the concrete has attained strength of at least 2,500 psi.~~

~~The diamond grinding process shall produce a pavement surface that is true to grade and uniform in appearance. The grooves shall be evenly spaced. Any ridges on the outside edge next to the shoulder, auxiliary, or ramp lanes greater than 3/16 inch high shall be feathered out to the satisfaction of the Engineer in a separate, feather pass operation.~~

~~The pavement surface after diamond grinding shall have no depressions or misalignment of slope in the longitudinal direction exceeding 1/8 inch in 12 feet when measured with a 12-foot straightedge placed parallel to the centerline. All areas of deviation shall be reground at no additional cost.~~

~~Stationing shall be stamped into the outside edge of the pavement, as shown on the plans.~~

Delete subsection 412.14 and replace with the following:

412.14 Curing. Immediately after the finishing operations have been completed the entire surface and exposed sides of the newly placed concrete, shall be sprayed uniformly with a curing compound meeting the requirements of ASTM C309, Type 2. The ASTM C309 Type 2 curing compound shall be volatile organic content (VOC) compliant.

The curing compound shall be applied within 10 minutes after the final finish has been applied. Failure to cover the surface of the concrete within 10 minutes shall be cause for immediate suspension of the paving operations.

An initial application of curing compound shall be applied under pressure by mechanical sprayers at the rate of not less than 1 gallon per 180 square feet of pavement surface. A second application of curing compound shall be applied within 30 minutes after the initial application. The second application rate shall be not less than 1 gallon per 180 square feet of pavement surface. Alternatively, the Contractor may apply the curing compound in one application of not less than 1 gallon per 120 square feet. Additional curing compound shall be applied as needed to ensure that 100 percent of the pavement is covered. The spraying equipment shall be fully automated, equipped with a tank agitator, and a wind guard. During application, the compound shall be in a thoroughly mixed condition with the pigment uniformly dispersed throughout the vehicle and the compound shall be stirred continuously by effective mechanical means. Hand spraying of irregular widths or shapes and surfaces exposed by removal of forms will be permitted. Curing compounds shall not be applied to the inside faces of joints to be sealed.

Should the curing film become damaged from any cause, within 72 hours after concrete placement, except for Class E concrete open to traffic, the damaged portions shall be repaired immediately with additional curing compound, payment for which shall be at the Contractor's expense.

The sides of pavement slabs shall be immediately sprayed with curing compound when the forms are removed.

Delete subsection 412.18(2) and replace with the following:

(2) Corrective work for texturing.

Delete subsection 412.22 and replace with the following:

412.22 Opening to Traffic. The pavement shall not be opened to traffic until the concrete has achieved a compressive strength of 3000 psi. Concrete compressive strength shall be determined by maturity meters. Prior to opening the pavement to traffic the roadway shall be cleaned, as approved.

REVISION OF SECTIONS 106 AND 412
SURFACE TEXTURE OF PORTLAND CEMENT CONCRETE PAVEMENT

Prior to placement of concrete whose strength will be determined with maturity meters, the Contractor shall provide the Engineer a report of maturity relationships in accordance with CP 69. The Contractor shall provide maturity meters and all necessary wires and connectors. The Contractor shall be responsible for the placement and maintenance of the maturity meters and wires. At a minimum a maturity meter will be placed at a minimum of once per day and then once per 5,000 square yards. Placement shall be as directed by the Engineer.

For placements with multiple maturity meters, the lowest compressive strength shall determine when the pavement may be opened to traffic.

If a maturity meter fails, is tampered with, is destroyed or was not placed, the section of pavement represented by the maturity meter shall remain closed to traffic for a period of 28 days. The Contractor may choose at his own expense to core the section of pavement represented by the maturity meter. Cores will be obtained and tested according to CP 65. Cores will be a minimum of 4 inches in diameter. A minimum of three cores in a two square foot area will be obtained. If the compressive strength of any one core differs from the average by more than 10 percent that compressive strength will be deleted and the average strength will be determined using the compressive strength of the remaining two cores. If the compressive strength of more than one core differs from the average by more than 10 percent the average strength will be determined using all three compressive strengths of the cores. To open the section of pavement, the average compressive strength of the cores shall be a minimum of 3,000 psi.

In subsection 412.24 (a) delete the second paragraph and replace with the following:

The price per square yard of Concrete Pavement shall be full compensation for furnishing and placing all materials, including any dowels, tie bars, joint materials, texturing, sawing, finishing, and rumble strips.

REVISION OF SECTIONS 601 AND 701
CEMENTS AND POZZOLANS

Sections 601 and 701 of the Standard Specifications are hereby revised for this project as follows:

In subsection 601.03, first paragraph, the following shall be added to the table:

High-Reactivity Pozzolans 701.04

Subsection 601.03 shall include the following:

Pozzolans shall consist of Fly Ash, Silica Fume and High-Reactivity Pozzolan.

In subsection 601.04, delete the third and fourth paragraphs and replace with the following

Cementitious material requirements are as follows:

Class 0 requirements for sulfate resistance shall be one of the following:

- (1) ASTM C 150 Type I, II or V
- (2) ASTM C 595 Type IL, IP, IP(MS), IP(HS) or IT
- (3) ASTM C 1157 Type GU, MS or HS
- (4) ASTM C 150 Type III cement if it is allowed, as in Class E concrete

Class 1 requirements for sulfate resistance shall be one of the following:

- (1) ASTM C 150 Type II or V; Class C fly ash shall not be substituted for cement.
- (2) ASTM C 595 Type IP(MS) or IP(HS).
- (3) ASTM C 1157 Type MS or HS; Class C fly ash shall not be substituted for cement.
- (4) When ASTM C 150 Type III cement is allowed, as in Class E concrete, it shall have no more than 8 percent C_3A . Class C fly ash shall not be substituted for cement.
- (5) ASTM C 595 Type IL; having less than 0.10 percent expansion at 6 months when tested according to ASTM C 1012. Class C fly ash shall not be substituted for cement.
- (6) ASTM C 595 Type IT; having less than 0.10 percent expansion at 6 months when tested according to ASTM C 1012.

Class 2 requirements for sulfate resistance shall be one of the following:

- (1) ASTM C 150 Type V with a minimum of a 20 percent substitution of Class F fly ash by weight
- (2) ASTM C 150 Type II or III with a minimum of a 20 percent substitution of Class F fly ash by weight. The Type II or III cement shall have no more than 0.040 percent expansion at 14 days when tested according to ASTM C 452
- (3) ASTM C 1157 Type HS; Class C fly ash shall not be substituted for cement.
- (4) ASTM C 150 Type II, III, or V plus High-Reactivity Pozzolan where the blend has less than 0.05 percent expansion at 6 months or 0.10 percent expansion at 12 months when tested according to ASTM C 1012

REVISION OF SECTIONS 601 AND 701
CEMENTS AND POZZOLANS

- (5) ASTM C 1157 Type MS plus Class F fly ash or High-Reactivity Pozzolan where the blend has less than 0.05 percent expansion at 6 months or 0.10 percent expansion at 12 months when tested according to ASTM C 1012
- (6) A blend of portland cement meeting ASTM C 150 Type II or III with a minimum of 20 percent Class F fly ash by weight, where the blend has less than 0.05 percent expansion at 6 months or 0.10 percent expansion at 12 months when tested according to ASTM C 1012.
- (7) ASTM C 595 Type IP(HS).
- (8) ASTM C 595 Type IL plus Class F fly ash or High-Reactivity Pozzolan where the blend has less than 0.05 percent expansion at 6 months or 0.10 percent expansion at 12 months when tested according to ASTM C 1012
- (9) ASTM C 595 Type IT; having less than 0.05 percent expansion at 6 months or 0.10 percent expansion at 12 months when tested according to ASTM C 1012.

Class 3 requirements for sulfate resistance shall be one of the following:

A blend of portland cement meeting ASTM C 150 Type II, III, or V with a minimum of a 20 percent substitution of Class F fly ash by weight, where the blend has less than 0.10 percent expansion at 18 months when tested according to ASTM C 1012.

- (1) ASTM C 1157 Type HS having less than 0.10 percent expansion at 18 months when tested according to ASTM C 1012. Class C fly ash shall not be substituted for cement.
- (2) ASTM C 1157 Type MS or HS plus Class F fly ash or High-Reactivity Pozzolan where the blend has less than 0.10 percent expansion at 18 months when tested according to ASTM C 1012.
- (3) ASTM C 150 Type II, III, or V plus High-Reactivity Pozzolan where the blend has less than 0.10 percent expansion at 18 months when tested according to ASTM C 1012.
- (4) ASTM C 595 Type 1L plus High-Reactivity Pozzolan where the blend has less than 0.10 percent expansion at 18 months when tested according to ASTM C 1012.
- (5) ASTM C 595 Type IP(HS) or IT having less than 0.10 percent expansion at 18 months when tested according to ASTM C 1012.
- (6) ASTM C 595 Type IL with a minimum of a 20 percent substitution of Class F fly ash by weight, where the blend has less than 0.10 percent expansion at 18 months when tested according to ASTM C 1012.

When fly ash or High-Reactivity Pozzolan is used to enhance sulfate resistance, it shall be used in a proportion greater than or equal to the proportion tested in accordance to ASTM C1012, shall be the same source and it shall have a calcium oxide content no more than 2.0 percent greater than the fly ash or High-Reactivity Pozzolan tested according to ASTM C 1012.

In subsection 601.05 delete the first paragraph and replace with the following:

601.05 Proportioning. The Contractor shall submit a Concrete Mix Design for each class of concrete being placed on the project. Concrete shall not be placed on the project before the Concrete Mix Design Report has been reviewed and approved by the Engineer. The Concrete Mix Design will be reviewed and approved following the procedures of CP 62. The Concrete Mix Design will not be approved when the laboratory trial mix data are the results from tests performed more than two years in the past or aggregate data are the results from tests performed more than two years in the past. The concrete mix design shall show the weights and sources of all ingredients including cement, pozzolan, aggregates, water, additives and the water to cementitious material ratio

REVISION OF SECTIONS 601 AND 701
CEMENTS AND POZZOLANS

(w/cm). When determining the w/cm, the weight of cementitious material (cm) shall be the sum of the weights of the cement, fly ash, silica fume and High-Reactivity Pozzolan.

In subsection 601.05, delete the 12th, 13th, 14th, 15th, and 16th paragraphs and replace with the following:

The Concrete Mix Design Report shall include Certified Test Reports showing that the cement, fly ash, High-Reactivity Pozzolan and silica fume meet the specification requirements and supporting this statement with actual test results. The certification for silica fume shall state the solids content if the silica fume admixture is furnished as slurry.

For all concrete mix designs with ASTM C150 cements, up to a maximum of 20 percent Class C, 30 percent Class F or 30 percent High-Reactivity Pozzolan by weight of total cementitious material may be substituted for cement.

For all concrete mix designs with ASTM C595 Type IL cements, up to a maximum of 20 percent Class C, 30 percent Class F or 30 percent High-Reactivity Pozzolan by weight of total cementitious material may be substituted for cement.

For all concrete mix designs with ASTM C595 Type IP, IP(MS), IP(HS) or IT cements; fly ash or High-Reactivity Pozzolan shall not be substituted for cement.

For all concrete mix designs with ASTM C1157 cements, the total pozzolan content including pozzolan in cement shall not exceed 30 percent by weight of the cementitious material content.

When the Contractor's use of fly ash or High-Reactivity Pozzolan results in delays to the project, when it is necessary to make changes in admixture quantities, the source, or the Contractor performs, the cost of such delays and corrective actions shall be borne by the Contractor.

The Contractor shall submit a new Concrete Mix Design Report meeting the above requirements when a change occurs in the source, type, or proportions of cement, fly ash, High-Reactivity Pozzolan, silica fume or aggregate. When a change occurs in the source of approved admixtures, the Contractor shall submit a letter stamped by the Concrete Mix Design Engineer approving the changes to the existing mix design. The change will need to be approved by the Engineer prior to use.

In subsection 601.06, second paragraph, delete (9) and replace with the following:

(9) Type, brand, and amount of cement, fly ash and High-Reactivity Pozzolan

In subsection 601.06, delete (a) and replace with the following:

(a) *Portland Cement, Fly Ash, High-Reactivity Pozzolan and Silica Fume.* These materials may be sacked or bulk. No fraction of a sack shall be used in a batch of concrete unless the material is weighed.

All bulk cement shall be weighed on an approved weighing device. The bulk cement weighing hopper shall be sealed and vented to preclude dusting during operation. The discharge chute shall be so arranged that cement will not lodge in it or leak from it.

Separate storage and handling equipment shall be provided for the fly ash, silica fume and High-Reactivity Pozzolan. The fly ash, silica fume, and High-Reactivity Pozzolan may be weighed in the cement hopper and discharged with the cement.

REVISION OF SECTIONS 601 AND 701
CEMENTS AND POZZOLANS

In subsection 701.01 delete and replace the second paragraph with the following:

All concrete, including precast, prestressed and pipe shall be constructed with one of the following hydraulic cements, unless permitted otherwise.

ASTM C 150 Type I

ASTM C 150 Type II

ASTM C 150 Type V

ASTM C 595 Type IL

ASTM C 595 Type IP

ASTM C 595 Type IP(MS)

ASTM C 595 Type IP(HS)

ASTM C 595 Type IT

ASTM C 1157 Type GU, consisting of no more than 15 percent limestone

ASTM C 1157 Type MS, consisting of no more than 15 percent limestone

ASTM C 1157 Type HS, consisting of no more than 15 percent limestone

In subsection 701.02 add the following after the first paragraph:

Blending of pozzolans according to ASTM D5370 is permitted to meet the requirements of ASTM C 618.

Add subsection 701.04 immediately following subsection 701.03 as follows:

701.04 High-Reactivity Pozzolans. High-Reactivity Pozzolans (HRP) shall conform to the requirements of AASHTO M321. HRPs are but not limited to metakaolin, rice hull ash, zirconium fume, ultra-fine fly ash, and fume from the production of 50 percent ferrosilicon (with SiO₂ less than 85 percent).

HRPs shall meet the following optional requirement of AASHTO M321: The sulfate expansion at 14 days shall not exceed 0.045 percent

HRP shall be from a preapproved source listed on the Department's Approved Products List. The HRP intended for use on the project shall have been tested and accepted prior to its use. Certified Test Reports showing that the HRP meets the specification requirements and supporting this statement with actual test results shall be submitted to the Engineer.

The HRP shall be subject to sampling and testing by the Department. Test results that do not meet the physical and chemical requirements may result in the suspension of the use of HRP until the corrections necessary have been taken to ensure that the material conforms to the specifications.

February 3, 2011

REVISION OF SECTION 601
CONCRETE BATCHING

Section 601 of the Standard Specifications is hereby revised for this project as follows:

In subsection 601.06, delete (13) and (17) and replace with the following:

- (13) Gallons of water added by truck operator, the time the water was added and the quantity of concrete in the truck each time water is added.

- (17) Water to cementitious material ratio.

February 3, 2011

REVISION OF SECTIONS 601 CONCRETE FINISHING

Section 601 of the Standard Specifications are hereby revised for this project as follows:

In subsection 601.12 (a) delete the fifth paragraph and replace it with the following:

Water shall not be added to the surface of the concrete to assist in finishing operations.

Hand finishing should be minimized wherever possible. The hand finishing methods shall be addressed in the Quality Control Plan for concrete finishing. Hand finished concrete shall be struck off and screeded with a portable screed that is at least 2 feet longer than the maximum width of the surface to be struck off. It shall be sufficiently rigid to retain its shape. Concrete shall be thoroughly consolidated by hand vibrators. Hand finishing shall not be allowed after concrete has been in-place for more than 30 minutes or when initial set has begun. Finishing tools made of aluminum shall not be used.

The Contractor shall provide a Quality Control Plan (QCP) to ensure that proper hand finishing is accomplished in accordance with current Industry standards. It shall identify the Contractor's method for ensuring that the provisions of the QCP are met. The QCP shall be submitted to the Engineer at the Preconstruction Conference. Concrete placement shall not begin until the Engineer has approved the QCP. The QCP shall identify and address issues affecting the quality finished concrete including but not limited to:

- (1) Timing of hand finishing operations
- (2) Methodology to place and transport concrete
- (3) Equipment and tools to be utilized
- (4) Qualifications and training of finishers and supervisors

When the Engineer determines that any element of the approved QCP is not being implemented or that hand finished concrete is unacceptable, work shall be suspended. The Contractor shall supply a written plan to address improperly placed material and how to remedy future hand finishing failures and bring the work into compliance with the QCP. The Engineer will review the plan for acceptability prior to authorizing the resumption of operations.

In subsection 601.14(a) delete the fourth paragraph.

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 REVISION OF SECTION 601
 CONCRETE SLUMP ACCEPTANCE

Section 601 of the Standard Specifications is hereby revised for this project as follows:

Delete the fifth paragraph of Subsection 601.05 and replace with the following:

Except for Class BZ concrete, the slump of the delivered concrete shall be the slump of the approved concrete mix design plus or minus 2.0 inch. The laboratory trial mix must produce an average compressive strength at least 115 percent of the required field compressive strength specified in Table 601-1. When entrained air is specified in the Contract for Class BZ concrete, the trial mix shall be run with the required air content.

Delete Subsection 601.17 (b), 601.17 (d) and Table 601-3 and replace with the following:

(b) *Slump*. Slump acceptance, but not rejection, may be visually determined by the Engineer. Any batch that exceeds the slump of the approved concrete mix design by 2.0 inches will be retested. If the slump is exceeded a second time, that load is rejected. If the slump is greater than 2 inches lower than the approved concrete mix design, the load can be adjusted with a water reducer, or by adding water (if the w/cm allows) and retested.

Portions of loads incorporated into structures prior to determining test results which indicate rejection as the correct course of action shall be subject to reduced payment or removal as determined by the Engineer.

(d) *Pay Factors*. The pay factor for concrete which is allowed to remain in place at a reduced price shall be according to Table 601-3 and shall be applied to the unit price bid for Item 601, Structural Concrete.

If deviations occur in air content and strength within the same batch, the pay factor for the batch shall be the product of the individual pay factors.

**Table 601-3
 PAY FACTORS**

Percent Total Air		Strength		
Deviations From Specified Air (Percent)	Pay Factor (Percent)	Below Specified Strength (psi) [< 4500 psi Concrete]	Pay Factor (Percent)	Below Specified Strength (psi) [≥ 4500 psi Concrete]
0.0-0.2	98	1-100	98	1-100
0.3-0.4	96	101-200	96	101-200
0.5-0.6	92	201-300	92	201-300
0.7-0.8	84	301-400	84	301-400
0.9-1.0	75	401-500	75	401-500
Over 1.0	Reject	Over 500	Reject	
			65	501-600
			54	601-700
			42	701-800
			29	801-900
			15	901-1000
			Reject	Over 1000

October 2, 2014

REVISION OF SECTION 603
CULVERT PIPE INSPECTION

Section 603 of the Standard Specifications is hereby revised for this project as follows:

Delete the first paragraph of subsection 603.09 and replace with the following:

603.09 Backfilling. After the conduit or section of conduit is placed, it shall be inspected before any backfill is placed. Reinforced concrete pipe (RCP) shall be visually inspected in accordance with AASHTO LRFD Bridge Construction Specifications, Section 27.6. Conduit found to be damaged shall be replaced, and conduit found to be out of alignment or unduly settled shall be taken up and relaid. The trench shall then be backfilled with material in accordance with Section 206.

In subsection 603.09, delete the fifth paragraph.

Add subsection 603.091 immediately following subsection 603.09 as follows:

603.091 Deflection Testing of Metal and Plastic Pipe. After a metal or plastic pipe is backfilled and earthwork over the pipe is complete to the top of the subgrade, the pipe deflection shall be measured in the presence of the Engineer. The maximum allowable deflection shall be 5 percent. Deflection is a reduction in the nominal diameter of the pipe measured in any direction. Measurement shall be made using a mandrel, laser profile, or other method approved by the Engineer. Measurement shall be made 30 days or more following the pipe installation. Pipe having any deflections in excess of 5 percent at any location within the pipe shall be removed and reinstalled at the Contractor's expense. Pipe that is permanently deformed or damaged in any way shall be replaced at the Contractor's expense. Replaced pipe shall be retested 30 days or more after the installation in accordance with the method described above.

February 3, 2011

REVISION OF SECTION 612
DELINEATORS

Section 612 of the Standard Specifications is hereby revised for this project as follows:

In subsection 612.02(a) 1, delete the last sentence, and replace with the following:

Posts shall conform to the requirements shown on the plans, and reflectors shall conform to the requirements in subsections 713.07 and 713.10.

In subsection 612.02(a) 2.B, delete the first paragraph, and replace with the following:

- B. Base Anchoring. The posts shall be designed to facilitate a permanent installation that resists overturning, twisting, and displacement from wind and impact forces. It shall have an anchoring depth of 18 to 24 inches. Actual depth shall be as recommended by the manufacturer. If soil conditions prohibit anchoring depth to less than 18 inches, installation shall be in accordance with manufacturer's recommendations.

REVISION OF SECTION 630
RETROREFLECTIVE SIGN SHEETING

Section 630 of the Standard Specifications is hereby revised for this project as follows:

In subsection 630.02, delete the sixth and seventh paragraphs, including Table 630-1, and replace them with the following:

Retroreflective sheeting for all signs requiring an orange background shall be Type VI or Type Fluorescent.

Retroreflective sheeting for all signs requiring a yellow background shall be Type Fluorescent.

**Table 630-1
RETROREFLECTIVE SHEETING TYPES**

Sheeting	Type IV	Type VI (Roll-up sign material)	Type Fluorescent ¹
Application	Work Zone	Work Zone	Work Zone
All Orange Construction Signs			X
Orange Construction Signs that are used only during daytime hours for short term or mobile operations		X ⁴	X
Barricades (Temporary)	X		X
Vertical Panels	X		X
Flaggers Stop/Slow Paddle	X		X
Drums ²	X		X
Non-orange Fixed Support signs with prefix "W"	X		
Special Warning Signs			X
STOP sign (R1-1) YIELD sign (R1-2) WRONG WAY sign (R5-1a) DO NOT ENTER sign (R5-1) EXIT sign (E5-1a)	X		
DETOUR sign (M4-9) or (M4-10)			X
All other fixed support signs ³	X		X
All other signs used only during working hours	X		X
All other signs that are used only during daytime hours for short term or mobile operations	X	X ⁵	X

¹ Fluorescent Sheeting shall be of a brand that is on the CDOT Approved Products List.
² Drum Sheeting shall be manufactured for flexible devices.
³ Fixed support signs are defined as all signs that must remain in use outside of working hours. They shall be mounted in accordance with Standard Plan S-630-1.
⁴ RS 24 only.
⁵ White only.

REVISION OF SECTION 702
BITUMINOUS MATERIALS

Section 702 of the Standard Specifications is hereby deleted for this project and replaced with the following:

702.01 Asphalt Cements.

(a) *Superpave Performance Graded Binders.* Superpave Performance Graded Binders shall conform to the requirements listed in Table 702-1. (Taken from AASHTO M 320)

Asphalt cement shall not be acid modified or alkaline modified.

Asphalt cement shall not contain any used oils that have not been re-refined. Modifiers that do not comply with environmental rules and regulations including 40 CFR Part 261.6(a) (3) (IV), and part 266/Subpart C shall not be added. Modifiers shall not be carcinogenic.

The supplier of the PG binder shall be certified in accordance with CP 11.

REVISION OF SECTION 702
BITUMINOUS MATERIALS

Acceptance Samples of the PG binder will be taken on the project in accordance with the Schedule in the Field Materials Manual.

The Department will test for acid modification and alkaline modification during the binder certification process. Thereafter, the Department will randomly test for acid modification and alkaline modification.

(b) *Damp proofing.* Asphalt for damp proofing shall conform to the requirements of ASTM D 449, and the asphaltic primer shall conform to the requirements of ASTM D 41.

702.02 Emulsified Asphalts. Emulsified asphalts shall conform to AASHTO M 140 or M 208 for the designated types and grades. Emulsified asphalt and aggregate used for surface seals shall be sampled and will be tested for information only in accordance with CP-L 2213.

Emulsified asphalt (HFMS-2S) with a residual penetration greater than 300 dmm shall conform to all properties listed in AASHTO M 140, Table 1 except that ductility shall be reported for information only.

(a) *Emulsion for Tack and Fog Coats.* Emulsions for tack and fog coats shall conform to the requirements listed in Table 702-2 or 702-3, prior to dilution.

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 REVISION OF SECTION 702
 BITUMINOUS MATERIALS

**Table 702-2
 TACK AND FOG COAT EMULSIONS**

Property	CSS-1h	SS-1h	AASHTO Test No.
Viscosity, at 25 °C, Saybolt-Furol, s	min	20	T 59
	max	100	
Storage stability, 24 hr, % max ¹	1.0	1.0	T 59
Particle charge test	Positive		T 59
Sieve test, % max	0.10	0.10	T 59
Oil Distillate by volume, % max	3.0	3.0	T-59
Residue by distillation/ evaporation, % min ³	57 ³	57 ³	T 59/ CP-L 2212 ²
Tests on residue:			
Penetration, 25 °C, 100g, 5s, min, dmm	40	40	T 49
Penetration, 25 °C, 100g, 5s, max, dmm	120	120	
Ductility, 25 °C, 5 cm/min, cm, min	40	40	T 51
Solubility, in trichloroethylene% min	97.5	97.5	T 44
<p>¹If successful application is achieved in the field, the Engineer may wave this requirement.</p> <p>² CP-L 2212 is a rapid evaporation test for determining percent residue of an emulsion and providing material for tests on residue. CP-L 2212 is for acceptance only. If the percent residue or any test on the residue fails to meet specifications, the tests will be repeated using the distillation test in conformance with AASHTO T-59 to determine acceptability.</p> <p>³ For polymerized emulsions the distillation and evaporation tests will in be in conformance with AASHTO T-59 or CP-L 2212 respectively with modifications to include 205 ± 5 °C (400 ± 10 °F) maximum temperature to be held for 15 minutes.</p>			

- (b) *Emulsion for Chip Seals* Polymerized emulsions for chip seals shall conform to the requirements listed in Table 702-3. Emulsion for chip seals shall be an emulsified blend of polymerized asphalt, water, and emulsifiers. The asphalt cement shall be polymerized prior to emulsification and shall contain at least 3 percent polymer by weight of asphalt cement. The emulsion standing undisturbed for a minimum of 24 hours shall show no white, milky separation but shall be smooth and homogeneous throughout. The emulsion shall be pumpable and suitable for application through a distributor.

REVISION OF SECTION 702
BITUMINOUS MATERIALS

Table 702-3
POLYMERIZED EMULSIONS FOR CHIP SEALS

Property	CRS-2	CRS-2P	CRS-2R	HFMS-2P	AASHTO Test No.
Tests on Emulsion:					
Viscosity, at 50 °C, Saybolt-Furol, s	min	50	50	50	T 59
	max	450	450	450	
Storage stability, 24 hr, % max	1.0	1.0	1.0	1.0	T 59
Particle charge test	Positive	Positive	Positive		T 59
Sieve test, % max	0.10	0.10	0.10	0.10	T 59
Demulsibility ¹ , % min	40	40	40		T 59
Oil Distillate by volume, % max or range	3.0	3.0	3.0	3.0	T-59
Residue by distillation/ evaporation, % min ³	65 ³	65 ³	65 ³	65 ³	T 59/ CP-L 2212 ²
Tests on residue:					
Penetration, 25 °C, 100g, 5s, min, dmm	70	70	70	70	T 49
Penetration, 25 °C, 100g, 5s, max, dmm	150	150	150	150	
Ductility, 25 °C, 5 cm/min, cm, min	40			75	T 51
Ductility, 4 °C, 5 cm/min, cm, min			40		
Solubility, in trichloroethylene% min ⁴	97.5 ⁴	97.5 ⁴	97.5 ⁴	97.5 ⁴	T 44
Elastic Recovery, 25 °C min				58	T 301
Float Test, 60 °C, s min				1200	T 50
Toughness, in-lbs, min		70	90		CP-L 2210
Tenacity, in-lbs, min		45	45		CP-L 2210

¹If successful application is achieved in the field, the Engineer may waive this requirement.

² CP-L 2212 is a rapid evaporation test for determining percent residue of an emulsion and providing material for tests on residue. CP-L 2212 is for acceptance only. If the percent residue or any test on the residue fails to meet specifications, the tests will be repeated using the distillation test in conformance with AASHTO T-59 to determine acceptability.

³ For polymerized emulsions the distillation and evaporation tests will in be in conformance with AASHTO T-59 or CP-L 2212 respectively with modifications to include 205 ± 5 °C (400 ± 10 °F) maximum temperature to be held for 15 minutes.

⁴ Solubility may be determined on the base asphalt cement prior to polymer modification.

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 REVISION OF SECTION 702
 BITUMINOUS MATERIALS

(c) *Emulsion for Slurry Seals and Micro-Surfacing.* Emulsions for slurry seals and micro-surfacing shall conform to the requirements listed in Table 702-4. The modified emulsion shall contain a minimum of 3 percent polymer, SBR latex, or natural latex by weight.

Table 702-4
SLURRY SEAL AND MICRO-SURFACING EMULSIONS

Property	CQS-1hL	CQS-1hP	AASHTO Test No.
Viscosity, at 25 °C, Saybolt-Furol, s	15	15	T 59
min	100	100	
max	1.0	1.0	T 59
Storage stability, 24 hr, % max ¹	1.0	1.0	T 59
Particle charge test	Positive	Positive	T 59
Sieve test, % max	0.10	0.10	T 59
Oil Distillate by volume, % max	0.5	0.5	T-59
Residue by distillation/ evaporation, % min ³	62 ³	62 ³	T 59/ CP-L 2212 ²
Penetration, 25 °C, 100g, 5s, min, dmm	40	40	T 49
Penetration, 25 °C, 100g, 5s, max, dmm	150	150	
Ductility, 25 °C, 5 cm/min, cm, min	50	50	T 51
Solubility, in trichloroethylene% min	97.5	97.5	T 44

¹If successful application is achieved in the field, the Engineer may wave this requirement.

² CP-L 2212 is a rapid evaporation test for determining percent residue of an emulsion and providing material for tests on residue. CP-L 2212 is for acceptance only. If the percent residue or any test on the residue fails to meet specifications, the tests will be repeated using the distillation test in conformance with AASHTO T-59 to determine acceptability.

³ For polymerized emulsions the distillation and evaporation tests will in be in conformance with AASHTO T-59 or CP-L 2212 respectively with modifications to include 205 ± 5 °C (400 ± 10 °F) maximum temperature to be held for 15 minutes.

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 REVISION OF SECTION 702
 BITUMINOUS MATERIALS

- (d) *Emulsion for Prime Coat.* Emulsion for prime coat shall conform to the requirements of Table 702-5. Circulate before use if not used within 24 hours.

**Table 702-5
 ASPHALT EMULSION FOR PRIME COAT (AEP)**

Property	Requirement	AASHTO Test No.
Viscosity, Saybolt Furol, at 50 °C (122 °F), s	20-150	T 59
% Residue	65% min.	T 59 to 260 °C (500 °F)
Oil Distillate by Volume, %	7% max.	T59
Tests on Residue from Distillation:		
Solubility in Trichloroethylene, %	97.5 min.	T 44

- (e) *Recycling Agent.* Recycling Agent for Item 406, Cold Bituminous Pavement (Recycle), shall be either a high float emulsified asphalt (polymerized) or an emulsified recycling agent as follows:

1. High Float Emulsified Asphalt (Polymerized). High Float Emulsified Asphalt (Polymerized) for Cold Bituminous Pavement (Recycle) shall be an emulsified blend of polymer modified asphalt, water, and emulsifiers conforming to Table 702-6 for HFMS-2sP. The asphalt cement shall be polymerized prior to emulsification, and shall contain at least 3 percent polymer.

The emulsion standing undisturbed for a minimum of 24 hours shall show no white, milky separation, and shall be smooth and homogeneous throughout.

The emulsion shall be pumpable and suitable for application through a pressure distributor.

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 REVISION OF SECTION 702
 BITUMINOUS MATERIALS

Table 702-6
HIGH FLOAT EMULSIFIED ASPHALT
(POLYMERIZED) (HFMS-2sP)

Property	Requirement		AASHTO Test
	Minimum	Maximum	
Tests on Emulsion:			
Viscosity, Saybolt Furol at 50 °C (122 °F), sec	50	450	T 59
Storage Stability test, 24 hours, %		1	T 59
Sieve test, %		0.10	T 59
% Residue ¹	65		T 59
Oil distillate by volume, %	1	7	T 59
Tests on Residue:			
Penetration, 25 °C (77 °F), 100g, 5 sec	150	300 ²	T 49
Float Test, 60 °C (140 °F), sec	1200		T 50
Solubility in TCE, %	97.5		T 44
Elastic Recovery, 4 °C (39.2 °F), %	50		T 301
¹ 400 ± 10° F maximum temperature to be held for 15 minutes. ² When approved by the Engineer, Emulsified Asphalt (HFMS-2sP) with a residual penetration greater than 300 dmm may be used with Cold Bituminous Pavement (Recycle) to address problems with cool weather or extremely aged existing pavement. Emulsified Asphalt (HFMS-2sP) with a residual penetration greater than 300 dmm shall meet all properties listed in Table 702-4 except that Elastic Recovery shall be reported for information only.			

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 REVISION OF SECTION 702
 BITUMINOUS MATERIALS

2. *Emulsified Recycling Agent.* Emulsified Recycling Agent for use in Cold Bituminous Pavement (Recycle) shall conform to the requirements in Table 702-7.

Table 702-7
EMULSIFIED RECYCLING AGENT

Property	Requirement		Test
	Minimum	Maximum	
Tests on Emulsion:			
Viscosity @ 25 °C, SFS	20	200	ASTM D 244
Pumping Stability	Pass		GB Method ¹
			ASTM D 244 ^c
Sieve Test, %w		0.1	
Cement Mixing, %w		2.0	ASTM D 244
Particle Charge	Positive		ASTM D 244
Conc. Of Oil Phase	64		ASTM D 244 ^s
Tests on Residue:			
Viscosity @ 60 °C , CST	2000	4000	ASTM D 2170
Flash Point, COC, °C (° F)	232		ASTM D 92
Maltenes Dist. Ratio ⁴ $\frac{PC+A_1}{S+A_2}$	0.3	0.6	ASTM D 2006
PC/S Ratio	0.4		ASTM D 2006
Asphaltenes, % max.		11.0	ASTM D 2006
<p>¹Pumping stability is determined by charging 450 ml of emulsion into a one liter beaker and circulating the emulsion through a gear pump (Roper 29.B22621) having a 6.3 mm (1/4 inch) inlet and outlet. The emulsion passes if there is no significant separation after circulating ten minutes.</p> <p>²Test procedure identical with ASTM D 244 except that distilled water shall be used in place of 2 percent sodium oleate solution.</p> <p>³ASTM D 244 Evaporation Test for percent of residue is modified by heating 50 gram sample to 149°C (300 °F) until foaming ceases, then cooling immediately and calculating results.</p> <p>⁴In the Maltenes Distribution Ratio Test by ASTM Method D 2006.</p> <p>PC = Polar Compounds S = Saturates A₁ = First Acidaffin A₂ = Second Acidaffins</p>			

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 REVISION OF SECTION 702
 BITUMINOUS MATERIALS

(f) Asphalt Rejuvenating Agents. Asphalt rejuvenating agents (ARA) shall be composed of a petroleum resin-oil base uniformly emulsified with water and shall conform to the physical and chemical requirements of Table 702-8 or ASTM D 4552.

Table 702-8
ASPHALT REJUVENATING AGENT

Property	Test Method	Requirement
Viscosity, S.F., @ 25 °C (77 °F), s	ASTM D 244	20-40
¹ Residue, % min.	ASTM D 244	60-65
² Miscibility Test	ASTM D 244	No coagulation
³ Sieve Test, % max.	ASTM D 244	0.10
Particle Charge Test	ASTM D 244	Positive
ASTM D244 (Mod):		
Viscosity, 60 °C (140 °F), mm ² /s	ASTM D 445	100 - 200
Flash Point, COC, °C, min.	ASTM D 92	196
Asphaltenes, % max.	ASTM D2006	1.0
⁴ Maltenes Dist. Ratio $\frac{PC+A_1}{S+A_2}$	ASTM D 2006	0.3-0.6
Saturated Hydrocarbons, %	ASTM D 2006	21-28
<p>¹ ASTM D244 Modified Evaporation Test for percent of residue is made by heating 50-gram sample to 149 °C (300 °F) until foaming ceases, then cooling immediately and calculating results.</p> <p>² Test procedure identical with ASTM D244 except that 0.02 Normal Calcium Chloride solution shall be used in place of distilled water.</p> <p>³ Test procedure identical with ASTM D244 except that distilled water shall be used in place of 2% sodium oleate solution.</p> <p>⁴ In the Maltenes Distribution Ratio Test by ASTM Method D4124:</p> <p style="text-align: center;">PC = Polar Compounds S = Saturates A₁ = First Acidaffin A₂ = Second Acidaffins</p>		

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 REVISION OF SECTION 702
 BITUMINOUS MATERIALS

For hot-in-place recycling ARA-1P is an acceptable alternative to ARA. ARA-1P shall meet the requirements below:

Emulsified Polymer Modified Asphalt Rejuvenating Agent (ARA-1P) for use in hot-in-place recycling of bituminous pavements shall be modified with a minimum of 1.5 percent styrene-butadiene solution polymer. The finished product shall conform to the physical requirements listed in Table 702-9 below.

**Table 702-9
 ARA-1P**

Property	Test Method	Min	Max
Test on Emulsion			
Viscosity, Saybolt-Furol @ 77 °F, s	ASTM D 244		100
Residue @ 350 °F, %	ASTM D 244 Mod	60	
Sieve Test, %	ASTM D 244		0.10
Oil distillate, %	ASTM D 244		2.0
Test on Residue			
Penetration @ 39.2 °F, 100g, 5s, dmm	ASTM D-5 Modified	150	250
Asphaltenes, %	ASTM D 4124		15

702.03 (unused)

702.04 Hot Poured Joint and Crack Sealant. Hot poured material for filling joints and cracks shall conform to the requirements of ASTM D 6690, Type II or Type IV. The concrete blocks used in the Bond Test shall be prepared in accordance with CP-L 4101.

Sealant material shall be supplied pre-blended, pre-reacted, and prepackaged. If supplied in solid form the sealant material shall be cast in a plastic or other dissolvable liner having the capability of becoming part of the crack sealing liquid. The sealant shall be delivered in the manufacturer's original sealed container.

Each container shall be legibly marked with the manufacturer's name, the trade name of the sealer, the manufacturer's batch or lot number, the application temperature range, the recommended application temperature, and the safe heating temperature.

The sealant shall be listed in CDOT's Approved Products List prior to use.

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REVISION OF SECTION 703
AGGREGATE FOR BASES
(WITHOUT RAP)

Section 703 of the Standard Specifications is hereby revised for this project as follows:

In subsection 703.03, delete the first paragraph and replace with the following:

703.03 Aggregate for Bases. Aggregates for bases except Aggregate Base Course (RAP) shall be crushed stone, crushed slag, crushed gravel, natural gravel, or crushed reclaimed concrete. Aggregate Base Course (RAP) shall be 100 percent crushed recycled asphalt pavement material. All materials except Aggregate Base Course (RAP) shall conform to the quality requirements of AASHTO M 147 except that the requirements for the ratio of minus 75 μm (No. 200) sieve fraction to the minus 425 μm (No. 40) sieve fraction, stated in 3.2.2 of AASHTO M 147, shall not apply.

The requirements for the Los Angeles wear test (AASHTO T 96 & ASTM C535) shall not apply to Class 1, 2, and 3. Aggregates for bases shall meet the grading requirements of Table 703-3 for the class specified for the project, unless otherwise specified.

REVISION OF SECTION 703
AGGREGATES FOR HOT MIX ASPHALT

Section 703 of the Standard Specifications is hereby revised for this project as follows:

Delete subsection 703.04 and replace with the following:

703.04 Aggregates for Hot Mix Asphalt. Aggregates for hot mix asphalt (HMA) shall be of uniform quality, composed of clean, hard, durable particles of crushed stone, crushed gravel, natural gravel, or crushed slag. Excess of fine material shall be wasted before crushing. A percentage of the aggregate retained on the 4.75 mm (No. 4) sieve for Gradings S, SX and SG— and on the 2.36 mm (No. 8) sieve for Gradings SF and ST—shall have at least two mechanically induced fractured faces when tested in accordance with Colorado Procedure 45. This percentage will be specified in Table 403-1, as revised for the project in Section 403. The angularity of the fine aggregate shall be a minimum of 45.0 percent when determined according to AASHTO T 304. Grading SF mixes, when determined by RME, may not require fine aggregate angularity of 45.0 percent. Aggregate samples representing each aggregate stockpile shall be non-plastic if the percent of aggregate passing the 2.36 mm (No. 8) sieve is greater than or equal to 10 percent by weight of the individual aggregate sample. Plasticity will be determined in accordance with AASHTO T 90. The material shall not contain clay balls, vegetable matter, or other deleterious substances.

The aggregate for Gradings ST, S, SX and SG shall have a percentage of wear of 45 or less when tested in accordance with AASHTO T 96.

**Table 703-4
MASTER RANGE TABLE FOR HOT MIX ASPHALT**

Sieve Size	Percent by Weight Passing Square Mesh Sieves				
	Grading SF**	Grading ST	Grading SX	Grading S	Grading SG
37.5 mm (1½")					100
25.0 mm (1")				100	90 – 100
19.0 mm (¾")			100	90 – 100	
12.5 mm (½")		100	90 – 100	*	*
9.5 mm (¾")	100	90 – 100	*	*	*
4.75 mm (#4)	90 – 100	*	*	*	*
2.36 mm (#8)	*	28 – 58	28 – 58	23 – 49	19 – 45
1.18 mm (#16)	30 – 54				
600 µm (#30)	*	*	*	*	*
300 µm (#50)					
150 µm (#100)					
75 µm (#200)	2 – 12	2 – 10	2 – 10	2 – 8	1 – 7

* These additional Form 43 Specification Screens will initially be established using values from the As Used Gradation shown on the Design Mix.
**SF applications are limited and the CDOT Pavement Design Manual should be referenced, prior to use.

Aggregates for stone matrix asphalt (SMA) shall be of uniform quality, composed of clean, hard, durable particles of crushed stone, crushed gravel, or crushed slag. A minimum of 90 percent of the particles retained on the 4.75 mm (No. 4) sieve shall have at least two mechanically induced fractured faces when tested in accordance with Colorado Procedure 45. The particles passing the 4.75 mm (No. 4) sieve shall be the product of crushing rock larger than 12.5 mm (½ inch) and shall be non-plastic when tested in accordance with AASHTO T 90.

REVISION OF SECTION 703
AGGREGATES FOR HOT MIX ASPHALT

Additionally, each source of aggregate for SMA shall meet the following requirements:

- (1) No more than 30 percent when tested in accordance with AASHTO T 96 Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine.
- (2) No more than 12 percent when tested in accordance with AASHTO T 104 Soundness of Aggregate by Use of Sodium Sulfate.

The aggregate for Hot Mix Asphalt (HMA) shall meet the requirements of Table 703-4A when tested in accordance with CP-L 4211 Resistance of Coarse Aggregate to Degradation by Abrasion in the Micro-Deval Apparatus. The Contractor shall be assessed a price reduction of \$1000 for each production sample of the combined aggregate with a value greater than 20 according to CP-L 4211.

Table 703-4A
AGGREGATE DEGRADATION BY ABRASION
IN THE MICRO-DEVAL CP-L 4211

	Not to exceed
Combined Aggregate (Mix Design)	18
Combined Aggregate (1/10,000 tons, or fraction thereof during production)	20

July 28, 2011

REVISION OF SECTION 703
CONCRETE AGGREGATES

Section 703 of the Standard Specifications is hereby revised for this project as follows:

Delete the second paragraph of subsection 703.00 and Table 703-1.

Delete subsections 703.01 and 703.02 and replace with the following:

703.01 Fine Aggregate for Concrete. Fine aggregate for concrete shall conform to the requirements of AASHTO M 6, Class A. The minimum sand equivalent, as tested in accordance with Colorado Procedure 37 shall be 80 unless otherwise specified. The fineness modulus, as determined by AASHTO T 27, shall not be less than 2.50 or greater than 3.50 unless otherwise approved.

703.02 Coarse Aggregate for Concrete. Coarse aggregate for concrete shall conform to the requirements of AASHTO M 80, Class A aggregates, except that the percentage of wear shall not exceed 45 when tested in accordance with AASHTO T 96.

February 3, 2011

REVISION OF SECTION 712
WATER FOR MIXING OR CURING CONCRETE

Section 712 of the Standard Specifications is hereby revised for this project as follows:

Delete subsection 712.01 and replace it with the following:

712.01 Water. Water used in mixing or curing concrete shall be reasonably clean and free of oil, salt, acid, alkali, sugar, vegetation, or other substance injurious to the finished product. Concrete mixing water shall meet the requirements of ASTM C1602. The Contractor shall perform and submit tests to the Engineer at the frequencies listed in ASTM C1602. Potable water may be used without testing. Where the source of water is relatively shallow, the intake shall be so enclosed as to exclude silt, mud, grass, and other foreign materials.

REVISION OF SECTION 713
REFLECTORS FOR DELINEATORS AND MEDIAN BARRIER

Section 713 of the Standard Specifications is hereby revised for this project as follows:

In subsection 713.10(a) 1., delete A. and replace with the following

- A. Delineator and Median Barrier Reflectors. The specific intensity of each delineator and median barrier reflector shall be at least equal to the following minimum values when tested in accordance with AASHTO T 257, with an observation angle of 0.1 degrees.

Entrance Angle Degrees	Specific Intensity Candlepower per Foot-Candle				
	Crystal	Yellow	Blue	Red	Green
0	115	70	48	25	62
20	45	25	26	10	34

November 6, 2014

REVISION OF SECTION 713
SIGN PANEL BACKGROUNDS

Section 713 of the Standard Specifications is hereby revised for this project as follows:

In subsection 713.04, delete the third paragraph and replace with the following:

The aluminum sign blanks shall receive a chemical treatment conforming to ASTM B 449, Class 2 or ASTM B921 prior to placement of reflective sheeting.

AFFIRMATIVE ACTION REQUIREMENTS
EQUAL EMPLOYMENT OPPORTUNITY

A. AFFIRMATIVE ACTION REQUIREMENTS

Notice of Requirement for Affirmative Action to Ensure Equal Employment Opportunity (Executive Order 11246)

1. The Bidder's attention is called to the "Equal Opportunity Clause" and the "Standard Federal Equal Employment Opportunity Construction Contract Specifications" set forth herein.
2. The goals and timetables for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area are as follows:

Goals and Timetable for Minority Utilization

Timetable - Until Further Notice			
Economic Area	Standard Metropolitan Statistical Area (SMSA)	Counties Involved	Goal
157 (Denver)	2080 Denver-Boulder	Adams, Arapahoe, Boulder, Denver, Douglas, Gilpin, Jefferson.....	13.8%
	2670 Fort Collins	Larimer.....	6.9%
	3060 Greeley	Weld.....	13.1%
	Non SMSA Counties	Cheyenne, Clear Creek, Elbert, Grand, Kit Carson, Logan, Morgan, Park, Phillips, Sedgwick, Summit, Washington & Yuma.....	12.8%
158 (Colo. Spgs. - Pueblo)	1720 Colorado Springs	El Paso, Teller.....	10.9%
	6560 Pueblo	Pueblo.....	27.5%
	Non SMSA Counties	Alamosa, Baca, Bent, Chaffee, Conejos, Costilla, Crowley, Custer, Fremont, Huerfano, Kiowa, Lake, Las Animas, Lincoln, Mineral, Otero, Prowers, Rio Grande, Saguache.....	19.0%
159 (Grand Junction)	Non SMSA	Archuleta, Delta, Dolores, Eagle, Garfield, Gunnison, Hinsdale, La Plata, Mesa, Moffat, Montezuma, Montrose, Ouray, Pitkin, Rio Blanco, Routt, San Juan, San Miguel	10.2%
156 (Cheyenne - Casper WY)	Non SMSA	Jackson County, Colorado.....	7.5%
GOALS AND TIMETABLES FOR FEMALE UTILIZATION			
Until Further Notice.....6.9% -- Statewide			

AFFIRMATIVE ACTION REQUIREMENTS
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These goals are applicable to all the Contractor's construction work (whether or not it is Federal or federally assisted) performed in the covered area. If the Contractor performs construction work in a geographical area located outside of the covered area, it shall apply the goals established for such geographical area where the work is actually performed. With regard to this second area, the Contractor also is subject to the goals for both its federally involved and non-federally involved construction.

The Contractor's compliance with the Executive Order and the regulations in 41 CFR Part 60-4 shall be based on its implementation of the Equal Opportunity Clause specific affirmative action obligations required by the specifications set forth in 41 CFR 60-4.3(a), and its efforts meet the goals established for the geographical area where the contract resulting from this solicitation is to be performed. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade, and the Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor or from project to project for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, the Executive Order and the regulations in 41 CFR Par 60-4. Compliance with the goals will be measured against the total work hours performed.

3. The Contractor shall provide written notification to the Director of the Office of Federal Contract Compliance Programs within 10 working days of award of any construction subcontract in excess of \$10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the name, address and telephone number of the subcontractor; employer identification number; estimated dollar amount of the subcontract; estimated starting and completion dates of the subcontract; and the geographical area in which the contract is to be performed.
4. As used in this specification, and in the contract resulting from this solicitation, the "covered area" is the county or counties shown on the Invitation for Bids and on the plans. In cases where the work is in two or more counties covered by differing percentage goals, the highest percentage will govern.

AFFIRMATIVE ACTION REQUIREMENTS
EQUAL EMPLOYMENT OPPORTUNITY**B. STANDARD FEDERAL EQUAL EMPLOYMENT OPPORTUNITY CONSTRUCTION CONTRACT SPECIFICATIONS**

Standard Federal Equal Employment Opportunity Construction Contract Specifications (Executive Order 11246)

1. As used in these Specifications:
 - a. "Covered area" means the geographical area described in the solicitation from which this contract resulted;
 - b. "Director" means Director, Office of Federal Contract Compliance Programs, United States Department of Labor, or any person to whom the Director delegates authority;
 - c. "Employer identification number" means the Federal Social Security number used on the Employer's Quarterly Federal Tax Return, U.S. Treasury Department Form 941.
 - d. "Minority" includes;
 - (i) Black (all persons having origins in any of the Black African racial groups not of Hispanic origin);
 - (ii) Hispanic (all persons of Mexican, Puerto Rican, Cuban, Central or South American or other Spanish Culture or origin, regardless of race);
 - (iii) Asian and Pacific Islander (all persons having origins in any of the original peoples of the Far East, Southeast Asia, the Indian Subcontinent, or the Pacific Islands); and
 - (iv) American Indian or Alaskan Native (all persons having origins in any of the original peoples of North America and maintaining identifiable tribal affiliations through membership and participation or community identification).
2. Whenever the Contractor, or any Subcontractor at any tier, subcontracts a portion of the work involving any construction trade, it shall physically include in each subcontract in excess of \$10,000 the provisions of these specifications and the Notice which contains the applicable goals for minority and female participation and which is set forth in the solicitations from which this contract resulted.
3. If the Contractor is participating (pursuant to 41 CFR 60-4.5) in a Hometown Plan approved by the U.S. Department of Labor in the covered area either individually or through an association, its affirmative action obligations on all work in the Plan area (including goals and timetables) shall be in accordance with that Plan for those trades which have unions participating in the Plan. Contractors must be able to demonstrate their participation in and compliance with the provisions of any such Hometown Plan. Each Contractor or Subcontractor participating in an approved Plan is individually required to comply with its obligations under the EEO clause, and to make a good faith effort to achieve each goal under the Plan in each trade in which it has employees. The overall good faith performance by other Contractors or Subcontractor toward a goal in an approved Plan does not excuse any covered Contractor's or Subcontractor's failure to take good faith efforts to achieve the Plan goals and timetables.
4. The Contractor shall implement the specific affirmative action standards provided in paragraphs 7a through p of these specifications. The goals set forth in the solicitation from which this contract resulted are expressed as percentages of the total hours of employment and training of minority and female utilization the Contractor should reasonably be able to achieve in each construction trade in which it has employees in the covered area. Covered Construction contractors performing construction work in geographical areas where they do not have a Federal or federally assisted construction contract shall apply the minority and female goals established for the geographical area where the work is being performed. Goals are published periodically in the Federal Register in notice form, and such notices may be obtained from any office of Federal Contract Compliance Programs Office or from Federal procurement contracting officers. The Contractor is expected to make substantially uniform progress in meeting its goals in each craft during the period specified.

AFFIRMATIVE ACTION REQUIREMENTS
EQUAL EMPLOYMENT OPPORTUNITY

5. Neither the provisions of any collective bargaining agreement, nor the failure by a union with whom the Contractor has a collective bargaining agreement, to refer either minorities or women shall excuse the Contractor's obligations under these specifications, Executive Order 11246, or the regulations promulgated pursuant thereto.
6. In order for the nonworking training hours of apprentices and trainees to be counted in meeting the goals, such apprentices and trainees must be employed by the Contractor during the training period, and the Contractor must have made a commitment to employ the apprentices and trainees at the completion of their training, subject to the availability of employment opportunities. Trainees must be trained pursuant to training programs approved by the U.S. Department of Labor.
7. The Contractor shall take specific affirmative actions to ensure equal employment opportunity. The evaluation of the Contractor's compliance with these specifications shall be based upon its effort to achieve maximum results from its actions. The Contractor shall document these efforts fully, and shall implement affirmative action steps at least as extensive as the following;
 - a. Ensure and maintain a working environment free of harassment, intimidation, and coercion at all sites, and in all facilities at which the Contractor's employees are assigned to work. The Contractor, where possible, will assign two or more women to each construction project. The Contractor shall specifically ensure that all foremen, superintendents, and other on-site supervisory personnel are aware of and carry out the Contractor's obligation to maintain such a working environment, with specific attention to minority or female individuals working at such sites or in such facilities.
 - b. Establish and maintain a current list of minority and female recruitment sources, provide written notification to minority and female recruitment sources and to community organizations when the Contractor or its union have employment opportunities available, and maintain a record of the organization's responses.
 - c. Maintain a current file of the names, addresses and telephone numbers of each minority and female off-the-street applicant and minority or female referral from a union, a recruitment source of community organization and of what action was taken with respect to each individual. If such individual was sent to the union hiring hall for referral and was not referred back to the Contractor by the union or, if referred, not employed by the Contractor, this shall be documented in the file with the reason therefor, along with whatever additional actions the Contractor may have taken.
 - d. Provide immediate written notification to the Director when the union with which the Contractor has a collective bargaining agreement has not referred to the Contractor a minority person or woman sent by the Contractor, or when the Contractor has other information that the union referral process has impeded the Contractor's efforts to meet its obligations.
 - e. Develop on-the-job training opportunities and/or participate in training programs for the area which expressly include minorities and women, including upgrading programs and apprenticeship and trainee programs relevant to the Contractor's employment needs, especially those programs funded or approved by the Department of Labor. The Contractor shall provide notice of these programs to the sources compiled under 7b above.
 - f. Disseminate the Contractor's EEO policy by providing notice of the policy to unions and training programs and requesting their cooperation in assisting the Contractor in meeting its EEO obligations; by including it in any policy manual and collective bargaining agreement; by publicizing it in the company newspaper, annual report, etc., by specific review of the policy with all management personnel and with all minority and female employees at least once a year, and by posting the Contractor's EEO policy on bulletin boards accessible to all employees at each location where construction work is performed.

AFFIRMATIVE ACTION REQUIREMENTS
EQUAL EMPLOYMENT OPPORTUNITY

- g. Review, at least annually, the Contractor's EEO policy and affirmative action obligations under these specifications with all employees having any responsibility for hiring, assignment, layoff, termination or other employment decisions including specific review of these items with onsite supervisory personnel such as Superintendents, General Foreman, etc., prior to the initiation of construction work at any job site. A written record shall be made and maintained identifying the time and place of these meetings, persons attending, subject matter discussed, and disposition of the subject matter.
- h. Disseminate the Contractor's EEO policy externally by including it in any advertising in the news media, specifically including minority and female news media, and providing written notification to and discussing the Contractors and Subcontractors with whom the Contractor does or anticipates doing business.
- i. Direct its recruitment efforts, both oral and written, to minority, female and community organizations, to schools with minority and female students and to minority and female recruitment and training organizations serving the Contractor's recruitment area and employment needs. Not later than one month prior to the date for the acceptance of applications for apprenticeship or other training by any recruitment source, the Contractor shall send written notification to organizations such as the above, describing the openings, screening procedures, and tests to be used in the selection process.
- j. Encourage present minority and female employees to recruit other minority persons and women and, where reasonable, provide after school, summer and vacation employment to minority and female youth both on the site and in other areas of a Contractor's workforce.
- k. Validate all tests and other selection requirements where there is an obligation to do so under 41 CFR Part 60-3.
- l. Conduct, at least annually, an inventory and evaluation at least of all minority and female personnel for promotional opportunities and encourage these employees to seek or to prepare for, through appropriate training, etc. such opportunities.
- m. Ensure that seniority practices, job classifications, work assignments and other personnel practices, do not have a discriminatory effect by continually monitoring all personnel and employment related activities to ensure that the EEO policy and the Contractor's obligations under these specifications are being carried out.
- n. Ensure that all facilities and Contractor's activities are nonsegregated except that separate or single-user toilet and necessary changing facilities shall be provided to assure privacy between the sexes.
- o. Document and maintain a record of all solicitations of offers for subcontracts from minority and female construction contractors and suppliers, including circulation of solicitations to minority and female contractor associations and other business associations.
- p. Conduct a review, at least annually, of all supervisor's adherence to and performance under the Contractor's EEO policies and affirmative action obligation.

AFFIRMATIVE ACTION REQUIREMENTS
EQUAL EMPLOYMENT OPPORTUNITY

8. Contractors are encouraged to participate in voluntary associations which assist in fulfilling one or more of their affirmative action obligations (7a through p). The efforts of a contractor association, joint contractor-union contractor-community, or other similar group of which the Contractor is a member and participant, may be asserted as fulfilling any one or more of its obligations under 7a through p of these specifications provided that the Contractor actively participates in the group, makes every effort to assure that the group has a positive impact on the employment of minorities and women in the industry, ensures that the concrete benefits of the program are reflected in the Contractor's minority and female workforce participation, makes a good faith effort to meet its individual goal and timetables, and can provide access to documentation which demonstrates the effectiveness of actions taken on behalf of the Contractor. The obligation to comply, however, is the Contractor's and failure of such a group to fulfill an obligation shall not be a defense for the Contractor's noncompliance.
9. A single goal for minorities and a separate single goal for women have been established. The Contractor, however, is required to provide equal employment opportunity and to take affirmative action for all minority groups, both male and female, and all women, both minority and non-minority. Consequently, the Contractor may be in violation of the Executive Order if a particular group is employed in a substantially disparate manner (for example, even though the Contractor has achieved its goals for women generally, the Contractor may be in violation of the Executive Order if a specific minority group of women is underutilized).
10. The Contractor shall not use the goals and timetables or affirmative action standards to discriminate against any person because of race, color, religion, sex, or national origin.
11. The Contractor shall not enter into any Subcontract with any person or firm debarred from Government contracts pursuant to Executive Order 11246.
12. The Contractor shall carry out such sanctions and penalties for violation of these specifications and of the Equal Opportunity Clause, including suspension, termination and cancellation of existing subcontracts as may be imposed or ordered pursuant to Executive Order 11246, as amended, and its implementing regulations, by the Office of Federal Contract Compliance Programs. Any Contractor who fails to carry out such sanctions and penalties shall be in violation of these specifications and Executive Order 11246, as amended.
13. The Contractor in fulfilling its obligations under these specifications, shall implement specific affirmative action steps, at least as extensive as those standards prescribed in paragraph 7 of these specifications, so as to achieve maximum results from its efforts to ensure equal employment opportunity. If the Contractor fails to comply with the requirements of the Executive Order, the implementing regulations, or these specifications, the Director shall proceed in accordance with 41 CFR 60-4.8.
14. The Contractor shall designate a responsible official to monitor all employment related activity to ensure that the company EEO policy is being carried out, to submit reports relating to the provisions hereof as may be required by the Government and to keep records. Records shall at least include for each employee the name, address, telephone numbers, construction trade, union affiliation if any, employee identification number when assigned, social security number, race, sex, status (e.g., mechanic, apprentice, trainee, helper, or laborer), dates of changes in status, hours worked per week in the indicated trade, rate of pay, and locations at which the work was performed. Records shall be maintained in an easily understandable and retrievable form, however, to the degree that existing records satisfy this requirement, contractors shall not be required to maintain separate records.
15. Nothing herein provided shall be construed as a limitation upon the application of other laws which establish different standards of compliance or upon application of requirements for the hiring of local or other area residents (e.g., those under the Public Works Employment Act of 1977 and the Community Development Block Grant Program).

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C. SPECIFIC EQUAL EMPLOYMENT OPPORTUNITY RESPONSIBILITIES.

1. *General.*

- a. Equal employment opportunity requirements not to discriminate and to take affirmative action to assure equal employment opportunity as required by Executive Order 11246 and Executive Order 11375 are set forth in Required Contract. Provisions (Form FHWA 1273 or 1316, as appropriate) and these Special Provisions which are imposed pursuant to Section 140 of Title 23, U.S.C., as established by Section 22 of the Federal-Aid highway Act of 1968. The requirements set forth in these Special Provisions shall constitute the specific affirmative action requirements for project activities under this contract and supplement the equal employment opportunity requirements set forth in the Required Contract provisions.
- b. The Contractor will work with the State highway agencies and the Federal Government in carrying out equal employment opportunity obligations and in their review of his/her activities under the contract.
- c. The Contractor and all his/her subcontractors holding subcontracts not including material suppliers, of \$10,000 or more, will comply with the following minimum specific requirement activities of equal employment opportunity: (The equal employment opportunity requirements of Executive Order 11246, as set forth in Volume 6, Chapter 4, Section 1, Subsection 1 of the Federal-Aid Highway Program Manual, are applicable to material suppliers as well as contractors and subcontractors.) The Contractor will include these requirements in every subcontract of \$10,000 or more with such modification of language as is necessary to make them binding on the subcontractor.

2. *Equal Employment Opportunity Policy.* The Contractor will accept as his operating policy the following statement which is designed to further the provision of equal employment opportunity to all persons without regard to their race, color, religion, sex, or national origin, and to promote the full realization of equal employment opportunity through a positive continuing program;

It is the policy of this Company to assure that applicants are employed, and that employees are treated during employment, without regard to their race, religion, sex, color, or national origin. Such action shall include; employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship, preapprenticeship, and/or on-the-job training.

3. *Equal Employment Opportunity Officer.* The Contractor will designate and make known to the State highway agency contracting officers and equal employment opportunity officer (herein after referred to as the EEO Officer) who will have the responsibility for an must be capable of effectively administering and promoting an active contractor program of equal employment opportunity and who must be assigned adequate authority and responsibility to do so.

4. *Dissemination of Policy.*

- a. All members of the Contractor's staff who are authorized to hire, supervise, promote, and discharge employees, or who recommend such action, or who are substantially involved in such action, will be made fully cognizant of, and will implement, the Contractor's equal employment opportunity policy and contractual responsibilities to provide equal employment opportunity in each grade and classification of employment. To ensure that the above agreement will be met, the following actions will be taken as a minimum;

- (1) Periodic meetings of supervisory and personnel office employees will be conducted before the start of work and then not less often than once every six months, at which time the Contractor's equal employment opportunity policy and its implementation will be reviewed and explained. The meetings will be conducted by the EEO Officer or other knowledgeable company official.

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- (2) All new supervisory or personnel office employees will be given a thorough indoctrination by the EEO Officer or other knowledgeable company official, covering all major aspects of the Contractor's equal employment opportunity obligations within thirty days following their reporting for duty with the Contractor.
 - (3) All personnel who are engaged in direct recruitment for the project will be instructed by the EEO Officer or appropriate company official in the Contractor's procedures for locating and hiring minority group employees.
- b. In order to make the Contractor's equal employment opportunity policy known to all employees, prospective employees and potential sources of employees, i.e., schools, employment agencies, labor unions (where appropriate), college placement officers, etc., the Contractor will take the following actions:
- (1) Notices and posters setting forth the Contractor's equal employment opportunity policy will be placed in areas readily accessible to employees, applicants for employment and potential employees.
 - (2) The Contractor's equal employment opportunity policy and the procedures to implement such policy will be brought to the attention of employees by means of meetings, employee handbooks, or other appropriate means.

5. *Recruitment.*

- a. When advertising for employees, the Contractor will include in all advertisements for employees the notation; "An Equal Opportunity Employer." All such advertisements will be published in newspapers or other publications having a large circulation among minority groups in the area from which the project work force would normally be derived.
- b. The Contractor will, unless precluded by a valid bargaining agreement, conduct systematic and direct recruitment through public and private employee referral sources likely to yield qualified minority group applicants, including, but not limited to, State employment agencies, schools, colleges and minority group organizations. To meet this requirement, the Contractor will, through his EEO Officer, identify sources of potential minority group employees, and establish with such identified sources procedures whereby minority group applicants may be referred to the Contractor for employment consideration.

In the event the Contractor has a valid bargaining agreement providing for exclusive hiring hall referrals, he is expected to observe the provisions of that agreement to the extent that the system permits the Contractor's compliance with equal employment opportunity contract provisions. (The U.S. Department of Labor has held that where implementation of such agreements have the effect of discriminating against minorities or women, or obligates the Contractor to do the same, such implementation violates Executive Order 11246, as amended.)

- c. The Contractor will encourage his present employees to refer minority group applicants for employment by posting appropriate notices or bulletins in areas accessible to all such employees. In addition, information and procedures with regard to referring minority group applicants will be discussed with employees.

6. *Personnel Actions.* Wages, working conditions, and employee benefits shall be established and administered, and personnel actions of every type, including hiring, upgrading, promotion, transfer, demotion, layoff, and termination, shall be taken without regard to race, color, religion, sex, or national origin. The following procedures shall be followed;

- a. The Contractor will conduct periodic inspections of project sites to insure that working conditions and employee facilities do not indicate discriminatory treatment of project site personnel.

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- b. The Contractor will periodically evaluate the spread of wages paid within each classification to determine any evidence of discriminatory wage practices.
- c. The Contractor will periodically review selected personnel actions in depth to determine whether there is evidence of discrimination. Where evidence is found, the Contractor will promptly take corrective action. If the review indicates that the discrimination may extend beyond the actions reviewed, such corrective action shall include all affected persons.
- d. The Contractor will promptly investigate all complaints of alleged discrimination made to the Contractor in connection with his obligations under this contract, will attempt to resolve such complaints, and will take appropriate corrective action within a reasonable time. If the investigation indicates that the discrimination may affect persons other than the complainant, such corrective action shall include such other persons. Upon completion of each investigation, the Contractor will inform every complainant of all of his avenues of appeal.

7. *Training and Promotion.*

- a. The Contractor will assist in locating, qualifying, and increasing the skills of minority group and women employees, and applicants for employment.
- b. Consistent with the Contractor's work force requirements and as permissible under Federal and State regulations, the Contractor shall make full use of training programs, i.e., apprenticeship, and on-the-job training programs for the geographical area of contract performance. Where feasible, 25 percent of apprentices or trainees in each occupation shall be in their first year of apprenticeship or training.
- c. The Contractor will advise employees and applicants for employment of available training programs and entrance requirements for each.
- d. The Contractor will periodically review the training and promotion potential of minority group and women employees and will encourage eligible employees to apply for such training and promotion.

8. *Unions.* If the Contractor relies in whole or in part upon unions as a source of employees, the Contractor will use his/her best efforts to obtain the cooperation of such unions to increase opportunities for minority groups and women with the unions, and to effect referrals by such unions of minority and female employees. Actions by the Contractor either directly or through a contractor's association acting as agent will include the procedures set forth below:

- a. The Contractor will use best efforts to develop, in cooperation with the unions, joint training programs aimed toward qualifying more minority group members and women for membership in the unions and increasing the skills of minority group employees and women so that they may qualify for higher paying employment.
- b. The Contractor will use best efforts to incorporate an equal employment opportunity clause into each union agreement to the end that such union will be contractually bound to refer applicants without regard to their race, color, religion, sex, or national origin.
- c. The Contractor is to obtain information as to the referral practices and policies of the labor union except that to the extent such information is within the exclusive possession of the labor union and such labor union refuses to furnish such information to the Contractor, the Contractor shall so certify to the State highway department and shall set forth what efforts have been made to obtain such information.

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- d. In the event the union is unable to provide the Contractor with a reasonable flow of minority and women referrals within the time limit set forth in the collective bargaining agreement, the Contractor will, through independent recruitment efforts, fill the employment vacancies without regard to race, color, religion, sex or national origin; making full efforts to obtain qualified and/or qualifiable minority group persons and women. (The U.S. Department of Labor has held that it shall be no excuse that the union with which the Contractor has a collective bargaining agreement providing for exclusive referral failed to refer minority employees.) In the event the union referral practice prevents the Contractor from meeting the obligations pursuant to Executive Order 11246, as amended, and these special provisions, such Contractor shall immediately notify the State highway agency.

9. *Subcontracting.*

- a. The Contractor will use his best efforts to solicit bids from and to utilize minority group subcontractors or subcontractors with meaningful minority group and female representation among their employees. Contractors shall obtain lists of minority-owned construction firms from State highway agency personnel.
- b. The Contractor will use his best efforts to ensure subcontractor compliance with their equal employment opportunity obligations.

10. *Records and Reports.*

- a. The Contractor will keep such records as are necessary to determine compliance with the Contractor's equal employment opportunity obligations. The records kept by the Contractor will be designed to indicate:
- (1) The number of minority and nonminority group members and women employed in each work classification on the project.
 - (2) The Progress and efforts being made in cooperation with unions to increase employment opportunities for minorities and women (applicable only to contractors who rely in whole or in part on unions as a source of their work force).
 - (3) The progress and efforts being made in locating, hiring, training, qualifying, and upgrading minority and female employees, and
 - (4) The progress and efforts being made in securing the services of minority group subcontractors or subcontractors with meaningful minority and female representation among their employees.
- b. All such records must be retained for a period of three years following completion of the contract work and shall be available at reasonable times and places for inspection by authorized representatives of the State highway agency and the Federal Highway Administration.
- c. The Contractors will submit an annual report to the State highway agency each July for the duration of the project, indicating the number of minority, women, and non-minority group employees currently engaged in each work classification required by the contract work. This information is to be reported on Form PR 1391.

DISADVANTAGED BUSINESS ENTERPRISE (DBE) REQUIREMENTS

1. Overview

The Disadvantaged Business Enterprise (DBE) Program is a federally-mandated program that seeks to ensure non-discrimination in the award of U.S. Department of Transportation (DOT)-assisted contracts and to create a level playing field on which DBEs can compete fairly for DOT-assisted contracts. To such end, CDOT sets a contract goal for DBE participation for each DOT-assisted Contract.

In order to be awarded the Contract, the bidder shall show that it has committed to DBE participation sufficient to meet the goal or has otherwise made good faith efforts to do so. CDOT will amend the goal prior to award if the lowest apparent bidder demonstrates that good faith efforts were made but sufficient commitments to meet the goal could not be obtained.

CDOT will monitor the progress of the Contractor throughout the project to ensure that the Contractor's DBE commitments are being fulfilled. Modifications to the commitments must be approved by CDOT. CDOT may withhold payment or seek other contractual remedies if the Contractor is not complying with the requirements of this special provision. Upon completion of the Contract, CDOT may reduce the final payment to the Contractor if the Contractor has failed to fulfill the commitments or made good faith efforts to meet the contract goal.

For general assistance regarding the DBE program and compliance, contact CDOT's Civil Rights and Business Resource Center (CRBRC) at (303)757-9234. For project specific issues, contact the Engineer.

All forms referenced herein can be found on the CDOT website in the forms library:

<http://www.coloradodot.info/library/forms/cdot-forms-by-number>

2. Contract Assurance

By submitting a proposal for this Contract, the bidder agrees to the following assurance and shall include it verbatim in all (including non-DBE) subcontracts:

The contractor, subrecipient or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The contractor shall carry out applicable requirements of 49 CFR Part 26 in the award and administration of DOT-assisted contracts. Failure by the contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as CDOT deems appropriate.

3. Definitions

Terms not defined herein shall have the meaning provided in the CDOT Standard Specifications for Road and Bridge Construction.

- A. *Commitment.* A commitment is a portion of the Contract, identified by dollar amount and work area, designated by the bidder or Contractor for participation by a particular DBE. Commitments are submitted to CDOT via Form 1414, Anticipated DBE Participation Plan, or via Form 1420, DBE Plan Modification Request. Once approved, commitments are obligations of the Contract that are enforceable by CDOT.
- B. *Commercially Useful Function (CUF).* Responsibility for the execution of the work and carrying out such responsibilities by actually performing, managing and supervising the work as further described in Section 8 below.
- C. *Contract Goal.* The percentage of the contract designated by CDOT for DBE participation. The contract goal for this contract is provided in the Project Special Provision Disadvantaged Business Enterprise

Contract Goal.

- (1) The bidder/Contractor shall make good faith efforts to fulfill the contract goal with eligible DBE participation. For determining whether the contract goal was met prior to award, the contract goal shall be based upon the proposal amount excluding force account items. For determining whether the contract goal was met during and upon completion of the project, the contract goal shall be based upon the total earnings amount.
 - (2) If the lowest apparent bidder demonstrates that it was unable to meet the contract goal but made good faith efforts to do so, the contract goal will be amended and the revised contract goal will be provided on Form 1417, Approved DBE Participation Plan.
- D. *Disadvantaged Business Enterprise (DBE)*. A Colorado-certified Disadvantaged Business Enterprise listed on the Colorado Unified Certification Program (UCP) DBE Directory at www.coloradodbe.org.
- E. *DBE Program Manual*. The manual maintained by the CRBRC which details CDOT's policies and procedures for administering the DBE program. A copy of the DBE Program Manual is available on the CRBRC webpage.
- F. *Eligible Participation*. Work by a DBE that counts toward fulfillment of the contract goal as described in Section 4 below.
- G. *Good Faith Efforts*. All necessary and reasonable steps to achieve the contract goal which, by their scope, intensity, and appropriateness to the objective, could reasonably be expected to obtain sufficient DBE participation, even if not fully successful. Good faith efforts are evaluated prior to award and throughout performance of the Contract. For guidance on good faith efforts, see 49 CFR Part 26, Appendix A.
- H. *Joint Check*. A check issued by the Contractor or one of its subcontractors to a DBE firm and a material supplier or other third party for materials or services to be incorporated into the work.
- I. *Reduction*. A reduction occurs when the Contractor reduces a commitment to a DBE. A reduction constitutes a partial termination.
- J. *Subcontractor*. An individual, firm, corporation or other legal entity to whom the Contractor sublets part of the Contract. For purposes of this special provision, the term subcontractor includes suppliers.
- K. *Substitution*. Substitution occurs when a Contractor seeks to find another DBE to perform work on the contract as a result of a reduction or termination.
- L. *Termination*. A termination occurs when a Contractor no longer intends to use a DBE for fulfillment of a commitment.
- M. *Total Earnings Amount*: Amount of the Contract earned by the Contractor, including approved changes and approved force account work performed, but not including any deductions for liquidated damages, price reduced material, work time violations, overweight loads or liens. The amount of the Contract earned does not include plan force account items (i.e. OJT, pavement incentives, etc).
- N. *Work Code*. A code to identify the work that a DBE is certified to perform. A work code includes a six digit North American Industry Classifications System code plus a descriptor. Work codes are listed on a firm's profile on the UCP DBE Directory. The Contractor may contact the CRBRC to receive guidance on whether a work code covers the work to be performed.

4. Eligible Participation

The following rules will be used to determine whether work performed by a DBE qualifies as eligible participation on the Contract:

- A. *Work Must be Identified in Commitment.* The work performed by the DBE must be reasonably construed to be included in the work area and work code identified by the Contractor in the approved commitment.
 - (1) If the Contractor intends to use a DBE for work that was not listed in the commitment, the Contractor shall submit Form 1420, DBE Participation Plan Modification for approval of the modification. Unapproved work will not count toward the contract goal.
 - (2) A DBE commitment cannot be modified to include work for which the DBE was not certified at the time of the approval of the original commitment.
- B. *DBE Must be Certified to Perform the Work.* The DBE must be certified to perform the work upon submission of the commitment and upon execution of the DBE's subcontract.
 - (1) When a commitment has been made, but upon review of Form 205 or 205B, Sublet Permit, CDOT determines that the DBE is no longer certified in the work code which covers the work to be performed, the Contractor may not use the DBE's participation toward the contract goal. The Contractor shall terminate the DBE commitment and seek substitute DBE participation in accordance with Section 9 below.
 - (2) A DBE's work will continue to count as eligible participation if the DBE was certified upon approval of Form 205 or 205B, Sublet Permit and the certification status changes during the performance of the work.
 - (3) Suppliers must be certified upon execution of the purchase order.
- C. *DBE Performs the Work.* Eligible participation will only include work actually performed by the DBE with its own forces.
 - (1) Work performed by the DBE includes the cost of supplies and materials obtained by the DBE for its work on the Contract, including any equipment leased by the DBE, provided that such supplies or equipment are not purchased or leased from the Contractor or a subcontractor that is subletting to the DBE.
 - (2) If CDOT determines that a DBE has not performed a CUF on the project, no participation by such DBE shall count toward the contract goal.
- D. *DBE Subcontracts to Another Firm.* When a DBE subcontracts part of the work, the value of the subcontracted work may only be counted toward the goal if the subcontractor is a DBE. Performance by non-DBE subcontractors, including non-DBE trucking firms and owner-operators, shall be deducted from the DBE's participation.
- E. *DBE Received Payment for the Work.* Eligible participation only includes work for which the DBE has received payment, including the release of its retainage.
- F. *Special Calculations for Suppliers.* When a DBE supplies goods on a project, the DBE may be classified as a manufacturer, dealer or broker. The DBE's status as a manufacturer, dealer or broker is determined on a contract-by-contract basis and is based upon the actual work performed.
 - (1) When a DBE is deemed to be acting as a manufacturer, one hundred percent of the commitment will count as eligible participation.
 - (2) When a DBE is deemed to be acting as a regular dealer (i.e. non-manufacturer supplier), only

sixty percent of the commitment will count as eligible participation.

(3) When a DBE is deemed to be acting as a broker, only the reasonable brokerage fee will count as eligible participation.

G. *Reasonable Fee for Contract-Specific Services.* Services shall count toward the contract goal only if they are specifically required for the performance of the Contract. Non-contract specific expenses may not be counted toward the contract goal. Fees for services must be reasonable. Services include but are not limited to professional services, public involvement, etc. In the case of temporary employment placement agencies, only the placement fee for an individual to be specifically and exclusively used for work on the contract shall count as eligible participation.

H. *Pre-Approval for Joint Venture Participation.* When a DBE is a participant in a joint venture, the DBE must apply to CDOT to determine how much of the work performed by the joint venture will count toward the contract goal. The DBE shall complete Form 893, Information for Determining DBE Participation when a Joint Venture Includes a DBE. Form 893 shall be submitted to CDOT no less than ten days before the submission of the Proposal to ensure sufficient time for review.

5. Proposal Requirements

In order to be eligible for award, the following shall be submitted with the proposal, or, for electronic bidders, via email to cdot_hq_dbeforams@state.co.us by the proposal submission deadline. In order to avoid an error within the electronic bidding system, electronic bidders shall also enter the total percentage of anticipated eligible DBE participation into the Form 714 and electronically sign the form.

- A. *Form 1413, Bidders List.* The bidder shall list each subcontractor (including both DBE and non-DBE subcontractors) that submitted a quote for participation on the project. Failure to submit a signed Form 1413 will result in rejection of the proposal.
- B. *Form 1414, Anticipated DBE Participation Plan.* If the Contract Goal is greater than zero, the bidder shall submit Form 1414 to document anticipated DBE participation.
 - (1) If the Bidder has not obtained any DBE commitments, it shall still submit Form 1414 documenting zero anticipated participation. If the Contract Goal is greater than zero, failure to submit a signed Form 1414 shall result in rejection of the proposal.
 - (2) The bidder shall list the DBE, work area(s), commitment amount and estimated eligible participation for each commitment. Once Form 1414 is submitted, a commitment may only be terminated or reduced in accordance with Section 9 below. The bidder is responsible for ensuring that commitments, and the estimated eligible participation resulting therefrom, have been properly calculated prior to submitting its proposal.
 - (3) If the bidder is a DBE, the bidder must include itself in Form 1414 and list the work area(s) and amount that it intends to self-perform and count as eligible participation on the contract.
 - (4) Commitments may be made to second tier or lower DBE subcontractors; however, the Contractor is ultimately responsible for the fulfillment of the commitment and shall sign the Form 1415, Commitment Confirmation.

6. Additional Forms Due Prior to Award.

If the contract goal is greater than zero, or if the bidder has voluntarily made commitments, the Bidder shall submit the following forms within five calendar days of selection as the lowest apparent bidder:

- A. *Form 1415, Commitment Confirmation.* A Form 1415, Commitment Confirmation shall be obtained from each DBE listed on Form 1414. The bidder shall complete Section 1 and the DBE shall complete Section 2 of Form 1415. Form 1415s shall be consistent with the commitments listed on Form 1414. The

bidder shall not modify commitments listed on Form 1414 without good cause and approval from CDOT. The bidder shall contact CDOT if any issues arise which may require the bidder to alter or terminate a commitment.

- B. *Form 1416, Good Faith Effort Report.* If the total eligible participation listed on Form 1414 does not meet the contract goal, the lowest apparent bidder shall also submit Form 1416, Good Faith Effort Report and any supporting documentation that the bidder would like considered by CDOT as evidence of good faith efforts.

7. Commitment and Good Faith Effort Review

- A. *Commitment Review.* CDOT will evaluate the Form 1414 and each Form 1415 to ensure that the commitment is valid and has been properly calculated. CDOT may investigate or request additional information in order to confirm the accuracy of a commitment. If CDOT determines that the total estimated eligible participation of the commitments does not meet the contract goal, within two business days of notice from CDOT or within the original five calendar day deadline, whichever is later, the bidder shall submit Form 1416 to CDOT.
- B. *Good Faith Effort Review.* If the total eligible participation of Form 1414 and all supporting Form 1415s does not meet the contract goal, CDOT will review Form 1416 and all supporting documentation submitted by the bidder in order to determine whether the bidder has demonstrated good faith efforts to obtain DBE participation. CDOT will use 49 CFR Part 26, Appendix A as a guide for determining whether the bidder made good faith efforts to meet the contract goal. A bidder will be deemed to not have made good faith efforts if the bidder lists a DBE for a work area for which the DBE is not certified and the bidder cannot establish a reasonable basis for its determination. CDOT may consider and approve commitments made after submission of the bid if the Bidder demonstrates that (1) good faith efforts were made prior to submission of the bid and (2) there is a reasonable justification for not obtaining the commitments prior to submission of the bid.
- C. *Administrative Reconsideration.* If CDOT determines that the bidder did not demonstrate good faith efforts to meet the contract goal, it will provide the bidder with written notice of its determination and an opportunity to appeal. The process for reconsideration is set forth in the *Good Faith Effort Appeal Process*, which is an Appendix I to the DBE Program Manual. A copy of the *Good Faith Effort Appeal Process* will be included in the written notice from CDOT.
- D. *Form 1417, Approved DBE Participation Plan.* If CDOT determines that the bidder has met the contract goal or made good faith efforts to do so, CDOT will issue Form 1417, Approved DBE Participation Plan, documenting the approved commitments. If CDOT determines that the bidder did not meet the contract goal but made good faith efforts to do so, via the Form 1417 CDOT will amend the contract goal in accordance with the commitments that were obtained and attach an explanation of its determination.

8. Ongoing Oversight of DBE Participation

- A. *Consistency Review.* CDOT will review Form 205 or 205B, Sublet Permit Application to determine whether the work being sublet is consistent with the DBE commitments. CDOT may withhold approval of the sublet or stop performance of the work if the Contractor has reduced, terminated, or otherwise modified the type or amount of work to be performed by a DBE without seeking prior approval.
- B. *Form 1419, DBE Participation Report.* The Contractor shall submit Form 1419, DBE Participation Report to the Engineer on a quarterly basis (January 15, April 15, July 15, and October 15) and upon completion of the Contract. CDOT may withhold progress payments if the quarterly Form 1419 is not received on time. CDOT will not provide final payment on the Contract in accordance with subsection 109.09 of CDOT's *Standard Specifications for Road and Bridge Construction* until the final Form 1419 has been reviewed and approved.
- C. *Joint Checks.* All joint checks must be approved by CDOT before they are used in payment to a DBE. Joint checks used in payments to DBEs will be monitored closely to ensure (1) the DBE is performing a

CUF and (2) the joint checks are not being used in a discriminatory manner. The Contractor shall request approval for the use of a joint check in a written letter signed by the DBE and the Contractor, stating the reason for the joint checks and the approximate number of checks that will be needed.

- D. *Commercially Useful Function.* CDOT will monitor performance during the Contract to ensure each DBE is performing a CUF. If CDOT determines that a DBE is not performing a CUF, no work performed by such DBE shall count as eligible participation. The DBE, Contractor, and any other involved third parties may also be subject to additional enforcement actions.
- (1) When determining whether a DBE is performing a CUF, CDOT will consider the amount of work subcontracted, industry practices, the amount the firm is to be paid compared to the work performed and eligible participation claimed, and any other relevant factors.
 - (2) With respect to material and supplies used on the Contract, in order to perform a CUF the DBE must be responsible for negotiating price, determining quality and quantity, ordering the material, installing the material, if applicable, and paying for the material itself.
 - (3) With respect to trucking, in order to perform a CUF, the DBE trucking firm must own and operate at least one fully licensed, insured and operational truck used on the Contract. Additionally, the DBE trucking firm must be responsible for the management and supervision of the entire trucking operation for which it is responsible on the Contract.
 - (4) A DBE does not perform a CUF when its role is limited to that of an extra participant in a transaction, contract or project through which funds are passed in order to obtain the appearance of DBE participation. CDOT will evaluate similar transactions involving non-DBEs in order to determine whether a DBE is an extra participant.
 - (5) If a DBE does not perform or exercise responsibility for at least 30 percent of the total cost of its contract with its own work force, or the DBE subcontracts a greater portion of the work than would be expected on the basis of normal industry practice for the type of work involved, CDOT will presume that the DBE is not performing a CUF. The DBE may present evidence to rebut this presumption.
 - (6) If the Contractor disagrees with CDOT's determination regarding CUF, in accordance with 49 CFR 26.55 the Contractor may seek review of the determination by the applicable USDOT operating administration, however, CUF determination is not subject to administrative appeal.

9. DBE Participation Plan Modifications

- A. *Form 1420, DBE Participation Plan Modification Request.* During the performance of the Contract, the Contractor shall use Form 1420, DBE Participation Plan Modification Request to communicate all requests for *termination*, reduction, substitution, and waivers to CDOT. One Form 1420 may include multiple requests and must be submitted at the time of the occurrence or, if that is not possible, within a reasonable time of the occurrence requiring termination, reduction, substitution or waiver.
- B. *Commitment Terminations and Reductions.* No commitment shall be terminated or reduced without CDOT's approval. Terminations and reductions include, but are not limited to, instances in which a Contractor seeks to *perform* work originally designated for a DBE subcontractor with its own forces, those of an affiliate, a non-DBE firm or with another DBE firm. In order to receive approval, the Contractor shall:
- (1) Have good cause for termination or reduction. Good cause may include:
 - (i) the DBE fails or refuses to execute a written contract;

- (ii) the DBE fails or refuses to perform the work of its subcontract consistent with normal industry standards, provided that such failure is not the result of bad faith or discriminatory actions of the Contractor or one of its subcontractors;
 - (iii) the DBE fails to meet reasonable, nondiscriminatory bond requirements;
 - (iv) the DBE becomes bankrupt, insolvent, or exhibits credit unworthiness;
 - (v) the DBE is ineligible to work because of suspension or debarment proceedings or other state law;
 - (vi) the DBE is not a responsible contractor;
 - (vii) the DBE voluntarily withdraws from the project and provides written notice to CDOT,
 - (viii) the DBE is ineligible to receive DBE credit for the work required;
 - (ix) the DBE owner dies or becomes disabled and is unable to complete the work;
 - (x) the DBE ceases business operations or otherwise dissolves;
 - (xi) or other documented good cause that compels termination. Good cause does not exist if the Contractor seeks to terminate a DBE it relied upon to obtain the contract so that the Contractor can self-perform the work for which the DBE was engaged or so that the Contractor can substitute another DBE or non-DBE contractor after contract award.
- (2) Provide the DBE notice of the Contractor's intent to terminate or reduce the commitment and the reason for such termination or reduction, with a copy to CDOT;
 - (3) In the notice of intent, provide the DBE at least five calendar days to respond to the notice and inform CDOT and the Contractor of the reasons, if any, why it objects to the proposed termination or reduction and any reasons that it shall not be approved. The Contractor is not required to provide the five calendar days written notice in cases where the DBE in question has provided written notice that it is withdrawing from the subcontract or purchase order. The notice period may be reduced by CDOT if required by public necessity.
 - (4) Following the notice period, if the Contractor decides to proceed, submit Form 1420 requesting approval of the termination or reduction.
 - (5) When a commitment is terminated or reduced (including when a DBE withdraws), make good faith efforts to find another DBE to substitute. These good faith efforts shall be directed at finding another DBE to perform at least the same amount of work under the contract as the participation that was terminated or reduced up to the contract goal.

C. *Contract Changes*. In the event of a contract change:

- (1) If CDOT eliminates or reduces work committed to a DBE, such change shall be considered good cause for termination or reduction in accordance with Section 9.B above. The Contractor shall follow the processes outlined in Section 9.B but is not required to substitute. If the change reduces the Contractor's DBE participation to below the contract goal, the Contractor shall indicate so on a Form 1420 and request a waiver of the unmet participation.

- (2) If CDOT issues a change which increases or adds new work items, the Contractor shall ensure that it has obtained sufficient DBE participation to meet the Contract Goal, or has made good faith efforts to do so.

D. *Process for Substitution or Increase in Participation to Meet the Contract Goal.* When the Contractor must obtain additional DBE participation to meet the Contract Goal, whether resulting from an approved termination or reduction or a change to the Contract, the Contractor shall:

- (1) Increase the participation of a DBE for any work items previously identified in an approved commitment without seeking CDOT approval; provided, however, that at its discretion, CDOT may request a Form 1420 documenting such additional participation; or
- (2) If the Contractor needs to add new work to a commitment or obtain additional participation from a DBE that is not already participating on the contract pursuant to an approved commitment, submit a Form 1420 and Form 1415 requesting approval of the additional participation; or
- (3) If the Contractor determines that additional DBE participation cannot be obtained, submit a Form 1420 requesting waiver of the participation. The Contractor shall include its justification for not obtaining additional participation and, at its discretion, CDOT may require additional information regarding the efforts of the Contractor.

10. Payment Reduction

The Contractor's retainage will not be released until CDOT has determined whether the Contractor will be subject to a payment reduction. Payment reductions will be calculated as follows:

- A. *Failure to Fulfill Commitments.* If the Contractor terminated or reduced a commitment, the Contractor will be subject to a payment reduction for any termination or reduction which was not approved via a Form 1420.
- B. *Failure to Meet Contract Goal.* If the Contractor failed to meet the contract goal, the Contractor will be subject to a payment reduction for the portion of the contract goal that was not met and was not waived via an approved Form 1420.
- C. *Duplication.* The contractor will not be subject to duplicate reduction for the same offense.
- D. *Adjustments.* CDOT may adjust the payment reduction wherein the Contractor demonstrates that its failure to obtain DBE participation was due to circumstances outside of its control.

11. Other Enforcement

- A. *Investigations.* As it determines necessary, CDOT may conduct reviews or investigations of participants. All participants, including, but not limited to, DBE firms and applicants for DBE certification, complainants, and contractors using DBE firms to meet contract goals, are required to cooperate fully and promptly with compliance reviews, certification reviews, investigations, and other requests for information.
- B. *Intimidation and retaliation.* Participants shall not intimidate, threaten, coerce, or discriminate against any individual or firm for the purpose of interfering with any right or privilege secured by the DBE program or because the individual or firm has made a complaint, testified, assisted, or participated in any manner in an investigation, proceeding, or hearing under the DBE program.

- C. *Consequences of Non-Compliance.* Failure to comply with subsections 11 A. or 11 B. shall be a ground for appropriate action against the party involved (e.g., with respect to recipients, a finding of noncompliance; with respect to DBE firms, denial of certification or removal of eligibility and/or suspension and debarment; with respect to a complainant or appellant, dismissal of the complaint or appeal; with respect to a contractor which uses DBE firms to meet goals, findings of non-responsibility for future contracts and/or suspension and debarment).
- D. *Fraud and Misrepresentation.* If CDOT determines that a Contractor or subcontractor was a knowing and willing participant in any intended or actual subcontracting arrangement contrived to artificially inflate DBE participation or any other business arrangement determined by CDOT to be unallowable, or if the Contractor engages in repeated violations, falsification or misrepresentation, CDOT may:
- (1) refuse to count any fraudulent or misrepresented DBE participation;
 - (2) withhold progress payments to the Contractor commensurate with the violation;
 - (3) suspend or reduce the Contractor's prequalification status;
 - (4) refer the matter to the Office of Inspector General of the US Department of Transportation for investigation; or
 - (5) seek any other available contractual remedy.

Decision Nos. CO160024 dated January 08, 2016 supersedes Decision Nos. CO150024 dated January 02, 2015.		Modifications			ID
		<u>MOD Number</u>	<u>Date</u>	<u>Page Number(s)</u>	
When work within a project is located in two or more counties and the minimum wages and fringe benefits are different for one or more job classifications, the higher minimum wages and fringe benefits shall apply throughout the project.					
General Decision No. CO160024 applies to the following counties: Larimer, Mesa, and Weld counties.					
General Decision No. CO160024 The wage and fringe benefits listed below reflect collectively bargained rates.					
Code	Classification	Basic Hourly Rate	Fringe Benefits	Last Mod	
	POWER EQUIPMENT OPERATOR:				
	Drill Rig Caisson				
1714	Smaller than Watson 2500 and similar	24.73	9.15		
1715	Watson 2500 similar or larger	25.04	9.15		
	Oiler				
1716	Weld	24.88	9.15		
The wage and fringe benefits listed below do not reflect collectively bargained rates.					
	CARPENTER:				
1717	Excludes Form Work	20.72	5.34		
	Form Work Only				
1718	Larimer, Mesa	18.79	3.67		
1719	Weld	16.54	3.90		
	CEMENT MASON/CONCRETE FINISHER:				
1720	Larimer	16.05	3.00		
1721	Mesa	17.53	3.00		
1722	Weld	17.48	3.00		
	ELECTRICIAN:				
	Excludes Traffic Signalization				
1723	Weld	33.45	7.58		
	Traffic Signalization				
1724	Weld	25.84	6.66		

General Decision No. CO160024				
The wage and fringe benefits listed below do not reflect collectively bargained rates.				
Code	Classification	Basic Hourly Rate	Fringe Benefits	Last Mod
	FENCE ERECTOR:			
1725	Weld	17.46	3.47	
	GUARDRAIL INSTALLER:			
1726	Larimer, Weld	12.89	3.39	
	HIGHWAY/PARKING LOT STRIPING:			
	Painter			
1727	Larimer	14.79	3.98	
1728	Mesa	14.75	3.21	
1729	Weld	14.66	3.21	
	IRONWORKER:			
	Reinforcing (Excludes Guardrail Installation)			
1730	Larimer, Weld	16.69	5.45	
	Structural (Excludes Guardrail Installation)			
1731	Larimer, Weld	18.22	6.01	
	LABORER:			
	Asphalt Raker			
1732	Larimer	18.66	4.66	
1733	Weld	16.72	4.25	
1734	Asphalt Shoveler	21.21	4.25	
1735	Asphalt Spreader	18.58	4.65	
1736	Common or General	16.29	4.25	
1737	Concrete Saw (Hand Held)	16.29	6.14	
1738	Landscape and Irrigation	12.26	3.16	
1739	Mason Tender - Cement/Concrete	16.29	4.25	
	Pipelayer			
1740	Larimer	17.27	3.83	
1741	Mesa, Weld	16.23	3.36	
1742	Traffic Control (Flagger)	9.55	3.05	

General Decision No. CO160024				
The wage and fringe benefits listed below do not reflect collectively bargained rates.				
Code	Classification	Basic Hourly Rate	Fringe Benefits	Last Mod
	LABORER (con't):			
	Traffic Control (Sets Up/Moves Barrels, Cones, Installs signs, Arrow Boards and Place Stationary Flags), (Excludes Flaggers)			
1743	Larimer, Weld	12.43	3.22	
1744	PAINTER (Spray Only)	16.99	2.87	
	POWER EQUIPMENT OPERATOR:			
	Asphalt Laydown			
1745	Larimer	26.75	5.39	
1746	Mesa, Weld	23.93	7.72	
1747	Asphalt Paver	21.50	3.50	
	Asphalt Roller			
1748	Larimer	23.57	3.50	
1749	Mesa	24.25	3.50	
1750	Weld	27.23	3.50	
	Asphalt Spreader			
1751	Larimer	25.88	6.80	
1752	Mesa, Weld	23.66	7.36	
	Backhoe/Trackhoe			
1753	Larimer	21.46	4.85	
1754	Mesa	19.81	6.34	
1755	Weld	20.98	6.33	
	Bobcat/Skid Loader			
1756	Larimer	17.13	4.46	
1757	Mesa, Weld	15.37	4.28	
1758	Boom	22.67	8.72	
	Broom/Sweeper			
1759	Larimer	23.55	6.20	
1760	Mesa	23.38	6.58	
1761	Weld	23.23	6.89	

General Decision No. CO160024				
The wage and fringe benefits listed below do not reflect collectively bargained rates.				
Code	Classification	Basic Hourly Rate	Fringe Benefits	Last Mod
	POWER EQUIPMENT OPERATOR (con't):			
	Bulldozer			
1762	Larimer, Weld	22.05	6.23	
1763	Mesa	22.67	8.72	
1764	Crane	26.75	6.16	
	Drill			
1765	Larimer, Weld	31.39	0.00	
1766	Mesa	35.06	0.00	
1767	Forklift	15.91	4.68	
	Grader/Blade			
1768	Larimer	24.82	5.75	
1769	Mesa	23.42	9.22	
1770	Weld	24.53	6.15	
1771	Guardrail/Post Driver	16.07	4.41	
1772	Loader (Front End)			
1773	Larimer	20.45	3.50	
1774	Mesa	22.44	9.22	
1775	Weld	23.92	6.67	
	Mechanic			
1776	Larimer	27.68	4.57	
1777	Mesa	25.50	5.38	
1778	Weld	24.67	5.68	
	Oiler			
1779	Larimer	24.16	8.35	
1780	Mesa	23.93	9.22	
	Roller/Compactor (Dirt and Grade Compaction)			
1781	Larimer	23.67	8.22	
1782	Mesa, Weld	21.33	6.99	

General Decision No. CO160024				
The wage and fringe benefits listed below do not reflect collectively bargained rates.				
Code	Classification	Basic Hourly Rate	Fringe Benefits	Last Mod
	POWER EQUIPMENT OPERATOR (con't.):			
	Rotomill			
1783	Larimer	18.59	4.41	
1784	Weld	16.22	4.41	
	Scraper			
1785	Larimer	21.33	3.50	
1786	Mesa	24.06	4.13	
1787	Weld	30.14	1.40	
	Screed			
1788	Larimer	27.20	5.52	
1789	Mesa	27.24	5.04	
1790	Weld	27.95	3.50	
1791	Tractor	13.13	2.95	
	TRAFFIC SIGNALIZATION:			
	Groundsman			
1792	Larimer	11.44	2.84	
1793	Mesa	16.00	5.85	
1794	Weld	16.93	3.58	
	TRUCK DRIVER:			
	Distributor			
1795	Larimer	19.28	4.89	
1796	Mesa	19.17	4.84	
1797	Weld	20.61	5.27	
	Dump Truck			
1798	Larimer	18.86	3.50	
1799	Mesa	15.27	4.28	
1800	Weld	15.27	5.27	

General Decision No. CO160024				
The wage and fringe benefits listed below do not reflect collectively bargained rates.				
Code	Classification	Basic Hourly Rate	Fringe Benefits	Last Mod
	TRUCK DRIVER (con't.):			
	Lowboy Truck			
1801	Larimer	18.96	5.30	
1802	Mesa, Weld	18.84	5.17	
1803	Mechanic	26.48	3.50	
	Multi-Purpose Specialty & Hoisting Truck			
1804	Larimer, Mesa	16.65	5.46	
1805	Weld	16.87	5.56	
1806	Pickup and Pilot Car	13.93	3.68	
1807	Semi/Trailer Truck	18.39	4.13	
1808	Truck Mounted Attenuator	12.43	3.22	
	Water Truck			
1809	Larimer	19.14	4.99	
1810	Mesa	15.96	5.27	
1811	Weld	19.28	5.04	

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29 CFR 5.5(a)(1)(ii)).

In the listing above, the "SU" designation means that rates listed under the identifier do not reflect collectively bargained wage and fringe benefit rates. Other designations indicate unions whose rates have been determined to be prevailing.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- * an existing published wage determination
- * a survey underlying a wage determination
- * a Wage and Hour Division letter setting forth a position on a wage determination matter
- * a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program.

If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7).

Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

END OF GENERAL DECISION NO. CO160024

1
ON THE JOB TRAINING

This training special provision is an implementation of 23 U.S.C. 140 (a). The Contractor shall meet the requirements of the FHWA 1273 for all apprentices and trainees.

As part of the Contractor's Equal Employment Opportunity Affirmative Action Program, training shall be provided on projects as follows:

1. The Contractor shall provide on the job training aimed at developing full journey workers in the skilled craft identified in the approved training plan. The Contractor shall provide at a minimum, required training hours listed in the Project Special Provisions for each project.
2. The primary objective of this specification is to train and upgrade women and minority candidates to full journey worker status. The Contractor shall make every reasonable effort to enroll and train minority and women workers. This training commitment shall not be used to discriminate against any applicant for training whether or not the applicant is a woman or minority.
3. The Contractor may employ temporary workers from CDOT supportive services providers to meet OJT requirements. Information pertaining to supportive services providers may be obtained by calling the CDOT OJT Coordinator at the number shown on the link <http://www.coloradodot.info/business/equal-opportunity/training.html>
4. An employee shall not be employed or utilized as a trainee in a skilled craft in which the employee has achieved journey status.
5. The minimum length and type of training for each skilled craft shall be as established in the training program selected by the Contractor and approved by the Department and the Colorado Division of the Federal Highway Administration (FHWA), or the U. S Department of Labor (DOL), Office of Apprenticeship or recognized state apprenticeship agency. To obtain assistance or program approval contact:

CDOT Center for Equal Opportunity
4201 East Arkansas Avenue
Denver, CO 80222
eo@dot.state.co.us
1-800-925-3427

6. The Contractor shall pay the training program wage rates and the correct fringe benefits to each approved trainee employed on the project and enrolled in an approved program. The minimum trainee wage shall be no less than the wage for the Guardrail Laborer classification as indicated in the wage decision for the project.
7. The CDOT Regional Civil Rights Manager must approve all proposed apprentices and trainees for the participation to be counted toward the project goal and reimbursement. Approval must occur before training begins. Approval for the apprentice or trainee to begin work on a CDOT project will be based on:
 - A. Evidence of the registration of the trainee or apprentice into the approved training program.
 - B. The completed Form 838 for each trainee or apprentice as submitted to the Engineer.
8. Before training begins, the Contractor shall provide each trainee with a copy of the approved training program, pay scale, pension and retirement benefits, health and disability benefits, promotional opportunities, and company policies and complaint procedures.
9. Before training begins, the Contractor shall submit a copy of the approved training program and CDOT Form 1337 to the Engineer. Progress payments may be withheld until this is submitted and approved and may be withheld if the approved program is not followed.

2
ON THE JOB TRAINING

10. On a monthly basis, the Contractor shall provide to the Engineer a completed On the Job Training Progress Report (Form 832) for each approved trainee or apprentice on the project. The Form 832 will be reviewed and approved by the Engineer before reimbursement will be made. The Contractor will be reimbursed for no more than the OJT Force Account budget. At the discretion of the Engineer and if funds are available, the Engineer may increase the force account budget and the number of reimbursable training hours through a Change Order. The request to increase the force account must be approved by the Engineer prior to the training.
11. Upon completion of training, transfer to another project, termination of the trainee or notification of final acceptance of the project, the Contractor shall submit to the Engineer a "final" completed Form 832 for each approved apprentice or trainee.
12. All forms are available from the CDOT Center for Equal Opportunity, through the CDOT Regional Civil Rights Manager, or on CDOT's website at <http://www.coloradodot.info/business/bidding/Bidding%20Forms/Bid%20Winner%20Forms>
13. Forms 838 and 832 shall be completed in full by the Contractor. Reimbursement for training is based on the number of hours of on the job training documented on the Form 832 and approved by the Engineer. The Contractor shall explain discrepancies between the hours documented on Form 832 and the corresponding certified payrolls.
14. The OJT goal (# of training hours required) for the project will be included in the Project Special Provisions and will be determined by the Regional Civil Rights Manager after considering:
 - A. Availability of minorities, women, and disadvantaged for training;
 - B. The potential for effective training;
 - C. Duration of the Contract;
 - D. Dollar value of the Contract;
 - E. Total normal work force that the average bidder could be expected to use;
 - F. Geographic location;
 - G. Type of work; and
 - H. The need for additional journey workers in the area
 - I. The general guidelines for minimum total training hours are as follows:

Contract dollar value	Minimum total training hours to be provided on the project
Up to 1 million	0
>1 - 2 million	320
>2 - 4 million	640
>4 - 6 million	1280
>6 - 8 million	1600
>8 - 12 million	1920
>12 - 16 million	2240
>16 - 20 million	2560
For each increment of \$5 million, over \$20 million	1280

3
ON THE JOB TRAINING

15. The number of training hours for the trainees to be employed on the project shall be as shown in the Contract. The trainees or apprentices employed under the Contract shall be registered with the Department using Form 838, and must be approved by the Regional Civil Rights Manager before training begins for the participation to be counted toward the OJT project goal. The goal will be met by an approved trainee or apprentice working on that project; or, if a Contractor's apprentice is enrolled in a DOL approved apprenticeship program and registered with CDOT using Form 838 and working for the Contractor on a non-CDOT project. The hours worked on the non-CDOT project may be counted toward the project goal with approved documentation on Form 832. Training hours will be counted toward one project goal.
16. Subcontractor trainees who are enrolled in an approved Program may be used by the Contractor to satisfy the requirements of this specification.
17. The Contractor will be reimbursed \$2.00 per hour worked for each apprentice or trainee working on a CDOT project and whose participation toward the OJT project goal has been approved.
18. The Contractor shall have fulfilled its responsibilities under this specification if the CDOT Regional Civil Rights Manager has determined that it has provided acceptable number of training hours.
19. Failure to provide the required training will result in the following disincentives: A sum representing the number of training hours specified in the Contract, minus the number of training hours worked as certified on Form 832, multiplied by the journey worker hourly wages plus fringe benefits [(A hours – B hours worked) x (C dollar per hour + D fringe benefits)] = Disincentives Assessed. Wage rate will be determined by averaging the wages for the crafts listed on Form 1337. The Engineer will provide the Contractor with a written notice at Final Acceptance of the project informing the Contractor of the noncompliance with this specification which will include a calculation of the disincentives to be assessed.

PARTNERING PROGRAM

The Colorado Department of Transportation actively encourages partnering and invites the Contractor and his subcontractors and suppliers to participate in a voluntary partnering agreement for this project.

The following information summarizes the partnering process. More information is available through the Resident Engineer listed in the project special provisions.

This partnership will be structured to draw on the strengths of each organization to identify and achieve mutual goals. The objectives are effective and efficient Contract performance with reciprocal cooperation, and completion within budget, on schedule, and in accordance with the Contract.

This partnership will be bilateral in make-up and all costs associated with this partnership will be agreed to by both parties and will be shared equally. The Contractor shall assume full responsibility for all costs associated with partnering during the implementation of the partnering process. CDOT will reimburse the Contractor for the agreed amount.

The CDOT Program Engineer or the Resident Engineer will contact the Contractor within ten days after the award of this project to ask if the Contractor wants to implement this partnership initiative. If the Contractor agrees, the Contractor's on-site project manager shall meet with CDOT's Resident Engineer to plan a partnering development and team building workshop. At this planning session, arrangements shall be made to determine the facilitator and the workshop, attendees, agenda, duration, and location.

The workshop shall be held prior to the commencement of any major work item and preferably before the preconstruction conference. The following persons shall attend the workshop: CDOT's Resident Engineer, Project Engineer, and key project personnel; the Contractor's on-site project manager and key project supervision personnel; and the subcontractors' key project supervision personnel. The following personnel shall also be invited to attend as needed: project design engineer, key local government personnel, suppliers, design consultants, CDOT maintenance foreman, CDOT environmental manager, key railroad personnel, and key utility personnel. The Contractor and CDOT shall also have Regional or District managers and Corporate or State level managers on the partnering team.

Follow-up workshops may be held periodically throughout the duration of the Contract as agreed by the Contractor and the Engineer at the initial workshop. A closeout workshop shall be held to evaluate the effectiveness of the partnership.

The establishment of a partnership charter, which identifies the workshop participants' mutual goals on the project, will not change the legal relationship of the parties to the Contract or relieve either party from any terms of the Contract.

REQUIRED CONTRACT PROVISIONS
FEDERAL-AID CONSTRUCTION CONTRACTS

Attached is Form FHWA 1273 titled *Required Contract Provisions Federal-Aid Construction Contracts*. As described in Section I. General, the provisions of Form FHWA 1273 apply to all work performed under the Contract and are to be included in all subcontracts with the following modification:

For TAP (Transportation Alternatives Program) funded Recreational Trails projects, Section I (4) regarding convict labor and all of Section IV of the FHWA 1273 do not apply.

REQUIRED CONTRACT PROVISIONS FEDERAL-AID CONSTRUCTION CONTRACTS

FHWA-1273 -- Revised May 1, 2012

REQUIRED CONTRACT PROVISIONS FEDERAL-AID CONSTRUCTION CONTRACTS

- I. General
- II. Nondiscrimination
- III. Nonsegregated Facilities
- IV. Davis-Bacon and Related Act Provisions
- V. Contract Work Hours and Safety Standards Act Provisions
- VI. Subletting or Assigning the Contract
- VII. Safety: Accident Prevention
- VIII. False Statements Concerning Highway Projects
- IX. Implementation of Clean Air Act and Federal Water Pollution Control Act
- X. Compliance with Governmentwide Suspension and Debarment Requirements
- XI. Certification Regarding Use of Contract Funds for Lobbying

immediate superintendence and to all work performed on the contract by piecework, station work, or by subcontract.

3. A breach of any of the stipulations contained in these Required Contract Provisions may be sufficient grounds for withholding of progress payments, withholding of final payment, termination of the contract, suspension / debarment or any other action determined to be appropriate by the contracting agency and FHWA.

4. Selection of Labor: During the performance of this contract, the contractor shall not use convict labor for any purpose within the limits of a construction project on a Federal-aid highway unless it is labor performed by convicts who are on parole, supervised release, or probation. The term Federal-aid highway does not include roadways functionally classified as local roads or rural minor collectors.

ATTACHMENTS

A. Employment and Materials Preference for Appalachian Development Highway System or Appalachian Local Access Road Contracts (included in Appalachian contracts only)

I. GENERAL

1. Form FHWA-1273 must be physically incorporated in each construction contract funded under Title 23 (excluding emergency contracts solely intended for debris removal). The contractor (or subcontractor) must insert this form in each subcontract and further require its inclusion in all lower tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services).

The applicable requirements of Form FHWA-1273 are incorporated by reference for work done under any purchase order, rental agreement or agreement for other services. The prime contractor shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider.

Form FHWA-1273 must be included in all Federal-aid design-build contracts, in all subcontracts and in lower tier subcontracts (excluding subcontracts for design services, purchase orders, rental agreements and other agreements for supplies or services). The design-builder shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider.

Contracting agencies may reference Form FHWA-1273 in bid proposal or request for proposal documents, however, the Form FHWA-1273 must be physically incorporated (not referenced) in all contracts, subcontracts and lower-tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services related to a construction contract).

2. Subject to the applicability criteria noted in the following sections, these contract provisions shall apply to all work performed on the contract by the contractor's own organization and with the assistance of workers under the contractor's

II. NONDISCRIMINATION

The provisions of this section related to 23 CFR Part 230 are applicable to all Federal-aid construction contracts and to all related construction subcontracts of \$10,000 or more. The provisions of 23 CFR Part 230 are not applicable to material supply, engineering, or architectural service contracts.

In addition, the contractor and all subcontractors must comply with the following policies: Executive Order 11246, 41 CFR 60, 29 CFR 1625-1627, Title 23 USC Section 140, the Rehabilitation Act of 1973, as amended (29 USC 794), Title VI of the Civil Rights Act of 1964, as amended, and related regulations including 49 CFR Parts 21, 26 and 27; and 23 CFR Parts 200, 230, and 633.

The contractor and all subcontractors must comply with: the requirements of the Equal Opportunity Clause in 41 CFR 60-1.4(b) and, for all construction contracts exceeding \$10,000, the Standard Federal Equal Employment Opportunity Construction Contract Specifications in 41 CFR 60-4.3.

Note: The U.S. Department of Labor has exclusive authority to determine compliance with Executive Order 11246 and the policies of the Secretary of Labor including 41 CFR 60, and 29 CFR 1625-1627. The contracting agency and the FHWA have the authority and the responsibility to ensure compliance with Title 23 USC Section 140, the Rehabilitation Act of 1973, as amended (29 USC 794), and Title VI of the Civil Rights Act of 1964, as amended, and related regulations including 49 CFR Parts 21, 26 and 27; and 23 CFR Parts 200, 230, and 633.

The following provision is adopted from 23 CFR 230, Appendix A, with appropriate revisions to conform to the U.S. Department of Labor (US DOL) and FHWA requirements.

1. Equal Employment Opportunity: Equal employment opportunity (EEO) requirements not to discriminate and to take affirmative action to assure equal opportunity as set forth under laws, executive orders, rules, regulations (28 CFR 35, 29 CFR 1630, 29 CFR 1625-1627, 41 CFR 60 and 49 CFR 27) and orders of the Secretary of Labor as modified by the

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provisions prescribed herein, and imposed pursuant to 23 U.S.C. 140 shall constitute the EEO and specific affirmative action standards for the contractor's project activities under this contract. The provisions of the Americans with Disabilities Act of 1990 (42 U.S.C. 12101 et seq.) set forth under 28 CFR 35 and 29 CFR 1630 are incorporated by reference in this contract. In the execution of this contract, the contractor agrees to comply with the following minimum specific requirement activities of EEO:

a. The contractor will work with the contracting agency and the Federal Government to ensure that it has made every good faith effort to provide equal opportunity with respect to all of its terms and conditions of employment and in their review of activities under the contract.

b. The contractor will accept as its operating policy the following statement:

"It is the policy of this Company to assure that applicants are employed, and that employees are treated during employment, without regard to their race, religion, sex, color, national origin, age or disability. Such action shall include: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship, pre-apprenticeship, and/or on-the-job training."

2. EEO Officer: The contractor will designate and make known to the contracting officers an EEO Officer who will have the responsibility for and must be capable of effectively administering and promoting an active EEO program and who must be assigned adequate authority and responsibility to do so.

3. Dissemination of Policy: All members of the contractor's staff who are authorized to hire, supervise, promote, and discharge employees, or who recommend such action, or who are substantially involved in such action, will be made fully cognizant of, and will implement, the contractor's EEO policy and contractual responsibilities to provide EEO in each grade and classification of employment. To ensure that the above agreement will be met, the following actions will be taken as a minimum:

a. Periodic meetings of supervisory and personnel office employees will be conducted before the start of work and then not less often than once every six months, at which time the contractor's EEO policy and its implementation will be reviewed and explained. The meetings will be conducted by the EEO Officer.

b. All new supervisory or personnel office employees will be given a thorough indoctrination by the EEO Officer, covering all major aspects of the contractor's EEO obligations within thirty days following their reporting for duty with the contractor.

c. All personnel who are engaged in direct recruitment for the project will be instructed by the EEO Officer in the contractor's procedures for locating and hiring minorities and women.

d. Notices and posters setting forth the contractor's EEO policy will be placed in areas readily accessible to employees, applicants for employment and potential employees.

e. The contractor's EEO policy and the procedures to implement such policy will be brought to the attention of employees by means of meetings, employee handbooks, or other appropriate means.

4. Recruitment: When advertising for employees, the contractor will include in all advertisements for employees the notation: "An Equal Opportunity Employer." All such advertisements will be placed in publications having a large circulation among minorities and women in the area from which the project work force would normally be derived.

a. The contractor will, unless precluded by a valid bargaining agreement, conduct systematic and direct recruitment through public and private employee referral sources likely to yield qualified minorities and women. To meet this requirement, the contractor will identify sources of potential minority group employees, and establish with such identified sources procedures whereby minority and women applicants may be referred to the contractor for employment consideration.

b. In the event the contractor has a valid bargaining agreement providing for exclusive hiring hall referrals, the contractor is expected to observe the provisions of that agreement to the extent that the system meets the contractor's compliance with EEO contract provisions. Where implementation of such an agreement has the effect of discriminating against minorities or women, or obligates the contractor to do the same, such implementation violates Federal nondiscrimination provisions.

c. The contractor will encourage its present employees to refer minorities and women as applicants for employment. Information and procedures with regard to referring such applicants will be discussed with employees.

5. Personnel Actions: Wages, working conditions, and employee benefits shall be established and administered, and personnel actions of every type, including hiring, upgrading, promotion, transfer, demotion, layoff, and termination, shall be taken without regard to race, color, religion, sex, national origin, age or disability. The following procedures shall be followed:

a. The contractor will conduct periodic inspections of project sites to insure that working conditions and employee facilities do not indicate discriminatory treatment of project site personnel.

b. The contractor will periodically evaluate the spread of wages paid within each classification to determine any evidence of discriminatory wage practices.

c. The contractor will periodically review selected personnel actions in depth to determine whether there is evidence of discrimination. Where evidence is found, the contractor will promptly take corrective action. If the review indicates that the discrimination may extend beyond the actions reviewed, such corrective action shall include all affected persons.

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d. The contractor will promptly investigate all complaints of alleged discrimination made to the contractor in connection with its obligations under this contract, will attempt to resolve such complaints, and will take appropriate corrective action within a reasonable time. If the investigation indicates that the discrimination may affect persons other than the complainant, such corrective action shall include such other persons. Upon completion of each investigation, the contractor will inform every complainant of all of their avenues of appeal.

6. Training and Promotion:

a. The contractor will assist in locating, qualifying, and increasing the skills of minorities and women who are applicants for employment or current employees. Such efforts should be aimed at developing full journey level status employees in the type of trade or job classification involved.

b. Consistent with the contractor's work force requirements and as permissible under Federal and State regulations, the contractor shall make full use of training programs, i.e., apprenticeship, and on-the-job training programs for the geographical area of contract performance. In the event a special provision for training is provided under this contract, this subparagraph will be superseded as indicated in the special provision. The contracting agency may reserve training positions for persons who receive welfare assistance in accordance with 23 U.S.C. 140(a).

c. The contractor will advise employees and applicants for employment of available training programs and entrance requirements for each.

d. The contractor will periodically review the training and promotion potential of employees who are minorities and women and will encourage eligible employees to apply for such training and promotion.

7. Unions: If the contractor relies in whole or in part upon unions as a source of employees, the contractor will use good faith efforts to obtain the cooperation of such unions to increase opportunities for minorities and women. Actions by the contractor, either directly or through a contractor's association acting as agent, will include the procedures set forth below:

a. The contractor will use good faith efforts to develop, in cooperation with the unions, joint training programs aimed toward qualifying more minorities and women for membership in the unions and increasing the skills of minorities and women so that they may qualify for higher paying employment.

b. The contractor will use good faith efforts to incorporate an EEO clause into each union agreement to the end that such union will be contractually bound to refer applicants without regard to their race, color, religion, sex, national origin, age or disability.

c. The contractor is to obtain information as to the referral practices and policies of the labor union except that to the extent such information is within the exclusive possession of the labor union and such labor union refuses to furnish such information to the contractor, the contractor shall so certify to the contracting agency and shall set forth what efforts have been made to obtain such information.

d. In the event the union is unable to provide the contractor with a reasonable flow of referrals within the time limit set forth in the collective bargaining agreement, the contractor will, through independent recruitment efforts, fill the employment vacancies without regard to race, color, religion, sex, national origin, age or disability; making full efforts to obtain qualified and/or qualifiable minorities and women. The failure of a union to provide sufficient referrals (even though it is obligated to provide exclusive referrals under the terms of a collective bargaining agreement) does not relieve the contractor from the requirements of this paragraph. In the event the union referral practice prevents the contractor from meeting the obligations pursuant to Executive Order 11246, as amended, and these special provisions, such contractor shall immediately notify the contracting agency.

8. Reasonable Accommodation for Applicants / Employees with Disabilities: The contractor must be familiar with the requirements for and comply with the Americans with Disabilities Act and all rules and regulations established there under. Employers must provide reasonable accommodation in all employment activities unless to do so would cause an undue hardship.

9. Selection of Subcontractors, Procurement of Materials and Leasing of Equipment: The contractor shall not discriminate on the grounds of race, color, religion, sex, national origin, age or disability in the selection and retention of subcontractors, including procurement of materials and leases of equipment. The contractor shall take all necessary and reasonable steps to ensure nondiscrimination in the administration of this contract.

a. The contractor shall notify all potential subcontractors and suppliers and lessors of their EEO obligations under this contract.

b. The contractor will use good faith efforts to ensure subcontractor compliance with their EEO obligations.

10. Assurance Required by 49 CFR 26.13(b):

a. The requirements of 49 CFR Part 26 and the State DOT's U.S. DOT-approved DBE program are incorporated by reference.

b. The contractor or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The contractor shall carry out applicable requirements of 49 CFR Part 26 in the award and administration of DOT-assisted contracts. Failure by the contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the contracting agency deems appropriate.

11. Records and Reports: The contractor shall keep such records as necessary to document compliance with the EEO requirements. Such records shall be retained for a period of three years following the date of the final payment to the contractor for all contract work and shall be available at reasonable times and places for inspection by authorized representatives of the contracting agency and the FHWA.

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a. The records kept by the contractor shall document the following:

(1) The number and work hours of minority and non-minority group members and women employed in each work classification on the project;

(2) The progress and efforts being made in cooperation with unions, when applicable, to increase employment opportunities for minorities and women; and

(3) The progress and efforts being made in locating, hiring, training, qualifying, and upgrading minorities and women;

b. The contractors and subcontractors will submit an annual report to the contracting agency each July for the duration of the project, indicating the number of minority, women, and non-minority group employees currently engaged in each work classification required by the contract work. This information is to be reported on [Form FHWA-1391](#). The staffing data should represent the project work force on board in all or any part of the last payroll period preceding the end of July. If on-the-job training is being required by special provision, the contractor will be required to collect and report training data. The employment data should reflect the work force on board during all or any part of the last payroll period preceding the end of July.

III. NONSEGREGATED FACILITIES

This provision is applicable to all Federal-aid construction contracts and to all related construction subcontracts of \$10,000 or more.

The contractor must ensure that facilities provided for employees are provided in such a manner that segregation on the basis of race, color, religion, sex, or national origin cannot result. The contractor may neither require such segregated use by written or oral policies nor tolerate such use by employee custom. The contractor's obligation extends further to ensure that its employees are not assigned to perform their services at any location, under the contractor's control, where the facilities are segregated. The term "facilities" includes waiting rooms, work areas, restaurants and other eating areas, time clocks, restrooms, washrooms, locker rooms, and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing provided for employees. The contractor shall provide separate or single-user restrooms and necessary dressing or sleeping areas to assure privacy between sexes.

IV. DAVIS-BACON AND RELATED ACT PROVISIONS

This section is applicable to all Federal-aid construction projects exceeding \$2,000 and to all related subcontracts and lower-tier subcontracts (regardless of subcontract size). The requirements apply to all projects located within the right-of-way of a roadway that is functionally classified as Federal-aid highway. This excludes roadways functionally classified as local roads or rural minor collectors, which are exempt.

Contracting agencies may elect to apply these requirements to other projects.

The following provisions are from the U.S. Department of Labor regulations in 29 CFR 5.5 "Contract provisions and related matters" with minor revisions to conform to the FHWA-1273 format and FHWA program requirements.

1. Minimum wages

a. All laborers and mechanics employed or working upon the site of the work, will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR part 3)), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics.

Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph 1.d. of this section; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in 29 CFR 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: Provided, That the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates conformed under paragraph 1.b. of this section) and the Davis-Bacon poster (WH-1321) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

b.(1) The contracting officer shall require that any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. The contracting officer shall approve an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:

(i) The work to be performed by the classification requested is not performed by a classification in the wage determination; and

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(ii) The classification is utilized in the area by the construction industry; and

(iii) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(2) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the contracting officer agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by the contracting officer to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, DC 20210. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

(3) In the event the contractor, the laborers or mechanics to be employed in the classification or their representatives, and the contracting officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the contracting officer shall refer the questions, including the views of all interested parties and the recommendation of the contracting officer, to the Wage and Hour Administrator for determination. The Wage and Hour Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

(4) The wage rate (including fringe benefits where appropriate) determined pursuant to paragraphs 1.b.(2) or 1.b.(3) of this section, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

c. Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

d. If the contractor does not make payments to a trustee or other third person, the contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, Provided, That the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

2. Withholding

The contracting agency shall upon its own action or upon written request of an authorized representative of the Department of Labor, withhold or cause to be withheld from the contractor under this contract, or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime contractor, so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of the work, all or part of the wages required by the contract, the contracting agency may, after written notice to the contractor, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

3. Payrolls and basic records

a. Payrolls and basic records relating thereto shall be maintained by the contractor during the course of the work and preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work. Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in section 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR 5.5(a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in section 1(b)(2)(B) of the Davis-Bacon Act, the contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

b. (1) The contractor shall submit weekly for each week in which any contract work is performed a copy of all payrolls to the contracting agency. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under 29 CFR 5.5(a)(3)(i), except that full social security numbers and home addresses shall not be included on weekly transmittals. Instead the payrolls shall only need to include an individually identifying number for each employee (e.g., the last four digits of the employee's social security number). The required weekly payroll information may be submitted in any form desired. Optional Form WH-347 is available for this purpose from the Wage and Hour Division Web site at <http://www.dol.gov/esa/whd/forms/wh347instr.htm>

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or its successor site. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors. Contractors and subcontractors shall maintain the full social security number and current address of each covered worker, and shall provide them upon request to the contracting agency for transmission to the State DOT, the FHWA or the Wage and Hour Division of the Department of Labor for purposes of an investigation or audit of compliance with prevailing wage requirements. It is not a violation of this section for a prime contractor to require a subcontractor to provide addresses and social security numbers to the prime contractor for its own records, without weekly submission to the contracting agency..

(2) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:

(i) That the payroll for the payroll period contains the information required to be provided under §5.5 (a)(3)(ii) of Regulations, 29 CFR part 5, the appropriate information is being maintained under §5.5 (a)(3)(i) of Regulations, 29 CFR part 5, and that such information is correct and complete;

(ii) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in Regulations, 29 CFR part 3;

(iii) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.

(3) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph 3.b.(2) of this section.

(4) The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under section 1001 of title 18 and section 231 of title 31 of the United States Code.

c. The contractor or subcontractor shall make the records required under paragraph 3.a. of this section available for inspection, copying, or transcription by authorized representatives of the contracting agency, the State DOT, the FHWA, or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, the FHWA may, after written notice to the contractor, the contracting agency or

the State DOT, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

4. Apprentices and trainees

a. Apprentices (programs of the USDOL).

Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship Training, Employer and Labor Services, or with a State Apprenticeship Agency recognized by the Office, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Office of Apprenticeship Training, Employer and Labor Services or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice.

The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the contractor's or subcontractor's registered program shall be observed.

Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination.

In the event the Office of Apprenticeship Training, Employer and Labor Services, or a State Apprenticeship Agency recognized by the Office, withdraws approval of an apprenticeship program, the contractor will no longer be permitted to utilize apprentices at less than the applicable

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predetermined rate for the work performed until an acceptable program is approved.

b. Trainees (programs of the USDOL).

Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration.

The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration.

Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed.

In the event the Employment and Training Administration withdraws approval of a training program, the contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

c. Equal employment opportunity. The utilization of apprentices, trainees and journeymen under this part shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR part 30.

d. Apprentices and Trainees (programs of the U.S. DOT).

Apprentices and trainees working under apprenticeship and skill training programs which have been certified by the Secretary of Transportation as promoting EEO in connection with Federal-aid highway construction programs are not subject to the requirements of paragraph 4 of this Section IV. The straight time hourly wage rates for apprentices and trainees under such programs will be established by the particular programs. The ratio of apprentices and trainees to

journeymen shall not be greater than permitted by the terms of the particular program.

5. Compliance with Copeland Act requirements. The contractor shall comply with the requirements of 29 CFR part 3, which are incorporated by reference in this contract.

6. Subcontracts. The contractor or subcontractor shall insert Form FHWA-1273 in any subcontracts and also require the subcontractors to include Form FHWA-1273 in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in 29 CFR 5.5.

7. Contract termination: debarment. A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract, and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.

8. Compliance with Davis-Bacon and Related Act requirements. All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR parts 1, 3, and 5 are herein incorporated by reference in this contract.

9. Disputes concerning labor standards. Disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and the contracting agency, the U.S. Department of Labor, or the employees or their representatives.

10. Certification of eligibility.

a. By entering into this contract, the contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

b. No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

c. The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001.

V. CONTRACT WORK HOURS AND SAFETY STANDARDS ACT

The following clauses apply to any Federal-aid construction contract in an amount in excess of \$100,000 and subject to the overtime provisions of the Contract Work Hours and Safety Standards Act. These clauses shall be inserted in addition to the clauses required by 29 CFR 5.5(a) or 29 CFR 4.6. As

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used in this paragraph, the terms laborers and mechanics include watchmen and guards.

1. Overtime requirements. No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.

2. Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in paragraph (1.) of this section, the contractor and any subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (1.) of this section, in the sum of \$10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (1.) of this section.

3. Withholding for unpaid wages and liquidated damages. The FHWA or the contacting agency shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (2.) of this section.

4. Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraph (1.) through (4.) of this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (1.) through (4.) of this section.

VI. SUBLETTING OR ASSIGNING THE CONTRACT

This provision is applicable to all Federal-aid construction contracts on the National Highway System.

1. The contractor shall perform with its own organization contract work amounting to not less than 30 percent (or a greater percentage if specified elsewhere in the contract) of the total original contract price, excluding any specialty items designated by the contracting agency. Specialty items may be performed by subcontract and the amount of any such specialty items performed may be deducted from the total original contract price before computing the amount of work required to be performed by the contractor's own organization (23 CFR 635.116).

a. The term "perform work with its own organization" refers to workers employed or leased by the prime contractor, and equipment owned or rented by the prime contractor, with or without operators. Such term does not include employees or equipment of a subcontractor or lower tier subcontractor, agents of the prime contractor, or any other assignees. The term may include payments for the costs of hiring leased employees from an employee leasing firm meeting all relevant Federal and State regulatory requirements. Leased employees may only be included in this term if the prime contractor meets all of the following conditions:

(1) the prime contractor maintains control over the supervision of the day-to-day activities of the leased employees;

(2) the prime contractor remains responsible for the quality of the work of the leased employees;

(3) the prime contractor retains all power to accept or exclude individual employees from work on the project; and

(4) the prime contractor remains ultimately responsible for the payment of predetermined minimum wages, the submission of payrolls, statements of compliance and all other Federal regulatory requirements.

b. "Specialty Items" shall be construed to be limited to work that requires highly specialized knowledge, abilities, or equipment not ordinarily available in the type of contracting organizations qualified and expected to bid or propose on the contract as a whole and in general are to be limited to minor components of the overall contract.

2. The contract amount upon which the requirements set forth in paragraph (1) of Section VI is computed includes the cost of material and manufactured products which are to be purchased or produced by the contractor under the contract provisions.

3. The contractor shall furnish (a) a competent superintendent or supervisor who is employed by the firm, has full authority to direct performance of the work in accordance with the contract requirements, and is in charge of all construction operations (regardless of who performs the work) and (b) such other of its own organizational resources (supervision, management, and engineering services) as the contracting officer determines is necessary to assure the performance of the contract.

4. No portion of the contract shall be sublet, assigned or otherwise disposed of except with the written consent of the contracting officer, or authorized representative, and such consent when given shall not be construed to relieve the contractor of any responsibility for the fulfillment of the contract. Written consent will be given only after the contracting agency has assured that each subcontract is

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evidenced in writing and that it contains all pertinent provisions and requirements of the prime contract.

5. The 30% self-performance requirement of paragraph (1) is not applicable to design-build contracts; however, contracting agencies may establish their own self-performance requirements.

VII. SAFETY: ACCIDENT PREVENTION

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

1. In the performance of this contract the contractor shall comply with all applicable Federal, State, and local laws governing safety, health, and sanitation (23 CFR 635). The contractor shall provide all safeguards, safety devices and protective equipment and take any other needed actions as it determines, or as the contracting officer may determine, to be reasonably necessary to protect the life and health of employees on the job and the safety of the public and to protect property in connection with the performance of the work covered by the contract.

2. It is a condition of this contract, and shall be made a condition of each subcontract, which the contractor enters into pursuant to this contract, that the contractor and any subcontractor shall not permit any employee, in performance of the contract, to work in surroundings or under conditions which are unsanitary, hazardous or dangerous to his/her health or safety, as determined under construction safety and health standards (29 CFR 1926) promulgated by the Secretary of Labor, in accordance with Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 3704).

3. Pursuant to 29 CFR 1926.3, it is a condition of this contract that the Secretary of Labor or authorized representative thereof, shall have right of entry to any site of contract performance to inspect or investigate the matter of compliance with the construction safety and health standards and to carry out the duties of the Secretary under Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C.3704).

VIII. FALSE STATEMENTS CONCERNING HIGHWAY PROJECTS

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

In order to assure high quality and durable construction in conformity with approved plans and specifications and a high degree of reliability on statements and representations made by engineers, contractors, suppliers, and workers on Federal-aid highway projects, it is essential that all persons concerned with the project perform their functions as carefully, thoroughly, and honestly as possible. Willful falsification, distortion, or misrepresentation with respect to any facts related to the project is a violation of Federal law. To prevent any misunderstanding regarding the seriousness of these and similar acts, Form FHWA-1022 shall be posted on each Federal-aid highway project (23 CFR 635) in one or more

places where it is readily available to all persons concerned with the project:

18 U.S.C. 1020 reads as follows:

"Whoever, being an officer, agent, or employee of the United States, or of any State or Territory, or whoever, whether a person, association, firm, or corporation, knowingly makes any false statement, false representation, or false report as to the character, quality, quantity, or cost of the material used or to be used, or the quantity or quality of the work performed or to be performed, or the cost thereof in connection with the submission of plans, maps, specifications, contracts, or costs of construction on any highway or related project submitted for approval to the Secretary of Transportation; or

Whoever knowingly makes any false statement, false representation, false report or false claim with respect to the character, quality, quantity, or cost of any work performed or to be performed, or materials furnished or to be furnished, in connection with the construction of any highway or related project approved by the Secretary of Transportation; or

Whoever knowingly makes any false statement or false representation as to material fact in any statement, certificate, or report submitted pursuant to provisions of the Federal-aid Roads Act approved July 1, 1916, (39 Stat. 355), as amended and supplemented;

Shall be fined under this title or imprisoned not more than 5 years or both."

IX. IMPLEMENTATION OF CLEAN AIR ACT AND FEDERAL WATER POLLUTION CONTROL ACT

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

By submission of this bid/proposal or the execution of this contract, or subcontract, as appropriate, the bidder, proposer, Federal-aid construction contractor, or subcontractor, as appropriate, will be deemed to have stipulated as follows:

1. That any person who is or will be utilized in the performance of this contract is not prohibited from receiving an award due to a violation of Section 508 of the Clean Water Act or Section 306 of the Clean Air Act.

2. That the contractor agrees to include or cause to be included the requirements of paragraph (1) of this Section X in every subcontract, and further agrees to take such action as the contracting agency may direct as a means of enforcing such requirements.

X. CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY AND VOLUNTARY EXCLUSION

This provision is applicable to all Federal-aid construction contracts, design-build contracts, subcontracts, lower-tier subcontracts, purchase orders, lease agreements, consultant contracts or any other covered transaction requiring FHWA

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approval or that is estimated to cost \$25,000 or more – as defined in 2 CFR Parts 180 and 1200.

1. Instructions for Certification – First Tier Participants:

a. By signing and submitting this proposal, the prospective first tier participant is providing the certification set out below.

b. The inability of a person to provide the certification set out below will not necessarily result in denial of participation in this covered transaction. The prospective first tier participant shall submit an explanation of why it cannot provide the certification set out below. The certification or explanation will be considered in connection with the department or agency's determination whether to enter into this transaction. However, failure of the prospective first tier participant to furnish a certification or an explanation shall disqualify such a person from participation in this transaction.

c. The certification in this clause is a material representation of fact upon which reliance was placed when the contracting agency determined to enter into this transaction. If it is later determined that the prospective participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the contracting agency may terminate this transaction for cause of default.

d. The prospective first tier participant shall provide immediate written notice to the contracting agency to whom this proposal is submitted if any time the prospective first tier participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.

e. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180 and 1200. "First Tier Covered Transactions" refers to any covered transaction between a grantee or subgrantee of Federal funds and a participant (such as the prime or general contract). "Lower Tier Covered Transactions" refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). "First Tier Participant" refers to the participant who has entered into a covered transaction with a grantee or subgrantee of Federal funds (such as the prime or general contractor). "Lower Tier Participant" refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

f. The prospective first tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency entering into this transaction.

g. The prospective first tier participant further agrees by submitting this proposal that it will include the clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transactions," provided by the department or contracting agency, entering

into this covered transaction, without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the \$25,000 threshold.

h. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the Excluded Parties List System website (<https://www.epls.gov/>), which is compiled by the General Services Administration.

i. Nothing contained in the foregoing shall be construed to require the establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of the prospective participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

j. Except for transactions authorized under paragraph (f) of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause or default.

* * * * *

2. Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion – First Tier Participants:

a. The prospective first tier participant certifies to the best of its knowledge and belief, that it and its principals:

(1) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency;

(2) Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;

(3) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (a)(2) of this certification; and

(4) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.

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

2. Instructions for Certification - Lower Tier Participants:

(Applicable to all subcontracts, purchase orders and other lower tier transactions requiring prior FHWA approval or estimated to cost \$25,000 or more - 2 CFR Parts 180 and 1200)

a. By signing and submitting this proposal, the prospective lower tier is providing the certification set out below.

b. The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that the prospective lower tier participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department, or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

c. The prospective lower tier participant shall provide immediate written notice to the person to which this proposal is submitted if at any time the prospective lower tier participant learns that its certification was erroneous by reason of changed circumstances.

d. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180 and 1200. You may contact the person to which this proposal is submitted for assistance in obtaining a copy of those regulations. "First Tier Covered Transactions" refers to any covered transaction between a grantee or subgrantee of Federal funds and a participant (such as the prime or general contract). "Lower Tier Covered Transactions" refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). "First Tier Participant" refers to the participant who has entered into a covered transaction with a grantee or subgrantee of Federal funds (such as the prime or general contractor). "Lower Tier Participant" refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

e. The prospective lower tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency with which this transaction originated.

f. The prospective lower tier participant further agrees by submitting this proposal that it will include this clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction," without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the \$25,000 threshold.

g. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the Excluded Parties List System website (<https://www.epls.gov/>), which is compiled by the General Services Administration.

h. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

i. Except for transactions authorized under paragraph e of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

* * * * *

Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion--Lower Tier Participants:

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

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

* * * * *

XI. CERTIFICATION REGARDING USE OF CONTRACT FUNDS FOR LOBBYING

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts which exceed \$100,000 (49 CFR 20).

1. The prospective participant certifies, by signing and submitting this bid or proposal, to the best of his or her knowledge and belief, that:

a. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of

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Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

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

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

3. The prospective participant also agrees by submitting its bid or proposal that the participant shall require that the language of this certification be included in all lower tier subcontracts, which exceed \$100,000 and that all such recipients shall certify and disclose accordingly.

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**ATTACHMENT A - EMPLOYMENT AND MATERIALS
PREFERENCE FOR APPALACHIAN DEVELOPMENT
HIGHWAY SYSTEM OR APPALACHIAN LOCAL ACCESS
ROAD CONTRACTS**

This provision is applicable to all Federal-aid projects funded under the Appalachian Regional Development Act of 1965.

1. During the performance of this contract, the contractor undertaking to do work which is, or reasonably may be, done as on-site work, shall give preference to qualified persons who regularly reside in the labor area as designated by the DOL wherein the contract work is situated, or the subregion, or the Appalachian counties of the State wherein the contract work is situated, except:

a. To the extent that qualified persons regularly residing in the area are not available.

b. For the reasonable needs of the contractor to employ supervisory or specially experienced personnel necessary to assure an efficient execution of the contract work.

c. For the obligation of the contractor to offer employment to present or former employees as the result of a lawful collective bargaining contract, provided that the number of nonresident persons employed under this subparagraph (1c) shall not exceed 20 percent of the total number of employees employed by the contractor on the contract work, except as provided in subparagraph (4) below.

2. The contractor shall place a job order with the State Employment Service indicating (a) the classifications of the laborers, mechanics and other employees required to perform the contract work, (b) the number of employees required in each classification, (c) the date on which the participant estimates such employees will be required, and (d) any other pertinent information required by the State Employment Service to complete the job order form. The job order may be placed with the State Employment Service in writing or by telephone. If during the course of the contract work, the information submitted by the contractor in the original job order is substantially modified, the participant shall promptly notify the State Employment Service.

3. The contractor shall give full consideration to all qualified job applicants referred to him by the State Employment Service. The contractor is not required to grant employment to any job applicants who, in his opinion, are not qualified to perform the classification of work required.

4. If, within one week following the placing of a job order by the contractor with the State Employment Service, the State Employment Service is unable to refer any qualified job applicants to the contractor, or less than the number requested, the State Employment Service will forward a certificate to the contractor indicating the unavailability of applicants. Such certificate shall be made a part of the contractor's permanent project records. Upon receipt of this certificate, the contractor may employ persons who do not normally reside in the labor area to fill positions covered by the certificate, notwithstanding the provisions of subparagraph (1c) above.

5. The provisions of 23 CFR 633.207(e) allow the contracting agency to provide a contractual preference for the

use of mineral resource materials native to the Appalachian region.

6. The contractor shall include the provisions of Sections 1 through 4 of this Attachment A in every subcontract for work which is, or reasonably may be, done as on-site work.

Appendix A

Project Submittals

PROJECT SUBMITTAL FORM

PROJECT: **B½ Rd. Overpass at U.S. 50 Multimodal Conversion Project**

CONTRACTOR:

PROJECT ENGINEER: Lee Cooper

Description	Date Received	Resubmittal Requested	Resubmittal Received	Date Accepted
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STREET CONSTRUCTION

Hot Mix Asphalt (Grading SX) (75) (PG 64-22)				
Hot Mix Asphalt (Grading SX) (75) (PG 76-28)				
Aggregate Base Course gradation, Proctor curve (Class 6)				
Aggregate Base Course gradation, (Class 1 & 3)				
Concrete Mix Design (CDOT Class D Concrete)				
Reinforcing Steel				
Geotextile (Separator) (Class 2)				
Geogrid Reinforcement				
Guardrail Type 7 (Style CA)				
Guardrail (Special)				
Transition Type 3G (31 in. MGS)				
End Anchorage (Flared) (31 in. MGS)				

UTILITY CONSTRUCTION

Reinforced Concrete Pipe (Various Sizes)				
Manhole Slab Base (10 & 15 Foot)				
Inlet Special (5 Foot)				
Inlet Type 13 (5 Foot)				
2 Inch Electrical Conduit (Bridge) (Special)				
2 Inch Electrical Conduit (Plastic)				
Conduit (4" Broadband)				
Pull Box (30"x48"x24") (Broadband)				
Type One Pull Box				
Pipe Bedding Gradation (Type A)				
6 Inch Plastic Pipe (C-900, PVC)				
Wiring				
Light Standard and Luminaire				

Description	Date Received	Resubmittal Requested	Resubmittal Received	Date Accepted
(Pedestrian)				
Light Standard Foundation (Special)				
Light Control Center (Special)				

EROSION CONTROL/STORMWATER MANAGEMENT

Concrete Washout Facility				
Storm Drain Inlet Protection (Type II)				
Erosion Log (12 Inch)				

PERMITS, PLANS, OTHER

Traffic Control Plan(s)				
Contractor's Construction Schedule				
CDPHE Dewatering Permit (If Necessary)				
Hourly Labor and Equipment Rate Tables				

APPENDIX B

**CDOT Disadvantage Business Enterprise (DBE) Program Plan
CDOT Forms: 1414, 1415, 1416**

ANTICIPATED DBE PARTICIPATION PLAN

Bidder:		Project:	
Contact:		Project Code:	
Phone:		Date of Proposal:	
Email:		Contract Goal:	
Preferred Contact Method:		Region:	

DBE Commitments			
DBE Firm Name	Work to Be Performed	Commitment Amount	Eligible Participation
Total Eligible Participation			
Total Bid Amount			
Total Eligible Participation Percentage			

Bidder Signature

This section must be signed by an individual with the authority to bind the Bidder. By signing this form, as an authorized representative of the Bidder, you declare under penalty of perjury in the second degree and any other applicable state or federal laws that the statements made in this document are true and complete to the best your knowledge. Further, you attest that you have read the Standard Special Provision Disadvantaged Business Enterprise Requirements and understand the following:

CDOT shall not award a contract until it has been determined that the contract goal has been met or that you have otherwise demonstrated good cause. Once your proposal has been submitted, commitments may not be modified or terminated without the approval of CDOT. If selected as the lowest apparent bidder, you shall submit a Form 1415 for each commitment listed above. If you have not met the contract goal, you will also be required to submit documentation of all good faith efforts to meet the contract goal.

It is your responsibility to ensure that the selected DBEs are certified for the work to be performed and that their eligible participation has been properly counted. For additional information and instructions on calculating eligible participation, see the Standard Special Provision Disadvantaged Business Enterprise Requirements.

Name	Title	Signature	Date

COLORADO DEPARTMENT OF TRANSPORTATION

COMMITMENT CONFIRMATION

SECTION 1. This section must be completed by the Contractor.

Project:		Project Code:	
Bidder/Contractor:		Phone:	
Contact:		Email:	
DBE Firm Name:		DBE Phone:	
DBE Address:		DBE Email:	

Commitment Details

Category	Work to be Performed	DBE Work Code(s)	Commitment Amount	Eligible Participation
Construction				
Trucking				
Supplies				
Services				
Total				

This section must be signed by an individual with the power to contractually bind the Bidder/Contractor. You declare under penalty of perjury in the second degree and any other applicable state or federal laws that the statements made in this document are complete, true and accurate to the best of your knowledge.

Bidder/Contractor Representative	Title	Signature	Date
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SECTION 2. This section must be completed by the DBE. (Attach additional pages if necessary).

This document is not a contract with the Bidder/Contractor; it is an acknowledgement of the obligation that the Bidder/Contractor is making to CDOT. The amounts listed above may be less than the subcontractor or purchase order amount, but can never be more, and shall not reflect any mark up by the Bidder/Contractor. **All questions must be answered.**

Are you contracting directly with the Bidder/Contractor or with one of its subcontractors? If with a subcontractor, provide the firm name.	
Will you be purchasing supplies or materials or leasing or renting equipment from the Bidder/Contractor or its subcontractors? If so, explain.	
Do you intend to subcontract any portion of the work listed above? If yes, state to which firms, what work and the approximate amount. Include trucking subcontractors and owner-operators.	
Will you be providing trucking services on this project? If so, state how many of your own trucks and employees you will have on this project.	
Who within your firm will be supervising and responsible for your firm's work on this project?	
Will you be acting as a broker on this project? If so, state what you will be brokering and your approximate brokerage fee.	
Will you be acting as a supplier on this project? If so, please state what you will be supplying and whether you will manufacture the items.	

This section must be signed by an individual with the power to contractually bind the DBE. You declare under penalty of perjury in the second degree and any other applicable state or federal laws that the statements made in this document are complete, true and to the best of your knowledge. You attest that you are eligible to participate as a DBE on this contract for the work listed above and have the capacity to perform the work as stated.

DBE Representative	Title	Signature	Date

See the DBE Standard Special provision for additional information on completing and submitting this form.

Pre-award CDOT projects: Submit this form to the CDOT Civil Rights and Business Resource Center via fax to (303)757-9019. All originals must be sent to: CDOT Civil Rights and Business Resource Center, 4201 E. Arkansas Ave. Room 150, Denver, CO 80222.

Pre-award local agency projects: Submit this form to the local agency. All originals must be sent to: CDOT Civil Rights and Business Resource Center, 4201 E. Arkansas Ave. Room 150, Denver, CO 80222.

APPENDIX C

Special Notice to Contractors

Special Notice to Contractors – 16a

1. SCOPE

1.1 It is the intent of this chapter to provide guidelines to the Contractor or Sub-Contractor, so that they can properly present their materials for inclusion in the construction project.

1.2 The Contractor shall follow the procedures listed below to ensure the proper inspection, sampling, testing, and certification of materials and products incorporated into all construction projects.

1.3 “Prequalification of Bidders” (Standard Specifications, Subsection 102.01) is synonymous with any reference to the CDOT “Pre-Qual List”. A Prime Contractor requiring additional information regarding bidding can go to <https://www.codot.gov/business/bidding>.

1.4 The Qualified Manufacturers List (QML) is used for suppliers of Steel Reinforcing Bars & Steel Dowel Bars, Epoxy-Coated Steel Reinforcing Bars & Epoxy-Coated Steel Dowel Bars, and Precast Concrete Structures. These products are required to be selected off the QML. All relevant details for the proper submittal of specified Standard Manufactured Materials and Fabricated Structural Materials are found in CDOT’s Field Materials Manual under CP 11, Quality Management Plans for the Qualified Manufacturers List or the Approved Products List.

2. PROVIDE NOTIFICATION OF MATERIALS SOURCES AND SUPPLIERS

2.1 In accordance with Subsection 106.01 of the Standard Specifications: The Contractor shall submit a formal list of material sources and suppliers to the Engineer at least two weeks prior to delivery; however, it is preferable that the list be presented at the Pre-Construction Meeting. The Department will sample and test materials proposed by the Contractor to be utilized for Items 203, 206, and 304. If the Department test results indicate the material is not in conformance with the project specifications, the Contractor is directed to Subsection 106.02 regarding Contractor Source materials and additional testing requirements.

2.2 The list shall include: item to be supplied, quantity, a reference to the level of acceptance required by CDOT (per Section 7, Designated Products and Assemblies), company name and

address supplying the material, and contact person (if the material is to be pre-inspected or if a problem exists with the material delivered). The submitted list shall indicate, immediately after the item being supplied, the applicable acceptance level required:

- (A) Pre-Inspection (PI)
- (B) Certified Test Report (CTR)
- (C) Certificate of Compliance (COC)
- (D) Pre-Approved (per APL)

2.3 All required product or material documentation shall be provided at the point and time of delivery to the construction project. Failure to provide the required documents, such as CTRs and COCs, may result in rejection of the materials. Failure to utilize the QML or APL may result in rejection of the materials.

3. INNOVATIVE CONTRACTING (DESIGN / BUILD PROJECTS, CM/GC PROJECTS, ETC.) - MATERIALS DOCUMENTATION RECORD, CDOT FORM #250

3.1 Two weeks before construction of any element of work the Contractor shall furnish the Engineer a schedule of items, approximate quantities to be incorporated into the project, and a reference to the method of acceptance required by CDOT (per Section 7, Designated Products and Assemblies). This information is to include the item of work with its placement location and dates. The Contractor shall immediately notify the Engineer, in writing, if the items of work or quantities are revised.

3.2 At the completion of the project, the Contractor shall furnish the Engineer with a completed CDOT Form #250 - Materials Documentation Record listing items utilized to construct the project and the approximate quantity of each item.

4. BUY AMERICA REQUIREMENTS

4.1 In accordance with Subsection 106.11 of the Standard Specifications as referenced in 23 CFR Part 635.410:

4.1.A Regulations require the use of domestic steel and iron in Federally funded construction projects. All steel and iron materials and products are covered under the Buy America requirements regardless of the percentage they comprise in a manufactured product or the form they may take.

(See “C” below for examples.) Buy American strictly limits, but does not eliminate, the amount of foreign steel. (See “E” for minimum use & waiver information.)

4.1.B All manufacturing processes are defined as “processes required to change the raw ore or scrap metal into the finished, in-place steel or iron product”. Manufacturing begins with the initial melting and mixing, and continues through the coating stage. Any process which modifies the chemical content, the physical size or shape, or the final finish is considered a manufacturing process.

4.1.C Examples of products that are subject to Buy America requirements include, but are not limited to, the following:

- steel or iron products used in pavements, bridges, tunnels or other structures, which include, but are not limited to, the following: fabricated structural steel, reinforcing steel, piling, high strength bolts, anchor bolts, dowel bars, permanently incorporated sheet piling, bridge bearings, cable wire/strand, pre-stressing / post-tensioning wire, motor/machinery brakes and other equipment for moveable structures;
- guardrail, guardrail posts, end sections, terminals, cable guardrail;
- steel fencing material, fence posts;
- steel or iron pipe, conduit, grates, manhole covers, risers;
- mast arms, poles, standards, trusses, or supporting structural members for signs, luminaires, or traffic control systems;
- steel or iron components of precast concrete products, such as reinforcing steel, wire mesh and pre-stressing or post-tensioning strands or cables; and
- steel or iron shelves, washers, nuts, bolts, screws, tie wire, spacers, clamps, chairs, lifting hooks, and door hinges.

4.1.D Products made of material other than steel or iron such as aluminum, copper, brass, nickel, etc. are examples of products which are exempt from Buy America requirements.

4.1.E Buy America will not prevent a minimal use of foreign steel or iron provided the total project delivery cost of all such steel and iron which includes the cost of delivering the steel and iron to the project, does not exceed one-tenth of one percent of the total contract cost or \$2,500, whichever is greater. With prior concurrence

from FHWA Headquarters, the FHWA Division Administrator may grant a waiver of the Buy America requirements for specific projects. When domestic steel products are available, meeting the contractor’s schedule should not be the basis for requesting a Buy America waiver.

4.1.F The Contractor shall maintain on file at the project the certifications that every process, including the application of a coating, performed on steel or iron products either has or has not been carried out in the United States of America. These certifications shall create a chain of custody, and the lack of these certifications will be justification for rejection of the steel or iron product.

4.1.G Prior to the permanent incorporation into the project of the steel or iron product, the Contractor shall certify in writing to the Project Engineer that the delivered quantity of each material meets the contract Buy America requirements; that the original Buy America Certification from the Supplier is on file in the Contractor’s project office; and the steel or iron products are in compliance with the plans and specifications for this project.

The Contractor shall maintain a document summarizing the date and quantity of the material utilizing CDOT’s Item Number(s) and Item Description(s) delivered to the project, along with the quantity of material installed during the month. The Contractor shall provide documentation of the project delivered cost of all foreign steel or iron permanently incorporated into the project, if any. This summary shall be delivered to the Project Engineer on a monthly basis as established per the revision of Section 106.11 of the Standard Specifications for Road and Bridge Construction. A monthly summary shall be required even if no steel or iron products are incorporated into the project during the month. Examples of these requirements are shown on pages 12 thru 14 of this chapter.

NOTE 1: Section 106.11 of the CDOT Construction Manual contains specific information on Buy America Requirements.

5. GLASS BEADS for PAVEMENT MARKING

5.1 The material shall meet the requirements of Standard Specifications Subsection 106.11, Section 627, and Subsection 713.08.

6. QUALITY MANAGEMENT PLANS FOR

THE QUALIFIED MANUFACTURERS LIST OR THE APPROVED PRODUCTS LIST

6.1 CP 11 specifies requirements and procedures for a certification system that shall be applicable to all referenced manufacturers, as well as suppliers and contractors within certain industries. Certifying a Manufacturer’s Quality Management Plan is not an automatic acceptance of any particular product, but an acknowledgement that the Manufacturer has taken steps to ensure that their quality controls meet the applicable Industry standards. Manufacturers whose Quality Management Plans are acceptable will be placed on the Qualified Manufacturers List (QML). Only Manufacturers listed on the QML will be eligible to provide the referenced products to a CDOT project.

6.2 The following Standard Manufactured Materials as referenced in CP 11 require an annual submission of a Quality Management Plan along with a sample for evaluation.

- Part I, Standard Manufactured Materials
 - Sub-Part 1. Asphalt Binder
 - Sub-Part 2. Asphalt Emulsion
 - Sub-Part 3. Hydraulic Cement
 - Sub-Part 4. Fly Ash
 - Sub-Part 5. Hydrated Lime

These products are located on the APL.

6.3 The following Fabricated Structural Materials as referenced in CP 11 require an annual submission of a Quality Management Plan.

- Part II, Fabricated Structural Materials
 - Sub-Part 1. Steel Reinforcing Bars & Steel Dowel Bars
 - Sub-Part 2. Epoxy-Coated Steel Reinforcing Bars & Epoxy-Coated Steel Dowel Bars
 - Sub-Part 3. Precast Conc. Structures

The QML is located within CDOT’s Approved Products List (APL) web site, at www.codot.gov/business/APL. A Notice to Manufacturers is located within the same web site that references specific evaluation protocols including AASHTO’s National Transportation Product Evaluation Program (NTPEP).

6.4 The respective QML web site pages are updated regularly. All pages will have at least one revision referencing acceptability for the new calendar year.

7. DESIGNATED PRODUCTS AND ASSEMBLIES

7.1 The majority of materials submitted for inclusion on CDOT projects will fall within one of four methods of product acceptance for their sampling and testing. CDOT always retains the right through its Quality Assurance (QA) Program to obtain samples for additional testing and require supplemental documentation.

7.2 If the material or product is not referenced within the four methods of product acceptance then the materials or products must be fabricated or supplied in accordance with the requirements of the applicable Colorado Department of Transportation specifications, plans, and standards. An example of processed materials not found in the following four methods are Aggregate Base Course (ABC), Hot Mix Asphalt (HMA), and Concrete (PCCP). An example of a manufactured product treated uniquely is the Dynamic Message Signs (DMS) which are competitively bid on projects or through state awards.

7.3.a. PRE-INSPECTION (PI):

Pre-Inspection is when representatives from the Colorado Department of Transportation visit a manufacturer’s facility to perform an initial review of the company’s quality control plan and employee certifications, as well as subsequent inspection visitations during the manufacturing of the product. Inspection arrangements shall be made by contacting the CDOT Staff Bridge Fabrication and Construction Inspectors at (303) 757-9339 a minimum of 10 days prior to the beginning of fabrication. Failure to give notification will result in delays to the project and/or rejection of materials or products.

NOTE 2: Bearing Devices and Expansion Devices are inspected randomly at the discretion of the Staff Bridge Fabrication Inspectors.

Products needing Pre-Inspection:

- Bearing Devices (Type III) - Bridge^A
- Expansion Device, Modular - Bridge^A (0-6", through, 0-24")
- Prestressed Concrete Units - Bridge^A
- Structural Steel - Bridge^A

CDOT Form #193 is to be provided with the above referenced products.

7.3.b. CERTIFIED TEST REPORT (CTR):

The Certified Test Report method of acceptance is when a manufacturer is required to submit the actual test results performed on the

material being provided. A CTR shall contain the actual results of tests for the chemical analysis, heat treatment, and/or mechanical properties per the drawing and/or specification. The contract will designate products and assemblies that can be incorporated in the work, if accompanied by Certified Test Reports. The word preceding the "Test Report" may vary between different industries, such as Certified, Mill, Metallurgical, Laboratory; however, they are all considered equivalent.

In accordance with Subsection 106.13 of the Standard Specifications and the requirements of this document, each CTR shall include:

- 1) Department's project number,
- 2) Manufacturer's name,
- 3) Address of manufacturing facility,
- 4) Laboratory name & address,
- 5) Name of product or assembly,
- 6) Complete description of the material,
- 7) Model, catalog, stock no. (if applicable),
- 8) Lot, heat, or batch number identifying the material delivered,
- 9) Date(s) of the laboratory testing,
- 10) All test results that are required so as to verify that the material furnished conforms to all applicable Department specifications. Test results shall be from tests conducted on samples taken from the same lot, heat, or batch.
- 11) The following certification, signed by a person having legal authority to act for the Contractor: [Example on page 6]

The Certified Test Report shall be a legible copy or an original document and shall include the Contractor's original signature. The signature (including corporate title) on the Certified Test Report, under penalty of perjury, shall be of a person having legal authority to act for the manufacturer or the independent testing laboratory. It shall state that the test results show that the product or assembly to be incorporated into the project has been sampled and passed all specified tests in conformity to the plans and specifications for this project. One legible copy or original document of the fully signed Certified Test Report shall be furnished to the Engineer prior to installation of the material. Failure to comply may result in delays to the project and/or rejection of the materials.

Each product or assembly delivered to the project must contain the lot, heat, or batch number identical to that on the accompanying Certified Test Report. Products or assemblies furnished on the basis of Certified Test Reports

may be sampled and tested by the Department and if determined that the material does not meet the applicable specifications, the material will be rejected or accepted according to Subsection 105.03.

An example of what is required on a CTR is on page 15 of this chapter.

Products requiring Certified Test Report (below is an incomplete list):

Bearing Devices (Type III) - Bridge^A
 Bridge Deck Forms, Permanent Steel^A
 Cribbing, Steel
 Geogrid (or COC, per project specs)
 Glass Beads (for pavement marking)
 Mechanical Fasteners (Field)^A
 Overhead Sign Structures^A
 Pedestrian & Bikeway Railing
 Quicklime
 Soil Conditioner
 Structural Plate Structures
 Top Soil
 Traffic Signal Structures^A
 Water, Non-Potable
 Welded Wire Reinforcement

7.3.c. CERTIFICATE OF COMPLIANCE (COC):

The Certificate of Compliance method of acceptance is when a manufacturer is required to submit a document certifying that the material being provided meets all required Department specifications. A COC shall reference the required specifications for the chemical analysis, heat treatment, and/or mechanical properties per the drawing and/or specification, but not the actual test results. The contract will designate products and assemblies that can be incorporated in the work, if accompanied by Certificates of Compliance.

In accordance with Subsection 106.12 of the Standard Specifications and the requirements of this document, the certificate shall include:

- 1) Department's project number,
- 2) Manufacturer's name,
- 3) Address of manufacturing facility,
- 4) Laboratory name & address,
- 5) Name of product or assembly,
- 6) Complete description of the material,
- 7) Model, catalog, stock no.(if applicable),
- 8) Lot, heat, or batch number identifying the material delivered,
- 9) Date(s) of the laboratory testing,
- 10) Listing of all applicable specifications required by the Department for this particular product or assembly. Certificates shall reference the actual

tests conducted on samples taken from the same lot, heat, or batch, and shall include a statement that the product or assembly to be incorporated into the project was fabricated in accordance with and meets the applicable specifications.

- 11) The following certification, signed by a person having legal authority to act for the Contractor: [Example on page 6]

The original Certificate of Compliance shall include the Contractor's original signature. The original signature (including corporate title) on the Certificate of Compliance, under penalty of perjury, shall be of a person having legal authority to act for the manufacturer. It shall state that the product or assembly to be incorporated into the project has been sampled and passed all specified tests in conformity to the plans and specifications for this project. One legible copy of the fully signed Certificate of Compliance shall be furnished to the Engineer prior to installation of material. The original shall be provided to the Engineer before payment for the represented item will be made.

Each product or assembly delivered to the project must contain the lot, heat, or batch number identical to that on the accompanying Certificate of Compliance. Products or assemblies furnished on the basis of Certificates of Compliance may be sampled and tested by the Department and if determined that the material does not meet the applicable specifications, the material will be rejected or accepted according to Subsection 105.03.

An example of what is required on a COC is on page 16 of this chapter.

NOTE 3: If the Plans do not specifically reference a Certified Test Report (Mill Test Report) and the product category is not listed on the Approved Products List within the Pre-Approved level of acceptance, then a COC will be required.

Products requiring Certificate of Compliance (below is an incomplete list):

AEP (Asphalt Emulsion Prime)
 Aggregate Bag (for the bag, CTR for agg.)
 Bearing Devices (Type I, II ^{A,B})
 Bridge Rail, Steel ^A
 Catch Basin Insert
 Cattle Guard Boxes, Pre-Cast
 Concrete Box Culverts, Precast
 Dampproofing, Asphalt
 Delineator Posts, Steel
 Ditch Control (Erosion Log & Silt Dike)
 Dust Palliative, Asphaltic or Magnesium

Chloride
 Erosion Bales ^D
 Expansion Joint Material, Preform. Filler
 Fence (Wires & Posts)
 Fertilizer
 Flumes (all types) Gabions and Slope
 Mattress
 Gaskets
 Geogrid (for Erosion Control)
 Glass Beads (for PMM)
 Guard Rail - End Anchors
 Guard Rail Metal ^A
 Guard Rail Posts - Metal ^A
 Guard Rail - Precast
 Guard Rail Posts - Timber Blocks and
 Posts ^A
 Hay ^D
 Headgates
 Hydraulic Soil Stabilizers
 Inlets, Grates and Frames (Prefab)
 Interior Insulation
 Irrigation Systems
 Lighting, all items
 Light Standards, High Mast
 Light Standards, Metal
 Luminaires (Inclusive)
 Manholes, Rings and Covers (Prefab)
 MSE Wall - Elements ^{A,C}
 Mulch (Hydraulic or Dry Applied)
 Mulch Tackifier
 Pedestrian Bridge ^A
 Perimeter Control (Silt Fence)
 Piling ^A
 Pipes - all material compositions
 Rest Area Materials (construction of)
 Retaining Wall Blocks
 Seeding (Native), Seed ^C
 Sign Panels
 Sprinkler System(s)
 Steel Chairs
 Steel Sign Posts
 Steel Sheet Piling ^A
 Storm Drain Inlet Protection
 Straw ^D
 Structural Glazed Tile and Ceramic Tile
 Structural Plate Structures ^A
 Structural Steel Galvanized ^A
 Treated Timber
 Vegetation (Sod & Plants)
 Water, Potable
 Water Control Devices

Water Lines
Welded Wire Mesh

- C product.
- C Certified Test Report shall be included.
- D Contractor may obtain a current list of Weed Free Forage Crop Producers by contacting the Colorado Department of Agriculture at (303) 239-4149.

NOTE 4:

- A Mill Test Report shall be included.
- B Certified Test Report(s) on components must accompany the material or

Example of stamp or affixed sticker to be placed on Certified Test Reports (CTRs), per Subsection 7.2 B (11).

I herby certify under penalty of perjury that the material listed in this Certified Test Report represents _____(quantity and units) of pay item _____ (pay item # and description) that will be installed in conformance with the plans and specifications on Project Number_____ .	
_____	_____
Contractor Rep. Signature	Date

Example of stamp or affixed sticker to be placed on Certificates of Compliance (COCs), per Subsection 7.2 C (11).

I herby certify under penalty of perjury that the material listed in this Certificate of Compliance represents _____(quantity and units) of pay item _____ (pay item # and description) that will be installed in conformance with the plans and specifications on Project Number_____ .	
_____	_____
Contractor Rep. Signature	Date

7.3.d. PRE-APPROVED (APL):

The Pre-Approved method of acceptance is when a manufacturer is required to submit all relevant documentation on their product in advance of any specific project. A primary requirement to be considered for the Approved Products List (APL) is that the material retains a very high level of uniformity and consistency in its production quality (i.e. not project specific).

The submittal of Product literature /Tech Data Sheet (TDS), Certificates of Compliance, Certified Test Reports, Materials Safety Data Sheets (MSDS), etc., as well as product samples for specific categories combine all previous methods of acceptance into one. A Manufacturer whose product is not currently on the APL should read and follow the instructions within the Notice to Manufacturers on the APL web site at www.codot.gov/business/APL .

Product evaluation can take a minimum APL User Guidance

1. If three or more products are listed for any applicable category then one of these products shall be selected. If the category is unpopulated a COC will be required for the product actually used. If the category is under-populated a COC

of four months to in excess of a year for some product categories. If CDOT specifications need to be altered or created for a product's acceptance then it could take even longer.

In accordance with CDOT's Procedural Directive 1401.1, a manufacturer's product is evaluated within CDOT to determine its acceptability on CDOT construction projects, as defined by CDOT specifications, plans and standards. For additional information on the APL or the web site contact the Product Evaluation Coordinator within the Staff Materials & Geotechnical Branch at 303-398-6566.

Locate products on the web site through *APL Search*, and then use the referenced Category, the Manufacturer's name, or the Product name. A category search requires that the drop-down menus be used.

will be required for the product actually used if not from the APL. CDOT's Subject Matter Expert (SME) for the applicable category shall be contacted for assistance. A CTR may be requested if the Project Engineer deems it appropriate. Contact the CDOT Product Evaluation Coordinator at 303-398-6566 with any

questions.

2. Products that are evaluated on a batch or lot basis and subsequently posted on the APL web site will not be posted indefinitely. They expire two years after their CTR date or they will be removed sooner if informed that the batch or lot is depleted. Specifically this refers to (1) single component, hot-applied, elastomeric membranes for bridge decks, (2) hot poured, joint/crack sealant, and (3) asphalt plug joints.

3. Asphalt Binder and Asphalt Emulsions: Approved asphalt binders and emulsions are valid for the calendar year in which they were tested and approved, as per CP 11. The year is incorporated into the product name. On February 1st of each calendar year product older than two complete years will be automatically removed.

4. Environmental Erosion Control, Soil Retention Covering, and Herbicide Treatment: All questions regarding this category's materials, both the current specifications and the products, should be directed to the CDOT Staff Environmental Branch SME.

5. Traffic Control Pavement Marking Material Sub-Category: All questions regarding pavement marking materials, both the current specifications and the products, should be directed the CDOT Staff Traffic Branch SME.

6. Geosynthetics and Geotextiles: Materials Bulletin (2008 Number 1) dated January 25, 2008 is posted at: <http://www.dot.state.co.us/DesignSupport/Materials%20Bulletins/Materials%20Bulletins.htm>

This Materials Bulletin clarifies the terminology and application of geosynthetics as specified in the standard specifications and the standard special provision (SSP), *Revision of Sections 208, 420, 605, and 712 – Geosynthetics and Geotextiles*. For New York State web site navigation refer to (NYDOT APL Instructions) at <http://internal/infoexchg/organizations.cfm>.

7. Concrete Mix Designs: On the APL website there is a folder listing

concrete mix designs that have been pre-approved. When a concrete mix is placed on the APL, it meets the most current CDOT Standard Specifications; however, it may not meet a CDOT project's Special Provisions. CP 62 is the procedure for approving all concrete mixes for use on a CDOT project.

8. Warm Mix Asphalt (WMA) Mixes:

On the APL website there is a folder listing approved WMA technologies and a folder listing approved contractors for specific WMA technologies that have been pre-approved for use on CDOT Projects. Use of a WMA mix on a Project shall be approved by the Project Engineer.

9. Contractors are required to submit a Certificate of Compliance to the project engineer documenting the selection of the CDOT APL and/or QML products that they wish to include for project incorporation. (Example on Page 17.)

10. APL Quality Assurance Program:

Upon selecting the sub-category or base-category the Product ID (PID), Product Name, Manufacturer, and Comments will be displayed.

(a) By clicking on the PID / Form #595 the Pre-Approved Product Evaluation Request & Summary will be displayed. This will provide the customer with both a mini product data sheet and the information necessary for additional product analysis for specific utilization.

(b) From a Quality Assurance (QA) perspective, it is highly recommended that the **Comments – Add** field be selected so that a database can be generated for products that work best in specific situations. In those rare occasions, bad or flawed products can be removed from the APL. Only comments from the Contractor, applicable sub-contractor, and the project personnel representing the Department will be accepted.

(c) If a product fails to perform to within minimum quality expectations contact the CDOT Product Evaluation Coordinator immediately via e-mail as listed in the APL web site.

DISCLAIMER: The Colorado Department of Transportation (CDOT) is not obligated to any manufacturer to use any of their products listed in the Approved Products List (APL). The APL simply documents that the listed products have been reviewed, tested, and evaluated against CDOT standards, and were found to be acceptable to be used in CDOT projects. Acceptance is based on product quality; however, price or availability may be the determining factor by a contractor or sub-contractor on the CDOT project.

The product shall be removed from the APL if Product Performance comments indicate that field performance is unacceptable to CDOT quality standards or if the product varies from the data as originally submitted. Additional disclaimer information can be found within the APL web site.

<u>APL Category</u>	<u>APL Sub-Category</u>	<u>APL Base Category</u>	<u>Material Code</u>	
Adhesive:	Anchoring, Lateral:	Acrylic	712.10.02.00	
		Cementitious	712.10.02.00	
		Epoxy	712.10.02.00	
	Anchoring, Overhead: Bonding:	Polyester	712.10.02.00	
		N/A	712.10.02.00	
		Epoxy	712.10.01.00	

Asphalt:	Asphalt Release Agent:	Truck Bed Only	401.09.01.00	
		Truck & Equipment	401.09.01.00	
	Binder:	PG 58-28	702.01.01.01	
		PG 58-34	702.01.01.02	
		PG 64-22	702.01.01.03	
		PG 64-28	702.01.01.04	
		PG 70-28	702.01.01.05	
		PG 76-28	702.01.01.06	
	Emulsion:	CSS-1	702.03.18.00	
		CSS-1h	702.03.19.00	
		CRS-2	702.03.15.00	
		CRS-2P	702.03.21.00	
		CRS-2R	702.03.23.00	
		CQS-1h	702.03.20.00	
		HFMS-2	702.03.08.00	
		HFMS-2s	702.03.10.00	
		HFMS-2P	702.03.25.00	
		HFMS-		
		2sP	702.03.26.00	
				HFMS-2h
		HFRS-2P	702.03.24.00	
		SS-1	702.03.11.00	
		SS-1h	702.03.12.00	
		ARA-1P	702.04.02.00	
	Hydrated Lime:	N/A	712.03.01.00	
	Roadway Patching:	Pre-Mixed [Bagged]	401.02.01.00	

Bridge Structures:	Geocomposite Drain:	N/A	712.08.01.01	
	Thin Bonded Overlay:	Epoxy	519.01.00.00	
		Non-Epoxy	519.01.00.00	
	Structural Wrapping Repair	N/A	601.09.02.00	

Concrete:	Admixture:	Air Entraining	711.02.01.00	
		Water-Reducing	711.02.01.00	
		Retarding	711.02.01.00	
		Accelerating	711.02.01.00	
		Water-Reducing & Retarding	711.02.01.00	
		Water-Reducing & Accelerating	711.02.01.00	
		Water-Reducing, High Range	711.02.01.00	

<u>APL Category</u>	<u>APL Sub-Category</u>	<u>APL Base Category</u>	<u>Material Code</u>	
Concrete	Admixture	Water-Reducing, High Range & Retard.	711.02.01.00	
		Extended Set-Control	711.02.01.00	
		Specific Performance	711.02.01.00	
		Concrete Corrosion Inhibitor	711.02.01.00	
		Miscellaneous	711.02.01.00	
	Curing Compound:	Type 1 [Clear, Wax Based]	711.01.01.00	
		Type 1 [Clear, Resin Based]	711.01.01.00	
		Type 2 [White Pigmented, Wax Based]	711.01.01.00	
		Type 2 [White Pigmented, Resin Based]	711.01.01.00	
	Cement:	Portland Cement, ASTM C 150	701.01.01.00	
		Blended Cement, ASTM C 595	701.01.02.00	
		Hydraulic Cement, ASTM C 1157	701.01.03.00	
	Pozzolan:	Fly Ash, Class C	701.02.01.00	
		Fly Ash, Class F	701.02.02.00	
		Fly Ash, Class N	701.02.03.00	
		Silica Fume	701.03.01.00	
	Concrete:	Fiber:	Macro Fiber	709.04.02.00
			Micro Fiber	709.04.02.00
	Grout:	Repair/Patching:	General Purpose [Non-Shrink]	601.02.14.00
			Post-Tensioned Cable	618.02.01.00
Rapid Set, Horizontal			601.09.01.00	
Repair/Patching:	Bonding Agent	Rapid Set, Vertical & Overhead	601.09.01.00	
		Bonding Agent	601.09.01.00	
		Bonding Agent	601.09.01.00	
Drainage:	Culvert Pipe:	Culvert Lining [Repair]	707.12.01.00	
		Open-Cut/Direct-Bury	712.13.02.00	
	Manholes & Inlets:	Manhole Riser	604.04.01.00	
		Trench Drain	712.14.01.00	
		Plastic Drains	712.14.01.00	
Drainage	Storm Water Separator:	Regular Flow Hydrodynamic	604.04.04.01	
		High Flow Hydrodynamic	604.04.04.02	
Environmental:	Sound Wall:	Absorptive	607.02.02.00	
		Reflective	607.02.02.00	
Erosion Control:	Ditch Control:	Silt Berm	208.02.02.00	
		Construction Inlet Protection:	Storm Drain Inlet Protection	208.02.08.01
	Construction Dewatering:	Dewatering Filter Bag	208.02.18.00	
	Concrete Washout Structure:	Pre-Fabricated	208.02.14.00	
	Temporary Slope Drain:	Flexible Pipe	208.02.06.00	
Soil Retention Covering:	Soil Retention Covering:	Manufactured Channel Liner	208.02.06.00	
		SRB [Biodegradable Class 1]	216.02.02.00	
		SRB [Photodegradable Class 1]	216.02.02.00	
		SRB [Biodegradable Class 2]	216.02.02.00	
Soil Retention Covering:	Turf Reinforcement Mat:	SRB [Photodegradable Class 2]	216.02.02.00	
		TRM [Class1]	216.02.03.00	
		TRM [Class 2]	216.02.03.00	
Herbicide Treatment:	Herbicide:	TRM [Class 3]	216.02.03.00	
		Selective ... Application	217.02.01.00	
Paint / Coating:	Anti-Graffiti:	N/A	708.02.01.00	
		Concrete Corrosion Inhibitor:	N/A	708.08.01.00
		Epoxy Coating:	N/A	708.03.03.00
		Structural Concrete Coating:	N/A	708.08.01.00
		Structural Steel Paint:	N/A	708.03.02.00
		Wire Coating:	N/A	

<u>APL Category</u>	<u>APL Sub-Category</u>	<u>APL Base Category</u>	<u>Material Code</u>
Pedestrian Safety:	ADA Truncated Dome:	Embedded	608.02.03.00
		Retrofit	608.02.03.00
	Joint System	N/A	705.01.03.00

Right-of-Way Structure:	Mailbox Support System:	N/A	210.13.01.00
	Utility Enclosure:	N/A	604.04.02.00
	Fence, Non-Standard Coating	N/A	710.03.01.00
	Pole Base Hardware:	N/A	713.05.01.00

Roadway Safety:	Cable Barrier:	NCHRP 350 TL-3	606.02.06.00
		NCHRP 350 TL-4	606.02.06.00
	Guardrail W-Beam:	Guardrail Synthetic Blockout	606.02.04.00
		Guardrail End Treatment	606.02.03.00
	Crash Cushion:	Guardrail Median Terminal	606.02.02.00
		Barrier End Terminal	606.02.02.00
		Impact Attenuator, Std, Perm.	614.07.02.00
		Impact Attenuator, Wide, Perm.	614.07.02.00
		Sand Barrel Impact Attenuator	614.07.02.00
Roadway Safety:	Railing	Pedestrian & Bicycle Vehicle	514.05.01.00 606.02.05.00

Sealant [Joint & Crack]:	Asphaltic Plug Joint:	N/A	518.03.01.00
	Hot Poured, Joint/Crack:	ASTM D 6690, Type II	702.06.01.00
		ASTM D 6690, Type IV	702.06.02.00
		ASTM D 5078	702.06.03.00

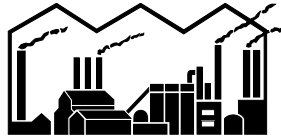
Sealant [Joint & Crack]:	Silicone, Joint:	Non-Sag	705.01.01.00
		Self-Leveling	705.01.01.00
	Pre-Formed Joint Filler:	N/A	705.01.02.00
	Loop Detector Slot:	One Component	705.01.01.00
		Two Component	705.01.01.00

Soil / Geotechnical:	Stabilization:	Chemical, Liquid	308.03.02.01
	Void Elimination:	Polyurethane Foam, Hi Density	308.03.02.01

Traffic Control:	Portable Changeable Message:	Trailer Mount	630.03.01.00
		Vehicle Mount	630.03.01.00
	Arrow Board:	Type A	630.03.01.00
		Type B	630.03.01.00
		Type C	630.03.01.00
		Type D	630.03.01.00
	Speed Notification:	Radar/Message Trailer	630.03.01.00
		Speed Display Trailer	630.03.01.00
		Speed Display Device	630.03.01.00
	Traffic Control Enhancement:	AFAD	630.04.01.00
		Flashing Beacon	614.06.01.00
		Warning Light	630.08.02.00
		Raised Island, Temporary	630.08.02.00
		Rumble Strip, Temporary	630.08.02.00
		Glare Screen	630.08.01.00
	Channelizing Device:	Cone	630.05.01.00
		Tubular Marker	630.05.02.00
		Vertical Panel	630.06.01.00
		Drum	630.06.02.00
		Barricade, Type 1	630.06.02.00
Barricade, Type 2		630.06.02.00	

<u>APL Category</u>	<u>APL Sub-Category</u>	<u>APL Base Category</u>	<u>Material Code</u>
		Barricade, Type 3	630.06.02.00
	Channelizing Device:	Direction Indicator Barricade	630.02.02.00
		Longitudinal Channelizing Device	630.06.04.00
	Delineator:	Opposing Traffic Lane Divider	630.06.03.00
		Flexible Post	612.02.02.00
		Flexible, Multiple Hit Post	612.02.02.00
		Guardrail Mount	612.02.02.00
	Reflective Element:	Barrier (Solid Wall) Marker	612.02.04.00
		Guardrail & Post Marker	612.02.04.00
		Delineator Post Marker	612.02.04.00
		Linear Reflector Strip	612.02.05.00
	Post Anchoring:	Mechanical System	612.05.01.00
		Polyurethane Foam, Backfill	614.02.03.00
	Traffic Barrier, Temporary:	N/A	630.07.01.00
	Crash Cushion, Temporary:	Impact Attenuator, Temporary	630.08.03.00
		Truck Mounted Attenuator (TMA)	630.08.03.00
		Trailer Mounted Attenuator	630.08.03.00
Traffic Control:	Sign Stand:	N/A	630.02.01.00
Traffic Control:	Pave. Marking Material:	Preformed Plastic Tape, Type I, Perm.	713.13.01.00
		Preformed Plastic Tape, Type II, Perm.	713.13.01.00
		Preformed Plastic Tape, Type III Perm.	713.13.01.00
		Thermoplastic, Hot Applied	713.12.01.00
		Thermoplastic, Preformed	713.14.01.00
		Epoxy Paint, Yellow	713.17.01.01
		Epoxy Paint, White	713.17.01.02
	Pave. Marking Material:	Methyl Methacrylate	713.19.01.00
		Raised Flexible Marker	713.18.01.00
		Recessed Pavement Marker	713.18.02.00
Traffic Control:	Sign Sheeting:	ASTM D 4956, Type IV	713.04.01.00
		ASTM D 4956, Type V	713.04.01.00
		ASTM D 4956, Type VI	713.04.01.00
		ASTM D 4956, Type VI [Roll-up & Cone Collar]	713.04.01.00
		ASTM D 4956, Type VIII	713.04.01.00
		ASTM D 4956, Type VIII, Fluorescent	713.04.01.00
		ASTM D 4956, Type IX	713.04.01.00
		ASTM D 4956, Type IX, Fluorescent	713.04.01.00
		ASTM D 4956, Type XI	713.04.01.00
		ASTM D 4956, Type XI, Fluorescent	713.04.01.00
		Films / Miscellaneous	713.04.01.00

Waterproofing:	Concrete Sealer:	Alkyl-alkoxy Silane	515.03.01.00
		Non-Alkyl-alkoxy Silane	515.03.01.00
		Penetrating Epoxy	515.03.01.00
		Micro-Subsurface Repair	515.03.01.00
	Elastomeric Membrane:	Single Component, Hot Applied	705.09.01.00
		Non-Asphaltic	705.08.01.00



Kryptonite Construction Inc.

13369 W. Rocky Rd. Smallville, Colorado 91130
Phone 999-123-4567

Attn: Project Engineer

Date: July 10, 2014

Re: CDOT Contract ID: 53124

Re: CDOT Project No. CC 00-0000-00

Subject: Buy America Certification

Kryptonite Construction hereby certifies that the materials and quantities represented below, to be incorporated into the project, meet the contract Buy America requirements. We also certify that the Buy America paperwork and certifications required by Section 106.11 are on file at the project.

- 1.) 550 LF of 24" culvert pipe for bid item 603-01180

Respectfully,

 Clark Kent
 Construction Manager
 Kryptonite Construction Inc.

EXAMPLE
 (Per requirements of Subsection 4.1)
 (Original Signatures Required, No Facsimiles
 Accepted)

Note 1: The Buy America Certification is to always be received by the Project Engineer prior to the steel or iron being incorporated into the project.

Note 2: The delivery date and/or the incorporation date may be included in the letter.



Kryptonite Construction Inc.

Summary of Buy America Certifications Received for Installed Steel / Iron Products

CDOT Project No.: CC000-000-00

CDOT Contract ID: 53124

Summary for the Period Ending: October 2014

Item	Item Description	Quantity Delivered to Project	Unit	Delivered Cost*	Delivery Date	Installed Quantity	Unit	Installation Month	BUY AMERICA CERTIFICATION Date	BUY AMERICA CERTIFICATION Quantity
603-01180	24" culvert pipe	550	LF		11-Jul-14	300	LF	Aug-14	10-Jul-14	550 LF
						250	LF	Oct-14	10-Jul-14	550 LF
Total	24" culvert pipe	550	LF			550	LF			

Prepared by: _____ Title: _____ Date: _____

* If there is any foreign steel or iron permanently incorporated into the project the Contractor shall provide documentation of the project delivered cost of that foreign steel or iron.

EXAMPLE

Suggested format for the reconciliation of the Buy America Certification quantities with Installed Quantities. The Contractor shall submit this summary to the Project Engineer.

Subsection 4.1.G "The Contractor shall maintain a document summarizing the date and quantity of the material utilizing CDOT Item Number(s) and Item Description(s) delivered to the project, along with the quantity of material installed during the month."



Kryptonite Construction Inc.

13369 W. Rocky Rd. Smallville, Colorado 91130
Phone 999-123-4567

Attn: Project Engineer

Date: November 28, 2014

Re: CDOT Contract ID: 53124

Re: CDOT Project No. CC 00-0000-00

Subject: Buy America Certification

Kryptonite Construction Inc. hereby certifies that throughout the entirety of the above referenced project there was one acquisition of steel / iron from a non-American source. The Minor Exception documentation is on file at the project's Contractor's trailer as required by Section 106.11 of the contract.

- No Exception
- Minor Exceptions: Value less than 1/10 of 1% of the total contract cost or \$ 2,500.00 whichever is greater. Documentation is in our Project Files.

1.) 16 panels of ADA Truncated Domes which were imported from China were incorporated into the project. The total contract cost to date of imported steel or iron is \$1,831.66.

Respectfully,

Clark Kent
Construction Manager
Kryptonite Construction Inc.

EXAMPLE
(Per requirements of Subsection 4.1)
(Original Signatures Required, No Facsimiles Accepted)

American Glass Bead Inc.

Desert Ray, Tx. 76660

Phone: (254)562-2541

Fax: (254)562-2542

www.agbi.com

CERTIFIED TEST REPORT

Colorado Department of Transportation (CDOT) project number: MTCE 03-022

Name of Product: AASHTO M 247 Type 1 Colorado Spec Glass Beads

*Product Code: AGBI- 0123

Product Batch Number: 021805

*Product date of manufacturing: Feb. 18, 2005

*Quantity Shipped: 44000 Pounds

* Date of Shipment: TBA

Laboratory Information:

*AGBI Inc.: HWY 40 & FCR 145

*Testing Date: 2/18/05

* Samples Tested: Samples are from Batch # 021805

AASHTO Designation M 247

*AASHTO M 247 Type 1 Colorado Spec

Test Results: Gradation (ASTM Standard D 1214)

Sieve Designation	Specification for AASHTO M 247 Mass Percent Passing (Type 1)	Test Result
No. 20 (0.850 mm)	100	100
No. 30 (0.600 mm)	75-95	86.9
No. 40 (0.425 mm)	-	-
No. 50 (0.300 mm)	15-35	24.2
No. 80 (0.180 mm)	-	-
No. 100 (0.150 mm)	0-5	.7

AASHTO M 247 Type 1

Test Results: Other Properties

Element / Method	Specification for AASHTO M 247 Specification Limit	Test Result
Roundness/ASTM D 1155	70% min	71.4%
Crushing Resistance ASTM D 1213	Retained 0.425-mm (No. 40) sieve 133N (30 lbs.) min.	Passing
Refractive Index (Ref: TTB1325C Section 4.3.3)	1.50 min	1.52
Moisture Resistance	Non-Moisture absorption & Free flowing	Passing
Flotation	90% of all beads shall float in xylene	n/a

Certification of Material: The referenced material meets or complies with the AASHTO M 247 Type 1 Colorado Specification.

Billy Gibbons

18 Feb, 2005

Billy Gibbons / Quality Control

Date

EXAMPLE

**[Per requirements of Section 7]
(Original Signatures Required,
Legible copy Accepted)**

I hereby certify under penalty of perjury that the material listed in this Certified Test Report represents _____ (quantity and units) of pay item _____ (pay item # and description) that will be installed in conformance with the plans and specifications on Project No. _____.

Contractor

Date

North-By-Northwest, North-By-Northwest, Inc.

9876 S. Eva-Marie Blvd.
Grant, South Dakota 54321
Phone 999-123-4567

Certificate of Compliance

Product Name: Universal Bridge Deck Expansion Joint
Model: .UBDEJ-101
Lot: 135-02

Description: Pre-formed Silicone gland, that can be bonded directly to an Elastomeric concrete joint interface with a single component silicone-locking adhesive.

Material Testing Specifications:

<u>Property</u>	<u>Test Method</u>	<u>Mean Value</u>
Durometer (Shore A)	ASTM D 2240	55
Tensile (psi)	ASTM D 412	650 psi
Elongation (%)	ASTM D 412	382 %
Tear (die B ppi)	ASTM D 624	88 ppi
Compression Set	ASTM D 395	30 %
At 350°F 22 hrs.		
Operating Temperature Range		-60° F to 450° F
Specific Gravity		1.51

State Specification Reference:

Colorado DOT Standard Specifications for Road and Bridge Construction, Section 412.13 (c). Project plans as required.

CDOT Project Number NH 0507-123

The above referenced tests were performed within our laboratory on March 14th 2002. All tests passed and the minimum required values were exceeded. Applicable laboratory test reports are available upon your request.

North-By-Northwest, Inc.

John Doe

John Doe
Manager, Quality Assurance

Date: 22 June 2002

I her Com conf	EXAMPLE	Material listed in this Certificate of (and units) of pay item _____ (description) that will be installed in at Number _____ . _____ Date
	[Per requirements of Section 7] (Original Signatures Required, Legible copy Accepted)	

BlueBerry Shortcake Construction Inc.

411 N. Southland Rd. East Westville, Colorado 91130

Phone 999-123-4567

CERTIFICATE OF CONTRACTOR'S COMPLIANCE FOR APL / QML SELECTION

Date: _____

CDOT Contract ID _____

CDOT Project No.: _____

CDOT Project Location: _____

The following material was selected from the CDOT Approved Products List in accordance with the project plans, the 2011 Standard Specifications for Road and Bridge Construction, and the 2012 Field Materials Manual.

QML Part/Sub-Part: _____

APL Category: _____

APL Sub-Category: _____

APL Base Category: _____

APL Reference No.: _____

Product Name: _____

Manufacturer: _____

Date of Web Site Review & Selection: _____

BlueBerry Shortcake Construction Inc.

Veronica Dee

Veronica Dee
Construction Manager

I hereby certify under penalty of perjury that the material listed in this Certificate of Compliance represents _____ (quantity and units) of pay item _____ (pay item # and description) that will be installed in conformance with plans and specification on Project Number _____ .	
_____ Contractor	_____ Date

<p>EXAMPLE</p> <p>(Per requirements of Subsection 7.3.d)</p> <p>(Original Signatures Required, No Facsimiles Accepted)</p>

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APPENDIX D

CDOT Forms:

CDOT Form #17 – Contractor DBE Payment Certification

CDOT Form #205 B – Sublet Permit Application

CDOT Form #605 – Contractors Performance Capability Statement

CDOT Form #621 – Assignment of Antitrust Claims

COLORADO DEPARTMENT OF TRANSPORTATION CONTRACTOR DBE PAYMENT CERTIFICATION	Project No.: <hr/> Project Code (SA#):
---	---

Section I.

Prime Contractor:

- List the DBE firms and the amount you have paid or will pay for work performed and materials used on this project
- Return both copies to the Project Engineer.
- Retain supporting documentation for a minimum of seven years from the project acceptance date.
- The contractor is required to provide written explanation(s) for final pay amounts that are less than the amount committed on CDOT Form 715 when the difference is 10% or greater. Use space below in **Section II.**

DBE FIRM NAME	AMOUNT	TIER

Section II.

Explain why your company paid less to the project's DBE(s) subcontractors than was shown on CDOT Form 715:

I declare under penalty of perjury in the second degree, and any other applicable state or federal laws, that the statements made in this document are true and complete to the best of my knowledge.

Prime Contractor's Name:	Date: / /
--------------------------	--------------

Authorized Representative's Signature and Title:

COLORADO DEPARTMENT OF TRANSPORTATION
CONTRACTORS PERFORMANCE CAPABILITY STATEMENT

Project #

1. List names of partnerships or joint ventures none

2. List decreases in the contractors fiscal or workmanship qualifications compared to the last prequalification statement submitted to CDOT. (Attach additional sheets if necessary.)

a. Key personnel changes none

b. Key equipment changes none

c. Fiscal capability changes (legal actions, etc.) none

d. Other changes that may effect the contractors ability to perform work. none

I DECLARE UNDER PENALTY OF PERJURY IN THE SECOND DEGREE, AND ANY OTHER APPLICABLE STATE OR FEDERAL LAWS, THAT THE STATEMENTS MADE ON THIS DOCUMENT ARE TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE

Contractor's firm or company name

By

Date

Title

2nd Contractor's firm or company name (if joint venture)

By

Date

Title

**COLORADO DEPARTMENT OF TRANSPORTATION
ASSIGNMENT OF ANTITRUST CLAIMS**

PROJECT NO.

Contractor and Colorado Department of Transportation (CDOT) recognize that in actual economic practice antitrust violations ultimately impact on CDOT. Therefore, for good cause and as consideration for executing this contract and for receiving payments hereunder:

1. Contractor hereby irrevocably assigns to CDOT any and all claims it may now have or which may hereafter accrue to it under federal or state antitrust laws in connection with the particular project, goods or services purchased or acquired by CDOT pursuant to this contract.
2. Contractor hereby expressly agrees:
 - a. That, upon becoming aware that a third party has commenced a civil action asserting on Contractor's behalf an antitrust claim which has been assigned to CDOT hereunder, Contractor shall immediately advise in writing:
 - (1) Such third party that the antitrust claim has been assigned to CDOT, and
 - (2) CDOT that such civil action is pending and of the date on which, in accordance with subparagraph a. (1) above, Contractor notified such third party that the antitrust claim had been assigned to CDOT;
 - b. To take no action which will in any way diminish the value of the claims or rights assigned or dedicated to CDOT hereunder; and
 - c. Promptly to pay over to CDOT its proper share of any payment under an antitrust claim brought on Contractor's behalf by any third party and which claim has been assigned to CDOT hereunder.
3. Further, Contractor agrees that in the event it hires one or more subcontractors to perform any of its duties under the contract, Contractor shall require that each such subcontractor:
 - a. Irrevocably assign to CDOT (as a third party beneficiary) any and all claims that such subcontractor may have or which may thereafter accrue to the subcontractor under federal or state antitrust laws in connection with any goods or services provided by the subcontractor in carrying out the subcontractor's obligations to Contractor;
 - b. Upon becoming aware that a third party has commenced a civil action on the subcontractor's behalf asserting an antitrust claim which has been assigned to CDOT hereunder, shall immediately advise in writing:
 - (1) Such third party that the antitrust claim has been assigned to CDOT, and
 - (2) Contractor and CDOT that such civil action is pending and of the date on which, in accordance with subparagraph b. (1) above, the subcontractor notified such third party that the antitrust claim had been assigned to CDOT;
 - c. Take no action which will in any way diminish the value of the claims or rights assigned or dedicated to CDOT hereunder; and
 - d. Promptly pay over to CDOT its proper share of any payment under an antitrust claim brought on the subcontractor's behalf by any third party and which claim has been assigned or dedicated to CDOT pursuant hereto.

I, acting in my capacity as officer of a bidder (bidders if a joint venture) do agree to the above assignment of antitrust claims.

Contractor's firm or company name	By	Date
	Title	
2nd contractor's firm or company name. (If joint venture.)	By	Date
	Title	

PoDI / NHS

FHWA PROJECT OF DIVISION INTEREST? (PoDI) NO YES

NATIONAL HIGHWAY SYSTEM? NO YES

DESCRIPTION OF PROJECT

A MULTI-MODAL CONVERSION PROJECT FOR B 1/2 ROAD FROM US 50 TO 27 3/4 ROAD IMPLEMENTING "COMPLETE STREETS" DESIGN STANDARDS. THIS PROJECT IS A SAFETY AND A MULTI MODAL TRANSPORTATION ENHANCEMENT PROJECT WHICH INCLUDES CONSTRUCTION OF A COMBINATION OF PAVED AND CONCRETE BICYCLE/PEDESTRIAN PATH ON THE SOUTH SIDE OF THE ROADWAY CONSISTENT IN ALIGNMENT AND WIDTH, PROVIDING CONSISTENT LANDSCAPE AREAS ON THE SOUTH SIDE OF THE ROADWAY, AND CONSTRUCTING STORM DRAIN AND WATER QUALITY FEATURES.

A MANDATORY PRE-BID CONFERENCE WILL BE HELD ON TUESDAY, AUGUST 30, 2016 AT 10:00 AM AT GRAND JUNCTION CITY HALL LOCATED AT 250 NORTH 5TH STREET, GRAND JUNCTION, COLORADO TO PRESENT A BRIEF OVERVIEW OF THE PROJECT AND TO ANSWER QUESTIONS FROM PERSPECTIVE BIDDERS.

TABULATION OF LENGTH & DESIGN DATA

STATION	ROADWAY	
	B 1/2 FEET	B 1/2 MILES
BEGIN PROJECT, TAP M555-032 STA 4+50 = MP 34.10, 90'RT	2950	0.56
END PROJECT, TAP M555-032 STA 34+00 = MP 34.1, 2430'LT		
PROJECT GROSS LENGTH	2950	0.56
2014 DESIGN TRAFFIC	DHV = N/A ADT = 5412	

* FOR INFORMATION ONLY

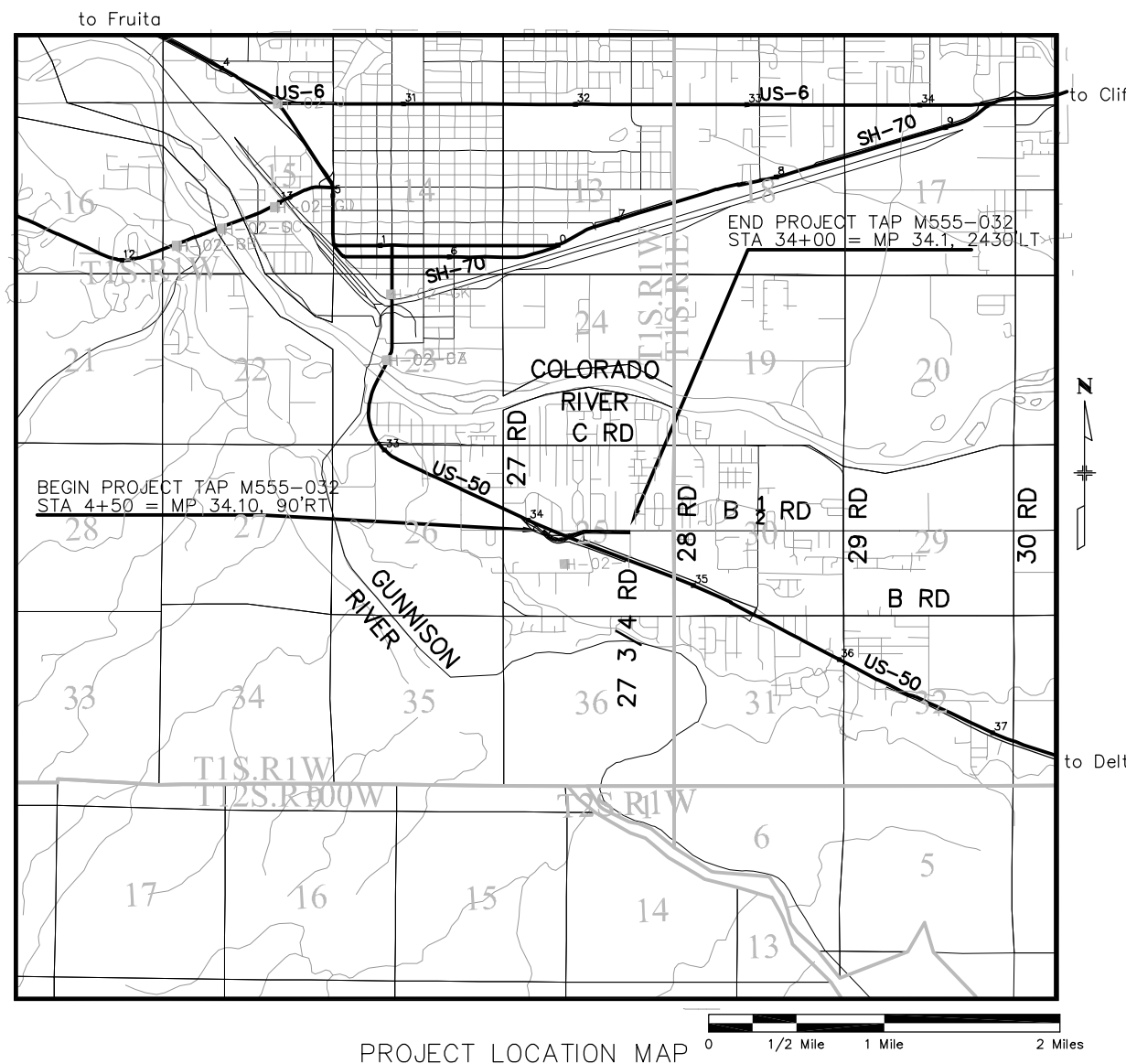
City of Grand Junction, Department of Public Works, Utilities, and Planning

HIGHWAY CONSTRUCTION BID PLANS OF PROPOSED FEDERAL AID PROJECT NO. TAP M 555-032 B 1/2 Rd. Overpass at US 50 Multi-modal Conversion Project MESA COUNTY C.D.O.T. PROJECT CODE NO. 20736 B 1/2 ROAD FROM US 50 TO 27 3/4 ROAD

Related Projects:
P. E. UNDER PROJECT: LEE COOPER
Project Number: TAP M 555-032
Project Code: 20736

R.O.W. Projects:
R.O.W. Project Description: TAP M 555-032

SHEET No.	INDEX OF SHEETS
1	Title Sheet
2	CDOT Standard Plan List
3-5	Typical Sections
6	General Notes
7-8	Summary of Approximate Quantities
9	Project Overview
10	Summary of Earthwork Quantities
11	Tabulation of Removals
12	Tabulation of adjustments and resets
13	Tabulation of Surfacing
14	Tabulation of Guard Rail, Hand Rail, Curb, and Gutter
15	Tabulation of Concrete Sidewalk and Concrete Curb Ramp
16	Tabulation of Drainage Removals & Drainage Items
17	Tabulation of Construction Traffic Control Devices
18-21	Roadway Details
22	Survey Tabulation
23-28	Staking Plan
29-34	Removal Plan
35-40	Roadway Plan
41-49	Intersection Corner Ramp Plan
50-59	Roadway Profile
60-65	Utility Plan
66-70	Drainage Details
71-72	Storm Drain Vicinity Map
73-75	Storm Drain Plan and Profile
76-81	0.1ft Contour Grading Plan
82	Lighting General Notes
83	Lighting Schedule and Tabulation
84-89	Site Electrical Plan
90	Electrical Details, One-Line
91	Lighting Control Center Details
92-94	Light Pole Bridge Connection Details
95	Tabulation of Final Signing
96-101	Signing Plans
102	Tabulation of Final Striping
103-108	Striping Plans
109-112	Storm Water Management Plan
113-118	Storm Water Management Plan - Site Plan
200-233	Roadway Cross Sections
300-323	CDOT S-STANDARD PLAN S-630-1 (TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION)



N:\Landproj\2015 B.5 Rd Multimodal path\dwg\Tittle Sheet.dwg, 8/10/2016 2:34:07 PM

B 1/2 Rd. Overpass at US 50 Multimodal Conversion Project, Bid PLAN SET July 2016



Know what's below.
Call before you dig.

Print Date: at left	0000	Sheet Revisions				As Constructed	Contract Information		Project No./Code
File Name: at left		Date:	Comments	Init.		No Revisions:	Contractor:	TAP M555-032	
Horiz. Scale: As Noted Vert. Scale: As Noted						Revised:	Resident Engineer:	20736	
Unit Information: City of GJ Unit Leader Initials: jjv						Void:	Project Engineer:	PROJECT STARTED: ___/___/___ ACCEPTED: ___/___/___	
						Comments:	Sheet Number 1		


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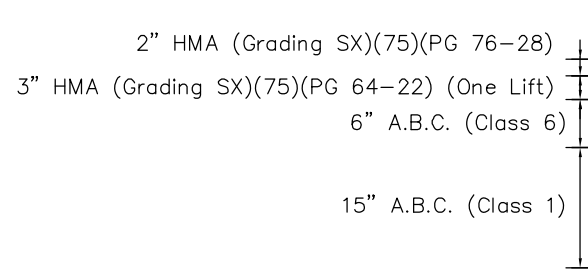
PLAN NUMBER	NEW OR REVISED	M STANDARD TITLE	PAGE NUMBER	PLAN NUMBER	NEW OR REVISED	M STANDARD TITLE	PAGE NUMBER	PLAN NUMBER	NEW OR REVISED	S STANDARD TITLE	PAGE NUMBER
M-100-1		STANDARD SYMBOLS (3 SHEETS)	1-3	M-607-1		WIRE FENCES AND GATES (3 SHEETS)	100-102	S-612-1		DELINEATOR INSTALLATIONS (7 SHEETS)	151-157
M-100-2		ACRONYMS AND ABBREVIATIONS (4 SHEETS)	4-7	M-607-2		CHAIN LINK FENCE (3 SHEETS)	103-105	S-614-1	<input type="checkbox"/>	GROUND SIGN PLACEMENT (2 SHEETS) (REVISED ON DECEMBER 12, 2014)	158-159
M-203-1	<input type="checkbox"/>	APPROACH ROADS (REVISED ON JULY 08, 2013)	8	M-607-3		BARRIER FENCE	106	S-614-2		CLASS I SIGNS	160
M-203-2		DITCH TYPES	9	M-607-4	<input type="checkbox"/>	DEER FENCE, GATES, AND GAME RAMPS (5 SHEETS) (REVISED ON APRIL 30, 2015)	107-109	S-614-3		CLASS II SIGNS	161
M-203-11		SUPERELEVATION CROWNED AND DIVIDED HIGHWAYS (3 SHEETS)	10-12	M-607-10		PICKET SNOW FENCE	110	S-614-4	<input type="checkbox"/>	CLASS III SIGNS (3 SHEETS) (REVISED ON DECEMBER 17, 2014)	162-164
M-203-12		SUPERELEVATION STREETS (2 SHEETS)	13-14	M-607-15		ROAD CLOSURE GATE (9 SHEETS)	111-119	S-614-5		BREAK-AWAY SIGN SUPPORT DETAILS FOR GROUND SIGNS (2 SHEETS)	165-166
M-206-1		EXCAVATION AND BACKFILL FOR STRUCTURES (2 SHEETS)	15-16	M-608-1	<input type="checkbox"/>	CURB RAMPS (7 SHEETS) (REVISED ON JUNE 16, 2014)	120-125	S-614-6	<input type="checkbox"/>	CONCRETE FOOTINGS AND SIGN ISLANDS FOR CLASS III SIGNS (2 SHEETS) (REVISED ON SEPTEMBER 16, 2013)	167-168
M-206-2		EXCAVATION AND BACKFILL FOR BRIDGES (2 SHEETS)	17-18	M-609-1	<input type="checkbox"/>	CURBS, GUTTERS, AND SIDEWALKS (4 SHEETS) (REVISED ON JULY 24, 2012)	126-129	S-614-8	<input type="checkbox"/>	TUBULAR STEEL SIGN SUPPORT DETAILS (6 SHEETS) (REVISED ON APRIL 2, 2014)	169-173
M-208-1	<input type="checkbox"/>	TEMPORARY EROSION CONTROL (11 SHEETS) (REVISED ON MARCH 29, 2016)	19-30	M-611-1		CATTLE GUARD (2 SHEETS)	130-131	S-614-9	<input type="checkbox"/>	PEDESTRIAN PUSH BUTTON POST ASSEMBLY (REVISED ON MAY 24, 2016)	174
M-210-1		MAILBOX SUPPORTS (2 SHEETS)	31-32	M-611-2	<input type="checkbox"/>	DEER GUARD (2 SHEETS) (NEW ON APRIL 30, 2015)		S-614-10		MARKER ASSEMBLY INSTALLATIONS	175
M-214-1		PLANTING DETAILS	33	M-613-1		ROADWAY LIGHTING (4 SHEETS)	132-135	S-614-11		MILEPOST SIGN DETAIL FOR HIGH SNOW AREAS	176
M-216-1	<input type="checkbox"/>	SOIL RETENTION COVERING (2 SHEETS) (NEW ON JULY 16, 2015)		M-614-1		RUMBLE STRIPS (3 SHEETS)	136-138	S-614-12		STRUCTURE NUMBER INSTALLATION	177
M-412-1	<input type="checkbox"/>	CONCRETE PAVEMENT JOINTS (5 SHEETS) (REVISED ON JULY 24, 2012)	34-38	M-614-2		SAND BARREL ARRAYS (2 SHEETS)	139-140	S-614-14		FLASHING BEACON AND SIGN INSTALLATIONS (3 SHEETS)	178-180
M-510-1		STRUCTURAL PLATE PIPE H-20 LOADING	39	M-615-1		EMBANKMENT PROTECTOR TYPE 3	141	S-614-20		TYPICAL POLE MOUNT SIGN INSTALLATIONS	181
M-601-1	<input type="checkbox"/>	SINGLE CONCRETE BOX CULVERT (2 SHEETS) (REVISED ON NOVEMBER 25, 2015)	40-41	M-615-2		EMBANKMENT PROTECTOR TYPE 5	142	S-614-21	<input type="checkbox"/>	CONCRETE BARRIER SIGN POST INSTALLATIONS (REVISED ON MAY 24, 2016)	182
M-601-2	<input type="checkbox"/>	DOUBLE CONCRETE BOX CULVERT (2 SHEETS) (REVISED ON NOVEMBER 25, 2015)	42-43	M-616-1		INVERTED SIPHON	143	S-614-22		TYPICAL MULTI-SIGN INSTALLATIONS	183
M-601-3	<input type="checkbox"/>	TRIPLE CONCRETE BOX CULVERT (2 SHEETS) (REVISED ON NOVEMBER 25, 2015)	44-45	M-620-1		FIELD LABORATORY CLASS 1	144	S-614-40	<input type="checkbox"/>	TYPICAL TRAFFIC SIGNAL INSTALLATION DETAILS (5 SHEETS) (REVISED ON APRIL 2, 2015)	184-188
M-601-10		HEADWALL FOR PIPES	46	M-620-2		FIELD LABORATORY CLASS 2 (2 SHEETS)	145-146	S-614-40A	<input type="checkbox"/>	ALTERNATIVE TRAFFIC SIGNAL INSTALLATION DETAILS (4 SHEETS) (REVISED ON APRIL 2, 2015)	189-192
M-601-11		TYPE "S" SADDLE HEADWALLS FOR PIPE	47	M-620-11		FIELD OFFICE CLASS 1	147	S-614-41	<input type="checkbox"/>	TEMPORARY SPAN WIRE SIGNALS (REVISED ON APRIL 2, 2015)	193
M-601-12		HEADWALLS AND PIPE OUTLET PAVING	48	M-620-12		FIELD OFFICE CLASS 2	148	S-614-42		CABINET FOUNDATION DETAIL (4 SHEETS)	194-197
M-601-20		WINGWALLS FOR PIPE OR BOX CULVERTS	49	M-629-1		SURVEY MONUMENTS (2 SHEETS)	149-150	S-614-43		TRAFFIC LOOP AND MISCELLANEOUS SIGNAL DETAILS (10 SHEETS)	198-207
M-603-1	<input type="checkbox"/>	METAL PIPE (4 SHEETS) (REVISED ON OCTOBER 02, 2014)	50-53					S-614-44	<input type="checkbox"/>	PEDESTAL POLE SIGNALS (2 SHEETS) (REVISED ON NOVEMBER 03, 2014)	
M-603-2	<input type="checkbox"/>	REINFORCED CONCRETE PIPE (REVISED ON OCTOBER 02, 2014)	54					S-614-50	<input type="checkbox"/>	STATIC SIGN MONOTUBE STRUCTURES (12 SHEETS) (REVISED ON NOVEMBER 28, 2012)	208-219
M-603-3		PRECAST CONCRETE BOX CULVERT	55					S-614-60	<input type="checkbox"/>	DYNAMIC SIGN MONOTUBE STRUCTURES (14 SHEETS) (REVISED ON NOVEMBER 28, 2012)	220-233
M-603-4	<input type="checkbox"/>	CORRUGATED POLYETHYLENE PIPE (AASHTO M294) (REVISED ON OCT. 02, 2014)	56					S-627-1	<input type="checkbox"/>	PAVEMENT MARKINGS (5 SHEETS) (REVISED ON JUNE 10, 2014)	234-238
M-603-5	<input type="checkbox"/>	POLYVINYL CHLORIDE (PVC) PIPE (AASHTO M304) (REVISED ON OCT. 02, 2014)	57					S-630-1	<input type="checkbox"/>	TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION (24 SHEETS) (REVISED ON DECEMBER 08, 2014)	239-258
M-603-6	<input type="checkbox"/>	STEEL REINFORCED POLYETHYLENE RIBBED PIPE (AASHTO MP 20) (NEW ON APRIL 30, 2015)						S-630-2		BARRICADES, DRUMS, CONCRETE BARRIERS (TEMP.) AND VERTICAL PANELS	259
M-603-10		CONCRETE AND METAL END SECTIONS (2 SHEETS)	58-59					S-630-3		FLASHING BEACON (PORTABLE) DETAILS	260
M-604-10		INLET, TYPE C	60					S-630-4		STEEL SIGN SUPPORT (TEMPORARY) INSTALLATION DETAILS (2 SHEETS)	261-262
M-604-11		INLET, TYPE D	61					S-630-5	<input type="checkbox"/>	PORTABLE RUMBLE STRIPS (TEMPORARY) (2 SHEETS) (REVISED ON AUGUST 13, 2015)	263-264
M-604-12		CURB INLET TYPE R (2 SHEETS)	62-63					S-630-6		EMERGENCY PULL-OFF AREA (TEMPORARY)	265
M-604-13		CONCRETE INLET TYPE 13	64					S-630-7		ROLLING ROADBLOCKS FOR TRAFFIC CONTROL (3 SHEETS)	266-268
M-604-20		MANHOLES (3 SHEETS)	65-67								
M-604-25		VANE GRATE INLET (5 SHEETS)	68-72								
M-605-1		SUBSURFACE DRAINS	73								
M-606-1	<input type="checkbox"/>	GUARDRAIL TYPE 3 W-BEAM (20 SHEETS) (REVISED ON OCTOBER 27, 2014)	74-92								
M-606-1	<input type="checkbox"/>	MIDWEST GUARDRAIL SYSTEM (MGS) TYPE 3 W-BEAM 31 INCHES (20 SHEETS) (REVISED ON DECEMBER 29, 2015)									
M-606-13	<input type="checkbox"/>	GUARDRAIL TYPE 7 F-SHAPE BARRIER (4 SHEETS) (REVISED ON AUGUST 30, 2013)	93-96								
M-606-14		PRECAST TYPE 7 CONCRETE BARRIER (3 SHEETS)	97-99								

COLORADO
 DEPARTMENT OF TRANSPORTATION
M&S STANDARDS PLANS LIST
 July 04, 2012
 Revised on May 24, 2016

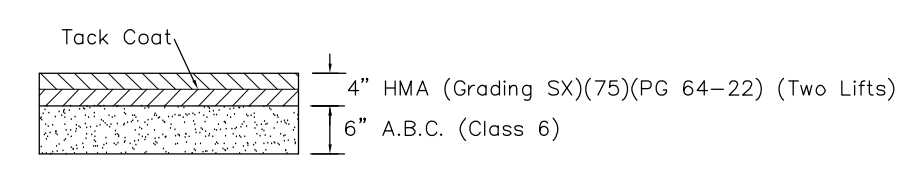
ALL OF THE M&S STANDARD PLANS, AS SUPPLEMENTED AND REVISED, APPLY TO THIS PROJECT WHEN USED BY DESIGNATED PAY ITEM OR SUBSIDIARY ITEM.

NEW OR REVISED STANDARD PLAN SHEETS APPLICABLE TO THIS PROJECT, INDICATED BY A MARKED BOX , ■ WILL BE ATTACHED TO THE PLANS.

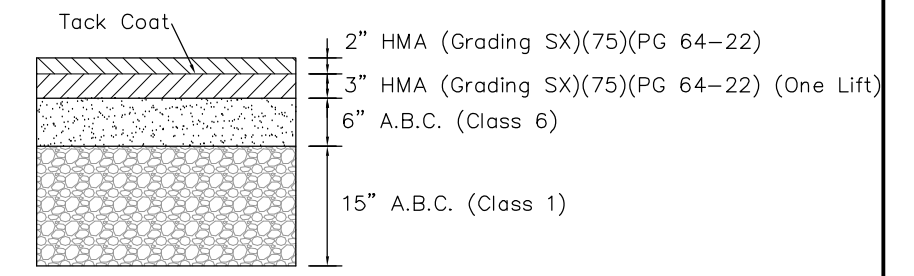
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File Name: as shown at left	Date:	Comments	Init.		No Revisions:		Designer: John C Smith Detailer: John C Smith		TAP M555-032	
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Unit Information: City of GJ Unit Leader Initials: JJV					Void:		Sheet Subset: CSPL Subset Sheets: 1 OF 1			



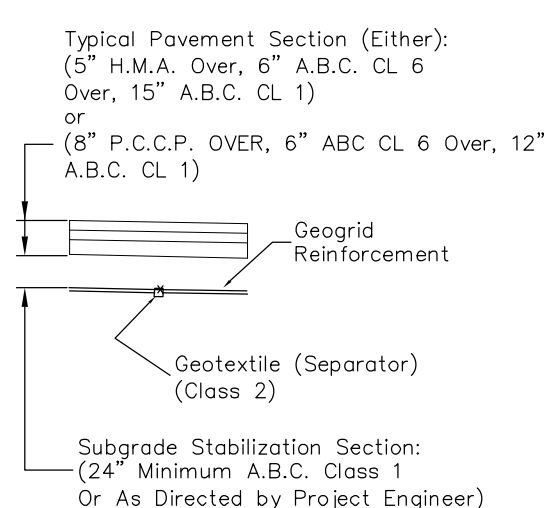
**B 1/2 ROAD OVERPASS
ASPHALT PAVEMENT DETAIL #1
C.D.O.T. R.O.W.
VEHICULAR TRAVEL AREA**
STA 4+50, 9' LT TO STA 8+16, 5' RT
STA 18+35, 20' LT TO STA 19+70, 4' RT



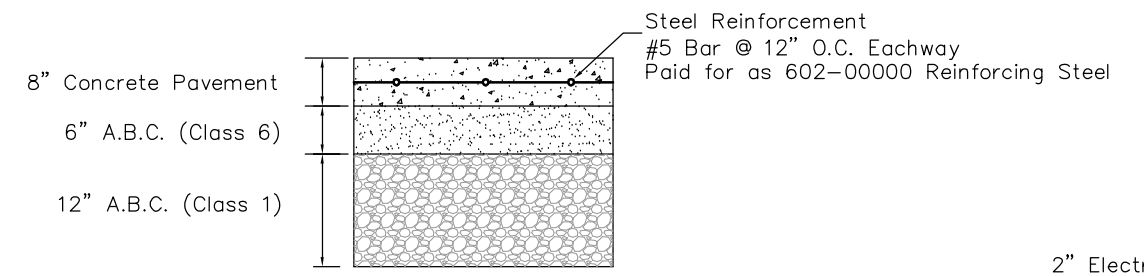
**B 1/2 ROAD OVERPASS
ASPHALT PAVEMENT DETAIL #2
C.D.O.T. R.O.W.
PATHWAY AREAS**
STA 4+50, 10' RT TO STA 8+50, 18' RT
STA 8+25, 9' RT TO STA 8+59, 9' RT
STA 8+79, 12' RT TO STA 8+93, 12' RT



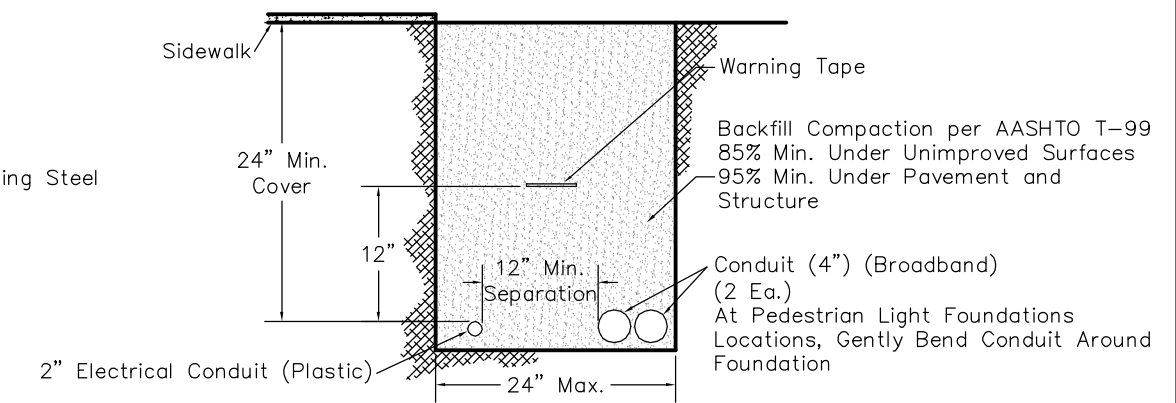
**B 1/2 ROAD
ASPHALT PAVEMENT DETAIL #3
CITY R.O.W.
VEHICULAR TRAVEL AREAS**
STA 19+70, 4' RT TO STA 33+76, 19' RT



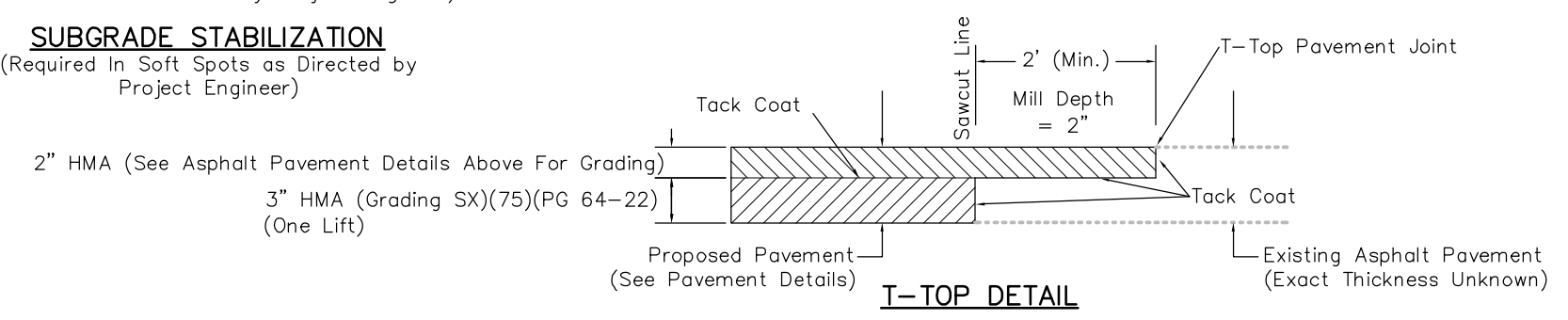
SUBGRADE STABILIZATION
(Required In Soft Spots as Directed by Project Engineer)



BUS PULL-OUT CONCRETE PAVEMENT DETAIL
B 1/2 RD. = STA 29+70 TO 30+70 RT

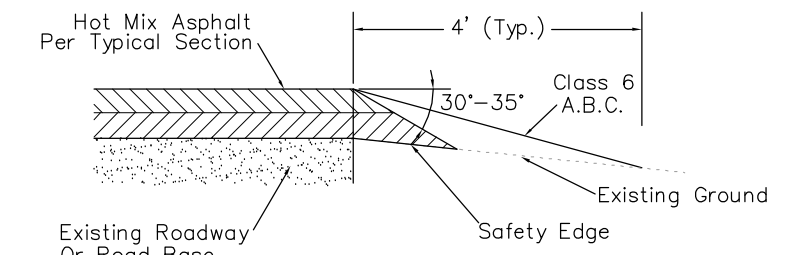


TYP. DRY UTILITY TRENCH DETAIL



GENERAL NOTES

- FOR THE B 1/2 RD. OVERPASS WIDENING AREAS, THE CONTRACTOR SHALL REMOVE A WIDTH OF 2- FEET OF EXISTING ASPHALT (FULL-DEPTH) ALONG THE ENTIRE LENGTH OF THE ON-RAMP EXTENSION.
- THE MINIMUM T-TOP ASPHALT THICKNESS SHALL BE 2-INCH AND THE MINIMUM WIDTH SHALL BE 2- FEET.
- THE T-TOP PAVEMENT JOINT SHALL NOT BE LOCATED IN A VEHICLE WHEEL PATH. THE CONTRACTOR SHALL ADJUST THE T-TOP PAVEMENT JOINT ACCORDINGLY.



**SAFETY EDGE DETAIL
GENERAL NOTES**

- THE SAFETY EDGE WILL BE CONSTRUCTED AS PART OF THE ROADWAY PAVEMENT. A SHOULDER WEDGE DEVICE WILL BE ADDED TO THE SCREED ON THE PAVING MACHINE.
- THE CONTRACTOR MAY USE A SHOULDER WEDGE MAKER OR A SIMILAR DEVICE THAT PRODUCES THE SAME COMPACTION RESULTS.
- SHORT SECTIONS OF HANDWORK WILL BE ALLOWED WHEN NECESSARY FOR TRANSITIONS AND TURNOUTS.
- SITE PREPARATION AND ADDITIONAL EARTHWORK REQUIRED TO CONSTRUCT THE SAFETY EDGE WILL NOT BE PAID FOR SEPARATELY BUT SHALL BE INCLUDED IN THE WORK.

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Unit Information: City of GJ Unit Leader Initials: JJV

Sheet Revisions		
Date:	Comments	Init.

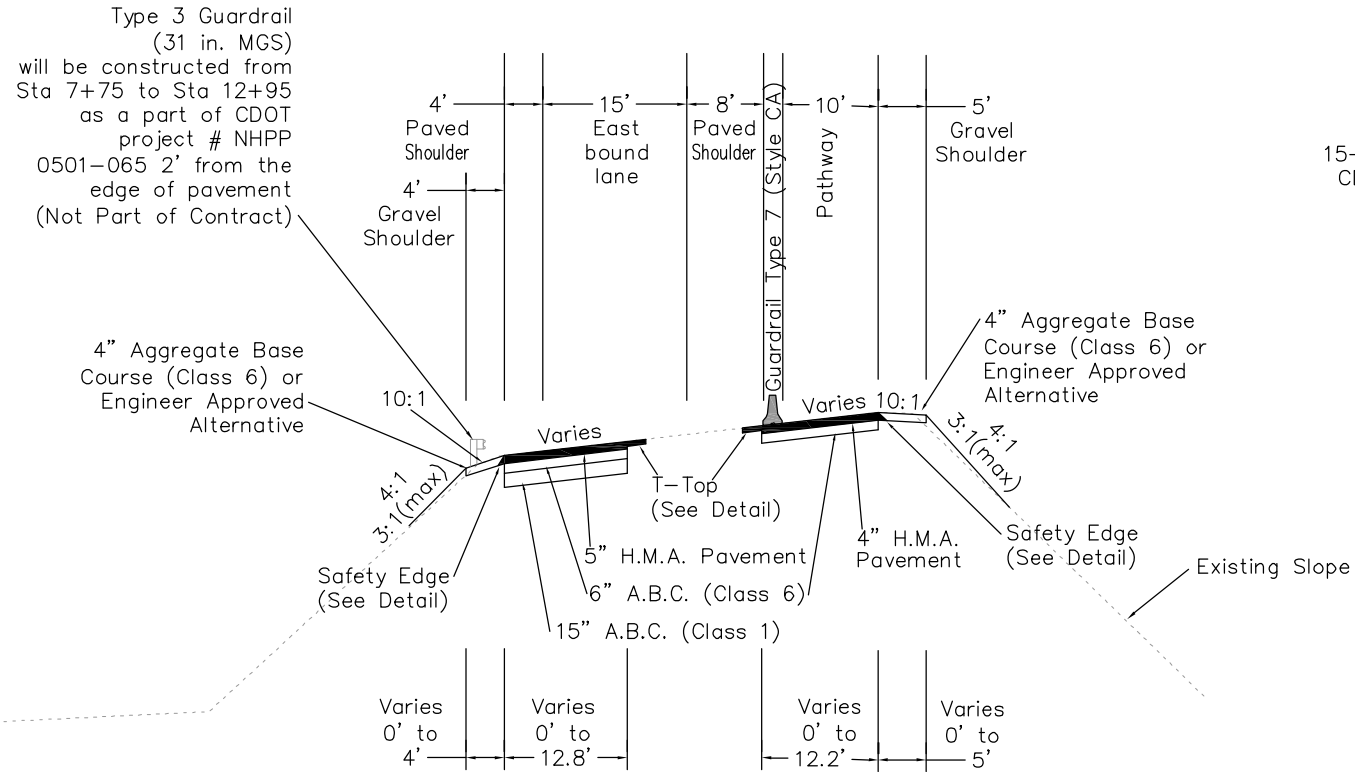


As Constructed
No Revisions:
Revised:
Void:

TYPICAL SECTIONS			
Designer: John C Smith	Structure	Numbers	-
Detailer: John C Smith	Structure	Numbers	-
Sheet Subset: Typical	Subset Sheets:	1 of 3	

Project No./Code
TAP M555-032
20736
Sheet Number 3

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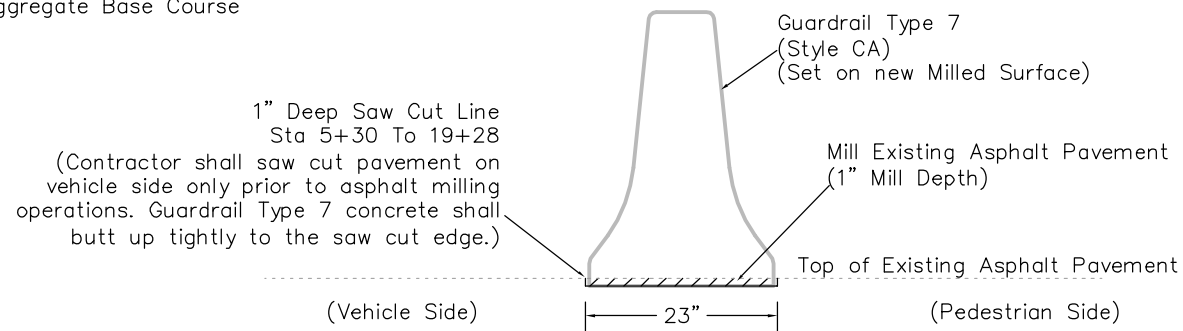
EASTBOUND B 1/2 ROAD

- WEST PATH CONNECTION ON OVERPASS TO STRUCTURE H-02-T
- STA 4+50 TO STA 8+50

Notes:
 - Extend Full Pavement Base Section 6" Beyond Edge of New Pavement (Typical)

TYPICAL SECTION NOTES

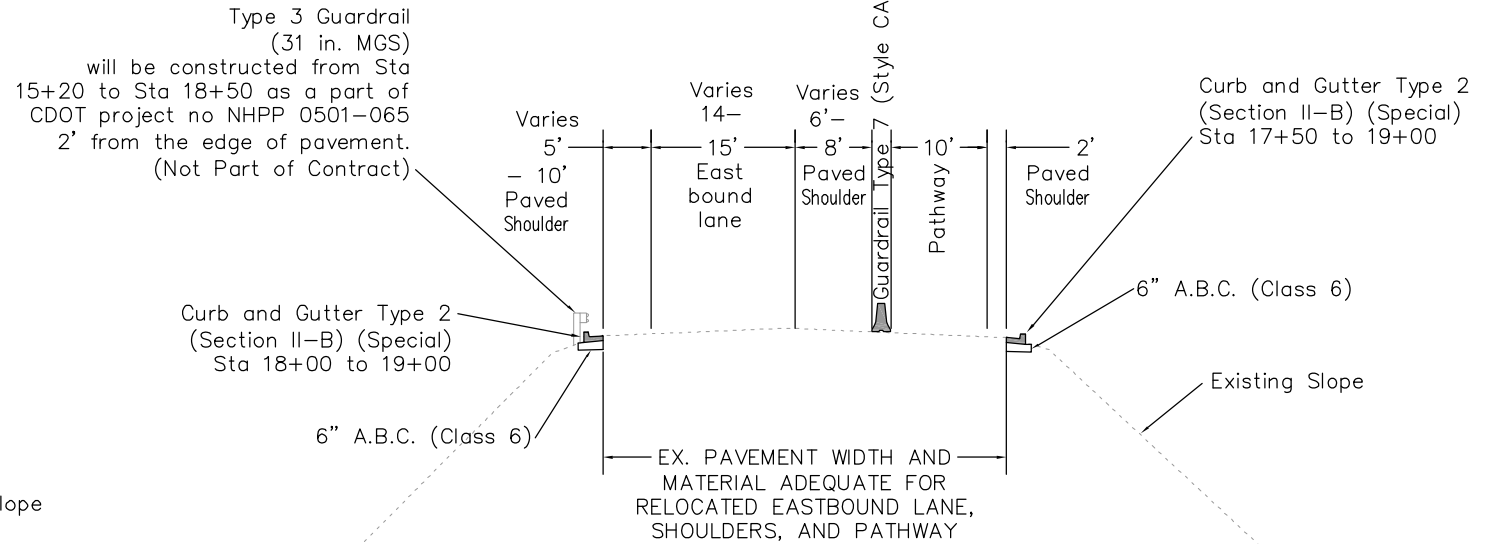
- P.G.L. = Profile Grade Line
- H.M.A. = Hot Mix Asphalt
- A.B.C. = Aggregate Base Course



GUARDRAIL TYPE 7 (STYLE CA) MILL ANCHOR

See CDOT M-Standard M-606-13 for details

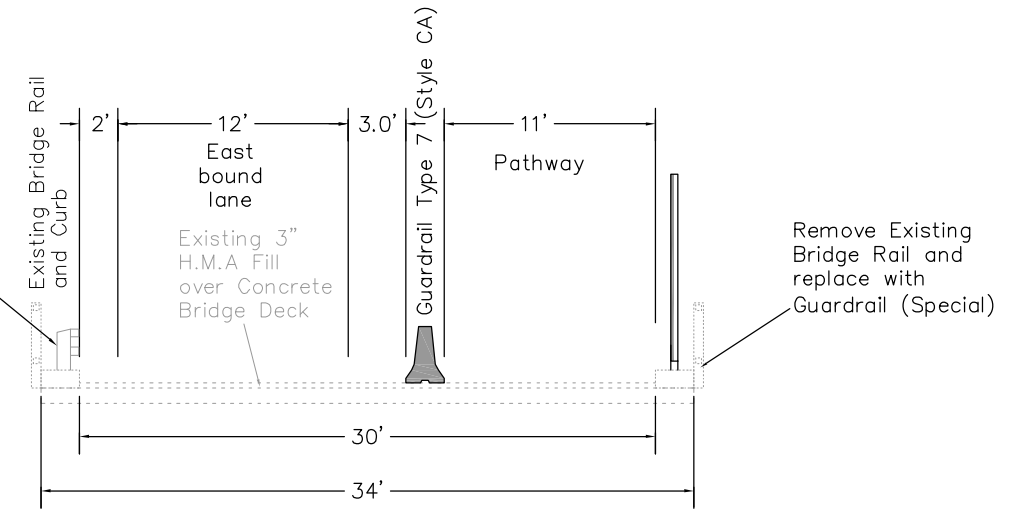
1. Saw cut (1" deep) will not be paid for separately, but shall be included in the cost of Pay Item: 202-00240 Removal of Asphalt Mat (Planing)



EASTBOUND B 1/2 ROAD

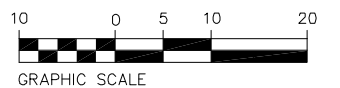
- STRUCTURE H-02-T TO 27 1/2 ROAD INTERSECTION
- STA 17+50 TO STA 19+28

Bridge Rail Type 10 R Replacement Rail from Sta 12+95 to Sta 15+20 as a part of CDOT project # NHPP 0501-065 (Not Part of Contract)



EASTBOUND B 1/2 ROAD

ON STRUCTURE H-02-T FROM STA 13+00 TO STA 15+50



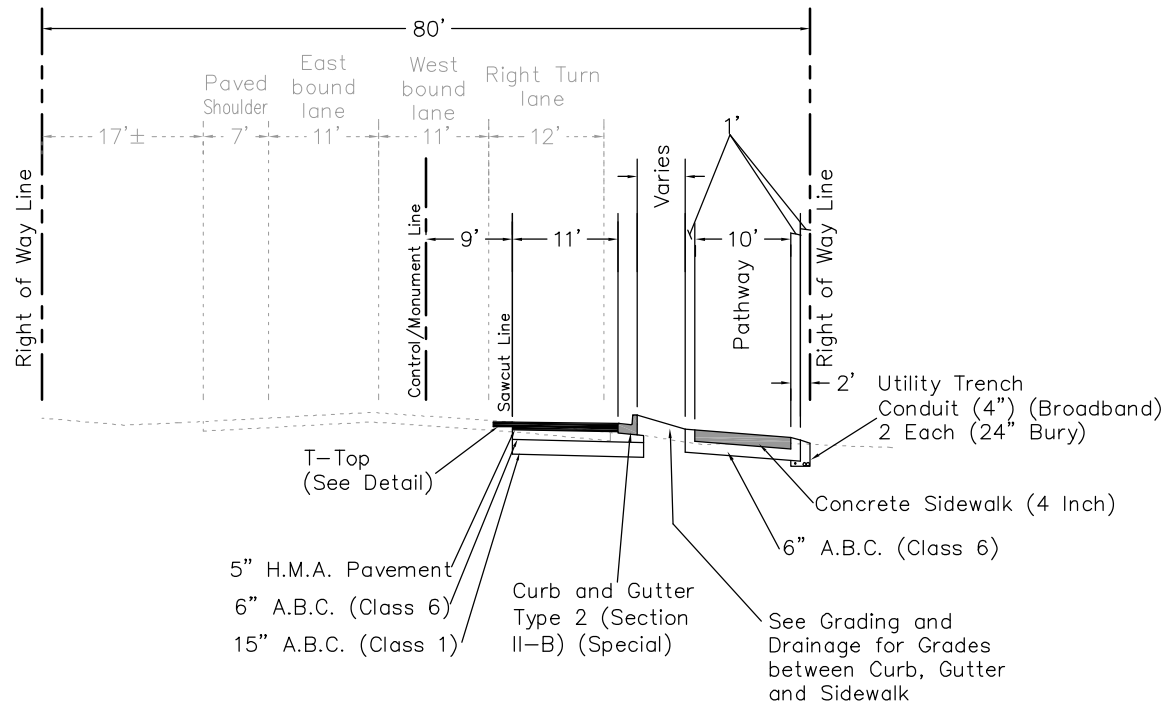
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 Unit Information: City of GJ Unit Leader Initials: JJV

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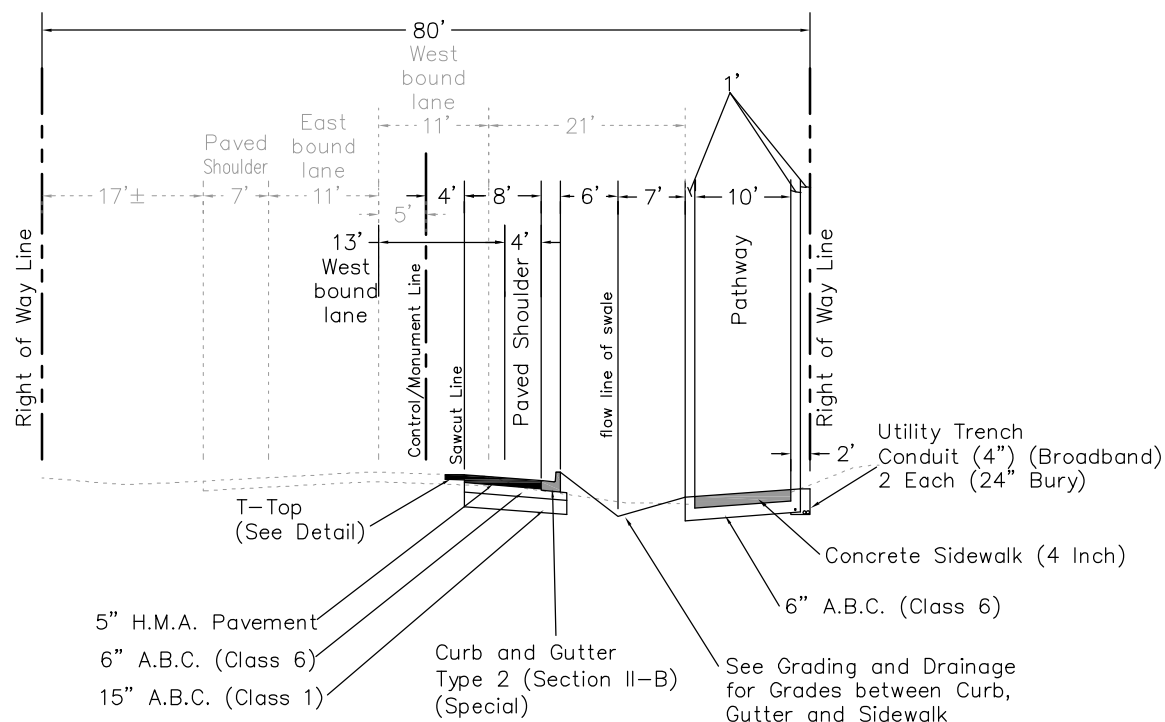


As Constructed	RAMP EXTENSIONS TYPICAL SECTIONS		Project No./Code
No Revisions:	Designer: John C Smith	Structure Numbers: -	TAP M555-032
Revised:	Detailer: John C Smith	Subset Sheets: -	20736
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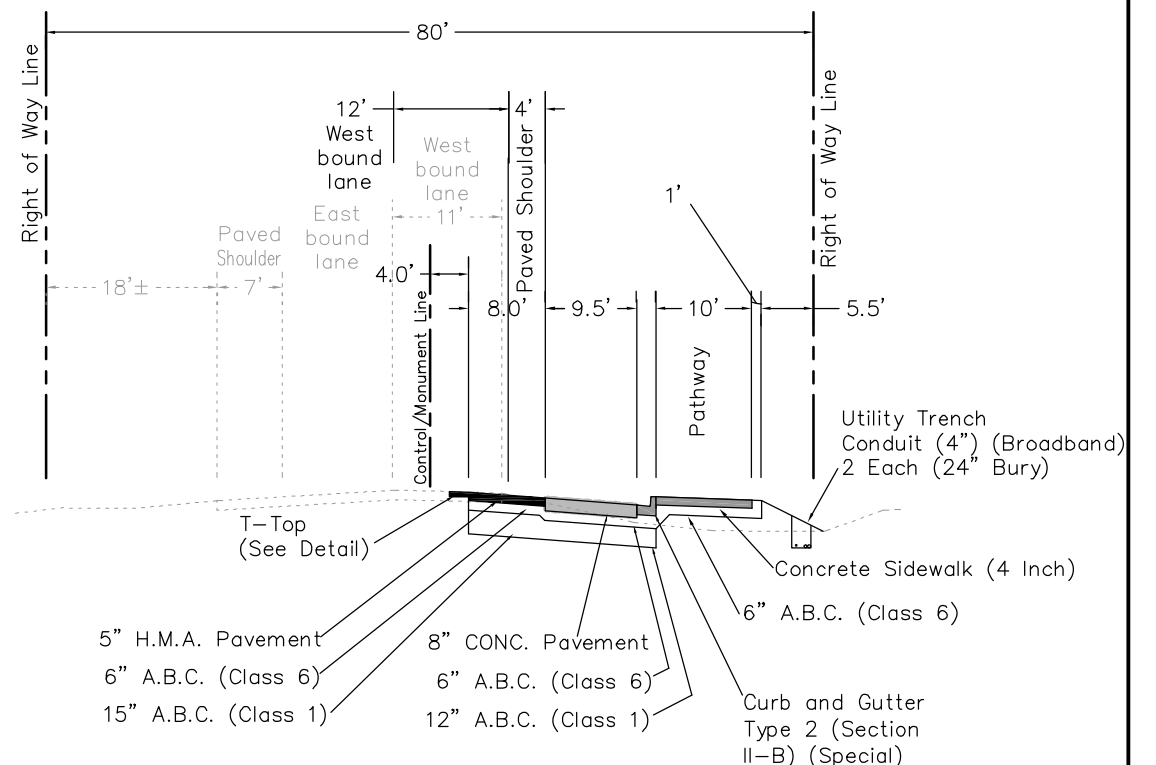
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EASTBOUND B 1/2 ROAD
FROM STA 30+70 TO STA 33+75



EASTBOUND B 1/2 ROAD
FROM STA 19+28 TO STA 29+70

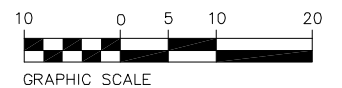


EASTBOUND B 1/2 ROAD
(BUS PULL-OUT)
FROM STA 29+70 TO STA 30+70

TYPICAL SECTION NOTES

- P.G.L. = Profile Grade Line
- H.M.A. = Hot Mix Asphalt
- A.B.C. = Aggregate Base Course

Notes:
- Extend Full Pavement Base Section 6" Beyond Edge of New Pavement (Typical)



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Unit Information: City of GJ Unit Leader Initials: JJV
City of Grand Junction PUBLIC WORKS UTILITIES & PLANNING

Sheet Revisions		
Date:	Comments	Init.



As Constructed
No Revisions:
Revised:
Void:

RAMP EXTENSIONS TYPICAL SECTIONS			
Designer: John C Smith	Structure Numbers		
Detailer: John C Smith			
Sheet Subset: Typical	Subset Sheets:	3 of 3	

Project No./Code
TAP M555-032
20736
Sheet Number 5

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CONSTRUCTION

THE FOLLOWING SHALL BE FURNISHED WITH EACH HOT MIX PAVER:
 A. A SKI TYPE DEVICE AT LEAST 30 FEET IN LENGTH.
 B. SHORT SKI OR SHOE.
 C. TAUT STRING LINE (WIRE) SET TO GRADE.
 D. LASER CONTROL.

THE SUBSEQUENT LIFT OF HOT MIX ASPHALT SHALL NOT BE PLACED UNTIL THE PROCEEDING LIFT IS COMPLETED TO FULL WIDTH.

ASPHALT JOINTS SHALL FALL ON LINES, SHOULDERS LINES OR MEDIAN LINES, EXCEPT WHERE STATED IN THE PLANS.

WHEN MORE THAN ONE LIFT OF HOT MIX ASPHALT IS BEING PLACED, LONGITUDINAL JOINTS FORMED BY ADJACENT PASSES WITH THE PAVER IN A LIFT SHALL BE OFFSET BY A MINIMUM OF 8" BETWEEN LIFTS.

A TACK COAT IS REQUIRED PRIOR TO THE PLACEMENT OF SUBSEQUENT LIFTS OF HMA. BEFORE PLACEMENT OF THE TACK COAT, THE CONTRACTOR SHALL CLEAN THE ROADWAY AS DIRECTED BY THE ENGINEER. CLEANING SHALL NOT BE MEASURED AND PAID FOR SEPARATELY BUT SHALL BE CONSIDERED INCIDENTAL TO THE WORK.

A 2 INCH BUTT JOINT SHALL BE PROVIDED WHERE NEW ASPHALT PAVEMENT TIES INTO EXISTING ASPHALT PAVEMENT AT ROAD APPROACHES AND DRIVEWAYS.

WHERE EXISTING ASPHALT PAVEMENT, CONCRETE PAVEMENT, OR CONCRETE SIDEWALK IS TO BE REMOVED, IT SHALL BE CUT FULL DEPTH TO A NEAT WORK LINE WITH A SAW OR CUTTING WHEEL AS APPROVED BY THE ENGINEER. CUT FACES SHALL NOT REMAIN OVERNIGHT. THIS WORK WILL NOT BE PAID FOR SEPARATELY BUT SHALL BE CONSIDERED SUBSIDIARY TO THE WORK.

DEPTH OF MOISTURE – DENSITY CONTROL FOR THIS PROJECT SHALL BE AS FOLLOWS:
 A. FULL DEPTH OF ALL EMBANKMENTS.
 B. BASES OF CUTS AND FILLS – 6 INCHES
 C. EXCAVATION REQUIRED FOR COMPACTION OF BASES OF CUTS AND FILLS WILL BE CONSIDERED AS SUBSIDIARY TO THAT OPERATION, AND WILL NOT BE PAID FOR SEPARATELY

UNLESS OTHERWISE DIRECTED BY THE ENGINEER, THE CONTRACTOR SHALL LIMIT CONSTRUCTION ACTIVITIES TO THOSE AREAS WITHIN THE LIMITS OF DISTURBANCE AND/OR TOES OF SLOPE AS SHOWN ON THE PLANS AND CROSS SECTIONS. ANY DISTURBANCE BEYOND THESE LIMITS SHALL BE RESTORED TO ORIGINAL CONDITION BY THE CONTRACTOR AT THEIR OWN EXPENSE. CONSTRUCTION ACTIVITIES IN ADDITION TO NORMAL CONSTRUCTION PROCEDURES SHALL INCLUDE THE PARKING OF VEHICLES OR EQUIPMENT, DISPOSAL OF LITTER, AND ANY OTHER ACTION WHICH WOULD ALTER EXISTING CONDITIONS.

STRUCTURE EXCAVATION, STRUCTURE BACKFILL, CONCRETE COLLAR, AND COUPLING BANDS WILL NOT BE PAID FOR SEPARATELY, BUT SHALL BE INCLUDED IN THE COST OF THE PIPE, MANHOLES, INLETS, AND METER VAULTS.

THE TEMPORARY CONSTRUCTION EASEMENTS ARE LIMITED TO SPECIFIC CONSTRUCTION ITEMS AND THE AREA IS TO BE RETURNED TO EXISTING CONDITION AS SOON AS POSSIBLE. THE AREAS ARE NOT TO BE USED FOR STORAGE OR PARKING WHERE IT WOULD INTERFERE WITH BUSINESS OPERATIONS, ACCESS OR PARKING.

THE HORIZONTAL AND VERTICAL GEOMETRY FOR THE CURB, GUTTER AND SIDEWALK IS SHOWN TO THE LIP OF GUTTER UNLESS OTHERWISE NOTED ON THE PLANS.

A 5-FOOT (10:1 VERTICAL) TAPER SHALL BE USED ON ALL EXPOSED END OF CURB.

AGGREGATE BASE COURSE (CLASS 6) SHOULDER MATERIAL SHALL BE STABILIZED IMMEDIATELY UPON PLACEMENT.

WATER SHALL BE USED AS A DUST PALLIATIVE WHERE REQUIRED. APPLICATION SHALL BE AS DIRECTED BY THE ENGINEER. WATER AS A DUST PALLIATIVE AND ANY OTHER WETTING SHALL BE INCLUDED IN THE WORK AND WILL NOT BE PAID SEPARATELY.

WATER SOURCE USED FOR MOISTURE DENSITY CONTROL SHALL BE THE CONTRACTOR'S RESPONSIBILITY AND SHALL BE FREE OF EXCESSIVE SEDIMENTS OR OTHER CONTAMINANTS THAT MAY BE DETRIMENTAL TO EMBANKMENTS, SUB-BASES, AND BASE COURSE MATERIAL.

DURING CONSTRUCTION ACTIVITIES THE CONTRACTOR SHALL KEEP ALL WORK EQUIPMENT AND MATERIALS WITHIN THE EASEMENT AND/OR RIGHT OF WAY LIMITS.

THE FOLLOWING CLEAR ZONE CRITERIA SHALL BE USED DURING THIS PROJECT: 10 FEET ON B 1/2 ROAD

SULFATE RESISTANT CONCRETE FOR THIS PROJECT SHALL BE CLASS 2 (TYPE I-II SULFATE RESISTANT CEMENT).

ALL SLOPES WILL BE ROUGHENED AS DIRECTED BY THE ENGINEER. COSTS ASSOCIATED WITH THIS WORK SHALL BE INCIDENTAL TO THE WORK.

EXCAVATION REQUIRED FOR COMPACTION OF BASES OF CUTS AND FILLS WILL BE CONSIDERED AS SUBSIDIARY TO THAT OPERATION AND WILL NOT BE PAID FOR SEPARATELY.

THE CONTRACTOR SHALL COORDINATE, IF NECESSARY, CONSTRUCTION WORK TO ACCOMMODATE OTHER CONSTRUCTION PROJECTS WITHIN THE SURROUNDING AREA, INCLUDING BUT NOT LIMITED TO, THE FOLLOWING PROJECT:
 CDOT – US HIGHWAY 50 IMPROVEMENT PROJECT
 PROJECT ENGINEER: VICTOR PENNINGTON, (970) 216-1319

CONSTRUCTION, (CONT.)

FOR EXTENSION OF EXISTING PIPES, THE CONTRACTOR SHALL FIELD VERIFY ALL SIZES AND FLOW LINE ELEVATIONS PRIOR TO ORDERING MATERIALS. THE CONTRACTOR OR HIS SUBCONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER WHENEVER FIELD CONDITIONS OR EXISTING TERRAIN WOULD RESULT IN LESS THAN OPTIMAL INSTALLATION OF SAID ITEMS.

THE CONTRACTOR SHALL BE REQUIRED TO FIELD VERIFY LENGTHS, DIAMETERS, ELEVATIONS, LOCATIONS, AND THICKNESS BEFORE ORDERING MATERIALS.

NO VERTICAL SLOPES SHALL BE LEFT OVERNIGHT UNPROTECTED. ALL UNPROTECTED VERTICAL SLOPES SHALL BE FLATTENED TO A 4:1 SIDE SLOPE PRIOR TO THE END OF THE WORK DAY, OR AS DIRECTED BY THE ENGINEER.

FINAL STRIPING WILL BEGIN AT A POINT THAT MATCHES THE ADJACENT STRIPING LOCATION AND SPACING.

ACCEPTANCE OF CONCRETE PAVEMENT SHALL BE BASED ON COMPRESSIVE STRENGTH.

THE CONTRACTOR WILL BE RESPONSIBLE FOR THE ADJUSTMENT OF ALL VALVE BOXES AND MANHOLES WITHIN THE PROJECT LIMITS. THE CONTRACTOR SHALL NOTIFY THE IMPACTED UTILITY COMPANY AT LEAST 48 HOURS PRIOR TO ANY WORK BEING ACCOMPLISHED.

THE CONTRACTOR WILL BE REQUIRED TO STAKE THE EASEMENT AREAS DURING CONSTRUCTION AT NO ADDITIONAL COST TO THE PROJECT.

ANY EXISTING SIGNS OR SIGNS TO BE RESET THAT ARE DAMAGED BY THE CONTRACTOR SHALL BE REPAIRED OR REPLACED AT NO ADDITIONAL COST TO THE PROJECT.

THIS PROJECT IS DESIGNATED AS NON-SIGNIFICANT.

UTILITIES

THE CONTRACTOR SHALL PROTECT EXISTING UTILITIES BY USING EVERY REASONABLE MEANS POSSIBLE, INCLUDING FIELD LOCATION OF THE UTILITY. REPAIR OF DAMAGE TO THE EXISTING UTILITIES DURING CONSTRUCTION SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR SHALL DOCUMENT THE CONDITION OF EXISTING UTILITIES (VISIBLE FACILITIES) WITH THE ENGINEER AND UTILITY REPRESENTATIVES PRIOR TO COMMENCING CONSTRUCTION ACTIVITIES.

EXISTING UTILITY LINES AS SHOWN ON THE PLAN SHEETS ARE PLOTTED FROM THE BEST AVAILABLE INFORMATION, (ASCE STANDARD QUALITY LEVEL B).

UTILITY WORK NOT COMPLETED PRIOR TO THE START OF THE CONTRACTOR'S OPERATIONS WILL REQUIRE COORDINATION WITH CONTRACT WORK IN ACCORDANCE WITH SUBSECTION 105.11 OF THE STANDARD SPECIFICATIONS. THE CONTRACTOR SHALL COORDINATE AND COOPERATE WITH UTILITY OWNERS IN THEIR REMOVAL, ADJUSTMENT, AND/OR RELOCATION OPERATIONS SO THAT THE UTILITY WORK CAN BE ACCOMPLISHED WITHOUT IMPACTING THE CONSTRUCTION SCHEDULE.

THE CONTRACTOR SHALL COMPLY WITH ARTICLE 1.5 OF TITLE 9, CRS ("EXCAVATION REQUIREMENTS") WHEN EXCAVATING OR GRADING IS PLANNED IN THE AREA OF UNDERGROUND UTILITY FACILITIES. THE CONTRACTOR SHALL NOTIFY ALL AFFECTED UTILITIES AT LEAST TWO (2) BUSINESS DAYS, NOT INCLUDING THE ACTUAL DAY OF NOTICE, PRIOR TO COMMENCING SUCH OPERATIONS. THE CONTRACTOR SHALL CONTACT THE UTILITY NOTIFICATION CENTER OF COLORADO (UNCC) AT 811 OR 1-800-922-1987, TO HAVE LOCATIONS OF UNCC REGISTERED LINES MARKED BY MEMBER COMPANIES. ALL OTHER UNDERGROUND FACILITIES SHALL BE LOCATED BY CONTACTING THE RESPECTIVE OWNER. FOR CDOT OWNED UTILITY FACILITIES THE CONTRACTOR SHALL CALL THE CDOT REGION 3 TRAFFIC SECTION AT 970-683-6271 TO REQUEST LOCATES. UTILITY SERVICE LATERALS SHALL ALSO BE LOCATED PRIOR TO BEGINNING EXCAVATION OR GRADING.

LOCATION AND NOTIFICATION OF BOTH UNCC MEMBER AND NON-MEMBER UTILITIES IS THE CONTRACTOR'S RESPONSIBILITY.

IT IS SUGGESTED THAT THE CONTRACTOR INITIATE A REQUEST TO XCEL ENERGY, CENTURYLINK AND CHARTER COMMUNICATIONS FOR ANY CONSTRUCTION RELATED TO TEMPORARY ELECTRICAL POWER AND TELEPHONE SERVICE AS SOON AS POSSIBLE.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE LOCATION AND DEPTH OF ALL EXISTING UTILITIES AT PIPES, CULVERTS, CBC'S, AND OTHER AREAS OF EXCAVATION AS NECESSARY TO ENSURE THE UTILITIES WILL NOT BE IMPACTED.

POTHOLING OF AN AREA SHALL TAKE PLACE 10 DAYS PRIOR TO COMMENCEMENT OF CONSTRUCTION OPERATIONS IN THAT AREA. POTHOLING FOR PROJECT IS ESTIMATED AT 25 HOURS.

THE CONTRACTOR SHALL:

- A. NOTIFY UTE WATER, CITY OF GRAND JUNCTION WATER AND SEWER, AND ALL CUSTOMERS AFFECTED BY OUTAGE OF WATER DURING CONSTRUCTION AT LEAST 48 HOURS PRIOR TO DISRUPTION OF SERVICE.
- B. NOTIFY GRAND JUNCTION POLICE DEPARTMENT, GRAND JUNCTION FIRE DEPARTMENT, GRAND JUNCTION DEPARTMENT OF PUBLIC WORKS, MESA COUNTY SHERIFF'S OFFICE, MESA COUNTY PUBLIC WORKS, COLORADO STATE PATROL, UTE WATER CONSERVANCY DISTRICT, UNITED STATES POSTAL SERVICE, GRAND VALLEY TRANSIT, AND FIRST STUDENT BUS COMPANY OF ALL STREET CLOSINGS AND EXISTING FIRE HYDRANTS TO BE TAKEN OUT OF SERVICE AT LEAST 48 HOURS PRIOR TO THE START OF CONSTRUCTION AND UPDATED ON A BI-WEEKLY BASIS.

WHEN EXCAVATING BELOW EXISTING WATER OR SANITARY SEWER LINES THE CONTRACTOR SHALL SUBMIT, FOR APPROVAL, THE METHOD BY WHICH EXISTING WATER OR SANITARY SEWER LINES SHALL BE PROTECTED AND SUPPORTED.

THE STATION POINT AND ELEVATION SHOWN ON THE PLANS FOR THE STANDARD STORM INLET AND MEDIAN INLET IS LOCATED AT THE CENTER OF THE INLET BOX. THE STATION POINT OF ALL OTHER DRAINAGE, IRRIGATION, AND SANITARY SEWER STRUCTURES IS LOCATED AT THE CENTER POINT OF THE STRUCTURE AS WELL.

ESTIMATED QUANTITIES

FOR PRELIMINARY PLAN QUANTITIES, THE FOLLOWING RATES OF APPLICATION WERE USED:

- TACK COAT DILUTED EMULSIFIED ASPHALT (SLOW SETTING)..... @ 0.1 GALS/SQ YD (DILUTED)
- HOT MIX ASPHALT (GRADING SX)..... @ 110 LBS/SQ YD/INCH
- AGGREGATE BASE COURSE (CLASS 1)..... @ 133 LBS/CU FT.
- AGGREGATE BASE COURSE (CLASS 3)..... @ 133 LBS/CU FT.
- AGGREGATE BASE COURSE (CLASS 6)..... @ 133 LBS/CU FT.

DILUTED EMULSIFIED ASPHALT FOR TACK COAT SHALL CONSIST OF 1 PART EMULSIFIED ASPHALT AND 1 PART WATER.

IT IS ESTIMATED THAT THE FOLLOWING SHALL BE REQUIRED FOR THIS PROJECT, AS DIRECTED BY THE PROJECT ENGINEER FOR MISCELLANEOUS WORK:

- (201-00000) CLEARING AND GRUBBING – 1 LS
- (203-00100) MUCK EXCAVATION – 150 CY
- (203-01597) POTHOLING – 25 HOURS
- (304-03000) AGGREGATE BASE COURSE (CLASS 3) – 300 TON
- (420-00133) GEOTEXTILE (SEPARATOR) (CLASS 2) – 100 SY
- (506-01020) GEOGRID REINFORCEMENT – 100 SY
- (619-50480) 6 INCH PLASTIC PIPE – 30 LF
- (620-00020) SANITARY FACILITY – 1 EA
- (625-00000) CONSTRUCTION SURVEYING – 1 LS
- (626-00000) MOBILIZATION – 1 LS

PROOFROLLING WILL BE REQUIRED FOR THIS PROJECT AND WILL BE INCLUDED IN THE COST OF THE WORK.

CLEARING AND GRUBBING SHALL INCLUDE REMOVAL OF ALL TREES, LOGS, LIMBS, BRUSH, BUSHES, GROUND COVER, SOD, LANDSCAPING ITEMS, AND TRASH, ETC. AS SHOWN IN THE PLANS OR REQUIRED BY THE WORK TO AN OFF SITE LOCATION, UNLESS SHOWN ON THE PLANS TO BE PROTECTED. THIS WORK WILL BE PAID FOR AS 201-00000 CLEARING AND GRUBBING.

AGGREGATE BASE COURSE (CL. 6) SHOWN TO BE PLACED UNDER CONCRETE CURBS, GUTTERS, SIDEWALKS, DRAINAGE PANS, INTERSECTION FILLETS, DRIVEWAY SECTIONS, AND CURB RAMPS IS DESIGNATED AS "AGGREGATE BASE COURSE (CLASS 6)" AND WILL BE MEASURED AND PAID FOR SEPARATELY.

ENVIRONMENTAL

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE ACCEPTANCE AND CONTROL OF ALL SURFACE AND SUBSURFACE DRAINAGE AND GROUNDWATER ENTERING THE PROJECT AREA. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING DEWATERING IF NEEDED AT NO ADDITIONAL COST TO THE PROJECT. DEWATERING METHODS SHALL BE APPROVED BY THE ENGINEER. THE CONTRACTOR SHALL OBTAIN A CONSTRUCTION DEWATERING PERMIT FROM THE COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT. THE PERMIT WILL NOT BE PAID FOR SEPARATELY BUT SHALL BE INCLUDED IN THE WORK.

SEE STORMWATER MANAGEMENT PLAN FOR EROSION CONTROL MEASURES TO BE USED DURING CONSTRUCTION. WHENEVER SEDIMENT IS TRANSPORTED ONTO A PUBLIC ROAD, THE ROAD SHALL BE CLEANED AT THE END OF EACH DAY. SEDIMENT SHALL BE REMOVED FROM ROADS BY SHOVELING OR SWEEPING AND BE TRANSPORTED TO A CONTROLLED SEDIMENT DISPOSAL AREA. STREET WASHING SHALL NOT BE ALLOWED. STREET SWEEPING METHODS/OPERATIONS SHALL BE APPROVED BY THE ENGINEER PRIOR TO COMMENCEMENT OF SWEEPING OPERATIONS. OPEN STYLE MECHANICAL BROOM WILL NOT BE ALLOWED FOR STREET SWEEPING.

THE CONTRACTOR SHALL ADDRESS LOCAL DRAINAGE DURING EACH PHASE OF CONSTRUCTION. THIS WORK WILL NOT BE PAID SEPARATELY BUT SHALL BE CONSIDERED SUBSIDIARY TO THE WORK.

ANY DEWATERING WILL NOT BE PAID FOR SEPARATELY, BUT SHALL BE INCIDENTAL TO THE PROJECT.

PROJECT UTILITY CONTACTS

CHARTER COMMUNICATIONS	JEFF VALDEZ	970-263-2314
ORCHARD MESA SANITATION DISTRICT		970-245-0033
CITY OF GRAND JUNCTION (PERSIGO SEWER SYSTEMS)	LARRY BROWN	970-256-4168
CITY OF GRAND JUNCTION (FIBER OPTIC)	PAUL JAGIM	970-244-1591
CENTURY LINK COMMUNICATIONS	CHRIS JOHNSON	970-244-4311
UTE WATER	DAVE PRISKE	970-242-7491
XCEL ENERGY (GAS)	JON PRICE	970-244-2693
XCEL ENERGY (ELECTRIC)	JON PRICE	970-244-2693
ORCHARD MESA IRRIGATION DISTRICT (DRAIN DITCHES)	MAX SCHMIDT	970-464-7885

Print Date: As Shown	0000	Sheet Revisions				As Constructed		GENERAL NOTES			Project No./Code	
File Name: General Notes		Date:	Comments	Init.		No Revisions:					TAP M555-032	
Horiz. Scale: NA Vert. Scale: NA						Revised:		Designer: ALC	Structure: —	20736		
Unit Information: City of GJ Unit Leader Initials: ALC						Void:		Detailer: JCS	Numbers: —	Sheet Subset: General	Subset Sheets: 1 of 1	Sheet Number 6

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INDEX			CONTRACT ITEM NO.	CONTRACT ITEM	UNIT	ROADWAY		UTILITIES BY CONTRACTOR		PROJECT TOTALS	
BOOK	PAGE	SHEET				PLAN	AS CONST.	PLAN	AS CONST.	PLAN	AS CONST.
			201-00000	Clearing and Grubbing	LS	1				1	
			202-00000	Removal of Structure and Obstructions	LS	1				1	
			202-00010	Removal of Tree	EA	10				10	
			202-00021	Removal of Manhole	EA	1				1	
			202-00035	Removal of Pipe	LF	33				33	
			202-00090	Removal of Delineator	EA	16				16	
			202-00195	Removal of Median Cover	SY	48				48	
			202-00200	Removal of Sidewalk	SY	18				18	
			202-00201	Removal of Curb	LF	136				136	
			202-00202	Removal of Gutter	LF	11				11	
			202-00203	Removal of Curb and Gutter	LF	181				181	
			202-00220	Removal of Asphalt Mat	SY	3076				3076	
			202-00240	Removal of Asphalt Mat (Planing)	SY	305				305	
			202-00250	Removal of Pavement Marking	SF	23				23	
			202-00425	Removal of Bridge Railing	LF	232				232	
			202-00810	Removal of Ground Sign	EA	10				10	
			202-00821	Removal of Sign Panel	EA	3				3	
			202-01000	Removal of Fence	LF	216				216	
			203-00010	Unclassified Excavation (Complete In Place)	CY	2723				2723	
			203-00100	Muck Excavation	CY	150				150	
			203-01597	Potholing	HOUR	25				25	
			208-00002	Erosion Log (12 inch)	LF	820				820	
			208-00035	Aggregate Bag	LF	144				144	
			208-00045	Concrete Washout Structure	EA	2				2	
			208-00052	Storm Drain Inlet Protection (Type II)	LF	20				20	
			208-00103	Removal and Disposal of Sediment (Labor)	HOUR	30				30	
			208-00105	Removal and Disposal of Sediment (Equipment)	HOUR	30				30	
			208-00106	Sweeping (Sediment Removal)	HOUR	40				40	
			208-00206	Erosion Control Supervisor	DAY	60				60	
			208-00300	Temporary Berms	LF	1100				1100	
			210-00050	Reset Fire Hydrant	EA	2				2	
			210-00810	Reset Ground Sign	EA	8				8	
			210-00815	Reset Sign Panel	EA	3				3	
			210-01700	Reset Sprinkler Head	EA	19				19	
			210-04010	Adjust Manhole	EA	3				3	
			210-04050	Adjust Valve Box	EA	15				15	
			210-04060	Adjust Water Meter	EA	3				3	
			212-00006	Seeding (Native)	AC	0.7				0.7	
			213-00061	Mulch Tackifier	LB	67				67	

INDEX			CONTRACT ITEM NO.	CONTRACT ITEM	UNIT	ROADWAY		UTILITIES BY CONTRACTOR		PROJECT TOTALS	
BOOK	PAGE	SHEET				PLAN	AS CONST.	PLAN	AS CONST.	PLAN	AS CONST.
			213-00065	Inorganic Mulch	CY	170				170	
			304-01000	Aggregate Base Course (Class 1)	TON	1581				1581	
			304-03000	Aggregate Base Course (Class 3)	TON	300				300	
			304-06000	Aggregate Base Course (Class 6)	TON	1364				1364	
			403-00720	Hot Mix Asphalt (Patching) (Asphalt)	TON	12				12	
			403-34741	Hot Mix Asphalt (Grading SX) (75) (PG 64-22)	TON	571				571	
			403-34771	Hot Mix Asphalt (Grading SX) (75) (PG 76-28)	TON	73				73	
			411-10255	Emulsified Asphalt (Slow-Setting)	GAL	244				244	
			412-00800	Concrete Pavement (8 Inch)	SY	96				96	
			420-00133	Geotextile (Separator) (Class 2)	SY	100				100	
			506-01020	Geogrid Reinforcement	SY	100				100	
			602-00000	Reinforcing Steel	LB	1360				1360	
			603-01185	18 Inch Reinforced Concrete Pipe (Complete In Place)	LF	50				50	
			603-01245	24 Inch Reinforced Concrete Pipe (Complete In Place)	LF	9				9	
			603-01425	42 Inch Reinforced Concrete Pipe (Complete In Place)	LF	51				51	
			603-01485	48 Inch Reinforced Concrete Pipe (Complete In Place)	LF	86				86	
			603-02185	23x14 Inch Reinforced Concrete Pipe (Complete In Place)	LF	20				20	
			604-19005	Inlet Special (5 Foot)	EA	3				3	
			604-13005	Inlet Type 13 (5 Foot)	EA	2				2	
			604-30010	Manhole Slab Base (10 Foot)	EA	1				1	
			604-30015	Manhole Slab Base (15 Foot)	EA	1				1	
			606-00710	Guardrail Type 7 (Style CA)	LF	1407				1407	
			606-00900	Guardrail (Special)	LF	220				220	
			606-01370	Transition Type 3G (31 in. MGS)	EA	1				1	
			606-02005	End Anchorage (Flared) (31 in. MGS)	EA	1				1	
			608-00000	Concrete Sidewalk	SY	1522				1522	
			608-00010	Concrete Curb Ramp	SY	104				104	
			609-20010	Curb Type 2 (Section B)	LF	60				60	
			609-21023	Curb and Gutter Type 2 (Section II-B) (Special)	LF	1729				1729	
			609-24003	Gutter Type 2 (3 Foot)	LF	25				25	
			612-00001	Delineator (Type I)	EA	1				1	
			613-00207	2 Inch Electrical Conduit (Bridge) (Special)	LF	236				236	
			613-01200	2 Inch Electrical Conduit (Plastic)	LF	2807				2807	
			613-04010	Conduit (4") (Broadband)	LF	2784				2784	
			613-07001	Type One Pull Box	EA	27				27	
			613-07010	Pull Box (Surface Mounted)	EA	1				1	
			613-07040	Pull Box (30"x48"x24") (Broadband)	EA	6				6	
			613-10000	Wiring	LS	1				1	
			613-30005	Light Standard and Luminaire (Pedestrian)	EA	28				28	

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 Unit Information: City of GJ Unit Leader Initials: DPJ

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SUMMARY OF APPROXIMATE QUANTITIES			
Designer: John Smith	Structure Numbers		
Detailer: John Smith			
Sheet Subset: Removal	Subset Sheets:	1 of 2	

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INDEX			CONTRACT ITEM NO.	CONTRACT ITEM	UNIT	ROADWAY		UTILITIES BY CONTRACTOR		PROJECT TOTALS	
BOOK	PAGE	SHEET				PLAN	AS CONST.	PLAN	AS CONST.	PLAN	AS CONST.
			613-40012	Light Standard Foundation (Special)	EA	28				28	
			613-50106	Lighting Control Center (Special)	EA	1				1	
			614-00011	Sign Panel (Class I)	SF	27				27	
			614-00012	Sign Panel (Class II)	SF	54				54	
			614-01503	Steel Sign Support (2-inch Round)(Post and Socket)	EA	2				2	
			614-01573	Steel Sign Support (2-1/2 Inch Round NP-40)(Post & Slipbase)	EA	6				6	
			614-80314	Barricade (Type 3 F-D)	EA	1				1	
			619-50480	6 Inch Plastic Pipe	LF	30				30	
			620-00020	Sanitary Facility	EA	1				1	
			625-00000	Construction Surveying	LS	1				1	
			626-00000	Mobilization	LS	1				1	
			627-00005	Epoxy Pavement Marking	GAL	39				39	
			627-30410	Preformed Thermoplastic Pavement Marking (Xwalk-Stop Line)	SF	608				608	
			630-00000	Flagging	HOUR	500				500	
			630-00007	Traffic Control Inspection	DAYS	32				32	
			630-00012	Traffic Control Management	DAYS	80				80	
			630-80336	Barricade (Type 3 M-B) (Temporary)	EA	5				5	
			630-80341	Construction Traffic Sign (Panel Size A)	EA	22				22	
			630-80342	Construction Traffic Sign (Panel Size B)	EA	16				16	
			630-80344	Construction Sign Panel (Special)	SF	21				21	
			630-80358	Advance Warning Flashing or Sequencing Arrow Panel (Type C)	EA	2				2	
			630-80359	Portable Message Sign Panel	DAYS	60				60	
			630-80360	Drum Channelizing Device	EA	80				80	
			630-80363	Drum Channelizing Device (With Light) (Flashing)	EA	80				80	
			630-80380	Traffic Cone	EA	160				160	
			700-70010	F/A Minor Contract Revisions	FA	1				1	
			700-70011	F/A Partnering	FA	1				1	
			700-70016	F/A Fuel Cost Adjustment	FA	1				1	
			700-70082	F/A Furnish & Install Electrical Service	FA	1				1	
			700-70320	F/A Sprinklers	FA	1				1	
			700-70380	F/A Erosion Control	FA	1				1	

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 Unit Information: City of GJ Unit Leader Initials: DPJ

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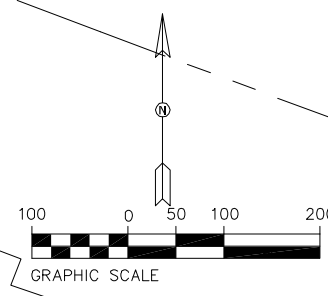
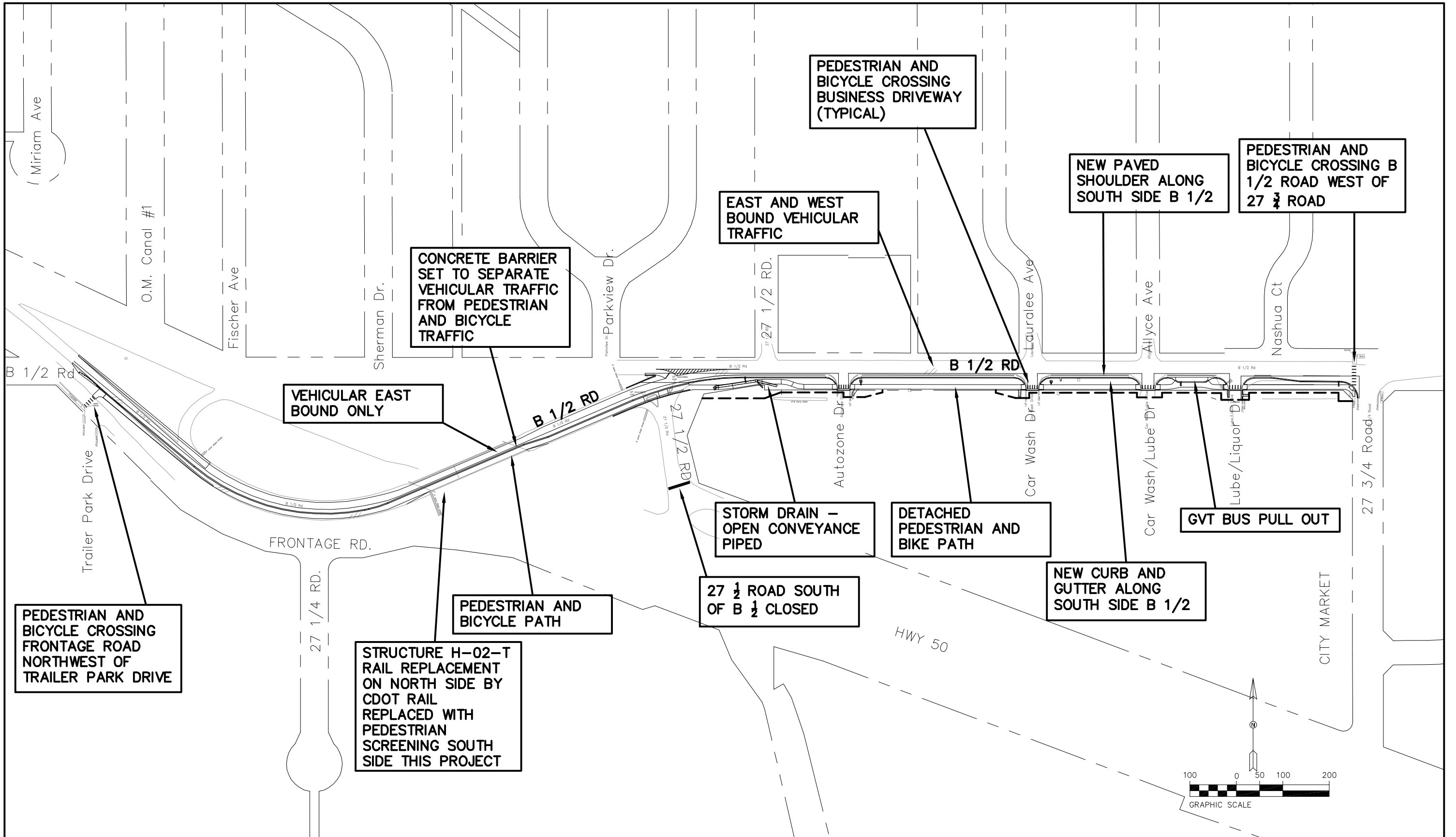


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SUMMARY OF APPROXIMATE QUANTITIES	
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Detailer: John Smith	
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B 1/2 ROAD Project Overview	
Designer: John Smith	Structure Numbers
Detailer: John Smith	
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SUMMARY OF EARTHWORK QUANTITIES

INDEX				PROJECT TOTAL	
Book	Page	Sheet		CU. YD.	As Const.
			UNCLASSIFIED EXCAVATION (CIP) (203-00010)		
			ROADWAY (QUANTITY CALCULATED FROM CIVIL 3D)		
			B 1/2 ROAD FROM 4+50 TO 33+75		
				3077	
			removal of pavement pay items	-339	
			removal of concrete pay items	-15	
			TOTAL FOR PAY QUANTITIES		
				2723	
			WETTING (FOR INFORMATION ONLY)		
			SURFACING (0.022 M GAL/TON)		
			EMBANKMENT (CIP) (0.04 M GAL / CY)		
			TOTAL		
				0	
			EMBANKMENT MATERIAL (CIP) (FOR INFORMATION ONLY)		
			QUANTITY CALCULATED FROM CIVIL 3d		
			B 1/2 ROAD FROM 4+50 TO 33+75		
				2095	
			TOTAL		
				2095	

INDEX			ROADWAY QUANTITIES BALANCE (FOR INFORMATION ONLY)	PROJECT TOTAL	
Book	Page	Sheet		CU. YD.	As Const.
			Total Unclassified Excavation	2723	
			Total Embankment (net)	2095	
			EMBANKMENT TIMES FACTOR 1.15	2409	
			Excess Embankment	314	
			(Material to be Hauled by Contractor)		

NOTES:
 TOP 4 INCHES OF ALL EMBANKMENT SHALL BE FREE OF DEBRIS AND ROCKS OR CLODS GREATER THAN 3 INCHES IN DIAMETER, AND SHALL BE SUITABLE AS NATIVE TOPSOIL.
 ALL IMPORTED EMBANKMENT MATERIAL SHALL MEET A MINIMUM OF R-VALUE = 40.

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Horiz. Scale: NA Vert. Scale: NA						Revised:		Detailer: John Smith		20736	
Unit Information: City of GJ Unit Leader Initials: DPJ						Void:		Sheet Subset: SEQ		Sheet Number 10	
					Structure Numbers		Subset Sheets: 1 of 1				

TABULATION OF REMOVALS - SECTION 1

STATION	(202-00195) REMOVAL OF MEDIAN COVER		(202-00200) REMOVAL OF SIDEWALK		(202-00201) REMOVAL OF CURB		(202-00202) REMOVAL OF GUTTER		(202-00203) REMOVAL OF CURB AND GUTTER		(202-00220) REMOVAL OF ASPHALT MAT		(202-00240) REMOVAL OF ASPHALT MAT (PLANING)		COMMENTS
	SY		SY		LF		LF		LF		SY		SY		
	Plan	As Const	Plan	As Const	Plan	As Const	Plan	As Const	Plan	As Const	Plan	As Const	Plan	As Const	
B 1/2 ROAD															
4+50, 9' RT TO 8+50, 15' RT												80			SOUTH SIDE B 1/2 WEST END PROJECT
4+50, 9' LT TO 8+16, 5' LT												640			NORTH SIDE B 1/2 WEST END PROJECT
5+55, 11' RT TO 19+27, 21' RT														305	MILLING TO ANCHOR TYPE 7 GUARDRAIL
7+93, 23' LT TO 7+95, 34' LT							11								AT S BOUND HWY 50 ON RAMP REMOVAL
12+67, 22' RT TO 13+22, 15' RT												23			S SIDE OF B 1/2 W END OF STRUCT. H-02-T
15+50, 15' RT TO 16+00, 21' RT												16			S SIDE OF B 1/2 E END OF STRUCT. H-02-T
17+50, 21' RT TO 19+28, 26' RT												1065			ASPHALT REMOVAL TO CLOSE 27 1/2 RD
18+45, 24' RT					85										TRAFFIC ISLAND AT 27 1/2 RD
18+85, 20' RT					30										TRAFFIC ISLAND AT 27 1/2 RD
18+45, 24' RT	42														TRAFFIC ISLAND AT 27 1/2 RD
18+85, 20' RT	6														TRAFFIC ISLAND AT 27 1/2 RD
18+32, 21' LT TO 33+81, 9' RT												1252			27 1/2 RD TO 27 3/4 RD
22+40, 7' RT TO 22+58 40' RT									42						AUTOZONE DR
22+84, 40' RT TO 23+00, 7' RT									40						AUTOZONE DR
22+91, 51' RT TO 22+91, 42' RT			5												SERVICE WALK
26+43, 7' RT TO 26+63, 40' RT									44						CAR WASH DR
26+50, 54' RT TO 26+50, 41' RT			7												SERVICE WALK
26+91, 40' RT TO 27+12, 9' RT									44						CAR WASH DR
30+79, 27' RT TO 30+94, 41' RT					21										LUBE/LIQUOR DRIVE
31+29, 48' RT TO 31+29, 59' RT									11						LUBE/LIQUOR DRIVE
33+69, 42' RT TO 33+69, 53' RT			6												27 3/4 RD
SECTION 1 TOTALS	48		18		136		11		181		3076		305		

TABULATION OF REMOVALS - SECTION 2

STATION	(202-00000) REMOVAL OF STRUCTURE AND OBSTRUCTIONS		(202-00010) REMOVAL OF TREE		(202-00021) REMOVAL OF MANHOLE		(202-00250) REMOVAL OF PAVEMENT MARKING		(202-00425) REMOVAL OF BRIDGE RAILING		(202-01000) REMOVAL OF FENCE		COMMENTS
	LS		EA		EA		SF		LF		LF		
	Plan	As Const	Plan	As Const	Plan	As Const	Plan	As Const	Plan	As Const	Plan	As Const	
B 1/2 ROAD													
4+50, 19' RT TO 6+70, 28' RT												216	SOUTH SIDE B 1/2 WEST END PROJECT
6+15, 34' LT			1										NORTH SIDE B 1/2 WEST END PROJECT
7+84, 40' LT			1										NORTH SIDE B 1/2 WEST END PROJECT
6+80, 24' RT			6										SOUTH SIDE B 1/2 WEST END PROJECT
8+12, 40' RT			1										SOUTH SIDE B 1/2 WEST END PROJECT
13+32, 20' RT TO 15+53, 20' RT									232				S SIDE OF STRUCTURE H-02-T
20+93, 14' RT					1								ABANDON MH NORTH OF AUTOZONE
29+52, 38' RT			1										NORTH OF LUBE CENTER
26+66, 4' RT TO 26+87, 4' RT							10						WHITE STRIPE ACROSS CAR WASH DRIVE
29+13, 4' RT TO 29+39, 4' RT							13						WHITE STRIPE ACROSS CAR WASH/LUBE DRIVE
29+42 TO 30+79&30+94 TO 30+97	1												WOOD BORDER NORTH OF LUBE CENTER
PROJECT TOTAL	1		10		1		23		232		216		

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 Unit Information: City of GJ Unit Leader Initials: DPJ

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**TABULATION OF
REMOVALS**

Designer: John Smith Structure Numbers
 Detailer: John Smith
 Sheet Subset: Rem Tab Subset Sheets: 1 of 1

Project No./Code
 TAP M555-032
 20736
 Sheet Number 11

TABULATION OF ADJUSTMENTS AND RESETS

STATION	OFFSET	SIDE	(210-00050) RESET FIRE HYDRANT										COMMENTS
			(210-04010) ADJUST MANHOLE		(210-04050) ADJUST VALVE BOX		(210-04060) ADJUST WATER METER		(210-01700) RESET SPRINKLER HEAD				
			EA	EA	EA	EA	EA	EA					
Plan	As Const	Plan	As Const	Plan	As Const	Plan	As Const	Plan	As Const	Plan	As Const		
B 1/2 ROAD													
21+05	16'	RT									1	IN FRONT OF AUTOZONE	
21+18	7'	RT				1						AT 27 1/2 RD INTERSECTION	
21+29	32'	RT		1								IN FRONT OF AUTOZONE	
21+83	39'	RT				1						IN FRONT OF AUTOZONE	
22+05	39'	RT				1						IN FRONT OF AUTOZONE	
22+34	39'	RT				1						IN FRONT OF AUTOZONE	
22+56	39'	RT								1		IN FRONT OF AUTOZONE	
23+35	42'	RT								1		IN FRONT OF THE SHOPS OF ORCHARD MESA CENTER	
24+82	25'	RT				1						IN FRONT OF THE SHOPS OF ORCHARD MESA CENTER	
24+90	25'	RT				1						IN FRONT OF THE SHOPS OF ORCHARD MESA CENTER	
24+95	25'	RT				1						IN FRONT OF THE SHOPS OF ORCHARD MESA CENTER	
26+05	25'	RT				1						IN FRONT OF THE SHOPS OF ORCHARD MESA CENTER	
26+15	18'	RT				1						IN FRONT OF VACANT PROPERTY	
26+16	36'	RT						1				IN FRONT OF VACANT PROPERTY	
26+22	41'	RT.								1		IN FRONT OF VACANT PROPERTY	
26+43	13'	RT.								1		IN FRONT OF VACANT PROPERTY	
26+48	42'	RT.								1		IN FRONT OF VACANT PROPERTY	
26+53	42'	RT.								1		IN FRONT OF VACANT PROPERTY	
26+53	54'	RT.								1		IN FRONT OF VACANT PROPERTY	
26+60	38'	RT	1									IN FRONT OF VACANT PROPERTY	
26+62	40'	RT.								1		IN FRONT OF VACANT PROPERTY	
26+63	9'	RT				1						IN FRONT OF VACANT PROPERTY	
26+63	18'	RT				1						IN FRONT OF VACANT PROPERTY	
26+65	8'	RT				1						IN FRONT OF VACANT PROPERTY	
26+93	25'	RT.								1		IN FRONT OF CAR WASH	
27+46	16'	RT.				1						IN FRONT OF CAR WASH	
27+50	20'	RT.								1		IN FRONT OF CAR WASH	
27+50	40'	RT								1		IN FRONT OF CAR WASH	
27+80	40'	RT								1		IN FRONT OF CAR WASH	
27+81	20'	RT.								1		IN FRONT OF CAR WASH	
28+07	20'	RT.								1		IN FRONT OF CAR WASH	
28+30	20'	RT								1		IN FRONT OF CAR WASH	
28+54	20'	RT.								1		IN FRONT OF CAR WASH	
28+79	20'	RT								1		IN FRONT OF CAR WASH	
29+02	23'	RT								1		IN FRONT OF CAR WASH	
29+12	12'	RT			1							AT CAR WASH/LUBE DRIVE INTERSECTION	
29+40	15'	RT				1						AT CAR WASH/LUBE DRIVE INTERSECTION	
29+45	31'	RT						1				IN FRONT OF LUBE CENTER	
29+98	29'	RT						1				IN FRONT OF LUBE CENTER	
30+66	20'	RT				1						HYDRANT RUN IN FRONT OF LUBE CENTER	
30+68	30'	RT	1									IN FRONT OF LUBE CENTER	
30+94	32'	RT			1							AT LUBE/LIQUOR DRIVE INTERSECTION	
PROJECT TOTAL			2		3		15		3		19		

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TABULATION OF
ADJUSTMENTS AND RESETS

Designer: John Smith Structure Numbers
 Detailer: John Smith
 Sheet Subset: tab util Subset Sheets: 1 of 1

Project No./Code
 TAP M555-032
 20736
 Sheet Number 12

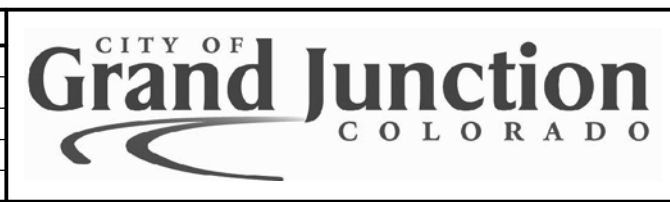
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SURFACING TABULATION

STATION	(213-00065) INORGANIC MULCH		(304-01000) AGGREGATE BASE COURSE (CLASS 1)		(304-06000) AGGREGATE BASE COURSE (CLASS 6)		(403-00720) HOT MIX ASPHALT (PATCHING) (ASPHALT)		(403-34741) HOT MIX ASPHALT (GRADING SX) (75) (PG 64-22)		(403-34771) HOT MIX ASPHALT (GRADING SX) (75) (PG 76-28)		(411-10255) EMULSIFIED ASPHALT (SLOW-SETTING)		(412-00800) CONCRETE PAVEMENT (8 INCH)		(602-00000) REINFORCING STEEL		COMMENTS
	CY		TON		TON		TON		TON		TON		GAL		SY		LB		
	Plan	As Const.	Plan	As Const.	Plan	As Const.	Plan	As Const.	Plan	As Const.	Plan	As Const.	Plan	As Const.	Plan	As Const.	Plan	As Const.	
B 1/2 ROAD																			
4+50, 9' LT TO 8+16, 5' LT			308		155				68		45		41						WEST END NORTH SIDE OF B 1/2 ROAD
4+50, 10' RT TO 8+50, 16' RT					132				62				28						WEST END SOUTH SIDE OF B 1/2 ROAD (4" THICK ASPHALT)
17+50, 21' RT TO 19+25, 34' RT					12														UNDER CURB AND GUTTER
18+00, 21' LT TO 18+48, 33' LT					6														UNDER CURB AND GUTTER
18+26, 9' RT TO 18+60, 12' RT					14		12						5						PATCH BACK REMOVED TRAFFIC ISLAND
18+35, 20' LT TO 19+70, 4' RT			190		75				42		28		25						PAVING AT 27 1/2 INSIDE CDOT ROW
18+95, 10' RT TO 22+47, 20' RT	40																		BETWEEN BACK OF CURB AND FACE OF WALK
18+80, 14' RT TO 22+47, 33' RT					123														UNDER SIDEWALK IN FRONT OF AUTOZONE
19+29, 15' RT TO 22+57, 40' RT					23														UNDER CURB AND GUTTER IN FRONT OF AUTOZONE
19+70, 4' RT TO 33+81, 57' RT			1083		433				399				145						ROADWAY FROM 27 1/2 TO 27 3/4
22+53, 33' RT					3														UNDER CURB RAMP AUTOZONE DRIVE INTERESECTION
22+84, 40' RT TO 26+63, 40' RT					28														UNDER CURB AND GUTTER IN FRONT OF THE SHOPS OF ORCHARD MESA CENTER
22+88, 33' RT					3														UNDER CURB RAMP AUTOZONE DRIVE INTERESECTION
22+93, 27' RT TO 26+53, 20' RT	62																		BETWEEN BACK OF CURB AND FACE OF WALK
22+95, 33' RT TO 26+53, 33' RT					100														UNDER SIDEWALK IN FRONT OF THE SHOPS OF ORCHARD MESA CENTER
23+08, 13' RT TO 23+08, 23' RT					2														UNDER GUTTER CHASE TO DITCH IN FRONT OF THE SHOPS OF ORCHARD MESA CENTER
26+60, 33' RT					3														UNDER CURB RAMP CAR WASH DRIVE INTERSECTION
26+91, 40' RT TO 29+10, 40' RT					17														UNDER CURB AND GUTTER IN FRONT OF THE CAR WASH
26+95, 33' RT					3														UNDER CURB RAMP CAR WASH DRIVE INTERSECTION
27+01, 33' RT TO 29+00, 33' RT					53														UNDER SIDEWALK IN FRONT OF THE CAR WASH
27+01, 20' RT TO 29+01, 20' RT	33																		BETWEEN BACK OF CURB AND FACE OF WALK
27+38, 13' RT TO 27+38, 20' RT					1														UNDER GUTTER CHASE TO DITCH IN FRONT OF THE CAR WASH
29+06, 33' RT					4														UNDER CURB RAMP LUBE/LIQUOR DRIVE INTERSECTION
29+42, 40' RT TO 29+67, 13' RT					3														UNDER CURB AND GUTTER IN FRONT OF LUBE CENTER
29+46, 33' RT					4														UNDER CURB RAMP LUBE/LIQUOR DRIVE INTERSECTION
29+52, 20' RT TO 29+83, 20' RT	5																		BETWEEN BACK OF CURB AND FACE OF WALK
29+52, 33' RT TO 30+88, 33' RT					35														UNDER SIDEWALK IN FRONT OF LUBE CENTER
29+67, 14' RT TO 29+84, 19' RT					1														UNDER CURB AT BUS STOP
29+67, 13' RT TO 30+73, 13' RT					29										96		1360		BUS PULL OUT
29+84, 19' RT TO 30+56, 19' RT					5														UNDER CURB AND GUTTER AT BUS PULL OUT
30+56, 19' RT TO 30+73, 14' RT					1														UNDER CURB AT BUS STOP
30+57, 20' RT TO 30+88, 20' RT	5																		BETWEEN BACK OF CURB AND FACE OF WALK
30+73, 13' RT TO 30+99, 55' RT					4														UNDER CURB AND GUTTER IN FRONT OF LUBE CENTER
30+95, 33' RT					4														UNDER CURB RAMP LUBE/LIQUOR DRIVE INTERSECTION
31+29, 59' RT TO 33+73, 41' RT					19														UNDER CURB AND GUTTER IN FRONT OF LIQUOR STORE
31+30, 51' RT TO 31+42, 50' RT					1														UNDER GUTTER CHASE TO DETENTION FACILITY IN FRONT OF LIQUOR STORE
31+33, 33' RT					4														UNDER CURB RAMP LUBE/LIQUOR DRIVE INTERSECTION
31+39, 20' RT TO 33+53, 20' RT	25																		BETWEEN BACK OF CURB AND FACE OF WALK
31+40, 33' RT TO 33+72, 53' RT					60														UNDER SIDEWALK IN FRONT OF LIQUOR STORE
33+62, 33' RT					4														UNDER CURB RAMP 27 3/4 ROAD INTERSECTION
SUB TOTAL SHT 1	170		1581		1364		12		571		73		244		96		1360		

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TABULATION OF SURFACING

Designer: John Smith Structure Numbers
 Detailer: John Smith
 Sheet Subset: tab o surf Subset Sheets: 1 of 1

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 20736
 Sheet Number 13

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TABULATION OF GUARDRAIL, CURB, AND GUTTER

STATION	(606-01370) TRANSITION TYPE 3G (31in MGS)		(606-02005) END ANCHORAGE (FLARED) (31in MGS)		(606-00710) GUARDRAIL TYPE 7 (STYLE CA)		(606-00900) GUARDRAIL (SPECIAL)		(609-20010) CURB TYPE 2 (SECTION B)		(609-24003) GUTTER TYPE 2 (3 FOOT)		(609-21023) CURB AND GUTTER TYPE 2 (SECTION II-B) (SPECIAL)		COMMENTS	
	EACH		EACH		LF		LF		LF		LF		LF			
	Plan	As Const	Plan	As Const	Plan	As Const	Plan	As Const	Plan	As Const	Plan	As Const	Plan	As Const		
B 1/2 ROAD																
4+75, 14.50' RT TO 5+12.34, 10.61' RT			1													END OF GUARDRAIL WEST END OF PROJECT, SOUTH SIDE OF B 1/2
5+12.34, 10.61' RT TO 5+30.48, 11.13' RT	1															END OF GUARDRAIL WEST END OF PROJECT, SOUTH SIDE OF B 1/2
5+30.57, 12.12' RT TO 19+27.15, 21.27' RT					1407											JERSEY BARRER FROM WEST END TO 27 1/2 TO SEPARATE VEHICLES FROM PEDESTRIANS
13+29.15, 16' RT TO 15+49.15, 16' RT							220									PEDESTRIAN SCREENING PLACED ON STRUCTURE H-02-T
17+50, 21' RT TO 19+25, 34' RT													176			PLACED SOUTH SIDE OF B 1/2 TO CLOSE OFF 27 1/2 ROAD
18+00, 21' LT TO 18+48, 33' LT													94			PLACED ON THE NORTH SIDE OF B 1/2 AT 27 1/2 ROAD
19+29, 15' RT TO 22+57, 40' RT													337			IN FRONT OF AUTOZONE
22+84, 40' RT TO 26+63, 40' RT													411			IN FRONT OF THE SHOPS OF ORCHARD MESA CENTER
23+08, 13' RT TO 23+08, 19' RT										6						GUTTER CHASE TO SWALE IN FRONT OF THE SHOPS OF ORCHARD MESA CENTER
26+91, 40' RT TO 29+10, 40' RT													251			IN FRONT OF THE CAR WASH
27+38, 13' RT TO 27+38, 20' RT										7						GUTTER CHASE TO SWALE IN FRONT OF THE CAR WASH
29+42, 40' RT TO 29+67 13' RT													42			CURB AND GUTTER IN FRONT OF THE LUBE CENTER
29+67, 14' RT TO 29+84, 19' RT									18							CURB AT BUS PULLOUT
29+84, 19' RT TO 30+56, 19' RT													75			CURB AND GUTTER AT THE BUS PULLOUT
30+56, 19' RT TO 30+73, 14' RT									18							CURB AT BUS PULLOUT
30+73, 13' RT TO 30+99, 55' RT													57			CURB AND GUTTER IN FRONT OF THE LUBE CENTER
31+29, 59' RT TO 33+73 41' RT													286			CURB AND GUTTER IN FRONT OF THE LIQUOR STORE
31+30, 53' RT TO 31+42, 53' RT									12							CURB AT GUTTER CHASE INTO DETENTION AREA IN FRONT OF THE LIQUOR STORE
31+30, 51' RT TO 31+42, 51' RT											12					GUTTER CHASE INTO THE DETENTION AREA IN FRONT OF THE LIQUOR STORE
31+30, 48' RT TO 31+42, 48' RT									12							CURB AT GUTTER CHASE INTO DETENTION AREA IN FRONT OF THE LIQUOR STORE
SUB TOTAL SHT 1	1		1		1407		220		60		25		1729			

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As Constructed	TABULATION OF GUARD RAIL, HAND RAIL, CURB, AND GUTTER		Project No./Code
No Revisions:			TAP M555-032
Revised:	Designer: John Smith	Structure Numbers	20736
Void:	Detailer: John Smith	Sheet Subset: t sw, cg, mc	Sheet Number 14
	Subset Sheets:	1 of 1	

TABULATION OF CONCRETE SIDEWALK, CONCRETE CURB RAMP, AND BROADBAND CONDUIT

STATION	(608-00000) CONCRETE SIDEWALK (4 INCH)		(608-00010) CONCRETE CURB RAMP		(613-04010) CONDUIT (4") (BROADBAND)		(613-07040) PULL BOX (30"x48"x24") (BROADBAND)		COMMENTS
	SY		SY		LF		EA		
	Plan	As Const	Plan	As Const	Plan	As Const	Plan	As Const	
B 1/2 ROAD									
5+30.65, 13.12' RT TO 5+48.82, 12.50' RT	36								WEST END OF PROJECT, SOUTH SIDE OF B 1/2
18+80, 14' RT TO 22+47, 33' RT	411								SIDEWALK IN FRONT OF AUTOZONE
19+59, 21' RT							1		BROADBAND PULL BOX
19+59, 21' RT TO 21+34, 28' RT (TWO EACH)					350				4" BROADBAND CONDUIT (TWO CONDUITS)
21+34, 28' RT							1		BROADBAND PULL BOX
21+34, 28' RT TO 21+74, 38.7' RT (TWO EACH)					80				4" BROADBAND CONDUIT (TWO CONDUITS)
21+74, 38.7' RT							1		BROADBAND PULL BOX
21+74, 38.7' RT TO 26+41, 38.7' RT (TWO EACH)					934				4" BROADBAND CONDUIT (TWO CONDUITS)
22+53, 33' RT			10						CURB RAMP AUTOZONE DRIVE INTERSECTION
22+88, 33' RT			10						CURB RAMP AUTOZONE DRIVE INTERSECTION
22+95, 33' RT TO 26+53, 33' RT	426								SIDEWALK IN FRONT OF THE SHOPS OF ORCHARD MESA CENTER
26+41, 38.7' RT							1		BROADBAND PULL BOX
26+41, 38.7' RT TO 29+83, 38.5' RT (TWO EACH)					684				4" BROADBAND CONDUIT (TWO CONDUITS)
26+60, 33' RT			10						CURB RAMP CAR WASH DRIVE INTERSECTION
26+95, 33' RT			10						CURB RAMP CAR WASH DRIVE INTERSECTION
27+01, 33' RT TO 29+00, 33' RT	225								SIDEWALK IN FRONT OF THE CAR WASH
29+06, 33' RT			12						CURB RAMP CAR WASH/LUBE DRIVE INTERSECTION
29+46, 33' RT			13						CURB RAMP CAR WASH/LUBE DRIVE INTERSECTION
29+52, 33' RT TO 30+88, 33' RT	167								SIDEWALK IN FRONT OF THE LUBE CENTER
29+83, 38.5' RT							1		BROADBAND PULL BOX
29+83, 38.5' RT TO 33+51, 39' RT (TWO EACH)					736				4" BROADBAND CONDUIT (TWO CONDUITS)
30+95, 33' RT			13						CURB RAMP LUBE/LIQUOR DRIVE INTERSECTION
31+33, 33' RT			13						CURB RAMP LUBE/LIQUOR DRIVE INTERSECTION
31+40, 33' RT TO 33+72, 53' RT	257								SIDEWALK IN FRONT OF THE LIQUOR STORE
33+51, 39' RT							1		BROADBAND PULL BOX
33+62, 33' RT			13						CURB RAMP 27 3/4 ROAD INTERSECTION
PROJECT TOTAL	1522		104		2784		6		

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TABULATION OF CONCRETE SIDEWALK,
 CONCRETE CURB RAMP,
 BROADBAND CONDUIT
 Designer: John Smith Structure Numbers
 Detailer: John Smith
 Sheet Subset: t sw,cg,mc Subset Sheets: 1 OF 1

Project No./Code
 TAP M555-032
 20736
 Sheet Number 15

TABULATION OF DRAINAGE ITEMS

STATION	OFFSET	SIDE	STRUCTURE NUMBER		(202-00035)		(603-01185)		(603-01245)		(603-01425)		(603-01485)		(603-02185)		(604-13005)		(604-19005)		(604-30010)		(604-30015)		COMMENTS			
			FROM	TO	REMOVE EXISTING PIPE		18 INCH REINFORCED CONCRETE PIPE (COMPLETE IN PLACE)	24 INCH REINFORCED CONCRETE PIPE (COMPLETE IN PLACE)	42 INCH REINFORCED CONCRETE PIPE (COMPLETE IN PLACE)	48 INCH REINFORCED CONCRETE PIPE (COMPLETE IN PLACE)	23X14 INCH REINFORCED CONCRETE PIPE (COMPLETE IN PLACE)	INLET TYPE 13 (5 FOOT)	INLET (SPECIAL) (5 FOOT)	Manhole Slab Base (10 Foot)	Manhole Slab Base (15 Foot)													
					LF		LF	LF	LF	LF	EA	EA	EA	EA														
					Plan	As Const	Plan	As Const	Plan	As Const	Plan	As Const	Plan	As Const	Plan	As Const	Plan	As Const	Plan	As Const								
B 1/2 ROAD																												
LINE A																												
20+97	30'	RT	EX PIPE END	EX MH	33																					REMOVE 36 INCH RCP TO FACILITATE NEW CONSTRUCTION		
21+29	32'	RT		EX MH																						END PIPE REMOVAL AT EX MH		
LINE A																												
21+27.18	31.20'	RT	EX MH	(A1)					46																		PIPE (A0)	
20+83.03	20.16'	RT		(A2)																	1						MANHOLE (A1) (90" Dia.)	
20+83.03	20.16'	RT	(A1)	(A3)									86														PIPE (A2)	
19+98.42	33.11'	RT		(A4)																							MANHOLE (A3) (90" Dia.)	
19+98.42	33.11'	RT	(A3)	EX PIPE					5																		PIPE (A4)	
19+94.46	30.19'	RT		EX PIPE																							EX PIPE END/CONNECTION NO SEPARATE PAY	
LINE B																												
20+96.55	34.75'	RT	EX PIPE	(A1)																								PIPE (B1)
20+83.03	20.16'	RT		(A1)										20														TABULATED IN LINE A
LINE C																												
19+92.50	39.86'	RT	EX PIPE	(A3)		9																						PIPE (C1)
19+98.42	33.11'	RT		(A3)																								TABULATED IN LINE A
LINE D																												
19+89.98	35.34'	RT	EX PIPE	(A3)				9																				PIPE (D1)
19+98.42	33.11'	RT		(A3)																								TABULATED IN LINE A
LINE E																												
20+58.27	13'	RT		(E2)																	1							INLET (E1)
20+58.27	13'	RT	(E1)	(A2)		11																						PIPE (E2)
20+59.86	23.96'	RT		(A2)																								TABULATED IN LINE A
LINE F																												
23+07.97	20.65'	RT		(F2)																	1							INLET (F1)
23+07.97	20.65'	RT	(F1)	EX PIPE		8																						PIPE (F2)
23+07.97	29.04'	RT		EX PIPE																								CONNECT TO EX PIPE NO SEPARATE PAY
LINE G																												
27+17.45	21.67'	RT		(G2)																	1							INLET (G1)
27+17.45	21.67'	RT	(G1)	EX PIPE		5																						PIPE (G2)
27+17.46	26.52'	RT		EX PIPE																								CONNECT TO EX PIPE NO SEPARATE PAY
LINE H																												
29+96.58	22.51'	RT		(H2)																	1							INLET (H1)
29+96.58	22.51'	RT	(H1)	EX PIPE		8																						PIPE (H2)
29+96.59	30.35'	RT		EX PIPE																								CONNECT TO EX PIPE NO SEPARATE PAY
NO LINE I																												
LINE J																												
33+36.63	21.86'	RT		(J2)																	1							INLET (J1)
33+36.63	21.86'	RT	(J1)	EX PIPE		9																						PIPE (J2)
33+36.64	31.12'	RT		EX PIPE																								CONNECT TO EX PIPE NO SEPARATE PAY
PROJECT TOTAL					33	50	9	51	86	20	2	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	

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 Unit Information: City of GJ Unit Leader Initials: DPJ

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Sheet Revisions		
Date:	Comments	Init.



As Constructed
 No Revisions:
 Revised:
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**TABULATION OF DRAINAGE
 REMOVALS & DRAINAGE ITEMS**

Designer: John Smith Structure Numbers
 Detailer: John Smith
 Sheet Subset: tab o drn Subset Sheets: 1 of 1

Project No./Code
 TAP M555-032
 20736
 Sheet Number 16

TABULATION OF CONSTRUCTION TRAFFIC CONTROL DEVICES

SIGN CODE	SIGN PANEL SIZE			LEGEND	(630-80341) CONSTRUCTION TRAFFIC SIGN (PANEL SIZE A)		(630-80342) CONSTRUCTION TRAFFIC SIGN (PANEL SIZE B)	
	W"	x	H"		EACH		EACH	
					Plan	As Const	Plan	As Const
W20-7a	48	x	48	FLAGGER AHEAD (SYMBOL)			4	
R2-1 (20)	36	x	48	SPEED / LIMIT / 20	4			
W21-5	36	x	36	SHOULDER / WORK	4			
W9-1	36	x	36	RIGHT LAND ENDS	4			
G20-10	48	x	48	XYZ / CONSTRUCTION / THANKS / 555-555-5555			4	
R52-6a	36	x	48	BEGIN / FINES / DOUBLE / IN WORK / ZONE			4	
G20-5AP	24	x	18	WORK ZONE	4			
R52-6b	36	x	48	END / FINES / DOUBLE / IN WORK / ZONE			4	
W4-2	36	x	36	LANE ENDS (SYMBOL)	4			
R1-1	30	x	30	STOP	2			
PROJECT TOTALS =					22		16	

ITEM NUMBER	ITEM DESCRIPTION	UNIT	PLAN QUANTITY
630-00000	FLAGGING	HOUR	500
630-00007	TRAFFIC CONTROL INSPECTION	DAY	32
630-00012	TRAFFIC CONTROL MANAGEMENT	DAY	80
630-80336	BARRICADE (TYPE 3 M-B)(TEMPORARY)	EACH	5
630-80358	ADVANCED WARNING FLASHING ARROW PANEL (TYPE C)	EACH	2
630-80359	PORTABLE MESSAGE SIGN PANEL	DAY	60
630-80360	DRUM CHANNELIZING DEVICE	EACH	80
630-80363	DRUM CHANNELIZING DEVICE (WITH LIGHT)(FLASHING)	EACH	80
630-80380	TRAFFIC CONE	EACH	160

SCHEDULE OF CONSTRUCTION SIGN PANEL (SPECIAL) 630-80344

ITEM	EACH		QUANTITY	TOTAL SQ. FT.	AS CONST.
	DIMENSION	SQ. FT.	EACH		
27 1/2 RD	42" x 18"		2	10.5	
27 3/4 RD	42" x 18"		2	10.5	
TOTAL				21	

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 Unit Information: City of GJ Unit Leader Initials: DPJ

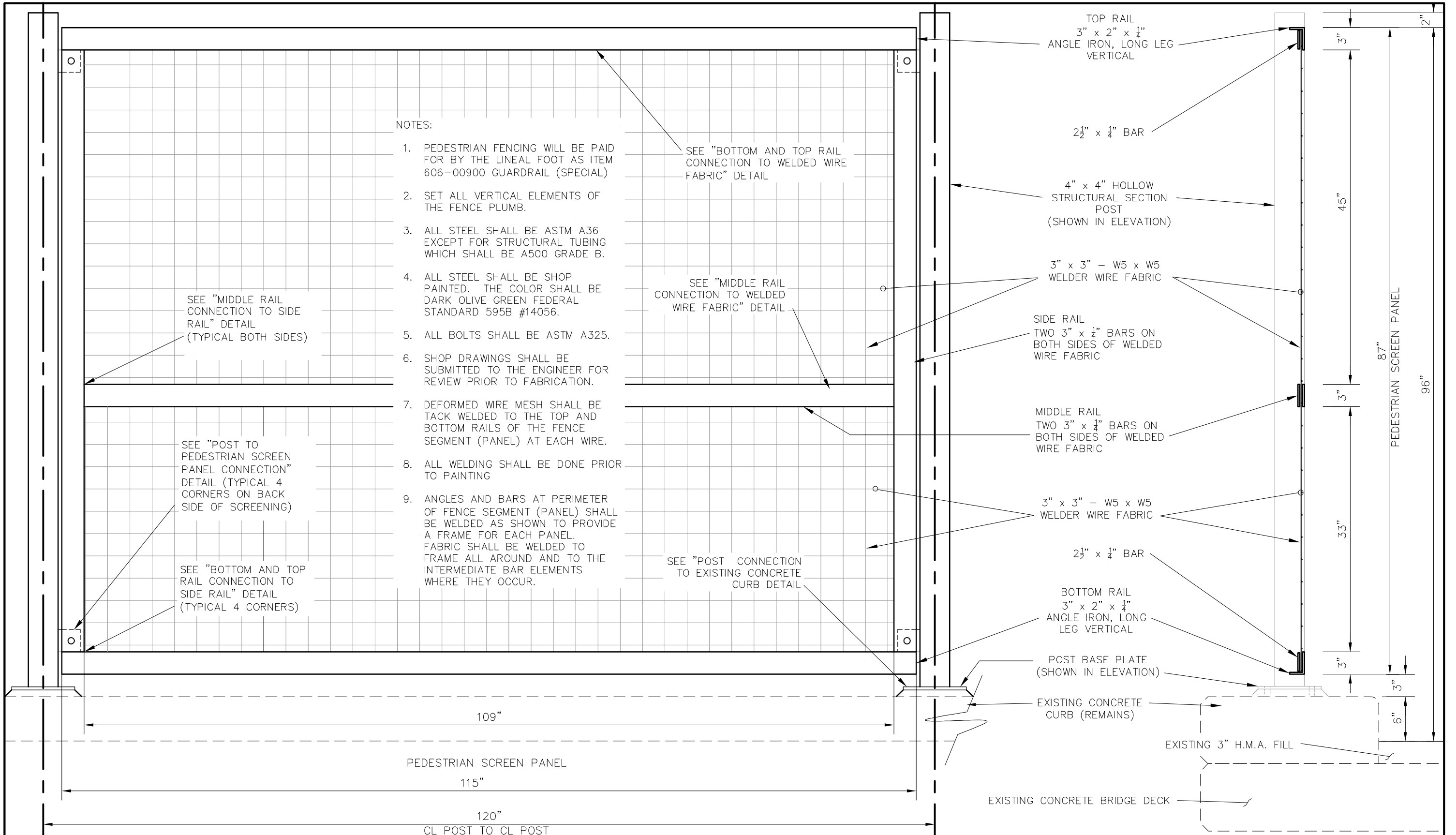
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Sheet Revisions		
Date:	Comments	Init.



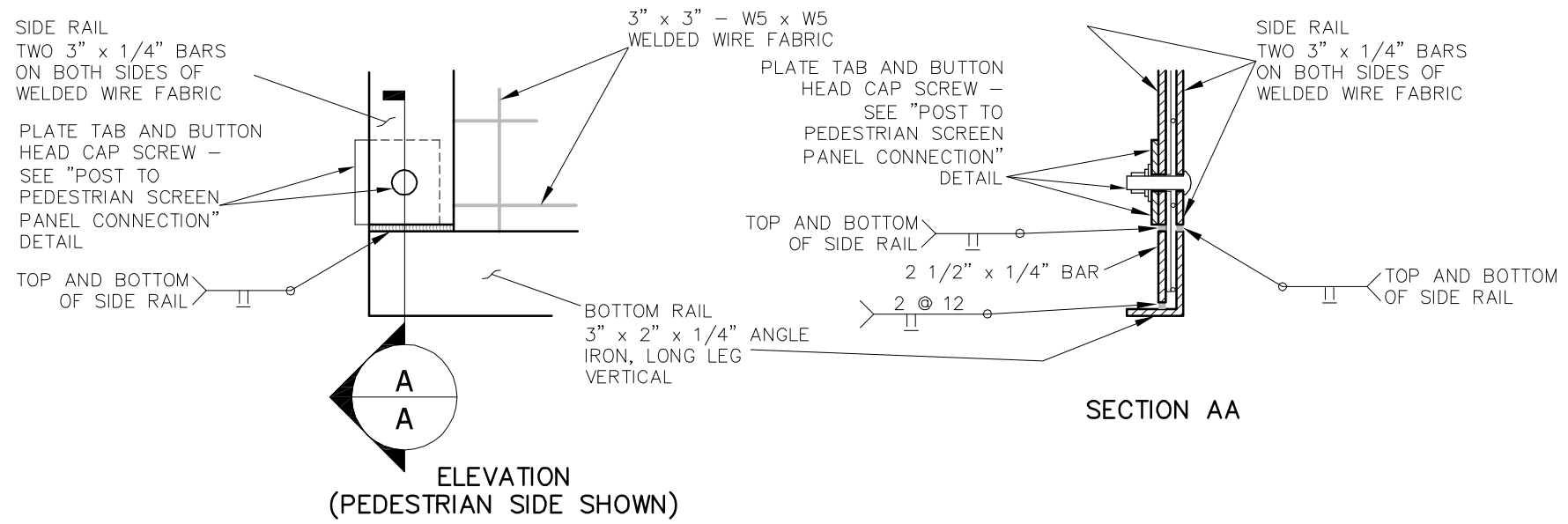
As Constructed	Tabulation of Construction Traffic Control Devices		Project No./Code
No Revisions:			TAP M555-032
Revised:	Designer:	Structure Numbers	20736
Void:	Detailer:		
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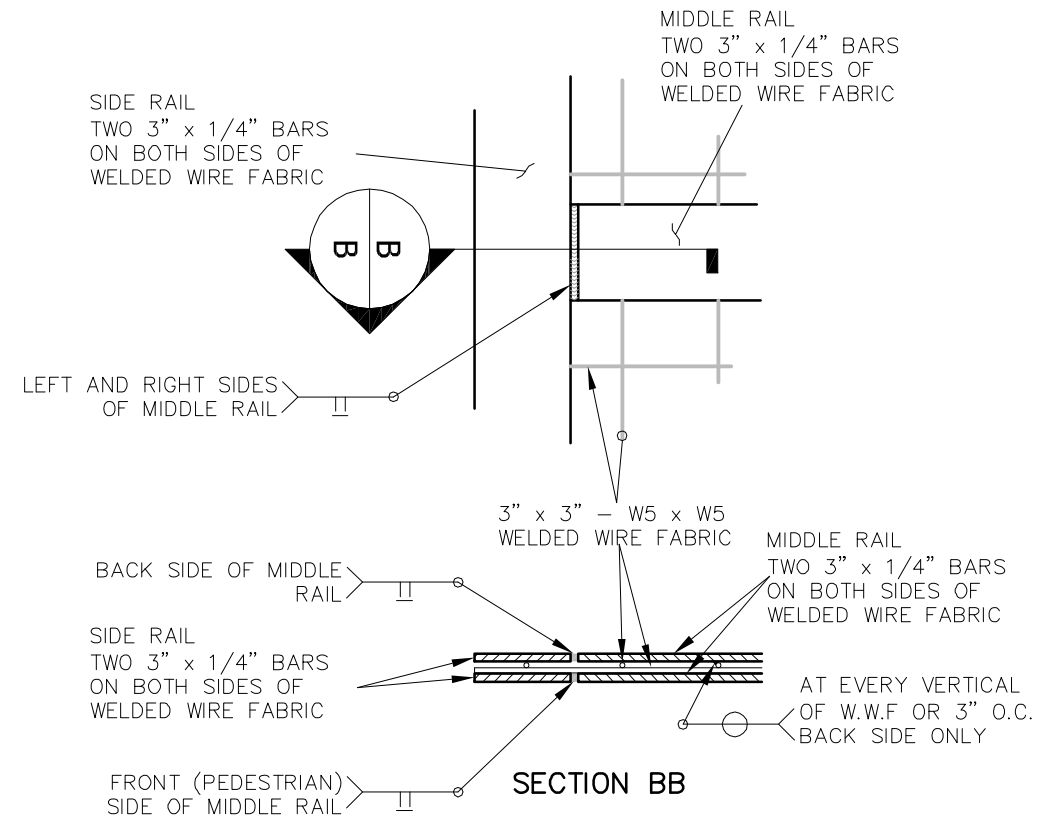


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File Name: Roadway Details	Date:	Comments	Init.			GUARDRAIL (SPECIAL)			
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Unit Information: City of GJ	Unit Leader Initials: JJV				Revised:	Designer: JCS	Structure Numbers	-	Sheet Number 18
					Void:	Detailer: JCS	Subset Sheets:	1 of 4	
						Sheet Subset: RD DET			

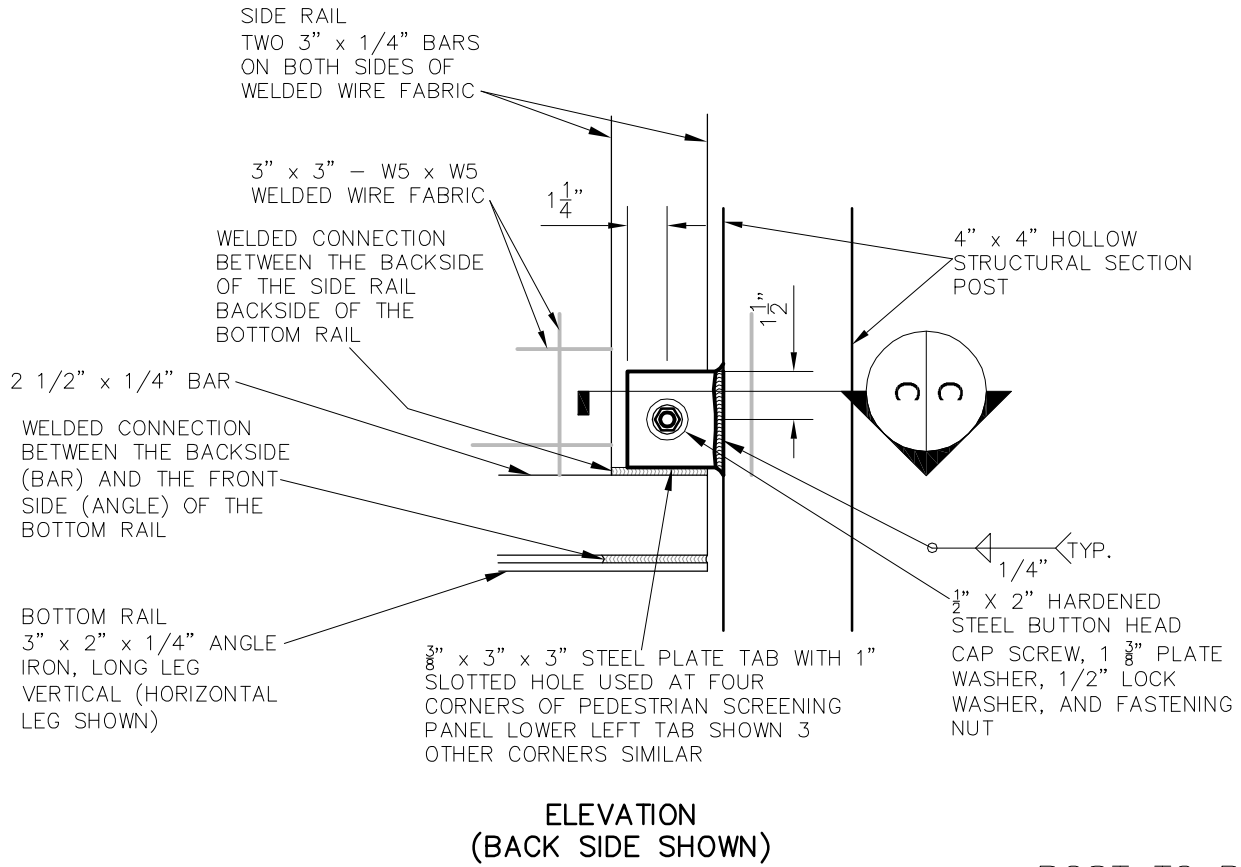
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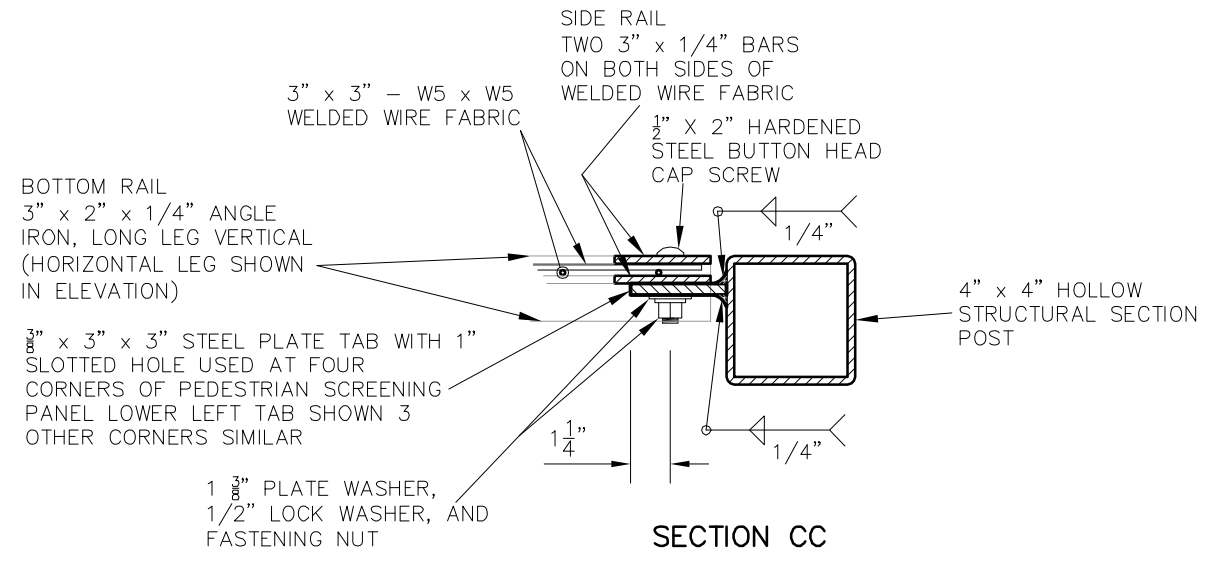
BOTTOM AND TOP RAIL CONNECTION TO SIDE RAIL (BOTTOM RAIL SHOWN - TOP RAIL SIMILAR)



MIDDLE RAIL CONNECTION TO SIDE RAIL (LEFT SHOWN - RIGHT SIMILAR)



POST TO PEDESTRIAN SCREEN PANEL CONNECTION (LOWER LEFT CORNER SHOWN - 3 OTHER CORNERS SIMILAR)



Print Date: © left
File Name: Roadway Details
Horiz. Scale: AS SHOWN Vert. Scale: AS SHOWN
Unit Information: City of GJ Unit Leader Initials: JJV

Sheet Revisions		
Date:	Comments	Init.

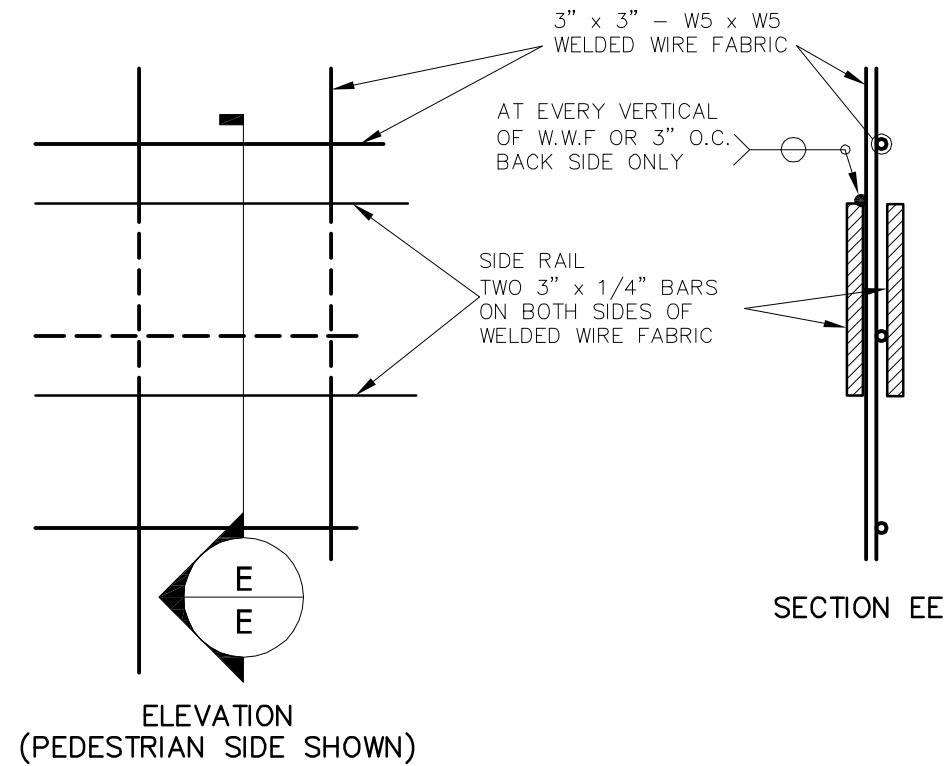


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Revised:
Void:

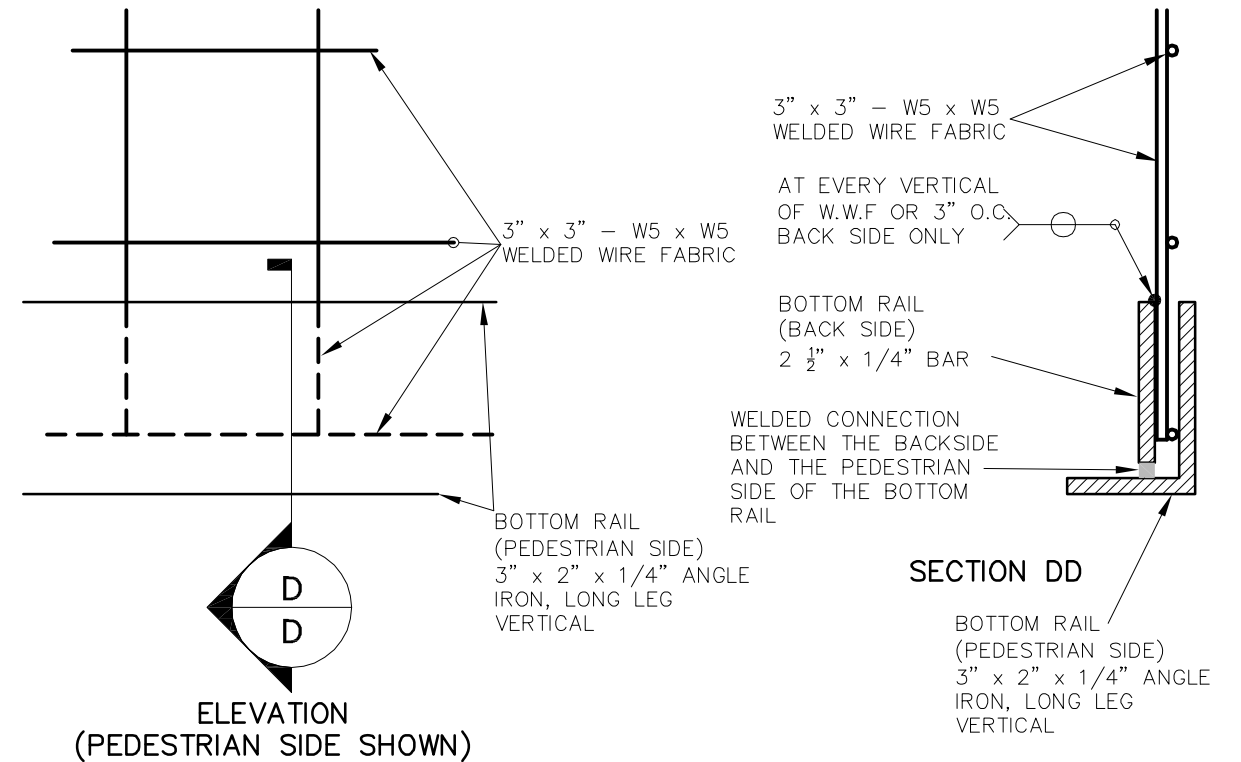
ROADWAY DETAILS GUARDRAIL (SPECIAL) CONNECTION DETAILS			
Designer:	JCS	Structure Numbers:	-
Detailer:	JCS	Subset Sheets:	2 of 4

Project No./Code
TAP M555-032
20736
Sheet Number 19

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MIDDLE RAIL
CONNECTION TO WELDED WIRE FABRIC



BOTTOM AND TOP RAIL
CONNECTION TO WELDED WIRE FABRIC
(BOTTOM RAIL SHOWN - TOP SIMILAR)

Print Date: © left
File Name: Roadway Details
Horiz. Scale: AS SHOWN Vert. Scale: AS SHOWN
Unit Information: City of GJ Unit Leader Initials: JJV

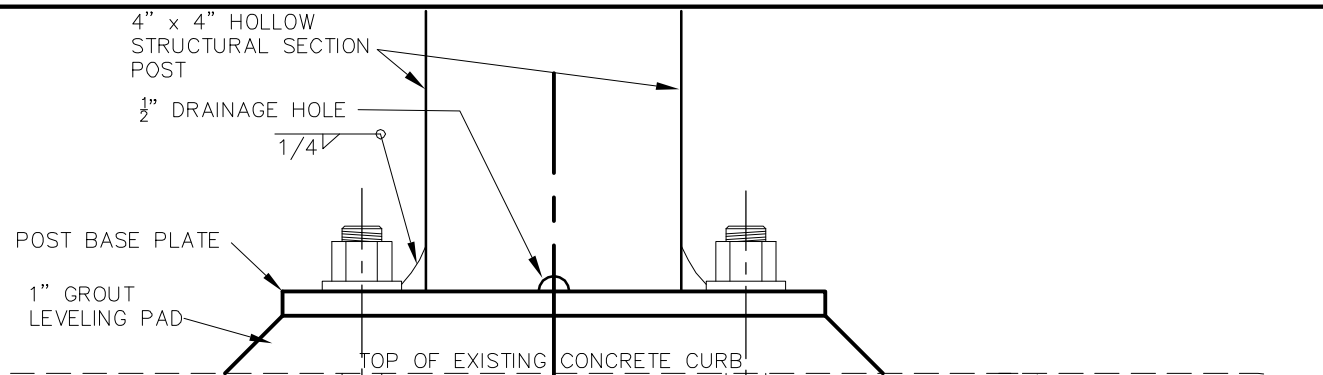
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Sheet Revisions		
Date:	Comments	Init.

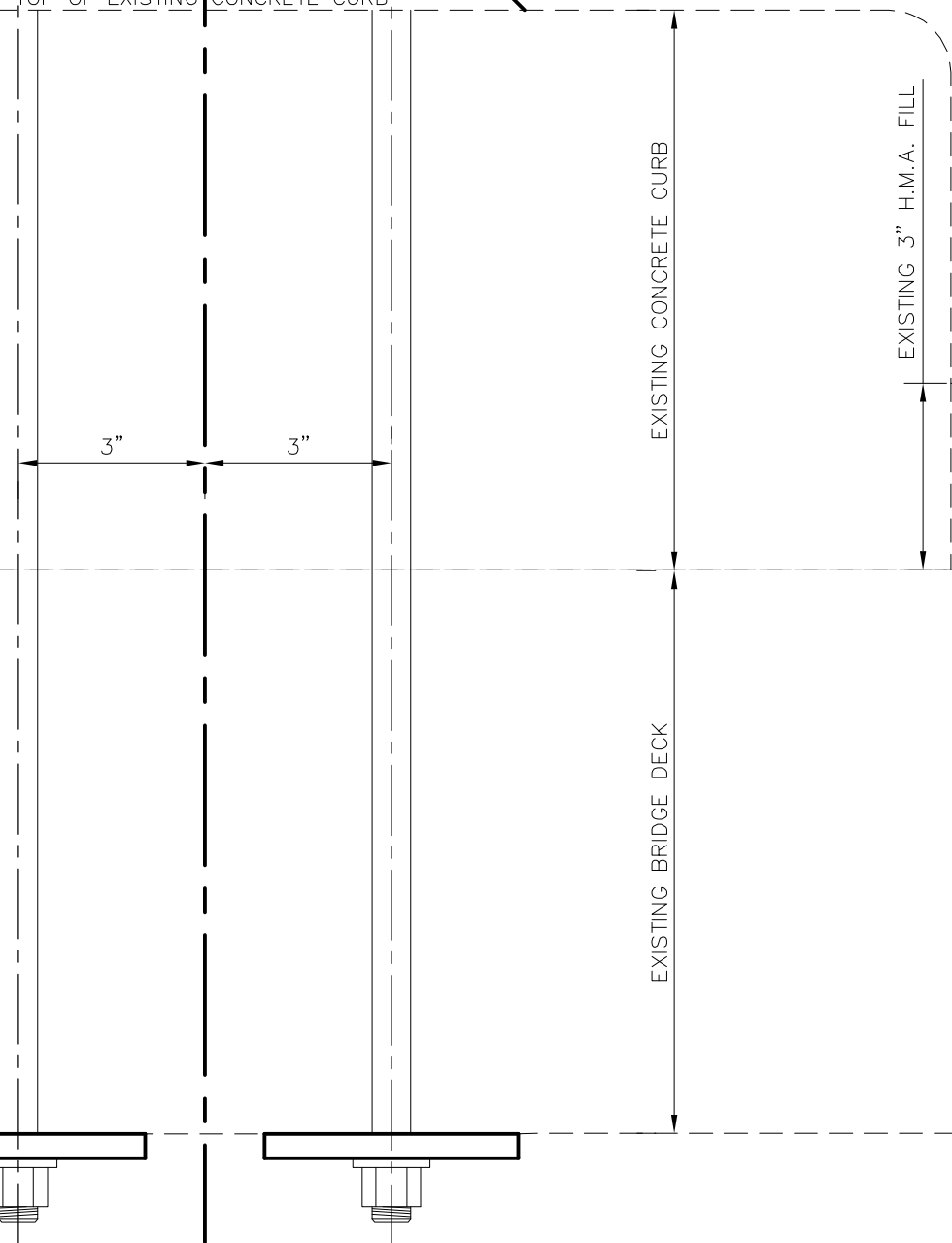


As Constructed	ROADWAY DETAILS			Project No./Code
	GUARDRAIL (SPECIAL)			
No Revisions:	CONNECTION DETAILS			TAP M555-032
Revised:	Designer: JCS	Structure Numbers	-	20736
Void:	Detailer: JCS	Subset Sheets:	-	Sheet Number 20
	Sheet Subset: RD DET		3 of 4	

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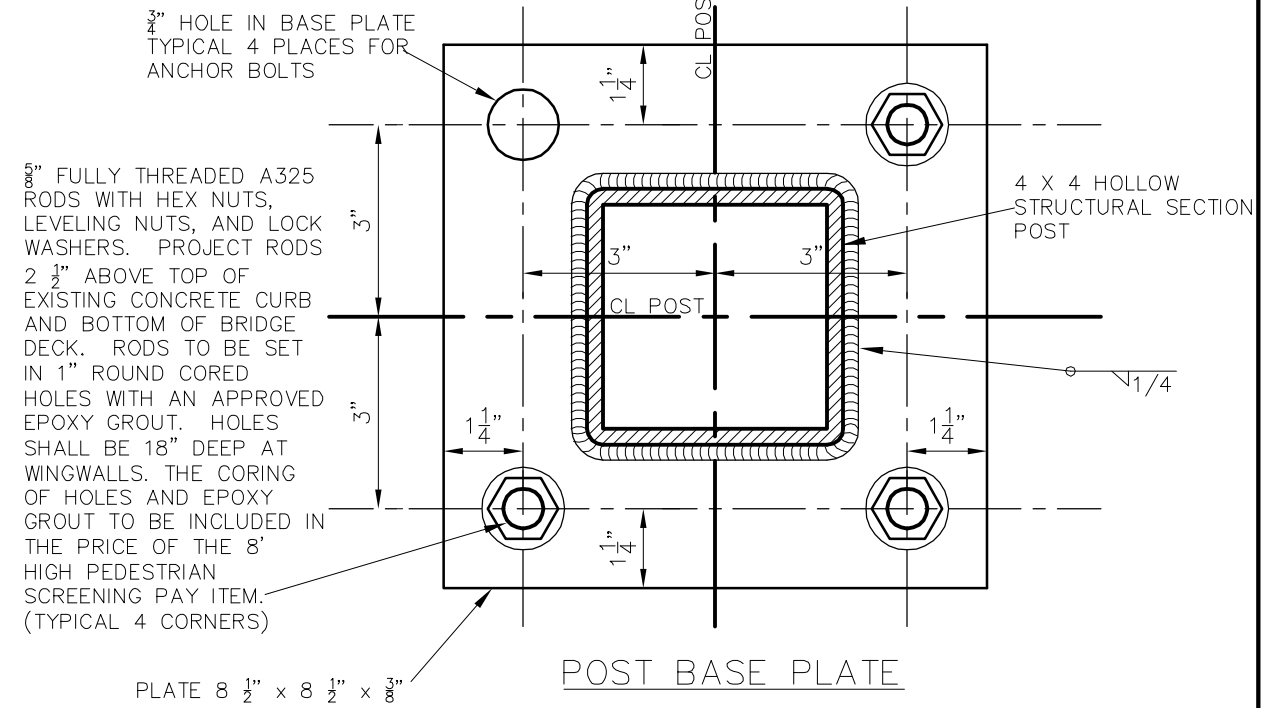


5/8" FULLY THREADED A325 RODS WITH HEX NUTS, LEVELING NUTS, AND LOCK WASHERS. PROJECT RODS 2 1/2" ABOVE TOP OF EXISTING CONCRETE CURB AND BOTTOM OF BRIDGE DECK. RODS TO BE SET IN 1" ROUND CORED HOLES WITH AN APPROVED EPOXY GROUT. HOLES SHALL BE 18" DEEP AT WINGWALLS. THE CORING OF HOLES AND EPOXY GROUT TO BE INCLUDED IN THE PRICE OF THE 8' HIGH PEDESTRIAN SCREENING PAY ITEM. (TYPICAL 4 CORNERS)



ELEVATION VIEW
POST CONNECTION TO EXISTING CONCRETE CURB

3" x 3" x 3/8" PLATE WITH 1 3/8" Ø HOLE (TYP) (TYPICAL 4 CORNERS)



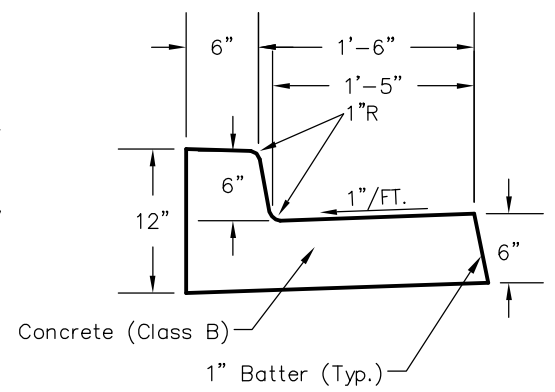
5/8" FULLY THREADED A325 RODS WITH HEX NUTS, LEVELING NUTS, AND LOCK WASHERS. PROJECT RODS 2 1/2" ABOVE TOP OF EXISTING CONCRETE CURB AND BOTTOM OF BRIDGE DECK. RODS TO BE SET IN 1" ROUND CORED HOLES WITH AN APPROVED EPOXY GROUT. HOLES SHALL BE 18" DEEP AT WINGWALLS. THE CORING OF HOLES AND EPOXY GROUT TO BE INCLUDED IN THE PRICE OF THE 8' HIGH PEDESTRIAN SCREENING PAY ITEM. (TYPICAL 4 CORNERS)

PLATE 8 1/2" x 8 1/2" x 3/8"

POST BASE PLATE

Notes:

- Tie Bars between the concrete gutter and the concrete pavement shall be installed per Standard Plan M-412-1.
- Tie Bars shall be Grade 40, epoxy coated, and deformed. Bar size shall be as designated on the Standard Plan M-412-1.
- All Curb and Gutter shall be monolithic and shall not be Key-Way Type 4 Curbs.
- Where gutter is adjacent to Concrete Pavement, the gutter thickness shall match that of the adjacent Concrete Pavement. See General Notes in M&S Standards M-609-1 for more information.



CURB AND GUTTER TYPE 2
(SECTION II-B) (SPECIAL)

Print Date: © left
File Name: Roadway Details
Horiz. Scale: AS SHOWN Vert. Scale: AS SHOWN
Unit Information: City of GJ Unit Leader Initials: JJV

Sheet Revisions		
Date:	Comments	Init.



As Constructed
No Revisions:
Revised:
Void:

ROADWAY DETAILS GUARDRAIL (SPECIAL) AND CURB AND GUTTER			
Designer:	JCS	Structure Numbers:	-
Detailer:	JCS	Structure Numbers:	-
Sheet Subset:	RD DET	Subset Sheets:	4 of 4

Project No./Code
TAP M555-032
20736
Sheet Number 21

TO ESTABLISH GEOMETRIC CONTROL FOR THE CONSTRUCTION OF THIS PROJECT, THE DEPARTMENT HAS PROVIDED THE FOLLOWING INFORMATION:

<input checked="" type="checkbox"/> Horizontal Control	Format * Plan Sheet
<input checked="" type="checkbox"/> Vertical Control	Plan Sheet
<input checked="" type="checkbox"/> Roadway Alignment	Plan Sheet
<input checked="" type="checkbox"/> Original Terrain Data	Plan Sheet
<input type="checkbox"/> Other:	

* Specify the information format, ie., plan sheet, computer disk, computer printout, or other. The information marked is either contained on the plans or is available from the Engineer.

TYPE OF PROJECT

- Landscaping
- Signalization
- Safety Improvement
- Asphalt Overlay
- Concrete Overlay
- Minor Widening
- Major Reconstruction (Intersection Reconstruction)
- New Roadway Construction
- Bridge Replacement
- Bridge Widening
- New Bridge
- Other: Sidewalk & Drive Reconstruction, Bus Pullout, Right Turn Lane, and Streetscaping

SURVEY WORK TO BE PERFORMED BY OTHERS: _____

WORK PERFORMED BY THE CONTRACTOR'S SURVEYOR UNDER SECTION 625:

- Establish and Maintain Project Centerline or Engineer Approved Offset Line(s)
- Verification and Maintenance of Horizontal and Vertical Control
- Verify or Determine existing grades and alignments
- Verify or Determine existing topography
- GPS/RTS (Global Positioning System/Robotic Total Station) Construction Machine Control
- Clearing and Grubbing Limits (Section 201)
- Removal Limits (Section 202)
- Reset Items (Section 210)
- Excavation and Embankment (Section 203)

- Excavation
 - Unclassified
 - Stripping
 - Muck
 - Rock
 - Borrow
 - Other: _____
 - Potholing

- Embankment
- Site Grading
- Erosion Control (Perm)
- Other: _____
- As Staked Earthwork Quantities

- Landscaping
 - Top Soil (Section 207)
 - Seeding (Section 212)
 - Mulching (Section 213)
 - Planting (Section 214)
 - Herbicide (Section 217)
 - Other: _____
- Erosion Control (Section 208)
 - Seeding (Temp)
 - Silt Fence
 - Erosion Bales
 - Erosion Logs
 - Riprap (Temp)
 - Other: _____

- Roadway Bases
 - Untreated Subgrade
 - Treated Subgrade
 - Aggregate Base Course (Section 304)
 - Reconditioning
 - PMBB - Plant Mix Bituminous Base
 - Other: _____

	Slope Staking (Y/N)	Grid (Y/N)	Grade (Y/N)	Special Interval
Excavation	Y	-	Y	25'
	-	-	-	-
	-	-	-	-
	-	-	-	-
	-	-	-	-
	-	-	-	-

	Slope Staking (Y/N)	Grid (Y/N)	Grade (Y/N)	Special Interval
Embankment	Y	-	Y	25'
	-	-	-	-
	-	-	-	-
	-	-	-	-

	Grid (Y/N)	Grade (Y/N)	Special Interval	Special Offset
Roadway Bases	-	-	-	-
	-	-	-	-
	-	-	-	-
	-	-	-	-
	-	-	-	-

- Pavements
 - HMA - Hot Mix Asphalt (Section 403)
 - Concrete (Section 412)
 - Heating & Scarifying Treatment
 - Prime Coat, Tack Coat & Rejuvenating Agent (Section 407)
 - Seal Coat or Chip Seal (Section 409)
 - Other: _____

	Grid (Y/N)	Special Interval	Special Offset
Pavements	-	-	-
	-	-	-
	-	-	-
	-	-	-

- Roadway Elements
 - Curb and Gutter (Section 609)
 - Drop inlets - alignment and grades (Section 604)
 - Retaining Walls
 - Guard Rail (Section 606)
 - Sidewalk (Section 608)
 - Overlay Stationing
 - Other: _____

	Tangent Interval	Curve Interval	Special Offset
Curb & Gutter	-	-	-
	-	-	-

- Riprap (Perm) (Section 506)
- Slope and Ditch Paving (Section 507)

	Left Interval	Center Interval	Right Interval
Stationing	-	-	-
	-	-	-

- Minor Structures
 - Structure Excavation limits (Section 206)
 - Culverts (Section 603)
 - Culverts w/ Headwalls and Wingwalls (Section 601)
 - Concrete Box Culverts w/ Headwalls and Wingwalls
 - Pipes (Section 603)
 - Sanitary Sewer
 - Storm Sewer
 - Water
 - Irrigation
 - Miscellaneous
 - Manholes (Section 604)
 - Inlets (Section 604)
 - Permanent Water Quality BMP (Section 208)
 - Other: _____

- Major Structures - Overhead Signs (Section 614), Concrete Box Culverts, Bridges - and all other structures assigned a structure number
 - Structure Excavation limits (Section 206)
 - Concrete Box Culverts (Section 603) w/ Headwalls and Wingwalls (Section 601)
 - Piling locations and cut off elevations (Section 502)
 - Caisson locations and elevations (Section 503)
 - Footing locations, alignment, and elevations
 - Abutment/Pier locations, alignment, and elevations
 - Wingwall skew angles/offsets
 - Structural concrete form locations
 - Substructure As-constructed survey required for Bridges (Subsection 601 .12) and Overhead signs (S-614-50)
 - Bridge expansion joint(s) alignment and grade (longitudinal and transverse)
 - Deck grades at Girder 10th or "n" th point locations and elevations
 - Slope and Ditch Paving (Section 507)
 - Other: _____

- Fencing (Section 607)
 - Temporary
 - Permanent
 - Sound Barrier
 - Other: _____

- Delineators (Section 612)
 - Temporary
 - Permanent

- Lighting (Section 613) and Traffic Control Devices (Permanent) (Section 614)
 - Signal pole locations and elevations
 - Light pole locations and elevations
 - Sign locations
 - Field verify sign post locations, elevations, and lengths before fabrication.
 - Other: _____

- Pavement Marking (Section 627)
 - Striping (Temp)
 - Striping (Perm)
 - Symbols
 - Other: _____
- Temporary Lighting and Construction Traffic Control Devices (Section 630)
 - Signal pole locations and elevations (Temp)
 - Light pole locations and elevations (Temp)
 - Sign Locations (Temp)
 - Other: _____
- All Easements (Temp Staking by P.L.S. Only)
- Right of Way (Temp Staking by P.L.S. Only)

WORK PERFORMED BY THE CONTRACTOR'S SURVEYOR UNDER SECTION 629:

- Monumentation (Section 629)
 - Control
 - Right of Way
 - Land corners, Aliquot corners
 - Easements
 - Reference the specified existing monuments: ** _____
 - Replace the specified existing monuments: ** _____
 - Locate monuments. It is estimated _____ hours are required.

NOTE: All 629 items shall include adequate research, calculations, and evaluations of evidence for monuments to be set.

** A Tabulation of Survey Monuments may be provided on the plans.

GENERAL NOTES:

- Unless indicated otherwise on this Survey Tabulation Sheet, all survey work and staking intervals shall be done in accordance with the latest edition of the CDOT Survey Manual.
- Adequate information for establishing lines, grades, and locations for all work items have been specified on the plans. Any additional information required to stake the item or element shall be generated by the Contractor's surveyor.
- The Contractor's surveyor shall provide an estimate of the man-hours necessary to complete the work items indicated on this sheet. A copy of this sheet, with the estimated man-hours written on the blank line to the left of the specified items, shall be submitted with the Survey Schedule to the Engineer 14 days prior to the Pre-Construction Meeting.
- Stakes and Monuments which are damaged or destroyed by the progress of construction shall be replaced by the Contractor at no additional cost to the Department.
- Prior to beginning work on any subsequent operation, such as placing base course or paving, the Contractor shall certify in writing to the Engineer that the final grade is within specified tolerance.
- The Contractor's surveyor shall perform all field surveying and calculations necessary to tie plan grades into field grades.
- The Contractor shall coordinate construction staking on the project with any utility work.
- Fieldbooks shall contain daily records of points set and or measurements observed. The information recorded shall contain: date, crew members' names, point no., description, staking information, and sketches. If the survey information is collected electronically, information recorded shall be provided to the Project Engineer in a hard copy format that is intuitive, clear and related to the supplemental information recorded in the field books. All linear surveys, such as slope stakes and blue tops, shall have the station and offset information related to the measured information. Non-linear surveys such as structures staking shall have sketches relating electronic information, such as point numbers, to the sketch.
- The Contractor's surveyor shall submit the following fieldbooks to the Engineer:
 - Horizontal Control (Primary & Secondary)
 - Vertical Control (i.e. Benchmarks)
 - Property Pin Ties
 - Horizontal Alignment
 - Grading
 - Slope Staking
 - Minor Structures
 - Major Structures
 - One fieldbook for each work category shown on this sheet
 - Other Fieldbook(s): _____

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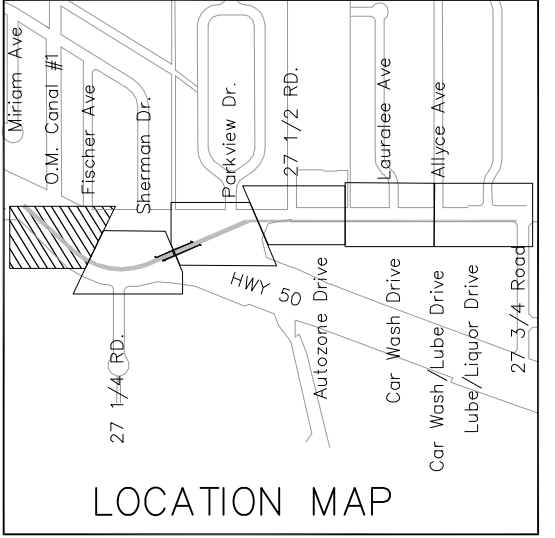
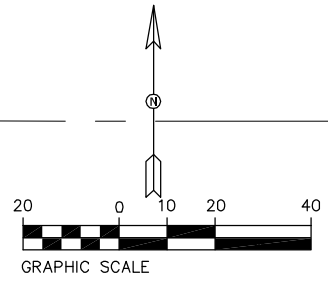
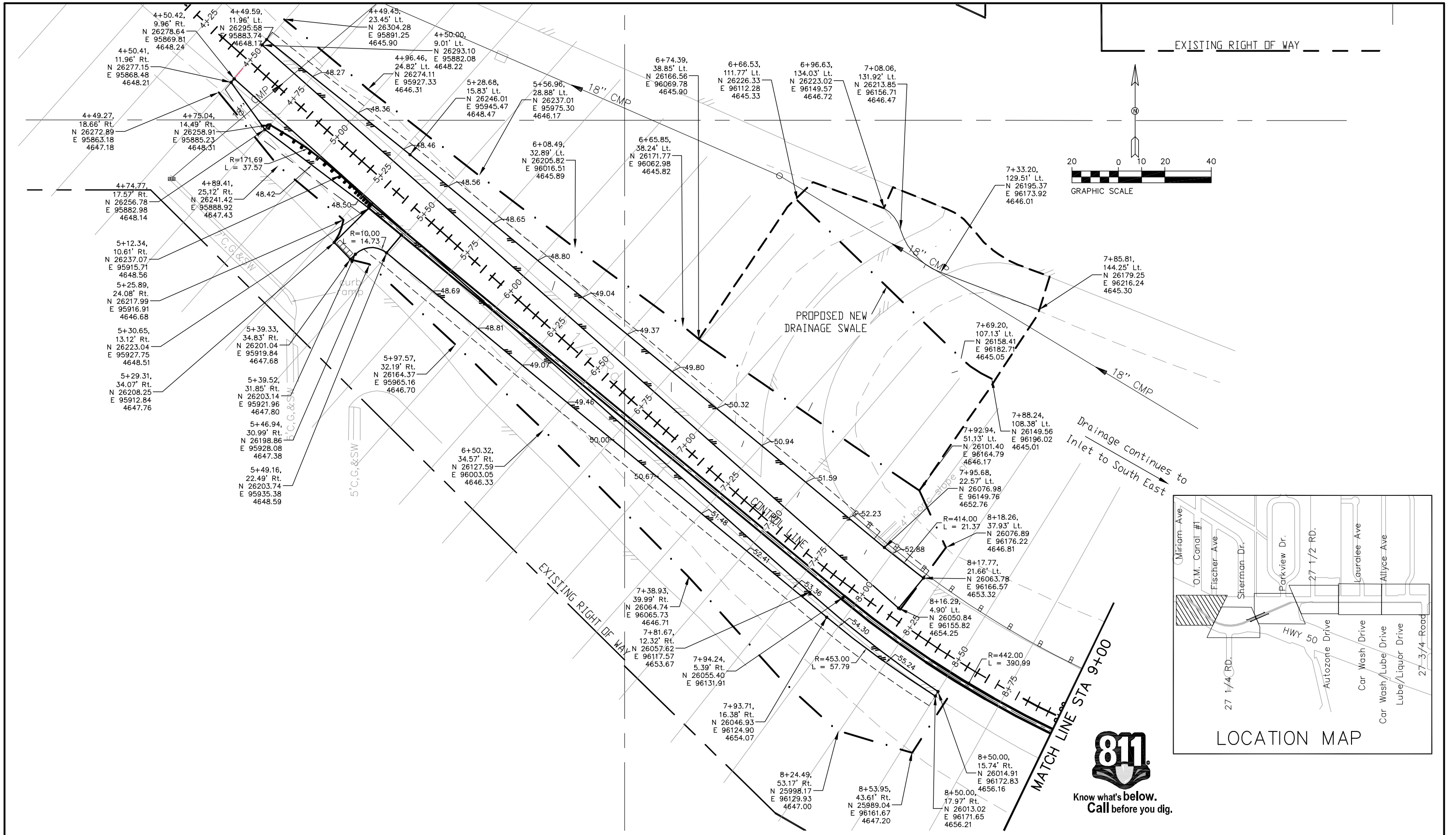
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Unit Information: City of GJ Unit Leader Initials: DPJ

Sheet Revisions		
Date:	Comments	Init.



As Constructed	SURVEY TABULATIONS		Project No./Code
No Revisions:			TAP M555-032
Revised:	Designer: John C Smith	Structure Numbers	20736
Void:	Detailer: John C Smith	Subset Sheets:	Sheet Number 22

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Horiz. Scale: AS SHOWN Vert. Scale: NA
Unit Information: City of GJ Unit Leader Initials: JJV

Sheet Revisions		
Date:	Comments	Init.

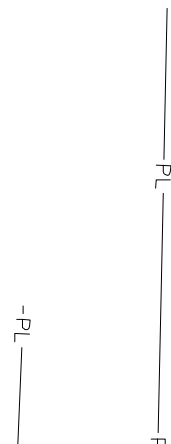
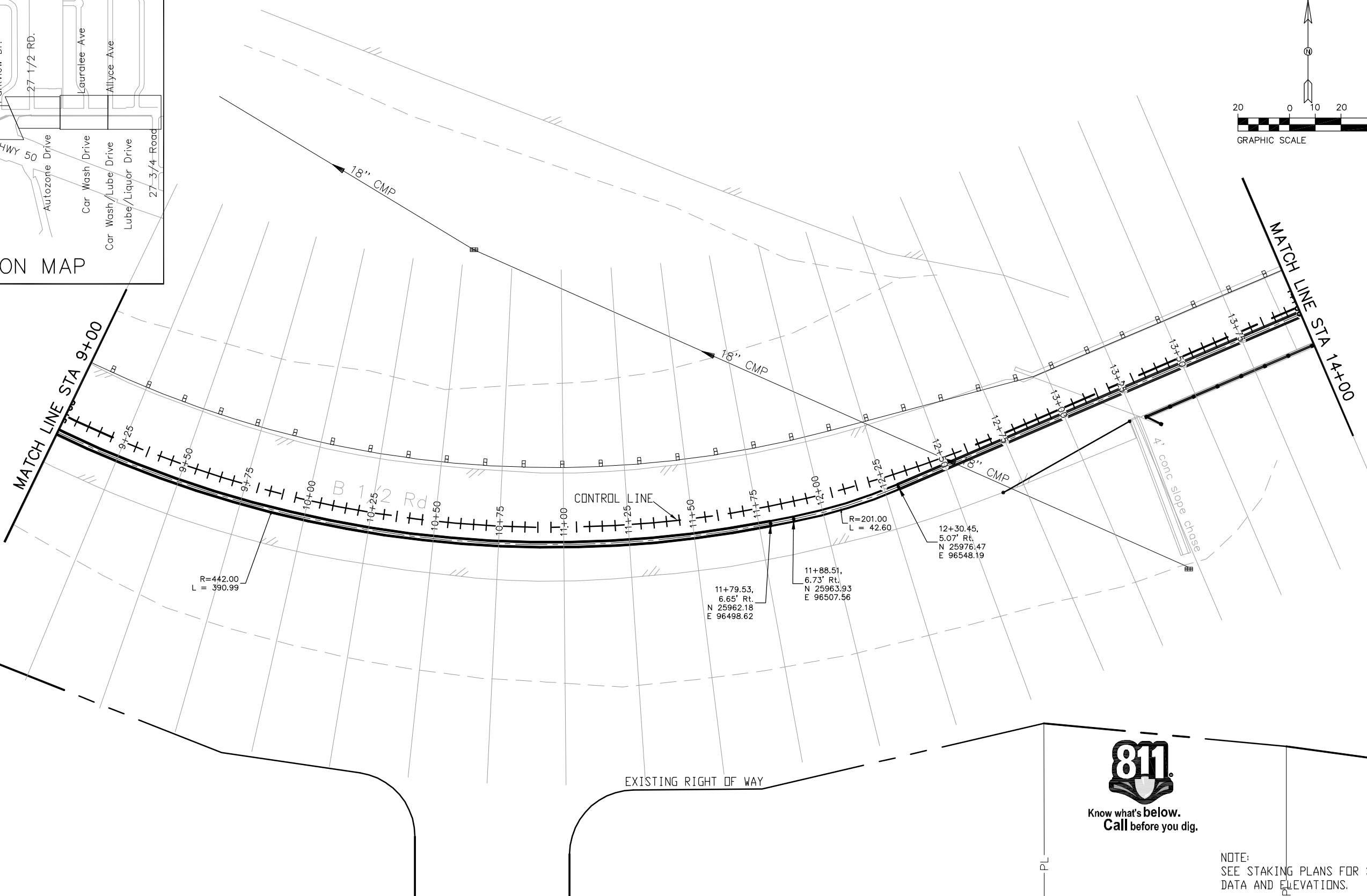
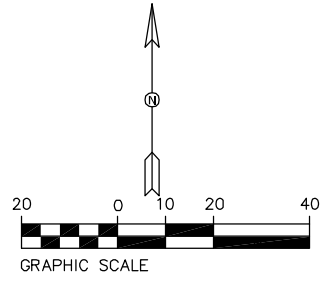
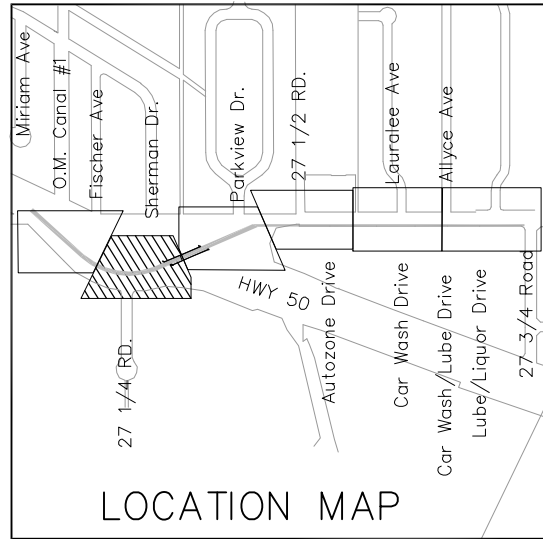


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Revised:
Void:

B 1/2 ROAD Staking Plan Sta. 4+50 TO 9+00	
Designer: John Smith	Structure Numbers
Detailer: John Smith	
Sheet Subset: Staking	Subset Sheets: 1 of 6

Project No./Code
TAP M555-032
20736
Sheet Number 23

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NOTE: SEE STAKING PLANS FOR STAKING DATA AND ELEVATIONS.

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Horiz. Scale: AS SHOWN Vert. Scale: NA
Unit Information: City of GJ Unit Leader Initials: JJV

Sheet Revisions		
Date:	Comments	Init.

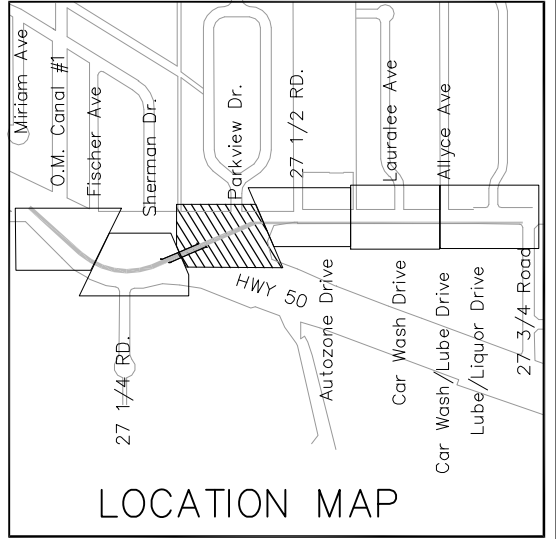
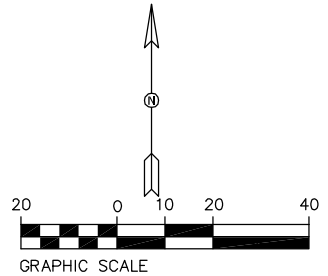
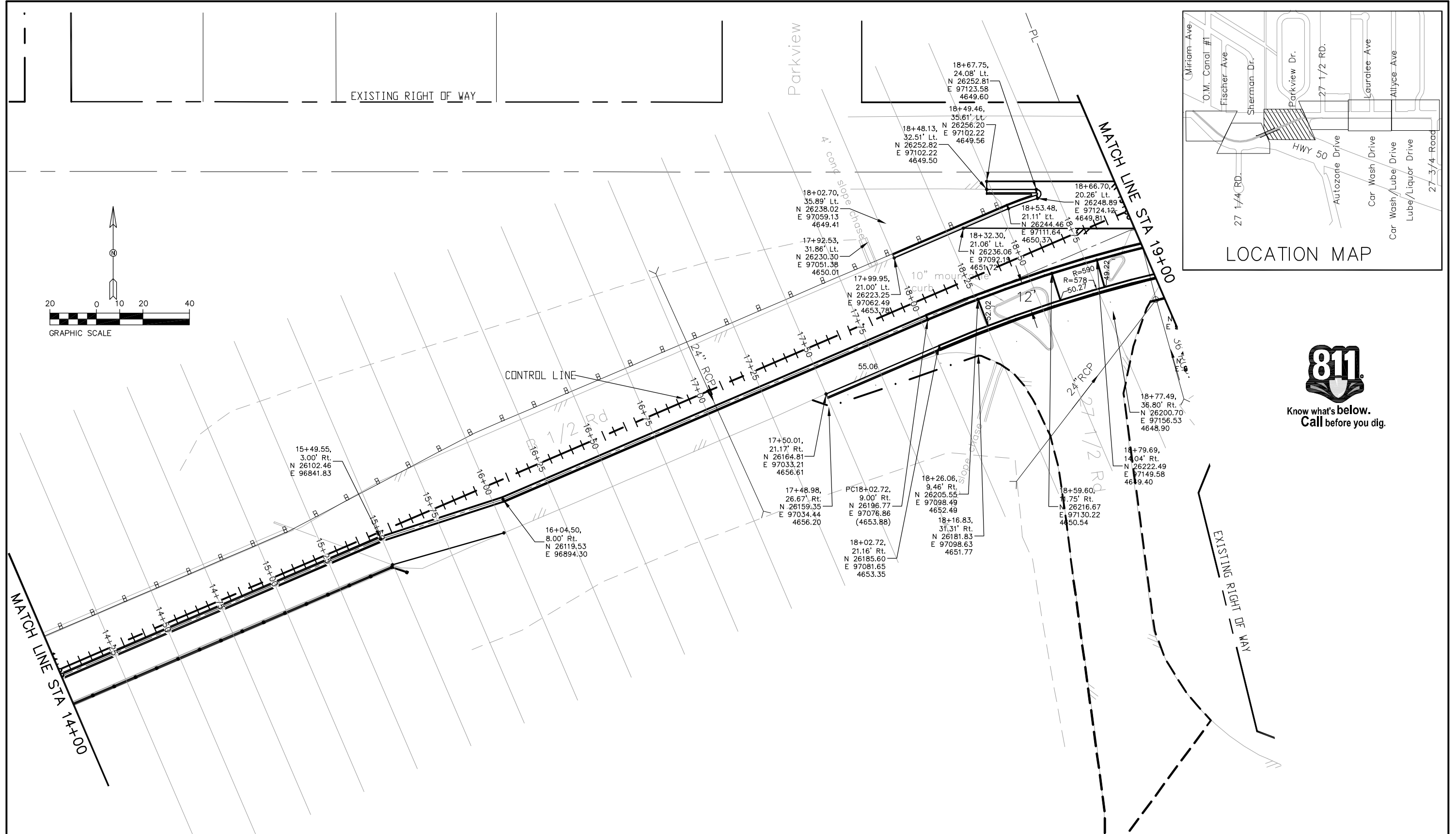


As Constructed
No Revisions:
Revised:
Void:

B 1/2 ROAD Staking Plan Sta. 9+00 TO 14+00	
Designer: John Smith	Structure Numbers
Detailer: John Smith	
Sheet Subset: Staking	Subset Sheets: 2 of 6

Project No./Code
TAP M555-032
20736
Sheet Number 24

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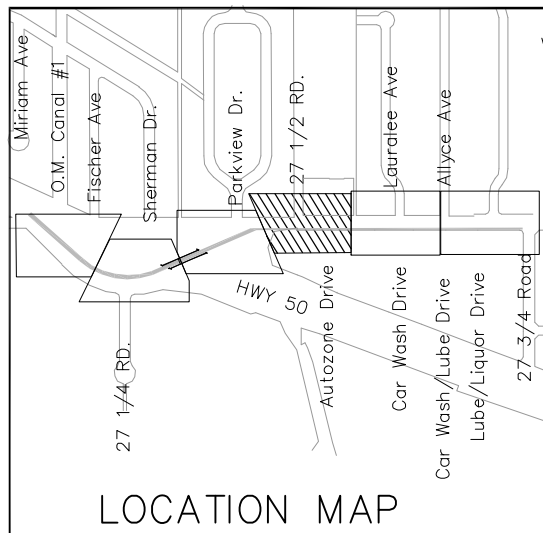
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File Name: © LEFT	Date:	Comments	Init.		No Revisions:	Staking Plan		
Horiz. Scale: AS SHOWN	Vert. Scale: NA				Revised:	Sta. 14+00 TO 19+00		20736
Unit Information: City of GJ Unit Leader Initials: JJV					Void:	Designer: John Smith	Structure Numbers	Sheet Number 25
						Detailer: John Smith	Subset Sheets: 3 of 6	

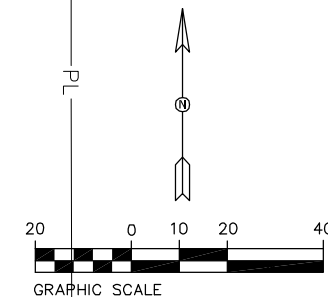
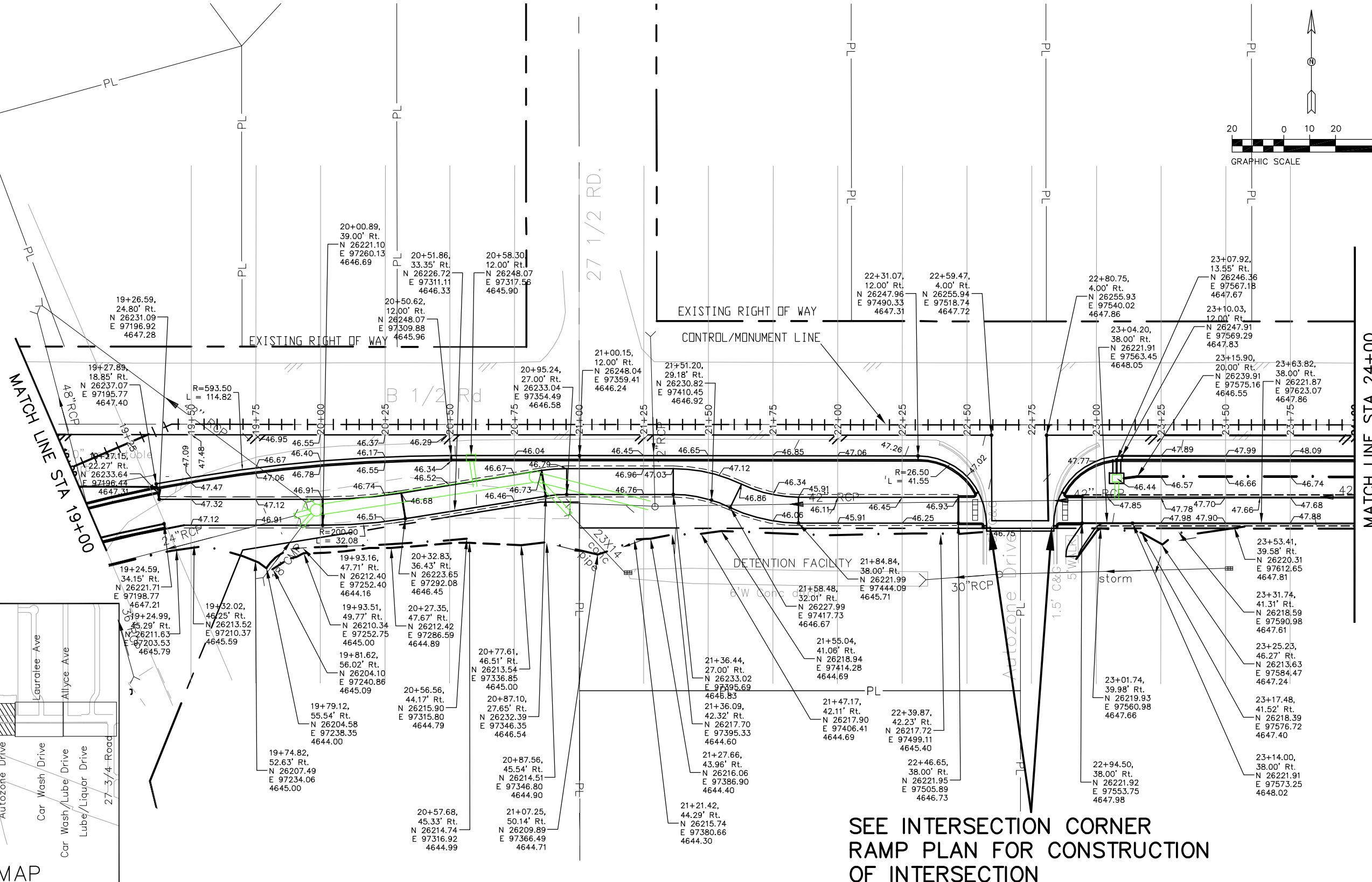
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LOCATION MAP



SEE INTERSECTION CORNER
RAMP PLAN FOR CONSTRUCTION
OF INTERSECTION

Print Date: © LEFT
File Name: © LEFT
Horiz. Scale: AS SHOWN Vert. Scale: NA
Unit Information: City of GJ Unit Leader Initials: JJV

Sheet Revisions		
Date:	Comments	Init.
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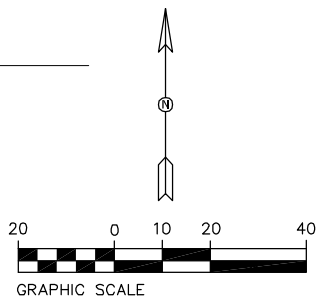
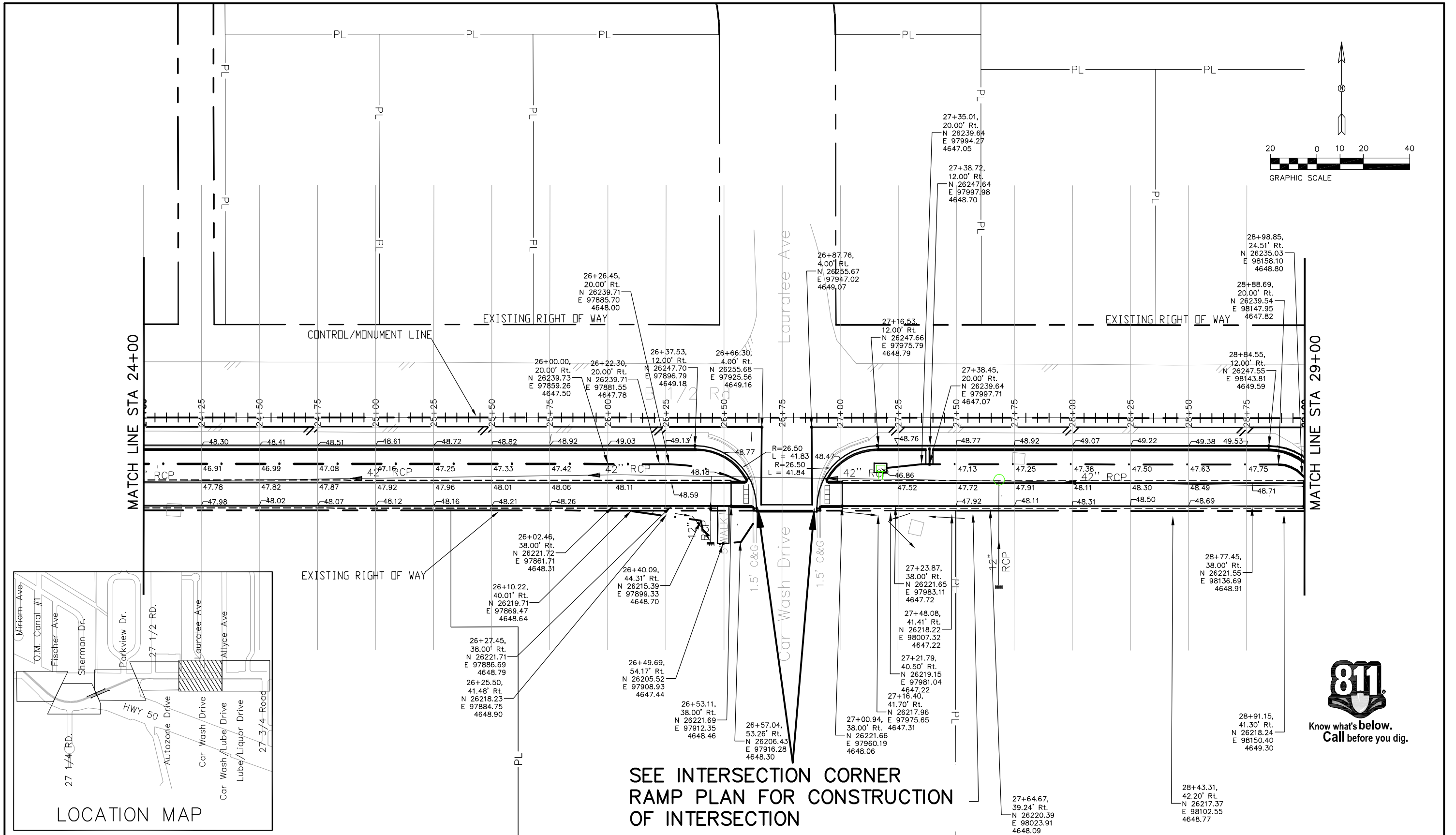


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No Revisions:
Revised:
Void:

B 1/2 ROAD Staking Plan Sta. 19+00 TO 24+00	
Designer: John Smith	Structure Numbers
Detailer: John Smith	
Sheet Subset: Staking	Subset Sheets: 4 of 6

Project No./Code
TAP M555-032
20736
Sheet Number 26

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SEE INTERSECTION CORNER RAMP PLAN FOR CONSTRUCTION OF INTERSECTION

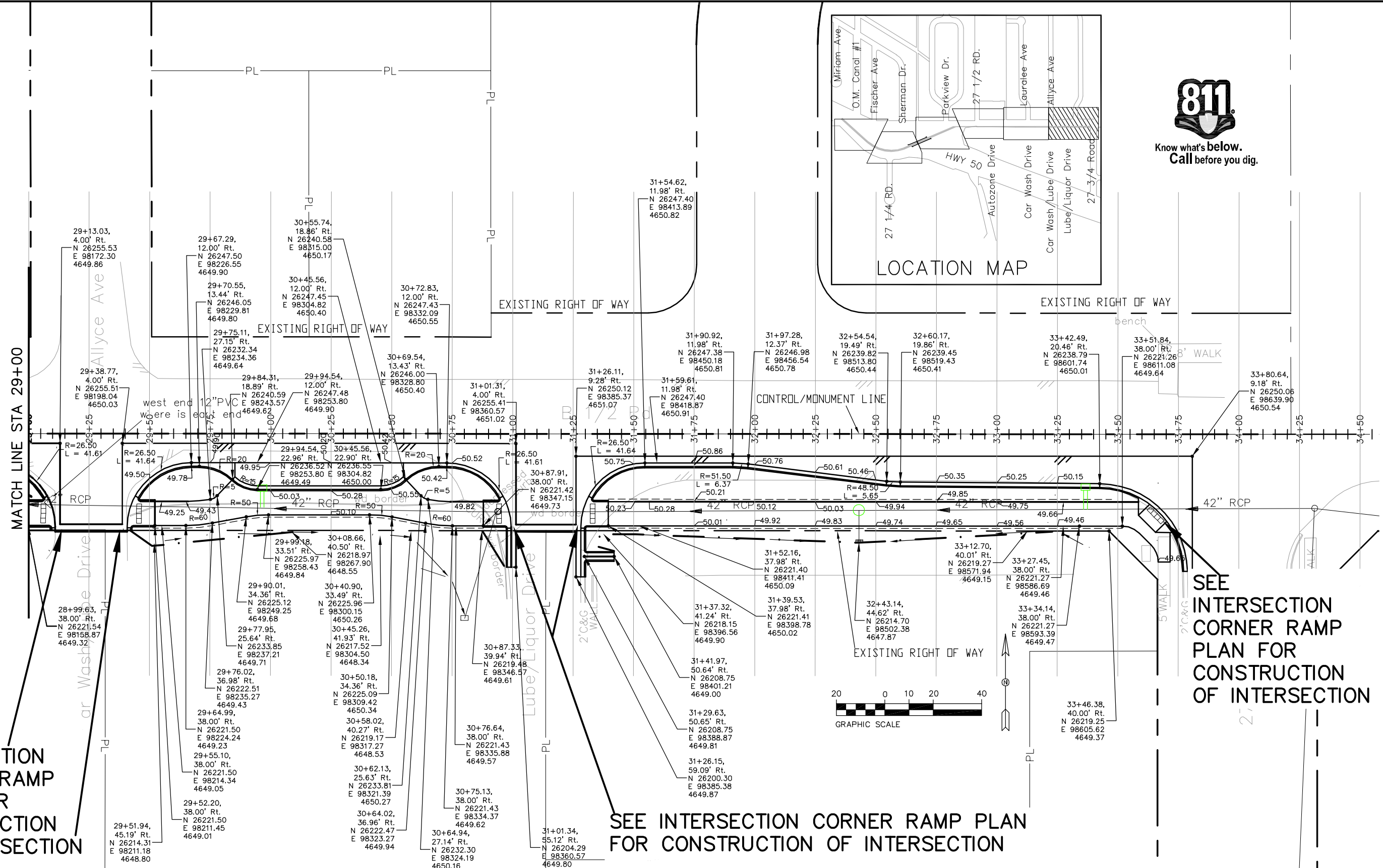
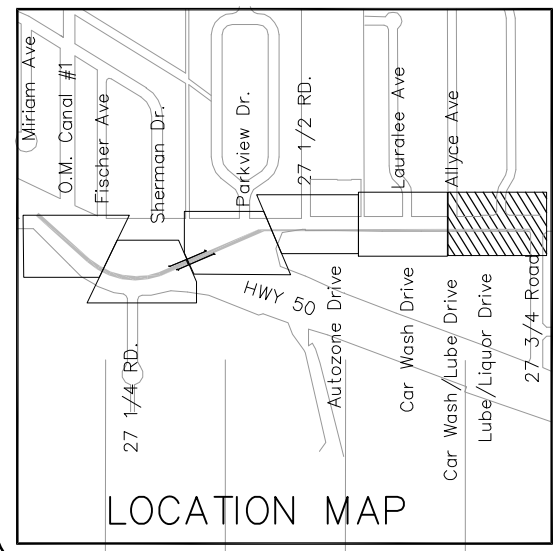


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File Name: © LEFT	Date:	Comments	Init.		No Revisions:	Staking Plan		TAP M555-032
Horiz. Scale: AS SHOWN				Revised:	Sta. 24+00 TO 29+00		20736	
Unit Information: City of GJ Unit Leader Initials: JJV				Void:	Designer: John Smith	Structure Numbers	Sheet Number 27	
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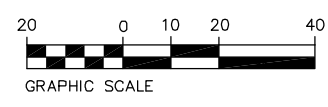
Know what's below.
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SEE INTERSECTION CORNER RAMP PLAN FOR CONSTRUCTION OF INTERSECTION

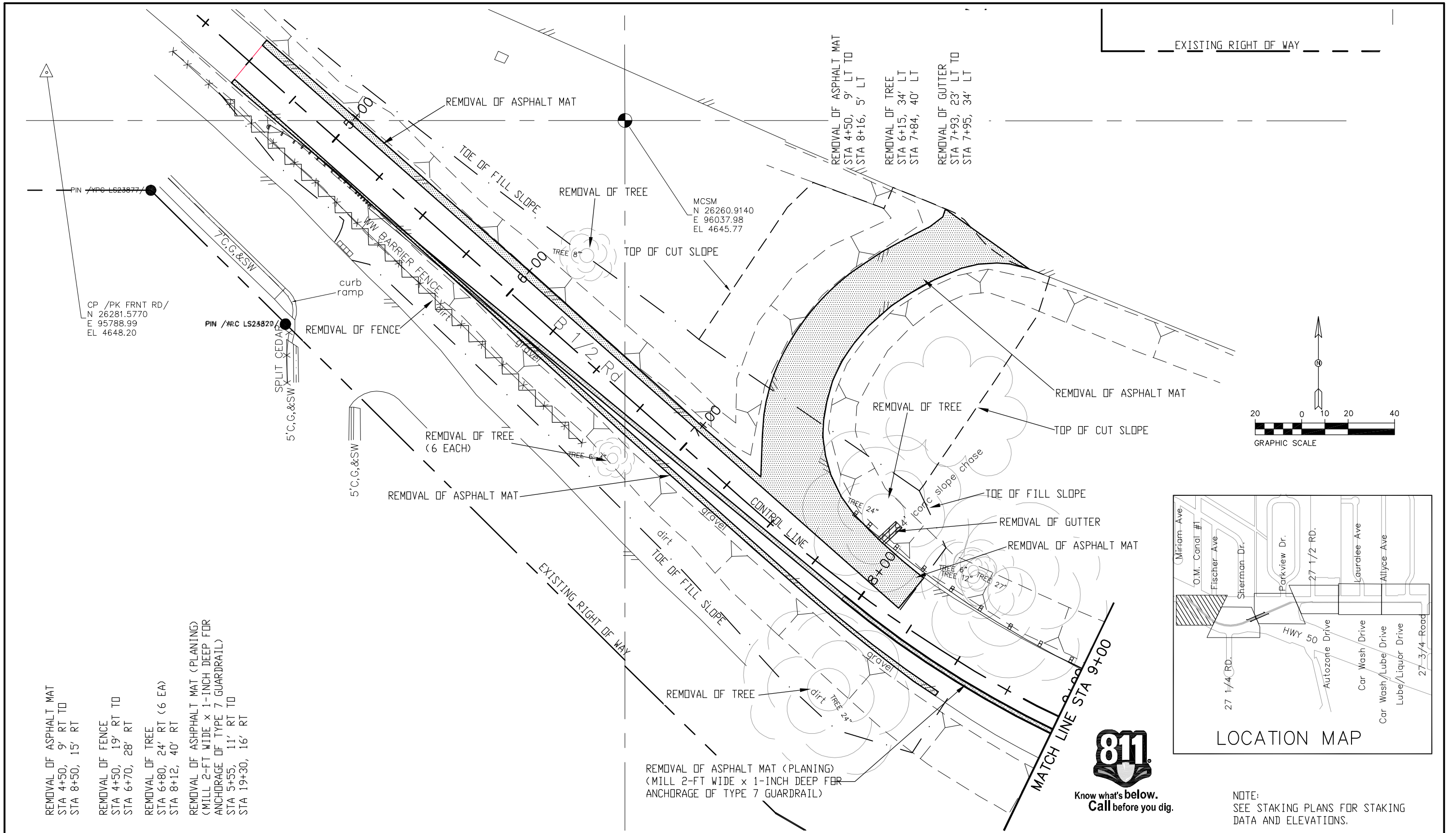
SEE INTERSECTION CORNER RAMP PLAN FOR CONSTRUCTION OF INTERSECTION

SEE INTERSECTION CORNER RAMP PLAN FOR CONSTRUCTION OF INTERSECTION

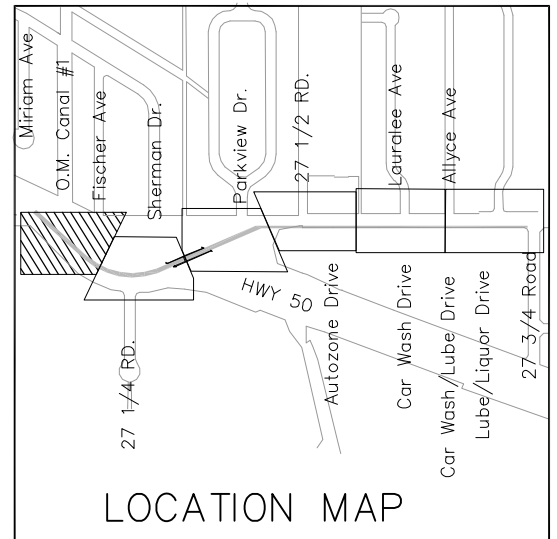


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File Name: © LEFT	Date:	Comments	Init.		No Revisions:	Staking Plan		
Horiz. Scale: AS SHOWN					Revised:	Sta. 29+00 TO 34+00		20736
Unit Information: City of GJ Unit Leader Initials: JJV					Void:	Designer: John Smith	Structure Numbers	Sheet Number 28
						Sheet Subset: Staking	Subset Sheets: 6 of 6	

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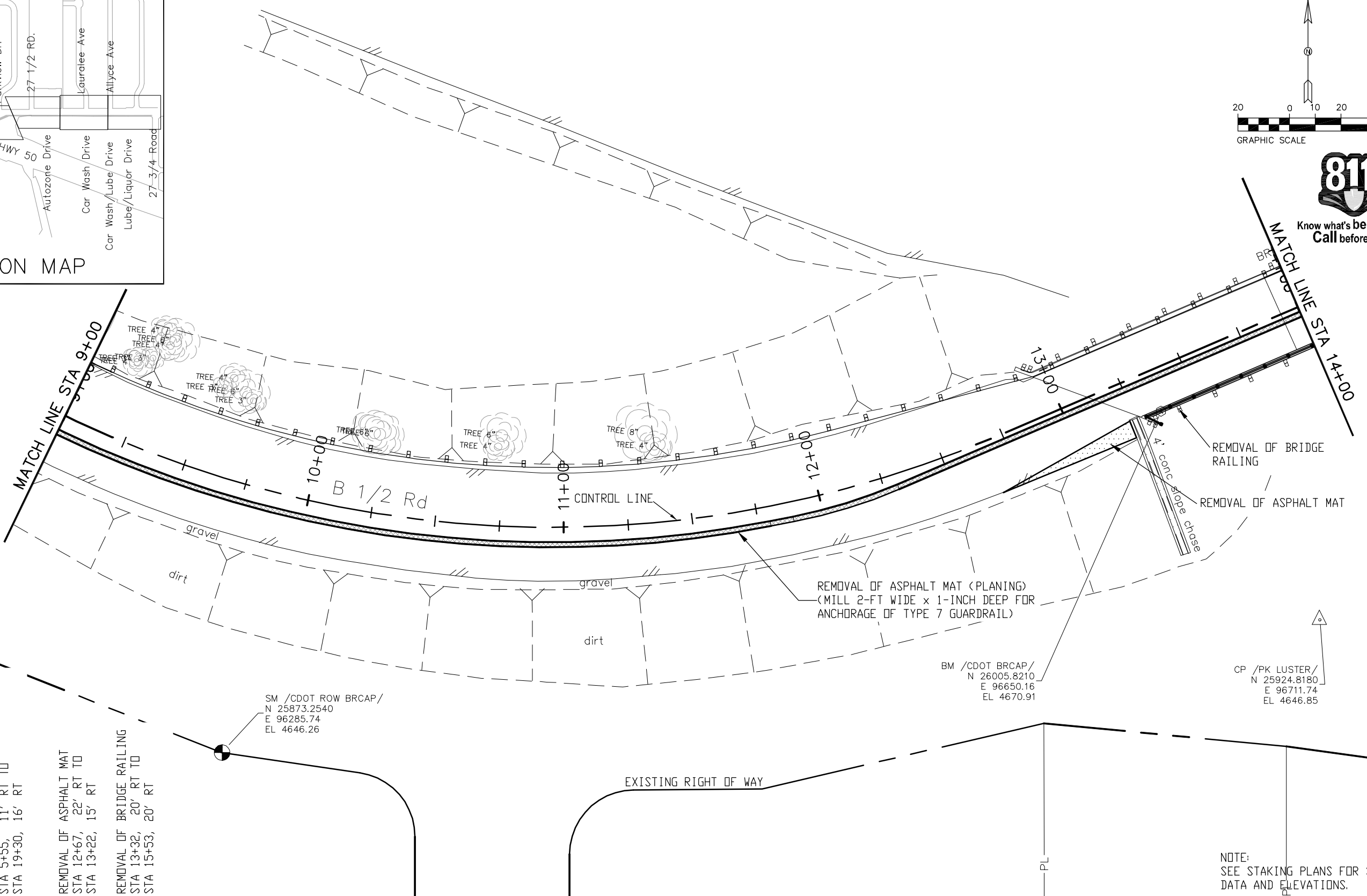
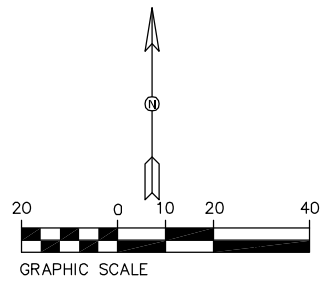
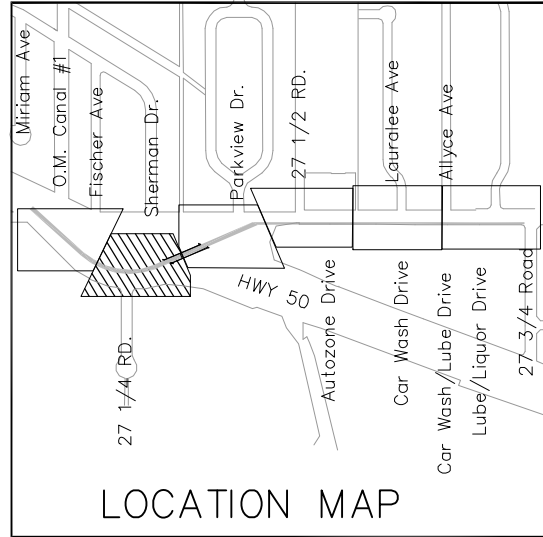
- REMOVAL OF ASPHALT MAT
STA 4+50, 9' RT TO
STA 8+50, 15' RT
- REMOVAL OF FENCE
STA 4+50, 19' RT TO
STA 6+70, 28' RT
- REMOVAL OF TREE
STA 6+80, 24' RT (6 EA)
STA 8+12, 40' RT
- REMOVAL OF ASPHALT MAT (PLANNING)
(MILL 2-FT WIDE x 1-INCH DEEP FOR
ANCHORAGE OF TYPE 7 GUARDRAIL)
STA 5+55, 11' RT TO
STA 19+30, 16' RT



NOTE:
SEE STAKING PLANS FOR STAKING
DATA AND ELEVATIONS.

Print Date: © LEFT	Sheet Revisions			CITY OF Grand Junction COLORADO	As Constructed	B 1/2 Road (Overpass) Removal Plan		Project No./Code
File Name: © LEFT	Date:	Comments	Init.		No Revisions:	Sta. 4+50 TO 9+00		TAP M555-032
Horiz. Scale: AS SHOWN					Revised:	Designer: John Smith	Structure Numbers	20736
Unit Information: City of GJ Unit Leader Initials: JJV					Void:	Detailer: John Smith	Subset Sheets:	1 of 6
						Sheet Subset: removal		Sheet Number 29

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REMOVAL OF ASPHALT MAT (PLANING)
(MILL 2-FT WIDE x 1-INCH DEEP FOR
ANCHORAGE OF TYPE 7 GUARDRAIL)
STA 5+55, 11' RT TO
STA 19+30, 16' RT

REMOVAL OF ASPHALT MAT
STA 12+67, 22' RT TO
STA 13+22, 15' RT

REMOVAL OF BRIDGE RAILING
STA 13+32, 20' RT TO
STA 15+53, 20' RT

SM /CDOT ROW BRCAP/
N 25873.2540
E 96285.74
EL 4646.26

BM /CDOT BRCAP/
N 26005.8210
E 96650.16
EL 4670.91

CP /PK LUSTER/
N 25924.8180
E 96711.74
EL 4646.85

NOTE:
SEE STAKING PLANS FOR STAKING
DATA AND ELEVATIONS.

Print Date: © LEFT
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Horiz. Scale: AS SHOWN Vert. Scale: NA
Unit Information: City of GJ Unit Leader Initials: JJV

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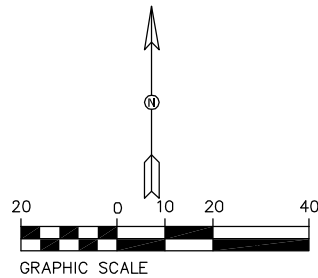


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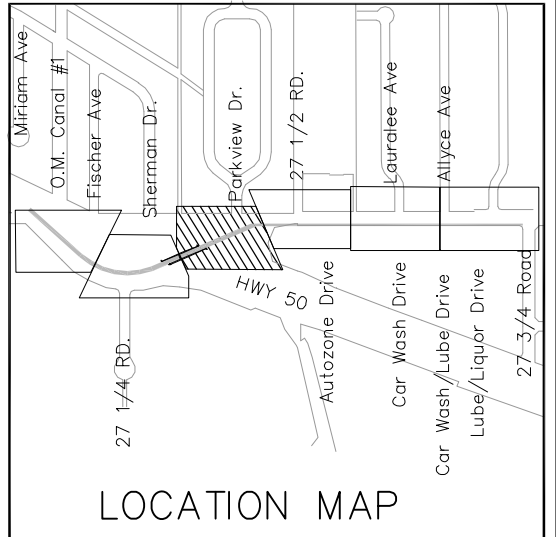
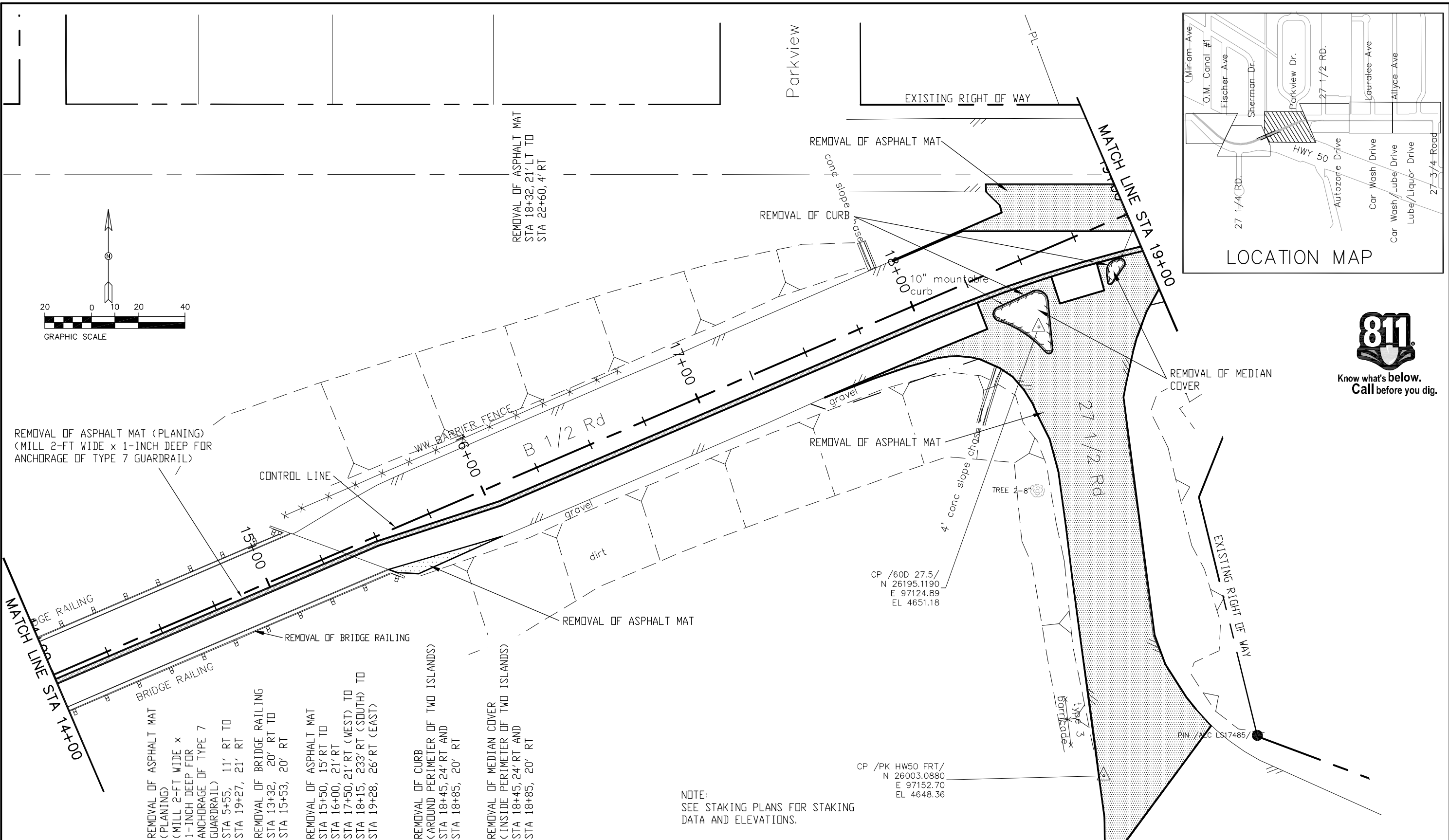
B 1/2 Road (Overpass) Removal Plan Sta. 9+00 TO 14+00	
Designer: John Smith	Structure Numbers
Detailer: John Smith	
Sheet Subset: Plan	Subset Sheets: 2 of 6

Project No./Code
TAP M555-032
20736
Sheet Number 30

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REMOVAL OF ASPHALT MAT (PLANING)
(MILL 2-FT WIDE x 1-INCH DEEP FOR
ANCHORAGE OF TYPE 7 GUARDRAIL)



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NOTE:
SEE STAKING PLANS FOR STAKING
DATA AND ELEVATIONS.

Print Date: © LEFT
File Name: © LEFT
Horiz. Scale: AS SHOWN Vert. Scale: NA
Unit Information: City of GJ Unit Leader Initials: JJV

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Sheet Revisions

Date:	Comments	Init.



As Constructed

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Revised:
Void:

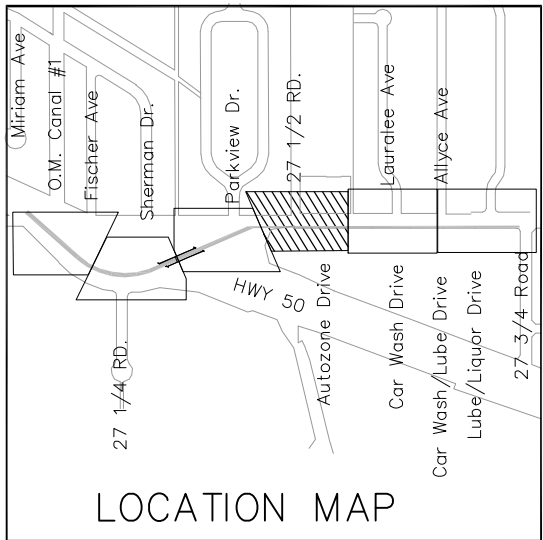
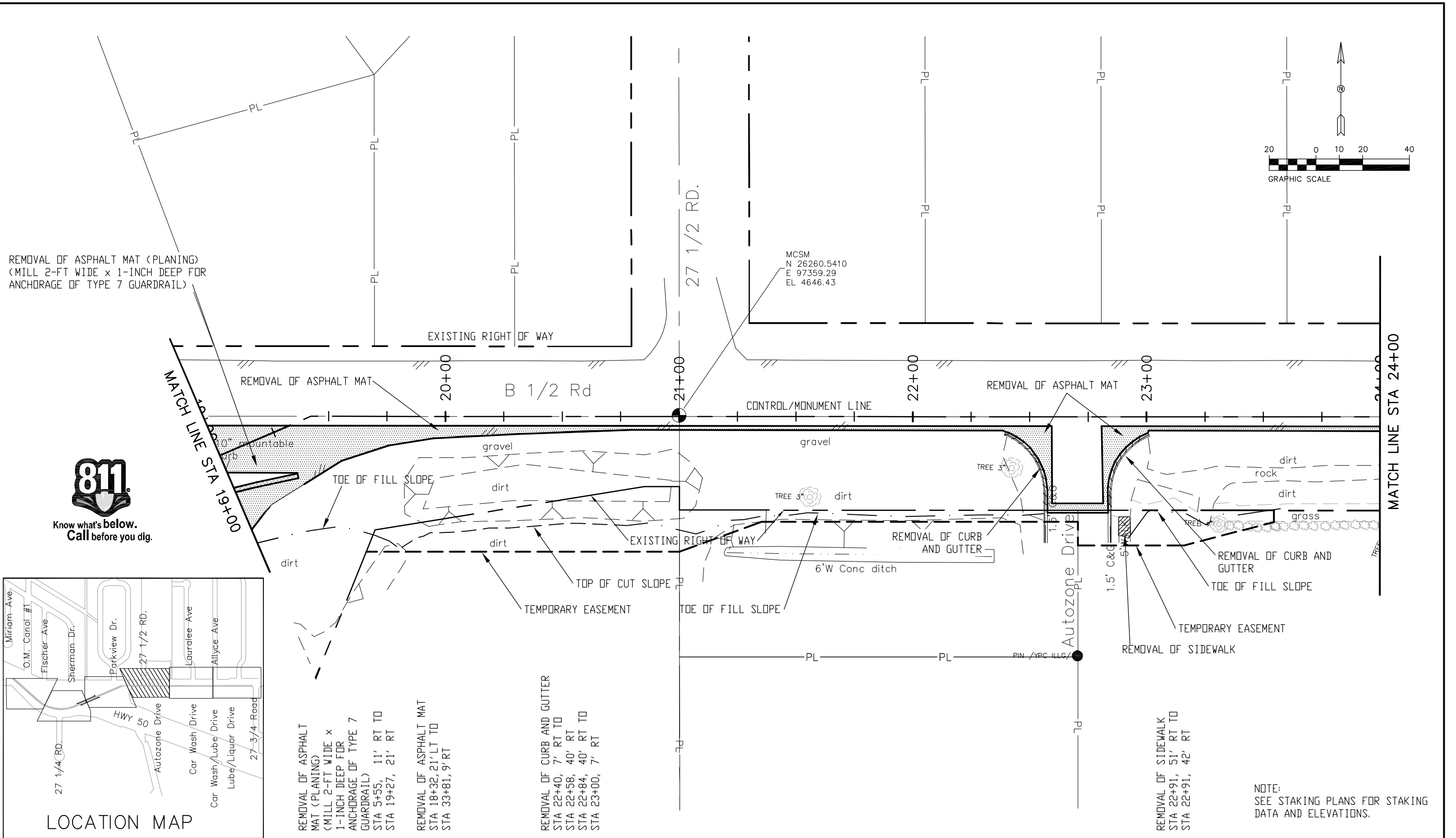
B 1/2 Road (Overpass)
Removal Plan
Sta. 14+00 TO 19+00

Designer: John Smith	Structure Numbers
Detailer: John Smith	
Sheet Subset: Plan	Subset Sheets: 3 of 6

Project No./Code

TAP M555-032
20637
Sheet Number 31

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REMOVAL OF ASPHALT MAT (PLANING) (MILL 2-FT WIDE x 1-INCH DEEP FOR ANCHORAGE OF TYPE 7 GUARDRAIL) STA 5+55, 11' RT TO STA 19+27, 21' RT

REMOVAL OF ASPHALT MAT STA 18+32, 21' LT TO STA 33+81, 9' RT

REMOVAL OF CURB AND GUTTER STA 22+40, 7' RT TO STA 22+58, 40' RT STA 22+84, 40' RT TO STA 23+00, 7' RT

REMOVAL OF SIDEWALK STA 22+91, 51' RT TO STA 22+91, 42' RT

NOTE: SEE STAKING PLANS FOR STAKING DATA AND ELEVATIONS.

Print Date: © LEFT
File Name: © LEFT
Horiz. Scale: AS SHOWN Vert. Scale: NA
Unit Information: City of GJ Unit Leader Initials: JJV

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	Date:	Comments	Init.

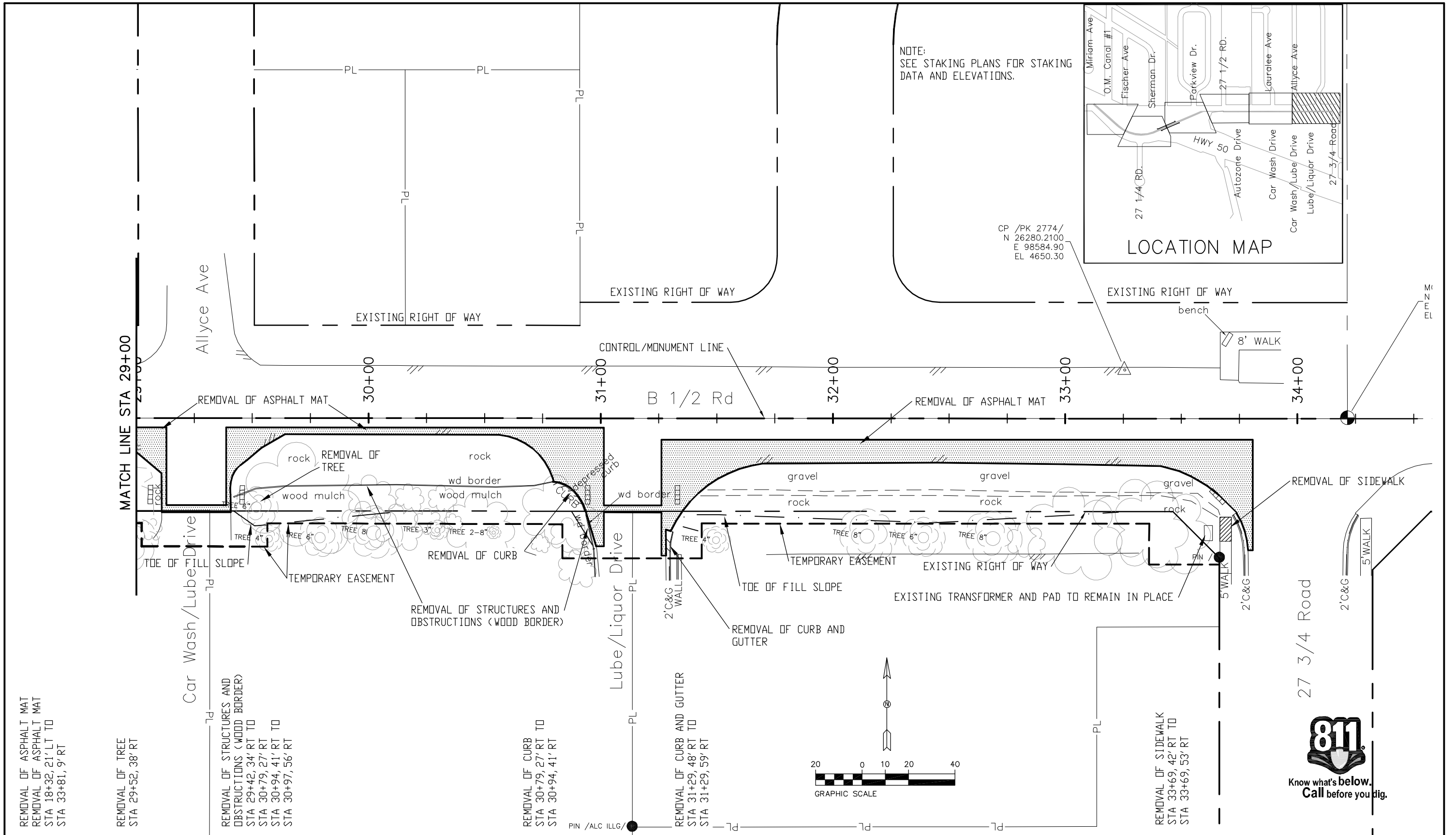


As Constructed
No Revisions:
Revised:
Void:

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Designer: John Smith	Structure Numbers
Detailer: John Smith	
Sheet Subset: Plan	Subset Sheets: 4 of 6

Project No./Code
TAP M255-032
20736
Sheet Number 32

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REMOVAL OF ASPHALT MAT
 STA 18+32, 21' LT TO
 STA 33+81, 9' RT

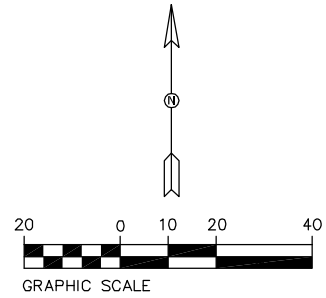
REMOVAL OF TREE
 STA 29+52, 38' RT

REMOVAL OF STRUCTURES AND
 OBSTRUCTIONS (WOOD BORDER)
 STA 29+42, 34' RT TO
 STA 30+79, 27' RT
 STA 30+94, 41' RT TO
 STA 30+97, 56' RT

REMOVAL OF CURB
 STA 30+79, 27' RT TO
 STA 30+94, 41' RT

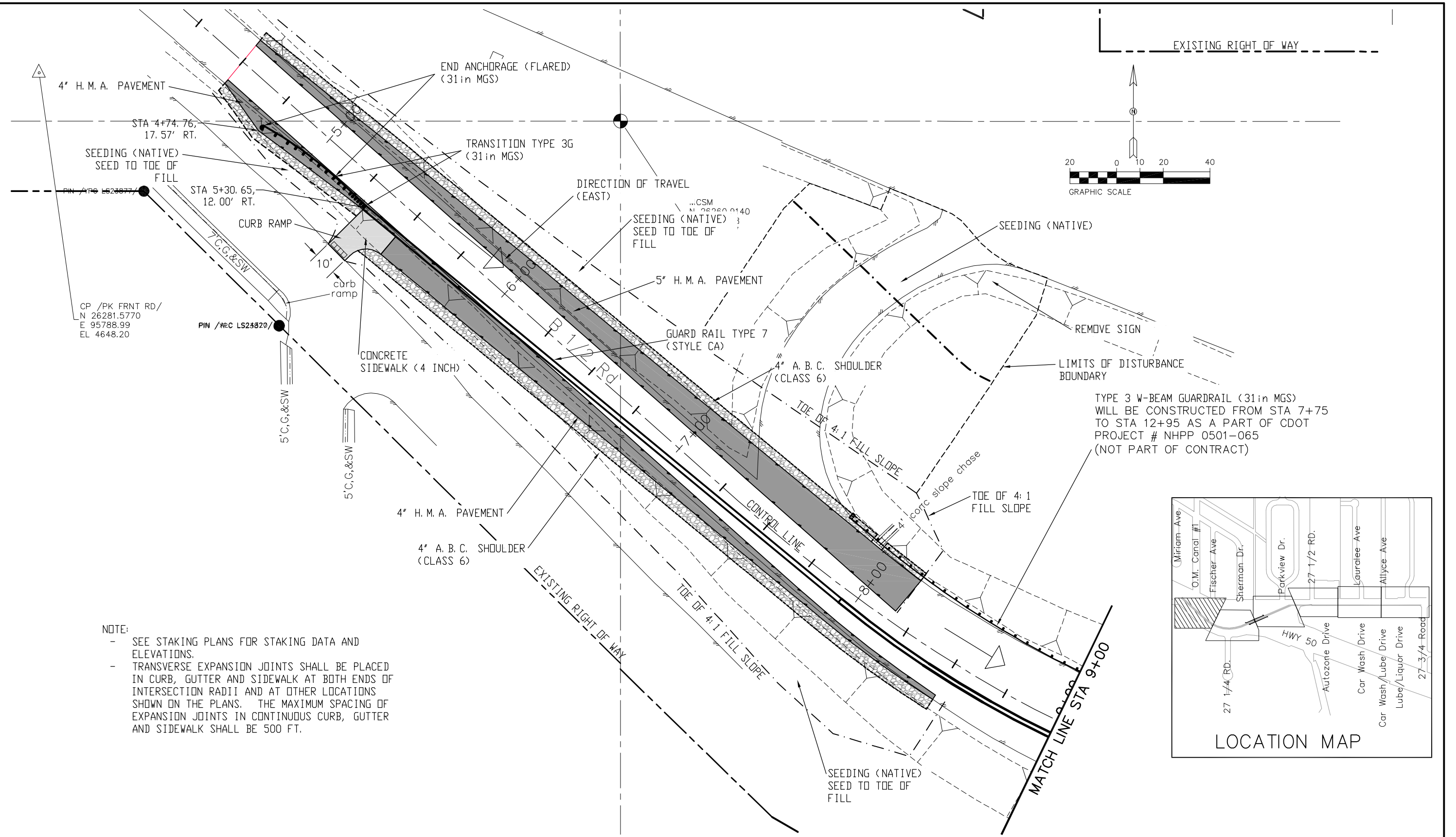
REMOVAL OF CURB AND GUTTER
 STA 31+29, 48' RT TO
 STA 31+29, 59' RT

REMOVAL OF SIDEWALK
 STA 33+69, 42' RT TO
 STA 33+69, 53' RT



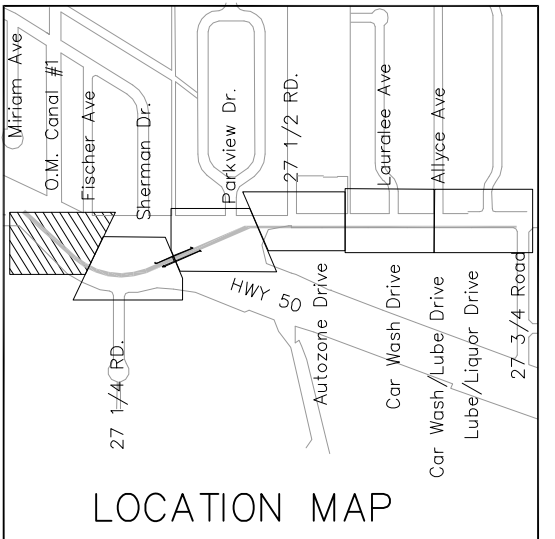
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File Name: © LEFT	Date:	Comments	Init.		No Revisions:	Sta. 29+00 TO 34+00		TAP M555-032
Horiz. Scale: AS SHOWN				Revised:	Designer: John Smith	Structure Numbers	20736	
Unit Information: City of GJ Unit Leader Initials: JJV				Void:	Detailer: John Smith	Subset Sheets: 6 of 6	Sheet Number 34	

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NOTE:

- SEE STAKING PLANS FOR STAKING DATA AND ELEVATIONS.
- TRANSVERSE EXPANSION JOINTS SHALL BE PLACED IN CURB, GUTTER AND SIDEWALK AT BOTH ENDS OF INTERSECTION RADII AND AT OTHER LOCATIONS SHOWN ON THE PLANS. THE MAXIMUM SPACING OF EXPANSION JOINTS IN CONTINUOUS CURB, GUTTER AND SIDEWALK SHALL BE 500 FT.



Print Date: © LEFT	0000
File Name: © LEFT	
Horiz. Scale: AS SHOWN Vert. Scale: NA	
Unit Information: City of GJ Unit Leader Initials: JJV	

Sheet Revisions		
Date:	Comments	Init.

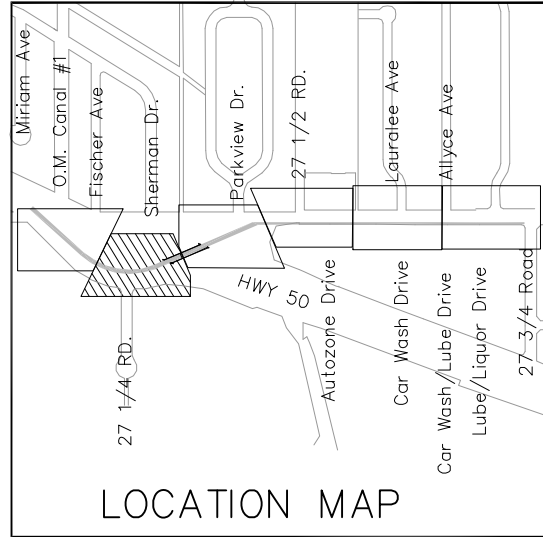


As Constructed
No Revisions:
Revised:
Void:

B 1/2 Road (Overpass) Roadway Plan Sta. 4+50 TO 9+00	
Designer: John Smith	Structure Numbers
Detailer: John Smith	
Sheet Subset: Plan	Subset Sheets: 1 of 6

Project No./Code
TAP M555-032
20736
Sheet Number 35

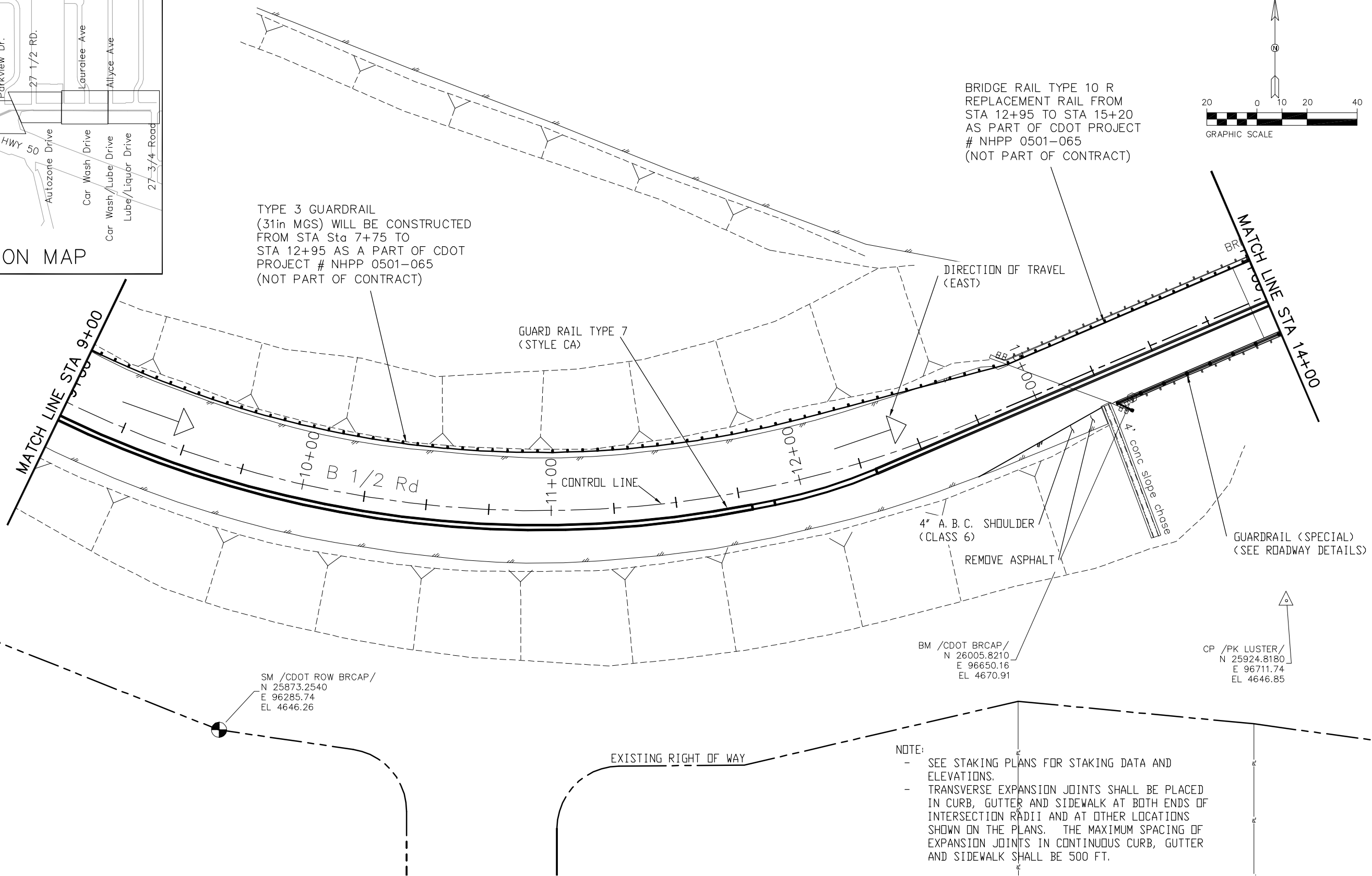
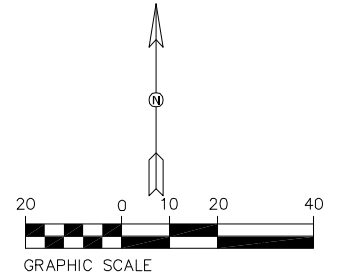
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LOCATION MAP

TYPE 3 GUARDRAIL
(31in MGS) WILL BE CONSTRUCTED
FROM STA Sta 7+75 TO
STA 12+95 AS A PART OF CDOT
PROJECT # NHPP 0501-065
(NOT PART OF CONTRACT)

BRIDGE RAIL TYPE 10 R
REPLACEMENT RAIL FROM
STA 12+95 TO STA 15+20
AS PART OF CDOT PROJECT
NHPP 0501-065
(NOT PART OF CONTRACT)



NOTE:
- SEE STAKING PLANS FOR STAKING DATA AND ELEVATIONS.
- TRANSVERSE EXPANSION JOINTS SHALL BE PLACED IN CURB, GUTTER AND SIDEWALK AT BOTH ENDS OF INTERSECTION RADII AND AT OTHER LOCATIONS SHOWN ON THE PLANS. THE MAXIMUM SPACING OF EXPANSION JOINTS IN CONTINUOUS CURB, GUTTER AND SIDEWALK SHALL BE 500 FT.

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Unit Information: City of GJ Unit Leader Initials: JJV

Sheet Revisions		
Date:	Comments	Init.



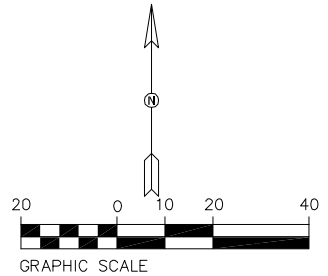
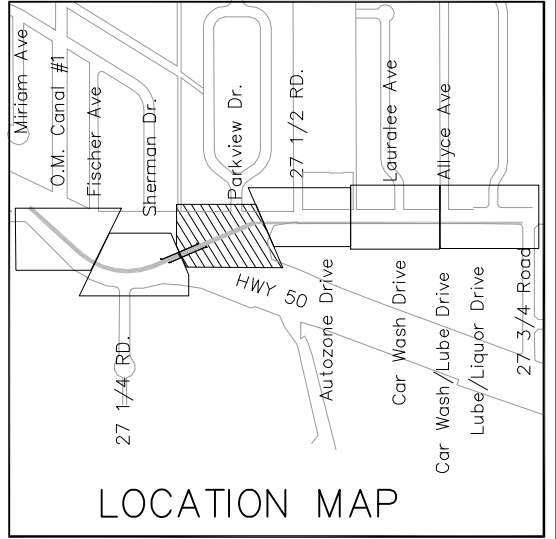
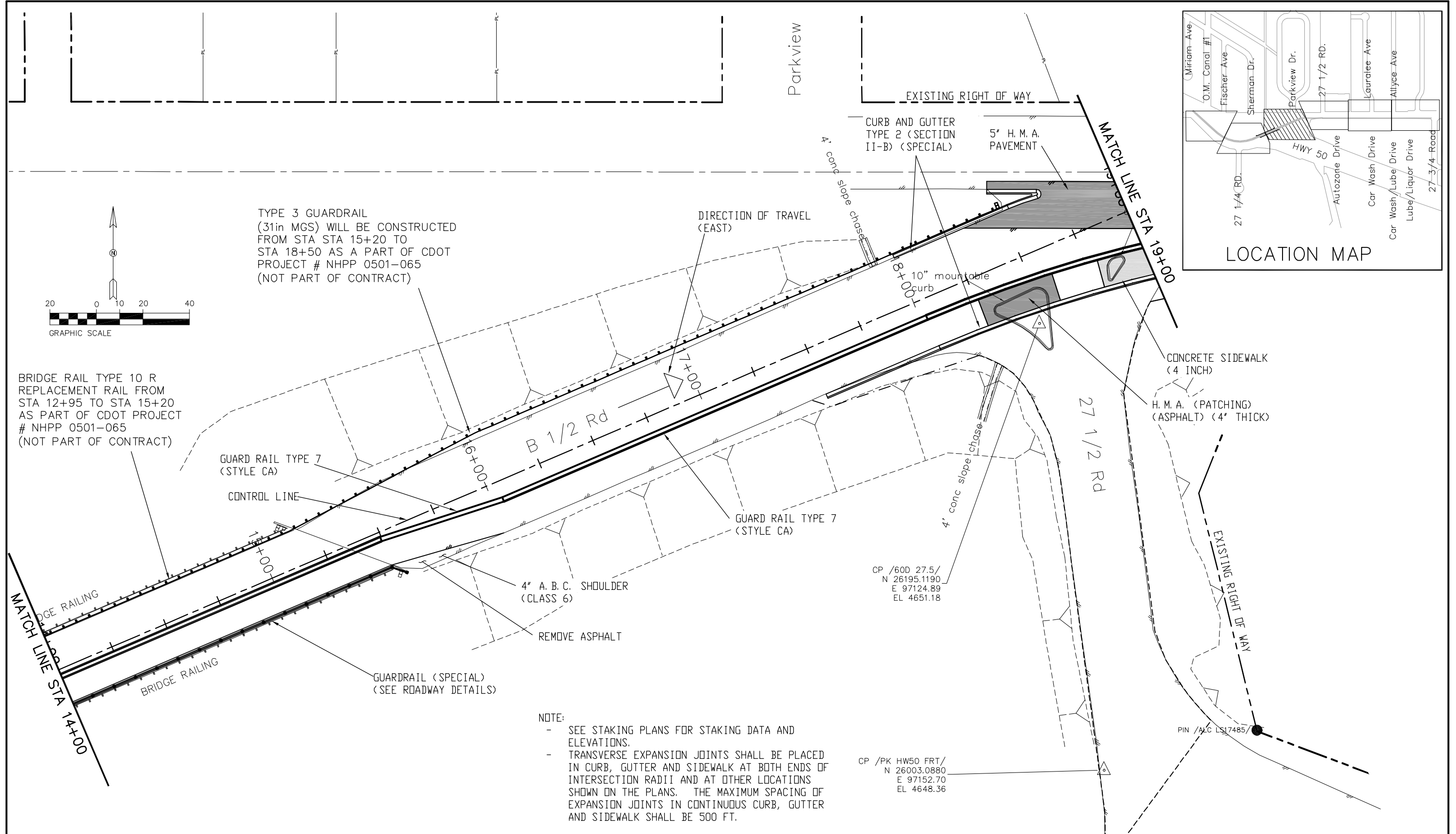
As Constructed
No Revisions:
Revised:
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B 1/2 Road (Overpass) Roadway Plan Sta. 9+00 TO 14+00	
Designer: John Smith	Structure Numbers
Detailer: John Smith	
Sheet Subset: Plan	Subset Sheets: 2 of 6

Project No./Code
TAP M555-032
20736
Sheet Number 36

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TYPE 3 GUARDRAIL
(31in MGS) WILL BE CONSTRUCTED
FROM STA STA 15+20 TO
STA 18+50 AS A PART OF CDOT
PROJECT # NHPP 0501-065
(NOT PART OF CONTRACT)

BRIDGE RAIL TYPE 10 R
REPLACEMENT RAIL FROM
STA 12+95 TO STA 15+20
AS PART OF CDOT PROJECT
NHPP 0501-065
(NOT PART OF CONTRACT)

NOTE:
- SEE STAKING PLANS FOR STAKING DATA AND ELEVATIONS.
- TRANSVERSE EXPANSION JOINTS SHALL BE PLACED IN CURB, GUTTER AND SIDEWALK AT BOTH ENDS OF INTERSECTION RADII AND AT OTHER LOCATIONS SHOWN ON THE PLANS. THE MAXIMUM SPACING OF EXPANSION JOINTS IN CONTINUOUS CURB, GUTTER AND SIDEWALK SHALL BE 500 FT.

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Unit Information: City of GJ Unit Leader Initials: JJV

Sheet Revisions		
Date:	Comments	Init.

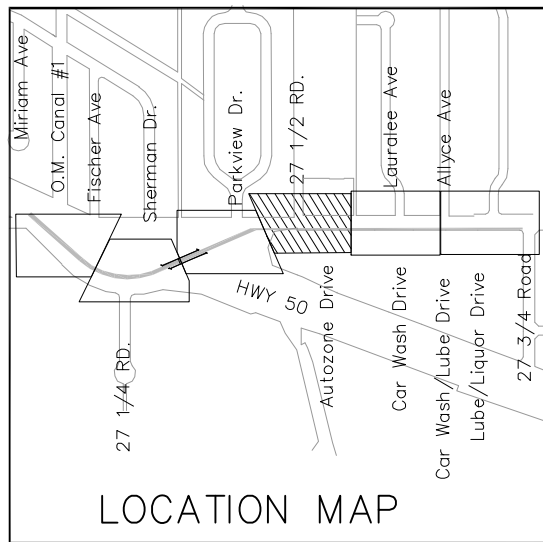
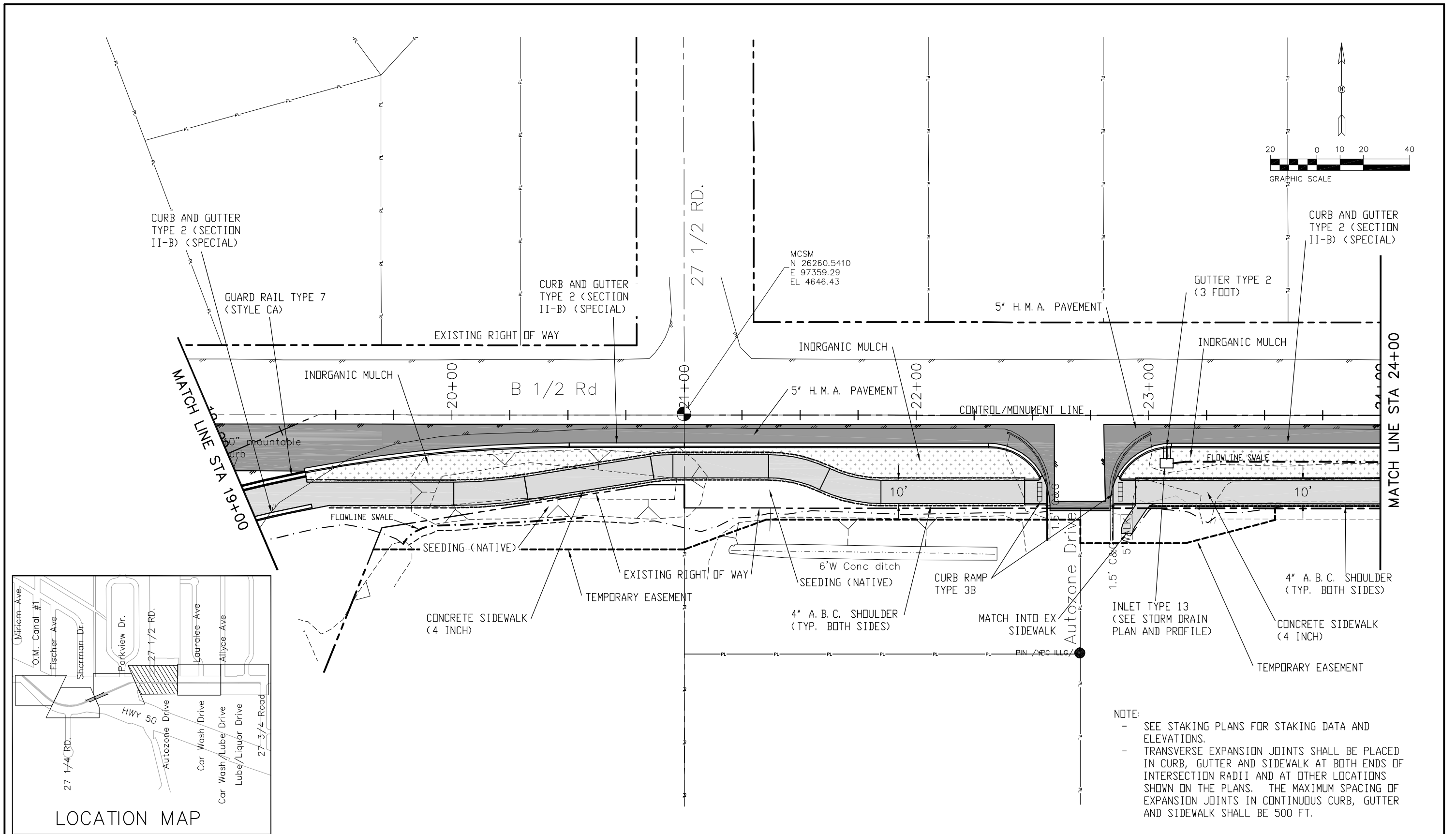


As Constructed
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Designer: John Smith	Structure Numbers
Detailer: John Smith	
Sheet Subset: Plan	Subset Sheets: 3 of 6

Project No./Code
TAP M555-032
20736
Sheet Number 37

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NOTE:
 - SEE STAKING PLANS FOR STAKING DATA AND ELEVATIONS.
 - TRANSVERSE EXPANSION JOINTS SHALL BE PLACED IN CURB, GUTTER AND SIDEWALK AT BOTH ENDS OF INTERSECTION RADII AND AT OTHER LOCATIONS SHOWN ON THE PLANS. THE MAXIMUM SPACING OF EXPANSION JOINTS IN CONTINUOUS CURB, GUTTER AND SIDEWALK SHALL BE 500 FT.

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Unit Information: City of GJ Unit Leader Initials: JJV

Sheet Revisions		
Date:	Comments	Init.



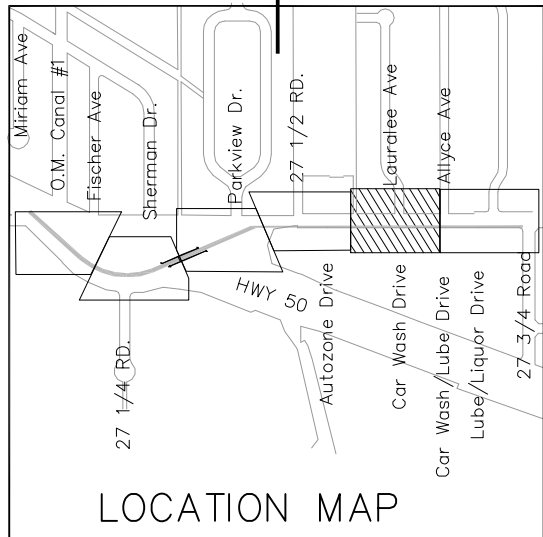
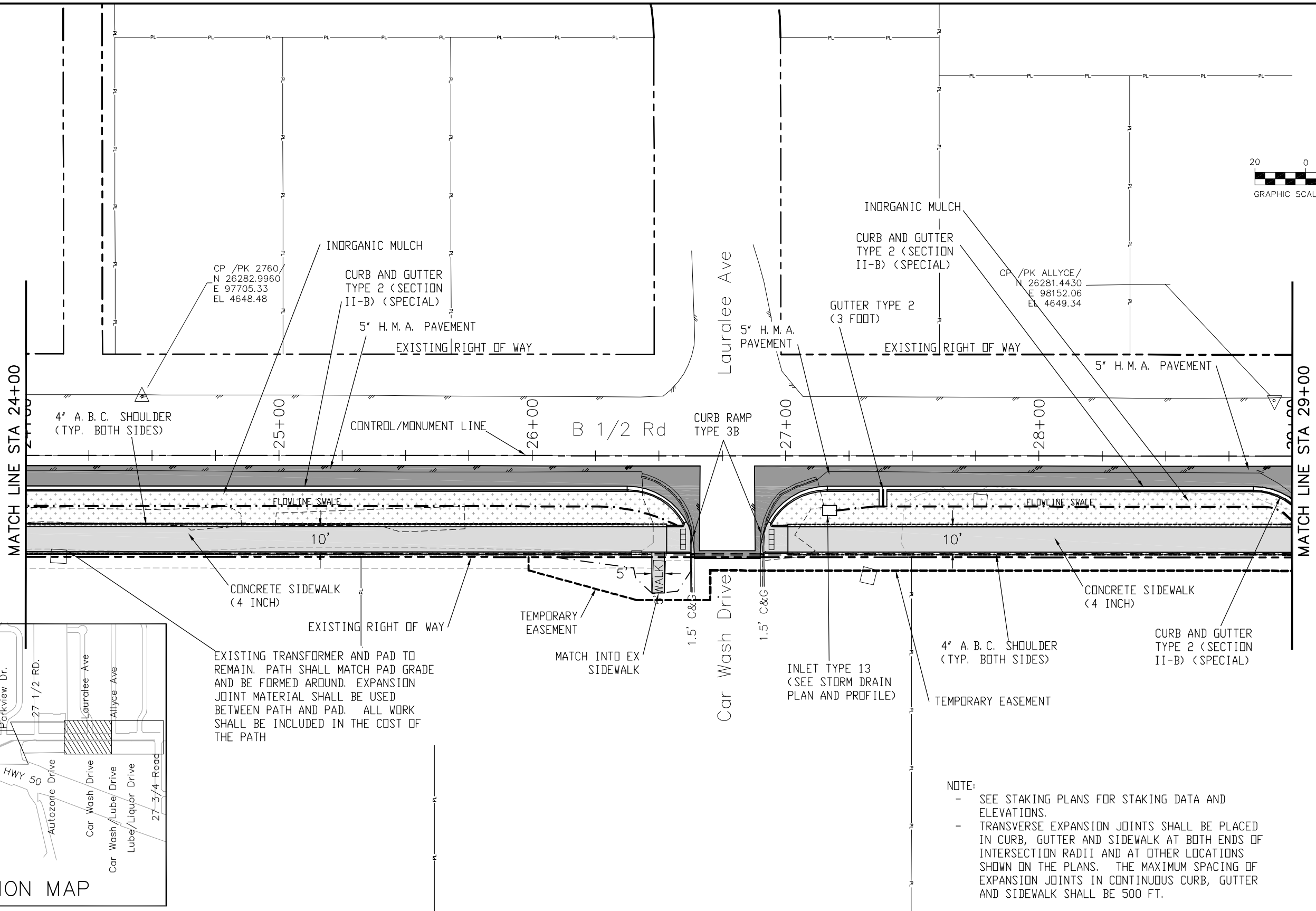
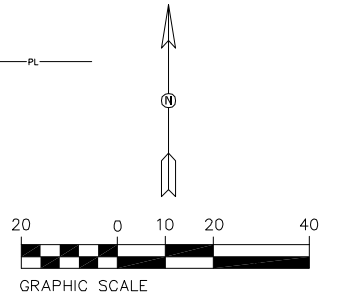
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B 1/2 Road Roadway Plan Sta. 19+00 TO 24+00	
Designer: John Smith	Structure Numbers
Detailer: John Smith	
Sheet Subset: Plan	Subset Sheets: 4 of 6

Project No./Code
TAP M555-032
20736
Sheet Number 38

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EXISTING TRANSFORMER AND PAD TO REMAIN. PATH SHALL MATCH PAD GRADE AND BE FORMED AROUND. EXPANSION JOINT MATERIAL SHALL BE USED BETWEEN PATH AND PAD. ALL WORK SHALL BE INCLUDED IN THE COST OF THE PATH

NOTE:
 - SEE STAKING PLANS FOR STAKING DATA AND ELEVATIONS.
 - TRANSVERSE EXPANSION JOINTS SHALL BE PLACED IN CURB, GUTTER AND SIDEWALK AT BOTH ENDS OF INTERSECTION RADII AND AT OTHER LOCATIONS SHOWN ON THE PLANS. THE MAXIMUM SPACING OF EXPANSION JOINTS IN CONTINUOUS CURB, GUTTER AND SIDEWALK SHALL BE 500 FT.

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Unit Information: City of GJ Unit Leader Initials: JJV

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Date:	Comments	Init.



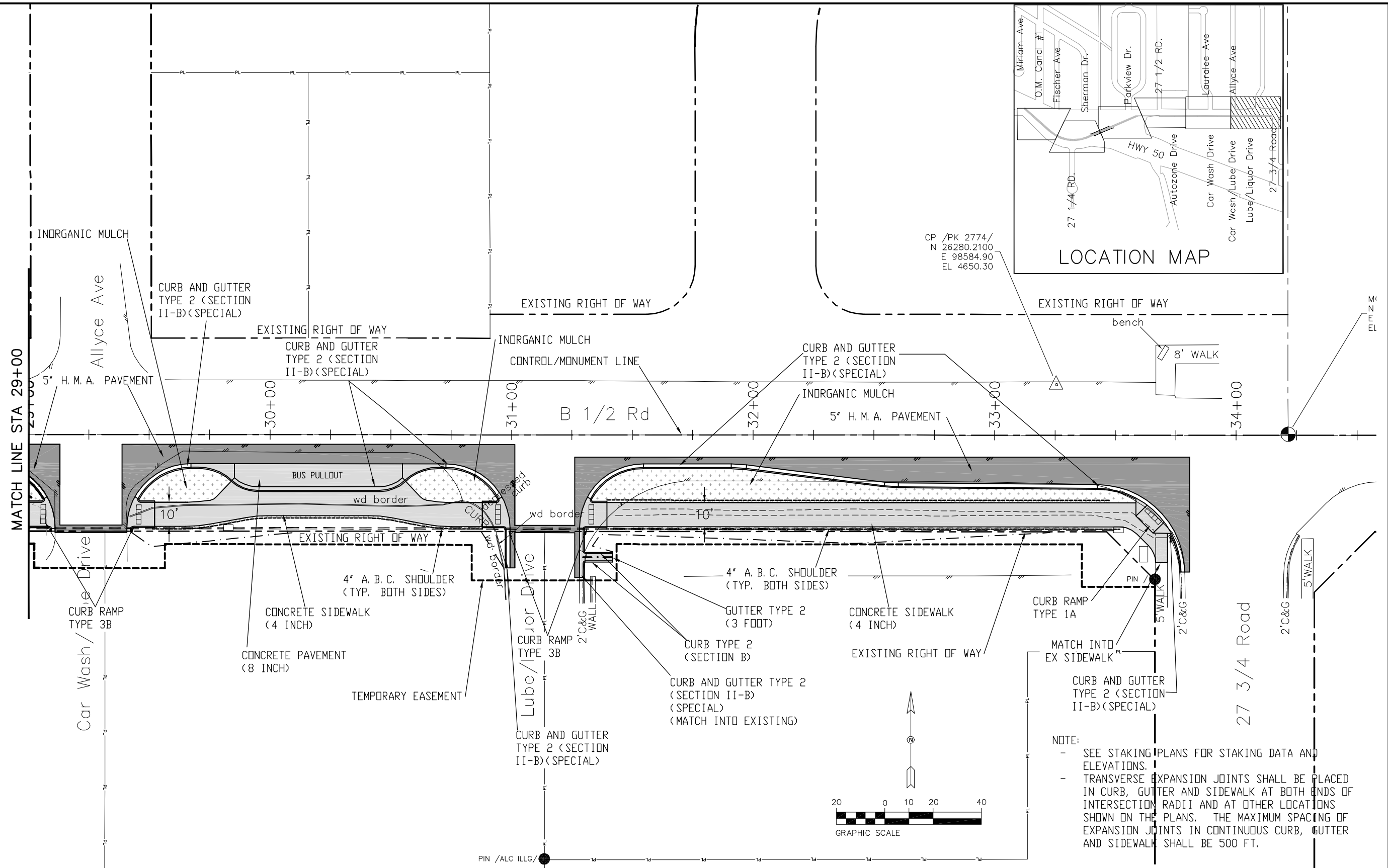
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B 1/2 Road Roadway Plan Sta. 24+00 TO 29+00	
Designer: John Smith	Structure Numbers
Detailer: John Smith	
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Project No./Code
TAP M555-032
20736
Sheet Number 39

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CP /PK 2774/
N 26280.2100
E 98584.90
EL 4650.30

LOCATION MAP

NOTE:
- SEE STAKING PLANS FOR STAKING DATA AND ELEVATIONS.
- TRANSVERSE EXPANSION JOINTS SHALL BE PLACED IN CURB, GUTTER AND SIDEWALK AT BOTH ENDS OF INTERSECTION RADII AND AT OTHER LOCATIONS SHOWN ON THE PLANS. THE MAXIMUM SPACING OF EXPANSION JOINTS IN CONTINUOUS CURB, GUTTER AND SIDEWALK SHALL BE 500 FT.

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File Name: © LEFT
Horiz. Scale: AS SHOWN Vert. Scale: NA
Unit Information: City of GJ Unit Leader Initials: JJV

Sheet Revisions		
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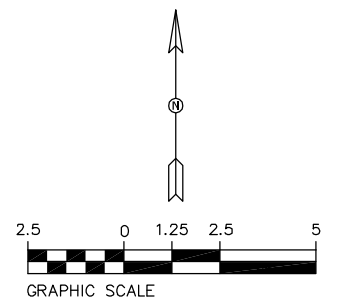
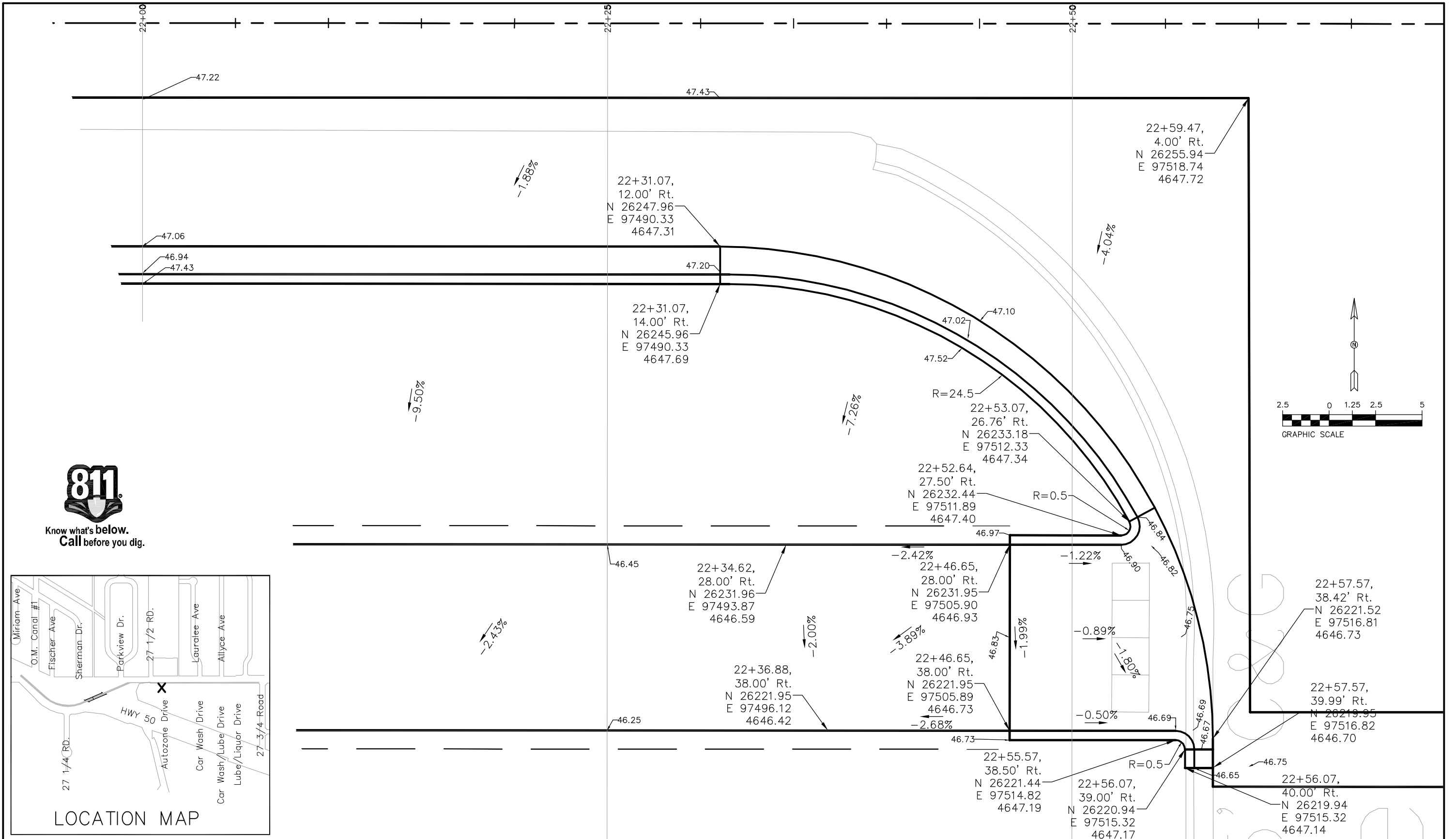
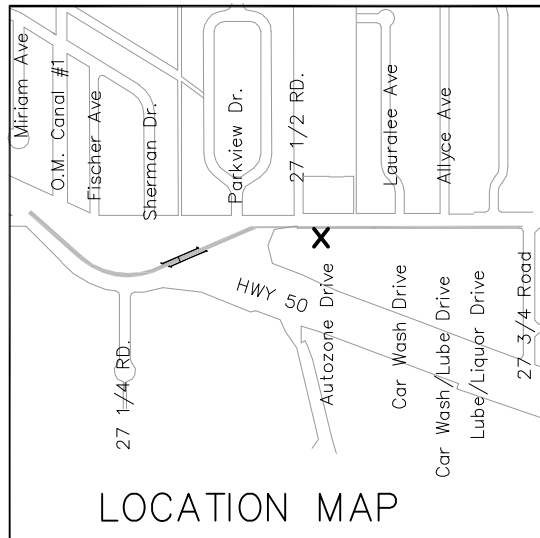
B 1/2 Road Roadway Plan Sta. 29+00 TO 34+00	
Designer: John Smith	Structure Numbers
Detailer: John Smith	
Sheet Subset: Plan	Subset Sheets: 6 of 6

Project No./Code
TAP M555-032
20736
Sheet Number 40

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Print Date: © LEFT
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Unit Information: City of GJ Unit Leader Initials: JJV

Sheet Revisions			
Date:	Comments	Init.	
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No Revisions:
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Void:

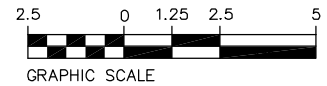
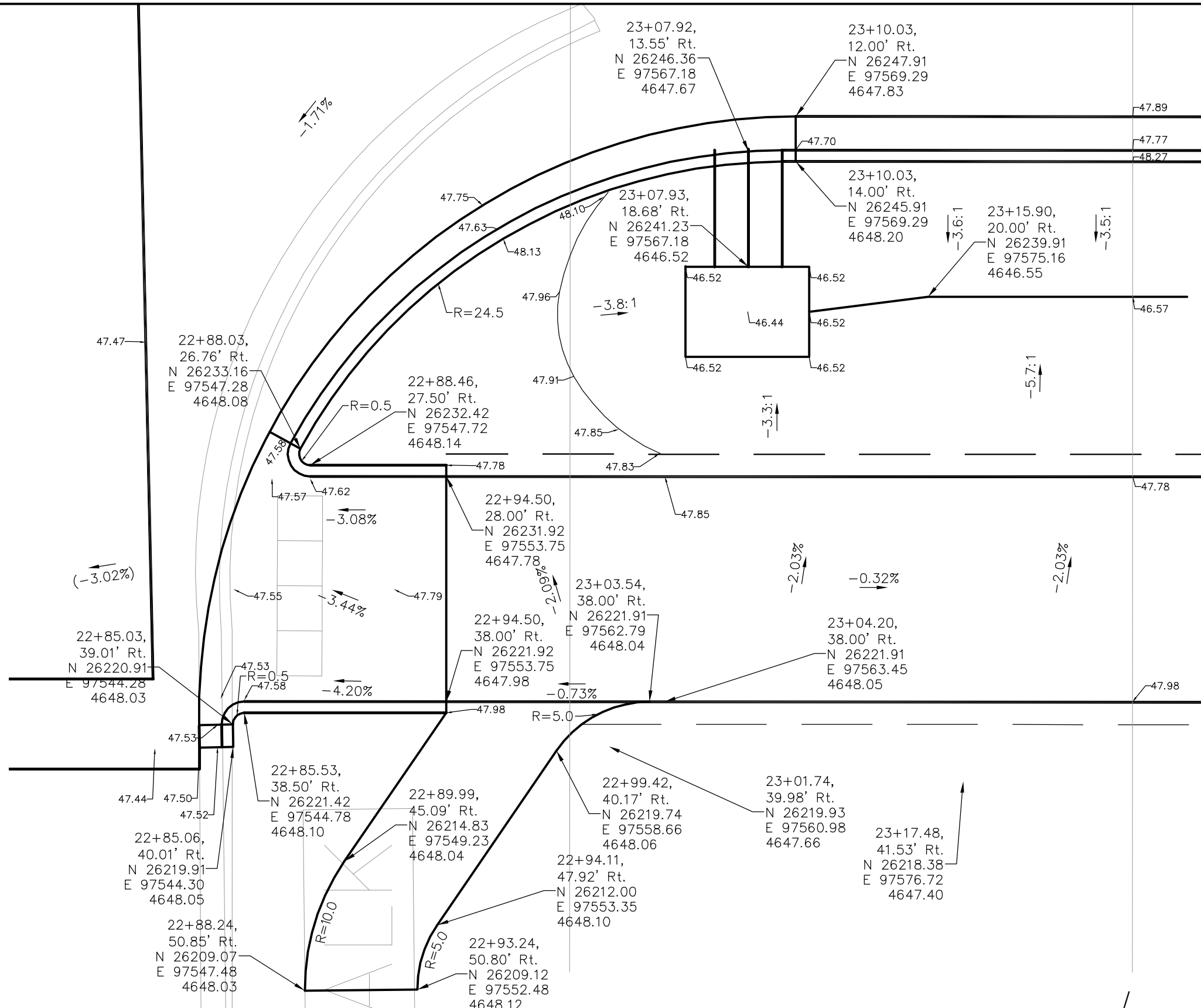
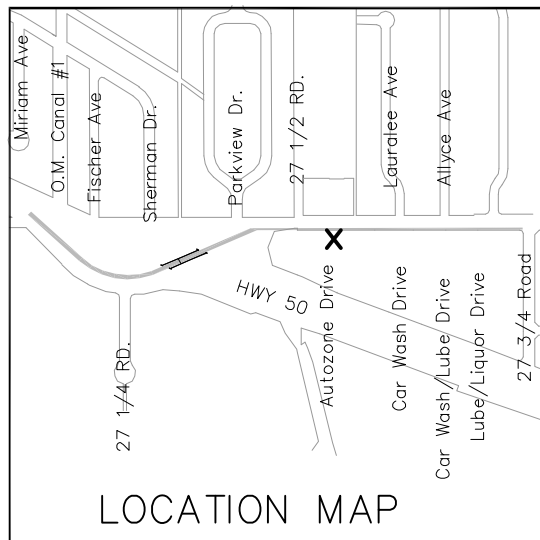
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Designer: John Smith	Structure		
Detailer: John Smith	Numbers		
Sheet Subset: Staking	Subset Sheets:	1 of 9	

Project No./Code
TAP M555-032
20736
Sheet Number 41

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Horiz. Scale: AS SHOWN Vert. Scale: NA
Unit Information: City of GJ Unit Leader Initials: JJV

Sheet Revisions		
Date:	Comments	Init.



As Constructed
No Revisions:
Revised:
Void:

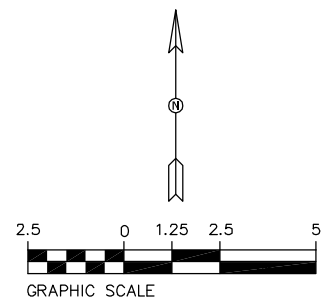
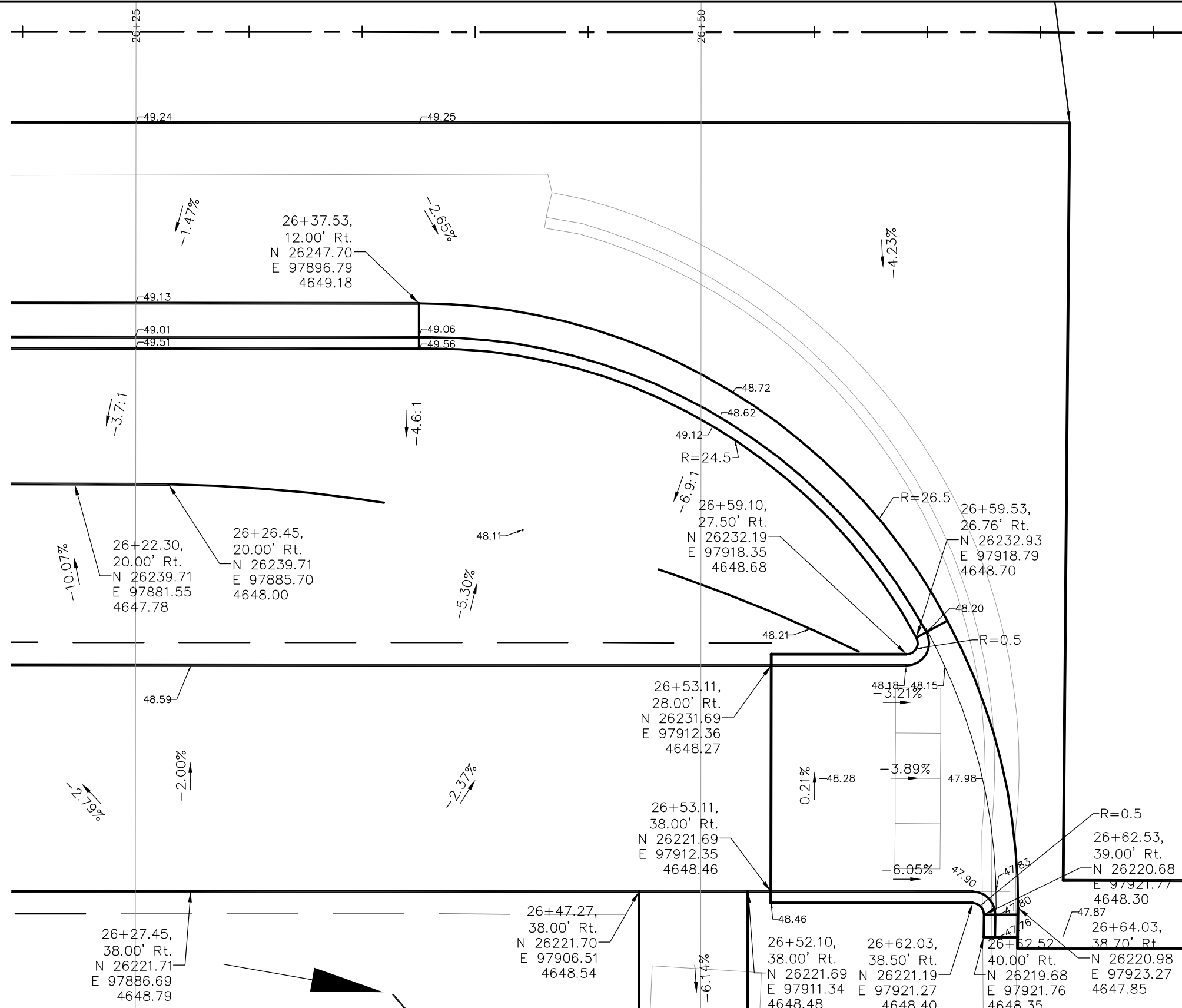
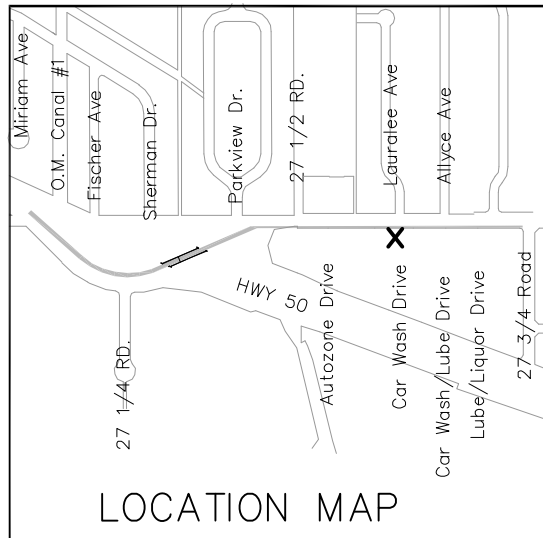
B 1/2 ROAD Intersection Corner Ramp Plan SE Corner Autozone Drive	
Designer: John Smith	Structure Numbers
Detailer: John Smith	
Sheet Subset: Staking	Subset Sheets: 2 of 9

Project No./Code
TAP M555-032
20736
Sheet Number 42

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Know what's below.
Call before you dig.



Print Date: © LEFT
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 Unit Information: City of GJ Unit Leader Initials: JJV

Sheet Revisions			
Date:	Comments	Init.	



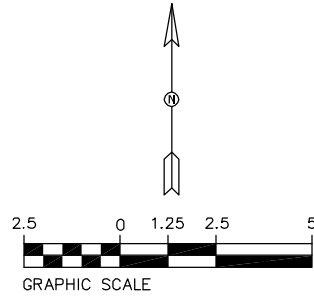
As Constructed
 No Revisions:
 Revised:
 Void:

B 1/2 ROAD
 Intersection Corner Ramp Plan
 SW Corner Car Wash Drive
 Designer: John Smith
 Detailer: John Smith
 Sheet Subset: Staking Subset Sheets: 3 of 9

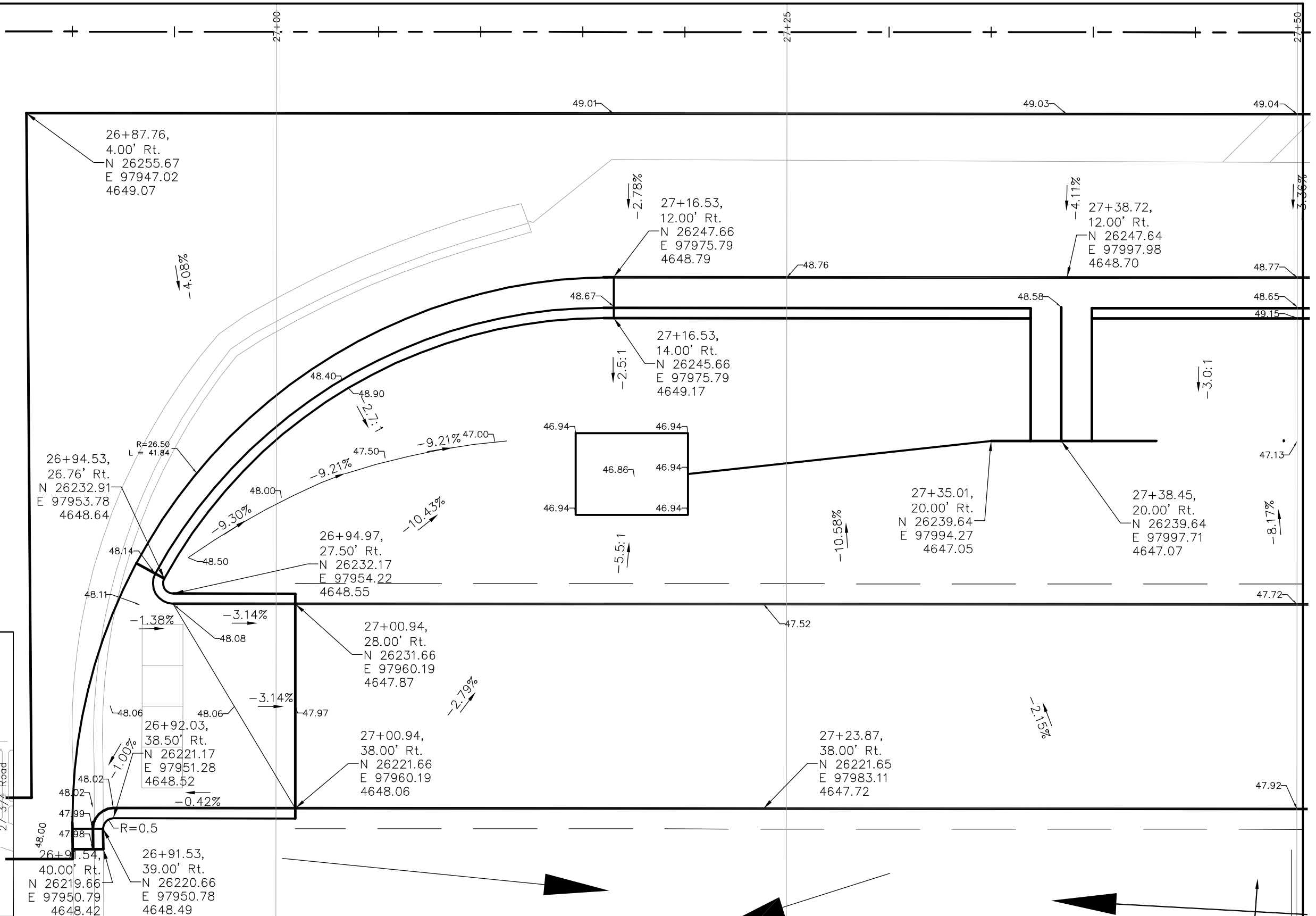
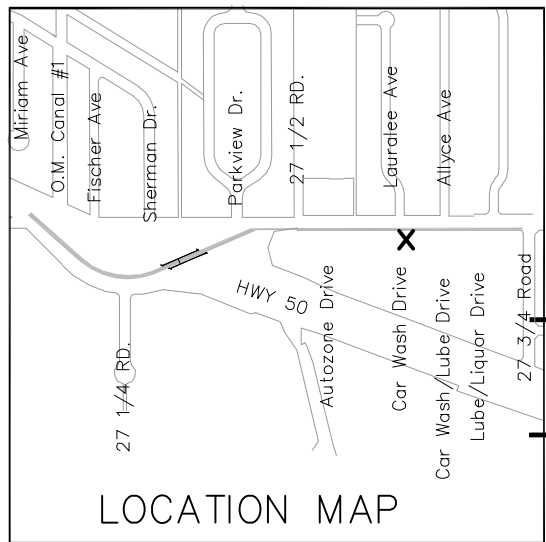
Project No./Code
 TAP M555-032
 20736
 Sheet Number 43

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Know what's below.
Call before you dig.



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Horiz. Scale: AS SHOWN Vert. Scale: NA
Unit Information: City of GJ Unit Leader Initials: JJV

Sheet Revisions			
Date:	Comments	Init.	

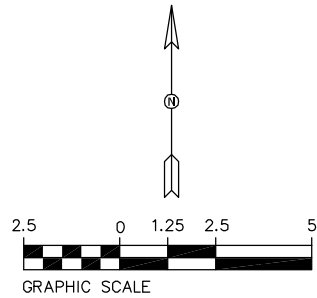


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Revised:
Void:

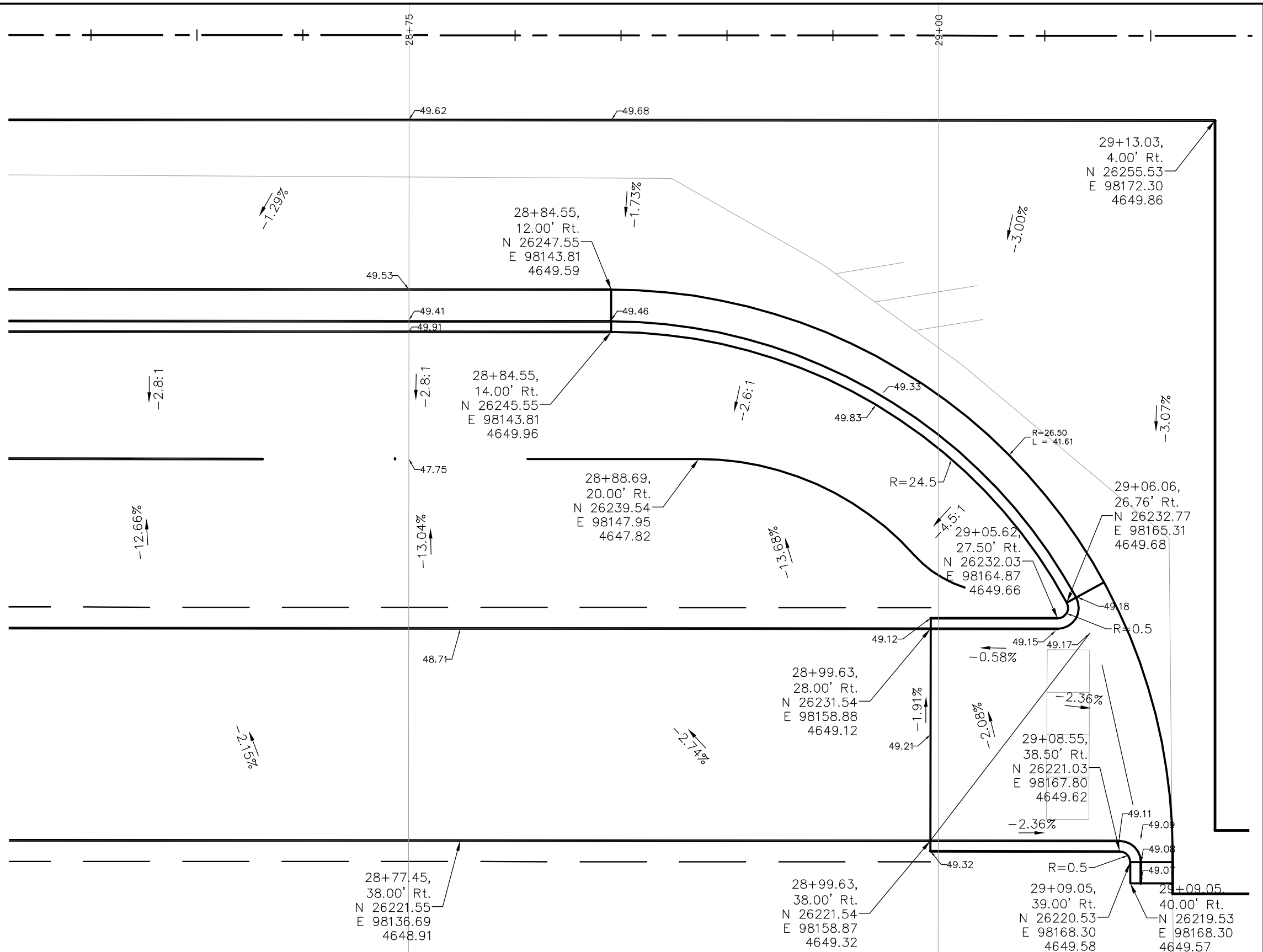
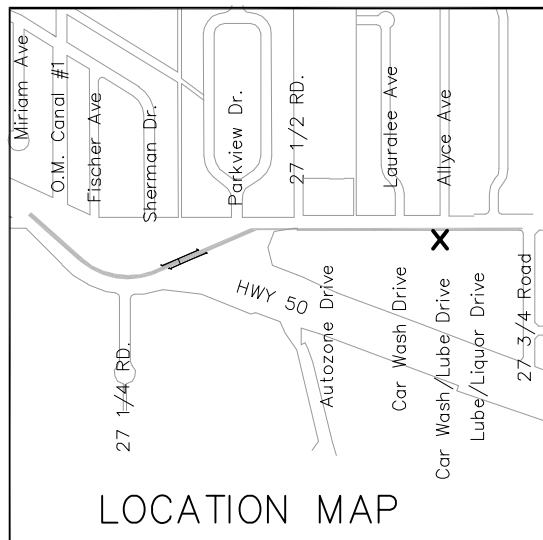
B 1/2 ROAD	
Intersection Corner Ramp Plan	
SE Corner Car Wash Drive	
Designer: John Smith	Structure Numbers
Detailer: John Smith	
Sheet Subset: Staking	Subset Sheets: 4 of 9

Project No./Code
TAP M555-032
20736
Sheet Number 44

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Know what's below.
Call before you dig.



Sheet Revisions		
Date:	Comments	Init.

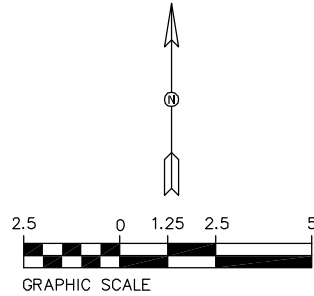


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No Revisions:
Revised:
Void:

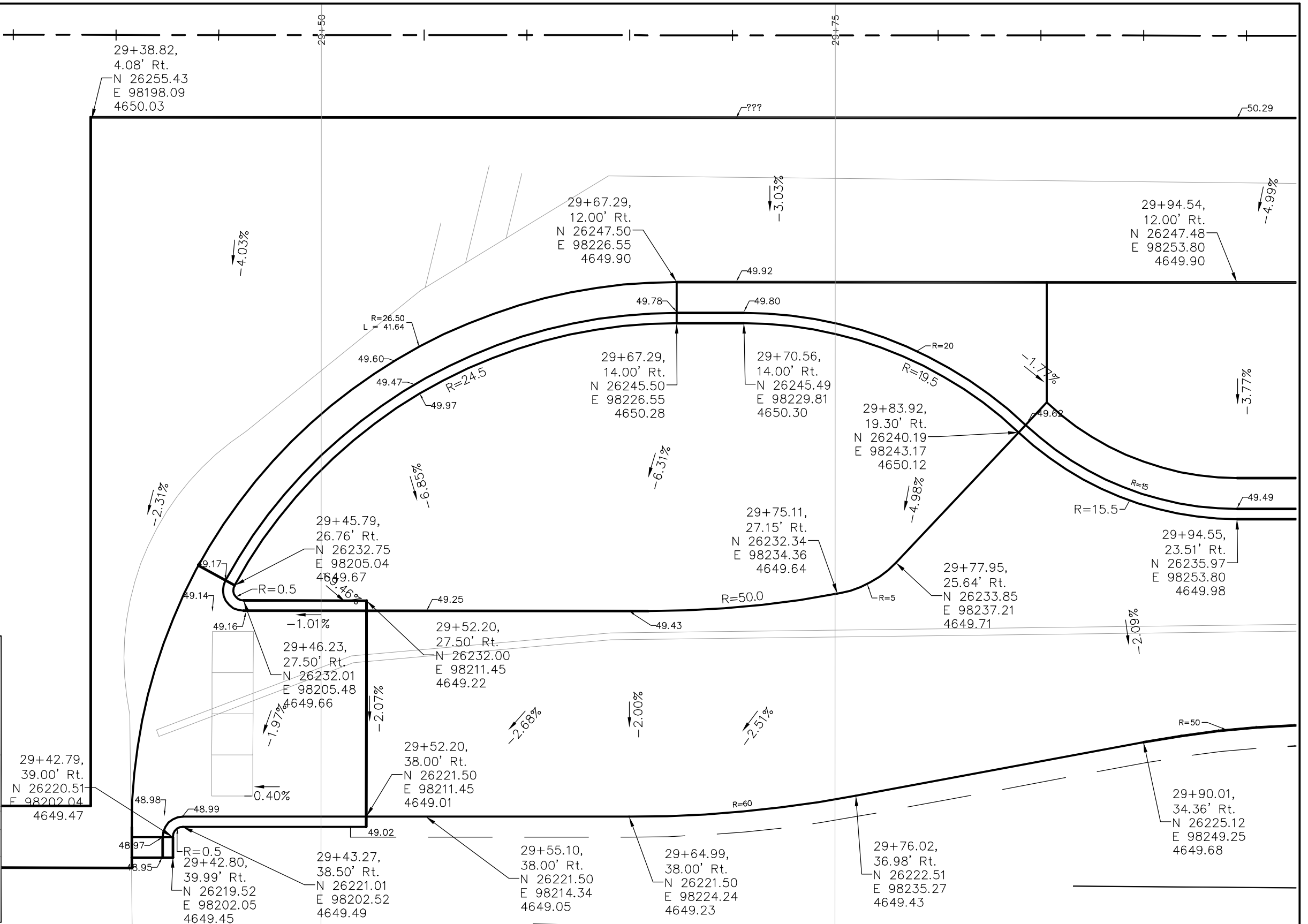
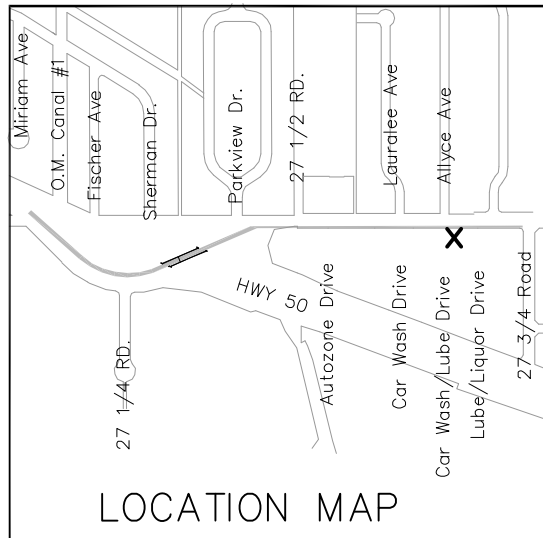
B 1/2 ROAD	
Intersection Corner Ramp Plan	
SW Corner Car Wash/Lube Drive	
Designer: John Smith	Structure Numbers
Detailer: John Smith	
Sheet Subset: Staking	Subset Sheets: 5 of 9

Project No./Code
TAP M555-032
20736
Sheet Number 45

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Call before you dig.



Print Date: © LEFT
File Name: © LEFT
Horiz. Scale: AS SHOWN Vert. Scale: NA
Unit Information: City of GJ Unit Leader Initials: JJV

Sheet Revisions		
Date:	Comments	Init.

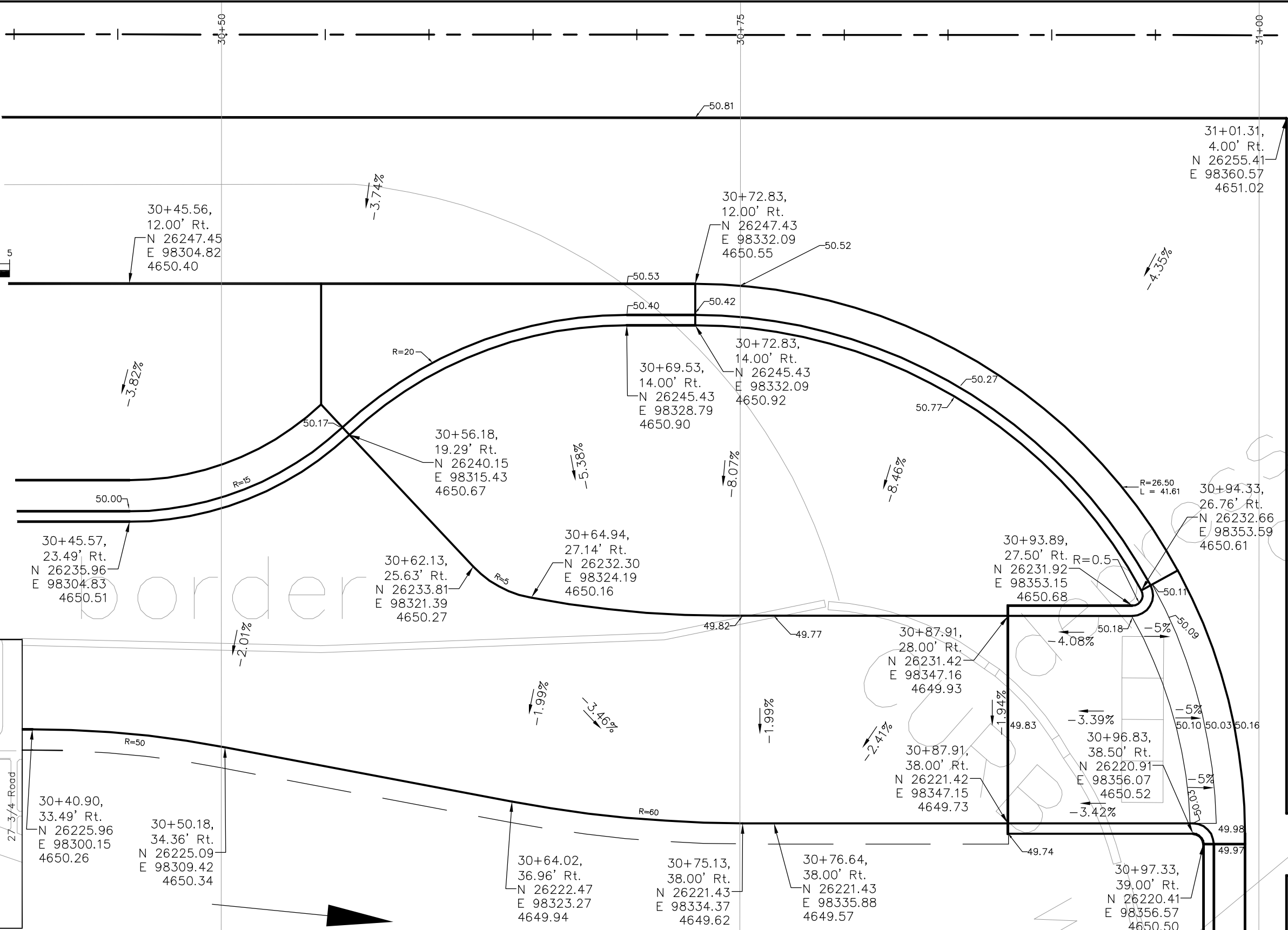
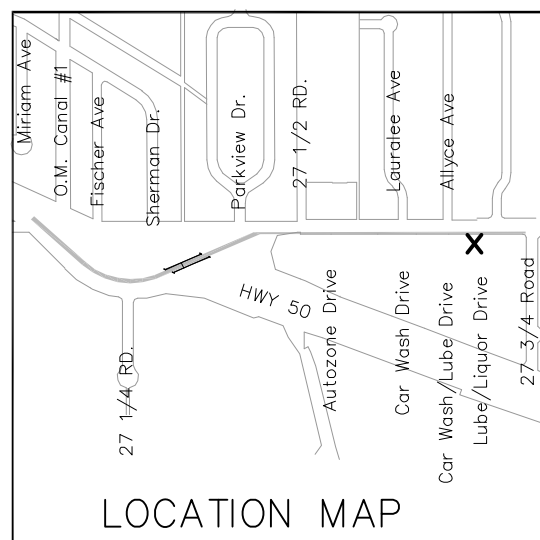
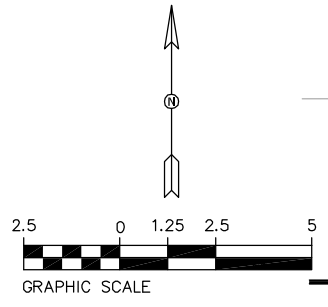


As Constructed
No Revisions:
Revised:
Void:

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Intersection Corner Ramp Plan	
SE Corner Car Wash/Lube Drive	
Designer: John Smith	Structure Numbers
Detailer: John Smith	
Sheet Subset: Staking	Subset Sheets: 6 of 9

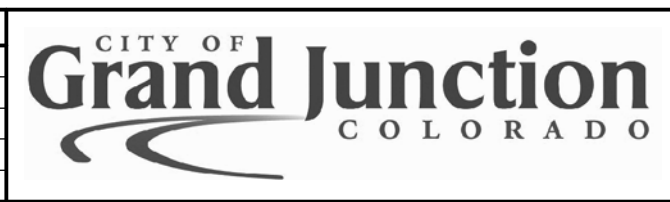
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20736
Sheet Number 46

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Unit Information: City of GJ Unit Leader Initials: JJV

Sheet Revisions			
Date:	Comments	Init.	

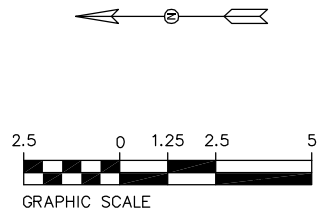


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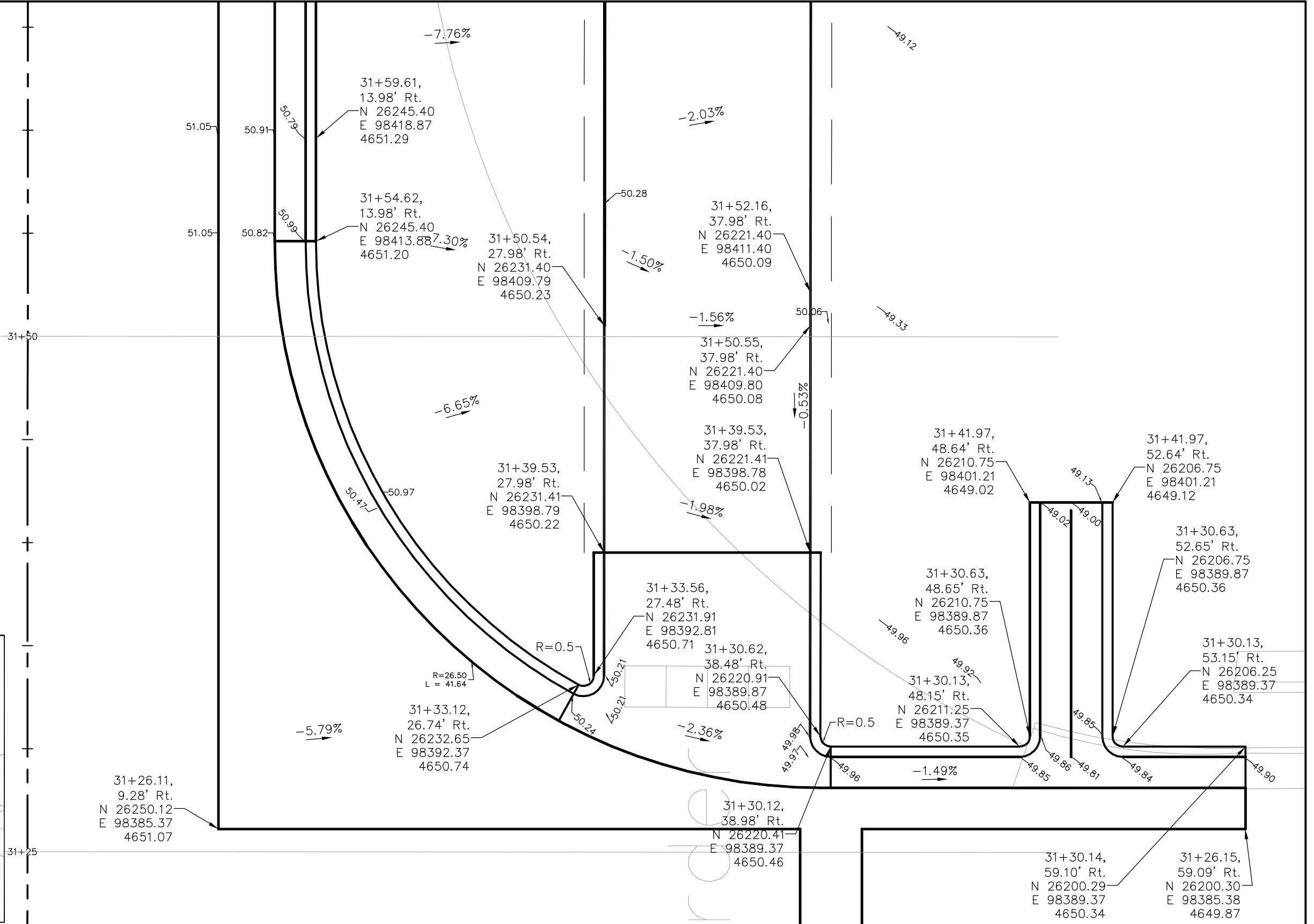
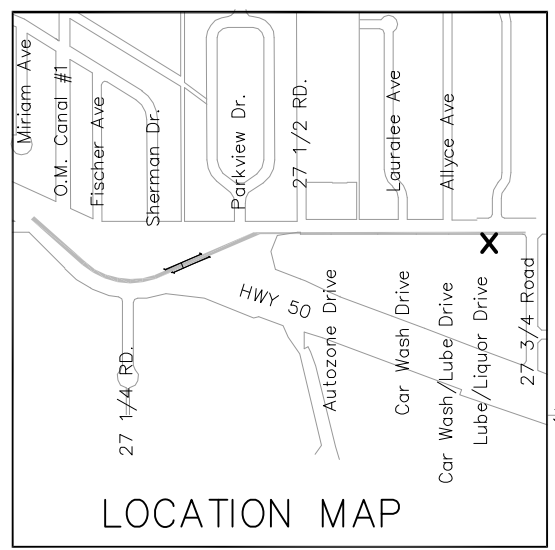
B 1/2 ROAD	
Intersection Corner Ramp Plan	
SW Corner Car Lube/Liquor Drive	
Designer: John Smith	Structure Numbers
Detailer: John Smith	
Sheet Subset: Staking	Subset Sheets: 7 of 9

Project No./Code
TAP M555-032
20736
Sheet Number 47

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Unit Information: City of GJ Unit Leader Initials: JJV

Sheet Revisions		
Date:	Comments	Init.



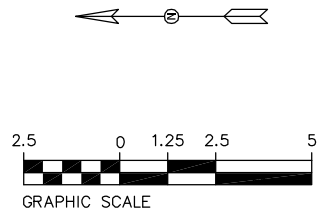
As Constructed
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Void:

B 1/2 ROAD	
Intersection Corner Ramp Plan	
SE Corner Car Lube/Liquor Drive	
Designer: John Smith	Structure Numbers
Detailer: John Smith	
Sheet Subset: Staking	Subset Sheets: 8 of 9

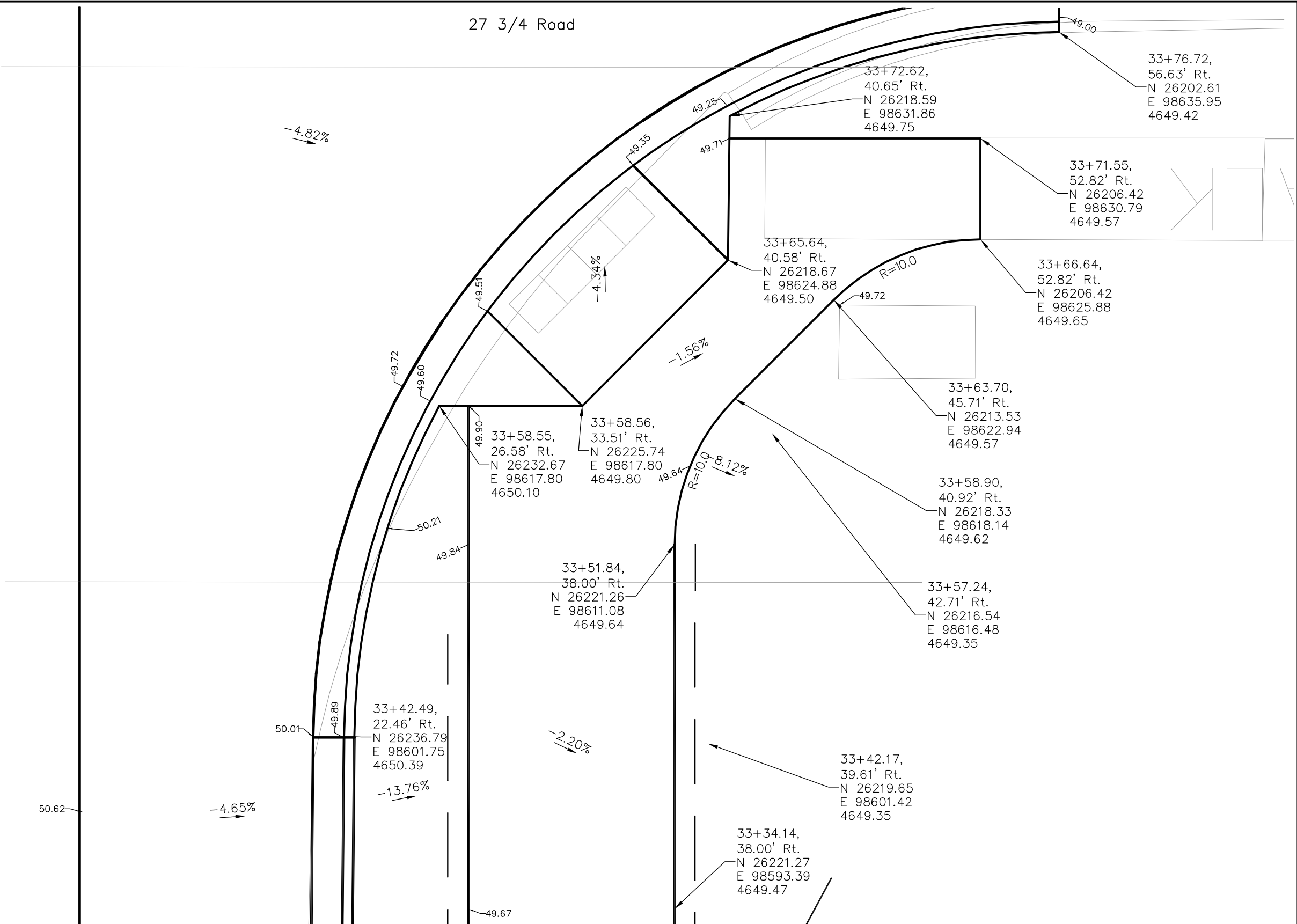
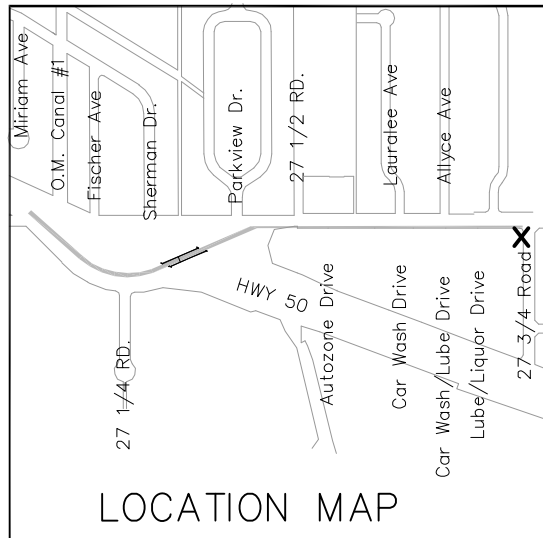
Project No./Code
TAP M555-032
20736
Sheet Number 48

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Call before you dig.



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File Name: © LEFT
Horiz. Scale: AS SHOWN Vert. Scale: NA
Unit Information: City of GJ Unit Leader Initials: JJV

Sheet Revisions			
Date:	Comments	Init.	

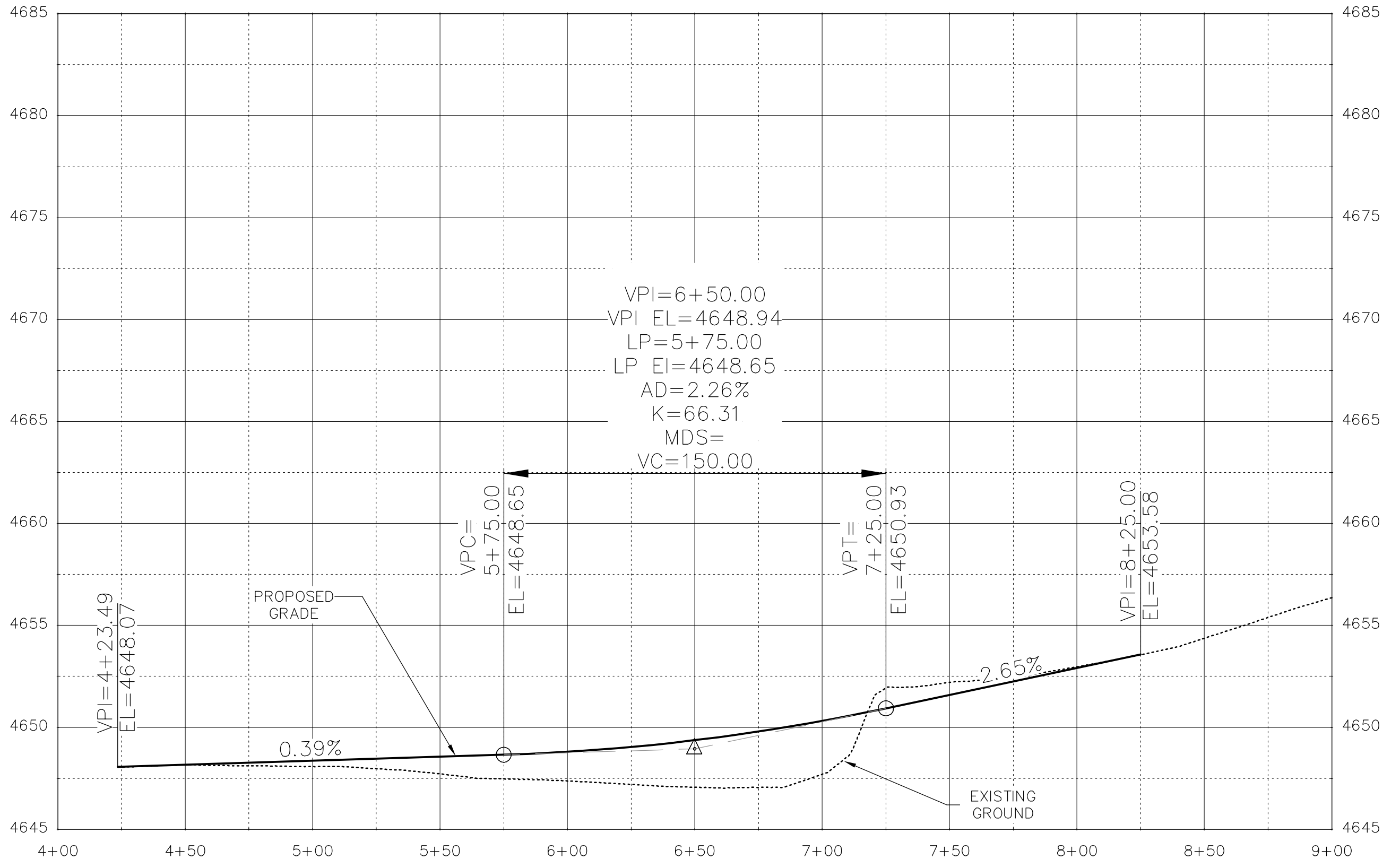


As Constructed
No Revisions:
Revised:
Void:

B 1/2 ROAD Intersection Corner Ramp Plan SW Corner 27 3/4 Rd		
Designer: John Smith	Structure Numbers	
Detailer: John Smith		
Sheet Subset: Staking	Subset Sheets:	9 of 9

Project No./Code
TAP M555-032
20736
Sheet Number 49

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 LP=5+75.00
 LP EL=4648.65
 AD=2.26%
 K=66.31
 MDS=
 VC=150.00

NORTH EDGE OF PAVEMENT – B 1/2 ROAD

Print Date: as shown at left
 File Name: as shown at left
 Horiz. Scale: AS SHOWN Vert. Scale: AS SHOWN
 Unit Information: City of GJ Unit Leader Initials: JJV

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Sheet Revisions		
Date:	Comments	Init.

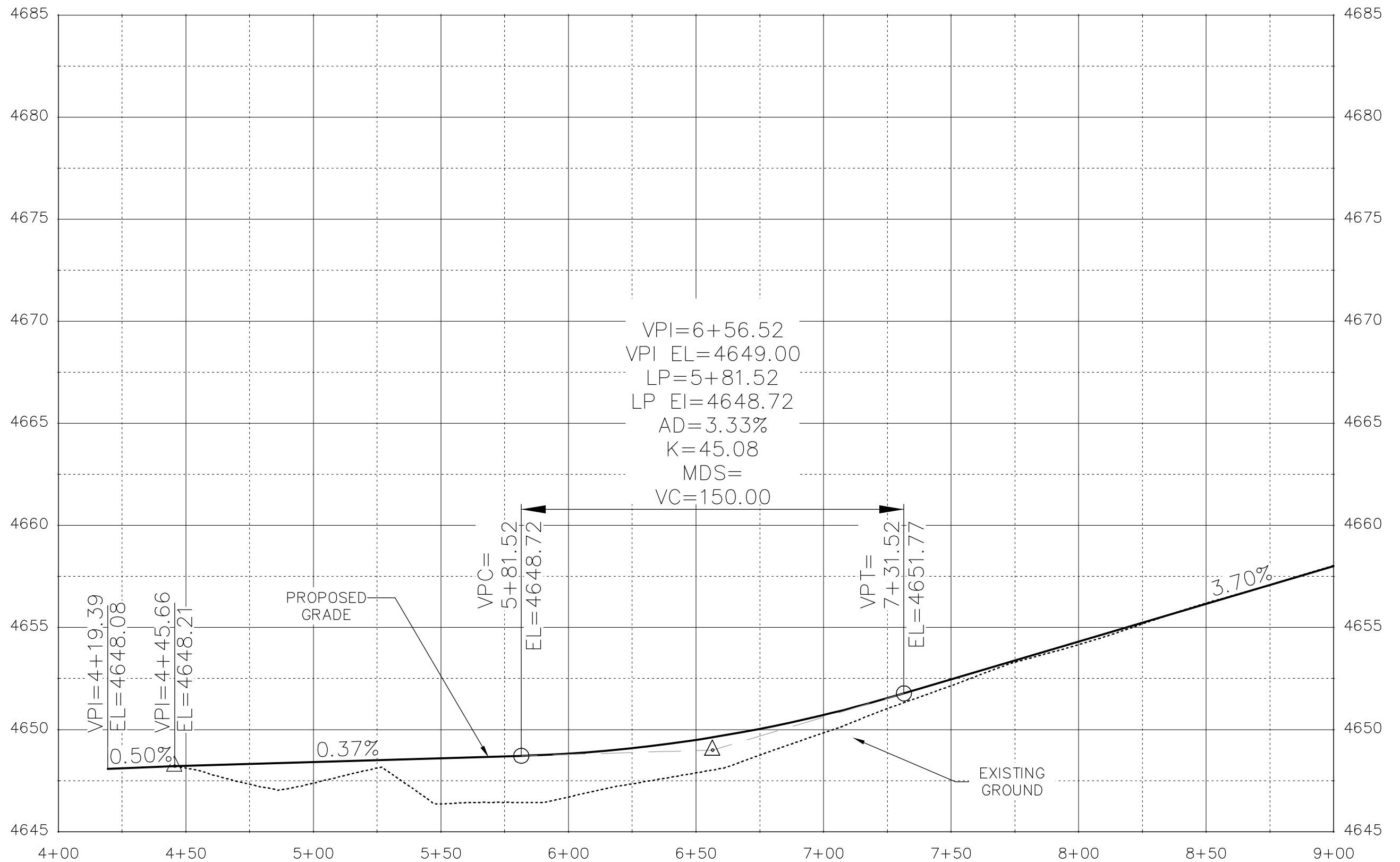


As Constructed
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 Revised:
 Void:

ROADWAY PROFILE			
Designer: John C Smith	Structure Numbers	—	—
Detailer: John C Smith	Structure Numbers	—	—
Sheet Subset: Profile	Subset Sheets:	1 of 10	—

Project No./Code
 TAP M555-032
 20736
 Sheet Number 50

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SOUTH EDGE OF PAVEMENT – B 1/2 ROAD

Print Date: as shown at left
File Name: as shown at left
Horiz. Scale: AS SHOWN Vert. Scale: AS SHOWN
Unit Information: City of GJ Unit Leader Initials: JJV

Sheet Revisions		
Date:	Comments	Init.

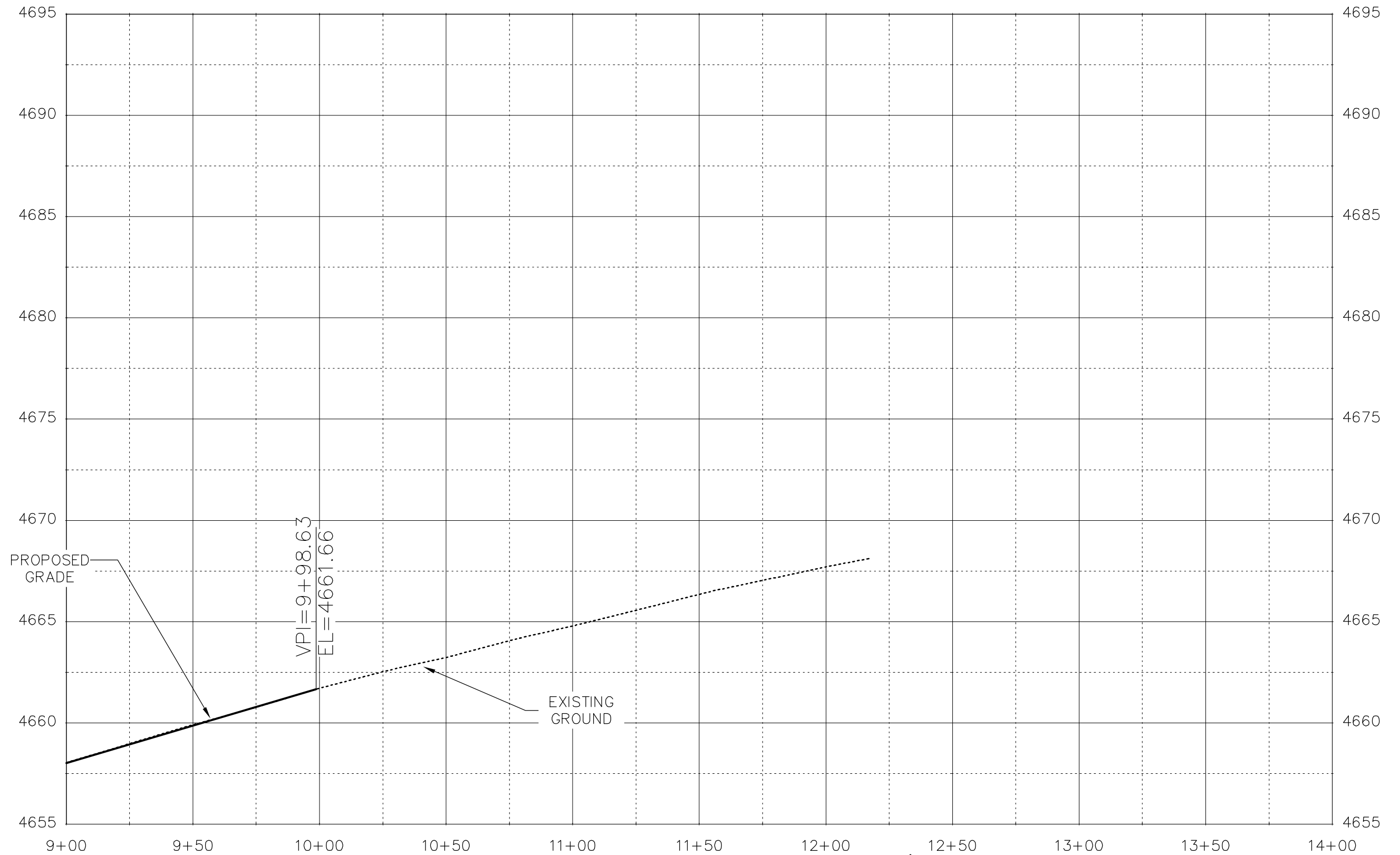


As Constructed
No Revisions:
Revised:
Void:

ROADWAY PROFILE			
Designer: John C Smith	Structure Numbers	—	—
Detailer: John C Smith	Structure Numbers	—	—
Sheet Subset: Profile	Subset Sheets:	2 of 10	

Project No./Code
TAP M555-032
20736
Sheet Number 51

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SOUTH EDGE OF PAVEMENT – B 1/2 ROAD

Print Date: as shown at left
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Horiz. Scale: AS SHOWN Vert. Scale: AS SHOWN
Unit Information: City of GJ Unit Leader Initials: JJV

Sheet Revisions		
Date:	Comments	Init.

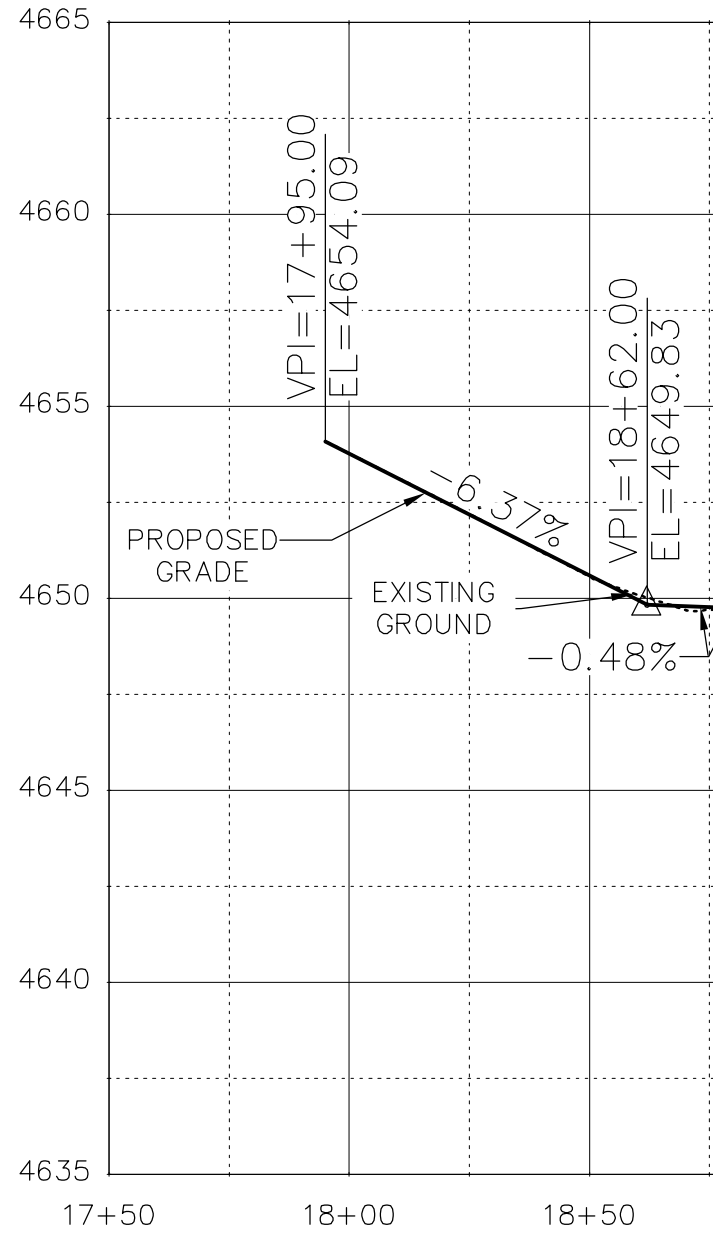


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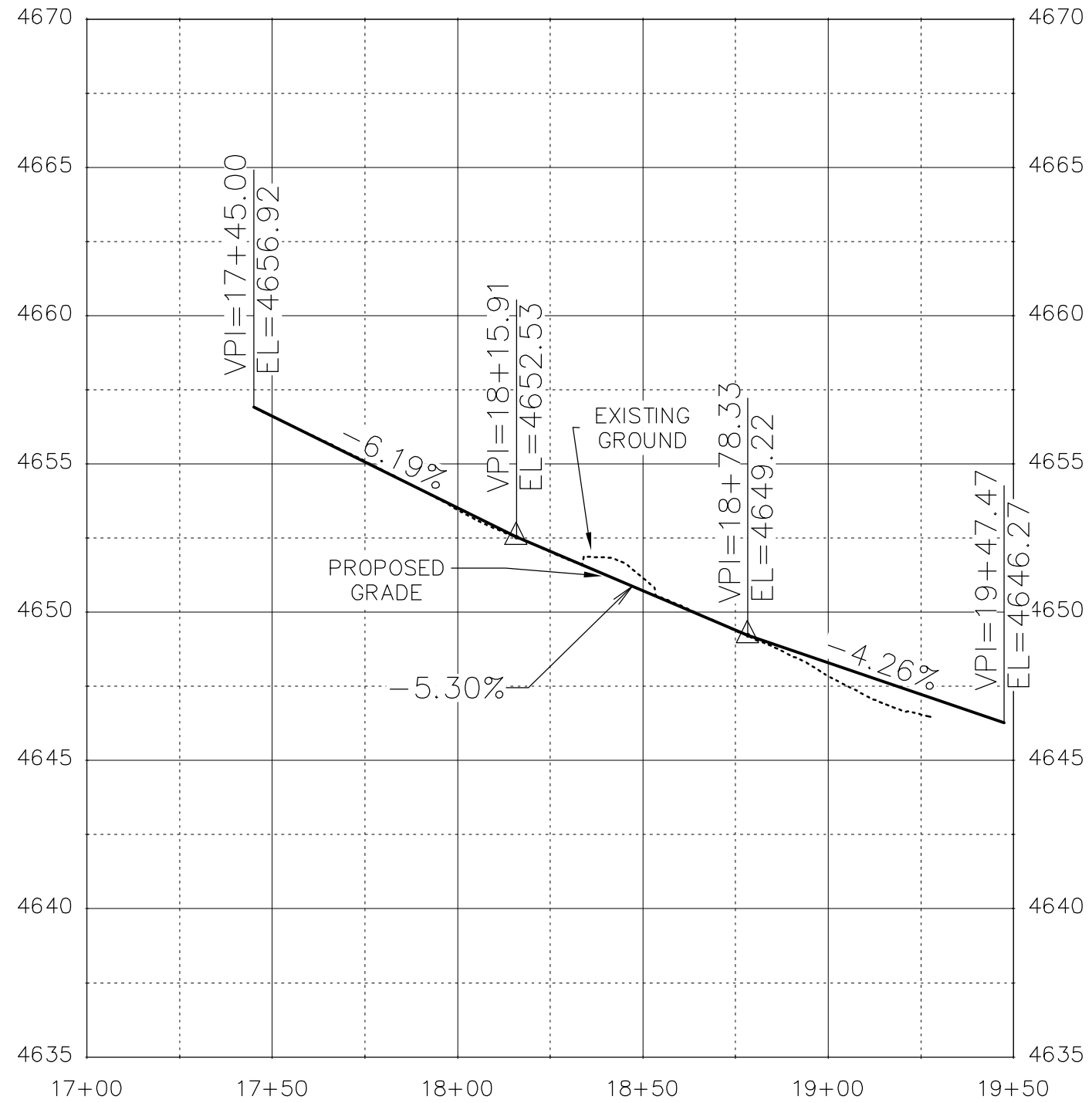
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Designer: John C Smith	Structure Numbers	–	–
Detailer: John C Smith	Structure Numbers	–	–
Sheet Subset: Profile	Subset Sheets:	3 of 10	

Project No./Code
TAP M555-032
20736
Sheet Number 52

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**NORTH EDGE OF PAVEMENT
B 1/2 ROAD**



**SOUTH EDGE OF PAVEMENT
B 1/2 ROAD**

Print Date: as shown at left
 File Name: as shown at left
 Horiz. Scale: AS SHOWN Vert. Scale: AS SHOWN
 Unit Information: City of GJ Unit Leader Initials: JJV

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Sheet Revisions		
Date:	Comments	Init.

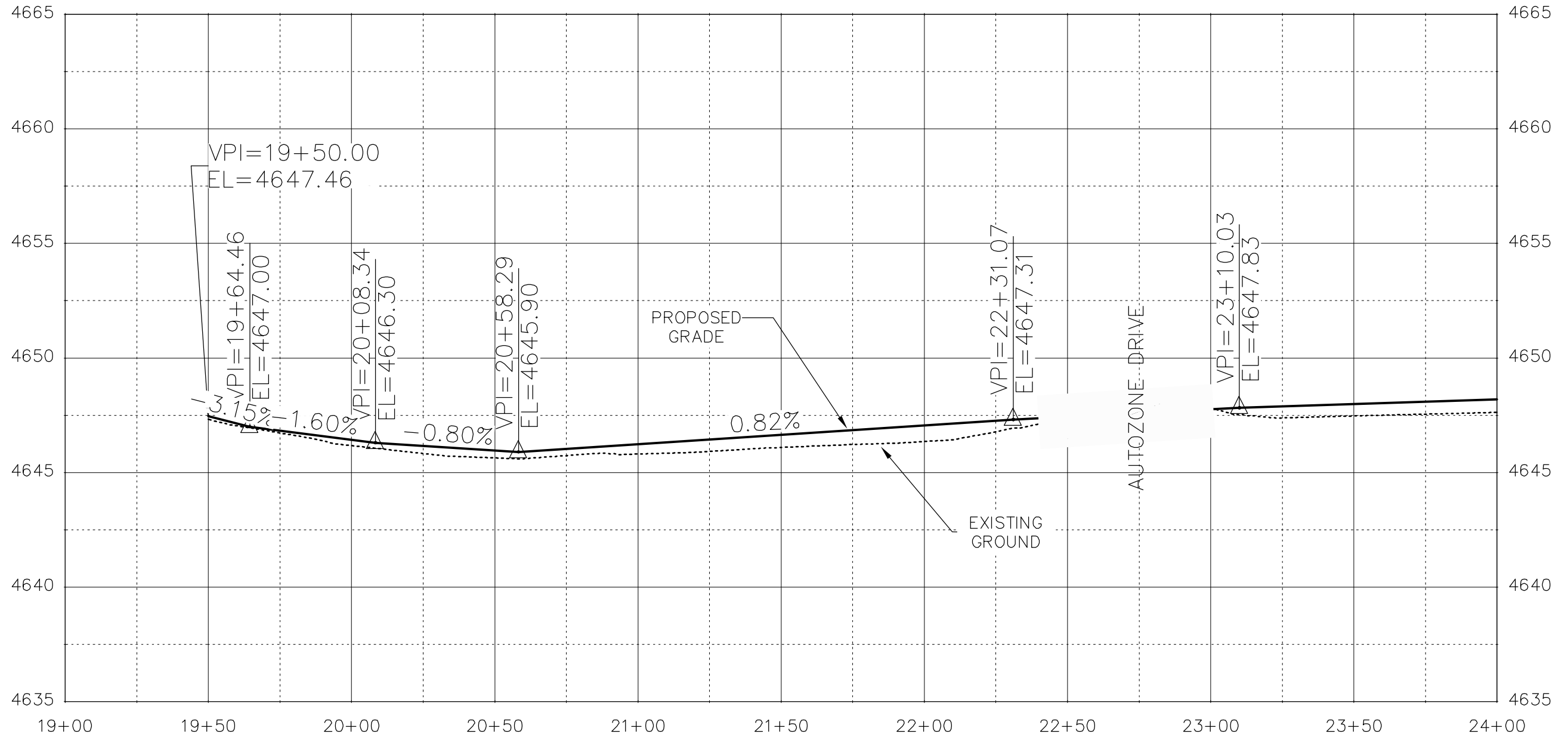


As Constructed
 No Revisions:
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ROADWAY PROFILE			
Designer: John C Smith	Structure	Numbers	-
Detailer: John C Smith	Structure	Numbers	-
Sheet Subset: Profile	Subset Sheets:	4 of 10	

Project No./Code
TAP M555-032
20736
Sheet Number 53

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SOUTH EDGE OF PAVEMENT – B 1/2 ROAD

Print Date: as shown at left
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 Unit Information: City of GJ Unit Leader Initials: JJV

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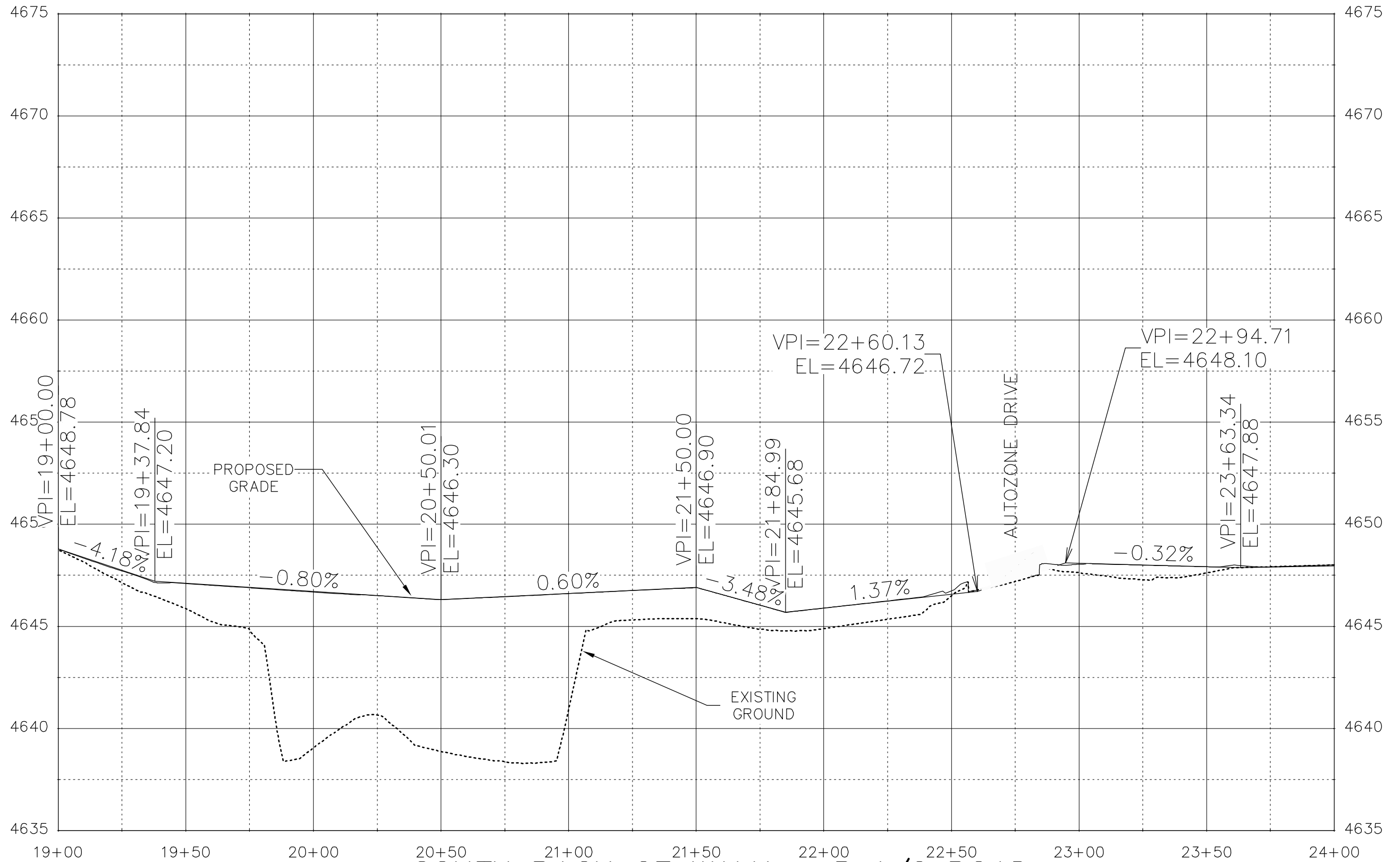
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Project No./Code
 TAP M555-032
 20736
 Sheet Number 54

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ELEVATION



SOUTH BACK OF WALK - B 1/2 ROAD

Print Date: as shown at left
 File Name: as shown at left
 Horiz. Scale: AS SHOWN Vert. Scale: AS SHOWN
 Unit Information: City of GJ Unit Leader Initials: JJV

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Sheet Revisions		
Date:	Comments	Init.

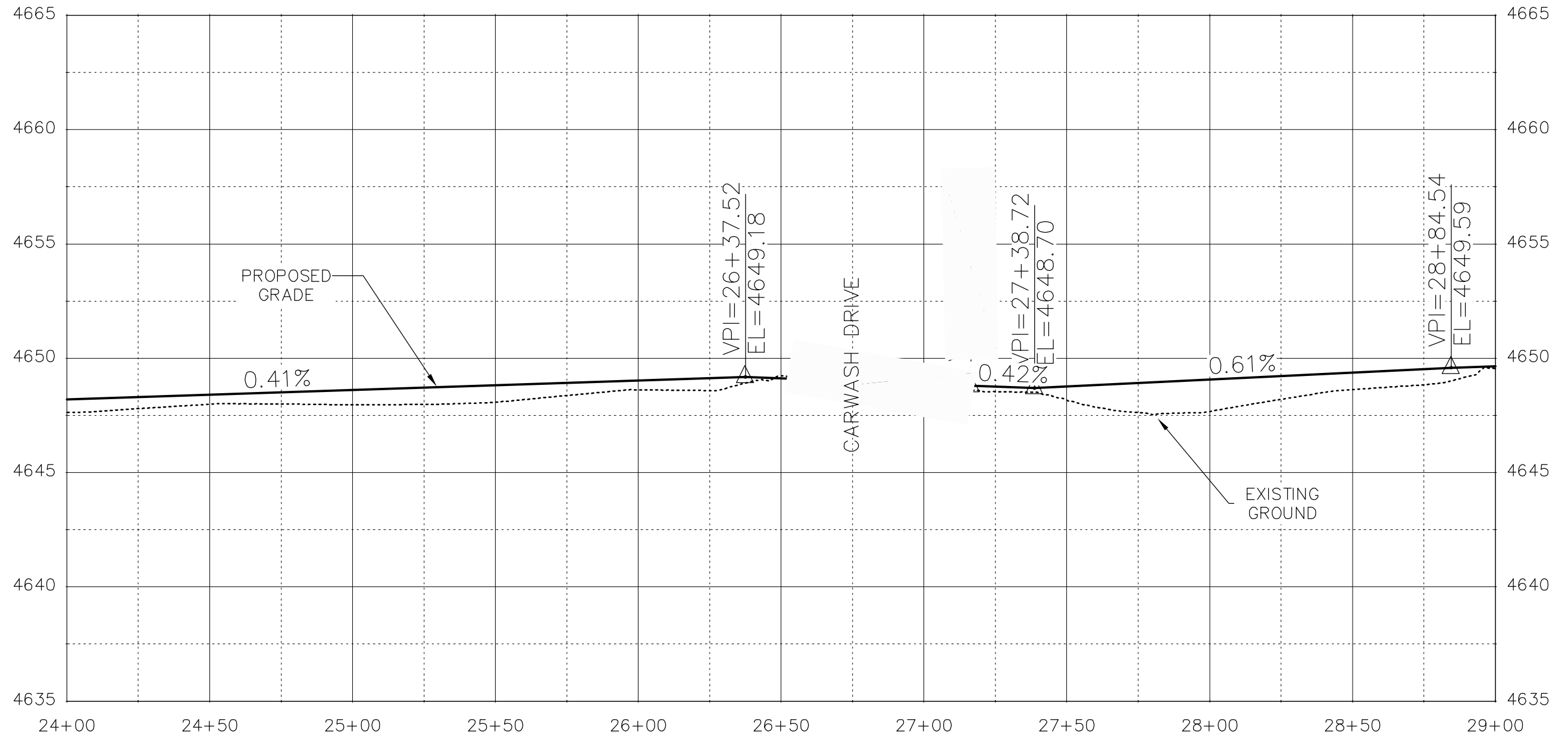


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Detailer:	John C Smith	Structure Numbers	-
Sheet Subset:	Profile	Subset Sheets:	6 of 10

Project No./Code
 TAP M555-032
 20736
 Sheet Number 55

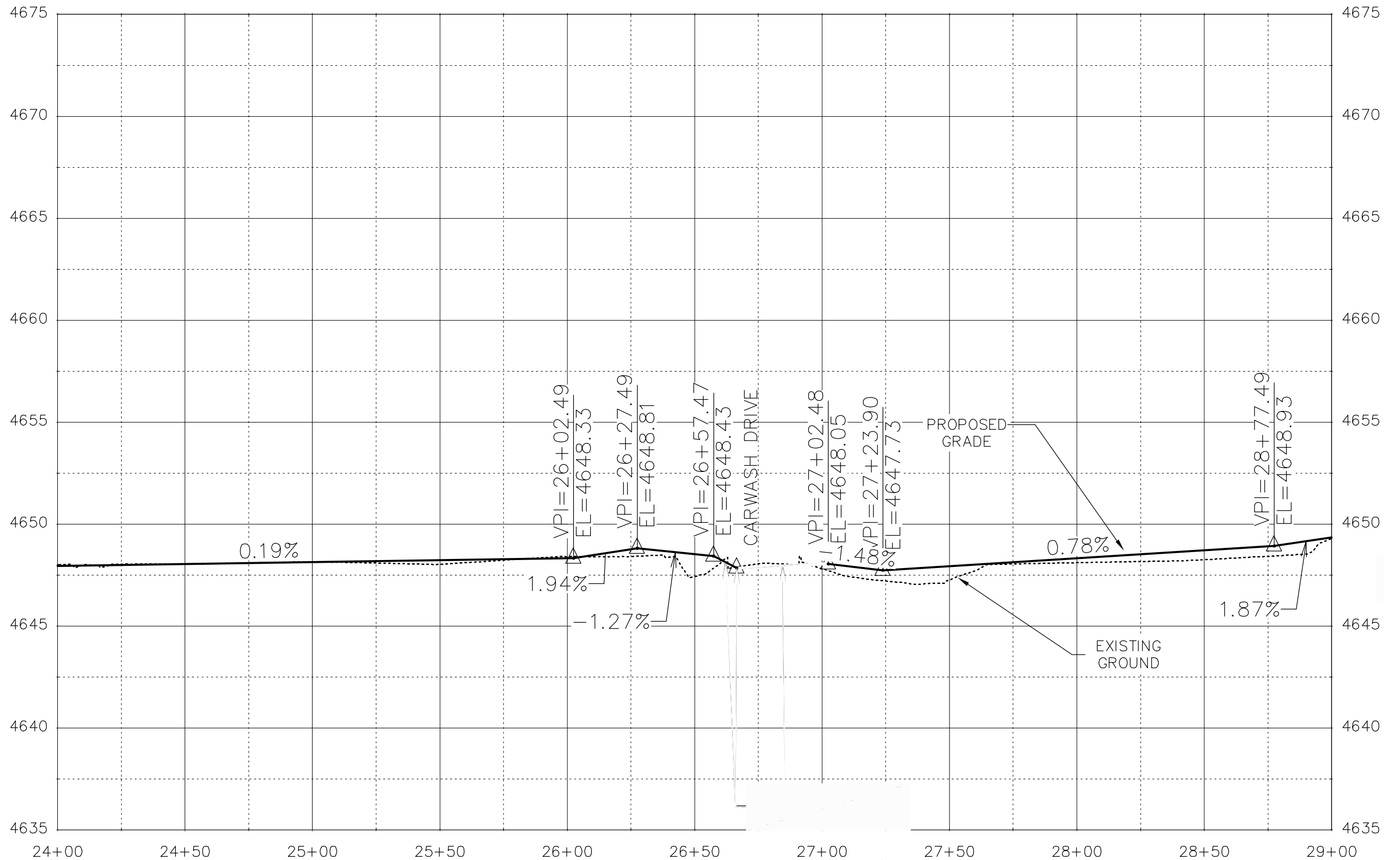
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SOUTH EDGE OF PAVEMENT – B 1/2 ROAD

Print Date: as shown at left File Name: as shown at left Horiz. Scale: AS SHOWN Vert. Scale: AS SHOWN Unit Information: City of GJ Unit Leader Initials: JJV	0000	Sheet Revisions				As Constructed		ROADWAY PROFILE		Project No./Code			
		Date:	Comments	Init.		No Revisions:		Designer: John C Smith		TAP M555-032			
						Revised:		Detailer: John C Smith		Structure Numbers		20736	
						Void:		Sheet Subset: Profile		Subset Sheets: 7 of 10		Sheet Number 56	

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SOUTH BACK OF WALK - B 1/2 ROAD

Print Date: as shown at left
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Horiz. Scale: AS SHOWN Vert. Scale: AS SHOWN
Unit Information: City of GJ Unit Leader Initials: JJV

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Sheet Revisions		
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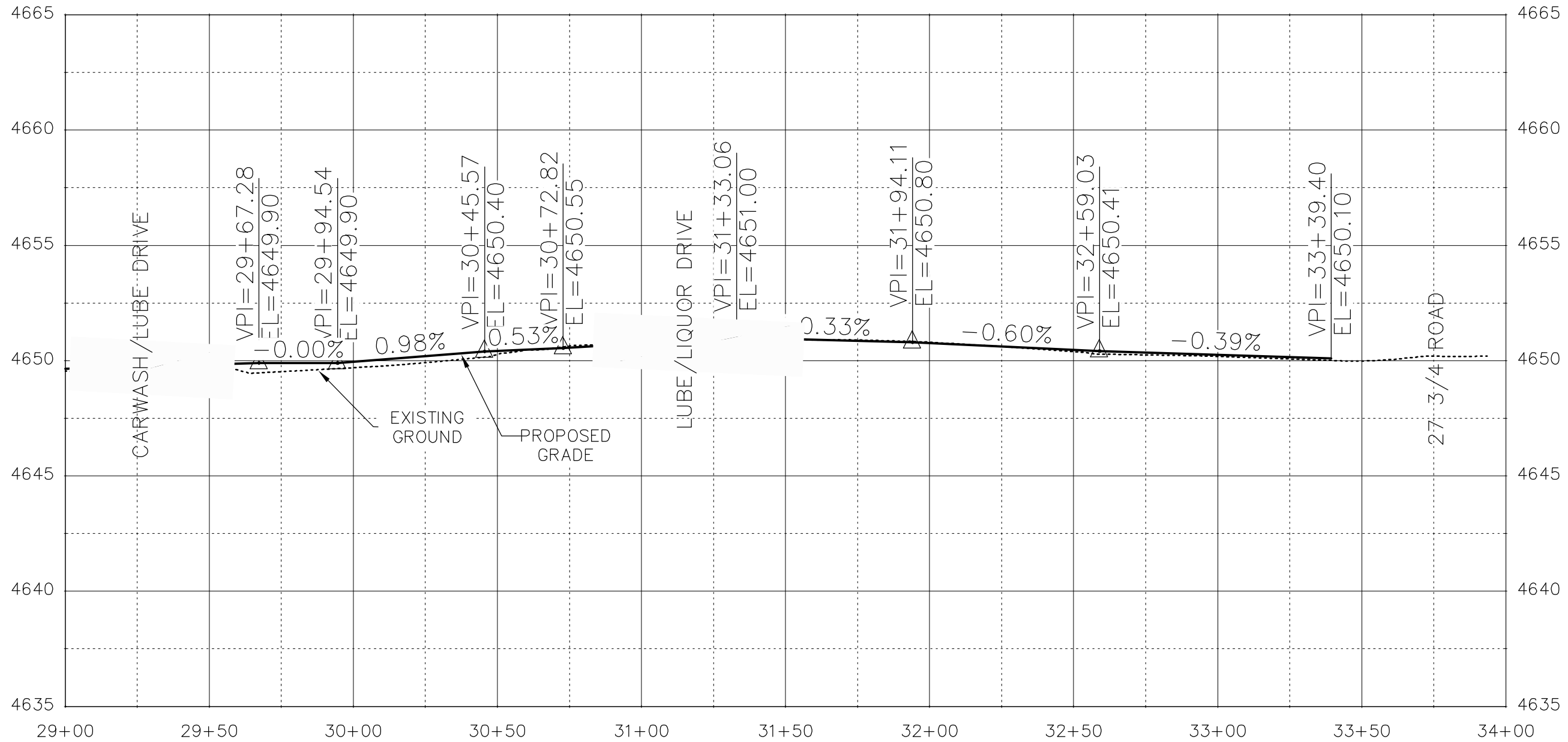


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ROADWAY PROFILE			
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Detailer: John C Smith	Subset Sheets:	8 of 10	-
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Project No./Code
TAP M555-032
20736
Sheet Number 57

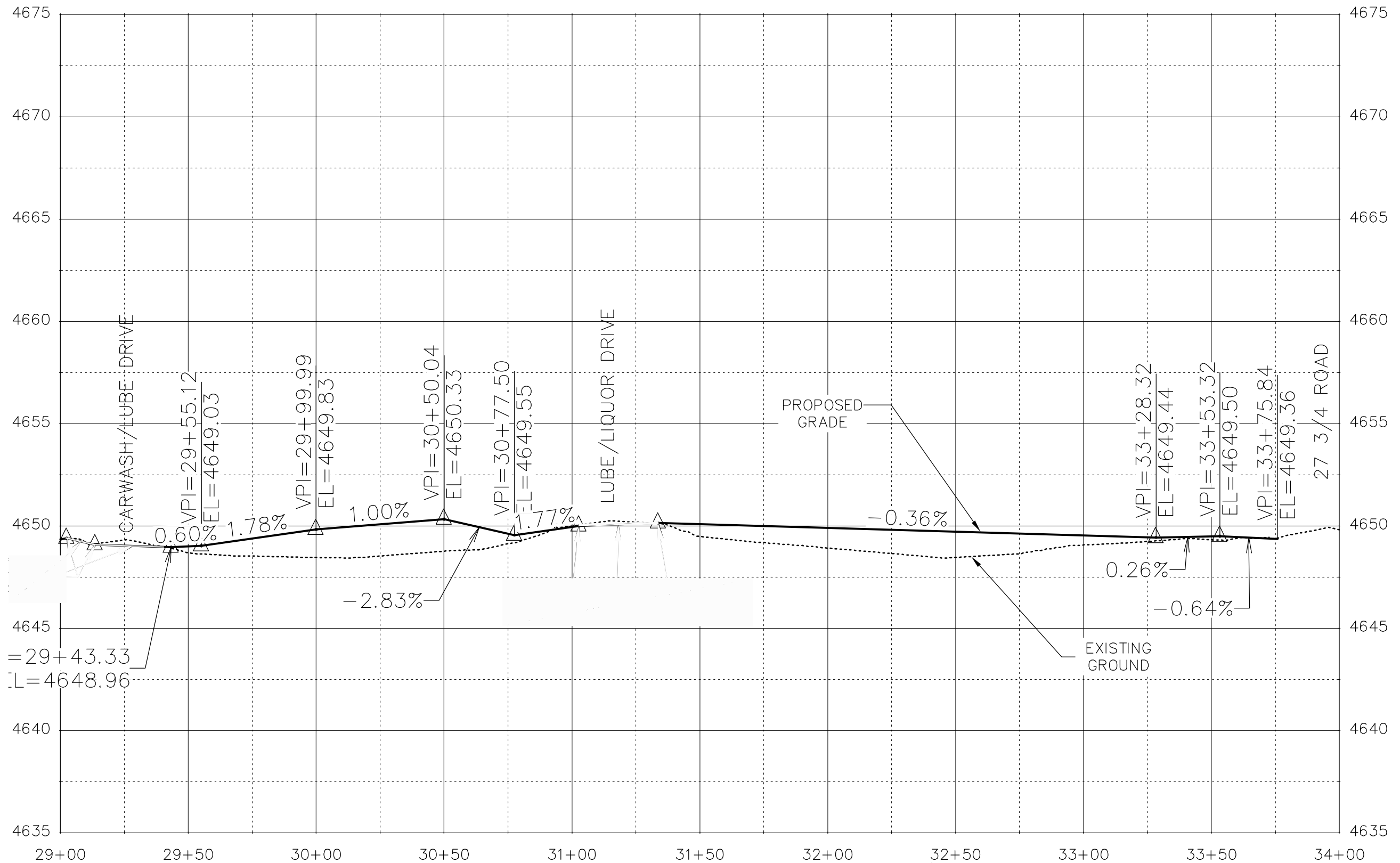
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SOUTH EDGE OF PAVEMENT – B 1/2 ROAD

Print Date: as shown at left File Name: as shown at left Horiz. Scale: AS SHOWN Vert. Scale: AS SHOWN Unit Information: City of GJ Unit Leader Initials: JJV	0000	Sheet Revisions <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 15%;">Date:</th> <th style="width: 55%;">Comments</th> <th style="width: 30%;">Init.</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> </tbody> </table>	Date:	Comments	Init.											As Constructed No Revisions: Revised: Void:	ROADWAY PROFILE Designer: John C Smith Detailer: John C Smith Sheet Subset: Profile	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%;">Structure Numbers</td> <td style="width: 15%;">-</td> </tr> <tr> <td>Subset Sheets:</td> <td>9 of 10</td> </tr> </table>	Structure Numbers	-	Subset Sheets:	9 of 10	Project No./Code TAP M555-032 20736 Sheet Number 58
Date:	Comments	Init.																					
Structure Numbers	-																						
Subset Sheets:	9 of 10																						

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SOUTH BACK OF WALK - B 1/2 ROAD

Print Date: as shown at left
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 Horiz. Scale: AS SHOWN Vert. Scale: AS SHOWN
 Unit Information: City of GJ Unit Leader Initials: JJV

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Sheet Revisions		
Date:	Comments	Init.

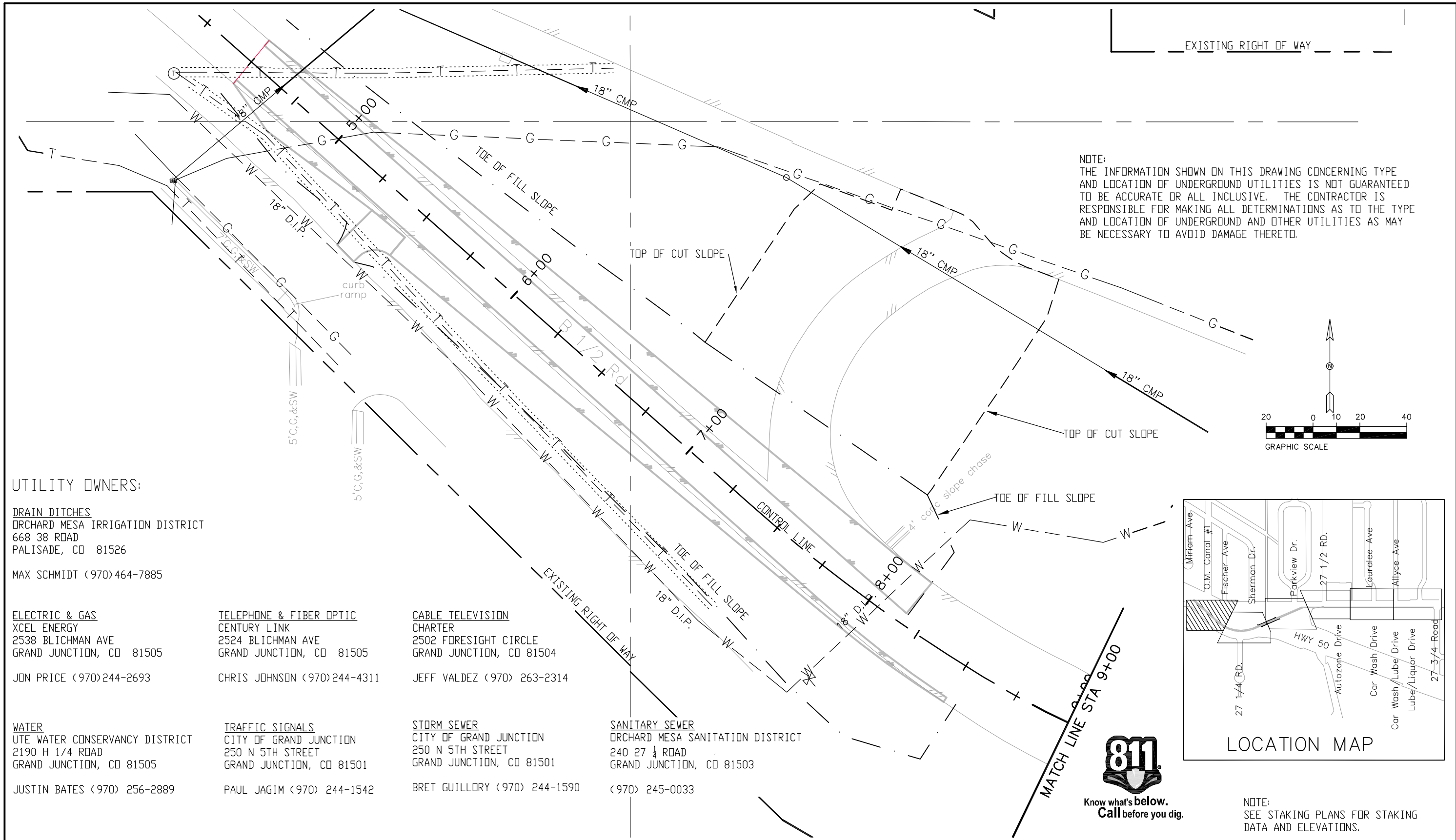


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No Revisions:
Revised:
Void:

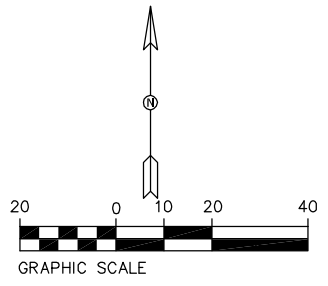
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Designer: John C Smith	Structure	Numbers	-
Detailer: John C Smith	Structure	Numbers	-
Sheet Subset: Profile	Subset Sheets:	10 of 10	

Project No./Code
TAP M555-032
20736
Sheet Number 59

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NOTE:
THE INFORMATION SHOWN ON THIS DRAWING CONCERNING TYPE AND LOCATION OF UNDERGROUND UTILITIES IS NOT GUARANTEED TO BE ACCURATE OR ALL INCLUSIVE. THE CONTRACTOR IS RESPONSIBLE FOR MAKING ALL DETERMINATIONS AS TO THE TYPE AND LOCATION OF UNDERGROUND AND OTHER UTILITIES AS MAY BE NECESSARY TO AVOID DAMAGE THERETO.



UTILITY OWNERS:

DRAIN DITCHES
ORCHARD MESA IRRIGATION DISTRICT
668 38 ROAD
PALISADE, CO 81526

MAX SCHMIDT (970)464-7885

ELECTRIC & GAS
XCEL ENERGY
2538 BLICHMAN AVE
GRAND JUNCTION, CO 81505

JDN PRICE (970)244-2693

TELEPHONE & FIBER OPTIC
CENTURY LINK
2524 BLICHMAN AVE
GRAND JUNCTION, CO 81505

CHRIS JOHNSON (970)244-4311

CABLE TELEVISION
CHARTER
2502 FORESIGHT CIRCLE
GRAND JUNCTION, CO 81504

JEFF VALDEZ (970) 263-2314

WATER
UTE WATER CONSERVANCY DISTRICT
2190 H 1/4 ROAD
GRAND JUNCTION, CO 81505

JUSTIN BATES (970) 256-2889

TRAFFIC SIGNALS
CITY OF GRAND JUNCTION
250 N 5TH STREET
GRAND JUNCTION, CO 81501

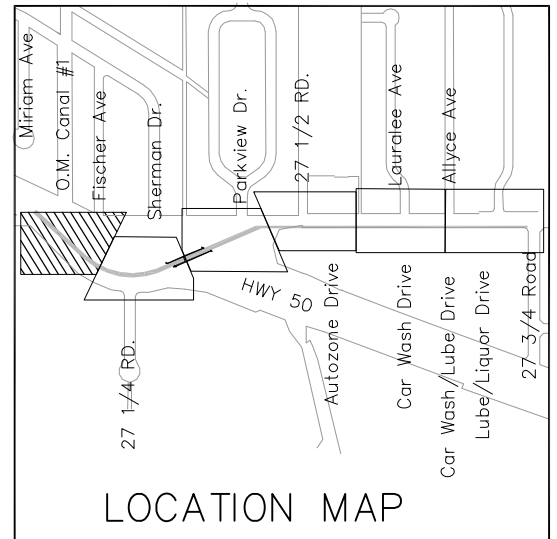
PAUL JAGIM (970) 244-1542

STORM SEWER
CITY OF GRAND JUNCTION
250 N 5TH STREET
GRAND JUNCTION, CO 81501

BRET GUILLORY (970) 244-1590

SANITARY SEWER
ORCHARD MESA SANITATION DISTRICT
240 27 1/4 ROAD
GRAND JUNCTION, CO 81503

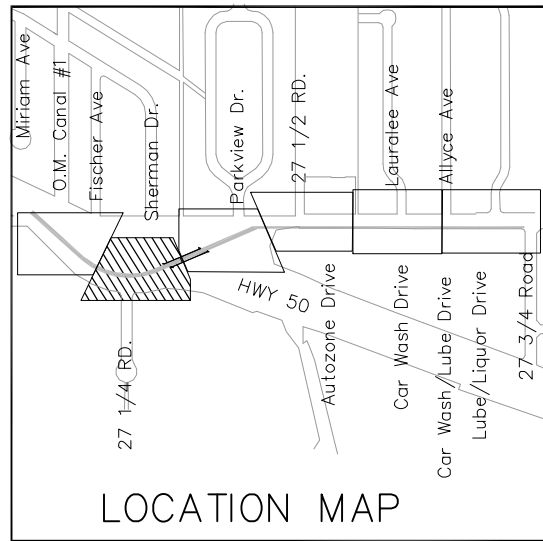
(970) 245-0033



NOTE:
SEE STAKING PLANS FOR STAKING DATA AND ELEVATIONS.

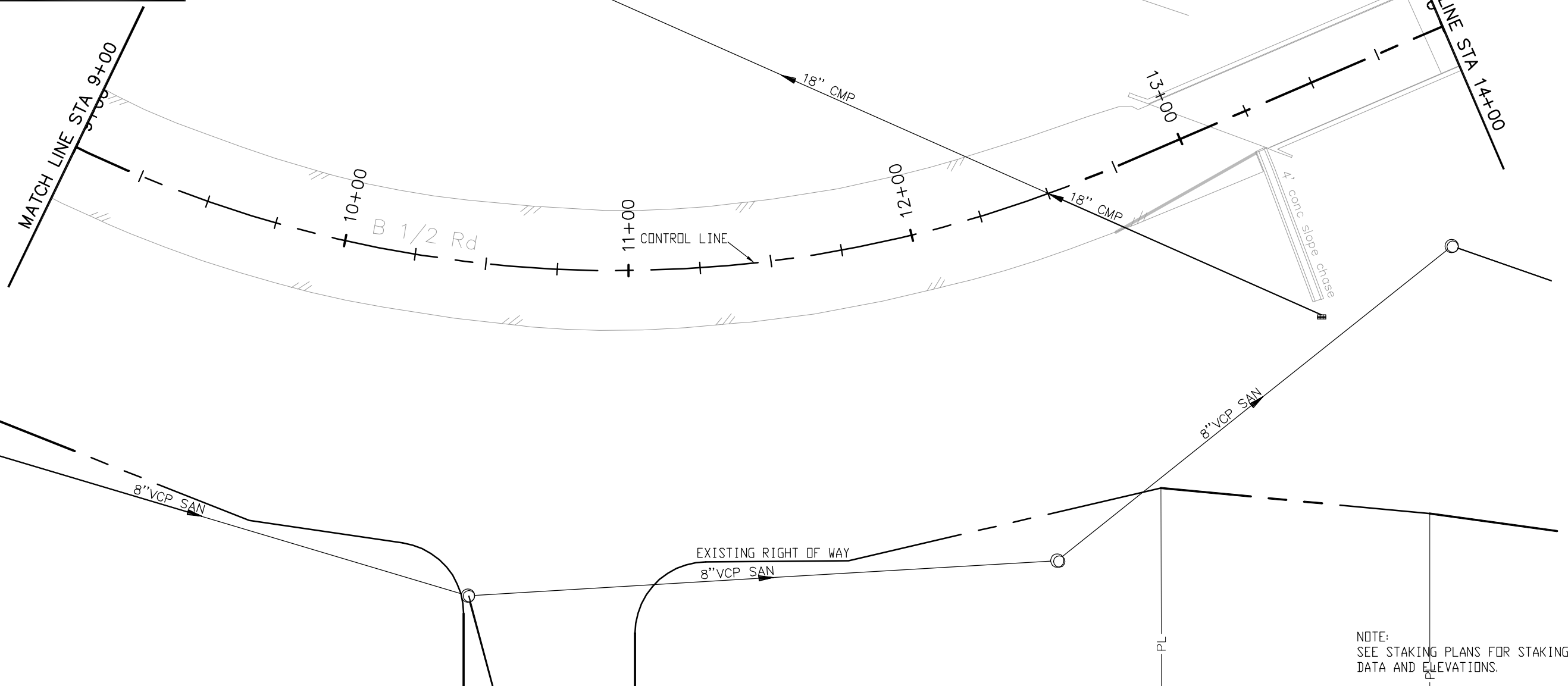
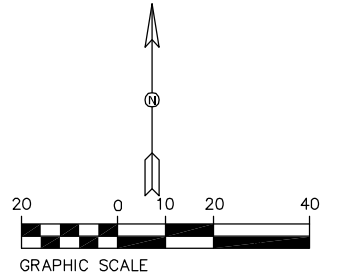
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File Name: © LEFT		Date:	Comments	Init.		No Revisions:	Sta. 4+50 TO 9+00		TAP M555-032		
Horiz. Scale: AS SHOWN Vert. Scale: NA						Revised:	Designer: John Smith	Structure Numbers	20736		
Unit Information: City of GJ Unit Leader Initials: JJV						Void:	Detailer: John Smith	Subset Sheets: 1 of 6	Sheet Number 60		

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LOCATION MAP

NOTE:
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NOTE:
SEE STAKING PLANS FOR STAKING DATA AND ELEVATIONS.

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File Name: © LEFT
Horiz. Scale: AS SHOWN Vert. Scale: NA
Unit Information: City of GJ Unit Leader Initials: JJV

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Sheet Revisions		
Date:	Comments	Init.

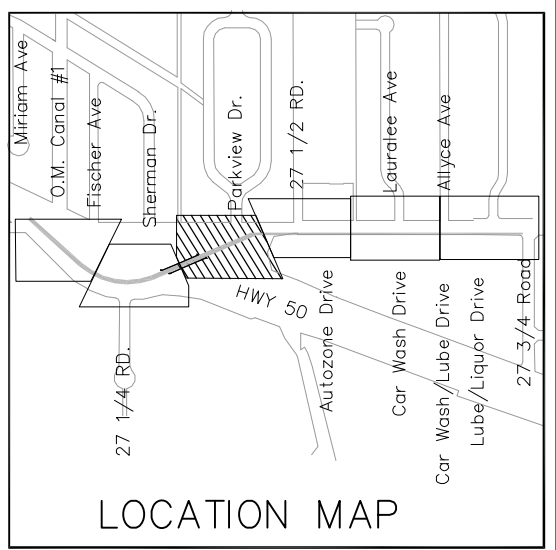
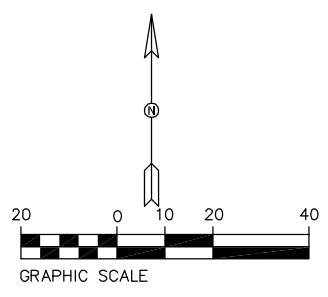
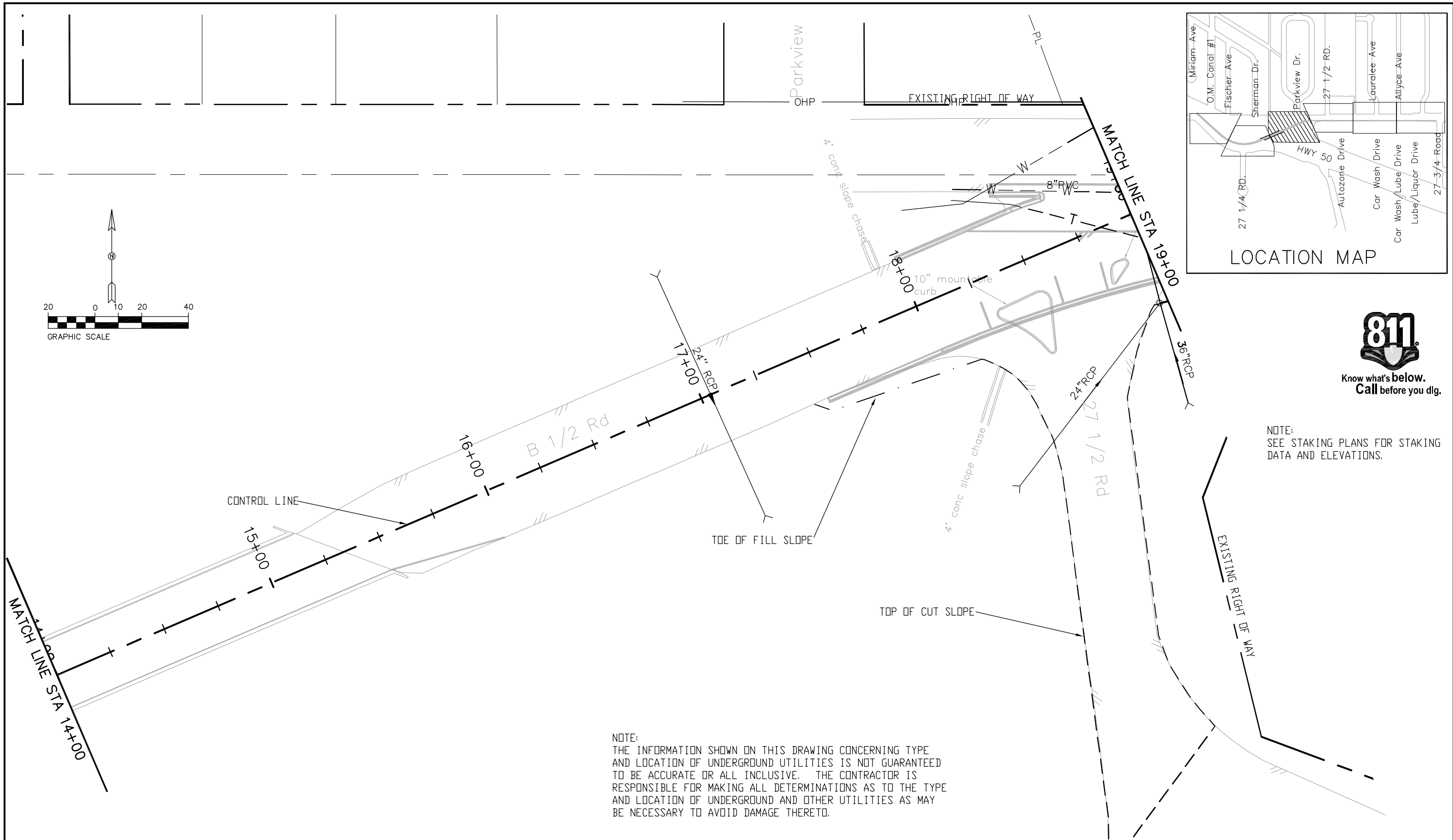


As Constructed
No Revisions:
Revised:
Void:

B 1/2 Road (Overpass) Utility Plan Sta. 9+00 TO 14+00	
Designer: John Smith	Structure Numbers
Detailer: John Smith	
Sheet Subset: Plan	Subset Sheets: 2 of 6

Project No./Code
TAP M555-032
20736
Sheet Number 61

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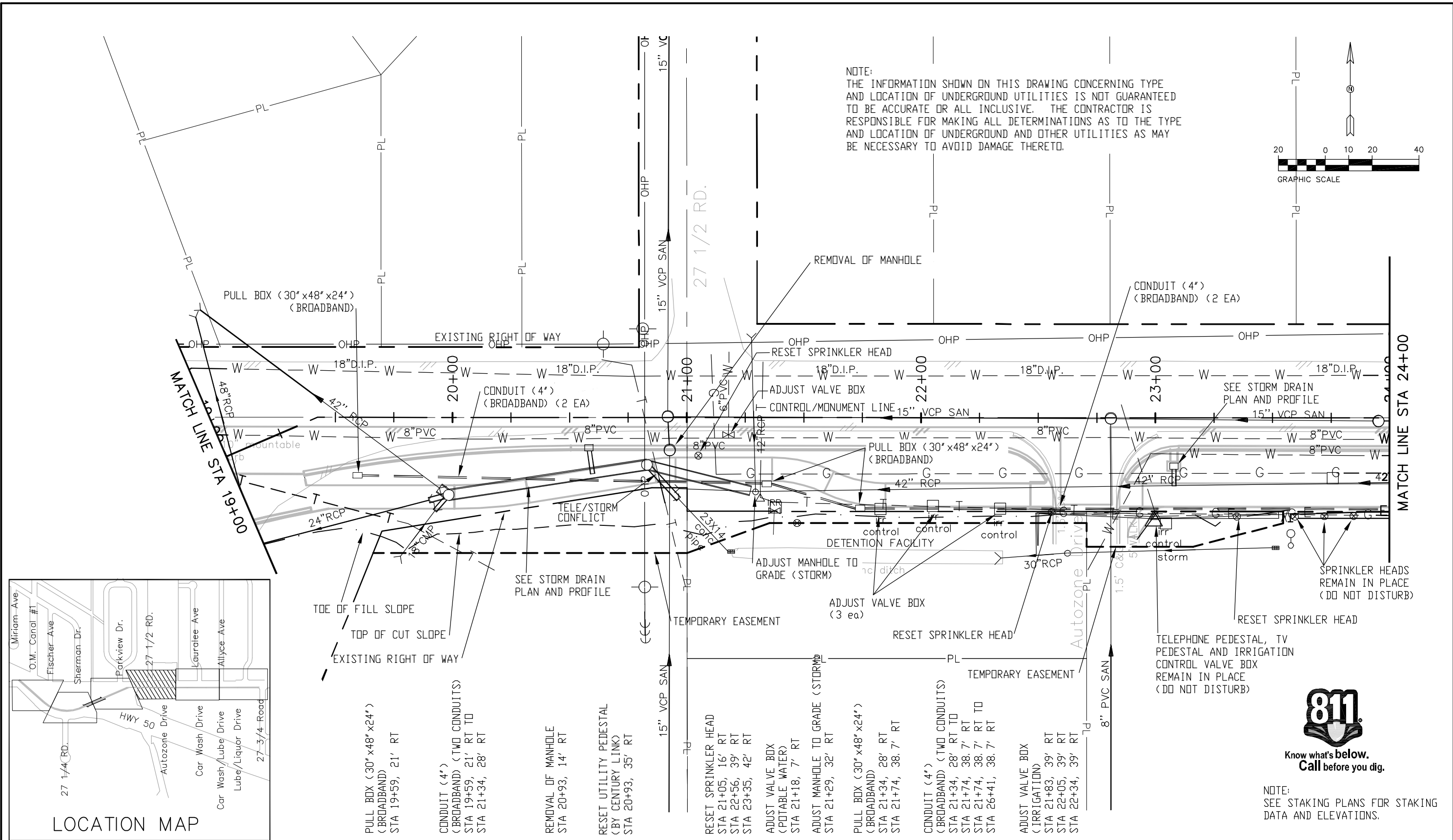


NOTE:
SEE STAKING PLANS FOR STAKING
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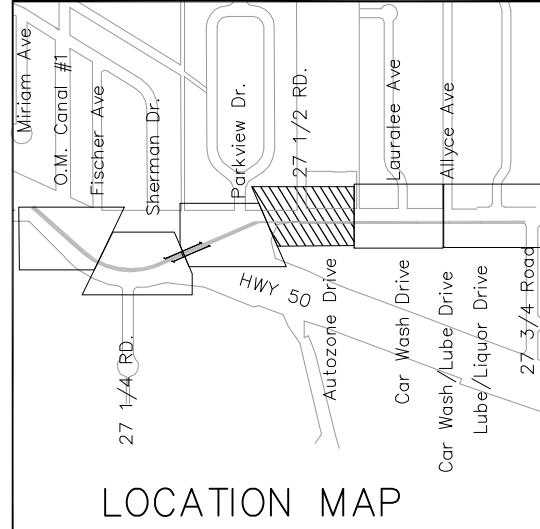
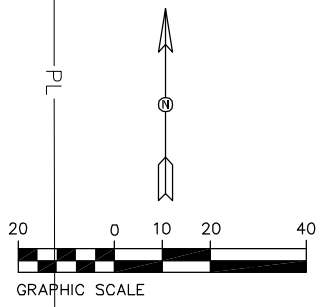
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TO BE ACCURATE OR ALL INCLUSIVE. THE CONTRACTOR IS
RESPONSIBLE FOR MAKING ALL DETERMINATIONS AS TO THE TYPE
AND LOCATION OF UNDERGROUND AND OTHER UTILITIES AS MAY
BE NECESSARY TO AVOID DAMAGE THERETO.

Print Date: © LEFT	0000	Sheet Revisions			CITY OF Grand Junction COLORADO	As Constructed		B 1/2 Road (Overpass) Utility Plan		Project No./Code	
File Name: © LEFT		Date:	Comments	Init.		No Revisions:	Sta. 14+00 TO 19+00		TAP M555-032		
Horiz. Scale: AS SHOWN Vert. Scale: NA						Revised:	Designer: John Smith	Structure Numbers	20637		
Unit Information: City of GJ Unit Leader Initials: JJV						Void:	Detailer: John Smith	Subset Sheets: 3 of 6	Sheet Number 62		

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 AND LOCATION OF UNDERGROUND AND OTHER UTILITIES AS MAY
 BE NECESSARY TO AVOID DAMAGE THERETO.



Know what's below.
 Call before you dig.

NOTE:
 SEE STAKING PLANS FOR STAKING
 DATA AND ELEVATIONS.

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File Name: © LEFT
Horiz. Scale: AS SHOWN Vert. Scale: NA
Unit Information: City of GJ Unit Leader Initials: JJV

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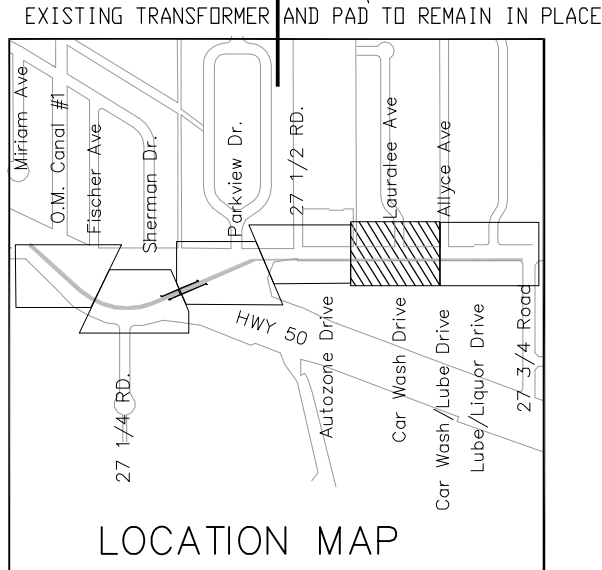
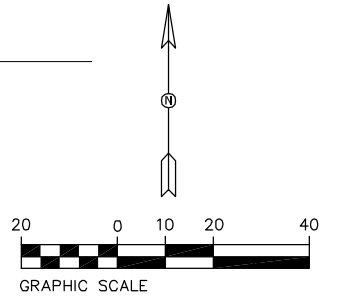
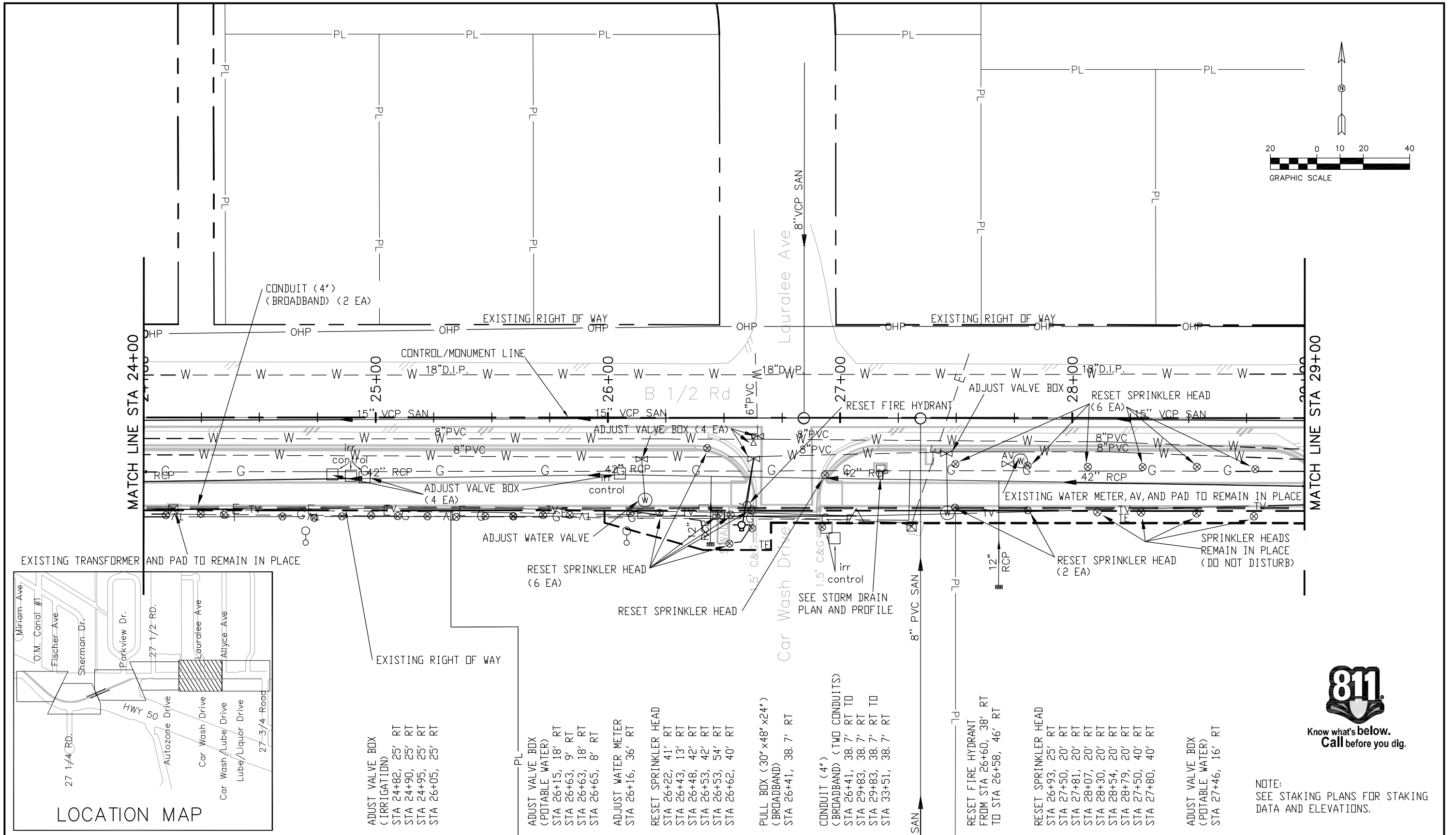


As Constructed
No Revisions:
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B 1/2 Road Utility Plan	
Sta. 19+00 TO 24+00	
Designer: John Smith	Structure Numbers
Detailer: John Smith	
Sheet Subset: Plan	Subset Sheets: 4 of 6

Project No./Code
TAP M255-032
20736
Sheet Number 63

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ADJUST VALVE BOX (IRRIGATION)
 STA 24+82, 25' RT
 STA 24+90, 25' RT
 STA 24+95, 25' RT
 STA 26+05, 25' RT

ADJUST VALVE BOX (POTABLE WATER)
 STA 26+15, 18' RT
 STA 26+63, 9' RT
 STA 26+63, 18' RT
 STA 26+65, 8' RT

ADJUST WATER METER
 STA 26+16, 36' RT

RESET SPRINKLER HEAD
 STA 26+22, 41' RT
 STA 26+43, 13' RT
 STA 26+48, 42' RT
 STA 26+53, 42' RT
 STA 26+53, 54' RT
 STA 26+62, 40' RT

PULL BOX (30' x48' x24') (BROADBAND)
 STA 26+41, 38.7' RT

CONDUIT (4') (BROADBAND) (TWO CONDUITS)
 STA 26+41, 38.7' RT TO
 STA 29+83, 38.7' RT
 STA 29+83, 38.7' RT TO
 STA 33+51, 38.7' RT

RESET FIRE HYDRANT FROM STA 26+60, 38' RT TO STA 26+58, 46' RT

RESET SPRINKLER HEAD
 STA 26+93, 25' RT
 STA 27+50, 20' RT
 STA 27+81, 20' RT
 STA 28+07, 20' RT
 STA 28+30, 20' RT
 STA 28+54, 20' RT
 STA 28+79, 20' RT
 STA 27+50, 40' RT
 STA 27+80, 40' RT

ADJUST VALVE BOX (POTABLE WATER)
 STA 27+46, 16' RT

NOTE: SEE STAKING PLANS FOR STAKING DATA AND ELEVATIONS.



Print Date: © LEFT
File Name: © LEFT
Horiz. Scale: AS SHOWN Vert. Scale: NA
Unit Information: City of GJ Unit Leader Initials: JJV

Sheet Revisions		
Date:	Comments	Init.

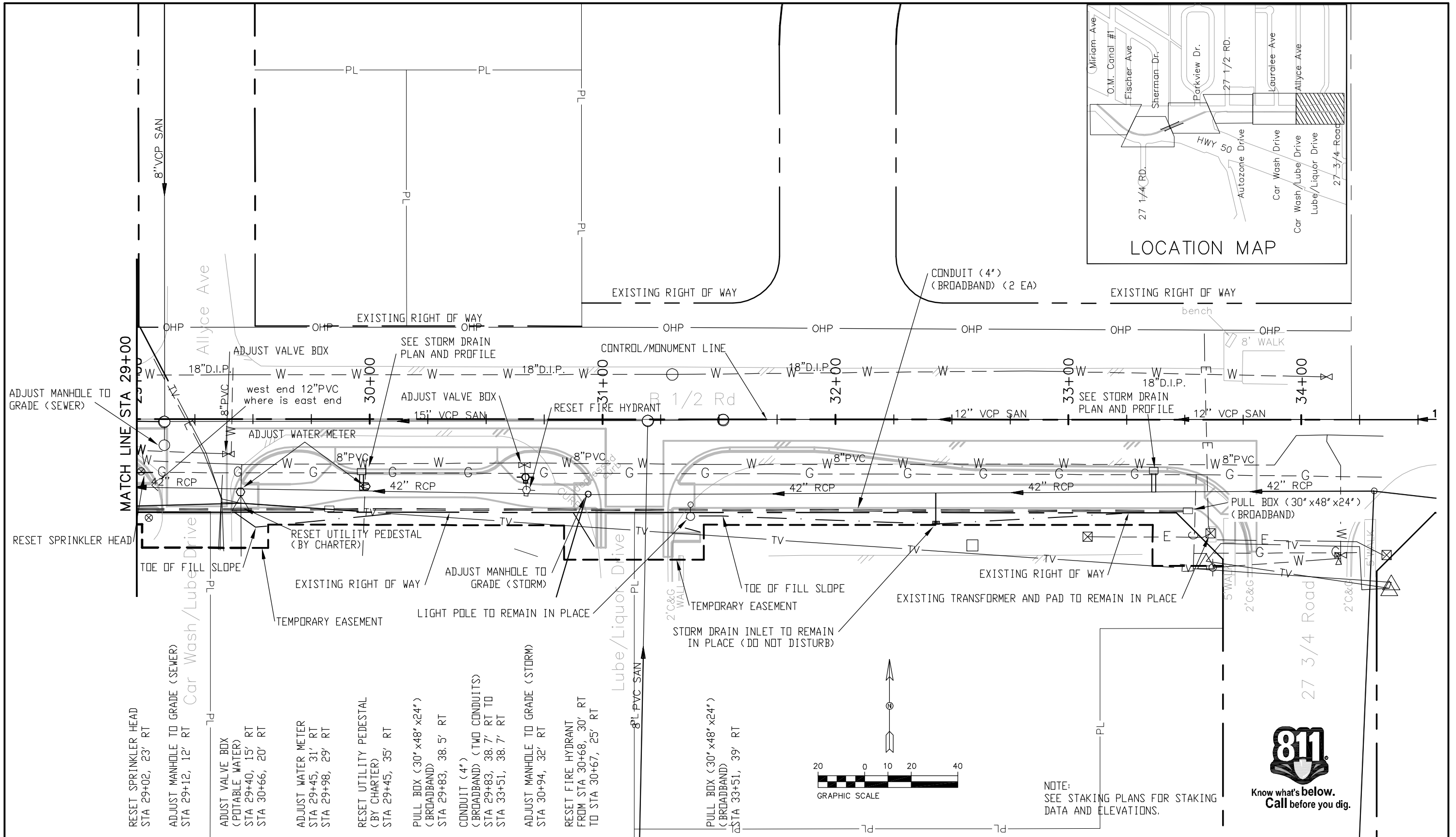


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Revised:
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Designer: John Smith	Structure Numbers
Detailer: John Smith	
Sheet Subset: Plan	Subset Sheets: 5 of 6

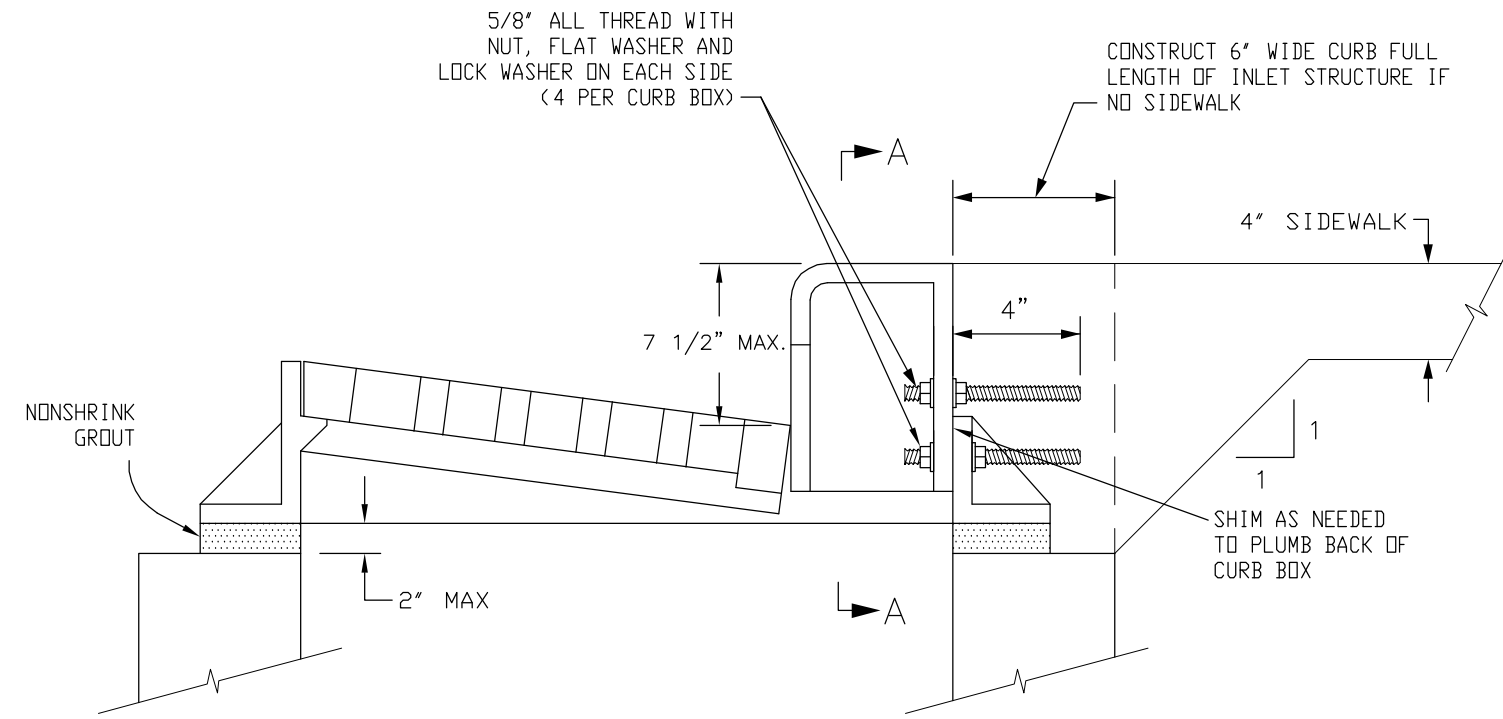
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TAP M555-032
20736
Sheet Number 64

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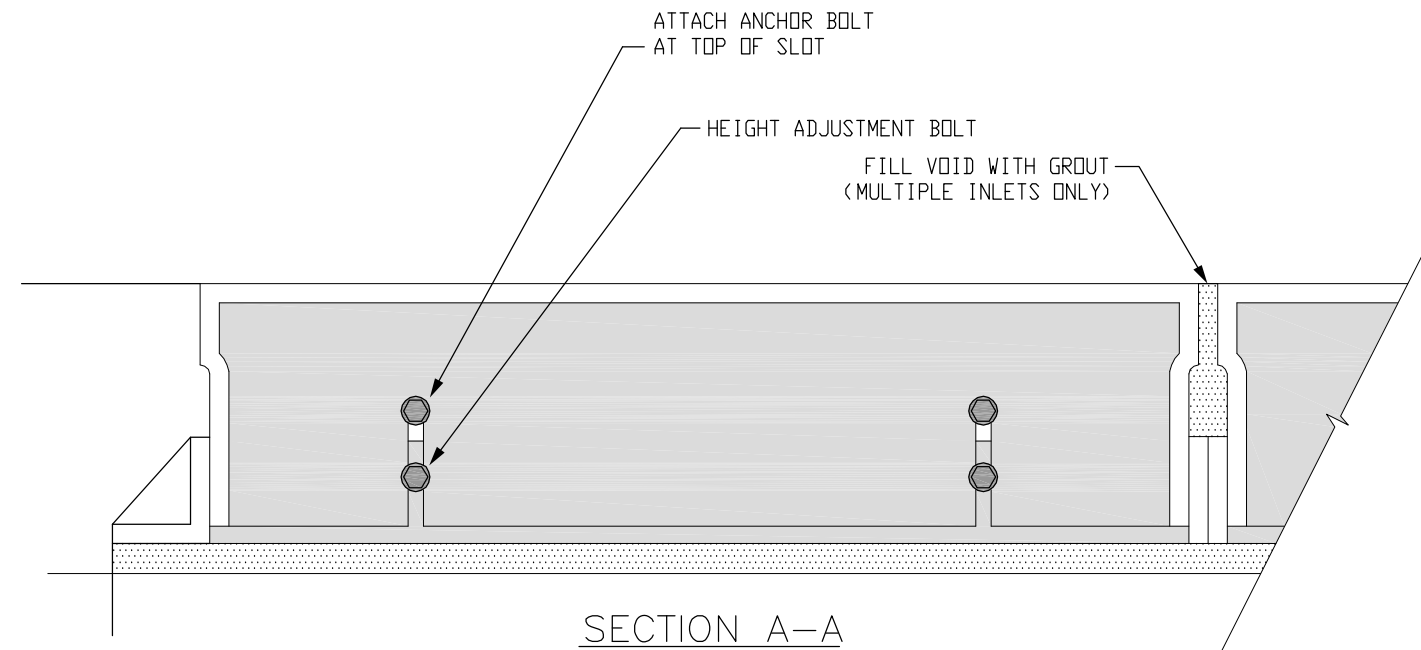


Print Date: © LEFT	Sheet Revisions			CITY OF Grand Junction COLORADO	As Constructed	B 1/2 Road Utility Plan		Project No./Code TAP M555-032
File Name: © LEFT	Date:	Comments	Init.			No Revisions:	Sta. 29+00 TO 34+00	
Horiz. Scale: AS SHOWN					Revised:	Designer: John Smith	Structure Numbers	20736
Unit Information: City of GJ Unit Leader Initials: JJV					Void:	Detailer: John Smith	Subset Sheets: 6 of 6	Sheet Number 65

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SIDE VIEW
N.T.S.

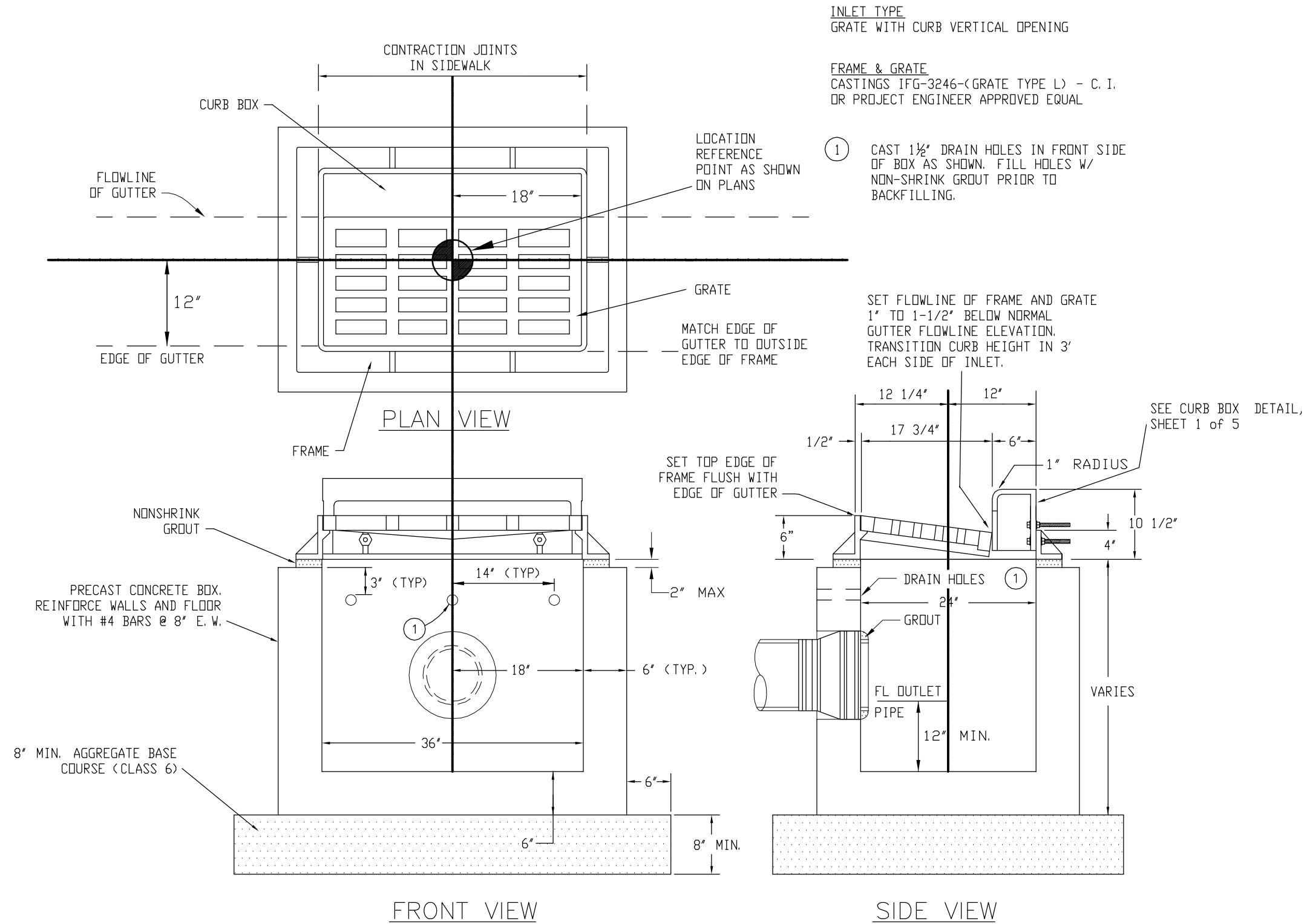


SECTION A-A
N.T.S.

INLET CURB BOX DETAIL

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File Name: Drainage Details		Date:	Comments	Init.		No Revisions:	Designer: JCS Structure Numbers: — Detailer: JCS Subset Sheets: 1 of 5 Sheet Subset: D DETAIL			TAP M555-032		
Horiz. Scale: NA Vert. Scale: NA						Revised:				20736		
Unit Information: City of GJ Unit Leader Initials: JJV						Void:				Sheet Number 66		

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INLET TYPE
GRATE WITH CURB VERTICAL OPENING

FRAME & GRATE
CASTINGS IFG-3246-(GRATE TYPE L) - C. I.
OR PROJECT ENGINEER APPROVED EQUAL

① CAST 1 1/2" DRAIN HOLES IN FRONT SIDE OF BOX AS SHOWN. FILL HOLES W/ NON-SHRINK GROUT PRIOR TO BACKFILLING.

SET FLOWLINE OF FRAME AND GRATE 1" TO 1-1/2" BELOW NORMAL GUTTER FLOWLINE ELEVATION. TRANSITION CURB HEIGHT IN 3' EACH SIDE OF INLET.

SEE CURB BOX DETAIL, SHEET 1 of 5

INLET SPECIAL

Print Date: © LEFT
File Name: Drainage Details
Horiz. Scale: NA Vert. Scale: NA
Unit Information: City of GJ Unit Leader Initials: JJV

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Sheet Revisions		
Date:	Comments	Init.

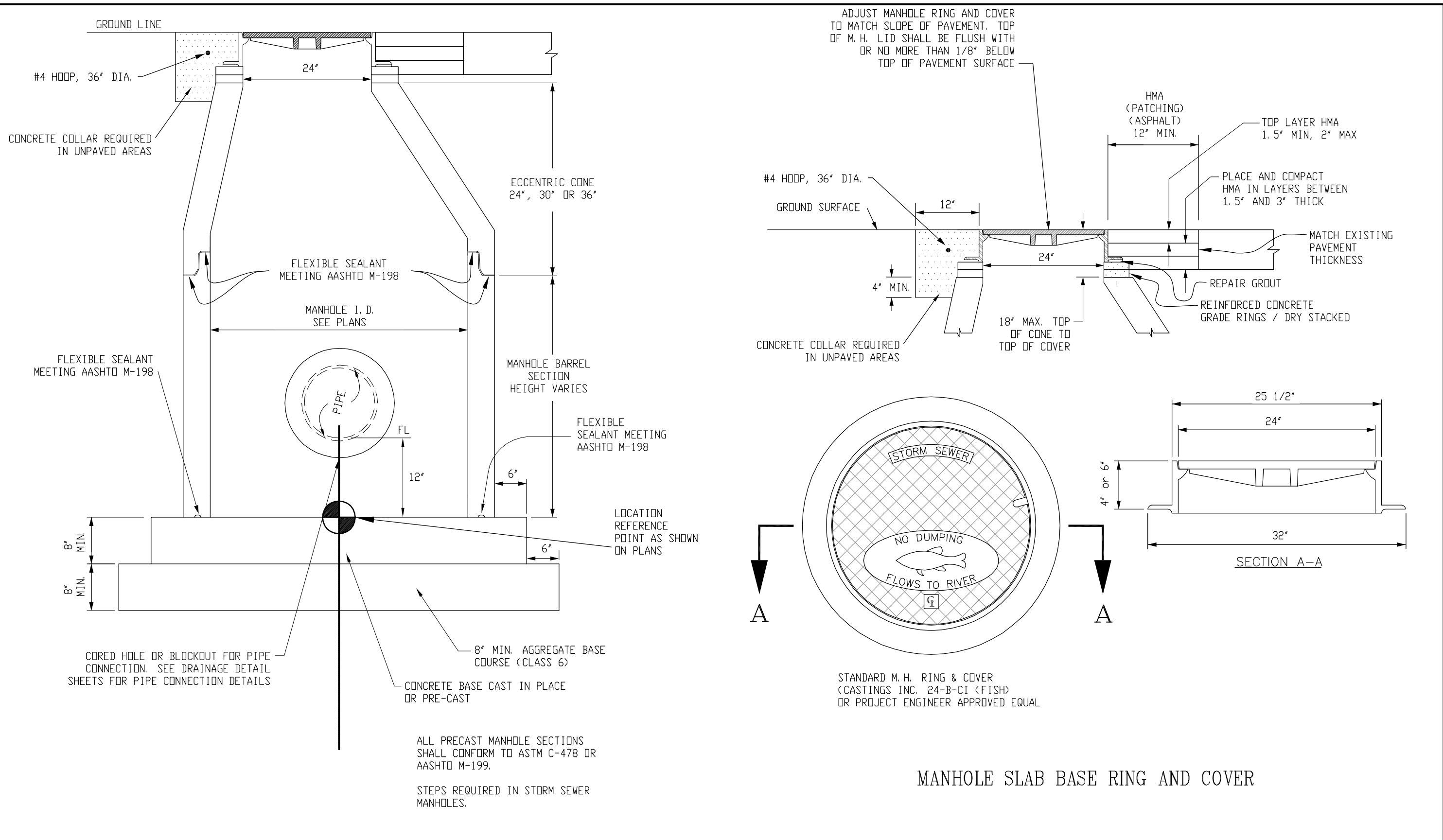


As Constructed
No Revisions:
Revised:
Void:

Drainage Details Inlet Special			
Designer:	JCS	Structure Numbers	-
Detailer:	JCS	Subset Sheets:	2 of 5
Sheet Subset:	D DETAIL		

Project No./Code
TAP M555-032
20736
Sheet Number 67

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Sheet Revisions		
Date:	Comments	Init.



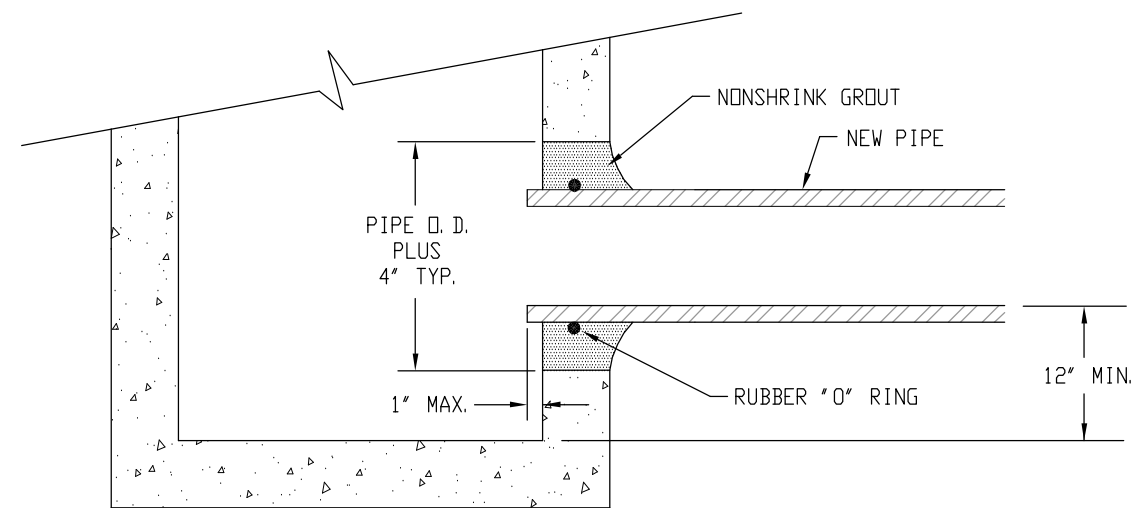
As Constructed
No Revisions:
Revised:
Void:

Drainage Details Manhole Slab Base			
Designer:	JCS	Structure Numbers	-
Detailer:	JCS	Subset Sheets:	3 of 5
Sheet Subset:	D DETAIL		

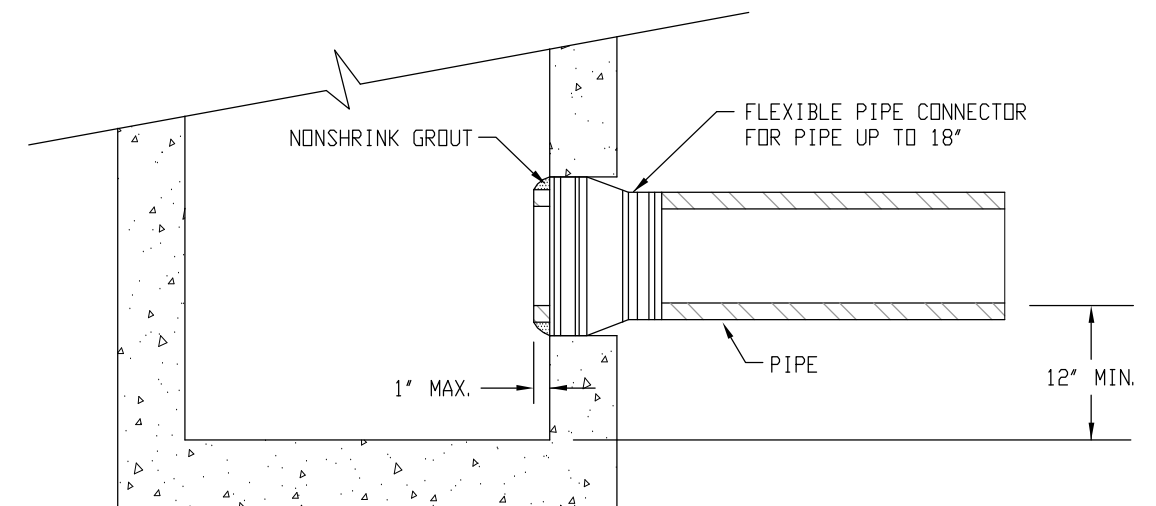
Project No./Code
TAP M555-032
20736
Sheet Number 68

GENERAL NOTES

1. BACKFILL AROUND MANHOLES, INLET BOXES, AND OTHER STRUCTURES SHALL BE PLACED IN 8" LOOSE LIFTS AND COMPACTED TO 95% AASHTO T-180.
2. ALL BACKFILL MATERIAL SHALL BE UNIFORMLY ADJUSTED TO WITHIN 2% OF THE OPTIMUM MOISTURE CONTENT PRIOR TO PLACEMENT AND COMPACTION.
3. ALL PORTLAND CEMENT CONCRETE SHALL BE CLASS "B". (SECTION 601.02).
4. ANY EXISTING PAVEMENT NOT DESIGNATED FOR REMOVAL WHICH IS DAMAGED BY CONSTRUCTION SHALL BE REPLACED IN-KIND BY CONTRACTOR.
5. SEE APPROVED CONSTRUCTION DRAWINGS FOR ALL LOCATIONS, GRADES AND ELEVATIONS OF ALL DRAINAGE IMPROVEMENTS.
6. MANHOLE RING AND COVER AND INLET GRATE AND FRAME SHALL BE ADJUSTED TO FINISHED GRADE USING NON-SHRINK GROUT AND PRE-CAST CONCRETE GRADE RINGS. GROUT THICKNESS SHALL NOT EXCEED 2 INCHES. GROUT SHALL BE PLACED UNDER THE CAST IRON RING OR FRAME. NO GROUT SHALL BE PLACED BETWEEN THE CONCRETE GRADE RINGS. STEEL GRADE ADJUSTMENT RINGS MAY BE USED FOR ADJUSTMENT OF MANHOLE COVERS ONLY WHEN STREETS ARE OVERLAID.
7. ALL WORK SHALL BE IN ACCORDANCE WITH APPROVED PLANS.
8. STORM DRAIN INLET BOXES MAY BE MADE FROM STACKABLE PRECAST BOX SECTIONS WITH TONGUE AND GROOVE JOINTS AND FLEXIBLE SEALANT BETWEEN SECTIONS. THE TOP SECTION OF THE INLET BOX SHALL HAVE A GROOVE-LESS FLAT SURFACE TO SUPPORT THE INLET FRAME AND GRATE.



GROUTED PIPE CONNECTION
(FOR CONNECTIONS TO EXISTING STRUCTURES)



PVC PIPE CONNECTION

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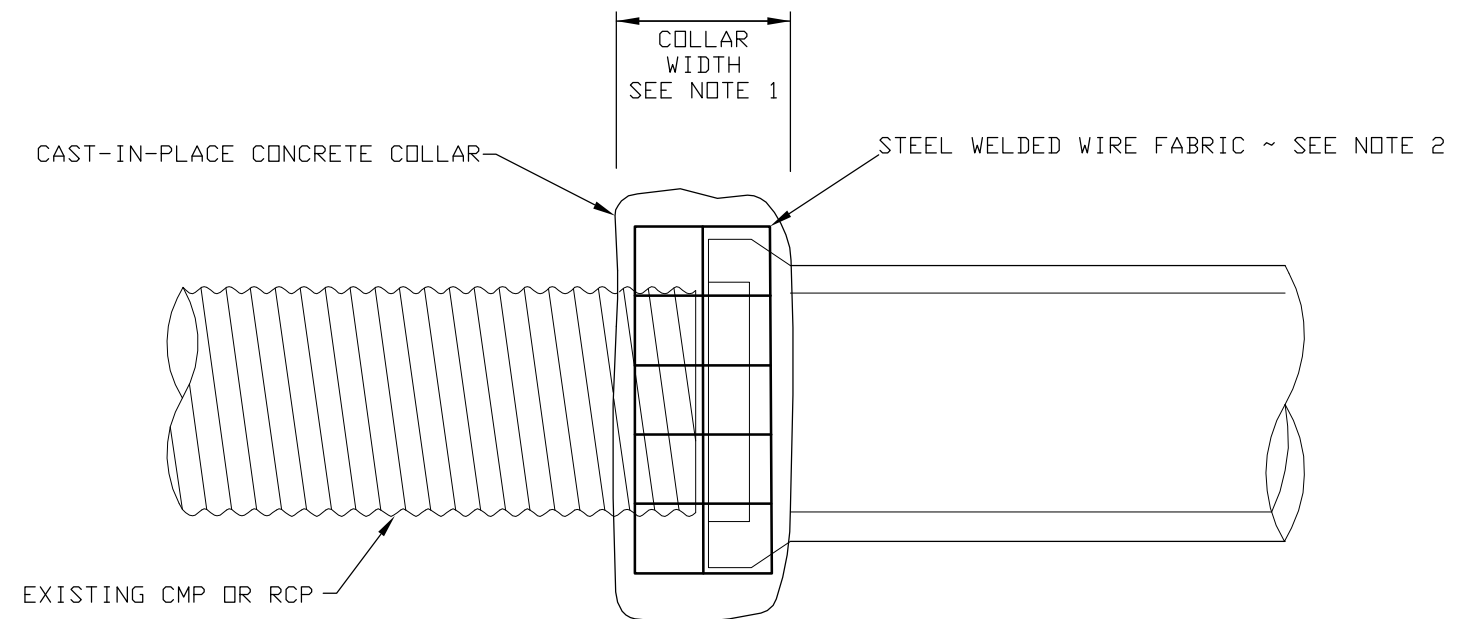
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Horiz. Scale: NA Vert. Scale: NA						Revised:	Designer: JCS	Structure Numbers	-		20736	
Unit Information: City of GJ Unit Leader Initials: JJV						Void:	Detailer: JCS	Sheet Subset: D DETAIL	Subset Sheets:	4 of 5		Sheet Number 69

NOTES:

1. The Concrete Collar width shall be one half of the outside pipe diameter of the largest pipe. The minimum Concrete Collar width shall be 12". Concrete Collars may be used with all pipe materials and diameters. The Concrete Collar shall only be used to make pipe connections as specified on the plans.
2. Steel Welded Wire Fabric shall be in accordance with CDDOT Standard Specification 602. Install two wraps for size 6 x 6 x W. 14 (10 Gage) Steel Welded Wire Fabric or one wrap for any of the following sizes:

- 6 x 6 x W2.1 (8 Gage)
- 6 x 6 x W2.9 (6 Gage)
- 4 x 4 x W2.9 (8 Gage)
- 4 x 4 x W4.0 (4 Gage)

3. Concrete collars will not be paid for separately, but shall be included in the cost of the pipe installation.

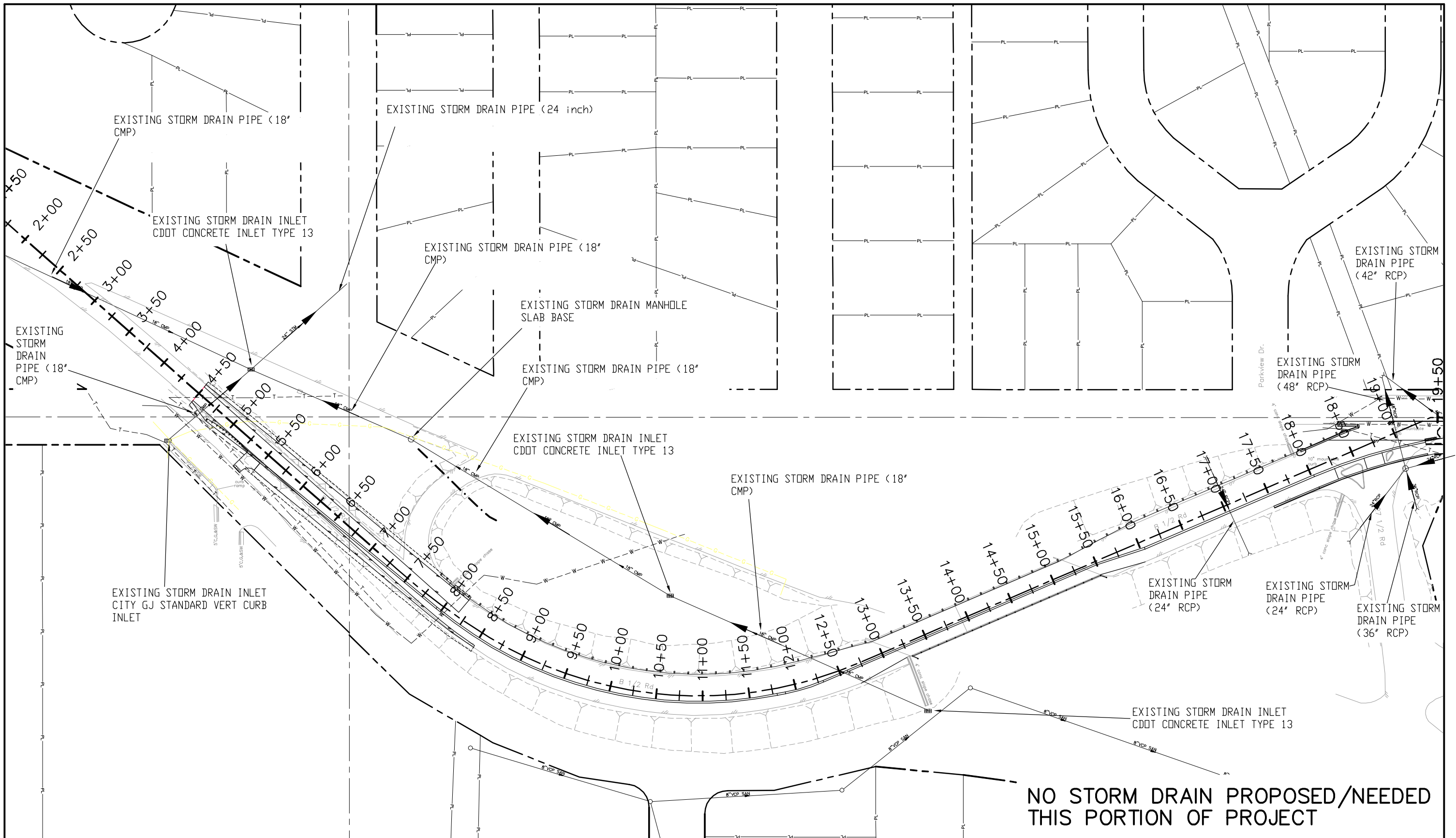


CONCRETE COLLAR
(TYPICAL PIPE TO PIPE CONNECTION)

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File Name: Drainage Details		Date:	Comments	Init.		No Revisions:				TAP M555-032		
Horiz. Scale: NA Vert. Scale: NA						Revised:	Designer: JCS	Structure Numbers	-		20736	
Unit Information: City of GJ Unit Leader Initials: JJV						Void:	Detailer: JCS	Sheet Subset: D DETAIL	Subset Sheets:	5 of 5		Sheet Number 70

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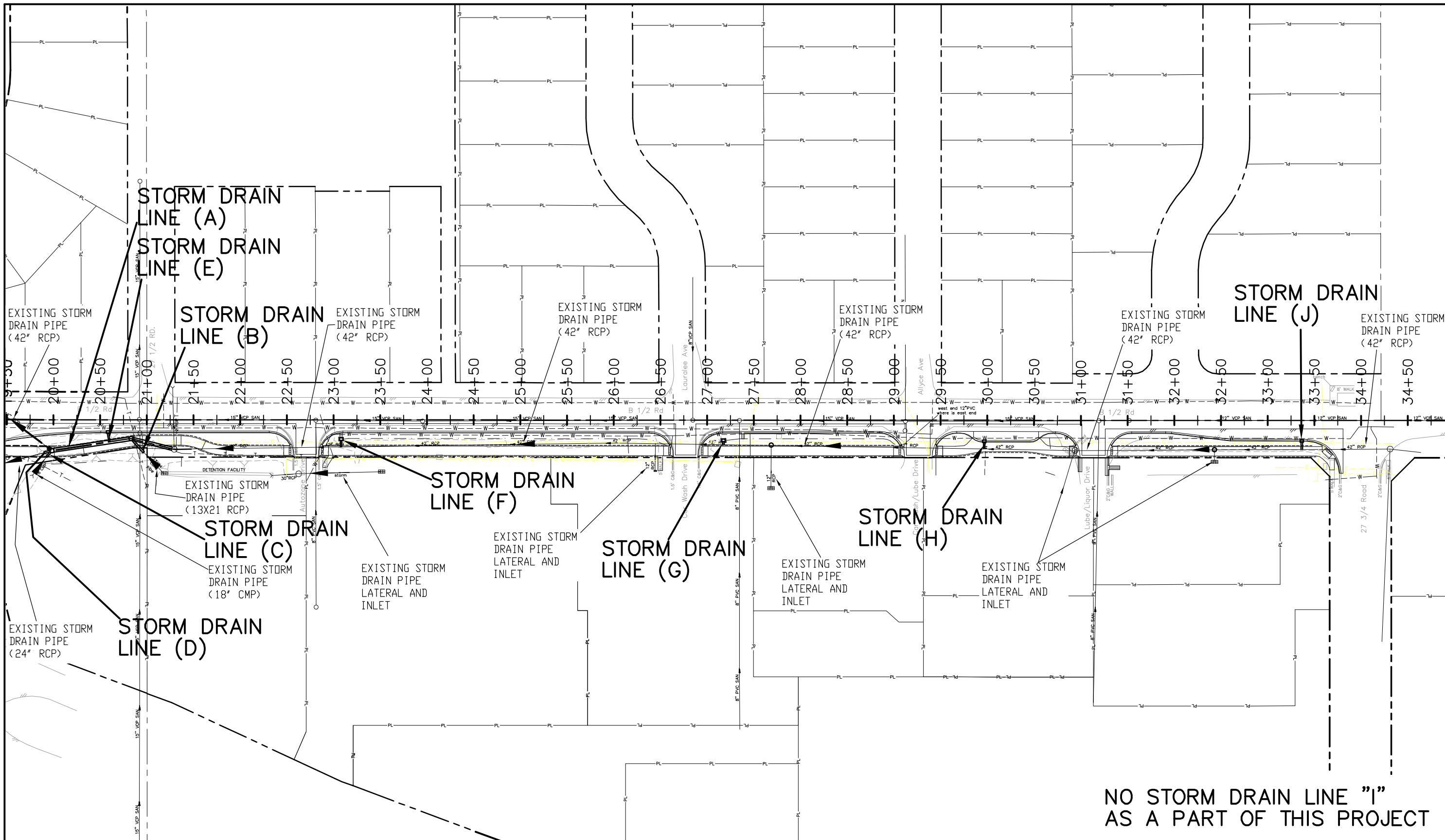


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No Revisions:
Revised:
Void:

Storm Drain Vicinity Map		
Designer: John Smith	Structure Numbers	
Detailer: John Smith		
Sheet Subset: Storm PP	Subset Sheets:	1 of 2

Project No./Code
TAP M555-032
20736
Sheet Number 71

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**NO STORM DRAIN LINE "I"
AS A PART OF THIS PROJECT**

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Horiz. Scale: as shown Vert. Scale: as shown
Unit Information: GJ Design Unit Leader Initials: JJV

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As Constructed
No Revisions:
Revised:
Void:

Storm Drain Vicinity Map		
Designer: John Smith	Structure Numbers	
Detailer: John Smith	Subset Sheets:	2 of 2

Project No./Code
TAP M555-032
20736
Sheet Number 72

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REQ'D - 9' X 24" Concrete Pipe (D1) and Connection to Ex Pipe
 STA 19+89.98, 35.34' RT. TD
 STA 19+98.42, 33.11' RT.

REQ'D - 9' X 18" Concrete Pipe (C1) and Connection to Ex Pipe
 STA 19+98.42, 33.11' RT. TD
 STA 19+92.50, 39.86' RT.

REQ'D - 5' X 42" Concrete Pipe (A4) and Connection to Ex Pipe
 STA 19+94.46, 30.19' RT. TD
 STA 19+98.42, 33.11' RT.

STA 19+98.42, 33.11 RT.
 N 26227.00
 E 97257.66
 90in Manhole Slab Base
 (15 foot) (A3)

REQ'D - 86' X 48" Concrete Pipe (A2) and Connection to Ex Pipe
 STA 19+98.42, 33.11' RT. TD
 STA 20+83.03, 20.16' RT.

STA 20+83.03, 20.16 RT.
 N 26239.89
 E 97342.29
 90in Manhole Slab Base
 (10 foot) (A1)

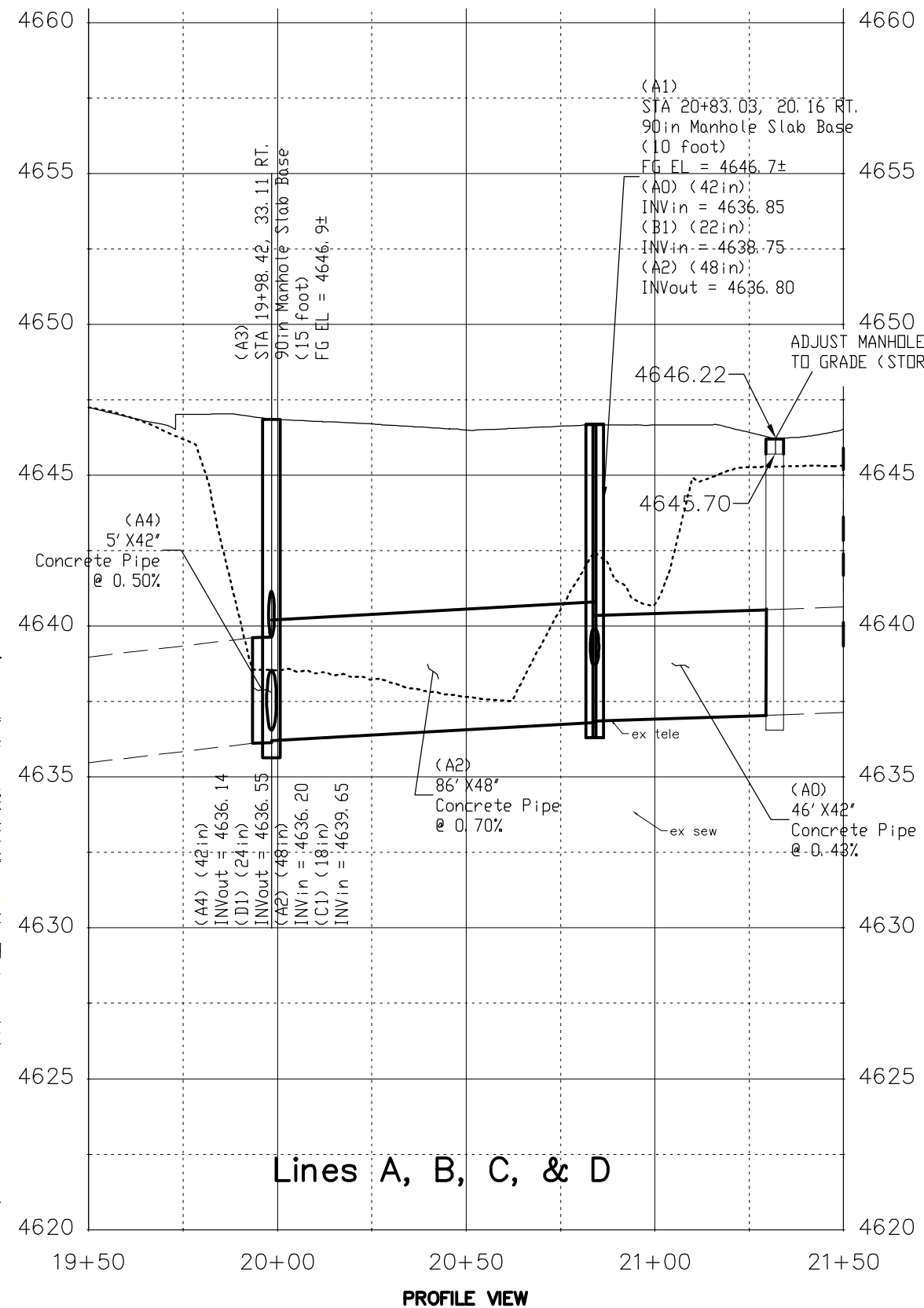
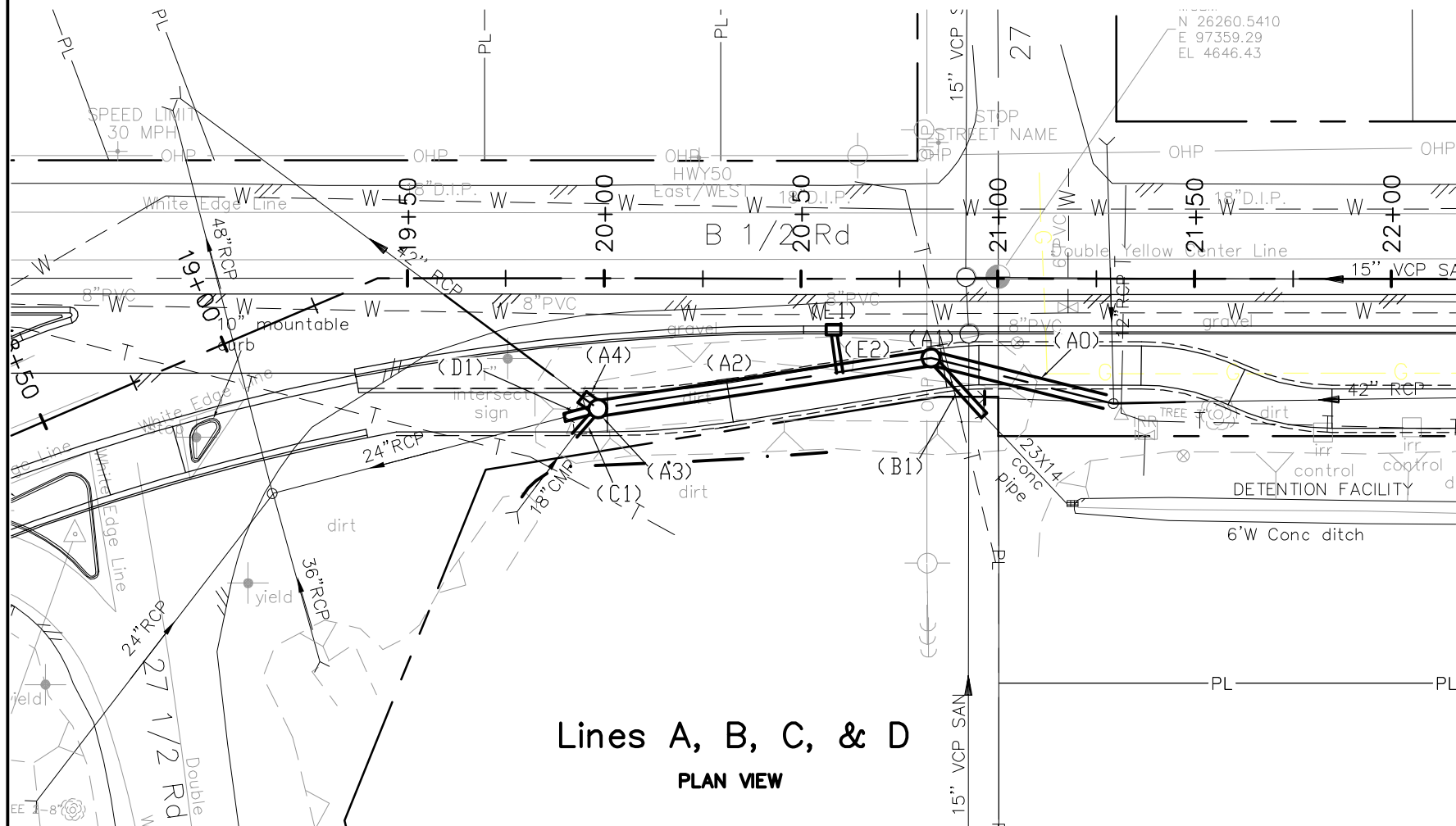
REQ'D - 46' X 42" Concrete Pipe (A0) and Connection to Ex MH
 STA 20+83.03, 20.16' RT. TD
 STA 21+27.18, 31.20' RT.

REMOVAL OF PIPE (36" RCP) (33 LF)
 STA 20+97, 30' RT TO
 STA 21+29, 32' RT

REQ'D - 20' X 23 X 14 Concrete Pipe (B1) and Connection to Ex Pipe
 STA 20+83.03, 20.16' RT. TD
 STA 20+96.55, 34.75' RT.

NOTE:
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NOTE:
 COORDINATES SHOWN ARE TO CENTER OF STRUCTURE



Print Date: @LEFT
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Unit Information: GJ Design Unit Leader Initials: JJV

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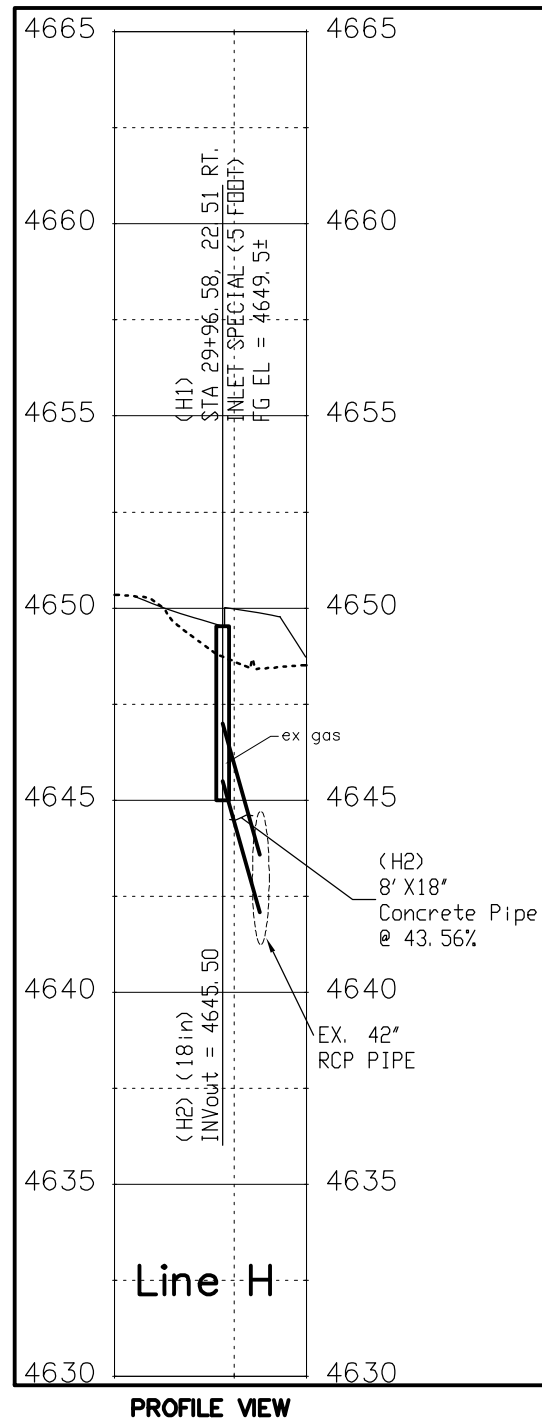
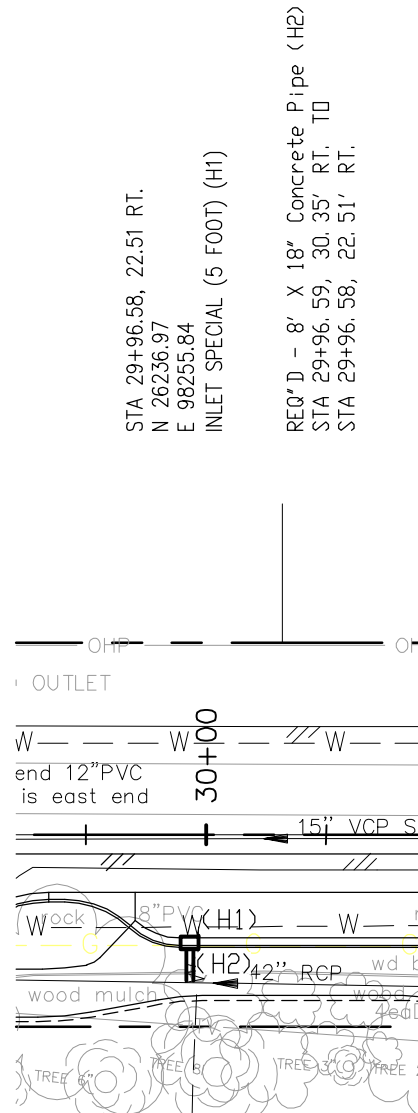


As Constructed
No Revisions:
Revised:
Void:

Storm Drain Plan and Profile		
Designer: John Smith	Structure Numbers	
Detailer: John Smith		
Sheet Subset: Storm PP	Subset Sheets:	1 of 3

Project No./Code
TAP M555-032
20736
Sheet Number 73

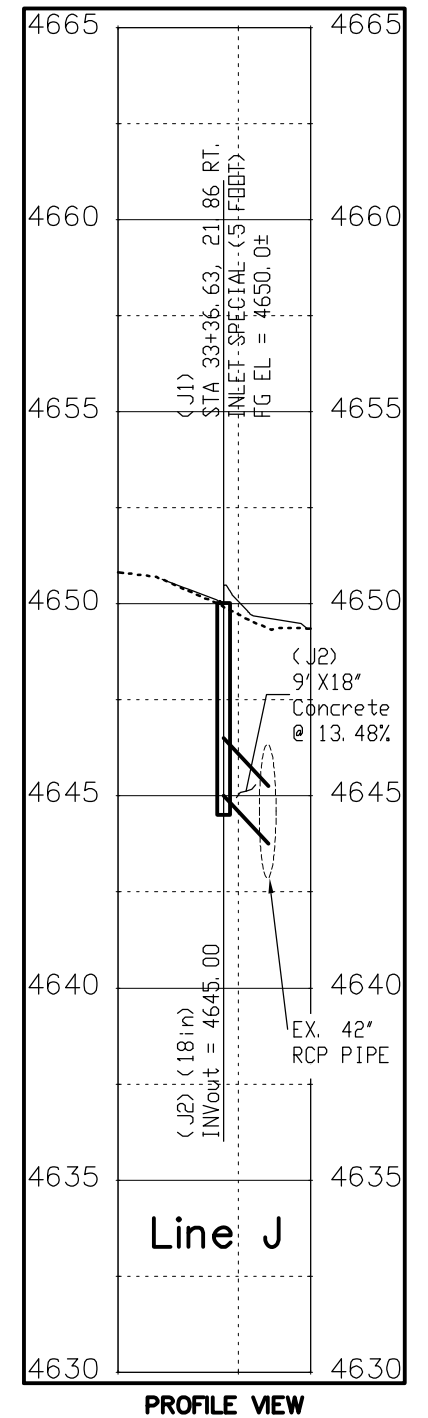
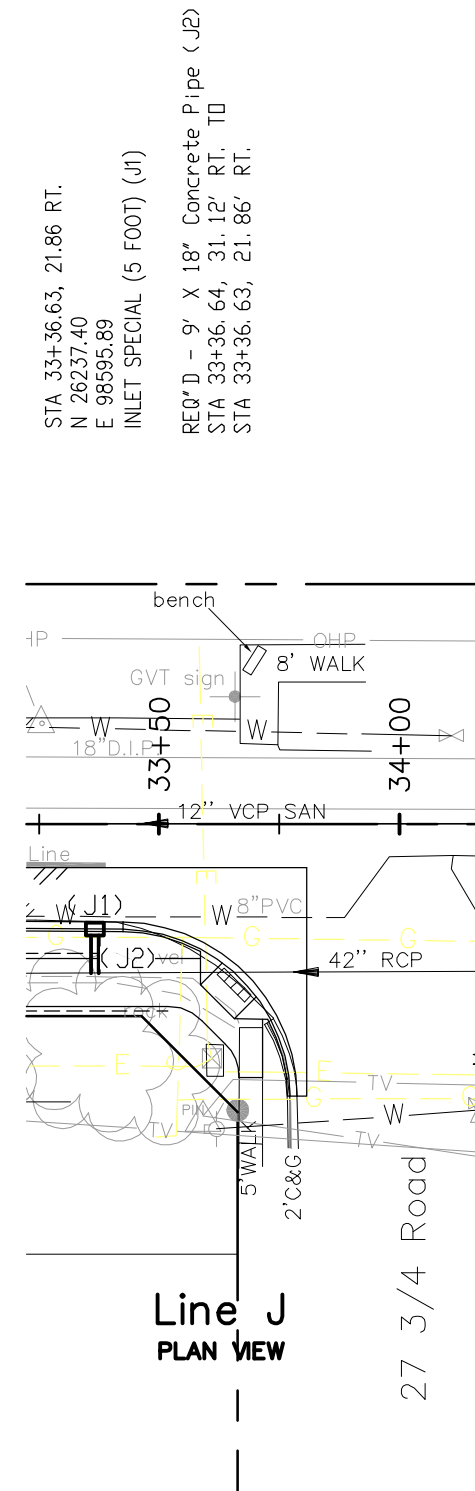
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NOTE:
 COORDINATES SHOWN ARE TO CENTER OF STRUCTURE

NO LINE "I" AS A PART OF THIS CONTRACT



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Horiz. Scale: as shown Vert. Scale: as shown
Unit Information: GJ Design Unit Leader Initials: JJV

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Sheet Revisions		
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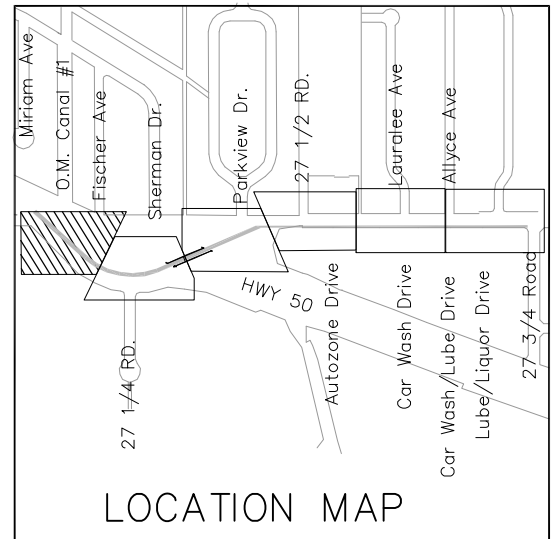
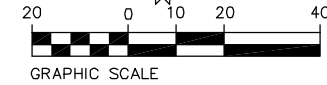
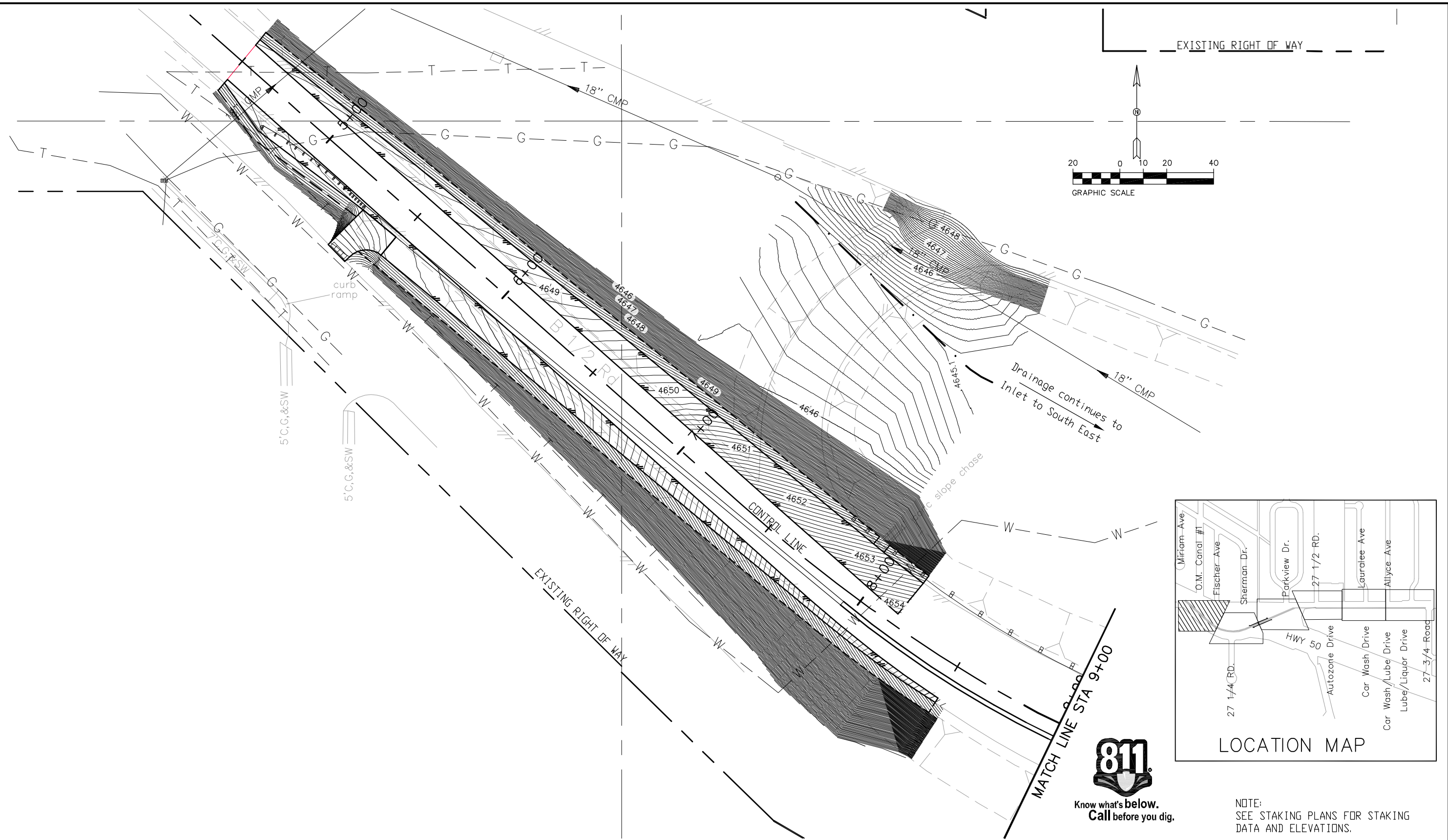


As Constructed
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Storm Drain Plan and Profile		
Designer: John Smith	Structure Numbers	
Detailer: John Smith		
Sheet Subset: Storm PP	Subset Sheets:	3 of 3

Project No./Code
TAP M555-032
20736
Sheet Number 75

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NOTE:
SEE STAKING PLANS FOR STAKING
DATA AND ELEVATIONS.

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Unit Information: City of GJ Unit Leader Initials: JJV

Sheet Revisions		
Date:	Comments	Init.

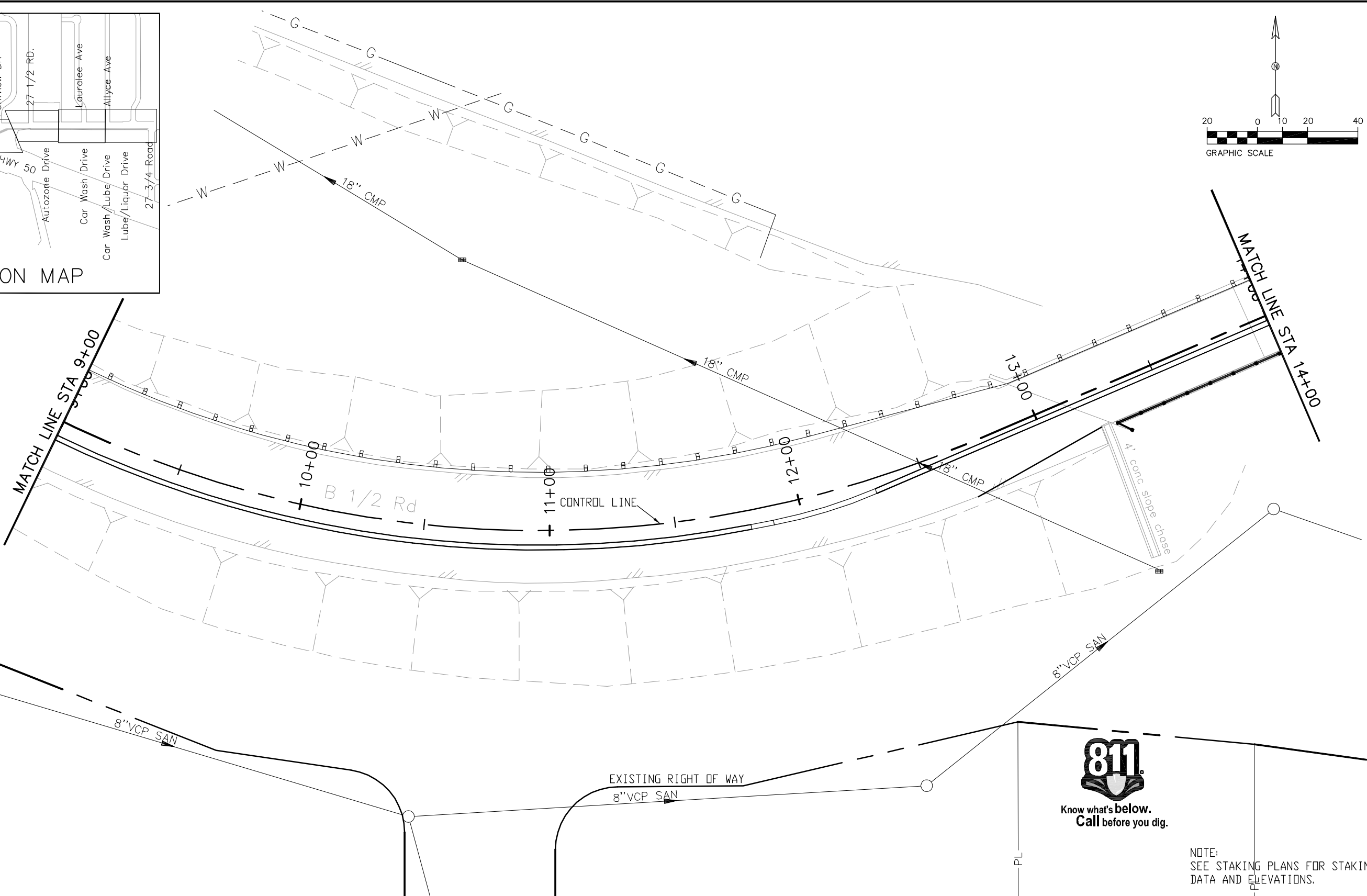
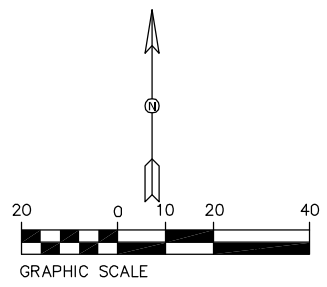
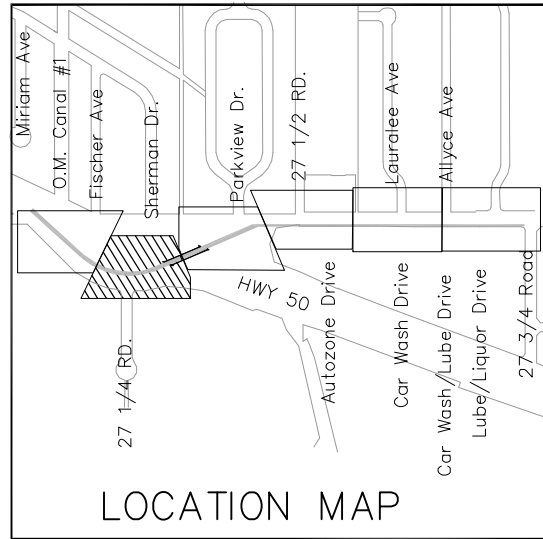


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B 1/2 ROAD 0.1' Contour Grading Plan Sta. 4+50 TO 9+00	
Designer: John Smith	Structure Numbers
Detailer: John Smith	
Sheet Subset: Plan	Subset Sheets: 1 of 6

Project No./Code
TAP M555-032
20736
Sheet Number 76

N:\Landproj\2015 B.5 Rd Multimodal path\dwg\Plot 0.1' CONTOUR GRADING PLAN.dwg, 4/12/2016 12:29:56 PM



NOTE:
SEE STAKING PLANS FOR STAKING
DATA AND ELEVATIONS.

Print Date: © LEFT
File Name: © LEFT
Horiz. Scale: AS SHOWN Vert. Scale: NA
Unit Information: City of GJ Unit Leader Initials: JJV

Sheet Revisions		
Date:	Comments	Init.

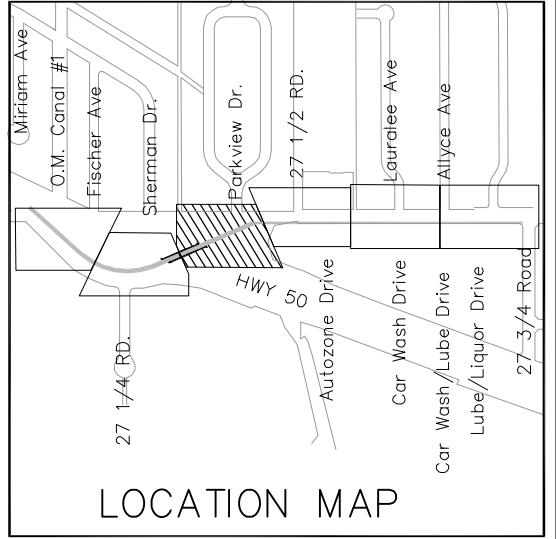
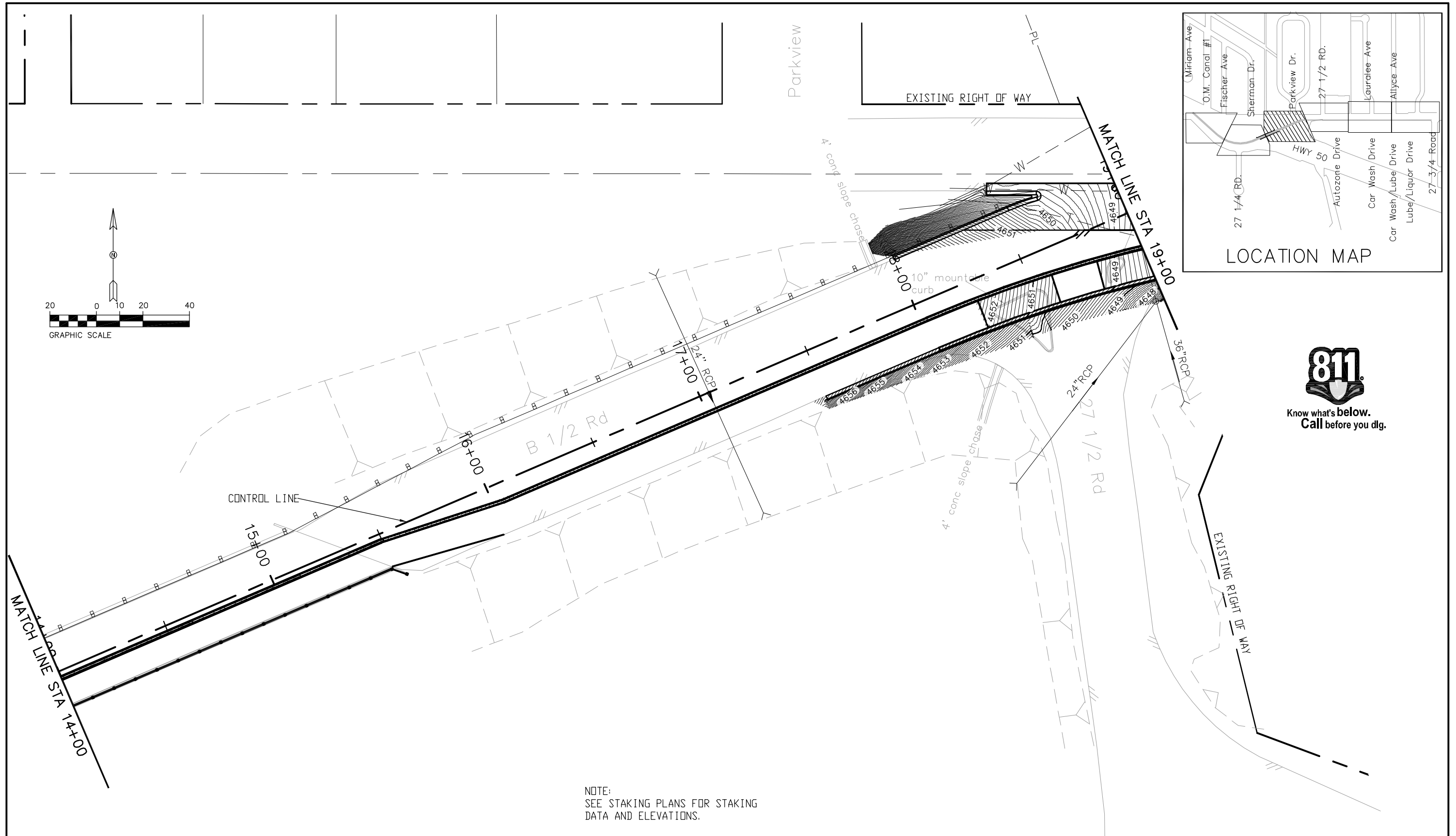


As Constructed
No Revisions:
Revised:
Void:

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Sta. 9+00 TO 14+00	
Designer: John Smith	Structure Numbers
Detailer: John Smith	
Sheet Subset: Plan	Subset Sheets: 2 of 6

Project No./Code
TAP M555-032
20736
Sheet Number 77

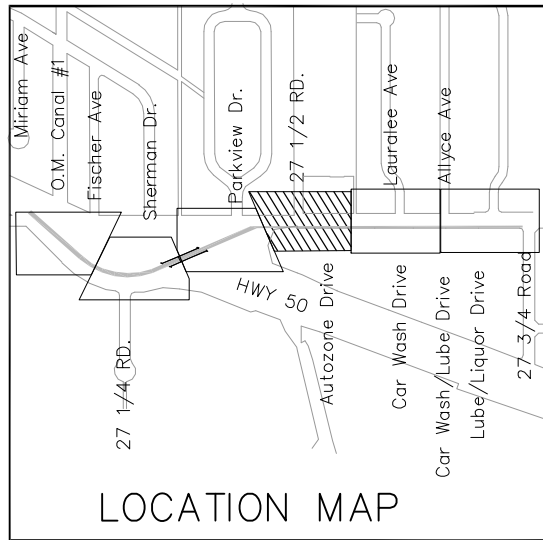
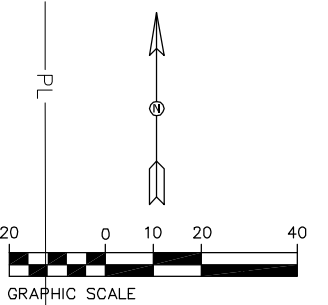
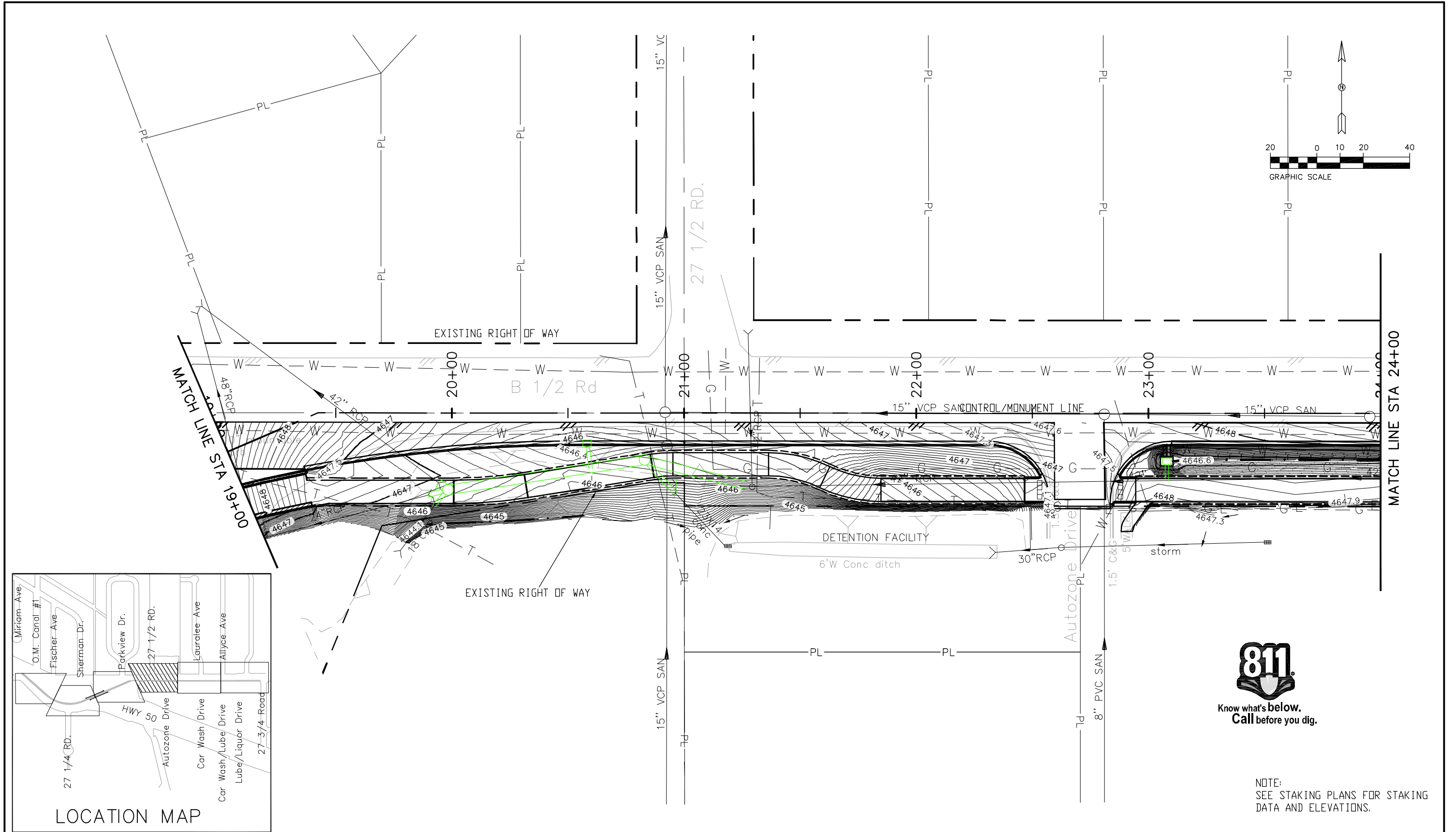
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NOTE:
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File Name: © LEFT		Date:	Comments	Init.		No Revisions:	TAP M555-032			
Horiz. Scale: AS SHOWN Vert. Scale: NA						Revised:	Designer: John Smith		Structure Numbers	
Unit Information: City of GJ Unit Leader Initials: JJV						Void:	Detailer: John Smith		Subset Sheets: 3 of 6	
					Sheet Subset: Plan		20736	Sheet Number 78		

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Know what's below.
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Unit Information: City of GJ Unit Leader Initials: JJV

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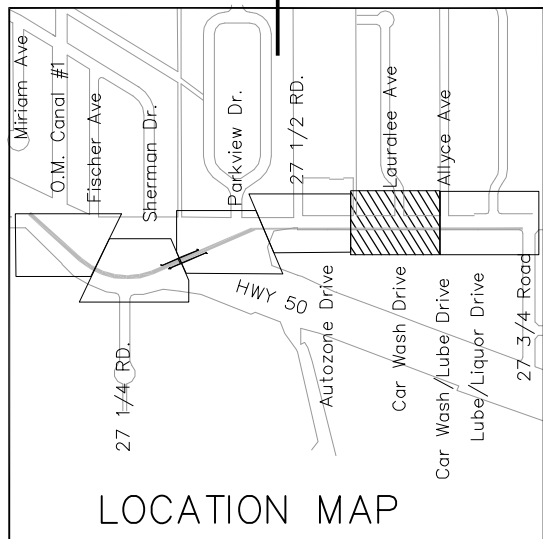
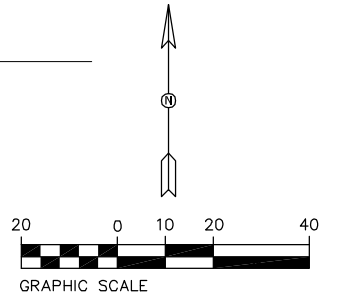
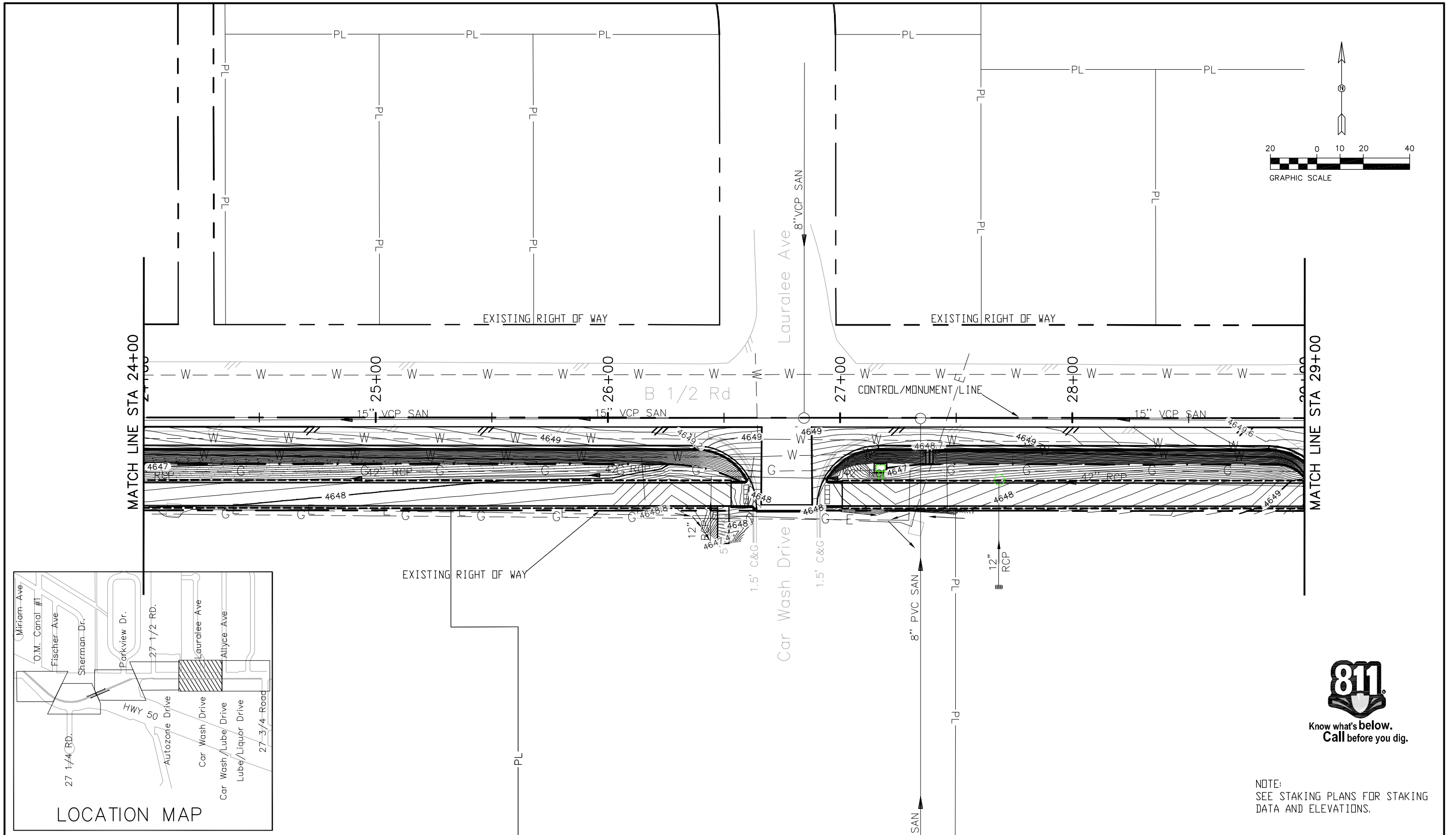


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Detailer: John Smith	
Sheet Subset: Plan	Subset Sheets: 4 of 6

Project No./Code
TAP M555-032
20736
Sheet Number 79

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Know what's below.
Call before you dig.

NOTE:
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DATA AND ELEVATIONS.

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Unit Information: City of GJ Unit Leader Initials: JJV

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Date:	Comments	Init.



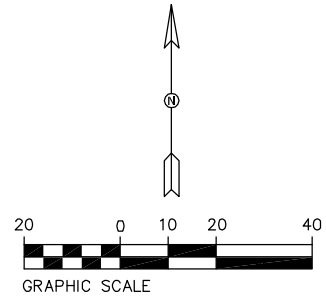
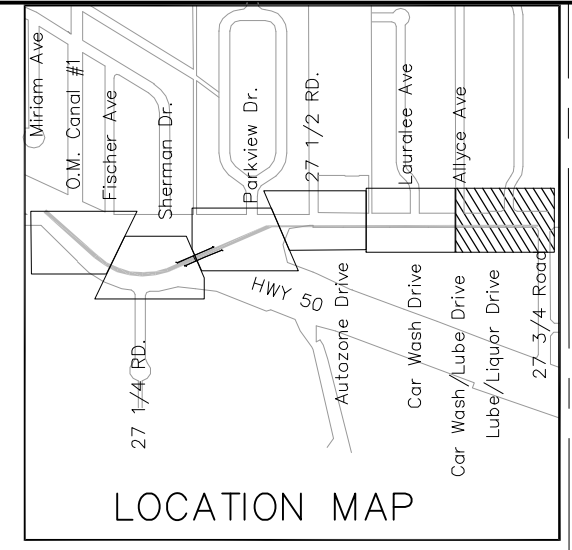
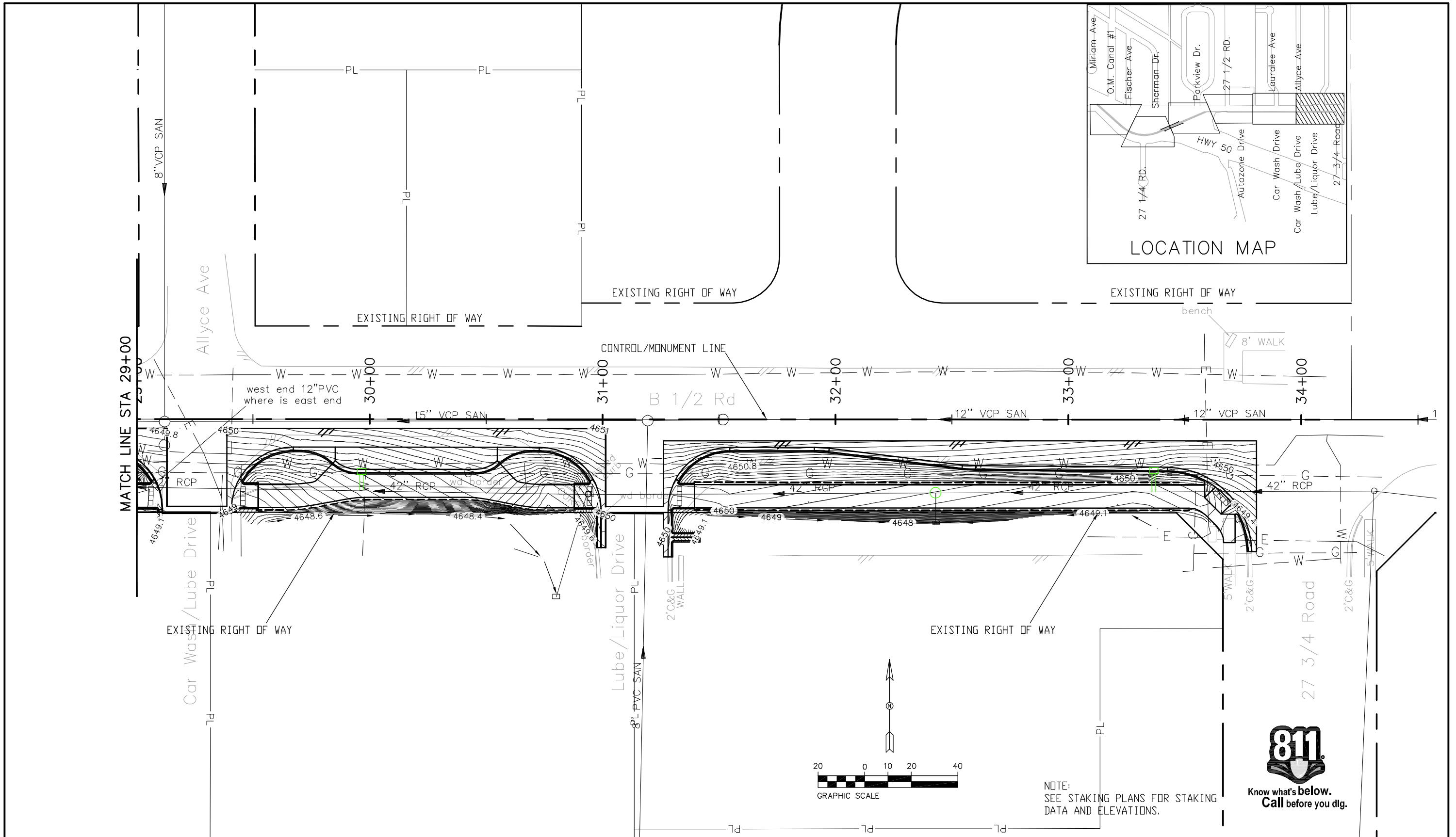
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Detailer: John Smith	
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Project No./Code
TAP M555-032
20736
Sheet Number 80

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N:\Landproj\2015 B.5 Rd Multimodal path\dwg\Plot 0.1' CONTOUR GRADING PLAN.dwg, 5/25/2016 11:48:52 AM



NOTE:
SEE STAKING PLANS FOR STAKING
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Date:	Comments	Init.																

Schedule of Lighting Devices										
ITEM No.				613-30005		613-40012		See note 2		
LONG DESCRIPTION				LIGHT STANDARD AND LUMINAIRE (PEDESTRIAN)		LIGHT STANDARD FOUNDATION SPECIAL		LUMINAIRE LED (66 WATT)		NOTES
UNITS				EACH(BY OTHERS)		EACH		EACH		
				PLAN	AS CONST	PLAN	AS CONST	PLAN	AS CONST	
SHEET NO.	I.D. NO.	STATION	OFFSET							
LE3	SA-1	5+28.87	R=17.27	1		1		1		1,2
LE3	SA-2	6+19.71	R=22.08	1		1		1		1,2
LE3	SA-3	7+19.65	R=18.66	1		1		1		1,2
LE3	SA-4	8+17.38	R=20.34	1		1		1		1,2
LE4	SA-5	9+20.07	R=20.96	1		1		1		1,2
LE4	SA-6	10+22.11	R=20.88	1		1		1		1,2
LE4	SA-7	11+24.19	R=20.74	1		1		1		1,2
LE4	SA-8	12+26.30	R=20.57	1		1		1		1,2
LE4	SA-9	13+23.15	R=17.00	1		1		1		1,2
LE5	SA-10	14+39.15	R=14.99	1		1		1		1,2
LE5	SA-11	15+55.15	R=17.41	1		1		1		1,2
LE5	SA-12	16+71.15	R=21.00	1		1		1		1,2
LE5	SA-13	17+87.15	R=24.16	1		1		1		1,2
LE6	SA-14	19+3.15	R=28.82	1		1		1		1,2
LE6	SA-15	20+18.03	R=39.06	1		1		1		1,2
LE6	SA-16	21+13.07	R=26.67	1		1		1		1,2
LE6	SA-17	22+7.89	R=39.00	1		1		1		1,2
LE6	SA-18	23+15.89	R=39.00	1		1		1		1,2
LE7	SA-19	24+23.89	R=39.00	1		1		1		1,2
LE7	SA-20	25+31.89	R=39.00	1		1		1		1,2
LE7	SA-21	26+39.89	R=39.00	1		1		1		1,2
LE7	SA-22	27+43.72	R=39.00	1		1		1		1,2
LE7	SA-23	28+61.72	R=39.00	1		1		1		1,2
LE8	SA-24	29+70.20	R=39.00	1		1		1		1,2
LE8	SA-25	30+69.91	R=39.00	1		1		1		1,2
LE8	SA-26	31+69.91	R=38.98	1		1		1		1,2
LE8	SA-27	32+53.91	R=38.99	1		1		1		1,2
LE8	SA-28	33+37.30	R=39.00	1		1		1		1,2
TABLE TOTALS				28		28		28		

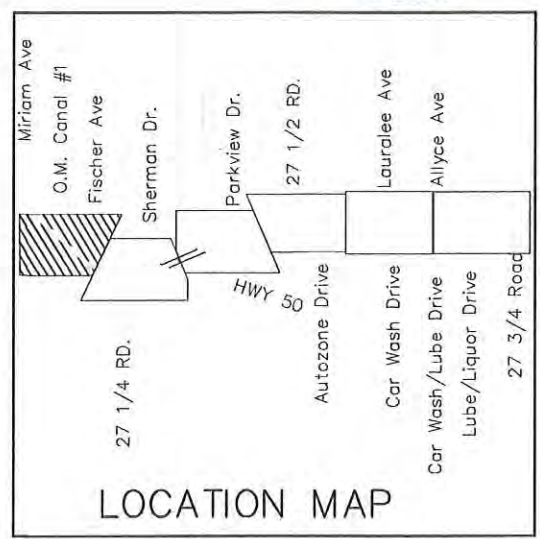
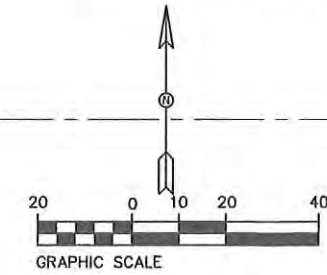
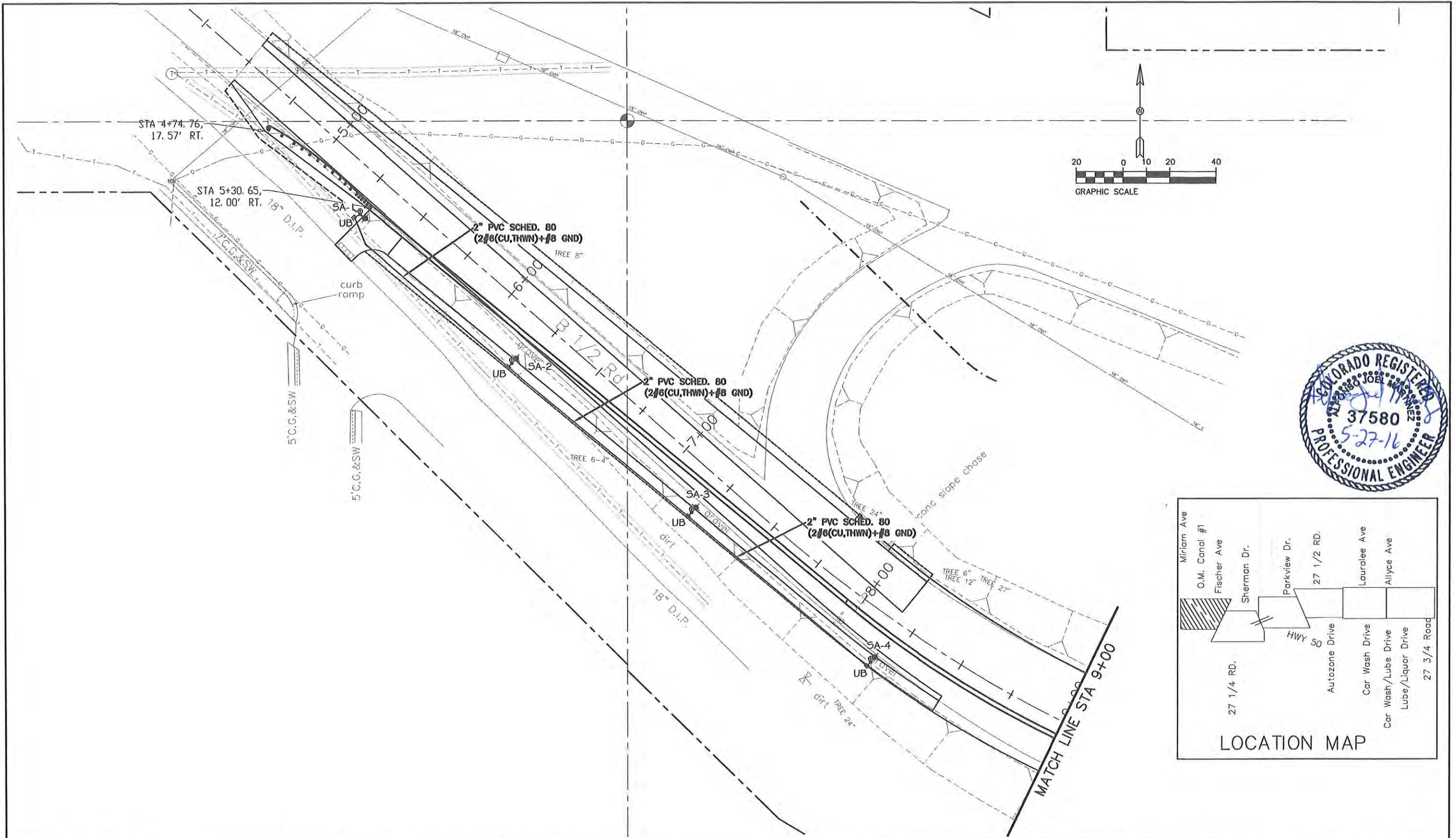
- SCHEDULE OF LIGHTING DEVICES NOTES:
- FOUNDATION TOP HEIGHT EQUAL TO ADJACENT SIDEWALK
 - LUMINAIRE LED (66 WATT) IS TO BE INCLUDED IN THE COST OF PAY ITEM 613-30005 LIGHT STANDARD AND LUMINAIRE (PEDESTRIAN)
 - FOUNDATION TOP HEIGHT AS SHOWN IN DETAIL.

Tabulation of Approximate Quantities(BASE PROJECT)					
Item No.	Ref. No.	Construction Note Description	Quantity	Unit	NOTES
	613-01200	2 Inch Electrical Conduit (Plastic)	2807	LF	
	613-00207	2 Inch Electrical Conduit (RIGID STEEL CONDUIT)	236	LF	1
	613-07001	Type One Pull Box	27	EA	
	613-07010	Pull Box (Surface Mounted)	1	EA	1,2
	613-10000	Wiring	1	LS	
	613-30005	Light Standard and Luminaire (Pedestrian)	28	EA	
	613-40012	Light Standard Foundation (Special)	28	EA	
	613-50106	Lighting Control Center (Special)	1	EA	
SUMMARY NOTES:					
1. INSTALLED UNDER BRIDGE DECK FOR CONNECTION TO BRIDGE MOUNTED LIGHT.					
2. NEMA 3R					



Know what's below.
Call before you dig.

Print Date: 4-20-2016	Sheet Revisions				As Constructed	LIGHTING SCHEDULES AND TABULATIONS		Project No./Code
File Name:	Date:	Comments	Init.		No Revisions:			TAP M555-032
Horiz. Scale: AS SHOWN	Vert. Scale: NA				Revised:	Designer: AJM	Structure Numbers	20736
Unit Information: City of GJ Unit Leader Initials: LC					Void:	Detailer: AJM	Subset Sheets: LE2 of 13	Sheet Number 83
 ACM CONSULTING AND ENGINEERING PH: (970) 245-7292 EMAIL: JOELMRTINEZ@GMAIL.COM					LIGHTING			



Print Date: 4-20-2016
 File Name:
 Horiz. Scale: AS SHOWN Vert. Scale: NA
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 ACM CONSULTING AND ENGINEERING
 PH: (970) 245-7292
 EMAIL: JOELMRTINEZ@GMAIL.COM

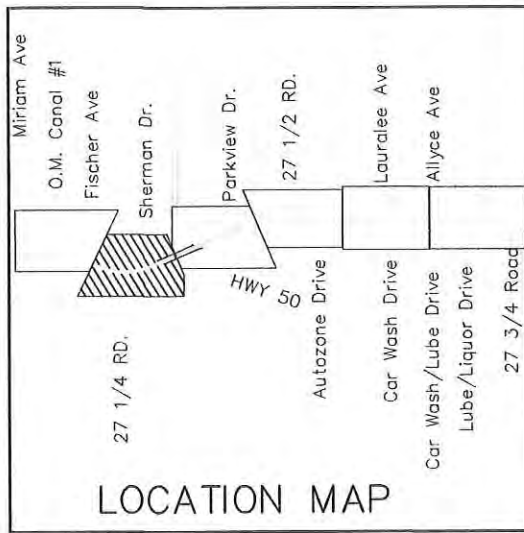
Sheet Revisions			
Date:	Comments	Init.	



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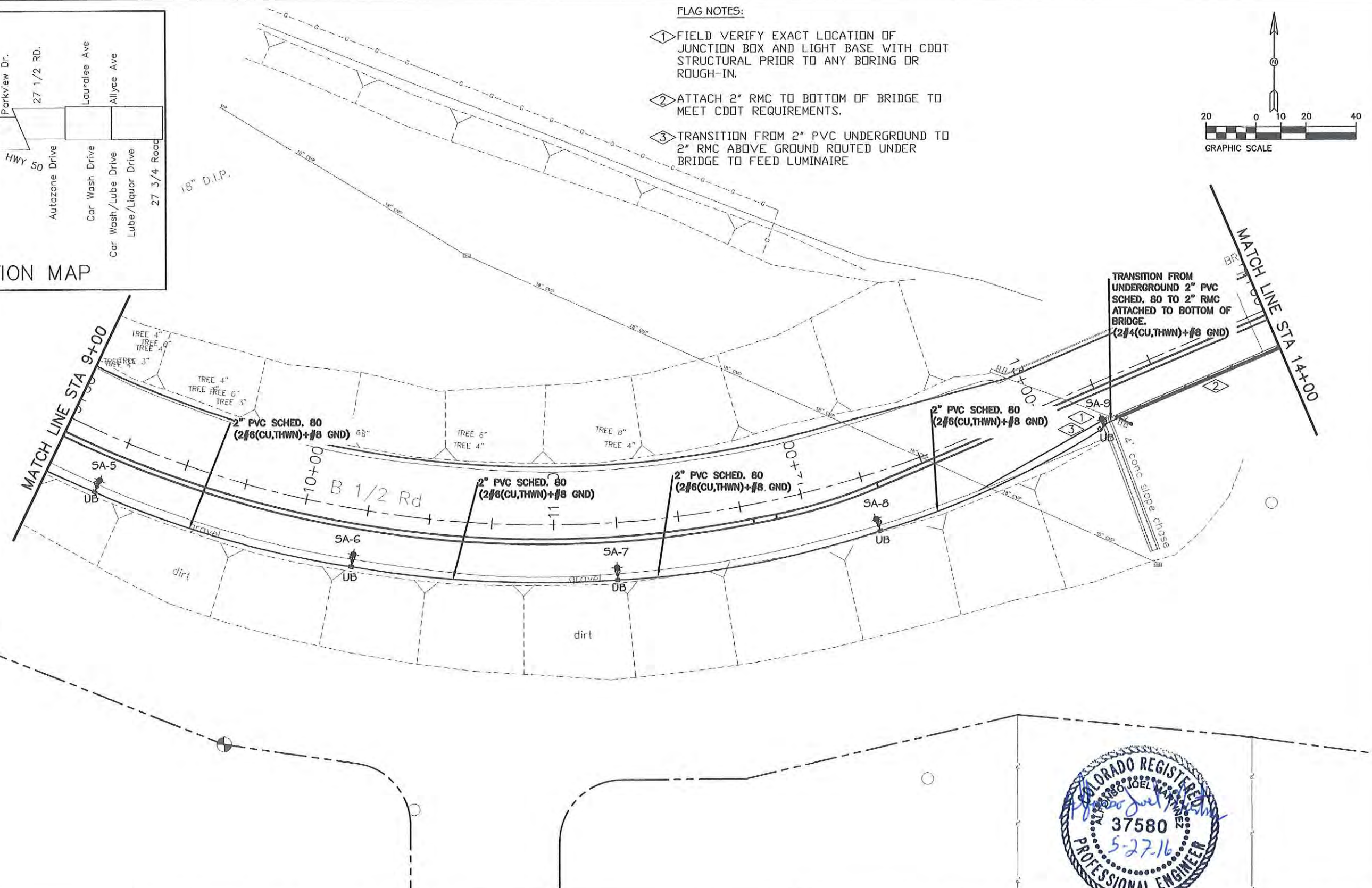
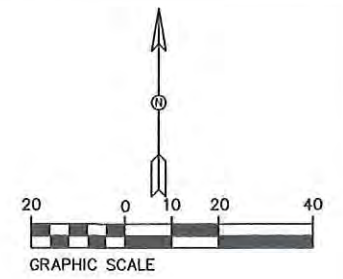
SITE ELECTRICAL PLAN
 Sta. 4+50 TO 9+00
 Designer: AJM
 Detailer: AJM
 LIGHTING
 Structure Numbers
 Subset Sheets: LE3 of 13

Project No./Code
 TAP M555-032
 20736
 Sheet Number 84

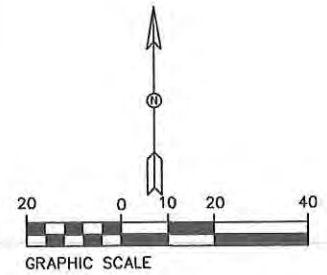
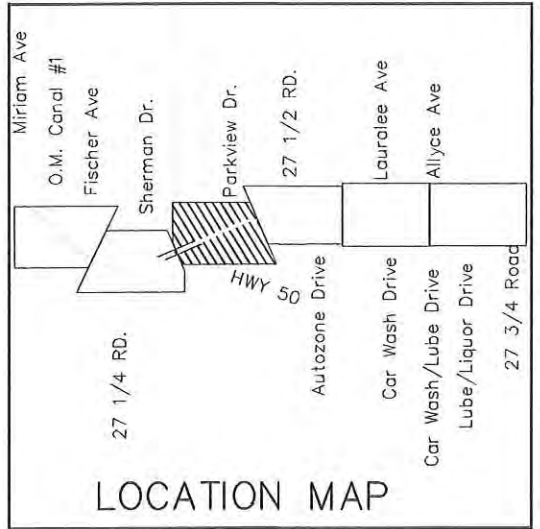
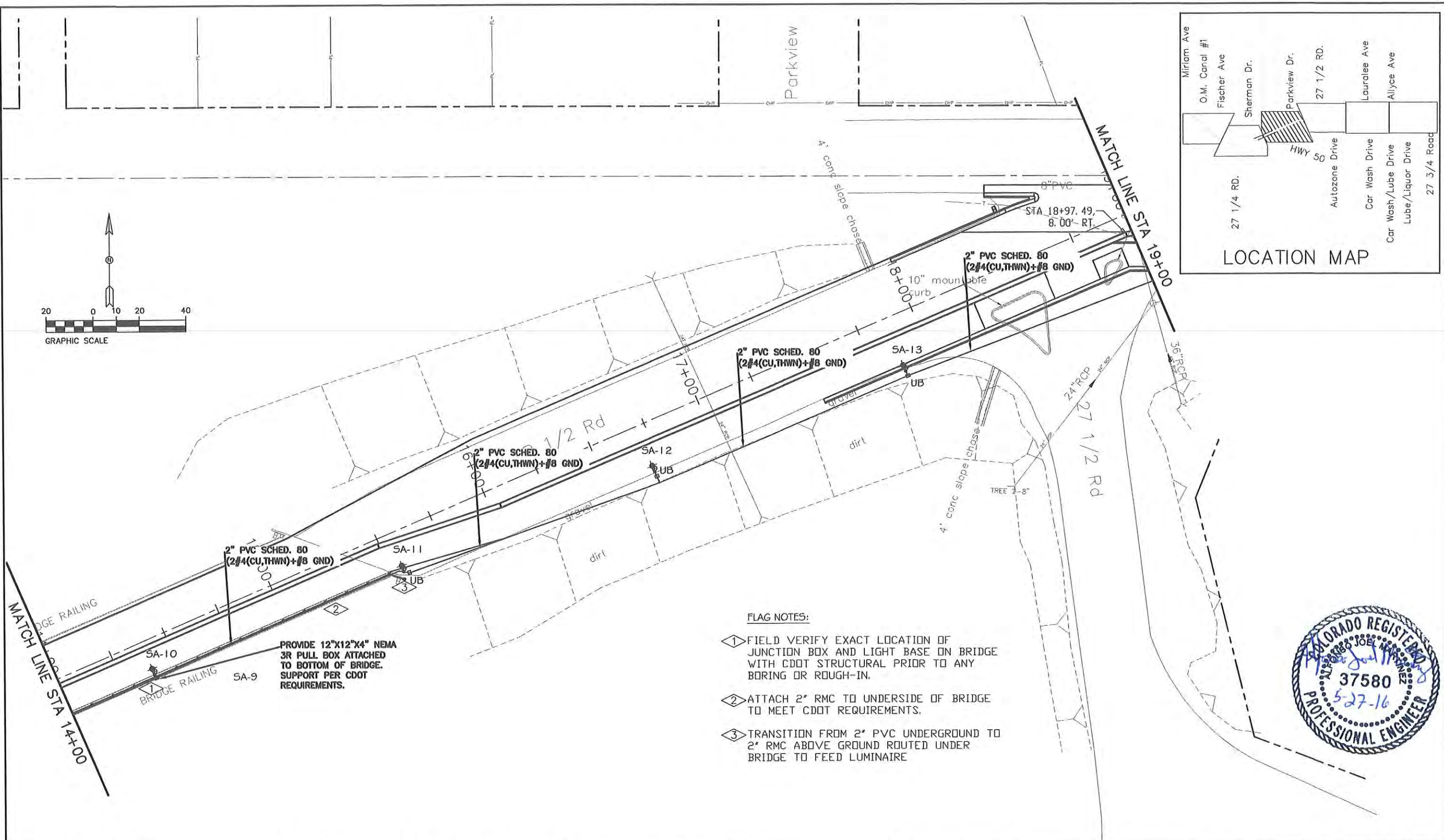


FLAG NOTES:

- ① FIELD VERIFY EXACT LOCATION OF JUNCTION BOX AND LIGHT BASE WITH CDDT STRUCTURAL PRIOR TO ANY BORING OR ROUGH-IN.
- ② ATTACH 2" RMC TO BOTTOM OF BRIDGE TO MEET CDDT REQUIREMENTS.
- ③ TRANSITION FROM 2" PVC UNDERGROUND TO 2" RMC ABOVE GROUND ROUTED UNDER BRIDGE TO FEED LUMINAIRE



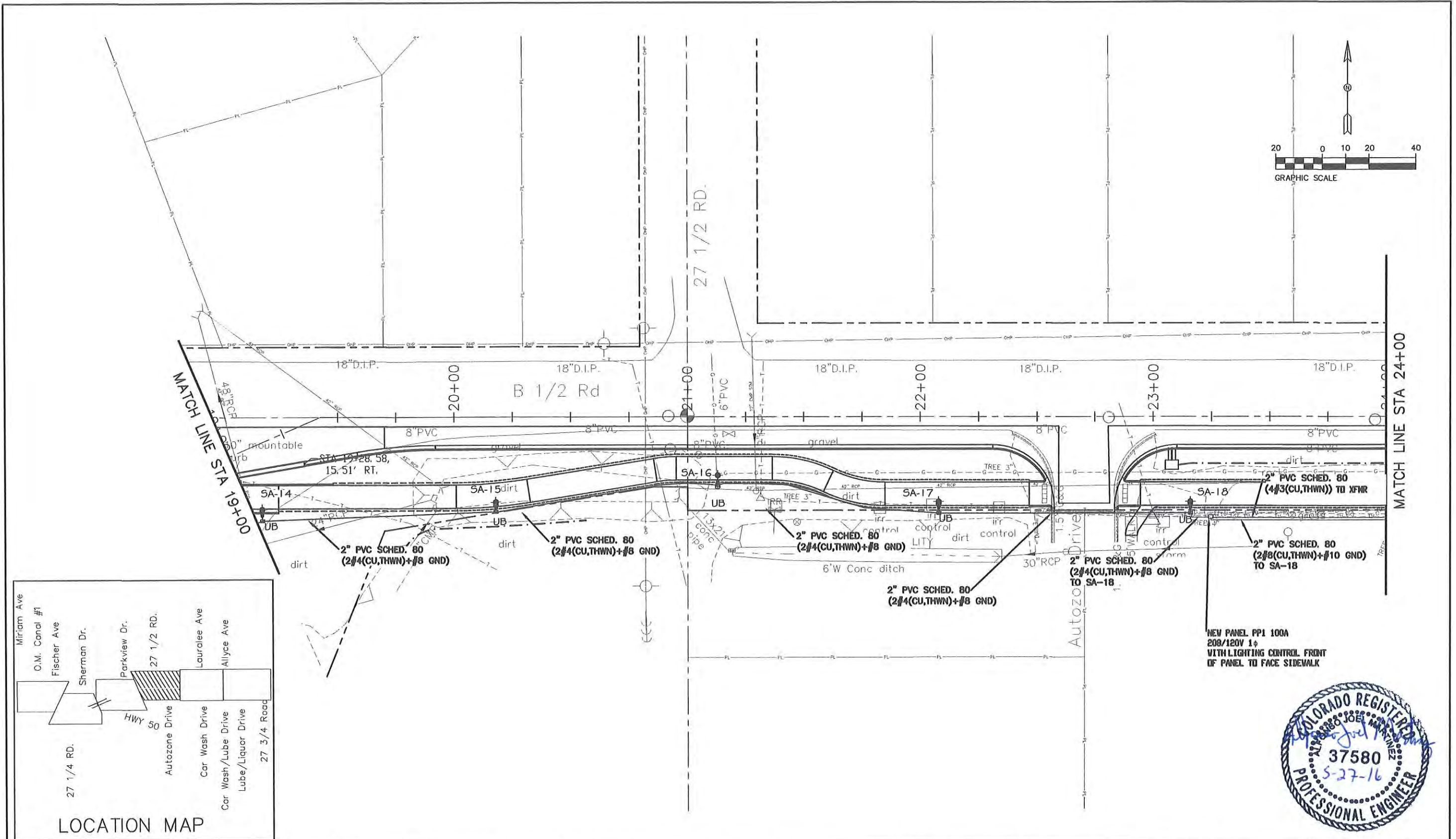
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Horiz. Scale: AS SHOWN					Revised:	Designer: AJM	Structure Numbers	20736
Unit Information: City of GJ Unit Leader Initials: LC					Void:	Detailer: AJM		Sheet Number 85
ACM CONSULTING AND ENGINEERING PH: (970) 245-7292 EMAIL: JOELMRTINEZ@GMAIL.COM						LIGHTING	Subset Sheets: LE4 of 13	



- FLAG NOTES:**
- ① FIELD VERIFY EXACT LOCATION OF JUNCTION BOX AND LIGHT BASE ON BRIDGE WITH CDOT STRUCTURAL PRIOR TO ANY BORING OR ROUGH-IN.
 - ② ATTACH 2" RMC TO UNDERSIDE OF BRIDGE TO MEET CDOT REQUIREMENTS.
 - ③ TRANSITION FROM 2" PVC UNDERGROUND TO 2" RMC ABOVE GROUND ROUTED UNDER BRIDGE TO FEED LUMINAIRE



Print Date: 4-20-2016	Sheet Revisions			CITY OF Grand Junction COLORADO	As Constructed	SITE ELECTRICAL PLAN		Project No./Code
File Name:	Date:	Comments:	Init.		No Revisions:	Sta. 14+00 TO 19+00		TAP M555-032
Horiz. Scale: AS SHOWN					Revised:	Designer: AJM	Structure Numbers	20736
Unit Information: City of GJ Unit Leader Initials: LC					Void:	Detailer: AJM	Subset Sheets: LE5 of 13	Sheet Number 86
ACM CONSULTING AND ENGINEERING PH: (970) 245-7292 EMAIL: JOELMARTINEZ@GMAIL.COM						LIGHTING		



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 File Name:
 Horiz. Scale: AS SHOWN Vert. Scale: NA
 Unit Information: City of GJ Unit Leader Initials: LC
 ACM CONSULTING AND ENGINEERING
 PH: (970) 245-7292
 EMAIL: JOELMRTINEZ@GMAIL.COM

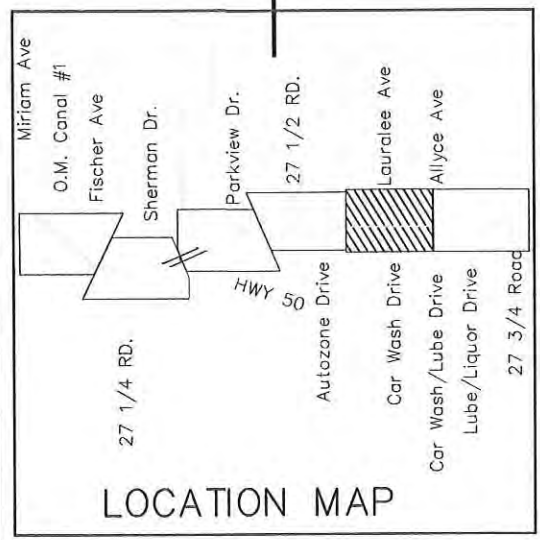
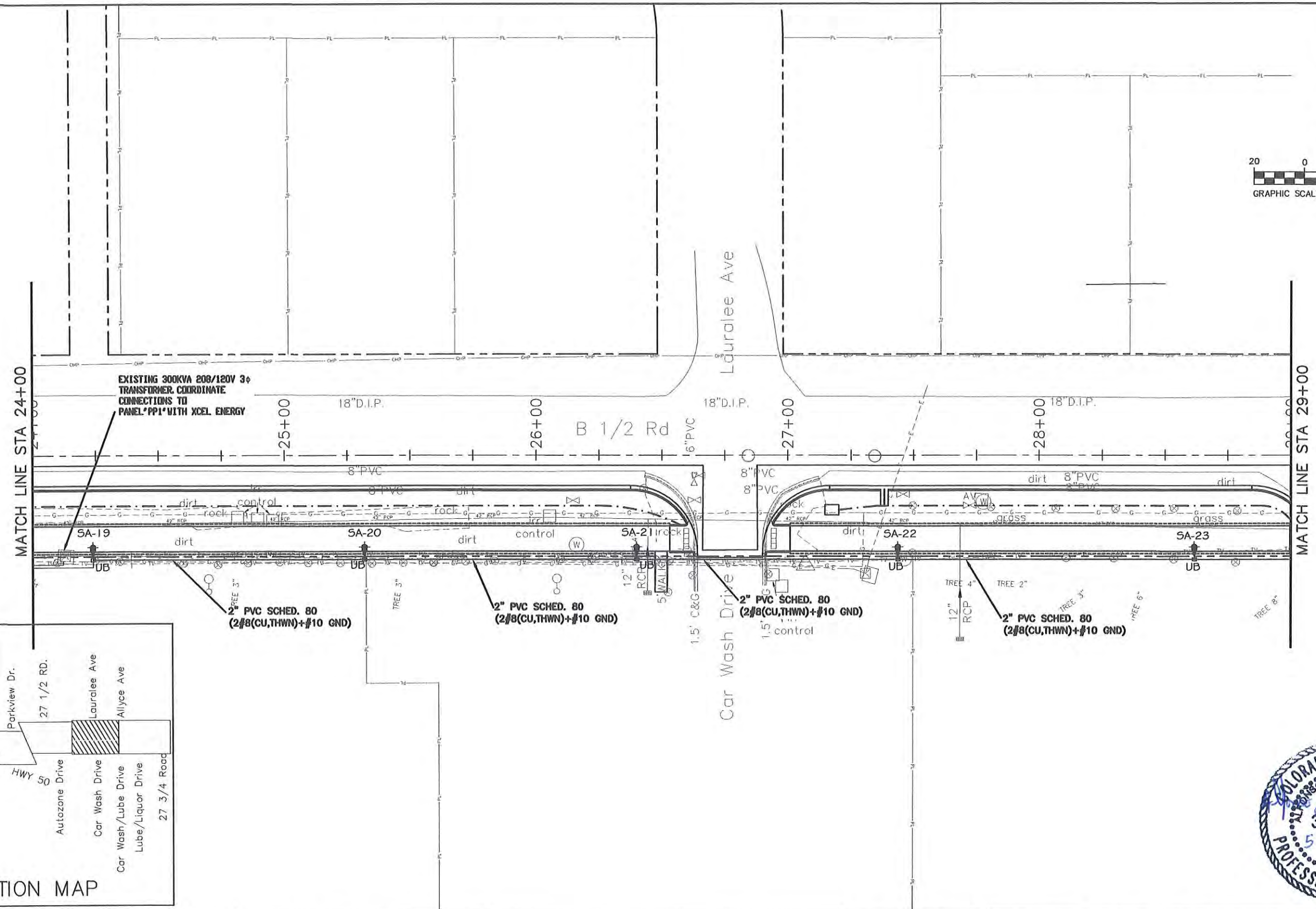
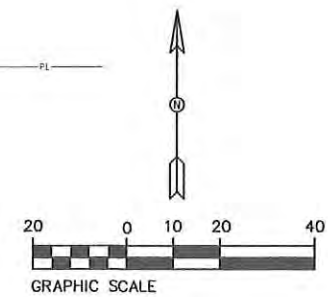
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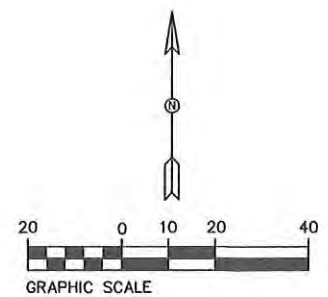
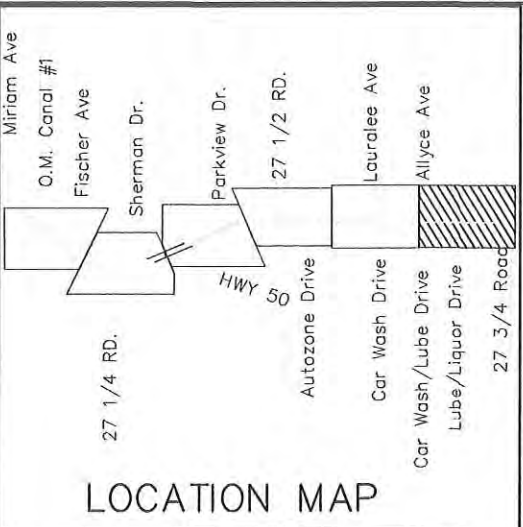
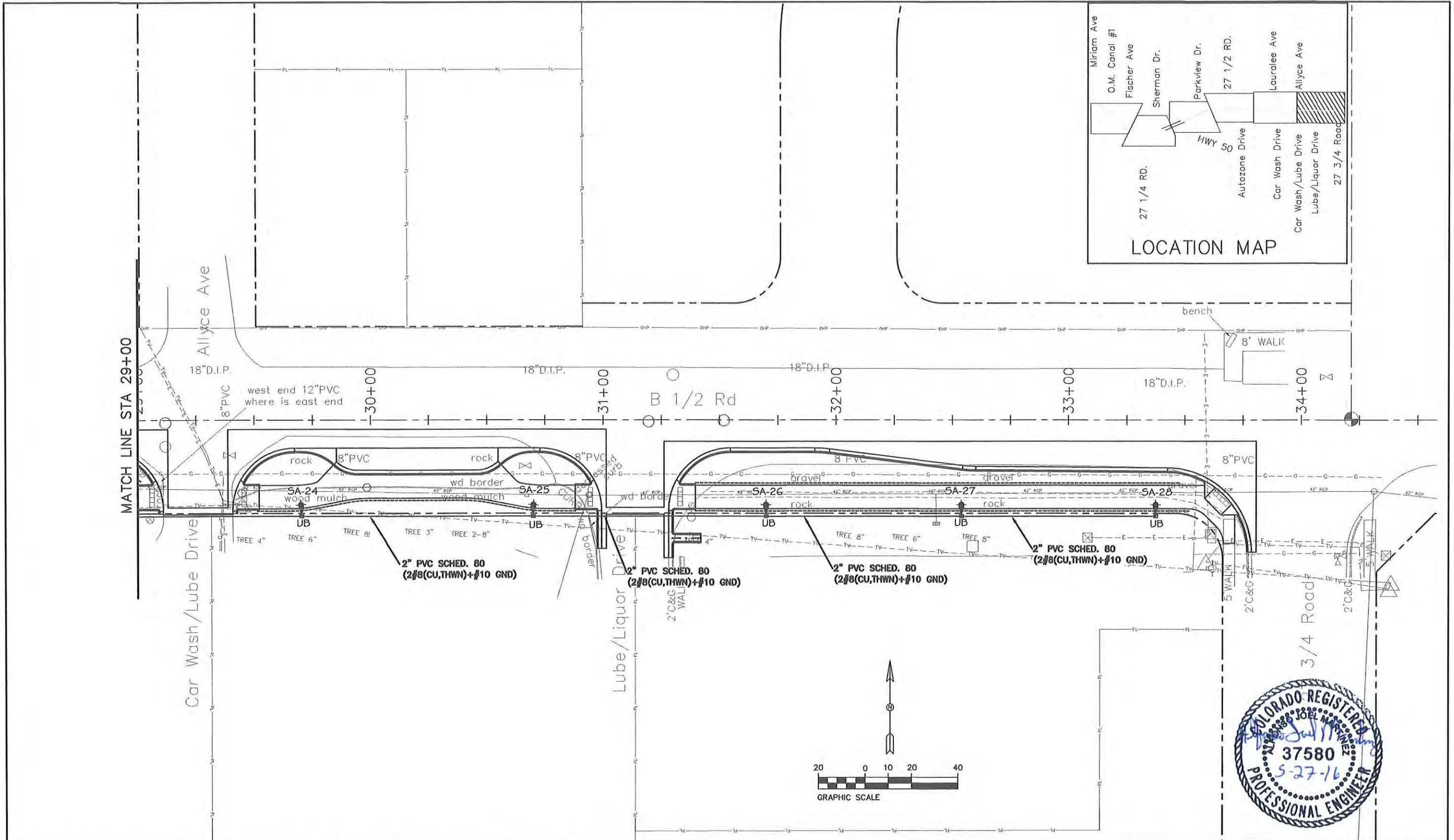
As Constructed
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SITE ELECTRICAL PLAN
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 Designer: AJM
 Detailer: AJM
 Structure Numbers
 Subset Sheets: LE6 of 13

Project No./Code
 TAP M555-032
 20736
 Sheet Number 87



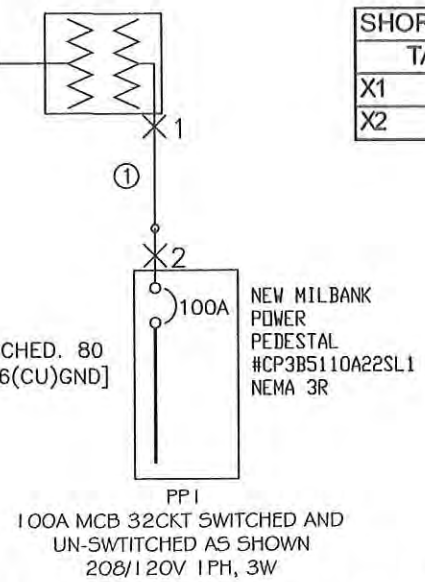
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File Name:	Date:	Comments:	Init.		No Revisions:	Sta. 24+00 TO 29+00		TAP M555-032
Horiz. Scale: AS SHOWN					Revised:	Designer: AJM	Structure Numbers	20736
Unit Information: City of GJ Unit Leader Initials: LC					Void:	Detailer: AJM	Subset Sheets: LE7 of 13	Sheet Number 88
ACM CONSULTING AND ENGINEERING PH: (970) 245-7292 EMAIL: JOELMARTINEZ@GMAIL.COM						LIGHTING		



Print Date: 4-20-2016	Sheet Revisions			CITY OF Grand Junction COLORADO	As Constructed	SITE ELECTRICAL PLAN		Project No./Code
File Name:	Date:	Comments:	Init.:		No Revisions:	Sta. 29+00 TO 34+00		TAP M555-032
Horiz. Scale: AS SHOWN					Revised:	Designer: AJM	Structure Numbers:	20736
Unit Information: City of GJ Unit Leader Initials: LC					Void:	Detailer: AJM	Lighting:	Sheet Number 89
ACM CONSULTING AND ENGINEERING PH: (970) 245-7292 EMAIL: JOELMRTINEZ@GMAIL.COM							Subset Sheets: LE8 of 13	

EXISTING PAD MOUNTED TRANSFORMER 300KVA 208/120 VOLT, 1PH

CABLE LEGEND
 ① 1 SET(S) [2" PVC SCHED. 80 (3#3(CU, THWN)+1#6(CU)GND)]



SHORT CIRCUIT SCHEDULE		
TAG	AIC	LENGTH (FT)
X1	42940	0
X2	4469	93.1

ONE-LINE DIAGRAM

GENERAL NOTES:

- IN AS MUCH AS DESIGN REQUIRES THAT CERTAIN ASSUMPTIONS BE MADE REGARDING EXISTING CONDITIONS, AND BECAUSE SOME OF THESE ASSUMPTIONS CANNOT BE VERIFIED. FIELD COORDINATION DURING CONSTRUCTION SERVICES IS IMPERATIVE. CONTRACTORS BIDDING THIS WORK MUST MAKE REASONABLE ALLOWANCES FOR UNFORESEEN CONTINGENCIES.
- THE SERVING ELECTRICAL ASSOCIATION SHALL ADVISE THE OWNER/ENGINEER PRIOR TO SERVICE MODIFICATION REQUIRING COST TO THE OWNER.
- REFERENCE CIVIL AND STRUCTURAL DRAWING PLANS FOR COORDINATION AND LOCATION OF ALL UNDER GROUND SYSTEMS.
- ALL WORK SHALL BE COORDINATED WITH OTHER TRADES AS REQUIRED: REFERENCE CIVIL STRUCTURAL DRAWINGS.
- ALL WIRING IS SHOWN DIAGRAMMATICALLY ON DRAWINGS, FIELD VERIFY ALL CONDITIONS PRIOR TO ROUGH-IN.
- ALL ELECTRICAL WORK SHALL COMPLY WITH THE LATEST EDITION OF NATIONAL ELECTRICAL CODE AND ALL APPLICABLE LOCAL CODES.
- ALL WIRE TO BE #10 UNLESS NOTED OTHERWISE.
- CONDUCTOR COUNT IS SHOWN FOR REFERENCE ONLY. CONTRACTOR SHALL ENSURE THAT ANY AND ALL DEVICES AND EQUIPMENT ARE CIRCUITED PROPERLY. CONTRACTOR SHALL ENSURE THAT NO EQUIPMENT OR DEVICES ARE COMBINED OTHER THAN WHAT IS DEPICTED.
- FIELD VERIFY ALL DIMENSIONS, DO NOT SCALE DRAWINGS.
- COORDINATE INSTALLATION OF METER AND ELECTRICAL REQUIREMENTS WITH XCEL ENERGY.
- NEW PEDESTAL PPI MUST MEET ALL XCEL ENERGY REQUIREMENTS I.E. COLD SEQUENCE PADLOCK SLIP LATCH ON METER COVER, HOLD OPEN BAR ON METER HOOD.

PANEL: BUS-PP1	DC DEVICE TYPE: Breaker	ENCLOSURE: NEMA 3R	MAINS(A): BKR	CONTINUOUS(A): 100
LOCATION: BUS-XFMR	DEVICE FAMILY: Bolt On	MOUNTING: Surface	WIRING: Single-Phase 3-Wire	BUS SC RATING(A): 12000
FED FROM: BUS-PP1		VOLTAGE: 208/120		FAULT CURRENT(A): 4469

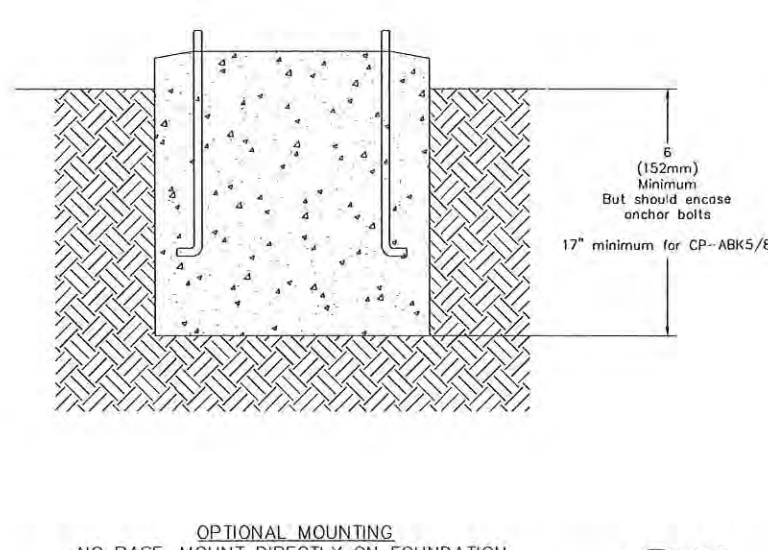
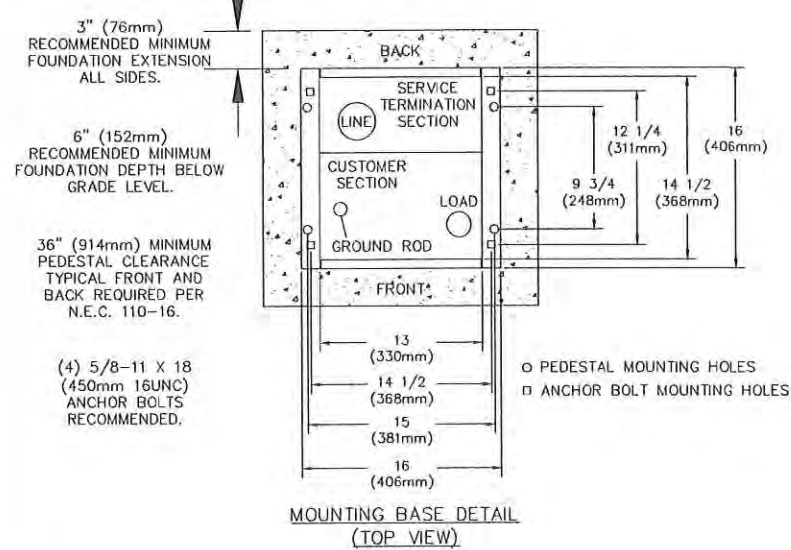
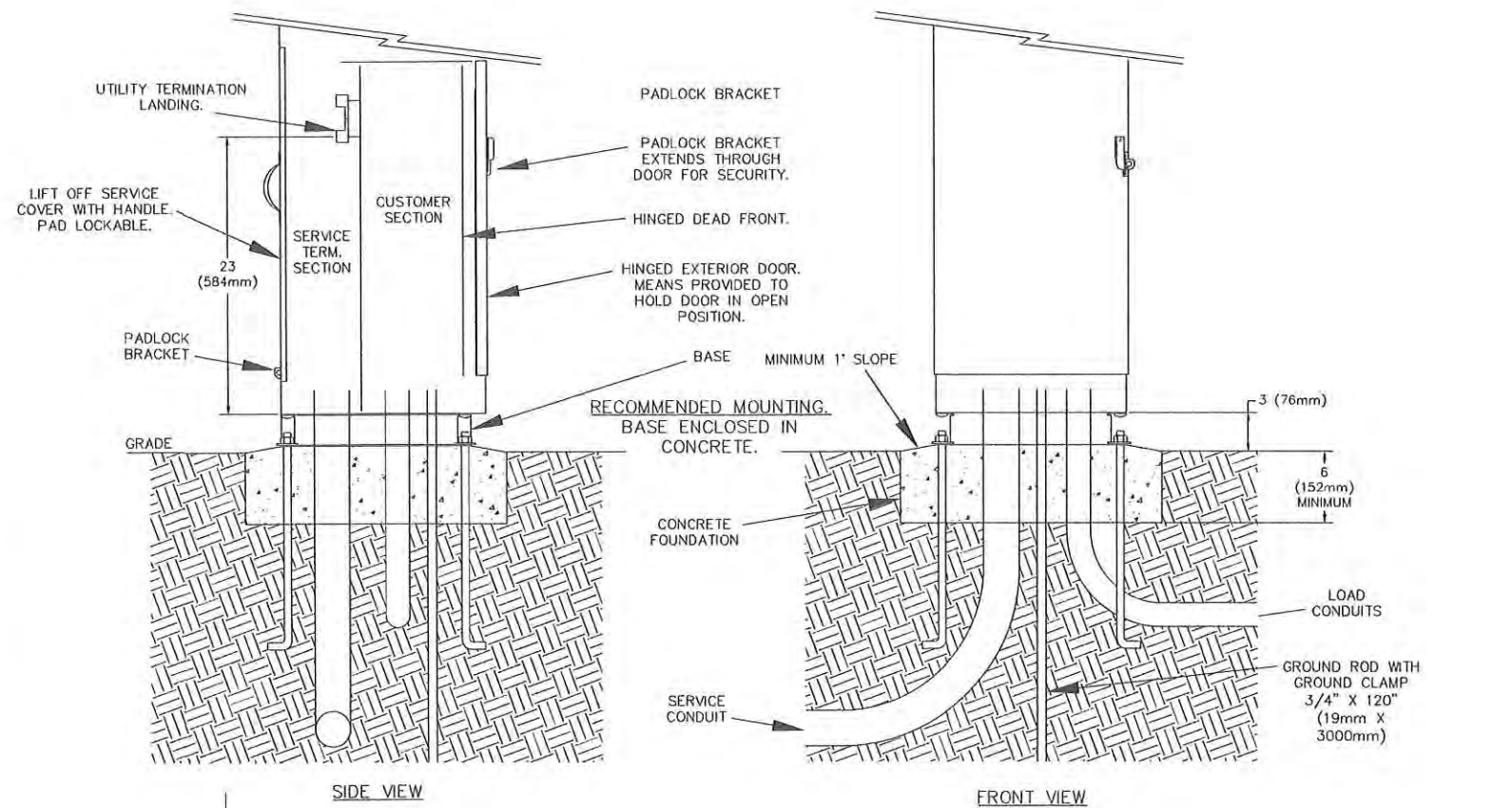
UN-SWITCHED CIRCUIT DIRECTORY														
DC AMPS P	NOTES	DESCRIPTION	DEMAND CODE	VA	CKT	PHASE A	LOADS B	VA C	CKT	VA	DEMAND CODE	DESCRIPTION	NOTES	DC AMPS P
100 2		MAIN	GENERAL	-	0	180	150		2	180	GENERAL	CONTROL POWER SWITCHED LC CONTROL		15 1
									4	300				60 2
									6					
									8					
									10					
									12					
									14					
									16					

SWITCHED CIRCUIT DIRECTORY														
DC AMPS P	NOTES	DESCRIPTION	DEMAND CODE	VA	CKT	PHASE A	LOADS B	VA C	CKT	VA	DEMAND CODE	DESCRIPTION	NOTES	DC AMPS P
20 2		CBL-SW	NONE	1188	17	924	924		18	660	NONE	CBL-NE		20 2
									20					
									22					
									24					
									26					
									28					
									30					
									32					

ALL CONNECTED	KVA	3P AVE AMPS	* PHASE TOTALS	VA	AMPS	BUS TOTALS	KVA
TOTAL CONNECTED	2.25	6.2	* A-N	1204.4	10.0	CONNECTED	2.25
TOTAL DEMAND	2.25	6.2	* B-N	1047.9	8.7	DEMAND	2.25

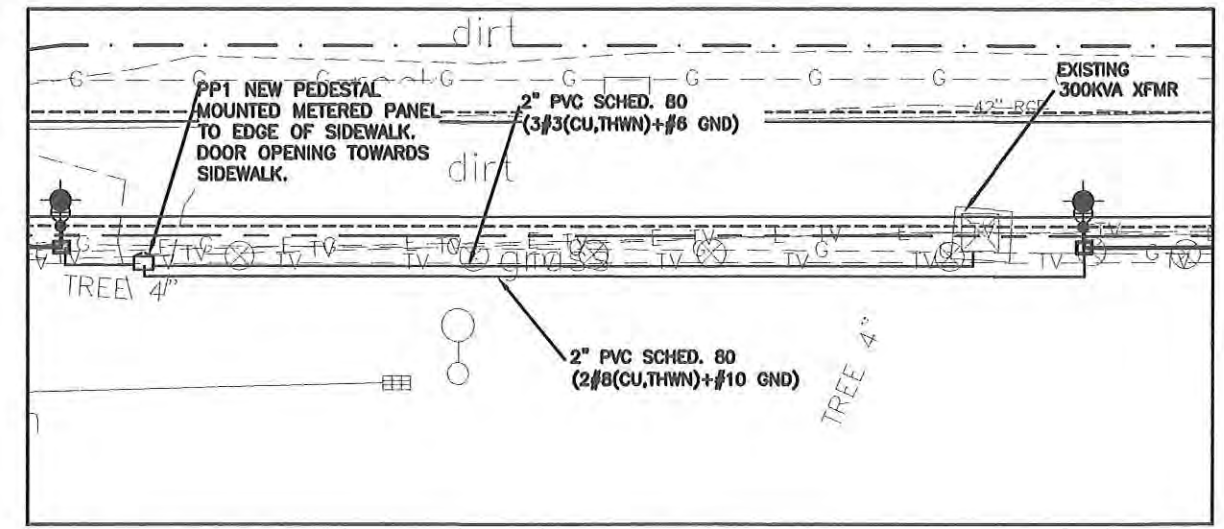
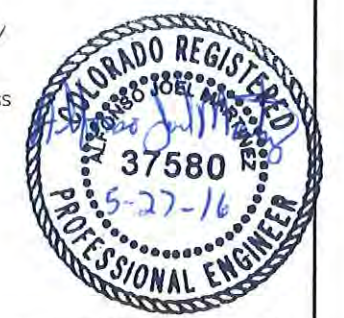


Print Date: 4-20-2016	Sheet Revisions				As Constructed	ELECTRICAL DETAILS, ONE-LINE		Project No./Code
File Name:	Date:	Comments	Init.		No Revisions:			TAP M555-032
Horiz. Scale: AS SHOWN	Vert. Scale: NA				Revised:	Designer: AJM	Structure Numbers:	20736
Unit Information: City of GJ Unit Leader Initials: LC					Void:	Detailer: AJM	Subset Sheets: LE9 of 13	Sheet Number 90
ACM CONSULTING AND ENGINEERING PH: (970) 245-7292 EMAIL: JOELMRTINEZ@GMAIL.COM						LIGHTING		



NOTES

- CONTROL CABINET SHALL BE U/L LISTED "INDUSTRIAL CONTROL PANEL" PER UL 508.
- CONSTRUCTION SHALL BE NEMA 3R, 12 GA. A60 STEEL POWDER COATED MINT GREEN WITH PHOTO ELECTRIC CELL IN SERVICE CABINET. ELECTRICAL CONTRACTOR TO PROVIDE PHOTOCELL.
- VOLTAGE RATINGS OF SERVICE EQUIPMENT SHALL CONFORM TO THE SERVICE VOLTAGES INDICATED ON THE PLANS.
- SERVICE EQUIPMENT ENCLOSURE AND METERING EQUIPMENT SHALL MEET THE REQUIREMENTS OF THE SERVING UTILITY. WHEN THE SERVING UTILITY PROVIDES BOTH METERED AND UN-METERED CIRCUITS, A SEPARATE BUS SHALL BE PROVIDED FOR EACH CIRCUIT. THE METER AREA SHALL HAVE A SEALING, LOCKABLE, RAIN TIGHT COVER THAT CAN BE REMOVED WITHOUT THE USE OF TOOLS.
- SERVICE EQUIPMENT SHALL BE FACTORY WIRED AND CONFORM TO NEMA STANDARDS.
- THE EXTERIOR DOOR SHALL HAVE PROVISIONS FOR PADLOCKING. THE PADLOCK HOLE SHALL BE A MINIMUM DIAMETER OF 11mm.
- ALL TERMINALS FOR INCOMING SERVICE CONDUCTORS SHALL BE COMPATIBLE WITH EITHER COPPER OR ALUMINUM CONDUCTORS SIZED TO SUIT THE CONDUCTORS SHOWN ON THE PLAN. TERMINAL LUGS SHALL BE COPPER OR TIN-PLATED ALUMINUM. SOLID NEUTRAL TERMINAL STRIP SHALL BE RATED 125A UNLESS OTHERWISE SPECIFIED AND FOR USE WITH COPPER OR ALUMINUM CONDUCTORS. THE TERMINAL SHOULD INCLUDE BUT NOT BE LIMITED TO:
 - INCOMING TERMINALS (LANDING LUGS)
 - NEUTRAL LUGS
 - SOLID NEUTRAL TERMINAL STRIP.
 - TERMINAL STRIPS FOR CONDUCTORS WITHIN THE ENCLOSURE.
- AT LEAST 4 STANDARD SINGLE POLE 208V AND 1 SINGLE POLE 120 CIRCUIT BREAKER SPACES (20mm NOMINAL) SHALL BE PROVIDED FOR BRANCH CIRCUITS. CIRCUIT BREAKER INTERIORS SHALL BE COPPER. INTERIORS SHALL ACCEPT PLUG-IN OR CABLE-IN/ CABLE-OUT CIRCUIT BREAKERS.
- PLUG-IN CIRCUIT BREAKERS MAY BE MOUNTED IN THE VERTICAL OR HORIZONTAL POSITION. CABLE-IN/ CABLE-OUT CIRCUIT BREAKERS SHALL BE MOUNTED IN THE VERTICAL POSITION.
- FASTENERS ON THE EXTERIOR OF THE ENCLOSURE SHALL BE VANDAL RESISTANT AND SHALL NOT BE REMOVABLE FROM THE EXTERIOR. ALL NUTS, BOLTS, SCREWS, WASHERS, AND HINGES SHALL BE STAINLESS STEEL.
- PHENOLIC NAME PLATES SHALL BE PROVIDED AS REQUIRED.
- A PLASTIC COVERED WRING DIAGRAM SHALL BE ATTACHED TO THE INSIDE OF THE FRONT DOOR.
- FOUNDATION SHALL EXTEND 50mm MINIMUM BEYOND EDGE OF ENCLOSURE.



B TYPICAL POWER PEDESTAL/LIGHTING CONTROL CENTER (SPECIAL) PLAN
1 NOT TO SCALE

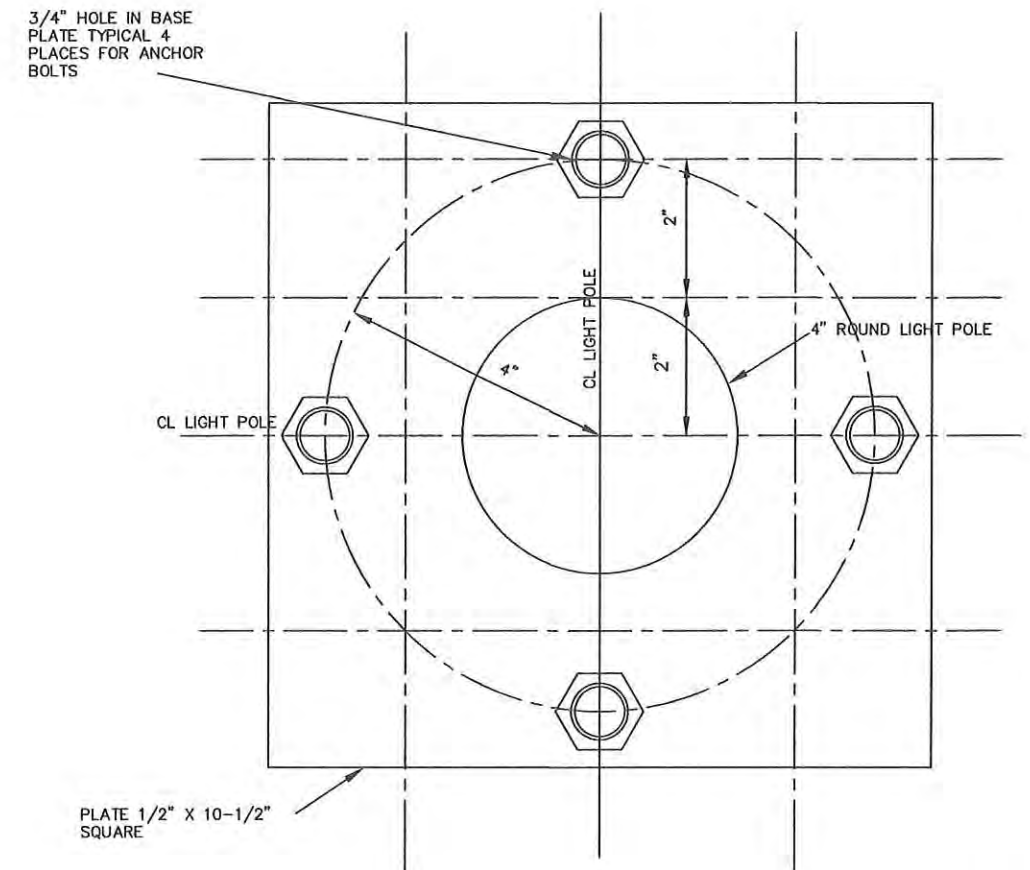
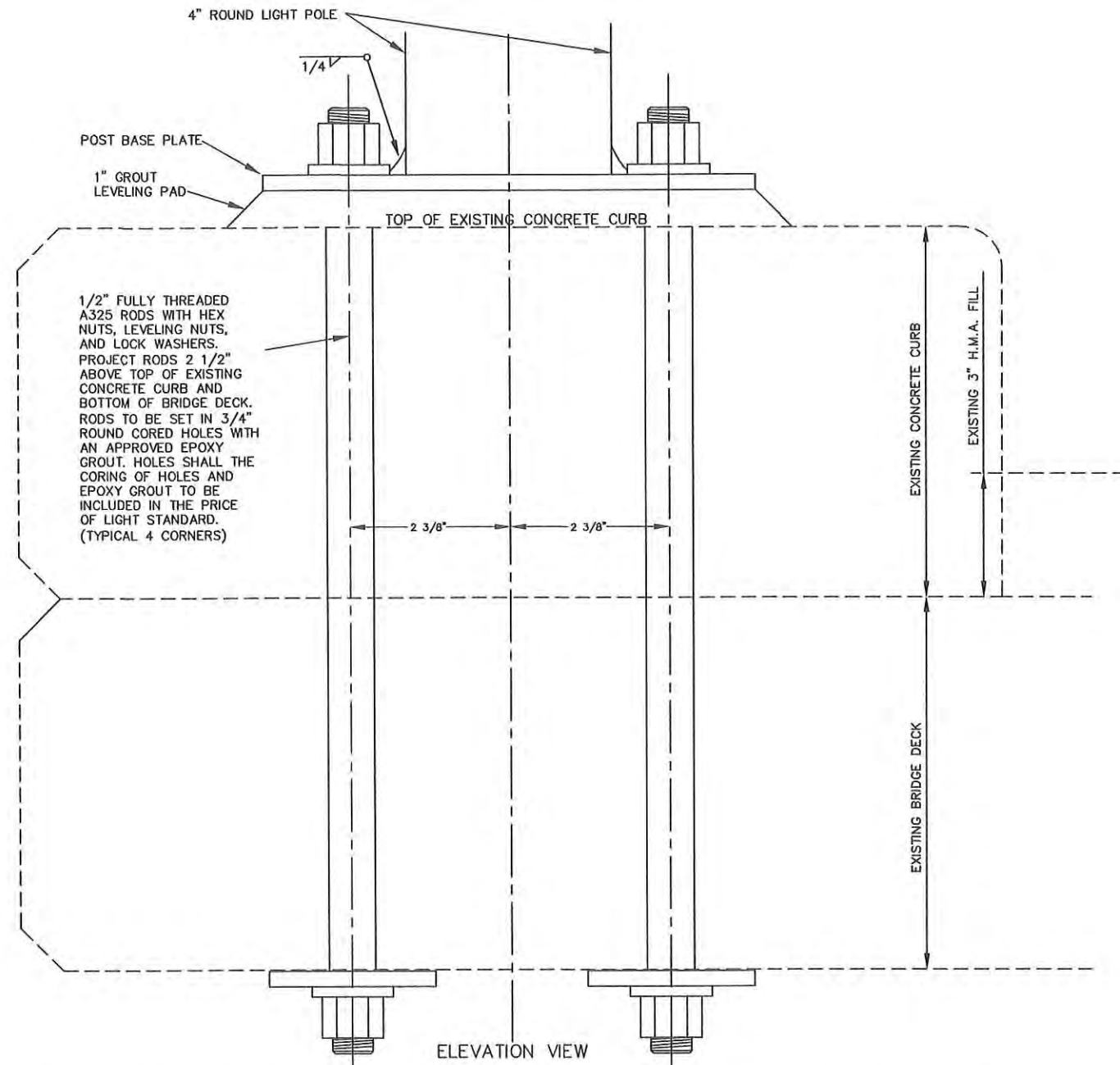
B TYPICAL LIGHTING CONTROL CENTER AND POWER PEDESTAL(SPECIAL) LOCATION PLAN
2 NOT TO SCALE



Print Date: 4-20-2016	Sheet Revisions				As Constructed	LIGHTING CONTROL CENTER DETAILS		Project No./Code
File Name:	Date:	Comments:	Init.:		No Revisions:			TAP M555-032
Horiz. Scale: AS SHOWN					Revised:	Designer: AJM	Structure Numbers:	20736
Unit Information: City of GJ Unit Leader Initials: LC					Void:	Detailer: AJM		Sheet Number 91
ACM CONSULTING AND ENGINEERING PH: (970) 245-7292 EMAIL: JOELMRTINEZ@GMAIL.COM						LIGHTING	Subset Sheets: LE10 of 13	

NOTES

1. COORDINATE INSTALLATION OF POLE AND LUMINAIRE WITH CDOT STRUCTURAL ENGINEER PRIOR TO BORING AND INSTALLATION OF LIGHT FOUNDATION AND 2" ELECTRICAL ACCESS.
2. OBTAIN AND MATCH TEMPLATE OF POLE MOUNTING PATTERN FROM POLE PROVIDER PRIOR TO CASTING LIGHT FOUNDATION FOR POLE LOCATED ON OVERPASS.
3. POLE ON OVERPASS TO HAVE A TOTAL HEIGHT SUCH THAT BOTTOM OF LUMINAIRE IS 12' ABOVE PATH SURFACE ON OVER PASS.

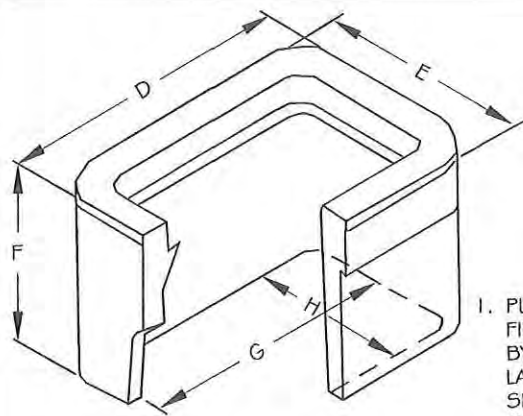


TYPICAL POLE BASE PLATE
2 NOT TO SCALE

TYPICAL LIGHT POLE CONNECTION TO EXISTING CONCRETE CURB & BRIDGE DECK
1 NOT TO SCALE

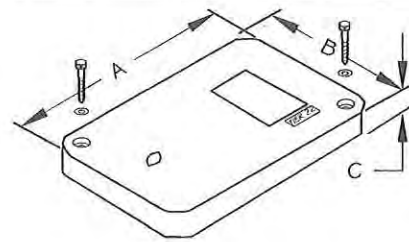


Print Date: 4-20-2016	Sheet Revisions			CITY OF Grand Junction COLORADO	As Constructed	LIGHT POLE BRIDGE CONNECTION DETAILS		Project No./Code
File Name:	Date:	Comments:	Init.:		No Revisions:	Designer: AJM	Structure Numbers:	TAP M555-032
Horiz. Scale: AS SHOWN	Vert. Scale: NA				Revised:	Detailer: AJM		20736
Unit Information: City of GJ Unit Leader Initials: LC					Void:	LIGHTING	Subset Sheets: LE11 of 13	Sheet Number 92
ACM CONSULTING AND ENGINEERING PH: (970) 245-7292 EMAIL: JOELMRTINEZ@GMAIL.COM								



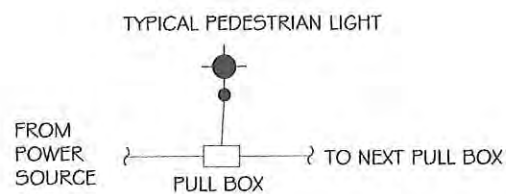
UTILITY BOX DIMENSIONS

A	18-1/8"
B	11-1/4"
C	1-1/4"
D	20-1/2"
E	13-3/8"
F	12"
G	15-3/4"
H	8-7/8"



- PULL BOXES, PULL BOX COVERS AND EXTENSIONS SHALL BE MADE OF FIBERGLASS REINFORCED POLYMER CONCRETE. PULL BOXES SHALL BE VERIFIED BY A 3RD PARTY NATIONALLY RECOGNIZED INDEPENDENT TESTING LABORATORY AS MEETING ALL TEST PROVISIONS OF THE LATEST ANSI/SCTE 77 SPECIFICATION FOR UNDERGROUND ENCLOSURE INTEGRITY, TIER 22 RATING. CERTIFICATION DOCUMENTS SHALL BE SUBMITTED WITH MATERIALS SUBMITTALS. THE PULL BOX SHALL HAVE A DETACHABLE COVER WITH A SKID RESISTANT SURFACE AND HAVE THE WORDS ELECTRICAL CAST INTO THE SURFACE. PAINTING THE WORDS SHALL NOT BE ACCEPTED. MARKINGS SHOWING THE TIER 22 RATING MUST BE LABELED OR STENCILED ON THE INSIDE AND OUTSIDE OF THE BOX AND THE ON THE UNDER SIDE OF THE COVER. THE COVER SHALL BE ATTACHED TO THE PULL BOX BODY BY MEANS OF A MINIMUM 3/8 - 7 UNIFIED NATIONAL COURSE (UNC) STAINLESS STEEL PENTA HEAD BOLTS AND SHALL HAVE TWO LIFT SLOTS TO AID IN THE REMOVAL OF THE LID.
- PULL SLOTS SHALL BE RATED FOR A MINIMUM PULL OUT OF 3,000 POUNDS. MAGNESIUM CHLORIDE TESTS SHOULD BE PERFORMED IN ACCORDANCE WITH THE LATEST ANSI/SCTE 77 SPECIFICATION FOR UNDERGROUND ENCLOSURE INTEGRITY, TIER 22 RATING.

**C
1** UTILITY BOX DETAIL

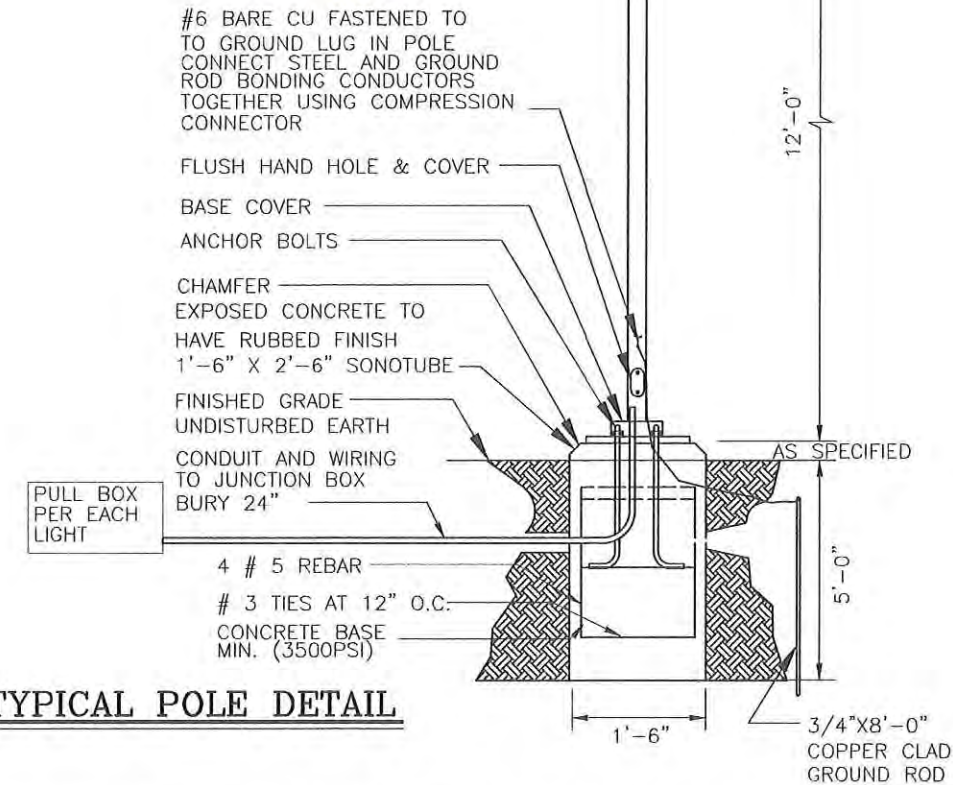


- EACH LIGHT LOCATION TO HAVE PULL BOX

**C
2** UTILITY BOX CONNECTION DETAIL



Know what's below.
Call before you dig.



**C
3** TYPICAL POLE DETAIL

POLE DETAIL NOTES:

- ORDER STEINBERG URBAN LINE 4" ROUND STRAIGHT STEEL POLES, #450P4 1/4/BK. OBTAIN POLE MOUNTING TEMPLATE PATTERN FROM MANUFACTURER PRIOR TO ROUGH-IN.
- PROVIDE EACH PEDESTRIAN LIGHT INSTALLED IN THIS CONTRACT WITH J-BOX.
- MOUNT ALL LIGHTS PERPENDICULAR TO PATHWAY TO MAXIMIZE LIGHT ON PATHWAY.

LUMINAIRE SCHEDULE PEDESTRIAN					
TYPE	MANUFACTURER MODEL NUMBER	APPROVAL	VOLTAGE MOUNTING # OF LAMPS	BALLAST LAMPE TYPE LAMP CAT. #	DESCRIPTION
SA	STERNBERG LIGHTING 1A-1527LED-R-SV1-4ARC35T2- MDL03-EZ/OAPT450P414/BK	OWNER REQUESTED	208 POLE 1	ELECTRONIC LED 66 W	PEDESTRIAN LUMINAIRE, ARM MOUNTED, LED, CUTOFF. ORDER POLE SO THAT LAMP HEIGHT IS 12' AFG MEASURED AT BOTTOM OF LUMINAIRE. ORDER WITH OAPT ARM. POLE AND ARM COLOR TO MATCH. ORDER WITH 4" ROUND STRAIGHT ALUMINUM POLES.

Print Date: 4-20-2016
File Name:
Horiz. Scale: AS SHOWN Vert. Scale: NA
Unit Information: City of GJ Unit Leader Initials: LC
ACM CONSULTING AND ENGINEERING PH: (970) 245-7292 EMAIL: JOELMRTINEZ@GMAIL.COM

Sheet Revisions		
Date:	Comments	Init.



As Constructed
No Revisions:
Revised:
Void:

LIGHTING DETAILS, SCHEDULES		
Designer: AJM	Structure Numbers	
Detailer: AJM		
LIGHTING	Subset Sheets: LE12 of 13	

Project No./Code
TAP M555-032
20736
Sheet Number 93

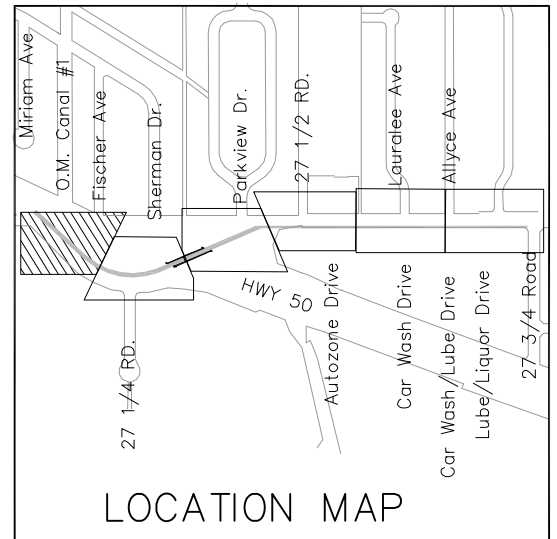
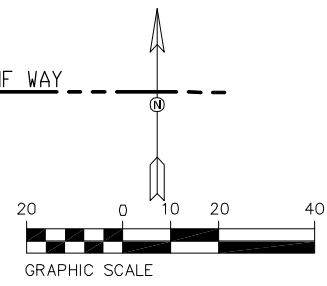
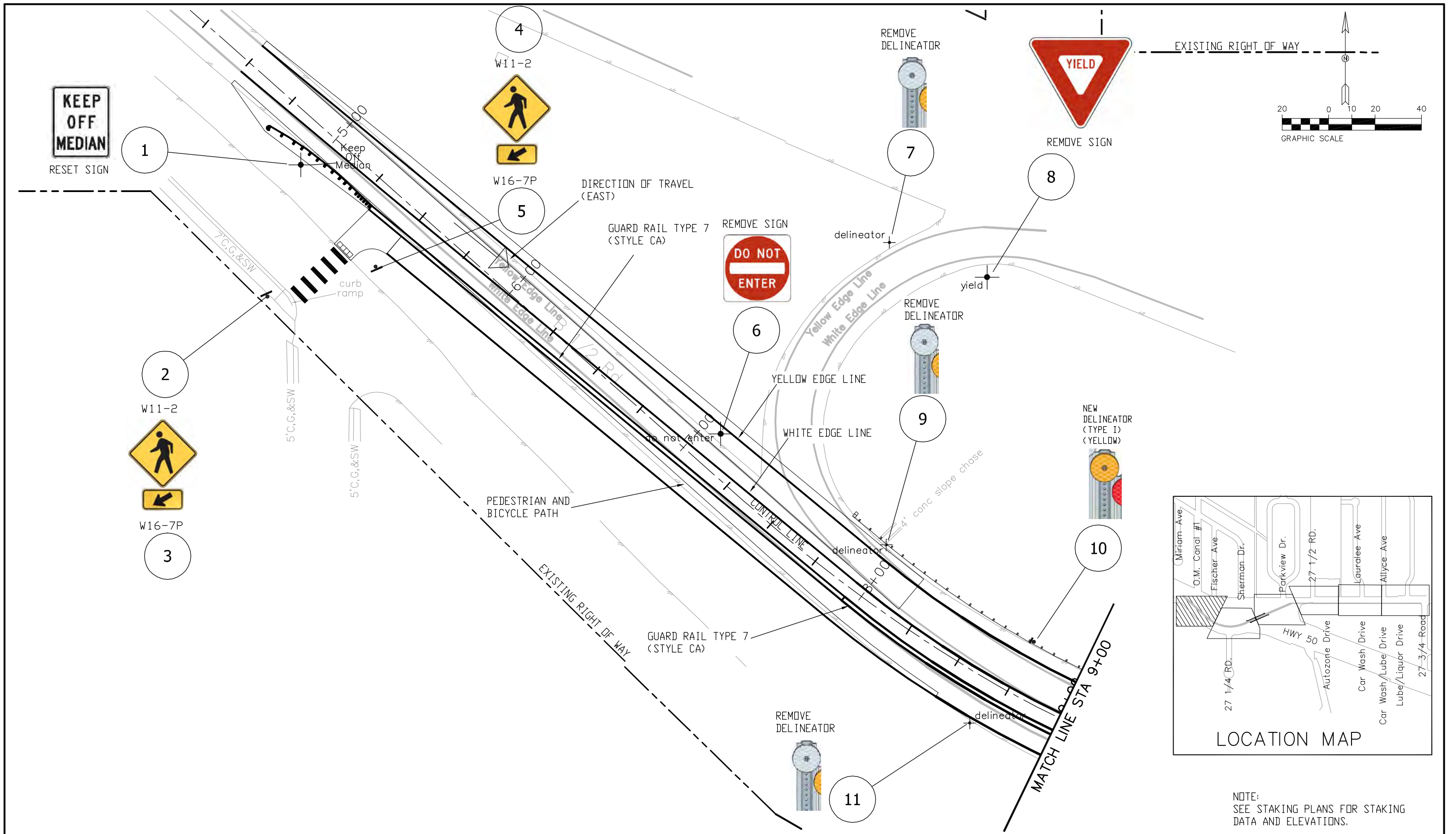
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TABULATION OF FINAL SIGNING

SIGN NO.	STATION	SIDE	SIGN CODE	DIMENSIONS	LEGEND	(202-00090) REMOVAL OF DELINEATOR		(202-00810) REMOVAL OF GROUND SIGN		(202-00821) REMOVAL OF SIGN PANEL		(210-00810) RESET GROUND SIGN		(210-00815) RESET SIGN PANEL		(612-00001) DELINEATOR (TYPE 1)		(614-00011) SIGN PANEL (CLASS I)		(614-00012) SIGN PANEL (CLASS II)		(614-01503) STEEL SIGN SUPPORT (2" ROUND) (POST & SOCKET)		(614-01573) STEEL SIGN SUPPORT (2 1/2" ROUND NP-40) (POST & SLIPBASE)		(614-80314) Barricade (Type 3 F-D)		NOTES		
						EACH		EACH		EACH		EACH		EACH		SF		SF		EACH		EACH		EACH						
						Plan	As Const	Plan	As Const	Plan	As Const	Plan	As Const	Plan	As Const	Plan	As Const	Plan	As Const	Plan	As Const	Plan	As Const	Plan	As Const	Plan	As Const		Plan	As Const
B 1/2 ROAD																														
1	4+25	RT	R11-1	24 X 30	KEEP OF MEDIAN							1																	RESET SIGN TO STA 4+25 RT	
2	5+25	RT	W11-2	36 X 36	PEDESTRIAN																								SOUTH SIDE OF B 1/2 AT WEST END OF PROJECT FOR 27 3/4 RD CROSSING	
3	5+25	RT	W16-7P	15 X 24	DOWNWARD DIAGONAL ARROW SIGN														2.50										SOUTH SIDE OF B 1/2 AT WEST END OF PROJECT FOR 27 3/4 RD CROSSING	
4	5+50	LT	W11-2	36 X 36	PEDESTRIAN																								NORTH SIDE OF B 1/2 AT WEST END OF PROJECT FOR 27 3/4 RD CROSSING	
5	5+50	LT	W16-7P	15 X 24	DOWNWARD DIAGONAL ARROW SIGN														2.50										NORTH SIDE OF B 1/2 AT WEST END OF PROJECT FOR 27 3/4 RD CROSSING	
6	7+08	LT	R5-1	30 X 30	DO NOT ENTER			1																					AT SOUTHBOUND ON RAMP THAT IS BEING REMOVED	
7	7+08	LT	DELINEATOR	NA	RETROREFLECTIVE WHITE DELINEATOR	1																							AT SOUTHBOUND ON RAMP AND HWY 50	
8	7+52	LT	R1-2	36 X 36 X 36	YIELD SIGN			1																					AT SOUTHBOUND ON RAMP THAT IS BEING REMOVED	
9	7+95	LT	DELINEATOR	NA	RETROREFLECTIVE WHITE DELINEATOR	1																							AT SOUTHBOUND ON RAMP THAT IS BEING REMOVED	
10	8+75	LT	DELINEATOR	TYPE 1	DELINEATOR (TYPE 1) (YELLOW)											1													NEW DELINEATOR INSTALLATION LT SIDE FOR EASTBOUND	
11	8+75	RT	DELINEATOR	NA	RETROREFLECTIVE WHITE DELINEATOR	1																							OLD DELINEATOR FOR WESTBOUND	
12	9+50	RT	R2-1	24 X 30	SPEED LIMIT (30 MPH)							1																	RESET SPEED LIMIT SIGN TO CONC. BARRIER (SURFACE MOUNT)	
13	10+44	LT	DELINEATOR	NA	RETROREFLECTIVE YELLOW DELINEATOR	1																							OLD DELINEATOR FOR WESTBOUND	
14	11+72	RT	DELINEATOR	NA	RETROREFLECTIVE WHITE DELINEATOR	1																							OLD DELINEATOR FOR EASTBOUND	
15	12+88	RT	DELINEATOR	NA	RETROREFLECTIVE WHITE DELINEATOR	1																							OLD DELINEATOR FOR EASTBOUND	
16	13+27	RT	DELINEATOR	NA	RETROREFLECTIVE WHITE DELINEATOR	1																							OLD DELINEATOR FOR EASTBOUND	
17	12+74	LT	W1-11	30 X 30	HAIRPIN CURVE			1																					SIGN FOR PREVIOUS WEST TO SOUTH BOUND TRAFFIC	
18	12+74	LT	W13-1P	18 X 18	ADVISORY SPEED (PLAQUE)			1																					SIGN FOR PREVIOUS WEST TO SOUTH BOUND TRAFFIC	
19	16+63	LT	M1-4	24 X 24	US ROUTE SIGN (1 OR 2 DIGITS)			1																					SIGN FOR PREVIOUS WEST TO SOUTH BOUND TRAFFIC	
20	16+63	LT	M3-2	24 X 12	CARDINAL DIRECTION			1																					SIGN FOR PREVIOUS WEST TO SOUTH BOUND TRAFFIC	
21	17+93	LT	R5-1	30 X 30	DO NOT ENTER														6.25										SIGN TO KEEP DRIVERS FROM TURNING AND TRAVELING W. BOUND ON B 1/2 AT 27 1/2	
22	18+45	LT	DELINEATOR	NA	RETROREFLECTIVE YELLOW DELINEATOR	1																							NORTH SIDE OF ROAD AT 27 1/2 ROAD INTERSECTION	
23	18+62	LT	R3-2	24 X 24	MOVEMENT PROHIBITION (NO LEFT TURN)														4.00				1						POST NO LEFT TURN FROM EASTBOUND B 1/2 AT 27 1/2	
24	18+45	LT	R1-1	30 X 30	STOP SIGN			1																					REMOVE EXISTING SIGN AT INTERSECTION	
25	18+81	LT	R1-1	30 X 30	STOP SIGN														6.25				1						NEW SIGN AT INTERSECTION	
26	18+32	RT	DELINEATOR	NA	RETROREFLECTIVE WHITE DELINEATOR	1																							IN TRAFFIC ISLAND AT 27 1/2	
27	18+24	RT	R1-2	36 X 36 X 36	YIELD SIGN			1																					REMOVED AT 27 1/2 DUE TO ROAD CLOSURE	
28	18+82	RT	R1-2	36 X 36 X 36	YIELD SIGN			1																					REMOVED AT 27 1/2 DUE TO ROAD CLOSURE	
29	18+84	RT	R1-1	36 X 36	STOP SIGN			1																					REMOVED AT 27 1/2 DUE TO ROAD CLOSURE	
30	18+22, 220'	RT	T3BARR	5'H X 40'W	Barricade (Type 3 F-D)																								Barricade (Type 3 F-D)	
31	18+22, 220'	RT	W1-7	48 X 24	LARGE ARROW (TWO DIRECTIONS)																								ON Barricade (Type 3 F-D)	
32	18+22, 220'	RT	R11-2	48 X 30	ROAD CLOSED																								ON Barricade (Type 3 F-D)	
33	19+75	RT	W2-2	30 X 30	INTERSECTION WARNING SIGN							1																	RESET SIGN AS A RESULT OF SWALE BEING FILLED IN	
34	20+24	LT	M6-1	21 X 15	DIRECTIONAL ARROW																								REMOVE PANEL FROM BACKING ZEES	
35	20+24	LT	M1-4	24 X 24	US ROUTE SIGN (1 OR 2 DIGITS) (50)							1																	REMOVE PANEL FROM BACKING ZEES	
36	20+24	LT	M3-2	24 X 12	CARDINAL DIRECTION (EAST)							1																	REMOVE PANEL FROM BACKING ZEES	
37	20+24	LT	M6-3	21 X 15	DIRECTIONAL ARROW											1													TRIM BACKING ZEES AND REPOSITION CENTER ON SAME POST	
38	20+24	LT	M1-4	24 X 24	US ROUTE SIGN (1 OR 2 DIGITS) (50)											1													TRIM BACKING ZEES AND REPOSITION CENTER ON SAME POST	
39	20+24	LT	M3-4	24 X 12	CARDINAL DIRECTION (WEST)											1													TRIM BACKING ZEES AND REPOSITION CENTER ON SAME POST	
40	22+89	RT	R1-1	30 X 30	STOP SIGN																								RESET STOP SIGN OUT OF ROADWAY AUTOZONE DR. INTERSECTION	
41	23+13	RT	R2-1	24 X 30	SPEED LIMIT (30 MPH)																								RESET SIGN OUT OF ROADWAY IN FRONT OF THE SHOPS AT ORCHARD MESA CENTER	
42	26+95	RT	R1-1	30 X 30	STOP SIGN																								RESET STOP SIGN OUT OF CURB RAMP CAR WASH DR. INTERSECTION	
43	29+45	RT	R1-1	30 X 30	STOP SIGN																								RESET STOP SIGN OUT OF CURB RAMP CAR WASH/LUBE DR. INTERSECTION	
44	30+74	RT	DELINEATOR	NA	RETROREFLECTIVE YELLOW DELINEATOR	1																							REMOVE DELINEATOR AT LUBELIQUOR DRIVE INTERSECTION	
45	30+78	RT	DELINEATOR	NA	RETROREFLECTIVE YELLOW DELINEATOR	1																							REMOVE DELINEATOR AT LUBELIQUOR DRIVE INTERSECTION	
46	30+83	RT	DELINEATOR	NA	RETROREFLECTIVE YELLOW DELINEATOR	1																							REMOVE DELINEATOR AT LUBELIQUOR DRIVE INTERSECTION	
47	30+88	RT	DELINEATOR	NA	RETROREFLECTIVE YELLOW DELINEATOR	1																							REMOVE DELINEATOR AT LUBELIQUOR DRIVE INTERSECTION	
48	31+37	RT	DELINEATOR	NA	RETROREFLECTIVE YELLOW DELINEATOR	1																							REMOVE DELINEATOR AT LUBELIQUOR DRIVE INTERSECTION	
49	31+40	RT	DELINEATOR	NA	RETROREFLECTIVE YELLOW DELINEATOR	1																							REMOVE DELINEATOR AT LUBELIQUOR DRIVE INTERSECTION	
50	31+45	RT	DELINEATOR	NA	RETROREFLECTIVE YELLOW DELINEATOR	1																							REMOVE DELINEATOR AT LUBELIQUOR DRIVE INTERSECTION	
51	29+70	RT	R7-107A	12 X 30	NO PARKING (WITH TRANSIT LOGO) (GV)																								RESET SIGN FROM STATION 32+00 RIGHT	
52	33+48	RT	W11-2	36 X 36	PEDESTRIAN																									SOUTH SIDE OF B 1/2 AT EAST END OF PROJECT FOR 27 3/4 RD CROSSING
53	33+48	RT	W16-7P	15 X 24	DOWNWARD DIAGONAL ARROW SIGN															2.50										SOUTH SIDE OF B 1/2 AT EAST END OF PROJECT FOR 27 3/4 RD CROSSING
54	33+75	LT	W11-2	36 X 36	PEDESTRIAN																									NORTH SIDE OF B 1/2 AT EAST END OF PROJECT FOR 27 3/4 RD CROSSING
55	33+75	LT	W16-7P	15 X 24	DOWNWARD DIAGONAL ARROW SIGN															2.50										NORTH SIDE OF B 1/2 AT EAST END OF PROJECT FOR 27 3/4 RD CROSSING
PROJECT TOTAL						16		10		3		8		3		1		26.5		54		2		6		1				

NOTE: REMOVAL OF GROUND SIGN INCLUDES PLACING SIGNS ON TEMPORARY SUPPORTS DURING THE WORK

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NOTE:
SEE STAKING PLANS FOR STAKING
DATA AND ELEVATIONS.

Print Date: © LEFT
File Name: © LEFT
Horiz. Scale: AS SHOWN Vert. Scale: NA
Unit Information: City of GJ Unit Leader Initials: JJV

Sheet Revisions		
Date:	Comments	Init.

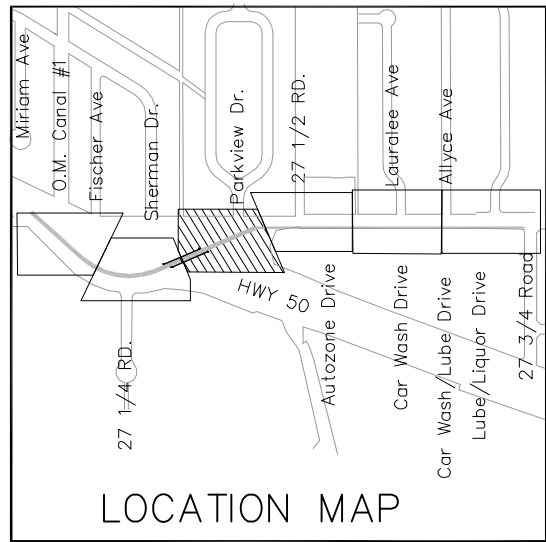


As Constructed
No Revisions:
Revised:
Void:

B 1/2 ROAD Signing Plan Sta. 4+50 TO 9+00	
Designer: John Smith	Structure Numbers
Detailer: John Smith	
Sheet Subset: Sign	Subset Sheets: 1 of 6

Project No./Code
TAP M555-032
20736
Sheet Number 96

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LOCATION MAP

YELLOW EDGE LINE
 WHITE EDGE LINE
 GUARD RAIL TYPE 7 (STYLE CA)
 CONTROL LINE

8' HIGH PEDESTRIAN SCREENING

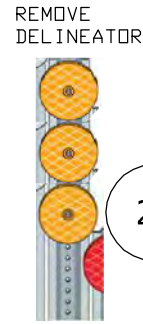
DIRECTION OF TRAVEL (EAST)



REMOVE SIGN



R5-1



REMOVE DELINEATOR



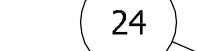
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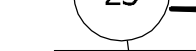
R3-2



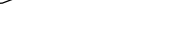
R1-1



REMOVE SIGN



R3-2



R1-1



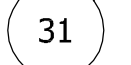
REMOVE SIGN



REMOVE SIGN



REMOVE DELINEATOR



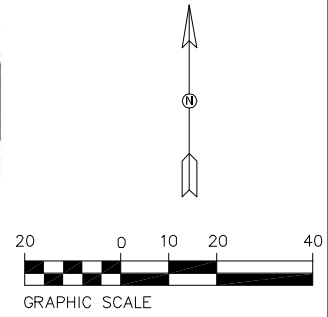
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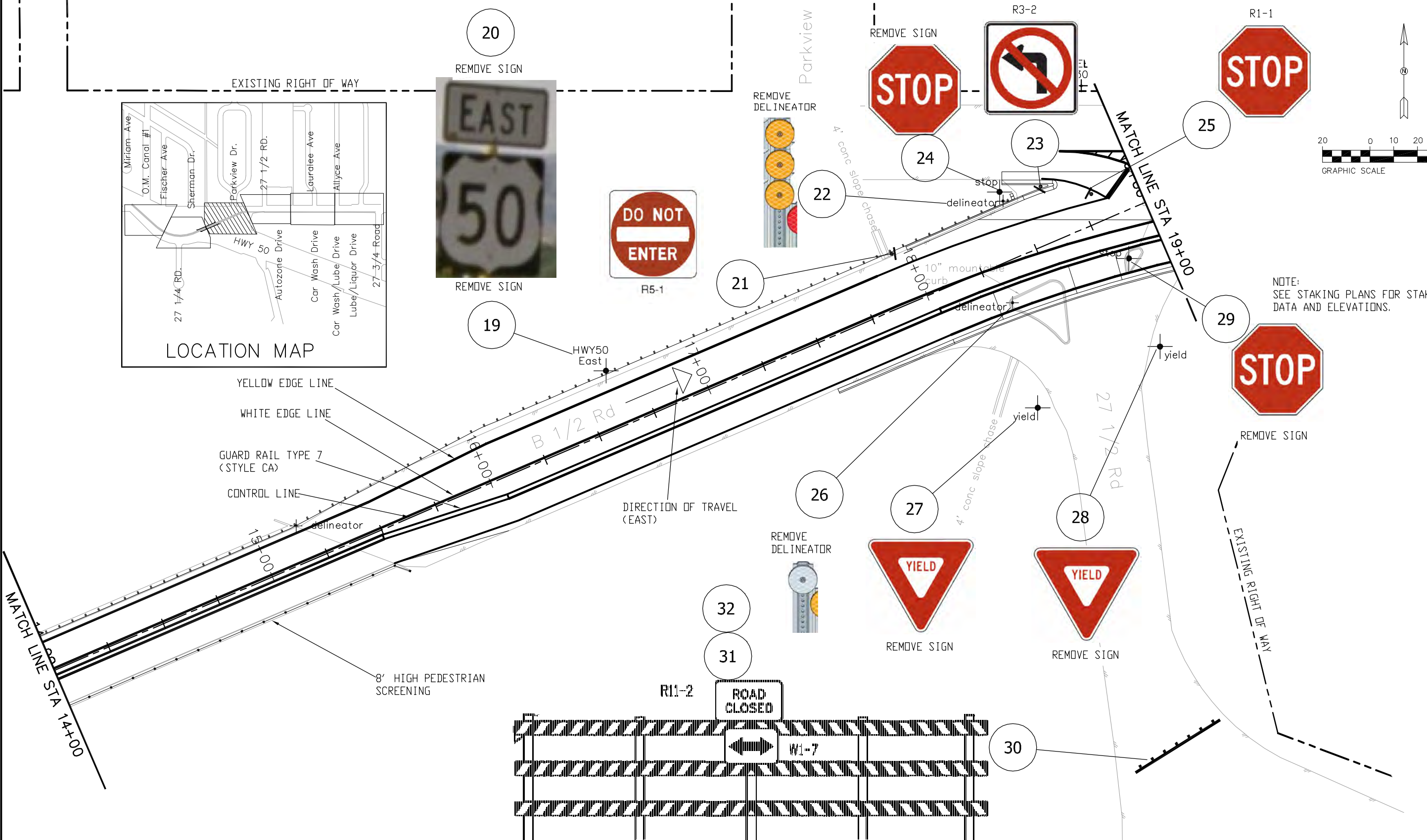
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REMOVE SIGN

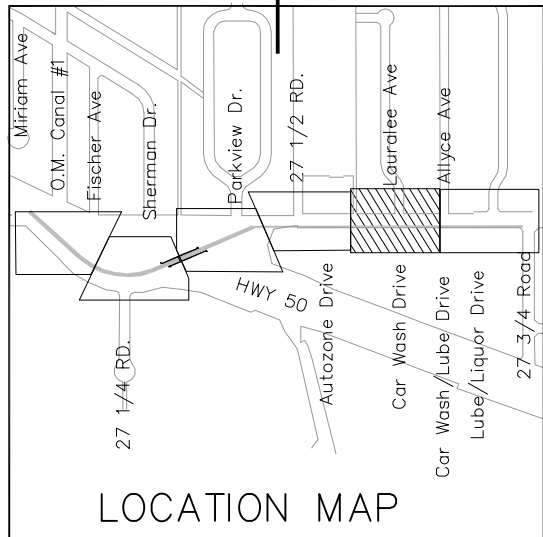
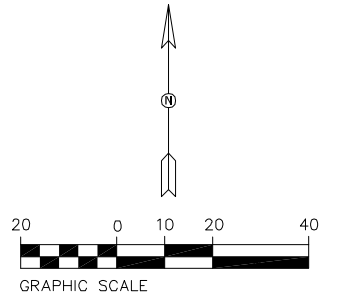
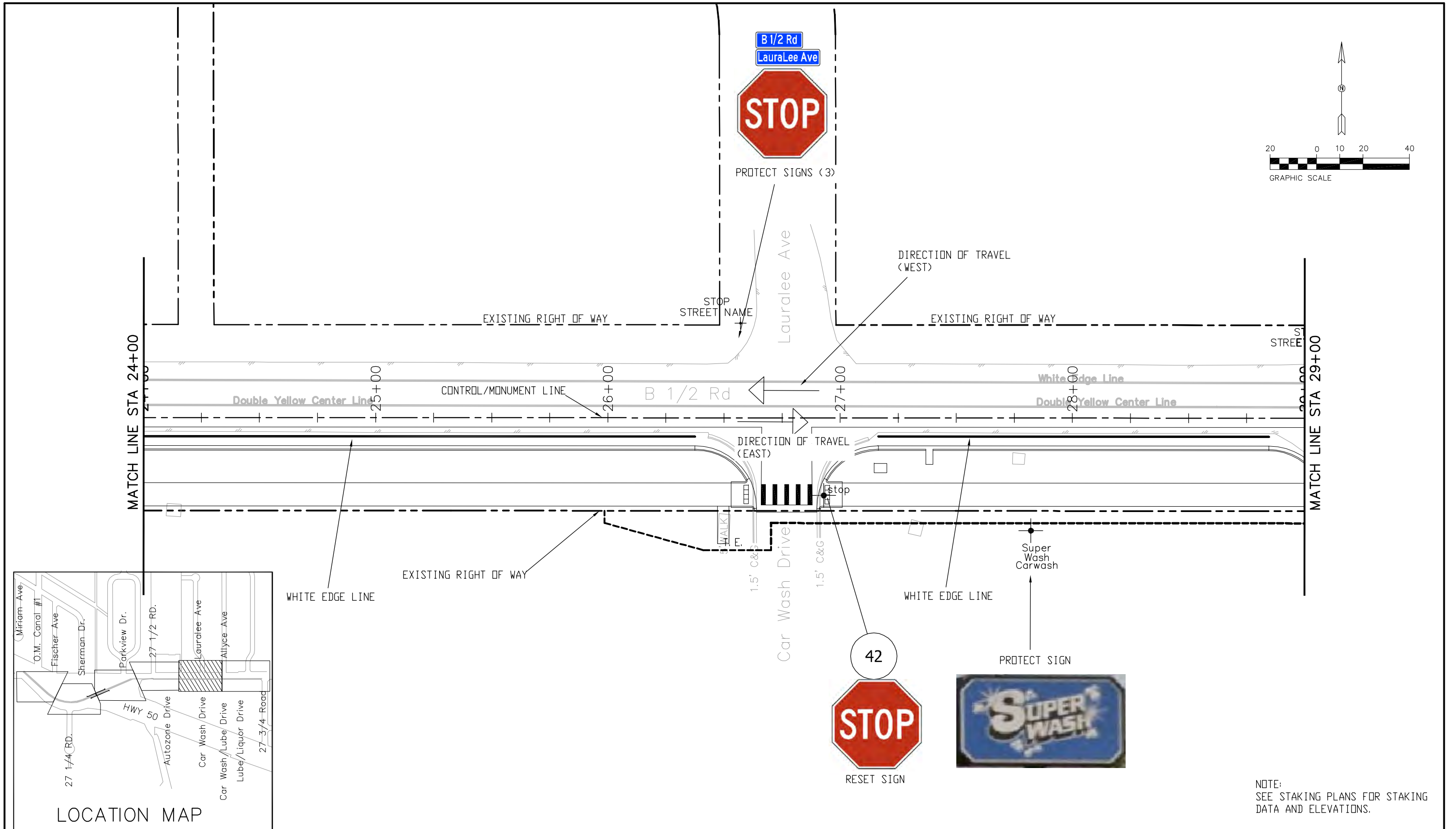


NOTE: SEE STAKING PLANS FOR STAKING DATA AND ELEVATIONS.



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File Name: © LEFT	Date:	Comments	Init.		No Revisions:	Sta. 14+00 TO 19+00		TAP M555-032
Horiz. Scale: AS SHOWN	Vert. Scale: NA				Revised:	Designer: John Smith	Structure Numbers	20736
Unit Information: City of GJ Unit Leader Initials: JJV					Void:	Detailer: John Smith	Subset Sheets:	3 of 6
						Sheet Subset: Sign		Sheet Number 98

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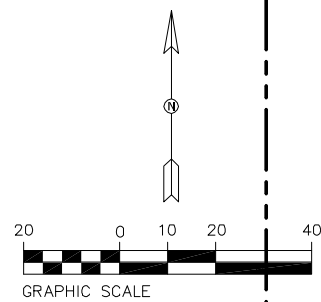


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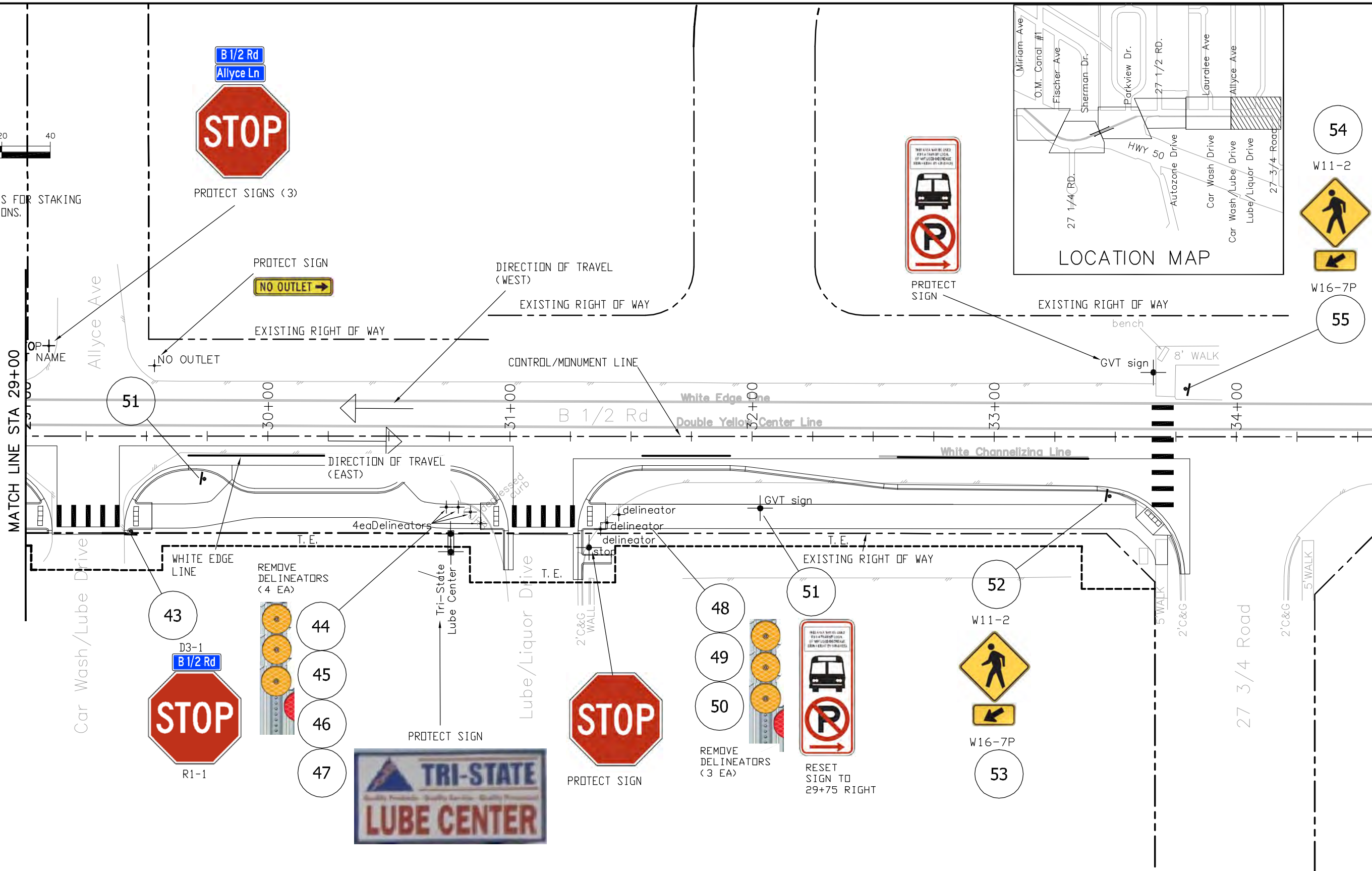
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Designer: John Smith	Structure Numbers
Detailer: John Smith	
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Project No./Code
TAP M555-032
20736
Sheet Number 100

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Unit Information: City of GJ Unit Leader Initials: JJV

Sheet Revisions		
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B 1/2 ROAD Signing Plan Sta. 29+00 TO 34+00	
Designer: John Smith	Structure Numbers
Detailer: John Smith	
Sheet Subset: Sign	Subset Sheets: 6 of 6

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TAP M555-032
20736
Sheet Number 101

TABULATION OF PAVEMENT MARKINGS

LOCATION	(627-00005) EPOXY PAVEMENT MARKING			(627-30410) PREFORMED THERMOPLASTIC PAVEMENT MARKING (XWALK- STOP LINE)		COMMENTS	
	ASPHALT ONLY (TWO COATS @ 90 SF/GAL.) (APPLY ONE DAY APART)						
	YELLOW SOLID	WHITE SOLID	WHITE SOLID				
	4 INCH LF	4 INCH LF	8 INCH LF	LF	SF		
B 1/2 ROAD							
4+50, 9.15' LT TO 18+86, 8' LT	1418					NORTH EDGE LINE WEST END TO 27 1/2	
4+50, 5.20' RT TO 22+31.07, 8' RT		1780				SOUTH EDGE LINE WEST END TO AUTOZON DR. INTERSECTION	
5+32, 61' RT TO 5+32, 35' RT				45	90	X-WALK WEST END PROJECT	
8+50, 18' RT TO 13+23, 15' RT		490				WHITE EDGE LINE OF PATH FROM WEST END TO STRUCT H-02-T	
15+50, 15' RT TO 19+12, 29' RT		365				WHITE EDGE LINE OF PATH FROM STRUCT H-02-T TO 27 1/2 RD	
18+75, 34' LT TO 20+46, 5' LT	525					FOR THE TRAFFIC ISLAND AT 27.5 ROAD INTERSECTION	
18+86, 8' LT TO 18+99, 16' LT				16	32	STOP LINE FOR E BOUND B 1/2 RD TRAFFIC AT 27 1/2	
22+60, 33' RT TO 22+82, 33' RT				45	90	X-WALK AUTOZONE DRIVE INTERSECTION	
23+10, 8' RT TO 26+37, 8' RT		328				WHITE EDGE LINE FROM AUTOZONE DR TO CAR WASH DR	
26+66, 33' RT TO 26+88, 33' RT				45	90	X-WALK CAR WASH DRIVE INTERSECTION	
27+16, 8' RT TO 28+84, 8' RT		170				WHITE EDGE LINE FROM CAR WASH DR TO CAR WASH/LUBE DR	
29+13, 33' RT TO 29+39, 33' RT				45	90	X-WALK CAR WASH/LUBE DRIVE INTERSECTION	
29+67, 8' RT TO 30+72, 8' RT		106				WHITE EDGE LINE FROM CAR WASH/LUBE DR TO LUBE/LIQUOR DR	
31+00, 33, RT TO 31+26, 33, RT				45	90	X-WALK LUBE/LIQUOR DRIVE INTERSECTION	
31+54, 8' RT TO 31+90, 8' RT		37				WHITE EDGE LINE FROM LUBE/LIQUOR DR TO RIGHT TURN LANE	
32+60, 8' RT TO 33+38, 9' RT			80			CHANNELIZING LINE FOR RIGHT TURN LANE ONTO 27 3/4	
33+70, 29' RT TO 33+70, 13' LT				63	126	X-WALK ACROSS B 1/2 ROAD EAST END OF PROJECT	
TOTAL (LF) =	3886	6552	160	304			
TOTAL (SF) =	1294	2182	107		608		
TOTAL (GAL) =	14	24	1				
TOTAL GALLON PER COLOR OF PAINT=	14		25				

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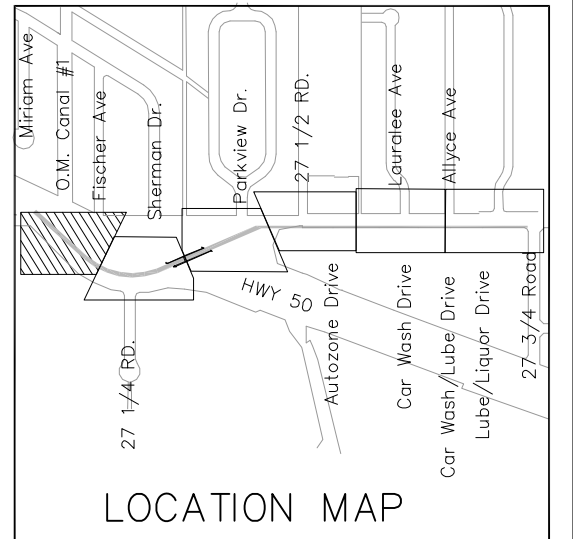
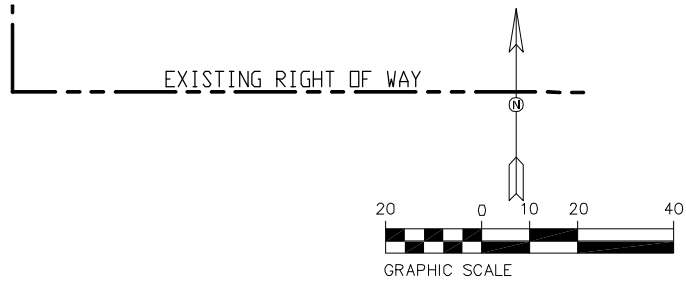
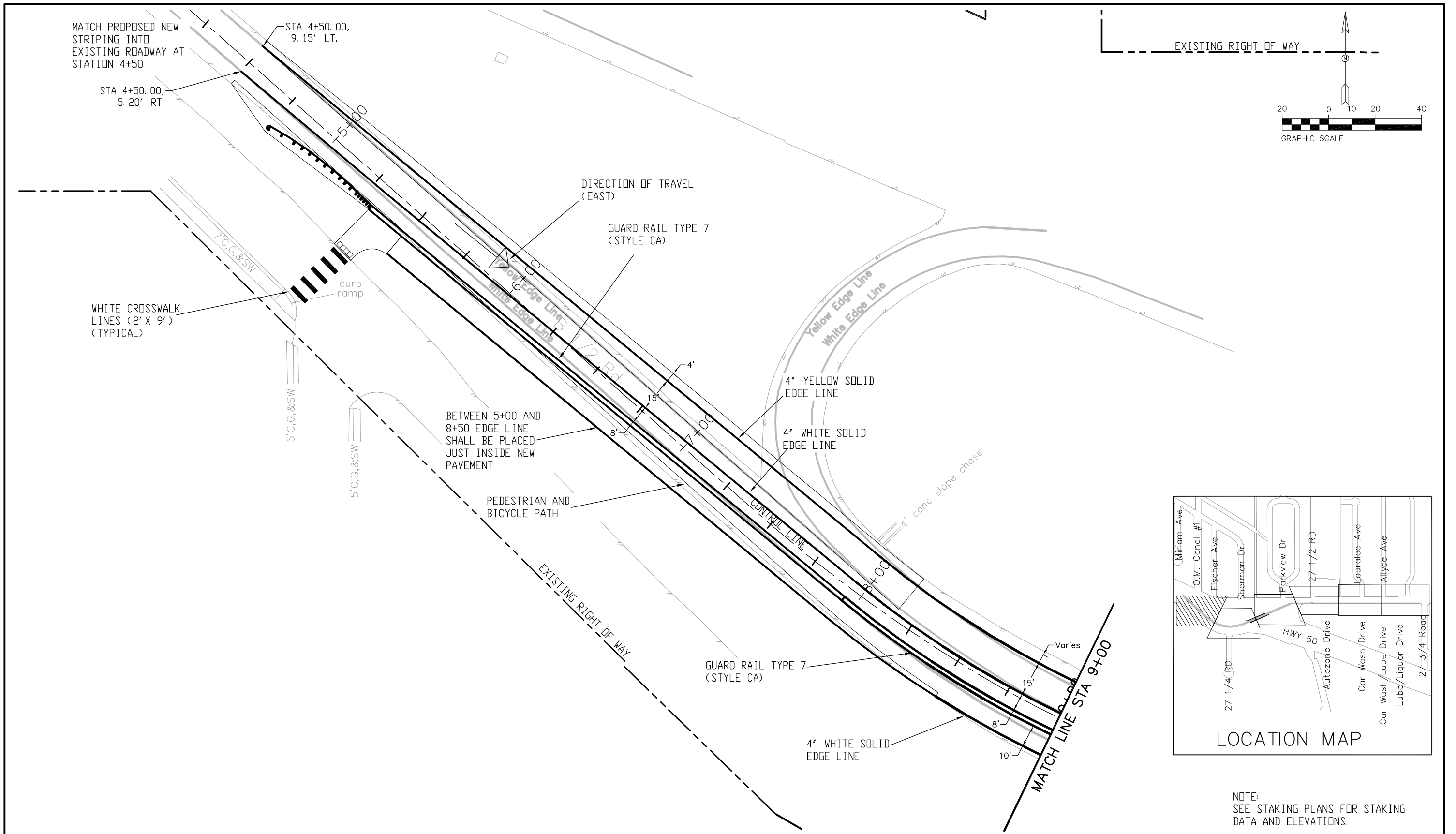


As Constructed
No Revisions:
Revised:
Void:

TABULATION OF PAVEMENT MARKINGS		
Designer: John Smith	Structure Numbers	
Detailer: John Smith		
Sheet Subset: tab mark	Subset Sheets:	1 of 1

Project No./Code
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20736
Sheet Number 102

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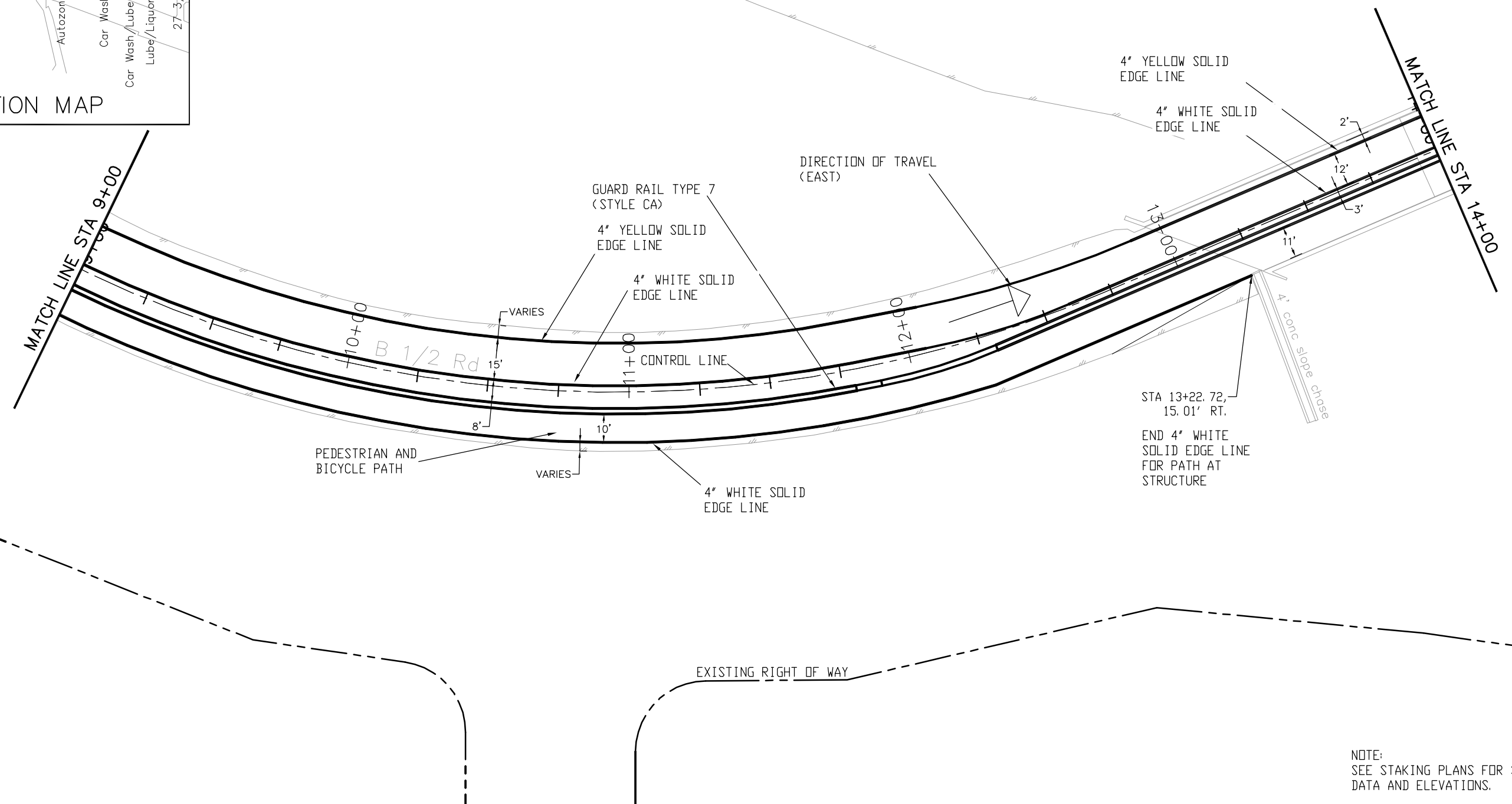
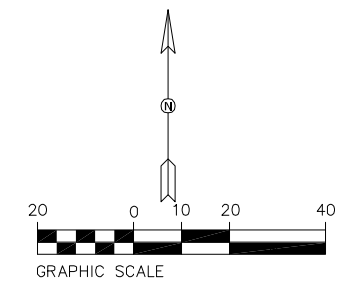
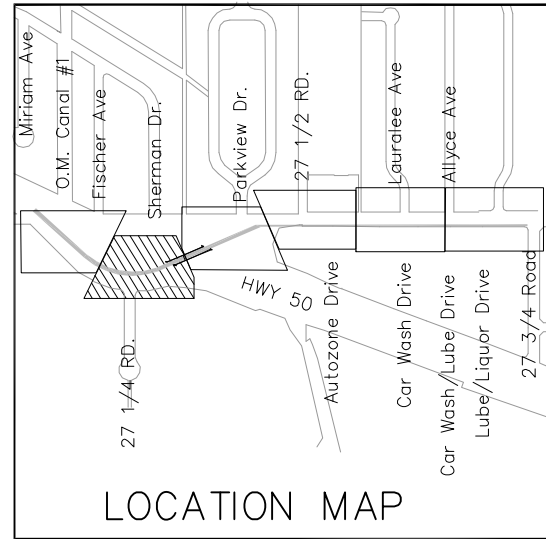
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As Constructed
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Revised:
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B 1/2 ROAD Striping Plan Sta. 4+50 TO 9+00	
Designer: John Smith	Structure Numbers
Detailer: John Smith	
Sheet Subset: Stripe	Subset Sheets: 1 of 6

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TAP M555-032
20736
Sheet Number 103



NOTE:
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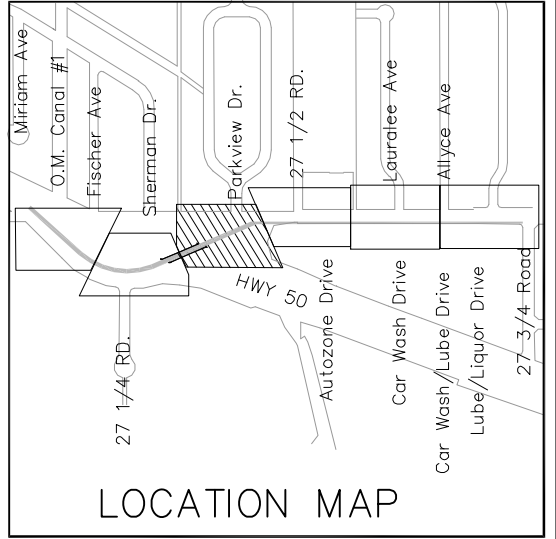
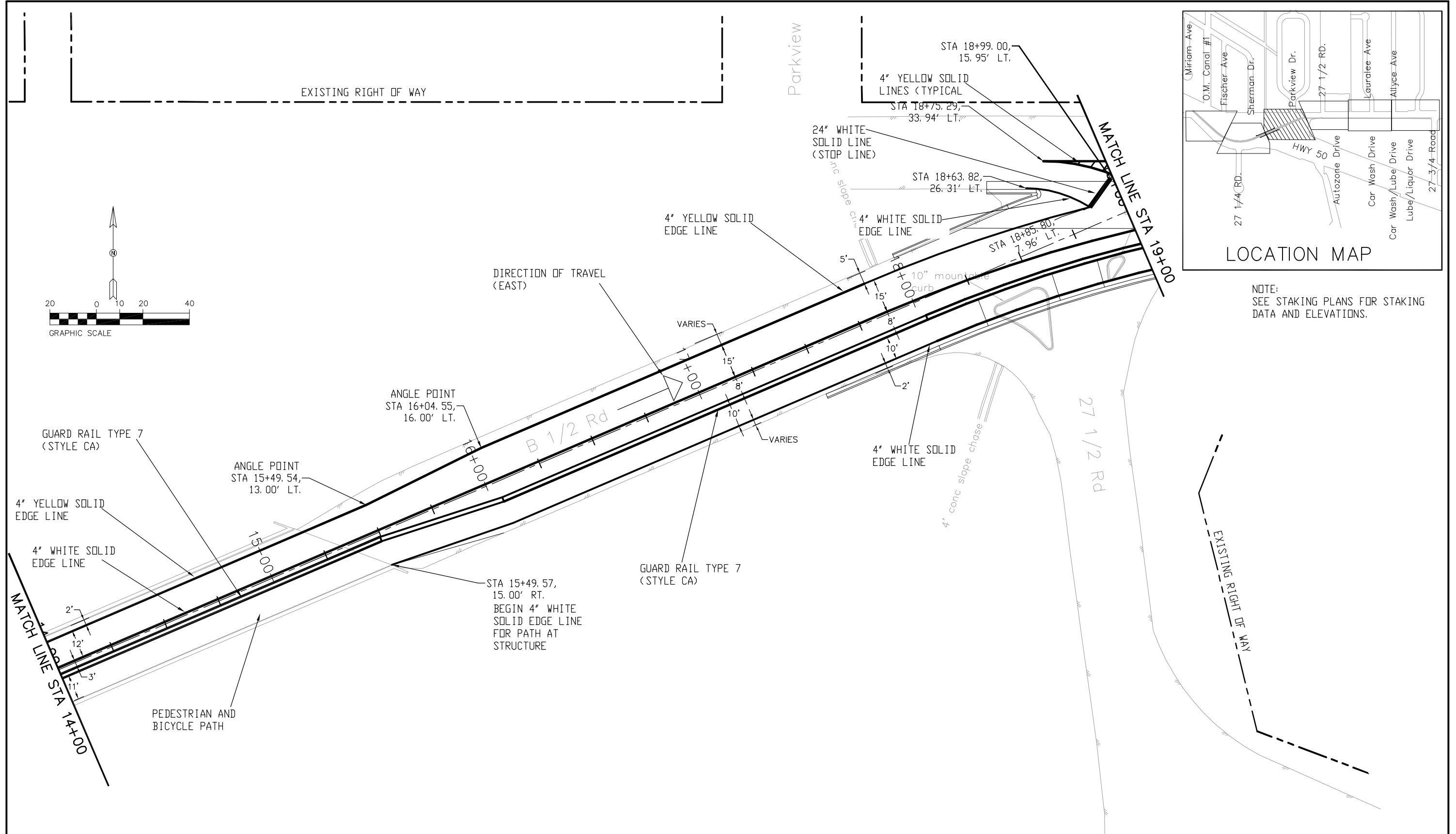


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Detailer: John Smith	
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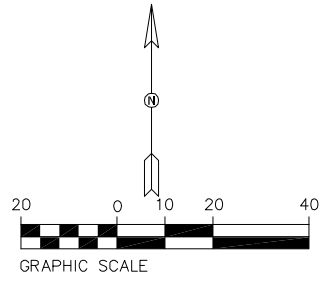
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20736
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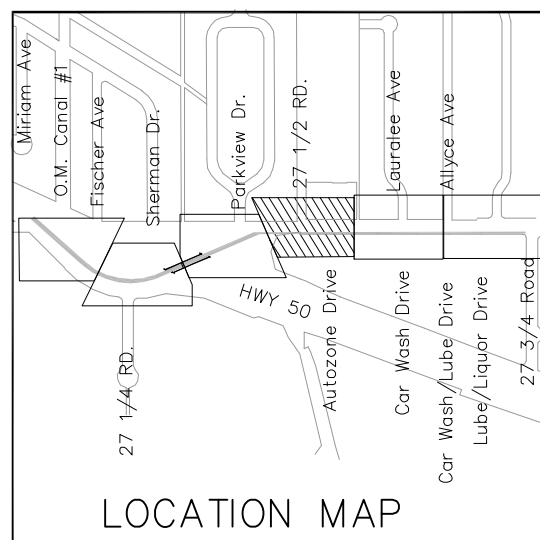
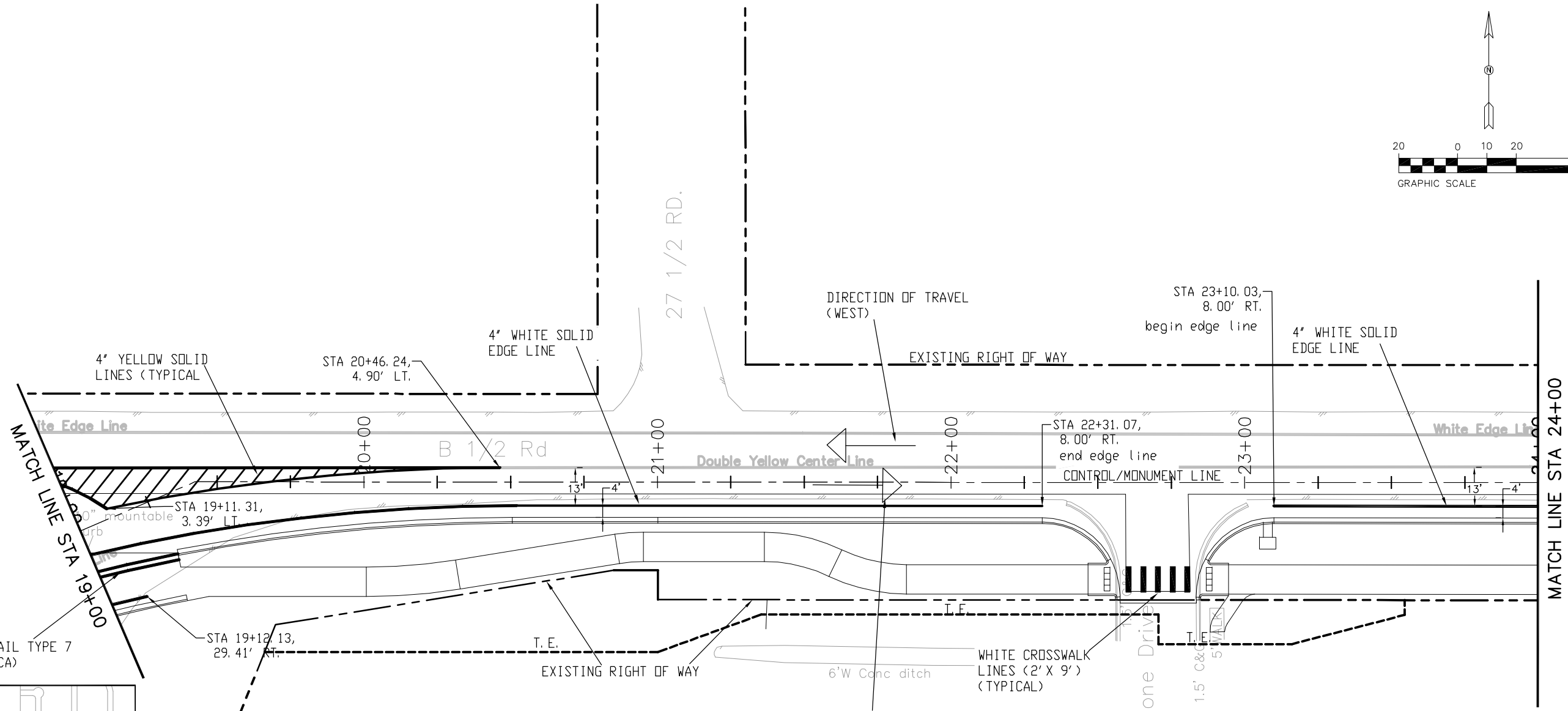
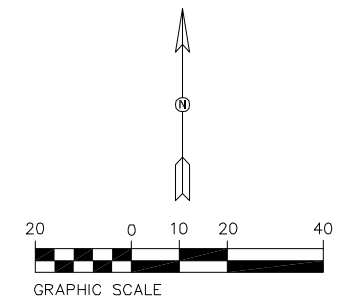


LOCATION MAP

NOTE:
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DATA AND ELEVATIONS.



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Horiz. Scale: AS SHOWN					Revised:	Sta. 14+00 TO 19+00		20736
Unit Information: City of GJ Unit Leader Initials: JJV					Void:	Designer: John Smith	Structure Numbers	Sheet Number 105
						Detailer: John Smith	Subset Sheets: 3 of 6	



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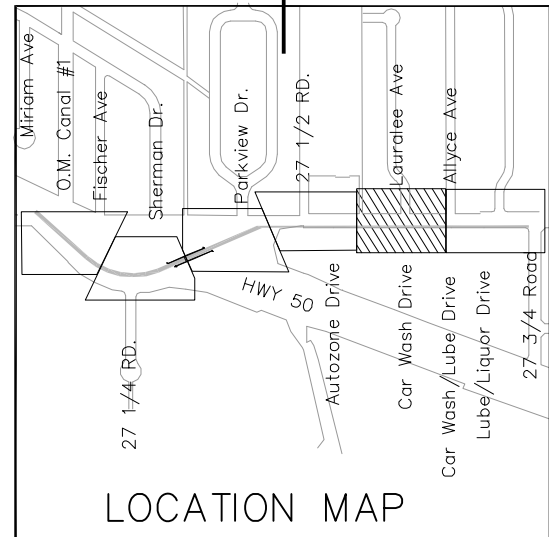
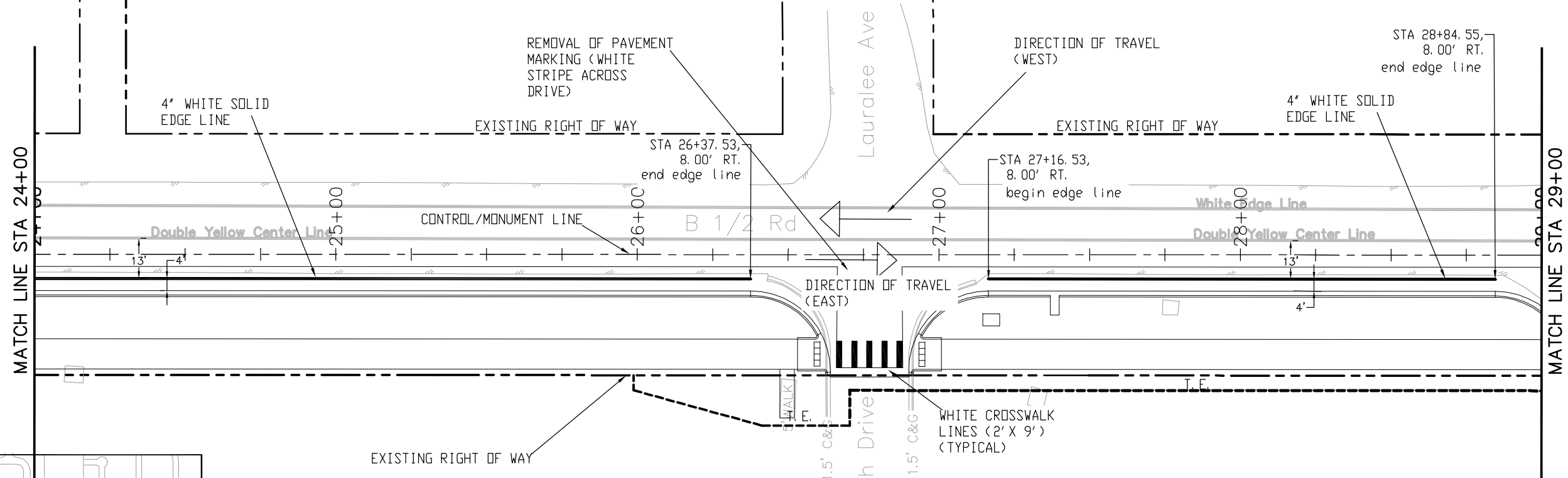
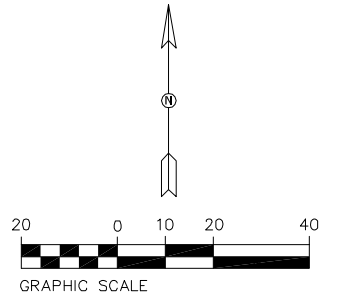
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Designer: John Smith	Structure Numbers
Detailer: John Smith	
Sheet Subset: Stripe	Subset Sheets: 4 of 6

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TAP M555-032
20736
Sheet Number 106

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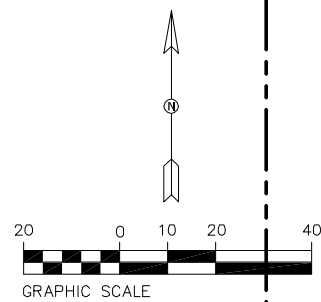


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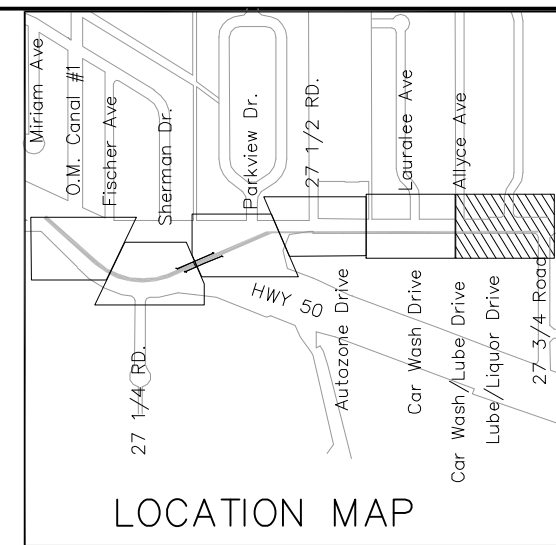
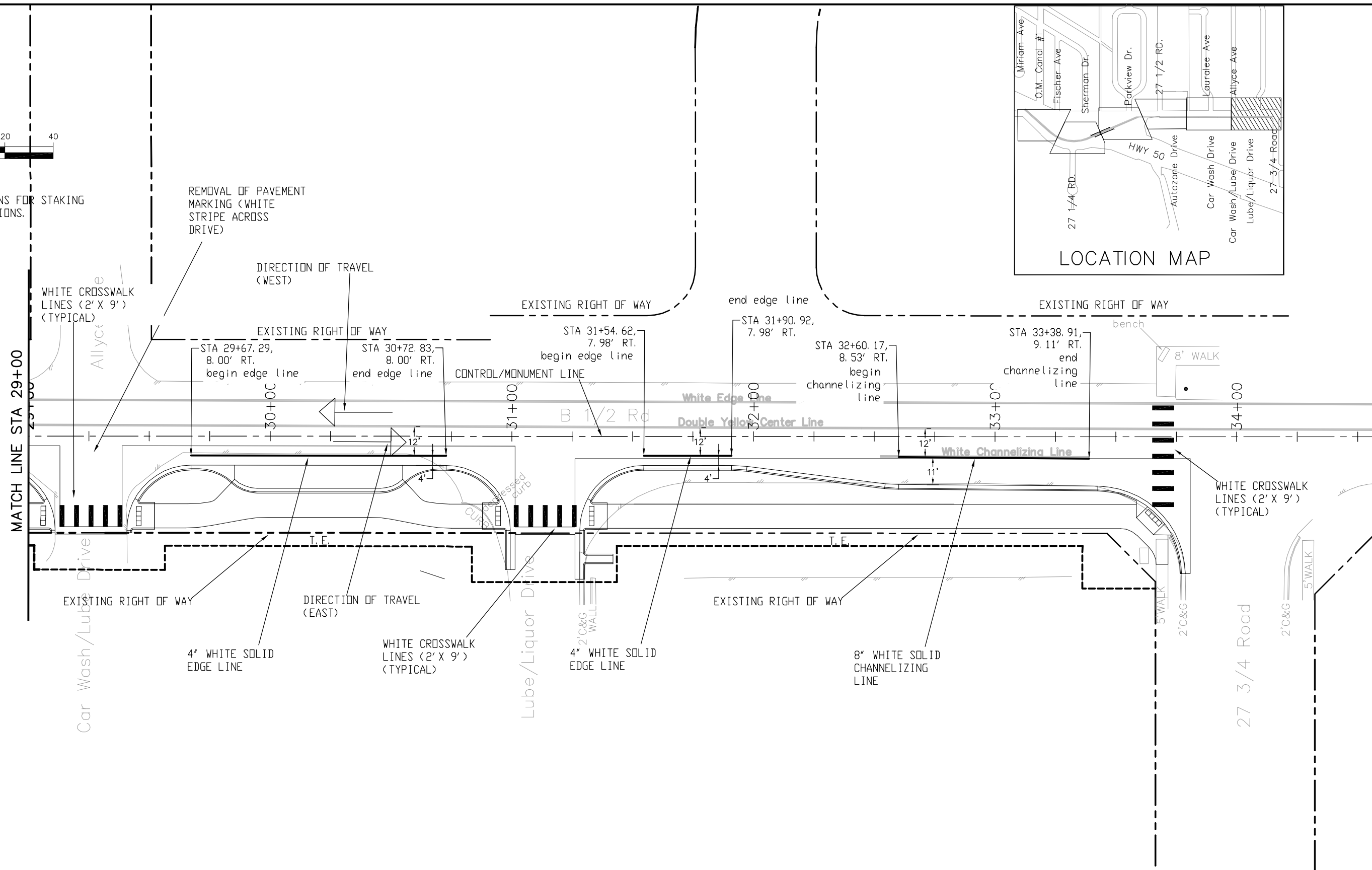
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Detailer: John Smith	
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B 1/2 ROAD Striping Plan Sta. 29+00 TO 34+00	
Designer: John Smith	Structure Numbers
Detailer: John Smith	
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Sheet Number 108

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D. LOCATION OF ALL STRUCTURAL BMPs IDENTIFIED IN THE SWMP - All proposed Structural BMP's are shown and labeled on the Storm Water Management Site Plans. The locations shown on the Storm Water Management Site Plans are approximate and can be changed by the Contractor and/or Project Engineer during construction to adapt with the construction phasing.

E. LOCATION OF NON-STRUCTURAL BMPs AS APPLICABLE IN THE SWMP - Location of the following to be located by the ECS: Material management, material usage, spill prevention and control, sanitary and septic waste management, liquid waste management, hazardous waste management, vehicle and equipment management, and concrete washout structure.

F. SPRINGS, STREAMS, WETLANDS AND OTHER SURFACE WATER - N/A

G. PROTECTION OF TREES, SHRUBS, CULTURAL RESOURCES AND MATURE VEGETATION - Protection of trees and shrubs are shown on the Landscape Plans and the Removal Plans.

H. AREAS USED FOR STORING AND STOCKPILING OF MATERIALS, STAGING AREAS (field trailer, fueling, etc.) and BATCH PLANTS

*ECS to revise site maps in accordance to 208.03

3. SWMP ADMINISTRATORS:

A. SWMP ADMINISTRATOR FOR DESIGN:
Name/Title: Lee Cooper/Project Engineer

Contact information: 970-256-4155, leec@gjcity.org

4. STORMWATER MANAGEMENT CONTROLS FIRST CONSTRUCTION ACTIVITIES

THE CONTRACTOR SHALL PERFORM THE FOLLOWING:

A. POTENTIAL POLLUTANT SOURCES

Evaluate, identify and describe all potential sources of pollutants at the site in accordance with subsection 107.25 and place in the SWMP notebook. All BMPs related to potential pollutants shall be shown on the SWMP site map by the contractor's ECS.

B. BEST MANAGEMENT PRACTICES (BMPs) FOR STORMWATER POLLUTION PREVENTION

PHASED BMP IMPLEMENTATION

During Design: "BMP as Designed" boxes are marked when used in the SWMP. During construction: the ECS shall update the "In use on site" boxes to match which BMPs are currently in use on site. Clearly describe the relationship between the phases of construction and the implementation of BMP controls.

STRUCTURAL BMPs that may be potentially used on the project for erosion and sediment control; practices may include, but are not limited to:

APPLICATION, BMP	NARRATIVE	BMP AS DESIGNED	IN USE ON SITE	BMP PHASING		
				FIRST/INITIAL CONSTRUCTION ACTIVITIES	INTERIM CONSTRUCTION ACTIVITIES	FINAL STABILIZATION
PROTECTION OF EXISTING WETLANDS Fence (plastic) and erosion logs	Fence (plastic) shall be placed in combination with erosion logs to prevent encroachment of construction traffic and sediment into state waters prior to start of construction disturbances. Fence (plastic) shall be placed adjacent to the wetlands; erosion logs shall be placed between the plastic fence and disturbance area. Logs shall be placed to direct flows away from or filter water running into wetlands from disturbance areas.			X	X	

PROTECTION OF EXISTING TREES/LANDSCAPING Fence (plastic)	Fence (plastic) shall be used in areas indicated in the plans to protect mature trees and/or existing landscaping prior to start of construction disturbances.			X	X	
CHECK DAM/DITCH CHECK Erosion log, silt berm, silt dike, rock check dam	Placed in ditches immediately upon completion of ditch grading to reduce velocity of runoff in ditch. For existing ditches, place prior to start of construction disturbances.			X	X	X
TYPE R AND TYPE 16 INLET PROTECTION Storm drain inlet protection (type 1, 2 and 3)	Placed prior to construction disturbances to protect existing inlets or immediately upon completion of new inlets to prevent sediment from entering the inlet throughout construction.			X	X	X
CULVERT INLET/OUTLET PROTECTION Erosion logs, aggregate bags	Placed at mouth of culvert inlets and over top of culvert at inlet and outlet where disturbance may be occurring adjacent to pipe to prevent sediment laden water from entering pipe or drainage. Place prior to start of construction disturbances.			X	X	X
TYPE C, TYPE D AND TYPE 13 PROTECTION Erosion logs, aggregate bags, erosion bales	Placed around inlet grate or slope and ditch paving to prevent sediment from entering inlet. Place prior to start of construction disturbances.			X	X	X
STOCKPILE PROTECTION Temporary berm, erosion logs, aggregate bags*	Placed within specified distance from toe to contain sediment around stockpile. *Aggregate bags are easily moved and replaced for access during the work day. Place prior to start of stock pile, increase control as stock pile increases size.				X	
TOE OF FILL PROTECTION Erosion logs, temporary berm, silt fence, topsoil windrow*	Place prior to slope/embankment work to capture sediment and protect and delineate undisturbed areas. *Can be used to stockpile topsoil for salvage.			X	X	
PERIMETER CONTROL Erosion logs, silt fence, temporary berm, topsoil windrow*	Placed prior to construction commencing to address potential run-on water from off site, and to divert around disturbed area			X	X	
SEDIMENT CONTROL/SLOPE CONTROL Silt fence, erosion logs	Placed on the contour on a slope to contain and slow down construction runoff. Place prior to start of construction disturbances.			X	X	
TEMPORARY SEDIMENT TRAP (ECS shall add locations to SWMP site maps)	Used to capture sediment laden runoff from disturbed areas < 5 acres during construction. Place prior to start of construction disturbances.			X	X	
PERMANENT SEDIMENT BASIN Extended detention basin	Constructed early in project, prior to storm sewer/ditches to capture storm flow as a temporary sediment trap. Outlet structure shall be modified for construction runoff.			X	X	

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Unit Information: GJ Design Unit Leader Initials: JSL

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As Constructed	Storm Water Management Plan		Project No./Code
No Revisions:			TAP M555-032
Revised:	Designer: LEE COOPER	Structure Numbers	20736
Void:	Detailer: JOHN SMITH	Sheet Subset: SWMP	Sheet Number 110
	Subset Sheets: 2 OF 4		

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PERMANENT SEDIMENT BASIN Extended detention basin.	Constructed early in project, prior to storm sewer/ditches to capture storm flow as a temporary sediment trap. Outlet structure shall be modified for construction runoff.				X	X	
EMBANKMENT PROTECTION OR TEMPORARY SLOPE DRAIN	Placed as a conduit or chute to drain runoff down slope and to prevent erosion of slope.					X	X
OUTLET PROTECTION Riprap, or approved other	Material placed as energy dissipater to prevent erosion at outlet structure.					X	X
CONCRETE WASHOUT In-ground or fabricated	Construction control, used for waste management of concrete and concrete equipment cleaning. Place prior to start of concrete activities.				X	X	
VEHICLE TRACKING PAD	Source control, placed to prevent tracking of sediment from disturbed area to offsite surface. Place prior to start of construction disturbances.				X	X	
SWEEPING	Source control, used to remove sediment tracked onto paved surfaces and to prevent from entering drainage system. Sweep daily and at the end of the construction shift as needed. Kick brooms shall not be allowed.				X	X	
DEWATERING (Contractor is responsible for obtaining a permit from Colorado Department of Health and Environment.)	Shall be done in such a manner to prevent potential pollutants from entering state waters.				X	X	
TEMPORARY STREAM CROSSING	Constructed over stream or drainage to prevent discharge of pollutants from construction equipment into water				X	X	
CLEAN WATER DIVERSION	Placed to divert clean surface or ground water around disturbance area to prevent it from mixing with construction runoff				X	X	
OTHER							

NON-STRUCTURAL BMPs that may be potentially used on the project for erosion and sediment control; practices may include, but are not limited to:

APPLICATION, BMP	NARRATIVE	BMP AS DESIGNED	IN USE ON SITE	BMP PHASING		
				FIRST/INITIAL CONSTRUCTION ACTIVITIES	INTERIM CONSTRUCTION ACTIVITIES	FINAL STABILIZATION
VEGETATIVE BUFFER STRIP Fence (plastic)	Filter sediment laden runoff from disturbance area. Area to be identified for preservation prior to construction starting.			X	X	X
LANDFORM (ECS shall add locations to SWMP site maps)	Existing landforms may be used as a BMP if they prevent sediment from entering or leaving the disturbance area. If a landform directs flow of water to a concentrated outfall point, the outfall point shall be protected to prevent erosion.			X	X	
TOPSOIL MANAGEMENT STOCKPILE/SALVAGE Windrow or stockpile	Prior to embankment work commencing, existing topsoil shall be scraped to a depth of 4 inches, and placed in stockpiles or windrows. Upon completion of slope work/final grading (less 4 inches), topsoil shall be evenly distributed over embankment to a depth of 4 inches.			X	X	
SURFACE ROUGHENING / GRADING TECHNIQUES Blading, Backhoe, Dozing, Combination Loader	Temporary stabilization of disturbance and to minimize wind and erosion.				X	
SEEDING TEMPORARY	Temporary stabilization used for over wintering of disturbance or used to control erosion for areas scheduled for future construction.				X	
BONDED FIBER MATRIX/HYDRAULIC MULCH (Not to be used in areas of concentrated flows, i.e. ditch lines.)	To be used in combination with surface roughening for temporary stabilization of disturbed soils, when work is temporarily halted and as approved by the Engineer. May be used as surface cover for temporary topsoil stockpiles				X	
MULCH/MULCH TACKIFIER	Temporary or Final Stabilization placed as a surface cover for erosion control and or seeding establishment. To be installed as temporary surface cover when work is temporarily halted and as approved by the Engineer				X	X
SPRAY-ON MULCH BLANKET (Not to be used in areas of concentrated flows, i.e. ditch lines.)	Temporary or Final Stabilization placed as a surface cover for erosion control and or seeding establishment. To be installed as temporary surface cover when work is temporarily halted and as approved by the Engineer				X	X
SEEDING PERMANENT	Final Stabilization of disturbance and to reduce runoff and control erosion on disturbed areas.					X
SOIL RETENTION BLANKET (SRB)	Final Stabilization of disturbance and to reduce runoff and control erosion on disturbed areas.				X	X
TURF REINFORCEMENT MAT (TRM)	Final Stabilization of disturbance and to reduce runoff and control erosion on disturbed areas. Placed in channels or on slopes for erosion control, channel liner and seeding establishment.				X	X
OTHER						

Erosion control devices are used to limit the amount of soil loss on site
Sediment control devices are designed to capture sediment on the project site.
Construction controls are BMPs related to construction access and staging.
BMP locations are indicated on the SWMP site map.

NARRATIVES

BMP details and narratives not covered by the SWMP or Standard Plan M-208-1 shall be added to the SWMP notebook by the ECS.

D. OFFSITE DRAINAGE (RUN ON WATER)

- Describe and record BMPs on the SWMP site map that has been implemented to address off site run-on water in accordance with subsection 208.03.

E. VEHICLE TRACKING PAD/VEHICLE TRACKING CONTROL

- BMPs shall be implemented in accordance with subsection 208.04.

F. PERIMETER CONTROL

- Perimeter control shall be established as the first item on the SWMP to prevent the potential for pollutants leaving the construction site boundaries, entering the stormwater drainage system, or discharging to state waters.
- Perimeter control may consist of vegetation buffers, berms, silt fence, erosion logs, existing landforms, or other BMPs as approved.
- Perimeter control shall be in accordance with subsection 208.04.

5. DURING CONSTRUCTION

RESPONSIBILITIES OF THE SWMP ADMINISTRATOR/TRANSPORTATION EROSION CONTROL SUPERVISOR DURING CONSTRUCTION

The SWMP should be considered a "living document" that is continuously reviewed and modified. During construction, the following items shall be added, updated, or amended as needed by the SWMP Administrator/Erosion Control Supervisor (ECS) in accordance with Section 208. During construction, indicate how items that have not been addressed during design are being handled in construction. If items are covered in the template or other sections of the SWMP notebook indicate below what section the discussion takes place.

A. **STOCKPILE MANAGEMENT** - shall be done in accordance with subsection 107.25 and 208.07

B. **CONCRETE WASHOUT** - Concrete wash out water or waste from field laboratories and paving equipment shall be contained in accordance with subsection 208.05.

C. **SAW CUTTING** - shall be done in accordance with subsection 107.25, 208.04, 208.05

D. **STREET CLEANING** - shall be done in accordance with subsection 208.04

6. INSPECTIONS

A. Inspections shall be in accordance with subsection 208.03 (c).

7. BMP MAINTENANCE

A. Maintenance shall be in accordance with subsection 208.04 (f).

8. RECORD KEEPING

A. Records shall be kept in accordance with subsection 208.03 (c).

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Unit Information: GJ Design Unit Leader Initials: JSL

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As Constructed	Storm Water Management Plan		Project No./Code
No Revisions:			TAP M555-032
Revised:	Designer: LEE COOPER	Structure Numbers	20736
Void:	Detailer: JOHN SMITH	Sheet Subset: SWMP	Subset Sheets: 3 OF 4
			Sheet Number 111

9. INTERIM AND FINAL STABILIZATION

A. SEEDING PLAN

Soil preparation, soil conditioning or topsoil, seeding (native), mulching (weed free) and mulch tackifier will be required for an estimated 0.70 acres of disturbed area within the right-of-way limits which are not surfaced. The following types and rates shall be used:

COMMON NAME	BOTANICAL NAME	% OF MIX BY QTY.
GALLETA GRASS	HILARIA JAMESII	20%
HARD FESCUE	FESTUCA OVINA 'DURAR'	20%
INDIAN RICEGRASS	ORIZOPSIS HYMENOIDES 'PALOMA'	12%
NEEDLE & THREAD GRASS	STIPA COMATA	1%
SHEEP FESCUE	FESTUCA OVINA 'COVAR'	8%
WESTERN WHEATGRASS	AGROPYRON SMITHII 'ARRIBA'	30%
SAND DROPSEED	SPOROBOLUS CRYPTANDRUS	1%
BLUE GRAMMA	BOUTELOUA GRACILIS	5%
SIDE OATS GRAMMA	BOUTELOUA CURTIPENDULA	3%
SEED AT 5 LB/ACRE PLS		

B. SEEDING APPLICATION: Drill seed 0.25 inch to 0.5 inch into the soil. In small areas not accessible to a drill, hand broadcast or hydroseed at double the rate and rake 0.25 inch to 0.5 inch into the soil.

C. MULCHING APPLICATION: Apply a minimum of 2 tons of certified weed free straw or 2 tons of certified weed free straw per acre and in accordance with Section 213, and mechanically crimp it into the soil in combination with an organic mulch tackifier.

- a. Prior to winter shutdown or the summer seeding window: Uncompleted slopes shall be mulched with 2 tons of mulching (weed free) per acre, mechanically crimped into the topsoil in combination with an organic mulch tackifier per section 213.

D. SPECIAL REQUIREMENTS:

- 1. Due to high failure rates, hydroseeding will not be allowed.

E. SOIL CONDITIONING AND FERTILIZER REQUIREMENTS: [Minimum requirements for all disturbances to receive seeding (native). Compost is optional within areas above 8000 ft in elevation]

Soil conditioner paid for as Item 212- Soil Conditioning (Acre)		
Biological nutrient organic based fertilizer (lbs/acre)*	Humate (lbs/acre)	Compost (cy/acre) (1/2 inch depth)
N/A	N/A	N/A

*Biological nutrient shall not exceed 8-8-8 (N-P-K). Humate based material and compost shall be in accordance to Section 212.

F. SOIL RETENTION COVERING: On slopes and ditches requiring a blanket or turf reinforcement mat (trm), the blanket/trm shall be placed in lieu of mulch and mulch tackifier. See SWMP for blanket locations.

G. RESEEDING OPERATIONS/CORRECTIVE STABILIZATION

Prior to final acceptance:

- 1. Seeded areas shall be reviewed during the 14 day inspections by the Erosion Control Supervisor for bare soils caused by surface or wind erosion. Bare areas caused by surface or gully erosion, blown away mulch, etc. shall be re-graded, seeded, and have the designated mulching applied as necessary, at no additional cost to the project.
- 2. The Contractor shall maintain seeding/mulch/tackifier, mow to control weeds or apply herbicide to control weeds in the seeded areas until Final Acceptance.

10. PRIOR TO FINAL ACCEPTANCE

- A. Final Acceptance shall be in accordance with subsection 208.10 At the Partial Acceptance of the project, it shall be determined by the ECS and the Engineer which temporary BMP's shall remain until 70% reestablishment or which shall be removed.
- B. At the end of the project, all ditch checks shall either consist of temporary erosion logs or permanent rip-rap.

11. TABULATION OF STORMWATER QUANTITIES

Pay Item	Description	Pay Unit	*Quantity	As Const.
208-00002	Erosion Log (12 Inch)	LF	820	
208-00035	Aggregate Bag	LF	144	
208-00045	Concrete Washout Structure	Each	2	
208-00052	Storm Drain Inlet Protection (Type2)	LF	20	
208-00103	Removal and Disposal of Sediment (Labor)	Hour	30	
208-00105	Removal and Disposal of Sediment (Equipment)	Hour	30	
208-00106	Sweeping (Sediment Removal)	Hour	40	
208-00206	Erosion Control Supervisor	Day	60	
208-00300	Temporary Berms	LF	1100	
212-00006	Seeding (Native)	Acre	0.70	
213-00061	Mulch Tackifier	LB	67	
700-70380	Erosion Control	FA	1	

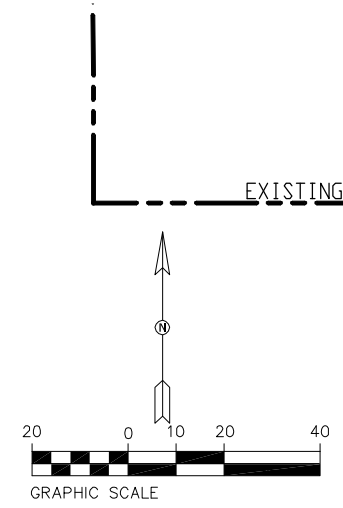
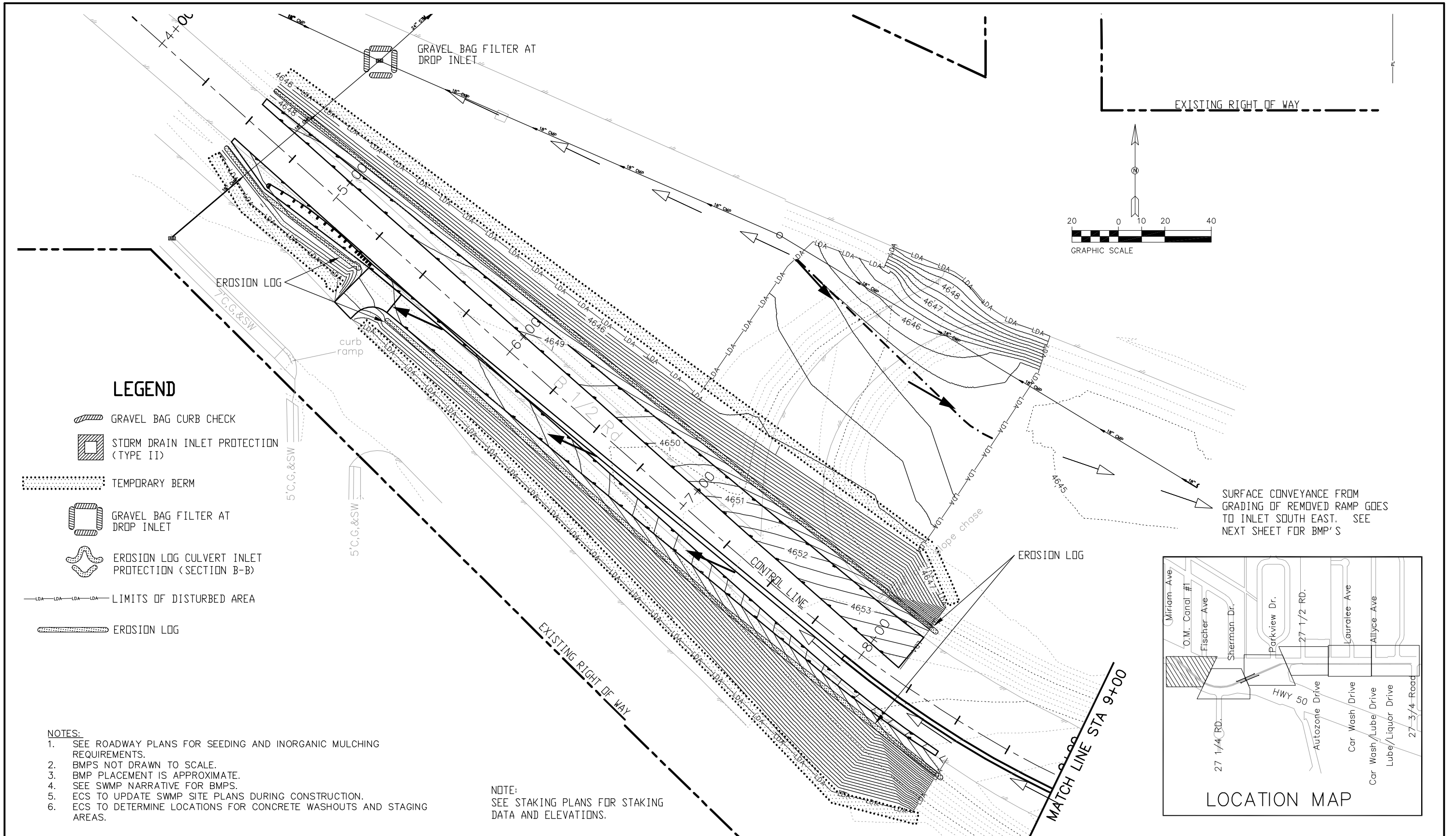
* It is anticipated that additional BMPs and BMP quantities not shown on the SWMP Site Maps shall be required on the project for unforeseen conditions and replacement of items that are beyond their useful service life, see subsection 208.03 and 208.04 (e). Quantities for all BMPs shown above are estimated, and have been increased for unforeseen Project conditions. Quantities shall be adjusted according to the conditions encountered in the field as directed and approved by the Engineer. Payment shall be for the actual work completed and material used.

- A. BMP sediment removal and disposal shall be paid for as: 208 Removal and Disposal of Sediment (Equipment) and 208 Removal and Disposal of Sediment (Labor). All other BMP maintenance shall be included in the cost of the BMP Device.
- B. It is estimated that 40 hours of Sweeping (Sediment Removal) may be required for miscellaneous erosion control work as directed by the Engineer. Work shall be paid for as: 208 Sweeping (Sediment Removal).
- C. Maintenance of seeded areas shall be paid for as: 212 Seeding (Native).

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Horiz. Scale: NA Vert. Scale: NA						Revised:	Designer: LEE COOPER	Structure Numbers		20736	
Unit Information: GJ Design Unit Leader Initials: JSL						Void:	Detailer: JOHN SMITH	Subset Sheets:	4 OF 4	Sheet Number 112	
					Sheet Subset: SWMP						

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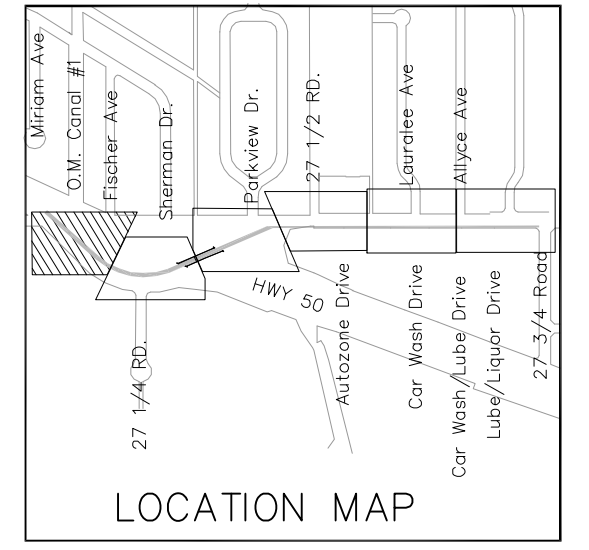
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- GRAVEL BAG CURB CHECK
- STORM DRAIN INLET PROTECTION (TYPE II)
- TEMPORARY BERM
- GRAVEL BAG FILTER AT DROP INLET
- EROSION LOG CULVERT INLET PROTECTION (SECTION B-B)
- LIMITS OF DISTURBED AREA
- EROSION LOG

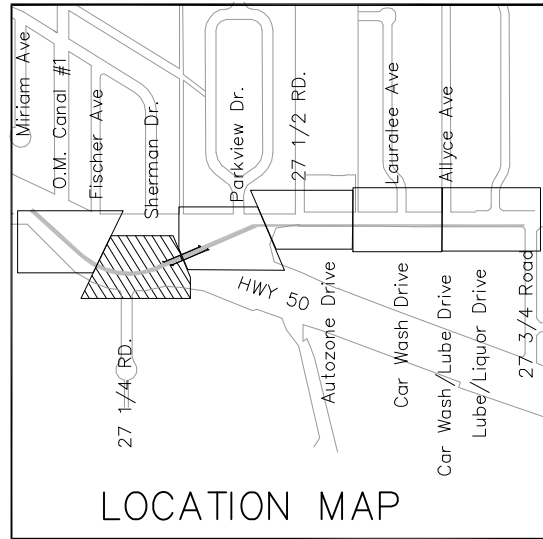
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1. SEE ROADWAY PLANS FOR SEEDING AND INORGANIC MULCHING REQUIREMENTS.
2. BMPs NOT DRAWN TO SCALE.
3. BMP PLACEMENT IS APPROXIMATE.
4. SEE SWMP NARRATIVE FOR BMPs.
5. ECS TO UPDATE SWMP SITE PLANS DURING CONSTRUCTION.
6. ECS TO DETERMINE LOCATIONS FOR CONCRETE WASHOUTS AND STAGING AREAS.

NOTE:
SEE STAKING PLANS FOR STAKING DATA AND ELEVATIONS.

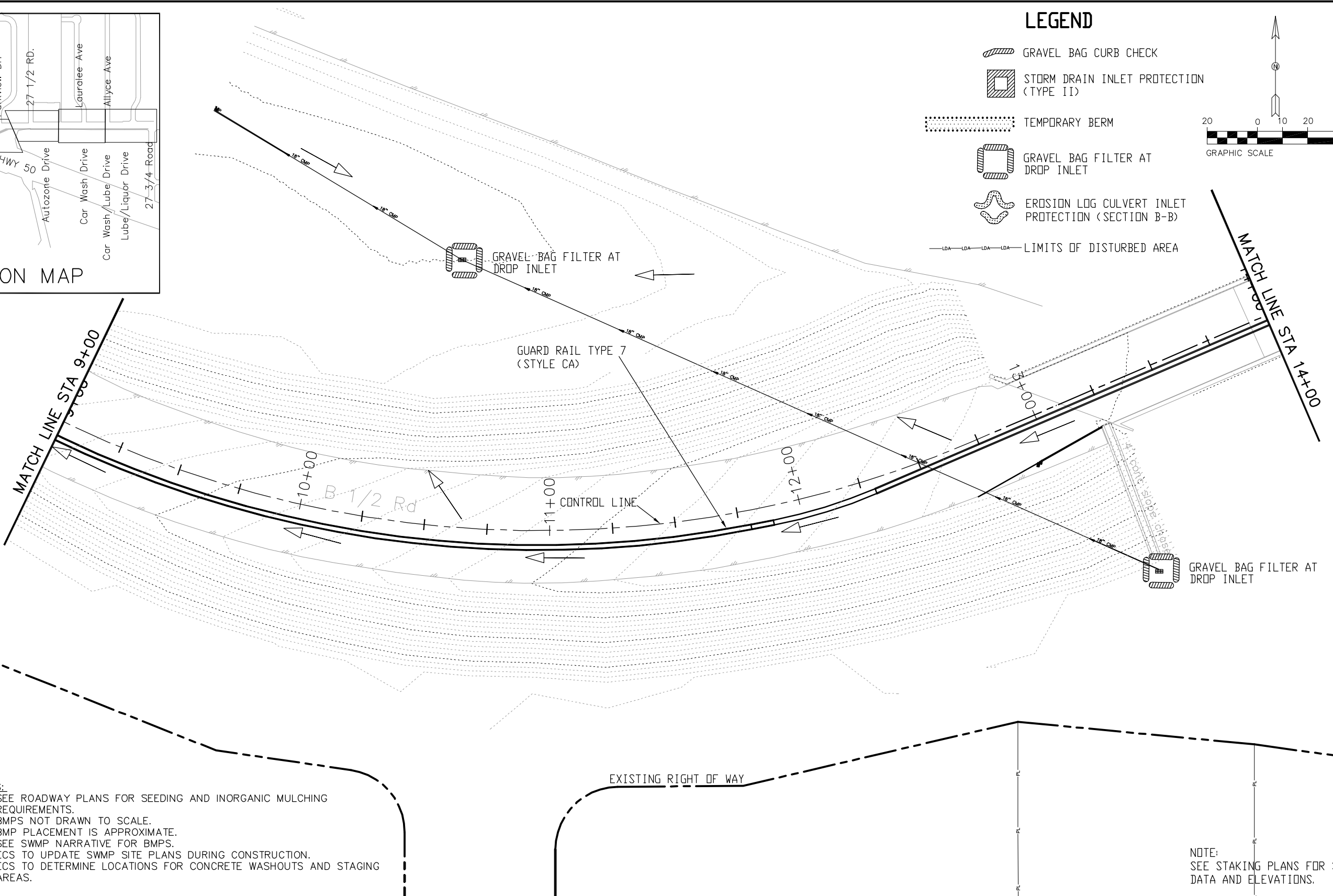
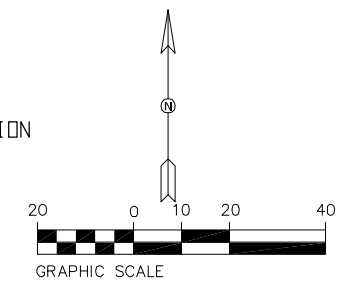


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						Detailer: John Smith	Subset Sheets: 1 of 6	



LEGEND

- GRAVEL BAG CURB CHECK
- STORM DRAIN INLET PROTECTION (TYPE II)
- TEMPORARY BERM
- GRAVEL BAG FILTER AT DROP INLET
- EROSION LOG CULVERT INLET PROTECTION (SECTION B-B)
- LIMITS OF DISTURBED AREA



- NOTES:**
1. SEE ROADWAY PLANS FOR SEEDING AND INORGANIC MULCHING REQUIREMENTS.
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

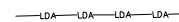
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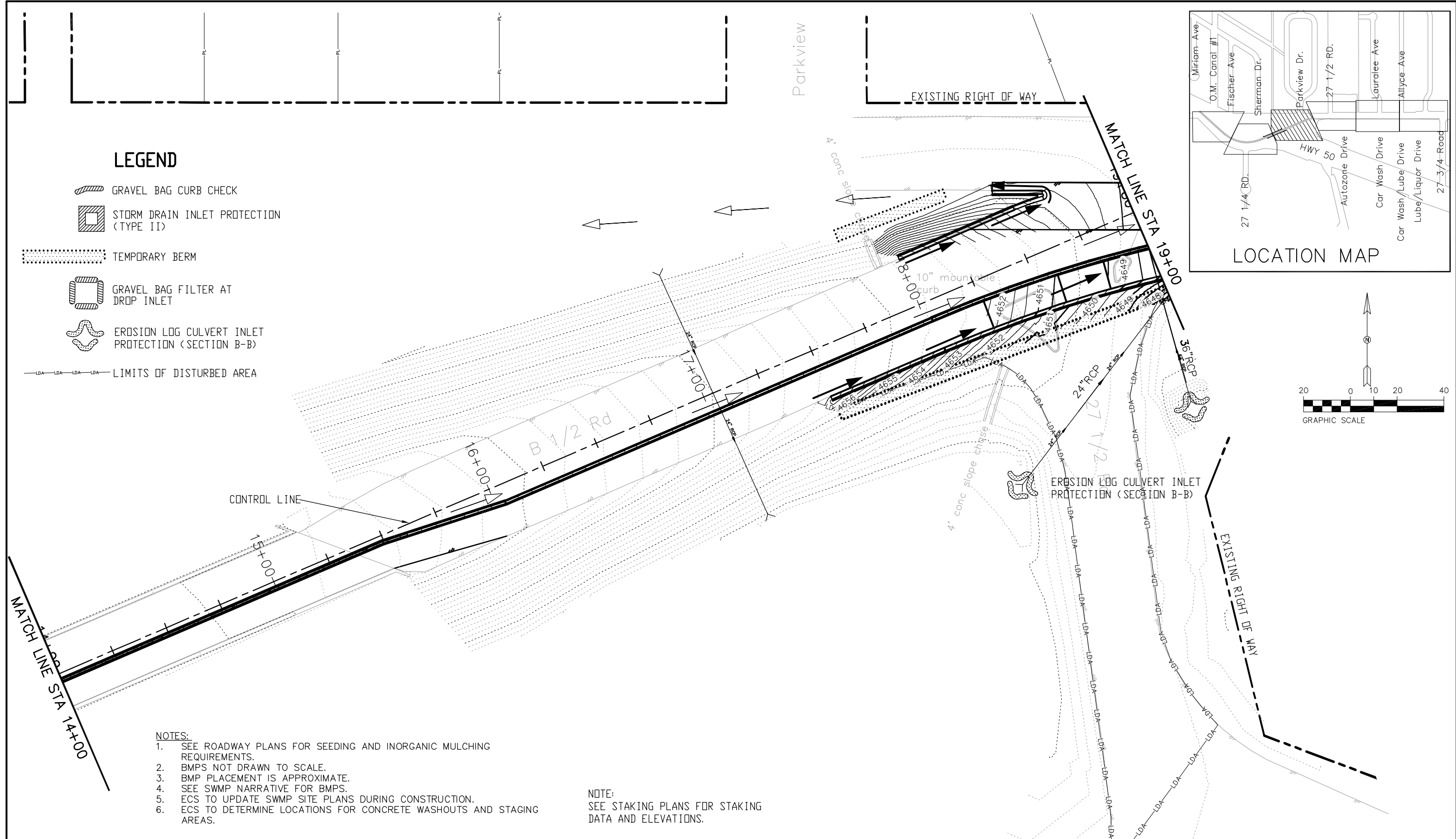
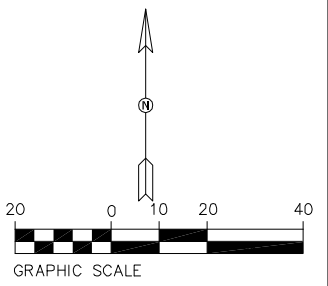
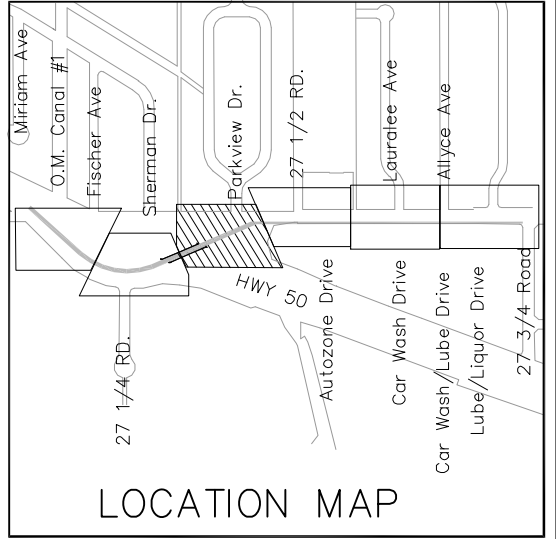
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Unit Information: City of GJ Unit Leader Initials: ALC						Void:	Detailer: John Smith	Sheet Subset: SWMSP		Subset Sheets: 2 of 6

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-  GRAVEL BAG CURB CHECK
-  STORM DRAIN INLET PROTECTION (TYPE I)
-  TEMPORARY BERM
-  GRAVEL BAG FILTER AT DROP INLET
-  EROSION LOG CULVERT INLET PROTECTION (SECTION B-B)
-  LIMITS OF DISTURBED AREA






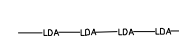


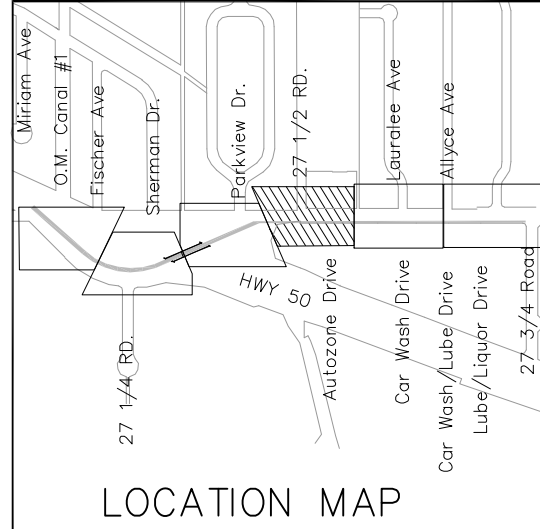
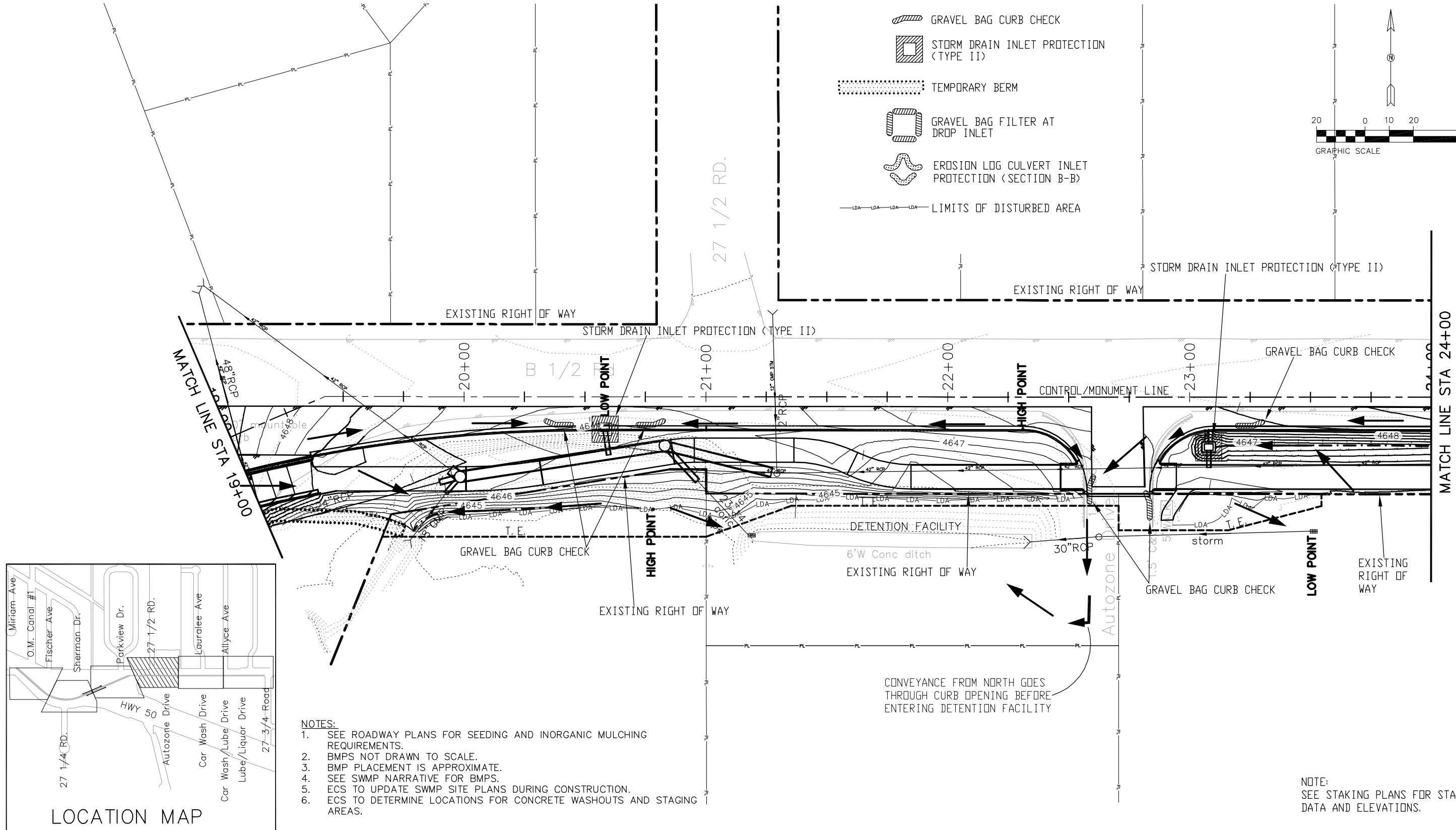
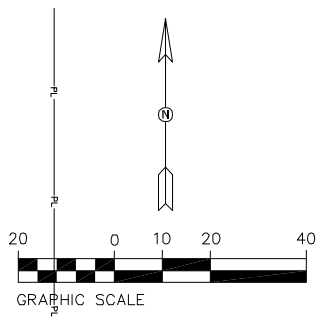
- NOTES:**
1. SEE ROADWAY PLANS FOR SEEDING AND INORGANIC MULCHING REQUIREMENTS.
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						Detailer: John Smith					
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-  GRAVEL BAG CURB CHECK
-  STORM DRAIN INLET PROTECTION (TYPE II)
-  TEMPORARY BERM
-  GRAVEL BAG FILTER AT DROP INLET
-  EROSION LOG CULVERT INLET PROTECTION (SECTION B-B)
-  LIMITS OF DISTURBED AREA

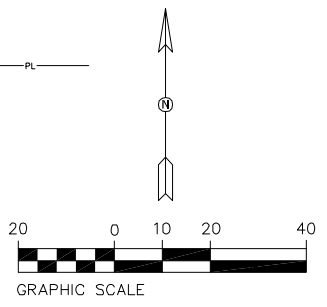
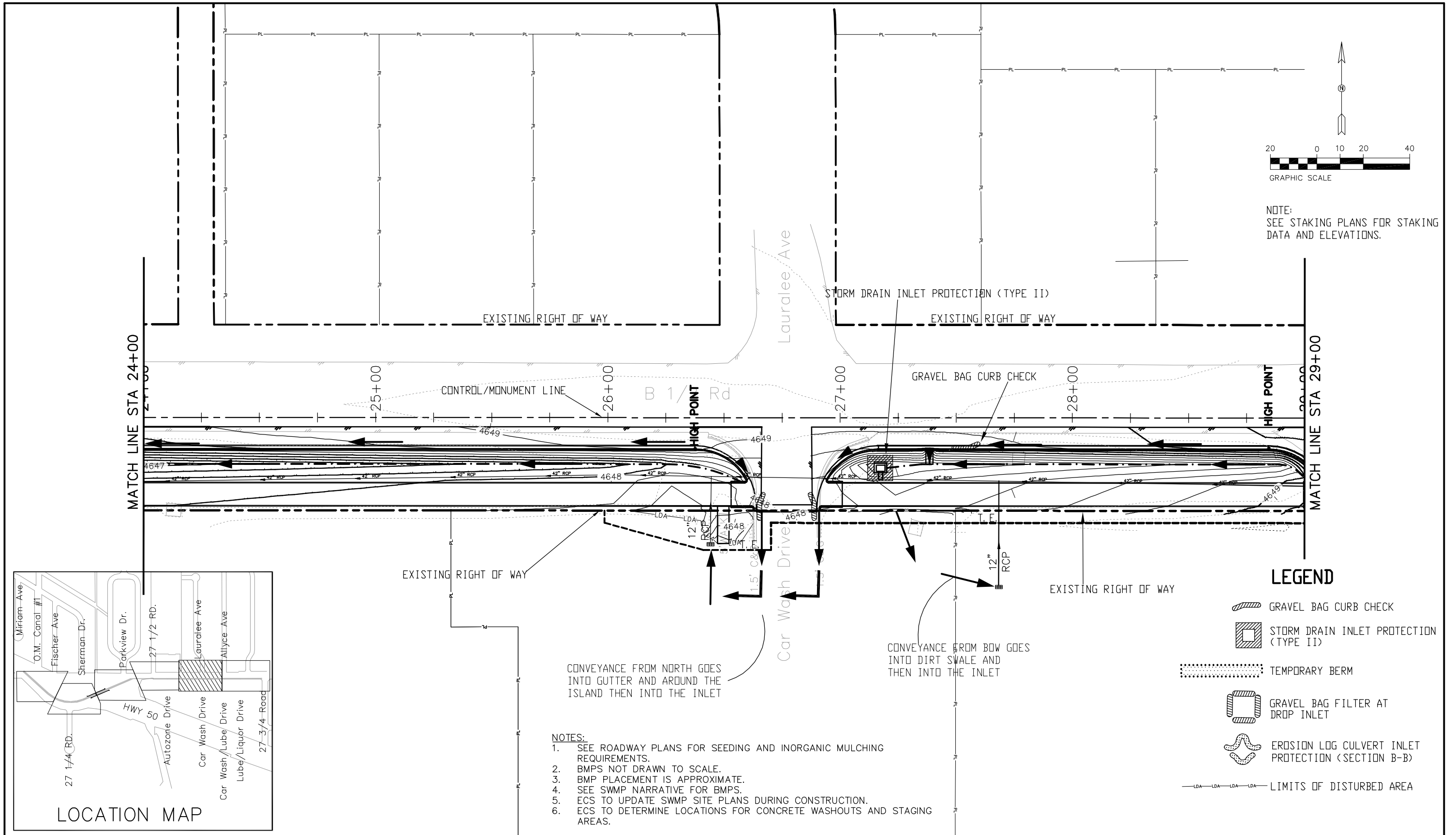


- NOTES:**
1. SEE ROADWAY PLANS FOR SEEDING AND INORGANIC MULCHING REQUIREMENTS.
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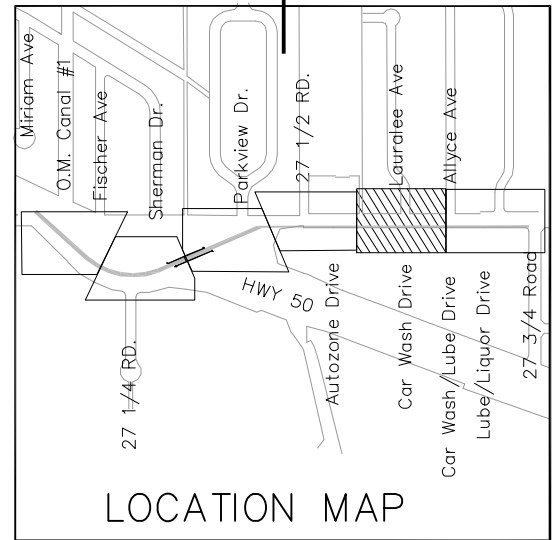
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NOTE:
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DATA AND ELEVATIONS.



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- GRAVEL BAG CURB CHECK
- STORM DRAIN INLET PROTECTION (TYPE II)
- TEMPORARY BERM
- GRAVEL BAG FILTER AT DROP INLET
- EROSION LOG CULVERT INLET PROTECTION (SECTION B-B)
- LIMITS OF DISTURBED AREA

CONVEYANCE FROM NORTH GOES INTO GUTTER AND AROUND THE ISLAND THEN INTO THE INLET

CONVEYANCE FROM BOW GOES INTO DIRT SWALE AND THEN INTO THE INLET

- NOTES:**
- SEE ROADWAY PLANS FOR SEEDING AND INORGANIC MULCHING REQUIREMENTS.
 - BMPS NOT DRAWN TO SCALE.
 - BMPS PLACEMENT IS APPROXIMATE.
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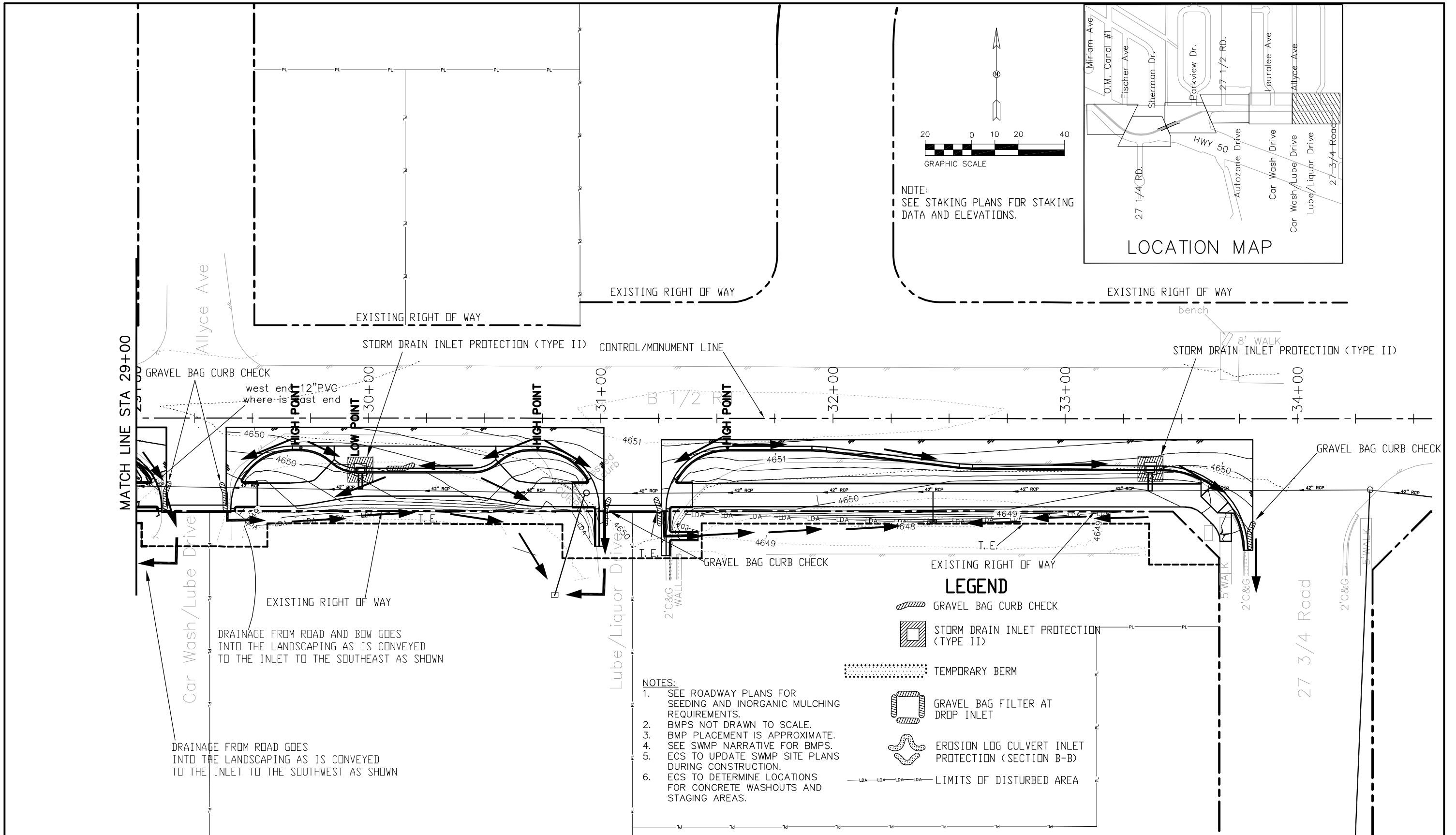
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Detailer: John Smith	
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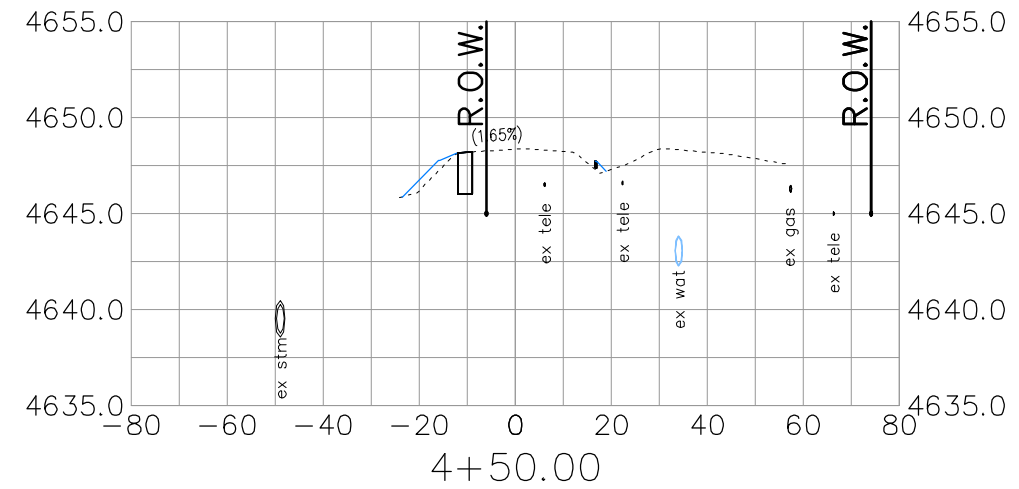
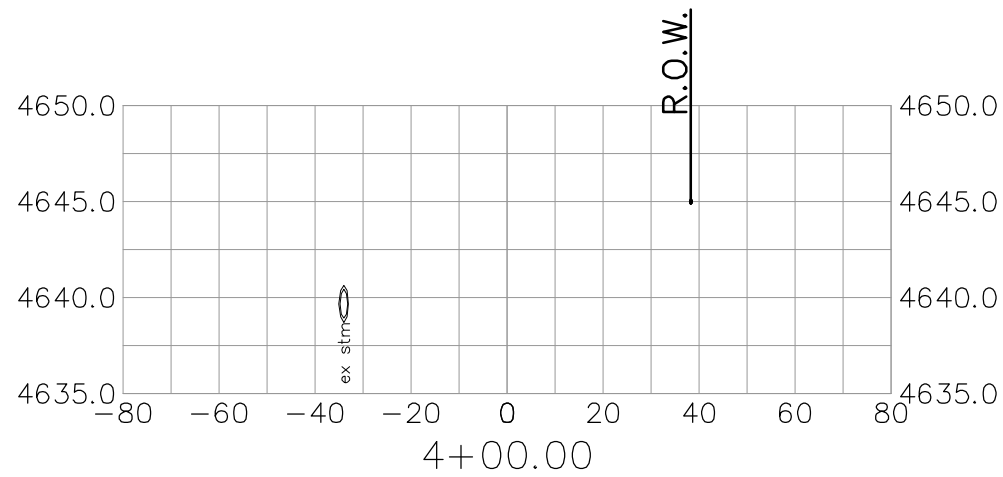
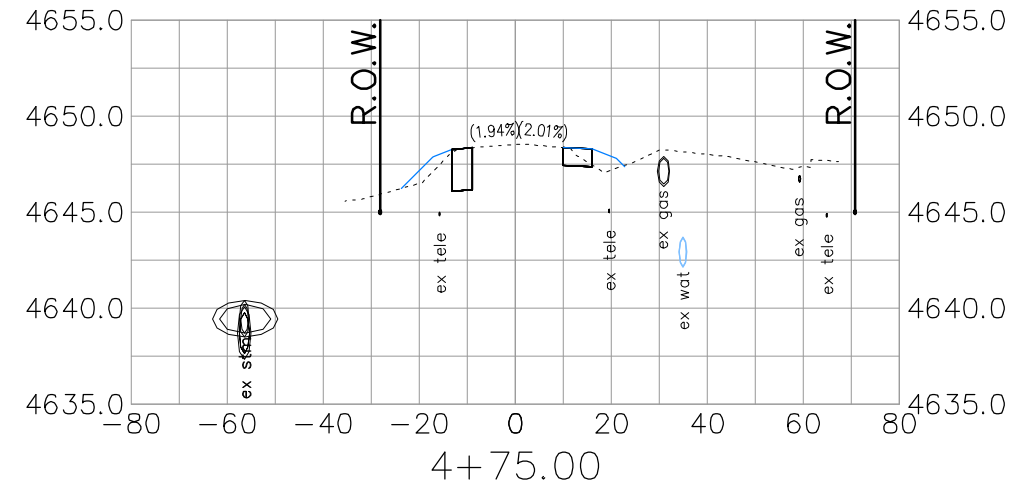
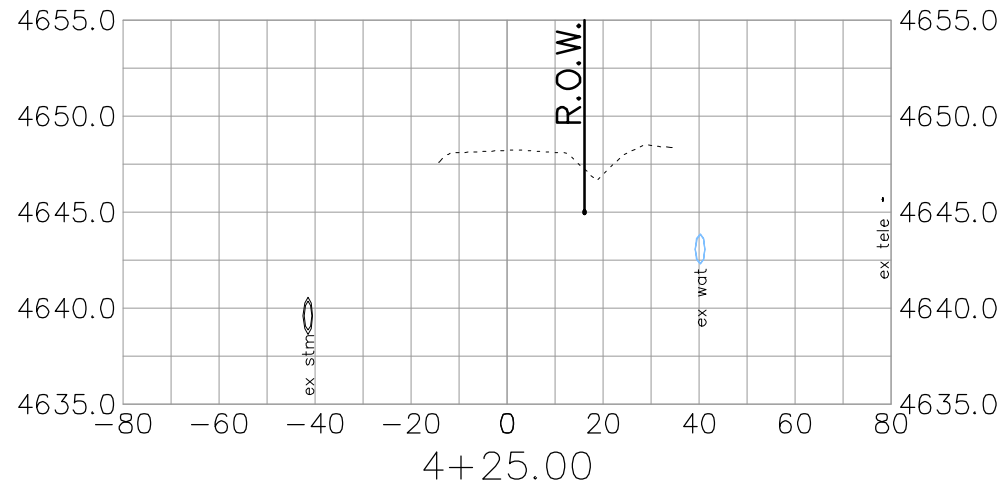
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							Sheet Subset: SWMSP		Subset Sheets: 6 of 6	
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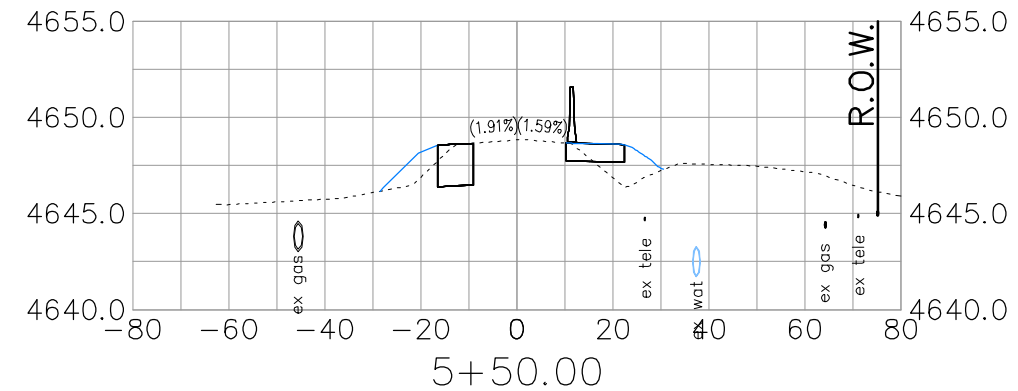
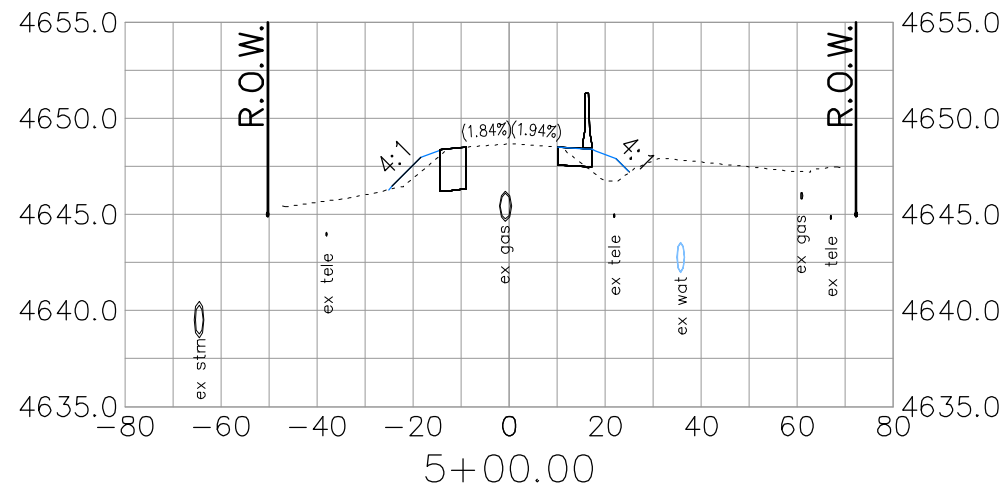
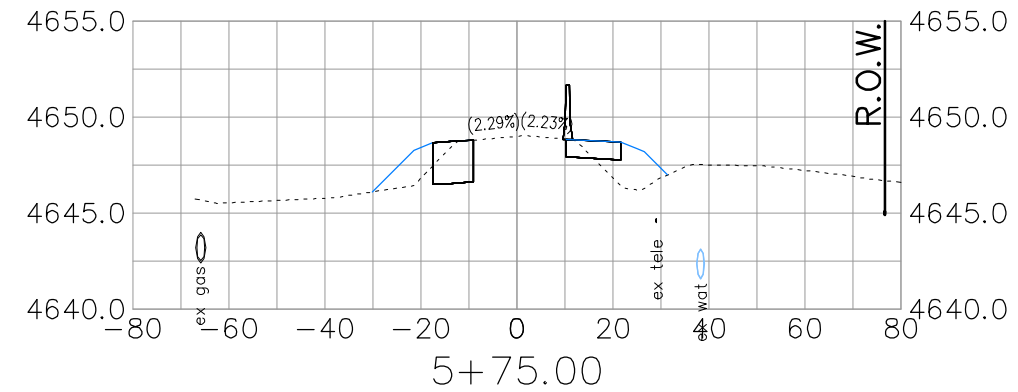
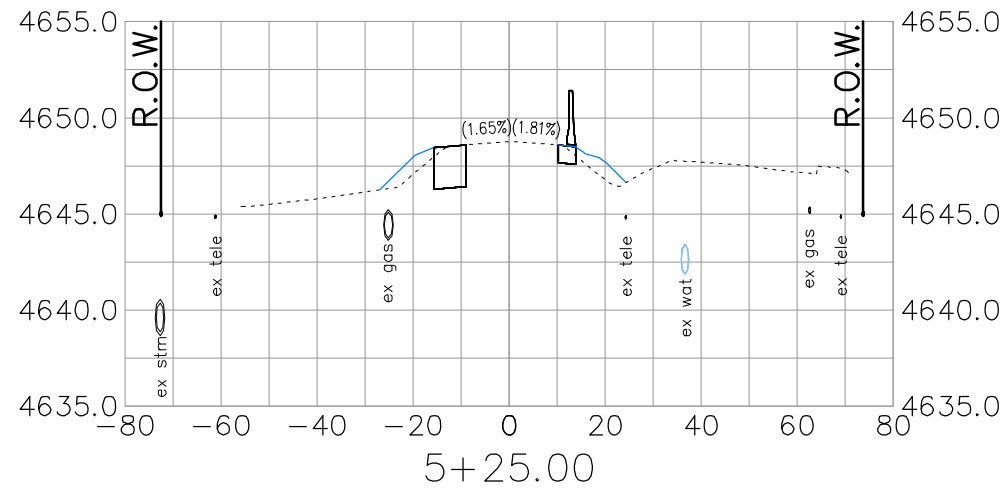


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Designer:	John C Smith	Structure Numbers	—
Detailer:	John C Smith	Structure Numbers	—
Sheet Subset:	Profile	Subset Sheets:	1 of 34

Project No./Code
TAP M555-032
20736
Sheet Number 200

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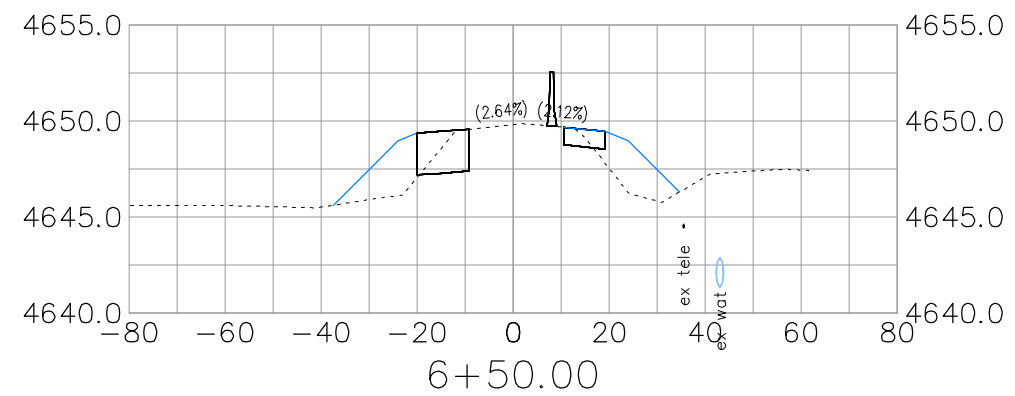
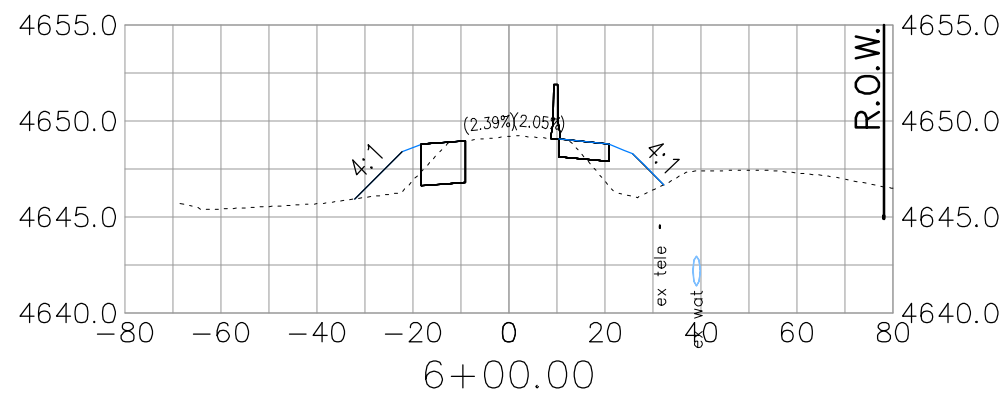
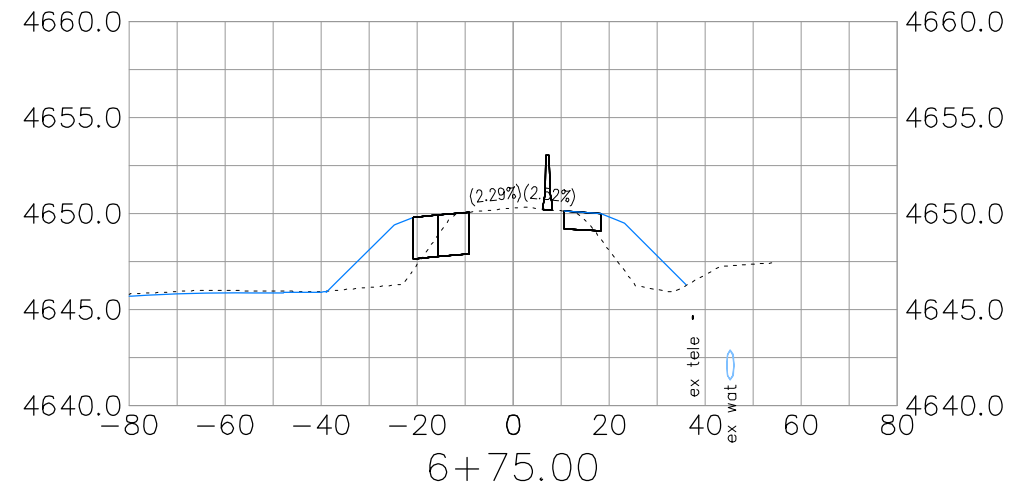
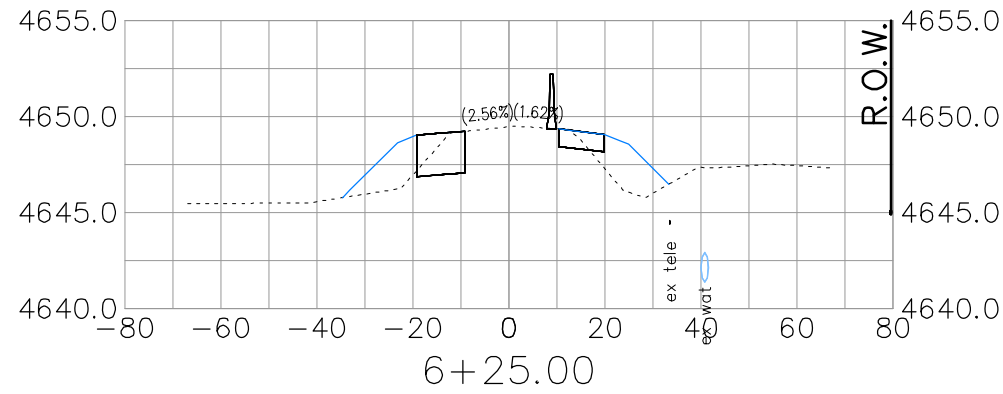
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Detailer: John C Smith	Structure Numbers	—
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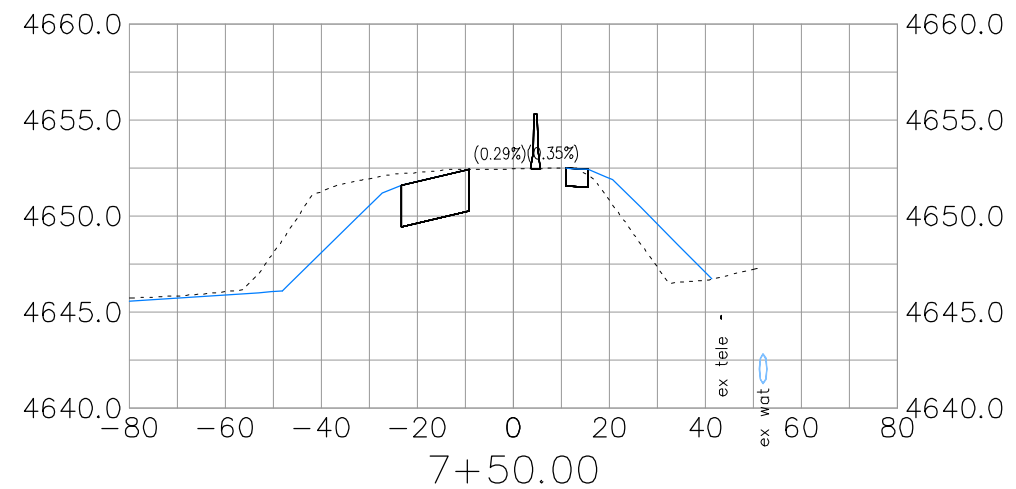
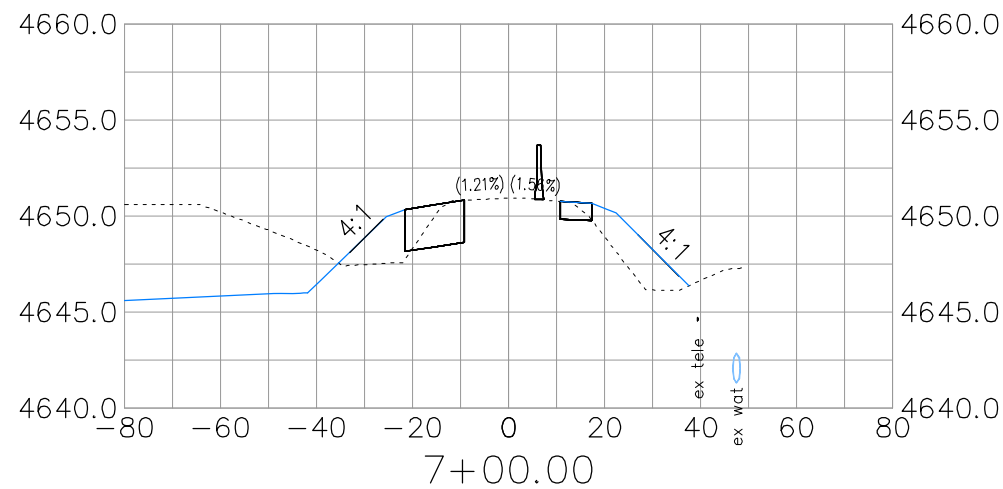
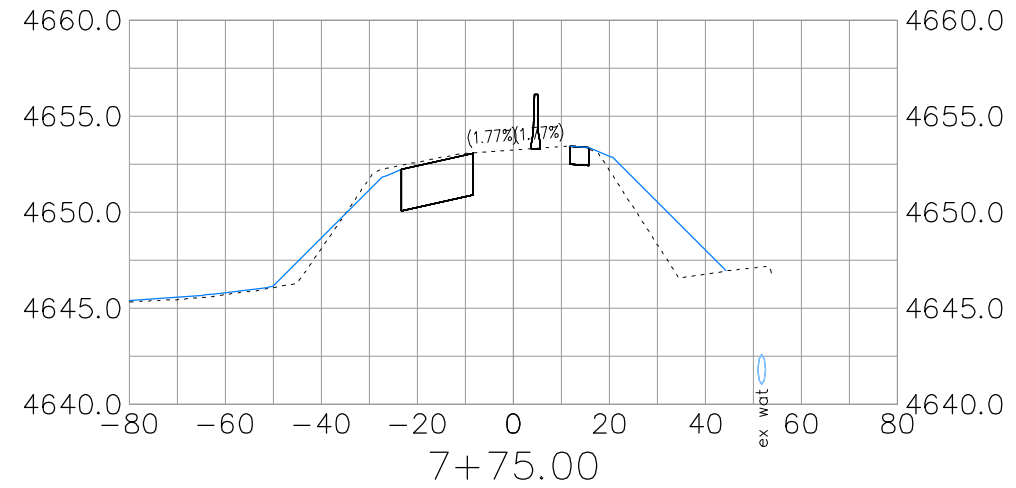
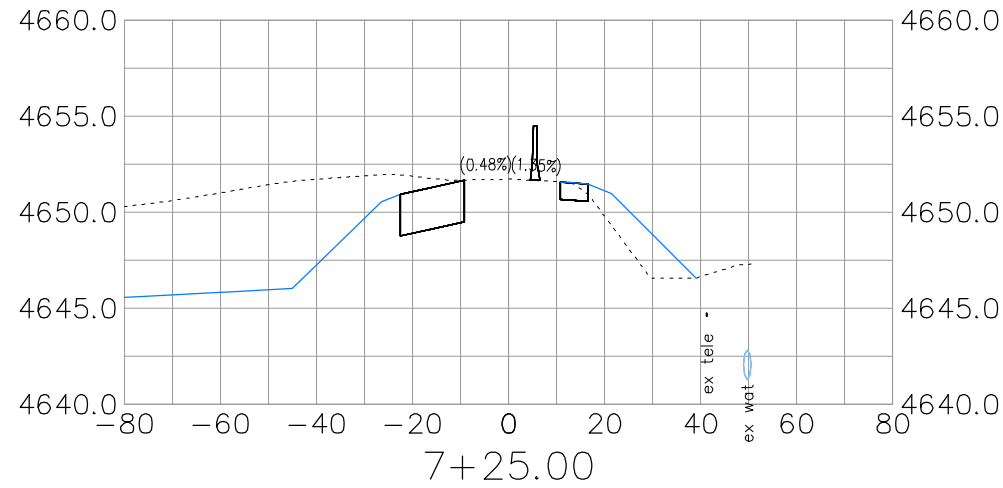


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Designer:	John C Smith	Structure Numbers	—
Detailer:	John C Smith	Structure Numbers	—
Sheet Subset:	Profile	Subset Sheets:	3 of 34

Project No./Code
TAP M555-032
20736
Sheet Number 202

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 Horiz. Scale: AS SHOWN Vert. Scale: AS SHOWN
 Unit Information: City of GJ Unit Leader Initials: JJV

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Sheet Revisions

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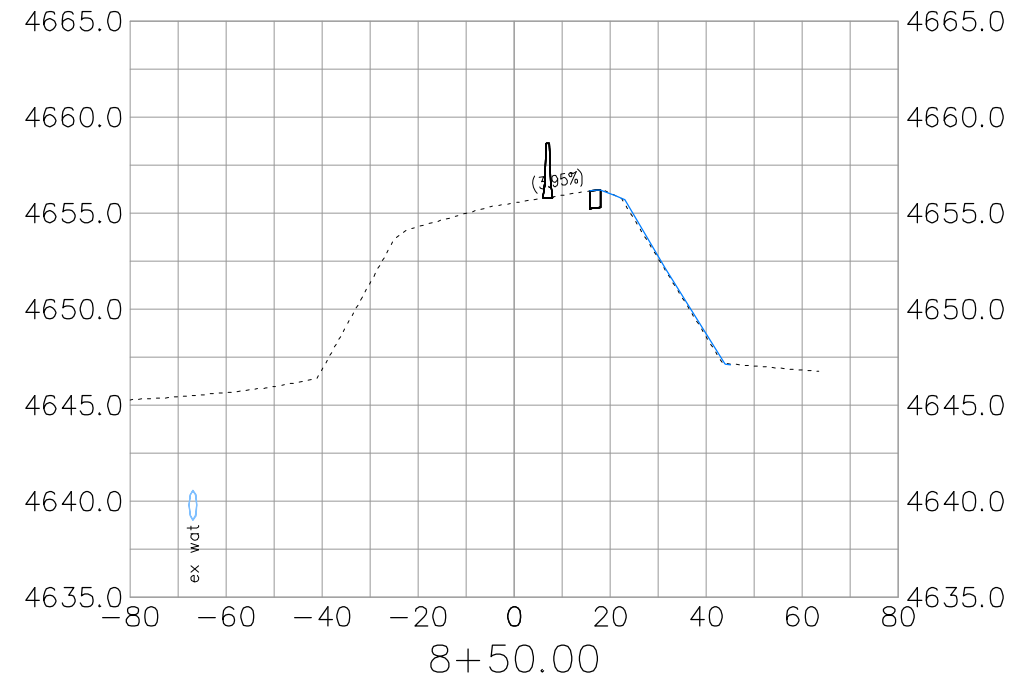
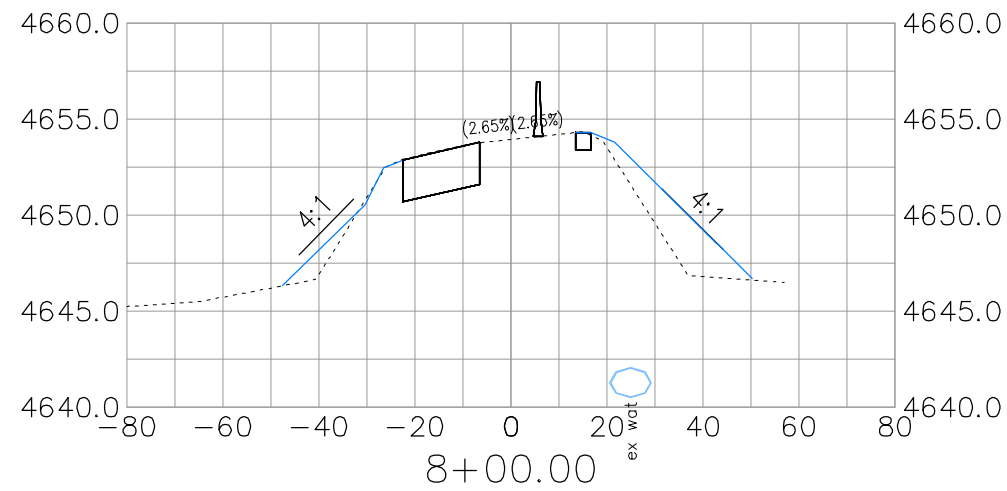
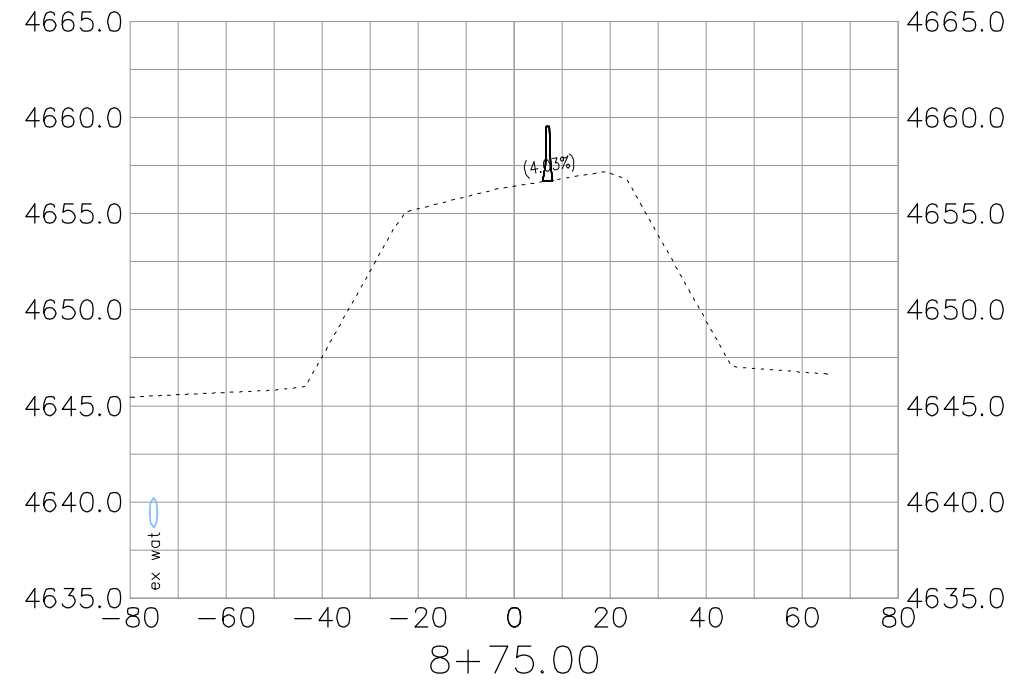
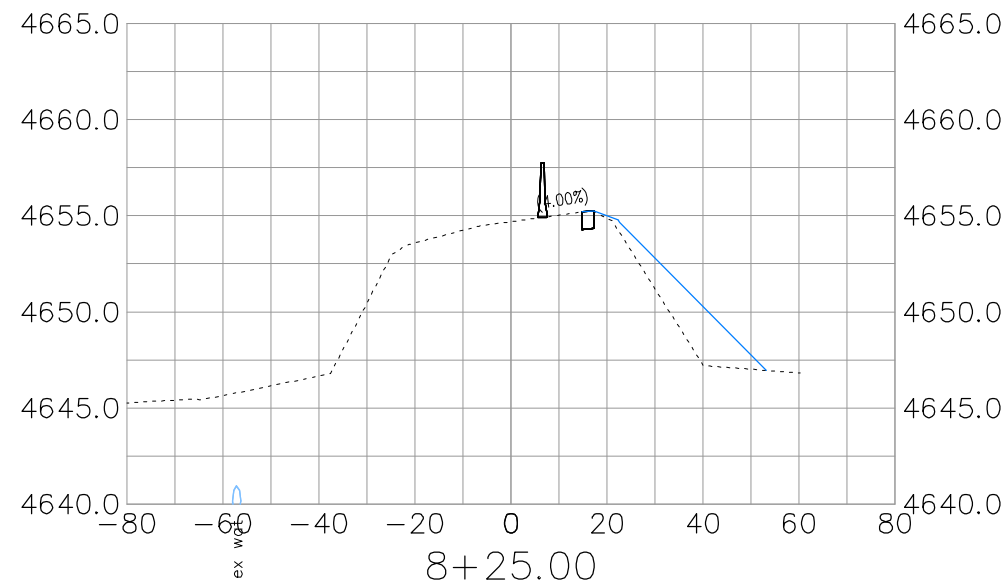
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Designer: John C Smith	Structure Numbers	—
Detailer: John C Smith	Subset Sheets:	4 of 34

Project No./Code

TAP M555-032
 20736
 Sheet Number 203

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 Unit Information: City of GJ Unit Leader Initials: JJV

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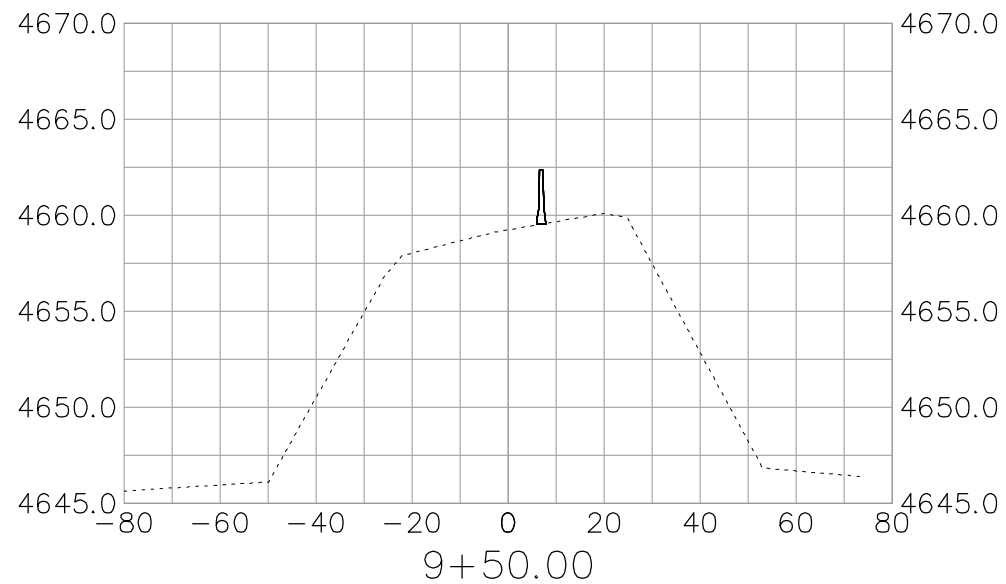
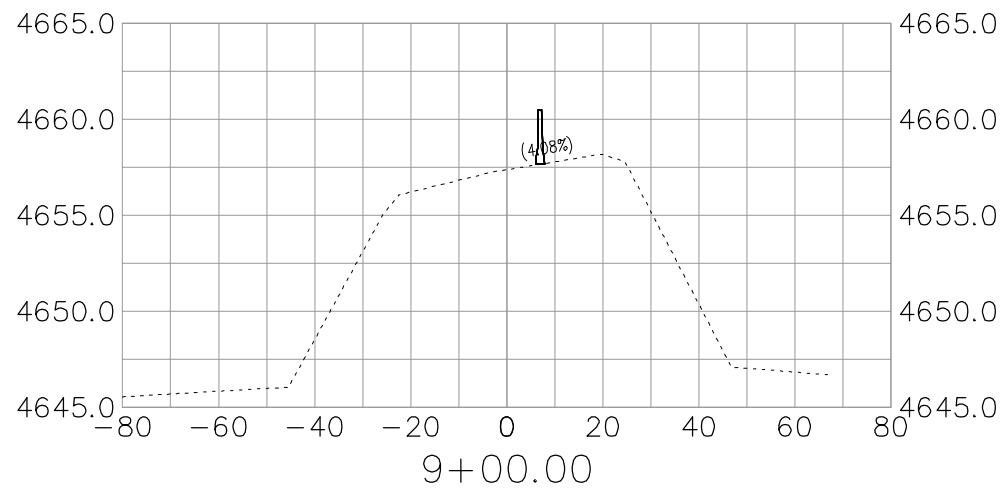
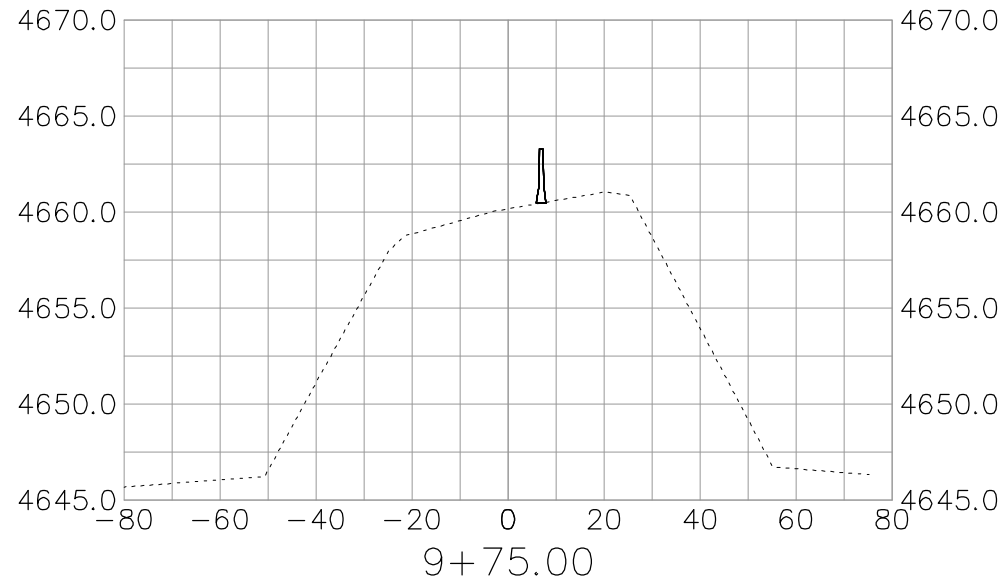
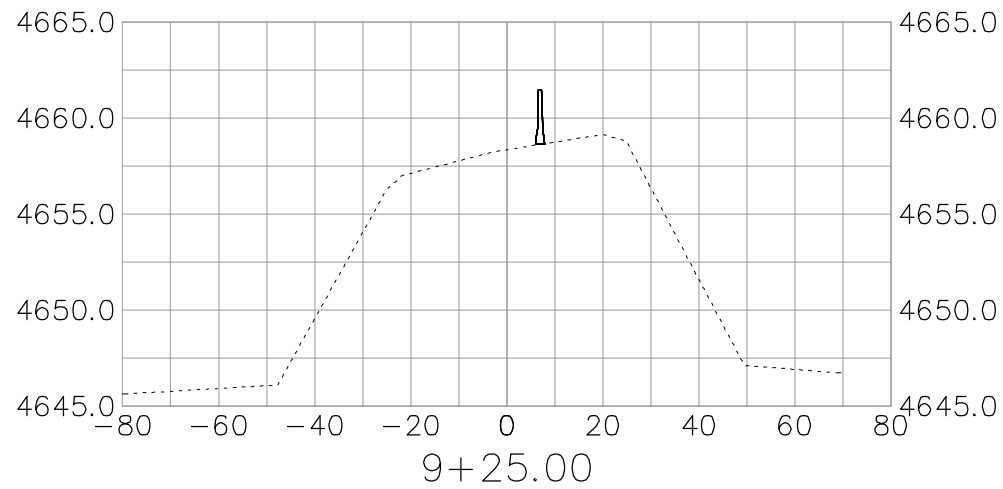


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Designer: John C Smith	Structure	Numbers	—
Detailer: John C Smith	Structure	Numbers	—
Sheet Subset: Profile	Subset Sheets:	5 of 34	

Project No./Code
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 20736
 Sheet Number 204

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Know what's below.
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Print Date: as shown at left
 File Name: as shown at left
 Horiz. Scale: AS SHOWN Vert. Scale: AS SHOWN
 Unit Information: City of GJ Unit Leader Initials: JJV

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Sheet Revisions		
Date:	Comments	Init.

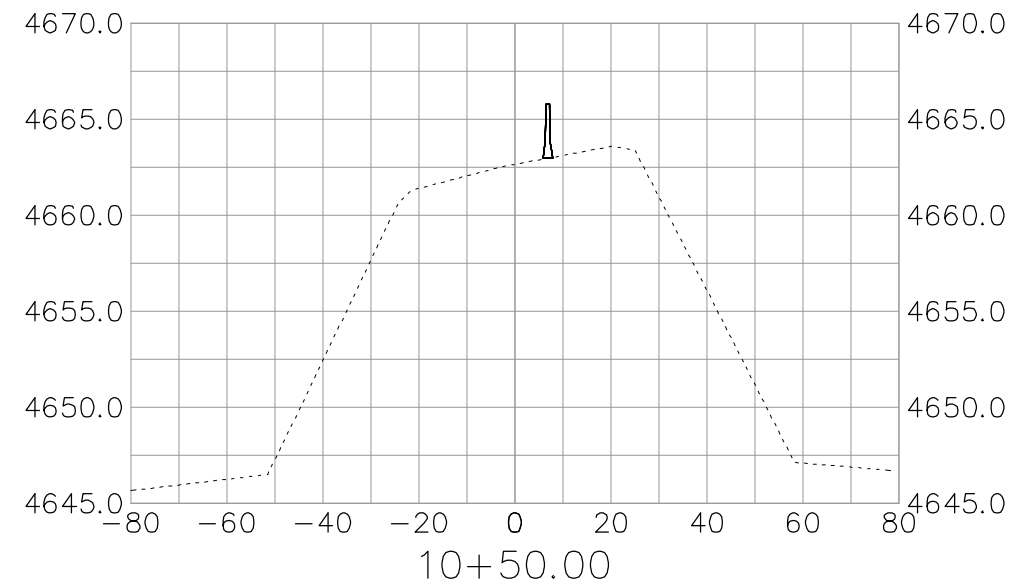
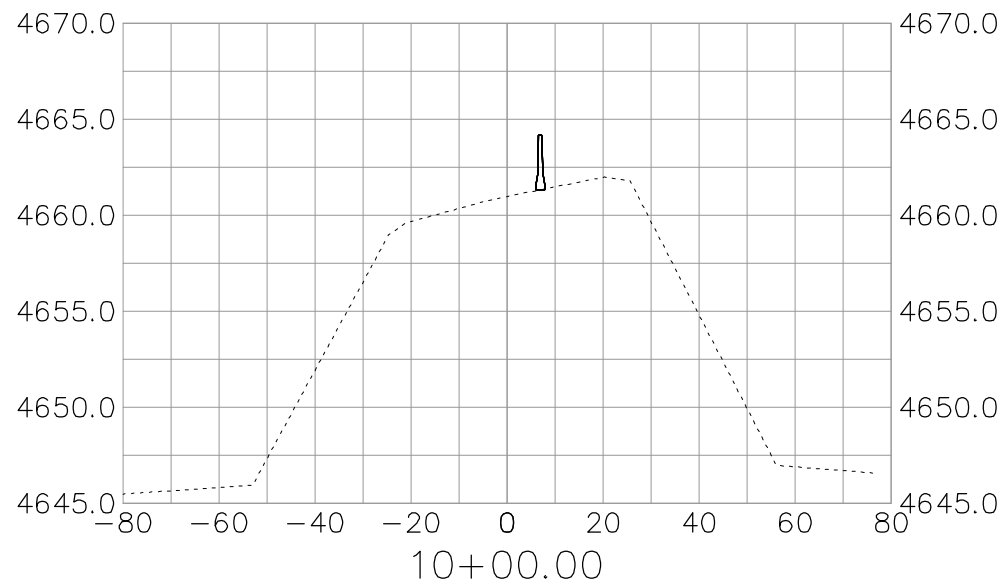
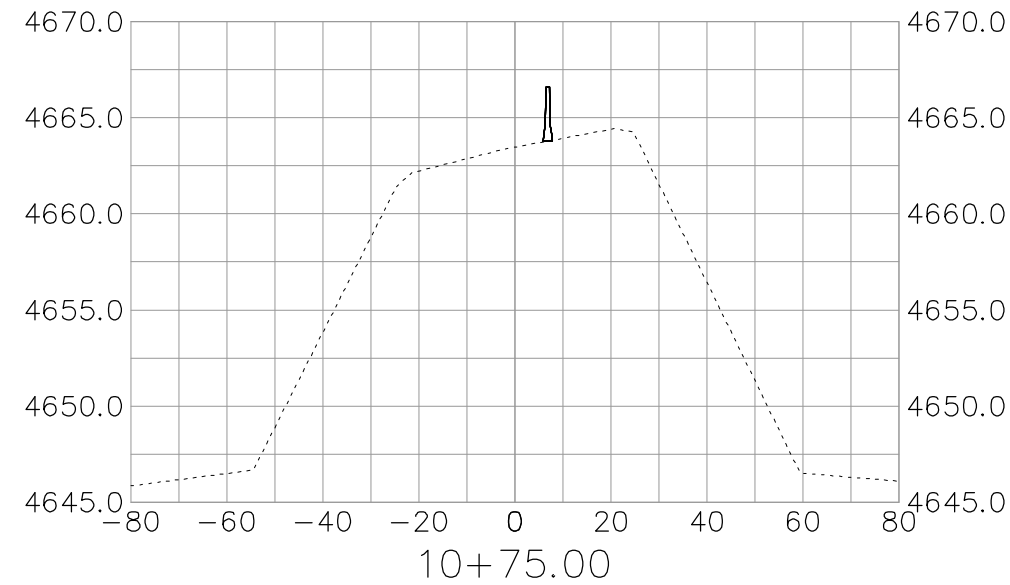
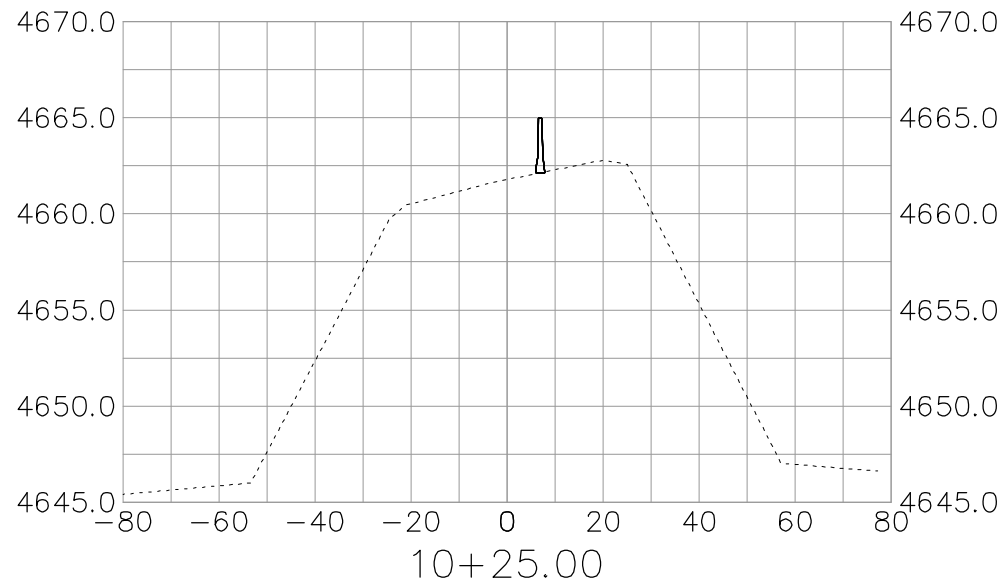


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Detailer: John C Smith	Structure	Numbers	—
Sheet Subset: Profile	Subset Sheets:	6 of 34	

Project No./Code
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 20736
 Sheet Number 205

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 Unit Information: City of GJ Unit Leader Initials: JJV

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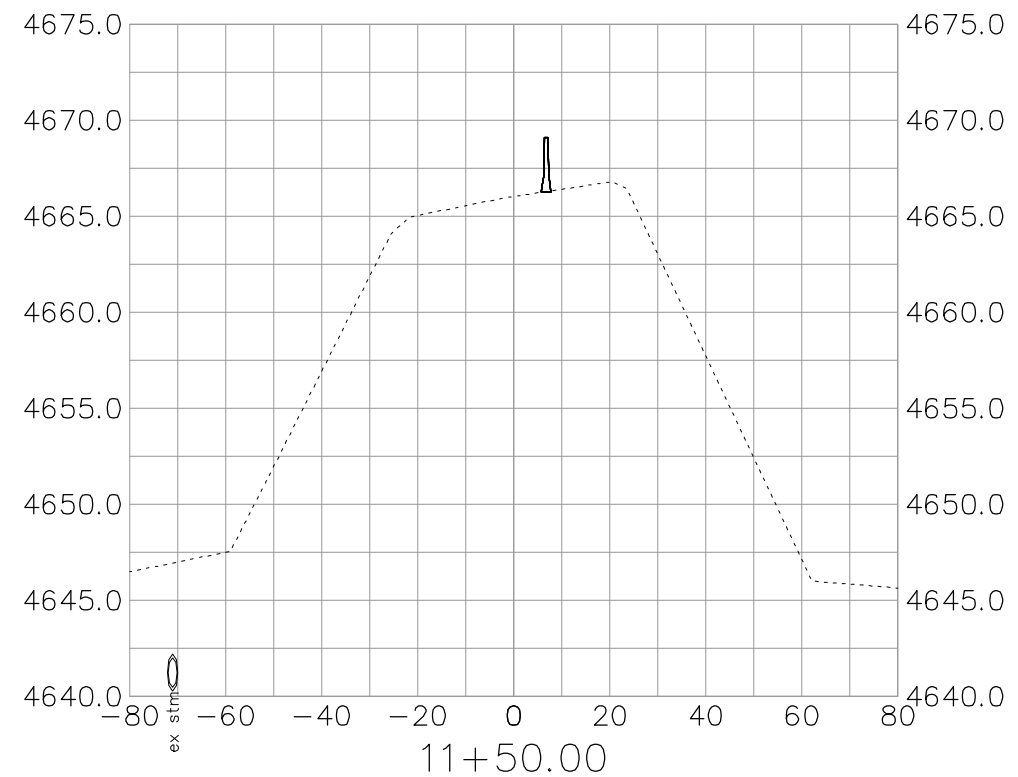
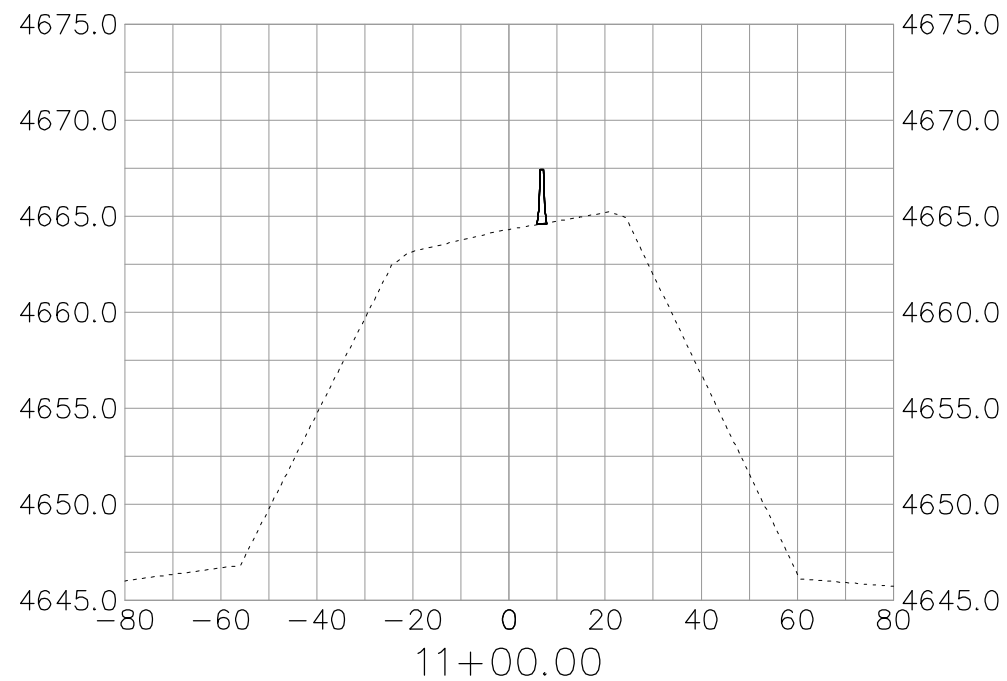
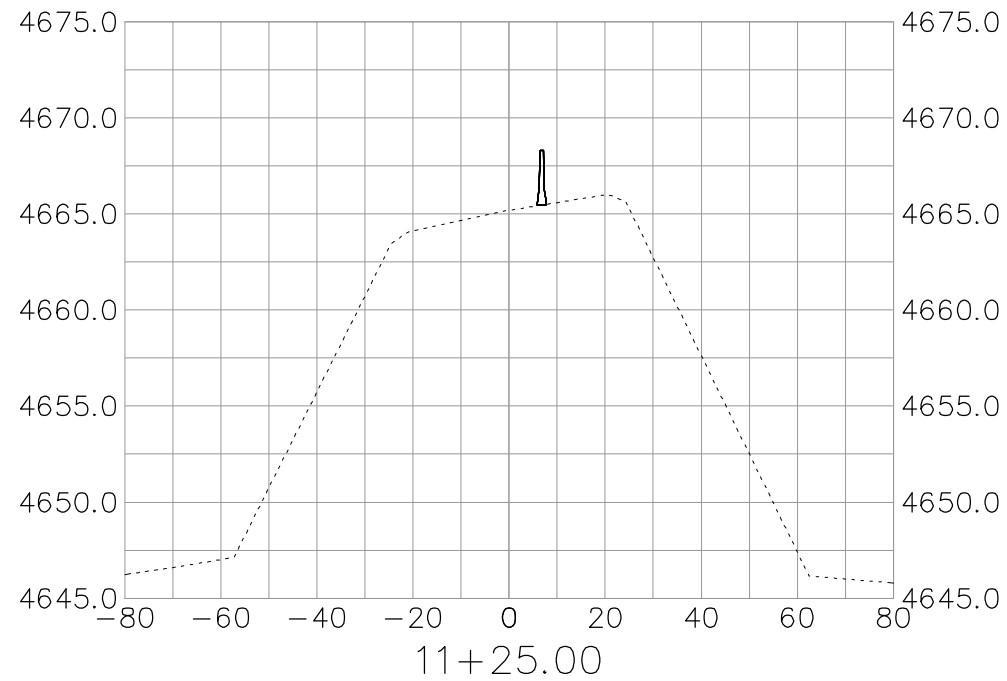


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Detailer: John C Smith	Structure	Numbers	—
Sheet Subset: Profile	Subset Sheets:	7 of 34	

Project No./Code
 TAP M555-032
 20736
 Sheet Number 206

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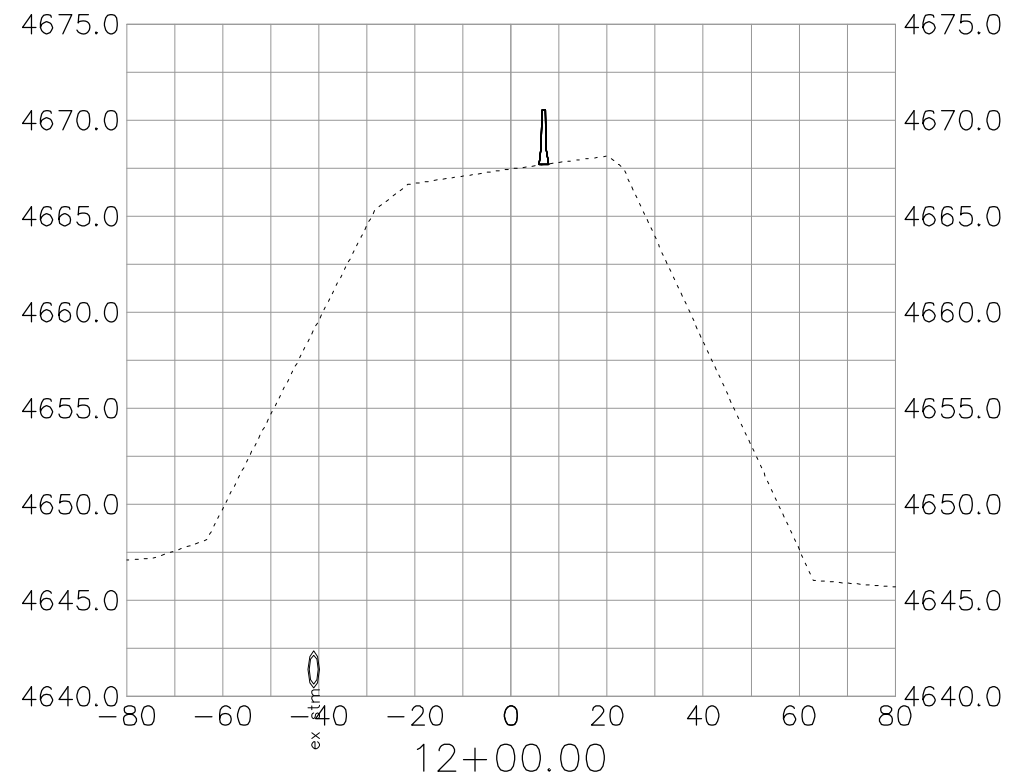
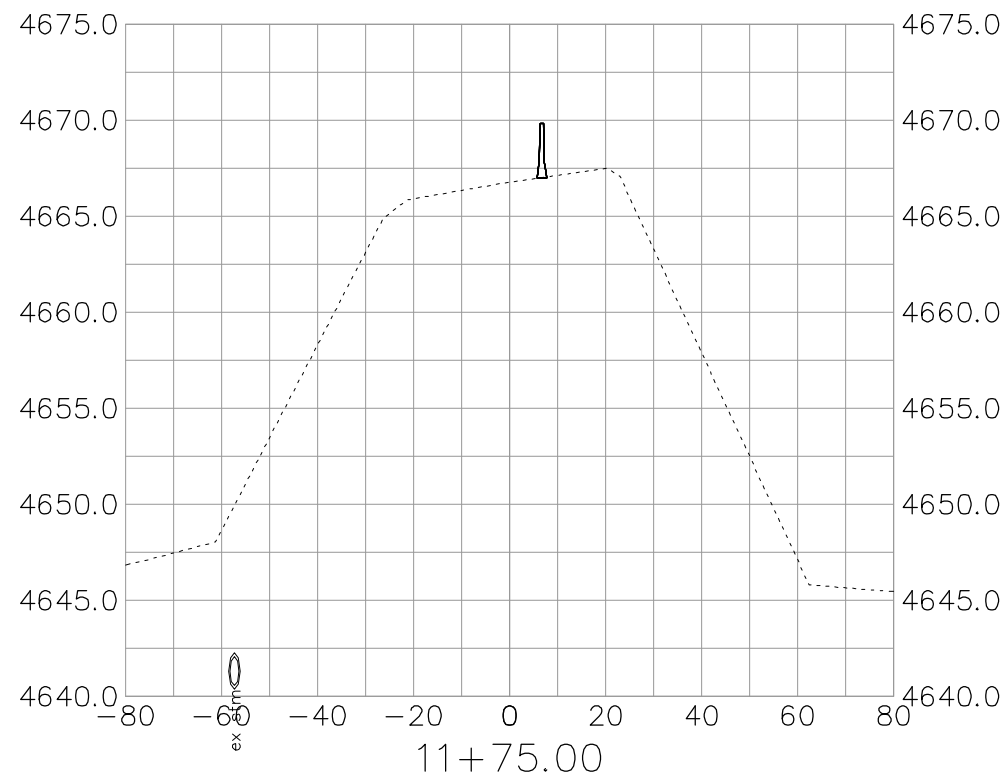


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ROADWAY CROSS SECTIONS			
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Detailer: John C Smith	Structure	Numbers	—
Sheet Subset: Profile	Subset Sheets:	8 of 34	

Project No./Code
 TAP M555-032
 20736
 Sheet Number 207

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 Unit Information: City of GJ Unit Leader Initials: JJV

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Sheet Revisions		
Date:	Comments	Init.

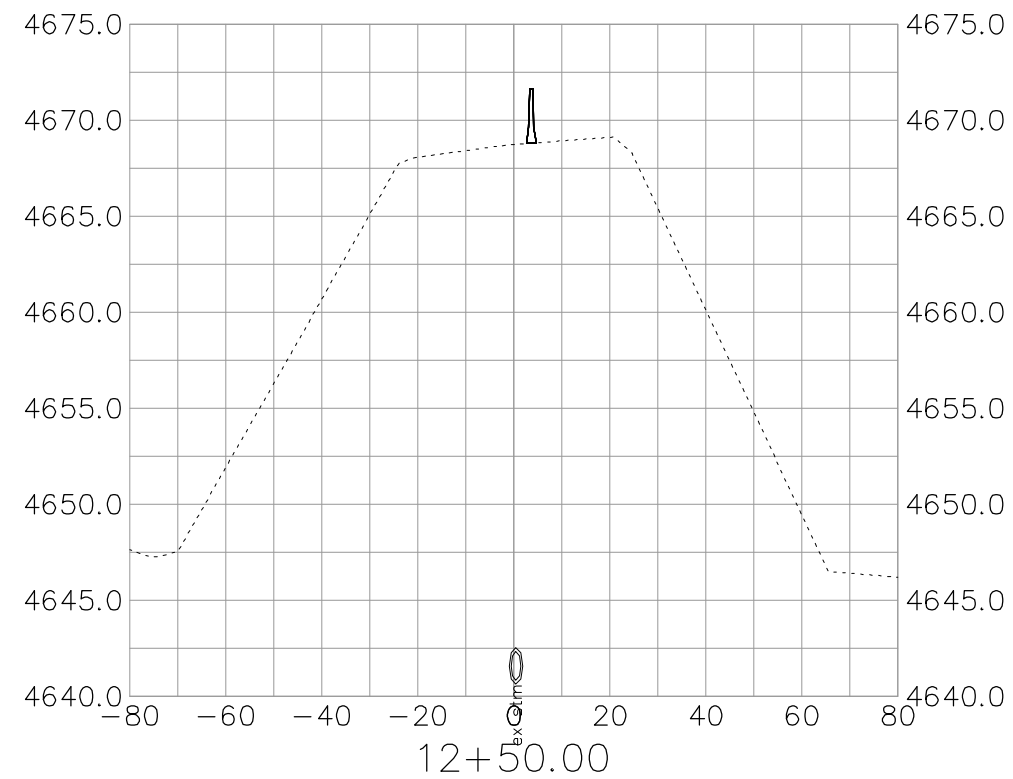
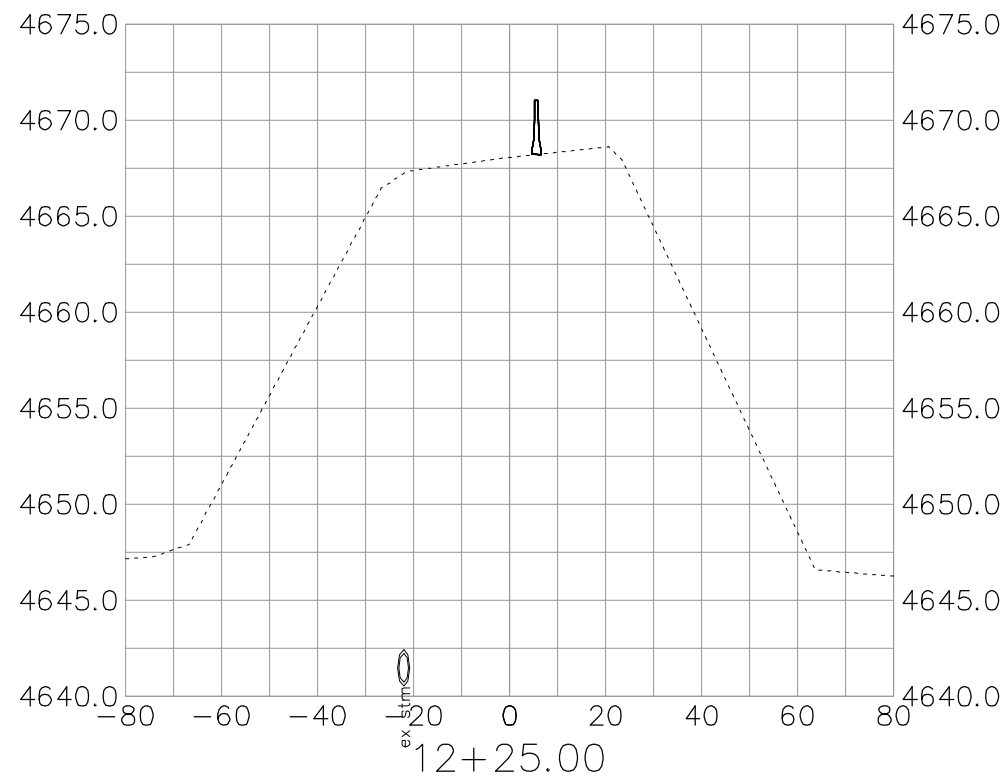


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Detailer: John C Smith	Structure	Numbers	—
Sheet Subset: Profile	Subset Sheets:	9 of 34	

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Sheet Number 208

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Print Date: as shown at left
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 Unit Information: City of GJ Unit Leader Initials: JJV

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Sheet Revisions		
Date:	Comments	Init.

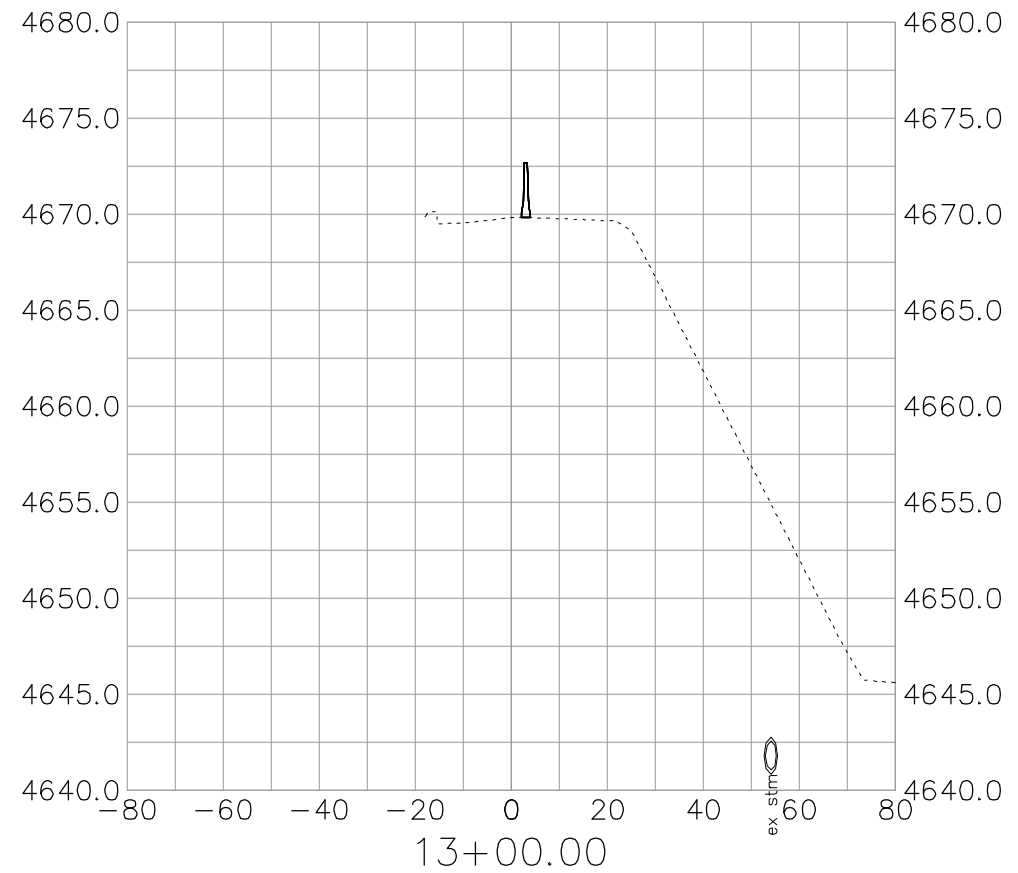
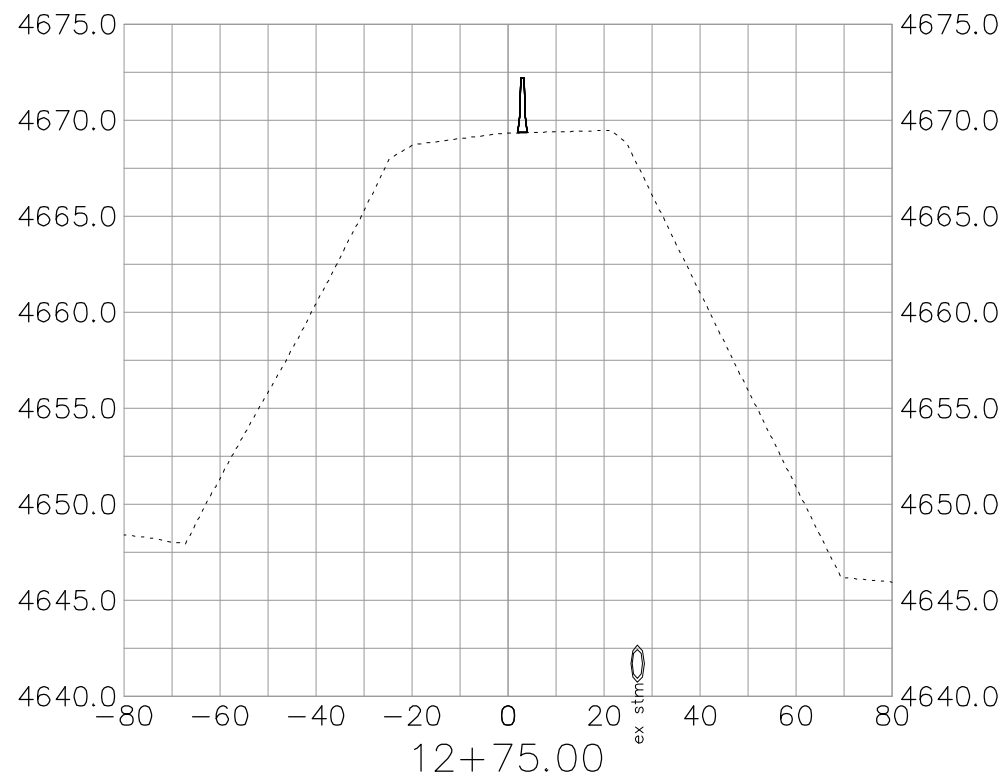


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Project No./Code
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Unit Information: City of GJ Unit Leader Initials: JJV

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Sheet Revisions		
Date:	Comments	Init.

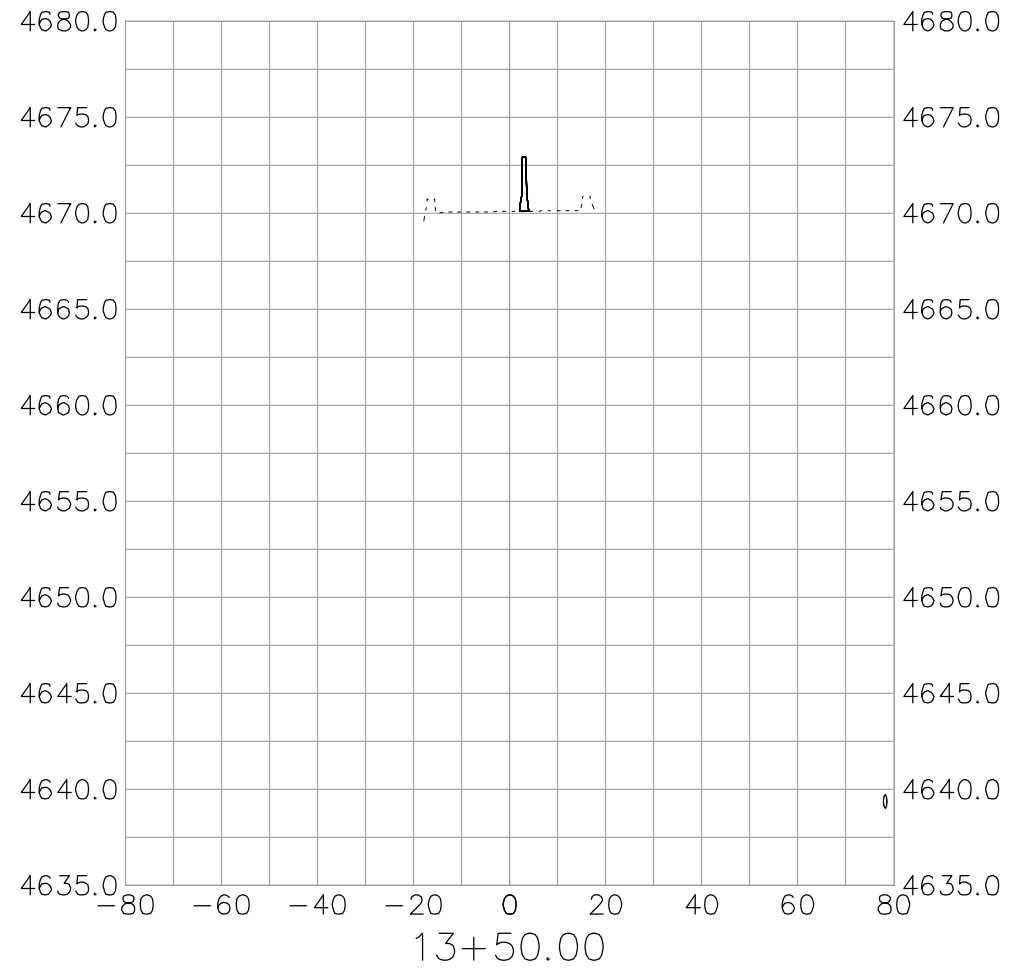
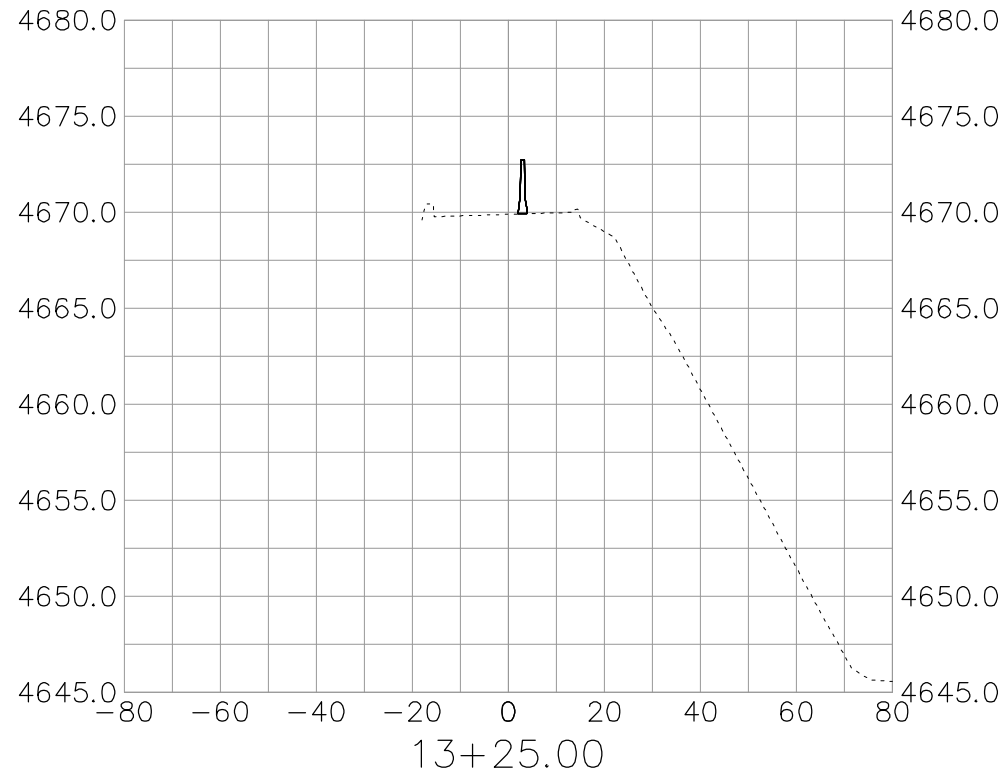


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Detailer: John C Smith	Structure Numbers	—	—
Sheet Subset: Profile	Subset Sheets:	11 of 34	

Project No./Code
TAP M555-032
20736
Sheet Number 210

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 Unit Information: City of GJ Unit Leader Initials: JJV

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Sheet Revisions		
Date:	Comments	Init.

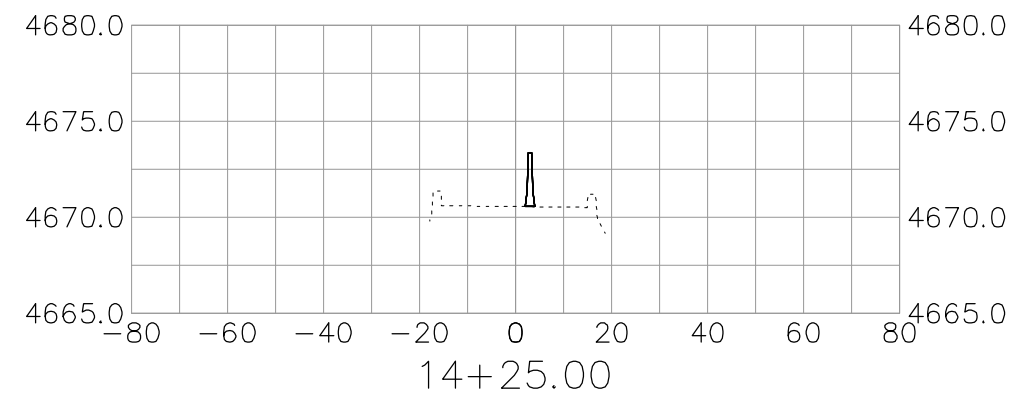
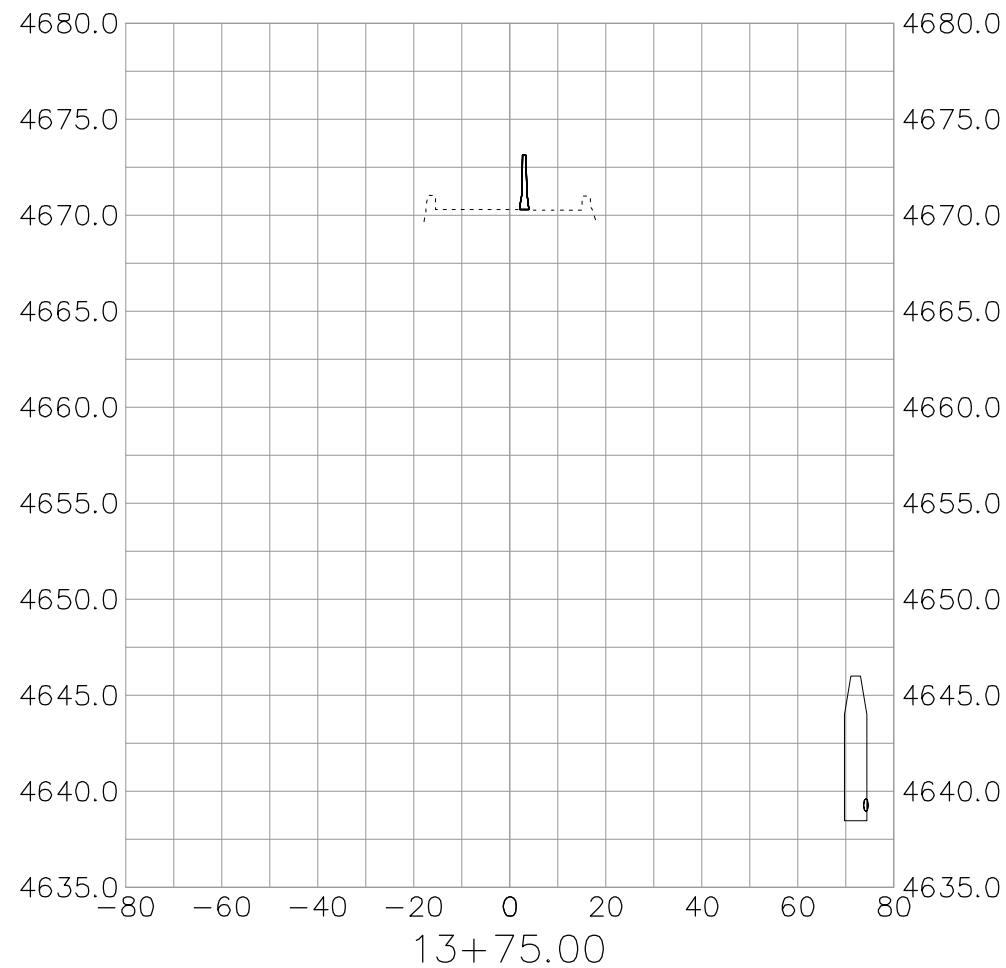
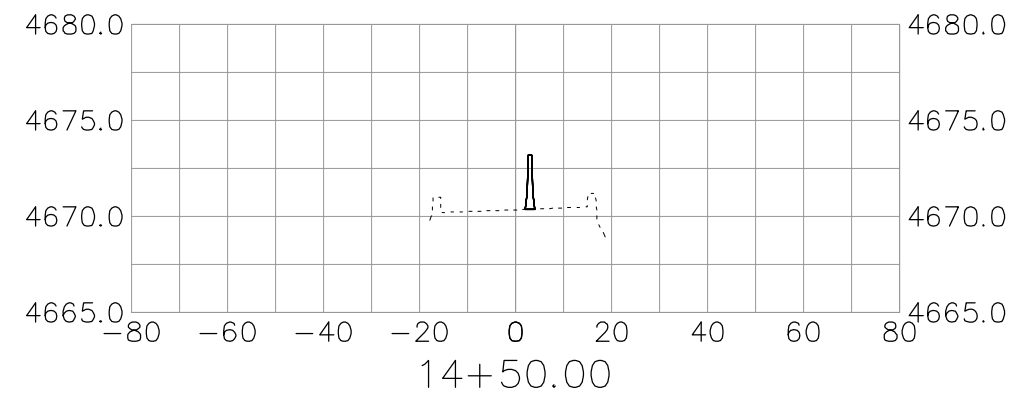
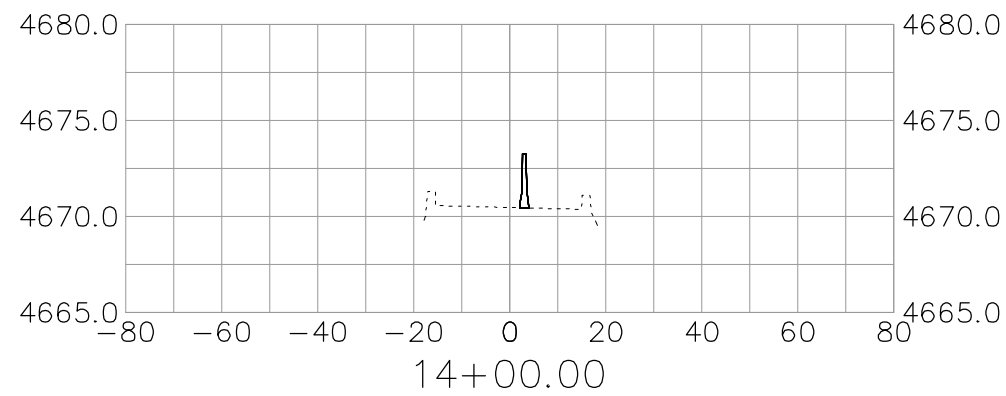


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Detailer:	John C Smith	Structure Numbers	—
Sheet Subset:	Profile	Subset Sheets:	12 of 34

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 20736
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Sheet Revisions		
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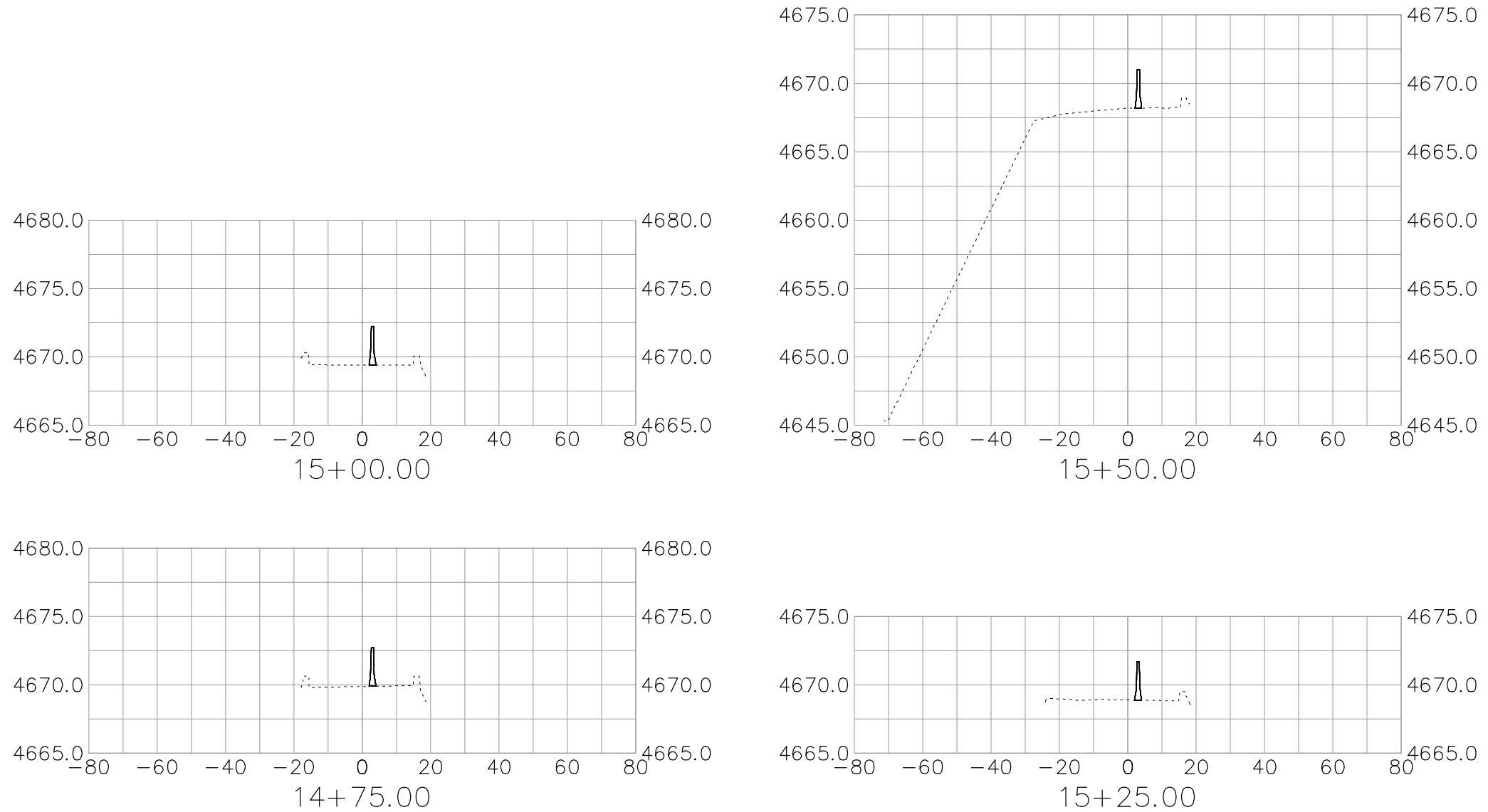


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ROADWAY CROSS SECTIONS			
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Sheet Subset:	Profile	Subset Sheets:	13 of 34

Project No./Code
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 Sheet Number 212

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 Unit Information: City of GJ Unit Leader Initials: JJV

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Date:	Comments	Init.

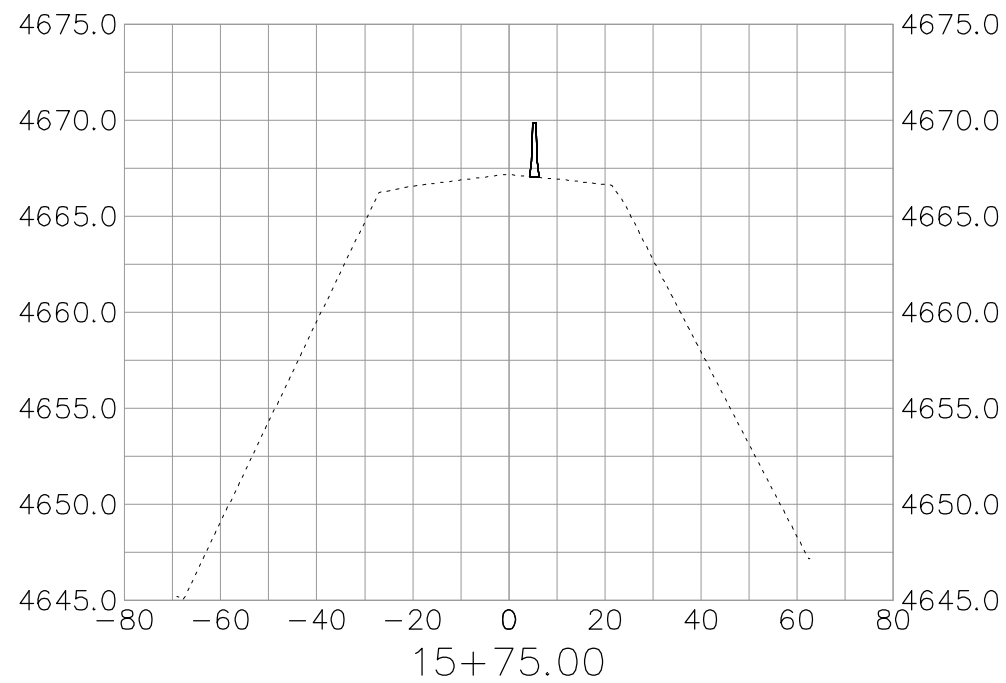
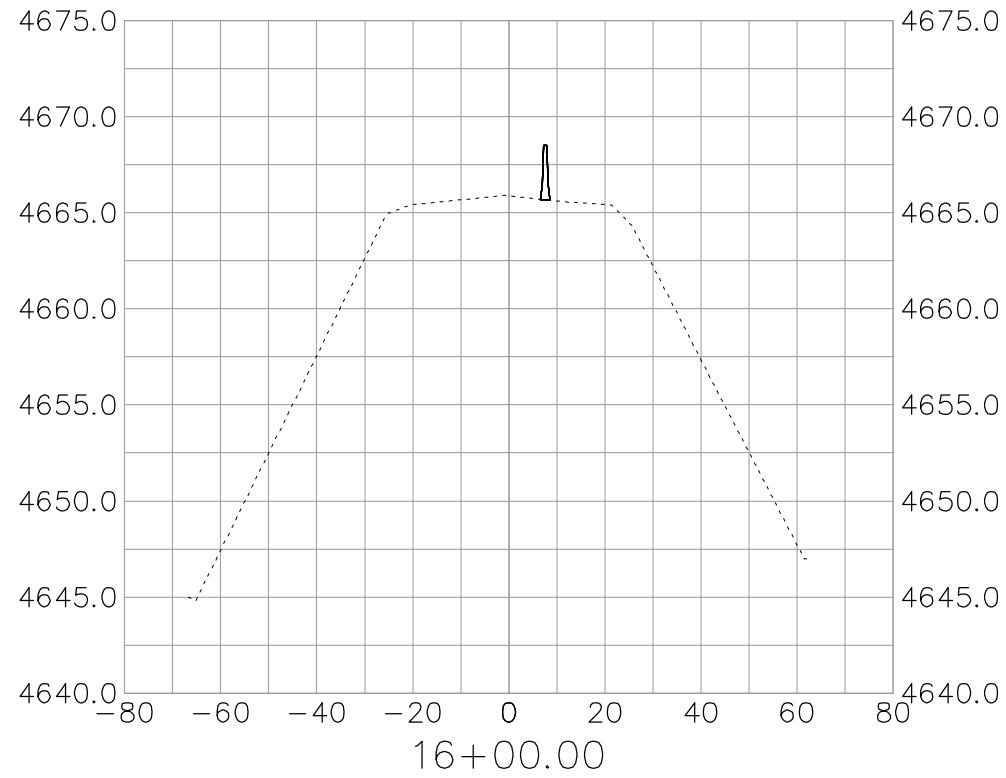


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Sheet Subset:	Profile	Subset Sheets:	14 of 34

Project No./Code
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 Sheet Number 213

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 Unit Information: City of GJ Unit Leader Initials: JJV

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Sheet Revisions		
Date:	Comments	Init.

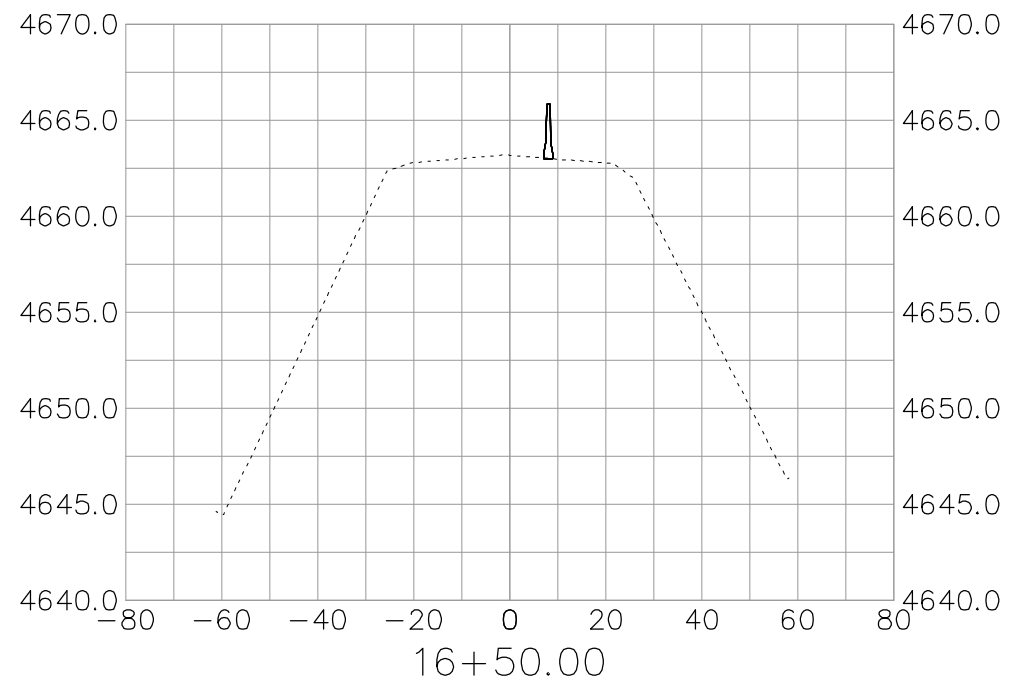
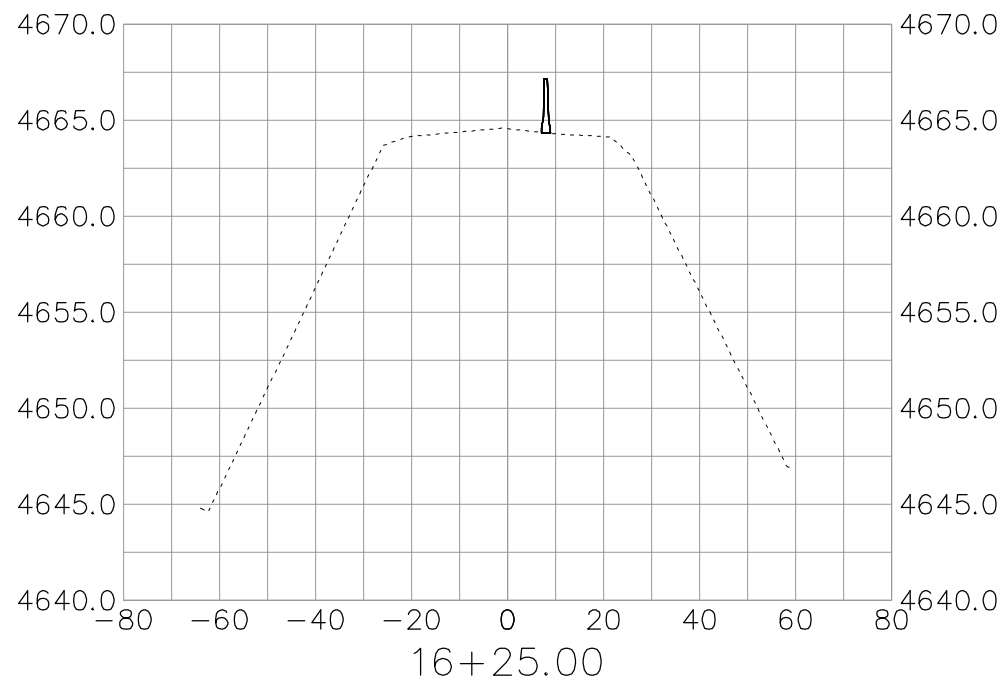


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Detailer: John C Smith	Structure	Numbers	—
Sheet Subset: Profile	Subset Sheets:	15 of 34	

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20736
Sheet Number 214

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Sheet Revisions		
Date:	Comments	Init.

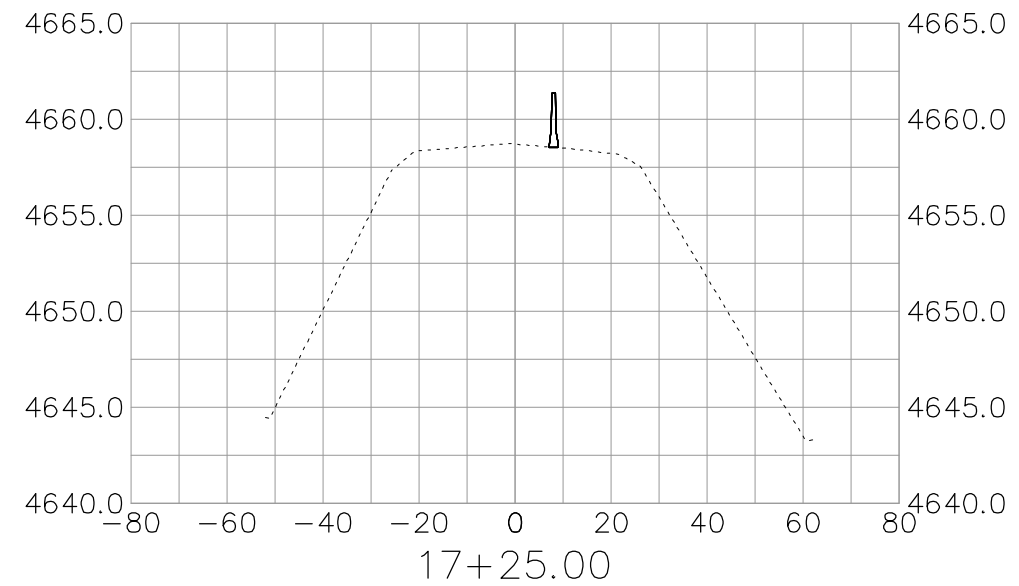
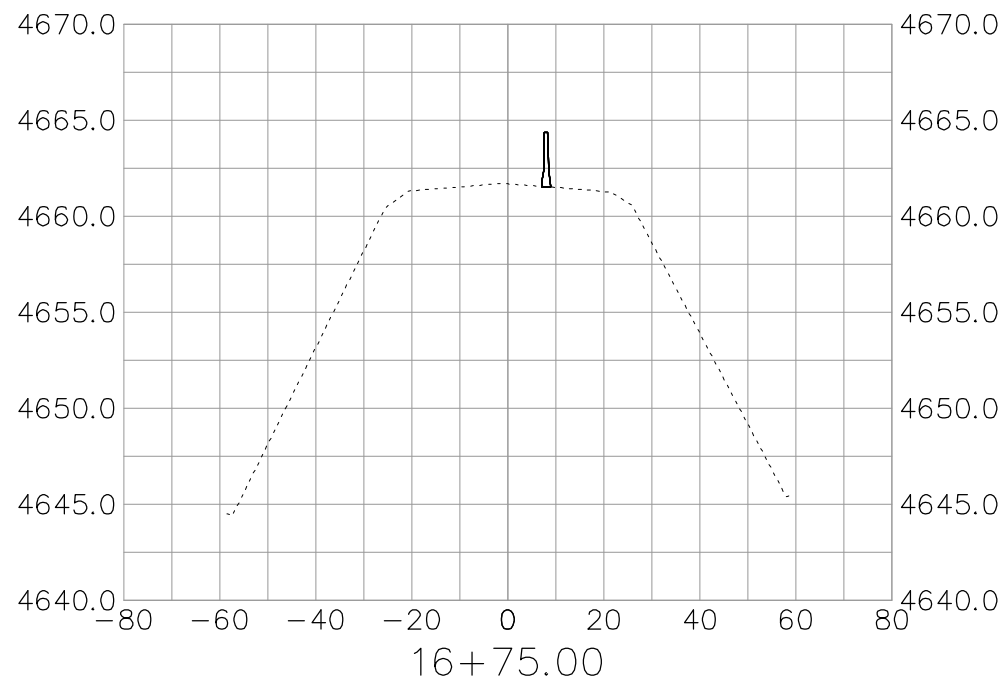
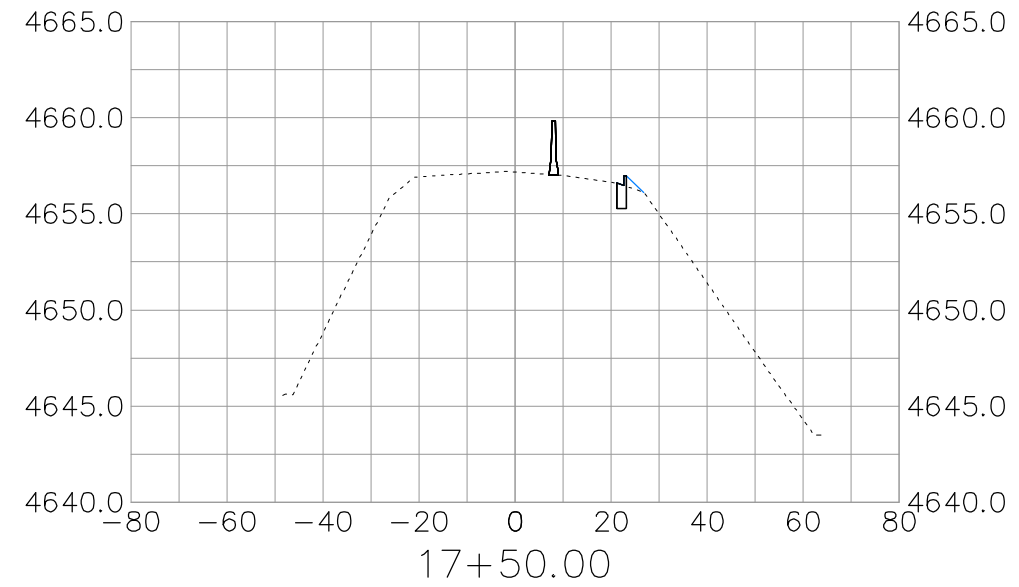
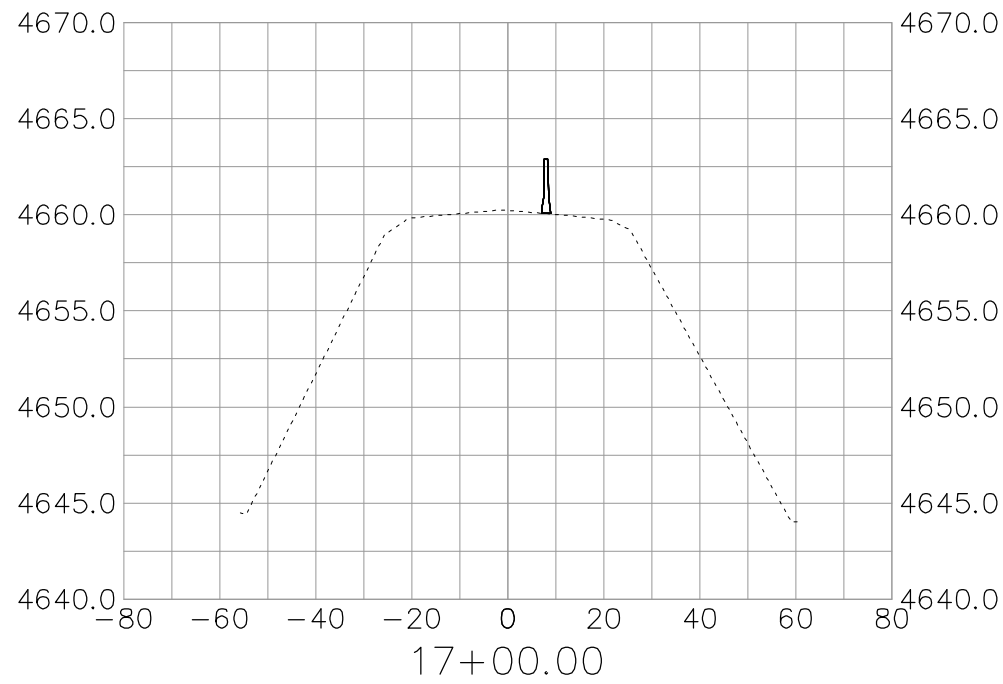


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ROADWAY CROSS SECTIONS			
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Detailer:	John C Smith	Structure Numbers	—
Sheet Subset:	Profile	Subset Sheets:	16 of 34

Project No./Code
 TAP M555-032
 20736
 Sheet Number 215

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Sheet Revisions		
Date:	Comments	Init.

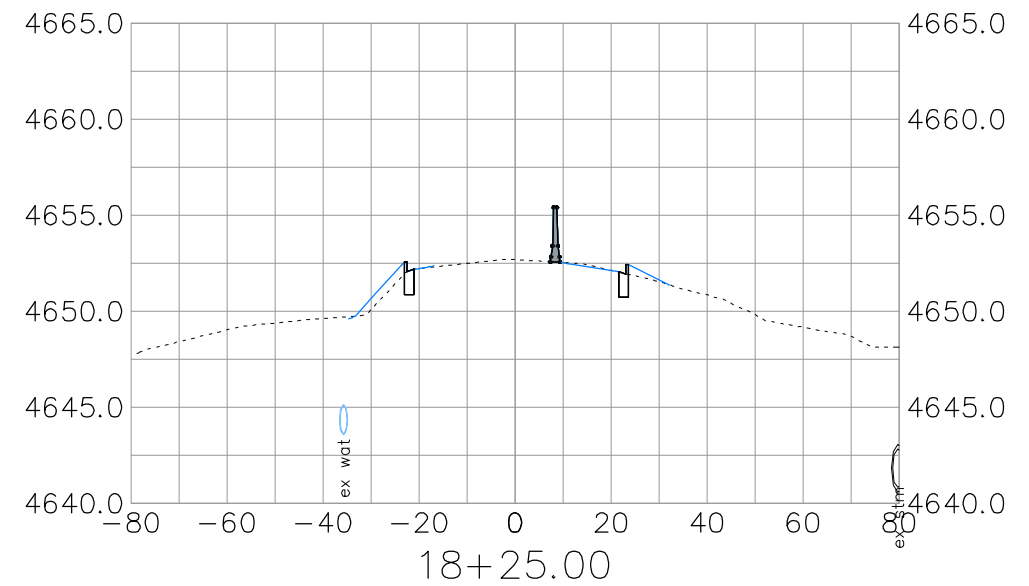
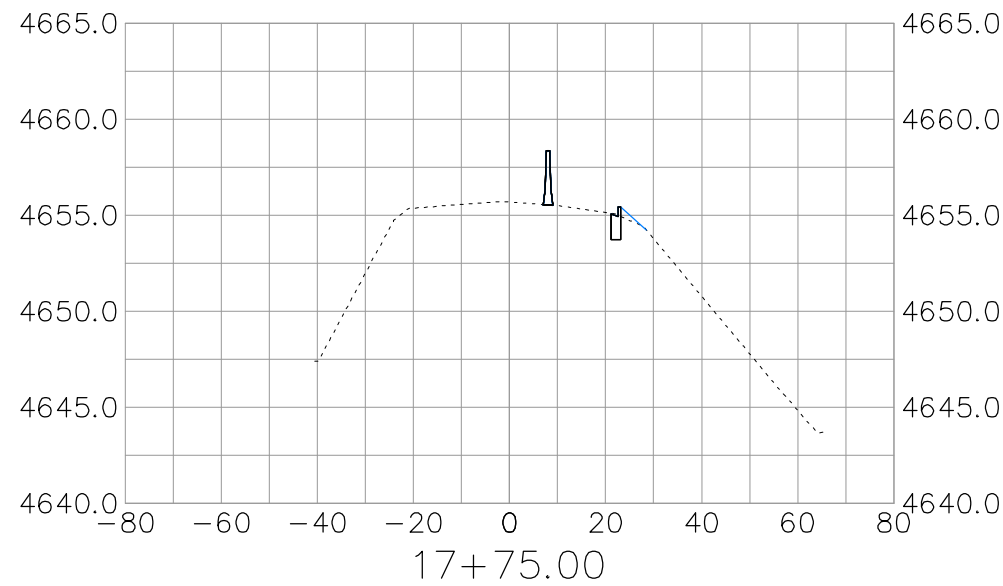
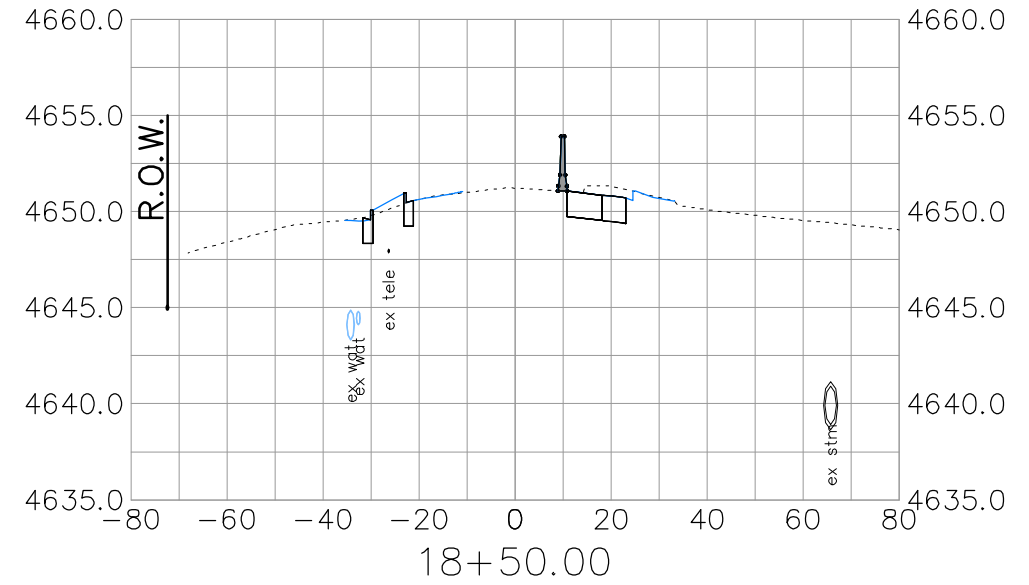
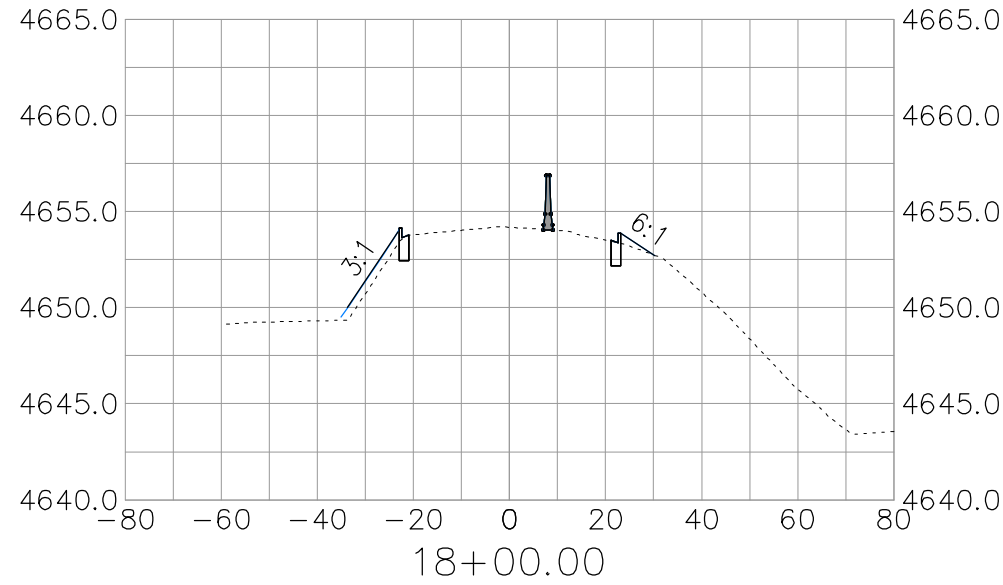


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Detailer: John C Smith	Structure	Numbers	—
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Project No./Code
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 20736
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Sheet Revisions		
Date:	Comments	Init.

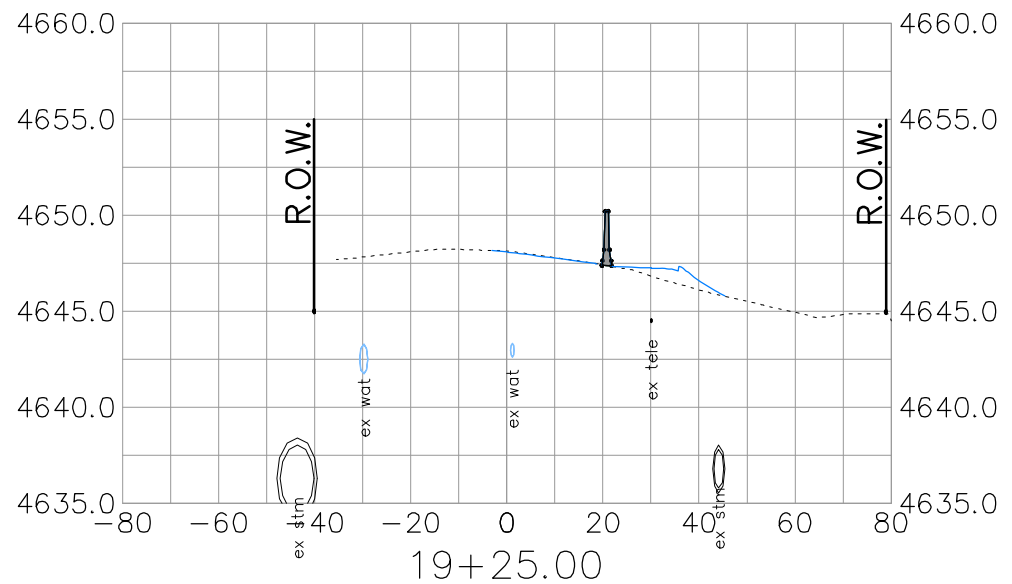
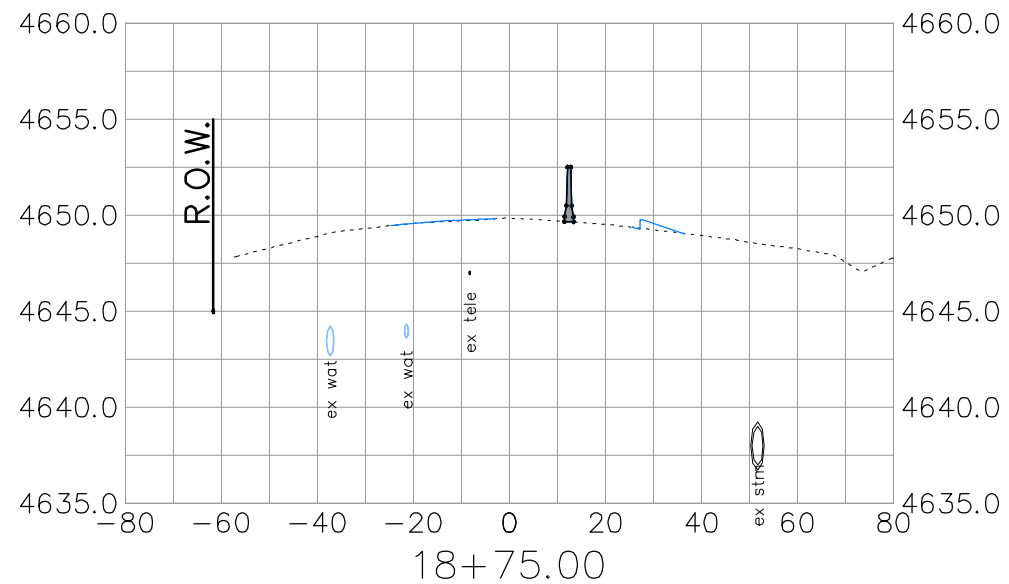
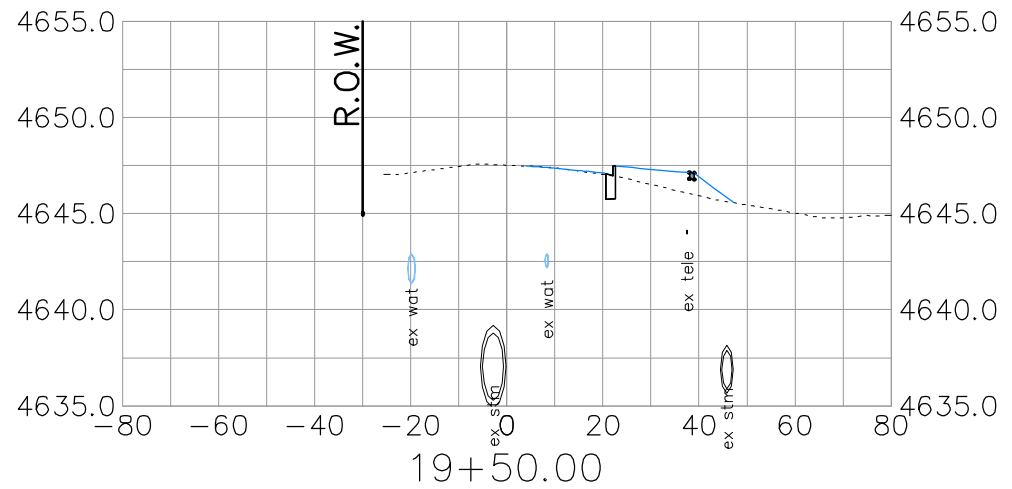
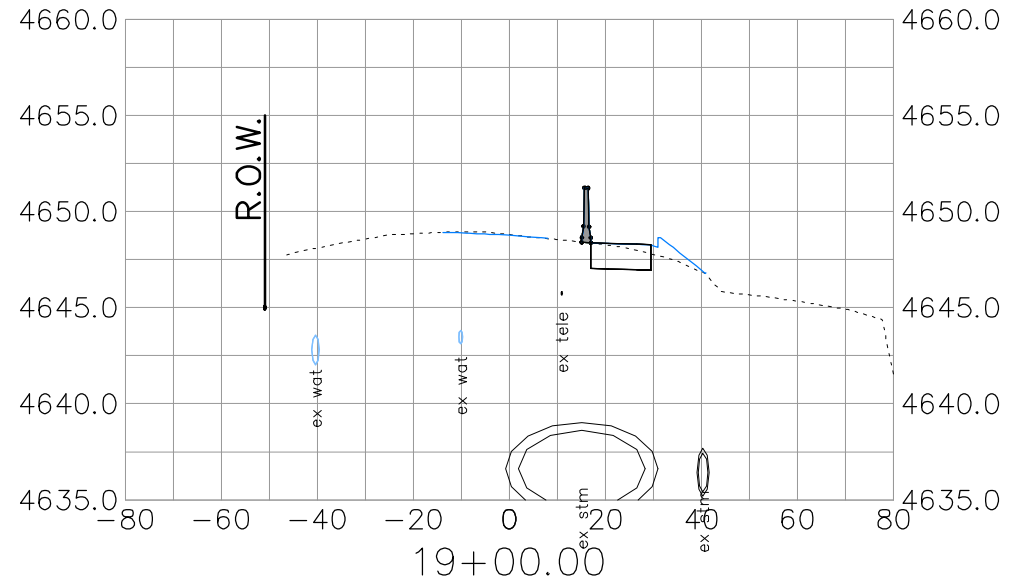


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Detailer:	John C Smith	Structure Numbers	—
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20736
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Sheet Revisions		
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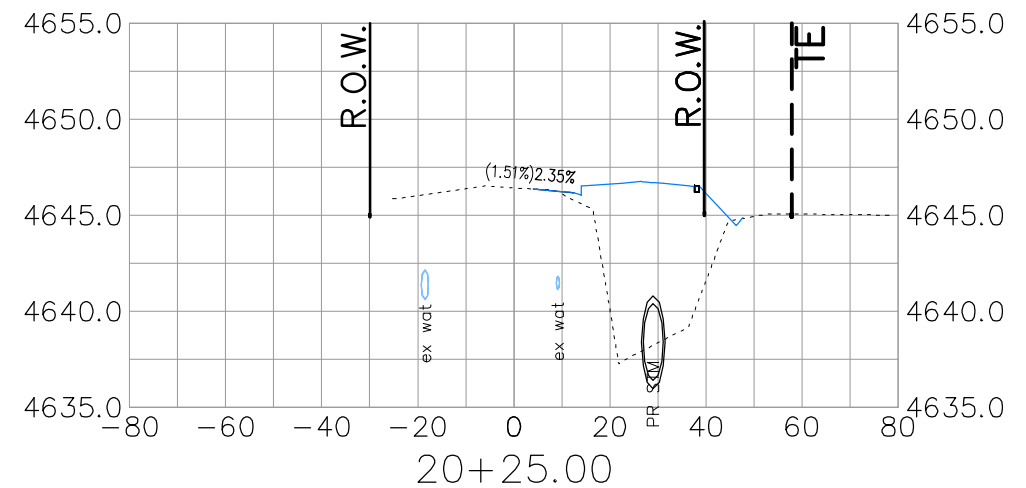
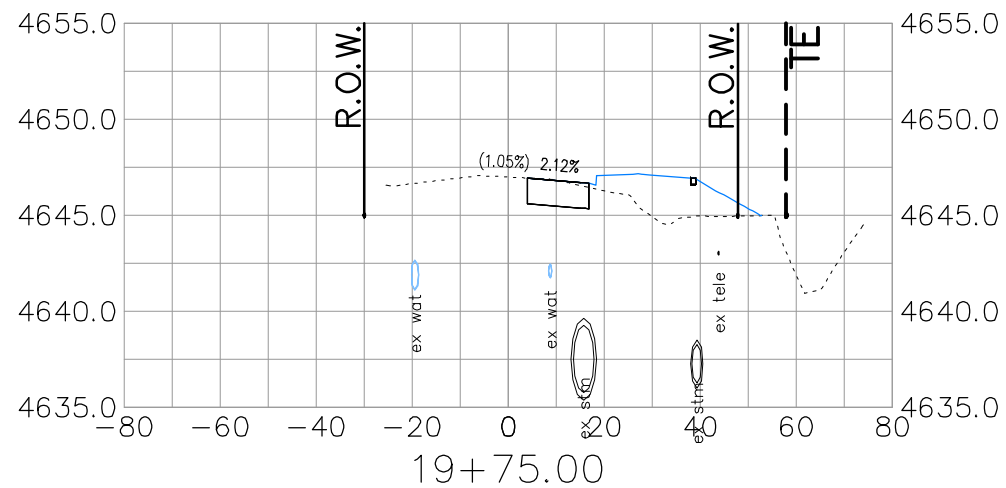
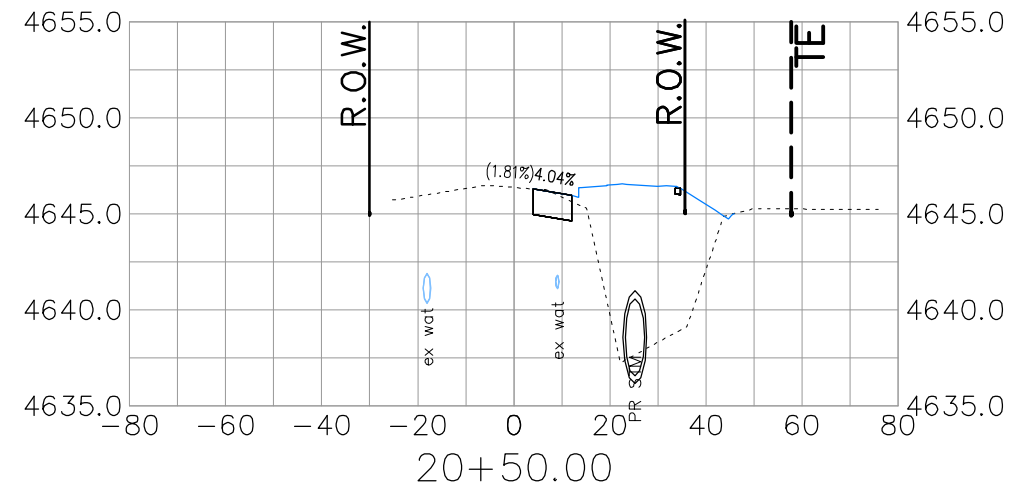
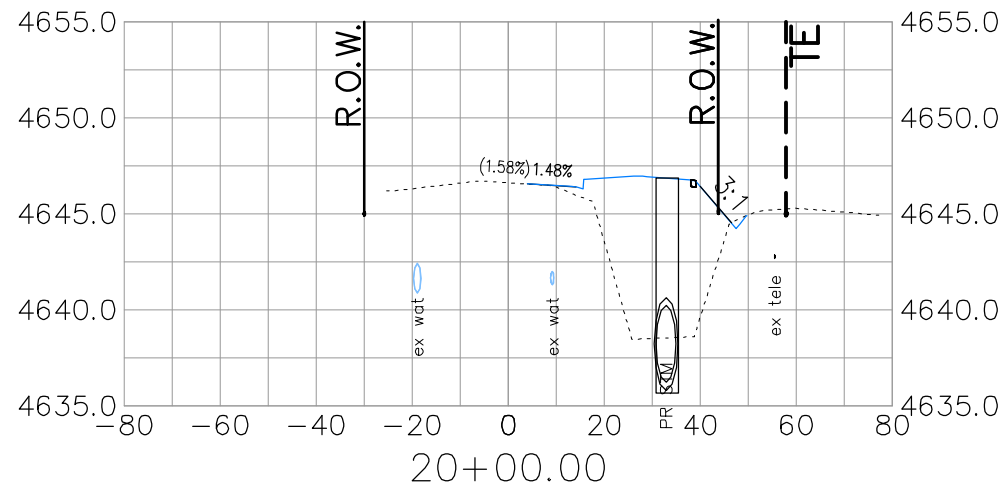


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Detailer: John C Smith	Structure Numbers	—	—
Sheet Subset: Profile	Subset Sheets:	19 of 34	

Project No./Code
TAP M555-032
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Sheet Number 218

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Sheet Revisions

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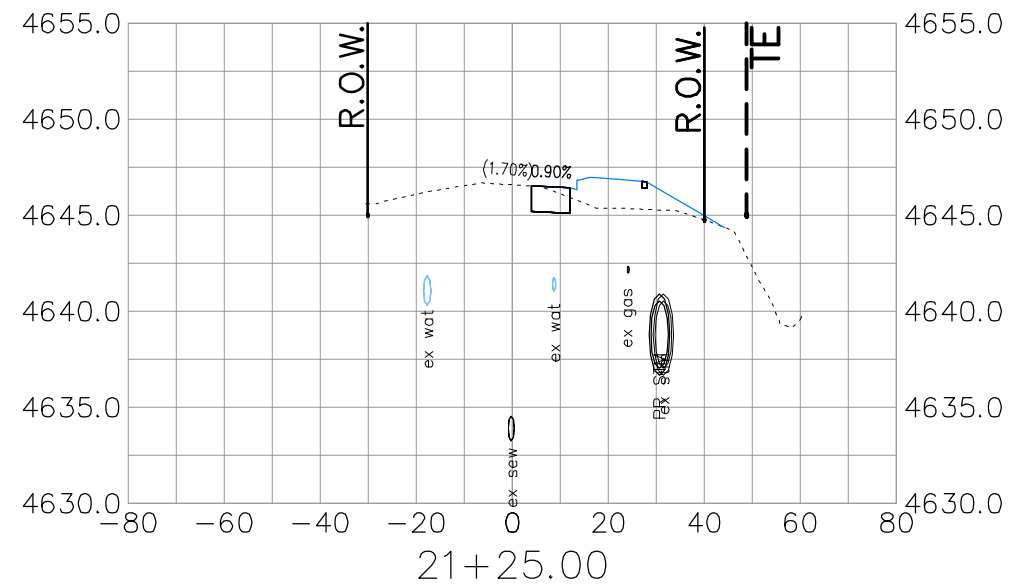
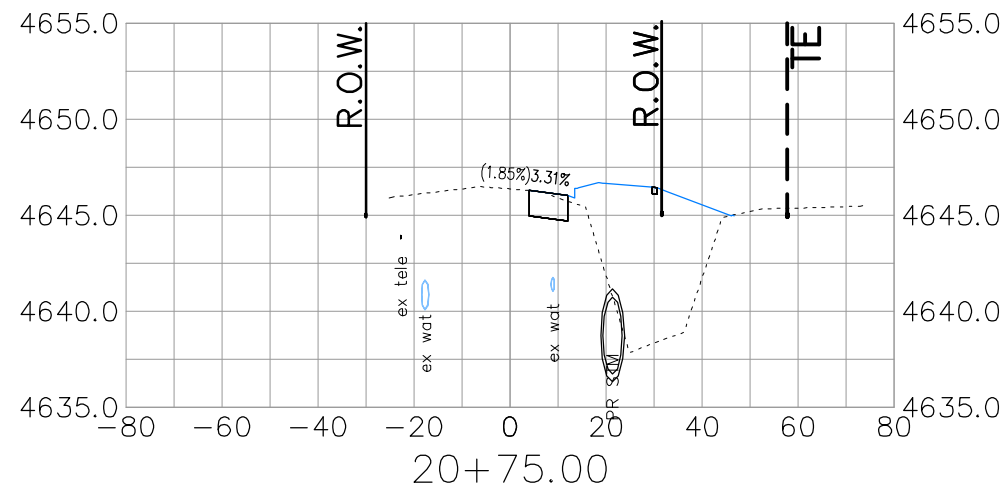
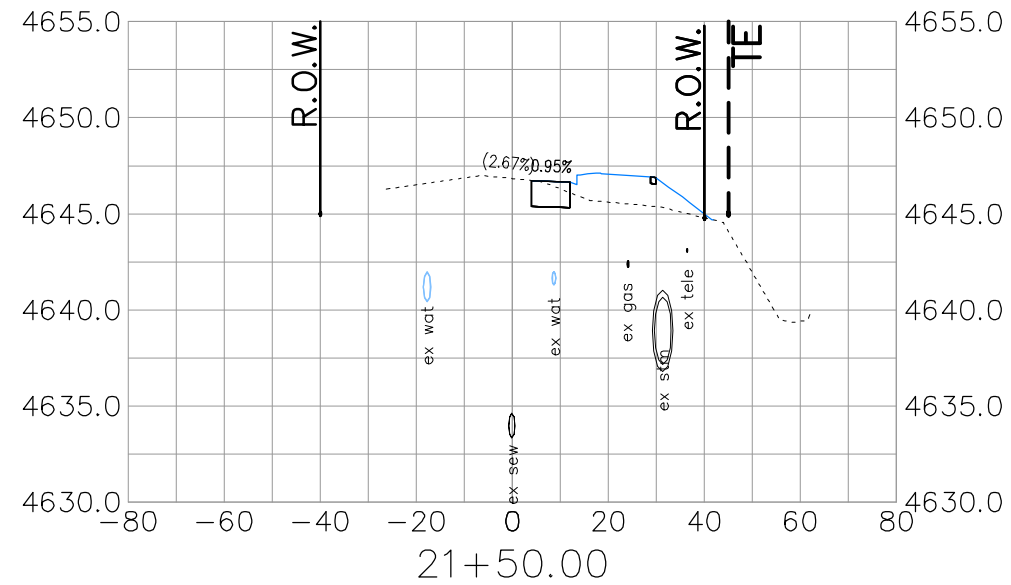
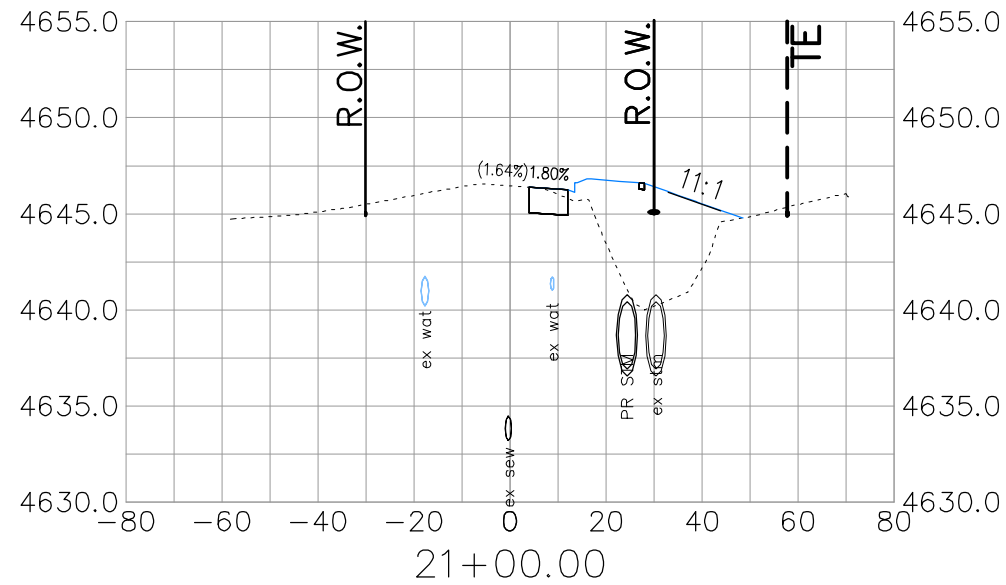
ROADWAY CROSS SECTIONS

Designer: John C Smith	Structure Numbers	—
Detailer: John C Smith	Subset Sheets:	20 of 34

Project No./Code

TAP M555-032
20736
Sheet Number 219

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Know what's below.
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Print Date: as shown at left
File Name: as shown at left
Horiz. Scale: AS SHOWN Vert. Scale: AS SHOWN
Unit Information: City of GJ Unit Leader Initials: JJV

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Sheet Revisions

Date:	Comments	Init.



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No Revisions:
Revised:
Void:

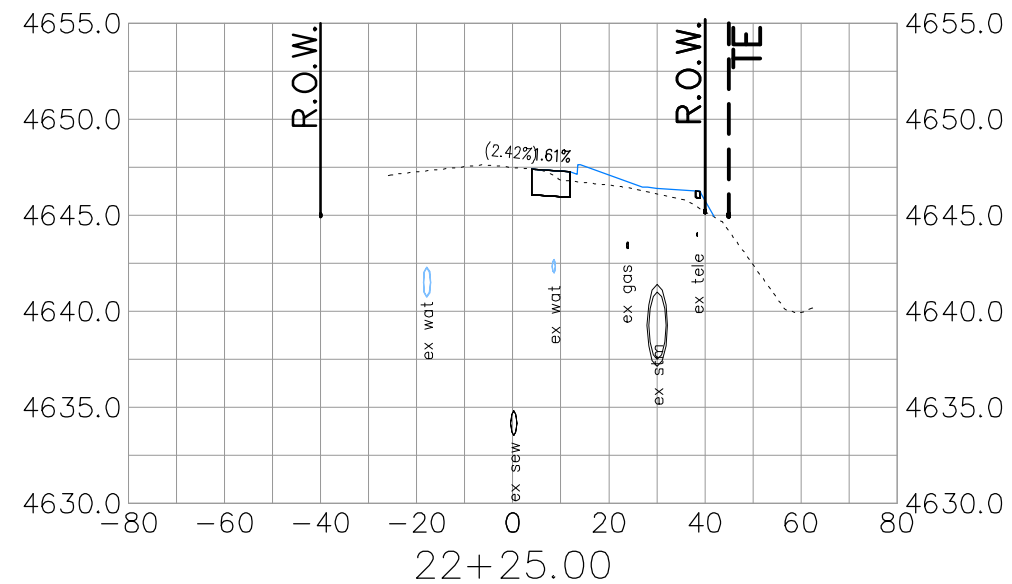
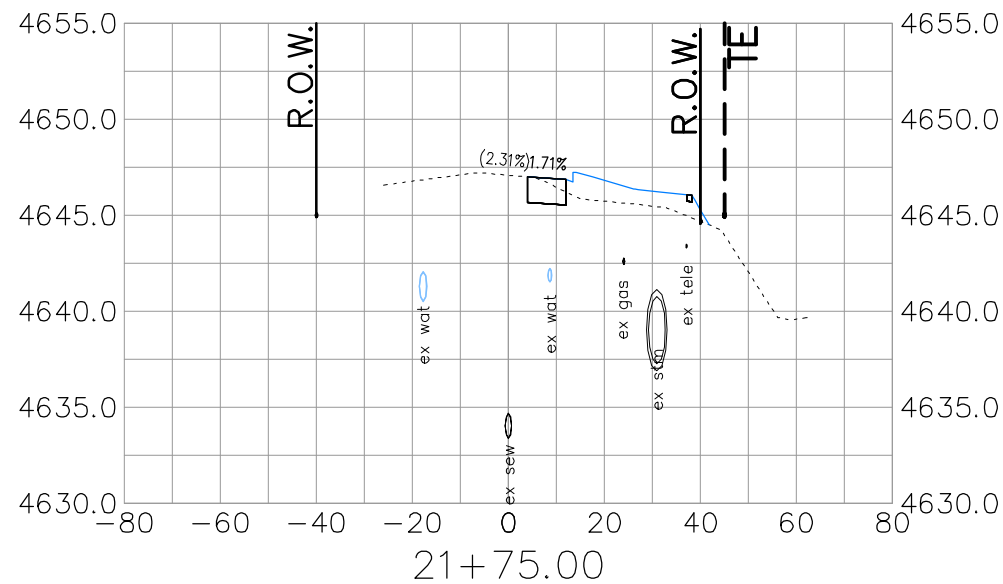
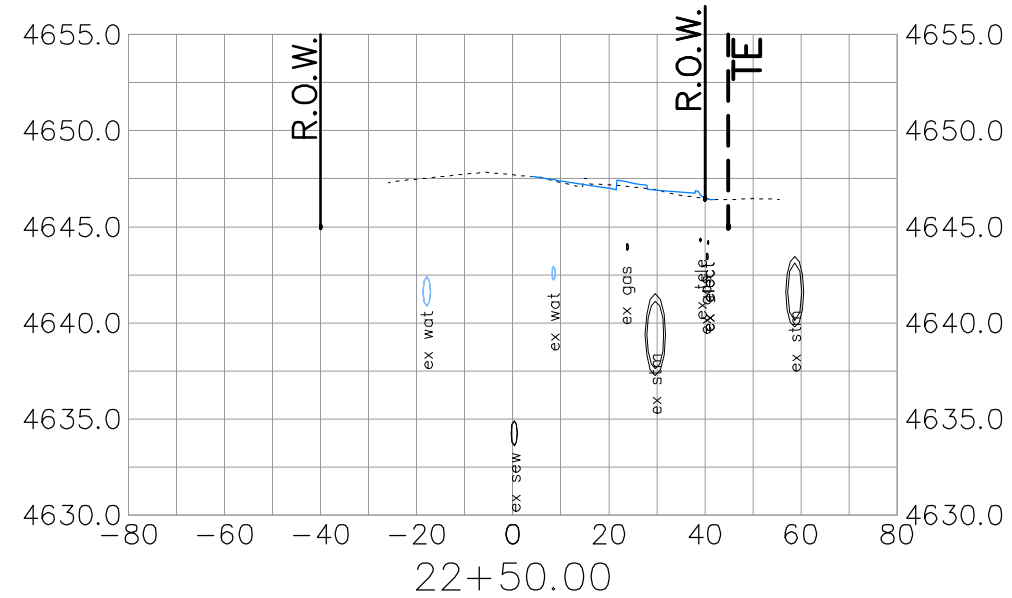
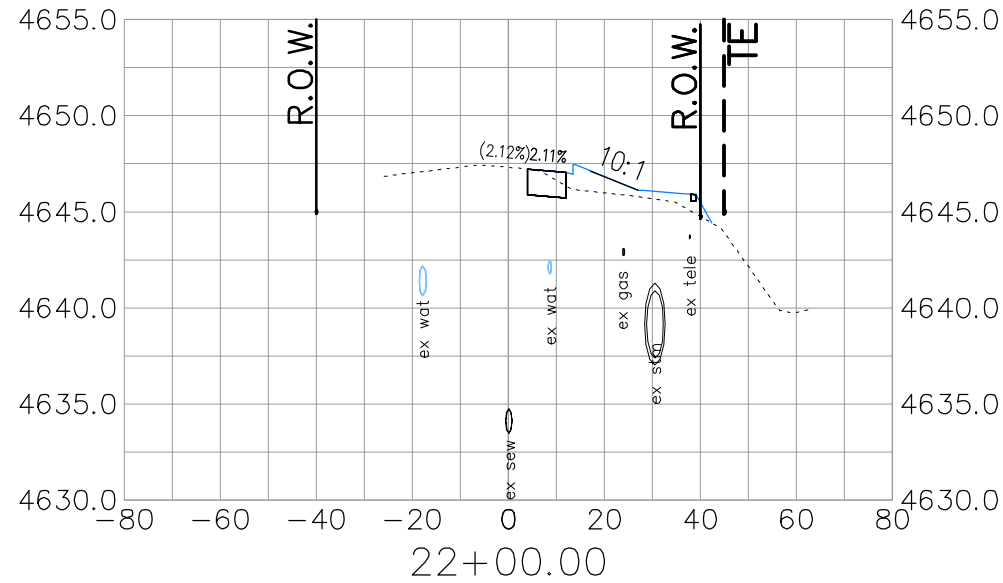
ROADWAY CROSS SECTIONS

Designer: John C Smith	Structure Numbers	—
Detailer: John C Smith	Subset Sheets:	21 of 34

Project No./Code

TAP M555-032
20736
Sheet Number 220

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Print Date: as shown at left
File Name: as shown at left
Horiz. Scale: AS SHOWN Vert. Scale: AS SHOWN
Unit Information: City of GJ Unit Leader Initials: JJV

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Sheet Revisions

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As Constructed

No Revisions:
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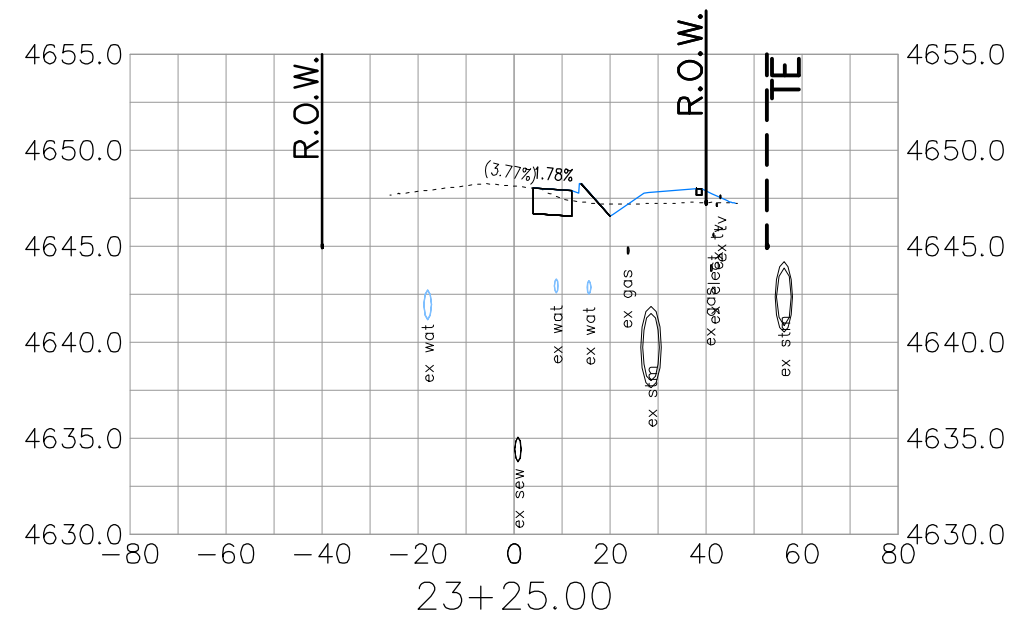
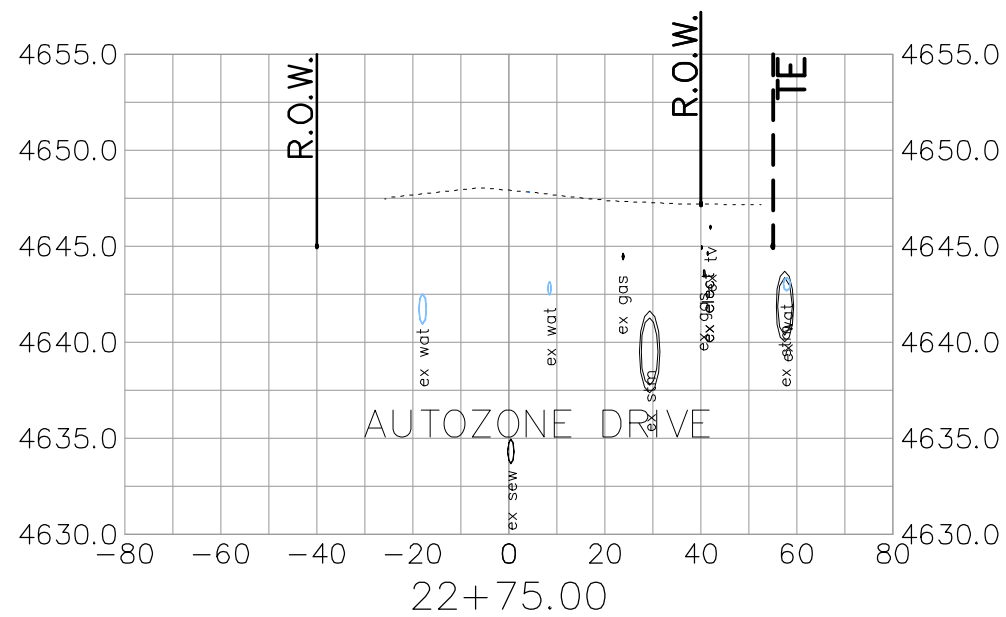
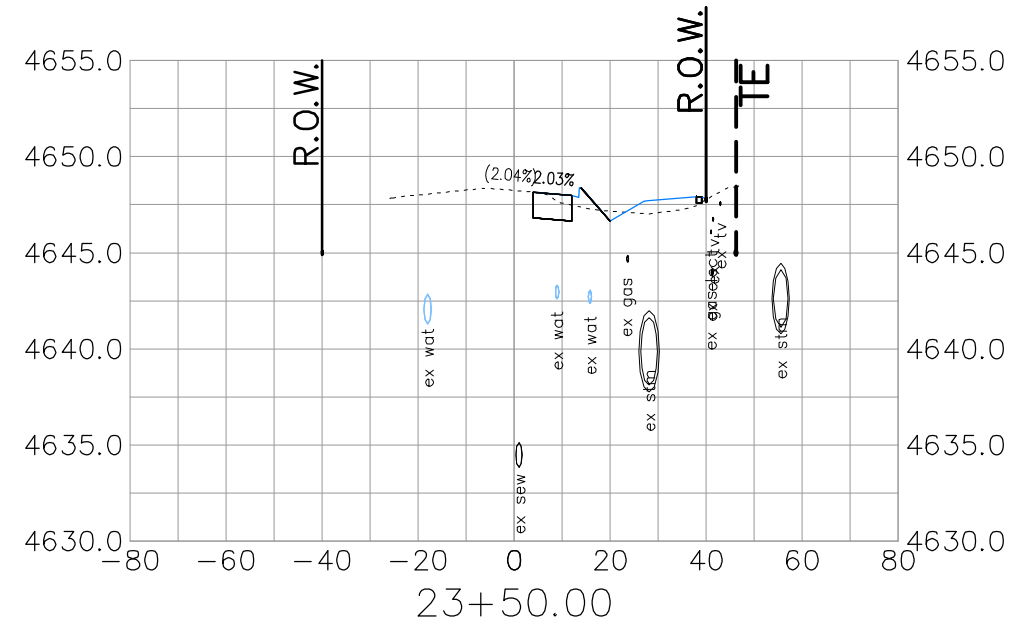
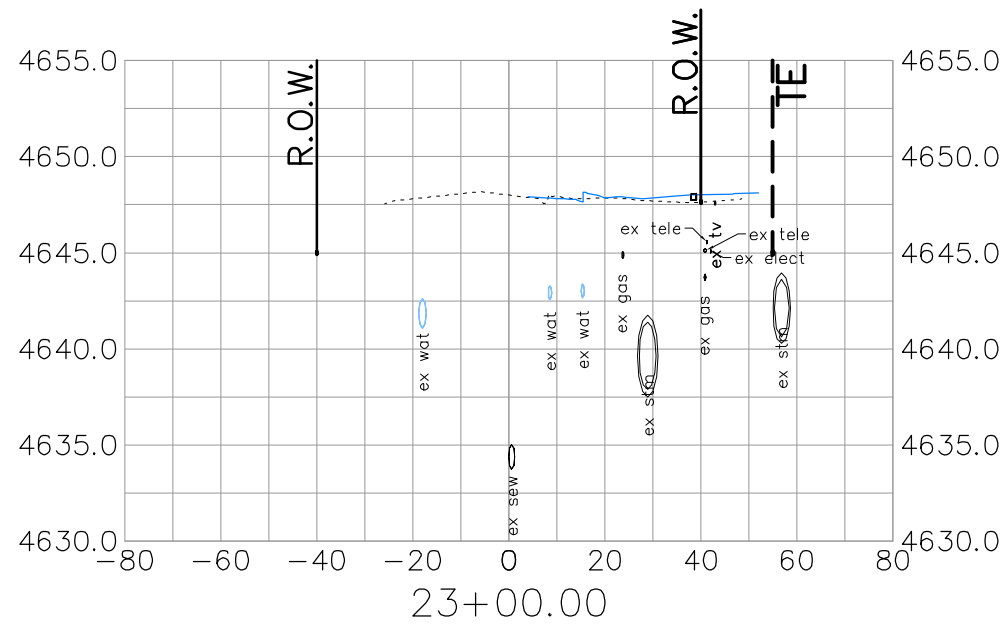
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Detailer: John C Smith	Subset Sheets:	22 of 34

Project No./Code

TAP M555-032
20736
Sheet Number 221

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Print Date: as shown at left
File Name: as shown at left
Horiz. Scale: AS SHOWN Vert. Scale: AS SHOWN
Unit Information: City of GJ Unit Leader Initials: JJV

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Sheet Revisions

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As Constructed

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Revised:
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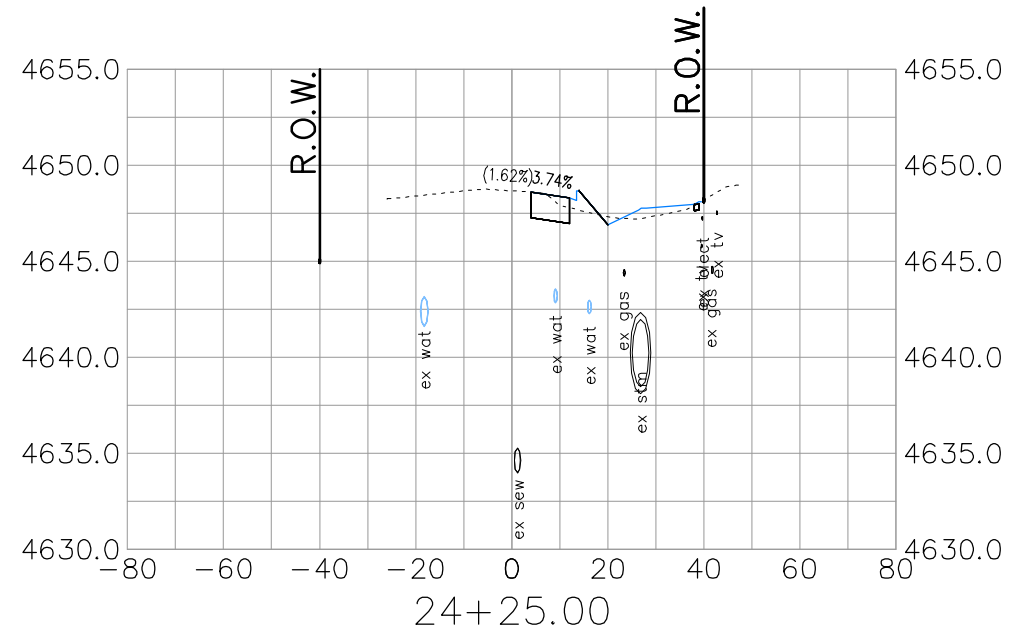
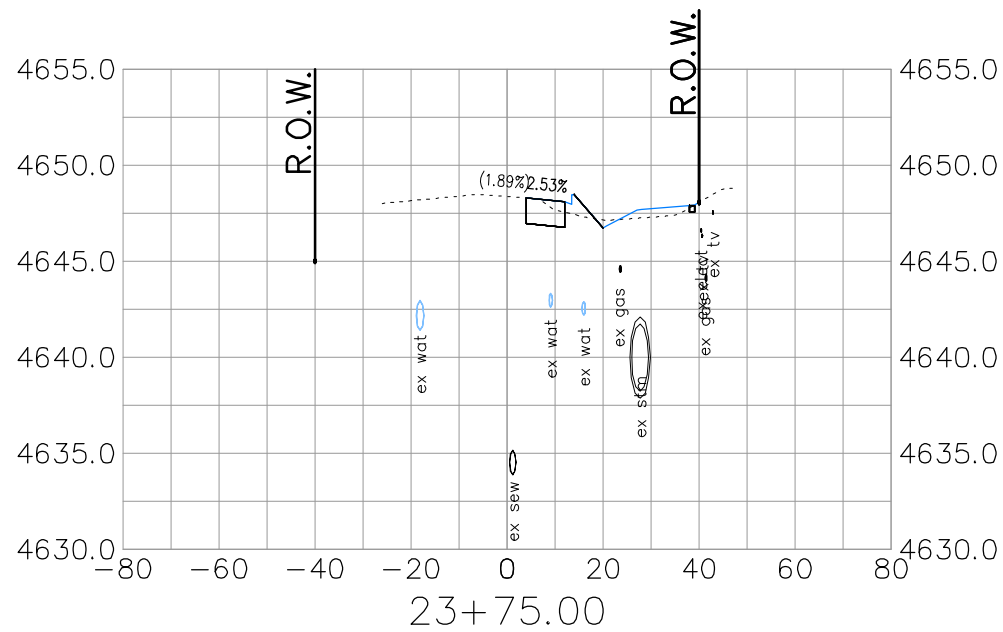
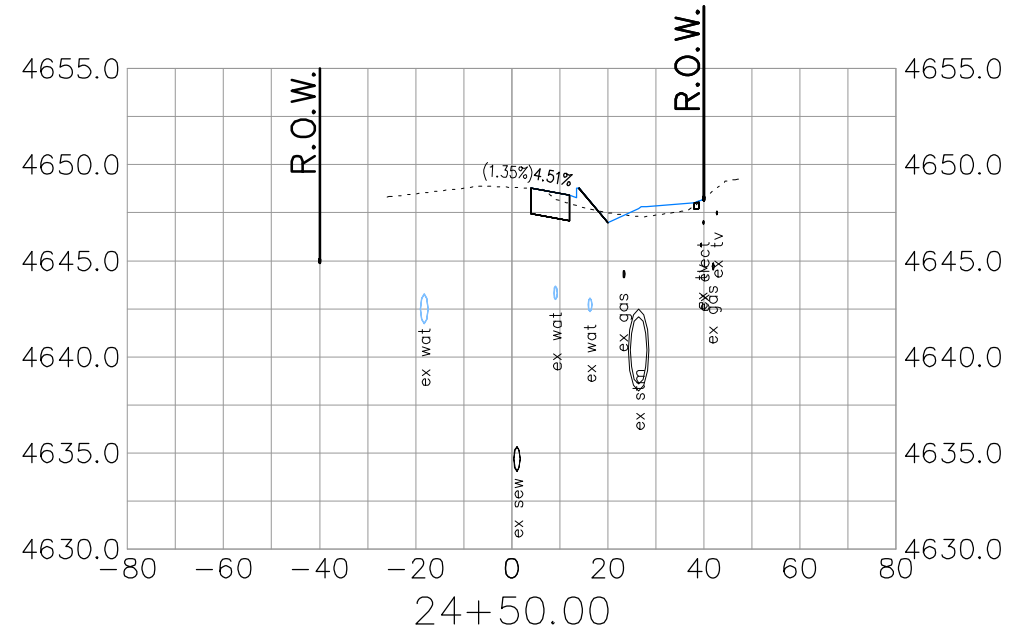
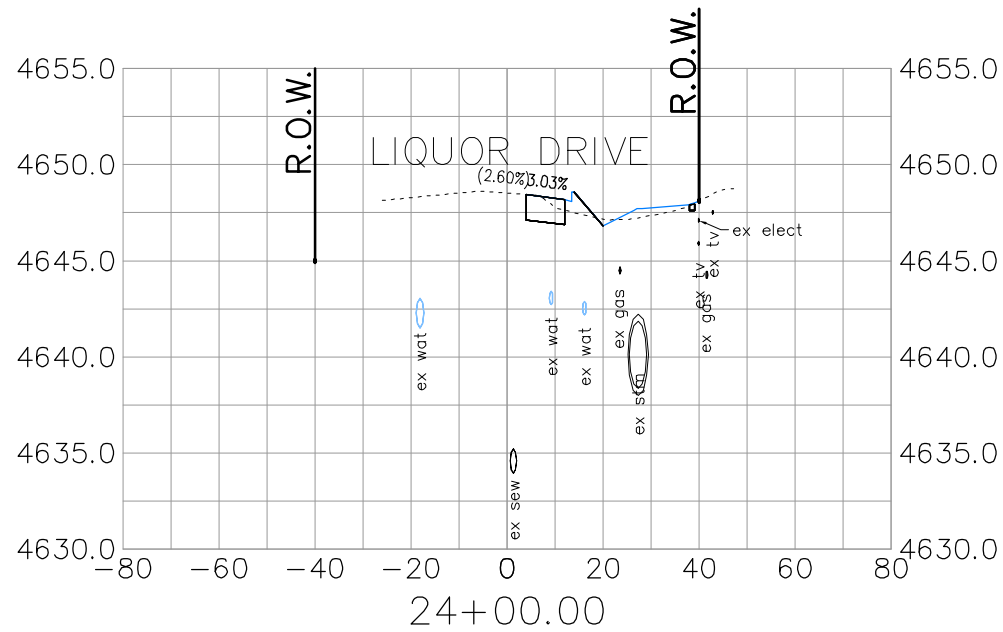
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Designer: John C Smith	Structure Numbers	—
Detailer: John C Smith	Subset Sheets:	23 of 34

Project No./Code

TAP M555-032
20736
Sheet Number 222

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Sheet Revisions		
Date:	Comments	Init.

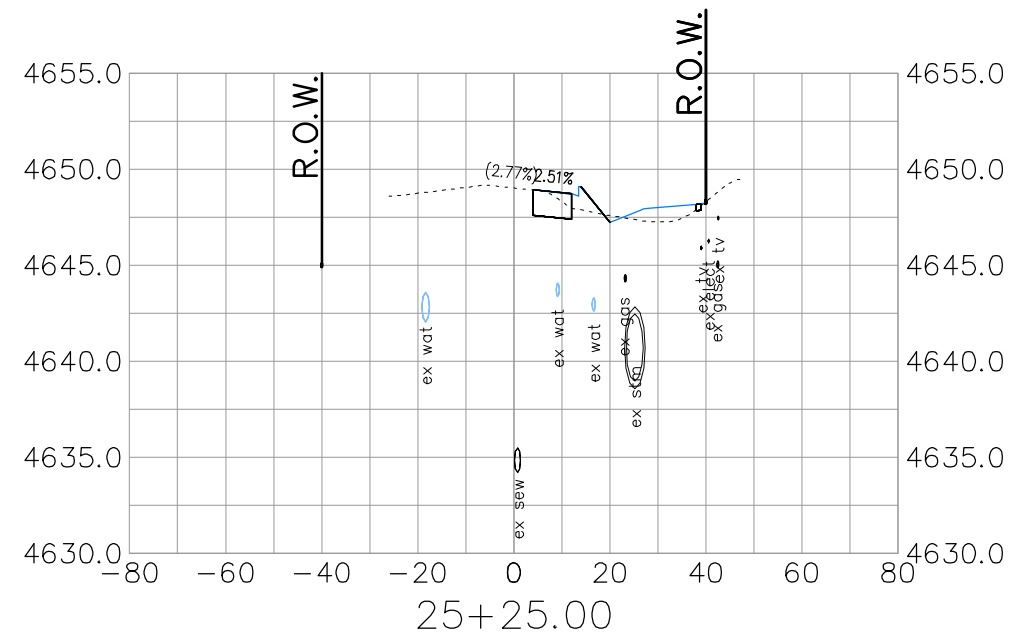
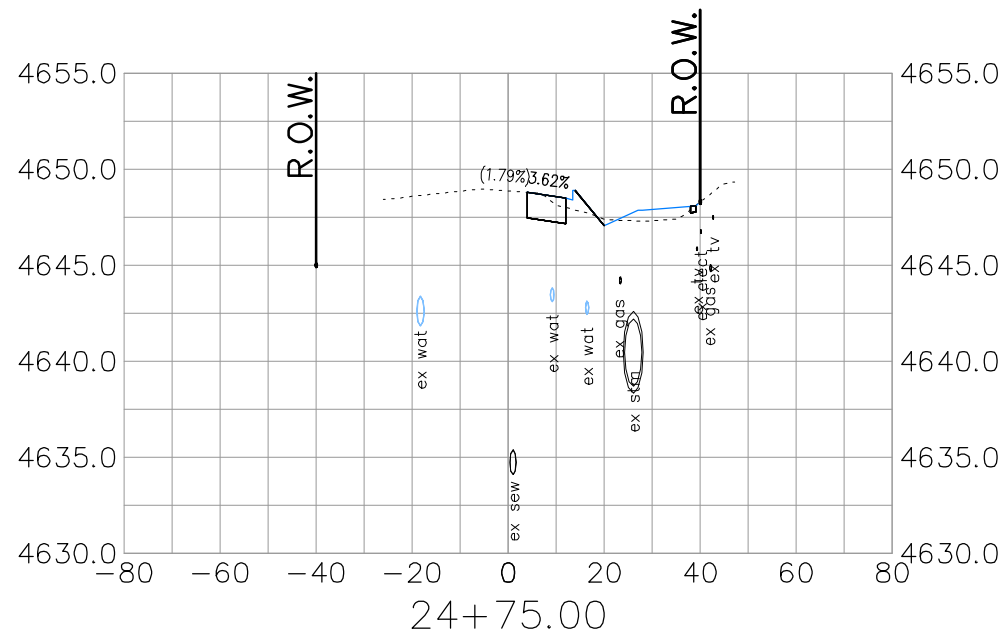
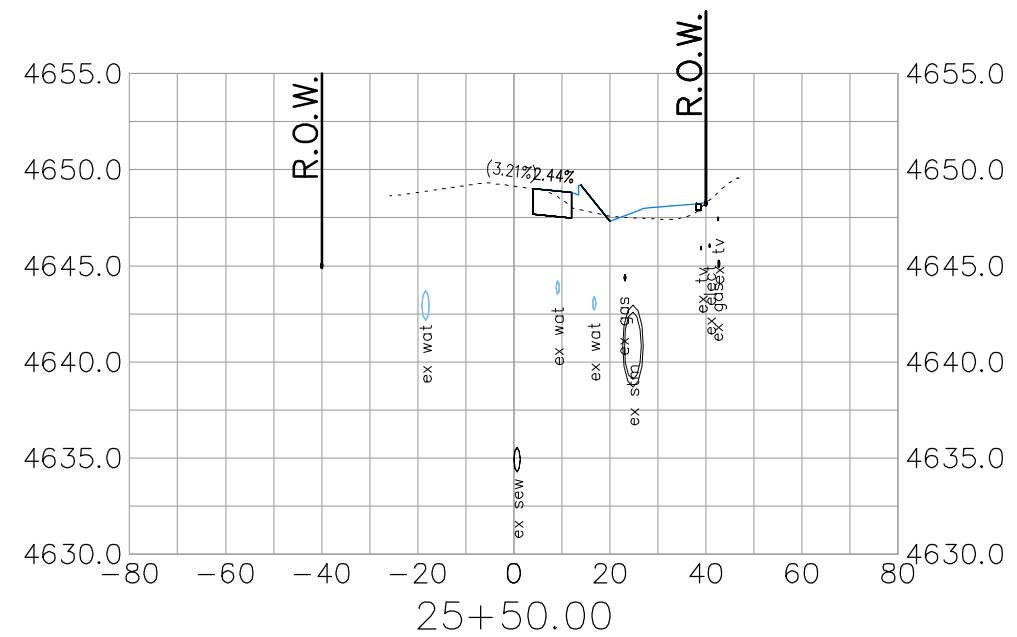
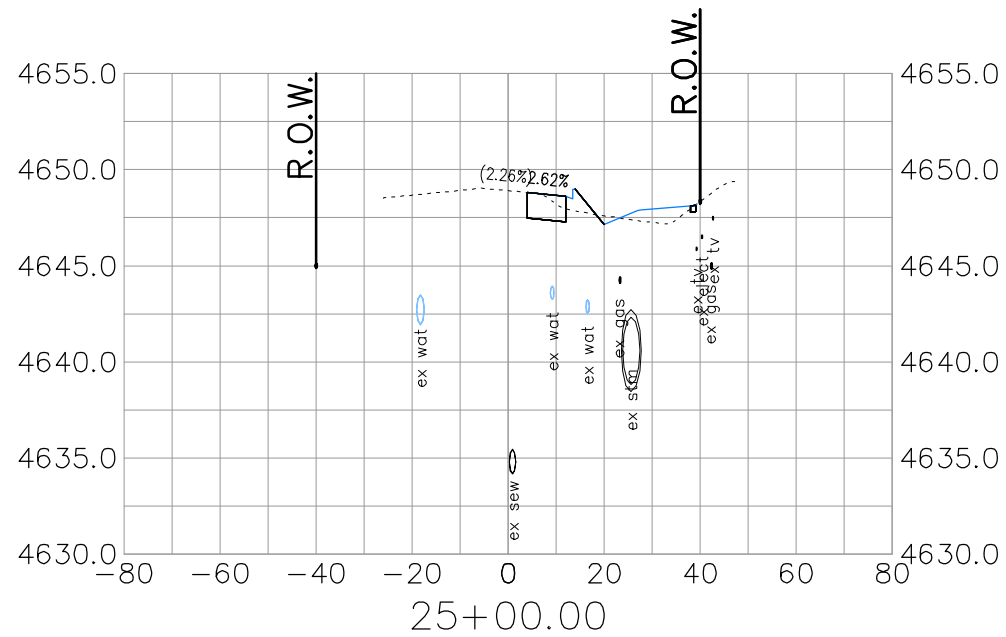


As Constructed
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Detailer:	John C Smith	Structure Numbers	—
Sheet Subset:	Profile	Subset Sheets:	24 of 34

Project No./Code
 TAP M555-032
 20736
 Sheet Number 223

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Know what's below.
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Print Date: as shown at left
File Name: as shown at left
Horiz. Scale: AS SHOWN Vert. Scale: AS SHOWN
Unit Information: City of GJ Unit Leader Initials: JJV

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Sheet Revisions

Date:	Comments	Init.



As Constructed

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Revised:
Void:

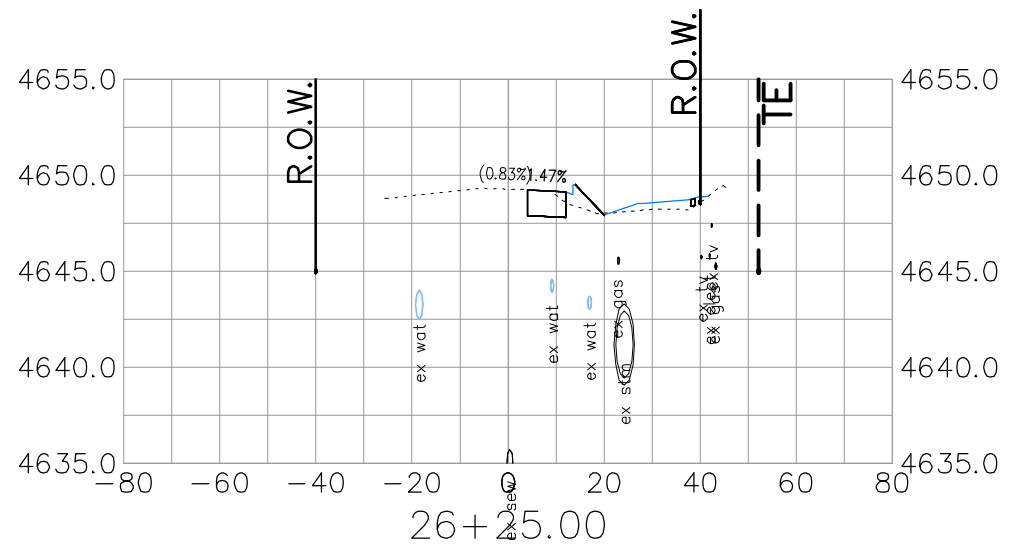
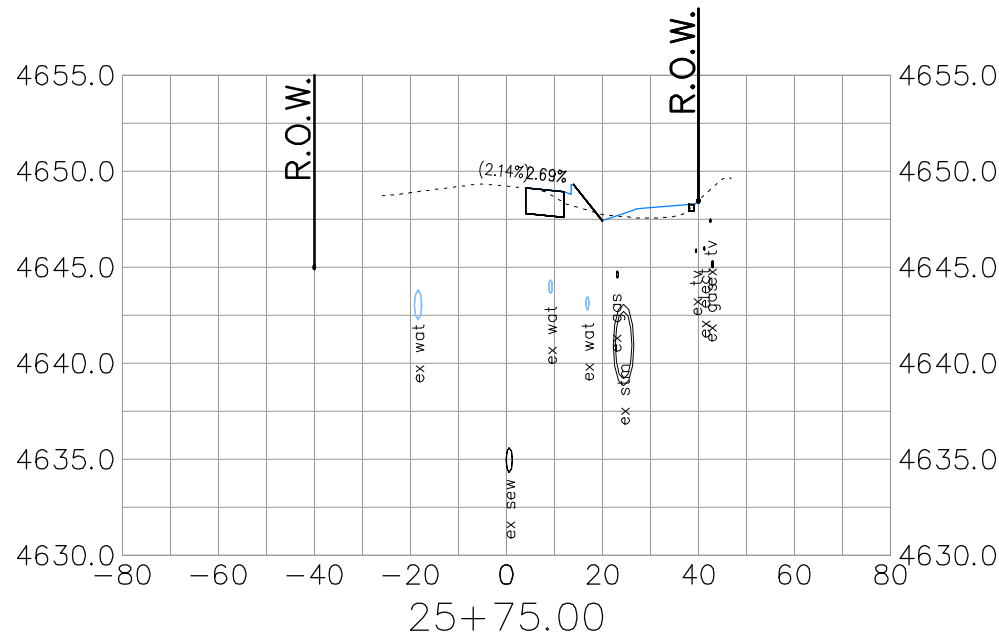
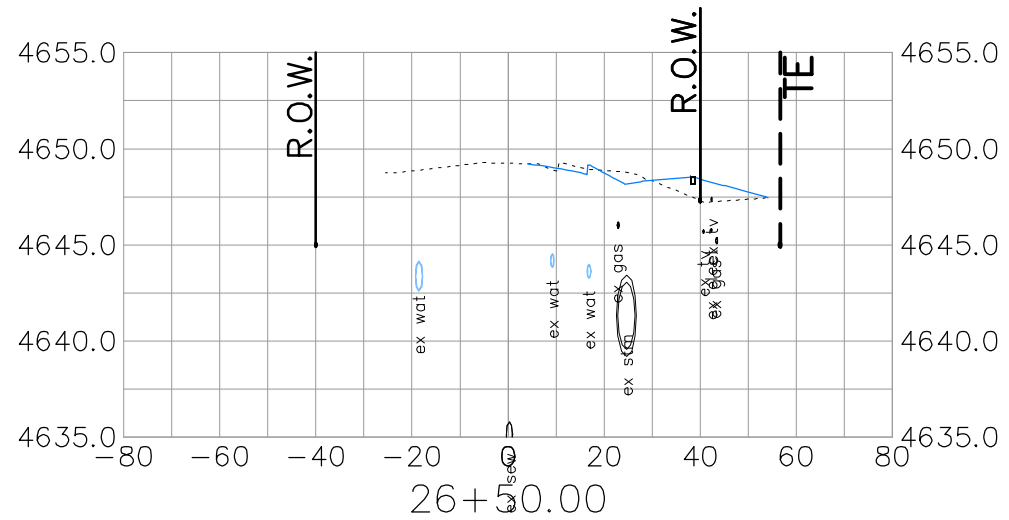
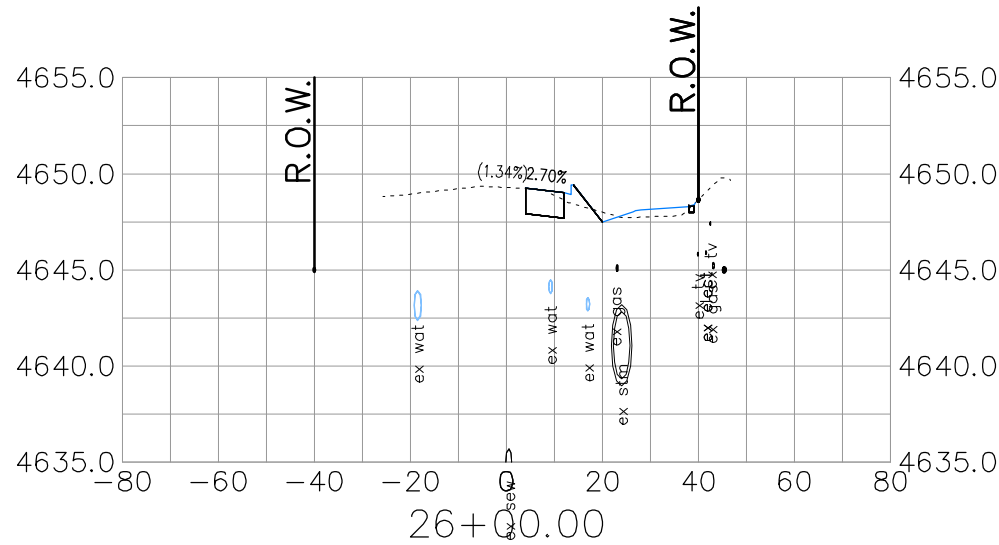
ROADWAY CROSS SECTIONS

Designer: John C Smith	Structure Numbers	—
Detailer: John C Smith	Subset Sheets:	25 of 34

Project No./Code

TAP M555-032
20736
Sheet Number 224

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Know what's below.
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Unit Information: City of GJ Unit Leader Initials: JJV

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Sheet Revisions		
Date:	Comments	Init.

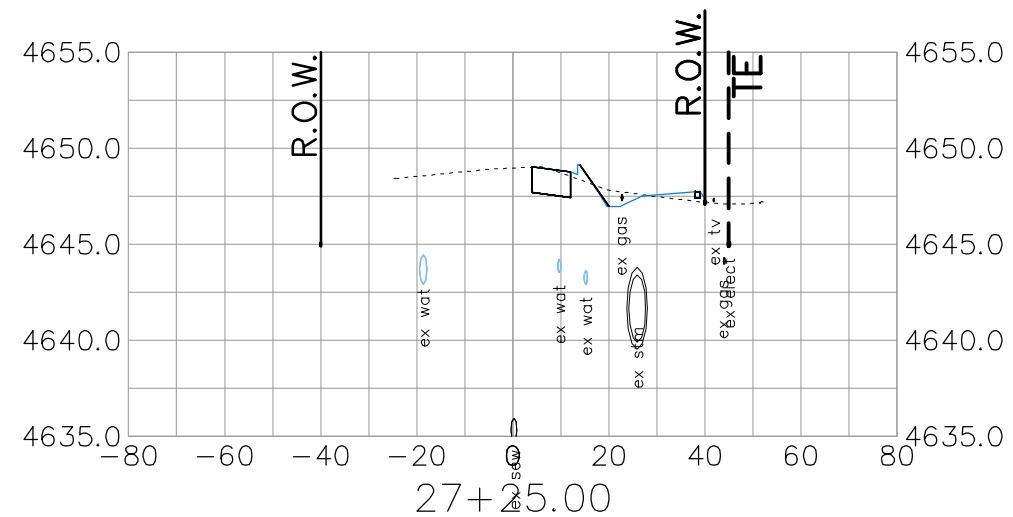
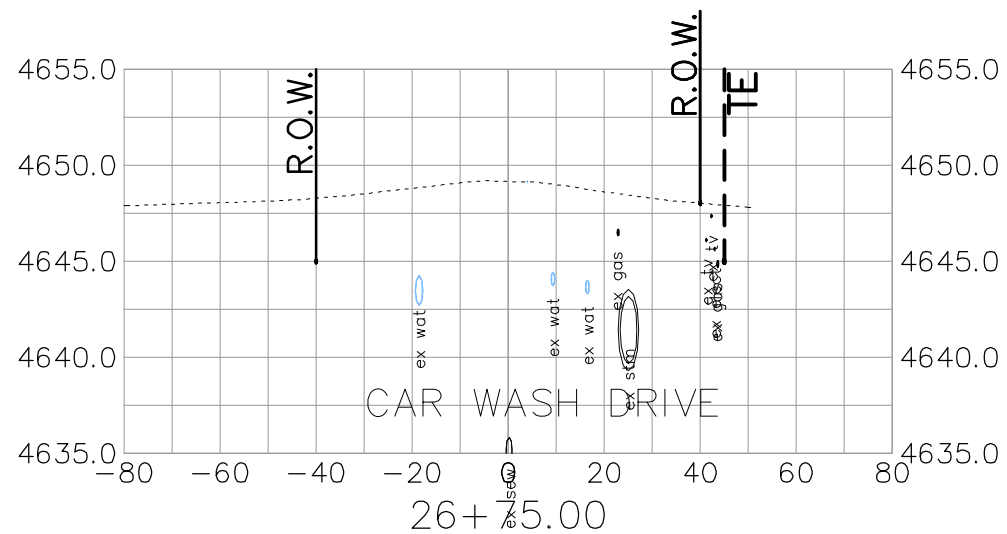
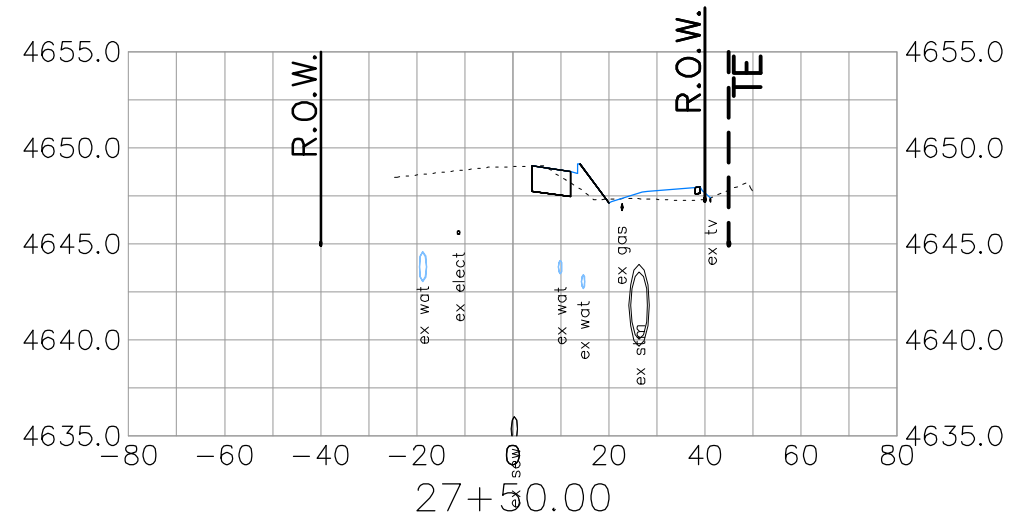
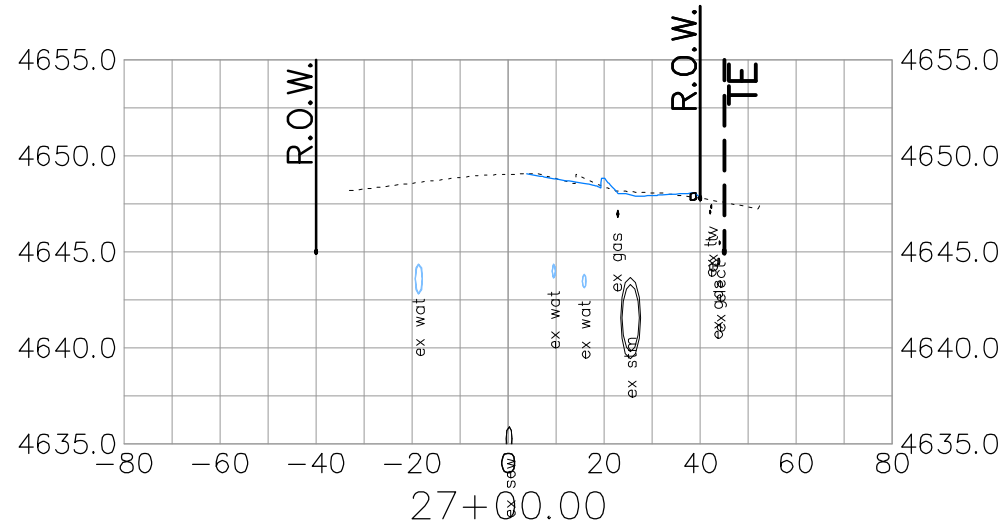


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Detailer: John C Smith	Subset Sheets:	26 of 34	—
Sheet Subset: Profile			

Project No./Code
TAP M555-032
20736
Sheet Number 225

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 File Name: as shown at left
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 Unit Information: City of GJ Unit Leader Initials: JJV

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Sheet Revisions

Date:	Comments	Init.



As Constructed

No Revisions:
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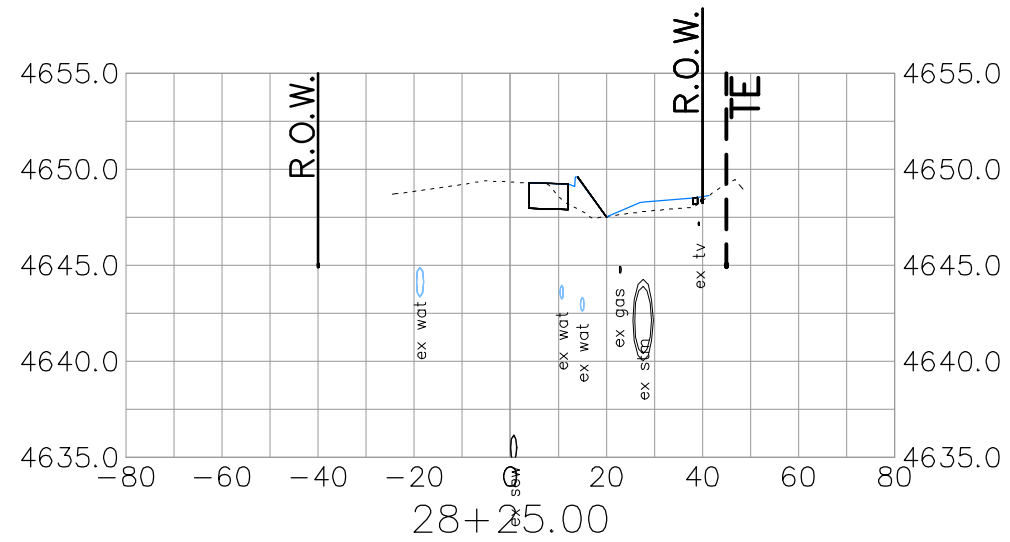
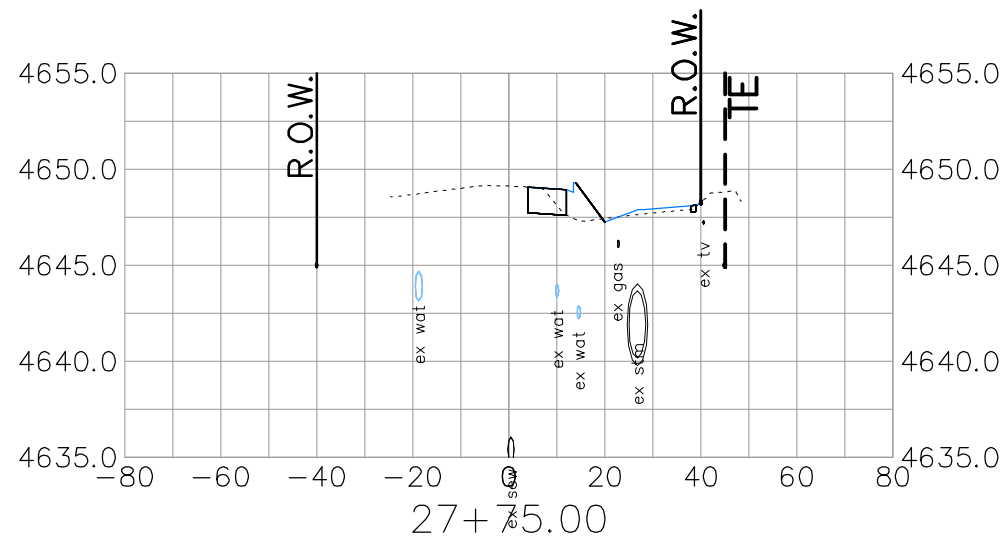
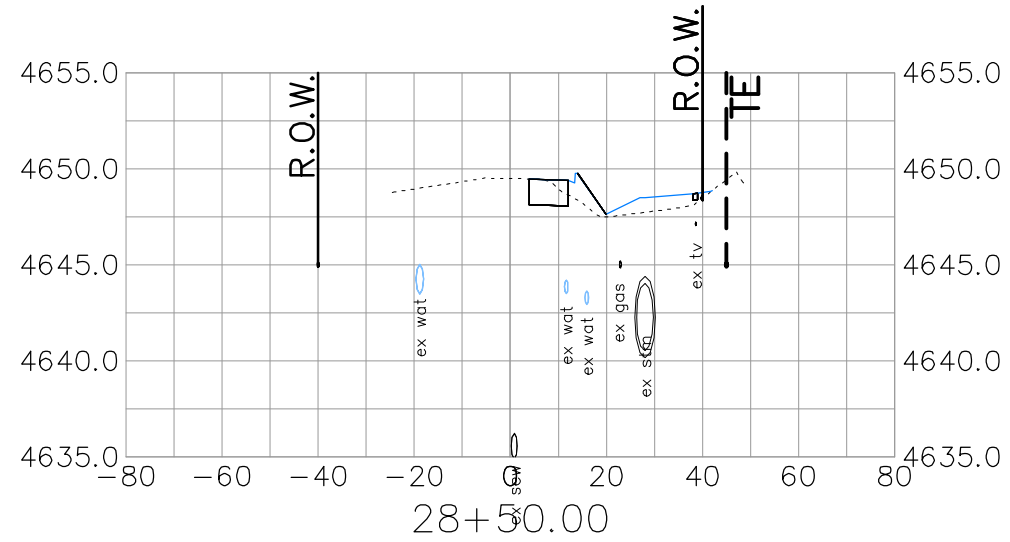
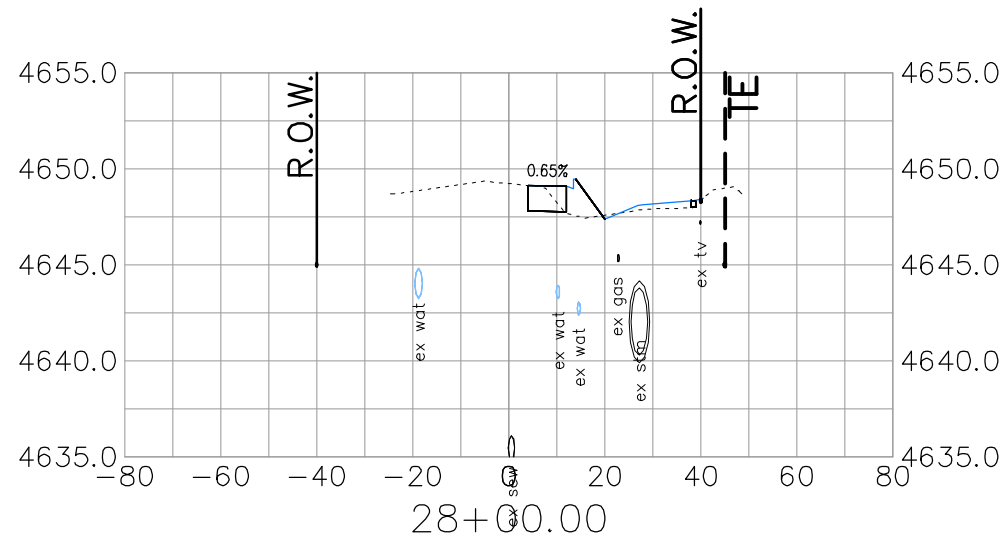
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Detailer: John C Smith	Subset Sheets:	27 of 34

Project No./Code

TAP M555-032
 20736
 Sheet Number 226

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Know what's below.
Call before you dig.

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Sheet Revisions		
Date:	Comments	Init.

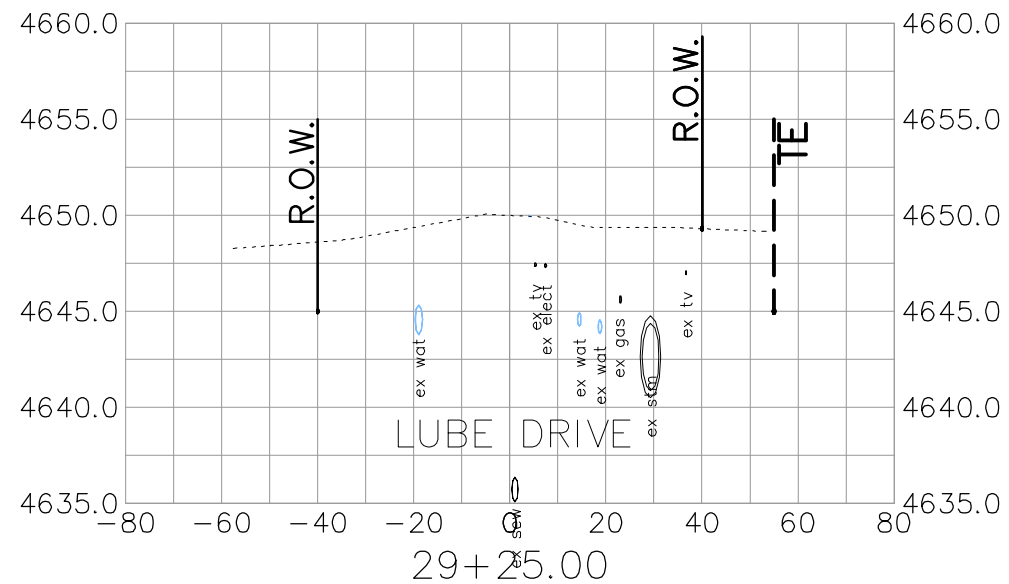
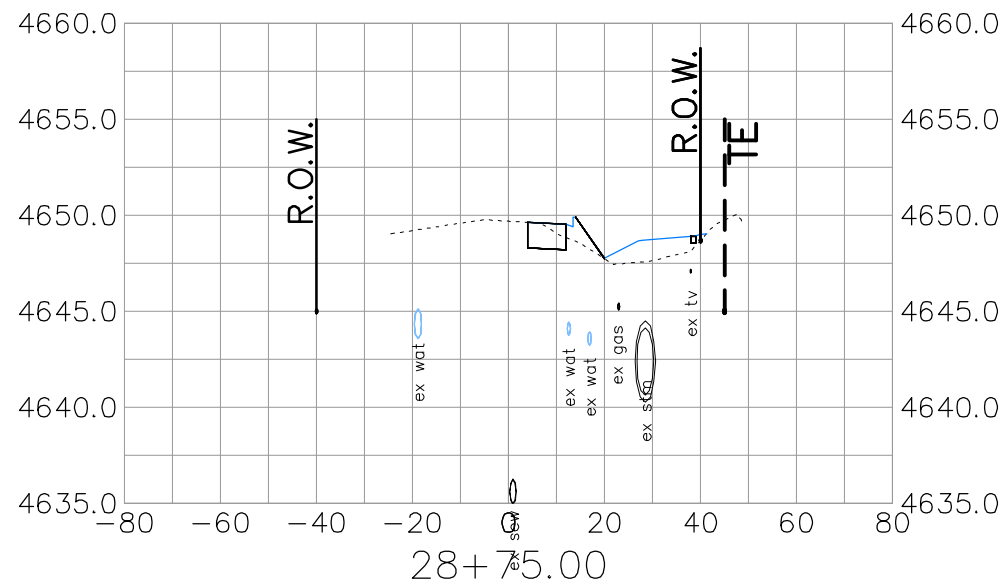
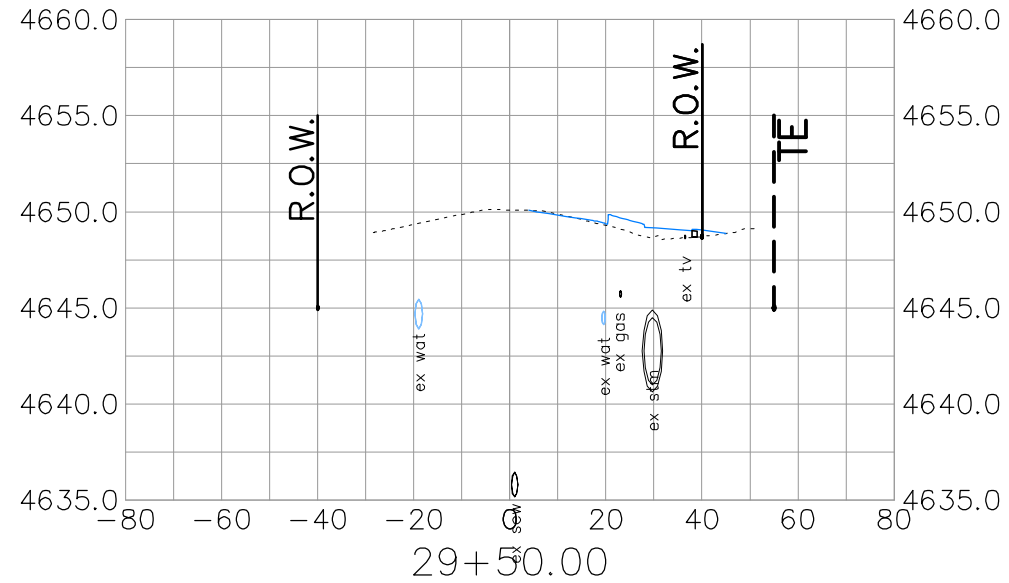
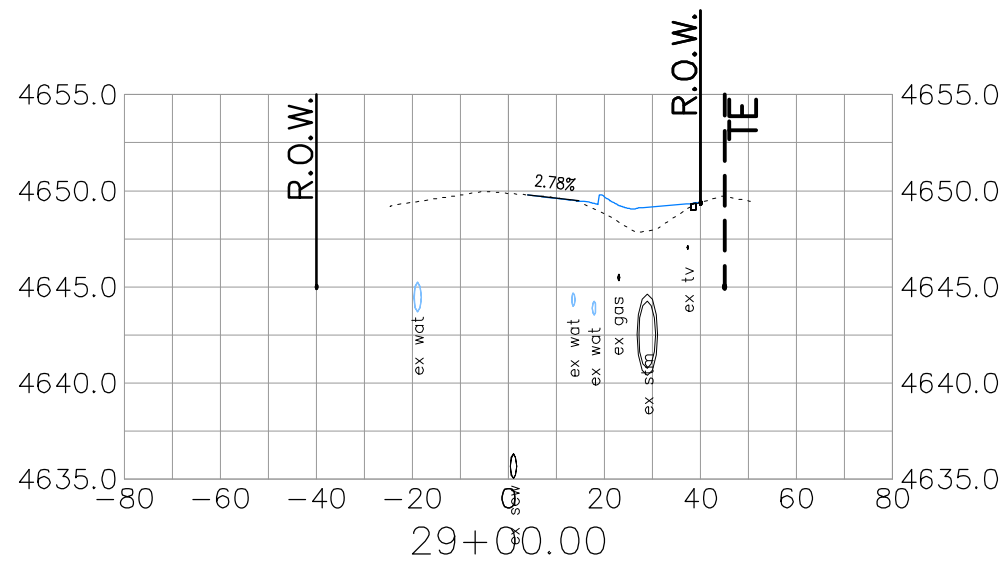


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Detailer: John C Smith	Structure Numbers	—	—
Sheet Subset: Profile	Subset Sheets:	28 of 34	—

Project No./Code
 TAP M555-032
 20736
 Sheet Number 227

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Sheet Revisions		
Date:	Comments	Init.

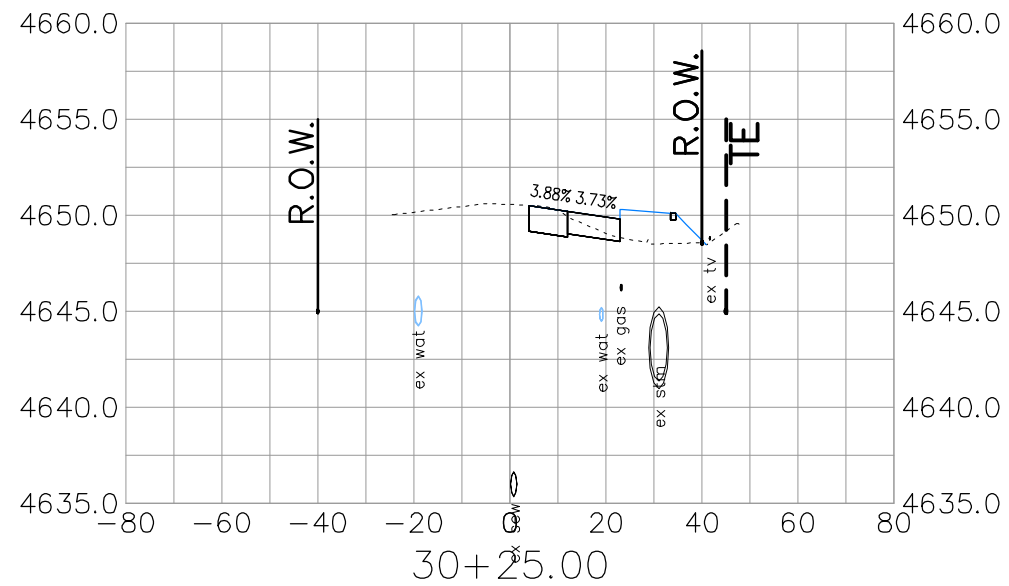
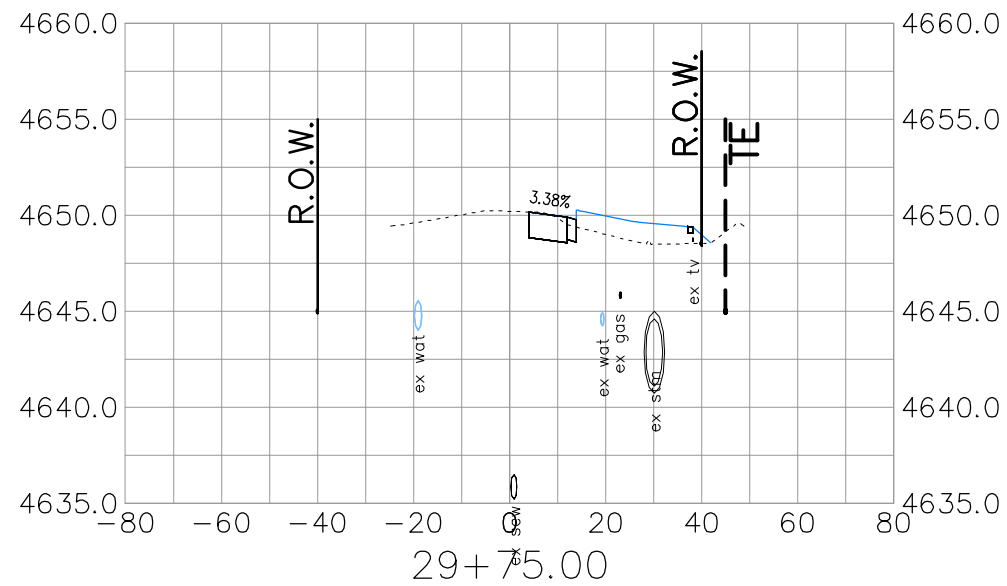
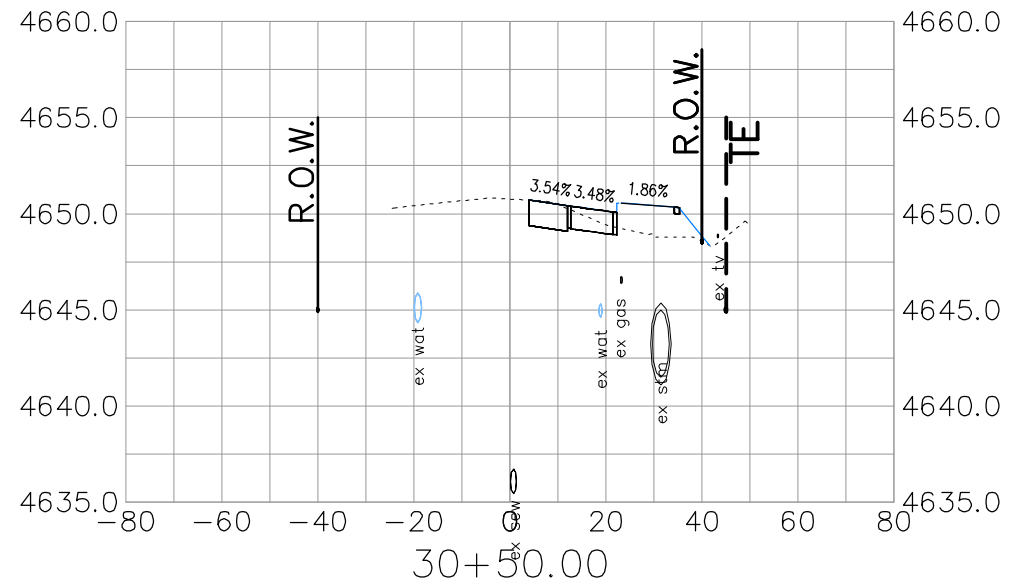
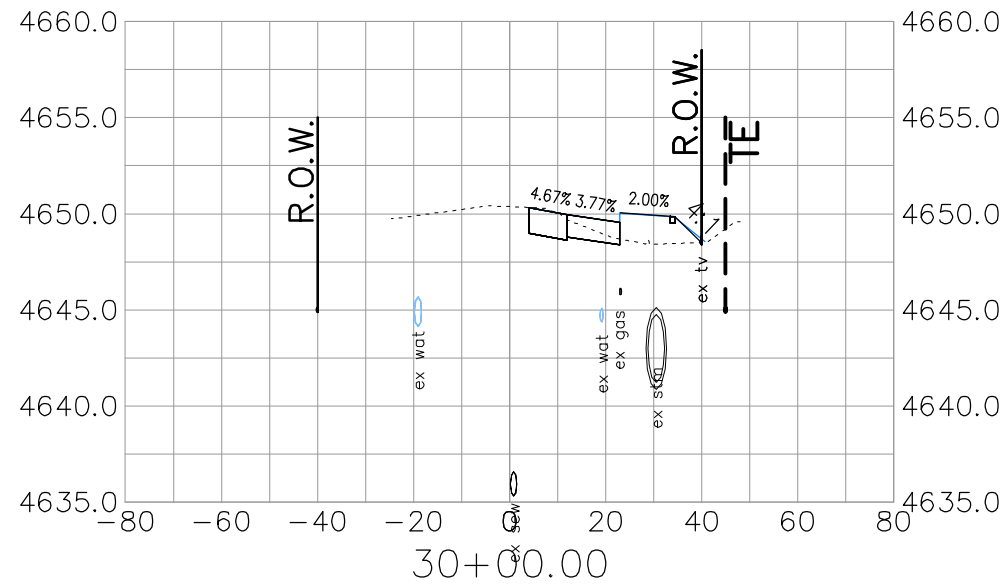


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Detailer: John C Smith	Structure	Numbers	—
Sheet Subset: Profile	Subset Sheets:	29 of 34	

Project No./Code
 TAP M555-032
 20736
 Sheet Number 228

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Know what's below.
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Print Date: as shown at left
File Name: as shown at left
Horiz. Scale: AS SHOWN Vert. Scale: AS SHOWN
Unit Information: City of GJ Unit Leader Initials: JJV

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Sheet Revisions

Date:	Comments	Init.



As Constructed

No Revisions:

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ROADWAY CROSS SECTIONS

Designer: John C Smith	Structure Numbers	—
Detailer: John C Smith	Subset Sheets:	30 of 34

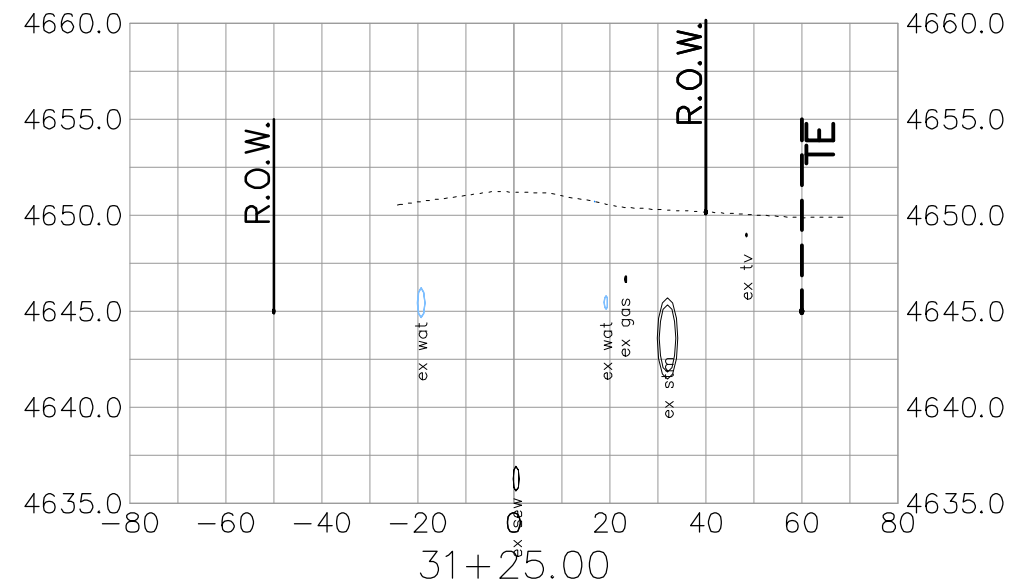
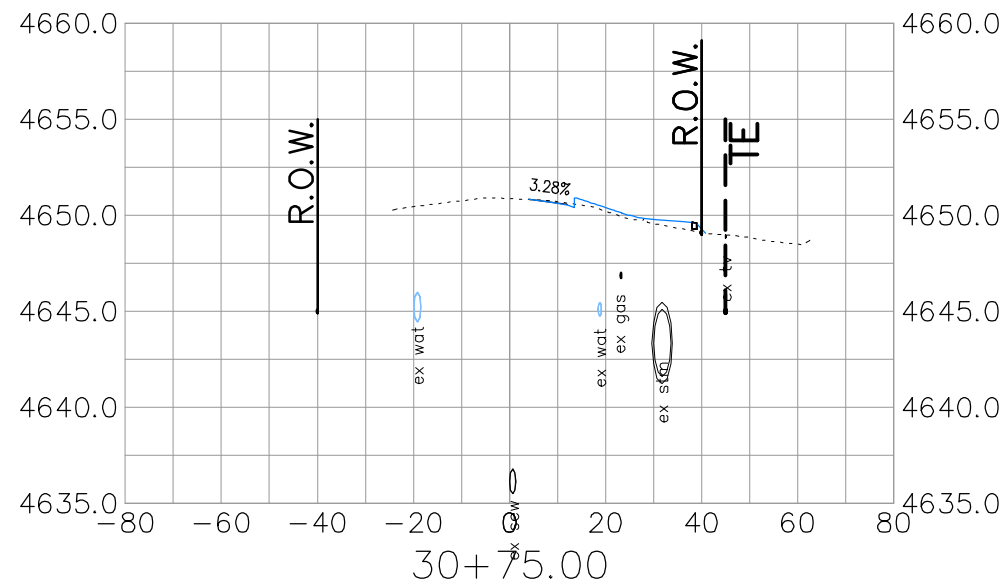
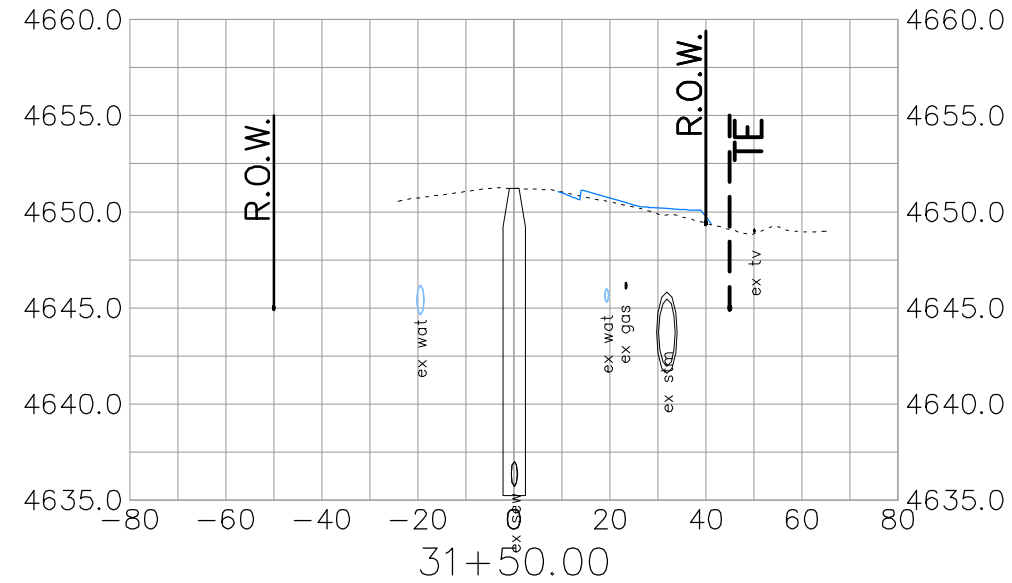
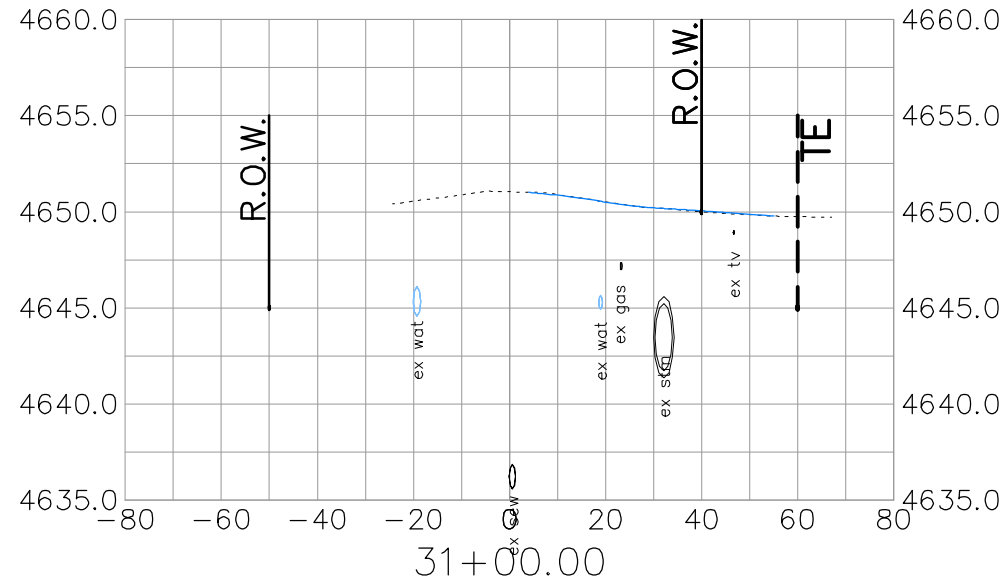
Project No./Code

TAP M555-032

20736

Sheet Number 229

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Unit Information: City of GJ Unit Leader Initials: JJV

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Sheet Revisions		
Date:	Comments	Init.

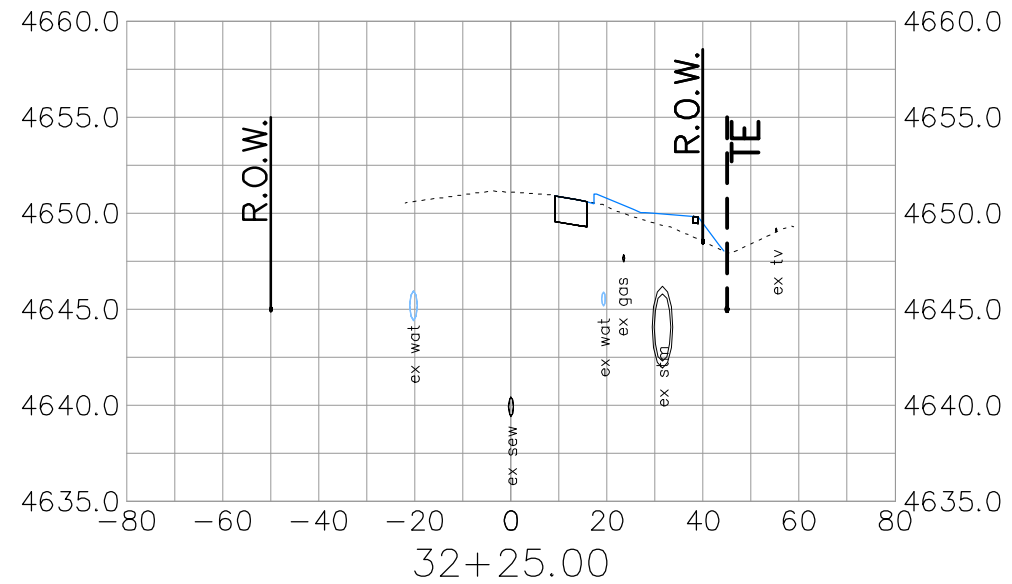
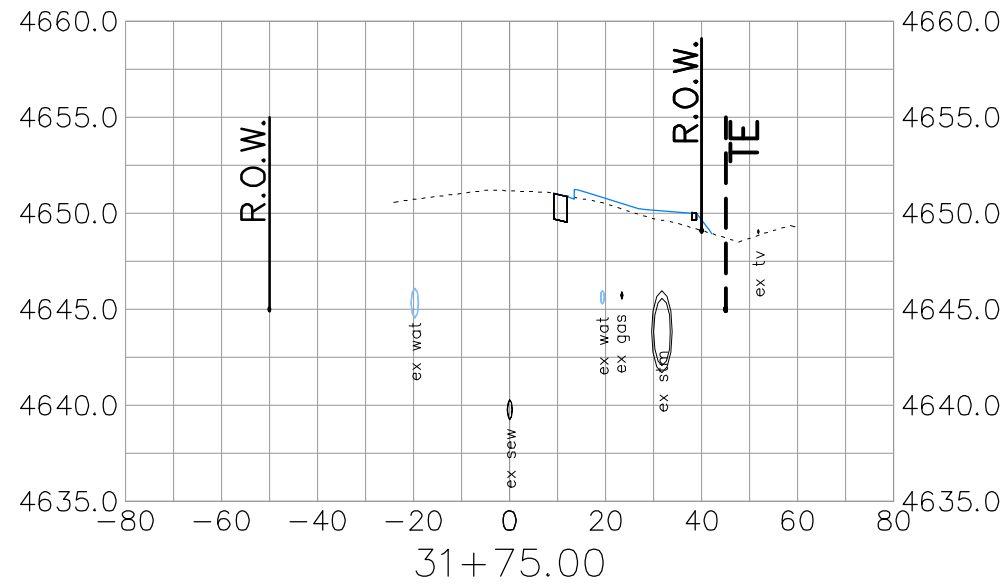
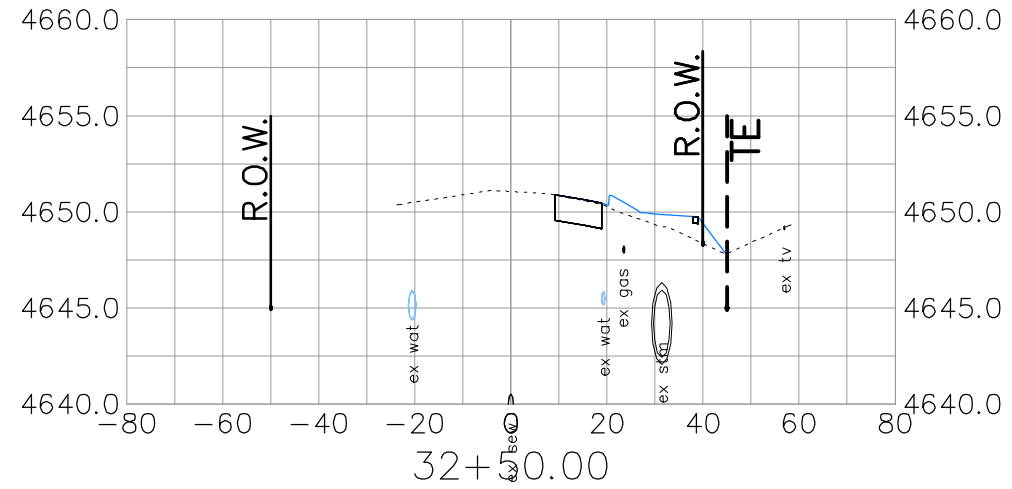
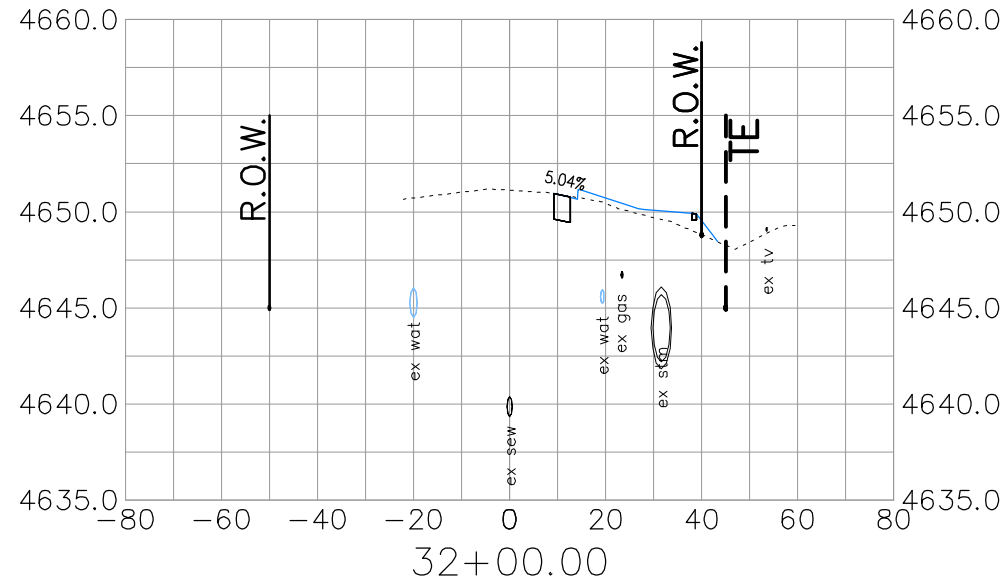


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Void:

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Detailer: John C Smith	Subset Sheets:	31 of 34	—
Sheet Subset: Profile			

Project No./Code
TAP M555-032
20736
Sheet Number 230

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File Name: as shown at left
Horiz. Scale: AS SHOWN Vert. Scale: AS SHOWN
Unit Information: City of GJ Unit Leader Initials: JJV

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Sheet Revisions

Date:	Comments	Init.



As Constructed

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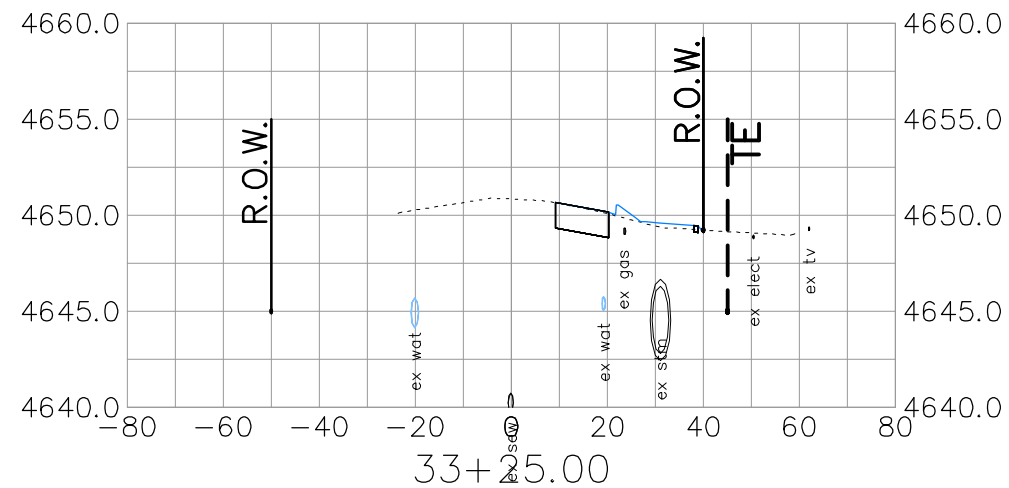
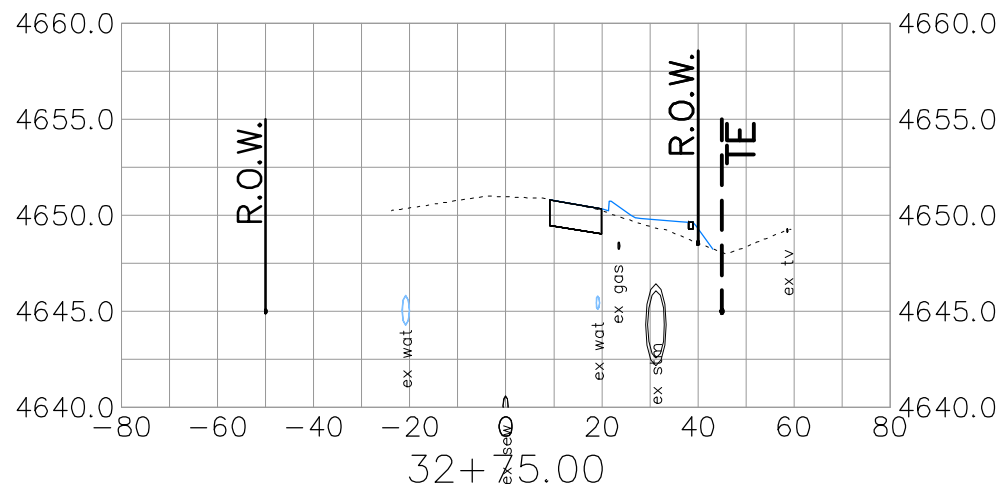
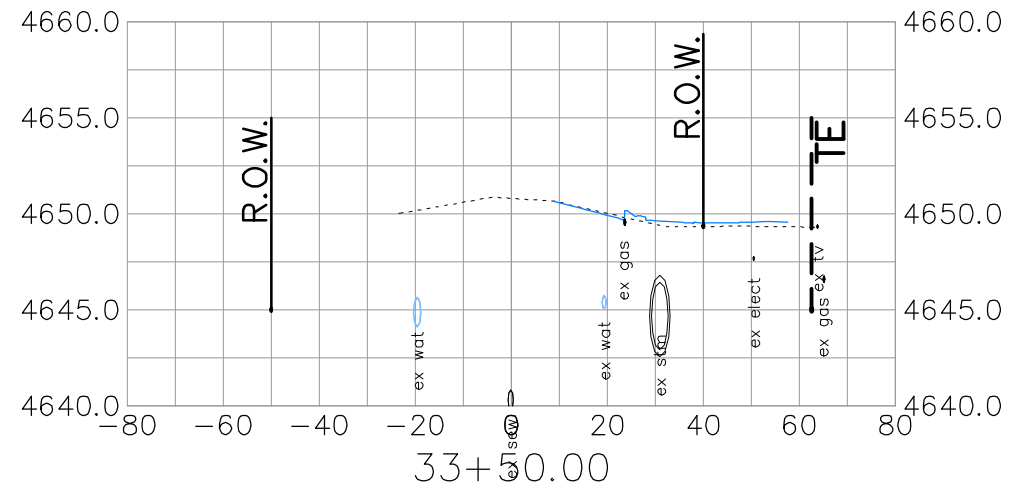
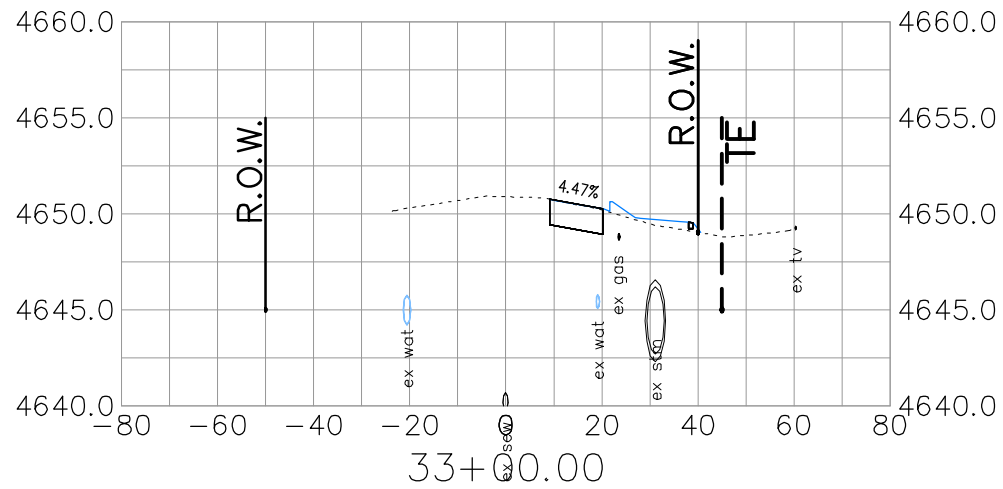
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Detailer: John C Smith	Subset Sheets:	32 of 34

Project No./Code

TAP M555-032
20736
Sheet Number 231

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File Name: as shown at left
Horiz. Scale: AS SHOWN Vert. Scale: AS SHOWN
Unit Information: City of GJ Unit Leader Initials: JJV

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Sheet Revisions

Date:	Comments	Init.



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Revised:

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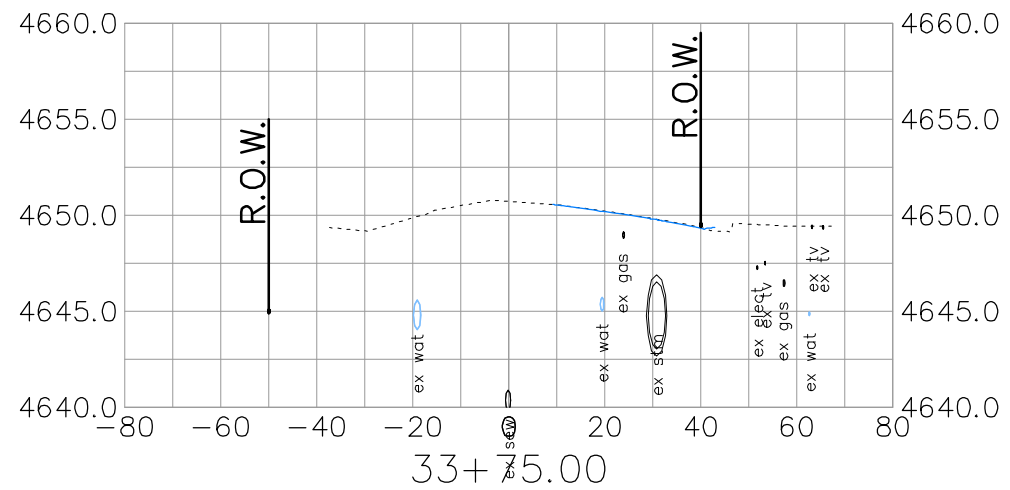
ROADWAY CROSS SECTIONS

Designer: John C Smith	Structure Numbers	-
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Project No./Code

TAP M555-032
20736
Sheet Number 232

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Print Date: as shown at left
 File Name: as shown at left
 Horiz. Scale: AS SHOWN Vert. Scale: AS SHOWN
 Unit Information: City of GJ Unit Leader Initials: JJV

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Sheet Revisions		
Date:	Comments	Init.



As Constructed
 No Revisions:
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ROADWAY CROSS SECTIONS			
Designer:	John C Smith	Structure Numbers	—
Detailer:	John C Smith	Structure Numbers	—
Sheet Subset:	Profile	Subset Sheets:	34 of 34

Project No./Code
 TAP M555-032
 20736
 Sheet Number 233

GENERAL NOTES

1. ALL CONSTRUCTION ZONE TRAFFIC CONTROL DEVICES, INCLUDING BUT NOT LIMITED TO BARRICADES, SIGNS, ARROW PANELS, FLASHING BEACON (PORTABLE), AND CHANNELIZING DEVICES, SHALL BE FURNISHED, INSTALLED, MAINTAINED (INCLUDING WASHING), REPLACED IF DAMAGED, REMOVED WHEN TEMPORARILY NOT IN USE AND RETURNED WHEN REQUIRED, RESET AS NECESSARY DURING THE PROGRESS OF CONSTRUCTION, AND REMOVED ENTIRELY WHEN THE PROJECT IS COMPLETED. ALL DEVICES SHALL MEET THE REQUIREMENTS OF THE LATEST EDITION OF THE ATSSA "QUALITY GUIDELINES FOR TEMPORARY TRAFFIC CONTROL DEVICES & FEATURES".
2. WORK ON THE PROJECT SHALL NOT BE STARTED UNTIL ALL REQUIRED TRAFFIC CONTROL DEVICES ARE IN PLACE, AND APPROVED BY THE ENGINEER.
3. WHEN SPEED LIMIT REDUCTION IS REQUIRED, SUCH REDUCTION SHALL BE IN ACCORDANCE WITH CDDT FORM 568, "AUTHORIZATION AND DECLARATION OF TEMPORARY SPEED LIMITS."

WHEN A CHANGE IN AN EXISTING SPEED LIMIT IS REQUIRED, THE R2-1 SIGNS, SHOWN ON THE SCHEDULE OF CONSTRUCTION TRAFFIC CONTROL DEVICES, SHOULD BE INSTALLED AT THE LOCATIONS SHOWN ON THE TYPICAL CASES BY R2-1 (OPTIONAL) SIGNS.

AN ADVISORY SPEED PLATE (W13-1P) MAY BE USED WITH A WARNING SIGN WHEN THE MAXIMUM RECOMMENDED SPEED FOR CONDITION NAMED IS LOWER THAN THE POSTED SPEED LIMIT.

THE REGULATORY OR ADVISORY SPEED REDUCTION DISPLAYED SHALL NOT EXCEED 15 MPH PER SIGN INSTALLATION.
4. ANY TRAFFIC CONTROL DEVICE THAT IS DAMAGED, WEATHERED, WORN, OR OTHERWISE DEEMED UNACCEPTABLE BY THE ENGINEER, SHALL BE REPLACED.
5. CONTRACTOR AND PERSONAL VEHICLE PARKING IS PROHIBITED WITHIN THE RIGHT-OF-WAY UNLESS DESIGNATED ON THE PLANS, OR APPROVED BY THE ENGINEER.
6. CONSTRUCTION TRAFFIC SIGNS SHALL BE MEASURED BY THE FOLLOWING SIZES AND DESCRIPTIONS:

PANEL SIZE A 0.01 TO 9.00 SQ. FT. (INCLUDING TYPE 1 AND TYPE 2 BARRICADES).
PANEL SIZE B 9.01 TO 16.00 SQ. FT.
PANEL SIZE C GREATER THAN 16 SQ. FT.

CONSTRUCTION TRAFFIC SIGN (SPECIAL), SQ. FT., MAY BE USED FOR SOME PROJECT SPECIFIC INFORMATION SIGNS.

FOR DETAILED DIMENSIONS OF SIGNS WITH SIGN CODE NUMBERS, SEE "STANDARD HIGHWAY SIGNS" AND THE "COLORADO SUPPLEMENT" THERETO. SIGN LAYOUTS FOR OTHER SIGNS WILL BE FURNISHED IN THE PLANS, TRANSMITTED TO THE ENGINEER AFTER AWARD, OR MAY BE AVAILABLE UPON REQUEST.

W20-5 WARNING SIGNS SHALL BE FURNISHED WITH EXCHANGEABLE PLAQUES READING "RIGHT", "LEFT", "CENTER", "RIGHT 2", ETC. AT NO ADDITIONAL COST.
7. ALL WARNING AND REGULATORY SIGNS SHALL BE POSTED ON BOTH SIDES OF THE ROADWAY ON DIVIDED HIGHWAYS, MULTI-LANE RAMPS, ONE-WAY STREETS, AND AS DIRECTED BY THE ENGINEER, EXCEPT WHERE ONLY ONE SHOULDER IS CLOSED (EX: CASE 11 ON SHEET 7).
8. ADDITIONAL TRAFFIC CONTROL DEVICES ADDRESSING FLAGGING, SPEED REDUCTION, ETC. WILL BE NECESSARY FOR SET-UP AND TAKE-DOWN OF MOST CASE APPLICATIONS; DAILY WORK SITE ACCESS; AND PAVEMENT MARKING REMOVAL AND INSTALLATION OPERATIONS.
9. BASED ON SIGHT DISTANCE AND OTHER CONSIDERATIONS, THE FINAL LOCATIONS OF SIGNS ARE SUBJECT TO APPROVAL OF THE ENGINEER.
10. IF CONSTRUCTION RELATED TRAFFIC CONGESTION BACKS UP BEYOND THE INSTALLED ADVANCE SIGN SEQUENCE, ADDITIONAL ADVANCE SIGNING SHALL BE PLACED BEYOND THE CONGESTION.
11. ALL SIGN MATERIAL SHALL BE SOUND AND DURABLE TO THE DEGREE NECESSARY FOR MAINTAINING EFFECTIVE AND NEAT APPEARING TRAFFIC CONTROLS, AND:
 - a. SIGN PANELS MAY BE FABRICATED FROM PLYWOOD, STEEL, ALUMINUM, OR OTHER SUITABLE MATERIAL.
 - b. REFLECTIVE SHEETING SHALL CONFORM TO ASTM D4956. THE TYPE SHALL BE AS DESCRIBED IN THE STANDARD SPECIFICATIONS AND/OR AS SHOWN ON THE PLANS.
 - c. SYMBOLS AND LEGEND SHALL BE OF GOOD WORKMANSHIP (UNEVEN OR HAND LETTERING WILL NOT BE ACCEPTED).
 - d. PORTABLE OR TEMPORARY MOUNTING SHALL NOT BE CONSTRUCTED OR WEIGHTED BY ANY METHOD OR MATERIAL THAT MAKES THEM HAZARDOUS TO TRAFFIC.
 - e. CERTAIN POST SIZES AND SHAPES REQUIRE A "BREAK-AWAY" DEVICE. SEE THE APPLICABLE STANDARD PLAN. OTHER POST DESIGNS OR SYSTEMS REQUIRE THE SUBMITTAL OF AN FHWA LETTER OF ACCEPTANCE TO THE ENGINEER, AND MUST BE APPROVED BY THE ENGINEER PRIOR TO THEIR USE.
12. ALL CONSTRUCTION SIGN PLACEMENT SHALL BE IN ACCORDANCE WITH STANDARD PLAN "TYPICAL GROUND SIGN PLACEMENT" UNLESS OTHERWISE APPROVED.

SIGNS APPROVED TO BE MOUNTED ON PORTABLE SUPPORTS, OR APPROPRIATE SIGNS MOUNTED ON BARRICADES, MAY BE AT LOWER HEIGHTS, BUT THE BOTTOM OF THE SIGNS SHALL NOT BE LESS THAN ONE FOOT ABOVE THE PAVEMENT ELEVATION.
13. SIGNS MOUNTED ON THE MEDIAN OF DIVIDED HIGHWAYS WHERE MEDIAN BARRIER IS IN PLACE MAY BE MOUNTED ON THE BARRIER WITH A SADDLE TYPE BRACKET. IF THE BRACKET ALLOWS THE SIGN PANEL TO BE TURNED PARALLEL TO THE ROADWAY, THE SIGN MAY REMAIN IN PLACE WHEN NOT APPLICABLE, BUT LAYING THE SIGN PANEL DOWN IN A HORIZONTAL POSITION IS NOT PERMITTED.
14. TRAFFIC CONES SHALL BE AT LEAST 28 INCHES IN HEIGHT. HOWEVER, THE MINIMUM SIZE SHALL BE 36 INCHES WHEN THEY ARE USED ON FREEWAYS AND EXPRESSWAYS, OR DURING NIGHT TIME WORKING HOURS. THEY SHOULD ALSO BE 36 INCHES WHEN USED ON OTHER HIGH SPEED ROADWAYS (45 MPH OR MORE) WITH AN ADT OF 6,000 OR MORE.
15. TYPE 1 BARRICADES SHALL NOT BE USED ON FREEWAYS, EXPRESSWAYS, OR OTHER HIGH SPEED ROADWAYS (55 MPH OR MORE).
16. WHEN TWO-WAY TRAFFIC IS PLACED ON ONE ROADWAY OF A NORMALLY DIVIDED HIGHWAY, OPPOSING TRAFFIC SHALL BE SEPARATED EITHER WITH CONCRETE BARRIER (TEMPORARY), OR WITH CHANNELIZING DEVICES APPROVED FOR THIS APPLICATION, THROUGHOUT THE LENGTH OF TWO-WAY OPERATION. THE TRANSITION ZONES SHALL HAVE CONCRETE BARRIER (TEMPORARY). THE BARRIER SHALL BE TIED TO AN EXISTING STRUCTURE OR GUARD RAIL, FLARED OR EXTENDED, TO MEET CLEAR ZONE REQUIREMENTS, OR FITTED WITH AN IMPACT ATTENUATION DEVICE.
17. CHANNELIZING DEVICE SPACING, IN FEET, SHALL BE AS FOLLOWS:
 - a. FOR TAPERS AND TRANSITIONS, SPACING EQUALS THE NUMERICAL VALUE OF THE SPEED LIMIT. (e.g. 45 MPH = 45 FEET)
 - b. FOR TANGENTS ALONG THE BUFFER SPACE OR WORK AREA, SPACING MAY NOT BE GREATER THAN TWO TIMES THE SPEED LIMIT. (e.g. 50 MPH = 50 FEET TO 100 FEET MAXIMUM)
18. FOR DETAILS ON BARRICADES, CONCRETE BARRIER (TEMPORARY), VERTICAL PANELS, AND FLASHING BEACON (PORTABLE), SEE THE APPLICABLE STANDARD PLANS.
19. FLOOD LIGHTS SHALL BE USED TO ILLUMINATE FLAGGER STATIONS DURING THE HOURS OF DARKNESS UNLESS OTHERWISE APPROVED. A TYPICAL LIGHT SHOULD PROVIDE THE FOLLOWING: A FULLY DIRECTIONAL SWIVEL MOUNT QUARTZ LIGHT SOURCE (500 WATT MINIMUM), SELF-SUPPORTING STAND WITH VARIABLE LIGHT HEIGHT FROM A MINIMUM OF EIGHT FEET ABOVE THE ROADWAY, AND A POWER SOURCE. IT SHALL ILLUMINATE THE STATION AREA AND A FLAGGER ESCAPE PATH, BUT SHALL NOT PRESENT ANY GLARE TO TRAFFIC.
20. FOR TEMPORARY PAVEMENT MARKINGS AND CONTROL POINTS FOR INSTALLING THOSE PAVEMENT MARKINGS FOR UNDIVIDED ROADWAYS THAT ARE BEING CONSTRUCTED UNDER TRAFFIC, FULL COMPLIANCE CENTER LINE, LANE LINE, AND EDGE LINE TEMPORARY MARKINGS SHALL BE IN PLACE AT THE END OF EACH WORK DAY IN ACCORDANCE WITH SECTION 627.03(d)2.

FOR ADDITIONAL PAVEMENT MARKING DETAILS, SEE STANDARD PLAN "TYPICAL PAVEMENT MARKINGS".
21. BUFFER SPACE IS OPTIONAL. NEED MUST BE DETERMINED ON A PROJECT OR SITE SPECIFIC BASIS AS DIRECTED BY THE ENGINEER. WHEN A BUFFER SPACE IS USED, DIMENSIONS AND/OR DEVICES USED ARE TO BE INCORPORATED IN THE TRAFFIC CONTROL PLAN (TCP) OR THE CONTRACTOR'S METHOD OF HANDLING TRAFFIC (MHT).
22. ADDITIONAL VMS SIGNAGE SHOULD BE CONSIDERED AT LEAST A MILE IN ADVANCE OF THE SIGNING SHOWN IN THE DETAIL FOR ANY LANE CLOSURES ON INTERSTATE AND OTHER HIGH SPEED FACILITIES ESPECIALLY WHEN THE LEVEL OF SERVICE IS SIGNIFICANTLY REDUCED AS A RESULT OF CONSTRUCTION. THE LEGENDS SHOULD BE CHANGED TO ADVISE MOTORISTS OF UPCOMING TRAFFIC CONDITIONS AND TO ALERT THEM OF UPCOMING LANE USAGE.


ADDITIONAL ADVANCE WARNING SIGNAGE IS ENCOURAGED IN ALL CASES WHERE TRAFFIC VOLUMES AND SPEEDS ARE HIGH AND/OR WHERE THERE ARE INFREQUENT EXITS. ADDITIONAL SIGNAGE IS ALSO ENCOURAGED IN LOCATIONS WHERE DRIVERS' LINE OF SIGHT TO ADVANCE WARNING SIGNS IS OBSTRUCTED.
23. WHEN ARROW BOARDS ARE USED TO CLOSE MULTIPLE LANES, A SEPARATE ARROW BOARD SHALL BE USED FOR EACH CLOSED LANE.

IF ARROW BOARDS ARE USED FOR SHOULDER WORK, BLOCKING THE SHOULDER, FOR ROADSIDE WORK NEAR THE SHOULDER, OR FOR TEMPORARILY CLOSING ONE LANE ON A TWO-LANE, TWO-WAY ROADWAY, USE THE ARROW BOARDS ONLY IN THE CAUTION MODE.
24. RAISED PAVEMENT MARKERS MAY BE USED TO SUPPLEMENT TEMPORARY STRIPING DURING NON-SNOW PERIODS. THEIR USE IS ENCOURAGED ON HIGHER SPEED FACILITIES WHEN TRAFFIC IS BEING DIVERTED FROM ITS USUAL COURSE.
25. THE TYPICAL CASES DEPICTED IN THIS STANDARD REFLECT THE MINIMUM REQUIREMENTS, UNLESS AS OTHERWISE DIRECTED BY THE PROJECT PLANS AND SPECIFICATIONS, AND/OR THE PROJECT ENGINEER.
26. A SIGNIFICANT PROJECT IS DEFINED AS ONE THAT, ALONE OR IN COMBINATION WITH OTHER CONCURRENT PROJECTS NEARBY, IS ANTICIPATED TO CAUSE SUSTAINED WORK ZONE IMPACTS AT A LOCATION FOR THREE OR MORE CONSECUTIVE DAYS WITH EITHER INTERMITTENT OR CONTINUOUS LANE CLOSURES.

Sheet Revisions	
Date:	Comments
(R-1) 02/06/13	SHEET 13 - UPDATE TO 2009 MUTCD STD
(R-2) 02/26/13	SHEET 1 - UPDATE TO NOTE 1
(R-3) 02/27/13	SHEET 4 - UPDATE TAPER TO MUTCD STD
(R-4) 07/26/13	SHTS 9, 10, 15 & 20 - CORRECTED SIGN CODE DESIGNATION
(R-5) 03/27/14	SHTS 17 & 18 - UPDATED SIGNS AND TMA'S
(R-6) 07/22/14	SHEET 1 - UPDATE TO NOTE 20
(R-7) 12/8/14	SHEETS 17 TO 24 - ADDED AND RENUMBERED SHEET 22 - SIGN CODE UPDATE, W5-40 & W21-50

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Safety & Traffic Engineering Branch KCM/KEN

**TRAFFIC CONTROLS
FOR HIGHWAY
CONSTRUCTION**

Issued By: Safety & Traffic Engineering Branch July 4, 2012

STANDARD PLAN NO.

S-630-1

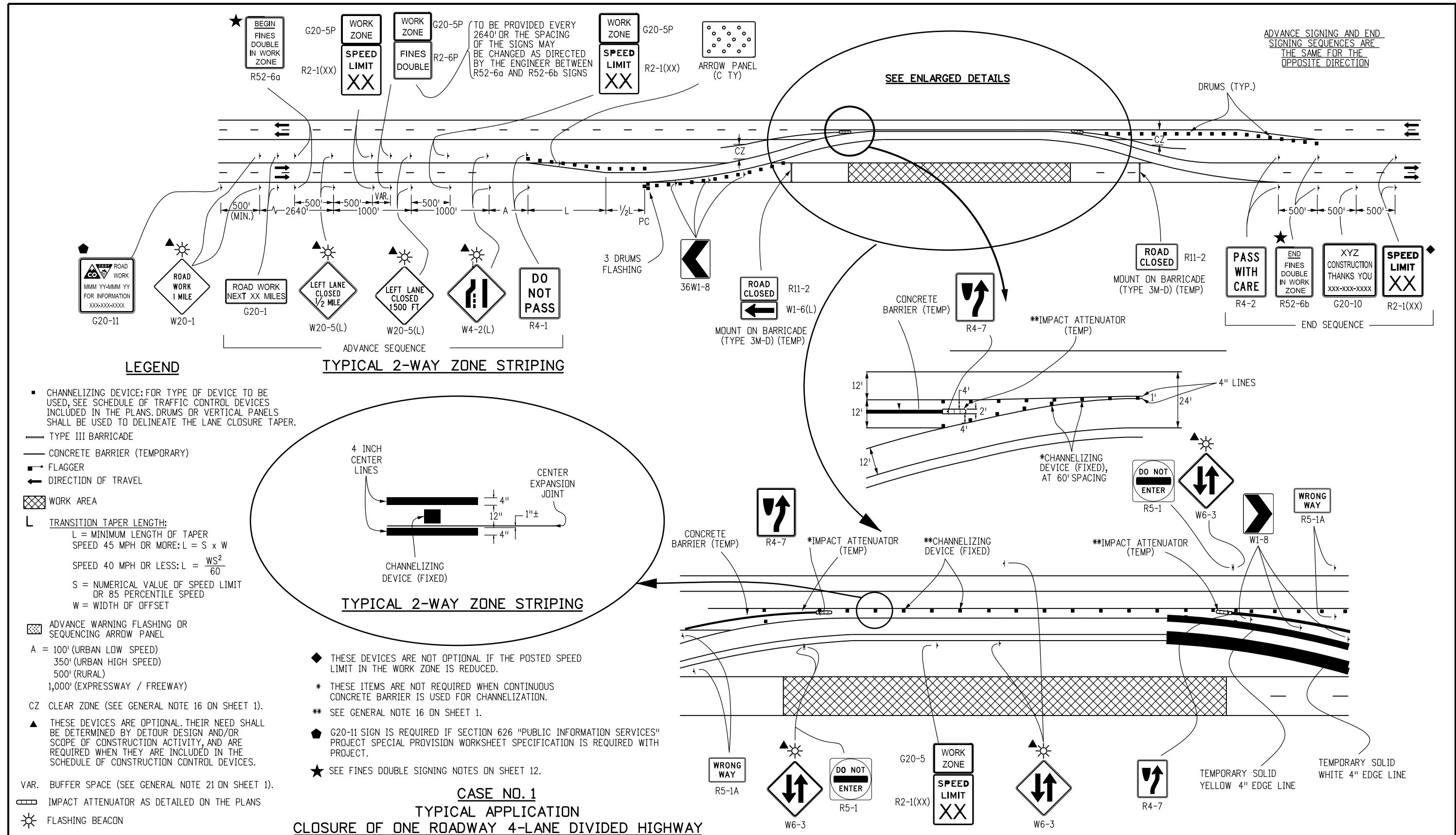
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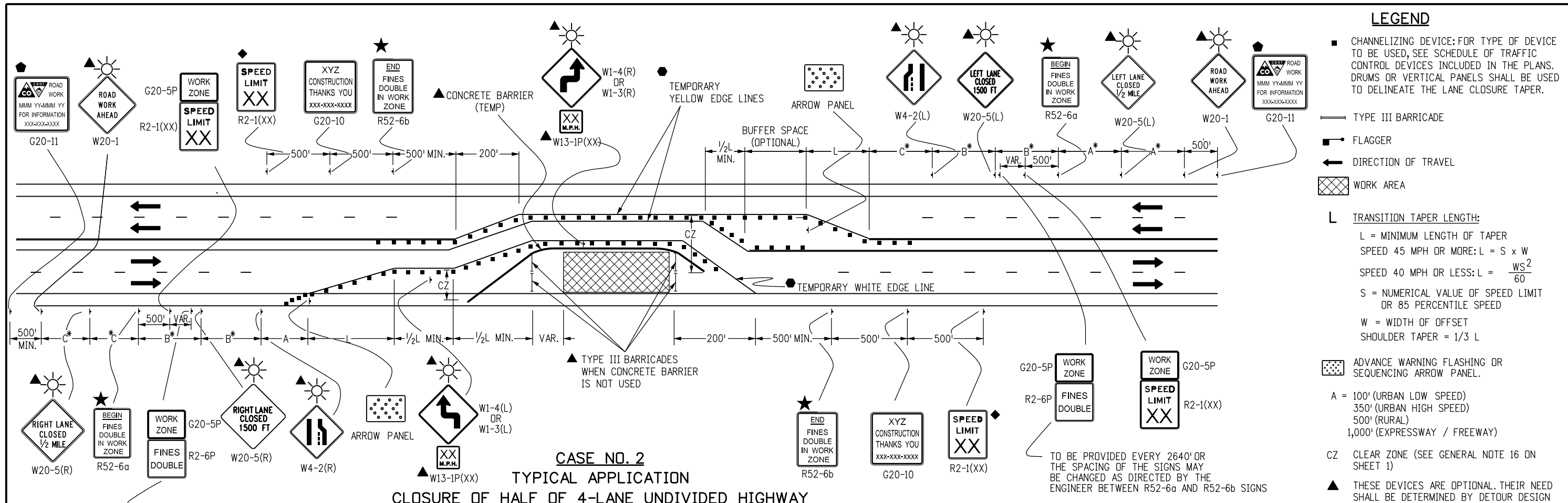
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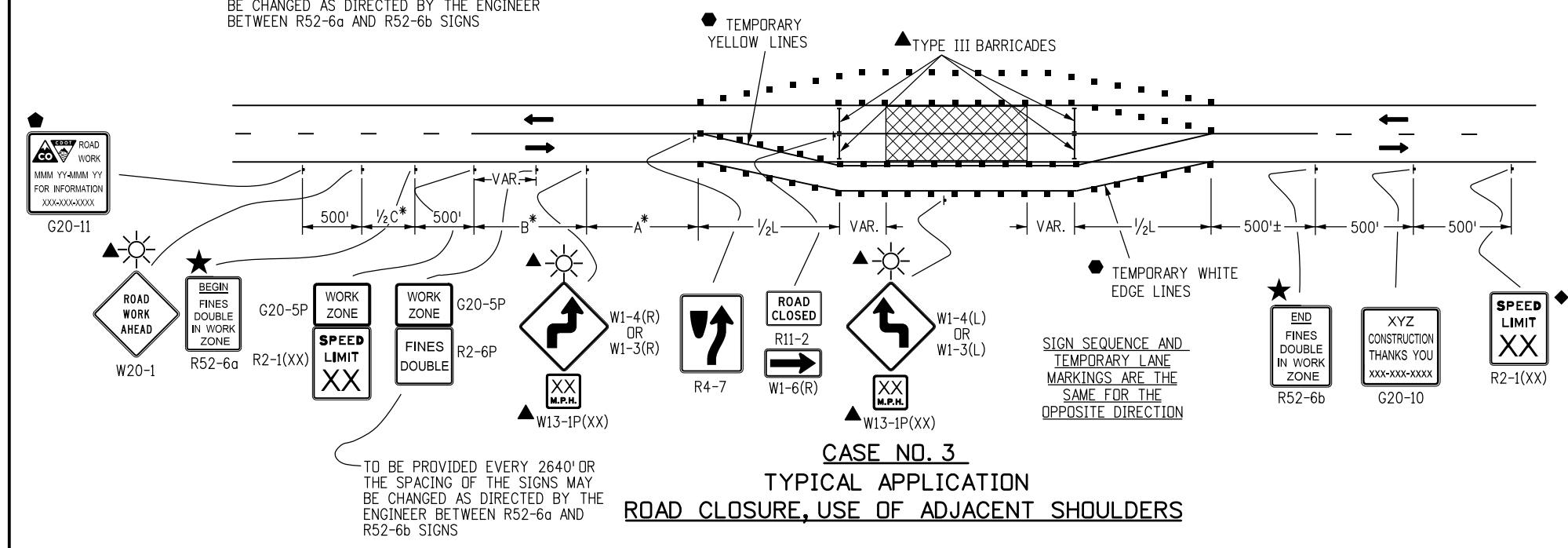
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CASE NO. 2
TYPICAL APPLICATION
CLOSURE OF HALF OF 4-LANE UNDIVIDED HIGHWAY



CASE NO. 3
TYPICAL APPLICATION
ROAD CLOSURE, USE OF ADJACENT SHOULDERS

LEGEND

- CHANNELIZING DEVICE: FOR TYPE OF DEVICE TO BE USED, SEE SCHEDULE OF TRAFFIC CONTROL DEVICES INCLUDED IN THE PLANS. DRUMS OR VERTICAL PANELS SHALL BE USED TO DELINEATE THE LANE CLOSURE TAPER.
- TYPE III BARRICADE
- FLAGGER
- ← DIRECTION OF TRAVEL
- ▨ WORK AREA
- L TRANSITION TAPER LENGTH:
L = MINIMUM LENGTH OF TAPER
SPEED 45 MPH OR MORE: $L = S \times W$
SPEED 40 MPH OR LESS: $L = \frac{WS^2}{60}$
S = NUMERICAL VALUE OF SPEED LIMIT OR 85 PERCENTILE SPEED
W = WIDTH OF OFFSET
SHOULDER TAPER = 1/3 L
- ▨ ADVANCE WARNING FLASHING OR SEQUENCING ARROW PANEL.
- A = 100' (URBAN LOW SPEED)
350' (URBAN HIGH SPEED)
500' (RURAL)
1,000' (EXPRESSWAY / FREEWAY)
- CZ CLEAR ZONE (SEE GENERAL NOTE 16 ON SHEET 1)
- ▲ THESE DEVICES ARE OPTIONAL. THEIR NEED SHALL BE DETERMINED BY DETOUR DESIGN AND/OR SCOPE OF CONSTRUCTION ACTIVITY, AND ARE REQUIRED WHEN THEY ARE INCLUDED IN THE SCHEDULE OF CONSTRUCTION CONTROL DEVICES.
- ◆ THESE DEVICES ARE NOT OPTIONAL IF THE POSTED SPEED LIMIT IN THE WORK ZONE IS REDUCED.
- VAR. BUFFER SPACE (SEE GENERAL NOTE 21 ON SHEET 1).
- REQUIRED WHEN WORK OCCUPIES THE LOCATION FOR MORE THAN 3 DAYS.
- ◆ G20-11 SIGN IS REQUIRED WHEN SECTION 626 "PUBLIC INFORMATION SERVICES" PROJECT SPECIAL PROVISION WORKSHEET SPECIFICATION IS REQUIRED WITH PROJECT.
- ☀ FLASHING BEACON
- ★ SEE FINES DOUBLE SIGNING NOTES ON SHEET 12.

*** KEY TO ADVANCE SIGNING DISTANCES**

ROAD TYPE	DISTANCE BETWEEN SIGNS		
	A	B	C
URBAN (<=40 MPH)	100	100	100
URBAN (>=45 MPH)	350	350	350
RURAL	500	500	500
EXPRESSWAY/FREEWAY	1000	1500	2640

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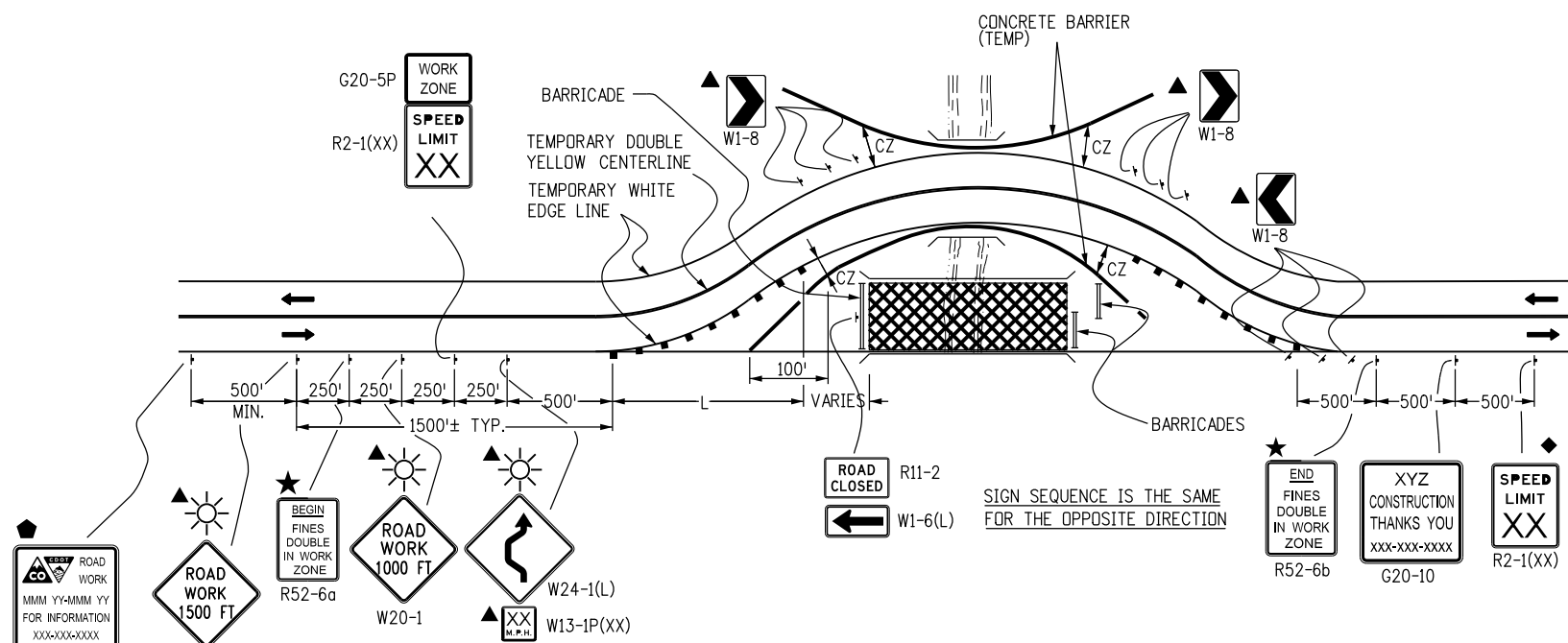
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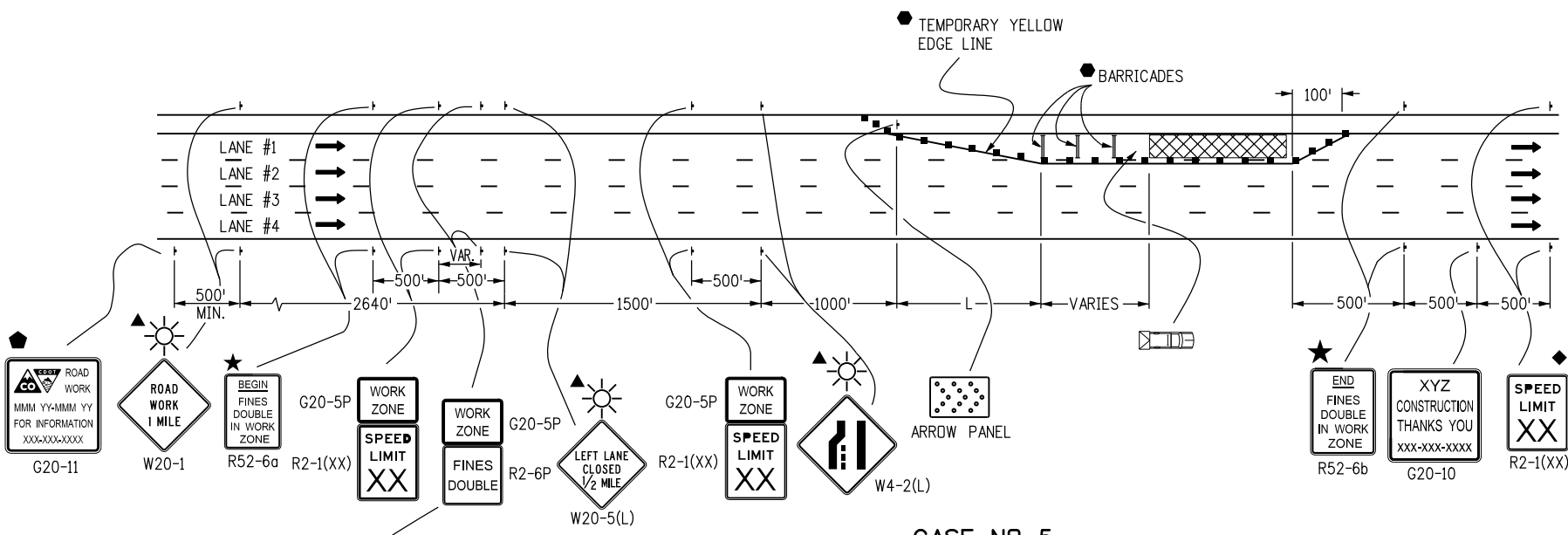
TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

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CASE NO. 4
TYPICAL APPLICATION
ROAD CLOSURE, BYPASS DETOUR PROVIDED



CASE NO. 5
TYPICAL APPLICATION
LANE #1 CLOSURE, MULTI-LANE FREEWAY

TO BE PROVIDED EVERY 2640' OR THE SPACING OF THE SIGNS MAY BE CHANGED AS DIRECTED BY THE ENGINEER BETWEEN R52-6a AND R52-6b SIGNS

LEGEND

- CHANNELIZING DEVICE: FOR TYPE OF DEVICE TO BE USED, SEE SCHEDULE OF TRAFFIC CONTROL DEVICES INCLUDED IN THE PLANS. DRUMS OR VERTICAL PANELS SHALL BE USED TO DELINEATE THE LANE CLOSURE TAPER.
- TYPE III BARRICADE
- CONCRETE BARRIER (TEMPORARY)
- FLAGGER
- ← DIRECTION OF TRAVEL
- ▨ WORK AREA
- L TRANSITION TAPER LENGTH:
 L = MINIMUM LENGTH OF TAPER
 SPEED 45 MPH OR MORE: $L = S \times W$
 SPEED 40 MPH OR LESS: $L = \frac{WS^2}{60}$
 S = NUMERICAL VALUE OF SPEED LIMIT OR 85 PERCENTILE SPEED
 W = WIDTH OF OFFSET
 SHOULDER TAPER = 1/3 L
- ▨ ADVANCE WARNING FLASHING OR SEQUENCING ARROW PANEL
- CZ CLEAR ZONE (SEE GENERAL NOTE 16 ON SHEET 1).
- ▲ THESE DEVICES ARE OPTIONAL. THEIR NEED SHALL BE DETERMINED BY DETOUR DESIGN AND/OR SCOPE OF CONSTRUCTION ACTIVITY, AND ARE REQUIRED WHEN THEY ARE INCLUDED IN THE SCHEDULE OF CONSTRUCTION CONTROL DEVICES.
- ◆ THESE DEVICES ARE NOT OPTIONAL IF THE POSTED SPEED LIMIT IN THE WORK ZONE IS REDUCED.
- VARIES BUFFER SPACE (SEE GENERAL NOTE 21 ON SHEET 1).
- REQUIRED WHEN WORK OCCUPIES THE LOCATION FOR MORE THAN 3 DAYS.
- ◆ G20-11 SIGN IS REQUIRED WHEN SECTION 626 "PUBLIC INFORMATION SERVICES" PROJECT SPECIAL PROVISION WORKSHEET SPECIFICATION IS REQUIRED WITH PROJECT.
- ▨ TRUCK MOUNTED ATTENUATOR (TMA)
- ☀ FLASHING BEACON
- ★ SEE FINES DOUBLE SIGNING NOTES ON SHEET 12.

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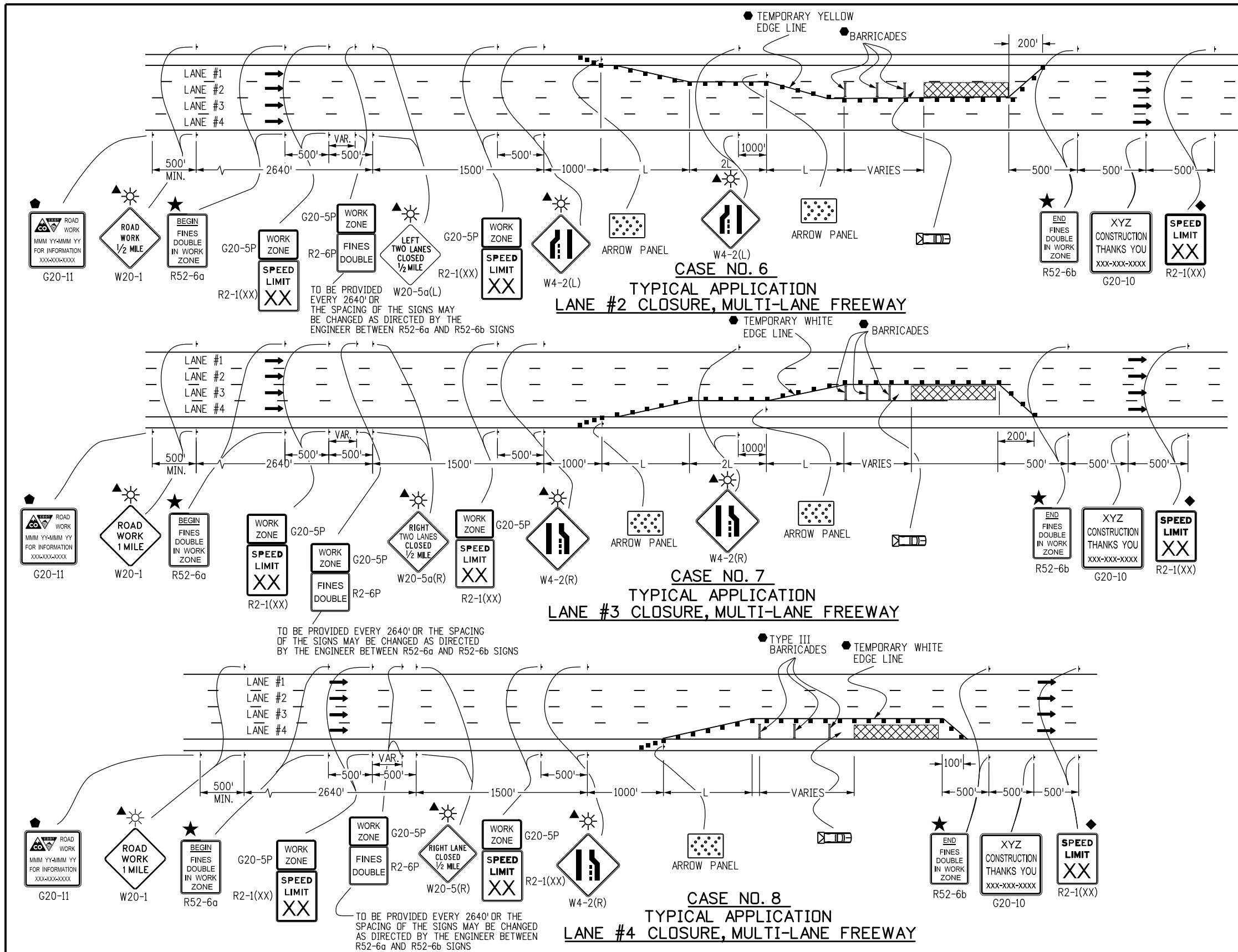
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TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

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- ### LEGEND
- CHANNELIZING DEVICE: FOR TYPE OF DEVICE TO BE USED, SEE SCHEDULE OF TRAFFIC CONTROL DEVICES INCLUDED IN THE PLANS. DRUMS OR VERTICAL PANELS SHALL BE USED TO DELINEATE THE LANE CLOSURE TAPER.
 - TYPE III BARRICADE
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 - ← DIRECTION OF TRAVEL
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 - ▨ TRUCK MOUNTED ATTENUATOR (TMA)
 - ☀ FLASHING BEACON
 - ★ SEE FINES DOUBLE SIGNING NOTES ON SHEET 12.

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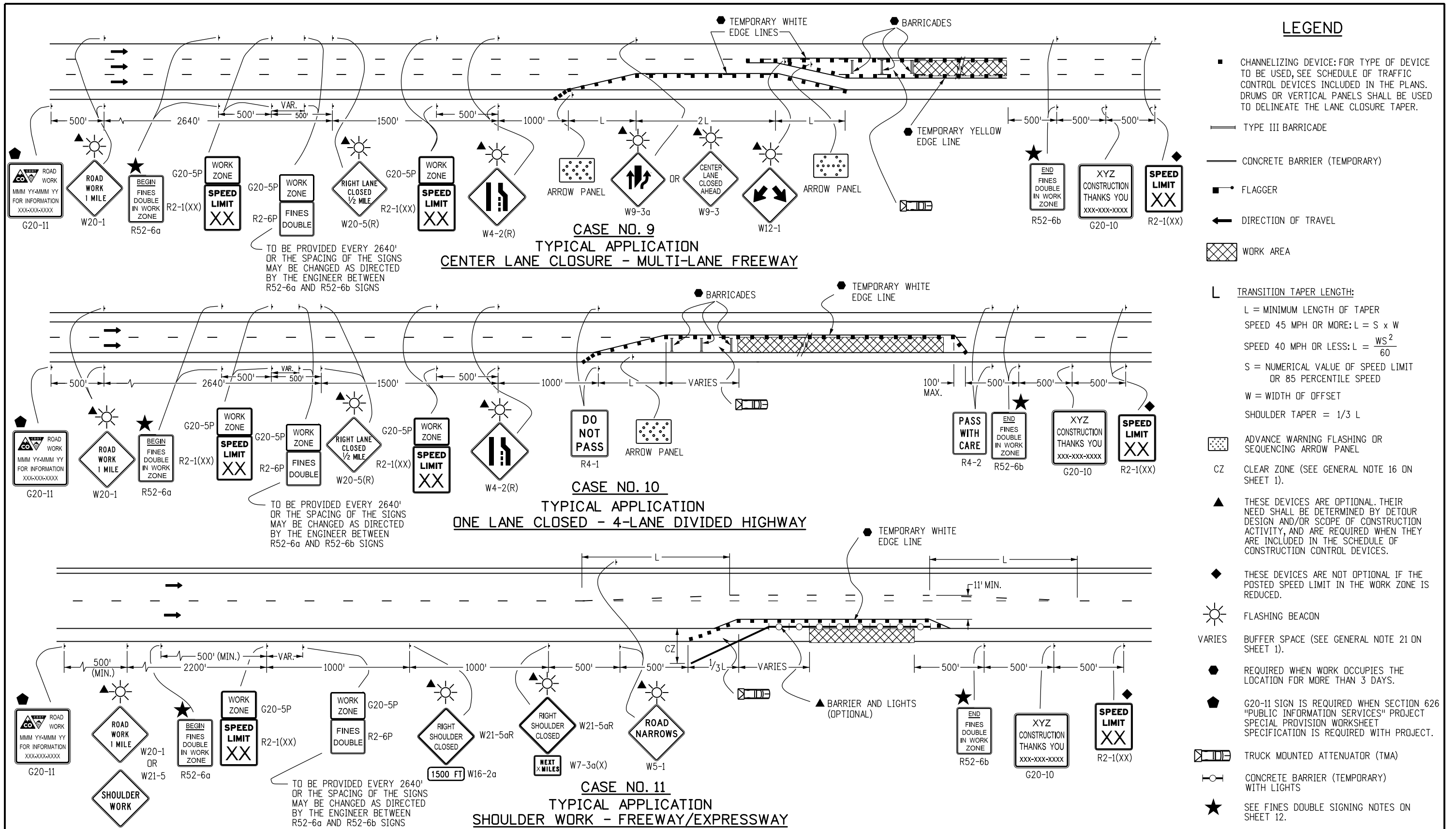
TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

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LEGEND

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- CONCRETE BARRIER (TEMPORARY)
- FLAGGER
- ← DIRECTION OF TRAVEL
- ▨ WORK AREA
- L TRANSITION TAPER LENGTH:
L = MINIMUM LENGTH OF TAPER
SPEED 45 MPH OR MORE: $L = S \times W$
SPEED 40 MPH OR LESS: $L = \frac{WS^2}{60}$
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- ▤ ADVANCE WARNING FLASHING OR SEQUENCING ARROW PANEL
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- REQUIRED WHEN WORK OCCUPIES THE LOCATION FOR MORE THAN 3 DAYS.
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- ▤ TRUCK MOUNTED ATTENUATOR (TMA)
- CONCRETE BARRIER (TEMPORARY) WITH LIGHTS
- ★ SEE FINES DOUBLE SIGNING NOTES ON SHEET 12.

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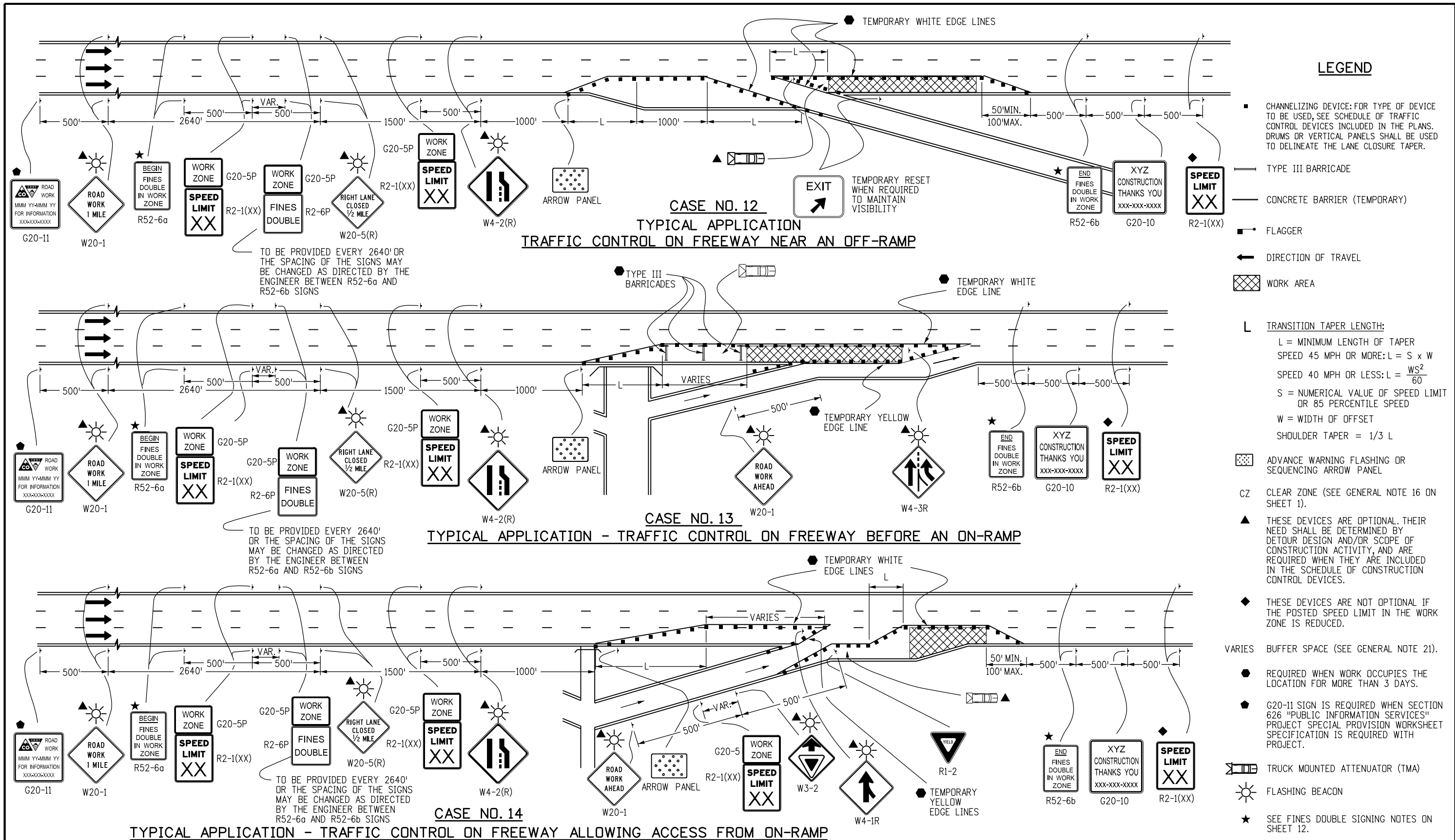
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TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

Issued By: Safety & Traffic Engineering Branch July 4, 2012

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LEGEND

- CHANNELIZING DEVICE: FOR TYPE OF DEVICE TO BE USED, SEE SCHEDULE OF TRAFFIC CONTROL DEVICES INCLUDED IN THE PLANS. DRUMS OR VERTICAL PANELS SHALL BE USED TO DELINEATE THE LANE CLOSURE TAPER.
- TYPE III BARRICADE
- CONCRETE BARRIER (TEMPORARY)
- FLAGGER
- ← DIRECTION OF TRAVEL
- ▨ WORK AREA
- L TRANSITION TAPER LENGTH:
L = MINIMUM LENGTH OF TAPER
SPEED 45 MPH OR MORE: $L = S \times W$
SPEED 40 MPH OR LESS: $L = \frac{WS^2}{60}$
S = NUMERICAL VALUE OF SPEED LIMIT OR 85 PERCENTILE SPEED
W = WIDTH OF OFFSET
SHOULDER TAPER = 1/3 L
- ▨ ADVANCE WARNING FLASHING OR SEQUENCING ARROW PANEL
- CZ CLEAR ZONE (SEE GENERAL NOTE 16 ON SHEET 1).
- ▲ THESE DEVICES ARE OPTIONAL. THEIR NEED SHALL BE DETERMINED BY DETOUR DESIGN AND/OR SCOPE OF CONSTRUCTION ACTIVITY, AND ARE REQUIRED WHEN THEY ARE INCLUDED IN THE SCHEDULE OF CONSTRUCTION CONTROL DEVICES.
- ◆ THESE DEVICES ARE NOT OPTIONAL IF THE POSTED SPEED LIMIT IN THE WORK ZONE IS REDUCED.
- VARIES BUFFER SPACE (SEE GENERAL NOTE 21).
- REQUIRED WHEN WORK OCCUPIES THE LOCATION FOR MORE THAN 3 DAYS.
- G20-11 SIGN IS REQUIRED WHEN SECTION 626 "PUBLIC INFORMATION SERVICES" PROJECT SPECIAL PROVISION WORKSHEET SPECIFICATION IS REQUIRED WITH PROJECT.
- ▨ TRUCK MOUNTED ATTENUATOR (TMA)
- ☀ FLASHING BEACON
- ★ SEE FINES DOUBLE SIGNING NOTES ON SHEET 12.

Computer File Information	
Creation Date: 07/04/12	Initials: KEN
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Full Path: www.coloradodot.info/library/traffic/traffic-s-standard-plans	
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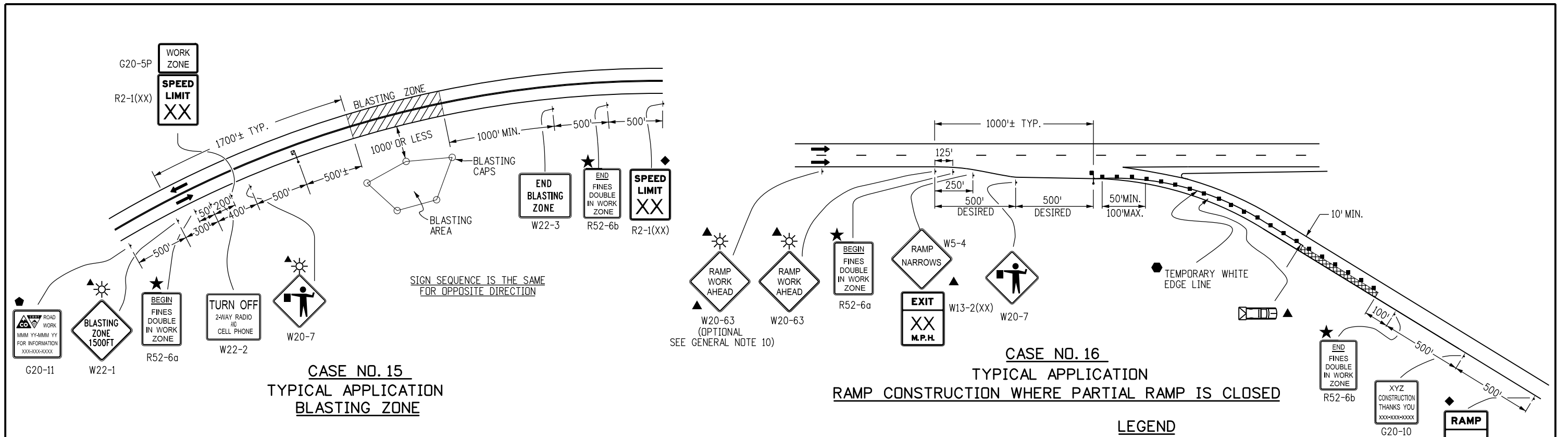
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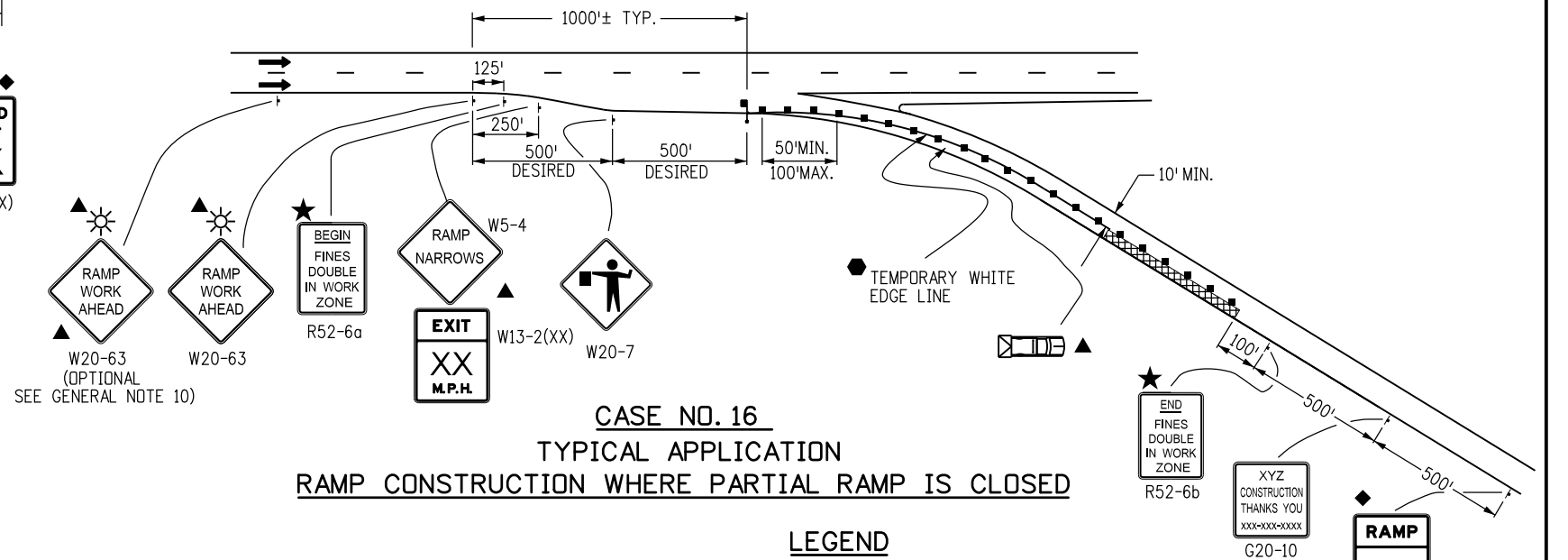
TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

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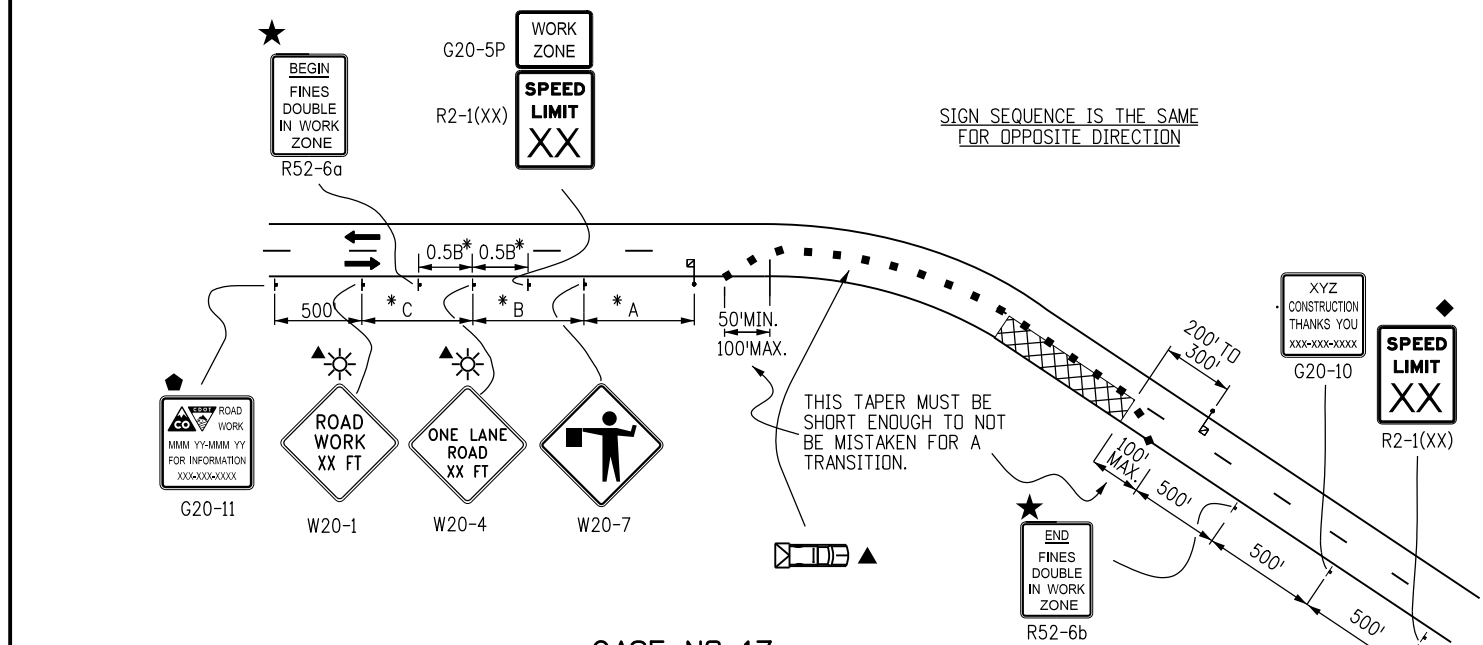
STANDARD PLAN NO.
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CASE NO. 15
TYPICAL APPLICATION
BLASTING ZONE



CASE NO. 16
TYPICAL APPLICATION
RAMP CONSTRUCTION WHERE PARTIAL RAMP IS CLOSED



CASE NO. 17
TYPICAL APPLICATION
LANE CLOSURE, 2-LANE HIGHWAY, AT CURVE

LEGEND

- CHANNELIZING DEVICE: FOR TYPE OF DEVICE TO BE USED, SEE SCHEDULE OF TRAFFIC CONTROL DEVICES INCLUDED IN THE PLANS. DRUMS OR VERTICAL PANELS SHALL BE USED TO DELINEATE THE LANE CLOSURE TAPER.
- TYPE III BARRICADE
- CONCRETE BARRIER (TEMPORARY)
- FLAGGER
- ← DIRECTION OF TRAVEL
- ▨ WORK AREA
- L TRANSITION TAPER LENGTH:
L = MINIMUM LENGTH OF TAPER
SPEED 45 MPH OR MORE: $L = S \times W$
SPEED 40 MPH OR LESS: $L = \frac{WS^2}{60}$
S = NUMERICAL VALUE OF SPEED LIMIT OR 85 PERCENTILE SPEED
W = WIDTH OF OFFSET
SHOULDER TAPER = 1/3 L
- ▩ TRUCK MOUNTED ATTENUATOR (TMA)
- ★ SEE FINES DOUBLE SIGNING NOTES ON SHEET 12
- ▨ ADVANCE WARNING FLASHING OR SEQUENCING ARROW PANEL
- CZ CLEAR ZONE (SEE GENERAL NOTE 16 ON SHEET 1).
- ▲ THESE DEVICES ARE OPTIONAL. THEIR NEED SHALL BE DETERMINED BY DETOUR DESIGN AND/OR SCOPE OF CONSTRUCTION ACTIVITY, AND ARE REQUIRED WHEN THEY ARE INCLUDED IN THE SCHEDULE OF CONSTRUCTION CONTROL DEVICES.
- ◆ THESE DEVICES ARE NOT OPTIONAL IF THE POSTED SPEED LIMIT IN THE WORK ZONE IS REDUCED.
- ☀ FLASHING BEACON
- REQUIRED WHEN WORK OCCUPIES THE LOCATION FOR MORE THAN 3 DAYS.
- G20-11 SIGN IS REQUIRED WHEN SECTION 626 "PUBLIC INFORMATION SERVICES" PROJECT SPECIAL PROVISION WORKSHEET SPECIFICATION IS REQUIRED WITH PROJECT.

***KEY TO ADVANCE SIGNING DISTANCES**

ROAD TYPE	DISTANCE BETWEEN SIGNS		
	A	B	C
URBAN (<= 40 MPH)	100	100	100
URBAN (>= 45 MPH)	350	350	350
RURAL	500	500	500
EXPRESSWAY/FREEWAY	1000	1500	2640

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Sheet Revisions

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07/26/13	CORRECTED SIGN CODE DESIGNATION FOR FLAGGER (SYMBOL) SIGN TO W20-7

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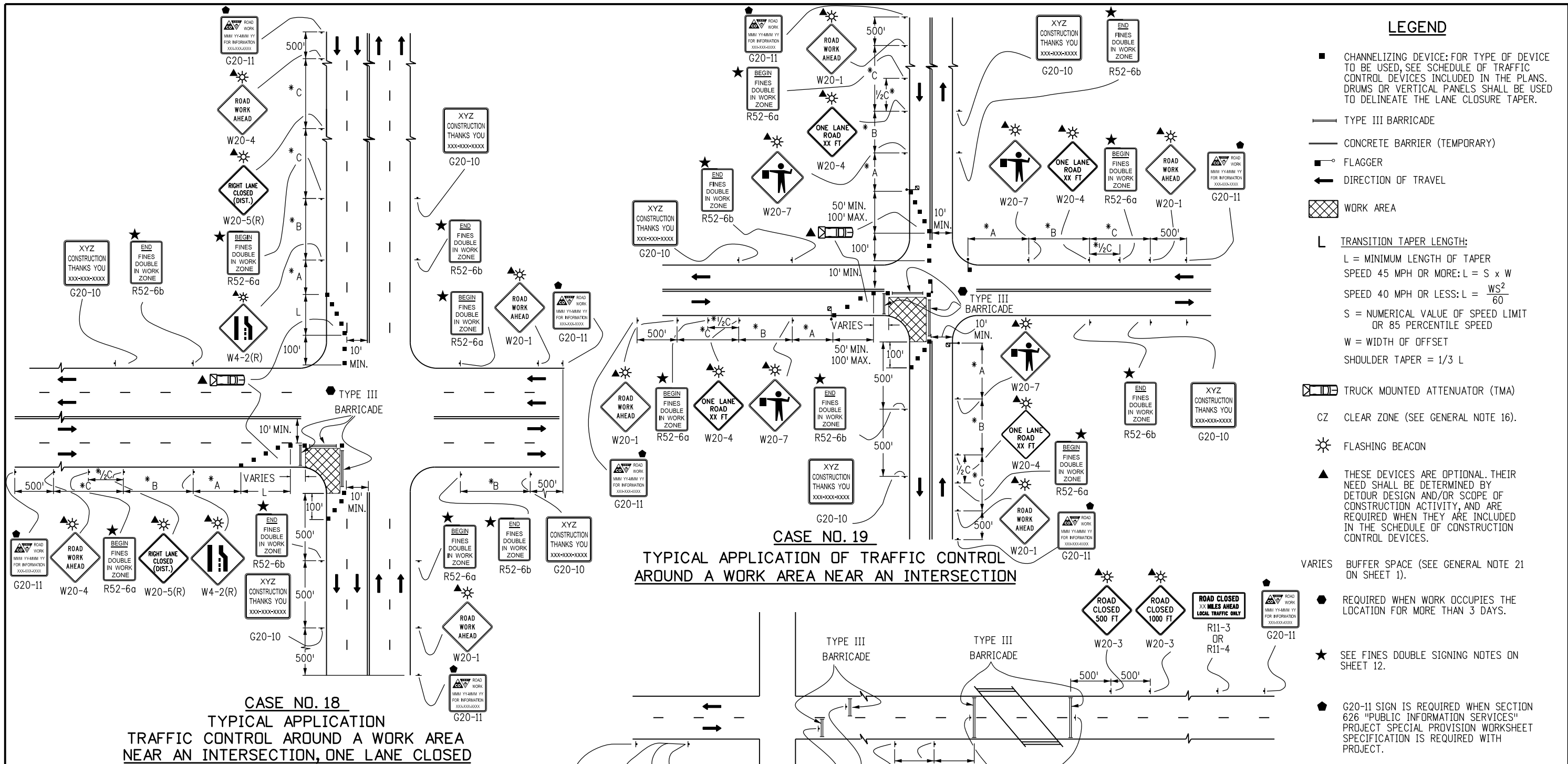
TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

Issued By: Safety & Traffic Engineering Branch July 4, 2012

STANDARD PLAN NO.

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LEGEND

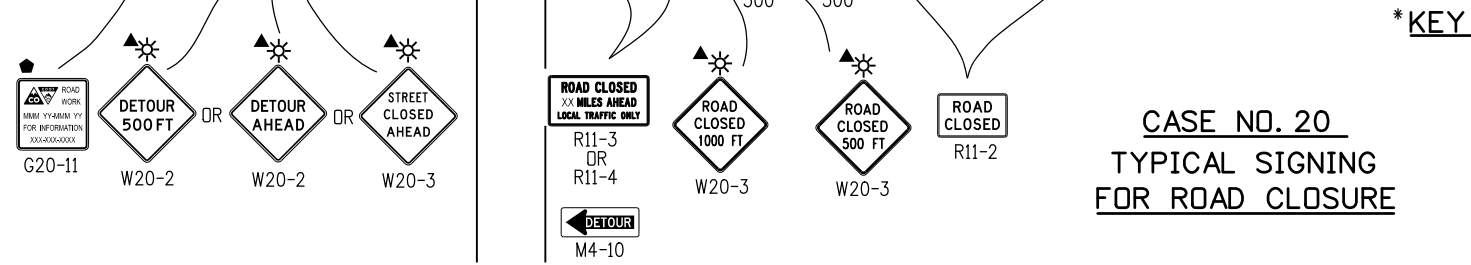
- CHANNELIZING DEVICE: FOR TYPE OF DEVICE TO BE USED, SEE SCHEDULE OF TRAFFIC CONTROL DEVICES INCLUDED IN THE PLANS. DRUMS OR VERTICAL PANELS SHALL BE USED TO DELINEATE THE LANE CLOSURE TAPER.
- TYPE III BARRICADE
- CONCRETE BARRIER (TEMPORARY)
- FLAGGER
- ← DIRECTION OF TRAVEL
- ▨ WORK AREA
- L TRANSITION TAPER LENGTH:
L = MINIMUM LENGTH OF TAPER
SPEED 45 MPH OR MORE: $L = S \times W$
SPEED 40 MPH OR LESS: $L = \frac{WS^2}{60}$
S = NUMERICAL VALUE OF SPEED LIMIT OR 85 PERCENTILE SPEED
W = WIDTH OF OFFSET
SHOULDER TAPER = 1/3 L
- ▭ TRUCK MOUNTED ATTENUATOR (TMA)
- CZ CLEAR ZONE (SEE GENERAL NOTE 16).
- ☀ FLASHING BEACON
- ▲ THESE DEVICES ARE OPTIONAL. THEIR NEED SHALL BE DETERMINED BY DETOUR DESIGN AND/OR SCOPE OF CONSTRUCTION ACTIVITY, AND ARE REQUIRED WHEN THEY ARE INCLUDED IN THE SCHEDULE OF CONSTRUCTION CONTROL DEVICES.
- VARIES BUFFER SPACE (SEE GENERAL NOTE 21 ON SHEET 1).
- REQUIRED WHEN WORK OCCUPIES THE LOCATION FOR MORE THAN 3 DAYS.
- ★ SEE FINES DOUBLE SIGNING NOTES ON SHEET 12.
- G20-11 SIGN IS REQUIRED WHEN SECTION 626 "PUBLIC INFORMATION SERVICES" PROJECT SPECIAL PROVISION WORKSHEET SPECIFICATION IS REQUIRED WITH PROJECT.

CASE NO. 18
TYPICAL APPLICATION
TRAFFIC CONTROL AROUND A WORK AREA
NEAR AN INTERSECTION, ONE LANE CLOSED

CASE NO. 19
TYPICAL APPLICATION OF TRAFFIC CONTROL
AROUND A WORK AREA NEAR AN INTERSECTION

NOTES:

1. SIGN PLACEMENT SHOWN ON CASES 18 AND 19 TYPIFIES RURAL APPLICATIONS. URBAN APPLICATIONS REQUIRE THE SIGNS TO BE PLACED WITHIN ONE, OR PERHAPS TWO, BLOCKS.
2. TRUCK-MOUNTED ATTENUATORS (TMA) OPTIONAL FOR ALL CASES AS DETERMINED BY THE ENGINEER.



CASE NO. 20
TYPICAL SIGNING
FOR ROAD CLOSURE

***KEY TO ADVANCE SIGNING DISTANCES**

ROAD TYPE	DISTANCE BETWEEN SIGNS		
	A	B	C
URBAN (<= 40 MPH)	100	100	100
URBAN (> 45 MPH)	350	350	350
RURAL	500	500	500
EXPRESSWAY/FREEWAY	1000	1500	2640

Computer File Information

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Date:	Comments
07/26/13	CORRECTED SIGN CODE DESIGNATION FOR FLAGGER (SYMBOL) SIGN TO W20-7

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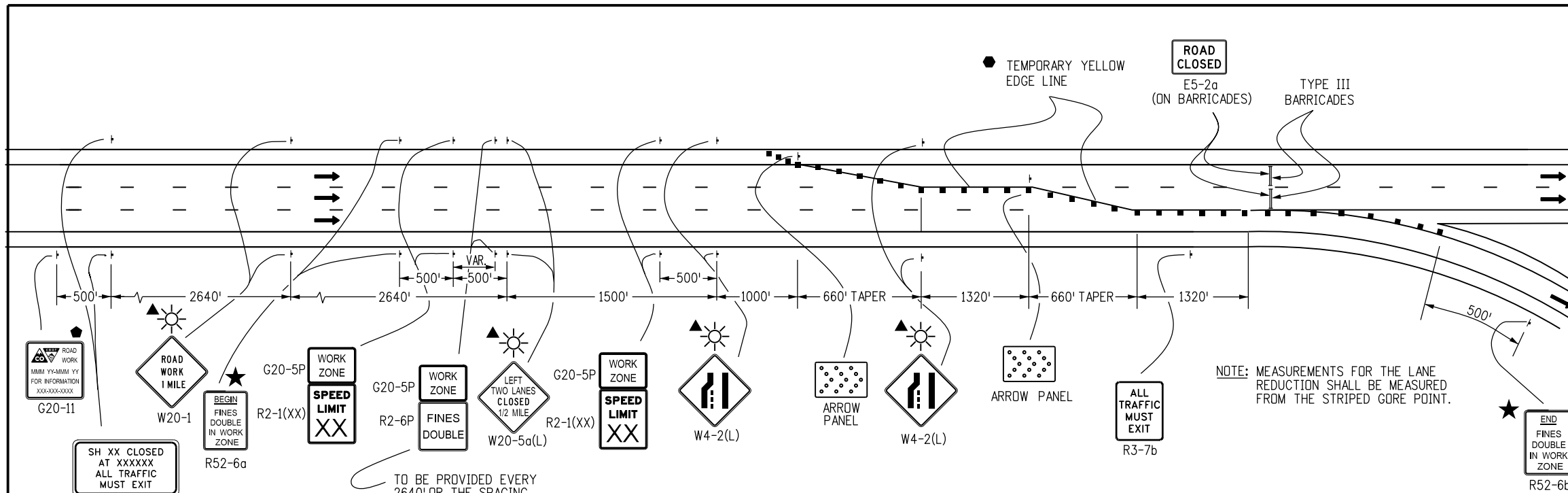
TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

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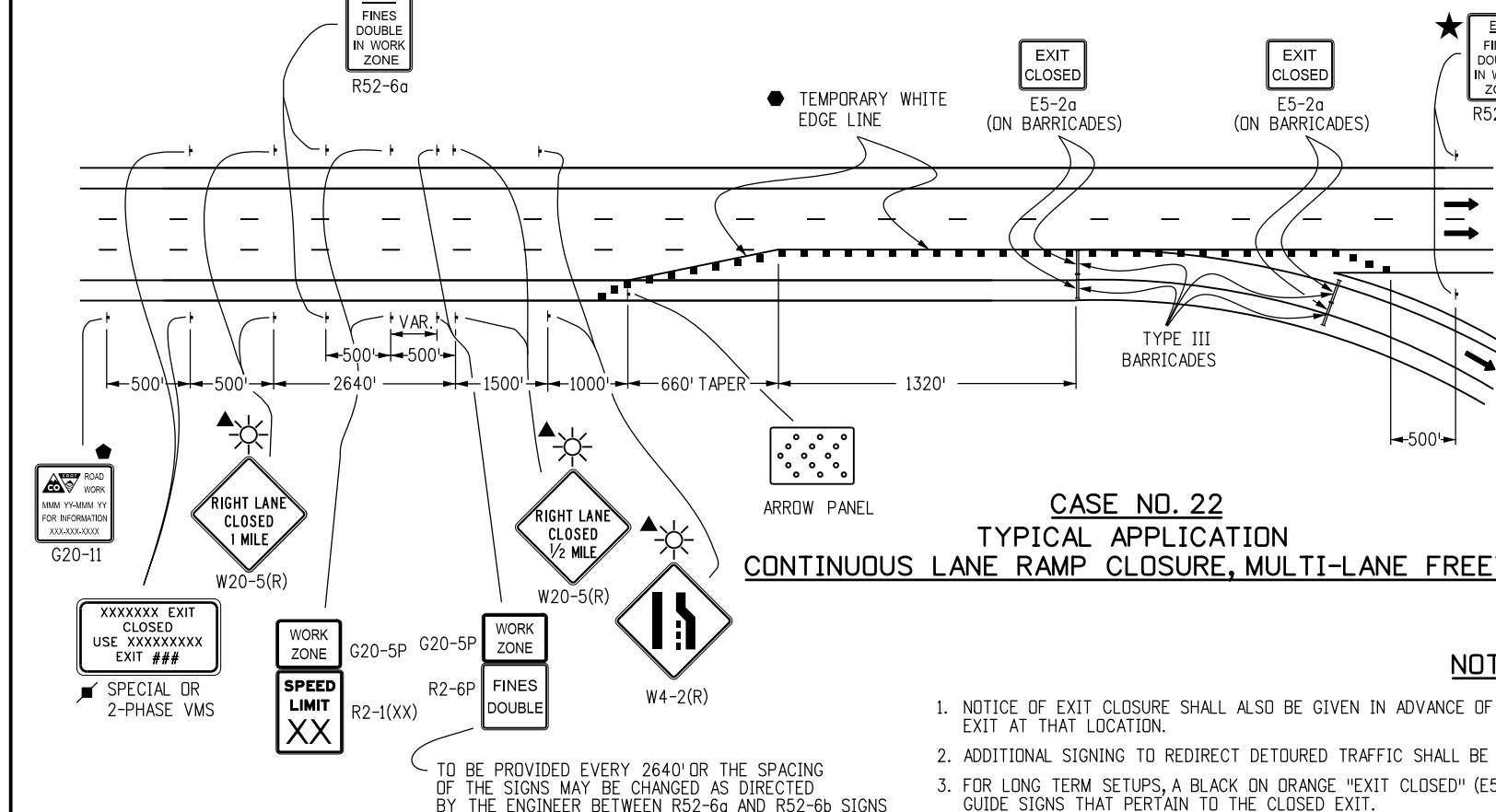
STANDARD PLAN NO.
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LEGEND

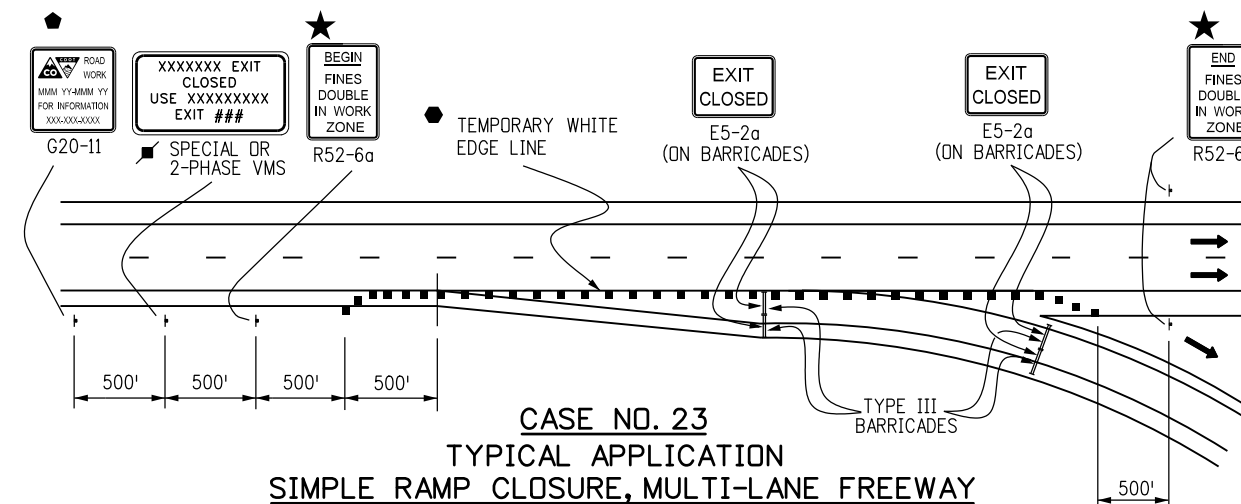
- ▣ ADVANCE WARNING FLASHING OR SEQUENCING ARROW PANEL
- ▲ THESE DEVICES ARE OPTIONAL. THEIR NEED WILL BE DETERMINED BY THE DESIGNER BASED ON DETOUR DESIGN AND/OR SCOPE OF THE CONSTRUCTION ACTIVITY, AND ARE REQUIRED WHEN THEY ARE INCLUDED IN THE PLANS.
- REQUIRED WHEN WORK OCCUPIES THE LOCATION FOR MORE THAN 3 DAYS.
- ◆ G20-11 SIGN IS REQUIRED WHEN SECTION 626 "PUBLIC INFORMATION SERVICES" PROJECT SPECIAL PROVISION WORKSHEET SPECIFICATION IS REQUIRED WITH PROJECT.
- CHANNELIZING DEVICE: FOR TYPE OF DEVICE TO BE USED, SEE SCHEDULE OF TRAFFIC CONTROL DEVICES INCLUDED IN THE PLANS. DRUMS OR VERTICAL PANELS SHALL BE USED TO DELINEATE THE LANE CLOSURE TAPER.
- TYPE III BARRICADE
- ← DIRECTION OF TRAVEL
- L TRANSITION TAPER LENGTH:
 $L = \text{MINIMUM LENGTH OF TAPER}$
 SPEED 45 MPH OR MORE: $L = S \times W$
 SPEED 40 MPH OR LESS: $L = \frac{WS^2}{60}$
 $S = \text{NUMERICAL VALUE OF SPEED LIMIT OR 85 PERCENTILE SPEED}$
 $W = \text{WIDTH OF OFFSET SHOULDER TAPER} = 1/3 L$
- ▣ CLOSURE AND EXIT MESSAGES ON SIGN LEGEND(S) SHOULD BE MODIFIED TO FIT THE SITUATION.
- ☀ FLASHING BEACON
- ★ SEE FINES DOUBLE SIGNING NOTES ON SHEET 12.



**CASE NO. 21
TYPICAL APPLICATION
FULL CLOSURE, MULTI-LANE FREEWAY**



**CASE NO. 22
TYPICAL APPLICATION
CONTINUOUS LANE RAMP CLOSURE, MULTI-LANE FREEWAY**



**CASE NO. 23
TYPICAL APPLICATION
SIMPLE RAMP CLOSURE, MULTI-LANE FREEWAY**

NOTES

1. NOTICE OF EXIT CLOSURE SHALL ALSO BE GIVEN IN ADVANCE OF THE PREVIOUS EXIT TO PROVIDE MOTORISTS WITH THE OPTION TO EXIT AT THAT LOCATION.
2. ADDITIONAL SIGNING TO REDIRECT DETOURED TRAFFIC SHALL BE PROVIDED FOR IN THE PROJECT'S METHOD OF HANDLING TRAFFIC.
3. FOR LONG TERM SETUPS, A BLACK ON ORANGE "EXIT CLOSED" (E5-2a) PANEL SHALL BE MOUNTED DIAGONALLY ACROSS ALL EXISTING GUIDE SIGNS THAT PERTAIN TO THE CLOSED EXIT.

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**TRAFFIC CONTROLS
FOR HIGHWAY
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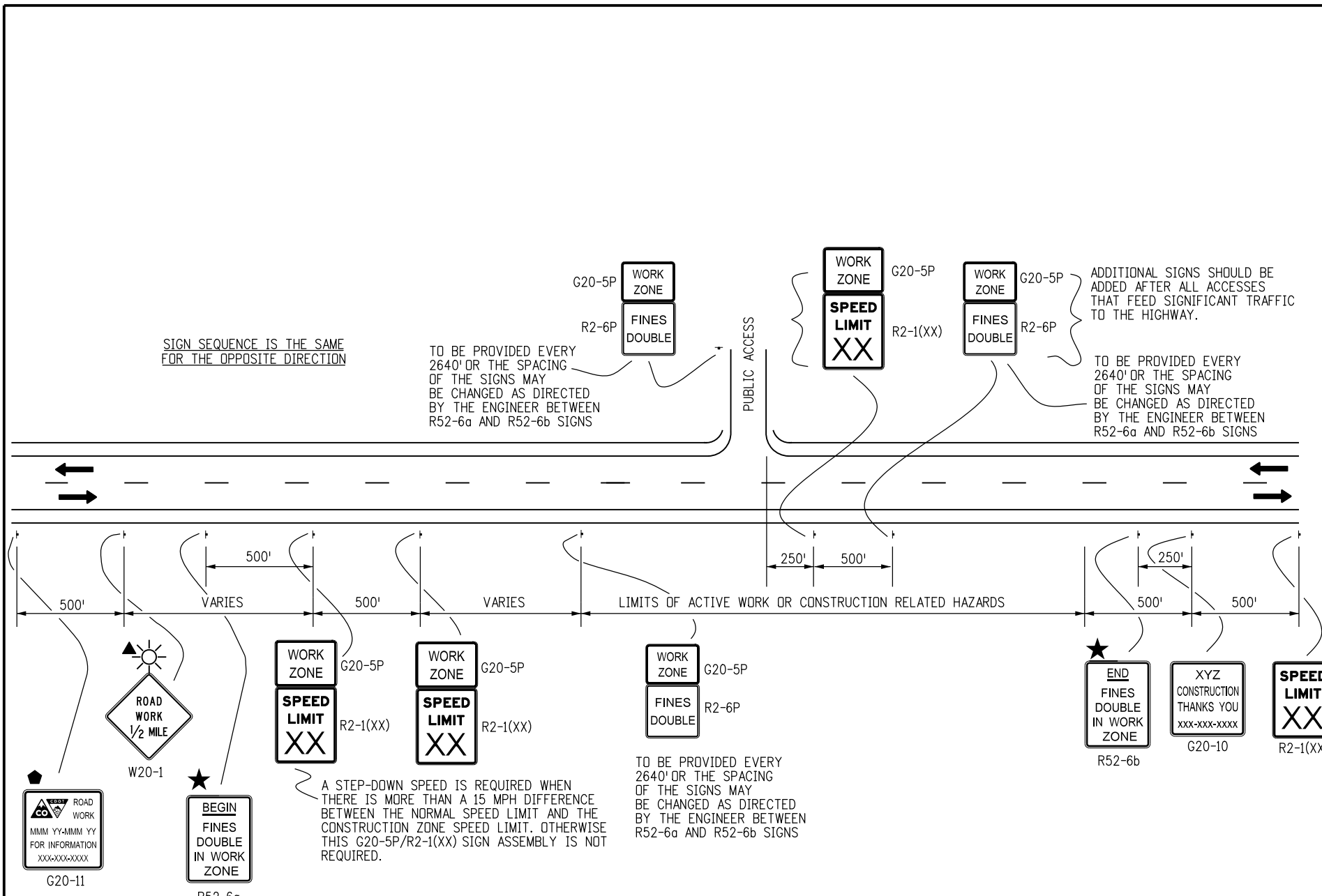
LEGEND

- ← DIRECTION OF TRAVEL
- ▲ THESE DEVICES ARE OPTIONAL. THEIR NEED WILL BE DETERMINED BY THE DESIGNER BASED ON DETOUR DESIGN AND/OR SCOPE OF THE CONSTRUCTION ACTIVITY, AND ARE REQUIRED WHEN THEY ARE INCLUDED IN THE PLANS.
- ◆ G20-11 SIGN IS REQUIRED WHEN SECTION 626 "PUBLIC INFORMATION SERVICES" PROJECT SPECIAL PROVISION WORKSHEET SPECIFICATION IS REQUIRED WITH PROJECT.
- ☀ FLASHING BEACON
- ★ FINES DOUBLE SIGNING NOTES, SEE BELOW

FINES DOUBLE SIGNING NOTES:

1. SIGNS SHALL NOT BE PLACED SOONER THAN FOUR HOURS BEFORE WORK IS TO BEGIN AND SHALL BE REMOVED AS SOON AS WORK ACTIVITIES ARE CONCLUDED, UNLESS POTENTIAL HAZARDS INTRODUCED AS A RESULT OF THE WORK ARE STILL PRESENT AT THE END OF THE WORK DAY. IF SIGNS ARE LEFT IN PLACE AFTER WORK ACTIVITIES, THE TRAFFIC CONTROL SUPERVISOR SHALL MAKE AN ENTRY IN THEIR DAILY DIARY THAT JUSTIFIES THEIR USE.

"HAZARDS" INCLUDE BUT ARE NOT LIMITED TO:
EDGE DROP OFFS
EQUIPMENT, WORKERS OR NON-SHIELDED OBJECTS IN THE CLEAR ZONE
ROUGH PAVEMENT
MAJOR CHANGE IN ALIGNMENT
REDUCED SHOULDER WIDTH
TEMPORARY GUARD RAIL OR BARRIER
LANE CLOSURE
2. SIGNS SHALL ONLY BE PLACED WHERE WORKERS ARE PRESENT IN THE ROADWAY OR CLEAR ZONE OR ARE AT RISK, OR WHERE THERE ARE HAZARDS IN THE TRAVELWAY, SHOULDERS OR CLEAR ZONE.
3. SIGNS SHOULD BE PLACED SO THAT MOTORISTS IMMEDIATELY ASSOCIATE THE SIGNS WITH PRESENT WORK ACTIVITIES. IF THE ZONE OF WORK ACTIVITY MOVES, THE SIGNS SHOULD BE MOVED ACCORDINGLY.
4. SIGNING SHOWN IS REQUIRED TO ENFORCE DOUBLE FINES IN A WORK ZONE. ADDITIONAL SIGNING SHALL BE IN ACCORDANCE WITH THAT NORMALLY REQUIRED FOR THE PARTICULAR WORK ZONE. PLACEMENT OF "FINES DOUBLE" SIGNING MAY BE ADJUSTED AS NEEDED TO PROVIDE A MINIMUM 250' SPACING BETWEEN OTHER SIGNING REQUIRED FOR THE SPECIFIC WORK ZONE SETUP.



**CASE NO. 24
TYPICAL APPLICATION
"FINES DOUBLE IN WORK ZONE" SIGNING
(WITH SPEED REDUCTION)**

Computer File Information	
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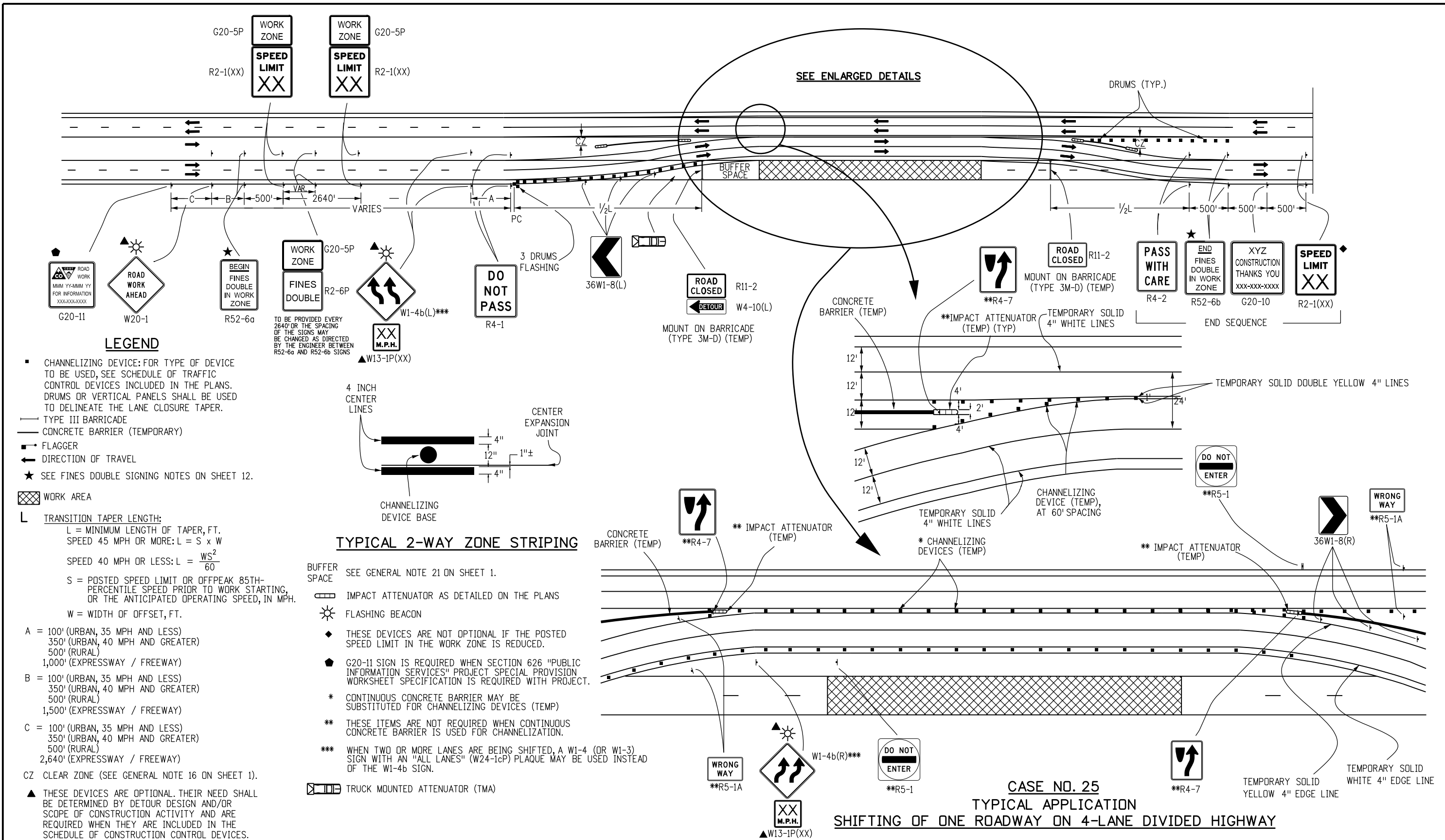
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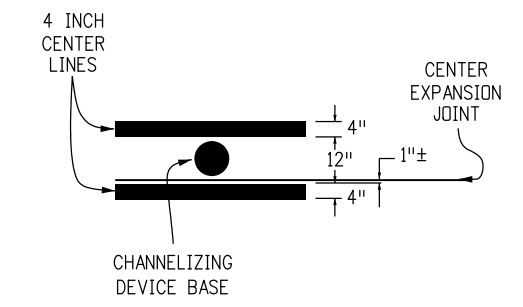


LEGEND

- CHANNELIZING DEVICE: FOR TYPE OF DEVICE TO BE USED, SEE SCHEDULE OF TRAFFIC CONTROL DEVICES INCLUDED IN THE PLANS. DRUMS OR VERTICAL PANELS SHALL BE USED TO DELINEATE THE LANE CLOSURE TAPER.
- TYPE III BARRICADE
- CONCRETE BARRIER (TEMPORARY)
- FLAGGER
- ← DIRECTION OF TRAVEL
- ★ SEE FINES DOUBLE SIGNING NOTES ON SHEET 12.
- ▨ WORK AREA
- L TRANSITION TAPER LENGTH:
 $L = \text{MINIMUM LENGTH OF TAPER, FT.}$
 SPEED 45 MPH OR MORE: $L = S \times W$
 SPEED 40 MPH OR LESS: $L = \frac{WS^2}{60}$
 $S = \text{POSTED SPEED LIMIT OR OFFPEAK 85TH-PERCENTILE SPEED PRIOR TO WORK STARTING, OR THE ANTICIPATED OPERATING SPEED, IN MPH.}$
 $W = \text{WIDTH OF OFFSET, FT.}$
- A = 100' (URBAN, 35 MPH AND LESS)
 350' (URBAN, 40 MPH AND GREATER)
 500' (RURAL)
 1,000' (EXPRESSWAY / FREEWAY)
- B = 100' (URBAN, 35 MPH AND LESS)
 350' (URBAN, 40 MPH AND GREATER)
 500' (RURAL)
 1,500' (EXPRESSWAY / FREEWAY)
- C = 100' (URBAN, 35 MPH AND LESS)
 350' (URBAN, 40 MPH AND GREATER)
 500' (RURAL)
 2,640' (EXPRESSWAY / FREEWAY)
- CZ CLEAR ZONE (SEE GENERAL NOTE 16 ON SHEET 1).
- ▲ THESE DEVICES ARE OPTIONAL. THEIR NEED SHALL BE DETERMINED BY DETOUR DESIGN AND/OR SCOPE OF CONSTRUCTION ACTIVITY AND ARE REQUIRED WHEN THEY ARE INCLUDED IN THE SCHEDULE OF CONSTRUCTION CONTROL DEVICES.

TYPICAL 2-WAY ZONE STRIPING

- BUFFER SPACE SEE GENERAL NOTE 21 ON SHEET 1.
- IMPACT ATTENUATOR AS DETAILED ON THE PLANS
- ☀ FLASHING BEACON
- ◆ THESE DEVICES ARE NOT OPTIONAL IF THE POSTED SPEED LIMIT IN THE WORK ZONE IS REDUCED.
- ◆ G20-11 SIGN IS REQUIRED WHEN SECTION 626 "PUBLIC INFORMATION SERVICES" PROJECT SPECIAL PROVISION WORKSHEET SPECIFICATION IS REQUIRED WITH PROJECT.
- * CONTINUOUS CONCRETE BARRIER MAY BE SUBSTITUTED FOR CHANNELIZING DEVICES (TEMP)
- ** THESE ITEMS ARE NOT REQUIRED WHEN CONTINUOUS CONCRETE BARRIER IS USED FOR CHANNELIZATION.
- *** WHEN TWO OR MORE LANES ARE BEING SHIFTED, A W1-4 (OR W1-3) SIGN WITH AN "ALL LANES" (W24-1cP) PLAQUE MAY BE USED INSTEAD OF THE W1-4b SIGN.
- TRUCK MOUNTED ATTENUATOR (TMA)



**CASE NO. 25
TYPICAL APPLICATION
SHIFTING OF ONE ROADWAY ON 4-LANE DIVIDED HIGHWAY**

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02/06/13	UPDATE TO 2009 MUTCD STANDARD

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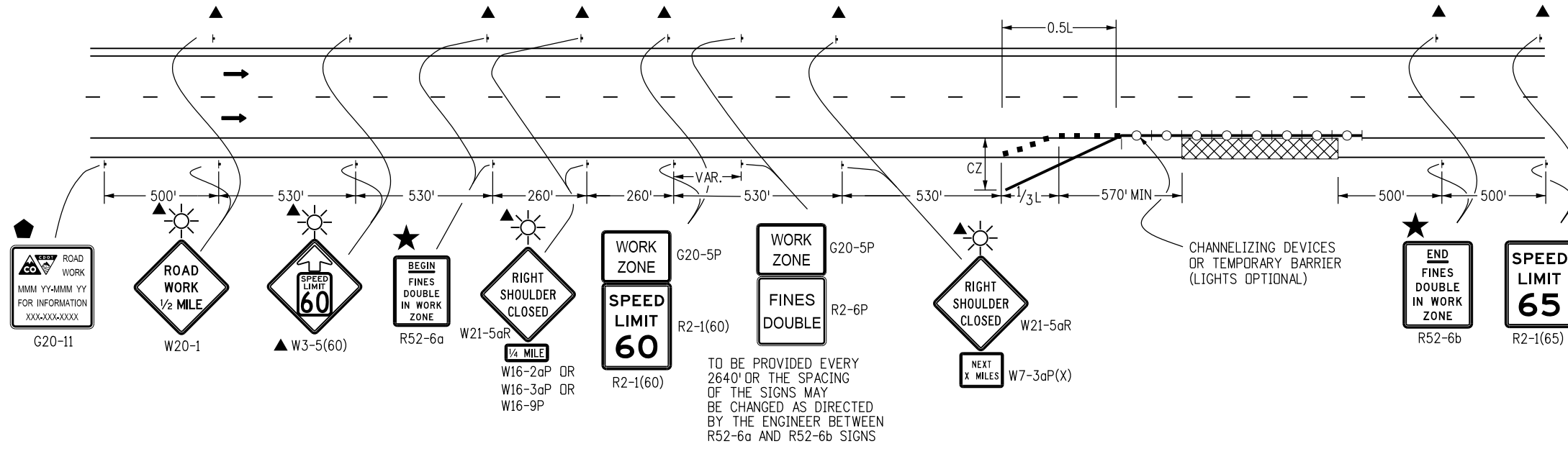
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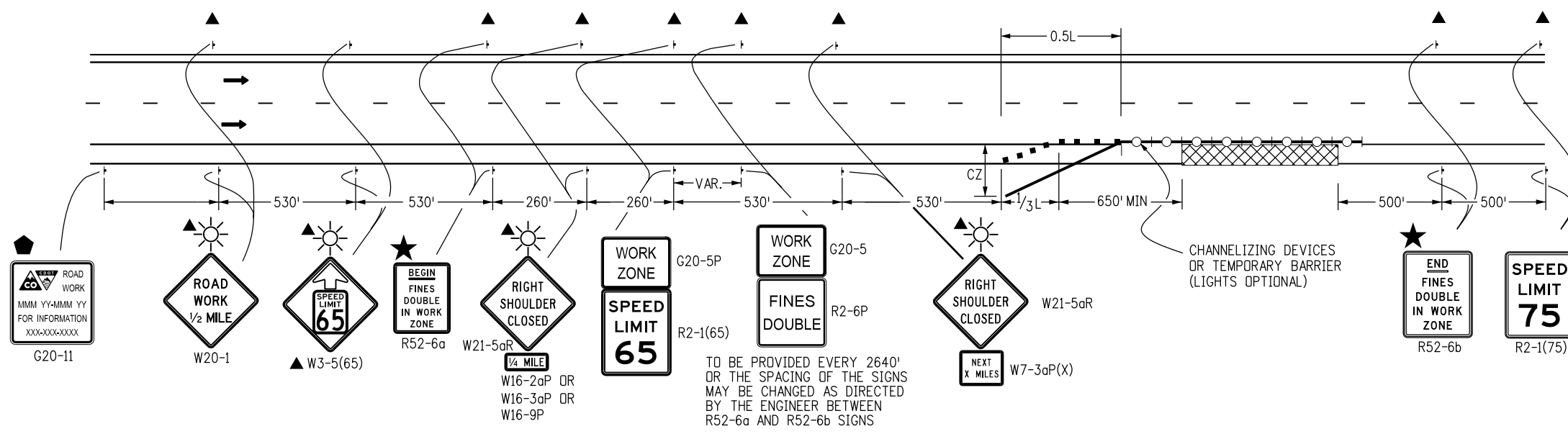
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LEGEND

- CHANNELIZING DEVICE: FOR TYPE OF DEVICE TO BE USED, SEE SCHEDULE OF TRAFFIC CONTROL DEVICES INCLUDED IN THE PLANS. DRUMS OR VERTICAL PANELS SHALL BE USED TO DELINEATE THE LANE CLOSURE TAPER.
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- CONCRETE BARRIER (TEMPORARY)
- FLAGGER
- ← DIRECTION OF TRAVEL
- ▨ WORK AREA
- L TRANSITION TAPER LENGTH:
L = MINIMUM LENGTH OF TAPER
SPEED 45 MPH OR MORE: $L = S \times W$
S = NUMERICAL VALUE OF SPEED LIMIT OR 85 PERCENTILE SPEED
W = WIDTH OF OFFSET
SHOULDER TAPER = $1/3 L$
- ▤ ADVANCE WARNING FLASHING OR SEQUENCING ARROW PANEL
- CZ CLEAR ZONE (SEE GENERAL NOTE 16 ON SHEET 1).
- ▲ THESE DEVICES ARE OPTIONAL. THEIR NEED SHALL BE DETERMINED BY TRAFFIC VOLUMES AND/OR SCOPE OF CONSTRUCTION ACTIVITY, AND ARE REQUIRED WHEN THEY ARE INCLUDED IN THE SCHEDULE OF CONSTRUCTION CONTROL DEVICES.
- ⬛ G20-11 SIGN IS REQUIRED WHEN SECTION 626 "PUBLIC INFORMATION SERVICES" PROJECT SPECIAL PROVISION WORKSHEET SPECIFICATION IS REQUIRED WITH PROJECT.
- REQUIRED WHEN WORK OCCUPIES THE LOCATION FOR MORE THAN 3 DAYS.
- ▧ TRUCK MOUNTED ATTENUATOR
- ☀ FLASHING BEACON
- ★ SEE FINES DOUBLE SIGNING NOTES ON SHEET 12.



CASE NO. 26
TYPICAL APPLICATION
SHOULDER WORK - FREEWAY/EXPRESSWAY w/ 65 MPH SPEED LIMIT
 WHEN HAZARDS (WORKERS, EQUIPMENT, OR TEMPORARY BARRIER) ARE WITHIN 8 FT OF TRAVEL WAY



CASE NO. 27
TYPICAL APPLICATION
SHOULDER WORK - FREEWAY/EXPRESSWAY w/ 75 MPH SPEED LIMIT
 WHEN HAZARDS (WORKERS, EQUIPMENT, OR TEMPORARY BARRIER) ARE WITHIN 10 FT OF TRAVEL WAY

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TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

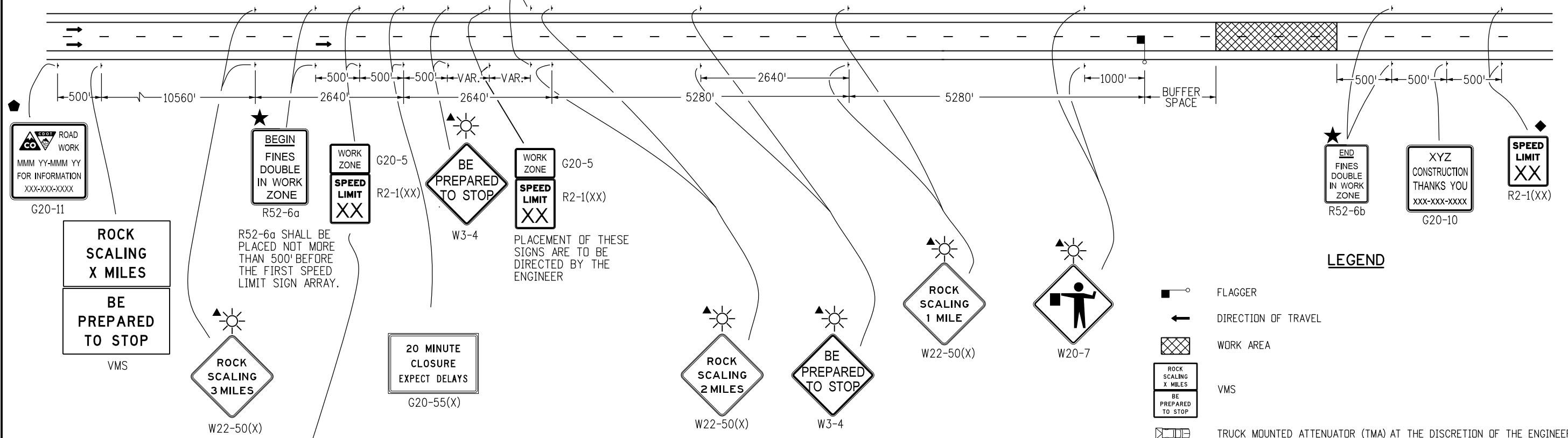
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SIGN SEQUENCE IS THE SAME FOR THE OPPOSITE DIRECTION

TO BE PROVIDED EVERY 2640' OR THE SPACING OF THE SIGNS MAY BE CHANGED AS DIRECTED BY THE ENGINEER BETWEEN R52-6a AND R52-6b SIGNS

WORK ZONE G20-5
FINES DOUBLE R2-6



R52-6a SHALL BE PLACED NOT MORE THAN 500' BEFORE THE FIRST SPEED LIMIT SIGN ARRAY.

PLACEMENT OF THESE SIGNS ARE TO BE DIRECTED BY THE ENGINEER

A STEP-DOWN SPEED LIMIT IS REQUIRED WHEN THERE IS MORE THAN A 15 MPH DIFFERENCE BETWEEN THE NORMAL SPEED LIMIT AND THE CONSTRUCTION ZONE SPEED LIMIT. OTHERWISE THIS G20-5P/R2-1(XX) SIGN ASSEMBLY IS NOT REQUIRED.

LEGEND

- FLAGGER
- DIRECTION OF TRAVEL
- WORK AREA
- ROCK SCALING X MILES
- BE PREPARED TO STOP
- TRUCK MOUNTED ATTENUATOR (TMA) AT THE DISCRETION OF THE ENGINEER
- THESE DEVICES ARE OPTIONAL. THEIR NEED SHALL BE DETERMINED BY DETOUR DESIGN AND/OR SCOPE OF CONSTRUCTION ACTIVITY, AND ARE REQUIRED WHEN THEY ARE INCLUDED IN THE SCHEDULE OF CONSTRUCTION CONTROL DEVICES.
- THESE DEVICES ARE NOT OPTIONAL IF THE POSTED SPEED LIMIT IN THE WORK ZONE IS REDUCED.
- G20-11 SIGN IS REQUIRED WHEN SECTION 626 "PUBLIC INFORMATION SERVICES" PROJECT SPECIAL PROVISION WORKSHEET SPECIFICATION IS REQUIRED WITH PROJECT.
- BUFFER SPACE SEE GENERAL NOTE 21 ON SHEET 1.
- FLASHING BEACON
- SEE FINES DOUBLE SIGNING NOTES ON SHEET 12.

CASE NO. 28
TYPICAL APPLICATION
ROCK SCALING - ROAD CLOSURE, 4-LANE DIVIDED HIGHWAY

Computer File Information	
Creation Date: 07/04/12	Initials: RRR
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Drawing File Name: S-630-01_15of24.dgn	
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Sheet Revisions	
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07/26/13	CORRECTED SIGN CODE DESIGNATION FOR FLAGGER (SYMBOL) SIGN TO W20-7

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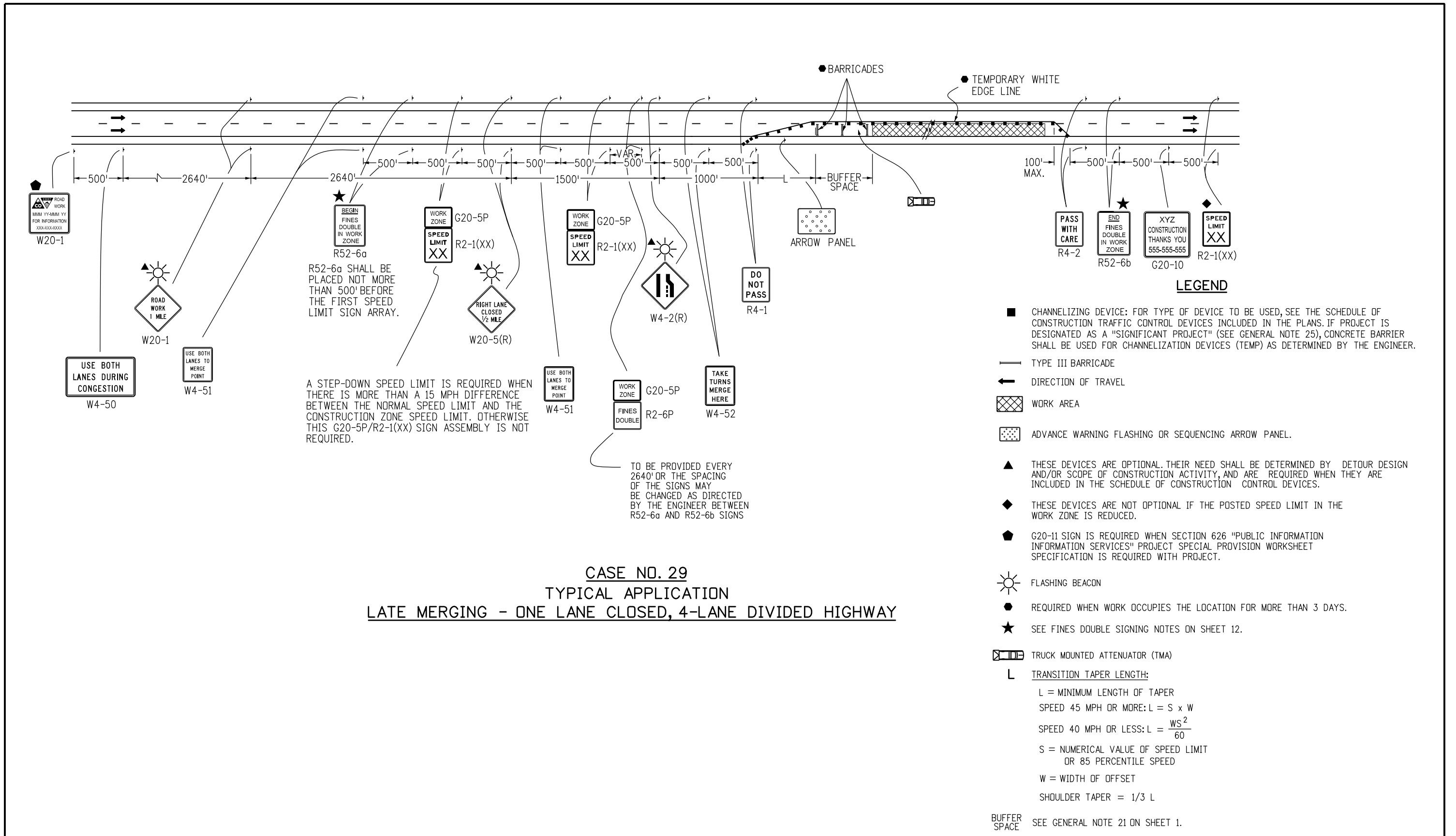
TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

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**CASE NO. 29
TYPICAL APPLICATION
LATE MERGING - ONE LANE CLOSED, 4-LANE DIVIDED HIGHWAY**

Computer File Information	
Creation Date: 07/04/12	Initials: RRR
Last Modification Date:	Initials:
Full Path: www.coloradodot.info/library/traffic/traffic-s-standard-plans	
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(R-X)	

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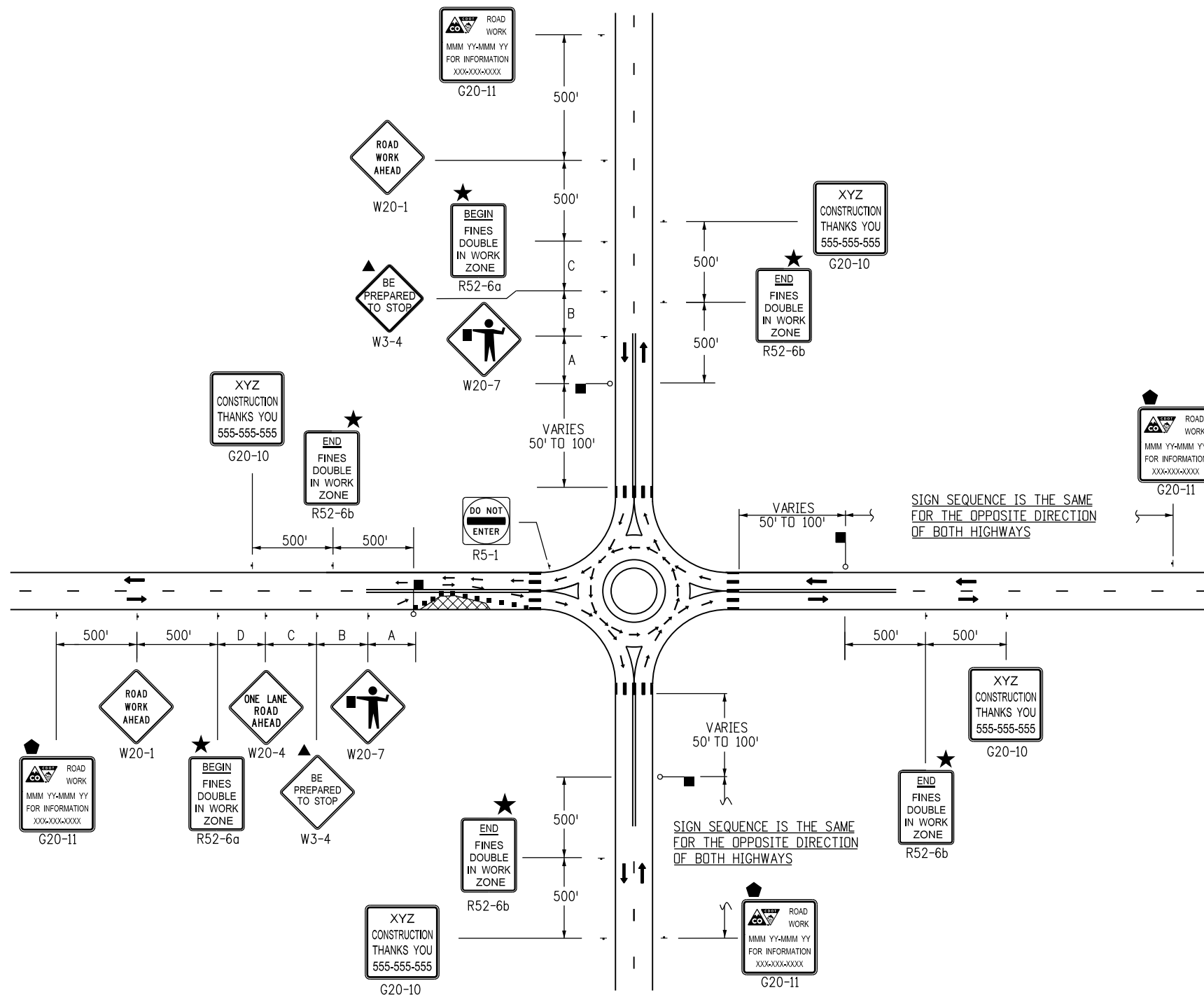
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LEGEND

- CHANNELIZING DEVICE: FOR TYPE OF DEVICE TO BE USED, SEE THE SCHEDULE OF CONSTRUCTION TRAFFIC CONTROL DEVICES INCLUDED IN THE PLANS. IF PROJECT IS DESIGNATED AS A "SIGNIFICANT PROJECT" (SEE GENERAL NOTE 25), CONCRETE BARRIER SHALL BE USED FOR CHANNELIZATION DEVICES (TEMP) AS DETERMINED BY THE ENGINEER.
- TYPE III BARRICADE
- ← DIRECTION OF TRAVEL
- ▨ WORK AREA
- ▤ ADVANCE WARNING FLASHING OR SEQUENCING ARROW PANEL
- ▲ THESE DEVICES ARE OPTIONAL. THEIR NEED SHALL BE DETERMINED BY DETOUR DESIGN AND/OR SCOPE OF CONSTRUCTION ACTIVITY, AND ARE REQUIRED WHEN THEY ARE INCLUDED IN THE SCHEDULE OF CONSTRUCTION CONTROL DEVICES.
- ◆ THESE DEVICES ARE NOT OPTIONAL IF THE POSTED SPEED LIMIT IN THE WORK ZONE IS REDUCED.
- G20-11 SIGN IS REQUIRED WHEN SECTION 626 "PUBLIC INFORMATION SERVICES" PROJECT SPECIAL PROVISION WORKSHEET SPECIFICATION IS REQUIRED WITH PROJECT.
- ☀ FLASHING BEACON
- REQUIRED WHEN WORK OCCUPIES THE LOCATION FOR MORE THAN 3 DAYS.
- ★ SEE FINES DOUBLE SIGNING NOTES ON SHEET 12.
- ▤ TRUCK MOUNTED ATTENUATOR (TMA)
- L TRANSITION TAPER LENGTH:
 L = MINIMUM LENGTH OF TAPER
 SPEED 45 MPH OR MORE: $L = S \times W$
 SPEED 40 MPH OR LESS: $L = \frac{WS^2}{60}$
 S = NUMERICAL VALUE OF SPEED LIMIT OR 85 PERCENTILE SPEED
 W = WIDTH OF OFFSET
 SHOULDER TAPER = 1/3 L
- ▭ BUFFER SPACE SEE GENERAL NOTE 21 ON SHEET 1.
- FLAGGER



CASE NO. 30
TYPICAL APPLICATION
ROUNDBOUT - PARTIAL CLOSURE NEAR ONE-LANE ROUNDBOUT

ROAD TYPE	DISTANCE BETWEEN SIGNS		
	A	B	C
URBAN (<= 40 MPH)	100	100	100
URBAN (>= 45 MPH)	350	350	350
RURAL	500	500	500
EXPRESSWAY/FREEWAY	1000	1500	2640

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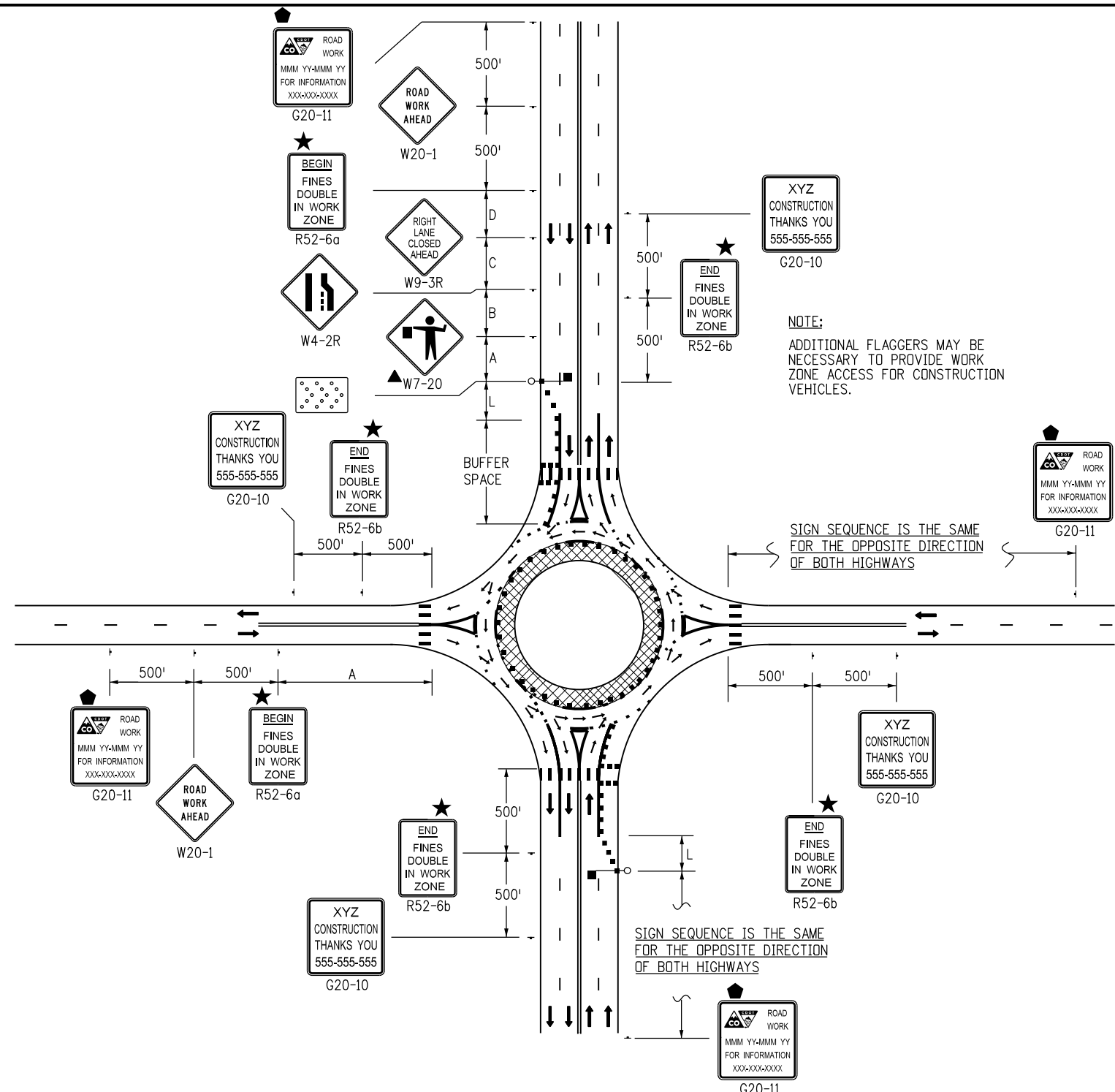
TRAFFIC CONTROLS
FOR HIGHWAY
CONSTRUCTION

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LEGEND

- * A TRUCK DETOUR ROUTE MAY BE NECESSARY TO DIVERT TRUCKS AWAY FROM THE ROUNDABOUT CIRCLE. ALSO NECESSARY IS A STREET NAME AND/OR ROUTE NUMBER SIGN, INFORMING MOTORISTS WHERE THEY NEED TO EXIT THE ROUNDABOUT CIRCLE TO ENTER THE DESIRED STREET AND/OR ROUTE NUMBER.
- CHANNELIZING DEVICE: FOR TYPE OF DEVICE TO BE USED, SEE THE SCHEDULE OF CONSTRUCTION TRAFFIC CONTROL DEVICES INCLUDED IN THE PLANS. IF PROJECT IS DESIGNATED AS A "SIGNIFICANT PROJECT" (SEE GENERAL NOTE 25), CONCRETE BARRIER SHALL BE USED FOR CHANNELIZATION DEVICES (TEMP) AS DETERMINED BY THE ENGINEER.
- TYPE III BARRICADE
- ← DIRECTION OF TRAVEL
- ▨ WORK AREA
- ▤ ADVANCE WARNING FLASHING OR SEQUENCING ARROW PANEL.
- ▲ THESE DEVICES ARE OPTIONAL. THEIR NEED SHALL BE DETERMINED BY DETOUR DESIGN AND/OR SCOPE OF CONSTRUCTION ACTIVITY, AND ARE REQUIRED WHEN THEY ARE INCLUDED IN THE SCHEDULE OF CONSTRUCTION CONTROL DEVICES.
- ◆ THESE DEVICES ARE NOT OPTIONAL IF THE POSTED SPEED LIMIT IN THE WORK ZONE IS REDUCED.
- ◆ G20-11 SIGN IS REQUIRED WHEN SECTION 626 "PUBLIC INFORMATION SERVICES" PROJECT SPECIAL PROVISION WORKSHEET SPECIFICATION IS REQUIRED WITH PROJECT.
- ☀ FLASHING BEACON
- REQUIRED WHEN WORK OCCUPIES THE LOCATION FOR MORE THAN 3 DAYS.
- ★ SEE FINES DOUBLE SIGNING NOTES ON SHEET 12.
- ▤ TRUCK MOUNTED ATTENUATOR (TMA)
- L TRANSITION TAPER LENGTH:
 $L = \text{MINIMUM LENGTH OF TAPER} \times \frac{W}{S}$
 SPEED 45 MPH OR MORE: $L = S \times W$
 SPEED 40 MPH OR LESS: $L = \text{---}$
 S = NUMERICAL VALUE OF SPEED LIMIT OR 85 PERCENTILE SPEED
 W = WIDTH OF OFFSET
 SHOULDER TAPER = 1/3 L
- ▭ BUFFER SPACE SEE GENERAL NOTE 21 ON SHEET 1.
- FLAGGER

CASE NO. 31
TYPICAL APPLICATION *
ROUNDABOUT - INSIDE LANE CLOSURE FOR TWO-LANE ROUNDABOUT

ROAD TYPE	DISTANCE BETWEEN SIGNS		
	A	B	C
URBAN (<= 40 MPH)	100	100	100
URBAN (>= 45 MPH)	350	350	350
RURAL	500	500	500
EXPRESSWAY/FREEWAY	1000	1500	2640

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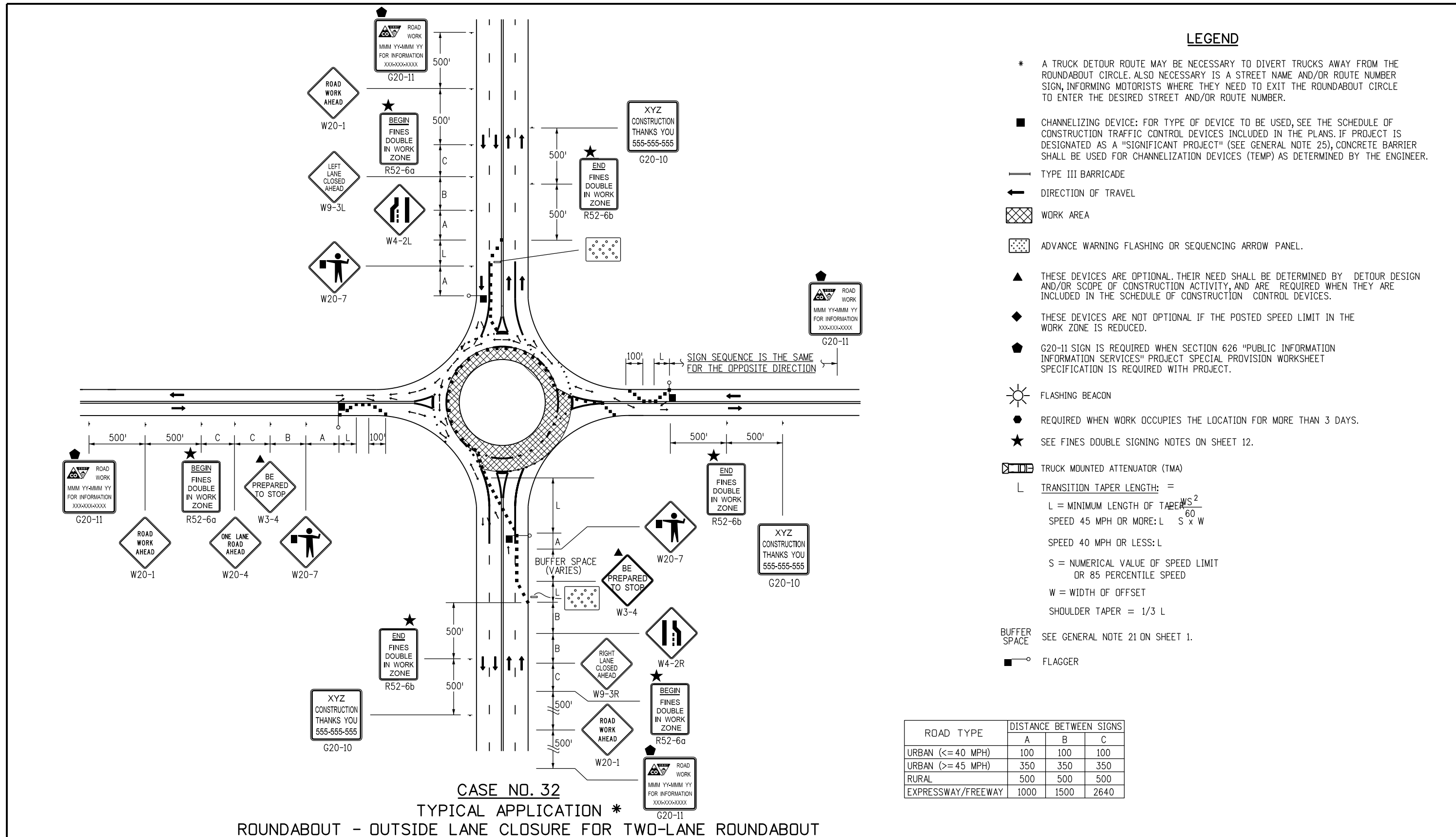
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CASE NO. 32
TYPICAL APPLICATION *
ROUNDABOUT - OUTSIDE LANE CLOSURE FOR TWO-LANE ROUNDABOUT

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CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English	

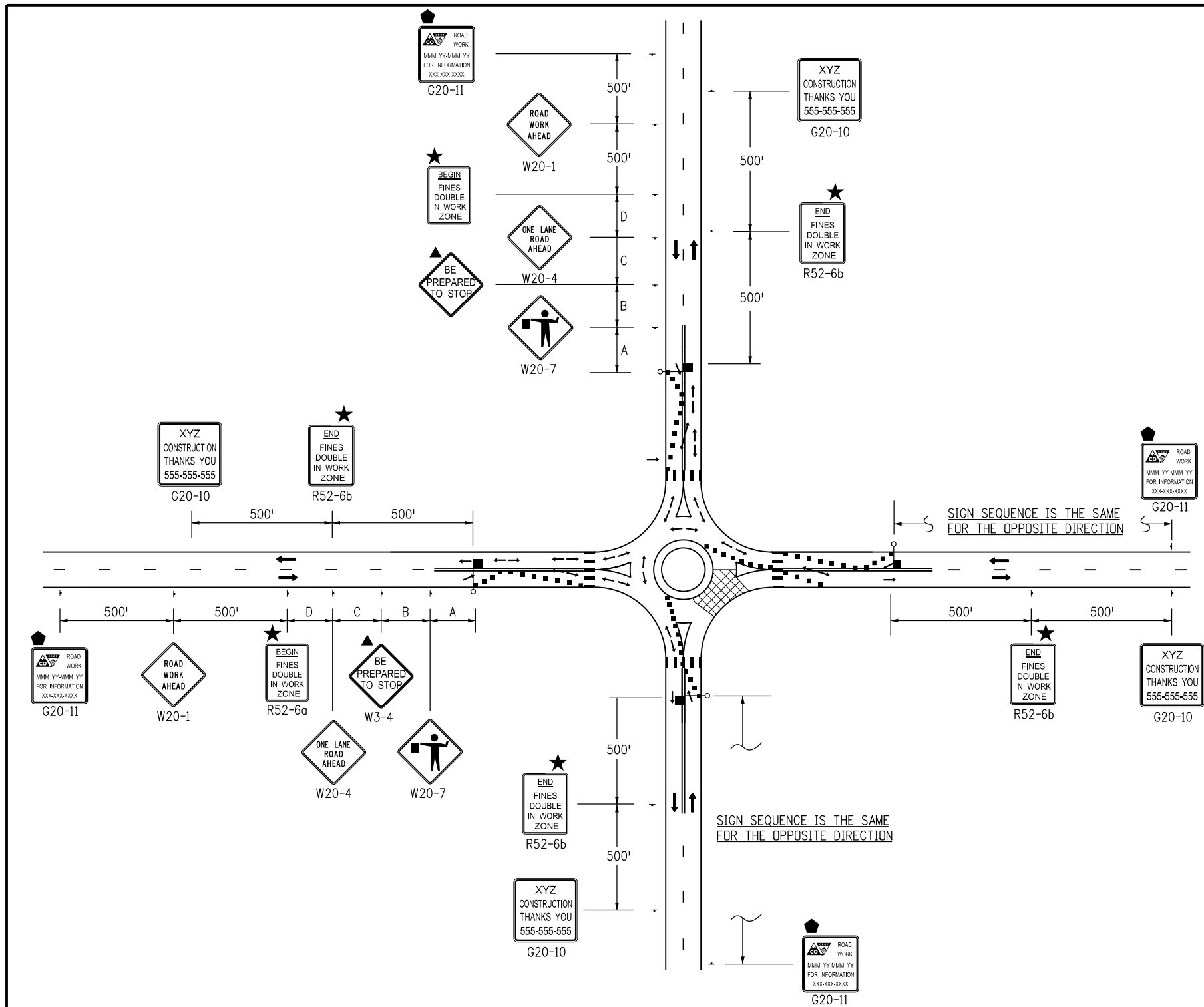
Sheet Revisions	
Date:	Comments
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- ### LEGEND
- * A TRUCK DETOUR ROUTE MAY BE NECESSARY TO DIVERT TRUCKS AWAY FROM THE ROUNDABOUT CIRCLE. ALSO NECESSARY IS A STREET NAME AND/OR ROUTE NUMBER SIGN, INFORMING MOTORISTS WHERE THEY NEED TO EXIT THE ROUNDABOUT CIRCLE TO ENTER THE DESIRED STREET AND/OR ROUTE NUMBER.
 - CHANNELIZING DEVICE: FOR TYPE OF DEVICE TO BE USED, SEE THE SCHEDULE OF CONSTRUCTION TRAFFIC CONTROL DEVICES INCLUDED IN THE PLANS. IF PROJECT IS DESIGNATED AS A "SIGNIFICANT PROJECT" (SEE GENERAL NOTE 25), CONCRETE BARRIER SHALL BE USED FOR CHANNELIZATION DEVICES (TEMP) AS DETERMINED BY THE ENGINEER.
 - TYPE III BARRIAGE
 - ← DIRECTION OF TRAVEL
 - ▨ WORK AREA
 - ▤ ADVANCE WARNING FLASHING OR SEQUENCING ARROW PANEL.
 - ▲ THESE DEVICES ARE OPTIONAL. THEIR NEED SHALL BE DETERMINED BY DETOUR DESIGN AND/OR SCOPE OF CONSTRUCTION ACTIVITY, AND ARE REQUIRED WHEN THEY ARE INCLUDED IN THE SCHEDULE OF CONSTRUCTION CONTROL DEVICES.
 - ◆ THESE DEVICES ARE NOT OPTIONAL IF THE POSTED SPEED LIMIT IN THE WORK ZONE IS REDUCED.
 - ◆ G20-11 SIGN IS REQUIRED WHEN SECTION 626 "PUBLIC INFORMATION SERVICES" PROJECT SPECIAL PROVISION WORKSHEET SPECIFICATION IS REQUIRED WITH PROJECT.
 - ☀ FLASHING BEACON
 - REQUIRED WHEN WORK OCCUPIES THE LOCATION FOR MORE THAN 3 DAYS.
 - ★ SEE FINES DOUBLE SIGNING NOTES ON SHEET 12.
 - ▧ TRUCK MOUNTED ATTENUATOR (TMA)
 - L TRANSITION TAPER LENGTH: =
 - L = MINIMUM LENGTH OF TAPER $L = \frac{WS^2}{S^2}$
 - SPEED 45 MPH OR MORE: $L = \frac{WS^2}{S^2}$
 - SPEED 40 MPH OR LESS: L
 - S = NUMERICAL VALUE OF SPEED LIMIT OR 85 PERCENTILE SPEED
 - W = WIDTH OF OFFSET
 - SHOULDER TAPER = 1/3 L
 - BUFFER SPACE SEE GENERAL NOTE 21 ON SHEET 1.
 - FLAGGER

CASE NO. 33
TYPICAL APPLICATION *
ROUNDABOUT - PARTIAL CLOSURE FOR ONE-LANE ROUNDABOUT

ROAD TYPE	DISTANCE BETWEEN SIGNS		
	A	B	C
URBAN (<= 40 MPH)	100	100	100
URBAN (>= 45 MPH)	350	350	350
RURAL	500	500	500
EXPRESSWAY/FREEWAY	1000	1500	2640

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LEGEND

VEHICLE WITH TRUCK-MOUNTED ATTENUATORS (TMA), TWO 360-DEGREE YELLOW FLASHING BEACONS, AND YELLOW FLASHING VEHICLE LIGHTS OR STROBES.

VMS VARIABLE MESSAGE SIGN (VMS).

▲ WHEN VMS IS USED, THE "SHOULDER CLOSED" SIGN BECOMES OPTIONAL.

■ THE "PICK-UP VEHICLES" OR "WARNING VEHICLE" MAY ENCRDACH INTO THE TRAFFIC LANE WHEN THE SHOULDER IS TOO NARROW TO DRIVE ON.

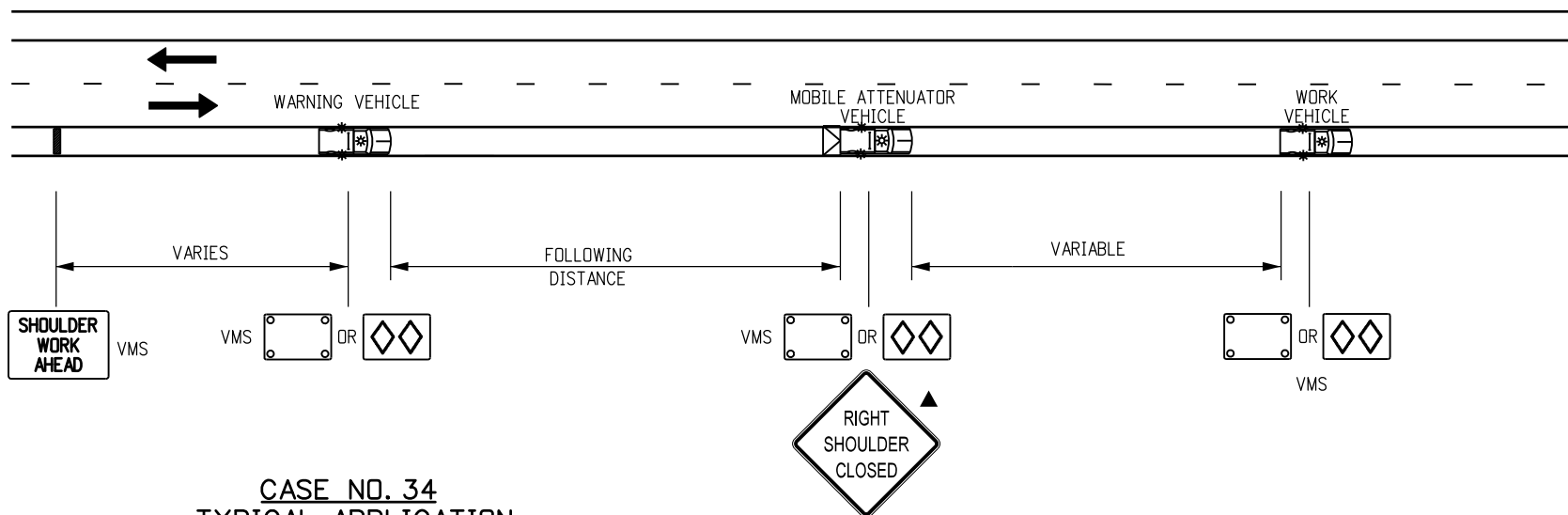
● IF TRACKING OF THE WET PAINT IS ANTICIPATED, THE USE OF CONES OR STATIONARY "WET PAINT" SIGNS SHALL BE POSTED.

● THE VARIABLE SEPARATION DISTANCE BETWEEN THE "CONE PLACEMENT VEHICLE" AND "CONE PICKUP VEHICLE" SHALL BE DETERMINED BY THE TRACK DRYING TIME OF THE PAVEMENT MARKING MATERIAL.

● OPTIONAL

FOLLOWING DISTANCE CHART FOR WARNING AND MOBILE ATTENUATOR (OR CONE PICKUP) VEHICLE

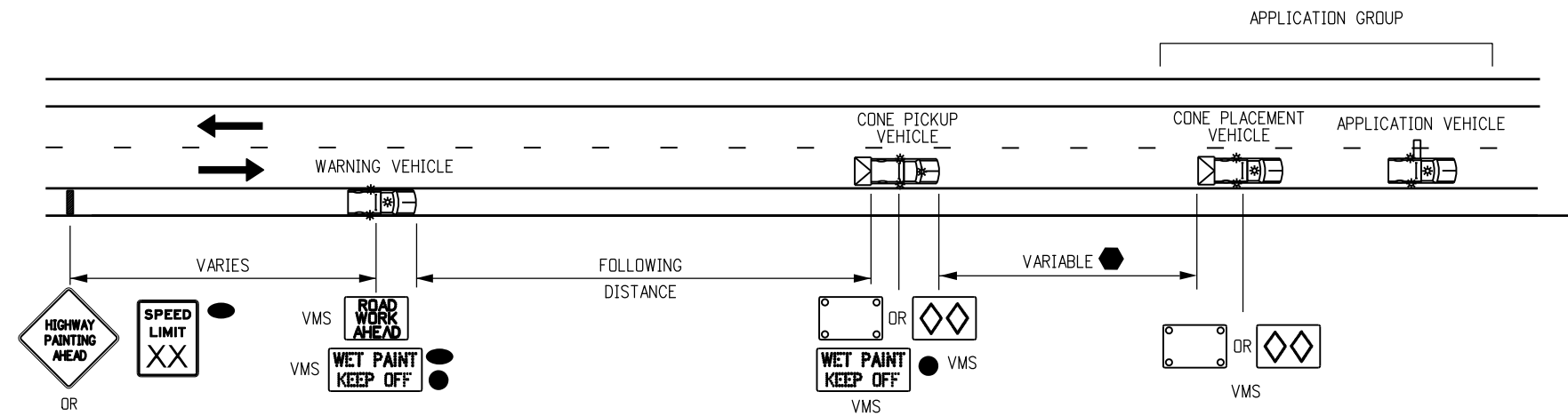
POSTED WZ SPEED LIMIT (MPH)	FOLLOWING DISTANCE (FEET)
0 - 30	250 - 550
35 - 40	325 - 700
45 - 50	600 - 900
55	750 - 1200
60 - 65	1000 - 1400
70 - 75	1200 - 1600



CASE NO. 34
TYPICAL APPLICATION
MOBILE WORK ZONE
MOBILE SHOULDER CLOSURE ON 2-LANE UNDIVIDED HIGHWAY

NOTE

THE VARIABLE SEPARATION DISTANCE BETWEEN THE "CONE PLACEMENT VEHICLE" AND "CONE PICKUP VEHICLE" SHALL BE DETERMINED BY THE TRACK DRYING TIME OF THE PAVEMENT MARKING MATERIAL.








CASE NO. 35
TYPICAL APPLICATION*
MOBILE PAVEMENT MARKING ZONE
CENTERLINE STRIPING ON 2-LANE UNDIVIDED HIGHWAY

* USE CASE 31 IF SHOULDER IN CASE 30 IS TOO NARROW FOR GROUP VEHICLE USE.

Computer File Information		Sheet Revisions		Colorado Department of Transportation		TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION		STANDARD PLAN NO.	
Creation Date: 07/04/12	Initials: KEN	Date:	Comments		4201 East Arkansas Avenue Denver, Colorado 80222 Phone: (303) 757-9543 Fax: (303) 757-9219	TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	Issued By: Safety & Traffic Engineering Branch July 4, 2012	S-630-1	
Last Modification Date: 12/8/14	Initials: KEN	3/27/14	REDUCED NUMBER OF TMA VEHICLES, REVISE VMS AND ADD STATIONARY SIGNS					Sheet No. 21 of 24	
Full Path: www.coloradodot.info/library/traffic/traffic-s-standard-plans		12/8/14	FORMERLY SHEET 17.						
Drawing File Name: S-630-1_21of24.dgn				Safety & Traffic Engineering Branch	KCM/KEN				
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LEGEND

-  VEHICLE WITH TRUCK-MOUNTED ATTENUATORS (TMA), TWO 360-DEGREE YELLOW FLASHING BEACONS, AND YELLOW FLASHING VEHICLE LIGHTS OR STROBES.
-  ADVANCE WARNING FLASHING OR SEQUENCING ARROW PANEL.
-  PORTABLE VARIABLE MESSAGE SIGN (VMS).
-  WHEN THE VMS IS USED, THE "RIGHT LANE CLOSED AHEAD" (W9-3X) SIGN BECOMES OPTIONAL.
-  THE "CONE PICK-UP VEHICLE" OR "WARNING VEHICLE" MAY ENCRDACH INTO THE TRAFFIC LANE WHEN THE SHOULDER IS TOO NARROW TO DRIVE ON.

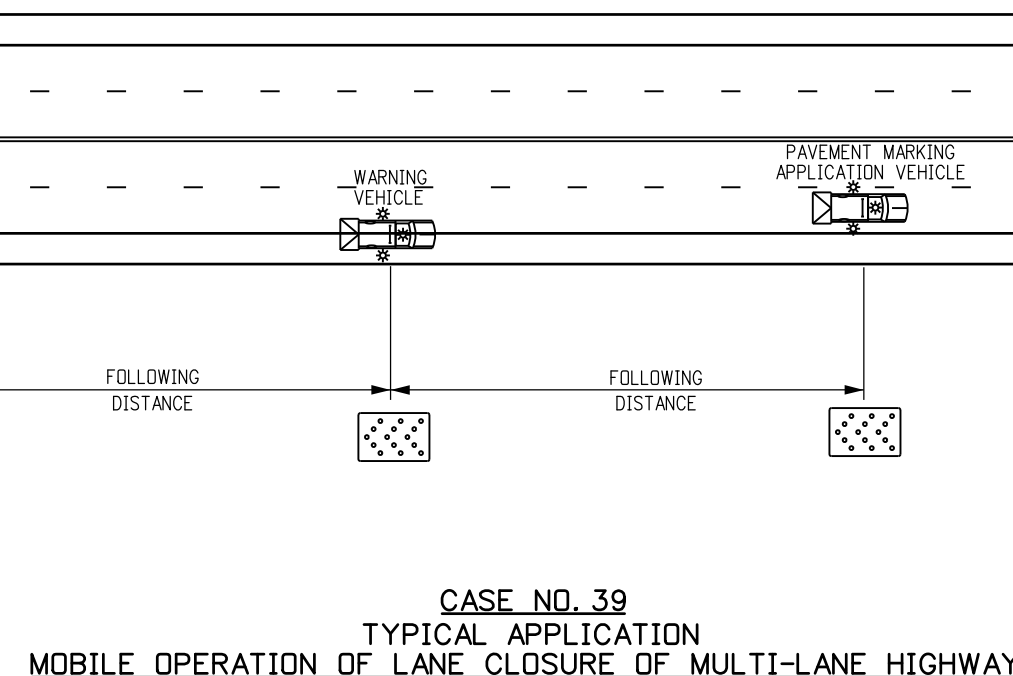
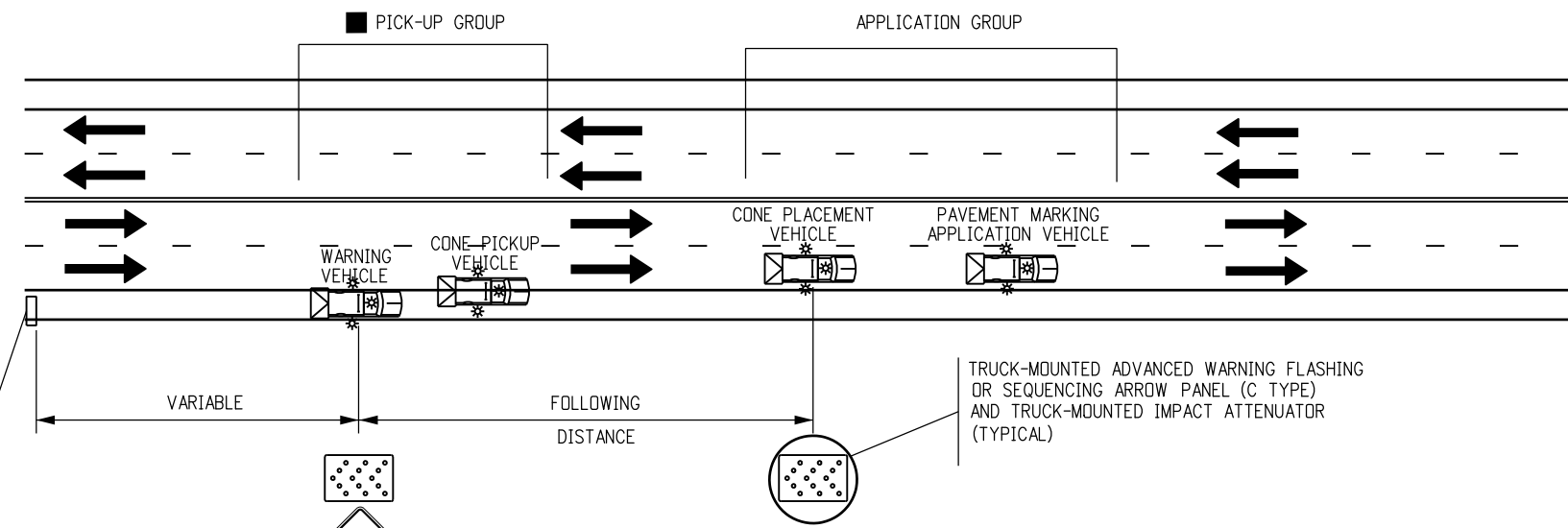
NOTES

1. IN ROADWAY WHERE THE AADT IS 2,000 OR LESS, A SINGLE WORK VEHICLE WITH APPROPRIATE WARNING DEVICES ON THE VEHICLE MAY BE USED.
2. RADIO COMMUNICATIONS BETWEEN THE WORKCREW AND THE MOVING BLOCKADE ARE REQUIRED TO ADJUST THE BLOCKADE TO INCREASE OR DECREASE THE CLOSURE TIME. RELEASE TRAFFIC ONLY AFTER CONFIRMATION THAT ALL WORKERS AND THEIR VEHICLES ARE CLEAR OF THE ROADWAY.
3. IF APPLICABLE, ALL RAMP AND ACCESS BETWEEN THE MOVING BLOCKADE AND WORK OPERATION AREA SHALL BE TEMPORARILY CLOSED USING TRAFFIC CONTROL EQUIPMENT AND PERSONNEL. EACH RAMP MUST REMAIN CLOSED UNTIL THE CREW DOING THE WORK GIVES THE "ALL CLEAR" SIGNAL OR UNTIL THE FRONT OF THE MOVING BLOCKADE PASSES THE CLOSED RAMP(S).

FOLLOWING DISTANCE CHART FOR WARNING VEHICLE AND SIGNING VEHICLES

POSTED WZ SPEED LIMIT (MPH)	FOLLOWING DISTANCE (FEET)
0 - 30	250 - 550
35 - 40	325 - 700
45 - 50	600 - 900
55	750 - 1200
60 - 65	1000 - 1400
70 - 75	1200 - 1600

CASE NO. 38
TYPICAL APPLICATION
MOBILE OPERATION OF LANE CLOSURE OF MULTI-LANE HIGHWAY
(NOT FOR USE ON FREEWAYS)



CASE NO. 39
TYPICAL APPLICATION
MOBILE OPERATION OF LANE CLOSURE OF MULTI-LANE HIGHWAY

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TYPICAL CONSTRUCTION ZONE SIGNS

THESE SIGNING NOTES ARE INTENDED AS A QUICK REFERENCE FOR TYPICAL SIGN USE AND PLACEMENT IN CONSTRUCTION ZONES.

<p>G20-1 "ROAD/WORK/NEXT XX MILES" - THIS SIGN SHALL BE ERECTED AT THE LIMITS OF ANY ROAD CONSTRUCTION OR MAINTENANCE PROJECT OF MORE THAN TWO (2) MILES IN LENGTH WHERE TRAFFIC IS MAINTAINED THROUGH THE PROJECT.</p> <p>G20-4 "PILOT CAR/FOLLOW ME" - THIS SIGN SHALL BE MOUNTED IN A CONSPICUOUS POSITION ON THE REAR OF A VEHICLE USED FOR GUIDING ONE-WAY TRAFFIC THROUGH OR AROUND THE PROJECT.</p> <p>G20-5P "WORK ZONE" - THIS PLAQUE SHALL BE MOUNTED JUST ABOVE THE WORK ZONE SPEED LIMIT SIGNS PRIOR TO THE WORK ZONE AREA.</p> <p>G20-10 THANK YOU SIGN - THIS SIGN SHOULD BE ERECTED APPROXIMATELY 500 FEET BEYOND THE END OF THE PROJECT.</p> <p>G20-11 CONSTRUCTION PROJECT INFORMATION SIGN - THIS SIGN SHOULD BE ERECTED AS DESCRIBED IN THE SECTION 626 STANDARD SPECIFICATION.</p> <p>G20-55(X) "X MINUTE CLOSURE. EXPECT DELAYS" - THIS SIGN IS INTENDED FOR USE 500 FEET PAST THE "WORK ZONE"/SPEED LIMIT SIGN.</p> <p>M4-9() "DETOUR/⟨⟨⟨" - THIS SIGN IS USED FOR UNNUMBERED ROUTES; FOR USE IN EMERGENCY SITUATIONS; FOR PERIODS OF SHORT DURATION; OR WHERE, OVER RELATIVELY SHORT DISTANCES, IT IS NOT NECESSARY TO SHOW ROUTE MARKERS TO GUIDE TRAFFIC ALONG THE DETOUR AND BACK TO ITS AUTHORIZED ROUTE.</p> <p>M4-10() "DETOUR ARROW" - THIS SIGN SHOULD BE MOUNTED JUST BELOW THE ROAD CLOSED SIGN AT THE POINT WHERE THE DETOUR ROADWAY OR ROUTE HAS BEEN ESTABLISHED DUE TO THE CLOSURE OF THE STREET OR HIGHWAY TO THROUGH TRAFFIC.</p> <p>R2-1() "SPEED/LIMIT/XX" - THESE SIGNS ARE INTENDED TO REDUCE TRAFFIC SPEED IN ADVANCE OF THE DAILY WORK AREA WITHIN THE OVERALL PROJECT LIMITS.</p> <p>R2-1(XX) "SPEED/LIMIT/XX" - THIS SIGN IS INTENDED FOR USE 500 FEET PAST THE "THANK YOU" SIGN TO BRING TRAFFIC BACK TO ORIGINAL POSTED SPEED.</p> <p>R2-6P "FINES DOUBLE" - THIS SIGN IS INTENDED FOR USE WITHIN WORK ZONES TO PROVIDE NOTICE OF INCREASED FINES FOR TRAFFIC VIOLATIONS WITHIN WORK ZONES.</p> <p>R4-1 "DO NOT PASS" - THIS SIGN SHOULD BE PLACED AT TRANSITION TAPER POINT.</p> <p>R4-2 "PASS WITH CARE" - THIS SIGN SHOULD BE PLACED AT TRANSITION TAPER POINT.</p> <p>R11-2 "ROAD/CLOSED" - THIS SIGN IS TO BE MOUNTED ON THE BARRICADE THAT IS PLACED BEFORE THE WORK ZONE ENTRANCE TO PROHIBIT TRAFFIC FROM ENTERING THE WORK ZONE.</p> <p>R11-3 "ROAD CLOSED/X MILES AHEAD/L.T.O." - THIS SIGN SHOULD BE PLACED WHERE THROUGH TRAFFIC MUST DETOUR TO AVOID THE CLOSURE OF THE ROAD SOME DISTANCE BEYOND, BUT WHERE THE ROAD IS OPEN TO LOCAL TRAFFIC UP TO THE POINT OF CLOSURE.</p> <p>R11-4 "ROAD CLOSED/TO/THRU TRAFFIC" FOR URBAN USE - THIS SIGN SHOULD BE PLACED WHERE THROUGH TRAFFIC MUST DETOUR TO AVOID THE CLOSURE OF THE ROAD SOME DISTANCE BEYOND, BUT WHERE THE ROAD IS OPEN TO LOCAL TRAFFIC UP TO THE POINT OF CLOSURE.</p> <p>R52-6a "BEGIN FINES DOUBLE IN WORK ZONE" SIGN IS PLACED AT THE BEGINNING OF THE ADVANCED WARNING AREA OF THE TRAFFIC CONTROL ZONE.</p> <p>R52-6b "END FINES DOUBLE IN WORK ZONE" SIGN IS PLACED AFTER WORK ZONE AREA, PAST DOWNSTREAM TAPER SECTION.</p> <p>W1-1() "TURN ARROW" - THIS SIGN IS INTENDED FOR USE WHERE ENGINEERING INVESTIGATIONS OF ROADWAY CONDITIONS SHOW THE RECOMMENDED SPEED ON THE TURN TO BE 30 MPH OR LESS.*</p> <p>W1-2() "CURVE ARROW" - THIS SIGN IS INTENDED FOR USE WHERE ENGINEERING INVESTIGATIONS OF ROADWAY CONDITIONS SHOW THE RECOMMENDED SPEED ON THE CURVE TO BE IN THE RANGE BETWEEN 30 AND 60 MILES PER HOUR.*</p> <p>W1-3() "REVERSE TURN ARROW" - THIS SIGN IS INTENDED FOR USE WHERE TWO TURNS OR THE CURVE AND A TURN IN OPPOSITE DIRECTIONS ARE SEPARATED BY A TANGENT OF LESS THAN 600 FEET.*</p> <p>W1-4() "REVERSE CURVE ARROW" - THIS SIGN IS INTENDED FOR USE WHERE TWO CURVES IN OPPOSITE DIRECTIONS ARE SEPARATED BY A TANGENT OF LESS THAN 600 FEET.*</p> <p>W1-6() "ARROW" - THIS SIGN SHOULD BE MOUNTED JUST BELOW THE ROAD CLOSED SIGN AT THE POINT WHERE THE DIVERSION HAS BEEN ESTABLISHED DUE TO THE LANE CLOSURE.</p> <p>W3-2 "YIELD AHEAD" - THIS SIGN IS INTENDED FOR USE AT THE APPROACH TO THE YIELD SIGN THAT IS NOT VISIBLE FOR A SUFFICIENT DISTANCE TO PERMIT THE DRIVER TO BRING HIS VEHICLE TO A STOP AT THE YIELD SIGN.*</p> <p>W3-4 "BE PREPARED TO STOP" - THIS SIGN TO BE PLACED 1.5 MILES IN ADVANCED OF A FLAGGER.</p> <p>W4-2(X) "LEFT (RIGHT) LANE TRANSITION SYMBOL" - THIS SIGN IS INTENDED FOR USE IN ADVANCE OF THE REDUCTION IN THE NUMBER OF TRAFFIC LANES IN THE DIRECTION OF TRAVEL ON THE MULTILANE HIGHWAY.*</p> <p>W4-50 "USE BOTH LANES DURING CONGESTION" - THIS SIGN IS INTENDED FOR USE IN ADVANCE OF THE "ROAD WORK X MILE" ADVANCED WARNING SIGN.</p> <p>W4-51 "USE BOTH LANES TO MERGE POINT" - THIS SIGN IS INTENDED TO DIRECT MOTORISTS TO USE BOTH TRAVEL LANES UNTIL THE LANES ARE REDUCED TO ONE LANE.</p> <p>W4-52 "TAKE TURNS MERGE HERE" - THIS SIGN IS INTENDED TO WARN MOTORISTS IN ADVANCED TO MOVE FROM THE CLOSED TRAVEL LANE TO THE OPEN TRAVEL LANE, USUALLY 500 FEET IN ADVANCED OF THE START OF THE TRANSITION TAPER.</p> <p>W5-1 "ROAD NARROWS" - THIS SIGN IS INTENDED FOR USE IN ADVANCE OF THE TRANSITION ON THE ROAD WHERE THE PAVEMENT WIDTH IS REDUCED ABRUPTLY TO A WIDTH SUCH THAT TWO CARS CANNOT PASS WITHOUT REDUCING SPEED.*</p>	<p>W5-2a "NARROW BRIDGE SYMBOL" - THIS SIGN IS INTENDED FOR USE IN ADVANCE OF A BRIDGE OR CULVERT HAVING A CLEAR TWO-WAY ROADWAY WIDTH OF 16 TO 18 FEET OR ANY BRIDGE OR CULVERT HAVING A ROADWAY CLEARANCE LESS THAN THE WIDTH OF THE APPROACH PAVEMENT.*</p> <p>W5-3 "ONE LANE/BRIDGE" - THIS SIGN SHOULD BE PLACED ON TWO-WAY ROADWAYS IN ADVANCE OF THE BRIDGES OR CULVERTS WHERE THE ROADWAY WIDTH IS LESS THAN 16 FEET (18 FEET FOR COMMERCIAL VEHICLES) OR WHEN THE ALIGNMENT IS POOR ON THE APPROACH TO THE STRUCTURE HAVING A CLEAR ROADWAY WIDTH OF 18 FEET OR LESS.*</p> <p>W6-1 "DIVIDED HIGHWAY SYMBOL" - THIS SIGN SHOULD BE PLACED ON THE APPROACHES TO THE SECTION OF HIGHWAY WHERE OPPOSING FLOWS OF TRAFFIC ARE SEPARATED BY A PHYSICAL MEDIAN.</p> <p>W6-2 "DIVIDED HIGHWAY ENDS SYMBOL" - THIS SIGN SHOULD BE PLACED AT THE END OF THE SECTION OF PHYSICALLY DIVIDED HIGHWAY AS A WARNING OF TWO-WAY TRAFFIC AHEAD.</p> <p>W6-3 "TWO-WAY TRAFFIC SYMBOL" - THIS SIGN IS INTENDED FOR USE TO GIVE WARNING OF TRANSITION FROM A SEPARATED ONE-WAY ROADWAY TO A TWO-WAY ROADWAY.*</p> <p>W7-1 "HILL SYMBOL" - THIS SIGN SHOULD BE PLACED AT A POINT IN ADVANCE OF THE DOWNGRADE WHERE THE LENGTH, PERCENT OF GRADE, HORIZONTAL CURVATURE, OR OTHER PHYSICAL FEATURES REQUIRE SPECIAL CONSIDERATION ON THE PART OF DRIVERS.*</p> <p>W8-1,W8-2 "BUMP"/"DIP" - THESE SIGNS ARE INTENDED FOR USE TO GIVE WARNING OF A SHARP RISE OR DEPRESSION IN THE PROFILE OF THE ROAD THAT IS SUFFICIENTLY ABRUPT TO AFFECT VEHICLE OPERATION OR CAUSE CONSIDERABLE DISCOMFORT TO PASSENGERS.*</p> <p>W8-3a "PAVEMENT ENDS SYMBOL" - THIS SIGN IS INTENDED FOR USE IN ADVANCE OF A POINT WHERE THE PAVEMENT SURFACE CHANGES FROM A HARD-SURFACED PAVEMENT TO THE LOW-TYPE SURFACE OR EARTH ROAD.*</p> <p>W8-4 "SOFT SHOULDER" - THIS SIGN IS INTENDED FOR USE TO WARN OF A SOFT SHOULDER CONDITION THAT COULD PRESENT A PROBLEM TO VEHICLES THAT MAY GET OFF THE PAVEMENT.*</p> <p>W8-5 "SLIPPERY WHEN WET SYMBOL" - THIS SIGN SHOULD BE PLACED IN ADVANCE OF THE CONDITION WHERE THE HIGHWAY SURFACE IS SLIPPERY BEYOND WHAT IS ORDINARY WHEN WET.*</p> <p>W8-9a "SHOULDER DROP-OFF" - THIS SIGN IS INTENDED FOR USE IN ADVANCE OF A SHOULDER DROP-OFF THAT EXCEEDS THREE INCHES IN HEIGHT.*</p> <p>W8-11 "UNEVEN LANES" - THIS SIGN IS INTENDED FOR USE IN ADVANCE OF AN UNEVEN ADJACENT LANE SITUATION THAT EXCEEDS ONE INCH IN HEIGHT.*</p> <p>W9-1() "LEFT (RIGHT) LANE ENDS" - THIS SIGN IS INTENDED FOR USE IN ADVANCE OF THE PAVEMENT WIDTH TRANSITION SIGN (W4-2).</p> <p>W9-2() "LANE ENDS/MERGE LEFT (RIGHT)" - THIS SIGN IS INTENDED FOR USE AS A SUPPLEMENT TO THE PAVEMENT WIDTH TRANSITION SIGN (W4-2).</p> <p>W9-3 OR W9-3a() "CENTER LANE CLOSED AHEAD" - THIS SIGN SHOULD BE USED IN ADVANCE OF THE POINT WHERE WORK OCCUPIES THE CENTER LANE AND TRAFFIC IS DIRECTED TO THE RIGHT OR LEFT OF THE WORK ZONE.*</p> <p>W12-1 "DOUBLE ARROW SYMBOL" - THIS SIGN SHOULD BE PLACED AT THE POINT OF THE OBSTRUCTION IN THE ROADWAY, WHERE TRAFFIC IS PERMITTED TO PASS ON EITHER SIDE OF THE OBSTRUCTION.</p> <p>W12-2 "LOW CLEARANCE SYMBOL" - THIS SIGN IS INTENDED FOR USE IN ADVANCE OF AN OBSTRUCTION TO WARN VEHICLE OPERATORS OF CLEARANCES LESS THAN THE MAXIMUM VEHICLE HEIGHT PERMITTED PLUS 12 INCHES.*</p> <p>W13-1P() "ADVISORY SPEED PLAQUE" - THIS PLAQUE IS INTENDED TO SUPPLEMENT WARNING SIGNS ONLY AND SHALL NOT BE MOUNTED ALONE. IT IS USED TO INDICATE THE MAXIMUM RECOMMENDED SPEED FOR THE INDICATED CONDITION.</p> <p>W13-3 "ADVISORY RAMP SPEED" - THIS SIGN IS TO BE POSTED TO INFORM MOTORISTS WHAT THE SUGGESTED SPEED LIMIT IS ON A RAMP.</p> <p>W20-1 "ROAD/WORK/AHEAD" - THIS SIGN IS TO BE LOCATED IN ADVANCE OF THE INITIAL ACTIVITY OR DETOUR A DRIVER MAY ENCOUNTER, AND IS INTENDED TO BE USED AS A WARNING OF OBSTRUCTIONS OR RESTRICTIONS.</p> <p>W20-2 "DETOUR/(DIST.)" - THIS SIGN IS INTENDED FOR USE IN ADVANCE OF THE POINT AT WHICH TRAFFIC IS DIVERTED OVER A TEMPORARY ROADWAY OR ROUTE.</p> <p>W20-3 "ROAD/CLOSED/(DIST.)" - THIS SIGN IS INTENDED FOR USE IN ADVANCE OF A POINT AT WHICH A ROADWAY IS CLOSED TO ALL TRAFFIC OR TO ALL BUT LOCAL TRAFFIC.</p> <p>W20-4 "ONE LANE/ROAD/(DIST.)" - THIS SIGN IS INTENDED FOR USE IN ADVANCE OF A POINT WHERE TRAFFIC IN BOTH DIRECTIONS MUST USE A SINGLE LANE.</p> <p>W20-5() "XXX LANE/CLOSED/(DIST.)" - THIS SIGN IS INTENDED FOR USE IN ADVANCE OF A POINT WHERE ONE LANE OF A MULTIPLE-LANE ROADWAY IS CLOSED. IT SHOULD BE PROVIDED WITH INTERCHANGEABLE PLAQUES READING "RIGHT", "LEFT", AND "CENTER" AT NO ADDITIONAL COST TO THE PROJECT.</p> <p>W20-7 "FLAGGER SYMBOL" - THIS SIGN IS INTENDED FOR USE IN ADVANCE OF ANY POINT AT WHICH A FLAGGER HAS BEEN STATIONED TO CONTROL TRAFFIC THROUGH OR AROUND THE PROJECT.*</p> <p>W20-52 "GROOVED/PAVEMENT/AHEAD" - THIS SIGN IS INTENDED TO BE USED IN ADVANCE OF A ROADWAY THAT HAS BEEN GROOVED AND/OR ROTO MILLED.</p> <p>W21-1a "WORKER SYMBOL" - THIS SIGN IS INTENDED FOR USE IN CONJUNCTION WITH MINOR MAINTENANCE AND PUBLIC UTILITY OPERATIONS FOR THE PROTECTION OF MEN WORKING IN OR NEAR THE ROADWAY.</p>	<p>W21-2 "FRESH/OIL" - THIS SIGN IS INTENDED FOR USE WHERE RE-SURFACING OPERATIONS HAVE RENDERED THE SURFACE OF THE PAVEMENT TEMPORARILY WET, AND OBJECTIONABLE SPLASHING ON VEHICLES MAY OCCUR.*</p> <p>W21-3 "ROAD/MACHINERY/AHEAD" - THIS SIGN IS INTENDED FOR USE IN ADVANCE OF THE AREAS WHERE HEAVY EQUIPMENT IS OPERATING IN OR ADJACENT TO THE ROADWAY.*</p> <p>W21-4 "ROAD/WORK/(DIST.)" - THIS SIGN IS INTENDED FOR USE IN ADVANCE OF MAINTENANCE FOR MINOR RECONSTRUCTION OPERATIONS IN THE ROADWAY.</p> <p>W21-5 "SHOULDER/WORK" - THIS SIGN IS INTENDED FOR USE IN ADVANCE OF THE PROJECT INVOLVING THE SHOULDER, WHERE THE TRAVELED WAY REMAINS UNOBSTRUCTED.</p> <p>W21-6 "SURVEY/CREW" - THIS SIGN IS INTENDED FOR USE IN ADVANCE OF A POINT WHERE A SURVEYING CREW IS WORKING IN OR ADJACENT TO THE ROADWAY.*</p> <p>W22-1 "BLASTING/ZONE/(DIST.)" - THIS SIGN IS INTENDED FOR USE IN ADVANCE OF ANY POINT OR WORK SITE WHERE THERE ARE EXPLOSIVES BEING USED. THE W22-2 AND W22-3 SIGNS MUST BE USED IN SEQUENCE WITH THIS SIGN.</p> <p>W22-2 "TURN OFF/2-WAY RADIOS/AND/CELLULAR/PHONES" - THIS SIGN IS TO BE USED IN SEQUENCE WITH THE W22-1 AND W22-3 SIGNS AND PLACED AT LEAST 1000 FEET FROM THE BEGINNING OF THE BLASTING ZONE.</p> <p>W22-3 "END/BLASTING/ZONE" - THIS SIGN IS TO BE USED TO DENOTE THE END OF THE RADIO INFLUENCE AREA AND SHALL BE PLACED A MINIMUM OF 1000 FEET FROM THE BLASTING ZONE, EITHER WITH OR PRECEDING THE END CONSTRUCTION SIGN.</p> <p>W22-50(X) "ROCK SCALING X MILE(S)" - THIS SIGN IS INTENDED TO BE USED IN ADVANCE OF A FLAGGER IN ADVANCED OF THE WORK ZONE AREA.</p>
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ADVANCE PLACEMENT OF WARNING SIGNS

POSTED OR 85TH PERCENTILE SPEED	ADVANCE PLACEMENT DISTANCE (FEET)								
	CONDITION A	CONDITION B: DECLARATION TO THE LISTED ADVISORY SPEED (MPH) FOR THE CONDITION							
		MPH							
	+	0	10	20	30	40	50	60	70
20	225	●	●	—	—	—	—	—	—
25	325	●	●	●	—	—	—	—	—
30	450	●	●	●	●	—	—	—	—
35	550	●	●	●	●	—	—	—	—
40	650	125	●	●	●	—	—	—	—
45	750	175	125	●	●	●	—	—	—
50	850	250	200	150	100	●	—	—	—
55	950	325	275	225	175	100	●	—	—
60	1100	400	350	300	250	175	●	—	—
65	1200	475	425	400	350	275	175	●	—
70	1250	550	525	500	425	350	250	150	—
75	1350	650	625	600	525	450	350	250	100

- + CONDITION A: SPEED REDUCTION AND LANE CHANGING IN HEAVY TRAFFIC. TYPICAL SIGNS ARE "MERGE" AND "RIGHT LANE ENDS".
- ++ CONDITION B: TYPICAL CONDITIONS ARE THE WARNING OF A POTENTIAL STOP SITUATION AND LOCATIONS WHERE THE ROAD USER MUST DECREASE SPEED TO MANEUVER THROUGH THE WARNED CONDITION. TYPICAL SIGNS ARE "STOP AHEAD", "SIGNAL AHEAD", "YIELD AHEAD", "CURVE", "REVERSE CURVE", "TURN".
- NO SUGGESTED DISTANCES ARE PROVIDED AT THESE SPEEDS, AS THE PLACEMENT IS DEPENDENT ON SITE CONDITIONS AND OTHER SIGNING.

A SUPPLEMENTAL PLAQUE MAY BE USED WITH WARNING SIGNS SPECIFYING THE DISTANCE TO THE CONDITION IF THERE IS AN IN-BETWEEN INTERSECTION THAT MIGHT CONFUSE THE MOTORIST.

* PLACEMENT SHOULD BE IN ACCORDANCE WITH WARNING SIGN PLACEMENT TABLE.

Computer File Information		Sheet Revisions		Colorado Department of Transportation  4201 East Arkansas Avenue Denver, Colorado 80222 Phone: (303) 757-9543 Fax: (303) 757-9219	TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	STANDARD PLAN NO. S-630-1
Creation Date: 07/04/12	Initials: KEN	Date:	Comments			
Last Modification Date: 12/8/14	Initials: KEN	07/26/13	CHANGE W20-7a SIGN CODE TO W20-7	Safety & Traffic Engineering Branch	KCM/KEN	
Full Path: www.coloradodot.info/library/traffic/traffic-s-standard-plans		12/8/14	FORMERLY SHEET 20.			
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CAD Ver.: MicroStation V8	Scale: Not to Scale	Units: English				